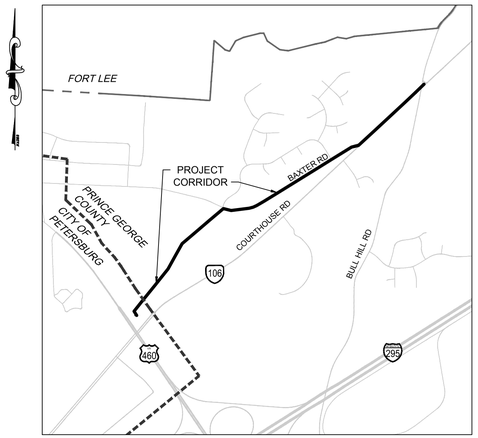
# UPPER BLACKWATER SEWER REHABILITATION

## PRINCE GEORGE COUNTY, VIRGINIA

### RIVES DISTRICT

## SHEET INDEX






**VICINITY MAP**

SCALE: 1" = 1,500'

08/25/15

## SITE DATA

**OWNER/OPERATOR:**

PRINCE GEORGE COUNTY
6602 COURTS DRIVE
P.O. BOX 68
PRINCE GEORGE, VA 23875
CONTACT: CHIP ENGLAND (DIRECTOR OF ENGINEERING AND UTILITIES)
PHONE: (804) 722-8688
EMAIL: CENGLAND@PRINCEGEORGECOUNTYVA.GOV

**ENGINEER:**

TIMMONS GROUP
1001 BOULDERS PARKWAY, SUITE 300
RICHMOND, VA 23225
CONTACT: WES HUNNIUS
PHONE: (804) 200-6385
EMAIL: WES.HUNNIUS@TIMMONS.COM

**CONTRACTOR:**

INSTITUFORM TECHNOLOGIES, LLC
709 EAST ORDNANCE ROAD
SUITE 501
BALTIMORE, MD 21226
CONTACT: WILL LAKE
PHONE: (410) 762-5882
EMAIL: WLAKE@INSTITUFORM.COM

## QUANTITIES

| | |
|---|---|
| PRE INSTALLATION CLEANING & CCTV INSPECTION | 5,695 LF |
| PIPE REHABILITATION | 5,695 LF |
| MANHOLE REHABILITATION | 65 VF |
| LATERAL REINSTATEMENT WITH CONNECTION SEAL | 27 EA |
| CLEARING | 0.85 AC |
| SILT FENCE | 4,015 LF |
| CULVERT INLET PROTECTION | 1 EA |

NOTE: ALL QUANTITIES ARE APPROXIMATE. CONTRACTOR IS RESPONSIBLE FOR QUANTITY TAKE-OFF.

| SANITARY SEWER MANHOLE LOCATION DATA | | |
|---|---|---|
| LABEL | NORTHING | EASTING |
| 3 | 3598859.44 | 11822487.61 |
| 4 | 3598947.77 | 11822432.25 |
| 5 | 3599140.79 | 11822587.97 |
| 6 | 3599487.14 | 11822867.38 |
| 7 | 3599833.03 | 11823146.42 |
| 8 | 3600095.64 | 11823291.44 |
| 9 | 3600364.52 | 11823439.92 |
| 10 | 3600604.03 | 11823721.94 |
| 11 | 3600843.54 | 11824003.96 |
| 12 | 3601099.55 | 11824305.42 |
| 12A | 3601086.92 | 11824290.54 |
| 13 | 3601058.70 | 11824466.86 |
| 14 | 3601105.78 | 11824846.29 |
| 15 | 3601128.52 | 11824928.92 |
| 16 | 3601163.67 | 11825006.18 |
| 17 | 3601252.52 | 11825155.92 |
| 18 | 3601426.22 | 11825440.79 |
| 19 | 3601666.16 | 11825827.38 |
| 20 | 3601906.11 | 11826213.97 |
| 21 | 3602146.05 | 11826600.56 |
| 22 | 3602389.13 | 11826992.20 |
| 23 | 3602424.84 | 11827136.68 |
| 23A | 3602406.99 | 11827064.44 |
| 24 | 2602735.05 | 11827476.35 |
| 25 | 3603026.35 | 11827789.94 |
| 26 | 3603322.68 | 11828108.48 |
| 27 | 3603534.40 | 11828330.88 |
| 28 | 3603327.64 | 11828113.64 |

## LEGEND

- PROP. SANITARY SEWER LINE
- EXISTING SANITARY SEWER LINE
- EXISTING FORCEMAIN
- EXISTING PROPERTY BOUNDARY
- EXISTING EASEMENT
- LOCALITY BOUNDARY
- EXISTING EDGE OF TREELINE
- PROP. EDGE OF TREELINE
- ROAD CENTERLINE
- EXISTING EDGE OF ASPHALT
- EXISTING EDGE OF CONCRETE
- EXISTING EDGE OF GRAVEL
- EXISTING CURBLINE
- EXISTING EDGE OF BUILDING
- EXISTING EDGE OF FEMA 100YR FLOODPLAIN
- EXISTING WATERLINE
- EXISTING NATURAL GAS LINE
- EXISTING FENCELINE
- EXISTING NATURAL GAS LINE
- SANITARY SEWER STRUCTURE LABEL
- EXISTING SANITARY SEWER SEWER MANHOLE
- EXISTING WETLANDS (NWI)
- EXISTING WATERBODY
- EXISTING WATER VALVE

**RECORD DRAWING**

THESE RECORD DRAWINGS HAVE BEEN PREPARED, IN PART, ON THE BASIS OF INFORMATION COMPILED AND FURNISHED BY OTHERS. TIMMONS GROUP WILL NOT BE RESPONSIBLE FOR ANY ERRORS AND OMISSIONS WHICH HAVE BEEN INCORPORATED IN THIS DOCUMENT AS A RESULT.

### COUNTY APPROVALS

DATE RECEIVED

DEVELOPMENT PLAN APPROVAL
PRINCE GEORGE COUNTY, VA

PLANNING/ZONING:
BUILDING OFFICIAL:
FIRE SERVICES:
ENGINEER/UTILITIES:
HEALTH DEPARTMENT:
VDOT, PETERSBURG RESIDENCY:
POLICE DEPARTMENT:
NOTES:

**DEVELOPER INFORMATION**

**REQUIRED INFORMATION**

| | |
|---|---|
| APPLICANTS NAME: | N/A |
| ZONING AND CASE: | N/A |
| NUMBER OF LOTS: | N/A |
| TAX MAP NUMBER: | N/A |
| DATE OF PLANNING COMMISSION APPROVAL: | N/A |

**PROJECT NAME (ALTERNATE NAME)**

UPPER BLACKWATER SEWER REHABILITATION

**COUNTY PROJECT NO.**

2016-U001

RECORD DRAWING

COMMONWEALTH OF VIRGINIA
WESLEY G. HUNNIUS
Lic. No.040151
08/25/15
PROFESSIONAL ENGINEER


THIS DRAWING PREPARED AT THE
Corporate Headquarters
1001 Boulders Parkway | Richmond, VA 23225
TEL 804.200.6500 FAX 804.560.1016 www.timmons.com


YOUR VISION ACHIEVED THROUGH OURS.

| REVISION DESCRIPTION | DATE |
|---|---|
| ---- | ---- |

DATE: 08/25/15
DRAWN BY: C. CUNDIFF
DESIGNED BY: W. HUNNIUS
CHECKED BY: W. HUNNIUS
SCALE: AS SHOWN

TIMMONS GROUP

UPPER BLACKWATER SEWER REHABILITATION
RIVES DISTRICT - PRINCE GEORGE COUNTY - VIRGINIA
COVER SHEET

JOB NO. 35280.005
SHEET NO. G1.0



L:\2015\35280.005 - Upper Blackwater Sewer Rehabilitation\DWG - Record\Sheet\CD\35280.005-G1.0.dwg | Plotted on 9/7/2016 9:11 AM | by Andy Pitts

FORT LEE

BAXTER RD (RTE 603)

BAXTER RIDGE RD (RTE 1170)

BULL HILL RD (RTE 630)

PARTRIDGE CT

COURTHOUSE RD (RTE 106)

PRINCE GEORGE COUNTY

CITY OF PETERSBURG

ROUTE 460

U1.1

U1.2

U1.3

U1.4

U1.5

U1.6

GAS LINE & EASEMENT

NOT TO BE LINED (PVC)

SEE DETAIL RIGHT

1 2 3 4 5 6 7 8 9 10 11 12 12A 13 14 15 16 17 18 19 20 21 22 23 23A 24 25 26 27

NAD 83

SCALE 1"=250'

0 250' 500'

PROP. TEMPORARY ACCESS TO SANITARY SEWER EASEMENT (APPROXIMATELY 18' WIDTH. CONTRACTOR SHALL PROTECT MANHOLE COVER WHILE ACCESSING EASEMENT)

CITY OF PETERSBURG PARCEL ID #060010003 3101 COUNTY DRIVE D.B. 346, PG. 531

CITY OF PETERSBURG 20" SANITARY SEWER LINE

NATURAL GAS LINE

PRINCE GEORGE PUMP STATION (OWNED BY CITY OF PETERSBURG)

EXISTING FLUME MANHOLE - DO NOT DISTURB

EXISTING FENCE GATE (COORDINATE WITH THE CITY THROUGH THE COUNTY FOR ACCESS)

EXSTING FENCE

GRAVEL ACCESS ROAD

FM

SWM

NAD 83

SCALE 1"=20'

0 20' 40'

RECORD DRAWING

L:\2015\35280.005 - Upper Blackwater Sewer Rehabilitation\DWG - Record\Sheet\C3\35280.005-U1.0.dwg | Plotted on 8/8/2016 4:51 PM | by Andy Pitts

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DATE 08/25/15
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DESIGNED BY W. HUNNIUS
CHECKED BY W. HUNNIUS
SCALE 1" = 250'

TIMMONS GROUP

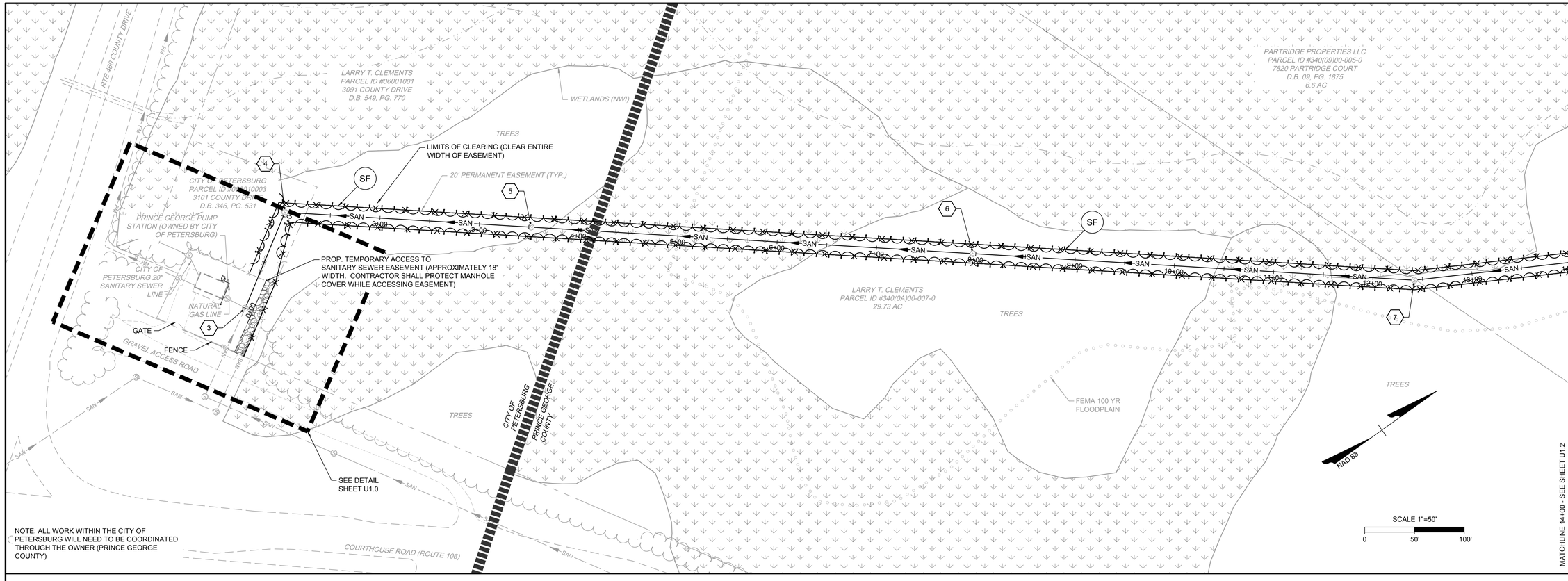
# UPPER BLACKWATER SEWER REHABILITATION

RIVES DISTRICT - PRINCE GEORGE COUNTY - VIRGINIA

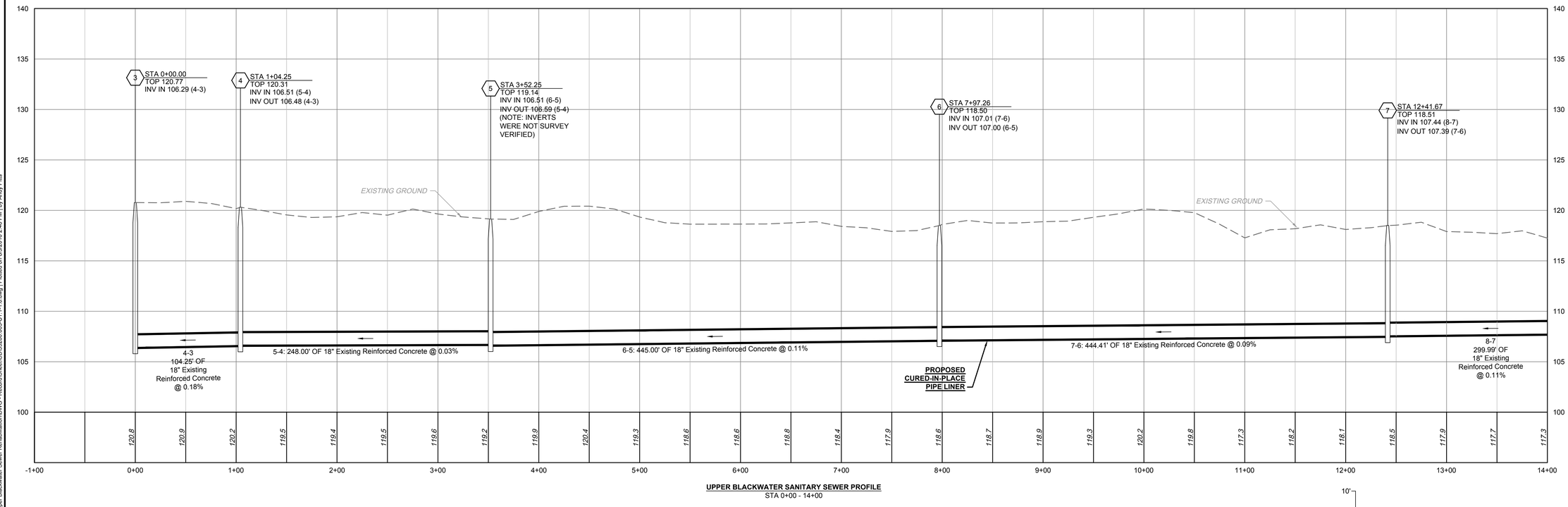
## INDEX SHEET

JOB NO. 35280.005

SHEET NO. U1.0




NOTE: ALL WORK WITHIN THE CITY OF PETERSBURG WILL NEED TO BE COORDINATED THROUGH THE OWNER (PRINCE GEORGE COUNTY)




**UPPER BLACKWATER SANITARY SEWER PROFILE**
STA 0+00 - 14+00

10'
0
0 50'
PROFILE SCALE

ALL EXISTING DATA SHOWN WAS TAKEN FROM GIS DATA OR RECREATED APPROXIMATELY FROM AS-BUILT SURVEY DATA COMPLETED BY ROY F WESTON PRITCHARD AND ALTMAN, DATED FEBRUARY 1977, 2-8.

RECORD DRAWING

COMMONWEALTH OF VIRGINIA
WESLEY G. HUNNIUS
Lic. No.040151
08/25/15
PROFESSIONAL ENGINEER

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CHECKED BY W. HUNNIUS
SCALE AS SHOWN

TIMMONS GROUP

# UPPER BLACKWATER SEWER REHABILITATION

RIVES DISTRICT - PRINCE GEORGE COUNTY - VIRGINIA

## SANITARY SEWER PLAN & PROFILE

JOB NO. 35280.005
SHEET NO. U1.1



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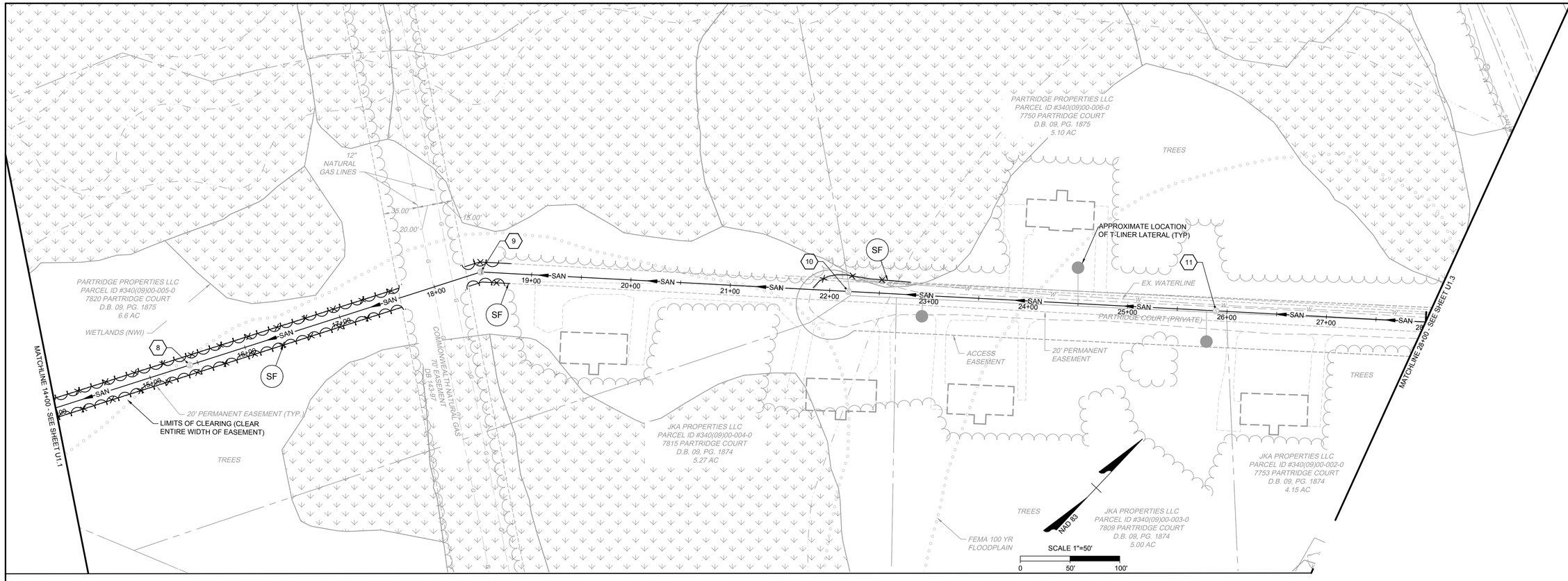


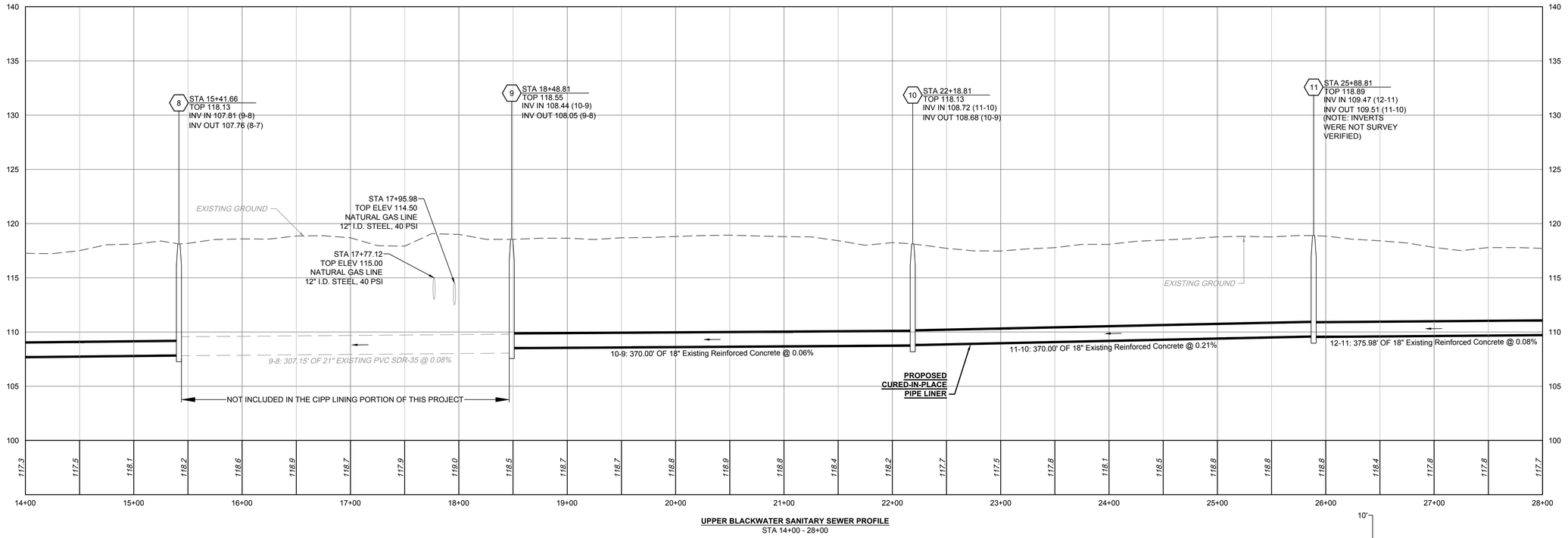


**UPPER BLACKWATER SANITARY SEWER PROFILE**
STA 14+00 - 28+00

ALL EXISTING DATA SHOWN WAS TAKEN FROM GIS DATA OR RECREATED APPROXIMATELY FROM AS-BUILT SURVEY DATA COMPLETED BY ROY F WESTON PRITCHARD AND ALTMAN, DATED FEBRUARY 1977, 2-8.

RECORD DRAWING

COMMONWEALTH OF VIRGINIA
WESLEY G. HUNNIUS
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08/25/15
PROFESSIONAL ENGINEER

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DESIGNED BY: W. HUNNIUS
CHECKED BY: W. HUNNIUS
SCALE: AS SHOWN

TIMMONS GROUP

# UPPER BLACKWATER SEWER REHABILITATION

RIVES DISTRICT - PRINCE GEORGE COUNTY - VIRGINIA

## SANITARY SEWER PLAN & PROFILE

JOB NO. 35280.005
SHEET NO. U1.2



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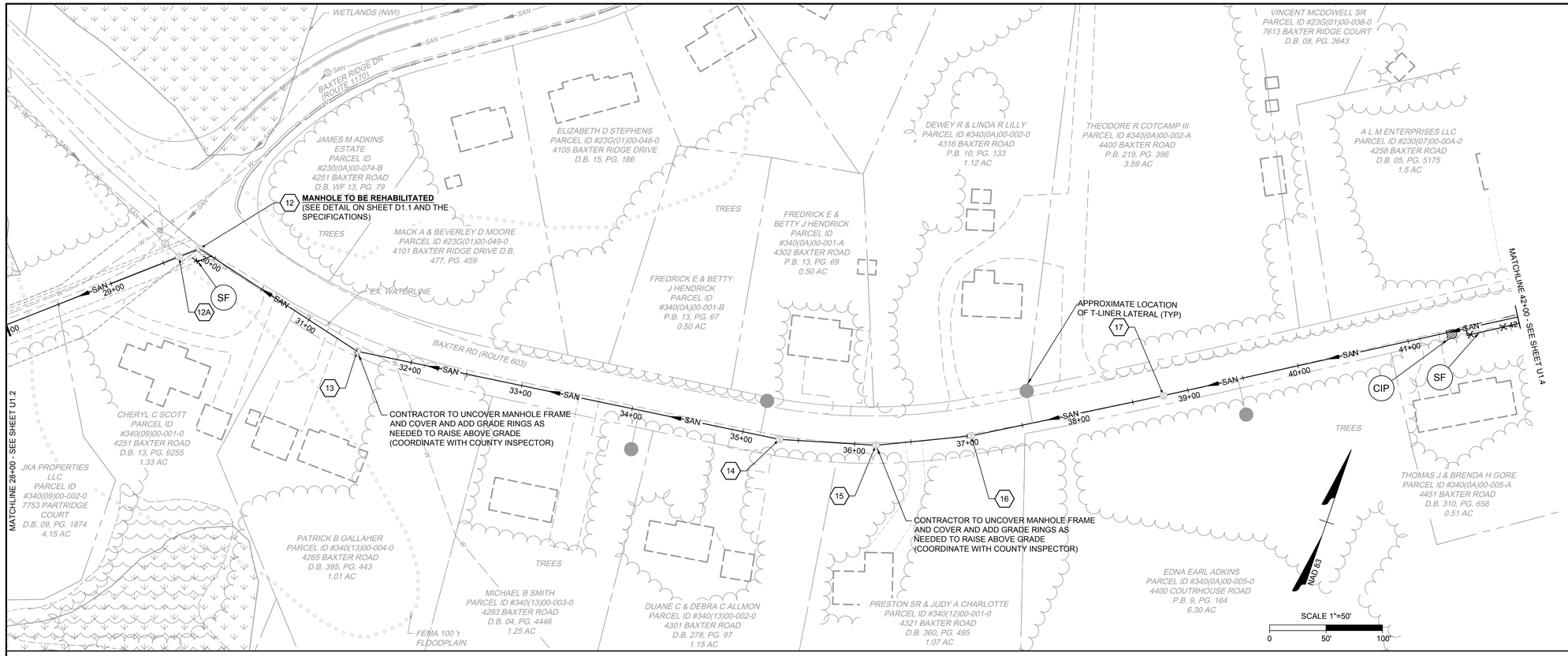


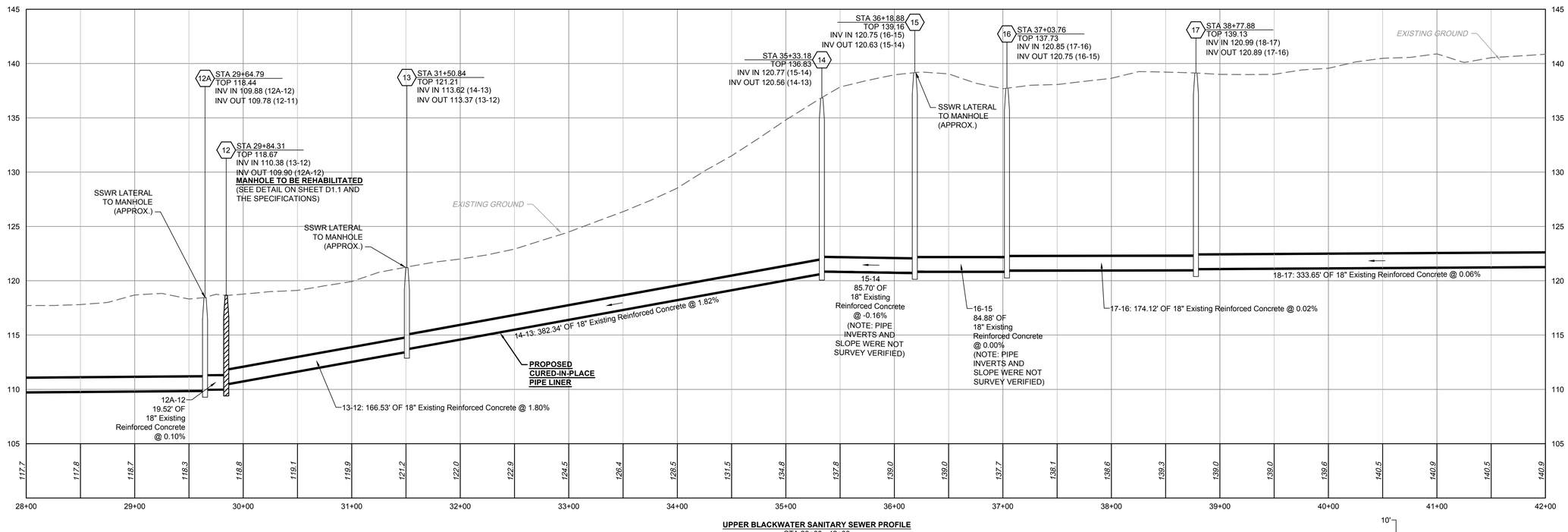


**UPPER BLACKWATER SANITARY SEWER PROFILE**
STA 28+00 - 42+00

10'
0
0
50'
PROFILE SCALE

ALL EXISTING DATA SHOWN WAS TAKEN FROM GIS DATA OR RECREATED APPROXIMATELY FROM AS-BUILT SURVEY DATA COMPLETED BY ROY F WESTON PRITCHARD AND ALTMAN, DATED FEBRUARY 1977, 2-8.

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08/25/15
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DESIGNED BY W. HUNNIUS
CHECKED BY W. HUNNIUS
SCALE AS SHOWN

# UPPER BLACKWATER SEWER REHABILITATION
RIVES DISTRICT - PRINCE GEORGE COUNTY - VIRGINIA
SANITARY SEWER PLAN & PROFILE

JOB NO. 35280.005
SHEET NO. U1.3



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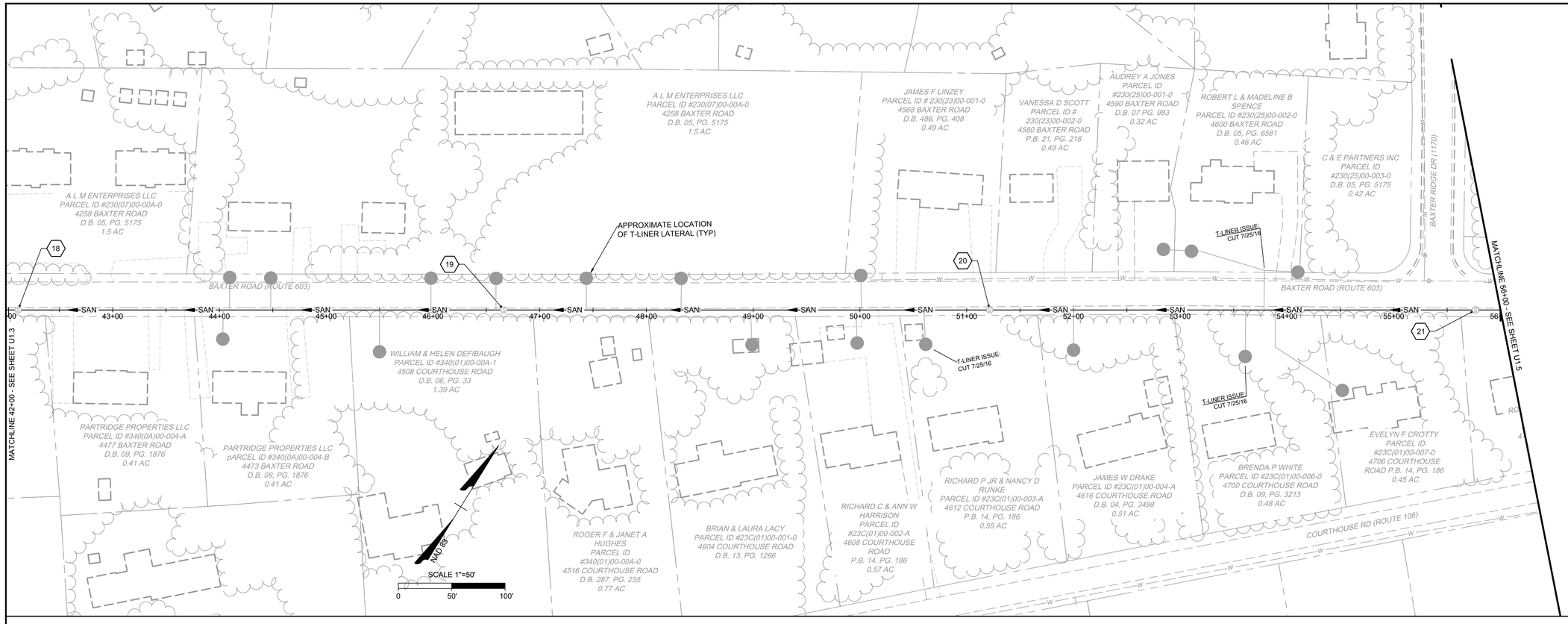


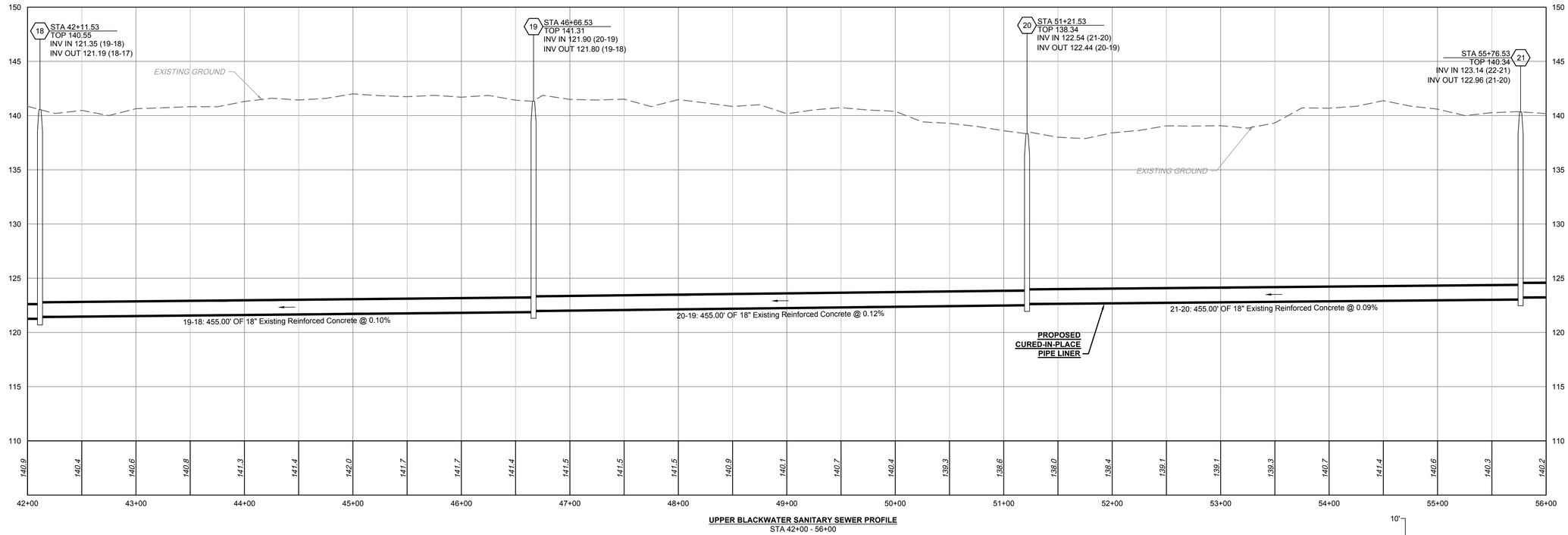


**UPPER BLACKWATER SANITARY SEWER PROFILE**
STA 42+00 - 56+00

10'
0
0
50'
PROFILE SCALE

ALL EXISTING DATA SHOWN WAS TAKEN FROM GIS DATA OR RECREATED APPROXIMATELY FROM AS-BUILT SURVEY DATA COMPLETED BY ROY F WESTON PRITCHARD AND ALTMAN, DATED FEBRUARY 1977, 2-8.

RECORD DRAWING

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REVISION DESCRIPTION

| DATE | |
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DATE
09/14/15
DRAWN BY
C. CUNDIFF
DESIGNED BY
W. HUNNIUS
CHECKED BY
W. HUNNIUS
SCALE
AS SHOWN

TIMMONS GROUP

# UPPER BLACKWATER SEWER REHABILITATION

RIVES DISTRICT - PRINCE GEORGE COUNTY - VIRGINIA

## SANITARY SEWER PLAN & PROFILE

JOB NO.
35280.005
SHEET NO.
U1.4



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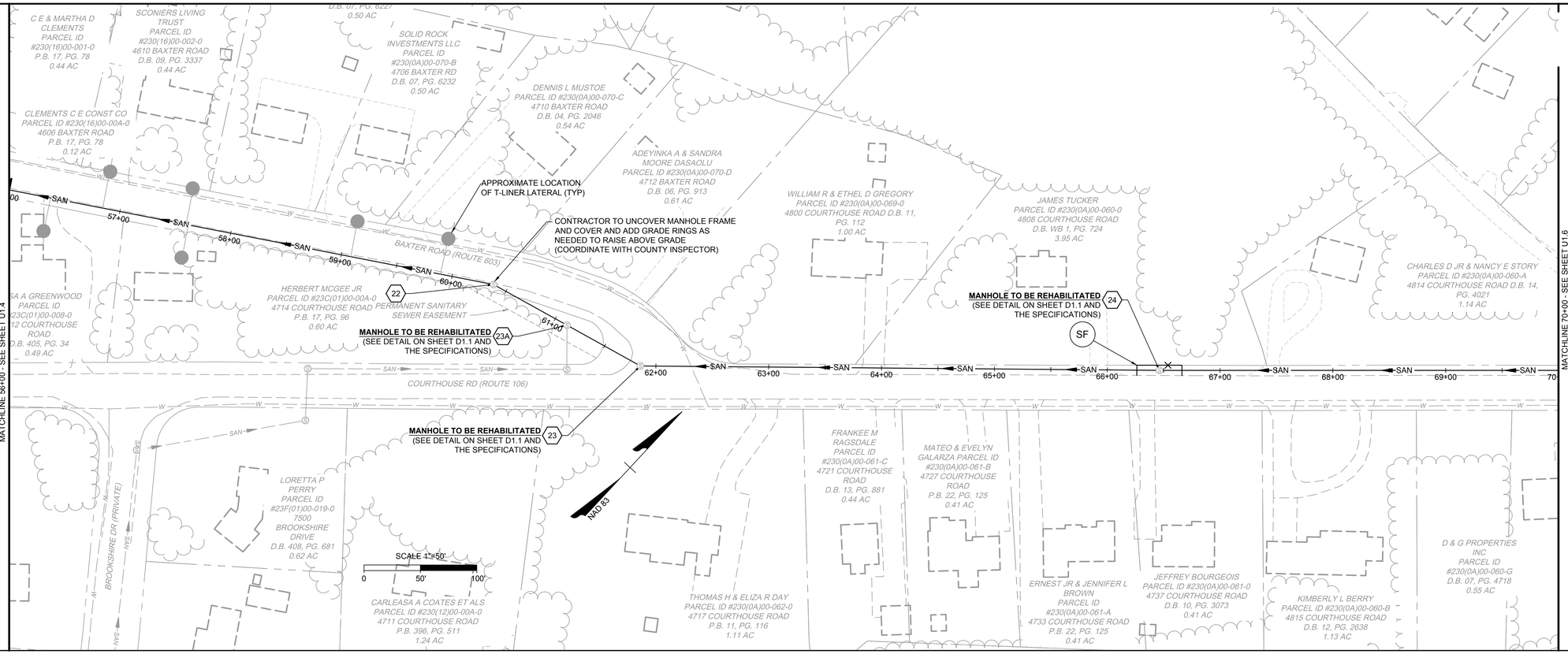


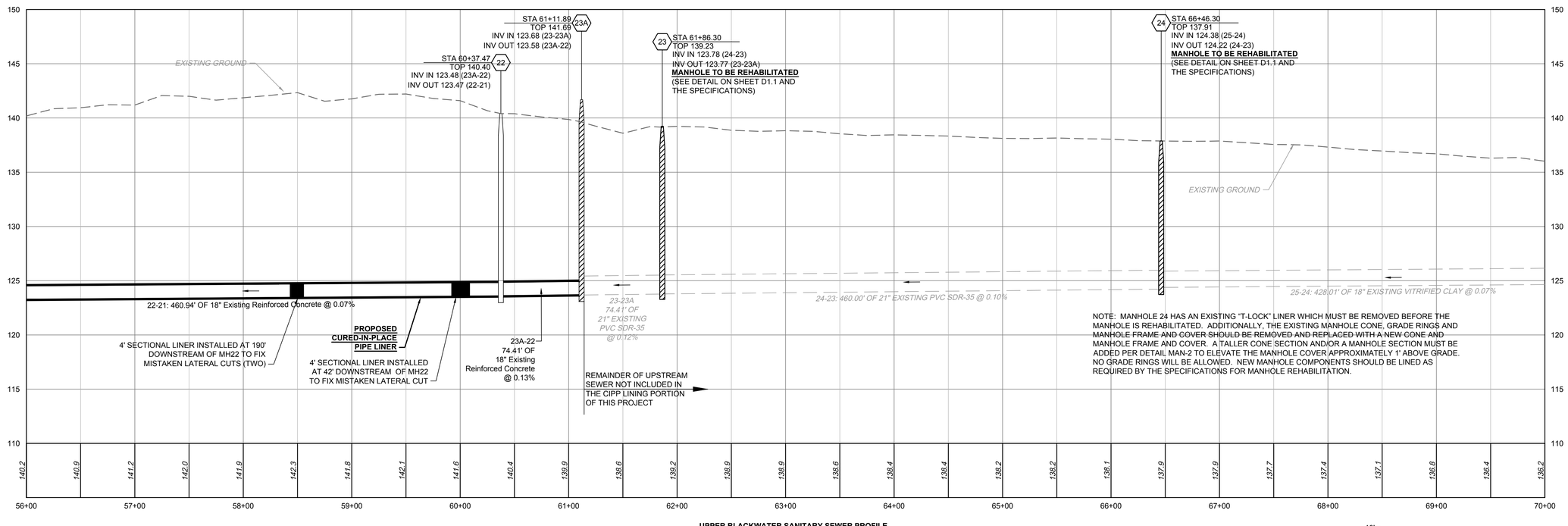


**UPPER BLACKWATER SANITARY SEWER PROFILE**
STA 56+00 - 70+00

ALL EXISTING DATA SHOWN WAS TAKEN FROM GIS DATA OR RECREATED APPROXIMATELY FROM AS-BUILT SURVEY DATA COMPLETED BY ROY F WESTON PRITCHARD AND ALTMAN, DATED FEBRUARY 1977, 2-8.

RECORD DRAWING

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DATE 09/14/15
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DESIGNED BY W. HUNNIUS
CHECKED BY W. HUNNIUS
SCALE AS SHOWN

TIMMONS GROUP

UPPER BLACKWATER SEWER REHABILITATION
RIVES DISTRICT - PRINCE GEORGE COUNTY - VIRGINIA
SANITARY SEWER PLAN & PROFILE

JOB NO. 35280.005
SHEET NO. U1.5



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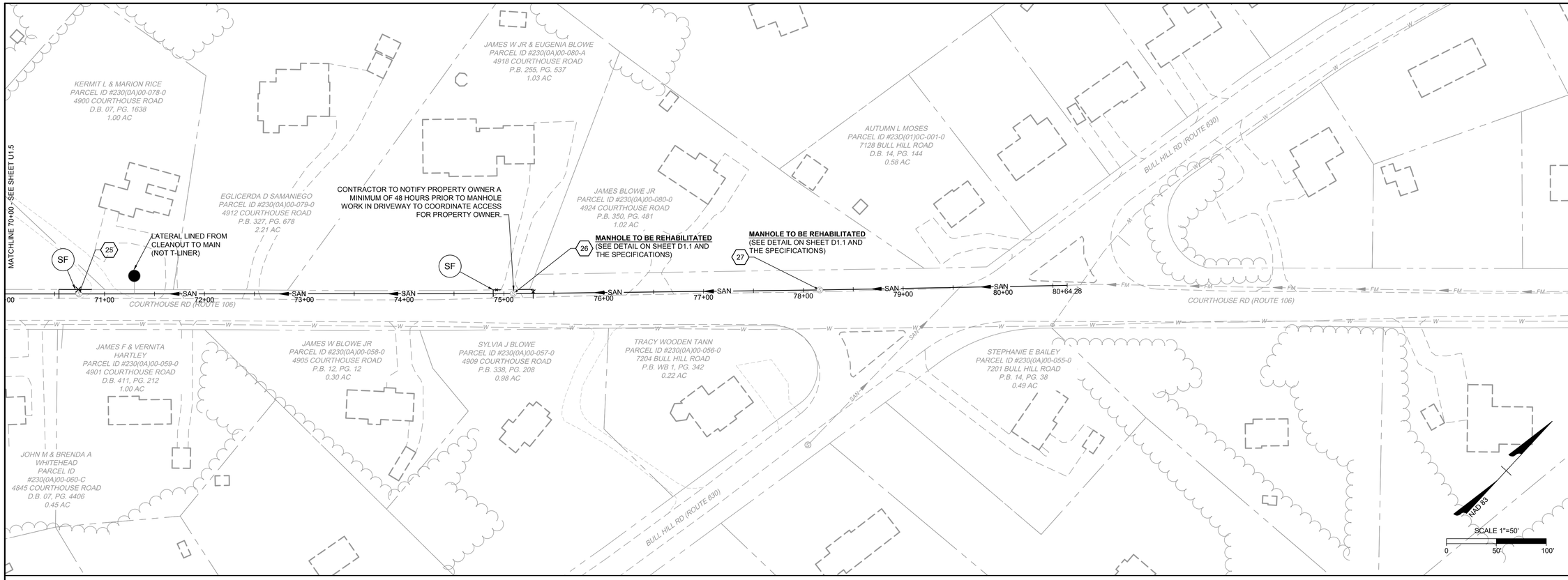


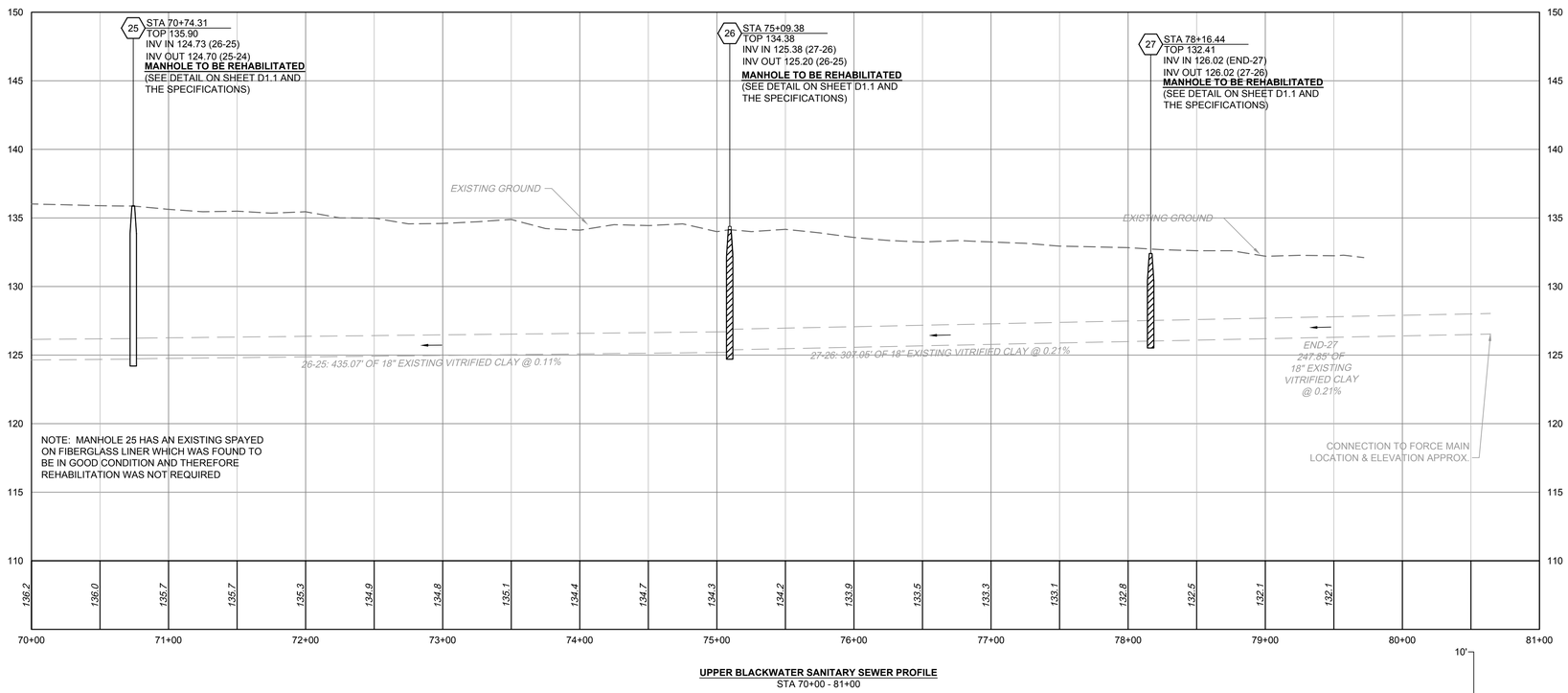


**UPPER BLACKWATER SANITARY SEWER PROFILE**
STA 70+00 - 81+00

ALL EXISTING DATA SHOWN WAS TAKEN FROM GIS DATA OR RECREATED APPROXIMATELY FROM AS-BUILT SURVEY DATA COMPLETED BY ROY F WESTON PRITCHARD AND ALTMAN, DATED FEBRUARY 1977, 2-8.

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| ---- | ---- |

DATE 09/14/15
DRAWN BY C. CUNDIFF
DESIGNED BY W. HUNNIUS
CHECKED BY W. HUNNIUS
SCALE AS SHOWN

TIMMONS GROUP

# UPPER BLACKWATER SEWER REHABILITATION

RIVES DISTRICT - PRINCE GEORGE COUNTY - VIRGINIA

## SANITARY SEWER PLAN & PROFILE

JOB NO. 35280.005
SHEET NO. U1.6



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**VDOT**
**SUBDIVISION AND SITE CONSTRUCTION PLAN**
**GENERAL NOTES**
**(FOR THE FOLLOWING NOTES, DEVELOPER REFERS TO PRINCE GEORGE COUNTY)**

1. ALL MATERIALS AND CONSTRUCTION WITHIN THE PUBLIC RIGHT OF WAY SHALL BE IN ACCORDANCE WITH CURRENT VIRGINIA DEPARTMENT OF TRANSPORTATION'S SPECIFICATIONS AND STANDARDS.
2. LAND USE PERMITS (LUP-A) 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 PETERSBURG PERMITS OFFICE AT 804-863-4009 FOR PRINCE GEORGE, DINWIDDIE AND NOTTOWAY COUNTIES AND THE SOUTH HILL PERMITS OFFICE AT 434-774-2309 FOR MECKLENBURG, BRUNSWICK AND LUNENBURG COUNTIES.
4. WORK ZONES - THE DEPARTMENT SHALL BE NOTIFIED 48 HOURS IN ADVANCE OF ANY ANTICIPATED ROAD/SHOULDER CLOSURES. ADDITIONALLY, THE PERMITTEE OR HIS OR HER DESIGNEE SHALL REPORT ALL WORK ZONES IN THE VDOT RIGHT OF WAY ON A DAILY BASIS AT SET-UP AND TAKE-DOWN. CONTACT VDOT'S SMART TRAFFIC CENTER AT 804-796-4520 FOR ALL NOTIFICATIONS.
5. TO LOCATE VDOT UTILITIES ON THE RIGHT OF WAY PLEASE SEE THE BELOW CONTACT LIST. ALL VDOT LOCATES REQUIRE A 72 HOUR NOTICE.
   TRAFFIC SIGNALS = 804-524-6592
   INTERSTATE LIGHTING, SIGN LIGHTING = 804-524-6116
   ITS (FIBER OPTIC, TRAFFIC CAMERAS, MESSAGE BOARDS, ETC) = 804-796-4520
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. PRELIMINARY DESIGN OF THE PAVEMENT STRUCTURE FOR ALL SUBDIVISION STREETS SHALL BE IN ACCORDANCE WITH THE CURRENT EDITION OF 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.
8. THE CONTRACTOR SHALL VERIFY THE ELEVATIONS OF ALL POINTS OF CONNECTION OR PROPOSED WORK TO EXISTING CURBS, SANITARY LINES, WATER LINES, ETC., PRIOR TO CONSTRUCTION.
9. UPON DISCOVERY OF SOILS THAT ARE UNSUITABLE 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.
10. ALL STORM SEWER DESIGN AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH LATEST VDOT DRAINAGE MANUAL, ROAD AND BRIDGE STANDARDS, AND IIMS.
11. ALL PRE-CAST UNITS SHALL BE VDOT APPROVED. CERTIFICATION AND VDOT STAMP IS REQUIRED ON ALL UNITS.
12. ALL CONCRETE SHALL BE CLASS A3-AE (AIR ENTRAINED 3,000 PSI).
13. 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 ENTRANCE CULVERTS AND SHALL CONFORM TO PE-1 PRIVATE ENTRANCE STANDARDS UNLESS OTHERWISE DIRECTED BY THE RESIDENT ENGINEER. NO ENTRANCE CULVERTS ARE TO BE INSTALLED WITHIN FIVE (5) FEET OF A PROPERTY CORNER.
    - VDOT STANDARD CG-9D ENTRANCES SHALL BE INSTALLED IN CURB AND GUTTER NEIGHBORHOODS.
14. THE DEVELOPER SHALL FURNISH AND INSTALL STOP SIGNS AT STREET INTERSECTIONS AND ALL REGULATORY SIGNAGE PER THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
15. 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.
16. 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 OF CENTRAL VIRGINIA AT 1-800-552-7001. THE DEVELOPER SHALL BE RESPONSIBLE FOR THE RELOCATION OF ANY UTILITY WITHIN EXISTING AND PROPOSED RIGHT OF WAY REQUIRED BY THE DEVELOPMENT.
17. ALL STREETLIGHTS SHALL BE LOCATED A MINIMUM OF 9.5' FROM THE EDGE OF PAVEMENT ON CURB AND GUTTER STREETS OR LOCATED A MINIMUM OF 5.5' BEHIND THE DITCH CENTERLINE ON OPEN DITCH STREETS.
18. ALL ROADSIDE DITCHES SHOWN AS PAVED ON PLANS ARE TO BE PAVED IN ACCORDANCE WITH THE STANDARD TYPICAL SECTION AS SHOWN ON THE PLANS. GENERALLY, ALL DITCHES WITH SLOPES EXCEEDING 5% OR LESS THAN 0.75% SHALL BE PAVED UNLESS OTHERWISE DIRECTED BY THE RESIDENT ENGINEER. 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.
19. 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.
20. 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.
21. VDOT SHALL HAVE PERFORMED 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 BASE COURSE(S).
22. A PRIME COAT SEAL SHALL BE PLACED BETWEEN THE AGGREGATE BASE AND BITUMINOUS CONCRETE ACCORDING TO THE LATEST VDOT ROAD AND BRIDGE SPECIFICATION, SECTION 311.
23. THE SCHEDULING OF AGGREGATE BASE INSTALLATION AND SUBSEQUENT PAVING ACTIVITIES SHALL ACCOMMODATE FORECASTED WEATHER CONDITIONS PER SECTION 315 OF THE ROAD AND BRIDGE SPECIFICATIONS.
24. 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 SURFACE COURSE(S). CONTACT VDOT FOR INSPECTION OF THE AGGREGATE BASE COURSE(S) 48 HOURS PRIOR TO APPLICATION OF THE SURFACE COURSE(S).
25. AN ACTUAL COPY OF THE COMPLETE CBR REPORT SHALL BE SUBMITTED TO VDOT IN CONJUNCTION WITH FINAL PAVEMENT DESIGNS. ALL PAVEMENT DESIGN RECOMMENDATIONS SHALL BE PERFORMED IN ACCORDANCE WITH THE CURRENT EDITION OF THE PAVEMENT DESIGN GUIDE FOR SUBDIVISION AND SECONDARY ROADS IN VIRGINIA.
26. A GEOTECHNICAL ENGINEER APPROVED BY THE RESIDENT ENGINEER OR HIS DESIGNEE SHALL ASCERTAIN CAUSE AND CERTIFY RECOMMENDED METHOD OF REPAIR FOR ALL PAVEMENT STRUCTURAL FAILURES PRIOR TO STATE ACCEPTANCE.
27. ALL VEGETATION AND ORGANIC MATERIAL SHALL BE REMOVED FROM THE RIGHT OF WAY LIMITS PRIOR TO CONDITIONING OF THE SUBGRADE.
28. DRY GUTTER IS ALLOWED IN VDOT RIGHT OF WAY ONLY AS SHOWN ON VDOT'S ENTRANCE STANDARD DETAILS.
29. THE DEVELOPER SHALL BE RESPONSIBLE FOR THE DESIGN COSTS OF ANY TRAFFIC SIGNAL INSTALLATION OR MODIFICATION OF EXISTING SIGNALS UNDER AN ACCOUNT RECEIVABLE WITH VDOT. ACTUAL CONSTRUCTION SHALL BE PERFORMED BY A VDOT APPROVED CONTRACTOR AND VDOT INSPECTION COSTS SHALL BE PAID FOR BY THE DEVELOPER UNDER THE SAME ACCOUNTS RECEIVABLE.
30. THE NECESSITY AND LOCATIONS FOR ADDITIONAL VDOT STANDARD UNDERDRAINS SHALL BE DETERMINED AT TIME OF SUBGRADE INSPECTION. VIDEO INSPECTION OF ACCESSIBLE OUTLET LOCATIONS, MAINLINE LONGITUDINAL CONNECTION INCLUDED, AND 10% OF LONGITUDINAL PIPE FOR ALL PAVEMENT UNDERDRAINS/EDGEDRAINS AND PREFABRICATED GEOCOMPOSITE PANEL DRAINS SHALL BE CONDUCTED IN ACCORDANCE WITH VIRGINIA TEST METHOD 108.
31. 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 AND CONSTRUCTION WITHIN VDOT MAINTAINED RIGHT-OF-WAY.
32. VDOT SHALL BE PROVIDED DOCUMENTATION BY A 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. THE PERMITS INSPECTOR SHALL BE CONTACTED 24 HOURS PRIOR TO THE CORE SAMPLES BEING TAKEN.
33. THE ESTABLISHMENT OF A TEMPORARY VEGETATIVE COVER IS REQUIRED ON ALL DENUDED AREAS THAT ARE NOT TO BE FINE GRADED FOR PERIODS LONGER THAN 14 DAYS.
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 ROAD 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 ENGINEER TO ISSUE SAID PERMIT AT THE TIME OF STATE ACCEPTANCE).
35. A MODIFIED 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.
36. 2007 ROAD & BRIDGE SUPPLEMENTAL SPECIFICATIONS - SUPPLEMENTAL SECTION 302 DRAINAGE STRUCTURES. SECTION 302.03 PROCEDURES - ADDRESSES POST INSTALLATION VISUAL/VIDEO CAMERA INSPECTION OF STORM SEWER PIPES AND PIPE CULVERTS. INSPECTION FREQUENCY IN ACCORDANCE WITH THE STANDARD AND/OR AS NECESSITATED BY THE ENGINEER. VIRGINIA TEST METHOD - 123 IS TO BE USED FOR BURIED STORM DRAIN PIPE AND PIPE CULVERTS.

## PRINCE GEORGE COUNTY
## DEPARTMENT OF PUBLIC UTILITIES

NOTES:

1. ALL MATERIALS FOR SEWER AND WATER SYSTEMS SHOWN SHALL BE SUPPLIED AND INSTALLED IN ACCORDANCE WITH THE LATEST SPECIFICATIONS OF PRINCE GEORGE COUNTY APPLICABLE AT THE TIME OF NOTICE TO PROCEED.
2. FOR SEWER AND WATER INSTALLATION WITHIN EXISTING VDOT R/W; UTILITY CONTRACTORS MUST NOTIFY VDOT WHEN INSTALLATION BEGINS SO THAT DENSITY CAN BE TESTED ON TRENCH BACKFILL (95% ASTM. D-698 @ OPTIMUM MOISTURE ± 2%).
3. THE INSTALLATION OF A SEWER BACKFLOW DEVICE IS REQUIRED FOR ALL SERVICE CONNECTIONS WHERE THE FINISHED FLOOR ELEVATION IS LOWER THAN THE NEAREST DOWNGRADE AND/OR UPGRADE MANHOLE TOP ELEVATIONS. THIS DEVICE WILL BE INSPECTED BY THE BUILDING INSPECTION DEPARTMENT.
4. ALL WATER SERVICE CONNECTIONS BELOW THE ELEVATION CONTOUR OR WHERE THE PRESSURE IS GREATER THAN 80 P.S.I. WILL REQUIRE INDIVIDUAL PRESSURE REGULATORS AS REQUIRED BY BOCA CODE.
5. VERTICAL DATUM IS BASED ON MEAN SEA LEVEL (USC & GS DATUM). HORIZONTAL CONTROLS ARE BASED ON VIRGINIA STATE PLANE COORDINATE GRID, SOUTH ZONE, NORTH AMERICAN DATUM OF 1983 (NAD 83).
6. CONTRACTOR SHALL PROPERLY NOTIFY ALL PROPERTY OWNERS TWO (2) WEEKS PRIOR TO THE START OF ANY CONSTRUCTION (INCLUDING LAND CLEARING). NOTIFICATION SHALL BE IN THE FORM OF A LETTER SIMILAR TO THE "SAMPLE" REFLECTED IN THE COUNTY'S LATEST WATER AND SEWER SPECIFICATIONS (NOT-1).

REQUIRED INFORMATION FOR TITLE PAGE

APPLICANTS NAME _____
ZONING AND CASE# _____
NUMBER OF LOTS _____
TAX MAP NUMBER _____
DATE OF PLANNING _____
COMMISSION APPROVAL _____

| DATE | STANDARD SEWER AND WATER NOTES | DRWG. NO. |
|---|---|---|
| JAN. 2008 | | DES-2 |
| REVISIONS | | |

## PRINCE GEORGE COUNTY
## DEPARTMENT OF PUBLIC UTILITIES

NOTES CONT:

7. THE ENGINEER WILL CERTIFY THAT THE ROADS ARE WITHIN 6-INCHES OF SUBGRADE BEFORE WATERLINE CONSTRUCTION CAN BEGIN.
8. FOR SEWER AND WATER INSTALLATION WITHIN EXISTING VDOT R/W; UTILITY CONTRACTORS SHALL NOTIFY VDOT 48 HOURS IN ADVANCE WHEN INSTALLATION BEGINS SO THAT DENSITY CAN BE TESTED (95% @ OPTIMUM MOISTURE + 20%)
9. CONTRACTOR SHALL VERIFY LOCATION AND ELEVATION OF ALL UNDERGROUND UTILITIES SHOWN ON THE PLANSIN AREAS OF CONSTRUCTION PRIOR TO STARTING THE WORK. CONTACT ENGINEER IMMEDIATELY, IF: LOCATION OR ELEVATION IS DIFFERENT FROM THAT SHOWN ON THE PLAN, OR IF: THERE APPEARS TO BE A CONFLICT, AND UPON DISCOVERY OF ANY UTILITY NOT SHOWN ON THE PLAN CALL MISS UTILITY OF VIRGINIA AT 1-800-552-7001 (TOLL FREE)
10. THE INSTALLATION OF A BACKFLOW DEVICE IS REQUIRED IN ALL HOUSES WHERE THE FINISHED FLOOR ELEVATION IS LOWER THAN THE TOP UPGRADE MANHOLE. THIS DEVICE WILL BE INSPECTED BY THE COUNTY BUILDING INSPECTOR.
11. INDIVIDUAL WATER SERVICES SHALL BE 3/4"
12. ALL WATERLINE VALVES MUST BE LOCATED ON THE TEE OR CROSS WHEN APPLICABLE.
13. ALL MANHOLES IN UTILITY EASEMENTS ARE TO HAVE THE CONCRETE SECTION EXTENDED ONE FOOT ABOVE THE GROUND OR DETAIL MAN-2B SHALL BE USED
14. A SMOOTH TRANSITION OF A DROP MANHOLE MUST BE PROVIDED FOR EACH LATERAL OR SANITARY SEWER ENTERING A SANITARY MANHOLE
15. ALL FIRE HYDRANTS SHALL BE O.S.H.A. RED IN COLOR.
16. METER BOXES PROVIDED SHALL BE CAST IRON 12"x18"x24" HIGH WITH CAST IRON LIDS. THE METER ASSEMBLIES ARE TO BE SUPPLIED WITH NEPTUNE PROREAD ENCODERS AND R9001 PIT MIU (RF) ATTACHED TO THE LID. METERS ARE TO BE COMPATIBLE WITH THE PROPOSED SYSTEM. A WAND TYPE VISUAL READER COMPATIBLE WITH THE PROREAD SYSTEM WILL BE SUPPLIED TO THE UTILITY DEPARTMENT WITH THE WATER METERS.
17. ALL SANITARY SEWER LATERALS THAT ARE INSTALLED OUTSIDE OF THE R/W ARE TO HAVE THE CLEANOUT INSTALLED AT THE EDGE OF THE EASEMENT. A CARSONITE MARKER SHALL ALSO BE INSTALLED TO INDICATE THEIR LOCATION.
18. ALL HYDRANTS AND BENDS SHALL BE EQUIPPED WITH MEGA LUGS, KICKERS AND THRUST BLOCKS.
19. PRESSURE REDUCING VALVES SHALL BE USED ON LOTS WHERE THE STATIC PRESSURE IN THE SYSTEM EXCEEDS 80 PSI OR AS REQUIRED BY BUILDING CODE.
20. CLEANOUTS ARE TO BE INSTALLED ON ALL SANITARY LATERALS IN ACCORDANCE WITH PRINCE GEORGE COUNTY SPECIFICATIONS. THESE CLEANOUTS SHOULD BE INSTALLED AT THE EDGE OF THE R/W.

| DATE | STANDARD SEWER AND WATER NOTES | DRWG. NO. |
|---|---|---|
| JAN. 2008 | | DES-2 |
| REVISIONS | | SHEET 2 OF 3 |

## PRINCE GEORGE COUNTY
## DEPARTMENT OF PUBLIC UTILITIES

NOTES CONT:

21. UTILITY INSPECTOR SHALL BE CONTACTED BEFORE INDIVIDUAL SERVICE CONNECTIONS ARE COVERED.
22. ALL MANHOLES WITHIN 1,000 FEET OF A FORCE MAIN DISCHARGE SHALL BE COATED AS REQUIRED IN THE LATEST COUNTY SPECIFICATIONS.
23. ALL INDIVIDUAL WATER AND SEWER CONNECTIONS SHALL BE MADE USING DOUBLE BANDED, STAINLESS STEEL, EPDXY COATED SADDLES.
24. A 'W' AND 'S' SHALL BE STAMPED IN THE CURB WHILE THE CONCRETE IS STILL WET. THESE MARKS SHALL INDICATE THE ACTUAL LOCATION OF THE WATER AND SEWER CONNECTIONS FOR EACH LOT.
25. ALL MANHOLES SHALL BE SEALED AT THE JOINTS WITH AN EXTERNAL RUBBER SLEEVE SIMILAR TO THE INFI-SHIELD SEAL WRAP AS MANUFACTURED BY SEALING SYSTEMS, INC. THE SEAL SHALL BE MADE OF EPDM (ETHYLENE PROPYLENE DIENE MONOMER) RUBBER WITH A MINIMUM THICKNESS OF 65 MILS. EACH UNIT SHALL HAVE A 2-INCH WIDE MASTIC STRIP ON THE TOP AND BOTTOM EDGE OF THE RUBBER WRAP. THE MASTIC SHALL BE NON-HARDENING BUTYL RUBBER SEALANT, WITH A MINIMUM THICKNESS OF 125 MILS.
26. THE BOXES FOR THE SEWER CONNECTIONS MUST BE MARKED AS SEWER CONNECTIONS RATHER THAN WATER METER.
27. ALL GATE VALVE BOXES LOCATED OUTSIDE THE PAVEMENT NEED TO BE ENCLOSED IN A 12"x12"x6" CONCRETE ENLOSURE.

| DATE | STANDARD SEWER AND WATER NOTES | DRWG. NO. |
|---|---|---|
| JAN. 2008 | | DES-2 |
| REVISIONS | | SHEET 3 OF 3 |

RECORD DRAWING

COMMONWEALTH OF VIRGINIA
WESLEY G. HUNNIUS
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08/25/15
PROFESSIONAL ENGINEER

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DRAWN BY: C. CUNDIFF
DESIGNED BY: W. HUNNIUS
CHECKED BY: W. HUNNIUS
SCALE: NTS

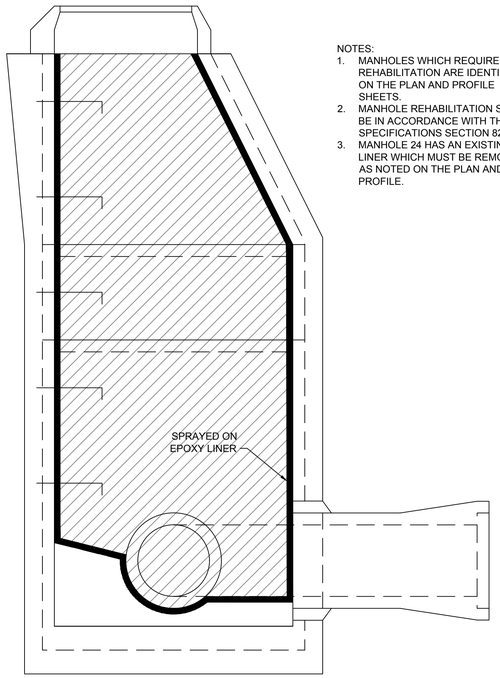
TIMMONS GROUP

UPPER BLACKWATER SEWER REHABILITATION
RIVES DISTRICT - PRINCE GEORGE COUNTY - VIRGINIA
NOTES & DETAILS

JOB NO. 35280.005
SHEET NO. D1.0



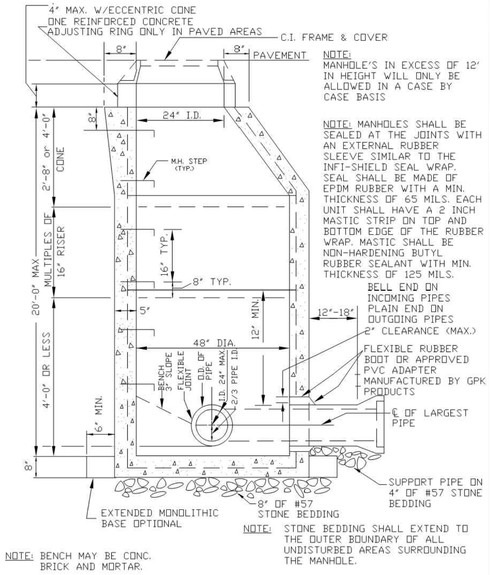
L:\2013\35280.005 - Upper Blackwater Sewer Rehabilitation\DWG - Record\Sheet\CD\35280.005-D1.0-E1.1.dwg | Plotted on 9/8/2016 4:57 PM | by Andy Pitts




NOTES:
1. MANHOLES WHICH REQUIRE REHABILITATION ARE IDENTIFIED ON THE PLAN AND PROFILE SHEETS.
2. MANHOLE REHABILITATION SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS SECTION 822
3. MANHOLE 24 HAS AN EXISTING LINER WHICH MUST BE REMOVED AS NOTED ON THE PLAN AND PROFILE.

## MANHOLE REHABILITATION

PRINCE GEORGE COUNTY
DEPARTMENT OF PUBLIC UTILITIES



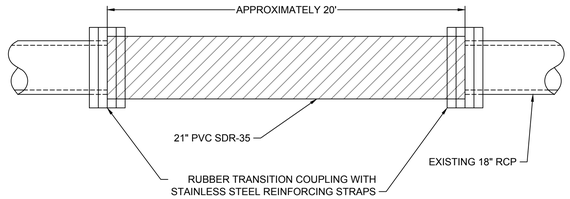

NOTE: MANHOLE'S IN EXCESS OF 12' IN HEIGHT WILL ONLY BE ALLOWED IN A CASE BY CASE BASIS

NOTE: MANHOLES SHALL BE SEALED AT THE JOINTS WITH AN EXTERNAL RUBBER SLEEVE SIMILAR TO THE INFI-SHIELD SEAL WRAP. SEAL SHALL BE MADE OF EPDM RUBBER WITH A MIN. THICKNESS OF 65 MILS. EACH UNIT SHALL HAVE A 2 INCH MASTIC STRIP ON TOP AND BOTTOM EDGE OF THE RUBBER WRAP. MASTIC SHALL BE NON-HARDENING BUTYL RUBBER SEALANT WITH MIN. THICKNESS OF 125 MILS.

NOTE: BENCH MAY BE CONC. BRICK AND MORTAR.

NOTE: STONE BEDDING SHALL EXTEND TO THE OUTER BOUNDARY OF ALL UNDISTURBED AREAS SURROUNDING THE MANHOLE.

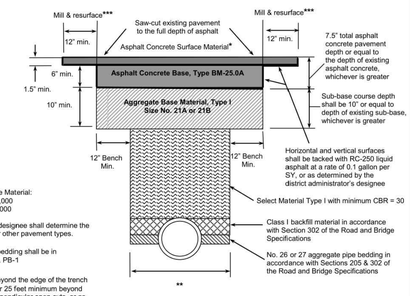
| DATE JAN. 2008 | STANDARD PRECAST CONCRETE MANHOLE SEWERS 8" TO 24" LOCATED IN PAVED AREAS | DRWG. NO. MAN-2 |
|---|---|---|
| REVISIONS | | |




NOTES:
1. THIS REPAIR OPTION WILL ONLY BE USED WHERE DIRECTED BY THE OWNER AND WHERE OTHER SPOT REPAIR METHODS ARE DETERMINED TO NOT BE FEASIBLE.
2. CUT ENDS OF EXISTING RCP PIPE SQUARE TO PROVIDE A SECURE LOCATION FOR TRANSITION COUPLING.

## OPEN CUT POINT REPAIR

**Asphalt Pavement Restoration Detail for Open Cut Utility Installations**




**NOTES:**

* Asphalt Concrete Surface Material:
SM-9.5A for ADT < 10,000
SM-9.5D for ADT > 10,000

The district administrator's designee shall determine the restoration requirements for other pavement types.

** Trench width and pipe bedding shall be in accordance with VDOT Std. PB-1

*** 12 inches minimum beyond the edge of the trench on longitudinal open cuts, or 25 feet minimum beyond the trench centerline on perpendicular open cuts, or as determined by the district administrator's designee.

**Date: August 27, 2014**

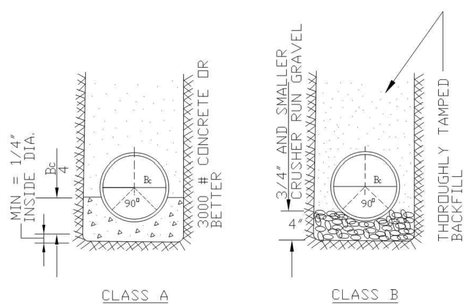
**Not to Scale**

## VDOT PAVEMENT REPLACEMENT

4

PRINCE GEORGE COUNTY
DEPARTMENT OF PUBLIC UTILITIES

MAXIMUM TRENCH WIDTH SHALL BE 33" FOR SEWER UP TO 12" DIAMETER. USE OUTSIDE PIPE DIAMETER PLUS 18" FOR SEWER 15" AND LARGER.




| DATE JAN. 2008 | TYPES OF SEWER BEDDING | DRWG. NO. SEW-1 |
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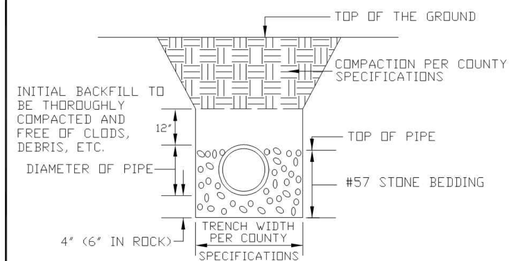
PRINCE GEORGE COUNTY
DEPARTMENT OF PUBLIC UTILITIES




NOTE: FOR DEPTHS IN EXCESS OF 12 FEET, WHEN APPROVED BY THE COUNTY, PIPE NEEDS TO BE DUCTILE IRON PIPE WITH 12 INCHES OF STONE ON TOP

NOTE: CONTRACTOR MUST INSURE THE STONE IS PROPERLY COMPACTED, ESPECIALLY UNDER THE HAUNCHES OF THE PIPE.

| DATE JAN. 2008 | BEDDING AND BACKFILL DETAIL FOR PLASTIC SEWER PIPE | DRWG. NO. SEW-2 |
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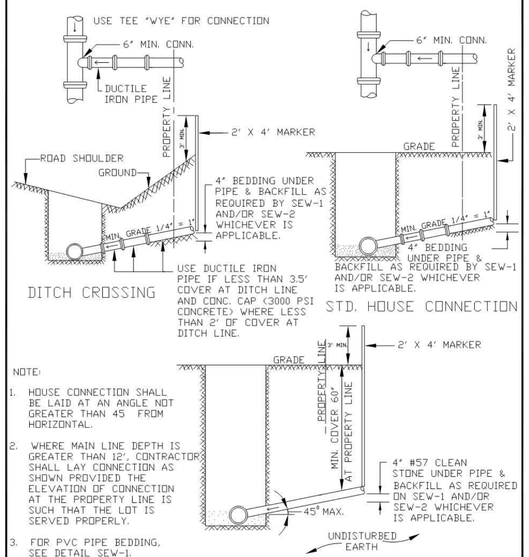
| REVISIONS | | |

PRINCE GEORGE COUNTY
DEPARTMENT OF PUBLIC UTILITIES




NOTE:
1. HOUSE CONNECTION SHALL BE LAID AT AN ANGLE NOT GREATER THAN 45° FROM HORIZONTAL.
2. WHERE MAIN LINE DEPTH IS GREATER THAN 12', CONTRACTOR SHALL LAY CONNECTION AS SHOWN PROVIDED THE ELEVATION OF CONNECTION AT THE PROPERTY LINE IS SUCH THAT THE LOT IS SERVED PROPERLY.
3. FOR PVC PIPE BEDDING, SEE DETAIL SEW-1.

| DATE JAN. 2008 | HOUSE CONNECTION DETAILS | DRWG. NO. SEW-4 |
|---|---|---|
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RECORD DRAWING

COMMONWEALTH OF VIRGINIA
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DATE 07/08/15
DRAWN BY C. CUNDIFF
DESIGNED BY W. HUNNIUS
CHECKED BY W. HUNNIUS
SCALE NTS

TIMMONS GROUP

UPPER BLACKWATER SEWER REHABILITATION
RIVES DISTRICT - PRINCE GEORGE COUNTY - VIRGINIA
NOTES & DETAILS

JOB NO. 35280.005
SHEET NO. D1.1



L:\2015\35280.005 - Upper Blackwater Sewer Rehabilitation\DWG - Record\Sheet\CD\35280.005-D1.0-E1.1.dwg | Plotted on 9/8/2016 4:59 PM | by Andy Pitts

*LAND DISTURBANCE AND EROSION & SEDIMENT CONTROL NARRATIVE*

PROJECT DESCRIPTION

THIS PROJECT WILL INCLUDE THE CURED–IN–PLACE–PIPE (CIPP) LINING OF AN EXISTING 18"SANTIARY SEWER AND THE REHABILITATION OF A NUMBER OF MANHOLES ALONG THE SEWER ALIGNMENT. THE PROJECT WILL RUN ALONG COURTHOUSE ROAD, BAXTER ROAD, PARTRIDGE COURT AND WITHIN AN EXISTING CROSS COUNTRY UTILITY EASEMENT. THE MOJORITY OF THE WORK WILL BE COMPLETED THROUGH THE EXITSING MANHOLES THEREBY LIMITING THE AMOUNT OF EXCAVATION AND LAND DISTRUBNANCE REQUIRED.

EXISTING SITE CONDITIONS

THE PROJECT SITE CONSISTS OF EXISTING ROAD RIGHT OF WAY AND EXISTING UTILITY EASEMENTS, BOTH OF WHICH HAVE BEEN PREVIOUSLY DISTURBED.

STOCKPILE AREAS

ALL STOCKPILES SHALL BE KEPT WITHIN THE TEMPORARY CONSTRUCTION/PERMANENT UTILITY EASEMENTS, BUT MUST STAY CLEAR OF ALL CONSTRUCTION ACTIVITY. SILT FENCE SHALL BE PLACED AROUND THE LIMITS OF THE STOCKPILES TO PREVENT EROSION.

EROSION AND SEDIMENT CONTROL MEASURES

UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE CONSTRUCTED AND MAINTAINED ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS OF THE LATEST EDITION OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK (VESCH).

STRUCTURAL PRACTICES

1. SILT FENCE BARRIER – 3.05
   SILT FENCE SEDIMENT BARRIERS SHALL BE INSTALLED DOWN SLOPE OF AREAS WITH MINIMAL GRADES TO FILTER SEDIMENT–LADEN RUNOFF FROM SHEET FLOW AS APPROPRIATE.
2. CULVERT INLET PROTECTION – 3.08
   CULVERT INLET PROTECTION SHALL BE INSTALLED TO PREVENT SEDIMENT FROM ENTERING, ACCUMULATING IN AND BEING TRANSFERRED BY A CULVERT AND ASSOCIATED DRAINAGE SYSTEM PRIOR TO PERMANENT STABILIZATION OF A DISTURBED PROJECT AREA.
3. ROCK CHECK DAMS – 3.20
   ROCK CHECK DAMS SHALL BE INSTALLED TO REDUCE THE VELOCITY OF CONCENTRATED STORMWATER FLOWS, THEREBY REDUCING EROSION OF THE SWALE OR DITCH.

VEGETATIVE PRACTICES

1. TOPSOILING (STOCKPILE) – 3.30
   TOPSOIL WILL BE STRIPPED FROM AREAS TO BE EXCAVATED AND STOCKPILED FOR LATER USE IN BACKFILLING UPPER SURFACES OF TRENCHES. STOCKPILE LOCATIONS SHALL BE LOCATED WITHIN TEMPORARY CONSTRUCTION/PERMANENT UTILITY EASEMENTS.

2. TEMPORARY SEEDING – 3.31
   ALL DENUDED AREAS WHICH WILL BE LEFT DORMANT FOR 14 DAYS OF TIME SHALL BE SEEDED IN ACCORDANCE WITH THE SPECIFICATIONS WITH FAST–GERMINATING, TEMPORARY VEGETATION IMMEDIATELY FOLLOWING EXCAVATION.

3. MULCH – 3.35
   MULCH SHALL BE USED ON RELATIVELY FLAT AREAS AND WILL BE APPLIED AS A SECOND STEP IN THE SEEDING OPERATION.

MANAGEMENT STRATEGIES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF ALL EROSION AND SEDIMENT CONTROL PRACTICES. ALL EROSION & SEDIMENT CONTROL MEASURES SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.
2. IF INSTALLED. A CONSTRUCTION ENTRANCE SHALL BE INSTALLED AS PART OF THE CONTRACT IN THE LOCATIONS SHOWN ON THESE PLANS. SUBSEQUENTLY, THE CONTRACTOR SHALL UTILIZE THIS ENTRANCE FOR CONSTRUCTION PURPOSES.
3. THE CONTRACTOR SHALL INSTALL SILT FENCE ALONG THE CONSTRUCTION AREAS IN ACCORDANCE WITH THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK.
4. THE CONTRACTOR SHALL CONFINE HIS WORK TO EXISTING RIGHT–OF–WAYS, TEMPORARY CONSTRUCTION EASEMENTS, AND PERMANENT UTILITY EASEMENTS.
5. CONSTRUCTION WILL BE SEQUENCED SO THAT CLEARING AND ALL EXCAVATION AND BACKFILL OPERATIONS CAN BEGIN AND END AS QUICKLY AS POSSIBLE.
6. THE CONTRACTOR SHALL COMMENCE CLEARING OPERATIONS AS REQUIRED. THE CONTRACTOR SHALL INITIATE REPAIRS IN ACCORDANCE WITH THE SPECIFICATIONS. UPON COMPLETION OF THE REPAIRS THE CONTRACTOR SHALL THEN PERFORM ALL SEEDING AND MULCHING AS REQUIRED.
7. FUEL, OIL, AND CHEMICALS USED FOR THIS PROJECT SHALL BE PLACED IN A SECURED AREA, WEATHERPROOF TRAILER, OR TRANSPORTED TO A LOCKED ENCLOSURE AT THE END OF EACH WORKDAY. PROVISIONS FOR CONTAINMENT SHALL BE SUBMITTED TO THE OWNER FOR APPROVAL.
8. THE CONTRACTOR SHALL PROPERLY REMOVE AND DISPOSE OF ALL DEBRIS REMOVED FROM THE PROJECT. NO SOLID MATERIALS (GARBAGE AND DEBRIS) SHALL BE DISCHARGED TO SURFACE WATERS OF THE STATE. DISTURBED AREAS AND AREAS USED FOR STORAGE OF MATERIALS THAT ARE EXPOSED TO PRECIPITATION SHALL BE INSPECTED FOR EVIDENCE OF, OR THE POTENTIAL FOR, POLLUTANTS ENTERING NATURAL DRAINAGE COURSES. OTHER POTENTIAL POLLUTION SOURCES, SUCH AS VEHICLE FUELING, STORAGE OF FERTILIZERS OR CHEMICALS, AND SANITARY WASTE FACILITIES SHALL ALSO BE CONTROLLED SO AS NOT TO BE DISCHARGED TO SURFACE WATERS OF THE STATE.
9. CONTRACTOR SHALL INSPECT DISTURBED AREAS OF THIS PROJECT AT THE END OF EACH WORK DAY (SILT FENCE, CULVERT INLET PROTECTION) AND MAKE ANY NEEDED REPAIRS IMMEDIATELY. CONTRACTOR SHALL DOCUMENT A WRITTEN INSPECTION OF DISTURBED AREAS OF THIS PROJECT AT THE END OF EACH WORK WEEK (SILT FENCE, CULVERT INLET PROTECTION, ROCK CHECK DAMS, TEMPORARY AND PERMANENT STABILIZED AREAS), NOTING WHERE REPAIRS WERE PERFORMED, WHEN PERMANENT STABILIZATION WAS APPLIED, WHEN EROSION & SEDIMENT CONTROL MEASURES WERE INSTALLED, AND WHEN THEY WERE REMOVED.

PERMANENT STABILIZATION

ALL AREAS DISTURBED BY CONSTRUCTION SHALL BE STABILIZED WITH PERMANENT SEEDING AND/OR WETLAND SEEDING IMMEDIATELY FOLLOWING FINISH GRADING OR RESTORING GRADES TO THE PRE–EXISTING ELEVATIONS. SEEDING SHALL BE DONE IN ACCORDANCE WITH THE CONSTRUCTION PLANS AND SPECIFICATIONS. IN ALL SEEDING OPERATIONS, SEED, FERTILIZER, AND LIME WILL BE APPLIED PRIOR TO MULCHING.

MAINTENANCE

1. THE CONTRACTOR SHALL INSPECT DISTURBED AREAS OF THE CONSTRUCTION SITE THAT HAVE NOT BEEN FINALLY STABILIZED, AND AREAS USED FOR STORAGE OF MATERIALS THAT ARE EXPOSED TO PRECIPITATION, STRUCTURAL CONTROL MEASURES, AND LOCATIONS WHERE VEHICLES ENTER OR EXIT THE SITE. THESE INSPECTIONS SHALL BE CONDUCTED AND DOCUMENTED AT LEAST ONCE EVERY SEVEN CALENDAR DAYS WITHIN 24 HOURS OF THE END OF A STORM EVENT THAT IS 0.5 INCHES OR GREATER. WHERE AREAS HAVE BEEN FINALLY STABILIZED, SUCH INSPECTIONS SHALL BE CONDUCTED AT LEAST ONCE EVERY MONTH. THE FOLLOWING ITEMS WILL BE PERFORMED IN PARTICULAR.
2. DISTURBED AREAS AND AREAS USED FOR STORAGE OF MATERIALS THAT ARE EXPOSED TO PRECIPITATION SHALL BE INSPECTED WEEKLY AND WITHIN 24 HOURS OF THE END OF A STORM EVENT THAT IS 0.5 INCHES OR GREATER FOR EVIDENCE OF OR THE POTENTIAL FOR, POLLUTANTS ENTERING THE DRAINAGE SYSTEM. EROSION AND SEDIMENT CONTROL MEASURES IDENTIFIED IN THE PLAN SHALL BE OBSERVED TO ENSURE THAT THEY ARE OPERATING CORRECTLY. WHERE DISCHARGE LOCATIONS OR POINTS ARE ACCESSIBLE, THEY SHALL BE INSPECTED TO ASCERTAIN WHETHER EROSION CONTROL MEASURES ARE EFFECTIVE IN PREVENTING SIGNIFICANT IMPACTS TO RECEIVING WATERS. LOCATIONS WHERE VEHICLES ENTER OR EXIT THE SITE SHALL BE INSPECTED FOR EVIDENCE OF OFF–SITE SEDIMENT TRACKING.
3. THE SILT FENCE BARRIER WILL BE CHECKED WEEKLY AND WITHIN 24 HOURS OF THE END OF A STORM EVENT THAT IS 0.5 INCHES OR GREATER FOR UNDERMINING OF DETERIORATION OF THE FABRIC. SEDIMENT SHALL BE REMOVED WHEN THE LEVEL OF SEDIMENT DEPOSITION REACHES HALF WAY TO THE TOP OF BARRIER.
4. THE SEEDED AREAS WILL BE CHECKED WEEKLY AND WITHIN 24 HOURS OF THE END OF A STORM EVENT THAT IS 0.5 INCHES OR GREATER TO ENSURE THAT A GOOD STAND IS MAINTAINED. AREAS SHOULD BE FERTILIZED AND RESEEDED AS NEEDED.
5. BASED ON THE RESULTS OF THE INSPECTION, THE EROSION AND SEDIMENT CONTROL MEASURES IDENTIFIED ON THESE PLANS SHALL BE REVISED AS APPROPRIATE, BUT IN NO CASE LATER THAN 7 CALENDAR DAYS FOLLOWING INSPECTION. SUCH MODIFICATIONS SHALL PROVIDE FOR TIMELY IMPLEMENTATION OF ANY CHANGES TO THE PLANS WITHIN 7 CALENDAR DAYS

EROSION CONTROL LEGEND

| | | | * |
|---|---|---|---|
| SF | ×–×–× | SILT FENCE | 3.05 |
| CIP | ▨ | CULVERT INLET PROTECTION | 3.08 |

* VIRGINIA EROSION & SEDIMENT CONTROL HANDBOOK SPECIFICATION NUMBER, THIRD EDITION, 1992.

AREA OF DISTURBANCE

TOTAL AREA DISTURBED = 0.15 AC

FEMA INFORMATION

FEMA COMMUNITY PANEL NUMBER = 51149C0155B (PRINCE GEORGE COUNTY) & 5101120029C (PETERSBURG IND CITY)
EFFECTIVE DATE: MAY 15, 2012 (PRINCE GEORGE COUNTY) & FEBURARY 04, 2011 (PETERSBURG IND CITY)

## MINIMUM STANDARDS:

PER THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, THIRD EDITION, DATED 1992, 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 14 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 TRAP 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 25–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 STORM WATER 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. NON–ERODIBLE MATERIAL SHALL BE USED FOR THE CONSTRUCTION OF CAUSEWAYS AND COFFERDAMS. EARTHEN FILL MAY BE USED FOR THESE STRUCTURES IF ARMORED BY NON–ERODIBLE 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 NON–ERODIBLE MATERIAL SHALL BE PROVIDED.

MS–14. ALL APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS PERTAINING TO WORKING 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. EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF TRENCHES.

B. 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.

C. MATERIAL USED FOR BACKFILLING TRENCHES SHALL BE PROPERLY COMPACTED IN ORDER TO MINIMIZE EROSION AND PROMOTE STABILIZATION.

D. RE–STABILIZATION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THESE REGULATIONS.

E. APPLICABLE SAFETY REGULATIONS SHALL BE COMPLIED WITH.

F. NO MORE THAN 500 CONTINUOUS LINEAR FEET OF TRENCH MAY BE OPENED AT ONE TIME.

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.

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 STANDARDS AND CRITERIA LISTED IN THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, CHAPTER 8 PAGES 20–24.

COMMONWEALTH OF VIRGINIA
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08/25/15
PROFESSIONAL ENGINEER

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DATE 07/08/15
DRAWN BY C. CUNDIFF
DESIGNED BY W. HUNNIUS
CHECKED BY W. HUNNIUS
SCALE NTS

TIMMONS GROUP

UPPER BLACKWATER SEWER REHABILITATION
RIVES DISTRICT - PRINCE GEORGE COUNTY - VIRGINIA
EROSION & SEDIMENT CONTROL NOTES & DETAILS

JOB NO. 35280.005
SHEET NO. E1.0

RECORD DRAWING

TABLE 3.32-D (FROM THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, 1992)

SITE SPECIFIC PERMANENT SEEDING MIXTURES FOR PIEDMONT AREA

| | TOTAL LBS PER ACRE |
|---|---|
| **MINIMUM CARE LAWN** | 175-200 LBS |
| -COMMERCIAL OR RESIDENTIAL | |
| -KENTUCKY 31 OR TURF-TYPE TALL FESCUE | 95-100% |
| -IMPROVED PERENNIAL RYEGRASS | 0-5% |
| -KENTUCKY BLUEGRASS | 0-5% |
| **HIGH-MAINTENANCE LAWN** | 200-250 LBS |
| -KENTUCKY 31 OR TURF-TYPE TALL FESCUE | 100% |
| **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 TALL FESCUE | 108 LBS |
| -RED TOP GRASS | 2 LBS |
| -SEASONAL NURSE CROP* | 20 LBS |
| -CROWNVETCH** | 20 LBS |
| | 150 LBS |

* USE SEASONAL NURSE CROP IN ACCORDANCE WITH SEEDING DATES AS STATED BELOW:

| | |
|---|---|
| FEBRUARY 16, THROUGH APRIL | ANNUAL RYE |
| MAY 1ST THROUGH AUGUST 15 | FOXTAIL MILLET |
| AUGUST 16 THROUGH OCTOBER | ANNUAL RYE |
| NOVEMBER THROUGH FEBRUARY 15 | WINTER RYE |

** SUBSTITUTE SERICEA LESPEDEZA FOR CROWNVETCH EAST OF FARMVILLE, VA. (MAY THROUGH SEPTEMBER USE HULLED SERICEA, ALL OTHER PERIODS, USE UNHULLED SERICEA). IF FLATPEA IS USED IN LIEU OF CROWNVETCH, INCREASES RATE TO 30 LBS/AC. 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/AC IN MIXES.

## LIME, FERTILIZER, AND MULCH RATE SCHEDULE

### I. LIME

COASTAL PLAIN : 2 TONS / ACRE PULVERIZED AGRICULTURAL GRADE LIMESTONE (90 LBS/1000 SQ.FT.)

NOTE : AN AGRICULTURAL GRADE OF LIMESTONE SHOULD ALWAYS BE USED.

### II. FERTILIZER

- MIXED GRASSES AND LEGUMES : 1000 LBS/ACRE 10-20-10 OR EQUIVALENT NUTRIENTS (23 LBS/1000 SQ.FT.)
- LEGUME STANDS ONLY : 1000 LBS/ACRE 5-20-10 (23 LBS/1000 SQ.FT.) IS PREFERRED; HOWEVER, 1000 LBS/ ACRE OF 10-20-10 OR EQUIVALENT MAY BE USED.
- GRASS STANDS ONLY : 1000LBS/ACRE 10-20-10 OR EQUIVALENT NUTRIENTS, (23 LBS/1000 SQ.FT.)

FERTILIZATION: COOL SEASON GRASSES SHOULD BEGIN TO BE FERTILIZED 90 DAYS AFTER PLANTING TO ENSURE PROPER STAND AND DENSITY. WARM SEASON FERTILIZATION SHOULD BEGIN AT 30 DAYS AFTER PLANTING.

- COOL SEASON GRASSES

4 LBS NITROGEN (N)
1 LB PHOSPHORUS (P) 〉 PER 1000 SQ.FT. PER YEAR
2 LBS POTASH (K)

SEVENTY-FIVE PERCENT OF THE TOTAL REQUIREMENTS SHOULD BE APPLIED BETWEEN SEPTEMBER 1 AND DECEMBER 31ST. THE BALANCE SHOULD BE APPLIED DURING THE REMAINDER OF THE YEAR. MORE THAN 1 LB OF SOLUBLE NITROGEN PER 1000 SQ.FT. SHOULD NOT BE APPLIED AT ANY ONE TIME.

- WARM SEASON GRASSES

APPLY 4-5 LBS NITROGEN (N) BETWEEN MAY 1 AND AUGUST 15TH PER 1000 SQ.FT. PER YEAR.

PHOSPHORUS (P) AND POTASH (K) SHOULD ONLY BE APPLIED ACCORDING TO SOIL TEST.

NOTE : THE USE OF SLOW-RELEASE FERTILIZER FORMULATIONS FOR MAINTENANCE OF TURF IS ENCOURAGED TO REDUCE THE NUMBER OF APPLICATIONS AND THE IMPACT ON GROUNDWATER.

### III. MULCH

ORGANIC MULCH MATERIALS AND APPLICATION RATES

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

## SEEDING NOTES

1. ALL STABILIZATION/ SEEDING WILL BE ACCOMPLISHED IN ACCORDANCE WITH THE LATEST EDITION OF THE VIRGINIA EROSION AND SEDIMENTATION CONTROL HANDBOOK, AS WELL AS THE ACCOMPANYING SEEDING SCHEDULE.
2. ANY DISTURBED AREA NOT PAVED, SODDED, OR BUILT UPON, WILL HAVE A MINIMUM OF 80% VEGETATIVE COVER PRIOR TO FINAL INSPECTION, AND IN THE OPINION OF THE COUNTY INSPECTOR WILL BE MATURE ENOUGH TO CONTROL SOIL EROSION SATISFACTORILY AND SURVIVE SEVERE WEATHER CONDITIONS.
3. STREAM DIVERSION AREAS, WATERWAYS, BANKS AND RELATED AREAS SHALL BE SEEDED AND MULCHED IMMEDIATELY AFTER WORK IN WATERCOURSE IS COMPLETED.
4. WINTERIZATION - ANY DISTURBED AREA NOT PAVED, SODDED OR BUILT UPON BY NOVEMBER 15 IS TO BE SEEDED AND MULCHED ON THAT DATE UNLESS WAIVED BY THE DIRECTOR OF PUBLIC WORKS.
5. 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 STOCKPILES, ON SITE AS WELL AS SOIL (INTENTIONALLY) TRANSPORTED FROM THE PROJECT SITE.

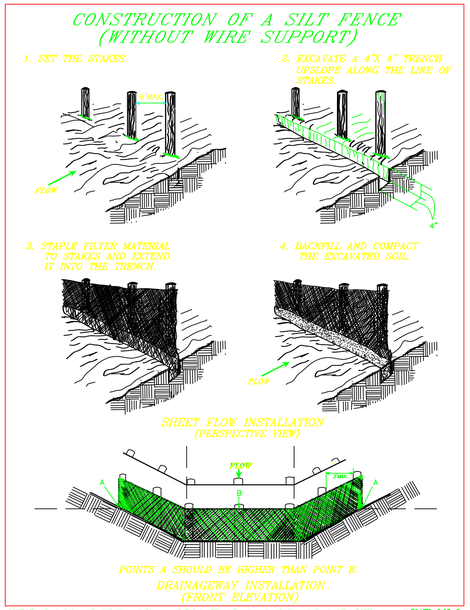
TABLE 3.31-C (FROM THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, 1992)

TEMPORARY SEEDING PLANT MATERIALS, SEEDING RATES, AND DATES

| SPECIES | SEEDING RATE | | COASTAL PLAIN AREA | | | PLANT CHARACTERISTICS |
|---|---|---|---|---|---|---|
| | ACRE | 1000 SQ.FT | 2/15 TO 4/30 | 5/1 TO 9/1 | 9/1 TO 11/15 | |
| OATS ( AVENA SATIVA ) | 3 BU. (UP TO 100 LBS, NOT LESS THAN 50 LBS) | 2 LBS | X | – | – | USE SPRING VARIETIES (E.G. NOBLE). |
| RYE [d] (SECALE CEREALE ) | 2 BU. (UP TO 110 LBS, NOT LESS THAN 50 LBS) | 2.5 LBS | X | – | X | USE LATE FALL SEEDINGS, WINTER COVER. TOLERATES COLD AND LOW MOISTURE. |
| GERMAN MILLET (SETARIA ITALICA) | 50 LBS | APPROX. 1 LB | – | X | – | WARM-SEASON ANNUAL. DIES AT FIRST FROST. MAY BE ADDED TO SUMMER MIXES. |
| ANNUAL RYEGRASS [c] (LOLIUM MULTI-FLORUM) | 60 LBS | 1.5 LBS | X | – | X | MAY BE ADDED IN MIXES. WILL MOW OUT OF MOST STANDS. |
| WEEPING LOVEGRASS (ERAGROSTIS CURVULA) | 15 LBS | 5.5 OZS | – | X | – | WARM-SEASON PERENNIAL. MAY BUNCH. TOLERATES HOT, DRY SLOPES AND ACID, INFERTILE SOILS. MAY BE ADDED TO MIXES. |
| KOREAN LESPEDEZA [c] (LESPEDEZA STIPULACEA) | 25 LBS | APPROX. 1.5 LBS | X | X | – | WARM SEASON ANNUAL LEGUME. TOLERATES ACID SOILS. MAY BE ADDED TO MIXES. |

[c] MAY BE USED AS A COVER CROP WITH SPRING SEEDING
[d] MAY BE USED AS A COVER CROP WITH FALL SEEDING
X MAY BE PLANTED BETWEEN THESE DATES
– MAY NOT BE PLANTED BETWEEN THESE DATES

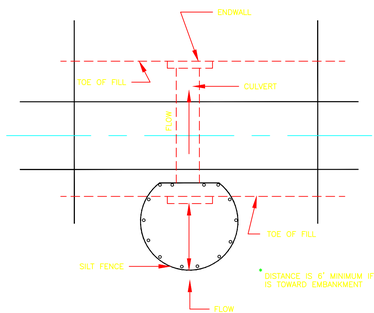
## CONSTRUCTION OF A SILT FENCE (WITHOUT WIRE SUPPORT)



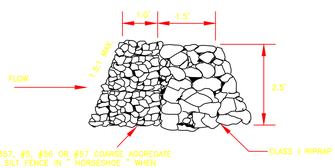

SOURCE: Adapted from Installation of Straw and Fabric Filter Barriers for Sediment Control,VA. DSWC Sherwood and Wyant

PLATE. 3.05-2

## SILT FENCE CULVERT INLET PROTECTION




## * OPTIONAL STONE COMBINATION




SOURCE: ADAPTED from VDOT Standard Sheets and Va. DSWC

PLATE. 3.08-1

Xref BORDER

RECORD DRAWING

COMMONWEALTH OF VIRGINIA
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REVISION DESCRIPTION
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DATE
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DATE: 07/08/15
DRAWN BY: C. CUNDIFF
DESIGNED BY: W. HUNNIUS
CHECKED BY: W. HUNNIUS
SCALE: NTS

TIMMONS GROUP

UPPER BLACKWATER SEWER REHABILITATION
RIVES DISTRICT - PRINCE GEORGE COUNTY - VIRGINIA
EROSION & SEDIMENT CONTROL NOTES & DETAILS

JOB NO. 35280.005
SHEET NO. E1.1



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