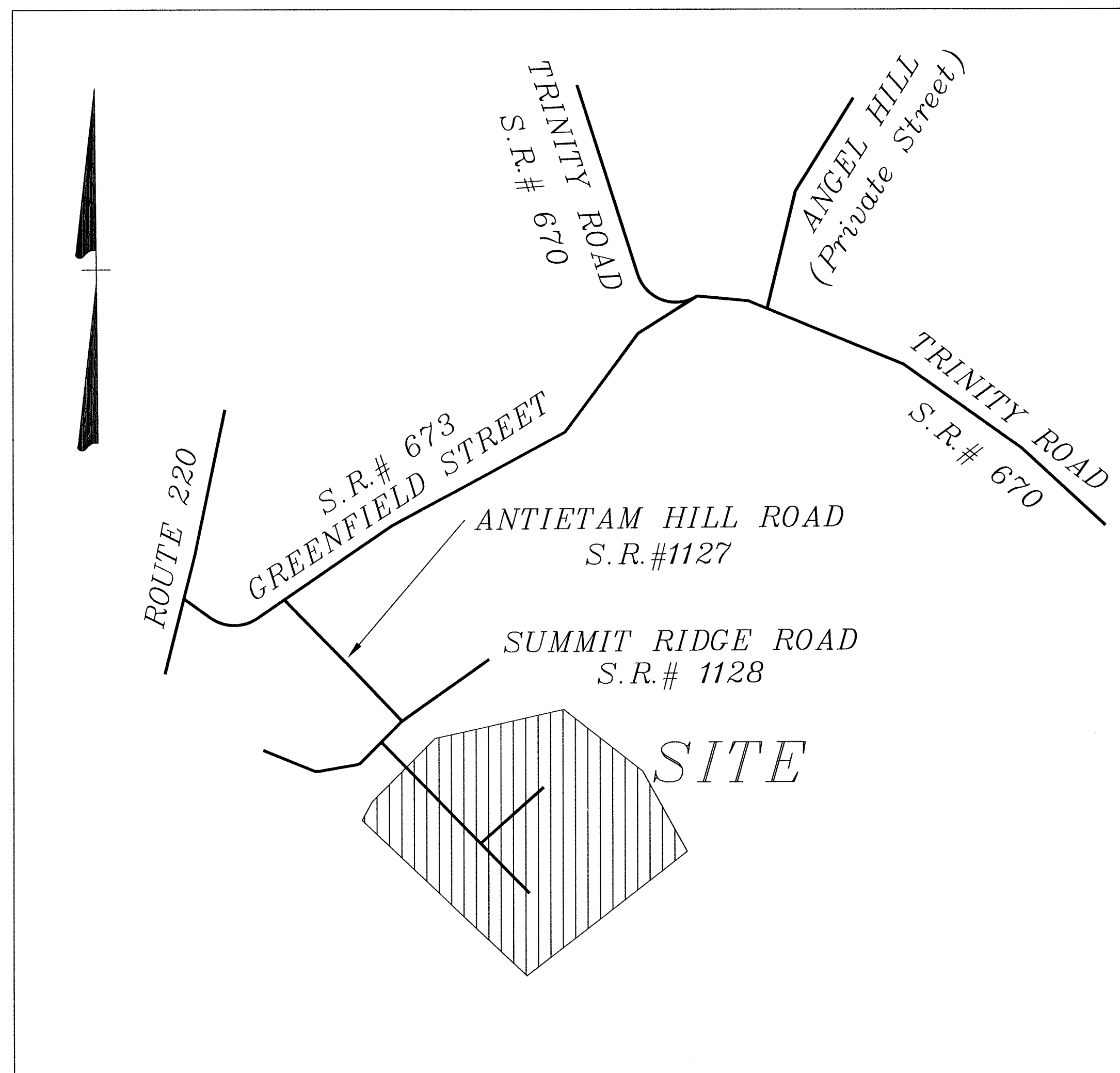


# DEVELOPMENT PLANS

## ASHLEY PLANTATION – SECTION 6

### AMSTERDAM MAGISTERIAL DISTRICT

### BOTETOURT COUNTY, VIRGINIA



*S & R DEVELOPERS, INC.*  
*P.O. BOX 950*  
*DALEVILLE, VA 24083*  
*PHONE: (540) 293-8575*

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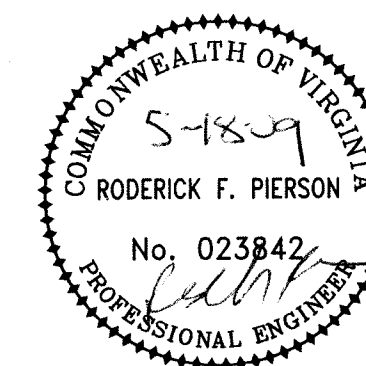
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2. ROADWAY DETAIL SHEET
3. PLAN SHEET
4. ROADWAY PROFILES – MAIN ROAD
5. SIDE ROAD PROFILES & CROSS- SECTIONS
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7. SEWERLINE PROFILES
8. N/A
9. FORCEMAIN PROFILES
10. N/A
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12. N/A
13. N/A
14. N/A
15. N/A
- 15B. N/A
16. N/A
17. N/A
18. N/A

#### UTILITIES OWNERSHIP:

WATER: PRIVATE (CENTRAL WATER COMPANY)  
 SEWER: BOTETOURT COUNTY

REV	DATE	DESCRIPTION
1	09/27/06	PER COUNTY & VDOT COMMENTS
2	11/01/06	PER COUNTY & VDOT COMMENTS
3	12/27/06	PER COUNTY & VDOT COMMENTS
4	06/08/07	SEWERLINE AND WATERLINE PROFILE

PIERSON ENGINEERING & SURVEYING  
 RODERICK F. PIERSON, LLS, PE  
 P.O. BOX 311  
 DALEVILLE, VA 24083  
 540.966.3027  
 540.966.5906 fax



AS-BUILTS  
 05-15-09

VIRGINIA DEPARTMENT OF TRANSPORTATION NOTE:

1. Quality Control

Streets to be graded and paved and all structural components erected within the proposed rights of way shall be constructed in accordance with the Virginia Department of Transportation Road and Bridge Specifications dated January 2001, Road and Bridge Standards dated January 1, 2002, and The Work Area Protection Manual dated January 1, 1998, Botetourt County. All materials used shall be tested in accordance with standard policies. The developer must contact the office of the Resident Engineer prior to beginning of any construction at which time an Inspection and Testing Procedure Policy will be drawn. The developer will produce test reports from approved independent laboratories at the developer's expense.

The subgrade must be approved by Virginia Department of Transportation prior to placement of the base. Base must be approved by Virginia Department of Transportation for depth, template and compaction before surface is applied.

2. Utilities

All necessary utility laterals along with provisions for conduits (I.E. water, sewer, storm, gas and telephone) will be constructed prior to placement of base material.

Gas or petroleum transmission lines will not be permitted within the pavement or shoulder element (back of curb to back of curb) of the development. Service laterals crossing and pipe lines located outside the pavement but inside the right of way will be constructed in conformity with ASA B 31.8 Specifications and Safety Regulations. Distribution lines with pressure less than 120 lbs. are unaffected by the above.

Permits will be required for all utilities within street right of way prior to acceptance into the secondary highway system.

Any easements granted to a utility company for placement of power, telephone, etc. must be released prior to acceptance.

3. Private Entrances

Modified CG-9D gutter will be provided at all entrances to private lots where standard CG-6 curb and gutter is approved for use.

Permits will be required for all private entrances constructed on street rights of way prior to acceptance into the secondary highway system.

4. Erosion Control and Landscaping

Care must be taken during construction to prevent erosion, dust and mud from damaging adjacent property, clogging ditches, tracking public streets and otherwise creating a public or private nuisance to surrounding areas.

The entire construction area including ditches, channels, back of curbs and or pavement are to be backfilled and seeded at the earliest possible time after final grading.

Drainage easements must be defined by excavated ditches or channels for their full length to well defined existing natural watercourses.

This road will be reviewed during construction for the need of paved gutters. If erosion is encountered in any drainage easement, it will be the responsibility of the developer to sod, rip rap, grout, pave, or to do whatever is necessary to correct the problem.

All vegetation and overburden to be removed form shoulder to shoulder prior to the conditioning (cutting and/or preparation) of the subgrade.

5. Intersection Pavement Radius

Minimum pavement radius of 25 feet is required at all street intersections. If the proposed streets are to be traveled by school bus, the return radii must be increased to 50' minimum.

6. Connections to State - Maintained Roads

While these plans have been approved, such approval does not exempt connections with existing state-maintained roads from critical review at the time permit applications are made. This is necessary in order that the prevailing conditions be taken into consideration regarding safety accompaniments such as turning lanes.

7. Guardrails

Standard guardrail with safety end sections may be required on fills as deemed necessary by the VDOT Resident Engineer. After completion of rough grading operations, the office of the Resident Engineer, Virginia Department of Transportation, shall be notified so that a field review may be made of the proposed locations.

Where guardrails are to be installed the shoulder width shall be increased in accordance with VDOT Road and Bridge Standards.

8. Storm Drainage

Field review will be made by the VDOT Resident Engineer during construction to determine the need and limits of paved ditches and/or ditch stabilization treatments, and to determine the need and limits of additional easements. All drainage easements must be cut and made to function to a natural watercourse. Any erosion problems encountered in an easement must be corrected by whatever means necessary prior to subdivision acceptance.

Ditch slopes are to be four to one (4:1) for shoulder widths of six feet (6') or greater and three to one (3:1) for shoulder widths of four feet (4') or five feet (5'), unless otherwise specified in the plans.

9. Entrance Permit

Contractor shall obtain entrance permit to the existing Virginia Department of Transportation Right of Way from Resident Engineer prior to road construction.

10. Inspection

An inspector will not be furnished except for periodic progress inspection, the above mentioned field reviews and for required stone depths. The developer will be required to post a surety to guarantee the road free of defects for one year after acceptance by the Department of Transportation.

11. Street Maintenance

The streets must be properly maintained until acceptance. At such time as all requirements have been met for acceptance, another inspection will be made to determine that the street has been properly maintained.

12. Underground Utilities

Contractor shall verify location and elevation of all underground utilities shown on the plans in areas of construction prior to starting work by contacting Miss Utility. Contact site engineer immediately if location or elevation is different from that shown on the plans. If there appears to be a conflict, and upon discovery of any utility not shown on the plans call "Miss Utility" of central Virginia at 1-800-552-7001.

13. Revisions of Specifications and Standards

Approval of these plans will be based on specifications and standards in effect at the time of approval and will be subject, until completion of the roadway and acceptance by the Department, to future revisions, of the Specifications and Standards.

GENERAL NOTES FOR SUBDIVISION PLANS

VDOT General Notes

- V1. All work on this project shall conform to the latest editions of the Virginia Department of Transportation (VDOT) Road and Bridge Specifications, and Standards, The Virginia Erosion and Sediment Control Regulations and any other state, federal or local regulations applicable. In the event of conflict between any of these standards, specifications or plans, the most stringent shall govern.
- V2. All construction shall comply with the latest U.S. Department of Labor Occupational Safety & Health Administration and VOSH Rules & Regulations.
- V3. When working on VDOT right or way, all traffic control, whether permanent or temporary, shall be in accordance with the current edition of VDOT's work area protection manual. Furthermore, all traffic control flaggers must be certified in accordance with VDOT's January, 1994 (or latest edition of) Road & Bridge Specifications, Section 104.04-C.
- V4. Design features relating to construction or to regulation, control and safety of traffic may be subject to change as deemed necessary by VDOT.
- V5. Prior to initiation of work, Contractor shall be responsible for acquiring all necessary VDOT land use permits for any work on VDOT right of way.
- V6. If required by the local VDOT Residency Office, a preconstruction conference must be arranged and held by the engineer and/or developer with the attendance of the contractor, various County agencies, utility companies and VDOT prior to initiation of work.
- V7. Contractor shall notify the local VDOT Residency office when work is to begin or cease for any undetermined length of time. VDOT will also require 48 hours notice for any inspection.
- V8. The Contractor will be responsible for maintaining adequate access to the project from the adjacent public roadway through construction and maintenance of a construction entrance in accordance with the Virginia Erosion & Sediment Control Handbook, Sec. 3.02. Furthermore, access to other properties affected by this project shall be maintained through construction.
- V9. Contractor shall ensure adequate drainage is achieved and maintained on the site during and at the end of construction.
- V10. All water and sewer lines within existing or proposed VDOT right of way are to have minimum 36" cover and, to be installed under roadway drainage facilities.
- V11. Any unusual subsurface conditions encountered during the course of construction shall be immediately brought to the attention of the engineer and VDOT. Work shall cease in that vicinity until an adequate design can be determined by the engineer and approved by VDOT.
- V12. All undercut areas and borrow material shall be inspected and approved by VDOT Inspection prior to placement of fill.
- V13. All roadway fill, base, subsurface material and backfill of utility/storm sewer trenches shall be compacted in 6" lifts to 95% of theoretical maximum density as determined by ASSHTO T-99 Method A, within plus or minus 2% of optimum moisture for the full width of any dedicated street right-of-way. At the direction of VDOT Inspector density tests performed by a qualified independent agency shall be conducted as required in the VDOT Road and Bridge Specifications. A copy of all tests shall be submitted to VDOT prior to final VDOT approval.
- V14. VDOT Standard CD and UD underdrains shall be installed where indicated on these plans and further where determined necessary by VDOT Inspector.
- V15. The installation of any entrances and mailboxes within any dedicated street right-of-way shall meet VDOT minimum design standards and is the developer's responsibility.
- V16. If required by the local VDOT Residency Office, copies of all invoices for materials within any dedicated street right-of-way must be provided to the VDOT Inspector prior to acceptance of work. Unit and total prices may be obscured.
- V17. Prior to acceptance by VDOT of any streets, any required street signage and/or pavement markings must be installed by the developer or, at VDOT's discretion, by VDOT on an account receivable basis.
- V18. Any deviations between the proposed plans and as-built conditions may require additional drainage structures and easements.

DATE: 04/18/05

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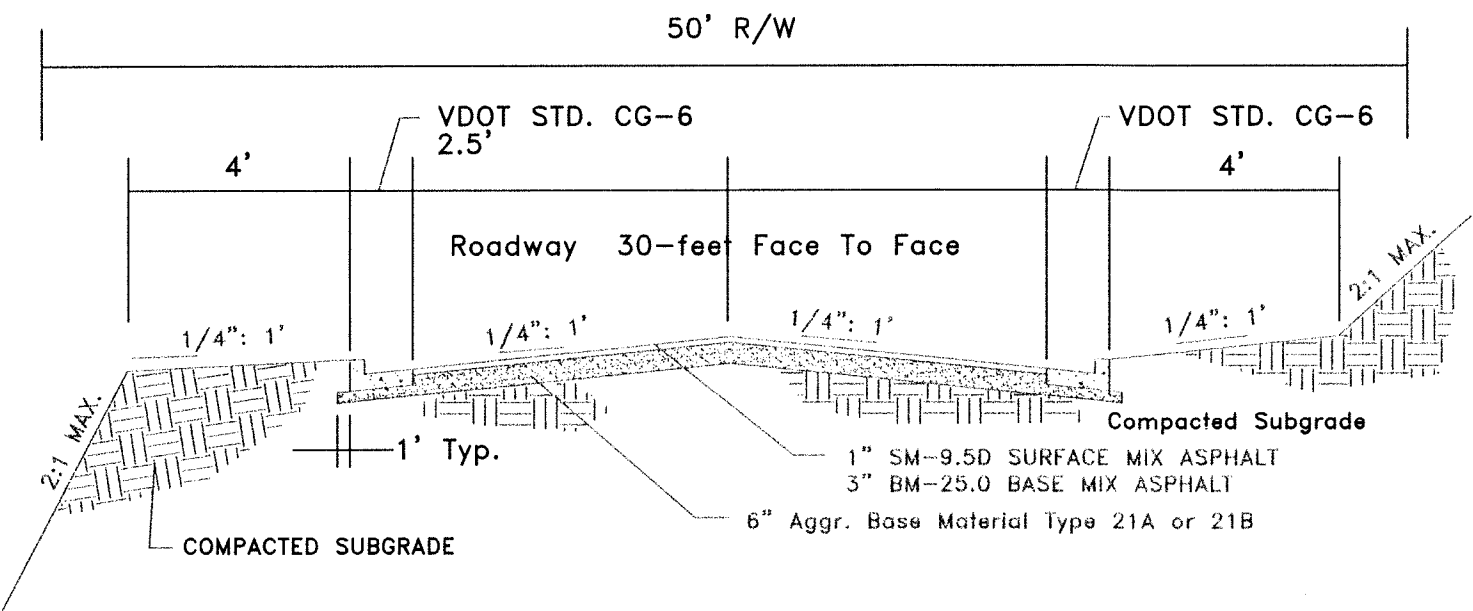
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DEVELOPMENT PLANS  
FOR  
ASHLEY PLANTATION SECTION 6  
BOTETOURT COUNTY, VIRGINIA

ROADWAY  
SPECIFICATIONS

COMMONWEALTH OF VIRGINIA  
5-18-05  
RODERICK F. PIERSON  
No. 023842  
PROFESSIONAL ENGINEER  
COMMISSION  
R200548  
SHEET  
2



Roadway Typical Section  
Not To Scale

THE PRELIMINARY PAVEMENT DESIGNS SHOWN ARE BASED ON A PREDICTED SUB-GRADE CBR VALUE OF 4.0 AND WITH A RESILIENCY FACTOR (RF) OF 1.5 AS SHOWN IN APPENDIX I OF THE 2000 VIRGINIA DEPARTMENT OF TRANSPORTATION PAVEMENT DESIGN GUIDE FOR SUBDIVISION AND SECONDARY ROAD. THE SUB-GRADE SOIL IS TO BE TESTED BY AN INDEPENDENT LABORATORY AND THE RESULTS SUBMITTED TO THE VIRGINIA DEPARTMENT OF TRANSPORTATION PRIOR TO BASE CONSTRUCTION. SHOULD THE SUB-GRADE CBR VALUE AND/OR RF VALUE BE LESS THAN THE PREDICTED VALUES, ADDITIONAL PAVEMENT MATERIAL MAY BE REQUIRED. ALL PAVEMENT DESIGNS SHALL BE SUBMITTED TO VDOT FOR REVIEW AND APPROVAL.

ALL PAVEMENT ITEMS SHALL MEET 2000 VDOT PAVEMENT DESIGN GUIDE FOR SUBDIVISION AND SECONDARY ROADS.

INSTALLATION OF ALL CULVERTS, DITCHES AND STORM-SEWER SYSTEMS LOCATED WITHIN VDOT RIGHT-OF-WAY AND EASEMENTS SHALL CONFORM TO THE 2001 VDOT ROAD AND BRIDGE STANDARDS.

A FIELD REVIEW WILL BE MADE DURING CONSTRUCTION TO DETERMINE THE NEED AND LIMITS OF PAVED DITCH, EC-2 AND/OR EC-3.

IF SEDIMENT IS LOST FROM THE SITE AND COLLECTS WITHIN THE VDOT RIGHT-OF-WAY IT WILL BE THE DEVELOPERS RESPONSIBILITY TO REMOVE THE SEDIMENT AND/OR CLEAN OUT

ALL DRAINAGE WAYS SHALL BE MADE TO FUNCTION.

THE DEVELOPER MUST SUBMIT THE CBR TESTS TO DETERMINE ACTUAL PAVEMENT STRUCTURE.

PAVEMENT DESIGN WILL BE REVISED AFTER THE RESULTS OF CBR TESTING ARE OBTAINED.

ALL DITCHES, SWALES, NATURAL WATERCOURSES DOWNSTREAM OF THIS PROJECT NEED TO BE FIELD REVIEWED DURING AND AFTER CONSTRUCTION TO ENSURE COMPLIANCE TO DCR'S MS-19. IF EROSION OR SCOUR IS OCCURRING AND IF SUCH IS FOUND, TO DETERMINE APPROPRIATE REMEDIAL CORRECTIVE MEASURES. THE DEVELOPER SHALL BE RESPONSIBLE FOR ALL CORRECTIVE MEASURES.

A FIELD REVIEW WILL BE MADE OF THE DEVELOPMENT'S ROADWAY DITCH LINE DURING AND AFTER CONSTRUCTION TO ENSURE THAT NO CONCENTRATED RUNOFF IS BEING CONVEYED ACROSS FILL MATERIAL. IF IT IS FOUND THAT CONCENTRATED RUNOFF IS BEING CONVEYED ACROSS FILL MATERIAL, THE DITCH LINE MUST BE LINED WITH RIP RAP TO PREVENT FUTURE EROSION SCOUR PROBLEMS.

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05-15-09



DATE: 06/06

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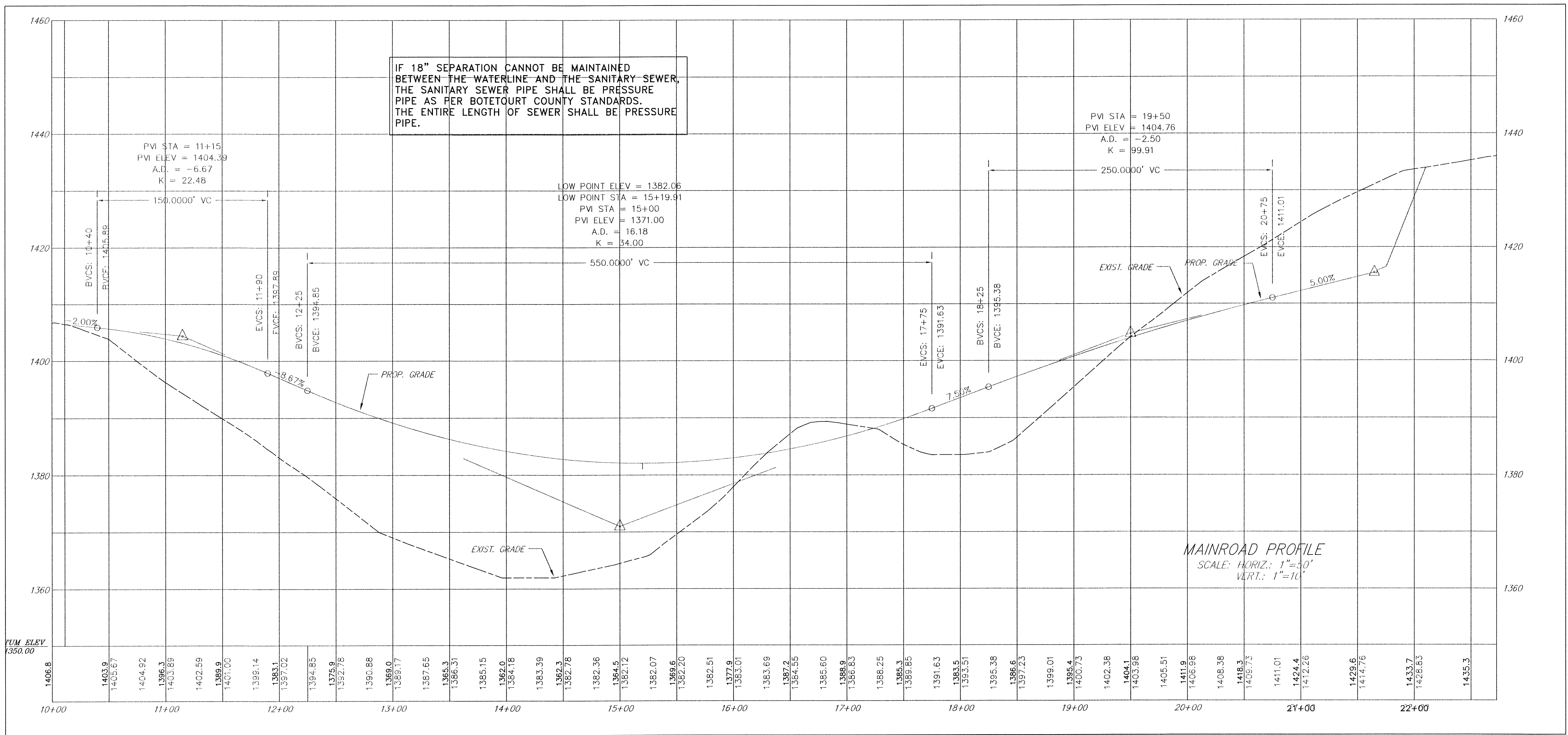
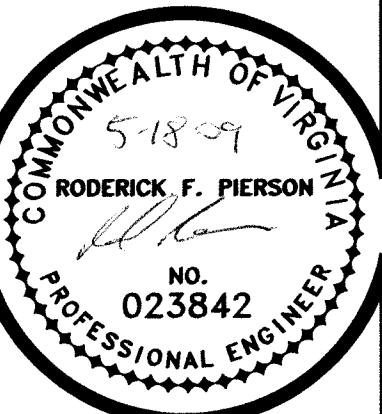
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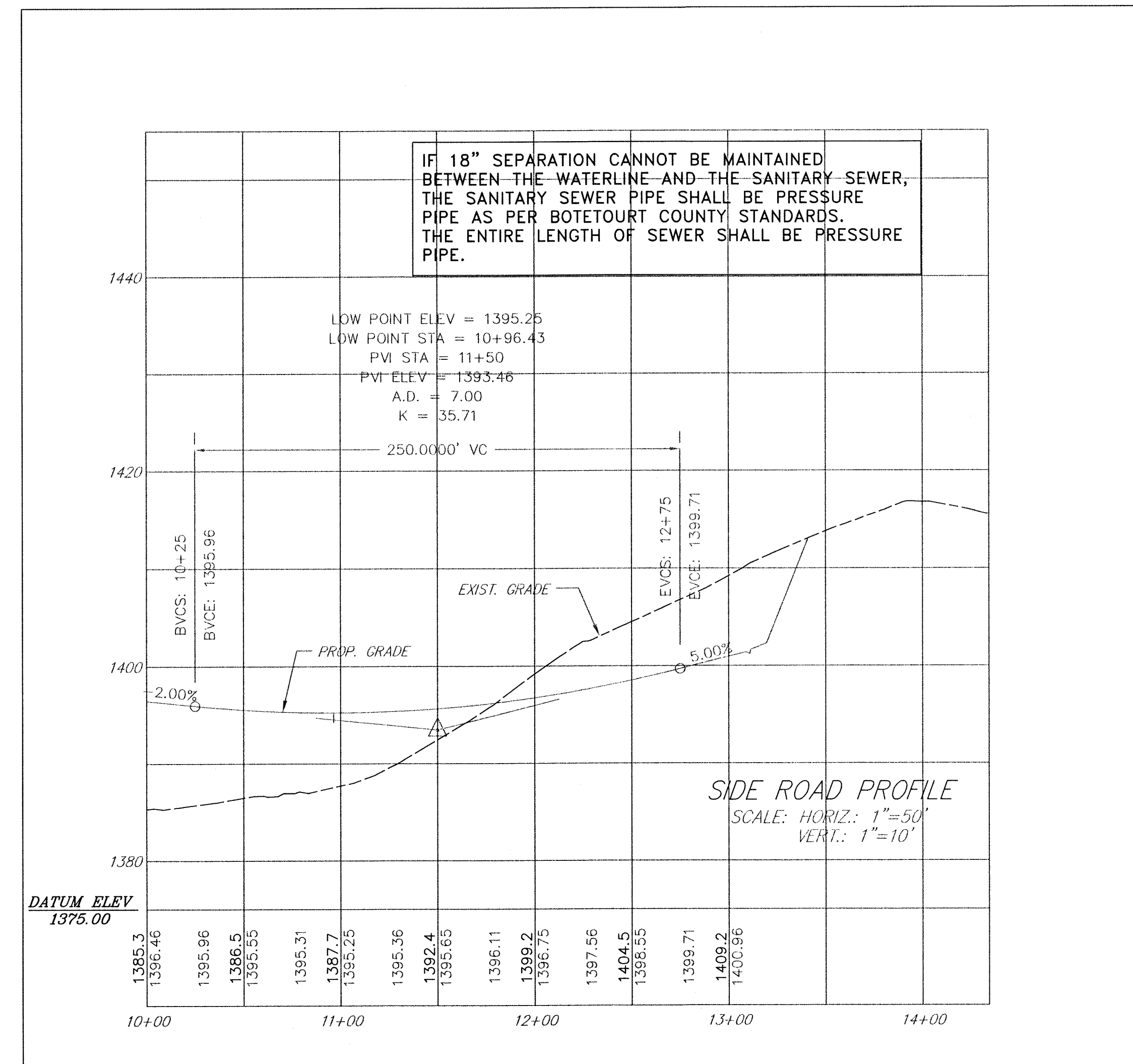
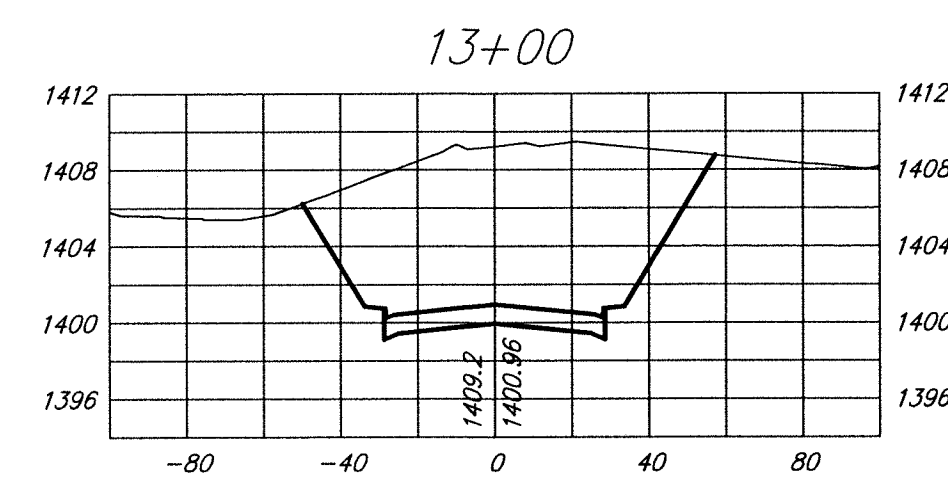
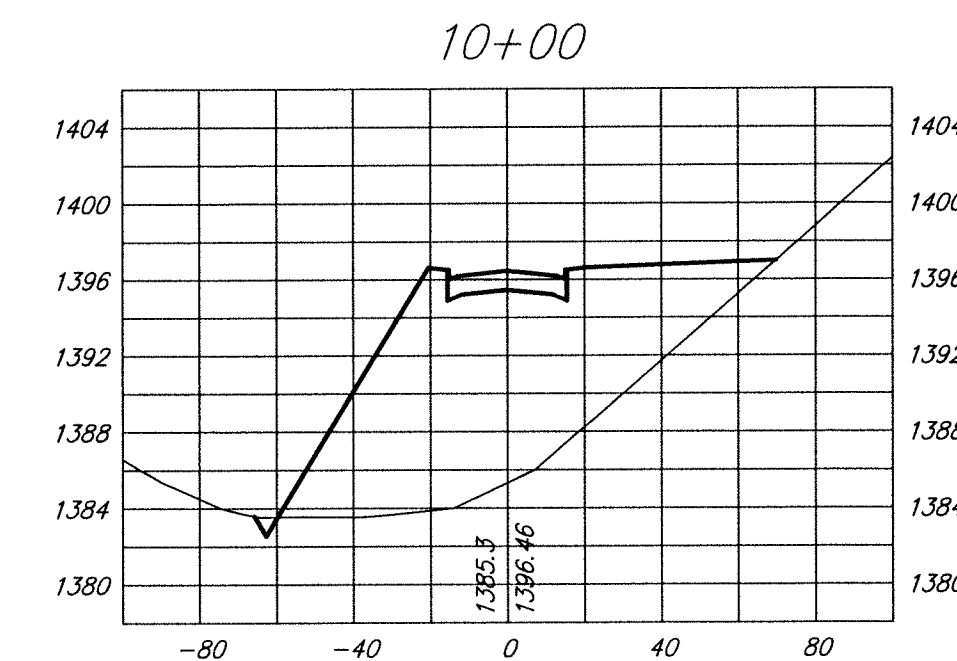
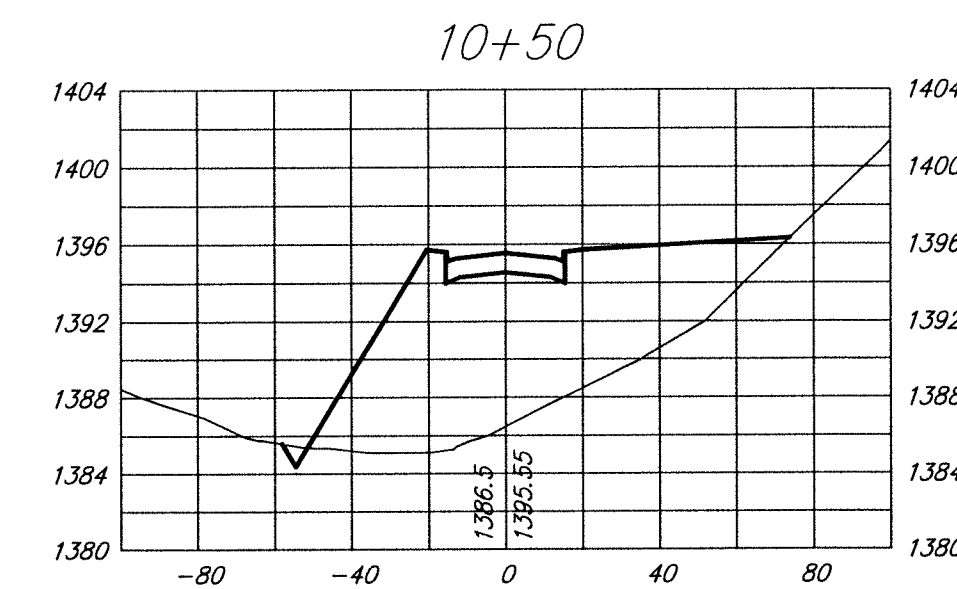
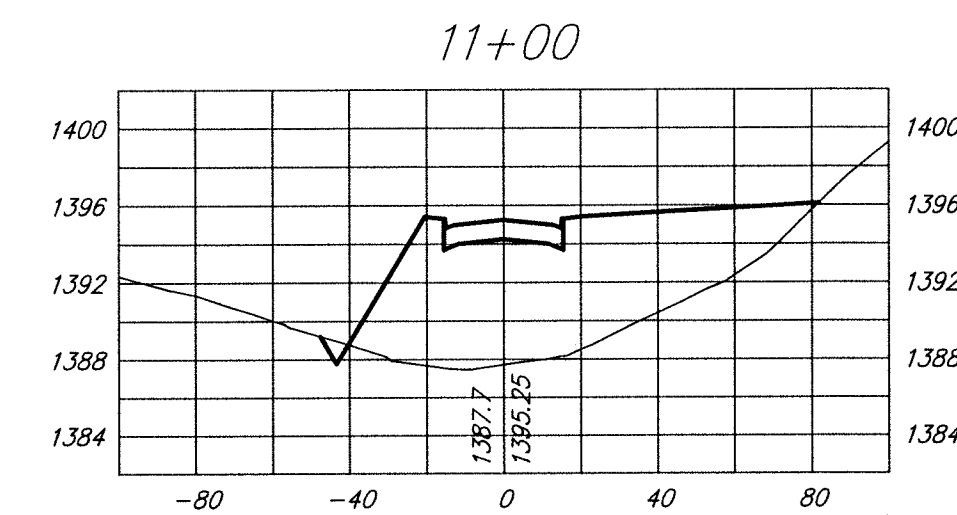
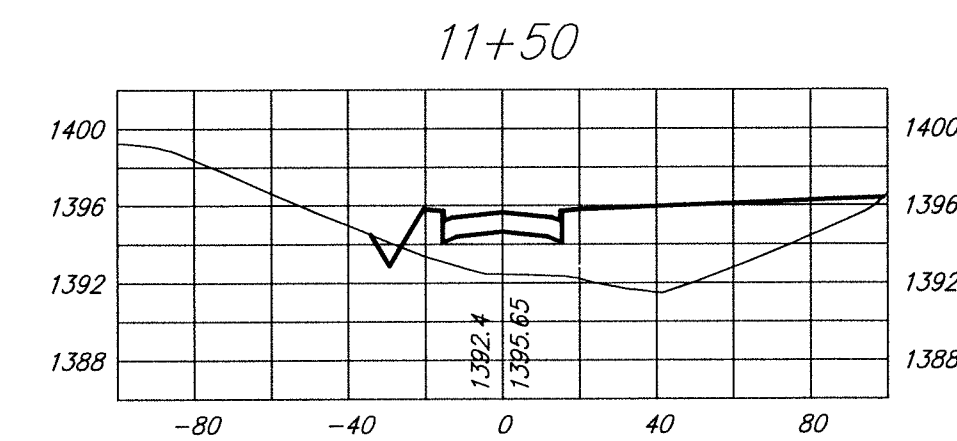
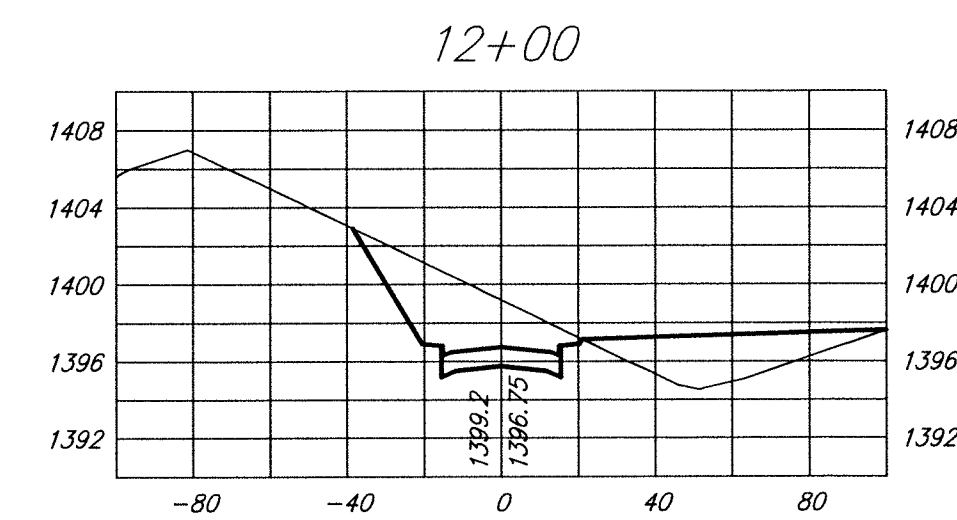
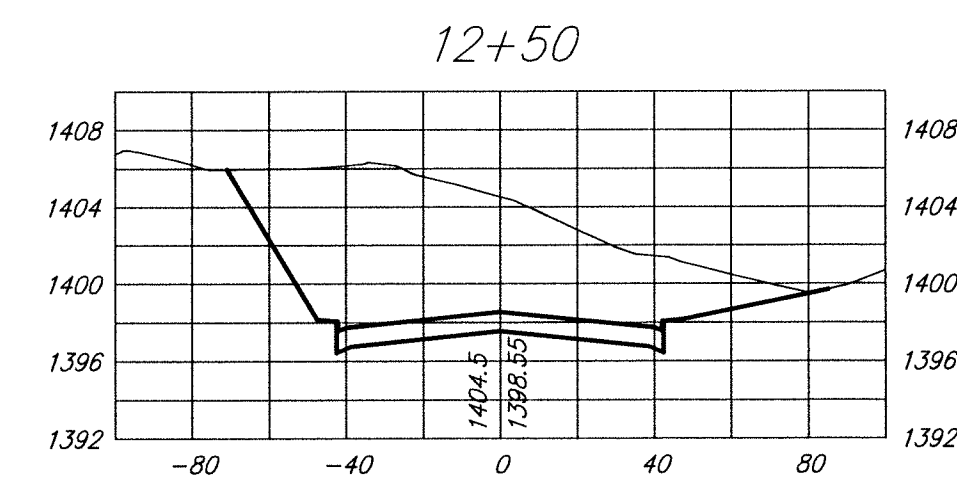
DEVELOPMENT PLANS  
 FOR  
 ASHLEY PLANTATION SECTION 6  
 BOTETOURT COUNTY, VIRGINIA

PROFILES





# SIDE ROAD



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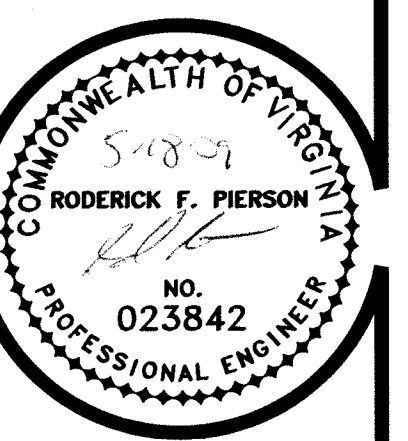
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DEVELOPMENT PLANS  
FOR  
ASHLEY PLANTATION SECTION 6  
BOTETOURT COUNTY, VIRGINIA

SIDE ROAD  
PROFILES  
AND  
CROSS-SECTIONS



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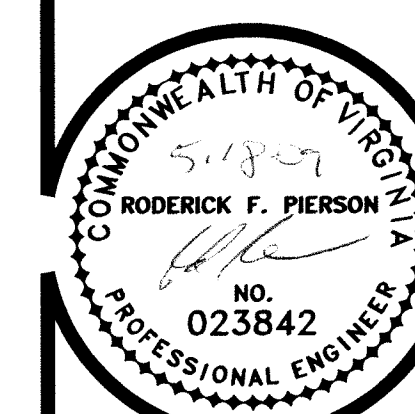
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DEVELOP MET PLANS  
FOR  
ASHLEY PLANTATION SECTION 6  
BOTETOURT COUNTY, VIRGINIA

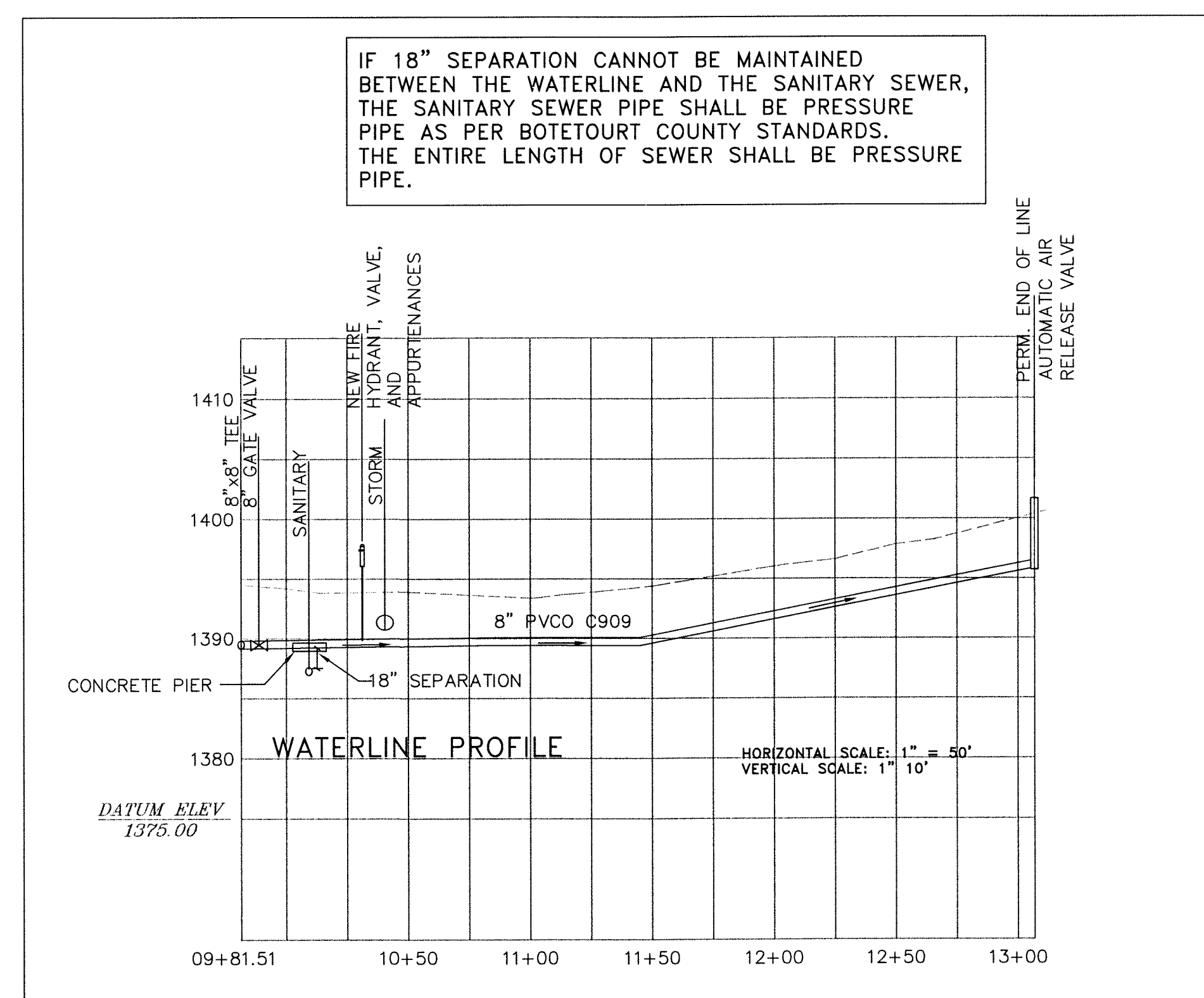
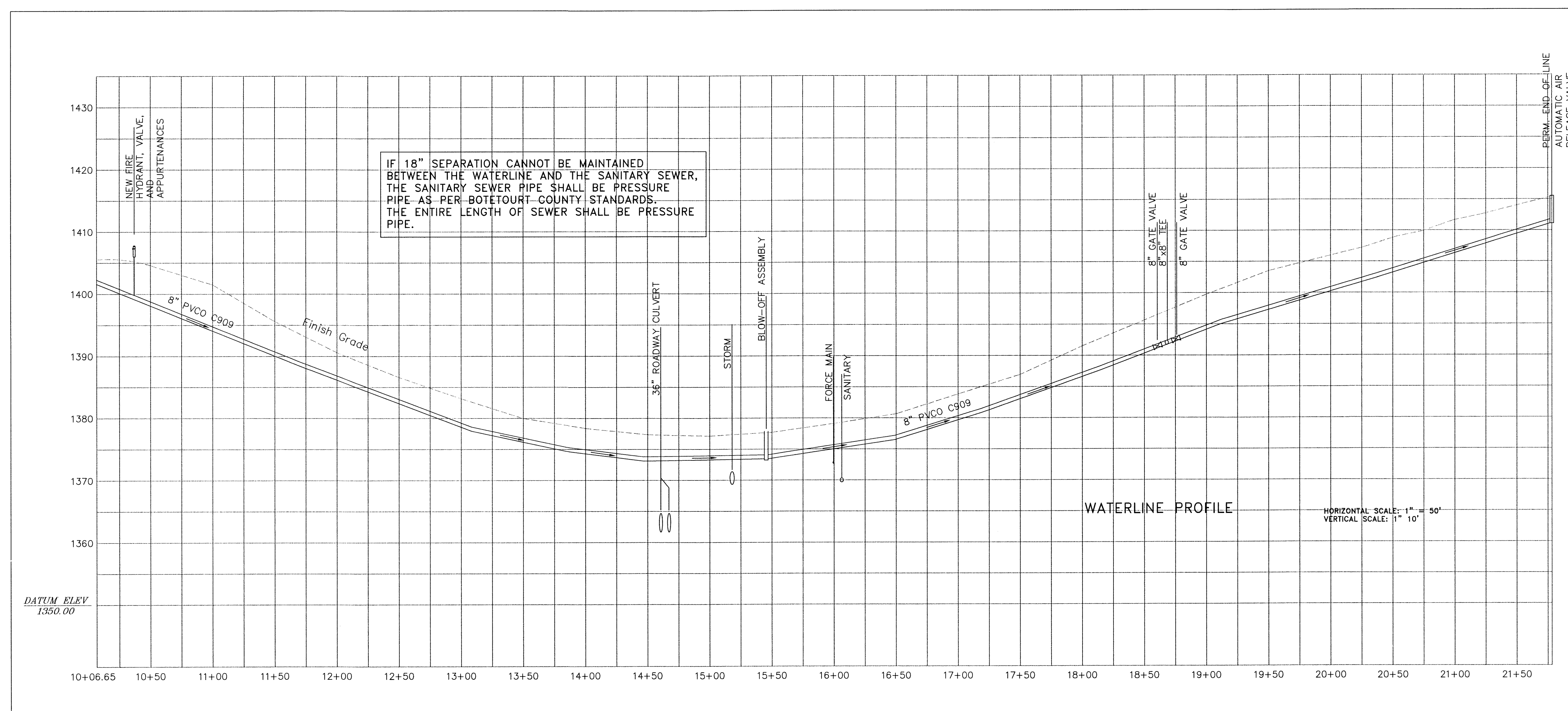
WATERLINE  
PROFILES



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R200548

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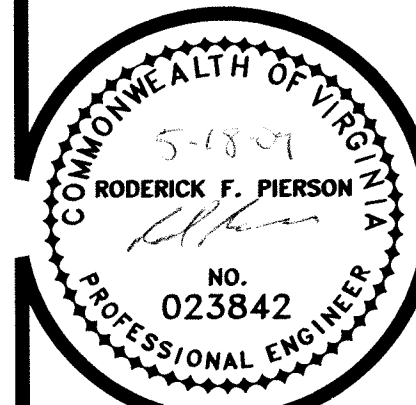
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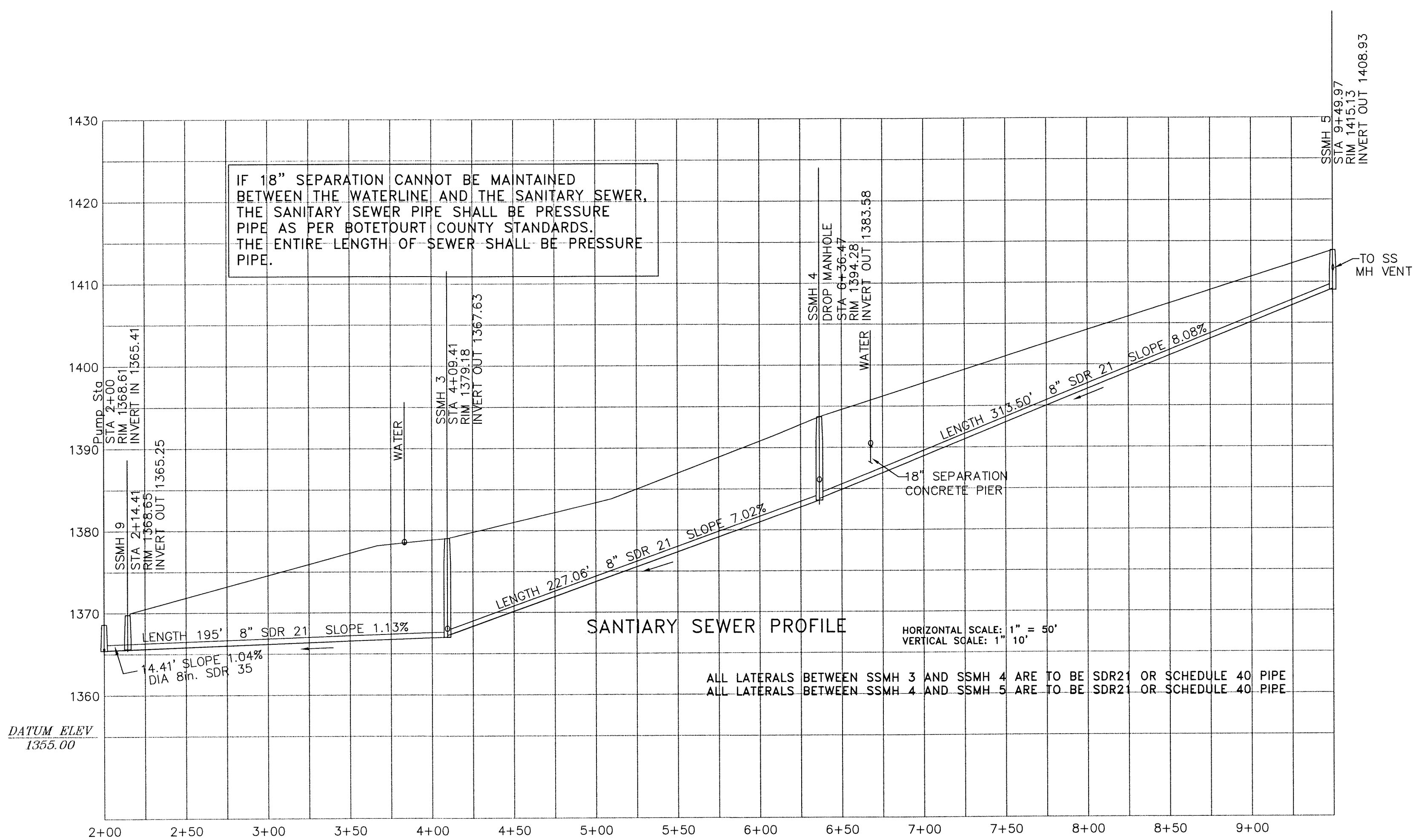
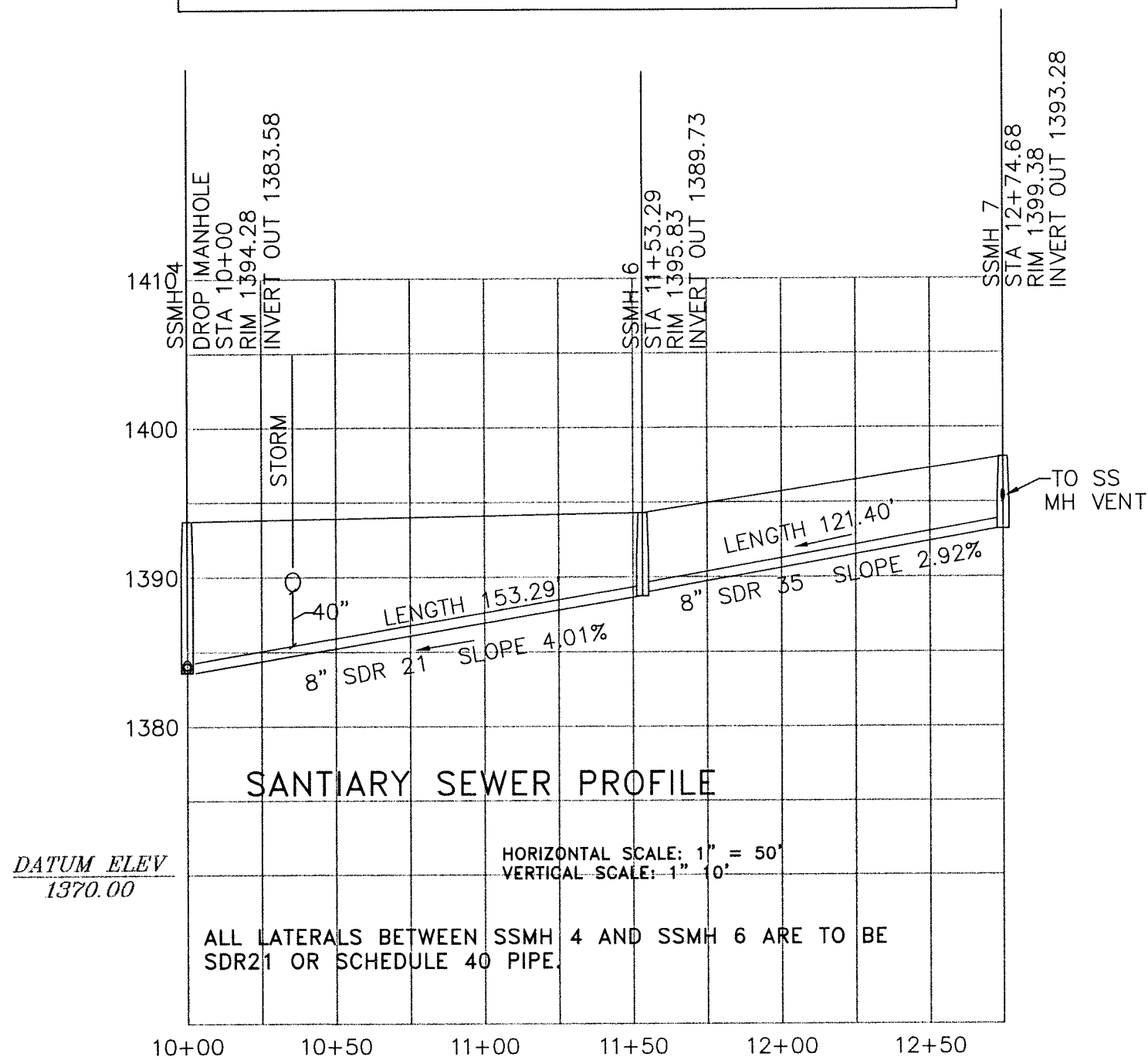
DEVELOP MET PLANS  
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BOTETOURT COUNTY, VIRGINIA

SEWERLINE  
PROFILES

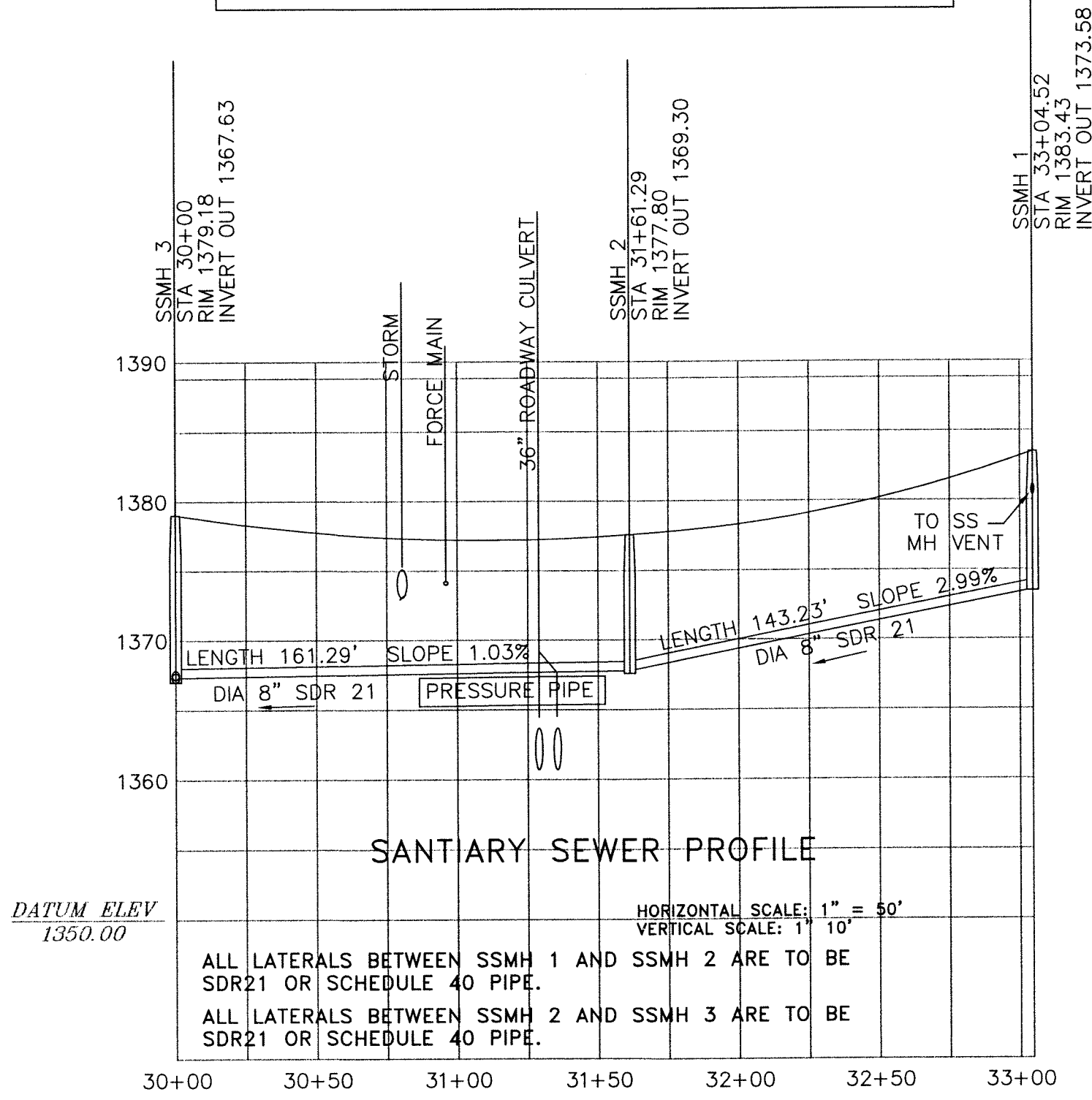


COMMISSION  
R200548  
SHEET  
7

IF 18" SEPARATION CANNOT BE MAINTAINED  
BETWEEN THE WATERLINE AND THE SANITARY SEWER,  
THE SANITARY SEWER PIPE SHALL BE PRESSURE  
PIPE AS PER BOTETOURT COUNTY STANDARDS.  
THE ENTIRE LENGTH OF SEWER SHALL BE PRESSURE  
PIPE.



IF 18" SEPARATION CANNOT BE MAINTAINED  
BETWEEN THE WATERLINE AND THE SANITARY SEWER,  
THE SANITARY SEWER PIPE SHALL BE PRESSURE  
PIPE AS PER BOTETOURT COUNTY STANDARDS.  
THE ENTIRE LENGTH OF SEWER SHALL BE PRESSURE  
PIPE.



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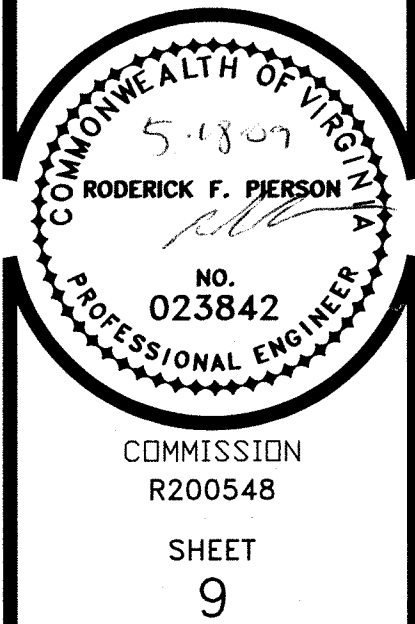
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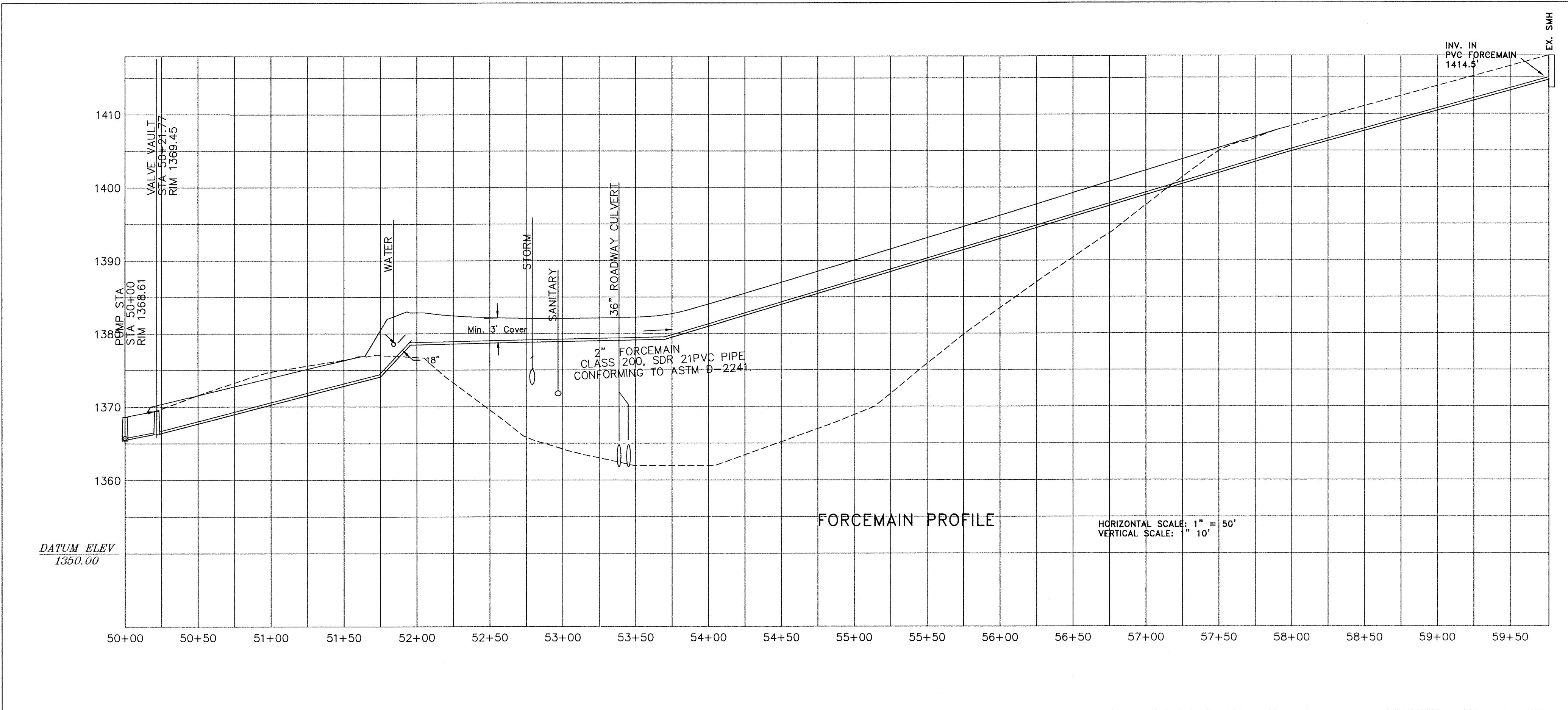
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DEVELOPMET PLANS  
FOR  
ASHLEY PLANTATION SECTION 6  
BOTETOURT COUNTY, VIRGINIA

FORCEMAIN  
PROFILES



AS-BUILTS  
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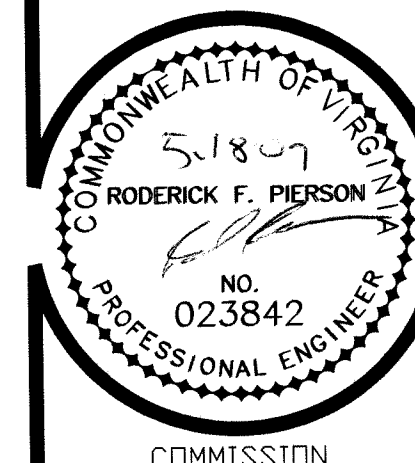
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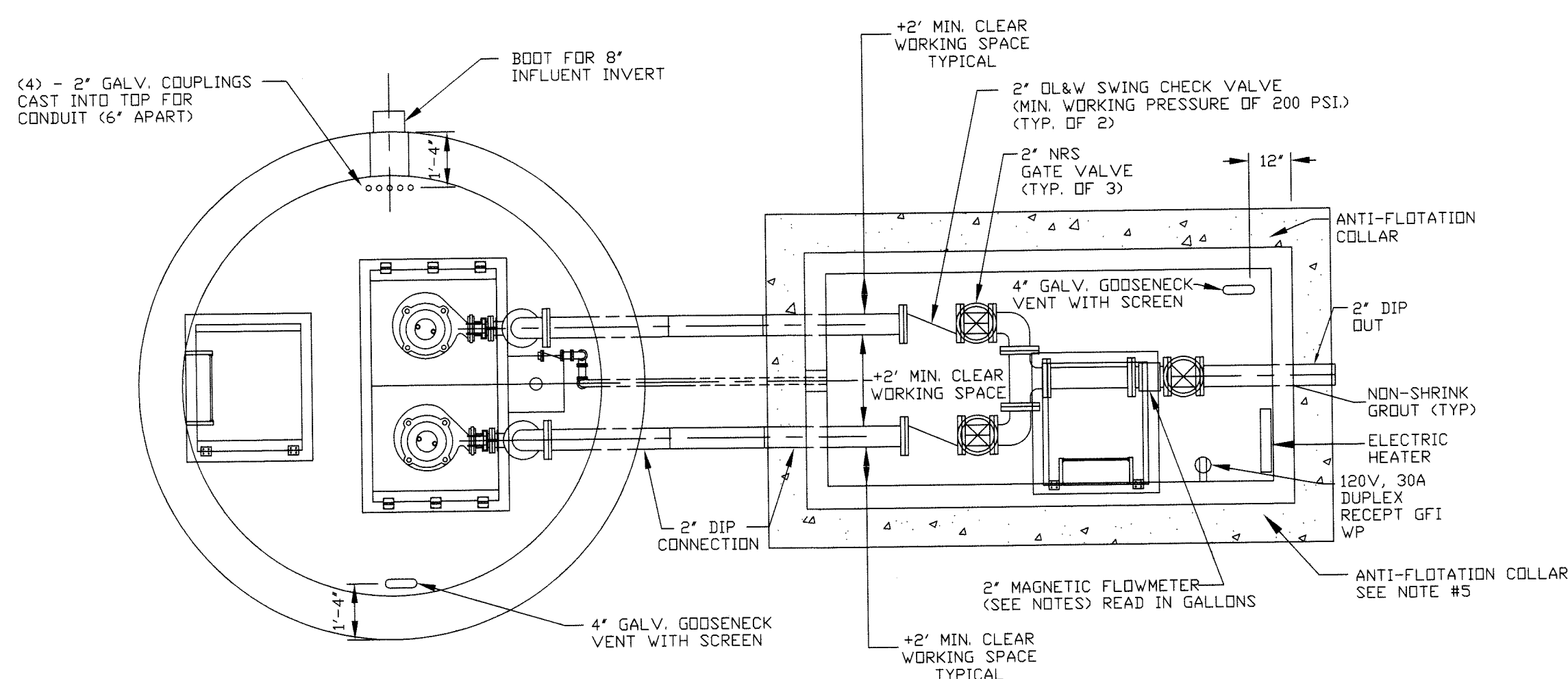
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e-mail: rpierson@bnet.net

SUBDIVISION PLAN  
FOR  
ASHLEY PLANTATION - SECTION 6  
BOTETOURT COUNTY, VIRGINIA

PUMP STATION



COMMISSION  
R200124  
SHEET  
13



PLAN VIEW  
N.T.S.

Testing Requirements:

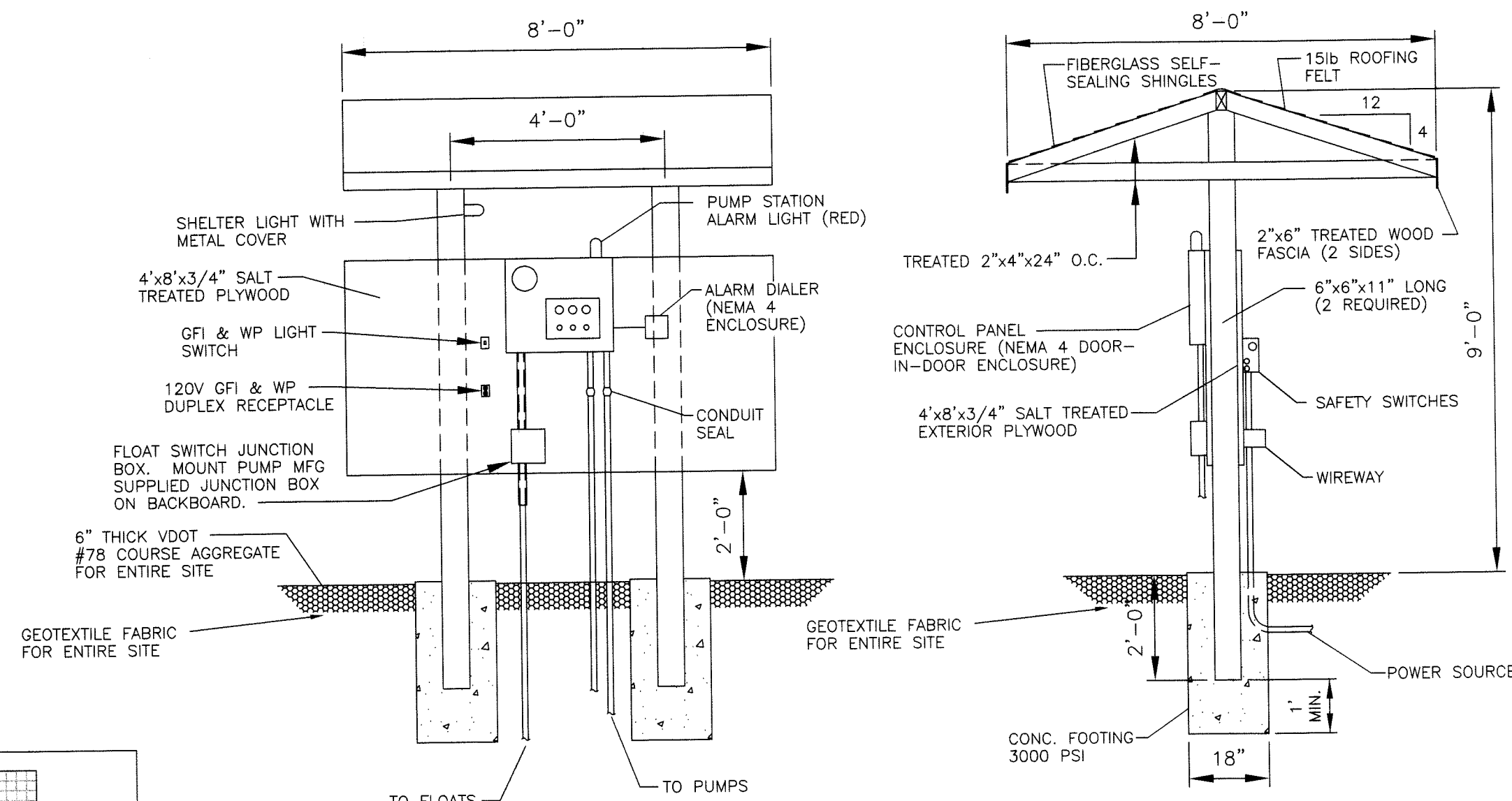
1. All Sanitary Manholes Shall Be Tested According To ASTM C-1244.
2. All Plastic Pipelines Shall Be Tested According To ASTM F1417-92.
3. The Leakage For The Forcemain Is Limited By AWWA C600.

DESIGN CRITERIA

- APPROX. # OF LOTS TO BE SERVED - 20
- AVERAGE DAILY FLOW - 5.55 GPM
- PEAK DAILY FLOW - 22.2 GPM
- PUMP RATED CAPACITY - 22.5 GPM @ 61' TDH
- 25YR STORM ELEVATION - 1347.42
- 100YR STORM ELEVATION - 1347.84

PUMP STATION SITE DETAIL

N.T.S.

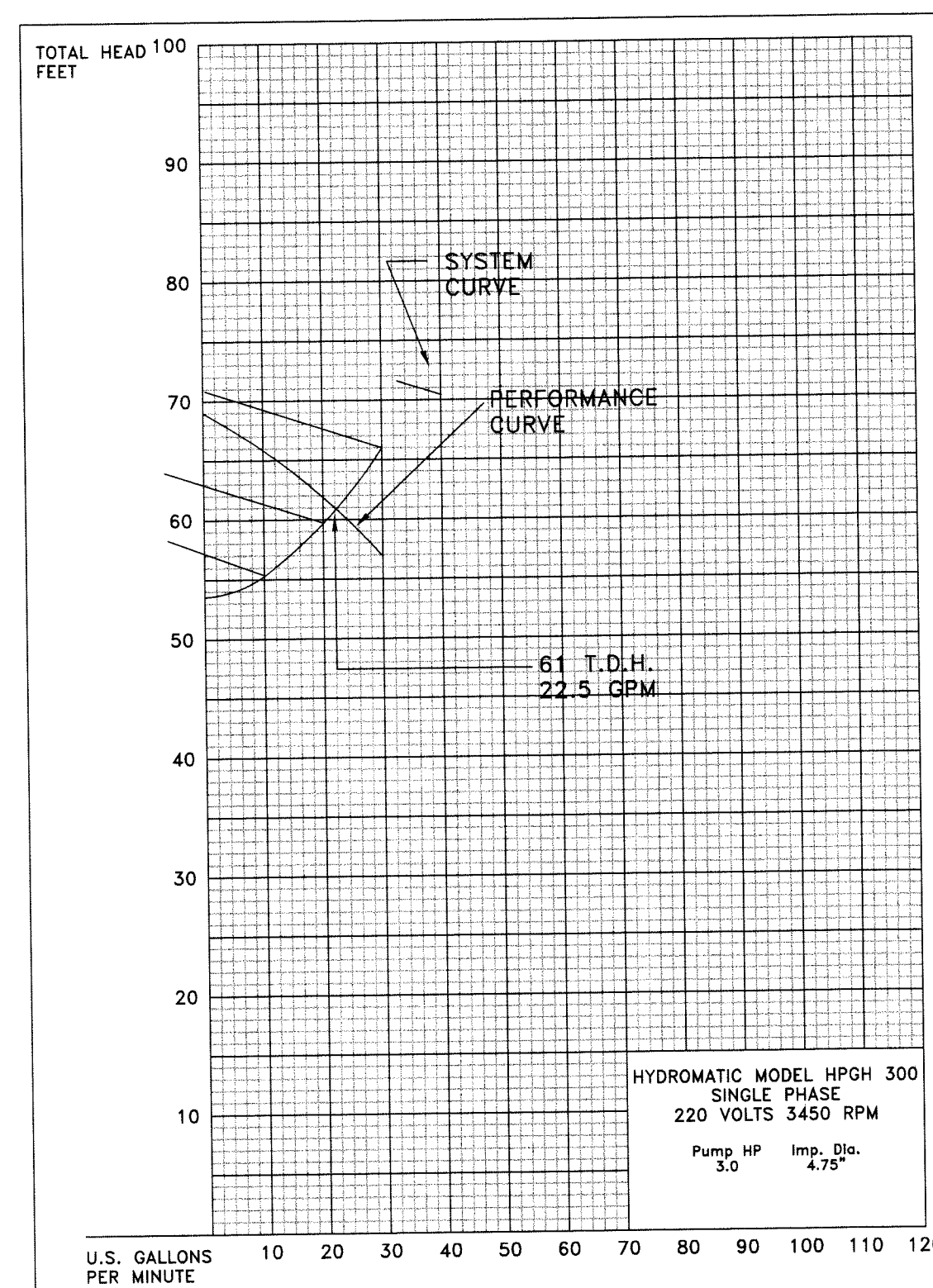


CONTROL PANEL SHELTER

N.T.S.

NOTES:

1. DUPLEX EXPLOSION-PROOF HYDROMATIC MODEL HPGH 300, Grinder Pump (SINGLE PHASE, 220 VOLTS, 3450 RPM)
2. 2" SIEMENS MAGNETIC FLOWMETER WITH TRIM OR EQUAL. METER TO HAVE A RANGE FROM 0 TO 60 GALLONS MINIMUM. DISPLAY SHALL BE LOCATED ON TOP OF METER IN DIRECTION OF ACCESS HATCH. FLOWMETER SHALL HAVE PROVISIONS FOR READING BY SENSUS TOUCH READ REMOTE READING METER. READ IN GALLONS. FLOW METER TO RECORD INSTANTANEOUS FLOW AND TOTAL FLOW IN GALLONS, IT SHALL BE TOTALIZING AND RECORDING.
3. CONCRETE ANTI-FLOTATION COLLAR SHALL BE DOWELED TO BOTTOM OF PUMP STATION.
4. CONTRACTOR TO VERIFY ELEVATIONS PRIOR TO CONSTRUCTION.
5. ALUMINUM LADDER BRACKET @ 6' CENTER SECURED TO WET WELL WALL WITH STAINLESS STEEL ANCHORS. BITUMINUS COATING SHALL BE APPLIED AT ALL AREAS WHERE BRACKETS CONTACT CONCRETE SURFACE.
6. CONSTRUCTION SHALL BE IN ACCORDANCE TO BOTETOURT COUNTY SPECIFICATIONS FOR WASTEWATER PUMPING STATIONS AND FORCE MAINS.
7. ALL PIPING COUPLINGS, FITTINGS, VALVES, ETC. SHALL BE CLASS 125 FLANGED MEETING ANSI B16.1 SPECIFICATIONS.
8. WET WELL STRUCTURES SHALL BE PRECAST CONCRETE CONSTRUCTION AND CONFORM TO ASTM C478, WITH WATERTIGHT JOINTS PER ASTM C443.
9. WET WELL CORROSION PROTECTION SHALL BE TWO (2) COATS KOPPERS "BITUMASTIC" NO. 300M PER CORPS OF ENGINEERS SPECIFICATION C-200.
10. THE TWO (2) PUMPS SHALL AUTOMATICALLY ALTERNATE BETWEEN THE "LEAD" AND "LAG" POSITION BY MEANS OF AN ELECTRIC ALTERNATOR IN THE CONTROL PANEL.
11. AUTOMATIC DIALER SHALL BE AMERICAN MANUFACTURING CO. INC., MODEL #A4-AFLX WITH A SENSAPHONE MODEL 1104 MONITORING SYSTEM.
12. AUTOMATIC STANDBY POWER GENERATOR SHALL BE INSTALLED PER BOTETOURT COUNTY SPECIFICATIONS FOR WASTEWATER PUMPING STATION AND FORCE MAINS. ONE (1) CATERPILLAR - OLYMPIAN L.P. GAS-ELECTRIC SET MODEL G225F53 WITH BRUSHLESS GENERATOR, 25KW STANDBY AT 1.0 F.F. 120/240 VOLTS, 1 PHASE, 60 HERTZ AT 1800 rpm. 6" CONCRETE PAD TO BE PROVIDED FOR GENERATOR TO SET ON. GENERATOR SHALL HAVE AN AUTOMATIC TRANSFER SWITCH.
13. CONTRACTOR TO SUBMIT INFORMATION ON PROPOSED ALARM DIALER SYSTEM TO BOTETOURT COUNTY AND ENGINEER PRIOR TO ORDERING EQUIPMENT.
14. CONTRACTOR TO SUBMIT INFORMATION ON PROPOSED STANDBY POWER GENERATOR TO BOTETOURT COUNTY AND ENGINEER PRIOR TO ORDERING EQUIPMENT.
15. THE CONTRACTOR SHALL PROVIDE AND INSTALL ONE (1) HOIST AND EMBEDDED HOIST SOCKET (HALLIDAY D2B36B & D2E).
16. CONTRACTOR TO PROVIDE TELEPHONE LINE FOR AUTOMATIC DIALER SYSTEM.
17. ALL BENDS IN THE SEWER FORCEMAIN SHALL HAVE CONCRETE THRUST BLOCKS ACCORDING TO DETAIL "BC W-13" ON SHEET 15.



HYDROMATIC MODEL HPGH 300  
SINGLE PHASE  
220 VOLTS 3450 RPM  
Pump HP 3.0 Imp. Dia. 4.75"

SECTION VIEW

N.T.S.

BOTETOURT COUNTY STANDARDS REQUIRE THAT THE DEVELOPER PROVIDE TWO (2) SPARE PUMPS FOR GRINDER PUMP STATIONS.