

EXISTING UTILITY OWNERS

SEWER AND WATER:

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GEOTECHNICAL NOTES:

- 1. SUBSURFACE CONDITIONS AND GEOTECHNICAL RECOMMENDATIONS ARE PROVIDED IN THE DOCUMENT PREPARED BY TIMMONS GROUP TITLED 'GEOTECHNICAL ENGINEERING REPORT: HUGUENOT HILLS WATER AND SEWER DESIGN, DATED AUGUST 2, 2022.
2. BORING LOCATIONS AND INDIVIDUAL BORING LOGS ARE SHOWN ON SHEETS C5.0-C5.2.

RESTRAINED JOINT NOTES:

- 1. THRUST RESTRAINTS SHALL BE PROVIDED ON ALL VALVES, FITTINGS, BENDS, TEES, AND DEAD ENDS. THRUST RESTRAINTS SHALL EXTEND A MINIMUM OF ONE FULL JOINT OF PIPE IN EACH DIRECTION. ADDITIONAL RESTRAINED LENGTH SHALL BE PROVIDED AS INDICATED BELOW. THRUST RESTRAINTS SHALL BE MANUFACTURED BY EBAA IRON OR APPROVED EQUAL AND THE SERIES INDICATED BELOW.

PVC PUSH ON JOINTS: SERIES 6500

Table with 2 columns: SOIL TYPE, SAFETY FACTOR, TRENCH TYPE, DEPTH OF BURY, TEST PRESSURE. Values include ML, 1.5 to 1.0, 3, 3.5', 150 psi.

Table with 2 columns: FITTING, 8" PVC. Values include 11.25" BEND**, 22.5" BEND**, 45" BEND**, 90" BEND**, GATE VALVE**, PLUG, TEE**, REDUCER*.

NOTE: *REDUCERS SHALL BE RESTRAINED TO PIPE ON EACH SIDE - ADDITIONAL LENGTH APPLIES TO LARGE SIDE ONLY **RESTRAINED LENGTHS SHALL APPLY IN EACH DIRECTION

HDPE AND HDD NOTES:

- 1. CONTRACTOR SHALL ELIMINATE BENDS BY UTILIZING THE PIPE BENDING RADIUS PER THE PIPE MANUFACTURER'S RECOMMENDATIONS.
2. CONTRACTOR SHALL REDUCE THE VERTICAL RADIUS OF CURVATURE AND THEREFORE THE DEPTH OF COVER IN ACCORDANCE WITH THE CAPABILITIES OF THE SPECIFIC DRILLING RIG AND RODS SELECTED BY THE CONTRACTOR. MINIMUM COVER SHALL BE MAINTAINED AS INDICATED.
3. LOCATION OF DIRECTIONAL DRILLING LAUNCHING AND RECEIVING LOCATIONS SHOWN IS APPROXIMATE. CONTRACTOR SHALL DETERMINE DRILLING AND RECEIVING LOCATIONS IN THE FIELD SO AS TO MINIMIZE LAND DISTURBANCE AND AVOID ENVIRONMENTAL IMPACTS.
4. THE PIPE SHALL BE JOINED WITH ELECTROFUSION COUPLINGS AS OUTLINED IN ASTM F1065 AND CONFORM TO THE GENERIC ELECTROFUSION PROCEDURE FOR FIELD JOINING OF POLYETHYLENE (PE) PIPE, PUBLISHED BY THE MUNICIPAL ADVISORY BOARD (MAB), OR WITH BUTT (THERMAL) FUSION WELDS AND CONFORM TO THE GENERAL BUTT FUSION JOINING PROCEDURE FOR FIELD JOINING OF POLYETHYLENE PIPE, TECHNICAL REPORT 33 (TR-33) PUBLISHED BY THE PLASTICS PIPE INSTITUTE (PPI). ALL JOINTS SHALL BE MADE IN STRICT COMPLIANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. A FACTORY QUALIFIED JOINING TECHNICIAN AS DESIGNATED BY PIPE MANUFACTURER OR EXPERIENCED, TRAINED TECHNICIAN SHALL PERFORM ALL ELECTROFUSION AND BUTT FUSION JOINTS.
5. LENGTHS OF PIPE SHALL BE ASSEMBLED INTO SUITABLE INSTALLATION LENGTHS BY THE FUSION PROCESS BEING PERFORMED. ALL PIPES SO JOINED SHALL BE MADE FROM THE SAME CLASS AND TYPE OF RAW MATERIAL MADE BY THE SAME RAW MATERIAL SUPPLIER. PIPE SHALL BE FURNISHED IN STANDARD LAYING LENGTHS, NO SHORTER THAN 20 FEET.
6. CONTRACTOR SHALL NOT EXCEED BENDING RADIUS AND PULLBACK FORCE LIMITS SET FORTH BY THE MANUFACTURER'S REQUIREMENTS.
7. CONSTRUCTION METHODS SHALL CONFORM TO THE PLASTIC PIPE INSTITUTE (PPI) HANDBOOK OF POLYETHYLENE PIPE.
8. PULLBACK DURATION SHALL BE LIMITED TO 12 HOURS MAXIMUM FOR EACH DRILL.
9. A BREAKAWAY LINK SHALL BE USED TO PREVENT THE PULL-BACK FORCE FROM EXCEEDING THE ALLOWABLE PULL-BACK STRESS OF THE PIPE.
10. HDPE PIPE AND FITTING SHALL BE MANUFACTURED WITH PREMIUM PE4710 RESIN CONFORMING TO ASTM D3350 WITH WITH CELL CLASSIFICATION 4456740C AND SHALL BE LISTED WITH THE PLASTIC PIPE INSTITUTE'S (PPI) TR4. HDPE MATERIAL SHALL BE FORMULATED WITH CARBON BLACK AND/OR ULTRAVIOLET STABILIZER FOR MAXIMUM PROTECTION AGAINST UV RAYS.

GENERAL NOTES:

- 1. THE CONTRACTOR SHALL PAY FOR AND OBTAIN ALL REQUIRED PERMITS AND DELIVER COPIES TO THE OWNER AT THE PRE-CONSTRUCTION MEETING.
2. CONTRACTOR SHALL NOTIFY PROPERTY OWNERS (IN WRITING) OF ANY WORK SCHEDULED ADJACENT TO OR THROUGH THEIR PROPERTY A MINIMUM OF ONE WEEK IN ADVANCE PRIOR TO THE COMMENCEMENT OF ANY STAKING OR CONSTRUCTION ACTIVITY.
3. HORIZONTAL DATUM: NAD 83 VERTICAL DATUM: NAVD 88
4. STAKING FOR CONSTRUCTION, TO ASSURE PROPER LOCATION OF PROJECT COMPONENTS SHALL BE PERFORMED BY A LICENSED LAND SURVEYOR.
5. ALL EXISTING PROPERTY MARKERS WILL REMAIN UNDISTURBED. IF DISTURBANCE OCCURS, REPLACEMENT MUST BE PERFORMED BY A LICENSED LAND SURVEYOR AT THE CONTRACTOR'S EXPENSE.
6. PREVIOUSLY ARRANGED ACCESS EASEMENTS, STAGING AREAS, STORAGE AREAS, ETC., IF ANY, ARE SHOWN ON THE DRAWINGS. ADDITIONAL LAND USE RIGHTS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
7. WORK AREAS SHALL BE KEPT AT ALL TIMES FREE OF DEBRIS AND HAZARDOUS MATERIAL TO THE SATISFACTION OF THE INSPECTOR.
8. THE CONTRACTOR SHALL COORDINATE STORAGE OF MATERIALS, PARKING OF VEHICLES, AND RESTRICTIONS OF WORK WITH THE INSPECTOR.
9. CONTRACTOR IS RESPONSIBLE FOR RESTORATION OF ALL EXISTING FEATURES (EXCEPT TREES), SUCH AS GUARDRAIL, SIDEWALKS, BRICKWORK, CULVERTS, FENCES, SHRUBS, PLANTERS, ETC. TO THEIR ORIGINAL LOCATION AND CONDITION WHICH EXISTED PRIOR TO CONSTRUCTION. TOTAL REPLACEMENT MAY BE NECESSARY.
10. THE LOCATION OF EXISTING UTILITIES ACROSS OR ALONG THE ROUTE OF THE PROPOSED WORK IS NOT NECESSARILY SHOWN ON THE PLANS, AND WHEN SHOWN, IS ONLY APPROXIMATELY CORRECT. IN ADDITION TO CONTACTING MISS UTILITY PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL, ON HIS OWN INITIATIVE, HORIZONTALLY AND VERTICALLY LOCATE ALL EXISTING UNDERGROUND LINES, FACILITIES, AND STRUCTURES. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ANY UNDERGROUND LINES, FACILITIES, AND STRUCTURES DAMAGED.
11. CONTRACTOR SHALL COORDINATE WITH THE LOCAL UTILITY COMPANIES PRIOR TO CONSTRUCTING PORTIONS OF WORK IMMEDIATELY ADJACENT TO UTILITY STRUCTURES. THE COSTS OF POLE AND/OR OTHER STRUCTURE STABILIZATION DURING WORK SHALL BE BORNE BY THE CONTRACTOR.
12. ALL WORK SHALL BE SUBJECT TO INSPECTION BY BOTH STATE AND LOCAL INSPECTORS.
13. FINAL ACCEPTANCE BY THE OWNER UNTIL ALL WORK SHOWN ON THE APPROVED CONTRACT DOCUMENTS IS COMPLETED, INCLUDING PAVING, GRADING, RESTORATION AND ALL ADJUSTMENTS.
14. CONTRACTOR SHALL RESTORE EXISTING DITCH TO ORIGINAL CONDITION AND ENSURE THAT POSITIVE DRAINAGE IS MAINTAINED WITHIN THE DITCH. PAVEMENT AND SHOULDERS MUST ALSO BE RESTORED TO THEIR ORIGINAL CONDITION.
15. CONTRACTOR SHALL ENSURE THAT PUBLIC AND PRIVATE ENTRANCE CULVERTS ARE FREE OF ANY CONSTRUCTION DEBRIS.

UTILITY NOTES:

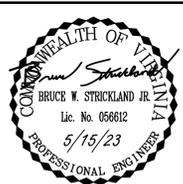
- 1. CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT AND MAINTAIN UNINTERRUPTED SERVICE EXCEPT AS ALLOWED BY THE INSPECTOR.
2. ANY DAMAGE TO EXISTING STRUCTURES SHALL BE REPAIRED IMMEDIATELY TO THE SATISFACTION OF THE INSPECTOR, AT THE CONTRACTOR'S EXPENSE.
3. NEW WATER AND SEWER PIPES SHALL HAVE A MINIMUM OF 3.5 FEET OF COVER, UNLESS NOTED OTHERWISE.
4. ALL TIE-IN CONNECTIONS SHALL BE APPROVED BY THE INSPECTOR PRIOR TO BACKFILLING.
5. COMPACT EACH LAYER OF FILL OR BACKFILL TO NOT LESS THAN THE FOLLOWING PERCENTAGES OF THE MAXIMUM DENSITY AT OPTIMUM MOISTURE CONTENT AS DETERMINED BY ASTM D 698 (ASHTO T-99). REFER TO THE GEOTECHNICAL ENGINEERING REPORT FOR ADDITIONAL BACKFILL AND COMPACTION REQUIREMENTS.
5.A. 100 PERCENT BENEATH AND WITHIN 25 FEET OF BUILDINGS AND STRUCTURES, INCLUDING THOSE SHOWN FOR FUTURE CONSTRUCTION.
5.B. 95 PERCENT BENEATH PAVEMENTS, WALKS, AND ROAD SHOULDERS, INCLUDING THOSE SHOWN FOR FUTURE CONSTRUCTION.
5.C. 90 PERCENT IN OTHER UNPAVED AREAS.
6. AFTER BACKFILLING, FINISHED GRADE ABOVE TRENCH SHALL BE RESTORED TO AS GOOD OR BETTER THAN EXISTING CONDITIONS WHICH EXISTED PRIOR TO CONSTRUCTION.
7. BLASTING OF ROCK IS STRICTLY PROHIBITED WITHOUT WRITTEN PRIOR AUTHORIZATION FROM THE OWNER.
8. TRENCHES WITHIN PRIVATE ROADS, ENTRANCES, AND DRIVEWAYS SHALL BE BACKFILLED ENTIRELY WITH SELECT AGGREGATE MATERIAL (21A OR 21B).

COUNTY OF GOOCHLAND DEPARTMENT OF PUBLIC UTILITIES WATER AND SEWER NOTES:

- 1. ALL CONSTRUCTION, MATERIALS AND INSTALLATIONS SHALL CONFORM TO THE LATEST EDITION OF STANDARDS AND SPECIFICATIONS, DEPARTMENT OF PUBLIC UTILITIES (DPU) GOOCHLAND COUNTY, VIRGINIA ("DPU STANDARDS").
2. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND SPECIFICATIONS FOR ALL PROPOSED PRODUCTS TO BE USED DURING UTILITY CONSTRUCTION TO DPU FOR REVIEW AND CONCURRENCE PRIOR TO PROCURING ANY MATERIALS. USING MARKINGS, HIGHLIGHTING AND/OR NOTES, SUBMITTAL SHEETS SHALL CLEARLY IDENTIFY THE SPECIFIC PRODUCT TO BE USED, AND THE PURPOSE TO WHICH IT IS TO BE PUT.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING DPU TO SCHEDULE A PRE-CONSTRUCTION MEETING AT LEAST 48 HOURS (TWO WORKING DAYS) PRIOR TO STARTING ANY WORK ON THIS PROJECT. ALL WORK SHALL BE SUBJECT TO INSPECTION. CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS PRIOR TO REQUESTING A PRE-CONSTRUCTION MEETING.
4. CONTRACTOR SHALL INCLUDE IN HIS BID PRICE THE COSTS FOR LOCATING AND UNCOVERING ALL SEWER MANHOLES AND VALVE BOXES AFTER SURFACE TREATMENT OF ROADS, AND FOR ADJUSTING THEM TO THE FINAL ROAD GRADES AS NEEDED.
5. CONTRACTOR SHALL VERIFY LOCATION AND ELEVATION OF ALL UNDERGROUND UTILITIES. THE LOCATIONS AND ELEVATIONS OF EXISTING UTILITIES ACROSS OR ALONG THE LINE OF THE PROPOSED WORK MAY NOT BE SHOWN ON THE PLANS AND WHERE SHOWN MAY BE ONLY APPROXIMATELY CORRECT.
6. CONTRACTOR SHALL INCLUDE IN HIS BID PRICE THE COST OF LOCATING ALL UNDERGROUND LINES AND STRUCTURES AS NECESSARY TO COMPLETE THE WORK. NO CLAIMS FOR DAMAGES OR EXTRA COMPENSATION SHALL ACCRUE TO THE CONTRACTOR DUE TO THE PRESENCE OF EXISTING UTILITIES OR FROM ANY DELAY DUE TO REMOVAL OR REARRANGEMENT OF THE SAME. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE CAUSED TO UNDERGROUND STRUCTURES.
7. CONTRACTOR SHALL CALL "MISS UTILITY" TOLL FREE AT 811 PRIOR TO START OF CONSTRUCTION.
8. DATUM FOR ALL ELEVATIONS SHOWN IS NATIONAL GEODETIC SURVEY.
9. SERVICE SADDLES MUST BE USED ON ALL WATER SERVICE CONNECTIONS.
10. FIRE HYDRANTS SHALL BE INSTALLED IN ACCORDANCE WITH STANDARD DRAWING FR-01.
11. ALL FIRE HYDRANTS SHALL BE NATIONAL STANDARD THREADS AND SHALL BE PAINTED REFLECTIVE SILVER.
12. MINIMUM DESIGN COVER OVER WATER LINES IS 3.5 FEET. EXCEPTIONS DUE TO UNUSUAL CIRCUMSTANCES IN THE FIELD MUST BE APPROVED BY DPU.
13. MINIMUM DESIGN COVER OVER GRAVITY SEWER LINES IS 3.5 FEET. EXCEPTIONS DUE TO UNUSUAL CIRCUMSTANCES IN THE FIELD MUST BE APPROVED BY DPU.
14. MINIMUM DESIGN COVER OVER SANITARY SEWER FORCE MAINS IS 3.5 FEET. EXCEPTIONS DUE TO UNUSUAL CIRCUMSTANCES IN THE FIELD MUST BE APPROVED BY DPU.
15. A SANITARY SEWER CLEANOUT SHALL BE INSTALLED ON EACH SEWER SERVICE LATERAL AT THE EDGE OF THE ROW/UTILITY EASEMENT IN ACCORDANCE WITH DPU STANDARDS.
16. VANDAL PROOF COVERS SHALL BE USED ON ALL MANHOLES IN EASEMENTS. WATERTIGHT COVERS SHALL BE USED IN FLOOD PLAINS. THE MANHOLE COVERS SHALL BE IN ACCORDANCE WITH STANDARD DRAWINGS MAN-11 AND MAN-12. DETECTABLE MARKING TAPE IS REQUIRED ON ALL BURIED LINES. PRODUCT AND APPLICATION SPECIFICATIONS CAN BE FOUND IN THE FOLLOWING SECTIONS OF THE DPU STANDARDS: 11.2.27, 11.3.16, 12.2.11, 12.3.2D, 12.3.3D.
17. COPPER TRACER WIRE AND TRACER WIRE ACCESS BOXES SHALL BE INSTALLED ON ALL WATER MAINS AND ALL SEWAGE FORCE MAINS. PRODUCT AND APPLICATION SPECIFICATIONS CAN BE FOUND IN THE FOLLOWING SECTIONS OF THE DPU STANDARDS: 11.2.24, 11.3.17, 12.2.9, 12.2.10, 12.3.3.E.
18. ON WATER SYSTEMS, TRACER WIRE ACCESS BOXES WITH MOW COLLARS SHALL BE INSTALLED ADJACENT TO ALL FIRE HYDRANTS (SEE DPU STANDARDS SECTION 11.4.24.B).
19. ON SEWAGE FORCE MAINS TRACER WIRE ACCESS BOXES SHALL BE INSTALLED AT THE FOLLOWING LOCATIONS: a. ADJACENT TO THE BYPASS CONNECTION RISER ON THE PUMP STATION SITE. b. ADJACENT TO THE DISCHARGE MANHOLE FOR THE FORCE MAIN. c. OTHER INTERMEDIATE LOCATIONS AS DETERMINED BY DPU AND SHOWN ON THE PLANS.
20. SANITARY SEWERS WHICH RECEIVE PUMPED FLOW SHALL BE PROTECTED AGAINST SULFIDE ATTACK FOR A DISTANCE OF 1,200 FEET DOWNSTREAM FROM THE POINT OF ENTRY OF THE PUMPED FLOW. THIS SHALL BE ACCOMPLISHED BY THE USE OF ACID-RESISTANT PIPE AND MANHOLES IN ACCORDANCE WITH DPU STANDARDS.
21. DESIGN ENGINEER SHALL CERTIFY THAT UNPAVED STREETS ARE TO SUBGRADE PRIOR TO CONTRACTOR INSTALLING WATER SYSTEMS.
22. NO PERMANENT STRUCTURES OR TREES SHALL BE LOCATED WITHIN ANY UTILITY EASEMENT. PRIOR TO REQUESTING ANY ACCEPTANCE INSPECTION, CONTRACTOR SHALL FLUSH AND CLEAN OUT GRAVITY SEWER MAINS AS NEEDED, PERFORM CCTV RECORDINGS OF ALL GRAVITY SEWER MAINS AND MANHOLES, AND SUBMIT CCTV RECORDINGS TO DPU FOR REVIEW.
23. FINAL ACCEPTANCE BY COUNTY WILL NOT OCCUR UNTIL ALL WORK SHOWN ON APPROVED UTILITY PLANS IS COMPLETED INCLUDING CURB & GUTTER, PAVING, GRADING AND ALL REQUIRED ADJUSTMENTS.
24. A WETLANDS PERMIT MAY BE REQUIRED FROM THE U.S. ARMY CORPS OF ENGINEERS FOR THIS PROJECT. FOR INFORMATION CONCERNING SUCH REQUIREMENT, CONTACT THE APPROPRIATE LOCAL U.S. ARMY CORPS OF ENGINEERS FIELD OFFICE.
25. DPU WILL INSPECT ALL PUBLIC WATER AND SANITARY SEWER MAINS, CONNECTIONS AND APPURTENANCES THERETO, AS SHOWN ON THE APPROVED UTILITY PLANS, LOCATED WITHIN DEDICATED EASEMENTS AND/OR PUBLIC RIGHTS-OF-WAY. OTHER LINES TO BE INSTALLED ON SITE SUCH AS ROOF DRAINS, FOUNDATION DRAINS, PRIVATE WATER SUPPLY LINES, PRIVATE SANITARY SEWER LINES, ETC., MUST BE APPROVED BY THE DEPARTMENT OF BUILDING INSPECTIONS PRIOR TO INSTALLATION AND ARE TO BE INSPECTED BY THEM BEFORE BACKFILLING/COVERING.
26. CONCURRENT INSPECTIONS BY THE DEPARTMENT OF BUILDING INSPECTIONS AND DPU WILL BE PERFORMED FOR THE FOLLOWING: MAINLINE BACKFLOW PREVENTERS; MONITORING MANHOLES; GREASE TRAPS; EXCLUSION METERS; IRRIGATION METERS. DPU WILL INSPECT TO ENSURE THAT THE PROPER APPURTENANCE, AS SHOWN ON THE APPROVED UTILITY PLANS, HAS BEEN INSTALLED AND TESTED IN ACCORDANCE WITH DPU STANDARDS.

VDOT GENERAL NOTES:

- 1. ALL MATERIALS AND CONSTRUCTION WITHIN THE PUBLIC RIGHT OF WAY SHALL BE IN ACCORDANCE WITH THE CURRENT EDITION OF THE VIRGINIA DEPARTMENT OF TRANSPORTATION'S ROAD AND BRIDGE SPECIFICATIONS, ROAD AND BRIDGE STANDARDS AND WORK AREA PROTECTION MANUAL.
2. LAND USE PERMITS (LUP) SHALL BE OBTAINED FROM THE VIRGINIA DEPARTMENT OF TRANSPORTATION PRIOR TO BEGINNING ANY CONSTRUCTION WITHIN THE EXISTING STATE MAINTAINED RIGHT OF WAY (INCLUDING ACCESS).
3. VDOT REQUIRES NOTIFICATION 48 HOURS PRIOR TO COMMENCING WITH INITIAL CONSTRUCTION ACTIVITIES. PLEASE CONTACT THE APPROPRIATE PERMIT OFFICE IN WHICH YOUR PROPOSED ACTIVITIES ARE TO OCCUR.
4. APPROVAL OF A DETAILED CONSTRUCTION SEQUENCING AND MAINTENANCE OF TRAFFIC PLAN FOR THE WORK ZONE IS A PREREQUISITE FOR ISSUANCE OF A LAND USE PERMIT. THE PLAN SHALL ACCOMMODATE ACCESS TO CONSTRUCTION WITHIN VDOT MAINTAINED RIGHT-OF-WAY.
5. WORK ZONES - THE DEPARTMENT SHALL BE NOTIFIED 48 HOURS IN ADVANCE OF ANY ANTICIPATED ROAD/SHOULDER CLOSURES. ADDITIONALLY, THE PERMITEE OR HIS OR HER DESIGNEE SHALL INPUT ALL WORK ZONES ON ROADWAYS CLASSIFIED AS COLLECTOR ROADS OR HIGHER. LCAMS REQUESTS MUST BE RECEIVED BY THE THURSDAY PRIOR TO THE WEEK IN WHICH ACTIVITIES ARE PROPOSED FOR REVIEW AND APPROVAL. CALL 804-796-4492 FOR ADDITIONAL INFORMATION ON LCAMS. THE PERMITEE OR HIS OR HER DESIGNEE SHALL INPUT THE WORK ZONES INTO VA TRAFFIC. CONTACT VDOT'S SMART TRAFFIC CENTER AT 804-796-4520 TO NOTIFY WHEN THE WORK ZONE IS ACTIVATED AND DEACTIVATED.
6. PRIOR TO ANY CONSTRUCTION, THE CONTRACTOR SHALL CONSULT THE DEVELOPER'S ENGINEERING CONSULTANT AND VERIFY THE APPROVAL OF THE PLANS BY ALL APPLICABLE FEDERAL, STATE AND LOCAL AGENCIES.
7. CONTRACTOR SHALL VERIFY LOCATION AND ELEVATION OF ALL UNDERGROUND UTILITIES SHOWN ON PLANS IN AREAS OF CONSTRUCTION PRIOR TO STARTING WORK. CONTACT THE DEVELOPER'S ENGINEERING CONSULTANT IMMEDIATELY IF LOCATION OR ELEVATION IS DIFFERENT FROM THAT SHOWN ON PLAN. IF THERE APPEARS TO BE A CONFLICT, OR UPON DISCOVERY OF ANY UTILITY NOT SHOWN ON THIS PLAN, CALL "MISS UTILITY" AT 811. THE DEVELOPER SHALL BE RESPONSIBLE FOR THE RELOCATION OF ANY UTILITY WITHIN EXISTING AND PROPOSED RIGHT OF WAY REQUIRED BY THE DEVELOPMENT.
8. TO LOCATE VDOT UTILITIES ON THE RIGHT OF WAY, SUBMIT A REQUEST TO VDOT'S CUSTOMER SERVICE CENTER AT 800-367-7623 AT LEAST 48 HOURS IN ADVANCE OF PLANNED EXCAVATION. "MISS UTILITY" DOES NOT LOCATE VDOT UTILITIES.
9. THE CONTRACTOR SHALL VERIFY THE ELEVATIONS AND FIELD POINTS OF CONNECTION OR PROPOSED WORK TO EXISTING CURBS, SANITARY LINES, WATER LINES, ETC., PRIOR TO CONSTRUCTION.
10. DESIGN CHANGES, SPECIFIED MATERIALS CHANGES AND FIELD CHANGES FROM THE APPROVED PLANS SHALL BE RE-SUBMITTED TO VDOT FOR APPROVAL PRIOR TO PROCEEDING WITH THE WORK. A LETTER OF EXPLANATION SHALL ACCOMPANY THE PROPOSED REVISION ALONG WITH DRAINAGE CALCULATIONS WHEN APPROPRIATE.
11. VDOT APPROVAL OF CONSTRUCTION PLANS DOES NOT PRECLUDE THE RIGHT TO REQUIRE ADDITIONAL FACILITIES AS DEEMED NECESSARY FOR ACCEPTANCE OF THE ROADS INTO THE VDOT SECONDARY ROAD SYSTEM BASED ON FIELD CONDITIONS OR UNAPPROVED PLAN CHANGES.
12. VDOT APPROVAL OF THESE PLANS WILL EXPIRE FIVE (5) YEARS FROM THE DATE OF APPROVAL FOR SITE PLANS AND SUBDIVISION PLANS IF CONSTRUCTION HAS NOT STARTED.
13. PRELIMINARY DESIGN OF THE PAVEMENT STRUCTURE FOR ALL SUBDIVISION STREETS SHALL BE IN ACCORDANCE WITH THE PAVEMENT DESIGN GUIDE FOR SUBDIVISION AND SECONDARY ROADS IN VIRGINIA. THE COMPLETED DESIGN WORKSHEET APPENDIX IV SHALL BE INCLUDED WITH THE INITIAL PLAN SUBMITTAL FOR EACH PROPOSED PAVEMENT SECTION UTILIZING THE PREDICTED SOIL SUPPORT VALUE SHOWN IN APPENDIX I OF THE PAVEMENT DESIGN GUIDE OR AS REPORTED IN A GEOTECHNICAL ANALYSIS OF THE ON-SITE SOILS.
14. A COPY OF THE COMPLETE CBR REPORT SHALL BE SUBMITTED TO VDOT IN CONJUNCTION WITH FINAL PAVEMENT DESIGN AND PROPOSED RECOMMENDATIONS SHALL BE PERFORMED IN ACCORDANCE WITH THE CURRENT EDITION OF PAVEMENT DESIGN GUIDE FOR SUBDIVISION AND SECONDARY ROADS IN VIRGINIA.
15. ALL VEGETATION AND ORGANIC MATERIAL SHALL BE REMOVED FROM THE RIGHT OF WAY LIMITS PRIOR TO CONDITIONING OF THE SUBGRADE.
16. UPON DISCOVERY OF UNSUITABLE SOILS FOR FOUNDATIONS, SUBGRADES, OR OTHER ROADWAY CONSTRUCTION PURPOSES, THE DEVELOPER OR HIS DESIGNEE, WHICH MAY BE THE CONTRACTOR, SHALL IMMEDIATELY ENGAGE A GEOTECHNICAL ENGINEER AND NOTIFY VDOT. THESE AREAS SHALL BE EXCAVATED BELOW PLAN GRADE AS DIRECTED BY THE GEOTECHNICAL ENGINEER, BACKFILLED WITH SUITABLE MATERIAL AND COMPACTED IN ACCORDANCE WITH CURRENT VDOT SPECIFICATIONS.
17. THE NECESSITY AND LOCATIONS FOR ADDITIONAL VDOT STANDARD UNDERDRAINS SHALL BE DETERMINED AT THE TIME OF SUBGRADE INSPECTION OF ACCESSIBLE OUTLET LOCATIONS, MAINLINE LONGITUDINAL CONNECTIONS, AND LONGITUDINAL PIPE FOR ALL PAVEMENT UNDERDRAINS, CROSS DRAINS, EDGE DRAINS AND PREFABRICATED GEOCOMPOSITE PANEL DRAINS SHALL BE CONDUCTED IN ACCORDANCE WITH SECTION 501 OF THE ROAD AND BRIDGE SPECIFICATIONS AND VIRGINIA TEST METHOD 108 - POST INSTALLATION INSPECTION OF UNDERDRAINS, CROSSDRAINS, AND EDGE DRAINS.
18. VDOT SHALL HAVE THE REQUIRED FIELD INSPECTION (PROOF ROLL) PRIOR TO PLACEMENT OF THE AGGREGATE BASE COURSE(S). CONTACT VDOT FOR SUBGRADE INSPECTION 48 HOURS PRIOR TO SCHEDULING PLACEMENT OF AGGREGATE COURSE(S).
19. THE SCHEDULING OF AGGREGATE BASE INSTALLATION AND SUBSEQUENT PAVING ACTIVITIES SHALL ACCOMMODATE FORECASTED WEATHER CONDITIONS PER SECTION 315 OF THE ROAD AND BRIDGE SPECIFICATIONS.
20. VDOT SHALL HAVE APPROVED THE AGGREGATE BASE COURSE(S) FOR DEPTH, TEMPLATE AND PERFORMED THE REQUIRED FIELD INSPECTION (PROOF ROLL) PRIOR TO PLACEMENT OF ANY ASPHALT CONCRETE SURFACE COURSE(S). CONTACT VDOT FOR INSPECTION OF THE AGGREGATE BASE COURSE(S) 48 HOURS PRIOR TO APPLICATION OF THE SURFACE COURSE(S).
21. A LICENSED GEOTECHNICAL ENGINEER OR HIS DESIGNEE SHALL ASCERTAIN CAUSE AND CERTIFY RECOMMENDED METHOD OF REPAIR FOR ALL PAVEMENT STRUCTURAL FAILURES PRIOR TO STATE ACCEPTANCE.
22. VDOT SHALL BE PROVIDED DOCUMENTATION BY A LICENSED GEOTECHNICAL ENGINEER, CERTIFYING THAT ALL IN-PLACE PAVEMENTS MEET OR EXCEED THE APPROVED PAVEMENT DESIGN THICKNESS PRIOR TO STATE ACCEPTANCE OF THE STREET. CORES ARE TO BE OBTAINED VERIFYING PAVEMENT THICKNESS UNLESS OTHERWISE DIRECTED BY VDOT. THE PERMITS INSPECTOR SHALL BE CONTACTED 24 HOURS PRIOR TO THE CORE SAMPLES BEING TAKEN.
23. ALL STORM SEWER DESIGN AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH LATEST VDOT DRAINAGE MANUAL, ROAD AND BRIDGE STANDARDS, AND IIMS.
24. ALL PRE-CAST UNITS SHALL BE VDOT APPROVED. CERTIFICATION AND VDOT STAMP IS REQUIRED ON ALL UNITS.
25. ALL CONCRETE SHALL BE CLASS A3-AE (AIR ENTRAINED 3,000 PSI) UNLESS OTHERWISE SPECIFIED.
26. ALL ROADSIDE DITCHES SHOWN AS PAVED ON PLANS ARE TO BE PAVED IN ACCORDANCE WITH THE STANDARD TYPICAL SECTION AS SHOWN ON THE PLANS. ANY ADDITIONAL PAVING OF THE DITCHES, OTHER THAN THOSE SHOWN ON THE ROAD PLANS WILL BE DETERMINED PRIOR TO ACCEPTANCE OF THE ROADS INTO THE VDOT SECONDARY ROAD SYSTEM.
27. ROAD & BRIDGE SPECIFICATIONS SECTION 802, DRAINAGE STRUCTURES ADDRESSES POST INSTALLATION VISUAL VIDEO CAMERA INSPECTION OF STORM SEWER PIPES AND PIPE CULVERTS. INSPECTION FREQUENCY SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS AND/OR AS NECESSITATED BY THE ENGINEER. VIDEO INSPECTION SHALL BE CONDUCTED IN ACCORDANCE WITH VIRGINIA TEST METHOD (VTM) 123, POST INSTALLATION INSPECTION OF BURIED STORM SEWER PIPE AND PIPE CULVERTS.
28. A CONSTRUCTION ENTRANCE SHALL BE INSTALLED ON EACH INDIVIDUAL LOT PRIOR TO ANY LOT GRADING OR HOME CONSTRUCTION ACTIVITIES AND SHALL BE ADEQUATELY MAINTAINED UNTIL ALL CONSTRUCTION TRAFFIC AREAS WITHIN THE LOT HAVE BEEN STABILIZED.
29. ALL ENTRANCES SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH CURRENT VDOT STANDARDS. RESIDENTIAL LOT ACCESS SHALL BE PROVIDED PER THE FOLLOWING CRITERIA:
- ALL DRIVEWAY ENTRANCES AND ENTRANCE CULVERTS SHALL CONFORM TO PE-1 PRIVATE ENTRANCE STANDARDS UNLESS OTHERWISE APPROVED BY VDOT. NO ENTRANCE CULVERTS ARE TO BE INSTALLED WITHIN FIVE (5) FEET OF A PROPERTY CORNER.
- VDOT STANDARD CG-9D ENTRANCES SHALL BE USED WHEN AN ENTRANCE IS REQUIRED IN CURB AND GUTTER NEIGHBORHOODS UNLESS OTHERWISE APPROVED BY VDOT.
29. DRY GUTTERS IS NOT ALLOWED IN VDOT RIGHT OF WAY EXCEPT AS SHOWN ON VDOT'S ENTRANCE STANDARD DETAILS.
30. THE DEVELOPER SHALL FURNISH AND INSTALL STOP SIGNS AND STOP BARS AT STREET INTERSECTIONS AND ALL REGULATORY SIGNAGE PER THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. ALL SIGNS MUST BE INSTALLED ON VDOT STANDARD STP-1 SIGN POSTS.
31. INSTALLATION, MAINTENANCE AND OPERATION OF STREET LIGHTING SHALL BE PROVIDED BY AND AT THE SOLE EXPENSE OF OTHERS. VDOT WILL ALLOW LIGHTING WITHIN THE RIGHT OF WAY BY LUP ONLY. LIGHTING ON CURB SECTIONS SHALL BE PLACED BEHIND THE CURB AND PREFERABLY BEHIND THE SIDEWALK. FOR SHOULDER SECTIONS, THE POLE SHALL BE PLACED A MINIMUM OF 10' FROM EDGE OF PAVEMENT AND BEHIND THE DITCH LINE. ALL LIGHTING PROPOSED WITHIN THE RIGHT OF WAY MUST BE DESIGNED IN ACCORDANCE WITH THE AASHTO GUIDE FOR ROADWAY LIGHTING AND SHALL MEET THE CURRENT ILLUMINATING ENGINEERING SOCIETY OF NORTH AMERICA (IESNA) STANDARDS.
32. TRAFFIC SIGNALS REQUIRE AN INDIVIDUAL LAND USE PERMIT. THE APPLICANT SHALL BE RESPONSIBLE FOR THE DESIGN LOCATION AND MODIFICATION OF EXISTING SIGNALS. DESIGN PLANS MUST BE PREPARED AND SUBMITTED TO VDOT BY A LICENSED PROFESSIONAL ENGINEER FOR REVIEW AND APPROVAL. THIS INCLUDES THE FOUNDATION DESIGN AND ANY EQUIPMENT ASSOCIATED WITH THE COMPLETED TRAFFIC SIGNAL. ALL EQUIPMENT MUST BE APPROVED BY VDOT. SHOP DRAWINGS MUST BE SUBMITTED FOR REVIEW AND APPROVAL PRIOR TO FABRICATING ANY SIGNAL STRUCTURAL COMPONENTS.
33. SOIL STABILIZATION IS REQUIRED WITHIN 7 DAYS FOR ALL AREAS WHERE CLEARING, GRADING, EXCAVATION OR OTHER LAND DISTURBING ACTIVITIES HAVE PERMANENTLY CEASED OR WHERE LAND DISTURBANCE ACTIVITIES HAVE BEEN TEMPORARILY SUSPENDED FOR AN ANTICIPATED DURATION OF GREATER THAN 7 DAYS, OR UPON COMPLETION OF GRADING OPERATIONS FOR A SPECIFIED AREA. SOIL STABILIZATION SHALL BEGIN AS SOON AS PRACTICABLE, BUT NOT LATER THAN THE SEVEN DAYS FOLLOWING THE DAY WHEN LAND DISTURBING ACTIVITIES PERMANENTLY CEASED.
34. NO STRUCTURE SHALL BE CONSTRUCTED ON STATE MAINTAINED RIGHTS OF WAY, OR ON RIGHT OF WAYS INTENDED TO BE MAINTAINED BY VDOT UNLESS SAID STRUCTURES ARE SHOWN ON CONSTRUCTION PLANS APPROVED BY VDOT OR SUCH STRUCTURES ARE COVERED BY A VDOT LAND USE PERMIT (OR BY A LETTER OF INTENT FROM THE RESIDENT ADMINISTRATOR/RESIDENT ENGINEER TO ISSUE SAID PERMIT AT THE TIME OF STATE ACCEPTANCE).



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YOUR VISION ACHIEVED THROUGH OURS. REVISION DESCRIPTION DATE REVISED PER COUNTY COMMENTS REVISED PER COUNTY AND VDOT COMMENTS BID SET DATE ADDENDUM 1

DATE 10/21/2022 DRAWN BY L. KIM J. MARSHALL DESIGNED BY B. STRICKLAND CHECKED BY B. STRICKLAND SCALE AS SHOWN

TIMMONS GROUP HUGUENOT HILLS WATER AND SEWER IMPROVEMENTS GOOCHLAND COUNTY, VIRGINIA GENERAL NOTES JOB NO. 50070 SHEET NO. G2.0

EROSION AND SEDIMENT CONTROL NARRATIVE:

PROJECT DESCRIPTION
THE PURPOSE OF THIS PROJECT IS TO UPGRADE THE EXISTING WATER SYSTEM AND PROVIDE NEW SEWER SERVICE TO THE HUGUENOT HILLS SUBDIVISION IN GOOCHLAND COUNTY, VIRGINIA. THE PROJECT WILL INCLUDE TWO NEW 8" PUBLIC WATERLINES BETWEEN THE EXISTING 16" WATERLINE ON PATTERSON AVENUE AND THE EXISTING 12" WATERLINE ON OAK HILL PARK DRIVE. THE PROJECT WILL ALSO INCLUDE A NEW PRESSURE SEWER SYSTEM CONSISTING OF 3" AND 4" PUBLIC FORCE MAINS THAT WILL DISCHARGE INTO AN EXISTING MANHOLE ON CHARITIES ROAD. THERE IS APPROXIMATELY 4,010 LINEAR FEET OF NEW PUBLIC WATERLINE AND APPROXIMATELY 4,150 LINEAR FEET OF NEW FORCE MAIN.

AREA OF DISTURBANCE
TOTAL AREA DISTURBED: 4.50 ACRES
AREA TAKEN FROM CONSTRUCTION PLAN "LIMITS OF DISTURBANCE" (LOD).

EXISTING SITE CONDITIONS
THE PROJECT WILL MOSTLY TAKE PLACE IN AN EXISTING SUBDIVISION COMPRISED OF DEVELOPED LOTS, FORESTED AREAS, PAVED/GRAVEL ROADS, AND WETLAND FEATURES. ADDITIONALLY, THE PROJECT WILL REQUIRE A HORIZONTAL DIRECTIONAL DRILL ALONG AN EXISTING ACCESS EASEMENT TO AVOID WETLAND IMPACTS.

ADJACENT AREAS
ADJACENT AREAS INCLUDE THE PROPOSED (BY OTHERS) OAK HILL DEVELOPMENT TO THE NORTH, PROPOSED (BY OTHERS) BLUFFTONS DEVELOPMENT TO THE EAST, PATTERSON AVENUE TO THE SOUTH, AND UNDEVELOPED FORESTED LAND TO THE WEST.

OFFSITE AREAS
THERE WILL BE NO OFF-SITE LAND DISTURBANCES ASSOCIATED WITH THIS PROJECT. SPOILS WILL BE DISPOSED OF IN STRICT ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REQUIREMENTS.

SOIL TYPES AND CHARACTERISTICS
SOILS WERE EVALUATED BASED ON USGS SOIL SURVEY INFORMATION. SEE KEY PLAN ON SHEET C2.0

CRITICAL AREAS
THERE ARE DELINEATED WETLANDS ALONG ROCHELLE ROAD AND VILLE PONTEAUX LANE.

PROPOSED TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES
SILT FENCE WILL SERVE AS THE PRIMARY EROSION CONTROL MEASURE THROUGHOUT CONSTRUCTION. ROCK CHECK DAMS AND CULVERT INLET PROTECTION WILL PROVIDE EROSION CONTROL FOR EXISTING DITCHES AND DRIVEWAY CULVERTS. TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED FIRST AND WILL BE MONITORED AND MAINTAINED THROUGHOUT ALL PHASES OF CONSTRUCTION.

MAINTENANCE
ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED IN ACCORDANCE WITH THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK. ALL MEASURES SHALL BE INSPECTED WEEKLY AND AFTER ALL RAIN EVENTS. IF THE SEDIMENT TRAPPING MEASURE IS NO LONGER USEFUL IT SHALL BE REPLACED.

STRUCTURAL PRACTICES AND MAINTENANCE PROCEDURES
THE CONTRACTOR SHALL CONSTRUCT AND MAINTAIN ALL MEASURES NECESSARY TO PREVENT SOIL FROM ERODING OR BEING TRACKED ONTO ADJACENT PROPERTY, STREETS, DRAINAGE SYSTEMS, AND WATERWAYS. ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE CONSTRUCTED AND MAINTAINED ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK AND VIRGINIA REGULATION 9 VAC 25-840-40. THE MINIMUM STANDARDS OF THE VIRGINIA EROSION AND SEDIMENT CONTROL REGULATIONS SHALL BE ADHERED TO UNLESS OTHERWISE WAIVED OR APPROVED BY A VARIANCE FROM GOOCHLAND COUNTY.

3.02 TEMPORARY STONE CONSTRUCTION ENTRANCE

TEMPORARY STONE CONSTRUCTION ENTRANCE SHALL BE CONSTRUCTED AS SHOWN ON THE PLANS OR AS DIRECTED BY COUNTY INSPECTOR. IF THIS MEASURE BECOMES COVERED WITH SOIL OR PUSHED INTO THE SOIL BY CONSTRUCTION TRAFFIC, IT SHALL BE REPLACED WITH A DEPTH OF STONE EQUAL TO THE ORIGINAL APPLICATION. THE CONSTRUCTION ENTRANCE SHALL BE CONSTRUCTED PRIOR TO ANY OTHER WORK TAKING PLACE.

3.05 SILT FENCE

A TEMPORARY SEDIMENT BARRIER CONSTRUCTED OF POSTS, FILTER FABRIC AND, IN SOME CASES, A WIRE SUPPORT FENCE, PLACED ACROSS OR AT THE TOE OF A SLOPE OR IN A MINOR DRAINAGE WAY TO INTERCEPT AND DETAIN SEDIMENT AND DECREASE FLOW VELOCITIES FROM DRAINAGE AREAS OF LIMITED SIZE; APPLICABLE WHERE SHEET AND RILL EROSION OR SMALL CONCENTRATED FLOWS MAY BE A PROBLEM. MAXIMUM EFFECTIVE LIFE OF 6 MONTHS.

3.08 CULVERT INLET PROTECTION

A SEDIMENT FILTER LOCATED AT THE INLET TO STORM SEWER CULVERTS WHICH PREVENTS SEDIMENT FROM ENTERING, ACCUMULATING IN, AND BEING TRANSFERRED BY THE CULVERT. IT ALSO PROVIDES EROSION CONTROL AT CULVERTS DURING THE PHASE OF A PROJECT WHERE ELEVATION AND DRAINAGE PATTERNS ARE CHANGING, CAUSING ORIGINAL CONTROL MEASURES TO BE INEFFECTIVE.

3.18 OUTLET PROTECTION

STRUCTURALLY LINED APRONS PLACED AT THE OUTLETS OF PIPES OR CHANNEL SECTIONS TO PREVENT SCOUR AND PROTECT THE OUTLET STRUCTURE.

3.20 ROCK CHECK DAM

SMALL, TEMPORARY STONE DAMS CONSTRUCTED ACROSS A DRAINAGE DITCH TO REDUCE THE VELOCITY OF CONCENTRATED FLOWS, REDUCING EROSION OF THE SWALE OR DITCH. LIMITED TO USE IN SMALL OPEN CHANNELS WHICH DRAIN 10 ACRES OR LESS; SHOULD NOT BE USED IN LIVE STREAMS.

3.31 TEMPORARY SEEDING

ESTABLISHMENT OF TEMPORARY VEGETATIVE COVER ON DISTURBED AREAS THAT WILL NOT BE BROUGHT TO FINAL GRADE FOR PERIODS OF 30 DAYS TO ONE YEAR BY SEEDING WITH APPROPRIATE RAPIDLY GROWING PLANTS.

3.32 PERMANENT SEEDING

ESTABLISHMENT OF PERENNIAL VEGETATIVE COVER BY PLANTING SEEDS ON ROUGH-GRADED AREAS THAT WILL NOT BE BROUGHT TO FINAL GRADE FOR A YEAR OR MORE OR WHERE PERMANENT, LONG-LIVED VEGETATIVE COVER IS NEEDED ON FINE-GRADED AREAS.

GENERAL EROSION AND SEDIMENT CONTROL NOTES

ES-1: UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CONSTRUCTED AND MAINTAINED ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK AND THE VIRGINIA EROSION AND SEDIMENT CONTROL REGULATIONS 9VAC25-840.

ES-2: THE PLAN APPROVING AUTHORITY MUST BE NOTIFIED ONE WEEK PRIOR TO THE PRE-CONSTRUCTION CONFERENCE, ONE WEEK PRIOR TO THE COMMENCEMENT OF LAND DISTURBING ACTIVITY, AND ONE WEEK PRIOR TO THE FINAL INSPECTION.

ES-3: ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE PLACED PRIOR TO OR AS THE FIRST STEP IN CLEARING EACH PIPELINE ROUTE.

ES-4: A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN SHALL BE MAINTAINED ON THE SITE AT ALL TIMES.

ES-5: PRIOR TO COMMENCING LAND DISTURBING ACTIVITIES IN AREAS OTHER THAN INDICATED ON THESE PLANS (INCLUDING, BUT NOT LIMITED TO, OFF-SITE BORROW OR WASTE AREAS), THE CONTRACTOR SHALL SUBMIT A SUPPLEMENTARY EROSION CONTROL PLAN TO THE OWNER FOR REVIEW AND APPROVAL BY THE PLAN APPROVING AUTHORITY.

ES-6: THE CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF ANY ADDITIONAL EROSION CONTROL MEASURES NECESSARY TO PREVENT EROSION AND SEDIMENTATION AS DETERMINED BY THE PLAN APPROVING AUTHORITY.

ES-7: ALL DISTURBED AREAS ARE TO DRAIN TO APPROVED SEDIMENT CONTROL MEASURES AT ALL TIMES DURING LAND DISTURBING ACTIVITIES AND DURING CONSTRUCTION UNTIL FINAL STABILIZATION IS ACHIEVED.

ES-8: DURING ANY DEWATERING OPERATIONS, WATER WILL BE PUMPED INTO AN APPROVED FILTERING DEVICE.

ES-9: THE CONTRACTOR SHALL INSPECT ALL EROSION CONTROL MEASURES PERIODICALLY AND AFTER EACH RUNOFF-PRODUCING RAINFALL EVENT. ANY NECESSARY REPAIRS OR CLEANUP TO MAINTAIN THE EFFECTIVENESS OF THE EROSION CONTROL DEVICES SHALL BE MADE IMMEDIATELY.

MANAGEMENT STRATEGIES

- 1. PROVIDE SEDIMENT TRAPPING MEASURES AS A FIRST STEP IN GRADING AND SEED AND MULCH IMMEDIATELY FOLLOWING INSTALLATION.
- 2. PROVIDE TEMPORARY SEEDING OR OTHER STABILIZATION IMMEDIATELY AFTER GRADING.
- 3. ISOLATE TRENCHING FOR UTILITIES AND DRAINAGE FROM DOWNSTREAM CONVEYANCES IN ORDER TO MINIMIZE PERIMETER CONTROLS.
- 4. ALL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE MAINTAINED UNTIL THEY ARE NO LONGER REQUIRED TO COMPLY WITH THE CONTRACT DOCUMENTS OR STATE LAW.

PERMANENT STABILIZATION

ALL NON-PAVED AREAS DISTURBED BY CONSTRUCTION SHALL BE STABILIZED WITH PERMANENT SEEDING IMMEDIATELY FOLLOWING FINISH GRADING. TOPSOIL SHALL BE PLACED TO A DEPTH OF 4" & SEEDING SHALL BE IN ACCORDANCE WITH STD. & SPEC. 3.32. PERMANENT SEEDING, IMPORTED TOPSOIL SHALL BE OBTAINED FROM A SITE WITH AN APPROVED ESC PLAN. SEED TYPE SHALL BE AS SPECIFIED FOR "MINIMUM CARE LAWNS" AND "GENERAL SLOPES" IN THE HANDBOOK. MULCH (STRAW OR FIBER) IN ACCORDANCE WITH STD. & SPEC. 3.35, SHALL BE USED ON ALL SEEDED SURFACES. EROSION CONTROL BLANKETS WILL BE INSTALLED OVER FILL SLOPES WHICH HAVE BEEN BROUGHT TO FINAL GRADE AND HAVE BEEN SEEDED TO PROTECT THE SLOPES FROM RILL & GULLY EROSION AND TO ALLOW THE SEED TO GERMIMATE PROPERLY. IN ALL SEEDING OPERATIONS SEED, FERTILIZER AND LIME SHALL BE APPLIED PER RECOMMENDATIONS OF THE SOIL TEST PRIOR TO MULCHING.

EROSION AND SEDIMENT MINIMUM STANDARDS:

AN EROSION AND SEDIMENT CONTROL PROGRAM ADOPTED BY A DISTRICT OR LOCALITY MUST BE CONSISTENT WITH THE FOLLOWING CRITERIA, TECHNIQUES AND METHODS.

MS-1: PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN SEVEN DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN SEVEN DAYS TO DENUDED AREAS THAT MAY NOT BE AT FINAL GRADE BUT WILL REMAIN DORMANT FOR LONGER THAN 30 DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT DORMANT FOR MORE THAN ONE YEAR.

MS-2: DURING CONSTRUCTION OF THE PROJECT, SOIL STOCKPILES AND BORROW AREAS SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES. THE APPLICANT IS RESPONSIBLE FOR THE TEMPORARY PROTECTION AND PERMANENT STABILIZATION OF ALL SOIL STOCKPILES ON SITE AS WELL AS BORROW AREAS AND SOIL INTENTIONALLY TRANSPORTED FROM THE PROJECT SITE.

MS-3: A PERMANENT VEGETATIVE COVER SHALL BE ESTABLISHED ON DENUDED AREAS NOT OTHERWISE PERMANENTLY STABILIZED. PERMANENT VEGETATION SHALL NOT BE CONSIDERED ESTABLISHED UNTIL A GROUND COVER IS ACHIEVED THAT IS UNIFORM, MATURE ENOUGH TO SURVIVE AND WILL INHIBIT EROSION.

MS-4: SEDIMENT BASINS AND TRAPS, PERIMETER DIKES, SEDIMENT BARRIERS AND OTHER MEASURES INTENDED TO TRAP SEDIMENT SHALL BE CONSTRUCTED AS A FIRST STEP IN ANY LAND-DISTURBING ACTIVITY AND SHALL BE MADE FUNCTIONAL BEFORE UPSLOPE LAND DISTURBANCE TAKES PLACE.

MS-5: STABILIZATION MEASURES SHALL BE APPLIED TO EARTHEN STRUCTURES SUCH AS DAMS, DIKES AND DIVERSIONS IMMEDIATELY AFTER INSTALLATION.

MS-6: SEDIMENT TRAPS AND SEDIMENT BASINS SHALL BE DESIGNED AND CONSTRUCTED BASED UPON THE TOTAL DRAINAGE AREA TO BE SERVED BY THE TRAP OR BASIN.

A. THE MINIMUM STORAGE CAPACITY OF A SEDIMENT TRAP SHALL BE 134 CUBIC YARDS PER ACRE OF DRAINAGE AREA AND THE TRAPS SHALL ONLY CONTROL DRAINAGE AREAS LESS THAN THREE ACRES.

B. SURFACE RUNOFF FROM DISTURBED AREAS THAT IS COMPRISED OF FLOW FROM DRAINAGE AREAS GREATER THAN OR EQUAL TO THREE ACRES SHALL BE CONTROLLED BY A SEDIMENT BASIN. THE MINIMUM STORAGE CAPACITY OF A SEDIMENT BASIN SHALL BE 134 CUBIC YARDS PER ACRE OF DRAINAGE AREA. THE OUTFALL SYSTEM SHALL, AT A MINIMUM, MAINTAIN THE STRUCTURAL INTEGRITY OF THE BASIN DURING A TWENTY-FIVE YEAR STORM OF 24-HOUR DURATION. RUNOFF COEFFICIENTS USED IN RUNOFF CALCULATIONS SHALL CORRESPOND TO A BARE EARTH CONDITION OR THOSE CONDITIONS EXPECTED TO EXIST WHILE THE SEDIMENT BASIN IS UTILIZED.

MS-7: CUT AND FILL SLOPES SHALL BE DESIGNED AND CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION. SLOPES THAT ARE FOUND TO BE ERODING EXCESSIVELY WITHIN ONE YEAR OF PERMANENT STABILIZATION SHALL BE PROVIDED WITH ADDITIONAL SLOPE STABILIZING MEASURES UNTIL THE PROBLEM IS CORRECTED.

MS-8: CONCENTRATED RUNOFF SHALL NOT FLOW DOWN CUT OR FILL SLOPES UNLESS CONTAINED WITHIN AN ADEQUATE TEMPORARY OR PERMANENT CHANNEL, FLUME OR SLOPE DRAIN STRUCTURE.

MS-9: WHENEVER WATER SEEPS FROM A SLOPE FACE, ADEQUATE DRAINAGE OR OTHER PROTECTION SHALL BE PROVIDED.

MS-10: ALL STORM SEWER INLETS THAT ARE MADE OPERABLE DURING CONSTRUCTION SHALL BE PROTECTED SO THAT SEDIMENT-LADEN WATER CANNOT ENTER THE CONVEYANCE SYSTEM WITHOUT FIRST BEING FILTERED OR OTHERWISE TREATED TO REMOVE SEDIMENT.

MS-11: BEFORE NEWLY-CONSTRUCTED STORMWATER CONVEYANCE CHANNELS OR PIPES ARE MADE OPERATIONAL, ADEQUATE OUTLET PROTECTION AND ANY REQUIRED TEMPORARY OR PERMANENT CHANNEL LINING SHALL BE INSTALLED IN BOTH THE CONVEYANCE CHANNEL AND RECEIVING CHANNEL.

MS-12: WHEN WORK IN A LIVE WATERCOURSE IS PERFORMED, PRECAUTIONS SHALL BE TAKEN TO MINIMIZE ENCROACHMENT, CONTROL SEDIMENT TRANSPORT AND STABILIZE THE WORK AREA TO THE GREATEST EXTENT POSSIBLE DURING CONSTRUCTION. NONERODIBLE MATERIAL SHALL BE USED FOR THE CONSTRUCTION OF CAUSEWAYS AND COFFERDAMS. EARTHEN FILL MAY BE USED FOR THESE STRUCTURES IF ARMORED WITH NONERODIBLE COVER MATERIALS.

MS-13: WHEN A LIVE WATERCOURSE MUST BE CROSSED BY CONSTRUCTION VEHICLES MORE THAN TWICE IN ANY SIX-MONTH PERIOD, A TEMPORARY VEHICULAR STREAM CROSSING CONSTRUCTED OF NONERODIBLE MATERIAL SHALL BE PROVIDED.

MS-14: ALL APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS PERTAINING TO WORK IN OR CROSSING LIVE WATERCOURSES SHALL BE MET.

MS-15: THE BED AND BANKS OF A WATERCOURSE SHALL BE STABILIZED IMMEDIATELY AFTER WORK IN THE WATERCOURSE IS COMPLETED.

MS-16: UNDERGROUND UTILITY LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING STANDARDS IN ADDITION TO OTHER APPLICABLE CRITERIA:

- a. NO MORE THAN 500 LINEAR FEET OF TRENCH MAY BE OPENED AT ONE TIME.
- b. EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF TRENCHES.
- c. EFFLUENT FROM DEWATERING OPERATIONS SHALL BE FILTERED OR PASSED THROUGH AN APPROVED SEDIMENT TRAPPING DEVICE, OR BOTH, AND DISCHARGED IN A MANNER THAT DOES NOT ADVERSELY AFFECT FLOWING STREAMS OR OFF-SITE PROPERTY.
- d. MATERIAL USED FOR BACKFILLING TRENCHES SHALL BE PROPERLY COMPACTED IN ORDER TO MINIMIZE EROSION AND PROMOTE STABILIZATION.
- e. RESTABILIZATION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THESE REGULATIONS.
- f. APPLICABLE SAFETY REGULATIONS SHALL BE COMPLIED WITH.

MS-17: WHERE CONSTRUCTION VEHICLE ACCESS ROUTES INTERSECT PAVED OR PUBLIC ROADS, PROVISIONS SHALL BE MADE TO MINIMIZE THE TRANSPORT OF SEDIMENT BY VEHICULAR TRACKING ONTO THE PAVED SURFACE. WHERE SEDIMENT IS TRANSPORTED ONTO A PAVED OR PUBLIC ROAD SURFACE, THE ROAD SURFACE SHALL BE CLEANED THOROUGHLY AT THE END OF EACH DAY. SEDIMENT SHALL BE REMOVED FROM THE ROADS BY SHOVELING OR SWEEPING AND TRANSPORTED TO A SEDIMENT-CONTROL DISPOSAL AREA. STREET WASHING SHALL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS MANNER. THIS PROVISION SHALL APPLY TO INDIVIDUAL DEVELOPMENT LOTS AS WELL AS TO LARGER LAND-DISTURBING ACTIVITIES.

MINIMUM STANDARDS (CONTINUED):

MS-18: ALL TEMPORARY EROSION AND SEDIMENT-CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED, UNLESS OTHERWISE AUTHORIZED BY THE LOCAL PROGRAM AUTHORITY. TRAPPED SEDIMENT AND THE DISTURBED SOIL AREAS RESULTING FROM THE DISPOSITION OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED TO PREVENT FURTHER EROSION AND SEDIMENTATION.

MS-19: PROPERTIES AND WATERWAYS DOWNSTREAM FROM DEVELOPMENT SITES SHALL BE PROTECTED FROM SEDIMENT DEPOSITION, EROSION AND DAMAGE DUE TO INCREASES IN VOLUME, VELOCITY AND PEAK FLOW RATE OF STORMWATER RUNOFF FOR THE STATED FREQUENCY STORM OF 24-HOUR DURATION IN ACCORDANCE WITH THE FOLLOWING STANDARDS AND CRITERIA:

- A. CONCENTRATED STORMWATER RUNOFF LEAVING A DEVELOPMENT SITE SHALL BE DISCHARGED DIRECTLY INTO AN ADEQUATE NATURAL OR MAN-MADE RECEIVING CHANNEL, PIPE OR STORM SEWER SYSTEM. FOR THOSE SITES WHERE RUNOFF IS DISCHARGED INTO A PIPE OR PIPE SYSTEM, DOWNSTREAM STABILITY ANALYSES AT THE OUTFALL OF THE PIPE OR PIPE SYSTEM SHALL BE PERFORMED.
- B. ADEQUACY OF ALL CHANNELS AND PIPES SHALL BE VERIFIED IN THE FOLLOWING MANNER:
 - (1) THE APPLICANT SHALL DEMONSTRATE THAT THE TOTAL DRAINAGE AREA TO THE POINT OF ANALYSIS WITHIN THE CHANNEL IS ONE HUNDRED TIMES GREATER THAN THE CONTRIBUTING DRAINAGE AREA OF THE PROJECT IN QUESTION; OR
 - (2) NATURAL CHANNELS SHALL BE ANALYZED BY THE USE OF A TWO-YEAR STORM TO VERIFY THAT STORMWATER WILL NOT OVERTOP CHANNEL BANKS NOR CAUSE EROSION OF CHANNEL BED OR BANDS; AND
 - (3) ALL PREVIOUSLY CONSTRUCTED MAN-MADE CHANNELS SHALL BE ANALYZED BY THE USE OF A TEN-YEAR STORM TO VERIFY THAT STORMWATER WILL NOT OVERTOP ITS BANKS AND BY THE USE OF A TWO-YEAR STORM TO DEMONSTRATE THAT STORMWATER WILL NOT CAUSE EROSION OF CHANNEL BED OR BANKS; AND
 - (4) PIPES AND STORM SEWER SYSTEMS SHALL BE ANALYZED BY THE USE OF A TEN-YEAR STORM TO VERIFY THAT STORMWATER WILL BE CONTAINED WITHIN THE PIPE OR SYSTEM.
- C. IF EXISTING NATURAL RECEIVING CHANNELS OR PREVIOUSLY CONSTRUCTED MAN-MADE CHANNELS OR PIPES ARE NOT ADEQUATE, THE APPLICANT SHALL:
 - (1) IMPROVE THE CHANNEL TO A CONDITION WHERE A TEN-YEAR STORM WILL NOT OVERTOP THE BANKS AND A TWO-YEAR STORM WILL NOT CAUSE EROSION TO THE CHANNEL BED OR BANKS; OR
 - (2) IMPROVE THE PIPE OR PIPE SYSTEM TO A CONDITION WHERE THE TEN-YEAR STORM IS CONTAINED WITHIN THE APPURTENANCES; OR
 - (3) DEVELOP A SITE DESIGN THAT WILL NOT CAUSE THE PRE-DEVELOPMENT PEAK RUNOFF RATE FROM A TWO-YEAR STORM TO INCREASE WHEN RUNOFF OUTFALLS INTO A NATURAL CHANNEL OR WILL NOT CAUSE THE PRE-DEVELOPMENT PEAK RUNOFF RATE FROM A TEN-YEAR STORM TO INCREASE WHEN RUNOFF OUTFALLS INTO A MAN-MADE CHANNEL; OR
 - (4) PROVIDE A COMBINATION OF CHANNEL IMPROVEMENT, STORMWATER DETENTION OR OTHER MEASURES WHICH ARE SATISFACTORY TO THE PLAN-APPROVING AUTHORITY TO PREVENT DOWNSTREAM EROSION.

D. THE APPLICANT SHALL PROVIDE EVIDENCE OF PERMISSION TO MAKE THE IMPROVEMENTS.

E. ALL HYDROLOGIC ANALYSES SHALL BE BASED ON THE EXISTING WATERSHED CHARACTERISTICS AND THE ULTIMATE DEVELOPMENT OF THE SUBJECT PROJECT.

F. IF THE APPLICANT CHOOSES AN OPTION THAT INCLUDES STORMWATER DETENTION HE SHALL OBTAIN APPROVAL FROM THE LOCALITY OF A PLAN FOR MAINTENANCE REQUIREMENTS OF THE DETENTION FACILITIES. THE PLAN SHALL SET FORTH THE MAINTENANCE REQUIREMENTS OF THE FACILITY AND THE PERSON RESPONSIBLE FOR PERFORMING THE MAINTENANCE.

G. OUTFALL FROM A DETENTION FACILITY SHALL BE DISCHARGED TO A RECEIVING CHANNEL, AND ENERGY DISSIPATORS SHALL BE PLACED AT THE END OF ALL DETENTION FACILITIES AS NECESSARY TO PROVIDE A STABILIZED TRANSITION FROM THE FACILITY TO THE RECEIVING CHANNEL.

H. ALL ON-SITE CHANNELS MUST BE VERIFIED TO BE ADEQUATE.

I. INCREASED VOLUMES OF SHEET FLOWS THAT MAY CAUSE EROSION OR SEDIMENTATION ON ADJACENT PROPERTY SHALL BE DIVERTED TO A STABLE OUTLET, ADEQUATE CHANNEL, PIPE OR PIPE SYSTEM, OR TO A DETENTION FACILITY.

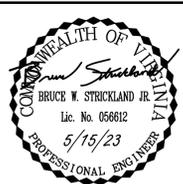
J. IN APPLYING THESE STORMWATER RUNOFF CRITERIA, INDIVIDUAL LOTS OR PARCELS IN A RESIDENTIAL, COMMERCIAL OR INDUSTRIAL DEVELOPMENT SHALL NOT BE CONSIDERED TO BE SEPARATE DEVELOPMENT PROJECTS. INSTEAD, THE DEVELOPMENT, AS A WHOLE, SHALL BE CONSIDERED TO BE A SINGLE DEVELOPMENT PROJECT. HYDROLOGIC PARAMETERS THAT REFLECT THE ULTIMATE DEVELOPMENT CONDITION SHALL BE USED IN ALL ENGINEERING CALCULATIONS.

K. ALL MEASURES USED TO PROTECT PROPERTIES AND WATERWAYS SHALL BE EMPLOYED IN A MANNER WHICH MINIMIZES IMPACTS ON THE PHYSICAL, CHEMICAL AND BIOLOGICAL INTEGRITY OF RIVERS, STREAMS AND OTHER WATERS OF THE STATE.

L. ANY PLAN APPROVED PRIOR TO JULY 1, 2014, THAT PROVIDES FOR STORMWATER MANAGEMENT THAT ADDRESSES ANY FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL OR MAN-MADE CHANNELS SHALL SATISFY THE FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL OR MAN-MADE CHANNELS IF THAT PRACTICES ARE DESIGNED TO (i) DETAIN THE WATER QUALITY VOLUME AND TO RELEASE IT OVER 48 HOURS; (ii) DETAIN AND RELEASE OVER A 24-HOUR PERIOD THE EXPECTED RAINFALL RESULTING FROM THE ONE YEAR, 24-HOUR STORM; AND (iii) REDUCE THE ALLOWABLE PEAK FLOW RATE RESULTING FROM THE 1, 5, 2, AND 10-YEAR, 24-HOUR STORMS TO A LEVEL THAT IS LESS THAN OR EQUAL TO THE PEAK FLOW RATE FROM THE SITE ASSUMING IT WAS IN A GOOD FORESTED CONDITION, ACHIEVED THROUGH MULTIPLICATION OF THE FORESTED PEAK FLOW RATE BY A REDUCTION FACTOR THAT IS EQUAL TO THE RUNOFF VOLUME FROM THE SITE WHEN IT WAS IN A GOOD FORESTED CONDITION DIVIDED BY THE RUNOFF VOLUME FROM THE SITE IN ITS PROPOSED CONDITION, AND SHALL BE EXEMPT FROM ANY FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL OR MAN-MADE CHANNELS AS DEFINED IN ANY REGULATIONS PROMULGATED PURSUANT TO 10.1-562 OR 10.1-5700 OF THE ACT.

M. FOR PLANS APPROVED ON AND AFTER JULY 1, 2014, THE FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS OF 10.1-561 A OF THE ACT AND THIS SUBSECTION SHALL BE SATISFIED BY COMPLIANCE WITH WATER QUANTITY REQUIREMENTS IN THE STORMWATER MANAGEMENT ACT (10.1-603.2 ET SEQ. OF THE CODE OF VIRGINIA) AND ATTENDANT REGULATIONS, UNLESS SUCH LAND-DISTURBING ACTIVITIES ARE IN ACCORDANCE WITH 4VAC50-60-48 OF THE VIRGINIA STORMWATER MANAGEMENT PROGRAM (VSM) PERMIT REGULATIONS.

N. COMPLIANCE WITH THE WATER QUANTITY MINIMUM STANDARDS SET OUT IN 4VAC50-60-66 OF THE VIRGINIA STORMWATER MANAGEMENT PROGRAM (VSM) PERMIT REGULATION SHALL BE DEEMED TO SATISFY THE REQUIREMENTS OF MINIMUM STANDARD 19.



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7/18/2023	ADDENDUM 1

DATE
10/21/2022

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L. KIM J. MARSHALL

DESIGNED BY
B. STRICKLAND

CHECKED BY
B. STRICKLAND

SCALE
AS SHOWN

TIMMONS GROUP

HUGUENOT HILLS WATER AND SEWER IMPROVEMENTS
GOOCHLAND COUNTY, VIRGINIA

EROSION AND SEDIMENT CONTROL NARRATIVE

JOB NO.
50070

SHEET NO.
C1.0

L:\2011\50070-Huguenot_Hills_Water_Sewer\DWG-Sheet\C2.C1.E EROSION AND SEDIMENT CONTROL NARRATIVE.dwg | Plotted on 7/18/2023 12:02 PM | by Chad Valentine

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Linear Utility Project - Erosion & Sediment Control Notes

Underground utility lines shall be installed in accordance with the following standards in addition to other applicable criteria:

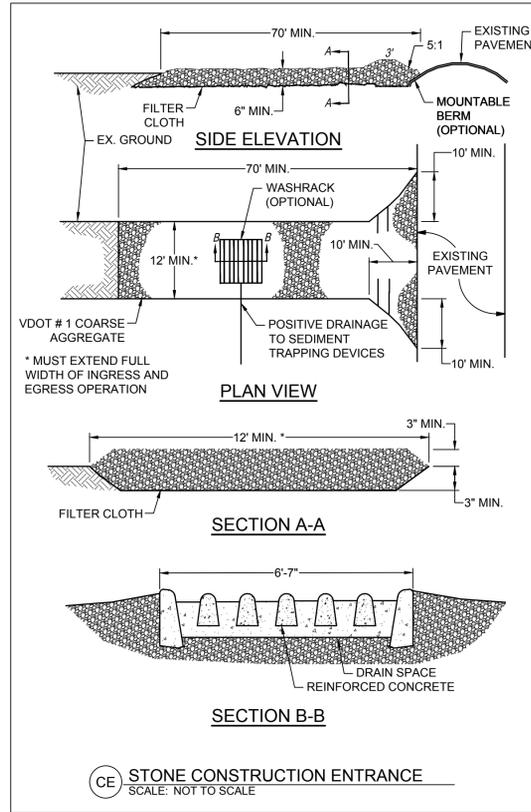
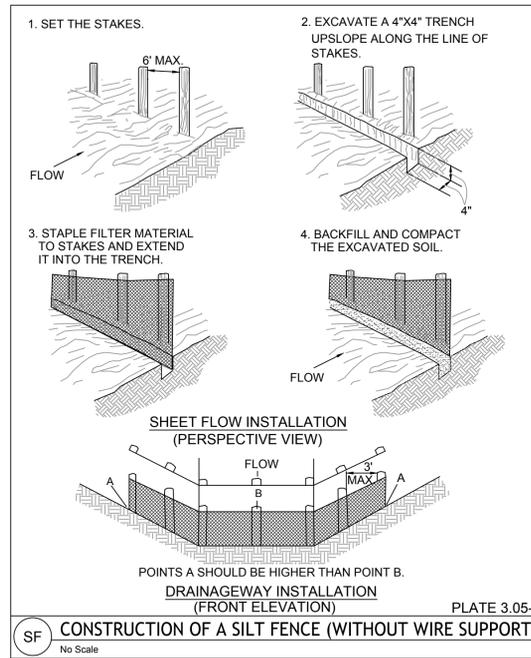
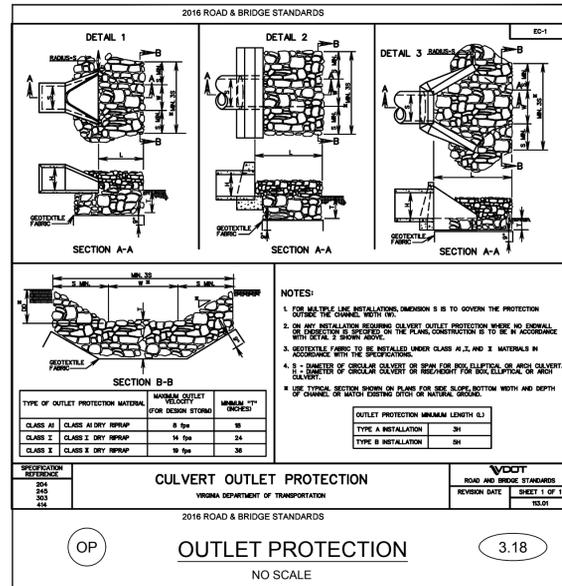
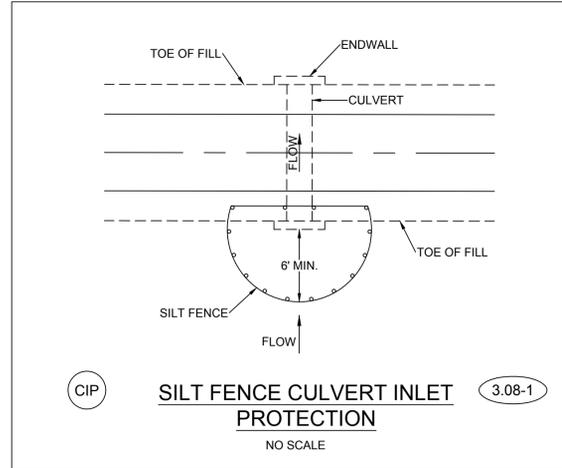
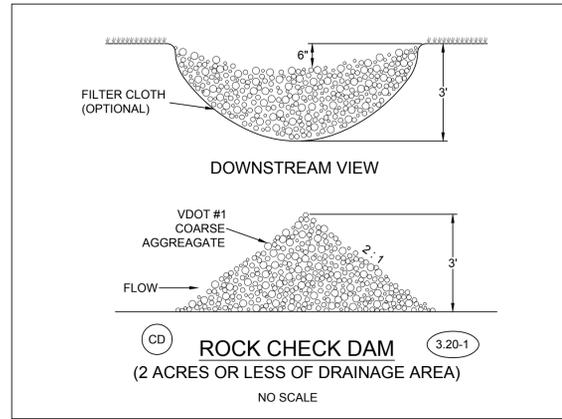
- No more than 500 linear feet of trench may be opened at one time
- Excavated material shall be placed on the uphill side of trenches
- Effluent from dewatering operations shall be filtered or passed through an approved sediment trapping device, or both, and discharged in a manner that does not adversely affect flowing streams or off-site property
- Material used for backfilling trenches shall be properly compacted in order to minimize erosion and promote stabilization
- Soil stabilization shall be accomplished in accordance with the requirements in the *Standards & Specifications of the Department of Public Utilities*, and the *Virginia Erosion and Sediment Control Handbook*.
- Contractor shall comply with applicable safety regulations at all times.
- It shall be the Developer's responsibility to inspect all erosion control devices periodically and after every rainfall. Any necessary repairs or cleanup to maintain the effectiveness of the erosion control devices shall be made immediately.
- No disturbed area will be denuded for more than 30 calendar days.
- All erosion and siltation measures are to be put in place prior to or as the first step in clearing and grading.
- All storm and sanitary sewer lines not in streets are to be mulched and seeded immediately after backfilling. No more than five hundred linear feet are to be open at one time.
- All temporary earth berms, diversions, and silt dams are to be mulched and seeded for vegetative cover immediately after grading. Straw or hay mulch is required. The same applies to all soil stockpiles on site as well as soil (intentionally) transported from the project site.
- During construction, all storm sewer inlets will be protected by silt traps, maintained and modified as required by construction progress.
- Temporary seeding will be applied within seven days to denuded areas that may not be at final grade, but which may remain dormant (undisturbed) for longer than thirty days. For temporary seeding use 50% of recommended amounts used for permanent seeding of fertilizer and lime and 100% of required amounts of seed and mulch.
- All erosion control devices must be installed and maintained in accordance with the latest edition of the *Virginia Erosion and Sediment Control Handbook*.
- If during construction, additional erosion control devices are found necessary, they shall be installed as directed by the County Engineer.

Linear Utility Project - Stormwater Management Notes

In accordance with **VDEQ Guidance Memo No. 15-2003** (dated 23 April 2015) any linear utility project being constructed without General VPDES Permit Coverage for Stormwater Management, shall be conducted in the following manner:

- The project will not significantly alter the predevelopment runoff characteristics of the land surface after the completion of construction and final stabilization.
- The project will be managed so that less than one (1) acre of land disturbance occurs on a daily basis.
- The disturbed land where work has been completed will be adequately stabilized on a daily basis.
- The environment will be protected from erosion and sedimentation damage associated with the land-disturbing activity.
- The engineer and contractor will design, install, implement and maintain pollution prevention measures to:
 - Minimize the discharge of pollutants from equipment and vehicle washing, wheel wash water, and other wash waters.
 - Minimize the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste, and other materials present on-site to precipitation and to stormwater.
 - Minimize the discharge of pollutants from spills and leaks and implement chemical spill and leak prevention and response procedures.
 - Prohibit the discharge of wastewater from the washout of concrete.
 - Prohibit the discharge of wastewater from the washout and cleanout of stucco, paint, form release oils, curing compounds, and other construction materials.
 - Prohibit the discharge of fuels, oils or other pollutants used in vehicle and equipment operation and maintenance.

Form F-14
06/2020



EROSION CONTROL LEGEND			
LABEL	SYMBOL	STANDARD NAME	SPEC.#
CE		CONSTRUCTION ENTRANCE	3.02
SF		SILT FENCE	3.05-2
CIP		CULVERT INLET PROTECTION	3.08
OP		OUTLET PROTECTION	3.18
CD		ROCK CHECK DAM	3.20
TS		TEMPORARY SEEDING	3.31
PS		PERMANENT SEEDING	3.32
MU		MULCHING	3.35
LOD		LIMITS OF DISTURBANCE	

*NOTE: PS AS LABELED ON PLAN SHEETS IS INTENDED TO INCLUDE MU

TABLE 3.32-D
SITE SPECIFIC SEEDING MIXTURES FOR PIEDMONT AREA

	TOTAL LBS. PER ACRE
MINIMUM CARE LAWN	175-200 LBS.
COMMERCIAL OR RESIDENTIAL	90-100%
KENTUCKY 31 OR TURF-TYPE TALL FESCUE	0-5%
IMPROVED PERENNIAL RYEGRASS	0-5%
KENTUCKY BLUEGRASS	
GENERAL SLOPE (3:1 OR LESS)	
KENTUCKY 31 FESCUE	128 LBS.
RED TOP GRASS	2 LBS.
SEASONAL NURSE CROP *	20 LBS.
	150 LBS.
LOW-MAINTENANCE SLOPE (STEEPER THAN 3:1)	
KENTUCKY 31 FESCUE	108 LBS.
RED TOP GRASS	2 LBS.
SEASONAL NURSE CROP *	20 LBS.
CROWNVECH **	20 LBS.
	150 LBS.

* USE SEASONAL NURSE CROP IN ACCORDANCE WITH SEEDING DATES AS STATED BELOW:
 FEBRUARY 16TH THROUGH APRIL 30TH..... ANNUAL RYE
 MAY 1ST THROUGH AUGUST 15TH..... FOXTAIL MILLET
 AUGUST 16TH THROUGH OCTOBER..... ANNUAL RYE
 NOVEMBER THROUGH FEBRUARY 15TH..... WINTER RYE

** SERICEA LESPEDEZA FOR EAST OF FARMVILLE, VA (MAY THROUGH SEPTEMBER USE HULLED SERICEA. ALL OTHER PERIODS, USE UNHULLED SERICEA). IF FLATPEA IS USED IN LIEU OF SERICEA LESPEDEZA, INCREASE RATE TO 30 LBS./ACRE. ALL LEGUME SEED MUST BE PROPERLY INOCULATED. WEEPING LOVEGRASS MAY BE ADDED TO ANY SLOPE OR LOW-MAINTENANCE MIX DURING WARMER SEEDING PERIODS; ADD 10-20 LBS./ACRE IN MIXES.

PS PERMANENT SEEDING PIEDMONT REGION SCALE: NOT TO SCALE

TABLE 3.31-B
ACCEPTABLE TEMPORARY SEEDING PLANT MATERIALS
"QUICK REFERENCE FOR ALL REGIONS"

PLANTING DATES	SPECIES	RATE (LBS./ACRE)
SEPT. 1 - FEB. 15	50/50 MIX OF ANNUAL RYEGRASS (LOLIUM MULTI-FLORUM) & CEREAL (WINTER) RYE (SECALE CEREALE)	50-100
FEB. 16 - APR. 30	ANNUAL RYEGRASS (LOLIUM MULTI-FLORUM)	60-100
MAY 1 - AUG. 31	GERMAN MILLET (SETARIA ITALICA)	50

TS TEMPORARY SEEDING SCALE: NOT TO SCALE

ORGANIC MULCH MATERIALS AND APPLICATION RATES

MULCH	MULCHING RATES		NOTES
	PER ACRE	PER 1000 SQ. FT.	
STRAW AND HAY	1.5 - 2 TONS (MIN 2 TONS FOR WINTER COVER)	70-90 LBS	FREE FROM WEEDS AND COARSE MATTER. MUST BE ANCHORED, SPREAD WITH MULCH BLOWER OR BY HAND.

MU MULCHING SCALE: NOT TO SCALE



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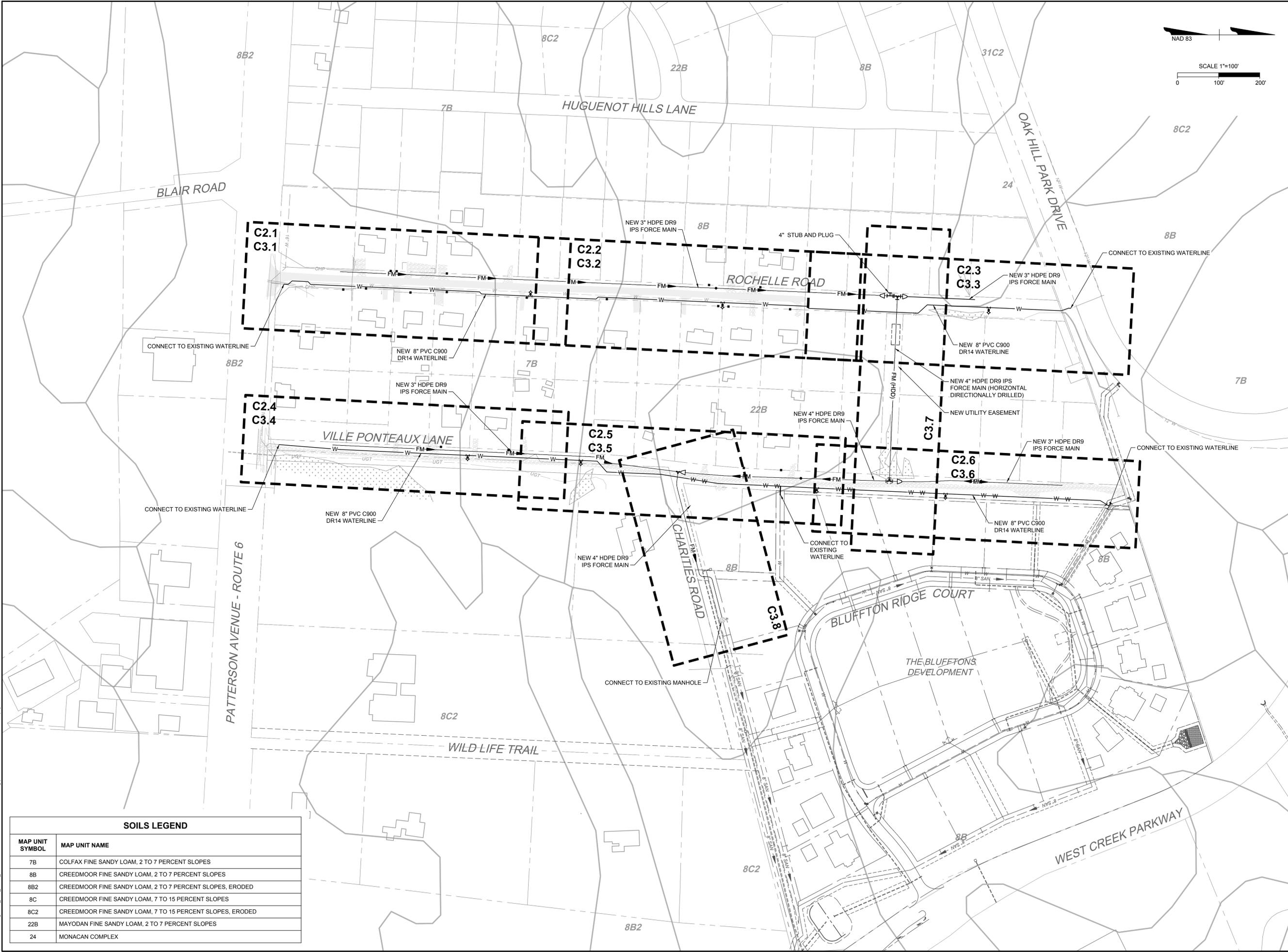
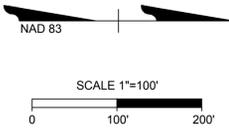
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 CHECKED BY: B. STRICKLAND
 SCALE: AS SHOWN

TIMMONS GROUP

HUGENOT HILLS WATER AND SEWER IMPROVEMENTS
 GOOCHLAND COUNTY, VIRGINIA
 EROSION AND SEDIMENT CONTROL DETAILS

JOB NO. 50070
 SHEET NO. C1.1

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SOILS LEGEND

MAP UNIT SYMBOL	MAP UNIT NAME
7B	COLFAX FINE SANDY LOAM, 2 TO 7 PERCENT SLOPES
8B	CREEDMOOR FINE SANDY LOAM, 2 TO 7 PERCENT SLOPES
8B2	CREEDMOOR FINE SANDY LOAM, 2 TO 7 PERCENT SLOPES, ERODED
8C	CREEDMOOR FINE SANDY LOAM, 7 TO 15 PERCENT SLOPES
8C2	CREEDMOOR FINE SANDY LOAM, 7 TO 15 PERCENT SLOPES, ERODED
22B	MAYODAN FINE SANDY LOAM, 2 TO 7 PERCENT SLOPES
24	MONACAN COMPLEX

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L. KIM J. MARSHALL

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B. STRICKLAND

CHECKED BY
B. STRICKLAND

SCALE
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TIMMONS GROUP

HUGUENOT HILLS WATER AND SEWER IMPROVEMENTS

GOOCHLAND COUNTY, VIRGINIA

KEY PLAN

JOB NO.
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SEQUENCE OF CONSTRUCTION NOTES:

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- CONNECT TO EXISTING WATERLINES AS SHOWN ON THE PLANS.
- INSTALL TEMPORARY JUMPERS WITH BACKFLOW PREVENTION AS REQUIRED BY GOOCHLAND DPU.
- INSTALL NEW 8" WATERLINES AND APPURTENANCES.
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GENERAL CONSTRUCTION NOTES:

- ALL UTILITY SERVICES THAT CROSS EXISTING VDOT PAVEMENT SHALL BE INSTALLED UTILIZING TRENCHLESS INSTALLATION METHODS.
- ALL ENTRANCES SHALL BE REPAIRED IN KIND.

NYFB ASSOCIATES
C/O MARK CLAUD
D.B. 238, PG. 763
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TAX PARCEL ID: 64-4-1-34-0

CHRISTOPHER DAVIS
EMILY-ANNE S. DAVIS
INSTRUMENT: 2008002301
GPIN: 7724-93-1130
TAX PARCEL ID: 64-4-1-1-0
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DANIEL W. DUKE & LAUREN E. LEWIS
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TAX PARCEL ID: 64-4-1-2-0
552 ROCHELLE ROAD

PAUL M. CLARKE, TRUSTEE
INSTRUMENT: 20190001984
GPIN: 7724-93-1334
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556 ROCHELLE ROAD

EMILY WEBB
GPIN: 7724-93-1459
TAX PARCEL ID: 64-4-1-5-0
565 ROCHELLE ROAD

K & G LIMITED PART
INSTRUMENT: 2012
GPIN: 7724-93-
TAX PARCEL ID: 64-4-1-3-0



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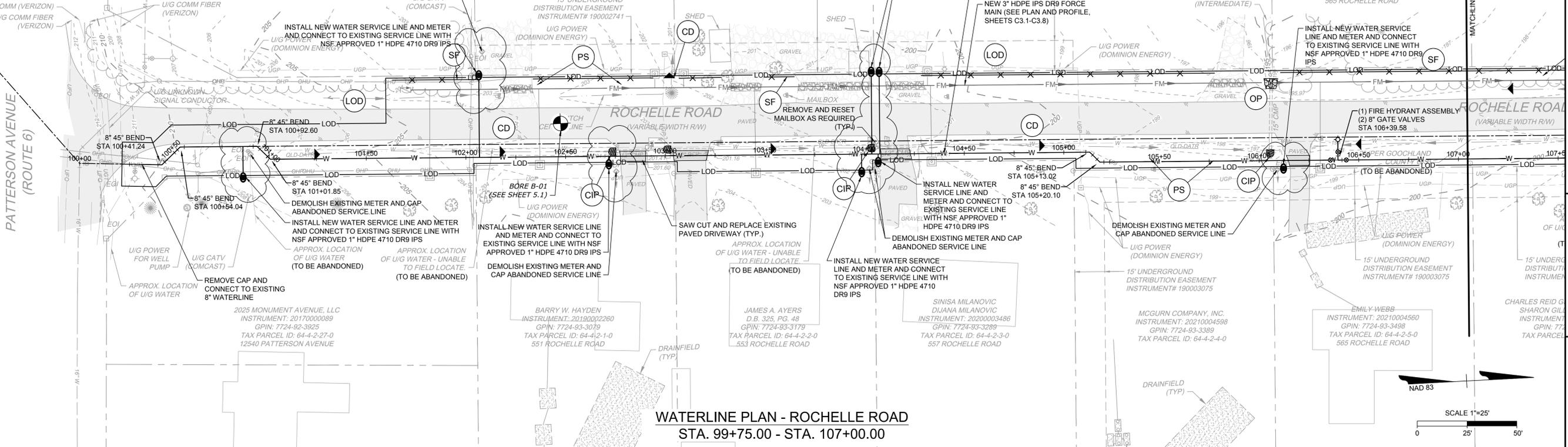
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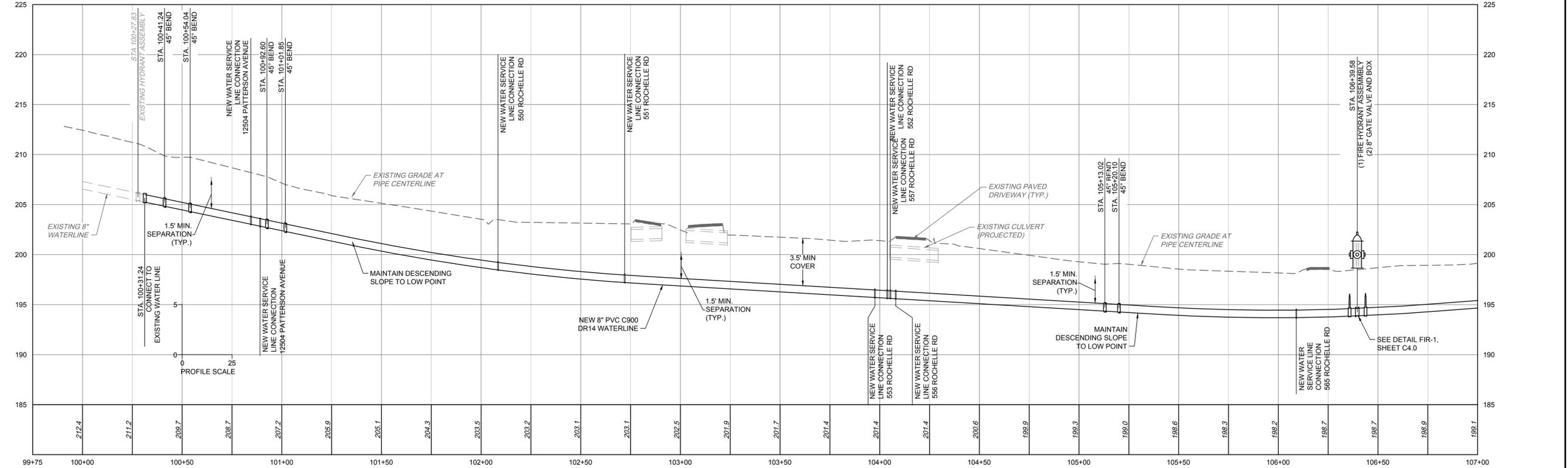
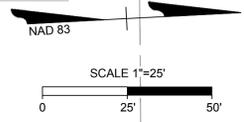
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WATERLINE PROFILE - ROCHELLE ROAD
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GOOCHLAND COUNTY, VIRGINIA
WATERLINE PLAN AND PROFILE - ROCHELLE ROAD

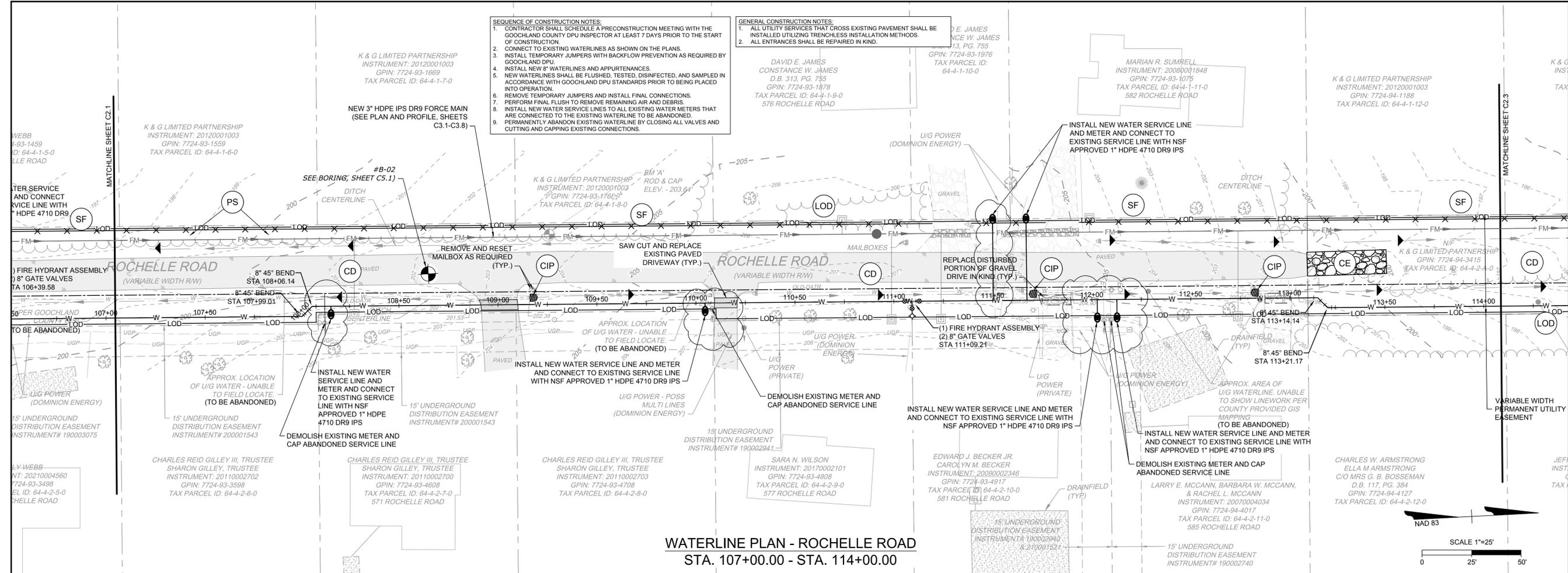
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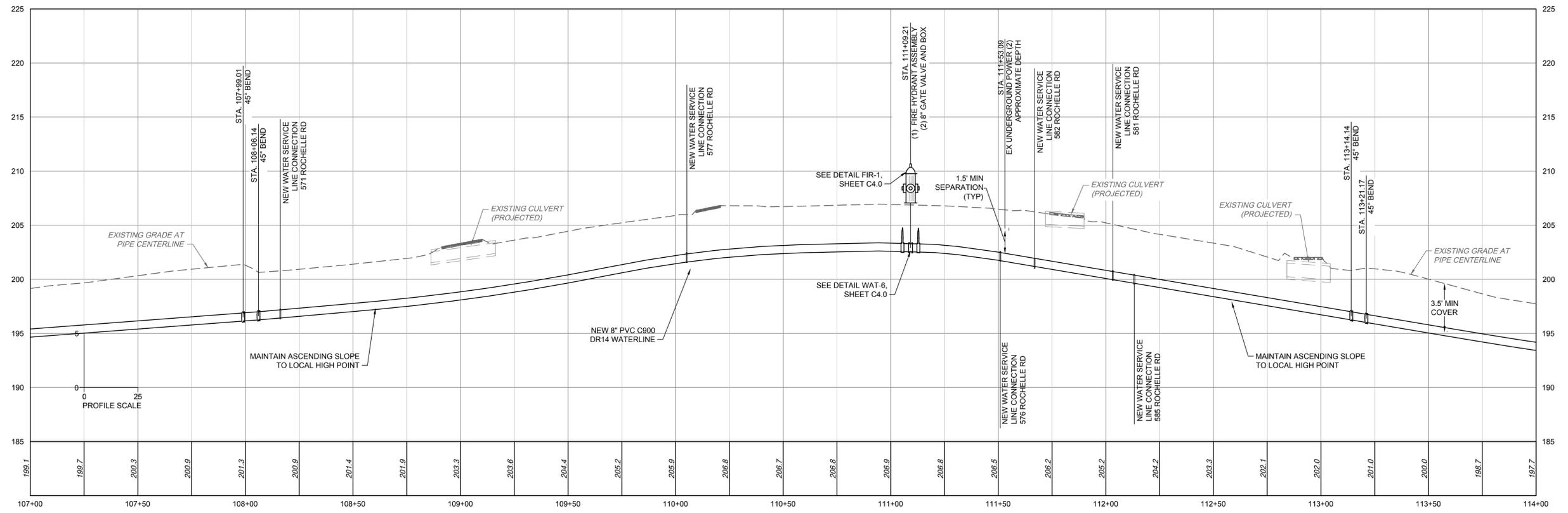
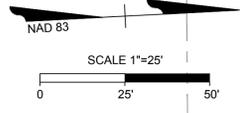


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SCALE	AS SHOWN

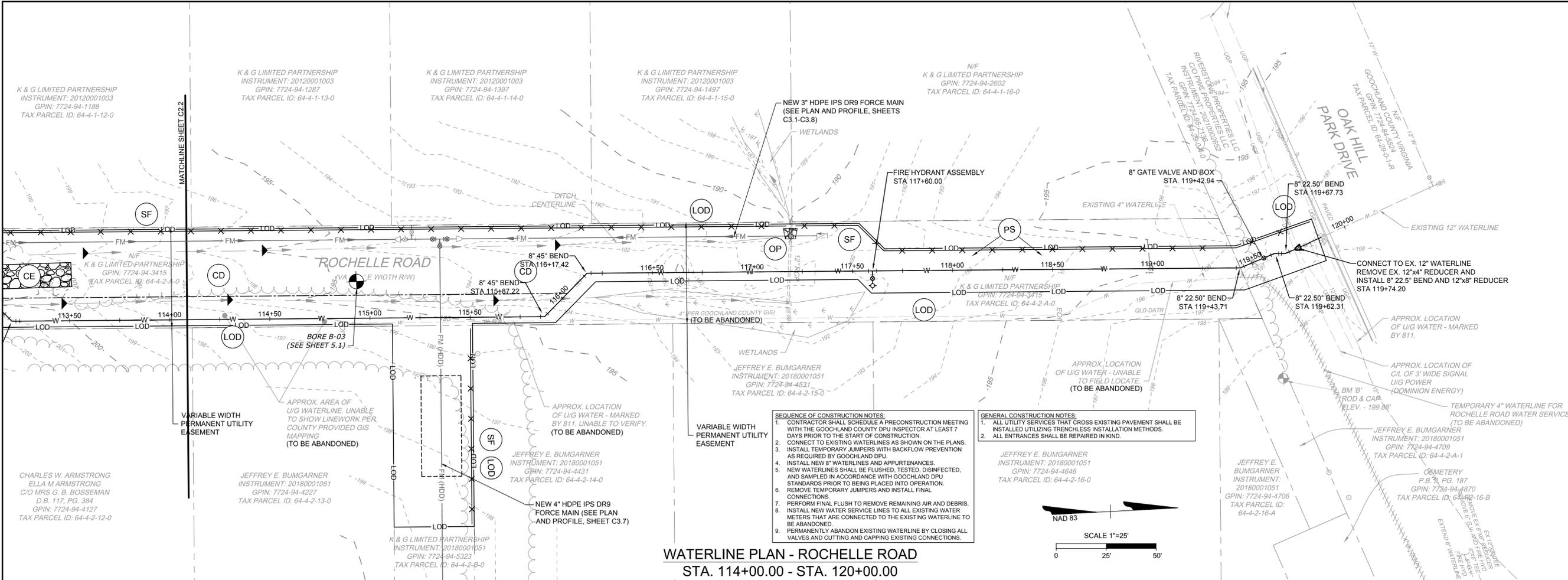
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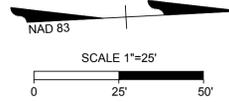
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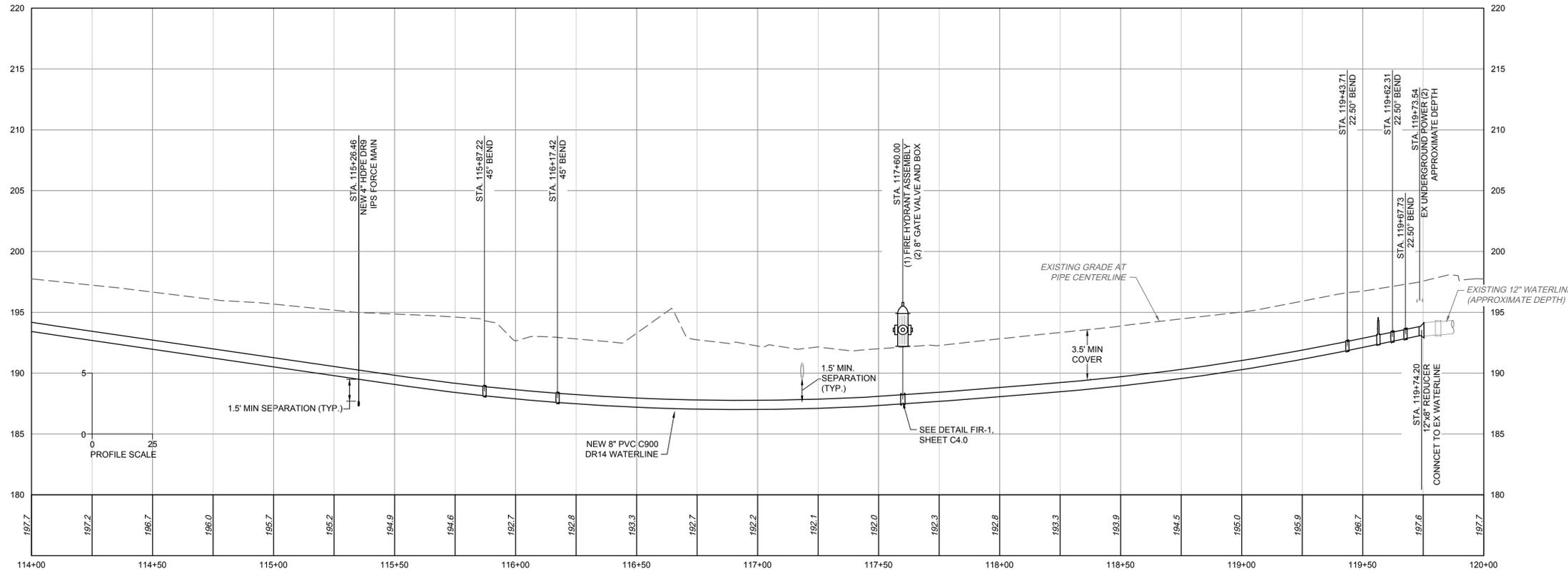


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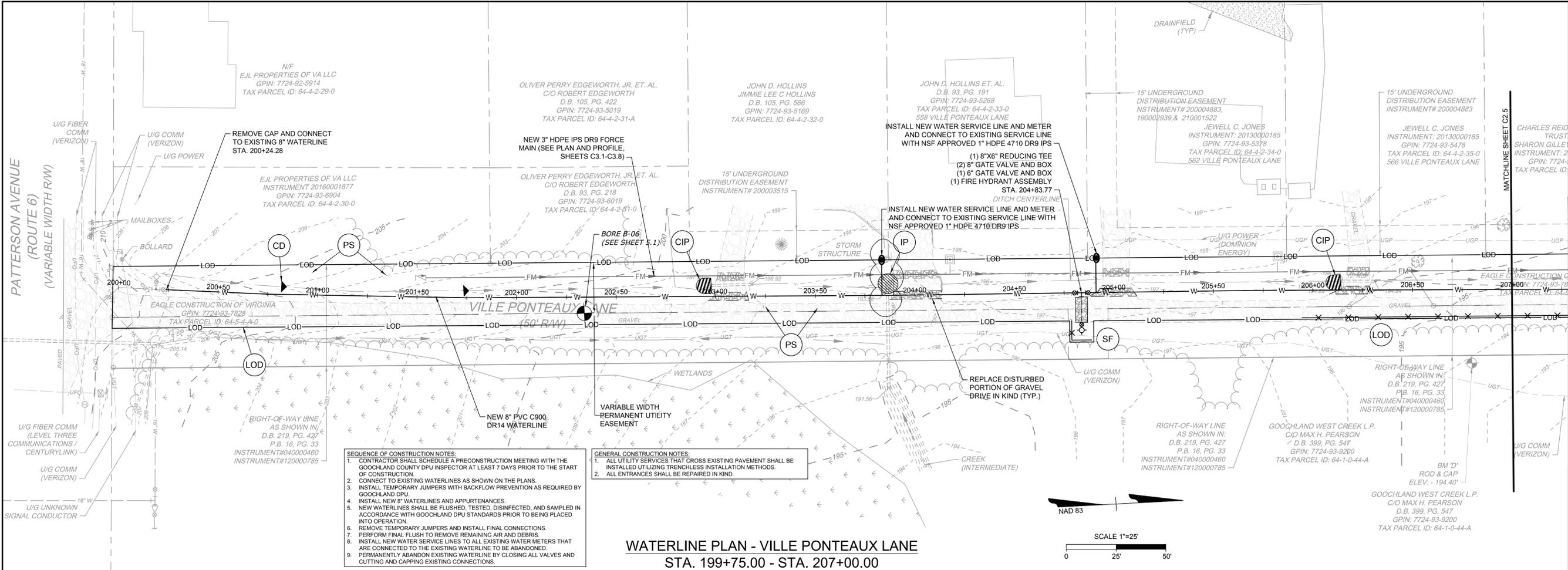
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WATERLINE PLAN AND PROFILE - ROCHELLE ROAD

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C2.3

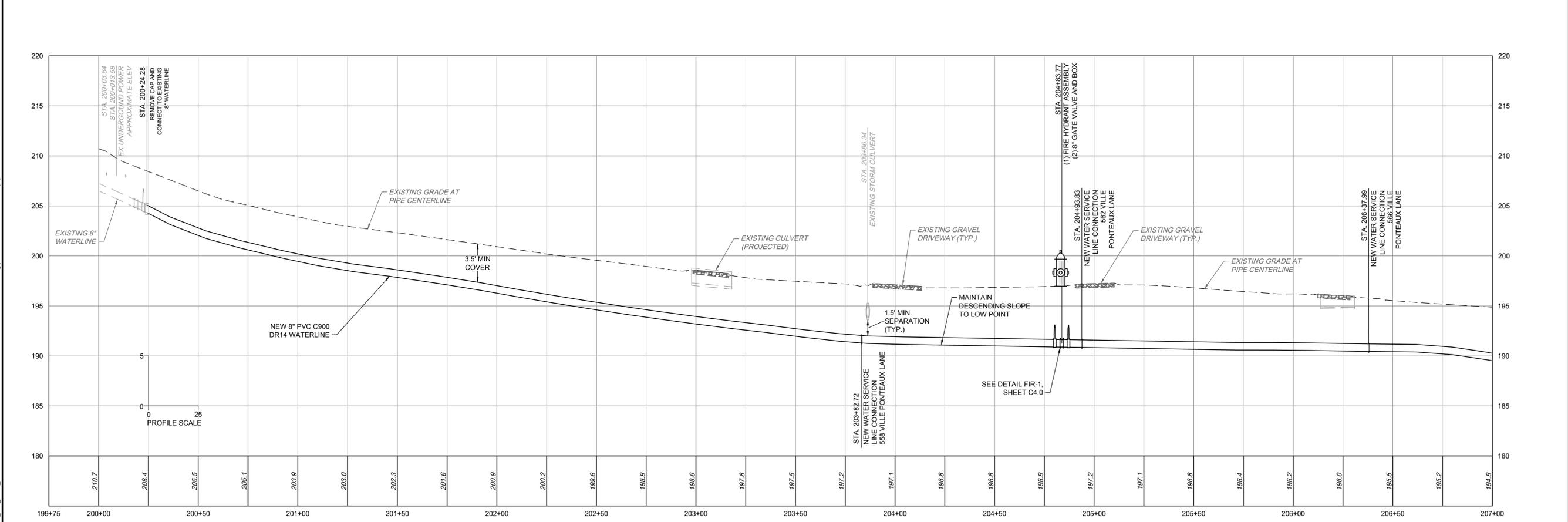
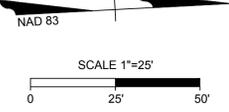
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- SEQUENCE OF CONSTRUCTION NOTES:**
1. CONTRACTOR SHALL SCHEDULE A PRECONSTRUCTION MEETING WITH THE GOOCHLAND COUNTY DPU INSPECTOR AT LEAST 7 DAYS PRIOR TO THE START OF CONSTRUCTION.
 2. CONNECT TO EXISTING WATERLINES AS SHOWN ON THE PLANS.
 3. INSTALL TEMPORARY JUMPERS WITH BACKFLOW PREVENTION AS REQUIRED BY GOOCHLAND DPU.
 4. INSTALL NEW 8" WATERLINES AND APPURTENANCES.
 5. NEW WATERLINES SHALL BE FLUSHED, TESTED, DISINFECTED, AND SAMPLED IN ACCORDANCE WITH GOOCHLAND DPU STANDARDS PRIOR TO BEING PLACED INTO OPERATION.
 6. REMOVE TEMPORARY JUMPERS AND INSTALL FINAL CONNECTIONS.
 7. PERFORM FINAL FLUSH TO REMOVE REMAINING AIR AND DEBRIS.
 8. INSTALL NEW WATER SERVICE LINES TO ALL EXISTING WATER METERS THAT ARE CONNECTED TO THE EXISTING WATERLINE TO BE ABANDONED.
 9. PERMANENTLY ABANDON EXISTING WATERLINE BY CLOSING ALL VALVES AND CUTTING AND CAPPING EXISTING CONNECTIONS.

- GENERAL CONSTRUCTION NOTES:**
1. ALL UTILITY SERVICES THAT CROSS EXISTING PAVEMENT SHALL BE INSTALLED UTILIZING TRENCHLESS INSTALLATION METHODS.
 2. ALL ENTRANCES SHALL BE REPAIRED IN KIND.

WATERLINE PLAN - VILLE PONTEAUX LANE
STA. 199+75.00 - STA. 207+00.00



WATERLINE PROFILE - VILLE PONTEAUX LANE
STA. 199+75.00 - STA. 207+00.00

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5/15/2023	BID SET
7/18/2023	ADDENDUM 1

DATE: 10/21/2022

DRAWN BY: L. KIM J. MARSHALL

DESIGNED BY: B. STRICKLAND

CHECKED BY: B. STRICKLAND

SCALE: AS SHOWN

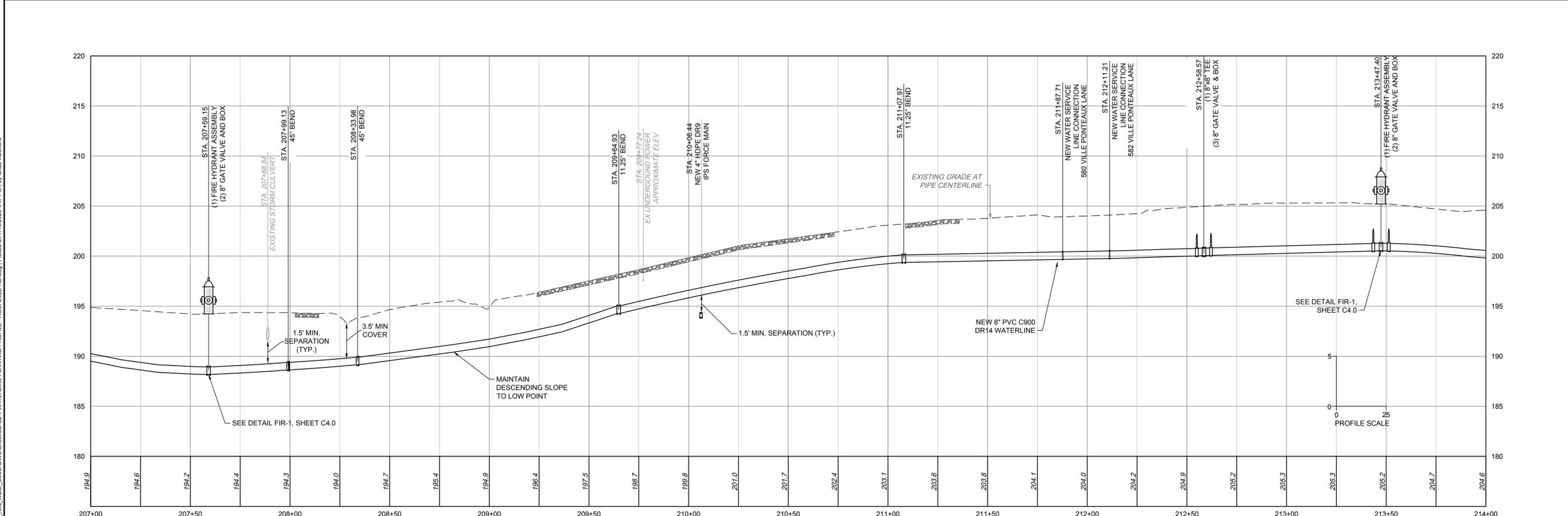
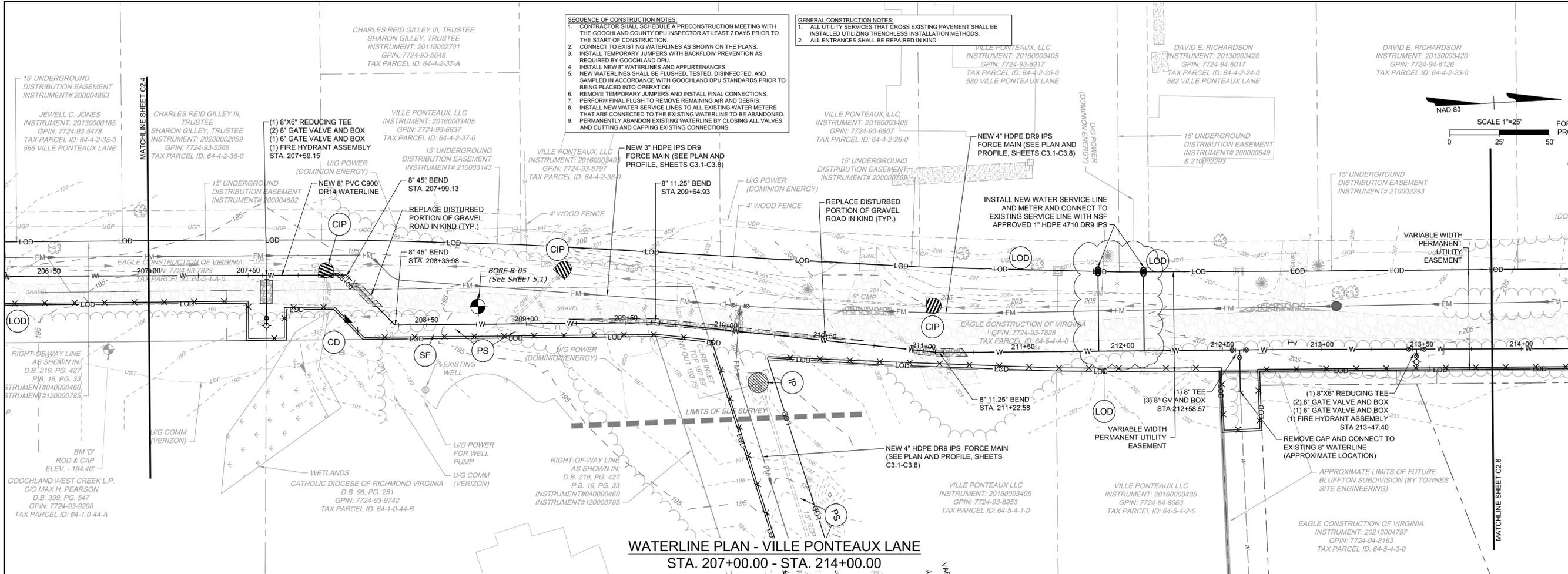
TIMMONS GROUP

HUGUENOT HILLS WATER AND SEWER IMPROVEMENTS
GOOCHLAND COUNTY, VIRGINIA

WATERLINE PLAN AND PROFILE - VILLE PONTEAUX LANE

JOB NO. 50070
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WATERLINE PROFILE - VILLE PONTEAUX LANE
STA. 207+00.00 - STA. 214+00.00

L:\20150070-Huguenot-Hills_Water_Stewer\DWG\Sheet\C2.1 WATERLINE PLAN AND PROFILE - ROCHELLE RD.dwg | Plotted on 7/18/2023 4:47 PM | by Chad Valentine

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DATE	10/21/2022
DRAWN BY	J. KIM
DESIGNED BY	J. MARSHALL
CHECKED BY	B. STRICKLAND
CHECKED BY	B. STRICKLAND
SCALE	AS SHOWN

TIMMONS GROUP

HUGUENOT HILLS WATER AND SEWER IMPROVEMENTS
GOOCHLAND COUNTY, VIRGINIA
WATERLINE PLAN AND PROFILE - VILLE PONTEAUX LANE

JOB NO. 50070
SHEET NO. C2.5

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7/18/2023	ADDENDUM 1
DATE	DATE
10/21/2022	

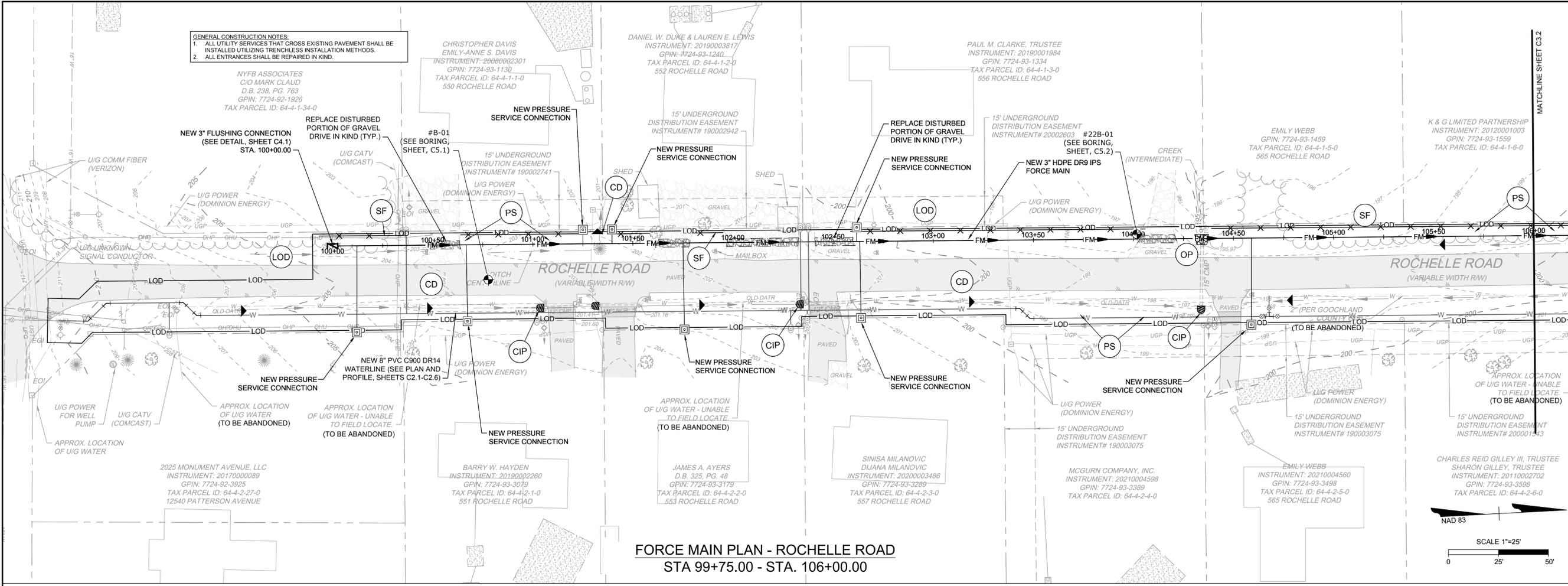
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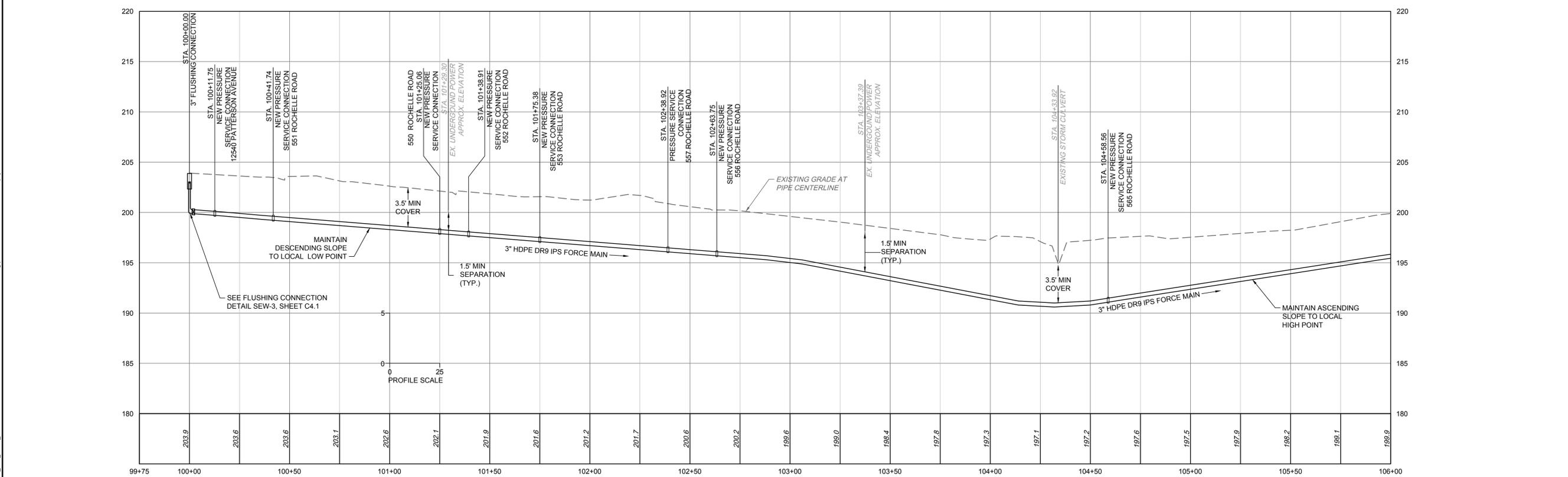
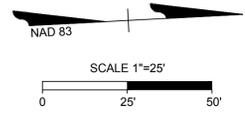
FORCE MAIN PLAN AND PROFILE - ROCHELLE ROAD

JOB NO.	50070
SHEET NO.	C3.1

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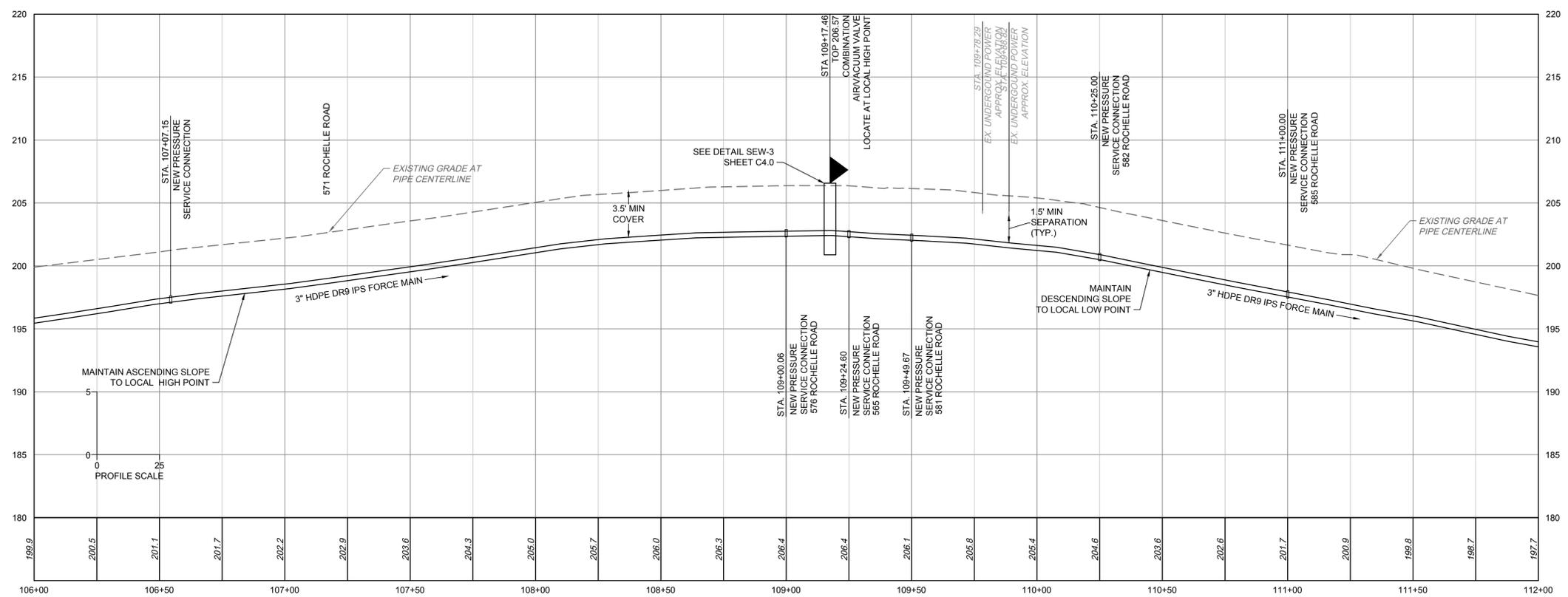
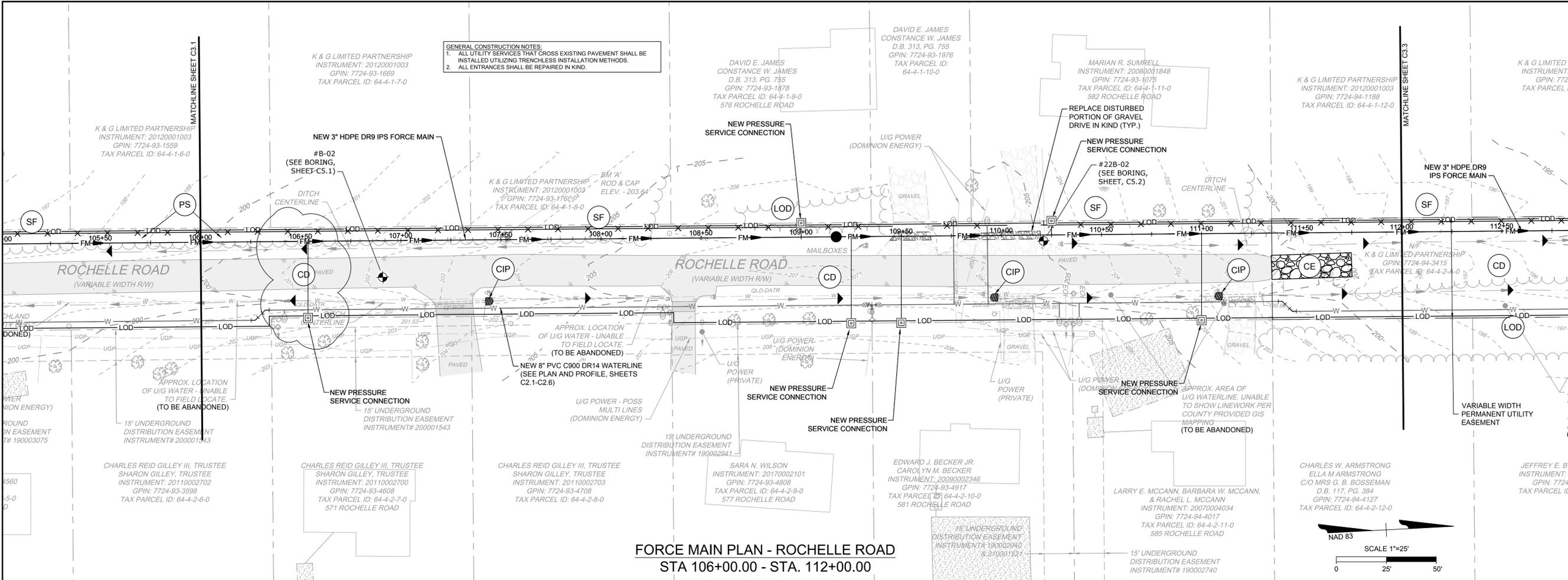


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SCALE: AS SHOWN

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HUGUENOT HILLS WATER AND SEWER IMPROVEMENTS
GOOCHLAND COUNTY, VIRGINIA

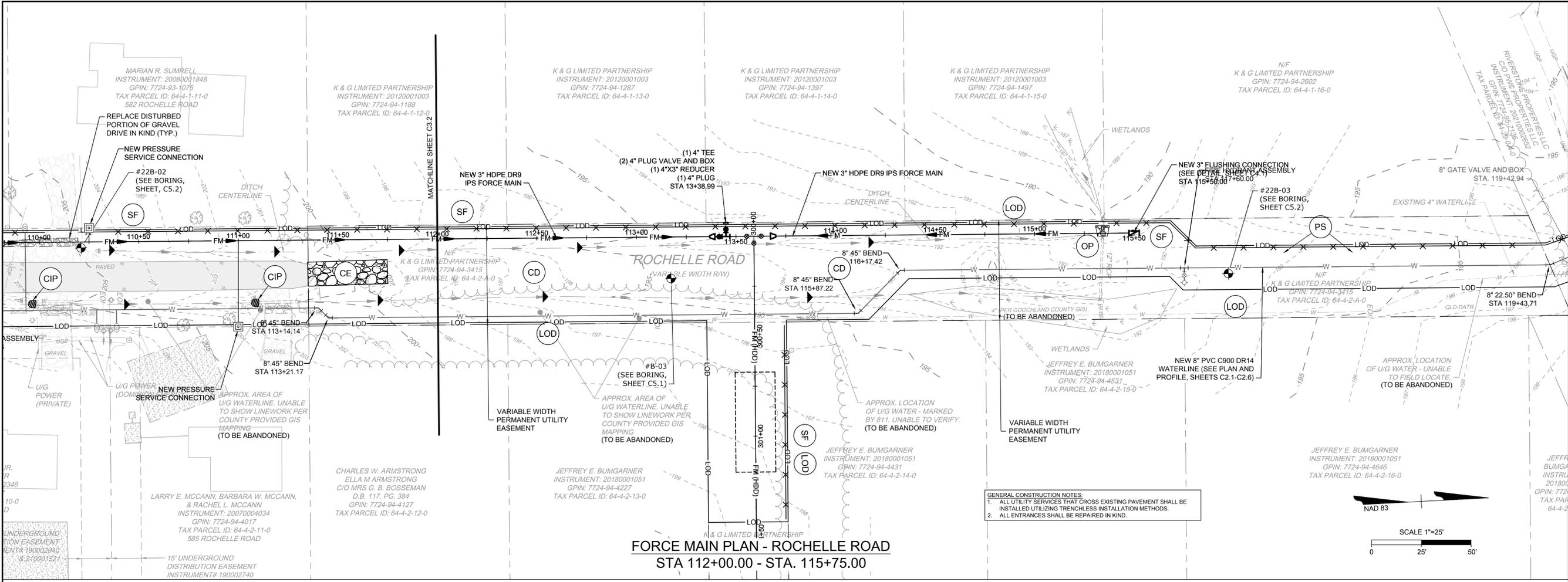
FORCE MAIN PLAN AND PROFILE - ROCHELLE ROAD

JOB NO. 50070
SHEET NO. C3.2

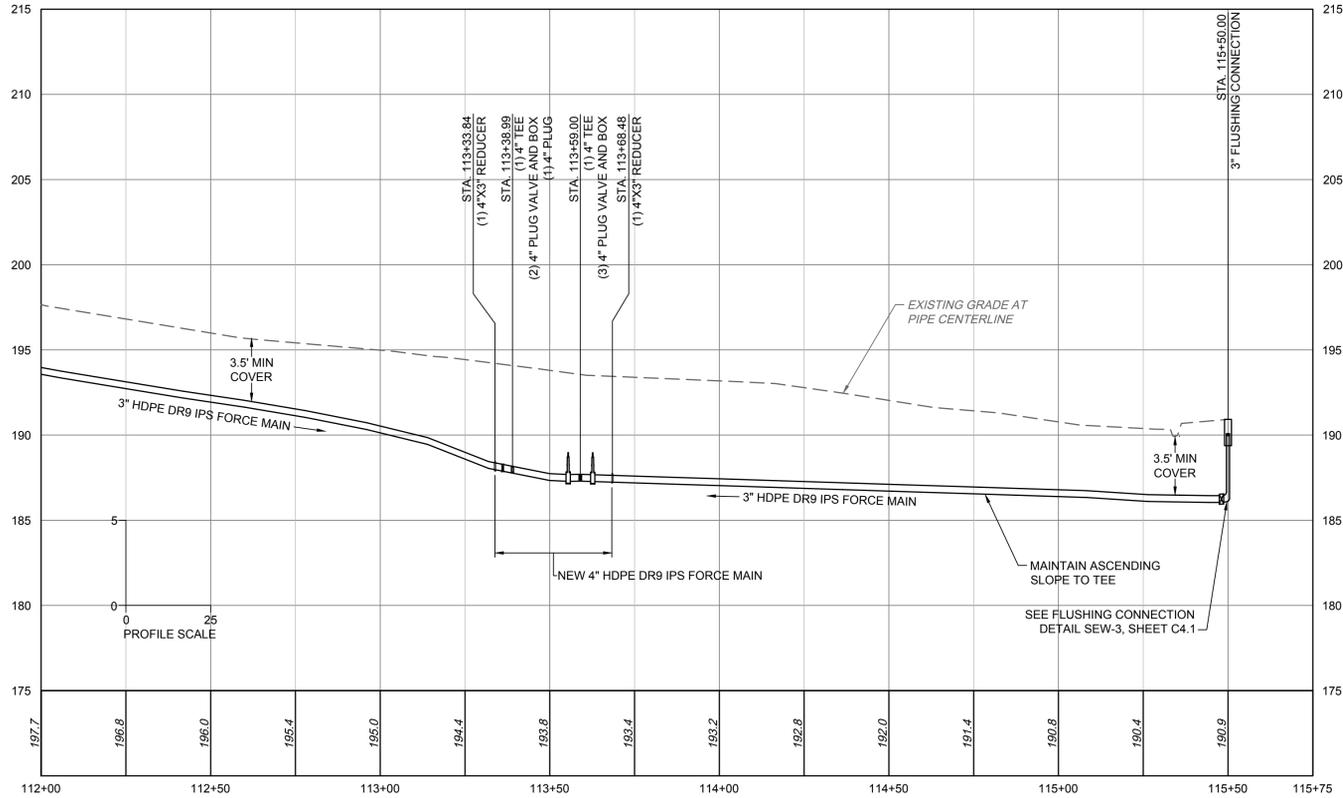
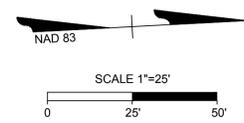
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 2. ALL ENTRANCES SHALL BE REPAIRED IN KIND.



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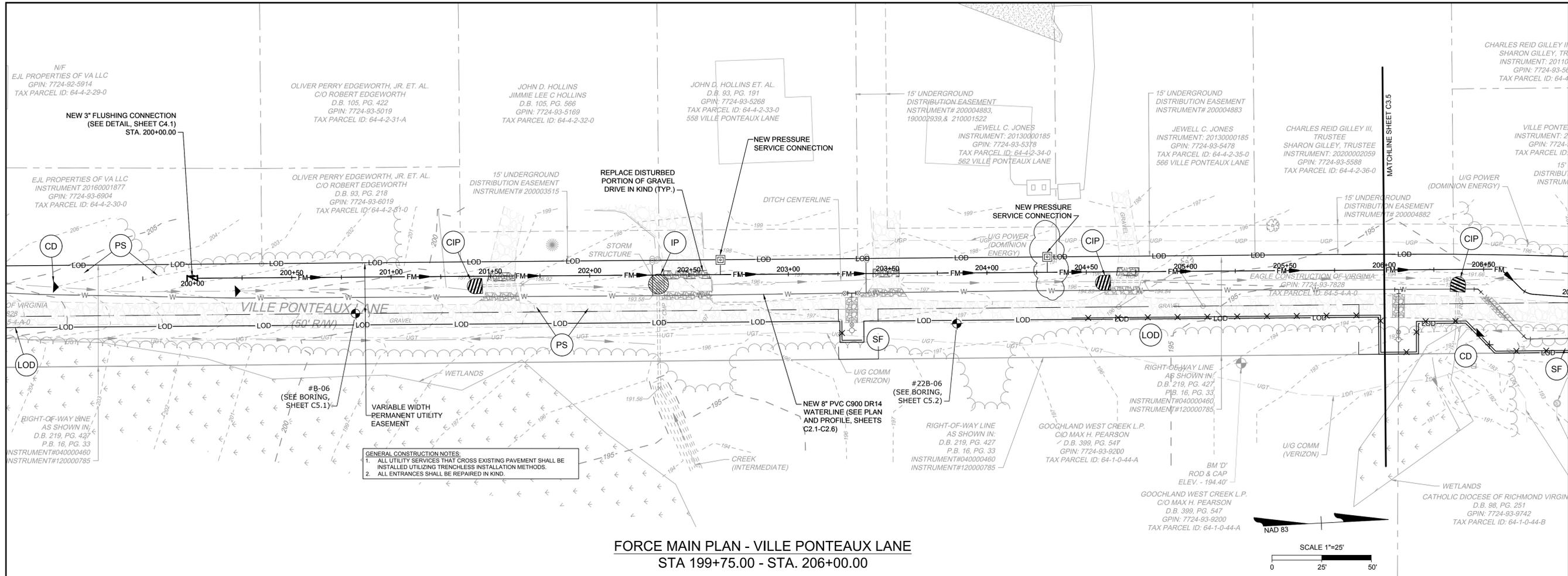
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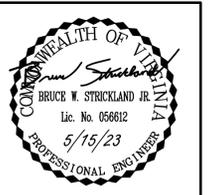
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 GOOCHLAND COUNTY, VIRGINIA
FORCE MAIN PLAN AND PROFILE - ROCHELLE ROAD

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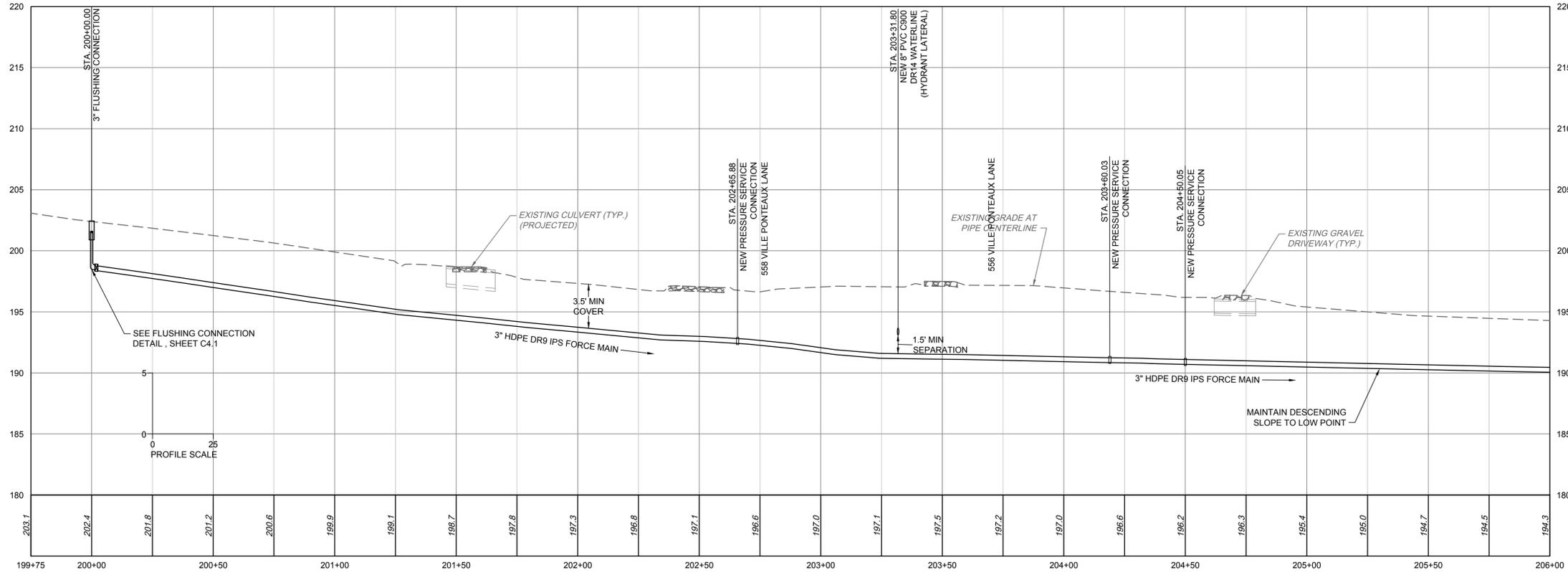
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HUGUENOT HILLS WATER AND SEWER IMPROVEMENTS
 GOOCHLAND COUNTY, VIRGINIA

FORCE MAIN PLAN AND PROFILE - VILLE PONTEAUX LANE

JOB NO.	50070
SHEET NO.	C3.4

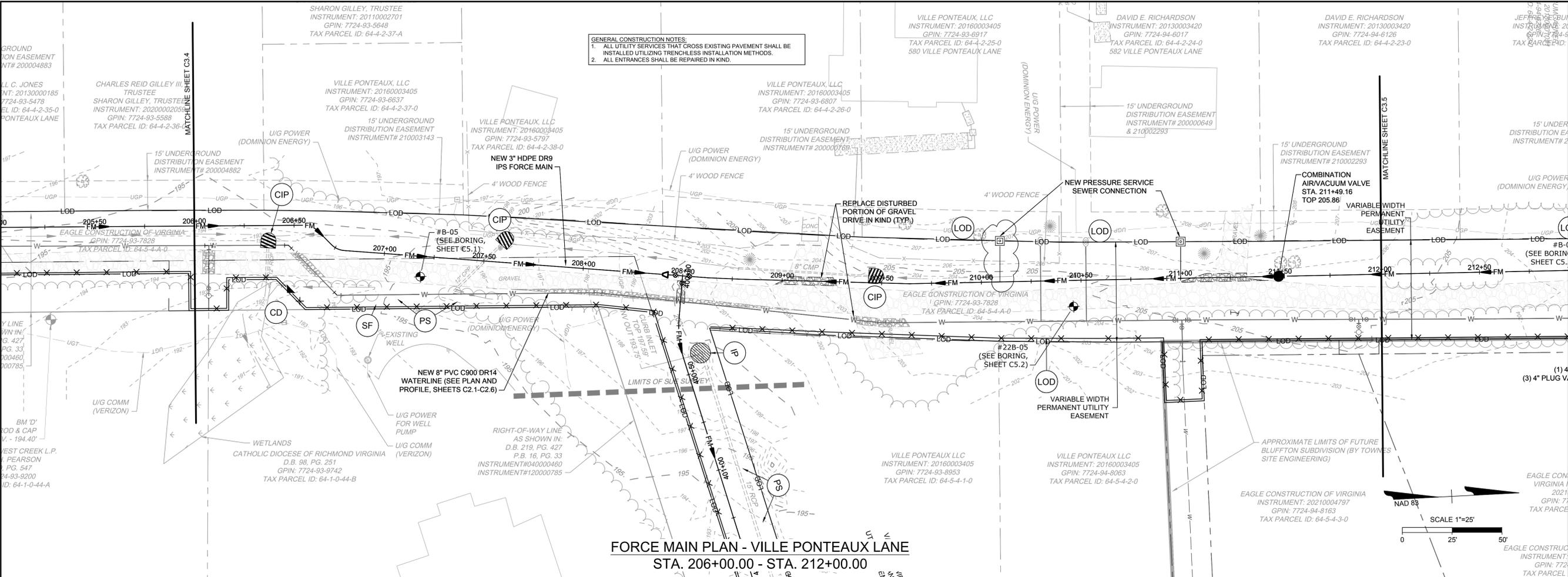
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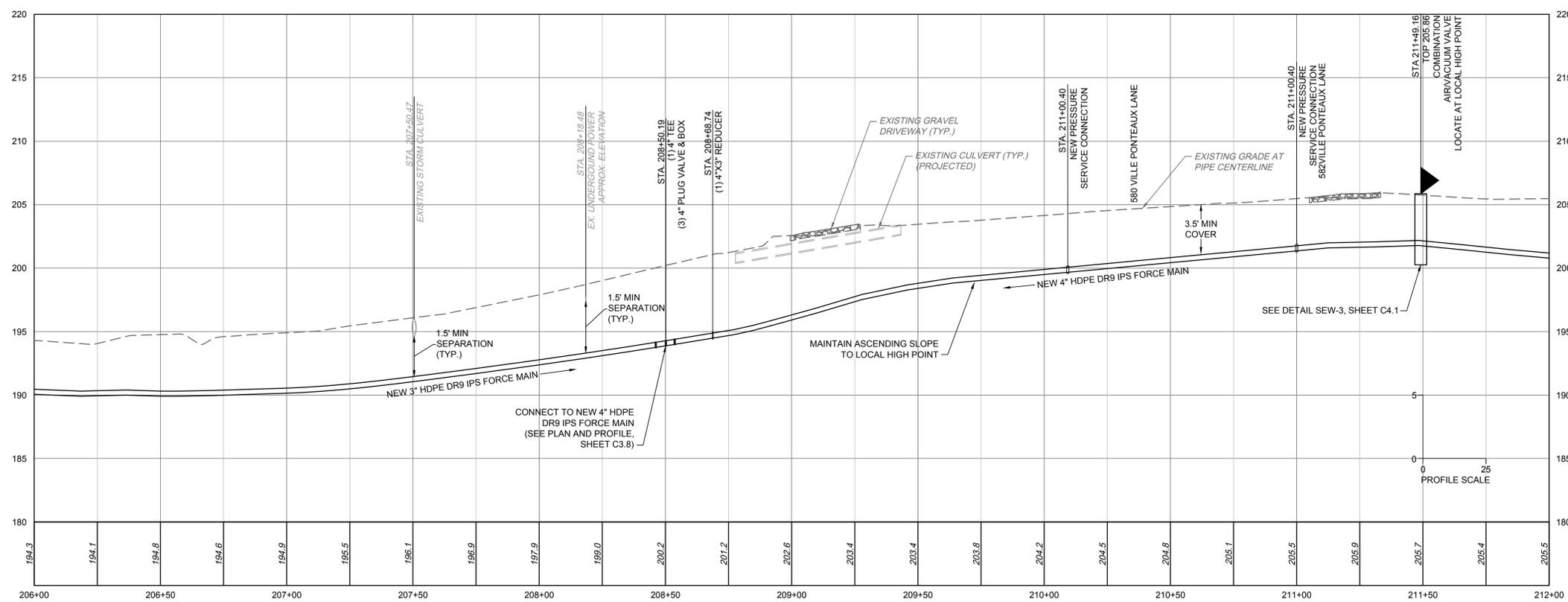
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DATE		ADDENDUM 1

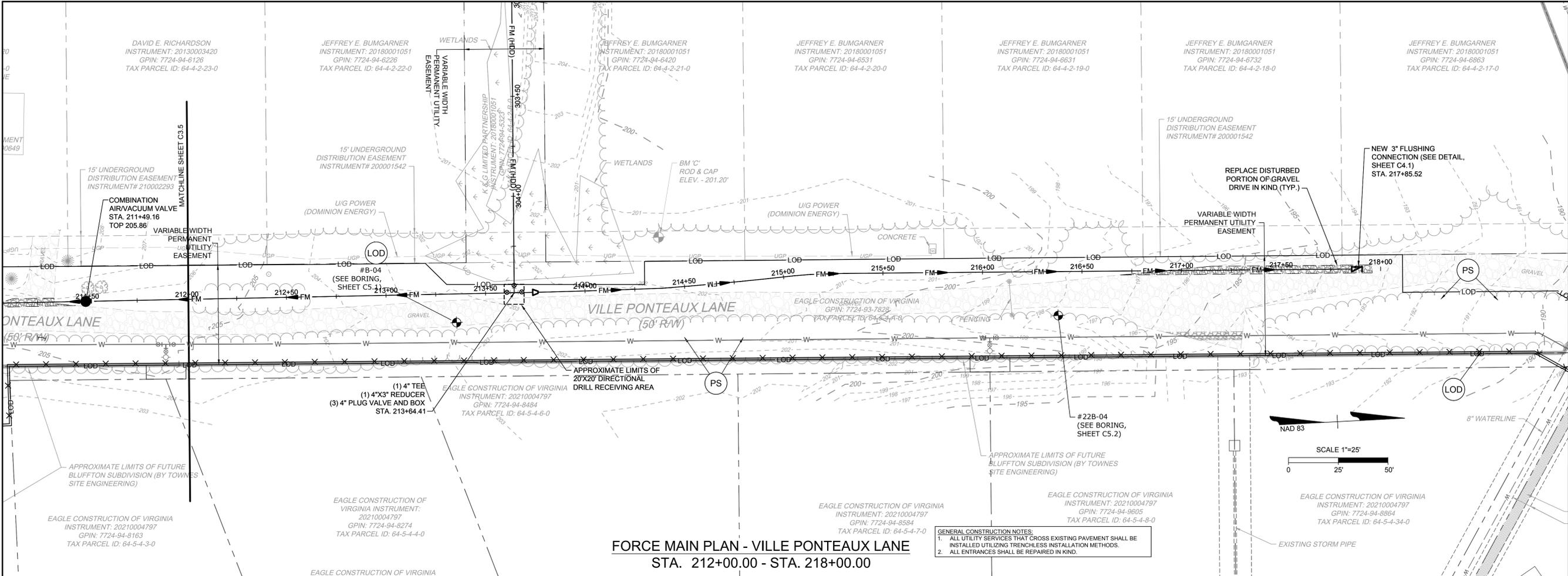
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GOOCHLAND COUNTY, VIRGINIA

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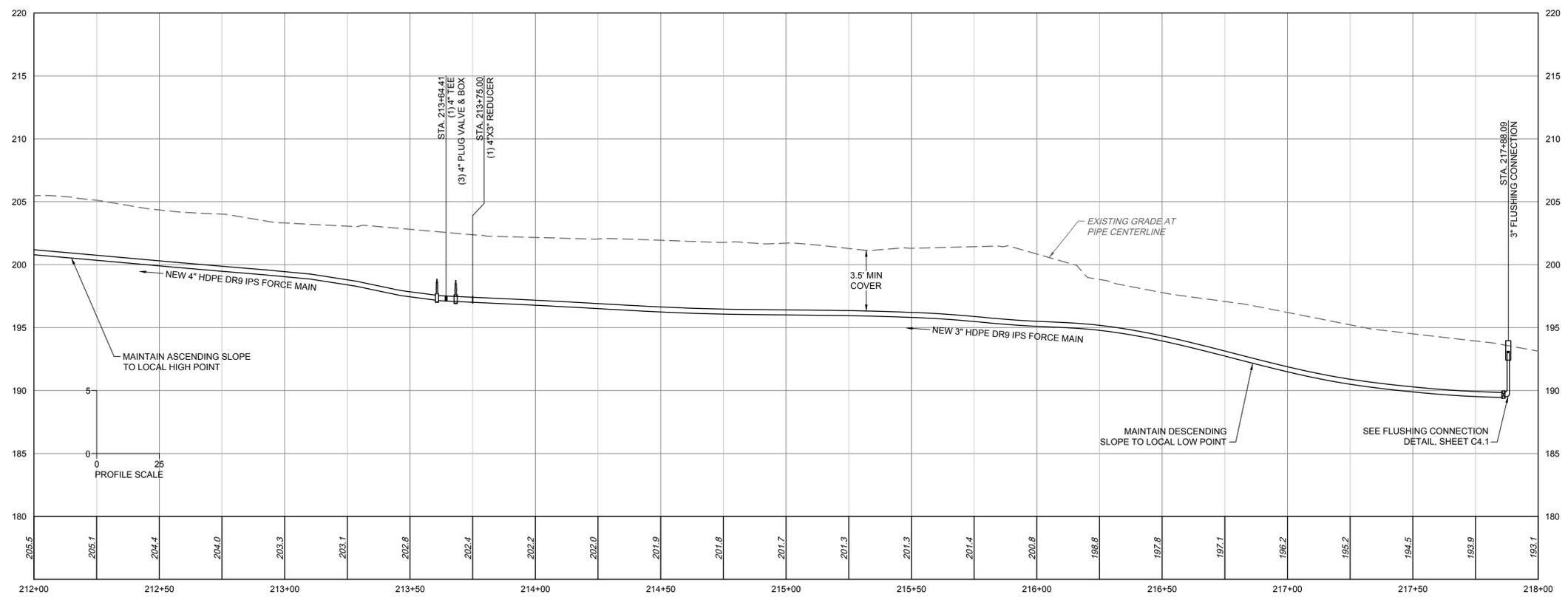
JOB NO.	50070
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L. KIM J. MARSHALL
 DESIGNED BY
B. STRICKLAND
 CHECKED BY
B. STRICKLAND
 SCALE
 AS SHOWN

TIMMONS GROUP

HUGUENOT HILLS WATER AND SEWER IMPROVEMENTS
 GOOCHLAND COUNTY, VIRGINIA

FORCE MAIN PLAN AND PROFILE - VILLE PONTEAUX LANE

JOB NO.
50070

SHEET NO.
C3.6

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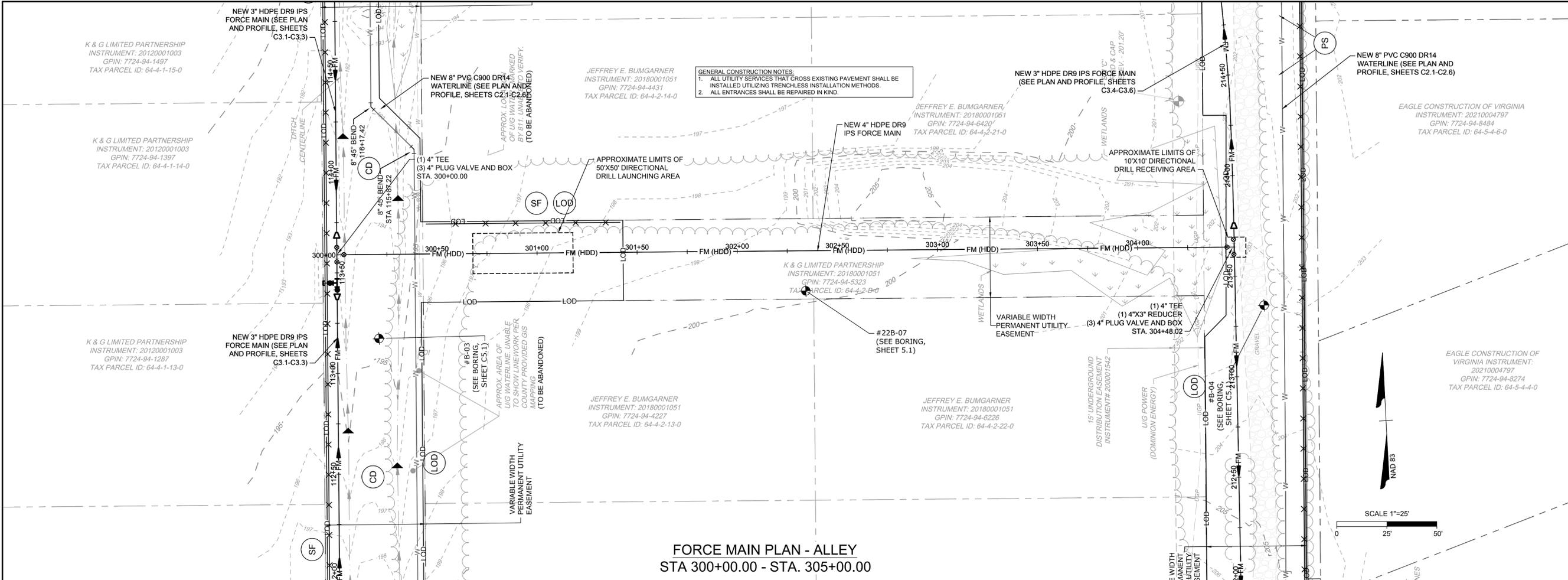
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SCALE	AS SHOWN

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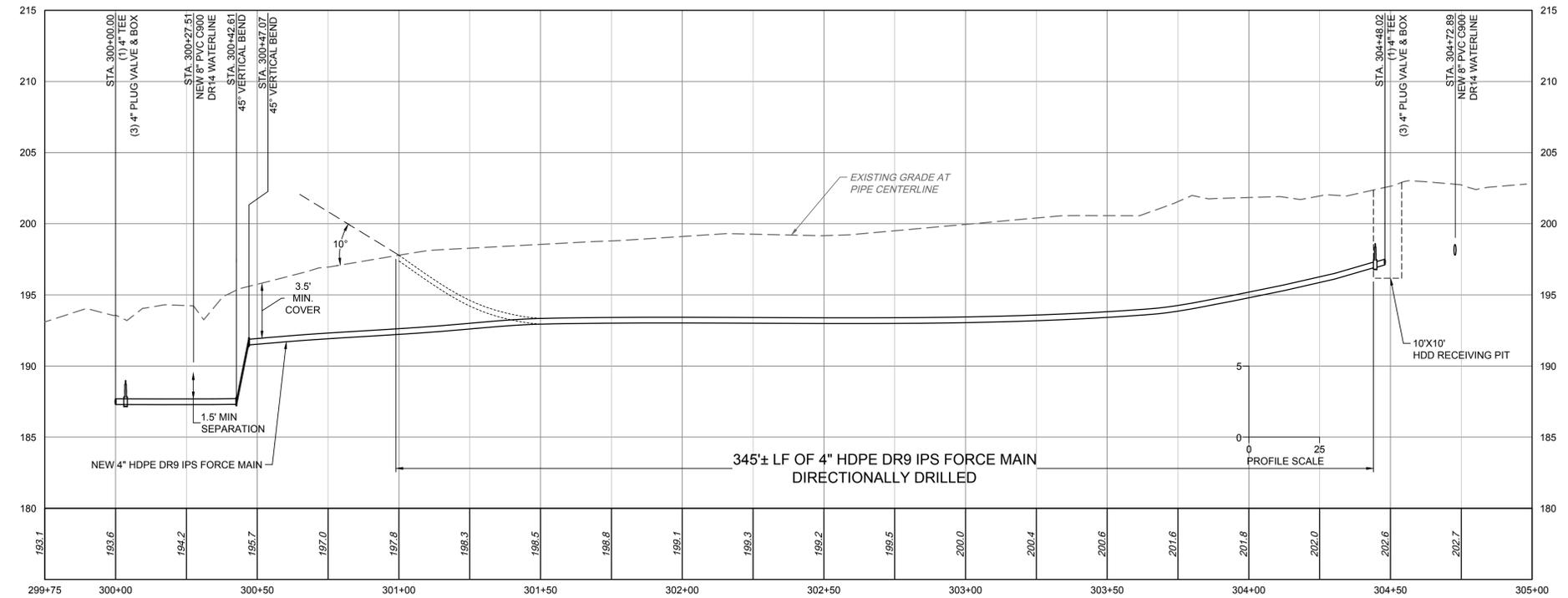
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 GOOCHLAND COUNTY, VIRGINIA
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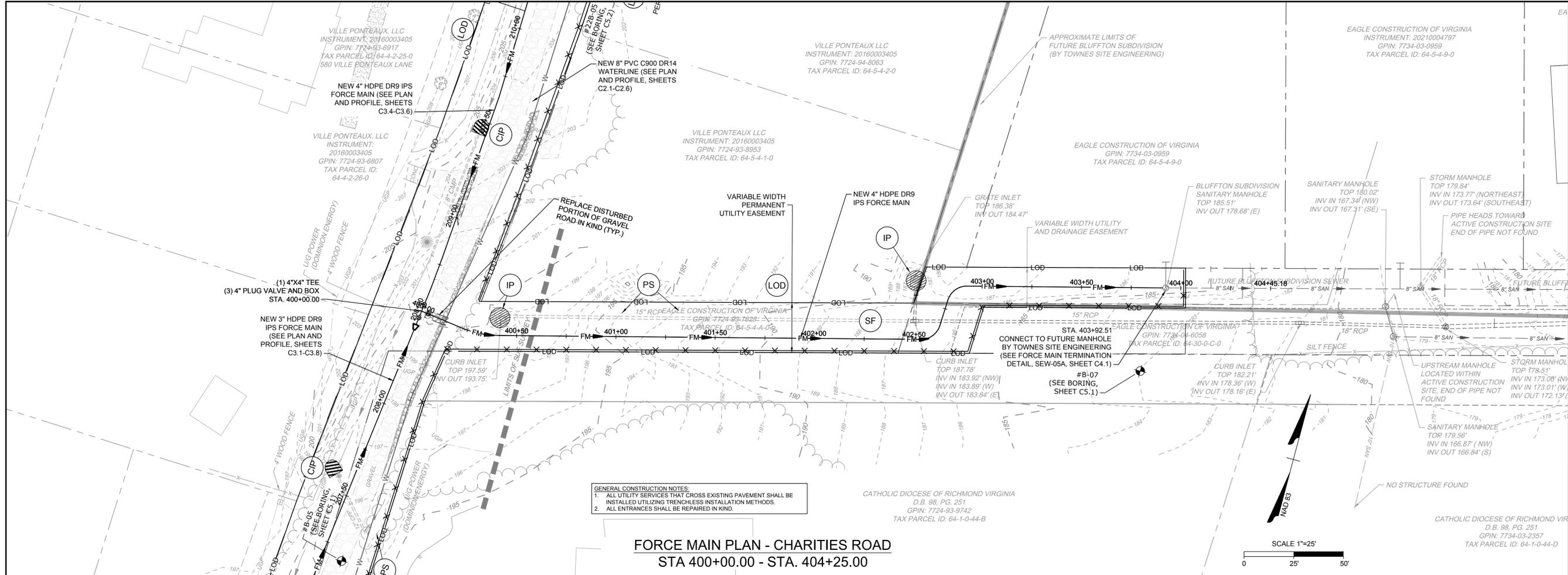


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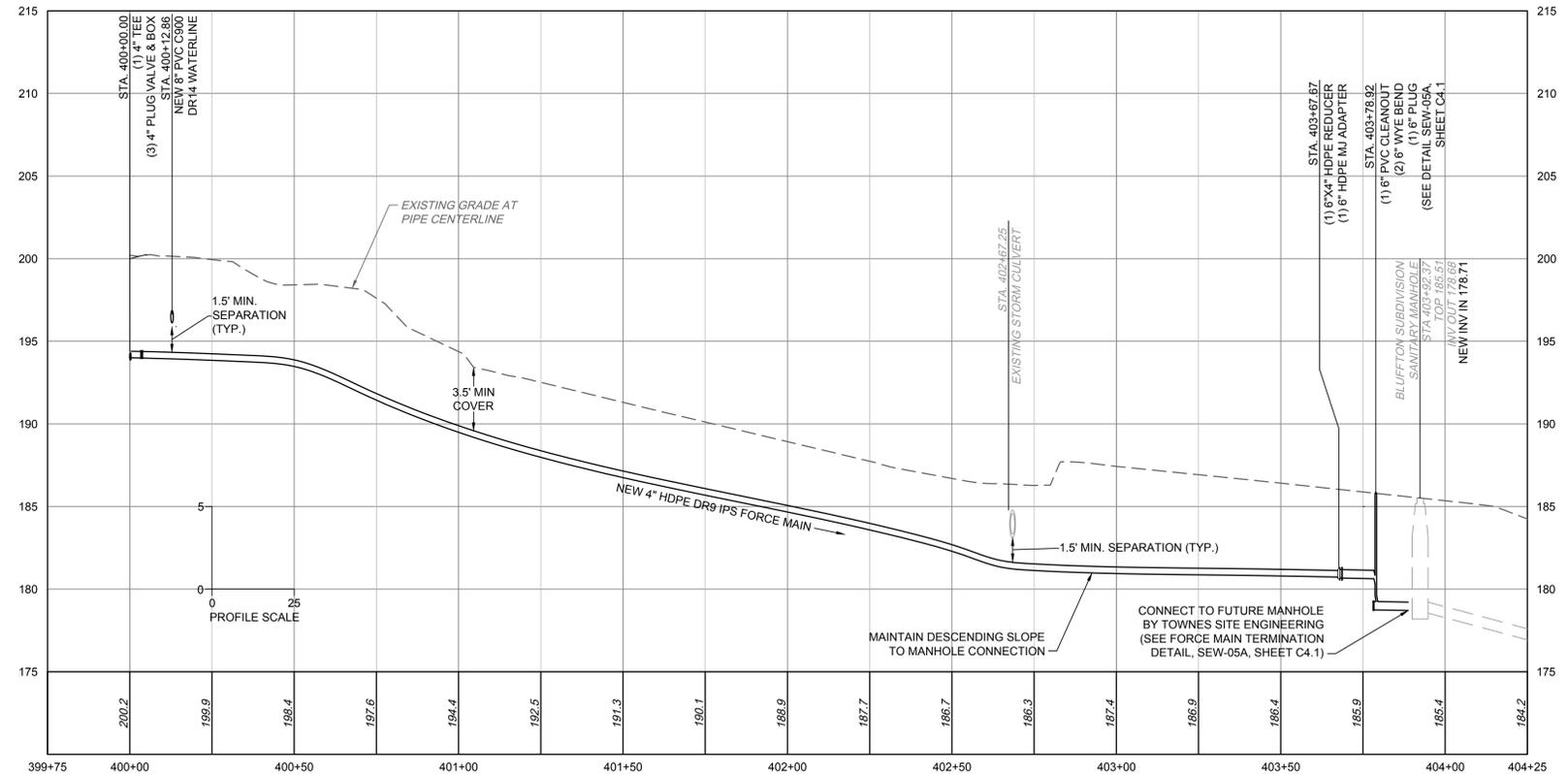
FORCE MAIN PROFILE - ALLEY
 STA. 299+75.00 - STA. 305+00.00

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 STA 400+00.00 - STA. 404+25.00



FORCE MAIN PROFILE - CHARITIES ROAD
 STA. 399+75.00 - STA. 404+00.00



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5/15/2023	BID SET
7/18/2023	ADDENDUM 1

DATE: 10/21/2022
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 DESIGNED BY: B. STRICKLAND
 CHECKED BY: B. STRICKLAND
 SCALE: AS SHOWN

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HUGUENOT HILLS WATER AND SEWER IMPROVEMENTS
 GOOCHLAND COUNTY, VIRGINIA

FORCE MAIN PLAN AND PROFILE - CHARITIES ROAD

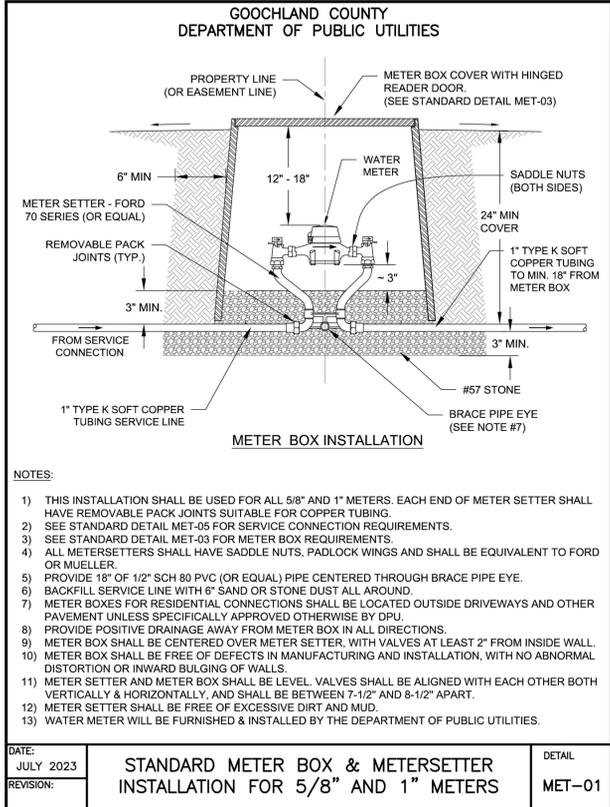
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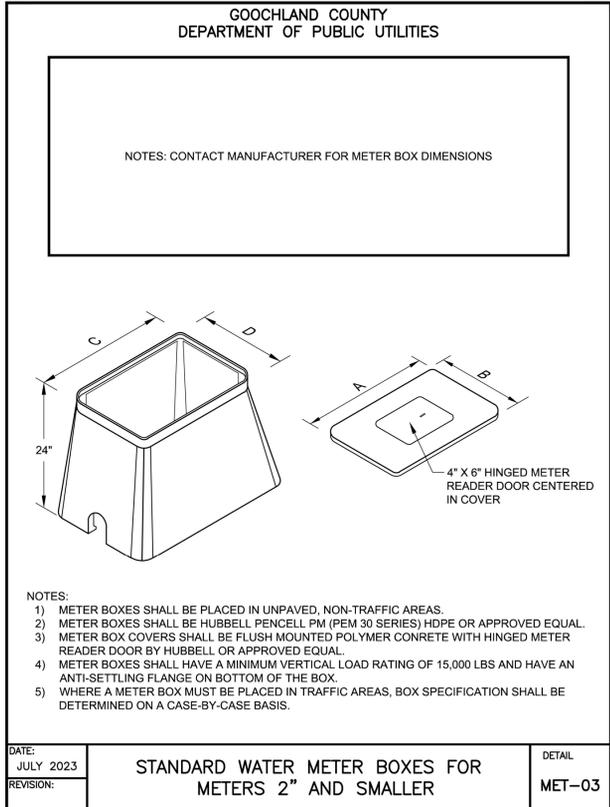
GOOCHLAND COUNTY DEPARTMENT OF UTILITIES		
DESCRIPTION OF UTILITY	SYMBOL FOR EXISTING	SYMBOL FOR PROPOSED
SANITARY SEWER	--- SAN ---	--- SAN ---
MANHOLE	--- O/H ---	--- O/H ---
CLEANOUT	--- CO ---	--- CO ---
SEWAGE FORCE MAIN	--- FM ---	--- FM ---
WATER MAIN OR SERVICE LINE	--- W ---	--- W ---
VALVE	--- V ---	--- V ---
VALVE (ALTERNATIVE TO THE ABOVE)	--- V ---	--- V ---
METER	--- M ---	--- M ---
FIRE HYDRANT	--- FH ---	--- FH ---
REDUCER	--- R ---	--- R ---
PIPE FITTINGS & REACTION BLOCKING	--- F ---	--- F ---
PIPE END CAP OR PLUG	--- E ---	--- E ---
GAS MAIN OR SERVICE LINE	--- G ---	--- G ---
STORM DRAIN WITH ENDWALLS	--- SD ---	--- SD ---
POWER LINE	--- P ---	--- P ---
TELEPHONE LINE	--- T ---	--- T ---
CABLE TV LINE	--- CTV ---	--- CTV ---
UNDERGROUND LINE	--- U/G ---	--- U/G ---
OVERHEAD LINE	--- O/H ---	--- O/H ---
UTILITY POLE WITH GUY & ANCHOR	--- U ---	--- U ---

DATE: AUG. 2014
 REVISION:
 STANDARD SYMBOLS FOR UTILITY DRAWINGS
 DRWG. NO. DES-1



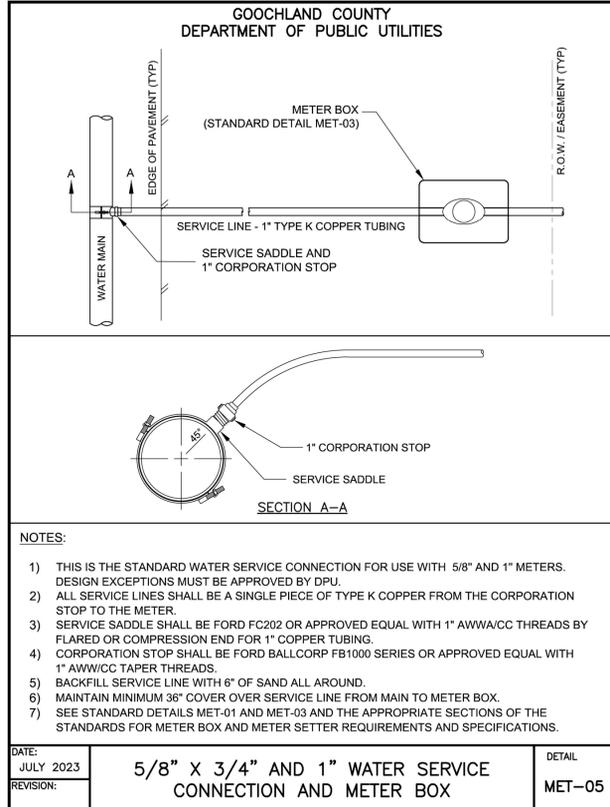
- NOTES:
- 1) THIS INSTALLATION SHALL BE USED FOR ALL 5/8" AND 1" METERS. EACH END OF METER SETTER SHALL HAVE REMOVABLE PACK JOINTS SUITABLE FOR COPPER TUBING.
 - 2) SEE STANDARD DETAIL MET-05 FOR SERVICE CONNECTION REQUIREMENTS.
 - 3) SEE STANDARD DETAIL MET-03 FOR METER BOX REQUIREMENTS.
 - 4) ALL METERSETTERS SHALL HAVE SADDLE NUTS, PADLOCK WINGS AND SHALL BE EQUIVALENT TO FORD OR MUELLER.
 - 5) PROVIDE 18" OF 1/2" SCH 80 PVC (OR EQUAL) PIPE CENTERED THROUGH BRACE PIPE EYE.
 - 6) BACKFILL SERVICE LINE WITH 6" SAND OR STONE DUST ALL AROUND.
 - 7) METER BOXES FOR RESIDENTIAL CONNECTIONS SHALL BE LOCATED OUTSIDE DRIVEWAYS AND OTHER PAVEMENT UNLESS SPECIFICALLY APPROVED OTHERWISE BY DPU.
 - 8) PROVIDE POSITIVE DRAINAGE AWAY FROM METER BOX IN ALL DIRECTIONS.
 - 9) METER BOX SHALL BE CENTERED OVER METER SETTER, WITH VALVES AT LEAST 2" FROM INSIDE WALL.
 - 10) METER BOX SHALL BE FREE OF DEFECTS IN MANUFACTURING AND INSTALLATION, WITH NO ABNORMAL DISTORTION OR INWARD BULGING OF WALLS.
 - 11) METER SETTER AND METER BOX SHALL BE LEVEL. VALVES SHALL BE ALIGNED WITH EACH OTHER BOTH VERTICALLY & HORIZONTALLY, AND SHALL BE BETWEEN 7-1/2" AND 8-1/2" APART.
 - 12) METER SETTER SHALL BE FREE OF EXCESSIVE DIRT AND MUD.
 - 13) WATER METER WILL BE FURNISHED & INSTALLED BY THE DEPARTMENT OF PUBLIC UTILITIES.

DATE: JULY 2023
 REVISION:
 STANDARD METER BOX & METERSETTER
 INSTALLATION FOR 5/8" AND 1" METERS
 DETAIL MET-01



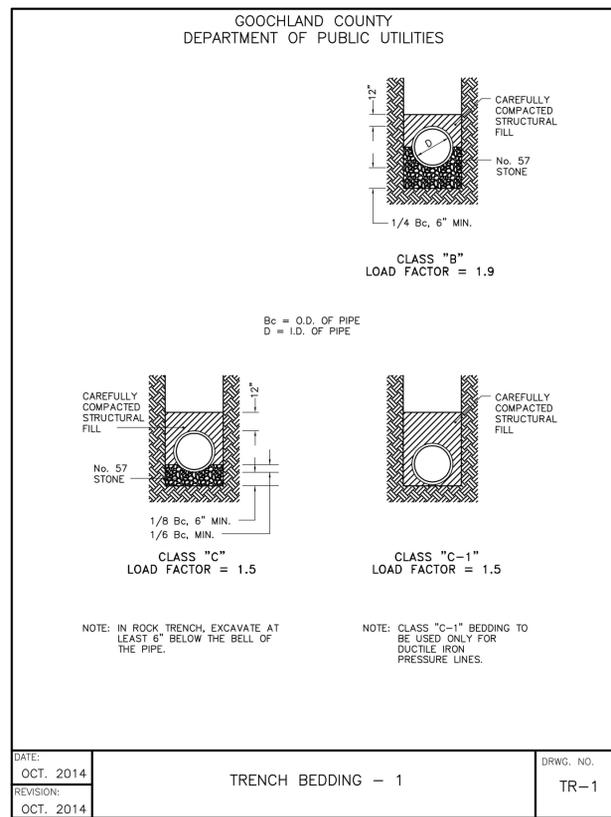
- NOTES:
- 1) METER BOXES SHALL BE PLACED IN UNPAVED, NON-TRAFFIC AREAS.
 - 2) METER BOXES SHALL BE HUBBELL PENCELL PM (PEM 30 SERIES) HDPE OR APPROVED EQUAL.
 - 3) METER BOX COVERS SHALL BE FLUSH MOUNTED POLYMER CONCRETE WITH HINGED METER READER DOOR BY HUBBELL OR APPROVED EQUAL.
 - 4) METER BOXES SHALL HAVE A MINIMUM VERTICAL LOAD RATING OF 15,000 LBS AND HAVE AN ANTI-SETTLING FLANGE ON BOTTOM OF THE BOX.
 - 5) WHERE A METER BOX MUST BE PLACED IN TRAFFIC AREAS, BOX SPECIFICATION SHALL BE DETERMINED ON A CASE-BY-CASE BASIS.

DATE: JULY 2023
 REVISION:
 STANDARD WATER METER BOXES FOR
 METERS 2" AND SMALLER
 DETAIL MET-03

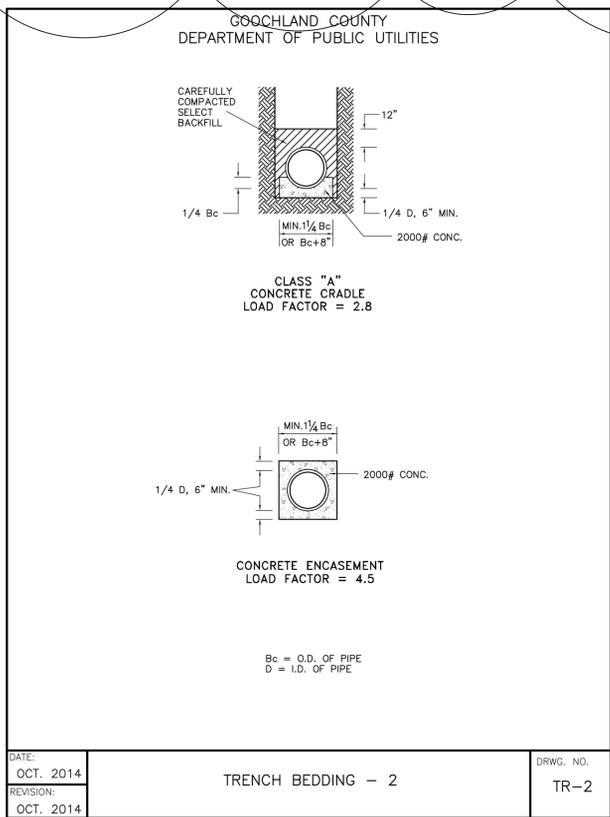


- NOTES:
- 1) THIS IS THE STANDARD WATER SERVICE CONNECTION FOR USE WITH 5/8" AND 1" METERS. DESIGN EXCEPTIONS MUST BE APPROVED BY DPU.
 - 2) ALL SERVICE LINES SHALL BE A SINGLE PIECE OF TYPE K COPPER FROM THE CORPORATION STOP TO THE METER.
 - 3) SERVICE SADDLE SHALL BE FORD FC202 OR APPROVED EQUAL WITH 1" AWWA/COC THREADS BY FLARED OR COMPRESSION END FOR 1" COPPER TUBING.
 - 4) CORPORATION STOP SHALL BE FORD BALLCORP FB1000 SERIES OR APPROVED EQUAL WITH 1" AWWA/COC TAPER THREADS.
 - 5) BACKFILL SERVICE LINE WITH 6" OF SAND ALL AROUND.
 - 6) MAINTAIN MINIMUM 36" COVER OVER SERVICE LINE FROM MAIN TO METER BOX.
 - 7) SEE STANDARD DETAILS MET-01 AND MET-03 AND THE APPROPRIATE SECTIONS OF THE STANDARDS FOR METER BOX AND METER SETTER REQUIREMENTS AND SPECIFICATIONS.

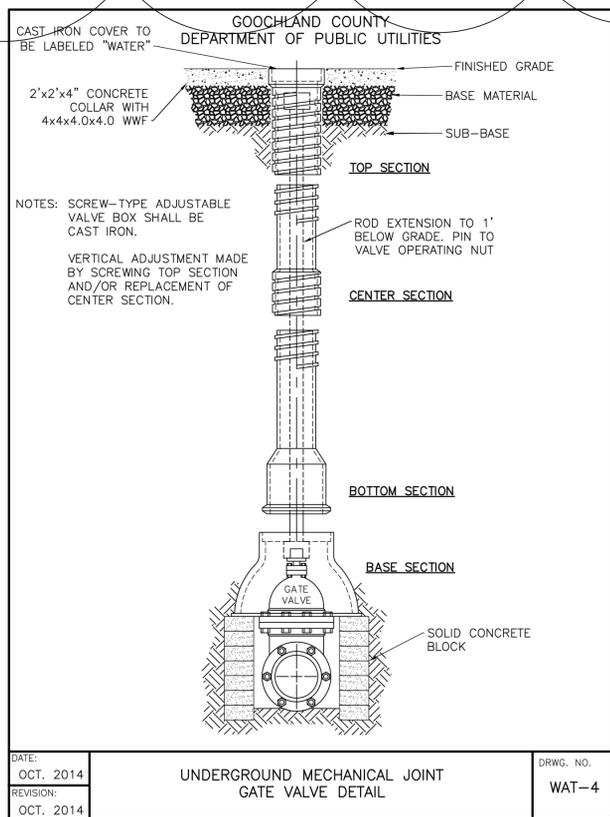
DATE: JULY 2023
 REVISION:
 5/8" X 3/4" AND 1" WATER SERVICE
 CONNECTION AND METER BOX
 DETAIL MET-05



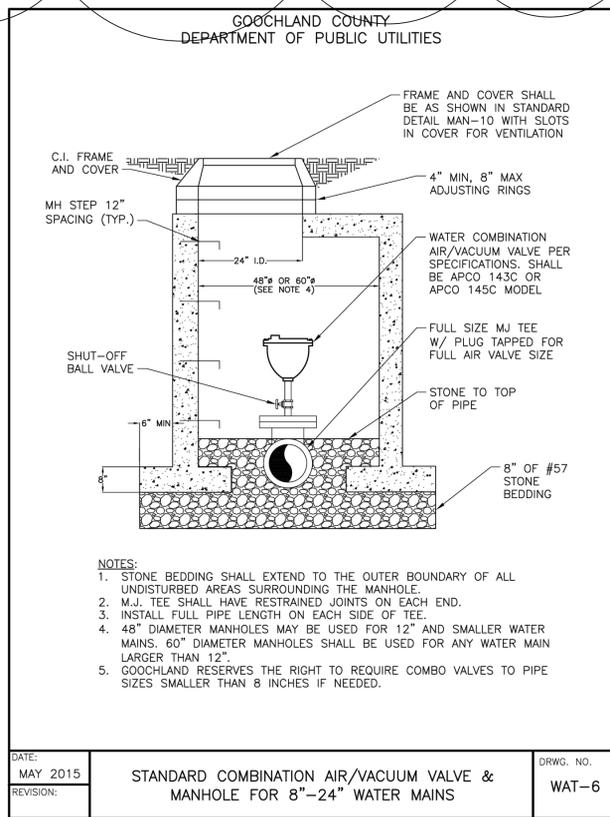
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 REVISION: OCT. 2014
 TRENCH BEDDING - 1
 DRWG. NO. TR-1



DATE: OCT. 2014
 REVISION: OCT. 2014
 TRENCH BEDDING - 2
 DRWG. NO. TR-2



DATE: OCT. 2014
 REVISION: OCT. 2014
 UNDERGROUND MECHANICAL JOINT
 GATE VALVE DETAIL
 DRWG. NO. WAT-4



DATE: MAY 2015
 REVISION:
 STANDARD COMBINATION AIR/VACUUM VALVE &
 MANHOLE FOR 8"-24" WATER MAINS
 DRWG. NO. WAT-6

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 DESIGNED BY: B. STRICKLAND
 CHECKED BY: B. STRICKLAND
 SCALE: AS SHOWN

TIMMONS GROUP
 HUGENOT HILLS WATER AND SEWER IMPROVEMENTS
 GOOCHLAND COUNTY, VIRGINIA
 CIVIL DETAILS

JOB NO. 50070
 SHEET NO. C4.0

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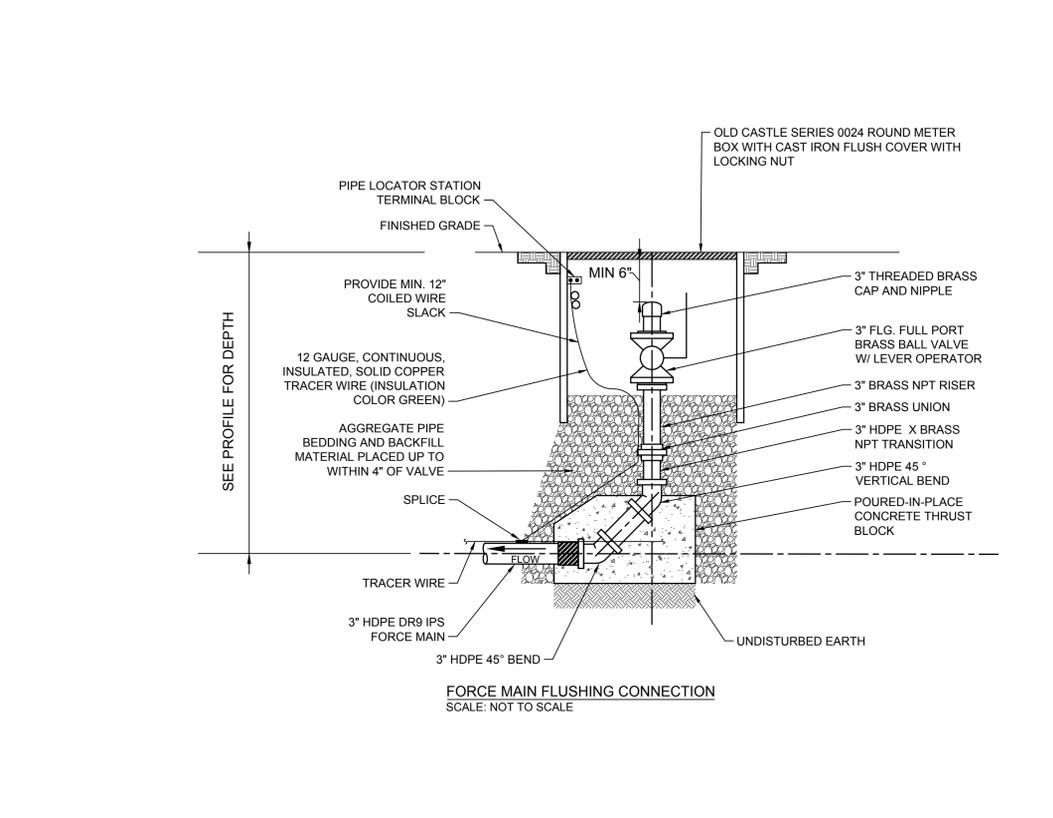
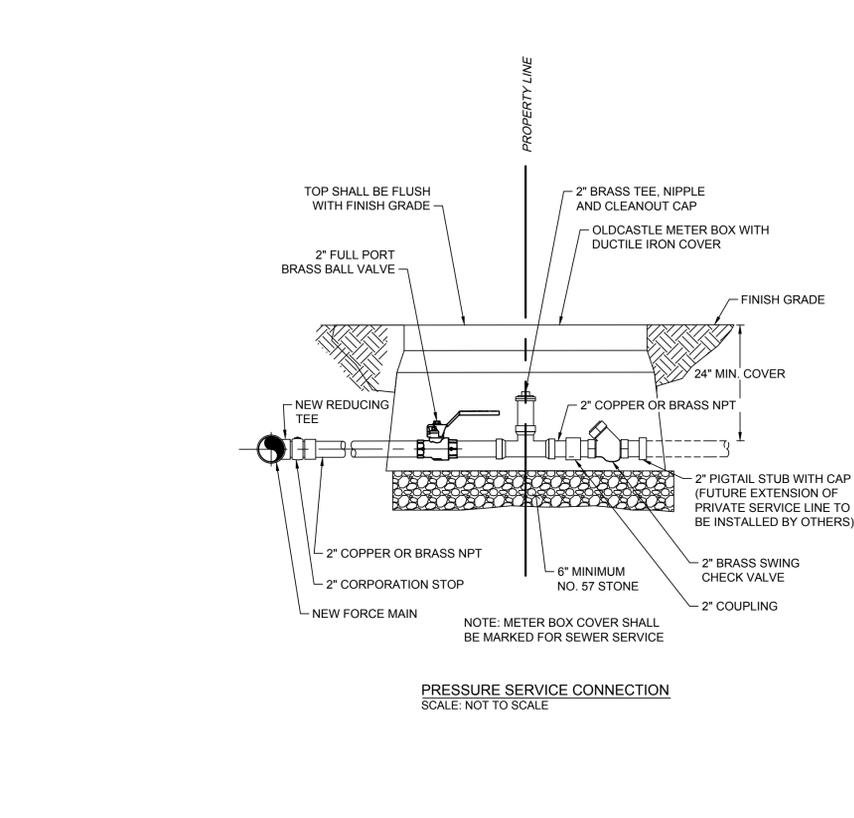
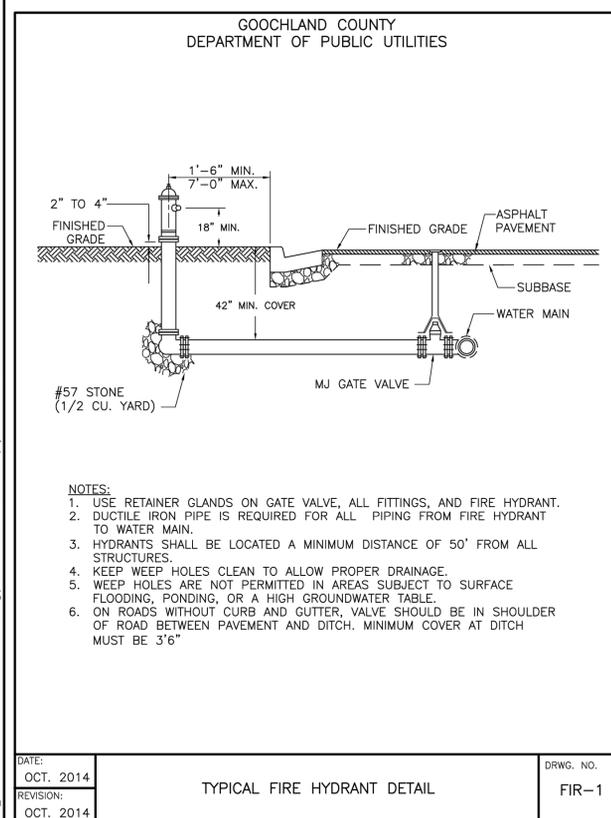
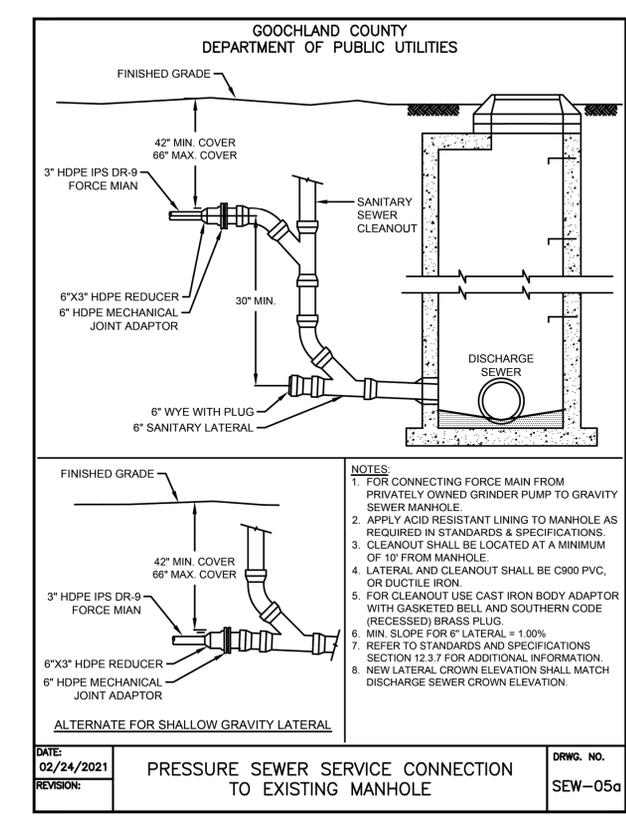
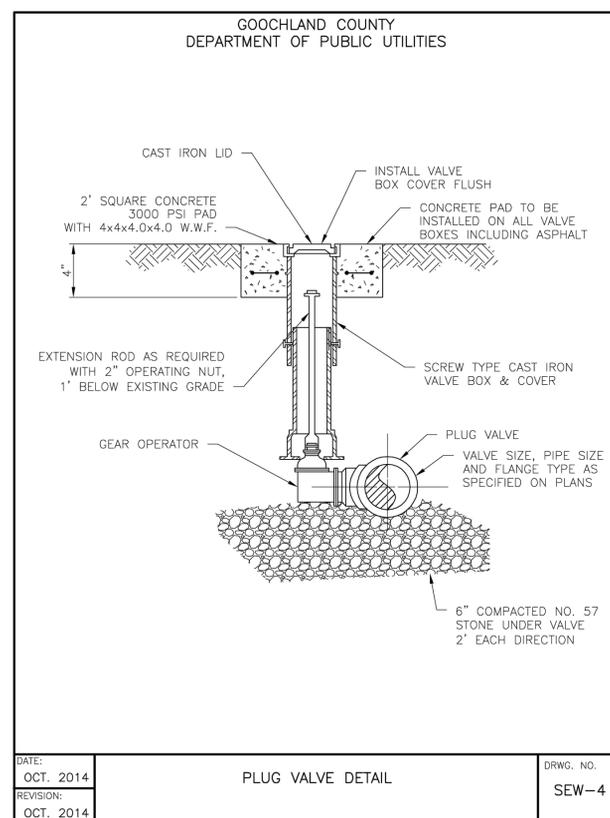
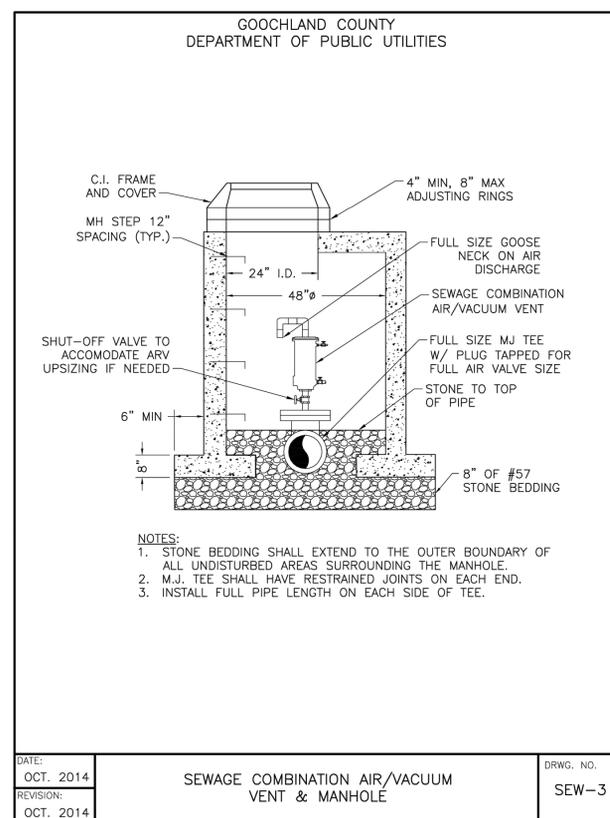
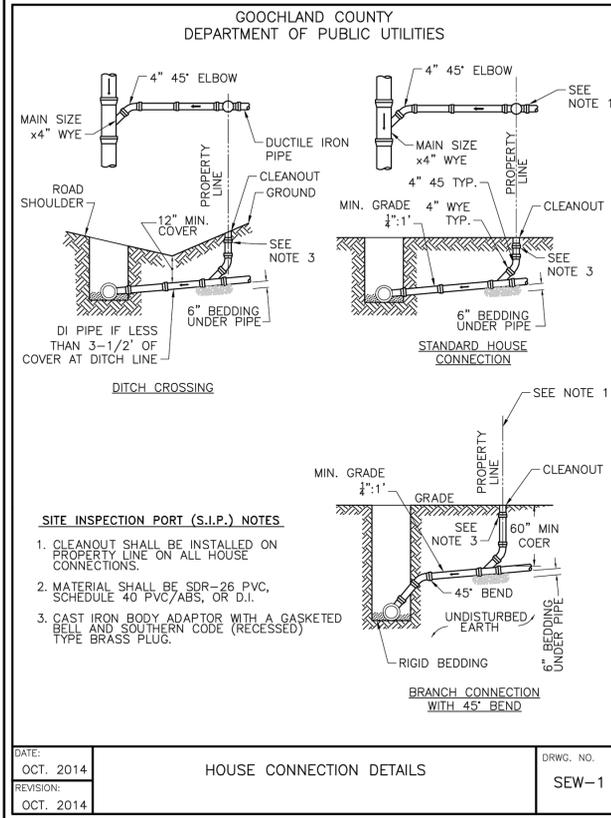
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 GOOCHLAND COUNTY, VIRGINIA
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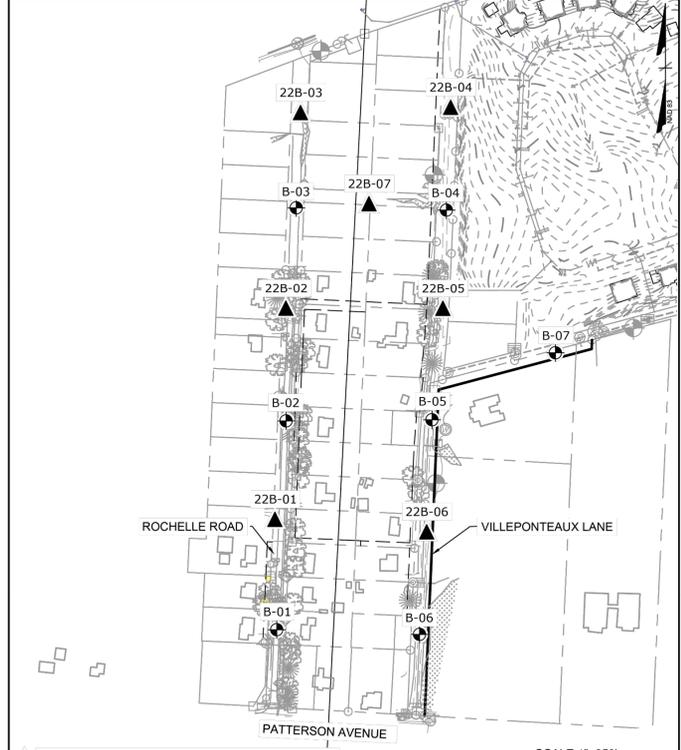
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SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS		TYPICAL DESCRIPTIONS
			GRAPH	LETTER	
COARSE GRAINED SOILS MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVEL AND GRAVELLY SOILS (LITTLE OR NO FINES)	CLEAN GRAVELS		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES		GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN SANDS		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
		SANDS WITH FINES		SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
FINE GRAINED SOILS MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS LIQUID LIMIT LESS THAN 50	CLAYEY SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
		CLAYEY SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY		OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
		CLAYEY SILTS AND ORGANIC SILTY CLAYS OF MEDIUM TO HIGH PLASTICITY		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
		CLAYEY SILTS AND ORGANIC SILTY CLAYS OF HIGH PLASTICITY		CH	INORGANIC CLAYS OF HIGH PLASTICITY
		CLAYEY SILTS AND ORGANIC SILTY CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS		OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
	SILTS AND CLAYS LIQUID LIMIT GREATER THAN 50	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS		PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

Y:\801\Geotechnical\PROJECTS\2022\Projects\50070_Huguenot Hills Sewer Design Phase\Drafting\Boring Location Plan 2022.dwg | Plotted on 7/13/2022 2:45 PM | by Julian Ruffin

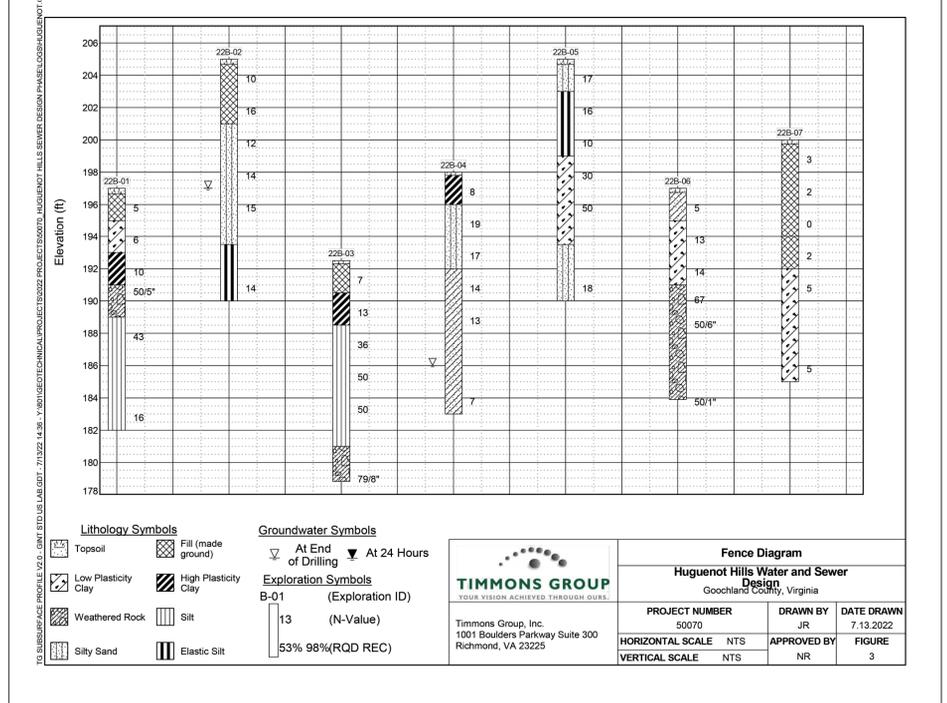


▲ APPROXIMATE LOCATION OF TEST BORING (2022)
 ● APPROXIMATE LOCATION OF TEST BORING (2021)

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HUGUENOT HILLS WATER AND SEWER DESIGN
 GOOCHLAND COUNTY, VIRGINIA

DATE: 7/13/2022
 DESIGNER: JR
 CHECKED BY: LJM
 DRAWN BY: LJM



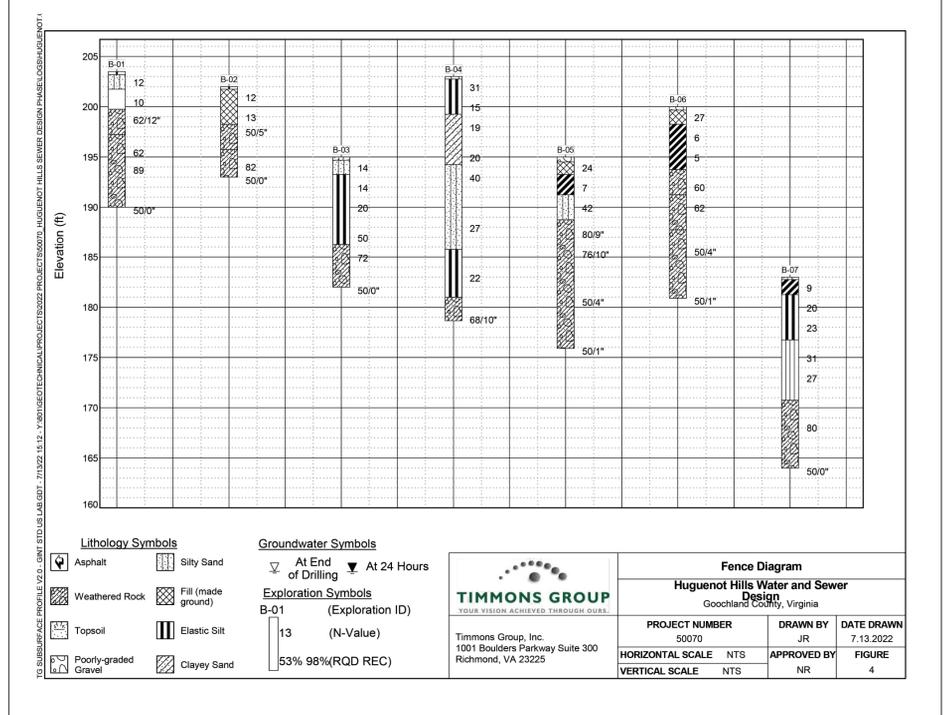
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 Richmond, VA 23225

Fence Diagram
 Huguenot Hills Water and Sewer Design
 Goochland County, Virginia

PROJECT NUMBER: 50070
 DRAWN BY: JR
 DATE DRAWN: 7.13.2022

HORIZONTAL SCALE: NTS
 APPROVED BY: NR
 FIGURE: 3



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Fence Diagram
 Huguenot Hills Water and Sewer Design
 Goochland County, Virginia

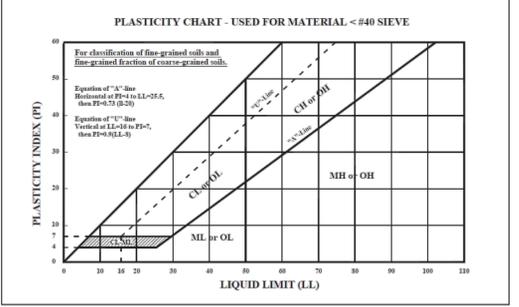
PROJECT NUMBER: 50070
 DRAWN BY: JR
 DATE DRAWN: 7.13.2022

HORIZONTAL SCALE: NTS
 APPROVED BY: NR
 FIGURE: 4

KEY TO BORING LOG TERMINOLOGY

Relative Density - Used for soils with less than 50% passing No. 200 sieve		Consistency - Used for soils with 50 percent or more passing No. 200 sieve	
Relative Density	SPT N-Value (blow/ft)	Consistency	SPT N-Value (blow/foot)
Very Loose	0 to 3	Very Soft	0 to 1
Loose	4 to 9	Soft	2 to 4
Medium Dense	10 to 29	Medium Stiff	5 to 8
Dense	30 to 50	Stiff	9 to 15
Very Dense	Greater than 50	Very Stiff	16 to 30
		Hard	31 to 50
		Very Hard	Greater than 50

Grain Size Terminology (U.S. Standard Sieves)		Natural Moisture Content	
Term	Particle Size		
Boulder	12 inches +	Dry	Very little apparent moisture, dusty
Cobble	3 to 12 inches	Moist	Damp, but no free water visible
Coarse Gravel	3/4 to 3 inches		
Fine Gravel	#4 to #10		
Coarse Sand	#10 to #40	Wet	Visible free water, or in cohesive soil, clearly saturated
Medium Sand	#40 to #100		
Fine Sand	#100 to #200		
Silt and Clay	<#200		



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REVISION DESCRIPTION
 REVISION PER COUNTY COMMENTS
 REVISION PER COUNTY AND VDOT COMMENTS
 BID SET
 ADDENDUM 1

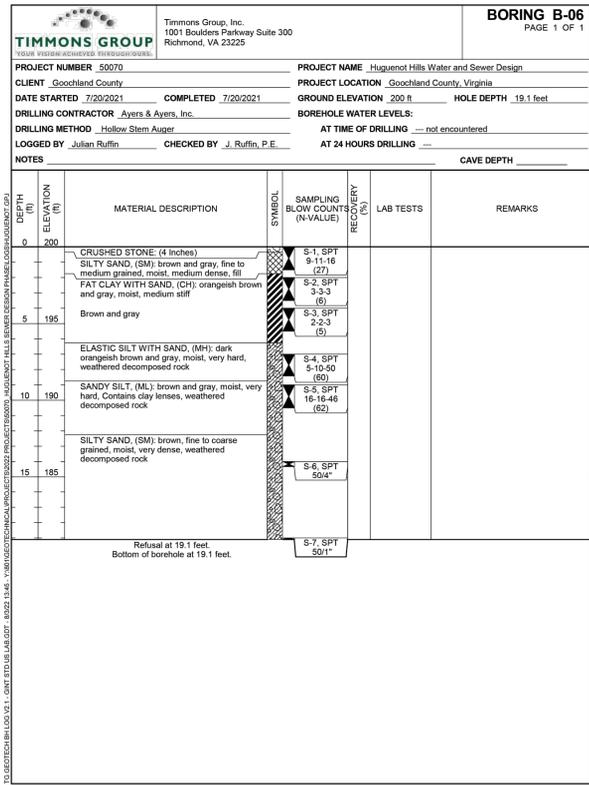
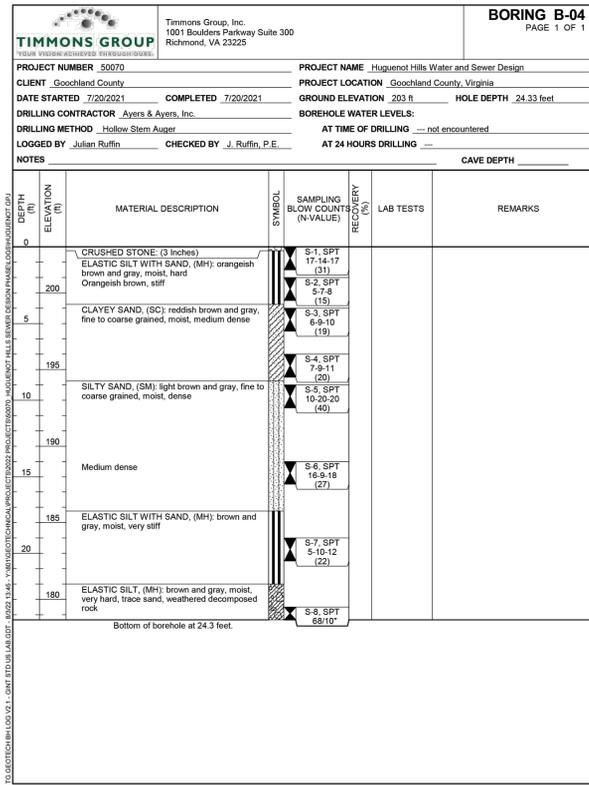
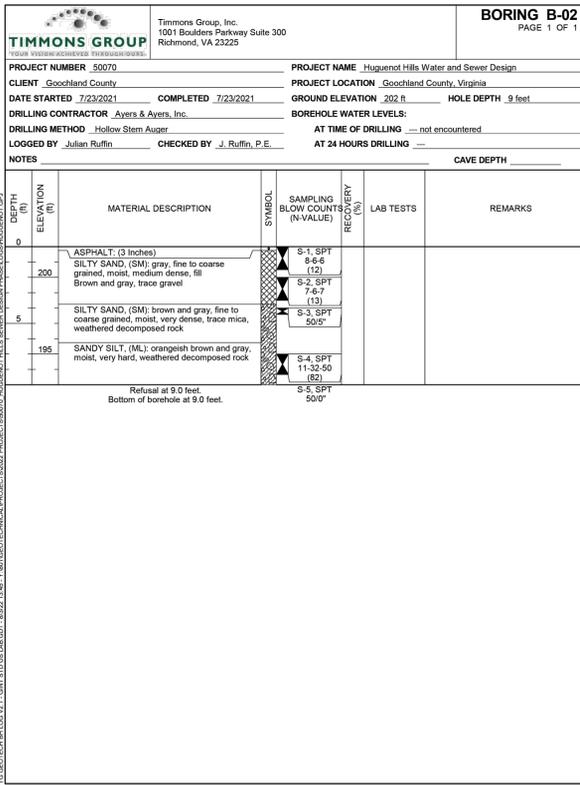
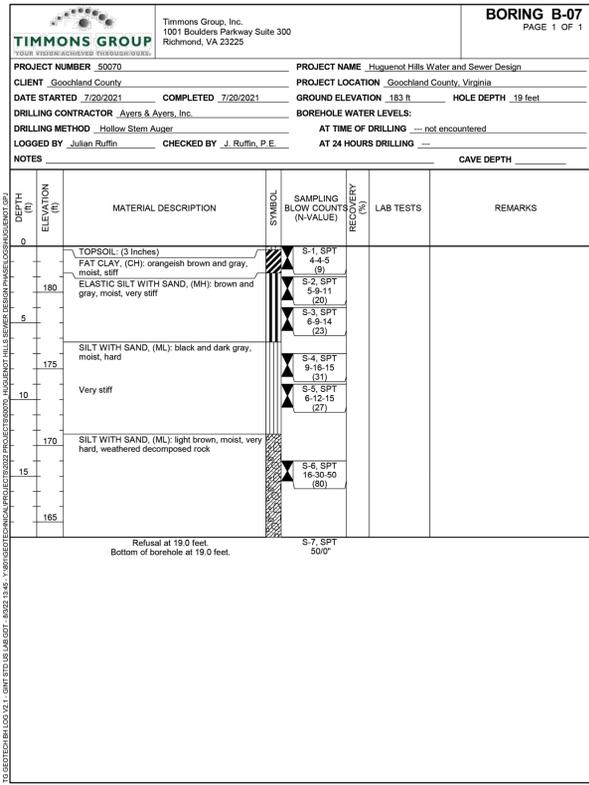
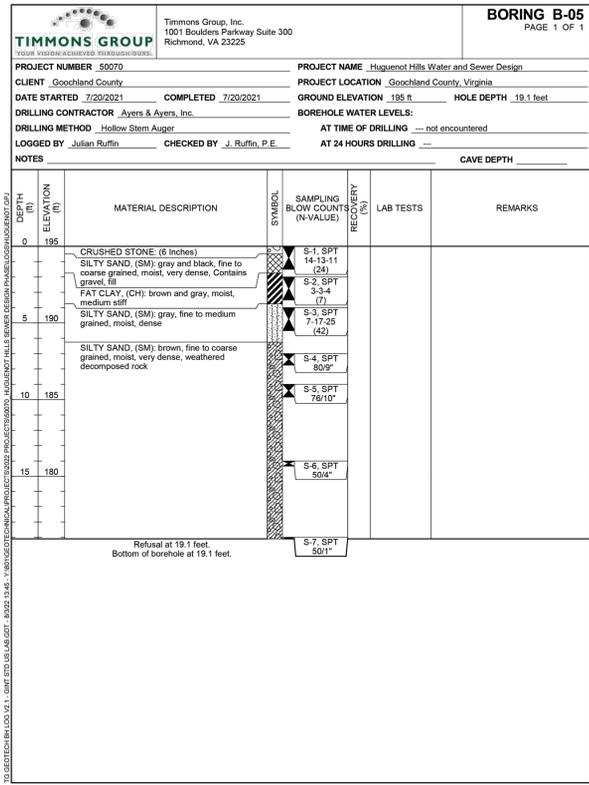
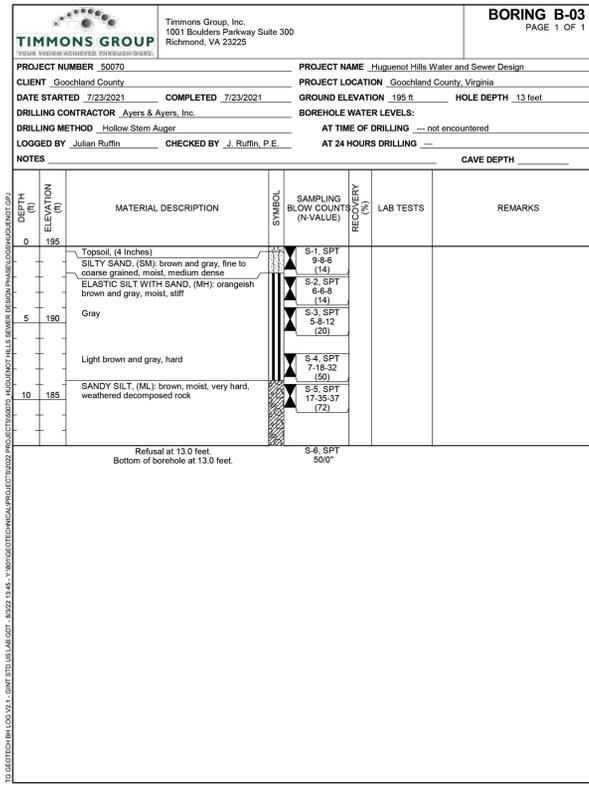
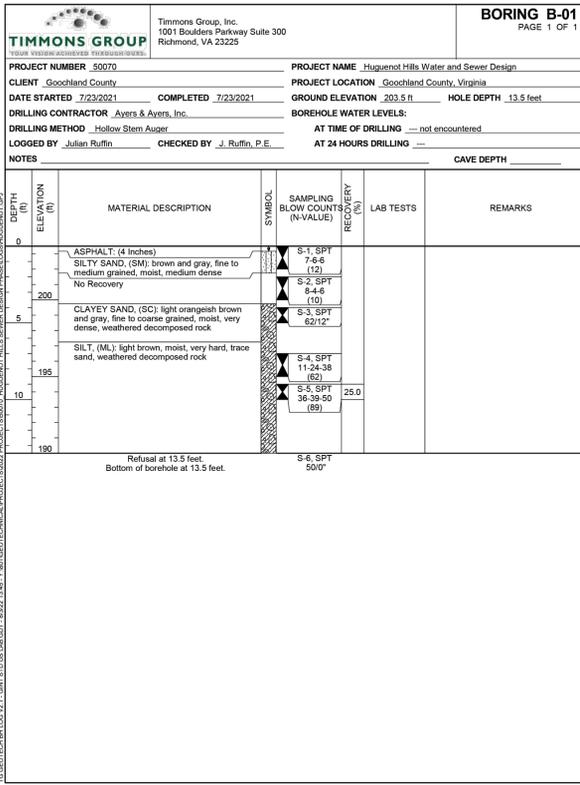
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 DESIGNED BY: B. STRICKLAND
 CHECKED BY: B. STRICKLAND
 SCALE: AS SHOWN

TIMMONS GROUP

HUGUENOT HILLS WATER AND SEWER IMPROVEMENTS
 GOOCHLAND COUNTY, VIRGINIA

GEOTECHNICAL BORING LOGS

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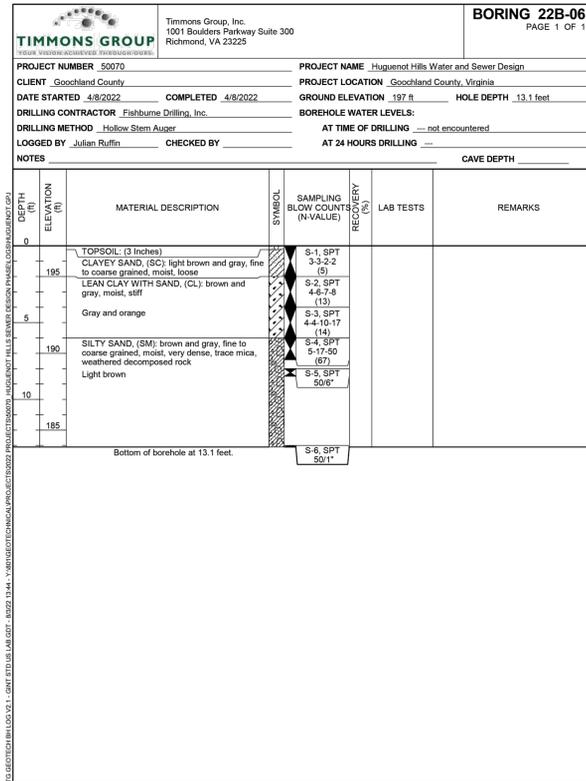
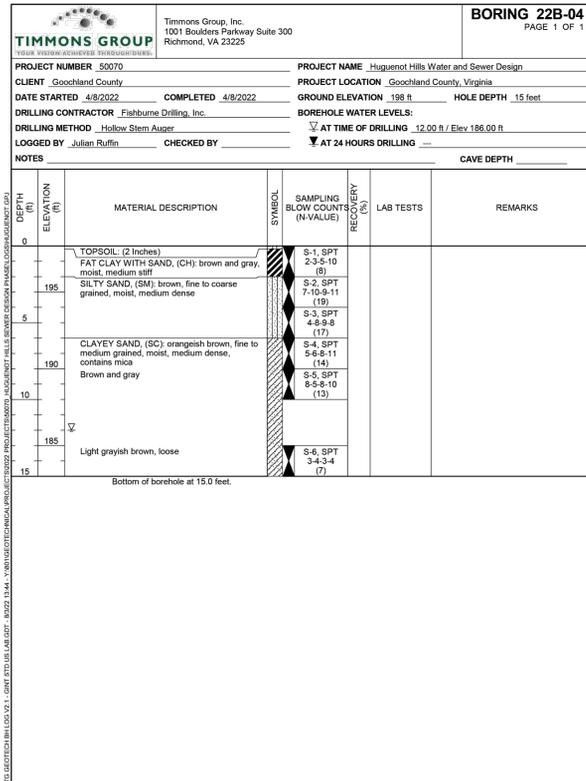
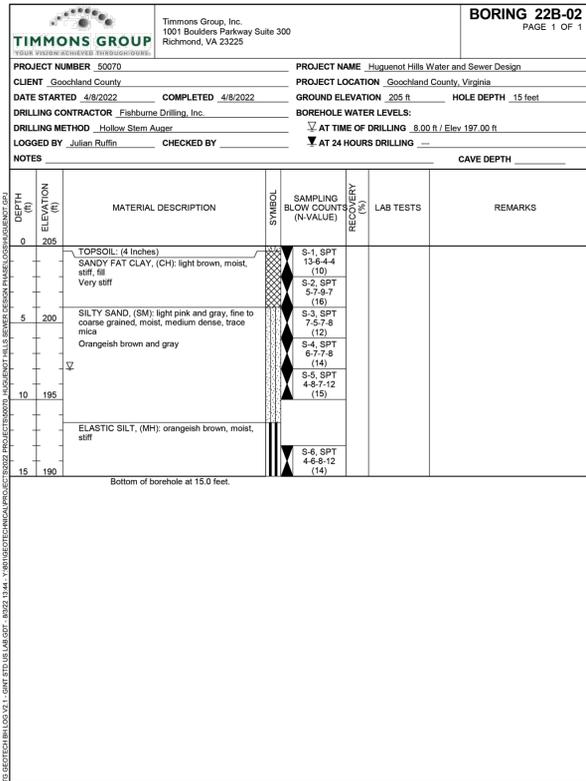
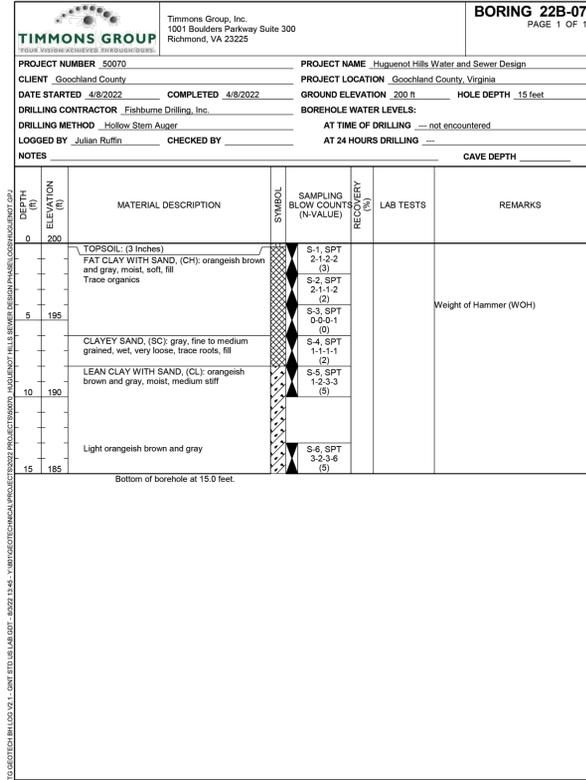
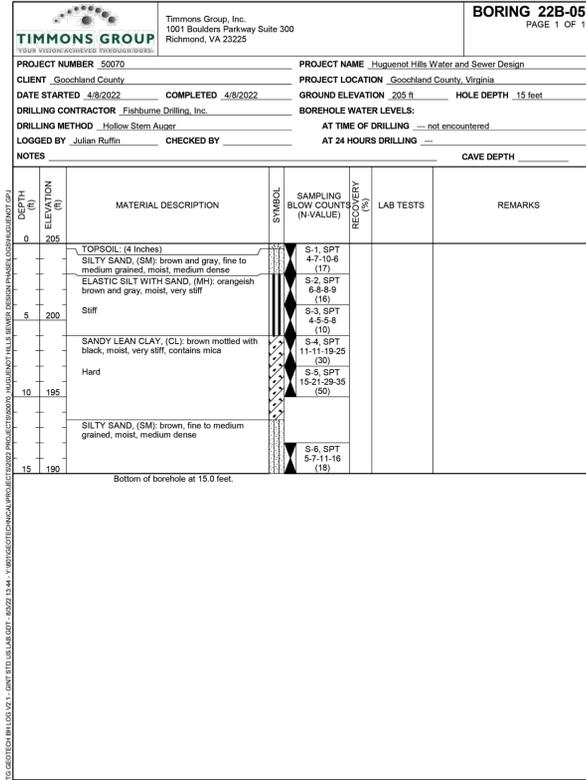
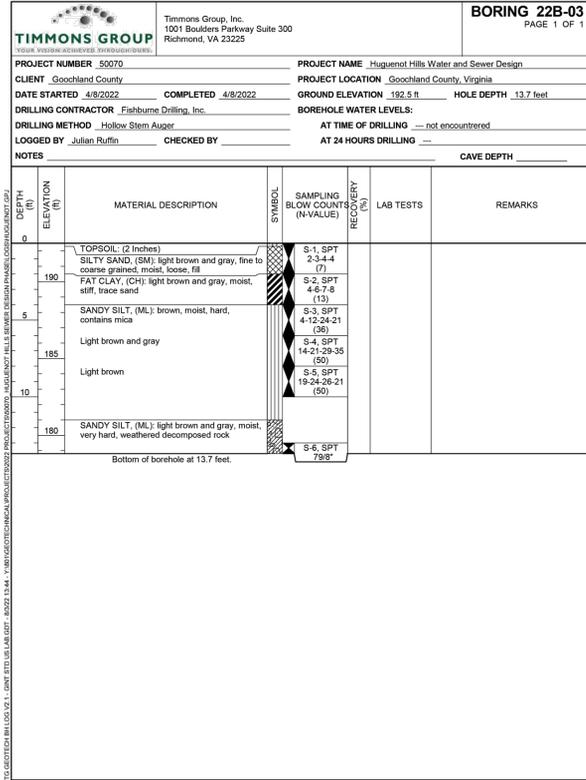
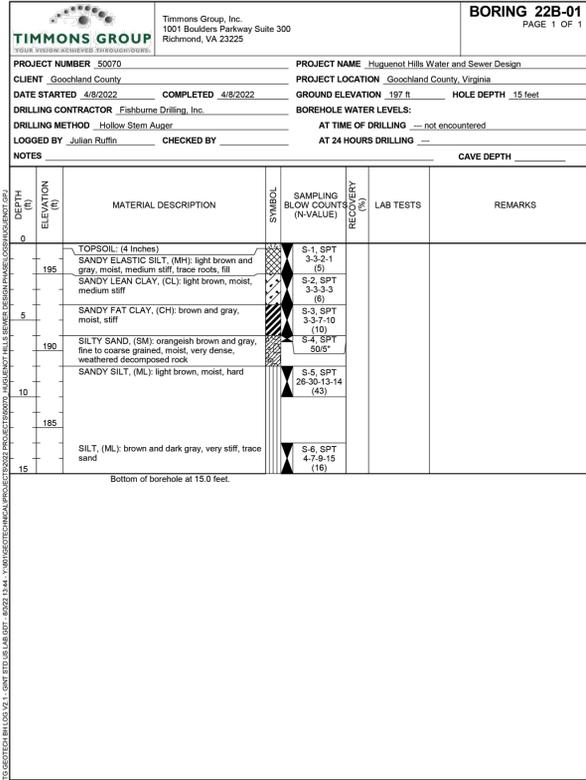
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4/12/2023	REVISED PER COUNTY AND VDOT COMMENTS
5/15/2023	BID SET
7/18/2023	ADDENDUM 1

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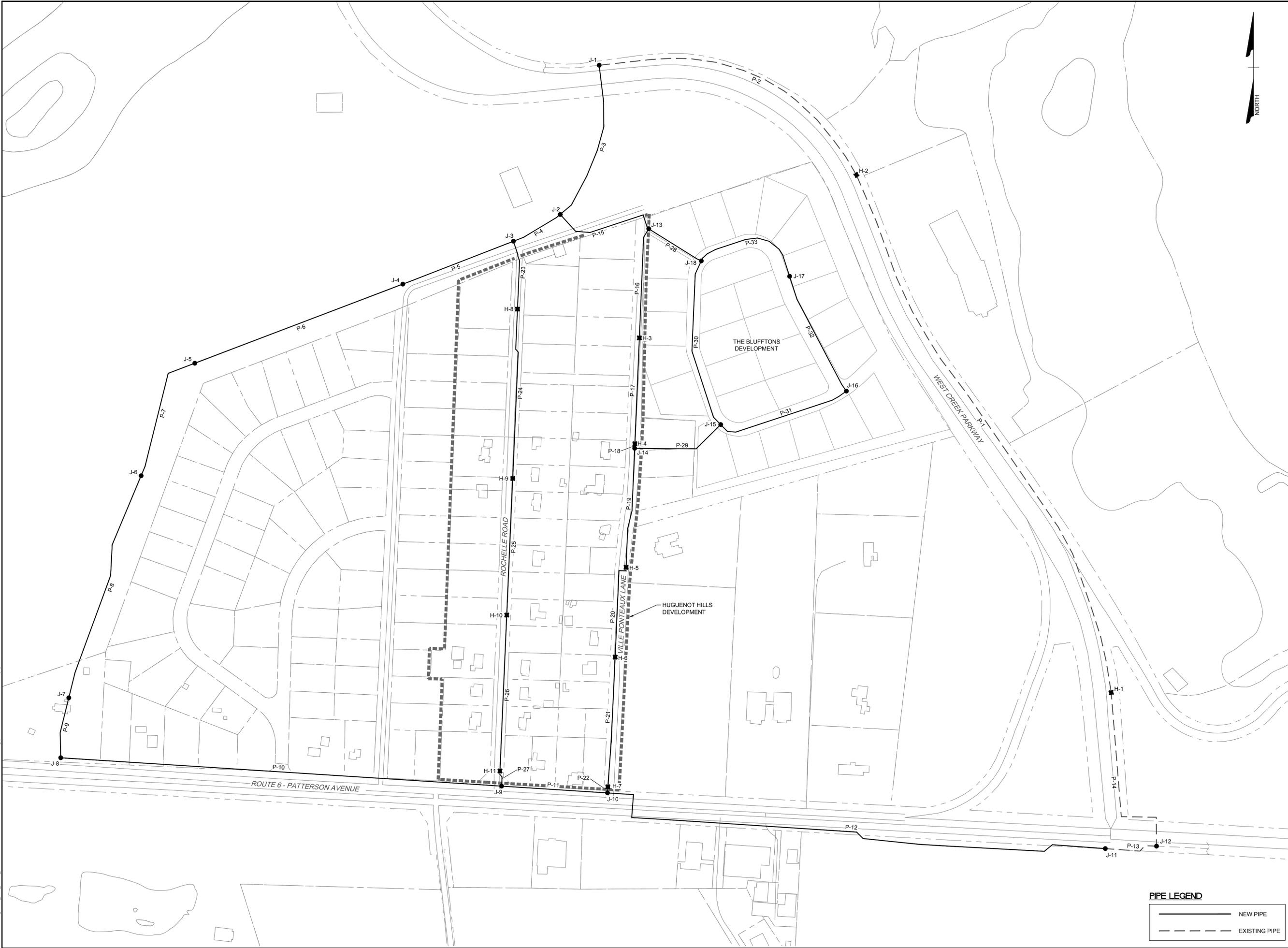
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L:\2015\07070-Huguenot_Hills_Water_Stewer\CadWater\DWG\DW1.1 WATER MODEL RESULTS.dwg | Plotted on 7/19/2023 12:12:12 PM | by Chad Valentine



PIPE LEGEND

	NEW PIPE
	EXISTING PIPE



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L. HAMILTON
 DESIGNED BY
S. HARVEY
 CHECKED BY
B. STRICKLAND

SCALE
 N.T.S.

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 GOOCHLAND COUNTY, VIRGINIA

WATER SYSTEM HYDRAULIC ANALYSIS LAYOUT

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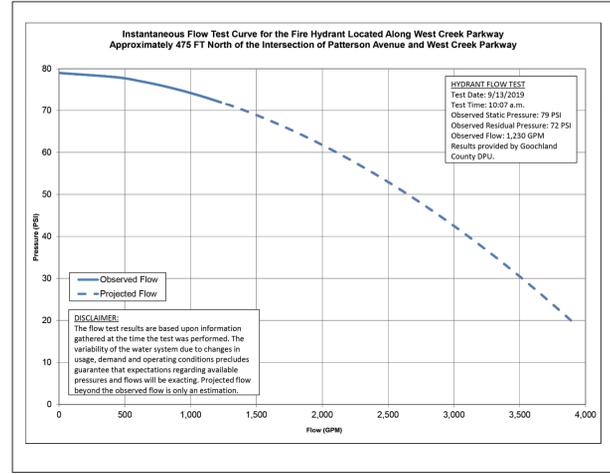
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DESIGN CRITERIA

- FLOW INFORMATION WAS OBTAINED FROM A FLOW TEST PERFORMED BY THE GOOCHLAND COUNTY DEPARTMENT OF PUBLIC UTILITIES ON 9/13/2019. THE FLOW TEST NODE IS THE EXISTING HYDRANT LOCATED ALONG WEST CREEK PARKWAY APPROXIMATELY 475 FT NORTH OF THE INTERSECTION OF ROUTE 6 - PATTERSON AVENUE AND WEST CREEK PARKWAY. THE AVAILABLE FLOW CURVE IS SHOWN ON THIS SHEET.
- SYSTEM FLOW IS REPRESENTED AT H-1 IN THE INCLUDED WATER MODEL LAYOUT.
- THIS WATER MODEL WAS PERFORMED TO EVALUATE AVAILABLE PRESSURE AND FLOW BASED ON THE INCLUDED WATER MODEL LAYOUT AND FLOW DEMAND CRITERIA.
- ALL WATERLINES WERE MODELED WITH A HAZEN-WILLIAMS ROUGHNESS COEFFICIENT OF 120.
- THE PROJECT AREA INCLUDES 60 TOTAL PARCELS. THIS HYDRAULIC ANALYSIS, HOWEVER, ONLY INCLUDES THE DEVELOPABLE 36 PARCELS WITHOUT AN EXISTING PUBLIC WATER SUPPLY CONNECTION. IT IS ASSUMED THAT THE EXISTING DEVELOPED LOTS WATER DEMANDS ARE TAKEN INTO ACCOUNT IN THE 9/13/2019 AVAILABLE FLOW CURVE PROVIDED BY GOOCHLAND COUNTY.
- THE EXISTING WATER LINE LAYOUT IS BASED ON GIS WATERLINE INFORMATION PROVIDED BY GOOCHLAND COUNTY. PROPOSED WATERLINE LAYOUT FOR THE BLUFFTONS DEVELOPMENT IS BASED ON INFORMATION PROVIDED BY GOOCHLAND COUNTY. LAYOUT OF THE 12" LINE TO THE WEST OF THE HUGUENOT HILLS DEVELOPMENT AND THE 16" LINE ALONG PATTERSON AVENUE IS BASED ON THE PRELIMINARY LAYOUT SHOWN IN THE 'OAK HILL FIRE FLOW ANALYSIS MEMORANDUM', BY DEWBERRY, DATED 11/19/2020. PROPOSED WATERLINE LAYOUT FOR THE HUGUENOT HILLS DEVELOPMENT IS BASED ON THE PRELIMINARY DESIGN BY TIMMONS GROUP.
- NODE ELEVATIONS ARE BASED ON SURVEY AND GIS CONTOUR INFORMATION PROVIDED BY GOOCHLAND COUNTY.
- THE PROPOSED SYSTEM WAS EVALUATED BASED ON MAINTAINING A MINIMUM RESIDUAL PRESSURE OF 40 PSI FOR ALL DOMESTIC SCENARIOS AND A MINIMUM RESIDUAL PRESSURE OF 20 PSI FOR ALL FIRE SCENARIOS.

AVAILABLE FLOW CURVE



FLOW DEMAND CRITERIA

- LOTS - RESIDENTIAL
 - FLOW FACTOR = 300 GPD / LOT
 - DURATION = 24 HOURS
 - AVERAGE DAILY DEMAND = 0.21 GPM / LOT
- LOTS - COMMERCIAL
 - FLOW FACTOR = 1,000 GPD / LOT
 - DURATION = 12 HOURS
 - AVERAGE DAILY DEMAND = 1.4 GPM / LOT
- AVERAGE DAILY DEMAND - HUGUENOT HILLS DEVELOPMENT
 - LOT COUNT BASED ON UNDEVELOPED PARCELS WITHOUT AN EXISTING PUBLIC WATER SUPPLY CONNECTION.
 - H-4 = 7 LOTS (RESIDENTIAL)
 - H-5 = 4 LOTS (RESIDENTIAL)
 - H-6 = 4 LOTS (RESIDENTIAL)
 - H-8 = 8 LOTS (RESIDENTIAL)
 - H-9 = 7 LOTS (RESIDENTIAL)
 - H-10 = 6 LOTS (RESIDENTIAL)
 - J-9 = 1 LOTS (COMMERCIAL)
 - J-10 = 2 LOTS (COMMERCIAL)
- AVERAGE DAILY DEMAND - THE BLUFFTONS DEVELOPMENT
 - BASED ON LAYOUT PREPARED BY TOWNES ENGINEERING
 - J-15 = 8 LOTS (RESIDENTIAL)
 - J-16 = 6 LOTS (RESIDENTIAL)
 - J-17 = 6 LOTS (RESIDENTIAL)
 - J-18 = 8 LOTS (RESIDENTIAL)
- MAXIMUM DAILY DEMAND = AVERAGE DAILY DEMAND X 1.8
- OAK HILL DEVELOPMENT
 - DEMANDS ARE BASED ON 'OAK HILL FIRE FLOW ANALYSIS MEMORANDUM', BY DEWBERRY, DATED 11/19/2020.
 - IT IS ASSUMED THAT THESE DEMANDS ARE MAXIMUM DAILY DEMANDS AND AS SUCH, WERE NOT PEAKED IN ANY SCENARIO.
 - J-4 = 108.4 GPM (COMMERCIAL DEMAND)
 - J-4 = 12.5 GPM (RESIDENTIAL DEMAND)
 - J-5 = 108.4 GPM (COMMERCIAL DEMAND)
 - J-6 = 500 GPM (COMMERCIAL DEMAND)
 - J-7 = 108 GPM (COMMERCIAL DEMAND)

CONCLUSION

- BASED ON THE INFORMATION PROVIDED, AND THE ASSUMPTIONS MADE HEREIN, THE PROPOSED SYSTEM IS ADEQUATE TO MEET THE MINIMUM RESIDUAL PRESSURE REQUIREMENTS WHILE PROVIDING THE FLOWS FOR DOMESTIC AND FIRE SCENARIOS.
- THE RESULTS PRESENTED ARE BASED UPON INFORMATION GATHERED AT THE TIME OF THIS ANALYSIS. THE VARIABILITY OF THE WATER SYSTEM DUE TO CHANGES IN USAGE, DEMAND, OPERATING CONDITIONS, AND LAYOUT PRECLUDES GUARANTEE THAT EXPECTATIONS REGARDING AVAILABLE PRESSURES AND FLOWS WILL BE EXACTING.
- IT IS ASSUMED THAT THE OFF-SITE WATER SYSTEM HAS ADEQUATE OPERATIONAL AND PERMIT CAPACITY.
- THIS HYDRAULIC ANALYSIS DOES NOT MAKE ANY STATEMENTS REGARDING THE ABILITY TO MEET ANY FIRE CODES, STANDARDS, OR REGULATIONS. IT IS A HYDRAULIC MODEL DEMONSTRATING THE FLUID MECHANICS OF THE SYSTEM. THESE RESULTS MAY BE USED BY OTHERS TO DETERMINE THE ADEQUACY OF THE SYSTEM TO MEET FIRE SAFETY REQUIREMENTS.
- THIS ANALYSIS IS INTENDED FOR MASTER PLAN USE ONLY. FIRE FLOW RESULTS SHOWN ARE REPRESENTED ON MAINLINE NODES. THIS ANALYSIS DOES NOT ASSUME ANY LOSSES FOR METERS, BACKFLOW PREVENTION OR ON-SITE PIPING AND THESE FIRE FLOWS CANNOT BE GUARANTEED ON-SITE. SEPARATE HYDRAULIC ANALYSES FOR EACH SITE SHOULD BE PERFORMED TO DETERMINE AVAILABLE FLOWS TO PROPOSED FACILITIES.

RESIDUAL PRESSURE RESULTS (PSI)

FLOW SCENARIO	JUNCTIONS																		HYDRANTS										
	J-1	J-2	J-3	J-4	J-5	J-6	J-7	J-8	J-9	J-10	J-11	J-12	J-13	J-14	J-15	J-16	J-17	J-18	H-1	H-2	H-3	H-4	H-5	H-6	H-7	H-8	H-9	H-10	H-11
STATIC	180.8	200.0	199.3	177.2	191.3	184.1	182.8	179.7	212.0	209.7	176.6	180.0	189.6	204.3	189.4	192.0	176.6	180.0	154.6	168.1	197.1	204.2	194.3	197.1	208.3	193.6	207.9	201.9	210.2
AVERAGE DAILY DEMAND (ADD)	67.6	59.3	59.6	69.2	63.1	66.2	66.8	68.1	54.1	55.1	69.4	68.0	63.8	57.5	63.9	62.8	69.4	79.0	73.1	60.6	57.5	61.8	60.6	55.7	62.1	55.9	58.5	54.9	
MAXIMUM DAILY DEMAND (MDD)	63.6	55.2	55.4	64.9	58.7	61.8	62.5	63.9	50.0	51.0	65.6	64.1	59.7	53.4	59.8	58.6	65.3	63.9	75.4	69.2	56.5	53.4	57.7	56.5	51.7	57.9	51.7	54.4	50.8
MDD + FIRE FLOW*	63.4	55.0	55.3	64.8	58.6	61.7	62.4	63.7	49.9	50.9	65.4	64.0	59.6	53.2	59.6	58.5	65.2	63.7	75.3	69.1	56.3	53.2	57.6	56.4	51.5	57.8	51.6	54.2	50.7
MINIMUM PRESSURE DURING FIRE FLOW	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	30.0	28.2	26.3	25.3	27.2	27.1	27.0	26.7	23.2	26.5	26.7
NODE OF MINIMUM PRESSURE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	J-9	J-9	H-4	H-4	J-14	J-9	J-9	H-9	H-9	H-9	H-11

*FIRE FLOW = 1,500 GPM AT EACH HYDRANT, FLOWED NON-SIMULTANEOUSLY, AT SYSTEM MINIMUM RESIDUAL PRESSURE LIMIT OF 20 PSI.

PIPE REPORT

LABEL	LENGTH (FT)	DIA (IN.)
P-1	2,126	12
P-2	1,110	12
P-3	588	12
P-4	198	12
P-5	434	12
P-6	814	12
P-7	490	12
P-8	857	12
P-9	222	12
P-10	1,617	16
P-11	389	16
P-12	1,935	16
P-13	196	16
P-14	687	12
P-15	397	8
P-16	403	8
P-17	386	8
P-18	17	8
P-19	436	8
P-20	354	8
P-21	473	8
P-22	22	8
P-23	251	8
P-24	621	8
P-25	498	8
P-26	569	8
P-27	58	8
P-28	225	8
P-29	351	8
P-30	625	6
P-31	499	8
P-32	468	8
P-33	426	8



THIS DRAWING PREPARED AT THE
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YOUR VISION ACHIEVED THROUGH OURS.

DATE	REVISION DESCRIPTION
12/16/2022	REVISED PER COUNTY COMMENTS
4/12/2023	REVISED PER COUNTY AND VDOT COMMENTS
5/15/2023	BID SET
7/18/2023	ADDENDUM 1

10/21/2022
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L. HAMILTON
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B. STRICKLAND
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N.T.S.

TIMMONS GROUP

HUGUENOT HILLS WATER AND SEWER IMPROVEMENTS
 GOOCHLAND COUNTY, VIRGINIA
 WATER SYSTEM HYDRAULIC ANALYSIS RESULTS

JOB NO.
50070
 SHEET NO.
W1.1