SMITHFIELD TOWN COUNCIL AGENDA

October 8, 2025 at 6:30 PM
220 North Church Street

1. **Call To Order**
2. **Pledge Of Allegiance**
3. **Presentation**
   - **a.** Resolution in Support of the Isle of Wight Christian Outreach Program and its 2025 "Friends Helping Friends" Campaign
   - **b.** Smithfield Recreation Association (SRA) Check Presentation
   - **c.** Smithfield Police Department Presentation "Destination Zero Award" by Deputy Chief Meier
4. **Closed Session**
   - **a.** Closed Session for the discussion of cost negotiations, more specifically, Right of Way acquisition at Red Point Taphouse pursuant to 2.2-3711 A3 of the Code of Virginia
   - **b.** Closed Session for the discussion of Acquisition / Disposition of Real Property, more specifically, The Grange @ 10Main pursuant to 2.2-3711 A3 and A5 of the Code of Virginia
   - **c.** Closed session for discussion with Legal Counsel regarding legal matters and possible litigation, more specifically, Former Town Attorney's contract pursuant to 2.2-3711 A7 and A8 of the Code of Virginia
5. **Informational Reports**
   - **a.** Town Manager's Activity Reports
   - **b.** Committee Summary Reports

6. Upcoming Meetings And Activities

October 7 -	5:00 - 7:00 p.m. - 2025 National Night Out @ Luter Sports Complex
October 8 -	6:30 p.m. - Town Council Meeting
October 13 -	Town Offices Closed in Observance of Columbus Day
October 14 -	6:30 p.m. - Planning Commission Meeting
October 21 -	6:30 p.m. - Board of Historic and Architectural Review
October 21 -	7:30 p.m. - Board of Zoning Appeals
October 27 -	3:00 p.m. - Town Council Committee Meetings
October 31 -	5:30 p.m. - Downtown Safe Trick-or-Treating

NOTE: All of the above public meetings will be held at the Smithfield Center, unless otherwise noted.

7. Public Comments

8. Council Comments

NOTICE OF INTENT TO COMPLY WITH THE AMERICANS WITH DISABILITIES ACT (ADA) Reasonable efforts will be made to provide assistance or special arrangements to qualified individuals with disabilities in order to participate in or attend Planning Commission meetings. ADA compliant hearing devices are available for use upon request. Please call 1-(757)-365-4200 at least twenty-four (24) hours prior to the meeting date so that proper arrangements may be made.

9. Consent Agenda Items

a. Adopt Ordinance to Amend Town Code Chapter 82 - Utilities
Water and Sewer Committee Chair, Darren Cutler

b. Invoices Over $20,000 Requiring Council Authorization:
Finance Committee Chair, Jeff Brooks

The Blair Brothers, Inc. - Street Pavings and Patchwork	$120,240.00
Isle of Wight County - FY 2024/2025 Tourism True-up	$304,504.59

c. Adopt Ordinance to Amend Town Code to Repeal Section 70-223 Registration Fees for Use of Windsor Castle Dog Park
Public Buildings and Welfare Committee Chair, Valerie Butler

d. Adopt Ordinance to Amend Town Code Section 60-1 Regarding Yard Sale Permits
Public Buildings and Welfare Committee Chair, Valerie Butler

e. Motion to Approve the Proposed Fee Schedule for the Community Development and Planning Department
Public Buildings and Welfare Committee Chair, Valerie Butler

f. Approval of the Town Council Summary Minutes from September 2nd and September

12th, 2025
Mayor Michael G. Smith

10. Action Items

a. PUBLIC HEARING: Text Amendment - Zoning Ordinance - Article 9 - Landscaping
Tammie Clary, Director of Community Development and Planning

b. PUBLIC HEARING: Text Amendment - Zoning Ordinance - Attached and Multi-Family Residential - Smithfield Zoning Ordinance Article 3.E and 3.F
Tammie Clary, Director of Community Development and Planning

c. PUBLIC HEARING: Text Amendment - Site Plan Requirements - Smithfield Zoning Ordinance Article 11
Tammie Clary, Director of Community Development and Planning

d. PUBLIC HEARING: Text Amendment - Smithfield Subdivision Ordinance and Town Design Standards
Tammie Clary, Director of Community Development and Planning

11. New Business

12. Old Business

a. Special Use Permit - Short-Term Rental - 139 Sykes Court
Public Buildings and Welfare Committee Chair, Valerie Butler

b. Conditional Rezoning and Special Use Permits - Sheetz
Public Buildings and Welfare Committee Chair, Valerie Butler

13. Additional Discussion

14. Adjournment

Independent Accountants' Report on Applying Agreed-Upon Procedures

To the Management of
Town of Smithfield, Virginia

We have performed the procedure identified below on amounts paid for legal services by Town of Smithfield, Virginia for the period July 2008 through July 2025. Management of Town of Smithfield, Virginia is responsible for providing information, documents and records necessary to complete the procedure listed below.

Management of Town of Smithfield, Virginia has agreed to and acknowledges that the procedure performed is appropriate to meet the intended purpose of assisting Management and Town Council in evaluating the amount paid for legal services including the amount charged to the Town on an hourly basis for legal services during the period July 2008 through July 2025. This report may not be suitable for any other purpose. The procedure performed may not address all the items of interest to a user of this report and may not meet the needs of all users of this report and, as such, users are responsible for determining whether the procedure performed are appropriate for their purposes.

The procedure and associated results are as follows:

PROCEDURE

Examined all documentation (invoices) retained by the Town in support of payments to William H. Riddick, III and/or his law firm during the period July 2008 through July 2025. Recomputed and summarized all invoices during this period, noting the date of the invoice, total hours worked and total amount invoiced. Recomputed the hourly rate charged.

RESULTS

Summarized below are the results of our procedure:

Hourly rates invoiced:

July 2008 through July 2018	$200 per hour
August 2018 through December 2023	$275 per hour
January 2024 through July 2025	$350 per hour

1. Additional amount invoiced and paid by the Town of Smithfield with an hourly rate greater than $200 per hour for the period July 2008 through July 2025 - $99,028.

2. Additional amount invoiced and paid by the Town of Smithfield with an hourly rate greater than $200 per hour for the period July 2020 through July 2025 - $71,770.

3. Additional amount invoiced and paid by the Town of Smithfield with an hourly rate greater than $275 per hour for the period July 2020 through July 2025 - $14,963.

We were engaged by management of Town of Smithfield, Virginia to perform this agreed-upon procedures engagement and conducted our engagement in accordance with attestation standards established by the AICPA. We were not engaged to and did not conduct an examination or review engagement, the objective of which would be to express an opinion or conclusion, respectively, on amounts paid for legal services by Town of Smithfield, Virginia. Accordingly, we do not express such an opinion or conclusion. Had we performed additional procedures, other matters might have come to our attention that would have been reported to you.

We are required to be independent of Town of Smithfield, Virginia and to meet our other ethical responsibilities, in accordance with the relevant ethical requirements related to our agreed-upon procedures engagement.

This information is intended solely for the use of management of Town of Smithfield, Virginia and is not intended to be and should not be used by anyone other than these specified parties.

Robinson, Farmer, Cox Associates
Charlottesville, Virginia
October 7, 2025

September 26, 2025

TO: **SMITHFIELD TOWN COUNCIL**

FROM: **MICHAEL R. STALLINGS, JR. ICMA-CM**
TOWN MANAGER

SUBJECT: **MONTHLY ACTIVITY REPORT – SEPTEMBER 2025**

TOWN MANAGER:

- Attended Town Council Meeting 9/2/25
- Attended Hampton Roads Managers meeting 9/3/25
- Met with SVFD Re: Training Facility 9/4/25
- Met with ICMATV Re: video shoot 9/5/25
- Attended State of the County event 9/8/25
- Attended Special Town Council Meeting 9/12/25
- Attended VRSA Fall Education Forum 9/16/25
- Attended Staff Meeting 9/16/25
- Met with Attorneys Re: Meeting Prep 9/19/25
- Attended Committee Meetings 9/22/25
- Met with Engineers Re: Utilities 9/23/25
- Attended Student Leadership Institute Kickoff 9/24/25
- Attended Maritime Academy Announcement 9/24/25
- Participated in ICMATV video shoot 9/27/25
- Attended RDA status call 9/29/25
- Met with Engineers Re: Project Updates 9/30/25
- Met with IOW Schools and PD Re: Homecoming Parade 9/30/25
- Attended Coffee with a Cop 10/1/25
- Attended Hampton Roads Managers meeting 10/1/25
- Met with HRPDC Re: Strategic Plan 10/2/25

DIRECTOR OF HUMAN RESOURCES:

- Processed property/liability claims with VRSA as appropriate.
- Processed Workers Compensation claims as appropriate.
- Conduct recruiting efforts for the following positions:
    - Patrol Officer (Certified) (2) – Police Department
    - Utilities & Grounds Helper (2) - Public Works & Utilities
    - Utilities Mechanic (2)– Public Works & Utilities
    - Engineer I – Public Works & Utilities
- Conducted interviews for Police Officer on September 17th and 23rd
- Conducted interview for Utilities Mechanic on September 18th
- Conducted New Hire Orientation activities for newly hired police officer the week of September 8th
- Participated in a webinar on Workers' Compensation on September 10th
- Attended Virginia Risk Sharing Association Fall Education Forum on September 16th
- Presented to the IOWC Student Leadership class on the topic of Interviewing for Success on September 24th
- Continued implementation of NeoGov Insight for Applicant Tracking
- Continued work on RDA implementation
- Worked with VRSA to get our annual workers compensation audit completed
- Completed Process for Council Appointee Performance Evaluations
- Managed any personnel-related & benefits questions/issues as appropriate.
- Participated in all scheduled staff and Council meetings.

TOWN CLERK:

- Transcribed and proofed the monthly minutes from Town Council, Planning Commission, and Board of Historic and Architectural Review.
- Attended Town Council Meeting on September 2nd.
- Prepared agenda and attended Special Town Council meeting on September 12th.
- Prepared September Town Council Committee Agenda and October Town Council Agenda.
- Prepared summary reports from Town Council Committee meetings on September 22nd.
- Continued to work on the Implementation of the new Agenda Management Software through Civic Plus, for Planning Commission Agendas and Board of Historic and Architectural Review.
- Staff continues to work with the Public Works Department to put Surplus Property items out on GovDeals.
- Worked to fill multiple requests throughout the month for information through the Freedom of Information Act

.

- Continue to work on organizing Town records and disposing of documents according to General Schedules of the Library of Virginia.

TREASURERS DEPARTMENT:

- Labor Day Holiday Monday the 1st
- TC Public Meeting on Tuesday from 6:30 – 9:15
- Worked on a billing special project on Tuesday and Wednesday
- Worked on Contracts special project
- Updated Collections list
- Worked on Auditors list all day Thursday and Friday for the upcoming audit next week
- Worked on Finance Policies
- Worked on the Accounts Payable Policies
- Continued work on Policies and Procedures list for Treasurer's Association of VA certification
- Pulled data for Purchasing Manager role.
- Worked on Unclaimed Property
- Auditors in week of Sept 8-12
    - Met with auditors briefly each day to go over outstanding items
- RDA status meeting on Monday the 8th
- Lunch with Riley Davis, RDA (team meeting) on Wednesday the 10th
- Met with Councilman Brooks and Barbara Hunter to discuss short term rentals on the 11th
- RDA System overview and demo on Friday the 12th
- Auditor items, either completed, team completed, and I uploaded:
    - E911 True Up
    - Balance Sheet items (Bonds Payable) discussion
    - Sewer Inventory
    - Accrued Leave
    - Tourism True Up
    - Museum True Up (bill)
    - IT Shared Services Bill breakdown
    - All bank docs
    - Treasury Inventory (PP and RE)
    - Agreements with IOW
    - Trial Balance
    - Land Books
    - DAV list
    - Tax Rate Info

    - Street payment letters
    - F/S for June 25
    - Asset File
    - Check Registers
    - All Bank Recs and Bank Statements
    - Bank Account list
    - Info about Luter funds
    - And many others.
- Updated Collections list
- Worked with Lawson and printing company on bills for Nov (PP)
- Completed sheet for the Municipal Mailer
- RDA status meeting on Monday the 15th
    - Worked on outstanding items for the implementation
- Doc Appts through 3:00 on Tuesday
- For Council Committee Meeting
    - Reviewed the FS, updated, and added footnotes
    - Compiled the Graphs detailing activities
    - Compiled the benchmark report
    - Compiled the talking points documents
- Met with Councilman Brooks to discuss the financial statements since I will be on vacation next week and will miss the council committee meeting
- Reviewed our website, beginning to do updates
- Discussed tax forms changes with Barbara
- Reviewed the Del RE bills again, they are still missing ½
- Updated Collections list
- Worked on the DMV request
- Worked with Lawson and printing company on bills for Nov (PP)
- Vacation Friday the 19th through Friday the 26th
- RDA Status Meeting on Monday the 29th
- Direct reports meeting on Monday the 29th
- Worked on delinquent business licenses

COMMUNITY DEVELOPMENT AND PLANNING:

Planning Commission – September 9th, 2025

Discussion Item SUP (Service Station) - 1282 Smithfield Plaza – The Kroger Company – C/O Jason Sandzimier, applicant.

Discussion Item SUP (Commercial Recreation Facility) - 1812 S Church Street – George Vancil, applicant.

Entrance Corridor Overlay Review – 1018 S Church Street – Walls Insurance Agency C/O Jacob Walls, applicant. APPROVED.

Entrance Corridor Overlay Review & PC Waiver – 1200 Benns Church Blvd. – Riverside Health C/O Ryan Haley, applicant. APPROVED.

Public Hearing Text Amendment (Landscaping) – Smithfield Zoning Ordinance Article 9 – Town Staff, applicant. FAVORABLE RECOMMENDATION.

Public Hearing Text Amendment (MFR) – Smithfield Zoning Ordinance Articles 3.F – Town Staff, applicant. FAVORABLE RECOMMENDATION AS REVISED.

Public Hearing Text Amendment (AR) – Smithfield Zoning Ordinance Article 3.E – Town Staff, applicant. FAVORABLE RECOMMENDATION AS REVISED.

Text Amendment (Site Plan Requirements) – Smithfield Zoning Ordinance Article 11 – Town Staff, applicant. FAVORABLE RECOMMENDATION AS REVISED.

Text Amendment – Smithfield Subdivision Ordinance and Town Design Standards – Town Staff, applicant. FAVORABLE RECOMMENDATION.

Discussion Item Land Use Matrix – Town Staff, applicant. TABLED.

Discussion Item Density. TABLED.

Planning Commission Special Meeting – September 23rd, 2025

Public Hearing SUP (Service Station) - 1282 Smithfield Plaza – The Kroger Company – C/O Jason Sandzimier, applicant. FAVORABLE RECOMMENDATION.

Public Hearing SUP (Commercial Recreation Facility) - 1812 S Church Street – George Vancil, applicant. FAVORABLE RECOMMENDATION.

Discussion Item Rezoning, Comprehensive Plan Amendment, & FLUM Amendment – 315 Main Street – Town of Smithfield, applicant.

Special Use Permit Applications under review

A. 13458 Benns Church Blvd – Miller Oil Co., Inc., applicant
B. 1810 S Church St – Natale & Josephine Carrollo, applicants
C. 895 W Main St – Brown's Enterprises, LLC, applicant
D. TPIN: 22-01-006C5 - Smithfield Retail Management LLC, applicant
E. TPIN: 22J-01-013 – Feeman and Associates c/o Steven Gaskins
F. TPIN: 32-01- 096A2 – Randy Royal, applicant

Subdivision and Site Plans under review

A. TPIN:22-01-006C5 – Steven Barrett, applicant (restaurant w/drive-in)
B. Phase B, Mallory Pointe
C. Phase C, Mallory Pointe
D. Phase D, Mallory Pointe
E. TPIN:22-01-020 – Brad Martin, applicant (Battery Park Storage)
F. Cypress Crossing Infrastructure – Cameron Morgan, applicant
G. TPIN: 21A-01-511 – Development Logistics and Consulting (DLAC, LLC) (The Cottages at Battery)

Rezonings under review

32-01-096A2 Randy Royal, applicant

Subdivision and Commercial Sites Under Construction and Inspection

A. Church Square, Phase II
B. Washington & James – James & Washington Square
C. 16" Water Main – Ken Turner (Mallory Point)
D. 1305 S. Church St. TPIN: 21A-01-511C – KLS Battery Park Development Group, LLC (Retail & Restaurant)
E. 201 Battery Park Road – Trey Gwaltney (Self Storage)
F. Phase A Erosion & Sediment Controls – Mallory Point
G. Phase A1, Mallory Pointe
H. Phase A2, Mallory Pointe
I. 204 Wimbledon Lane – Jack Bloom, applicant (Liberty Live Church)
J. 18403 Cypress Crossing – John Lombardo, applicant (Mod Wash)

Board of Historic & Architectural Review – SEPTEMBER 16TH, 2025

Siding Material Change (After-the-Fact) – 110 Main Street – Landmark – Carolyn Burke, applicant. APPROVED AS AMENDED.

Assorted Exterior Changes (After-the-Fact) – 210 Astrid Street – Non-Contributing – RAJ Lima Contracting Services LLC c/o Jhonatan Gomero, applicant. CONDITIONALLY APPROVED.

Board of Zoning Appeals – SEPTEMBER 16TH, 2025 (CANCELED)

Erosion & Sediment Control Program

Erosion and sediment control inspections were performed at 29 active residential construction sites throughout the Town and the required reports were submitted to Isle of Wight County for submission to the Department of Environmental Quality.

Certificate of Occupancies issued in SEPTEMBER 2025

0 Issued

Code Enforcement Updates Across Town SEPTEMBER 2025

A. Notices were sent/issued for the following violations:
    a. Inoperable Vehicle, 1 location
    b. Grass Height Violation, 1 location
    c. Nuisance, 1 location
    d. No Permit, 1 location
    e. No SUP for Short Term Rental, 1 location
    f. RV Habitation, 1 location
    g. Unpermitted Storage Yard, 1 location
    h. 11 Door hangers issued (3 Inoperable Vehicle, 5 Nuisance, 1 Grass Height Violation, 2 RV in front yard/driveway.)

PUBLIC WORKS & UTILITES:

Utility Staff performs the following duties monthly

A. Miss Utility marking
B. Read meters for billing and to transfer property owners.
C. Water cut-offs and cut-on
D. Check sewer pump stations daily.
E. Install and repair street signs.
F. Replace and repair broken water meters.
G. Perform maintenance on town-owned buildings such as Atlantic Contractors installing new hvac units at town hall.

1. Sewer Line Repairs and Maintenance

A. Maintenance crew assisted Lewis Construction on Quail St to repair sewer main line.

2. Sewer Pump Station Repairs and Maintenance

A. Weekly and daily checks on all 27 pump stations.
Performed the following scheduled maintenance at all pump stations.
1. Cleaning of wet-well
2. Alarm testing
3. Sump pump cleaning
4. Check Valve cleaning and repair.
5. Generator check / Godwin pump check
6. Control Panel / Flow monitor check
7. Fence and Grounds inspection
8. Inspected Structure
9. Inspect and clean pumps.
10. Level system check
11. Test limit switches
12. Bar screen cleaning
13. Rain gauge cleaning
14. Head pressure reading at 7 pump stations.

B. James St pump station set to receive new pump.
C. Virginia Control and Electrical Systems installed new base Ell Bows at Bradford Mews pump station.

3. **Water Line Repairs and Maintenance.**

A. Assisted Lewis Construction at 301 Watson Dr. for a water leak on 1in galvanized water service line that had completely rusted out. Replace the rusted-out line with new line and restored water service.

4. **Well Repairs and Maintenance**

   A. All wells except 8A and 10 (at RO Plant) are off now that RO plant is running. Upgrades to well houses have been completed to keep wells in operating condition in case of an emergency. Emergency wells are flushed, sampled, and inspected once a month.

5. **Water Treatment Plant**

   A. Operate RO Plant and monitor distribution system.
   B. Daily lab analysis, monthly sampling, and reports for VDH, HRSD, DEQ and RO contractors.
   C. Performed monthly routine tasks including but not limited to:
      1. Daily Inspection of RO Plant and grounds.
      2. Monthly Tank inspections.
      3. Inspect and exercise plant generator monthly.
      4. Fill antiscalant day tank.
      5. Truck Inspections.
      6. Routine service of lime system.
      7. Service online fluoride and chlorine analyzers.
      8. Calibrate online turbidimeter and pH meter.
      9. Check and replace air filters.
      10. Test Alarms.
      11. Repaired Lime Box mixer.
      12. Va Controls Cleaned backflow preventer on Well 8.
      13. Rebuilt Hypo pump.
      14. Changed Cartridge Filters.
      15. Cleaned and organized extra parts and tools.

6. **FOG/ Backflow/ Septic Pump Out Program**

   A. Implementing the FOG Program to ensure compliance by:
      1. Scheduling and meeting with FSE's for routine inspections.
      2. Checking FSE's for compliance in record keeping and HRFOG Certifications, trying to get more certifications for education outreach.
      3. Inspections to include proper record keeping of pump outs.
      4. Inspections include proper record keeping of rendered grease clean out and pick up/throw out.
      5. Working with FSE's to get more employees, specifically dishwashers certified by HRFOG.

6. Working to schedule inspections around FSE's clean out/pump out schedule for pump station problem areas.
7. Sending emails/letters to schedule more inspections.
8. Working with select FSE's to schedule inspection during pump out to monitor clean out and pumping is done to compliance.
9. Attendance of the HRFOG meeting via Zoom.

B. Implementing the Cross Connection and Backflow Program to ensure compliance by:
1. Entering reports and filing reports.
2. Conducted backflow inspections for new irrigation installations.
3. Conducted backflow inspections for CO requests.
4. Following up with residents with disconnected systems and/or placed on irrigation well, making letter to inform well drillers of new ordinance change.
5. January mailers' final non-compliance notices sent.
6. Sending out failed device notices as received.
7. July mailers' non-compliance notices sent.
8. Studying to become backflow certified.
9. Providing education to residents installing frost free yard hydrants.
10. Starting 2024 January mailers.

C. Maintaining of the Septic Pump Out Program
1. Sending 2023 non-compliance notices out for the invoices that were not provided by the due date.
2. Sending pump out reminders for 2024 were sent.
3. Sending pump out letters for 2023.
4. Working with the water department to get a complete town sewer list from the water dept to fill in gaps on non-town sewer residents.

7. **Miscellaneous or Construction**

A. Goodrich trimming trees and cleaning ditches around town.

ENGINEERING

1.) Blair Brother's Contracting: The contractor started and completed a 2" asphalt mill and overlay of Inverness in Cypress Creek and approx.. 600' of Pagan Road starting at Bailey Ave. Contractor also performed mill and asphalt overlay at 600 and 1428 Cypress Creek Parkway. Contractor performed storm pipe joint repair at 1400 Cypress Creek Parkway. Contractor restored existing riprap and regraded outfall ditch on Battery Park Road at Harvest Fellowship Church.
2.) Smithfield Lake Dam: Field inspections continue to be held this month involving the Dam. No structural deficiencies were noted this month on the dam site. The Town's

engineer and TRC Companies have recently completed a full structural inspection of the dam and have submitted a 2-year recertification application for the dam to DCR. The Town has now purchased a level sensor which is currently being scheduled for installation. It will be installed in the emergency outfall area.

3.) The following projects are currently under design and review:
   a.) Battery Park Road storm pipe replacement near the Villas Subdivision. Plans have been developed to replace the existing 18" storm pipe with twin 48" x 68" elliptical pipes.
   b.) Battery Park Road culvert outfall and ditch enhancements project which is located near Greenbriar Lane. The site plans are complete and approved.
   c.) Cedar Street culvert outfall storm pipe extension and shoulder repair. Site plans are complete and approved. Additional drainage easement areas are being acquired.
4.) South Church Street to Nike Park Bike Trail Project:
   Site plans are being completed and various sources of funding involving the construction of the project are now being examined.
5.) Meetings with VDOT representatives have been held to discuss the reconstruction of Grace Street. VDOT has now determined the corrective measures required involving the drainage concerns at the intersection of Grace & James Streets. Reconstruction of this intersection has now begun.
6.) The developer has requested an inspection of Cypress Creek Phase VI for the acceptance of the streets into the Towns Maintenance system. A final inspection has now been completed. The developer has been notified of the required bonding amounts required for the one-year warranty period. The Town is now compiling the documentation which is required to be submitted to VDOT for the streets to be accepted into the Urban Maintenance system.
7.) A review of the proposed engineering site plans continues regarding the Mallory Farms subdivision Phases B, C & D.
   With respect to Mallory Farms subdivision Phase A, Section 1 the contractor has now installed base asphalt as per approved site plans on Wharf Hill Drive, Wentworth Crossing, Purdie Lane & St. Luke's Lane. Homes are now under construction.
   Regarding Battery Park Road the contractor has installed the required base, intermediate and surface asphalt courses. All required line striping has also been installed and completed. Installation of signage has now been completed.
   Phase A Section 2 the contractor has begun and now completed the installation of the storm water structures and storm pipe. The contractor is currently completing the installation of the sanitary sewer main, laterals and water main and laterals.

Parks and Recreation Activity Report for September 2025

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1 Labor Day	2 6:30 PM - 8:00 PM SC AB Town Council 6:30 PM	3 **1:00 PM - 7:00 PM WC Trails IOW Schools Cross Country Meet 1:00 PM**	4	5 ***1:00 PM - 11:00 PM SC MHSu Summer Concert Series Finale 7:30 PM*** 4:00 PM - 6:30 PM LSC Parking Ruritan Cruise In 4:00 PM	6 **6:00 AM - 1:00 PM WC Trails IOW Schools Cross Country Meet 8:00 AM** 1:00 PM - 11:00 PM LSC Field 2 SRA Baseball/Softball 1:00 PM
7 1:00 PM - 11:00 PM LSC Field 2 SRA Baseball/Softball 1:00 PM 2:00 PM - 3:00 PM WC Grounds WC Historic Walking Tours 2:00 PM	8 **8:30 AM - 4:00 PM SC MHSu State of the County 11:30 AM** 5:00 PM - 6:00 PM WC MHouse WCFB Meeting 5:00 PM	9 **9:00 AM - 2:00 PM SC CD Pipe Line Safety Class 10:30 AM** 6:30 PM - 8:00 PM SC AB Planning Commission 6:30 PM	10 12:30 PM - 5:00 PM SC CD Tourism Strategic Work Session 1:00 PM **1:00 PM - 6:00 PM WC Trails Windsor High Cross Country 1:00 PM**	11 8:00 AM - 5:00 PM SC CD Workzone Safety Training 8:00 AM	12 9:00 AM - 11:00 AM SC D Committee Meetings 9:00 AM **4:30 PM - 7:30 PM WC MHouse/Grounds Kanneh-Simon Set 5:00 PM**	13 IOW Fair Weekend 9:00 AM - 5:00 PM LSC Field 1 VA Baseball Games 9:00 AM **10:00 AM - 11:00 PM WC MHouse/Grounds Kanneh-Simon Wedding and Reception 4:30 PM** 1:00 PM - 11:00 PM LSC Field 2 SRA Baseball/Softball 1:00 PM
14 9:00 AM - 5:00 PM LSC Field 1 VA Baseball Games 9:00 AM 1:00 PM - 11:00 PM LSC Field 2 SRA Baseball/Softball 1:00 PM	15	16 **6:00 AM - 1:30 PM SCMH,CD VRSA 7:30 AM** 11:00 AM - 12:00 PM SC AB Crime Line Meeting 11:00 AM 2:00 PM - 3:00 PM WC MHouse Town Mgrs Mtg 2:00 PM 6:30 PM - 8:00 PM SC AB BHAR Meeting 6:30 PM	17 Closed SC Backflow Insp	18 **10:00 AM - 2:30 PM SC MH Smfd Women's Club 12:00 PM**	19 **4:00 PM - 8:00 PM WC MHouse/Grounds Biggs-Dollins Wedding and Reception 5:30 PM**	20 No SC bookings-Vacations **11:00 AM - 11:00 PM WC MHouse/Grounds Biggs-Dollins Wedding and Reception 4:30 PM** 1:00 PM - 11:00 PM LSC Field 2 SRA Baseball/Softball 1:00 PM 1:00 PM - 11:00 PM LSC Field 6 Relay for Life Event 1:00 PM
21 1:00 PM - 11:00 PM LSC Field 2 SRA Baseball/Softball 1:00 PM	22 3:00 PM - 6:00 PM SC AB Committee Meetings 3:00 PM 6:00 PM - 7:00 PM SC AB Schoolhouse Mtg 6:00 PM	23 WC Piano Tuning 5:00 PM - 10:00 PM SC MH Candidate's Forum 7:00 PM 6:30 PM - 8:30 PM SC AB Planning Commission Work Session 6:30 PM	24 **8:00 AM - 12:30 PM SC MH Isle Maritime Trades Governor Visit 10:00 AM**	25 10:00 AM - 12:30 PM SC CD Miss Utility Meeting 10:00 AM	26 **2:00 PM - 10:00 PM WC MHouse/Grounds Turner-Neblett Reception Set Up 6:00 PM**	27 Tourism Film Shoot Vintage Market-5 P Start **6:00 AM - 5:00 PM Main Street Vintage Market 6:00 AM** 1:00 PM - 11:00 PM LSC Field 2 SRA Baseball/Softball 1:00 PM 1:00 PM - 11:00 PM LSC Field 6 SPYS Football Season 1:00 PM **2:30 PM - 11:00 PM WC MHouse/Grounds Turner-Neblett Reception 5:30 PM**
28 9:00 AM - 5:00 PM LSC Field 1 Nations Baseball Games 9:00 AM 1:00 PM - 11:00 PM LSC Field 2 SRA Baseball/Softball 1:00 PM	29	30 4:30 PM - 6:00 PM WC MHouse Ivy Hill Cemetery Board 4:30 PM				

Parks and Recreation Activity Report for September 2025

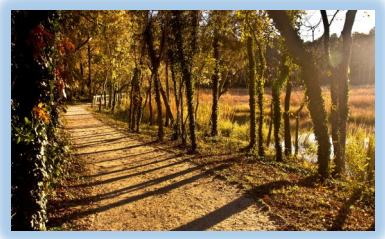


SMITHFIELD CENTER EVENTS STATISTICS & REVENUES			
Number of Events for month	18	Complimentary / Discounted Events for Month (town meetings, events, civic clubs)	12 events at 100 % discount 1 event at 50% discount
Sales Totals for Month	$ 3,280	Total Event Attendance for month	900

WINDSOR CASTLE EVENTS STATISTICS & REVENUES			
Number of Events for Month	9	Complimentary/ Discounted Events for Month (town meetings, events, civic clubs)	6 events at 100% discount
Sales Totals for Month	$ 12,090	Total Event Attendance for month	700



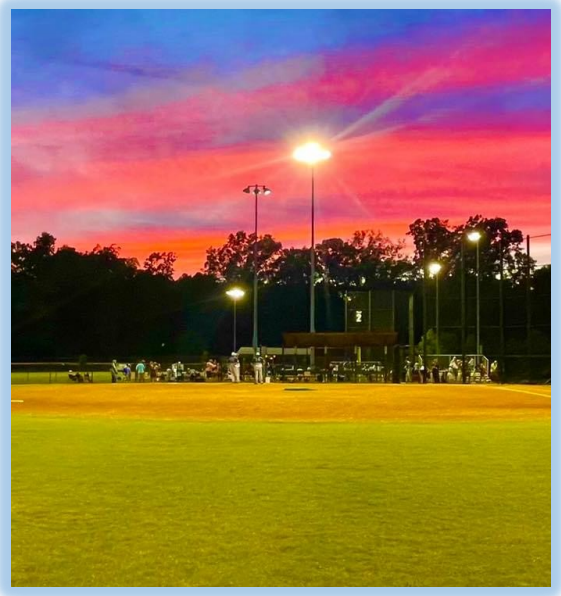
Parks and Recreation Activity Report for September 2025



WINDSOR CASTLE PARK Trail Doctor Hours
2025 Total as of September
205 Hours of Trail Repairs and Invasive Species Eradication



WINDSOR CASTLE PARK Kayak Kiosk Revenue Share	
2025 Total (through Aug)	$ 5,980
2024 TOTAL (Mar-Nov)	$ 8,666
2023 TOTAL (Jul-Nov)	$ 3,088



LUTER SPORTS COMPLEX
August
Totals
$ 525

PARKS NEWS



Windsor Castle Park is a Buzzzz

Thanks to James Rasnake, of Blackwater Birds and Bees, Windsor Castle Park now has its very own beehives. This hive was placed in the middle of the Long Leaf Pines to avoid park patrons getting too close. Pollinators are on the decline and they are essential to a healthy ecosystem. Setting up hives like these can help restore our pollinators. Learning opportunities for the public will be available soon.



Governor Youngkin Visit to the Smithfield Center

Governor Youngkin visited the Smithfied Center on Wednesday, September 24th to celebrate the opening of the Isle Marine Trades Academy. This is a collaborative program that offers dual enrollment in Smithfield High and Paul D Camp Community College. Students in this program will graduate with a high school diploma, an associates degree and an interview with Huntington Ingalls Shipyard.

Parks and Recreation Activity Report for September 2025

Special Events

September 2025

Wednesday, September 3, 2025	1 P-6 P WC Kayak Field Cross Country Meet 700 p	**Smithfield High Cross Country Meet**
Friday, September 5, 2025	7 PM-8:30 PM Smithfield Center 400 P	**Summer Concert Series Finale**
Friday, September 5, 2025	5-8 P LSC Car Show 100 p	**Ruritans Cruise In Car Show**
Saturday, September 6, 2025	9 A-12 P WC Kayak Field Cross Country Meet 700 p	**Smithfield High Cross Country Meet**
Wednesday, September 10, 2025	1 P-6 P WC Kayak Field Cross Country Meet 700 p	**Windsor High Cross Country**
Saturday, September 20, 2025	1-11 P LSC Community Fundraiser 100 P	**Relay for Life**
Saturday, September 27, 2025	10 AM-4 PM Main Street 100-300 Market 7000 p	**Autumn Vintage Market** Tourism

Parks and Recreation Activity Report for September 2025

Special Events

UPCOMING in October 2025

Friday, October 3, 2025	9 A-2 P LSC Car Show 100 p	**Ruritan Car Show**
Saturday, October 4, 2025	11 A-5 P WC Festival 3500 P	**Bacon and Bourbon Festival** Smithfield Events
Tuesday, October 7, 2025	5 P-7 P LSC Community 500 p	**National Night Out** Night Out Committee
Tuesday, October 7, 2025	1 P-6 P WC Cross Country Meet 700 p	**IWA Cross Country Meet** IWA
Wednesday, October 8, 2025	1 P-6 P WC Cross Country Meet 700 p	**Windsor High Cross Country** Windsor High
Saturday, October 25, 2025	8 A-11 A WC 5K Race 500 P	**Hog Jog**
Monday, October 27, 2025	1 P-6 P WC Cross Country Meet 200 p	**Lakeland High Cross Country**
Wednesday, October 29, 2025	1 P-6 P WC Cross Country Meet 700 p	**Smithfield High Cross Country Meet**
Thursday, October 23, 2025	5 P-8 P Main Street Communi-ty 2000 p	**Witches Night Out**
Friday, October 31, 2025	5 P-8 P Main Street Communi-ty 2000 p	**Halloween Safe Trick or Treat**

Smithfield/Isle of Wight Tourism
Activity Report SEPTEMBER 2025

- Labor Day Holiday 9/1/25.
- Historic Saint Luke's Strategic Planning Session-Marketing Division 9/2/25.
- Full Tourism staff meeting held 9/2/25.
- Director and Assistant Director attended Town Council meeting 9/2/25.
- Director and Assistant Director attended RVA757 Connects' Innovation Spotlight webinar on multi-use trails 9/3/25.
- VA250 Thematic Driving Tour meeting with Museum staff 9/3/25. IOW VA250 Committee through Tourism has received a grant for $10,000 to launch the Isle of Wight VA250 Thematic Driving Tour.
- Director attended VTLI speaker/leader discussion prior to final session on 9/3/25. Director is in the first Co-hort as well as a inaugural organizer for the Virginia Tourism Leadership Institute sponsored by VADMO (Virginia Association of DMO's).
- Director attended IOW Agenda Review staff meeting 9/4/25 and County staff meeting 9/22/25.
- Director attended SVAE Executive Committee 9/4/25.
- Director attended Christmas in Smithfield (CIS) meeting 9/4/25. This event will be held the first weekend in December with a Homes Tour, Antique Show, Market at the Manor, and additional events celebrating our Christmas heritage in Downtown Smithfield.
- Director and Assistant Director met with the ICMA Film Crew 9/5/25, regarding filming featuring Smithfield that will be premiered at this year's ICMA meeting. The town and tourism will have use of the video and all of the B-Roll footage from the shoot scheduled for 9/27/25.
- Director worked the Smithfield Summer Concert Series finale at the Smithfield Cener and Smithfield Little Theatre (Green Room) 9/5/25.
- Full time staff meeting held 9/8; 9/22.

- Director and Assistant Director attended CHAMBER State of the County event 9/8/25.

- SAIL250 internal meeting 9/8/25 and 9/12/25 and 9/18/25 to continue to work on event scheduled for June 12-14, 2026. Work continues on the Smithfield SAIL250 event. Smithfield will be hosting a SAIL250 Skipjack ship SIGSBY, and the Buyboat MILDRED BELLE, from the Living Classroom in June 2026, as part of the SAIL VA event ***Smithfield Maritime Rendezvous*** (June 12-14, 2026). Both tall ships that were under consideration have declined due to the water depth in the Pagan and turning radius issues. But the new boats will be less expensive to host (we completed a grant application to host these ships and expect it to be successful) and offer far more programming possibilities than the tall ships. We are listed as an official SAIL250 Affiliate Harbor and will enjoy all of the promotional benefits befitting that affiliation.

- Monthly VA250 Local Committee Convening 9/9/25.

- Tourism Strategic Planning meeting was held 9/10/25 with 30 stakeholders in attendance. Director worked with Laura Messer with VTC to plan the events with the second session taking place on October 21, 2025. The plan will cover tourism initiatives for the next 5 years.

- Director and Special Events Manager met with Blue Sky Distillery to discuss upcoming events and how to partner on more initiatives moving forward. Excellent meeting with owner and Tina, the new Event Coordinator at Blue Sky.

- Assistant Director/Marketing Manager is working with the Miss America organization to host Miss America for an appearance in Smithfield. The newly crowned Miss America is Cassie Donnagan, who has ties to Smithfield and the Smithfield Little Theatre. Internal meeting held 9/11/25 to brainstorm.

- Staff is working with the 1750 Courthouse throughout the month to solidify the Courthouse hosting the Witches Nite Out "After Party" on Thursday night, October 23rd. Tourism will be assisting the Courthouse Board with this event.

- Isle of Wight County Fair held September 11-14. Staff assisted with gate admissions. Fair attendance was @ 31,000 people.

- Inaugural VADMO "Directors Blend" Coffee Clatch ZOOM meeting held 9/15/25. Director and Assistant Director attended this tourism CEO focused group think tank exercise.

- Director attended final VADMO VTLI (Virginia Tourism Leadership Institute) classes in Richmond, September 16-17 in Richmond. This concludes the classroom portion of the program. Director will present her CAPSTONE project (The Smithfield-IOW 5 Year Tourism Strategic Plan) in January of 2026 and the

first Cohort will graduate in April 2026. Excellent program and will suggest that the Assistant Director attend starting next year.

- Assistant Director attended Town Staff meeting 9/16/25.

- FARMERS MARKETs held throughout month on Saturdays 9-12..

- Salty Southern Route (regional trail featuring pork and peanuts with participating localities: Smithfield/IOW; Surry; Suffolk; Franklin/Southampton; Sussex.) Group continues to work with Visit Widget to create a new website and online trail app. The group has hired Pat Bernshausen, formerly the Director of Tourism for Surry County as the SSR Coordinator. Pat began her duties the month.

- Director and Special Event Coordinator met with the Coastal Virginia Culinary Coalition (CVCC) via ZOOM. September will be SAVOR SEPTEMBER in all of the Coastal Virginia localities and restaurants will be widely promoted that month.

- Director and Special Event Manager attended SVAE (Smithfield VA Events) full board meeting on 9/17/25.

- Director, Assistant Director and Office Manager completed 6-month check-in report for VTC regarding the DRIVE Tourism grant that targets the Raleigh/Durham area 9/19/25.

- Director attended CVTA (Coastal Virginia Tourism Alliance) meeting 9/25/25.

- Director and Marketing Director continue to meet with website redesign company, Louder, Inc. Rollout expected by late Fall 2025.

- New Event Assistant, David Berrien hired and brought on board 8/18/25 and trained throughout September.

- Director attended County Staff Meeting 9/22/25.

- Director and Assistant Director attended Council Committees held 9/22/25.

- Director attended Historic Saint Luke's Church & Museum Board meeting 9/23/25.

- Director taught Public Speaking class to the Chamber Student Leadership Institute class 9/24/25.

- Director met with new County Assistant Administrator 9/24/25.

- Tourism Docent/Vintage Market meeting held 9/24/25. All staff in attendance.

- Staff attended “Beyond the Season: Strategies to Keep Your Business Thriving Year-Round” webinar 9/25/25.

- VINTAGE MARKET 9/27/25!!! All hands on deck!

- Director scheduled to meet with VB Tiki Tour owner regarding bringing a similar business to Smithfield on 9/29/25. Stay tuned!

- VISITOR CENTER open throughout Month. Tourism, County and Town Facebook postings throughout month. Update website events and ***Where the Locals Go*** event promotion newsletter weekly.

Isle of Wight County Museum &
Isle of Wight County Historic Resources



September 2025 Report

J.L. England, Museum Director & Isle of Wight County Historic Resources Manager

Isle of Wight County Museum 103 Main Street, Smithfield







- **VISITATION**: 648
- **SPECIAL EVENTS**
  - **Sept. 6. LUNCH & LEARN: JOYEUX ANNIVERSAIRE, MARQUIS DE LAFAYETTE!** Today in 1757, the Marquis de Lafayette was born. Join us for this event...and a celebratory dessert. On the 267th anniversary of Lafayette's birth, we will tell the story of how this young French general helped win our War of Independence to include an overview of his life and legacy as well as information on his connections to Isle of Wight County, his participation in the American Revolution and his lifelong passion for human rights. 15 guests.
  - **Sept. 17-23. CONSTITUTION WEEK**. In conjunction with the Col. William Allen Chapter of the Daughters of the American Revolution, Smithfield, several events were hosted at the museum including an exhibit in conjunction with the Sept. 13 Smithfield Farmers' Market, a performance *of Remembering the American Revolution* and their annual hunt for patriotic rocks in Windsor Castle Park and downtown Smithfield. 125+ attendees.
  - **Sept. 13. 1864 BATTLE OF SMITHFIELD LECTURE & WALKING TOUR.** Join us for the 161st anniversary of *the Town of Smithfield's most dramatic event*. This 1864 engagement between Union and Confederate troops saw artillery and musket fire reverberating up and down Main Street eventually resulting in the destruction of the U.S. Army Gunboat *Smith Briggs*. Meet your guide at the museum for a brief overview of this Civil War battle as well as a walk along Main Street to several sites associated with the significant events from January 30 to February 2, 1864. 8 guests.
- **VIDEO PRODUCTIONS.** We continue to connect with visitors, supporters, fans and the community via social media. Our livestreaming tours and programs on Facebook drive traffic and enhance interaction on our sites. Productions are viewable in the videos/reels section of our Facebook page and on our YouTube Channel.
  - **Sept. 4. LIVE at 12:05: There's No Time Like Fair Time!** The Isle of Wight County Fair is almost here! It began in the early part of the 20th century, and while it went in hiatus during World War II, it was reestablished as an annual event in 1991. Registrar Emmi Goodman shares a bit of the fair's history as well as a few fair-related collection items from the museum. Tune in to this talk as





well as Isle of Wight County Parks and Recreation to make your plans to attend this year's fair!

- **Sept. 11. LIVE at 12:05: Selective Service Registrants in Isle of Wight County, Virginia, 1940 to 1942.** This 1940 to 1942 collection of registrants for the Selective Service in Isle of Wight County, Virginia, recently came into the museum's collection. The U.S. World War II draft began with the Selective Training and Service Act of 1940 as a peacetime conscription effort requiring men to register starting on October 16, 1940. View the records here: https://archive.org/details/@isle_of_wight_county_museum.
- **Sept. 17. Drone Footage from the Isle of Wight County Fair.** Drone footage from Saturday night at the Isle of Wight County Fair! Make your plans for next year: www.thefairiscoming.com.
- **Sept. 18. LIVE at 12:05: Exhibit Development in Partnership with Riverside Smithfield Hospital.** In partnership with Riverside Smithfield Hospital, Smithfield, Virginia, we are designing and installing two exhibits inside the hospital. One will showcase a number of artifacts related to health and well-being while another will highlight the crops and agriculture of Isle of Wight County. We are honored to be asked to install these exhibits and have made our final selections on the objects to be included. A few of these items from the Isle of Wight County Museum's collection are highlighted here.
- **Sept. 25. LIVE at 12:05: Artifacts from Smithfield Baptist Church, Smithfield, Virginia.** Dive into the museum's collection to learn a little history of Smithfield Baptist Church through objects and research with Docent Sheila Williams-Morales. Learn even more here - https://rb.gy/npen3h - about this church by watching our video series BEHIND THESE WALLS.
- **Sept. 26. BEHIND THESE WALLS: Bethany Presbyterian Church.** Our video series about historic structures in Isle of Wight County, Virginia, highlights the 1924 Bethany Presbyterian Church in Zuni.













- **GROUPS/TOURS/PROGRAMS**
  - Sept. 3. Col. William Allen Chapter, Daughters of the American Revolution, Smithfield. 26 guests.
  - Sept. 12. Atlantic Shores, Hampton Roads. 14 guests.
  - Sept. 16. Virginia Tourism Corporation's Northern Virginia Gateway. 6 guests.
  - Sept. 18. Smithfield and Isle of Wight County Tourism Familiarization Tour. 22 guests.
- **GIFT SHOP**
  - New magnets, postcards and notebooks were added. Three-legged pigs were re-ordered.
- **EXHIBIT/PROJECT UPDATE**
  - **Sprigg Wing, Phase III: Tobacco History.** Awaiting installation of barn.
  - **First Residents.** Awaiting mounting of longleaf pine tree branches.

- **Local Treasures**. Currently on display is the collection of **Robert Cox** showcasing artifacts recovered from one of Isle of Wight County's early courthouses, the **Mount Holly Courthouse**. This exhibit concept displays the private collections of Isle of Wight County residents and/or those with a local connection. For more information and applications: www.historicisleofwight.com/local-treasures.html.
- **English Telephone Box**. In design with the exhibit for the phone box's interior.
- **Steamboats & Life on the Water; Unusual Objects; Vietnam War Veterans in Isle of Wight County: Online Exhibit; Unsung Heroes of Isle of Wight County: Online Exhibit.** Under development.
- **ISLE Be Home for Christmas.** This book project is collecting photographs, postcards, stories, mementos, songbooks, recipes and more that detail the holiday season in Isle of Wight County. To be published in November 2026.
- **Nike-Ajax N-75.** A book about the former missile battery in Carrollton is in production. To be published in 2026.
- **Riverside Smithfield Hospital.** The hospital has begun installation of the exhibit cabinetry, and the exhibit designer making changes to our preliminary designs. Our two exhibits will be completed by January 2026.



- **ARTIFACTS**
  - Additions to the collection include a Smithfield Foods advertising materials and a cast pewter button, circa 1780, with the interlocking initials USA on face. While from our Windsor Castle Park collection, the button was returned to us after receiving conservation from Architectural and Cultural Solutions Inc.
- **STAFF UPDATES, TRAINING AND REQUIREMENTS**
  - None.

Financials

• Gift Shop Sales:	$ 939.41
• Gift Shop Tax:	$ 56.48
• Donations:	$ 100.00
• Admission:	$ 880.00
• Program/Lecture Fees:	$ 0.00
Total Monthly Deposit:	**$ 1,975.89**

Social Media/Online Presence

- Visit our website at www.historicisleofwight or www.hamcamva.com.
- **LIVE at 12:05.** Each Thursday, we host broadcasts on the museum's Facebook page. Our segments, shot in the museum or at our historic sites, highlight events at the museum, announcements or

artifacts from our collection. Tune in at 12:05 p.m. on the museum's Facebook page – or view productions on our YouTube channel.



- **Facebook:** Isle of Wight County Museum: 5.2K followers. Daily posts.
- **Facebook:** World's Oldest Ham: 342 followers. Semi-weekly posts.
- **Facebook:** Town of Smithfield. Periodic posts, responses and maintenance.
- **Twitter.** @WorldsOldestHam. The world's oldest ham has his own account. 1,322 followers.
- **BlueSky.** @WorldsOldestHam. 95 followers.
- **Instagram.** @Isleofwightcountymuseum. 1,231 followers.
- **YouTube.** Isle of Wight County Museum. 348 subscribers.
- **Google Reviews.** 4.7/5 overall rating.
- **TripAdvisor.** 4.5/5 star overall rating.
- **Yelp.** 4.5/5 star overall rating.
- **Foursquare/Swarm.** 7.3/10 rating.
- **EarthCam/HamCam.** Streaming views from May 20 to August 20, 2025: 83,687.

Media Coverage/Promotion/Advertising/Lobbying

- Various pieces in area publications to include calendars and events.
- **Sept. 3. Smithfield Times**. Articles: Sept. 26 is deadline for 'Pan Ham' photo contest; Commemorating 250 Years of Freedom: Town of Smithfield strated in 1752 with four streets.
- **Sept. 9. Smithfield Foods**. Video shoot with Smithfield Mayor Mike Smith.
- **Sept. 12. Virginian Pilot**. Article: Isle of Wight County poised for economic growth - https://www.pilotonline.com/2025/09/12/isle-of-wight-state-of-county/
- **Sept. 16. Smithfield Times**. Article: Smithfield Ruritan Club celebrates 90 years - https://www.smithfieldtimes.com/2025/09/16/smithfield-ruritan-club-celebrates-90-years/
- **Sept. 17. Smithfield Times.** Cutline: DAR welcomes new members.
- **Sept. 26. WHRO Public Media**. Production: Revolution 250: Stories From The First Shore: History Preserved: Elizabeth Bennett Young - https://mediaplayer.whro.org/program/revolution-250-stories-from-the-first-shore/e/history-preserved-elizabeth-bennett-young-y27902
- **Sept. 30. World Atlas**. Article: 11 Liveliest Virginia Towns For Active Seniors - https://www.worldatlas.com/cities/11-liveliest-virginia-towns-for-active-seniors.html

Outreach Lectures & Events

- **Sept. 13-14. Main Street Baptist Church, Smithfield**. Engagement with members to identify individuals in photographs from the Albert W. Durant Photography Collection belonging to Special Collections of John D. Rockefeller Jr. Library, Colonial Williamsburg. The collection contains scenes and individuals in Isle of Wight County.



Safety & Repairs



- No updates.

Windsor Castle 705 Cedar Street, Smithfield



- **Sept. 7. WINDSOR CASTLE WALKING TOUR.** From the site's pre-colonial existence to the present day, Windsor Castle tells the fascinating history of the development of Smithfield. Join us for this walking tour through history as we explore the house and several of the outbuildings. Meet on the front steps of Windsor Castle, 301 Jericho Road, Smithfield. 8 guests.
- Exhibit directional sign added to the smokehouse.

Fort Boykin 7410 Fort Boykin Trail, Isle of Wight County

- No updates.

Fort Huger 15080 Talcott Terrace, Isle of Wight County

- No updates.

Nike-Carrollton Park 13036 Nike Park Road, Carrollton

- **Nike-Ajax Missile Restoration.** ECS Mid-Atlantic LLC completed the subsurface exploration, laboratory testing and geotechnical engineering analyses. ATCS supplied the plan set for the artifact's structure. Parks and Recreation is working with Purchasing to create a bid package for the site plan.
- **Nike-Ajax Missile Mural Atop Missile Magazine B.** Awaiting an update from the Boy Scout heading up the project.
- **Sept. 27. COLD WAR DEFENSE: CARROLLTON-NIKE PARK WALKING TOUR.** Visit Nike-Ajax Missile Site N-75L, one of the Cold War's few surviving Army Air-Defense Posts. Local historian Albert Burckard along with former missile mechanic Ira Abbott host a short presentation and walking tour of this site which contains the original barracks, mess hall, administration and recreation building, officer/non-commissioned officer family housing, fueling area and underground missile magazines. Event begins in the Recreation Hall (former soldier barracks) at Nike Park, 13036 Nike Park Road, Carrollton. 9 guests.

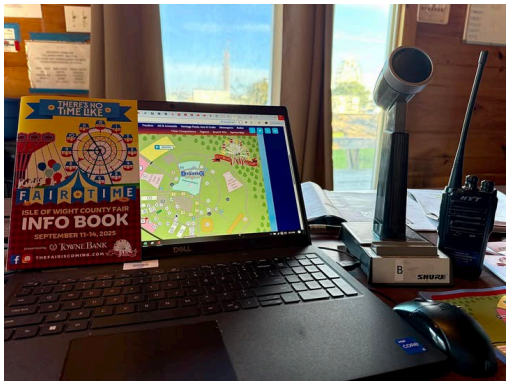
Boykin's Tavern, 1820 Clerk's Office & Isle of Wight County Court House Complex 17146 Monument Circle, Isle of Wight County

- Boykin's Tavern Visitors: 5

Meetings

- Sept. 8. State of the County hosted by the Isle of Wight County Chamber of Commerce.
- Sept. 10. Smithfield & IOW Tourism Strategic Planning Session.
- Sept. 16. Town of Smithfield staff meeting.

Other Events & Notable Information



- **Volunteer Hours**: 129
- **Isle of Wight County Museum Economic Impact Survey for September 2025:**
  - 12.6% made a gift shop purchase
  - 39.8% indicated that they had lunch/dinner plans in Smithfield/Isle of Wight County
  - 54.6% indicated that they were planning to or had already shopped in Smithfield/Isle of Wight County
- **Isle of Wight County Fair.** From Sept. 11 to 14, staff provided all voiceover announcements for the Isle of Wight County Fair.
- **Virginia American Revolution 250 Commission**
  - **Smithfield Times Article Series**: 2024-2026. Published August 6 was *Commemoration 250 Years of Freedom:* Quality control was important in colonial Virginia.
  - **New Postcards**. New postcard in the museum's gift shop created in conjunction with our 23430 postal office. Smithfield, Virginia, was home to one of the first 60 post offices created when the Continental Congress named Benjamin Franklin as the nation's first-ever postmaster general in 1775. The stamp set unveiled in 2025 commemorates the legacy of 250 years of U.S. mail delivery. Smithfield's USPS building, located at 234 Main Street, was dedicated on January 18, 1941.

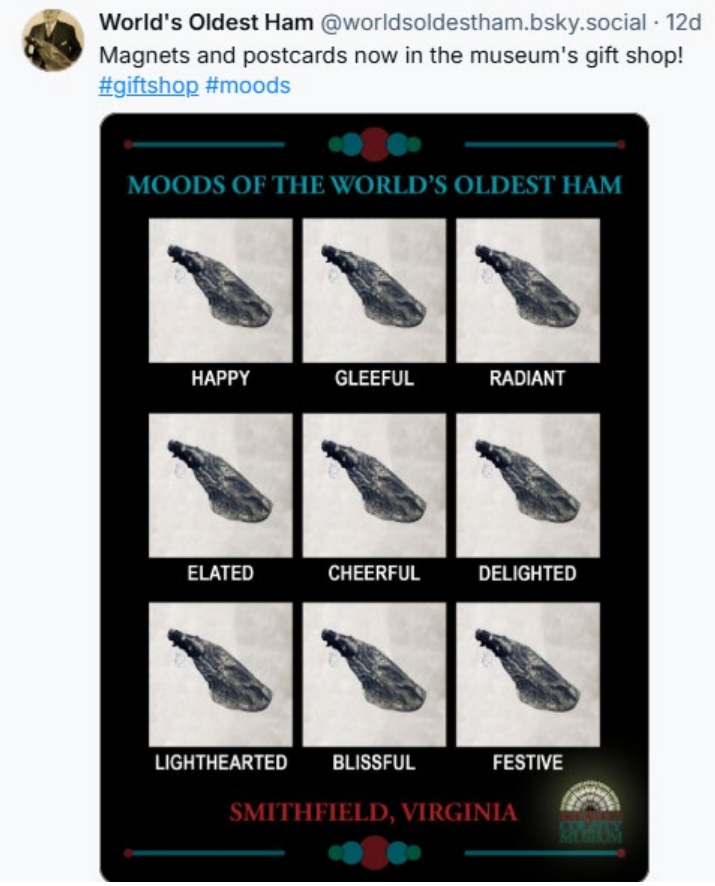


- **Isle of Wight County Department of Community Development & Planning**
  - **Commentary and review provided for the following projects:**
    - Phase I Cultural Resources Survey of St. Luke's Village Tract.
    - SIMP-25-15. Simplified Site Plan. Carrollton-Nike Park, Nike-Ajax Missile exhibit.
    - PRE-25-18. Preliminary Site Plan Development, Sweetgrass Subdivision, Condominiums.
- **Town of Smithfield Department of Community Development & Planning**
  - No updates.
- **The Schoolhouse Museum**
  - No updates.
- **Ivy Hill Cemetery**
  - No updates.

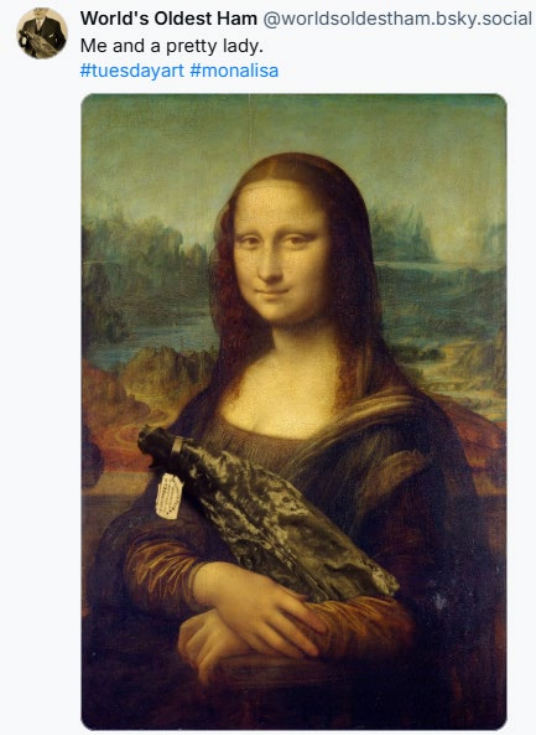
Safety & Repairs

- No updates.

Selections from Our Website and Social Media



September 16, 2025



September 23, 2025

September 25, 2025

BEST MUSEUM!

We were awarded a Hammy Award from The Smithfield Times for being the BEST MUSEUM!

ZONING PERMIT SEPTEMBER 2025

PERMIT #	CONSTRUCTION TYPE	PROJECT	ADDRESS	CONTRACTOR/ OWNER
0946	DECK		8 DASHIELL DRIVE	MNK UNLIMITED / ANTHONY GOSLIN
0947	FENCE		126 MUIRFIELD	SUPERIOR FENCE / MICHAEL RENO
0949	NEW PUMP STATION		18403 CYPRESS CROSSING	THE HUTTON COMPANY LLC
0950	NEW COMMERCIAL BUILDING		18403 CYPRESS CROSSING	HOWARD GWALTNEY FAMILY TRUST
0955	SHED		425 EVERGREEN WAY	OWEN ROWLANDS
0956	FENCE		1403 CYPRESS CREEK PARKWAY	WILLAIAM CARSON
0959	DECK		1018 SOUTH CHURCH STREET	MAJOR LEAGUE BUILDERS / WALLS INSURANCE
0960	DEMOLISH SINGLE FAMILY RESIDENCE		511 PAGAN ROAD	BIRDSONG BUILDERS INC / ROBERT MAY
0961	SINGLE FAMILY RESIDENCE		511 PAGAN ROAD	BIRDSONG BUILDERS INC / ROBERT MAY
0964	SHED		205 BARCROFT	TIMONTHY CUNNINGHAM
0965	FENCE		919 MAGRUDER ROAD	DACAL INC / VA FENCE COMPANY / CHARLES VAUGHAN
0971	DECK		208 RED POINT DRIVE	KNIGHT EXTERIORS / ANDREW TILLMAN
0972	DECK		1 FIELD DRIVE	HW ENTERPRISES INC / JOSEPH PONSETI
0973	SINGLE FAMILY RESIDENCE		2109 WENTWORTH CROSSING	STANLEY MARTIN HOMES LLC
0974	FENCE		802 SMITHFIELD BOULEVARD	JONATHAN EWING
0976	SHED		313 ST ANDREWS	SHEDS BY KEN / MARILYN SMITH
0977	SINGLE FAMILY RESIDENCE		1322 WHARF HILL DRIVE	EASTWOOD HOMES OF RICHMOND LLC

September 26, 2025

TO: SMITHFIELD TOWN COUNCIL

FROM: LESLEY G. KING
TOWN CLERK

SUBJECT: INFORMATIONAL REPORT FOR THE PUBLIC SAFETY COMMITTEE MEETING HELD ON MONDAY, SEPTEMBER 22ND, 2025

The Public Safety Committee met Monday, September 22nd, 2025 at 4:19 p.m. at the Smithfield Center located at 220 North Church Street, Smithfield Virginia. Committee members attending were Mr. Steven G. Bowman, Ms. Mary Ellen Bebermeyer and Mr. Bill Harris. Other Council members present were Ms. Valerie Butler, Mr. Jeff Brooks, Mr. Darren Cutler and Mayor Smith. Staff members present were Mr. Michael R. Stallings, Town Manager; Mrs. Lesley King, Town Clerk; Mr. Christopher MacKenzie, Interim Town Attorney; Mrs. Ashley Rogers, Director of Human Resources; Mr. Alonzo Howell, Chief of Police; Mr. Chris Meier, Deputy Chief of Police; Mrs. Tammie Clary, Director of Planning and Community Development; Mrs. Amy Novak, Director of Parks and Recreation; Mr. Ed Heide, Director of Public Works and Utilities; Ms. Judy Winslow, Director of Tourism; Ms. Stephanie Kensicki, Assistant Tourism Director; Mr. Steve Clark, Parks and Recreation. There was no media present.

Public Safety Committee Chair, Mr. Steven G. Bowman, called the meeting to order.

A. MATTERS DISCUSSED BY COMMITTEE WHICH WILL NOT BE ON THE COUNCIL'S AGENDA

1. Operational Update for the Smithfield Police Department – August Activity Report – Chief Howell reported that their August Activity Report was included in today's agenda packet, and he would be glad to answer any questions as they relate to this report. He mentioned that in addition to this report, he had a few additional operational updates.

The first is a reminder of National Night Out which is coming up on October 7th from 5-7 p.m. A resolution has been prepared for the mayor to sign supporting this event. Town Council is invited to attend, and they look forward to seeing everyone there.

Chief Howell mentioned that the next item is the upcoming Top Cop Awards Banquet. This year's Top Cop from Smithfield has been selected. The banquet will be held at the Hilton Garden Inn in Suffolk on October 25th at 6:30 p.m. Everyone is cordially invited to attend. The Town typically purchases a table that sits eight.

The last thing that Chief Howell had for operational updates was regarding safe trick-or-treating from 5 pm to 7 pm in downtown Smithfield on Friday, October 31st.

The plan is to close both Main Street and Grace Street one hour before the event starts and open the streets an hour after the event to ensure the safety of the kids that are trick-or-treating. Mayor Smith asked about the closing of Thomas Street during the safe trick-or-treating downtown. Chief Howell stated that they have taken a second look at this area, and they will have an officer in the general vicinity to ensure that any vehicle or traffic that is in that area is kept to a minimum and kept very slow. This decision was made based on the concerns that have been submitted to the police department. The Town Manager further explained that some of the problems with closing Thomas Street to all traffic is that once they have closed everything else, that is the only way the residents back on Washington Street can get in and out. That is the reason we are going to have some additional personnel in that area. We will do our best to keep the kids on the sidewalks and minimal cars on the street.

Councilman Cutler stated that in reading the Department's August report he saw where they had attended a security meeting at Jersey Park apartments. He asked if that was with the folks that are doing the rehabilitation of that community. Chief Howell stated that was correct. He had a meeting with them before they started construction. Councilman Cutler stated that the new owner had mentioned previously about some additional security measures that were potentially in the works and asked if they had come up with any new ideas or changes. He also asked if the Police Department had made any recommendations. Chief Howell reported that they had made some suggestions to implement while the construction is going on that will hopefully make things safer. The owner has taken some of those suggestions and put them into place. They have also made some suggestions for once the construction is complete. Councilman Bowman stated that Councilwoman Butler has been very involved in this project and asked if she had anything additional to report. Councilwoman Butler stated that she did not know that Green Street had had a security meeting with the police force. However, she did mention that she had had a conversation with the new owner and Sergeant McGough and they were pleased with the security meeting. Councilwoman Butler explained that the old property managers had made a lot of commitments to the Town on what they would do for security measures; however, they never followed through with these commitments. It is her understanding that Mr. Powell and Sergeant McGough are trying to come up with a game plan but does not know how much they can do with final security until the construction phase is complete. The new owners do have security concerns now while the construction phase is happening, but they are trying to work through them. The Town Manager stated that he has spoken to Mr. Powell since they have officially taken over the management of the apartments and he has indicated that he was going to come and give us a status update soon. The hope is to have Mr. Powell attend an upcoming Committee meeting in the near future to give Council an update on the project.

The meeting was adjourned at 4:26 p.m.

September 26, 2025

TO: SMITHFIELD TOWN COUNCIL

FROM: LESLEY G. KING
TOWN CLERK

SUBJECT: INFORMATIONAL REPORT FOR THE WATER & SEWER COMMITTEE MEETING HELD ON MONDAY, SEPTEMBER 22ND, 2025

The Water & Sewer Committee held a meeting on Monday, September 22nd, 2025 at 4:26 p.m. at the Smithfield Center located at 220 North Church Street, Smithfield Virginia. Committee members attending were Mr. Darren Cutler, Mrs. Mary Ellen Bebermeyer and Mr. Steve Bowman. Other Council members present were Mayor Michael Smith, Ms. Valeire Butler, Mr. Jeff Brooks, and Vice Mayor Bill Harris. Staff members present were Mr. Michael R. Stallings, Town Manager; Ms. Lesley King, Town Clerk; Mr. Christopher MacKenzie, Interim Town Attorney; Mrs. Ashley Rogers, Director of Human Resources; Mr. Alonzo Howell, Chief of Police; Mr. Chris Meier, Deputy Chief of Police; Mrs. Tammie Clary, Director of Community Development and Planning; Mrs. Amy Novak, Director of Parks and Recreation; Ms. Judy Winslow, Director of Tourism; Ms. Stephanie Kensicki, Assistant Tourism Director; and Mr. Steve Clark, Parks and Recreation. There was no media present.

Water and Sewer Committee Chair, Mr. Darren Cutler, called the meeting to order.

A. MATTERS DISCUSSED BY COMMITTEE WHICH WILL BE ON THE COUNCIL'S AGENDA

1. Town Code Update – Utilities – The Town Manager stated that included in your packet today is a relined version of Chapter 82 of the Town Code. This section of the code deals with utilities and staff have made some recommended changes. Currently, the water and sewer rates are in different parts of this code. Staff recommends that we move all the rates to the same section of the code, so it is easier for the residents and staff to find. In the future when the Town adopts new rates during our annual budget adoption they are all in one section of the ordinance. There are no recommended rate adjustments to these changes. All rates remain the same as adopted with the FY2025-2026 budget. There was also a larger section 82-75E which dealt with some residential construction done in the 90s and has since been completed and is no longer needed. Staff recommends removing this section. There are some other minor changes throughout but those mentioned were the major changes in Section 82. Councilman Cutler stated that in

summary it is just refining the document. This item will move to Town Council's consent agenda for consideration at their October 8th, 2025 meeting.

B. MATTERS DISCUSSED BY COMMITTEE WHICH WILL NOT BE ON THE COUNCIL'S AGENDA

1. Additional Informational Item: Water Rates – The Town Manager explained that over the weekend he picked up some chatter on Facebook about water rates doubling and people's bills were going up substantially. He stated that he took some time and investigated these concerns. The Town did make a rate adjustment at the beginning of the budget year. The new rate took effect in July 2025. The water rates went from $7.00 dollars per thousand gallons to $8.50 per thousand gallons of water. The Town's sewer rate went from $3.99 to $6.00. At the same time, HRSD also did their annual increase which they went a dollar per thousand gallons from $11.07 to $12.07. The Town's average consumer is somewhere between 6 and 10 thousand gallons every two months. He further explained that for the consumer that uses 8 thousand gallons they're by monthly rate went up $28. For some of the ones that he saw on Facebook they were consumers of approximately 15,000 gallon users. At 15,000 gallons the increase would be $52 every two months. Once you add in the HRSD piece of that it would take a 15,000 gallon user to $67 every two months if their consumption stayed the same. He did notice that some of the people that expressed concern about their increased bill also had a significant increase in consumption. It is hard to help folks when there is a period of consistent usage and then goes through the roof for one billing cycle and then goes back to normal usage. Sometimes the user may know exactly where it went because they filled their pool; however, there are other times when someone may have left the water hose on by accident. When this happens the Town Manager stated that he does not have any mechanism to help users with their bills. If a user has a leak that runs their bill up and can show that they found it and fixed it, then the Town has the ability to make an adjustment to their bill. Again, our rates did go up, but it did not go up enough to make anybody's bill double. Councilman Bowman stated to that point, if a resident has had a child away at college for X number of months and then they come home that child does use water. So, there are a lot of variables in that mix that may need to be taken into consideration. Also, Isle of Wight County has a higher water rate than the Town so that is another factor whether the concerns are from Town residents or County residents. Councilman Bowman stated that he would like to applaud the Town Manager for getting the cart before the horse on this and giving us a little bit of preemptive information because he had seen the same post. The Town Manager stated that everyone that has had their water meter replaced within the last couple of years, the town has the capacity to go pull data from those meters. He can look at a bar chart and tell you the day the increased consumption started and the day it stopped. Councilman Cutler thanked the Town Manager for providing this clarification. He knows that we have citizens that watch these meetings and hopefully this will get circulated around to clarify some of the increased bills. This was for informational purposes only.

2. Additional Item Discussed: Special Planning Commission Meeting – Councilman Cutler wanted to let everyone know that there will be a special Planning Commission meeting tomorrow evening here at the Smithfield Center @ 6:30 p.m. He invited all of Council to join them.

3. Additional Item Discussed: Councilman Cutler stated that he wanted to start a discussion amongst Town Council. He explained that they have had a couple challenging weeks and they still have some work to do. He stated that he is trying to think from a high level, so he just wanted to throw a couple of ideas out. He then hopes that they can put this on an upcoming agenda to iron out something whether it is an idea he is going to propose or something else to get them moving. Councilman Cutler stated that he would like for them to consider something like a leadership and modernization committee. This committee would be formed to address some recent issues and identify staff needs to hopefully avoid some of these issues in the future. When we look at recent areas of concern surrounding contract issues, process for evaluations, or the general task list that he gave the Town Manager at a previous meeting. The tasks were originally supposed to be reviewed each month at our committee meetings. To date they have not done that; however, they are following through on the closed session procedure which he thinks is fantastic. It is in his opinion that they as a Council can do better. He has thought about three areas for improvement with the first being personnel. He thinks it is really important that we look at these last few months and consider whether we are appropriately invested in our personnel. He stated that he spoke with the HR Director and the Town Manager and learned the City of Chesapeake has set a goal that they are going to be the number three city in Tidewater for places for people to work. He is not sure how they will arrive at this but that is a goal that they have set. Here in Smithfield, we have a beautiful town that we preserve, and we come to our meetings every month and we fight to preserve it. Council has a staff that does all the work that we direct them to do; however, the town has grown a little bit over the last few decades. Maybe there is some areas of growth that our town has not kept up with and maybe personnel is one of those pieces. Just something off the top of his mind is that an Assistant Town Manager or an Executive Assistant to the Town Council may be appropriate. Someone that can handle some of these responsibilities that we do not have professionals for. Maybe the Town does not have a need for a full-time employee, a contracting and procurement person or a safety person. These are complex duties that require high levels of attention to detail. Our HR Director does have a very specific job. If you recall from the job description of the Town Manager, the Town Clerk, and the Town Treasurer that they have very specific duties. If we are asking them to do other things, as well, then it has the potential to interfere with their primary duties that they are trying to do. Councilman Cutler also mentioned that in his opinion Council should look at one-time upgrades. One-time investments that we can do in our Town to improve the work environment for our staff. The third area he looked at was the Town's Capital Improvement Plan (CIP) for projects in the Town. Having our leadership all under one roof is important. We need to advance this as a goal of this Council. As he thought through these things an Assistant

Town Manager could be a safety officer and procurement officer and handle the task that come out of Town Council. The Town Manager has to manage everyone and every task that does not fall into the right basket. Even if they assign the Town Manager a task here it is put on top of everything that he already has. The Town may have a need for one or two more personnel, but an assessment needs to be made. When he talked with the Town Manager there was a locality that does a four-day work week. We cannot compete with Chesapeake but what other things can we do that enhances our Town's staff, keeps our employees, and also addresses the process problems that we have. He would like to see the Town set some sort of goal that we can work towards as a Council for our staff that would set us apart and make us the best place to work. Whether we are the number one small locality in Virginia or number one locality under 10,000 people in what we provide our employees. Is there a process in place in the state for us to make that distinction of ourselves. They talked at their retreat about being the jewel of Southeast Virginia. The Town has certifications through our Police Department, and Public Works Department. This gives staff a set of standards to compare themselves to. Council then takes these standards that were achieved by Staff and say to our citizens, you are safer because of this. Councilman Cutler stated that Council forms some sort of committee he would certainly like to be on it and feels Councilman Bowman would be an asset to this committee because of his wealth of leadership experience at all levels of government. He also thinks the Town Manager and the HR Director should be part of it. He would even recommend a non-management senior employee, someone that has been with the town for some time that is not in a management function. In his opinion this committee could come up with great ideas to make positive improvements to the Town. The point for bringing this up today was to initiate some thought processes moving forward and making some corrective actions for a number of things.

Meeting adjourned at 4:41 p.m.

September 26, 2025

TO: SMITHFIELD TOWN COUNCIL

FROM: LESLEY G. KING
TOWN CLERK

SUBJECT: INFORMATIONAL REPORT FOR THE FINANCE COMMITTEE MEETING HELD ON MONDAY, SEPTEMBER 22ND, 2025.

The Finance Committee held a meeting on Monday, September 22nd, 2025 at 4:41 p.m. at the Smithfield Center located at 220 North Church Street, Smithfield Virginia. Committee members attending were Mr. Jeff Brooks, Ms. Valerie Butler, and Mr. Bill Harris. Other Council members present were Mayor Michael Smith, Mr. Steve Bowman, Mrs. Mary Ellen Bebermeyer and Mr. Darren Cutler. Staff members present were Mr. Michael R. Stallings, Town Manager; Mrs. Lesley King, Town Clerk; Mr. Christopher MacKenzie, Interim Town Attorney; Ms. Ashley Rogers, Director of Human Resources; Mr. Alonzo Howell, Chief of Police; Mr. Chris Meier, Deputy Chief of Police; Mrs. Tammie Clary, Director of Planning and Community Development; Ms. Amy Novak, Director of Parks and Recreation; Ms. Judy Winslow, Director of Tourism; Ms. Stephanie Kensicki and Mr. Steve Clark, Parks and Recreation. The was no media present.

Finance Committee Chair Mr. Jeff Brooks, called the meeting to order.

A. MATTERS DISCUSSED BY COMMITTEE WHICH WILL BE ON THE COUNCIL AGENDA

1. Invoices Over $20,000 Requiring Council Authorization:

a. Blair Brothers, Inc. $120,240.00

These invoices from Blair Brothers, Inc. are for four different projects for street paving and patchwork. Committee recommends sending these invoices to Town Council for consideration at their meeting on October 8th, 2025.

b. Isle of Wight County $304,504.59

This invoice from Isle of Wight County is for FY 2024-2025 Tourism True-up. Vice Mayor Harris asked that of the total budget, how much does the county contribute.

The Town Manager replied that the contributions are split 50/50. He explained that the way it is set up is the Town funds 50 percent of Tourism's budget and the Isle of Wight County Museum's budget. Tourism employees are County employees and Museum employees are Town employees. Councilman Cutler inquired about the line-item titled lease/rental of buildings for $34,884.00. Is this amount just the rental of the building on Main Street. The Town Manager stated that was correct. Committee recommends sending this invoice to Town Council for consideration at their meeting on October 8th, 2025.

B. MATTERS DISCUSSED BY COMMITTEE WHICH WILL NOT BE ON THE COUNCIL'S AGENDA.

1. August Financial Statements – The Town Manager stated that Ms. Ross was unable to attend Committees today; however, included in the agenda packet was a high-level overview of the previous month. If you have any questions he will do his best to try and answer them. Her notes covered the Financial Statements as well as the Cash Balances. Councilman Brooks stated that if you noticed there were a couple of tabs for sales tax distribution and county tax distribution. He had asked the Town Manager a couple of weeks ago for a generic cheat sheet that would list out all the taxes that we pay to include what part is the County's and what part is the Town's. Occasionally we get asked a question about a tax and he would just like a quick cheat sheet to refer to. That is why this information was included in this month's agenda packet. It was just a follow up to a question that he had.

2. August Cash Balances/VIP Investment Update – See comment under August Financial Statements.

Meeting adjourned @ 4:46 p.m.

September 26, 2025

TO: SMITHFIELD TOWN COUNCIL

FROM: LESLEY G. KING
TOWN CLERK

SUBJECT: PARKS AND RECREATION COMMITTEE MEETING - CANCELLED

The Parks and Recreation Committee scheduled for Monday, September 22nd, 2025 at the Smithfield Center located at 220 North Church Street was cancelled due to lack of agenda items.

September 26, 2025

TO: SMITHFIELD TOWN COUNCIL

FROM: LESLEY G. KING
TOWN CLERK

SUBJECT: PUBLIC WORKS COMMITTEE MEETING - CANCELLED

The Public Works Committee scheduled for Monday, September 22nd, 2025 at the Smithfield Center located at 220 North Church Street was cancelled due to lack of agenda items.

September 26, 2025

TO: SMITHFIELD TOWN COUNCIL

FROM: LESLEY G. KING
TOWN CLERK

SUBJECT: INFORMATIONAL REPORT FOR THE PUBLIC BUILDINGS & WELFARE COMMITTEE MEETING HELD ON MONDAY, SEPTEMBER 22nd, 2025.

The Public Buildings and Welfare Committee held a meeting on Monday, September 22nd, 2025 at 4:46 p.m. at the Smithfield Center located at 220 North Church Street, Smithfield Virginia. Committee members attending were Ms. Valerie Butler, Mr. Bill Harris, and Mr. Darren Cutler. Other Council members present were Mr. Jeff Brooks, Mrs. Mary Ellen Bebermeyer, Mr. Steve Bowman and Mayor Michael Smith. Staff members present were Mr. Michael R. Stallings, Town Manager; Mrs. Lesley King, Town Clerk; Mr. Christopher MacKenzie, Interim Town Attorney; Ms. Ashley Rogers, Director of Human Resources; Mr. Alonzo Howell, Chief of Police; Mr. Chris Meier, Deputy Chief of Police; Mrs. Tammie Clary, Director of Planning and Community Development; Ms. Amy Novak, Director of Parks and Recreation; Ms. Judy Winslow, Director of Tourism; Ms. Stephanie Kensicki and Mr. Steve Clark, Parks and Recreation. The was no media present.

Public Buildings and Welfare Committee Chair, Mrs. Valerie Butler, called the meeting to order.

A. MATTERS DISCUSSED BY COMMITTEE WHICH WILL BE ON COUNCIL'S AGENDA

1. Special Use Permit – Short Term Rental – 139 Sykes Court – The Town Manager explained that there are two parts to this topic. Included in your packet, for the first part, was some research on short-term rentals. An overview was included in the packet of the various localities that he reviewed. He reached out to the City of Suffolk as they had not responded when the agenda was posted. He has since received a call saying that they do not permit short-term rentals; however, he is sure that they do exist. He explained that if someone has a room in their house that they want to rent out they can do that. The City of Suffolk does not permit dedicated short-term rentals. There were only two localities, Virginia Beach and Hampton, that currently have a limitation. Hampton has 51 different

districts and, in those districts, you can have 1% of all residential dwellings as short-term rentals. He is not sure how they manage that in all 51 districts. Virginia Beach only has a limitation in the oceanfront area, and you have to get a conditional use permit. Overall, the policies on short-term rentals were all over the place. There was a wide range of different approaches to how the different localities handle short-term rentals. The Town Manager stated that he hopes this gives Council some insight to what other localities are doing. Councilwoman Butler asked if the Town has a list of all short-term rental properties in Town. Mrs. Clary stated that she did. There have been four that have been approved through SUP to operate primarily as a short-term rental. Councilwoman Butler asked if they want to set a limit on the number of short-term rentals and if so do they want two categories with one category being in the historic district and the second being outside the historic district. The Town Manager stated that will be a Council decision. The only thing that he would say is that if you want to do a limitation based off what Virginia Beach did some sort of overlay maybe a way to do that. He stated that he does not see that there will be a huge proliferation out in normal residential neighborhoods. There is not a draw for that. The people who are looking for short-term rentals want to come and be in the downtown area for obvious reasons. If Council wants to consider something he would ask that it be kept so that it is easy to manage and is specific to what they want to accomplish. Councilman Cutler stated that he likes the statement in the conclusion that if they wish to pursue some type of limitation on the number of short-term rentals an overlay district may be the most manageable. He stated that this is an opportunity for the Council to send this to Planning Commission and ask them to put together a draft zoning ordinance or overlay ordinance with some guidance from Town Council. Councilman Cutler stated that he likes some parts of what Hampton did and he would recommend going stricter rather than more lenient when setting up guidelines for short-term rentals. A couple of other ideas that he would like to suggest are a % limit and inspections for zoning compliance, especially when it comes to short-term rentals in the historic district. It is important that if owners are renting out their homes they meet all of our zoning requirements and overlay district requirements. Councilman Cutler also suggested that they look at lodging for outage workers. This seems to be a category of people when we talk about lodging in the community that they are missing. There is not a lot of lodging between here and the power plant, but what he has observed is that these folks tend to come to Smithfield to eat, shop, and spend their money. If somewhere in this process, we made some exceptions for outage workers it might be something that is enhancing for the Town or residents of the Town that have that capability to have a space in their homes for these workers. Councilwoman Butler asked Councilman Cutler if he is recommending this to go back to Planning Commission and they set up a criteria for short-term rentals. Her concern is that the Special Use Permit application before them today has already been recommended for approval by the Planning Commission. Town Council originally delayed action on this application to do some research on how short-term rentals are handled in other localities. The Town Manager stated to create new restrictions after this resident has already applied would not be the right thing to do. He

believes that Council needs to deal with this application and then work on new restrictions. Councilwoman Butler stated that she agrees with that. The Town Manager stated that in sending this back to Planning Commission then Council needs to have specific guidance because what you have on the books today is what Planning Commission crafted. If you want something different from that you need to be very specific. Councilman Brooks stated that he has put a lot of research and time into this topic. At this point he has decided not to take on our current policy at all, but he may. He believes they have a very lacked system when it comes to short-term rentals. You can break your place out for up to 104 days. There is no regulation on owner occupied. So, our rules right now as they exist are very favorable to someone that wants to get into short-term rentals. However, they do have an application in front of them that they need to vote on. He stated that he has spoken to one resident of Sykes Court who is adamantly opposed to this application, citing it has very tight parking. In addition, he has been trying to track down another resident that lives on that street who is also opposed to it. Given the nature of the neighbor's opposition to this specific one, this one is not going to garner his support. He does believe that they need to take action on with some instructions on looking into how our policy is currently written. If they do not address the concerns that have been brought up, they will continue to do what they are doing right now by addressing each one individually and this may not be the best path moving forward. Councilman Bowman stated that he tends to agree with Councilman Brooks. This application has been held in the vortex for a while, and he thinks that they need to make a decision one way or the other as we proceed down the path of what they are going to do as far as any modifications to the process. Vice Mayor Harris stated that he wanted to concur with Councilman Bowman and Councilman Brooks. Council needs to make a decision on the application that they have before them. At this time, he is opposed to this application mostly to the points that Councilman Brooks mentioned. He did support the two previous short-term rental applications because they were in the commercial areas of the historic district. Councilwoman Butler stated this item will move forward to Town Council's agenda for consideration at their October 8th, 2025 meeting. Review of the Town's short-term rental ordinance will come back to committees in October for further discussion.

2. Conditional Rezoning and Special Use Permits – Sheetz – Ms. Clary reported that the applicant is seeking a conditional rezoning to Highway Retail Commercial (HRC) to facilitate the construction of a convenience store with fueling station islands, with 2, potentially 3 additional retail users. These uses are also in line with the Future Land Use Map, as the current designation is Corridor Mixed Use, which provides for primary commercial uses. The 6,139 square foot convenience store will feature a 4,170 square foot fueling station canopy, with 6 double sided self-serve fueling stations. In addition to traditional convenience store offerings, there will be a made-to-order food menu, Coffee bar, and smoothies. There will be indoor and outdoor seating. The store will operate 24 hours a day, 7 days a week. The site has existing access servicing Sherwin Williams and

will also include a right-in/ right-out entrance shared amongst the subdivide parcels. There will be a pedestrian path along Route 10 for connectivity. The applicant is seeking three special use permits listed below:

- 1st Special Use Permit – Article 3.J2.C.7: Drive-thru facility.
  The applicant is seeking to utilize a drive-thru facility at the convenience store for made-to-order food or other items from the store.

- 2nd Special Use Permit – C.20: Waiver of parking and loading:
  The applicant would like to exceed the maximum number of parking spaces allowed by 7 spaces, providing up to 44 spaces instead of the maximum of 37 spaces.

- 3rd Special use Permit – C.15: Service Station:
  The applicant would like to utilize one parcel as a 5,500 square foot oil express facility.

This application was tabled at the August Town Council meeting while we awaited comments from VDOT. VDOT has now provided their approval letter with an updated conceptual plan in general conformance with the originally submitted plan for potentially 3 users in addition to the Sheetz. This potential modification will be in the interim of the updates that will be happening at this intersection. If the updates to the intersection do not happen before the Sheetz comes on board, there will be a channelized right turn coming off of Turner Drive onto Benns Church Boulevard which would then be reconfigured once these updates to the intersection occur. Councilman Bowman stated that if he recalls correctly the only real issue that gave them heartburn was no response given by VDOT. It seems to him today that they have not only come back with some type of clarification but even made a contingency plan. Vice Mayor Harris stated that he just wanted to echo Councilman Bowman. He asked if the Oil Express facility was like a Jiffy Lube? Mrs. Clary stated that they were not specific about what it would be. Councilwoman Butler asked if the Oil Express facility will be a separate building from the Sheetz. Mrs. Clary replied that was correct. Councilwoman Bebermeyer stated that right now there are three parcels there. Mrs. Clary explained that the Sheetz and the Oil Express facility that they are proposing are on one parcel, it has not been subdivided. Then there is the potential for another one or two other users. They have not identified them at this time. Councilman Cutler addressed the last paragraph on VDOT's letter. It mentioned that no improvements are addressed but it appears through this paragraph that improvements are needed. Ms. Clary explained that the improvements are only needed if the Sheetz comes online before the planned improvements are made to this intersection. Sheetz proffered that they would do anything that VDOT required them to do. The conceptual plan that you see there shows that channelized right coming off Turner Drive which is what VDOT asked them to do. Sheetz could not proffer what they do not know so they proffered a generic statement saying that they would address VDOT's comments.

Councilwoman Butler mentioned that it has been brought up before about two auto stores being side by side. Also, on Canteberry Lane there is an Express Oil service there. Will they be putting any criteria on the types of commercial properties that they would like to see along this corridor. The Town Manager stated that they have generally let the market dictate that. He is not aware of anything other than the uses that are specified in Highway Commercial zoning. You can argue that this is a list of preferred businesses along the commercial corridor but as far as going after and targeting specific businesses they do not, generally the market does that. Mrs. Clary stated that for this particular instance Sheetz has proffered that the proposed uses for these additional parcels will come back to Planning Commission for review. Committee expressed concern that the same type businesses that are currently in this corridor could be mirrored on one of the proposed parcels. They asked the Interim Town Attorney for his direction on this matter. The Interim Town Attorney stated that if the Town is looking for additional control over the usage of a particular parcel then through proffers is a good way to do that. Another way would be to require a special use permit for that type of use then you can decide whether or not you grant the use. Councilman Cutler asked if we have this type of protection for this project. Mrs. Clary stated that according to the proffers Planning Commission would have to review and approve any proposed uses. If we did not have it in the proffers the developer would have by right permitted uses in the Highway Retail Commercial zoning. Councilman Cutler asked for the proffer document be added to the Town Council agenda packet for review prior to their vote. Councilwoman Butler stated that this item will be placed on Town Council's agenda for consideration at their October 8th, 2025 meeting.

3. PRE-PUBLIC HEARING DISCUSSION: Text Amendment – Landscaping – Smithfield Zoning Ordinance Article 9 – Mrs. Clary reported that this is a proposed text amendment to Article 9.C.2.e to remove the requirement for tree canopies on platted lots in accordance with VA Code 15.2-961. The language in our zoning ordinance will mirror the language provided in State Code. This text amendment was favorably recommended by Planning Commission. This item will be placed on Town Council's agenda as a public hearing at their October 8th, 2025 meeting.

4. PRE-PUBLIC HEARING DISCUSSION: Text Amendment – Attached Residential – Smithfield Zoning Ordinance Article 3.E – Mrs. Clary reported that this is a proposed text amendment to Article 3.E to remove the requirement to provide recreational vehicle parking in Section I.2.B. making it an SUP requirement in Section C.2 and allowing public and private travel ways in Section I.3. Per Planning Commission's recommendation, the requirement for contiguous open space remains in Section G.5. This was favorably recommended by the Planning Commission. This item will be placed on Town Council's agenda as a public hearing at their October 8th, 2025 meeting.

5. PRE-PUBLIC HEARING DISCUSSION: Text Amendment – Multi Family Residential – Smithfield Zoning Ordinance Article 3.F – Mrs. Clary reported that this is a proposed text amendment to Article 3.F to remove the requirement to provide recreational vehicle parking in Section I.2.B. making it an SUP requirement in Section C.24, and allowing public and private travel ways in Section I.3. Per Planning Commission's recommendation, the requirement for contiguous open space remains in Section G.5. This was favorably recommended by the Planning Commission. This item will be placed on Town Council's agenda as a public hearing at their October 8th, 2025 meeting.

6. Amend Town Code to Repeal Section 70-223 Registration Fees for Use of Windsor Castle Park Dog Park – Councilwoman Butler asked why we are removing dog park fees. The Town Manager explained that the Town has not been doing dog registrations for several years now. The process was overwhelming to manager. People were not getting the permit to use the dog park and/or people were giving out the code to others that were not registered. There was no way to enforce the usage of the dog park, so they stopped requiring dogs to be registered to use the dog park at Windsor Castle. Repealing Section 70-223 just removes the registration fee for the use of the dog park. Councilman Bowman stated that the rational when it was started years ago was with good intentions. It was not so much about the fee to do it. The fee was the mechanism to ensure what when you came in to register your animal, they also had to provide the rabies certificate to ensure that the dog was protected when going in the dog park with other animals. Councilman Cutler suggested putting an advisory sign at the entrance of the dog park to remind people your pet should have a rabies vaccination. This item will be placed on Town Council's agenda for consideration at their October 8th, 2025 meeting.

7. Amend Town Code – Yard Sale Permits – The Town Manger reported that the Town received a complaint recently about a neighbor having multiple yard sales without the appropriate permit. Staff from the Police Department, Treasurer's Office, Community Development and Planning, as well as the Town Manager's Office met to discuss the current yard sale ordinance and its enforcement. Currently our ordinance says that it is a class 1 misdemeanor, which means a $2,500 fine and/ or will go to jail for one year. Staff thought that might be a tad excessive. He explained that the resident's complaints are valid because they do have something on the books that limits you to two-yard sales per year and each of those can only be for two days. If it is on the books, we must enforce it. When they started looking at the ordinance, they decided that they wanted something that made sense and was more manageable. Staff settled on a $10 fine and subsequent violations being a class 4 misdemeanor. The real issue here is not the people having the yard sales but the people who have the perpetual yard sales. In this specific incident the neighbor was having a perpetual yard sale. The people coming to the yard sale were parking in the neighbor's yard and tearing the neighbor's yard up. That is an issue and that is what this ordinance is meant to address. Councilwoman Butler asked who

monitors when a yard sale permit has been purchased. The Town Manager stated that it is a combination of the Treasurer's Office, the Police Department, and the Planning Department. Councilwoman Butler asked that if this person's neighbor had not complained would the Town have known that they were having multiple yard sales. The Town Manager stated that it was buried in a neighborhood that unless you happen to ride by there on a Saturday it probably would not have been caught. Councilwoman Butler stated that she has concerns with things being on the books, but no one monitors them. The Town Manager stated they have worked on that as well. They now have a process in place where the Treasurer's Office will track the permits and provide a list to the Police Department of where yard sale permits have been purchased for. This item will be placed on Town Council's agenda for consideration at their October 8th, 2025 meeting.

8. Discussion Item: Proposed Fee Schedule for Planning Department – Mrs. Clary reported that Town staff recently reviewed the current fee schedule for the community Development and Planning Department. For clarity, Staff would like to include some additional fee schedules as outlined below:

Demolition Fee	$30
Zoning Permit new SFD	$75
Preliminary Plat	$150
Proffer Amendment	Free
Public Hearing Proffer Amendment	$400
Rezoning to PMUD	$1,000 + $45 per lot/unit

Mrs. Clary also mentioned that they would like to modify their site plan for commercial instead of $50 per 1000 square feet it would be $500 per acre in addition to the $300. Councilwoman Butler asked if there was any discussion on the new fees. Vice Mayor Harris asked if our fees are in line with surrounding jurisdictions. Mrs. Clary stated that the Town is much lower. It has always been that they charge enough to cover the cost of advertising. She stated that the only fee that they are officially changing is the site plan review for commercial from $50 per 1000 square feet to $500 per acre because they do look at the entirety of the lot not just the building. If they did the $50 per 1000 square fee that would be quite a large fee and in some cases, it would be upwards of $30,000. Staff also wanted to reclassify the rezoning to the PMUD and have that because right now they kind of address rezoning residential and rezoning commercial and they wanted to spell out the rezoning to the PMUD since it is a mix of both residential and commercial. Also, since they changed the proffer language to now allow proffer amendments to come back only to Town Council when it does not affect use or density. When it comes back to Town Council only without a public hearing it is free because no advertisement is needed. If the Town does have to advertise for a proffer amendment there is a $400 fee for that. It has been a while since the fees have been adjusted. Councilman Cutler expressed concern that the applicant applying for a special use permit for a conex box is

pay the same $400 fee as the applicant applying for a special use permit for setbacks in a development. In his opinion this seems like a nonsensical thing. It is the highest fee that we have for our citizens other than rezoning costs. He suggested that if staff were going to do an assessment of our fees that seems to be a glaring area that our citizens are being disadvantaged but our developers are really getting a pretty good deal far as the level of effort that our planning staff must put into presenting an SUP for developers verses a conex box. The Town Manager stated that if you look at strictly that way you are right; however, what you have to remember is those developers are paying that rezoning fee on top of the special use permit fee. Developers are not just paying the $400. All the extra reviews are wrapped up in that rezoning fee. Councilman Cutler stated that rezoning by right would cost them the same thing too. So, he does not think thats relevant and continued to explain why he did not think it was relevant. A different perspective is when you have a multi-lot of SUPs that require multiple hours of staff time to process that we should account for that. Just something to look at if we want to look at the impact on our citizens versus the impact and how it affects growth and our bottom line. Paying our staff for the volume of work that they are doing for these developers effectively. This item will be placed on Town Council's agenda as a public hearing at their October 8th, 2025 meeting.

9. PRE-PUBLIC HEARING DISCUSSION: Text Amendment – Site Plan Requirements – Smithfield Zoning Ordinance Article 11 – Mrs. Clary reported that this is a proposed text amendment to Article 11 to bring our site plan requirements in line with Virginia Code which recently replaced the Planning Commission with the designated agent as the reviewer of site plans. Virginia Code no longer allows for a preliminary site plan preconference. Staff cleared up the language for minor and major site plans and included the requirement of a preliminary plat if more than 50 lots. Staff have updated the sewer systems with the new language from our adopted CBPA Ordinance and updated review timelines to follow Virginia Code. Finally, the appeals process was clarified to the Board of Zoning Appeals (BZA), not the Planning Commission. These revisions align the site plan requirements with current modern zoning practices. Per the Planning Commission J.3.b will not be limited to only the agencies on the list. The list will also include police, IOW County, Schools, Museum, and other utilities. Also, per Planning Commission remodeling of commercial structures may qualify as a minor site plan if in the opinion of the Zoning Administrator it is in conformance with the intent of this Article. Staff are continuing to work on updating the language for the major and minor site plans at Planning Commission's request. This was favorably recommended to Town Council four to two by the Planning Commission. Councilwoman Butler stated that she knows that there was a lot of discussion on this designation at Planning Commission level and asked Councilman Cutler why he and Dr. Pope had voted against it. Councilman Cutler state that the text amendment itself is pretty complex. There are a lot of things going on in this article and it was kind of difficult to navigate all the amendments. What they discussed specifically was writing zoning laws that support our comprehensive plan

and the goals that they have for the Town. If they say that South Church Street, for instance, is a growing commercial corridor and they do not want to create barriers to entry, like Dr. Pope experienced with his office expansion, for small businesses that are not overcome able through this ordinance. Councilwoman Butler asked how that relates to what state code is requiring. Mrs. Clary stated that staff are continuing to work on potential modifications to the minor site plan and major site plan. Staff agree with the Planning Commission that it is not perfect; however, they are operating under the deadline of July 1st with the designated agent. Their main goal was to make sure that the designated agent was clarified in Article 11. Staff can make minor tweaks, but the major site plan and the minor site plan is a much larger project, it is not being pressed by Virginia Code. Councilman Cutler stated that one of the other things that they discussed was that in the future when they have a state-mandated change that they look at that as a single change because that is pretty cut and dry and they can digest it pretty quick. When you have three or four different changes that are unrelated to the state-mandated changes then trying to track and understand unintended consequences become difficult. Vice Mayor Harris stated that it is confusing. He understands the state requirement; however, he had a question regarding Section 3.F Preliminary Site Plan Plat, in blue, requirements for Major Site Plans. He stated that he is not criticizing, he is just trying to follow the changes. There are twenty-four things that were once required on the major site plan that are redlined. If these things were in place all this time and we thought they were important then why are they being redlined and removed. Mrs. Clary explained that the Town actually has a checklist for our preliminary plat, and it is just repeated here in this article. Since it is duplicated it now refers to the subdivision ordinance checklist and all of those things are in there. Staff are not actually eliminating these requirements we are just cleaning up the document. Mrs. Clary replied that was correct. The only thing they are eliminating when you get to the final plat, is that they are no longer requiring Mylar documents and floppy disc. Councilman Cutler stated that if you go to the Planning Commission version of this presentation it has the checklist in it and you can see where they were edited as well. This item will be placed on Town Council's agenda as a public hearing at their October 8th, 2025 meeting.

10. PRE-PUBLIC HEARING DISCUSSION: Text Amendment – Smithfield Subdivision Ordinance and Town Design Standards – Mrs. Clary reported that this is a proposed text amendment to Article 2 to bring our general regulations for subdivision requirements in line with Virginia Code which recently replaced the Planning Commission with the designated agent as the reviewer of site plans. Article 3 was updated to include HRPDC and VDOT regulations. Article 4 was updated to the designated agent and included additional authorities for regulations. Article 5 was updated to the designated agent and removed the requirement for a planning conference. Staff also updated review times and number of copies required. Article 6 requires Town Council to approve private streets. Article 7 clarifies bonding requirements. Article 8 was repealed as it is repeated in Article 11 of the Smithfield Zoning Ordinance. Staff updated

our checklists for preliminary plats, public improvement plans, and final plats. Staff incorporated our Design Standards into our Subdivision Ordinance as Article 8 because Article 13 was not favored by our Public Works Department. Planning Commission did unanimously recommend this text amendment to Town Council. Staff have included additional language in the Design Standards requiring contractors to notify affected residents of utility disruption 48 hours prior. It would also require meters for fire lines. This item will be placed on Town Council's agenda as a public hearing at their October 8th, 2025 meeting.

B. **MATTERS DISCUSSED BY COMMITTEE WHICH WILL NOT BE ON COUNCIL'S AGENDA**

1. Discussion Item: Closed Session Minutes – The Town Manager recapped that at previous meetings Council has had a discussion on taking minutes or audio recordings in closed sessions. Currently, as you all know, we are doing audio recordings, but we need to have a conversation around this topic and how best to proceed with this. He mentioned that he has briefed the Interim Town Attorney on this topic. What you see in the memo is the language that the Attorney provided from sections of code. Basically, the Virginia Freedom of Information Act says that you may take close session minutes, but they are not required. It also says that they shall not be subject to mandatory disclosure, which means that if somebody asks for them you do not have to give them out. On the audio recordings piece, again, if it is recorded in closed session, it becomes exempt from FOIA. In other words, the Town would not be required to release that information to the public. The Town Manager stated that as he mentioned they have been doing some audio recordings based off direction of Council. Staff then takes these audio recordings off the device and puts them on the Town's server. If they have someone transcribe minutes from the recording it would be done by a staff person that would not normally be in those meetings. It could put them in a unique or uncomfortable position depending on the topic being discussed. This is a discussion amongst Council for direction to move forward. Councilman Cutler stated that he thinks that this process has been great so far. Ultimately, he thinks this whole process needs to be in our Town Code. Councilman Cutler stated that in his opinion it is a question of do we want to write them down or not. The Town Manager stated that the first decision that Council needs to make is whether to take minutes or not of closed sessions. If Council choses to do it, recording is the only way that he would recommend they do it. In doing the research he has not found another locality that takes minutes of closed session meetings. Smithfield would be the first that he is aware of in Virginia and the Attorney has indicated the same thing. Councilman Cutler stated that we have already voted to take minutes, correct? The Town Manager stated that staff was asked to take minutes based off the items that were being discussed so we have been doing that. There has been no formal vote from Council to record closed sessions.

Councilwoman Bebermeyer stated that she thinks it is a good idea to have the recordings, so we have some information on the meeting. She thinks that we have found over the last couple of weeks and months that going back to something is helpful. How long are these records kept. The Town Manager stated that he does not know the answer to that. He would need to look into the records management guidelines. The Interim Town Attorney stated that they should be treated like any other local government record of seven years. The assumption should be from a records destruction standpoint, and they would be retained for seven years. These records are protected under disclosure under those FOIA provisions that are included in the memo. Councilman Cutler clarified that they need to have motion on the keeping of minutes. What this derived from was the direction to create a closed session process that includes the recording of minutes. Since we already have a process for coming in and out of closed sessions, he would like to see the recording and maintaining of the minutes added to this process. The Town Manager stated that if that is the direction from Council, he will add the recording of closed session meetings to the process. The Interim Town Attorney stated that once the process has been approved by Town Council, he would suggest putting this process in the Town Code or Bylaws to detail how Town Council goes procedurally into closed session and comes out of closed session and whether or not it maintains any record of closed session. Councilman Bowman had a question for the Interim Town Attorney. He stated that he understands that these records are protected under FOIA and like a lot of other things that are FOIA oriented it says they are exempt under FOIA unless you decide to release them. Would these recordings be under that same type of verbiage that they are protected under FOIA unless we decided or voted as a Council to release them. The Attorney stated that was correct and a FOIA exemption is discretionary for the governing body. You can elect to withhold them from FOIA, but it is up to the governing body to decide whether or not to do so. Councilman Bowman stated that given the fact that all of Council votes to release or not release it one would assume that when they go into a closed session it may or may not remain confidential. He gave an example that if he goes into a closed session and spoke quite frank and candid about something specifically that he wanted to be utilized in that closed session and was intended for the benefit of his council members they could then come back and he would vote against releasing the minutes of what he had said and the rest of Council could, on the other hand, vote to release the minutes. What he assumed would be protected in the closed session could then become public record. The Attorney replied that was correct. Councilman Bowman stated that he says this so that when we go to vote, everyone is eyes wide open, and you understand that when you have something that you wish to divulge and presume that it will be protected under the closed session will no longer be the case. The Attorney expanded on this point that it is important to know the distinction between FOIA and the ability to withhold documents from public inspection under those exemptions when it comes to confidentiality. FOIA is a confidentiality provision. It provides for exemptions to the

otherwise general goal of making the public business transparent through this act. But if a public record is released after Council vote, then sure that is perfectly permissible under FOIA. The other interesting thing to note though is that if a public record is released inadvertently or by some kind of impermissible action there is no confidentiality attached to that document. Sometimes there is a view that closed sessions are confidential, and he thinks it is for the very reasons that have been pointed out, so that you can have candid discussions about matters that are disclosed and could negatively affect the Town's bargaining position or damage litigation positions. Councilman Cutler stated that that possibility existed whether you take minutes or not. He stated that he understands Councilman Bowman's concerns, but they may need to add this into our procedure that would include redactions. It is also his opinion that some of this comes back to drafting a statement during closed sessions to address the public when they return from closed sessions. He does not want to lose sight that they have a position as a FOIA officer, and they have training. Maybe there is additional training that needs to be done. If this person is the keeper of the sanctity of public information that would be the person that might keep the train on the tracks when they are going into closed sessions and that they are sticking to the topic that was identified. He is not sure if that is something that they want to include or consider in the process as well. Councilman Bowman stated that at this time the topic of discussion is whether they are going to do the recording or the full minutes. The Town Manager stated that the first part of our discussion is whether they are taking recordings/minutes of closed sessions. If that is a yes, then staff will determine the avenue. If it is a no, then it stops here with the minutes. Councilman Bowman stated that if they elect to just record the meetings and not type the minutes then the Town would maintain the recording as indicated by the Attorney for a period of seven years. The Town Manager stated that it would be the only way that he would recommend doing it. Councilwoman Bebermeyer stated that as the Attorney alluded to at some point Council could elect to make these minutes public and to Councilman Bowman's point it could be a Council that is two or three down the line that would elect to make those minutes public, and they may not be the current Council's intention. Sometimes there are discussions that are in closed session for a reason. Councilwoman Butler stated that she looks at closed sessions as being, personnel matters or real estate negotiations or things that they need to discuss in confidence before a decision is made. If it is done properly and a decision is made on the Town purchasing a piece of property or whatever, when they come out of closed session that should eventually become part of the public records. She stated that she does have some reservations, and the Town of Smithfield will be definitely setting a precedence when the Town Manager says he could not find any other municipality that takes minutes during closed sessions. Councilwoman Butler stated that she also checked with a few other localities, and they do not take minutes or recordings in any closed sessions. Councilwoman Butler asked the Attorney if closed sessions are designed to be confidential. The Attorney explained that the purpose of a closed

session is to have a private discussion. Often times you will see in FOIA, the legal framework that allows you to go into closed session. FOIA requires that there are more than two Council members that get together and discuss public business. This is defined as a public meeting, and you need to meet all the public meeting requirements. FOIA then goes down to another level and says here's a list of exceptions you may meet in private to discuss these items. In that list you will also see an explanation of why it is on the list. You are allowed to speak in private as a governing body for these specific reasons. That is the intent but there is nothing written in law that precludes you from taking the information that you learned in closed session and saying it publicly. That is not a FOIA violation. Councilwoman Butler stated that recently there has been some controversy over closed sessions and the Council not being transparent with our citizens. She stated that she has a concern that when we go in closed sessions for the right reasons and it is supposed to be a private conversation amongst the eight of them and if that does not happen, she looks at the fact that there are no consequences. She also stated that she loses trust when that happens, so she does have concerns with it. She stated that she is not in favor of taking audio recordings of closed session because if we do it right it is going to come back in the minutes during open session. Councilman Cutler stated that he understands that perspective, but he thinks the Freedom of Information Act is really clear about the intentions of government and who the beneficiary of the actions government are and that is the citizens. He also thinks it provides Council some accountability. They were in closed session for about an hour today and if the Town Manager needed to go back and look at something to formulate some process that he is working on then he has that capability. Council also has the ability to go back and look and see what they discussed in closed session because that discussion is just as important to us as the discussion that they have in open session. Yet we have no record of it. In his opinion it projects to our citizens a form of secrecy. He thinks it is a pretty archaic perspective to think that in 2025 we are going to have a meeting with no record. He does not think it represents the Town well and they can do better than that. If there is no other locality in the state of Virginia that is taking records of their meetings for their own internal use as a governing body, then he would be proud to be the first locality in the state of Virginia. Councilwoman Butler stated that recently they had a situation where they were going to discuss something in closed session and before they had an opportunity to discuss it, they were told that this subject had already been discussed with citizens. She expressed concern and stated that she has a problem with this. In her opinion it should have been a conversation amongst Council before it was shared with citizens. Councilman Cutler stated that he recalls the specific topic that Councilwoman Butler is referring to. He was the one that introduced the topic in closed session and before he brought it to Council he did speak to citizens about it because it was a conceptual idea. He wanted to get citizens opinion on the topic before he brought it to Council. Councilwoman Butler stated that since she has been on Council she does not remember any situation where people

have questioned them so much about going into closed sessions. She is to the point now that maybe we do not need any closed sessions and everything needs to be in open session for transparency. If that is what the rest of Council wants, she will do that; however, she does not agree with it. Councilman Brooks mentioned that during a retreat session a previous Town Council had discussed possibly having a code of conduct stating here are the things that they are expected to do and not do as council members. When he goes into a closed session he is under the assumption that it is confidential, and it stays in that room. He knows for a fact, from a previous Council, that items discussed in closed session have gotten out to the public. Councilman Brooks stated that he is with Councilwoman Butler and is upset over this kind of behavior. He is to the point that he does not see the need to have the closed sessions recorded. Councilman Cutler stated that all the actions that they are taking and the exemptions that they are using are not intended to promote secrecy. He does not think that he would intentionally speak about anything in closed session that he would not also say in open session other than those specific items that they were in closed session for. If there is some fear about something that you are discussing that would be released from closed session that is not related to the exemption, then it probably should not be discussed there. Otherwise, everything in the closed session is professional business and we all understand the exemption that it is under. The fact that it is written down or recorded makes little difference other than the capability for us to go back and review the facts. Councilwoman Butler asked if there was any further discussion on how we want to handle closed sessions. The Town Manager stated that this discussion has not directed him on what Council wants him to do. Council directed the Town Manager to put something together for Council to consider. They already have written procedures for closed sessions that they are already following. He will add something for Council to consider dealing with recording closed session/ minutes. Council will then either vote for it or not. This item will come back to October committees for further review of drafted procedure and discussion.

2. Additional item Discussed: Emails – Councilwoman Butler stated that she had responded recently to an email that was sent to all of Town Council. The email only reflected that one other Council member had responded and that was Vice Mayor Harris. Councilman Butler stated that she tries to respond to all of her emails by citizens. Her question for Council is that when they receive an email from a citizen and it is sent to all of them do we want seven responses back to that citizen or does Council want someone to respond on behalf of the Council. Councilwoman Bebermeyer stated that they are all individual people, and we have individual responses. She is not a big fan of reply all. She thinks it is okay for citizens to see that we all have different viewpoints on some topics. Councilman Bowman stated that she agrees with Councilwoman Bebermeyer but suggested that the last line in the response should include a disclaimer that says “I am one council member, and this is

my individual opinion, and I am not speaking on behalf of the entire Council". We should all do that. Councilwoman Butler stated that she is not of reply all either. Interim Town Attorney stated that in his opinion as the local government attorney is also not to use reply all and he says this because of FOIA. If you get in an email exchange and there is more than two Council members FOIA could consider this a meeting. This would be based on how quickly Council members are responding. Is it becoming more of a conversation than asynchronous series of emails. The Attorney also mentioned that any individual response for Council is an individual response. The town council only speaks through a motion passed by a majority of the body. Councilwoman Butler thanked the Attorney for this information.

Meeting Adjourned at 6:22 p.m.

Town of Smithfield

Memorandum

September 22, 2025

TO: The Honorable Mayor and Town Council

FROM: Michael Stallings, Town Manager

SUBJECT: Town Code Update – Utilities

Attached you will find a redlined copy of Chapter 82 of the Town Code. This section pertains to Utilities.

Each year with the adoption of the Town's budget, the Council sets water and sewer usage and connection fees. To streamline the ordinance, we are recommending changes to better organize the code, as well as some additional changes to reflect the current practices within the Town's utilities.

Section 82-75 (e) was removed as it dealt with the expansion of the sewer system that was conducted back in 1994. References were added to the Town's Design Standards in several places throughout Section 82.

There are no recommended rate adjustments in these changes. All rates remain the same as adopted with the FY2025-26 budget.

ORDINANCE

An Ordinance Amending Chapter 82 Of The Town Code for the Town Of Smithfield, Virginia

WHEREAS, Chapter 82 of Code of the Town of Smithfield, Virginia governs utility services; and,

WHEREAS, modifications to this Chapter are in order to provide consistency with practice and throughout the Ordinance.

NOW, THEREFORE BE IT ORDAINED by the Council of the Town of Smithfield that Chapter 82 of the Town Code shall be amended as follows:

Section 1:

ARTICLE I. IN GENERAL

Secs. 82-1—82-30. Reserved.

ARTICLE II. WATER SUPPLY[1]

Sec. 82-31. Connections, ~~and~~ availability, and usage fees.

(a) A connection fee of $660.00 and an availability fee of $4,900 shall be charged for residential connections to water mains. Residential connections larger than 5/8" shall be billed in accordance with the schedule in section (b).

(b) The following connection and availability fees shall be charged for connection of commercial or industrial structures to water mains:

Water Meter Size (inches)	Connection Fee	Availability Fee
⅝	$660.00	$4,900
¾	700.00	7,400
1	1,200.00	12,300
1½	2,000.00	21,500
2	4,000.00	39,200
3	8,000.00	78,400
4	14,000.00	122,500
6	31,000.00	245,000

Sewer connection and availability fees, to be paid by the owner upon application for connection, shall be as follows:

Water Meter Size (inches)	Connection Fee	Availability Fee
⅝	$1,580.00	$5,400
¾	2,250.00	7,600
1	4,000.00	12,000
1½	8,000.00	20,300
2	15,000.00	36,200
3	35,000.00	71,400
4	62,000.00	111,000
6	139,000.00	221,000

(c) The following service charges for water shall be charged by the town:

(1) *For service rendered within corporate limits:* The bimonthly rate for water customers shall be $11.47, plus $8.50 per 1,000 gallons for all water used during the bimonthly billing period.

(2) *For service rendered outside corporate limits:* The bimonthly rate for water customers shall be $11.47, plus $9.35 per 1,000 gallons for all water used during the bimonthly billing period.

(d) The following service charges for sewer shall be charged by the town:

(1) *For service rendered within corporate limits:* The bimonthly rate for sewer customers shall be $6.00 per 1,000 gallons for all sewer used during the bimonthly billing period in addition to the $18.62 sewer compliance fee.

(2) *For service rendered outside corporate limits:* The bimonthly rate for water customers shall be $6.60 per 1,000 gallons for all sewer used during the bimonthly billing period in addition to the $18.62 sewer compliance fee.

(c) Upon payment of the connection charge and availability fee, the town will authorize the contractor to connect to the existing main under town inspection, and after town approval, provide water service to the property. The cost of tapping the main and of the meter, meter set, meter box, corporation stop, line setter and pipe from the main to the meter will be at the owner's/contractor's/developer's expense.

(d) Connections will not be made to town water mains or service lines by persons other than town employees or the town's approved agent.

Sec. 82-32. Maintenance of lines from main to property line and/ or meter.

The maintenance of water lines, from the main to the property line and / or meter, shall be at the town's expense.

Sec. 82-33. Service charges—Generally.

~~(a) The following service charges for water shall be charged by the town:~~

~~(1) *For service rendered within corporate limits:* The bimonthly rate for water customers shall be $11.47, plus $8.50 per 1,000 gallons for all water used during the bimonthly billing period.~~

~~(2) *For service rendered outside corporate limits:* The bimonthly rate for water customers shall be $11.47, plus $9.35 per 1,000 gallons for all water used during the bimonthly billing period.~~

(b) Customer shall pay an application fee of $60.00 to establish a new account with the town. Contractors shall pay an application fee of $25.00 for an account during new construction. A fee of $28.00 shall be paid to transfer water service from one premises to another within the town.

(c) Water customers shall be billed based on usage. New accounts activated in the middle of the billing cycle may be billed in excess of the bi-monthly amount on the first bill if previous occupant has usage that must be billed.

(d) A customer whose water service is discontinued before the end of the billing period shall pay based on usage.

(e) Customers shall be billed on the first day of every other month for bi-monthly water service for the gallons used during the prior bi-monthly billing period.

(f) Where more than one occupant or tenant is served through a water meter, such as in apartments, multifamily dwellings or office buildings, a single water service charge for each use or unit will be billed, either to the owner or his agent or to any one tenant who assumes responsibility for the whole account.

(g) All water bills shall be payable, in full, on the date specified on the bill.

(h) Customers applying for water service shall complete an application and execute a water service contract, in a form prepared and approved by the town attorney, prior to initiation of water service. A separate application and service contract shall be required for each new account.

~~(i) The following service charges for sewer shall be charged by the town:~~

~~(1) *For service rendered within corporate limits:* The bimonthly rate for sewer customers shall be $6.00 per 1,000 gallons for all sewer used during the bimonthly billing period in addition to the $18.62 sewer compliance fee.~~

~~(2) *For service rendered outside corporate limits:* The bimonthly rate for water customers shall be $6.60 per 1,000 gallons for all sewer used during the bimonthly billing period in addition to the $18.62 sewer compliance fee.~~

Sec. 82-34. Same—Credit for vacant property.

No water customer will be allowed credit for vacant property unless the owner thereof notifies the town manager or the town treasurer, in writing, within ten days from the date of the

beginning of such vacancy. In case of vacancy and notice, the water will be cut off by a representative of the town and may not be cut back on until all delinquent accounts and the cut-on charge prescribed by section 82-36 have been paid.

Sec. 82-35. Cutting off water for repairs, extensions.

The town reserves the right, at any time, to shut off the water in the mains, distribution lines and services, for the purpose of repairing or making connections or extensions or for any other purpose that may be deemed necessary. If practicable, due notice will be given.

Sec. 82-36. Discontinuance of service.

(a) Water service may be discontinued for any of the following reasons:

(1) For nonpayment of a bill for such service.

(2) For permitting the use of water through a pipe to any property other than that described in the application for service.

(3) For willful waste of water through defective pipes or fixtures or otherwise.

(4) For violation of any rule of the town relating to water service.

(b) Water service discontinued pursuant to this section shall not be reinstated until all delinquent water and sewer bills have been paid or put on a payment plan. Services that have been discontinued will be assessed a $50.00 service charge, and this must be paid before reinstatement. Payment plans: one-half of the total bill must be paid up front, the remaining one-half will be put on the payment plan.

Sec. 82-37. Right of entry to inspect connections and outlets, enforce rules and disconnect service.

Any representative of the town, or its designated agent, may, at all proper and reasonable times, enter upon the premises of a water customer for the purpose of inspecting the water connections, services, outlets and the like, enforcing the rules of the town and protecting its interests, including the disconnection of any water service.

Sec. 82-38. Regulation of cross-connection control and backflow prevention for waterworks.

(a) The town hereby adopts by reference section 6.00, relating to cross-connection and backflow prevention control in waterworks of the Commonwealth of Virginia's Waterworks Regulations, and as these regulations may be amended or revised from time to time, the text of which is incorporated herein by reference.

(b) The town hereby adopts the revised, "Program for Cross-Connection Control and Backflow Prevention", dated October 6, 2009, the text of which is incorporated herein by reference.

Sec. 82-39. Water conservation and water supply emergency.

(a) *Purpose.* During the continued existence of climatic, hydrological and other extraordinary conditions, the protection of the health, safety and welfare of the residents of the County of Isle of Wight and the other customers served by the county water system may require that certain uses of water, nonessential to public health, safety and welfare, be reduced, restricted or curtailed; and as the shortage of potable water may become increasingly more critical, conservation measures to further reduce consumption or curtail essential water use may be required.

(b) *Procedures.*

(1) The town council finds that when there exists an immediate potential for a shortage of potable water in the Town of Smithfield water system, increasingly more restrictive conservation measures may be required to prevent a crucial water shortage;

(2) The town manager is hereby directed to implement conservation measures at such times by ordering the restricted use or absolute curtailment of the use of water for certain nonessential purposes for the duration of the water shortage in the manner hereinafter set out. In exercising his discretionary authority and making the determinations set forth herein, the town manager shall give due consideration to water levels; available/usable storage on hand; drawdown rates; the projected supply capability in water sources available to the system; system purification and pumping capacity; daily water consumption and consumption projections of the system's customers; prevailing and forecasted weather conditions; fire service requirements; pipeline conditions including breakage, stoppages and leaks; supplementary source data; estimates of minimum essential supplies to preserve public health and safety; and such other data pertinent to the past, current and projected water demands;

(3) The provisions of this article, or regulations promulgated hereunder by the town manager which are hereby authorized, shall not apply to any governmental activity, institution, business or industry which shall be declared by the town manager, upon a proper showing, to be necessary for the public health, safety and welfare, or the prevention of severe economic hardship or the substantial loss of employment;

(4) Upon a determination by the town manager of the existence of the following conditions, the town manager shall take the following actions:

a. *Condition 1:* When moderate but limited supplies of water are available, the town manager shall, through appropriate means, call upon the general population to employ prudent restraint in water usage, and to conserve water voluntarily by whatever methods available.

b. *Condition 2:* When very limited supplies of water are available, the town manager shall order curtailment of less essential usage of water, including, but not limited to one or more of the following:

1. The watering of shrubbery, trees, lawns, grass, plants or any other vegetation, except indoor plantings, greenhouse or nursery stocks, and except watering by commercial nurseries of freshly planted plants upon planting and once a week, for five weeks following planting;

2. The washing of automobiles, trucks, trailers, boats, airplanes, or any other type of mobile equipment, excepting in facilities operating with a water recycling system approved by the town manager provided, however, that any facility operating with a water recycling system shall permanently display in public view a notice approved by the town manager stating that such recycling system is in operation. In lieu of the provisions hereof, public utilities may curtail the hours of operation of commercial enterprises offering such services in washing their own equipment;

3. The washing of streets, driveways, parking lots, service station aprons, office buildings, exteriors of homes or apartments, or other outdoor surfaces;

4. The operation of any ornamental fountain or other structure requiring a similar use of water;

5. The filling of swimming and/or wading pools, or the refilling of swimming and/or wading pools that were drained after the effective date of the town manager's order;

6. The use of water from fire hydrants for any purpose other than fire suppression or other public emergency.

c. *Condition 3:* When critically limited supplies of water are available, the town manager shall institute mandatory reductions to each customer as follows:

1. Industrial, institutional, commercial, governmental, wholesale, and all other nonresidential customers shall be allotted a percentage reduction based on their average monthly and/or previous bimonthly consumption;

2. Individual residential customers shall be limited to a specific volume or percentage reduction of water per quarter;

3. If the allotted monthly and/or bimonthly water usage is exceeded, the customer shall be charged $10.00, for every 100 gallons of water consumed above the allotted volume. Where prior consumption data is not available, public utilities shall estimate allocations based on the data available from similar activities of equal intensity.

d. *Condition 4:* When only crucial supplies of water are available, the mayor shall restrict the use of water to purposes which are absolutely essential to life, health and safety.

(c) *Written report required.* The determination of conditions 2, 3 and 4 by the town manager shall be accompanied by a written report, which shall set out criteria utilized and data relied

upon in making such determination including a narrative summary supporting the determination. Each report shall be promptly filed with the town clerk, who shall make the same available for public inspection. The town manager shall forthwith transmit a copy of each report to the town council.

(d) *Penalties for noncompliance.*

(1) Any person who shall violate any provision of this article, or any of the conservation regulations promulgated by the town manager pursuant thereto, shall, upon conviction thereof, in addition to additional charges and/or other actions set forth herein, be fined not more than $500.00. Each act, or each day's continuation of a violation, shall be considered a separate offense;

(2) In addition to the foregoing, town manager may suspend water service to any person violating the provisions of this article or the regulations promulgated hereunder. If such water service is terminated, the person shall pay a reconnection fee of $50.00, plus all outstanding fines and fees before service will be restored.

(e) *Notice of cessation of emergency.* The town manager shall notify the town council when the resource shortage is over and the emergency situation no longer exists.

(f) *Water conversation and management plan.*

WATER CONSERVATION AND MANAGEMENT PLAN
TOWN OF SMITHFIELD, VIRGINIA

INTRODUCTION

Need for Conservation

(1) Water conservation involves both an increase in efficiency of water use and a reduction of water losses. The net result is a decrease in demand for treated water that can defer development of new resources and reduce the cost of future water service. Each gallon of water conserved is one less requiring storage, treatment and distribution. It may also represent one less gallon that has to be heated for washing or bathing, thus saving energy costs, or that must pass through a wastewater conveyance system and treatment before it is returned to the environment.

(2) Conservation is an important complement to new supply sources. In some cases, conservation may eliminate the need for new sources of supply. Fresh water, like other natural resources, is a limited commodity that must be managed wisely to preserve the well being of future generations. Efforts to conserve existing supplies, and efficient

allocation of water resources are important during each stage of the water supply planning process.

(3) The Town of Smithfield Public Utilities recognizes the need to conserve and effectively manage its water resources. Only by optimizing water use efficiency and reducing water loss can the town satisfy its projected water demands over the next five to ten years. While the search for additional long-term supplies must continue, every effort should be made to efficiently utilize currently available supplies.

Regulatory Requirements

The Groundwater Management Act of 1992 (House Bill 488) was approved in April 1992. It requires a Groundwater Withdrawal Permit (GWP) for certain groundwater withdrawals within declared Groundwater Management Areas (GMAs). Groundwater Withdrawal Regulation 9 VAC 25-610-10 et seq., requires that applications for new GWPs within GMAs include a water conservation plan approved by the Virginia Department of Environmental Quality, Division of Water (DOW). An approved conservation program must include:

- Use of water-saving plumbing and processes including, where appropriate, the use of water-saving fixtures in new and renovated plumbing as provided under the Uniform Statewide Building Code (USBC).
- A water loss reduction program.
- A water use education program.
- An evaluation of potential water reuse options.
- Requirements for mandatory use reductions during water shortage emergencies declared by the local governing body or the Director of DEQ, including, where appropriate, ordinances prohibiting the waste of water generally and requirements for mandatory water use restrictions, with penalties during water shortage emergencies.

Plan Objectives

(1) The primary objectives of this Water Conservation and Management Plan (the Plan) are to provide a documented, effective conservation strategy designed to reduce demand within the Town of Smithfield, and to demonstrate compliance with the Groundwater Management Act of 1992. This Plan will provide methods by which water use efficiency can be increased, as well as procedures to guide the town and its customers through water supply emergencies. Updates of this Plan are anticipated to be performed on an annual basis to document accomplishments and changes in individual conservation programs. A copy of the annual updates will be provided to the Virginia Department of Environmental Quality (VDEQ) upon request.

(2) Section 2.0 of this plan describes the use of water-saving plumbing and processes within the service area. Water loss reduction, economic incentives, water use education, and water reuse are discussed in Sections 3.0 through 6.0. The final section of this report describes the Use Restrictions Plan for the Town of Smithfield.

WATER-SAVING PLUMBING AND PROCESSES

Uniform Statewide Building Code (USBC)

(1) The Building Officials and Code Administrators (BOCA) organization is a nonprofit organization which develops a series of performance-oriented model codes (BOCA, 1990). These codes were adopted by the Commonwealth of Virginia as part of the Uniform Statewide Building Code (USBC) (DHCD, 1987). These codes directly specify the use of water conservation fixtures in commercial and residential applications.

(2) The USBC applies to all new construction and some remodeling of existing structures. The USBC requires that:

a. When reconstruction, renovation, or repair of existing buildings is undertaken, existing materials and equipment may be replaced with materials and equipment of similar kind or replaced with greater capacity equipment in the same location when not considered a hazard; however, when new systems, materials, and equipment that were not part of the original existing building are added, the new systems, materials, and equipment shall be subject to the edition of the USBC in effect at the time of their installation. Existing parts of such buildings not being reconstructed, renovated, or repaired need not be brought into compliance with the current edition of the USBC.

(3) The International Plumbing Code (IPC) sets maximum flow standards (Section 605.4) for a variety of fixtures and appliances. These standards are presented in the following table:

Plumbing Fixture or Fixture Fitting	Maximum Flow Rate or Quantity[b]
Water Closet	1.6 gallons per flushing cycle
Urinal	1.0 gallon per flushing cycle
Shower head[a]	2.5 gpm at 80 psi
Lavatory, private	2.2 gpm at 60 psi
Lavatory, public	0.5 gpm at 60 psi
Lavatory, public, metering or self-closing	0.25 gallon per metering cycle
Sink faucet	2.2 gpm at 60 psi

For SI: 1 gallon = 3.785L, 1 gallon per minute = 3.785 L/m, 1 pound per square inch = 6.895kPa

[a] A hand-held shower spray is a shower head.

[b] Consumption tolerances shall be determined from referenced standards.

(4) The current standards set a maximum limit of 2.5 gallons per minute (gpm) at 80 pounds per square inch (psi) for showers and private lavatories. Water closets are limited to 1.6 gallons per flushing cycle, and urinals are limited to 1.0 gallons per

cycle. In addition, lavatories in public facilities are limited to 0.5 gpm, for those with standard valve or spring faucets, and 0.25 gallons per cycle for self-closing metering valves (IPC, 1996).

(5) The USBC in Virginia was adopted from the IPC. States are permitted to develop plumbing codes that implement stricter measures than those imposed by the National Plumbing Code. However, localities in Virginia must obtain State authorization to develop a stricter code.

Compliance with USBC

Isle of Wight County currently enforces the 2012 regulations with the 2015 regulations to be adopted in September 2018. The County and Town will also evaluate incentive programs to encourage existing households to retrofit their homes with low-flow devices. An additional requirement will apply to car washes. Effective January 1999, all car washes must be equipped with an approved water recycling system.

WATER LOSS REDUCTION PROGRAM

Water Loss Audit

At the beginning of each fiscal year (July 1), a water loss audit will be conducted by the Town of Smithfield Public Utilities to determine the volume and nature of lost and unaccounted-for water within the town's water supply systems. The audit will include both the town's distribution system and the County-operated systems connected to the town's system. The purpose of this audit is to identify sources of demand that would normally escape detection by the metering system. This type of demand includes:

(1) *Fire Fighting.* The Smithfield Volunteer Fire Department will submit an estimate of all water used on a monthly basis, including water used for fire fighting and for hydrant flushing.

(2) *Main Flushing.* All main flushing performed by Public Utilities will require the submittal of a water consumption estimate.

(3) *Theft.* Any observed theft will be reported to Public Utilities, and appropriate action will be taken. An estimate of the volume of water stolen will be submitted to Public Utilities.

(4) *Main Breaks.* All known water main break will be repaired within 48 hours. Further, all main breaks will require reporting by Public Utilities of the estimated volume of water lost.

(5) *Tank Drainage.* All draining of storage tanks in the main distribution system will be reported.

(6) *Leaks.* Upon completion of the first water loss audit, Public Utilities will develop a leak detection program, which will have as its goal the complete survey of all distribution pipes and mains within the town, to be phased in over the next five years.

(7) *Meter Errors.* The town will replace meters at a rate such that a complete town-wide meter turnover takes place every fifteen years, which is the typical warranty period for water meters. The size of meters requested by commercial and industrial customers will be evaluated, and the developer will be consulted to help determine the appropriate meter size for a particular site based on water use and anticipated demand. Preventing the installation of oversized meters minimizes unwarranted waste of water.

(8) *Equipment Calibration.* All meters at the well heads will be calibrated on a annual basis. There will be service to check and replace inaccurate meters. Large customer meters that are accessible will be field calibrated yearly. An ongoing maintenance program will be implemented to locate and repair plant pipe leaks at the water treatment facilities.

All forms for reporting leaks and unaccounted-for water loss will be maintained by Town of Smithfield Public Utilities. These forms will be reviewed by Public Utilities personnel on a monthly basis so that measures can be taken to reduce unaccounted-for water loss.

Leak Repair Program

The owner of any residential unit, commercial establishment, or industrial establishment who is found, based on the water loss audit or by other methods, to be an excessive user of water due to leakage from water lines or plumbing fixtures on the premises will be notified by Public Utilities. These owners will be required to repair and stop such leakage within a reasonable period of time, or will be subject to financial penalties.

ECONOMIC INCENTIVES PROGRAM

Existing Program Elements

(1) Normal residential bills are currently issued bimonthly by Public Utilities through the Hampton Roads Utility Billing Service (HRUBS). Bimonthly billing allows more frequent and timely distribution of water conservation educational brochures to customers. It also helps customers become aware of leaks more quickly and recognize the cost of high seasonal water use. In addition, bimonthly billing is useful in providing feedback on customer conservation efforts.

(2) The Town of Smithfield does not grant any sewer credit for water used through sub-meters or irrigation systems and the Hampton Roads Sanitation District (HRSD) however in the event of a pool repair, HRSD will allow the customer to provide repair documentation to include their HRSD account number and the dates of the pool fill for review for possible credit. The town's intent with this decision is to promote water conservation.

Planned Program Elements

The Town of Smithfield Public Utilities will analyze its water rates annually. Rate setting goals will be as follows:

- Perpetuating Public Utilities self-sufficiency while maintaining the highest water quality standards.
- Recommending appropriate rates for water usage and special service charges that are equitable to all customers.
- Continuing a comprehensive water conservation policy by using public information and charges that will discourage nonessential use of water.

WATER USE EDUCATION PROGRAM

Planned Program Elements

Public education concerning the importance of water conservation is a key factor in reducing excessive water use. Education programs should include information about how drinking water is produced and why it is important to conserve. Providing consumers with a better understanding of the reasons conservation is necessary allows them to better appreciate and participate in conservation activities.

The public education program planned by the Town of Smithfield will include the following components:

(1) *Billing Notices.* Notices may be included with water bills. The notices will include information concerning water conservation techniques and leak detection strategies.

(2) *Brochures.* Water conservation brochures and pamphlets will be made available to the public at Town of Smithfield and other information made available through the Hampton Roads Water Efficiency Team (HRWET) government buildings and at exhibits set up during public events.

(3) *Video Tapes.* A variety of water conservation videotapes will be available from Public Utilities free of charge. They will be available to the general public, to schools for classroom instruction, and for public meetings. The videos will also be provided to cable television companies for play on government channels.

(4) *Water Conservation Hot Line.* A telephone number will be available through which residents can have their conservation questions answered by a knowledgeable town employee. In addition, requests for information on various water conservation topics, speakers, or other personal contacts will be coordinated through this telephone line.

(5) *News Releases.* News releases to the print media, radio, and television will keep the public informed. This process will be used not only during emergencies but also on a regular basis in the town's twice yearly newsletter to keep the public informed about conservation-related issues.

(6) *School Education.* Programs will be available for presentation by town staff at local schools. Programs will be targeted to specific age groups. Assistance will be made available for teachers who wish to develop their own water awareness programs.

(7) *Speakers.* Town staff will be available for speaking engagements or personal contacts. These individuals will work with local clubs and organizations to develop public awareness concerning the need to conserve water, along with other topics related to the water supply industry.

(8) Support of groundwater wells not exceeding 100 feet in depth for irrigation of lawns and landscaping by residents, businesses and industries within the service area. The use of well water for these activities helps to minimize the use of potable drinking water for uses which do not require it.

WATER REUSE OPTIONS

Water reuse may be either direct or indirect, and for potable or non-potable uses. Direct reuse involves introducing highly treated, reclaimed water directly to a potable water distribution system, while indirect reuse involves returning treated wastewater to the environment for dilution and natural purification, and subsequent withdrawal for water supply. Potable reuse [which is referred to as recycle by the Virginia Department of Health (VDH)] is the specific use of treated wastewater as a drinking water source.

Indirect potable reuse occurs widely in the United States each time treated wastewater effluent is discharged to a natural waterway upstream of a water supply intake. In most cases, it is unintentional. Past experience indicates that indirect reuse was acceptable because the application of water and wastewater treatment techniques, the near-universal use of some form of disinfectant, and the natural dilution and purification that occurs in natural waterways adequately treated the water. However, in recent years the effectiveness of these measures in protection against viral and trace organic contaminants has come under increasing scrutiny. Unplanned and unintentional reuse of this type is classified as uncontrolled potable reuse, and represents the overwhelming majority of cases of indirect potable reuse.

Planned Program Elements

(1) *Potable Reuse.* In 1992, the Hampton Roads Sanitation District (HRSD) suggested to Hampton Roads area communities the delivery of reclaimed water to supplement drinking water reservoir supplies. In response to HRSD's presentation of a reuse concept proposal, and resulting concerns expressed by water purveyors in southeastern Virginia, the Virginia Department of Health prepared a Recycle Issues paper dated November 24, 1992. The VDH stated its opposition to both direct and indirect potable reuse projects when naturally occurring sources of water are available. The VDH insists that the highest quality, best source of water be selected when alternatives are available. The VDH also listed several other requirements that would apply to a potable reuse project, pertaining to independent monitoring, dilution, and liability, removal of biological hazards and toxics, and utilization of natural purification processes. Given the current position of the VDH, reuse of wastewater treatment plant effluent for potable purposes is not deemed a practicable reuse alternative to conserve water.

(2) *Non-potable Reuse.* Many industrial water demands are for non-potable uses. One method of reducing demands on potable water sources is to supply non-potable demands using treated wastewater plant effluent. Detailed regulations for implementation of a water reuse project do not exist in the Commonwealth of Virginia. Permitting of a water reuse project would most likely involve both the VDH and the VDEQ. In addition, a Virginia Pollution Discharge Elimination System (VPDES) Permit would be required for discharge to state waters if the flow is not contaminated during its use; if it is contaminated, the approval of VDH and/or VDEQ would be required.

(3) Several states, including California, Arizona, Texas, Utah and Florida, have developed regulations and statutes that specify the required minimum quality of reclaimed water, depending on the intended use of the water. In general, the requirements become more stringent as the likelihood of public contact increases. In California, if treated reclaimed water for industrial use meets the state's standards for full body contact recreation, workers are not required to avoid contact with the water or wear protective clothing. However, precautions are required should the treated reclaimed water fail to meet these criteria. With the approval of state and local health departments, reclaimed water can be used for soil compaction, dust control, and other construction purposes.

(4) As mentioned previously, recycling will be required in all new car washes, and existing car washes will be required to be retrofitted. In addition, required recycling systems are being considered for all new construction and all repair or replacement of continuous flow devices, including any water connector, device, or appliance which requires a continuous flow of 5 gallons per minute or more.

(5) Typically, non-potable markets for reused water include irrigation uses, industrial uses, and creation of recreational lakes. Many factors affect the market for reused water, including:

- Size and location of demand.
- Water quality requirements.
- Degree of treatment required for discharge.
- Cost of reclaimed water.
- Cost and availability of alternative supplies.

(6) It is likely that additional reuse methodologies will be evaluated in the future. Industries within the service area that use large quantities of water are continually evaluating their processes, and looking for ways to lower production costs. For these industries, water represents one of their greatest operating expenses. It is in the best interest of these industries to stay abreast of the latest reuse technologies, and employ them whenever feasible.

Future Program Elements

The Town of Smithfield Department of Planning, Engineering, and Public Works (Public Utilities) will evaluate its water conservation programs on a continual basis. As part of this process, new water reuse technologies will be researched and evaluated to determine their applicability in the service area. Continued communication with large water users will create possibilities for more efficient use of water resources.

WATER USE RESTRICTIONS

Emergency Use Restriction Plan

(1) Emergency situations, such as severe drought, may threaten the regional water supply. During these times, the implementation of use restrictions is necessary to protect the water supply from further depletion. Use restrictions are considered a form of conservation because they result in demand reductions, but they are implemented only during periods when the regional water supply is threatened. Such restrictions are reserved as contingency measures for emergency situations, and are more restrictive than normal conservation measures that are used continually to reduce demands. Use restrictions are commonly implemented using a tiered approach, and are activated in relation to specific storage levels of a system's raw water supply.

(2) Isle of Wight County and the Town of Smithfield have developed a four-tiered use restriction plan. Chapter 82, Article II, Section 82-39 in the Town Code of the Town of Smithfield presents the procedures used in detail (see Appendix to this section). When the Town Council finds that the immediate potential for a water shortage exists, the Town Manager is authorized to implement conservation measures. The four tiers of use restrictions are as follows:

- *Tier 1 - Voluntary Use Restrictions:* Voluntary Use Restrictions are employed as a first stage in reducing water demands during a potential water shortage. These restrictions are encouraged by the water utility, but compliance is not required. When Tier 1 is in effect, the public will be asked to employ restraint in water usage and to conserve water voluntarily by whatever methods available.
- *Tier 2 - Mandatory Use Restrictions:* Mandatory Use Restrictions are put into effect when very limited supplies of water are available. These restrictions focus on the elimination of outdoor, nonessential uses of water. In Tier 2, compliance is mandated by a local ordinance, and the restrictions are enforced with penalties for violations.
- *Tier 3 - Mandatory Reductions:* Mandatory reductions in water use will be used to further reduce water usage under the most severe drought conditions. Non-residential users will be allotted a percentage reduction based on their average monthly and/or previous bimonthly consumption. Residential customers will be limited to a specific volume or percentage reduction of water per quarter. A surcharge above the allotted volume will be applied.

- *Tier 4 - Water Rationing:* When only crucial supplies of water are available, the Mayor or the Director of DEQ will restrict water use to the purposes that are essential to life, health and safety.

(3) These and other restrictions may also be implemented whenever requirements for mandatory water use restrictions during water shortage emergencies are declared by the Director of the Department of Environmental Quality (DEQ).

(4) When determining the level of use restriction to be implemented, the Town Manager should consider water levels, available storage, drawdown rates, projected supply capability, system purification and pumping capacity, daily and projected water consumption, prevailing and forecasted weather conditions, fire service requirements, pipeline conditions, supplementary source data, estimates of minimum essential supplies to preserve public health and safety, and other pertinent data. The restrictions do not apply to any governmental activity, institution, business, or industry which is declared by the Town Manager to be necessary for public health, safety and welfare, or on which the restrictions would place severe economic hardship or cause substantial loss of employment.

Enforcement

No enforcement or penalties are involved with Tier 1 because compliance with this tier is strictly voluntary. A violation of Tiers 2, 3 or 4 will result in a fine not to exceed five hundred dollars, in addition to any additional charges that apply to the violation. Each day of a continued violation will be considered a separate offense. In addition, the Town Manager can suspend water service to any person violating the use restrictions. If water service is terminated, a reconnection fee plus all outstanding fees and fines must be paid before service is restored.

SUMMARY OF CONSERVATION PLAN

The Town of Smithfield Water Conservation Management Plan will aid the town in meeting its water supply needs over the next decade. The Plan includes a variety of elements to be implemented on a regular basis. Water saving plumbing, as described in the USBC, will be required. Economic incentives will encourage conservation. Annual water loss audits and a leak reduction program will reduce water loss. An education program will help the public to understand the importance of conservation and methods by which conservation can be achieved. Evaluation of the potential for reuse of treated wastewater, especially for industry, will be completed for all new facilities. In addition, a four-tiered approach to reducing water consumption during emergency conditions will protect the town's water supply.

A combination of the water conservation measures to be implemented under normal conditions and the emergency use restrictions described in this document will reduce finished water demand. Through a combination of new supply sources and water conservation, the town will be able to supply predicted water demands into the future.

Sec. 82-40. Pool fill/refill discount.

The town shall give a credit on the sewer side of utility billing only for filling and/or refilling of pools if the following criteria are met:

(1) Issuance of a zoning permit must be verified before credit is considered.

(2) Customer contacts the water and sewer department and gives number of gallons used to fill or refill the pool. This amount will be verified by number of gallons used over the average usage. If verified and approved by water and sewer department credit will be given for the full overage amount.

(3) One such credit per year per property is allowed.

(4) If 2,500 gallons or less are used to fill or refill a pool, there will be no adjustment made to the customers bill.

Sec. 82-41. Water leak credit.

The town shall give a credit for water usage during a situation involving a leak at a rate of one-half off the average water gallons used over the average of the last three months or based on seasonal usage to be determined by the water and sewer department. The following criteria would have to be met:

(1) A receipt showing payment for repairs to the piping would need to be submitted.

(2) One credit per year per property. Any customer requesting more credit than that would go before the water and sewer committee for review.

Sec. 82-42. Customer voluntarily disconnecting water service.

(a) Any customer voluntarily requesting disconnection of water service shall appear and sign disconnect forms when moving or for any other reason.

(b) Person requesting disconnection must be the same name as on the account.

Sec. 82-43. Unauthorized connections to water system.

(a) It shall be unlawful for any person, except those duly authorized by the department of public utilities, to uncover, tap or make any connection with any town water lines.

(b) It shall be unlawful for any person in any manner to damage, obstruct or tamper with any part of the town's water system, including any pipes, apparatus, meters, valves, tools or fixtures. No person, except for duly authorized agents of the town, shall uncover any public water lines, nor operate any public fire hydrant, without first obtaining express written approval from the department of public utilities. Only employees of the public utilities department shall operate any valves connected with its water systems. Any person causing

damage or obstruction to the town's water system shall be liable to the town for all costs associated with necessary repairs.

(c) Any unauthorized equipment, meters, valves, etc. connected to the town's water system may be confiscated.

(d) A violation of any provision of this article shall constitute a class 1 misdemeanor. Each day's continuance of such violation shall constitute a separate offense. The penalties so imposed by law, plus reasonable attorney's fees, court costs, other expenses of litigation and the cost of repairing any damage to the town's water system are recoverable by the town.

Sec. 82-44. Bulk sale of water to parties not connected to the town's water system.

(a) A service fee of $25.00 shall be charged to any party not connected to the town's water system and desiring to purchase water in bulk from the town's water system. This service fee shall be charged each time that any party makes a bulk water purchase. In addition to the service fee, there shall be a charge of $5.00 per 1,000 gallons, or any part thereof. The same fees shall apply to any party who is already connected to the town's water system but chooses to make a bulk water purchase as a convenience.

(b) Bulk purchases of water shall be made at such location as may be designated by the town's public utilities department. Only employees of the public utilities department shall operate any valves connected with the town's water system in connection with a bulk purchase of water.

Sec. 82-45. Use of public water system mandatory.

Where a public water supply is available in the town it shall be unlawful to connect a residential or commercial structure to a private well.

Secs. 82-46—82-70. Reserved.

ARTICLE III. WASTEWATER DISCHARGE; SEWER USE[2]

Sec. 82-71. Definitions.

The following words, terms and phrases, when used in this article, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning:

BOD, denoting biochemical oxygen demand, means the laboratory determination of the quantity of oxygen by weight, expressed in milligrams per liter, utilized in the biochemical oxidation of organic matter under standard laboratory conditions of incubation for five days at a temperature of 20 degrees Celsius.

2

Building drain means that part of the lowest horizontal piping of a building drainage system which receives the discharge from soil, waste and other drainage pipes inside the walls of the buildings and conveys such drainage to the building sewer.

Building drainage system means that part of the plumbing system which receives, conveys and removes liquid and water-carried wastes to a building drain.

Building sewer means a sewer conveying wastewater from the premises of a user to a public sewer.

COD, denoting chemical oxygen demand, means the laboratory determination of the quantity of oxygen by weight, expressed in milligrams per liter, susceptible to oxidation by a strong chemical oxidant.

Combined sewer means a sewer receiving combined waste.

Combined waste means a wastewater containing surface water or stormwater and sewage.

Compatible pollutant means wastewater constituents which the wastewater treatment plant is designed to treat, and wastewater substances which will not inhibit the wastewater treatment processes employed nor be detrimental to the receiving stream.

Constituent means any analytically defined parameter.

Control point (control manhole) means a point of access to a course of discharge before the discharge mixes in the public sewer.

Cooling water means once-through, noncontact cooling water discharged from any system of condensation, air conditioning, cooling, refrigeration or other sources.

Domestic wastes means a combination of water-carried wastes, consisting of wash water, culinary wastes and liquid wastes containing only human excreta and similar matter flowing in or from a building drainage system or sewer originating from residences, business buildings, institutions and commercial establishments.

Effluent means wastewater flowing out of any facility.

Garbage means animal and vegetable wastes from the preparation, cooking and disposing of food, and from the handling, processing, storage and sale of food products and produce.

Grab sample means a sample which is taken from a waste stream on a one-time basis, with no regard to the flow in the waste stream and without consideration of time.

Holding tank waste means any waste from holding tanks such as vessels, chemical toilets, campers, trailers, septic tanks and vacuum pump tank trucks.

HRSD means Hampton Roads Sanitation District.

Incompatible pollutant means any wastewater constituent or substance which is not a compatible pollutant, as defined in this section.

Industry means any establishment which uses water in a product or generates wastewater during any period of production.

Influent means wastewater, raw or partially treated, flowing into any sewage treatment device or facilities.

Intercepting sewer means a sewer which receives dry weather flow from sanitary sewers and/or additional predetermined quantities of combined waste, and conducts such flow to a plant for treatment or disposal.

Mass emission rate means the weight of material discharged to the sewer system during a given time interval, expressed as pounds per day of a particular constituent or combination of constituents.

Maximum permissible composite concentration means the highest allowable constituent concentration, as determined by laboratory testing from representative samples collected during a minimum six-hour period of normal operation.

Natural outlet means any outlet into a watercourse, ditch, lake or other body of surface water or groundwater.

Nondomestic waste (industrial waste) means any wastewater resulting from any process of industry, manufacturing, trade or business, or from the development or recovery of any natural resource, or any mixture of such waste with water or domestic wastewater, as distinct from domestic wastewater.

Nuisance means anything which is judicially determined to be injurious to health or is indecent or offensive to the senses or an obstruction to the free use of property so as to interfere with the comfort or enjoyment of life or property or which affects at the same time an entire community or neighborhood or any considerable number of persons, although the extent of the annoyance or damage inflicted upon individuals may be unequal.

Overload means the imposition of any constituent or hydraulic loading on a treatment facility in excess of its treatment capacity.

pH means the negative base 10 logarithm of the hydrogen ion concentration, expressed as moles per liter.

Premises means any parcel of real estate, including any improvements, upon which there is a single user for the purposes of receiving, using and paying for sewer services.

Public sewer means a sewer owned and operated by the town, tributary to wastewater facilities operated by the town.

Sanitary sewer means a sewer, the specific purpose of which is to carry domestic or industrial wastes or a combination of both, and into which stormwater, surface water, groundwater, and any unpolluted waters are not intentionally passed.

Sewage means the same as wastewater, as defined.

Sewage treatment works (sewage treatment plant, wastewater treatment plant) means any arrangement of devices, facilities and structures used for receiving, processing, and treating wastewater, industrial wastes, and sludges from the sanitary or combined sewers.

Sewer means a pipe or conduit, generally closed, for carrying wastewater.

Sewerage system means all sewers, laterals or other connections or plants which connect with, or pertain to a connection with, the sewers, plants, public works, and/or projects of the town, including all town-owned facilities.

Shredded garbage means garbage shredded to such a degree that all particles will be carried freely under the flow conditions normally prevailing in public sewers, with no particle having a dimension greater than one-half inch in any direction.

Standard methods means the examination and analytical procedures set forth in the recommended standard analytical techniques prepared by the U.S. Environmental Protection Agency and published in the Federal Register and contained in the current edition of the APHA Manual which is identified as "Standard Methods."

Storm sewer means a public sewer which carries stormwaters and surface waters and drainage, and into which domestic wastewater or industrial wastes are not intentionally passed.

Stormwater means the excess water running off from the surface of a drainage area or building, during and following a period of precipitation.

Superintendent means the superintendent of the town wastewater treatment plant, or his authorized representative.

Suspended solids means the dry weight of solids, expressed as milligrams per liter, that either float on the surface of, are in suspension or are settleable in, water, wastewater or other liquids and which are largely removable by a laboratory filtration device.

To discharge means to include, to deposit, conduct, drain, emit, throw, run, allow to seep, or otherwise release or dispose of, or to allow, permit, or suffer any of these acts or omission.

Town manager means the Town Manager of the Town of Smithfield or his authorized representative.

Toxic substances means any substance, whether gaseous, liquid or solid, which, when discharged to the sewer system in sufficient quantities, interferes with any sewage treatment process, constitutes a hazard to recreation in the receiving waters of the effluent from the sewage treatment plant, poses a hazard to workers in the sewer system, constitutes a hazard to fish or animal life, or interferes with proper sludge disposal.

24-hour, flow proportionate composite sample means a sample consisting of several effluent portions collected during a 24-hour period, in which the portions of the sample are proportionate to the flow and combined to form a representative sample.

Unpolluted water means water to which no constituent has been added, either intentionally or accidentally, that would render such water unacceptable to the agency having jurisdiction thereof for disposal to storm or natural drainages or directly to surface waters.

User means any person who discharges, causes or permits the discharge of wastewater into a public sewer.

User charge means a charge levied on the users of wastewater facilities and treatment works for the cost of operation and maintenance of such facilities and works.

Waste means rejected, unutilized or superfluous substances in liquid, gaseous or solid state, resulting from domestic and nondomestic activities.

Wastewater means a combination of the water-carried waste from residences, business buildings, institutions, industrial establishments and other sources, whether treated or untreated, discharged into or permitted to enter a public sewer.

Wastewater constituents and characteristics means the chemical, physical, bacteriological and radiological parameters, including volume, flow rate and such other parameters, that serve to define, classify or measure the contents, quality, quantity and strength of wastewater.

Wastewater facilities means all facilities for collection, pumping, treating and disposing of wastewater.

Wastewater pretreatment means the treatment of wastewater before discharge into the sewerage system.

Wastewater treatment plant means the sewage treatment plant, as defined.

Watercourse means a natural or manmade channel in which a flow of water occurs, either continuously or intermittently.

Sec. 82-72. Purpose and policy.

This article sets forth policies for the administration and operation of the town's wastewater collection and treatment system, to assure that the facilities are used in the common interest of the public. The uniform requirements established in this article for wastewater discharges are intended to enable the town to comply with the water quality requirements set forth in its NPDES permit issued by the state water control board.

Sec. 82-73. Prohibited actions.

(a) *Unsanitary, objectionable deposits.* It shall be unlawful for any person to place, deposit or permit to be deposited in any unsanitary manner on public or private property within the town, or in any area under the jurisdiction of the town, any human or animal excrement, garbage or other objectionable waste.

(b) *Discharge of untreated, polluted water to storm sewer or natural outlet.* It shall be unlawful to discharge to any natural outlet or storm sewer within the town or in any area under the

jurisdiction of the town any sewage or other polluted waters, except where suitable treatment has been provided, or such discharge has been permitted by the state water control board and/or federal permit.

(c) *Use of public sewers mandatory.* Where a public sewer is available, it shall be unlawful to construct or reconstruct any privy, privy vault, septic tank, cesspool, or other facility intended or used for the disposal of sewage, except as hereinafter provided.

(d) *Suitable toilet facilities required.* The owner of any house, building or property used for human occupancy, employment, recreation or other purposes, situated within the town and abutting on any street, alley or right-of-way in which there is now located, or may in the future be located, a public sanitary sewer of the town, is hereby required, at his expense, to install suitable toilet facilities therein, and to connect such facilities directly with the proper public sewer in accordance with the provisions of this article within 90 days after date of official notice to do so. Any building beyond 200 feet from the public sewer, or constructed at such elevation that it cannot be connected by gravity to the public sewer, or which, in the opinion of the town manager, is impractical to connect to the public sewer, will not be required to so connect.

Sec. 82-74. Private sewage disposal.

(a) Where a public sanitary sewer is not available, the building sewer shall be connected to a private sewage disposal system, the type, capacity, location and layout of which shall comply with regulations of and be approved by the state department of health. No septic tank or cesspool shall be permitted to discharge to any natural outlet.

(b) The owner shall operate and maintain the private sewage disposal facilities in a sanitary manner at all times, at no expense to the town.

(c) No statement contained in this article shall be construed to interfere with any additional requirement that may be imposed by the state department of health.

Sec. 82-75. Building sewers and connections.

(a) No unauthorized person shall uncover, make any connections with or opening into, alter or disturb any public sewer or appurtenances thereof, without first obtaining a written permit from the town manager.

(b) The owner or his agent shall make application on a special form furnished by the town. The permit application shall be supplemented by any plans, specifications, or other information considered pertinent in the judgment of the town manager.

(c) All costs and expenses for the installation and connection of the building sewer shall be borne by the owner. The owner shall indemnify the town from any loss or damage that may directly or indirectly be occasioned by the installation of the building sewer, The owner shall be responsible for installing and constructing a sewer lateral to the property line when a sewer lateral is not currently present. ~~Except as provided in subsection (e) below, the~~

owner shall pay, upon application for connection, a residential connection fee of $1,580.00 and availability fee of $4,120.00; except that in the case of those users who must lift residential sewage to the public sewer, the connection fee shall be $790.00 plus the availability fee of $4,120.00. Commercial connection and availability fees shall be paid by the owner, upon application for connection, according to the schedule in subsection (d) of this section 82-31. Residential connection and availability fees shall be paid for each dwelling unit, apartment or tenant, regardless of the number served. In the case of re-subdivisions of lots previously subdivided, the owner of any such re-subdivided lot shall, in addition, pay to the town the actual cost of installing a lateral sewer from the existing main to the owner's property line.

(d) Sewer connection fees, to be paid by the owner upon application for connection, shall be as follows:

Water Meter Size (inches)	Connection Fee	Availability Fee
⅝	$1,580.00	$5,400
¾	2,250.00	7,600
1	4,000.00	12,000
1½	8,000.00	20,300
2	15,000.00	36,200
3	35,000.00	71,400
4	62,000.00	111,000
6	139,000.00	221,000

In addition to the connection and availability fees charged by the town as specified above, the Hampton Roads Sanitation District (HRSD) levies an availability fee for sewer connections.

(e) In connection with the extension of town sewer lines to Riverside Drive, Jamesview Circle and Waterview Circle, the property owners shall be subject to the same provisions and conditions as specified in subsection (c) above; except that in the case of any property located on Riverview Drive, Jamesview Circle or Waterview Circle not previously served by the town's sewerage system, the property owner of a lot on which an existing residence is located as of May 4, 1994, the effective date of the ordinance from which this subsection is derived, shall pay a residential connection fee of $500.00. The property owners of a lot on which no residence has been constructed as of such date shall pay a residential connection fee of $5,000.00. These fees for connection to the sewer line extension shall be payable as follows: for property owners of a lot on which an existing residence has been constructed as of May 4, 1994, the effective date of the ordinance from which this subsection is derived, the residential connection fee shall be paid within one year from the date that the construction of the sewer line is completed and accepted by the town. For property owners of a lot on which no residence has been constructed as of such date, the residential connection fee shall be payable within three years from the date that the construction of the sewer line is completed and accepted by the town. If not sooner paid, the $5,000.00

~~residential connection fee shall be paid in three equal annual installments of $1,500.00 each and a final installment of $500.00 payable at the time that the lateral sewer line is installed to provide sewer service to any dwelling constructed on any vacant lot. There shall be a lien upon the real estate for the payment of the residential connection fees assessed thereon prior to any other lien or encumbrance thereon, from the commencement of the year for which the residential connection fees are assessed. The lien imposed hereby shall be enforceable by all means provided by law.~~

(f) No person, while engaged in the construction of a building or otherwise, shall injure, trim, break or remove any portion of any main or lateral sewer, or "Y", or manhole, or do any injury to any building sewer previously laid; and no penalty fixed by this chapter shall prevent the town or any property owner from recovering any damages sustained by reason of such injury, by appropriate civil action or otherwise.

(g) A separate and independent building sewer shall be provided for each building; except, where ~~one~~ an accessory building can connect to the primary building as approved by Public Works. ~~stands at the rear of another on an interior lot and no private sewer is available or can be constructed to the rear building through an adjoining alley, court, yard or driveway, the building sewer from the front building may be extended to the rear building and the whole considered as one building sewer.~~

(h) Old building sewers may be used in connection with new buildings only when they are found, on examination and test by the superintendent, to meet all requirements of this chapter.

(i) The size, slope, alignment and materials of construction of a building sewer, and the methods to be used in excavating, placing of the pipe, jointing, testing and backfilling the trench, shall all conform to the requirements of the Town Design Standards, building and plumbing code or other applicable rules and regulations of the town. In the absence of code provisions or in amplification thereof, the materials and procedures set forth in appropriate specifications of the ASTM and WEF Manual of Practice No. 9 shall apply.

(j) Whenever possible, the building sewer shall be brought to the building at an elevation below the basement floor; but no deeper than 4 ½ feet. In all buildings in which any building drain is too low to permit gravity flow to the public sewer, sanitary sewage carried by such building drain shall be lifted by an approved means and discharged to the building sewer. Where basements are in existence at the time of adoption of the ordinance from which this subsection is derived and are connected to existing septic tanks, and, in the opinion of the town manager, it is impractical to connect by gravity to the public sewer, the basement building drains may continue to discharge to the septic tank until such time as there is failure of the tank or tile field, at which time the basement flow shall be lifted by approved means to the public sewer.

(k) No person shall make connection of roof downspouts, exterior foundation drains, areaway drains or other sources of surface runoff or groundwater to a building sewer or building drain which in turn is connected directly or indirectly to a public sanitary sewer.

(l) The connection of the building sewer into the public sewer shall conform to the requirements of the Town Design Standards, building and plumbing code or other applicable rules and regulations of the town or the procedures set forth in appropriate specifications of the ASTM and the WEF Manual of Practice No. 9 and in accordance with the Virginia Uniform State-wide Building Code—BOCA National Plumbing Code. All such connections shall be made gastight and watertight. A cleanout shall be installed, by the owner, ~~at the property line~~ within the utility easement.

(m) The applicant for the building sewer permit shall notify the ~~town manager~~ Public Works representative when the building sewer is ready for inspection and connection to the public sewer. The connection shall be approved by the superintendent or his representative.

(n) All excavations for building sewer installation shall be adequately guarded with barricades and lights, so as to protect the public from hazard. Streets, sidewalks, parkways and other public property disturbed in the course of the work shall be restored in a manner satisfactory to the town.

(o) Grease, oil and sand interceptors shall be provided when, in the opinion of the town manager, they are necessary for the proper handling of liquid wastes containing grease in excessive amounts, or any flammable wastes, sand or other harmful ingredients; except that such interceptors shall not be required for private living quarters or dwelling units. All interceptors shall be of a type and capacity approved by the town manager and shall be so located as to be readily and easily accessible for cleaning and inspection.

(p) In case of stoppage in the main sewer, the town shall remove the obstruction. If the stoppage occurs in a building sewer, the town will clean the building sewer from an existing cleanout at the property line and repair that portion of any defective sewer within the street right-of-way. Where no building sewer cleanout exists at the property line, the town will install a cleanout at the owner's expense.

Sec. 82-76. Prohibited discharges.

It shall be unlawful for any person to discharge or permit the discharge or infiltration into any public sewer of any of the following:

(1) Any liquid or vapor having a temperature higher than 120 degrees Fahrenheit (49 degrees Celsius) or any substance which causes the temperature of the total wastewater treatment plant influent to increase at a rate 10 degrees Fahrenheit (5 degrees Celsius) or more per hour, or a combined total increase of plant influent temperature to 100 degrees Fahrenheit (38 degrees Celsius).

(2) Any liquid containing fats, wax, grease or oils, whether emulsified or not, in excess of 300 mg/liter, or containing substances which may solidify or become viscous at temperatures between 32 degrees and 150 degrees Fahrenheit (0 degrees and 65 degrees Celsius), at the point of discharge into the system.

(3) Any explosive or flammable liquids, solids or gases in such concentrations which would cause or potentially cause an explosive, flammable or other hazardous condition. Such materials include, but are not limited to, gasoline, kerosene, naphtha, benzene, toluene, xylene, ethers, alcohols, ketones, aldehydes, peroxides, chlorates, perchlorates, bromates, carbides, hydrides and sulfides.

(4) Any substances, of such nature and quantity which, either singly or by interaction with other waste substances:

a. Cause obstruction to the flow in a sewer or damage to the wastewater facilities;

b. Reduce the biological effectiveness of, impede the proper functioning of, or otherwise hinder the performance of any wastewater treatment process;

c. Cause excessive loading or overloading of wastewater facilities or cause excessive treatment costs; or

d. Pass to the receiving waters without being effectively treated, due to the incompatibility of the substance, and cause violation of state or federal regulations.

(5) Any discharge into public sewers of harmful quantities of solid substances, including but not limited to:

a. Ashes.

b. Cinders.

c. Sand.

d. Mud.

e. Straw.

f. Shavings.

g. Metal.

h. Glass.

i. Rags.

j. Tar.

k. Plastics.

l. Wood or sawdust.

m. Unground garbage.

n. Whole blood.

o. Paunch manure.

p. Hair and fleshings.

q. Entrails.

r. Feathers.

s. Bones.

t. Slops.

u. Paint residues.

v. Bulk solids.

(6) Any garbage that has not been properly shredded to a degree that all particles can be carried freely under the flow conditions normally prevailing in public sewers. Particles greater than one-half inch in any dimension are prohibited.

(7) Any liquid having a pH lower than 6.0 or higher than 9.0 or having any property capable of causing hazard, damage or any other condition deleterious to structures, equipment, personnel, treatment processes or operation of the wastewater facilities.

(8) Any noxious or malodorous substance that is capable of causing objectionable odors, public nuisance, hazard to life, or any condition which requires unusual provisions, alteration or expense to accommodate such material.

(9) Any wastewater containing in excess of the following limitations:

	Constituent	Daily Concentration 24-Hour Composite Sample (mg/l)	Instantaneous Concentration Grab Sample (mg/l)
a.	Arsenic	0.02	0.02
b.	Barium	2.0	2.0
c.	Boron	0.05	0.1
d.	Cadmium	0.1	0.1
e.	Chlorides	250.0	500.0
f.	Chromium, trivalent	1.0	1.0
g.	Chromium, hexavalent	0.1	0.1
h.	Chemical oxygen demand	300.0	500.0
i.	Copper	0.2	0.2
j.	Cyanide	0.25	0.25
k.	Iron	1.0	2.0
l.	Lead	0.1	0.1
m.	Manganese	1.0	2.0
n.	Mercury	0.005	0.005
o.	Nickel	0.2	0.2
p.	Phenolic compounds	0.2	0.5

q.	Selenium	0.02	0.02
r.	Silver	0.1	0.1
s.	Surfactants	5.0	10.0
t.	Tin	0.2	0.2
u.	Zinc	0.2	0.2

(10) Any dilution water for the purpose of satisfying the requirements set forth herein, except when such dilution may be beneficial in the operation of the wastewater treatment plant and is approved by the superintendent.

(11) Any wastewaters at a flow rate which is excessive relative to the capacity of the treatment works and which would cause a treatment process upset and subsequent loss of treatment efficiency; or wastewaters containing such concentration or quantities of pollutants that their introduction into the treatment works over a relatively short time period (sometimes referred to as slug discharges) would cause a treatment process upset and subsequent loss of treatment efficiency.

(12) Any unpolluted stormwater, surface water, groundwater, roof runoff, interior or exterior footing or basement floor drainage, subsurface drainage, or cooling water.

Sec. 82-77. Incompatible pollutants.

The Federal Water Pollution Control Act Amendments of 1972 require industrial users discharging incompatible pollutants into publicly owned treatment works to pretreat such incompatible pollutants to the extent required by effluent limitation guidelines promulgated by the administrator of the U.S. Environmental Protection Agency, pursuant to subsections 301(b) and 307(b) of the act. Upon the promulgation of the federal categorical pretreatment standards for a particular industrial subcategory, the federal standard, if more stringent than limitations imposed under this article for sources in that subcategory, shall immediately supersede the limitations imposed under this article:

(1) If the superintendent determines that the limitations in section 82-76 may not be sufficient to protect the operation of the treatment works; or

(2) If the superintendent determines that the limitations in section 82-76 may not be sufficient to enable the treatment works to comply with water quality standards or effluent limitations specified in NPDES permit issued; or

(3) If the town manager determines that the limitations in section 82-76 do not provide the overall most cost-effective means of wastewater treatment at the treatment works, the town manager may modify these limitations in whatever manner is necessary to assure overall cost effectiveness. Such modifications shall be based on adequate supportive engineering information and shall be subject to review by federal and state agencies.

Sec. 82-78. Toxic materials.

Any liquids containing toxic materials in sufficient quantity, either singly or by interaction with other wastes, which would tend to injure or interfere with any treatment process, constitute a hazard to humans or animals, or create any hazard in the receiving waters or the effluent of the treatment plant, are hereby prohibited.

Sec. 82-79. Radioactive materials.

No user shall discharge radioactive materials into public sewers.

Sec. 82-80. Holding tank waste.

A user proposing to discharge holding tank waste into a public sewer must secure written permission. This permit will state the specific location of discharge, the time of day the discharge is to occur, the volume of the discharge, and the wastewater constituents and characteristics. If permission is granted for discharge of such waste into a public sewer, the user shall pay applicable user charges and fees and shall meet such other conditions as required by the town manager.

Sec. 82-81. Limitations on point of discharge.

No person shall discharge any waste directly into a manhole or other opening in a public sewer, other than through an approved building sewer, unless, upon written application by the user and payment of the applicable user charges and fees, the town manager issues a permit for such direct discharge. This provision does not apply to employees or agents of the town involved in the construction, repair or maintenance of the sewerage system.

Sec. 82-82. Control of prohibited wastes.

If wastewater containing any substance described in section 82-76 is discharged or proposed to be discharged into the sewerage system of the town or to any sewerage system tributary thereto, the town may take any appropriate action necessary to:

(1) Prohibit the discharge of such wastewater.

(2) Require a discharger to demonstrate that in-plant modifications will eliminate the discharge of such substances to a degree as to be acceptable to the town.

(3) Require pretreatment, including storage facilities or flow equalization if necessary, to reduce or eliminate the objectionable characteristics or substances, so that the discharge will not violate the provisions of this article.

(4) Require the person making, causing or allowing the discharge to pay any added cost of handling and treating excess loads imposed on the sewerage facilities.

(5) Take such other remedial action as may be deemed to be desirable or necessary to achieve the purpose of this article.

Sec. 82-83. Pretreatment facilities.

Users shall provide necessary wastewater treatment as required to comply with this article and shall achieve compliance with all federal categorical pretreatment standards within the time limitations as specified by the federal pretreatment regulations. Any facilities required to pretreat wastewater to a level acceptable to the town shall be provided, operated and maintained at the user's expense. Detailed plans showing the pretreatment facilities and operating procedures shall be submitted to the town for review and shall be acceptable to the town before construction of the facility. The review of such plans and operation procedures will in no way relieve the user from the responsibility of modifying the facility as necessary to produce an effluent acceptable to the town under the provisions of this article. Any subsequent changes in the pretreatment facilities or method of operation shall be reported to and be acceptable to the town prior to the user's initiation of the changes.

Sec. 82-84. Special agreements.

No statement contained in this article shall be construed as preventing any special agreement between the town and any user of the sewerage facilities, whereby a wastewater of unusual strength or character may be accepted into the system when unusual or extraordinary circumstances compel special terms or conditions. No such agreement, however, shall be made which would allow the combined influent to the wastewater treatment plant to exceed the limitations set forth in section 82-76.

Sec. 82-85. Wastewater discharge permits required.

All nondomestic users proposing to connect to or to discharge into a public sewer shall obtain a wastewater discharge permit before connecting to or discharging into a public sewer.

Sec. 82-86. Permit application.

(a) Users seeking a wastewater discharge permit shall complete and file with the town manager an application in the form prescribed by the town manager and accompanied by any applicable fees. The applicant shall be required to submit, where applicable, in units and terms appropriate for evaluation, information including but not limited to the following:

(1) Name, address and telephone number of applicant or responsible party.

(2) Volume of wastewater to be discharged.

(3) Schedule of all industrial process waste flows produced before pretreatment, if any, at the premises, including the daily volume, maximum rate of discharge, and wastewater constituents and characteristics as determined by a representative analysis.

(4) Time and duration of discharge.

(5) Average and hourly peak wastewater flow rates, including daily, monthly and seasonal variations, if any.

(6) Conceptual site and plumbing plans to show all connections to the town sewerage system.

(7) A general description of activities, facilities and plant processes on the premises, including all process waste materials which are or could be discharged, but excluding proprietary information concerning process and products.

(8) Each product produced by type.

(9) Number of employees, and hours of work.

(10) Any other relevant information as may be deemed by the town manager to be necessary to evaluate the permit application.

(b) The town manager will evaluate the data furnished by the user and may require additional information. After evaluation and acceptance of the data furnished, the town manager shall issue, within 60 days, a draft wastewater discharge permit. A 30-day comment period shall be allowed all users, and thereafter the town manager shall issue a wastewater discharge permit if all of the terms and conditions herein are complied with.

Sec. 82-87. Permit conditions.

Wastewater discharge permits shall be subject to all provisions of this article and all other pertinent regulations, user charges and fees established by the town. Wastewater discharge permits may contain the following:

(1) The unit charge or schedule of user charges and fees for the wastewater to be discharged to a public sewer.

(2) The maximum permissible instantaneous and composite concentration and mass emission rates of wastewater constituents.

(3) Limits on rate and time of discharge or requirements for flow regulation and equalization.

(4) Requirements for inspection and sampling facilities.

(5) Pretreatment requirements.

(6) Specifications for monitoring programs, which may include sampling locations, frequency and method of sampling, number, types and standards for tests and reporting schedule.

(7) Requirement for submission of periodic discharge reports. The discharge report may include, but not be limited to, wastewater volume, rates of flow, constituent concentrations and mass emission rates, hours of operation, number of employees, or other information which relates to the wastewater discharge to the sewers.

(8) Requirements for maintaining plant records relating to wastewater discharge, as specified by the town manager, and affording access thereto.

(9) Other conditions as deemed appropriate by the director to ensure compliance with this chapter.

Sec. 82-88. Duration of permits.

Wastewater discharge permits shall be issued for a specified time period, not to exceed two years. A permit may be issued for a period less than a year or may be stated to expire on a specified date. The terms and conditions of the permit may be subject to modifications and change by the town manager during the life of the permit, as limitations or requirements are modified and changed by state and federal regulations. Whenever possible, users shall be informed of any proposed changes in permits at least 90 days prior to the effective date of change. Users shall be allowed a comment period, relating to any of the proposed changes in permits, which shall be the first 45 days of the 90-day period prior to the effective date of change. Any changes or new conditions in the permit shall include a reasonable time schedule for compliance.

Sec. 82-89. Transfer of a permit.

A wastewater discharge permit shall be issued to a specific user for a specific operation. A wastewater discharge permit shall not be reassignable or transferable, and shall only be used for the operation for which it was obtained.

Sec. 82-90. Accidental discharges.

Users shall notify the superintendent or town manager immediately, upon accidentally discharging wastes in violation of this article. Users are required to take countermeasures to stop the discharge and to neutralize its effect, if possible. Such notification shall be followed, within three days of the date of occurrence, by a detailed written statement to the town manager, describing the causes of the accidental discharge and the measures being taken to prevent future occurrence. The town manager may require the user to provide protection from accidental discharge of prohibited materials or other wastes regulated by this chapter.

Sec. 82-91. New discharge or change in existing discharge.

Any proposed change in a discharge to the wastewater facilities by any nondomestic user, including any new significant discharge or significant change in the quantity or quality of an existing discharge, must be reported to the town manager.

Sec. 82-92. User charges—Generally.

(a) ~~The following user charges for wastewater collection shall be charged by the town:~~ The Town will charge user fees as provided for in this Article.

~~(1) Wastewater user charges shall be based on the metered water consumption on the premises. The bimonthly sanitary sewer service charge within the corporate limits of the town, shall be $18.62, plus $3.74 per 1,000 gallons.~~

~~(2) The bimonthly sanitary sewer service charge outside the corporate limits of the town, shall be $18.62, plus $4.67 per 1,000 gallons.~~

(b) In addition to the charges levied by the town ~~as specified above in subsection (a) of this section~~, the Hampton Roads Sanitation District (HRSD) levies a monthly charge to each customer for the treatment and disposal of the sewage.

(c) For those users who have basements that, in the opinion of the town manager, it is impractical to connect to the public sewer, and that remain connected to existing septic tanks, the charges shall be calculated on the number of gallons of water consumed during any bi-monthly period.

(d) In addition to the above, any discharger whose wastewater has a BOD exceeding 300 ppm, or has a suspended solids count (SS) exceeding 300 ppm, shall pay a surcharge of two percent of the base rates given above, for each ten ppm of BOD and/or SS above 300 ppm.

(e) Customers shall pay the charge prescribed by this section, in advance, for the period from the time of beginning of service until the end of the billing period. Customers shall be billed at the bi-monthly rate when sewer service is provided on or before 30 days prior to the next bi-monthly rate and half the bi-monthly rate when sewer service is provided within 29 days prior to the next bi-monthly billing date.

(f) Customers shall be billed on the first day of every other month for bi-monthly sewer service, at the bi-monthly rate. All bills shall be payable, in full, on the tenth of the month following the month in which the customer was billed.

(g) If any water meter fails to register properly, the user charge shall be estimated, using the average of the readings for the two previous billing periods.

(h) Users using private water supplies may be required to install, at their own expense, a flow meter or other device for determining the volume of wastewater discharged to the town's sewerage system. Where no such device exists, and installation of such device is not required by the town manager, the user shall pay a wastewater user charge based on the average water consumption rates for this type of user.

(i) In the event that a utility customer should qualify for a credit to their water billing pursuant to the provisions of section 82-41 of this chapter, then the town treasurer shall have the authority, in their sole discretion, to adjust a bi-monthly billing for sewer user charges when in the treasurer's determination such bi-monthly billing is excessive due to a water leak. In such instances, the treasurer may reduce the bi-monthly billing in question to an amount not less than the average user charges for the three bi-monthly billings immediately preceding the bi-monthly billing in question.

Sec. 82-93. Revocation of discharge permit.

Any user who violates any of the following conditions may be subject to the revocation of his discharge permit:

(1) Failure of a user to factually report the wastewater constituents and characteristics of his discharge.

(2) Failure of the user to report significant changes in wastewater constituents or characteristics.

(3) Refusal of reasonable access to the user's premises for the purpose of inspection or monitoring.

(4) Violation of the conditions of the permit or of this article.

Sec. 82-94. Termination of service.

The town manager may terminate wastewater service and disconnect a user from the system when:

(1) Materials damaging to sewer lines or treatment process are released by the user to the sewer, causing deterioration of these structures or interfering with proper conveyance and treatment of wastewater.

(2) The effluent from the wastewater treatment plant is no longer of a quality permitted for discharge to a watercourse, and it is found that the user is delivering wastes to the wastewater system that cannot be sufficiently treated or require pretreatment.

(3) The user:

a. Discharges wastewater that is in significant violation of the permit issued;

b. Fails to pay user charges for public sewer services when due;

c. Discharges prohibited wastes to public sewers; or

d. Violates any requirement of this article.

Sec. 82-95. Notification of proposed revocation of discharge permit and termination of service.

(a) The town manager will endeavor, within reasonable limits, to eliminate or remedy a violation without resorting to discontinuance of the user's discharge. However, if those informal efforts have been unsuccessful, the town manager is authorized to revoke the discharge permit and terminate service to a user.

(b) The town manager shall not revoke a discharge permit and terminate service to a user without first delivering to the user written notice of such proposed revocation and

termination. The notice shall state the reason or reasons of the revocation and may allow a reasonable time for satisfactory compliance to meet the wastewater constituents and/or characteristic limitation(s) that are being violated.

(c) Nothing in this chapter is intended to deter, hinder or stop the town manager from taking immediate action to terminate service to a user when there is imminent risk or great danger to the wastewater facilities.

Sec. 82-96. Show-cause hearing.

(a) The town manager may direct any user who causes or allows an unauthorized discharge to show cause before the town council why such discharge should not be discontinued. A notice shall be served on the offending party, specifying the time and place of a hearing, such time to be not less than five days from the date of the notice, to be held by the town council regarding the violation and directing the offending party to show cause why an order should not be issued directing the discontinuance of such discharge.

(b) The town council shall conduct the hearing and take the evidence.

(c) At any public hearing, testimony taken before the town council must be under oath and recorded. The transcript so recorded will be made available to any member of the public or any party to the hearing, upon payment of the usual charges therefor.

(d) After the town council has reviewed the evidence, it may issue an order to the user responsible for the discharge, directing that, within a specified time period, the discharge shall be discontinued unless adequate treatment works, facilities or devices shall have been installed, or existing treatment works, facilities or devices, if adequate, are properly operated, or such other action is taken as the town council may deem necessary. Any user aggrieved by any order or other action of the town council shall have a right to judicial review thereof by the circuit court having jurisdiction, by an appropriate petition to such court filed within 30 days of the date of the order of the town council.

Sec. 82-97. Court proceedings.

If any user discharges sewage, industrial waste or other wastes to the wastewater facilities under the jurisdiction of the town contrary to any order of the town council, the town may commence an action by proceeding in the circuit court having jurisdiction where the discharging facilities are located, for the purpose of having the discharge stopped.

Sec. 82-98. Penalties.

A violation of any provision of this article shall constitute a class 4 misdemeanor. Each day's continuance of such violation shall constitute a separate offense. The penalties so imposed, plus reasonable attorney's fees, court costs and other expenses of litigation, are recoverable by the town.

Sec. 82-99. Injunctive relief.

In addition to the penalties provided in section 82-98, wherever a user violates any provision of this article or fails to comply with any order of the town council, the town may apply to the circuit court having jurisdiction where the discharger is located for the issuance of an injunction restraining the user violating the article or penalty, or failing to comply with the order, from making any further discharges to the facilities under the jurisdiction of the town.

Sec. 82-100. Appeals.

Any user or permit applicant affected by any decision, action or determination made by the town manager, interpreting or implementing the provisions of this article or in any permit issued under this article, may file with the town manager a written request for reconsideration within ten days of such decision, action or determination, setting forth in detail the facts supporting the user's request for reconsideration. The decision of the town manager shall remain in effect during such period of reconsideration. Any person aggrieved by a decision shall have the right to judicial review, by appeal to the circuit court having jurisdiction, appeal to be made within 30 days of the date of such decision.

Sec. 82-101. Damage to facilities.

When a discharge of waste causes an obstruction, damage or any other impairment to wastewater facilities, the town may assess a charge against the user for the work required to clean or repair the facility and add such charge to the user's charges and fees, and collect the same as the user's charges and fees are collected.

Sec. 82-102. Authority of town manager.

The town manager is charged with the responsibility for the town's wastewater discharge control program and enforcement of the provisions of this article.

Secs. 82-103—82-119. Reserved.

ARTICLE IV. FATS, OILS AND GREASE (FOG)

Sec. 82-120. Purpose and applicability.

(a) The purpose of this article is to aid in preventing the introduction and accumulation of fats, oils and grease into the town's sanitary sewer system that may contribute to sanitary sewer blockages and obstructions. Food service establishments, grease haulers and other industrial or commercial establishments generating or collecting wastewater containing fats, oils and grease are subject to this article. This article regulates such users by requiring that grease control devices and other approved strategies be installed, implemented and maintained in

accordance with the provisions of this article and other applicable requirements of the Town of Smithfield.

(b) The provisions of this article shall apply to all food service establishments within the Town of Smithfield and to all grease haulers providing service to any such food service establishment.

Sec. 82-121. Definitions.

Brown grease shall mean floatable fats, oils, grease and settled solids produced during food preparation that are recovered from grease control devices.

Enforcement response plan shall mean a system that sets forth the process and procedures for enforcement of this article by the Town of Smithfield.

Fats, oils and grease (FOG) shall mean material, either liquid or solid, composed of fats, oils or grease from animal or vegetable sources. Examples of FOG include, but are not limited to, kitchen cooking grease, vegetable oil, bacon grease and organic polar compounds derived from animal and/or plant sources that contain multiple carbon triglyceride molecules. These substances are detectable and measurable using analytical test procedures established in the United States Code of Federal Regulations at 40 CFR Part 136, as may be amended from time to time. FOG may be referred to herein as "grease" or "greases".

Food service establishment (FSE) shall mean any commercial, industrial, institutional, or food processing facility discharging kitchen or food preparation wastewaters including, but not limited to, restaurants, commercial kitchens, caterers, motels, hotels, cafeterias, correctional facilities, prisons or jails, cafeterias, care institutions, hospitals, schools and churches. Any establishment engaged in preparing, serving or otherwise making food available for consumption by the public shall be included. Such establishments use one or more of the following preparation activities: Cooking by frying (all methods), baking (all methods), grilling, sauteing, rotisserie cooking, broiling, boiling, blanching, roasting, toasting or poaching. Also included are: Infrared heating, searing, barbequing, and other food preparation activity that produces a hot, nondrinkable food product in or on a receptacle that requires washing.

Grease control device (GCD) shall mean a device used to collect, contain or remove food waste and grease from the wastewater while allowing the remaining wastewater to be discharged to the Town of Smithfield's sanitary sewer system by gravity. Devices include grease interceptors, grease traps, automatic grease removal devices or other devices approved by the director of public works.

Grease hauler shall mean a contractor who collects the contents of a grease interceptor or trap and transports it to an approved recycling or disposal facility. A grease hauler may also provide other services related to grease interceptor maintenance for a FSE.

Grease interceptor shall mean a structure or device, usually located underground and outside a FSE, designed to collect, separate and contain food waste and grease while allowing the wastewater to be discharged to the Town of Smithfield's sanitary sewer system by gravity.

Grease removal device shall mean an active, automatic device that separates and removes FOG from effluent discharge and that cleans itself of accumulated FOG at least once every 24 hours utilizing electromechanical apparatus.

Grease trap shall mean a device typically located indoors and under the sink or in the floor, designed for separating and containing grease prior to the wastewater exiting the trap and entering the sanitary sewer system. Such devices are typically passive (gravity fed) and compact with removable baffles.

Renderable FOG container shall mean a closed, leak-proof container for the collection and storage of yellow grease.

Yellow grease shall mean FOG used in food preparation that have not been in contact or contaminated with other sources such as water, wastewater or solid waste. An example of yellow grease is fryer oil, which can be recycled into products such as animal feed, cosmetics and alternative fuel. Yellow grease is also referred to as renderable FOG.

Sec. 82-122. Registration requirements.

All FSEs shall be required to register their GCDs. Registrations shall be on forms provided by the department of public works to ensure that such devices are properly sized and maintained, as well as to facilitate inspection in accordance with the requirements established by the department of public works.

(1) Existing FSEs shall register all GCDs within 90 days of the adoption of the ordinance from which this article derives. New establishments shall register when setting up their water and sewer service or prior to obtaining a certificate of occupancy.

(2) All grease haulers, owners or employees servicing GCDs for FSEs within the Town of Smithfield, shall be required to obtain a certification to service GCDs from the Hampton Roads FOG, regionally-approved training program provided by the HRPDC.

(3) All grease haulers shall obtain the required permits, certifications and/or approvals from the facility in which waste will be disposed of. Grease haulers discharging to a Hampton Roads Sanitation District (HRSD) Treatment Plant shall be approved through the HRSD indirect wastewater discharge permit.

(4) FSEs shall have a current employee/staff/volunteer that has successfully completed the Hampton Roads FOG, regionally-approved, "Best Management Practices Training Program", provided by the HRPDC.

Sec. 82-123. Discharge limits.

No person shall discharge or cause to be discharged from any FSE any wastewater with FOG in concentrations or quantities that will damage the sewers or sanitary sewer system, as determined by Section 301 D. of the Hampton Roads Sanitation District's Industrial Wastewater Discharge Regulations.

Sec. 82-124. Grease control devices.

(a) *Requirements.* All FSEs shall have a GCD(s) meeting all applicable requirements of the International Plumbing Code or its successors. The GCD(s) shall be designed in accordance with the Hampton Roads Regional Grease Control Device Design Standards.

(1) *New establishments.* Except as provided in subsection (a)(2), FSEs shall be required to install, operate and maintain a GCD in compliance with the requirements contained in this article. GCDs shall be installed and registered prior to the issuance of a certificate of occupancy.

(2) *Existing establishments.* Existing FSEs in operation as of the effective date of this article shall be allowed to operate and maintain their existing GCDs, provided such GCDs are in proper operating condition and not found to be contributing FOG in quantities sufficient to cause line stoppages or to necessitate increased maintenance of the sanitary sewer system. If its GCD is determined to be contributing FOG in quantities sufficient to cause line stoppages or to necessitate increased maintenance of the sanitary sewer system, an existing FSE shall comply with the requirements of this section. Existing FSEs that are renovated or expanded shall install a GCD meeting the requirements of this article. GCDs shall be installed, inspected and registered as a condition of final approval of such renovation or expansion.

(3) *Retrofit.* Any existing FSE may be required to install or upgrade a GCD if such FSE is contributing FOG to the sanitary sewer system, as determined by the locality and HRSD. Such devices shall be registered with the locality within 30 days of installation.

(b) *Installation of grease control devices.* GCDs shall be installed by a plumber licensed in the Commonwealth of Virginia. Every GCD shall be installed and connected so that it may be readily accessible for inspection, cleaning and removal of the intercepted food waste and grease at any time.

(c) *Maintenance of grease control devices.*

(1) All GCDs shall be maintained at the owner's expense. Maintenance shall include the complete removal of all contents, including floating material, wastewater and settled solids. Decanting or discharging of removed waste back into the grease interceptor or private sewer line or into any portion of the Town of Smithfield's or HRSD's sanitary sewer system is prohibited.

(2) Grease interceptors shall be pumped out completely when the total accumulation of FOG, including floating solids and settled solids, reaches 25 percent of the overall liquid volume. At no time shall a GCD be cleaned less frequently than once every three months unless allowed by the director of public works for good cause shown. Approval will be granted on a case-by-case basis upon submittal of a request by the FSE, documenting reasons for the proposed frequency variance.

(3) Grease traps and grease removal devices shall be opened, inspected and completely cleaned of food solids and FOG a minimum of once per week, unless allowed by the director of public works for good cause shown. Approval will be granted on a case-by-case basis upon submittal of a request by the FSE documenting reasons for the proposed frequency variance. In no event shall the content of food solids and FOG exceed 25 percent of the overall liquid depth of the device.

(4) The director of public works may establish a more frequent cleaning schedule if the FSE is found to be contributing FOG in quantities sufficient to cause line stoppages or to necessitate increased maintenance of the sanitary sewer system.

(d) *Use of additives.* The use of additives by FSEs including, but not limited to, products that contain solvents, emulsifiers, surfactants, caustics, acids, enzymes or bacteria are prohibited for use as grease management control; provided, however, that additives may be used to clean the FSE drain lines so long as the usage of such additives will not cause FOG to be discharged from the grease control device to the sanitary sewer system. The use of additives shall not be substituted for the maintenance procedures required by this section.

(e) *Waste disposal.*

(1) Waste removed from a grease trap shall be disposed of in the solid waste disposal system or by a grease hauler certified by the Hampton Roads Planning District Commission.

(2) Waste removed from a grease interceptor shall be disposed of at a facility permitted to receive such wastes. No materials removed from interceptors shall be returned to any grease interceptor, private sewer line or into any portion of the Town of Smithfield's or HRSD's sanitary sewer system.

(3) FSEs shall dispose of yellow grease in a renderable FOG container, where contents will not be discharged to the environment. Yellow grease shall not be poured or discharged into the Town of Smithfield's or HRSD's sanitary sewer system.

(f) *Inspection of grease control devices.* The director of public works or his designee shall have the right of entry into any FSE, during reasonable hours, for the purpose of making inspections, observation, measurements, sampling, testing or records review of the sanitary sewer system and GCDs installed in such building or premises to ensure that the FSE is in compliance with this article. The owner or occupant may accompany the director or his designee. Operational changes, maintenance and repairs required by the director or his designee shall be implemented as noted in the written notice received by the FSE.

(g) *Record keeping.*

(1) FSEs shall retain and make available for inspection and copying records of all cleaning and maintenance for the previous three years for all GCDs. Cleaning and maintenance records shall include, at a minimum, the dates of cleaning/maintenance records, the names and business addresses of the company or person performing each cleaning/maintenance and the volume of waste removed in each cleaning. Such records

shall be kept on-site and shall be made immediately available to any employee of the department of public works upon request.

(2) FSEs shall retain and make available for inspection and copying records of yellow grease disposal for the previous three (3) years. Yellow grease disposal logs shall include, at a minimum, the dates of disposal, name and business address of the company or person performing the disposal and the volume of yellow grease removed in each cleaning. Such records shall be kept on site and shall be made immediately available to any employee of Department of Public Works upon request.

Sec. 82-125. Grease hauler requirements.

(a) Any person collecting, pumping or hauling waste from GCDs located within the municipal boundaries of the Town of Smithfield, shall be certified by the Hampton Roads FOG regionally-approved training program provided by the HRPDC.

(b) The grease hauler shall notify the locality within 24 hours of any incident required to be reported to the Virginia Department of Environmental Quality.

(c) Grease haulers shall retain and make available for inspection and copying, all records related to grease interceptor pumping and waste disposal from businesses located in the Town of Smithfield's wastewater service area. Records shall include waste manifests that, at a minimum, include time, date and volume of waste removed from the device and the time, date, volume and destination of the waste disposed. These records shall remain available for a period of at least three years. The Town of Smithfield may require additional record keeping and reporting, as necessary, to ensure compliance with the terms of this article.

Sec. 82-126. Fees.

Fees provided for in this article are separate and distinct from all other fees chargeable by the Town of Smithfield. Fees applicable to this article are as follows:

(1) There will be no FSE registration fees if received by date listed on registration form. If registration is not received by due date, there will be a $100.00 late fee per month.

(2) There will be no initial inspection fees. Re-inspection fees shall be in the amount of $50.00 and shall be due upon invoice by the Town of Smithfield. Such fees may be added to the FSE's public service bill.

Sec. 82-127. Compliance.

The Town of Smithfield may require existing FSEs to modify or repair any noncompliant GCD and appurtenances as noted in the written notice received by the FSE.

Sec. 82-128. Violations and penalties.

(a) Any person who, intentionally or otherwise, commits any of the acts prohibited by this article shall be liable to the Town of Smithfield for all costs of containment, cleanup, abatement, removal and disposal of any substance unlawfully discharged into the sanitary sewer system, as well as the costs of any damages or regulatory fines, that are proximately caused by such violations.

(b) Any person who, intentionally or otherwise, commits any of the acts prohibited by this article shall be subject to a fine in an amount not to exceed $1,000.00 per violation. The court assessing such fines may, at its discretion, order such fines to be paid into the Treasury of the Town of Smithfield for the purpose of abating, preventing or mitigating environmental pollution.

(c) Enforcement will be in accordance with the associated enforcement response plan. The Town of Smithfield may terminate water and/or sewer services for continuing violations of this article.

(d) In addition to any other remedy for the violation of this article, the Town of Smithfield may bring legal action to enjoin the continuing violation of this article, and the existence of any other remedy, at law or in equity, shall be no defense to any such action.

(e) The remedies set forth in this section are cumulative, not exclusive; and it may not be a defense to any action, civil or criminal, that one or more of the remedies set forth herein has been sought or granted.

Section 2. Severance Clause

In the event that a court of competent jurisdiction declares any portion of this Ordinance invalid, then all remaining provisions shall remain in full force and effect.

Section 3. Effective Date

This ordinance shall be in effect on and after its adoption.

Adopted: _____

A TRUE COPY, ATTEST:

_____
Town Clerk

Approved as to form:

_____
Town Attorney

The Blair Bros., Inc.

P.O. Box 5413
Suffolk, VA 23435
(757) 538-1696 Fax: (757) 538-0714
www.blairbros.com

Invoice

Terms	P.O. No.	Date	Invoice #
NET 30 DAYS	HWY-25-17	8/28/2025	20359

Bill To:

Town of Smithfield
P O Box 246
Smithfield VA 23431

Project:

600 Cypress Creek Pwy (2)

Description	Amount
Provide equipment, labor, and materials to accomplish the following: Option 2: Asphalt mill / Pave - Mill area between Cypress Creek Pkwy and St. Andrews (1,800 SY) at a depth of 1.5". (see site map for exact location) - Provide a leveling course of asphalt in low areas prior to overlay. - Furnish and install 1.5" of SM12.5A asphalt in same area. - Restripe 4" white lines as needed. - Includes traffic control.	
Total Contract Price:	32,950.00

THANK YOU FOR YOUR BUSINESS

Invoice Total: $32,950.00

All charges during the month are due and payable by the 10th of the following month or as per stated terms. A SERVICE CHARGE OF 2% PER MONTH will be added to account from invoice date on past due accounts. This is an annual percentage rate of 24%. The customer agrees to pay service charges and the cost of collection, including attorney's fees.

If prices and terms on invoice are not as agreed, or if any claim or damage or deficiency is to be made, please notify us at once, as no claim made at maturity will be allowed.

We Accept

VISA MasterCard

Convenience fee added

The Blair Bros., Inc.

P.O. Box 5413
Suffolk, VA 23435
(757) 538-1696 Fax: (757) 538-0714
www.blairbros.com

Invoice

Terms	P.O. No.	Date	Invoice #
NET 30 DAYS		8/28/2025	20360

Bill To:

Town of Smithfield
P O Box 246
Smithfield VA 23431

Project:

Cypress Creek Mill/Patch

Description	Amount
Provide equipment, labor, and materials to accomplish the following: 1. Mill 3 areas on Cypress Creek Pkwy. (123' x 18', 42' x 18' and 20' x 18') 370 SY at a depth of 2". 2. Clean and haul millings off site. Millings shall become property of The Blair Bros. Inc. 3. Tack surface prior to overlay to ensure proper bond with new asphalt. 4. Overlay same area with 2" of SM12.5A asphalt and compact accordingly. 5. Provide traffic control as needed. Total Contract Price:	11,770.00

THANK YOU FOR YOUR BUSINESS

All charges during the month are due and payable by the 10th of the following month or as per stated terms. A SERVICE CHARGE OF 2% PER MONTH will be added to account from invoice date on past due accounts. This is an annual percentage rate of 24%. The customer agrees to pay service charges and the cost of collection, including attorney's fees.

If prices and terms on invoice are not as agreed, or if any claim or damage or deficiency is to be made, please notify us at once, as no claim made at maturity will be allowed.

Invoice Total: $11,770.00

We Accept
VISA MasterCard
Convenience fee added

The Blair Bros., Inc.

P.O. Box 5413
Suffolk, VA 23435
(757) 538-1696 Fax: (757) 538-0714
www.blairbros.com

Invoice

Terms	P.O. No.	Date	Invoice #
NET 30 DAYS	HWY-26-03	8/28/2025	20361

Bill To:

Town of Smithfield
P O Box 246
Smithfield VA 23431

Project:

Inverness Paving

Description	Amount
Provide equipment, labor, and materials to accomplish the following: 1. Mill approx. 1,160 SY at a depth of 2" on Inverness Court in Cypress Creek. 2. Clean and haul millings off site. Millings shall become property of The Blair Bros. Inc. 3. Tack surface prior to overlay to ensure proper bond with new asphalt. 4. Overlay same area with 2" of SM12.5A asphalt and compact accordingly. 5. Provide traffic control as needed. Total Contract Price:	29,500.00

THANK YOU FOR YOUR BUSINESS

Invoice Total: $29,500.00

All charges during the month are due and payable by the 10th of the following month or as per stated terms. A SERVICE CHARGE OF 2% PER MONTH will be added to account from invoice date on past due accounts. This is an annual percentage rate of 24%. The customer agrees to pay service charges and the cost of collection, including attorney's fees.

If prices and terms on invoice are not as agreed, or if any claim or damage or deficiency is to be made, please notify us at once, as no claim made at maturity will be allowed.

We Accept

VISA MasterCard

Convenience fee added

The Blair Bros., Inc.

P.O. Box 5413
Suffolk, VA 23435
(757) 538-1696 Fax: (757) 538-0714
www.blairbros.com

Invoice

Terms	P.O. No.	Date	Invoice #
NET 30 DAYS	HWY-25-16	9/5/2025	20403

Bill To:

Town of Smithfield
P O Box 246
Smithfield VA 23431

Project:

Pagan Rd.

Description	Amount
Provide equipment, labor, and materials to accomplish the following: 1. Mill approx. 1,980 SY at a depth of 2" on Pagan Rd. from 394 to 504 Pagan Rd and a 4' x 10' patch at 505. 2. Clean and haul millings off site. Millings shall become property of The Blair Bros. Inc. 3. Tack surface prior to overlay to ensure proper bond with new asphalt. 4. Overlay same area with 2" of SM12.5A asphalt and compact accordingly. 5. Provide traffic control as needed. Total Contract Price:	46,020.00

THANK YOU FOR YOUR BUSINESS

Invoice Total: $46,020.00

All charges during the month are due and payable by the 10th of the following month or as per stated terms. A SERVICE CHARGE OF 2% PER MONTH will be added to account from invoice date on past due accounts. This is an annual percentage rate of 24%. The customer agrees to pay service charges and the cost of collection, including attorney's fees.

If prices and terms on invoice are not as agreed, or if any claim or damage or deficiency is to be made, please notify us at once, as no claim made at maturity will be allowed.

We Accept
VISA MasterCard
Convenience fee added

Local Roots, Global Reach

Isle of Wight County
P.O. Box 80
Isle of Wight, Virginia 23397
757-357-7006

INVOICE

ORIGINAL COPY

Due upon receipt

CUSTOMER	INVOICE DATE	INVOICE NUMBER	AMOUNT PAID	DUE DATE	INVOICE TOTAL DUE
TOWN OF SMITHFIELD	09/11/2025	3122	$0.00	**09/11/2025**	**$304,504.59**

DESCRIPTION	QUANTITY	PRICE	UOM	ORIGINAL BILL	ADJUSTED	PAID	AMOUNT DUE
PLANNING & ZONING PROFESSIONAL CHARGES FY24-25 TOURISM TRUE-UP	1.00	$304504.590000	EACH	$304,504.59	$0.00	$0.00	$304,504.59

INSTALLMENTS

INSTALLMENT NUMBER	CHARGE CODE	START DATE	DUE DATE	INTEREST DATE	BILLED AMOUNT	ADJUSTED AMOUNT	TOTAL PAID	INTEREST DUE	PRINCIPAL UNPAID	BALANCE UNPAID
1		09/11/2025	09/11/2025	09/11/2025	$304,504.59	$0.00	$0.00	$0.00	$304,504.59	$304,504.59

Invoice Total:	**$304,504.59**

FY24-25 TOURISM TRUE-UP

INVOICE DUE UPON RECEIPT

✂ DETACH AND RETURN THE PORTION BELOW WITH YOUR PAYMENT ✂

Local Roots, Global Reach

Isle of Wight County
P.O. Box 80
Isle of Wight, Virginia 23397
757-357-7006

INVOICE

Remit Portion

Invoice Date	**09/11/2025**
Invoice Number	**3122**
Customer Number	**399376**
Amount Paid	
Due Date	**09/11/2025**
Invoice Total Due	**$304,504.59**

This account is due and payable to: Isle of Wight County Treasurer upon receipt.
Any remaining unpaid balance will be turned over to collections after 90 days.

TOWN OF SMITHFIELD
PO BOX 246
SMITHFIELD, VA 23431

ISLE OF WIGHT COUNTY
DEPARTMENT OF BUDGET AND FINANCE

REQUEST FOR BILLING

Please Bill:

Organization Name: Town of Smithfield

Contact Person: Laura Ross, Treasurer

Address: PO Box 246

City / State: Smithfield , Va Zip: 23431

Phone Number: 757-365-4287
Email : fhyde@smithfieldva.gov
jhunemuller@smithfieldva.gov
lross@smithfieldva.gov

In the amount of: $ 304,504.59
Total Amount DUE: **$ 304,504.59**
For the following: (please provide specifics)

FY24-25 Tourism True-up

Charge Code:	RECOV	**Invoice#**	3122
Customer#	399376	**Batch#**	696
Credit to Org - Object:	1100-1265		
Requested By:	Donna A. Proffitt	**Date:**	9-10-2025
Approved By:	M. Jutton	**Date:**	9/10/25
Entered by:	KMcKee	**Date:**	9/11/25

Filename:Network\Server1\Central\B F Forms\Request for Billing 10/00

ISLE OF WIGHT COUNTY
FISCAL YEAR 2024-25
TOURISM TRUE-UP

			FY 2025
EXPENDITURES			
FY Operating Expenditures (net of SSR)	$ 627,144.26		
TOTAL EXPENDITURES			
REVENUES			
Charges for Tourism (Revenue)	(19,735.09)		
TOTAL REVENUE			
OTHER			
Salty Southern Route Commitment	1,600.00		
NET EXPENDITURES		609,009.17	
1/2 OF NET EXPENDITURES DUE FROM SMITHFIELD		50%	$ 304,504.59
TOTAL PAYMENTS RECEIVED FROM SMITHFIELD			-
DUE FROM / (DUE TO) SMITHFIELD			**$ 304,504.59**

TOURISM OPERATING

REVENUES

ORG	OBJECT	ACCOUNT DESCRIPTION	YTD ACTUAL
11817000	416018	Tourism Special Events	-
11817000	418020	Tourism	(19,735.09)
11817000	418021	Tourism Recovered Cost	-
			(19,735.09)

EXPENDITURES

ORG	PROJECT	OBJ	ACCOUNT DESCRIPTION	YTD ACTUAL
11817000		511000	Salaries and Wages	251,930.07
11817000		512001	Holiday Pay	2,062.48
11817000		513000	Part-Time Salaries	53,802.05
11817000		521000	FICA (SS & Medicare)	23,231.77
11817000		522100	VRS - Retirement Benefits	34,007.61
11817000		523000	Health/Medical Insurances	48,860.32
11817000		524000	Group Life Insurance	2,942.53
11817000		528100	Deferred Comp	1,800.00
11817000		531700	Professional Services	33,918.75
11817000		533100	Repairs & Maintenance	63.00
11817000		536500	Marketing	55,389.36
11817000		536550	Salty Southern Route	6,177.80
11817000		540650	Internal Service Charge IT	16,239.75
11817000		540655	Internal Service Chrg-Risk Mgt	11,514.00
11817000		551000	Utilities	2,738.54
11817000		552100	Postage	133.88
11817000		552300	Telephone/Internet	3,941.69
11817000		554200	Lease/Rental of Buildings	34,884.00
11817000		555010	Travel & Training	4,794.08
11817000		555100	Tolls & Parking	64.99
11817000		558070	Special Events	14,218.49
11817000		558071	Special Events Marketing	5,725.53
11817000		558100	Dues & Association Membership	2,673.91
11817000		560010	Office Supplies	2,206.55
11817000		560060	Copier Lease	2,273.55
11817000		560061	Copier Service/Supply Contract	1,142.88
11817000		560080	Fleet	655.31
11817000		591050	Principal (Lease)	8,881.25
11817000		592050	Interest (Lease)	870.12
				627,144.26

SALTY SOUTHERN ROUTE

REVENUES

ORG	OBJECT	ACCOUNT DESCRIPTION	YTD ACTUAL
1100840	419020	Other Local Source-SSR MOU	(6,400.00)
1100840	419020	Salty Southern Route IOW/Smfd	(1,600.00)

EXPENDITURES

ORG	OBJECT	ACCOUNT DESCRIPTION	YTD ACTUAL
11817000	536550	536550 Salty Southern Route	6,177.80
		Used(Restricted/Commited)	(1,822.20)

TOWN COUNCIL STAFF REPORT: TOWN CODE SECTION 70-223 Registration fees for use of Windsor Castle Dog Park TEXT AMENDMENT

WEDNESDAY, October 8th, 2025, 6:30 PM

~~Red-lined~~ = removed from Town Code

Repealing Section 70-223 as it lists the annual registration fee for the use of the dog park. The Town is no longer changing a registration fee for the use of the dog park. This suggested Town Code change would bring Town Code into compliance with current practices.

Sec. 70-223. ~~Registration fees for use of Windsor Castle Park Dog Park.~~

~~Persons using the Windsor Castle Dog Park shall be required to provide the information required by these rules and regulations and shall register their dogs and pay the required registration fees at the treasurer's office in Town Hall at 310 Institute Street.~~

~~(1) There shall be an annual registration fee for Smithfield and Isle of Wight County residents in the amount of $10.00 for the first dog and $5.00 for each additional dog.~~

~~(2) There shall be an annual registration fee for nonresidents in the amount of $15.00 for the first dog $10.00 for each additional dog.~~

~~(3) Daily passes for use of the dog park shall be available as follows:~~

~~1 Day pass - Visitor fee - $2.00 per dog.~~

~~3 Day pass - Visitor fee - $5.00 per dog.~~

Repealed Ord. of 2025-xx-xx

(Ord. of 5-4-2010, § 1; Ord. of 2025-xx-xx)

Sec. 70-223. ~~Registration fees for use of Windsor Castle Park Dog Park.~~

~~Persons using the Windsor Castle Dog Park shall be required to provide the information required by these rules and regulations and shall register their dogs and pay the required registration fees at the treasurer's office in Town Hall at 310 Institute Street.~~

~~(1) There shall be an annual registration fee for Smithfield and Isle of Wight County residents in the amount of $10.00 for the first dog and $5.00 for each additional dog.~~

~~(2) There shall be an annual registration fee for nonresidents in the amount of $15.00 for the first dog $10.00 for each additional dog.~~

~~(3) Daily passes for use of the dog park shall be available as follows:~~

~~1 Day pass - Visitor fee - $2.00 per dog.~~

~~3 Day pass - Visitor fee - $5.00 per dog.~~

Repealed Ord. of 2025-xx-xx

(Ord. of 5-4-2010, § 1; Ord. of 2025-xx-xx)

AN ORDINANCE REPEALING SECTION 70-223 OF THE CODE OF THE TOWN OF SMITHFIELD, VIRGINIA TO ELIMINATE WINDSOR CASTLE DOG PARK REGISTRATION FEES

WHEREAS, the Town of Smithfield currently requires residents to register and pay a fee for access to the Town's designated dog park located in Windsor Castle Park; and

WHEREAS, the Town no longer charges a registration fee for the use of the dog park.

NOW, THEREFORE, BE IT ORDAINED by the Town Council of the Town of Smithfield, Virginia:

1. Section 70-223 of the Town Code, entitled "Registration Fees for Use of Windsor Castle Park Dog Park" is hereby **repealed**.

2. This ordinance shall become effective immediately upon adoption.

Adopted this 8th day of October, 2025.

_____
Lesley G. King, Clerk

TOWN COUNCIL STAFF REPORT: TOWN CODE SECTION 62-1 Yard, rummage and other outdoor sales of used household items. TEXT AMENDMENT

WEDNESDAY, October 8th, 2025, 6:30 PM

~~Red lined~~ = removed from Town Code

Blue = added to Town Code

Sec. 62-1. Yard, rummage and other outdoor sales of used household items.

In section (a) we removed the requirement for the property owner on the same property. This still allows only two (2) yard sales per year.

(a) The term "yard sale" or "rummage sale," as used in this section, shall specifically mean an outdoor sale for disposal of used household items, provided such sale is not held more frequently than twice a year ~~by the property owner upon the same property~~, is not to exceed more than two days each and includes only items assembled from households within the town. Written or verbal permission from the property owner must be verified by the Town Treasurer or his/her designee before a second party is allowed to obtain the yard sale permit.

In section (b) we changed the issuing agent from the Town Manager to the Town Treasurer of his/ her designee. The fee is remaining at $10.00.

(b) A permit issued by the ~~town manager~~ Town Treasurer or his/her ~~agent~~ designee shall be required for all yard or rummage sales and such permit shall be prominently displayed at the sale. The fee for such permit shall be $10.00.

Section (c) was removed as it was a duplicate action of section (b).

~~(c) A permit from the town manager shall also be required for all yard or rummage sales conducted on any property in zoning districts where such sales are a permitted use. Such permit shall be subject to the provisions of subsection (b) above as to display and fee.~~ Repealed (2025-xx-xx)

In section (d), we moved the class 1 misdemeanor and included a $10 fine for the first offense. Subsequent offenses would then subject the violator to a class 4 misdemeanor.

(d) Any person conducting a sale without the permit required by this section shall be ~~guilty of a class 1 misdemeanor.~~ Subject to a ten dollar ($10) fine. Subsequent violators shall be guilty of a class 4 misdemeanor.

Section (f) removed the no rain date stipulation and still allows for only two yards sales per year per property.

(f) ~~There are no rain dates and~~ only two yard or rummage sales are allowed per property per year within the town.

Section (g) was added to allow the permit to be amended for rain dates by the Treasurer.

(g) Rain dates must have an amended permit from the Town Treasurer or his/her designee.

Sec. 62-1. Yard, rummage and other outdoor sales of used household items.

(a) The term "yard sale" or "rummage sale," as used in this section, shall specifically mean an outdoor sale for disposal of used household items, provided such sale is not held more frequently than twice a year ~~by the property owner upon the same property~~, is not to exceed more than two days each and includes only items assembled from households within the town. Written or verbal permission from the property owner must be verified by the Town Treasurer or his/her designee before a second party is allowed to obtain the yard sale permit.

(b) A permit issued by the ~~town manager~~ Town Treasurer or his/her ~~agent~~ designee shall be required for all yard or rummage sales and such permit shall be prominently displayed at the sale. The fee for such permit shall be $10.00.

(c~~) A permit from the town manager shall also be required for all yard or rummage sales conducted on any property in zoning districts where such sales are a permitted use. Such permit shall be subject to the provisions of subsection (b) above as to display and fee.~~ Repealed (2025-xx-xx)

(d) Any person conducting a sale without the permit required by this section shall be ~~guilty of a class 1 misdemeanor.~~ Subject to a ten dollar ($10) fine. Subsequent violators shall be guilty of a class 4 misdemeanor.

(e) Any outdoor sale of goods, whether casual or not, which does not come under the definition of "yard sale" or "rummage sale," as set out in this section, shall be subject to the gross receipts license tax as provided for in chapter 26 of this Code.

(f) ~~There are no rain dates and~~ only two yard or rummage sales are allowed per property per year within the town.

(g) Rain dates must have an amended permit from the Town Treasurer or his/her designee.

(Code 1982, § 12-35)

AN ORDINANCE TO AMEND SECTION 60-1 OF THE CODE OF THE TOWN OF SMITHFIELD, VIRGINIA TO REVISE PENALTIES RELATED TO YARD SALE PERMITS

WHEREAS, the Town of Smithfield, finds it necessary to amend the existing provisions of the Town Code relating to yard sales in order to ensure compliance with permitting requirements and maintain peace, health, safety, and welfare of the community; and

WHEREAS, the Town Council seeks to provide clarity and impose reasonable penalties for conducting yard sales without a valid permit or in violation of applicable regulations.

NOW, THEREFORE, BE IT ORDAINED by the Town Council of the Town of Smithfield, Virginia:

1. Section 60-1 of the Town Code, titled "Yard, rummage and other outdoor sales of used household items”" is hereby amended as follows:

   (a) The term “yard sale” or “rummage sale,” as used in this section, shall specifically mean an outdoor sale for disposal of used household items, provided such sale is not held more frequently than twice a year, is not to exceed more than two days each and includes only items assembled from households within the town. Written or verbal permission from the property owner must be verified by the Town Treasurer or his/her designee before a second party is allowed to obtain the yard sale permit.

   (b) A permit issued by the Town Treasurer or his/her designee shall be required for all yard or rummage sales and such permit shall be prominently displayed at the sale. The fee for such permit shall be $10.00.

   (c) Repealed (2025-10-08)

   (d) Any person conducting a sale without the permit required by this section shall be subject to a ten dollar ($10) fine. Subsequent violators shall be guilty of a class 4 misdemeanor.

   (e) Any outdoor sale of goods, whether casual or not, which does not come under the definition of “yard sale” or “rummage sale,” as set out in this section, shall be subject to the gross receipts license tax as provided for in chapter 26 of this Code.

   (f) Only two yard or rummage sales are allowed per property per year within the town.

   (g) Rain dates must have an amended permit from the Town Treasurer or his/her designee.

2. This ordinance shall become effective immediately upon adoption.

   Adopted this 8th day of October, 2025.

   _____
   Lesley G. King, Clerk

TOWN COUNCIL STAFF REPORT
DISCUSSION ITEM: MONDAY, SEPTEMBER 22nd, 2025

Town staff recently reviewed the current fee schedule for the Community Development and Planning Department. For clarity, Staff would like to include some additional fee schedules:

Application	Proposed Fee
Demolition fee	$30
Zoning Permit new SFD	$75
Preliminary Plat	$150
Proffer Amendment	Free
PH Proffer Amendment	$400
Rezoning to PMUD	$1000 + $45 per lot/unit

All other application fees in the Community Development & Planning Department are to remain the same.

A proposed fee schedule follows this staff report.

For inquiries, contact Tammie Clary at 1-(757)-365-4200 or tclary@smithfieldva.gov.

Application	Current $
Zoning Waiver	Free
Zoning Permit	$30
Zoning Permit Commercial	$75
RPA Mitigation Application	$50
Site View/ Vista Application	$50
Sign Permit	$30
Temporary Sign Permit	$10
Special Use Permit	$400
Ches. Bay Preservation Act Exception	$200
Special Sign Exception	$200
Special Yard Exception	$200
Special Height Exception	$200
Variance	$200
Vacation of Property Line	$150
Site Plan Review (Residential)	$150 + if over 3 lots, $50 per lot
~~Site Plan Review (Commercial)~~	~~$300 + $50 per 1,000 sqft~~
Final Plat	$150
Zoning Appeals	$250
Rezoning to Residential	$570 + $50 per lot/unit
Rezoning to Commercial	$1000 + $45 per lot
Land Disturbing Permit	$70 + $10 per acre

	Proposed $
Demolition fee	$30
Zoning Permit new SFD	$75
Preliminary Plat	$150
Proffer Amendment	Free
PH Proffer Amendment	$400
Rezoning to PMUD	$1000 + $45 per lot/unit
Site Plan Review (Commercial)	$300 + $500 per acre

The Smithfield Town Council held its regular meeting on Tuesday, September 2, 2025. The meeting was called to order at 6:30 PM.

Members present:

Michael Smith - Mayor
Bill Harris - Vice Mayor
Steve Bowman
Mary Ellen Bebermeyer
Valerie Bulter
Darren Cutler
Jeff Brooks

Members absent:

None

Staff present:

Michael Stallings – Town Manager
William H. Riddick, III – Town Attorney
Lesley King – Town Clerk
Tammie Clary – Community Development & Planning Director
Ed Heide – Director of Public Works
Mark Kluck - Planner II
Judy Winslow – Director of Tourism
Laura Ross – Treasurer
Alonzo Howell – Chief, Smithfield Police Department
Chris Meier – Deputy Chief, Smithfield Police Department
Ashley Rogers – Director of Human Resources
Amy Novak – Director of Parks and Recreation
Steve Clark - Grounds Attendant
Stephanie Kensicki - Assistant Tourism Director
Ava Abbott - Police Officer, Smithfield Police Department
Sam Johnson - Patrol Sargent, Smithfield Police Department
Kate Wahl - Police Officer, Smithfield Police Department
Paul Jones - Senior Police Officer, Smithfield Police Department
Noah Cecil - Police Officer, Smithfield Police Department

Press:
Stephen Faleski - The Smithfield Times Steve Stewart - The Smithfield Times

Citizens:
32

DRAFT

Mayor Smith welcomed all attendees to the meeting and asked all present to stand for the Pledge of Allegiance.

1. Call To Order

Mayor Smith asked all attendees to observe a moment of silence in remembrance of Joseph Luter, III. He expressed his appreciation for what Mr. Luter had done for Smithfield over the years.

2. Pledge Of Allegiance

3. Closed Session Discussion

Councilman Bowman made a motion to defer the closed session until the end of the meeting. Councilwoman Bebermeyer seconded the motion.

Mayor Smith called for the vote, with seven members present. Councilwoman Butler voted aye, Councilwoman Bebermeyer voted aye, Councilman Brooks voted aye, Councilman Cutler voted aye, Councilman Bowman voted aye, Vice Mayor Harris voted aye, and Mayor Smith voted aye. The motion passed unanimously.

4. Informational Reports

The Town Manager reported that he would be happy to answer any questions regarding the informational reports from the previous month's activity.

a. Town Manager's Activity Reports

b. Committee Summary Reports

5. Upcoming Meetings And Activities

September 1 - Town Offices are Closed in Observance of Labor Day
September 2 - 6:30 p.m. - Town Council Meeting
September 9 - 6:30 p.m. - Planning Commission Meeting
September 13 - 6:30 p.m. - Board of Historic and Architectural Review
September 16 - 7:30 p.m. - Board of Zoning Appeals
September 22 - 3:00 p.m. - Town Council Committee Meetings
September 23 - 6:30 p.m. - Special Planning Commission Meeting

NOTE: All of the above public meetings will be held at the Smithfield Center, unless otherwise noted.

6. Presentations

a. Swear-In New Police Officer, Ava Abbott

Chief Howell stated that it was his pleasure to introduce to the Council the newest addition to the Smithfield Police Department, Ava Abbott. He reported that Ms. Abbott was previously an employee at the Middlesex Police Department, having worked in law enforcement for three years.

Lesley King, Town Clerk, completed the swearing-in of Ms. Abbott.

Chief Howell addressed Ms. Abbott, noting that the badge he was presenting her with was a symbol of the public's trust, and encouraged her to hold the code of ethics in high regard. He implored her not to erode the trust of the public and tarnish the badge or the public's relationship with the department.

b. Resolution of Appreciation - Terry Andrews

Mayor Smith invited Mrs. Terry Andrews to the podium. He read a Resolution of Appreciation to Mrs. Andrews in honor of her many years of service to the Town of Smithfield at the Blackwater Regional Library. He wished her well in her retirement.

7. Public Comments

1. Sean Holmer - Mr. Holmer, of 101 Great Oaks Circle in Smithfield, reported that he was present to discuss short-term rentals in the Town of Smithfield. He said that he had been operating a short-term rental in the community for the past two years, but had owned the house at 111 Institute Street since 2018. He explained that having the house as a short-term rental had allowed him to be able to make repairs and updates to the house, adding that he planned to add a fence and front porch railing to the dwelling that matched the characteristics of Historic Downtown. He encouraged any members of the public that had any pictures of the house as it was in 1910 to please let him know as he would like to match the house to its original appearance as much as possible. Mr. Holmer reported that his short-term rental provided the town with tax revenue. He stated that most of the people who rented the house were coming to the town for events and wanted to stay close to what the town had to offer, such as the Farmer's Market. He added that he had renters that utilized his house during the Surry Power Plant outages, and renters who need a short-term place to stay while looking for their permanent home. Mr. Holmer stated that his purpose in speaking was to give a different perspective regarding the issue of short-term rentals. He encouraged the Council to call or email him if they wanted any additional feedback or information from the owner's perspective.

Councilman Brooks asked Mr. Holmer if he owned any additional units or if the house on Institute Street was his only rental.

Mr. Holmer reported that the home at the Institute was his only rental property, and he had previously lived there as his primary residence.

2. Bob Small - Mr. Small reported that he was present, as he had promised at the last Council meeting, to provide the Council with updates regarding the blighted property at 1502 Magruder Road. He gave the reminder that the owner had retained the services of Davis and Associates to

conduct the necessary surveys in order to delineate the Resource Protection Areas (RPAs), the Resource Management Areas (RMAs), and any work with the Smithfield Board of Zoning Appeals (BZA). He stated that the initial survey work had been completed the week prior, with some additional work still needing to be done. He said that the estimated completion time for the delineation of the RPAs and RMAs was sometime before mid-September. Mr. Small gave the reminder that those surveys were necessary in order to begin any work at the property. He expressed that the work was moving forward, and appreciation for the town for working with them to resolve the issue. He noted that he would not be able to attend October's meeting in person, but would submit a written report to be given to the Council.

3. Ginny Soule - Mrs. Soule, of 104 Richmond Avenue in Smithfield, stated that the citizens of Smithfield deserved a full, complete, and transparent report on how the overpayment to the Town Attorney occurred. She requested that the Town Council release a full public report explaining the circumstances of how the overpayment occurred, and what steps were being taken to keep it from happening again. She related that in less than 72 hours, her group had obtained more than 60 signatures on a petition requesting full transparency on the misuse of taxpayer funds. Mrs. Soule gave a copy of the petition to the Town Clerk.

4. Bob Hines - Mr. Hines, of 216 Washington Street in Smithfield, apologized in advance if any of the information he was about to share was incorrect. He said that the recent error concerning the town's compensation of the Town Attorney had resulted in unanswered questions. He related that the most prevalent statement he had seen regarding the issue was from the Town Attorney, Mr. Riddick, as quoted in the Smithfield Times, "Obviously, we, the Council and myself, failed to properly document the change." Mr. Hines reported that citizens wanted to know how and why the error was made. He continued that what he had to say had nothing to do with the increased fee, recognizing that the amount was competitive and fair, but was in regard to the process. He added that he was not suggesting that the move had been underhanded in nature, but he wanted to ask what they knew and when did they know it. Mr. Hines related his personal history of processing invoices for purchases. He said that from what he had read in the Times, some past Council members recalled a conversation in a Town Council Meeting that Mr. Riddick's fee should be adjusted, then consensus was reached, but no vote was taken. He said that maybe that action was considered enough justification to submit new and higher fees. He speculated that perhaps the Council members did not know that a vote and proper documentation was required, adding that Mr. Riddick should have known. Mr. Hines pointed out that the Town Attorney was the constant in the situation as town personnel had changed. He stated that the argument that the protocol had not been known was not good enough, and someone, somewhere saw the increase and paid the higher fee. He said that no one seemed to be willing to step forward and explain just how the situation transpired. He reiterated that the issue was not with the fee, which was fair, but was with transparency and accountability. Mr. Hines acknowledged that if Mr. Riddick's rate had been static from 2008 to 2017, he would have been working too cheaply toward the end of that time period. He additionally pointed out that Mr. Riddick's fee was paid as an hourly contractor, and he received a 1099 form as an independent contractor. He said that due to those actions, the issue should not have been handled as a personnel matter in a closed session, but rather as any other contractor for the public to be able to participate in an open council meeting. He requested that whatever video, audio, or other media from the two meetings regarding the issue be released to the public on the town site. He said that citizens

wanted the unedited recordings and not some filtered verbiage from the Mayor or any Council member. He said that if there was a legal problem with that request, then a statute must be cited. Mr. Hines reported that in the not too distant past, many of the current Council members were sitting in the audience and would be questioning a 6 to 1 vote with no public explanatory statement. He read the following from a recent Times Editorial in regard to the Town Council voting to seek outside legal advice: "The current Town Council majority, whose members ran and were elected overwhelmingly on a platform of transparency, has passed its first test and met the moment. We're confident that taxpayers will soon get the answers they deserve." Mr. Hines recognized that the whole issue may be "much ado about nothing," but since the issue was in the open, the taxpayers and citizens needed to be made aware and offer clarification. He said this issue was not the same as the issue with 60-foot-high structures or traffic related to the Pierceville property.

8. Council Comments

Vice Mayor Harris thanked Mr. Hines and all other speakers who had raised questions. He said that when transparency was discussed, it seemed that it was a term used to describe a process and a behavior. He said that in the last two weeks, transparency has become an item that was timed. He explained that in order for the Town Council to complete their due diligence and come to conclusions that were shareable and not misrepresentations, it would take a little time. He continued that the two Closed Sessions that had been referenced, notably in the previous two days, happened within a week. He reported that the last was held on the previous Friday, which was one business day prior to the Council meeting they were all at. Vice Mayor Harris requested that they allow the Council to be as transparent as they had promised to be, and they would do their best to give information across the board. He related that in the previous week he had two very interesting questions asked to him: what the fourth estate was and were all the issues the fault of the newspaper. In answering the first, he explained that in the 1790s in England, society was divided into states: royals, the church, and commoners. He continued that in Edinburgh there was another group that played an important role in a democratic republic, which was the press. He said that the interpretation of what information was in the newspaper was personal to the reader, and the information was processed through the reader's perspective. He said free society must be served by a press that was not afraid to shine a light on areas that all people needed to consider. Vice Mayor Harris detailed that on August 25th there was a closed session in which most of the Town Council members were present and participated. He noted that the Mayor was absent from the meeting due to a personal matter. He reported that the session had been the first where the Council had enacted new guidelines for Closed Session meetings. He stated that the Council would not ever go into a closed meeting again without the Town Manager reading the purpose of the Closed Session and then reconsidering whether the item merits the Closed Session. He continued that on August 25th not one of the Council members had questioned the need to go into Closed Session. Vice Mayor Harris stated that for two hours they discussed the controversy regarding the payment of the Town Attorney, with much of what was said relating to the difference between "intent" and "impact." He related that they had asked the Town Manager to shed light on what had happened on the Town side of the procedure, and he had been quite frank in his responses. He noted that the Town Manager had taken full responsibility for the mismanagement and lack of oversight in the management of contracts. He stated that there was nothing of concrete value in past information about the town's operations, and in the case of the Town Attorney, there was only one existing contract with no other written, provable, formal approvals. He said that the Town Council was looking at the best way to address the staff and ensure that this issue did not arise again. Vice Mayor Harris stated that he personally came away from the conversation believing that the best approach to dealing with the

controversy was to focus their efforts on a corrective, not punitive, policy. He related that at the end of the two-hour discussion, the Council concluded that there had been gross mismanagement and lax oversight regarding the increase in fees to the Town Attorney. He continued that the Council determined to proceed with new policy and procedures which they were in the process of considering. He stated that there was much work to be done related to contract writing and consideration. Vice Mayor Harris reported that they had spoken with the Town Attorney, and acknowledged that the Town Attorney had not been present and could not answer their questions directly. He said that they concluded that they should offer the Town Attorney the opportunity to come and speak with them directly. He recognized that the Council members were not legal experts, nor were they an investigative body, and as such they had agreed to have Town Management hire an outside attorney to provide guidance and legal advice. He reported that he had personally asked every member of the Council if they believed that there was any evidence of malfeasance, illegal activity, or attempt to defraud, to which all stated that there was not one person who felt that way. Vice Mayor Harris then detailed that at the next Closed Session, with Mayor Smith present, they agreed it was the appropriate setting to proceed with further investigation. He reported that they had been joined by Ms. Alejandro, from a legal firm in Richmond, who was familiar with contract law and negotiations. He continued that the first part of the session had the Town Attorney in attendance as well to share his perspective. He stated that the Town Attorney and Ms. Alejandro engaged in an in-depth, legally-based conversation. He emphasized that Ms. Alejandro repeated that the biggest problems present were misunderstanding, mismanagement, lack of oversight, poor policies, poor procedures, and a lack of leadership. He added that the organization had been hampered by the change in leadership a number of times over the years. He stated that though Ms. Alejandro reported no illegal activity or attempts to defraud the Town and did not exonerate, nor offer any excuses for the Town Attorney. Vice Mayor Harris stated that it had been a concern of the citizens that the way the fee increases were enacted suggested that taxpayer money was mismanaged, which may hold some truth. He said that many people had stated that they should seek to make public money "whole." He testified that almost the very first words from the Town Attorney was a volunteer statement to write a check covering the difference in monies. He noted that Ms. Alejandro stated that, legally, the Town Attorney would only be obligated to pay any overages since 2024 due to the statute of limitations. He said that the Council had asked the Town Manager to look at the different levels of outstanding monies needed in order to make it right. He said that he was sharing the information because he felt it was important for the public to know. Vice Mayor Harris reported that the motion made by Councilman Bowman once they had returned to open session was largely based on the advice given to them by the outside attorney. He detailed that the motion was to write a new contract for the Town Attorney and turn that information over to Ms. Alejandro and her firm in Richmond, so the contract would be extremely specific, a one-year contract, and they would adjust the salary to a fair market value. He said that prior to the vote, the Council made certain that after reviewing the contract there was nothing that would prevent their putting different stipulations, requirements, or metrics of behavior. Vice Mayor Harris stated that transparency was a process and did not happen overnight.

Councilman Cutler related his personal history as a nuclear machinist, then a submarine officer, and then transferred to medicine. He said as part of his job he participated in a lot of fact-finding and critiques. He noted that critiques in that line of work were intensive meetings that identified who was responsible for an issue and how to correct the root cause to be able to restore confidence in the ability to execute the mission. Councilman Cutler stated that he had spent a lot of time sharing and discussing his feelings on the subject with other Council members. He said it was straightforward

that the deviation from the contracted amount to the billed amount and the approval method utilized were the root causes. He said that the law was clear, as demonstrated by Ms. Alejandro, that the Council must vote to raise the pay. He continued that with the proper billing statements; there never would have been a problem. He said that if there had been proper adherence to the contract and utilization of methods for increased compensation in accordance with state code, then there would never have been a problem. Mr. Cutler reported that they had covered transparency at length, and they should be doing like Cheif Howell said earlier: doing the right thing even when no one is looking. He quoted Admiral Rickover as saying, "You get what you inspect, not what you expect," and "Responsibility is a unique concept. You may share it with others, but your portion is not diminished. If responsibility is rightfully yours, no evasion or ignorance or passing the blame can shift the burden to someone else." He related that elements of transparency could be thought of in the same manner. Councilman Cutler thanked the Smithfield Times directly for their efforts to bring transparency to the issue. He observed that he had caught some flak, which was fine as neither he nor the Times minded. He stated that no Council members ever saw the bills of filling rate in print from the Town Attorney or the Town Manager leading up to the release of the story. He said that only a billing summary was requested from the treasurer and used for the evaluations that had not been completed in years. He continued that the request did not include the hourly rate and the contract in place at the time was the only thing provided as a mechanism of employment. He detailed the information that was pulled on their direct reports, but they did not have the same things for the Town Attorney. He said that for the Town Attorney, the contract and the summary of billing were all that the Council had to conduct their evaluation and was where his own information requests ended. He said that the media invoked the Freedom of Information Act (FOIA) and read it as: "The affairs of government are not intended to be conducted in an atmosphere of secrecy since at all times the public is to be the beneficiary of any action taken at any level of government." Councilman Cuter reported that the Smithfield Times brought transparency to an issue that only a single individual in the Town Staff was aware of until the Town Manager pulled the contract. He said that until the Smithfield Times reached out to the Council, only a select few knew the story, FOIA requests, or the billing problem before being revealed by the Times. He said that there was plenty of time to act and be transparent before the release of the story, and the subsequent sensationalization and finger pointing on social media. Councilman Cutler stated that the Town Manager had become a little bit of a scapegoat for the problem, but he was an excellent Town Manager. He stated that the Town Manager had been advised by the legal services provided by the Town Council. He wagered that the reputation of the Town Attorney as well as the confidence of a Council that had kept the same Town Attorney for over 30 years without questioning the billing or contract, etc., had instilled in the Town Manager a level of trust in the Town Attorney that made him feel that he didn't need to question the billing or changes. He quoted from the Town Code: "It shall be the duty of the Town Attorney to draft all bonds, deeds, obligations, and contracts, etc. which may be required of him by any ordinance or order of the Council which, by law, usage, or agreement, should be drawn by the Town." He said that there was much to blame for the issue, however the root cause was the lack of knowledge of the contract itself. Councilman Cutler stated that the Town had been audited since 2008 and not a single audit pulled that specific contract. He reviewed that only one Council member from 2018 had acknowledged to the paper knowledge of the rate increase made that year. He said that the Council had a level of trust so high that they revolted to renew the contract prior to resolving the issue by invoking a 2018 discussion of raising rates as a validation for the change, and then validating a non-transparent arrangement. He invoked the phrase "trust, but verify," and said that the fault was lacking verification in exchange for trust and lacking awareness of the contract until the 2025 evaluation cycle. He quoted James Madison as

saying: "The truth was that all men having power ought to be distrusted in a certain degree." Councilman Cutler questioned what the citizens had lost in the process, and quoted from a book by James Harris "ethical transgressions, such as acts of commission and acts of omission, the former is treated much more harshly than the latter in society." He said that Mr. Harris wrote about government: "Most of us are painfully aware that our trust in government, corporations, and other public institutions have been undermined by lies." He said that the writer was alluding to the fragility of the public's trust, and continued to read from his writings. He recognized that they had determined that no malicious intent had occured, but added that the citizens of Smithfield may lose public trust. He noted that the public had lost the ability to consider the marketplace and other services available. He said that despite the confidence that the Town Council displayed in retaining the Town Attorney, the firm was not without responsibility and required accountability. He summarized that the contract had been in existence since 2008, with one individual particularly aware of it, and since the 2024 pay increase. He said that the contract was with the Town Council, and hired at the pleasure of the Town Council; however, it was with the citizens of Smithfield. Councilman Cutler said that he would make motions in New Business on the agenda to take 100% accountability for all payments contrary to the 2008 contact. He said that Ms. Alejandro had said that the law would support that action, and an informal raise was not in accordance with the state and Virginia Code. He said it was within their right and recoverable by state law to the statute of limitations. He said that Ms. Alejandro would not advise on the action but would advise on the outcome of their decision-making. Ms. Alejandro stated that the corrections were not taken in 2018 or 2024. He noted that Ms. Alejandro said that there was nothing stopping the firm from paying back any overpayment or making overpayment a condition of contract renewal. He said a breach of contract with the citizens of Smithfield required full accounting, external audit, balancing of the books, and making the citizens whole.

Mayor Smith confirmed that there were no other Council members who wished to comment.

9. Consent Agenda Items

Councilwoman Butler made a motion to approve C(a) through C(e) on the Consent Agenda. Councilman Brooks seconded the motion.

Mayor Smith called for the vote, with seven members present. Councilwoman Butler voted aye, Councilwoman Bebermeyer voted aye, Councilman Brooks voted aye, Councilman Cutler voted aye, Councilman Bowman voted aye, Vice Mayor Harris voted aye, and Mayor Smith voted aye.

a. Motion to Amend the Town's Pay and Classification Plan
Finance Committee Chair, Jeff Brooks

b. Resolution to Appropriate Funds to the 2025/2026 General Fund Operating Budget for Vehicle Purchase
Finance Committee Chair, Jeff Brooks

c. Invoices Over $20,000 Requiring Council Authorization:
Finance Committee Chair, Jeff Brooks

i.	The Peterbuilt Store - New Public Works Truck	$129,324.00
ii.	The Blair Brothers, Inc. - Sykes Court Paving	$ 41,450.00

d. Resolution to Accept St, Andrews, Royal Blackheath, Ayrshire Loop and St. Annes located in Cypress Creek Phase 6 into the Town's Maintenance System for Funding
Public Works Committee Chair, Bill Harris

e. Motion to Accept the Proffer Amendment for Battery Park Storage
Public Buildings and Welfare Committee Chair, Valerie Butler

10. Action Items

a. PUBLIC HEARING: Conditional Rezoning and Special Use Permit - The Promontory
Tammie Clary, Director of Community Development and Planning

Tammie Clary, Community Development and Planning Director, reported that the applicant was seeking a conditional rezoning to Planned Mix Use Development (PMUD) to facilitate the construction of 5 commercial lots, future commercial area, 107 single-family detached units, 103 single-family-attached units (67 villa units, 36 townhouse units) a maximum of 210 units in total, and 22.93 acres of open space. She stated that the project would be phased, starting with the commercial sites. She observed that the road beside Tractor Supply was planned to be extended, with a network of public roads, connecting to Cypress Run Drive and Turner Drive. Mrs. Clary reported that in order to facilitate this project, the applicants had applied for the following:

Conditional Official Zoning Map Amendment (Rezoning):
The uses the applicant is proposing (attached and detached units, fast food restaurant, car wash, restaurant, drive-in bank) are permissible in the Planned Mixed Use Development District (PMUD). These uses are also in line with the Future Land Use Map, as the current designations are Residential Mixed Use and Corridor Mixed Use, which provide for primary residential uses and primary mixed commercial / multifamily residential uses.

1st Special Use Permit- Article 3.J2.C.7: Drive-thru facilities.
The applicant is requesting flexibility to utilize drive-thru facilities on all 5 commercial parcels, with the current plan of a drive-in bank and fast-food restaurant with a drive-thru window.

2nd Special Use Permit- C.20: Waiver of yard requirements for reduced setbacks:

Townhouse:	Villa:	SFD:	Required:
Front 25'/20'	Front 25'/20'	Front: 25'	Front 35'
Side 10'	Side 12'	Side: 10'	Side 15'
Rear 25'	Rear 25'	Rear: 25'	Rear 35'

Mrs. Clary continued that the amenities would include the items depicted on L11- L15: signage, multipurpose lawns, grill area, waterfront deck, fishing outpost, native plantings, seating nook, tot lot, seating with open views to the lake, trails, firepit, picnic pergola with tables and benches, Adirondack chairs, and sand beach. She noted that the applicants added a dog park with play equipment. She stated that the applicants would appoint a property owners association that would be responsible for the maintenance and upkeep of the following: (i) all open space, common areas, and other amenities noted in the Conceptual Plan; (ii) all stormwater management infrastructure, including "wet" stormwater management infrastructure, specifically the best management practices;

and (iii) landscaped buffer areas, as shown in the Conceptual Plan. She detailed that the applicants were proffering the following road improvements:

1. Southbound right-turn lane (100-foot storage plus 200-foot taper) into right in/right out proposed Project entrance off of US 258/Rt. 10 (Benns Church Boulevard) designated as Public Road A on the Conceptual Plan and currently serving as an entrance to the existing Tractor Supply;
2. Southbound right-turn lane (100-foot storage plus 200-foot taper) into right in/right out proposed Project entrance off of US 258/Rt. 10 (Benns Church Boulevard) designated as Public Road J on the Conceptual Plan (in between Turner Dr & Tractor Supply); and
3. A conditional payment of $1,000,000.00 toward the construction of the roundabout at Turner Drive.

She stated that in addition to those proffers, the applicants were proffering a conditional cash proffer to Isle of Wight County Schools if they are over enrollment capacity at SMS at the time of CO issuance. Finally, no more than 60 zoning permits will be issued in a 12 consecutive month period for the residential units. Mrs. Clary reviewed that the application was favorably recommended to Town Council at the July Planning Commission. She reported that the applicants were in attendance with a prepared presentation.

Kent Henry of 3122 West Marshall Street in Richmond stated the presentation he was going to show them detailed the revisions that had been made to the package since the last time he was present. He began by displaying the updated General Development Plan, commercial at the front and townhouses directly behind. He reported that the number of townhouses had been reduced to 36, which decreased their density. He observed the proposed townhouses complied with the existing building height code for the Town of Smithfield, meaning there was no waiver request necessary. He continued that the villas were also behind the commercial area, with the developer having broken up some of the villas into duplexes. He specified that the number of villas had decreased by an additional 10 or so to a total of 67. Mr. Henry said that they had reimagined the single-family lots by making some of them larger to stay in substantial conformance with the plans submitted. He reported that the density had been lowered to 107 single-family units. He noted that when they were working on the newest iteration of the product, they matched it to the Smithfield Zoning Ordinance, specifically that their attached product matched the Attached Residential (AR) zoning density requirements, and the single-family detached matched the Suburban Residential (SR) Cluster Subdivision.

Mr. Henry listed the high-level revisions as follows: Reduced density to 210 units; No waiver requested for reduced buffer and keeping the 50' buffer on the property line; Single-family Detached matches SR-Cluster district setbacks and density; Single Family Attached (SFA) matches AR district setbacks and density; VDOT approval on TIA consistency memo, Larger entry park and creation of a dog park. He reviewed the two SUP Requests and the continued plan to allow a sewer tie-in for the church, allowing them to connect to the public sewer. He reviewed the phasing plan that was discussed in the Staff Report and gave an overview of where the amenities were located on the project site map. He next summarized the Traffic Plan information and the decrease in school impacts due to the decrease in density. Mr. Henry emphasized that the developer was only able to proffer for impacts specifically attributable to their development. He stated that they had received a letter from Isle of Wight County Schools dated 12/13/2024 that reported that Smithfield Middle

School would exceed capacity when future development was added, and noted that they had addressed the issue in their proffer statement. He related that due to the changes in density, the fiscal impacts had been updated. Mr. Henry reviewed the notable proffers including: pattern book for architectural and landscape standards, amenities to match conceptual plans, construction of two turn lanes, conditional $1 million payment for the construction of the roundabout on Turner Drive, conditional payment to the public school if Smithfield Middle School was over capacity at the time of Certificate of Occupancy (CO) issuance, commercial parcels to be developed first, and the prohibition of piers or docks on Cypress Creek.

Mayor Smith asked if the Council had any questions.

Councilman Cutler shared with the Council members information compiled by Town Staff that included growth-rate data in the area. He noted that there were no growth rates included on the report, but there was the statement that new population growth of about 3,000 people was expected to take place over 10 years, or 3.3% annually. He observed that the presentation given had reported a cash flow for the Town of about $250,000.00 annually, but he did not feel that information captured the cost of growth of services from all the development. He pointed out that in the Tishler Bice study, the County was in the red at a rate of growth of 2% annually and would be forced to raise taxes strictly because of numerical growth. He said that based on the numbers presented, the Town was already edging up to the 2% growth rate without approving new development. He questioned if the Promontory even needed to be built. Councilman Cutler said to Mr. Henry t that their product looked great, but he disagreed with the setbacks SUP. He asked Staff and the developer to tell him what was good about the project.

Mr. Henry observed that in the developers Fiscal Impact Analysis, the methodology utilized a marginal analysis, explaining that it was specifically their incremental effect on the Town's operations. He said that the other developments that Councilman Cutler had mentioned, namely Mallory Pointe, had also completed their own Fiscal Impact statements. He reported that the property in question was beautiful, and one of the last large properties in Smithfield to be developed. He added that the proposed development would be in the commercial corridor of Benns Church Boulevard which had allowed them to include 5 commercial parcels that were needed in the Town of Smithfield. He repeated the road improvements that would be completed as a result of the development. He stated that the residential parcels helped to offset the costs associated with bringing the commercial areas online. Mr. Henry reported that they offered a great mix of products, including attainable housing for young adults and housing appropriate for aging adults. He said that they were the right developer to complete a project on that property.

The Town Attorney reminded Mayor Smith that the developer had their opportunity to make his presentation, and the next step generally was to have the public hearing with Council engaging with the developer after.

Mayor Smith opened the public hearing, reporting that there were three people signed up to comment.

Tanya Harwell - Mrs. Harwell of 224 Smith Drive in Smithfield stated that she wanted to speak about her daughter with Prader-Willi syndrome and the challenges associated with that diagnosis.

Mayor Smith confirmed with Mrs. Harwell that the public hearing was not in regard to accessory structures.

Renee Bevan - Mrs. Bevan of 101 Beale Avenue in Smithfield reported that she wanted to offer tentative support for the proposed development, The Promontory. She specified that her support was tentative due to her belief that the developer needed to submit a plan that conformed with the Town's existing zoning laws. She stated that considering that there was a request to change the land use from Community Conservation (CC) to PMUD, the builder should have had no problem meeting the setback requirements and there was no reason to approve the requested SUP related to setbacks. She continued that if compliance with the Town's setbacks resulted in fewer homes and lower density, then the Town's laws were effective. Mrs. Bevan continued that the developer should be more specific on the proffered amenities, and quoted from page L8 that amenities "may include the following," and she asserted that it should be changed to "shall." She asked the Council to ensure that the amenities were included on the site plan so that there was not a repeat of the issues had at Cypress Creek. Mrs. Bevan told Mr. Henry that she had been pleased to see that the developer had increased the buffer size. She gave the reminder that 4 of the current Council members had campaigned on a platform of "Managed Growth," and managed growth meant compliance with the Town's zoning laws.

Bob Thornton - Mr. Thornton of 3752 Little Neck Point in Virginia Beach reported that he had been hired by the landowner of the property that included the 5 commercial parcels in order to market them. He stated that they previously had been successful in bringing Tractor Supply to site. He recalled that at the time that the business was being constructed, the road perpendicular to the site was all that they could get VDOT to review. He detailed that he had been working on the marketing for the other 5 commercial parcels for the last 10 years. He stated that there was now a bank committed to the parcel on the corner of Benn's Church and Turner Drive, and it was a bank that was local to Smithfield. Mr. Thornton reported that there were many fast food establishments interested in the site, but they could not sell the commercial parcels without access to the site. He pointed out that there was only one access point to the development past the Tractor Supply to be able to serve the other 5 parcels. He emphasized that having an access point in the back of the property was critical to marketing the commercial parcels. He said that without the creation of the roundabout or the infrastructure support that the residential area would provide, he did not think that the commercial parcels were viable. He suggested that the Council give serious consideration to the project.

Mayor Smith asked if there was anyone else who wished to speak on the matter. Hearing and seeing none, he closed the public hearing.

Councilman Cutler asked Mr. Henry to specify what the change was with regard to the buffer.

Mr. Henry recalled that the issue had been a sticking point as they went through the Planning Commission review process. He stated that they brought the buffer up to the existing PMUD standards as outlined in the Town Code. He reported that the setbacks in the PMUD did not differentiate between the different types of residential products. He related that the current iteration of the project included larger lots and shifting houses to other locations on the property to allow for the park at the front entrance.

Councilman Cutler asked why the developer did not choose to apply for zoning that they could match the setbacks to.

Mr. Henry reported that when the development team had first met with the Town in 2022 or 2023, the PMUD designation made sense for this particular project, and stated that it still did. He said that the AR and SR Cluster densities chosen from the Town Codes allowed them to support public infrastructure.

Councilman Cutler reported that he was still in talks with the School Board Chairman about the issue of school proffers. He reviewed that when he and Councilman Brooks attended the legislative summary conference, an issue discussed was proffer requirements. He said that the attorneys from Sands Anderson stated that if the County was in the process of modifying their proffer rules, even if the project was already submitted but not approved and the proffer rules changed, then they would still need to adhere to those proffer rules. He said that he did not know if that information was correct, but it was what had been reported to them by the attorneys at that event, which was hosted by the Virginia Municipal League.

Vice Mayor Harris asked Councilman Cutler what he was suggesting in relation to the project they were currently discussing.

Councilman Cutler suggested that they table the matter for a long period of time. He stated that it would be risky governance of the Town Council for them to not understand the growth rate that was taking place in the Town with consideration of what had already been approved in Smithfield and the perils that the County was facing based on their numerical growth rate. He added that there needed to be an assessment for the Town in order for them to understand what their growth rate was and how it would affect their taxes. He continued that by tabling the matter, they would allow time for the County to fix the proffer system in order to allow the conditional proffer to become non-conditional.

The Town Attorney reported that action was not possible. He explained that the Town Council could not ask for a proffer.

Councilman Cutler stated that no one was asking for a proffer.

The Town Attorney said that the County could not fix their proffer system due to the fact that there was not a proffer system. He stated that the County could amend their Capital Improvement Plan, but there was not a proffer system.

Councilman Cutler stated that he was speaking in plain language.

The Town Attorney said that they needed to speak in very specific language due to the nature of the issue. He reported that he had spoken with the County Attorney on the issue as well, and it came back to the point that localities were not permitted to ask for proffers and were not permitted to accept proffers unless there were capital items identified in their Capital Improvement Plan. He added that the impact must be specifically attributable to the particular development. He acknowledged that the Town could not demand anything, but it would allow the developer to change the manner of the offer from conditional to non-conditional.

Councilman Cutler stated that he understood what the Town Attorney was saying, but noted that if the Council tabled the issue long enough and if the County amended their Capital Improvement Plan, then it would change the offer that the developer could make, per what the developer's attorney had stated at a prior meeting.

The Town Attorney stated that he would let the developer's attorney address the issue, as he did not want to speak for them.

Tyler Rose, Attorney with the law firm Williams Mullen, explained that there was a distinction in the world of proffers and the statute was pretty specific in the case of residential developments like the Promontory. He stated that there was a general cash proffer statute that related to cash proffers related to non-residential developments and Capital Improvement Plan projects. He reported that there was a more specific statute, 15.2230.4, that related to residential developments — specifically on-site and off-site proffers. Mr. Rose stated that the definition of off-site proffers included a general concept of cash proffers and did not have the Capital Improvement Plan concept either. He emphasized that the proffer related to residential developments needed to be specifically attributable to the development. He stated that the public facilities concept included public schools. Mr. Rose said that the Capital Improvement Plan concept that they were discussing was different than the residential development statute that they were dealing with in the matter. He stated that the developer was limited to the proffers that they were allowed to provide and was limited to the developers' specific impacts to public facilities, including public schools. Mr. Rose said that whether the County admitted the Capital Improvement Plan projects related to other infrastructure, the more specific statute related to public schools would take precedence over the more general statute. He explained that the reason why the development team was trying to offer more flexibility in the proffers was due to the numbers they were receiving were not as specific as they would have liked. He said that the way the proffer was written allowed them to address the developments specific impact to that Smithfield Middle School, which was the only school identified as being impacted.

Councilman Cutler recalled that when Mr. Rose addressed the issue prior he had said that if the School Board and the County's documents they had used to guide their writing were written differently or more appropriately than that would change what could be proposed.

Mr. Rose said that he did not recall saying that, and the explanation he had just given was how he had always interpreted the statute. He apologized if he had created confusion, but they were limited to the specific statute related to the issue.

Councilman Cutler stated that his point in bringing the issue up was that if the County made changes pursuant to those specific statutes that allowed a change, then that could be pursued while the project was not approved.

The Town Attorney reported that it could not. He said what Mr. Rose was trying to explain was that their development only impacted Smithfield Middle School, and they could not offer money for "schools" when they had no reported impact on other schools. He said that if the County amended their plan, and included other schools that were not directly impacted by their specific project, the Promontory, then they could not offer money towards schools that were not impacted. The Town Attorney gave the reminder that they had been discussing the contingent proffer for months, and it had been sent to the County Attorney for his review. He noted that the County was bound by State

Law.

Councilman Cutler said that per a previous discussion they had, the Town Attorney had indicated that if the documentation regarding the process was changed at the County, then it could change what was possible.

The Town Attorney said it did not. He asserted that the developer could not offer money for impacts to schools that they have no impact on. He pointed out that the developer was offering money for the schools that they would impact, which was all they could do.

Councilman Cutler said that he and the Town Attorney could discuss the issue later.

The Town Attorney said that Councilman Cutler had raised the issue at a public meeting.

Councilman Cutler said that he did not think he would be able to refine his question further, but he would be happy to discuss the issue further at a later point. He recommended that they table the project to assess the Town's growth rate.

Councilman Bowman said that he understood Councilman Cutler's statement, and acknowledged that he had his own idea of what he thought was appropriate growth for the Town as far as taxation went. He expressed concern if the Council was going to be put in the position that they were holding a process to see what might come and even when, or if, it did occur, it might not be applicable to the project in question.

Councilwoman Bebermeyer asked how the conditional proffers would work, specifically at what point they would be applied.

Mr. Rose stated that the statutes read that proffers could only be offered to address impacts that were applicable at the time that the project was approved. He said currently, the numbers that were being reported did not show an impact due to number fluctuations. He said that there was the potential for impact now, but if in the future overcapacity was projected at Smithfield Middle School, then the developer would pay in accordance to what the numbers reflected.

Councilwoman Bebermeyer asked who made that decision.

Mr. Henry said it would be through the issuance of the Certificate of Occupancy (CO). The Town

Attorney observed that information was written in the proffer.

The Town Manager clarified that if the schools identified that they were at capacity, then the Town would not issue a CO until that proffer was honored.

Councilwoman Bebermeyer confirmed that the townhouses were 3-story, and the villas were 2-story.

Mr. Henry added that though the townhouses were 3-story, they were within the existing height requirement.

Councilwoman Bebermeyer related that she had made her disdain for townhouses very well known. She expressed appreciation that the proposed townhouses were within the height requirement and the developer was not asking for an SUP in that regard.

Mr. Henry added that the villas were 2-stories, but the primary living area was on the first floor, which allowed for aging in place.

Councilwoman Bebermeyer confirmed with Mr. Henry that the developer had also decreased the number of townhouses, and that Cypress Run Drive would become a town-owned road. She reviewed the other planned entrances into the development. She asked Mr. Henry to discuss pedestrian access in the development.

Mr. Henry reported that there were sidewalks on both sides of the road within the development and a trail system through the RPA that tied into them. He added that on the public roads there were sidewalks down one side. He noted that in the commercial area there would likely be sidewalks, but how it would look would depend on the tenant as those site plans came forward.

Councilwoman Bebermeyer asked Mr. Henry to address the issue raised by Mrs. Bevan on the use of "may" in regard to the amenities.

Mr. Henry pointed out that in the proffer statement, item 5 reads: "the project shall provide the amenities as shown on the conceptual plan and contemplated on sheets L11 through L15." He said that the developer specifically referenced the Master Plan and Amenity Overview, as well on each individual page in the range given.

The Town Attorney said that he had also spoken with Mrs. Clary on the subject raised by Mrs. Bevan. He explained that the proffers used "shall."

Councilwoman Bebermeyer asked Mrs. Clary whether the proposed pump station on the project would service that entire area.

Mrs. Clary clarified that the area would be serviced by Isle of Wight County for their water and sewer utilities.

Councilwoman Butler asked Councilwoman Bebermeyer the reason she did not like townhouses, and asked Mr. Henry if he could then explain why they had chosen to include townhouses in their project.

Mr. Henry explained that townhouses allowed the developer to deliver attainable housing, and it was their lowest price point given the density that they were able to utilize. He said that they had placed that density internally in the plan, and reiterated that they were within the Town required building height. He acknowledged that townhomes weren't for everyone, but it allowed a first-time home buyer an opportunity to own a house. He reported that on July 24th he researched homes in Isle of Wight County that had 1750 square feet or more. He said that the results were 18 homes on the market that were under $500,000. He specified that the average year those homes were built was 2002 and the average price was $435,000. Mr. Henry stated that their townhome product offered

buyers who were looking at those houses newer, quality construction at a price that was attainable.

Councilwoman Bebermeyer reported that her issues with townhouses were that they were not attractive and had the appearance of a large wall. She noted that one thing she did like about the project was the commercial aspect and said that the property was the perfect place for it. She recalled that for years many had said that Smithfield needed to be a walkable town, and she felt that the proposed project was just that. She recognized her issues with the density; however she felt that it was important to note that it was walkable to the places that people would want to walk to, for example, the bank or grocery store.

Vice Mayor Harris reported that it had taken a while for him to lean toward approval for the Promontory. He recalled back to Mrs. Bevans comments and said that he was one of the Council members who had run on a platform of managed growth. He stated that in working with Mr. Henry, he felt that the project had given them an opportunity to do exactly that: manage the growth. He pointed out that the original number submitted had been lessened significantly, giving credit to Mr. Henry and the development team and were open to suggestions given by the Planning Commission and Town Council. He pointed out that the developer had revised the plan no less than 5 times, and had returned each time with a reflection of what they had requested. He noted that the plan for the Promontory was very similar when compared with the vision for the town outlined in the Comprehensive Plan. Vice Mayor Harris related that the increased walkability in the area would also decrease the number of cars on the road. He emphasized that the builder was shouldering the expense of virtually everything that was important to the infrastructure needed and that was one aspect that had led him to support the project. He additionally noted that their allowance of Hope Presbyterian Church to tap into their line, allowing access to public utilities, showed him that they were interested in be part of their community. He continued that their reworking the buffer to get rid of the SUP, making larger lots, and decreasing the number of homes were all good things. Vice Mayor Harris asserted that generally, he did not think that SUPs were in order if their sole purpose was to increase density and increase profit for the developer. He pointed out that he had said on a number of occasions that he would consider SUPs if they seemed to bring benefit to the town. He reviewed the two SUPs requested, and related that the request for drive-thrus in the commercial parcels was no problem; however, the second SUP regarding the setbacks had bothered him a great deal. He said that they had approached the developer about breaking the property zoning into sections and not under a PMUD, but apparently that was not possible. He related that he had learned to embrace the issue because the setbacks presented were within the AR and SR requirements for those specific areas, but they did not find them within the PMUD designation. He said that it present as silly, and speculated that maybe they needed to consider rewriting the zoning. Vice Mayor Harris summarized that the SUP for yard setbacks was not a big issue, and the proposed development had potential to bring good to that part of the town. He said for those reasons he was in favor of approval.

Councilman Cutler asked Mr. Henry how many cars the TIA had estimated would be added due to the project.

Devin Simpson, representative of Kimley-Horn, reported that she had been responsible for the Traffic Impact Analysis (TIA) for both the Benn's Church Master TIA and the consistency memo. She asked Councilman Cutler if he was referencing the development as a whole, meaning that he was including commercial and residential.

Councilman Cutler stated that was correct.

Mrs. Simpson said that roughly combined the number was about 350, or a little under, during the peak hour.

Councilman Cutler asked if that number took into account the walkability of the area.

Mrs. Simpson reported that it did not, adding that the decision to be conservative came about when they were completing the Benn's Church Master TIA. She clarified that it was their hope that walkability would decrease the number of cars on the road, but they did not want to be too conservative in their assumption.

Councilman Cutler noted that the walkability would be dependent on weather, etc., and asked for confirmation that there would be a net increase in traffic.

Mrs. Simpson acknowledged that was correct.

Councilman Cutler reported that they had discussed in Closed Session the legality on changing the zoning, and they had learned that it was possible. He asked the Town Manager how much the town's payment was for the roundabout at Turner Drive.

The Town Manager reported that town had agreed to a contribution of just under $1 million, or $982,000; however, it was all associated with the parcels across the street from that area.

Councilman Cutler asked if the building of the Promontory relieved any payment the town had toward that amount.

The Town Manager confirmed that it did not, as the developer's contribution had already been factored in when that amount was agreed upon.

Councilman Cutler asked Mr. Henry if there were 5 businesses lined up for the commercial parcels.

Mr. Henry reported that they had 2 currently, but no letters of intent had been signed since the zoning was not in place.

Councilman Cutler asked if they were advertising to any local business or was it only open to national businesses.

Mr. Henry stated that they were advertising to anyone who wanted to come.

Councilman Cutler referenced the growth data given, and noted that the developer's financials showed that the town would have a surplus of $250,000 annually.

Mr. Henry reported it was a marginal analysis for the addition of their project.

Councilman Cutler observed that the town had approved and considered with the Grange and the

Promontory about 3,000 citizens coming into town over the next 10 years. He asked the Town Manager if he could speak to how that would affect the police and the fire department, what additional services would need to be provided, and what the consequences of the additional growth to what had already been approved could be.

The Town Manager reported that it was an aggressive estimate to think that all 3,000 people would be in Smithfield in 10 years, and that estimate was using an audacious build-out timeline. He stated that the impacts that would occur included the increase in police personnel, as the ratio was generally 1 officer to 500 citizens. He noted that the revenue from the additional homes was what generally gave the ability to pay for the additional personnel. He said that beyond that, impact would be to level of service as fire, EMS, and schools were all provided by the County.

Councilman Cutler asked if the town would inherit the streets from the development.

The Town Manager stated that was correct, adding that the town would then receive reimbursement from VDOT per lane mile. Vice Mayor Harris made a motion to approve the conditional rezoning and SUP for the Promontory. Councilman Bowman seconded the motion.

Mayor Smith called for the vote, with seven members present. Councilman Bowman voted aye, Councilwoman Butler voted aye, Councilman Cutler voted nay, Councilwoman Bebermeyer voted aye, Councilman Brooks voted aye, Vice Mayor Harris voted aye, and Mayor Smith voted aye. The motion passed by a majority of 6/1.

b. PUBLIC HEARING: Text Amendments to the following sections of the Zoning Ordinance
Tammie Clary, Director of Community Development and Planning

i.	Article 2.Q and P	Reclassify Accessory Apartments as Accessory Dwelling Units and Clarify Regulations
ii.	Article 3.O	Update the Floodplain Overlay
iii.	Article 3.S	Create the Pinewood Heights Industrial Park Overlay

Mayor Smith reported that there were three proposed text amendments, and he wanted to address each individually.

Mrs. Clary stated that the first was an amendment to Article 2, P and Q. She explained that the amendment would update accessory apartments to accessory dwelling units. She reported that they would still require an SUP, but removed the family and age requirements. She noted that it would also allow freestanding ADUs in addition to ADUs over detached garages, and not require the removal of the kitchen. Mrs. Clary continued that Article 2P changed accessory apartments to accessory dwelling units. She reviewed that the Planning Commission favorably recommended this application with the following conditions: removal of item 4, remove breezeway from 8a, 8c replace shall with "may." She said that the Town Staff also suggested removing the porch, patio, etc. from 8a.

Mayor Smith opened the public hearing.

Tonya Harwell - Mrs. Harwell of 224 Smith Drive in Smithfield explained that her adult daughter had a rare syndrome called Prader Willi, and she would like for her to be able to have some independence in her life, but still keep her safe. She listed out the different symptoms of the syndrome that her daughter lived with, including malignant hypothermia and hyperthermia, which required her to be at specific temperatures. She stated that her daughter wanted a little independence, and having a dwelling close by would enable her to ensure her daughter was in a safe environment.

Councilman Bowman reported that he had known Mrs. Harwell for about 25 years, and he could validate the challenges that she had encountered with her daughter's care.

Mrs. Harwell observed that there were a lot of things she could control in a smaller environment to ensure her daughter's safety and well-being.

Mayor Smith stated that there were no other members of the public signed-up and asked if anyone else wished to speak. Hearing and seeing none, he closed the public hearing.

Councilman Cutler made a motion to approve the text amendment to Article 2.Q and P. Councilwoman Bebermeyer seconded the motion.

Mayor Smith called for the vote, with seven members present. Vice Mayor Harris voted aye, Councilman Cutler voted aye, Councilman Bowman voted aye, Councilman Brooks voted aye, Councilwoman Bebermeyer voted aye, Councilwoman Butler voted aye, and Mayor Smith voted aye.

Mrs. Clary reported that the next proposed text amendment was to Article 3.O updating the Floodplain Ordinance. She stated that the Federal Emergency Management Agency (FEMA) updated the Flood Insurance Rate Map (FIRM) and Flood Insurance Study (FIS). She said that the Town Staff utilized the provided model ordinance, which has already been approved by DCR (Department of Conservation and Recreation). She related that once approved by Town Council, it will need to be approved by FEMA. Mrs. Clary reviewed that the item appeared on the April 9th, 2024 Planning Commission agenda as a discussion item, with the Planning Commission favorably recommending the application with the condition that alternative language allowing accessory structures in the Special Flood Hazard Area (SFHA) be included. She noted that the Town Staff additionally suggested removing the language allowing accessory structures and instead prohibiting accessory structures in the SFHA, as that would be in conformance with our Chesapeake Bay Protection Area (CBPA) guidelines, which do not allow accessory structures in the RPA.

Mayor Smith opened the public hearing and confirmed that there were no members of the public signed up for comment. He asked if there was anyone present who wished to speak on the matter. Hearing and seeing none, he closed the public hearing.

Councilman Cutler made a motion to approve the text amendment to Article 3.O updating the Floodplain Ordinance. Vice Mayor Harris seconded the motion.

Mayor Smith called for the vote, with seven members present. Councilman Brooks voted aye, Councilwoman Butler voted aye, Councilwoman Bebermeyer voted aye, Councilman Cutler voted aye, Councilman Bowman voted aye, Vice Mayor Harris voted aye, and Mayor Smith voted aye.

Mrs. Clary stated that the final proposed text amendment was to Article 3S to create a new Pinewood Heights Industrial Park Overlay (PHIPO) District. She reported that the item appeared as a discussion item at the July Planning Commission meeting, and a red-lined version was attached. She said that the Planning Commission made suggested changes as a discussion item and favorably recommended it to Town Council.

Mayor Smith opened the public hearing and confirmed that there were no members of the public signed up for comment. He asked if there was anyone present who wished to speak on the matter. Hearing and seeing none, he closed the public hearing. The Town Manager recalled that in Committees they had discussed the issue of shipping containers and thought they may want to talk about it further to decide if they wanted to allow any shipping containers in the district and, if so, in what cases they would be permissible. He noted that a SUP was currently required for anyone to use a shipping container in the industrial park.

Councilman Bowman stated that after considering the matter, he preferred that they continue to have shipping containers require an SUP in the industrial park. He added that they could revisit the issue at a later date if they felt that a change needed to be made.

Mayor Smith agreed that it would allow the Town Council to review each individual shipping container and its use.

Councilman Cutler asked what the cost would be to apply for a shipping container SUP.

The Town Manager detailed that it was $400 to apply for the SUP, and added at least three months to the process.

Councilman Cutler reported that he had driven through the area in question, and felt that it could be one of the best proactive projects that the town had pursued. He stated that he would like to see fewer impediments to the least earning small businesses wishing to establish themselves in that area, but he was understanding of the balance necessary. He questioned if they could come up with a better zoning ordinance to provide that balance instead of requiring the use of an SUP.

Councilman Bowman said that he was in agreement, however he did not want to pass it at the initial outset.

Councilman Cutler agreed that having it as a by-right use would be a bad idea, but he was not in favor of making it a barrier for entry for small businesses.

Councilman Bowman said that it was not his intent to create barriers. He clarified that the last thing he would like to see in the new industrial park was many shipping containers positioned in an unsightly manner.

Councilman Brooks asked how the Council felt about allowing one shipping container per lot by-right. He recognized that the area in question was pretty visible, and lots could be viewed in succession without delineation.

The Town Manager stated that in order to make shipping container use by-right he would want them

to be shielded from view, and needed to be presentable. He offered that they could spend time crafting guidelines.

Councilman Cutler began to make a motion to table.

Councilman Bowman interjected that he did not want to table the issue, but wanted to approve the issue as initially presented without any reference to shipping containers. He related that the Town Staff and the Planning Commission could further work on the issue, but he wanted to pass the overlay.

Councilwoman Bebermeyer agreed that they should pass the overlay and then still work on some of the finer issues.

Councilman Bowman made a motion to approve the text amendment to Article 3S to create a new Pinewood Heights Industrial Park Overlay (PHIPO) District. Councilwoman Bebermeyer seconded the motion.

Mayor Smith called for the vote, with seven members present. Councilwoman Bebermeyer voted aye, Councilman Brooks voted aye, Councilman Bowman voted aye, Vice Mayor Harris voted aye, Councilwoman Butler voted aye, Councilman Cutler voted aye, and Mayor Smith voted aye.

c. Motion to Approve the Town Council Summary Minutes from August 5th, 2025
William H. Riddick, III, Town Attorney

The Town Attorney recommended that minutes be approved with minor corrections.

Councilman Bowman made a motion to approve the amended minutes. Vice Mayor Harris seconded the motion.

Mayor Smith called for the vote, with seven members present. Councilman Cutler voted aye, Vice Mayor Harris voted aye, Councilman Bowman voted aye, Councilwoman Butler voted aye, Councilman Brooks voted aye, Councilwoman Bebermeyer voted aye, and Mayor Smith voted aye.

Councilman Cutler stated that he was attaching a letter to request that the overpayments come back to the town and to the citizens, as well as stipulations for contract renewal that say the same for future motions once they had results of those audits.

Councilwoman Butler asked Councilman Cutler for clarification that the audit they were requiring would take an estimated 18 hours to review back to contract information in 2008.

Councilman Cutler confirmed that was the scope that was discussed.

Mayor Smith asked if they were breaking it into sections of 2008 through 2018, etc.

The Town Manager reported that was how the staff internal audit was being completed. He said that when he spoke with the auditing firm he would ask them to break out the information in the same way.

Councilwoman Butler confirmed that Councilman Cutler's last comment was not a motion, but an observation.

Councilman Cutler stated he had prepared a motion, but wanted to wait for the outcome of the audit in order to gauge the correct scop of repayment.

11. New Business

a. Additional Invoice Received Since Finance Committee Requiring Council Authorization: Michael Stallings, Town Manager

i. Lewis Construction of Virginia - Cypress Creek Bridge Waterline Work $ 25,923.60

DRAFT

The Town Manager reported that an additional invoice had been received after the Committee Meetings. He explained that as the work was being completed to the Cypress Creek Bridge, they were made aware of a piece of pipe that needed to be replaced through one of the abutments. He directed them to the associated invoice in their informational packet.

Councilman Brooks asked for more information about how the situation arose.

The Town Manager said that as work was progressing, Town Staff viewed a piece of pipe that went through one of the abutments, and wanted to have it replaced while they were completing bridge work. He noted that otherwise the Town would have had to shut a lane down in the near future to complete the necessary work, but they were able to utilize the existing lane closure to have it completed.

Ed Heide, Director of Public Works, clarified that the pipe was not leaking, but a seal that went through the abutment on the Red Point side of the bridge had failed, causing the ductal iron pipe to lay on the bridge abutment, which was causing a friction point which had the potential to cause a future leak. He said that with the bridge already partially closed, it seemed like a good time to address the issue. He observed that the cost for traffic control was almost the same as replacing the pipe itself.

Councilman Brooks made a motion to approve the invoice. Councilman Cutler seconded the motion.

Mayor Smith called for the vote, with seven members present. Councilman Brooks voted aye, Councilman Bowman voted aye, Vice Mayor Harris voted aye, Councilwoman Bebermeyer voted aye, Councilwoman Butler voted aye, Councilman Cutler voted aye, and Mayor Smith voted aye.

b. Motion to Accept the Proposal for Audit Services Regarding Over-payment to the Town Attorney.

Councilman Cutler reported that the Council had spoken with the Town Manager regarding obtaining audit services due to the recent accounting situation they had encountered. He asked what the cost of those services.

The Town Manager reported that it was $4,100 with the firm Robinson Farmer Cox, the auditing firm that they used who is the Town's existing auditing firm. He stated the quote was for the firm to do an external audit to address the invoice situation.

Councilman Cutler asked if it was approved, would it be part of the Town's annual audit fee. The

Town Manager reported that cost would be separate and outside.

Councilman Cutler asked when the audit could be completed.

The Town Manager reported that it sounded like it could be started soon. He reviewed the quote and stated that the firm was estimating 18 hours of work, and he anticipated that within probably two weeks they would be able to turn it around.

Councilman Cutler made a motion to authorize the Town Manager to fund an audit of the billing between the Town of Smithfield and the Town Attorney's firm to determine the extent of any over/under payments since the contract start date in 2008. Councilwoman Bebermeyer seconded the motion.

Councilwoman Butler asked if reviewing contracts was a part of the Town's annual auditing process.

The Town Manager reported that during the audit process the auditors would pull a random sampling of invoices and check those against existing contracts. He stated that he had confirmed with Robinson Farmer Cox and they confirmed that over the years, the Attorney's contract had never been part of their random sampling.

Councilwoman Butler questioned that the Attorney's contract had not ever been pulled since 2008.

The Town Manager clarified that it would have had to have been pulled after 2018. He noted that prior to that time there was not the same type of auditing. He said that the Town also changed auditing firms occasionally as their contracts were reviewed every 5 years.

Councilwoman Butler expressed surprise that the contract had never been audited by any firm. She suggested that was something that they may need to require moving forward.

Councilman Bowman reported that he thought that the Treasurer would include what the Town was paying for outside contracted services as part of her monthly report.

Councilwoman Butler agreed it should be audited internally, but it should also have outside auditing as well.

The Town Manager related that as part of their audit this year he could have representatives from Robinson Farmer Cox present to the Council information about their process.

Vice Mayor Harris asked Councilman Cutler to share more information about why they were requesting this action.

Councilman Cutler said that the Town Staff were capable, certified professionals who could complete an audit. He added that with an outside audit there would be a second review to validate the Town's findings. He said that when they did such an action and validated the effectiveness of their own corrective actions, then they verified to Staff, the Town Council, and the public that the Town's funds were being managed appropriately.

Vice Mayor Harris said that this was a step that needed to be taken due to the amount of issues, problems, and misinformation.
Mayor Smith called for the vote, with seven members present. Councilman Brooks voted aye, Councilman Bowman voted aye, Vice Mayor Harris voted aye, Councilwoman Bebermeyer voted aye, Councilwoman Butler voted aye, Councilman Cutler voted nay, Councilman Brooks voted aye, and Mayor Smith voted aye. The motion passed unanimously.

13. Closed Session

Councilman Bowman expressed concern about the topic for Closed Session a. Closed Session for the Purpose of Discussing Personnel Matters, more specifically, the Four Appointed Positions by Town Council as follows: Town Manager, Town Treasurer, Town Clerk, and Town Attorney, Pursuant to Section 2.2-3711 A1 of the Code of Virginia. He asked if it was the Council's intent to talk with each one of the individuals during the current session.

Councilwoman Bebermeyer stated that it was only to discuss their evaluations.

Councilman Bowman noted the time and care that needed to be taken and questioned if that should be done at a later date, perhaps as part of Committees.

Mayor Smith stated that it was his understanding that there was to be light discussion and then they needed to get a response back to Human Resources by the 22nd for them to be present with them on the 26th.

Vice Mayor Harris said that he was in agreement that the appropriate attention should be given to the evaluations, especially given the amount of work Ashley Rogers, Director of Human Resources, had put into the endeavor.

Mrs. Rogers stated that the timeline was up to them and could be adjusted. She confirmed that the evaluations were scheduled to be delivered at the next Committee meeting. She related that there was discussion to be had, and the Council meeting had already been scheduled, which was why it was on the agenda.

Councilman Cutler asked for confirmation that it was basically for consolidation.

Councilman Bowman made a motion to go into Closed Session to discuss the identified closed session topics. Councilwoman Bebermeyer seconded the motion.

Mayor Smith called for the vote, with seven members present. Councilwoman Butler voted aye, Councilwoman Bebermeyer voted aye, Councilman Brooks voted aye, Councilman Cutler voted aye, Councilman Bowman voted aye, Vice Mayor Harris voted aye, and Mayor Smith voted aye.

Entered into Closed Session: 9:10 pm
Returned from Closed Session: 10:04 pm

Councilman Bowman made a motion to return to Open Session. Vice Mayor Harris seconded the motion.

Mayor Smith called for the vote, with seven members present. Councilwoman Butler voted aye, Councilwoman Bebermeyer voted aye, Councilman Brooks voted aye, Councilman Cutler voted aye, Councilman Bowman voted aye, Vice Mayor Harris voted aye, and Mayor Smith voted aye.

Councilman Bowman made a motion to certify that only the topics previously mentioned were discussed during the Closed Session. Councilwoman Bebermeyer seconded the motion.

Mayor Smith called for the vote, with seven members present. Councilwoman Butler voted aye, Councilwoman Bebermeyer voted aye, Councilman Brooks voted aye, Councilman Cutler voted aye, Councilman Bowman voted aye, Vice Mayor Harris voted aye, and Mayor Smith voted aye.

a. Closed Session for the Purpose of Discussing Personnel Matters, more specifically, the Four Appointed Positions by Town Council as follows: Town Manager, Town Treasurer, Town Clerk, and Town Attorney, Pursuant to Section 2.2-3711 A1 of the Code of Virginia.

b. Closed Session for the Purpose of Cost Negotiations for Red Point Taphouse Right of Way Valuations Pursuant to 2.2-3711 A3 of the Code of Virginia

c. Closed Session for the Discussion of Acquisition / Disposition of Real Property, more specifically, The Grange @ 10Main Pursuant to 2.2-3711 A3 of the Code of Virginia

12. Old Business

a. Agreement to refund SUP Advertisement Fee

Vice Mayor Harris stated that it was his understanding that the Town Attorney had looked into the legality of the Town's ability to repay the sum of $400 for a previous permit application.

The Town Attorney reported that they had come to the conclusion that there was nobody to object to the action. He explained that the fee was to cover the cost of the advertisement required.

The Town Manager confirmed that they had already voted to complete the action, and now they could write the check.

14. Adjournment

The meeting adjourned at 10:07 pm.

_____ _____

Michael Smith - Mayor Lesley King - Town Clerk

DRAFT

The Smithfield Town Council held its Special Meeting on Friday, September 12, 2025. The meeting was called to order at 9:00 AM.

Members present:

Michael Smith - Mayor
Bill Harris - Vice Mayor
Steve Bowman
Mary Ellen Bebermeyer
Valerie Bulter
Darren Cutler
Jeff Brooks

Members absent:

None

Staff present:

Michael Stallings – Town Manager
Lesley King – Town Clerk
Faith Alejandro - Interim Attorney from the firm of Sands Anderson, PC
Christopher MacKenzie - Interim Attorney from the firm of Sands Anderson, PC

Press:
Stephen Faleski - The Smithfield Times

Citizens:
0

Mayor Smith welcomed all attendees to the meeting.

1. **Call To Order**

2. **New Business**

    a. **Motion to Appoint Sands Anderson, PC as Interim Town Attorney and Approve the Engagement Agreement for Services**

The Town Manager recapped that the Town's former attorney resigned his position effective September 4th, 2025, with the Town working with Sands Anderson since that time as interim counsel. He stated that the Town Code provided for Council to appoint legal counsel. He directed the Council members to their informational packet to the Engagement Agreement from Sands Anderson to provide those services until Council can select a more permanent attorney. He encouraged discussion and then action from Town Council to officially appoint Sands

Anderson as the interim counsel until such time as the Town Council hired a more permanent Town Attorney. He reported that Mr. MacKenzie and Ms. Alejandro from Sands Anderson were present if the Council had questions for them.

Mayor Smith asked if there were any comments from Town Council.

Councilman Cutler stated that he had a few comments, but first would like to welcome Ms. Alejandro and Mr. MacKenzie. He thanked Sands Anderson for the clarity of their contact that was included in the packet today. He noted that there was an Escalation Clause, and questioned if it was unique to the current situation as it did not look standard. He stated that his comments were directed to the two attorneys present from Sands Anderson. He reported that he did some research to try and learn and understand more about transparency. He related that he began by asking Artificial Intelligence (AI) about transparency. Councilman. Cutler continued that in government, transparency was the principal of openness, clarity and accessibility, where government actions, policies, and the decision-making process were openly communicated and made available to the public. He said that it allowed citizens to hold officials accountable in making informed decisions and participate effectively in the democratic processes. He stated that the American Legislative Exchange Council made what they termed a "legal definition" of transparency as the government's obligation to share with citizens what is needed to make informed decisions and hold the officials accountable for the conduct of the people's business. Councilman Cutler reported that he brought the subject up for discussion because he was asked about the term "conditional transparency" and thought it should be discussed with the attorney present, adding that he believed that Closed Sessions were at the root of the discussion. He observed that the Town Council did not make or craft a joint statement after their closed sessions and, instead, what they ended up with was a statement or statements that appeared as if they were on behalf of the entire Town Council when, in fact, the entire Town Council had not been consulted. He said that there was an opportunity to conclude a closed session and be on the same page, effectively avoiding "conditional transparency" because they understood where they all agreed or disagreed at the conclusion of the meeting. He said that without a joint statement, they were left with a "telephone game" for consensus. He explained that the Council may hold a lengthy closed session, and then have different interpretations of the outcome, which was evident at the most recent meeting. Councilman Cutler stated that he would like to ask Sands Anderson to guide their efforts towards transparency and adhering to the Freedom of Information Act (FOIA). He repeated that the affairs of government are not intended to be conducted in an atmosphere of secrecy and at all times the public was to be the beneficiary of any action taken at any level of government. He explained that many of the Council members were new to the position, with the exception of Mayor Smith and Councilwoman Butler, who had been on Council for some time. He requested that Sands Anderson guide them with the help of assuring them the following: 1) That they provide transparency to their beneficiaries, 2) that they stay on topic and not deviate from topics that were not accepted or part of the agenda, and 3) that they attempt to close with some type of final understanding or statement that was agreed on and allowed the public to have an insight to what they ha discussed. Councilman Cutler reported that as he researched, he realized that transparency could be classified into three areas: opaqueness, translucency, and clarity. He explained that opaqueness was when a work group did not disclose any information to its stakeholders, which was not a transparent work group. He noted that definition was often where closed sessions existed. He continued that translucency was when a work group disclosed its information partially, which was still not a transparent work group. He acknowledged that he was not a purist and thought that there should never be closed-session meetings. He said that clarity was when a work group disclosed all of its information, and the only work group having the "clarity" level of transparency was a transparent work group. He urged the Town Council to keep in mind the beneficiaries of their actions were, and must continue to be, the citizens of Smithfield. He emphasized that they should remain their top priority. He asked Mr. MacKenzie and Ms. Alejandro of Sands Anderson to provide the Town Council with additional resources. Councilman Cutler reported that he would also go as far as requesting them to lead and guide the Town's FOIA Officer. He explained that better resources and training for the FOIA Officer, the Town Manager, and the Town Council would help with keeping costs down.

Councilwoman Butler referred to Councilman Cutler's statement and asked if the information would be included in the Town's Engagement Agreement with Sands Anderson as an included service to the Town.

Ms. Alejandro explained that as a local government attorney they were very aware of the importance of transparency, and those services were baked into their agreement with the Town.

Councilwoman Butler stated that over the last couple of weeks there was much controversy over closed sessions, and she was confused as to what constitutes a closed session. She stated that she would like to hear the attorney's perspective on that definition if they were appointed to service as the Town's interim attorney.

Councilman Cutler recognized that transparency was inherent in their standards, but it was important to him that, as they worked on preparing a Request For Proposal (RFP) for permanent counsel representation that they sought an attorney who was passionate about ethics and FOIA.

Vice Mayor Harris reported that it had been a concern for many of the Council members that after exiting a closed session there should be some sort of collective statement. He stated that it was his hope that counsel would be able to help and guide them in developing a mechanism that allowed them to craft a statement that represented what went on and what they could absolutely share. He made a motion to appoint Sands Anderson, PC as Interim Town Attorney and Approve the Engagement Agreement for Services.

Councilwoman Bebermeyer seconded the motion. Mayor Smith asked for any further discussion.

Councilman Bowman noted that they were beginning the process to ultimately replace their previous attorney. He said he had noticed in the engagement agreement that the cost per hour for Sands Anderson was $410. He noted that there were two attorneys present today and asked if the charge would be $410 per hour per attorney.

Mr. MacKenzie stated that they would not typically staff a meeting with two attorneys, and they were both in attendance as it was their introduction to the Town. He specified that the $410 rate was per attorney, adding that Sands Anderson would have multiple attorneys from their firm doing different jobs for the Town. He explained that the firm had specialists in different areas of government.

Councilman Bowman thanked them and noted that it made sense with it being an introduction meeting. He reported that when he reviewed the agreement he did not see where the expenses were delineated. He asked for confirmation whether they charged mileage to and from the Town when they attended meetings since their office is located in Richmond, Virginia.

Mr. MacKenzie stated that they do not charge a mileage fee; however, they do charge for their time.

Councilman Bowman asked if that time was at the base rate of $410 per hour.

Mr. MacKenzie stated that was correct, with the approximate cost to the Town for the attorney to travel to and from Richmond to Smithfield as $1,200.00. He noted that the amount did not include the time spent attending meetings.

Councilman Bowman stated that the reason he asked was because there had been much discussion about the cost of the Town's previous attorney, at a rate of $350 an hour. He added that much had also been made about the fact that we need to ensure that the community was made whole, and the previous attorney should pay back everything above and beyond the $200 that was contracted in 2008. He explained that a law was adopted in 2003 that specifically states that the locality shall set the fee for the attorney, and asked if the attorneys from Sands Anderson were familiar with this statute.

Ms. Alejandro stated that they were familiar with the statute.

Councilman Bowman continued by asking if a locality did not set the fee for the attorney and the attorney provided invoices, was the attorney at fault for submitting a fee to the locality. He added that the locality may not have been in and of itself negligent, but may not have set the fee, and asked who would be at fault.

Ms. Alejandro stated that it was still a contractual issue because there was a contract establishing a set fee. She stated that it was hard to say who was at fault; however, it was clear that the terms of the contract were not being followed.

Councilman Bowman continued that from a transparency perspective, it was important that the citizens know what the Town would end up paying in attorney fees versus the previous amount of

$350 per hour, which to some seemed to be exorbitant and should not have been at that rate. He said that there had been statements that the former attorney was taking the Town for a ride at the rate of $350, but now the Town was looking at in real time what the attorney's fees were going to potentially cost the Town. He worried about the taxpayers being made whole versus the Council moving in a direction that was going to cost the Town significantly more money. He stated that he was going to vote for the motion that has been made because he deemed the situation to be somewhat of an emergency. Councilman Bowman stated that the town must run a government, and must have legal counsel. He said that he believed that they had good legal counsel present. He related that, from a transparency perspective, the taxpayers needed to know that the $350 being charged by the previous Town Attorney was a bargain. He asked Ms.
Alejandro if she agreed.

Ms. Alejandro stated that the former Town Attorney's rates were certainly lower than their firm's current rates.

Mayor Smith called for the vote, with seven members present. Councilman Bowman voted aye, Councilwoman Butler voted aye, Councilman Cutler voted aye, Councilwoman Bebermeyer voted aye, Councilman Brooks voted aye, Vice Mayor Harris voted aye, and Mayor Smith voted aye. The motion passed unanimously.

3. Closed Session

Councilman Bowman made a motion to go into closed session for two items: for the discussion of acquisition / disposition of real property, more specifically, The Grange @ 10Main pursuant to 2.2-3711 A3 of the Code of Virginia and for possible litigation and consultation with legal counsel, more specifically, the former Town Attorney's contract pursuant to 2.2-3711 A8 of the Code of Virginia.

Vice Mayor Harris seconded the motion.

Mayor Smith called for the vote. Seven members were on call for the vote. Councilwoman Butler voted aye, Councilwoman Bebermeyer voted aye, Councilman Brooks voted aye, Councilman Cutler voted aye, Councilman Bowman voted aye, Vice Mayor Harris voted aye, and Mayor Smith voted aye. The motion passed unanimously.

The Town Council went into closed session at 9:20 a.m.
The Town Council returned to open session at 10:53 a.m.

Councilman Bowman made a motion to return to regular session and certify that only information previously mentioned pursuant to 2.2-3711 A3 and A8 of the Code of Virginia were discussed.

Councilwoman Bebermeyer seconded the motion.

Mayor Smith called for the vote. Seven members were on call for the vote. Councilwoman Butler voted aye, Councilwoman Bebermeyer voted aye, Councilman Brooks voted aye, Councilman Cutler voted aye, Councilman Bowman voted aye, Vice Mayor Harris voted aye, and Mayor Smith voted aye. The motion passed unanimously.

a. Closed Session for the Discussion of Acquisition / Disposition of Real Property, more specifically, The Grange @ 10Main Pursuant to 2.2-3711 A3 of the Code of Virginia and for the Discussion of possible litigation, more specifically, for Town Attorney's Contract Pursuant to 2.2-3711 A8 of the Code of Virginia.

Councilman Bowman made a motion to go into closed session for two items: for the discussion of acquisition / disposition of real property, more specifically, The Grange @ 10Main pursuant to 2.2-3711 A3 of the Code of Virginia and for possible litigation and consultation with legal counsel, more specifically, the former Town Attorney's contract pursuant to 2.2-3711 A8 of the Code of Virginia.

Vice Mayor Harris seconded the motion.

Mayor Smith called for the vote. Seven members were on call for the vote. Councilwoman Butler voted aye, Councilwoman Bebermeyer voted aye, Councilman Brooks voted aye, Councilman Cutler voted aye, Councilman Bowman voted aye, Vice Mayor Harris voted aye, and Mayor Smith

voted aye. The motion passed unanimously.

The Town Council went into closed session at 9:20 a.m.
The Town Council returned to open session at 10:53 a.m.

Councilman Bowman made a motion to return to regular session and certify that only information previously mentioned pursuant to 2.2-3711 A3 and A8 of the Code of Virginia were discussed.

Councilwoman Bebermeyer seconded the motion.

Mayor Smith called for the vote. Seven members were on call for the vote. Councilwoman Butler voted aye, Councilwoman Bebermeyer voted aye, Councilman Brooks voted aye, Councilman Cutler voted aye, Councilman Bowman voted aye, Vice Mayor Harris voted aye, and Mayor Smith voted aye. The motion passed unanimously.

4. Adjournment

The meeting adjourned at 10:54 am.

_____ _____

Michael Smith - Mayor Lesley King - Town Clerk

DRAFT

NOTICE OF PUBLIC HEARING
TOWN COUNCIL OF THE TOWN OF SMITHFIELD
AMENDMENT & REVISION OF ZONING ORDINANCE

Notice is hereby given that the Town Council of the Town of Smithfield, Virginia will hold a public hearing at the regular meeting of the Town Council in the council chambers in The Smithfield Center, 220 N. Church Street, meeting room A, Smithfield, Virginia, on Wednesday, October 8th, 2025 at 6:30 p.m. to consider the application of the Town of Smithfield, applicant for a text amendments of the Zoning Ordinance of the Town of Smithfield, Virginia, adopted September 1, 1998, and as amended thereafter, to the provisions of the following: Article 9.C.2.e. to remove tree canopies for platted lots; Article 3.E and 3.F to remove the contiguous open space requirement and remove required recreational vehicle parking making it an SUP, and allowing public and private travelways; and Article 11 to update site plan requirements.

Any person affected by or interested in the aforesaid applications may appear at the hearing and be heard. Copies of the current Zoning Ordinance of the Town of Smithfield, Virginia, adopted Tuesday, September 1st, 1998, and all amendments thereto, along with copies of the text amendment applications, are on file and may be examined in the Community Development & Planning Department, 310 Institute St, Smithfield, VA 23430.

TOWN OF SMITHFIELD, VIRGINIA

BY: Lesley G. King, Clerk

Publish: Wednesday, September 24th, 2025, and Wednesday, October 1st, 2025.

TOWN COUNCIL STAFF REPORT: ARTICLE 9.C.2.e. TEXT AMENDMENT
PUBLIC HEARING

WEDNESDAY, OCTOBER 8th, 2025, 6:30 PM

This is a proposed text amendment to Article 9.C.2.e. removing the requirement for tree canopies on platted lots in accordance with VA Code 15.2-961.

The language in our zoning ordinance will mirror the language provided in State Code.

Staff suggest a favorable approval.

Please direct inquiries to Tammie Clary at 1-(757)-365-4200 or tclary@smithfieldva.gov.

Article 9:

LANDSCAPE AND SCREENING REGULATIONS

Article 9:

Landscaping and Screening Regulations

A. Purpose and Intent:

The purpose of this section is to establish general standards and processes by which the Smithfield Comprehensive Plan's goals and objectives for landscape architecture, urban and waterfront design, site buffering, and transitional screening will be implemented. Pursuant to the intent of preserving and promoting the health, safety and general welfare of the community, these regulations are promulgated in order to:

1. Facilitate the protection, replenishment and maintenance of the existing environment,

2. Conserve and protect sensitive environmental resources and open spaces,

3. Preserve and enhance the aesthetic character of the community,

4. Protect and improve the quality of natural waters and wetlands,

5. Enhance erosion and sediment control practices through the use of plant materials and ground cover,

6. Improve the physical relationship between adjacent properties via sensitive screening and buffering,

7. Reduce potential deleterious relationships between pedestrian and vehicular land use patterns,

8. Preserve, rehabilitate and maintain existing water courses and stream valleys in high quality condition,

9. Provide adequate tree canopy and vegetative cover and

10. Introduce complementary landscaping to supplement Chesapeake Bay regulations, Best Management Practices, and stormwater management requirements.

B. General Standards:

The following general standards shall apply to the planning, design, installation and maintenance of all landscape improvements, urban design improvements, screening and buffering measures, and related site development practices required by this section:

1. A landscape plan meeting the requirements of this article shall be required for all subdivision, site plan, and other development plan applications. Landscaping, screening, and buffering for any subdivision and site development activity shall be guided by this Article as well as generally accepted landscape design principles.

2. Landscape design plans shall seek to maximize the preservation of existing trees and minimize the disruption of established landscape materials employing preservation and protection criteria provided in the Virginia Erosion and Sediment Control Manual and the State's Urban Best Management Practices Handbook.

3. The quality and type of all new plant materials installed on a site shall be in accord with the specifications of the American Association of Nurserymen, provided that the transplanting of trees and shrubs may be done in accordance with accepted horticultural and silvicultural practices. The planting and placement of trees shall be done in accord with the standardized landscape specifications of the Virginia Society of Landscape Designers and the Virginia Chapter of the American Society of Landscape Architects.

4. The property owner, developer and or successor in title to a given property shall be responsible for the perpetual maintenance as well as timely repair and replacement of all landscaping, buffers and screening as required by this Article. In RPA buffer areas and areas outside the construction footprint, plant material shall be tended and maintained in a healthy growing condition and free from refuse and debris. Unhealthy, dying or dead plant materials shall be replaced during the next planting season. A failure to adequately maintain landscape improvements in a healthy state and to keep such improvements free of litter, refuse and debris shall be deemed a violation of this ordinance. Landscape planting, maintenance and repair regulations also shall apply to all land in common open space, active recreational areas, or other lands not in lots in residential subdivisions. Property owners' documents shall incorporate such requirements.

5. Landscape plans to accompany any site plan or plat shall be prepared by a qualified landscape designer, nurseryman, horticulturalist or a Certified Landscape Architect. Qualifications and/or certification shall be shown on the site plan or plat and must include the name, address and phone number of the person(s) that prepared the landscaping plan.

6. The landscaping and buffering standards hereinafter established provide minimum guidelines for landscape architecture of commercial, industrial, institutional and residential properties. Refer to Appendix C for graphic illustrations and design guidelines.

7. In addition to the provisions of this article, property which is situated within areas recognized by the Official Zoning Map as a HP-O, Historic Preservation Overlay District and/or a designated Chesapeake Bay Preservation Area shall be subject to additional regulations as provided for in the individual zoning districts, supplemental regulations and design guidelines related thereto.

8. Where areas to be preserved, as designated on an approved landscaping plan, are encroached, replacement of existing trees and other vegetation will be achieved at a ratio of three (3) planted trees to one (1) removed. Replacement trees shall be a minimum three and one-half (3.5) inches diameter breast height (DBH) at the time of planting.
(Ord. of 8-1-2000; Ord. of 9-5-2000)

C. Site Landscaping, Canopy and Tree Preservation Standards:

1. The applicant shall preserve and protect existing trees in the design and development of projects requiring Town subdivision and/or site plan approval and to replace those trees necessarily removed during such development.

2. The subdivision plat or site plan for any subdivision or site development activity shall include the planting and/or replacement of trees on the site to the extent that, at twenty (20) years of growth, minimum tree canopies or tree covers will be provided in accord with the following standards: (Refer to Appendix C for graphic illustrations of canopy coverage ratios for commercial, industrial and residential land uses.)

   a. Business, Commercial and Industrial Development: Ten percent (10%) of the total site area shall be covered in tree canopy.

   b. Residential Development (20 DU/AC and greater): Ten percent (10%) of the total site area shall be covered in tree canopy.

   c. Residential Development (Greater than 10 DU/AC and less than 20 DU/AC): Fifteen percent (15%) of the total site area shall be covered in tree canopy.

   d. Residential Development (10 DU/AC and less): Twenty percent (20%) of the total site area shall be covered in tree canopy.

~~e. Platted Residential Lots: Ten percent (10%) of the total lot area, or 3000 square feet, whichever is less.~~

f. Off-Site Planting Option: If the full canopy requirement cannot be met by on-site plantings, the requirement may be satisfied by off-site plantings at the discretion of the Planning Commission.

3. All landscape materials shall conform with the following minimum size or height (at date of planting) standards:

a.	Deciduous shade trees:	2" caliper
b.	Street trees:	2" caliper
c.	Ornamental and understory trees:	6' height
d.	Coniferous trees:	6' height
e.	Evergreen shrubs:	18" spread or height
f.	Deciduous shrubs:	24" spread or height

4. "Tree canopy" or "tree cover" shall include all areas of coverage by trees and plant materials, including street trees, provided that all such trees and plant materials exceed six (6) feet in height at date of planting.

5. All landscape materials shall be selected and sized in accordance with hardiness rating and growth habit appropriate for the intended placement of materials. All landscape materials shall be well branched and well formed, vigorous, healthy and free from disease, sun and wind damage and insect and shall have healthy and unbroken root systems.

6. Tree canopy requirements may be reduced on a case-by-case basis by waiver of the Planning Commission during the site plan and/or subdivision plat approval process where it can be clearly demonstrated by the applicant that either (a) the reduced canopy achieves the intended landscape design objective through a combination of alternative landscape architectural and landscaping techniques or (b) where the characteristics property is such that the canopy coverage would not be effective and other methods of landscaping provide equal and adequate design responses. The above stipulated sizes may be modified based on specific property conditions and site design requirements.

7. The removal of any trees which exceed 6" caliper (dbh, breast height) shall be fully justified by the applicant in cases where modifications to the layout and design elements of the site plan could protect such trees without impairing the function and economy of the intended use.

8. Existing trees, inclusive of wooded preserved areas, which are to be preserved may be included to meet all or part of the aforementioned canopy requirements; provided that the landscape plan identifies such existing trees and that these trees meet standards of desirability, hardiness and life expectancy as established by the Town.

9. In cases where the application of the screening and/or parking lot landscape requirements cited hereinafter exceed the above minimum canopy requirements, the final placement, type, and quantity of landscape materials shall be determined as a part of the Town's site plan or subdivision plat review process, provided that nothing herein shall restrict the applicant from exceeding the minimum canopy requirements, if desired.

10. No landscaping materials shall be installed which interfere with minimum transportation site distances for public and private streets. The landscape plan shall depict sight distance alignments and the location of sight easements.

11. The applicant's landscape architect or qualified landscape designer shall consult with the Planning and Zoning Administrator during the preliminary plan phase to determine the most appropriate layout and coordinated landscape design concepts, tree placement and suitable species of trees and ground cover to be incorporated into the site plan.

D. Parking Lot Landscaping:

1. Parking lots and private access adjacent to lot lines:

   a. Where a parking lot (or a private driveway providing access to a parking lot or building entry) abuts a property line not common with the right of way of a street, a landscaping strip of ten (10) feet in width shall be located between the parking lot and the abutting property line. Refer to Appendix C for graphic examples.

   b. A minimum of one tree for each forty (40) feet of contiguous property line shall be planted in the landscaping strip. This planting shall be in addition to any planting within a required zoning district buffer yard and in addition to any planting within six (6) feet of a building or structure.

   c. Where appropriate, shrubs and ground covers shall be provided within the landscaping strip to establish an enhanced low level visual buffer between the adjoining properties.

d. At maturity, these shrubs and other ground covers shall be three (3) to five (5) feet in height. Landscape plans are encouraged to incorporate earth berms, where appropriate, into the buffer strips.

2. Parking lots and private access adjacent to public streets:

a. Where a parking lot (or a private driveway providing access to a parking lot or building entry) abuts a public right of way for a Town street, a landscaping strip of ten (10) feet in width (not including sidewalk) shall be located between the parking lot or private driveway and the right of way line.

b. A minimum of one tree for each forty (40) feet of property line common with the public right of way shall be planted in the landscaping strip. This planting shall be in addition to any planting within a required zoning district buffer yard and in addition to any planting within six (6) feet of a building or structure.

c. Where appropriate, shrubs and ground covers shall be provided within the landscaping strip to establish an enhanced low level visual buffer between the parking lot and the public right-of-way.

d. At maturity, these shrubs and other ground covers shall be a minimum of three (3) to five (5) feet in height. The landscape design for such shrubs and ground covers shall also serve to direct and control pedestrian access into parking lots.

e. Landscape plans are encouraged to incorporate earth berms, where appropriate, into the right of way landscaped buffer strips.

3. All parking lots of twelve (12) or more spaces shall contain within the interior of the parking lot not less than one tree for every six (6) parking spaces or fraction thereof. Such trees shall be reasonably dispersed throughout interior of the parking lot in accord with good landscape and urban design practices. All plant materials shall be of a variety and size which can be used to meet the tree canopy cover requirements hereinabove outlined. Refer to Appendix C for graphic illustrations.

4. Landscaping located within the interior of parking lots shall be contained within “planting islands” with raised medians. Planting islands which are located parallel to the long dimension of a parking spaces shall have a minimum width of ten (10) feet and shall be designed to permit vehicular doors to open fully without impacting plant materials. A median (or island) shall be constructed to separate no more than twelve (12) contiguous perpendicular spaces for single-loading bays and twenty-four (24) for double-loading bays. A planting island with raised median (with curb and gutter) shall be constructed to

terminate the end of any perpendicular parking bay and to provide adequate separation from an adjacent to a private driveway or travelway.

5. Landscaped “planting islands” (located such that parking spaces are on opposing sides of the planting island) shall be developed in parking lots meeting the following criteria:

   a. The total size of the parking lot exceeds one hundred fifty (150) total parking spaces,

   b. Parking lot layout incorporates three or more double-loaded or single-loaded parking bays which are contiguous and parallel to each other, and the requirements of Paragraph 4 above.

   c. Planting islands which are designed to be perpendicular to the parking bay shall be constructed for every other parking bay.

   d. Planting islands shall have a minimum width of six (6) feet to allow for bumper overhang and shall otherwise provide adequate width for the growth and maintenance of the intended landscape materials to be planted therein.

6. The primary landscaping materials used in parking lots shall be trees which provide shade or are capable of providing shade at maturity. Shrubs and other live planting material must be used to complement the primary, tree landscaping, but shall not be the sole contribution to the landscaping.

7. The landscaping shall be dispersed throughout the parking lot, with interior dimensions of any planting area (i.e. interior parking median) sufficient to protect and maintain all landscaping materials planted therein. See illustrative example in Appendix C.

8. The type and method of parking lot landscape irrigation shall be fully described in the site plan if any type and method is to be included in the design.

9. The applicant’s landscape architect or landscape designer and project engineer shall consult with the Planning and Zoning Administrator during the sketch plan and preliminary plat phase to determine the most appropriate parking lot layout and coordinated landscape design concepts, tree placement, and suitable species of trees and ground cover to be used in parking lots.

10. The landscape provisions of this article are not intended to apply to off-street parking spaces or private driveway access to such off-street parking spaces for individual single family residential dwellings.

E. Transitional Screening and Buffer Yards:

1. Transitional screening and buffer yards shall be required between properties as designated by the Zoning Map for different land use categories. Screening and buffer yard requirements shall be imposed on the property of the more intensive zoning category. Buffer landscape yard geometry, plant types, plant quantities and related landscaping requirements between different land use categories shall be based on the screening and buffer yard standards in Appendix C of this ordinance.

2. Transitional screening shall be provided at the outer boundaries of a lot, except in locations where driveways, parking lots, utility easements and/or other openings are required. Where transitional screening and landscape buffer yards are required, evergreen trees and deciduous trees of size, type and canopy as approved by the Planning Commission, shall be employed for screening purposes.

3. Understory and shrubs, in the recommended size and quantities described in the graphic design standards in the appendix, may be incorporated into the buffer yard at the option of the applicant. Landscape plans are encouraged to incorporate earth berms, where physiographically feasible, and other creative landscape features into transitional screening and buffer yard designs. See illustrative examples in Appendix C for recommended landscape materials and placement.

4. Buffer yards and transitional screening may not be used for the storage of materials, buildings, parking or loading areas for motor vehicles or equipment or signs. Sidewalks and pedestrian trails may be incorporated into buffer yards.

5. All outdoor storage and loading areas shall be screened from all public streets and adjacent residential properties. An opaque screen with a minimum height of six (6) feet of landscape materials, architectural walls, opaque fencing or other opaque material shall be used.

6. Transitional screening may be waived or otherwise modified by the Planning Commission for any public use or utility when it can be demonstrated that such use has been specifically designed to minimize adverse impacts on adjacent properties.

7. No landscape materials or screening shall be installed which interfere with minimum transportation site distances. The landscape plan shall depict sight distance alignments and the location of sight easements in accord with transportation design standards.

8. Transitional screening requirements may be modified by the Planning and Zoning Administrator in cases where it can be clearly demonstrated by the applicant that either (a) the alternative landscape design minimizes any adverse impact through a combination of architectural and landscaping techniques or (b) where the topography of the property is such that transitional screening would not be effective and other methods of screening provide equal and adequate design responses.

9. The applicant's certified landscape architect or qualified landscape designer shall consult with the Planning and Zoning Administrator during the sketch plan and preliminary plat phase to determine the most appropriate buffer and screening design concepts, tree placement and suitable species of trees to be used for screening purposes.

10. Additional buffer requirements for major Town entrance streets and highways:

    (a). In order to maintain and preserve the small town atmosphere of Smithfield and the desired landscape character for the major streets and highways, a minimum buffer yard measuring forty (40) feet in width shall be preserved on properties contiguous to the public right of way of all major arterial roads into the Town.

    (b). The streets and highways designated for additional buffer requirements are:

        (1). Benns Church Boulevard (Route 10),
        (2). Route 10 Bypass,
        (3). Battery Park Road (Route 704) and
        (4). Courthouse Highway (Route 258).

    (c). The buffer requirement for the major streets and highways leading into the Town shall be in addition to any other buffer yard requirements for the subject property.

    (d). The buffer yard shall be left in an undisturbed state unless otherwise approved for modifications or recommended by the Planning Commission for improvement and enhancement. If improvements and enhancements are to be made within the buffer yard, new landscape materials and grading activities shall be designed to preserve and enhance the natural character of the buffer yard and its existing mature vegetation. Limited clearing of underbrush and removal of volunteer vegetative undergrowth is encouraged within the buffer yard to ensure that existing, mature vegetation can prosper.

    (e). Supplemental plantings and ground cover within the major street and highway buffer yard may be required, subject to landscape plan review.

(f). Subject to site plan review by the Planning Commission, commercial and industrial properties fronting on the major entranceways to the Town shall be permitted to establish limited sight lines which allow indirect views of building but which shield the views of parking areas to the extent possible.

F. Subdivision Landscaping and Street Tree Requirements:

1. A street tree landscape plan shall be submitted with all residential subdivision plats and other development plans involving the construction, extension or widening of private or public streets.

2. The street tree landscape plan for residential subdivisions shall provide for the placement of street trees outside of and contiguous to the public right-of-way. A minimum of one street tree on each side of a given street shall be established for each forty (40) feet of right of way length.

3. Within residential subdivisions, the street tree landscape plan shall provide an integrated program of street tree plantings, residential subdivision lot landscaping, and tree preservation for all lots located within the subdivision.

4. Street trees shall be counted towards the landscape canopy requirement.

5. No street trees shall be installed which interfere with minimum transportation site distances for public and private streets. The landscape plan shall depict sight distance alignments and the location of sight easements.

6. The applicant's landscape architect or qualified landscape designer shall consult with the Planning and Zoning Administrator during the sketch plan and preliminary plat phase to determine the most appropriate species of street trees as well as suitable landscape design and placement concepts for use in a given subdivision or street development program. A list of candidate landscape materials and varieties for differing functions and applications is provided in the appendix of this ordinance.

G. Bonds and Maintenance:

1. No landscape plan required by this ordinance shall be approved until the applicant has posted a bond acceptable to the Town conditioned upon satisfactory installation of the landscaping proposed in the landscape plan. The bondable sum shall be established by

the Planning and Zoning Administrator upon receipt of the applicant's certified estimate of costs for the proposed landscape improvements.

2. At the discretion of the Planning and Zoning Administrator, the bond (or a portion thereof) for landscaping may be held in force for a period of not longer than eighteen (18) months from date of planting of materials, provided that landscape materials have been specified, planted and maintained pursuant to the requirements of this Article. During the period, plant materials shall be tended and maintained in a healthy growing condition and replaced if necessary.

3. Street trees shall be bonded along with other public improvements proposed for any Town residential subdivision, provided that single family residential subdivisions with fewer than five (5) lots shall be exempt from bonding requirements.

4. Upon written notice by the Planning and Zoning Administrator, the subdivider or developer shall repair or replace any landscape materials, seeding and ground cover, screening, fencing, fine grading and earthscaping, or other landscape elements which do not meet the requirements and intent of this Article within thirty (30) days of notification.

5. No Certificate of Occupancy shall be issued until required landscaping is completed in accordance with the approved landscape plan or as otherwise conditioned by the Planning and Zoning Administrator.

H. Landscape Plan Requirements

1. The landscape plan drawn on a site plan base map to the same scale as the accompanying site plan and/or subdivision plat.

2. Refer to the Town's Design and Construction Standards Manual and Appendix C of this ordinance for additional information related to landscape materials, installation standards, and design details.

3. The landscape plan shall include:

   a. A tree survey depicting the location, size, description and number of existing trees with 6" or greater caliper. The tree survey shall include all trees which are proposed to be removed during the site development or subdivision process. This shall include the identification, classification and location of any diseased trees which should be removed during site development.

b. Location, type, size, height, number and botanical name and construction details for proposed landscaping materials. Information is to be provided in graphic and tabular format.

c. Canopy dimensions (at 20 year maturity), location, size or caliper (at time of planting), area of canopy coverage, description and the botanical name of proposed trees, landscape materials, ground covers and planting beds. A table shall address the calculations for open space, tree canopy, and number of plants (both required and provided).

d. Planting specifications and installation details for proposed landscaping materials, including a schedule of recommended planting timeframes for specific plant materials and ground covers.

e. Location, size,and botanical name of all existing landscape materials to be retained during the site development process as well as appropriate landscape protection measures to be implemented during the site construction process.

f. Location, size and other related design details for all hardscape improvements, signage, recreational improvements and open space areas, fences, retaining walls, barriers and other elements related to transitional buffer yards.

g. Designation of required setbacks, yards and screening areas.

h. Location of other man-made site features, parking lots, hardscape improvements, overhead structures and underground utilities to ensure that landscape materials will not be in conflict with the placement and operation of these improvements.

i. Limits of grading and site disturbing activities.

j. Acreage of disturbed areas, computed by planimetric methods, to the nearest 0.1 acre.

k. Acreage and location of proposed open spaces and recreation areas, computed to the nearest 0.1 acres.

l. Acreage and location of total site tree cover of the projected ten year site landscape maturity timeframe, computed to the nearest 0.05 acres.

m. Location, size and construction details for site lighting, special hardscape and landscape features, irrigation systems and exterior site furnishings.

n. Methods and specifications for tree protection during clearing, grading, and all construction phases.

o. Landscape preservation and maintenance program shall be provided, including recommended pruning techniques and fertilization applications and schedules.

p. Landscape treatment of stormwater management improvements, Best Management Practices structures, and erosion and sediment controls.

q. Any required RPA buffer area shall be clearly delineated and any plant material to be added to establish or supplement the buffer area shall be shown on the landscaping plan. Within the buffer area, trees to be removed for sight lines, vistas, access paths, and best management practices shall be shown on the plan. Vegetation to replace any existing trees within the buffer area shall also be shown on the landscaping plan.

r. Trees to be removed for shoreline stabilization projects and any replacement vegetation shall be shown on the landscaping plan.

s. The plan shall depict grade changes or other work adjacent to trees which will affect them adversely. Specifications shall be provided as to how grade, drainage, and aeration would be maintained around trees to be preserved.
(Ord. of 8-1-2000)

AN ORDINANCE TO AMEND THE ZONING ORDINANCE
OF THE TOWN OF SMITHFIELD, VIRGINIA TO REMOVE TREE CANOPIES FOR PLATTED LOTS

WHEREAS, the Town Council of the Town of Smithfield deems it necessary to revise and amend certain provisions of the Zoning Ordinance of the Town of Smithfield to comply with state law with respect to tree canopies for platted lots; and

WHEREAS, the Town's Planning Commission, after a public hearing, has unanimously recommended that the Town Council adopt the proposed amendment and revisions; and,

WHEREAS, this Council, after a public hearing on the matter, finds it to be in the best interest of the citizens of the town to revise and amend the following provisions of its Zoning Ordinance.

NOW, THEREFORE, BE IT ORDAINED by the Town Council of the Town of Smithfield, Virginia, as follows, to-wit:

1. That Article 9, Landscaping and Screening Regulations, Section C.2.e. is repealed.
2. This ordinance shall be in effect immediately upon adoption.

Adopted: October 8, 2025

TOWN COUNCIL OF THE
TOWN OF SMITHFIELD, VIRGINIA

By_____
Michael G. Smith, Mayor

Attest:

_____
Lesley G. King, Clerk

NOTICE OF PUBLIC HEARING
TOWN COUNCIL OF THE TOWN OF SMITHFIELD
AMENDMENT & REVISION OF ZONING ORDINANCE

Notice is hereby given that the Town Council of the Town of Smithfield, Virginia will hold a public hearing at the regular meeting of the Town Council in the council chambers in The Smithfield Center, 220 N. Church Street, meeting room A, Smithfield, Virginia, on Wednesday, October 8th, 2025 at 6:30 p.m. to consider the application of the Town of Smithfield, applicant for a text amendments of the Zoning Ordinance of the Town of Smithfield, Virginia, adopted September 1, 1998, and as amended thereafter, to the provisions of the following: Article 9.C.2.e. to remove tree canopies for platted lots; Article 3.E and 3.F to remove the contiguous open space requirement and remove required recreational vehicle parking making it an SUP, and allowing public and private travelways; and Article 11 to update site plan requirements.

Any person affected by or interested in the aforesaid applications may appear at the hearing and be heard. Copies of the current Zoning Ordinance of the Town of Smithfield, Virginia, adopted Tuesday, September 1st, 1998, and all amendments thereto, along with copies of the text amendment applications, are on file and may be examined in the Community Development & Planning Department, 310 Institute St, Smithfield, VA 23430.

TOWN OF SMITHFIELD, VIRGINIA

BY: Lesley G. King, Clerk

Publish: Wednesday, September 24th, 2025, and Wednesday, October 1st, 2025.

NOTICE OF PUBLIC HEARING
TOWN COUNCIL OF THE TOWN OF SMITHFIELD
AMENDMENT & REVISION OF ZONING ORDINANCE

Notice is hereby given that the Town Council of the Town of Smithfield, Virginia will hold a public hearing at the regular meeting of the Town Council in the council chambers in The Smithfield Center, 220 N. Church Street, meeting room A, Smithfield, Virginia, on Wednesday, October 8th, 2025 at 6:30 p.m. to consider the application of the Town of Smithfield, applicant for a text amendments of the Zoning Ordinance of the Town of Smithfield, Virginia, adopted September 1, 1998, and as amended thereafter, to the provisions of the following: Article 9.C.2.e. to remove tree canopies for platted lots; Article 3.E and 3.F to remove the contiguous open space requirement and remove required recreational vehicle parking making it an SUP, and allowing public and private travelways; and Article 11 to update site plan requirements.

Any person affected by or interested in the aforesaid applications may appear at the hearing and be heard. Copies of the current Zoning Ordinance of the Town of Smithfield, Virginia, adopted Tuesday, September 1st, 1998, and all amendments thereto, along with copies of the text amendment applications, are on file and may be examined in the Community Development & Planning Department, 310 Institute St, Smithfield, VA 23430.

TOWN OF SMITHFIELD, VIRGINIA

BY: Lesley G. King, Clerk

Publish: Wednesday, September 24th, 2025, and Wednesday, October 1st, 2025.

TOWN COUNCIL STAFF REPORT: ARTICLE 3.E TEXT AMENDMENT
PUBLIC HEARING

WEDNESDAY, OCTOBER 8th, 2025, 6:30 PM

This is a proposed text amendment to Article 3.E removing the requirement to provide recreational vehicles parking in Section I.2.B. making it an SUP requirement in Section C.2, and allowing public and private travelways in Section I.3.

Per Planning Commission's recommendation, the requirement for contiguous open space remains in Section G.5..

Staff suggest a favorable approval.

Please direct inquiries to Tammie Clary at 1-(757)-365-4200 or tclary@smithfieldva.gov.

TOWN COUNCIL STAFF REPORT: ARTICLE 3.F TEXT AMENDMENT
PUBLIC HEARING

WEDNESDAY, OCTOBER 8th, 2025, 6:30 PM

This is a proposed text amendment to Article 3.F removing the requirement to provide recreational vehicles parking in Section I.2.B. making it an SUP requirement in Section C.24, and allowing public and private travelways in Section I.3.

Per Planning Commission's recommendation, the requirement for contiguous open space remains in Section G.5..

Staff suggest a favorable approval.

Please direct inquiries to Tammie Clary at 1-(757)-365-4200 or tclary@smithfieldva.gov.

Article 3.E:

A-R, Attached Residential District

Article 3.E:

A-R, Attached Residential

(Townhouse and Attached Residential District)

A. Purpose and Intent:

The A-R, Attached Residential District is created to provide for attached residential dwellings such as conventional townhouses, row houses, multiplex dwellings, duplexes and other similar forms of attached residential units. Single family detached residential dwellings may be permitted under the special use provisions of the district. Garden apartments, “over and under” attached residences, housing for the elderly, and other forms of multi-family housing are not permitted in this district. The A-R District is intended for use in locations compatible with the Comprehensive Plan's goals for medium density, attached residential development in Smithfield. The average density of six (6) to eight (8) units per net developable acre establishes this district as one recognizing townhouse-styled units as the dominant land use.

The A-R District shall be applied to undeveloped tracts lying within Smithfield, as well as to infill parcels at selected locations with the intent of preserving existing natural features and vegetation, promoting excellence in site planning and landscape design, creating self-sustaining neighborhoods and recreational areas and encouraging attached housing with compatible scale, materials and character of architecture. Development in the A-R, Attached Residential District shall be sensitive to land physiography, provision of adequate public infrastructure and development of quality transportation improvements in achieving optimal siting of dwellings, recreation areas, community facilities and open space.

B. Permitted Uses:

1. Attached residential (townhouse) dwellings.
2. Duplex residential dwellings.
3. Private community facilities, recreation areas and other common area improvements normally associated with attached residential developments (other than those requiring special use permits) shall be permitted subject to general development plan and final site plan approval.
4. Accessory uses, to include tool sheds, detached garages and carports, children's playhouses, doghouses and accessory off-street parking and loading spaces.
5. Irrigation wells and wells for ground source HVAC systems.
6. Group Homes.

(Ord. of 2020-09-01; Ord. of 2025-08-05)

C. Uses Permitted by Special Use Permit:

1. Single family detached residences, subject to S-R District regulations, provided that such residences do not comprise more than 25% of the total planned residential units depicted on the general development plan.
2. Parking lots for recreational vehicles and boats, ~~except as part of a planned development.~~
3. Commercial swimming pools and tennis courts.
4. Churches and places of worship.
5. Public uses and facilities.
6. Recycling centers, for use by the A-R District residents only.
7. Child day centers.
8. Adult day care centers.
9. Nursery schools.
10. Private schools.
11. Public schools.
12. Cemeteries.
13. Home occupations.
14. Repealed 2025-08-05
15. Institutional housing and general care for indigents and orphans.
16. Boating, country, and/or hunt clubs.
17. Public utilities.
18. Temporary real estate marketing offices for new subdivisions.
19. Multi-family housing for the elderly and assisted living residences requiring medical and/or food support structures, subject to MF-R regulations.
20. Waiver of Parking and Loading Requirements.

(Ord. of 9-2-2008, Ord. of 2019-09-03; Ord. of 2025-08-05; Ord. of 2025-xx-xx)

D. Maximum Density:

1. Eight (8.0) dwelling units per net developable acre.

E. Lot Size Requirements:

1. Minimum district size: Five (5) acres

2. Minimum lot area for attached (townhouse) dwellings:

A. Interior lot: 1600 square feet
B. Corner lot: 2400 square feet

C. Condominium: See Additional Regulations for A-R District

3. Minimum lot area for duplex dwellings:

A. Duplex lot (1 attached unit/lot):

(1) Interior lot: 4000 square feet
(2) Corner lot: 5000 square feet

B. Duplex lot (1 duplex per lot):

(1) Interior lot: 8000 square feet
(2) Corner lot: 10,000 square feet

C. Condominium: See Additional Regulations for A-R District

4. Minimum lot width for attached (townhouse) dwellings:

A. Interior lot: 18 feet

B. Corner lot: 35 feet,
subject to additional side yard regulations.

C. Condominiums: See Additional Regulations for A-R District

5. Minimum lot width for duplex dwellings:

A. Duplex lot (1 attached unit per lot):

(1) Interior lot: 35 feet
(2) Corner lot: 50 feet

B. Duplex lot (1 duplex per lot):

(1) Interior lot: 70 feet
(2) Corner lot: 100 feet

C. Condominiums: See Additional Regulations for A-R District

(Ord. of 2025-08-05)

6. Other: Where a lot is to be subdivided into individual lots for the sale of single family attached dwelling units:

A. Lot lines shall conform with party wall centerlines, and

B. Each lot shall be required to include a rear privacy yard with a minimum area of 200 square feet. The design of the privacy yard shall be detailed on the final site plan and shall include provisions for screening, fencing, paving, exterior lighting and/or special landscaping treatment.

F. Bulk Regulations:

1. Height

A. Residential building height: 35 feet
by Commission waiver: 45 feet, but not to exceed 3 stories.

B. Public or semi-public building: 45 feet,
provided that required front, rear and side yards shall be increased by 1 foot for each foot of height over thirty-five feet.

C. Cupolas, spires and steeples: 90 feet,
by special use permit approved by the Planning Commission.

D. Accessory structures: 16 feet
provided that accessory building heights may be increased to twenty-four feet in accordance with Article 2, Section P of the Zoning Ordinance.

2. Minimum yard requirements for attached, duplex and two-family dwellings:

A. Front yard: 25 feet,
for any yard fronting a public right of way.

12 feet,
for any yard fronting a private travelway and/or parking bay, provided that the minimum yard depth be measured from the face of building to either (1) the back of vehicular pavement

curbing or (2) the back of sidewalk if located between building and vehicular pavement curbing, whichever dimension is closer to the building front.

20 feet,
for any yard fronting a private travelway and/or parking bay serving a residential dwelling with a garage.

B. Side yard: 25 feet,
for any side yard fronting a public right of way.

16 feet,
for any side yard abutting a private travelway and/or parking bay.
12 feet,
for any side yard abutting an adjacent lot line.

C. Rear yard: 25 feet

3. In addition to the above regulations, the yard requirements for uses and structures other than residential dwellings and residential accessory uses shall be further regulated by floor area ratio and lot coverage ratios. A maximum floor area ratio equal to 0.30 shall apply to such non-residential uses and structures, with a maximum percentage of building coverage on the lot equal to 20%. The location of all such uses shall be subject to site plan approval.
(Ord. of 5-4-2004)

G. Open Space and Recreation Areas:

1. Twenty-five percent (25%) of the gross site area shall be common open space dedicated to common usage and ownership.

2. Fifty percent (50%) of the required common open space area shall be developed as active recreational areas and facilities.

3. Active recreational areas may include playgrounds with recreational structures, tot lots, tennis courts, swimming pools, wading pools, spas and saunas, clubhouse facilities, community meeting rooms and other similar facilities intended for the exclusive use and participation of residents within the development. The applicant shall establish that the type and quality of the planned improvements for the active recreation space shall satisfy the needs of the residents of the project. The location, mix, type, quality and phasing of

active recreation facilities and open spaces shall be delineated on the General Development Plan and are subject to Planning Commission approval. A bond may be required for such improvements and facilities subject to the discretion of the Planning Commission.

4. No more than 40% of the required common open space shall consist of land classified as 100 year floodplain, stream valleys, wetlands, water features, stormwater management facilities, slopes greater than 30% and/or drainage easements.
5. Required common open space shall be contiguous and shall occupy a single parcel within the A-R development unless otherwise approved by the Planning Commission.

6. In no instance shall open space credit be given for lands which are included in or reserved for public rights of way or private travelways, loading areas, required sidewalks or parking areas.

7. Open space and active recreational areas shall be accessible to all attached residential lots within the development via dedicated pedestrian access easements. Walkways and other forms of pedestrian access shall form an interconnected system within the A-R District, serving as access to open space, recreational areas and other pedestrian destinations. Pedestrian systems shall be delineated on the General Development Plan.

8. Where community bike and pedestrian trails intended for public use have been designated by the Town's adopted Comprehensive Plan or the Capital Improvements Plan, the applicant shall connect interior pedestrian trails and sidewalks within the project, where appropriate, to these community trails.

9. All open space shall be further regulated by landscaping requirements.

10. All common open space, recreational areas and other common properties shall be preserved for their intended purpose as shown on the approved Plan of Development and shall be established by metes and bounds on the Final Subdivision Record Plat.

11. Common open space, recreational areas and other common properties shall be owned, administered and maintained by a not-for-profit, property owners' association, provided, however, that a portion or all of such properties may be dedicated to the Town subject to and at the sole discretion of the Town for acceptance at time of plat recordation. Property owners' association by-laws, articles of incorporation, restrictive covenants and a schedule of maintenance shall be submitted with any application for subdivision plat or site plan approval.

12. For open space, recreational areas and other common properties to be retained by the property owners' association of a subdivision, the initial developer/owner of the subdivision must establish the owners' association as a legal entity prior to the recordation of the final plat. Membership in the association shall be mandatory for all lot owners within the subdivision. The owners' association shall own all common open space and recreational facilities and shall provide for their perpetual administration, maintenance and operation.
(Ord. of 2021-07-06; Ord. of 2025-xx-xx)

H. Net Developable Area Calculation for Attached Residential

1. Notwithstanding governing lot size and yard regulations, the maximum number of units for attached residential development or subdivision shall be calculated based on existing land conditions. The yield of a subdivision shall be based on its net developable area, with adjustment factors for physical land units as specified in the chart in the following section.

2. The final plat and/or site plan for a project shall graphically depict the location and area for the physical land units as outlined herein below. A calculation of the net developable area shall be required for all subdivision and site plan submissions. *(Refer to illustrative example of net developable area calculation in the Appendix of the Zoning Ordinance.)*

Physical Land Unit	Percent Credited Toward Net Acreage
Slopes less than 10%:	*100%*
Slopes from 10% but less than 20%:	*75%*
Slopes from 20% but less than 30%:	*50%*
Slopes 30% or more:	*10%*
Soils with high shrink/swell characteristics, as defined:	*75%*
Wetlands, existing water features and streams:	*0%*
Stormwater management basins and structures:	*0%*
Above-ground 69 KV or greater transmission lines:	*0%*
Public right-of-way	*0%*
Private streets, travleways and combined travelways and parking bays	*0%*

3. No credit towards net developable area shall be given for planned public rights-of-way, private streets, travelways and combined travelways and parking bays within a lot or property to be developed or subdivided. Twenty percent (20%) shall be subtracted from the calculated net developable acreage to allow for street rights of way, unless it can be

demonstrated by survey calculations to the satisfaction of the Planning Commission that proposed street rights of way, private streets, travelways and combined travelways and parking bays in a subdivision will be less than 20% percent of the calculated net acreage.

4. No A-R District residential lot shall be configured such that more than 25% of the prescribed minimum lot area is comprised of one or more of the following physical land units: (a) slopes 30% or more, (b) wetlands, (c) 100-year floodplains and (d) water features. Stormwater management and BMP facilities shall not be constructed within the boundaries of a residential lot.
(Ord. of 8-1-2001)

I. Additional Regulations:

1. Waiver of Minimum District Size: The Planning Commission may approve a special permit waiving the five acre minimum district size requirement for the A-R, Attached Residential District provided that the owner shall successfully demonstrate that consolidation with contiguous parcels or lots necessary to meet minimum district size represents an undue economic hardship or physical impossibility. Further, the owner shall establish that such proposed A-R development will have no deleterious effect on contiguous properties while satisfying the purpose and intent of the district.

2. Refer to Parking and Loading Requirements, Article 8, for parking regulations.

   A. Parking spaces for each dwelling unit shall be assigned and located within close proximity to the individual dwelling unit served.

   B. ~~Separate parking spaces shall be allocated and reserved within an A-R development for recreational vehicle parking on the basis of one (1) recreational vehicle parking space per four (4) dwelling units. No recreational vehicle parking space shall front on a public street.~~

   C. ADA (American Disabilities Act) parking requirements and dimensions shall be incorporated as a required improvement into all plats and site plans.

   D. Recreational vehicle parking shall not be permitted on residential lots within the A-R District. Refer to Parking and Loading Requirements for parking regulations and specific requirements for common parking lots for recreation vehicle and boat storage.

(Ord. of 2025-xx-xx)

3. ~~Private~~ Travelways, Combined Travelways with Parking Bays and General Access:

   A. All dwellings shall have access to a ~~private~~ travelway providing for two-way traffic on twelve (12) foot travel lanes with a combined minimum width of 24 feet (curb to curb), within a minimum 30 foot private vehicular access easement to be recorded with the subdivision plat.

   B. Travelways combined with single-loaded perpendicular parking bays shall be a minimum width of 42 feet (curb to curb), 18 feet of which shall be allocated to and striped for parking. Travelways combined with double loaded perpendicular parking bays shall maintain a minimum width of 60 feet (curb to curb), with 18 feet allocated to the depth of each parking bay space.

   C. ~~Private~~ travelways and combined travelways with parking bays shall be constructed to geometric and pavement design standards as specified by the Town's Design and Construction Standards manual, as revised.

   D. All travelways and parking bays shall be constructed with VDOT CG-6 or approved equivalent curb and gutter.

   E. ~~No attached dwelling unit may be accessed directly from a public street unless approved by special permit.~~

   (Ord. of 2025-xx-xx)

4. Refuse and Solid Waste Buffering and Screening

   A. All refuse facilities shall be completely enclosed and screened.

5. Additional Setback and Lot Requirements

   A. Where adjacent properties are zoned to a district other than the A-R District, all Attached Residential buildings shall be set back at least 25 feet from the common district property line(s) or as otherwise provided by screening and buffer requirements.

   B. Front lot lines shall be common with private vehicular access easement lines, provided that where a perpendicular parking stall, recreational feature and/or a sidewalk intended for common usage are located outside of the private vehicular access easement, a minimum landscaped front yard of 12 feet shall be provided.

6. Separation and Grouping of Units

A. Building structures for single-family attached dwelling units shall be separated from one another by a minimum of 24 feet.

B. No more than eight (8) and no fewer than three (3) single-family attached units (townhouses) shall be included in any one physically contiguous grouping.

C. Townhouse grouping shall be designed to minimize “flat,” row-house architectural facades. Architectural projections, off-sets, window bays, porches, mixed materials and colors and other design elements shall be provided to achieve this result.

D. Architectural treatment of attached dwellings shall vary so that no more than two abutting units are substantially the same and so that no more than four units in any group are substantially the same.

7. Required Improvements and Maintenance of Improvements

A. For any development in the A-R District, all common area improvements (including open space, recreational facilities, private travelways, walkways, parking areas and other community facilities) shall be maintained by and at the sole responsibility of the developer-owner of the A-R District development until such time as the developer-owner conveys such common area to a non-profit property owners’ association entity consisting of the individual owners of the dwelling units in the development.

B. On-site lighting, signing and mailboxes (as approved by the U.S. Postal Service) shall be provided by the owner-developer of the A-R, Attached Residential District development. These improvements shall be of compatible scale, materials and colors, the designs for which shall be provided with the final site plan.

8. Property Owners’ Association and Covenants

A. Prior to final approval of a subdivision plat or site plan which includes common properties or common property improvements to be owned by a property owners’ association, the Town Attorney shall review and approve the applicant’s property owners’ association bylaws, articles of incorporation, restrictive covenants and a schedule of common property maintenance.

B. Deed restrictions and covenants shall be included with the conveyance of common property and common property improvements to include, among other things, that assessments, charges and costs of maintenance of such common areas shall constitute a pro-rata share lien upon the individual dwelling lots, such lien inferior only to taxes and recorded trusts.

C. Restrictive covenants shall specify the detailed means by which the non-profit entity shall govern and manage itself and maintain building exteriors, landscaping, lighting, recreation areas, walkways, pedestrian trails, parking areas, snow removal travelways and other common elements of the development.

9. Additional Land Development and Site Plan Requirements

A. All uses within the A-R District shall require a General Development Plan for zoning and/or special permit approval. The General Development Plan shall serve as the master land use plan for the specific development proposal.

B. The development of any and all sections within the A-R District shall require site plan approval in conformance with the General Development Plan.

C. A Traffic Impact Assessment may be required for any A-R District application by the Planning and Zoning Administrator. The study shall be prepared in accord with the guidelines and standards provided by the Town.

D. Refer to Landscaping Regulations for additional screening buffer yard and open space landscaping provisions.

E. Refer to the Town's Design and Construction Standards Manual for additional residential design standards and criteria.

10. Condominiums

A. Any proposed condominium development established under the Condominium Laws of Virginia shall be subject to the following provisions:

(1) All AR district provisions shall be met, as if lot lines existed, unless approved by special use permit.

(2) Repealed 2024-02-06

(3) A site plan shall be required and shall govern the location of all site structures and improvements on final plans.

11. No private domestic well and septic systems shall be permitted. Irrigation wells and wells for ground source HVAC systems are permitted by right.

12. Any subdivision or lot which is proposed to be developed on shrink/swell soils shall require a geotechnical report to be submitted with the preliminary plat and plans. Such report shall be prepared by a registered professional engineer and shall address the feasibility of development on the subject soils. No subdivision plat or site plan shall be approved for final recordation until a foundation engineering report has been reviewed by the Town. All recorded plats for lots containing shrink/swell soils shall bear the following note: *"This lot contains shrink/swell soils which require special engineering design for foundations and structural elements. No structure will be approved for issuance of a building permit until a foundation engineering design prepared by a certified professional engineer has been approved for the proposed structure."*

13. Refer to the Floodplain Zoning Overlay District, where applicable.

14. Refer to the Chesapeake Bay Preservation Area Overlay District.

15. Refer to the Smithfield Historic District Design Guidelines and the HP-O district for additional design standards and criteria, where applicable.

16. Refer to Sign Regulations, Article 10 for signage provisions.

(Ord. of 2022-02-06)

Article 3.F:

MF-R, Multifamily Residential District

Article 3.F:

MF-R Residential

(Multifamily Residential District)

A. Purpose and Intent:

The MF-R, Multifamily Residential District is intended to provide for multifamily residences at locations compatible with the Comprehensive Plan's goals for housing for the elderly and other limited high density residential development and redevelopment in Smithfield. No more than three (3) unrelated occupants may reside in any one multifamily or attached dwelling in the MF-R District. The average density of twelve (12) units per acre establishes this district as one recognizing garden-styled and mid-rise apartment and/or condominium units as the dominant land use. Buildings shall not exceed three stories in height.

While no new garden apartment projects are recommended by the Comprehensive Plan, the MF-R District is intended to promote housing for the elderly and well planned higher density residential developments. Retirement residential projects, independent living communities and nursing homes and housing for persons requiring assisted living care are encouraged under this district.

Elderly housing proposals may be granted higher densities (up to 20 or more units per acre) subject to superior design proposals as well as the results of the supporting transportation/parking studies which quantify a reduction in parking demand and overall traffic impacts attributable to elderly and assisted living projects. The development of townhouses are permitted in the MF-R District and shall be subject to the requirements of the A-R, Attached Residential District.

This designation may be applied to existing multi-family development within stable areas of the Town. Also, it is intended for application to certain undeveloped tracts and infill locations as recognized by the Comprehensive Plan, where housing for the elderly would be appropriate. In all instances, it is the intent of this district to promote development which is sensitive to existing natural features and vegetation, promotes excellence in site planning and landscape design and incorporates appropriate scale, materials and character of architecture. Development in the MF- R District must be sensitive to land forms, environmental characteristics, adequate public infrastructure and quality transportation improvements.

B. Permitted Uses:

1. Multiple family residential dwellings (with no more than three (3) unrelated occupants per dwelling unit).
2. Single family attached dwellings, subject to A-R District regulations.
3. Duplex residential dwellings, subject to A-R District regulations.
4. A mix of residential dwelling types as set forth above.
5. Private community facilities, recreation areas, parking lots for recreational vehicles and other common area improvements normally associated with multi family residential developments (other than those requiring special use permits).
6. Accessory uses, to include tool sheds, detached garages and carports, children's playhouses and doghouses.
7. Irrigation wells and wells for ground source HVAC systems.

(Ord. of 2020-09-01)

C. Uses Permitted by Special Use Permit:

1. Cemeteries.
2. Community buildings, limited to residential use.
3. Churches and places of worship.
4. Public uses and facilities.
5. Libraries.
6. Child day care centers.
7. Adult day care centers.
8. Nursery schools, for use by MF-R District residents only.
9. Private schools and related uses.
10. Public schools and related uses.
11. Commercial swimming pools and tennis courts, except as may be approved in a planned unit development.
12. Housing for the elderly and assisted living residences requiring medical and/or food support structures.
13. Institutional housing and general care for indigents and orphans.
14. Hospitals and medical offices.
15. Public utilities.
16. Nursing homes (licensed) with medical offices.
17. Recycling centers, for use by the MF-R District residents only.
18. Home occupations.
19. Waiver of district size.
20. Waiver of maximum density.
21. Waiver of maximum building height.
22. Temporary real estate marketing offices for new subdivisions.

23. Waiver of Parking and Loading Requirements.

24. Parking lots for recreational vehicles and boats.

(Ord. of 9-5-2000, Ord. of 9-2-2008; Ord. of 2025-xx-xx)

D. Maximum Density:

1. Multifamily dwellings (conventional):

Twelve (12.0) dwelling units per net developable acre.

2. Multifamily dwellings (subject to conditional zoning agreements and proffered for elderly and assisted living orientations only):

Twenty (20.0) dwelling units per net developable acre (by special permit via waiver of maximum density).

3. Repealed (2025-08-05).

(Ord. of 2025-08-05)

E. Lot Size Requirements:

1. Minimum district size: Five (5) acres

2. Minimum lot area for multifamily dwellings: Not regulated, provided that dwellings must be appropriately sited to respect physiographic, air, solar, landscape, screening and environmental characteristics of lot and their relationship to adjoining properties, as well as other criteria provided in the Additional Regulations of this district.

3. Non-residential uses:
In addition to the above regulations, the yard requirements for uses and structures other than residential dwellings and residential accessory uses shall be further regulated by floor area ratio and lot coverage ratios. A maximum floor area ratio equal to 0.30 shall apply to such non-residential uses and structures, with a maximum percentage of building coverage on the lot equal to 20%. The location of all such uses shall be subject to site plan approval.

(Ord. of 2025-08-05)

F. Bulk Regulations:

1. Maximum Height

A. Residential building height: 40 feet

B. Public or semi-public building: 45 feet, provided that required front, rear and side yards shall be increased by 1 foot for each foot of height over thirty-five feet.

C. Cupolas, spires and steeples: 90 feet, by special permit.

2. Minimum yard requirements for multifamily dwellings:

A. Front yard: 30 feet, for any yard fronting a public right of way.

15 feet, for any yard fronting a private travelway and/or parking bay, provided that the minimum yard depth be measured from the building to either (1) the back of vehicular pavement curbing or (2) the back of sidewalk if located between building and vehicular pavement curbing, whichever is closer.

B. Side yard: 15 feet, provided that where a side yard fronts a public right of way, the side yard shall be 30 feet.

C. Rear yard: 30 feet

(Ord. of 2025-08-05)

G. Open Space and Recreation Areas:

1. Thirty percent (30%) of the gross site area shall be common open space dedicated to common usage and ownership.

2. Fifty percent (50%) of the required common open space area shall be developed as active recreational areas and facilities.

3. Active recreational areas may include playgrounds with recreational structures, tot lots, tennis courts, swimming pools, wading pools, spas and saunas, clubhouse facilities, community meeting rooms and other similar facilities intended for the exclusive use and participation of residents within the MF-R development. The applicant shall establish that the type and quality of the planned improvements for the active recreation space shall satisfy the needs of the residents of the project. The location, mix, type, quality and phasing of active recreation facilities and open spaces shall be delineated on the General Development Plan and is subject to Planning Commission approval. A bond may be required for such improvements and facilities subject to the discretion of the Planning Commission.

4. No more than 40% of the required common open space shall consist of land classified as 100 year floodplain, stream valleys, wetlands, water features, stormwater management facilities, slopes greater than 30% and/or drainage easements.

5. Required open space shall be contiguous and shall occupy a single parcel within the MF-R development unless otherwise approved by the Planning Commission.

6. In no instance shall open space credit be given for lands which are included in or reserved for public rights of way or private travelways, loading areas, required sidewalks or parking areas.

7. Common open space and active recreational areas shall be accessible to all attached residential lots within the development via dedicated pedestrian access easements. Walkways and other forms of pedestrian access shall form an interconnected system within the MF-R District, serving as access to open space, recreational areas and other pedestrian destinations. Pedestrian systems shall be delineated on the required General Development Plan.

8. Where community bike and pedestrian trails intended for public use have been designated by the Town's adopted Comprehensive Plan or the Capital Improvements Plan, the applicant shall connect interior pedestrian trails and sidewalks within the project to these community trails.

9. All open space shall be further regulated by landscaping and buffer yard requirements.

10. All common open space, recreational areas and other common properties shall be preserved for their intended purpose as shown on the approved Plan of Development and shall be established by metes and bounds on the Final Subdivision Record Plat.

11. Common open space, recreational areas and other common properties shall be owned, administered and maintained by a not-for-profit, property owners' association, provided that a portion or all of such properties may be dedicated to the Town at the sole discretion of the Town Council for acceptance at the time of plat recordation. Property owners' association by-laws, articles of incorporation, restrictive covenants and a schedule of maintenance shall be submitted with any application for a subdivision plat or site plan approval.

12. For common open space, recreational areas and other common properties to be retained by the property owners' association, the initial developer/owner of the project must establish the owners' association as a legal entity prior to the recordation of the final plat. Membership in the association shall be mandatory for all property owners within the development. The owners' association shall own all common open space and recreational facilities and shall provide for their perpetual administration, maintenance and operation.

H. Net Developable Area Calculation for the MF-R District:

1. Notwithstanding governing lot size and yard regulations, the maximum number of units for multifamily and attached residential development or subdivision shall be calculated based on existing land conditions. The yield of a multifamily development project shall be based on its net developable area, with adjustment factors for physical land units as specified in the chart in the following section.

2. The final plat and/or site plan for a project shall graphically depict the location and area for the physical land units as outlined below. A calculation of the net developable area shall be required for all subdivision and site plan submissions. *(Refer to illustrative example of net developable area calculation in Appendix 1 of the Zoning Ordinance.)*

Physical Land Unit	Percent Credited Toward Net Acreage
Slopes of less than 10%:	*100%*
Slopes greater than 10% but less than 20%:	*75%*
Slopes from 20% but less than 30%:	*50%*
Slopes of 30% or more:	*10%*
Soils with high shrink/swell characteristics, as defined:	*75%*
Wetlands, existing water features and streams:	*0%*
Stormwater management basins and structures:	*0%*
Above-ground 69 KV or greater transmission lines:	*0%*
Public right-of-way	*0%*
Private streets, travleways and combined travelways and parking bays	*0%*

3. No credit towards net developable area shall be given for planned public rights-of-way, private streets, travelways and combined travelways and parking bays within a lot or property to be developed or subdivided. Twenty percent (20%) shall be subtracted from the calculated net developable acreage to allow for street rights of way, unless it can be demonstrated by survey calculations to the satisfaction of the Planning Commission that proposed street rights of way, private streets, travelways and combined travelways and parking bays in a subdivision will be less than 20% percent of the calculated net acreage.

4. No MF-R District residential lot shall be configured such that more than 10% of the prescribed minimum lot area for a subdivided attached residential or duplex residential lot is comprised of one or more of the following physical land units: (a) slopes of 30% or more, (b) wetlands, (c) 100-year floodplains or (d) water features. Stormwater management and BMP facilities shall not be constructed within the boundaries of a residential lot.
(Ord. of 8-1-2001)

I. Additional Regulations:

1. Waiver of Minimum District Size: The Planning Commission may approve a special permit waiving the five acre minimum district size requirement for the MF-R District provided that the owner shall successfully demonstrate that the consolidation of contiguous parcels or lots necessary to meet the minimum district size represents an undue economic hardship or physical impossibility. Further, the owner shall establish that such proposed MF-R development will have no deleterious effect on contiguous properties while satisfying the purpose and intent of the district.

2. Refer to Parking and Loading Requirements for parking regulations.

   A. Parking spaces for each dwelling unit shall be assigned and located within reasonable walking distance to the individual dwelling unit served.

   ~~B. Separate parking spaces shall be allocated and reserved for recreational vehicle parking on the basis of one (1) recreational vehicle parking space per six (6) dwelling units. No recreational vehicle parking space shall front on a public street.~~

   C. ADA (American Disabilities Act) parking requirements and dimensions shall be incorporated as a required improvement into all plats and site plans.

   D. Recreational vehicle parking shall not be permitted on residential lots within the MF-R District. Refer to Parking and Loading Requirements for commercial parking lots and specific requirements for recreation vehicle and boat storage.

3. ~~Private~~ Travelways, Combined Travelways with Parking Bays and General Access:

   A. All dwellings shall have access to a ~~private~~ travelway providing for two-way traffic on twelve (12) foot travel lanes with a minimum width of 24 feet (curb to curb), within a minimum 30-foot private vehicular access easement which shall be recorded with the subdivision plat.

   B. Travelways combined with single loaded perpendicular parking bays (90 degree parking stalls) shall be a minimum width of 42 feet (curb to curb), 18 feet of which shall be allocated to and striped for parking. Travelways combined with double loaded perpendicular parking bays shall be a minimum width of 60 feet (curb to curb), with 18 feet allocated to the depth of each parking bay space.

   C. ~~Private~~ travelways and combined travelways with parking bays shall be constructed to geometric and pavement design standards as specified by the Town's *Design and Construction Standards Manual*, as revised.

   D. All travelways and parking bays shall be constructed with VDOT CG-6 or approved equivalent curb and gutter.

   ~~E. No attached dwelling unit may be accessed directly from a public street unless approved by special permit.~~

4. Refuse and Solid Waste Buffering and Screening

   A. All refuse facilities shall be completely enclosed and screened according to the provisions established in the Landscaping and Screening Regulations.

5. Additional Setback and Lot Requirements

   A. Where adjacent properties are zoned to a district other than the MF-R District, all buildings shall be set back at least 30 feet from the common district property line(s) or as otherwise provided by screening and buffer requirements.

   B. Front lot lines shall be common with private vehicular access easement lines, provided that where a perpendicular parking stall, recreational feature and/or a sidewalk intended for common usage are located outside of the private vehicular access easement, a minimum landscaped front yard of 12 feet shall be provided.

6. Separation and Grouping of Units

   A. Building structures for multifamily residential units shall be separated from one another by a minimum of 30 feet.

   B. No more than twenty-four (24) multifamily units shall be included in any one building structure, provided that greater than 24 units per building may be permitted for housing for the elderly by special permit.

   C. Multifamily groupings shall be designed to minimize “flat,” row- house architectural facades. Architectural projections, off-sets, window bays, porches, mixed materials and colors and other design elements shall be employed to achieve this result.

(Ord. of 2025-08-05; Ord. of 2025-xx-xx)

7. Required Improvements and Maintenance of Improvements

   A. For any development in the MF-R District, all common area improvements (including open space, recreational facilities, private travelways, walkways, parking areas and other community facilities) shall be maintained by the developer/owner of the MF-R District development until such time as the developer/owner conveys said common area to a non-profit property owners association.

B. On-site lighting, signage and mailboxes (as approved by U.S. Postal Service) shall be provided by the owner/developer of the MF-R District development. These improvements shall be of compatible scale, materials and colors with the proposed development and adjacent uses. The designs for these improvements shall be provided with the final site plan.

J. Property Owners' Association and Covenants

A. Prior to final approval of a subdivision plat or site plan which includes common properties or common property improvements to be owned by a property owners association, the Town Attorney shall review and approve the applicant's property owners' association bylaws, articles of incorporation, restrictive covenants and a schedule of common property maintenance.

B. Deed restrictions and covenants shall be included with the conveyance of common property and common property improvements to include, among other things, that assessments, charges and costs of maintenance of such common areas shall constitute a pro-rata share lien upon the individual dwelling lots, such lien being inferior only to taxes and recorded trusts.

C. Restrictive covenants shall specify the detailed means by which the non-profit entity shall govern and manage itself and maintain building exteriors, landscaping, lighting, recreation areas, walkways, pedestrian trails, parking areas, snow removal travelways and other common elements of the development.

K. Additional Land Development and Site Plan Requirements

A. All uses within the MF-R District shall require a General Development Plan for zoning and/or special permit approval. The General Development Plan shall serve as the master land use plan for the specific development proposal.

B. The development of any and all sections within the MF-R District shall require site plan approval in conformance with the General Development Plan.

C. A Traffic Impact Assessment may be required for any MF-R District application by the Planning and Zoning Administrator. See Appendix, Article 14.B.

D. Refer to Article 9, Landscape and Screening Regulations for additional screening buffer yard and open space landscaping provisions.

E. Refer to the Town's Design and Construction Standards Manual for additional residential design standards and criteria.

L. Condominiums

A. Any proposed condominium development established under the Condominium Laws of Virginia shall be subject to the following provisions:

(1) All setbacks, density and other MF-R District provisions shall be met.

(2) Minimum lot and yard requirements shall be met as if lot lines existed.

M. No private domestic well and septic systems shall be permitted. Irrigation wells and wells for ground source HVAC systems are permitted by right.

N. Any subdivision or lot which is proposed to be developed on shrink/swell soils shall require a geotechnical report to be submitted with the preliminary plat and plans. Such report shall be prepared by a registered professional engineer and shall address the feasibility of development on the subject soils. No subdivision plat or site plan shall be approved for final recordation until a foundation engineering report has been reviewed by the Town. All recorded plats for lots containing shrink/swell soils shall bear the following note: *"This lot contains shrink/swell soils which require special engineering design for foundations and structural elements. No structure will be approved for issuance of a building permit until a foundation engineering design prepared by a certified professional engineer has been approved for the proposed structure."*

O. Refer to the Floodplain Zoning Overlay District, where applicable.

P. Refer to the Chesapeake Bay Preservation Area Overlay District.

Q. Refer to Article 10, Signage Regulations for signage provisions.

(Ord. of 2020-09-01; Ord. of 2025-08-05)

AN ORDINANCE TO AMEND THE ZONING ORDINANCE
OF THE TOWN OF SMITHFIELD, VIRGINIA

WHEREAS, the Town Council of the Town of Smithfield deems it necessary to revise and amend certain provisions of the Zoning Ordinance of the Town of Smithfield to remove required recreational vehicle parking making it an SUP and allowing public and private travelways;

WHEREAS, the Town's Planning Commission, after a public hearing, has unanimously recommended that the Town Council adopt the proposed amendment and revisions; and,

WHEREAS, this Council, after a public hearing on the matter, finds it to be in the best interest of the citizens of the town to revise and amend the following provisions of its Zoning Ordinance.

NOW, THEREFORE, BE IT ORDAINED by the Town Council of the Town of Smithfield, Virginia, as follows, to-wit:

1. That Article 3.F, MFR, Multi Family Residential, the requirement for recreational vehicle parking in Section I.2.B is removed, recreational parking is a special use permit in Section C.24 and public and private travelways in Section I.3.
2. That Article 3.E, AR, Attached Residential, the requirement for recreational vehicle parking in Section I.2.B is removed, recreational parking is a special use permit in Section C.2 and public and private travelways in Section I.3.
3. This ordinance shall be in effect immediately upon adoption.

Adopted: October 8th, 2025

TOWN COUNCIL OF THE
TOWN OF SMITHFIELD, VIRGINIA

By_____
Michael G. Smith, Mayor

Attest:

_____
Lesley G. King, Clerk

NOTICE OF PUBLIC HEARING
TOWN COUNCIL OF THE TOWN OF SMITHFIELD
AMENDMENT & REVISION OF ZONING ORDINANCE

Notice is hereby given that the Town Council of the Town of Smithfield, Virginia will hold a public hearing at the regular meeting of the Town Council in the council chambers in The Smithfield Center, 220 N. Church Street, meeting room A, Smithfield, Virginia, on Wednesday, October 8th, 2025 at 6:30 p.m. to consider the application of the Town of Smithfield, applicant for a text amendments of the Zoning Ordinance of the Town of Smithfield, Virginia, adopted September 1, 1998, and as amended thereafter, to the provisions of the following: Article 9.C.2.e. to remove tree canopies for platted lots; Article 3.E and 3.F to remove the contiguous open space requirement and remove required recreational vehicle parking making it an SUP, and allowing public and private travelways; and Article 11 to update site plan requirements.

Any person affected by or interested in the aforesaid applications may appear at the hearing and be heard. Copies of the current Zoning Ordinance of the Town of Smithfield, Virginia, adopted Tuesday, September 1st, 1998, and all amendments thereto, along with copies of the text amendment applications, are on file and may be examined in the Community Development & Planning Department, 310 Institute St, Smithfield, VA 23430.

TOWN OF SMITHFIELD, VIRGINIA

BY: Lesley G. King, Clerk

Publish: Wednesday, September 24th, 2025, and Wednesday, October 1st, 2025.

Town of Smithfield

Memorandum

September 22, 2025

TO: The Honorable Mayor and Town Council

FROM: Michael Stallings, Town Manager

SUBJECT: Town Code Update – Article 11 – Site Plan Requirements

Attached you will find a brief staff report from our Community Development and Planning Director as well as a red-lined copy of our current Article 11. Any language to be removed is red and is struck through. New language is blue or purple. Purple language was added at the request of Planning Commission, and blue is the original recommendation.

The impetus for this change was a revision to State Code that no longer allows the final site plan review to happen at the Planning Commission level. This review has always been administrative, and the State Code now puts that review with the locality's "Designated Agent". In this case, the Community Development and Planning Director who serves as our Zoning Administrator.

Staff used this opportunity to clean up language elsewhere in the ordinance to bring it in line with other ordinances and practices.

Planning Commission did recommend these changes for approval.

TOWN COUNCIL STAFF REPORT: ARTICLE 11 TEXT AMENDMENT

WEDNESDAY, OCTOBER 8th, 2025, 6:30 PM

This is a proposed text amendment to Article 11 bringing our site plan requirements in line with VA Code which recently replaced the Planning Commission with the designated agent as the reviewer of site plans.

VA Code also does not allow for a preliminary site plan preconference.

Staff cleared up the language for minor and major site plans and included the requirement of a preliminary plat if more than 50 lots.

We updated the sewer systems with the new language from our adopted CBPA Ordinance and updated review timelines to follow VA Code.

Finally, the appeals process was clarified to the BZA, not Planning Commission.

These revisions align the site plan requirements with current modern zoning practices.

This was recommended to Town Council with a 4 to 2 vote with the following additions:

J.3.b will not be limited to only the agencies on the list. The list will also include police, IOW County, Schools, Museum, and other utilities.

Remodeling commercial structures may qualify as a minor site plan if in the opinion of the Zoning Administrator it is in conformance with the intent of this Article.

Staff is continuing to work on updating the language for the major and minor site plans.

Staff suggest approval.

Please direct inquiries to Tammie Clary at 1-(757)-365-4200 or tclary@smithfieldva.gov.

AN ORDINANCE TO AMEND THE ZONING ORDINANCE
OF THE TOWN OF SMITHFIELD, VIRGINIA TO UPDATE SITE PLAN REQUIREMENTS

WHEREAS, the Town Council of the Town of Smithfield deems it necessary to revise and amend certain provisions of the Zoning Ordinance of the Town of Smithfield to UPDATE Site Plan requirements; and

WHEREAS, the Town's Planning Commission, after a public hearing, has unanimously recommended that the Town Council adopt the proposed amendment and revisions; and,

WHEREAS, this Council, after a public hearing on the matter, finds it to be in the best interest of the citizens of the town to revise and amend the following provisions of its Zoning Ordinance.

NOW, THEREFORE, BE IT ORDAINED by the Town Council of the Town of Smithfield, Virginia, as follows, to-wit:

1. That the following provisions of the Zoning Ordinance, are hereby repealed and reenacted, so as to update the site plan requirements. The full text of the provisions to be reenacted is attached hereto as Exhibit "A":

   Article 11 Site Plan Requirements

2. This ordinance shall be in effect immediately upon adoption.

Adopted: October 8th, 2025

TOWN COUNCIL OF THE
TOWN OF SMITHFIELD, VIRGINIA

By_____
Michael G. Smith, Mayor

Attest:

_____
Lesley G. King, Clerk

Article 11:

SITE PLAN REQUIREMENTS

Article 11:
Site Plan Requirements

A. Purpose and Intent:

1. Title and Application:

The Town shall require submission and approval of a plan of development, hereinafter referred to as the "site plan", prior to the issuance of zoning permits and building permits to ensure the compliance with regulations contained in the Zoning Ordinance and, specifically, this article, which shall be hereinafter referred to as the “Site Plan Requirements” pursuant to Section 15.2-2286 of the Code of Virginia (1997).

2. Relationship to Comprehensive Plan:

The site plan requirements shall be employed to implement the Town’s Comprehensive Plan, zoning ordinance, and its expressed growth management objectives. The Comprehensive Plan provides for a balanced development policy which accommodates and directs future growth in a manner sensitive to existing amenities, sensitive environmental areas, historic areas and significant cultural features. There is mutual responsibility between the Town and the developer to develop land within Smithfield in an orderly manner in accordance with the Town's Comprehensive Plan. Therefore, the Comprehensive Plan shall serve as a general guide to the developer in the land development process.

3. Site Plan Process: Major and Minor Site Plans:

The purpose of this article is to facilitate the utilization of the most advantageous site improvement techniques in the development of land within the Town. The site plan requirements promote contemporary standards in the siting, design, landscaping and implementation of development to ensure that land is used in a manner which is efficient and harmonious with neighboring properties.

Site improvements for a lot may be deemed as either (a) major or (b) minor. In this regard, the Town has separate requirements for the submission of either a major site plan and or a minor site plan, each of which is organized to respond to the unique impacts and scope of any given land development activity. This article also provides for ~~a preliminary site plan review process by the Town’s Plan Review Committee as well as~~ requirements for residential lot development plans.

Site plans and related public improvements plans, landscape plans, plats, design calculations, construction specifications and architectural drawings, which are to be prepared and approved in accordance with the provisions of this Article, shall be required to by the Town in the review of site development applications. Site plans shall be prepared and submitted for development approvals to assure compliance with the adopted Comprehensive Plan, the Zoning Ordinance, related ordinances, and other adopted Town facilities plans including, but not limited to, transportation, sanitary sewer, drainage, stormwater management, water, recreation, lighting and open space.

Nothing herein shall require the approval of any development or land use, or any feature thereof, which shall be found by the ~~Planning Commission~~ Zoning Administrator to constitute a danger to the public health, safety or general welfare, or which shall be determined by the ~~Planning Commission~~ Zoning Administrator to be a departure from, or violation of, sound engineering design or standards.

No work or site preparation may begin before the applicant for a project has received an approved site plan and subdivision plat, if applicable.
(Ord. of 2025-xx-xx)

4. Non-Conforming Uses, Structures and Sites (General):

A change or addition to any non-conforming use, structure, or site subject to a major or minor site plan shall require that the entire use, structure, or site (including both the non-conforming and conforming improvements) be brought into full conformance with all of the requirements of this ordinance, ~~provided that the Planning Commission, upon recommendation by the Planning and Zoning Administrator, may waive a portion or all of the individual requirements for conformance.~~

The Zoning Administrator may grant a nonconforming use and development waiver for structures on legal nonconforming lots or parcels to provide for remodeling and alterations or additions to such nonconforming structures provided that ~~there will be no increase in nonpoint source pollution load and~~ any development or land disturbance exceeding an area of 2500 square feet complies with all erosion and sediment control requirement of this Ordinance.
(Ord. of 2025-xx-xx)

5. Costs of Development:

The developer shall be responsible for all costs incurred in planning, engineering, bonding, constructing, installing and testing of all public facilities and improvements required to complete the proposed project.

6. Fees:

The developer shall pay all applicable plan review fees at the time of submission of a site plan or plat, including pro-rata share fees for off-site improvements and cash proffers. Fees for site inspections and other aspects of the development process shall be due and payable in accord with the site development fee schedule. The site development fee schedule is available from the office of the ~~Planning and~~ Zoning Administrator.
(Ord. of 8-1-2000; Ord. of 2025-xx-xx)

B. Administration of this Article:

1. General:

The Town Council designates the ~~Planning Commission~~ Zoning Administrator to review and act to approve or disapprove site plans within its jurisdiction. In the performance of its duties, the ~~Planning Commission~~ Zoning Administrator shall request and consider the review and comments of the ~~Planning and Zoning Administrator,~~ the Plan Review Committee, selected Town staff and other public agencies.

2. Authority to Review and Approve Site Plans: Major and Minor Site Plans:

The ~~Planning and~~ Zoning Administrator, ~~as an agent of the Planning Commission~~, shall administer, review and provide final approval ~~a recommendation~~ concerning any site plan submission. ~~Final approval of any site plan must come directly from the Planning Commission.~~

The Town has two (2) site plan submission and review processes: the minor site plan and the major site plan. The scope and nature of the planned project determines which site plan of the two review processes will be required of the applicant. Unlike the major site plan, the minor site plan incorporates abbreviated submission requirements. In addition, there is a requirement for the submission of a separate lot development plan for subdivided lots in existing and proposed residential subdivisions.

a. The ~~Planning and~~ Zoning Administrator~~, as the designated agent of the Planning Commission,~~ shall be responsible for the receipt and processing of all site plan applications subject to the procedures as hereinafter provided.

b. The ~~Planning and~~ Zoning Administrator may establish, from time to time, such proper and reasonable administrative procedures, in addition to those provided herein, as shall be necessary for the proper administration of this Article.

c. Town staff and other designated public officials responsible for the supervision, inspection, testing and enforcement of this Article shall have the right to enter upon any property subject to the provisions of this Article and the Zoning Ordinance at all reasonable times during the periods of plan review and construction for the purpose of ensuring compliance with this Article.

d. It shall be the responsibility of the applicant, owner or developer to notify the ~~Planning and~~ Zoning Administrator when each stage of the development shall be ready for field inspection for compliance with the approved site development plan in accordance with testing and inspection schedules and regulations promulgated by this Article, the Zoning Ordinance and the Town Design and Construction Standards Manual.

(Ord. of 2025-xx-xx)

C. Uses Requiring a Minor Site Plan:

Minor site plan approval is required for the construction or expansion of all the following, provided that, if the development involves any of the elements which require the need for a major site plan, a major site plan must be submitted.

1. ~~Duplexes, single family~~ residential dwellings or expansion thereof.
2. Residential accessory uses where the limits of impervious coverage allocated to the lot would be met within 200 square feet.
3. Residential accessory uses where, in the opinion of the Zoning Administrator, there is a possibility of encroachment into the setback.
2. All private single family residential uses related to the development of waterfront access, boat docks, piers, and boat storage for residential properties.
3. Remodeling of commercial structures may qualify as a minor site plan if in the opinion of the Zoning Administrator it is in conformance with the intent of this Article.

   ~~All residential accessory uses requiring a special permit.~~
4. ~~Enlargement of a building which does not otherwise require a major site plan and which does not result in changes in on-site parking, provided that the enlargement does not exceed twenty-five percent (25%) of the gross floor area of the original building or 1000 square feet, whichever is less.~~

5. ~~Parking areas in conjunction with renting a bedroom(s) in a single-family residential dwelling.~~
6. ~~Any special permit use in a residential district which does not otherwise require a major site plan.~~
7. ~~Any commercial agricultural activity or building which require on-site parking.~~
8. ~~All permitted uses and special permit uses in the office, commercial, and industrial districts which do not otherwise require a major site plan or as otherwise determined by the Planning and Zoning Administrator.~~
9. ~~Enlargement of a parking lot that does not increase the number of parking spaces by more than ten (10) spaces.~~
10. ~~Changing the parking layout of existing parking lots without increasing the area used for parking, provided that no changes to vehicular access from a public street are proposed.~~
11. ~~Any development in which off-street parking with ten (10) or less spaces which is to be used by more than one establishment.~~
12. ~~Accessory event facility uses in zoning districts where such uses are permissible by-right.~~ (Ord. of 2019-09-03; Ord. of 2025-xx-xx)

G. Minor Site Plan Requirements:

Minor site plans shall be drawn to scale, prepared and certified by a licensed engineer, architect, landscape architect or land surveyor, or other qualified individual experienced in site plan preparation, and shall include, as a minimum, the following information:

1. Name, address and phone number of owner ~~or developer~~ and builder; name, address and phone number of preparer of plan.

4. Indicate scale (to be one inch equal fifty (50) feet or larger, maximum size sheets 24" x 36", and date of plan preparation). Site plans shall be legible regardless of scale. Overall master plans, utility plans, drainage plans, etc. may be at a smaller scale as long as it is legible.
5. Site identification (Lot number, Tax Parcel Identification Number, Address, Streets)

3. Existing zoning of property (including conditional zoning and proffer agreements), zoning district boundaries, and proposed changes in zoning, if any.

4. Water Quality Impact Assessment (WQIA) when necessary (Refer to Article 3.P, Section ~~H~~ 108).

~~5. Vicinity map.~~ Legend and north arrow.

6. Certified boundary survey of the lot, depicting bearings and distances, and a north arrow, including references to and location of survey datum, employing the State Plane Coordinate System and National Mapping Standards accuracy for urban surveys. All coordinates and measurements need to be derived using the State Plane Zone 5576 in a NAD 83 coordinate system. The site plan must also be tied to Isle of Wight County's network of survey monuments that are located in and around the Town of Smithfield.

7. The area of the lot and gross acreage or square footage of area to be developed, including calculations of net developable area. Location, size, and characteristics of geophysical and environmental features (such as wetlands, ponds, springs, streams, watercourses, shrink/swell soils, adverse soils conditions, etc.) and other conditions which impact the calculation of net developable area, as defined.

The site plan for a project shall graphically depict the location and calculations of net developable area shall be provided for the site's physical land units (to the nearest 0.1 acre) as outlined below.

Physical Land Unit	Percent Credited Toward Net Acreage
Slopes less than 10%:	*100%*
Slopes from 10% but less than 20%:	*75%*
Slopes from 20% but less than 30%	*50%*
Slopes 30% or more:	*10%*
Soils with high shrink/swell characteristics, as defined.	*75%*
Wetlands, existing water features and streams:	*0%*
Stormwater management basins and structures:	*0%*
Above-ground 69 KV or greater transmission lines:	*0%*
Public right-of-way	*0%*
Private streets, travelways and combined travelways and parking bays	*0%*

8. Building envelopes and setbacks.
9. Existing and proposed impervious cover.
10. The location of the proposed and existing edge of pavement or curb line and other public improvements along the frontage of the property.

11. Size, location and use of existing buildings.

12. Location and design of proposed site improvements (including utilities, storm drainage conveyance, buildings, streets, driveways, parking areas, site lighting fixtures, off street parking, and site signage.)

13. The dimension, height and use of the proposed building improvements, ~~including building signage.~~

~~14. Limits of clearing and grading.~~ Easements, widths, and dedication information.

~~15. Landscape plan, as required by Article 9.~~

16. Existing topography, spot elevations of key features, and proposed site grading depicting finished contours, with contour intervals of two feet or less.

17. Proposed service utility lines for potable water, fire protection and sanitary sewer illustrating the water meter and sewer cleanout and distance between them and sidewalks, driveways, etc. ~~Sufficient information for sizing and constructing the service shall be provided pursuant to the Town Design and Construction Standards manual.~~

~~18. Certification in writing from the Town that availability and connection to water and sewer are attainable.~~

19. Erosion and sediment control plan and measurers, identifying and labeling the disturbed area and limits of clearing and grading ~~and narrative statement~~.

~~20. Location of tidal and non-tidal wetlands and impacts of the proposed development thereon.~~

21. Location of ~~100-year floodplain boundaries~~ Special flood hazard areas and impacts of the proposed development thereon.

22. Location of stormwater management facilities and BMP measures.

23. Location and boundaries of designated Chesapeake Bay Preservation Areas (RPAs and RMAs) and impacts of proposed development thereon.

24. Phasing plan, if the project is to be developed in more than one phase.

~~25. Minor site plan check list, certified by preparer of plan.~~ Include the following notes:

26. The Builder/ Contractor shall verify grades on site prior to construction.

27. The Builder/ Contractor shall provide for positive drainage without impacting adjacent properties.

28. The Builder/ Contractor shall execute an Agreement in Lieu of Erosion and Sediment Control Plan in conjunction with approval of this plan.

29. No trees and shrubs shall be planted in Town easements. Shrubs shall be a minimum of five (5) feet and trees a minimum of ten (10) feet from the center of water and sanitary sewer pipelines.

(Ord. of 8-1-2000; Ord. of 8-1-2001; Ord. of 5-4-2004; Ord. of 2025-xx-xx)

D. Uses Requiring a Major Site Plan:

Due to the scope and nature of the uses, the major site plan requires a more extensive submission process than the minor site plan. A major site plan for land development activities is required for projects involving the following:

1. All uses requiring new structures in any of the commercial zoning districts.
2. All proposed subdivisions with 3 lots or more.
~~All uses in the I-1 and I-2 zoning districts.~~
3. ~~All uses in the A-R and MF-R zoning districts.~~
4. ~~All uses in the MH-P district.~~
5. ~~All uses requiring a special permit, including cluster residential developments.~~
6. Enlargement of a building which results in changes in on-site parking, provided that such enlargement exceeds twenty-five percent (25%) of the gross floor area of the original building or 1000 square feet, whichever is less.
7. All uses related to waterfront access, boat docks and boat storage for (a) public use, (b) which enable public access, or (c) related to uses other than private residential.
8. Installation, extension or change of a public water or sewer main or facility (storage, treatment, etc.).
9. ~~Public parking lots and parking structures.~~
10. ~~Installation or change of a public water or sewer pump facility.~~
11. ~~Installation or change of a public water storage facility.~~
12. ~~Installation or change of a public water or sewer treatment facility or installation or change of a private sewer pretreatment facility.~~
13. Construction of a new street or extension of an existing street and related infrastructure.
14. Development of a road or street lying within a previously platted public right of way.
15. Any disturbed areas greater than ~~10,000~~ 2,500 square feet in total land area, except single family homes and other uses that are exempted by E&S Control regulations.
16. Enlargement of a parking lot, increasing the number of parking spaces by more than ten (10) spaces.

17. Any development in which any required off-street parking space requiring more than ten (10) parking spaces which is to be used by more than one establishment.
18. ~~Principal event facility uses in any zoning district.~~
19. ~~Principal and accessory event facility uses in any zoning district where such uses are permissible only by Special Use Permit (SUP).~~
20. Any change or use determined by the Zoning Administrator to qualify as a major site plan in conformance with the intent of this Article.

(Ord. of 2000-08-01; Ord. of 2019-09-03; Ord. of 2025-xx-xx)

E. Waiver of Requirement for a Site Plan:

No site plan (major or minor) shall be required for the following uses, when established that (1) the use will not require the improvements subject to review in this article, and (2) that waiving the requirement to submit a site plan will be in keeping with the intent of this article.

1. Where it can be clearly shown that the application for a zoning permit and building permit involves building and safety regulations which are not critical to the purpose and intent of the Zoning Ordinance.

2. Any change in, or expansion of, a use, provided that:

    a. Such change or expansion does not occasion additional parking as required by this ordinance, and
    b. No additional ingress/egress to a public road or change in ingress/egress is recommended by the ~~Planning and~~ Zoning Administrator based on intensification or use, and
    c. No additional ingress/egress or alteration of existing ingress/ egress is proposed.
    d. Disturbed area is less than 2500 square feet in area, and
    e. It has been verified in writing by the ~~Planning and~~ Zoning Administrator that availability and connection to water and sewer are attainable.
    f. The expansion is not within a Resource Protection Area.

3. School uses located in existing church facilities, if no changes to the footprint of the existing building are involved.
4. At the discretion of the Zoning Administrator provided that requested change or use is in conformance with the intent of this Article.

4. Notwithstanding the above exceptions, the applicant is required to show evidence of having obtained a building permit and zoning permit, and, upon completion of improvements, a certificate of occupancy.

(Ord. of 8-1-2000; Ord. of 2025-xx-xx)

F. ~~Preliminary Site Plan and Preliminary Site Plan Conference~~:

1. ~~Requirement for Preliminary Site Plan Conference and Preliminary Site Plan:~~

~~a. A Preliminary Site Plan Conference is required for a developer or owner prior to undertaking the review process for a major site plan. The Preliminary Site Plan Conference allows the applicant to review the preliminary site plan with the Plan Review Committee prior to the preparation of the final site plan, and to better understand and anticipate key planning issues, site plan submission requirements, and site-related design issues which may be deemed essential by the Town during the subsequent final site plan review process.~~

~~b. A Preliminary Site Plan Conference does not negate the requirement for the submission of (1) a preliminary site plan, (2) a final plat (as may be required by the Subdivision Ordinance), (3) a minor or major site plan, (4) erosion and sediment control plans, and/or (5) any other applicable provisions of this article.~~

~~c. A Preliminary Site Plan and Preliminary Site Plan Conference is not required when the applicant qualifies for a minor site plan.~~

~~2. Preliminary Site Plan Conference Objectives:~~

~~The applicant shall contact the Planning and Zoning Administrator to schedule a Preliminary Site Plan Conference. The purpose of this conference is to review the Town's evaluation of the preliminary site plan with respect to the following considerations:~~

~~a. Location, use, design, scope, type, density, physical characteristics and phasing of proposed development.~~

~~b. Coordination of the proposed development with the Smithfield Comprehensive Plan, all adopted master facilities plans, the capital improvements program, and plans for development of neighboring properties.~~

~~c. Coordination of transportation improvements with other existing and planned streets within the general area of the proposed development and otherwise in keeping with the provisions of the transportation element of the adopted Comprehensive Plan and other adopted transportation plans.~~

~~d. Reasonable regulations and provisions uniquely applicable to the proposed development as related to topography, soils, geology, public utility and facilities service, drainage and flood control, transportation, environmental and historic impact, economic development, and facilitation of the creation of a convenient, attractive and harmonious development.~~

~~e. Coordination of proposed development with applicable ordinances, design guidelines and development criteria.~~

~~f. Other matters related to review of preliminary site plan.~~

~~3~~.F. Preliminary ~~Site Plan~~ Plat Requirements for Major Site Plans:

~~Five (5)~~ Eight (8) copies of the preliminary site plan shall be submitted. Preliminary plat approval is mandatory for plats involving more than 50 lots, prior to the submission of site plans. Preliminary plat submission for plats with less than 50 lots is at the option of the landowner. ~~ten (10) calendar days prior to the scheduled date of the Preliminary Site Plan Conference.~~

The preliminary ~~site plan~~ plat shall comply with the checklist in Article 10 of the Subdivision Ordinance of the Town of Smithfield. ~~show the following:~~

~~a. Name, address and telephone number of owner or developer.~~

~~b. Indicate scale (to be one inch equal fifty (50) feet or larger, maximum size sheets 24" x 36", and date of plan preparation). Site plans shall be legible regardless of scale. Overall master plans, utility plans, drainage plans, etc. may be at a smaller scale as long as it is legible.~~

~~c. Name, address and telephone number of preparer of plan.~~

~~d. Vicinity map.~~

~~e. Current boundary survey of the lot by bearings and distances, and a north arrow.~~

~~f. The area of the lot and gross acreage or square footage of area to be developed, including calculations of net developable area.~~

~~g. The location of the proposed and existing edge of pavement or curb line and other public improvements along the frontage of the property.~~

~~h. Size, location and use of existing and proposed buildings.~~

~~i. Location of the proposed site improvements (including utilities, drainage conveyance, building and site signage, buildings, streets, site lighting, driveways and parking areas) and distances from all property lines.~~

~~j. The dimension, height and use of the proposed building improvements.~~

~~k. Limits of clearing and grading.~~

~~l. Existing zoning (including conditional zoning and proffer agreements), zoning district boundaries and proposed changes in zoning, if any.~~

~~m. Existing topography and a preliminary grading plan depicting finished contours, with contour intervals of two feet or less.~~

~~n. Proposed location, alignment, easements, and sizing of proposed utility service for potable water, fire protection and sanitary sewer.~~

o. ~~Certification in writing from the Town that availability and connection to water and sewer are attainable.~~

~~p. Location of tidal and non-tidal wetlands and impacts of the proposed development thereon.~~

~~q. Location of 100-year floodplain boundaries and impacts of the proposed development thereon.~~

~~r. Location of stormwater management facilities and BMP measures.~~

~~s. Location and boundaries of designated Chesapeake Bay Preservation Areas (RPAs and RMAs) and impacts of proposed development thereon.~~

~~t. Phasing plan, if the project is to be developed in more than one phase.~~

~~u. References to and location of survey datum, employing the State Plane Coordinate System (specifically State Plane Zone 5576 in a NAD 83 coordinate system) and National Mapping Standards accuracy for urban surveys.~~

(Ord. of 5-4-2004; Ord. of 2025-xx-xx)

G. Minor Site Plan Requirements:

Minor site plans shall be drawn to scale, prepared and certified by a licensed engineer, architect, landscape architect or land surveyor, or other qualified individual experienced in site plan preparation, and shall include, as a minimum, the following information:

1. Name, address and phone number of owner or developer and builder; name, address and phone number of preparer of plan.

6. Indicate scale (to be one inch equal fifty (50) feet or larger, maximum size sheets 24" x 36", and date of plan preparation). Site plans shall be legible regardless of scale. Overall master plans, utility plans, drainage plans, etc. may be at a smaller scale as long as it is legible.

7. Site identification (Lot number, Tax Parcel Identification Number, Address, Streets)

30. Existing zoning of property (including conditional zoning and proffer agreements), zoning district boundaries, and proposed changes in zoning, if any.

31. Water Quality Impact Assessment (WQIA) when necessary (Refer to Article 3.P, Section H 108).

32. Vicinity map. Legend and north arrow.

33. Certified boundary survey of the lot, depicting bearings and distances, and a north arrow, including references to and location of survey datum, employing the State Plane Coordinate System and National Mapping Standards accuracy for urban surveys. All coordinates and measurements need to be derived using the State Plane Zone 5576 in a NAD 83 coordinate system. The site plan must also be tied to Isle of Wight County's network of survey monuments that are located in and around the Town of Smithfield.

34. The area of the lot and gross acreage or square footage of area to be developed, including calculations of net developable area. Location, size, and characteristics of geophysical and environmental features (such as wetlands, ponds, springs, streams, watercourses, shrink/swell soils, adverse soils conditions, etc.) and other conditions which impact the calculation of net developable area, as defined.

The site plan for a project shall graphically depict the location and calculations of net developable area shall be provided for the site's physical land units (to the nearest 0.1 acre) as outlined below.

Physical Land Unit	Percent Credited Toward Net Acreage
Slopes less than 10%:	*100%*
Slopes from 10% but less than 20%:	*75%*
Slopes from 20% but less than 30%	*50%*
Slopes 30% or more:	*10%*
Soils with high shrink/swell characteristics, as defined.	*75%*
Wetlands, existing water features and streams:	*0%*
Stormwater management basins and structures:	*0%*
Above-ground 69 KV or greater transmission lines:	*0%*
Public right-of-way	*0%*
Private streets, travelways and combined travelways and parking bays	*0%*

35. Building envelopes and setbacks.
36. Existing and proposed impervious cover.
37. The location of the proposed and existing edge of pavement or curb line and other public improvements along the frontage of the property.

38. Size, location and use of existing buildings.

39. Location and design of proposed site improvements (including utilities, storm drainage conveyance, buildings, streets, driveways, parking areas, site lighting fixtures, off street parking, and site signage.)

40. The dimension, height and use of the proposed building improvements, including building signage.

41. Limits of clearing and grading.

42. Landscape plan, as required by Article 9.

43. Existing topography, spot elevations of key features, and proposed site grading depicting finished contours, with contour intervals of two feet or less.

44. Proposed service utility lines for potable water, fire protection and sanitary sewer illustrating the water meter and sewer cleanout and distance between them and sidewalks, driveways, etc. Sufficient information for sizing and constructing the service shall be provided pursuant to the Town Design and Construction Standards manual.

~~45. Certification in writing from the Town that availability and connection to water and sewer are attainable.~~

~~46. Erosion and sediment control plan~~ and measurers, identifying and labeling the disturbed area and limits of clearing and grading ~~and narrative statement~~.

~~47. Location of tidal and non-tidal wetlands and impacts of the proposed development thereon.~~

~~48. Location of 100-year floodplain boundaries and impacts of the proposed development thereon.~~

~~49. Location of stormwater management facilities and BMP measures.~~

~~50. Location and boundaries of designated Chesapeake Bay Preservation Areas (RPAs and RMAs) and impacts of proposed development thereon.~~

~~51. Phasing plan, if the project is to be developed in more than one phase.~~

~~52. Minor site plan check list, certified by preparer of plan.~~ Include the following notes:

~~53. The Builder/ Contractor shall verify grades on site prior to construction.~~

~~54. The Builder/ Contractor shall provide for positive drainage without impacting adjacent properties.~~

~~55. The Builder/ Contractor shall execute an Agreement in Lieu of Erosion and Sediment Control Plan in conjunction with approval of this plan.~~

~~56. No trees and shrubs shall be planted in Town easements. Shrubs shall be a minimum of five (5) feet and trees a minimum of ten (10) feet from the center of water and sanitary sewer pipelines.~~

~~(Ord. of 8-1-2000; Ord. of 8-1-2001; Ord. of 5-4-2004;~~ ~~Ord. of 2025-xx-xx~~~~)~~

H. Major Site Plan Requirements:

1. Copies Required:

~~Ten (10)~~ Eight (8) hard sets of all major site plans and digital copies shall be submitted in clearly legible blue or black line copies and shall contain the information outlined in this

section. A major site plan is hereinafter referred to as a "site plan" in this section. Site plans which lack information required by this section, ~~the Major Site Plan Checklist,~~ and/or the Town Design and Construction Standards Manual shall be deemed to be incomplete and shall be rejected.

(Ord. of 20205-xx-xx)

2. Fee Required:

Payment of the site plan review fees per the fee schedule adopted by the Town Council for costs associated with the review of any site plan shall be required at the time of submission of the site plan.

3. Site Plan Certification:

Site plans or any portion thereof involving engineering, architecture, geology, environmental science, or land surveying shall be certified by an engineer, architect, land surveyor, or landscape architect who is duly qualified to practice and whose professional practice is duly registered by the State of Virginia.

No person shall prepare or certify design elements of site plans which are outside the limits of their professional expertise and license. All sheets and calculations submitted with any site plan shall bear the seal and signature of the respective design professional(s).

4. Information Required on Major Site Plan:

This section outlines the required information on site plans (major site plans). The applicant shall employ as many sheets as necessary to incorporate the following minimum requirements.

The sheet size shall be a maximum size of 24" x 36". Site plans shall be legible regardless of scale. Overall master plans, utility plans, drainage plans, etc. may be at a smaller scale as long as it is legible.

All site plans shall be prepared on a current base map which shows existing topography with contour intervals of two feet (2') or less, extending a minimum of twenty-five (25) feet minimum beyond property lines. Topographic mapping shall depict all natural and cultural features for the property, as well as supplemental existing spot elevations. A north arrow shall be included on all plan sheets.

All sheets shall ~~shall~~ be bound into a single document and each sheet shall bear the seal and signature of the design professional.

a. Project Cover Sheet - The application shall prepare a cover sheet which clearly depicts the following:

1. Title of project.

2. Name, address, phone number and seal of preparer of plan, boundary survey, and topographic mapping.

3. Name, address and phone number of owner and developer of property.

4. Tax map number, parcel number, deed book reference and zoning classification for parcel ~~and adjacent properties~~.

5. Existing and Proposed zoning classification.

6. Description of planned land use, along with projected number of employees (for non-residential land uses) and other information related to the activities to be conducted on the property.

7. Date of plan and mapping preparation.

8. Vicinity map and location of zoning district boundaries.

9. Gross acreage (~~or~~ and square footage) of property.

10. Net developable area of property and supporting calculations in accordance with Article 14.A.

11. Tree Canopy Calculations and open space.
Density.
Parking regulations.
Height and setbacks.
Responsible Land Disturber.
Town of Smithfield contact information for Planning and Public Works and Utilities.
Copy of rezoning proffers, special use permit conditions, and waivers or variances granted.

12. A blank space, sized 4" x 4", for Town review and approval notations.

b. Boundary Survey Information: A current certified boundary survey of the property prepared to National Mapping Standards accuracy shall be submitted with the site plan in both paper and digital form and shall include the following:

1. Title, title source, and name of owner of lot and subdivision names and/or lot owners for surrounding lots.

2. Metes and bounds of property.

3. Location and metes and bounds of all existing property lines, rights of way and easements.

4. Names of existing streets in and adjoining the development.

~~5. Setback and yard lines in accord with zoning requirements.~~

6. Location of Chesapeake Bay Preservation Area boundaries.

7. Reference to survey datum. Horizontal control shall be based on Virginia State Plane Coordinate System, Zone 5576 in a North American Datum 1983 coordinate system.

~~8. All digital survey data must be contained in a .dxf file on either a 1.44 mb floppy disk or recordable/rewriteable cd, and the submission file must contain a list providing the name and a brief description of each layer in the file.~~

~~9. Statement of boundary survey closure accuracy and compliance with National Mapping Standards including a certification that the digital data is a true representation of the paper copy.~~

c. Minimum Information to be included in Site Plans:

1. Location, dimensions, design sections and construction specifications of all site improvements, including, but not limited to, existing and proposed streets, travelways, alleys, curb and gutter, sidewalk and driveways, including proposed street names and locations for street lights, street signs, and traffic signals.

2. Location and size of existing and proposed buildings and accessory structures, including land area coverage and floor elevations of proposed use.

3. Location of existing utilities within and adjacent to the development including size and elevation. Provide elevation profile where grading is proposed above utility or within easement limits.

4. Site plan and design profiles of proposed public streets and travelways ~~(public or private) depicting:~~ shall conform to the current Virigina Department of Transportation Road and Bridge Specifications and Standards.
Site plan and design profiles of proposed private streets and travelways should meet the minimum current Virginia Department of Transportation Road and Bridge Specifications and Standards.
(a) ~~street stations at appropriate station intervals,~~
~~(b) percent of longitudinal grades,~~
~~(c) elevations at 50-foot stations in vertical tangent sections and on 25-foot stations in vertical curves,~~
~~(d) finished grades (on site plans),~~
~~(e) spot elevations for all non-typical sections,~~
~~(f) locations of entrances, taper design and any necessary structures and roadway appurtenances.~~
~~(g) horizontal and vertical curve data, including definition of curve control point (PI, PC, PT, PVI, etc.)~~
~~(h) sight distances for all crest and sag vertical curves.~~
~~(i) sight distances (horizontal and vertical) at all street intersections and road entrances other than single family driveways, unless warranted by unique topographical conditions.~~
~~(j) street intersections showing spot elevations along curb radii and in pavement area as necessary to define surface drainage patterns.~~
~~(k) super-elevation tables shall be provided where streets require super-elevation.~~

5. Site plan location and design specifications for off-street parking, travelways, parking lots, sidewalks, and loading areas, including:

(a) building square footage / use class unit.

(b) site access plan for internal traffic and pedestrian circulation, including handicap access.
(c) size of parking spaces, angle of stalls, width of aisles.
(d) travelway and parking lot pavement sections.
(e) pavement design calculations, CBR test reports, and location map.
(f) parking calculations, including ADA requirements.
(g) provisions for emergency access / fire protection.
(h) location and marking of permanent fire lanes, if required.
(i) pavement striping and marking.
(j) finished grades and spot elevations at critical design points.

6. Location, size, and characteristics of geophysical and environmental features (such as wetlands, ponds, springs, streams, watercourses, high shrink/swell soils, adverse soils conditions, etc.) and other conditions which impact the calculation of net developable area, as defined. The site plan shall graphically depict the location and calculations of net developable area shall be provided for the site's physical land units (to the nearest 0.1 acre) as outlined ~~below~~. In Article 14.A.

~~Physical Land Unit~~	~~Percent Credited Toward Net Acreage~~
~~*Slopes less than 10%:*~~	~~*100%*~~
~~*Slopes from 10% but less than 20%:*~~	~~*75%*~~
~~*Slopes from 20% but less than 30%*~~	~~*50%*~~
~~*Slopes 30% or more:*~~	~~*10%*~~
~~*Soils with high shrink/swell characteristics, as defined.*~~	~~*75%*~~
~~*Wetlands, existing water features and streams:*~~	~~*0%*~~
~~*Stormwater management basins and structures:*~~	~~*0%*~~
~~*Above-ground 69 KV or greater transmission lines:*~~	~~*0%*~~
~~*Public right-of-way*~~	~~*0%*~~
~~*Private sts, travelways and combined travelways and parking bays*~~	~~*0%*~~

7. Location, size, design profiles and design calculations for proposed domestic water service and sanitary sewer mains and laterals. Invert elevations shall be shown to the nearest 0.01' accuracy. Location of gas, telephone, electric and other utility lines and other underground or overhead structures in or affecting the project. Plans shall include detail of utility appurtenances and construction procedures. If irrigation wells are proposed, well locations are to be designated.

8. Site plans for projects which require utility pumping storage or treatment facilities shall be supported by appropriate structural, hydraulic, electrical and mechanical plans and construction specifications.

9. Detailed site grading plan depicting finished contours, to be prepared at a minimum two (2) foot contour interval, with spot elevations, as required, at key locations of paving, sidewalks, curb and gutter, and other proposed surface improvements.

10. Site plan and design profiles for storm water drainage improvements, including locations of existing and proposed stormwater drainage conveyance pipes, culverts, channels and drop inlets, indicating size, type and grade of all proposed improvements. Typical sections and linings for all channels shall be included. Invert elevations and other design details for all drainage improvements shall be shown to the nearest 0.01' accuracy. Energy grade lines shall be shown on profiles. A drainage delineation map, prepared at the same scale as the site plan, shall include drainage divides and areas of contributing runoff to proposed improvements.

11. Site plan and design profiles for stormwater management (SWM) and Best Management Practices (BMP) structures, including detailed plan and section views of retention/detention ponds, underground storage structures, and other SWM/BMP facilities. Elevations for the calculated 2-, 10-, and 100-year post-development water surface elevations shall be shown with water quality calculations demonstrating compliance with Article 3.P~~, Section G, subsection 2e~~.

12. Location, width and purpose of all existing and proposed utility right-of-ways and easements with dedication information.

13. Location and boundaries of existing water courses, ~~100-year flood plain and floodways~~. and special flood hazard areas.

14. Location of tidal and non-tidal wetlands, including location and characterization of Chesapeake Bay Preservation Areas.

15. Erosion and sediment control plan and narrative report.

16. Site plan location and design criteria for the following:

(a) site amenities and recreation areas (including playgrounds, courts, fields, pedestrian walkways, bike paths, etc.)
(b) open space, including required land area calculations.
~~(c) site amenities.~~
(d) retaining walls (include calculations).
(e) site and building signage, including street and advertising signs
(f) site lighting (exterior and building mounted), including height, illumination intensity, foot-candle distributions, and fixture type and shielding, as required).
(g) provisions and location for public trash pick-up.
(h) refuse collection and dumpster locations, including access and screening.
(i) locations and design for traffic control devices and signalization.
(j) building and structural footings.
(k) setbacks

17. Landscape and screening plan, to be prepared in accord with Article 9 of this ordinance.

18. Water quality impact assessment, pursuant to Article 3.P, Section ~~H~~ 108.

d. Additional Required Supporting Information:

1. Storm drainage and stormwater management engineering report, to include:

(a) hydrologic calculations and hydraulic modeling of the contributing drainage basin.
(b) energy grade line calculations for all enclosed pipe systems.
(c) storm runoff for pre-development and post-development characteristics, based on TR-55, the Modified Rational Formula or other appropriate modeling techniques as approved by the ~~Planning and Zoning Administrator.~~ Department of Environmental Quality.
(d) analysis and verification of receiving channel capacity.
(e) stormwater management pond or retention/detention structure routing and performance analysis, and
(f) storm culvert, pipe, and inlet (street and yard) design loading and sizing calculations.

2. Geotechnical report for proposed buildings, structures, streets, pavements, and other infrastructure, as required.

3. Foundation design calculations and construction criteria, where required.

4. Pavement design calculations for all streets and travelways.

5. A phasing plan, if the development is to be constructed in more than one phase. The phasing plan shall clearly indicate by phase lines, notes or other methods which facilities are to be constructed under each phase. Plans shall indicate locations of contour tie-ins for each phase and specific measures for phased termination of all water, sewer, storm drainage, streets and other public improvements. Plans for erosion control and drainage facilities shall be designed and displayed independently for each phase.

6. ~~Articles of incorporation, covenants and property maintenance documents related to the ownership, management, and maintenance functions for any condominium development or other property wherein common ownership agreements exist or as otherwise required by this ordinance.~~

7. Statement of facility and land use operations and activities, including hours of operation, number of employees and number of work shifts.

~~8. Site plan check list, certified by preparer of plan.~~

e. Provisional Information on Major Site Plans:

The ~~Planning and~~ Zoning Administrator may require any or all of the following information and any other materials as may be deemed necessary for its review:

1. Statement of estimated construction time.

2. Photographs and maps relating proposed use to surrounding properties.

3. Site design drawings, showing building configuration, topography and relationship to site improvements, color and building materials.

4. Architectural drawings showing plan and elevations of new planned construction or renovations, including drawings of the original building.

5. Traffic impact assessment in accordance with criteria provided in the Town's Design and Construction Standards Manual and Article 14.B.

6. Articles of incorporation, covenants and property maintenance documents related to the ownership, management, and maintenance functions for any condominium development or other property wherein common ownership agreements exist or as otherwise required by this ordinance.

(Ord. of 8-1-2000; Ord. of 8-1-2001; Ord. of 5-4-2004; Ord. of 2025-xx-xx)

I. Minimum Design and Construction Standards:

In furtherance of the purposes of this article and to assure the public safety and general welfare, no site plan shall be approved unless and until the Town is assured that the following improvements and minimum design criteria will be implemented as required. In addition to requirements outlined herein, all site improvements are to be provided in accord with the Town's Design and Construction Standards Manual, Article 3.P, and Article 11.A, Erosion and Sediment Control.

1. Street Construction and Design Standards:

All street and highway construction and geometric design standards shall be in accord with the Town Design and Construction Standards Manual and all applicable VDOT design and construction standards.

a. All development in all zoning districts must have direct access to public dedicated and Town maintained roads. Such developments are to be designed so that sites or lots will not have direct access to any arterial road unless the physiography, shape or size of the tract would preclude other methods of providing access.

b. Where traffic generated from any entire development exceeds 150 vehicle trips per day, or when a residential subdivision contains 150 or more dwelling units (whichever is less), such development or subdivision shall provide connectors to any existing public road at two locations. Where only one connection is physically achievable, the connecting portion of the entrance roadway must be of

a four-lane divided standard extending into the development for a length of not less than 250 feet or as otherwise determined by the ~~Planning Commission~~ Zoning Administrator. No internal vehicular connections shall be permitted to this entrance section.

c. Streets and rights-of-way shall be provided and designed to permit access to adjoining acreage in conformance with the Comprehensive Plan and other transportation plans and to the satisfaction of the ~~Planning and~~ Zoning Administrator ~~and the Planning Commission~~.

d. Curb and gutter shall be required on all new public and private streets. The minimum roadway width shall be ~~thirty (30)~~ twenty-nine (29) feet from the face of curb to the face of curb.

e. Where public or private streets are to be constructed in phases, such streets shall be terminated with a temporary cul-de-sac or other temporary turn-around acceptable to the ~~Planning Commission~~ Zoning Administrator. Where temporary turn-arounds are provided, adequate rights of way and/or temporary access and construction easements shall be designated on site plans and subdivision plats. (Ord. of 2025-xx-xx)

2. Parking, Loading and Site Access:

a. For all residential, institutional and commercial uses, other than single family homes, all required off-street parking spaces, parking lots, loading spaces, and on-site vehicular access shall be constructed of a permanent all weather, stabilized, dust free surface (such as concrete or asphalt) with curb and gutter and in accordance with the Town's Design and Construction Standards Manual. Except, improvements to existing gravel or other similar materials are permissible; however, the parcel is required to be in compliance and remain in compliance with the landscaping and paving requirements of this Ordinance once improvements, other than landscaping and interior renovation, made during a rolling 5-year period constitute 50% or more of the structure's assed value.

b. For industrial uses, all employee and customer parking, as well as all entrances into parking areas, shall be constructed of an all weather, stabilized, dust free surface which is clearly defined from adjoining on-site improvements and in accordance with the Town Design and Construction Standards Manual. Except, improvements to existing gravel or other similar materials are permissible; however, the parcel is required to be in compliance and remain in compliance

with the landscaping and paving requirements of this Ordinance once improvements, other than landscaping and interior renovation, made during a rolling 5-year period constitute 50% or more of the structure's assed value.

c. For industrial uses, surfacing may be waived only for areas used for heavy equipment parking and loading areas.

d. Surfacing requirements may also be waived for uses in the HP-O District.

e. Curb and gutter shall be required on all new private travelways, private streets, and travelways, loading areas and parking lots within a lot.

f. Parking lots shall be adequately illuminated during non-daylight hours. Lighting shall be designed, shielded, and otherwise arranged to direct light and glare away from abutting properties and adjacent rights of way. Lighting fixtures in parking lots should be compatible with the architectural characteristics of the development. A lighting study may be required with the submission of a site plan.

g. Dimensional requirements and design criteria for parking spaces, parking lots and loading areas shall be in accord with the Town Design and Construction Standards Manual.

h. Refer to Landscaping and Screening, Article 9, for parking lot landscaping requirements.

(Ord. of 2025-xx-xx)

3. Sidewalks and Pedestrian Walkways:

a. Sidewalks within public rights of way shall be required on all new public streets or other areas of a site where in keeping with the Comprehensive Plan and other Town public improvements plans. Sidewalks shall be constructed of concrete and otherwise in accord with the Town Design and Construction Standards Manual, except in cases where other materials may be approved by the Planning Commission based on ~~its'~~ their suitability to its' ~~environs~~ environment and its' natural setting. In such cases, materials to be considered may include asphalt, concrete, brick, etc.

b. Construction of bicycle facilities on new public streets or other areas of a site in accordance with the Comprehensive Plan and the Town's bicycle and pedestrian plans shall be provided as recommended by those plans. When an individual lot

which does not involve a public street is developed, additional right-of-way to provide for future bicycle facilities shall be dedicated as recommended by the ~~Planning and~~ Zoning Administrator.

(Ord. of 2025-xx-xx)

4. Repealed (Ord. of 2024-06-04)

5. Easement Widths:

Minimum easement width shall be established as required in the Town Design and Construction Standards Manual.

6. Hydrologic and Hydraulic Analysis:

Engineering documentation shall be provided for all storm drainage improvements, stormwater management facilities, and BMP facilities. Floodplain studies may be required at the option of the ~~Planning and~~ Zoning Administrator. Analysis and design recommendations shall take into consideration the impact of 2-, 10-, and 100-year storm intensities, both pre- and post-development.

(Ord. of 2025-xx-xx)

7. Storm Drainage Systems and Stormwater Management:

The policies for drainage systems and stormwater management are to be in accord with the Town Design and Construction Standards Manual and Article 3.P. In general, on-site storm drainage and stormwater management structures shall be constructed in concert with all site development activities and post-development runoff volumes and velocities shall not exceed pre-development levels. Analysis and design recommendations shall take into consideration the impact of 2-, 10-, and 100-year storm intensities, both pre- and post-development. The water quality requirements of Article 3.P~~, Section G, subsection 2.e~~ Section 108 and resiliency assessment of Section 109 shall be accommodated.

(Ord. of 2025-xx-xx)

8. Water Systems:

Water distribution systems shall be designed and constructed to adequately supply both peak load demands for domestic and commercial service and fire flow requirements for the intended development, and meet all requirements of the Town's Design and Construction Standards Manual.

9. Sewer Systems:

a. Sewer systems shall be designed and constructed on the basis of average daily per capita flows of not less than those set forth by sewerage regulations of the State Department of Health and the Town Design and Construction Standards Manual.

b. All on-site sewage disposal systems not requiring Virginia Pollutant Discharge Elimination System permit shall be pumped out at least once every five years, in accordance with the provisions of the State Health Code, the Chesapeake Bay Act and the Chesapeake Bay Preservation Overlay District ordinance. (Refer to Article 3.P, Section ~~K~~ 106)

~~c. A reserve sewage disposal site with a capacity at least equal to that of the primary sewage disposal site shall be provided, in accordance with the State Health Code. This requirement shall not apply to any lot or parcel recorded prior to October 1, 1989 if such lot or parcel is not sufficient in capacity to accommodate a reserve sewage disposal site, as determined by the local Health Department. Building or construction of any impervious surface shall be prohibited on the area of all sewage disposal sites or on an on-site sewage treatment system which operates under a permit issued by the State Water Control Board, until the structure is served by public sewer. As an alternative, alternating drainfields may be installed in lieu of the 100 percent reserve drainfield provided that the following conditions are met:~~

~~1. Each of the two alternating drainfields shall have at a minimum, an area of not less than 50 percent of the area that would otherwise be required if a single primary drainfield were constructed.~~

~~2. An area equaling 50 percent of the area that would otherwise be required for the primary drainfield site must be reserved for subsurface absorption systems that use a flow diversion device, in order to provide for future replacement or repair to meet the requirements for a sewage disposal system and that expansion of the primary system will require an expansion of this reserve area.~~

~~3. The two alternating drainfields shall be connected by a diversion valve that has been approved by the Isle of Wight County Health Department, is located in the pipe between the septic tank and the distribution boxes~~

~~and is used to alternate the direction of the effluent flow to one drainfield or the other at a time.~~

~~4. Such diversion valves shall not be used for sand mounds, low-pressure distribution systems, repair situations when the installation of a valve is not feasible or and other approved system for which the sue of a valve would adversely affect the design of the system as determined by the Isle of Wight County Health Department.~~

~~5. The diversion valve shall be a three-port, two-way valve of approved materials.~~

~~6. There shall be a conduit from the top of the valve to the ground surface with an appropriate cover to be level with or above the ground surface.~~

~~7. The valve shall not be located in driveways, recreational courts, parking lots, or beneath sheds and other structures.~~

~~8. The valve shall be used to alternate the drainfields every 12 months.~~

~~9. Local government shall notify the property owners that the drainfields must be alternated.~~

c. For new construction not served by public sewer or other system requiring VPDES permit, a reserve sewage disposal site with a capacity at least equal to that of the primary sewage disposal site shall be provided. This requirement shall not apply to any lot or parcel recorded prior to October 1, 1989, if such lot or parcel is not sufficient in capacity to accommodate a reserve sewage disposal site, as determined by the Western Tidewater Health District. Building or construction of any impervious cover shall be prohibited on the area of all sewage disposal sites, including reserve sewage disposal sites, until the property is served by public sewer or an on-site sewage treatment system operating under a VPDES permit. All sewage disposal site records shall be administered to provide adequate notice and enforcement. As an alternative to the reserve sewage disposal site, the owners of such systems may install an alternative drainfield system meeting the following conditions:

1. Each of the two (2) alternating drain fields in the system shall have at a minimum, an area not less than fifty (50) percent of the area that would otherwise be required if a single primary drainfield were constructed.

2. An area equal to fifty (50) percent of the area that would otherwise be required for the primary drainfield site shall be reserved for subsurface absorption systems that utilize a flow diversion device, to provide for future

replacement or repair to meet the requirements for a sewage disposal system. Expansion of the primary system shall require an expansion of the reserve system.

3. The two (2) alternating drain fields shall be connected by a diversion valve, approved by the Western Tidewater Health District, located in the pipe between the septic tank and the distribution boxes. The diversion valve shall be used to alternate the direction of effluent flow to one (1) drainfield or the other at a time. Diversion valves shall not be used for the following types of treatment systems:
    a. Sand mounds.
    b. Low pressure distribution systems.
    c. Repair situations when installation of a valve is not feasible.
    d. Any other approved system for which the use of a valve would adversely affect the design of the system, as determined by the Western Tidewater Health District.
4. The diversion valve shall be a three-port, two-way valve of approved materials (i.e., resistant to sewage, leak-proof and designed so that the effluent from the tank can be directed to flow into either one (1) of the two (2) distribution boxes).
5. There shall be a conduit from the top of the valve to the ground surface with an appropriate cover to be level with or above the ground surface.
6. The valve shall not be located in driveways, recreational courts, parking lots, or beneath sheds or other structures.
7. In lieu of a diversion valve, any device that can be designed and constructed to direct the flow of effluent from the tank into either one (1) of the two (2) distribution boxes may be approved if plans are submitted to the Western Tidewater Health District and determined to be satisfactory.
8. Owners shall alternate using the drain fields every 12 months to permit the yearly resting of half of the absorption system.
9. The Town of Smithfield Administrator shall ensure that the owners are notified annually of the requirement to switch the valve to the opposite drainfield.

(Ord. of 2025-xx-xx)

10. Street Lights, Site Lighting and Electrical Facilities:

Provisions for street lights, parking lot lighting and other site lighting shall be shown on site plans, as required by the Town Design and Construction Standards Manual. Locations of street and parking lot light poles, fixtures, conduits, transformers, wires and easements shall be coordinated with the Town and local electric company and shall be

shown on the site plans. Conduits of a size and location satisfactory to the Town and local electric company shall be located under street pavements at all proposed major intersections for the future installation of traffic control signals as required by the Town.
(Ord. of 2025-xx-xx)

11. Best Management Practices and Erosion and Sedimentation Control Measures:

Installation of adequate temporary and permanent erosion and sedimentation control measures, as required by the Town's Design and Construction Standards Manual and Article 11.A, Erosion and Sediment Control. Installation of Best Management Practices and other measures related to water quality and runoff protection shall be in accord with Article 3.P.

12. Other Design Criteria:

All other design criteria and construction standards shall be in accordance with the Town's Design and Construction Standards Manual and other applicable regional, state and federal requirements, including those of the Virginia Department of Transportation and HRPDC. Where standards and criteria are not provided therein for a particular site development component, the ~~Planning and~~ Zoning Administrator either shall provide the governing standards or shall approve a proposed standard as prepared by the applicant's engineer.
(ord. of 2025-xx-xx)

13. Construction Standards, Inspection, and Supervision:

a. Unless otherwise specifically provided in this ordinance, the construction standards for all required on-site and off-site improvements shall conform to the provisions of this article and the Town's Design and Construction Standards Manual and all applicable VDOT design manuals, along with HRPDC. The ~~Planning Commission~~ Zoning Administrator shall provide written approval of the plans, details, and specifications for all required improvements prior to commencement of construction.

b. Inspections during the installation of the required on-site improvements shall be made by the ~~Planning and~~ Zoning Administrator or other Town personnel, as applicable, as required to monitor compliance with the approved site plan and applicable Town Design and Construction Standards.

c. The owner or developer shall notify the ~~Planning and~~ Zoning Administrator in writing forty eight (48) hours prior to the beginning of any work shown to be constructed on an approved major or minor site plan.

d. The owner or developer shall provide adequate supervision on the site during the installation of all required improvements and have a responsible superintendent or foreman together with one set of approved plans, profiles and specifications available at the site at all times when work is being performed.

e. The installation of improvements, as required by this article, shall in no case serve to bind the Town to accept such improvements for the maintenance, repair or operation thereof, but such acceptance shall be subject to the existing regulations concerning the acceptance of each type of improvement.

f. The applicant's contractor shall be responsible for the location of all utilities and underground infrastructure in accord with VA 811 (MISS UTILITY) practices prior to land disturbance.

i. Prior to issuance of an occupancy permit, a certified as-built survey shall be provided the Town upon completion of site improvements. Variations in the as-built conditions shall be noted. The as-built survey shall be provided in AutoCAD, PDF, and five (5) hard copies. ~~digital and standard formats~~.
(Ord. of 8-1-2000**;** Ord. of 4-6-2004; Ord. of 5-4-2004; Ord. of 7-1-2008; Ord. of 2025-xx-xx)

J. Site Plan Review and Approval Procedures:

1. Site Plan Submittal and Compliance Procedures (Major and Minor):

a. Major site plan submission requirements: ~~Ten (10)~~ Eight (8) copies of the major site plan shall be submitted to the ~~Planning and~~ Zoning Administrator. The site plan shall be accompanied by payment of fees for review and processing. The fee shall be based on a fee schedule as may be adopted and modified by the Town Council.

b. Minor site plan submission requirements: ~~Ten (10)~~ Two (2) copies of the minor site plan shall be submitted to the ~~Planning and~~ Zoning Administrator. The minor site plan shall be accompanied by payment of fees for review and processing. The fee shall be based on a fee schedule as may be adopted and modified by the Town Council.
(Ord. of 2025-xx-xx)

2. Initial Site Plan Compliance Requirements (Major and Minor):

a. An initial review of the applicant's site plan (major and minor) and site plan check list will be made by the ~~Planning and~~ Zoning Administrator to determine the completeness and general compliance with the information requirements of this ordinance.

b. Site plans (major and minor) which contain information required by this article, and the site plan check list ~~and are consistent with the proceedings of the Preliminary Site Plan Conference,~~ shall be deemed to be complete and shall be forwarded to all necessary reviewing agencies and staff within five (5) working days of submittal, at which time the applicant's submittal shall be deemed "substantially complete and accepted for review."

c. Site plans (major and minor) which lack any information required by this article, the Town Design and Construction Standards Manual, and the Site Plan Checklist, ~~and which are consistent with the proceedings of the Preliminary Site Plan Conference~~ shall be deemed to be incomplete and shall be rejected by the ~~Planning and~~ Zoning Administrator within ~~five (5) working~~ forty (40) days of submittal, at which time the applicant's submittal shall be deemed "incomplete and rejected" and the reasons for rejection clearly provided. Further review of the submission shall be suspended. The applicant shall be notified of this finding in writing.
(Ord. of 2025-xx-xx)

3. Review Procedures for Site Plans (Major and Minor):

a. Review process, general:

The site plan review process shall include participation by the Town's Plan Review Committee, Town staff and other reviewing agencies as determined by the ~~Planning and~~ Zoning Administrator. Final approval of any site plan shall be granted by ~~majority vote of the Planning Commission~~ the Zoning Administrator.

b. The Plan Review Committee, Town staff and other reviewing agencies:

All site plans (major and minor) shall be reviewed by certain Town, State or local agencies or their delegated agents who are qualified to determine compliance with applicable laws and regulations in relation to proposed development. The Plan Review Committee may include any or all of the following (not limited to):

(1) Planning Commission
(2) Town Manager or Assistant Town Manager

(3) Planning and Zoning Administrator or Staff
(4) Virginia Department of Health
(5) Fire Chief
(6) Virginia Power
(7) Town Engineer
(8) Regional Sewer Authority
(9) Virginia Department of Environmental Quality
(10) Town Council
(11) Public Works & Utilities
(12) Virginia Department of Transportation
(13) Police Department
(14) IOW County
(15) Museum
(16) Schools
(17) Other Utilities

c. Site plan review and notification process:

(1) Distribution of the Site Plan to the Plan Review Committee, staff and agency review: Within ~~ten (10) calendar~~ five (5) business days after acceptance of a site plan which has been determined to be "substantially complete and accepted for review", the reviewing staff and agencies will be issued a copy of the site plan for review and comment on the technical compliance with this ordinance and all applicable standards, provided that the site plan has been found to be in initial compliance as hereinabove stated.

(2) Administrative site plan review: All Plan Review Committee, staff and agency review and comments shall be completed within ~~thirty (30)~~ forty (40) calendar days from the date of issuance of the site plan for review. Plan Review Committee, staff and agency comments shall be provided in writing to the ~~Planning and~~ Zoning Administrator, who shall be responsible for preparing a final site plan review report with recommendations for approval, approval with conditions, or disapproval within ~~ten (10)~~ twenty (20) calendar days after receipt of all staff and agency comments.

(3) Notice to applicant: Upon receipt by the ~~Planning and~~ Zoning Administrator, the applicant shall be provided with all Plan Review Committee, staff and agency review comments and recommendations.

(4) Revisions by applicant: Upon receipt of staff and agency comments, the site plan shall be revised by the applicant to comply with all requirements of the Plan Review Committee and other staff and reviewing agencies and shall submit such revisions together with any required re-submittal fee. Where the revised site plan does not include all requested or required revisions, the applicant will be notified that the site plan review process shall not proceed until the requested or required revisions are complete. Site plans requiring only minor revisions will be reviewed within ~~ten (10)~~ seven (7) calendar days upon resubmission. Plans requiring substantial revisions will be reviewed and comments shall be completed within thirty (30) calendar days. Third and additional resubmissions will be reviewed, and comments shall be completed within fourteen (14) calendar days. ~~on the time frame of a new submission.~~

(5) Action by ~~Planning Commission~~ Zoning Administrator: Within twenty (20) ~~seventy (70)~~ days of receipt of approval from agencies ~~staff comments,~~ the ~~Planning Commission~~ Zoning Administrator shall act on the application and shall render a decision to approve, approve with conditions, defer or disapprove the site plan ~~upon action at a regularly scheduled meeting.~~

~~(6) Site Plan Revisions: In consideration of site plan revisions to any site plan, such revisions may be approved administratively by the Planning and Zoning Administrator upon input from the Planning Commission, provided that where the Planning Commission is of the opinion that the site plan revision is of such a magnitude and impact that a decision on the revision should be reached only after a public hearing thereon. In such instances, a public hearing before the Planning Commission shall be scheduled prior to action on the site plan. The applicant shall be notified in writing of action by the Planning Commission within five (5) calendar days of the action taken.~~

(Ord. of 2025-xx-xx)

4. Approval / Denial Process:

a. Site plans (major and minor) will be approved by the ~~Planning Commission~~ Zoning Administrator if they demonstrate substantial compliance with this

ordinance, as well as the site design criteria set forth in this article and the Town Design and Construction Standards Manual and if the public facilities, utilities and site designs as designed will be able to function in a manner beneficial to the health, safety and general welfare of the public.

b. Under certain conditions, approval by other agencies not specifically referred to hereinabove shall be a prerequisite to approval by the Town.

c. In denying a site plan, specific reasons shall be provided by the ~~Planning Commission~~ Zoning Administrator. Reasons for denial shall relate in general terms to such modifications or corrections as will permit approval of the site plan.

d. Appeals of a decision of the ~~Planning and~~ Zoning Administrator in the administration of this article shall be to the Board of Zoning Appeals ~~Planning Commission~~ as provided in Section 15.2-2311 (1997) of the Code of Virginia.

~~e. Appeals of a decision of the Planning Commission by the applicant or a party in interest regarding a site plan, waiver, variation or substitution shall be to the Town Council, provided that such appeal is filed with the Town Manager within ten (10) calendar days of the decision being appealed. The appeal shall be placed on the agenda of the Town Council at the next regular meeting. The Town Council may reverse or affirm, wholly or partly, or may modify the decision of the Planning Commission.~~ Any person or persons jointly or severally aggrieved by any decision of the Board, or any taxpayer or any officer, department, Commission, Board, or agency of the Town, may present to the Circuit Court of Isle of Wight County a petition specifying the ground on which aggrieved within thirty days after the filing of the decision in the office of the Board. The proceedings before the Circuit Court shall be in accordance with applicable state law.

(Ord. of 2025-xx-xx)

5. Expiration of Approval:

Final approval of any site plan (with the exception of erosion and sediment control plans) submitted under the provisions of this ordinance shall expire five (5) years after the date of such approval in accordance with the Code of Virginia, 1950, as amended, thereafter requiring re-submittal for approval. Erosion and sediment control plans expire in accordance with applicable sections of the Town Code.

6. Fees:

a. Payment of Fee:

The developer shall pay fees to the Town for the examination and review of a site plan submitted pursuant to this ordinance.

b Site Development Fee Schedule:

A schedule of fees for the examination of plans and the inspection of all required improvements in such plans shall be determined by a Town Council resolution, which schedule may be changed from time to time. Before approval of any site plan, such fee shall be made payable to the Town of Smithfield and deposited into the credit of the general fund.
(Ord. of 8-1-2000; Ord. of 5-4-2004; Ord. of 2-1-2005)

K. Site Construction Permits and Bonding of Improvements:

1. Prerequisites for Site Improvement Activities:

No site improvement activities may occur unless all of the following requirements are met:

a. Approval of site plan.

b. Approval of final subdivision plat, if required.

c. Approval of erosion and sediment control plan, if required.

d. Approval of an erosion and sediment control bond, if applicable.

e. Installation of adequate erosion and sediment control measures in accord with the plan.

f. Approval of a performance bond or other surety to ensure the completion of public infrastructure facilities within a specified time frame.

g. Issuance of a ~~land disturbing~~ zoning permit.

g. Approval of availability and capacity of all necessary utilities.

(Ord. of 2025-xx-xx)

2. Improvements Costs:

All improvements required by this ordinance shall be installed at the cost of the owner or developer, except where cost sharing or reimbursement agreements between the Town of Smithfield and the applicant are appropriate, the same to be recognized by formal written agreement prior to site development plan approval.

3. Acceptance of Site Improvements:

The approval of a site development plan or the installation of the improvements as required by this ordinance, shall not obligate the Town to accept the improvements for maintenance, repair or operation. Acceptance shall be subject to Town and/or State regulations, where applicable, concerning the acceptance of each type of improvement.

4. Bonding of Improvements:

a. Performance (surety) bond required for improvements:

1. A bond shall be required prior to commencement of construction to guarantee the successful completion, function, and operation of certain improvements which are to be accepted for dedication, maintenance and/or operation by the Town and as otherwise required by this ordinance and the subdivision ordinance (where applicable.)

2. Before the final site plan will be approved by the ~~Planning and~~ Zoning Administrator for the owner to commence work and before issuance of a~~n land disturbance~~ zoning permit for any project, the owner or his designated agent shall submit a bond or other surety acceptable to the Town Attorney to ensure that measures could be taken by the Town at the owner's expense should owner fail to complete the public utilities, infrastructure, facilities and erosion control measures required for the project within the specified time frame.

3. The period of the initial bond (surety) agreement shall be not less than twelve (12) months from its effective date. The bond shall be of a form which automatically renews itself unless and until the issuing guarantor shall give ninety (90) days prior written notice to the Town of its intent to terminate the bond.

4. Appropriate personnel and agencies of the Town may make inspections of the improvements subject to bonding at any time during the progress of the work. The owner or developer shall be required to notify the Town of progress on a periodic basis in accord with the Town's published inspection timeframes and procedures.

5. A decision by the Town to draw upon the bond to ensure compliance with bonding requirements may be made at any point during the life of the bond at the sole discretion of the Town.

b. Bond cost estimate required by applicant:

1. The developer or his agent shall submit a detailed, itemized cost estimate of (a) public utilities, infrastructure and/or facilities, (b) erosion control and public facilities, and (c) other bondable improvements related to the public health, safety and general welfare as determined and required for the proposed project to the ~~Planning and~~ Zoning Administrator.

2. A cost estimate for improvements to be covered by bonding shall be submitted for approval prior to site plan approval, with said estimate based upon standard unit prices within the region and shall be prepared by a registered professional engineer or licensed general contractor qualified to perform the work subject to the bond.

3. The Town Attorney with recommendation from the ~~Planning and~~ Zoning Administrator shall employ the original bond cost estimate in setting the bondable amount for any project.

c. Notification of expiration and extension of bond:

1. If prior to sixty (60) days from the expiration date of the bond the applicant has not taken steps to gain approval of improvements, release of the bond, and/or extension of the bond, the applicant and surety will be notified by the Town by certified mail within forty-five (45) calendar days prior to that expiration date that a bond extension or new bond will be required.

2. If an extension or new bond is not received by the ~~Planning and~~ Zoning Administrator within twenty-five (25) calendar days of the original bond's expiration date, action will be taken to draw upon the original to allow the Town to complete the installation of public improvements, other site improvements and erosion control and public works facilities. At that time, all construction permits will be revoked and continued work at the project will place the developer, the contractor, and/or other associated parties in violation of this ordinance.

d. Forms of bond and surety guarantees:

Forms of surety guarantees, all of which shall be subject to the approval of the Town Attorney, shall be limited to the following:

1. Corporate surety bond from an insurance corporation licensed in Virginia.
2. Cash escrows and set-asides from an insured lending institution.
3. Irrevocable letters of credit from an insured lending institution.
4. Cashier's check.
5. Other surety as approved by the Town Attorney.
6. The bond may be released by the Town in full or in part only upon the satisfactory completion of applicable improvements and the permanent stabilization of the site against erosion and sedimentation in accordance with the Subdivision Ordinance.

e. Maintenance (defect) bonds:

1. Prior to the release of the performance bond and the acceptance of public facilities by the Town, the owner shall submit a maintenance (defect) bond for any improvement to be accepted for dedication, maintenance, and/or operation by the Town.

2. The maintenance (defect) shall be in an amount and form satisfactory to the Town Attorney but in no instance shall be less than ~~ten (10)~~ twenty (20) percent of the total construction cost of the improvements subject to the bond.

3. The maintenance bond may be released at the end of two (2) years from the date of Town acceptance of responsibility. Such bond shall be released in full if no defects have been found to exist, or if defects are found to exist, they have been corrected by the owner or development to

the satisfaction of the Town. If defects found to exist have been corrected by action of the Town, the costs of such action shall be deducted from the amount of the maintenance bond.

f. As-built construction drawings:

As-built construction drawings for all improvements subject to bonding shall be provided to the Town in AutoCAD, PDF, and five (5) hard copies ~~on mylar~~ prior to the release of any bond amounts. The as-built drawings shall fully document the accuracy of improvements and update all information shown on the original site plan.
(Ord. of 2025-xx-xx)

5. Foundation Survey:

No work on a new building or addition that is required to have either a minor or major site plan and is located within five (5) feet of any required setback shall be approved to proceed above the foundation or slab until the building inspections office has received a survey prepared by a certified land surveyor licensed to practice in Virginia, showing that the foundation or slab, as constructed, is located in accordance with the approved site plan and other applicable ordinances. This requirement is supplemental to, and does not negate the requirement for, submission of application for building permits prior to commencing any construction activity.
(Ord. of 5-4-2004)

L. Requests for Waivers, Variations or Substitutions:

1. An applicant or owner may request a waiver, variation or substitution pursuant to the requirements and application of this article. A written request for a wavier, variation or substitution shall state the rationale and justification for such request together with such alternatives as may be proposed by the applicant or owner.

2. Such request shall be submitted to the ~~Planning and~~ Zoning Administrator with the filing of a preliminary or final site plan.

3. The Planning Commission, at its sole discretion, may accept the request for waiver, variation or substitution for any requirement in a particular case upon a finding that the waiver, variation or subdivision of such requirement would advance the purposes of this ordinance and otherwise serve the public interest in a manner equal to or exceeding the desired effects of the requirements of the ordinance. Alternately, the Planning

Commission may recommend a conditional modification to the request or the Planning Commission may deny the request.

4. Approval or conditional approval of a waiver, variation, or substitution shall be accompanied by a statement from the Planning Commission as to the public purpose served by such waiver, variation, or substitution, particularly in regard to the purpose and intent of this article, this ordinance, the subdivision ordinance, and the Comprehensive Plan.

5. No such waiver, variation, or substitution shall be detrimental to the public health, safety or welfare, orderly development of the area, sound engineering practice, or to properties located within the project impact area.

6. The Planning Commission, in its deliberation on the request, may require the submission of a formal engineering report or other related technical documentation or graphic exhibits to support the applicant's request for waiver, variation, or substitution.

7. The ~~Planning and~~ Zoning Administrator may waive individual requirements for information to be contained on the Single-Family Residential Lot Plan.
(Ord. of 8-1-2000; Ord. of 5-4-2004; Ord. of 2025-xx-xx)

M. Revisions to Approved Site Plans:

1. Any revision or deviation from approved plans and specifications must be submitted in writing with related site plan documentation to the ~~Planning and~~ Zoning Administrator.

2. The ~~Planning and~~ Zoning Administrator shall determine which staff and agencies are required to review the requested modifications and will oversee the implementation of this process.

3. The ~~Planning and~~ Zoning Administrator may grant approval of revisions to previously approved site plans, provided that the ~~Planning and~~ Zoning Administrator determines that the proposed revisions do not substantially alter the site plan and thus does not warrant another public hearing at Planning Commission. If it is determined that the revisions to the site plan is of such a magnitude and impact that a decision on the revision should be reached only after a public hearing thereon, then a meeting before the Planning Commission to act on such revision shall be scheduled in a fashion similar to an original site plan submission.
(Ord. of 5-4-2004; Ord. of 2025-xx-xx)

N. Single Family Residential Lot Plans:

To ensure that proposed single family uses and related lot development activities are compatible with approved subdivision plats and public improvements plans and to ensure consistency with the underlying residential zoning district regulations, a single family lot plan shall be required to accompany zoning permit, ~~building permit~~, and/or use applications for single family residences, accessory buildings, accessory uses, private garages, rental uses of a portions of a single family dwelling, on-site parking areas or other lot improvements which are to be constructed, reconstructed, rehabilitated, or otherwise expanded. The single-family lot plan, or survey, shall be prepared by a certified land surveyor.

The single-family residential lot plan shall be reviewed and acted upon by the ~~Planning and~~ Zoning Administrator within ten (10) working days upon receipt and application for a zoning permit ~~or building permit~~. In the event of denial of approval by the ~~Planning and~~ Zoning Administrator, the applicant may petition the matter to be heard ~~by the Planning Commission~~ at a scheduled public hearing for the Board of Zoning Appeals. ~~their next regularly scheduled meeting.~~

The single-family residential lot plan shall include the following:

1. Address and tax map reference number of lot; name of subdivision and deed reference.

2. North arrow; dimensions of the lot drawn to scale, with metes and bounds of lot.

3. Location and dimensions of both the existing structure(s) and the structure(s) to be erected on the lot.

4. Geotechnical evaluation and certified engineering design for building foundation for lots which contain shrink/swell soils.

5. Dimensional setbacks from property lines to any structure or improvement, including covered porches, decks, stairwells, garages, swimming pools, accessory uses, etc.

6. Square footage of lot per recorded subdivision plat.

7. Easements contained within the lot or across the lot line.

8. Proposed finished lot grading shown with two foot (2') contour intervals.

~~9. Certificate of water and sewer availability.~~

10. Location of all required off-street parking.

11. Location of all existing natural or man-made drainage channels and storm sewer facilities, as well as location of proposed drainage improvements, to ensure the adequate conveyance of stormwater on and through the property.

12. Location and boundaries of 100 year floodplain. The developer(s) are required to establish base flood elevation (BFE) for new development greater than 50 lots or 5 acres. For approximated area, the developer(s) shall use the BFE and floodway data from other sources.

13. Location and boundaries of Chesapeake Bay Preservation Areas.

14. Location of service connections to public water and sewer.

15. Location and design of waterfront improvements, including boat ramps and docks.

~~16. Location of construction entrance.~~

17. Limits of clearing, including trees in excess of 6" in diameter which are proposed to be removed outside the construction footprint.

18. Erosion and sediment control measures including the location of the construction entrance.

19. Include the following notes:

    a. The Builder/ Contractor shall verify grades on site prior to construction.

    b. The Builder/ Contractor shall provide for positive drainage without impacting adjacent properties.

    c. The Builder/ Contractor shall execute an Agreement in Lieu of Erosion and Sediment Control Plan in conjunction with approval of this plan.

    d. No trees and shrubs shall be planted in Town easements. Shrubs shall be a minimum of five (5) feet and trees a minimum of ten (10) feet from the center of water and sanitary sewer pipelines.

(Ord. of 9-3-2002; Ord. of 5-4-2004; Ord. of 2025-xx-xx)

O. Acceptance of Public Facilities:

Within thirty (30) days following satisfactory completion, inspection and approval of the installation of all required improvements, and upon the satisfactory compliance with the provisions of this ordinance and the Town's Design and Construction Standards Manual, a "Certificate of Substantial Completion" shall be issued as cited in the Town Design and Construction Standards Manual. The Town will accept ownership of maintenance responsibilities for such facilities on the effective date of said letter.

P. Appeals:

1. Appeals of a decision of the ~~Planning and~~ Zoning Administrator in the administration of this article shall be to the Board of Zoning Appeals ~~Planning Commission~~ as provided in Section 15.2-2311 (1997) of the Code of Virginia.

2. ~~Appeals of a decision of the Planning Commission by the applicant or a party in interest regarding a site plan, waiver, variation or substitution shall be to the Town Council, provided that such appeal is filed with the Town Manager within ten (10) calendar days of the decision being appealed. The appeal shall be placed on the agenda of the Town Council at the next regular meeting. The Town Council may reverse or affirm, wholly or partly, or may modify the decision of the Planning Commission.~~ Any person or persons jointly or severally aggrieved by any decision of the Board, or any taxpayer or any officer, department, Commission, Board, or agency of the Town, may present to the Circuit Court of Isle of Wight County a petition specifying the ground on which aggrieved within thirty days after the filing of the decision in the office of the Board. The proceedings before the Circuit Court shall be in accordance with applicable state law.
(Ord. of 8-1-2000; Ord. of 2025-xx-xx)

Q. Violations and Penalties:

1. Any person, whether owner, lessee, principal, agent, employee or otherwise, who violates any of the provisions of this ordinance, or permits any such violation, or fails to comply with any of the requirements hereof, or who erects any building or uses any building or uses any land in violation of any detailed or proffered statement or plan submitted by him and approved under the provisions of this ordinance shall be guilty of a Class I misdemeanor and, upon conviction thereof, shall be subject to punishment as provided by law. Each day that a violation continues shall be deemed a separate offense.

2. Any building erected or improvements constructed contrary to any of the provisions of this Ordinance or to the approved plans, and any use of any building or land which is

conducted, operated or maintained contrary to any of the provisions of this Ordinance shall be, and the same is hereby declared to be, unlawful.

3. The Town may initiate injunction, mandamus, or any other action to prevent, enjoin, abate or remove such erection or use in violation of any provision of this Ordinance.

4. Upon becoming aware of any violation of a provision of this ordinance, the ~~Planning and~~ Zoning Administrator, Town Manager, or Town Attorney shall serve notice of such violation on the person committing or permitting the same. If such violation has not ceased within a reasonable time as specified in the notice, action as may be necessary to terminate the violation shall be initiated.

5. The remedies provided for in this article are cumulative and not exclusive and shall be in addition to any other remedies provided by law.

6. In addition to any other remedies which may be obtained under this ordinance, any person who: (i) violates any provision of any this ordinance or (ii) violates or fails, neglects, or refuses to obey any final notice, order, rule, regulation, or variance or permit condition authorized or issued by the ~~Planning and~~ Zoning Administrator or the Town Council under this ordinance shall, upon such finding by the circuit court, be assessed a civil penalty not to exceed $5,000 for each day of violation. Such civil penalties may, at the discretion of the court assessing them, be directed to be paid into the treasury of the Town of Smithfield for the purpose of abating environmental damage to or restoring Chesapeake Bay Preservation Areas therein, in such a manner as the court may direct by order.

7. With the consent of any person who: (i) violates any provision of this ordinance related to the protection of water quality in Chesapeake Bay Preservation Areas or (ii) violates or fails, neglects, or refuses to obey any order, rule, regulation, or variance or permit condition authorized or issued by the ~~Planning and~~ Zoning Administrator or the Town Council under this ordinance, the Town Council may provide for the issuance of an order against such person for the one-time payment of civil charges for each violation in specific sums, not to exceed $10,000 for each violation. Such civil charges shall be paid into the treasury of the Town of Smithfield for the purpose of abating environmental damage to or restoring Chesapeake Bay Preservation Areas therein. Civil charges shall be in lieu of any appropriate civil penalty that could be imposed under Paragraph 6 immediately hereinabove. Civil charges may be in addition to the cost of any restoration required or ordered by the ~~Planning and~~ Zoning Administrator or the Town Council.
(Ord. of 8-1-2000; Ord. of 2025-xx-xx)

NOTICE OF PUBLIC HEARING
TOWN COUNCIL OF THE TOWN OF SMITHFIELD
AMENDMENT & REVISION OF SUBDIVISION ORDINANCE

Notice is hereby given that the Town Council of the Town of Smithfield, Virginia will hold a public hearing at the regular meeting of the Town Council in the council chambers in The Smithfield Center, 220 N. Church Street, meeting room A, Smithfield, Virginia, on Wednesday, October 8th, 2025 at 6:30 p.m. to consider the application of the Town of Smithfield, applicant for a text amendment to the Subdivision Ordinance of the Town of Smithfield, Virginia, adopted September 7, 1999, and as amended thereafter, to update Articles 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 and 12 and incorporate the Town Design Standards into the Subdivision Ordinance.

Any person affected by or interested in the aforesaid application may appear at the hearing and be heard. Copies of the current Subdivision Ordinance of the Town of Smithfield, Virginia, adopted September 7th, 1999, and all amendments thereto, along with copies of the text amendment application, are on file and may be examined in the Community Development & Planning Department, 310 Institute St, Smithfield, VA 23430.

TOWN OF SMITHFIELD, VIRGINIA

BY: Lesley G. King, Clerk

Publish: Wednesday, September 24th, 2025, and Wednesday, October 1st, 2025.

TOWN COUNCIL STAFF REPORT: SUBDIVISION ORDINANCE TEXT AMENDMENT

WEDNESDAY, October 8th, 2025, 6:30 PM

This is a proposed text amendment to Article 2 bringing our general regulations for subdivision requirements in line with VA Code which recently replaced the Planning Commission with the designated agent as the reviewer of site plans.

Article 3 was updated to include HRPDC and VDOT regulations.

Article 4 was updated to the designated agent and included additional authorities for regulations.

Article 5 was updated to the designated agent and removed the requirement for a planning conference.

We also updated review times and number of copies required.

Article 6 requires Town Council to approve private streets. Article 7 clarifies bonding requirements.

Article 8 was repealed as it is repeated in Article 11 of the SZO.

We updated our checklists for preliminary plats, public improvement plans, and final plats.

Finally, we incorporated our Design Standards into our Subdivision Ordinance as Article 8.

Planning Commission unanimously recommended this text amendment to Town Council.

Staff included additional language in the Design Standards requiring contractors to notify affected residents of utility disruption 48 hours prior.

Staff suggest approval.

Please direct inquiries to Tammie Clary at 1-(757)-365-4200 or tclary@smithfieldva.gov.

AN ORDINANCE TO AMEND THE SUBDIVISION ORDINANCE OF THE TOWN OF SMITHFIELD, VIRGINIA TO UPDATE AND INCORPORATE THE TOWN DESIGN STANDARDS

WHEREAS, the Town Council of the Town of Smithfield deems it necessary to revise and update certain provisions of the Subdivision Ordinance of the Town of Smithfield and incorporate the Town Design Standards; and

WHEREAS, the Town's Planning Commission, after a public hearing, has unanimously recommended that the Town Council adopt the proposed amendment and revisions; and,

WHEREAS, this Council, after a public hearing on the matter, finds it to be in the best interest of the citizens of the town to revise and amend the following provisions of its Subdivision Ordinance.

NOW, THEREFORE, BE IT ORDAINED by the Town Council of the Town of Smithfield, Virginia, as follows, to-wit:

1. That the following provisions of the Subdivision Ordinance, are hereby repealed and reenacted, so as to update the floodplain overlay district. The full text of the provisions to be reenacted is attached hereto as Exhibit "A":

   Subdivision Ordinance

2. This ordinance shall be in effect immediately upon adoption.

Adopted: October 8th, 2025

TOWN COUNCIL OF THE
TOWN OF SMITHFIELD, VIRGINIA

By_____
Michael G. Smith, Mayor

Attest:

_____
Lesley G. King, Clerk

SUBDIVISION ORDINANCE
The Town of Smithfield, Virginia

Table of Contents

ARTICLE ..... **#**

Constitution and Purpose 1

General Regulations 2

Subdivision Improvements Required 3

Subdivision Design Standards 4

Subdivision Approval Process 5

Private Streets 6

Subdivision Bonds and Surety 7

~~Residential Lot Plans ..... 8~~

Violations, Penalties and Legal Remedies 9

Preliminary Subdivision Plat Checklist 10

Final Public Improvements Plan Checklist 11

Final Subdivision Plat Checklist 12

Town Design Standards 8

Article 1:

CONSTITUTION AND PURPOSE

Article 1:
CONSTITUTION AND PURPOSE

A. Title and Application

The regulations embraced in this document shall be known, cited and referred to as the "Subdivision Ordinance of the Town of Smithfield, Virginia." The provisions of the Subdivision Ordinance shall apply to all subdivided land in the Town of Smithfield.

B. Purpose and Intent

The Subdivision Ordinance of the Town of Smithfield, Virginia (hereinafter Ordinance) is intended to guide and facilitate the orderly, beneficial growth of the community, to assure the orderly subdivision of land and its development, and for the general purpose of promoting the health, safety and general welfare of the public, and of further accomplishing the objectives of Section 15.2-2240 of the Code of Virginia, as amended.

It is the policy of the Town of Smithfield to consider the subdivision of land as subject to the power of the Town to implement the adopted Comprehensive Plan. This ordinance is adopted for the following purposes:

1. *To ensure that the growth of the community is consonant with the efficient and economical use of public funds;*
2. *To ensure that residential developments are created to promulgate a healthy environment for family life;*
3. *To improve the public health, safety, convenience, and welfare of the citizens of the Town;*
4. *To clearly establish the procedure which must be followed in order to subdivide land in the Town, subject to this Ordinance;*
5. *To ensure that this process includes appropriate and applicable reviews; and*
6. *To ensure that all improvements required by this ordinance will be designed, constructed, and maintained so as not to become an undue burden on the Town and its citizens.*

C. "Subdivision" Definition

The term "subdivision" means the division of a parcel of land into two or more lots or parcels for the purpose of transfer of ownership or building development, or, if a new street is involved insuch division, any division of a parcel of land. The term includes re-subdivision and, when appropriate to the context, shall relate to the process of subdividing or to the land subdivided and solely for the purpose of recordation of any single division of land into two lots or parcels, a plat ofsuch division shall be submitted for approval in accordance with this Ordinance.

D. Authority for Subdivision Ordinance

The Town Council hereby exercises the police power conferred by Chapter 22 of Title 15.2 of the Code of Virginia to assure the orderly subdivision of land and to implement the Comprehensive Plan of the Town.

E. Severability and Validity

Should any article, section or part of this ordinance be decided by the Courts to be invalid or unconstitutional, such decision shall not affect the validity of the Ordinance as a whole or any part thereof other than the part held unconstitutional or invalid.

F. Conflicting Ordinances

If another State or Federal statute or Town Ordinance or regulation contains conflicting provisions with this Ordinance, the more restrictive of the provisions, ordinances, or regulations shall govern.

G. Minimum Requirements

In interpreting and applying the provisions of this Ordinance, they shall be held to be the minimum requirements for the promotion of the public safety, health, or general welfare. It is not intended by this chapter to interfere with, abrogate or annul any subdivisions, recorded lots, easements, covenants, or other agreements between parties executed prior to the effective date of this Ordinance.

H. Relation to Other Laws and Contracts

The requirements of this ordinance are separate from, but supplementary to, all other applicable requirements of the Town Code, state and federal law, private agreements and covenants, proffers and conditions of zoning, and other applicable ordinances and regulations.

I. Effective Date

This Ordinance was adopted on September 7, 1999 by the Town Council of Smithfield, Virginia, and became effective 7:30 P.M. on September 7, 1999 at which time all previous subdivision provisions and ordinances applicable to the Town of Smithfield were repealed.

J. Certified Copy

A certified copy of the ordinance, as may be amended from time to time, shall be filed in the Office of the Planning and Zoning Administrator and in the Office of the Town Manager.

Article 2:

GENERAL REGULATIONS

Article 2:
GENERAL REGULATIONS

A. General Effect

The effect of this Ordinance shall be consonant with the objectives of the Town to assure the orderly subdivision of land and its development, to coordinate the development of streets within and contiguous to any subdivision, to establish adequate provisions for water, sewer, drainage, flood control and other public purposes, to promulgate acceptable physical standards and criteria for subdivision improvements, to provide for dedication of public rights-of-way, and to serve in implementing the adopted Comprehensive Plan, Official Map, Zoning Ordinance and other land use plans.

B. Prior Approvals

Nothing in this Ordinance shall be deemed to require any change in or invalidation of final subdivision plats previously approved and of record prior to the effective date of this Ordinance.

C. Application and Compliance

1. No person shall divide or subdivide, or cause a subdivision to be made, by deed or plat, of any tract of land located within the Town of Smithfield, except in conformity with the provisions of this Ordinance.

2. Whenever the owner of any tract of land located within the Town desires to subdivide the same, the owner shall submit a plat of the proposed subdivision with reference to known or permanent monuments to the ~~Planning Commission, or its agent~~, Designated Agent in accordance with the requirements of this Ordinance.

3. No owner shall subdivide land without making and recording a Final Subdivision Plat of such subdivision in the office of the Clerk of the Circuit Court of Isle of Wight County, and no such plat of any subdivision shall be recorded unless and until it shall have been submitted to and approved by the ~~Planning Commission~~ Designated Agent in accordance with the regulations set forth in this Ordinance.

4. No person, shall sell or transfer any land of a subdivision, before a plat of such subdivision has been duly approved, bonded, and recorded as provided herein.

5. This Ordinance bears no relation to any private easement, covenant, agreement or restriction and the responsibility of enforcing such private easement, covenant, agreement or restriction is not implied to any public official.

6. Nothing in this ordinance shall affect the power of a court of equity to order that property be partitioned.

7. All references to any statute, regulation, guideline, manual, or standard shall be to that regulation, guideline, manual, or standard as it exists on the date of adoption of this Ordinance and includes any amendment thereafter or reissue in a subsequent edition.

8. All references to days shall be to "calendar days."

D. Administration and Enforcement

1. Administration

The administration and enforcement of this Ordinance shall be vested in the Town Council and the Planning Commission. The ~~Planning and~~ Zoning Administrator is hereby delegated as the agent of the Town Council and Planning Commission and is hereby authorized to administer this ordinance.

a. The ~~Planning Commission~~ Designated Agent, upon recommendation by the ~~Planning and~~ Zoning Administrator, shall review and act to approve or disapprove Preliminary Subdivision Plats and Final Subdivision Plats.

b. The ~~Planning Commission~~ Designated Agent, upon recommendation by the ~~Planning and~~ Zoning Administrator, shall review and act to approval or disapprove Public Improvement Plans.

c. The Town Council, upon recommendation by the ~~Planning and~~ Zoning Administrator, Town Attorney, and Planning Commission, shall review forms of required surety and shall act to approve bonds and subdivision agreements required by this ordinance.

In performance of their respective duties, the ~~Town Council and the Planning Commission~~ Designated Agent shall request and consider the comments of the ~~Planning and~~ Zoning Administrator, the Subdivision Review Committee, the Town Staff, and other applicable public agencies and officials in making ~~recommendations and~~ decisions on all subdivision plats.

2. Enforcement

The Town Council may act through its ~~Planning and~~ Zoning Administrator, duly appointed as provided in the Code of Virginia (1950 as amended) to the extent that the Town Council finds appropriate for the enforcement of this ordinance; provided, however, that no person may act for the ~~Planning Commission~~ Designated Agent in approving or disapproving any Preliminary Subdivision Plat, Final Subdivision Plat, or Public Improvement Plan unless otherwise specifically provided for in this ordinance.

3. Minor Subdivisions

Minor subdivisions of land are recognized where a single lot or parcel of land, which (a) is proposed to be divided into not more than two (2) lots, or (b) where the lot lines of existing lots are proposed to be changed or vacated. No lot(s) which has (have) been divided by utilizing the minor subdivision process may be further subdivided using this process, within a time limit of three (3) years.

With respect to minor subdivisions, any one or more of the requirements of this ordinance may be waived in writing by and at the sole discretion of the ~~Planning and~~ Zoning Administrator provided that such division of land:

a. conforms to all applicable zoning ordinance requirements and proffered conditions of zoning;
b. does not involve any new public street, road, or easement of access;
c. does not offer opportunity to obstruct the floodplain, marshes, rivers of the Town or any planned highway, transportation, public facility, public infrastructure, or public use;
d. does not adversely affect any part of the Comprehensive Plan or any other adopted plan; and
e. does not in any way violate the intent of this ordinance or other applicable ordinances, agreements or conditions.

A minor subdivision plat, prepared by a certified land surveyor licensed in the State of Virginia, showing the metes and bounds of the lots resulting from a minor subdivision of land under this section shall be presented to the ~~Planning and~~ Zoning Administrator, who shall act to approve or disapprove the plat within thirty (30) days of a complete submission. Upon approval by the ~~Planning and~~ Zoning Administrator, the minor

subdivision plat shall be recorded in the Clerk's Office of the Circuit Court of Isle Wight County, Virginia, within the time period as set forth in this ordinance.

The plat shall include the following surveyor's certification:

"This minor subdivision known as _____ Subdivision is approved by the undersigned pursuant to the Subdivision Ordinance of the Smithfield Town Code and may be admitted to record."

4. Cluster Subdivisions

a. Clustering, an alternative to conventional subdivision practices, is premised on the concept of reducing lot size requirements for the provision of common open space within the development, all in accordance with the zoning districts within the Zoning Ordinance in which clustering is permitted.

b. The purpose of the cluster method of subdivision is to permit an alternative to standard subdivision design which will promote flexibility of layout and variety of type in residential dwellings, without sacrificing existing per acre dwelling densities or changing the character of the neighborhood, and at the same time preserving open spaces of scenic and use value for common enjoyment.

c. The use of this optional method of subdivision, and the procedure for plat filing and review, shall be subject to the regulations of the Zoning Ordinance the same as for standard subdivisions, with the following exceptions:

i) A detailed proposal setting forth the post-development utilization of open space areas, including covenants, property owners' agreements or other specific documents, showing the ownership of and maintenance and utilization of those areas within the subdivision which are declared to be open spaces for common use, must be submitted and approved before Final Subdivision Plat approval.

ii) The proposed method of ownership and maintenance in perpetuity of all common spaces must be acceptable to and approved by the Town Council and must be set forth in the deed of dedication recorded at the time of recordation of the Final Subdivision Plat.

E. Public Improvements--General

1. All required improvements shall be installed at the cost of the subdivider, unless Town cost sharing or other means of Town participation are first indicated and approved by the

Town Council. Such agreements shall be formally entered into prior to final subdivision plat approval. All construction and materials shall conform to current Town and state design and construction standards and criteria in effect at the time of subdivision.

2. Any required subdivision bond shall not be released until required construction has been satisfactorily completed, wherein discharge and release of the subdivision bond shall be executed pursuant to Town bonding procedures as outlined herein and in the Zoning Ordinance.

F. Right of Way Additions

1. Where the adopted Smithfield Comprehensive Plan or any other adopted transportation plans indicates a right-of-way greater than that existing along the boundaries of the subdivision or lot, such additional right of way shall be dedicated to public use on the plat when it is recorded.

2. Where a subdivision has occurred on public streets with less than fifty feet right-of-way width, additional right-of-way shall be dedicated in order that the total public right-of-way shall be no less than fifty (50) feet in width or as designated on the Smithfield Comprehensive Plan or other adopted transportation plan of the Town.

G. Parks, Schools, Open Space and Public Land

1. In the subdividing of land, consideration shall be given to suitable sites for parks, open spaces, natural areas, schools, and other areas of public use as may be described in the Smithfield Comprehensive Plan or other adopted plan. The location, boundary, and size of such areas should be indicated on the Preliminary Subdivision Plat and Final Subdivision Plat in order that it may be determined if, when, and in what manner such areas will be dedicated to, reserved for, or acquired by the Town for that use.

2. This provision shall not be construed to preclude the reservation or dedication of property for public use not included in the Smithfield Comprehensive Plan or other adopted plan, provided such property is acceptable to the Town for such dedication and maintenance.

H. Dedications for Public Use

1. No Final Subdivision Plat showing any public easement or public right-of-way shall be recorded, nor shall any such easement or right-of-way otherwise be accepted for dedication to public use until such dedication shall first be approved, accepted by the Town, and evidence of such approval by signature of the ~~Town Manager~~ Zoning Administrator shown on the instrument to be recorded.

2. Recordation of the Final Subdivision Plan shall be accompanied by the appropriate deeds of easement.

I. Pro-Rate Share Funding for Water, Sewer and Drainage Improvements

A subdivider or developer of land shall pay to the Town Council his pro rata share of the cost of providing reasonable and necessary sewer, water and drainage improvements, located outside the boundary of the property which are necessitated or required, at least in part, by the construction or improvement of the subdivision, provided that:

1. no payment shall be required until the Town establishes a general sewer, water and drainage improvements program and plan for an area having related and common sewer, water and drainage conditions, and within which the property is located or where the Town Council has committed it's to such a program, and

2. the program and plan comply with Section 15.2-2243 of the Code of Virginia.

J. Pro-Rate Share Funding for Off-Site Transportation Improvements

A subdivider or developer of land may voluntarily contribute, and the Town Council may accept funds for off-site road and street improvements substantially generated and reasonably required by the construction or improvement of the subdivision. The determination of whether the need for an improvement is substantially generated by the subdivision shall be made by the ~~Planning Commission~~ Designated Agent. In determining whether the need for an improvement is substantially generated by the subdivision, the ~~Planning Commission~~ Designated Agent shall consider whether:

1. the impact of the subdivision would create a threat to the public health, safety, or welfare if not addressed by the improvement;

2. the improvement is identified in the Smithfield Comprehensive Plan, the Town's Major Street Plan, or official map;

3. the improvement is identified in the Smithfield Capital Improvement Plan;

4. the improvement is identified in the VDOT Six Year Road Plan; and

5. the need generated is more than an incremental effect that would otherwise result, as determined by annual population growth vehicular, traffic or other appropriate criteria.

K. Waivers, Variances and Substitutions

1. An applicant may request a waiver, variation or substitution to the requirements for a Preliminary Subdivision Plat, Final Subdivision Plat or Public Improvements Plan. A written request for a wavier, variation, or substitution shall state the rationale and justification for such request together with such alternatives as may be proposed by the applicant or owner.

2. Such request shall be submitted to the ~~Planning and~~ Zoning Administrator with the filing of a Preliminary Subdivision Plat, Final Subdivision Plat or Public Improvements Plan. For each requested individual waiver, variation or substitution, a separate letter of application for the request must be submitted, accompanied by relevant documentation.

3. The ~~Planning Commission~~ Designated Agent, at its sole discretion, may accept the request for waiver, variation or substitution for any requirement in a particular case upon a finding that the waiver, variation or substitute of such requirement would advance the purposes of this ordinance and otherwise serve the public interest in a manner equal to or exceeding the desired effects of the requirements of the ordinance. Alternately, the ~~Planning Commission~~ Designated Agent may recommend a conditional modification to the request, or the ~~Planning Commission~~ Designated Agent may deny the request.

4. Approval or conditional approval of a waiver, variation, or substitution shall be accompanied by a statement from the ~~Planning Commission~~ Designated Agent as to the public purpose served by such waiver, variation, or substitution, particularly in regard to the purpose and intent of this article, this ordinance, the Zoning Ordinance, and the Comprehensive Plan.

5. No such waiver, variation, or substitution shall be detrimental to the public health, safety or welfare, orderly development of the area, sound engineering practice, or to properties located within the project impact area.

6. The ~~Planning Commission~~ Designated Agent, in its deliberation on the request, may require the submission of a formal engineering report or other related technical documentation or

graphic exhibits to support the applicant's request for waiver, variation, or substitution. At its discretion, the ~~Planning Commission~~ Designated Agent may solicit the input from a professional engineer or other consultant to assist in the review of the applicant's documentation.

7. The Town shall adopt a schedule of fees for consideration of waivers, variances and substitutions, with said fee to be paid by the applicant upon submission of a request for waiver, variance or substitution.

L. Changes and Revisions to Preliminary Subdivision Plat and Final Subdivision Plat

1. Changes and revisions may be made to an approved Preliminary Subdivision Plat or Final Subdivision Plat provided that prior written authorization by the ~~Planning and~~ Zoning Administrator has been received, except when the change has been required by the ~~Planning Commission~~ Designated Agent.

2. The changes and revisions shall be submitted and reviewed in the same manner as a Preliminary Subdivision Plat or Final Subdivision Plat, as the case may be, provided that minor changes and revisions may be approved by the ~~Planning and~~ Zoning Administrator.

3. A Final Subdivision Plat subject to a change or modification shall be signed by the owner or owners of the land being subdivided.

M. Re-subdivision of Land

1. Property may be re-subdivided to eliminate, relocate or otherwise alter a boundary line without the formal vacation of a recorded plat provided that the re-subdivision does not involve the relocation or alteration of streets, alleys, public rights of way, easements for public access, easements for utilities and public infrastructure, and easements for public use or common areas.

2. An application for the re-subdivision of land shall be submitted, reviewed and considered for approval by the ~~Planning Commission~~ Designated Agent in the same manner as a Final SubdivisionPlat, provided that re-subdivisions involving minor changes and revisions may be approved by the ~~Planning and~~ Zoning Administrator pursuant to the requirements of a Minor Subdivision.

3. The ~~Town Manager~~ Zoning Administrator shall sign plats of re-subdivision.

4. The approval of a re-subdivision of land does not extend the period of validity of the Final Subdivision Plat in which the re-subdivided lot is located.

N. Vacation of Plat and Relocation of Boundary Lines

1. A duly recorded Final Subdivision Plat or any part thereof may be vacated, or its boundary lines may be relocated pursuant to Section 15.2-2271 through 15.2 2276 of the Code of Virginia.

2. An application for the vacation of a recorded plat shall be submitted, reviewed and considered for approval by the ~~Planning Commission~~ Designated Agent in the same manner as a Final Subdivision Plat.

3. The vacation of a recorded plat shall operate to destroy the force and effect of the recording of the plat so vacated, or any portion thereof.

Article 3:

SUBDIVISION IMPROVEMENTS REQUIRED

Article 3:
SUBDIVISION IMPROVEMENTS REQUIRED

A. General

1. The Town shall require that the subdivider be responsible for making the improvements required for Final Subdivision Plat approval. Said improvements shall be installed at the cost of the subdivider and in compliance with the requirements of any or all approved plans and plats.

2. No subdivider shall commence the construction of any such improvements without first submitting plans and specifications, providing the appropriate bonds, and obtaining the written approval and appropriate permits from the Town, Isle of Wight County, Virginia Department of Transportation (VDOT), and any other applicable federal, state or local agency.

3. Public easements for drainage, water and sewer services shall be subject to approval by the ~~Planning Commission~~ Designated Agent, provided that easements for minor subdivisions of land maybe approved by the ~~Planning and~~ Zoning Administrator.

4. Any subdivider commencing any construction in violation of this Ordinance shall be guilty of a Class 1 (one) misdemeanor.

5. Any person who should knowingly continue construction after the issuance of a STOP WORK order by the Town Manager, ~~Planning and~~ Zoning Administrator and/or other designated representative of the Town shall be subject to a penalty for each day of said construction which should continue after issuance of the STOP WORK order.

B. Requirements for Improvements

No Final Subdivision Plat or Public Improvement Plan related thereto shall be approved until the Planning Commission is assured that the following minimum improvements will be made:

1. Construction and right-of-way dedication as required for highways, streets, vehicular travel lanes, and service drives which permit vehicular travel within the subdivision as well as to and from adjacent properties.

2. Construction of new public streets shall be in accordance with the Town Zoning Ordinance, the Town's Design and Construction Standards Manual and other applicable HRPDC and VDOT manuals, guidelines and regulations.

3. Construction and dedication for widening ~~of~~ existing roads and streets, existing roads and streets within new alignments, and proposed new roads and streets, all as may be indicated by the adopted Smithfield Comprehensive Plan, the Town's Major Street Plan, or other adopted plan, and, otherwise, where the need for such roads and streets is substantially generated by the proposed subdivision.

4. Construction of all utilities, fire protection improvements, community facilities, landscaping, and other infrastructure necessary to serve the proposed subdivision.

5. Construction and extension of public water and sewer mains and laterals to all lots within the subdivision. Specifications, easements and dedications shall be in accordance with requirements of the Town's Design and Construction Standards Manual, other applicable HRPDC manuals, guidelines and regulations.

6. Dedication of easements or rights-of-way for all utilities and facilities within subdivisions which are intended to serve the public. Such easement or right-of-way shall be clearly defined on the plat or plan with the intended purposes clearly stated and recorded as required by the Town's Design and Construction Standards Manual.

7. Construction of improvements for an adequate storm drainage system for the disposition of storm runoff from the subdivision as well as from off-site properties which impact the subdivision, and, further, in accordance with the Town's Design and Construction Standards Manual for storm drainage, VDOT, and other applicable HRPDC manuals, guidelines and regulations.

8. Construction of comprehensive grading improvements and individual lot gradingimprovements at the time of implementation of the subdivision's public improvements to ensure that all lots, rights of way, and other improved areas within a subdivision are provided positive drainage and to ensure that public drainage improvements are engineered, coordinated, and aligned to provide adequate collection of runoff from developed properties.

9. Construction of stormwater management improvements to provide water quantity and water quality (Best Management Practices) controls in accordance with the Town's Design and Construction Standards Manual and related state regulations.

10. Construction of bicycle trails, pedestrian paths and/or sidewalks in accordance with the general location shown on the adopted Smithfield Comprehensive Plan, the Town's Bike

Plan, or any other adopted planning study, together with such other connecting trails, paths, or walkways within the limits of the subdivision plat.

11. Construction of pedestrian paths and sidewalks shall be required so that residents/patrons may walk on the same from lot to lot within the subdivision and to adjacent subdivisions or properties. Wherever possible, connection shall be made to existing walkways in adjacent developments or subdivisions. The subdivider shall provide all improvements necessary to bring pedestrian paths and sidewalks in the subdivision into conformity with requirements of the Town's Design and Construction Standards Manual.

12. Dedication of rights-of-way for any major transportation improvements as indicated by the adopted Smithfield Comprehensive Plan, the Town's official map, VDOT plans, and other applicable adopted plans.

13. All other improvements required by the provisions of this ordinance to include, where applicable, but not to be limited to entrances to public streets, private streets, street lighting, screening and landscaping, and any other improvement to be constructed within the public right of way.

14. Improvements, rehabilitation, and stabilization of existing streams, natural channels, waterways, and adjacent embankments and landscaping to ensure adequate control of storm runoff and preservation of environmentally sensitive areas which may be impacted by storm runoff.

15. Preservation, conservation and enhancement of designated Resource Protection Areas, subject to the Chesapeake Bay Area Preservation Act.

16. Installation of temporary and permanent erosion and sedimentation control measures in accordance with Article 11.A (Erosion and Sediment Control) of the Town's Zoning Ordinance, the State's Erosion and Sediment Control Manual, and the Town's Design and Construction Standards Manual.

17. Offsite water, sewer and drainage improvements subject to the Town's facility programs and plans and ~~pro-rate~~ pro-rata share funding agreements subject to Section 15.2-2243 of the Code of Virginia.

18. Offsite transportation improvements subject to Section 15.2-2242(4) of the Code of Virginia.

19. In any proposed subdivision, the developer/owner of such subdivision shall cause to be installed, at no cost to the town, street lights of a type and design and at locations approved by the agent. The developer/owner shall pay to the Town Council a sum basedon the current monthly charges per light established by the utility company multiplied by the number of lights multiplied by twelve (12). This amount as calculated shall equal the charge for the first year. The amount due for each subsequent year up to and including the seventh year shall be increased annually by five (5) percent. The seven (7) annual charges shall be totaled, and the amount shall be due and payable in cash or certified check to the Town Council prior to the lights being connected for service by the utility company.

Article 4:

SUBDIVISION DESIGN STANDARDS

Article 4:
SUBDIVISION DESIGN STANDARDS

A. General Design Objectives

The quality of Smithfield's neighborhoods and communities are mutually interdependent on the physical characteristics of the Town's individual subdivisions. Appropriate neighborhood design requires the coordination of the efforts of each subdivider or developer of land within the Town. Therefore, the design of each subdivision shall be prepared so as to be consistent with the principles and recommendations established by the Smithfield Comprehensive Plan for land use circulation, community facilities and public services, and in accordance with the following general principles:

1. The size of lots and blocks and other areas for residential, commercial, industrial, and public uses shall be designed to provide adequate light, air, open space, landscaping, and off-street parking and loading facilities.

2. The arrangements of lots and blocks and the street system shall be designed to protect and to make the most advantageous use of topography and natural physical features. Tree masses and large individual trees shall, wherever possible and consistent with the provisions of this ordinance, be preserved.

B. Minimum Design Standards

In furtherance of the purposes of this ordinance, the following minimum subdivision design standards, as applicable, shall be required and provided for with the Final Subdivision Plats and public improvements plans for any subdivision.

1. Streets

a. Street Location and Alignment

i) All subdivision street and related highway construction standards right- of-way and pavement widths, and geometric design standards shall be in accord with those specified by the Smithfield Comprehensive Plan, the Town's Design and Construction Standards Manual, the Virginia Department of Transportation Subdivision Design Guidelines and other applicable standards.

ii) All subdivisions must have direct access to public dedicated and State maintained roads. Private roads which access public streets may be permitted under special considerations in accordance with the provisions of this ordinance. All subdivisions shall be designed so that no individual subdivision lots will have direct access to any road designated as controlled access unless, or where, ~~in the opinion of the Planning Commission or Town Council~~, the physiography, shape or size of the tract would preclude other methods of providing appropriate public street access.

iii) Where traffic generated from a commercial or industrial subdivision exceeds 500 vehicles per day, or where a residential subdivision contains 50 or more dwelling units, such subdivision shall provide connectors to existing public roads at two (2) locations. Where only one connection is physically achievable, the ~~Planning Commission~~ Designated Agent, at its discretion, may require that the connecting portion of the entrance roadway shall be developed as a four-lane divided standard existing into the development for a length of not less than 250 feet. In such case, no internal public or private street connection shall be permitted to this four-lane divided entrance section into the development. If the storm elevation of a 100-year flood could be anticipated to inundate, block or obstruct a principal means of access to a residential subdivision, the principal means of access shall be designed and constructed so as to provide unobstructed assess at the time of flooding.

iv) The arrangement of streets in a subdivision shall be coordinated with and provide for the planned continuation of existing streets into adjoining properties. The design of such streets with respect to alignment, grading, drainage, cross sections, and street grades shall not be such as to cause unnecessary hardship to the owners of adjoining property to carry out the future extension of such streets.

v) "Half street" sections (streets of less than the full street width or right-of-way required) or "partial street" sections along the property line of land proposed for subdivision shall not be permitted.

vi) Streets in predominantly residential subdivisions shall be designed to discourage through traffic or bypass traffic which would encourage non-residential traffic patterns.

vii) There shall be no buffer or reserve strips ("hate strips" or "spite strips") which deliberately limit access from existing or planned through streets so as to violate the intent of this ordinance and the Smithfield Comprehensive Plan.

viii) No plat shall be approved or recorded which does not provide public street access to an otherwise landlocked property.

ix) Cul de sacs and dead-end streets shall provide a terminal turnaround having a right of way radius as prescribed by VDOT Urban Highway Manual or the Town' s Design and Construction Standards Manual. The length of the cul de sac shall not exceed the length determined by the ~~Planning Commission~~ Designated Agent, taking into consideration the existing terrain, density of development, construction difficulty, desired lot frontage characteristics, fire protection service, and other comprehensive planningmatters.

x) Temporary cul de sacs shall be constructed for those streets within a subdivision, or section thereof, which are planned for future extension, but which have been shown on a Final Subdivision Plat and have been approved by the ~~Planning Commission~~ Designated Agent to terminate temporarily in conjunction with the subdivision improvements subject to the plat approval.

b. Service Drives

Whenever a proposed subdivision contains or is adjacent to a controlled access roadway or major highway, sufficient land shall be reserved so as to provide for subsequent construction of service drives or service streets approximately parallel to such right-of-way; but the Planning Commission may, when consistent with the public convenience and necessity, waive the requirement of such provision.

Except where impractical by reason of topographic hardship, the area between the service drive and the major highway shall be sufficient to provide for landscape planting and screening. The dimension of the area between the service drive and a major highway and the points of access between the same shall be determined after due consideration of traffic safety requirements.

c. Street Extensions

Proposed streets which will extend an existing street shall be improved by the subdivider, with the type of improvement and construction materials of such improvements in ~~accord~~ accordance with the ~~the~~ Town's Design and Construction Standards Manual, the VDOT Urban Highway Manual or other VDOT design criteria.

d. Street Signs and Names

At each street intersection, within or adjacent to the proposed subdivision, there shall be one street identification sign of a design as provided for in the ~~the~~ Town's Design and Construction Standards Manual.

e. Alleys

Privately maintained and properly documented alley easements may be permitted at the discretion of the Town Council, provided there are agreements and documentation acceptable to the Town Council ensuring the intended access arrangements, drainage improvements, grading, construction materials, maintenance and upkeep of the alley easement. No alley easement shall be less than twenty (20) feet in width and no alley pavement shall be less than twelve (12) feet in width.

f. Street Width

The right-of-way width, pavement width and lane configuration for all public streets shall conform to the widths and configurations as designated on the transportation element of the Smithfield Comprehensive Plan, the Town's Design and Construction Standards Manual, the Major Street Plan, and as otherwise may be specified by the Town or the VDOT Urban Highway Manual.

g. Entrances

The entrance of a new street onto any public road for vehicular traffic to and from such subdivision shall be subject to the approval of the ~~Planning Commission~~ Designated Agent and shall be designed and constructed in accordance with the ~~the~~ Town's Design and Construction Standards Manual and VDOT criteria. Horizontal separation between planned new and existing entrances shall be based on traffic impact evaluations. Minimum vertical and horizontal sight distances

between planned and existing entrances shall be a function of the appropriate design speed for the subject streets.

h. Curbs and Gutters

Curbs and gutters shall be installed by the subdivider on both sides of the street as herein provided and in accordance with the Town's Design and Construction Standards Manual, VDOT's Road and Bridge Specifications and Standards manuals and any other pertinent regulations. Curbs and gutters shall be installed on both sides of each street in all subdivisions within every zoning district in the Town of Smithfield, with the sole exception of the C-C, Community Conservation zoning district, where curbs and gutters may not be required. The decision to grant a waiver of the curb and gutter requirement in the C-C district shall be at the sole discretion of the Planning Commission.

Sidewalks and streetlights shall be installed by the subdivider on one or both sides of the street as herein provided in accordance with the Town's Design and Construction Standards Manual, VDOT's Road and Bridge Specifications and Standards manuals or as per direction of the ~~Planning Commission~~ Designated Agent. Sidewalks and streetlights may be required on one or both sides of the street depending upon the topography, intensity of the development, location with respect to schools and other public or semi-public facilities and such other factors as the ~~Planning Commission~~ Designated Agent may determine in a particular case. The decision to grant a waiver of the sidewalk and streetlights requirement shall be at the sole discretion of the Planning Commission.

i. Street Classifications

i) The classification of proposed streets and the design sections and paving specifications related thereto shall be determined by an estimate of the anticipated vehicular traffic volume as determined by a Traffic Impact Assessment performed by the applicant in conjunction with the review of the preliminary plat. The Traffic Impact Assessment shall be prepared in accord with the Town's criteria for such studies.

ii) Subdividers shall be required to reserve right-of-way for minor and major arterials and other transportation facilities as may be depicted on the Smithfield Comprehensive Plan, the Town Major Street Plan, and the official map.

iii) Subdividers shall be required to construct service drives and access points as may be required to satisfy the transportation goals of the Town and as may be depicted on the Smithfield Comprehensive Plan, the Town Major Street Plan, VDOT plans, or the Official Map.

iv) Subdividers shall be required to dedicate and construct all public streets directly serving the subject subdivision.

2. Blocks

a. Block Length

The length of a block in a proposed subdivision shall be not less than four hundred (400) feet nor more than one thousand two hundred (1200) feet.

b. Block Width

The width of a proposed subdivision block shall be sufficient to allow two tiers of lots of minimum depth, except where fronting on controlled access streets; provided that the ~~Planning Commission~~ Designated Agent may approve a single tier of lots of minimum depth wherever physiography, access requirements, or the Smithfield Comprehensive Plan so prescribes.

c. Block Orientation

Where a proposed subdivision adjoins a controlled access street, major arterial highway, or collector street, the ~~Planning Commission~~ Designated Agent may require either (1) public service streets or private driveways parallel to such arterial or collector street, or (2) reverse frontage lots, to facilitate safe ingress or egress to the subdivision.

d. Nonconforming Blocks

The decision to grant a waiver for any proposed blocks of irregular shape or otherwise not conforming to the dimensions required in this section ~~may be accepted upon approval of the Planning Commission.~~ shall be at the sole discretion of the Planning Commission.

3. Lots

a. Relationship to Street

Each lot shall front on a public street dedicated by the subdivision plat or deed of dedication, or on an existing approved public street.

b. Corner Lots

Corner lots shall be designed to meet front setback line requirements on both streets on which the corner lot abuts, unless otherwise specifically prescribed by the individual zoning district in which the lot is located.

c. Right-of-Way Lines

Property lines at street intersections shall be rounded with a radius of not less than fifteen (15) feet: except at an intersection of any street with a major or minor arterial street, or at other locations where traffic hazards and congestion may be anticipated, property lines shall be rounded with a radius of not less than twenty-five (25) feet, or greater if deemed necessary by the ~~Planning Commission~~ Designated Agent or the Virginia Department of Transportation.

d. Lot Size and Area

Each lot shall have at least one building site, the minimum size and area of which shall be as set forth in the Zoning Ordinance for the individual zoning district in which the lot is located.

e. Double Frontage and Reverse Frontage Lots

Double frontage or reverse frontage lots shall be permitted where essential to provide separation of residential development from streets, to overcome disadvantage of topography, or where exceptional site design permits.

f. Lot Shape

Each lot shall be of a shape which provides a satisfactory and desirable building site. No lot shall contain peculiarly shaped elongations which are designed solely to provide the necessary square footage of area or frontage on a public street. No “flag lots” or “pipe stem lots” shall be permitted.

g. Remnants

Remnants shall not be created by the subdivision of land. All remnants shall be added to abutting lots rather than remain as unbuildable lots.

h. Side Lot Lines

Side lot lines should be approximately perpendicular to the centerline bearing of the street on which the lot has frontage. Side lot lines on cul de sacs should be approximately radial to the circular curvature of the cul de sac unless otherwise constricted by special terrain conditions, landscape design considerations, or unique lot access requirements.

i. Lot Grading and Drainage

Subdivisions and subdivided lots contained therein shall be designed and improved so as to provide positive drainage in accord with a master grading and drainage plan for the subdivision. Streets, public infrastructure, mass grading, individual lot grading, dwelling placement and other improvements shall be engineered and coordinated to ensure that the storm runoff from all improved properties within the subdivision can be adequately collected, conveyed, and treated without adversely impacting adjoining lots and properties.

j. Residential Lot Development Plans

Individual residential development on subdivision lots shall respect drainage patterns and other subdivision improvements established by the subdivision plat and public improvements plans. ~~Building~~ Zoning permits for individual lots shall not be issued unless and until a Lot Development Plan, prepared in accord with the requirements of the zoning ordinance, shall be submitted and approved by the ~~Planning and~~ Zoning Administrator.

k. Lot sewerability

All lots shall be provided sewer laterals with adequate and necessary access to public sewer to be constructed with the subdivision improvements. A lateral schedule shall be provided with all subdivision plats and public improvements plans. It shall be the responsibility of the lot owner to maintain sewer laterals on private property.

l. Lot water service

All lots shall be provided public water service, with laterals ~~and meters~~ installed at the time of subdivision development. Public water improvements shall be designed to ensure adequate pressure and flow to the elevation of the highest story of a structure on the property which would be permitted by the underlying zoning district. It shall be the responsibility of the lot owner to maintain water laterals on private property.

4. Monuments and Corners

a. Monument Location and Type

Permanent reference monuments shall be placed as required by the Town's Design and Construction Standards Manual.

b. Lot Corner Location and Type

All other lot corners shall be marked with permanent reference markers.

c. Visibility

Upon completion of all streets and other improvements in the subdivision, all monuments and pins required shall be clearly visible or marked with a guard stake or flag for inspection and use prior to the release of subdivision bond.

5. Easements

a. Minimum easement widths for public improvements, utilities, and related subdivision infrastructure shall be delineated on the Final Subdivision Plat in accord with provisions and criteria of the Town's Design and Construction Standards Manual.

b. The easement agreement and dedication documentation shall be provided in accord with the typical form provided by the ~~Planning and~~ Zoning Administrator.

c. No building or structure shall be constructed on any Town easement without the approval of a special waiver by the Town Council.

d. Easements on individual subdivision lots shall be maintained by the lot owner or the applicable homeowners' association unless otherwise provided for by separate agreement.

6. Storm Drainage Systems and Stormwater Management Improvements

a. Storm Drainage Improvements

Storm drainage systems shall be provided in accord with the Town's Design and Construction Standards Manual.

b. Stormwater Management Improvements

Stormwater management systems and Best Management Practices shall be provided for storm runoff quantity and quality control in accord with the Town's Design and Construction Standards Manual, the Chesapeake Bay Ordinance, and the State's Stormwater Management Regulations.

c. Easements

Dedicated private and/or public easements shall be provided for storm drainage and stormwater management facilities in accord with the Town's Design and Construction Standards Manual. In lieu of dedication, the Planning Commission, ~~at its sole discretion, may~~ will require that stormwater management facilities be maintained privately.

d. Floodplain Studies

Floodplain studies shall be required in accord with the provisions of the flood plain zoning classification and other land and subdivision improvements which may be impacted by the 100-year flood.

7. Water Supply and Sanitary Sewer Collection Systems

a. Authority

The Town Council shall have authority over sewer and water connections in Smithfield. No individual private well and septic service is permitted to provide domestic service for any dwelling or structure within the Town ~~unless authorized in writing by the Town Manager for an existing parcel of land.~~

b. General Design and Construction Requirements

Refer to the Town's Design and Construction Standards Manual.

c. Contributing Population

Refer to water and sewerage recommendations outlined in the Smithfield Comprehensive Plan, the Town's Water and Sewer Master Plan, and the Town's Design and Construction Standards Manual.

d. Design Quantities

Refer to water and sewerage recommendations outlined in the Town's Design and Construction Standards Manual, the Smithfield Comprehensive Plan, and to data which may be otherwise provided by the Planning and Zoning Administrator.

e. Hydraulic Design Criteria

Refer to the Town's Design and Construction Standards Manual, the Smithfield Comprehensive Plan, the Virginia Department of Health's regulations and design standards, the Chesapeake Bay Ordinance, the Virginia Stormwater Management Regulations, and other adopted water and sewer facilities plans.

f. Location of Water Mains, Sewers and Appurtenances

Refer to water and sewerage standards and criteria as outlined in the Smithfield Comprehensive Plan, Virginia Drinking Waterworks Regulations, the Town's Water and Sewer Master Plan, the Town's Design and Construction Standards Manual, other applicable HRPDC manuals, guidelines and regulations, and the State Department of Health.

g. Acceptance Tests

Criteria for acceptance testing of sanitary sewer and water mains shall be as specified in the Town's Design and Construction Standards Manual.

8. Flood Plains

The ~~Planning Commission~~ Designated Agent, in the interest of the health, safety, and general welfare of the present and future inhabitants of the Town of Smithfield shall control the subdivision for development of any property which lies within a 100-year floodplain, in accordance with the following provisions:

a. In a proposed subdivision which includes property within a floodplain along a stream, wetlands, marsh, river or other watercourse, the 100-year floodplain shall be shown on the preliminary and final subdivision plat.

b. If an area in a proposed subdivision along a river, stream, wetlands, marsh, or other watercourse which is subject to periodic flooding has not had a 100-year flood plain specifically delineated by FEMA, the subdivider shall be required to prepare an engineering floodplain study which establishes the flood elevations and contours for both the pre-development and post-development property conditions.

c. The 100-year floodplain elevation shall be shown on the preliminary and final subdivision plat of the property to be subdivided. The developer(s) are required to establish base flood elevation (BFE) for new development greater than 50 lots or 5 acres. For approximated area, the developer(s) shall use the BFE and floodway data from other sources.

d. If required, the floodplain study shall be based on contour mapping prepared at a minimum scale of 1" = 100' with 2' contour intervals. The hydraulic analysis of the floodplain shall be based on standard HEC modeling (or equivalent engineering analysis technique) with minimum sections of 100' (preferably 50').

e. Floodplain studies shall be prepared by a registered professional engineer qualified to perform such work.

f. Certification by registered professional engineer or architect that floodproofing and anchoring methods meet watertight and structural load criteria in accordance with NFIP §60.3(c)(3).

g. Certification by registered professional engineer or architect that any fully enclosed area below lowest floor meet design criteria in accordance with NFIP §60.3(c)(5).

h. Certification by registered professional engineer or architect that piles, columns and structure can withstand simultaneous 100-yr wind and water loads.

i. Certification by registered professional engineer or architect that breakaway walls meet design criteria in accordance to NFIP §60.3(a)(5).

9. Fire Protection

a. Adequate fire hydrants shall be installed by the developer in a subdivision at locations as required by the Town's Design and Construction Standards Manual, Virginia Drinking Waterworks Regulations, and HRPDC manuals, guidelines and regulations, as necessary to provide adequate fire protection.

b. Fire hydrants shall be installed within the public right-of-way or public access easement at the cost of the developer.

c. All water mains shall be designed to provide hydrant flows and residual pressures to established standards set by the Town's Design and Construction Standards Manual, Virginia Drinking Waterworks Regulations, other applicable HRPDC manuals, guidelines and regulations, and the Virginia Department of Health's design standards.

10. Underground Electric, Telephone and Cable Service

a. All electric, cable, and telephone service to subdivisions and individual lots located therein shall be placed underground. No overhead facilities shall be permitted.

b. The subdivider shall coordinate with local power and telephone providers prior to submission of the Preliminary Site Plan to ensure adequate location, alignments, easements, maintenance access, and other design criteria can be provided.

11. Gas

a. The subdivider shall coordinate plats and public improvements plans to ensure the properly engineering alignment and location of gas mains.

b. Easements for gas service shall be depicted on Final Subdivision Plats.

12. Record (As-Built) Drawings

a. ~~One (1) set of mylar record~~ Five (5) sets of record (as-built) drawings and one digital file, prepared by a certified land surveyor or registered professional engineer duly authorized by the State of Virginia to prepare the same, shall be submitted to the Town as a condition precedent to the acceptance of the facilities. A digital copy of the above information shall also be provided, along with CAD files.

b. Final release of subdivision bonding shall not be given until all site improvements are complete and the record (as-built) drawings are submitted to and approved by the Town.

Article 5:

SUBDIVISION APPROVAL PROCESS

Article 5:
SUBDIVISION APPROVAL PROCESS

A. General

1. All subdivision design criteria and construction standards shall be in accordance with this ordinance and the Town's Design and Construction Standards Manual, as may be amended.

2. All applicants for subdivision approval in the Town of Smithfield must complete five (5) major steps in the approval process:

~~a. Subdivision Planning Conference with the Planning and Zoning Administrator and Subdivision/Plan Review Committee,~~

b. Preliminary Subdivision Plat Approval by the ~~Planning Commission~~ Designated Agent,

c. Final Subdivision Plat Approval by the ~~Planning Commission~~ Designated Agent,

d. Public Improvements Plan Approval by the ~~Planning Commission~~ Designated Agent, and

e. Subdivision Bond and Subdivision Agreement Approval and Acceptance by the Town Council.

~~B. Subdivision Planning Conference~~

~~1. Purpose of Conference~~

~~Prior to the submission of the Preliminary Subdivision Plat, the applicant shall contact the Planning and Zoning Administrator to schedule a Subdivision Planning Conference. The purpose of this conference is to establish the following:~~

~~a. the intended use, scope, type, density, physical characteristics, and phasing of proposed subdivision.~~

~~b. intended phasing of the proposed subdivision, with all phased improvements to conform to the standards in effect at the time of construction.~~

c. coordination of proposed subdivision with any adopted facilities or infrastructure plans, the Smithfield Comprehensive Plan, the Town's capital improvements program, and existing or proposed plans for development of neighboring properties.

d. coordination of transportation improvements with existing and planned streets within the vicinity of the proposed subdivision and as otherwise may be prescribed by the Smithfield Comprehensive Plan and Town Street Plan.

e. reasonable regulations and provisions uniquely applicable to the proposed subdivision as related to physiography, public utility and facilities service, drainage and flood control, transportation, environmental and historic impact, economic development, and facilitation of the creation of a convenient, attractive, and harmonious development.

f. consistency with conditions of zoning and proffer agreements.

2. The applicant shall provide plans, sketches, exhibits, or other materials as necessary to adequately describe the proposed subdivision.

3. In conjunction with the Subdivision Planning Conference, the Planning and Zoning Administrator shall identify those comprehensive planning and zoning issues, subdivision and site planning considerations, utility and infrastructure considerations, other regulations and provisions which are found to be supportive of this ordinance, as well as contributive to the applicant's understanding of the general requirements as well as any special circumstances which may be related to subsequent subdivision approval.

4. The Subdivision Planning Conference does not replace the requirement for the submission of a Preliminary Subdivision Plat, a Final Subdivision Plat, a Public Improvements Plan, or any other provisions of this Ordinance, the Zoning Ordinance or any other requirement of the Town.

5. There is hereby created a Subdivision Review Committee comprised of members chosen by the Planning and Zoning Administrator and who are qualified to represent the Town at the Subdivision Planning Conference and during the plan review period to determine compliance with applicable laws and regulations in relation to a proposed subdivision.

~~The composition of the Subdivision Review Committee may vary from time to time shall be determined at the sole discretion of the Planning and Zoning Administrator based on the requirements of a particular project. The Committee may include any or all of the following:~~

~~(1) Members of the Planning Commission~~
~~(2) Members of the Board of Historic and Architectural Review~~
~~(3) Town Manager~~
~~(4) Planning and Zoning Administrator and Staff~~
~~(5) Virginia Department of Health~~
~~(6) Fire Chief~~
~~(7) Virginia Power Company~~
~~(8) Utility Superintendent or other Town Staff~~
~~(9) Regional Sewer Authority~~
~~(10) Department of Conservation and Recreation~~
~~(11) Members of the Town Council~~
~~(12) Virginia Department of Transportation~~
~~(13) Members of other State Agencies, as necessary~~
~~(14) Professional consultant retained by the Town~~

C. Preliminary Subdivision Plat

1. Submission of Preliminary Subdivision Plat

a. Application for Preliminary Subdivision Plat approval shall be submitted to the ~~Planning and~~ Zoning Administrator.

b. Any Preliminary Subdivision Plat which lacks any information required by this ordinance or which is not consistent with the requirements of the Preliminary Subdivision Plat Checklist (see Article 10) shall be deemed to be an incomplete submission and the applicant shall be notified ~~by mail~~ of deficiencies within ~~ten~~ thirty (30) calendar days of the submittal ~~and the plats shall be returned~~.

c. The resubmission of a corrected Preliminary Subdivision Plat which has been previously determined to be incomplete shall be considered a new submission.

d. Once a Preliminary Subdivision Plat which has been determined to be complete, it shall be deemed a “complete submission” and shall be transmitted to the Subdivision Review Committee.

2. Approval Procedures and Timeframes for Preliminary Subdivision Plats

a. Initial Submittal

i) Whenever the owner of any tract of land in the Town of Smithfield desires to apply to subdivide the same, the applicant shall submit a Preliminary Subdivision Plat, a Preliminary Subdivision Plat Checklist, and other relevant information related to the proposed subdivision to the ~~Planning and~~ Zoning Administrator for plats involving more than 50 lots.

ii) This Preliminary Subdivision Plat shall be in compliance with the provisions of the Subdivision Ordinance, the Preliminary Plat Checklist (Article 10 of this Ordinance), the Zoning Ordinance, ~~and, further, shall be in accord with the proceedings of the Subdivision Planning Conference.~~

iii) The subdivider shall pay a fee at the time when the Preliminary Subdivision Plat is filed. Such fee shall be in the form of cash or check, the amount thereof is to be determined in accordance with a scheduleset and adopted by resolution by the Town Council.

iv) An applicant shall file ~~twelve (12) blueline or blackline prints~~ five (5) hard copies and a digital file of the Preliminary Subdivision Plat. Two (2) hard copies and a digital file of the Preliminary Subdivision Plat Checklist shall be filed with each application.

v) The Preliminary Subdivision Plat and other documents comprising an application shall be available for public viewing in the Community Development and Planning Department ~~of Planning and Zoning~~.

vi) Within ~~ten (10)~~ five (5) calendar days of receipt of a complete Preliminary Subdivision Plat, the ~~Planning and~~ Zoning Administrator shall distribute a copy of the complete submission of the Preliminary Subdivision Plat and supporting plans to the individual members of the Subdivision Review Committee. The Committee shall meet within thirty (30) calendar days from the date the complete Preliminary Subdivision Plat was received.

vii) The ~~Planning and~~ Zoning Administrator shall provide the applicant with Staff and/or Subdivision Review Committee comments and recommendations within ~~sixty (60)~~ forty-five (45) calendar days of a complete submission. In cases where Preliminary Subdivision Plat revisions,

deletions or additions are necessary to complete and satisfy the agency review process, the applicant shall be so notified in writing.

viii) The subdivider or developer shall revise the Preliminary Subdivision Plat to include all requirements of the Subdivision Review Committee and shall submit such revisions to the ~~Planning and~~ Zoning Administrator ~~within fifteen (15) calendar days of receipt of the Town's review comments. Where the revised plat does not include required revisions or is not resubmitted within the fifteen (15) day period, the Planning and Zoning Administrator shall suspend the review period and shall notify the applicant in writing that the plat review shall not proceed until the required revisions are submitted per the determination of the Planning and Zoning Administrator.~~ The Zoning Administrator shall provide comments on resubmissions within thirty (30) days in accordance with VA Code 15.2-2260.

ix) Nothing contained herein shall obligate the applicant to revise the Preliminary Subdivision Plat to include recommendations from Staff and/or the Subdivision Review Committee which are above those specified as the minimum standards in this ordinance. However, in such case in which the applicant does not revise the Preliminary Subdivision Plat to include recommendations of the Subdivision Review Committee, the applicant shall submit in writing to the ~~Planning and~~ Zoning Administrator a statement as to the reasons and justification for not incorporating such recommendations in the revised Preliminary Subdivision Plat.

x) At such time as the ~~Planning and~~ Zoning Administrator determines that the Preliminary Subdivision Plat is in compliance with the requirements of this ordinance, it shall be deemed an "official submission", whereupon the ~~Planning and~~ Zoning Administrator shall transmit the Preliminary Subdivision Plat, together with the recommendations of the Subdivision Review Committee, and ~~his~~ their comments and recommendations, to the ~~Planning Commission~~ Designated Agent for action.

~~xi)~~ A decision to approve or disapprove the Preliminary Subdivision Plat shall be rendered by the ~~Planning Commission~~ Designated Agent within twenty (20) ~~forty five (45)~~ days from the date of approval from all other agencies. ~~an "official submission" unless the timeframe is waivedby mutual consent (agreement by the applicant and the Town of Smithfield.)~~

xii) The approval of the Preliminary Subdivision Plat does not guarantee approval of the Final Subdivision Plat and Public Improvements Plan; nor does Preliminary Subdivision Plat approval constitute acceptance of the subdivision, or public dedications of areas within, nor does it establish authorization to proceed with construction or improvements within the subdivision.

xiii) No property shall be transferred or offered for sale, nor shall a permit be issued on the basis of an approved Preliminary Subdivision Plat.

xiv) Applicants shall have not more than five (5) years after receiving the Preliminary Subdivision Plat approval to submit a Final Subdivision Plat, Public Improvements Plan and related engineering studies for a portion or all of the subdivision. Failure to do so shall render the Preliminary Subdivision Plat approval null and void. The Planning Commission may grant, upon written request by the applicant, an extension of the twelve (12) months.

3. Required Preliminary Subdivision Plat Information

a. Preliminary Subdivision Plats shall include all required information and certifications as provided for on the Preliminary Plat Checklist (an official copy is contained in Article 10 of this ordinance.)

b. It shall be the responsibility of the applicant and the applicant's engineer or surveyor to complete and return two (2) hard copies and one digital file of the Preliminary Plat Checklist with the submission and any subsequent resubmission of the Preliminary Subdivision Plat.

c. The Preliminary Plat Checklist shall be prepared by the applicant's engineer or surveyor, and the checklist shall be certified for completeness in the signature block provided thereon.

D. Final Subdivision Plat and Public Improvements Plans

1. Submission of Final Subdivision Plat and Public Improvements Plan

a. The application for Final Subdivision Plat approval shall be submitted to the ~~Planning and~~ Zoning Administrator. Two hard copies and a digital file of the Final Subdivision Plat Checklist (see Article 12) shall be submitted

with each application. All Final Subdivision Plats shall be accompanied by or preceded by a Public Improvements Plan.

b. The Public Improvements Plan shall provide engineering design plans, profiles, details and specifications for required subdivision improvements. Two hard copies and a digital file of the Final Public Improvements Plan Checklist (see Article 11) shall be submitted with each application.

c. Any Final Subdivision Plat which lacks any information required by this ordinance, the Zoning Ordinance, and the Final Subdivision Plat Checklist (an official copy contained in Article 12 of this Ordinance) shall be deemed to be an "incomplete submission" and shall be rejected by the ~~Planning and~~ Zoning Administrator ~~within ten (10) calendar days of initial submission~~, otherwise the plat shall be deemed a "complete submission."

d. Any Public Improvements Plan relevant to a Final Subdivision Plat which lacks any information required by this ordinance, the Zoning Ordinance and the Final Site Plan Checklist, shall be deemed to be an "incomplete submission" and shall be rejected by the ~~Planning and~~ Zoning Administrator ~~within ten (10) calendar days of initial submission~~, otherwise the plan shall be deemed a "complete submission."

2. Approval Procedures and Timeframes for Final Subdivision Plat

a. Initial Submittal

i) ~~Twelve (12)~~ Five (5) hard copies and a digital file of the Final Subdivision Plat and Public Improvements Plan (in clearly legible blue or black line copies) shall be submitted to the ~~Planning and~~ Zoning Administrator. The Town may establish a schedule of deadlines and cycles for the submission and review of plats.

ii) The Final Subdivision Plat and Public Improvements Plan shall be accompanied by payment of a fee for review and processing, with fee based on a fee schedule adopted by resolution of the Town Council.

iii) The Final Subdivision Plat shall be prepared by a certified land surveyor licensed by the State of Virginia and shall contain the signature and original professional seal of the land surveyor.

iv) The accompanying Public Improvements Plan shall have been previously approved, or it shall be submitted and concurrently processed for approval in the manner prescribed by the site plan regulations of the Zoning Ordinance. The Public Improvements Plan shall be prepared by a registered professional engineer or A~~B~~-class surveyor licensed by the State of Virginia and shall contain the signature and original professional seal of the engineer or A~~B~~-class surveyor.

v) Two (2) hard copies and a digital file of the Final Subdivision Plat Checklist (Article 12 of this Ordinance) shall be submitted.

b. Relationship of Final Subdivision Plat to Preliminary Plat

If, in the opinion of the ~~Planning and~~ Zoning Administrator or the ~~Planning Commission~~ Designated Agent, there are substantial differences between the Preliminary and Final Subdivision Plats, the review process shall be suspended until such point in time that the applicant revises the plat or revises such plats to warrant conformity, provided that the applicant, at his discretion, may revise and resubmit the Preliminary Subdivision Plat to conform with the Final Subdivision Plat.

c. Staff Review and Subdivision Review Committee Action

i) Within ~~ten (10)~~ five (5) calendar days of receipt, copies of the complete submission of a Final Subdivision Plat may at the discretion of the ~~Planning and~~ Zoning Administrator be distributed to the members of the Subdivision Review Committee for review and comment on the technical compliance with this ordinance and all applicable Town standards. Concurrently, the Subdivision Plan Review Committee shall review the Public Improvements Plan in accord with the provisions of this ordinance and the Zoning Ordinance.

ii) Town Staff and/or the Subdivision Review Committee comments on the final subdivision plat shall be completed within ~~thirty (30)~~ sixty (60) calendar days from the complete submission of the Final Subdivision Plat.

iii) In cases where Final Subdivision Plat revisions, deletions or additions are necessary to complete and satisfy the agency review process, the applicant shall be so notified in writing. The ~~Planning and~~ Zoning Administrator shall provide the applicant with a summary of review

comments and recommendations within sixty (60) calendar days of a complete submission.

d. Revisions by Applicant

i) In cases where Final Subdivision Plat or Public Improvements Plan revisions, deletions or additions are necessary to complete and satisfy the review process, the applicant shall be so notified in writing.

ii) The subdivider or developer shall revise the Final Subdivision Plat and Public Improvements Plan to include all requirements from Staff and/or the Subdivision Review Committee and shall submit such revisions to the ~~Planning and~~ Zoning Administrator ~~within thirty (30) days of receipt of the Town's review comments~~. The resubmission shall be accompanied by a revised check list and correspondence from the applicant's engineer or surveyor addressing each matter presented in the Town's summary review comments. The Zoning Administrator shall provide comments on resubmissions within forty-five (45) days in accordance with VA Code 15.2-2259.

~~iii) Where the revised plat or plan does not include required revisions or is not resubmitted within the thirty (30) day period, the Planning and Zoning Administrator shall suspend the review period and shall notify the applicant in writing that the plat review shall not proceed until the required revisions are submitted per the determination of the Planning and Zoning Administrator.~~

iv) Nothing contained herein shall obligate the applicant to revise the Final Subdivision Plat to include recommendations from Staff and/or the Subdivision Review Committee. However, in such case in which the applicant does not revise the Final Subdivision Plat and Public Improvements Plan to include recommendations of the Subdivision Review Committee, the applicant shall submit in writing to the ~~Planning and~~ Zoning Administrator a statement as to the reasons and justification for not incorporating such recommendations in the revised plat and plan.

e. Complete Administrative Review

Pursuant to the ~~the Planning and~~ Zoning Administrator's and/or the Subdivision Review Committee's determination that the Final Subdivision Plat and Public Improvements Plan are in full compliance with the submission requirements of this

ordinance, the Zoning Ordinance and the Final Subdivision Plat Check List,

the Final Subdivision Plat shall be deemed a "complete administrative review" and an "official submission." The ~~Planning and~~ Zoning Administrator shall prepare a report for distribution to the ~~Planning Commission~~ Designated Agent, applicant and other interested parties.

f. Action on Final Subdivision Plat by ~~Planning Commission~~ Designated Agent

i) Upon determination of a "complete administrative review" and "official submission", the ~~Planning and~~ Zoning Administrator shall transmit the Final Subdivision Plat and Public Improvements Plan, together with the report containing the findings and recommendations of the complete administrative review, to the ~~Planning Commission~~ Designated Agent for action.

ii) A decision to approve or disapprove the Final Subdivision Plat or Public Improvements Plan shall be rendered by the ~~Planning Commission~~ Designated Agent within sixty (60) calendar days from the date of receipt of the "complete administrative review" and "official submission" ~~unless the timeframe is waived by mutual consent (agreement by the applicant and the Town of Smithfield).~~

iii) The approval of the Final Subdivision Plat or Public Improvements Plan by the ~~Planning Commission~~ Designated Agent does not constitute acceptance of the public facilities.

iv) No Final Subdivision Plat shall be approved prior to approval of the Public Improvements Plan, provided that the Final Subdivision Plat and ~~and~~ Public Improvements Plan may be approved concurrently by the ~~Planning Commission~~ Designated Agent.

g. Appeal to ~~Town Council and~~ Circuit Court

~~i) Any person aggrieved by any decision of the Planning Commission or Planning and Zoning Administrator may within fifteen (15) calendar days of such decision, appeal to and have a determination made by the Town Council.~~

ii) If the designated agent disapproves a plat and the applicant contends that the disapproval was not properly based on the ordinance applicable thereto, or was arbitrary or capricious, he may appeal to the circuit court having jurisdiction of such land and the court shall hear and determine the case as soon as may be, provided that his appeal is filed with the circuit court within 60 days of the written disapproval by the designated agent.

~~iii) The Town Council may approve, deny or modify the appeal upon review~~

~~of the facts and finding at a regularly scheduled meeting within sixty (60) days from date of such appeal.~~

~~iv) Any applicant aggrieved by the failure of the Town Council to act on such an appeal within sixty (60) calendar days or any applicant who is aggrieved by the decision rendered on such appeal by the Town Council may continue to appeal the matter to the Isle of Wight County Circuit Court, provided that such appeal is filed within sixty (60) calendar days from the date of such action or lack thereof by the Town Council.~~

h. Expiration and Extension of Approval of Final Subdivision Plat

Approval of a Final Subdivision Plat and Public Improvements Plan submitted under the provisions of this ordinance shall expire twelve (12) months after the date of such approval, unless:

i) the Final Subdivision Plat has been duly recorded in the Office of the Clerk of the Circuit Court of Isle of Wight County, and

ii) the subdivision surety agreement and bond has been approved and accepted by the Town Council, or

iii) an extension of the Final Subdivision Plat has been granted by the Planning Commission upon receipt of written request by applicant. Such extension grant shall not exceed a period of six (6) months.

i. Phased Subdivisions

The subdivider shall have the right to record the remaining sections of a subdivision in accord with the Code of Virginia and as shown on an approved and valid Preliminary Subdivision Plat for a period of five (5) years from the date the Final Subdivision Plat for the first section of the subdivision was recorded, pursuant to Section 15.2-2261 of the Code of Virginia

Upon petition by the subdivider, an extension of this minimum timeframe for recordation may be granted as deemed reasonable and appropriate by the Planning Commission so long as the extension is otherwise consistent with the plat recordation guidelines established in the Code of Virginia.

j. Approval Conditions

i) The Final Subdivision Plat shall not be approved by the ~~Planning Commission~~ Designated Agent until the applicant has:

(1) the Public Improvements Plan related to the subdivision has fully complied with the requirements and standards of design outlined specifically and referred to more generally (ie. the VDOT Road and Bridge Standards and Specifications manuals and the Town's Design and Construction Standards manual) within this ordinance;
(2) submitted all required deeds and plats of easement,
(3) the subdivision bond and subdivision agreement have been approved and accepted by the Town Council.

ii) Approval of the Final Subdivision Plat shall be shown by attaching a signature panel to be signed by the ~~Town Manager~~ Zoning Administrator.

iii) Nothing herein shall require the approval of any subdivision or any part or feature thereof which shall be found to constitute a nuisance or to constitute a danger to the public health, safety, or general welfare, or which shall be determined by the ~~Planning Commission~~ Designated Agent to be a departure from or a violation of sound engineering design or standards.

Article 6:

PRIVATE STREETS

Article 6:
PRIVATE STREETS:
ADMINISTRATION AND DESIGN STANDARDS

A. Private Street Requirements

All subdivisions shall be served by public streets, provided that the ~~Planning Commission~~ Town Council may waive this requirement subject to conditions and restrictions imposed by the ~~Planning Commission~~ Town Council. All subdivisions and developments must have access to State of Virginia maintained roads. This access may be via private streets provided that:

1. Neither the Town nor the State will maintain such private streets unless they are brought into compliance with applicable public street standards of the Town in effect at the time and without cost to the Town.

2. The final recorded plat and all deeds of subdivision, or similar instruments, for any single-family subdivision containing private street(s) shall clearly designate the streets which are to be private and shall contain the following note:

   The following street(s), _____, in this subdivision are privately owned and maintained by the lot owner(s), do not meet Town requirements, and will not be maintained by either the State or the Town."

   Grantors of any subdivision lot(s) to which such statement applies must include the statement on each deed of conveyance thereof. The Final Subdivision Plat shall provide adequate easements across private streets for ingress, egress, drainage, maintenance of utilities, and access by public agencies including the Town's Police and Fire Departments to allow them to carry out their duties.

3. All lot owners must be assured perpetual right of access via the private street to the State of Virginia maintained road.

4. No private roadways in commercial or industrial developments shall carry in excess of five hundred (500) vehicles per day or serve developments of over fifty (50) dwelling units in a residential subdivision unless otherwise approved by the ~~Planning Commission~~ Town Council.

5. All permitted private roadways shall carry a street name approved by the Town. Individual lots shall carry a street address.

6. No parking spaces shall be permitted to have direct access to private streets carrying in excess of five hundred (500) vehicles per day.

B. Street Standards

1. The applicant shall provide engineering plans, profiles, details, design sections and construction standards consistent with the requirements of a Public Improvements Plan for all private streets and related infrastructure.

2. Geometric design requirements for private streets and parking areas shall conform with the private street design standards provided in Town's Design and Construction Standards Manual.

3. The methods of pavement design, construction practices, and materials used in the construction of private street improvements shall conform to the current VDOT criteria.

4. Signs and striping of private roads and streets shall be provided and paid for by the developer. Signs shall meet the requirements of the Town's Design and Construction Standards Manual and be designated on the Public Improvements Plan.

C. Maintenance

1. A bona fide property owners' association must be established and given the responsibility of ownership and perpetual maintenance of private roadways and, where appropriate, sidewalks and/or trails.

2. All documents are to be submitted to the ~~Planning and~~ Zoning Administrator with applications for subdivision approval. Other related documents to be submitted forreview in conjunction with Final Subdivision Plat include deed covenants and articles of incorporation.

~~3.~~ Any private road or street within a subdivision which is not intended to be incorporated into the State system shall be identified with a street sign that is yellow with black letters. ~~attached to the street sign stating: *"Private Road Not Publicly Maintained."*~~

Article 7:

SUBDIVISION BONDS AND SURETY

Article 7:
SUBDIVISION BONDS AND SURETY

A. Completion of Improvements and Bonding

In order to obtain guarantee of performance to assure timely completion and competent construction of subdivision and related public improvements, the applicant is required to post surety(ies) in the form of bond, escrow, letter of credit or other acceptable surety under the provisions contained in this article. Such surety(ies) shall be posted by the applicant and ~~approval~~ approved by the Town Council prior to recordation of the Final Subdivision Plat to which the bond applies.

B. Surety and Bond Agreements

The surety (or bond) agreement(s) shall apply to erosion and sediment control, landscaping and required physical improvements located within the existing or proposed public right-of-way or public or private easements or as are connected to any public utility or facility in form and substance as approved by the Town.

C. Bond Amount Estimate

The applicant's engineer shall submit an itemized, component cost estimate of improvements planned for the subdivision, including: (1), subdivision improvements, (2) erosion and sediment control measures, (3) landscaping improvements, (4) other public or private infrastructure to be dedicated to and maintained by a public agency, (5) proffered improvements and financial commitments related to conditional zoning approvals for the subdivision, and (6) other items as may be required for subdivision bonding by the ~~Planning and~~ Zoning Administrator.

The bond amount estimate shall be submitted to and reviewed by the Town Attorney, and the ~~Planning and~~ Zoning Administrator prior to the review of the Subdivision Agreement by the ~~Planning Commission~~ Town Council. The component cost estimate for bonding shall be based upon industry norms within the Tidewater region and/or Town standard unit prices and shall be signed and sealed by either a licensed professional engineer or qualified land surveyor. The bond amount estimate shall include a reasonable allowance for administrative costs, inspection fees, inflation, potential damage to existing streets or utilities, but shall not exceed ~~twenty five~~ ten (10) percent of the construction costs.

The erosion and sediment control bond may be separate from the subdivision improvements bond.

D. Period of Bond Agreement

1. When an applicant enters into a bond agreement with the Town, it is understood that all necessary physical improvements must be completed in the specified period of time. If all of the improvements are not completed to the sole satisfaction of the Town within the period of the bond, and no extension has been obtained, or a replacement bond has not been approved, the bond agreement shall be deemed in default.

2. The maximum period of the performance bond agreement shall be ~~eighteen (18)~~ twelve (12) months, unless the initial bond period is extended by the Town Council at the time of Final Subdivision Plat approval.

3. The applicant and surety will be notified by the ~~Planning and~~ Zoning Administrator within sixty (60) calendar days prior to the end of the period of bond agreement. For sureties which contain an expiration date, the applicant and surety will be notified within sixty (60) calendar days prior to expiration that an approved extension or new bond will be required ~~and approved by the Town Council.~~

E. Extension of Bond Agreement

The applicant may request and be granted by the Town Council, an extension of the expiration date of the bond for a period not to exceed one (1) year, provided that:

1. All surety agreements have been acquired and accepted by the Town.

2. The applicant has submitted an acceptable program of completion to the Planning and Zoning Administrator.

3. Inspection of existing physical improvements is found satisfactory.

4. There have been no undue and unattended complaints lodged against the applicant or the subdivision.

5. The applicant's request for extension of the bond sufficiently addresses thereasons which have precluded the completion of the project within the original bond period.

6. The bond cost estimate has been updated to the satisfaction of the ~~Planning and~~ Zoning Administrator.

7. The applicant's extension request is received by the ~~Planning and~~ Zoning Administrator thirty days (30) prior to the end of the period of the bond agreement.

F. Forms of Surety Guarantees Shall be Limited to the Following:

1. Cash escrows.

2. Letters of credit from an insured lending institution.

3. Cashier's or certified check.

4. Other surety as approved by the Town Attorney.

G. Maintenance (Warranty) Bonds

1. Prior to the release of the ~~subdivision~~ performance bond and the Town or state acceptance of streets and other public facilities subject to initial surety requirements, a maintenance (or warranty) bond shall be required for such subdivision improvements to be held for a period of two (2) years.

2. The subdivider shall furnish surety in the same manner as a ~~subdivision~~ performance bond, in an amount sufficient for and conditioned upon the maintenance of the improvements ~~until such time as the improvements are accepted~~. The form and type of surety shall be approved by the Town Attorney.

3. The maintenance bond shall apply to streets, roads, curbs, guttering, street lighting, storm drainage improvements, utilities, other related improvements, including the reconstruction and repaving of any public street or road ~~before the road may be accepted into the public system~~.

4. The maintenance bond shall be equal to or greater in value than an amount equaling twenty (20) per cent of the total construction cost of the subdivision improvements.

H. Release of Bond

1. The performance bond shall be released only upon (a) the findings of the Town and state that support satisfactory completion of improvements, and (b) upon the placement of a maintenance bond per the requirements of this ordinance, the Town's Design and Construction Standards Manual, and other standards and criteria upon which the approval of the Final Subdivision Plat and Public Improvements Plan, erosion and sediment control plan, and landscape plan were based.

2. Upon written request by the subdivider or developer, the Town shall make periodic partial performance bond releases for satisfactory subdivision performance and otherwise in accord with the Code of Virginia. Upon the Town's review of request and upon satisfactory inspection and approval of improvements subject to the release request, such periodic and/or partial releases shall be made within thirty (30) days of request. The releases shall be based upon the percentage of the facilities completed and approved by the Town, provided that such releases may not occur before the completion of at least thirty (30) percent of the facilities covered by any bond, escrow, letter of credit, or other performance guarantee. The Town shall ~~be~~ not execute more than three (3) periodic and/or partial releases in any twelve-month period. Upon final completion and acceptance of said facilities by the Town and state, the Town shall release any remaining bond, escrow letter of credit, or other performance guarantee (surety) to the subdivider or developer provided a maintenance (or warranty) bond is in place.

3. For the purpose of final release, the term "acceptance" is deemed to mean: when the said public facility is accepted by and taken over for operation and maintenance by the Town. For the purpose of erosion and sediment control, acceptance shall be warranted upon final stabilization of the site as determined by the ~~Planning and~~ Zoning Administrator, and for the purpose of landscaping, acceptance shall be warranted upon final installation of all required landscaping measures as determined by the ~~Planning and~~ Zoning Administrator.

I. Bond Default

1. If the applicant or owner of property subject to the bond fails to complete the required improvements within the specified time frame of the bond agreement, the applicant and owner shall be deemed in default.

2. The applicant, owner and surety will be mailed a copy of the ~~Planning and~~ Zoning Administrator's report on the default and will be advised of their right to be heard on the matter at a scheduled public hearing of the ~~Planning Commission~~. Town Council.

3. The applicant, owner and surety shall have thirty (30) days to correct the default and to otherwise complete an agreement with the Town to complete improvements subject to the default.

4. If satisfactory action is not made within the prescribed period, the Town Attorney shall proceed with the completion of the default action by the Town against the applicant and owner, and the Town shall take any and all necessary legal actions to call the bond and secure monetary proceeds related thereto. The Town shall take appropriate steps to initiate action to complete the improvements with monies secured from the default action pursuant to prior approved plans or revisions thereto which may be in the best interest of the residents of the subdivision.

Article 8:

RESIDENTIAL LOT PLANS

Article 8:
RESIDENTIAL LOT PLANS

A. Purpose and Intent for Residential Lot Plans

To ensure that proposed single family uses and related lot development activities are compatible with approved subdivision plats and public improvements plans and to ensure consistency with the underlying residential zoning district regulations, a residential lot plan shall be required to accompany a zoning permit, building permit, and/or other use application for the following:

1. single family residences, two family or duplex residences,
2. accessory buildings or apartments, accessory uses,
3. private garages,
4. rental uses of a portions of a residential dwelling,
5. on site parking areas or other lot improvements which are to be constructed, reconstructed, rehabilitated, or otherwise expanded.

The plan shall provide necessary and sufficient information to ensure that (1) the siting and use of the intended structure(s) is in conformance with the original subdivision plat and public improvements plans for the subdivision in which the lot is located, (2) site grading, stormwater drainage and runoff for the subject lot meet or exceed contemporary requirements for residential development, (3) necessary easements and rights of way, infrastructure plans, comprehensive plan recommendations, urban design guidelines, historic district regulations, and other planning initiatives of the Town are incorporated into the plan to the extent possible, and (4) the siting and use of the intended structure(s) will not adversely impact adjoining properties.

Unless specifically waived by the Town, the plan shall be prepared by a qualified engineer, architect, landscape architect, or surveyor.

B. Town Action on Residential Lot Plans

The single family residential lot plan shall be reviewed and acted upon by the Planning andZoning Administrator within ten (10) working days upon receipt and application for a zoning permit. In the event of denial of approval by the Planning and Zoning Administrator, the applicant may petition the matter to be heard by the Planning Commission at their next regularly scheduled meeting.

C. Preparation and Submission of Residential Lot Plans

The applicant or owner of any residential lot plan shall submit five (5) copies of the plan on a sheet not to exceed 24" x 36". The contents of the residential lot plan shall include the following:

1. Address and tax map reference number of lot; name of subdivision and deed reference.

2. North arrow; dimensions of the lot drawn to scale of 1"=20', with meets and bounds of lot.

3. Location and dimensions of both the existing structure(s) and the structure(s) to be erected on the lot.

4. Geotechnical evaluation and certified engineering design for building foundation for lots which contain shrink/swell soils.

5. Dimensional setbacks from property lines to any structure or improvement, including covered porches, decks, stairwells, garages, swimming pools, accessory uses, etc.

6. Square footage of lot per recorded subdivision plat.

7. Easements contained within the lot or across the lot line.

8. Proposed finished lot grading shown with two-foot (2') contour intervals.

9. Certificate of water and sewer availability.

10. Location of all required off-street parking.

11. Location of all existing natural or man-made drainage channels and storm sewer facilities, as well as location of proposed drainage improvements, to ensure the adequate conveyance of stormwater on and through the property.

12. Location and boundaries of 100-year floodplain. The developer(s) are required to establish base flood elevation (BFE) for new development greater than 50 lots or 5 acres. For approximated area, the developer(s) shall use the BFE and floodway data from other sources.

13. Location and boundaries of Chesapeake Bay Preservation Areas.

14. Location of service connections to public water and sewer.

15. Location and design of waterfront improvements, including boat ramps and docks.

16. Location of construction entrance.

17. Limits of clearing, including trees in excess of 6" in diameter which are proposed to be removed outside the construction footprint.

18. Erosion and sediment control measures.

Article 9:

VIOLATIONS, PENALTIES AND LEGAL REMEDIES

Article 9:
VIOLATIONS, PENALTIES AND LEGAL REMEDIES

A. Any person (owner, applicant, subdivider, or agent) who sells or transfers any land of a subdivision before (1) the Final Subdivision Plat has been duly approved and recorded, and (2) the bond(s) for the subdivision have been posted and approved by Town Council shall be guilty ofa Class 1 (one) misdemeanor.

B. Any person, whether owner, lessee, principal, agent, employee or otherwise, who violates any of the provisions of this Ordinance, or permits any such violation, or fails to comply with any of the requirements hereof, or who subdivides any land, constructs any improvements, erects any building, or uses any land in violation of any Preliminary or Final Subdivision Plat or Public Improvement Plan submitted by such person and approved under the provisions of this Ordinance shall be guilty of a misdemeanor and, upon conviction thereof, shall be subject to punishment as provided by law. Each lot that constitutes a violation and each day that a violation continues shall be deemed a separate offense subject to cumulative fines and other penalties.

C. The ~~Planning and~~ Zoning Administrator may initiate injunction, mandamus, or any other appropriate action to prevent, enjoin, abate or remove such erection or use in violation of any provision of this Ordinance. Such action may also be instituted by any citizen who may be aggrieved or particularly damaged by a violation of any provisions of the ordinance.

D. Upon becoming aware of any violation of any provisions of this ordinance, the ~~Planning and~~ Zoning Administrator shall serve notice of such violator on the person committing or permitting the same, and if such violation has not ceased within such reasonable time as the ~~Planning and~~ Zoning Administrator has specified in such notice, he shall institute such action as may be necessary to terminate the violation.

E. The remedies provided for in this Section are cumulative and not exclusive and shall be in addition to any other remedies provided by the law.

Article 10:

PRELIMINARY SUBDIVISION PLAT CHECKLIST

Article 10:

PRELIMINARY SUBDIVISION PLAT CHECKLIST

Two hard copies and a digital file of the Preliminary Subdivision Plat Checklist shall be prepared and certified by the person(s) preparing the plat and shall be submitted with any initial application or resubmission for a Preliminary Subdivision Plat. The checklist shall be deemed "incomplete" if all items are not fully addressed.

(Official Copy)

MINIMUM SUBMISSION REQUIREMENTS CHECKLIST FOR PRELIMINARY SUBDIVISION PLATS

The Town of Smithfield

Project Name: _____

Project Location: _____

Tax Map and Deed Book: _____

Submission Date: _____

Applicant (Type or print): _____

Applicant's Signature: _____

Address: _____

Phone #: _____

Engineer/Surveyor: _____

Address: _____

Phone #: _____

Review Fee: _____

Preliminary Plat Title Sheet:

	Plan Sheet to Include:	Yes	No	Reason for No
1	Title Block			
2	Subdivision name.			
3	Scale (1" = 100' or less).			
4	Town of Smithfield/Isle of Wight tax map and parcel number.			
5	Names and addresses of the owners of the property, existing mortgages, the subdivider, and the surveyor.			
6	Date of preparation.			
7	Surveying and mapping control information, including reference to survey datum. Horizontal control shall be based on Virginia State Plane Coordinate System, Zone 5576 in a North American Datum coordinate system.			
8	Vicinity map at a scale of 1" = 1000'.			
9	General information section provided, including the number of sheets comprising the preliminary plat and an index showing the locations of the various sheets.			
10	Reference any proffers, special use permit conditions, waivers or variances granted. Copies of all are to be attached.			

	Plan Sheet to Include:	Yes	No	Reason for No
	GENERAL INFORMATION			
1	North arrow, match lines and sheet numbers.			
2	Topography: Existing contours at one (1) foot intervals or as otherwise specified by the Town.			
3	Certified boundary survey of record of the lot, depicting bearings and distances, including references to and location of survey datum.			
4	Present zoning and land use of all abutting or contiguous parcels.			
5	Location of all existing lot lines and total acreage in each parcel.			
6	Location of all proposed lots, building setback lines, approximate acreage of each lot, approximate dimensions of all lots, and approximate right-of-way acreage.			
7	Locations of existing and proposed public and private streets, easements and other rights-of-way within and adjoining the subdivision, including right-of-way and roadway widths, and proposed street names.			
8	Location of existing and proposed utilities and fire hydrants adjacent to the tract to be subdivided, including sizes.			
9	Proposed method of water supply, drainage provisions, sanitary sewer layout or other accepted sanitary plan. Connections with existing facilities, preliminary sizes of proposed facilities and any accessory structure shall also be shown.			
10	Existing storm drainage systems and stormwater management.			

	Plan Sheet to Include:	Yes	No	Reason for No
11	Holders of any easements affecting the property.			
12	Locations of existing easements showing width and use.			
13	Location of all existing buildings within subdivision.			
14	Location of any natural or cultural features, cemeteries, and landmarks.			
15	Locations of proposed drainage and stormwater management facilities.			
16	Watercourses, marshes, wetlands and their names.			
17	100-year floodplain limits and the source of floodplain information.			
18	Existing and proposed open spaces, recreation areas and buffer areas, indicating proposed ownership.			
19	Designation, location and area of wetlands.			
20	Proposed travelways, pedestrian systems and bike trails.			
21	Locations and dimensions of all proposed private alleys.			
22	Private Street design proposals.			
23	RPA boundaries and limits.			
24	Proposed phasing plans and timeframe for completion.			
25	Designation, location and area of "environmental units" and calculation of net developable areas.			

	Plan Sheet to Include:	Yes	No	Reason for No
26	Soils study and geotechnical report.			
27	Additional documentation and technical reports (copies attached).			
28	Application for waiver, variance or substitution (copies attached).			
29	Statement of availability of public utilities and services.			
30	All digital survey data must be contained in a .dxf file or otherwise as specified by the Town of Smithfield on either a 1.44 mb floppy disk or a 100 mb zip disk, and the submission file must contain a list providing the name and a brief description of each layer in the file.			

31 **Surveyor/Engineer's Certification of Completion of Check List:**

I have fully reviewed the Town's requirements and certify this application to be a complete submission. I understand that an incomplete plat or incomplete check list shall be deemed an incomplete submission and shall be returned to the applicant upon determination of such by the Director of Planning, Zoning and Development.

_____ _____

Name Date

_____

Engineer/Surveyor Seal and Registration #

Article 10:

PRELIMINARY SUBDIVISION PLAT CHECKLIST

Two hard copies and a digital file of the Preliminary Subdivision Plat Checklist shall be prepared and certified by the person(s) preparing the plat and shall be submitted with any initial application or resubmission for a Preliminary Subdivision Plat. The checklist shall be deemed "incomplete" if all items are not fully addressed.

(Official Copy)

MINIMUM SUBMISSION REQUIREMENTS CHECKLIST FOR PRELIMINARY SUBDIVISION PLATS

The Town of Smithfield

Project Name: _____

Project Location: _____

Tax Map and Deed Book: _____

Submission Date: _____

Applicant (Type or print): _____

Applicant's Signature: _____

Address: _____

Phone #: _____

Engineer/Surveyor: _____

Address: _____

Phone #: _____

Review Fee: _____

Preliminary Plat Title Sheet:

	Plan Sheet to Include:	Yes	No	N/A	Reason for No or N/A
1	Title Block.				
2	Subdivision Name.				
3	Scale (1” = 100’ or less).				
4	Town of Smithfield/ Isle of Wight County Tax Map and Parcel Number				
5	Names and addresses of the surveying/engineering firm.				
6	Date of preparation.				
7	Surveying and mapping information, including reference to survey datum. Horizontal control shall be on Virginia State Plane Coordinate System, Zone 5576 in a North American Datum coordinate system.				
8	Vicinity map at a scale of 1” = 1000’.				
9	General information section provided, including the number of sheets comprising the preliminary plat and an index showing the locations of the various sheets.				
10	Reference any proffers, special use permit conditions, waivers, or variances granted. Copies of all are to be attached.				

	Plan Sheet to Include:	Yes	No	N/A	Reason for No
1	North arrow, match lines and sheet numbers.				
2	Topography: Existing contours at one (1) foot intervals or as otherwise specified by the Town.				
3	Certified boundary survey of record of the lot, depicting bearings and distances, including references to and location of survey datum.				
4	Present zoning and land use of all abutting or contiguous parcels.				
5	Location of all existing lot lines and total acreage in each parcel.				
6	Location of all proposed lots, building setback lines, approximate acreage of each lot, approximate dimensions of all lots, and approximate right-of-way acreage.				
7	Locations of existing and proposed public and private streets, easements, and other rights-of-way within and adjoining the subdivision, including right-of-way and roadway widths and proposed street names.				
8	~~Location of existing and proposed utilities and fire hydrants adjacent to the tract to be subdivided, including sizes.~~ Existing and proposed impervious coverage, including a table with the total allowable impervious coverage for each lot.				
9	~~Proposed method of water supply, drainage provisions, sanitary sewer layout or other accepted sanitary plan. Connections with existing facilities, preliminary sizes of proposed facilities and any accessory structure shall also be shown.~~				
10	Existing and proposed storm drainage systems and stormwater management.				

11	~~Holders~~ Identification and dedication information for ~~of~~ any easements affecting the property.				
12	~~Location of existing easements showing width and use.~~				
13	Location of all existing buildings within the subdivision.				
14	Location of any natural or cultural features, cemeteries, and landmarks.				
15	~~Locations of proposed drainage and stormwater management facilities.~~				
16	Watercourses, marshes, wetlands and their names.				
17	100- year floodplain limits and the source of floodplain information. RPA boundaries and limits.				
18	Existing and proposed open spaces, recreations areas and buffer areas, indicating proposed ownership.				
19	~~Designation, location and area of wetlands.~~				
20	Proposed public and private travelways, pedestrian systems and bike trails.				
21	~~Locations and dimensions of all proposed private alleys.~~				
22	~~Private Street design proposals.~~				
23	~~RPA boundaries and limits.~~				

24	Proposed phasing plans and timeframe for completion.				
25	~~Designation, location and area of "environmental units" and calculation of net developable areas.~~				
26	~~Soils study and geotechnical report.~~				
27	~~Additional documentation and technical reports (copies attached).~~				
28	~~Application for waiver, variance or substitution (copies attached).~~				
29	~~Statement of availability of public utilities services.~~				
31	Surveyor/Engineer's Certification of Completion of Checklist I have fully reviewed the Town's requirements and certify this application to be a complete submission. I understand that and incomplete plat or incomplete list shall be deemed an incomplete submission and shall be returned to the applicant upon determination of such by the Community Development and Planning Director. Name _____ Date _____ Engineer/Surveyor Seal and Registration #				

Article 11:

FINAL PUBLIC IMPROVEMENTS PLAN CHECKLIST

Article 11:

FINAL PUBLIC IMPROVEMENTS PLAN CHECKLIST

Two hard copies and a digital file of the Final Public Improvements Plan Checklist shall be prepared and certified by the person(s) preparing the plan and shall be submitted with any initial application or resubmission for a Final Public Improvements Plan. The checklist shall be deemed "incomplete" if all items are not fully addressed.

(Official Copy)

MINIMUM SUBMISSION REQUIREMENTS CHECKLIST FOR FINAL PUBLIC IMPROVEMENTS PLANS

The Town of Smithfield

Project Name: _____

Project Location: _____

Tax Map and Deed Book: _____

Submission Date: _____

Applicant (Type or print): _____

Applicant's Signature: _____

Address: _____

Phone #: _____

Engineer/Surveyor: _____

Address: _____

Phone #: _____

Review Fee: _____

Final Public Improvements Plan Check List:

GENERAL INFORMATION				
	Plan Sheet to Include:	**Yes**	**No**	**Reason for No**
1	Subdivision name.			
2	Date of plan.			
3	Standard cover sheet with surveying and mapping control information. Vicinity map (1"=2000') and title block information section completed.			
4	North arrow, designation of north orientation, match lines and sheet numbers.			
5	Contour intervals every 1' or as otherwise specified by the Town.			
6	Boundary survey of record with bearings and distances.			
7	Seal and signature on each sheet by a Virginia registered professional engineer or land surveyor.			
8	Show total acreage, current zoning, and proposed zoning by acres.			
9	Any waivers or zoning variances granted for the project shown on the plans.			
10	Master plan (all phases or proposed sections).			
11	Show site layout including lot numbers and acres, right-of-way, tabulate total number of lots or units to account for site acreage.			

	Plan Sheet to Include:	Yes	No	Reason for No
12	Show state route numbers and names on all existing streets to which connections are to be made. Also, all proposed street names.			
13	Show proposed right-of-way lines, width, centerline, area, limits of construction, and pavement width.			
14	Set of general notes explaining details of plan.			
15	Written description of all plan revisions shall accompany all revised plans submitted for re-evaluation and approval.			
16	Separate parcels shall be individually identified with a separate and sequential number.			
17	Locations of all monuments placed, type of monument set.			
18	Watercourses, marshes, wetlands, and their names.			
19	Location, width, and names of all existing or platted Town streets within, adjacent, or providing access to the subdivision.			
20	Master phasing plan for subdivision.			
21	Subdivision lot grading plan (per site plan requirements and standards).			
	GEOMETRICS			
1	Location of entrance and distance measured to nearest intersection of state route or crossovers for field verification of sight distance.			
2	Radius of all curb returns to face of curb. On streets where curb and gutter are not required, indicate radius to edge of pavement.			
3	All proposed street frontage and intersection improvements.			

	Plan Sheet to Include:	Yes	No	Reason for No
4	Proposed building location, use, square footages and distance to property lines.			
5	Indicate all temporary turnaround construction with easements as indicated on preliminary plans.			
6	Show existing entrances, street connections, crossovers, etc., that are located along existing roadway that may be affected by the development.			
7	Existing right-of-ways, centerline, width, and route number or street name.			
8	Crossover spacing and sight distance in both directions.			
9	Indicate lengths of existing and proposed deceleration, left and right turn storage lanes.			
10	Indicate right-of-way, centerline distance including curve data, delta, radius, arc, chord, tangent, and profile.			
11	Show sight distance at all street intersections and landscaping, sign placement and all obstructions that may affect or obstruct sight distance.			
12	Provide sufficient information on each proposed development street including estimated future traffic so that the Town can approve functional classification before final design stage.			
13	Soils map information and actual tested CBR values under proposed roadway as per VDOT Pavement Design Guide.			
	DRAINAGE			
1	Show direction of drainage flow for streets, storm sewer, valley gutters, subdrains, and the like, and all existing streams.			
2	Show location of all streams or drainageway related to construction.			
3	Existing storm drainage system and proposed major drainage structures.			
4	Show 100-yr. Flood boundaries, source of information and square footage used and RPA boundaries.			
5	Provide drainage area map and drainage calculation.			

UTILITIES				
	Plan Sheet to Include:	**Yes**	**No**	**Reason for No**
1	Show all existing and proposed utilities in and around site.			
2	Provide any notes or information necessary to explain intent and propose of utilities or adjustment of existing utilities.			
3	Existing and proposed easement, width, and use. Note certifying applicant has right to use existing ingress easement to make any proposed improvements.			
4	Indicate proposed street light locations.			
TRAFFIC ANALYSIS				
1	Apts., townhouses, or time-share units should include number of units and how parking will be handled.			
2	Traffic analysis for development on existing and proposed facility. Level of service with and without proposed development. Must include existing and build out year.			
3	Intersection analysis including need for signalization, channelization, turn lanes, and modification of existing signals.			
4	Recommendations for roadway improvements to accommodate existing traffic and proposed traffic generated by development.			
5	Indicate any notes or information necessary to explain intent and purpose of proposed traffic analysis.			
6	Traffic counts, left/right turn movements, and typical street section. Traffic impact study, if required.			

TRAFFIC IMPACT ANALYSIS REPORT CONTENTS				
	Plan Sheet to Include:	**Yes**	**No**	**Reason for No**
1	Introduction. A. Site and Study area boundaries. B. Existing and proposed site uses. C. Existing and proposed nearby uses. D. Existing and proposed roadways and intersections.			
2	Analysis of existing traffic conditions. A. Daily and peak hour(s) traffic volumes. B. Capacity analysis at critical points. C. Levels of service at critical points.			
3	Analysis of future conditions without development. A. Daily and peak hour (s) traffic volumes. B. Capacity analysis at critical points. C. Levels of service at critical points.			
4	Trip generation.			
5	Trip distribution/direction split.			
6	Traffic assignment/turning movements.			
7	Analysis of future conditions with development. A. Future daily and peak hour(s) traffic volumes. B. Capacity analysis at critical points. C. Levels of service at critical points.			
8	Recommended Improvements. A. Proposed recommended improvements. B. Capacity analysis at critical points. C. Levels of service at critical points.			
9	Conclusion.			

OTHER				
	Plan Sheet to Include:	**Yes**	**No**	**Reason for No**
1	Name of any previously approved plan must be referenced on plans.			
2	Certification by submitter that plans conform to all Town ordinances, comprehensive plans, and regulations as well as VDOT design standards.			
3	Environmental impact assessment.			
4	Surveyor/Engineer's Certification of Completion of Check List: I have fully reviewed the Town's requirements and certify this application to be a complete submission. I understand that an incomplete plat or incomplete check list shall be deemed an incomplete submission and shall be returned to the applicant upon determination of such by the Planning and Zoning Administrator. _____ _____ Name Date _____ Professional Seal and Registration #			

Smithfield Subdivision Ordinance September 7, 1999

Article 11:

FINAL PUBLIC IMPROVEMENTS PLAN CHECKLIST

Two hard copies and a digital file of the Final Public Improvements Plan Checklist shall be prepared and certified by the person(s) preparing the plat and shall be submitted with any initial application or resubmission for a Final Public Improvements Plan. The checklist shall be deemed "incomplete" if all items are not fully addressed.

(Official Copy)

MINIMUM SUBMISSION REQUIREMENTS CHECKLIST FOR FINAL PUBLIC IMPROVEMENTS PLANS

The Town of Smithfield

Project Name: _____

Project Location: _____

Tax Map and Deed Book: _____

Submission Date: _____

Applicant (Type or print): _____

Applicant's Signature: _____

Address: _____

Phone #: _____

Engineer/Surveyor: _____

Address: _____

Phone #: _____

Review Fee: _____

Final Public Improvements Plan Checklist:

GENERAL INFORMATION					
	Plan Sheet to Include:	**Yes**	**No**	**N/A**	**Reason for No or N/A**
1	Subdivision Name.				
2	Date of plan.				
3	Standard cover sheet with surveying and mapping control information. Vicinity map (1"=2000') and title block information section completed.				
4	North arrow, designation of north orientation, match lines, and sheet numbers.				
5	Contour intervals every 1' or as otherwise specified by the Town.				
6	Boundary survey of record with bearing and distances.				
7	Seal and signature on each sheet by a Virginia-registered professional or land surveyor.				
8	Show total acreage, current zoning, and proposed zoning by acres.				
9	Any waivers or zoning variances granted for the project shown on the plans				
10	Master plan (all phases or proposed sections).				
11	Show site layout including lot numbers and acres, right-of-way tabulate, and total number of lots or units to account for site acreage.				

12	Show state route numbers and names on all existing streets to which connections are to be made. Also, all proposed street names.				
	Plan Sheet to Include:	**Yes**	**No**	**N/A**	**Reason for No or N/A**
13	Show proposed right-of-way lines, width, centerline, area, limits of construction and pavement width.				
14	Set of general notes explaining details of plan.				
15	Written description of all plan revisions shall accompany all revised plans submitted for re-evaluation and approval.				
16	Separate parcels shall be individually identified with a separate and sequential number.				
17	Locations of all monuments placed, type of monument set.				
18	Watercourses, marshes, wetlands, and their names.				
19	Location, width, and names of all existing or platted Town streets within, adjacent, or providing access to the subdivision				
20	Master phasing plan for subdivision.				
21	Subdivision lot grading plan (per site plan requirements and standards).				
GEOMETRICS					
1	Location of entrance and distance measured to nearest intersection of state route or crossovers for field verification of sight distance.				
2	Radius of all curb returns to face of curb. On streets where curb and gutter are not required, indicate radius to edge of pavement.				
3	All proposed street frontage and intersection improvements.				

4	Proposed building locations, use, square footages and distance to property lines.				
5	Indicate all temporary turnaround construction with easements as indicated on the preliminary plans.				
6	Show existing entrances, street connections, crossovers, etc., that are located along existing roadway that may be affected by the development.				
	Plan Sheet to Include:	**Yes**	**No**	**N/A**	**Reason for No or N/A**
7	Existing right-of-way, centerline, width, and route number or street.				
8	Crossover spacing and sight distance in both directions.				
9	Indicate lengths of existing and proposed deceleration, left, and right turn storage lanes.				
10	Indicate right-of-way, centerline distance including curve data, delta, radius, arc, chord, tangent, and profile.				
11	Show sight distance at all street intersections and landscaping, sign placement, and all obstructions that may affect or obstruct sight distance.				
12	Provide sufficient information on each proposed development street, including estimated future traffic, so that the Town can approve functional classification before the design stage.				
13	Soils map information and actual tested CBR values under proposed roadways as per VDOT Pavement Design Guide				
	DRAINAGE				
1	Show direction of drainage flow for street, storm sewer, valley gutters, subdrains, and the like, and all existing streams.				
2	Show the location of all streams or drainageways related to construction.				

3	Existing storm drainage system and proposed major drainage structures.				
4	Show 100-year Flood Boundaries, source of information and square footage used and RPA boundaries.				
5	Provide drainage area map and drainage calculation.				
UTILITIES					
1	Show all existing and proposed utilities in and around site.				
2	Provide any notes or information necessary to explain intent and ~~propose~~ purpose of utilities or adjustment of existing utilities.				
	Plan Sheet to Include:	**Yes**	**No**	**N/A**	**Reason for No or N/A**
3	Existing and proposed easement, width, and use. Note certifying applicant has right to use existing ingress easement to make proposed improvements.				
4	Indicate proposed street light locations.				
TRAFFIC ANALYSIS					
1	Apts., townhouses, or time-share unit should include number of units and how parking will be handled.				
2	Traffic analysis for development on existing and proposed facility. Level of service with and without proposed development. Must include existing and build out year.				
3	Intersection analysis including need for signalization, channelization, turn lanes, and modification of existing signals				
4	Recommendations for roadway improvements to accommodate existing traffic and proposed traffic generated by development.				
5	Indicate any notes or information necessary to explain intent and purpose of proposed traffic analysis.				

6	Traffic counts, left/right turn movements and typical street section. Traffic impact study, if required.				
TRAFFIC IMPACT ANALYSIS REPORT CONTENTS					
1	Introduction. A. Site and Study are boundaries. B. Existing and proposed site uses. C. Existing and proposed nearby uses. D. Existing and proposed roadways and intersections.				
2	Analysis of existing traffic conditions. A. Daily and peak hour(s) traffic volumes. B. Capacity analysis at critical points. C. Levels of service at critical points.				
3	Analysis of future traffic conditions without development. A. Daily and peak hour(s) traffic volumes. B. Capacity analysis at critical points. C. Levels of service at critical points.				
	Plan Sheet to Include:	**Yes**	**No**	**N/A**	**Reason for No or N/A**
4	Trip generation.				
5	Trip distribution/direction split.				
6	Traffic assignment/turning movements.				
7	Analysis of future traffic conditions with development. A. Daily and peak hour(s) traffic volumes. B. Capacity analysis at critical points. C. Levels of service at critical points.				
8	Recommended Improvements. A. Proposed recommended improvements. B. Capacity analysis at critical points. C. Levels of service at critical points.				
9	Conclusion.				

OTHER					
1	Name of any previously approved plan must be referenced on plans.				
2	Certification by submitter that plans conform to all Town, ordinances, comprehensive plans, and regulations, as well as VDOT design standards.				
3	Environmental Impact Assessment.				
4	Surveyor/Engineer's Certification of Completion of Checklist: I have fully reviewed the Town's requirements and certify this application to be a complete submission. I understand that an incomplete plat or incomplete checklist shall be deemed an incomplete submission and shall be returned to the applicant upon determination of such by the Planning and Zoning Administrator. _____ Name _____ Date _____ Professional Seal and Registration #				

Article 12:

FINAL SUBDIVISION PLAT CHECKLIST

Article 12:

FINAL SUBDIVISION PLAT CHECKLIST

Two hard copies and a digital file of the Final Subdivision Plat Checklist shall be prepared and certified by the person(s) preparing the plat and shall be submitted with any initial application or resubmission for a Final Subdivision Plat. The checklist shall be deemed "incomplete" if all items are not fully addressed.

(Official Copy)

MINIMUM SUBMISSION REQUIREMENTS CHECKLIST FOR FINAL SUBDIVISION PLATS

The Town of Smithfield

Project Name: _____

Project Location: _____

Tax Map and Deed Book: _____

Submission Date: _____

Applicant (Type or print): _____

Applicant's Signature: _____

Address: _____

Phone #: _____

Engineer/Surveyor: _____

Address: _____

Phone #: _____

Review Fee: _____

Final Plat Title Sheet:

	Plan Sheet to Include:	Yes	No	N/A	Reason for No or N/A
1	Title Block.				
2	Subdivision Name (Must be the same as preliminary).				
3	Scale (1” = 100” or less).				
4	Town of Smithfield/ Isle of Wight County Tax Map and Parcel Number				
5	Names and addresses of the surveying/engineering firm.				
6	Date of preparation.				
7	Surveying and mapping information, including reference to survey datum. Horizontal control shall be on Virginia State Plane Coordinate System, Zone 5576 in a North American Datum 1983 coordinate system.				
8	Vicinity map at a scale of 1” = 1000’.				
9	General information section provided, including the number of sheets comprising the final plat and an index showing the locations of the various sheets.				
10	Reference any proffers, special use permit conditions, waivers, or variances granted. Copies of all are to be attached.				
11	Seal and signature (on each sheet) by a Virginia certified land surveyor				
12	Owner’s dedication and consent to properly worded and notarized.				

13	Signature panel for Town approval.				
14	Reference any proffers, special use permit conditions, waivers, or variances granted. Copies of all are to be attached.				
15	Description of Subdivision.				
16	Surveyor's certificates.				
17	All dimensions shown in feet and decimals of a foot to the closest one hundredth (0.01) of a foot; all bearings in degrees, minutes and seconds to the nearest second.				
18	Current boundary survey; bearings and distances to the nearest existing street lines or benchmarks or to other permanent monuments (not less than three) shall be accurately described on the plat.				
19	Parcel and subdivision boundaries with bearing and distances.				
20	Number of lots and area of each new parcel listed by parcel number.				
21	Total site acreage.				
22	Separate parcels shall be individually identified with a separate and sequential number.				
23	Location, dimensions with bearing and distances and purposes of any easement (designate whether public or private) and any areas to be reserved or dedicated for public use.				
24	When the subdivision consists of land acquired from more than one source of title, the outlines of the various tracts shall be indicated by dashed lines, and identification of the respective tracts shall be placed on the final plat.				

25	Location, width dimensions and names of the proposed street, right-of-way, alleys, lots and building lines.				
26	Street right-of-way boundaries with bearings and distances.				
27	Locations of all monuments placed, type of monument set.				
28	All curve data (in a complete curve table).				
29	Watercourses, marshes, wetlands, and their names.				
30	Location, width, centerline and names of all existing or platted Town streets within, adjacent, or providing access to the subdivision.				
31	Vacated streets or parcels showing areas vacated and area amounts reverted to adjacent parcels.				
32	Exact boundary lines of the tract, determined by field survey, giving distances to the nearest one-hundredth (1/100) foot and angles to the nearest minute, which shall be balanced and closed with an error of closure not to exceed 1 to 10,000.				
33	When one (1) or more temporary turnarounds are shown, the following note shall be included on the plat: “The area on this plat designated as “Temporary Turnaround” will be constructed and used as other streets in the subdivision until (insert sheet name) is/are extended to *A connecting street or to another turnaround which is approved by the Planning Commission* at which time the land in the temporary turnaround area will be abandoned for street purposes and will revert to adjoining lot owners in accordance with specific provisions in their respective deeds.”				
34	A statement, either directly on the plat or in an identified attached document, of any private covenants or homeowners association agreements.				

35	Every use requiring the establishment of a buffer yard or screening area shall note the following restriction regarding the use of such buffer on a plat or other instrument recorded among the land records: "*Land designated as required buffer yards or screening shall be landscaped and may only be used for structures, uses or facilities in accord with the Town of Smithfield Zoning Ordinance."*				
36	The following note shall be included on the plat for all site plans or subdivisions that require a landscape plan: *"The owner of fee title to any property on which plant materials have been established per an approved plan shall be responsible for the maintenance, repair, and replacement of the approved plant material as required by the Town of Smithfield Zoning Ordinance."*				
37	Location and width of ingress and egress.				
38	Area of r/w dedication in sq. ft. & labeled "Hereby dedicated to the Town of Smithfield for Public Street purposes."				
39	100-yr Flood area and RPA boundaries including ties to property lines and corners with bearings & distances and/or curve data.				
40	Town Tax map and Parcel number and Zoning Classification.				
41	Match lines shown.				
42	Adjacent property owners, parcel identification no., present zoning, use, deed book, and page number.				
43	All existing dwellings, structures, showing use and distance from property line, underground utilities (electrical, telephone, etc.) wells, waterlines, underground storage vessels, sewer lines, septic systems, as installed and drain field locations on undeveloped parcels.				
44	Easements for dams. The Town is not liable or responsible for dams and it structures.				

45	When applicable, include the following note: "The Town will not accept responsibility for ponds and/or basons and shall be saved harmless for any liability caused by the failure of these structures on their outflow structures."				
46	Accompanying documentation indicating reference to deeds of easement to be recorded with the subdivision.				
47	Statement of boundary survey closure accuracy and compliance with National Mapping Standards including a certification that the digital data is a true representation of the paper copy.				
48	The final plat should be tied to Isle of Wight County's network of survey monuments located in and around the Town of Smithfield and to the Town's Geographic Information System once it is integrated with the County's existing GIS.				
49	NOTE ON PLAT: <u>Surveyor's Certification:</u> I hereby certify that to the best of my knowledge and belief, all requirements of the Planning Commission, and ordinances of the Tow of Smithfield, Virginia, regarding the platting of subdivisions within the Town have been complied with. Given under my hand this _____ day of _____, 20_____. _____ State Certified Engineer or Land Surveyor				

51	Owner's Consent and Dedication: Know all men by these present, that the subdivision of land shown on this plat containing _____ acres, more or less and designated at _____ Subdivision situated in _____ Smithfield, Virginia, is with the free consent and in accordance with the desires of the undersigned owners thereof; that all streets on said plat are hereby dedicated to the public use, and that all lots within the subdivision are subject to certain restrictions, reservations, stipulations and covenants as contained in a writing executed by the undersigned, under the date of _____, 20___, and recorded in the Clerk's Office of _____. Isle of Wight County, in Deed Book _____, on Page _____. The said _____ acres of land hereby subdivided having been conveyed to _____ by deed dated _____, 20____, and recorded in the Clerk's Office of the Circuit Court of Isle of Wight County, Virginia, in Deed Book _____, Page _____. Given under our hands this _____ day of _____, 20_____. _____ SEAL _____ SEAL _____ SEAL

Article 12:

FINAL SUBDIVISION PLAT CHECKLIST

Two hard copies and a digital file of the Final Subdivision Plat Checklist shall be prepared and certified by the person(s) preparing the plat and shall be submitted with any initial application or resubmission for a Final Subdivision Plat. The checklist shall be deemed "incomplete" if all items are not fully addressed.

(Official Copy)

MINIMUM SUBMISSION REQUIREMENTS CHECKLIST FOR FINAL SUBDIVISION PLATS

The Town of Smithfield

Project Name: _____

Project Location: _____

Tax Map and Deed Book: _____

Submission Date: _____

Applicant (Type or print): _____

Applicant's Signature: _____

Address: _____

Phone #: _____

Engineer/Surveyor: _____

Address: _____

Phone #: _____

Review Fee: _____

Final Subdivision Plat Check List:

	Plan Sheet to Include:	Yes	No	Reason for No
1	Title Block			
2	Scale (1" = 100' or less).			
3	Subdivision name. (Must be same as preliminary.)			
4	Town of Smithfield/Isle of Wight tax map and parcel number.			
5	Names and addresses of the surveying/engineering firm.			
6	Scale (1" = 100' or less).			
7	Date of preparation.			
8	Surveying and mapping control information, including reference to survey datum. Horizontal control shall be based on Virginia State Plane Coordinate System, Zone 5576 in a North American Datum 1983 coordinate system.			
9	Vicinity map at a scale of 1" = 2000'.			
10	General information section provided, including the number of sheets comprising the final plat and an index showing the locations of the various sheets.			
11	Seal and signature (on each sheet) by a Virginia certified land surveyor.			
12	Owner's dedication and consent properly worded and notarized.			

	Plan Sheet to Include:	Yes	No	Reason for No
13	Signature panel for Town approval.			
14	Reference any proffers, special use permit conditions, waivers or variances granted. Copies of all are to be attached.			
15	Description of Subdivision.			
16	Surveyor's certificates.			
17	All dimensions shown in feet and decimals of a foot to the closest one hundredth (0.01) of a foot; all bearings in degrees, minutes and seconds to the nearest second.			
18	Current boundary survey; bearings and distances to the nearest existing street lines or bench marks or other permanent monuments (not less than three) shall be accurately described on the plat.			
19	Parcel and subdivision boundaries with bearing and distances.			
20	Number of lots and area of each new parcel listed by parcel number.			
21	Total site acreage			
22	Separate parcels shall be individually identified with a separate and sequential number.			
23	Location, dimensions with bearing and distances and purposes of any easement (designate whether public or private) and any areas to be reserved or dedicated for public use.			

	Plan Sheet to Include:	Yes	No	Reason for No
24	When the subdivision consists of land acquired from more than one source of title, the outlines of the various tracts shall be indicated by dashed lines, and identification of the respective tracts shall be placed on the final plat.			
25	Location, width dimensions and names of proposed street, rights-of-way, alleys, lots and building lines.			
26	Street right-of-way boundaries with bearings and distances.			
27	Locations of all monuments placed, type of monument set.			
28	All curve data (in a complete curve table.)			
29	Watercourses, marshes, wetlands, and their names.			
30	Location, width, centerline and names of all existing or platted Town streets within, adjacent, or providing access to the subdivision.			
31	Vacated streets or parcels showing areas vacated and area amounts reverted to adjacent parcels.			
32	Exact boundary lines of the tract, determined by a field survey, giving distances to the nearest one-hundredth (1/100) foot and angles to the nearest minute, which shall be balanced and closed with an error of closure not to exceed 1 to 10,000.			

	Plan Sheet to Include:	Yes	No	Reason for No
33	When one (1) or more temporary turnarounds are shown, the following note shall be included on the plat: "The area on this plat designated as "Temporary Turnaround" will be constructed and used as other streets in the subdivision until (insert street name) is/are extended to *A connecting street or to another turnaround which is approved by plat by the Planning Commission* at which time the land in the temporary turnaround area will be abandoned for street purposes and will revert to adjoining lot owners in accordance with specific provisions in their respective deeds."			
34	A statement, either directly on the plat or in an identified attached document, of any private covenants or homeowners association agreements.			
35	Every use requiring the establishment of a buffer yard or screening area shall note the following restriction regarding the use of such buffer on a plat or other instrument recorded among the land records: *"Land designated as required buffers or landscape screening shall be landscaped and may only be used for structures, uses, or facilities in accord with the Zoning Ordinance."*			
36	The following note shall be included on the plat for all site plans or subdivisions that require a landscape plan: *"The owner of fee title to any property on which plant materials have been established per an approved plan shall be responsible for the maintenance, repair, and replacement of the approved plant material as required by the Zoning Ordinance."*			
37	Location and width of ingress and egress.			
38	Area of r/w dedication in sq. ft. & labeled "Hereby dedicated to the Town of Smithfield for Public Street purposes."			
39	100-yr. Flood area and RPA boundaries including ties to property lines and corners with bearings & distances and/or curve data.			
40	Town Tax map and Parcel number and Zoning Classification.			

	Plan Sheet to Include:	Yes	No	Reason for No
41	Match lines shown.			
42	Adjacent property owners, parcel identification no., present zoning, use, deed book, and page number.			
43	All existing dwellings, structures, showing use and distance from property line, underground utilities (electrical, telephone, etc.) wells, waterlines, underground storage vessels, sewer lines, septic systems, as installed, and drain field locations on undeveloped parcels.			
44	Easements for dams. The Town is not liable or responsible for dams and its structures.			
45	When applicable, include the following note: "The Town will not accept responsibility for ponds and/or basins and shall be saved harmless for any liability caused by the failure of these structures on their outflow structures."			
46	All digital survey data must be contained in a .dxf file or as otherwise specified by the Town of Smithfield on either a 1.44 mb floppy disk or a 100 mb zip disk, and the submission file must contain a list providing the name and a brief description of each layer in the file.			
47	Accompanying documentation indicating reference to deeds of easement to be recorded with the subdivision.			
48	Statement of boundary survey closure accuracy and compliance with National Mapping Standards including a certification that the digital data is a true representation of the paper copy.			
49	The final plat should be tied to Isle of Wight County's network of survey monuments located in and around the Town of Smithfield and to the Town's Geographic Information System once it is integrated with the County's existing GIS.			

50	NOTES ON PLAT: Surveyor's Certification: I hereby certify that to the best of my knowledge and belief, all of the requirements of the Planning Commission, and ordinances of the Town of Smithfield, Virginia, regarding the platting of subdivisions within the Town have been complied with. Given under my hand this _____ day of _____, 19 _____. _____ State Certified Engineer or Land Surveyor			
	Plan Sheet to Include:	**Yes**	**No**	**Reason for No**
51	Owner's Consent and Dedication: Know all men by these present, that the subdivision of land as shown on this plat, containing _____ acres, more or less, and designated at _____ Subdivision situated in _____ Smithfield, Virginia, is with the free consent and in accordance with the desires of the undersigned owners thereof; that all streets on said plat are hereby dedicated to the public use, and that all lots within the subdivision are subject to certain restrictions, reservations, stipulations and covenants as contained in a writing executed by the undersigned, under date of _____, 19 ____, and recorded in the Clerk's Office of _____. Isle of Wight County, in Deed Book _____, on Page _____. The said _____ acres of land hereby subdivided having been conveyed to _____ by _____ by deed dated _____, 19 _____, and recorded in the Clerk's Office of the Circuit Court of Isle of Wight County, Virginia, in Deed Book _____, Page _____. Given under our hands this _____ day of _____, 19 _____. _____ SEAL _____ SEAL _____ SEAL			

Article 8:

TOWN DESIGN STANDARDS

Town of Smithfield
Design Standards

Smithfield, Virginia

July 2025

THIS PAGE INTENTIONALLY LEFT BLANK

SECTION 1. DESIGN STANDARDS:

1.1 **GENERAL**: The Design Standards of the Town of Smithfield shall provide both public and private users with the requirements and guidelines for design and construction of projects within the Town of Smithfield.

The Town reserves the right to waive or modify any or all parts of the Design Standards in specific instances as is deemed appropriate, except where the Virginia Department of Health Waterworks Regulations or the Department of Environmental Quality Sewage Collection and Treatment Regulations would be violated by such a waiver.

All site and subdivision plans shall be sealed by a Professional Engineer or Land Surveyor licensed in the Commonwealth of Virginia. Plan submittals shall be accompanied by the "Water and Sanitary Sewer System Design Checklist" provided in Appendix D. Any plans submitted without a Professional seal or a completed checklist will be returned without review.

When a Professional Engineer or Surveyor (Professional) with a current said professional license with the Commonwealth of Virginia prepares design documents for a specific project and incorporates the HRPDC Regional Construction Standards and/or Smithfield's Design Standards into that design by reference, the Professional's signed and dated seal of the particular plans, specifications and drawings for that project represents their approval of the HRPDC Regional Construction Standards and/or Smithfield's Design Standards as incorporated by reference into such particular plans, specifications and drawings for such project. In other words, the Professional who stamps or seals any plans, specifications, reports or other documents incorporating the HRPDC Regional Construction Standards and/or Smithfield's Design Standards by reference is responsible for assuring that such plans, and the HRPDC Regional Construction Standards and/or Smithfield's Design Standards incorporated into such plans by reference, are adequate and appropriate for the particular project. The ultimate decision about what goes into such plans, specifications, reports, or other documents for a specific project must be that of the Professional who signs and seals them.

1.2 **DESIGN OF FACILITIES:** Design of all public sewer systems to be dedicated to the Town of Smithfield shall be performed by a Professional Engineer or Professional Land Surveyor with Part A and B license certified by the Commonwealth of Virginia. Water systems, pump systems, well facilities, and sanitary sewer pressure systems shall be prepared by or under the supervision of a licensed professional engineer legally qualified to practice in the Commonwealth of Virginia, and will require current Professional Engineers certification. All designs shall meet or exceed the latest edition of the Virginia Department of Health *Waterworks Regulations*, the Department of Environmental Quality *Sewage Collection and Treatment Regulations,* and the Smithfield Design Standards (including the HRPDC Regional Construction Standards).

Virginia Department of Health (VDH), Department of Environmental Quality (DEQ), and Hampton Roads Sanitation District (HRSD) approvals are required for, but not limited to, the following:

DEQ:

- All gravity sanitary sewer projects with a 40,000 gpd or greater Average Design Flow or, 100 or more connections regardless of phasing.
- All pump stations with a 20 gpm or greater pump rate.
- All pump stations discharging into a common force main with one or more other stations.
- The approval by DEQ may require a Certification by the *Professional* that all SCAT Regulation requirements are met, if DEQ does not review the project. The Certification shall be as required by the DEQ Certificate to Construct application.

VDH:

- All water mains 16-inches and larger.
- All transmission mains.
- All water production facilities (including wells).
- All master metered projects which have on-site, private water distribution piping larger than 8-inches in diameter or serving more than 14 residential connections.

HRSD:

- All gravity sanitary sewer projects with a 40,000 gpd or greater Average Design Flow or, 100 or more connections regardless of phasing.
- Any project proposing a direct connection to HRSD mains.
- Any project proposing work in proximity to existing HRSD mains.
- Any project discharging Industrial Waste.

It is the responsibility of the Applicant to coordinate submittals to and receive approval from the above agencies. A copy of the developer's/engineer's transmittal to these agencies, where required, shall be included as part of the site plan submittal. Agency approvals are required prior to final plan approval by the Town of Smithfield.

1.3 **VERTICAL AND HORIZONTAL SURVEY DATUM CONTROL:** Vertical and horizontal survey datum control shall be based upon, the Town of Smithfield, Virginia 2003 Geodetic Control Network, Horizontal NAD 83 (1996), Vertical NAVD 88. A minimum of one permanent bench mark that meets the requirements of the Subdivision Ordinance of Smithfield, Virginia shall be established for each project.

1.4 **CONTRACTOR LICENSING:** Contractor registration shall be in accordance with Title 2.2 Chapter 43 of the Code of Virginia. The Contractor responsible for installing the water and sanitary sewer facilities will be required to provide their State Contractor's License number.

1.5 **WORK IN TOWN RIGHT OF WAY:** All work performed within Town rights-of-way (ROWs) shall be permitted, bonded, and performed by competent individuals whose specialize in the type of work being conducted and are licensed and bonded Class A Highway/Heavy and Utility contractor and subcontractor.

A list of all contractors and subcontractors who intend to perform the work, as well as three (3) references for each shall be submitted to the Community Development & Planning and Engineering & Public Works Departments for their review and approval prior to the granting of an ROW permit for any construction activities proposed in Town ROWs.

All references for all contractors and subcontractors must be individuals who were directly involved in the contractors' and subcontractors' previous projects.

THIS PAGE INTENTIONALLY LEFT BLANK

SECTION 2. WATER AND SANITARY SEWER SYSTEM DESIGN:

2.1 **WATER DISTRIBUTION PRESSURE:**

- A minimum residual pressure of 20-psi shall be maintained throughout the water distribution system under any condition.
- Where the pressure at the service tap exceeds 80 psi, the provisions of the Uniform Statewide Building Code shall apply. Pressures may exceed 80-psi for areas where the finish floors are less than 70-feet in elevation.
- Flows required for fire protection shall be in accordance with applicable requirements of the National Fire Protection Agency, Insurance Services Office, State and local agencies, and subject to the approval of the Fire Chief of the Town of Smithfield.
- A water distribution system hydraulic analysis, with fire flow analysis, showing the hydraulic gradient at key points shall be included with plan submittals requiring water main extension of the Smithfield water system or as required by the Town of Smithfield.

2.2 **ACCEPTABLE WATER MAIN SIZES:** The Town of Smithfield permits 8, 12, 14, 16 inch diameter mains as part of its distribution system. Proposed mains, larger than 16-inch in diameter, shall be coordinated with the Public Works Department at the conceptual plan stage. The minimum size of pipe where fire protection is to be provided or required shall be eight inches in diameter unless otherwise approved by the Fire Chief and Town of Smithfield.

A. Pipes of smaller diameter may be used in the following instances where fire protection is not required, and justification is provided with a hydraulic analysis including the proposed and future domestic and irrigation water uses as follows:

- Six-inch pipe and lesser diameter pipe may be used if 40-psi minimum pressure and flow of three (3) gallons per minute plus irrigation demands per connection can be maintained.

- Four-inch pipe may be used when the run is less than 600-feet but more than 300-feet, and a flow rate of three (3) gallons per minute plus irrigation demands per connection, with a 40-psi minimum pressure can be maintained.

- Two-inch pipe may be used when the run is less than 300-feet, and a minimum pressure of 40-psi can be maintained with a flow rate of three (3) gallons per minute plus irrigation demands.

2.3 **WATER MAIN PIPE MATERIAL AND PLACEMENT:** Unless otherwise specified by the Town of Smithfield, water mains shall be Class 52 Ductile Iron pipe conforming to the HRPDC Regional Construction Standards, inclusive of Town of Smithfield Special Provisions. Water mains 2-inch and smaller shall be Municipex pipe. Use of Type K copper must be approved by the Town. Water mains shall be located in the roadway one foot inside the edge of pavement.

A. Waterlines should run above other utilities where at all possible. Offsets under storm lines should be avoided where going over will meet cover requirements as noted in Sec. 2

2.4 **ACCEPTABLE WATER SERVICE CONNECTION SIZES:** The acceptable water service connection sizes are 5/8, 3/4, 1, 1-1/2, 2, 4, 6, 8, 10, 12, 14, and 16-inches in diameter. A gate valve shall be installed at the tee for all service connections 4-inches and larger.

All residential connections shall utilize a 1-inch water service line. If a smaller service is needed, the service line shall be reduced to the required size at the meter setter. Owner will only be required to pay the fee for the size meter required.

All commercial sites shall have a 2-inch water service line. If a smaller service is needed, the service line shall be reduced to the required size at the meter setter. Owner will only be required to pay the fee for the size meter required. In the event that a commercial property renovates their building, the water service line shall be upgraded to 2-inch.

2.5 **COVER**: Water distribution systems and sanitary force mains shall have a minimum of 36 inches and a maximum of 42 inches, measured from the top of the pipe to the established finished grade above the pipe, unless otherwise approved by the Town. Water service lines shall have a minimum of 18 inches and a maximum of 2 feet of cover. During design, site layout of other infrastructure (i.e. storm sewer, gravity sanitary sewer, etc) shall be considered in minimizing the need to have deep pressure mains.

2.6 **EASEMENTS**: Permanent easements of 20-feet width for water mains and services and 20-feet width for sanitary sewer mains and services, minimum, shall be provided on all private property. (Combined water and sanitary sewer easements shall be 30-feet minimum.) For gravity sanitary sewers over 10-feet deep, the width of easement shall be 30-feet minimum. Additional easement width may be required by the Town of Smithfield. Prior to considering an easement as permanent, all surface conditions must be restored to original or better condition. The easement shall be stabilized within 30 calendar days of the completion of construction. Easement plats and deeds shall be recorded prior to site plan approval, except where the easements will be recorded as part of a subdivision plat. Any proposed offsite easements shall be secured by the Developer prior to plan approval by the Town.

The Town of Smithfield shall not accept nor be responsible for repairing, maintaining, or locating any portion of the water or sanitary systems prior to dedication of the appropriate corresponding utility easement(s) relating to the said development. Existing water and sanitary systems within the said development currently not within an easement shall also have appropriate easements dedicated prior to acceptance of new development water and sanitary systems. Dedication of an easement does not mean the utilities within that easement are accepted by the Town. The Town of Smithfield will not accept any utility until final completion requirements of Section 4.1 have been met. The Town reserves the right to require existing easements to comply with current easement width criteria for development projects (i.e. increase existing easement width from 10-feet to 20-feet).

No building or permanent structures shall be constructed within a Town Utility Easement. No trees, shrubs, structures, irrigation mains, invisible pet fences or other obstacles shall be placed within an easement which would render the easement inaccessible by equipment. Shrubs shall be a minimum of 5 feet, and trees a minimum of 10 feet, from the center of water and sanitary sewer pipelines. The Town of

Smithfield will not be responsible for replacement of trees and shrubs placed within the easement.

Water and sanitary sewer easements are exclusive, and shall be designated on the plans and Plat as "Utility Easement dedicated to the Town of Smithfield," with the width specified, unless otherwise authorized by the Town.

The following note shall be added to all plats containing Town of Smithfield Utility Easements:

"Easements denoted as "Utility Easement dedicated to the Town of Smithfield" are for the exclusive use of the Town of Smithfield and the property owner. Other utility service providers desiring to use these easements with the exception of perpendicular utility crossings must obtain authorization for access and use from the Town of Smithfield and the property owner. All utilities must maintain a 5-foot separation from Town owned utilities. Additionally, the Town of Smithfield shall not be held responsible for any damage to improvements within this easement, from any cause."

Any existing Town of Smithfield easement requiring abandonment or extinguishment will require approval by the Town of Smithfield. Appropriate materials (plat, deed, exhibits, etc) including fees shall be submitted by the Developer/Engineer for presentation to the Town.

2.7 **DEAD ENDS AND HIGH POINTS**: Dead ends shall be minimized by looping of all water lines where possible. Where dead-end lines occur, they shall be provided with a blow off valve. The blow off valve shall not be directly connected to any sanitary sewer. Approved air release devices shall be installed at all system high points. **All devices shall be inspected by the Town prior to backfilling.**

2.8 **EXTENSION PROVISIONS**: Provisions shall be made for logical future water and sanitary sewer extensions. Future water main and sanitary force main extensions shall be provided with a gate valve and a minimum of a full joint of pipe beyond the gate valve. This pipe shall be properly restrained, plugged, blocked, pressure tested, and disinfected (water mains only) along with the rest of the piping system. After passing inspection, the gate valve shall be closed. A temporary blow-off assembly shall be installed at the end of all extensions. No sanitary stub outs shall be installed on manholes for future extensions. Future manhole inverts shall be cored in the field.

2.9 **HYDRAULIC ANALYSIS**: A hydraulic analysis is required for all water system design projects requiring an extension of the water distribution system, and/or installation of new fire hydrants and/or as required by the Town. The hydraulic analysis shall be used to verify flow demands and pressure availability for the proposed project and to justify pipe sizes. The analysis shall also demonstrate the effect the proposed project will have on the existing distribution system. The hydraulic analysis shall include as a minimum the following:

A. Under peak hour demands (excluding fire demands), the water distribution system shall maintain pressures above 40-psi.

B. Under maximum day plus fire demands plus applicable irrigation demands, the water

system shall maintain pressures above 20-psi.

C. Water system layouts shall be designed to minimize dead ends. Looping water lines is required where possible.

D. Velocity in any pipe line (excluding fire hydrant six-inch runs) shall not exceed 5 fps under any condition.

E. Head losses in any pipe line (excluding fire hydrant six-inch runs) shall not exceed 20 psi per 1,000 feet of pipe line.

F. Provide a separate hydraulic analysis for each phase of the project to confirm adequate system design.

G. The water model calculations must be sealed, signed and dated by a Licensed Professional Engineer, currently licensed by the Commonwealth of Virginia.

H. The hydraulic analysis shall be neatly organized and bound. Provide a summary describing the project, the basis of the calculation procedures performed, name and version of the software. The analysis shall be provided in printed form as well as electronic form. The electronic copy shall include the input data for inclusion in the Town system model.

I. Provide a node map that includes pipe numbers, reservoirs, pumps, junction numbers, contours to check elevations, locations of fire hydrants, and lot locations.

J Provide in the model, irrigation demands that might be applied to this development. If no irrigation demands are included in the model, then provide justification of how the irrigation will not be allowed for this project. If irrigation demands are included for this development, then describe how the irrigation demands were developed and what mechanisms will be in place to control them. An example of justification might include the homeowner covenant documentation prohibiting outdoor irrigation of all kinds or allowing irrigation under specific circumstances that support the irrigation demand calculations. Provide a written discussion of irrigation demands with the analysis.

K. Provide a software generated date/time stamp on all water model pages.

L. Provide in the hydraulic analysis the following:

1. Fire hydrant flow tests for which the model is based and a description of input assumptions such as reservoir data and pump data that simulates the flow test.

2. Listing of all inputs for all pipes, nodes, pumps, reservoirs, etc, used in the model.

3. Include Average Day Demand Analysis.

4. Include Maximum Day Demand Analysis.

5. Include Maximum Day Demand + Fire Flow + any applicable irrigation demands. The water system must maintain 20-psi at all nodes.
6. Include Peak Hour + any proposed irrigation demands. The pressures in the system must be maintained above 40-psi at all nodes.

7. Include a Global Fire Flow Analysis.

8. No pipe velocities shall exceed 5 fps, under any condition

9. No pipe head losses in any pipeline shall exceed 25-feet per 1,000-feet of pipe.

10. Provide separate hydraulic analysis for each phase of the project to confirm adequate system pressures and flows during phase development. Apply the fire flow within the phased area.

11. Pipe reports must include the following information at a minimum:

    a. Pipe number

    b. Starting Node number and Ending Node number

    c. Status

    d. Pipe diameter (inches)

    e. Pipe length (feet)

    f. C-Factor (C-Factor of 130 is the maximum allowed)

    g. Discharge (gpm)

    h. Velocity (fps)

    i. Head losses (ft)

    j. Minor losses (ft)

12. Junction reports must include the following information at a minimum:

    a. Junction number

    b. Elevation (ft)

    c. Demand (gpm)

    d. Description (description for calculating demand)

e. Calculated demand (gpm)

f. Pressure Head (ft)

g. Residual pressures at all nodes (psi)

h. Hydraulic Grade Line (ft)

13. Reservoir report must include the following information at a minimum:

a. Label

b. Elevation (ft)

c. Hydraulic Grade Line (ft)

d. Inflow (gpm)

e. Outflow (gpm)

14. Pump report must include the following information at a minimum:

a. Label

b. Status

c. Elevation (ft)

d. All input information

e. Intake pump grade (ft)

f. Discharge pump grade (ft)

g. Discharge (gpm)

h. Pump head (ft)

2.10 **WATER AND SANITARY SEWER SYSTEM DATA SHEETS:**

A. **Water Data Sheet**: Provide a completed Water Data Sheet with all water system projects. The Water Data Sheet shall be completed as follows:

1. Date: Provide the date the Water Data Sheet was completed. If revisions are necessary, add each revision date.

2. Provide the following information under General Information:

   a. Provide the project name.

   b. Provide the project address: Provide the address if available or a description of the location of the project.

   c. Developer: Provide the firm name of the responsible party for the development.

   d. Submitted By: Provide the name of the firm submitting this project for review.

   e. Contact Person: Provide the name of the contact person the Town may contact to address questions concerning the application.

   f. Address: Provide the address of the contact person.

   g. Provide the phone and fax numbers and the e-mail address of the contact person for this application.

3. Provide the following information requested under Design Information as follows:

   a. Source of Water: List the source of water for this project.

   b. Flow Information: Flow information shall be in accordance with the types of development, units, flow, and flow duration in accordance with Table 2.1. Any deviations from this Table will require supporting documentation and will require VDH approvals.

      i. Total Flow (GPD): Provide the calculated total GPD based on the project development type.

      ii. Irrigation Demand (gpm): Provide the irrigation demands that are applicable to this project. If no irrigation demands are included in this project, then no in-ground irrigation systems will be allowed with this project.

      iii. Average Day Demand (gpm): Provide the calculated average day demand using the values associated with Table 2.1 based on the number of units, flow rate and flow duration for each development type for master planning purposes and residential developments. For site specific site projects, the demand shall be calculated based on the International Plumbing Code (IPC) for fixture counts and flow values. The IPC flow value, which is a peaked demand, shall be divided by a factor of 4 for the Average Day Demand.

      iv. Maximum Day Demand (gpm): Provide the calculated maximum day demand based on the average day demand with a peaking factor of no less than 1.7. Different peaking factors must be supported with documentation and will be subjected to VDH approvals.

v. Peak Hour Demand (gpm): Provide the calculated peak hour demand based on the average day demand with a peaking factor of no less than 4.0. Different peaking factors must be supported with documentation and will be subjected to VDH approvals.

c. Hydraulic Analysis: Provide the combined volume of the peak hour demand plus the irrigation demand and at what minimum residual pressure as supported by the hydraulic model.

4. Provide the Fire Hydrant(s) Flow Information as follows:

a. Provide the actual fire hydrant flow test information and attach a copy to the hydraulic analysis. Information to be provided is the fire hydrant number or address, static pressure (psi), residual pressure (psi), pitot pressure (psi), residual flow (gpm) and the estimated flow at 20-psi and the date the fire hydrant flow test was performed.

b. Provide the fire flow volume required for this project as stipulated in Section 2.11. Deviations from the Town of Smithfield required fire flow volumes must be approved in writing by the Smithfield Fire Department and the supporting documentation attached.

c. Hydraulic Analysis: Provide the volume (gpm) of the total fire flow plus maximum day demand plus any applicable irrigation demands and the minimum pressure in psi.

d. Number of Existing Fire Hydrants: Provide the number of existing fire hydrants used to support this project.

e. Number of Proposed Fire Hydrants: Provide the number of proposed fire hydrants to be added to support this project.

f. This sheet will be sent by the Town of Smithfield to the Smithfield Fire Department for their approval. The Fire Department approval will be required as a component to the Town approval of this Water Data Sheet.

5. Provide the Water Distribution Information as follows:

a. Water Distribution Piping: Provide the diameter (inches), length (feet) and pipe materials (DI, PVC, etc) for the water distribution system piping for this project. The length of pipe must correspond to the pipe within proposed Town easements or pipe within public right-of-ways. If multiple phases or sections of a project are anticipated, include only the piping proposed on the phased site plan.

b. Water Meter Assemblies: Provide the size (inches) and the number of each meter

size for the water distribution system submitted. Developer or Owner must purchase meters. Water meter sizing for commercial developments shall be calculated using the International Plumbing Code as adopted and amended by the Uniform Statewide Building Code (latest edition) for fixture counts and flow values and AWWA Manual - M22 for water meter size based on the calculated flow rates. Provide a copy of the water meter sizing calculations with this analysis. Also provide calculations for justification of irrigation meters if a separate irrigation meter is proposed. Detector Check Valve water meters shall be listed individually. If multiple phases or sections of a project are anticipated, include only those water meters proposed on the phased site plan.

c. The use of multiple meters in lieu of a single, larger meter, is prohibited unless as authorized by the Town of Smithfield.

d. Submit calculations which verify the existing or proposed water service line velocities do not exceed 5 feet per second based on the peak hour demand.

e. Casing Pipe: Provide the casing pipe diameter (inches) and length (feet).

WATER DATA SHEET

Date:_____ Revised: _____

I. GENERAL INFORMATION:

a. Project Name: _____

b. Project Address: _____

c. Developer: _____

d. Submitted By: _____

e. Contact Person: _____

f. Address: _____

_____

g. Phone: _____ Fax: _____ Email: _____

II. DESIGN INFORMATION:

a. Source of Water: _____

b. Flow Information:

Type of Development	Number of Units	Flow (GPD/Unit)	Flow Duration (Hr)	Total Flow (GPD)
Totals				

Type of Development	Irrigation Demand (gpm)	Average Day Demand (gpm)	Maximum Day Demand (gpm)	Peak Hour Demand (gpm)
Totals				

c. Hydraulic Analysis: Peak Hour Demand (gpm) + Irrigation Demand (gpm):
_____ @ _____psi > 40 psi (Node _____)
(Attach a hydraulic analysis that supports the above flow and pressure results)

WATER DATA SHEET (continued)

Date: _____ Revised: _____

Project Name: _____

Project Address: _____

III. **FIRE FLOW INFORMATION:**

a. Actual Fire Flow Test Information: *(Attach a copy of fire flow test with this form.)*

Date Performed: _____ Nozzle Size: 2-1/2 inch

Hyd. No. _____ Static _____psi Residual _____psi

Hyd. No. _____ Pitot _____ psi Flow _____ gpm

Hyd. No. _____ Pitot _____ psi Flow _____ gpm

Hyd. No. _____ Pitot _____ psi Flow _____ gpm

Total Residual Flow _____ gpm

Calculated Flow @ 20 psi _____gpm

b. Fire flow to support this project per Town Standards Section 2.11: _____gpm @ 20 psi

c. Fire flow to support this project per Smithfield Fire Department (provide supporting documentation if different from the Town fire flow standards above) _____gpm @ 20 psi

d. Hydraulic Analysis: Fire Flow + Maximum Day Demand + any applicable irrigation demands:

_____gpm @ _____psi. > 20 psi (Node_____)
(Attach a hydraulic analysis that supports the above flow and pressure results)

e. Number of Existing fire hydrants: _____

f. Number of Proposed fire hydrants: _____

NOTE: A maximum single flow from any fire hydrant shall not exceed 1000 gpm.

Fire Department Approval (Town use only):

Approved by: _____ Date: _____

WATER DATA SHEET (continued)

IV. WATER DISTRIBUTION INFORMATION:

a. Water Distribution Piping (Include Fire Hydrant piping, exclude service lines smaller than 4-inch diameter):

Pipe Diameter (Inches)	Pipe Length (Feet)	Material Type (DI, PVC, etc)
Totals		

b. Water Meter Assemblies:

Water Meter Size (Inches)	Quantity

Note: Water meter sizing for commercial site plans shall be calculated using the International Plumbing Code as adopted and amended by the Uniform Statewide Building Code (latest edition) for fixture counts and flow values and the AWWA Manual – M22 for water meter size based on the calculated flow rates. Meter sizing shall be based on not exceeding 80% meter capacity unless approved otherwise by the Town of Smithfield. Provide a copy of the water meter sizing calculations with this form. Submit calculations which verify the existing or proposed water service line velocities do not exceed 5 feet per second based on the peak hour demand.

Casing Pipe:

Diameter _____(Inches), Length _____ (Feet)

Diameter _____(Inches), Length _____ (Feet)

B. **Sanitary Sewer System Data Sheet**: Provide a completed sanitary sewer data sheet with all sanitary sewer system projects. The Sanitary Sewer System Data Sheet shall be completed as follows:

1. Date: Provide the date the Sanitary Sewer System Data Sheet was completed. If revisions are necessary, add each revision date.

2. Provide the following information under General Information:

   a. Provide the project name.

   b. Provide the project address: Provide the address if available or a description of the location of the project.

   c. Developer: Provide the firm name of the responsible party for the development.

   d. Submitted By: Provide the name of the firm submitting this project for review.

   e. Contact Name: Provide the name of the contact person the Town may contact to address questions concerning the application.

   f. Address: Provide the address of the contact person.

   g. Provide the phone and fax numbers and the e-mail address of the contact person for this application.

3. Provide the following information requested under Design Information as follows:

   a. Sanitary Sewer System: Provide the name of the collection basin or receiving lift station or pump station.

   b. Design Population: Provide the breakdown of the proposed development such as 100-single-family homes and/or 10,000-gross square feet Office Building, etc. This item and flow duration shall reflect the type of development listed in Table 2.1- Flow Demands. Provide the total peak flow in accordance with Section 2.10, paragraphs E and F.

   c. Sanitary Sewer System Piping: Provide the diameter (inches), length (feet) and pipe materials (DI, PVC, HDPE, etc.) for the sanitary sewer gravity and force main system piping for the development. The length of pipe must correspond to the pipe within proposed Town easements or pipe in public right-of-ways. If multiple phases or sections of a project are anticipated, include only the piping proposed on the phased site plan.

   d. Sanitary Sewer Manholes: Provide number of standard manholes, number of 60-inch diameter manholes, and their respective average depths.

   e. Casing Pipe: Provide the casing pipe diameter (inches) and length (feet).

SANITARY SEWER SYSTEM DATA SHEET

Date: _____ Revised: _____

I. GENERAL INFORMATION:

a. Project Name: _____

b. Project Address: _____

c. Developer: _____

d. Submitted By: _____

e. Contact Person: _____

f. Address: _____

g. Phone: _____ Fax: _____ Email: _____

II. DESIGN INFORMATION:

A. Sanitary Sewer System: _____

B. Design Population: (attach chart if additional space is required)

Type of Development	Number of Units	Flow (GPD/Unit)	Flow Duration (Hr)	Total Average Flow (GPD)	Total Peak Flow (GPM)
Totals					

C. Sanitary Sewer System Piping: (include 6-inch sewer laterals)

Pipe Diameter (Inches)	Piping System (Gravity or Force Main)	Length (Feet)	Material (DI, PVC, etc)

D. Sanitary Sewer Manholes:
Standard Manholes: _____, Average Depth: _____

60-inch Manholes: _____, Average Depth: _____

E. Casing Pipe:

Diameter _____(inches), Length: _____(feet)

2.11 **FLOW DEMANDS AND DESIGN CONSIDERATIONS:** Design basis for new developments shall be based on the following flow criteria:

A. Maximum Day Water Demand - maximum day demand is defined as 1.7 times average day demand.

B. Peak Hour Water Demand - peak hour demand is defined as 4.0 times average day demand.

C. Average Day Water Demand - average day demand is defined by Table 2.1 based on the number of units, flow rate and flow duration for each development type for master planning purposes and residential developments. For site specific site projects, the demand shall be calculated based on the International Plumbing Code (IPC) for fixture counts and flow values. The IPC flow value, which is a peaked demand, shall be divided by a factor of 4 for the Average Day Demand.

D. Water meter sizing for commercial site plans shall be calculated using the International Plumbing Code as adopted and amended by the Uniform Statewide Building Code (latest edition) for fixture counts and flow values and the AWWA Manual – M22 for water meter size based on the calculated flow rates. Meter sizing shall be based on not exceeding 80% meter capacity unless approved otherwise by the Town. Provide a copy of the water meter sizing calculations with this form. Submit calculations which verify the existing or proposed water service line velocities do not exceed 5 feet per second based on the peak hour demand.

E. Peak Sewer Flow - lateral and sub-main sewers.

1. Lateral - a sewer that has no other common sewers discharging into it.

2. Sub-main - a sewer that receives flow from one or more lateral sewers.

3. Minimum Peak Design Flow should be 400-percent of the average design flow.

F. Peak Sewer Flow - main trunk and interceptor sewers.

1. Main or Trunk - a sewer that receives sewage from one of more sub-main sewers.

2. Interceptor - a sewer that receives sewage flow from a number of gravity mains, trunk sewers, sewage force mains, etc.

3. Minimum Peak Design Flow should be 250-percent of the average design flow.

G. General -In general, sanitary sewer systems should be designed for the estimated ultimate tributary population with an upper limit consisting of the 50-year population growth projection, except when considering parts of the system that can be readily increased in capacity. Consideration shall be given to land use plans and to the other planning

documents and to the maximum anticipated capacity of institutions, industrial parks, apartment development, etc.

H. Sanitary Sewer Design Considerations: All sanitary sewer systems shall be designed with the following considerations:

1. Peak hourly sewage flows
2. Additional maximum sewage or waste flow from industrial plant
3. Ground water infiltration
4. Topography of area
5. Depth of excavation
6. Slope of sewer lines and laterals
7. Pumping requirements
8. Downstream system capacity

Table 2.1

Type of Development	Contributing Design Units	Flow or Demand (GPD/Unit)	Flow or Demand Duration (hours)	Sewer Flow Peaking Factor	Water Flow Peaking Factor
Dwellings	Per Unit	310	24	2.5	(6)
Trailer Courts, Apartments, Condos, Townhomes & Timeshares	Per Unit	310	24	2.5	(6)
Schools	Per Person	10	8	3	(6)
Boarding Schools	Per Person	75	16	3	(6)
Hotels & Motels	Per Room	130	24	3	(6)
Restaurants (including fast food)	Per Seat	30	16	3	(6)
Service Stations	Per Gross SF	0.4	16	3	(6)
Shopping Centers	Per Gross SF	0.2	12	3	(6)
Hospitals	Per Bed	300	24	3	(6)
Nursing Home/Assisted Living	Per Bed	160	24	3	(6)
Doctor's Office in Medical Center	Per Gross SF	0.25	12	3	(6)
Laundromats	Per Machine	500	16	3	(6)
Community Colleges	Per Student and Faculty	10	12	3	(6)
Theaters (auditorium type)	Per seat	2.5	12	3	(6)
Picnic Areas	Per Person	5	12	3	(6)
Camps, Resort day & Night with Limited Plumbing	Per Site	50	24	3	(6)
Luxury Camps With Flush Toilets	Per Site.	100	24	3	(6)

Table 2.1 (Cont'd)

Type of Development	Contributing Design Units	Flow or Demand (GPD/Unit)	Flow or Demand Duration (hours)	Sewer Flow Peaking Factor	Water Flow Peaking Factor
Warehouse	Per Gross SF	0.05	24	3	(6)
Convenience Store	Per Gross SF	0.3	24	3	(6)
Office Building	Per Gross SF	0.1	12	3	(6)
Fitness Center	Per Gross SF	0.1	16	3	(6)
Religious Assembly	Per Seat in Main Assembly Room	2.5	6	3	(6)
Heavy Industrial	Per Gross SF	0.35(1)	16	3	(6)
Light Industrial	Per Gross SF	0.10(1)	16	3	(6)

Sanitary Sewer Flow Projection Notes:

(1) The stated flow per day per unit is provided as a guide and should only be used if known data for similar heavy or light industrial facilities is not available.

(2) For undeveloped property zoned other than residential, average daily flows may be projected at a rate of 1,000 gpd per acre. Consideration should be given to designated wetlands and Chesapeake Bay Preservation Act Resource Protection Areas (CBPA RPA) which should be excluded from the gross acreage. A peaking factor of 3 shall be used.

(3) For undeveloped property zoned residential, average daily flows may be projected at a rate of 310 gpd per unit based on the zoning density. A peaking factor of 2.5 shall be used.

(4) Flow duration should be taken into account for design of onsite infrastructure and when discharging into publically owned force mains, but need not be considered for downstream publically owned gravity collection systems. Additionally, the SCAT Regulations require a peaking factor of 4 be applied to the average daily flow when designing laterals and sub-mains. For example, in designing an on-site sanitary sewer lateral or an on-site private pump station for a shopping center that has a gross square footage of 7,500 SF, the flow duration should be applied as follows:

7,500 SF x0.20gpd/SF = 1,500gpd
1,500 gpd/ (12 hour duration x 60 min/hr) = 2.08 gpm
2.08 gpm x 4 (peak factor per SCAT regulations) = 8.32 gpm

(5) Sound engineering judgment must be used in all application of these flow projection guidelines.

Table 2.1 (Cont'd)

(6) Water Demand Peaking Factors shall be as defined in Section 2.10 for Average Day, Maximum Day (1.7 x Average Day) and Peak hour Demands (4 x Average Day).
(7) For all undeveloped property, water demands shall be based on the number of residential units and/or commercial square footage anticipated for the development either by current zoning or where limited by Proffers. Peaking factors shall be as defined in Section 2.10.

2.12 **FIRE FLOW REQUIREMENTS**: Fire flow demands are specified by the Smithfield Fire Department and are based on the designated zoning, use, and specific type of construction. The zoning categories are:

A. Residential: To include, but not limited to, Single-family, Manufactured Homes, Apartments, Townhouses, Condominiums, Motels, etc.

B. Commercial: To include, but not limited to, Offices, Small Businesses, Hotels, Shopping Centers, Food Markets, Small Buildings, Churches, etc.

C. Industrial: To include, but not limited to, Plants, Factories, Larger Buildings, Industrial Facilities, etc.

The fire demand ranges from 1,000 gpm to 4,500 gpm. The following table shows the guidelines for specified fire demands based on project type. The maximum flow allowed for a single fire hydrant is 1,000 gpm. If the project has a required demand greater than 1,000 gpm, then additional hydrants must be included for the project to meet the specified demand. Each project's fire flow requirements shall be specified by the Fire Chief for the Smithfield Fire Department. Available fire flows for existing fire hydrants shall be verified by a fire hydrant flow test performed by the Smithfield and/or the Smithfield Fire Department.

FIRE FLOW DEMANDS

Single-family		1,000 gpm
Apartments/Townhouses/Condominiums		2,500 gpm
Motels/Hotels/High Rise Apartments		2,500 gpm
Commercial	Light	2,500 gpm
	Heavy	3,500 gpm
Industrial	Light	3,000 gpm
	Heavy	4,500 gpm

2.13 **THRUST RESTRAINTS:** Thrust restraints shall be provided at all pipe fittings, bends, tees, and valves. Thrust restraints shall consist of retainer glands. Manufactured joint restraints may be used, where appropriate, in place of retainer glands.

Manufactured joint restraints shall be supplied by the same manufacturer as the pipe material and shall be subjected to the same submittal and compliance requirements as the approved pipe. The minimum restrained lengths shall be in accordance with the Joint Restraint Table found in the Smithfield standard details (Detail JR.1). Fire hydrant assemblies shall be restrained at least two full joints of pipe in each direction on the mainline.

2.14 **CONNECTION TO EXISTING WATER AND SANITARY SEWER SYSTEMS**:
All connections to existing water systems to include saddles, service lines, tapping sleeves and valves and direct taps, and connections to existing sanitary sewer systems to include saddles, laterals, manhole connections, force main connections, etc., shall be scheduled with the Town of Smithfield. **The connections shall be made only in the presence of the Town of Smithfield.** Connections to existing manholes shall be made by core-drilling the manhole and connecting the pipe using a KOR-N-SEAL boot, or equal. Existing manholes shall be vacuum tested upon completion of the new connection.

Fernco couplings, or similar products, shall not be permitted on Smithfield water mains, sanitary sewer mains, force mains, laterals or standpipes. Must use Shear Guard fitting, or approved by Town.

All water service connections shall be metered. Private water and sanitary sewer services and plumbing shall conform to the Uniform Statewide Building Code (latest edition.)

All connections to sanitary force mains of 4 inches and larger shall be made with a 4 inch tap and valve.

All connections to AC water mains shall be made utilizing a stainless steel wrap-around repair clamp with a tap. All connection construction methods for connecting to existing AC watermains must be approved by the Town.

All connections larger than 2" to existing DI shall be made with a cast iron tapping sleeve and valve.

The Town reserved the right to dictate water or sewer connection locations within the ROW. Connections from new force mains to existing gravity sewer will not be permitted if an existing force main is available and capable of handling the additional flow.

2.15 **MINIMUM GRADES**: Sanitary sewers shall have a uniform slope and straight alignment between manholes (unless approved otherwise by Smithfield),and be designed and constructed to achieve total containment. Minimum grades shall not be less than those required to produce a velocity of approximately two (2) feet per second when the size pipe selected is flowing full and using an "n" value of 0.013 in the Manning Equation. Minimum grades shall be as follows:

Sewer Size (inches)	Minimum Slope (Feet per 100 Feet)
8	0.40
10	0.28
12	0.22
15	0.15

18	0.12
21	0.10
24	0.08
27	0.067
30	0.058
36	0.046

2.16 **MAXIMUM VELOCITY**: Generally, the maximum permissible velocity in gravity sewers shall not exceed fifteen (15) feet per second. Where velocities greater than fifteen (15) per feet per second are expected, special provisions shall be made to protect against internal erosion by high velocity. The pipe shall conform to appropriate ASTM or AWWA specifications which provide protection against internal erosion. Drop manholes shall be provided to break steep slopes to limit the velocities in connecting sewer pipes between manholes. Where drop manholes are impractical, the sewer main shall be ductile iron or other abrasion resistant material. Sanitary sewer on 20% slope or greater shall be anchored with concrete anchors in accordance with Section 21.05.03 of the SCAT Regulations. Suggested minimum anchorage is as follows:

A. Not over 36-feet center to center on grades 20 percent and up to 30 percent.

B. Not over 24-feet center to center on grades 30 percent and up to 50 percent.

C. Not over 16-feet center to center on grades 50 percent and over.

2.17 **JUNCTIONS**: At all junctions where a smaller sewer joins a larger one, the invert of the larger sewer shall be lowered to maintain the same energy gradient. This may be accomplished by one of the following methods:

A. Positioning the 0.8 depth point of both sewers at the same elevation, or

B. Positioning the crown of both sewers at the same elevation.

2.18 **MANHOLES**: Manholes shall be designed to include the following:

A. Manholes shall be installed at the end of each line of eight (8) inch diameter or greater; at all changes in grade, size, or alignment; at all intersections; and at distances not greater than 400-feet.

B. Manholes for sewers up to 24-inches in diameter shall not be less than 48-inch inside diameter.

C. Manholes for sewers larger than 24-inches in diameter shall not be less than 60-inch inside diameter.

D. Manholes 10 feet and over in depth shall be 60-inch diameter. No sewer manholes over 13 feet in depth will be allowed in the Town.

E. Manhole top elevations shall be above the 100-year Flood Elevation or shall be sealed watertight frame and cover with approved casting or inserts. Ventilation of gravity sewer systems shall be provided where continuous watertight sections greater than 1,000-feet in length are incurred.

F. Minimum elevation difference across manhole from inlet to outlet shall be 0.1 feet.

G. Epoxy manhole coatings shall be provided where lift station force mains or low pressure lines with five (5) or more residential grinder pumps connect to a manhole. A minimum of three (3) manholes and 1200 feet downstream of these force main connections shall be coated. Plans shall clearly designate the manholes requiring coating, the coating manufacturer and minimum Type A coating as defined in the HRPDC standards. The Town reserves the right to require additional manholes for epoxy coating where deemed necessary.

H. Sanitary sewer laterals shall connect to the mainline unless otherwise directed by the Town.

I. Interior drop connections shall be constructed when the vertical difference between the invert of the outlet pipe and the invert of the inlet pipe is 15-inches or greater. Where drop connections are required, manholes shall be a minimum of 60 -inch. Inside drop system by Reliner, or equal, shall be used. Inside drop pipe shall extend to the invert and turn toward the direction of flow. Where the difference in elevation between the incoming sewer and the manhole invert is less than 15-inches, the invert shall be filleted to prevent solids deposition.

2.19 **MINIMUM SIZES:** No public sanitary sewer shall be less than 8-inches in diameter. The minimum size for a single lateral connection is 6-inches inside diameter. The Town reserves the right to specify the size of any sanitary sewer main or lateral.

2.20 **SEWER PIPE MATERIALS:** Unless otherwise specified by the Town of Smithfield, gravity sewer mains shall be PVC SDR 26 or Class 52 P401 Ductile Iron, conforming to the HRPDC Regional Construction Standards, inclusive of Town of Smithfield Special Provisions. Gravity sewers 10 feet deep at the invert of the pipe shall be ductile iron. Pipe materials cannot change materials between manholes.

Force mains shall be Class 52 P401 Ductile Iron, conforming to the HRPDC Regional Construction Standards, inclusive of Town of Smithfield Special Provisions. Force mains 2-inch and smaller shall be green Municipex pipe.

Where Class 52 Ductile Iron Pipe is used, Protecto 401 Ceramic Epoxy Lining shall be applied.

2.21 **DEPTH OF SEWERS**: All sewers shall be constructed in such a manner that a minimum of 3-feet of cover is maintained between the top of the pipe and the finished grade elevation. Where conditions dictate that the cover be less than 3-feet, ductile iron pipe will be required, and the installation shall be approved by Smithfield. For depths of sewer exceeding 10-feet, ductile iron pipe shall be used. No sewer over 13 feet in depth will be allowed.

2.22 **SURFACE WATER CROSSING**: Surface water crossings, both over and under water, present special problems and should be discussed with Smithfield and the Department of Environmental Quality prior to final plan preparation. Water and sanitary sewer mains passing over surface water shall be adequately supported, protected from damage due to

freezing, accessible for repair or replacement, and located above the 100 year flood level. Water and sanitary sewer mains passing under surface water shall be of a special type of construction utilizing flexible watertight joints. Also, for pressure pipelines, valves and sample taps shall be located at both ends of the surface water crossing for testing and repairs. The valves shall be easily accessible and not subject to flooding. Sample taps shall also be available at a reasonable distance from each side of the crossing. All surface water crossings shall be approved by the Department of Environmental Quality prior to construction.

2.23 **PIPE CROSSING SEPARATION**: Pipe separation at crossings between water, sanitary sewer, storm, gas, or other pipe systems shall be 18-inches unless approved by the Town. Where the Town allows less than 18-inches separation, the pipe crossing shall comply with HRPDC Standard Detail WS_09. Reference the HRPDC Regional Construction Standards, Section 805, for additional requirements regarding separation of water mains and sewers.

2.24 **PROXIMITY TO BEST MANAGEMENT PRACTICES (BMP'S)** : Water and sanitary sewer mains, appurtenances and easements shall not be placed within a BMP, stormwater structure, or associated embankment. BMP's or stormwater structures shall not be constructed within existing water or sanitary sewer easements.

2.25 **PLAN CLARITY**: Water and sanitary sewer force main appurtenances such as valves, fittings, air release valves, etc., shall be shown in both plan and profile views. Plan of development shall be clear and concise. It is necessary to call the appurtenances out in only one location, with stationing and offset annotated, as long as they are depicted graphically in both. Water and sanitary sewer pipe material (PVC or DIP) shall be clearly identified on the plan and/or profile. Plan and profiles shall be developed at a maximum scale of 1"=40' horizontal and 1"=4' vertical. Plan and profile horizontal scales shall be the same with the vertical profile scale a tenth of the horizontal scale.

Plan revisions and/or slip-sheeting during the site plan submittal process shall be properly described in the border revision block with date of revision. Any plan revisions made after site plan approval shall also include "clouding" the revision for clarity.

Smithfield and/or HRPDC references to the applicable standard details (i.e. Typical Water Meter Installation, W13.0) shall be provided on the plan, either individually labeled or tabularized. Standard details shall be provided on the plan. If details are modified, the engineer shall clearly identify those modifications on the detail.

2.26 **GREASE TRAPS**: Grease traps are required for all restaurants or other commercial establishments expected to discharge FOG (fats, oils, and grease) to the wastewater collection system. Grease trap design shall comply with the International Plumbing Code. Provide a tee with a 4-inch vertical standpipe and a cast iron clean- out frame and cover to be used as a sampling station for the proposed grease traps. This sampling station should be located within 5-feet from the grease trap on the effluent side.

2.27 **GRINDER PUMPS**: Grinder Pumps shall be considered on a case by case basis and will remain privately maintained. They must be illustrated on the site plan.

2.28 **GENERAL SYSTEM DESIGN CONSIDERATIONS:**

A. Buried ductile iron pipe and fittings shall have mechanical or push-on joints. Above ground ductile iron pipe and fittings shall have flange joints or restrained joint mechanical joints as appropriate and approved by the Town. For flange piping, use of multi-gaskets and spacers are prohibited.

B. Water mains 2-inch and smaller shall be Municipex pipe.

C. Valves shall be installed on all temporary dead-end pressure pipelines, on small branching mains as close as possible to the larger main, and on loop networks. Valves shall also be placed on water mains so that a break or failure will not affect more than 800-linear feet of main. Valves shall be located at the tee for all intersecting water mains and sanitary sewer force mains. Provide at intersecting mains one valve per the number of connecting waterlines (i.e. provide four (4) valves for an intersecting cross fitting).

D. Air release valve assemblies shall be constructed at all high points along pressure pipelines. Where practical, high points shall be eliminated by slight adjustments to the pressure pipeline profile. Locations of air release valves shall be shown on the construction plan and profile drawings.

E. Locations for the fire hydrants shall be shown on the construction plan and profile drawings.

F. Fire Hydrant Locations: Fire hydrants shall be installed in the public right-of-way or in a Town easement. Fire hydrants shall be located in non-traffic areas (i.e., in an island or behind a curb). Fire hydrants shall be installed at an intersection whenever possible. Fire hydrants installed at an intersection shall be located at the curb's point of curvature. All other fire hydrants shall be located in-line with a property line perpendicular to the right-of-way line, whenever possible. In townhouses, condominiums, apartments, commercial and industrial areas, fire hydrants shall be located in a raised island (grass or concrete) when not at an intersection. Each fire hydrant location shall be approved by the Smithfield Volunteer Fire Department. In addition, fire hydrants shall be located on the following:

1. On highways divided by a median strip, hydrants shall be located on each side of the right-of-way as per the fire hydrant spacing requirements.

2. The Town, in consultation with the Fire Chief, may require that additional fire hydrants be provided on the site at specified locations in order to ensure adequate fire suppression capabilities and to allow the system to be flushed periodically of accumulated sediments.

3. For developments that are served by independent water production facilities, the water source and facilities shall be constructed to provide adequate fire protection.

G. Fire Hydrant Spacing Requirements: Fire hydrant spacing is specified by the Smithfield Fire Department. The hydrant spacing ranges from 400-feet for commercial/industrial areas to 600-feet for single-family residential areas.

H. All fire hydrants and valves shall be open left only.

I. Sanitary sewer cleanouts shall placed at the edge of ROW or with a utility easement dedicated to the Town of Smithfield if none are present by the contractor, builder or homeowner. Sanitary sewer laterals and cleanouts shall maintain a minimum 18-inch horizontal edge-to-edge clearance from driveways and/or drive paths, sidewalks or bike paths, unless approved otherwise by the Town. At no point shall laterals run under driveways within the right-of-way. Smithfield reserves the right to require SS_12 cleanouts be provided at its direction. No cleanout shall have an invert elevation greater than 4.5 feet below grade.

J. New water mains shall be located in the roadway, at least one foot inside the edge of pavement.

K. Sewer Laterals and water service lines shall be installed at least 10-feet apart.

L. Water and sewer mains shall be installed at least 10-feet apart.

M. On water mains 16-inch diameter or greater, butterfly valves may be used in place of gate valves if cover restrictions exist, unless otherwise directed by the Town. Butterfly valves shall be manufactured by M&H Valve Company.

N. The Town must approve tie in points for all utilities prior to plan approval.

2.29 **WATER METER**: Water meters shall be Neptune and shall register in gallons. The Town shall purchase and install meters 1" and smaller. The Contractor shall purchase and install meters larger than 1" under the supervision of the Town. Meter type/model shall be approved by the Town prior to the Contractor purchasing the water meter.

Parameters for designing/installing water meters and service connections shall involve the following:

1. Water meter box and water service line installation shall maintain a minimum 18-inch horizontal edge-to-edge clearance from driveways and/or drive paths, sidewalks or bike paths, unless approved otherwise by the Town. At no point shall water service lines run under driveways, sidewalks, or bike paths within the right-of-way.

2. Water meters shall be placed at the edge of ROW or with a utility easement dedicated to the Town of Smithfield.

3. Water meter relocations shall require a new tap when modifications to the property require relocation of the existing service which shall be at the owner's expense.

4. Water service lines shall be perpendicular to the main.

2.29a **Fire Line Meter:** Fire lines shall have an appropriate size fire meter. An RPZ or RPDA is required.

2.30 **DETECTOR CHECK VALVE**: A detector check valve with a backflow prevention device located downstream is required at the following locations:

A. Master meters for entire water systems (Neptune Protectus III). Master meters are only permissible when looping the system and individual meters are not possible.

B. Fire services or automatic sprinkler services.

C. Locations of backflow prevention devices shall be approved and inspected by the Town.

The detector meter shall be 5/8-inch x 3/4-inch.

2.31 **BACKFLOW PREVENTION DEVICES**: Backflow prevention devices shall be installed as required by the Town of Smithfield's Cross Connection and Backflow Prevention Program. The installer's responsibility is to make proper installation of approved backflow prevention devices, in accordance with the manufacturer's installation instructions, the Uniform Statewide Building Code, and any additional instructions offered by the Town. Approved backflow prevention devices and assemblies are those that meet AWWA standards, and are approved by ASSE and the USC-FCCC (University of Southern California Foundation for Cross Connection Control and Hydraulic Research). Flow orientation, access, and installation of backflow preventers shall be provided in accordance with USC-FCCC guidelines and as specified by the installation instructions of the approved manufacturer. NOTE: USC approval is specific to orientation, horizontal or vertical, device model number and size. Approvals are continuously verified and can be rescinded. Thermal expansion and/or water hammer downstream of the assembly can cause excessive pressure. To avoid possible damage to the system and assembly, the installer will use water hammer arresters, surge protectors, relief valves and expansion tanks as appropriate. Only testable devices that meet or exceed current and future hazards to the Town's distribution system shall be approved and accepted by the Town's Backflow Prevention Manager. Approved method or type of construction shall be included. Backflow prevention assemblies must not be installed in locations subject to flooding such as underground vaults. Protection of backflow preventers shall meet current code requirements and outdoor enclosures for backflow preventers shall comply with ASSE 1060. Refer to the Town of Smithfield's Cross Connection and Backflow Prevention Program Weblink at https://www.smithfieldva.gov/departments/public-works-&-utilities/cross-connection-and-backflow-prevention-program#:~:text=This%20program%20is%20established%20by,of%20the%20Commonwealth%20of%20Virginia. for further information.

2.32 **CONTROL VALVES (2 inches in Diameter and Larger)**: Control valves (2" and larger) shall be hydraulically operated, pilot-controlled diaphragm-type globe valve. All control valves shall be constructed in an above ground structure meeting the requirements of it. The main valve shall have a single removable seat and a resilient disc. The stem shall be guided at both ends by a bearing in the valve core and an integral bearing in the valve seat. No external packing glands are permitted and there shall be no pistons operating the main valve or any pilot controls. The pilot control shall be a direct-acting, adjustable, spring loaded, normal open, diaphragm valve, designed to permit flow when controlled pressure is less than spring setting. The control valve shall be class 125 bronze fittings manufactured in accordance with ANSI B16.1, ASTM A48, B61, and B62, adjustable from 30 to 300 psi. Valves shall have

an internal and external epoxy coating in accordance with AWWA C550-latest revision. Valves shall be furnished with a Delrin stem in both normally open and normally closed configurations. Valves shall also include position indicator devices. Control valve functions include one or more of the following:

A. **Check Valve**: Check valves shall be no-slam operation, drip tight shut off and shall have adjustable dual speed controls.

B. **Pressure Reducing**: Pressure reducing valves shall provide sensitive and accurate pressure control, shall provide easy adjustment and maintenance, shall be tamper resistant, and shall include a fully supported frictionless diaphragm. This valve shall be Cla-Val or approved equal and have remote control and SCADA (Supervisory Control and Data Acquisition) features as required by the Town.

C. **Combination Pressure Reducing and Pressure Sustaining Valves**: Combination pressure reducing and pressure sustaining valves shall have accurate response to slight pressure changes, a check feature, shall be completely automatic operation, drip tight, positive seating; and, shall have fully hydraulic operation

D. **Solenoid Actuated Valve**: Solenoid actuated valve shall have quick acting solenoid actuation, and shall provide for ease for installation and maintenance.

E. **Rate of Flow Control Valves**: Rate of flow control valves shall accurately limit flow rate, shall have automatic operation, shall include orifice plate and holder, and shall have a check valve feature and allow for ease of adjustment.

F. **Altitude Valve**: Altitude valves shall include accurate repeatable level control, drip tight positive shut-off, reliable hydraulic operation, easy adjustable controls, complete automatic operation, and shall be either double acting or single flow as required by the Town. This valve shall be Cla-Val or approved equal and have remote control and SCADA (Supervisory Control and Data Acquisition) features as required by the Town.

2.33 **SUBSURFACE UTILITY LOCATING:** Test holes shall be performed and information incorporated in the design for all existing pipe crossings where conflicts with proposed utilities may occur. This shall include physically locating all proposed connections to existing Town of Smithfield water and sanitary force main systems. As part of the site plan process, the developer/engineer shall provide test hole data sheets to the Town which substantiate the horizontal and vertical location of each crossing/connection.

2.34 **MASTER UTILITY PLAN DEVELOPMENT:** Where required by the Town of Smithfield, Master Utility Plans with associated hydraulic modeling and calculations shall be submitted prior to site plan submittal. Generally, Master Utility Plans shall be submitted for large scale developments, projects being developed in phases, and developments requiring multiple water and or sewer pump station facilities. Town of Smithfield general guidelines for development of Master Utility Plans are included in Appendix E.

THIS PAGE INTENTIONALLY LEFT BLANK

SECTION 3. SITE WORK, DRAINAGE, STREETS:

3.1 **GENERAL:** Design shall be by a professional engineer licensed in accordance with the requirements of the Code of Virginia. The Town prior to commencement of construction shall approve all plans, plats and specifications in writing.

The Contractor shall be responsible for traffic control during the course of the work and shall provide certified flagmen, signs, etc., as necessary to meet requirements of VDOT and/or the Town of Smithfield. At least one (1) lane of traffic shall be maintained on existing residential streets at all times.

Tree trunks, branches, and exposed roots damaged during equipment operation or construction shall be pruned as directed by a certified arborist or the Town of Smithfield.

The Contractor shall construct and maintain all necessary erosion and sediment control devices sufficient to prevent soil from being eroded from the site into any adjacent system, ditch or watercourses. Any material that is eroded shall be promptly removed. The Contractor shall comply with the current requirements of the "Virginia Erosion and Sediment Control Handbook".

All excavated materials shall be stockpiled so as not to interfere with existing drainage. Stockpiles shall comply with Virginia Erosion and Sediment Control regulations.

The Contractor shall be responsible for removing and replacing with matching materials any pavement, driveways, walks, curbs, etc., that must be cut or that are damaged during construction. Cuts in pavements shall be straight-line saw cut. Cuts in curbs and walks shall be saw cut at an existing joint. Repair as per Section 3.3.7 of these standards

Plans, profiles and specifications shall include provisions for excavation and backfill, dewatering, sheeting and bracing, maintenance of traffic and protection of the public, protection of existing utilities and structures, trench widths and preparation, materials, material testing, details of pipe laying and construction of pipe lines and appurtenances and other items as may be applicable to the project and all in accordance with good engineering practice. Plans (Scale 1"=25’ or larger) shall include profiles, details and topographic information such as existing and proposed zoning, lot numbers, street pavement, sidewalks, driveways, curb and gutter, storm drains, utilities, trees, shrubbery, property lines, street names and house numbers (where available) and appropriate elevations. Plans shall also include a vicinity map, map and deed book references for adjacent property and existing easements, and typical sections of streets, roads and ditches. Plans shall not be larger than 24”x36”. Plans shall include typical sections for streets and ditches.

Datum shall be Town of Smithfield, Virginia 2003 Geodetic Control Network, Horizontal NAD 83 (1996), and Vertical NAVD 88. Plans shall show referenced benchmark and a minimum of two (2) benchmarks established for the project. The developer shall establish permanent benchmarks in subdivisions. The number and locations are to be determined by the Town of Smithfield’s representative and developer. The benchmark elevation is to be certified by a licensed land surveyor or a professional engineer.

3.2 **DRAINAGE DESIGN:** Drainage shall be designed in general by the criteria established in the current VDOT Drainage Manual. Design and construction shall also meet the applicable requirements of the Town of Smithfield "Chesapeake Bay Preservation Area Ordinance"; and stormwater management and erosion and sediment control requirements of the Commonwealth of Virginia Soil and Water Conservation Board. Refer to the current "Virginia Erosion and Sediment Control Handbook" and "Virginia Stormwater Management Handbook". No submerged drainage systems are to be allowed in the Town of Smithfield.

Drainage shall be designed by the criteria established in the Virginia Department of Transportation Drainage Manual and in coordination with the following guidelines:

(1) Peak runoff shall be computed by the rational method with the intensity taken from the intensity-duration curve for Norfolk, Virginia.

(2) Where the drainage basin exceeds 200 acres or when a retention design is involved, hydrographic or other approved methods are to be used for design purposes.

(3) Runoff coefficients shall be based on a weighted coefficient for the composite area.

(4) Inlet capacities and pavement spread calculations shall be designed in accordance with the current VDOT Drainage Manual. These capacities shall be designed for a storm having a minimum 10-year recurrence frequency. Inlets shall be spaced to eliminate pavement spreads in excess of ten feet (10') on the typical street section calculated on a 10-year recurrence frequency.

(5) Pipe Capacities:

(a) Hydraulic grade line calculations are required which take into account structure and bend losses, etc. Pipe joints must be designed to withstand pressures proposed. System must be designed to prevent flooding during the design event.

(b) Hydraulic grade line calculations must reflect the same design event in the downstream or receiving facility.

(6) Off-site drainage improvements will be required to prevent the proposed development from having any significant detrimental effect on the downstream facilities or natural channels.

(7) Minimum slope for storm drain pipes is 0.5%

(8) Minimum size for RCP is 15" unless approved by the town.

(9) Drainage Easements:

All storm drainage systems collecting runoff from a public right-of-way must have a drainage easement dedicated to the Town of Smithfield to the point of outfall from the proposed site. Any storm drainage system that collects runoff from a private property encroaching on other private property must also have a drainage easement granting drainage rights to the third party. Easements required by and conveyed to the Town shall be used solely for drainage and utilities that are maintained by the Town.

Drainage easements for storm drain pipes shall be centered over the storm pipes. The width of the drainage easement shall be determined by the following unless otherwise approved by the Town:

$$W = 2d + D + 2 \text{ feet}$$

Where :
- W = easement width (in feet)
- d = depth of pipe (invert to final grade, in feet)
- D Diameter of pipe (in feet)

All easement widths should be rounded to the nearest 5 feet and have a minimum width of 10 feet.

All open channel drainage design systems (ditches and channels) shall have a drainage /access easement which will vary with the wideth of the top of bank. Open channel drainage systems with the top of bank width of:

- 5 feet or less should have an easement width of 25 feet, with a 15-foot access easement on one side.
- 15 feet or less should have a minimum easement of 20 feet larger than the top of the width of the open channel, with a 15-foot access easement on one side.
- Greater than 15 feet should have a minimum easement of 30 feet greater than the width of the open channel, including a 20-foot access easement on one side.

All subdivision and commercial site plans must meet this requirement for approval from the Town of Smithfield.

No building or permanent structures shall be constructed within a Town Drainage Easement. No trees, shrubs, structures, irrigation mains, invisible pet fences or other obstacles shall be placed within an easement which would render the easement inaccessible by equipment. Shrubs shall be a minimum of 5 feet, and trees a minimum of 10 feet, from the center of storm sewer pipelines. The Town of Smithfield will not be responsible for replacement of trees and shrubs placed within the easement.

Drainage easements are exclusive, and shall be designated on the plans and Plat as “Drainage Easement dedicated to the Town of Smithfield,” with the width specified, unless otherwise authorized by the Town.

The following note shall be added to all plats containing Town of Smithfield Drainage Easements:

"Easements denoted as "Drainage Easement dedicated to the Town of Smithfield" are for the exclusive use of the Town of Smithfield and the property owner. All utilities must maintain a 5-foot separation from Town owned utilities. Additionally, the Town of Smithfield shall not be held responsible for any damage to improvements within this easement, from any cause."

3.3 **DRAINAGE MATERIALS AND STANDARDS**: Materials and standards shall be in accordance with the current Virginia Department of Transportation (VDOT) "Road and Bridge Specifications" and "Road and Bridge Standards", unless otherwise stated.

(1) Temporary drainage during construction shall be provided by the Contractor to relieve areas that may cause damage to roadways, etc. or as directed by the Town of Smithfield.

(2) Concrete shall be Class "A3" Air Entrained (3,000-psi. minimum) for general concrete and Class "A4" Air Entrained (4,000 psi minimum for pre-cast units).

(3) All storm sewer pipes in Town of Smithfield Right-of-Way shall be reinforced concrete tongue and groove, Class III minimum. Corrugated metal pipe and plastic pipe will not be permitted. Any concrete pipe that has an end section that is broken, chipped, or has been saw cut during installation will be required to be epoxy grouted as per approval of the Town and / or their representative.

(4) Pre-cast structures are acceptable. These drainage structures shall meet all current VDOT Standards and Specifications. Drop Inlet T-DI-1 shall be furnished with square "Alternate Top" where wheel loading is not a factor.

(5) Riprap shall be provided at endwalls and flared end sections or as otherwise specified by the Town of Smithfield.

(6) All new and, where required, existing downstream, storm sewer pipes and structures shall be cleaned of debris and eroded material upon completion of construction.

(7) No open cut of a public roadway shall be allowed except with written permission from the Town of Smithfield, accompanied with all necessary sureties. This repair shall be equal to or `greater than VDOT LUP-OC.

(8) Relocation of any utilities shall be at the Contractor's expense and completed with site work.

(9) Before digging the Contractor shall contact VA811 (formerly MISS UTILITY of Tidewater) for location of existing utilities. Prior to construction or excavation, the Contractor shall assume the responsibility of locating any underground utilities (public or private) that may exist and cross through the area of construction. Utility companies shall be notified 72 hours in advance of any excavation in the proximity of their utilities. The Contractor shall be responsible for repairing, at his expense, any existing utilities damaged during construction. The above referenced statement shall be noted on all construction plans. At their expense, the contractor shall be responsible for repairing any existing utilities or infrastructure within the right of way of the Town of Smithfield during construction. This repair shall meet the approval of the Town.

3.4 **PAVEMENT DESIGN CRITERIA**: Pavement design shall be performed by a Professional Engineer/Land Surveyor licensed to perform this type of work. Soil sampling shall be performed as per the current VDOT Pavement Design Guide. Samples should be taken a minimum of 10' below the finish grade of the proposed street. The Engineer shall submit to the Town for review test logs, pavement design and bore location map. The following information shall be submitted to the Town of Smithfield with the pavement design:

(1) **Soil Analysis** - Ten-foot (10') deep boring logs of sufficient quantity to determine the soil profile, related to elevations. The borings shall reflect ground water elevations; description of materials and blow counts on the samplers. Borings shall indicate normal water table elevation, and projected seasonable high water table elevation. Maximum spacing of test shall be 500 foot (250' radius of coverage per test) and as per the current VDOT Pavement Design Guide. No less than 2 tests are to beprovided. All soil tests are to be performed by a certified Testing Laboratory licensed to perform this type of work. Soil Analysis of subgrade material shall include:

(a) Gradation (Sieve and Hydrometer Analysis)
(b) Atterberg Limits.
(c) Moisture density relationships and curves.
(d) Maximum dry weight.
(e) Optimum moisture content.
(f) Specific gravity.
(g) Swell.
(h) California Bearing Ratio in accordance with Virginia Test Method (VTM-8), with soaked and unsoaked test results required. Samples

shall be taken at the proposed street subgrade elevation.

(2) **Traffic Volumes** - On proposed new streets the following minimum 24-hour trip generation information shall be used or the I.T.E. Trip Generation Table from the latest edition of the "I.T.E. Trip Generation Manual", whichever is greater:

Development	Trip Generation Rate	%Heavy Trucks
Single Family Residential	10/ dwelling unit	5
Townhouse Residential	6/ dwelling unit	5
Apartment Residential	6/ dwelling unit	5
Elementary and Intermediate Schools	0.8/ student	5
High School	1.4/ student	5
Industrial	52/ AC	12
Shopping Centers	600/ AC	5

Where proposed streets intersect the boundary of the subdivision providing access to adjoining undeveloped property, the design traffic shall be based on the number of acres and the total number of units expected to contribute traffic to the street.

3.5 **PAVEMENT DESIGN**: The pavement shall be designed per the current "VDOT Pavement Design Guide for Subdivision and Secondary Roads in Virginia".

3.6 **PAVEMENT MATERIALS AND STANDARDS**: Materials and standards shall be in accordance with the current edition of the VDOT Road and Bridge Specifications and Standards.

3.7 **PAVED PRIVATE ENTRANCE**:

(1) Applicants to whom permits are issued shall at all times indemnify and save harmless the Town of Smithfield, Virginia from responsibility for, damage to, or liability arising from the exercise of the privileges granted in such permit either during construction or at any time in the future.

(2) A permit may be denied any applicant, and all permits issued by the Town of Smithfield may be revoked, whenever in the opinion of the Town Manager, the safety, or use of maintenance of the highway, so requires.

(3) The permittee agrees that if the work authorized by this permit, including any work necessary to restore shoulders, ditches and drainage structures to their original condition, is not completed by the applicant to the satisfaction of the Town, the Town of Smithfield will do whatever is necessary to restore the area within the right of way to its original condition, and the permittee will pay to the Town the actual cost of completing the work.

(4) The absence of a Town representative does not in any way relieve the permittee of responsibility to perform the work in accordance with the provisions of this permit.

(5) No trees are to be cut or trimmed within the right of way.

(6) The entrance is to be constructed so as not to impair drainage within the right of way, with any and all drainpipe being supplied by the permittee.

(7) All precautions will be taken for the protection of traffic, such as flagmen, signs, barricades, lights, etc. as necessary.

(8) **Note:** The paved area (the area between the edge of the pavement/back of curb and the right of way line) shall consist of one of the following treatments in accordance with the current Virginia Department of Transportation specifications and/or approval by the Towns' Engineer:

a. Asphalt Entrance: The base course shall be crushed stone, Type I, No. 21A, 21B or 22, minimum 8" in depth compacted to 95% density at optimum moisture. The surface course shall consist of a prime with RC-250 at the rate of 0.3 gal. per sq. yd. and an application of bituminous concrete Type SM-12.5A at a rate of 220 lbs./sq. yd. geometrical design of the entrance, if piped, should meet the requirements of the Town Design Standards. If it is a curb and gutter roadway section, minimum 2 – foot flares should be installed at the curb line. The minimum width for a driveway is 12 feet measured at the edge of right of way.

b. Concrete Entrance: The paved area shall consist of Class A3 concrete 7" thick (minimum), current Virginia Department of Transportation Road and Bridge standards, Sections 201 and 203. Geometrical design of the entrance, if piped, should meet the requirements of the Town Design standards. Allowance will be given on 20 – foot radial section with minimum 3 – foot flares. If it is a curb and gutter roadway section; minimum 2 – foot flares should be installed at the curb line. If an entrance is being installed in an existing curb line; the existing curb should removed and replaced to the nearest joint if the wipedown for driveway is within 5 feet of the closest joint. The minimum width for a driveway is 12 feet measured at the edge of right of way.

3.8 STREET LIGHT POLICY

(1) The Town of Smithfield requires all new residential developments to install street lights. The following guidance is provided for spacing and/or location of street lights in new or existing areas. All new street light approvals are at the discretion of Town staff, cannot exceed the yearly budgeted amount allocated for new street lights and installation, and must meet the design requirements set forth by the Town of Smithfield and the appropriate Utility.

(a) **DOWNTOWN DISTRICT:** Where businesses are closely located together, street lights shall be no less than every other utility pole or approximately 200 feet apart.

(b) **RESIDENTIAL (Neighborhood Residential and Suburban Residential) NEW DEVELOPMENT:** Street lights in newly developed residential neighborhoods should be no more than 400 feet apart.

(c) **RESIDENTIAL (Neighborhood Residential and Suburban Residential) ESTABLISHED DEVELOPMENT**: Street lights in already established residential neighborhoods may be installed in front of residences at the owner's request, provided they are not closer than 200 feet from an established street light, and provided they provide a petition showing the support from a majority of neighbors located 400 feet in each direction, or to the next closest street light in each direction, on each side of the street, whichever distance is less, from the proposed Street light. Minimum street lights will be provided by the Town, where utility poles are available, at intersections and cul-de-sacs.

(d) **CONCENTRATED RESIDENTIAL (Attached Residential and Multi-Family Residential) NEW DEVELOPMENT:** Street lights in newly developed residential neighborhoods should be no more than 200 feet apart.

(e) **CONCENTRATED RESIDENTIAL (Attached Residential and Multi-Family Residential) ESTABLISHED DEVELOPMENT:** Street lights in already established residential neighborhoods may be installed in front of residences at the owner's request, provided they are not closer than 200 feet from an established street light, and provided they provide a petition showing the support from a majority of neighbors located 200 feet in each direction, or to the next closest street light in each direction, on each side of the street, whichever is distance is less, from the proposed Street light. Minimum street lights will be provided by the Town, where utility poles are available, at intersections and cul-de-sacs.

(f) **RURAL RESIDENTIAL:** Street lights where residential units are widely separated may be installed in front of residences at the owner's request, provided they are not closer than 500 feet from an established street light. Minimum street lights will be provided by the Town, where utility poles are available, at intersections and cul-de-sacs.

(2) **UPGRADING OF STREET LIGHTS IN DEVELOPED SUBDIVISIONS WITHOUT UTILITY POLES:** In subdivisions where utilities are buried and no utility poles are available, the Town will contribute capital in an amount equivalent to the cost of installing utility poles and lights. It shall be the developer or owner's responsibility to pay the difference for ornamental or decorative lighting.

(3) **REQUIREMENT FOR PUBLIC STREETS:** Street lights paid for with public funds may only be installed on streets or right of ways accepted into the Virginia Department of Transportation (VDOT) system. The Town of Smithfield will not pay for the installation or operation of street lights on private streets, roads, or driveways.

3.9 SUBDIVISION STREET LIGHT REQUIREMENTS

(1) Entrance: When built as part of a subdivision where underground utilities are present, all entry way street lights must be built to the following specifications:

- Must be between 10' and 14' in height
- Must be at least 8,000 Lumens
- Must be mounted on a sturdy decorative pole
- Must be no further than 100 feet apart.
- Must be installed on both sides of the entrance and along the front of the property

a. The required lights are the 8,000 Lumen traditional colonial lights on the approved list provided by Dominion Energy and/ or Community Electric. The required lights can be found on Dominion Energy's website at https://www.dominionenergy.com/virginia/products/lighting-fixtures and Community Electric's website at https://www.comelec.coop/area-lighting.

b. The entrance will be defined as the section of road at the beginning of the subdivision to the first cross-street. All subdivisions are encouraged to install LED streetlights where feasible in lieu of traditional street lights.

(2) Inside Subdivision: When built as part of a subdivision where underground utilities are present, all interior street lights must be built to the following specifications:

- Must be in substantial conformance with entry way streetlights
- Must be no less than 14’ in height
- Must be at least 8,000 Lumens

THIS PAGE INTENTIONALLY LEFT BLANK

SECTION 4. PROJECT CLOSE-OUT:

4.1 FINAL COMPLETION REQUIREMENTS:

A. Record Drawings for Town of Smithfield CIP Projects and Development Projects: Record drawings are required at the completion of all water, sanitary sewer, and storm sewer system projects constructed for, or dedicated to, the Town of Smithfield and shall include the following:

Prior to acceptance of the water, sanitary sewer, and storm sewer system improvements by the Town of Smithfield, five (5) complete paper copies of preliminary record drawings for the project shall be submitted to the Town for review and approval. An electronic copy in AutoCAD compatible format and PDF shall also be provided. The record drawings shall show the location of all easements, above ground appurtenances, service connections, water, sanitary sewer, and storm sewer system components (including type, material, and material class of pipe), appurtenances, and all other data necessary to operate, maintain, and locate the water, sanitary sewer, and storm sewer system improvements. All **fire hydrants, water main valves, tees, bends, blow-off valves, air release valves, water meter boxes and service lines, manholes, cleanouts and laterals, storm structures, force main valves, bends and fittings, air release valves, offsets, abandoned facilities and repairs** shall have dimensions on the drawings to a minimum of two (2) permanent structures, such as property pins, edge of pavement, etc. Record drawings shall include elevations for all sanitary sewer and storm manhole rims, inverts, and cleanouts. All record drawings shall be stamped by a Engineer or Surveyor with a current license in the Commonwealth of Virginia. Vertical and horizontal survey datum control for record drawings shall comply with Section 1.3 of these Design Standards.

Water mains along roadways shall be dimensioned from the edge of pavement to the main every 50-feet. The Town of Smithfield reserves the right to require additional dimensioning on the record drawings for areas of long distances between fittings.

B. Development Projects:

1. Final Inspection Requirements:
   a. No final inspection will be scheduled until all property pins are installed, flagged, and staked, installation of all other utilities serving the development (to include Virginia Power, Telephone, Gas, Cable, and others) is complete, and record drawings are submitted. Record drawings shall be submitted in accordance with Section 4.1.A and delivered fifteen (15) days prior to scheduling the final inspection.

   b. A letter shall be provided by the Developer/Owner confirming that all utilities (i.e. electric, gas, cable, telephone and others) have been installed. The letter shall include the cost associated with the installation

of the water, sanitary sewer, and storm sewer system, both on-site and off-site.

c. A copy of the recorded plat and/or related documentation shall be submitted to the Town of Smithfield.

d. The Developer/Owner will provide a signed letter by the Engineer or Surveyor of record stating that the construction work was completed according to the approved plans and specifications. This statement will be based upon inspections of the construction, during and after construction.

e. Contractor shall provide personnel responsible for exercising all valves in the presence of the Town during the final inspection walkthrough.

C. Post-Installation TV inspection:

Post-Installation TV inspection for all gravity sewer and storm sewer installations or rehabilitations shall be submitted to the Town prior to acceptance of sewer system improvements. Lines shall be cleaned prior to inspection.

For gravity sewer, prior to inserting the television camera into the pipeline, the Contractor shall flush and clean the mainline and the laterals. The Contractor shall introduce a minimum of 15 gallons of clear, potable water to each lateral and 1,000 gallons of clear, potable water into the terminal upstream manhole or last access structure on any given gravity sewer branch of the pipeline to be inspected with a television camera. The Contractor shall run the camera within 8 hours after the water has been introduced to the main and laterals. The Contractor is responsible for acquiring, collecting and disposing of the water, at no additional cost to the Owner. TV inspection shall include all joints and manhole inverts. No TV Inspection during cleaning of the lines shall be accepted.

D. Construction Data Tolerances:

HRPDC Regional Construction Standards indicate requirements for the various components of the Construction Record Drawings contained herein. See HRPDC Region Construction Standards for full details. In the event of conflict the most restrictive standards shall govern.

CRDs with construction deficiencies that exceed established tolerances are subject to rejection. Such deficiencies in construction and proposed corrective action should be identified by the developer's representative to expedite CRD approval

4.2 **WARRANTY (DEVELOPMENT PROJECTS)**: The Developer/Contractor will be responsible for, and obligated to, correct all deficiencies in construction and installation of the project for two years from the date of acceptance of the facilities by the Town of Smithfield. This will include repairs to any valves, meters, meter boxes, yokes, piping, manholes, manhole frames and covers, cleanouts, cleanout boxes, storm sewer structures, etc., damaged by subcontractors, builders or others, or to correct defects in installation or materials.

In addition to the above stated two (2) year warranty, the developer or contractor shall for all equipment installed for which the manufacturer thereof has a standard guarantee in excess of the one (1) year, transfer to the Town of Smithfield all necessary warranties to properly guarantee such equipment by the manufacturer for the standard term of the manufacturer's guarantee.

4.3 **DEDICATION (DEVELOPMENT PROJECTS)**: Following verification of the record drawings and completion of the punch list, the developer/owner will formally dedicate the water distribution, sanitary sewer, and storm sewer system, easements, and/or property to the Town of Smithfield. Such dedication will be acknowledged in writing by the Town. Dedication does not mean acceptance of the utilities. The Town of Smithfield will not accept any utility until final completion requirements of Section 4.1 have been met.

Through the Engineer or Surveyor of record for the project submit: Five (5) paper copies and one (1) electronic copy of the recorded plat and accompanying deeds of easements; Five (5) paper copies and one (1) electronic copy of the record drawings. Provide record drawing information in electronic AutoCAD compatible format and PDF. Coordinates in the AutoCAD compatible file shall be Virginia coordinate system in accordance with Section 1.3.

4.4 **WATER METER INSTALLATION**: Before installation of water meters, all water, sanitary sewer, and storm sewer utilities must be fully accepted by the Town. This will require installation of all other utilities (i.e. natural gas, electricity, telephone, TV cable, etc), completion of all deficiencies identified by the Town in pre-final punch list, and submittal and approval of record drawings for the water and sanitary sewer desired for acceptance by the Town. The Town of Smithfield will not accept any utility until final completion requirements of Section 4.1 have been met.

THIS PAGE INTENTIONALLY LEFT BLANK

SECTION 5. WATER FACILITIES AND PUMPING STATIONS:

5.1 WELLS, STORAGE TANKS AND WATER PRODUCTION FACILITIES:

A. General:

1. Wells, storage tanks, water production and pumping stations shall meet or exceed all applicable requirements of the Commonwealth of Virginia Department of Health, the American Water Works Association, and the National Fire Protection Association; and shall be submitted to the Town of Smithfield for review and approval.

2. All water production facilities shall be dedicated to the Town.

B. Design:

1. Water production shall be equipped with an approved alarm system, standby power supply and disinfection facilities.

2. The size of storage and production facilities shall be based on the needs of the development and as approved by the Town

3. Water storage facilities shall consist of disinfection, peak demand and fire flow storage unless otherwise approved by the Town.

4. Water production facilities shall be equipped with a SCADA system that is compatible and tied into the Town's SCADA system. Remote alarm terminal will be furnished by the Town but paid for and installed by the Contractor. Contractor shall provide duplex outlet for service to alarm transmitter. Connections to alarm transmitter shall be by 18-gauge stranded telemetry wire. The Town's programmer will take it from the termination in the panel vox to the RTU and do start-up, but the work shall be paid for by the developer. If exterior control box is provided it shall be NEMA 4X and have sufficient space for the alarm transmitter

5. Modification to the existing RO Plant PLC and Servers shall be performed by the Town's Programmer but paid for and installed by the Contractor.

6. Water production facilities shall be equipped with Rosemount magnetic flow meters that can detect reverse flow. Flow meters shall be tied into the SCADA system.

C. Arc Flash:

1. Contractor shall perform a Short Circuit/Equipment Evaluation, Time Current Coordination Study, and Arc Flash Analysis Study. The limits of the Study shall begin at the Utility Primary Source of Connection and end at (including but not limited to) all Three Phase Panel boards, Switchboards, Fused Switches, Motor Starters and

Serviceable Enclosures/Equipment containing exposed live parts. Standby Power Generators and associated Equipment shall also be included in this Study.

2. The study shall be performed in accordance with NFPA 70 and 70E.

3. The Study shall be performed with the aid of a digital computer program designed for such purposes and shall be accomplished in accordance with the latest applicable references and standards.
4. Contractor shall submit (3) copies of the complete Short Circuit / Equipment Evaluation, Time Current Coordination Study, and Arc Flash Analysis Study report.

5. Contractor shall furnish and install arc flash warning labels on all new and existing electrical equipment per NFPA 70 and 70E. The arc flash warning labels shall be marked and contain the following:

   a. Nominal system voltage
   b. Arc Flash boundaries
   c. Available incident energy and the corresponding working distance or arc flash PPE category
   d. Minimum arc rating of clothing

5.2 **WASTEWATER PUMPING STATIONS**:

A. General:

1. Pumping Stations shall meet all applicable requirements of the Department of Environmental Quality (DEQ), and shall be submitted to the Town of Smithfield for review and approval. Pumping Stations shall be designed in accordance with the DEQ SCAT Regulations, and the Town of Smithfield Design Standards. The size of the pumping station shall be based on the needs of the development and the Town.

B. Plans:

1. Plans and specifications shall include provisions for excavation, foundation, and backfill, dewatering, sheeting and bracing, protection of the public, materials, material testing, details of construction of pump station and appurtenances and other items as may be applicable to the project, all in accordance with good engineering practice. Plans shall include elevations showing site appearance of the station, sections, details, electrical details and a site plan showing existing topographic information such as pavement, storm drains, utilities, trees, shrubbery, property lines, and appropriate elevations as well as new construction including layout dimensions and final elevations. Details provided by Town of Smithfield and HRPDC must be referenced where applicable.

2. The plans shall be clear and legible. They shall be drawn to a scale that will

permit all necessary information to be clearly shown. Plans shall not be larger than 24 inches x 36 inches. Datum shall be Town of Smithfield, Virginia 2003 Geodetic Control Network, Horizontal NAD 83 (1996), Vertical NAVD 88, and a referenced benchmark and project benchmark shall be shown.

3. Dimensions and relative elevation of structures, finished floor elevations, the location and size of piping, surface water levels, 100-year flood level, and ground elevations shall be shown.

4. Plans submitted for approval shall be accompanied by technical specifications, hydraulic calculations, pump curves, and pump cycle calculations.

C. Design:

1. Pump station will have two pumps setup as lead / lag. Each pump shall be capable of handling peak flows at required force main pressures. All stations shall be provided with an equivalent spare pump for Town use. Pumps shall be capable of passing 3-inch diameter solids. Pumps rated 20HP to 39HP shall have a minimum rating of 230 volts. Pumps rated 40HP and above shall have a minimum rating of 460 volts

2. Pump stations designed for greater than 250 gpm shall be wet well/dry well type with Fairbanks Morse pumps or approved equal unless otherwise specified by the Public Works Department. Pumps shall turn to clockwise. Pump stations up to 250 gpm shall be approved by the Town of Smithfield. All pumps and controls shall be explosion proof. All stations shall have three-phase power where available. If three-phase power is not available, a VFD (type approved by Town) shall be used to convert single-phase power to three-phase power. Pump stations must have an electric hoist installed on the dry well.

3. If non-clog pump is selected, it shall be a Hydromatic chopper pump, or approved equal.

4. Capacity of the wet well shall be such that the pump runs continuously for five (5) minutes with a fill time of no more than 15 minutes at the average flow.

5. When discharging into Hampton Roads Sanitation District (HRSD) force main system, both minimum and maximum pressures shall be considered in pump selection . Variable Frequency Drives (VFD) is required for connection to HRSD unless authorized by the Public Works Department . A pressure Transmitter with indicator complete with ½"stainless steel process seal with clean out port and magnetic flow meter wired to control shall be installed on proposed discharge piping. Engineer shall notify Southside HRSD Interceptor Engineer 30 days prior to design of connection to HRSD force main for pressure letter. Engineer shall obtain HRSD flow certification letter for all connections to HRSD.

6. As a minimum, provide design calculations to include service area map with flow

rates, project description, vicinity map, piping schematic, pump design curves with operating points, structural calculations, and HRSD pressure letter if applicable, and the following minimum design calculations:

a. Sanitary Flows (Minimum, Average, and Peak)
b. Size Wet Well
c. Well Elevations
d. Well Flotation
e. Structural
f. Force Main Sizing
g. Pipe Headloss and Velocity
h. Equivalent Length of Force Main
i. System Head
j. Pump Selection
k. System Head Curve vs. Pump Curve
l. Pump Cycle Times (HRSD Minimum and Maximum Head, if applicable)
m. Sewage Overlfow
n. Ventilation

7. Force main velocities shall remain between 2-8 ft/sec.

8. Wet well bottom shall have fillet of 1:1 occupying approximately 25% of wet well bottom.

9. Influent pipe shall be installed with a StationGuard manual bar screen or an inside drop with a Reliner Drop Bowl, as determined by the Town.

10. All pump stations shall have a manhole on site with minimum slope pipe entering wet well.

11. Wet well ventilation must be separate from dry well ventilation. Dry well ventilation shall vent through the outside wall and be thermostat controlled.

12. All pump stations shall have a flow meter installed on the force main downstream of the emergency bypass pump.

13. All pump stations must meet DEQ SCAT Regulations method of continuous operation. Method of continuous operation must be provided in writing by the developer and approved by the Town and DEQ. Pump stations discharging to pressure pipe shall obtain DEQ approval prior to construction.

D. Construction:

1. Building construction shall be approved by the Town.

2. Pump station building shall have a GFI receptacle on the outside of the building.

3. All hatches and aluminum fabrications shall be 6061-T6 with safety grate.

4. All fasteners (nuts, bolts, etc.) shall be stainless steel grade 316. All other metals in pump station shall be non-corrosive aluminum 6061-T6 or stainless steel grade 304.

5. Wet well shall contain aluminum bar screen with maximum 3/4-inch openings, aluminum stairs, emergency suction, intermediate floor, and be provided with ventilation.

6. Dry well shall contain pumps, header piping and valves, sump pump, air relief piping, stairway, adequate lighting, pressure gauge, dehumidifier, and ventilation.

7. Control Room shall contain pump control panel, remote alarm terminal, adequate lighting and ventilation, and back-up pump.

8. Pump suction velocity shall be 2-6 fps and discharge velocity shall be 2-8 fps.

9. Wet well interior shall be coated with Tnemec coating or approved equal. Coating shall be applied by a qualified and approved applicator. Application procedures shall conform to the recommendations of the coating product manufacturer, including environmental controls, product handling, mixing, application, safety, equipment, and methods. Structure exterior shall be coated with approved bituminous coating. Consult manufacturer for recommended mil thickness and obtain approval from Town.

10. Electrical service shall be underground. Control panel shall include phase monitors, running time meters, convenience outlet, and lightning suppression. Electrical conduits shall be PVC.

11. Remote alarm terminal will be furnished by the Town, but paid for and installed by the Contractor. Contractor shall provide duplex outlet for service to alarm transmitter. Connections to alarm transmitter shall be by 18 gauge stranded telemetry wire. The Town's programmer will take it from termination in the panel box to the RTU and do start-up, but the work shall be paid for by the developer. If exterior control box is provided for pump controls, it shall be NEMA 4X and have sufficient space for the alarm transmitter. Separate dry well high-level float shall be wired directly to the alarm transmitter. Separate wet well, dry well high-level float, phase monitors, bypass pump running, bypass pump fail, and door entry alarms shall be wired directly to the alarm transmitter and shall not rely on Pump Control Panel to activate alarms.

12. The developer / engineer shall contact the Town of Smithfield Public Works Department for current information and specifications involving the Town's SCADA Alarm System.

13. Emergency pump connection shall be furnished on the discharge force main no higher than two feet above finished grade with a 6 - inch 90 degree bend, 4-inch check valve and 4-inch quick disconnect compatible with the Town system. Any above ground pipe shall be insulated.

14. Emergency suction pipe shall be furnished in the wet well with 4-inch quick disconnects compatible with the Town system.

15. A Godwin stationary pump, with diesel engine and sound attenuated enclosure, will be

required to be hard piped to the system with floats and inverter. The inverter shall have a 110 volt receptacle. The 110 volt receptacle will go from the inverter on the bypass pump to the alarm panel receptacle with the label: "Power from Bypass Pump." This will be turned over to the Town to supplement the Town's continuous operability program and satisfy DEQ. It shall be wired to prevent station pumps from running when the bypass pump is running. Above ground piping shall be insulated. To include expansion joints with lock washers or lock nuts on suction and discharge pipes. Color of stationary bypass pump shall Sherwin Williams quiver tan sw6151.

16. Pump stations shall have 8' high chain link fence with a 16’ double gate and a 4’ walk-through gate around the site as approved by Town. The double gate should swing inwards and the gate panels cannot block any other entrances when in the open position.

17. All stations shall have a paved surface entrance drive a minimum of 16 feet wide with turnaround. The entrance driveway shall have an 8-inch stone base and 8 inches of asphalt. Provide onsite parking for minimum of two (2) service vehicles. Parking area shall have an 8-inch stone base and 4 inches of asphalt.

18. All stations shall have separate check valves and gate valves located outside the wet well in an approved vault with aluminum weather tight top and access hatch. A separate valve vault with sump pump and sump pit shall contain a pressure transmitter/gauge (approved by the Town) in the control panel and flow meter capable of communicating with the control panel through a PLC. The flow meter shall be installed on the force main downstream of the emergency bypass pump. Check valves shall be ball check for under 4-inch by Danfoss Flowmatic or approved equal and swing check with weighted arm for 4-inch and above by Kennedy. Swing check valves shall be provided with a proximity switch.

19. Submersible stations shall have a sealed stainless steel electrical junction box, location and materials to be approved by Town. See detail S-5.

20. There shall be five mounted outside lights (one pole mounted) with a switch inside the pump station and an exterior duplex receptacle.

21. All stations shall be provided with a flow meter capable of communicating with the control panel through a PLC. The flow meter shall be installed on the force main downstream of the emergency bypass pump connection. A water service equipped with a hose bib and a backflow preventer approved by the State Department of Health will be required at all stations. If termination is outside, hydrant shall be freeze proof type, Simmon #802 yard hydrant with minimum two (2) feet of soil cover. Provide hose bib inside and outside station where building is specified.

22. A compact or submersible station shall have at least a 16 x16 inside enclosed building with HVAC split system for control panels. Construction shall be of concrete block with brick exterior, unless otherwise approved the Town. All wall penetrations shall

be sleeved.

23. Level controls shall be a level transducer with float backup. A digital force main pressure indicator shall also be included.
24. All pump stations shall have a submersible liquid level transmitter, digital level indicator/controller with float backup. A digital force main pressure transmitter shall be included.

25. All wet wells shall have a stainless steel float switch hook mounting bracket. Bracket shall be mounted on the hatch frame. All cables and wires should be hung separately utilizing cable support grips.

26. All pump station controls shall have the following features as a minimum:

    a. Three phase power monitor
    b. Pump Run Indicator for each pump
    c. Hand-Off-Auto selector switch for each pump
    d. Pump Flow-Fail indicator for each pump
    e. Pump 1 – Alternate – Pump 2 selector switch
    f. Pump Run elapsed time meter for each pump
    g. Control Power indicator
    h. Float Backup activated indicator
    i. Pump Over-Temperature indicator for each pump (where applicable)
    j. Pump Seal-Fail indicator for each pump (where applicable)
    k. Bypass pump run
    l. ALL above indicators shall be push to test LED type.
    m. High Wet Well

27. All vaults and wet wells shall have a confined space zinc plated floor mount (Miller DH-7ZPI) or wall mount (Miller DH-8ZPI). The Town will direct the Contractor on placement and type.

28. All pump stations turned over to the Town of Smithfield shall have a minimum of one (1) spare pump, transducer, and VFD provided at the expense of the developer.

E. Arc Flash:

6. Contractor shall perform a Short Circuit/Equipment Evaluation, Time Current Coordination Study, and Arc Flash Analysis Study. The limits of the Study shall begin at the Utility Primary Source of Connection and end at (including but not limited to) all Three Phase Panel boards, Switchboards, Fused Switches, Motor Starters and Serviceable Enclosures/Equipment containing exposed live parts. Standby Power Generators and associated Equipment shall also be included in this Study.

7. The study shall be performed in accordance with NFPA 70 and 70E.

8. The Study shall be performed with the aid of a digital computer program designed for such purposes and shall be accomplished in accordance with the latest applicable references and standards.
9. Contractor shall submit (3) copies of the complete Short Circuit / Equipment Evaluation, Time Current Coordination Study, and Arc Flash Analysis Study report.

10. Contractor shall furnish and install arc flash warning labels on all new and existing electrical equipment per NFPA 70 and 70E. The arc flash warning labels shall be marked and contain the following:

    a. Nominal system voltage
    b. Arc Flash boundaries
    c. Available incident energy and the corresponding working distance or arc flash PPE category
    d. Minimum arc rating of clothing

5.3 **OPERATIONS, MAINTENANCE AND REPAIR MANUALS:** Operation, maintenance, programming, and repair manuals shall be provided for all individual pieces of equipment and electrical systems. Provide four (4) copies of each manual bound in hardback binders or an approved equivalent. One (1) complete manual shall be provided to the Town for approval prior to system or equipment tests being performed. All revisions or comments from the system and equipment testing shall be incorporated into the final four (4) copies to be submitted to the Town prior to project completion. The manual shall include the following information:

A. On the exterior of the manual denote the following "OPERATION, MAINTENANCE AND REPAIR MANUAL", the name of the project, location of the building, and the name of the Contractor.

B. The manual shall include the name, addresses, and telephone numbers of each subcontractor installing the equipment and systems and the name, address and phone numbers for the local representatives for each item of equipment and each system.

C. The manual shall include a table of contents, with tab sheets placed before instructions covering the subject.

F. The manual shall include, but not be limited to the following:

    1. A system layout showing circuits, devices, and controls

    2. As-built wiring diagrams with the data to explain detailed operation, maintenance and repair for each component or system.

    3. A control sequence describing the start up, operation and shutdown.

4. Detailed instructions on the function of each piece of equipment or system to include the start up, operation, repair and shutdown procedures.

5. Provide a detailed parts list for each piece of equipment or system including

6. Programs, hardware, software, and any passwords.names, addresses and phone numbers of suppliers.

7. The manual shall be complete in all respects for all equipment, control, accessories and systems.

8. The manual shall be clearly and concisely written and shall be specifically prepared for makes, models and types of equipment and systems furnished.

9. General literature shall be modified or highlighted for the specific piece of equipment or system furnished.

THIS PAGE INTENTIONALLY LEFT BLANK

SECTION 6. GENERAL NOTES:

6.1 The following notes shall be provided on all Developer constructed water distribution and sanitary sewer system facility construction plans and specifications and compliance is required by the Contractor/Developer:

TOWN OF SMITHFIELD GENERAL NOTES FOR WATER DISTRIBUTION AND SANITARY SEWER SYSTEMS:

A. All components of the water distribution and sanitary sewer system shall be installed and tested in accordance with the latest edition of the Town of Smithfield Design Standards, the HRPDC Regional Construction Standards (Sixth Edition dated June 2016), the Virginia Department of Health Waterworks Regulations, and the Department of Environmental Quality Sewage Collection and Treatment Regulations. The Contractor shall use only new materials, parts, and products on all projects. All materials shall be stored so as to assure the preservation of their quality and fitness for the work. A copy of the Town of Smithfield Design Standards and HRPDC Regional Construction Standards must be kept on-site by the contractor during time of installing, testing, and conveying facilities to the Town.

B. The Contractor/Developer shall acquire a Certificate to Construct for Water and Sanitary Sewer Facilities from VDH/DEQ prior to commencement of construction of any water or sanitary sewer facilities.

C. A preconstruction meeting shall be held between the Town, the Developer, the Contractor including relevant subcontractor(s), and the Project Engineer prior to the start of construction. It shall be the responsibility of the Contractor to schedule this meeting with the Town and coordinate with the other attendees.

D. Any work that involves repairing or shutting down water, the contractor must notify in writing affected residents and the Town of Smithfield 48 hours in advance of shut down.

E. The Developer's representative shall submit shop drawings for all materials and receive Town approval prior to commencement of construction. All materials ordered and installed prior to the Town's review and acceptance will be at the Contractor's/Developer's risk.

F. Pipe lines and services shall be installed after grading to within 6-inches of final grade and prior to placement of base material. If any grading adjustments are made after utilities are installed, the Contractor shall adjust the heights of meter boxes, cleanouts, valve boxes, hydrants, and manholes accordingly.

G. All water mains shall be fully flushed, pressure tested, and disinfected and satisfactory bacteriological samples obtained, in accordance with the Town of Smithfield Design Standards. Flushing of water mains shall be scheduled with Smithfield Public Works a minimum of 3 business days prior to the flushing. Contractor shall provide the required duration and volume to Smithfield Public Works. Flushing will be scheduled Tuesday through Thursday, unless authorized otherwise by the Town, and will be on a first come-first serve basis.

G. Routine periodic inspections during construction will be provided by the Town. These inspections do not relieve the Developer/Contractor/Owner from his obligation and responsibility for constructing a water distribution and sanitary sewer system in strict accordance with the Town of Smithfield Design Standards and HRPDC Regional Construction Standards.

H. Any field modifications or changes to the approved plans shall be verified and checked by the Engineer of Record and approved by the Town prior to any field modifications or changes. All approved changes and field modifications shall be accurately indicated on the record drawings.

I. All lots shall be provided with water service and sanitary sewer connections. The connections shall be extended from the main to the property line or easement line, and shall terminate with a yoke in a meter box, or at the clean out, set at final finished grade. Meters larger than 1" shall be purchased by the Contractor per Town specification. The Town shall purchase and install meters 1" and smaller. The Contractor shall install meters larger than 1" under the supervision of the Town. Meter type/model shall be approved by the Town prior to the Contractor purchasing the water meter.

J. Any required easements, permits and approvals shall be acquired by the Developer prior to commencement of water main and/or sanitary sewer construction.

K. The Contractor shall comply with all applicable laws, ordinances, rules, regulations and orders of any public body having jurisdiction. The Contractor shall erect and maintain, as required by the conditions and progress of the work, all necessary safeguards for safety and protection. The Contractor shall also notify "VA811" prior to performing any underground excavation.

L. Water meter box and water service line installation shall maintain a minimum 18-inch horizontal edge-to-edge clearance from driveways and/or drive paths, sidewalks, bike paths, curbing and adjacent water meter boxes. At no point shall service lines run under driveways within the right-of-way.

M. Only Town of Smithfield personnel are authorized to operate valves on existing Town water mains and sanitary force mains. Once a system has been hydraulically energized, the Town will be responsible for operating the valves. The Contractor shall contact Smithfield Public Works at 757-365-4200 if there is an emergency or need to open/close a valve.

N. Any existing unused well(s) shall be abandoned in accordance with State Private Well Regulations and Town of Smithfield Code.

O. Bedding of Town utilities shall be in accordance with HRPDC Detail EW_01, Type IV for all utilities Type III for RCP storm pipe.

P. No trees, shrubs, structures, irrigation mains, invisible pet fences or other

obstacles shall be placed within an easement which would render the easement inaccessible by equipment. Shrubs shall be a minimum of 5 feet, and trees a minimum of 10 feet, from the center of water, storm, and sanitary sewer pipelines.

Q. Joint restraint shall be provided in accordance with minimum requirements of Town of Smithfield Detail JR-1, unless shown otherwise on the plans. All pressure pipelines shall have joint restraint. Fire hydrants shall be restrained at least one full joint of pipe in each direction on the mainline.

R. All private utilities in the right-of-way shall be 5-feet away from Town utilities. Water and sanitary sewer facilities shall have a minimum 10-foot horizontal edge-to-edge separation.

S. Any proposed backflow prevention device and/or grease trap must be inspected by the Town of Smithfield Backflow Prevention Manager/FOG Inspector (757- 365-4200).

T. The Contractor/Developer shall acquire a Certificate to Construct for Water and Sanitary Sewer Facilities from VDH/DEQ prior to commencement of construction of any water or sanitary sewer facilities. Plumbing inside of proposed buildings must be inspected by the Town's Backflow Prevention Manager (757-365-4200), for potential cross connections. Any cross connections must be protected by the appropriate backflow prevention device(s).

U. Easements denoted as "Easements dedicated to the Town of Smithfield" are for the exclusive use of the Town and the property owner. Other utility service providers desiring to use these easements must obtain authorization for access and use from the Town and the property owner. Additionally, the Town shall not be held responsible for any damage to improvements within this easement, from any cause.

V. The Town of Smithfield shall not be held responsible for any pavement settlement due to pipe bedding, backfilling, backfill materials or compaction for water or sanitary sewer facilities for this project.

W. Fire hydrants to be installed within existing or proposed VDOT rights-of-way shall be located in accordance with VDOT Requirements.

X. Privately owned utilities, (e.g., water and sewer lines and private fire service mains), shown on this plan are regulated by the Virginia Uniform Statewide Building Code, and enforced by the Isle of Wight County Permits Division. These privately owned utilities must comply fully with the International Plumbing Code, the National Fire Protection Association Standard 24, and the Virginia Statewide Fire Prevention Code. Contractors working from this site plan are cautioned not to install or conceal privately owned site utilities without first obtaining the required permits and inspections.

Y. Sanitary sewer laterals shall connect to the mainline unless otherwise directed by the Town.

Z. Sanitary sewer lateral and cleanout installation shall maintain a minimum 18-inch horizontal edge-to-edge clearance from driveways and/or drive paths, sidewalks, and bike paths. At no point shall laterals run under driveways within the right-of-way.

AA. On any water service removal or disconnect, a brass end cap shall be installed on the corporation stop.

BB. All private Underground Fuel Storage tanks shall have leak monitors and secondary containment in accordance with Virginia State Department of Environmental Quality requirements.

CC. All water and sewer accessory kits, adapter fittings, pipe restraint bolts, T-bolts and nuts shall be Cor-Blue type or Fluoropolymer epoxy coated bolts and nuts.

6.2 The following notes are a supplement to the Town of Smithfield General Notes for Water Distribution Systems and shall be provided on all Developer constructed water production facility construction plans and specifications and compliance is required by the Contractor/Developer:

TOWN OF SMITHFIELD GENERAL NOTES FOR WATER PRODUCTION FACILITIES:

A. All well facilities shall be designed by a Commonwealth of Virginia Licensed Professional Engineer (Consultant), and the design, construction and installation shall be in accordance with the following:

1. Commonwealth of Virginia Department of Health (VDH) Waterworks Regulations.

2. Town of Smithfield Design Standards.

3. Approvals of the Town and VDH shall be obtained prior to commencement of construction.

B. Construction plans shall be submitted through the Town for review and approval. The Developer/Contractor/Consultant shall supply minimum three (3) sets of construction plans and specifications detailing all phases of the well and water production construction including testing, materials, shop drawing submittals, painting and installation. These shall be submitted to, and approved by, the Town.

C. The Developer/Contractor/Consultant shall be responsible for assuring that all work is performed in accordance with the approved plans and specifications. Any deviation from the approved plans and specifications shall be approved by the Town and VDH prior to performing such work.

D. Drilling fluid shall be sodium bentonite drilling clay commercially processed to meet

or surpass the viscosity specifications in API "Standard 13-A for Drilling Fluid Materials", or approved equal.

E. Organic drilling muds shall not be used in any phase of drilling or construction. Lime shall not be used to thicken the drilling mud.

F. Drilling fluid mix water shall be from a potable source and initially Chlorinated to 50 mg/l free Chlorine concentration. Periodic addition will be required to maintain a 10 mg/l free Chlorine residual. All drilling fluids additives shall comply with industry standards and practices.

G. During drilling and well construction, a "Driller's Log" shall be prepared and submitted to the Town upon completion of the drilling.

H. Upon completion of the geophysical logging, recommendations shall be submitted to The Town for approval prior to the installation of the well casing and screens.

I. Grout of the surface casing shall be placed under pressure using an external tremie pipe in one continuous operation to a minimum depth of 100-feet.

J. Grouting operations shall be performed in the presence of the Town's Inspector and a VDH representative. Both agencies shall be notified a minimum of 48-hours in advance of the grouting operations.

K. Grout mixtures shall be approved by VDH and the Town prior to installation. Grout shall be firmly set (minimum of 72-hours) prior to proceeding with the well construction.

L. The well casing shall be stainless steel 316L. PVC well casing may be used with the prior approval of the Town and VDH as to material specifications and construction installation methods.

M. The screen shall be stainless steel 316L continuous slot wire wound screen, reinforced with longitudinal bars; the bars having a cross section that will form an opening between each adjacent coil of wire.

N. Prior to installation, the Consultant/Driller's recommended screen slot and gravel size along with supporting calculations shall be submitted to the Town for approval.

O. Prior to gravel packing, the hole shall be conditioned to ensure stability and to provide a clear filter cake. The gravel shall be disinfected by adding sufficient Chlorine to the placement fluid to produce a minimum Chlorine residual of 400 mg/l.

P. The well shall be developed in such a way as to remove the fines and sort the gravel pack. Records of the development steps and the chemicals used shall be submitted to the Town.

Q. A well plumbness and alignment, 48-hour pump test and recovery test shall be performed and the results documented and submitted to the Town.

R. Water samples shall be collected and analyzed for all parameters, required by VDH, including VOC's.

S. Final pump size and setting recommendations, along with test results and supporting documentation, shall be submitted to the Town for review and approval prior to installation.

T. The well shall be disinfected in accordance with VDH requirements.

U. The Developer shall obtain construction and operational permits from VDH and DEQ.

V. The Developer shall obtain all easements, approvals and regulatory permits.

W. The Developer shall acquire and provide 3-phase electrical service for the facility.

X. The water production facilities shall be equipped with a standby generator. Generator shall be rated for continuous duty and provide all power to operate the complete facility and systems.

Y. Shop drawings and operational, maintenance and repair manuals shall be provided to The Town, along with a one-year warranty on all facility components and workmanship.

Z. Record drawings shall be submitted and the facilities shall be dedicated as a public water supply prior to acceptance by the Town. Dedication does not mean acceptance of the water facility. All required easements shall be dedicated to the Town with recorded documents submitted to the Town.

AA. The facility shall be have an 8' fence with barbed wire.

APPENDIX A

Smithfield Construction Standards

THIS PAGE INTENTIONALLY LEFT BLANK

SECTION 105

CONTROL OF WORK

I. REUSE OF CONTRACT DOCUMENTS

1.1 Neither the Contractor nor any Subcontractor or Supplier or other person or organization performing or furnishing any of the Work under a direct or indirect contract with the Owner shall have or acquire any title to or ownership rights in any of the Contract Documents (or copies thereof) prepared by or bearing the seal of the Engineer; and, they shall not reuse any of the Contract Documents on extensions of the Project or any other project without written consent of the Owner and Engineer and specific written verification by the Owner.

II. COPIES OF CONTRACT DOCUMENTS

2.1 The Owner will furnish to the Contractor up to _____ ( ) copies of the Contract Documents as are reasonably necessary for the execution of the Work. Additional copies will be furnished, upon request, at the cost of reproduction, unless a digital version is provided by the Owner.

III. CONTRACT DOCUMENTS

3.1 The Contract Documents will govern the Work set forth therein.

In cases of conflicts, Special Provisions shall govern over the *Regional Construction Standards*; Specifications shall govern over Drawings; figure dimensions shall govern over scaled dimensions; and, detailed Drawings shall govern over general Drawings; unless, the interpretation would result in a violation of any law or regulation applicable to the performance of the Work

3.2 The Contractor shall, upon discovering any error, omission, or discrepancy in the Contract Documents, immediately notify the Owner.

IV. SHOP DRAWINGS AND SUBMITTALS

4.1 The Contractor shall compile a complete and comprehensive schedule of all the submittals anticipated to be made during the progress of the Work. The schedule shall include a list of each type of item for which the Contractor's drawings, Shop Drawings, material affidavits, material samples, certificates, warranties**,** guarantees, operations and maintenance manuals, testing and adjustment reports, plans, schedules or other types of submittals are required by the Contract Documents.

4.2 Prior to each submittal, the Contractor shall carefully review and coordinate all aspects of each item or sample submitted with any other item or sample being submitted and verify that each item and sample adheres in all respects with the requirements of the Contract Documents.

4.3 The Contractor shall certify that all materials used in the Work are in complete compliance with all specified provisions. Certification shall not be construed as relieving the Contractor from its responsibility of furnishing satisfactory materials. At the time of each submission, the Contractor shall in writing call the Owner's attention to any deviations that the Shop Drawings or samples may have from the requirements of the Contract Documents. By making a submission for approval, the Contractor shall be deemed to have certified that he has checked the items in the Shop Drawings before submitting them and that he is satisfied that, in their present state, they not only meet the requirements of the Contract Documents, but will present no difficulties in the performance and

completion of the Work. The Contractor shall clearly note his approval on the Shop Drawings prior to submission to the Owner. Failure of the Contractor to note his approval will be reason for the Owner to return such submission to the Contractor unchecked.

1. If it appears to the Owner that the Shop Drawings submitted by the Contractor have not been properly checked, even though the Contractor's approval has been noted thereon, Owner may return such submission to the Contractor unchecked.

2. Markings, written or otherwise, made by the Contractor or by his suppliers or manufacturers must be made on the Submittal in a color other than red. RED is reserved for the exclusive use of the reviewer in marking Submittals.

4.4 The Contractor shall submit four (4) copies, plus the number of copies desired to be returned, of Shop Drawings or submittals that are required by Section 105 or the Special Provisions. Each submission shall be accompanied by letter of transmittal in duplicate, listing the contents of the submission and identifying each item by reference to specification section or Drawing. The data shown on the Shop Drawings shall be complete with respect to quantities, dimensions, specified performance and design criteria, materials and similar data to show the Owner the materials and equipment the Contractor proposes to provide. Digital Shop Drawing submittals may be made when acceptable to the Owner and all provisions in this section are satisfied.

4.5 The Contractor shall also submit samples to the Owner for review and approval in accordance with the accepted schedule of submittals. Each sample shall be identified clearly as to material, supplier, pertinent data such as catalog numbers and the use for which intended and otherwise as the Owner may require for review. The review of a separate item or sample will not indicate approval of any assembly in which the separate item or sample functions.

4.6 The Contractor is responsible for submitting all Shop Drawings and schedules in a timely manner to avoid delaying the Work. The Owner shall within 21 Days after receipt, return Shop Drawings and schedules to the Contractor indicating approval or disapproval.

4.7 Review and/or approval of Shop Drawings will be for general conformance with the Contract Documents and shall not relieve the Contractor from the responsibility of furnishing materials and equipment of proper dimension, size, quality, quantity, and all performance characteristics to efficiently perform the requirements and intent of the Contract Documents. Approval shall not be construed as permitting any departure from the Project requirements, authorization of any increase in price, or approval of departures from additional details or instructions previously furnished by the Owner.

4.8 Before submitting each Shop Drawing or sample, the Contractor shall have determined and verified:

A. All field measurements, quantities, dimensions, specified performance criteria, installation requirements, materials, catalog numbers and similar information with respect thereto;

B. All materials with respect to the intended use, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work; and

C. All information relative to the Contractor's sole responsibility in respect of means, methods, techniques, sequences and procedures of construction and safety precautions and progress incident thereto.

4.9 Each Shop Drawing and sample submission shall bear a stamp or specific written indication that the Contractor has satisfied Contractor's obligation under the Contract Documents with respect to the Contractor's review and approval of that submission. The Contractor's Shop Drawing stamp shall be as follows (or as otherwise approved by the Owner and Engineer):

(Owner's Name)
(Project Name)

Shop Drawing No.: _____

Specification Section: _____

With respect to this Shop Drawing or Sample, I have determined and verified all quantities, dimensions, specified performance criteria, installation requirements, materials, catalog numbers, and similar data with respect thereto and reviewed or coordinated this Shop Drawing or Sample with other Shop Drawings and samples and with the requirements of the Work and the Contract Documents.

_____ *No variation from Contract Documents*

_____ *Variation from Contract Documents as shown*

(Contractor's Name and Address)

By: _____

Date: _____

4.10 The Engineer will review and approve or disapprove or return as incomplete Shop Drawings and samples in accordance with the schedule of submittals submissions accepted by the Engineer. The Engineer's review and approval or disapproval will not extend to means, methods, techniques, sequences or procedures of construction (except where a particular means, method, technique, sequence, or procedure of construction is specifically and expressly called for by the Contract Documents) or to safety precautions or programs incident thereto. The Contractor shall make corrections required by the Engineer, and shall return the requested number of copies of Shop Drawings and samples for review and approval. The Contractor shall direct specific attention in writing to revisions other than the corrections called for by the Engineer on previous submittals. Upon approval, two marked copies will be returned to the Contractor.

4.11 No progress payments will be made to the Contractor until the schedules are submitted to and acceptable to the Engineer. The progress schedule shall be acceptable to the Engineer as being the Contractor's schedule for the orderly progression of the Work to completion within any specified Contract Times, but such acceptance will neither impose on the Engineer responsibility for the sequencing, scheduling or progress of the Work nor interfere with or relieve the Contractor from the Contractor's full responsibility therefor.

4.12 The Engineer will record time required by the Engineer or Engineer's consultants for excessive submittal review occasioned by the Contractor's re-submission, in excess of one re-submission of a

required submittal, caused by unverified, unchecked or un-reviewed, incomplete, inaccurate or erroneous, or nonconforming submittals. The Engineer's costs will be an estimated average billing rate for labor plus related expenses and shall be paid by the Contractor upon terms satisfactory to the Owner.

4.13 Within ten (10) Days after the Effective Date of the Agreement, the Contractor shall submit to the Engineer for approval a schedule listing the manufacturer of the items of equipment and materials proposed for the construction. Following approval of the schedule, no changes in material or equipment from those listed will be allowed except in unusual or extenuating circumstances. When such circumstances arise, the Contractor shall request, in writing, the Owner's approval of the proposed change, stating the circumstances necessitating such a change. The intent of this schedule is to name the manufacturers of material specified by a product standard and to designate which manufacturer will be used when more than one has been named for an item. The schedule shall not be interpreted as allowing any change from base Bid items or those substitute items offered with the Bid and accepted in the Agreement.

4.14 Submittals shall be made in logical groupings representing all submittals from a technical specification section and/or, where appropriate, related section(s). Shop drawing submissions lacking all required submittals under a technical specification section(s) will be returned without review.

4.15 The approval of Shop Drawings shall not relieve the Contractor from the responsibility for proper fittings and construction of the Work nor from furnishing materials and work required by the Contract which may not be indicated on the Shop Drawings when approved.

4.16 Where a Shop Drawing or sample is required by the Specifications, and related work is performed prior to the Owner's review and approval of the pertinent submission, such work will be the sole responsibility of the Contractor. Owner shall have the right to inspect any such Work, but failure of Owner to inspect such Work shall not be deemed an acceptance by the Owner.

4.17 In proposing alternate materials or construction methods or in requesting Owner determination of alternate materials, submittals must clearly demonstrate that the proposed alternate items clearly meet, in all respects, the requirements of the Contract Documents, design intent of the Project. The burden of proof in all such determinations is up to the Contractor and the Owner's determination is un-reviewable and final. All such proposals count as submittals in determining the cost of additional reviews in accordance with paragraph 4.12 above.

4.18 Manufacturer's Certificates

A. The Contractor shall furnish at the time of submitting Shop Drawings the manufacturer's certificates for items of equipment and products in the various sections of these Specifications.

B. The manufacturer's warranty and certification submitted for equipment, a product, or component of a product shall indicate that the manufacturer has examined the Contract Documents and the equipment, product or component of a product provided will meet the performance criteria and conforms in all respects to the requirements of the Contract Documents.

C. A statement originating from the Contractor, or any of his Subcontractors, suppliers, or any other agent, which merely indicates that a particular item of equipment, product, or component of a product, meets the requirements of the Contract Documents, shall not be

considered a certificate. Any such submittal made in this manner will not be approved and the corresponding equipment, product, or component of a product, shall not be approved.

V. RECORD DRAWINGS

5.1 The Contractor shall keep one record copy of all Special Provisions, Specifications, Drawings, Addenda, Written Amendments, Change Orders, Shop Drawings, Owner-approved submittals, and samples at the site in good order and annotated to show all changes made during the construction process. These documents shall be available to the Owner for examination and shall be submitted to the Owner upon completion of the Work. As-built information (including dimensions, materials, existing utilities) shall also be included on the Drawings. Progress payments may be withheld for failure to keep neat, accurate and complete record drawings.

5.2 The Contractor shall include any field changes, deviations from the Drawings due both to field conditions and Change Orders.

5.3 Record information for projects shall include the following as a minimum:

A. Size, horizontal and vertical location of all existing utilities uncovered during the course of the Work. This shall include telephone cables and conduits, TV cables and conduits, electrical cables and conduits, gas lines, water line, sewer force mains, sanitary sewers, storm sewers and the like.

B. Horizontal and vertical location of the water, force main, sanitary and storm sewer installed at every 100-foot station, at interconnections, and at fittings, tees, bends and offsets. The frequency and location of survey shots will match the proposed grade elevations shown on the Drawings.

C. Location of lines plugged or capped, blowoffs, and air vents.

D. Location of all restraining devices used; for example, thrust blocks, retainer glands, tie rods, etc.

E. Location of all valves, ends of all lines and other fittings shall be accurately located by triangulation from two permanent structures, which will be visible on the ground surface.

F. Location and size of all taps and service line connections made, including corporation stops (if any) used for testing purposes.

G. Size (if greater than ¾”), material, depth and location of both ends of the water service lines are required.

H. Rim elevations of manholes and invert elevations of pipes entering and exiting the manhole.

I. Size, material, depth and location of sewer laterals including:

1. Measurements taken from the nearest downstream manhole, then measure over perpendicular from that point on the main to the end of the lateral. All measurements are taken from the center of the manhole cover.

2. If lateral comes out of a manhole in a cul-de-sac; triangulation from that manhole will be required.

3. Measured depth from the finished grade at the end of the lateral.

J. Information required for public storm drain systems:

1. Size, material and location of all storm sewer lines.

2. Elevations shall be provided for all ditch, pipe and structure inverts and rims.

5.4 The Record Drawings shall include the following minimum accuracy for survey measurements and field measurements.

A. Horizontal accuracy:

1. Both surface and subsurface gravity sanitary sewer systems shall be measured in a survey to +/- 1.0 foot at the structure location.

2. Both surface and subsurface pressure systems shall be measured in a survey to +/- 1.0 foot at the structure location.

3. Curb/curb and gutter shall be measured in a survey to +/- 1.0 foot at high points, low points, curb returns, and various other positions following good engineering, construction and surveying practices.

4. Storm Water Management Facilities (SWMF) shall be measured in a survey to +/- 1.0 foot, including the top of bank, bottom of bank, edge of water, pipes, structures, and setback distances to property lines and/or right-of-way lines and any unusual feature of each SWMF.

5. Utility system components including, but not limited to, fire hydrants, meter vaults, meter boxes, water services, corporation stops, fittings, thrust restraint, laterals, cleanouts, valves, blowoff assemblies, air vent assemblies, water sampling stations, etc. shall be measured in a survey to +/- 1.0 foot.

6. Project landscaping shall be measured in a survey to +/- 1.0 foot. Only large significant features, such as trees, will be surveyed. The species and caliper (size) shall be noted.

7. Street signs and light poles shall be measured in a survey to +/- 1.0 foot.

B. Vertical accuracy:

	Survey Accuracy	Field Measurement
Manhole Rim	+/- 0.01 ft.	
Manhole Invert	+/- 0.01 ft.	
Gravity Sewer Slope	+/- 0.02%	
Valve Depth	+/- 0.1 ft.	
Pressure/vacuum systems	+/-0.05 ft.	
SWMF	+/- 0.01 ft.	
Curb/curb and gutter	+/- 0.01 ft.	
Offset		+/- 1.0 ft.
Lateral Depth		+/- 0.25 ft.

The Contractor shall provide on the record drawings, if applicable, coordinate values (northing's and easting's based on the locality's monumentation) for the following:

Gravity Sewer
- Manholes
- Cleanouts and connections to the main

Force Mains
- Valves and tracer wire boxes
- Air release assemblies
- Horizontal bends 45-degrees (and greater if allowed) and combinations of fittings equaling 45-degrees or greater, spaced no greater than 10-feet of the start of the bends to the bend's terminus
- Offsets (vertical and horizontal)
- Connections (tees and taps)
- Limits of lined pipe

Grinder Pump and Low Pressure Systems
- Grinder pump
- Control panel
- Air release/cleanout assemblies
- Valves
- Connections to force mains (taps, corporation stops, etc.)

Water Systems
- Water meters
- Hydrants
- Valves and tracer wire boxes
- Connections and intersections (taps, etc.)
- Air release assemblies
- Corporation stops/taps to mains
- Offsets (vertical and horizontal)
- End of line blow-off assemblies
- Sample stations

Storm Sewer

- Manholes
- Curb Inlets
- Yard Drains

The Contractor shall provide all information on all valves installed as part of the project in the chart provided below and is to be included on the Record Drawings.

Item No.	Data	Valve				
1	Project Name					
2	Date Installed					
3	Branch ID					
4	Station No. (0+00)					
5	Valve No. (IMS); to be provided by Owner					
6	Size (diameter)					
7	Material of Construction (DI, PVC, Brass, etc.)					
8	No. of Turns					
9	Opens (L, R)					
10	Operating Status (NO/NC)					
11	Depth (Elevation from finish grade to operator)					
12	Manufacturer & Model No.					
13	Type *					
14	Casting Date					
15	End Conn. **					
16	Coordinates (northing/easting)					

* FMV = Force Main Valve, ARV = Air Release Valve, FP = Flush Point, FMCV = Force Main Check Valve, WB = Wire Box, NRS = Non Rising Stem, GV = Gate Valve, BFV = Butterfly Valve, BV = Ball Valve, GA = Gear Actuated, H = Horizontal, V = Vertical. NO = Normally Open; NC = Normally Closed

** (MJ x type, Flange x type, Restrained, Glue, Threaded, Other)

Note: No information required for Check Valves in items 8 – 10.

5.5 Record Drawings shall be provided in two versions: a sealed PDF version and an electronic format acceptable to the Owner

VI. ACCESS TO PROJECT

6.1 The Owner, the Owner's Representatives, the Engineer, testing agencies and governmental agencies with jurisdictional interests shall have access to the Project at all times for their observations, inspecting, and testing. The Contractor shall provide proper and safe conditions for such access.

VII. SURVEYS AND REFERENCE POINTS

7.1 The Owner shall furnish all necessary Drawings showing property lines and/or easements and the location of the Work. The Contractor shall provide a land surveyor licensed in the Commonwealth of Virginia to execute the Work in accordance with the Contract Documents and shall be responsible for the accuracy of this Work.

7.2 The Owner has established or will establish such general reference and control points and benchmarks on or about the Project site as will enable the Contractor to proceed with the Work. Prior to issuance of the Notice to Proceed, if the Contractor finds that any previously established reference

points have been destroyed or misplaced, the Contractor shall promptly notify the Owner, and the Owner shall replace such general reference points and benchmarks at the Owner's expense.

7.3 The Contractor shall protect and preserve the established control points, bench marks and monuments and shall make no changes in locations without the written approval of the Owner. Any of these which may be lost or destroyed or which require shifting because of necessary changes in grades or locations shall, subject to prior approval of the Owner, be replaced and accurately located by the Contractor, at no expense to the Owner.

VIII. WORKING HOURS

8.1 Normal working hours shall be _____ a.m. to _____ p.m., Monday through Friday, except that Work shall not start any earlier than one-half hour after sunrise or continue beyond one-half hour prior to sunset. If the Contractor desires to perform Work outside the normal working hours, on holidays, or on weekends, the Contractor shall request permission, in writing, 48-hours in advance to allow arrangements to be made. The Contractor may be charged an inspection fee by the Owner if such Work is approved. Where the Owner specifically directs the Contractor to work outside of normal working hours, no inspection fee will be imposed. The Owner may refuse the Contractor permission to work outside the normal working hours. The Contractor shall make reasonable efforts to avoid undue noise during the night and on weekends, including, but not limited to, fireproof covering necessary to dampen excessive noise from engines or pumps which operate before 7:00 a.m. and after 9:00 p.m., if it is necessary to work at those times.

8.2 The Contractor shall designate a representative and furnish a telephone number at which the representative may be contacted at any time after working hours. This representative shall be empowered and authorized to provide such personnel and equipment as may be required to remedy emergency situations that may develop after normal working hours, or on weekends and holidays.

8.3 The Contractor shall receive approval of the Owner, in advance, of any Work to be performed on holidays. The Owner reserves the right to deny permission to work on Sundays and/or holidays without cause.

8.4 Holidays are as listed below:

New Years' Day	1st day of January
Martin Luther King's Birthday	3rd Monday in January
President's Day	3rd Monday in February
Memorial Day	Last Monday in May
Independence Day	4th day in July
Labor Day	1st Monday in September
Veteran's Day	11th day of November
Thanksgiving Day	4th Thursday in November
Day after Thanksgiving	Friday after 4th Thursday in November
Christmas Eve	24th day of December
Christmas Day	25th day of December

If a holiday falls on a Sunday, the following Monday shall be considered the holiday. If these dates fall on a Saturday, the previous Friday shall be considered the holiday. If any part of a two-day holiday falls on a weekend, the observance of the holiday shall be scheduled at the Owner's discretion in such a way as to result in a four-day weekend.

The Contractor's attention is called to Section 109-1.6.C.1.d. regarding Owner compensation by the Contractor for overtime Work performed outside normal working hours.

IX. PROJECT COORDINATION

9.1 Coordination with Owner

A. The Contractor shall coordinate all construction activities with the Owner and shall obtain the Owner's approval as to schedule of Work, permits, temporary Work, and traffic control.

B. Progress meetings shall be held monthly on a date to be set by the Owner. The Contractor shall be present at all progress meetings. If progress is not made as scheduled, or if the Owner desires to discuss revised progress schedules or the quality of workmanship or other aspects of the Work, additional progress meetings can be required.

C. The Owner may construct or reconstruct any utility service in the highway or street or grant a permit for the same at any time. The Contractor shall not be entitled to any damages occasioned thereby other than a consideration of an extension of time.

D. When authorized by the Owner, the Contractor shall allow any person, firm, or corporation to make an opening within the limits of the Project upon presentation of a duly executed permit from the Owner. When directed by the Owner, the Contractor shall satisfactorily repair portions of the Work disturbed by the openings. The necessary Work will be paid for as extra Work in accordance with these specifications and shall be subject to the same conditions as the original Work performed.

9.2 Coordination with Utilities

A. The Owner and Contractor agree that disruption to public services shall be avoided whenever possible and minimized when it is not avoidable. In cases where the disruption of existing facilities could adversely impact public service delivery, acceptable duration(s) and time(s) of the outages shall be coordinated between the Contractor and Owner, so as to explicitly minimize disruption to public service delivery.

B. Before the initiation of any excavation, the Contractor shall locate all existing utilities, culverts, and other structures. Work shall be coordinated with affected utility companies. Prior to excavation, the Contractor shall contact MISS UTILITY at (800) 552-7001 and comply with all MISS UTILITY requirements.

C. All existing utilities, both public and private (including sewer, gas, water, electrical services, etc.), shall be protected and their operation shall be maintained throughout the course of the Work. Any temporary shutdown of an existing service shall be arranged by the Contractor between the Contractor and the responsible agency. The Contractor shall assume full responsibility and defend and hold the Owner harmless from the result of any damage that may occur as a result of the Contractor's activities.

D. If any utility service is interrupted as a result of accidental breakage or of being exposed or unsupported, the Contractor shall promptly notify the proper authority and shall cooperate with the authority in the restoration of service. If utility service is interrupted, repair work shall be continuous until service is restored. The Contractor shall be responsible for any damage to utilities that are attributable to his neglect or methods of performing the Work.

E. The Owner shall provide Utility companies with copies of the construction plans and or scope of work prior to construction. If requested by the Owner, the Contractor shall provide

each affected utility company with a copy of the proposed schedule of progress prior to commencing Work.

F. Existing facilities (such as water and sewer valves) shall be operated only by the facility owner or under the direct supervision of the facility owner's personnel. The Contractor shall inform the owner at least 48-hours in advance of the need for the operation of existing facilities.

G. At points where the Contractor's operations are adjacent to the properties of any utility, including railroads, and damage to which might result in considerable expense, loss, or inconvenience, Work shall not commence until arrangements necessary for the protection thereof have been completed.

H. The Contractor shall cooperate with owners of utilities so that location, removal and adjustment operations may progress in a reasonable manner; duplication of adjustment work may be reduced to a minimum; and, services rendered by those parties will not be unnecessarily interrupted.

I. The Contractor should be aware that in some instances buried cables, gas lines, water lines, etc., two inches and smaller in diameter may have to be excavated by hand and slightly relocated to facilitate construction of the Work under this contract. This shall be considered incidental to the Work, and shall be performed at no additional cost to the Owner.

J. Should the location of any pipe or conduit greater than two-inches in diameter, pole, or other structures, above or below the ground be such that in the opinion of the Owner or his representative its removal, realignment, or change will be required due to Work to be performed under this Contract, the removal, realignment, or change will be done as a Change Order, or will be done by the Owner of the obstructions, without cost to the Contractor. The Contractor shall maintain at his own expense the structures until such removal and before and after such realignment or change. The Contractor shall not be entitled to any claim for damages or extra compensation because of the presence of said structure, or because of any delay in the removal or relocation of the same.

X. SUPERVISION

10.1 The Contractor shall supervise and direct the Work, and shall be solely responsible for the means, methods, techniques, sequences and procedures of construction. The Contractor shall employ and maintain on the Project a qualified supervisor who shall have been designated in writing by the Contractor as the Contractor's representative at the site. The supervisor shall have full authority to act on behalf of the Contractor and all communications given to the supervisor shall be the same as if mailed to the business address of the Contractor. The supervisor or a designated representative shall be present on the site at all times as required to perform adequate supervision and coordination of the Work. The Contractor shall notify the Owner in writing prior to any change of supervisor, and receive the Owner's approval for the replacement.

10.2 Upon notification to the Contractor, the Owner reserves the right to suspend the Work until such time as a supervisor satisfactory to the Owner is assigned to the project. Contract Time shall not be extended for such suspension nor shall the Contractor be entitled to any additional payment of any kind whatsoever as a result of such suspended Work.

10.3 Any employee of the Contractor or Subcontractor who is deemed unsuitable may be removed from the job site by the Owner, provided that Written Notice and just cause is given to the Contractor. Said employee shall be removed immediately upon receipt of said Notice.

XI. UNCOVERING WORK

11.1 If any Work has been covered or concealed without the Owner's approval prior to being covered or concealed, the Owner may request to see such Work and it shall be exposed by the Contractor. The Contractor shall pay the cost of opening or uncovering and replacement and shall, in addition, at no cost to the Owner, make the necessary corrections to bring the Work into accord with the Contract Documents.

11.2 Uncovering Work shall be at the Contractor's expense unless the Contractor has given the Owner timely notice of the Contractor's intention to cover the same and the Owner has not acted with reasonable promptness in response to such notice.

11.3 If the Owner considers it necessary or advisable that covered Work previously approved be re-inspected or tested by others, the Contractor, at the Owner's request, shall uncover, expose or otherwise make available for observation, inspection or testing as the Owner may require, that portion of the Work in question, furnishing all necessary labor, materials, tools, and equipment. If it is found that such Work is defective, the Contractor shall bear all the expenses of such uncovering, exposure, observation inspection and testing and of satisfactory reconstruction. If, however, such Work is not found to be defective, the Contractor will be allowed an increase in the Contract Price or an extension of the Contract Time or both directly attributable to such uncovering, exposure, observation, inspection, testing and reconstruction and an appropriate Change Order shall be issued.

XII. REMOVAL OF UNACCEPTABLE WORK

12.1 All Work that does not conform to the requirements of the Contract Documents shall be unacceptable.

12.2 The Contractor shall remove or correct all unacceptable and defective Work or materials. The replacement of Work and materials shall conform to the Contract Documents or be in a manner acceptable to the Owner. The Contractor shall bear all costs of such correction and/or removal and replacement.

12.3 Work done contrary to or regardless of the instructions of the Owner, Work done beyond the lines shown or as directed, except as herein provided, or any extra Work done without authority, will be considered unauthorized and will not be paid for under the provisions of the Agreement. Work so done may be ordered removed or replaced at no cost to the Owner.

12.4 If the Work is defective, or the Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to furnish or perform the Work in such a way that the completed Work will conform to the Contract Documents, the Owner may order the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of the Owner to stop the Work shall not give rise to any duty on the part of the Owner to exercise this right for the benefit of the Contractor or any surety or other party. If the Contractor does not remedy, remove, or replace the rejected or condemned Work as instructed by the Owner within the time period stated by the Owner but in no case to exceed 30 Days after receiving written Notice, such remedy, removal, or replacement may be accomplished by the Owner at the Contractor's expense.

XIII. SUBSTANTIAL COMPLETION

13.1 Prior to Final Payment, but following completion of all required tests and inspections, the Contractor may request in writing that the Owner certify that the entire Project or any phase of the Project is Substantially Complete and request the Owner issue a Certificate of Substantial Completion. Within fourteen (14) working days the Owner will conduct an inspection of the Project with the Contractor and either issue a Certificate of Substantial Completion or notify the Contractor in writing of the incomplete items. The Certificate and attachments shall include the following:

A. A listing of responsibilities for the security, operation, safety, maintenance, utilities and insurance on the substantially completed portion;

B. A tentative list of items to be completed or corrected prior to final payment; and,

C. The maximum time for items to be completed or corrected prior to final payment.

13.2 The Owner shall have the right to exclude the Contractor from the Project or phase of the Work certified to be Substantially Complete; however, the Owner will allow the Contractor reasonable access to complete or correct the Work.

XIV. USE OF COMPLETED PORTIONS

14.1 The Owner shall have the right to take possession of and use any completed or partially completed portions of the Work, not-withstanding that the time for completing the entire Work or such portions may not have expired, but such taking possession and use shall not be deemed an acceptance of any Work not completed in accordance with the Contract Documents. If such prior use increases the cost of or delays the Work, the Contractor shall be entitled to such extra compensation or extension of time or both as the Owner and the Contractor may agree by a Change Order.

XV. FINAL INSPECTION

15.1 Upon receiving written Notice from the Contractor that the entire Work or an agreed upon portion is complete, the Owner will make a final inspection with the Contractor, and will notify the Contractor in writing of all particulars in which this inspection reveals that the Work is incomplete or defective. The Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

15.2 This procedure shall be repeated until all items are corrected to the satisfaction of the Owner. Only written notification to the Contractor from the Owner will constitute final acceptance of any part of the Work under the Agreement.

XVI. CLAIMS

16.1 All claims, disputes, demands and other matters in question arising out of or relating to the Agreement or the Contract Documents, except for claims which have been waived by the Contractor's acceptance of final payment, will be addressed in accordance with the provisions of the Virginia Public Procurement Act and as stated herein; provided, however, the provisions of Section 2.2-4366 of that Act will not be applicable without the separate express written consent of the Owner.

16.2 Early or prior knowledge by the Owner of an existing or impending claim for damages could alter the plans, scheduling, or other action of the Owner or result in mitigation or elimination of the effect of the act objected to by the Contractor. Therefore, a written statement describing the act of omission or

commission by the Owner or its agents that allegedly caused damage to the Contractor and the nature of the claimed damage shall be submitted to the Owner at the time of occurrence or beginning of the Work upon which the claim and subsequent action are based. If such damage is deemed certain in the opinion of the Contractor to result from his acting on an order from the Owner, he shall immediately take written exception to the order. Submission of a notice of claim as specified shall be mandatory. Failure to submit such notice shall be a conclusive waiver to such claim for damages by the Contractor. An oral notice or statement will not be sufficient nor will a notice or statement after the event.

If the Contractor's claim contains data that cannot be verified by the Owner's records, the data shall be subject to a complete audit by the Owner or its authorized representative if they are to be used as a basis for claim settlement.

If the Contractor wishes to make claim for an increase in the Contract Price or Contract Time, he shall submit all supporting data to the Owner and Engineer within twenty (20) Days from the time of initial occurrence. Failure to submit such data within twenty (20) Days shall be a conclusive waiver to such claim by the Contractor.

16.3 All claims, disputes, and other matters relating to or arising out of the Agreement or the Contract Documents pertaining to the performance of the Work and claims in respect to changes in the Contract Price or Contract times shall be submitted to the Owner and Engineer in writing. Written Notice of each such claim, dispute or other matter shall be delivered by the Contractor to the Engineer and the Owner promptly (but in no event later than twenty (20) days) after the start of the occurrence or event giving rise thereto, and written supporting data shall be submitted to the Engineer and the Owner promptly, (but not later than twenty (20) days) after the start of such occurrence or event and monthly thereafter for continuing events unless the Owner and Contractor mutually agree to extend the time required to submit the written Notice to allow for the submission of additional accurate data in support of such claim, dispute or other matter. The Owner shall submit any response to the Engineer and the Contractor within twenty (20) days after receipt of the Contractor's last submittal (unless the Owner requests reasonable additional time to evaluate the claim).

The Engineer shall render a non-binding and non-final written recommendation regarding the manner in which to resolve the dispute within twenty (20) days of receipt of the Owner's response. Engineer's written recommendation shall be used to assist the Owner and Contractor towards the expeditious and amicable resolution of their dispute.

Within ten (10) days of the delivery of Engineer's written recommendation, senior representatives of the Owner and the Contractor, having authority to settle the dispute, and the Engineer, shall meet at a mutually acceptable time and place, and thereafter as often as they reasonably deem necessary, to exchange relevant information and to exercise their reasonable and good faith efforts to expeditiously resolve the dispute. The Owner's and Contractor's representatives will participate in good faith during the negotiation and will each have authority to approve changes in the Contract Time and Price, if any.

In the event a mutually acceptable agreement cannot be reached through negotiation within twenty (20) days of the delivery of Engineer's written recommendation, (or mutually agreeable longer period), or if either party will not meet within ten (10) days of the delivery of said written recommendation, the Owner or Contractor may declare, by written Notice, delivered to the other party and to the Engineer, that the negotiation was unsuccessful. If Owner chooses non-binding

mediation, it shall be a condition precedent to the institution of any further administrative, legal or equitable proceedings by either party.

In the event that the negotiation process is unsuccessful and upon the Owner's request that the parties participate in non-binding mediation, the parties shall endeavor to agree to a single mediator to mediate the dispute in a session not to exceed one-half day in length, unless extended by the agreement of both parties. If the parties cannot agree on a single mediator, they shall request the chief judge of the local state circuit court to designate a mediator. Unless the parties mutually agree otherwise, the mediation shall occur within ten (10) days of the mediator's selection. The costs of the mediation shall be paid by the parties on a pro rata basis.

The results of successful mediation will be implemented by a Change Order. Should the mediation be unsuccessful, it shall be terminated by written Notice to all involved by the mediator or Owner or Contractor.

16.4 In the event that the Owner does not elect mediation or the mediation is unsuccessful, a formal proceeding may then be instituted by either party in a forum of competent jurisdiction within the Owner's locality. The parties' Agreement, Contract Documents, and their performance obligations shall be governed, interpreted and enforced pursuant to the laws and regulations of the Owner's locality, and in accordance with the laws of the Commonwealth of Virginia without regard to the conflicts of law principles thereof.

All disputes arising out of or relating to this Agreement, the Contract Documents, or the performance obligations of the parties shall be brought in the Circuit Court or Federal Court in Virginia having jurisdiction over the location where the Work will be or has been performed. The Agreement and the Contract Documents shall be governed by, enforced and interpreted pursuant to the laws of the Commonwealth of Virginia without regard to conflicts of law principles.

16.5 The Contractor shall carry on the Work and adhere to the progress schedule during all disputes or disagreements with the Owner. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, except as the Owner and the Contractor may otherwise agree in writing.

XVII. ENGINEER'S STATUS

17.1 All Work shall be performed under the general observation of the Engineer (if specified in the Special Provisions, otherwise, the Owner shall serve as the Engineer at its discretion). The Contractor shall carry out the Work in accordance with the Contract Documents. The construction means, methods, techniques, sequences of procedures, and safety precautions and programs in connection with the Work shall be at the direction and the responsibility of the Contractor. The Engineer shall have authority to and shall reject any and all Work whenever it is necessary to do so in order to insure the proper execution of the Work in accordance with the Contract Documents. The Engineer shall have no authority to approve or order changes in the Work that alter the terms or conditions of the Agreement. The Owner shall confirm by written Notice within fourteen (14) calendar Days any oral order, direction, requirement or determination.

17.2 In case of the termination of the employment of the Engineer, the Owner may appoint a capable and reputable Engineer as a replacement. The status under the Agreement of the Engineer shall be that of the former Engineer.

17.3 Approval by the Engineer of any materials, plans, equipment or drawings proposed by the Contractor, shall be construed only to constitute an approval of general design. Such approval shall

not relieve the Contractor for any responsibility for the accurate and complete performance of the Work in accordance with Contract Documents, or from any duty, obligation, performance guarantee or other liability imposed upon him by the provisions of the Agreement.

XVIII. DOCUMENTATION OF PRECONSTRUCTION CONDITIONS

18.1 The Contractor may be required to accompany the Owner for an on-site review of the project after award, but prior to the pre-construction conference and issuance of the Notice to Proceed. The purpose of the on-site review will be to compile a property report that will list, according to the following categories, the properties affected by construction as determined mutually by the Contractor and the Owner, or his representative.

A. Unrestrained access to and from residences and business locations. This includes but is not limited to, the following types of scheduled projects:

1. Street repair (non-emergency) or improvement projects.

2. Utilities repair (non-emergency) or improvement projects.

3. Sidewalk repair (non-emergency) or improvement projects.

B. Right to enjoy one's residence or business free of disturbing and unusual environmental changes as a result of an Owner-authorized construction project. Examples of such changes are excessive noise, dust, light, as well as unusual working hours and odors. This includes, but is not limited to, projects such as:

1. Drainage repair (non-emergency) or improvement projects.

2. Sewage repair (non-emergency) or improvement projects.

C. The right to properly plan for the relocation of one's personal property which must be moved as a result of an Owner-authorized construction project. This includes, but is not limited to, the following:

1. Trees, shrubs, plants and flowers.

2. Play equipment.

3. Portable buildings.

4. Fences (above grade or underground electric pet containment).

5. Automobiles.

The property report is to remain on file with the Owner and the Contractor until project closeout.

XIX. NOTICE TO COMPLY ORDER

See page 105-18.

XX. STOP WORK ORDER

See page 105-19.

End of Section

CITY/COUNTY OF _____

NOTICE TO COMPLY

Department of _____

Pursuant to Section _____ of the Code of the City/County of _____ , Virginia, as amended, a City Manager/County Administrator Designee inspected your site at _____ on_____, 20_____ at _____ a.m. / p.m.

The following conditions of noncompliance were noted:

- ❑ SILT FENCE DOWN
- ❑ DISTURBED AREAS NOT STABILIZED
- ❑ SEDIMENT TRAPPING DEVICES NOT INSTALLED PROPERLY
- ❑ TRACKING ON PUBLIC ROAD
- ❑ OTHER: _____

_____

The following corrective measures are needed to bring you into compliance:

- _____
- _____
- _____
- _____

These measures are to be completed before _____, 20_____.

Notice ordered by _____, on _____, 20____.
(Designee of City Manager/County Administrator)

Hand Delivered _____ Certified Mail _____

If you have any questions, please call _____.
(Telephone number)

CITY/COUNTY OF _____

STOP WORK ORDER

Permit Number _____

Date _____

Department of _____

Pursuant to Section _____ of the Code of the City/County of _____, Virginia, as amended, a substantial Code violation exists at _____. You are hereby notified that further Work at this location must be

IMMEDIATELY DISCONTINUED

Corrective Measures Required:

_____

_____

_____

_____

Ordered by: _____, on _____, 20_____.
(Designee of City Manager/County Administrator)

Notice served to_____, on _____ , 20____ .

Stop Work Order in Effect Until _____

_____
(Signature of Enforcement Officer)

V. PRODUCTS

Unless specifically stated otherwise, all materials shall be new, free from defects, and shall be in accordance with this Section.

5.1. AGGREGATE

A. MINERAL FILLER

These specifications cover inorganic material such as lime or fly ash, usually of very fine grading, added to soil or asphalt to produce a desired effect and shall meet the requirements of the latest edition of the *VDOT Road and Bridge Specifications*, Section 201.

B. FINE AGGREGATE

These specifications cover material for use as fine aggregate in the production of hydraulic cement concrete, mortar, asphalt concrete, and asphalt surface treatments and shall meet the requirements of the latest edition of the *VDOT Road and Bridge Specifications*, Section 202.

C. COARSE AGGREGATE

These specifications cover material used as coarse aggregate in the production of hydraulic cement concrete, asphalt concrete, asphalt surface treatments, and in drainage and shall meet the requirements of the latest edition of the *VDOT Road and Bridge Specifications*, Section 203.

D. SUBBASE AND AGGREGATE BASE MATERIAL

These specifications cover material used to form a foundation for base or surface pavement and shall meet the requirements of the latest edition of the *VDOT Road and Bridge Specifications*, Section 208.

E. OPEN-GRADED SHOULDER MATERIAL

These specifications cover the requirements for open-graded material used on roadway shoulders where designated on the plans or other contract documents and shall meet the requirements of the latest edition of the *VDOT Road and Bridge Specifications*, Section 209.

F. CRUSHER RUN AGGREGATE

These specifications cover crushed aggregate used for backfilling and bedding pipe and box culverts, maintaining traffic, and repairing and constructing all-weather private access pavements and shall meet the requirements of the latest edition of the *VDOT Road and Bridge Specifications*, Section 205.

G. LIGHTWEIGHT AGGREGATE

These specifications cover crushed aggregate used for backfilling and bedding pipe and box culverts, maintaining traffic, and repairing and constructing all-weather private access pavements and shall meet the requirements of the latest edition of the *VDOT Road and Bridge Specifications*, Section 206.

H. SELECT MATERIAL

These specifications cover nonplastic material obtained from roadway cuts, borrow areas, or commercial sources used as foundation for subbase, shoulder surfacing, fill, backfill, or other specific purposes and shall meet the requirements of the latest edition of the *VDOT Road and Bridge Specifications*, Section 207.

5.2. ASPHALT MATERIALS

These specifications cover the manufacturing and material requirements for asphalt material consisting of asphalt, asphalt cement, asphalt cutback, or asphalt emulsion as defined in ASTM D8 and shall meet the requirements of the latest edition of the *VDOT Road and Bridge Specifications*, Section 210.

5.3. CASING PIPE

A. Steel Casing Pipe

1. Steel casing pipe shall be in accordance with ASTM A53 or ASTM A139, Grade B, 35,000 psi minimum yield strength, seamless (under 26-inch diameter), with beveled joints suitable for welding.

2. The diameter shall be as indicated in the Contract Documents and shall be in accordance with the VDOT *Road and Bridge Specifications*. Wall thickness shall be in accordance with the VDOT *Road and Bridge Specifications* but in no case shall be less than 1/2-inch. If casing is to be installed under railroad tracks, the railroad owner's requirements or AREA standards shall govern.

B. Carrier Pipe

1. Carrier pipe shall be as specified in the Contract Documents.

2. Skids and casing spacers shall be in accordance with the *VDOT Road and Bridge Standards*.

5.4. CLEARING AND GRUBBING

A. Temporary and /or tree protection fencing shall be as shown in the Contract Documents and in accordance with the *Virginia Erosion and Sediment Control Handbook*, as appropriate.

B. Tree wrapping where shown in the Contract Documents shall be burlap in accordance with AASHTO M182, Class 1, and/or waterproof paper, 30-30-30 krinklecraft or its equivalent, in strips 4-inches in width. Tree wound dressing shall be antiseptic and waterproof, asphalt base.

5.5. DRAINAGE STRUCTURES - PIPE AND PIPE ARCHES

These specifications cover materials used for drainage and storm water applications only and shall meet the applicable requirements of the latest edition of the *VDOT Road and Bridge Specifications,* Section 232. Specifications for materials used in water distribution and sanitary sewer collection systems (gravity and force main) are described in Sections V.5.19 (Water), V.5.11 (Sanitary Gravity Sewer), and V.5.10 (Sanitary Force Main). Corrugated metal and plastic pipe shall not be used in the Town.

5.6. HYDRAULIC CEMENT CONCRETE

These specifications cover materials, design criteria, mixing, and testing procedures for hydraulic cement concrete and shall meet the requirements of the latest edition of the *VDOT Road and Bridge Specifications*, Section 217.

A. JOINT MATERIALS

These specifications cover resilient products made from various materials that are designed to accommodate the movement of rigid structures, such as component parts of hydraulic cement concrete, and seal the joint from intrusion of water or incompressibles and shall meet the requirements of the latest edition of the *VDOT Road and Bridge Specifications*, Section 212.

B. HYDRAULIC CEMENT MORTAR AND GROUT

These specifications cover hydraulic cement mortar and grout used in bonding units together, filling voids, and making surface repairs and shall meet the requirements of the latest edition of the *VDOT Road and Bridge Specifications*, Section 218.

C. CONCRETE CURING MATERIALS

These specifications cover materials used to maintain the humidity and temperature of freshly placed concrete to ensure satisfactory hydration and proper hardening of the concrete and shall meet the requirements of the latest edition of the *VDOT Road and Bridge Specifications*, Section 220.

D. DAMP-PROOFING AND WATERPROOFING MATERIALS

These specifications cover materials, generally asphalt based, that are intended to prevent or delay the passage of water, usually through a section of hydraulic cement concrete and shall meet the requirements of the latest edition of the *VDOT Road and Bridge Specifications*, Section 213.

E. HYDRAULIC CEMENT

These specifications cover cements that harden when mixed with water. The various types have special characteristics to be used as denoted in other parts of these specifications and on the plans or in other contract documents and shall meet the requirements of the latest edition of the *VDOT Road and Bridge Specifications*, Section 214. For concrete color control, concrete mixtures for all exposed concrete surfaces of walks, curbs, gutters and pour-in-place structures shall be from the same supplier and cement manufacturer.

F. HYDRAULIC CEMENT CONCRETE ADMIXTURES

These specifications cover materials that are chemical or organic elements that may be added to a hydraulic cement concrete mixture, when permitted elsewhere in these specifications, to achieve some desired effect and shall meet the requirements of the latest edition of the *VDOT Road and Bridge Specifications*, Section 215.

G. WATER FOR USE WITH CEMENT OR LIME

These specifications cover water for use in mixing with cement or lime and shall meet the requirements of the latest edition of the *VDOT Road and Bridge Specifications*, Section 216.

Flowable fill may be used on an Owner approved, case-by-case basis for trench backfill and pipe abandonment fill. Pipe bedding requirements will remain unchanged unless otherwise specified in the Special Provisions. Fly ash may be approved for use provided it complies with the requirements of ASTM C618, Class F or Class C. A mix design certificate shall be submitted for Owner approval prior to placement of the material. Flowable fill shall meet a minimum 50 psi mix design and a maximum 300 psi mix design

5.7. PLANTING

A. Plants

1. Plants shall be obtained from approved sources. The Owner may withdraw its approval of sources that do not consistently furnish acceptable plants.

2. The botanical and common name of plants shall be in accordance with the latest edition of Standardized Plant Names, prepared by the Editorial Committee of the American Joint Committee on Horticultural Nomenclature, in effect on the date of the Invitation for Bids.

3. Plants shall be inspected and identified in accordance with the Standardized Plant Names prepared by the Editorial Committee of the American Joint Committee on Horticultural Nomenclature. The Owner may inspect and reject plants at any time and place. Plants will be inspected immediately prior to being planted. If they are planted prior to inspection and found to be unsatisfactory, they shall be replaced with approved plants at the Contractor's expense.

4. Plants and sod shipped from geographical areas that are quarantined for fire ant infestation by the U.S. Department of Agriculture shall have their roots or container contents chemically treated to destroy and/or prevent the transmission of fire ants, their eggs, or larvae. Proper certification of this treatment shall be provided with each shipment.

5. Plants shall conform to the requirements of American National Standard for Nursery Stock, by the American Association of Nurserymen, Inc. and these specifications. Plants shall be first class representatives of their normal species and varieties; shall have well-furnished branch systems and vigorous fibrous root systems characteristic of their respective kinds; shall be nursery grown; and shall bear evidence of proper nursery care, including adequate transplanting and root pruning. Plants shall comply with state and federal laws governing inspection for plant diseases and insect infestation and shall be free from insect pests, plant diseases, disfiguring knots, stubs, sun scalds, bark abrasions, or any other form of damage or objectionable disfigurements. Where a minimum and maximum size or range is specified, an average size shall be furnished. Plants shall not be pruned before delivery or cut back from larger sizes to conform to the sizes specified. Sizes furnished shall be those specified at the time of delivery and before the usual pruning at the time of planting. Nursery-grown trees shall be free from cuts of limbs that are not healing and cuts more than 3/4-inch that have not completely callused over. Deciduous shade trees shall conform to the requirements for street trees as specified in the American National Standard for Nursery Stock. Plants from cold storage will not be accepted.

6. In addition to the requirements of the American National Standard for Nursery Stock, container-grown plants shall conform to the following:

   a. The space between the rim or top of the container and the soil line within the container shall not be more than 1 1/2-inches for the 1 gallon and 2 gallon sizes and not more than 2 1/2-inches for the 5 gallon size.

   b. Encircling roots shall not have grown in such a manner that they will cause girdling of the trunk of the trunk or stems.

   c. Roots shall not protrude through drainage holes or over the rim of the container to the extent that they will be damaged while the root ball is removed from the container.

7. Plants shall have been acclimated to outside conditions. Container grown plants may be used provided their use is approved in writing by the Owner.

8. Collected plants from wild or native stands shall not be used without the written permission of the Owner unless specified in the Contract Documents. Wild or native plants shall be clean, sound stock, and free from injury, and the quality of the plants shall be similar to that specified for nursery grown material. Stock shall have sufficient root systems to ensure successful transplanting. Balls, when specified, shall be tight and well formed.

9. Clumps shall be dug from good soil that has produced a fibrous root system typical of the nature of the plant and shall have earth and incidental vegetation adhering to roots.

B. Miscellaneous Planting Materials

1. Peat moss shall be granulated, shredded, or milled sphagnum moss, nearly free from woody materials and consisting of at least 75 % decomposed leaves and stems of sphagnum moss essentially brown in color. The texture may vary from porous to spongy fibrous. Peat moss shall be free from sticks, stones, mineral matter, or other foreign material. Peat moss shall have a pH range between 3.5 and 5.5.

2. Tree wrap shall be waterproof paper, 30-30-30 krinklecraft or its equivalent, in strips 4-inches in width.

3. Twine for wrapping trees shall be jute twine, at least two-ply.

4. Soil mixture to backfill planting pits shall consist of 1 part peat moss and 4 parts topsoil as specified herein. Prior to use, peat moss and topsoil shall be thoroughly mixed. The method of mixing and the area in which the mixing operation is performed shall be approved by the Owner.

5. Water used in watering plants shall be obtained from fresh water sources and shall be free from chemicals and other toxic substances harmful to plants. Brackish water shall not be used. The source of water will be subject to the approval of the Owner.

6. Mulch used in planting plants shall be pine bark, wood chips, or other material specified in the Contract Documents or approved by the Owner. Mulch shall not be used until it has been inspected and approved by the Owner.

5.8. STEEL REINFORCEMENT

These specifications cover steel items designed to give added flexural strength to hydraulic cement concrete or to control and reduce cracking in such applications and shall meet the requirements of the latest edition of the *VDOT Road and Bridge Specifications*, Section 223.

5.9. STONE FOR MASONRY, RIPRAP, POROUS BACKFILL, AND GABIONS

These specifications cover aggregate materials used in the construction of masonry items and stone gabions, to protect ground slopes from erosion or wave action and to facilitate drainage, generally behind a backwall or abutment and shall meet the requirements of the latest edition of the *VDOT Road and Bridge Specifications*, Section 204.

5.10. SANITARY FORCE MAIN SYSTEMS

A. Ductile-Iron (DI) Pipe

1. DI pipe shall be furnished in 18- or 20-foot laying lengths, with push-on joints, except where mechanical or restrained joint, or flanged pipe is shown in the Contract Documents.

2. DI pipe shall conform to the requirements of ANSI/AWWA C150/A21.50 and C151/A21.51.

3. DI pipe shall be Class 52 for all pipe diameters; or Class 350 minimum pressure classification for diameters 24-inches and smaller and, 250 psi for diameters larger than 24-inches; or the thickness classification indicated in the Contract Documents. The manufacturer's mark, country where cast, year the pipe was produced, pipe class, and the letters "DI" or "Ductile Iron" shall be cast or stamped on the pipe.

4. Joints and gaskets shall conform to AWWA/ANSI C111/A21.11 or AWWA/ANSI C115/A21.15, as applicable. The minimum acceptable pressure rating for all joints is 250 psi. All flanges and glands for pipes shall be made of ductile iron.

5. Fittings shall be manufactured in accordance with ANSI/AWWA C110/A21.10 or ANSI/AWWA C153/A21.53, as applicable, and shall be ductile iron. Compact fittings are required and shall have a minimum acceptable pressure rating of 350 psi for pipe diameters less than 16-inch and 250 psi for diameters larger than 16-inch. Fittings shall have the same pressure rating, as a minimum, as the connecting pipe.

6. Nuts and Bolts:

   a. Mechanical and buried flanged joints – provide per AWWA C111, manufactured in accordance with ASTM 588 – High strength low-alloy structural steel, up to 50 ksi minimum yield point, with atmospheric corrosion resistance (Corten steel)

   b. Heads and dimensions per ASME B1.1.

   c. Threaded per ASME B1.1.

   d. Project ends 1/4 inches to ½ inches beyond nuts.

7. ASTM A674 – Standard Practice for Polyethylene Encasement for Ductile Iron Pipe for Water or Other Liquids.

8. AWWA C105 - Polyethylene Encasement for Ductile-Iron Pipe Systems

9. Coatings shall be provided on the exterior of all pipe, joints and fittings as required by AWWA/ANSI C110/A21.10, C111/A21.11, C115/A21.15, C116/A21.16, C151/A21.51, or C153/A21.53 as applicable. All pipes, joints, and fittings shall be examined after laying to determine if the coating was damaged during installation. Any damaged areas shall be coated with a minimum of 2 mils of an approved bituminous coating.

10. Pipe diameters 12-inches and smaller shall be gaged and delivered round and true throughout its entire length. Pipe diameters over 12-inches shall have one piece of gaged pipe delivered for each fitting and at connections to existing pipelines. Gaged pieces shall be marked on the pipe with markings indicated in the shop drawings.

11. Corrosion Resistant Linings

    a. All ductile iron pipe and fittings shall be seal coated in accordance with ANSI/AWWA C104/A21.4.

    b. Ductile iron pipe and fittings shall be lined with ceramic epoxy coating.

       The lining shall be shop applied to bare metal in strict accordance with the manufacturer's recommendations to cover the inner surface of the pipe and fittings. The lining shall be a nominal thickness of 40 mils and a minimum thickness of 35 mils. The gasket area and spigot end up to 6-inches back from the end of the spigot on the outside of the pipe shall be coated with 6 mils nominal, and 10 mils maximum.

       The lining in each joint of pipe and fitting shall pass a 2,500 volt pin hole/holiday test. The pin hole/holiday detection testing shall be conducted over 100% of all lined surfaces for the ductile iron pipe and fittings. All holidays shall be repaired in accordance with the manufacturer's instructions and tested again to ensure a pinhole free lining. Short lengths of pipe required to accommodate the pipeline geometry shall be furnished factory-lined. All outlets shall be tapped by the pipe manufacturer at the factory prior to applying the pipe lining.

       Where field touch up is required to seal cut ends and repair damaged areas, Joint Compound shall be applied by brush to ensure complete coverage in accordance with the manufacturer's recommendations. Joint Compound may be used over lined pipe and fittings, or on bare substrate. Care must be taken that the joint compound is applied smooth, without excessive buildup in the gasket seat or on the spigot ends and allowed to cure for 24 hours in accordance with the manufacturer's recommendations. At least 1-inch of overlap shall be applied to the area being repaired. Protecto 401 shall not be applied over Protecto 401 Joint Compound. Joint Compound shall not be applied over wet or frozen surfaces.

12. Each length of ductile iron pipe shall be hydrostatically tested at the point of manufacture to 500 psi for a duration of 10 seconds per AWWA C151. Testing may be performed prior to machining bell and spigot. Failure of ductile iron pipe shall be defined as any leak or rupture of the pipe wall.

13. For ductile iron pipe diameters 16-inches and greater:

    a. All pipe and fittings to be installed under this Contract may be inspected at the plant for compliance with this Section by an independent testing laboratory selected by the Owner at the Owner's expense.

    b. A manufacturer's representative shall be made available when requested by the Owner during the manufacturing furnishing, transporting, and unloading of the pipe and during installation and testing to assist in confirming that the pipe is properly fabricated, transported, unloaded, stored in the field, joined and tested.

    c. The manufacturer's representative shall be made available a minimum of 2 working days (time on site) during the project when requested by the Owner, including the first 2 Days of pipeline installation.

    d. The cost for the services of the manufacturer's representative, including expenses, shall be considered incidental to the project and will not be paid separately.

B. Polyvinyl Chloride (PVC) Pipe

1. PVC pipe shall be furnished in 20-foot laying lengths, with push-on joints. Pipe shall be restrained joint where shown in the Contract Documents.

2. PVC pipe, 4 to 12-inches in diameter, shall conform to the requirements of AWWA C900 - Class 150 (DR-18), unless otherwise indicated in the Contract Documents. PVC pipe greater than 12-inches in diameter shall be AWWA C-905 - Class 235 (DR 18) or Class 165 (DR 25), as specified in the Contract Documents.

    a. The pipe, shall be made from virgin polyvinyl chloride resin or clean rework materials generated from the manufacturer's own pipe production that equals or exceeds cell class 12454-B as defined by ASTM D 1784, and shall bear the seal of approval by the NSF. The pipe shall be unplasticized polyvinyl chloride plastic pressure pipe with integral wall bell and spigot joints.

    b. Joints shall be push-on type with a flexible factory assembled elastomeric ring in the integral bell-end. O-ring gaskets shall conform to ASTM F 477. Joint material including gaskets and lubricants shall conform to AWWA C900 and ASTM D3139.

    c. Fittings shall be manufactured in accordance with ANSI/AWWA C110/A21.10 or ANSI/AWWA C153/A21.53, and shall be ductile iron. Compact fittings are required and shall have a minimum acceptable pressure rating of 350 psi.

3. Pipe smaller than 4-inches in diameter shall be Schedule 80 PVC, in accordance with ASTM D-1785 or ASTM D-2241 for SDR (Standard Dimension Ratio) 13.5, or as

specified in the Contract Documents. Solvent cement for non-gasketed PVC pipe shall meet the requirements of ASTM D-2564. All sewer force mains 2-inch and smaller shall be green Municipex pipe.

4. Pipe shall bear identification markings that will remain legible during normal handling, storage, and installation. The markings shall be applied in a manner that will not reduce the strength of the pipe or coupling or otherwise damage either. Pipe markings shall be applied at intervals not to exceed five (5) feet and shall include the nominal size and outside diameter (e.g. 4 CI), PVC, DR 18, AWWA Pressure Class (PC 150), manufacturer's name or trademark and production record code, and the seal of the testing agency that verified the suitability of the pipe material for potable water service.

5. The manufacturer's representative shall be made available a minimum of 2 working days (time on site) during the project when requested by the Owner, including the first 2 Days of pipeline installation.

6. The cost for the services of the manufacturer's representative, including expenses, shall be considered incidental to the project and will not be paid separately.

C. High Density Polyethylene (HDPE) Pipe

1. HDPE pipe shall be in accordance with AWWA C906-15 and shall have a nominal DIPS (Ductile Iron Pipe Size) outside diameter unless otherwise specified. The nominal size, pressure classification rating, and SDR of the pipe shall be as specified in the Contract Documents. ODs and tolerances for IPS outside diameter pipe shall be in accordance with ANSI B36.10 as illustrated in AWWA C906-15 Table 3.

2. A Pipe shall be homogeneous and uniform throughout; shall be free of injurious defects such as visible cracks, holes, foreign inclusions, voids, and blisters; and shall have uniform color and physical properties according to the provisions of AWWA C906-15.

3. Commercial virgin PE Compounds shall meet ASTM D3350 physical property requirements and shall be classified per ASTM D3350 as shown in Table 1 of AWWA C906-15. The compound shall have HDB (Hydrostatic Design Basis) ratings at 73°F (23°C) and at 140°F (60°C) and HDS (Hydrostatic Design Stress) ratings at 73°F (23°C) determined in accordance with ASTM D2837 and PPI TR-3 (Policies and Procedures for Developing Recommended Hydrostatic Design Stress for Thermoplastic Pipe Materials).

4. The PE Compound in the pipe shall contain color and ultraviolet (UV) stabilizer meeting the requirements of ASTM D3350 Codes C or E. Code C compounds shall contain 2 to 3 percent carbon black when material from the pipe is tested in accordance with Section 4.3.11 of AWWA C906-15. Code E compounds used for solid color pipe, color stripes, or color layer (shell) shall contain sufficient UV stabilizer to protect the pipe against UV degradation for at least 24 months of unprotected outdoor exposure. Color PE compounds used for stripes or color layers shall be of the same materials designation codes as the pipe material, varying only by color and UV stabilizer.

5. Clean rework materials derived from pipe production by the same manufacturer are acceptable as part of a blend with virgin PE compound meeting section 4.2.1 of

AWWA C906-15 for the production of new pipe, including sections 4.2.3.1, 4.2.3.2, 4.2.3.3 and 4.2.4.

6. PE fittings or components may be molded, thermoformed from pipe sections or fabricated. Molded fittings shall meet the requirements of AWWA C906-15 and the requirements of ASTM D2683 for socket-type fittings, or ASTM D3261 for butt-type fittings, or ASTM F1055 for electrofusion-type fittings. Thermoformed and fabricated fittings shall meet the requirements of AWWA C906-15 and ASTM F2206.

7. Pipe sections shall be joined on the job site above ground into continuous lengths by the thermal butt-fusion or electrofusion method, which shall be performed in strict accordance with the manufacturer's recommendations. The butt-fusion equipment used in the joining procedures shall be capable of meeting all conditions recommended by the pipe manufacturer, including, but not limited to, temperature requirements of 400 ° F, alignment, and 75 psi interfacial fusion pressure. Butt-fusion joining shall be 100% efficient and shall provide a joint weld strength equal to or greater than the tensile strength of the pipe. Socket-fusion, extrusion welding or hot gas welding of HDPE shall not be used for pressure pipe applications. Flanges, unions, grooved-couplers, transition fittings, and some mechanical couplers may be used to mechanically connect HDPE pipe without butt-fusion, if specified in the Contract Documents and approved by the manufacturer.

8. The manufacturer's representative shall be made available a minimum of 2 working days (time on site) during the project when requested by the Owner, including the first 2 Days of pipeline installation.

9. The cost for the services of the manufacturer's representative, including expenses, shall be considered incidental to the project and will not be paid separately.

10. Transition couplings from HDPE to other pipe materials shall be as indicated in the Contract Documents.

D. Fusible Polyvinylchloride (fPVC) Pipe

1. Pipe Supplier shall furnish fPVC pipe conforming to all standards and procedures, and meeting all testing and material properties as described in this specification. Pipe, 4 to 12 inches in diameter, shall conform to AWWA C900 – Class 150 (DR 18), unless otherwise indicated in the Contract Documents. Pipe greater than 12 inch shall conform to AWWA C905 – Class 235 (DR 18) or Class 150 (DR25), as specified in the Contract Documents.

2. fPVC pipe shall be tested at the extrusion facility for properties required to meet all applicable parameters as outlined in AWWA C900 or C905, as appropriate. Rework material shall be allowed per AWWA C900 and AWWA C905 standards. All piping shall be made from a PVC compound conforming to cell classification 12454 per ASTM D1784.

3. fPVC pipe shall be extruded with plain ends and shall normally be supplied in standard 40 foot lengths. The ends shall be square to the pipe and free of any bevel or chamfer. There shall be no bell or gasket of any kind incorporated into the pipe. fPVC pipe shall be blue in color for potable water use or green for wastewater.

4. Acceptable fittings for use with fPVC pipe shall include standard ductile iron fittings conforming to AWWA/ANSI C110/A21.10 and AWWA/ANSI C153/A21.53.

5. Connections to fPVC pipe may be made using a restrained or non-restrained retainer gland product for PVC pipe, as well as for MJ or flanged fittings.

6. Bends, tees and other ductile iron fittings shall be restrained as indicated in the Contract Documents.

7. Ductile iron fittings and glands must be installed per the manufacturer's guidelines.

8. Pipe generally shall be marked per AWWA C900 or AWWA C905, and shall include as a minimum:

   a. Nominal pipe size
   b. PVC
   c. Dimension Ratio, Standard Dimension Ratio or Schedule
   d. AWWA pressure class and Standard number
   e. Extrusion production-record code
   f. Trademark or trade name
   g. Cell Classification 12454 and/or PVC material code 1120 may also be included.
   h. NSF-61 mark, if for potable water service.

9. The manufacturer's representative shall be made available a minimum of 2 working days (time on site) during the project when requested by the Owner, including the first 2 Days of pipeline installation.

10. The cost for the services of the manufacturer's representative, including expenses, shall be considered incidental to the project and will not be paid separately.

E. Valves

1. Gate Valves

   a. Resilient-seated gate valves shall be used on pipelines from 3-inches in diameter up to and including 16-inches in diameter. Valves under 16-inches shall operate in a vertical position (valves 16-inches and larger shall operate in a horizontal position). Gearing shall be provided on 16-inch and larger valves. Resilient-seated gate valves shall be in accordance with AWWA C509 or AWWA C515 and shall be supplied with an interior and exterior epoxy coating in accordance with AWWA C550. Resilient-seated gate valves shall be ductile iron body, non-rising bronze or stainless steel stem with standard 2-inch wrench nut, rubber encapsulated disc valve seat, o-ring seals, and suitable for buried service. Valve ends shall be flanged, mechanical joint, or mechanical joint by flange to suit the pipe or fittings as indicated in the Contract Documents. All gate valves for force main installations shall be drip tight with bidirectional shutoff and open counter clockwise.
   Gate valves shall be manufactured by Kennedy Valve Company, Mueller Company, AVK, AFC or as specified in the Special Provisions.

b. Gate valves smaller than 3-inches in diameter shall be cast bronze, solid-wedge disc, screwed bonnet, inside screw, non-rising stem valves. Valves shall conform to Standard SP-80, Type 2, Class 150, Manufacturer's Standardization Society of the Valve and Fitting Industry, Inc. Gate valves 2" and smaller shall be manufactured by AVK or AFC.

c. Gate valves larger than 16-inches in diameter shall meet the requirements of AWWA C500, except Section 4.4.8.1.1 will not be allowed. Valves shall be rated for 150 psi working pressure and a minimum 300 psi test pressure. Valves shall be iron body, bronze-mounted, double disc, parallel seat, non-rising stem type fitted with O-Ring seals. Valves shall be capable of drip tight, bi-directional shut off and operate in the horizontal position. The operating nuts shall be 2-in square. Valves shall open counter clockwise. Seats in the body shall be replaceable without removing the valve from the pipeline. Discs shall be cast iron and bronze faced. Valves to be furnished with bronze rollers and, bronze tracks and bronze scrapers.

d. Coatings

All interior ferrous surfaces of all valves shall be coated in accordance with ANSI/AWWA C550 and shall not contain lead, coal tar resins, lampblack, carbon black or bituminous materials. The exterior surfaces shall receive a factory applied fusion bonded epoxy coating.

e. Valve Operators

Buried valves shall have a 2-inch square operating nut conforming to AWWA C509, and shall open counter-clockwise, unless otherwise noted. Valves in vaults shall have a hand wheel of cast iron conforming to ASTM A 126, Class B.

f. Valve Stem Extensions

Valve stem extensions, when allowed by the locality, shall be furnished when the distance from the operating nut to the top of the valve box frame is greater than 36-inches from finished grade. Extension stems shall have a 2-inch square wrench nut on the top end and shall be at least as strong as the valve stem. Extension stems shall be coated in accordance with Paragraph, above.

2. Ball Valves

Owner-approved ball valves smaller than 3-inches in diameter shall be:

a. Brass with threaded connections, O-ring seals, and a coated ball conforming to AWWA C800 and Standard SP-80, Type 2, Class 150 Manufacturer's Standard Society of the Valve and Fittings Industry, Inc. Valves shall be manufactured by the Ford Meter Box Company B11, Mueller Company 300 Ball Curb Valve, B-20283.

b. Ball valves 2" and smaller shall be manufactured by AVK or AFC.

c. NSF approved.

3. Plug Valves (16-inch and larger)

Valves shall be full port size, designed for a minimum working pressure of 150 psi, conforming to AWWA C517. Valve actuators shall be sized based upon the working pressure. The valve body and plugs shall be ASTM A126 Class B cast iron. Plugs shall be one piece with a cylindrical seating surface eccentrically offset from the center of the shaft. Plug facing shall be Buna-N with a minimum hardness (Shore A) of 70 durometer. Seats shall be welded in overlay minimum 1/8 inch nickel raised surface of not less than 95% pure nickel. Bearings shall be sintered, permanently lubricated 316 stainless steel. Packing shall be multiple v-type or "U" cup type. Washers at the top and bottom of the plug journal shall be provided to keep grit and debris out of the bearings and packing. Gear cases and shafts shall be totally enclosed suitable for buried services. Valves shall have an interior and exterior epoxy coating. All exposed nuts, bolts, springs and washers shall be 316 stainless steel.

Valves shall operate in a horizontal position and have non-rising stems operated with a standard 2-inch wrench nut. Operator stems and nuts shall be provided with an enclosure that will protect the stem from being bent and provide a base and guide for the riser pipe.

Opening shall be counter clockwise. Extension stems shall not be allowed. Plug valves in the horizontal position shall be installed so that the plug rotates upward as the valves opens. Valves ends shall be mechanical joint unless otherwise specified and shall be oriented so that the plug rotates 90 degrees to the top of the pipe when open.

A bidirectional leakage test and low pressure 5 psi seat test shall be applied in accordance with the procedures in AWWA C157. Certified copies of the Proof-of-Design test reports documenting that all requirements of AWWA C-517 were successfully met shall be furnished to the Owner prior to installation.

Valves shall be manufactured by DeZurik, Inc., Milliken Valve Company, Inc., Val-Matic Valve and Manufacturing Corp., or approved equal, or as specified in the Special Provisions.

F. Appurtenances

1. Force Main Air Vent Assemblies shall be as indicated in the Standard Details. Air Vent Assemblies shall be installed where indicated in the Contract Documents and shall be as specified in the Special Provisions.

2. Brass Pipe shall be red brass pipe meeting the requirements of ASTM B 43. Pipe sizes, wall thickness and dimensions shall meet the requirements of ASTM B 251 Table I for regular pipe. Brass pipe fittings shall be screwed end malleable iron pattern meeting the requirements of ANSI B16.15. They shall be finished rough, unless otherwise specified. Unions shall be of all brass or bronze with ground joints and shall be left semi-finished. Fittings shall be rated for steam working pressures up to 125 psi. Joints shall be screwed type with threads clean cut, tapered and smooth, meeting the requirements of ANSI B2.1.

3. Service Saddle - Shall be designed and sized for the force main on which the saddle is to be installed. The service saddle shall also meet the following requirements:

a. Stainless steel saddle bodies shall be 18-8, Type 304, stainless steel with all welds fully passivated to restore stainless steel characteristics.

b. Ductile iron saddle bodies shall conform to ASTM A-536 and have a fusion applied epoxy coating 12-mils dry thickness (D.T.). Straps shall be double strap stainless steel, 18-8, Type 304 fully passivated for corrosion resistance.

c. Threads shall be AWWA C-800 CC/Taper.

d. The saddle band shall be a minimum of 2-inches in width.

e. The saddle shall be provided with a Buna-N rubber gasket meeting ASTM D2000 to seal the saddle and the main pipe.

f. The nuts, washers, bands, and bolts shall be 18-8 stainless steel.

g. Acceptable manufacturers are The Ford Meter Box Co., Inc., Model FS202/FS303/FRS202, JCM Model 406, Romac Industries Inc., Style 202N, Cascade Products Style CNS2, or approved equal.

G. Joint Restraint Devices

1. Joint restraints shall be provided where indicated in the Contract Documents.

2. The restrained joint system shall have a pressure rating equal to or greater than that of the pipe on which it is used. Restrained joint devices shall be installed in strict accordance with the manufacturer's recommendations.

3. Ductile Iron Pipe

a. Push-on Joints

For push–on joint type pipe, the restrained joint system shall be a manufacturer's standard restrained joint system, SnapLock (U.S.Pipe), TR Flex (U.S. Pipe), FlexRing (American Pipe), or approved equal.

b. Mechanical Joints

For mechanical joint type pipe, the restrained joint system shall be a manufacturer's standard restrained joint system, Series 1100 Megalug ductile iron glands (EBAA iron, Inc.), Series 1400 retainer glands (Ford Meter Box Company, Inc.), or approved equal.

4. PVC Pipe (4-inch and larger)

a. Bell and Spigot PVC Joints

The restraint system for bell and spigot PVC joints shall be Series 1600/2800 ductile iron retainers as manufactured by EBAA Iron, Inc, Series 1390

retainers as manufactured by Ford Meter Box Company, Inc., or approved equal.

b. PVC to Mechanical Joint Fittings

The restraint system for restraining PVC pipe to ductile iron mechanical joint fittings shall be Series 2000 PV ductile iron retainers as manufactured by EBAA Iron, Inc., Series 1500 retainers as manufactured by the Ford Meter Box Company, Inc., or approved equal.

5. Concrete Reaction Blocking

Concrete reaction blocking shall not be permitted, unless approved by the Owner.

6. Tie Rods

Tie roads shall not be used unless specifically approved by the Owner and shown in the Contract Documents. When appropriate, Tie rods, bolts, washers and nuts shall be stainless steel in accordance with ASTM A-307.

H. Tapping Valves and Sleeves

1. Tapping valves and sleeves shall be compatible for use with the pipe being tapped and as approved by the Owner. The Contractor shall verify the material and diameter of the pipe being tapped prior to ordering tapping valves and sleeves.

2. Tapping valves for ductile iron pipe shall meet the same specifications as gate valves, except they shall have a full, unobstructed opening to receive a full size shell cutter. Tapping valves shall contain a standard mechanical joint on one end and a flanged joint on the other end. The valves shall be subjected to a factory test pressure of 400 psi and be designed for a working pressure of 200 psi.

3. Tapping sleeves shall be split sleeve with mechanical joint type end seals. Cast sleeves for tapping cast iron pipe, shall be ductile iron meeting ASTM A536 Grade 65-42-12.

4. Tapping sleeves for Ductile Iron and PVC C-900 Pipe

As appropriate, tapping sleeves shall be mechanical joint, furnished complete with plain rubber gaskets, mechanical joint accessories, and approved interior and exterior coatings. The outlet flange shall be 125 pound, drilling per ANSI B16.1, with standard tapping flange counterbore per MSS SP-60. Tapping sleeves shall be in accordance with ANSI/AWWA C110/A21.10.and approved by the manufacturer for use on the type and class of pipe being tapped.

5. Tapping sleeves for PVC Pipe (Other than C-900)

Tapping sleeves shall be complete, furnished with plain rubber gaskets, have a full circumference band made of 18-8 type 304 stainless steel. The flange and all bolts and nuts shall conform to AWWA C207 Class D 150 lb. drilling, made of 18-8 type 304 stainless steel.

6. Gaskets shall conform to the applicable requirements of ANSI/AWWA C111/A21.11, and shall be clearly marked to identify the diameter range for which intended.

7. When approved by the Owner and indicated in the Contract Documents, stainless steel tapping sleeves may be used and shall be constructed of all stainless steel conforming to the following requirements:

   a. Flange - The flange shall be 18-8, type 304 stainless steel, with recess to accept the standard tapping valve according to MSS-SP60. The flange shall also conform to AWWA C207-latest revision, Class D ANSI 150 lb. drilling. The bolt hole shall be aligned to straddle the pipe centerline.

   b. Body - The body shall be 18-8, type 304 stainless steel. All welds shall be fully restored to stainless steel characteristics.

   c. Gaskets - The gaskets shall be virgin SBR compounded for water service. ASTM D2000 8M 4AA607. The gasket shall be a full 360 degree pipe coverage. The outlet gasket shall be Buna-N.

   d. Test Plug - Provide a waterworks brass 3/4-inch test plug with standard square head.

   e. Bolts and Nuts - The bolts and nuts shall be 18-8, type 304 stainless steel UNC threads. Provide heavy hex nuts and washers fluorocarbon coated to prevent galling.

   f. Manufacture - Acceptable manufacturer is the Ford Meter Box Co., Inc., Model FTSS, Smith-Blair Style 665, Romac Industries Inc., SST or JCM Industries, Inc., Model 432, or approved equal.

I. Sleeves and Couplings

1. Mechanical joint sleeves shall be solid type, long body pattern as approved by the Owner, manufactured in accordance with ANSI/AWWA C110/A21.10. Sleeves shall have a minimum pressure rating of 350 psi. Glands, gaskets, bolts, and nuts shall be in accordance with ANSI/AWWA C111/A21.11.

2. Sleeves shall not be machined in order to facilitate use with pipe of a class or type other than that for which the sleeve was manufactured.

3. The use of bolted steel couplings shall be restricted to joining pipes of different outside diameters, joining pipes of dissimilar materials, and joining sections of steel pipe. Ferrous surfaces shall be coated with a fusion bonded epoxy lining and coating with stainless steel nuts and bolts. Enamel coatings are not acceptable.

   a. Bolted steel transition couplings shall be HI Max 2 or Smith Blair 421, or approved by the Town.

5.11. SANITARY GRAVITY SEWER SYSTEMS

A. Ductile-Iron Pipe (DI)

1. DI pipe shall be furnished in 18- or 20-foot laying lengths, with push-on joints, except where mechanical or restrained joint or flanged pipe is shown in the Contract Documents.

2. DI pipe shall conform to the requirements of ANSI/AWWA C151/A21.51.

3. DI pipe for gravity sewer systems shall be minimum pressure class 350 psi, for diameters 24-inches and smaller and, 250 psi for diameters larger than 24-inches, unless otherwise indicated in the Contract Documents. The manufacturer's mark, country where cast, year the pipe was produced, and the letters "DI" or "Ductile Iron" shall be cast or stamped on the pipe. P401 DI pipe for gravity sewers shall be Class 52.

4. Joints and gaskets shall conform to ANSI/AWWA C111/A21.11 or ANSI/AWWA C115/A21.15 as applicable. The minimum acceptable pressure rating for all joints is 250 psi. All flanges and glands for pipes shall be made of ductile iron.

5. Fittings shall be manufactured in accordance with ANSI/AWWA C110/A21.10 or ANSI/AWWA C153/A21.53, and shall be ductile iron. Compact fittings are required and shall have a minimum acceptable pressure rating of 350 psi.

6. Coatings shall be provided on the exterior of all pipe, joints and fittings as required by ANSI/AWWA C110/A21.10, C111/A21.11, C115/A21.15, C116/A21.16, C151/A21.51, or C153/A21.53 as applicable. All pipes, joints, and fittings shall be examined after laying to determine if the coating was damaged during installation. Any damaged areas shall be coated with a minimum of 2 mil of an approved bituminous coating.

7. Corrosion Resistant Linings

   a. All ductile iron pipe and fittings shall be cement lined and seal coated in accordance with ANSI/AWWA C104/A21.4.

   b. Where corrosion resistant linings are identified in the Contract Documents for ductile iron pipe and fittings, linings shall be ceramic epoxy.

      If ceramic epoxy is specified, the lining shall be shop applied to bare metal in strict accordance with the manufacturer's recommendations to cover the inner surface of the pipe and fittings. The lining shall be a nominal thickness of 40 mils and a minimum thickness of 35 mils. The gasket area and spigot end up to 6-inches back from the end of the spigot on the outside of the pipe shall be coated with 6 mils nominal, and 10 mils maximum.

      The lining in each joint of pipe and fitting shall pass a 2,500 volt pin hole/holiday test. The pin hole/holiday detection testing shall be conducted over 100% of all lined surfaces for the ductile iron pipe and fittings. All

holidays shall be repaired in accordance with the manufacturer's instructions and tested again to ensure a pinhole free lining. Short lengths of pipe required to accommodate the pipeline geometry shall be furnished factory-lined.

Where field touch up is required to seal cut ends and repair damaged areas, Joint Compound shall be applied by brush to ensure complete coverage in accordance with the manufacturer's recommendations. Joint Compound may be used over lined pipe and fittings, or on bare substrate. Care must be taken that the joint compound is applied smooth, without excessive buildup in the gasket seat or on the spigot ends and allowed to cure for 24 hours in accordance with the manufacturer's recommendations. At least 1-inch of overlap shall be applied to the area being repaired. Protecto 401 shall not be applied over Protecto 401 Joint Compound. Joint Compound shall not be applied over wet or frozen surfaces.

8. Pipe inside diameters 12-inches and smaller shall be gaged and delivered round and true throughout its entire length. Pipe inside diameters greater than 12" inside shall have one piece of gaged pipe delivered for each fitting. Gaged pieces shall be marked as such on the pipe and shall be accompanied by the manufacturer's certification. Manufacturer's certification of inspection and testing shall accompany each delivery.

B. Polyvinyl Chloride (PVC) Non-Pressure Pipe

1. PVC pipe shall be integral bell and shall be furnished in 20-foot laying lengths with gasketed joints, except where specified otherwise in the Contract Documents.

2. Pipe and fittings shall be manufactured from approved PVC compound conforming to ASTM D1784.

3. PVC pipe sizes 4-inch through 15-inch in diameter and less than 10 feet deep shall conform to ASTM D3034 SDR 26. Fittings shall be heavy wall, H-Series Gasketed SDR 26.

4. PVC pipe sizes 18-inch through 27-inch in diameter shall conform to ASTM F679.

5. Joints shall meet all requirements of ASTM D3034, Section 6 and shall conform to the performance requirements of ASTM D3212. Restrained joints shall be provided where shown in the Contract Documents.

6. Rubber gaskets shall meet physical requirements specified in ASTM F477 and ASTM D1869.

C. Polyvinyl Chloride (PVC) Pressure Pipe

1. PVC pipe shall be furnished in 20-foot laying lengths with push-on joints.

2. PVC pipe 6 to 12 inches in diameter shall conform to the requirements of AWWA C-900 – DR-18, unless otherwise indicated in the Contract Documents. PVC pipe greater than 12-inches in diameter shall conform to the requirements of AWWA C-905 – DR 25, unless otherwise indicated in the Contract Documents.

3. PVC pipe shall be plasticized polyvinyl chloride plastic pressure pipe with integral wall bell and spigot joints and shall bear the seal of approval by the National Sanitation

Foundation (NSF). All manhole joints or intrusions shall be cemented or mortared inside and out of manhole.

4. Joints shall be push-on type with a factory assembled elastomeric ring in the integral bell-end. O-ring gaskets shall conform to ASTM F477. Joint material including gaskets and lubricants shall conform to AWWA C-900/C-905 and ASTM D3139.

5. Pipe shall bear identification markings that will remain legible during normal handling, storage, and installation. The markings shall be applied in a manner that will not reduce the strength of the pipe or otherwise damage. Pipe markings shall be applied at intervals not to exceed five (5) feet and shall include the nominal size and outside diameter, DR, manufacturer's name or trademark and production code, and the seal of the testing agency that verified suitability of the pipe material for potable water service.

D. A DFW/HPI non-shear coupling, Mission Flex Seal ARC Coupling, Fernco R/C Strong Back, or approved equal shall be used between transitions of pipe materials and connections to existing pipe.

E. Manholes

1. Precast concrete manholes shall be manufactured in accordance with ASTM C478 and shall conform to the Standard Details.

2. Lifting devices shall be used in lieu of thru-wall lifting holes, unless approved by the Owner. Lift voids shall be filled with non-shrink grout upon installation. Grout to be in accordance with of Paragraph V.5.6.A.1 and of Paragraph V.5.6.F.

3. Manhole joints shall be sealed with profile gasket (Type 4G manufactured by Press Seal Corp. or equal), or butyl resin sealants, or equal. Joints shall be watertight. Gaskets and sealants for section joints shall meet the requirements of ASTM C443 or ASTM C990.

4. The manhole frame and cover shall conform to ASTM A48. Frame and covers are to be even grained and free from unsightly defects, and shall be machined to insure a uniform bearing in all positions. The frame and cover; including dust cover, locking cover, and watertight assemblies, where required, shall conform to the Standard Details. Casting shall be finished with a minimum of one coat (2 mils) of bituminous asphaltic coatings, or in accordance with manhole coating procedures, described below.

5. When required, manhole steps shall be corrosion-resistant and shall be one-half inch grade 60 steel reinforcing rod encapsulated in a copolymer polypropylene. The steps shall conform with ASTM C478 and to the dimensions shown on the Standard Details.

6. Pipe connections shall be flexible rubber pipe-to-manhole connections of the locked-in factory assembled rubber ring type utilizing a stainless steel band as manufactured by NPC, Inc. (Kor-N-Seal), International Precast Supply Flexible Pipe, or Press-Seal Gasket Corp. (PSX or Press Boot) gasket adjustable ring. The resilient flexible manhole connector shall conform to ASTM C443 and ASTM C923 and the stainless steel band shall be totally non-magnetic Series 304 Stainless. Other flexible connectors must be approved by the Owner.

7. Manhole inverts shall be built up of brickwork and cement mortar to match the inside diameters of the connecting sewers (bricks shall be surfaced with cement mortar, ½-inch thick and shall be trowel finished). Invert channels and manhole bottoms shall be shaped and smoothed with sand-cement grout or as otherwise approved by the Owner. Inverts shall have a positive slope as indicated on the Standard Details. When benching and channel shaping is performed prior to manhole field installation, adequate clear space must be provided to allow adjacent piping to be properly inserted in the manhole and "brought home" at the pipe joint.

8. To enhance the bonding capacity between the manhole or structure and a coating system, a Concrete Surface Profile (CSP), as defined by the International Concrete Repair Institute's (ICRI) Guideline No. 03732 dated January 1997, and as specified by the coating Manufacturer's requirements, shall be provided on all interior surfaces of manholes or structures designated to receive protective coatings.

9. Sections are to be assembled so as to provide a plumb structure with uniform bearing at all joints, and at the base slab.

10. Polymer Concrete Manholes shall comply with the requirements of items 1 through 7 and 9 of this section (200.5.11) and the following:

    a. Shall be acid resistant polymer manhole sections, base sections and related components conforming to ASTM D 6783, ASTM C 857, and ASTM C 478.

    b. Base riser section shall have integral floors, unless otherwise shown.

    c. Polymer mixture shall consist solely of thermosetting resin san and aggregate with no cementitious materials. Polymer concrete shall have a minimum unconfined compressive strength of 9,000 psi when measured in accordance with ASTM C 497.

    d. Manholes wall thickness shall be designed to resist hydrostatic pressures with a minimum safety factor of 2.0 for full depth conditions from grade to invert. Wall thickness for all members shall be stated by the polymer manhole manufacturer based on loading conditions and material properties. The wall thickness of risers and conical tops shall not be less than that prescribed by the manufacturer's design by more than 5%. In no cases shall the wall thickness be less than 3 inches.

    e. Manholes shall be designed with sufficient bottom anchorage and side friction to resist buoyancy.

    f. Round manhole components shall be connected with an elastomeric sealing gasket as the sole means to maintain joint water tightness and both the gasket material and the manhole joint shall meet the requirements of ASTM C443. Round manholes shall utilize spigot and bell type joints incorporating either a confined O-ring or single step profile joint. Square and rectangular structures shall utilize a shiplap joint and be sealed with a butyl rope sealant per ASTM C990 as recommended by the structure manufacturer.

    g. Thermosetting resin shall have a minimum deflection temperature of 158 °F when tested at 264 psi following ASTM Test Method D 648. The resin shall

not be less than 7% of the weight of the sample as determined by ASTM test method D 2584. Resin selection shall be suitable for applications in the corrosive conditions to which the structures will be exposed.

h. Polymer bench and channel:

(i) Polymer bench and channels are to be constructed with all resin aggregate material containing no alternative fill material. Invert channels shall provide a smooth flow transition waterway with no disruption of flow at pipe-manhole connections. Invert slopes shall be as indicated in the Contract Documents.

(ii) If brick benching is indicated in the Contract Documents, brick shall be sewer grade brick SS in accordance with ASTM C32-05. Mortar shall be furan resin-based brick mortar. Mortar shall be 100% carbon filled and have the following physical properties and minimum values per referenced test method:

(1) Compression Strength, 14,500 psi, ASTM C579

(2) Tensile Strength, 1,400 psi, ASTM C307

(3) Flexural Strength, 3,900 psi, ASTM C580

(4) Bond Strength to Bricks, 750 psi, Pull Blocks

(5) Water Absorption, 0.15%, ASTM C413

(iii) Concrete surfaces that have a furan resin mortar placed against them shall be coated with the furan resin mortar manufacturer's recommended primer and prepared in accordance with the furan resin mortar manufacturer's recommendations.

(iv) The bench and channel brick mortar components shall be free of cracks, holes, delaminations, foreign inclusions, blisters, or other defects that result in a variation of inside diameter of more than 1/8 inch from that obtained on the adjacent unaffected portions of the surface or defects that would, due to their nature, degree, or extent, have a deleterious effect on the manhole performance as determined by the Owner.

(v) Mortar manufacturer shall be Furalac Green Panel Mortar by Henkel, or Owner approved equal.

i. All materials needed for grouting and patching shall be a polyester mortar compound provided by the manufacturer or an Owner approved equal.

11. Stainless Steel Manhole Inserts

The manhole insert body shall be manufactured of 304 stainless steel with a minimum thickness of 18 gauge. The insert shall have a straight side design to allow a loose fit into the ring for easy removal. The insert manufacturer shall submit a load test

verification showing a load test failure in excess of 3,000 pounds. Inserts shall have a closed cell neoprene gasket with pressure sensitive adhesive backing installed by the manufacturer on one side. Gaskets shall have a minimum thickness of 1/8 inch. The insert shall have one handle made of 3/16 inch plastic coated 304 stainless steel cable. The handle shall be attached with a # 6 high grade stainless steel rivet or with bolts, flat washers and locking nuts, all made of 304 stainless steel. The handle shall be capable of withstanding a pull force of at least 500 pounds before it fails or separates from the insert. The gas relief valve shall be designed using one valve capable of releasing gas at a pressure of 0.5 to 1.5 psi and have a water leak down rate no greater than 5 gallons per 24 hours. The valve shall be installed by means of a hole tapped in the insert by the manufacturer. The valve shall be made of nitrile or similar material for the prevention of corrosion from the contact with hydrogen sulfide, dilute sulfuric acid and other gases associated with wastewater collection systems. The insert shall be custom made to fit the manhole frame, outside diameter (cover), and inside diameter.

F. Manhole /Structure Coatings

Sanitary sewer manholes are often exposed to environments with various degrees of aggressiveness thereby degrading the concrete and reinforcing, and shortening the useful life of the structures. A number of measures have been used to maintain manhole structural integrity and component life, including epoxy coatings, concrete additives, embedded liners, etc. Choosing the appropriate protective measure should be determined during the design of the project. Any protective system must be applied in strict accordance with the protective system Manufacturer's recommendations. The manhole coating specifications presented in this document are intended to be used by experienced Engineers and are not meant to be inclusive of all available protective measures. Because of their current widespread usage in the Hampton Roads area, only epoxy coating systems are addressed herein. Other protective measures may be used if approved by the Owner. See also the Special Provisions for Owner-specified manufacturers, alternative coating systems, and specific coating thickness.

1. Products are to be stored and handled according to their material safety data sheets and the manufacturer's instructions.

2. Coatings are to be applied to manholes/structures in strict accordance with the coating manufacturer's requirements.

3. Manhole Coatings shall be 100% solids, solvent-free, epoxy resin systems.

4. Manhole Coatings are defined as:

   a. Type A Coating (40 to 50 mils thickness)

   b. Type B Coating (80 to 125 mils thickness), as specified

G. Clean-Out Assemblies

Clean-out assemblies include Fernco Strong Back RC Series coupling or Non-Shear DFW-HPI (if required), mainline or wye, riser pipe, end caps, and clean-out box as indicated on the Standard Details.

5.12. SEEDING

A. Seed

1. Seeds shall comply with applicable state and federal seed laws and the Contract Documents. Seed shall be accompanied by the Form of Affidavit provided in VDOT *Road and Bridge Specifications* Section 244.

2. Seed shall be subject to inspection by the Virginia State Seed Regulatory Inspectors of the Virginia Department of Agriculture and Consumer Services.

3. Seed test shall be completed within the twelve-month period prior to the time the seed is to be used.

4. Seed shall not be, or have been, stored in an enclosure where herbicides, kerosene, or other material detrimental to seed germination is stored.

5. Noxious weed seeds, as defined by the rules and regulations adopted for enforcement of the Virginia Seed Law, will not be permitted. The number of restricted noxious weed seeds shall be not more than the number per ounce or per pound of noxious weed seeds specified in the rules and regulations.

Schedule of Grass Seed Mixture:

Mix	Proportion by Weight	Common Name	Botanical	Min. % Germ.	Min. % Pure Seed	Max. % Weed Seed
Permanent	100%	Fescue	Festuca arundinacea	85	98	0.25
Temporary	100%	Annual Rye Grass	Lolium multiflorum	90	95	0.15

B. Fertilizer

1. Fertilizer shall be uniform in composition, free flowing, and suitable for application with approved equipment.

2. Urea formaldehyde shall be slow-release fertilizer material containing 38 % nitrogen. The material shall have an activity index of 40 to 50 % as determined by tests in accordance with the Association of Official Agricultural Chemists.

3. Fertilizer for general seeding shall be Grade 15-30-15 fertilizer, uniform in composition, free flowing, and suitable for application with approved equipment, and shall be applied at the rate of 600 lb/acre (unless specified otherwise by soil tests).

4. Fertilizer for planting plants shall have an analysis of approximately 10-30-6. Approximately 75 % of the nitrogen shall be slow release nitrogen from methylene ureas, also termed urea formaldehydes, which become slowly available for plants through nitrogen breakdown by soil microbes. Urea nitrogen shall not be used except as specified hereinafter. The phosphate fraction shall be triple superphosphate. Fertilizers to be mixed shall be delivered to the project or another approved location in separate bags bearing the manufacturer's label and shall be thoroughly mixed in the presence of the Owner on the job or other approved location in the following amounts:

20 pounds of urea-formaldehyde as specified herein (38%N), 5 pounds of ureas (45%N), 65 pounds of triple superphosphate (46%P_20_5), and 10 pounds of muirate of potash (60%K_2O).

5. Fertilizer shall be accompanied by the Form of Affidavit provided in VDOT *Road and Bridge Specifications* Section 244.

6. The analysis and rate of application shall be verified by soil testing. The Contractor shall have the soil tests performed by a state or approved laboratory at no additional cost to the Owner. Analysis and application rates shall be adjusted as recommended by the laboratory.

C. Lime

1. Lime shall be agricultural grade ground limestone. Agricultural grade pulverized limestone may be used at no additional cost to the Owner.

2. The material source shall be registered with and approved by the Virginia Department of Agriculture and Consumer Services in accordance with the Virginia Agricultural Lime Law and shall conform to the following requirements:

3. Ground limestone shall be of such fineness that at least 86 % will pass a No. 20 mesh screen, at least 47 % will pass a No. 60 mesh screen, and at least 28 % will pass a No. 100 mesh screen. Material shall have a calcium carbonate equivalent of at least 85 %.

4. Pulverized limestone shall be of such fineness that at least 90 % will pass a No. 20 mesh screen and at least 66 % will pass a No. 100 mesh screen. Material shall have a calcium carbonate equivalent of at least 85 %.

D. Mulch for Seeding or Erosion Control

Mulches for Seeding or Erosion Control shall be in accordance with the following based on functional longevity, slope length; and slope gradient as detailed herein.

1. Dry Straw or Hay

Dry straw or hay shall be used to facilitate vegetative establishment on slopes of 4:1 or less gradient designed to be functional for up to thirty (30) days. The dry straw or hay shall be free from noxious weeds, reasonably bright in color, and not be musty, moldy, caked, decayed, or dusty. Straw or hay shall be applied by tacking with a Hydraulic Erosion Control Product **(**HECP), Type 1, at the rate of 1000 pounds per acre and applied as recommended by the manufacturer by punching or disking into the soil or by other Engineer-approved methods.

2. Hydraulic Erosion Control Products (HECP)

Hydraulic Erosion Control Products shall be dyed green or contain a green dye in the package that will provide a color to facilitate visual inspection of the uniformly spread slurry. Mulch, including dye and tackifiers, shall not contain germination-inhibiting or growth-inhibiting factors. The mulch shall be manufactured and processed so that it will remain in uniform suspension in water under agitation and will blend with seed, fertilizer, and other additives to form a homogenous slurry. The mulch shall form a blotter-like

ground cover on application having moisture absorption and percolation properties. It shall cover and hold grass seed in direct contact with the soil, promoting the germination and growth of grass seedlings.

The manufacturer shall provide certification that all components are pre-packaged by the manufacturer to assure material performance and compliance with the minimum requirements of Table 200-5.12-1. Under no circumstances will field mixing of HECP additives or HECP components be allowed. Mulch shall be delivered in packages of uniform weight bearing the name of the manufacturer, the net weight, and an additional statement of the net dry weight content.

When polyacrylamide is used as part of a hydroseeding mix, only an anionic polymer formulation with free acrylamide monomer residual content of less than 0.05% is allowed. Cationic polyacrylamide shall not be used in any concentration. The Contractor shall ensure polyacrylamide-containing mixtures are not sprayed onto pavement. Polyacrylamide-containing mixtures may include tackifiers, flocculants, or moisture-holding compounds.

In addition to making field performance determinations, the Owner may sample and perform such other tests on mulch as it deems warranted to ensure that the mulch conforms to these specifications. Only those materials that have been evaluated by the VDOT and are deemed acceptable will appear on the *VDOT Materials Division Approved Products List*. Mulch types shall contain a tackifier or additive as detailed below that, upon drying, becomes insoluble and non-dispersible, to eliminate direct raindrop impact on soil. Typically, all HECP products shall be applied when the soil is dry and rain is not expected within at least 48 hours after application.

HECP types are as follows:

a. HECP, Type 1 shall be used to facilitate vegetative establishment on slopes of 1V:4H or flatter gradient. Products shall be functional for up to two (2) months after application and shall be composed of non-toxic fibers consisting of a minimum of 70% specially prepared wood fiber, paper fiber, or a mixture of shredded wood fiber and paper fiber.

b. HECP, Type 2 shall be used to facilitate vegetative establishment on slopes of 1V:3H or flatter gradient. Products shall be functional for up to three (3) months after application and shall consist of a hydraulically applied matrix composed of a minimum of 70% of non-toxic defibrated organic fibers with, at a minimum, one of the following non-toxic tackifiers or additives:

    (1) Soil tackifiers,

    (2) Soil flocculants,

    (3) Soil polymers,

    (4) Cross-linked hydro-colloidal polymers, or

    (5) Cross-linked tackifiers.

    HECP, Type 2 products shall not contain materials composed of paper, cellulose

fiber, or any mixture containing paper or cellulose.

c. HECP, Type 3 shall be used to facilitate vegetative establishment on slopes of 1V:2H or flatter gradient. Products shall be functional for up to six (6) months after application and shall consist of a hydraulically applied matrix composed of a minimum of 70% of non-toxic long-strand organic fibers heated to a minimum temperature of 212° Fahrenheit for sterilization purposes with, at a minimum, one or more of the following non-toxic additives that, upon drying, become insoluble and non-dispersible to eliminate direct raindrop impact on soil:

(1) Soil tackifiers,

(2) Soil flocculants,

(3) Soil polymers,

(4) Cross-linked hydro-colloidal polymers, or

(5) Cross-linked tackifiers.

HECP, Type 3 products shall not contain materials composed of paper, cellulose fiber, or any mixture containing paper or cellulose.

d. HECP, Type 4 shall be used to facilitate vegetative establishment on slopes of 1V:1H or flatter gradient. The product shall be functional for up to twelve (12) months after application. HECP, Type 4 shall be applied when the soil is dry, when the site requires immediate erosion protection or when there is a risk of impending adverse weather. HECP Type 4 shall consist of a hydraulically applied matrix composed of a minimum of 70% thermally refined wood fibers, cross-linked hydro-colloidal tackifiers (10% by weight), and crimped man-made fibers.

TABLE 200-5.12-1
Minimum HECP Performance and Physical Requirements

HECP Property	Test Method[1]	HECP Type 1	HECP Type 2	HECP Type 3	HECP Type 4
Physical	**Requirement**				
Color	Visually Observed	Colored to provide contrast upon application, shall be stable and not stain concrete or painted surfaces.			
Organic Matter	ASTM D2974	90% minimum			
Water Holding Capacity	ASTM D7367	400% minimum	500% minimum	600% minimum	700% minimum

Acute Toxicity	ASTM 7101 EPA 2021.0-1	Non Toxic			
Endurance	**Requirement**				
Functional Longevity	VDOT approved Testing Methods[4]	Up to 2 Months	Up to 3 Months	Up to 6 Months	Up to 12 Months
Performance	**Requirement**				
Maximum Slope Application	Observed	4.0 H:1V	3.0 H:1V	2.0 H:1V	1.0 H:1V
Rainfall Event (R-Factor)	ASTM D6459 [2,3]	N/A	75 < R	140 < R	175 < R
Cover Factor	ASTM D6459 [2,3]	C ≤ 0.50	C ≤ 0.10	C ≤ 0.05	C ≤ 0.01
Vegetation Establishment	ASTM D7322 [2]	200% minimum	300% minimum	400% minimum	500% minimum

[1] All products must meet the requirements of this Specification to be listed on VDOT's Materials Division Approved List for HECPs.

[2] ASTM test methods developed for Rolled Erosion Control Products (RECPs) that have been modified to accommodate Hydraulic Erosion Control Products (HECPs).

[3] Utah State Protocol of 2.5:1 slope with rainfall simulated at 5 inches per hour for a 60 minute duration, or TTI Protocol of 2:1 slope with rainfall simulated at 3.5 inches per hour with 3 successive test durations of 30 minutes for each test in 24-hour intervals may be substituted for ASTM D6459.

[4] Functional Longevity performed at a VDOT test facility or test facility approved by VDOT.

3. Compost Blanket

Compost blankets shall be used to facilitate vegetative establishment on slopes with gradients of 1V:2H or flatter. The compost shall meet the requirements listed in *VDOT Road and Bridge Specifications* Section 244.02 (j) with the exception of particle size as stated below:

Percentage (%) by Dry Weight Passing Sieve Size			
3"	1"	¾ "	¼ "
100	90-100	65-100	0-75

Compost used as a compost blanket shall be uniformly applied to the depth specified in the Contract Documents. Compost may be manually spread, or distributed by the use of a pneumatic (blower) or slinger type spreader unit. Compost shall be projected directly at the soil surface, thereby preventing water from moving between the soil\compost interface. The Contractor shall apply the compost layer approximately 3 feet beyond the top of the slope or overlap it into or underneath existing vegetation.

5.13. SODDING

A. Sod

1. Sod shall be cultivated material conforming to the requirements of the State Board of Agriculture for state-approved sod or the State Sod Certification Agency for state certified sod.

2. Root development shall be such that standard size pads will support their own weight and retain their size and shape when suspended vertically from a firm grasp on the uppermost ten (10) % of the area.

3. The top growth of sod shall be mowed so that the height of the grass will be 2 to 3 inches at the time of the stripping operation.

4. Sod may be furnished in any standard pad width and length provided the dimensions do not vary from the average by more than five (5) %.

5. Sod shall be machine stripped at a uniform soil thickness of at least 1-inch.

6. Broken, torn, or irregularly shaped pads will be rejected.

B. Fertilizer

1. Fertilizer shall be uniform in composition, free flowing, and suitable for application with approved equipment.

2. Urea formaldehyde shall be slow-release fertilizer material containing 38 % nitrogen. The material shall have an activity index of 40 to 55 % as determined by tests in accordance with the Association of Official Agricultural Chemists.

3. Fertilizer shall be accompanied by the Form of Affidavit provided in VDOT *Road and Bridge Specifications* Section 244.

4. The analysis and rate of application shall be verified by soil testing. The Contractor shall have the soil tests performed by a state or approved laboratory at no additional cost to the Owner. Analysis and application rates shall be adjusted as recommended by the laboratory.

C. Lime

1. Lime shall be agricultural grade ground limestone. Agricultural grade pulverized limestone may be used at no additional cost to the Owner.

2. The material source shall be registered with and approved by the Virginia Department of Agriculture and Consumer Services in accordance with the Virginia Agricultural Lime Law and shall conform to the following requirements:

3. Ground limestone shall be of such fineness that at least 86 % will pass a No. 20 mesh screen, at least 47 % will pass a No. 60 mesh screen, and at least 28 % will pass a No. 100 mesh screen. Material shall have a calcium carbonate equivalent of at least 85 %.

4. Pulverized limestone shall be of such fineness that at least 90 % will pass a No. 20 mesh screen and at least 66 % will pass a No. 100 mesh screen. Material shall have a calcium carbonate equivalent of at least 85 %.

5.14. SIDEWALKS, STEPS, AND HANDRAILS

A. Concrete shall be Class A3 conforming to the requirements of Paragraph V.5.6.

B. Aggregate for exposed aggregate concrete shall be approved by the Owner.

C. Asphalt concrete shall conform to the requirements of Paragraphs V.5.2, V.5.22 and V.5.23.

D. Preformed joint filler shall conform to the requirements of Paragraph V.5.6.B. Material shall be approximately ½ inch in thickness and shall have a width and depth equal to those of the incidental structure.

E. Curing materials shall conform to the requirements of Paragraph V.5.6.C.

F. Reinforcing steel shall conform to the requirements of Paragraph V.5.8.

G. Rails and posts shall conform to the requirements of VDOT *Road and Bridge Specifications* Section 232.02(c)4.b. Rails shall be of standard weight and posts shall be extra strong pipe.

H. Geotextile drainage fabric shall conform to the requirements of Paragraph V.5.26.

I. Detectable warning surface panels shall conform to the requirements of Paragraph V.5.24.

5.15. SOIL RETENTION COVERINGS

A. Jute mesh shall be a uniform, open, plain weave of undyed and unbleached single jute yarn. The yarn shall be loosely twisted and shall not vary in thickness by more than its normal diameter. Jute mesh shall be new, and its length shall be marked on each roll.

B. Openings: Between strands lengthwise, openings shall be 0.60 inch + 25 %. Between strands crosswise, openings shall be 0.90 inch + 25 %. Jute mesh shall weigh 0.9 pound per square yard + 5 %.

C. Soil retention mats shall consist of a machine-produced mat of wood fibers, wood excelsior, or manmade fiber that shall intertwine or interlock.

D. Matting shall be nontoxic to vegetation and germination of seed and shall not be injurious to the unprotected skin of the human body.

E. Mats shall be of consistent thickness, with fiber evenly distributed over its entire area, and covered on the top and bottom side with netting having a high web strength or covered on the top side with netting having a high web strength and machine sewn on 2-inch centers along the longitudinal axis of the material. Netting shall be entwined with the mat for maximum strength and ease of handling.

5.16. SUBGRADE AND SHOULDERS

A. Materials may consist of material in place, treated material in place, or imported material. Imported material may be borrow material, select material, or other material as shown in the

Contract Documents.

B. Materials other than regular excavation or borrow material that are shown in the Contract Documents shall conform to the applicable requirements of this Section.

5.17. TOPSOIL

A. Class A topsoil shall be stockpiled topsoil that has been salvaged in accordance with the requirements of Section 303. It shall be free from refuse or any material toxic to plant growth and reasonably free from subsoil, stumps, roots, brush, stones, clay lumps, or similar objects larger than 1-inch in their greatest dimension.

B. Class B topsoil shall be topsoil furnished from sources outside the project limits and shall be the original top layer of a soil profile formed under natural conditions, technically defined as the "A" horizon by the Soil Society of America. It shall consist of natural, friable, loamy soil without admixtures of subsoil or other foreign materials and shall be reasonably free from stumps, roots, hard lumps, stiff clays, stones, noxious weeds, brush, or other litter. It shall have demonstrated by evidence of healthy vegetation growing or having grown on it prior to stripping that it is reasonably well drained and does not contain substances toxic to plants.

C. Topsoil for planting plants shall have a pH in the range of 6.0 to 7.0 prior to mixing with organic matter. If the pH is not within this range, the pH shall be corrected at the Contractor's expense or a different source of supply shall be selected. Topsoil shall be subject to inspection by the Owner at the source of supply and immediately prior to use in planting and shall be mixed with organic matter as specified in the Contract Documents.

5.18. UNDERDRAINS

A. Unless specifically stated otherwise, all materials shall be new, free from defects, and shall be in accordance with this Section.

B. Pipe shall conform to the requirements of VDOT *Road and Bridge Specifications* Section 232.

C. Aggregate shall conform to the requirement of Paragraph V.5.1.

D. Geotextile drainage fabric shall conform to the requirements of Paragraph V.5.26.

5.19. WATER DISTRIBUTION SYSTEMS

A. Ductile-Iron (DI) Pipe

1. DI pipe shall be furnished in 18- or 20-foot laying lengths, with push-on joints, except where mechanical or restrained joint or flanged pipe is shown in the Contract Documents.

2. DI pipe shall conform to the requirements of ANSI/AWWA C151/A21.51.

3. DI pipe shall be Class 52 for all pipe diameters; or, Class 350 minimum pressure classification for diameters 24-inch and smaller and 250 psi for diameters larger than 24-inches; or, the thickness classification indicated in the Contract Documents. The manufacturer’s mark, country where cast, year the pipe was produced, and the letters “DI” or “Ductile Iron” shall be cast or stamped on the pipe.

4. Joints and gaskets shall conform to ANSI/AWWA C111/A21.11 or ANSI/AWWA C115/A21.15 as applicable. The minimum acceptable pressure rating for all joints is 250 psi. All flanges and glands for pipes shall be made of ductile iron.

5. Fittings shall be manufactured in accordance with ANSI/AWWA C110/A21.10 or ANSI/AWWA C153/A21.53, as applicable, and shall be ductile iron. Compact fittings are required, and shall have a minimum acceptable pressure rating of 350 psi for 24-inch and smaller piping and 250 psi for larger than 24-inch piping. Fittings shall have the same pressure rating, as a minimum, of the connecting pipe.

6. Coatings shall be provided on the exterior of all pipe, joints and fittings as required by ANSI/AWWA C110/A21.10, C111/A21.11, C115/A21.15, C151/A21.51, C116/A21.16, or C153/A21.53 as applicable. All pipes, joints, and fittings shall be examined after laying to determine if the coating was damaged during installation. Any damaged areas shall be coated with a minimum of 2 mil of an approved bituminous coating.

7. All ductile iron pipe and fittings shall be double thickness cement lined and seal coated in accordance with ANSI/AWWA C104/A21.4.

8. Pipe diameters 12-inch and smaller shall be gaged and delivered round and true throughout its entire length. Pipe over 12-inches in diameter shall have one piece of gaged pipe delivered for each fitting. Gaged pieces shall be marked as such on the pipe and shall be accompanied by the manufacturer's certification. Manufacturer's certification of inspection and testing shall accompany each delivery.

9. ASTM A242 – Standard Specification for High-Strength Low-Alloy Structural Steel

10. ASTM A307 – Standard Specification for Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength.

11. ASTM A674 – Standard Practice for Polyethylene Encasement for Ductile Iron Pipe for Water or Other Liquids.

12. AWWA C105 - Polyethylene Encasement for Ductile-Iron Pipe Systems.

13. For pipe diameters 16-inches and greater:

    a. Each length of ductile iron pipe shall be hydrostatically tested at the point of manufacture to 500 psi for a duration of 10 seconds per AWWA C151. Testing may be performed prior to machining bell and spigot. Failure of ductile iron pipe shall be defined as any leak or rupture of the pipe wall.

    b. All pipe and fittings to be installed under this Contract may be inspected at the plant for compliance with this Section by an independent testing laboratory selected by the Owner at the Owner's expense.

    c. A manufacturer's representative shall be made available to the Owner during the manufacturing furnishing, transporting, and unloading of the pipe during installation and testing of the pipe to assist in insuring that the pipe is properly fabricated, transported, unloaded, stored in the field, joined and tested. Manufacturer's responsibilities relate only to the proper care and treatment of

the pipe during these procedures and not the techniques or procedures used during installation and testing.

d. The manufacturer's representative shall be made available a minimum of 2 working days (time on site) during the project when requested by the Owner, including the first 2 Days of pipeline installation.

e. The cost for the services of the manufacturer's representative, including expenses, shall be considered incidental to the project and will not be paid separately.

B. Polyvinyl Chloride (PVC) Pipe

1. PVC pipe shall be furnished in 20-foot laying lengths, with push-on joints. Restrained joints shall be provided where shown in the Contract Documents.

2. PVC pipe, 4- to 12-inches in diameter, shall conform to the requirements of AWWA C900 - Class 150 (DR-18), unless otherwise indicated in the Contract Documents. PVC pipe greater than 12-inches in diameter shall be AWWA C-905 - Class 235 (DR 18) or Class 165 (DR 25), as specified in the Contract Documents.

3. The pipe, shall be made from virgin polyvinyl chloride resin or clean rework materials generated from the manufacturer's own pipe production that equals or exceeds cell class 12454-B as defined by ASTM D 1784, and shall bear the seal of approval by the NSF. The pipe shall be unplasticized polyvinyl chloride plastic pressure pipe with integral wall bell and spigot joints.

4. Joints shall be push-on type with a flexible factory assembled elastomeric ring in the integral bell-end. Joint material including gaskets and lubricants shall conform to AWWA C900.

5. Fittings shall be manufactured in accordance with ANSI/AWWA C110/A21.10 or ANSI/AWWA C153/A21.53, and shall be ductile iron. The minimum acceptable pressure rating shall be 250 psi. Compact fittings are required and shall have a minimum acceptable pressure rating of 350 psi.

6. 3-inch and 4-inch diameter pipe shall be Schedule 80 PVC, in accordance with ASTM D-1785 or ASTM D-2241 for SDR (Standard Dimension Ratio) 13.5, or as specified in the Contract Documents. Solvent cement for non-gasketed PVC pipe shall meet the requirement of ASTM D-2564. Pipe 2-inches and smaller shall be Municipex pipe.

7. Pipe shall bear identification markings that will remain legible during normal handling, storage, and installation. The markings shall be applied in a manner that will not reduce the strength of the pipe or coupling or otherwise damage either. Pipe markings shall be applied at intervals not to exceed five (5) feet and shall include the nominal size and outside diameter (e.g. 4 CI), PVC, DR 18, AWWA Pressure Class (PC 150), manufacturer's name or trademark and production record code, and the seal of the testing agency that verified the suitability of the pipe material for potable water service.

8. The manufacturer's representative shall be made available a minimum of 2 working days (time on site) during the project when requested by the Owner, including the first

2 Days of pipeline installation.

9. The cost for the services of the manufacturer's representative, including expenses, shall be considered incidental to the project and will not be paid separately.

C. High Density Polyethylene (HDPE) Pipe

1. HDPE pipe and fittings shall meet the requirements for potable water and have ANSI/NSF No. 61 certification. HDPE pipe shall only be used for potable water applications when a carrier pipe is required for boring.

2. HDPE pipe 3-inches or less in diameter shall comply with AWWA C901 and shall have a nominal DIPS (Ductile Iron Pipe Size) outside diameter unless otherwise specified. The nominal size and SDR of the pipe shall be as specified in the Contract Documents. HDPE pipe greater than 3-inches in diameter shall be in accordance with AWWA C906-15 and shall have a nominal DIPS (Ductile Iron Pipe Size) outside diameter unless otherwise specified. The nominal size, pressure classification rating, and SDR of the pipe shall be as specified in the Contract Documents. ODs and tolerances for IPS outside diameter pipe shall be in accordance with ANSI B36.10 as illustrated in AWWA C906-15 Table 3.A Pipe shall be homogeneous and uniform throughout; shall be free of injurious defects such as visible cracks, holes, foreign inclusions, voids, and blisters; and shall have uniform color and physical properties according to the provisions of AWWA C906-15.

3. Commercial virgin PE Compounds shall meet ASTM D3350 physical property requirements and shall be classified per ASTM D3350 as shown in Table 1 of AWWA C906-15. The compound shall have HDB (Hydrostatic Design Basis) ratings at 73°F (23°C) and at 140°F (60°C) and HDS (Hydrostatic Design Stress) ratings at 73°F (23°C) determined in accordance with ASTM D2837 and PPI TR-3 (Policies and Procedures for Developing Recommended Hydrostatic Design Stress for Thermoplastic Pipe Materials).

4. The PE Compound in the pipe shall contain color and ultraviolet (UV) stabilizer meeting the requirements of ASTM D3350 Codes C or E. Code C compounds shall contain 2 to 3 percent carbon black when material from the pipe is tested in accordance with Section 4.3.11 of AWWA C906-15. Code E compounds used for solid color pipe, color stripes, or color layer (shell) shall contain sufficient UV stabilizer to protect the pipe against UV degradation for at least 24 months of unprotected outdoor exposure. Color PE compounds used for stripes or color layers shall be of the same materials designation codes as the pipe material, varying only by color and UV stabilizer.

5. Clean rework materials derived from pipe production by the same manufacturer are acceptable as part of a blend with Virginia PE compound meeting section 4.2.1 of AWWA C906-15 for the production of new pipe, including sections 4.2.3.1, 4.2.3.2, 4.2.3.3 and 4.2.4.

6. PE fittings or components may be molded, thermoformed from pipe sections or fabricated. Molded fittings shall meet the requirements of AWWA C906-15 and the requirements of ASTM D2683 for socket-type fittings, or ASTM D3261 for butt-type fittings, or ASTM F1055 for electrofusion-type fittings. Thermoformed and fabricated fittings shall meet the requirements of AWWA C906-15 and ASTM F2206.

7. Pipe sections shall be joined on the job site above ground into continuous lengths by the thermal butt-fusion or electrofusion method, which shall be performed in strict accordance with the manufacturer's recommendations. The butt-fusion equipment used in the joining procedures shall be capable of meeting all conditions recommended by the pipe manufacturer, including, but not limited to, temperature requirements of 400 °F, alignment, and 75 psi interfacial fusion pressure. Butt-fusion joining shall be 100% efficient and shall provide a joint weld strength equal to or greater than the tensile strength of the pipe. Socket-fusion, extrusion welding or hot gas welding of HDPE shall not be used for pressure pipe applications. Flanges, unions, grooved-couplers, transition fittings, and some mechanical couplers may be used to mechanically connect HDPE pipe without butt-fusion, if specified in the Contract Documents and approved by the manufacturer.

8. The manufacturer's representative shall be made available a minimum of 2 working days (time on site) during the project when requested by the Owner, including the first 2 Days of pipeline installation.

9. The cost for the services of the manufacturer's representative, including expenses, shall be considered incidental to the project and will not be paid separately.

10. Transition couplings from HDPE to other pipe materials, shall be as indicated in the Contract Documents.

D. Copper Water Pipe

Pipe shall be seamless copper tubing conforming to ASTM B 88, Type K, Temper 060, and shall be of the coiled type. Fittings shall be wrought copper solder-joint pressure fittings conforming to ASME B16.22. Copper tube and fittings shall be rated for a working pressure of 150 psi. Joints shall be compression style.

E. Valves

1. Gate Valves

a. Resilient-seated gate valves shall be used on pipelines 3-inches in diameter up to and including 12-inches in diameter. Resilient-seated gate valves shall be in accordance with AWWA C509 or AWWA C515 and shall be supplied with an interior epoxy coating in accordance with AWWA C550. Resilient-seated gate valves shall be iron body, non-rising bronze or stainless steel stem, rubber encapsulated iron disc, o-ring seals, and suitable for buried service. Valve ends shall be flanged, mechanical joint, or mechanical joint by flange to suit the pipe or fittings as indicated in the Contract Documents.
Gate valves shall be manufactured by Kennedy Valve Company, Mueller Company, AVK, or AFC.

b. Gate valves 3-inches in diameter shall be cast bronze, solid-wedge disc, screwed bonnet, inside screw, non-rising stem valves with threaded connections. Valves shall conform to Standard SP-80, Type 2, Class 150, Manufacturer's Standardization Society of the Valve and Fitting Industry, Inc. Gate valves 2" and smaller shall be manufactured by AVK or AFC.

c. Gate valves larger than 16-inches in diameter shall meet the requirements of AWWA C500, except Section 4.4.8.1.1 will not be allowed. Valves shall be rated for 150 psi working pressure and a minimum 300 psi test pressure. Valves shall be iron body, bronze-mounted, double disc, parallel seat, non-rising stem type fitted with O-Ring seals. Valves shall be capable of drip tight, bi-directional shut off and operate in the horizontal position. The operating nuts shall be 2-in square. Valves shall open counter clockwise. Seats in the body shall be replaceable without removing the valve from the pipeline. Discs shall be cast iron and bronze faced and shall be free to revolve 360 degrees. Valves to be furnished with bronze rollers, bronze tracks and bronze scrapers.

d. Valve Operators

Buried valves shall have a 2-inch square operating nut conforming to AWWA C509, and shall open in a counterclockwise direction, unless otherwise noted. A valve key wrench of adequate length and of each type required shall be provided for each buried valve; however, not more than three of each type are required for each project. Valves in vaults shall have a hand wheel of cast iron conforming to ASTM A126, Class B.

2. Ball Valves

Owner-approved ball valves smaller than 3-inches in diameter shall be:

a. Brass with threaded connections, O-ring seals, and a coated ball conforming to AWWA C800 and Standard SP-80, Type 2, Class 150 Manufacturer's Standard Society of the Valve and Fittings Industry, Inc. Valves shall be manufactured by the Ford Meter Box Company B11, Mueller Company 300 Ball Curb Valve, B-20283, or approved equal.

b. Ball valves 2" and smaller shall be manufactured by AVK, AFC, or approved by Town.

c. NSF approved.

3. Butterfly Valves

a. Butterfly valves may be used on pipelines 16-inches in diameter and larger and shall be Pressure Class 150B in accordance with the latest revision of AWWA C504. Butterfly valves and operators shall be suitable for buried service. Valve seats shall be of synthetic rubber compound and tested in accordance with ASTM D-429. The valve shall be operable with a maximum input of 150 foot-pounds on the operating nut, and be able to withstand an overload input torque of 150 foot-pounds at full open and full closed positions without damage to the operator nut. Actuator components shall be designed to withstand, without damage, a rim pull of 200 pounds for the hand wheel, and an input torque of 300 Ft-Lbs for wrench nuts, in accordance with AWWA C504.The disc shall be capable of holding in any intermediate position without creep or flutter.

b. Butterfly valve operators may be side-mounted, shall meet the requirements of AWWA C504, pressure class 150B, shall be capable of seating and unseating the discs against the full design pressure and velocity, and shall transmit sufficient torque to the valve to accomplish this. Buried valves shall contain permanently lubricated operators. Valve operators shall be suitable for a minimum of 10,000 cycles of operations at its rated torque.

4. Coatings

All interior ferrous surfaces of all valves shall be coated in accordance with ANSI/AWWA C550 using a coating approved by the Virginia Department of Health for contact with potable water and shall not contain lead, coal tar resins, lampblack, carbon black or bituminous materials. The exterior surfaces shall receive a factory applied fusion bonded epoxy coating.

5. Valve Stem Extensions

Valve stem extensions, when allowed by the locality, shall be furnished when the distance from the operating nut to the top of the valve box frame is greater than 36-inches. Extension stems shall have a 2-inch square wrench nut on the top end and shall be at least as strong as the valve stem. Extension stems shall be coated in accordance with above.

6. Valve Markings

Valve markings shall be cast on the bonnet or body of each valve and shall show the manufacturer's name or mark, the year the valve casting was made, the size of the valve, and the designation of working pressure.

F. Valve Boxes

Valve boxes shall be as indicated in the Standard Details.

G. Fire Hydrants

1. Fire hydrants shall be of the dry-barrel type and shall conform to AWWA C502.

2. The hydrant base shall have a 6-inch mechanical joint bell, designed for connection to a horizontal 6-inch ductile iron hydrant branch with retainer glands. The traffic coupling shall allow for 360-degree adjustment of the upper standpipe. The fire hydrant shall be painted with a high gloss, alkyd industrial enamel (colors shall be selected by the Owner). Extension spools shall be available from 6-inches to at least 48-inches, in 6-inch increments. Normal bury depth shall be 3.5 feet.

3. The flow rate shall be a minimum of 1000 gallons per minute with not more than 5-psi pressure drop through the steamer nozzle, per AWWA C502.

4. The internal valve shall be no smaller than 4½-inches in diameter and have bronze-to-bronze seating.

5. Hydrants shall include two (2) 2 1/2-inch hose nozzles placed 180 degrees apart; National Standard (American) fire hose coupling screw threads; and one steamer

nozzle with 4 1/2-inch National Standard (American) fire hose coupling screw threads (unless specified otherwise by the Owner).

6. Fire Hydrants shall conform to Mueller Super Centurion 250 Model A421 or A-423, Kennedy Guardian K-81D,or 4 ½"American-Darling Mark 73-5.

H. Appurtenances

1. Air Vent and Blow Off Assemblies

a. Air Vent and Blow Off Assemblies shall be as indicated in the Standard Details.

b. Brass Pipe shall be red brass pipe meeting the requirements of ASTM B 43. Pipe sizes, wall thickness and dimensions shall meet the requirements of ASTM B 251, Table I for regular pipe. Brass pipe fittings shall be screwed end malleable iron pattern meeting the requirements of ANSI B16.15. They shall be finished rough, unless otherwise specified. Unions shall be of all brass or bronze with ground joints and shall be left semi-finished. Fittings shall be rated for steam working pressures up to 125 psi. Joints shall be screwed type with threads clean cut, tapered and smooth, meeting the requirements of ANSI B2.1.

2. Water Sampling Stations

Water sampling stations shall conform to Mainguard #94WM sampling station, or approved by Town.

3. Corporation Stops

Corporation Stops shall be manufactured to meet or exceed the AWWA C-800 latest revision. The corporation stops shall also meet the following requirements:

a. The valve shall be of the ball type construction. A plug valve is not approved.

b. The corporation stops shall be designed to withstand working pressures up to 300 psi.

c. The corporation stops shall be manufactured with AWWA/CC tapered threads. See details for Swivel Eighth Bend.

d. Corporation stops joining to existing galvanized piping shall have female iron pipe threads.

e. Acceptable manufacturers of corporation stops are:

(1) Ford Ball Corporation Stop:
Model FB600-4-NL for 1" (CC threads) with Swivel Bend Model LA04-44S-NL
Model FB600-7-NL for 2" (CC threads) with Swivel Bend Model LA04-77S-NL

(2) A.Y. McDonald Ball Corporation Stop:
Model 74701BL (1" or 2") with Swivel Bend Model 74750S-22 (1" or 2").

4. Service Saddle

Service Saddle shall be designed and sized for the water main on which the saddle is to be installed. The service saddle shall also meet the following requirements:

a. Stainless steel saddle bodies shall be 18-8, Type 304, stainless steel with all welds fully passivated to restore stainless steel characteristics.

b. Ductile iron saddle bodies shall conform to ASTM A-536 and have a fusion applied epoxy coating 12-mils dry thickness (D.T.). Straps shall be double strap stainless steel, 18-8, Type 304 fully passivated for corrosion resistance.

c. Threads shall be AWWA C-800 CC/Taper.

d. The saddle band shall be a minimum of 2-inches in width.

e. The saddle shall be provided with a Buna-N rubber gasket meeting ASTM D2000 to seal the saddle and the main pipe.

f. The nuts, washers, bands, and bolts shall be 18-8 stainless steel.

g. Acceptable manufacturers are The Ford Meter Box Co., Inc., Model FS202/FS303/FRS202, JCM Model 406, Romac Industries Inc., Style 202N, Cascade Products Style CNS2, or approved equal.

J. Water Meters

Meter settings shall include meter setter, meter box, water meter, and all appurtenances necessary for providing customer water service at the location designated in the Contract Documents. See the Special Provisions for additional information.

K. Joint Restraint Devices

1. Joint restraints shall be provided where indicated in the Contract Documents.

2. Ductile Iron Pipe

The restrained joint system shall have a pressure rating equal to or greater than that of the pipe on which it is used. Restrained joint devices shall be installed in strict accordance with the manufacturer's recommendations.

a. Push-On Joints

For push–on joint type pipe, the restrained joint system shall be a manufacturer's standard restrained joint system, SnapLock (U.S.Pipe), TR Flex (U.S. Pipe), FlexRing (American Pipe), Series 3000 Stargrip wedge

action restraint (Star Pipe Products), or approved equal.

b. Mechanical Joints

For mechanical joint type pipe, the restrained joint system shall be a manufacturer's standard restrained joint system, Series 1100 Megalug ductile iron glands (EBBA iron, Inc.), Series 1400 retainer glands (Ford Meter Box Company, Inc.), Series 3000 Stargrip wedge action restraint (Star Pipe Products), or approved equal.

3. PVC Pipe (4-inch and larger)

The restrained joint system shall have a pressure rating equal to or greater than that of the pipe on which it is used. Restrained joint devices shall be installed in strict accordance with the manufacturer's recommendations.

a. Bell and Spigot PVC Joints

The restraint system for bell and spigot PVC joints shall be Series 1600/2800 ductile iron retainers as manufactured by EBAA Iron, Inc, Series 1390 retainers as manufactured by Ford Meter Box Company, Inc., or approved equal.

b. PVC to Mechanical Joint Fittings

The restraint system for restraining PVC pipe to ductile iron mechanical joint fittings shall be Series 2000 PV ductile iron retainers as manufactured by EBAA Iron, Inc., Series 1500 retainers as manufactured by the Ford Meter Box Company, Inc., Series 4000 Stargrip wedge action restraint (Star Pipe Products),or approved equal.

4. Concrete Reaction Blocking

Concrete reaction blocking shall not be permitted, unless approved by the Owner.

5. Tie Rods

Tie rods shall not be used unless specifically approved by the Owner and only where shown in the Contract Documents. When appropriate, tie rods, bolts, washers, and nuts shall be stainless steel in accordance with ASTM A-307.

L. Tapping Valves and Sleeves

1. Tapping valves and sleeves shall be compatible for use with the pipe being tapped and as approved by the Owner. The Contractor shall verify the material and diameter of the pipe being tapped prior to ordering tapping valves and sleeves.

2. Tapping valves for ductile iron pipe shall meet the same specifications as gate valves, except they shall have a full, unobstructed opening to receive a full size shell cutter. Tapping valves shall contain a standard mechanical joint on one end and a flanged joint on the other end. The valves shall be subjected to a factory test pressure of 400 psi and be designed for a working pressure of 200 psi.

3. Tapping sleeves shall be split sleeve with mechanical joint type end seals. Cast sleeves for tapping cast iron pipe, shall be ductile iron meeting ASTM A536 Grade 65-42-12.

   a. Tapping sleeves for Ductile Iron and PVC C-900 Pipe

      As appropriate, tapping sleeves shall be mechanical joint, furnished complete with plain rubber gaskets, mechanical joint accessories, and approved interior and exterior coatings. The outlet flange shall be 125 pound, drilling per ANSI B16.1, with standard tapping flange counterbore per MSS SP-60. Tapping sleeves shall be in accordance with ANSI/AWWA C110/A21.10.and approved by the manufacturer for use on the type and class of pipe being tapped.

   b. PVC Pipe (Other than C-900)

      Tapping sleeves shall be complete, furnished with plain rubber gaskets, have a full circumference band made of 18-8 type 304 stainless steel. The flange and all bolts and nuts shall conform to AWWA C207 Class D 150 lb. drilling, made of 18-8 type 304 stainless steel.

      Gaskets shall conform to the applicable requirements of ANSI/AWWA C111/A21.11, and shall be clearly marked to identify the diameter range for which intended.

4. When approved by the Owner and indicated in the Contract Documents, stainless steel tapping sleeves may be used and shall be constructed of all stainless steel conforming to the following requirements:

   a. Flange - The flange shall be 18-8, type 304 stainless steel, with recess to accept the standard tapping valve according to MSS-SP60. The flange shall also conform to AWWA C207-latest revision, Class D ANSI 150 lb. drilling. The bolt hole shall be aligned to straddle the pipe center line.

   b. Body - The body shall be 18-8, type 304 stainless steel. All welds shall be fully restored to stainless steel characteristics.

   c. Gaskets - The gaskets shall be virgin SBR compounded for water service. ASTM D2000 8M 4AA607. The gasket shall be a full 360 degree pipe coverage. The outlet gasket shall be Buna-N.

   d. Test Plug - Provide a waterworks brass 3/4-inch test plug with standard square head.

   e. Bolts and Nuts - The bolts and nuts shall be 18-8, type 304 stainless steel UNC threads. Provide heavy hex nuts and washers fluorocarbon coated to prevent galling.

   f. Manufacturer - Acceptable manufacturer is the Ford Meter Box Co., Inc., Model FTSS, Smith-Blair Style 665, Romac Industries Inc., SST or JCM Industries, Inc., Model 432, or approved equal.

M. Sleeves and Couplings

1. Diameters greater than 2-inch

a. Mechanical joint sleeves shall be solid type, long or short body pattern as approved by the Owner, manufactured in accordance with ANSI/AWWA C110/A21.10. Sleeves shall have a minimum pressure rating of 350 psi. Glands, gaskets, bolts, and nuts shall be in accordance with ANSI/AWWA C111/A21.11.

b. Sleeves shall not be machined in order to facilitate use with pipe of a class or type other than that for which the sleeve was manufactured.

c. The use of bolted steel couplings shall be restricted to joining pipes of different outside diameters, joining pipes of dissimilar materials, and joining sections of steel pipe. Ferrous surfaces shall be coated with an epoxy coating; enamel coatings are not acceptable.

d. Bolted steel transition couplings shall be Rockwell 413, Dresser style 162, or approved equal.

e. Bolted steel reducing couplings shall be Rockwell 415, Dresser style 62, or approved equal.

f. Bolted steel couplings for joining pipes of the same outside diameter shall be Rockwell 411, Dresser style 38, or approved equal.

2. Diameters 2 inches and less:

a. Service couplings or unions shall conform to the requirements of AWWA C800-05 with the exception that any brass part of a fitting or coupling or valve in contact with potable water shall be made of copper alloy CDA No. C89520 or "no-lead brass" complying with ASTM B30 and B584. This "no-lead brass" alloy shall contain no more than ¼ of 1 percent (0.25%) total lead content by weight.

b. An ANSI accredited test lab per ANSI/NSF 61, Drinking Water Components-Health Effects Section 8, shall be used to certify the lead content for all "no-lead brass" fittings and valves. Proof of certification is required.

c. All brass fittings and couplings and valves shall have the manufacturers name or trademark integrally stamped as well.

d. Service couplings or unions shall be Mueller type H-15400, McDonald 4602, Cambridge 202, or approved equal.

5.20. MISCELLANEOUS ITEMS

A. Copper tracer wire – shall be 10 gauge, solid wire with plastic coating and shall be attached to waterline.

B. Subsurface Utility Warning Tape - Shall be of a durable, metalized, plastic film, similar to Terra Tape D for identification of water and force mains. Bright blue tape imprinted with the

legend "Caution - Waterline Below" and bright green tape imprinted with the legend "Caution - Sewer Below" shall be used as appropriate. The utility warning tape shall have a width of 6-inches and shall be manufactured by Reef Industries, or approved equal.

5.21. SANITARY SEWER REHABILITATION

The sanitary sewer rehabilitation specifications presented here and in Section 800 are meant as a guideline for the educated and experienced designer and practitioner of gravity sanitary sewer rehabilitation. Because most of the gravity sanitary sewers in Hampton Roads range in size from 6 to 18 inches, these specifications focus on technologies that are well understood in this geographic area and can be supported with competent contractors. These specifications are not meant to be inclusive of all rehabilitation technologies available today.

A. DVDs

1. All television surveys shall be digitally recorded and supplied to the Owner on DVD disks. DVDs shall be submitted to the Owner and will become the property of the Owner.

2. Two labels are required for DVDs. One label shall be placed on the plastic storage case for the CD/DVD and the other on the face of the DVD. Permanently label each DVD and case with the following information:

Plastic case of DVD

Owner Name: _____ Contractor's Name: _____
Tape No.: _____ Date Televised: _____ Date Submitted: _____
Project Name: _____
Branch Name:_____ Street Name:_____

Face of DVD

Manhole No. From	Manhole No. To	Pipe Diameter	Pipe Length	Street
_____	_____	_____	_____	
_____	_____	_____	_____	
_____	_____	_____	_____	
_____	_____	_____	_____	
_____	_____	_____	_____	

B. Pipe Rehabilitation by Cured-In-Place Pipe Method

1. The product proposed for the cured-in-place rehabilitation of sewers must have been in use in the United States for at least three years with a minimum of 50,000 linear feet of the product installed to date in this country.

2. The liner shall generally consist of corrosion resistant polyester, vinyl ester, or epoxy thermosetting resin, or approved equal, impregnated flexible polyester felt or fiberglass fiber. The liner may also consist of glass reinforced pipe (GRP).

3. The wall color of the interior pipe surface of the cured-in-place pipe after installation shall be a light reflective color so that a clear detail examination with closed circuit television inspection equipment may be made.

4. Design inputs generally considered to be the same from site to site for a particular project, are provided in Table 200-5.21.1.

TABLE 200-5.21.1

Common Design Parameters

Safety Factor	2.0
Soil Modulus (1)	1000 psi
Soil Density (2)	120 pcf

Notes:
(1) In the absence of site-specific information, assume a soil modulus of 1000 psi.
(2) In the absence of site-specific information, assume a soil density of 120 lb/ft3 (pcf).

The information listed in Table 200-5.21.2 is specific to each manhole to manhole run of pipe. The Contractor shall use for design the information provided by the Owner and information the Contractor collects during site visits for each manhole to manhole run.

TABLE 200-5.21.2
Site-Specific Design Parameters

Ovality	Notes 1, 2
Ground Water Depth Above Invert	Notes 1, 3
Soil Depth Above Crown	Note 1
Live Load	Notes 1, 4
Design Condition (Fully Deteriorated)	Notes 1, 5
CIPP Thickness	Notes 1, 6, 7

Notes:
(1) Design thickness and complete site-specific designs, in accordance with ASTM F 1216 (Appendix XI) or ASTM F 2019
(2) The Contractor shall estimate the ovality by viewing the videotapes and other information provided by the Owner. If tapes are not available, the Contractor shall assume an ovality of 2%. In cases where the ovality exceeds 10%, the Contractor may consider employing alternative design methods (such as beam design methods) to determine the pipe thickness.
(3) In the absence of accurate water table information or high water elevation observed during the site visit (stream, ponds, etc.), the Contractor shall assume a seasonal groundwater elevation variation of 3 feet below the ground surface.
(4) CIPP is subjected to traffic live loads as calculated by AASHTO Standard Specifications for Highway Bridges, HS-20-44 Highway Loading.
(5) The Contractor shall assume the pipe segments are fully deteriorated.
(6) Thicknesses specified (designed by the Contractor and approved by the Owner) are the final, in-ground thickness required. Measured sample thicknesses will not include polyurethane or polyethylene coatings, any layer of the tube not fully and verifiably impregnated with resin, or any portion of the tube not deemed by the Owner to be a structural component of the composite.
(7) The Contractor must consider any factors necessary to ensure the final, cured-in-place pipe thickness

is not less than specified above. These factors include any stress applied to the material during transportation, handling, installation and cure; the host pipe's material type, condition, and configuration; weather (including ambient temperature conditions); and any other factors which are reasonably expected to be found in existing combined or sanitary sewer systems.

5. The corrosion resistance of the resin system shall be tested by the resin manufacturer in accordance with ASTM D 543. The result of exposure to the chemical solutions listed in Table 200-5.21.3 shall produce loss of not more than 20% of the initial physical properties when tested in accordance with ASTM D 543 for a period of not less than 1 year at a temperature of 73.4°F plus or minus 3.6°F. For applications other than municipal wastewater, conduct chemical resistance tests with actual samples of the fluid to be transported in the pipe and in accordance with procedures approved by the Owner.

TABLE 200-5.21.3
Concentrations of Chemical Solutions for Chemical Resistance Test

Chemical Solution	Concentration, %
Tap Water (pH 6-9)	100
Nitric Acid	5
Phosphoric Acid	10
Sulfuric Acid	10
Petroleum Hydrocarbon Based Fuels (e.g. Gasoline, diesel, etc.)	100
Vegetable Oil[1]	100
Detergent[2]	0.1
Soap[2]	0.1
Domestic Sewage	100

1 Cotton seed, corn, or mineral oil
2 As per ASTM D 543

6. Manufacturer's Information

a. It shall be necessary for the Contractor to obtain the Owner's prior approval for all materials or processes and the Owner shall have the power at any time to order the Contractor to modify or discontinue any practice. All such orders shall be given in writing.

b. All fabricating and Contractor testing shall be carried out under cover and no materials shall be exposed to the weather until they are ready to be inserted. All materials should be protected from the weather and exposure to ultra-violet light as practicable during the manufacture and installation process.

c. Each liner shall be accompanied by suitable documentation indicating time

and date of manufacture, felt thickness, number of layers, length of liner, resin types, resin content, catalyst, relevant batch numbers, etc.

7. Non-Reinforced Thermoset Cured In Place Pipe Liners (Water or Steam Cured)

a. The liner shall meet the requirements of ASTM F 1216 and shall be constructed to withstand inversion pressures, have sufficient strength to bridge missing pipe, stretch to fit irregular pipe sections, and shall invert smoothly around bends. The liner shall fit tightly to the internal circumference of the existing pipe, and a membrane integrally bonded to the internal circumference of the felt, thus forming a smooth, chemically inert internal flow surface. The membrane shall be a minimum of 0.25 mm +5% and shall not be considered to impart any structural strength of the liner. The liner shall be fabricated to a size that when installed will neatly fit the internal circumference of the pipe to be lined. Allowance for longitudinal and circumferential stretching of the liner during installation shall be made by the Contractor.

b. The CIPP liner shall be composed of tubing material consisting of one or more layers of a flexible non-woven polyester felt with or without additives such as woven fiberglass or other fibers and meet the requirements of ASTM F 1216, ASTM F 1743, and ASTM D 5813. The felt content of the CIPP liner shall not exceed 25 percent of the total impregnated liner volume. The fabric tube shall be capable of absorbing and carrying resins, constructed to withstand installation pressures and curing temperatures and have sufficient strength to bridge missing pipe segments, and stretch to fit irregular pipe sections.

c. The CIPP liner tube may be made of single or multiple layer construction, with any layer not less than 1.5 mm thick. The wet-out fabric tube shall have a uniform thickness and excess resin distribution that when compressed at installation pressures will meet or exceed the design thickness after cure.

d. The exterior of the manufactured tube shall have distance markings along its length at regular intervals not to exceed 5 feet. Contractor shall use these marks as a gauge to measure elongation during insertion. Should the overall elongation of a reach exceed 5 percent, the liner tube shall be rejected and replaced. The Contractor shall identify the wet-out facility where all CIPP liner under this Contract will be manufactured. All CIPP liner shall be manufactured from this designated wet-out facility throughout the entire Contract unless specifically approved otherwise by the Owner in writing. Multiple wet-out facilities shall not be allowed. The application of the resin to the felt tubing (wet-out) shall be conducted under factory conditions and the materials shall be fully protected against UV light, excessive heat and contamination at all times.

e. The resin volume shall be adjusted by adding 5 to 10% excess resin for the change in resin volume due to polymerization and to allow for any migration of resin into the cracks and joints in the original pipe. The resin used shall not contain fillers, except those required for viscosity control, fire retardance, or as required to obtain the necessary pot life. Thixotropic agents which will not interfere with visual inspection may be added for viscosity control. Resins may contain pigments, dyes or colors that will not interfere with visual

inspection of the cured liner. However, the types and quantities of fillers and pigments added shall have prior approval of the Owner. The resin content of the liner shall be 10-15% by volume greater than the volume of felt in the liner bag. The felt resin tubing shall be vacuum impregnated with a thermosetting polyester resin and catalyst, vinyl ester resin and catalyst, or epoxy resin and hardener.

f. The Contractor shall deliver the uncured resin impregnated liner bag to the site. The bag may not be impregnated at the site unless approved by the Owner. The liner bag shall be impregnated with resin not more than 80 hours before the proposed time of installation and stored out of direct sunlight at a temperature of less than 30 °F.

Certain design inputs vary by manufacturer, process design, or installation technique. These variables are listed in Table 200-5.21.4 with explanatory notes below.

TABLE 200-5.21.4
Product-Specific Design Parameters

Minimum Enhancement Factor, K(1)	K = 7
Minimum Initial Flexural Strength (ASTM D 790)(2)	σ_s = 4500 psi
Minimum Initial Flexural Modulus of Elasticity (ASTM D 790)(2)	E_s = 350,000 psi
Minimum Retention of Properties to Account for Long-Term Effects (3)	50%
Maximum Long-Term Flexural Modulus of Elasticity (3)	E_L = 175,000 psi

Notes:
(1) Enhancement factor (K) is the additional buckling or load resistance of the rehabilitation product due to the restraining action of the host pipe. The tighter the fit of the product within the host pipe, the greater the value of K. Third party testing of external hydrostatic loading capacity of restrained pipe samples shall be conducted to verify the enhancement factor, K. The minimum values provided are based on the "Long-Term Structural Behavior of Pipeline Rehabilitation Systems," Trenchless Technology Center, 1994.
(2) Initial values are defined in ASTM D 790. The Owner may, at any time prior to installation, direct the Contractor to make cured samples (according to ASTM F 1216 93) and test them in accordance with the listed ASTM standards to verify initial values of physical properties. In such tests the Contractor's samples must achieve a 95% pass-rate.
(3) The initial flexural modulus is multiplied by the creep factor (or percentage retention) to obtain the long-term values used for design. Long-term values shall be verified by long-term external pressure testing of circular lengths of the pipe material by third-party labs prior to bid (e.g. Trenchless Technology Center - TTC). It is understood that the material's modulus of elasticity will not change over time; however, by convention the modulus is reduced for design purposes for all plastic pipe sections to account for the reduced ability of plastic pipe to carry loads due to the changes in pipe geometry resulting from the effects of creep over time.

8. Glass Reinforced Pipe (GRP) Liners

The materials used for GRP liners shall have the following additional properties:

a. The fiberglass within the liner shall be non-corrosion material and shall be free from tears, holes, cuts, foreign materials and other surface defects. Its

glass fibers must extend in a longitudinal direction to insure no longitudinal stretching during the installation process. The tube shall consist of a seamless, flexible, glass fiber with no longitudinal seams.

b. Interior and exterior plastics shall be styrene resistant to protect and contain the resin used in the liner.

c. The exterior plastic shall be UV light resistant, when applicable, and translucent to allow visual inspection of the impregnation of the resin within the glass fibers.

d. The resin shall be a chemically resistant, isophthalic polyester resin or vinyl ester resin. When cured the resin/liner system shall meet the structural and chemical resistance requirements of ASTM F 2019.

Certain design inputs vary by manufacturer, process design, or installation technique. These variables are listed in Table 200-5.21.5 with explanatory notes below.

TABLE 200-5.21.5
Product-Specific Design Parameters

Minimum Enhancement Factor, K(1)	K = 7
Minimum Initial Flexural Strength (ASTM D 790)(2)	σ_s = 4500 psi
Minimum Initial Flexural Modulus of Elasticity (ASTM D 790)(2)	E_s = 725,000 psi
Minimum Retention of Properties to Account for Long-Term Effects (3)	50%
Maximum Long-Term Flexural Modulus of Elasticity (4)	E_L = 362,500 psi

Notes:
(1) Enhancement factor (K) is the additional buckling or load resistance of the rehabilitation product due to the restraining action of the host pipe. The tighter the fit of the product within the host pipe, the greater the value of K. Third party testing of external hydrostatic loading capacity of restrained pipe samples shall be conducted to verify the enhancement factor, K. The minimum values provided are based on the "Long-Term Structural Behavior of Pipeline Rehabilitation Systems," Trenchless Technology Center, 1994.
(2) Initial values are defined in ASTM D 790. The Owner may, at any time prior to installation, direct the Contractor to make cured samples (according to ASTM F 1216 93) and test them in accordance with the listed ASTM standards to verify initial values of physical properties. In such tests the Contractor's samples must achieve a 95% pass-rate.
(3) The initial flexural modulus is multiplied by the creep factor (or percentage retention) to obtain the long-term values used for design. Long-term values shall be verified by long-term external pressure testing of circular lengths of the pipe material by third-party labs prior to bid (e.g. Trenchless Technology Center - TTC). It is understood that the material's modulus of elasticity will not change over time; however, by convention the modulus is reduced for design purposes for all plastic pipe sections to account for the reduced ability of plastic pipe to carry loads due to the changes in pipe geometry resulting from the effects of creep over time.
(4) E_L based on ASTM F 2019.

9. Liner Wall Thickness

a. Liner thicknesses shall be submitted for all pipe sections for Owner approval.

b. The required structural CIPP wall thickness shall be designed in accordance

with the guidelines in Appendix X1 of ASTM F 1216 - or ASTM F2019. In cases where ovality exceeds 10%, or where pipes are egg or oval shaped, alternative methods of design may be considered by the Owner. The categories of design parameters noted in Tables 200-5.21.1, 200-5.21.2, 200-5.21.3, 200-5.21.4 and/or 200-5.21.5 shall be used, as appropriate, unless otherwise directed by the Owner.

c. Liner thicknesses may be modified with the Owner's approval of supporting calculations by the Contractor's Professional Engineer. The Owner reserves the right to change specified thickness based on new information. The Bid prices will be adjusted to increase or decrease unit price as liners are thickened or thinned at the Owner's direction.

d. Maintenance of flow capacity of existing pipes is essential. Rehabilitated pipe shall have minimum or no change in capacity. An increase in flow capacity following rehabilitation is preferred, and in no case shall the flow capacity of rehabilitated pipes be reduced.

e. Verify that installed thickness of the CIPP is within minus 5 % and plus 10 % of the specified thickness. The Contractor shall collect samples per Section 813.2.6 Testing. The results of the liner thickness measurements and structural analysis shall be submitted to the Owner within 14 Days and prior to payment.

f. Minimum liner thicknesses for water or steam cured polyester thermoset CIPP and GRP liners shall be:

Pipe Diameter (In.)	Polyester Thermoset CIPP (mm)	GRP (mm)
6	4.5	3.0
8	6.0	4.5
10	6.0	4.5
12	6.0	4.5
15	7.5	6.0
18	9.0	7.5

10. The length of the liner shall be that which is deemed necessary by the Contractor to effectively carry out the insertion and seal the liner at the inlet and outlet of the manhole. Individual inversion runs may be made over one or more manhole to manhole sections as determined.

11. The Contractor shall provide a liner exhibiting the previously described properties. Prior approval of Shop Drawings related to any or all materials or methods of installation shall not relieve the Contractor of this responsibility.

C. Pipe Rehabilitation using the Sliplining Method

1. Fiberglass (GRP) pipe shall be centrifugally cast, or mandrel produced, with glass fiber reinforcement in a cured thermosetting resin manufactured in accordance with ASTM D3262, cell classification Type 1, Liner 1, Grade 1. Pipe stiffness shall meet the design requirements in ASTM D3262. Fiberglass pipe shall be shown by tests to be resistant to long-term corrosion. Testing shall be performed in accordance with

ASTM D3681 using 1.0N sulfuric acid for sanitary sewage, and ASTM C581 for industrial sewage. Fiberglass pipe shall have a gasket that has been affixed, via environmentally safe adhesive, to the pipe within the groove for the tongue and groove application. A coupling device with the gasket affixed similarly will suffice also. Loose gaskets affixed without adhesive will not be permitted.

2. PVC pipe shall have a minimum cell classification of 12364 B or C as defined in ASTM D1784. Pipe shall be closed profile per ASTM F 1803 with a tongue and groove gasketed joint. The joint shall be designed so that neither the outside diameter of the pipe is increased, nor the internal diameter of the pipe is decreased at the joint. The joint shall meet the requirements of ASTM D3212. PVC liner pipe shall have a minimum pipe stiffness of 46 psi when tested in accordance with ASTM D2412. Gaskets shall meet the requirements of ASTM F 477.

3. Fusible Polyvinylchloride (fPVC) Pipe

   a. Pipe Supplier shall furnish fPVC pipe conforming to all standards and procedures, and meeting all testing and material properties as described in this specification. Pipe, 4 to 12 inches in diameter, shall conform to AWWA C900 – Class 150 (DR 18), unless otherwise indicated in the Contract Documents. Pipe greater than 12 inch shall conform to AWWA C905 – Class 235 (DR 18) or Class 150 (DR25), as specified in the Contract Documents.

   b. fPVC pipe shall be tested at the extrusion facility for properties required to meet all applicable parameters as outlined in AWWA C900 or C905, as appropriate. Rework material shall be allowed per AWWA C900 and AWWA C905 standards. All piping shall be made from a PVC compound conforming to cell classification 12454 per ASTM D1784.

   c. fPVC pipe shall be extruded with plain ends and shall normally be supplied in standard 40 foot lengths. The ends shall be square to the pipe and free of any bevel or chamfer. There shall be no bell or gasket of any kind incorporated into the pipe. fPVC pipe shall be blue in color for potable water use or green for wastewater.

   d. Pipe generally shall be marked per AWWA C900 or AWWA C905, and shall include as a minimum:

      (1) Nominal pipe size
      (2) PVC
      (3) Dimension Ratio, Standard Dimension Ratio or Schedule
      (4) AWWA pressure class and Standard number
      (5) Extrusion production-record code
      (6) Trademark or trade name
      (7) Cell Classification 12454 and/or PVC material code 1120 may also be included.
      (8) NSF-61 mark, if for potable water service.

4. Polyethylene pipe and fittings shall be manufactured from high density compounds in accordance with ASTM D3350. All HDPE pipe shall be closed profile and have a minimum SDR rating of 32.5 and a minimum pipe stiffness of 46 psi.

5. All pipe shall be provided with joints designed so that neither the outside diameter of the pipe is increased nor the internal diameter of the pipe is decreased at the joint.

6. Cellular concrete grout for annular space provided under this Specification shall have the following characteristics:

   a. 300 psi, 28-day compressive strength; 100 psi, 24-hour compressive strength, minimum.
   b. Foam concentrate: ASTM C869.
   c. Cement: ASTM C150.
   d. Fly ash: ASTM C618, Class F, except loss of ignition shall not exceed 5%.
   e. Water: Potable.
   f. Admixtures: Only as approved by foam concentrate manufacturer and Owner.

7. All connectors provided for reinstatement of laterals shall be as follows:

   All connectors shall be composed of synthetic rubber based compounds formulated to resist acids, alkalis, solvents, and greases encountered in sanitary and storm sewer and shall contain no reclaimed rubber. Contractor shall submit evidence of satisfactory testing in accordance with ASTM D543 with no weight loss in 1.0N sulfuric acid, 1.0N hydrochloric acid or 1.0N nitric acid. Materials shall show no etching, blistering, distortion or other evidence of chemical attack. Ultimate tensile strength shall exceed 750 psi at 80 degrees F and elongation shall exceed 150%. Water absorption shall not exceed 4% when tested in accordance with ASTM D570 and hardness shall not exceed 55 in a 5 second reading interval when tested in accordance with ASTM D2240, Type A Hardness.

8. All compression bands shall be Series 316 Stainless Steel. All nuts and bolts shall be Series 305 Stainless Steel.

9. The completed joint shall comply with ASTM C425 for resilient sewer pipe joints.

D. Pipe Saddle Lateral Connection for Rehabilitated Pipes

1. Use pipe saddles only on rehabilitated sanitary sewer mains.

2. Supply one-piece prefabricated saddle, either polyethylene or PVC, with neoprene gasket.

3. Use 1/2 inch stainless steel bands for securing saddles to liner pipe. Bands shall be resistant to corrosion for a minimum service life of 50 years.

E. Inserta Tee Lateral Connection for Rehabilitated Pipes

1. Use pipe Inserta tees only on rehabilitated sanitary sewer mains.

2. The Inserta Tee is comprised of three parts; PVC hub, stainless steel band and rubber boot as manufactured by Fowler Manufacturing Co., Inc.

3. PVC hub and rubber boot shall be engineered to accept the wall thickness and internal radius of the pipe. The PVC hub and rubber boot shall not protrude more than ½inchinto the sewer pipe.

4. The PVC hub shall be in accordance with ASTM D 3034.

5. The rubber boot shall be in accordance with ASTM C 443.

F. Manhole Rehabilitation using Cementitious Products

1. Contractor may use the following products in conjunction with the liner material to facilitate manhole rehabilitation. Material compatibility of the products must be demonstrated prior to commencement of Work.

a. Mix to be applied according to manufacturer's recommendations and shall have the following minimum requirements.

Compressive Strength	ASTM C 109	6 hr 1,400 psi
Shrinkage	ASTM C 596	0% at 90% relative humidity
Bond	ASTM C 321	28 day 150 psi
Cement	Sulfate resistant	
Density, when applied		105 ±5 pcf

b. Infiltration Control Mix: A rapid-setting cementitious product specifically formulated for leak control shall be used to stop minor water infiltration and shall be mixed and applied according to manufacturer's recommendations and shall have the following minimum requirements.

Compressive Strength	ASTM C 109	1 hr	600 psi
Compressive Strength	ASTM C 579 B	24hr	1,000 psi
Bond	ASTM C 321	1 hr	30 psi
Bond	ASTM C 321	24 hr	80 psi.

c. Grouting Mix

(1) A cementitious grout shall be used for stopping very active infiltration and filling voids and shall be mixed and applied according to manufacturer's recommendations. The cementitious grout shall be volume stable and have a minimum 28 day compressive strength of 250 psi and a 1 day strength of 50 psi.

(2) Chemical grouts may be used for stopping very active infiltration and shall be mixed and applied per manufacturer's recommendations.

d. Liner Mix

(1) Standard

The cementitious liner shall be used to form a structural/structurally enhanced monolithic liner covering all interior manhole surfaces. The material shall be applied at a minimum ½-inch thickness; but application must be at a thickness to ensure a structurally stable manhole, while forming an infiltration barrier to water and gases. The material shall meet the following minimum requirements at 28 days.

Compressive Strength	ASTM C 495	3,000 psi
Flexural Strength	ASTM C 293	600 psi
Shrinkage	ASTM C 596	0% at 90% relative humidity
Tensile Strength	ASTM C 496	500 psi
Sulfate Resistance	ASTM C 267	No visible at pH of 2.

(2) High Performance

The liner mix shall be a cement-based, fiber-reinforced calcium aluminate mortar specifically designed to prevent infiltration and restore structural integrity. The material shall be premixed and specifically formulated to withstand hydrogen sulfide bacterial corrosion and abrasion in municipal sanitary sewer systems. The material shall meet the following minimum requirements at 28 days.

Compressive Strength	ASTM C 109	9,000 psi
Flexural Strength	ASTM C 293	1,200 psi
Shrinkage	ASTM C 596	0% at 90% relative humidity
Tensile Strength	ASTM C 496	>800 psi
Sulfate Resistance	ASTM C 267	No visible at pH of 2 or less

G. Manhole Rehabilitation using Cured-In-Place Fiberglass Insert Liner

1. Cured-In-Place fiberglass insert liner shall contain 68 ounces per square yard of pre-saturated fabrics. The liner shall contain a felt impregnated non-porous membrane bonded between the layers of structural fiberglass. The cured-in-place fiberglass insert shall have a ten-year labor and materials, non-prorated warranty to stop infiltration and further deterioration of the structure.

2. Cured-In-Place fiberglass insert liner shall meet the minimum applicable requirements:

Test	Property	Results
ASTM-D-790	Flexural Strength	22,000 psi
ASTM-D-695	Compressive Strength, Yield	10,500 psi
ASTM-D-638	Tensile Strength	9,500 psi
ASTM-D-638	% Elongation @ Max Load	1.53%
ASTM-D-2240	Hardness, Shore D	80
ASTM-D-4541	Bond Strength	900 psi

3. Chemical Resistance: The corrosion resistance of the fiberglass liner insert shall be tested by the manufacturer in accordance with requirements noted in 5.21.G.4.

4. The manufacturer shall warrant that the products are produced in conformity with its standard specifications or formulations within recognized tolerances, free of adulteration or contamination, and that the product will perform in accordance with representations in the manufacturer's literature and technical data sheets when properly applied in strict conformance with the printed instructions on container and prescribed in technical data instructions and when applied to a properly prepared surface.

H. Manhole Rehabilitation using Epoxy Coating

1. The monolithic high-build epoxy coating shall consist of a 100% solids epoxy formulated with exceptionally high physical strengths and broad range chemical resistance. The coating system coverage shall be a minimum of 100 mils and shall be determined by the manufacturer. The manufacturer shall provide documentation for the recommended thickness.

2. The epoxy coating shall have a one-year labor and materials, non-prorated warranty to stop infiltration and further deterioration of the structure.

3. The epoxy coating shall have the following minimum requirements:

Test	Property	Results
ASTM-D-790	Flexural Strength	12,443 psi
ASTM-D-695	Compressive Strength, Yield	12,870 psi
ASTM-D-638	Tensile Strength	6,640 psi
ASTM-D-638	% Elongation @ Max Load	1.53%
ASTM-D-2240	Hardness, Shore D	80
ASTM-D-256	Impact, IZOD	0.345 ft. lb/in of notch

4. The epoxy coating shall have the following minimum requirements after seven day curing:

Test	Property	Results
ASTM-D2240-75	Hardness	82 Shore D
ASTM-638	Ultimate Elongation	6%

5. Chemical Resistance: The corrosion resistance of the epoxy coating shall be tested by the coating manufacturer in accordance with ASTM D543. The result of exposure to the chemical solutions listed below shall produce loss of not more than 20 % of the initial physical properties when tested in accordance with ASTM D543 for a period of not less than 1 year at a temperature of 73.4 ºF plus or minus 3.6 ºF. For applications other than municipal wastewater, conduct chemical resistance tests with actual samples of the fluid to be transported through the manhole and in accordance with procedures approved by the Owner.

CONCENTRATIONS OF CHEMICAL SOLUTIONS FOR CHEMICAL RESISTANCE TEST

Chemical Solution	Concentration, (%)
Tap Water (pH 6-9)	100
Nitric Acid	5
Phosphoric Acid	10
Sulfuric Acid	10
Petroleum Hydrocarbon Based Fuels (e.g. Gasoline, diesel, etc.)	100
Vegetable Oil[1]	100
Detergent[2]	0.1
Soap[2]	0.1

Domestic Sewage	100

[1] Cotton seed, corn, or mineral oil
[2] As per ASTM D543

6. Other Materials: No other material shall be used with the above mixes without prior approval or recommendation from the manufacturer.

7. The manufacturer shall warrant that the products are produced in conformity with its standard specifications or formulations within recognized tolerances, free of adulteration or contamination, and that the product will perform in accordance with representations in the manufacturer's literature and technical data sheets when properly applied in strict conformance with the printed instructions on container and prescribed in technical data instructions and when applied to a properly prepared surface.

I. Cured in Place Manhole Liners

1. The liner design and selection of materials shall be suitable for all the specified design conditions and shall meet the minimum requirements outlined in Table 200-5.21.6. Thicker liners may be required based on design conditions. The liner shall be custom-designed to fit each manhole and the basis of design shall be submitted to the Owner in accordance with Section 822.1.2. It is the Contractor's responsibility to supply a CIPM liner that is most suitable for the existing conditions and that meets the requirements of this specification. Contractor shall assume groundwater at grade for all sites for the purposes of liner thickness design unless otherwise instructed by the Owner.

2. The cured in place liner shall provide a minimum service life of 25 years.

TABLE 200-5.21.6
Minimum Liner Physical Properties

Manhole Depth (grade to invert)	Minimum Liner Thickness(1) (inch) ASTM D5813	Minimum Pre-Saturated Fabric Weight (ounces)	Minimum Flexural Modulus of Elasticity (psi) ASTM D790	Minimum Compressive Strength (psi) ASTM D695	Chemical Resistance Testing in accordance with ASTM F1216 Appendix X2
0 to 10 ft	0.117	56	1,000,000	11,000	PASS
10.1 to 15 ft	0.117	56	1,000,000	11,000	PASS
15.1 to 20 ft	0.158	68	1,000,000	11,000	PASS

(1) Minimum liner thickness includes only the strength portion of the liner. Non-structural layers are not included in minimum thickness requirements.

J. Calcium Aluminate Cementitious Manhole Liner

1. The calcium aluminate cementitious liner shall be made with calcium aluminate cement and shall be used according to manufacturer's recommendations in applications where there is mild sulfide conditions (substrate surface of pH 2.0 or higher).

2. The calcium aluminate cementitious liner product shall be used to form a structural monolithic liner covering all interior substrate surfaces and shall have the following

minimum requirements:

Minimum Requirements			
Compressive Strength	ASTM C109	28 days	>9000 psi
Tensile Strength	ASTM C496	28 days	>800 psi
Flexural Strength	ASTM C293	28 days	>1500 psi
Shrinkage @90% relative humidity	ASTM C596	28 days	0%
Bond	ASTM C882	28 days	>2000 psi
Density, When Applied	-		134 ± 5lbs/ft3
Freeze/Thaw	ASTM C666	N/A	300 cycles no visible damage

3. The liner product shall be reinforced with alkaline resistant fiberglass rods or other similar fibers not less than 1/2 inch in length. The material shall meet or exceed industry standards and shall not have any basic ingredient that exceeds EPA maximum allowable limits for any heavy metals. Water used to mix product shall be clean and free from contaminants. Questionable water shall be tested by a laboratory per ASTM C-94 procedure. Potable water need not be tested.

4. When cured, the monolithic cementitious lining shall form a continuous, tight-fitting, hard, impermeable surfacing which is suitable for sewer system service and chemically resistant to any chemicals or vapors normally found in domestic sewage.

K. Manhole Frame Seals

1. Manhole frame seals shall be composed of flexible, pleated, high quality rubber gland with stainless steel expansion bands, and shall be designed to conform to the inside shape of the chimney area of the manhole frames.

   a. The rubber gland material compound shall conform to the applicable requirements of ASTM C 923, with a minimum tensile strength of 1,500 psi, a maximum compression set of 18%, and a durometer hardness of 48 (plus/minus 5).

   b. The manhole frame seals shall be contained in-place on the inside of the manhole frame chimney area through the use of stainless steel expansion bands designed to expand to form a compression seal between the rubber gland and the manhole chimney area surface.

   c. The bands shall be fabricated of 16 gauge Type 304 stainless steel conforming to ASTM A 240, and shall be equipped with a positive locking, worm-screw type mechanism. Screw hardware shall be Type 304 stainless steel conforming to ASTM F 593 and ASTM F 594.

2. Frame seals shall only be installed with the cementitious lining and epoxy coating systems. Frame seals are not required with the installation of fiberglass insert liner.

3. Acceptable Manufacturer: Cretex or equal.

L. Manhole Frame Sealants

Internal manhole frame sealant shall be Flex-Seal, or equal, and shall be composed of a corrosion resistant aromatic flexible urethane resin coating to be applied to the internal or external wall of the adjustment ring area.

1. The Aromatic Urethane Resin Liner Primer shall have the following minimum requirements:

Test	Property	Results
ASTM-D-1004	Tear Resistance	210 lb. l/in
ASTM-D-903	Adhesive Strength	400 lb. l/in
ASTM-D-412	Tensile Strength	3,200 psi
ASTM-D-442	Elongation	400%
ASTM-D-2240	Hardness	85

2. The Aromatic Urethane Resin Liner Final Coat shall have the following minimum requirements:

Test	Property	Results
ASTM-D-1004	Tear Resistance	155 lb. l/in
ASTM-D-903	Adhesive Strength	175 lb. l/in
ASTM-D-412	Tensile Strength	1,150 psi
ASTM-D-442	Elongation	800%
ASTM-D-2240	Hardness	75

M. Pipe Joint Rehabilitation using Chemical Grouting

1. Chemical joint sealing materials used on this project shall be an acrylamide joint-sealing gel grout plus activators, initiators and inhibitors recommended by the manufacturer.

2. In those lines that had root removal performed, a chemical root inhibitor shall be added to the grout prior to sealing the joints. Contractor shall submit the chemical to be used for Owner's approval prior to utilization.

3. In those lines where the grouting material may be exposed to a freeze-thaw cycle (cover depths of less than 3 feet), ethylene glycol or other Owner approved additive shall be used to prevent chemical grout cracking once set.

4. Acceptable Product and Manufacturer: AV-100 manufactured by Avanti International, Houston, Texas, or equal.

N. Insitu Point Repairs using Cured-In-Place Liner

1. The finished liner shall be in accordance with Section 5.21.B. The cured-in-place sectional pipelining shall be the New Life System as manufactured by Stephen's Technologies, Inc. or equal.

2. The liner shall be fabricated to a size that when installed will neatly fit the internal circumference of the conduit to be repaired as specified by the Owner.

3. The length and number of liners shall be that deemed necessary by the Owner to effectively carry out the repairs. The Contractor shall verify the lengths in the field before cutting liner to length. In general, the length shall vary between 3 and 8 feet.

4. Acceptable Product and Manufacturer: New Life System manufactured by Stephen's Technologies, or equal.

O. Insitu Point Repairs using Grouted Structural Sleeve

1. Sleeve: Type 316 stainless steel with a wall thickness sufficient to support the external loading of the host pipe system. The grouting sleeve material shall be of materials resistant to raw domestic sewage and corrosion caused by hydrogen sulfide gas or its derivatives.

2. Sealing Material: Water-cured polyurethane grout that complies with ANSI/NSF Standard 61.

3. Acceptable Manufacturer: Link-Pipe, Inc. or equal.

5.22. NOT USED

5.23. ASPHALT CONCRETE

Asphalt concrete shall consist of a combination of mineral aggregate and asphalt material mixed mechanically in a plant specifically designed for such purpose. Mix types shall meet the requirements of the latest edition of the *VDOT Road and Bridge Specifications*, Section 211.

5.24. COMPOSITE DETECTABLE WARNING SURFACE PANELS

A. Materials

Detectable Warning Surface shall be "tiles" made of homogeneous glass and carbon, reinforced composite material or vitrified polymer composite (VPC) material with ultraviolet stabilized coating, to minimize color wear, and a "non-slip" surface, incorporating "truncated domes," made of same material. The nominal thickness of the detectable warning tile shall be 1/8-foot exclusive of the height of the truncated domes. The tiles shall be in compliance with applicable Americans with Disabilities Act Accessibility Guidelines (ADAAG) and American with Disabilities Act (ADA) regulations with regard to detectable warning surfaces.

B. Types

Detectable warning surface shall be classified as follows:

1. Cast-in-Place tile shall be installed in the concrete in accordance with manufacturer's specifications. The cast-in-place tile shall be used for new construction.

2. Surface Mounted tile shall be secured to the concrete with a structural adhesive system and fasteners that anchors into the concrete. The surface mounted tile shall be installed to existing or proposed smooth finished concrete ramps.

C. Detail Requirements

Requirements for the detectable warning surface tiles shall meet the following:

1. Compressive Strength: 18,000 PSI minimum when tested by ASTM D695.

2. Tensile Strength: 10,000 PSI minimum when tested by ASTM D638-91.

3. Flexural Strength: 24,000 PSI minimum when tested by ASTM C293-94 or ASTM D790.

4. Water Absorption: 0.35% maximum when tested by ASTM D570.

5. Slip Resistance: 0.9 minimum for the combined wet/dry static co-efficient of friction when tested by ASTM C 1028.

6. Chemical and Stain Resistance: No deterioration, discoloration or staining when tested by ASTM D543-87 or ASTM 1308.

7. Fire Resistance: 25 minimum when tested to ASTM E84.

8. Accelerated Weathering: No deterioration, fading or chalking of surface after 2000 hours minimum exposure when tested by ASTM G26-95.

9. Salt and Spray Performance: No deterioration or other detects after 100 hours minimum exposure when tested by ASTM B117.

10. Accelerated Aging and Freeze Thaw: No disintegration, cracking, delamination, warpage, blistering, color change or other defects when tested by ASTM D037 or ASTM C1026.

D. Pattern/Dimension

Pattern and dimensions of the detectable warning surface tile shall incorporate an “in-line” dome pattern of truncated domes 0.2-inches in height, 0.9-inches diameter at the base and 0.4-inches diameter at top of dome. Domes should be spaced no greater than 2 1/4-inches from center to center. The field area of the detectable warning surface should consist of raised points no greater than 0.045-inches, to create a non-slip surface for wheelchair safety. Surface mounted detectable warning surface tiles shall have countersunk fastening holes and perimeter beveled edges.

Overall dimension of the detectable warning surface tiles shall be in accordance with this specification and the Contract Documents.

E. Color

Unless otherwise called out in the Contract Documents, the detectable warning surface tiles shall be “Brick Red”, Federal Color No. 31136, or Federal Color No. 11302, for applications on standard concrete curb ramps and “Light Gray”, Federal Color No. 26280 for applications on red brick paver or red brick concrete paver ramps, or as approved by Owner. The color shall be integral with the detectable warning device tiles and shall not be surface applied. Paints or other surface coatings shall not be used. Product samples with proposed color shall be submitted to Owner for approval prior to installation.

F. Fasteners

Fasteners shall be flat-head drive anchors made of a corrosion-resistant material ¼-inch in diameter x 1 3/4-inches long.

G. Adhesives

Adhesive shall be a urethane elastomeric adhesive material, as required by the manufacturer's specifications.

H. Sealants shall be a gray epoxy, two-component sealant, as required by the manufacturer's specifications.

5.25. FENCE

These specifications cover material requirements for fence components used in the construction of chain link, pedestrian, barbed wire, woven wire, and lawn fences and material specifications for temporary silt fences, geotextile fabric silt barriers, and filter barriers used for erosion and sediment control and shall meet the requirements of the latest edition of the *VDOT Road and Bridge Specifications* 242.

5.26. GEOSYNTHETICS

These specifications cover artificial fiber textile products to be used in transportation construction work, and low permeability liners for stormwater management facilities and shall meet the requirements of the latest edition of the *VDOT Road and Bridge Specifications* 245.

5.27. PAVERS

A. Concrete Pavers for Crosswalks and Sidewalks

1. Description

This section applies to concrete pavers used in sidewalks, crosswalks, driveways, roadways. This section also applies to concrete truncated dome pavers.

2. Pavers shall meet or exceed ASTM C936 specifications for Solid Concrete Interlocking Paving Units:

Average Compressive Strength (psi)	
Average of 5	8,000
Individual	7,000
Maximum Cold Water Absorption (%)	
5	5
Individual	7
Freeze/Thaw Resistance	
Resistant to 50 freeze/thaw cycles with no greater than 1% loss of material	
Freeze-thaw testing requirements shall be waived for applications not exposed to freezing conditions.	
Abrasion Resistance	
Maximum Volume Loss (%)	15 $cm^3/50cm^2$
Maximum Average Thickness Loss	3mm

a. Where 3 1/8-inch thick pavers are specified, their compressive strength test results per ASTM C 140 shall be adjusted by multiplying by 1.18 to equate the results to that from 2 3/8-inch thick pavers.

b. Detectable warning pavers shall meet the latest truncated dome requirements of the American Disabilities Act (ADA).

c. Color Pigments

(1) Color pigments for integrally colored concrete pavers shall meet or exceed ASTM C979 Standards. Products meeting this specification are concrete color pigments by the manufacturers indicated or approved equivalent if manufacturer is indicated. Integrally colored concrete pavers are defined as an acceptable color throughout the paver block as accepted by the Owner.

(2) Face-mix pavers are acceptable provided the pigment loading in the base mix is a minimum of 50% of the pigment loading in the face mix based on pigment loading being defined as 1 lb. pigment per 100 lbs. cement.

(3) The Owner shall approve the color.

d. Concrete pavers may have spacer bars on each unit. Verify with manufacturers that overall dimensions do not include spacer bars.

3. Bedding and Joint Sand

Bedding and joint sand shall conform to the following:

a. Washed, clean, non-plastic, free from deleterious or foreign matter, symmetrically shaped, natural or manufactured from crushed rock.

b. Where concrete pavers are subject to vehicular traffic, utilize sands that are as hard as practically available.

c. Bedding Sand Material Requirements

Bedding sand material shall conform to the grading requirements of ASTM C 33 with modifications as shown in Table 200-5.27.1.

TABLE 200-5.27.1
GRADING REQUIREMENTS FOR BEDDING SAND
FOR CONCRETE PAVERS
(ASTM C 33 MODIFIED)

Sand Sieve Size	% Passing
3/8 in.(9.5 mm)	100
No. 4 (4.75 mm)	95 to 100
No. 8 (2.36 mm)	85 to 100
No. 16 (1.18 mm)	50 to 85

No. 30 (0.600 mm)	25 to 60
No. 50 (0.300 mm)	10 to 30
No. 100 (0.150 mm)	2 to 10
No. 200 (0.075 mm)	0 to 1

(1) Mason sand or sand conforming to ASTM C 144 shall not be used for bedding sand.

(2) Limestone screenings or stone dust shall not be used for bedding sand.

d. Joint Sand Material Requirements

(1) Joint sand material shall conform to the grading requirements of ASTM C 144 as shown with modifications in Table 200-5.27.2 below:

TABLE 200-5.27.2
GRADING REQUIREMENTS FOR JOINT SAND
FOR CONCRETE PAVERS
(ASTM C 144 MODIFIED)

Sieve Size	ASTM C 144 Natural Sand % Passing	ASTM C 144 Manufactured Sand % Passing
No. 4 (4.75 mm)	100	100
No. 8 (2.36 mm)	95 to 100	95 to 100
No. 16 (1.18 mm)	70 to 100	70 to 100
No. 30 (0.600 mm)	40 to 75	40 to 100
No. 50 (0.300 mm)	10 to 35	20 to 40
No. 100 (0.150 mm)	2 to 15	10 to 25
No. 200 (0.075 mm)	0 to 1	0 to 10

(2) Coarser sand than that specified above may be used for joint sand including ASTM C 33 material as shown in Table 200-5.27.1. Use material where the largest sieve size easily enters the smallest joints. For example, if the smallest paver joints are 2 mm wide, use sand 2 mm and smaller in particle size. If ASTM C 33 sand is used for joint sand, extra effort may be required in sweeping material and compacting the pavers in order to completely fill the joints.

(3) Sieve according to ASTM C 136.

B. Clay Brick Pavers for Heavy Duty Traffic Loading Conditions

1. Description: This section applies to pavers used in crosswalks in roadways, higher traffic volume driveways, roadways and other applications where heavy vehicle loading or frequent vehicular traffic is anticipated. See Paragraph V.5.27.C for applications involving sidewalks, driveways and other applications where heavy or frequent vehicle loading is not anticipated.

2. Brick pavers shall conform to ASTM C 1272, Specification for Heavy Vehicular Paving Brick.

a. Durability

Paver Type	Type F (Pavers placed on sand base)	Type R (Pavers placed on asphalt or mortar base)
Average Compressive Strength (psi)		
Average of 5	8,000	10,000
Individual	7,000	8,800
Maximum Cold Water Absorption (%)		
Average of 5	6	6
Individual	7	7
Freeze/Thaw Resistance		
Resistant to 50 freeze/thaw cycles with no greater than 1% loss of material		
Freeze-thaw testing requirements shall be waived for applications not exposed to freezing conditions.		
Minimum Breaking Load (lb/in.)		
Average of 5	None	475
Individual	None	333
Abrasion Resistance		
Maximum Abrasion Index	.011	0.11
Maximum Volume Abrasion Loss	1.7 cm^3/cm^2	1.7 cm^3/cm^2

b. Dimensions

(1) Minimum Thickness: Brick pavers used in a heavy vehicular pavement shall have a minimum thickness of 2 5/8-inches. This thickness is exclusive of any chamfers.

(2) Dimensions: Pavers shall be commonly available sizes of pavers for flexible pavements. Length shall not be more than 4 times the thickness.

(3) Dimensional tolerances for pavers shall be 3/32-inch.

c. Brick pavers shall conform to Application PX as defined in ASTM C902.

C. Clay Brick Pavers for Pedestrian Areas and Light Duty Traffic Loading Conditions

1. Description: This section applies to pavers used in sidewalks, driveways and other applications where heavy or frequent vehicle loading is not anticipated. See Paragraph V.5.27.B for applications involving crosswalks in roadways, higher traffic volume driveways, roadways and other applications where heavy vehicle loading or frequent vehicular traffic is anticipated.

2. Brick pavers shall conform to ASTM C 902, Type SX.

a. Properties

Paver Type	Wire Cut	Molded

	Brick	Brick
Average Compressive Strength (psi)		
Average of 5	8,000	4,000
Individual	7,000	3,500
Maximum Cold Water Absorption (%)		
Average of 5	8	16
Individual	11	18
Freeze/Thaw Resistance		
Resistant to 50 freeze/thaw cycles with no greater than 1% loss of material		
Freeze-thaw testing requirements shall be waived for applications not exposed to freezing conditions.		
Maximum Saturation Coefficient		
Average of 5	0.78	0.78
Individual	0.80	0.80
Abrasion Resistance		
Maximum Abrasion Index	.011	0.11
Maximum Volume Abrasion Loss	1.7 cm^3/cm^2	1.7 cm^3/cm^2

b. Dimensions

(1) Minimum Thickness: Brick pavers used in a heavy vehicular pavement shall have a minimum thickness of 2 1/4-inches. This thickness is exclusive of any chamfers.

(2) Dimensions: Pavers shall be commonly available sizes of pavers for flexible pavements. Length shall not be more than 4 times the thickness.

(3) Dimensional tolerances for pavers shall be 3/32-inch.

c. Pavers shall conform to Application PX as defined in ASTM C902.

D. Setting Beds

1. Sand Setting Bed

a. Sand shall conform to ASTM C 33. Sand shall be washed, well-graded sand. The amount of material passing the 75 µm (No. 200) sieve shall be no more than 3 %. The sand particles shall be sub-angular. Only naturally occurring, washed silica sand with no silt content shall be used.

b. Mason's sand, limestone screenings, or stone dust shall not be used.

c. Cement shall not be added to the sand.

2. Sand /Cement Setting Bed

a. Sand shall conform to ASTM C 33. Sand shall be a washed, well-graded sand. The amount of material passing the 75 µm (No. 200) sieve shall be no more than 3 %. The sand particles shall be sub-angular. Only naturally occurring, washed silica sand with no silt content shall be used.

b. Mason's sand, limestone screenings, or stone dust shall not be used.

c. Sand/cement mixture shall be 3 parts sand, 1 part cement. Submit each sample for approval.

3. Mortar Setting Bed

a. Mortar shall be nonshrink.

b. Mortar shall conform to Paragraph 5.6.F.2.

4. Bituminous Setting Bed

a. Tack coat shall be SS-1 or SS-1h asphalt emulsion complying with ASTM D 977 Specification for Emulsified Asphalt.

b. The asphalt cement for the bituminous setting bed shall be the same grade as that specified for the adjacent surface course construction. The type of asphalt cement will govern the mixing and rolling temperatures. The fine aggregate for the bituminous setting bed shall be natural or manufactured sand that complies with ASTM D 1073 Specification for fine Aggregate for Asphaltic Paving Mixtures, grading No. 2, or similar material used as fine aggregate at the asphalt plant. All particles shall pass the No. 4 sieve.

c. The proportions shall be 6-8% of asphalt cement with 94-92% of fine aggregate or approximately 1 gallon of asphalt cement to 110 lbs of fine aggregate. The exact proportions shall be verified before supplying material for the project.

d. The adhesive shall be a neoprene modified asphalt product specifically developed for setting pavers. It shall consist of rubberized asphalt with inorganic fibers.

E. Jointing Sand

1. Sand Setting Bed Applications

a. Heavy Duty Traffic Loading Conditions: The sand particles shall be sub-angular. Bedding sand conforming to ASTM C 33 shall be used.

b. Pedestrian Areas and Light Duty Traffic Loading Conditions: The sand particles shall be sub-angular. Bedding sand conforming to ASTM C 33 or Mason Sand conforming to ASTM C 144 shall be used.

2. Bituminous Setting Bed Applications: Stabilized joint sand shall be provided. Stabilizers shall conform to the brick paver manufacturer's recommendations. The stabilizers shall bind the sand in the top 1/2 inch of the joint.

F. Surface Coatings

1. Colorless coatings (i.e. water repellents) shall not be used.

2. Coatings that prevent erosion of the jointing sand shall be of a type that has a high vapor transmission rate and will not affect the slip/skid resistance of the paver. The stabilizer shall be water based.

G. Miscellaneous

1. Edge Restraints shall conform to the type specified in the Contract Documents or Special Provisions. Manufactured edge restraints (other than cast-in-place concrete) shall be certified by the manufacturer to be appropriate for the type of application.

2. Mortar shall conform to ANSI 118.3

3. Grout

a. Grout shall conform to ANSI 118.3.

b. Grout colors shall be approved by the Owner from the manufacturer's complete color range.

c. Grout products shall be approved the by paver manufacturer.

4. Water that has been approved for drinking purposes is acceptable provided it is free from minerals or other materials that are detrimental to mortar and grout mixes.

5. Primer shall be as recommended by the mortar material manufacturer.

6. Sealant and backing materials shall conform to ASTM C 920.

7. Mixes - Prepare pre-mix materials in accordance with manufacturer's written instructions.

8. Geotextiles shall conform to Paragraph V.5.26, Geosynthetics. Geotextile fabric materials shall also be certified by the paver manufacturer to be appropriate for the type of application.

9. Cleaners, sealers, and joint sand stabilizers shall be certified by the paver manufacturer to be appropriate for the type of application.

5.28. GUARDRAIL

These specifications cover material requirements for components of guardrail systems and shall meet the requirements of the latest edition of the *VDOT Road and Bridge Specifications*, Section 221.

5.29. MASONRY UNITS

These specifications cover masonry units manufactured of regular or lightweight concrete or brick made from clay or shale in a plant specifically designed for such a purpose and shall meet the requirements of the latest edition of the *VDOT Road and Bridge Specifications*, Section 222.

5.30. STRUCTURAL STEEL

These specifications cover steel structural shapes furnished to specific dimensions and associated hardware and fasteners and shall meet the requirements of the latest edition of the *VDOT Road and Bridge*

Specifications, Section 226.

5.31. ALUMINUM ALLOY

These specifications cover aluminum alloy products designed in shapes and compositions to serve a specific purpose, such as a sign panel, post, or conduit, including necessary fasteners and shall meet the requirements of the latest edition of the *VDOT Road and Bridge Specifications*, Section 229.

5.32. ROADWAY CONSTRUCTION PAINT

These specifications cover a mixture of pigment in a liquid vehicle that, when applied, will dry to an opaque solid film. Use of paint in these specifications refers to the requirements for highway construction and shall meet the requirements of the latest edition of the *VDOT Road and Bridge Specifications*, Section 231. Paint materials not specified herein shall be as specified by the manufacturer and recommended specifically for or compatible with the intended application

5.33. GLASS BEADS FOR REFLECTORIZING TRAFFIC MARKINGS

This specification covers glass beads applied on the surface or incorporated into traffic-marking materials so as to produce a retroreflective surface and shall meet the requirements of the latest edition of the *VDOT Road and Bridge Specifications*, Section 234.

5.34. RETROREFLECTORS

This specification includes retroreflectors for delineators and pavement markers and shall meet the requirements of the latest edition of the *VDOT Road and Bridge Specifications*, Section 235.

5.35. WOOD PRODUCTS

These specifications cover the uses and requirements for roadway-related structural timber and lumber, miscellaneous wood products, and preservative treatments for such wood products where specified and shall meet the requirements of the latest edition of the *VDOT Road and Bridge Specifications*, Section 236.Intended uses include fence post, guardrail post, signs and signalization applications.

5.36. ELECTRICAL AND SIGNAL COMPONENTS

These specifications cover roadway-related conduits, conductors, junction boxes, traffic signal components, and necessary fittings to complete a described electrical or traffic signal system and shall meet the requirements of the latest edition of the *VDOT Road and Bridge Specifications*, Section 238.

5.37. LIME

These specifications cover lime to be used as a stabilizer or soil conditioner and shall meet the requirements of the latest edition of the *VDOT Road and Bridge Specifications* 240.

5.38. PAVEMENT MARKING

These specifications cover material for use in various retroreflective pavement-marking applications and shall meet the requirements of the latest edition of the *VDOT Road and Bridge Specifications* 246.

5.39. REFLECTIVE SHEETING

This specification covers reflective sheeting used on traffic control devices to provide a retroreflective

surface or shall meet the requirements of the latest edition of the *VDOT Road and Bridge Specifications* 247. The color of the reflective sheeting shall be as specified in the Contract Documents.

End of Section

SECTION 302

DRAINAGE STRUCTURES

I. GENERAL

1.1. DESCRIPTION OF WORK

The Contractor shall furnish all labor, supervision, material (except as herein provided), tools, equipment, supplies, and services; and, shall perform all Work necessary for the installation and construction of pipe culverts, endwalls, box culverts, precast concrete and metal arches, storm drains, drop inlets, manholes, spring boxes, junction boxes, and intake boxes and removing and replacing existing structures in accordance with these specifications and in conformity to the lines and grades shown in the Contract Documents or as designated by the Owner.

1.2. MATERIALS

Materials shall be furnished by the Contractor in accordance with Section 200.

1.3. SUBMITTALS

A. Submittals shall be made by the Contractor in accordance with the procedures set forth in Section 105 and as described below.

B. The Contractor shall furnish copies of the manufacturer's specifications and details for cast in place installations indicated in the Contract Documents, Standard Details, and the VDOT *Road and Bridge Standards*, latest edition, listing specific materials proposed.

C. Submittal of designs for precast items included in the Contract Documents will not be required provided fabrication is in accordance with the VDOT *Road and Bridge Standards*, latest edition. Submittal of designs for precast structures on VDOT's approved list will not be required provided the Contractor submits a certification that the item will be fabricated in accordance with the pre-approved design Drawings.

D. The Contractor shall furnish the Owner with an affidavit stating that products to be installed on this project comply with specification requirements.

E. The "Acceptance Procedures for Aggregates" shall be in accordance with Section 200.

II. EXECUTION

2.1. PROCEDURES

A. Trenching, excavation, bedding and backfill operations shall be performed in accordance with the requirements of Section 303.

B. The Contractor shall execute the Work in accordance with the latest edition of the VDOT *Road and Bridge Specifications*, Section 302.03, Procedures, however, Post Installation Inspection of Storm Sewer Pipes and Culverts shall be performed in accordance with 302.2.1.C below. Any references to "Engineer" or VDOT personnel shall mean the "Owner".

C. Post Installation Inspection of Storm Sewer Pipes and Culverts

In addition to the visual inspection if performed by the Owner during the initial installation of storm sewer pipes and pipe culverts, a post installation visual/video camera inspection shall be conducted by the Contractor in accordance with the requirements of this specification and VDOT VTM 123 on all pipes identified in the Contract Documents as storm sewer pipe and a selected number of pipe culverts. For the purposes of this Section all pipe installations not identified in the Contract Documents as storm sewer pipe are considered pipe culverts. Post installation Inspections shall be performed on straight line and radial installations.

For pipe culverts, a minimum of one pipe installation for each size of each material type utilized on the project will be randomly selected by the Owner for inspection, however, in no case will the amount of pipe subject to inspection be less than ten percent of the total contract amount for the size and material type indicated. Where possible, for all installations in which the pipe or culvert's size, orientation, or location permit deflection to be easily visually identified, (as verified with the Owner) the Contractor may perform visual inspections in lieu of video inspections. If defects as described herein are noted during the inspection, the Owner may require additional pipe installations of that size and/or material be inspected. The Contractor shall coordinate and schedule all post installation inspections so that these are made in the presence of the Owner. The post installation inspection shall be performed no sooner than 30 days after completion of the pipe installation and placement of final cover (except for pavement structure). The Contractor shall issue a report detailing all issues or deficiencies noted during the inspection (including a remediation plan for each deficiency noted where applicable) no later than 5 days after completion of the inspection.

While the intent of this requirement is to perform the post installation inspection prior to paving, project scheduling may dictate that a particular site be paved before the end of the 30 day period. In such cases, a preliminary inspection of the pipe shall be made, prior to paving over it, to insure that the pipe has been properly installed and is performing well. Performing such a preliminary inspection prior to paving will not relieve the Contractor from the requirement to perform the post installation inspection after the 30 day period.

The Contractor's inspection report shall identify and address any of the following items observed during the post installation inspection including identifying any proposed remediation measures the Contractor plans to perform where applicable. Remediation measures may consist of repairing or replacing the defective pipe section(s) or a combination of the two where differing conditions exist within the same run of pipe. Where permitted as an option, remediation methods for the various installation defects shall be proposed by the Contractor, reviewed with the Owner and must have the Owner's approval prior to implementation of the corrective action. Remediation shall be the sole responsibility of the Contractor. Further, if remediation measures are shown to be necessary, any time associated with such measures shall be reflected in the impact to the Contractor's progress schedule (may take the form of a time impact analysis, where required by the scheduling requirements) and will not relieve the Contractor of his responsibilities to finish the work required by the contract within the contract time limits or form the basis for any claim of delay where such remediation measures are determined to be a result of the Contractor's fault, omission or negligence.

Upon completion of any corrective remedial measures, the corrected installations are to be re-inspected prior to final acceptance of the project utilizing the test methods identified in VDOT VTM 123.

The following criteria shall form the basis for inspections for the respective pipe or culvert types listed:

1. Concrete Pipe\Culverts:

   a. Misalignment: Vertical and horizontal alignment of the pipe culvert or storm drain pipe barrel shall be checked by sighting along the crown, invert and sides of the pipe, and by checking for sagging, faulting and invert heaving. For the purposes of this provision faulting is defined as differential settlement between joints of the pipe, creating a non-uniform profile of the pipe. The person assigned by the Contractor to perform the inspection should take into account pipe or culvert laid with a designed camber or grade change in accordance with project or site requirements. Horizontal alignment shall be checked for straightness or smooth curvature. Any issues involving incorrect horizontal and/or vertical alignment shall be noted in the inspection report. If any vertical and/or horizontal misalignment problems are visually noted by the Owner or in the inspection report, a further evaluation shall be conducted by the Owner to determine the impact of the misalignment on the joints and wall of the pipe to ascertain what corrective actions are needed. All corrective actions determined necessary by the Owner that are a result of the Contractor's negligence, omission or fault shall be the sole responsibility of the Contractor to remedy.

   b. Joints: Leaking joints may be detected during low flows by visual observation of the joints or checking around the ends of pipes or culverts for evidence of piping or seepage.

      Differential movement, cracks, spalling, improper gasket placement, movement or settlement of pipe\culvert sections, and leakage shall be noted by the Contractor in the report. Joint separation greater than one inch shall be remediated by the Contractor at his expense to the satisfaction of the Owner. Evidence of soil migration through the joint will be further evaluated by the Owner to determine the level of corrective action necessary. All corrective actions determined necessary by the Owner that are a result of the Contractor's negligence, omission or fault shall be the sole responsibility of the Contractor to remedy.

   c. Cracks: Longitudinal cracks with a width less than one hundredth of an inch (0.01) are considered hairline and minor. They shall be noted in the inspection report; however, no remedial action is necessary.

      Longitudinal cracks having a width equal to or greater than one hundredth of an inch (0.01 but equal to or less than one tenth of an inch (0.1) and determined by the Owner to be detrimental to the structure shall be sealed by a method proposed by the pipe\culvert manufacturer and approved by the Owner. Pipes or culverts having longitudinal cracks with widths greater than one tenth of an inch (0.1) and determined to be beyond the limits of a satisfactory structural repair shall be replaced by the Contractor at his expense to the satisfaction of the Owner.

      Pipes or culverts having displacement across the crack greater than 0.1 inch but less than 0.3 inch shall be remediated. Remediation methods shall be in

accordance with recommendations of the pipe or culvert manufacturer, be acceptable to and authorized by the Owner before implementation and shall be the sole responsibility of the Contractor. Pipes\culverts having displacement across the crack greater than 0.3 inch shall be replaced by the Contractor at his expense to the satisfaction of the Owner.

Transverse cracks will be evaluated using the same criteria as indicated above for longitudinal cracks.

d. Spalls: Spalling is defined as a localized pop-out of concrete along the wall of the pipe\culvert generally caused by corrosion of the steel reinforcement or at the edges of longitudinal or circumferential cracks. Spalling may be detected by visual examination of the concrete along the edges of the crack. The person conducting the inspection shall check for possible delamination. If delamination is noted or if a hollow sound is produced when the area is tapped with a device such as a hammer, the pipe\culvert shall be remediated. Remediation methods shall be in accordance with recommendations of the pipe\culvert manufacturer, be acceptable to and authorized by the Owner before proceeding, and shall be the sole responsibility of the Contractor.

e. Slabbing: Any pipe\culvert experiencing slabbing shall be remediated. Slabbing is a structural failure of the pipe\culvert that results from radial or diagonal tension forces in the pipe\culvert. These failures appear as a separation of the concrete from the reinforcing steel near the crown or invert of the pipe\culvert and may span the entire length of a pipe or culvert section (joint to joint). Remediation methods shall be in accordance with recommendations of the pipe or culvert manufacturer, be acceptable to and authorized by the Owner before proceeding, and shall be the sole responsibility of the Contractor. Where slabbing is of such magnitude that, in the opinion of the Owner the integrity or service life of the pipe or culvert is severely compromised, the section(s) of pipe or culvert exhibiting such deficiency shall be replaced at the Contractor's expense to the satisfaction of the Owner.

Remediation efforts and percentage of payment shall apply to the entire section(s) of the deflected pipe or culvert, joint to joint. The cost of the remedial measures (including removal and replacement of the pipe, if necessary) and the re-inspection of the remediated pipe necessitated as a result of the Contractor's negligence, omission or fault shall be the contractual and financial responsibility of the Contractor.

2. Thermoplastic Pipe\Culvert:

a. Misalignment: Vertical and horizontal alignment of the pipe culvert or storm drain pipe barrel(s) shall be checked by sighting along the crown, invert and sides of the pipe, and by checking for sagging, faulting and invert heaving. The person assigned by the Contractor to perform the inspection should take into account pipes\culverts laid with a designed camber or grade change. Horizontal alignment shall be checked for straightness or smooth curvature. Any issues with horizontal and/or vertical alignment shall be noted in the inspection report. If any vertical and/or horizontal misalignment problems are noted in the

inspection, a further evaluation will be performed by the Owner to determine the impact of the misalignment on the joints and wall of the pipe\culvert to ascertain what corrective actions are needed. All corrective actions determined necessary by the Owner that are a result of the Contractor's negligence, omission or fault shall be the sole responsibility of the Contractor to remedy.

b. Cracks: Cracks or splits in the interior wall of the pipe shall be remediated. Remediation methods shall be in accordance with recommendations of the pipe manufacturer, be acceptable to and authorized by the Owner before proceeding, and shall be the sole responsibility of the Contractor

c. Joints: Pipes\culverts showing evidence of crushing at the joints shall be remediated. Differential movement, improper joint sealing, movement or settlement of pipe\culvert sections, and leakage shall be noted in the inspection report. Joint separation of greater than 1 inch shall be remediated. Evidence of soil migration through the joint will be further investigated by the Owner to determine the level of remedial action required by the Contractor. Remediation methods shall be in accordance with recommendations of the pipe manufacturer, be acceptable to and authorized by the Owner before proceeding. All corrective actions determined necessary by the Owner that are a result of the Contractor's negligence, omission or fault shall be the sole responsibility of the Contractor to remedy.

d. Buckling, bulging, and racking: Flat spots or dents at the crown, sides or flow line of the pipe due to racking shall be noted in the inspection report and will be evaluated by the Owner. Areas of wall buckling and bulging shall also be noted in the inspection report and evaluated by the Owner for corrective action if deemed necessary by the Owner. All corrective actions determined necessary by the Owner shall be the sole responsibility of the Contractor.

e. Deflection: Any one of several methods may be used to measure deflection of thermoplastic pipe\culvert (laser profiler, mandrel, direct manual measure, etc.) If the initial inspection indicates the pipe\culvert has deflected more than 5 percent of its original diameter, and if the original inspection was performed using a video camera, then a mandrel test shall also be performed in accordance with VDOT VTM 123. All deflections shall be noted in the inspection report. Deflections of less than 5 percent of the original pipe\culvert's diameter shall not require remediation. If the pipe\culvert is deflected greater than 5 percent of the original diameter, the pipe\culvert shall be replaced by the Contractor at his expense to the satisfaction of the Owner

Remediation efforts and percentage of payment shall apply to the entire section(s) of the deflected pipe or culvert, joint to joint. The cost of the remedial measures (including removal and replacement of the pipe, if necessary) and the re-inspection of the remediated pipe necessitated as a result of the Contractor's negligence, omission or fault shall be the contractual and financial responsibility of the Contractor.

D. Cleaning

Upon completion, each pipe and structure shall be cleaned of silt, debris, and foreign matter and shall be kept clear of such accumulation until final acceptance.

III. MEASUREMENT FOR PAYMENT

A. The cost of excavation, backfill, and disposal of surplus material for drop inlets, intake boxes, manholes both new and reconstructed, spring boxes, junction boxes, and base sections of pipe tee units used as drop inlets and manholes shall be included in the bid price for such items. No additional or separate payment will be made. In the event steps or invert shaping are required, the cost thereof shall also be included in the price for such items.

B. Bedding stone depth shall be 6-inches and shall be considered incidental to the pipe and structures.

C. Undercut excavation and the replacement of excavated undercut material shall be as specified in Section 303.

D. Pipe will be measured in linear feet of each size pipe and material type installed. Pipe will be measured through the fittings from center of the structure to center of structure or to the terminal end. When a partial section is required, the actual length of the partial section will be measured in place. Pipe shall be paid for at the contract unit price per linear foot, complete in place. Payment will include the cost of the following:

1. Backfilling, compacting, and compaction testing
2. Bedding
3. Cleaning prior to acceptance, as required
4. Dewatering
5. Disposal of surplus material
6. Excavation
7. Joint Wrapping & Sealing, including geotextile fabric
8. Main line fittings
9. Pipe anchor blocks
10. Restoration in right-of-way and shoulders and easements (including curb and gutter restoration), unless otherwise specified in the Contract Documents.
11. Storm sewer and appurtenances
12. Stripping and stockpiling topsoil
13. Temporary seeding and stabilization
14. Temporary sheeting and bracing.

E. Pipe culverts will be measured and paid in linear feet. Pipe will be measured through the fittings from center of the structure to center of structure or to the terminal end. When a partial section is required, the actual length of the partial section will be measured in place.

F. Pipe tees and elbows will not be measured separately**.**

G. Pipe reducers will be measured and paid in linear feet of pipe for payment at the larger pipe size.

H. Jacked pipe will be measured in linear feet to the nearest 1/10 of a foot. Jacked pipe will be paid at the contract unit price per linear foot for each size pipe installed, complete in place including all work associated with bore pit.

I. Reinstalled pipe will be measured and paid in linear feet along a line parallel to the flow line. This price shall include excavation involved in removing pipe, hauling, cleaning, relaying, backfilling, necessary cutting for joining to other sections of pipe, furnishing new coupling bands, disposing of surplus excavation, disposing of surplus and damaged materials, and replacing any otherwise usable sections damaged or broken because of the negligence of the Contractor.

J. End sections will be measured in units of each, complete-in-place.

K. End walls and arch substructures will be measured per each.

L. Box culverts will be measured in linear feet along the centerline of the barrel from face of curtain wall to face of curtain wall. This price shall include all work including, but not limited to designing, casting, reinforcing, installing, bedding, waterproofing, sealing joints, anchoring, and providing buffer zones for multiple lines.

M. Pipe grates will be measured and paid in linear feet or each, complete and in place, as indicated on the Bid form, unless included in another Bid item. This price shall include fabricating, furnishing, galvanizing, and installing.

N. Drop inlets, yard inlets, catch basins, and intake boxes will be measured as each as complete units, including the frame and grate or cover. Drop inlets, yard inlets, catch basins, and intake boxes will be paid for at the contract unit price per each. Where curb or curb and gutter extend along the drop inlet, the contract unit price for drop inlets shall include that part of the curb or gutter within the limits of the structure.

O. Base sections of pipe tee units used as drop inlets and manholes will be measured and paid in linear feet horizontally of pipe specified. The riser section and additional costs for the tee shall be included in the price for the drop inlet or manhole.

P. Manhole (4- or 5-foot diameter) installed complete in place, 0- to 6-foot in depth. Measurements will be made to the nearest foot from the bottom of the frame and cover to the invert out. Payment will be made at the unit price bid for each standard depth manhole (0- to 6-foot) installed and satisfactorily tested, and will include the cost of the following:

1. All appurtenances required for satisfactory operation
2. Bedding
3. Cleaning prior to acceptance, as required
4. Dewatering
5. Excavation, bedding, backfill, and compaction
6. Manhole, complete including frame and cover, benches, inverts and troughs
7. Openings and seals
8. Sheeting and shoring
9. Steps, unless otherwise noted

Q. Manhole (4- or 5-foot diameter) Extra Depth, installed complete in place, in excess of 6-feet in depth will be made based on the vertical feet of manhole installed in excess of 6-feet, measured to the nearest foot from 6-feet below the bottom of the frame and cover to the invert out in depth.

Payment will be made at the unit price bid for each additional vertical foot of manhole (in excess of 6-feet in depth) installed and satisfactorily tested and will include the cost of the following:

1. All appurtenances required for satisfactory operation
2. Cleaning prior to acceptance, as required
3. Dewatering
4. Excavation, bedding, backfill, and compaction
5. Openings and seals
6. Sheeting and shoring
7. Steps, unless otherwise noted

R. Conflict Manhole, installed complete in place.

Measurement will be made as each. Payment will be made at the unit price bid for each conflict manhole installed and satisfactorily tested will include the cost of the following:

1. All appurtenances required for satisfactory operation
2. Bedding
3. Cleaning prior to acceptance, as required
4. Dewatering
5. Ductile iron pipe
6. Excavation, bedding, backfill, and compaction
7. Manhole, complete including benches, inverts and troughs, and frame and cover
8. Openings and seals
9. Sheeting and shoring
10. Steps, unless otherwise noted

S. Concrete spring boxes will be measured and paid as each.

T. Junction boxes will be measured as a complete unit including frame and cover, and paid as each.

U. Reconstructed manholes will be measured and paid as each as a complete unit.

V. Precast arches will be measured and paid in linear feet along the centerline of the invert from face of headwall to face of headwall. This price shall include designing, forming, casting, reinforcing, excavating, wingwalls, installing, waterproofing, sealing joints, anchoring and bedding, and providing buffer zones for multiple lines. The cost for cast-in-place work other than that specified in the Contract Documents shall be included in the price for precast arches.

W. Post Installation Inspection of Storm Pipes and Culverts shall be measured and paid in linear feet of televised pipe in accordance with Section 811, Television Inspection. The cost of remedial measures (including removal and replacement of the pipe, if necessary) and the re-inspection of the remediated pipe necessitated as a result of the Contractor's negligence, omission or fault shall be the contractual and financial responsibility of the Contractor.

End of Section

SECTION 801

WATER DISTRIBUTION SYSTEMS

I. GENERAL

1.1 DESCRIPTION OF WORK

The Contractor shall furnish all labor, supervision, material (except as herein provided), tools, equipment, supplies, and services; and, shall perform all Work necessary for the construction of water distribution systems less than or equal to 36-inch in diameter. All pipe greater than 16-inch diameter shall be ductile iron, unless modified by Special Provisions. The water distribution systems shall be constructed in accordance with the Contract Documents and the applicable laws, rules, ordinances, standards, and regulatory agencies.

1.2 SUBMITTALS

Submittals shall be made by the Contractor in accordance with the procedures set forth in Section 105 and as described below:

A. Submit each manufacturer's and/or supplier's certification attesting that the pipe, pipe fittings, joints, joint gaskets, valves, and appurtenances meet or exceed the specified requirement. The following information is to be shown on each certificate:

1. Name and location of the work
2. Name and address of Contractor
3. Quantity and date or dates of shipment and/or delivery to which the certificate applies
4. Name of the manufacturing or fabricating company

B. Certification shall be in the form of a letter or company-standard form containing all required data and signed by an officer of the manufacturing, fabricating, or supplying company.

If requested by the Owner, all laboratory test reports shall be provided at no additional cost and shall show the following information:

1. Date or dates of testing. Test data should be the most current available and be within 5 years of the Bid Opening.
2. The specified requirements for which testing was performed
3. Results of the test or tests

C. Manufacturer's catalog cuts, technical data, operation and maintenance data, and/or Shop Drawings are required for the following water distribution system components (Shop Drawings shall be drawn to a scale sufficiently large to show all pertinent aspects of the item and its method of connection to the work):

1. Pipe
2. Valves
3. Valve Boxes
4. Fittings, Sleeves, and Couplings
5. Hydrants
6. Pipe Restraints

7. Tapping Sleeves
8. Corporation Stops
9. Meter Boxes and Meter Setters, when required.
10. Meter and Valve Vaults
11. Gauges
12. Tracer Wire and Marking Tape

D. Flushing, testing and disinfection procedures

In those cases where the installation or procedure proposed is not detailed in the Contract Documents or in the Special Provisions or a significant modification is required; the Contractor shall submit procedures and equipment to be used for the pressure testing (including methods of temporary joint restraint), leakage testing, and disinfection testing. The Contractor shall submit his proposed methods for disposing of chlorinated water following disinfection of the main.

E. Reduction of Lead in Drinking Water Act

In compliance with Public Law 111-380, the Contractor shall not use, install or repair any pipe, fittings, fixture, solder or flux in the installation of any public water system that is not "lead free". Solders and flux shall not contain more than 0.2% lead; and pipes, fittings, and components shall not contain more than 0.25% lead based on a weighted average of the wetted surfaces. Fire hydrants, service saddles, and gate valves that are 2-inches in diameter and greater, are exempt. Products must comply with NSF/ANSI Standard 61 to include Annex G and shall bear the NSF 61-G Certification Mark.

F. Pipelines greater than 16-inch diameter

In addition to the above submittal requirements, pipe diameters in excess of 16-inches shall provide the following information:

1. Laying schedule

   a. Submit a tabulated laying schedule for approval which references stations and invert elevations as shown in the Contract Documents as well as all fittings, valves, bends, outlets, restrained joints, tees, special deflection bells, adapters, solid sleeves and specials, along with the manufacturer's drawings and specifications providing complete details of all items;
   b. Show pipe class, class coding, station limits and transition stations for various pipe classes;
   c. The location of all pipes shall conform to the locations indicated in the Contract Documents;
   d. Each pipe supplied shall be identified with sequential numbering consistent with the laying schedule and marking drawings and each marked pipe will appear on the marking drawings in the identified location for installation;
   e. Special fittings, bends, and appurtenances requiring specific orientation will be supplied appropriately marked with the words "TOP" in the correct position and in a consistent location;

2. Submit shop drawings for approval before manufacture and shipment including, but not be limited to:

a. The grade of material, size, wall thickness of the pipe and fittings and appurtenances;
b. The type of fittings and valves;
c. The type and limits of the lining, lining reinforcing and coating systems of the pipe and fittings.
d. Joint details, methods and locations of supports, and complete information concerning type, size and location of all welds. Shop welds (no field welding will be allowed) will be clearly differentiated and welds will be clearly detailed with preparation procedures for all pipe and parent material comprising each weld. Critical welding procedures will be identified along with methods for controlling welding stresses and distortions. Locations and proposed joint details will also be clearly identified; and,
e. All other pertinent information for all items to be furnished; product data to show compliance of all couplings, supports, fittings, coatings and related items.

3. Submit anticipated production and delivery schedule.

4. Submit handling procedures for all phases from finished fabrication through delivery including storage, transportation, loading, and unloading. This will include storage at the project site and required protection following installation prior to startup.

5. Prior to shipment of pipe, submit:

a. Certified copies of mill tests confirming the type of materials used in the pipe, and shop testing of pipe to show compliance with the requirements of the applicable standards, including hydrostatic tests.
b. A certified affidavit of compliance from the manufacturer stating that the pipe, fittings, gaskets, linings and exterior coatings for this project have been manufactured and tested in accordance with AWWA and ASTM standards and requirements specified herein.

G. Work Plan for Tie-ins to Existing Systems

At a minimum the Contractor's Work Plan shall include the following:

1. Schedule:

a. Starting date.
b. Sequential listing of specific tasks required to complete the tie-in.
c. Anticipated duration for each task of the tie-in operation.

2. Testing procedures.

3. Identification of businesses and residences that may be impacted and will require notification.

4. Method of dewatering the existing water main and quantity of water anticipated in dewatering.

5. Method of handling constant flow if valves or line stops do not close completely. The Owner cannot guarantee that full stoppage of flow will be achieved.

6. Contingency plan for meeting a deadline for full traffic to be restored if a roadway is taken out of service or the capacity reduced during the tie-in and the completion schedule cannot be met.

7. Mobile phone contacts for Contractor and Owner personnel, and other identified key stakeholders, as appropriate.

8. List of equipment and number of crews to verify adequacy of Contractor's ability to work both ends of the tie-in simultaneously and continuously until connections are complete.

9. Stone and other backfill materials to be on-site if rain is forecast and used if a heavy rain event occurs during the tie-in backfill and compaction stage.

10. Confirmation of availability and scheduling of asphalt placement and proper cure time for tie-ins under existing pavement to restore traffic movement. Asphalt patch type to meet locality requirements.

II. EXECUTION

2.1. GENERAL

A. The Contractor shall furnish and install a complete piping system as shown in the Contract Documents and in accordance with the Contract Documents

B. The Owner reserves the right to reject defective material shipped to and/or stored on site, and to examine the same to determine if damage has occurred prior to installation.

C. The Contractor shall unload, handle, and store pipe and appurtenances in accordance with Section 200.

D. Proper implements, tools and facilities satisfactory to the Owner and as recommended by the material manufacturer shall be provided and used by the Contractor for the safe and convenient execution of the Work. All pipe, valves, fittings, hydrants and accessories shall be carefully lowered into the trench in such a manner as to prevent damage to the water main materials and any protective coatings and linings.

2.2. PIPE INSTALLATION

A. Cleaning: All lumps, blisters and excess coatings shall be removed from the bell and plain ends of each pipe. The outside of the plain end and the inside of the bell shall be cleaned and dried, and shall be free from dirt, sand, grit, or any foreign materials before the pipe is installed.

B. Trenching, bedding, backfilling and compaction shall be in accordance with Section 303.2.2 and Special Provisions.

C. Pipe Laying:

1. Pipe shall be laid to a true, uniform line and grade. High points, other than those indicated in the Contract Documents where an air vent assembly is to be placed, shall be avoided.

2. Pipe laying shall be in accordance with the manufacturer's recommendations. Pipe laying shall proceed, bells ahead. Each section of pipe shall be laid to form a close concentric joint with the adjoining section and to prevent sudden offsets in the flow line. Each section of pipe, as it is laid, shall be backfilled as specified in the Contract Documents, at least up to the centerline, before the next joint is made.

3. As the Work progresses, the interior of the pipe shall be cleared of dirt and superfluous material.

4. Trenches and other excavations shall be kept free of water until backfilled. Concrete or masonry Work shall not be constructed in water, nor shall water be allowed to rise over the Work until concrete or mortar has had ample time to set.

5. When Work is not in progress, open ends of pipe and fittings shall be closed, to the satisfaction of the Owner, so that trench water, earth, and other substances will not enter the pipe or fittings.

6. Whenever a pipe requires cutting for the insertion of valves, fittings, closure pieces, or to bring it to the required location, the Work shall be performed in a satisfactory manner so as to leave a beveled end in accordance with the manufacturer's instructions or recommendations. Cuts shall be made at 90° with the centerline of the pipe so that a framing square placed against the side of the pipe will reveal not more than 1/4-inch variation across the diameter of the pipe in any direction. The pipe shall be cut with an abrasive wheel, rotary wheel cutter, guillotine pipe saw, milling wheel saw or other equipment specifically designed for that purpose. The Contractor shall grind smooth cut ends and rough edges and for push-on connections, the cut ends should be beveled slightly. Pipe damaged by the Contractor in cutting shall be replaced at the Contractor’s expense

7. Laying of the pipe shall commence immediately after the excavation is started, and every means must be used to keep pipe laying closely behind the trenching. No more than 100 feet of trench may be open ahead of the pipe laying operation, unless otherwise specified. Holes shall be scooped out where the bells occur leaving the entire barrel of the pipe bearing on the pipe bed.

8. Pipe joint assembly practices and joint assembly materials such as lubricants, primers and adhesives shall be in accordance with the manufacturer’s recommendations and specifications, and in accordance with ANSI/AWWA C111.

9. Pipe shall not be laid on frozen bedding.

D. Alignment and Grade:

1. The Contractor shall not deviate from the line and grade indicated in the Contract Documents, except with approval of the Owner.

2. Where it is necessary to deflect pipelines to avoid obstructions, the amount of deflection shall not exceed ½ of that recommended by the manufacturer of the pipe. Where necessary to maintain the required line, short sections of pipe and fittings shall be provided.

3. The Contractor shall investigate the proposed location of the main far enough in

advance of the Work to determine where conflicts will occur and to determine joint deflections necessary to clear any obstructions.

E. Polyethylene Encasement:

1. Pipe shall be encased with polyethylene where specified in the Contract Documents

2. In the event that corrosive soils (as defined by Appendix "A" of ANSI/AWWA C105/A21.5) are encountered during excavation (and have not been identified as such in the Contract Documents), the Owner may direct that all, or a portion, of the pipeline be encased.

3. Materials and methods of installation shall be in accordance with ANSI/AWWA C105; Method A, B, or C may be used unless otherwise specified in the Contract Documents. Polyethylene shall be at least 4 mils thick, cross laminated, and shall conform to the requirements of ANSI/AWWA C105/A21.5.

4. A fabric type or padded sling shall be used when handling polyethylene encased pipe to prevent damage to the polyethylene encasement.

5. All seams in the polyethylene encasement shall be sealed completely with approved 2-inch wide plastic adhesive tape.

6. Pull loose tube along pipe barrel up snugly around the pipe and fasten in-place with adhesive tape at 3 foot intervals.

7. Completely cover fittings and connections with film held snugly in place with point tape or strapping.

8. Extreme care shall be taken when backfilling to avoid damaging the polyethylene encasement.

F. Tracer Wire:

All underground non-metallic pipe pressure systems shall be installed with continuous tracer wire, conforming to Section 200, attached every 10 feet to the piping system with plastic strapping. The wire shall terminate above ground at every valve box, tracer wire box, and air vent assembly. The wire shall be of sufficient length to allow the wire to be uncoiled and extended one (1) foot above the finished grade. The tracer wire installation will be considered complete and acceptable for service when the Owner can trace the wire using the locating equipment. Any breaks shall be repaired by the Contractor prior to project acceptance.

G. Subsurface Utility Tape:

All water mains shall be identified by a subsurface utility warning tape, conforming to Section 200, placed at an elevation not less than 6-inches, or more than 12-inches below the proposed finished grade, or directly under the roadway base material if the base material is greater than 12-inches.

2.3. VALVE INSTALLATION

A. Prior to installation, the Contractor shall inspect valves in the presence of the Owner for

direction of openings, freedom of operation, tightness of pressure containing bolting, cleanliness of valve ports and especially seating surfaces, handling damage and cracks. Valves determined to be defective by the Owner shall be replaced by the Contractor. The Contractor shall operate all valves greater than 3-inches once prior to installation to determine the number of rotations of the operating nut; this number of rotations shall be recorded on the record drawings.

B. The Contractor shall set and join valves to pipe in accordance with the manufacturer's requirements for the type and class of valve and pipe.

C. The valve box shall be centered and set plumb with the top of the box neatly to final grade, unless otherwise directed by the Owner. Shock and stress shall not be transferred from the box to the valve.

D. The top of the operating nut shall be less than 36-inches below the rim of the valve box (as measured from final grade). When the distance from the operating nut to the top of the valve box is greater than 36-inches, the Contractor shall install an approved valve stem extension device to result in a distance of 12- to 24-inches from the top of the operating nut to the rim of the valve box.

E. Valves shall be set vertical and embedded in accordance with the Standard Details, unless otherwise indicated.

2.4. HYDRANT INSTALLATION

A. Hydrants shall be installed as indicated in the Contract Documents and Standard Details.

B. The hydrant shall be plumb with the pumper nozzle facing the curb (or roadway). Nozzles shall be set 18- to 24-inches above the finished grade to the centerline of the nozzle, unless otherwise directed by the Owner. Hydrants shall have a minimum of 18"-24" from back of curb, with a maximum distance of 8 feet.

C. Newly installed fire hydrants not yet in service shall be covered with a bag (or other Owner approved system), securely tied in place indicating that the hydrant is not usable.

D. Fire hydrants shall not be installed on water mains less than 6-inches in diameter.

2.5. APPURTENANT INSTALLATION

All appurtenances (fittings, air vent assemblies, blow-offs, meter settings) shall be installed in accordance with the manufacturer's recommendations and as indicated in the Contract Documents and Standard Details.

2.6. RESTRAINT

A. Fittings, valves, pipe joints and hydrants shall be restrained as indicated in the Contract Documents and in accordance with Section 200. Alternate methods of thrust restraint other than those specified herein may be used only with the written approval of the Owner.

B. All exposed piping, flanges, couplings, nuts and bolts shall receive a minimum of two coats of an approved protective coating as directed by the Owner.

2.7. CONNECTIONS TO EXISTING MAINS

A. The Owner and Contractor shall have a coordination meeting with the Owner's personnel at least 10 Days prior to the planned water main shutdown and provide a written Work Plan. The Owner shall review the Work Plan and either approve it or meet with the Contractor within 3 business days after receipt of the schedule to satisfactorily modify it.

B. It will be the responsibility of the Contractor to contact all residents, businesses, and fire department 72 hours in advance of interrupting service.

C. The Contractor shall notify the Owner at least 5 business days in advance of performing the offset/shutdown. Work can be delayed a maximum of 48 hours from the anticipated shutdown if due to inclement weather, and is approved or directed by the Owner. Otherwise, rescheduling and re- notification of customers will be required. Weather delays greater than 48-hours in duration shall require the Contractor to re-notify affected properties as hereinbefore specified.

D. The Contractor is required to schedule a meeting on site on the morning of a planned nighttime tie-in and shall notify the Owner. At the time of the meeting, the Contractor shall have all materials and equipment necessary for the tie-in on site and assembled for inspection by the Owner.

The following items will be reviewed and discussed at this meeting:

1. Site conditions
2. Weather forecasts / weather impacts
3. Work and contingency plans
4. Contact information
5. Emergency equipment

E. The Owner reserves the right to postpone the scheduled tie-in if:

1. The site or Contractor is not prepared as required in the Work Plan and as agreed upon at the pre-tie-in meeting.
2. The Owner has an emergency in another part of their system.

F. Shutdowns shall not begin until all required materials are on-hand and ready for installation and a written Work Plan has been submitted and approved by the Owner.

G. The Owner reserves the right to cancel scheduled shutdowns if conditions warrant.

H. A decision point will be established by the Owner for the Contractor to cut the active water main. This decision during the tie-in will be based upon the Contractor's progress leading up to the cutting into the active water main. Inadequate progress by the Contractor leading up to this critical decision point may lead to a postponement of the tie-in completion, backfilling the excavation, placing temporary pavement, and rescheduling the remainder of the tie-in work**.**

I. The Contractor shall provide a crew with equipment for each connection point so that multiple connections can be completed simultaneously.

J. At a time approved by the Owner, the shutdown period will commence and the Contractor shall proceed with the Work continuously, start to finish, unless otherwise noted, until the Work is completed and the system is tested and ready for operation. If the Contractor completes

all required Work before the specified shutdown period has ended, the Owner may immediately place the existing system back in service. If problems occur, the Contractor along with appropriate staff and equipment to remain on site to be an extension of the Owner's operational response until all operational issues have been resolved to the satisfaction of Owner.

K. The Owner's personnel shall operate all existing system valves unless otherwise indicated. The Owner shall make every effort to have a complete shutdown. Failure by the Owner to achieve a complete shutdown shall not entitle the Contractor to any additional compensation.

L. The Contractor is responsible for providing adequate support and restraint, against system pressure of the exposed piping prior to and during startup and final backfill.

M. The Contractor shall follow the procedures herein for any joints of the new water main and fittings that have not been previously hydrostatically pressure tested:

1. The Owner reestablishes services in the line.
2. One half hour will elapse, after air venting is complete by the Owner.
3. Joints will be visually inspected for signs of leakage by Owner.
4. Any leakage noted shall be corrected to the satisfaction of the Owner.
5. After satisfactory visual testing of exposed joints by the Owner and any corrective action, the Contractor shall wrap the pipe and/or fitting as required and immediately proceed to backfill the pipe and restore to grade conditions or for reestablishment of traffic if in a roadway. Soil backfill compaction tests may be specified by the Owner for work within roadway travel lanes.
6. If specified in the Contract Documents, utility warning tape shall be installed above the connection in accordance with the Bid Documents.
7. Any joints not inspected by the Owner will not be approved and shall be excavated for inspection.

N. Connection shall be made to the existing main through the installation of a tee in the existing main or by tapping sleeve and valve, as indicated in the Contract Documents. Taps shall be sized based on manufacturer's recommendations, but in no case shall the taps be of equal or larger size than the main.

O. Careful attention shall be given to the depth of new pipelines at points where tie-ins to existing mains are to be made. The existing main shall be uncovered in the presence of the Owner and the new pipeline set to proper elevation to provide for a perpendicular and level tie-in.

P. The allowable duration of the water service interruption shall be approved by the Owner prior to the execution of the Work. Restoration of service due to the Contractor taking too much time to complete the connection or the Contractor's lack of proper equipment, personnel, or materials, shall not entitle the Contractor to any claim for additional time or compensation.

Q. The Contractor shall be responsible for ascertaining the exact location, depth, and joint pattern of existing mains prior to making connections. Prior to cutting into any water mains the Contractor shall have on site all required fittings, pipe, tools, personnel and equipment, and shall satisfy the Owner through field measurements, that his fittings will properly join the existing line. Obstructions within the tie-in length may require special offsets by the Contractor.

1. Other than as specified herein or in the Special Provisions, all materials shall be

installed in accordance with the manufacturer's recommendations including, but not limited to alignment, torque requirements, and tolerances.

2. All materials shall be thoroughly disinfected prior to installation, including the tapping machine.

3. Connections shall only be made in the presence of the Owner.

4. Tie-ins to existing mains shall only be performed after the new main has been satisfactorily pressure tested and chlorinated. The Contractor may not tie-in the new main to the existing main until after the results of the bacteriological tests have been completed and approved by the Owner.

R. Tapping Existing Mains Under Pressure:

1. Tapping sleeves and valves shall be utilized for connecting to existing mains where indicated in the Contract Documents.

2. It shall be the Contractor's responsibility to verify the actual outside diameter of the existing main at the location of the proposed tap in order that the tapping sleeve or couplings to be provided can be properly installed.

3. The centerline of the tapping sleeve and valve assembly shall be located the following minimum distances from existing pipe joints:

Size of Tapping Sleeve	Minimum Recommended Separation from Existing Joint
4-, 6- & 8-inch dia.	3-1/2 feet
10-, 12- & 16-inch dia.	5-1/2 feet
Greater than 16-inch dia.	See Special Provisions

4. In cases where the horizontal alignment as indicated in the Contract Documents would result in a "sleeve to joint" distance less that the minimum stated above, the Owner may direct the Contractor to substitute a MJ x MJ x Flange tee connection using acceptable sleeves and pipe sections.

5. In addition to pressure testing of newly installed pipelines in accordance with Paragraph 2.8 of this Section, the Contractor shall test each tapping sleeve and valve assembly prior to making the tap. Water shall be injected into the body of the sleeve, to a pressure of 150 psig, through the test plugs. If test plugs are not provided in the sleeve, a tapped mechanical joint plug shall be assembled to the valve for testing purposes. Pressure shall be maintained for a one-hour period without evidence of leakage. Upon obtaining a satisfactory test (which shall be witnessed by the Owner), the tapping operation may commence.

6. All installed tapping sleeves shall be restrained in accordance with the Drawings, or as otherwise noted.

7. Upon completion of the tap the Contractor shall save the pipe coupon to show the Owner.

8. For private service connections, Contractor shall follow approved site plan or submit a site plan for approval by the Town. The site plan will show the location of all connections. The Contractor shall notify the Town 48 hours in advance of making connections. Approved materials shall be on-site prior to making connections. A licensed plumber is required for all residential connections unless approved otherwise by the Town. The Contractor shall notify the Town when connection work is complete and leave trench open for inspection.

S. Sleeve-In of Straight Pipe:

1. Sleeve-in connections shall be as indicated in the Contract Documents.

2. Upon completion of the tie-in the connected pipelines shall be thoroughly flushed to remove heavily chlorinated water, assure clarity and air removal. One sample for bacteriological examination shall be collected by the Contractor from the point of discharge of the flushing water.

T. Offsets to Existing Water Main:

1. The Contractor shall comply with the above procedures for connections to existing mains.

2. Prior to performing an offset or cut-in, a trial shutdown will be performed to determine the working conditions to be encountered when the Work is performed.

3. All bends, valves, sleeves, pipe, and fittings shall be fully restrained with retainer glands.

4. The Contractor shall perform cut-in or offset Work at night, unless otherwise indicated. Under most circumstances the hours of operation will be from 12:00 midnight to 6:00 A.M. The excavation for the Work shall be completed no later than 3:30 P.M. on the day the offset or cut-in is to begin to allow for inspection by the Owner.

5. Offsets will not be subjected to pressure testing unless specified in the Contract Documents. After installation and connection to the existing mains, the offset shall be placed in service and left uncovered for visual inspection for at least 2 hours. Visible leaks shall be repaired to the satisfaction of the Owner prior to acceptance of the offset.

6. The materials to be installed and the tools to be used shall be assembled and ready for inspection no later than 3:30 P.M. on the day installation of the Work is to commence. The inside of all water system pipe and fittings to be installed shall be cleaned and swabbed with a chlorine solution of 50 mg/l and ends of lines capped until the time of installation. All visible dirt and foreign materials shall be removed from the interior of the pipe and fittings. Immediately prior to installation of the assembly, the pipe and fittings shall again be swabbed with 50 mg/l chlorine solution. The Contractor shall review in detail his plan of operation with the Owner at the time the excavation and pipe Work are inspected for readiness.

7. Excavation around the existing pipe shall be sufficient to allow the Work to be performed without requiring additional excavation during installation of the offset or cut-in. Excavation shall be of sufficient depth to accommodate a minimum of 8-inches uniform depth of VDOT #57 stone, which shall be placed by the Contractor over the entire bottom of the excavation. In addition, there shall be a minimum of 12-inches clearance between the bottom of the pipe and the top of the VDOT #57 stone.

8. The Contractor shall clean and mark the locations on the existing pipe where the pipe cuts are to be made by 3:30 P.M. on the day the offset or cut-in is to be installed. The Contractor shall measure the outside diameter of the pipe to be cut-in to be sure the proposed pipe and fittings are compatible with the existing pipe to be cut. All

measurements shall be double checked in the presence of the Owner just prior to cutting of the existing pipe.

9. All spoil material not used as backfill shall be removed the same day as excavated. Approved suitable material to be used as backfill shall be stockpiled in the vicinity of the excavation.

10. The Contractor shall have sufficient crews and equipment on hand to perform the Work for each offset. All equipment to be used during the Work, including pump, backup pump, backhoe, at least two pipe saws, fuel, tools, generators, light towers, and similar equipment shall be test run and determined to be in proper running order prior to cutting of the existing pipe. If the Contractor fails to provide adequate equipment in proper running order, the Owner will cancel the Work and the Contractor shall request rescheduling when the deficiencies have been corrected.

11. The Contractor shall have on hand at the site of the cut-in or offset two full circle stainless steel repair clamps and two DIMJ plugs or caps as necessary for each size of pipe to be cut. If plugs or caps are used, appropriate thrust restraint shall be provided by the Contractor.

12. After a cut-in or an offset has begun, the Contractor shall make continuous progress toward restoring the water line to full service. The Contractor shall maintain sufficient crews, equipment, and supplies and shall not leave the work site until the water main Work has been completed and restored to complete operation. The Contractor shall direct his pump discharge in such a manner as to insure drainage away from the excavation so it will not flood streets or adjacent private property.

13. When weather forecasts call for freezing temperatures the night of the cut-in or offset, the Contractor shall have on site sufficient coarse granular sand to spread over all paved areas, sidewalks, and bike paths wetted by the discharge of his pumps and any areas wetted from hydrants flushed to remove air and sediment from the system. During freezing weather, the Contractor shall minimize wetting of paved areas, sidewalks, and bike paths.

14. When bends are used in offsetting around obstructions, a 1-inch corporation stop shall be installed on each side of the offset to provide air release.

2.8. TESTING AND INSPECTION

A. General:

1. All flushing, pressure testing and disinfection procedures shall conform to this Section and the applicable sections of the Virginia Department of Health Waterworks Regulations.

2. The Contractor shall provide the Owner at least 48 hours notice prior to scheduled testing and inspection.

3. Before a Contractor request is made to witness the pressure test, the Contractor shall present a written tie-in plan to the Owner for approval. The tie-in plan shall include a schedule and details of how, where, and what will be done to prepare piping for tie-in.

The plan shall include, as a minimum, pressure testing, flushing, disinfection, sampling, and tie-in details. Details shall include the Contractor's proposed location and method to tie the new pipe to the existing system; the location of the pump, backflow prevention device and gage for the pressure test; the application point, method, injection point, location of the backflow prevention device and the sampling points for disinfection; and, the method and the location of feed water, the location of backflow prevention device, and the sample point locations for the bacteriological sampling.

4. Only properly functioning and clean equipment shall be used for flushing, pressure testing and disinfecting water mains. All gauges used in the pipe testing will have active calibration dates and have been calibrated in accordance with the Contract Documents.

5. Valves in the existing water system shall be operated only by or in the presence of the Owner.

6. See the Special Provisions for potential testing modifications, if any, for the specific locality.

B. Pressure Test:

1. New water mains shall be pressure tested in accordance with ANSI/AWWA C600-Section 5.2, except as herein provided. Water mains shall be filled with clean water and subjected to a pressure of 1.5 times the expected working pressure or 150 psig, whichever is greater, measured at the highest point along the test section. The pressure test shall be of at least two hour duration and any damaged or defective pipe, fittings, valves, or hydrants that are discovered during the pressure test shall be replaced by the Contractor and retested. The Contractor shall furnish all necessary equipment, materials and labor for making the tests as specified. Before applying the specified test pressure, air shall be slowly expelled completely from the pipe, valves, and hydrants. The pressure test shall not be performed against an active valve. Hydrants shall be tested with the main line. Testing shall be performed with laterals and services installed. Plug meter setter for testing.

2. The Contractor shall test the line prior to contacting the Owner for the formal pressure test. Contractor shall be required to soak mains for 24 hours prior to testing.

3. Water for the pressure test shall be obtained through a fully valved manifold, with an approved backflow preventer, as indicated in the Standard Details.

4. The Contractor shall furnish all pumps, fittings, and gauges as necessary to fill the line with potable water, dispel air from the system, and pressurize the pipeline for the tests.

5. The Owner reserves the right to test gauges to determine their accuracy.

6. The Contractor shall coordinate with the water system owner for water to be used for the pressure testing.

7. No pressure drop, no leaks.

9. The Contractor shall provide all necessary temporary restraint and support for testing apparatus during testing at no additional cost to the Owner.

10. The Contractor will be responsible for providing proper safety measures during pressure testing operations.

11. In addition, heat-fusion joined HDPE pipe pressure testing shall be in accordance with ASTM F2164 and shall also comply with the following:

    a. Before testing, heat fusion joints are to be completely cooled.

    b. All parts of the test section shall be restrained against movement. Temporarily remove, restrain, or isolate expansion joints and expansion compensators before starting.

    c. Observe all safety precautions identified in ASTM F2164.

    d. To compensate for expansion, add make-up water during the initial expansion phase. The quantity of water needed to fill the pipe test section and accommodate expansion (and possible leakage at non-fusion joints and seals) is estimated using:

    $$V_{gal} = 1.015 \times 0.04 \times (ID_{in})^2 \times L_{ft}$$

    where:

    V_{gal} = pipe section volume, gallons
    ID_{in} = pipe inside diameter, inches
    L_{ft} = test section, feet

    e. Allow the test section and the test liquid to equalize to a common temperature.

    f. Initial Expansion Phase:

        (1) When the test section is completely filled and purged of air, gradually increase the pressure to the required test pressure identified in paragraph 2.8.B.1 above.

        (2) Add make up water as necessary to maintain the maximum test pressure for 4 hours.

    g. Test Phase:

        (1) Reduce the test pressure by 10 psi and monitor pressure for 1 hour. Do not increase the pressure or add make up water.

(2) No visible leakage shall be observed and the pressure shall remain steady (within 5% of the test phase pressure) for the 1 hour test phase period for a passing test.

h. Retesting - If retesting is necessary, depressurize the test section per ASTM F2164 and correct any faults/leaks. Allow the test section to "relax" for at least 8 hours before repressurizing and repeat the Initial expansion and test phases as indicated above.

C. Leakage Test:

1. The leakage test shall be conducted concurrently with the pressure test. New water mains shall be tested for leakage in accordance with AWWA Standard C600-Section 5.2. Allowable leakage shall not exceed ANSI/AWWA C 600. No leakage shall be allowed for heat-fusion joined HDPE pipe or fPVC pipe. No pipe installations will be accepted if the leakage is greater than the values determined as follows:

The allowable leakage value shall be determined using the equation below, or Table 801-1:

$$L = \frac{SD(P)^{1/2}}{148{,}000}$$

Where:
L = Allowable leakage, in gallons/hr.
S = Length of pipe tested, in feet
D = Nominal diameter of the pipe, in inches
(P) ½ = Square Root of average test pressure during leakage test, in psig

TABLE 801-1
Leakage Testing Allowance per 1,000 feet of Pipeline (Gallons per Hour)
(Pipe diameters 16-inches and less)
Based on AWWA C600, Table 5A

Avg. Test Pressure psi	Nominal Pipe Diameter, inches							
	3	**4**	**6**	**8**	**10**	**12**	**14**	**16**
250	0.32	0.43	0.64	0.85	1.07	1.28	1.50	1.71
225	0.30	0.41	0.61	0.81	1.01	1.22	1.42	1.62
200	0.29	0.38	0.57	0.76	0.96	1.15	1.34	1.53
175	0.27	0.36	0.54	0.72	0.89	1.07	1.25	1.43
150	0.25	0.33	0.50	0.66	0.83	0.99	1.16	1.32

2. The Contractor shall, at its expense, locate and repair any defective material or workmanship until the excess leakage is reduced below the allowable limits.

3. If a water main or section fails to meet the specified test requirements or has to be repaired, it shall be retested at no additional cost to the Owner.

4. All joints, not subjected to pressure testing, shall be visually inspected under pressure for not less than 30 minutes for leakage.

D. Disinfection:

New, relocated, or repaired water mains shall be disinfected in accordance with AWWA Standard C 651-14, latest revision. The disinfection procedure shall be carried out after completion of construction and immediately before the mains are placed into service. During construction, precautions shall be taken to protect pipe interiors, fittings, and valves against contamination. Cleaning and swabbing of the interior of the pipe may be required if contamination cannot be removed by ordinary flushing and disinfection procedures. The cleaning and swabbing shall be performed with a 5% hypochlorite disinfecting solution, or other disinfecting agent as approved by the Owner. The Contractor shall be responsible for properly treating the discharge during disinfection, testing, and flushing activities in accordance with all environmental regulations required by the locality.

1. Preliminary Flushing:

a. Water lines shall be flushed every 2,000 feet unless the Owner gives the Contractor written permission for flushing longer lengths of pipeline. No more than 4,000 feet of pipeline shall be flushed at any one time, under any circumstances.

b. All water mains shall be flushed with potable water prior to disinfection. The flushing velocity shall not be less than 3.0 feet per second (FPS). No site for flushing shall be used unless adequate and satisfactory drainage is present, available and operational. It shall be noted that under no circumstances will preliminary flushing be considered a substitute for preventive measures taken before and during water main construction to minimize contamination. Estimated flow rates to achieve the required 3.0 FPS are as follows:

TABLE 801-2
Minimum Flushing Rate (FR) to Achieve 3.0 FPS
(Pipe diameters 16-inches and less)

Pipe Diameter (in.)	Flow (GPM)
6	260
8	470
10	730
12	1060
16	1880

2. Disinfection Methods

a. Tablet/Granular

The tablet method consists of placing calcium hypochlorite granules or tablets in the water main during the installation and then filling the main with potable water to create a chlorine solution. This method may be used only if, in the opinion of the Owner, the pipes and appurtenances have been kept clean and dry during construction. This method may not be used on mains less than 24 inches in diameter nor on solvent-welded plastic pipe.

b. Continuous-Feed Method

The continuous–feed method consists of completely filling the main with potable water, removing air pockets, then flushing the completed main to remove particulates, and refilling the main with potable water that has been chlorinated to 25 mg/l. After a 24-hour retention time in the main, there shall be a free chlorine residual of not less than 10 mg/l.

c. Slug Method

The slug method consists of completely filling the main to eliminate air pockets; flushing the main to remove particulates; and then, slowly flowing through the main a slug of water dosed with chlorine to a concentration of 100 mg/l. The slug shall pass through the main at a slow rate of flow allowing all parts of the main to be exposed to the highly chlorinated water for at least 3 hours.

d. Spray Disinfection Method

The spray disinfection method consists of spraying a 200 mg/l free chlorine solution on all interior surfaces of the main. After 30 minutes the main shall be filled with potable water. This method should only be used on very large diameter mains, where personnel and equipment may safely enter the pipe.

TABLE 801-3
Disinfection Methods Summary

Disinfection Method	Main Diameter Size	Initial Free Chlorine Concentration, mg/l	Min. Contact Time, Hours	Min. 24-Hour, Free Chlorine Residual, mg/l
Tablet/Granular	Less than 24- inches	25	24	0.2
Continuous Feed	General	25	24	10
Spray	Large	200	0.5	----
Slug	Large	100	3.0	50

Acceptable disinfecting solutions shall include chlorine in a liquid form, in calcium hypochlorite granules or in sodium hypochlorite solutions. All hypochlorite shall conform to AWWA Standard B 300, latest revision.

In water distribution systems using chloramines as the disinfectant, water from the distribution system no longer has a free chlorine residual, but instead has a combined chlorine residual. The combined chlorine will exert a free chlorine demand of approximately 5 ppm. Thus, the make-up water (if supplied from the water distribution system) will neutralize approximately 5 ppm of free chlorine. This 5 ppm free chlorine demand must be taken into account in determining the amount of chlorine necessary to achieve a 50 ppm free chlorine residual.

3. Final Flushing:

After the retention period, the heavily chlorinated water shall be flushed from the main

until the chlorine concentration in the water leaving the main is no higher than that generally prevailing in the existing system or less than 1 ppm. In water distribution systems using chloramines as the disinfectant, the heavily chlorinated water shall be flushed until all traces of free chlorine are absent (i.e. free chlorine residual = 0.0 ppm). The flushing shall be conducted in the presence of and only with the approval of the Owner.

4. Point of Discharge:

The Contractor shall discharge the chlorine solution from the water main through available outlets, or through taps in the main installed at the Contractor's expense. The environment to which the chlorinated water is to be discharged shall be inspected by the Contractor. If there is any question that the chlorinated discharge will cause damage to the environment, then a reducing agent shall be applied to the water as it is wasted to thoroughly and completely neutralize the chlorine residual in the water. (See Table 801-4, Amount of Agent Required to Neutralize Various Residual Chlorine Concentrations.) Dechlorination shall be performed in accordance with ANSI/AWWA C655-09. Where necessary, federal, state, and local regulatory agencies should be contacted by the Contractor to determine special provisions for the disposal of heavily chlorinated water.

TABLE 801-4
Amount of Agent Required to Neutralize Various Residual Chlorine Concentrations for 100,000 Gallons of Water

Residual Chlorine	Sulfur Dioxide (SO_2)	Sodium Biosulfate	Sodium Sulfite	Sodium Thiosulfate
ppm	LB	LB	LB	LB
1	0.8	1.2	1.4	1.2
2	1.7	2.5	2.9	2.4
10	8.3	12.5	14.6	12.0
50	41.7	62.6	73.0	60.0

To estimate the minimum flushing time and the amount of neutralizing agent needed, use the following, where:

L = length of pipe being chlorinated, feet
t = estimated minimum flushing time, seconds
FR = flow rate, from Table 801-2, as function of pipe diameter, GPM
V = flushing discharge volume, gallons
N = estimated amount of neutralizing agent as function of concentration, from Table 801-3, pounds

a. Determine the estimated minimum flushing time, t, in seconds:

$$t = L/2.5$$

b. Determine the estimated minimum flushing discharge, V, in gallons:

$$V = \frac{t + 300}{60} \times FR$$

c. Determine the estimated amount of neutralizing agent, N, in pounds:

$$N = \frac{V}{100{,}000} \times \text{(Table 801-4 value for given residual chlorine and type of neutralizing agent)}$$

5. Bacteriological Tests:

After final flushing and before the water main is placed in service, the Contractor shall collect samples and have the samples tested for bacteriological quality by a State Health Department approved laboratory. The samples shall be collected in sterile containers. Chlorine residual measurements shall be taken and recorded at the time each sample is collected.

For new mains, one of the following two options for the bacteriological testing of total coliform analysis may be used:

Option A – The Contractor shall take an initial set of samples and then resample after a minimum of 16 hours using the sampling site procedures outlined in AWWA C 651-14. Both sets of samples must pass before approval may be granted.

Option B – The Contractor shall allow the main to sit for a minimum of 16 hours without any water use/withdrawals prior to sampling. The Contractor shall then collect, using the sampling site procedures identified in AWWA C 651-14 and without flushing the main, two sets of samples a minimum of 15 minutes apart while the sampling taps are left running. Both sets of samples must pass before approval may be granted.

For new mains, sets of samples shall be collected every 1,200 feet, plus one set from the end of the new main and a minimum of one set for each branch greater than one pipe length.

6. Re-disinfection:

If the initial disinfection produces positive results for coliform, the main shall be re-flushed and the sampling procedure repeated. If these samples are positive for coliform, then the main shall be re-chlorinated and the sampling procedure repeated until satisfactory results are achieved.

7. Supervision:

The disinfection and testing procedure shall be carried out by the Contractor under the supervision of the Owner. Water mains shall be placed in service only after final approval has been issued by the Owner contingent upon test results.

III. MEASUREMENT FOR PAYMENT

A. Water Main, installed

Measurement of the water main will be made along the centerline of the pipeline based upon the linear footage of each size pipe and material type installed and satisfactorily tested, complete in place. No depth measurement will be made for trench excavation and native material backfill. Pipe will be measured through fittings, valves, and casings.

The unit price bid will not include the cost of valves. Payment will include the cost of the following:

1. Backfilling, compacting, and compaction testing
2. Bedding, as detailed in the Contract Documents
3. Coatings
4. Corporation stops
5. Dewatering
6. Disinfection
7. Disposal of surplus material
8. Excavation
9. Heat fusion equipment and any specialized technical operational support required
10. Restoration in right-of-way and easements (not including curb and gutter restoration or pavement restoration, unless otherwise noted)
11. Sampling and flushing
12. Service saddles
13. Shoulder restoration
14. Temporary seeding and stabilization
15. Temporary sheeting and bracing
16. Testing
17. Thrust restraint
18. Tracer wire and marking tape
19. Water main and appurtenances, including fittings.

B. Fire Hydrant, installed complete in place.

Payment will be made at the unit price bid for each fire hydrant (Type I, II, or III) installed and satisfactorily tested and will include the cost of the following:

1. All appurtenances required for satisfactory operation
2. Backfill, compacting and compaction testing
3. Bedding material
4. Blocking, where required
5. Burlap bag
6. Disposal of surplus material
7. Culvert Pipe
8. Dewatering
9. Excavation
10. Extension spools
11. Fire hydrant assembly, including valve, valve box, valve box frame and cover, pipe, and fittings as indicated on the Standard Details
12. Painting
13. Right of way restoration
14. Shoulder restoration
15. Stone
16. Temporary seeding and stabilization
17. Temporary sheeting and bracing
18. Testing
19. Thrust restraint.

C. Water Sampling Stations, installed complete in place.

Sampling stations, when required, shall be at the unit price bid.

D. Gate or Butterfly Valves, installed complete in place.

Payment will be made at the unit price bid for each size gate or butterfly valve installed, complete in place, and satisfactorily tested, and will include the cost of the following:

1. Backfill, compacting and compaction testing
2. Bedding material,
3. Coatings and linings
4. Disposal of surplus material,
5. Excavation,
6. Right of way restoration,
7. Shoulder restoration,
8. Stem extensions,
9. Temporary seeding and stabilization,
10. Temporary sheeting and bracing,
11. Testing,
12. Thrust restraint,
13. Valve, valve box, with frame and cover for each size in accordance with the Contract Documents,
14. Valve wrench.

E. Tapping Sleeve and Valve (TS&V), installed complete in place.

Payment will be made at the unit price bid for each size TS&V installed, in place, and satisfactorily tested, and will include the cost of the following:

1. Backfill, compacting and compaction testing,
2. Bedding material,
3. Coatings and linings,
4. Disposal of surplus material,
5. Excavation,
6. Pressure testing,
7. Right of way restoration,
8. Shoulder restoration,
9. Stem extensions,
10. Tapping sleeve assembly and appurtenance,
11. Temporary seeding and stabilization,
12. Temporary sheeting and bracing,
13. Testing.
14. Thrust Restraint,
15. Valve, valve box, with frame and cover for each size in accordance with the Contract Documents,
16. Valve wrench.

F. Blowoff Assembly, installed complete in place.

Payment will be made at the unit price bid for each blowoff assembly installed and satisfactorily tested and will include the cost of furnishing and installing the blowoff assembly and all required appurtenances, in accordance with the Standard Details, including tap to proposed water main to provide satisfactory operation in accordance with the Contract Documents.

G. Manual Air Vent Assembly, installed complete in place.

Payment will be made at the unit price bid for each manual air vent assembly installed and satisfactorily tested and will include the cost of furnishing and installing the manual air vent assembly in accordance with the Standard Details and all required appurtenances in accordance with the Standard Details, including tap to proposed water main to provide satisfactory operation in accordance with the Contract Documents.

H. Type K Copper (Single or Dual) Service Lines and Meter Box (Jack and Pull Construction), installed complete in place.

Payment will be made at the unit price bid at a unit price for each single or dual service, as indicated on the Bid form, and will include the cost of the following:

1. Backfill, compaction, and compaction testing
2. Clean up and restoration
3. Dewatering
4. Disinfection
5. Excavation of jacking and receiving pits
6. Jack and pull operation
7. Sampling and flushing
8. Temporary sheeting and bracing
9. Testing
10. Type K Copper service lines and all fittings to connect to water main including tapping saddle, curb stop, angle meter valve or meter yoke assembly (as shown on the Standard Detail), for each separate service
11. Meter box and all required appurtenances
12. Reconnections made to existing private water service lines at the meter box.

I. Type K Copper (Single or Dual) Service Lines and Meter Box (Open Cut Construction), installed complete in place.

Payment will be made at the unit price bid for each single or dual service, as indicated on the Bid form, and will include the cost of the following:

1. Backfill, compaction, and compaction testing,
2. Clean up and restoration,
3. Dewatering,
4. Disinfection,
5. Excavation,
6. Meter box and all required appurtenances,
7. Pavement repair, unless paid under another Bid item,
8. Reconnections made to existing private water service lines at the meter box,
9. Sampling and flushing,
10. Temporary sheeting and bracing,
11. Testing, and
12. Type K Copper service lines and all fittings to connect to water main including tapping saddle, curb stop, angle meter valve or meter yoke assembly (as shown on the Standard Detail), for each separate service.

J. Private Service Relocations

Measurement and payment will be performed in the same manner as “public” service lines in

the right of way on a unit price bid for each private service, as indicated on the Bid form, and will be installed in accordance with the International Plumbing Code.

K. Polyethylene Encasement installed complete in place.

Payment will be made at the unit price bid per linear foot for polyethylene pipe encasement satisfactorily installed.

L. Connections to existing water mains, complete in place

Connections to existing water mains will be paid for assemblies installed and satisfactorily tested. Payment will include:

1. Backfilling,
2. Bracing,
3. Compaction,
4. Compaction testing,
5. Coordination (including written work schedule and customer notification),
6. Dewatering,
7. Disinfection,
8. Disposal of surplus material,
9. Excavation,
10. Materials,
11. Other site restoration and cleanup as shown in the Contract Documents,
12. Restoration of right of way,
13. Shoulder restoration,
14. Stabilization,
15. Temporary seeding,
16. Testing,
17. Thrust restraint,
18. Temporary sheeting, and
19. Work Plan and all notifications to include re-notifications as necessary.

M. Plugging Existing 2-Inch Water Mains

Plugs for existing 2-inch water mains shall be paid based upon the number of excavations made for plugging. The unit price bid shall include the cost and installation of:

1. Backfilling with suitable material,
2. Compacting,
3. Coarse aggregate fill,
4. Couplings,
5. Cutting the existing main as shown in the Contract Documents, and indicated on the Bid form,
6. Disposing of surplus material,
7. Excavating,
8. Other site restoration and cleanup,
9. Pavement replacement,
10. Plugs,
11. Seeding,
12. Thrust restraint, and
13. Top soiling.

N. Offset of Existing Water Main

Offsets of existing water main shall be paid for at the contract unit price per foot. The unit price shall include:

1. Backfilling with suitable material,
2. Compacting and compaction testing,
3. Connections to existing mains,
4. Coordinating line shutdown,
5. Cutting of existing line,
6. Dewatering,
7. Disinfecting,
8. Disposing of surplus materials,
9. Excavating,
10. Fittings,
11. Furnishing and installing the pipe,
12. Other site restoration and cleanup
13. Pipe bedding,
14. Removing and disposing off-site of old line,
15. Seeding,
16. Temporary sheeting and bracing,
17. Testing,
18. Thrust restraint,
19. Top soiling, and
20. Work Plan and all notifications to include re-notifications as necessary.

O. Cutting in of Tees, Crosses, and Valves into Existing Mains (larger than 2-inches)

Cutting in of Tees, Crosses, and Valves into Existing Mains (larger than 2-inches) shall be paid based upon the number of each tee, cross, or valve cut in. The unit price bid shall not include pipe or valves and valve boxes, which shall be paid for under their respective unit price.

The unit price bid shall include:

1. Backfilling with suitable material,
2. Coarse aggregate fill,
3. Compacting,
4. Cutting-in of any valves at or near the tee or cross,
5. Dewatering,
6. Disposing of surplus material
7. Excavating,
8. Furnishing and installing all fittings such as tees, bends, reducers, sleeves, plugs, as well as other appurtenances,
9. Other site restoration and cleanup,
10. Pavement replacement,
11. Seeding,
12. Temporary sheeting and bracing,
13. Testing,
14. Thrust restraint, and
15. Top soiling.

P. Tracer Wire Box

Payment will be made at the unit price bid for each tracer wire box installed and will include the cost of furnishing and installing the box, lid, riser pipe, aggregate base material, backfilling, compaction, topsoil (if required), and all required appurtenances, in accordance with the Standard Detail.

End of Section

SECTION 802

SANITARY GRAVITY SEWER SYSTEMS

I. GENERAL

1.1. DESCRIPTION OF WORK

The Contractor shall furnish all labor, supervision, material (except as herein provided), tools, equipment, supplies, and services; and, shall perform all Work necessary for the construction of gravity sanitary sewer systems up to 24-inch in diameter. The gravity sanitary sewer systems shall be constructed in accordance with the Contract Documents and the applicable laws, rules, ordinances, standards, and specifications of regulatory agencies.

1.2. SUBMITTALS

Submittals shall be made by the Contractor in accordance with the procedures set forth in Section 105 and as described below:

A. Provide a construction schedule for approval that includes the sequence of installation of casings, pipelines and manholes. Provide a laying schedule (on the Drawings) that show necessary deviations from the Contract Documents due to specific utility conflicts discovered during required exploratory excavations.

B. Submit each manufacturer's and/or supplier's certification(s) attesting that the pipe, gaskets, manholes, castings, and appurtenances meet or exceed the specified requirement. The following information is to be shown on each certificate:

1. Name and location of the work
2. Name and address of Contractor
3. Quantity and date or dates of shipment and/or delivery to which the certificate applies.
4. Name of the manufacturing or fabricating company.
5. Type B manhole coatings shall be warranted for materials and workmanship for a minimum of 5 years.

C. Certification shall be in the form of a letter or company-standard form containing all required data and signed by an officer of the manufacturing, fabricating, or supplying company.

If requested by the Owner, all laboratory test reports shall be provided at no additional cost showing the following information:

1. Date or dates of testing
2. The specified requirements for which testing was performed.
3. Name and location of the testing agency.
4. Results of the test or tests.

D. Manufacturer's catalog cuts, technical data, operation and maintenance data, and/or shop drawings are required for the following gravity sewer system components (shop drawings shall be drawn to a scale sufficiently large to show all pertinent aspects of the item and its method of connection to the Work):

1. Pipe and fittings
2. Manholes
3. Frame and Covers
4. Clean-outs
5. Steps (where required)
6. Manhole Connections

E. Manhole Coatings:

1. Manufacturer’s submittals:

   a. Material Safety Data Sheets (MSDS) for each product used.

   b. Manufacturer's requirements, including application procedures, shall be in writing.

   c. Storage requirements including temperature, humidity, and ventilation for coating materials.

   d. Recommended concrete surface profile (CSP) values, including methods for obtaining the required profile; proposed methods for maintaining all environmental controls and for containing, collecting, and disposing of residuals.

   e. Manufacturer's certification that materials comply with Federal, State, and Local regulations for VOC (Volatile Organic Compounds).

   f. Letter(s) with associated product data signed by Manufacturer certifying that submitted products are suitable for application on the surfaces to be coated and for the service conditions.

   g. Certification that Applicator personnel have been trained and approved in the handling, mixing and application of the products to be used.

   h. Certification that the equipment to be used for applying the products has been approved and calibrated and Applicator personnel have been trained and certified for proper use of the equipment.

2. Applicator Requirements:

   a. Two (2) years’ experience and five (5) recent references of projects of similar size and scope.

   b. Applicator shall initiate and enforce quality control procedures consistent with applicable ASTM, NACE, ICRI and SSPC standards and the protective coating manufacturer's recommendations.

   c. Applicator shall conform to all local, state and federal regulations including those set forth by OSHA, RCRA and the EPA and any other applicable authorities.

3. Prior to substantial completion, the Contractor shall provide to the Owner "Manhole/Structure Protective Coating Post Installation Certification" form (see Section 109) completed by the Applicator and coatings manufacturer which includes the following information:

   a. All manhole and structures were coated in conformance with the coating manufacturer's recommendations.

   b. The value of the concrete surface profile of the manhole/structure complied with the coating manufacturer's CSP recommendations.

   c. Ambient conditions, including temperature and humidity.

   d. The concrete surface was clean and free of all deleterious materials.

   e. The concrete moisture levels at the time of coating applications were within acceptable levels as recommended by the coating manufacturer.

   f. Average and minimum dry film thickness of the coating.

   g. Recoat intervals.

F. Polymer Concrete Manholes

In addition to the manhole submittal requirements identified above, Polymer Concrete Manholes shall also require the following submittals:

1. Polymer concrete manholes shall be manufactured in accordance with Section 200.

2. Calculations signed and sealed by a Professional Engineer demonstrating the manhole meets the design requirements for its intended location and service duty. As a minimum material properties, polymer mixture, loadings, load combinations and dimensioned assumed.

3. Shop drawings for each manhole including the Owners number, location, rim and invert elevations, dimensions, reinforcing details, manhole sections, bench and invert materials, base units and construction details, and jointing details and materials.

4. Handling and shipping shall be performed in accordance with the manufacturer's instructions.

5. Each manhole shall be marked on the inside and outside with the Manufacturer's name or trademark, manufacturer's location and production date.

6. Certification that the manufacturer of Polymer Concrete manholes has been actively producing polymer concrete manholes for a minimum of 5 years with no more than one year between manholes projects. References demonstrating this requirement shall also be provided.

7. Polymer concrete manholes shall be manufactured by U.S. Composite Pipe, Inc. or Owner approved equal.

II. EXECUTION

2.1. GENERAL

A. The Contractor shall furnish and install a complete system as shown in the Contract Documents. Pipe shall be laid true to lines and grades except as authorized by the Owner.

B. The Owner reserves the right to reject defective material shipped to and/or stored on site, and to examine pipe and determine if the pipe is damaged prior to installation.

C. The Contractor shall unload, handle, and store pipe and appurtenances in accordance with Section 200 of these Standards and the manufacturer's recommendations.

D. Proper tools and facilities satisfactory to the Owner and as recommended by the material manufacturer shall be provided and used by the Contractor for the safe and convenient prosecution of the Work. All pipe, fittings, manhole sections, frame and covers, and accessories shall be carefully lowered into the trench piece by piece by means of a derrick, ropes, slings, or other suitable tools or equipment in such a manner as to prevent damage to the material and any protective coatings and linings.

2.2. PIPE INSTALLATION

A. Cleaning: All lumps, blisters and excess coatings shall be removed from the bell and plain ends of each pipe, and the outside of the plain end and the inside of the bell shall be cleaned, dry, and be free from oil, grease, dirt, sand, grit, or any foreign materials before the pipe is installed.

B. Trenching, bedding, backfilling and compaction shall be in accordance with Section 303.

C. Pipe Laying:

1. Pipe shall be laid to a true, uniform line and grade. The pipe shall be installed on a straight line between manholes (or to a clean-out box), without dips or bends. Laying of pipe shall be accomplished only after the trench has been dewatered and the foundation and/or bedding has been prepared in accordance with the Standard Details for the type and class of foundation or bedding specified.

2. Pipe laying shall be in accordance with the manufacturer's recommendations. Pipe laying shall proceed upgrade, bells ahead. Each section of pipe shall be laid to form a close concentric joint with the adjoining section and to prevent sudden offsets in the flow line. Each section of pipe, as it is laid, shall be backfilled as specified in the Contract Documents, at least up to the centerline to adequately hold the pipe in place, before the next joint is made.

3. A laser shall be used to maintain line and grade. A ventilating fan may be required to be used in conjunction with the laser beam to preclude fumes or air conditions that may cause refraction. A copy of the certification of the laser calibration shall be provided for each separate job prior to the beginning of pipe installation.

4. As the Work progresses, the interior of the pipe shall be cleared of dirt and superfluous material.

5. Trenches and other excavations shall be kept free of water until backfilled. Concrete or masonry Work shall not be constructed in water, nor shall water be allowed to rise over the Work until concrete or mortar has had ample time to set.

6. When work is not in progress, open ends of pipe and fittings shall be closed so that trench water, earth, and other substances will not enter the pipe or fittings.

7. Whenever a pipe requires cutting to bring it to the required location, the Work shall be performed in a satisfactory manner so as to leave a beveled end in accordance with the manufacturer's instructions or recommendations. Cuts shall be made at 90° with the centerline of the pipe so that a framing square placed against the side of the pipe will reveal not more than 1/4-inch variation across the diameter of the pipe in any direction. The pipe shall be cut with an abrasive wheel, rotary wheel cutter, guillotine pipe saw, milling wheel saw or other equipment specifically designed for that purpose. The Contractor shall grind smooth cut ends and rough edges and for push-on connections; the cut ends should be beveled slightly. Pipe damaged by the Contractor in cutting shall be replaced at the Contractor's expense.

8. Laying of the pipe shall commence immediately after the excavation is started, and every means must be used to keep pipe laying closely behind the trenching. Holes shall be scooped out where the bells occur leaving the entire barrel of the pipe bearing on the pipe bed. No more than 100 feet of trench shall be open in advance of pipe laying, unless approved by the Owner. The excavation of the trench shall be fully completed a sufficient distance in advance of the laying of the pipe.

9. Pipe joint assembly practices and joint assembly materials such as lubricants, primers and adhesives shall be in accordance with the manufacturer's recommendations and specifications.

10. Pipe shall not be laid on frozen bedding.

D. Alignment and Grade:

1. The Contractor shall not deviate from the line and grade indicated in the Contract Documents, except with approval of the Owner.

2. The sanitary sewer system shall be installed according to the following tolerances:

a. The maximum deviation of any invert from plan grade shall be within +/- 0.05 feet.

b. The total deviation of both inverts at each end of a particular line shall be within +/- 0.08 feet.

c. The maximum slope deviation between any two points in the line from the plan slope shall be +/- 0.02 %.

2.3. MANHOLE INSTALLATION

A. Prior to installation, the Owner shall inspect manholes for direction and sizes of openings, cleanliness, joints, and handling damage and cracks. Manholes determined to be defective by the Owner shall be replaced by the Contractor.

B. Manholes located within a distance of 250 linear feet of pipe away from a pump station discharge shall be considered to have a higher risk for corrosive degradation. When indicated on the Bid form polymer concrete or non-standard type manholes and frames shall be installed in lieu of standard manholes, frames and coatings unless otherwise approved by the Owner.

C. Manholes shall be constructed promptly as the sections of the sewer between them are completed.

D. The Contractor shall join pipe to the manhole in accordance with the Drawings, Standard Details, and the manufacturer's requirements. Pipe stubs shall extend beyond the manhole as indicated in the Contract Documents and shall be sealed with a watertight plug or cap.

E. Manhole bedding shall be as specified in the Standard Details. Concrete for manhole foundations shall be in accordance with the Standard Details and as specified under Section 502.

F. The top of all manholes shall be brought to proper grade for receiving frames and covers.

G. The manhole frame rim shall be free of all dirt and debris prior to the installation of the manhole insert. The insert shall be fully seated around the manhole frame rim to insure against water seepage between the insert and the manhole frame rim. Gasket lubricant, such as used in water and sewer main installation, shall be applied generously on the gasket prior to installing the insert.

H. Existing manholes and main line cleanouts requiring frame and cover adjustment rings for pavement overlay applications shall be performed in accordance with Section 510.

I. Manhole Coatings:

(This specification covers the execution processes required for protecting concrete manholes and other underground structures using epoxy-coating systems, per Section 200 and this Section. The Engineer is responsible for determining the level of protection required and is cautioned that the coating system recommendations contained herein may not be suitable for every application. Each project and structure should be evaluated independently and the level of protection determined based on the product, service environment and protection level, as a minimum.)

1. Surface Preparation

Surface preparation is the process by which sound, clean, and suitably roughened surfaces are produced on concrete substrates. This process includes the removal of unsound concrete and bond-inhibiting films, strength verification, opening the pore structure, verification of moisture content, and establishing profiles suitable for the application of the specified protective system.

The Contractor and Applicator must abide by all environmental controls and requirements specified in the Contract Documents during surface preparation and coatings application. Excess dust, noise, vibrations, and the loss from the job site of concrete dust and slurries must be avoided. Slurries must be contained, collected, and disposed of in an Owner approved method. If Contractor and applicator fail to adequately control emissions from the work site, Owner may take all necessary corrective actions and withhold the costs for such from monies due the Contractor.

The Contractor shall abide by all VOSHA and other applicable work area safety and protection requirements during surface preparation activities.

a. Installation of the epoxy coating shall not commence until the concrete substrate has properly cured and prepared in accordance with coatings manufacturer's recommendations.

b. All contaminants including: oils, grease, unsound or incompatible existing coatings, waxes, form release agents, curing compounds, efflorescence, sealers, salts, concrete dust, or other contaminants shall be removed.

c. All concrete that is not sound or has been damaged shall be removed to a sound concrete surface or replaced.

d. Temperature of the surface to be coated should be maintained between 40° F and 120° F during application. Prior to and during application, care should be taken to avoid exposure of direct sunlight or other intense heat source to the structure being coated. Where varying surface temperatures do exist, care should be taken to apply the coating when the surface temperature is falling versus rising.

e. Applicator shall inspect all specified surfaces prior to surface preparation. Applicator shall notify the Contractor and the Owner within 24 hours of all manholes/structures:

(1) whose concrete is not sound or has been damaged.

(2) or are not otherwise suitable for surface preparation.

f. Once the Applicator and Contractor are in agreement that the surfaces to be coated are in accordance with the product manufacturer’s requirements, Contractor shall notify Owner. The Owner, at its discretion, may then perform inspections as necessary to assure that the structure is ready for the application of the coating system.

g. Should any surface be found to be inadequate for acceptance of coating, or should the structure fail to meet the structural requirements of the referenced specifications, such structures shall be either repaired to the complete satisfaction of the Owner or removed from the project site and replaced with a new structure, all at no expense to the Owner. Replacement structures shall be subject to the same requirements for structural integrity and surface preparation.

2. Application Requirements

a. Application procedures shall conform to the recommendations of the coating Manufacturer, including material handling, mixing, environmental controls during application, safety, and application equipment.

b. Unless specified elsewhere herein, the Applicator shall comply with the Manufacturer's most recent written instructions with respect to the following:

(1) Mixing of all materials.

(2) Storage, protection and handling of all materials.

(3) Surface preparation has been properly performed and surfaces brought to the appropriate CSP profile.

(4) Recoat limitations and cure times.

(5) Minimum ambient, substrate and atmospheric temperatures, substrate's degree of dryness, relative humidity, and dew point of air.

(6) Application.

(7) Final curing.

(8) Use of proper application equipment.

(9) Cleanup and disposal

c. The Applicator must follow the minimum and maximum recoat limitation times and related temperature range restrictions between successive lifts, per Manufacturer's stated requirements.

d. The applied coating system shall be protected from damage during curing and shall be cured as recommended by the Manufacturer. Ambient conditions shall be controlled and maintained during curing as required by the Manufacturer.

e. The Applicator shall be responsible for coating all openings, including the top of manhole cone and pipe penetrations; and, joints (following field application of grouting). Any deficiencies in the finished coating shall be repaired by the Applicator according to the procedures provided by the coating Manufacturer.

f. For the Type of Coating specified, surfaces shall be coated to a minimum dry film thickness of:

(1) Type A Coating – 40 mils, and

(2) Type B Coating – 80 mils.

2.4. TESTING AND INSPECTION

A. General:

1. All flushing, air, vacuum, or infiltration testing procedures shall conform to this Section and the applicable sections of the Commonwealth of Virginia *SCAT Regulations, latest edition.*

2. The Contractor shall request the Owner at least 48 hours (2 working days) notice to schedule testing and inspection.

3. Only properly functioning and clean equipment shall be used for cleaning and testing gravity sewer systems.

4. Connections to existing sewer facilities will be permitted only after satisfactory completion of testing and cleaning, and only when authorized by the Owner.

5. All testing activities require compliance with the Occupational Safety and Health Agency (OSHA) in regard to confined space entry.

6. The Contractor is responsible for repairing any deficient Work at no additional cost to the Owner.

B. Pipe Testing - Gravity Lines:

1. New gravity sewer systems will be tested using the following procedures:

a. Visual Test - All manhole covers shall be removed by the Contractor as a prerequisite to conducting the visual test. The Contractor shall certify that all manhole entries are in compliance with confined space entry procedures and mechanical ventilation shall be provided. A visual inspection shall consist of the following:

(1) Inspection for visible leaks in lines or manholes

(2) Inspection of condition of the grout in the interior joints of manholes

(3) Inspection of manhole frames and covers for proper type and installation

(4) Inspection to see if lines are free of debris

(5) Inspection of manhole benches and inverts

(6) Check of alignment and grade by introducing sufficient water into the line to verify the absence of sags, or as directed by the Owner

(7) Check that manholes have been completely and properly coated on all surfaces

(8) Mirror test the line

b. Deflection Test - The entire length of all flexible gravity sanitary sewer lines shall be tested by means of a rigid mandrel to assure that deformation or deflection does not exceed 5 percent of the base inside diameter per ASTM D3034. An Owner-provided mandrel will be manually pulled through the line by the Contractor in the presence of the Owner, no sooner than 30 days after completion of backfill. The mandrel contact length will be equal to the nominal diameter of the pipe. The mandrel, one for each size of pipe, shall be a nine-arm mandrel, with a proving ring sized at 5 percent of the base inside diameter. Contractor is responsible for removal of mandrel if it becomes stuck in the pipe. Lines must be free of debris for this test and the Contractor shall be responsible for installing a string line in the pipe for the test. Any sections that do not pass the test shall be corrected or replaced by the Contractor. Ductile iron pipe will not be required to have a deflection test performed.

c. Leakage Testing

The Contractor shall perform one of the following leakage tests as required by the locality.

(1) Low Pressure Air Test:

(a) An air test conforming to ASTM Specification F1417, shall be performed on all gravity sewer mains, including service laterals and cleanouts, prior to acceptance. The Contractor is responsible for supplying an air-testing rig and pressure gauge, calibrated to the tenth of a pound, for this test.

(b) The Contractor shall furnish all the necessary equipment and be responsible for conducting all low-pressure air tests. The Owner shall witness all low-pressure air tests and verify the accuracy and acceptability of the test and the equipment utilized. The Contractor is responsible for any repair work on sections that do not pass the test.

(c) After a manhole-to-manhole reach of pipe has been backfilled to final grade and prepared for testing, plugs shall be placed in the line at each manhole and secured. Once the plugs are in place and the air hoses connected, the plugs shall be inflated and the sewer line pressurized to the test pressure.

(d) All plugs shall be installed and properly inflated to prevent blowout. All pressurizing equipment used for low-pressure air testing shall include a regulator or relief valves set no higher than nine (9) pounds per square inch gauge to avoid over-pressurizing and displacing temporary or permanent plugs. No person shall enter a manhole while air is being forced into a pipe with plugs in place or when any pressure remains behind the plugs.

(e) All plugs shall be capable of resisting internal testing pressures without the aid of external bracing or blocking. If pneumatic plugs are utilized, a separate hose is required to inflate the pneumatic plugs from the aboveground control panel. To facilitate test verification by the Owner, all air used shall pass through a single, aboveground control panel. The above-ground air control equipment shall include a shut-off valve, pressure regulating valve, pressure relief valve, input pressure gauge, and a continuous monitoring pressure gauge having a pressure range from zero (0) to at least ten (10) psig. The gauge dial shall be divided in 0.1 psi or smaller increments. The gauge shall have an accuracy of 0.04 psi. Two separate hoses shall be used (in addition to hose for pneumatic plugs) to: (1) connect the control panel to the sealed line for introducing low-pressure air, and (2) a separate

hose connection for constant monitoring of air pressure build-up in the line.

(f) All service laterals, clean-outs, stubs, and fittings within the sewer test section shall be properly capped or plugged during construction to prevent air loss that could cause an erroneous air test result.

(g) Air shall be supplied slowly to the section of the sewer being tested until the internal pressure reaches 4.0 psig greater than the average back pressure of groundwater above the pipe, but not greater than 9.0 psig. The groundwater adjustment shall be calculated by dividing the average vertical height, in feet of groundwater above the invert of the sewer pipe to be tested, by 2.31. The result gives the adjustment in pounds per square inch that must be added.

(h) After an internal pressure of 4.0 psig (plus required groundwater adjustment) is obtained, allow at least two minutes for air temperature to stabilize.

(i) After two minutes, the air hose from the control panel to the air supply shall be shut off or disconnected. There shall be no pressure drop, no leaks.

(j) If the section fails to meet these requirements, the Contractor shall determine at its own expense the source or sources of leakage, and shall repair or replace all defective materials and/or workmanship to the satisfaction of the Owner. The completed pipe installation shall then be retested until the requirements of this test are met.

(2) Infiltration

(a) Infiltration Test - will be conducted if the Contractor proves to the satisfaction of the Owner that the water table is high enough to conform to the requirements noted below.

The level of the groundwater shall be at least 4 feet above the top of the sewer line along the entire section of the pipeline to be tested. Measurements shall be made every hour for three hours to determine the amount of infiltration

(b) Infiltration shall not exceed 25 gallons per day per mile of sewer per inch of pipe diameter. There shall be no visible leaks.

d. Remote Camera / TV Inspection

Post-Installation TV inspection shall not be completed until all Work, including service laterals, manholes, and main line cleanouts are complete on a section of line. The post-installation TV inspection documentations (tapes, CDs, DVDs, storage portable storage devices, etc.) shall be submitted to the Owner prior to substantial completion, or when requested.

The Contractor shall engage and pay for television inspection for all gravity sewers installed, including service laterals and cleanouts. The Owner shall be present during the inspection. The inspections shall conform to the National Association of Sewer Service Companies (NASSCO) recommended specification for television inspections for main sewers. Manhole labels provided in video inspection must correspond to the manhole labels shown on the construction documents and record drawings.

Lines shall be cleaned prior to inspection. Prior to inserting the television camera into the pipeline, the Contractor shall flush and clean the mainline and the laterals. The Contractor shall introduce a minimum of 15 gallons of clear, potable water to each lateral and 1,000 gallons of clear, potable water into the terminal upstream manhole or last access structure on any given gravity sewer branch of the pipeline to be inspected with a television camera. The Contractor shall run the camera within 8 hours after the water has been introduced to the main and laterals. The Contractor is responsible for acquiring, collecting and disposing of the water, at no additional cost to the Owner. TV inspection shall include all joints and manhole inverts. No TV Inspection during cleaning of the lines shall be accepted.

The video inspection equipment shall conform to the requirements of Section 811. A video recording of inspected gravity sewer mains, service laterals, and cleanouts shall be provided to the Owner in electronic format on an Owner approved data transfer format upon completion of the inspection. The format shall comply with the requirements of Section 811. A log of comments made on the video shall be supplied with the associated pipe footage shown.

If the television inspection of the pipe shows poor alignment, displaced or cracked pipe, improper joints or slipped gaskets, the defect(s) shall be corrected and the pipe line re-videoed.

TABLE 802 -1 AIR TEST TABLE (Based on ASTM F1417)

Minimum Test Time in Minutes: Seconds
For Pressure Drop from 3.5 to 2.5 Psig (Minus Groundwater Influence)

Pipe Dia., In.	Minimum Time, Min.	Length for Minimum Time, Ft.	Time for Longer Lengths	Specification Time for Length (L) Shown, Minutes							
				100 Ft	150 Ft	200 Ft	250 Ft	300 Ft	350 Ft	400 Ft	450 Ft
4	3:46	597	0.380L	3:46	3:46	3:46	3:46	3:46	3:46	3:46	3:46

Pipe Dia., In.	Minimum Time, Min.	Length for Minimum Time, Ft.	Time for Longer Lengths	Specification Time for Length (L) Shown, Minutes							
				100 Ft	150 Ft	200 Ft	250 Ft	300 Ft	350 Ft	400 Ft	450 Ft
6	5:40	398	0.854L	5:40	5:40	5:40	5:40	5:40	5:40	5:42	6:24
8	7:34	398	1.520L	7:34	7:34	7:34	7:34	7:36	8:52	10:08	11:24
10	9:26	239	2.374L	9:26	9:26	9:26	9:53	11:52	13:51	15:49	17:48
12	11:20	199	3.418L	11:20	11:20	11:24	14:15	17:05	19:56	22:47	25:38
15	14:10	159	5.342L	14:10	14:10	17:48	22:15	26:42	31:09	35:36	40:04
18	17:00	133	7.692L	17:00	19:13	25:38	32:03	38:27	44:52	51:16	57:41
21	19:50	114	10.470L	19:50	26:10	34:54	43:37	52:21	61:00	69:48	78:31
24	22:40	99	13.674L	22:47	34:11	45:34	56:58	68:22	79:46	91:10	102:33

Note: If the groundwater level is 2 ft. or more above the top of the pipe at the upstream end, or if the air pressure required for the test is greater than 9 psi gauge, this air testing practice should not be used. Before this air testing practice is used, the groundwater level should be lowered by pumping or dewatering.

C. Manhole Testing:

1. All manholes shall be vacuum tested by the Contractor prior to acceptance.

a. Vacuum Test:

(1) The vacuum test shall be in accordance with ASTM C1244.

(2) All pipe entries into the manhole shall be plugged. The compression band of the manhole vacuum testing equipment shall be inflated to create a seal between the vacuum equipment base and the top of the manhole.

(3) If the Contractor backfills around the manhole prior to testing, ten (10) inches of mercury shall be applied to the manhole. The test duration for a 48-inch diameter manhole is 60 seconds; the test duration for a 60-inch diameter manhole is 75 seconds. There shall be no leakage.

b. If any vacuum drop is detected, necessary repairs shall be made and the vacuum test and repairs shall be repeated until the manhole passes the test.

2. Coating systems shall be tested during coating applications and after manholes have been installed.

a. During coating the Applicator shall regularly perform and record coating thickness using a wet film thickness gauge meeting ASTM D4414 – *Standard Practice for Measurement of Wet Film Thickness of Organic Coatings by Notched Gauges*, to ensure a monolithic coating and uniform thickness during application. A minimum of three (3) readings per 200 square feet of surface area shall be recorded. Applicator shall submit documentation on thickness readings to the Owner on a daily basis when coating application is underway.

b. For Type B coatings, the applicator shall perform holiday testing on all coated surfaces in the presence of the Owner. After the coating has dried and set hard to the touch, an induced holiday shall then be introduced on the coated concrete surface and shall serve to determine the minimum/maximum voltage to be used to test the coating for holidays at the particular area.

c. The spark tester shall be initially set at 100 volts per 1 mil of film thickness applied but may be adjusted as necessary to detect the induced holiday (refer to NACE RPO188-99). All detected holidays shall be marked and repaired by abrading the coating surface with grit disk paper or other hand tooling method. After abrading and cleaning, additional coating material can be hand applied to the repair area. All touch-up and repair procedures shall follow the coating manufacturers recommendations.

d. After manholes have been installed and all required testing of coatings and assembly have been performed, the Owner will perform a visual test to verify that no damage to the coating system occurred during installation. Any deficiencies in the finished coating shall be marked and repaired by the Applicator according to the procedures provided by the coating Manufacturer.

2.5. CONNECTIONS

General:

A. All materials shall be installed in accordance with ASTM C-923 and the manufacturer's recommendations and the Standard Details.

B. Core drilling and flexible pipe-to-manhole connectors shall be used when connecting sewer pipe to existing manholes unless otherwise approved by the Owner. The connector shall be as specified in Section 200. Connectors shall be of a size specifically designed for the class and type of pipe and manhole type.

C. Connections shall only be made in the presence of the Owner.

2.6. MANHOLE COATINGS WARRANTY

Following the successful application and acceptance of Type B coatings by the Owner, the coatings manufacturer shall warrant all Work against defects in materials and workmanship for a period of five (5) years, unless otherwise noted. Warranty shall begin at the date of substantial completion of the project. Coatings Manufacturer shall, within a reasonable time after receipt of written notice thereof, repair defects in materials or workmanship that may develop during the warranty period. The coatings Manufacturer shall be responsible for all costs necessary and associated with the repair of defects or the repairing of same, including traffic and environmental controls, at his sole expense.

III. MEASUREMENT FOR PAYMENT

A. Gravity Sewer Pipe, installed complete in place.

1. Measurement of the gravity sewer pipe will be made along the centerline of the pipeline, based upon the linear footage and depth of each size pipe and material type installed and satisfactorily tested. Pipe will be measured to the centerline of the manholes or cleanouts.

2. Measurement shall be made at the following depth classifications: 0-6, 6-8, 8-10, 10-12, 12-14, 14-16, 16-18, 18-20, and greater than 20 feet, in accordance with Standard Detail EW_02.

3. Payment will include the cost of the following:

   a. Backfilling, compacting, and compaction testing,
   b. Bedding as detailed in the Contract Documents,
   c. Bypass pumping(up to 2mgd),
   d. Clearing,
   e. Connection of existing laterals, manholes connections and drop connections when replacing existing sewer in the same trench,
   f. Dewatering,
   g. Disposal of surplus material,
   h. Excavation (per depth classification),
   i. Flushing,
   j. Gravity sewer main and appurtenances,
   k. Main line fittings,
   l. Post-installation video inspection,
   m. Protection of existing utilities,
   n. Removal and legal disposal of existing sanitary sewer main and structures where indicated in the Contract Documents,
   o. Restoration in right-of-way and easements (not including curb and gutter restoration or pavement restoration, unless otherwise noted),
   p. Stripping and stockpiling topsoil,
   q. Temporary seeding and stabilization,
   r. Temporary sheeting and bracing,
   s. Temporary tie-ins of mains and laterals during installation, and
   t. Testing.

B. Sewer Laterals

1. Measurement of the sewer laterals will be made along the centerline of the pipeline and based upon the linear footage or per each installed. Pipe will be measured from the service cleanout to the centerline of the gravity sewer pipe, manhole or mainline cleanout.

2. The cost of trench excavation and backfill for laterals shall be included in the unit price bid for each type of lateral, per foot or for each as indicated on the Bid form, regardless of the depth. Payment will include:

   a. Bedding,

b. Compaction,
c. Dewatering,
d. Disposal of surplus materials,
e. Seeding and stabilization,
f. Select materials,
g. The cost of restoration in right-of-way, shoulders, and easements (not including curb and gutter restoration or pavement restoration, unless otherwise noted),
h. Temporary sheeting and bracing,
i. Testing, and
j. Tracer wire.

C. Manholes

1. Standard Depth (0' to 6'):

a. Measurement of manholes (4- or 5-foot diameter), will be made for each standard depth manhole (0' to 6') installed and satisfactorily tested as measured to the nearest foot from the bottom of the frame and cover to the invert out.

b. Payment will be made at the unit price bid for each standard depth manhole installed and satisfactorily tested and will include the cost of the following:

i. All appurtenances required for satisfactory operation,
ii. Coatings (See III.H for Type B Coatings),
iii. Dewatering,
iv. Disposal of surplus material,
v. Excavation, bedding, backfill, and compaction,
vi. Invert shaping,
vii. Manhole, complete including benches, inverts and troughs, stainless steel insert, frame and cover, and riser (as required),
viii. Openings and seals,
ix. Precast concrete adjustment ring,
x. Restoration in right-of-way, shoulders, and easements (not including curb and gutter restoration or pavement restoration, unless otherwise noted)
xi. Seeding and stabilization,
xii. Sheeting and shoring,
xiii. Steps, unless otherwise noted,
xiv. Stone,
xv. Stripping and stockpiling of materials, and
xvi. Testing,

2. Extra Depth:

a. Measurement of manholes (4- or 5-foot diameter) in excess of 6-feet in depth will be made based on the vertical feet of manhole installed in excess of 6-feet, measured to the nearest foot from 6 feet below the bottom of the frame and cover to the invert out in depth and satisfactorily tested.

b. Payment will be made at the unit price bid for each additional vertical foot of manhole (in excess of 6' in depth) installed and satisfactorily tested and will include the cost of the following:

i. All appurtenances required for satisfactory operation,
ii. Backfill,
iii. Bedding,
iv. Compaction,
v. Dewatering,
vi. Disposal of surplus material.
vii. Excavation,
viii. Openings and seals,
ix. Sheeting and shoring, and
x. Steps, unless otherwise noted.

3. Drop Manhole (Inside or Outside), installed complete in place

Payment will be made at the unit price bid for each type of drop manhole (with a drop either inside or outside the manhole), installed and satisfactorily tested and will include the cost of the following:

a. All appurtenances required for satisfactory operation,
b. Backfill,
c. Bedding,
d. Compaction,
e. Dewatering,
f. Disposal of surplus material
g. Excavation,
h. Inside or outside drop connection including drop pipe, fittings, attachments, and concrete,
i. Manhole, complete including benches, inverts and troughs, stainless steel insert, frame and cover, and riser (as required), and
j. Sheeting and shoring

4. Non-Standard Manholes

Measurement shall be made for non-standard, including polymer concrete manholes, measured from the interior base floor to the bottom of the frame. Payment shall be made for each manhole installed or per vertical feet as indicated on the Bid form. The cost shall include:

a. All appurtenances required for satisfactory operation,
b. Backfill,
c. Bedding,
d. Compaction,
e. Dewatering,
f. Disposal of surplus material,
g. Excavation,
h. Invert shaping
i. Manhole, complete including benches, inverts and troughs, stainless steel insert, frame and cover, and riser (as required),
j. Openings and seals,
k. Precast concrete adjustment ring,

l. Restoration in right-of-way, shoulders, and easements (not including curb and gutter restoration or pavement restoration, unless otherwise noted),
m. Seeding and stabilization,
n. Sheeting and shoring,
o. Steps, unless otherwise noted,
p. Stone,
q. Stripping and stockpiling of materials, and
r. Testing.

5. Watertight Manhole Frame and Cover, installed complete in place

Watertight frame and cover assembly, to include dust cover and riser as required, shall be paid at the unit price bid for each.

D. Clean-out and Main Line Clean-out Assemblies

Payment will be made at the unit price bid for each clean-out assembly installed and satisfactorily tested and will include the cost of the following:

1. All appurtenances required for satisfactory operation,
2. Backfill,
3. Bedding,
4. Compaction,
5. Clean-out box with frame and cover,
6. Excavation,
7. Fittings,
8. Furnishing and installing the clean-out,
9. Stone,
10. Temporary seeding and stabilization,
11. Testing, and
12. Tracer wire and marking tape complete in place.

E. Connections to existing manholes, complete in place.

Connections to existing manholes will be paid for each connection installed and satisfactorily tested. Payment will include materials, excavation, backfilling, core drilling, dewatering, testing, repair of existing coating, rubber boot installation, and all other Work incidental to the connection to the existing manhole.

F. Connections from new manholes to existing sanitary sewer, complete in place.

Connections from new manholes to existing sanitary sewer will be paid for each connection installed and satisfactorily tested. Payment will include materials, excavation, backfilling, dewatering, testing, and all other Work incidental to the connection of adjacent, existing sanitary sewer to the proposed manhole.

G. Payment for Manhole and Main Line Cleanout Adjustments Rings, for pavement overlay, shall be in accordance with Section 510.

H. Manhole/Structure Coatings

1. Type B coating systems shall be measured on a vertical foot basis per manhole

diameter or per each structure.

2. Payment will be made based on the unit price bid per vertical foot for Type B coating system applied and the manhole diameter (4 foot or 5 foot), or per each structure as specified on the Bid form. Payment will include the costs associated with the following, plus all incidental items necessary for a complete and Owner approved coating system:

   a. Applicator fees,
   b. Clean up and disposal of surplus and excess materials,
   c. Coating Materials,
   d. Concrete surface preparation to the required CSP value, to include all environmental controls; containment, collection, and disposal of emissions and slurries; safety and protection; and restoration of affected areas,
   e. Equipment necessary for the mixing and application of all coating materials,
   f. Final cleaning of concrete surfaces,
   g. Handling, storage and protection of all materials,
   h. Safety equipment, and
   i. Testing recommended by the coatings manufacturer and required by the Contract Documents

I. Payment for Sewage Bypass Pumping, if required, shall be considered incidental for flows under 2 MGD in accordance with Section 812 – Bypass Pumping.

End of Section

SECTION 803

SANITARY FORCE MAIN SYSTEMS

I. GENERAL

1.1. DESCRIPTION OF WORK

The Contractor shall furnish all labor, supervision, material (except as herein provided), tools, equipment, supplies, and services; and, shall perform all Work necessary and incidental for the construction of sanitary sewer force main systems less than or equal to 36-inch in diameter. All pipe larger than 16-inch diameter shall be ductile iron, unless modified by Special Provision. The sanitary sewer force main systems shall be constructed in accordance with the Contract Documents and the applicable laws, rules, ordinances, standards, and specifications of regulatory agencies.

1.2. SUBMITTALS

Submittals shall be made by the Contractor in accordance with the procedures set forth in Section 105 and as described below:

A. Submit each manufacturer's, and/or supplier's certification attesting that the pipe, gaskets, castings, and appurtenances meet or exceed the specified requirement. The following information is to be shown on each certificate:

1. Name and location of the work
2. Name and address of Contractor
3. Quantity and date or dates of shipment and/or delivery to which the certificate applies.
4. Name of the manufacturing or fabricating company.

B. Certification shall be in the form of a letter or company-standard form containing all required data and signed by an officer of the manufacturing, fabricating, or supplying company.

If requested by the Owner, all laboratory test reports shall be provided at no additional cost and shall show the following information:

1. Date or dates of testing. Test data should be the most current available and be within 5 years of the Bid opening.
2. The specified requirements for which testing was performed.
3. Results of the test or tests.

C. Manufacturer's catalog cuts, technical data, operation and maintenance data, and/or shop drawings are required for the following sanitary sewer force main system components (shop drawings shall be drawn to a scale sufficiently large to show all pertinent aspects of the item and its method of connection to the work):

1. Air Vent Assemblies
2. Air Vent Assembly Vaults and Boxes
3. Fittings, Sleeves, and Couplings
4. Gauges
5. Pipe
6. Coatings and linings

7. Pipe Restraints
8. Tapping Sleeves
9. Tracer Wire and Marking Tape
10. Valves
11. Valve Boxes

D. Ductile Iron Pipelines greater than 16-inch diameter

In addition to the above submittal requirements, pipe diameters greater than 16-inches shall provide the following information:

1. Laying schedule

   a. Submit a tabulated laying schedule for approval which references stations and invert elevations as shown in the Contract Documents as well as all fittings, valves, bends, outlets, restrained joints, tees, special deflection bells, adapters, solid sleeves and specials, along with the manufacturer's drawings and specifications providing complete details of all items.

   b. Show pipe class, class coding, station limits and transition stations for various pipe classes.

   c. The location of all pipes shall conform to the locations indicated in the Contract Documents.

   d. Each pipe supplied shall be identified with sequential numbering consistent with the laying schedule and marking drawings and each marked pipe will appear on the marking drawings in the identified location for installation.

   e. Special fittings, bends, and appurtenances requiring specific orientation will be supplied appropriately marked with the words "TOP" in the correct position and in a consistent location.

2. Submit shop drawings for approval before manufacture and shipment including, but not be limited to:

   a. The grade of material, size, wall thickness of the pipe and fittings and appurtenances;

   b. The type of fittings and valves;

   c. The type and limits of the lining, lining reinforcing and coating systems of the pipe and fittings.

   d. Joint details, methods and locations of supports, and complete information concerning type, size and location of all welds. Shop welds (no field welding will be allowed) will be clearly differentiated and welds will be clearly detailed with preparation procedures for all pipe and parent material comprising each weld. Critical welding procedures will be identified along with methods for controlling welding stresses and distortions. Locations and proposed joint details will also be clearly identified; and,

e. All other pertinent information for all items to be furnished; product data to show compliance of all couplings, supports, fittings, coatings and related items.

3. Submit anticipated production and delivery schedule.

4. Submit handling procedures for all phases from finished fabrication through delivery including storage, transportation, loading, and unloading. This will include storage at the project site and required protection following installation prior to startup.

5. Prior to shipment of pipe, submit:

a. Certified copies of mill tests confirming the type of materials used in the pipe, and shop testing of pipe to show compliance with the requirements of the applicable standards, including hydrostatic tests.

b. A certified affidavit of compliance from the manufacturer stating that the pipe, fittings, gaskets, linings and exterior coatings for this project have been manufactured and tested in accordance with AWWA and ASTM standards and requirements specified herein.

E. Work Plan for Tie-ins to Existing Systems

At a minimum the Contractor's Work Plan shall include the following:

1. Schedule:

a. Starting date.

b. Sequential listing of specific tasks required to complete the tie-in.

c. Anticipated duration for each task of the tie-in operation.

2. Testing procedures.

3. Identification of businesses and residences that may be impacted and will require notification.

4. Method of dewatering the existing force main including where the sewage is to be disposed, and provide quantity of wastewater anticipated in dewatering.

5. Method of handling constant flow if valves or line stops do not close completely. The Owner cannot guarantee that full stoppage of flow will be achieved.

6. List of pump stations that must be maintained.

7. Number of pumper trucks, to include total capacity, to be supplied to handle flow at the existing stations and the pipe dewatering operations.

8. Contingency plan for handling flow at the existing pump station if the shutdown hours exceed the anticipated time frame.

9. Contingency plan for meeting a deadline for full traffic to be restored if a roadway is taken out of service or the capacity reduced during the tie-in and the completion schedule cannot be met.

10. Mobile phone contacts for Contractor and Owner personnel, and HRSD, and other identified key stakeholders' personnel, as appropriate.

11. List of equipment and number of crews to verify adequacy of Contractor's ability to work both ends of the tie-in simultaneously and continuously until connections are complete.

12. Stone and other backfill materials to be on-site if rain is forecast and used if a heavy rain event occurs during the tie-in backfill and compaction stage.

13. Confirmation of availability and scheduling of asphalt placement and proper cure time for tie-ins under existing pavement to restore traffic movement.

II. EXECUTION

2.1. GENERAL

A. The Contractor shall furnish and install a complete piping system as shown in the Contract Documents.

B. The Owner reserves the right to reject defective material shipped to and/or stored on site, and to examine the same to determine if damage has occurred prior to installation.

C. The Contractor shall unload, handle, and store pipe and appurtenances in accordance with Section 200 and ANSI/AWWA C600 and AWWA C605.

D. Proper implements, tools and facilities satisfactory to the Owner and as recommended by the material manufacturer shall be provided and used by the Contractor for the safe and convenient execution of the Work. All pipe, valves, fittings, and accessories shall be carefully lowered into the trench in such a manner as to prevent damage to the force main materials and any protective coatings and linings.

2.2. PIPE INSTALLATION

A. Cleaning: All lumps, blisters and excess coatings shall be removed from the bell and plain ends of each pipe, and the outside of the plain end and the inside of the bell shall be cleaned and dry, and be free from dirt, grease, oil, sand, grit, or any foreign materials before the pipe is installed.

B. Trenching, bedding, backfilling and compaction shall be in accordance with Section 303 and the Special Provisions.

C. Pipe Laying:

1. Pipe shall be laid to a true, uniform line and grade. High points, other than those indicated in the Contract Documents where an air vent assembly is to be placed, shall be avoided.

2. Pipe laying shall be in accordance with the manufacturer's recommendations. Pipe

laying shall proceed upgrade, bells ahead. Each section of pipe shall be laid to form a close concentric joint with the adjoining section and to prevent sudden offsets in the flow line. Each section of pipe, as it is laid, shall be backfilled as specified in the Contract Documents, at least up to the centerline, before the next joint is made.

3. As the work progresses, the interior of the pipe shall be cleared of dirt and superfluous material.

4. Trenches and other excavations shall be kept free of water until backfilled. Concrete or masonry work shall not be constructed in water, nor shall water be allowed to rise over the work until concrete or mortar has had ample time to set.

5. When work is not in progress, open ends of pipe and fittings shall be closed, so that trench water, earth, and other substances will not enter the pipe or fittings.

6. Whenever a pipe requires cutting for the insertion of valves, fittings, closure pieces, or to bring it to the required location, the work shall be performed in a satisfactory manner so as to leave a beveled end in accordance with the manufacturer's instructions or recommendations. Cuts shall be made at 90° with the centerline of the pipe so that a framing square placed against the side of the pipe will reveal not more than 1/4-inch variation across the diameter of the pipe in any direction. The pipe shall be cut with an abrasive wheel, rotary wheel cutter, guillotine pipe saw, milling wheel saw or other equipment specifically designed for that purpose. The Contractor shall grind smooth cut ends and rough edges and for push-on connections; the cut ends should be beveled slightly. Pipe damaged by the Contractor in cutting shall be replaced at the Contractor’s expense.

7. Laying of the pipe shall commence immediately after the excavation is started, and every means must be used to keep pipe laying closely behind the trenching. No more than 100 feet of trench may be open ahead of the pipe laying operation, unless otherwise specified in the Special Provisions for each locality. Holes shall be scooped out where the bells occur leaving the entire barrel of the pipe bearing on the pipe bed.

8. Pipe joint assembly practices and joint assembly materials such as lubricants, primers and adhesives shall be in accordance with the manufacturer’s recommendations and specifications, and in accordance with ANSI/AWWA C111.

D. Alignment and Grade:

1. The Contractor shall not deviate from the line and grade indicated in the Contract Documents, except with approval of the Owner.

2. Where it is necessary to deflect pipelines to avoid obstructions, the amount of deflection shall not exceed ½ of that recommended by the manufacturer of the pipe. Where necessary to maintain the required line, short sections of pipe and fittings shall be provided.

3. The Contractor shall investigate the proposed location of the main far enough in advance of the work to determine where conflicts will occur and to determine joint deflections necessary to clear any obstructions.

E. Polyethylene Encasement:

1. Pipe shall be encased with polyethylene where specified in the Contract Documents.

2. In the event that corrosive soils (as defined by Appendix "A" of ANSI/AWWA C105/A21.5) are encountered during excavation (and have not been identified as such in the Contract Documents), the Owner may direct that all, or a portion, of the pipeline be encased.

3. Materials and methods of installation shall be in accordance with AWWA C105; Method A, B, or C may be used unless otherwise specified in the Contract Documents. Polyethylene shall be at least 4 mils thick, cross laminated, and shall conform to the requirements of ANSI/AWWA C105/A21.5.

4. A fabric type or padded sling shall be used when handling polyethylene encased pipe to prevent damage to the polyethylene encasement.

5. All seams in the polyethylene encasement shall be sealed completely with approved 2-inch wide plastic adhesive tape.

6. Pull loose tube along pipe barrel up snugly around the pipe and fasten in-place with adhesive tape at 3 foot intervals.

7. Completely cover fittings and connections with film held snugly in place with point tape or strapping.

8. Extreme care shall be taken when backfilling to avoid damaging the polyethylene encasement.

F. Tracer Wire:

All underground non-metallic pipe pressure systems shall be installed with a continuous tracer wire conforming to Section 200, attached every 10 feet to the piping system with plastic strapping. The wire shall terminate above ground at every valve box, tracer wire box, and air release valve. The wire shall be of sufficient length to allow the wire to be uncoiled and extended one (1) foot above the finished grade. The tracer wire installation will be considered complete and acceptable for service when the Owner can trace the wire using the locating equipment. Any breaks shall be repaired by the Contractor prior to project acceptance.

G. Subsurface Utility Tape:

All force mains shall be identified by a subsurface utility warning tape, conforming to Section 200, placed at an elevation not less than 6-inches, nor more than 12-inches below the proposed finished grade, or directly under the roadway base material if the base material is greater than 12-inches.

2.3. VALVE INSTALLATION

A. Prior to installation, the Owner shall inspect valves for direction of openings, interior and exterior coating systems, freedom of operation, tightness of pressure containing bolting, cleanliness of valve ports and especially seating surfaces, handling damage and cracks. Valves determined to be defective by the Owner shall be replaced by and at the sole expense of the Contractor. The Contractor shall operate all valves greater than 3-inches once prior to

installation to determine the number of rotations of the operating nut; this number of rotations shall be recorded on the record drawings.

B. The Contractor shall set and join valves to pipe in accordance with the manufacturer's requirements for the type and class of valve and pipe.

C. The valve box shall be centered and set plumb with the top of the box neatly to grade of the surface of the existing ground, unless otherwise directed by the Owner. Shock and stress shall not be transferred from the box to the valve.

D. The top of the operating nut shall be less than 36-inches below the rim of the valve box (as measured from final grade). When the distance from the operating nut to the top of the valve box is greater than 36-inches, the Contractor shall install an approved valve stem extension device to result in a distance of 12- to 24-inches from the top of the operating nut to the rim of the valve box.

E. Valves shall be set vertical and bedded in accordance with the Standard Details.

2.4. APPURTENANT INSTALLATION

All appurtenances (fittings, air vent assemblies) shall be installed in accordance with the manufacturer's recommendations and as indicated in the Contract Documents and Standard Details.

2.5. RESTRAINT

A. Fittings, valves, and pipe joints shall be restrained as indicated in the Contract Documents and in accordance with Section 200. Alternate methods of thrust restraint other than specified herein may be used only with the written approval of the Owner.

B. Concrete and reinforcing shall be in accordance with Section 200. Blocking shall be placed between undisturbed earth and the fitting to be restrained. The blocking shall be in accordance with the Special Provisions and Standard Details, oriented to contain the resultant thrust force and to leave the fitting joints accessible.

C. All exposed piping, flanges, couplings, nuts and bolts shall receive a minimum of two coats of an approved protective coating.

2.6. CONNECTIONS TO EXISTING MAINS

A. For pipe diameters larger than 16-inches, connections shall be made in accordance with the Special Provisions.

B. The Owner and Contractor shall have a coordination meeting with the Owner's personnel at least 10 days prior to the planned force main shutdown and provide a written Work Plan. The Owner shall review the Work Plan and either approve it or meet with the Contractor within 3 business days after receipt of the schedule to satisfactorily modify it.

C. The Contractor shall notify the Owner at least 5 business days in advance of performing the offset/shutdown. Work can be delayed a maximum of 48 hours from the anticipated shutdown if due to inclement weather, and is approved or directed by the Owner.

D. The Contractor is required to schedule a meeting on site on the morning of a planned nighttime

tie-in and shall notify the Owner, and HRSD, affected jurisdictions and private utility owners, as appropriate. At the time of the meeting, the Contractor shall have all materials and equipment necessary for the tie-in on site and assembled for inspection by the Owner.

The following items will be reviewed and discussed at this meeting:

1. Site conditions
2. Weather forecasts / weather impacts
3. Work and contingency plans
4. Contact information
5. Emergency equipment

E. The Owner reserves the right to postpone the scheduled tie-in if:

1. The site or Contractor is not prepared as required in the Work Plan and as agreed upon at the pre-tie-in meeting.
2. The Owner or HRSD/impacted jurisdiction (as appropriate) has an emergency in another part of their system.
3. A rain event has occurred in the three (3) days before the scheduled tie-in date or is forecasted in the 24 to 48 hours after the scheduled tie-in date in a portion of the sewer system with historical problems with inflow and/or infiltration.

F. Shutdowns shall not begin until all required materials are on-hand and ready for installation and a written Work Plan has been submitted and approved by the Owner.

G. The Owner reserves the right to cancel scheduled shutdowns if conditions warrant.

H. A decision point will be established by the Owner for the Contractor to cut the active force main. This decision during the tie-in will be based upon the Contractor's progress leading up to the cutting into the active force main. Inadequate progress by the Contractor leading up to this critical decision point may lead to a postponement of the tie-in completion, backfilling the excavation, placing temporary pavement, and rescheduling the remainder of the tie-in work**.**

I. The Contractor shall provide a crew with equipment for each connection point so that multiple connections can be completed simultaneously.

J. The Contractor is responsible for conveying sewage from all affected pump stations to prevent overflow throughout the entire duration of each shutdown. The fact that a facility served by one of these stations is closed at night is not a guarantee of zero sewage flow.

K. At a time approved by the Owner, the shutdown period will commence and the Contractor shall proceed with the Work continuously, start to finish, unless otherwise noted, until the Work is completed and the system is tested and ready for operation. If the Contractor completes all required Work before the specified shutdown period has ended, the Owner may immediately place the existing system back in service. If problems occur, the Contractor along with appropriate staff and equipment to remain on site to be an extension of the Owner's operational response until all operational issues have been resolved to the satisfaction of Owner.

L. All existing system valves shall be operated by the Owner's personnel unless otherwise indicated. The Owner shall make every effort to have a complete shutdown. Failure by the Owner to achieve a complete shutdown shall not entitle the Contractor to any additional

compensation.

M. The operation of all existing privately-owned mainline valves, air vents, and pump stations will be performed only by forces of the private utility.

N. The Contractor is responsible for providing adequate support and restraint, against system pressure of the exposed piping prior to and during startup and final backfill.

O. The Contractor shall follow the procedures herein for any joints of the new force main and fittings that have not been previously hydrostatically pressure tested:

1. The Owner reestablishes services in the line.
2. One half hour will elapse, after air venting is complete by the Owner.
3. Joints will be visually inspected for signs of leakage by Owner or Owner's Representative.
4. Any leakage noted shall be corrected to the satisfaction of the Owner.
5. After satisfactory visual testing of exposed joints by the Owner and any corrective action, the Contractor shall wrap the pipe and/or fitting as required and immediately proceed to backfill the pipe and restore to grade conditions or for reestablishment of traffic if in a roadway. Soil backfill compaction tests may be specified by the Owner for work within roadway travel lanes.
6. If specified, utility warning tape shall be installed above the connection in accordance with the Contract Documents.
7. Any joints not inspected by the Owner will not be approved and shall be excavated for inspection.

P. The Contractor shall assist the Owner during the reestablishment of flows as follows:

1. Provide riser pipe, fittings, and sewage containment drums for each control air vent location, and temporary valve at the air release point to vent air.
2. Provide means of electronic communication to coordinate this operation.

Q. Connection shall be made to the existing main through the installation of a tee in the existing main or by tapping sleeve and valve, as indicated in the Contract Documents. Taps shall be sized based on manufacturer's recommendations, but in no case shall the taps be of equal or larger size than the main.

R. Careful attention shall be given to the depth of new pipelines at points where tie-ins to existing mains are to be made. The existing main shall be uncovered in the presence of the Owner and the new pipeline set to proper elevation to provide for a perpendicular and level tie-in.

S. The allowable duration of any service interruption shall be approved by the Owner prior to the execution of the Work. Restoration of service due to the Contractor taking too much time to complete the connection or the Contractor's lack of proper equipment, personnel, or materials, shall not entitle the Contractor to any claim for additional time or compensation.

T. The Contractor shall be responsible for ascertaining the exact location, depth, and joint pattern of existing mains prior to making connections. Prior to cutting into any force mains the Contractor shall have on site all required fittings, pipe, tools, personnel and equipment, and shall satisfy the Owner through field measurements, that his fittings will properly join the existing line.

1. All materials shall be installed in accordance with the manufacturer's recommendations including, but not limited to alignment, torque requirements, and tolerances.

2. Connections shall only be made in the presence of the Owner.

U. Tapping Existing Mains Under Pressure:

1. Tapping sleeves and valves shall be utilized for connecting to existing mains where indicated in the Contract Documents.

2. It shall be the Contractor's responsibility to verify the actual outside diameter of the existing main at the location of the proposed tap in order that the tapping sleeve or couplings to be provided can be properly installed.

3. The centerline of the tapping sleeve and valve assembly shall be located the following minimum distances from existing pipe joints:

Size of Tapping Sleeve	Minimum Recommended Separation from Existing Joint
4-, 6- & 8-inch dia.	3-1/2 feet
10-, 12- & 16-inch dia.	5-1/2 feet
Greater than 16-inch dia.	See Special Provisions

4. In cases where the horizontal alignment as indicated in the Contract Documents would result in a "sleeve to joint" distance less that the minimum stated above, the Owner may direct the Contractor to substitute a MJ x MJ x Flange tee connection using acceptable sleeves and pipe sections.

5. In addition to pressure testing of newly installed pipelines in accordance with Paragraph 2.7 of this Section, the Contractor shall test each tapping sleeve and valve assembly prior to making the tap. Water shall be injected into the body of the sleeve, to a pressure of 150 psig, through the test plugs. If test plugs are not provided in the sleeve, a tapped mechanical joint plug shall be assembled to the valve for testing purposes. Pressure shall be maintained for a one (1) hour period without evidence of leakage. Upon obtaining a satisfactory test (which shall be witnessed by the Owner), the tapping operation may commence.

6. All installed tapping sleeves shall be restrained in accordance with the Standard Details.

7. Only taps of size equal to the diameter of the branch are acceptable. Upon completion of the tap the Contractor shall save the pipe coupon to show the Owner.

V. Sleeve-In of Straight Pipe:

Sleeve-in connections shall be as indicated in the Contract Documents.

W. Connections to Manholes:

1. The force main shall enter the receiving manhole with its centerline horizontal and

with an invert elevation that will ensure a smooth flow transition to the gravity flow section.

2. In no case shall flow from the force main enter the manhole at a point more than one foot above the flow line.

3. Force main to manhole connections shall be in accordance with the Standard Details.

X. Offsets to Existing Force Main

1. The Contractor shall comply with the above procedures for connections to existing mains.

2. Prior to performing an offset or cut-in, a trial shutdown will be performed to determine the working conditions to be encountered when the Work is performed.

3. All bends, valves, sleeves, pipe, and fittings shall be fully restrained with retainer glands.

4. The Contractor shall perform cut-in or offset work at night, unless otherwise indicated. Under most circumstances the hours of operation will be from 12:00 midnight to 6:00 A.M. The excavation for the Work shall be completed no later than 3:30 P.M. on the day the offset or cut-in is to begin to allow for inspection by the Owner.

5. The materials to be installed and the tools to be used shall be assembled and ready for inspection no later than 3:30 P.M. on the day installation of the Work is to commence. The inside of all pipe and fittings to be installed shall be cleaned and ends of lines capped until the time of installation. All visible dirt and foreign materials shall be removed from the interior of the pipe and fittings. The Contractor shall review in detail his plan of operation with the Owner at the time the excavation and pipe work are inspected for readiness.

6. Excavation around the existing pipe shall be sufficient to allow the Work to be performed without requiring additional excavation during installation of the offset or cut-in. Excavation shall be of sufficient depth to accommodate a minimum of 8-inches uniform depth of VDOT #57 stone, which shall be placed by the Contractor over the entire bottom of the excavation. In addition there shall be a minimum of 12-inches clearance between the bottom of the pipe and the top of the VDOT #57 stone.

7. The Contractor shall clean and mark the locations on the existing pipe where the pipe cuts are to be made by 3:30 P.M. on the day the offset or cut-in is to be installed. The Contractor shall measure the outside diameter of the pipe to be cut-in to be sure the proposed pipe and fittings are compatible with the existing pipe to be cut. All measurements shall be double checked in the presence of the Owner just prior to cutting of the existing pipe.

8. All spoil material not used as backfill shall be removed the same day as excavated and approved select or suitable material to be used as backfill shall be stockpiled in the vicinity of the excavation.

9. The Contractor shall have sufficient crews and equipment on hand to perform the Work for each offset. All equipment to be used during the Work, including pump,

backup pump, backhoe, at least two pipe saws, fuel, tools, generators, light towers, sewage tanker truck(s) and similar equipment shall be test run and determined to be in proper running order prior to cutting of the existing pipe. If the Contractor fails to provide adequate equipment in proper running order, the Owner will cancel the Work and the Contractor shall request rescheduling when the deficiencies have been corrected.

10. The Contractor shall have on hand at the site of the cut-in or offset two full circle stainless steel repair clamps and two DIMJ plugs or caps as necessary for each size of pipe to be cut. If plugs or caps are used, appropriate thrust restraint shall be provided by the Contractor.

11. After a cut-in or an offset has begun, the Contractor shall make continuous progress toward restoring the force main to full service. The Contractor shall maintain sufficient crews, equipment, and supplies and shall not leave the work site until the force main work has been completed and restored to complete operation. The Contractor shall direct his pump discharge in such a manner as to insure drainage away from the excavation so it will not flood streets or adjacent private property, and in accordance with all environmental regulations required by the locality.

12. When weather forecasts call for freezing temperatures the night of the cut-in or offset, the Contractor shall have on site sufficient coarse granular sand to spread over all paved areas, sidewalks, and bike paths wetted by the discharge of his pumps. During freezing weather, the Contractor shall minimize wetting of paved areas, sidewalks, and bike paths.

13. When bends are used in offsetting around obstructions, a 1-inch corporation stop shall be installed on each side of the offset to provide air release.

2.7. TESTING AND INSPECTION

A. General:

1. All flushing and pressure testing shall conform to this Section and the applicable sections of the Virginia *Sewerage Regulations*.

2. The Contractor shall provide the Owner at least 48 hours' notice to schedule testing and inspection.

3. Only properly functioning, calibrated, clean, and approved equipment shall be used for flushing and pressure testing force mains. Pressure gauges shall display readings to 1.0 psi.

4. All valves in the existing sewer system shall be operated only by or in the presence of the Owner or HRSD or private utility, as applicable.

5. See the Special Provisions for potential testing modifications, if any, for the specific locality.

B. Pressure Test:

1. New force mains shall be pressure tested in accordance with ANSI/AWWA C600-

Section 5.2, except as herein provided. Force mains shall be filled with water and subjected to a pressure of 1.5 times the expected working pressure or 150 psig, whichever is greater, measured at the highest point along the test section. The pressure test shall be of at least a two hour duration and any damaged or defective pipe, fittings, or valves that are discovered following the pressure test shall be replaced by the Contractor. The Contractor shall furnish all necessary equipment, materials and labor for making the tests as specified. Before applying the specified test pressure, air shall be slowly expelled completely from the pipe and valves. The pressure test shall not be performed against an active valve.

2. The Contractor shall test the line prior to contacting the Owner for the formal pressure test.

3. Testing shall be performed on each section of pipe between main line valves.

4. Water for the pressure test shall be obtained through a fully valved manifold, with an approved backflow preventer, as indicated in the Standard Details, or other source and procedure approved by the Owner.

5. The Contractor shall furnish all pumps, fittings, and gauges as necessary to fill the line with water, expel air from the system, and pressurize the pipeline for the tests.

6. The Owner reserves the right to test gauges to determine their accuracy.

7. The Contractor shall coordinate arrangements for water to be used for the pressure testing with the Owner.

8. No pressure drop, no leaks.

9. The Contractor shall provide all necessary temporary restraint and support during testing at no additional cost to the Owner.

10. The Contractor will be responsible for providing proper safety measures during pressure testing operations.

11. In addition, heat-fusion joined HDPE pipe pressure testing shall be in accordance with ASTM F2164 and shall also comply with the following:

    a. Before testing, heat fusion joints are to be completely cooled.

    b. All parts of the test section shall be restrained against movement. Temporarily remove, restrain, or isolate expansion joints and expansion compensators before starting.

c. Observe all safety precautions identified in ASTM F2164.

d. To compensate for expansion, add make-up water during the initial expansion phase. The quantity of water needed to fill the pipe test section and accommodate expansion (and possible leakage at non-fusion joints and seals) is estimated using:

$V_{gal} = 1.015 \times 0.04 \times (ID_{in})^2 \times L_{ft}$

where:

V_{gal} = pipe section volume, gallons
ID_{in} = pipe inside diameter, inches
L_{ft} = test section, feet

e. Allow the test section and the test liquid to equalize to a common temperature.

f. Initial Expansion Phase:

(1) When the test section is completely filled and purged of air, gradually increase the pressure to the required test pressure identified in paragraph 2.7.B.1 above.

(2) Add make up water as necessary to maintain the maximum test pressure for 4 hours.

g. Test Phase:

(1) Reduce the test pressure by 10 psi and monitor pressure for 1 hour. Do not increase the pressure or add make up water.

(2) No visible leakage shall be observed and the pressure shall remain steady (within 5% of the test phase pressure) for the 1 hour test phase period for a passing test.

h. Retesting - If retesting is necessary, depressurize the test section per ASTM F2164 and correct any faults/leaks. Allow the test section to "relax" for at least 8 hours before repressurizing and repeat the Initial expansion and test phases as indicated above.

C. Leakage Test:

1. Leakage shall be in accordance with VDH requirements, unless stricter provisions are required in the Special Provisions. No leakage shall be allowed for heat-fusion joined HDPE pipe or fPVC pipe.

2. The leakage test shall be conducted concurrently with the pressure test.

3. Pipe installations shall only be accepted if there are no leaks.

4.

III. MEASUREMENT FOR PAYMENT

A. Ductile Iron, HDPE, fPVC or PVC Force Main, installed complete in place.

1. Measurement of ductile iron, HDPE, or PVC force main will be made along the centerline of the pipeline and based upon the linear footage of each size pipe installed and satisfactorily tested. No depth measurement will be made for trench excavation and native material backfill. Pipe will be measured through fittings or valves. The unit price bid will not include the cost of valves.

2. Payment will include the cost of the following:

a. Backfilling, compacting, and compaction testing
b. Bedding material, as detailed in the Contract Documents
c. Exterior Coatings,
d. Dewatering,
e. Disposal of surplus material,

f. Excavation,
g. Flushing,
h. Force main, including fittings and appurtenances,
i. Heat fusion equipment and any specialized technical operational support required
j. Restoration in right-of-way and easements (not including curb and gutter restoration or pavement restoration, unless otherwise noted),
k. Shoulder restoration,
l. Temporary seeding and stabilization,
m. Temporary sheeting and bracing,
n. Testing,
o. Thrust restraint,
p. Top soiling,
q. Tracer wire and subsurface marking tape, and
r. Water for testing

B. Air Vent Assembly, installed complete in place.

Payment will be made at the unit price bid for each manual air release valve installed and satisfactorily tested and will include the cost of furnishing and installing the air vent assembly and all required appurtenances in accordance with the Standard Details, including tap to proposed force main to provide satisfactory operation in accordance with the Contract Documents.

C. Valves, installed complete in place.

Payment will be made at the unit price bid for each size and type of valve installed, in place, and satisfactorily tested, and will include the cost of the following:

1. Bedding material
2. Coatings and linings
3. Stem extensions
4. Valve, valve box, with frame and cover for each size in accordance with the Contract Documents
5. Valve wrench, if specified

D. Tapping Sleeve and Valve (TS&V), installed complete in place.

Payment will be made at the unit price bid for each size TS&V installed, in place, and satisfactorily tested, and will include the cost of the following:

1. Bedding material
2. Coatings and linings
3. Stem extensions
4. Valve, valve box, with frame and cover for each size in accordance with the Contract Documents
5. Valve wrench, if specified
6. Tapping sleeve assembly and appurtenance
7. Pressure testing
8. Thrust Restraint

E. Connections to existing force mains or manholes.

1. Force main connections will be measured based upon each complete in place and satisfactorily tested.

2. Connections to existing force mains or manholes will be paid for each assembly installed and will include:

a. Backfilling,
b. Compaction and compaction testing,
c. Dewatering,
d. Disposal of surplus material,
e. Excavation,
f. Materials,
g. Restoration of shoulders and right of way (not including pavement restoration or curb and gutter, unless otherwise noted),
h. Site restoration and cleanup as shown in the Contract Documents,
i. Temporary piping, valves, and control air vents,
j. Temporary seeding,
k. Temporary sheeting and bracing,
l. Testing,
m. Top soiling,
n. Thrust restraint,
o. Work Plan and all notifications to include re-notifications as necessary, and
p. All other Work incidental to the connection to the existing main or manhole.

F. Interior Pipeline Corrosion Resistant Lining

1. The application of interior coatings for ductile iron pipe as indicated in the Contract Documents and described in Section 200, shall be measured on a linear foot basis for the complete, in-place application and successfully tested.

2. Payment will be made on a unit price basis per linear foot of a specified pipe diameter.

G. Polyethylene Encasement installed complete in place.

Payment will be made at the unit price bid per linear foot for polyethylene pipe encasement satisfactorily installed.

H. Offset of Existing Force Main

Offsets of existing force main shall be paid for at the contract unit price per foot. The unit price shall include the cost of:

1. Backfilling,
2. Bedding,
3. Compacting and compaction testing,
4. Coordinating line shutdown,
5. Cutting of existing line,
6. Dewatering,
7. Disposal of surplus materials,
8. Excavating,

9. Furnishing and installing the pipe and fittings,
10. Restoration of shoulders and right of way (not including pavement restoration and curb and gutter unless otherwise noted),
11. Testing,
12. Temporary piping, valves, and control air vents,
13. Temporary seeding,
14. Temporary sheeting and bracing,
15. Thrust protection,
16. Top soiling,
17. Seeding,
18. Site restoration and cleanup as shown in the Contract Documents,
19. Work Plan and all notifications, including re-notifications, as necessary, and
20. All other Work incidental to the offset.

I. Cutting in of Tees, Crosses, and Valves into Existing Mains (larger than 2-inches)

Cutting in of Tees, Crosses, and Valves into Existing Mains (larger than 2-inches) shall be paid based upon the number of each tee, cross, or valve cut in. The unit price bid shall not include pipe or valves and valve boxes, which shall be paid for under their respective unit price. The unit price bid shall include the cost of:

1. Backfilling with suitable material,
2. Coarse aggregate fill,
3. Compacting,
4. Cutting in of any valves at or near the tee or cross
5. Dewatering,
6. Disposing of surplus material
7. Excavating,
8. Furnishing and installing all fittings such as tees, bends, reducers, sleeves, plugs, as well as other appurtenances,
9. Other site restoration and cleanup,
10. Pavement replacement
11. Seeding,
12. Temporary sheeting and bracing,
13. Testing,
14. Thrust protection, and
15. Top soiling.

J. Tracer Wire Box

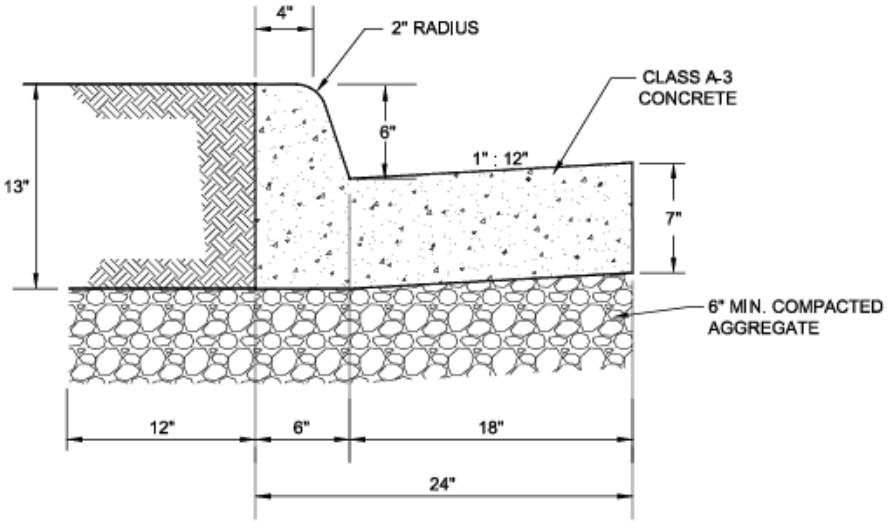
Payment will be made at the unit price bid for each tracer wire box installed and will include the cost of furnishing and installing the box, lid, riser pipe, aggregate base material, backfilling, compaction, topsoil (if required), and all required appurtenances, in accordance with the Standard Detail.

End of Section

APPENDIX B

Smithfield Standard Details

THIS PAGE INTENTIONALLY LEFT BLANK



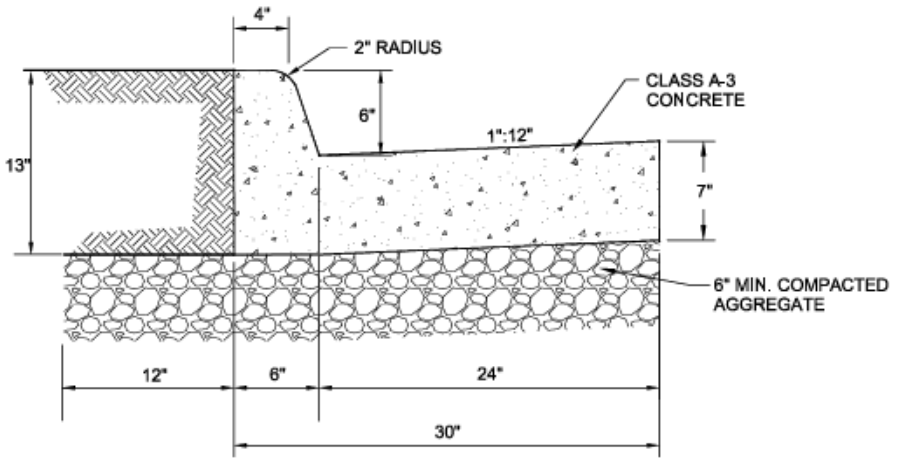
NOTES:

1. CRACK CONTROL JOINTS TO BE PROVIDED AT 10 FT. INTERVALS BY SAWING, SCORING, "LEAVE-IN" INSERTS, OR CUTTER PLATES TO 1-1/2 INCH DEPTH.
2. EXPANSION JOINTS TO BE INSTALLED PER SPECIFICATIONS SECTION 502.
3. AS SOON AS CONCRETE WILL NOT SLUMP, FACE FORMS ARE TO BE REMOVED, IRREGULARITIES REMOVED, A LIGHT BROOM FINISH GIVEN, AND LIQUID MEMBRANE SEAL OR OTHER APPROVED CURING MEDIUM APPLIED.
4. THE CONTRACTOR SHALL PREVENT THE TEMPERATURE AT THE SURFACE OF THE CONCRETE FROM FALLING BELOW 40°F DURING THE FIRST 72 HOURS IMMEDIATELY FOLLOWING CONCRETE PLACEMENT. PROTECTIVE MATERIAL SHALL BE LEFT IN PLACE FOR AN ADDITIONAL 48 HOURS IF FREEZING AIR TEMPERATURES ARE EXPECTED TO CONTINUE.

24" CURB & GUTTER

NOT TO SCALE

REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200,502	CONCRETE ITEMS	6/16		



NOTES:

1. CRACK CONTROL JOINTS TO BE PROVIDED AT 10 FT. INTERVALS BY SAWING, SCORING, "LEAVE-IN" INSERTS, OR CUTTER PLATES TO 1-1/2 INCH DEPTH.

2. EXPANSION JOINTS TO BE INSTALLED PER SPECIFICATIONS SECTION 502.

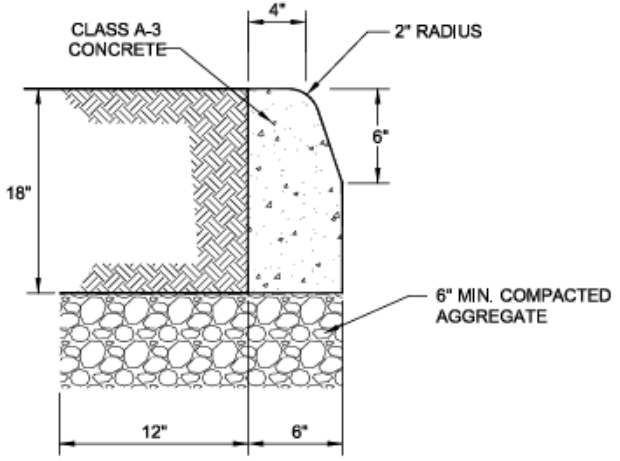
3. AS SOON AS CONCRETE WILL NOT SLUMP, FACE FORMS ARE TO BE REMOVED, IRREGULARITIES REMOVED, A LIGHT BROOM FINISH GIVEN, AND LIQUID MEMBRANE SEAL OR OTHER APPROVED CURING MEDIUM APPLIED.

4. THE CONTRACTOR SHALL PREVENT THE TEMPERATURE AT THE SURFACE OF THE CONCRETE FROM FALLING BELOW 40°F DURING THE FIRST 72 HOURS IMMEDIATELY FOLLOWING CONCRETE PLACEMENT. PROTECTIVE MATERIAL SHALL BE LEFT IN PLACE FOR AN ADDITIONAL 48 HOURS IF FREEZING AIR TEMPERATURES ARE EXPECTED TO CONTINUE.

30" CURB & GUTTER

NOT TO SCALE

REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200,502	CONCRETE ITEMS	6/16	Page 593 of 768	C-7



NOTES:

1. CRACK CONTROL JOINTS TO BE PROVIDED AT 10 FT. INTERVALS BY SAWING, SCORING, "LEAVE-IN" INSERTS, OR CUTTER PLATES TO 1-1/2 INCH DEPTH.

2. EXPANSION JOINTS TO BE INSTALLED PER SPECIFICATIONS SECTION 502.

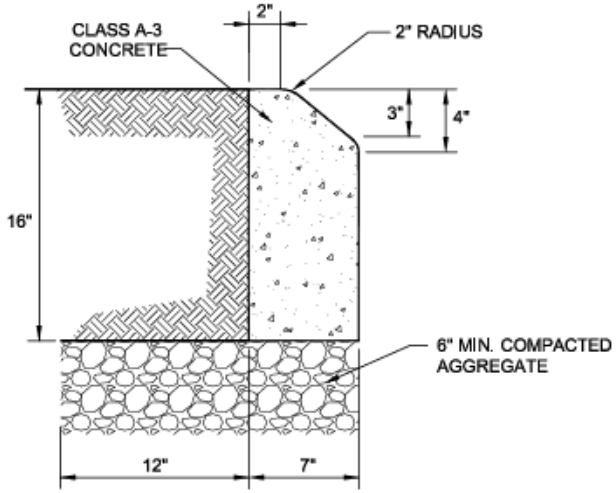
3. AS SOON AS CONCRETE WILL NOT SLUMP, FACE FORMS ARE TO BE REMOVED, IRREGULARITIES REMOVED, A LIGHT BROOM FINISH GIVEN, AND LIQUID MEMBRANE SEAL OR OTHER APPROVED CURING MEDIUM APPLIED.

4. THE CONTRACTOR SHALL PREVENT THE TEMPERATURE AT THE SURFACE OF THE CONCRETE FROM FALLING BELOW 40°F DURING THE FIRST 72 HOURS IMMEDIATELY FOLLOWING CONCRETE PLACEMENT. PROTECTIVE MATERIAL SHALL BE LEFT IN PLACE FOR AN ADDITIONAL 48 HOURS IF FREEZING AIR TEMPERATURES ARE EXPECTED TO CONTINUE.

STANDARD MEDIAN CURB

NOT TO SCALE

REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200,502	CONCRETE ITEMS	6/16		01_03



NOTES:

1. CRACK CONTROL JOINTS TO BE PROVIDED AT 10 FT. INTERVALS BY SAWING, SCORING, "LEAVE-IN" INSERTS, OR CUTTER PLATES TO 1-1/2 INCH DEPTH.
2. EXPANSION JOINTS TO BE INSTALLED PER SPECIFICATIONS SECTION 502.
3. AS SOON AS CONCRETE WILL NOT SLUMP, FACE FORMS ARE TO BE REMOVED, IRREGULARITIES REMOVED, A LIGHT BROOM FINISH GIVEN, AND LIQUID MEMBRANE SEAL OR OTHER APPROVED CURING MEDIUM APPLIED.
4. THE CONTRACTOR SHALL PREVENT THE TEMPERATURE AT THE SURFACE OF THE CONCRETE FROM FALLING BELOW 40°F DURING THE FIRST 72 HOURS IMMEDIATELY FOLLOWING CONCRETE PLACEMENT. PROTECTIVE MATERIAL SHALL BE LEFT IN PLACE FOR AN ADDITIONAL 48 HOURS IF FREEZING AIR TEMPERATURES ARE EXPECTED TO CONTINUE.

MOUNTABLE CURB

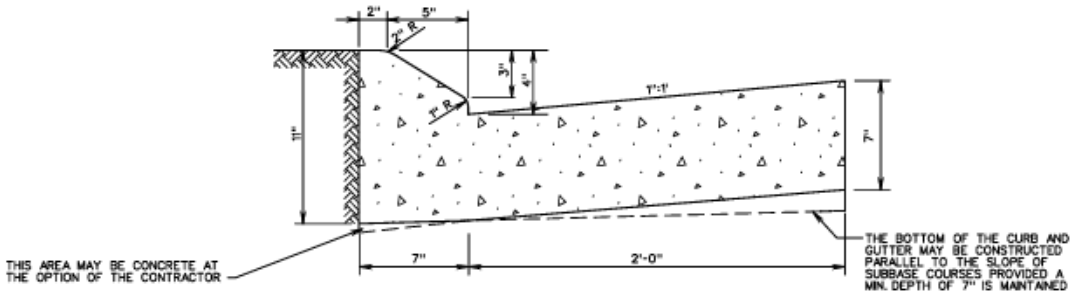
NOT TO SCALE

REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200,502	CONCRETE ITEMS	6/16	Page 595 of 738	CI_04

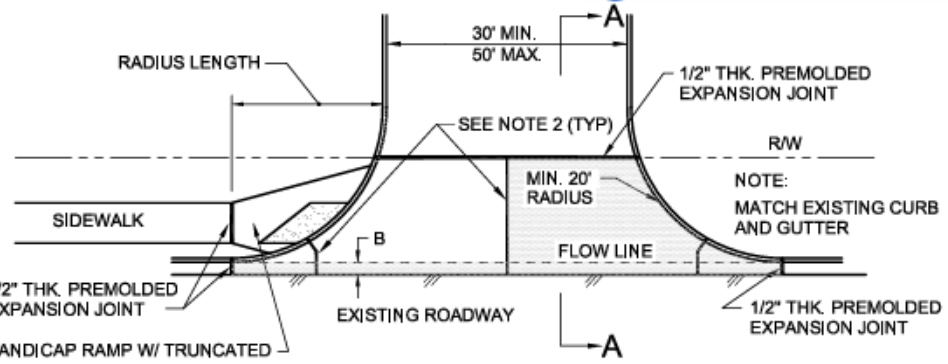
CG-7

NOTES:

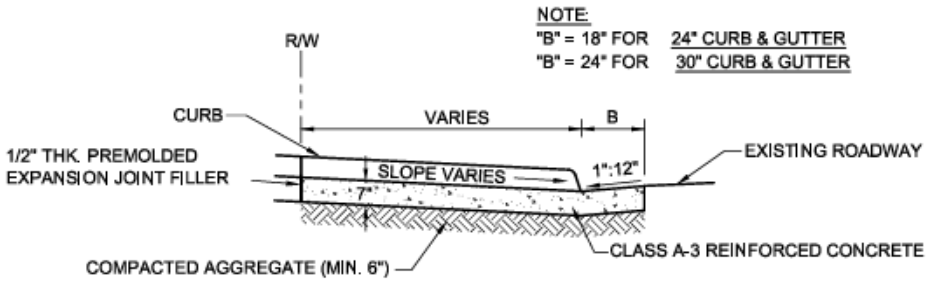
1. THIS ITEM MAY BE PRECAST OR CAST IN PLACE.
2. CONCRETE TO BE CLASS A3 IF CAST IN PLACE, 4000 PSI IF PRECAST.
3. COMBINATION CURB & GUTTER HAVING A RADIUS OF 300 FEET OR LESS (ALONG FACE OF CURB) SHALL BE PAID FOR AS RADIAL COMBINATION CURB & GUTTER.
4. FOR USE WITH STABILIZED OPEN-GRADED DRAINAGE LAYER, THE BOTTOM OF THE CURB AND GUTTER SHALL BE CONSTRUCTED PARALLEL TO THE SLOPE OF SUBBASE COURSES AND TO THE DEPTH OF THE PAVEMENT.
5. ALLOWABLE CRITERIA FOR THE USE OF CG-7 IS BASED ON ROADWAY CLASSIFICATION AND DESIGN SPEED AS SHOWN IN APPENDIX A OF THE VDOT ROAD DESIGN MANUAL IN THE SECTION ON URBAN GS STANDARDS.
6. WHEN THIS STANDARD IS TO BE TIED INTO EXISTING BARRIER CURB, THE TRANSITION IS TO BE MADE WITHIN 10' OR THE CHANGE IN STANDARDS CAN BE MADE AT REGULAR OPENINGS.
7. WHEN COMBINATION MOUNTABLE CURB AND GUTTER IS USED, THE STANDARD ENTRANCE GUTTERS OR STANDARD CONNECTION FOR STREET INTERSECTIONS ARE TO HAVE THE MOUNTABLE CURB CONFIGURATION INCORPORATED.



VDOT ROAD AND BRIDGE STANDARDS		COMBINATION 4" CURB AND GUTTER	SPECIFICATION REFERENCE
SHEET 1 OF 1	REVISION DATE	VIRGINIA DEPARTMENT OF TRANSPORTATION	105
201.04			



PLAN



SECTION A-A

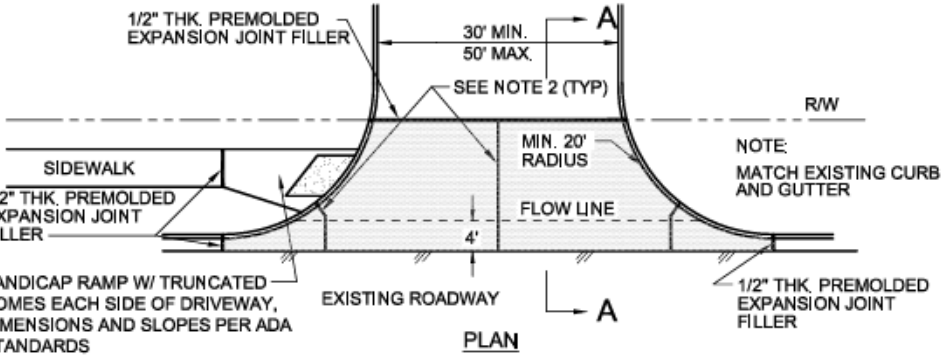
NOTES:

1. STREET APPROACH TO BE POURED MONOLITHICALLY WITH RADIAL CURB.
2. CRACK CONTROL JOINTS TO BE PROVIDED AT ENTRANCE MIDDLE AND AT ENTRANCE DIAGONALS BY SAWING, SCORING, "LEAVE-IN" INSERTS, OR CUTTER PLATES TO 1-1/2 INCH DEPTH.
3. FOR CURBED STREETS WITHOUT SIDEWALKS OR FOR USE WITH OPTIONAL HANDICAP RAMP WHEN DIRECTED BY LOCALITY.
4. WATER METERS AND SEWER CLEANOUTS SHALL NOT BE LOCATED IN DRIVEWAY (ENTRANCE) OR APRON UNLESS AUTHORIZED BY OWNER.
5. CONCRETE REINFORCEMENT METHOD PER CONTRACT DOCUMENTS.

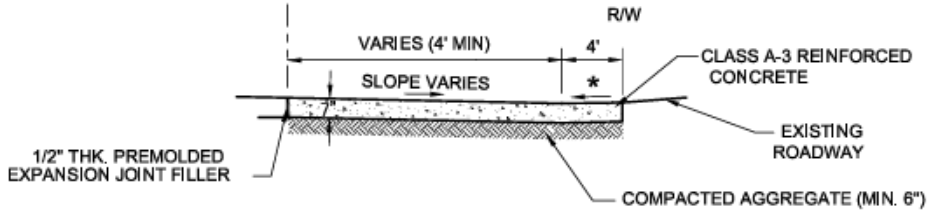
STANDARD COMMERCIAL ENTRANCE

NOT TO SCALE

REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200,502	CONCRETE ITEMS	6/16	1 of 1	1_38



PLAN



SECTION A-A

* TO MATCH 24" CURB & GUTTER, SLOPE = 1" : 32"
TO MATCH 30" CURB & GUTTER, SLOPE = 1" : 24"

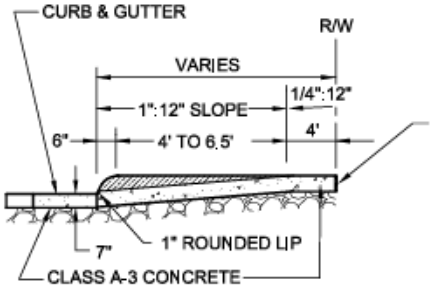
NOTES:

1. FOR USE ON STREETS HAVING A 45 MPH OR GREATER SPEED LIMIT.
2. CRACK CONTROL JOINTS TO BE PROVIDED AT ENTRANCE MIDDLE AND AT ENTRANCE DIAGONALS BY SAWING, SCORING, "LEAVE-IN" INSERTS, OR CUTTER PLATES TO 1-1/2 INCH DEPTH.
3. STREET APPROACH TO BE POURED MONOLITHICALLY WITH RADIAL CURB.
4. FOR CURBED STREETS WITHOUT SIDEWALKS OR FOR USE WITH A HIGH VOLUME ENTRANCE WITH OPTIONAL HANDICAP RAMP WHEN DIRECTED BY LOCALITY.
5. WATER METERS AND SEWER CLEANOUTS SHALL NOT BE LOCATED IN DRIVEWAY (ENTRANCE) OR APRON UNLESS AUTHORIZED BY OWNER.
6. CONCRETE REINFORCEMENT METHOD PER CONTRACT DOCUMENTS.

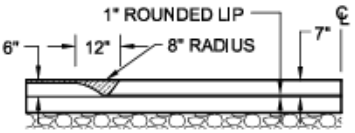
HIGH TRAFFIC SPEED COMMERCIAL ENTRANCE

NOT TO SCALE

REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200,502	CONCRETE ITEMS	6/16	1 of 1	01

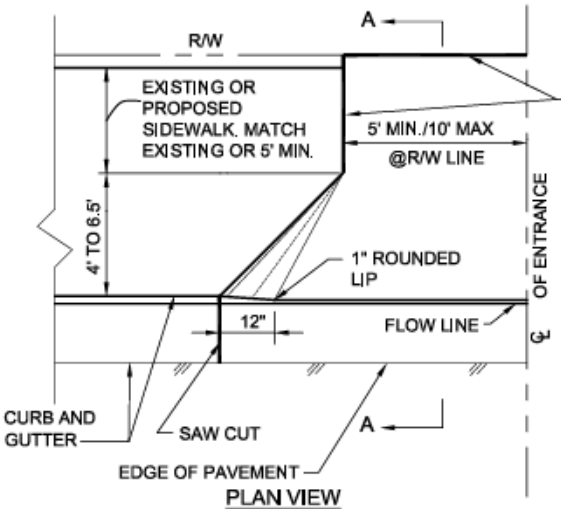


SECTION A-A



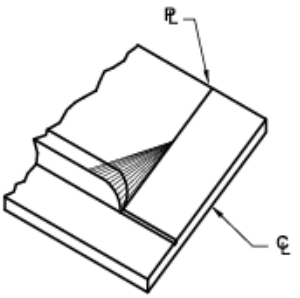
SECTION AT GUTTER LINE

MINIMUM 12' DRIVEWAY



PLAN VIEW

(SYMMETRICAL ABOUT ℄ OF ENTRANCE)



ISOMETRIC VIEW

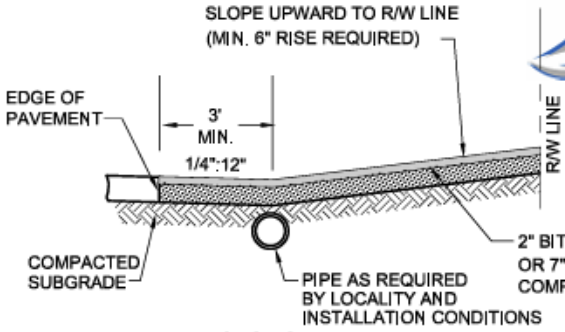
NOTES:

1. IF AN EXISTING SIDEWALK IS AFFECTED BY THIS INSTALLATION, IT MUST BE REMOVED TO THE NEAREST JOINT AND REPLACED WITH CLASS A-3 CONCRETE, SEVEN INCHES THICK.
2. A SLOPE OF 1/4":12" (UPWARD) IS REQUIRED FROM TOP OF CURB TO RIGHT-OF-WAY LINE, (ON ENTRANCE OR ON SIDEWALK).
3. ENTRANCES WITHIN TWO FEET OF EACH OTHER, MEASURED AT THE CURB LINE, MAY CONNECT TO SHARE A WIDER APRON DESIGN.
4. WATER METERS AND SEWER CLEANOUTS SHALL NOT BE LOCATED IN DRIVEWAY (ENTRANCE) OR APRON UNLESS AUTHORIZED BY OWNER.

RESIDENTIAL CONCRETE ENTRANCE W/ CURB & GUTTER

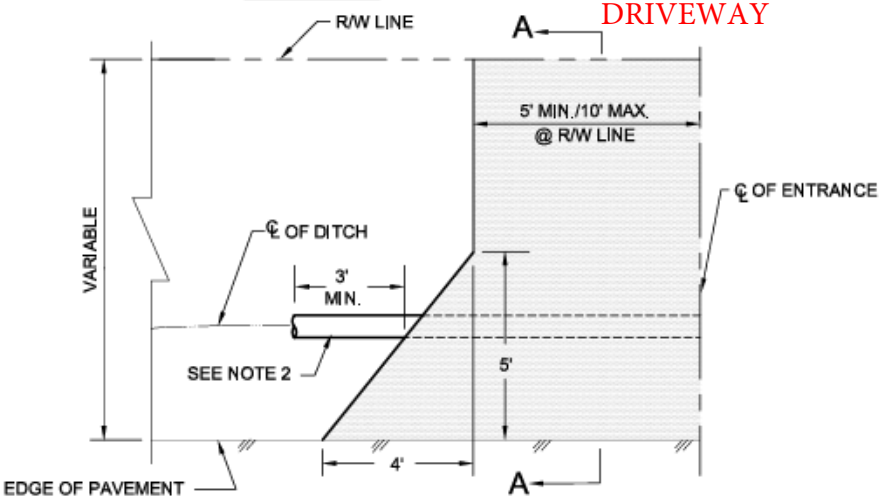
NOT TO SCALE

REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200,502	CONCRETE ITEMS	6/16	Page 599 of 738	CI_07



SECTION A-A

MINIMUM 12' DRIVEWAY



PLAN

(SYMMETRICAL ABOUT ℄ OF ENTRANCE)

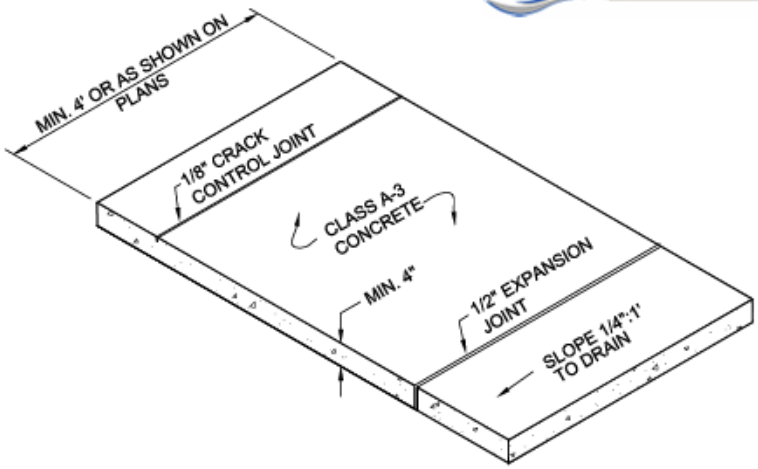
NOTES:

1. PIPE LOCATION MAY VARY WITHIN THE RIGHT-OF-WAY AS NECESSARY. THE PIPE SHALL BE INSTALLED TO PROVIDE AND/OR MAINTAIN POSITIVE DRAINAGE.
2. PIPE SHALL EXTEND THREE FEET (MINIMUM) BEYOND FARTHEST OUTSIDE EDGE OF ENTRANCE AT CROSSING. PROVIDE COVER OVER PIPE AS SPECIFIED BY ENGINEER.
3. WATER METERS AND SEWER CLEANOUTS SHALL NOT BE LOCATED IN DRIVEWAY (ENTRANCE) OR APRON UNLESS AUTHORIZED BY OWNER.

RESIDENTIAL ENTRANCE W/OUT CURB & GUTTER

NOT TO SCALE

REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200,502	CONCRETE ITEMS	6/16	PDC	6708



NOTES:

1. CRACK CONTROL JOINTS TO BE PROVIDED AT INTERVALS EQUAL TO THE WIDTH OF THE SIDEWALK BY SAWING, SCORING, "LEAVE-IN" INSERTS, OR CUTTER PLATES AND SHALL EXTEND INTO THE CONCRETE TO 1/4 OF THE DEPTH.

2. EXPANSION JOINTS TO BE INSTALLED AT INTERVALS NOT EXCEEDING 50', AND AT JUNCTION POINTS OF CURBS AND ENTRANCES, AND ON BOTH SIDES OF ALL SIDEWALK SECTIONS CONTAINING UTILITIES. PREMOLDED, 1/2" JOINT FILLER IS TO BE USED EXTENDING FROM BOTTOM OF SLAB TO 1/4" OF ITS TOP SURFACE.

3. AS SOON AS CONCRETE WILL NOT SLUMP, FACE FORMS ARE TO BE REMOVED, IRREGULARITIES REMOVED, A LIGHT BROOM FINISH GIVEN, AND A LIQUID MEMBRANE SEAL OR OTHER APPROVED CURING MEDIUM APPLIED.

4. SIDEWALKS ACROSS ENTRANCES SHALL HAVE A DEPTH OF SEVEN INCHES (7") WITH A MAXIMUM SLOPE OF 1":12".

5. THE CONTRACTOR SHALL PREVENT THE TEMPERATURE AT THE SURFACE OF THE CONCRETE FROM FALLING BELOW 40°F DURING THE FIRST 72 HOURS IMMEDIATELY FOLLOWING CONCRETE PLACEMENT. PROTECTIVE MATERIAL SHALL BE LEFT IN PLACE FOR AN ADDTIONAL 48 HOURS IF FREEZING AIR TEMPERATURES ARE EXPECTED TO CONTINUE.

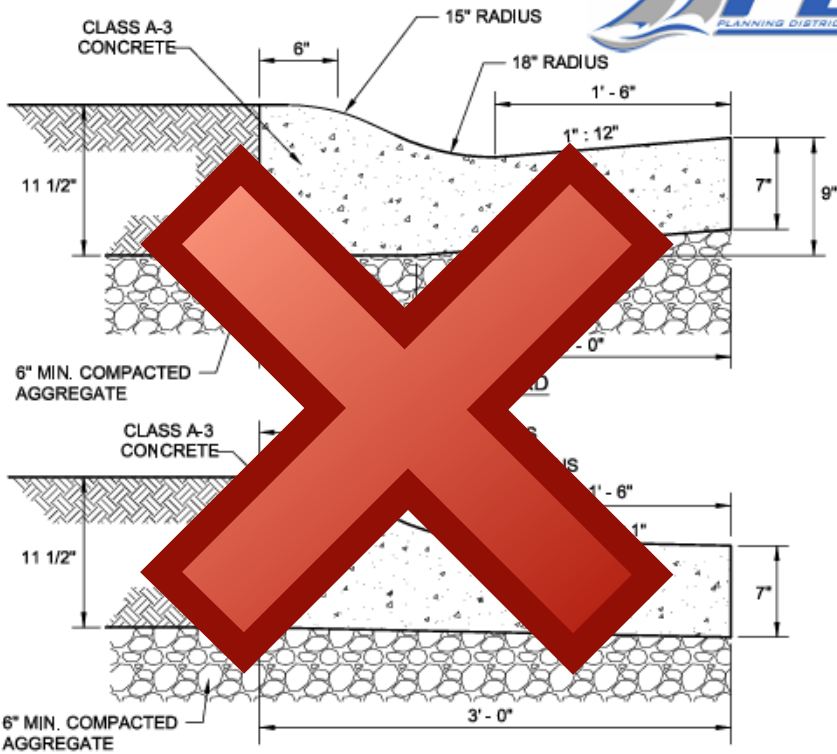
SIDEWALK DETAIL

NOT TO SCALE

REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200,502	CONCRETE ITEMS	6/16		

NOT APPROVED FOR USE IN SMITHFIELD

HAMPTON ROADS PDC PLANNING DISTRICT COMMISSION



REVERSE

NOTES:

1. CRACK CONTROL JOINTS TO BE PROVIDED AT 10 FT. INTERVALS BY SAWING, SCORING, "LEAVE-IN" INSERTS, OR CUTTER PLATES TO 1-1/2 INCH DEPTH.

2. EXPANSION JOINTS TO BE INSTALLED PER SPECIFICATIONS SECTION 502.

3. AS SOON AS CONCRETE WILL NOT SLUMP, FACE FORMS ARE TO BE REMOVED, IRREGULARITIES REMOVED, A LIGHT BROOM FINISH GIVEN, AND LIQUID MEMBRANE SEAL OR OTHER APPROVED CURING MEDIUM APPLIED.

4. THE CONTRACTOR SHALL PREVENT THE TEMPERATURE AT THE SURFACE OF THE CONCRETE FROM FALLING BELOW 40°F DURING THE FIRST 72 HOURS IMMEDIATELY FOLLOWING CONCRETE PLACEMENT. PROTECTIVE MATERIAL SHALL BE LEFT IN PLACE FOR AN ADDITIONAL 48 HOURS IF FREEZING AIR TEMPERATURES ARE EXPECTED TO CONTINUE.

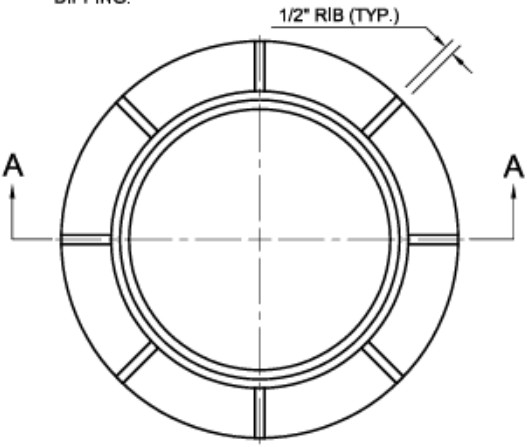
ROLL TOP CURB AND GUTTER

NOT TO SCALE

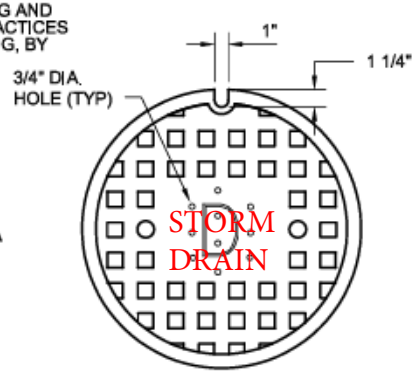
REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200,502	CONCRETE ITEMS	6/16		

NOTES:

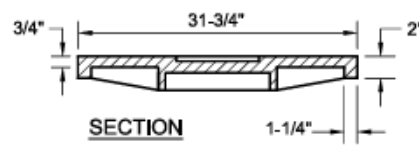
1. CASTING AND COVER TO BE SUPPLIED BY CAPITAL FOUNDRY OF VIRGINIA, INC. OR APPROVED EQUAL.
2. ALL GRAY IRON CASTINGS SHALL CONFORM TO LATEST EDITION OF ASTM A-48, CLASS 30 AND SHALL BE OF UNIFORM QUALITY.
3. ALL CASTING DIMENSIONS SHALL HAVE A TOLERANCE OF 1/8"±.
4. ALL CASTINGS SHALL BE CLEANED BY SHOT BLASTING AND HAND CHIPPING UTILIZING STANDARD INDUSTRY PRACTICES PRIOR TO SHOP APPLICATION OF ASPHALTIC COATING, BY DIPPING.



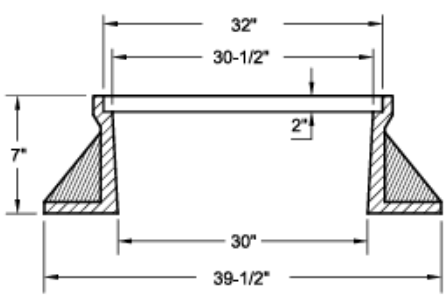
PLAN: CASTING



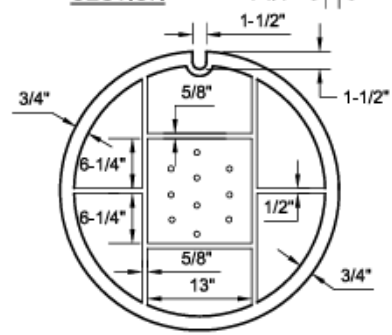
TOP VIEW: COVER



SECTION



SECTION A-A

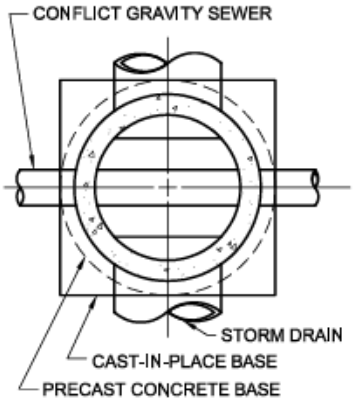


BOTTOM VIEW: COVER

STORM DRAIN CASTING & COVER (30")

NOT TO SCALE

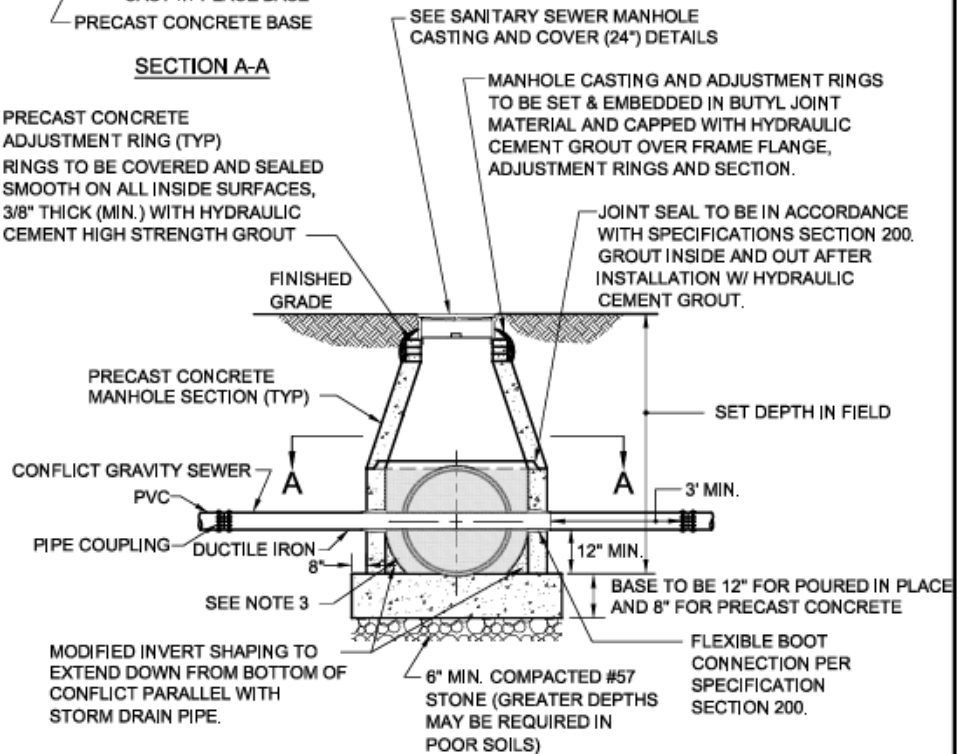
REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200,302	DRAINAGE STRUCTURES	6/16	Page 603 of 738	SD-6



MUST BE APPROVED BY TOWN STAFF PRIOR TO USE

SEE DS_02, SHEET 2 OF 2 FOR NOTES.

SECTION A-A



PRECAST CONCRETE CONFLICT MANHOLE

NOT TO SCALE

REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200,302	DRAINAGE STRUCTURES	6/16	1 OF 2	DS_03

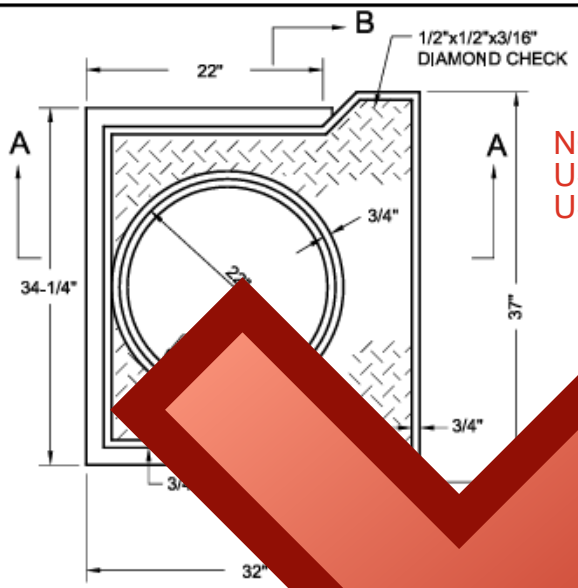
NOTES:

1. ALL CONFLICT MANHOLES TO BE APPROVED BY THE LOCALITY PRIOR TO THEIR USE.
2. FOR USE ON STORM DRAIN SYSTEMS 36" OR LESS IN DIAMETER AND WHEN THE CONFLICTING GRAVITY SEWER DOES NOT EXCEED 18" IN DIAMETER. ALL OTHER SITUATIONS REQUIRE A SPECIAL DESIGN AND LOCALITY APPROVAL.
3. SHADED AREA MUST EQUAL 1.5 (MIN.) TIMES THE CROSS SECTION AREA OF THE STORM DRAIN.
4. LOWER MANHOLE INVERT BELOW STORM DRAIN INVERT WHEN NECESSARY TO MAINTAIN MINIMUM 12" CLEARANCE UNDER CONFLICT SANITARY SEWER MAIN.
5. PRECAST CONCRETE MANHOLE TO BE IN COMPLIANCE WITH ASTM C-478.
6. WALL THICKNESS TO BE 5" MINIMUM FOR 48" INSIDE DIAMETER MANHOLES AND 6" MINIMUM FOR 60" INSIDE DIAMETER MANHOLES.
7. PROVIDE A MAXIMUM OF TWO LIFT HOLES PER SECTION. PLUG HOLES WATERTIGHT WITH RUBBER PLUGS AND GROUT AFTER INSTALLATION.
8. POURED IN PLACE BASE SLAB: REINFORCE WITH #5 REBAR @ 12" O.C. EACH WAY. ALL REBAR TO HAVE MIN. 1-1/2" COVER. CONCRETE TO BE CLASS A-3.
9. NO SEWER PIPE JOINTS ALLOWED INSIDE CONFLICT MANHOLE.

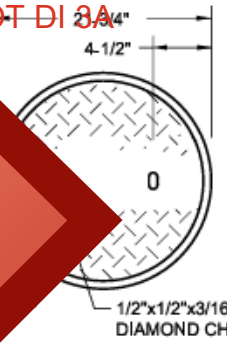
PRECAST CONCRETE CONFLICT MANHOLE

NOT TO SCALE

REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200,302	DRAINAGE STRUCTURES	6/16	PDC-3	DS-38

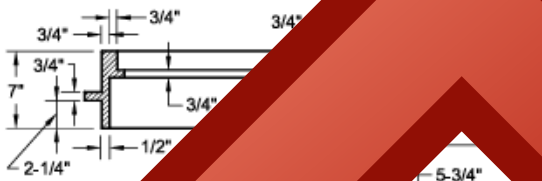


NOT APPROVED FOR
USE IN SMITHFIELD
USE VDOT DI 3A



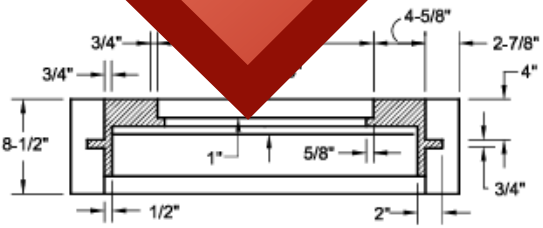
PLAN: COVER

PLAN: FRAM



NOTES:

1. FRAME & COVER TO BE SUPPLIED BY CAPITAL FOUNDRY OF VIRGINIA, INC., OR APPROVED EQUAL.
2. GRAY IRON CASTINGS CONFORM TO LATEST F ASTM A-48, D SHALL BE OF ITY.
3. DIMENSIONS E A TOLERANCE
4. CASTINGS SHALL BE CLEANED BY SHOT BLASTING AND HAND CHIPPING UTILIZING STANDARD INDUSTRY PRACTICES PRIOR TO SHOP APPLICATION OF ASPHALTIC COATING, BY DIPPING.



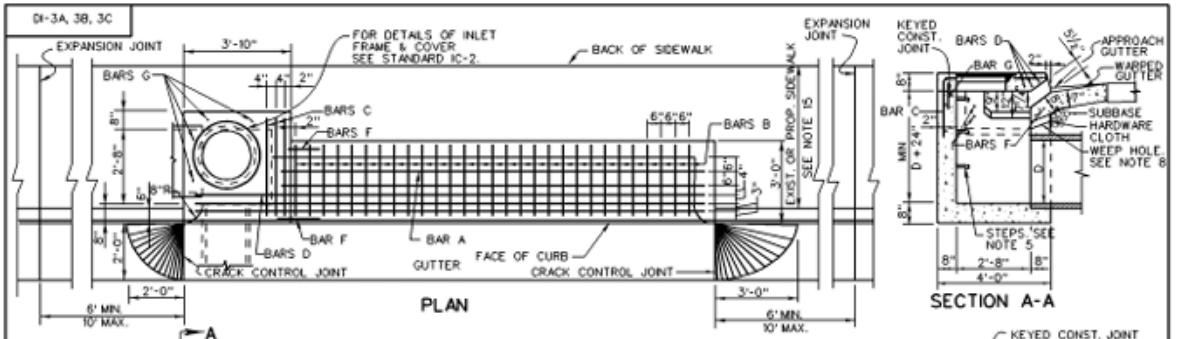
SECTION B-B

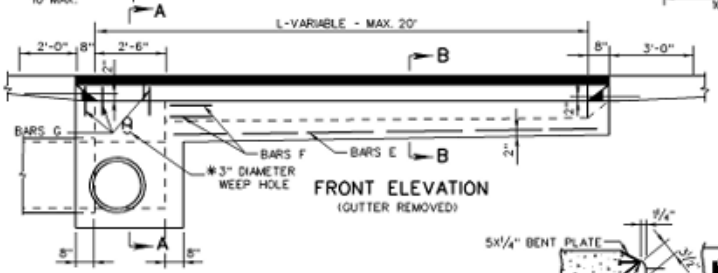
CURB INLET/CATCH BASIN FRAME AND COVER

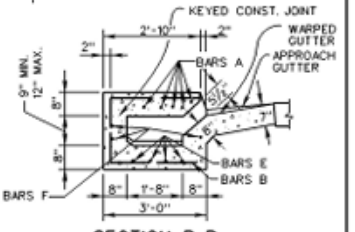
NOT TO SCALE

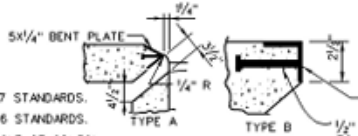
REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200,302	DRAINAGE STRUCTURES	6/16		

DI-3A, 3B, 3C







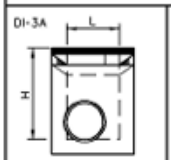


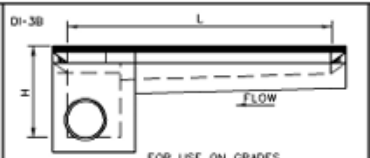
TYPE A NOSE DETAIL SHALL BE USED WITH CG-3 & CG-7 STANDARDS.

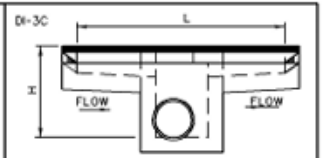
TYPE B NOSE DETAIL SHALL BE USED WITH CG-2 & CG-6 STANDARDS.

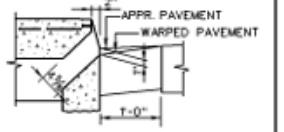
GALVANIZED PLATE FOR TYPE A TO BE BENT ON AN ANGLE OF 68° 30' CONNECTORS AND IS TO BE ANCHORED WITH 1/2" X 4" STUD SHEAR WELDED TO BENT PLATE AT 2'-C-C.

NOSE DETAILS









VDOT
ROAD AND BRIDGE STANDARDS

SHEET 1 OF 2 | REVISION DATE
104.09 | 08/10

STANDARD CURB DROP INLET

12" - 30" PIPE: MAXIMUM DEPTH (H) - 8'

VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION REFERENCE
233
302

TABLE OF QUANTITIES

DI-3A, 3B, 3C

TYPE	L	AREA OF SLOT	REINFORCING STEEL																
			Concrete	BARS A		BARS B		BARS C		BARS D		BARS E		BARS F		BARS G		WEIGHT
	Ft.	Sq. Ft.	Cu. Yds.	No.	Lin. Ft. ✱	No.	Lin. Ft. ✱	No.	Lin. Ft. ✱	No.	Lin. Ft.✱	No.	Lin. Ft.✱	No.	Lin. Ft.✱	No.	Lin. Ft.✱	Lbs.
DI-3A	2'-6"	1.15	2.26	-	-	-	-	1	5'-7"	3	3'-2"	-	-	-	-	6	1'-0"	22
DI-3B	4'	1.83	2.59	5	1'-6"	2	6'-7" to 6'-10"	3	5'-7"	3	3'-2"	4	1'-6"	3	1'-6"	4	1'-0"	64
	6'	2.75	3.02	5	3'-6"	6	6'-7" to 6'-10"	3	5'-7"	3	3'-2"	4	3'-6"	3	1'-6"	4	1'-0"	111
	8'	3.67	3.46	5	5'-6"	10	6'-7" to 6'-10"	3	5'-7"	3	3'-2"	4	5'-6"	3	1'-6"	4	1'-0"	158
	10'	4.58	3.90	5	7'-6"	14	6'-7" to 6'-10"	3	5'-7"	3	3'-2"	4	7'-6"	3	1'-6"	4	1'-0"	204
	12'	5.50	4.34	5	9'-6"	18	6'-7" to 6'-10"	3	5'-7"	3	3'-2"	4	9'-6"	3	1'-6"	4	1'-0"	251
	14'	6.42	4.78	5	11'-6"	22	6'-7" to 6'-10"	3	5'-7"	3	3'-2"	4	11'-6"	3	1'-6"	4	1'-0"	298
	16'	7.33	5.22	5	13'-6"	26	6'-7" to 6'-10"	3	5'-7"	3	3'-2"	4	13'-6"	3	1'-6"	4	1'-0"	345
	18'	8.25	5.66	5	15'-6"	30	6'-7" to 6'-10"	3	5'-7"	3	3'-2"	4	15'-6"	3	1'-6"	4	1'-0"	391
	20'	9.17	6.09	5	17'-6"	34	6'-7" to 6'-10"	3	5'-7"	3	3'-2"	4	17'-6"	3	1'-6"	4	1'-0"	438
DI-3C	6'	2.75	3.01	10	1'-9"	4	6'-7" to 6'-10"	5	5'-7"	3	3'-2"	8	1'-9"	6	1'•6"	2	1'-0"	111
	8'	3.67	3.45	10	2'-9"	8	6'-7" to 6'-10"	5	5'-7"	3	3'-2"	8	2'-9"	6	1'-6"	2	1'-0"	158
	10'	4.58	3.89	10	3'-9"	12	6'-7" to 6'-10"	5	5'-7"	3	3'-2"	8	3'-9"	6	1'-6"	2	1'-0"	205
	12'	5.50	4.33	10	4'-9"	16	6'-7" to 6'-10"	5	5'-7"	3	3'-2"	8	4'-9"	6	1'-6"	2	1'-0"	252
	14'	6.42	4.77	10	5'-9"	20	6'-7" to 6'-10"	5	5'-7"	3	3'-2"	8	5'-9"	6	1'-6"	2	1'-0"	298
	16'	7.33	5.21	10	6'-9"	24	6'-7" to 6'-10"	5	5'-7"	3	3'-2"	8	6'-9"	6	1'-6"	2	1'-0"	345
	18'	8.25	5.65	10	7'-9"	28	6'-7" to 6'-10"	5	5'-7"	3	3'-2"	8	7'-9"	6	1'-6"	2	1'-0"	392
	20'	9.17	6.09	10	8'-9"	32	6'-7" to 6'-10"	5	5'-7"	3	3'-2"	8	8'-9"	6	1'-6"	2	1'-0"	439

NOTES

1. DEPTH OF INLET (H) TO BE SHOWN ON PLANS.
2. THE "H" DIMENSION SHOWN ON THE STANDARDS AND SPECIFIED ON THE PLANS WILL BE MEASURED FROM THE INVERT OF THE OUTFALL PIPE TO THE TOP OF THE STRUCTURE. PLAN "H" DIMENSIONS ARE APPROXIMATE ONLY FOR ESTIMATING PURPOSES AND THE ACTUAL DIMENSIONS SHALL BE DETERMINED BY THE CONTRACTOR FROM FIELD CONDITIONS.
3. WHEN SPECIFIED ON THE PLANS THE INVERT IS TO BE SHAPED IN ACCORDANCE WITH STANDARD IS-1. THE COST OF FURNISHING AND PLACING ALL MATERIALS INCIDENTAL TO THE SHAPING IS TO BE INCLUDED IN THE BID PRICE FOR THE STRUCTURE.
4. IN THE EVENT THE INVERT OF THE OUTFALL PIPE IS HIGHER THAN THE BOTTOM OF THE STRUCTURE, THE INVERT OF THE STRUCTURE SHALL BE SHAPED WITH CEMENT MORTAR TO PREVENT STANDING OR PONDING OF WATER IN THE STRUCTURE. THE COST OF FURNISHING AND PLACING ALL MATERIALS INCIDENTAL TO THE SHAPING IS TO BE INCLUDED IN THE BID PRICE FOR THE STRUCTURE.
5. STEPS ARE TO BE PROVIDED WHEN H IS 4'-0" OR GREATER. FOR DETAILS SEE STANDARD ST-1.
6. THIS ITEM MAY BE PRECAST OR CAST-IN-PLACE.
7. #4 X 8" SMOOTH DOWELS AT APPROXIMATELY 12" C-C TO BE PLACED IN ALL AREAS ADJACENT TO ABUTTING CONCRETE TO PREVENT SETTLEMENT.
8. 3" DIAMETER WEEP HOLE TO BE LOCATED TO DRAIN SUBBASE MATERIAL. WEEP HOLE WITH 12"X12" PLASTIC HARDWARE CLOTH ¼" MESH OR GALVANIZED STEEL WIRE, MINIMUM WIRE DIAMETER 0.03", NUMBER 4 MESH HARDWARE CLOTH ANCHORED FIRMLY TO THE OUTSIDE OF THE STRUCTURE.
9. ALL REINFORCING STEEL SHALL HAVE A MIN. COVER OF 2".
10. ALL REINFORCING STEEL TO BE CUT CLEAR OF ALL OPENINGS BY 2".
11. CAST-IN PLACE CONCRETE IS TO BE CLASS A3 (3000 PSI). PRECAST CONCRETE IS TO BE 4000 PSI.
12. LENGTH OF SLOT (L) WILL, IN EVERY CASE, BE SHOWN ON PLANS.
13. IF INLET IS CONSTRUCTED IN MEDIAN CURB OR WITH INTEGRAL CURB, GUTTER IS TO BE OMITTED (SEE DETAIL).
14. STANDARD INLETS MAY BE CONSTRUCTED WITH CONCRETE BLOCKS IN ACCORDANCE WITH THE DETAILS SHOWN ON STANDARD DRAWING DI-MB.
15. THIS AREA MAY BE EARTHEN, IN WHICH CASE THE EXPANSION JOINTS WILL APPLY ONLY TO CURB AND GUTTER.
16. CONCRETE QUANTITIES SHOWN ARE FOR DEPTH (H) OF 5'-2" WITHOUT PIPES. THE AMOUNT DISPLACED BY PIPES MUST BE DEDUCTED TO OBTAIN TRUE QUANTITIES. FOR INLETS OF DIFFERENT DEPTHS ADD OR SUBTRACT 0.32 CUBIC YARDS OF CONCRETE FOR EACH FOOT OF DEPTH.
17. LENGTH OF ANGLE IRON AS SHOWN ON SHEET 1 OF 2 IS TO BE L +16" AT 4.10 LBS./FT..
18. ✱ DENOTES LENGTH OF ONE (1) BAR.
19. ALL REINFORCING BARS TO BE #5.
20. WHEN INLET IS USED IN 4'-0" MEDIAN, BACK OF INLET IS TO BE SHAPED TO CONFORM TO PROPOSED CURB.

SPECIFICATION REFERENCE

233
302

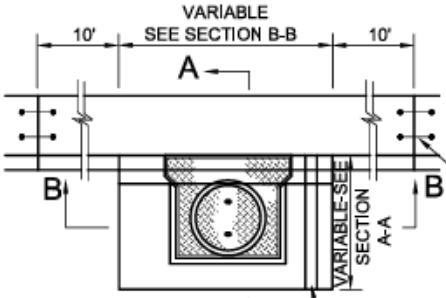
STANDARD CURB DROP INLET

12" - 30" PIPE: MAXIMUM DEPTH (H) = 8'

VIRGINIA DEPARTMENT OF TRANSPORTATION

VDOT
ROAD AND BRIDGE STANDARDS

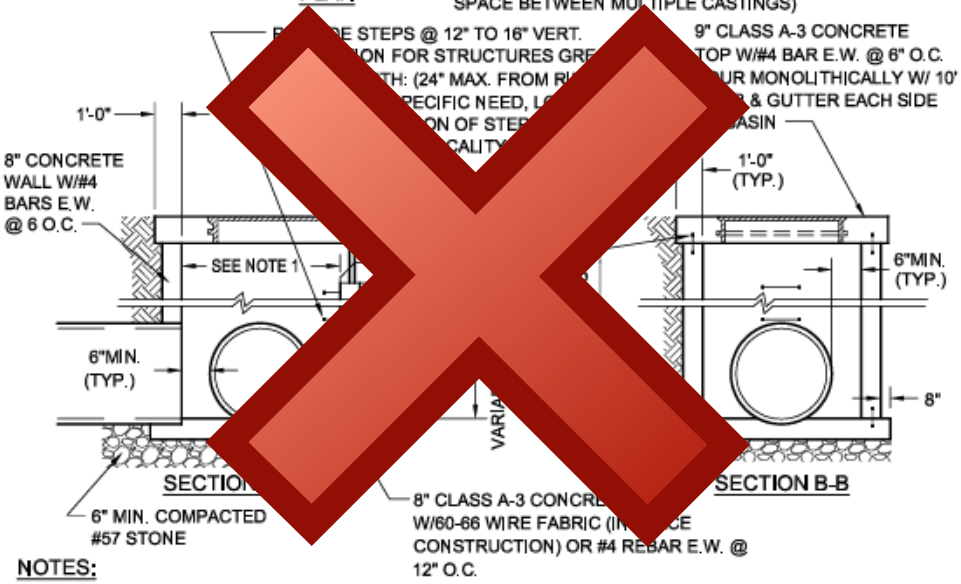
REVISION DATE | SHEET 2 OF 2



NOT APPROVED FOR USE IN SMITHFIELD

(2)-24" #4 DOWELS, PLACED 2" ABOVE GUTTER BOTTOM AND CENTERED AT JOINT (TYP. EACH SIDE)

4"x3/8" IRON PLATE (FOR MULTIPLE CATCH BASINS ONLY - PROVIDE MIN. 6" SPACE BETWEEN MULTIPLE CASTINGS)



9" CLASS A-3 CONCRETE

8" CLASS A-3 CONCRETE W/60-66 WIRE FABRIC (IN CONSTRUCTION) OR #4 REBAR E.W. @ 12" O.C.

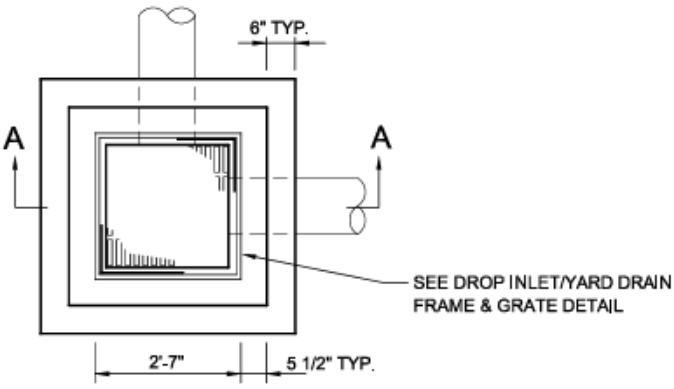
NOTES:

1. THE INTERIOR DIMENSIONS OF THE CATCH BASIN EQUAL 2'-6" FOR PIPE SIZES 12" THRU 18". WHERE THE PIPE SIZE IS 21" THRU 60", THE INTERIOR DIMENSIONS EQUAL 3'-0" OR THE O.D. OF THE PIPE, WHICHEVER IS GREATER, WHEN THE DEPTH DOES NOT EXCEED 4 FEET. IF THE DEPTH IS GREATER THAN 4 FEET, THE INTERIOR DIMENSIONS SHALL BE 4'-0" OR THE O.D. OF THE PIPE, WHICHEVER IS GREATER.
2. REFER TO THE VDOT ROAD AND BRIDGE STANDARDS, LATEST EDITION, - MANHOLE AND INLET SHAPING DETAIL.
3. FOR ALTERNATE PRECAST CONSTRUCTION, REFER TO SECTIONS 200 AND 302.

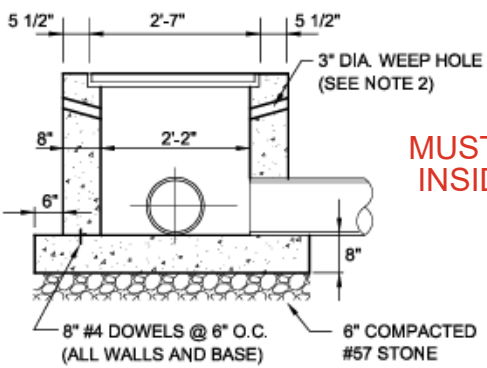
CURB INLET/CATCH BASIN

NOT TO SCALE

REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200,302	DRAINAGE STRUCTURES	6/16	PDC-1	SS-28



TOP VIEW



MUST BE GROUTED
INSIDE AND OUT

SECTION A-A

SEE DS_05, SHEET 2 OF 2 FOR NOTES.

YARD DRAIN

NOT TO SCALE

REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200,302	DRAINAGE STRUCTURES	6/16	DS_2	DS_03

NOTES:

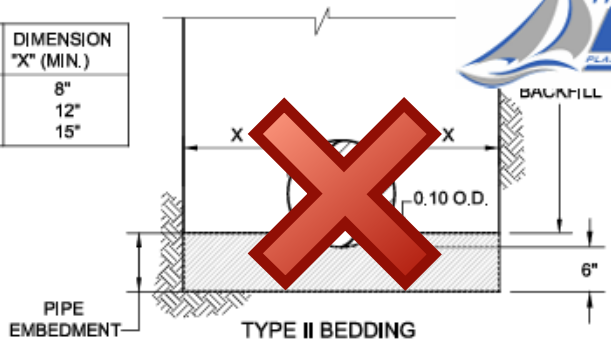
1. 8" CONCRETE WALLS WITH #4 BARS E.W. @ 6" O.C.
2. 3" WEEP HOLE WITH 12"x12" PLASTIC HARDWARE CLOTH, 1/4" MESH OR GALVANIZED STEEL WIRE, MINIMUM WIRE DIAMETER 0.03", NUMBER 4 MESH HARDWARE CLOTH ANCHORED FIRMLY TO OUTSIDE OF STRUCTURE.
3. STEPS THAT ARE ACCESSIBLE SHALL BE REQUIRED FOR DEPTHS OF FOUR FEET OR GREATER. SPECIFIC NEED, LOCATION AND SPECIFICATION OF STEPS TO BE DETERMINED BY LOCALITY.
4. ALL CAST IN PLACE CONCRETE TO BE CLASS A-3.
5. REFER TO THE VDOT ROAD AND BRIDGE STANDARDS, LATEST EDITION, - MANHOLE AND INLET SHAPING DETAIL.
6. PRECAST STRUCTURES MAY BE USED WHERE APPROVED BY THE LOCALITY.
7. FOR ALTERNATE PRECAST CONSTRUCTION, REFER TO SECTION 200 AND 302.

YARD DRAIN

NOT TO SCALE

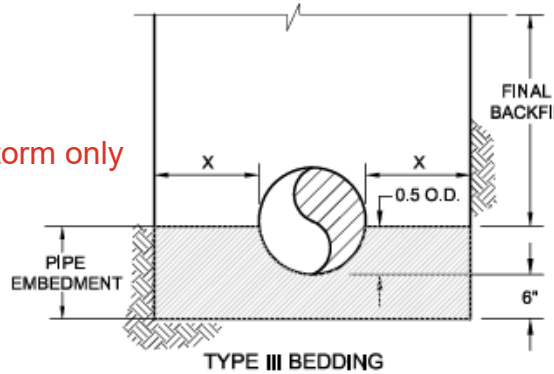
REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200,302	DRAINAGE STRUCTURES	6/16	4 OF 8	DR-7

PIPE SIZE	DIMENSION "X" (MIN.)
0"-24"	8"
27"-36"	12"
42"-72"	15"



TYPE II BEDDING

rcp storm only

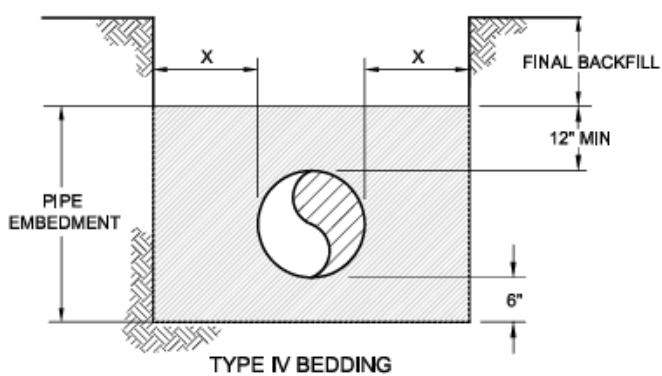


TYPE III BEDDING

#57 for storm and sewer

select fill for water

utilities



TYPE IV BEDDING

PIPE BEDDING DETAILS

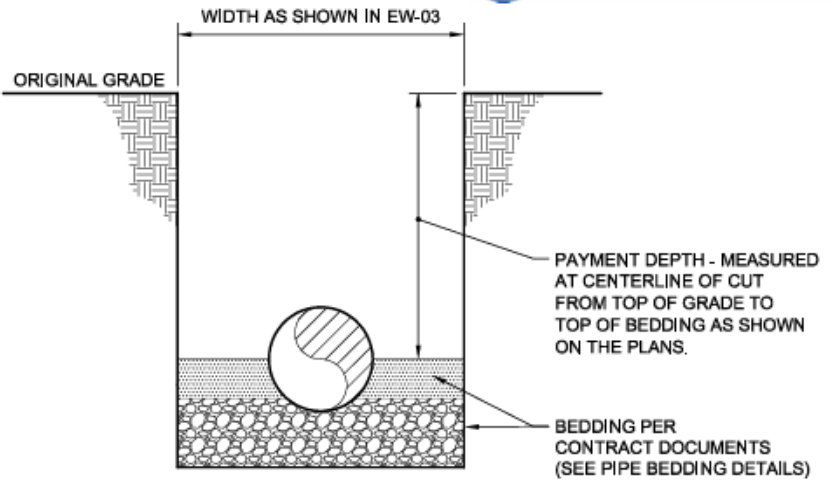
NOT TO SCALE

REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200,303	EARTHWORK	6/16		

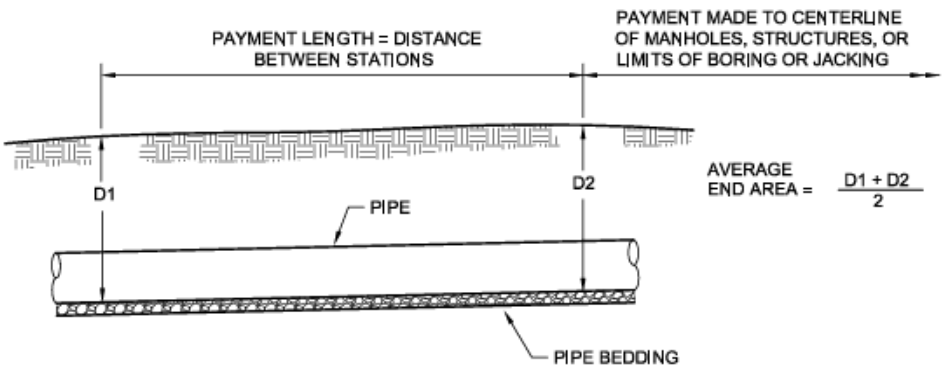
NOTES:

1. THESE BEDDING DETAILS ARE NOT INTENDED FOR THERMOPLASTIC STORM DRAINAGE PIPE
2. BEDDING MATERIAL TO BE APPROVED BY LOCALITY BEFORE USE.
3. TRENCH BOTTOM TO BE FREE OF WATER BEFORE PLACING BEDDING.
4. SHAPE RECESSES FOR BELL OF PIPE BY HAND.
5. BACKFILL ABOVE BEDDING WITH SPECIFIED BACKFILL MATERIAL. SEE SPECIFICATIONS SECTION 303.
6. REFER TO CONTRACT DOCUMENTS FOR TYPE OF BEDDING.
7. MINIMUM TRENCH WIDTH SHALL CONFORM TO PIPE MANUFACTURER'S RECOMMENDATIONS IF MORE STRINGENT.
8. TRENCH BOX OR OTHER SHORING METHODS SHALL NOT DISTURB PIPE EMBEDMENT AND BEDDING MATERIAL AFTER COMPACTION.
9. BEDDING SHALL BE INCLUDED IN THE PRICE OF THE PIPE UNLESS OTHERWISE INDICATED.

REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200,303	EARTHWORK	6/16	Page 613 of 738	STW_38



SECTION



PROFILE

SEE EW_02, SHEET 2 0F 2 FOR NOTES.

PAYMENT LIMITS
TRENCH EXCAVATION AND BACKFILL

NOT TO SCALE

REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200,303	EARTHWORK	6/16	1 OF 2	EW-02

NOTES:

1. PAYMENTS SHALL BE MADE USING THE AVERAGE END AREA METHOD AT THE UNIT COST PER FOOT, AT AVERAGE DEPTHS, AT 25' STATIONS BASED ON PLAN GRADES.

   EXAMPLE: D1 = 10.5 FT., D2 = 7.3 FT.

   $$\frac{D1 + D2}{2} = \frac{10.5 + 7.3}{2} = \frac{17.8}{2} = 8.9 \text{ FT.}$$

   PAYMENTS WOULD BE MADE AT THE UNIT PRICE BID FOR 8' TO 10' DEPTH FOR THIS 25 FOOT SECTION OF TRENCH EXCAVATION AND BACKFILL.

2. IN THE EVENT THE PAYMENT DEPTH SHALL EQUAL THE UPPER LIMIT OF PAYMENT CLASSIFICATION, PAYMENT WILL BE MADE AT THE LOWEST DEPTH UNIT PRICE (e.g. PAYMENT DEPTH = 10 FT.: PAYMENT WILL BE MADE AT THE UNIT PRICE FOR 8' TO 10' DEPTH, NOT AT THE UNIT PRICE FOR 10' TO 12' DEPTH).

3. FOR PIPE DIAMETERS 36-INCHES AND GREATER, DEDUCT THE DISPLACEMENT VOLUME OF THE PIPE FROM THE CALCULATED TRENCH VOLUME OF SELECT MATERIAL BACKFILL TO BE PLACED.

PAYMENT LIMITS
TRENCH EXCAVATION AND BACKFILL

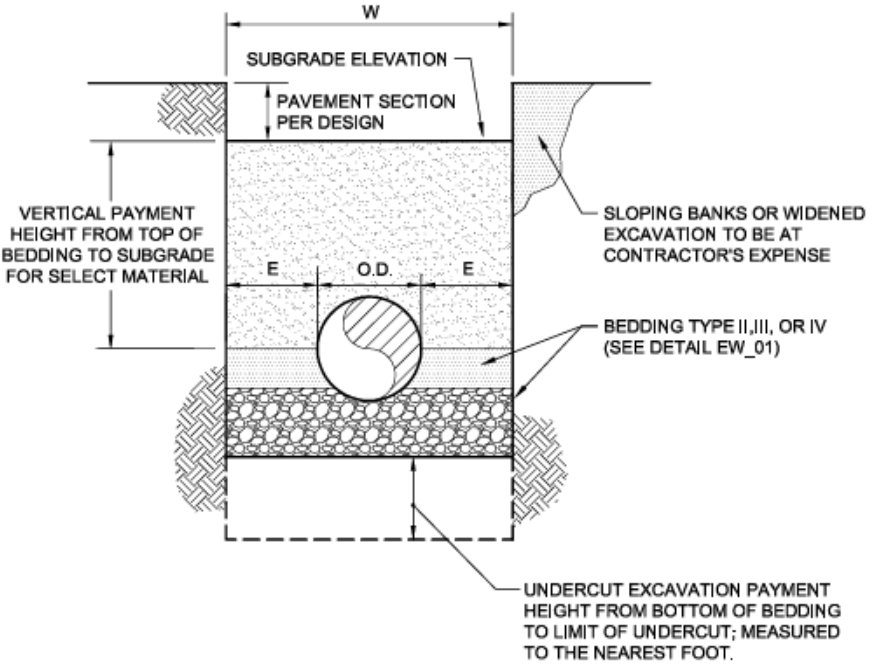
NOT TO SCALE

REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200,303	EARTHWORK	6/16	2 of 2	738

PIPE SIZE	DIMENSION "E"
0"-24"	8"
27"-36"	12"
42"-72"	15"

DEPTH (FT.)	DIMENSION "W"*
0-4.99	2' OR O.D.+2E
5-9.99	4' OR O.D.+2E
10-13.99	5' OR O.D.+2E
14-20	7' OR O.D.+2E
OVER 20	SPECIAL DESIGN - SEE CONTRACT DOCUMENTS

* WIDTH FOR COMPUTING QUANTITIES OF SELECT FILL AND UNDERCUT (CONTINGENT ITEMS)
* FOR CONTINGENT ITEMS, "W" SHALL BE THE GREATER OF THE TWO DIMENSIONS LISTED.



SEE EW_03, SHEET 2 0F 2 FOR ADDITIONAL NOTES.

TRENCH WIDTH DETAIL FOR PAYMENT OF CONTINGENT ITEMS

NOT TO SCALE

REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200,303	EARTHWORK	6/16	1 OF 2	EW_02

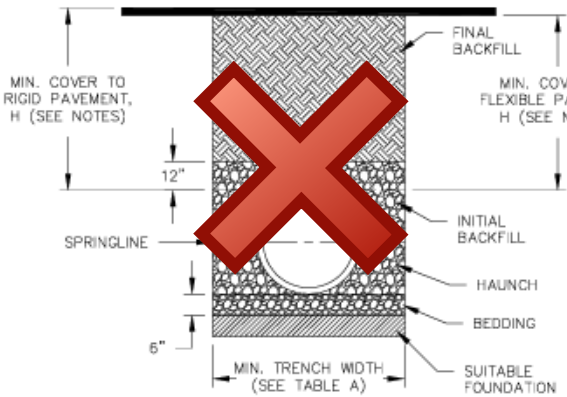
NOTES:

1. "W" = MAXIMUM PAYMENT WIDTH FOR CONTINGENT ITEMS IN TRENCH EXCAVATION.
2. VOLUMES TO BE CALCULATED BY AVERAGE END AREA METHOD AS DESCRIBED IN EW_02 AND WIDTH ("W") AS DETERMINED IN EW_03.
3. NO ADDITIONAL PAYMENT WILL BE MADE FOR EXTRA WIDTH TO ACCOMMODATE MANHOLES OR OTHER APPURTENANCES.
4. MEASUREMENT OF LENGTH TO BE ALONG CENTERLINE OF PIPE FROM START TO FINISH OF CONTINGENT ITEM.
5. CONTINGENT ITEMS INCLUDE SELECT MATERIAL, SELECT BEDDING AND UNDERCUT EXCAVATION.
6. TONNAGE FOR CONTINGENT ITEMS SHALL BE COMPUTED USING THE UNIT WEIGHTS AS SPECIFIED FOR THE TYPE OF MATERIAL WITH VOLUMES DERIVED AS FOLLOWS:
   #57 STONE = 100 LBS./CUBIC FOOT
   #21A, 21B, OR 26 STONE = 138 LBS./CUBIC FOOT
   SAND (VDOT GRADE A) = 110 LBS./CUBIC FOOT

TRENCH WIDTH DETAIL FOR PAYMENT OF CONTINGENT ITEMS

NOT TO SCALE

REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200,303	EARTHWORK	6/16		EW_38



HDPE not approved for use in Smithfield ROW

TABLE A - RECOMMENDED MINIMUM TRENCH WIDTHS	
PIPE DIAM.	MIN. TRENCH WIDTH
4"	21"
6"	23"
8"	26"
10"	28"
12"	30"
15"	34"
18"	39"
24"	48"
30"	56"
36"	64"
42"	72"
48"	80"
54"	88"
60"	96"

TABLE B - RECOMMENDED MAXIMUM HEIGHT OF COVER		
PIPE DIAMETER INCHES	AREA SQ. FT.	MAXIMUM HEIGHT OF COVER FEET
12	0.8	21
15	1.2	21
18	1.8	20
24	3.1	20
30	4.9	19
36	7.1	18
42	7.1	18
48	7.1	17

TABLE C - RECOMMENDED MINIMUM HEIGHT OF COVER DURING CONSTRUCTION	
PIPE DIAMETER	MINIMUM COVER HEIGHT DURING CONSTRUCTION
12" TO 30"	18"
36" AND ABOVE	1/2 DIAMETER

TABLE D - MINIMUM RECOMMENDED COVER BASED ON RAILWAY LOADING CONDITIONS **	
PIPE DIAM.	COOPER E-80***
UP TO 24"	24"
30"-36"	36"
42"-60"	48"

** COVER IS MEASURED FROM TOP OF PIPE TO BOTTOM OF RAILWAY TIE.
*** E-80 COVER REQUIREMENTS, ARE ONLY APPLICABLE TO ASTM F 2306 PIPE.

TYPICAL TRENCH DETAIL FOR HDPE STORM DRAIN PIPE

NOT TO SCALE

REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200, 302, 303	EARTHWORK	6/16	1 of 1	3 of 38

NOTES:

1. ALL PIPE SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH THESE SPECIFICATIONS OR AS MODIFIED BY THE OWNER.

2. TRENCH BOX OR OTHER SHORING METHODS SHALL NOT DISTURB THE PIPE BEDDING AND BACKFILL MATERIAL AFTER THEIR COMPACTION.

3. WHERE THE TR[illegible]TTOM IS UNSTABLE, THE CONTRACTOR S[illegible]AVATE TO A DEPTH INDICATED O[illegible]NG OR AS DIRECTED BY THE OWNER [illegible]WITH BEDDING MATERIAL

4. BEDD[illegible]USHED STONE OR VDO[illegible]NCE WITH SPEC[illegible]S OTHERWISE NO[illegible]UIRED BY THE OW[illegible]NESS SHALL

5. BACKFILL MA[illegible]HE P[illegible]

   A. INITIAL BACKFILL[illegible]
   VDOT AGGREGATE[illegible]WINGS OR AS DIRECTED BY THE OWNER, SHALL E[illegible] ZONE EXTENDING NOT LESS THAN 12-INCHES ABOVE[illegible]E INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDIT[illegible]
   B. FINAL BACKFILL:
   FINAL BACKFILL MATERIAL[illegible]L BACKFILL UNLESS OTHERWISE INDICATED ON THE DRA[illegible]

6. MINIMUM COVER (H[illegible]

   TRAFFIC APPL[illegible]MODIFIED BY THE LOCALITY, F[illegible]IP[illegible]F THE PIPE TO THE BOTTOM [illegible]THE TO[illegible]

   NON[illegible]UM COVER IN GR[illegible]2-INCHES FRO[illegible]ROUND SURFACE.

   ENTRANC[illegible]FINISHED COVER IS 9-INCHES F[illegible]LESS THAN OR EQUAL TO [illegible]PE DIAMETERS GREATER THAN 24-I[illegible]IMUM COVER SHALL BE 12-INCHES[illegible]E PIPE DIAMETER, WHICHEVER IS GREAT[illegible]E THE SURFACE OVER THE TOP OF TH[illegible] WILL BE ASPHALT, A MINIMUM OF 6-INCHES C[illegible]ECT BACKFILL MATERIAL SHALL BE PLACED BETWEEN THE TOP OF THE PIPE AND THE BOTTOM OF THE ASPHALT.

TYPICAL TRENCH DETAIL FOR HDPE STORM DRAIN PIPE

NOT TO SCALE

REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200, 302, 303	EARTHWORK	6/16	PAGE 619 OF 738	5

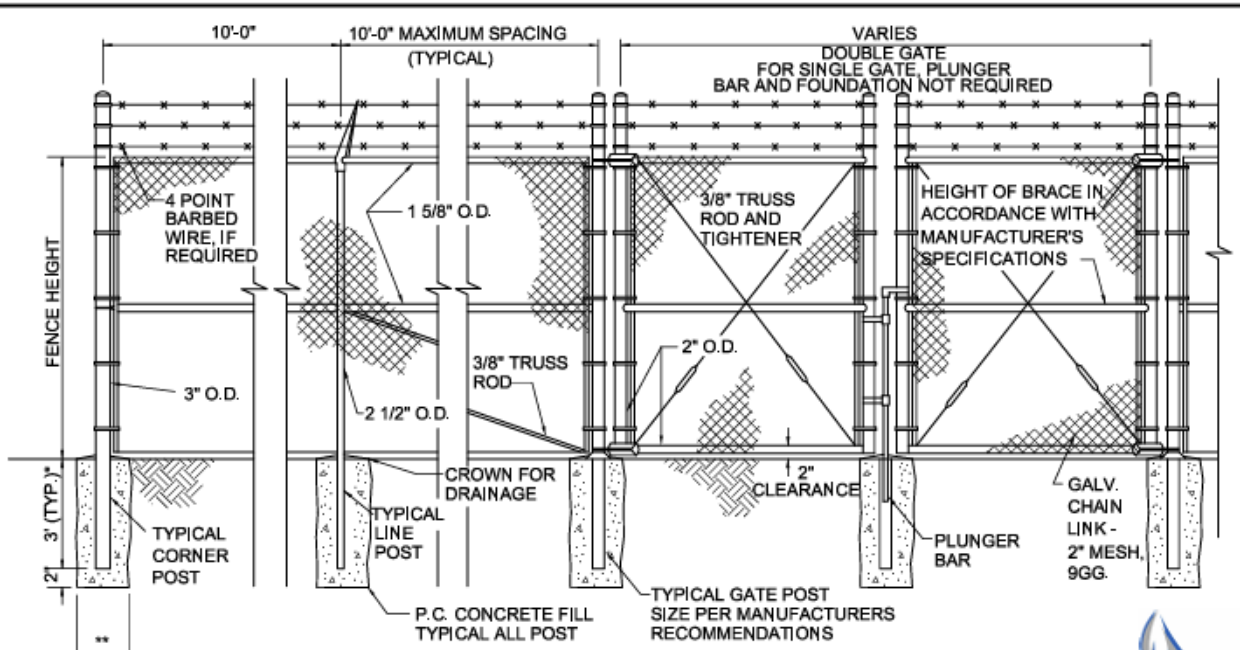
REFERENCE 200, 507

CATEGORY STANDARD CHAIN LINK GATE

DATE 6/16

SHEET No. 1 OF 2

DETAIL No. FE_01



** MIN. DIA.=4xDIA. OF POST. SIZE OF CONCRETE FILL REQUIRED FOR CORNER POSTS, POSTS AND GATE POST SHALL BE PER MANUFACTURERS RECOMMENDATIONS. GATE POST FOUNDATIONS SHALL BE 3'-6" TO BOTTOM OF POST FOR GATES 12' AND WIDER.

TYPICAL CHAIN LINK FENCE & GATE DETAIL

Not To Scale

NOTES:

1. FABRIC SHALL BE TIED TO TOP AND BOTTOM OF FRAME WITH 11 GAGE WIRE (MIN.).
2. ALL FOOTINGS SHALL BE CLASS A3 CONCRETE.
3. BARBED WIRE AND EXTENSION POSTS TO BE PROVIDED ONLY WHEN SHOWN ON DRAWINGS OR INDICATED IN SPECIAL PROVISIONS.
4. UNLESS OTHERWISE INDICATED ON DRAWINGS OR IN SPECIAL PROVISIONS, GATE COMPONENTS ARE TO BE GALVANIZED IN ACCORDANCE WITH SECTION 200.
5. FOR GATES 6'-0" IN WIDTH AND WIDER, ROLLED FORMED STEEL SHALL NOT BE USED.

HAMPTON ROADS PDC PLANNING DISTRICT COMMISSION

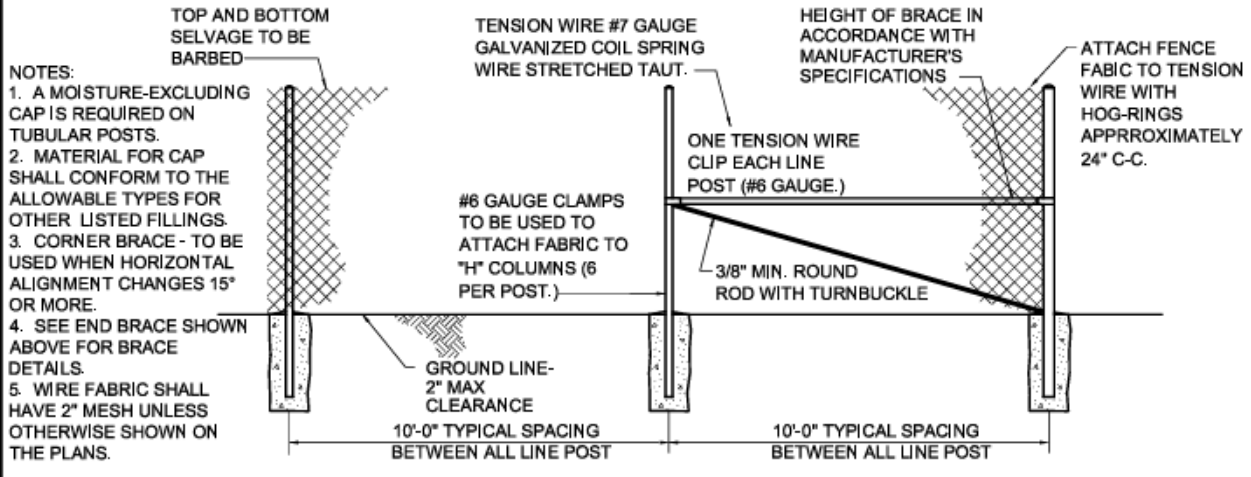
REFERENCE 200, 507

CATEGORY STANDARD CHAIN LINK FENCE

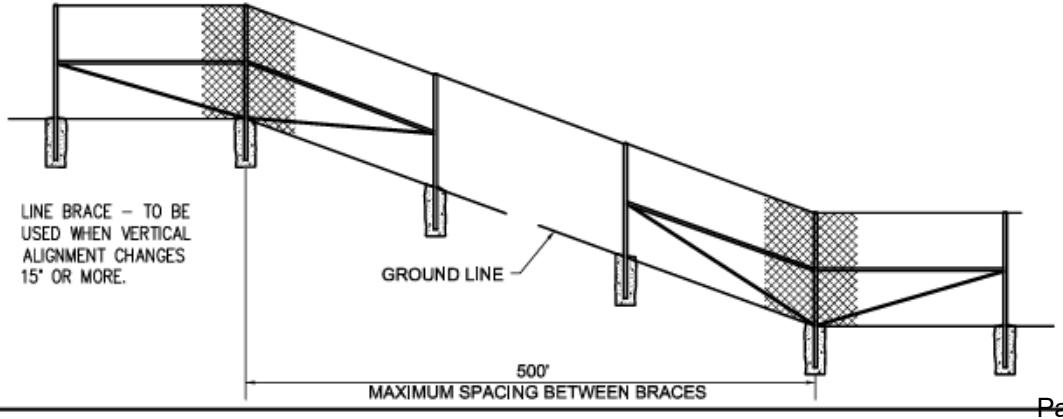
DATE 6/16

SHEET No. 2 OF 2

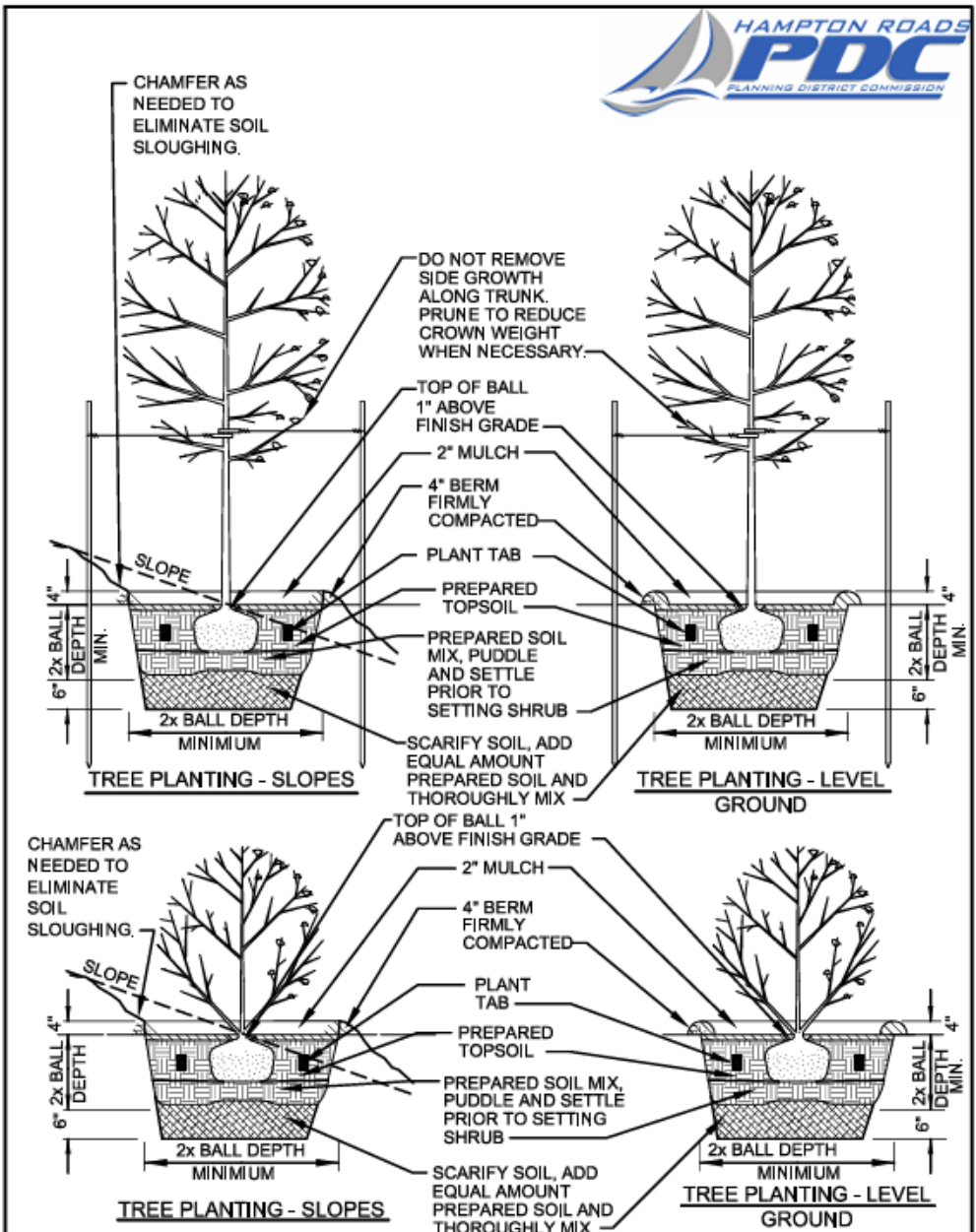
DETAIL No. FE_01



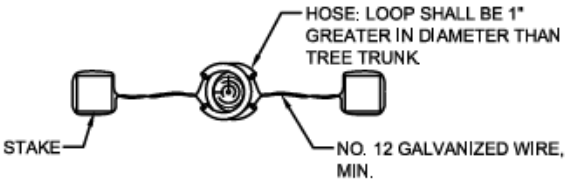
NOTES:
1. A MOISTURE-EXCLUDING CAP IS REQUIRED ON TUBULAR POSTS.
2. MATERIAL FOR CAP SHALL CONFORM TO THE ALLOWABLE TYPES FOR OTHER LISTED FILLINGS.
3. CORNER BRACE - TO BE USED WHEN HORIZONTAL ALIGNMENT CHANGES 15° OR MORE.
4. SEE END BRACE SHOWN ABOVE FOR BRACE DETAILS.
5. WIRE FABRIC SHALL HAVE 2" MESH UNLESS OTHERWISE SHOWN ON THE PLANS.



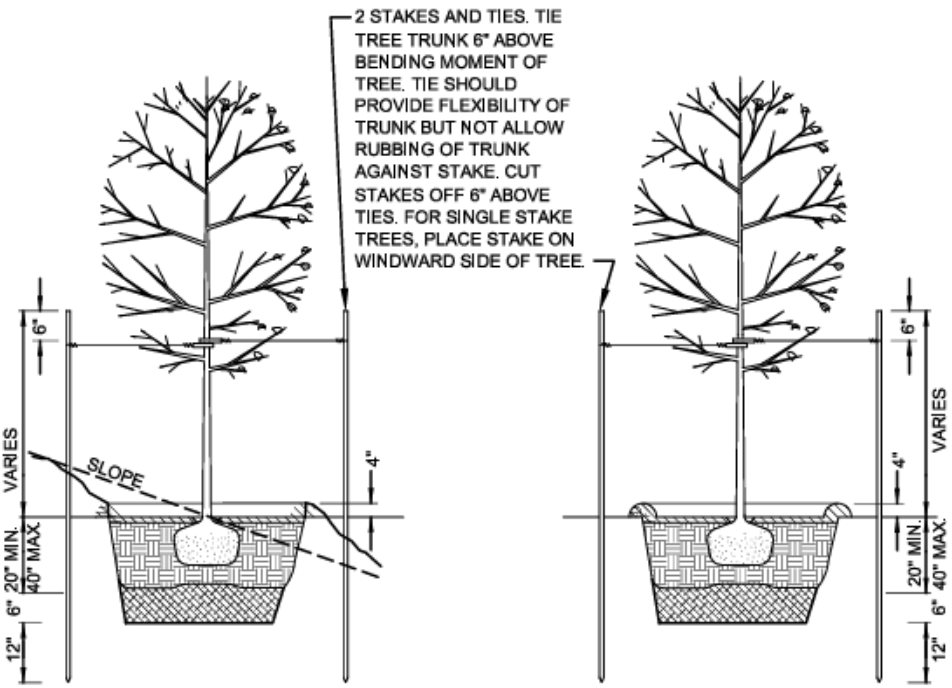
HAMPTON ROADS PDC PLANNING DISTRICT COMMISSION



REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200, 605	TREE AND SHRUB PLANTING	6/16	1 OF 1	



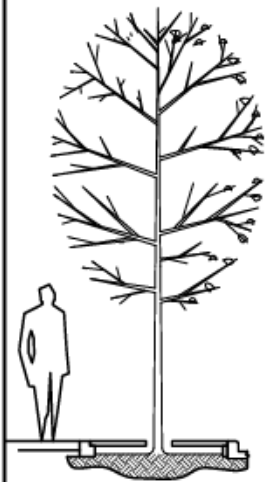
PLAN



TREE STAKING - SLOPES

TREE STAKING - LEVEL GROUND

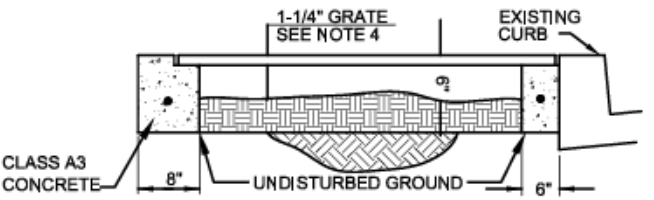
REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200, 605	TREE STAKING	6/16	1 of 1	



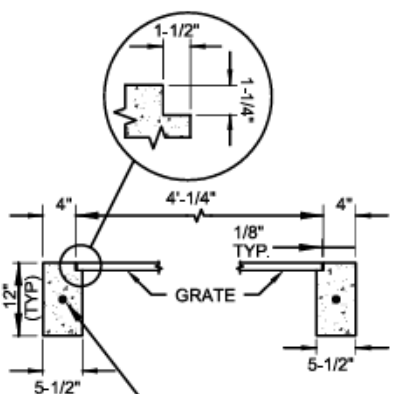
TREE SIZE

NOTES

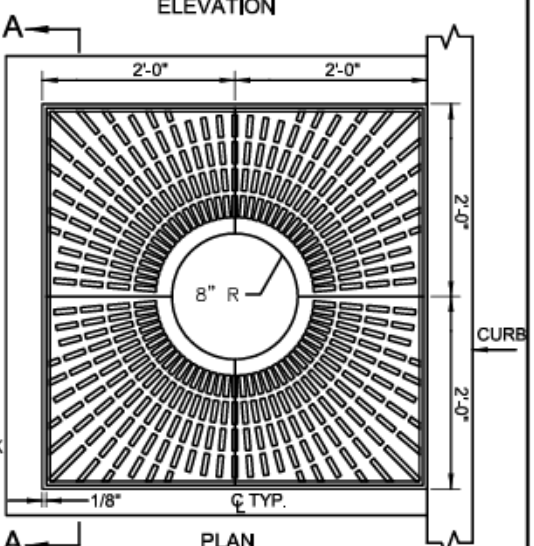
1. THE LOCATION AND SPECIES OF EACH TREE SHALL HAVE PRIOR APPROVAL OF THEOWNER.
2. SIDEWALK TO BE REMOVED FOR EACH TREE PLANTING SHALL BE SAW CUT FULL DEPTH.
3. FILL BELOW GRATE WITH 3/4"x #7 OR #78 CLEAN CRUSHED STONE. IF THE GRATE IS USED FOR SECURITY, ALL BOLTS, NUTS AND WASHERS SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION.
4. GRATE SHALL BE TWO SEPARATE PIECES, 2'x4' IN SIZE, UNLESS OTHERWISE SPECIFIED ON THE PLANS. SLOT OPENINGS IN GRATE DESIGN SHALL HAVE 3/8" MAXIMUM WIDTH. GRATES ARE TO BE DESIGNED IN ACCORDANCE WITH THE LATEST EDITION OF THE UNIFORM BUILDING CODE, WITH A MINIMUM UNIFORM LIVE LOAD OF 250 POUNDS PER SQUARE FOOT IN SIDEWALKS, AND HAVE A METHOD OF SYMMETRICAL INTERIOR EXPANDABLE RINGS/ OPENINGS (DETAILED ON THE PLANS) AS SELECTED AND APPROVED BY THE OWNER.
5. IMMEDIATE NOTIFICATION SHALL BE GIVEN TO THE OWNER OF ANY BELOW GRADE IMPOVEMENTS ENCOUNTERED.



ELEVATION



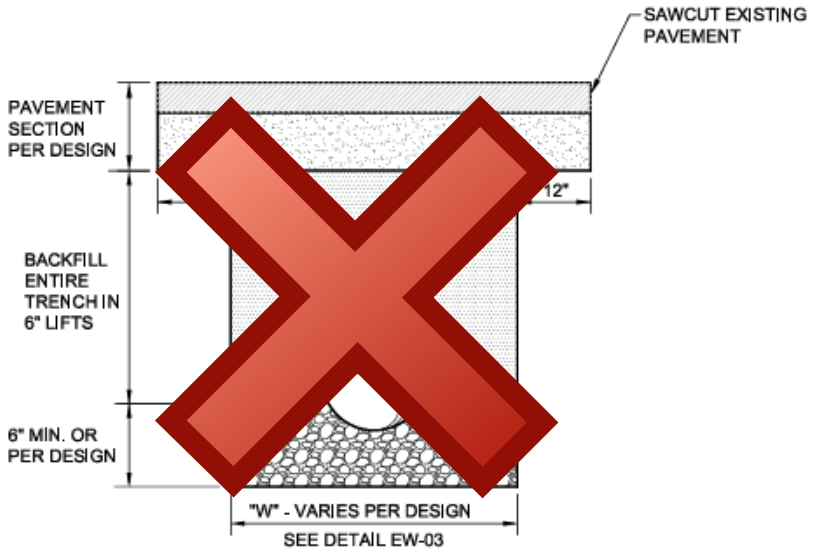
SECTION A-A



PLAN

REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200, 605	STEEL GRATE TREE WELL COVER	6/16	1	6-7

NOT APPROVED FOR USE IN SMITHFIELD
USE LUP-OC



NOTES:

1. BACKFILL TO BE PLACED AND COMPACTED ACCORDING TO SPECIFICATIONS SECTION 303 AND SECTION 305.
2. BACKFILL MATERIAL PER SPECIFICATIONS SECTION 200.
3. TACK COAT SHALL BE APPLIED ON VERTICAL SURFACES WHERE THE NEW PAVEMENT ABUTS EXISTING PAVEMENT.

PAVEMENT PATCHING DETAIL FOR FLEXIBLE PAVEMENT

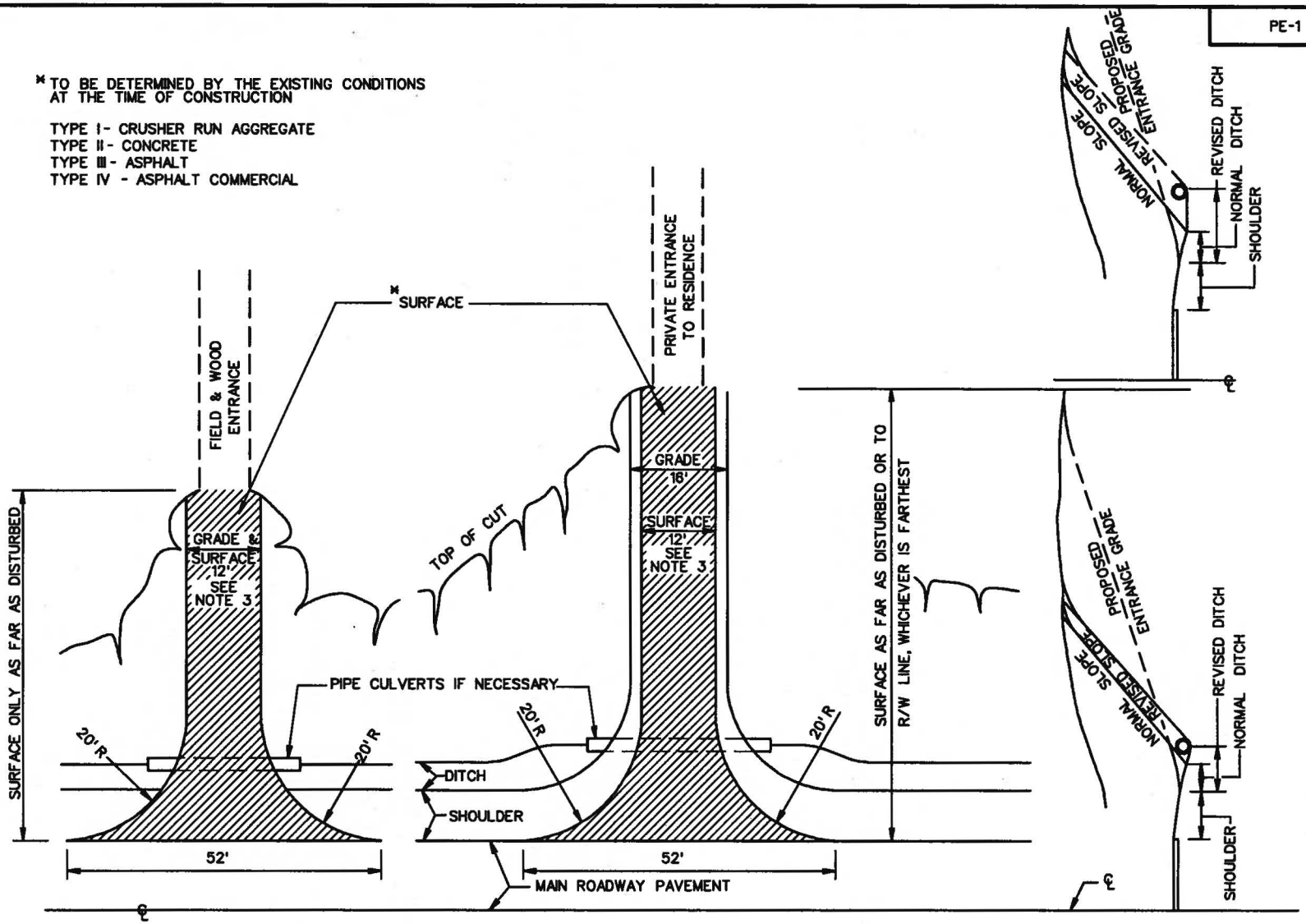
NOT TO SCALE

REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200,303,309,310,313,315	ROADWAY CONSTRUCTION	6/16		

PE-1

* TO BE DETERMINED BY THE EXISTING CONDITIONS AT THE TIME OF CONSTRUCTION

TYPE I - CRUSHER RUN AGGREGATE
TYPE II - CONCRETE
TYPE III - ASPHALT
TYPE IV - ASPHALT COMMERCIAL



ALTERNATE METHODS FOR PLACING PIPES UNDER ENTRANCES

NOTES:

1. ALL ENTRANCE GRADES SHALL START BACK OF THE SHOULDER LINE. IF DRAINAGE IS NECESSARY, THE DITCH MAY BE MOVED BACK TO PROVIDE AT LEAST 9" OF COVER OVER PIPE, AS SHOWN IN THE ALTERNATE METHODS FOR PLACING PIPE UNDER ENTRANCES DIAGRAM.
2. ENTRANCE GRADES ARE TO BE SMOOTHLY TIED INTO THE ROADWAY BY ROUNDING AS NECESSARY.
3. 12' OR EXISTING WIDTH WHICHEVER IS GREATER.
4. LENGTHS OF CULVERTS SHOWN ON ROAD PLANS FOR ENTRANCES ARE APPROXIMATE AND SHALL BE ADJUSTED TO OBTAIN ABOVE ROADWAY WIDTHS.
5. ENTRANCES IN FILL TO BE SAME AS ABOVE EXCEPT LOCATION OF CULVERT (WHEN NECESSARY).

SPECIFICATION REFERENCE	STANDARD PRIVATE ENTRANCES	VDOT ROAD AND BRIDGE STANDARDS
512	VIRGINIA DEPARTMENT OF TRANSPORTATION	REVISION DATE / SHEET 1 OF 1 / 602.02

LAND USE PERMIT
LUP-OC
Open-Cut Pavement Restoration Requirements

Any of the following provisions that may apply, shall apply:

1. The permittee shall be responsible for the restoration of pavement on state maintained highways in accordance with all applicable sections of the VDOT Road and Bridge Specifications, VDOT Road and Bridge Standards and this document.

2. Whenever existing pavement is permitted to be cut, not over one-half of the roadway width shall be disturbed at one time and the first open cut trench section shall be satisfactorily restored to allow for the passage of traffic prior to the second half of the roadway surface can be disturbed.

3. All trench backfill material shall be Select Material Type I having a minimum CBR of 30 and free from any wood, decaying material, asphalt, concrete, ice, frost, large clods, stone or debris.

4. Trench backfill material shall be compacted to a minimum of 95% of the theoretical maximum density at optimum moisture content, as determine by VDOT testing procedures (VTM1), using mechanical tamping throughout the depth of the trench in 6-inch lifts to ensure that the adequate support is provided for the aggregate sub-base layer is adequately supported.

5. For roadways with a bituminous concrete asphalt pavement section the compacted trench backfill shall be capped with 10 inches (10”) of Type I, Size 21-A or 21-B aggregate compacted to 100% of the theoretical maximum density at optimum moisture content covering the entire trench width and a minimum six inch (6”) bench on each side of the excavated trench or as determined by the district administrator’s designee.

6. A bituminous concrete asphalt base course (BM-25) having a minimum thickness of six inches (6”), or matching the existing base course thickness, shall be placed over the benched aggregate sub-base to the bottom elevation of the existing asphalt concrete surface course.

7. All sides of the excavated trench shall be saw-cut trimmed to neat straight lines and a tack coat of RC-250 liquid asphalt applied at a rate of 0.1 gallon per square yard (or as determined by the district administrator’s designee) prior to placing the bituminous concrete asphalt base course (BM-25.0) and/or replacement of the bituminous concrete asphalt surface course (SM-9.5A or SM-9.5D).

8. The existing pavement surface course adjacent to the excavated trench shall be milled and repaved with bituminous concrete asphalt (SM-9.5A or SM-9.5D) having of a minimum thickness of 1-1/2 inches (1.5”). This operation shall cover the entire trench width and extend 12 inches (12”) beyond the edge of the trench on longitudinal open cuts and 25 feet (25’) beyond the trench centerline on perpendicular open cuts, or as determined by the district administrator’s designee.

9. Open cuts in surface treated roadway sections with an aggregate base course shall be replaced with the same layer(s) as roadway sections with a bituminous concrete asphalt pavement structure except the sub-base layer (Type I, Size 21-A or 21-B) may be reduced to six inches (6”) and the bituminous concrete asphalt base layer (BM-25.0) may be reduced to four inches (4”) while maintaining the required six inch (6”) bench on both sides of the excavated trench. The surface course restoration material and thickness shall match the existing surface.

10. Replacement of all bituminous concrete asphalt and surface treated courses shall be rolled with equipment having a manufacturer’s rating of ten (10) tons until the aggregate is keyed into the bitumen. Where rolling is not possible, a mechanical tamper shall be utilized.

11. Full depth aggregate stone may be placed in the trench daily up to maximum length of 500 feet, at which time either temporary or permanent pavement restoration procedures must be implemented.

12. Should the application of the bituminous concrete asphalt surface course be delayed due to adverse weather conditions, the contractor shall provide and maintain a temporary pavement section that is acceptable to the district administrator's designee until such time as the appropriate permanent pavement restoration can be achieved.

13. The permittee shall be responsible for any settlement in the backfill or pavement for a period of two (2) years after the completion date of permit and for the continuing maintenance of the facilities placed within the highway right-of-way.

14. A one-year restoration warranty period may be considered, provided the permittee adheres to the following criteria:

    - The permittee retains the services of a professional engineer (or certified technician under the direction of the professional engineer) to observe the placement of all fill embankments, pavement, and storm sewer and utility trench backfill.
    - The professional engineer (or certified technician under the direction of the professional engineer) performs any required inspection and testing in accordance with all applicable sections of VDOT's Road and Bridge Specifications.
    - The professional engineer submits all testing reports for review and approval, and provides written certification that all restoration procedures have been completed in accordance with all applicable sections of VDOT's Road and Bridge Specifications prior to completion of the work authorized by the permit.

15. The district administrator's designee may request and review the backfill compaction test results and/or authorize an inspector to monitor the trench backfill and compaction operations.

16. The use of steel plates to provide a temporary riding surface will not be allowed between November 1 and April 1. The use of steel plates between April 2 and October 31 shall be in accordance with VDOT standards and specifications.

17. Traffic shall be maintained at all times in accordance with the Virginia Work Area Protection Manual and a VDOT approved Maintenance of Traffic (MOT) plan.

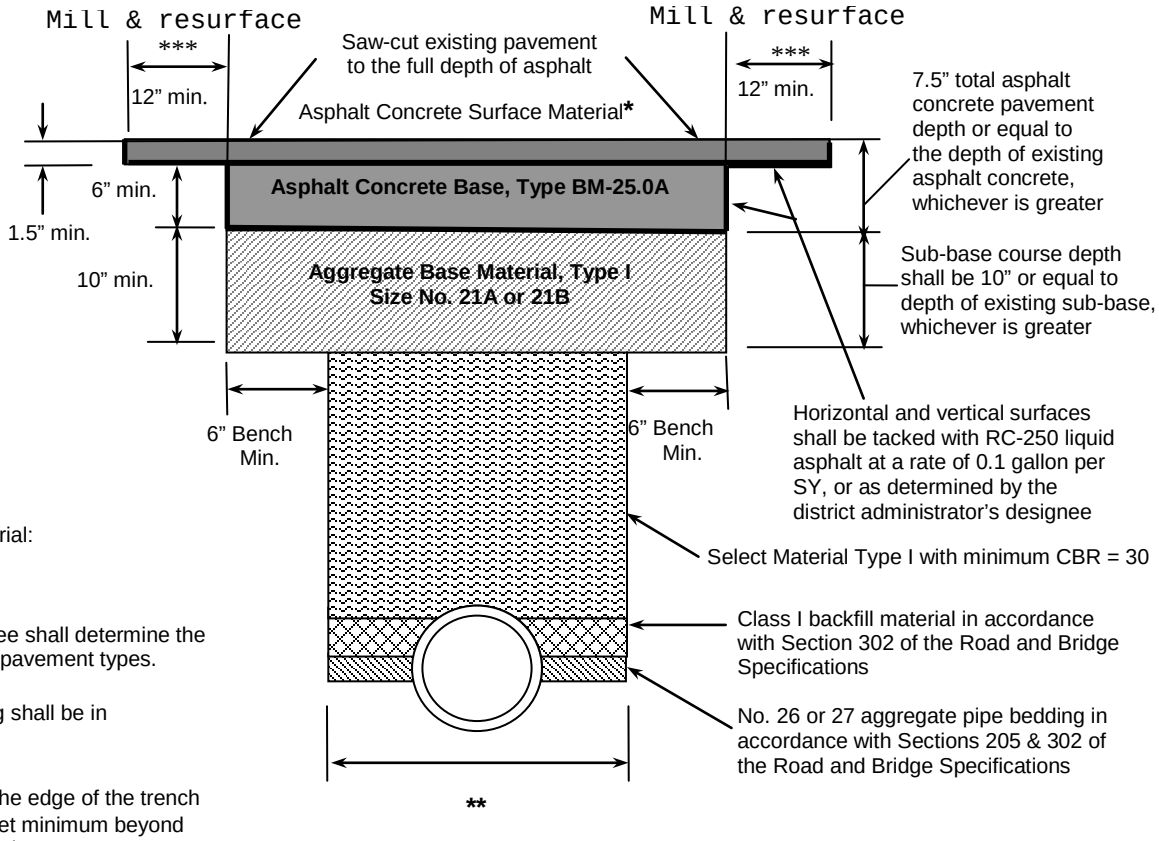
18. The permittee shall notify the district administrator's designee a minimum of 72 hours prior to initiating any pavement open cutting operations.

19. The trench to be backfilled shall be made as dry as practicable at the time of backfilling by pumping, bailing, draining, or other approved dewatering method.

20. All asphalt pavement restoration activities shall be in accordance with the Asphalt Pavement Restoration Detail for Open Cut Utility Installations contained herein.

LAND USE PERMIT
LUP-OC
Open-Cut Pavement Restoration Requirements

Asphalt Pavement Restoration Detail for Open Cut Utility Installations



NOTES:

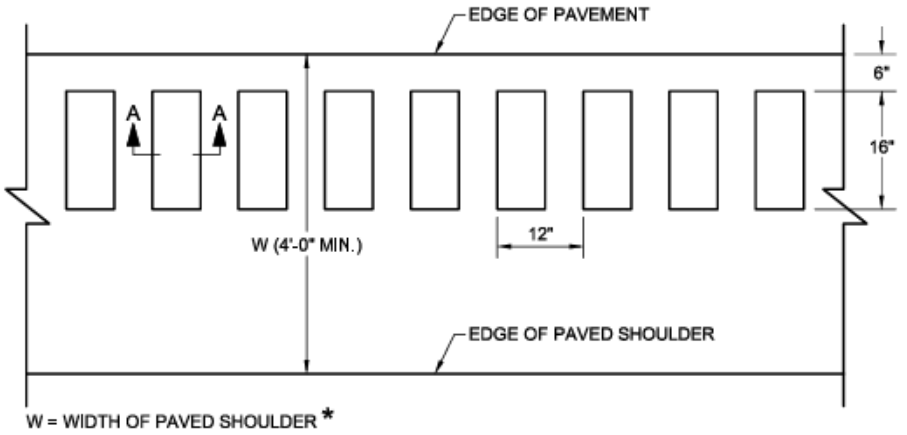
* Asphalt Concrete Surface Material:
SM-9.5A for ADT < 10,000
SM-9.5D for ADT > 10,000

The district administrator's designee shall determine the restoration requirements for other pavement types.

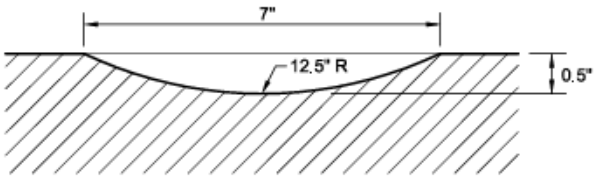
** Trench width and pipe bedding shall be in accordance with VDOT Std. PB-1

*** 12 inches minimum beyond the edge of the trench on longitudinal open cuts, or 25 feet minimum beyond the trench centerline on perpendicular open cuts, or as determined by the district administrator's designee.

Date: August 27, 2014



PLAN VIEW



SECTION A-A

NOTES:

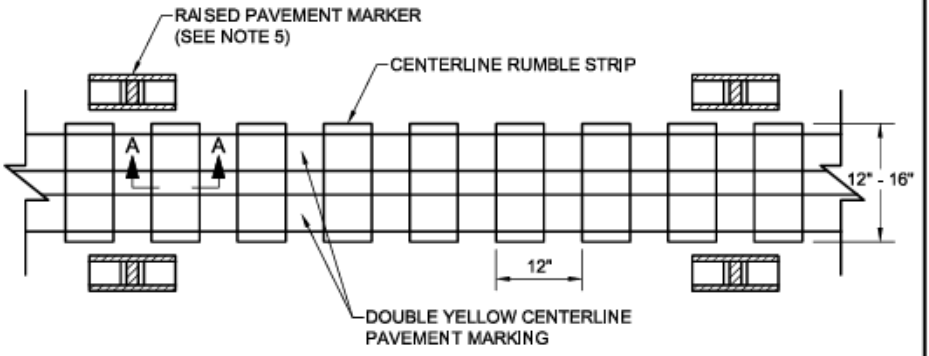
1. RUMBLE STRIPS SHALL BE INSTALLED CONTINUOUSLY AS DIRECTED BY THE OWNER.
2. RUMBLE STRIPS SHALL NOT BE INSTALLED WITHIN LIMITS OF BRIDGE DRAINAGE APRONS OR SPECIAL DESIGN SHOULDER SLOT INLETS.
3. RUMBLE STRIPS SHALL BE INSTALLED ON MAINLINE SHOULDERS ONLY.

* WHERE BICYCLES ARE NOT PROHIBITED, THE MINIMUM WIDTH OF THE OUTSIDE PAVED SHOULDER SHALL BE 8 FT.

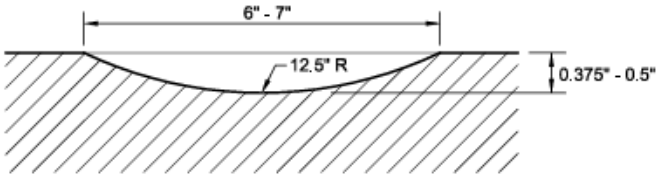
CONTINUOUS SHOULDER RUMBLE STRIPS

NOT TO SCALE

REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200, 315A	ROADWAY CONSTRUCTION	6/16	1 of 1	



PLAN VIEW



SECTION A-A

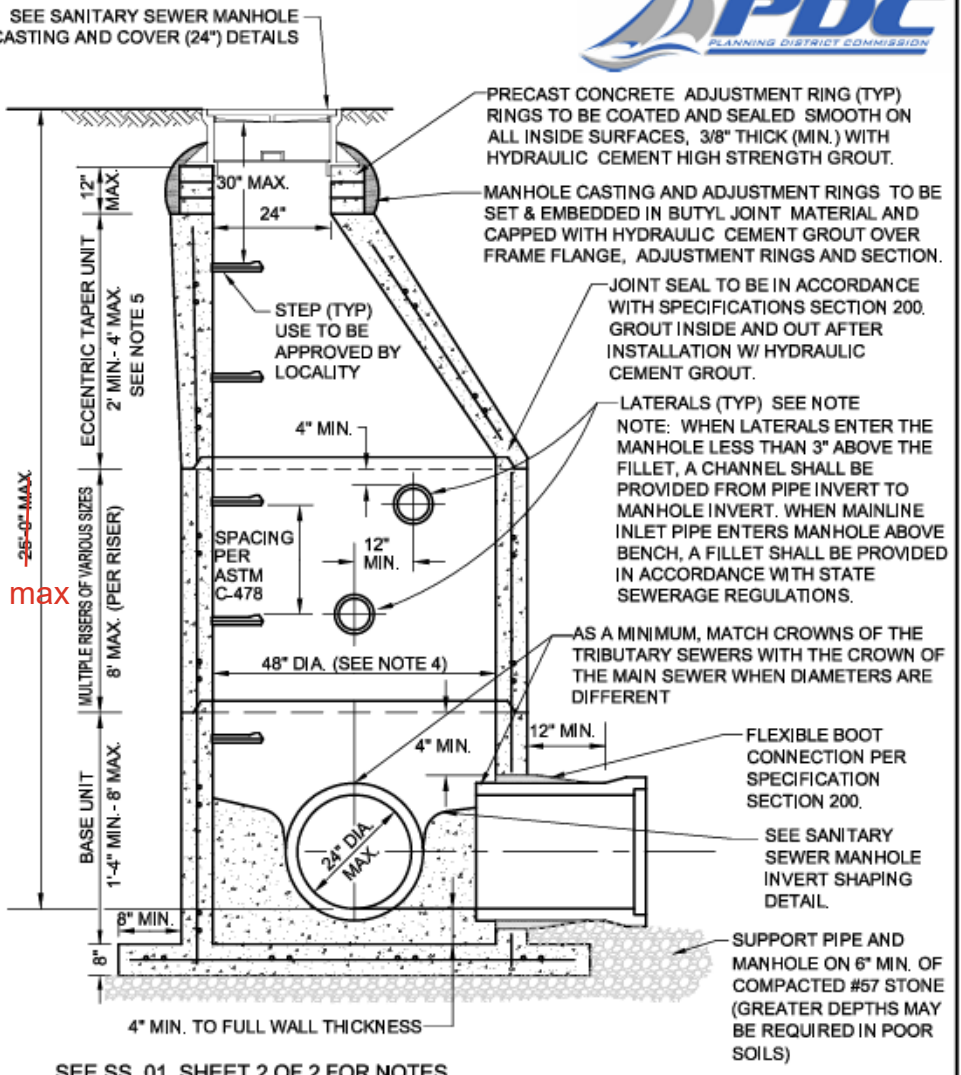
NOTES:

1. CENTERLINE RUMBLE STRIPS SHALL NOT BE INSTALLED WITHIN THE LIMITS OF BRIDGES.
2. CENTERLINE RUMBLE STRIPS SHALL NOT BE INSTALLED ON SUBDIVISION STREETS OR IN NARROW UNMARKED ROAD SECTIONS WITHOUT PAVEMENT MARKINGS.
3. CENTERLINE RUMBLE STRIPS SHALL NOT BE INSTALLED WITHIN THE LIMITS OF CENTER TWO-WAY TURN LANES.
4. CENTERLINE RUMBLE STRIPS SHALL NOT BE INSTALLED IN PASSING ZONES EXCEPT AS DIRECTED BY THE TRAFFIC ENGINEER. THE DEPTH OF CENTERLINE RUMBLE STRIPS IN PASSING ZONES SHALL BE ⅜".
5. USE OF RAISED PAVEMENT MARKERS IS OPTIONAL. SEE VDOT STANDARD PM-9 FOR DETAILS ON RAISED PAVEMENT MARKER PLACEMENT.

CENTERLINE RUMBLE STRIPS

NOT TO SCALE

REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200, 315A	ROADWAY CONSTRUCTION	6/16	1 of 1	25



SEE SS_01, SHEET 2 OF 2 FOR NOTES.

STANDARD PRECAST CONCRETE MANHOLE W/ EXTENDED MONOLITHIC BASE

NOT TO SCALE

REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200,802	SANITARY SYSTEMS	6/16	1	

HAMPTON ROADS PDC
PLANNING DISTRICT COMMISSION

NOTES:

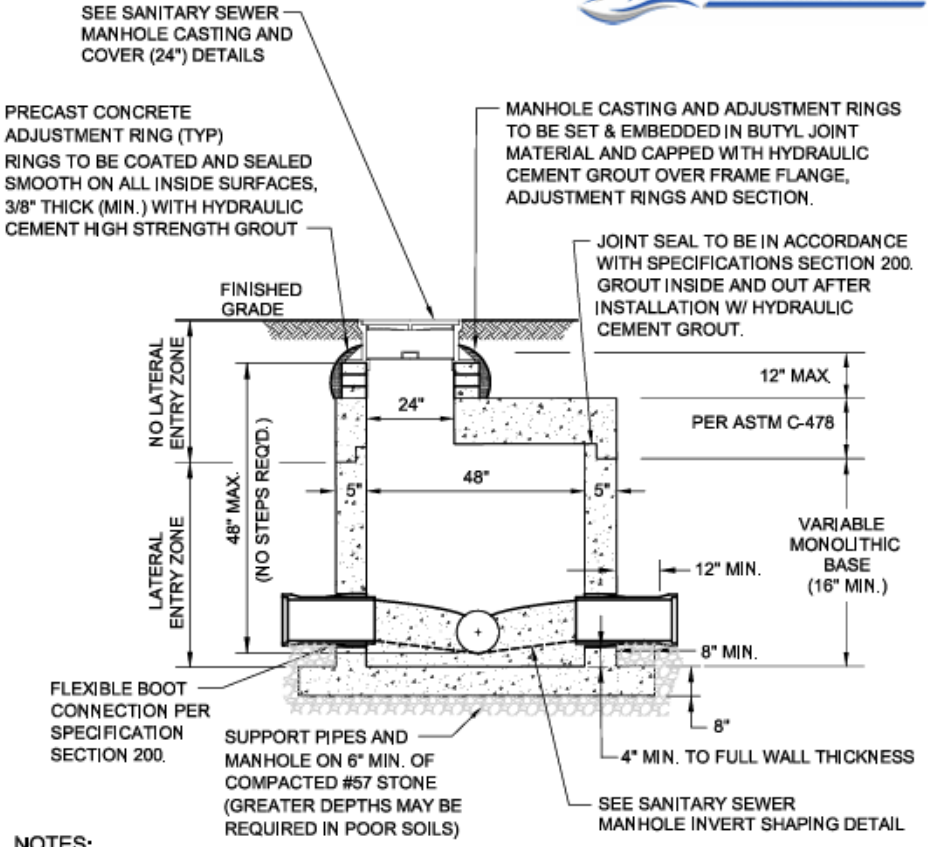
1. PRECAST CONCRETE MANHOLE TO BE IN COMPLIANCE WITH ASTM C-478.
2. WALL THICKNESS TO BE 5" MINIMUM FOR 48" INSIDE DIAMETER MANHOLES AND 6" MINIMUM FOR 60" INSIDE DIAMETER MANHOLES.
3. INSIDE DIAMETER OF MANHOLE MUST INCREASE TO 60" WHEN MANHOLE DEPTH IS GREATER THAN 12 FEET. 60" DIAMETER TO BE CONTINUOUS UP TO CONE SECTION.
4. MAXIMUM OF FOUR LATERALS PER MANHOLE.
5. IF LATERALS ARE TO ENTER INTO THE ECCENTRIC TAPER UNIT, THEY MUST ENTER ON THE NON-TAPERED SIDE.

13' max depth for sewer

STANDARD PRECAST CONCRETE MANHOLE W/ EXTENDED MONOLITHIC BASE

NOT TO SCALE

REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200,802	SANITARY SYSTEMS	6/16	2 of 2	SS-7



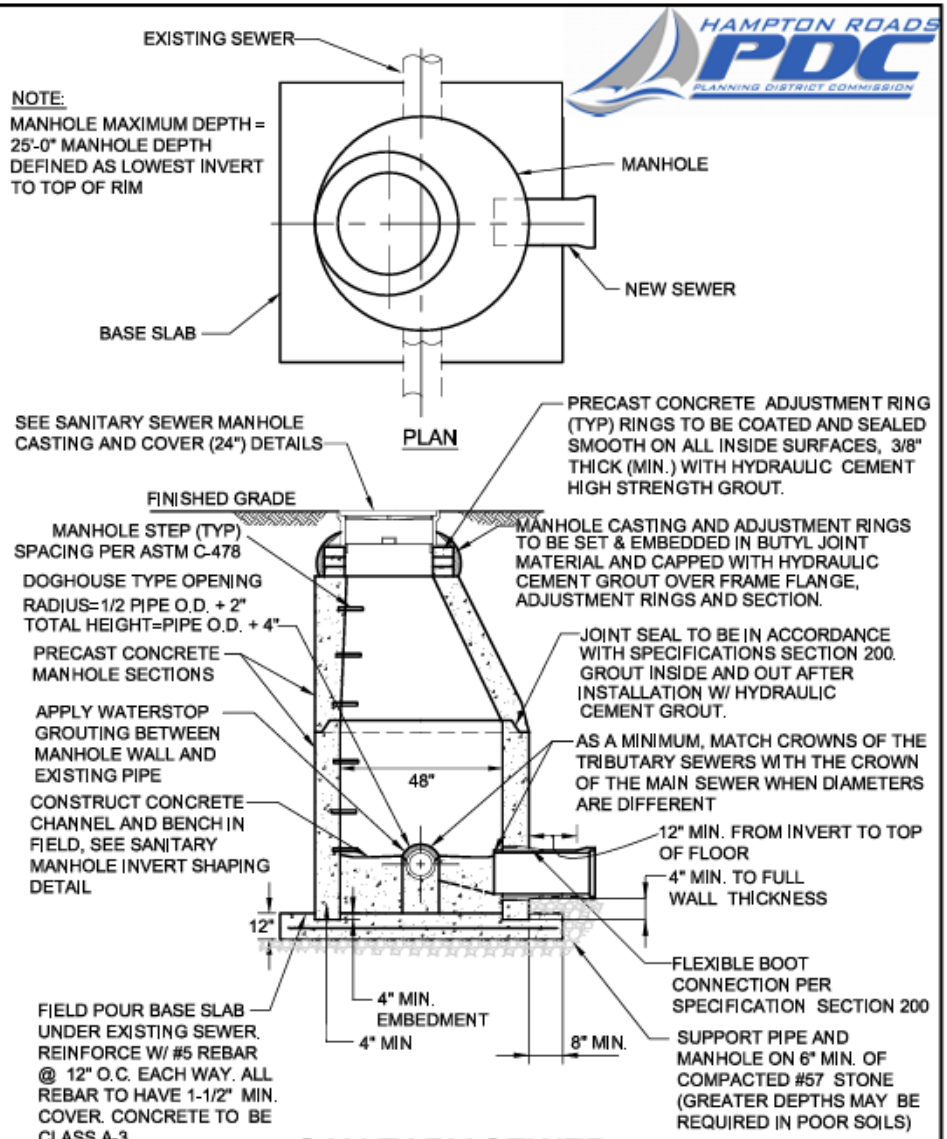
NOTES:

1. FLAT TOP CAN BE REPLACED W/ 1'-4" ECCENTRIC SHALLOW CONE IF APPROVED BY LOCALITY.
2. PRECAST MANHOLE TO BE IN COMPLIANCE WITH ASTM C-478.

PRECAST CONCRETE SHALLOW MANHOLE

NOT TO SCALE

REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200,802	SANITARY SYSTEMS	6/16	PAGE 1 OF 2	ST-08



SANITARY SEWER STRADDLE MANHOLE

NOT TO SCALE

REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200,802	SANITARY SYSTEMS	6/16	1 of 1	STD_

HAMPTON ROADS PDC
PLANNING DISTRICT COMMISSION

NOTES:

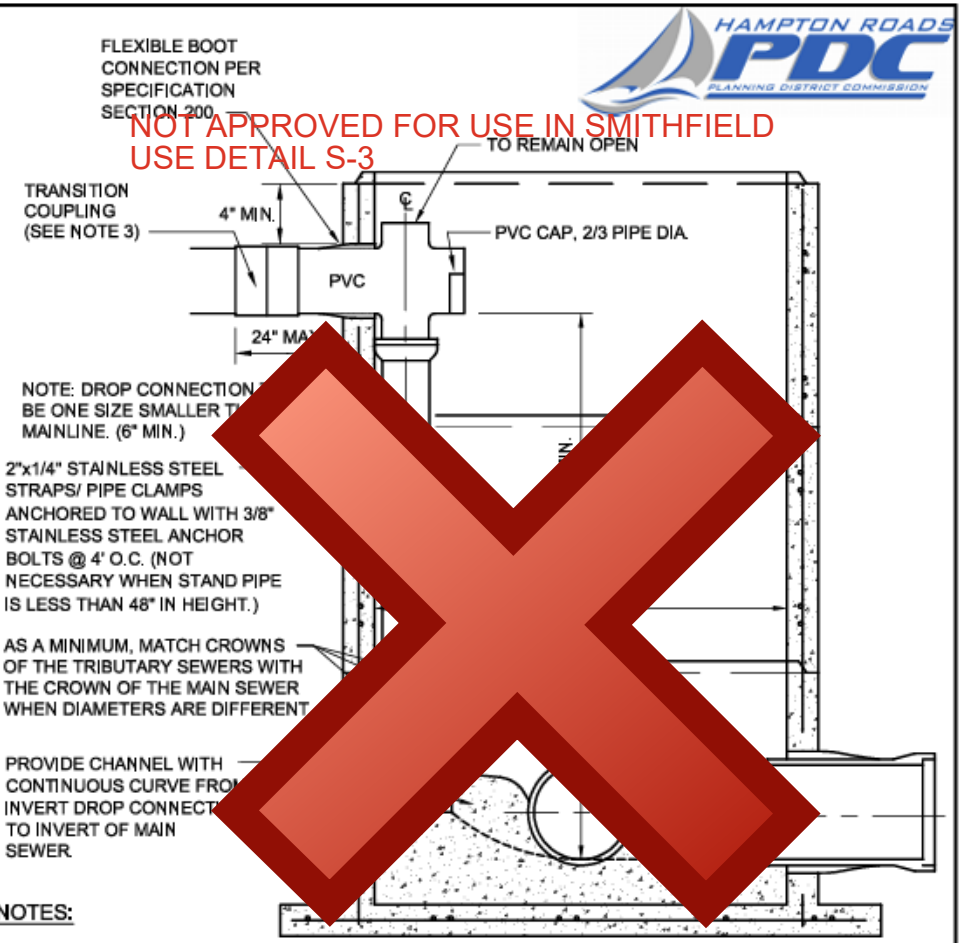
1. PRECAST MANHOLE TO BE IN COMPLIANCE WITH ASTM C-478.
2. WALL THICKNESS TO BE 5" MINIMUM FOR 48" INSIDE DIAMETER MANHOLES AND 6" MINIMUM FOR 60" INSIDE DIAMETER MANHOLES.
3. INSIDE DIAMETER OF MANHOLE MUST INCREASE TO 60" WHEN MANHOLE DEPTH IS GREATER THAN 12 FEET. 60 INCH DIAMETER TO BE CONTINUOUS UP TO CONE SECTION.

13' max depth for sewer

SANITARY SEWER STRADDLE MANHOLE

NOT TO SCALE

REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200,802	SANITARY SYSTEMS	6/16	2 OF 2	STD-4



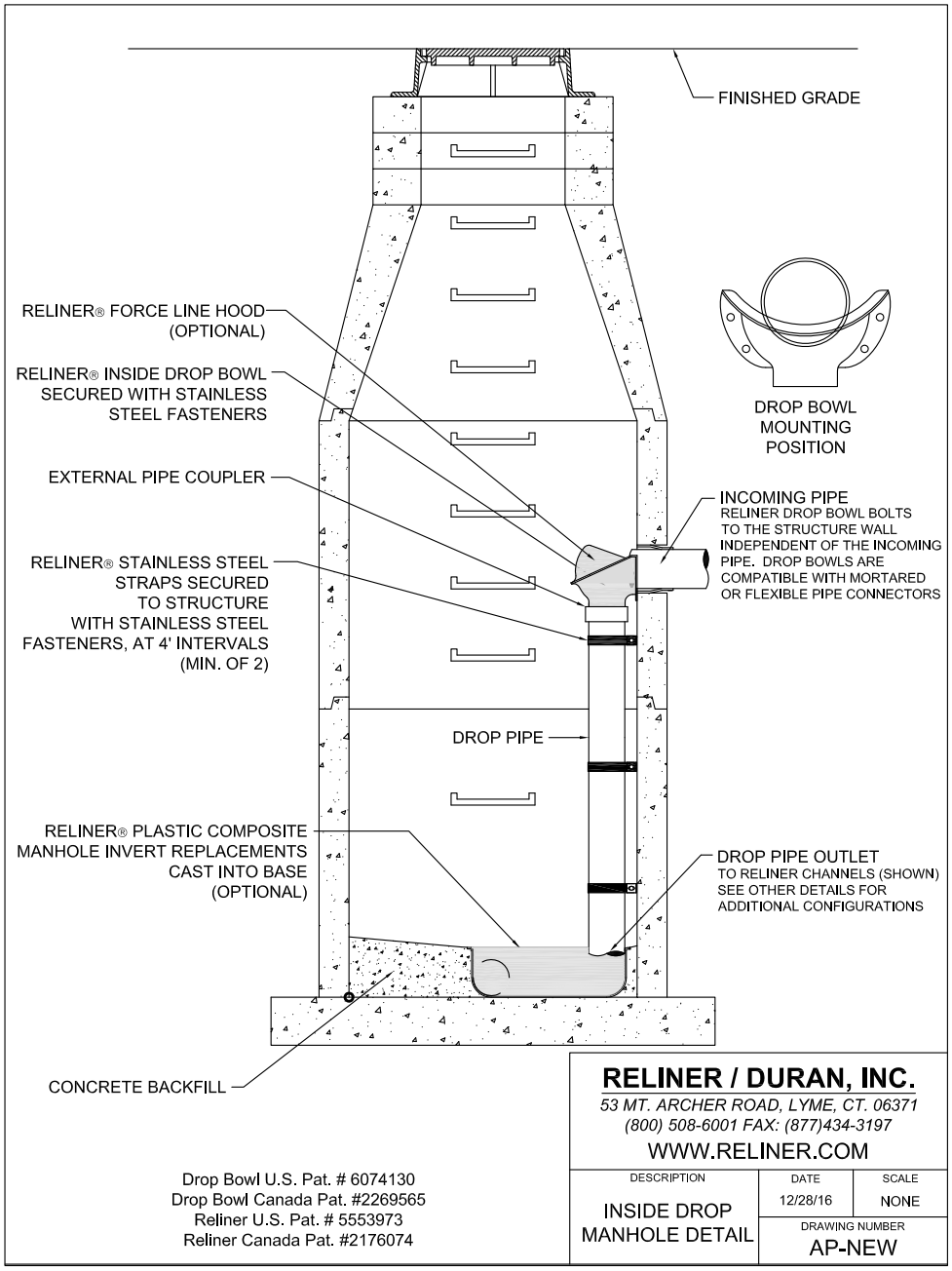
NOTES:

1. INTERIOR DROP TO BE USED IN NEW MANHOLES.
2. SOLVENT WELD JOINTS ON ALL INSIDE PIPING AND FITTINGS.
3. MAINLINE TO PVC DROP CONNECTION SHALL BE MADE WITH APPROVED COUPLING.
4. LOCATION OF DROP CONNECTION SHALL NOT CONFLICT WITH THE LOCATION OF THE MANHOLE STEPS.
5. BOTTOM 90 DEGREE BEND TO BE AT 45 DEGREES WITH RESPECT TO THE DOWNSTREAM FLOW.
6. PRECAST CONCRETE MANHOLE TO BE IN COMPLIANCE WITH ASTM C-478.
7. INTERIOR DROP SHALL BE NO MORE THAN 6 - INCHES FROM MANHOLE WALL.
8. ALL PVC PIPE AND FITTINGS SHALL BE SCHEDULE 40.

SANITARY SEWER INTERIOR DROP MANHOLE

NOT TO SCALE

REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200,802	SANITARY SYSTEMS	6/16	1 of 1	S-7



RELINER / DURAN, INC.
53 MT. ARCHER ROAD, LYME, CT. 06371
(800) 508-6001 FAX: (877)434-3197
WWW.RELINER.COM

Drop Bowl U.S. Pat. # 6074130
Drop Bowl Canada Pat. #2269565
Reliner U.S. Pat. # 5553973
Reliner Canada Pat. #2176074

DESCRIPTION	DATE	SCALE
INSIDE DROP MANHOLE DETAIL	12/28/16	NONE
	DRAWING NUMBER	AP-NEW

NOTES:

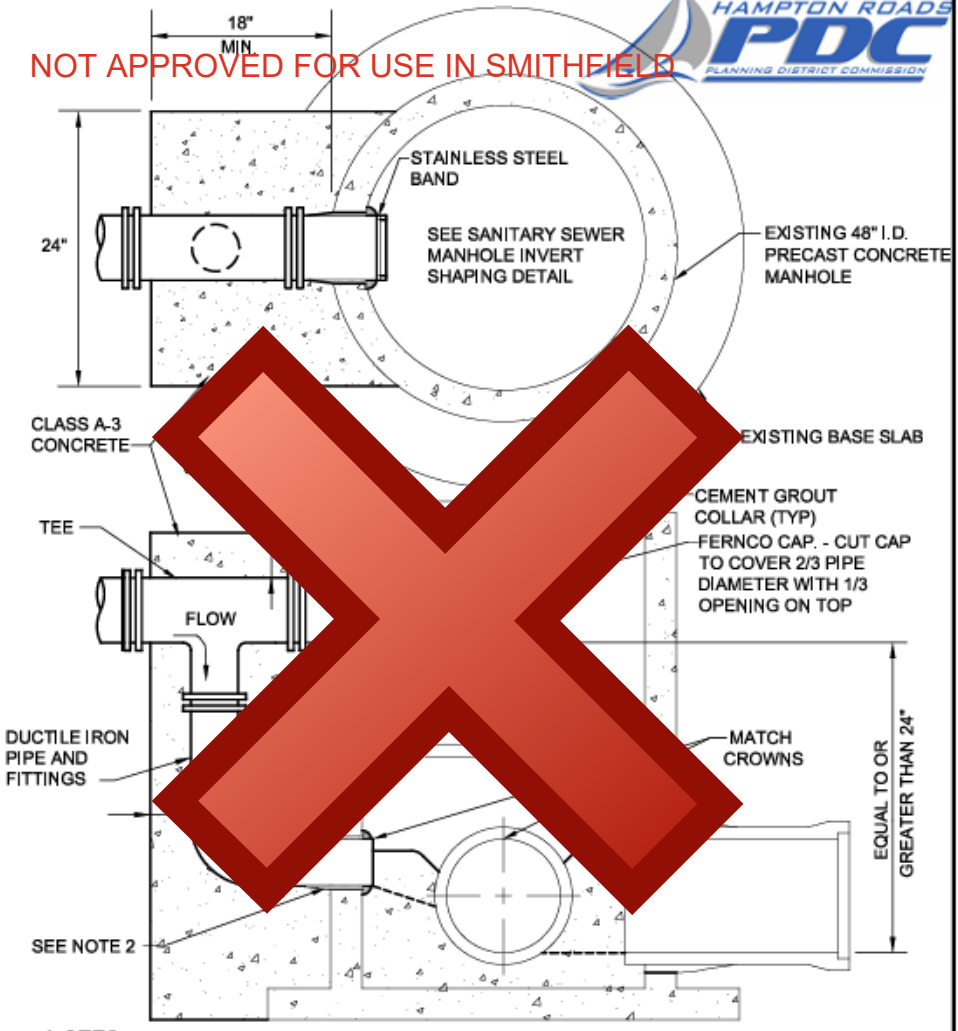
1. INTERIOR DROP TO BE USED IN NEW AND EXISTING MANHOLES.
2. SOLVENT WELD JOINTS ON ALL PIPING AND FITTINGS
3. MAINLINE TO PVC DROP CONNECTION SHALL BE MADE WITH APPROVED COUPLING.
4. LOCATION OF DROP CONNECTION SHALL NOT CONFLICT WITH THE LOCATION OF THE MANHOLE STEPS.
5. BOTTOM BEND TO BE AT 45 DEGREES WITH RESPECT TO THE DOWNSTREAM FLOW.
6. PRECAST CONCRETE MANHOLE TO BE IN COMPLIANCE WITH ASTM C-478.
7. INTERIOR DROP SHALL BE NO MORE THAN 6 INCHES FROM MANHOLE WALL.
8. ALL PVC PIPE AND FITTINGS SHALL BE SCHEDULE 40.
9. RIM AND LID SHALL BE CENTERED OVER THE MANHOLE
10. INSIDE DROP PIPE SHALL EXTEND TO INVERT AND TURN TOWARD THE DIRECTION OF FLOW

TOWN OF SMITHFIELD
DESIGN AND CONSTRUCTION STANDARDS

SANITARY SEWER INTERIOR DROP MANHOLE

DWG #: S-3	SCALE: NTS
	AUG 2017

NOT APPROVED FOR USE IN SMITHFIELD



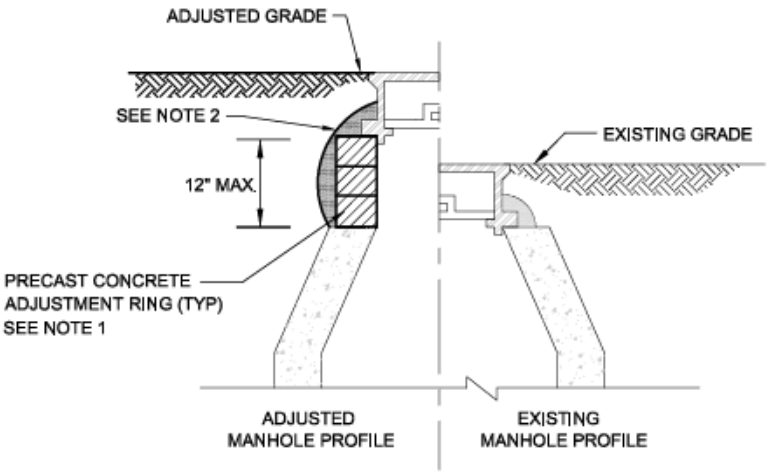
NOTES:

1. PLACEMENT OF DROP NOT TO CONFLICT WITH MANHOLE STEPS.
2. PROVIDE FLEXIBLE BOOT CONNECTION PER SPECIFICATION SECTION 200.

SANITARY SEWER EXTERIOR DROP MANHOLE (FOR EXISTING MANHOLE ONLY)

NOT TO SCALE

REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200,802	SANITARY SYSTEMS	6/16	PDC	5793



NOTES:

1. RINGS TO BE COATED AND SEALED SMOOTH ON ALL INSIDE SURFACES, 3/8" THICK (MIN.) WITH HYDRAULIC CEMENT HIGH STRENGTH GROUT.
2. MANHOLE CASTING AND ADJUSTMENT RINGS TO BE SET AND IMBEDDED IN BUTYL JOINT MATERIAL AND CAPPED WITH HYDRAULIC CEMENT GROUT OVER FRAME FLANGE, ADJUSTMENT RINGS AND SECTION.
3. FOUNDATION, FOOTING PAD, LOWEST BARREL SECTION OF MANHOLE AND PIPES SHALL REMAIN UNDISTURBED.

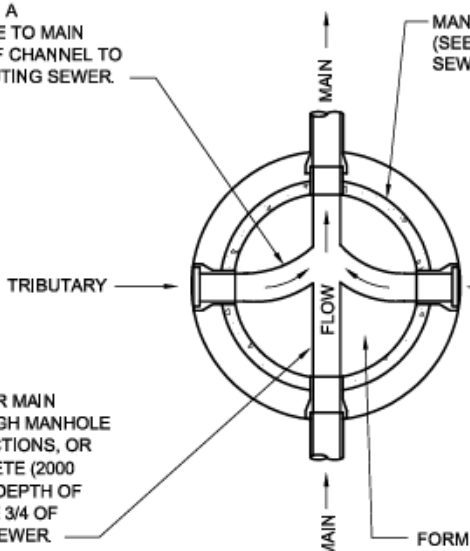
SANITARY SEWER MANHOLE ADJUSTMENT

NOT TO SCALE

REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200,802	SANITARY SYSTEMS	6/16	Page 640 of 736	SS_38

FORM TRIBUTARY CHANNELS OF CONCRETE (2000 P.S.I.) (TROWEL FINISH) ON A CONTINUOUS CURVE TO MAIN CHANNEL. DEPTH OF CHANNEL TO BE 3/4 OF CONTRIBUTING SEWER.

MANHOLE WALL (SEE ASSOCIATED SANITARY SEWER MANHOLE DETAILS)



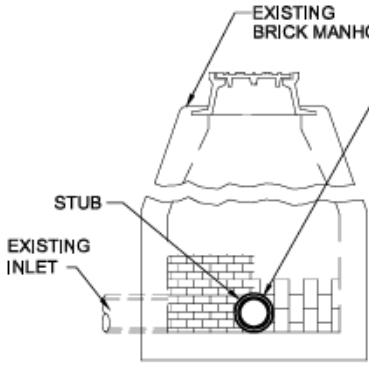
INVERT OF SEWER MAIN CARRIED THROUGH MANHOLE W/SPLIT PIPE SECTIONS, OR FORMED CONCRETE (2000 P.S.I.) CHANNEL. DEPTH OF CHANNELS TO BE 3/4 OF CONTRIBUTING SEWER.

FORM BENCHES IN ACCORDANCE WITH SPECIFICATIONS SECTION 200. SLOPE BENCH TO CHANNEL @ 2":12". COAT BENCH WITH APPLICATION OF AN APPROVED COATING, IF SPECIFIED.

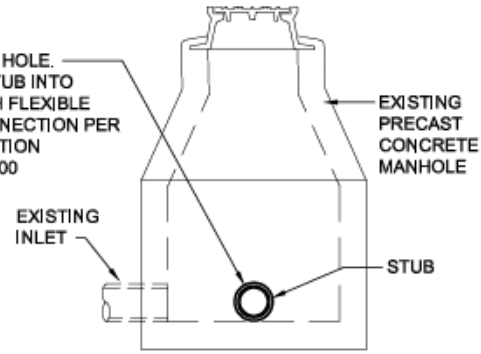
SANITARY SEWER
MANHOLE INVERT SHAPING

NOT TO SCALE

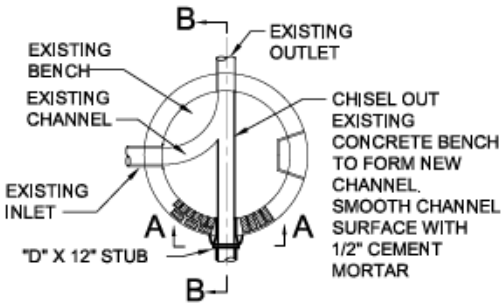
REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200,802	SANITARY SYSTEMS	6/16	1 of 1	



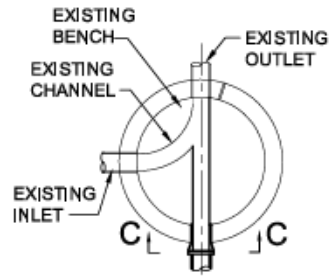
SECTION A-A



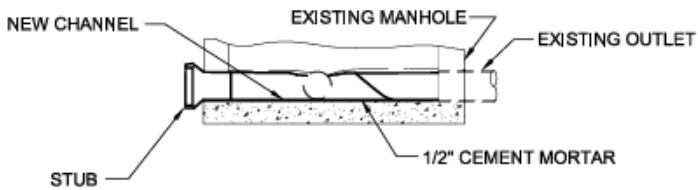
SECTION C-C



BASE PLAN OF
BRICK MANHOLE



BASE PLAN OF
PRE-CAST MANHOLE

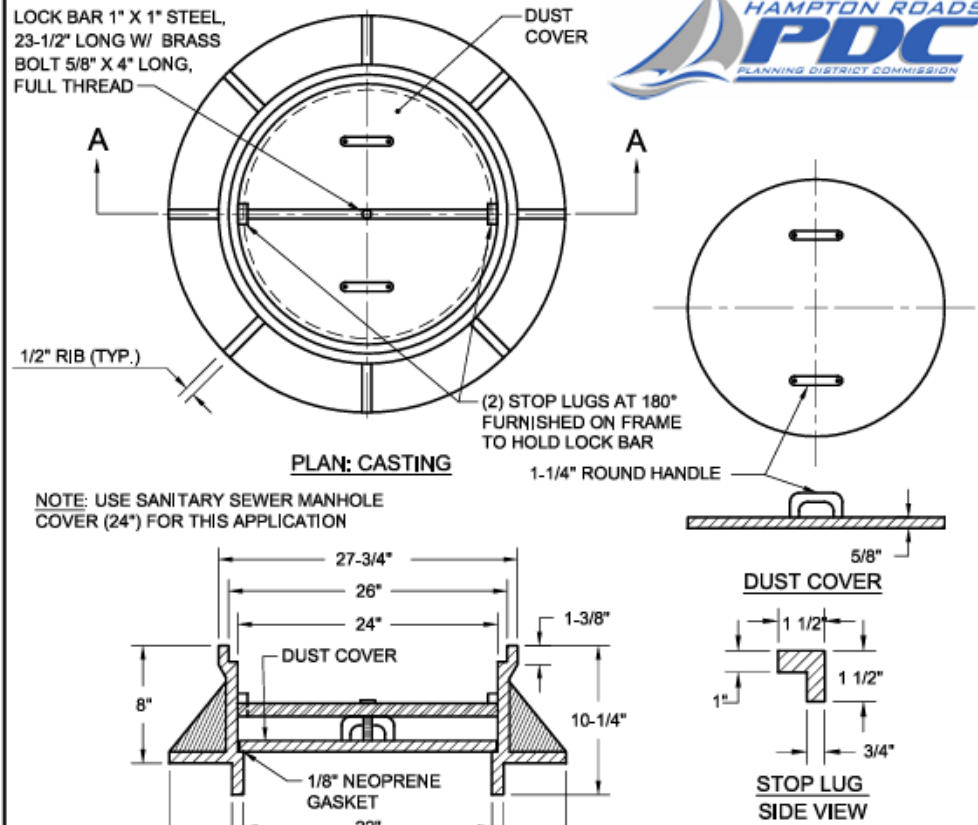


SECTION B-B

CONNECTION INTO EXISTING MANHOLES

NOT TO SCALE

REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200,802	SANITARY SYSTEMS	6/16	Page 642 of 738	9S_38



NOTE:
FOR NON-WATERTIGHT APPLICATIONS DELETE THE LOCK BAR AND NEOPRENE GASKET

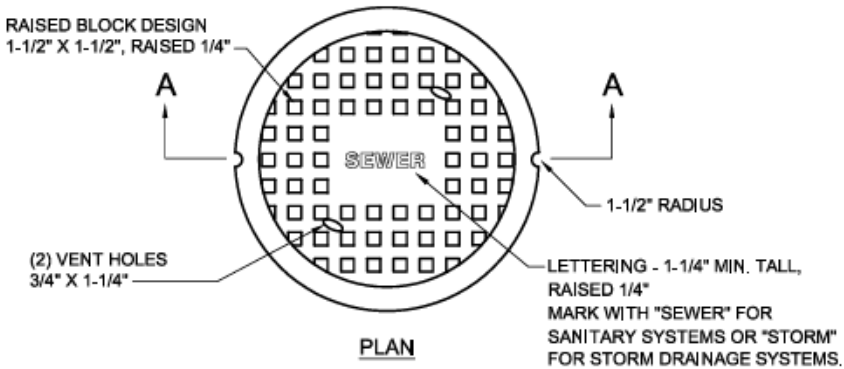
NOTES:

1. MANHOLE CASTING TO BE SUPPLIED BY CAPITAL FOUNDRY OF VIRGINIA, INC. OR APPROVED EQUAL.
2. ALL GRAY IRON CASTINGS SHALL CONFORM TO LATEST EDITION OF ASTM A-48, CLASS 30 AND SHALL BE OF UNIFORM QUALITY.
3. ALL CASTING DIMENSIONS SHALL HAVE A TOLERANCE OF 1/8"±.
4. ALL CASTINGS SHALL BE CLEANED BY SHOT BLASTING AND HAND CHIPPING UTILIZING STANDARD INDUSTRY PRACTICES PRIOR TO SHOP APPLICATION OF ASPHALTIC COATING, BY DIPPING.

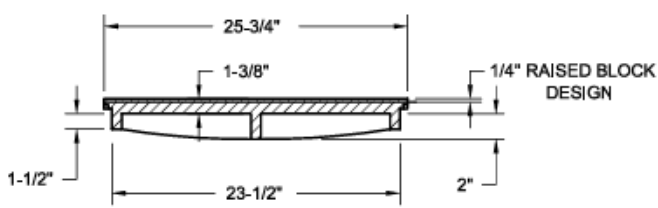
SANITARY SEWER MANHOLE CASTING (24")

NOT TO SCALE

REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200,802	SANITARY SYSTEMS	6/16	PAGE 1 OF 1	ST-8



PLAN



SECTION A-A

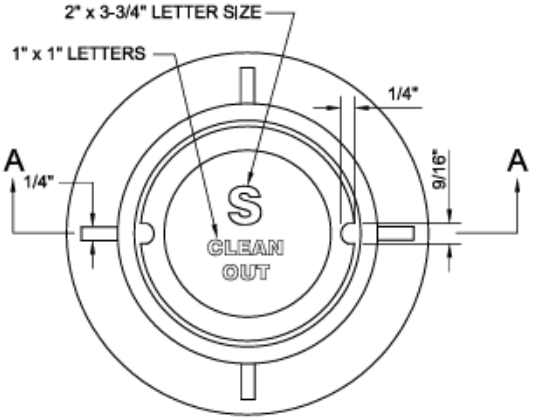
NOTES:

1. MANHOLE COVER TO BE SUPPLIED BY CAPITAL FOUNDRY OF VIRGINIA, INC., OR APPROVED EQUAL.
2. ALL GRAY IRON CASTINGS SHALL CONFORM TO LATEST EDITION OF ASTM A-48, CLASS 30 AND SHALL BE OF UNIFORM QUALITY.
3. ALL CASTING DIMENSIONS SHALL HAVE A TOLERANCE OF 1/8"±.
4. ALL CASTINGS SHALL BE CLEANED BY SHOT BLASTING AND HAND CHIPPING UTILIZING STANDARD INDUSTRY PRACTICES PRIOR TO SHOP APPLICATION OF ASPHALTIC COATING, BY DIPPING.

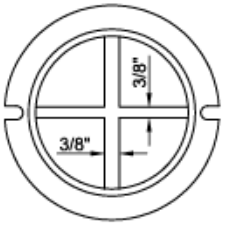
SANITARY SEWER MANHOLE COVER (24")

NOT TO SCALE

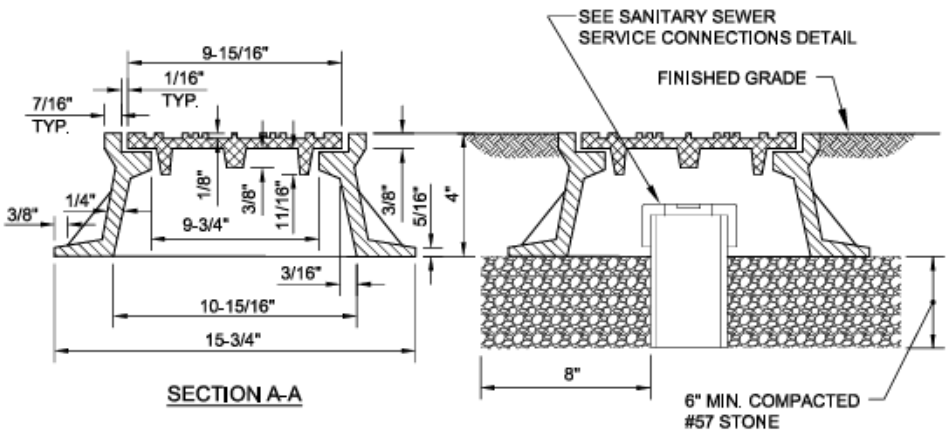
REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200,802	SANITARY SYSTEMS	6/16	Page 644 of 738	ST-38



PLAN



BOTTOM VIEW: BOTTOM



SECTION A-A

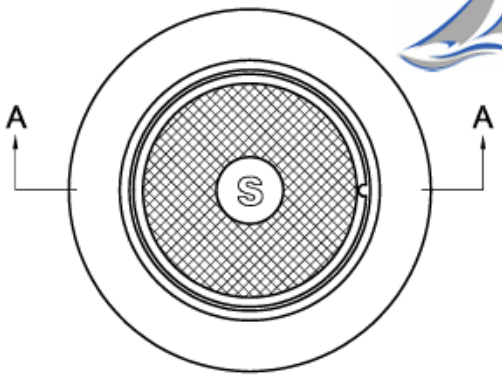
NOTES:

1. CLEAN OUT FRAME & COVER TO BE SUPPLIED BY CAPITAL FOUNDRY OF VIRGINIA, INC. OR APPROVED EQUAL. NPN-CW-18
2. ALL GRAY IRON CASTINGS SHALL CONFORM TO LATEST EDITION OF ASTM A-48, CLASS 30 AND SHALL BE OF UNIFORM QUALITY.
3. ALL CASTING DIMENSIONS SHALL HAVE A TOLERANCE OF 1/8"±.
4. ALL CASTINGS SHALL BE CLEANED BY SHOT BLASTING AND HAND CHIPPING UTILIZING STANDARD INDUSTRY PRACTICES PRIOR TO SHOP APPLICATION OF ASPHALTIC COATING, BY DIPPING.

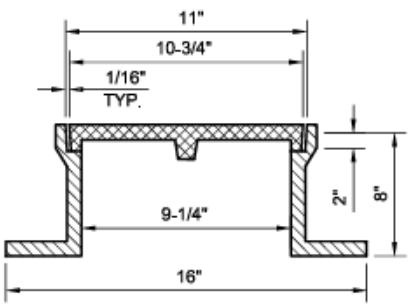
SANITARY SERVICE LATERAL CLEAN OUT FRAME AND COVER

NOT TO SCALE

REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200,802	SANITARY SYSTEMS	6/16		



PLAN



SECTION A-A

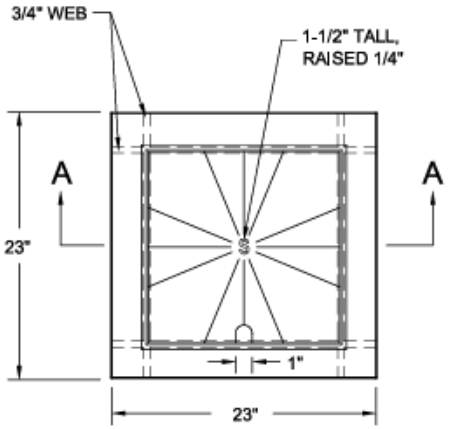
NOTES:

1. CLEAN OUT FRAME & COVER HIGHWAY LOAD RATED FOR USE IN DRIVEWAYS, PARKING LOTS, ETC.
2. CLEAN OUT FRAME & COVER TO BE SUPPLIED BY CAPITAL FOUNDRY OF VIRGINIA, INC. OR APPROVED EQUAL.
3. ALL GRAY IRON CASTINGS SHALL CONFORM TO LATEST EDITION OF ASTM A-48, CLASS 30 AND SHALL BE OF UNIFORM QUALITY.
4. ALL CASTING DIMENSIONS SHALL HAVE A TOLERANCE OF 1/8"±.
5. ALL CASTINGS SHALL BE CLEANED BY SHOT BLASTING AND HAND CHIPPING UTILIZING STANDARD INDUSTRY PRACTICES PRIOR TO SHOP APPLICATION OF ASPHALTIC COATING, BY DIPPING.

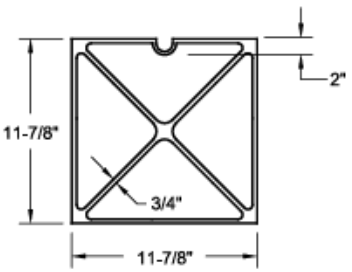
SANITARY SERVICE LATERAL CLEAN OUT FRAME AND COVER FOR HEAVY LOADS

NOT TO SCALE

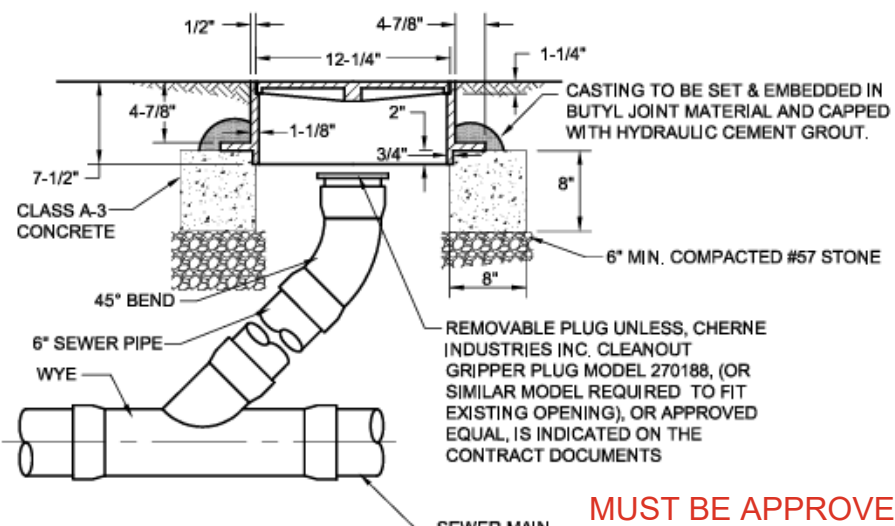
REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200,802	SANITARY SYSTEMS	6/16		



PLAN



BOTTOM VIEW: COVER



SECTION A-A

MUST BE APPROVED FOR USE BY TOWN STAFF

SANITARY SEWER MAIN LINE CLEAN OUT BOX

NOT TO SCALE

REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200,802	SANITARY SYSTEMS	6/16		

NOTES:

1. CLEAN OUT BOX TO BE SUPPLIED BY CAPITAL FOUNDRY OF VIRGINIA, INC., OR APPROVED EQUAL.
2. ALL GRAY IRON CASTINGS SHALL CONFORM TO LATEST EDITION OF ASTM A-48, CLASS 30 AND SHALL BE OF UNIFORM QUALITY.
3. ALL CASTING DIMENSIONS SHALL HAVE A TOLERANCE OF 1/8"±.
4. ALL CASTINGS SHALL BE CLEANED BY SHOT BLASTING AND HAND CHIPPING UTILIZING STANDARD INDUSTRY PRACTICES PRIOR TO SHOP APPLICATION OF ASPHALTIC COATING, BY DIPPING.

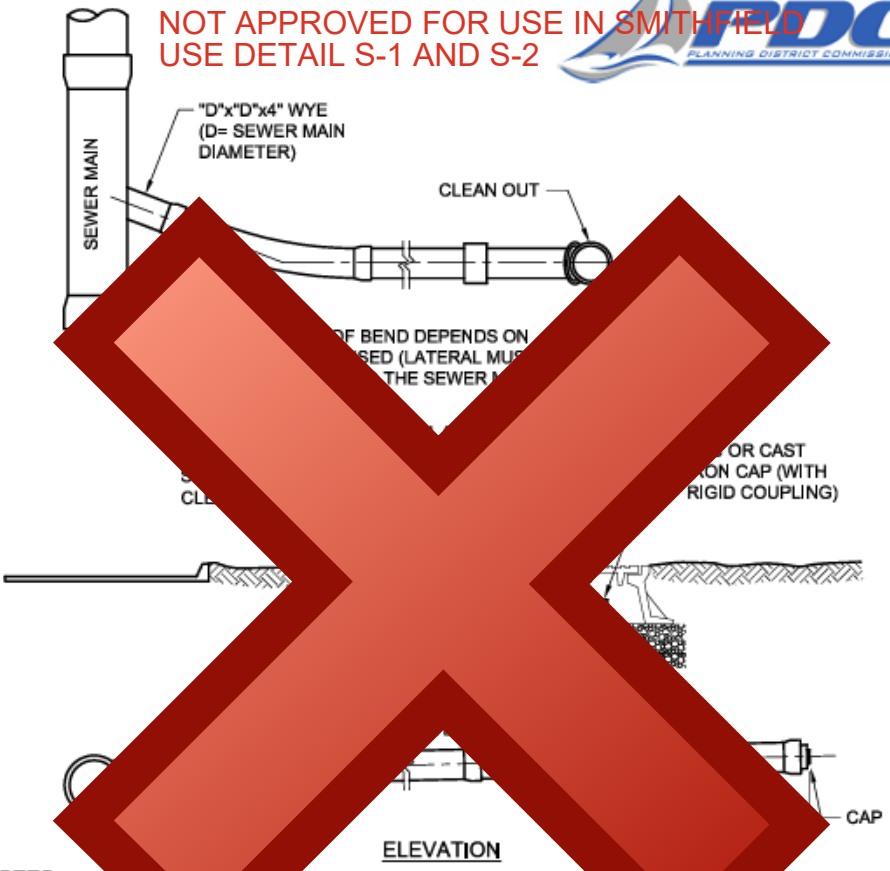
SANITARY SEWER MAIN LINE
CLEAN OUT BOX

NOT TO SCALE

REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200,802	SANITARY SYSTEMS	6/16	PDC-2	SS-33

NOT APPROVED FOR USE IN SMITHFIELD
USE DETAIL S-1 AND S-2

HAMPTON ROADS PDC PLANNING DISTRICT COMMISSION



ELEVATION

NOTES:

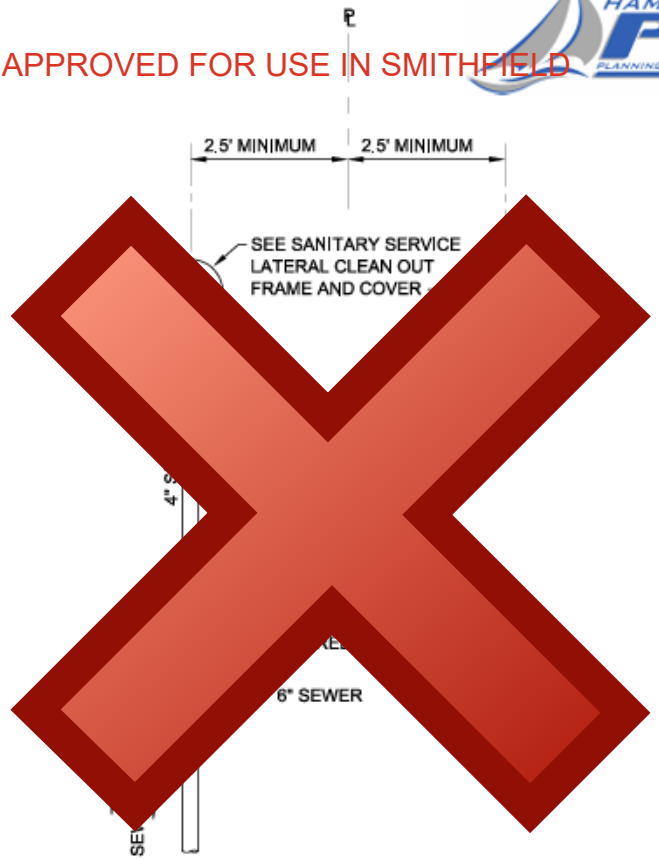
1. PROVIDE A CAP ION TO PROPERTY LINE PER LOCALITY REQ
2. LATERAL PIPE SHA THE SAME MATERIAL AS THE MAIN, UNLESS DUE CIAL CIRCUMSTANCES THE LOCALITY REQUIRES THE PIPE TO BE DUCTILE IRON. DUCTILE IRON SHALL REQUIRE A 6" STUB WITH MJ PLUG OR MJ CAP.
3. SEE PLANS FOR LOCATION OF CLEAN OUT.
4. TRACER WIRE SHALL BE INSTALLED CONTINUOUSLY FROM THE MAIN TO THE RIGHT OF WAY LINE DIRECTLY ON TOP OF THE PVC LATERAL. TRACER WIRE SHALL BE ATTACHED TO THE LATERAL.

SANITARY SEWER SERVICE CONNECTION

NOT TO SCALE

REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200,802	SANITARY SYSTEMS	6/16	PAGE 1	S-38

NOT APPROVED FOR USE IN SMITHFIELD



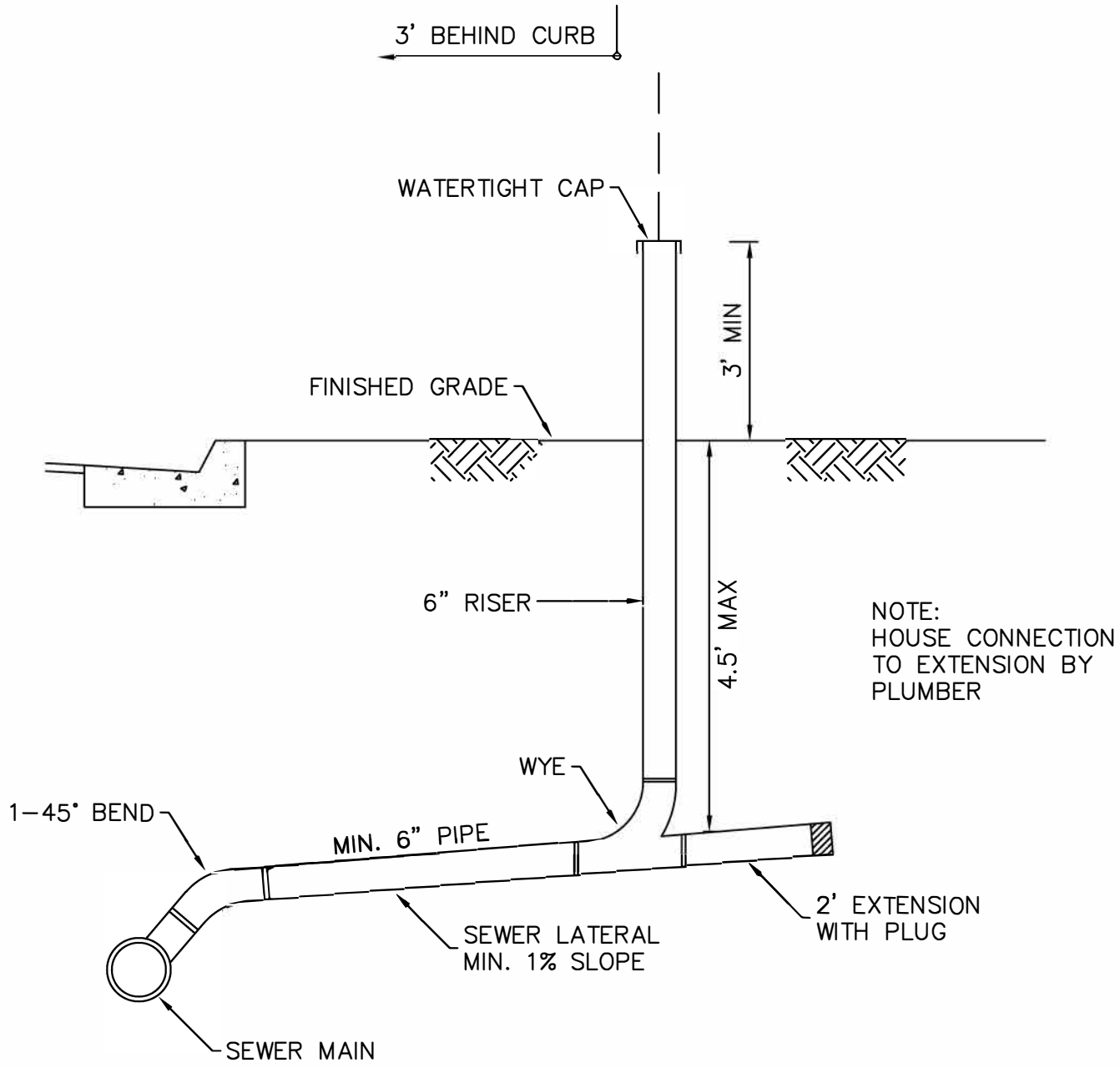
NOTES:

1. DUAL SERVICE CONNECTION TO BE USED ONLY WHERE APPROVED BY THE LOCALITY.
2. LATERAL PIPE SHALL BE PVC, ASTM D-3034, SDR 26, UNLESS DUE TO SPECIAL CIRCUMSTANCES THE LOCALITY REQUIRES THE PIPE TO BE DUCTILE IRON OR PVC C-900.
3. SEE PLANS FOR LOCATION OF CLEAN OUT.
4. REFER TO SANITARY SEWER SERVICE CONNECTION DETAIL FOR VERTICAL PROFILE.

DUAL SANITARY SEWER SERVICE CONNECTIONS

NOT TO SCALE

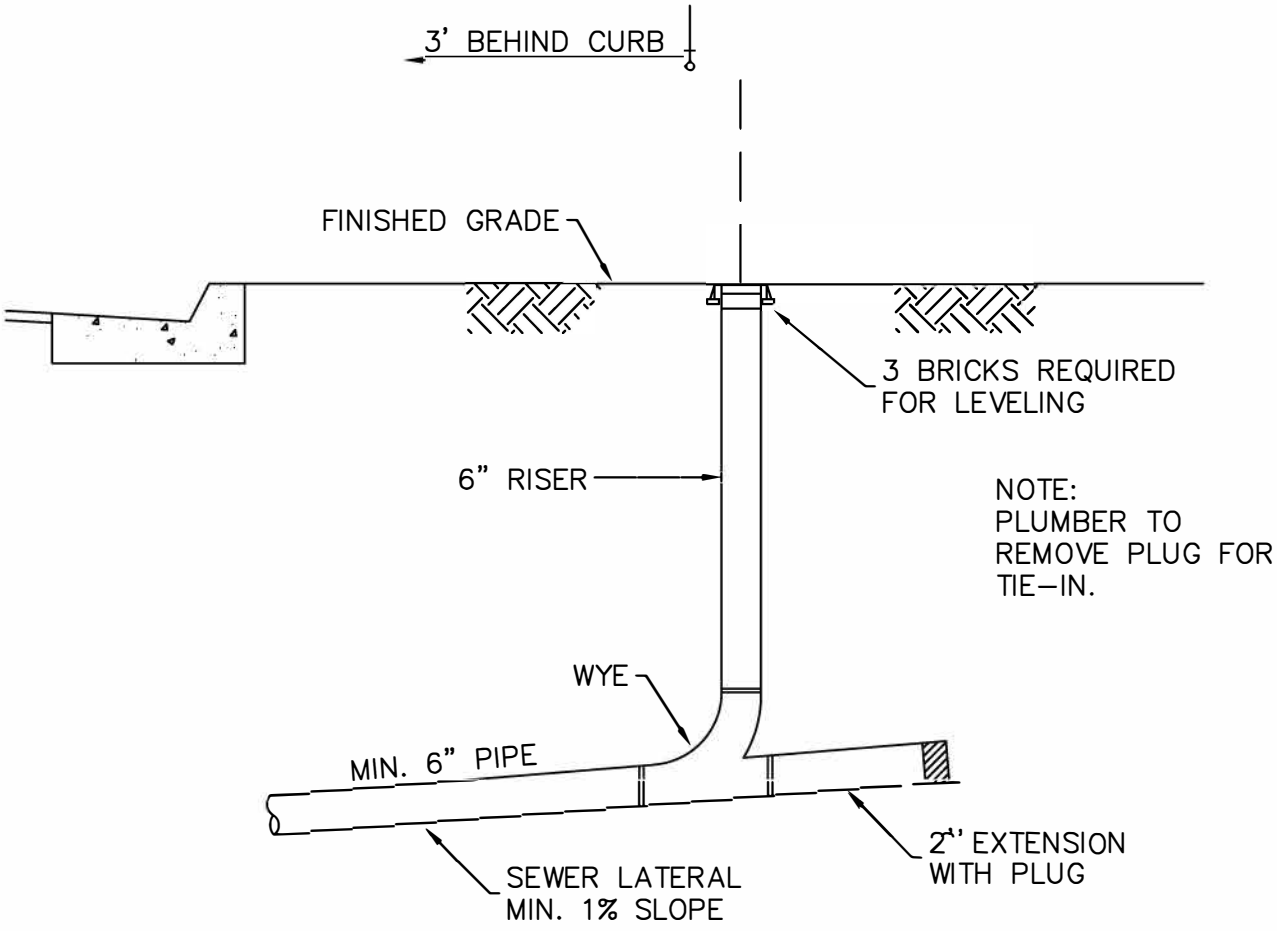
REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200,802	SANITARY SYSTEMS	6/16	Page 650 of 738	SS_08



NOTES:

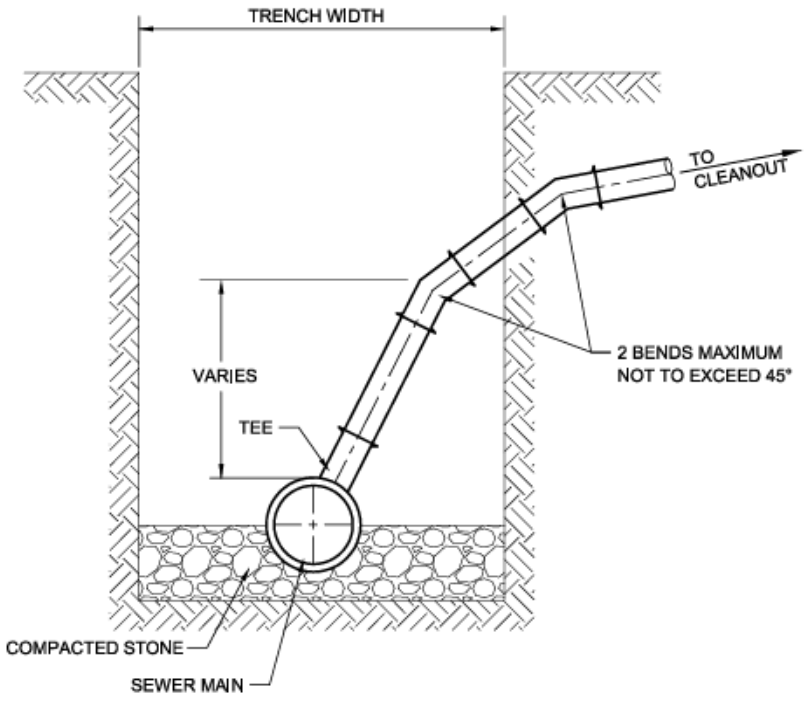
1. BEDDING REQUIREMENT SAME AS SEWER MAIN
2. CLEAN OUT SHALL BE LOCATED 3-FEET TO BEHIND CURB
3. MAXIMUM ALLOWABLE DEPTH OF LATERAL UNDER THE CURB IS 5-FEET. MAXIMUM ALLOWABLE DEPTH OF LATERAL AT THE CLEAN OUT IS 4.5-FEET.
4. SEWER SADDLES SHALL BE ROMAC STYLE CB UNLESS OTHERWISE APPROVED BY PUBLIC WORKS.
5. FOR DUCTILE IRON LATERALS, A TEMPORARY FERNCO FLEXIBLE CAP WITH BAND SHALL BE USED DURING CONSTRUCTION AND TESTING.
6. FOR PVC LATERALS, A TEMPORARY GLUE CAP OR SDR GASKET CAP SHALL BE USED DURING CONSTRUCTION AND TESTING.
7. NO MECHANICAL GRIPPER PLUGS SHALL BE USED.

TOWN OF SMITHFIELD DESIGN AND CONSTRUCTION STANDARDS	
SEWER LATERAL BY DEVELOPER	
DWG #: S-1	SCALE: NTS
	NOV 2022



TOWN OF SMITHFIELD DESIGN AND CONSTRUCTION STANDARDS	
SEWER LATERAL BY PLUMBER	
DWG #: S–2	SCALE: NTS
	NOV 2022

CONNECTION TO CUSTOMER SIDE LATERAL AT 4.5'



ELEVATION

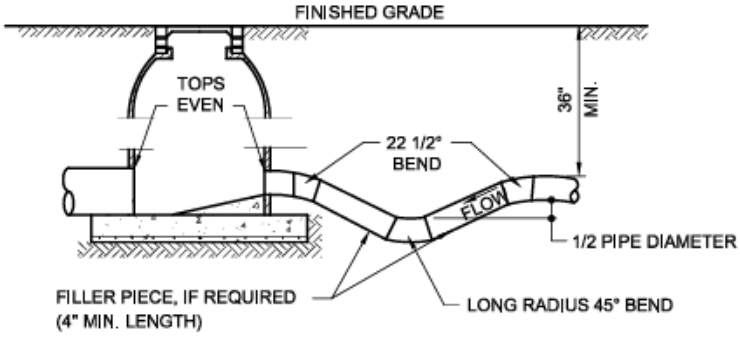
NOTES:

1. LATERAL MATERIAL TO MATCH SEWER MAIN MATERIAL.
2. TRACER WIRE SHALL BE INSTALLED CONTINUOUSLY FROM THE MAIN TO THE RIGHT-OF-WAY LINE DIRECTLY ON TOP OF THE PVC LATERAL, ATTACHED EVERY 10 FEET.

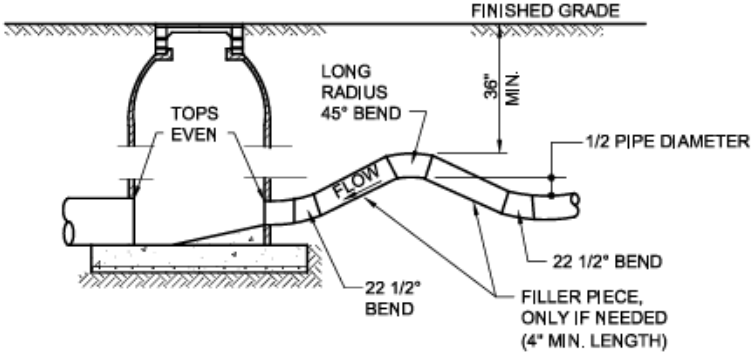
DEEP SANITARY SEWER SERVICE CONNECTION

NOT TO SCALE

REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200,802	SANITARY SYSTEMS	6/16	Page 653 of 738	05_18



FOR DISCHARGE INTO SHALLOW MANHOLE



FOR DISCHARGE INTO STANDARD MANHOLE

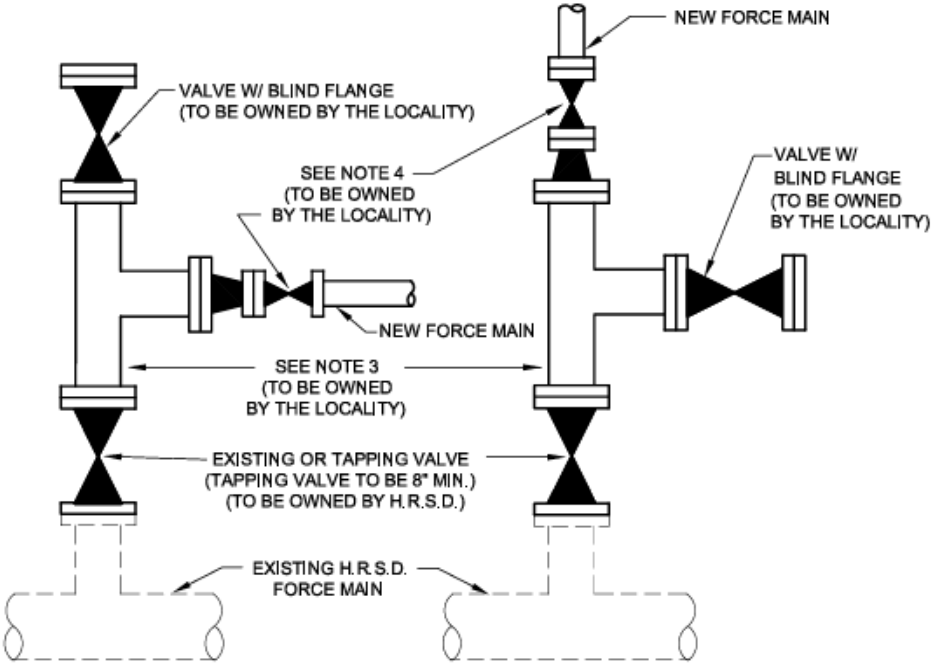
NOTES:

1. ALL JOINTS MUST BE PROTECTED BY RETAINER GLANDS OR THREADED RODS (GALV.).
2. ALL RESTRAINTS SHALL BE IN ACCORDANCE TO LOCALITY REQUIREMENTS.
3. COAT MANHOLE PER LOCALITY REQUIREMENTS.

FORCE MAIN SAXOPHONE

NOT TO SCALE

REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200,803	SANITARY SYSTEMS	6/16	Page 654 of 738	SS-38



CONNECTION METHOD 1

CONNECTION METHOD 2

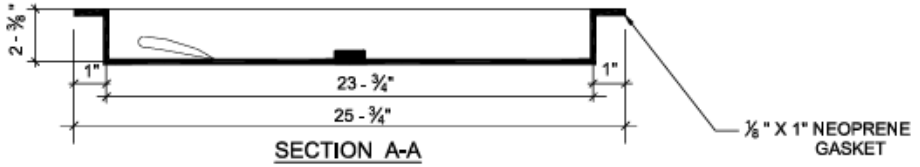
NOTES:

1. DIRECTION OF TEE BRANCH TO BE DETERMINED BY THE LOCALITY.
2. TEE AND VALVE TO BE FLANGED.
3. TEE TO BE SAME SIZE AS EXISTING VALVE OR TAPPING VALVE.
4. MINIMUM SIZE VALVE TO BE USED IS 4" WITH NON-RISING STEM AND 2" SQUARE OPERATING NUT.

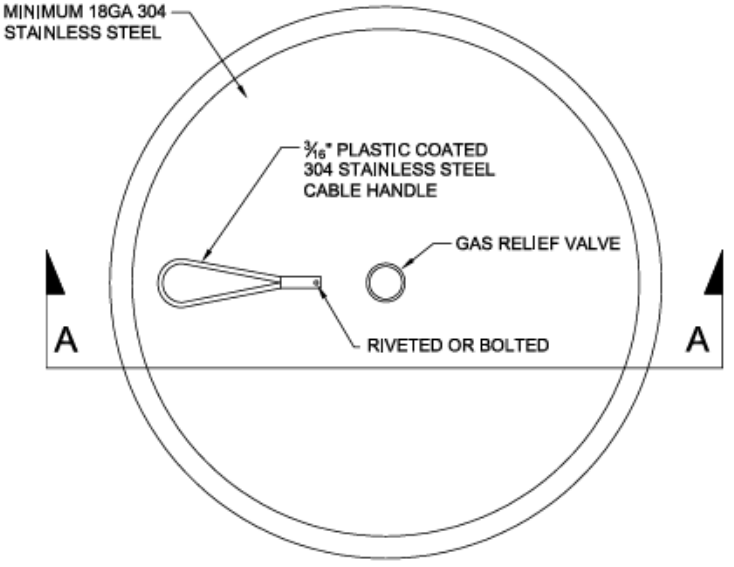
FORCE MAIN CONNECTION TO H.R.S.D. FORCE MAIN

NOT TO SCALE

REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200,803	SANITARY SYSTEMS	6/16	PAGE 1	SS_18



SECTION A-A



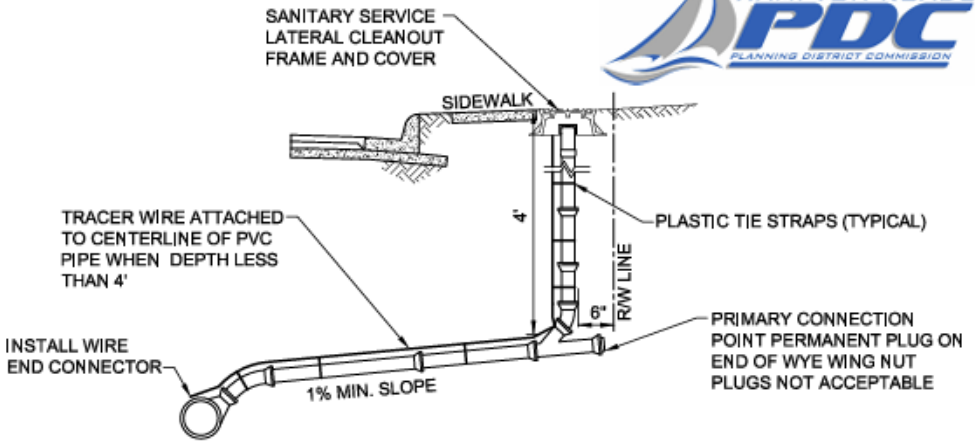
NOTES:

1. ACTUAL DIMENSIONS MUST BE COMPATIBLE WITH MANHOLE CASTING DIMENSIONS.
2. DUST COVER NOT REQUIRED WHEN USING MANHOLE INSERT.
3. GAS RELIEF VALVE SHALL BE CAPABLE OF RELEASING GAS AT A PRESSURE OF 0.5 TO 1.5 PSI AND HAVE A WATER LEAK DOWN RATE NO GREATER THAN 5 GALLONS / 24 HOURS.
4. LOAD TEST STRENGTH MUST EXCEED 3,000 POUNDS.
5. HANDLE MUST BE CAPABLE OF WITHSTANDING A MINIMUM 500 POUND PULL FORCE.

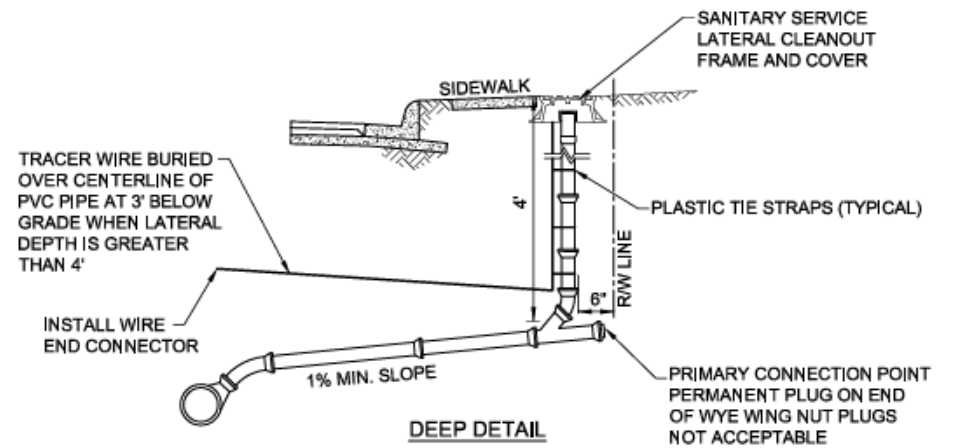
MANHOLE INSERT

NOT TO SCALE

REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200	SANITARY SYSTEMS	6/16	PAGE 1	SS738



SHALLOW DETAIL



DEEP DETAIL

NOTE:

INSTALL DETECTABLE WARNING TAPE CONTINUOUSLY FROM THE MAIN TO THE RIGHT OF WAY LINE DIRECTLY ON TOP OF PVC LATERAL, ATTACHED EVERY 10 FEET.

SANITARY SEWER SERVICE CONNECTION-ALTERNATE

NOT TO SCALE

REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200,802	SANITARY SYSTEMS	6/16	PAGE 2 OF 2	5738

HAMPTON ROADS PDC
PLANNING DISTRICT COMMISSION

NOTES:

1. TYPICAL LATERAL LAYOUT - (UTILITY CONTRACTOR)
SHALL ONLY UTILIZE THE PRIMARY CONNECTION POINT WHEN TYING TO AN EXISTING LATERAL. THE CONNECTION POINT TO THE PRIVATE LATERAL AND TO THE HOUSE LATERAL CLEANOUT SHALL BE MADE WITH SOLID SLEEVES. FERNCO COUPLINGS OR EQUIVALENTS ARE NOT PERMITTED ON THE HOUSE LATERAL CONNECTION OR AT THE CONNECTION POINT TO THE PRIVATE LATERAL, UNLESS THE PRIVATE LATERAL IS VCP (VITRIFIED CLAY PIPE), OR ORANGEBURG PIPE (BITUMINIZED FIBER SEWER PIPE). CLEANOUT RISER ASSEMBLY AND FITTING SHALL BE SAME MATERIAL AS THE SEWER LATERAL (P.V.C. ASTM D-3034 SCHEDULE 26, OR AWWA C900-CLASS 150 (DR-18). D.I.-ANSI/AWWA C150/A21.50-91 CLASS 52).

2. TYPICAL LATERAL LAYOUT - (PLUMBING CONTRACTOR)
THE PLUMBER MAY UTILIZE THE PRIMARY CONNECTION POINT, OR INSTALL AND UTILIZE THE SECONDARY CONNECTION POINT. WHEN INSTALLING THE SECONDARY CONNECTION POINT, THE LATERAL RISER ASSEMBLY, HOUSE LATERAL CLEANOUT AND TRACER WIRE SHALL BE REINSTALLED BY PLUMBING CONTRACTOR PRIOR TO OCCUPANCY. CLEANOUT RISER ASSEMBLY, AND FITTING SHALL BE SAME MATERIAL AS THE SEWER LATERAL (P.V.C. ASTM D-3034 SCHEDULE 26, OR AWWA C900-CLASS150 (DR-18).D.I.-ANSI/AWWA C150/A21.50-91 CLASS 52. ALL CLEANOUT RISER ASSEMBLY FITTING CONNECTIONS AND THE CONNECTION POINT TO THE PRIVATE LATERAL SHALL BE MADE WITH SOLID SLEEVES. FERNCO COUPLING OR EQUIVALENTS ARE NOT PERMITTED ON THE CLEANOUT RISER ASSEMBLY, THE RISER FITTINGS, AND AT THE CONNECTION POINT TO THE PRIVATE LATERAL (RIGHT-OF-WAY LINE OR EASEMENT LIMITS).

3. TYPICAL LATERAL LAYOUT
CLEANOUT RISER ASSEMBLY, HOUSE LATERAL CLEANOUT AND TRACER WIRE SHALL BE INSTALLED PRIOR TO FINAL INSPECTION/ACCEPTANCE. LOCATION OF WYE AND CLEANOUT MAY BE VARIED BY INSPECTOR IF NECESSARY DUE TO UNUSUAL DEPTH OR CONDITIONS. MINIMUM COVER OF 4.0 FEET REQUIRED UNLESS MORE DEPTH IS REQUIRED FOR SERVICE. PERMANENT PLUG SHALL BE INSTALLED IN THE END OF THE CLEANOUT WYE (WING NUT PLUGS ARE NOT ACCEPTABLE).

4. LATERAL SHALL BE SAME MATERIAL AS SEWER MAIN DUCTILE IRON (D.I.), OR POLYVINYLCHLORIDE (P.V.C.). D.I. SHALL BE ANSI/AWWA C150/A21.50-91 CLASS 52. P.V.C. SHALL BE ASTM D-3034 SCHEDULE 26, OR AWWA C900-CLASS 150 (DR-18).

5. TRACER WIRE SHALL BE AWG 10 SOLID COPPER WIRE W/POLYETHYLENE INSULATION. THE TRACER WIRE SHALL BE ATTACHED TO THE LATERAL PIPE WHEN THE DEPTH IS NO GREATER THAN 4.0 FEET (PVC ONLY). THE WIRE SHALL BE BURIED OVER THE CENTERLINE OF THE LATERAL PIPE AT 3.0 FEET BELOW GRADE WHEN THE LATERAL DEPTH IS GREATER THAN 4.0 FEET (PVC ONLY).

   WHEN THE TRACER WIRE IS ATTACHED TO THE LATERAL AND RISER ASSEMBLY, IT WILL BE FASTENED WITH TIE STRAPS OR APPROVED EQUAL.

   INSTALL DETECTABLE WARNING TAPE CONTINUOUSLY FROM THE MAIN TO THE RIGHT OF WAY LINE DIRECTLY ON TOP OF PVC LATERAL, ATTACHED EVERY 10 FEET.

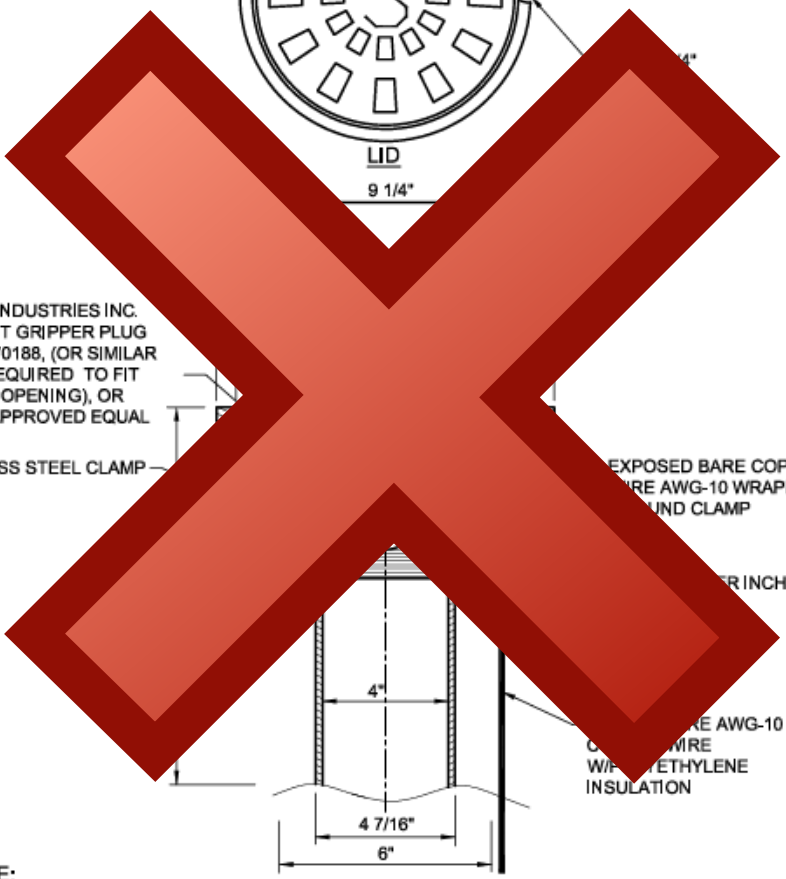
SANITARY SEWER SERVICE CONNECTION-ALTERNATE

NOT TO SCALE

REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200,802	SANITARY SYSTEMS	6/16	Page 658 of 738	

NOT APPROVED FOR USE IN SMITHFIELD

HAMPTON ROADS PDC PLANNING DISTRICT COMMISSION



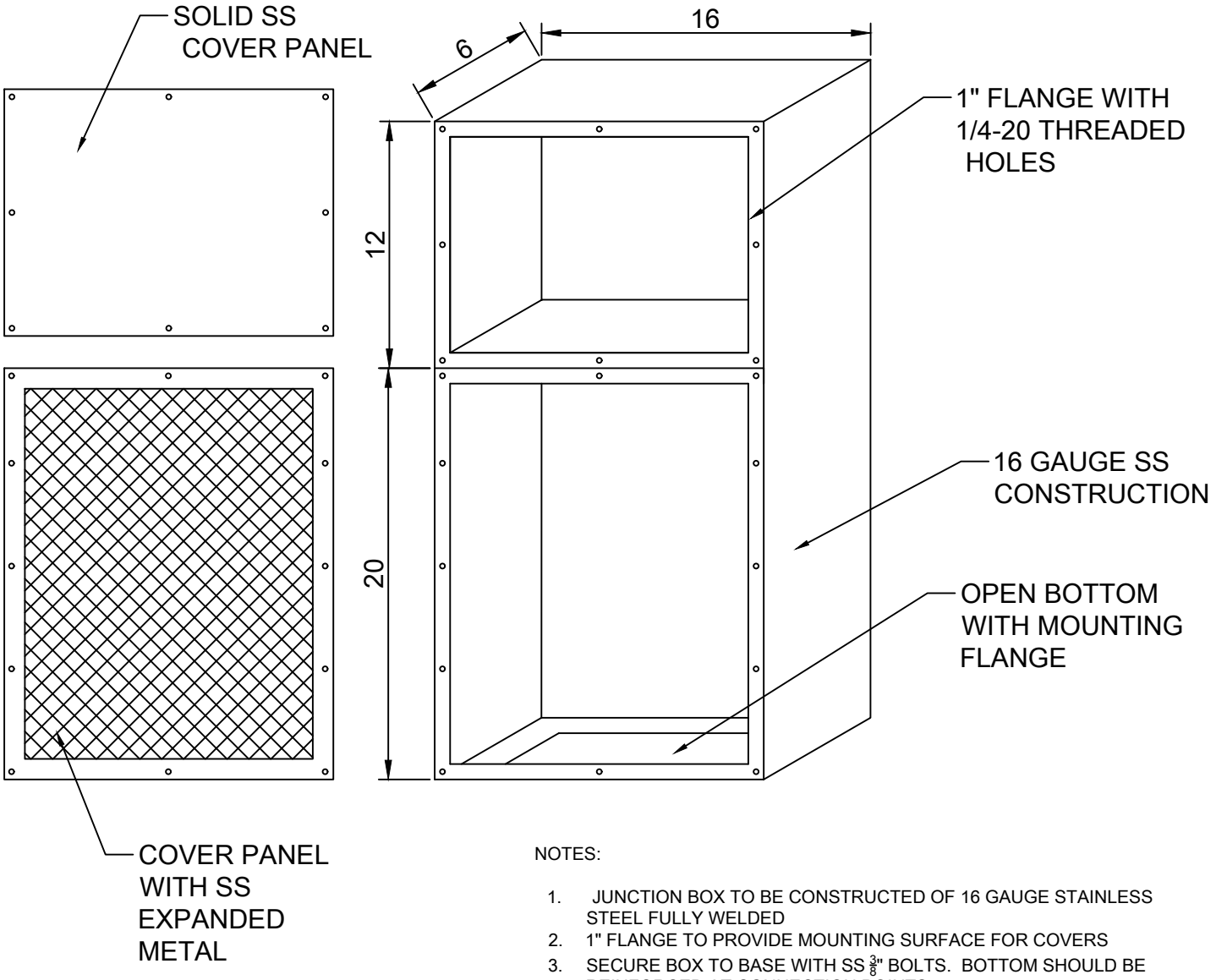
NOTE:

THE TRACER WIRE POLYETHYLENE INSULATION SHALL ONLY BE REMOVED WHERE THE TRACER WIRE IS WRAPPED AROUND THE STAINLESS STEEL CLAMP

HOUSE LATERAL CLEANOUT ALTERNATE

NOT TO SCALE

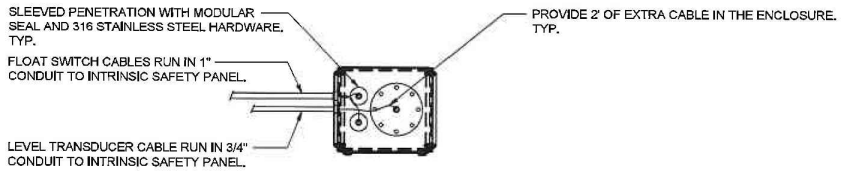
REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200,802	SANITARY SYSTEMS	6/16	Page 659 of 738	



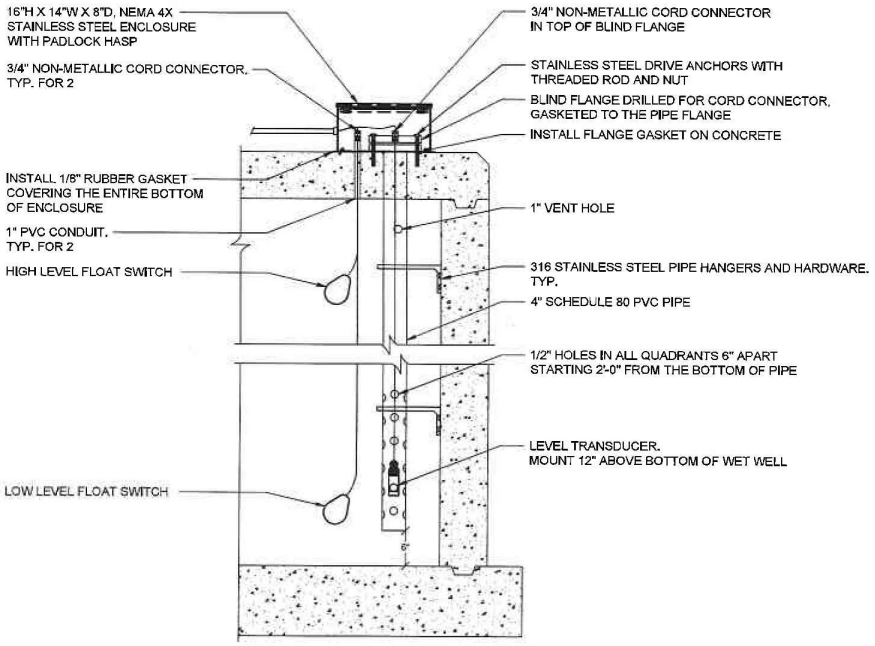
NOTES:

1. JUNCTION BOX TO BE CONSTRUCTED OF 16 GAUGE STAINLESS STEEL FULLY WELDED
2. 1" FLANGE TO PROVIDE MOUNTING SURFACE FOR COVERS
3. SECURE BOX TO BASE WITH SS $\frac{3}{8}$" BOLTS. BOTTOM SHOULD BE REINFORCED AT CONNECTION POINTS.
4. TOP BOX IS SEALED, ALL ENTRY POINTS SHALL HAVE PLASTIC WATER TIGHT CONNECTIONS.
5. COVERS SHOULD HAVE ATTACHED GASKET.
6. ALL MATERIALS/ FASTNERS ARE TO BE CORROSION RESISTANT.

TOWN OF SMITHFIELD DESIGN AND CONSTRUCTION STANDARDS	
JUNCTION BOX DETAIL	
DWG #: S-5	SCALE: N.T.S.
DWN BY : TOWN	8/8/2025



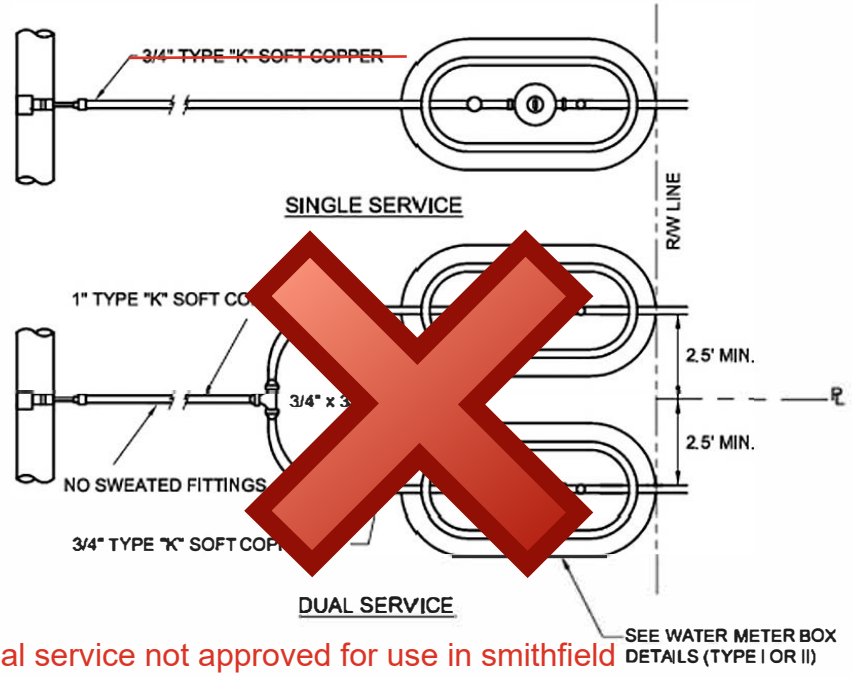
PLAN VIEW



WET WELL INSTRUMENATION
INSTALLATION DETAIL
NO SCALE

TOWN OF SMITHFIELD DESIGN AND CONSTRUCTION STANDARDS	
WET WELL INSTRUMENTATION DETAIL	
DWG #: S-6	SCALE: NTS
	NOV 2022

1" municipex



dual service not approved for use in smithfield

NOTES:

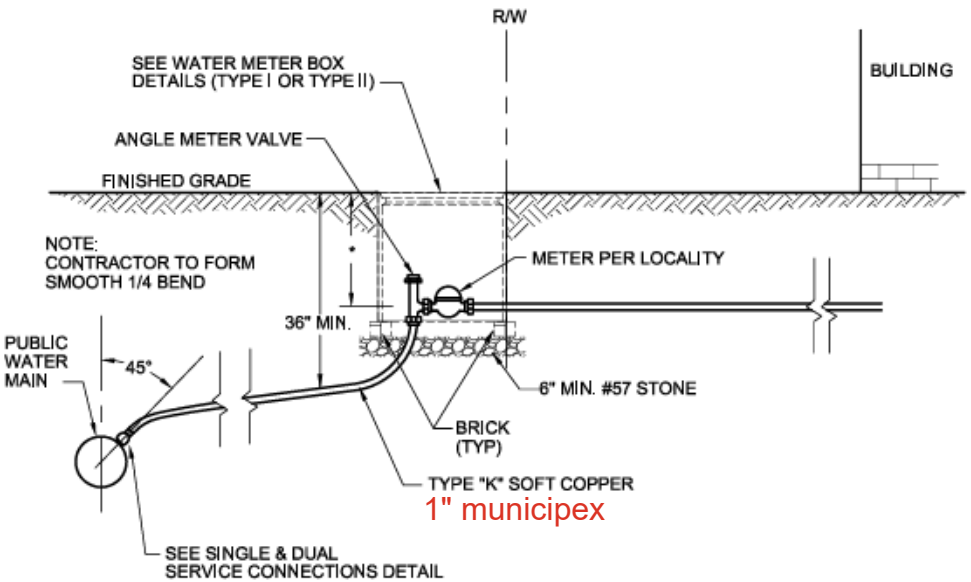
1. DUAL SERVICE REQUIRES PRIOR LOCALITY APPROVAL.
2. CONTRACTOR SHALL USE APPROVED BENDING TOOLS WHEN INSTALLING COPPER PIPE.
3. ~~ALL DUCTILE IRON MAINS, SIX INCHES IN DIAMETER AND LARGER, MAY BE TAPPED WITHOUT SADDLES.~~ WHERE PVC MAINS ARE PERMITTED BY LOCALITIES, THE CONNECTION TO A PVC MAIN MUST BE MADE WITH A TAPPING SADDLE. TAPPING SADDLES SHALL BE AS SPECIFIED IN SECTION 200 AND SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATIONS. ALL SADDLES TO BE STAINLESS STEEL OR EPOXY COATED.
4. INSTALL METER BOX BETWEEN THE CURB AND GUTTER AND THE SIDEWALK. METER BOXES SHALL NOT BE INSTALLED IN DRIVEWAY.

SINGLE & DUAL SERVICE CONNECTIONS

NOT TO SCALE

REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200.801	WATER DISTRIBUTION	6/16		

* TYPE I WATER METER BOX: 7.5"-22" AS APPROVED BY LOCALITY
TYPE II WATER METER BOX: 10.25"-22" AS APPROVED BY LOCALITY



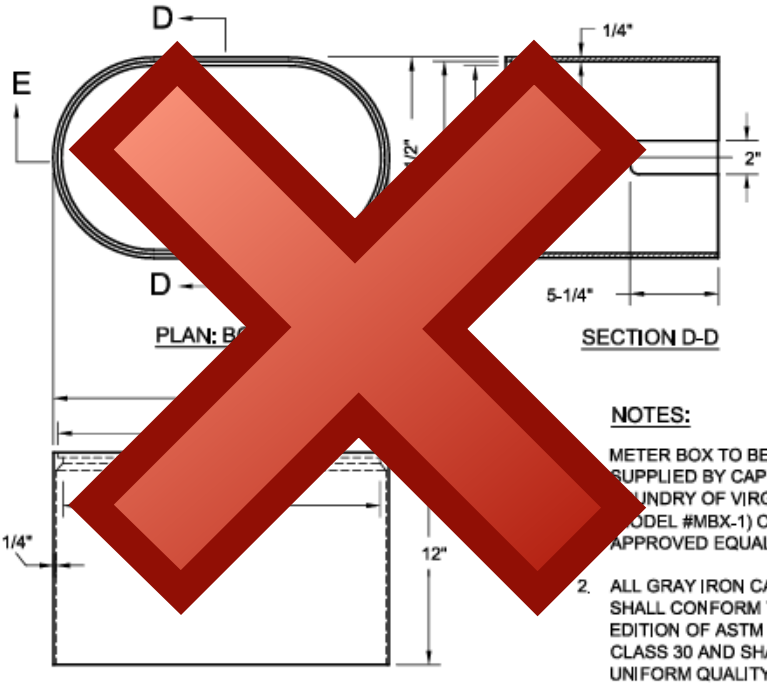
NOTES:

1. ALL DUCTILE IRON MAINS, SIX INCHES IN DIAMETER AND LARGER, MAY BE TAPPED WITHOUT SADDLES. WHERE PVC MAINS ARE PERMITTED BY LOCALITIES, THE CONNECTION TO A PVC MAIN MUST BE MADE WITH A TAPPING SADDLE. TAPPING SADDLES TO BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATIONS. ALL TAPPING SADDLES TO BE STAINLESS STEEL OR EPOXY COATED.
2. METER SHALL BE 5/8" MINIMUM THRU 1" MAXIMUM.
3. INSTALL METER BOX BETWEEN THE CURB & GUTTER AND THE SIDEWALK. METER BOXES SHALL NOT BE INSTALLED IN DRIVEWAYS OR SIDEWALKS.
4. ALL BENDS IN TYPE K COPPER SHALL BE MADE USING AN APPROPRIATE PIPE BENDING TOOL. THERE SHALL BE NO CRIMPS IN THE PIPE LINE.

WATER SERVICE INSTALLATION DETAIL

NOT TO SCALE

REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200,801	WATER DISTRIBUTION	6/16	Page 663 of 738	



SECTION E-E

NOTES:

METER BOX TO BE SUPPLIED BY CAPITAL FOUNDRY OF VIRGINIA, INC., (MODEL #MBX-1) OR APPROVED EQUAL.

2. ALL GRAY IRON CASTINGS SHALL CONFORM TO LATEST EDITION OF ASTM A-48, CLASS 30 AND SHALL BE OF UNIFORM QUALITY.

3. ALL CASTING DIMENSIONS SHALL HAVE A TOLERANCE OF 1/8"±.

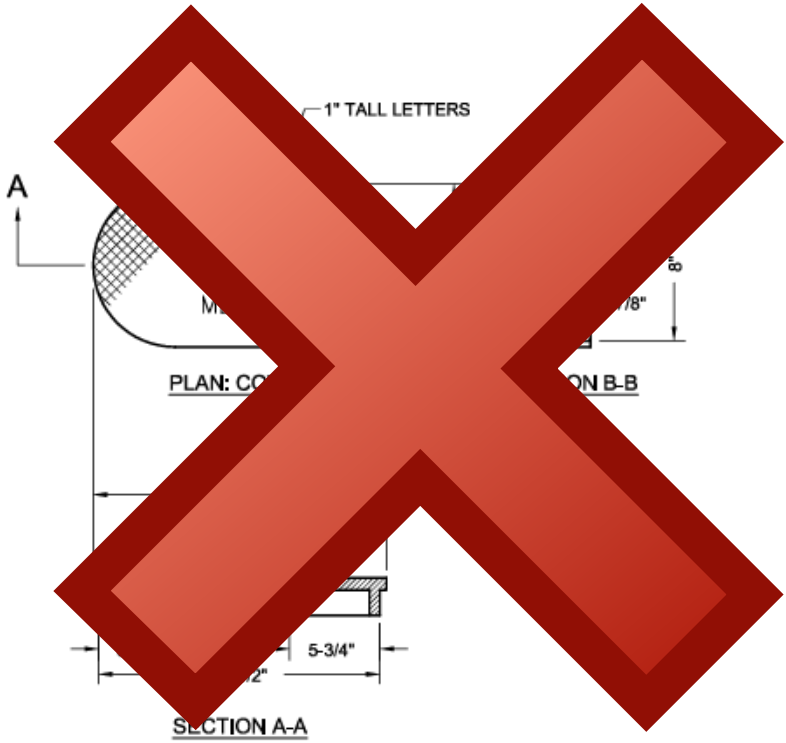
4. ALL CASTINGS SHALL BE CLEANED BY SHOT BLASTING AND HAND CHIPPING UTILIZING STANDARD INDUSTRY PRACTICES PRIOR TO SHOP APPLICATION OF ASPHALTIC COATING, BY DIPPING.

NOT APPROVED FOR USE IN SMITHFIELD
USE DFW 1800F-18-BODY AND DFW 36M-1T DEEP LID

WATER METER BOX (TYPE I)
(5/8" TO 1" WATER METER ASSEMBLIES)

NOT TO SCALE

REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200,801	WATER DISTRIBUTION	6/16		



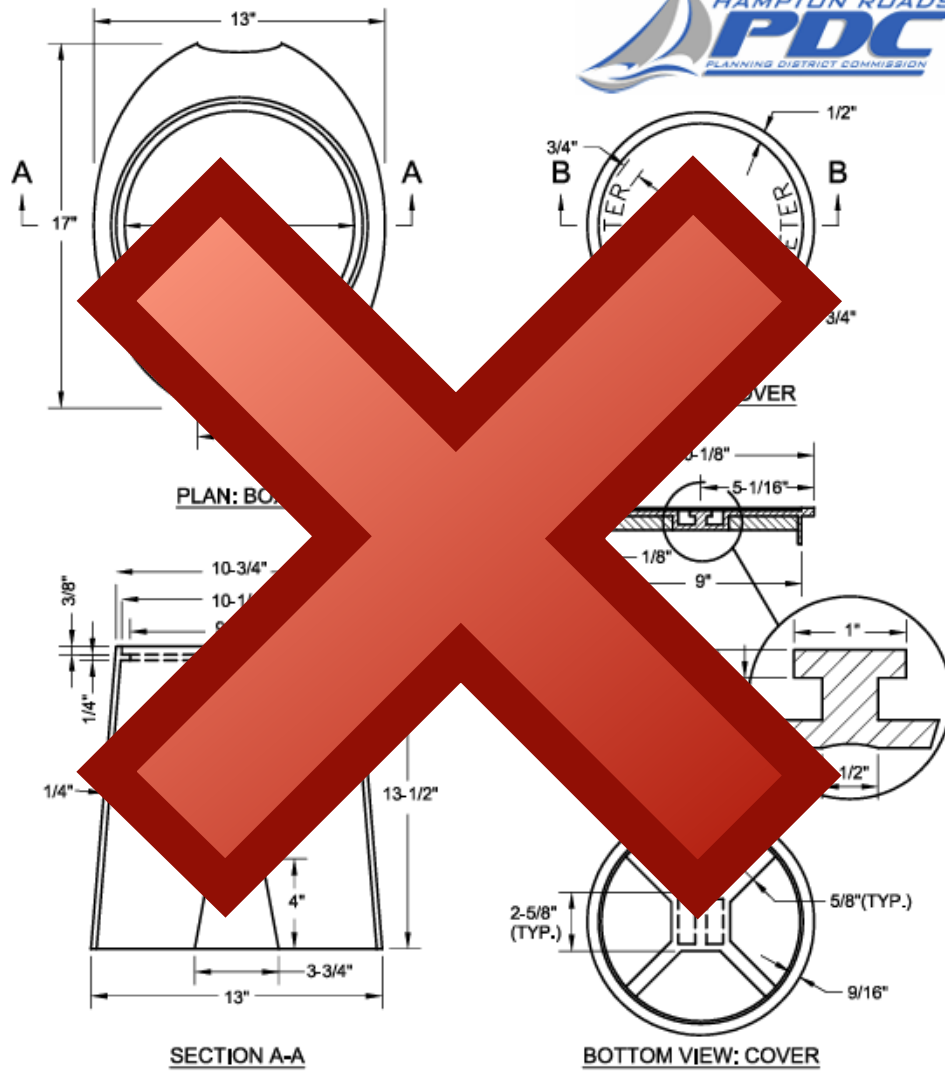
WATER METER BOX (TYPE I)

NOT TO SCALE

REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200,801	WATER DISTRIBUTION	6/16	2 of 2	WD_08

NOT APPROVED FOR USE IN SMITHFIELD

HAMPTON ROADS PDC PLANNING DISTRICT COMMISSION



SECTION A-A

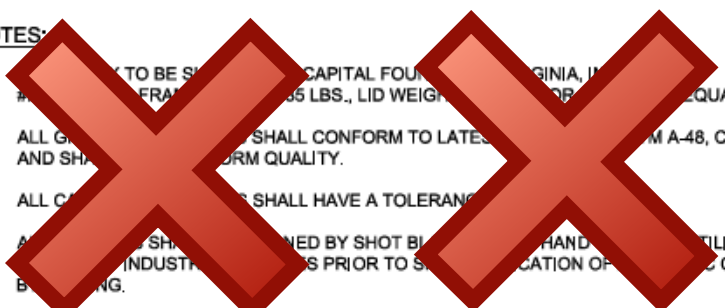
BOTTOM VIEW: COVER

SEE WD_04, SHEET 2 OF 2 FOR NOTES.

WATER METER BOX (TYPE II)
(5/8" TO 1" WATER METER ASSEMBLIES)

NOT TO SCALE

REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200,801	WATER DISTRIBUTION	6/16	1 of 2	WD_03



NOTES:

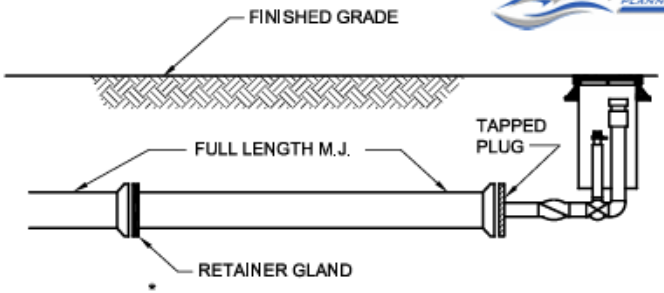
1. [illegible] TO BE S[illegible] CAPITAL FOU[illegible] GINIA, I[illegible] #[illegible] ERA[illegible] 35 LBS., LID WEIGH[illegible] OR[illegible] EQUAL.
2. ALL G[illegible] SHALL CONFORM TO LATES[illegible] M A-48, CLASS 30 AND SHA[illegible] RM QUALITY.
3. ALL CA[illegible] S SHALL HAVE A TOLERANC[illegible]
4. A[illegible] S SHA[illegible] NED BY SHOT BL[illegible] HAND[illegible] TILIZING INDUSTR[illegible] S PRIOR TO S[illegible] CATION OF[illegible] C COATING, B[illegible] NG.

WATER METER BOX (TYPE II)

NOT TO SCALE

REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200,801	WATER DISTRIBUTION	6/16		

* RESTRAINT LENGTHS BASED ON DUCTILE IRON PIPE ONLY. WHEN PVC PIPE OR POLYETHYLENE ENCASEMENT IS USED, RESTRAINT LENGTHS MUST BE RECALCULATED.



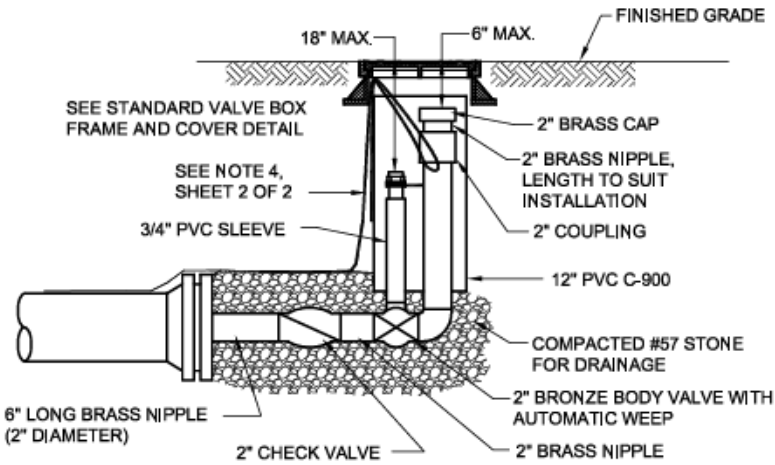
RESTRAINT LENGTHS:*

PIPE DIAMETER	LENGTH OF PIPE
4 INCHES	36 FEET
8 INCHES	36 FEET
10-12 INCHES	54 FEET
16 INCHES	72 FEET

RESTRAINT NOTES:

1. SPECIAL DESIGN REQUIRED FOR MAINS GREATER THAN 48" IN DEPTH OR IN SOILS WITH SHEAR STRENGTH LESS THAN 30 LBS/FT.
2. IF THE RESTRAINED JOINTS ARE LESS THAN THE LENGTHS SHOWN, THEN A SPECIAL RESTRAINT DESIGN MUST BE SUBMITTED FOR APPROVAL.

TYPICAL RESTRAINT



BLOW-OFF ASSEMBLY

SEE WD_05, SHEET 2 OF 2 FOR BLOW-OFF ASSEMBLY NOTES.

BLOW-OFF ASSEMBLY

NOT TO SCALE

REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200,801	WATER DISTRIBUTION	6/16	1 of 2	WD_06

End of the line requires a GIL, if in the middle of the line then a Ford is required.

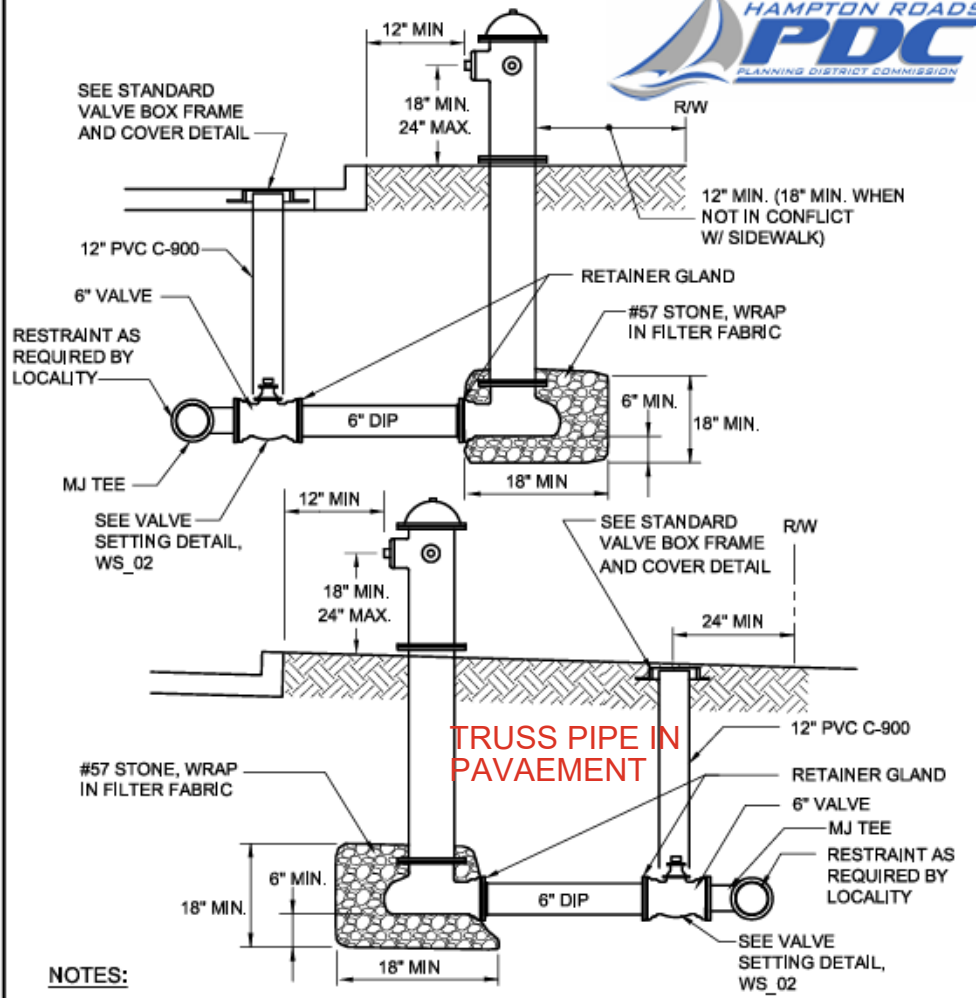
NOTES:

1. BLOW-OFF ASSEMBLY TO BE SUPPLIED BY GIL INDUSTRIES (MODEL: SLIM LINE 2" FLUSHING HYDRANT) OR APPROVED EQUAL.
2. A BLOW-OFF IS TO BE USED ON PIPE SIZES 10" IN DIAMETER OR LESS.
3. A FIRE HYDRANT IS TO BE USED AS A BLOW-OFF ASSEMBLY FOR PIPE SIZES 12" OR GREATER.
4. PLASTIC COATED 10 GAUGE SOLID COPPER TRACER WIRE TO BE ATTACHED WITH PLASTIC STRAPPING EVERY 10 FEET OF LENGTH. WIRE TO BE LOOPED THROUGH VALVE BOX AND EXTEND 12 INCHES ABOVE FINISHED GRADE AND COILED BACK INTO VALVE BOX.

BLOW-OFF ASSEMBLY

NOT TO SCALE

REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200,801	WATER DISTRIBUTION	6/16		



NOTES:

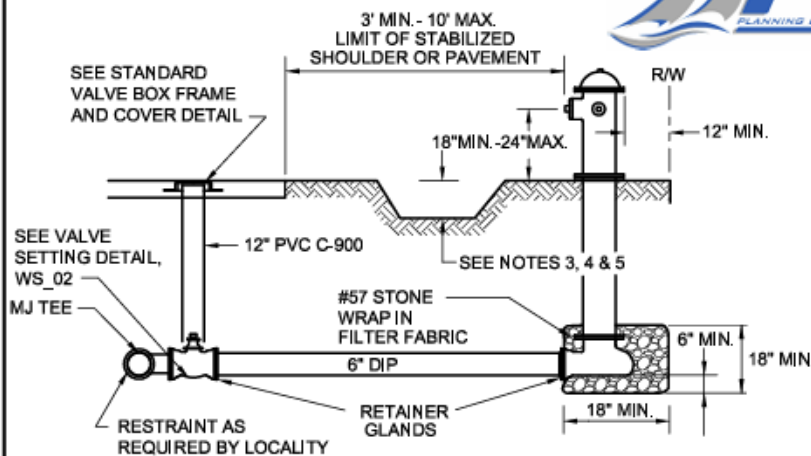
1. HYDRANT TO BE SET WITH BREAKABLE COUPLING APPROXIMATELY 3" ABOVE FINISHED GRADE.
2. STEAMER NOZZLE IS TO FACE ROADWAY UNLESS OTHERWISE NOTED.
3. TRACER WIRE REQUIRED.
4. ALL VALVES TO BE MJ.
5. WHEN FIRE HYDRANT IS TO BE INSTALLED WITHIN EXISTING OR PROPOSED VDOT RIGHT- OF-WAY, HYDRANTS SHALL BE LOCATED IN ACCORDANCE WITH VDOT REQUIREMENTS.
6. HYDRANT(S) SHALL BE PAINTED IN ACCORDANCE WITH LOCALITY REQUIREMENTS.

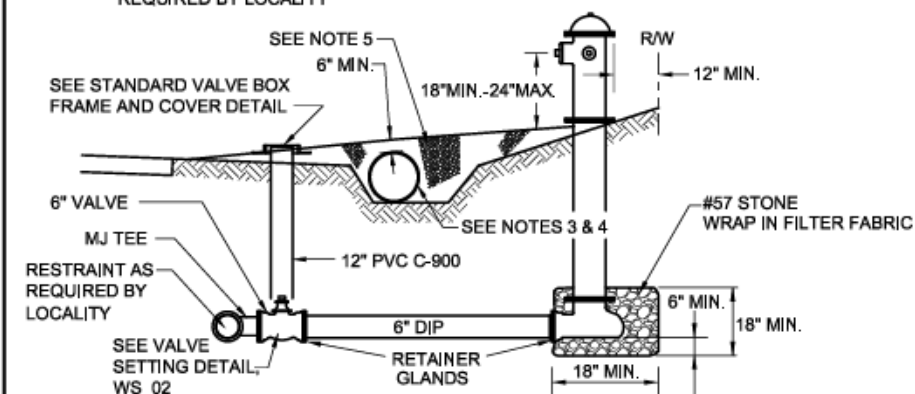
ALL HYDRANTS OPEN LEFT

FIRE HYDRANT SETTING (TYPE I)

NOT TO SCALE

REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200,801	WATER DISTRIBUTION	6/16		WD_08





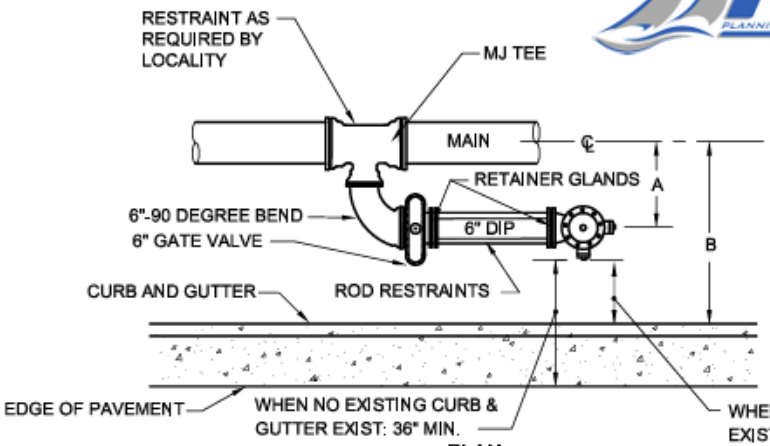
NOTES:

1. HYDRANT TO BE SET WITH BREAKABLE COUPLING APPROXIMATELY 3" ABOVE FINISHED GRADE.
2. STEAMER NOZZLE IS TO FACE ROADWAY UNLESS OTHERWISE NOTED.
3. CULVERT PIPE IS REQUIRED IF DITCH DEPTH (EDGE OF PAVEMENT TO BOTTOM OF DITCH) IS 18" OR MORE, OR HYDRANT VALVE FALLS WITHIN DITCH SLOPE.
4. SIZE OF CULVERT PIPE (RCP) IS TO BE APPROVED BY LOCALITY.
5. PROVIDE 6" MIN. COVER ON CULVERT. FILL DITCH WITH SELECT MATERIAL APPROVED BY THE LOCALITY. MINIMUM SURFACE WIDTH SHALL BE ACCORDANCE WITH LOCALITY REQUIREMENTS
6. ALL VALVES TO BE MJ.
7. WHEN FIRE HYDRANT IS TO BE INSTALLED WITHIN EXISTING OR PROPOSED VDOT RIGHT- OF-WAY, HYDRANTS SHALL BE LOCATED IN ACCORDANCE WITH VDOT REQUIREMENTS.
8. HYDRANT(S) SHALL BE PAINTED IN ACCORDANCE WITH LOCALITY REQUIREMENTS.

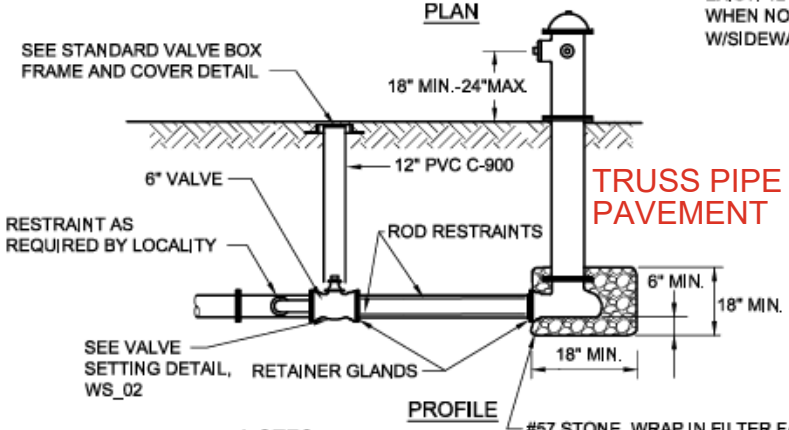
FIRE HYDRANT SETTING (TYPE II)

NOT TO SCALE

REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200,801	WATER DISTRIBUTION	6/16	Page 671 of 738	WD-38



PLAN



TRUSS PIPE IN PAVEMENT

MAIN SIZE	"A"	"B"
8"	18"	39"
12"	24"	45"
16"	30"	51"

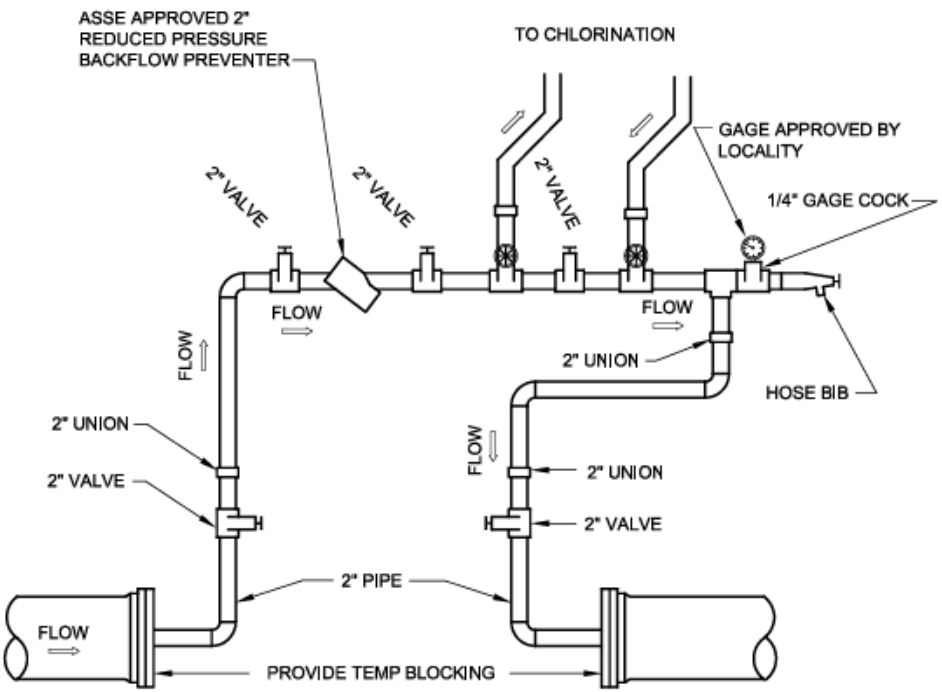
NOTES:

1. HYDRANT TO BE SET WITH BREAKABLE COUPLING APPROXIMATELY 3" ABOVE FINISHED GRADE.
2. STEAMER NOZZLE IS TO FACE ROADWAY UNLESS OTHERWISE NOTED.
3. ALL VALVES TO BE MJ.
4. WHEN FIRE HYDRANT IS TO BE INSTALLED WITHIN EXISTING OR PROPOSED VDOT RIGHT- OF-WAY, HYDRANTS SHALL BE LOCATED IN ACCORDANCE WITH VDOT REQUIREMENTS.
5. HYDRANT(S) SHALL BE PAINTED IN ACCORDANCE WITH LOCALITY REQUIREMENTS.

FIRE HYDRANT SETTING (TYPE III)

NOT TO SCALE

REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200,801	WATER DISTRIBUTION	6/16	1 OF 1	WD-38



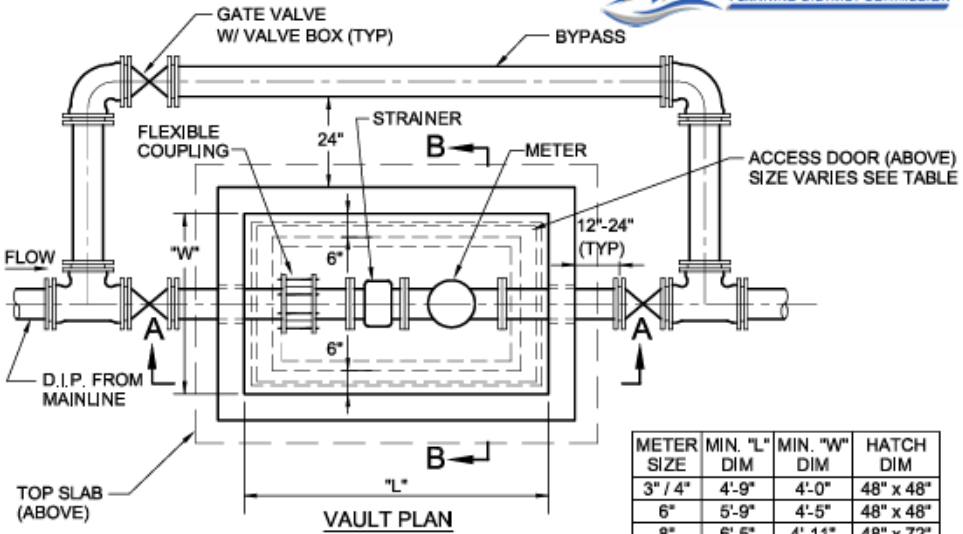
NOTES:

1. ALL VALVES TO BE 2" BALL VALVES.
2. ALL PIPING SHALL BE PROTECTED FROM THE WEATHER DURING FREEZING CONDITIONS.
3. BACKFLOW PREVENTER SHALL BE INSTALLED AND TESTED IN ACCORDANCE WITH THE LOCALITY'S APPROVED CROSS CONNECTION CONTROL PROGRAM.
4. THE RPZ SHALL NOT BE INSTALLED IN A PIT OR AREA SUBJECT TO FLOODING.

TEMPORARY MANIFOLD FOR TEST AND CHLORINATION

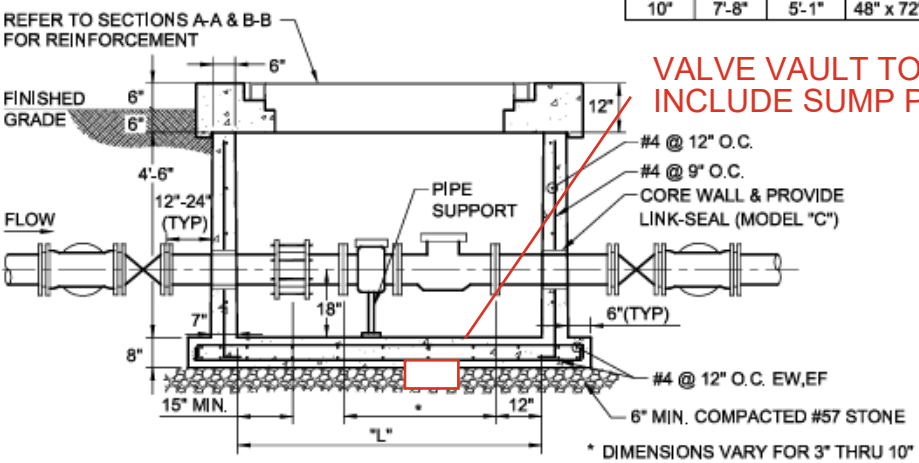
NOT TO SCALE

REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
(NONE)	WATER DISTRIBUTION	6/16	1 OF 1	WD-89



VAULT PLAN

METER SIZE	MIN. "L" DIM	MIN. "W" DIM	HATCH DIM
3" / 4"	4'-9"	4'-0"	48" x 48"
6"	5'-9"	4'-5"	48" x 48"
8"	6'-5"	4'-11"	48" x 72"
10"	7'-8"	5'-1"	48" x 72"



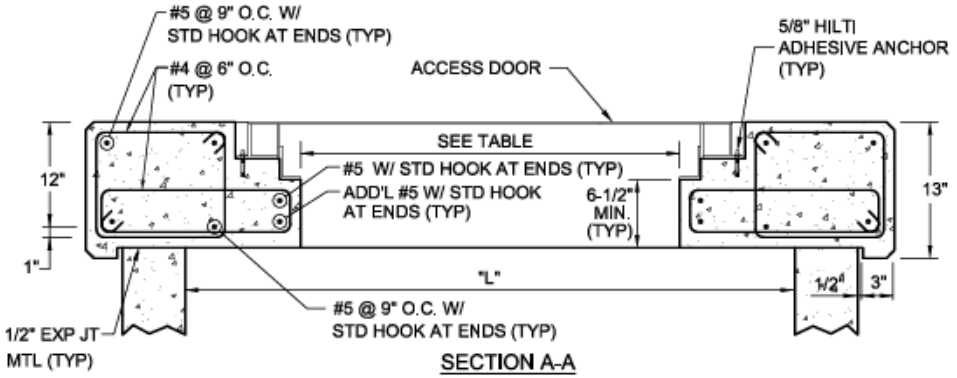
VALVE VAULT TO INCLUDE SUMP PIT

VAULT SECTION

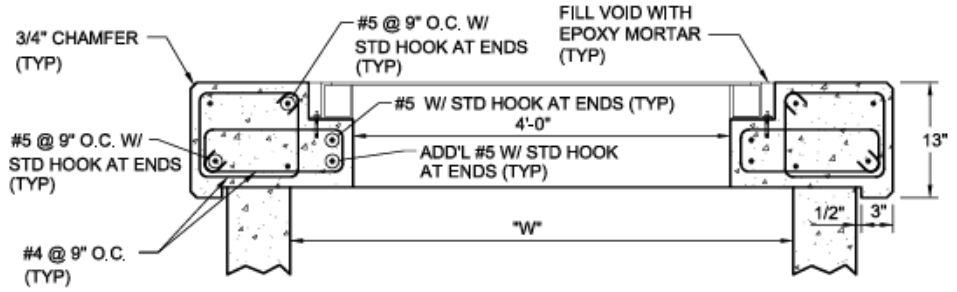
CONCRETE VAULT- H20 LOADING (3" THRU 10" WATER METER ASSEMBLIES)

NOT TO SCALE

REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200,801	WATER DISTRIBUTION	6/16	1 OF 2	WD-31



SECTION A-A



SECTION B-B

CONCRETE VAULT- H20 LOADING
(3" THRU 10" WATER METER ASSEMBLIES)

NOT TO SCALE

REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200,801	WATER DISTRIBUTION	6/16	2 of 3	

NOTES:

1. FLOOR OF VAULT TO BE SLOPED 1/4" PER FOOT TO A 6"X6" (3" DEEP) SUMP IN RIGHT BACK (PROPERTY SIDE) CORNER OF VAULT.
2. REDUCERS AS APPROPRIATE TO BE PLACED OUTSIDE THE BYPASS PIPING.
3. FLANGE ADAPTERS TO BE USED TO CONNECT METER TO PIPE.
4. METER, PIPE SUPPORT, AND DOOR KEY TO BE SUPPLIED BY THE CONTRACTOR AND DELIVERED TO THE OWNER.
5. ALL PIPES TO BE DUCTILE IRON, CLASS 53.
6. TWO 1-5/8" DIAMETER HOLES ARE TO BE DRILLED IN THE LEFT FRONT CORNER OF LID FOR REMOTE READ EQUIPMENT.
7. RECESSED LIFTING ANCHORS SHALL BE PROVIDED AT EACH CORNER OF VAULT LID.
8. VAULT DOORS SHALL CENTERED OVER METER LOCATION TO PROVIDE VERTICAL CLEARANCE ABOVE METER AND ASSOCIATED FITTINGS SO THAT THE ASSEMBLY CAN BE LIFTED STRAIGHT OUT OF THE VAULT WITHOUT TILTING. VAULT DOORS SHALL OPEN PARALLEL TO THE INTERIOR WATER LINE PIPING.
9. BILCO JD-AL H20 DOUBLE DOOR HATCH (OR APPROVED EQUAL) CENTERED.
10. INTERIOR AND EXTERIOR COATING PER LOCALITY REQUIREMENTS.

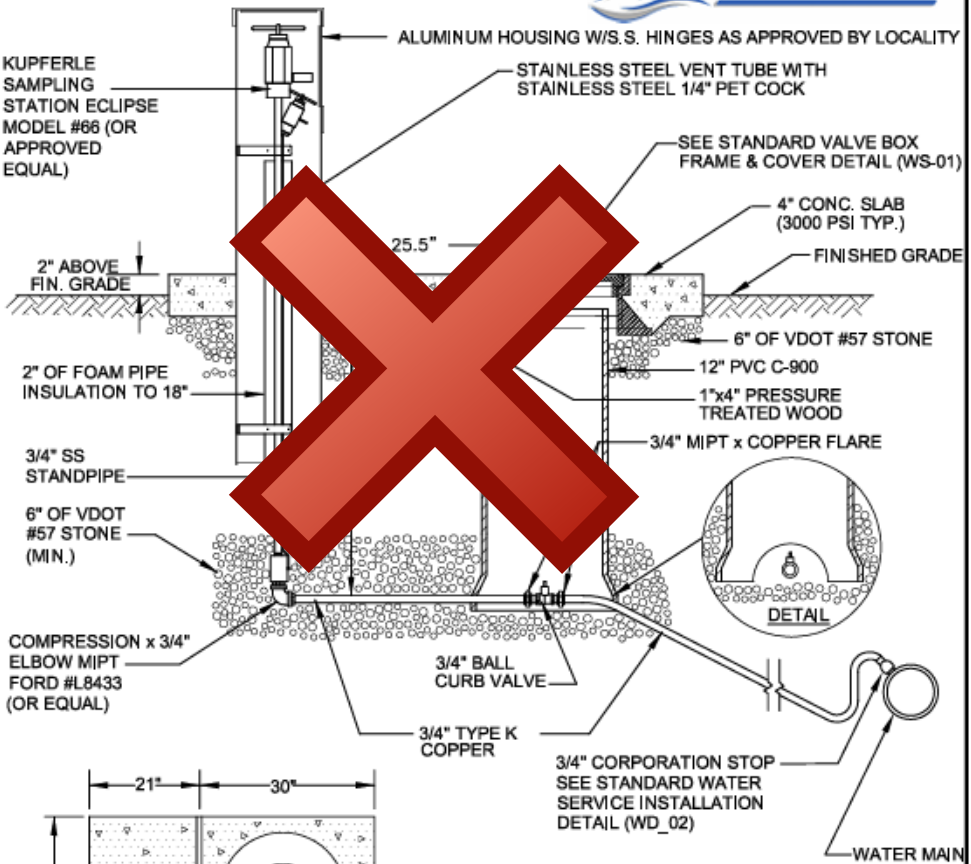
CONCRETE VAULT- H20 LOADING (3" THRU 10" WATER METER ASSEMBLIES)

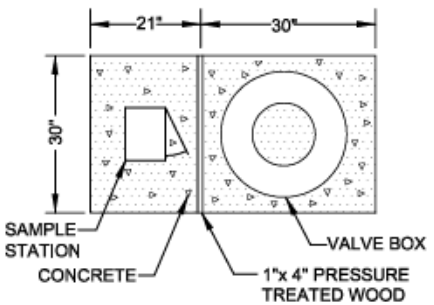
NOT TO SCALE

REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200,801	WATER DISTRIBUTION	6/16	3 Page 676 of 738	

NOT APPROVED FOR USE IN SMITHFIELD

HAMPTON ROADS PDC PLANNING DISTRICT COMMISSION





PLAN VIEW

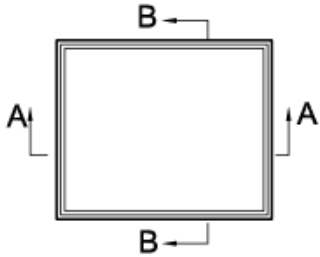
NOTE:
1. COMPACT AROUND BRASS STANDPIPE TO 95% MODIFIED PROCTOR.
2. SAMPLE STATION TO BE LOCATED OUTSIDE OF R/W CLEAR ZONE.

MAINGUARD #94WM SAMPLING STATION

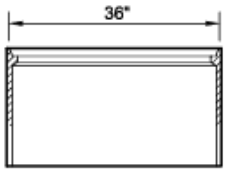
WATER SAMPLING STATION

NOT TO SCALE

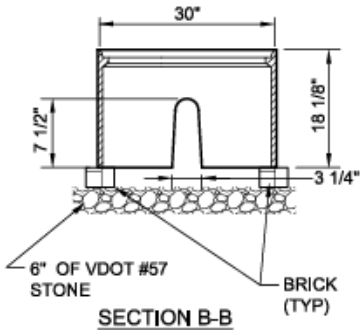
REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200, 801	WATER	6/16	1 OF 1	WD-13



PLAN (BODY)

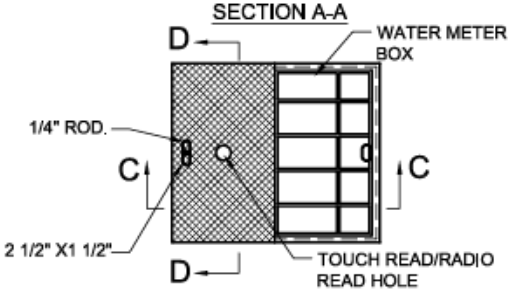


SECTION A-A

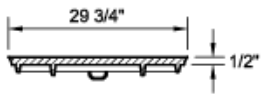


SECTION B-B

GRASS
CARSON 1730 BODY
OLD CASTLE FL36G LID

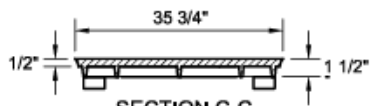


PLAN (LIDS TOP & BOTTOM)



SECTION D-D

ROW
DFW A4C-24-1 BODY
DFW A4C-1 LID



SECTION C-C

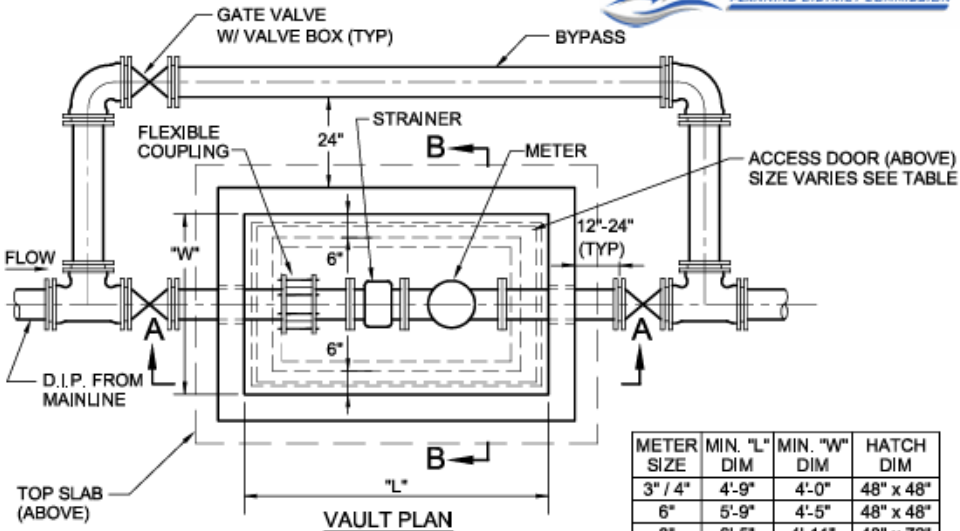
NOTES:

1. METER BOX TO BE SUPPLIED BY CAPITOL FOUNDRY OF VIRGINIA, INC. (MODEL MBX-1836) OR APPROVED EQUAL.
2. INTERIOR AND EXTERIOR OF METER BOX SHALL HAVE A BITUMASTIC COATING 16-20 MILS THICK.
3. PROVIDE A HOLE IN LID FOR TOUCH READ/RADIO READ CAPABILITY. COORDINATE TOUCH READ/RADIO READ REQUIREMENT WITH THE INDIVIDUAL LOCALITY.

LARGE WATER METER BOX (1 1/2" THROUGH 2-INCH)

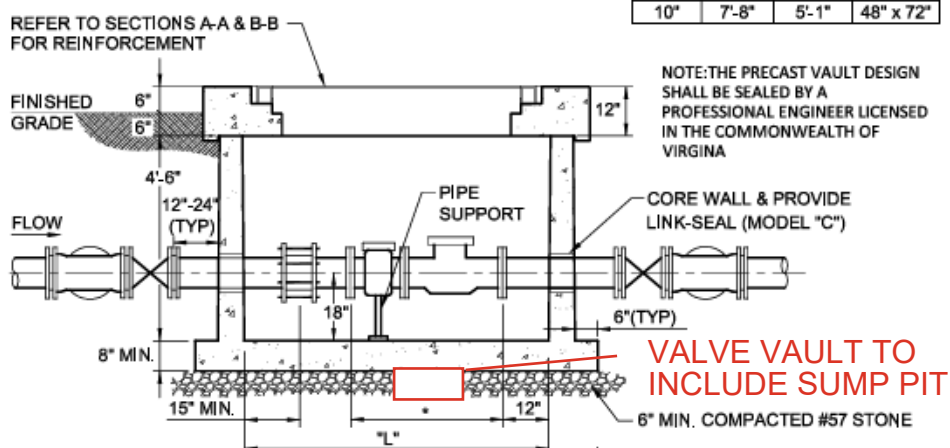
NOT TO SCALE

REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200,801	WATER DISTRIBUTION	6/16		



VAULT PLAN

METER SIZE	MIN. "L" DIM	MIN. "W" DIM	HATCH DIM
3" / 4"	4'-9"	4'-0"	48" x 48"
6"	5'-9"	4'-5"	48" x 48"
8"	6'-5"	4'-11"	48" x 72"
10"	7'-8"	5'-1"	48" x 72"



NOTE:THE PRECAST VAULT DESIGN SHALL BE SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE COMMONWEALTH OF VIRGINA

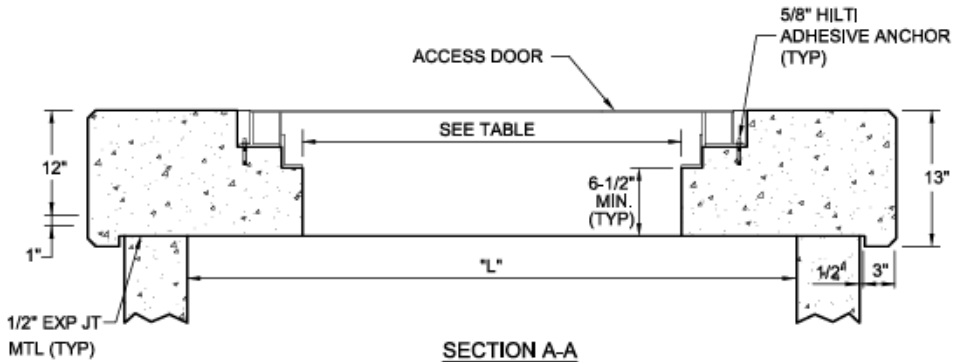
* DIMENSIONS VARY FOR 3" THRU 10" DIAMETER STRAINER & METER

VAULT SECTION

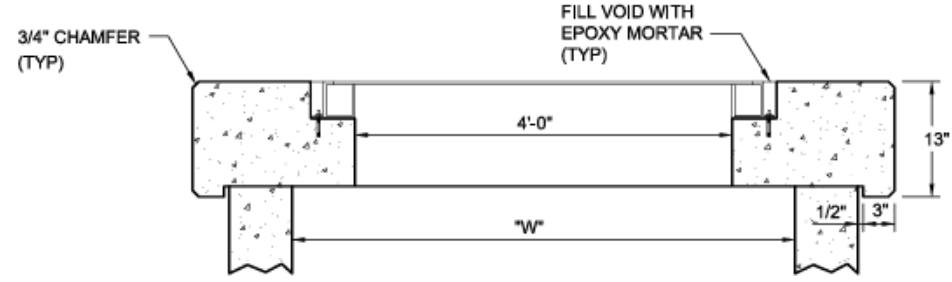
PRECAST VAULT- H20 LOADING (3" THRU 10" WATER METER ASSEMBLIES)

NOT TO SCALE

REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200,801	WATER DISTRIBUTION	6/16		



SECTION A-A



SECTION B-B

PRECAST CONCRETE VAULT- H20 LOADING (3" THRU 10" WATER METER ASSEMBLIES)

NOT TO SCALE

REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200,801	WATER DISTRIBUTION	6/16	2 of 2	WD-38

NOTES:

1. FLOOR OF VAULT TO BE SLOPED 1/4" PER FOOT TO A 6"X6" (3" DEEP) SUMP IN RIGHT BACK (PROPERTY SIDE) CORNER OF VAULT.
2. REDUCERS AS APPROPRIATE TO BE PLACED OUTSIDE THE BYPASS PIPING.
3. FLANGE ADAPTERS TO BE USED TO CONNECT METER TO PIPE.
4. METER, PIPE SUPPORT, AND DOOR KEY TO BE SUPPLIED BY THE CONTRACTOR AND DELIVERED TO THE OWNER.
5. ALL PIPES TO BE DUCTILE IRON, CLASS 53.
6. TWO 1-5/8" DIAMETER HOLES ARE TO BE DRILLED IN THE LEFT FRONT CORNER OF LID FOR REMOTE READ EQUIPMENT.
7. RECESSED LIFTING ANCHORS SHALL BE PROVIDED AT EACH CORNER OF VAULT LID.
8. VAULT DOORS SHALL BE CENTERED OVER METER LOCATION TO PROVIDE VERTICAL CLEARANCE ABOVE METER AND ASSOCIATED FITTINGS SO THAT THE ASSEMBLY CAN BE LIFTED STRAIGHT OUT OF THE VAULT WITHOUT TILTING. VAULT DOORS SHALL OPEN PARALLEL TO THE INTERIOR WATER LINE PIPING.
9. BILCO JD-AL H20 DOUBLE DOOR HATCH (OR APPROVED EQUAL) CENTERED.
10. INTERIOR AND EXTERIOR COATING PER LOCALITY REQUIREMENTS.
11. THE PRECAST VAULT DESIGN SHALL BE SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE COMMONWEALTH OF VIRGINA

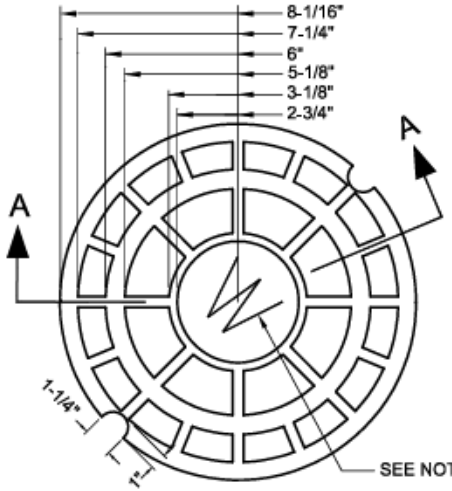
PRECAST CONCRETE VAULT- H20 LOADING (3" THRU 10" WATER METER ASSEMBLIES)

NOT TO SCALE

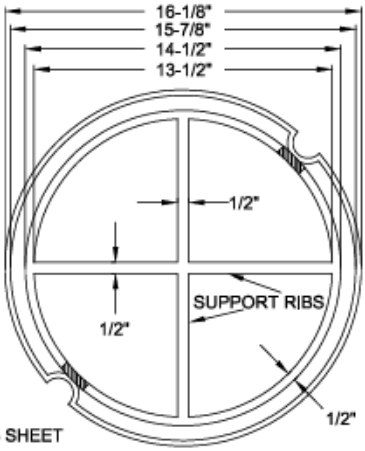
REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200,801	WATER DISTRIBUTION	6/16		

NOTE:

MARK WITH A "W" FOR WATER DISTRIBUTION SYSTEMS OR "S" FOR SANITARY SYSTEMS. TOP & BOTTOM OF LETTER DESIGNATION TO BE IN LINE WITH NOTCHES.

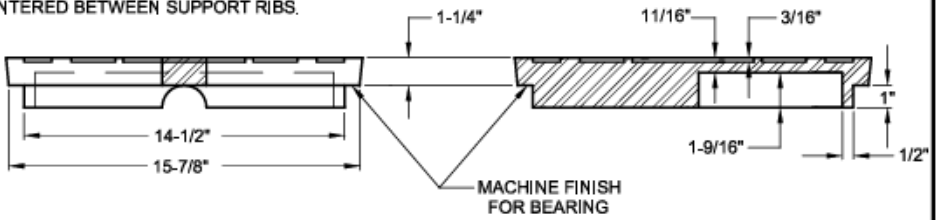


COVER: TOP



COVER: BOTTOM

BOTTOM SUPPORT RING TO BE NOTCHED DIRECTLY UNDER PICK HOLE ON BOTH SIDES. NOTCHES TO BE CENTERED BETWEEN SUPPORT RIBS.



SIDE VIEW

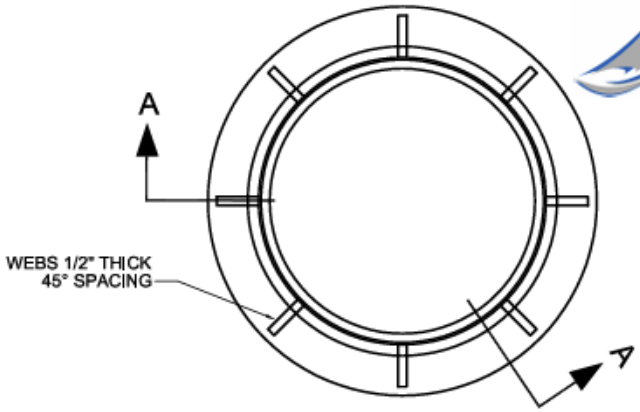
SECTION A-A

SEE WS_01, SHEET 2 OF 2 FOR NOTES & FRAME DETAILS.

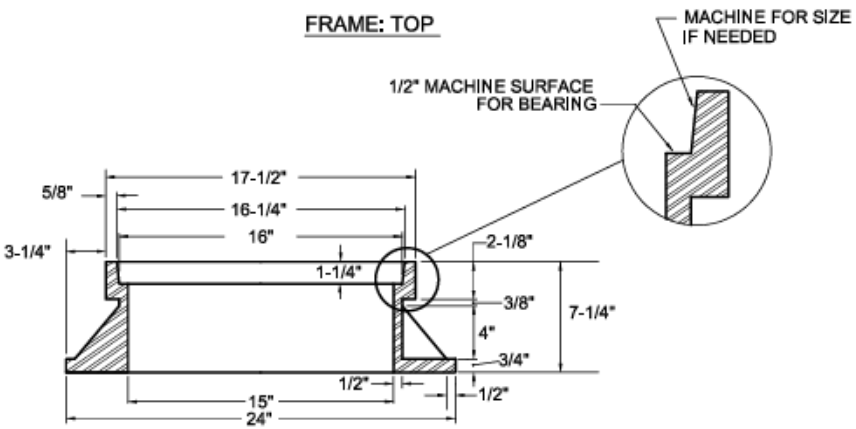
STANDARD VALVE BOX FRAME AND COVER

NOT TO SCALE

REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200,801,803	WATER & SANITARY	6/16	1 OF 2	WS-01



FRAME: TOP



SECTION A-A

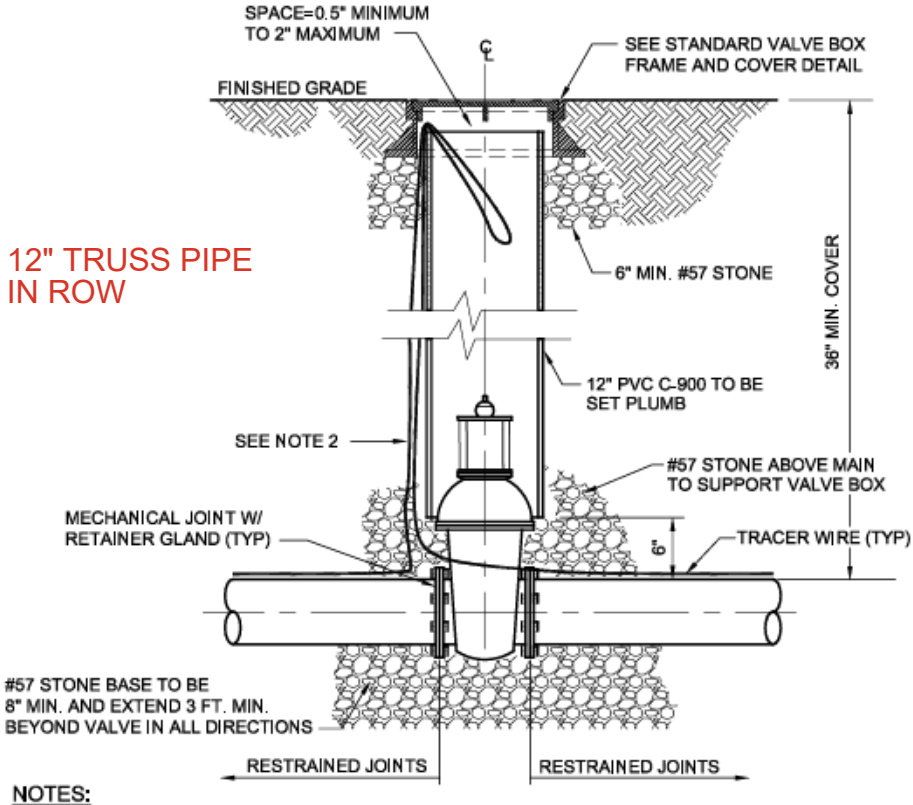
NOTES:

1. VALVE BOX FRAME AND COVER TO BE SUPPLIED BY CAPITAL FOUNDRY OF VIRGINIA, INC., MODEL #NPN-15*N, 160 LBS., OR APPROVED EQUAL.
2. ALL GRAY IRON CASTINGS SHALL CONFORM TO LATEST EDITION OF ASTM A-48, CLASS 30 AND SHALL BE OF UNIFORM QUALITY.
3. ALL CASTING DIMENSIONS SHALL HAVE A TOLERANCE OF 1/8"±.
4. ALL CASTINGS SHALL BE CLEANED BY SHOT BLASTING AND HAND CHIPPING UTILIZING STANDARD INDUSTRY PRACTICES PRIOR TO SHOP APPLICATION OF ASPHALTIC COATING, BY DIPPING.

STANDARD VALVE BOX FRAME AND COVER

NOT TO SCALE

REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200,801,803	WATER & SANITARY	6/16	PDC-2	WS-38



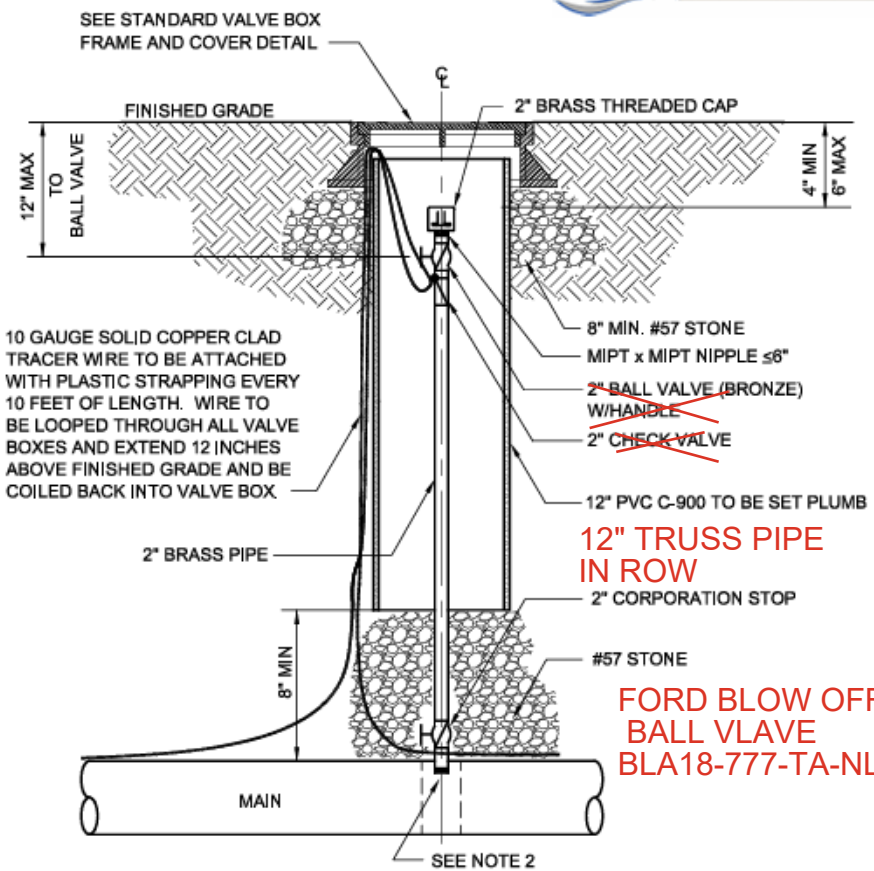
NOTES:

1. OPERATING NUT SHALL BE 12 TO 24 - INCHES BELOW THE TOP RIM OF THE VALVE BOX.IF OPERATING NUT IS GREATER THAN 36" BELOW TOP OF VALVE BOX FRAME, A VALVE STEM EXTENSION MAY BE INSTALLED. THE EXTENSION SHALL REPLACE OR BE SECURELY ATTACHED TO THE NORMAL 2 INCH SQUARE OPERATING NUT, SHALL BE AT LEAST AS STRONG AS THE VALVE STEM, AND SHALL BE COATED IN ACCORDANCE WITH AWWA C550. VALVE STEM EXTENSIONS MUST BE APPROVED BY THE LOCALITY.
2. PLASTIC COATED 10 GAUGE SOLID COPPER TRACER WIRE TO BE ATTACHED WITH PLASTIC STRAPPING EVERY 10 FEET OF LENGTH. WIRE TO BE LOOPED THROUGH VALVE BOX AND EXTEND 12 INCHES ABOVE FINISHED GRADE AND COILED BACK INTO VALVE BOX.

VALVE SETTING DETAIL

NOT TO SCALE

REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200,801,803	WATER & SANITARY	6/16	1 of 1	WS-08



FITTING	INLET THREAD	OUTLET THREAD
CORPORATION STOP	AWWA/CC	FEMALE IRON PIPE
BALL VALVE	FEMALE IRON PIPE	FEMALE IRON PIPE
THREADED CAP	FEMALE IRON PIPE	N/A

MANUAL AIR VENT ASSEMBLY

NOT TO SCALE

REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200,801,803	WATER & SANITARY	6/16	2 OF 3	WS-23

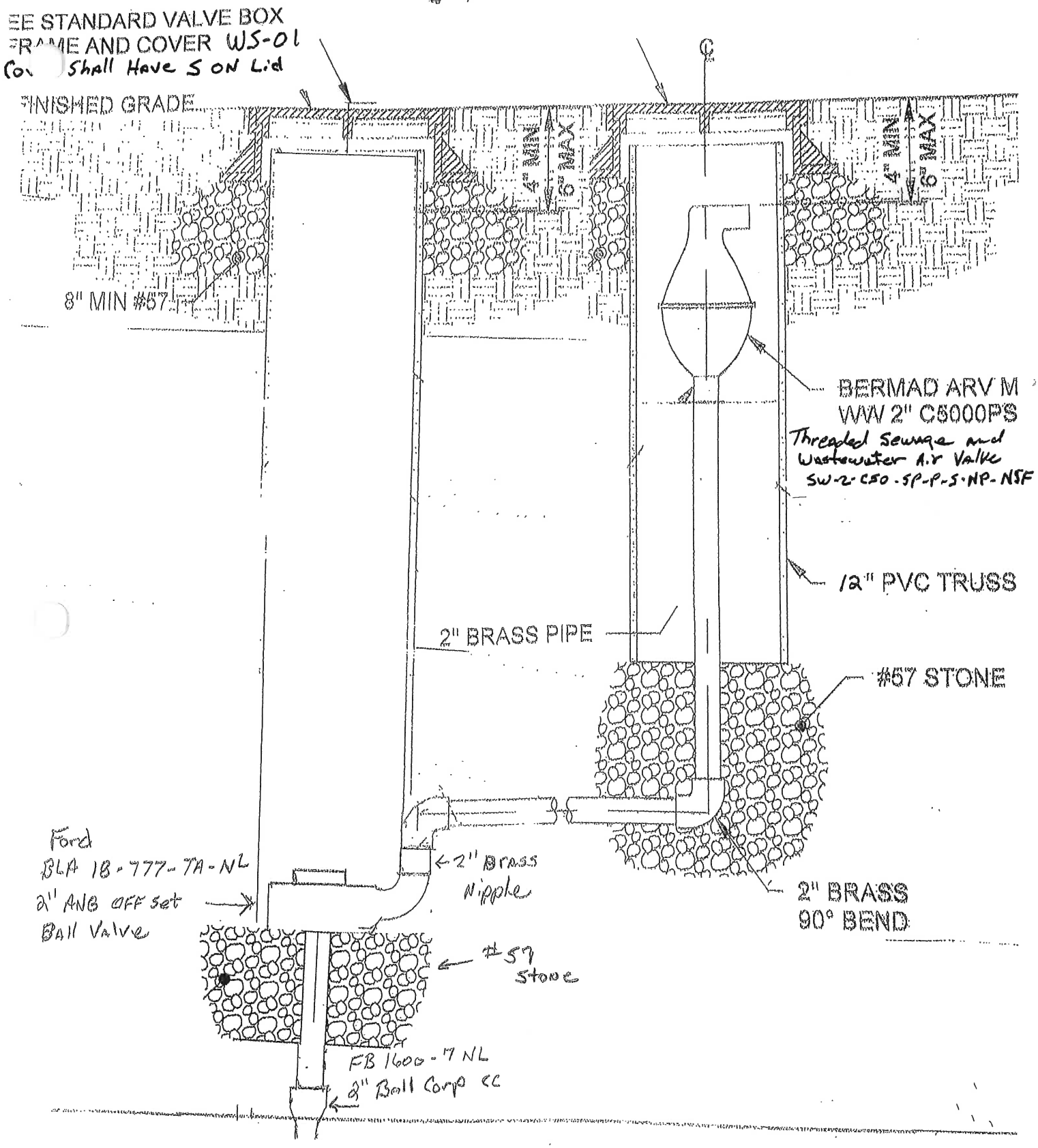
NOTES:

1. 2" BRASS PIPE AND FITTINGS SHALL BE USED FOR AIR RELEASE ASSEMBLY.
2. SADDLES ARE REQUIRED ON ALL PIPE DIAMETERS FOR ALL PIPE MATERIALS.
3. ALL BRASS FITTINGS SHALL HAVE IRON PIPE THREADS.
4. BRASS PIPE SHALL HAVE MALE IRON PIPE THREADS AT EACH END.
5. THE CORPORATION STOPS SHALL BE MANUFACTURED WITH AWWA/CC TAPERED INLET THREADS.
6. CORPORATION STOPS JOINING TO EXISTING GALVANIZED PIPING OR PROPOSED BRASS PIPE SHALL HAVE FEMALE IRON PIPE THREADS.
7. FOR CORPORATION STOPS JOINING TO GALVANIZED OR BRASS PIPING, USE FORD METER BOX CO., MODEL FB1600.
8. REFER TO DETAIL WS_02.

MANUAL AIR VENT ASSEMBLY

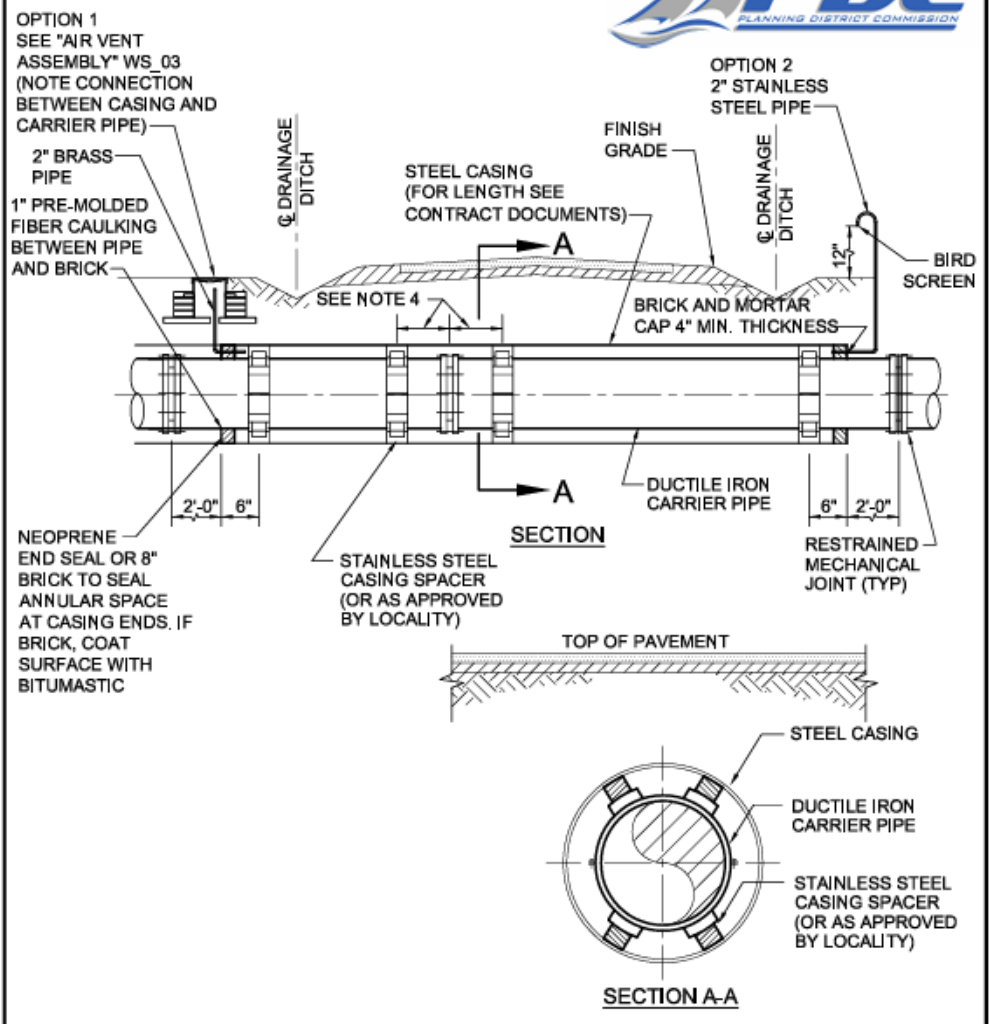
NOT TO SCALE

REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200,801,803	WATER & SANITARY	6/16	PAGE 3	WS_03



AUTOMATIC AIR VENT

NOT TO SCALE



SEE WS_04, SHEET 2 OF 2 FOR NOTES.

STEEL CASING DETAIL

NOT TO SCALE

REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200,801-804	WATER & SANITARY	6/16	PAGE 3	WS_03

STEEL CASING PIPE SELECTION CHART								
DUCTILE IRON PIPE SIZE	4"	6"	8"	12"	16"	24"	30"	36"
STEEL CASING PIPE SIZE (O.D.)	12"	18"	18"	24"	30"	42"	48"	54"

NOTES:

1. ALL JOINTS INSIDE OF CASING PIPE AND ONE JOINT BEYOND SHALL BE RESTRAINED MECHANICAL JOINTS OR AS APPROVED BY LOCALITY.

2. INSTALL CASING PIPE AS SHOWN ON DRAWINGS OR MIN. 5 FT. BEYOND EDGE OF PAVEMENT.

3. STAINLESS STEEL SPACERS
   SPACERS SHALL BE BOLT-ON STYLE WITH A TWO PIECE SHELL MADE FROM T-304 STAINLESS STEEL OF A MINIMUM 14 GAUGE THICKNESS. THE SHELL SHALL BE LINED WITH A RIBBED PVC SHEET OF A 0.090" THICKNESS THAT OVERLAPS THE EDGES. RUNNERS MADE FROM UHMW POLYMER, SHALL BE ATTACHED TO RISERS AT APPROPRIATE POSITIONS TO PROPERLY LOCATE THE CARRIER WITHIN THE CASING AND TO EASE INSTALLATION. RISERS TO BE MADE FROM T-304 STAINLESS STEEL OF A MINIMUM 14 GAUGE THICKNESS AND SHALL BE ATTACHED TO THE SHELL BY MIG WELDING. ALL WELDS SHALL BE FULLY PASSIVATED. ALL FASTENERS SHALL BE MADE FROM T-304 STAINLESS STEEL. CASING SPACERS SHALL BE MODEL CCS AS MANUFACTURED BY CASCADE WATERWORKS MANUFACTURING COMPANY OF YORKVILLE, IL., MODEL SSI AS MANUFACTURED BY ADVANCE PRODUCTS & SYSTEMS, INC. OF LAFAYETTE, LA., OR APPROVED EQUAL.

4. SPACER WIDTH AND PLACEMENT INTERVALS
   IN ALL INSTANCES SPACER SHOULD BE PLACED TO SUPPORT THE CARRIER WITHIN TWO FEET OF THE END OF EACH PIPE JOINT. CONSULT SPACER MANUFACTURER FOR RECOMMENDATIONS ON SPACER WIDTH AND ADDITIONAL PLACEMENT INTERVALS.

STEEL CASING DETAIL

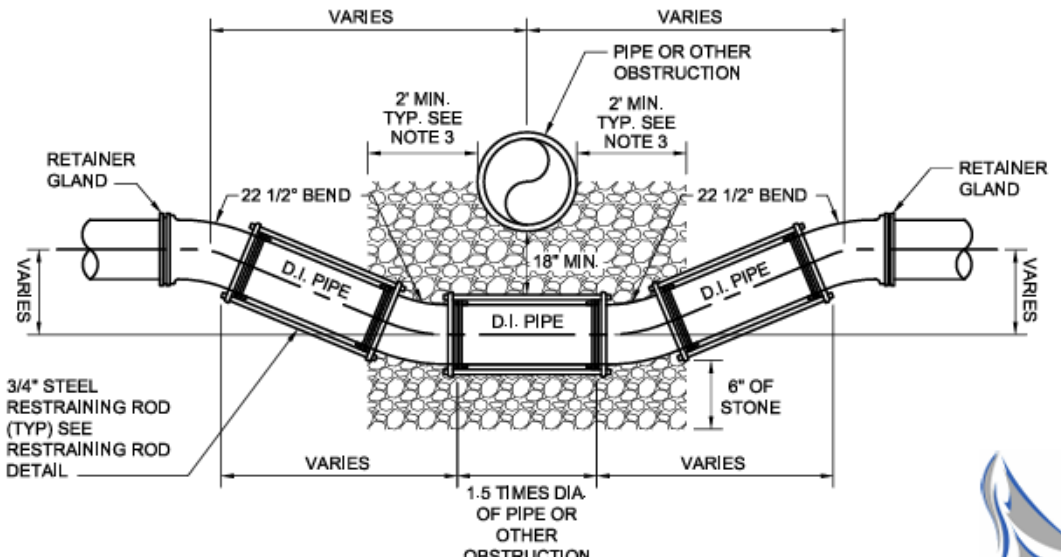
NOT TO SCALE

REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200,801-804	WATER & SANITARY	6/16	PDC-2	WS-34

REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200,801,803	WATER & SANITARY	6/16	1 OF 1	WS_06

OBSTRUCTION BY-PASS UNIFORM OFFSET

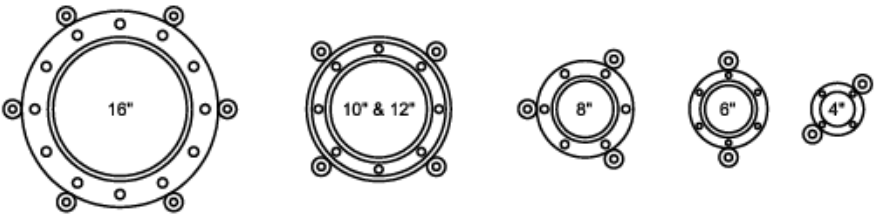
NOT TO SCALE

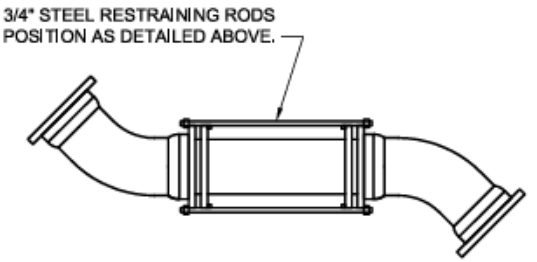


NOTES:

1. SEE PLANS FOR OFFSET DIMENSIONS. NON-UNIFORM OFFSET REQUIRES SPECIAL DESIGN.
2. SEE SPECIFICATION SECTION 200 FOR OTHER ALLOWABLE METHODS OF RESTRAINT.
3. BEDDING MATERIAL SHALL BE PLACED A MINIMUM OF 2 FEET BEYOND EACH PIPE AND PROJECT OUTWARD FROM THE CROSSING ALONG BOTH PIPES.

HAMPTON ROADS PDC PLANNING DISTRICT COMMISSION





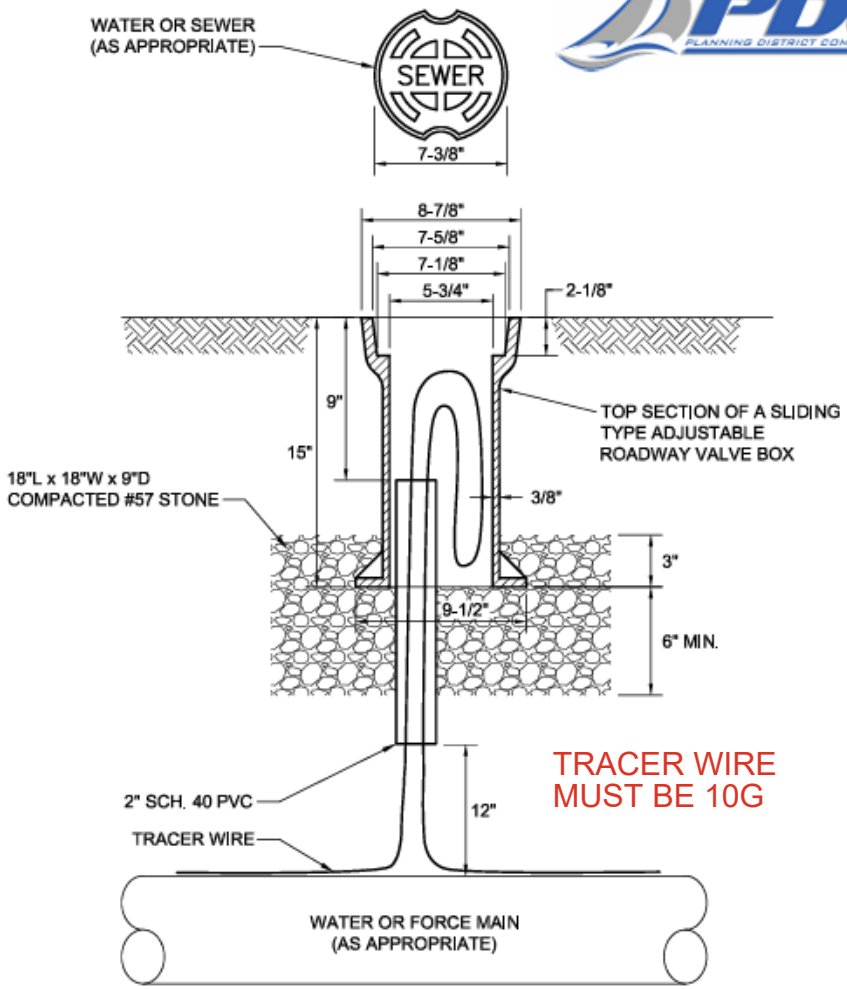
NOTES:

1. BOLT HOLES ARE SHOWN AS NORMALLY PROVIDED IN MECHANICAL JOINT FITTINGS, i.e. STRADDLING THE VERTICAL AXIS WHEN FITTING IS POSITIONED FOR A HORIZONTAL CHANGE OF DIRECTION. FITTINGS WITH BOLT HOLES OTHERWISE ORIENTED SHOULD NOT BE USED IN RODDED ASSEMBLIES.
2. 3/4" TIE BOLTS AND THREADED RODS SHALL HAVE A MINIMUM YIELD STRENGTH OF 11,000 lbs EACH.
3. ALL RODS AND FASTENERS SHALL BE GIVEN TWO COATS OF BITUMINOUS PAINT AFTER ASSEMBLY.

RESTRAINING ROD DETAIL

NOT TO SCALE

REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200,801,803	WATER & SANITARY	6/16		



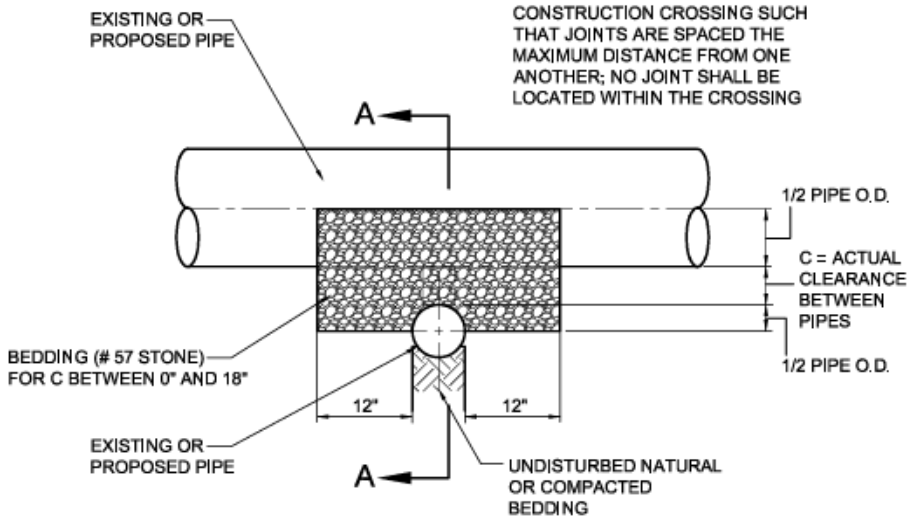
NOTES:

1. WIRE SHALL BE LOOPED THROUGH THE VALVE VAULT AND EXTEND 24 INCHES ABOVE FINISHED GRADE AND COILED BACK INTO THE VALVE VAULT.

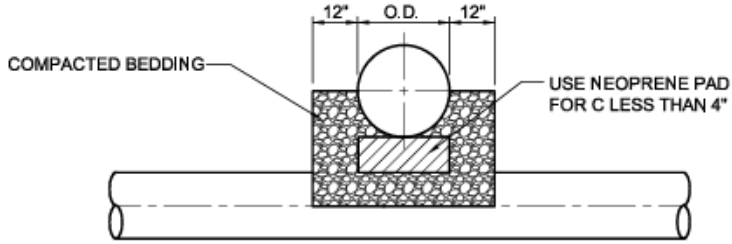
TYPICAL TRACER WIRE BOX INSTALLATION

NOT TO SCALE

REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200, 801, 803	WATER & SANITARY	6/16	Page 692 of 738	



SAND TO BE USED AROUND WATER LINE



SECTION A-A

NOTE:

1. USE OF THIS DETAIL MUST BE APPROVED BY THE LOCALITY.

PIPE CROSSING

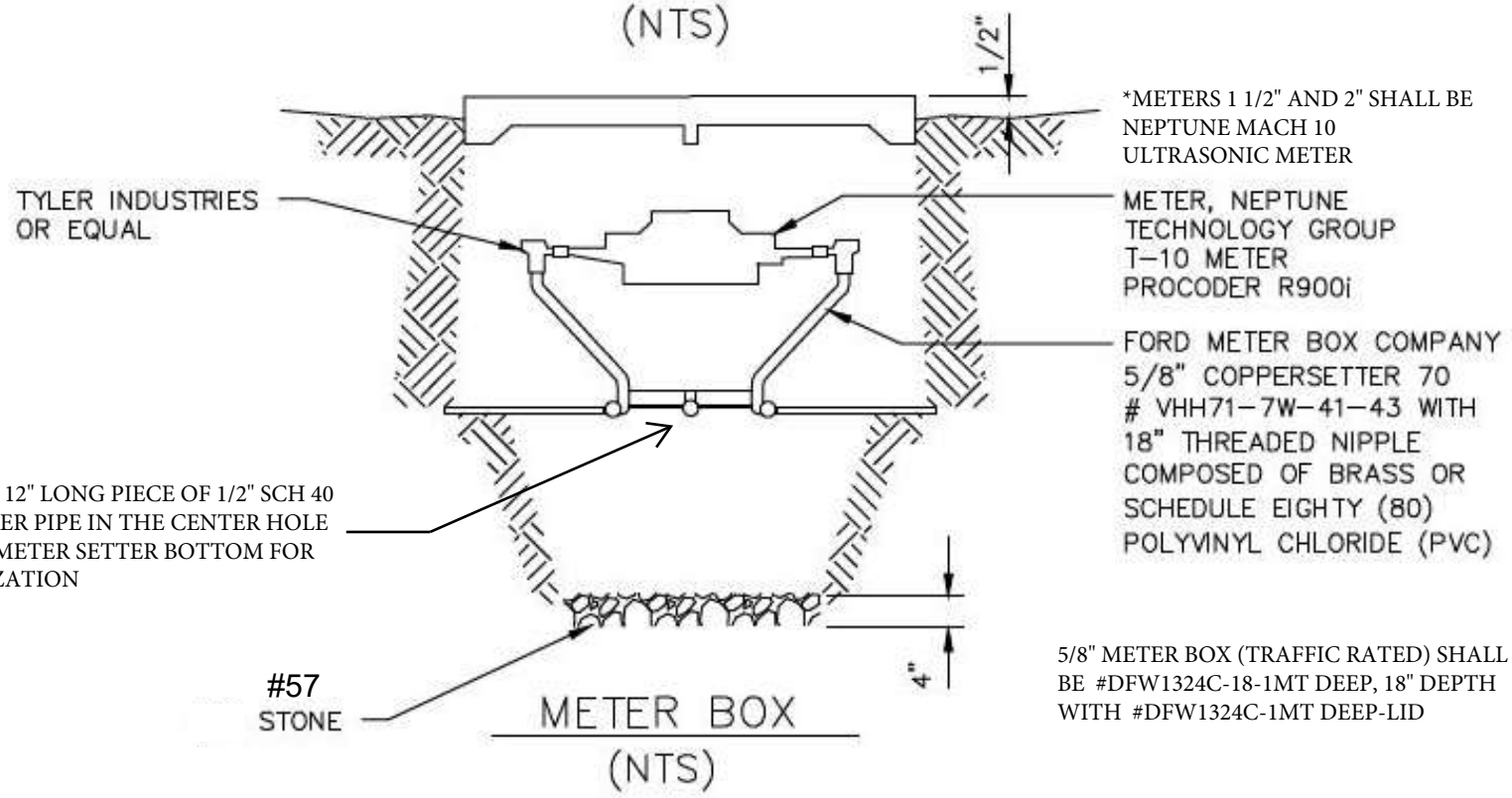
NOT TO SCALE

REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200, 801, 802, 803	WATER & SANITARY	6/16	Page 693 of 768	

NOTE: THE WATER SUPPLY LINES FROM THE WATER MAIN TO THE WATER METERS SHALL BE OF TWO–INCH (2") OR LESS IN DIAMETER MUNICIPEX PIPE, WITH TEN (10) GAUGE TRACER WIRE.

SERVICE CONNECTION

(NTS)



METER BOX

(NTS)

NOTE; THE COPPERSETTER MUST BE CONTAINED IN AN EIGHTEEN INCH (18") CARSON METER BOX (ITEM NUMBER 1520). AN EPOXY–COATED SERVICE SADDLE WITH "CC" THREADS AND STAINLESS STEEL STRAPS MUST BE USED. MUNICIPEX PIPE TWO INCHES (2") OR LESS IN DIAMETER, WITH TEN (10) GAUGE TRACER WIRE.

ADDITIONAL ACCESSORIES

WATER METER SHALL BE 5/8" NEPTUNE TECHNOLOGY GROUP MODEL T–10 PROCODER R900i
CORPORATION STOPS SHALL BE 1" BALL CORPORATION STOP PART #FB600–4–NL BY THE FORD METER BOX COMPANY, INC.
CONTRACTOR SHALL USE SWIVEL EIGHT BEND PART #LA04–44S–NL BY THE FORD METER BOX COMPANY

W–8

TOWN OF SMITHFIELD, VA

WATERWORKS DETAILS

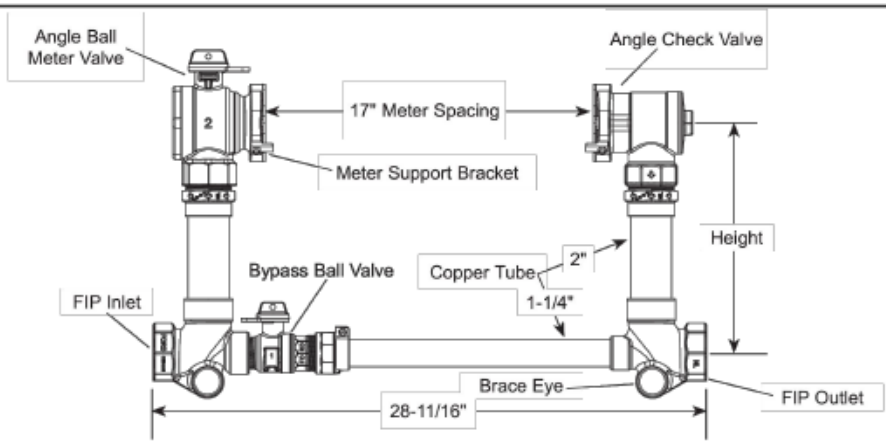
SUBMITTAL INFORMATION

70 Series Coppersetter - *(VBH77-xxB-11-77-NL style)*



ANGLE BALL VALVE BY ANGLE CHECK VALVE (2" METER)

FEMALE IRON PIPE THREAD INLET AND OUTLET



SERVICE LINE CONNECTION		HEIGHT	APPROX. WT. LBS.	CATALOG NUMBER	✓ SUBMITTED ITEM(S)
FIP INLET	FIP OUTLET				
2"	2"	12"	32	VBH77-12B-11-77-NL	
		15"	33	VBH77-15B-11-77-NL	
		18"	34	VBH77-18B-11-77-NL	
		21"	34	VBH77-21B-11-77-NL	
		24"	35	VBH77-24B-11-77-NL	
		27"	35	VBH77-27B-11-77-NL	
		36"	38	VBH77-36B-11-77-NL	
		42"	40	VBH77-42B-11-77-NL	

FEATURES

- All brass that comes in contact with potable water conforms to AWWA Standard C800 (ASTM B584, UNS C89833)
- The product has the letters "NL" cast into the main body for lead-free identification
- Brass components that do not come in contact with potable water conform to AWWA Standard C800 (ASTM B62 and ASTM B584, UNS C83600, 85-5-5-5)
- Certified to NSF/ANSI/CAN Standard 61 and NSF/ANSI/CAN Standard 372 where applicable
- Copper conforms to ASTM B75 or B88, UNS C12200
- All Ford® Setters are assembled with lead-free solder
- 2-1/8" copper risers provide more flow capacity
- Bracing eyes are standard
- Meter support brackets are standard
- Optional High Bypass - add "HB" following the height. Example: VBH77-12HB-11-77-NL
- Padlock wing is standard on all angle meter ball valves or key valves

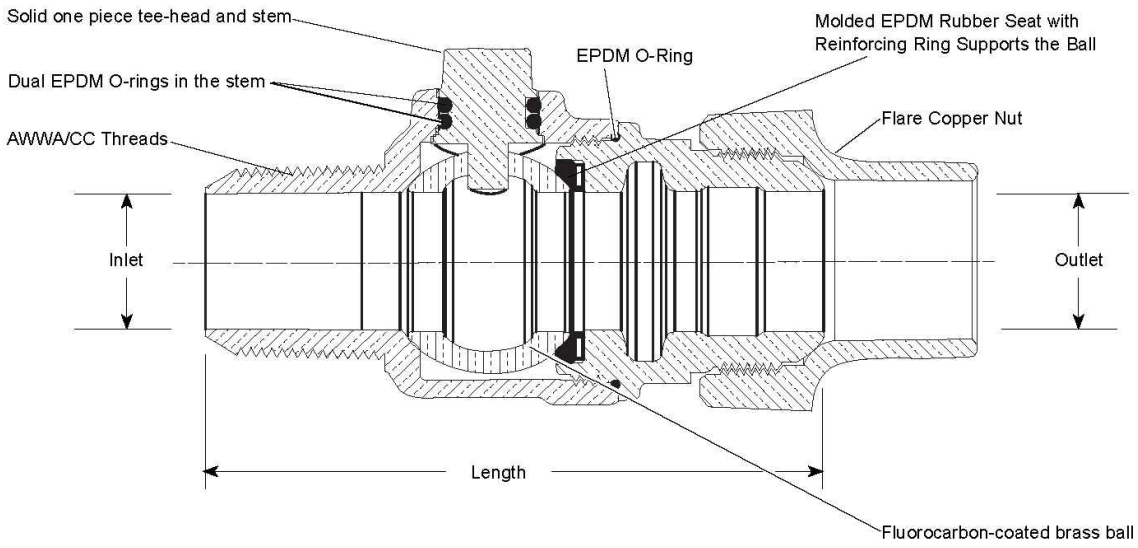
The Ford Meter Box Company considers the information in this submittal form to be correct at the time of publication. Item and option availability, including specifications, are subject to change without notice. Please verify that your product information is current. Our standard warranty applies.

The Ford Meter Box Company, Inc.
P.O. Box 443, Wabash, Indiana U.S.A. 46992-0443
Phone: 260-563-3171 / Fax: 800-826-3487
Overseas Fax: 260-563-0167
www.fordmeterbox.com

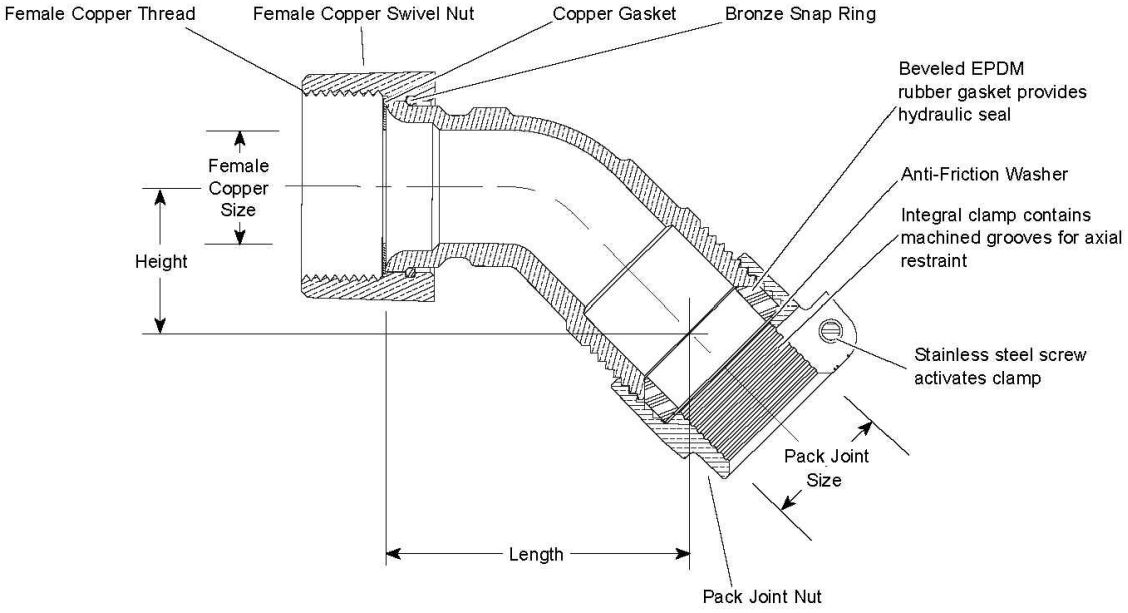
09/07/23

Submitted By:

AWWA/CC TAPER THREAD INLET BY FLARE COPPER OUTLET

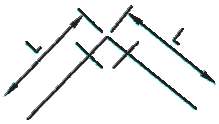


BALLCORP CORPORATION STOP
(FB600–x–NL style)
FORD METER BOX COMPANY

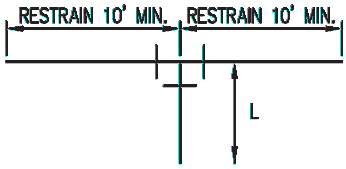


SWIVEL EIGHTH BEND
(LA04–xxS–NL style)
FORD METER BOX COMPANY

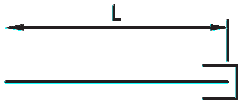
TOWN OF SMITHFIELD DESIGN AND CONSTRUCTION STANDARDS	
CORPORATION STOP AND SWIVEL EIGHTH BEND	
DWG #: W–8A	SCALE: NTS
	NOV 2022



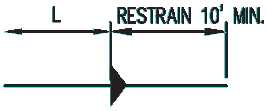
HORIZONTAL/VERTICAL BEND



TEE



PLUG & VALVES



REDUCER

NOTE: L = CORRESPONDING LENGTH BELOW (FT)

MINIMUM RESTRAINED JOINT LENGTHS (L)

FITTING	11.25°	22.5°	45°	90°	PLUG/VALVE	REDUCER	TEE
4" HORIZONTAL BEND	2'	4'	7'	17'	–	–	–
6" HORIZONTAL BEND	2'	5'	10'	24'	–	–	–
8" HORIZONTAL BEND	3'	6'	13'	31'	–	–	–
10" HORIZONTAL BEND	4'	8'	16'	38'	–	–	–
12" HORIZONTAL BEND	4'	9'	18'	44'	–	–	–
4" VERTICAL BEND	5'	10'	22'	–	–	–	–
6" VERTICAL BEND	7'	15'	31'	–	–	–	–
8" VERTICAL BEND	9'	19'	40'	–	–	–	–
10" VERTICAL BEND	11'	23'	48'	–	–	–	–
12" VERTICAL BEND	13'	26'	56'	–	–	–	–
4" PLUG/VALVE	–	–	–	–	52'	–	–
6" PLUG/VALVE	–	–	–	–	74'	–	–
8" PLUG/VALVE	–	–	–	–	96'	–	–
10" PLUG/VALVE	–	–	–	–	115'	–	–
12" PLUG/VALVE	–	–	–	–	135'	–	–
12x12	–	–	–	–	–	–	104'
12x10	–	–	–	–	–	40'	77'
12x8	–	–	–	–	–	72'	48'
12x6	–	–	–	–	–	98'	11'
12x4	–	–	–	–	–	117'	5'
10x10	–	–	–	–	–	–	84'
10x8	–	–	–	–	–	39'	57'
10x6	–	–	–	–	–	71'	22'
10x4	–	–	–	–	–	94'	5'
8x8	–	–	–	–	–	–	65'
8x6	–	–	–	–	–	40'	33'
8x4	–	–	–	–	–	69'	5'
6x6	–	–	–	–	–	–	43'
6x4	–	–	–	–	–	38'	8'
4x4	–	–	–	–	–	–	22'

NOTES:

1. LOOPED WATER SYSTEMS SHALL HAVE RESTRAINT PROVIDED ON BOTH SIDES OF ALL VALVES AND FITTINGS.
2. LENGTHS SHOWN ABOVE ARE MINIMUM REQUIREMENTS. CONDITIONS WORSE THAN THE DESIGN PARAMETERS INDICATED, WHETHER ANTICIPATED DURING DESIGN OR ENCOUNTERED DURING CONSTRUCTION, WILL REQUIRE SUBMITTAL OF DESIGN CALCULATIONS FOR SMITHFIELD REVIEW AND APPROVAL.
3. DEPTH OF BURY ON LOW SIDE OF VERTICAL BENDS ASSUMED AS 6 FEET.
4. COMPUTATIONS BASED ON FORD METER BOX UNIFLANGE PIPE THRUST RESTRAINT PROGRAM V.3.00.
5. GATE VALVES CALCULATED AS DEAD END FITTING TYPE
6. PIPE SIZES LARGER THAN 12" SHALL HAVE THE RESTRAINED LENGTH CALCULATED AND APPROVED BY SMITHFIELD THEN PLACED ON THE PLANS. THE DESIGN PARAMETERS SHOWN SHALL BE THE MINIMUM CONDITIONS.

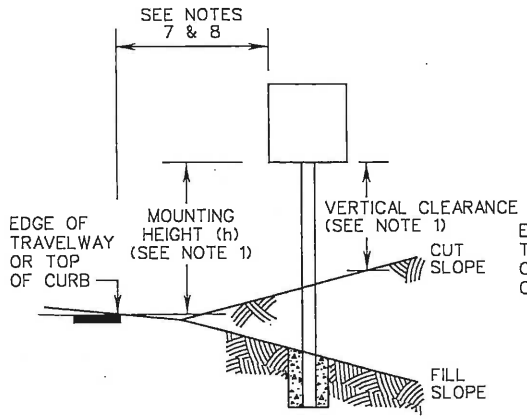
DESIGN PARAMETERS:

TEST PRESSURE = 150 PSI
PIPE MATERIAL = PVC
TRENCH TYPE IV
SOIL TYPE = ML
DEPTH OF BURY = 3'
SAFETY FACTOR = 1.5

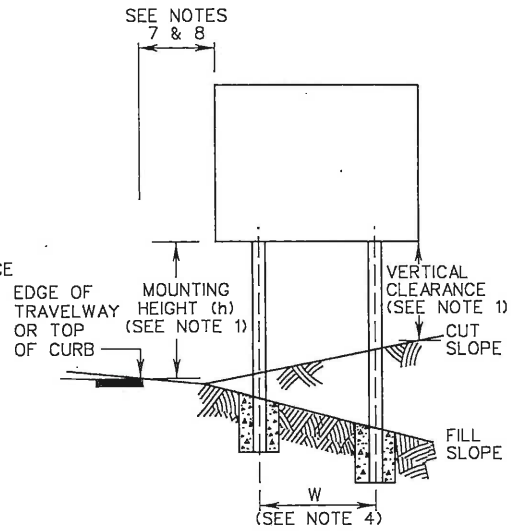
TOWN OF SMITHFIELD
DESIGN AND CONSTRUCTION STANDARDS

JOINT RESTRAINT TABLE

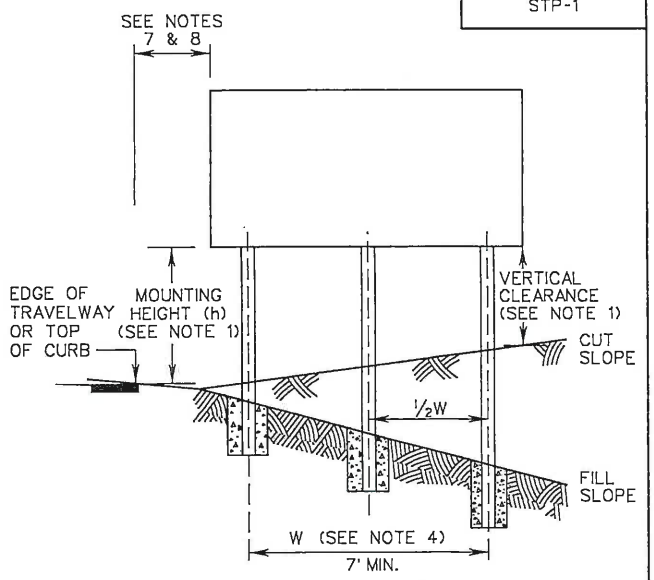
DWG #: JR–1	SCALE: N.T.S
DWN BY: TOWN	AUG 2017



SINGLE POST
INSTALLATIONS



TWO POST
INSTALLATIONS



THREE POST
INSTALLATIONS

NOTES:

1. FOR ALL SIGNS EXCEPT STREET NAME SIGNS:
   A. MINIMUM MOUNTING HEIGHT (h) SHALL BE IN ACCORDANCE WITH THE "MINIMUM MOUNTING HEIGHT" TABLE ON THIS SHEET.
   B. MAXIMUM MOUNTING HEIGHT (h) FOR THE BOTTOM-MOST SIGN PANEL(S) SHALL BE 8 FEET, EXCEPT WHEN NECESSARY TO ACHIEVE MINIMUM VERTICAL CLEARANCE BENEATH SIGN PANEL AS PER NOTE 1C.
   C. MINIMUM VERTICAL CLEARANCE (DISTANCE BETWEEN BOTTOM OF SIGN PANEL AND FINISHED GRADE BENEATH THE PANEL) SHALL BE 7 FEET FOR ANY PORTION OF THE SIGN WITHIN THE CLEAR ZONE. THIS MINIMUM VERTICAL CLEARANCE MAY BE REDUCED TO 5 FEET FOR EITHER OF THE FOLLOWING CONDITIONS:
      - WHEN SIGNS OR PORTIONS OF SIGNS ARE LOCATED MORE THAN 10 FEET UP A CUT SLOPE GREATER THAN 3:1, OR
      - WHEN THE SIGN IS LOCATED AT LEAST THE MINIMUM DISTANCE BEHIND CURB, BARRIER, OR GUARDRAIL AS PER NOTES 7 AND 8.
2. MOUNTING HEIGHT (h) FOR STREET NAME SIGNS SHALL BE BETWEEN 8'-6" AND 9'-0".
3. A SECONDARY SIGN IS CONSIDERED TO BE A SIGN MOUNTED BELOW ANOTHER SIGN, EXCEPT A ROUTE MARKER WITH AN AUXILIARY PLATE IS CONSIDERED TO BE A SINGLE SIGN. A SECONDARY SIGN SHALL NOT BE MOUNTED LOWER THAN 7 FEET ABOVE A PEDESTRIAN SIDEWALK OR PATHWAY IF IT WILL PROJECT INTO THE PEDESTRIAN FACILITY.
4. W = (0.60) X (SIGN PANEL WIDTH)
5. SQUARE TUBE SIGN POSTS REQUIRING A BREAKAWAY SUPPORT SYSTEM SHALL BE AN FHWA APPROVED BREAKAWAY SUPPORT SYSTEM CONFORMING TO AASHTO'S STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINIARIES AND TRAFFIC SIGNALS.

MINIMUM MOUNTING HEIGHT (h)
(SEE NOTE 1)

SIGN TYPES	FREEWAYS, EXPRESSWAYS, AND FULL CONTROL ACCESS HIGHWAYS	OTHER HIGHWAYS	
		RURAL AREAS	NON-RURAL AREAS
DIRECTIONAL SIGNS	7'	5'	7'
ROUTE MARKERS, WARNING AND REGULATORY SIGNS	7'	5'	7'
SECONDARY SIGNS (SEE NOTE 3)	5'	4'	7'

6. FOR SIGNS LOCATED IN AREAS WHERE PEDESTRIAN MOVEMENTS ARE LIKELY TO OCCUR OR ON-STREET PARKING IS PERMITTED, THE HEIGHT FROM THE LOWEST PORTION OF THE SIGN PANEL TO THE FINISHED SURFACE SHALL HAVE A MINIMUM CLEARANCE OF 7 FEET.
7. THE LATERAL CLEARANCE TO THE SIGN PANEL SHALL BE A MINIMUM OF 2 FEET FROM THE FACE OF CURB OR 4 FEET FROM FACE OF BARRIER, IF PRESENT.
8. UNLESS OTHERWISE APPROVED BY THE ENGINEER, SIGNS PLACED BEHIND GUARDRAIL SHALL BE LOCATED SUCH THAT THE NEAR SIDE EDGE OF THE SIGN PANEL IS OUTSIDE OF THE GUARDRAIL DEFLECTION DISTANCE.

SPECIFICATION REFERENCE	A COPY OF THE ORIGINAL SEALED AND SIGNED DRAWING IS ON FILE IN THE CENTRAL OFFICE.	VDOT ROAD AND BRIDGE STANDARDS	
700	# SQUARE TUBE SIGN POST VIRGINIA DEPARTMENT OF TRANSPORTATION	REVISION DATE 01/15	SHEET 1 OF 12 1321.10

TABLE 1
FOR HAMPTON ROADS DISTRICT (SEE NOTE 5)

SIZE OF POST	CENTROID (FT)	MAXIMUM AREA (TOTAL OF SIGN PANELS) (FT^2) SINGLE-POST	TWO-POST	THREE-POST	COMMENTS
2 INCH 14 GA.	8	5.8			TYPE A, TYPE D, OR TYPE F FOUNDATION AS SPECIFIED IN THE CONTRACT DOCUMENTS.
	9	5.1			
	10	4.6			
	11	4.2			
	12	3.8			
	13	3.5			
	14	3.3			
2½ INCH 12 GA.	8	11.8	23.6		SINGLE POST: TYPE A OR TYPE E FOUNDATION. MULTI-POST: TYPE B OR TYPE C FOUNDATION. AS SPECIFIED IN THE CONTRACT DOCUMENTS.
	9	10.5	21.0		
	10	9.4	18.8		
	11	8.6	17.2		
	12	7.8	15.6		
	13	7.2	14.5		
	14	6.7	13.5		
2½ INCH 10 GA.	8	13.6	27.2	40.8	TYPE B OR TYPE C FOUNDATION AS SPECIFIED IN THE CONTRACT DOCUMENTS.
	9	12.1	24.2	36.3	
	10	10.9	21.8	32.7	
	11	9.9	19.8	29.7	
	12	9.1	18.2	27.3	
	13	8.4	16.8	25.2	
	14	7.8	15.6	23.4	
2½ INCH 10 GA. WITH 2 3/16 INCH 10 GA. INNER POST (SEE NOTE 1)	8	23.9	47.8	71.7	TYPE B OR TYPE C FOUNDATION AS SPECIFIED IN THE CONTRACT DOCUMENTS.
	9	21.2	42.4	63.6	
	10	19.1	38.2	57.3	
	11	17.4	34.8	52.2	
	12	15.9	31.8	47.7	
	13	14.7	29.4	44.1	
	14	13.6	27.2	40.8	

NOTES:

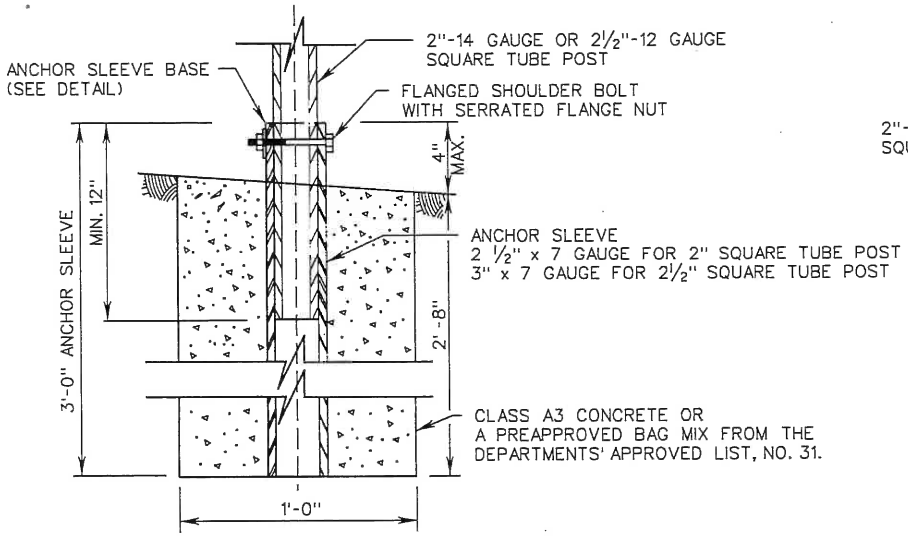
1. THE INNER POST SHALL BE 6 FEET IN LENGTH.
2. CENTROID SHALL BE DETERMINED IN ACCORDANCE WITH PCS-1.
3. MINIMUM COLD FORMED YIELD STRENGTH SHALL BE:
   14 GA. AND 12 GA. = 60 KSI
   10 GA. = 55 KSI
4. FOLLOW SIGN BRACING DETAILS (SEE SHEET 11 OF 12) FOR MAXIMUM SIGN PANEL WIDTHS AND SIGN BRACING SPACING.
5. TABLE 1 SHALL BE USED FOR THE HAMPTON ROADS DISTRICT, EXCEPT THE CITY OF EMPORIA AND COUNTIES OF GREENSVILLE, SUSSEX, AND SOUTHAMPTON SHALL USE TABLE 2.

TABLE 2
FOR BRISTOL, SALEM, LYNCHBURG, RICHMOND, FREDERICKSBURG, CULPEPER, STAUNTON, AND NORTHERN VIRGINIA DISTRICTS (SEE NOTE 5)

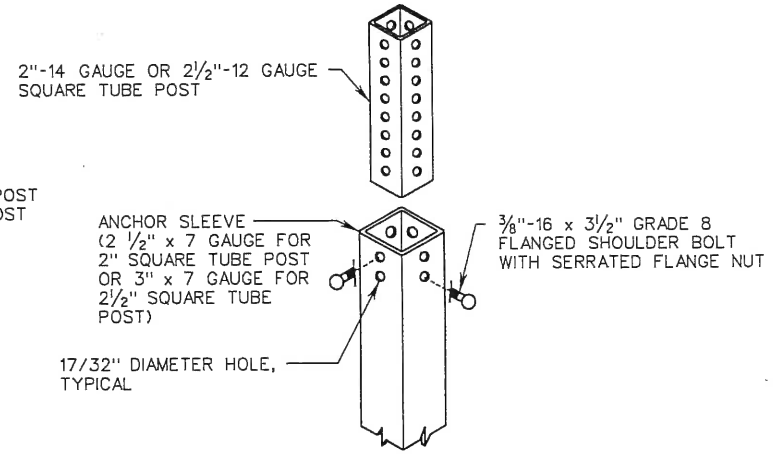
SIZE OF POST	CENTROID (FT)	MAXIMUM AREA (TOTAL OF SIGN PANELS) (FT^2) SINGLE-POST	TWO-POST	THREE-POST	COMMENTS
2 INCH 14 GA.	8	10.7	21.4		TYPE A, TYPE D, OR TYPE F FOUNDATION AS SPECIFIED IN THE CONTRACT DOCUMENTS.
	9	9.5	19.0		
	10	8.5	17.0		
	11	7.7	15.4		
	12	7.1	14.2		
	13	6.5	13.0		
	14	6.1	12.2		
2½ INCH 12 GA.	8	21.5			TYPE A OR TYPE E FOUNDATION.
	9	19.1			
	10	17.2			
	11	15.6			
	12	14.3			
	13	13.2			
	14	12.3			
2½ INCH 10 GA.	8	24.8	49.6	74.4	TYPE B OR TYPE C FOUNDATION AS SPECIFIED IN THE CONTRACT DOCUMENTS.
	9	22.0	44.0	66.0	
	10	19.8	39.6	59.4	
	11	18.0	36.0	54.0	
	12	16.5	33.0	49.5	
	13	15.2	30.4	45.6	
	14	14.1	28.2	42.3	
2½ INCH 10 GA. WITH 2 3/16 INCH 10 GA. INNER POST (SEE NOTE 1)	8	43.4	86.8	130.2	TYPE B OR TYPE C FOUNDATION AS SPECIFIED IN THE CONTRACT DOCUMENTS.
	9	38.6	77.2	115.8	
	10	34.7	69.4	104.1	
	11	31.6	63.2	94.8	
	12	28.9	57.8	86.7	
	13	26.7	53.4	80.1	
	14	24.8	49.6	74.4	

NOTES:

1. THE INNER POST SHALL BE 6 FEET IN LENGTH.
2. CENTROID SHALL BE DETERMINED IN ACCORDANCE WITH PCS-1.
3. MINIMUM COLD FORMED YIELD STRENGTH SHALL BE:
   14 GA. AND 12 GA. = 60 KSI
   10 GA. = 55 KSI
4. FOLLOW SIGN BRACING DETAILS (SEE SHEET 11 OF 12) FOR MAXIMUM SIGN PANEL WIDTHS AND SIGN BRACING SPACING.
5. TABLE 2 SHALL ALSO BE USED FOR THE CITY OF EMPORIA AND COUNTIES OF GREENSVILLE, SUSSEX, AND SOUTHAMPTON IN HAMPTON ROADS DISTRICT.

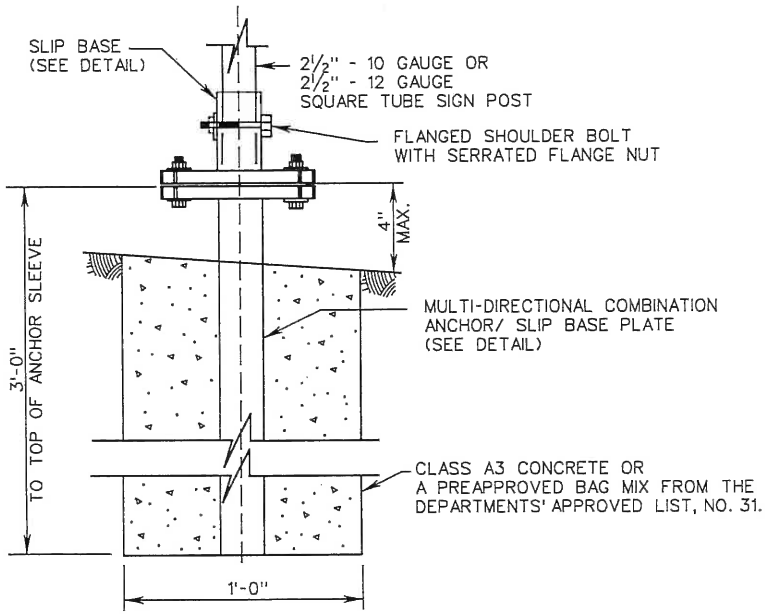


FOUNDATION TYPE A

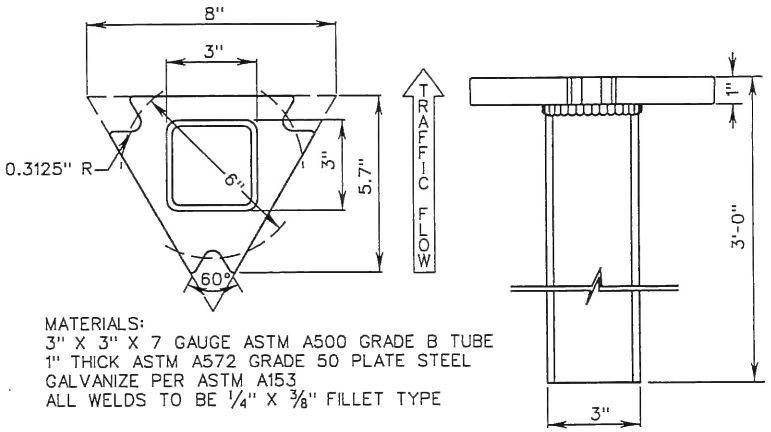


ANCHOR SLEEVE BASE DETAIL

VDOT ROAD AND BRIDGE STANDARDS	A COPY OF THE ORIGINAL SEALED AND SIGNED DRAWING IS ON FILE IN THE CENTRAL OFFICE. SQUARE TUBE SIGN POST FOUNDATION TYPE A DETAILS VIRGINIA DEPARTMENT OF TRANSPORTATION	SPECIFICATION REFERENCE
SHEET 4 OF 12	REVISION DATE	700
1321.13	NEW 01/15	



FOUNDATION TYPE B

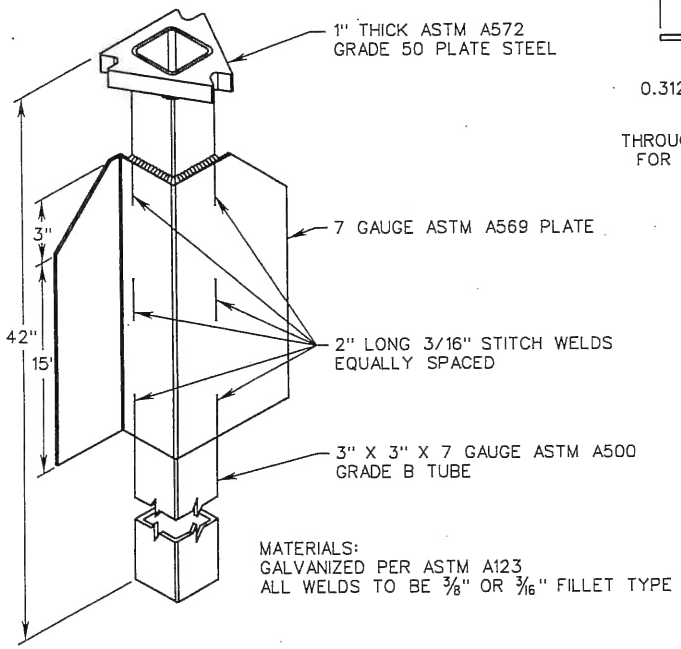


MATERIALS:
3" X 3" X 7 GAUGE ASTM A500 GRADE B TUBE
1" THICK ASTM A572 GRADE 50 PLATE STEEL
GALVANIZE PER ASTM A153
ALL WELDS TO BE ¼" X ⅜" FILLET TYPE

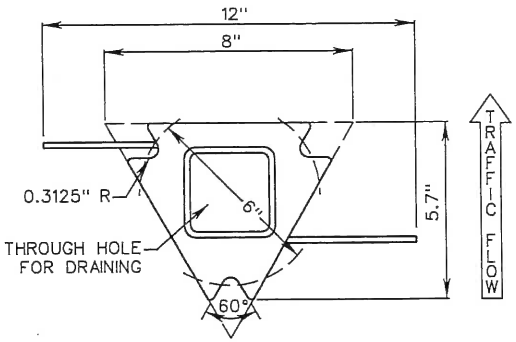
MULTI-DIRECTIONAL COMBINATION
ANCHOR/SLIP BASE PLATE

SPECIFICATION REFERENCE	A COPY OF THE ORIGINAL SEALED AND SIGNED DRAWING IS ON FILE IN THE CENTRAL OFFICE.	VDOT ROAD AND BRIDGE STANDARDS
700	SQUARE TUBE SIGN POST FOUNDATION TYPE B DETAILS VIRGINIA DEPARTMENT OF TRANSPORTATION	REVISION DATE NEW 01/15 / SHEET 5 OF 12 / 1321.14

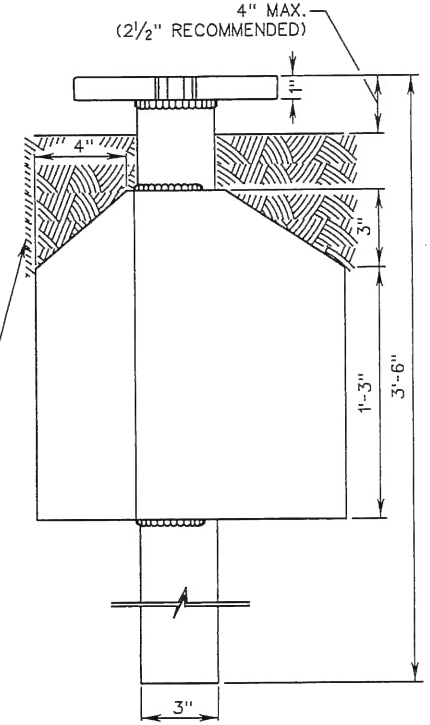
STP-1



FOUNDATION TYPE C

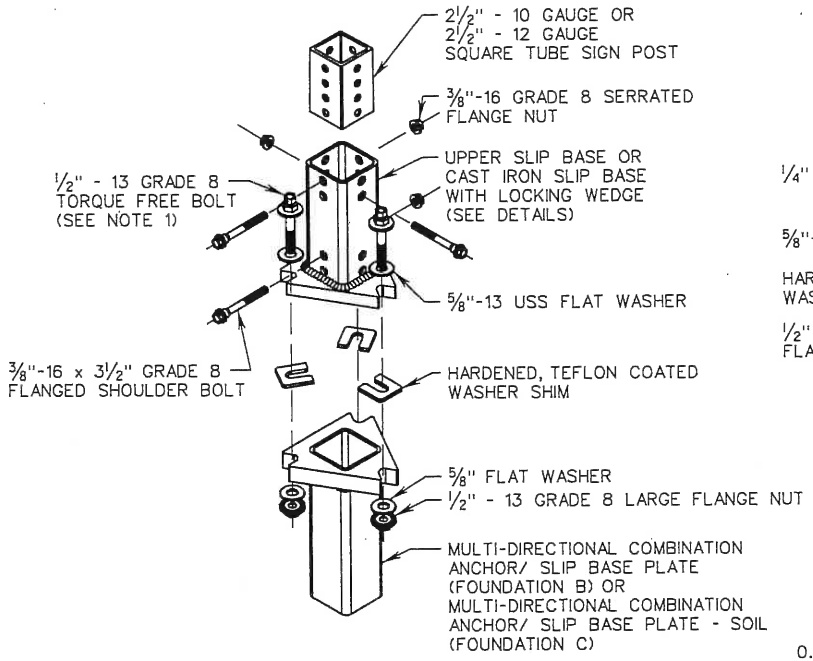


DIRECT DRIVEN SOIL INSTALLATION.
INSTALL WITH THE WIDEST BEARING
SURFACE OF THE STABILIZING WING
PARALLEL WITH THE FACE OF THE SIGN.

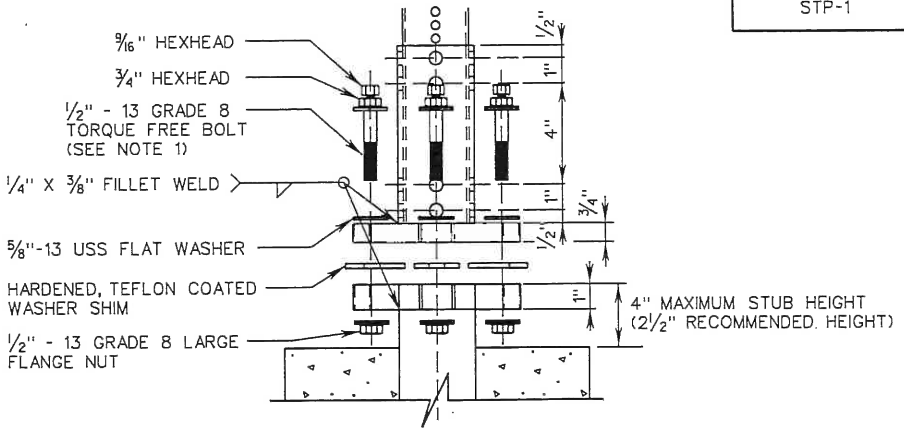


8" TRIANGULAR MULTI-DIRECTIONAL
COMBINATION ANCHOR/SLIP BASE PLATE - SOIL

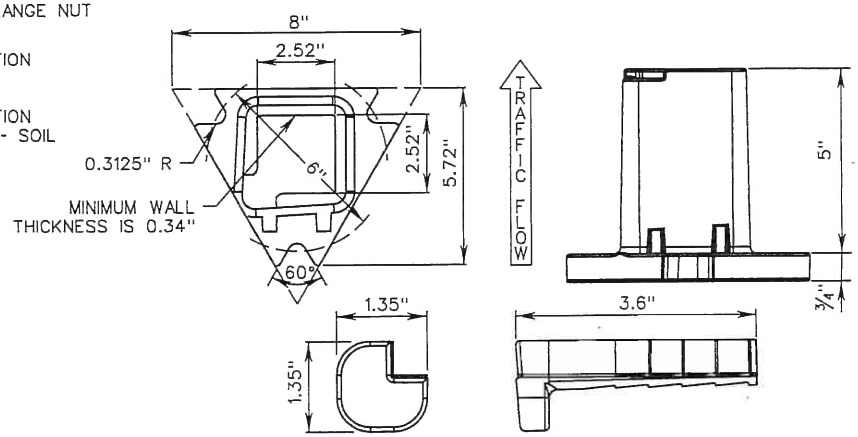
VDOT ROAD AND BRIDGE STANDARDS		A COPY OF THE ORIGINAL SEALED AND SIGNED DRAWING IS ON FILE IN THE CENTRAL OFFICE. SQUARE TUBE SIGN POST FOUNDATION TYPE C DETAILS VIRGINIA DEPARTMENT OF TRANSPORTATION	SPECIFICATION REFERENCE
SHEET 6 OF 12	REVISION DATE		700
1321.15	NEW 01/15		



SLIP BASE BREAKAWAY DETAIL

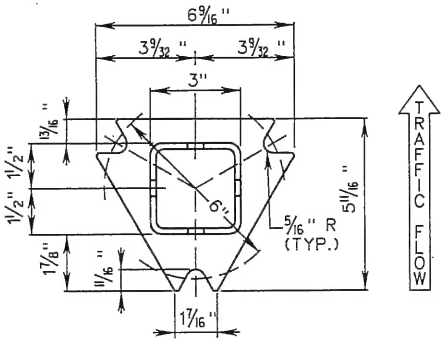


SLIP BASE BREAKAWAY PROFILE DETAIL

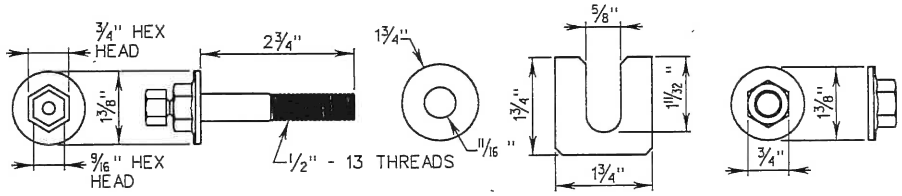


REDI-TORQUE MULTI-DIRECTIONAL BOLT ON SAE1035 STEEL FORGING SLIP BASE TOP FOR 2½" SQUARE POST WITH CAST IRON LOCKING WEDGE

MATERIALS:
TUBE RECEIVER - 3" x 3" x 7 GAUGE ASTM A500 GRADE B TUBE
PLATE - ASTM A572 GRADE 50



TOP POST RECEIVER/
FOR 2½" SQUARE POST



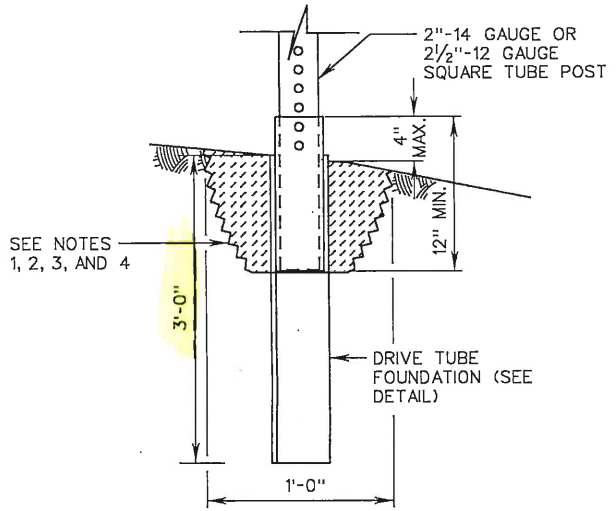
TORQUE FREE MATCH PLATE HARDWARE

NOTES:

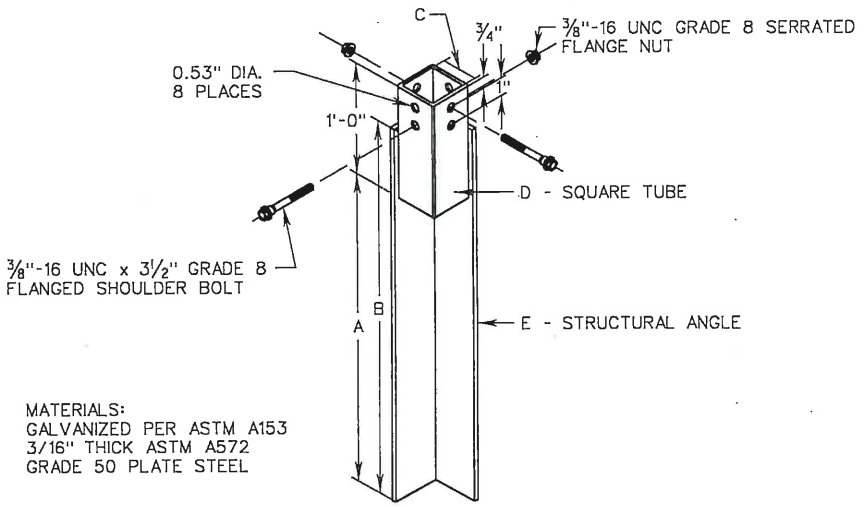
1. TIGHTEN THE TORQUE FREE BOLT USING THE LARGER ¾" HEX HEAD, THEN LOOSEN THE BOLTS BY THREE COMPLETE TURNS USING THE ¾" HEX HEAD. RETIGHTEN EACH TORQUE BOLT USING THE SMALLER ⅝" HEX HEAD UNTIL THE ⅝" HEX HEAD TWISTS OFF.

SPECIFICATION REFERENCE	A COPY OF THE ORIGINAL SEALED AND SIGNED DRAWING IS ON FILE IN THE CENTRAL OFFICE.	VDOT ROAD AND BRIDGE STANDARDS	
700	SQUARE TUBE SIGN POST FOUNDATION TYPE B AND C DETAILS VIRGINIA DEPARTMENT OF TRANSPORTATION	REVISION DATE NEW 01/15	SHEET 7 OF 12 1321.16

STP-1



FOUNDATION TYPE D AND E



MATERIALS:
GALVANIZED PER ASTM A153
3/16" THICK ASTM A572
GRADE 50 PLATE STEEL

DRIVE TUBE FOUNDATION DETAIL

NOTES:

1. EXCAVATE TO A DEPTH OF NO LESS THAN 8" AND NO GREATER THAN 12" PRIOR TO INSTALLATION OF DRIVE TUBE FOUNDATION.
2. THE EXCAVATED AREA SHALL BE BACKFILLED WITH A CEMENTITIOUS MATERIAL AND SHALL BE TAPPED WITH EACH 6" LIFT.
3. THE SQUARE TUBE POST SHALL BE INSERTED INTO THE SLEEVE OF THE DRIVE TUBE FOUNDATION A MINIMUM OF 12".
4. DRIVE CAP SHALL BE UTILIZED FOR INSTALLATION OF DRIVE TUBE FOUNDATION. WHEN USING A POWER DRIVER, A SHANK SHALL ALSO BE REQUIRED.

DRIVE TUBE FOUNDATION TABLE

FOUNDATION TYPE	SIZE OF POST	DRIVE TUBE FOUNDATION DIMENSION	
TYPE D	2 INCH 14 GA.	A	27"
		B	36"
		C	2⅛"
		D	2½" X 2½" X 3/16" ASTM A500 GRADE B
		E	2½" X 2½" X 3/16" ASTM A36
TYPE E	2½ INCH 12 GA.	A	27"
		B	36"
		C	2⅝"
		D	3" X 3" X 3/16" ASTM A500 GRADE B
		E	3" X 3" X 3/16" ASTM A36

VDOT
ROAD AND BRIDGE STANDARDS

SHEET 8 OF 12 | REVISION DATE 08/17
1321.17

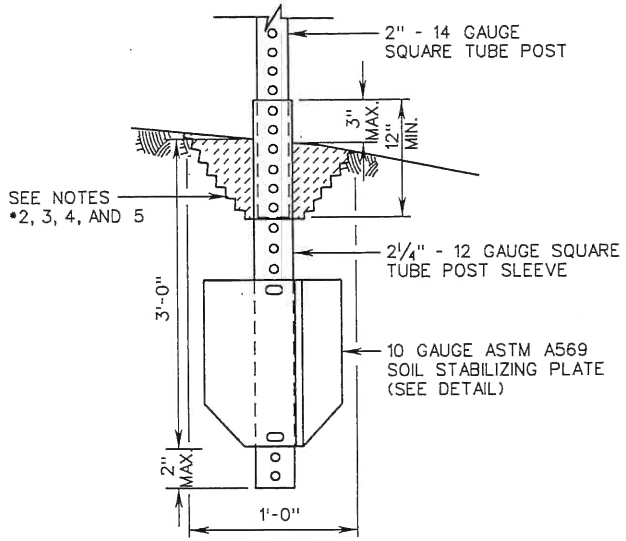
A COPY OF THE ORIGINAL SEALED AND SIGNED DRAWING IS ON FILE IN THE CENTRAL OFFICE.

SQUARE TUBE SIGN POST

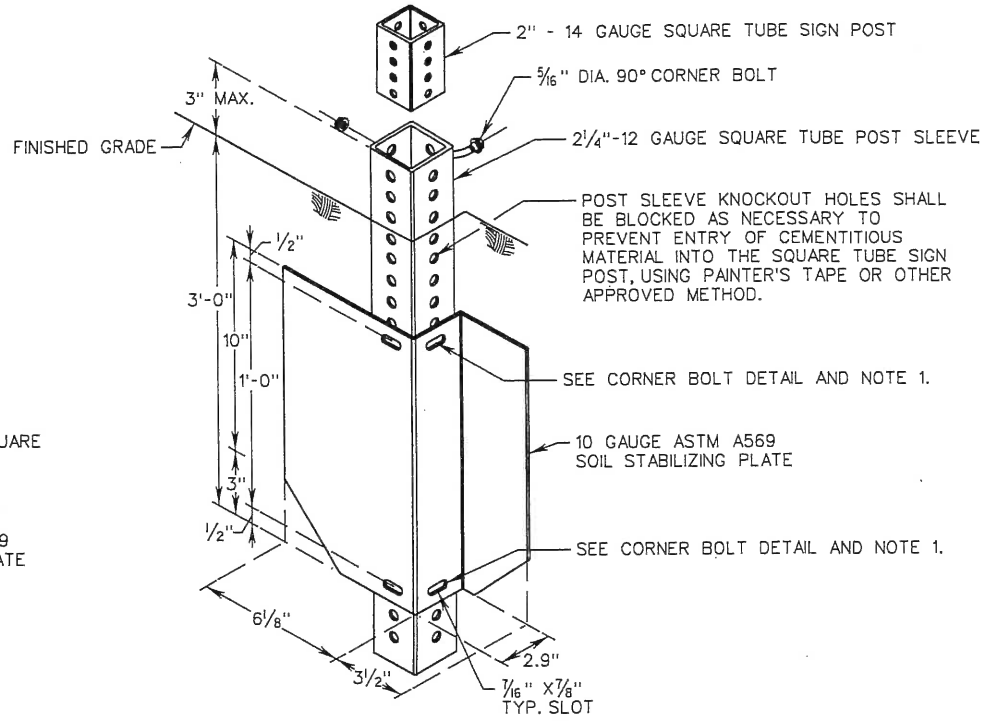
FOUNDATION TYPE D AND E DETAILS

VIRGINIA DEPARTMENT OF TRANSPORTATION

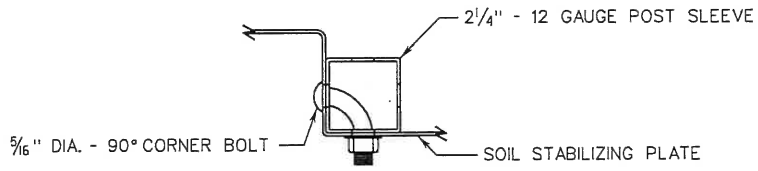
SPECIFICATION REFERENCE
700



FOUNDATION TYPE F



SOIL STABILIZING PLATE FOUNDATION DETAIL



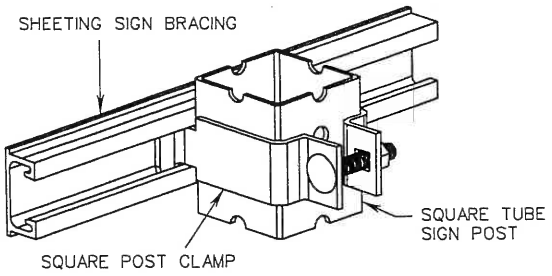
CORNER BOLT DETAIL

NOTES:

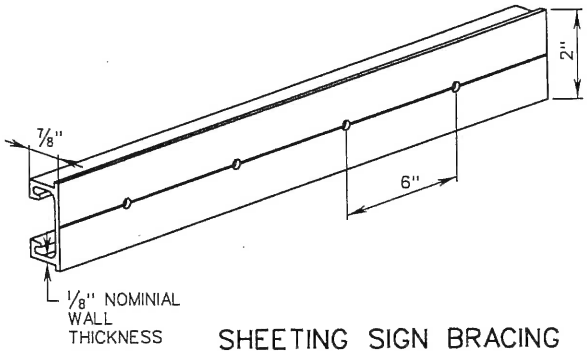
1. CORNER BOLTS SHALL BE 5/16" DIA. TRUSS HEAD BOLT WITH SERRATED FLANGE NUT. TWO CORNER BOLTS WILL BE REQUIRED TO CONNECT THE 2¼" POST SLEEVE TO THE SOIL STABILIZING PLATE.
2. EXCAVATE TO A DEPTH OF NO LESS THAN 8" AND NO GREATER THAN 12" PRIOR TO INSTALLATION OF SOIL STABILIZING PLATE FOUNDATION.
3. THE EXCAVATED AREA SHALL BE BACKFILLED WITH A CEMENTITIOUS MATERIAL AND SHALL BE TAPPED WITH EACH 6" LIFT.
4. THE 2" SQUARE TUBE POST SHALL BE INSERTED INTO THE 2¼" POST SLEEVE A MINIMUM OF 12".
5. DRIVE CAP SHALL BE UTILIZED FOR INSTALLATION OF DRIVE TUBE FOUNDATION. WHEN USING A POWER DRIVER, A SHANK SHALL ALSO BE REQUIRED.

SPECIFICATION REFERENCE	A COPY OF THE ORIGINAL SEALED AND SIGNED DRAWING IS ON FILE IN THE CENTRAL OFFICE.	VDOT ROAD AND BRIDGE STANDARDS	
700	SQUARE TUBE SIGN POST FOUNDATION TYPE F DETAILS VIRGINIA DEPARTMENT OF TRANSPORTATION	REVISION DATE NEW 01/15	SHEET 9 OF 12 1321.18

STP-1



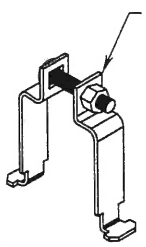
SQUARE POST CLAMP & BRACE (CONNECTING JUNCTION)



ALUMINUM SIGN BRACING 2" MOUNTING SURFACE x 7/8" DEPTH x 1/8" NOMINAL WALL THICKNESS

6061-T6 ALUMINUM ALLOY, PUNCHED WITH 3/16" DIAMETER HOLES ON 6" CENTERS FOR ATTCHMENT OF SIGN SUBSTRATE USING SIGN PANEL 3/16" DRIVE RIVETS, OR 3/8" DIAMETER HOLES ON 12" CENTERS WHEN USING 3/8" DRIVE RIVETS.

SHEETING SIGN BRACING



11 GAUGE, TYPE 304, #2B FINISHED STAINLESS STEEL WITH STAINLESS STEEL CARRIAGE BOLT

CLAMPS CAN BE TWIST LOCKED INTO PLACE WITHOUT SLIDING THE CLAMPS FROM AN OPEN END OF THE CHANNEL BRACE

CLAMP IS TO BE SIZED TO FIT THE SQUARE TUBE POST, 2" OR 2½"

SQUARE POST CLAMP DETAIL

NOTES:

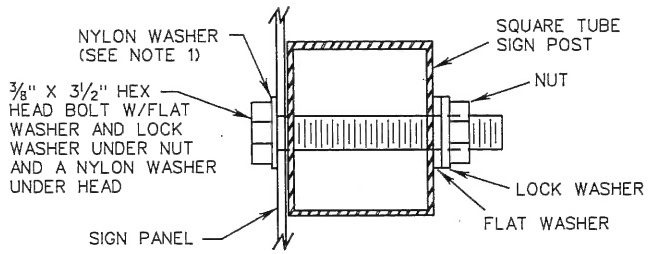
1. SEE SHEET 12 OF 12 FOR SIGN PANEL ATTACHMENT DETAILS.

A COPY OF THE ORIGINAL SEALED AND SIGNED DRAWING IS ON FILE IN THE CENTRAL OFFICE.

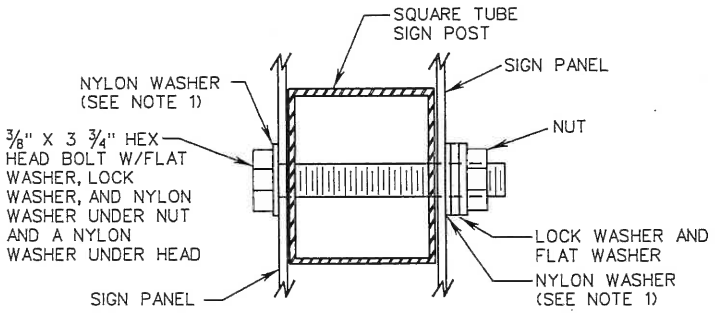
VDOT ROAD AND BRIDGE STANDARDS		SQUARE TUBE SIGN POST SIGN BRACING DETAILS VIRGINIA DEPARTMENT OF TRANSPORTATION	SPECIFICATION REFERENCE
SHEET 10 OF 12	REVISION DATE		700
1321.19	08/17		

STP-1

SIGN POSTS NOT REQUIRING BRACING



SINGLE SIGN PANEL DETAIL

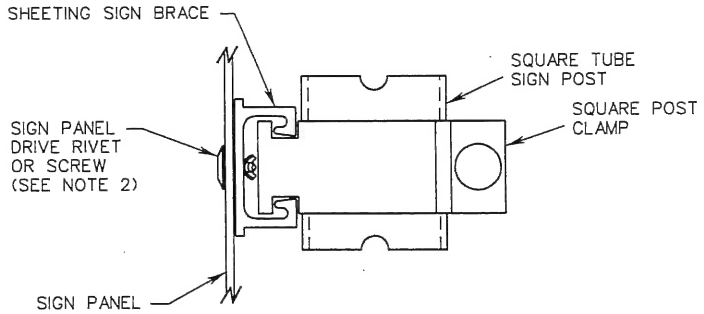


BACK-TO-BACK SIGN PANEL DETAIL

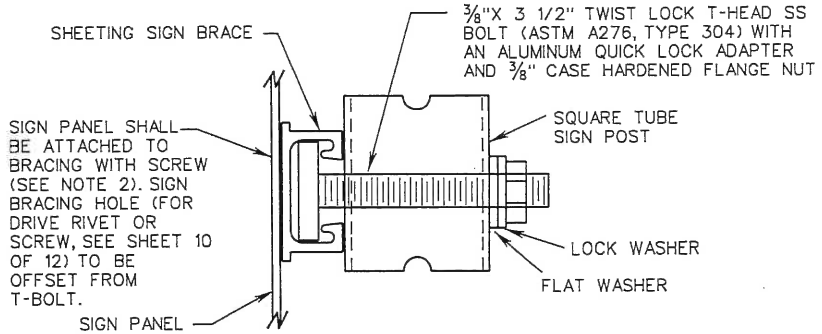
NOTES:

1. NYLON WASHER SHALL BE 1/16" THICK MINIMUM WITH AN OUTSIDE DIAMETER OF 1" AND AN INSIDE DIAMETER OF 7/16".
2. DRIVE RIVET SHALL BE 3/16" OR 3/8" ALUMINUM FLAT HEAD RIVET WITH STEEL PINS AND NYLON OR RUBBER WASHER.
3. THE HEADS OF ALL DRIVE RIVETS AND HEX HEAD BOLTS SHALL BE POWDER COATED TO MATCH THE COLOR OF THE SIGN SHEETING.
4. DRIVE RIVET SHALL NOT BE USED FOR SIGNS WITHOUT BRACING.

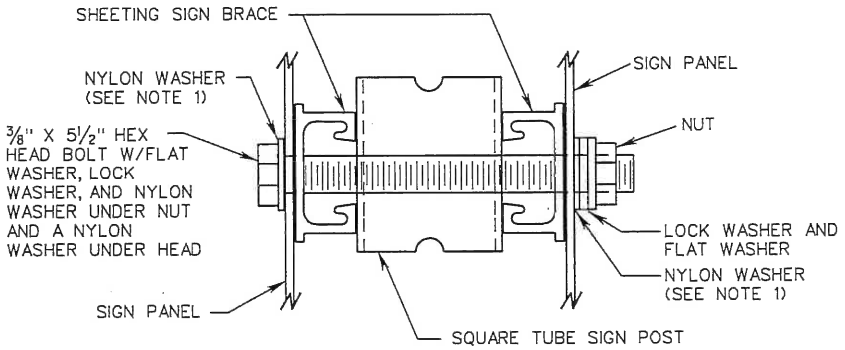
SIGN POSTS REQUIRING BRACING



SINGLE SIGN PANEL DETAIL



SINGLE SIGN PANEL ALTERNATE METHOD DETAIL



BACK-TO-BACK SIGN PANEL DETAIL

VDOT
ROAD AND BRIDGE STANDARDS

SHEET 12 OF 12	REVISION DATE
1321.21	08/17

A COPY OF THE ORIGINAL SEALED AND SIGNED DRAWING IS ON FILE IN THE CENTRAL OFFICE.

SQUARE TUBE SIGN POST

SIGN PANEL ATTACHMENT DETAILS

VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION REFERENCE

700

APPENDIX C

Smithfield Water and Sanitary Sewer System Design Checklist

THIS PAGE INTENTIONALLY LEFT BLANK

TOWN OF SMITHFIELD
WATER AND SANITARY SEWER SYSTEM DESIGN CHECKLIST

Project Name: _____

Project Address: _____

Developer: _____

Architect/Engineer: _____

Phone: _____ Fax: _____ E-mail: _____

Plan Preparer Signature: _____ Date: _____

Submittal # (Circle): 1 2 3 4 5

****

NOTE: This checklist shall be completed and accompany each water and sanitary sewer pipeline design submittal. The checklist shall be signed by the plan preparer certifying compliance of the design with the Town of Smithfield and HRPDC standards as well as the requirements of this checklist. This checklist serves only as a guide for the preparer in developing the construction drawings and is not intended to be all encompassing. It is the responsibility of the engineer and/or surveyor to ensure the plans and calculations comply with all governing regulations, standards and specifications. Plans submitted without a completed checklist will be returned without review. Any applicant response indicating "No" shall be explained on this checklist with the reason for noncompliance.

****

I. GENERAL:

		YES	NO	N/A
1.	Developer's/Applicant's name, contact person(s), street address, phone number and fax number on title sheet.	O	O	O
2.	Engineer's/Surveyor's firm, address, phone number and fax number on title sheet.	O	O	O
3.	North arrow and graphic scale bars provided on all applicable plan sheets.	O	O	O
4.	Utility plan clearly depicts all existing and proposed site features, including contours. Legend provided on the plan which correctly reflects the development plan.	O	O	O
5.	An overall utility plan provided for large development areas and subdivisions, or where deemed necessary by the Town of Smithfield.	O	O	O

		YES	NO	N/A
6.	All existing and proposed rights-of-way and/or easements properly shown, labeled, dimensioned and, where applicable, recordation referenced. Refer to the Smithfield Design Standards Section 2.6 for Town easement requirements.	O	O	O
7.	Town of Smithfield standard General Notes for Water Distribution and Sanitary Sewer Systems (current edition) included in their entirety on the plan. Refer to Smithfield Design Standards Section 6.1.	O	O	O
8.	All plan sheets sealed, signed and dated by engineer and/or surveyor overseeing the design. Refer to Smithfield Design Standards Section 1.2 for sealing requirements.	O	O	O
9.	Vertical and horizontal datum established in accordance with Smithfield Design Standards Section 1.3. Clearly reference the Town monument or benchmark specifically used for the project. TBM established on-site	O	O	O
10.	Date of plan submittal and/or revision noted on the cover. Professional seal date shall reflect the plan submittal date.	O	O	O
11.	Plan and profiles developed at a maximum scale of 1"=40' horizontal and 1"=4' vertical. Plan and profile horizontal scales shall be the same. Profile vertical scale shall be a tenth of the horizontal scale. Sheet size no larger than 24x36 shall be submitted.	O	O	O
12.	A minimum horizontal separation of ten (10) feet, edge to edge, maintained between sanitary sewer lines and water lines, water service connections and sanitary sewer laterals, unless approved otherwise by the Town of Smithfield.	O	O	O
13.	Provide call-outs, either individually or tabularized for all facility features, clearly referencing or labeling applicable Town and HRPDC details for the project (i.e. Typical Water Service Installation, HRPDC WD_02). Only provide those sanitary sewer or water system details on the plan which are either required by other regulatory agency review or have been modified from the standards.	O	O	O
14.	Provide profiles for all water and sanitary sewer mains. to include stub-outs for future extensions. All utility crossings (water, sanitary sewer, storm, etc.) shall be shown on the profile.	O	O	O
15.	Engineer's/Surveyor's letter of response provided indicating how and where on the plans each Town of Smithfield comment has been addressed.	O	O	O
16.	Miss Utility notation provided, including phone number.	O	O	O
17.	Existing and proposed street names (label as "Public" or "Private" where applicable), lot and parcel numbers clearly labeled on the plans.	O	O	O
18.	Existing water or sanitary sewer mains previously abandoned and/or removed are clearly labeled on the plan. Provide notes describing how existing facility is to be abandoned (i.e. grouted/ plugged, etc).	O	O	O
19.	Plat provided to the Town for review and approval prior to recordation. Refer to Section 4 of this checklist.	O	O	O
20.	Proposed Town utility lines are shown with reference distances from curb & gutter, edge of pavement, right-of-way, etc.	O	O	O

		YES	NO	N/A
21.	A minimum cover of 36-inches provided over all Town water and sanitary sewer force mains.	O	O	O
22.	Existing utilities size and, if known, material shown and labeled. Test hole data provided on plans and in report format.	O	O	O
23.	Proposed utility pipe lengths and structures shown on the Water and Sanitary Sewer System Data Sheets agree with the plan.	O	O	O
24.	Bore pit data such as bore location; length of bore; pit location and dimensions; casing diameter and thickness; and casing stationing and inverts are shown and labeled.	O	O	O
25.	All water service and/or sanitary sewer service lines are extended perpendicular from the respective main and are located within the right-of-way or a dedicated Town of Smithfield Utility Easement (except in cul-de-sacs).	O	O	O
26.	Sanitary sewer and water mains within fill areas are designed in accordance with Smithfield Design Standards Section 2.34.	O	O	O
27.	Transformer locations have been shown on the site plan and maintain required clearances from Town of Smithfield utilities.	O	O	O
28.	Items pertinent to the Utility Plans and Profiles (i.e. Smithfield General Notes, HRPDC/Smithfield detail tabularized references, thrust restraint lengths, etc) are required on the Utility Plans and/or Profiles. If not, a note shall be provided on each Utility Plan and profile sheet referencing where these items are located.	O	O	O
29.	The plan revision block shall indicate all plan revisions/amendments made after plan approval. This shall include clearly indicating the plan revision/amendment by "clouding" the area.	O	O	O
30.	Include proposed street lighting and landscaping on the Utility plan. Locations shall agree with the Landscaping and Lighting Plans. Minimum clearance requirements with Smithfield infrastructure are met.	O	O	O
31.	Plat provided for extinguishment/abandonment of any existing Town of Smithfield Utility Easement (refer to Smithfield Design Standards Section 2.6.	O	O	O
32.	Location of all existing private utilities (gas, power, CATV, Tele, etc) are shown on the plan.	O	O	O
33.	Geotechnical report and sealed design calculations provided for pipe bridges.	O	O	O
34.	Roadway baseline geometry indicated on the plans. Required to confirm pipe deflections do not exceed HRPDC/Smithfield requirements.	O	O	O
35.	Provide a note on each Utility Plan Sheet indicating the plan sheet where the associated profile(s) can be found.	O	O	O
36.	All private underground storage tanks shall have leak monitors and secondary containment unit as required by Virginia State DEQ Regulations	O	O	O

II. Sanitary Sewer System:

		YES	NO	N/A
1.	Hydraulic Analysis shall be provided for all sanitary sewer force mains.	O	O	O

		YES	NO	N/A
2.	A completed Sanitary Sewer System Data Sheet submitted in accordance with Smithfield Design Standards Section 2.10B.	O	O	O
3.	Plan clearly shows and describes proposed sanitary sewer connections to existing sewer.	0	0	0
4.	Sanitary sewer service provided to each lot or parcel.	0	0	0
5.	Required spacing of manholes and pipe slopes have been maintained. Refer to Smithfield Design Standards Section 2.15 and 2.18	O	O	O
6.	Pipe material (PVC or DIP), size, slope, direction of flow and length clearly labeled on plans. Structure inverts correctly calculate based on data shown.	O	O	O
7.	Force main and/or pump station plans submitted to the Department of Environmental Quality (DEQ), Office of Wastewater Engineering for approval. DEQ approval is required prior to Town of Smithfield approval. Refer to Smithfield Design Standards Section 1.2 for other regulatory submittal requirements. (A copy of the engineers DEQ transmittal must be attached to this checklist when submitted.) Certification provided SCAT regulations are met if not reviewed by DEQ	O	O	O
8.	Show and label existing septic system locations. Applicant shall coordinate this with the local Department of Health records.	O	O	O
9.	Manhole structure minimum slope difference between invert in and invert out elevation is maintained. Refer to Smithfield Design Standards Section 2.17.	O	O	O
10.	Manholes greater than 10 feet deep and interior drop manholes are shown and labeled on the plan as 60" diameter.	O	O	O
11.	Proper vertical separation provided between sanitary sewer facilities and other utilities. Refer to Smithfield Design Standards Section 2.23	O	O	O
12.	Manual air vent assemblies installed at all high points along force mains.	0	0	0
13.	Internal drop connections shown and labeled on the plan when a vertical drop exceeds 2 feet.	O	O	O
14.	The engineer/surveyor has field verified the inverts of the existing manhole(s).	0	0	0
15.	Ground coverage over sanitary sewer pipe meets minimum depth criteria. Refer to Smithfield Design Standards Section 2.21	O	O	O
16.	All sanitary sewer lines are designed with the entry into the manhole at an angle of 90-degrees or greater to the downstream line, unless otherwise approved by the Town.	O	O	O
17.	Sanitary sewers positioned at all manhole junctions in accordance with Smithfield Design Standards Section 2.17 Minimum elevation difference across manhole from inlet to outlet shall be 0.1 feet.	O	O	O
18.	All gravity sanitary sewer lines and force mains located within roadways shall be located at the quarter point.	O	O	O
19.	Force main thrust restraint requirements clearly shown and labeled on the plans or as a minimum, references by note Smithfield standard detail JR-1 on each applicable profile	O	O	O

		YES	NO	N/A
20.	Pump stations designed in accordance to Smithfield Standards and Specifications.	O	O	O
21.	Grease trap locations and size clearly identified on the plan. Refer to Smithfield Design Standards Section 2.26 for requirements.	O	O	O
22.	Calculations submitted for proposed force main and low pressure lines substantiating pipe size and velocity.	O	O	O
23.	Plans submitted to Hampton Roads Sanitation District (HRSD) for review and approval, when necessary. (The engineer shall prepare HRSD flow certificates for Smithfield signature and make the submission to HRSD).	O	O	O
24.	All pipe between manholes are of a like material and class.	O	O	O
25.	Baseline stationing provided on the plan and profile for cross-referencing.	O	O	O
26.	Provide inverts of all sanitary sewer laterals connecting directly into a manhole as part of the structure description.	O	O	O
27.	Design data shown on the plan(s) and profile(s) agree (i.e. inverts, line size, pipe material, etc).	O	O	O
28.	Termination of proposed utilities for future extension/ phases is clearly shown on the plan and profile.	O	O	O
29.	HRSD approval has been obtained for any waste flow containing chemicals discharging into the Town of Smithfield or HRSD sanitary sewer system.	O	O	O
30.	Provide sanitary sewer manhole depth as part of the structure description.	O	O	O
31.	Sanitary sewer laterals shall not connect to the mainline within 5-feet of a manhole. Laterals upstream and within 5-feet of the manhole shall connect directly into the manhole where necessary.	O	O	O
32.	Sanitary sewer lateral mainline connections are not located beneath drainage piping.	O	O	O
33.	Shallow sanitary sewer manhole (HRPDC detail SS_03) locations clearly labeled on the plan.	O	O	O
34.	Where force mains connect into a gravity sanitary sewer system, plan identifies those manholes requiring epoxy coating and the type of coating required (refer to Smithfield Design Standards Section 2.18G).	O	O	O
35.	Existing sewer manholes shall be vacuum tested at proposed connection points and shall be witnessed by the Town of Smithfield. Note provided on the plan.	O	O	O
36.	Grinder pump locations indicated on the plan.	O	O	O
37.	System capacity calculations or hydraulic modeling provided to support Flow Acceptance process for all proposed extensions and existing receiving systems.	O	O	O

III. Water Distribution System:

		YES	NO	N/A
1.	Hydraulic Analysis submitted in accordance with Smithfield Design Standards Section 2.9	O	O	O
2.	A completed Water Data Sheet submitted in accordance with Section 2.10B.	O	O	O
3.	Plan clearly shows and describes proposed water system connection(s) to the existing system.	O	O	O
4.	Proposed fire hydrant locations meet the conditions of Smithfield Design Standards Section 2.28F & 2.28G and/or as specified by the Town of Smithfield Fire Department.	O	O	O
5.	Water service provided to each lot or parcel.	O	O	O
6.	Proper vertical separation provided between water main and other utilities. Refer to Smithfield Design Standards Section 2.23	O	O	O
7.	Manual air vent assemblies installed at all high points along water mains. System designed to minimize manual air vents required (i.e. slight adjustment to pressure pipeline profile)	O	O	O
8.	All waterlines located within roadways shall be at the quarter point.	O	O	O
9.	Dead-end waterlines provided with a blow-off assembly.	O	O	O
10.	Valve locations do not exceed 800 feet. Required valving at intersections shall be two (2) at each tee intersection and three (3) at crosses.	O	O	O
11.	Water main sizes shown on the plans meet the conditions set forth in Smithfield Design Standards Section 2.2 and agree with the Hydraulic Analysis.	O	O	O
12.	Water meters shown and labeled, including proposed size. Provide calculations in accordance with Smithfield Design Standards Section 2.10A.5.b substantiating the proposed meter(s) sizing.	O	O	O
13.	Plan and profile show all fittings, water meters, fire hydrants and valves including sizes. Each appurtenance is properly labeled with stationing annotated for all sheets.	O	O	O
14.	Water main stubs for future extensions are designed as specified in Smithfield Design Standards Section 2.8	O	O	O
15.	Location of water meter boxes and service l ines maintain a minimum18-inch horizontal edge-to-edge clearance from driveways and/or drive paths, sidewalks, bike paths, curbing and adjacent water meter boxes.	O	O	O
16.	Submittal provided to the Virginia Department of Health (VDH) for review and approval in accordance with Smithfield Design Standards Section 1.2. VDH approval is required prior to Town approval. (A copy of the engineers VDH transmittal must be attached to this checklist when submitted.)	O	O	O
17.	For waterline tie-ins, the existing valve(s) to be used for shut-off is shown and labeled on the plan.	O	O	O

		YES	NO	N/A
18.	Irrigation proposed for the development has been addressed according to Town Standards Section 2.9J.	O	O	O
19.	Proposed water production facilities or modifications thereto shall be submitted separately to the Chief Engineer of Water for review and approval.	O	O	O
20.	A backflow prevention device is provided on domestic and fire service connections in accordance with Town Standards Section 2.31 and the Commonwealth of Virginia, State Board of Health Waterworks Regulations.	O	O	O
21.	Waterline thrust restraint requirements clearly shown and labeled on the plans or as a minimum, references by note Smithfield standard detail JR-1 on each applicable profile sheet.	O	O	O
22.	Waterline sizes meet the requirements of Town Standards Section 2.2.	O	O	O
23.	Waterline fittings, bends and service line connections are not located beneath drainage piping.	O	O	O
24.	Where meter vaults are proposed, a detail shall be provided on the Utility Plans meeting the requirements of the HRPDC Detail. This shall include labeling line sizes, fittings and the required meter size/type (i.e. Neptune Tru/Flo Compound Meter, Turbine Meter, Protectus III, etc). Show and label valving on the vault bypass line.	O	O	O
25.	Culvert size, length and inverts are shown on the plan where required.	O	O	O
26.	Water Sample Station(s) shown and labeled where required by Smithfield.	O	O	O
27.	The Applicant shall contact Smithfield if the development will likely have finished floors less than 70-feet in elevation. Depending on project location, Smithfield system pressures may exceed 80-psi at the service tap for these properties. If so, the development shall comply with the Uniform Statewide Building Code and requirements shall be clearly noted on the plan.	O	O	O

IV. Site Plan/Subdivision Plat Submittals:

		YES	NO	N/A
1.	All subdivision plats proposing Smithfield Utility Easements shall include the following note on the plat: "Easements denoted as "Smithfield Utility Easements" are for the exclusive use of the Town and the property owner. Other utility service providers desiring to use these easements with the exception of perpendicular utility crossings must obtain authorization for access and use from Smithfield and the property owner. Additionally, Smithfield shall not be held responsible for any damage to improvements within this easement, from any cause".	O	O	O
2.	The following note shall be included on all subdivision plats: " Any existing unused well(s) shall be abandoned in accordance with State Private Well Regulations and Town of Smithfield Code".	O	O	O
3.	Add a note on the plat which clearly states whether or not the parcel(s) are served by Public Water and/or Public Sewer.	O	O	O
4.	For family subdivisions, clearly show the location of all existing water and sanitary sewer service connections, if any. Any services requiring abandonment/relocation shall be done in accordance with the Smithfield requirements.	O	O	O
5.	Proposed easement widths and locations agree with the approved subdivision or site plan and meet the requirements of the Smithfield Criteria Section 2.5.	O	O	O
6.	All proposed subdivision grinder pump locations shall be clearly identified on the plat and meet the conditions of Smithfield Criteria Section 2.35.	O	O	O
7.	All professional seals and certificates on the plat are signed and dated.	O	O	O
8.	Existing Smithfield easements are shown and a reference provided where recorded.	O	O	O

V. **Geo-Thermal Wells**:

1.	All subdivision and site plans proposing geo-thermal wells shall include the system requirements as outlined in Section 2.36 .1 Smithfield Design Standards.	O	O	O
2.	A detail of the proposed geo-thermal well is included on the plans and shows all necessary information.	O	O	O
3.	If the proposed geo-thermal well is within 1500 feet radius of a public water well or otherwise a potential influence to a public well, are the requirements of Section 2.36.l Smithfield Design Standards met by the plans.	O	O	O

APPENDIX D

Smithfield Water and Sanitary Sewer Master Plan
Guidelines

THIS PAGE INTENTIONALLY LEFT BLANK

TOWN OF SMITHFIELD
WATER AND SANITARY SEWER MASTER PLAN GUIDELINES

The guidelines below are general in nature and are provided to assist the Designer in developing Master Utility Plans. These guidelines are not intended to be all encompassing. Smithfield's review of the Master Utility Plan may require additional items be addressed which are not noted below. It is recommended the Applicant meet with Smithfield to discuss the project and layout of public utilities prior to developing the Master Utility Plan.

GENERAL:

_____1. Proposed subdivision/development layout shown. Any development Phasing/Sections clearly delineated on the plan.
_____2. Plan provided at a legible scale.
_____3. Existing contours shown and labeled.
_____4. North arrow and graphic scale bar provided.
_____5. Developer's and Engineer's contact information provided on the plan.
_____6. Existing Smithfield Utilities shown and size labeled. Proposed connection point(s) identified.
_____7. Source of mapping identified on the plan (County GIS, aerial mapping, physical survey, etc).
_____8. Existing Smithfield Lift Stations and Well Facility locations identified on the plan.
_____9. Master Utility Plan submitted to DEQ and/or VDH where required (refer to Smithfield Design Standards Section 1.2).
_____10. Property lines, existing right-of-ways and adjoining parcels shown.

SANITARY SEWER SYSTEM MASTER PLAN:

____1. Gravity sewer and/or force main system layouts shown and agree with calculations/hydraulic modeling. Pipe sizes and direction of flow indicated.
____2. Sanitary Sewer Summary table provided on the plan with Phases/Sections tabulated individually. Table shall include the number of dwelling units, commercial/retail square footage, the per unit flow multiplier (per Smithfield Design Standards Table 2.1), duration, the Average Daily Flow (GPD) and the Peaked Flow (GPM). Totals (#units, sewer flow, etc) shall be provided at the bottom of the Summary Table.
____3. Peaked Flows are shown cumulative along the sewer network. The composite flow at the discharge point shall equal the Sanitary Sewer Summary Table flow.
____4. Manholes shown at key locations with reference label. Structure rim and invert elevations provided.
_____5. Manhole spacing and minimum pipe slope meet Smithfield requirements.
_____6. Sewer collection and/or force mains sized to accommodate future system extension.
____7. Any manholes exceeding 10-feet in depth are clearly identified on the plan (refer to Smithfield Design Standards Section 2.18).

_____8. Lift Station location(s) and size coordinated with the Chief Engineer of Wastewater.
_____9. Existing sewer collection systems checked to confirm the number of ERC's proposed do not exceed system capacity.
_____10. Sewer bridges identified on the plan.
_____11. Lots requiring grinder pumps are identified with "GP". Typically up to 5% of the total # of proposed lots to be served by grinder pumps, unless approved by the Chief Engineer of Wastewater.
_____12.. Invert of existing manhole(s) proposed for connection field verified.
_____13. Calculations provided for force main and low pressure lines substantiating required pipe size and velocity.
_____14. Sanitary sewer system designed in accordance with Smithfield Design Standards 2.11 E thru H.

WATER SYSTEM MASTER PLAN:

____1. Water Distribution system layout shown. Pipe sizes, node labeling and pipe segment labeling agree with the hydraulic modeling.
____2. Water Demand Summary table provided on the plan with Phases/Sections tabulated individually. Table shall include the number of dwelling units, commercial/retail square footage, the per unit flow multiplier, duration, the Average Daily Demand (GPM), Max Day Demand (GPM), Peak Hour (GPM), proposed irrigation requirements and required fire flow at each node. Totals (#units, demands, etc) shall be provided at the bottom of the Summary Table. Node demands listed agree with the hydraulic model.
____3. Pump location and reservoir identified on the plan and agrees with the fire flow test performed.
____4. Any reduction in required fire flows (per Smithfield Design Standards Section 2.12) shall be approved by the Fire Department prior to Smithfield approval of the Master Plan. A maximum single flow from any fire hydrant shall not exceed 1,000 gpm.
____5. Hydraulic modeling provided in accordance with Smithfield Design Standards Section 2.9 and sealed by a Licensed Professional Engineer registered in the Commonwealth of Virginia.
_____6. System design considers possibility of system extension to adjoining parcels.
_____7. System looped (either internal to the site or connection to existing mains) to eliminate dead-end lines where feasible.
_____8. Waterline sizes meet conditions of Smithfield Design Standards Section 2.2.
_____9. Water Sample Stations identified.
_____10. If irrigation is not proposed for the development, a note shall be added to the Master Plan clearly stating this.

APPENDIX E

Right of Way Easement Permit Application

THIS PAGE INTENTIONALLY LEFT BLANK

TOWN OF SMITHFIELD

310 Institute Street, P.O. Box 246 • Smithfield, VA 23431
(757) 365-4200 • Fax (757) 365-0215

Right of Way / Easement Permit Application No. RW-EP:_____

TYPE OR PRINT CLEARLY

APPLICANT:

_____
Applicant Name

_____
Address

_____
City State Zip Code

_____
Contact Phone Number

_____
Email Address

_____
Location of Proposed Work (*Address and Tax Map Number*)

Between _____ and
_____

Permittee Job No.:_____

Filing date _____

Permit Term needed _____ days

Total fees enclosed $ _____

Method of Payment Check ____ C.C. ____ Cash _____

The estimated cost of this work is $_____

Surety Information:

Name _____

Amount:$_____

Account # _____

Obligation Amount (*120% of estimated cost*) $_____

Bond ☐ LC ☐ Check ☐ Not Applicable ☐

Required Documents for Submission:

Itemized Cost Estimate..... ☐
Plan or Sketch of Proposed Work..... ☐
Minimum of 3 references for any / all contractor(s) and subcontractor(s)..... ☐
A copy of the applicant's Class A Highway / Heavy Utility Contractor's License..... ☐

Request Permission: To perform the following work and/or activity (s): _____

_____

_____ as per attached plans.

All applicable items on this form must be completed before your request can be considered. Recheck information furnished to avoid delay. Prepayment Required - make Remittance payable to the Town of Smithfield.

Application is hereby made for permit as shown on the accompanying plan or sketch, and all required materials and documents have been provided as described above. Said work and or activity(s) will be done under and in accordance with the rules and regulations of the Commonwealth Transportation Board of Virginia, in so far as said rules are applicable thereto and any agreement between the parties herein before referred to. Where applicable agreements may be attached and made a part of the permit assembly including any cost responsibilities covering work under permit. Applicant agrees to maintain work in a manner as approved upon its completion. Applicant also hereby agrees and is bound and held responsible to the owner for any and all damages to any other installations already in place as a result of work covered by resulting permit. Applicants to whom permits are issued shall at all times indemnify and save harmless the Commonwealth Transportation Board members of the Board, the Commonwealth, and all Commonwealth employees, agents, and officers, from responsibility, damage, or liability arising from the exercise of the privileges granted in such permit to the extent allowed by law. In consideration of the issuance of a permit the applicant agrees to waive for itself, successors in interest or assigns any entitlements it may otherwise have or have hereafter under the Uniform Relocation and Assistant Act of 1972 as amended in the event the Town or its successor, chooses to exercise its acknowledged right to demand or cause the removal of any or all fixtures, personalty of whatever kind or description that may hereafter be located, should this application be approved.

Signature of Applicant _____ Title _____ Date _____

TOWN USE ONLY

Permit Fee $100.00 R/W-Easement Inspection Fee $_____ Utility Inspection Fee $_____

Receipt is hereby acknowledged of CHECK ☐ C.C. ☐ or CASH ☐ in the amount of $ _____

Signed _____, Town Representative Date_____

Town of Smithfield

Memorandum

September 22, 2025

TO: The Honorable Mayor and Town Council

FROM: Michael Stallings, Town Manager

SUBJECT: Short Term Rentals

Zoning Ordinance Definitions:

Homestay: The provision of a dwelling unit, or any portion thereof, for rent to transient persons for fewer than thirty (30) consecutive days as an accessory use, while the operator remains present on the premises, or in the case where the property is the operator's principal residence.

Short-term rental (STR): The provision of a dwelling unit, or any portion thereof, for rent to transient persons for fewer than thirty (30) consecutive days as a principal use, known as a short-term rental, or as an accessory use, known as a homestay.

State Code Definition:

"Short-Term Rental" – means the provision of a room or space that is suitable or intended for occupancy for dwelling, sleeping, or lodging purposes, for a period of fewer than 30 consecutive days, in exchange for a charge for the occupancy.

Governing Code Sections:

15.2-983 – State Code section permitting regulation of Short-Term Rentals

Article 2 Section Z – Zoning Ordinance section regulating Short Term Rentals and Homestays

Localities Reviewed:

- City of Virginia Beach
- City of Hampton
- City of Newport News
- Town of West Point
- Town of Cape Charles
- Town of Vinton

- Town of Front Royal
- Town of Tappahannock
- Town of Colonial Beach
- Town of Kilmarnock
- Isle of Wight County

Current Regulations

Smithfield Ordinances provide that homestays are permitted by-right (no permit required) in any zoning district in which residential uses exist or are permitted. Short-Term rentals over 104 nights per year are permitted by Special Use Permit (SUP) only. Violation of any requirements shall result in the revocation of the operator's business license.

State Code prohibits requiring a SUP for any short-term rental when the dwelling is also occupied by the owner. This prohibition went into effect on December 31, 2023.

Overview of other localities

Town of West Point

No limit on the number of STR and they are only allowed when it is the owner's primary residence and with a SUP. All STR must register with the Treasurer's office.

Town of Front Royal

No limit on the number of STR and are only allowed with a SUP.

Town of Cape Charles

No limit on the number of STR. Requires obtaining annual zoning permit for the operation of a STR. Owners are required to notify neighbors when applying for a STR zoning permit. One individual may operate up to 5 STR's within the Town. The STR zoning permit requires inspection to determine compliance with the Building Code.

Town of Tappahannock

No limit on the number of STR. Only requires a zoning permit if property owner lives on site. Requires a SUP if the property owner does not live on site.

Town of Warsaw

No limit on the number of STR.

Town of Colonial Beach

No limit on the number of STR. STR's require annual permit.

Town of Vinton

No limit on the number of STR. STR's require annual permit. Requires that the owner still reside in the dwelling. Limits stays to not more than 14 days.

Town of Kilmarnock

No limit on STR. Listed as by-right in most zoning districts.

City of Newport News

No limit on the number of STR. Requires owner to reside in the dwelling for at least 185 days a year when the STR is a single-family home. The owner of a multifamily dwelling need not be a primary resident of the dwelling. Requires annual certificate of zoning compliance.

City of Hampton

Limits STR to 1% of residential dwellings in each of the 51 STR zones. Requires inspections every two years.

City of Virginia Beach

No permit required if rentals are for less than 30 days and homeowner resides at the residence. Requires annual STR zoning permit. VB has two STR overlay districts in place. The Sandbridge District makes all properties eligible for use as an STR with an approved permit. The Oceanfront Resort District requires STR's to obtain a Conditional Use Permit that must be renewed every five years.

Isle of Wight County

No limit on number of STR. STR's must register with IOW Community Development annually.

Conclusion

Of the Town's reviewed, none are currently limiting the number of STR's. The City of Hampton has a very robust STR program in place that established a limit of 1% of residential dwellings in each of their 51 STR zones. There was a wide variety of additional inspection and registry requirements that were locally specific.

If Council wishes to pursue some type of limitation on the number of STR's, an overlay district may be the most manageable avenue.

TOWN COUNCIL STAFF REPORT: SPECIAL USE PERMIT (SUP)

TUESDAY, OCTOBER 8th, 2025, 6:30 PM

Applicant	Anna Boyer 139 Sykes Court Smithfield, VA 23430
Owner	Anna Marie Boyer 11183 Burwells Bay Road Smithfield, VA 23430
Property	139 Sykes Court TPIN 21A-01-371
Zoning	Downtown Neighborhood Residential (DNR), Environmental Conservation District (E-C), & Historic Preservation Overlay (HPO)
Adjacent Zoning	Downtown Neighborhood Residential (DNR), Environmental Conservation District (E-C), Community Conservation District (C-C) & HPO
Project Description	The applicant is seeking approval to rent 139 Sykes Court, which is an existing single-family residential dwelling, as a short-term rental property. According to the Smithfield Zoning Ordinance (SZO) Article 2.Z.1, short-term rentals as principal uses are permissible by Special Use Permit (SUP) only. No changes to the property are proposed in order to accommodate the short-term rental. There are currently 4 other approved SUPs located at 111 Institute Street; 205 Chalmers Row; 233 S Mason St; & 328 Main Street.
Zoning Recommendation	Positives: This application provides additional accommodations in the Heart of the Historic District. Negatives: This is not a by-right use and does require a SUP. Approval should be conditioned on the applicant following the conditions outlined in Article 2.Z.1.a through Article 2.Z.1.i., except for Article 2.Z.1.b.. These conditions do require a signed and notarized short-term rental affidavit ensuring compliance. This application was favorably recommended by the Planning Commission at the June meeting.

Please direct inquiries to Tammie Clary at 1-(757)-365-4200 or tclary@smithfieldva.gov.




Institute St
Grace St
N Mason St
Main St
world's oldest ham
258
4-star hotel
Town of Smithfield
Smithfield Ice Cream Parlor
Smithfield Gourmet Bakery
S Mason St
Cedar St
Taste of Smithfield Restaurant
Southern
James St
Grace St
Institute St
Main St
Cedar St
Hill St
Smithfield Family Dentistry
Trinity United Methodist Church
S Mason St
Hill St
Fleur De Fou
Florist
Home Sweet Home Care Inc
Cockes Ln
Main St
Cedar St
Astrid St
S Mason St
Smithfield North
Sykes Ct
Gary St
Drummonds Ln
Smithfield Christian Counseling
RIDDICK & POPE, P.C
Cedar St

TOWN COUNCIL STAFF REPORT
CONDITIONAL REZONING & 3 SPECIAL USE PERMITS
WEDNESDAY, October 8th, 2025, 6:30 PM

Applicant Interstate Realty
C/O J. Michael Nidiffer
2151 Volunteer Pkwy
Bristol, TN 37620

Owner SFD Properties LLC
C/O Stephen Adams
20 S. King St.
Hampton, VA 23669

Property TPIN 32-01-096A2
7.35 ac E side Benns Church Blvd
Corner of Benns Church & Town Limits

Zoning Community Conservation (CC) & Entrance Corridor Overlay (ECO)

Adjacent Zoning CC & ECO

Proposed Zoning Highway Retail Commercial (HRC) & ECO

Future Land Use (FLU) Corridor Mixed Use

Adjacent FLU Residential Mixed Use & Corridor Mixed Use

Project Description The applicant is seeking a conditional rezoning to Highway Retail Commercial (HRC) to facilitate the construction of a convenience store with fueling station islands, with 2, potentially 3 additional retail users.

These uses are also in line with the Future Land Use Map, as the current designation is Corridor Mixed Use, which provides for primary commercial uses.

The 6,139 square foot convenience store will feature a 4,170 square foot fueling station canopy, with 6 double sided self-serve fueling stations. In addition to traditional convenience store offerings, there will be a made-to-order food menu, Coffee bar, and smoothies. There will be indoor and outdoor seating. The store will operate 24 hours a day, 7 days per week. The site has existing access servicing Sherwin Williams and will also include a right-in/ right-out entrance shared amongst the subdivided parcels. There will be a pedestrian path along Route 10 for connectivity.

1st Special Use Permit- Article 3.J2.C.7: Drive-thru facility.
The applicant is requesting to utilize a drive-thru facility at the convenience store for made to order food or other items from the store.

2nd Special Use Permit- C.20: Waiver of parking and loading:
The applicant would like to exceed the maximum number of parking spaces allowed by 7 spaces, providing up to 44 spaces instead of the maximum of 37 spaces.

3rd Special Use Permit – C. 15: Service Station:
The applicant would like to utilize one parcel as a 5,500 square foot oil express facility.

The applicants have included an updated conceptual plan in general conformance with the originally submitted plan for potentially 3 users in addition to the Sheetz. As proffered, any additional users would need to be reviewed and approved by the Planning Commission.

This application package was favorably recommended to Town Council at the July Planning Commission meeting provided the applicants determine a way to review/ limit the third parcel and they address VDOTs comments prior to the Council meeting.

Please direct inquiries to Tammie Clary at 1-(757)-365-4200 or tclary@smithfieldva.gov.

COMMONWEALTH of VIRGINIA

DEPARTMENT OF TRANSPORTATION
23116 Meherrin Road
COURTLAND, VIRGINIA 23837

Tammie Clary
Planning & Zoning Administrator
310 Institute Street
Smithfield, VA 23430

August 27, 2025

RE: Smithfield Retail
Benn's Church Blvd. (Rt. 10/258)
Smithfield, VA 23430

The Residency has completed its review of the submitted TIA dated July 2025 and received by the VDOT Office on July 29, 2025 for the proposed development. We agree with the findings of the submitted TIA.

The project proposes a primary access to an approach of the existing Benns Church Boulevard / Turner Drive signalized intersection. While there are technically four legs present at the existing intersection, the westbound leg currently serves only a Sherwin-Williams paint store, a relatively small generator of traffic volumes, meaning that this intersection effectively functions as a T-intersection today. T-intersections have necessarily simpler operations due to their need to serve fewer directions and phases as compared to a full-movement conventional four-leg intersection.

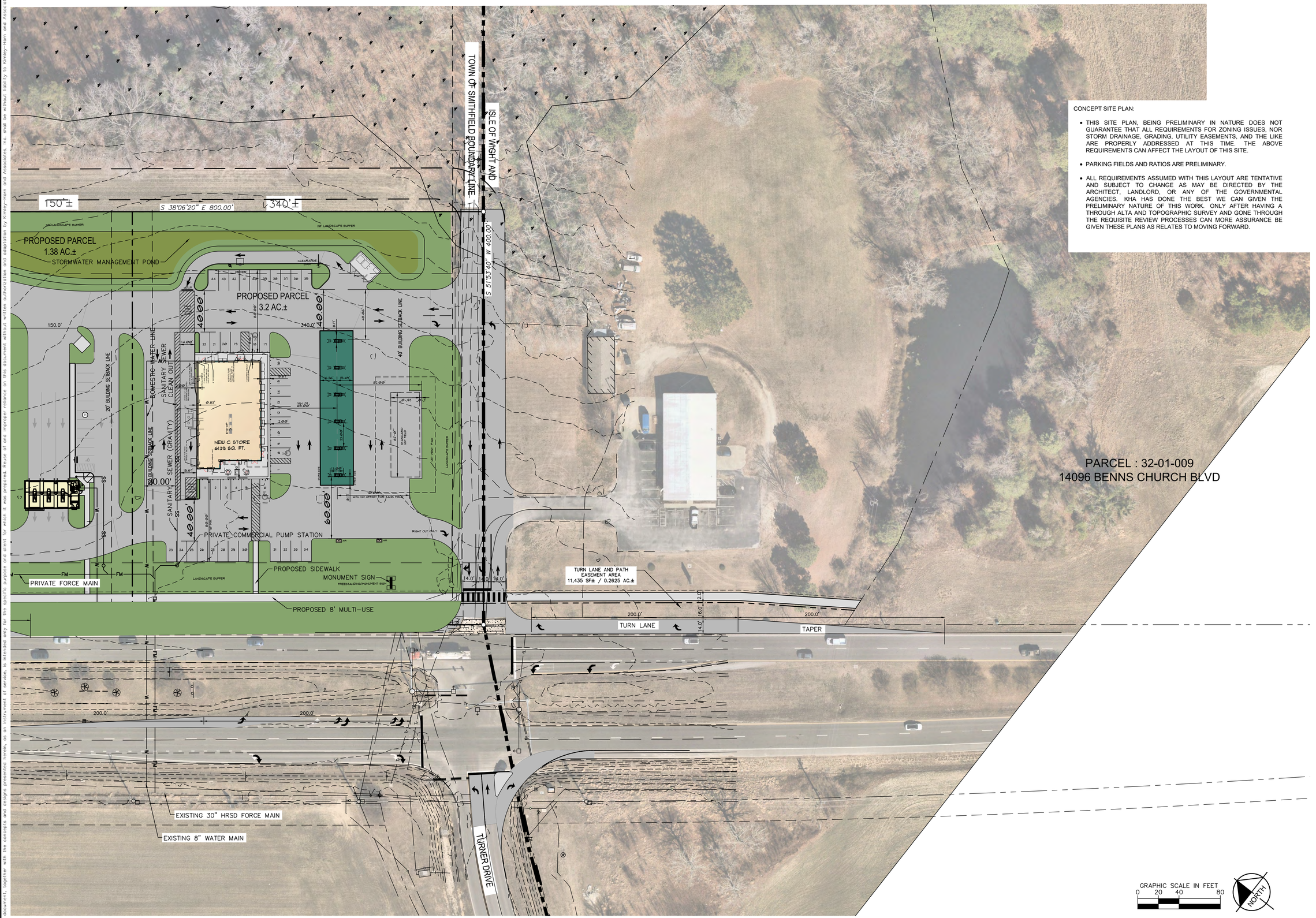
The build out analysis includes the proposed improvements constructed by the Isle of Wight County revenue sharing project scheduled to be complete January 2028. The development of the site with the improvements results in a 45% increase in delay at the Benns Church Boulevard / Turner Drive intersection as compared to the No Build scenario. A major contributer to the delay is the additional signal phases needed to accommodate the development at the westbound approach. The county revenue project is currently in the preliminary design phase. The intersection will be futher studied as the revenue project moves forward to ensure the most efficient and effective improvements are constructed.

To reinterate, there are no improvements proposed to the Northbound (Route 10 Left Turn onto Turner Drive) or Eastbound (Existing Turner Drive) approaches to mitigate the delay in the interim. Such improvement may include converting the eastbound approach to the intersection to an exclusive left, thru/right and a channelized right.

If you have any questions, please contact me at (757) 346-3084 or Jason.fowler@vdot.virginia.gov.

Sincerely,

Jason C. Fowler, PE
Area Land Use Engineer
Virginia Department of Transportation
Franklin Residency



CONCEPT SITE PLAN:

- THIS SITE PLAN, BEING PRELIMINARY IN NATURE DOES NOT GUARANTEE THAT ALL REQUIREMENTS FOR ZONING ISSUES, NOR STORM DRAINAGE, GRADING, UTILITY EASEMENTS, AND THE LIKE ARE PROPERLY ADDRESSED AT THIS TIME. THE ABOVE REQUIREMENTS CAN AFFECT THE LAYOUT OF THIS SITE.
- PARKING FIELDS AND RATIOS ARE PRELIMINARY.
- ALL REQUIREMENTS ASSUMED WITH THIS LAYOUT ARE TENTATIVE AND SUBJECT TO CHANGE AS MAY BE DIRECTED BY THE ARCHITECT, LANDLORD, OR ANY OF THE GOVERNMENTAL AGENCIES. KHA HAS DONE THE BEST WE CAN GIVEN THE PRELIMINARY NATURE OF THIS WORK. ONLY AFTER HAVING A THROUGH ALTA AND TOPOGRAPHIC SURVEY AND GONE THROUGH THE REQUISITE REVIEW PROCESSES CAN MORE ASSURANCE BE GIVEN THESE PLANS AS RELATES TO MOVING FORWARD.

No.	REVISIONS	DATE	BY

Kimley»Horn
© 2024 KIMLEY-HORN AND ASSOCIATES, INC.
4525 MAIN STREET, SUITE 1000, VIRGINIA BEACH, VA 23462
PHONE: 757-213-8600
WWW.KIMLEY-HORN.COM

KHA PROJECT 117264000
DATE 8/26/2025
SCALE AS SHOWN
DESIGNED BY ---
DRAWN BY ---
CHECKED BY ---

TURN LANE EXHIBIT

SMITHFIELD RETAIL
PREPARED FOR
INTERSTATE
DEVELOPMENT
SMITHFIELD VIRGINIA

SHEET NUMBER
EX3

Plotted By:Mathews, Joe Sheet Set:Smithfield Benns Church Rezoning Layout:Turn Lane Exhibit August 26, 2025 02:42:44pm K:\VAB_Civil\117264000-Smithfield Benns Church\CADD\Exhibits\Rezoning\2025.08.26_Smithfield - 2025.08.26 - rezoning concept.dwg
This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.

CONCEPT SITE PLAN:

- THIS SITE PLAN, BEING PRELIMINARY IN NATURE DOES NOT GUARANTEE THAT ALL REQUIREMENTS FOR ZONING ISSUES, NOR STORM DRAINAGE, GRADING, UTILITY EASEMENTS, AND THE LIKE ARE PROPERLY ADDRESSED AT THIS TIME. THE ABOVE REQUIREMENTS CAN AFFECT THE LAYOUT OF THIS SITE.
- PARKING FIELDS AND RATIOS ARE PRELIMINARY.
- ALL REQUIREMENTS ASSUMED WITH THIS LAYOUT ARE TENTATIVE AND SUBJECT TO CHANGE AS MAY BE DIRECTED BY THE ARCHITECT, LANDLORD, OR ANY OF THE GOVERNMENTAL AGENCIES. KHA HAS DONE THE BEST WE CAN GIVEN THE PRELIMINARY NATURE OF THIS WORK. ONLY AFTER HAVING A THROUGH ALTA AND TOPOGRAPHIC SURVEY AND GONE THROUGH THE REQUISITE REVIEW PROCESSES CAN MORE ASSURANCE BE GIVEN THESE PLANS AS RELATES TO MOVING FORWARD.

USFWS WETLANDS_2018
FRESHWATER FORESTED/SHRUB WETLAND

TOWN OF SMITHFIELD BOUNDARY LINE

ISLE OF WIGHT AND

FUTURE ACCESS ROAD FOR OFFSITE, ADJACENT PARCELS

LANDS N/F
PHILIP F. EDWARDS, III
INSTR #030004991
CWF 18-161
TPIN: 32-01-096A
ZONED: CC

20' BUFFER YARD LANDSCAPING

160'±

150'±

150'±

340'±

PROPOSED PARCEL
1.38 AC.±

PROPOSED PARCEL
1.38 AC.±

STORMWATER MANAGEMENT POND

60' B.S.L.

SIGNAGE AND STRIPING AS NECESSARY TO CONTROL TRAFFIC IN THIS AREA

10' BUFFER YARD LANDSCAPING

PROPOSED PARCEL
3.2 AC.±

10' BUFFER YARD LANDSCAPING

8' CHAIN FENCE

60' INGRESS/EGRESS ESM'T
(INSTR #040007387)
NON-BUILDABLE AREA
PRIVATE DRIVE NOT IN
PUBLIC MAINTENANCE SYSTEM

30' INGRESS/EGRESS ESM'T
(PC 1-394-7)
NON-BUILDABLE AREA
PRIVATE DRIVE NOT IN
PUBLIC MAINTENANCE SYSTEM

REQUIRED 20' BUFFER YARD LANDSCAPING

PARCEL B
(320,000.0 SQ. FT OR 7.346 ACRES)
TPIN #32-01-096A2
ZONED: C-C

PROPOSED PARCEL
1.47 AC.±
(INCLUDES ½ OF ACCESS EASEMENT)

20' LANDSCAPE BUFFER

20' BUILDING SETBACK LINE

20' BUILDING SETBACK LINE

DOMESTIC WATER LINE

SANITARY SEWER CLEAN OUT

40' BUILDING SETBACK LINE

NEW C STORE
6139 SQ. FT.

1,432 SF

SANITARY SEWER (GRAVITY)

80.00'

PARKING LOT LANDSCAPING
RIGHT OUT ONLY

PRIVATE COMMERCIAL PUMP STATION

LANDS N/F
ANGELA D. WILSON &
JAMES G. WILSON, JR.
INSTR #120004697
TPIN: 32-01-095
ZONED: LIMITED INDUSTRIAL

ENTRANCE CORRIDOR LANDSCAPING

40' BUILDING SETBACK LINE

60' B.S.L.

PRIVATE FORCE MAIN

ENTRANCE CORRIDOR LANDSCAPING

8' MULTI-USE PATH

TURN LANE AND PATH EASEMENT AREA
11,435 SF± / 0.2625 AC.±

MONUMENT SIGN LANDSCAPING

MONUMENT SIGN LANDSCAPING

250.0'

50.0'

TURN LANE

TAPER

200.0'

TURN LANE

TAPER

NORTHBOUND LANE

PROVIDE ADDITIONAL LENGTH TO EXISTING TURN LANE TO ACHIEVE 200' STACKING AND 200' TAPER.

200.0'

TAPER

200.0'

TURN LANE

SOUTHBOUND LANE

BENN'S CHURCH BOULEVARD
~ U.S. ROUTE 258 ~
~ STATE ROUTE 10 ~
(VARIABLE WIDTH R/W)
VDOT PROJ. 0010-046-104, RW201, C501

EXISTING 30" HRSD FORCE MAIN

EXISTING 8" WATER MAIN

15" RCP INV (BURIED)

24" RCP
INV(NW)42.93
INV(SE)42.37

PROPOSED CHANNELIZED RIGHT ONLY.

TURNER DRIVE

VDOT PROJ. 0010-046-104, RW201, C501

WATER MH
RIM: 47.81

WATER VAULT

GRAPHIC SCALE IN FEET
0 20 40 80

NORTH

No.	REVISIONS	DATE	BY

Kimley»Horn

© 2024 KIMLEY-HORN AND ASSOCIATES, INC.
4525 MAIN STREET, SUITE 1000, VIRGINIA BEACH, VA 23462
PHONE: 757-213-8600
WWW.KIMLEY-HORN.COM

KHA PROJECT
117264000
DATE
8/28/2025
SCALE AS SHOWN
DESIGNED BY
DRAWN BY
CHECKED BY

REZONING CONCEPT PLAN COLOR

SMITHFIELD RETAIL

PREPARED FOR
INTERSTATE
DEVELOPMENT

SMITHFIELD VIRGINIA

SHEET NUMBER
EX1

Plotted By:Mathews, Joe Sheet Set:Smithfield Benns Church Rezoning Layout:Concept Color August 28, 2025 02:49:21pm K:\VAB_Civil\117264000-Smithfield Benns Church\CADD\Exhibits\Rezoning\2025.08.28 Smithfield-2025.08.28-rezoning concept.dwg
This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.

FINAL

THE UNDERSIGNED ("DEVELOPER") HEREBY VOLUNTARILY PROFFER THAT THE DEVELOPMENT OF THE 7.35 ACRE PROPERTY LOCATED AT BENNS CHURCH BOULEVARD AT TURNER BOULEVARD (TPIN 32-01-096A2) ("PROPERTY") AND THE SUBJECT OF THIS APPLICATION ("PROJECT") SHALL BE IN STRICT ACCORDANCE WITH THE CONDITIONS SET FORTH IN THIS SUBMISSION, UNLESS AMENDMENT THERETO IS MUTUALLY AGREED UPON BY THE TOWN COUNCIL AND THE UNDERSIGNED OR THE OWNER OF RECORD.

1. The Project will be in compliance with all local, state, and federal rules, regulations, ordinances, and laws at all times.
2. Developer will provide the Town of Smithfield with copies of permits issued by various agencies.
3. Developer will prepare and submit a site plan to the Town of Smithfield in general conformance with the rezoning conceptual plan(s) and in conformance with the Town of Smithfield code of ordinances.
4. Any signs will be erected in compliance with the Town of Smithfield code of ordinances. Other onsite direction signage may be erected at the discretion of the owner.
5. Developer will obtain approval of the Project's Traffic Impact Analysis (TIA) from the Virginia Department of Transportation (VDOT).
6. Developer will contribute the appropriate pro rata share for roadway improvements per the master TIA which are $4,525.61 per acre
7. Improvements as identified and required as a result of the VDOT approved TIA shall be incorporated as conditions for this rezoning and shall be constructed and paid for by Developer. They include but are not limited to the following:

   A. Provide an exclusive right-turn lane with 200 feet of storage and 200 feet of taper at the intersection of Benns Church Boulevard and Turner Drive for the main driveway entrance across from Turner Drive. This is contingent upon Developer's ability to obtain offsite property, as well as permitting from the Corps of Engineers and/or the Virginia Department of Environmental Quality for potential wetlands impacts, in order to construct the turn lane improvements.

   B. Provide a southbound right-turn overlap at the intersection of Benns Church Boulevard and Turner Drive. This equates to making signal timing revisions to allow right turns from Benns Church Boulevard onto Turner Drive while left turns out of the project are made onto Benns Church Boulevard eastbound.

   C. Provide an exclusive right-turn lane with 250 feet of storage and 50 feet of taper at the intersection of Benns Church Boulevard and the secondary Right-In/Right-Out site access westward of Turner Drive. The southbound left turn lane on Benns Church Boulevard turning into the site will be lengthened to a 200-foot taper with a 200-foot storage lane.

   D. Additional roadway improvements recommended by the approved traffic study shall be incorporated provided VDOT, the Town of Smithfield and Isle of Wight County all agree upon their installation.

8. Developer will obtain a NPDES/VSMP permit for the Project.
9. Developer will obtain the required zoning permits from the Town of Smithfield.
10. Elevations for the proposed Sheetz will be in general conformance to the exterior elevations as shown on the "6139 PROTOTYPE – FY24_v1.7" drawings submitted to Smithfield Planning
11. Developer will contribute the appropriate pro rata share for public utilities (sanitary sewer and water) for the Property unless required to privately provide the utilities to the Property. The cost per acre will be determined by a study currently being performed by the Town of Smithfield and be derived from actual construction costs.
12. Submittal(s) will be made to Planning Commission for review and approval of other proposed users of the Property, if any.
13. More detailed submittals including conceptual landscaping, will be made for the Sheetz signage Special Use Permits being requested

APPLICANT:

Interstate Realty

By: J. Michael Nidiffer

Print: J. Michael Nidiffer

Title: Owner

Date: 8/22/2025

OWNER:

SFD Properties LLC

By: Stephen C Adams

Print: STEPHEN C. ADAMS

Title: Managing Member

Date: 8/20/2025