

PROJECT SUMMARY:  
OWNER/DEVELOPER: SHOWCASE HOME BUILDERS  
144 OAK TREE BOULEVARD  
CHRISTIANSBURG, VA 24073  
CONTACT: ROGER WOODY  
PROJECT LOCATION: 1145 ROANOKE STREET  
CHRISTIANSBURG, VA 24073

1. TYPE OF CONSTRUCTION: COMMERCIAL

1.1. TAX PARCEL NUMBER: 528-A 91

\*ALL WORK PROPOSED IN THESE PLANS IS TO BE DONE WITHIN THE ABOVE LISTED TAX PARCEL, EASEMENTS OBTAINED, OR PUBLIC RIGHTS-OF-WAY.

2. INSTRUMENT NO.: 2017006214

3. ZONING DISTRICT: B3-BUSINESS, GENERAL

4. SETBACKS:

FRONT: 30' (FROM ANY STREET RIGHT-OF-WAY)  
SIDE: 10'  
REAR: 35'  
PARKING: 20' (FROM RIGHT-OF-WAY)

4. ZONING/PLANNING AREAS

TOTAL PROJECT/PARCEL AREA: 96,244.040 SF (2.209 AC)  
TOTAL DISTURBED AREA: 96,244.040 SF (2.209 AC)  
TOTAL BUILDING AREA: 0  
TOTAL NUMBER OF BUILDINGS: 0  
BUILDING HEIGHT: 35' MAX. (N/A)  
LOT COVERAGE (% IMP): 76,979.232 SF (1.767 AC)(80%)

5. GREENSPACE AND LANDSCAPING AREAS

TOTAL AREA: 96,244.040 SF (2.209 AC)  
IMPERVIOUS SURFACE AREA REQUIRED: 76,979.232 SF (1.767 AC)  
IMPERVIOUS SURFACE AREA PROVIDED: 96,244.040 SF (2.209 AC)  
GREENSPACE REQUIRED: 19,244.808 SF (0.441 AC)  
GREENSPACE PROVIDED: 96,244.040 SF (2.209 AC)  
LANDSCAPING REQUIRED: ----- SF  
LANDSCAPING PROVIDED: ----- SF  
TREES REQUIRED: ----- TREES (MIN. 6 FEET TALL)  
TREES PROVIDED: ----- TREES (MIN. 6 FEET TALL)

6. INTERIOR PARKING LOT GREENSPACE AND TREE REQUIREMENTS

PARKING GREENSPACE REQUIRED: 0 S.F. (40 SF PER PARKING SPACE)  
PARKING GREENSPACE PROVIDED: 0 S.F.  
TREES REQUIRED: 0 TREES (1 PER 10 SPACES, MIN. 6 FEET TALL)  
TREES PROVIDED: 0 TREES (MIN. 6 FEET TALL)

7. PARKING TABULATIONS

PARKING SPACES REQUIRED: 0 SPACES (MIN. 4 INCH STRIPING)  
PARKING SPACES PROVIDED: 0 SPACES  
ACCESSIBLE SPACES REQUIRED: 0 SPACES  
ACCESSIBLE SPACES PROVIDED: 0 SPACES

8. FRONTAGE REQUIREMENT OF ZONING: 0 LF

9. LOT AREA REQUIREMENT OF ZONING: 0 S.F.

10. NOTE LOT AVERAGING, IF APPLICABLE: N/A

11. NOTE CLUSTER SUBDIVISION, IF APPLICABLE: N/A

12. STATEMENT OF WHETHER ANY EASEMENTS ARE PRESENT ON PROPERTY.

13. NOTE ANY VARIANCE, CONDITIONAL ZONING, OR CONDITIONAL USE PERMIT. INCLUDE DATE ISSUED BY TOWN COUNCIL AND ANY ASSOCIATED PROFFERS, CONDITIONS, OR VARIANCE. ANY APPLICABLE CHANGES TO ZONING DISTRICT STANDARDS SHALL BE NOTED WITHIN APPLICABLE NOTES.

14. THE TOPOGRAPHY, AS DEPICTED HEREON, IS THE RESULT OF AN ACTUAL FIELD SURVEY CONDUCTED BY DOUGLAS MEREDITH JR., P.E., L.L.S. ON 01/01/2018.

15. NO GRAVES, STRUCTURES, OR OBJECTS MARKING A PLACE OF HUMAN BURIAL WERE FOUND AT TIME OF SURVEY.

16. THE SUBJECT PROPERTY DOES NOT LIE WITHIN A F.E.M.A. DESIGNATED 100-YEAR FLOOD HAZARD ZONE. THE SUBJECT PROPERTY LIES WITHIN "UNSHADED ZONE X - OTHER AREAS", AS DEFINED BY F.E.M.A. & AS SHOWN ON F.I.R.M. MAP NO. 51121C0144C, EFFECTIVE DATE OF SEPTEMBER 25, 2009. THIS DETERMINATION HAS BEEN MADE BY GRAPHIC METHODS ONLY. NO ELEVATION STUDY HAS BEEN PERFORMED AS A PART OF THIS PROJECT.  
\*\*\*CONSULT SURVEY DRAWING\*\*\*

APPROXIMATE EARTHWORK NOTES

GRADING PHASE I/II (MASS GRADING)

CUT: XX,XXX C.Y.  
FILL: XX,XXX C.Y. (1.1X COMPACTION RATE),  
XX,XXX C.Y. FROM STOCKPILE

NET: XXX C.Y.

GRADING PHASE III (INDIVIDUAL LOT CONSTRUCTION)

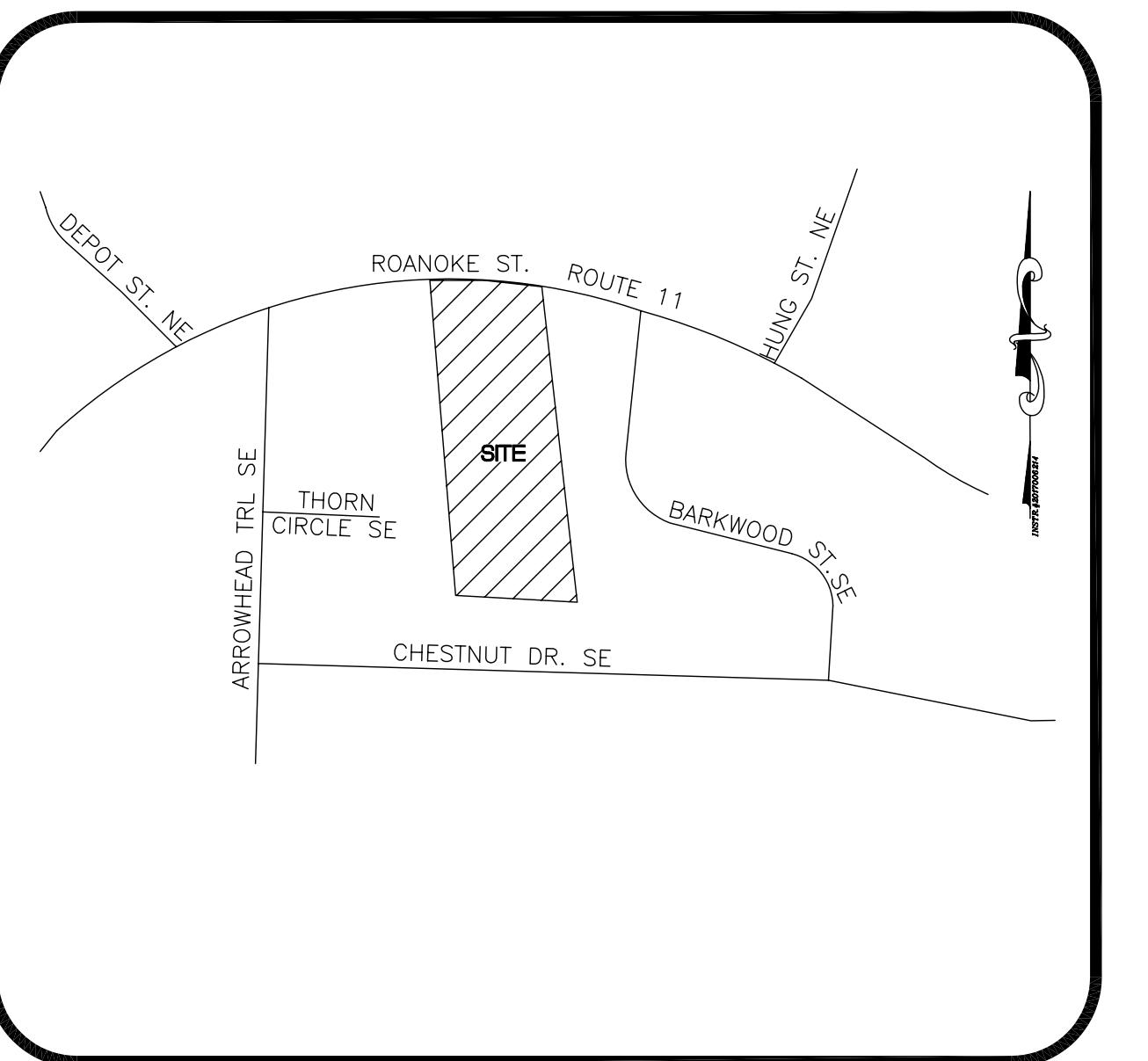
CUT: XX,XXX C.Y.  
FILL: XX,XXX C.Y. (1.1X COMPACTION RATE),  
XX,XXX C.Y. FROM STOCKPILE

NET: XXX C.Y.

1. ALL QUANTITIES ARE ENGINEER'S ESTIMATES FOR TOWN BONDING PURPOSES ONLY. ALL QUANTITIES SHALL BE CONSIDERED PRELIMINARY UNTIL FINAL SITE PLAN APPROVAL.
2. EARTHWORK QUANTITIES MAY BE BASED ON AN EXISTING TOP OF GRADE TO PROPOSED TOP OF GRADE COMPARISON ONLY AND THIS ARE APPROXIMATE. ACTUAL EARTHWORK REQUIRED WILL VARY BASED ON THE PRESENCE OF UNSUITABLE SOILS, TOPSOIL DEPTH, COMPACTION RATE, BASE STONE DEPTH, UTILITY TRENCH EXCAVATION, AND OTHER ENVIRONMENTAL FACTORS.
3. CONTRACTOR IS RESPONSIBLE FOR CONDUCTING THEIR OWN QUANTITIES TAKEOFF FOR BIDDING PURPOSES.

# SHOWCASE HOME BUILDERS COMMERCIAL SITE DEVELOPMENT 1145 ROANOKE ST.

TOWN OF CHRISTIANSBURG, VIRGINIA



VICINITY MAP

SCALE: NO SCALE

TOWN OF CHRISTIANSBURG, GENERAL NOTES:

1. ALL TRANSPORTATION INFRASTRUCTURE, AND THE DESIGN AND CONSTRUCTION OF STORM DRAINS AND MANHOLES WILL BE IN ACCORDANCE WITH VDOT ROAD AND BRIDGE STANDARDS AND SPECIFICATIONS, LATEST EDITION, CHAPTER 9 OF THE VDOT DRAINAGE MANUAL, 2008 EDITION AS AMENDED, AND TOWN OF CHRISTIANSBURG STANDARDS AND SPECIFICATIONS UNLESS SPECIFICALLY NOTED ON THE PLANS OR BY TOWN ORDER.
2. UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CONSTRUCTED AND MAINTAINED ACCORDING TO MINIMUM STANDARDS AND SPECIFICATION OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK AND VIRGINIA REGULATION 9VAC25-840-40 EROSION AND SEDIMENT CONTROL REGULATIONS.
3. 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 (UNDISTURBED) FOR LONGER THAN 14 DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT DORMANT FOR MORE THAN ONE YEAR.
4. ALL INFRASTRUCTURES SHALL BE CONSTRUCTED, INSPECTED, AND TESTED IN ACCORDANCE WITH THE REGULATIONS, STANDARDS, AND SPECIFICATIONS SET FORTH BY THE COMMONWEALTH OF VIRGINIA AND THE TOWN OF CHRISTIANSBURG.
5. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE THE LOCATION OF ALL UTILITIES PRIOR TO ACCEPTANCE BY THE TOWN. NO OTHER UTILITY SHALL BE LOCATED WITHIN 5 FEET, MEASURED HORIZONTALLY, OF ANY UTILITY TO BE MAINTAINED BY THE TOWN, EXCEPT WHERE CROSSING OF UTILITIES IS REQUIRED OR OTHERWISE APPROVED IN WRITING BY THE DIRECTOR OF ENGINEERING.
6. ALL WATERLINES SHALL BE CONSTRUCTED, INSPECTED, AND TESTED IN ACCORDANCE WITH AWWA STANDARD C-600, LATEST REVISION, AND THE REGULATIONS, STANDARDS, AND SPECIFICATIONS SET FORTH BY THE COMMONWEALTH OF VIRGINIA AND THE TOWN OF CHRISTIANSBURG.
7. INSTALLATION OF WATER METERS, WATER METER BOXES, AND TAPS ON EXISTING WATER MAINS SHALL BE PERFORMED BY TOWN PERSONNEL AT THE CONTRACTOR'S EXPENSE. THE CONTRACTOR SHALL CONSTRUCT ALL WATER SERVICE LINES BETWEEN THE TAPS AND WATER METERS. THE LOCATION AND INSTALLATION OF EACH ITEM SHALL BE COORDINATED BY THE CONTRACTOR.
8. ALL SANITARY SEWER LINES SHALL BE CONSTRUCTED, INSPECTED, AND TESTED IN ACCORDANCE WITH THE COMMONWEALTH OF VIRGINIA'S SEWAGE COLLECTION AND TREATMENT REGULATIONS, LATEST EDITION, THE REGULATIONS, STANDARDS, AND SPECIFICATIONS SET FORTH BY THE COMMONWEALTH OF VIRGINIA AND THE TOWN OF CHRISTIANSBURG.
9. CONNECTIONS TO EXISTING TOWN SANITARY SEWERS SHALL BE PERFORMED BY THE CONTRACTOR UNDER THE DIRECT SUPERVISION OF TOWN PERSONNEL. THE CONTRACTOR SHALL CONSTRUCT ALL SANITARY SEWER SERVICE LINES BETWEEN THE SANITARY SEWER MAIN AND THE CLEANOUT LOCATED AT THE PROPERTY OR EASEMENT LINE.
10. ALL PARKING SPACES, INCLUDING ADA COMPLIANT SPACES, SHALL BE SIGNED AND STRIPED ACCORDING TO CODE OF VIRGINIA SECTION 36-99.11
11. ADA SIGNAGE SHALL BE PROVIDED ACCORDING TO TOWN STANDARD DETAIL HS-1 FOR ALL HANDICAPPED ACCESSIBLE PARKING SPACES.
12. RIGHT-OF-WAY, LOT LINES, AND EASEMENTS ARE DEDICATED ON PLATS SEPARATE FROM THESE PLANS.
13. SIGNAGE IS PERMITTED SEPARATELY IN ACCORDANCE WITH CHAPTER 42, "ZONING" OF THE CHRISTIANSBURG TOWN CODE.

SHEET INDEX

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2. NOTES
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6. C-3 E&S AND GRADING PLAN
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OWNER/DEVELOPER CERTIFICATION

I, [REDACTED], HEREBY ACKNOWLEDGE THE SITE IMPROVEMENTS IMPOSED BY THIS PLAN AND THE CHRISTIANSBURG TOWN CODE. I HEREBY AGREE TO DEVELOP THE SUBJECT PROPERTY IN COMPLIANCE WITH THIS PLAN AND WILL SUBMIT ANY PLAN REVISIONS TO THE TOWN OF CHRISTIANSBURG FOR APPROVAL. I AGREE TO EXECUTE THE REVISIONS TO THE STORMWATER MAINTENANCE AGREEMENT AND POST ALL REQUIRED BONDS WITH THE TOWN FOR THIS DEVELOPMENT AND ACKNOWLEDGE ALL IMPROVEMENTS MUST BE COMPLETED TO THE TOWN'S SATISFACTION PRIOR TO ISSUANCE OF THE CERTIFICATE OF OCCUPANCY.

OWNER/DEVELOPER  
DATE

APPROVED: Engineering Date

APPROVED: Planning Date

TOWN OF CHRISTIANSBURG PLAN SUBMITTAL LOG		
#	ISSUE DATE	COMMENT
1	04/01/2017	FIRST SUBMITTAL

SHOWCASE HOME BUILDERS  
COMMERCIAL SITE DEVELOPMENT  
1145 ROANOKE ST.  
TOWN OF CHRISTIANSBURG, VIRGINIA

Sheet 1 of 9  
COMM. NO.  
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Surveying  
Landscape  
Architecture

SECOND  
REVIEW  
08/31/18  
NOT FOR CONSTRUCTION  
NOT FOR RECORDING

**GENERAL NOTES:**

1. THESE PLANS SHALL BE USED WITH STRICT CONFORMANCE TO THE PROJECT SPECIFICATIONS AND APPROVED ESC PLAN/NARRATIVE.
2. DISTANCES AND RADII REFERRED TO ARE THE EDGE OF PAVEMENT, OR FACE OF CURB, UNLESS OTHERWISE NOTED.
3. CONTRACTOR SHALL VERIFY BUILDING DIMENSIONS WITH ARCHITECTURAL PLANS PRIOR TO STARTING BUILDING.
4. CONTRACTOR SHALL CALL "VISITORS LINE" 1-800-552-7001 AT LEAST 48 HOURS PRIOR TO ANY EARTHWORK BEGINNING. ACCURACY OF UTILITY MARKS ARE ±2 FEET HORIZONTAL FROM THE ACTUAL LOCATION OF THE BURIED UTILITY.
5. A PRE-CONSTRUCTION MEETING WITH THE TOWN OF CHRISTIANSBURG (TOWN) WILL BE HELD PRIOR TO CONSTRUCTION. THE TOWN MUST BE NOTIFIED ONE WEEK PRIOR TO THE PRE-CONSTRUCTION MEETING.
6. ALL CONSTRUCTION WILL BE IN ACCORDANCE WITH TOWN OF CHRISTIANSBURG STANDARDS AND SPECIFICATIONS.
7. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MEET COMPLIANCE REQUIREMENTS WITH SECTION 59.1-406, ET SEQ. OF THE CODE OF VIRGINIA (OVERHEAD HIGH VOLTAGE LINES SAFETY ACT).
8. ALL NECESSARY PERMITS (E.G., CORPS, DEQ, VDOT, NORFOLK AND SOUTHERN, CHRISTIANSBURG) MUST BE OBTAINED BEFORE BEGINNING CONSTRUCTION.
9. UNLESS SHOWN OR SPECIFIED OTHERWISE, METHODS AND MATERIALS SHALL BE IN CONFORMANCE WITH VDOT ROAD AND BRIDGE STANDARDS LATEST EDITION, AND VDOT ROAD AND BRIDGE SPECIFICATIONS LATEST EDITIONS.
10. ALL ACTIVITIES IN PUBLIC RIGHT-OF-WAY SHALL CONFORM TO VDOT WORK AREA PROTECTION MANUAL (MOST RECENT EDITION).
11. PAVEMENT WORK WITHIN THE RIGHT-OF-WAY REQUIRES THE FOLLOWING INSPECTIONS:
  - A. SUBGRADE PRIOR TO PLACEMENT OF BASE STONE
  - B. BASE STONE PRIOR TO PLACEMENT OF PAVEMENT
  - C. PAVEMENT
12. MINIMUM PAVEMENT SHALL BE IN ACCORDANCE WITH THE PAVING DETAILS AS SHOWN ON THE PLANS. CONTRACTOR TO ENSURE SMOOTH TRANSITION BETWEEN ALL PROPOSED AND EXISTING ASPHALT.
13. RIGHT-OF-WAY, LOT LINES AND EASEMENTS ARE DEDICATED ON PLATS SEPARATE FROM THESE PLANS.
14. ALL PARKING SPACES, INCLUDING ADA COMPLIANT SPACES, SHALL BE SIGNED AND STRIPED ACCORDING TO CODE OF VIRGINIA SECTION 36-99.11.
15. ADA SIGNAGE SHALL BE PROVIDED ACCORDING TO TOWN STANDARD DETAIL HS-1 FOR ALL HANDICAP ACCESSIBLE PARKING SPACES.
16. SIGNAGE IS PERMITTED SEPARATELY IN ACCORDANCE WITH CHAPTER 4, "ADVERTISING," OF THE CHRISTIANSBURG TOWN CODE.
17. SOLID WASTE COLLECTION:
  - a. IF DUMPSTER IS NOT PLANNED, "CURBSIDE GARBAGE COLLECTION IS PLANNED. SHOULD A DUMPSTER BE ADDED, IT SHALL BE SCREENED FROM THE VIEW OF PUBLIC STREETS."
  - b. IF CURBSIDE GARBAGE COLLECTION IS NOT PLANNED, PROVIDE HEIGHT AND GATE DIMENSIONS FOR DUMPSTER SCREENING.
25. PROVIDE HEIGHT AND MATERIAL OF ALL RETAINING WALLS AND/OR FENCES. NOTE IF NO RETAINING WALLS/FENCES WILL BE INCLUDED IN THE DEVELOPMENT.
26. BY THE END OF CONSTRUCTION, PROVIDE LEGIBLE, SURVEYED MARK-UPS OF AS-BUILT SITE CONSTRUCTION PLANS ON SITE PLANS TO THE OWNER FOR PREPARATION OF SITE RECORD DRAWINGS. SURVEY AND INSPECTION REQUIREMENTS ARE DETAILED IN THE SEQUENCE OF CONSTRUCTION.
27. CONTRACTOR SHALL ENSURE THAT EGRESS FOR FIRE ACCESS FOR THE SITE IS MAINTAINED AT ALL TIMES.
28. MAINTAIN EMERGENCY SERVICE AND DELIVERY VEHICLE ACCESS TO THE SURROUNDING AREA AND COORDINATE THIS WITH THE OWNER.
29. LIGHTING FACILITIES SHALL BE ARRANGED AND INSTALLED, AND THE LIGHT SOURCE SHIELDED, TO MINIMIZE GLARE ON ADJACENT PROPERTY OR STREETS AND NO LIGHTING FIXTURE SHALL EXCEED A HEIGHT OF 15 FEET IN A RESIDENTIAL DISTRICT OR 30 FEET IN A BUSINESS DISTRICT. FOR MIXED USE DISTRICTS, LIGHTING FIXTURES SHALL NOT EXCEED 15 FEET FOR A RESIDENTIAL USE OR 30 FEET FOR A BUSINESS USE OR MIXED USE.
30. ANY DISCREPANCIES FOUND BETWEEN THE DRAWINGS AND SITE CONDITIONS OR ANY INCONSISTENCIES OR AMBIGUITIES IN THE DRAWINGS SHALL BE IMMEDIATELY REPORTED TO THE OWNER'S REPRESENTATIVE, WHO SHALL PROMPTLY CORRECT SUCH INCONSISTENCIES OR AMBIGUITIES. WORK DONE BY THE CONTRACTOR WITHOUT DIRECTION AFTER HIS DISCOVERY OF SUCH INCONSISTENCIES OR AMBIGUITIES SHALL BE DONE AT THE CONTRACTOR'S RISK.
31. ALL TRANSPORTATION INFRASTRUCTURE SHALL BE CONSTRUCTED IN ACCORDANCE WITH VDOT AND TOWN OF CHRISTIANSBURG STANDARDS AND SPECIFICATIONS.

#### GENERAL GRADING, FILLING, COMPACTION AND TESTING NOTES

1. THESE NOTES SHALL APPLY TO ALL GRADING, EXCAVATION, AND CONTROLLED FILL NECESSARY FOR THE CONSTRUCTION OF FILL SLOPES AND THE SUBGRADE FOR FOUNDATIONS, FOOTINGS, UTILITIES, ROADS, AND ALL OTHER TOWN MAINTAINED INFRASTRUCTURE.
2. ALL TESTING AND REPORTING SHALL BE THE RESPONSIBILITY OF THE OWNER / DEVELOPER AND SHALL BE CONDUCTED BY A LICENSED PROFESSIONAL GEOTECHNICAL ENGINEER LICENSED IN THE COMMONWEALTH OF VIRGINIA AND SHALL BE THE GEOTECHNICAL ENGINEER OF RECORD.
3. DEVIATIONS FROM THE REQUIREMENTS LISTED HERE-ON SHALL BE SUPPORTED BY A GEOTECHNICAL REPORT AND ENGINEERING DATA PREPARED BY THE PROJECT'S GEOTECHNICAL ENGINEER OF RECORD AND SHALL BE PROVIDED TO THE TOWN FOR REVIEW PRIOR TO COMMENCING WORK.
4. THE CONTRACTOR SHALL USE ALL MEANS NECESSARY TO PROTECT ALL NEWLY GRADED INFRASTRUCTURE SUBGRADES FROM DISTURBANCE FROM TRAFFIC, EROSION, OR SETLEMENT.
5. IN THE EVENT OF DAMAGE OR DISTURBANCE OF PREPARED AREAS, ALL REPAIRS AND RE-GRADING OF THE AREA SHALL BE APPROVED AND REPORTED BY THE GEOTECHNICAL ENGINEER OF RECORD.
6. COPIES OF ALL LABORATORY AND FIELD TEST REPORTS SHALL BE SUBMITTED TO THE TOWN WITHIN 72 HOURS OF TEST COMPLETION.
7. ONLY THAT PORTION OF THE WORK AREA ACTUALLY NEEDED FOR CONSTRUCTION SHALL BE CLEARED OR USED BY HEAVY EQUIPMENT UNLESS DIRECTED OTHERWISE BY THE TOWN. IN NO CASE SHALL CLEARING OR DEBRIS FROM CLEARING OPERATIONS BE TAKEN PAST THE APPROVED LIMITS OF DISTURBANCE, RIGHT-OF-WAY LINES, OR PERMANENT EASEMENT LINES ONTO PRIVATE PROPERTY.
8. THE CONTRACTOR SHALL CONTACT THE APPROPRIATE UTILITY COMPANIES AND HAVE UTILITIES LOCATED PRIOR TO STARTING CONSTRUCTION. LOCATIONS OF EXISTING FACILITIES SHOULD BE DETERMINED BY THE CONTRACTOR FAR ENOUGH IN ADVANCE OF THE CONSTRUCTION TO PROVIDE FOR MODIFICATION TO THE DESIGN, IF REQUIRED.

9. WORK NOT DEFINED IN THE NOTES HERE-IN SHALL FOLLOW GUIDANCE OF THE PROJECT'S GEOTECHNICAL ENGINEER OF RECORD IN ACCORDANCE WITH THE TOWN'S STANDARDS AND SPECIFICATIONS AS APPROVED BY THE TOWN.

#### DEFINITIONS

1. CONTROLLED FILL IS REQUIRED BEHIND ALL AREAS ON WHICH FINAL SUBGRADE OR GRADE IS NOT PLACED ON ORIGINAL EXCAVATED SOIL NECESSARY FOR CONSTRUCTION OF AND CONTROLLED FILL FOR FOUNDATIONS, FOOTINGS, UTILITIES, ROADS, AND ALL OTHER INFRASTRUCTURE.
2. MATERIALS CLASSIFIED AS ASTM D 2487 AS GW, GP, GM, GC, SW, SP, SM, SC, ML, AND CL ARE SATISFACTORY AS FILL FOR OVER-LOT GRADING AND ARE SATISFACTORY IN-SITU. OWNER SHALL PERFORM SOIL ANALYSIS AS REQUIRED BY THE TOWN FOR REVIEW AND APPROVAL.
3. MATERIALS CLASSIFIED AS ASTM D 2487 AS OL, OH, MH, CH, AND PT ARE UNSATISFACTORY IN-SITU AND AS FILL. UNSATISFACTORY MATERIALS ALSO INCLUDE THOSE MATERIALS CONTAINING ROOTS AND OTHER ORGANIC MATTER, TRASH DEBRIS, FROZEN MATERIALS, AND STONES LARGER THAN 6 INCHES. UNSATISFACTORY MATERIALS ALSO INCLUDE MAN-MADE FILLS, REFUSE, OR BACKFILLS FROM PREVIOUS CONSTRUCTION.
4. COHESIVE MATERIALS INCLUDE MATERIALS CLASSIFIED BY ASTM D 2487 AS GC, SC, ML, CL, MH, AND CH. COHESIONLESS MATERIALS INCLUDE MATERIALS CLASSIFIED IN ASTM D 2487 AS GW, GP, SW, AND SP. MATERIALS CLASSIFIED AS GM AND SM WILL BE IDENTIFIED AS ONLY WHEN THE FINES HAVE PLASTICITY INDEX OF ZERO.
5. DEGREE OF COMPACTION IS A PERCENTAGE OF THE MAXIMUM DENSITY OBTAINED BY THE TEST PROCEDURE PRESENTED IN ASTM D 698, AS ABBREVIATED BELOW AS A PERCENT OF LABORATORY MAXIMUM DENSITY.
6. MATERIAL OBTAINED FROM EXCAVATIONS, SUITABLE FOR TOPSOILS, IS DEFINED AS THE UPPER 6 INCHES OF EXISTING SOIL COVER. TOPSOIL SHALL CONSIST OF FRIABLE CLAY LOAM, FREE FROM ROOTS, STONES, AND OTHER UNDESIRABLE MATERIAL AND SHALL BE CAPABLE OF SUPPORTING A GOOD GROWTH OF GRASS.
7. ROCK SHALL CONSIST OF BOULDERS MEASURING  $\frac{1}{2}$  CUBIC YARD OR MORE AND MATERIALS THAT CANNOT BE REMOVED WITHOUT SYSTEMATIC DRILLING AND BLASTING SUCH AS ROCK MATERIAL IN LEDGES, BEDDED DEPOSITS, UNSTRATIFIED MASSES AND CONGLOMERATE DEPOSITS, AND BELOW GROUND CONCRETE OR MASONRY STRUCTURES, EXCEEDING  $\frac{1}{2}$  CUBIC YARD IN VOLUME. PAVEMENTS WILL NOT BE CONSIDERED AS ROCK.
8. UNYIELDING MATERIAL SHALL CONSIST OF ROCK AND GRAVELLY SOILS WITH STONES GREATER THAN 18 INCHES IN ANY DIMENSION OR AS DEFINED BY THE WORK PERFORMED, WHICHEVER IS SMALLER.
9. UNSTABLE MATERIAL SHALL CONSIST OF MATERIALS TOO WET TO PROPERLY SUPPORT A UTILITY PIPE, CONDUIT, OR ADDED PIPE STRUCTURE.
10. SELECT GRANULAR MATERIAL SHALL CONSIST OF WELL-GRADED SAND, GRAVEL, OR CRUSHED STONE, AND SHALL NOT CONTAIN MORE THAN 10 PERCENT BY WEIGHT OF MATERIAL PASSING A NO. 200 MESH SIEVE. THE MAXIMUM ALLOWABLE AGGREGATE SIZE SHALL BE 1 INCH, OR THE MAXIMUM SIZE RECOMMENDED BY THE PIPE MANUFACTURER, WHICHEVER IS SMALLER.
11. INITIAL BACKFILL MATERIAL FOR UTILITY TRENCHES SHALL CONSIST OF SELECT GRANULAR MATERIAL OR SATISFACTORY MATERIALS FREE FROM ROCKS 1 INCH OR LARGER IN ANY DIMENSION OR AS DEFINED BY THE WORK PERFORMED, WHICHEVER IS SMALLER.

#### COORDINATION

1. THE CONTRACTOR SHALL NOTIFY THE TOWN IN ADVANCE OF COMMENCING WORK AND SHALL SCHEDULE A PRECONSTRUCTION MEETING WITH TOWN STAFF, OWNER / DEVELOPER, GRADING CONTRACTOR AND THE GEOTECHNICAL ENGINEER OF RECORD WHO WILL BE PROVIDING GRADING, FILLING AND COMPACTION OVERSIGHT FOR THE OWNER/DEVELOPER.

#### EXCAVATION AND PREPARATION

1. WET OR OTHERWISE UNSUITABLE SOIL AT THE SUBGRADE SHALL BE REMOVED AND REPLACED WITH APPROVED, SOUND MATERIALS. EXCESS OR UNSUITABLE MATERIALS SHALL BE DISPOSED OF PROPERLY BY THE CONTRACTOR.
2. LEDGE ROCK, BOULDERS, AND LARGE STONES SHALL BE REMOVED TO PROVIDE A CLEARANCE OF AT LEAST 6-INCHES BELOW AND ON EACH SIDE OF ALL PIPE, MANHOLES, VALVES, OR OTHER APERTURES AND OVER DEPTH SHALL BE BACKFILLED WITH 6-INCHES OR ASTM D 448 #10 (PVC) OR #26 (DUCTILE IRON) AGGREGATE BEDDING.

3. LEDGE ROCK, BOULDERS, AND LARGE STONES ENCOUNTERED IN EXCAVATIONS FOR OTHER STRUCTURES SHALL BE REMOVED AND/OR OVER-EXCAVATED AS DEFINED IN THE PROPOSED SCOPE OF WORK IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE GEOTECHNICAL ENGINEER OF RECORD.
4. TOPSOIL SHALL BE STRIPPED FROM EXCAVATION AREA AND STOCKPILED SEPARATELY FROM OTHER BACKFILL MATERIAL IN APPROVED AREA UNTIL NEEDED FOR FINISH BACKFILL AND GRADING.

5. THE CONTRACTOR SHALL REMOVE BY APPROPRIATE MEANS ANY WATER WHICH MAY ACCUMULATE OR BE FOUND IN THE TRENCHES OR OTHER EXCAVATIONS AND SHALL KEEP THE EXCAVATIONS CLEAR OF WATER WHILE WORK IS BEING INSTALLED, UNLESS APPROVAL TO THE CONTRARY IS GRANTED BY THE TOWN.
6. BLASTING WILL NOT BE ALLOWED WHERE APPROVED BY THE TOWN. BLASTING SHALL BE PERFORMED IN ACCORDANCE WITH THE OCCUPATIONAL SAFETY AND HEALTH STANDARDS FOR THE CONSTRUCTION INDUSTRY, SUBPART U, THE VIRGINIA STATEWIDE FIRE PROTECTION CODE VR 394-01-6 AND ALL AMENDMENTS OR REVISIONS THEREOF. THE CONTRACTOR SHALL ADHERE TO THE REQUIREMENTS OF THE TOWN OF CHRISTIANSBURG, SHALL OBTAIN ALL REQUIRED PERMITS AND SHALL NOTIFY THE TOWN PRIOR TO ANY BLASTING. DAMAGE OF ANY NATURE RESULTING FROM BLASTING OPERATIONS SHALL BE SATISFACTORILY CORRECTED BY THE CONTRACTOR.

7. NO CLEATED EQUIPMENT SHALL BE USED ON PAVEMENTS. ROAD DRAINAGE SHALL NOT BE CLOGGED, AND SHOULDERS, DITCHES, ROADSIDE DRAINAGE, AND FACILITIES AND PAVEMENT AFFECTED BY EXCAVATION OPERATIONS SHALL BE MAINTAINED IN A CONDITION SATISFACTORY TO THE TOWN. ENTRANCES SHALL NOT BE BLOCKED EXCEPT FOR SHORT PERIOD AS ARRANGED WITH THE PROPERTY OWNER, AND INGRESS AND EGRESS TO ADJACENT PROPERTY SHALL BE MAINTAINED AT ALL TIMES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR OF ANY DAMAGED DRAINAGE STRUCTURES. PRIVATE ROADS SHALL BE RESTORED TO AN EQUAL OR BETTER CONDITION OF THAT PRIOR TO CONSTRUCTION.

8. DISPOSE OF UNSUITABLE AND SURPLUS MATERIAL AT DESIGNATED WASTE AREAS.

#### UTILITY TRENCH BACKFILLING

1. ALL BACKFILL MATERIALS SHALL BE FREE FROM MUD, REFUSE, CONSTRUCTION DEBRIS, ORGANIC MATERIAL, BOULDERS, FROZEN, OR OTHERWISE UNSUITABLE MATERIAL - SELECT INITIAL BACKFILL SHALL BE FREE FROM STONES OVER 3/4 INCH.

2. INITIAL BACKFILL SHALL BE WITH SELECT MATERIAL AS STATED ABOVE AND COMPACTION PRIOR TO PLACEMENT OF REMAINING BACKFILL. BACKFILL SHALL BE CARRIED UP EVENLY IN INCREMENTS OF ONE FOOT. MINIMUM REQUIRED DENSITY SHALL BE THE DENSITY OF THE ADJACENT UNDISTURBED MATERIAL. BACKFILL OUTSIDE THE PROPOSED PAVEMENT AREA OR STREET RIGHTS-OF-WAY OR IN OTHER AREAS NOT ALLOWED, SHALL BE COMPACTION TO A DRY DENSITY EQUAL TO OR GREATER THAN THE DENSITY OF THE UNDISTURBED SOIL SURROUNDING THE TRENCH. EACH LAYER OF EARTH SHALL BE COMPACTION INTO THE TRENCH BY TAMPING BEFORE THE NEXT LAYER IS APPLIED.

3. A HYDRO-HAMMER SHALL NOT BE USED FOR COMPACTION. ALL PIPELINES SHALL HAVE A MINIMUM OF 18-INCHES OF COVER BEFORE ANY ROLLING EQUIPMENT IS USED. CARE SHALL BE TAKEN TO PREVENT DAMAGE TO PIPE OR OTHER STRUCTURES DURING COMPACTION. DAMAGE TO PIPELINES OR OTHER STRUCTURES RESULTING FROM COMPACTION SHALL BE CORRECTED BY THE CONTRACTOR WITHOUT EXPENSE TO THE TOWN.

4. SELECT BACKFILL SHALL EXTEND AT LEAST ONE FOOT ABOVE THE TOP OF THE PIPE AND OTHER APPURTENANCES AND SHALL BE COMPACTED TO A DRY DENSITY EQUAL TO OR GREATER THAN THE DENSITY OF THE UNDISTURBED SOIL SURROUNDING THE TRENCH. EACH LAYER OF EARTH SHALL BE COMPACTION INTO THE TRENCH BY TAMPING BEFORE THE NEXT LAYER IS APPLIED.

5. BACKFILL UNDER PAVEMENT, PROPOSED PAVEMENT, OR IN AREAS WITHIN TOWN RIGHT-OF-WAY SHALL BE IN LAYERS OF SELECTED EARTH NOT MORE THAN 6-INCHES IN THICKNESS, AND EACH LAYER SHALL BE COMPACTION TO A MINIMUM OF 95 PERCENT OF MAXIMUM DENSITY WHEN TESTED IN ACCORDANCE WITH ASTM D 698. COMPACTION SHALL BE BY PNEUMATIC TAMERS OR BY HANDE AND IN ACCORDANCE WITH INSTRUCTIONS IN THIS SECTION AS MODIFIED HEREIN. ALL PIPELINES SHALL HAVE A MINIMUM OF 18-INCHES OF COVER BEFORE AND ROLLING EQUIPMENT IS USED. THE TOP SURFACE OF BACKFILL DIRECTLY UNDER PAVEMENT SHALL CONSIST OF AGGREGATE BASE MATERIAL MEETING THE REQUIREMENTS OF VDOT #2 A STONE. THE DEPTH OF THIS COURSE SHALL BE AT LEAST 12 INCHES, EXCEPT WHERE OTHERWISE REQUIRED BY THE TOWN. MOISTURE CONTENT SHALL BE WITHIN 20 PERCENT OF OPTIMUM.

6. MATERIALS FOR FILL AREAS SHOWN ON THE PLANS SHALL BE SECURED FROM EXCAVATION AFTER REJECTION OF ANY UNSUITABLE MATERIALS. ROCK OR ROCKY MATERIAL MAY BE INCORPORATED INTO FILLS IF SIZE AND SHAPE PERMIT, IF PLACED IN LOWER PORTION OF FILLS WHERE THE STABILITY WILL NOT BE AFFECTED, AND IF PLACED IN SUCH A MANNER THAT THE PERVERSIVENESS WILL NOT BE INCREASED. MATERIAL SHALL BE SPREAD IN LAYERS WITH MOISTURE CONTROLLED AND THEN COMPACTED TO A MINIMUM DENSITY AS STATED ABOVE.

7. UNIFORMLY SMOOTH GRADING OF DISTURBED AREAS SHALL BE REQUIRED AFTER BACKFILL AND COMPACTION. ROAD SHOULDERS SHALL HAVE A MINIMUM DEPTH OF 6-INCHES OF VDOT #25 OR #26 CRUSHER RUN AGGREGATE COMPACTED TO A MINIMUM OF 95 PERCENT OF MAXIMUM DENSITY AS MEASURED BY ASTM D 698. DITCHES AND CUTTERS SHALL BE FINISHED TO DRAIN READILY. IN GRASS OR LAWN AREAS, THE LAST 4-INCHES OF COMPACTED FILL WILL CONSIST OF TOPSOIL OR AN APPROVED SOIL WHICH WILL SUPPORT TURF GROWTH AFTER FERTILIZING AND SEEDING. SETTLEMENT OR OTHER DAMAGE THAT OCCURS PRIOR TO ACCEPTANCE OF THIS WORK SHALL BE REPAIRED AND GRADED SATISFACTORILY RE-ESTABLISHED.

8. THE CONTRACTOR WILL BE RESPONSIBLE FOR AND SHALL REPAIR ANY SETTLEMENT IN THE BACKFILL OR PAVEMENT FOR A PERIOD OF ONE YEAR AFTER COMPLETION OF THE WORK.

#### FILLS

1. UNLESS OTHERWISE RECOMMENDED BY THE GEOTECHNICAL ENGINEER OF RECORD, FILLS SHALL COMPLY WITH THIS SECTION.
2. THE GROUND SURFACE SHALL BE PREPARED TO RECEIVE FILL BY REMOVING VEGETATION, TOPSOIL, AND OTHER UNSUITABLE MATERIALS, AND SCARIFYING THE GROUND TO PROVIDE A BOND WITH THE FILL MATERIAL.

3. WHERE EXISTING GRADE IS AT A SLOPE STEEPER THAN 5:1 (H:V, 20%) AND THE DEPTH OF THE FILL EXCEEDS 5 FEET, BENCHING SHALL BE PROVIDED. A KEY SHALL BE PROVIDED THAT IS AT LEAST 10 FEET IN WIDTH AND 2 FEET IN DEPTH.

4. FILLED MATERIAL SHALL NOT INCLUDE ORGANIC, FROZEN, OR OTHER DETERIORATING MATERIALS. NO ROCK OR SIMILAR IRREDUCIBLE MATERIAL GREATER THAN 12 INCHES IN ANY DIMENSION SHALL BE INCLUDED IN FILLS.

5. BACKFILL UNDER PAVEMENT, PROPOSED PAVEMENT, OR IN AREAS WITHIN TOWN RIGHT-OF-WAY SHALL BE IN LAYERS OF SELECTED EARTH NOT MORE THAN 6-INCHES IN THICKNESS, AND EACH LAYER SHALL BE COMPACTION TO A MINIMUM OF 95 PERCENT OF MAXIMUM DENSITY WHEN TESTED IN ACCORDANCE WITH ASTM D 698. MOISTURE CONTENT SHALL BE WITHIN 20 PERCENT OF OPTIMUM.

6. FILLED MATERIALS SHALL NOT INCLUDE ORGANIC, FROZEN, OR OTHER DETERIORATING MATERIALS. NO ROCK OR SIMILAR IRREDUCIBLE MATERIAL GREATER THAN 12 INCHES IN ANY DIMENSION SHALL BE INCLUDED IN FILLS.

7. THE SLOPE OF THE FILL SURFACES SHALL BE NO STEEPER THAN IS SAFE FOR THE INTENDED USE. FILL SLOPES STEEPER THAN 2:1 (H:V, 50%) SHALL BE JUSTIFIED BY A GEOTECHNICAL REPORT OR ENGINEERING DATA BY THE GEOTECHNICAL ENGINEER OF RECORD.

8. THE CONTRACTOR SHALL SELECT THE PROPER COMPACTION METHOD AND EQUIPMENT TO PROPERLY COMPACT THE FILL TO THE REQUIRED DENSITY.

9. THE OWNER / DEVELOPER SHALL BE RESPONSIBLE FOR AND SHALL REPAIR ANY SETTLEMENT IN THE BACKFILL OR PAVEMENT FOR A PERIOD OF ONE YEAR AFTER COMPLETION OF THE WORK.

#### TESTING

1. UNDER THE DIRECTION OF THE GEOTECHNICAL ENGINEER OF RECORD, TESTING SHALL BE PERFORMED BY AN INDEPENDENT TESTING LABORATORY QUALIFIED TO PERFORM SUCH TESTS AND SHALL BE AT THE EXPENSE OF THE OWNER / DEVELOPER.
2. THE OWNER / DEVELOPER SHALL FURNISH ALL EQUIPMENT, TOOLS, AND LABOR TO CONDUCT THE TESTING.

3. ALL TESTING SHALL BE WITNESSED BY A DESIGNATED TOWN OFFICIAL. THE TEST SHALL BE REPEATED UNTIL SATISFACTORY RESULTS ARE OBTAINED AS OUTLINED IN THIS SECTION.

4. THE CONTRACTOR SHALL DEMONSTRATE THE ADEQUACY OF BACKFILL COMPACTION BY PERFORMING DENSITY TESTING OF THE COMPLETED BACKFILL AREAS AS DESIGNATED BY THE TOWN OR THE GEOTECHNICAL ENGINEER OF RECORD.

5. DENSITY TESTING SHALL BE PERFORMED USING NUCLEAR FIELD DENSITY EQUIPMENT OR CONVENTIONAL WEIGHT-VOLUME METHODS. IF THE WEIGHT-VOLUME METHOD IS USED, VOLUME SHALL BE DETERMINED BY USING THE SAND REPLACEMENT TEST (ASTM D 1556) OR LIQUID DISPLACEMENT METHODS (ASTM D 2167). IF NUCLEAR METHODS ARE USED WITHIN TRENCHES, THE TRENCH CORRECTION EFFECT SHALL BE ACCOUNTED FOR BY RECALIBRATING THE NUCLEAR GAUGE ON ITS CALIBRATION BLOCK AT THE LOCATION OF EACH TEST PRIOR TO TAKING THE DENSITY MEASUREMENT. BACKFILL IN ROADWAY OR PARKING AREAS SUCH AS TOWN RIGHTS-OF-WAY OR IN AREAS DESIGNATED BY THE TOWN SHALL BE COMPACTED TO A MINIMUM OF 95 PERCENT

DENSITY AS MEASURED BY ASTM D 698. THE DENSITY OF THE BACKFILL OUTSIDE OF TOWN RIGHT-OF-WAY OR OTHER CONTROLLED AREAS SHALL BE EQUAL TO OR GREATER THAN THE DENSITY OF THE UNDISTURBED MATERIAL IN THE IMMEDIATE AREA ADJACENT TO THE AREA UNDER TEST.

6. UTILITY TRENCH DENSITY TESTING SHALL BE PERFORMED AT THREE DEPTHS FOR EACH TEST LOCATION. SURFACE, 1/3-DEPTH, AND 2/3-DEPTH. MAXIMUM TRENCH DEPTH IS THE DEPTH OF THE BACKFILL MATERIAL. DENSITY SHALL BE OBSERVED DURING THE EXCAVATION FOR DENSITY TESTING TO DETERMINE CONFORMANCE WITH THE SPECIFICATIONS BY THE GEOTECHNICAL ENGINEER OF RECORD.

7. ALL BELOW GRADE INFRASTRUCTURE TO BE MAINTAINED UNDER STORMWATER BMP MAINTENANCE AGREEMENT SHALL BE INSPECTED BY THE TOWN INSPECTOR PRIOR TO COVERING, EXCEPT WHERE SPECIFICALLY ALLOWED BY THE TOWN INSPECTOR.

8. RECORD DRAWINGS ARE REQUIRED FOR PERMANENT BMP AND STORMWATER CONVEYANCE INFRASTRUCTURE IN ACCORDANCE WITH TOWN DEVELOPMENT MANUAL STANDARDS.

9. THE DESIGN AND CONSTRUCTION OF STORMWATER DRAINS AND MANHOLES WILL BE IN ACCORDANCE WITH VDOT ROAD AND BRIDGE STANDARDS AND SPECIFICATIONS, LATEST EDITION, AND CHAPTER 9 OF THE VDOT DRAINAGE MANUAL, 2008 EDITION, AS AMENDED, UNLESS SPECIFICALLY NOTED ON THE PLANS OR BY TOWN POLICY.

10. THIS PLAN IDENTIFIES THE LOCATION OF EACH OUTFALL, BUILDING DOWNSPOUT, AND ANY OTHER LOCATION WHERE CONCENTRATED STORMWATER IS DISCHARGED. CHANGES TO THESE DISCHARGE POINTS REQUIRES REVIEW AND APPROVAL BY TOWN STAFF.

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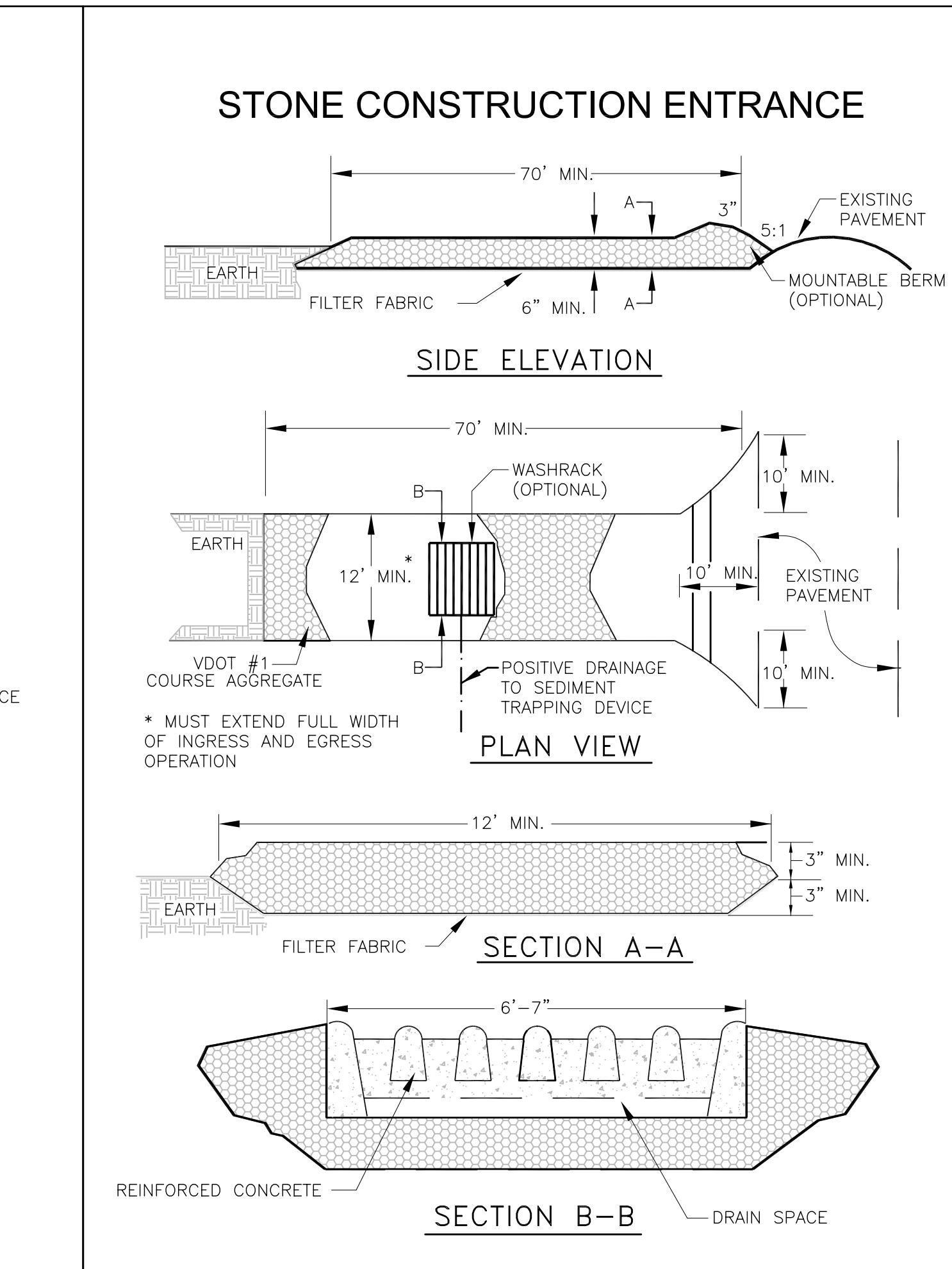
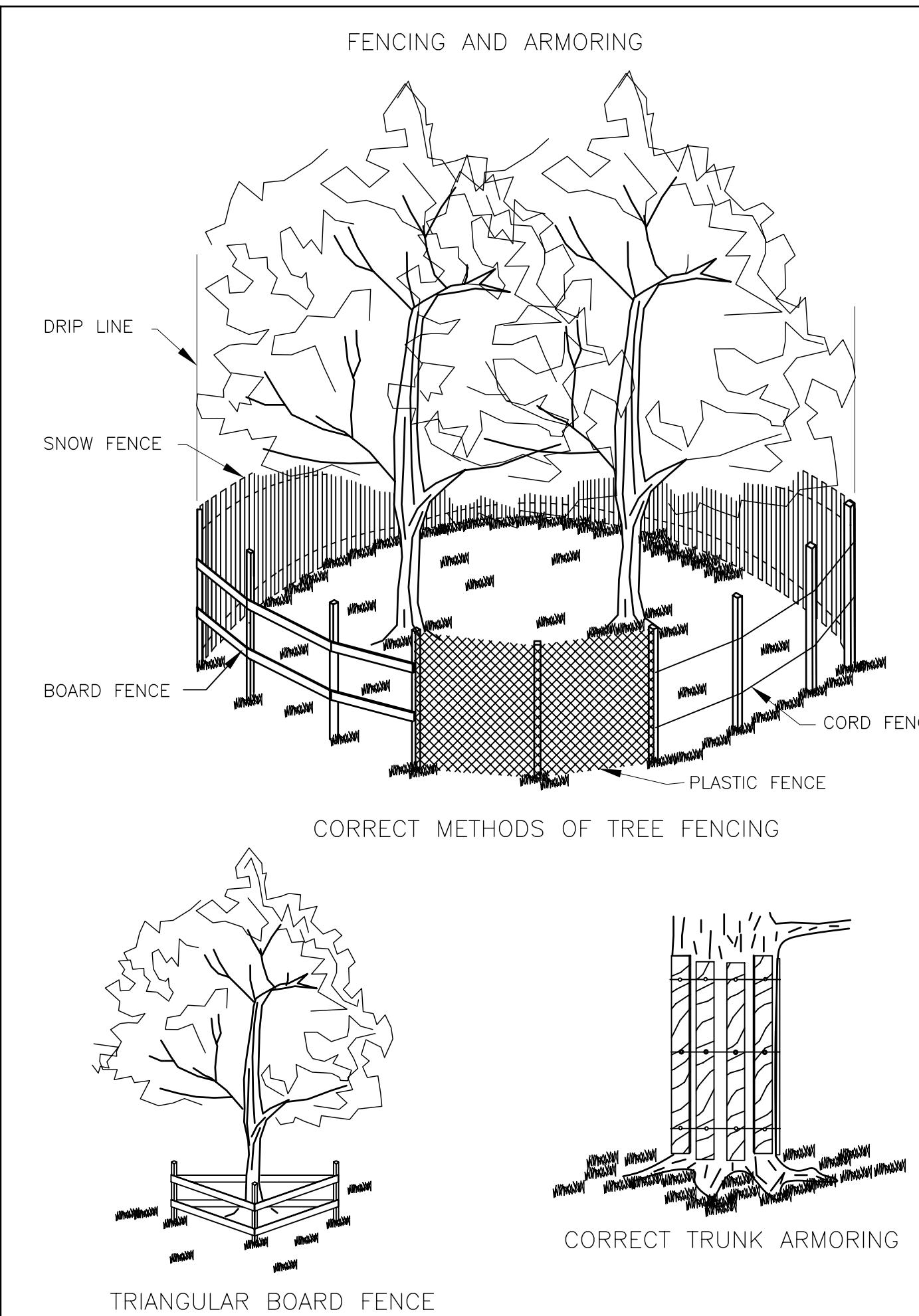
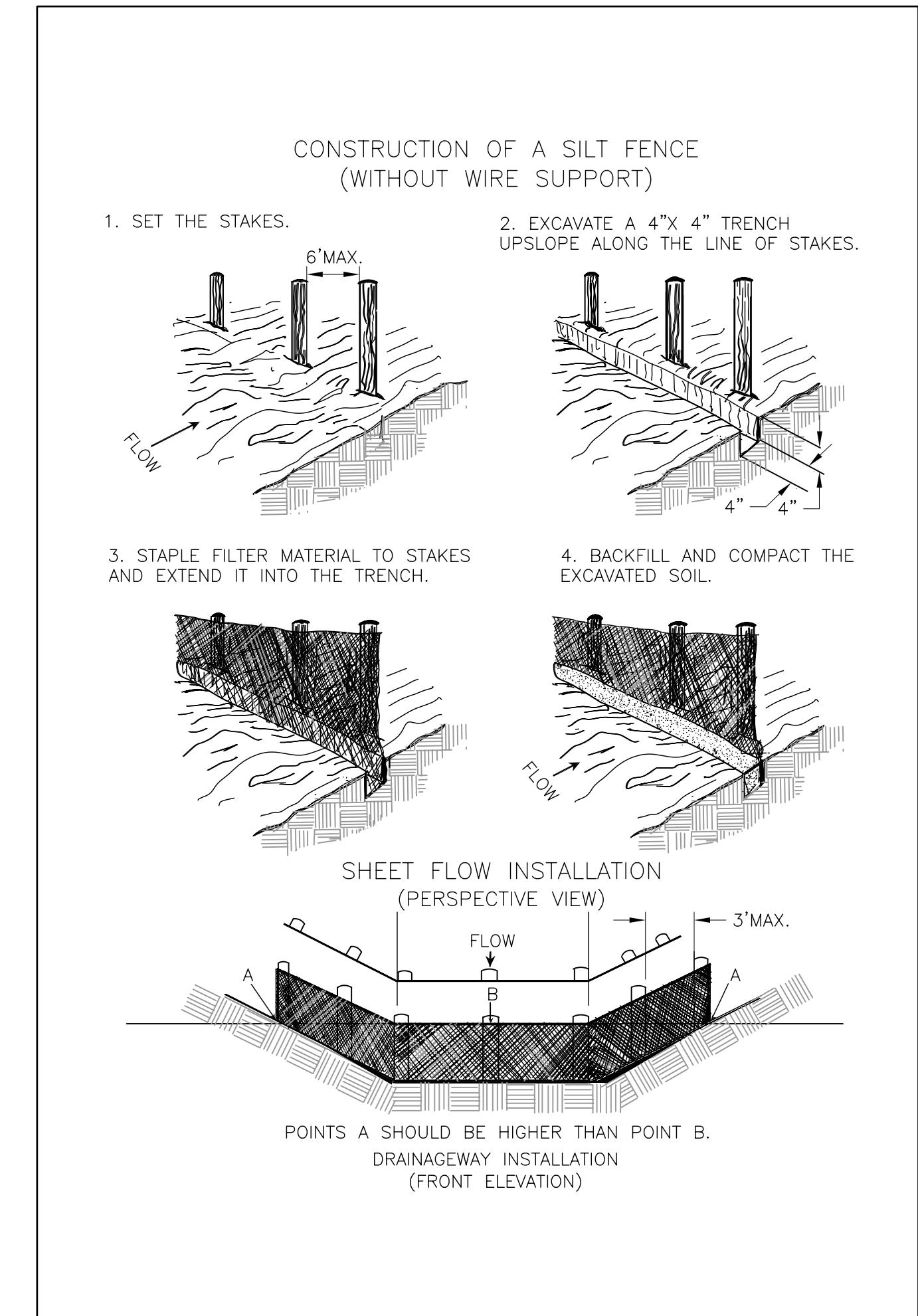
## ABBREVIATIONS

ABAN	ABANDON, ABANDONED
ABV	ABOVE
AFF	ABOVE FINISH FLOOR
ABUT	ABUTMENT
ACM	ASBESTOS CONTAINING MATERIAL
ACT	ACOUSTIC CEILING TILE
ADJ	ADJACENT
AGGR	AGGREGATE
AHU	AIR HANDLING UNIT
ALT	ALTERNATE
ALUM	ALUMINUM
ADA	AMERICANS WITH DISABILITIES ACT
ANC	ANCHOR
ANOD	ANODIZED
APPROX	APPROXIMATE
AV	AUDIO VISUAL
BL	BASE LINE
BVCE	BEGIN VERTICAL CURVE ELEVATION
BVCS	BEGIN VERTICAL CURVE STATION
BEG	BEGIN, BEGINNING
BJ	BELL JOINT
BEL	BELOW
BM	BENCH MARK
BTW	BETWEEN
BIT	BITUMINOUS
BSP	BLACK STEEL PIPE
BOC	BOTTOM OF CURB
BOS	BOTTOM OF STEP
BW	BOTTOM OF WALL
BRDG	BRIDGING
BTU	BRITISH THERMAL UNIT
BTUH	BTU PER HOUR
BLDG	BUILDING
BV	BUTTERFLY VALVE
CAPY	CAPACITY
CPT	CARPET
CI	CAST IRON
CLG	CEILING
CTR	CENTER
CL	CENTER LINE
C TILE	CERAMIC TILE
CO	CLEANOUT
CLR	CLEAR
CW	COLD WATER
COL	COLUMN
COMB	COMBINATION
CONC	CONCRETE
CMU	CONCRETE MASONRY UNIT
COND	CONDENSER/CONDUIT
CND	CONDUIT
CONN	CONNECTION
CONST	CONSTRUCTION
CONT	CONTINUOUS
CONTR	CONTRACTOR
CJ	CONTROL JOINT
CONV	CONVEYOR
COR	CORNER
CMP	CORRUGATED METAL PIPE
CR STONE	CRUSHED STONE
CF	CUBIC FOOT
CFM	CUBIC FOOT PER MINUTE
CULV	CULVERT
C & G	CURB AND GUTTER
D	DEPTH OR DEGREE OF CURVE
DEMO	DEMOLITION
DTL	DETAIL
DIAG	DIAGONAL
DIA	DIAMETER
DIFF	DIFFUSER(S)
DIM	DIMENSION
DISC	DISCONNECT
DIV	DIVISION
DBL	DOUBLE
DN	DOWN
DS	DOWNSPOUT
DE	DRAINAGE EASEMENT
DWG	DRAWING
DW	DRIVEWAY
DI	DROP INLET, DUCTILE IRON
DMH	DROP MANHOLE
DWL	DWELLING
EA	EACH
EW	EACH WAY, ENDWALL
ESMT	EASEMENT
EBL	EASTBOUND LANE
EP	EDGE OF PAVEMENT
EWC	ELECTRIC WATER COOLER
ELEC	ELECTRICAL
ELEV	ELEVATION
ENCL	ENCLOSE/ENCLOSURE
EOL	END OF LINE
EVCE	END VERTICAL CURVE ELEVATION
EVCS	END VERTICAL CURVE STATION
ENGR	ENGINEER
ENTR	ENTRANCE
EQ	EQUAL
EQPT	EQUIPMENT
EVAP	EVAPORATIVE(OR)
EXH	EXHAUST
EXG,EX	EXISTING
EXP	EXPANSION
EA	EXPANSION JOINT
EXP ST	EXPOSED STRUCTURE
EXT	EXTERIOR
FB	FACE BRICK
FOS	FACE OF STUD
FIG	FIGURE
FF	FLOOR
FIN	FINISH(ED)
FF	FINISHED FLOOR
FEC	FIRE EXTINGUISHER CABINET
FTRD	FIRE TREATED
FLG	FLANGE
FES	FLARED END SECTION
FLEX	FLEXIBLE
FL	FLOOR
FCO	FLOOR CLEAN-OUT
FD	FLOOR DRAIN
FT	FOOT
FTG	FOOTING
FDN	FOUNDATION
FAI	FRESH AIR INTAKE
GA	GAGE
GAL	GALLON
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GALV	GALVANIZED
CAR	CARAGE
G	GAS
CV	CATE VALVE
CL	CLASS
GOVT	GOVERNMENT
GRTG	GRATING
GR	GRAVEL
GRV	GRAVITY ROOF VENT
GND	GROUND
GFI	GROUND FAULT INTERRUPTER
GWB	GYPSUM WALL BOARD
HC	HANDICAPPED ACCESSIBLE
HDWR	hardware
HDWD	HARDWOOD
HE	HIGH EFFICIENCY
HVAC	HEATING VENTILATING & AIR CONDITIONING
HT	HEIGHT
HPT	HIGH POINT
HM	HOLLOW METAL
HS	HOOK STRIP
HORIZ	HORIZONTAL
HA	HOSE BIBB
HR	HOUR
H&T	HUB AND TAC
HW	HOT WATER
HYD	HYDRANT
IN	INCH
ID	INSIDE DIAMETER
INSUL	INSULATION
INV	INVERT
IP	IRON PIN (FOUND OR SET NOTED)
JT	JOINT
J	JUNCTION
KVA	KILOWOLT AMPS
KW	KILOWATT
LAM	LAMINATE
LVL	LAMINATED VENEER LUMBER
L	LENGTH, LONG
LT	LIGHT
LP	LIGHT POLE
LF	LINEAL FOOT
LIN	LINEAR
LG	LONG
LR	LONG RADIUS
MB	MAIL BOX
MH	MANHOLE
MFR	MANUFACTURER
MAS	MASONRY
MCJ	MASONRY CONTROL JOINT
MO	MASONRY OPENING
MATL	MATERIAL
MAX	MAXIMUM
MECH	MECHANICAL
MJ	MECHANICAL JOINT
MFISS	MEDIUM FISSURE
MBH	MEGA BTU PER HOUR
MTL	METAL
MIN	MINIMUM
MBL	MINIMUM BUILDING LINE
MISC	MISCELLANEOUS
MON	MONUMENT
MTD	MOUNTED
N & C	NAIL AND CAP
NEUT	NEUTRAL
NOM	NOMINAL
NPW	NON POTABLE WATER
NA	NOT APPLICABLE
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
NO	NUMBER
OC	ON CENTERS
OPP	OPPOSITE
OH	OPPOSITE HAND
OD	OUTSIDE DIAMETER
OA	OVER ALL
OVHD	OVERHEAD
OFCI	OWNER FURNISHED CONTRACTOR
INSTALLED	INSTALLED
OFOI	OWNER FURNISHED OWNER
PTD	PAINTED
PVMT	PAVEMENT
PAV	PAVING
PED	PEDESTRIAN
PERF	PERFORATED
PER	PERIMETER
PERP	PERPENDICULAR
PLAM	PLASTIC LAMINATE
PL	PLATE, PROPERTY LINE
PLYWD	PLYWOOD
PCC	POINT OF COMPOUND CURVE
PC	POINT OF CURVE
PI	POINT OF INTERSECTION
PRC	POINT OF REVERSE CURVE
PT	POINT OF TANGENCY
PVI	POINT OF VERTICAL INTERSECTION
POL	POINT ON LINE
POT	POINT ON TANGENT
PVC	POLYVINYL CHLORIDE
P TILE	PORCELAIN TILE
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PP	POWER POLE
PAIR	PR
PT	PRESSURE TREATED
PROJ	PROJECTION
PUE	PUBLIC UTILITY EASEMENT
Q TILE	QUARRY TILE
RAD	RADIUS
RR	RAILROAD
REC	RECORD
RDCR	REDUCER
REF	REFERENCE
REFRIG	REFRIGERATION
REINF	REINFORCE(D)
RCOP	REINFORCED CONCRETE PIPE
REBAR	REINFORCING BAR
REL	RELOCATED
REQD	REQUIRED
REV	REVISION
RT	RIGHT
R/W	RIGHT OF WAY
RD	ROAD
RD	ROAD DRAIN
RTU	ROOF TOP UNIT
RM	ROOM
RO	ROUGH OPENING
RTE	ROUTE
R TILE	RUBBER TILE
SAN	SANITARY
SS	SANITARY SEWER
SO	SASH OPENING
SCHED	SCHEDULE
SECT	SECTION
SER	SERVICE
SH	SHIRT
S/W	SIDEWALK
SIM	SIMILAR
SE	SLOPE, EASEMENT
SC	SOLID CORE
SP	SPACE
SPEC	SPECIFICATION
SO	SQUARE
SSTL	STAINLESS STEEL
STD	STANDARD
STA	STATION
STL	STEEL
STOR	STORAGE
SD	STORM DRAIN
STR	STREET
SUR	STRUCTURAL
SUSP	SUSPENDED
SW	SWITCH
SYM	SYMMETRIC(AL)
SYS	SYSTEM
TEL	TELEPHONE
TP	TELEPHONE POLE
TV	TELEVISION
TEMP	TEMPORARY
TSTAT	TERMOSTAT
THK	THICK
THRU	THROUGH
T & B	TOP AND BOTTOM
TOC	TOP OF CURB
TOP	TOP OF PAVEMENT
TOS	TOP OF STEP
TW	TOP OF WALL
TPO	TERMOPLASTIC POLYOLEFIN
TR	TREAD
TRTD	TREATED
TS	TUBULAR STEEL
TYP	TYPICAL
UND	UNDER
UG	UNDERGROUND
UL	UNDERWRITERS LABORATORY
UFAS	UNIFORM FEDERAL ACCESSIBILITY STANDARDS
UON	UNITED STATES COAST AND GEODETIC SURVEY
VAL	UNLESS OTHERWISE NOTED
VAR	VARIEABLE
VTR	VENT THROUGH ROOF
VERT	VERTICAL
VC	VERTICAL CURVE
VSD	VERTICAL SIGHT DISTANCE
VCT	VINY, COMPOSITION TILE
VWC	VINY, WALL COVERING
VDOT	VIRGINIA DEPARTMENT OF TRANSPORTATION
VESCR	VIRGINIA EROSION AND SEDIMENT CONTROL REGULATIONS
VUSBC	VIRGINIA UNIFORM STATEWIDE BUILDING CODE
VOL	VOLUME
WC	WATER CLOSET
WL	WATER LINE
WR	WATER RESISTANT
WS	WATER SURFACE
WP	WEATHERPROOF
WT	WEIGHT
WVDH	WEST VIRGINIA DEPARTMENT OF HIGHWAYS
WB	WESTBOUND LANE
WWVA	WESTERN VIRGINIA WATER AUTHORITY
WB	WET BULB
W	WIDE FLANGE, WIDE, WASTE, WATER
WDW	WINDOW
W/	WITH
W/O	WITHOUT
WD	WOOD

## LEGEND / SYMBOLS

EXISTING	NEW	DESCRIPTION
		BUILDING WITH PORCH OR STOOP
		FOUNDATION ONLY
		CONTOUR, CONTOUR WITH ELEVATION
		SPOT ELEVATION
		CONCRETE CURB
		CONCRETE CURB & GUTTER
		PAVEMENT
		UNPAVED OR GRAVEL ROAD
		CONSTRUCTION EASEMENT
		PERMANENT EASEMENT
		TREE LINE
		TREE OR SHRUB
		FENCE (EXISTING OR PROPOSED NOTED)
		CENTERLINE, CREEK, SWALE, DITCH
		PROPERTY LINE
		CENTERLINE OR BASELINE
	<img alt="Field	





**TEMPORARY SEDIMENT TRAP**

ORIGINAL GROUND ELEV.

DRY STORAGE 2095.6

$V_2 = 67 \text{ CY/AC}$

WET STORAGE 2093.6

$V_1 = 67 \text{ CY/AC}$   
(EXCAVATED)

BOTTOM 2090.0

1'

$V$

1.0'

TOP BERM 2097  
SPILL WAY 2096

$D_2$

$D_1$

2'

$H$

FILTER CLOTH

ORIGINAL GROUND ELEV.

COARSE AGGREGATE

CLASS I RIPRAP

**CROSS SECTION OF OUTLET**

CLASS I RIPRAP

LENGTH (IN FEET) = 15'  
6 X DRAINAGE AREA 2.5  
(IN AC.)

DIVERSION DIKE

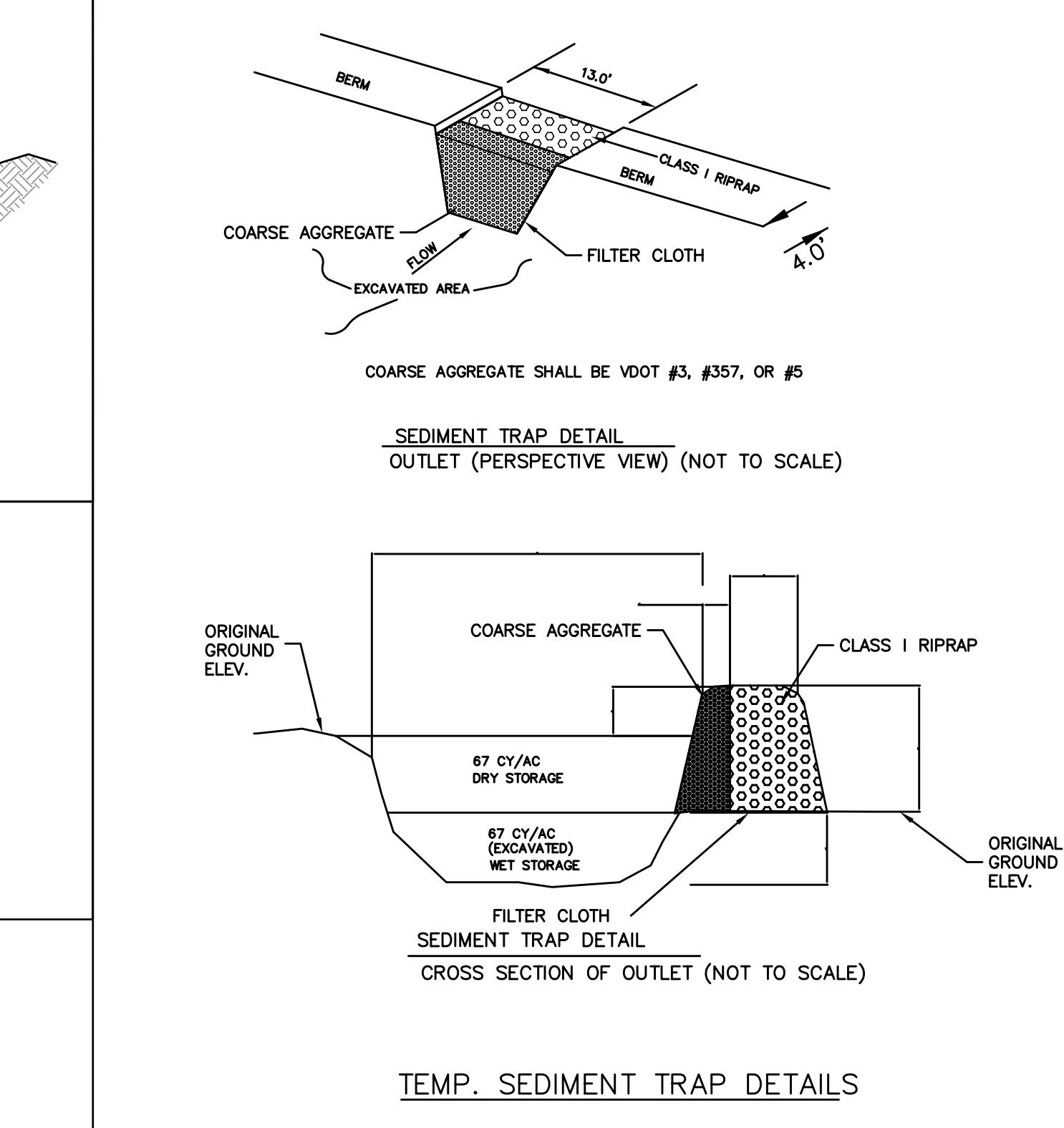
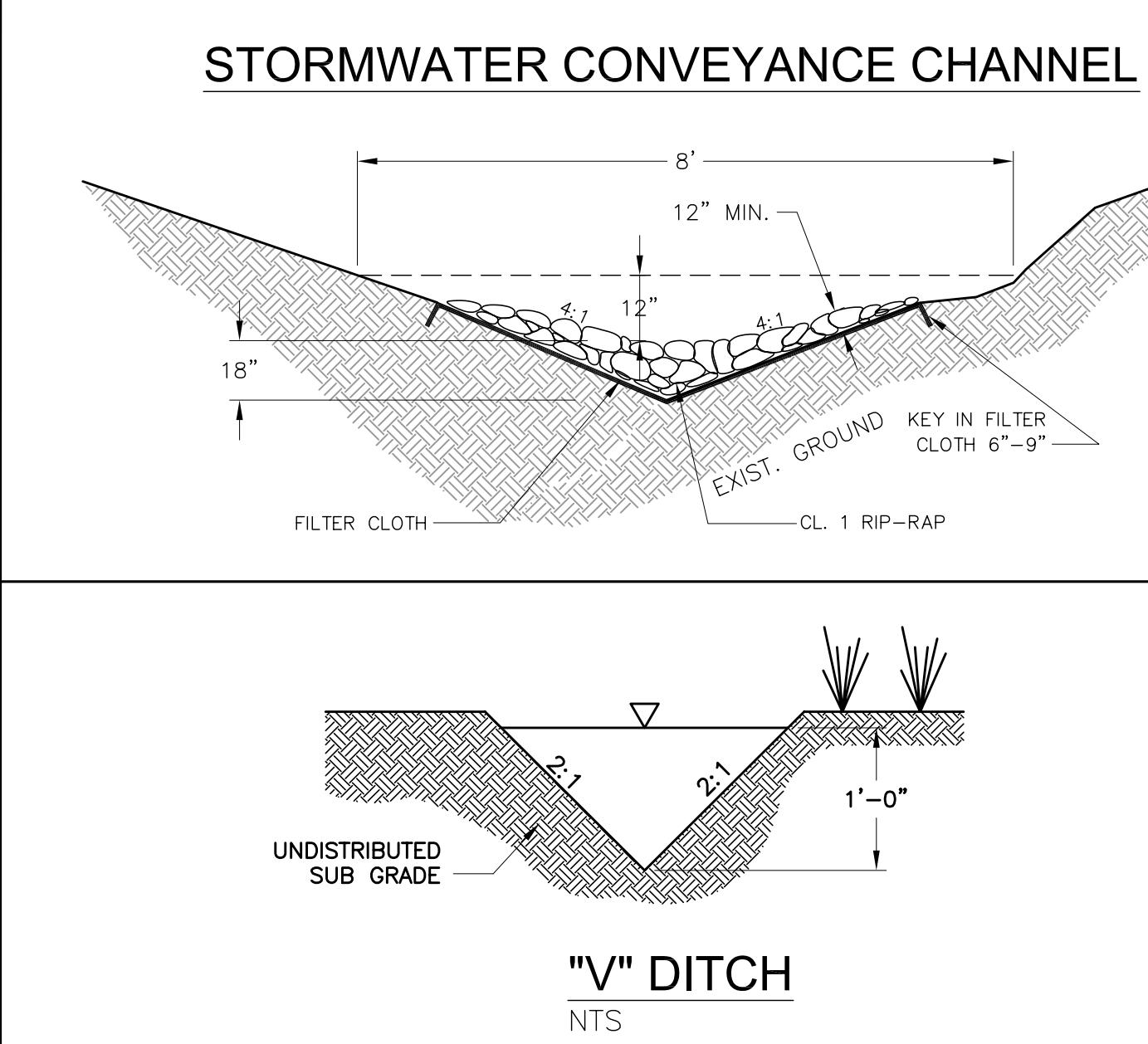
COARSE AGGREGATE

EXCAVATED AREA

FILTER CLOTH

\*\* COARSE AGGREGATE SHALL BE VDOT #3, #357 OR #5

**OUTLET (PERSPECTIVE VIEW)**



SHOWCASE HOME BUILDERS  
COMMERCIAL SITE DEVELOPMENT  
1145 ROANOKE ST

COMMERCIAL SITE DEVELOPMENT  
1145 ROANOKE ST

TOWN OF CHRISTIANSBURG, VIRGINIA

102 Albemarle Ave.  
Roanoke, Virginia  
24013

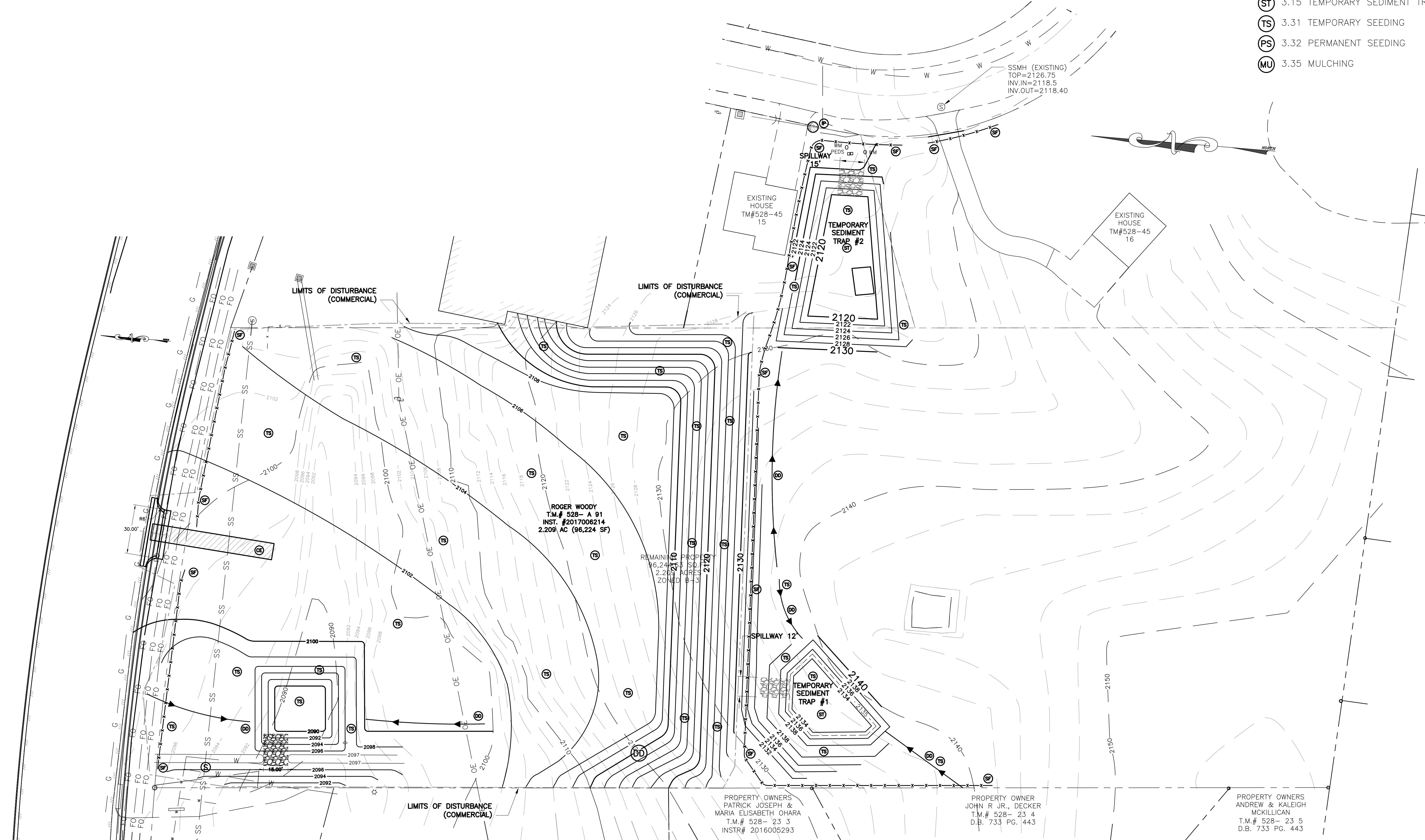
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lmweng@lmwpc.net

SECOND  
REVIEW  
08/31/18  
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**NOT FOR RECORDING**

Drawn By	MCP
Checked By	DRM
Drawing	4572A
Commission No.	4572A

C-2

Sheet 5 of 9



## E&amp;S LEGEND

- (CE) 3.02 CONSTRUCTION ENTRANCE
- (SF) 3.05 SILT FENCE
- (DD) 3.09 TEMPORARY DIVERSION DIKE
- (ST) 3.15 TEMPORARY SEDIMENT TRAP
- (TS) 3.31 TEMPORARY SEEDING
- (PS) 3.32 PERMANENT SEEDING
- (MU) 3.35 MULCHING

SHOWCASE HOME BUILDERS  
COMMERCIAL SITE DEVELOPMENT

1145 ROANOKE ST.

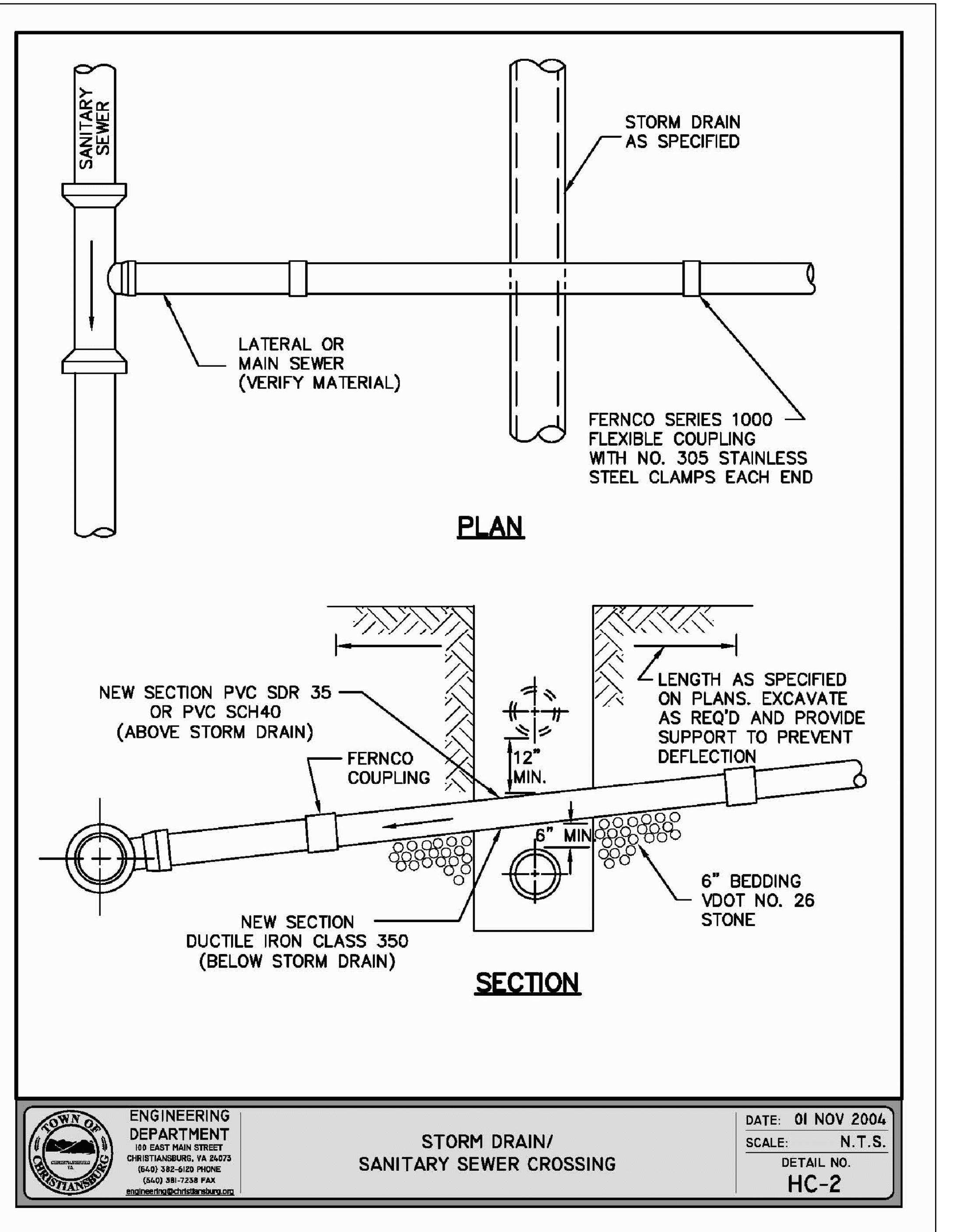
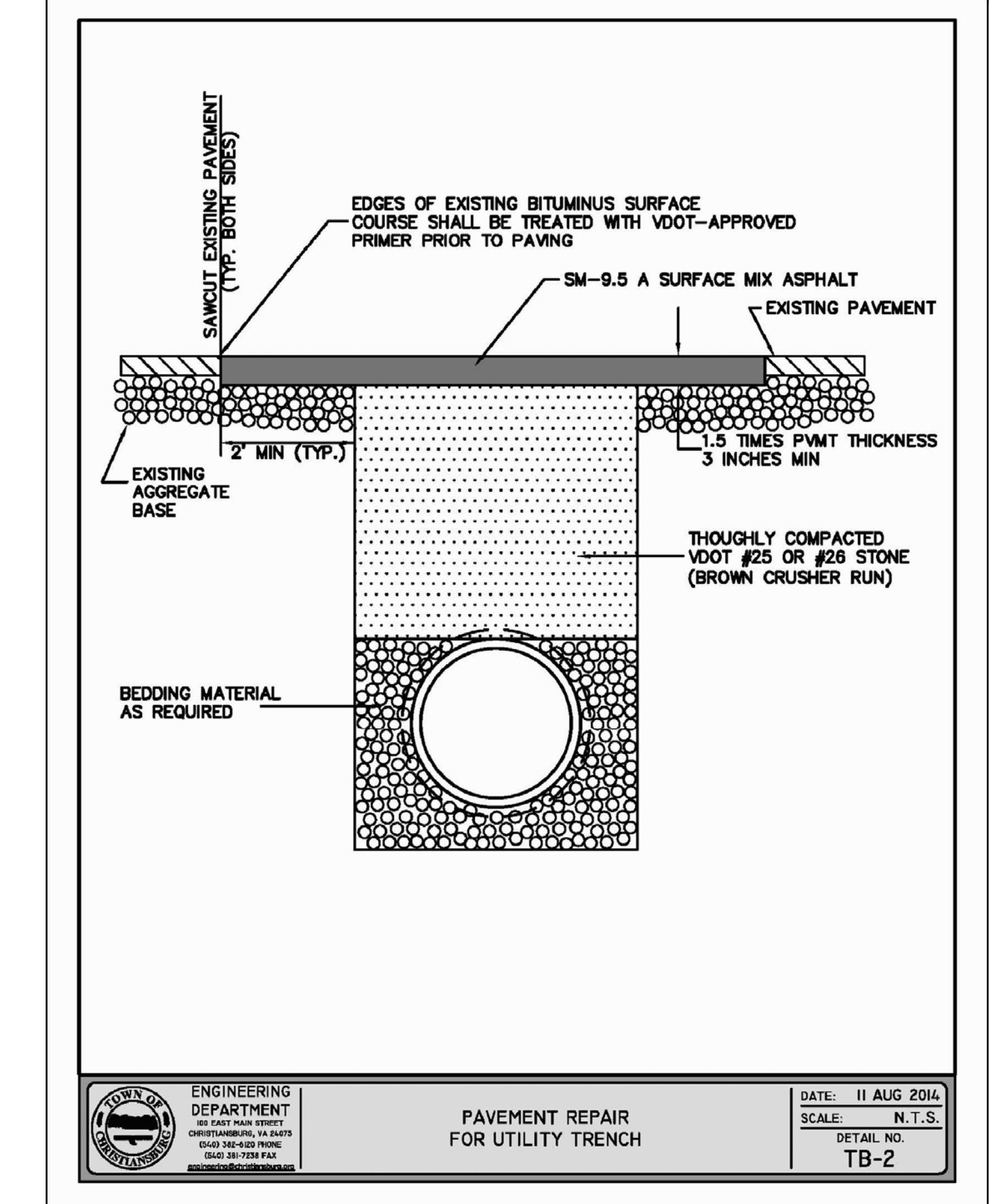
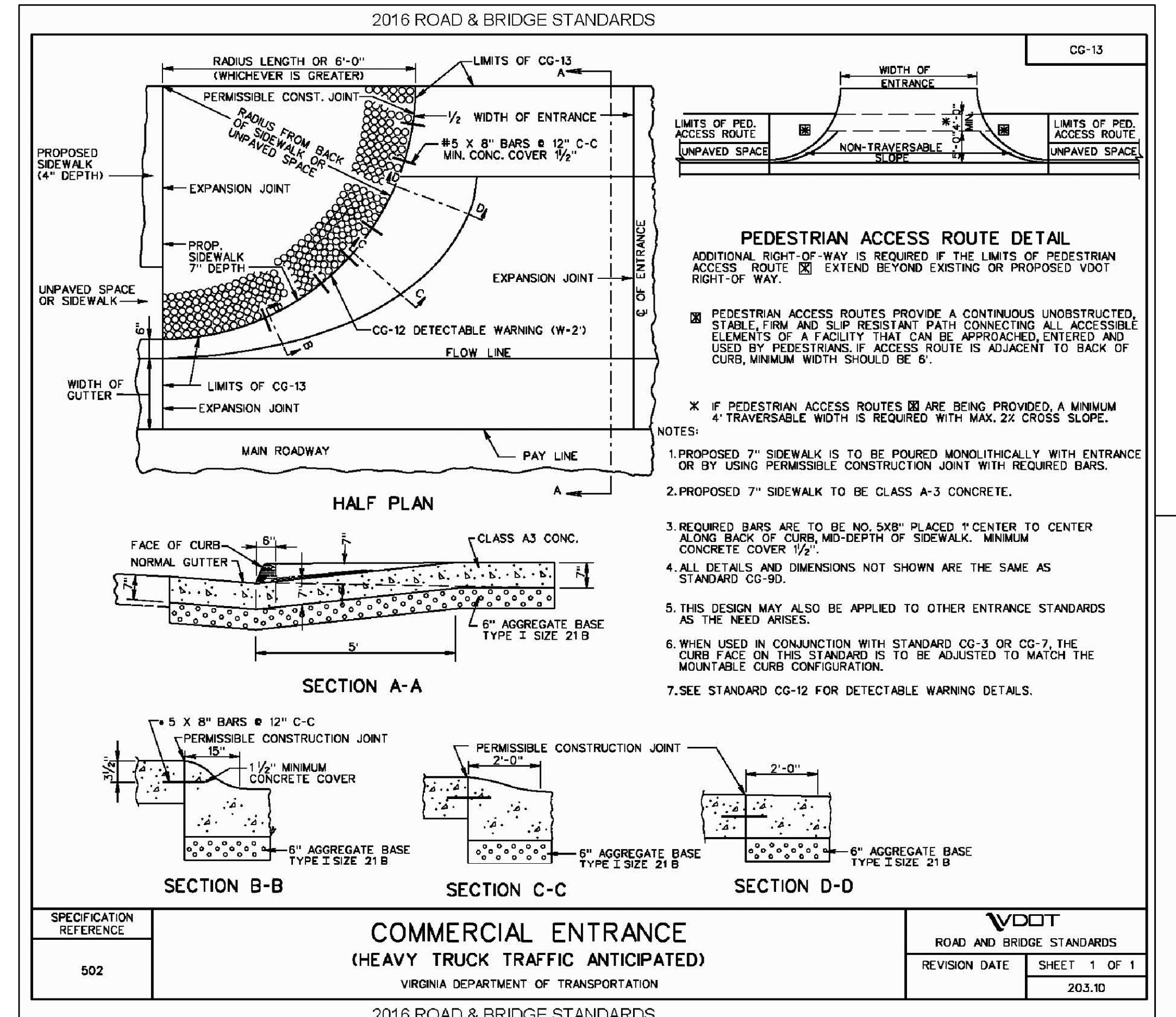
TOWN OF CHRISTIANSBURG, VIRGINIA

## E&amp;S AND GRADING PLAN

SECOND REVIEW 08/31/18	NOT FOR CONSTRUCTION NOT FOR RECORDING
Drawn By MCP	Checked By DRM
Drawing 4572A	Commission No. 4572A
C-3	

Sheet 6 of 9

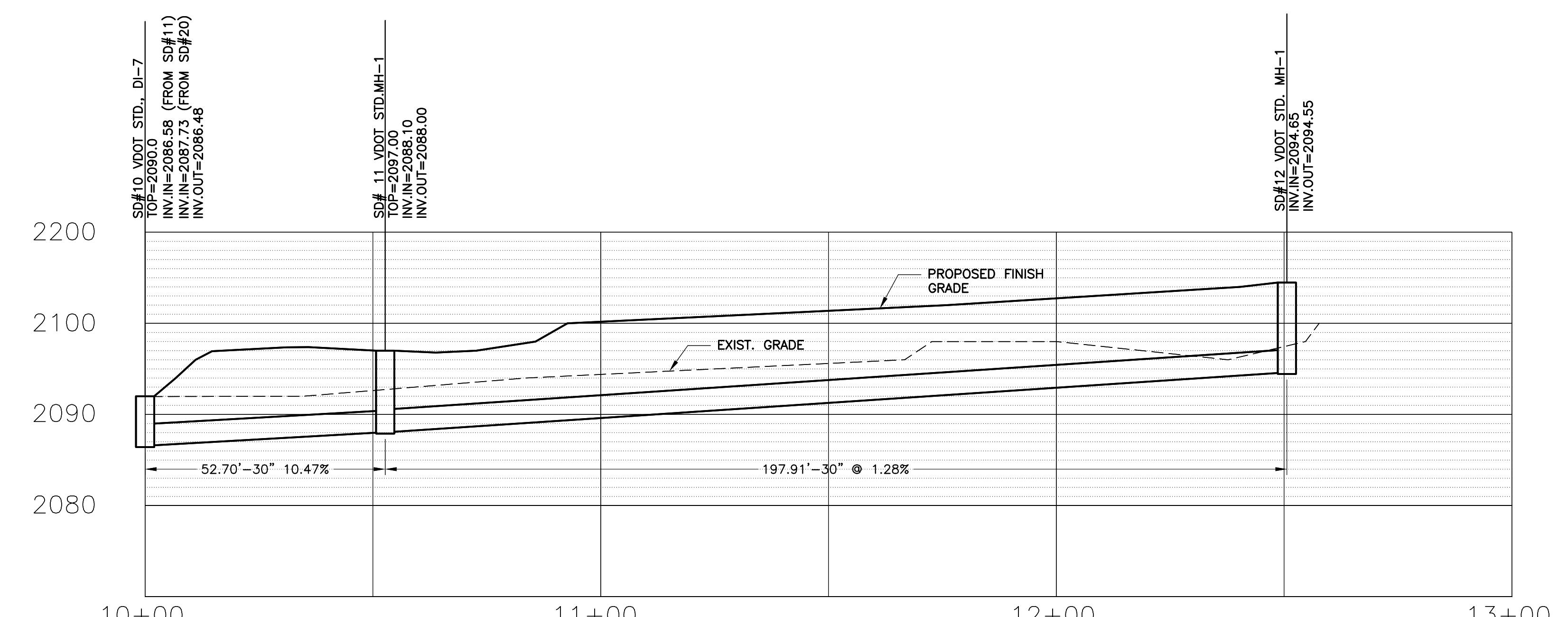




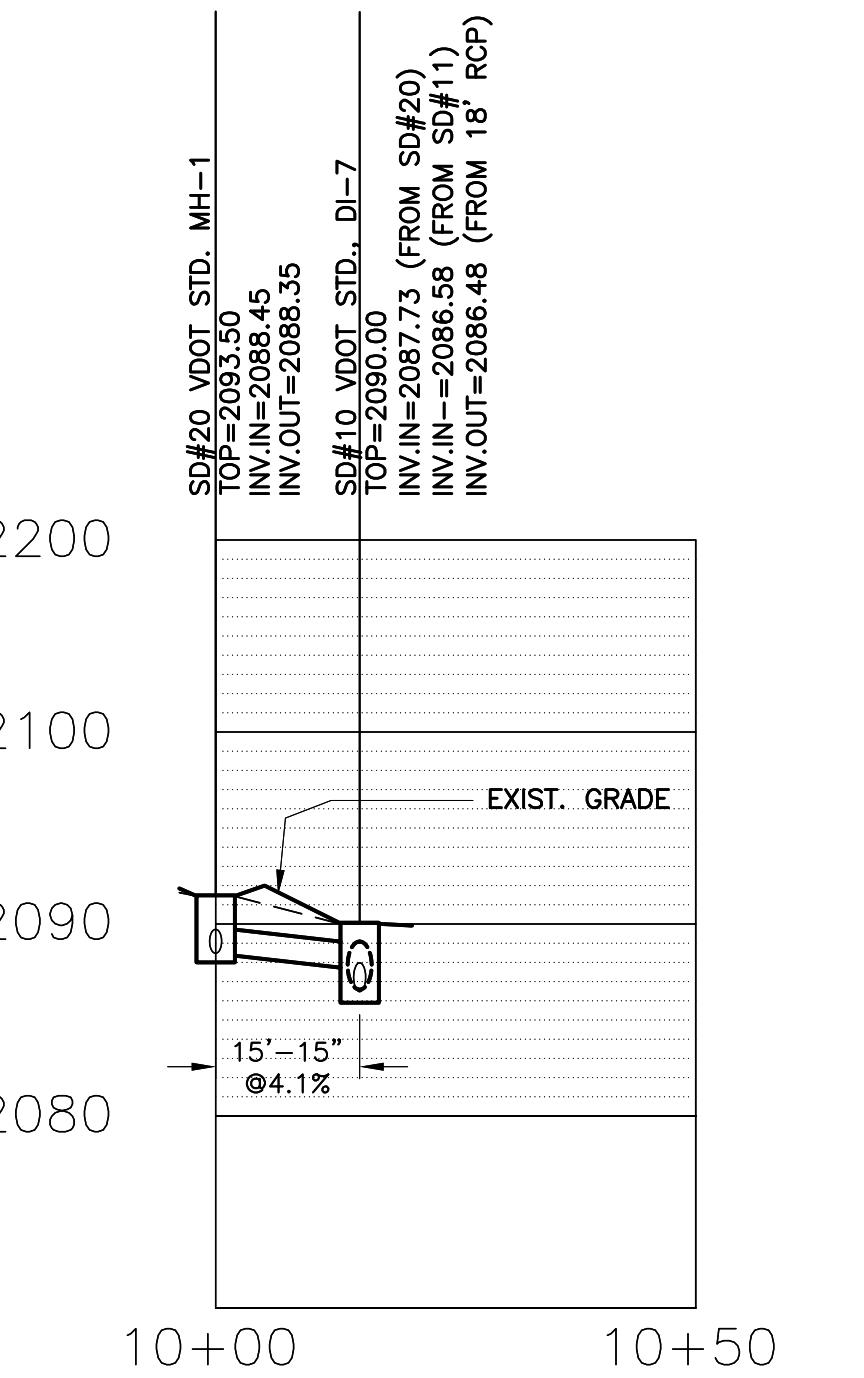
SHOWCASE HOME BUILDERS  
COMMERCIAL SITE DEVELOPMENT  
1145 ROANOKE ST.  
TOWN OF CHRISTIANSBURG, VIRGINIA

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Engineering  
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STORM DRAIN PROFILE  
1"=10' VERTICAL SCALE  
1"=20' HORIZONTAL SCALE



STORM DRAIN PROFILE  
2  
C-6  
1"=10' VERTICAL SCALE  
1"=20' HORIZONTAL SCALE

**SHOWCASE HOME BUILDERS  
COMMERCIAL SITE DEVELOPMENT**  
**1145 ROANOKE ST.**  
**TOWN OF CHRISTIANSBURG, VIRGINIA**

SECOND  
REVIEW  
08/31/18  
NOT FOR CONSTRUCTION  
NOT FOR RECORDING

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Checked By DRM  
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Commission No. 4572A  
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