

EROSION AND SEDIMENT CONTROL PLAN

T & L DEVELOPMENT

APPLICANT

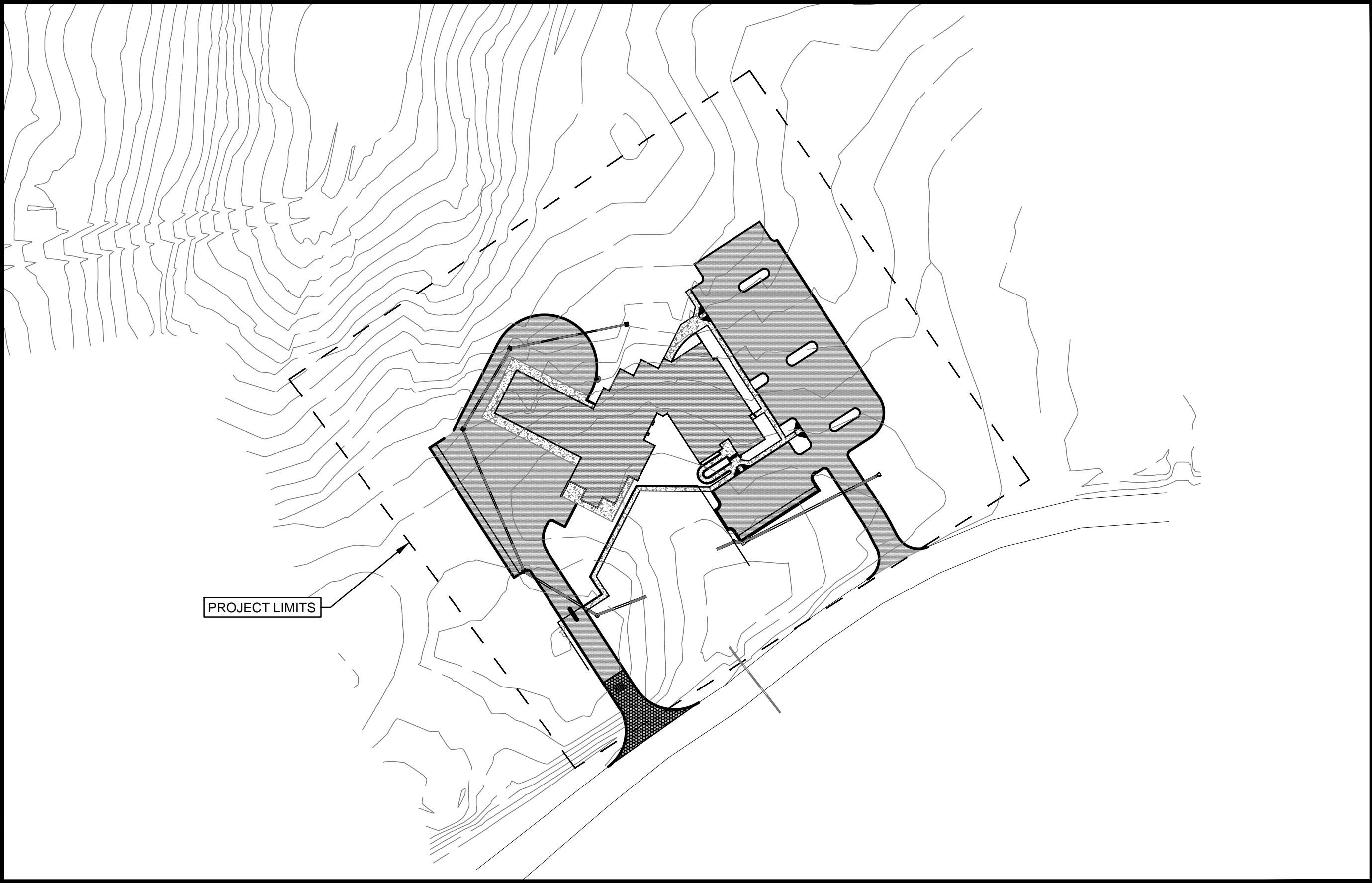
SMALLTOWN CONSULTANTS
SMALLTOWN, VA.
ATTN: KEN HARPER

BASE INFORMATION

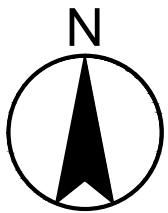
VA DEQ

STATISTICAL DATA

PROJECT LIMITS (APPROXIMATE) 6.7 ACRES ±
OPEN SPACE (PROJECT LIMITS)
MANAGED TURF (PROJECT LIMITS)
IMPERVIOUS (PROJECT LIMITS)



PROJECT LIMITS



0 100 200
APPROXIMATE SCALE (FEET)

DATE: 11/23/2016
FIRST SUBMITTAL

REVISIONS:	
DATE	DATE

PROJECT NARRATIVE:

THE PURPOSE OF THIS STORMWATER AND EROSION AND SEDIMENT CONTROL PLAN IS TO PROVIDE SPECIFICATION ON MANAGEMENT OF STORMWATER RUNOFF DURING AND AFTER CONSTRUCTION ACTIVITIES. THIS PLAN IS MEANT TO DEPICT EROSION AND SEDIMENT CONTROL AND STORMWATER MANAGEMENT DESIGN ONLY.

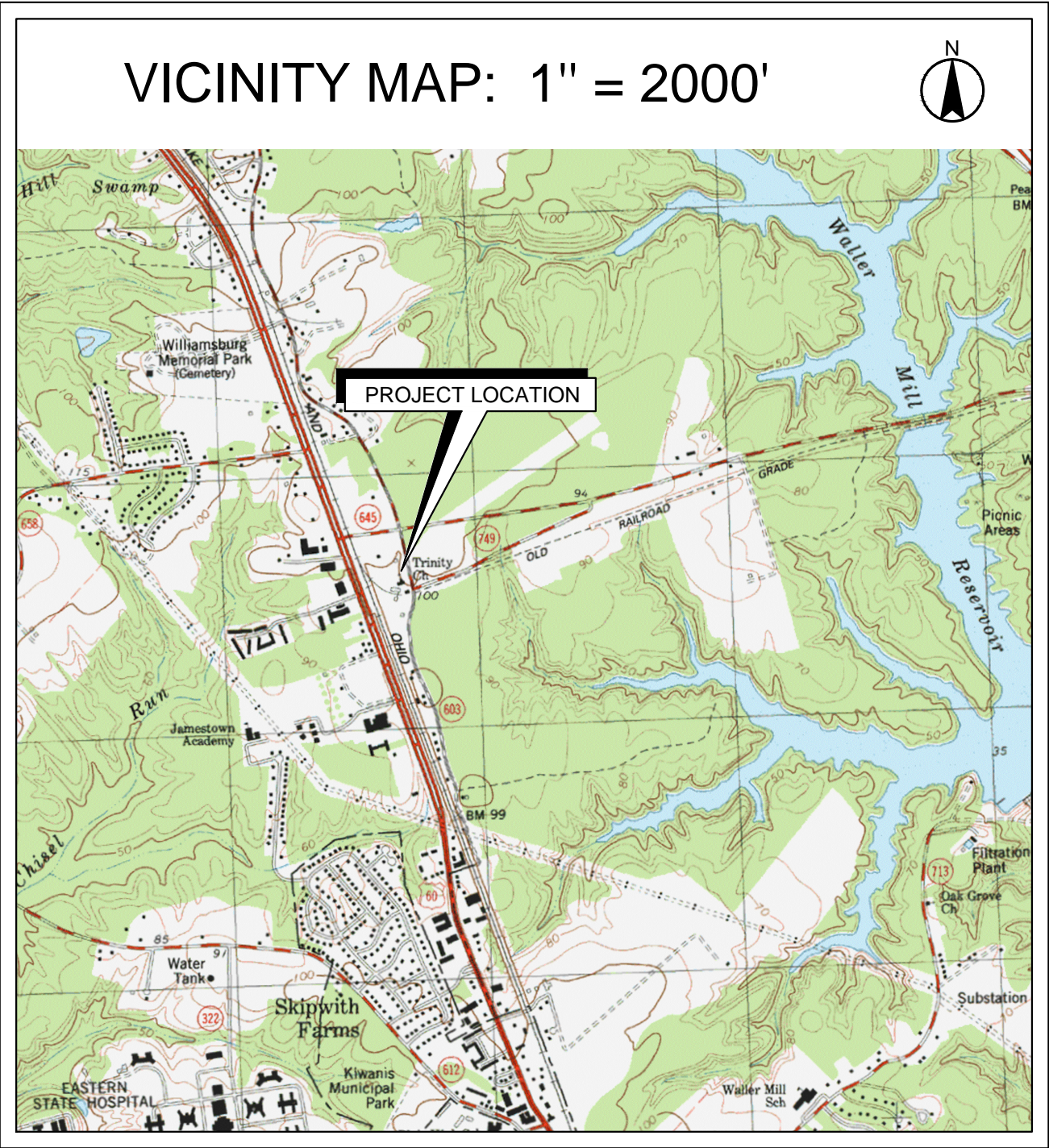
THIS PROJECT INCLUDES CLEARING EXISTING LOT AND THE CONSTRUCTION OF A NEW MULTI-STORY OFFICE COMPLEX AND PARKING. ACCORDING TO THE FLOOD INSURANCE RATING MAP (FIRM), THERE ARE NO BASE FLOOD ELEVATIONS (BFE) FOR THIS SITE.

THE PRIMARY OBJECTIVE OF THIS DESIGN IS TO MINIMIZE ENVIRONMENTAL DISTURBANCE TO THE MAXIMUM EXTENT PRACTICABLE AND MEET LOCAL REQUIREMENTS FOR STORMWATER QUANTITY AND QUALITY CONTROL.

LOW IMPACT DEVELOPMENT (LID) TECHNIQUES AND STORMWATER BEST MANAGEMENT PRACTICES (BMPs) SUCH AS BIORETENTION AND PERMEABLE PAVEMENTS ARE PROPOSED TO MEET THESE OBJECTIVES.

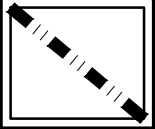
SHEET INDEX

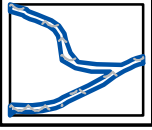
- COVER
- EXISTING CONDITIONS
- PROPOSED CONDITIONS
- BMP DESIGNS
- EROSION & SEDIMENT CONTROL PLAN PHASE I
- EROSION & SEDIMENT CONTROL NOTES
- EROSION & SEDIMENT CONTROL DETAILS

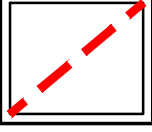


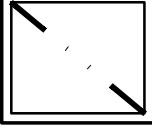
VICINITY MAP: 1" = 2000'

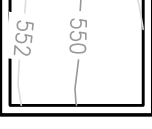
SMALLTOWN, VIRGINIA DEPARTMENT OF PUBLIC WORKS												APRIL 2014					
T&L COMMERCIAL DEVELOPMENT COVER												SITE PLANNING DIVISION					
DEQ TRAINING CASE STUDY												SCALE 1"=40'		DESIGNED BY: K. PROBST DRAFTED BY: K. PROBST CHECKED BY: J. SMITH		SHEET 1	

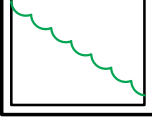
PROJECT LIMITS

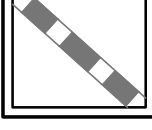
APPROXIMATE STREAM CHANNEL LIMITS

EXISTING DRAINAGE AREA

TIME OF CONCENTRATION LINE

EXISTING TOPOGRAPHY

EXISTING TREE LINE

EXISTING CULVERT

EXISTING PROJECT AREA DATA:

PROJECT AREA

6.7 ACRES ±

OPEN SPACE (PROJECT LIMITS)

5.8 ACRES ±

FORESTED (PROJECT LIMITS)

0.9 ACRES ±

CURVE NUMBER

78

DRAINAGE AREA DATA:

DRAINAGE AREA

5.7 ACRES ±

OPEN SPACE (IN DA)

5.0 ACRES ±

FORESTED (IN DA)

0.7 ACRES ±

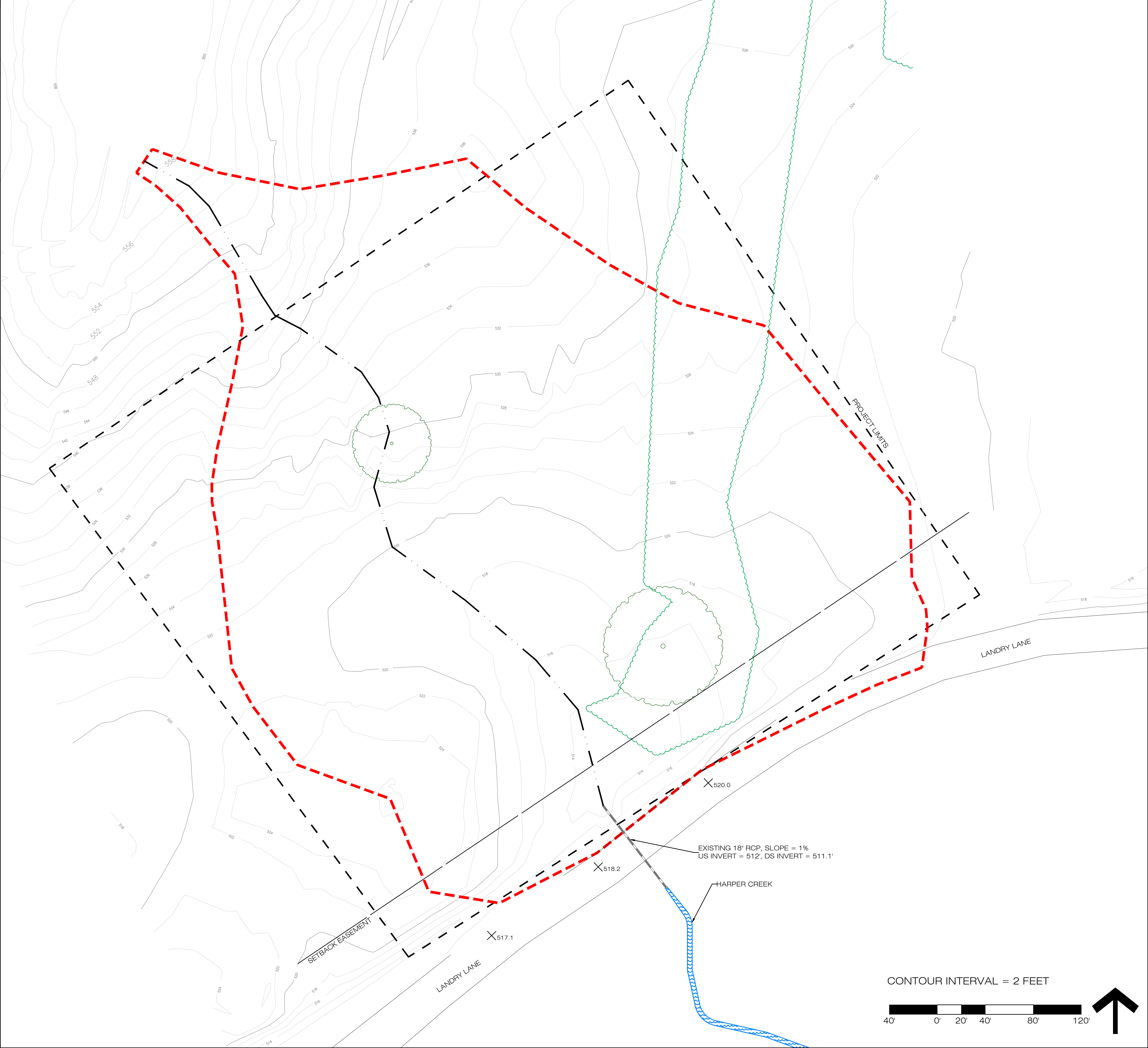
TIME OF CONCENTRATION

22 MINUTES ±

CURVE NUMBER

79

°C° SOILS THROUGHOUT



APRIL 2014									
SMALLTOWN, VIRGINIA DEPARTMENT OF PUBLIC WORKS									
			SITE PLANNING DIVISION						
			EXERCISE 5						
			T&L COMMERCIAL DEVELOPMENT EXISTING CONDITIONS						
			DEQ TRAINING CASE STUDY						
			DESIGNED BY: K PROBST DRAFTED BY: K PROBST CHECKED BY: J SMITH			SCALE 1"=40'			

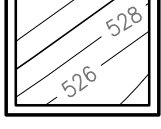
LEGEND:

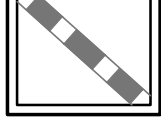
PROJECT LIMITS

APPROXIMATE STREAM CHANNEL LIMITS

PROPOSED DRAINAGE AREA

EXISTING TOPOGRAPHY


PROPOSED GRADING

EXISTING CULVERT

PROPOSED SITE BMP

PROPOSED PARKING LOT

PROPOSED SIDEWALK

PROPOSED TREELINE

PROPOSED PROJECT AREA DATA:

PROJECT AREA

6.7 ACRES ±

OPEN SPACE (PROJECT LIMITS)

3.50 ACRES ±

MANAGED TURF (PROJECT LIMITS)

1.25 ACRES ±

IMPERVIOUS (PROJECT LIMITS)

1.95 ACRES ±

CURVE NUMBER

79

PROPOSED SITE DATA						
DA	AREA (AC)	TREATMENT IN DA?	TREATMENT	IMPERVIOUS AREA (AC)	OPEN SPACE (AC)	MANAGED TURF (AC)
1	0.90	NO	-	0.10	0.75	0.05
2	0.20	YES	CISTERN	0.20	0.00	0.00
3	0.30	NO	-	0.1	0.20	0.00
4	0.27	NO	-	0.15	0.07	0.05
5	0.30	YES	PERM. PAVEMENT	0.3	0.00	0.00
6	1.80	YES	DRY SWALE	0.65	0.65	0.50
7	0.20	YES	PERM. PAVEMENT	0.2	0.00	0.00
8	0.70	YES*	EXTENDED DETENTION	0.2	0.00	0.50
9	0.66	NO	-	0.05	0.46	0.15
TOTAL	5.3	-	-	1.95	2.13	1.25

NOTE: ASSUME 5 MINUTES FOR TIME OF CONCENTRATION FOR EACH WATERSHED. ASSUME ALL SOILS ARE "C".
*BIORETENTION IN DA 8 CAPTURES DRAINAGE FROM DA'S 1-7 AS WELL, THESE ADDITIONAL AREAS ARE NOT INCLUDED IN THE DA 8 AREA.



APRIL 2014									
SMALLTOWN, VIRGINIA DEPARTMENT OF PUBLIC WORKS									
SITE PLANNING DIVISION		EXERCISE 5		T&L COMMERCIAL DEVELOPMENT		PROPOSED CONDITIONS		DEQ TRAINING CASE STUDY	
DESIGNED BY: K. PRIEST		DRAFTED BY: K. PRIEST		CHECKED BY: J. SMITH		SCALE		DATE	
1"=40'		BY		APPROVED		BY		DATE	
DESCRIPTION		BY		APPROVED		BY		DATE	
APPROVED BY SITE PLANNING DIVISION		BY		APPROVED		BY		DATE	



EROSION AND SEDIMENT CONTROL NARRATIVE:

THE PURPOSE OF THE EROSION CONTROL MEASURES SHOWN ON THESE PLANS SHALL BE TO PRECLUDE THE TRANSPORT OF SEDIMENTS RESULTING FROM CONSTRUCTION ACTIVITIES FROM ENTERING ONTO ADJACENT PROPERTIES AND STATE WATERS. IF FIELD INSPECTION REVEALS THE INADEQUACY OF THE PLAN TO CONFINE SEDIMENT TO THE PROJECT SITE, ALL APPROPRIATE MODIFICATIONS WILL BE MADE TO CORRECT ANY PLAN DEFICIENCIES.

PROJECT DESCRIPTION

A DEVELOPER IN SMALLTOWN, VIRGINIA IS PROPOSING TO CONSTRUCT AN OFFICE PARK ON EXISTING DENUDED LAND. THIS PROJECT INCLUDES THE CLEARING AND GRADING OF THE LAND ALONG WITH THE CONSTRUCTION OF THE OFFICE PARK. THIS PROJECT IS PART OF THE DEVELOPER'S EFFORTS TO INCREASE COMMERCIAL BUSINESS IN SMALLTOWN.

THE PROJECT INCLUDES APPROXIMATELY 6.7 ACRES OF LAND DISTURBANCE.

EROSION AND SEDIMENT CONTROL NOTES

1. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, THIRD EDITION, 1992. THE CONTRACTOR SHALL BE THOROUGHLY FAMILIAR WITH ALL APPLICABLE MEASURES CONTAINED THEREIN THAT MAY BE PERTINENT TO THIS PROJECT THESE STANDARDS WILL APPLY IN ADDITION TO THE PROVISIONS OF THE APPROVED PLAN.

2. PRIOR TO INITIATING LAND-DISTURBING ACTIVITIES, THE NAME OF A RESPONSIBLE LAND-DISTURBER SHALL BE PROVIDED. THE CONTACTS LISTED ON THE COVER SHEET SHALL SERVE AS THE PROJECT RESPONSIBLE LAND DISTURBER FOR PLANNING PURPOSES. THE RESPONSIBLE LAND-DISTURBER SHALL BE AN INDIVIDUAL WHO HOLDS A VALID CERTIFICATION OF COMPETENCE ISSUED BY THE VIRGINIA DEPARTMENT OF CONSERVATION AND IS DEFINED AS THE PERSON IN CHARGE OF AND RESPONSIBLE FOR CARRYING OUT THE LAND-DISTURBING ACTIVITY. IF THE PERSON DESIGNATED AS RESPONSIBLE LAND-DISTURBER CHANGES BETWEEN THE TIME OF PLAN APPROVAL AND THE SCHEDULED PRECONSTRUCTION MEETING, THE APPROPRIATE PARTIES SHALL BE INFORMED OF THE CHANGE, IN WRITING, 24 HOURS IN ADVANCE OF THE PRECONSTRUCTION MEETING. THE PROJECT SWPPP NOTEBOOK SHALL ALSO BE UPDATED ACCORDINGLY.

3. A PRECONSTRUCTION MEETING SHALL BE HELD ON SITE BETWEEN THE PROJECT ENGINEER, THE EROSION AND SEDIMENT CONTROL INSPECTOR, THE RESPONSIBLE LAND-DISTURBER, AND THE CONTRACTOR PRIOR TO INITIATING CONSTRUCTION. THE CONTRACTOR SHALL SUBMIT A SEQUENCE OF CONSTRUCTION FOR APPROVAL PRIOR TO THE PRECONSTRUCTION MEETING. THE DESIGNATED RESPONSIBLE LAND-DISTURBER IS REQUIRED TO ATTEND THE PRECONSTRUCTION MEETING FOR THE PROJECT.

4. THE CONSTRUCTION COORDINATOR AND/OR EROSION AND SEDIMENT CONTROL INSPECTORS HAVE THE AUTHORITY TO REQUIRE ADDITIONAL EROSION AND SEDIMENT CONTROLS IN AREAS WHERE FIELD CONDITIONS DICTATE THAT THE PLAN NEEDS TO BE MODIFIED.

5. QUALIFIED PERSONNEL SHALL PROVIDE AND DOCUMENT SWPPP INSPECTIONS AT THE FOLLOWING FREQUENCY: ONCE EVERY 10 BUSINESS DAYS AND NO LATER THAN 48 HOURS FOLLOWING A MEASURABLE STORM EVENT, OR A MINIMUM OF ONCE EVERY 5 BUSINESS DAYS. CONSTRUCTION ACTIVITIES THAT DISCHARGE TO IMPAIRED WATERS, SURFACE WATERS WITH A TMDL APPROVED, OR EXCEPTIONAL WATERS (AS DEFINED IN THE SWPPP) SHALL BE INSPECTED A MINIMUM OF EVERY 5 BUSINESS DAYS AND NO LATER THAN 48 HOURS FOLLOWING A MEASURABLE STORM EVENT, OR A MINIMUM OF EVERY 4 BUSINESS DAYS.

6. ALL POINTS OF CONSTRUCTION INGRESS AND EGRESS FROM PUBLIC ROADS SHALL BE PROTECTED BY A TEMPORARY CONSTRUCTION ENTRANCE TO PREVENT TRACKING OF MUD ONTO PUBLIC RIGHT-OF-WAYS. AN ENTRANCE PERMIT FROM VDOT IS REQUIRED PRIOR TO ANY CONSTRUCTION ACTIVITIES WITHIN STATE RIGHT-OF-WAYS. WHERE SEDIMENT IS TRANSPORTED ONTO A PUBLIC ROAD SURFACE, THE ROAD SHALL BE THOROUGHLY CLEANED AT THE END OF EACH DAY (STD. & SPEC 3.02).

7. SEDIMENT BARRIERS AND OTHER MEASURES INTENDED TO TRAP SEDIMENT ON-SITE MUST BE CONSTRUCTED AS A FIRST STEP IN GRADING AND BE MADE FUNCTIONAL BEFORE UPSLOPE LAND DISTURBANCE TAKES PLACE. EARTHEN STRUCTURES SUCH AS DAMS, DIKES, AND DIVERSIONS MUST BE SEEDED AND MULCHED IMMEDIATELY AFTER INSTALLATION. PERIODIC INSPECTIONS OF THE EROSION CONTROL MEASURES BY THE OWNER OR OWNERS REPRESENTATIVE SHALL BE MADE TO ASSESS THEIR CONDITION. ANY NECESSARY MAINTENANCE OF THE MEASURES SHALL BE ACCOMPLISHED IMMEDIATELY AND SHALL INCLUDE THE REPAIR MEASURES DAMAGED BY ANY SUBCONTRACTOR.

8. SEDIMENT CONTROL MEASURES MAY REQUIRE MINOR FIELD ADJUSTMENTS AT TIME OF CONSTRUCTION TO ENSURE THEIR INTENDED PURPOSE IS ACCOMPLISHED. APPROVAL WILL BE REQUIRED FOR DEVIATIONS FROM THE APPROVED PLANS.

9. PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO ALL DENUDED AREAS WITHIN 7 DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN SEVEN DAYS TO DENUDED AREAS WHICH MAY NOT BE AT FINAL GRADE BUT WILL REMAIN DORMANT FOR LONGER THAN 30 DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT DORMANT FOR MORE THAN ONE YEAR.

10. AN APPROPRIATE DEWATERING STRUCTURE (STD. & SPEC. 3.26) SHALL BE EMPLOYED WHEREVER DEWATERING IS NECESSARY TO REMOVE WATER FROM EVACUATED AREAS OR WHEREVER ELSE DISCHARGE OF SEDIMENT LADEN WATER IS EXPECTED

11. IF DISTURBED AREA STABILIZATION IS TO BE ACCOMPLISHED DURING THE MONTHS OF DECEMBER, JANUARY, OR FEBRUARY, STABILIZATION SHALL CONSIST OF MULCHING (STD. & SPEC 3.32). SEEDING WILL THEN TAKE PLACE AS SOON AS THE SEASON PERMITS.

12. THE TERM SEEDING, FINAL VEGETATIVE COVER OR STABILIZATION ON THIS PLAN SHALL MEAN THE SUCCESSFUL GERMINATION AND ESTABLISHMENT OF A STABLE GROUND COVER FROM A PROPERLY PREPARED SEEDBED CONTAINING THE SPECIFIED AMOUNTS OF SEED, LIME, AND FERTILIZER (STD. &SPEC. 3.32).

13. CUT AND FILL SLOPES SHALL BE DESIGNED AND CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION. ALL SLOPES STEEPER THAN 3:1, OR AS OTHERWISE INCLUDED IN THIS PLAN, SHALL REQUIRE THE USE OF EROSION CONTROL, BLANKETS AND MATTING TO AID IN THE ESTABLISHMENT OF A VEGETATIVE COVER. INSTALLATION SHALL BE IN ACCORDANCE WITH, STD. & SPEC. 3.36, SOIL STABILIZATION BLANKETS AND MATTING AND MANUFACTURERS INSTRUCTIONS.

14. TEMPORARY EROSION CONTROL MEASURES SUCH AS SILT FENCE ARE NOT TO BE REMOVED UNTIL ALL DISTURBED AREAS ARE STABILIZED. TRAPPED SEDIMENT SHALL BE SPREAD, SEEDED AND MULCHED. AFTER THE PROJECT AND STABILIZATION IS COMPLETE, ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS.

CONTROL MEASURES

ALL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, SECOND EDITION, 1992 (VESCH). THE FOLLOWING PRACTICES ARE PROPOSED:

TEMPORARY STONE CONSTRUCTION ENTRANCE, CE (VESCH STD. & SPEC. 3.02) - TEMPORARY STONE CONSTRUCTION ENTRANCES SHALL BE USED AT SELECT POINTS OF INGRESS AND EGRESS FROM PUBLIC ROADWAYS TO STABILIZE THE ACCESS POINT AND MINIMIZE THE TRANSPORT OF SEDIMENT OFFSITE, OTHER ENTRANCES MAY CONSIST OF TIMBER MATS ALONE, AS SPECIFIED HEREIN. GRAVEL CONSTRUCTION ENTRANCES SHALL BE CONSTRUCTED OF VDOT #1 COARSE AGGREGATE OR LARGER AS SPECIFIED HEREIN. A MINIMUM OF 6-INCHES THICK, AND A MINIMUM OF 70 FEET LONG. A LAYER OF FILTER CLOTH SHALL BE PLACED UNDERNEATH THE STONE TO SEPARATE THE STONE FROM THE UNDERLYING SOILS. AN OPTIONAL WASH RACK MAY BE USED IF CONDITIONS REQUIRE IT, WITH A SEDIMENT TRAP PLACED TO COLLECT RUNOFF FROM THE WASH RACK. IN SOME CASES WHERE CONSTRUCTION ACCESS IS LIMITED, THE PLAN MAY CALL FOR TIMBER MAT CONSTRUCTION ENTRANCES TO AVOID LAND DISTURBING TO CONSTRUCT THE CE.THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODICALLY TOPDRESSING THE ENTRANCE WITH ADDITIONAL STONE OR WASHING THE EXISTING STONE.

SILT FENCE, SF (VESCH STD. & SPEC. 3.05) - SILT FENCE SHALL BE USED TO PROVIDE SEDIMENT TRAPPING AT SPECIFIED LOCATIONS MAINLY AT SENSITIVE AREAS WHERE TOWER CONSTRUCTION IS TO OCCUR.SILT FENCES SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY. SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH STORM EVENT AND WHEN DEPOSITS REACH APPROXIMATELY ONE-HALF THE HEIGHT OF THE BARRIER. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM TO THE EXISTING GRADE, PREPARED AND SEEDED. CLOSE ATTENTION SHALL BE PAID TO REPAIR DAMAGED SILT FENCE RESULTING FROM END RUNS AND UNDERCUTTING. SHOULD THE FABRIC DECOMPOSE OR BECOME INEFFECTIVE, THE FABRIC SHALL BE REPLACED PROMPTLY.

INLET PROTECTION (VESCH STD. & SPEC. 3.07)

A SEDIMENT FILTER INSTALLED AROUND THE GRATED DROP INLET TO PREVENT SEDIMENT FROM ENTERING THE STORMWATER SYSTEM DUE TO EQUIPMENT TRAFFIC DURING CONSTRUCTION PRIOR TO PERMANENT STABILIZATION OF THE DISTURBED AREA. THE INLET PROTECTION SHALL BE INSPECTED AFTER EACH RAIN AND REPAIRS MADE AS NEEDED. SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH STORM EVENT.

SOIL STABILIZATION BLANKETS AND MATTING (VESCH STD. & SPEC. 3.36)

THE INSTALLATION OF A PROTECTIVE COVERING (BLANKET) OR A SOIL STABILIZATION MAT ON A PREPARED PLANTING AREA OF A STEEP SLOPE, CHANNEL, OR SHORELINE. BLANKETS AND MATTING SHOULD BE INSPECTED PERIODICALLY FOLLOWING INSTALLATION, PARTICULARLY AFTER RAIN TO FOR EROSION OR UNDERMINING. ANY DISLOCATION OR FAILURE SHOULD BE REPAIRED IMMEDIATELY. IF WASHOUT OR BREAKAGE OCCURS, REINSTALL THE MATERIAL. BLANKETS AND MATTING SHOULD BE INSPECTED PERIODICALLY FOLLOWING INSTALLATION, PARTICULARLY AFTER RAIN TO FOR EROSION OR UNDERMINING. ANY DISLOCATION OR FAILURE SHOULD BE REPAIRED IMMEDIATELY. IF WASHOUT OR BREAKAGE OCCURS, REINSTALL THE MATERIAL.

DIVERSION DIKE (VESCH STD. & SPEC. 3.09)

TO DIVERT STORM RUNOFF FROM UPSLOPE DRAINAGE AREAS AWAY FROM UNPROTECTED AREAS AND SLOPES TO A STABILIZED OUTLET. TO DIVERT SEDIMENT-LADEN RUNOFF FROM A DISTURBED AREA TO A SEDIMENT-TRAPPING FACILITY SUCH AS A SEDIMENT TRAP OR SEDIMENT BASIN.

SEDIMENT TRAP (VESCH STD. & SPEC. 3.13)

A TEMPORARY PONDING AREA FORMED BY CONSTRUCTING AN EARTHEN EMBANKMENT WITH A STONE OUTLET. TO DETAIN SEDIMENT-LADEN RUNOFF FROM SMALL DISTURBED AREAS LONG ENOUGH TO ALLOW THE MAJORITY OF THE SEDIMENT TO SETTLE OUT.

TEMPORARY SEEDING (VESCH STD. & SPEC. 3.31)

THE ESTABLISHMENT OF A TEMPORARY VEGETATIVE COVER ON DISTURBED AREAS BY SEEDING WITH APPROPRIATE RAPIDLY GROWING ANNUAL PLANTS. TO REDUCE EROSION AND SEDIMENTATION BY STABILIZING DISTURBED AREAS THAT WILL NOT BE BROUGHT TO FINAL GRADE FOR A PERIOD OF MORE THAN 14 DAYS. TO REDUCE DAMAGE FROM SEDIMENT AND RUNOFF TO DOWNSTREAM OR OFF-SITE AREAS, AND TO PROVIDE PROTECTION TO BARE SOILS EXPOSED DURING CONSTRUCTION UNTIL PERMANENT VEGETATION OR OTHER EROSION CONTROL MEASURES CAN BE ESTABLISHED.

LIMITS OF DISTURBANCE

1. PRIOR TO CONSTRUCTION, TIMBER ACTIVITIES WILL OCCUR WITHIN THE LIMITS OF CLEARING. ALL CLEARING WILL LEAVE THE ROOT MASS INTACT AND THE SOIL UNDISTURBED AND IS NOT CONSIDERED A LAND DISTURBING ACTIVITY. SELECT AREAS WILL REQUIRE ADDITIONAL PRECAUTIONS THROUGH HAND CLEARING ALONE. USE WOOD CHIPS IN UPLANDS AS GROUND COVER AFTER CLEARING.
2. LIMITS OF DISTURBANCE SHALL BE RESTRICTED TO THE TOWER WORK AREAS AND ACCESS ROUTES IDENTIFIED ON THESE PLANS.
3. SITE DEMOLITION, UTILITY CONSTRAINTS, ASPHALT REPAIRS, OR ANY OTHER SITE FEATURES OTHER THAN E&S ARE NOT ADDRESSED HEREIN BUT SHALL BE ADDRESSED BY OTHERS AS NEEDED.
4. ALL CONSTRUCTION ACTIVITIES WITHIN THE FEMA FLOODPLAIN (APPROXIMATE LIMITS SHOWN HEREIN) OR OTHER FLOOD MANAGEMENT AREAS, SHALL AVOID FILL ABOVE EXISTING GRADES, OR PROPER ADVANCED COORDINATION WITH THE ENGINEER AND AGENCIES SHALL OCCUR TO AUTHORIZE WORK.
5. CONSTRUCTION ROAD STABILIZATION WITHIN CONSERVATION EASEMENTS TO BE COORDINATED WITH CONSERVATION EASEMENT HOLDERS.

CONSTRUCTION SEQUENCE

1. HOLD A PRECONSTRUCTION MEETING ONSITE BETWEEN THE CONSTRUCTION COORDINATOR, CONTRACTOR(S) AND INSPECTOR.
2. INSTALL CONSTRUCTION ENTRANCES AND CONSTRUCTION ROAD STABILIZATION.
3. PERFORM CLEARING AS NEEDED FOR CONSTRUCTION ACCESS.
4. INSTALL ESC MEASURES PRIOR TO ANY LAND DISTURBING ACTIVITIES.
5. PERFORM BUILDING AND PARKING LOT CONSTRUCTION.
6. PERFORM CONTINUOUS TEMPORARY AND/OR PERMANENT SITE REHABILITATION PER THE NOTES HEREIN.

CONTRACTOR RESPONSIBILITY

THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLYING WITH THE MEASURES TO PROVIDE EROSION AND SEDIMENT CONTROL BOTH WITHIN AND OUTSIDE THE PROPERTY LIMITS. THE CONTRACTOR SHALL FOLLOW A POLICY OF KEEPING LAND DISTURBING ACTIVITIES TO A MINIMUM, CONSISTENT WITH GOOD CONSTRUCTION PRACTICES AND LONG-TERM ENVIRONMENTAL CONSIDERATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TEMPORARY STABILIZATION OF ALL AREAS DISTURBED DURING CONSTRUCTION ACTIVITIES UNTIL FINAL REHABILITATION AND STABILIZATION IS COMPLETE.

MINIMUM STANDARDS

MS-1 STABILIZATION OF DENUDED AREAS - PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN SEVEN (7) DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE.

MS-2 STABILIZATION OF SOIL STOCKPILES - DURING CONSTRUCTION, SOIL STOCKPILES AND BORROW AREAS SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES.

MS-3 ESTABLISHMENT OF PERMANENT VEGETATION - A PERMANENT VEGETATIVE COVER (~80%) SHALL BE ESTABLISHED ON DENUDED AREAS NOT OTHERWISE PERMANENTLY STABILIZED.

MS-4 TIMING AND STABILIZATION OF SEDIMENT TRAPPING MEASURES - SEDIMENT TRAPS, SILT FENCE, STRAW WATTLES AND ALL OTHER SEDIMENT BARRIERS, 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 OF SEDIMENT TRAPPING MEASURES - STABILIZATION MEASURES SHALL BE APPLIED TO EARTHEN STRUCTURES SUCH AS DAMS, DIKES, AND DIVERSIONS IMMEDIATELY AFTER INSTALLATION

MS-6 SEDIMENT BASINS - SEDIMENT TRAPS AND SEDIMENT BASINS SHALL BE DESIGNED AND CONSTRUCTED BASED UPON THE TOTAL DRAINAGE AREA TO BE SERVED BY THE TRAP OR THE BASIN. 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 LESS THAN THREE (3) ACRES. SEDIMENT BASINS ARE NOT TYPICALLY USED BECAUSE THEY ARE GENERALLY NOT APPLICABLE FOR THE NATURE OF ELECTRIC TRANSMISSION LINE CONSTRUCTION ACTIVITIES.

MS-7 DESIGN, CONSTRUCTION, AND STABILIZATION OF CUT AND FILL SLOPES - CUT AND FILL SLOPES SHALL BE DESIGNED AND CONSTRUCTED IN SUCH A MANNER THAT WILL MINIMIZE EROSION.

MS-8 CONCENTRATED RUNOFF CONTAINED IN ADEQUATE TEMPORARY OR PERMANENT CHANNEL - 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 ADEQUATE DRAINAGE PROTECTION FROM WATER SEEPS - WHENEVER WATER SEEPS FROM A SLOPE FACE, ADEQUATE DRAINAGE, OR OTHER PROTECTION SHALL BE PROVIDED.

MS-10 STORM SEWER INLET PROTECTION - ALL STORM SEWER INLETS THAT ARE MADE OPERABLE DURING CONSTRUCTION SHALL BE PROTECTED AGAINST SEDIMENT-LADEN WATER.

MS-11 STABILIZATION OF ONSITE WATERWAYS AND OUTLETS - BEFORE NEWLY CONSTRUCTED STORMWATER CONVEYANCE CHANNELS OR PIPES ARE MADE OPERATIONAL, ADEQUATE OUTLET PROTECTION SHALL BE INSTALLED. ONSITE STORMWATER CONVEYANCE CHANNELS ARE NOT TYPICALLY USED BECAUSE THEY ARE GENERALLY NOT APPLICABLE FOR THE NATURE OF THE ELECTRIC TRANSMISSION LINE CONSTRUCTION ACTIVITIES

MS-12 WORK IN LIVE WATERCOURSE - 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.

MS-13 CROSSING LIVE WATERCOURSE - WHEN A LIVE WATERCOURSE MUST BE CROSSED BY CONSTRUCTION VEHICLES MORE THAN TWICE IN ANY SIX (6) MONTH PERIOD, A TEMPORARY VEHICULAR STREAM CROSSING CONSTRUCTED ON NON-ERODIBLE MATERIAL SHALL BE PROVIDED.

MS-14 COMPLY WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL REGULATIONS FOR WORK IN LIVE WATERCOURSES - WHEN WORK IN A LIVE WATERCOURSE IS PERFORMED, ALL WORK MUST BE DONE IN SUCH A MANNER AS TO COMPLY WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL REGULATIONS.

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

MS-16 UNDERGROUND UTILITY CONSTRUCTION - AT A MINIMUM, UNDERGROUND UTILITY LINES MUST BE INSTALLED USING THE FOLLOWING STANDARDS:

- A) NO MORE THAN 500 LINEAR FEET OF TRENCH MAY BE OPENED AT ONE TIME. ANY TRENCH LENGTH VARIANCE WILL REQUIRE SEPARATE APPROVAL FROM DEQ;
 - B) EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF TRENCHES;
 - C) EFFLUENT FROM DEWATERING OPERATIONS SHALL BE APPROPRIATELY FILTERED AND DISCHARGED IN A MANNER THAT DOES NOT ADVERSELY AFFECT FLOWING STREAMS OR OFFSITE PROPERTY;
 - D) MATERIAL USED FOR BACKFILLING TRENCHES SHALL BE PROPERLY COMPACTED TO MINIMIZE EROSION AND PROMOTE STABILIZATION;
- STABILIZATION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH APPROPRIATE REGULATIONS

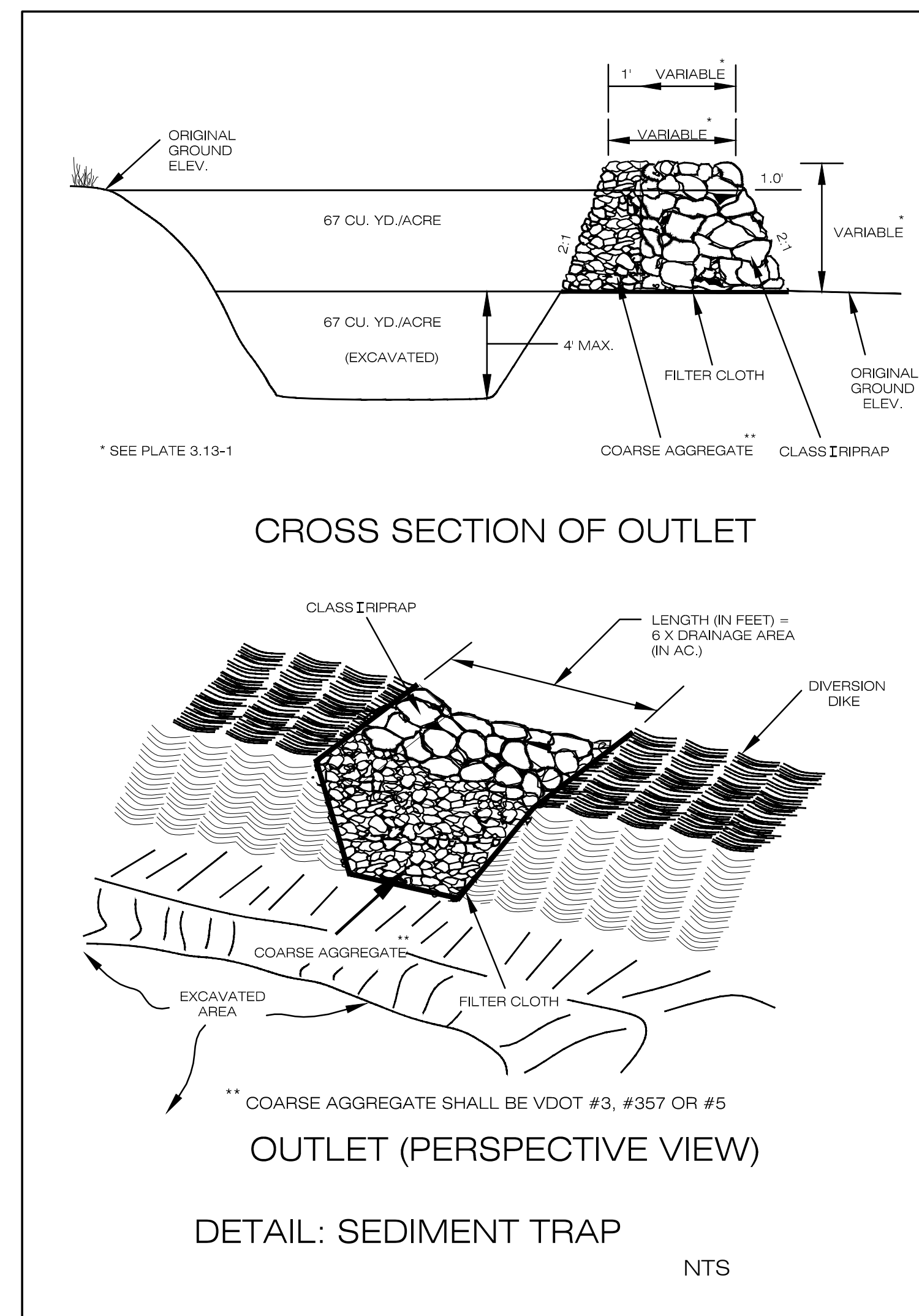
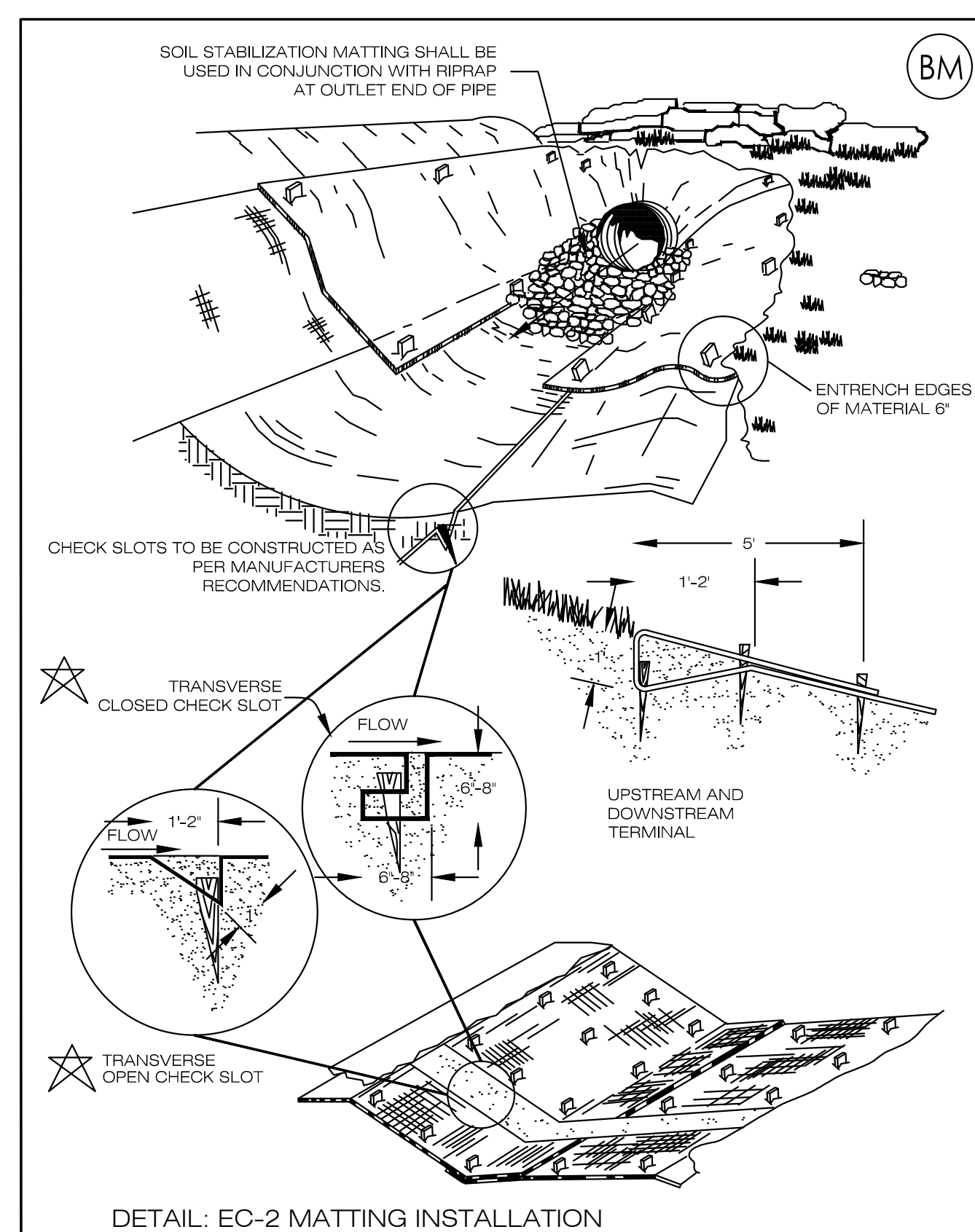
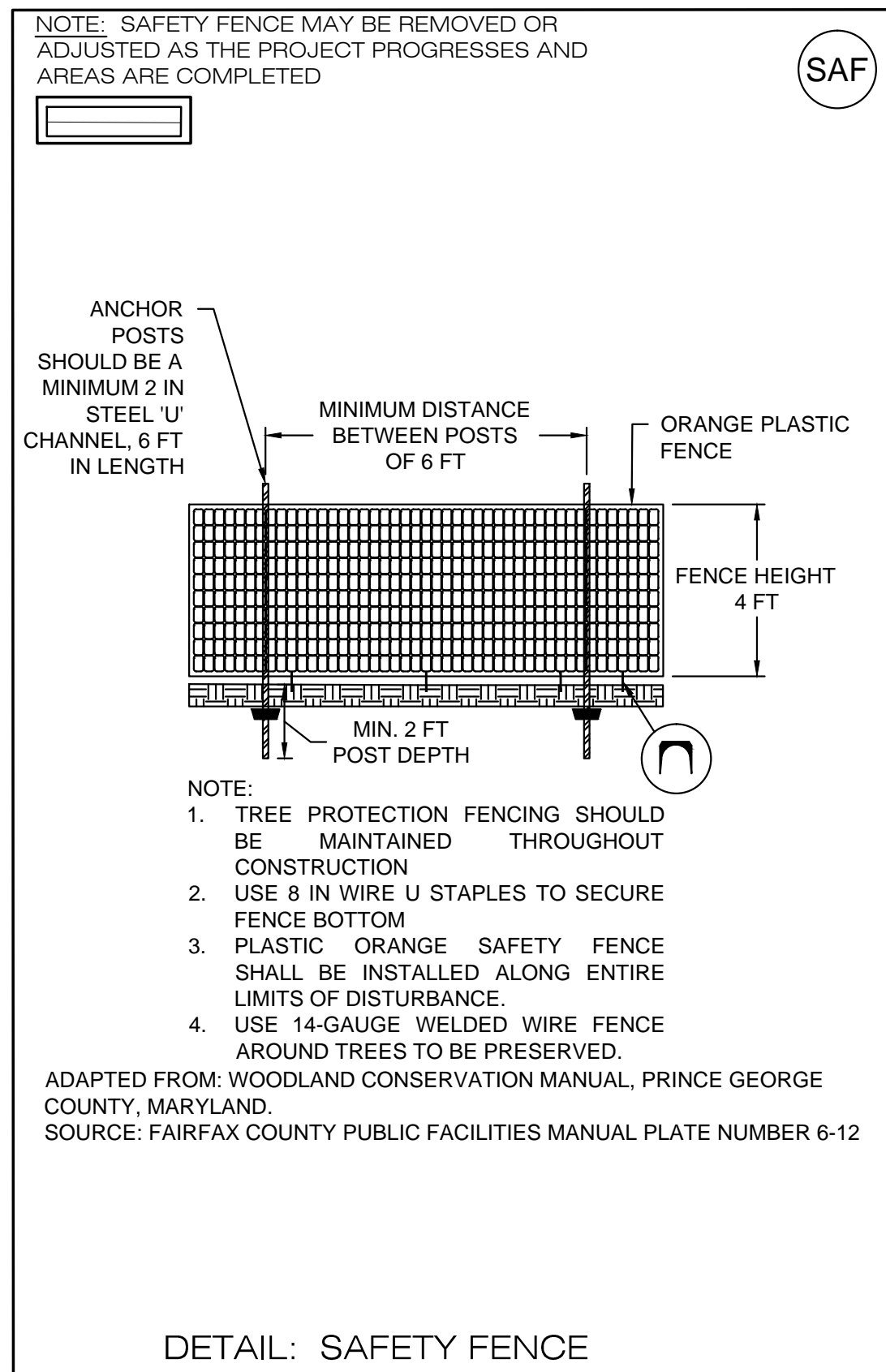
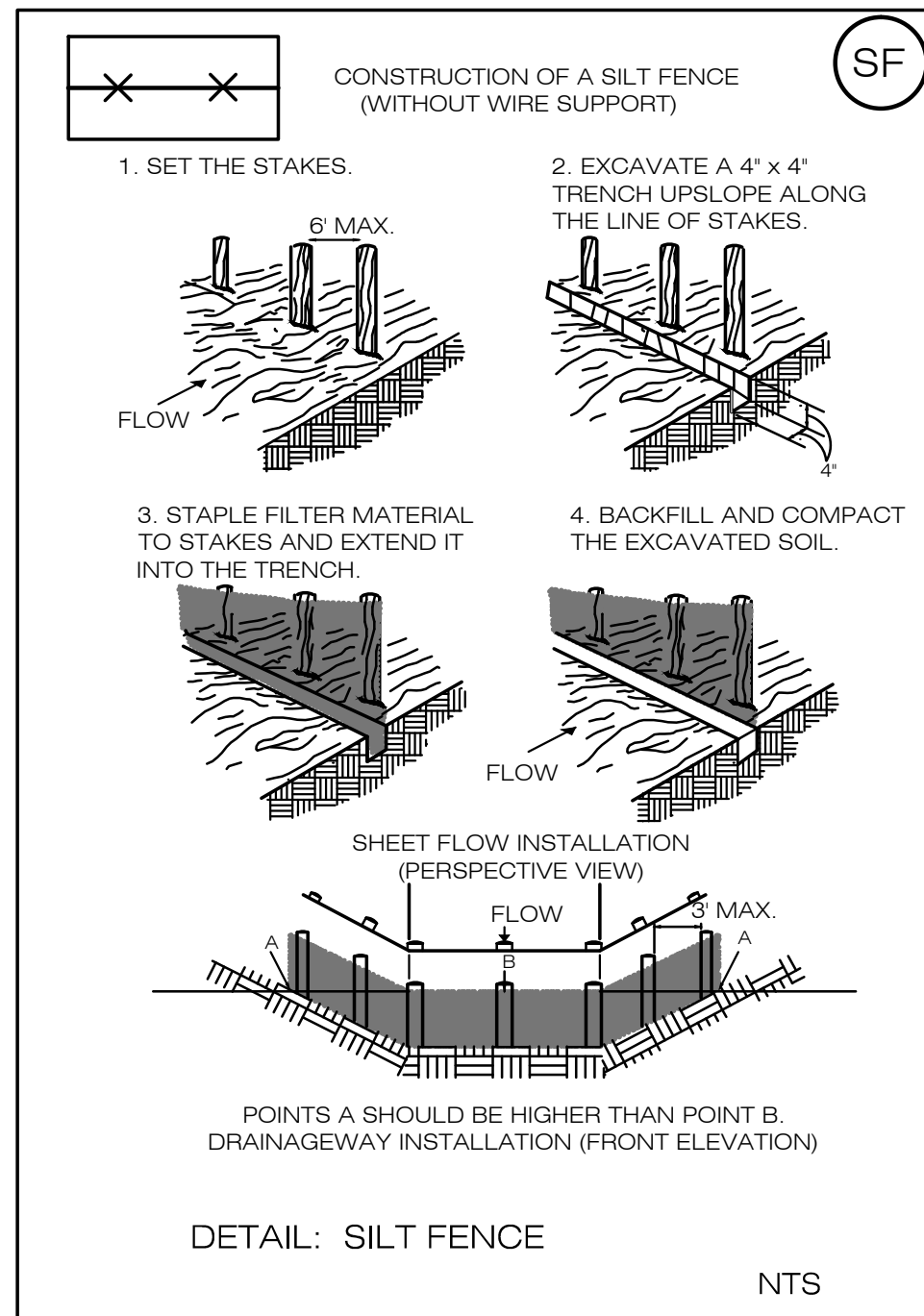
MS-17 CONSTRUCTION ACCESS ROADS - WHERE CONSTRUCTION VEHICLE ACCESS ROUTES INTERSECT PAVED OR PUBLIC ROADS, PROVISIONS SHALL BE MADE TO MINIMIZE THE TRANSPORT OF SEDIMENT BY VEHICULAR TRACKING ONTO THE PAVED SURFACE. ACCESS ROADS TO AND WITHIN THE PROPERTY LIMITS SHALL BE CONSTRUCTED OF A NON-ERODIBLE, PERMEABLE SURFACE AND SHALL NOT IMPEDE THE FLOW OF WATER. CONSTRUCTION OF ACCESS ROADS SHALL BE IN ACCORDANCE WITH THE PERMEABLE ACCESS ROAD AND ENTRANCE DETAIL PROVIDED IN APPENDIX B.

MS-18 DISPOSITION OF TEMPORARY MEASURES - ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN THIRTY (30) DAYS AFTER FINAL SITE STABILIZATION OR WHEN TEMPORARY MEASURES ARE NO LONGER NEEDED.

OFFSITE AREAS

OFFSITE AREAS TO BE DECIDED.

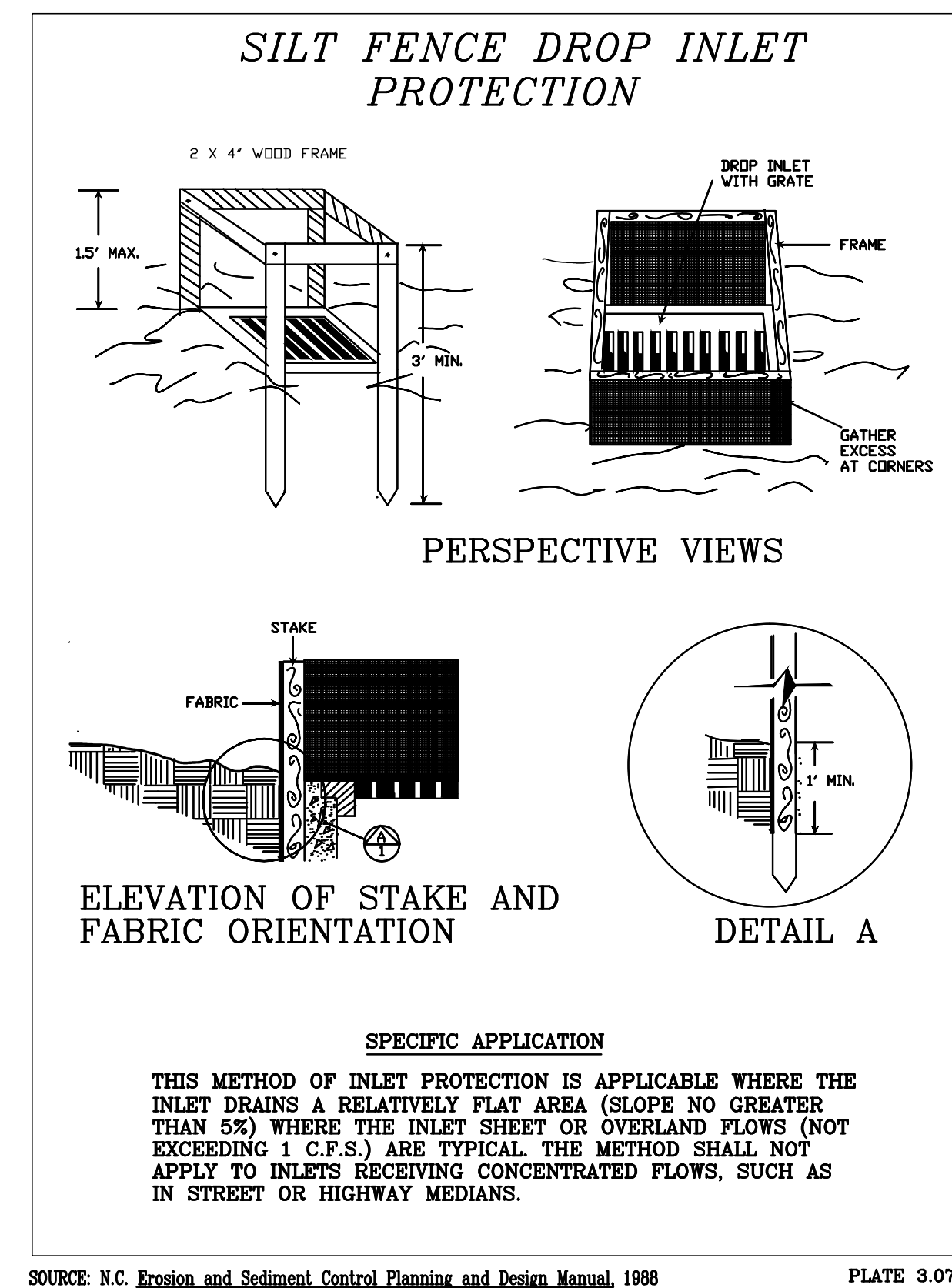
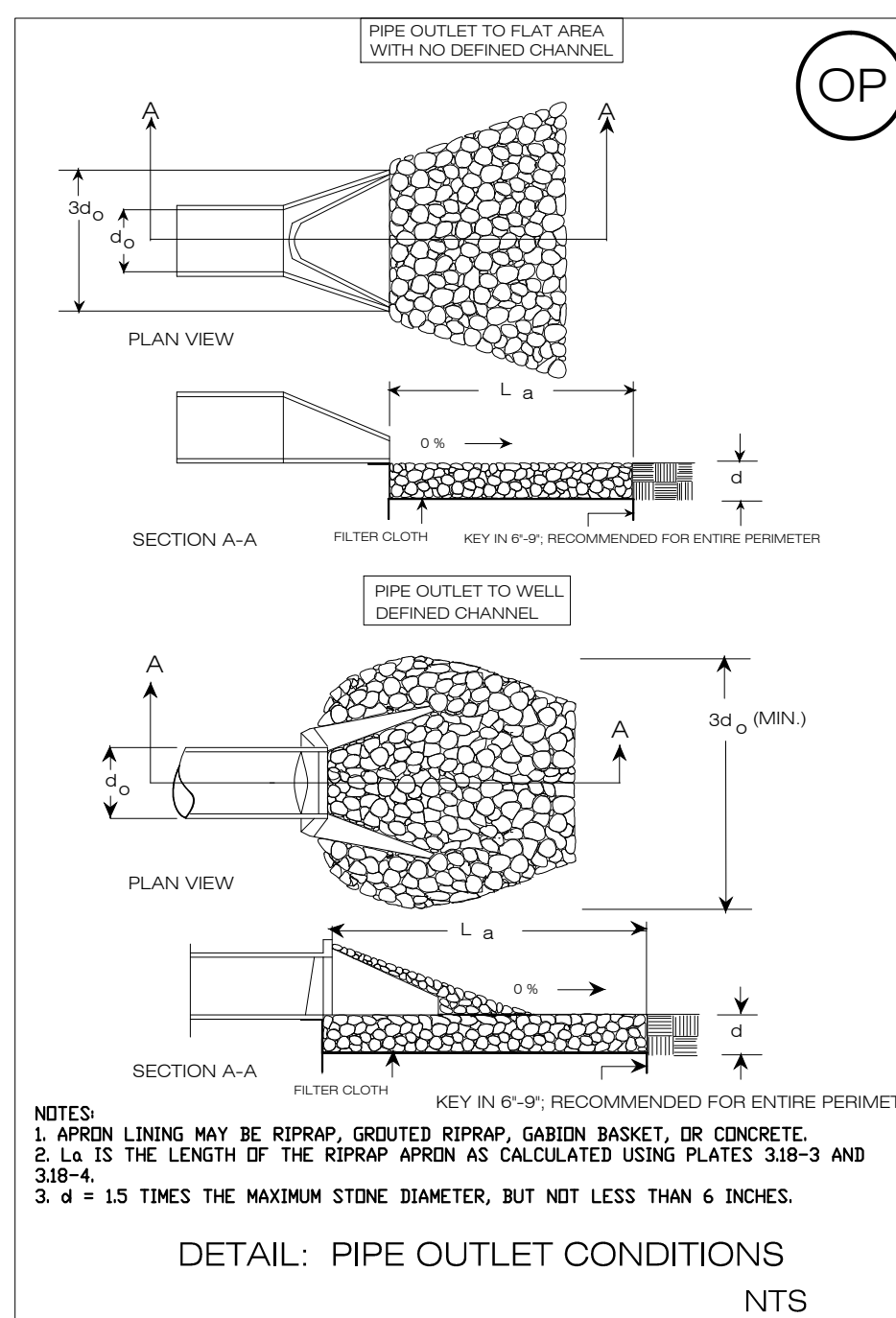
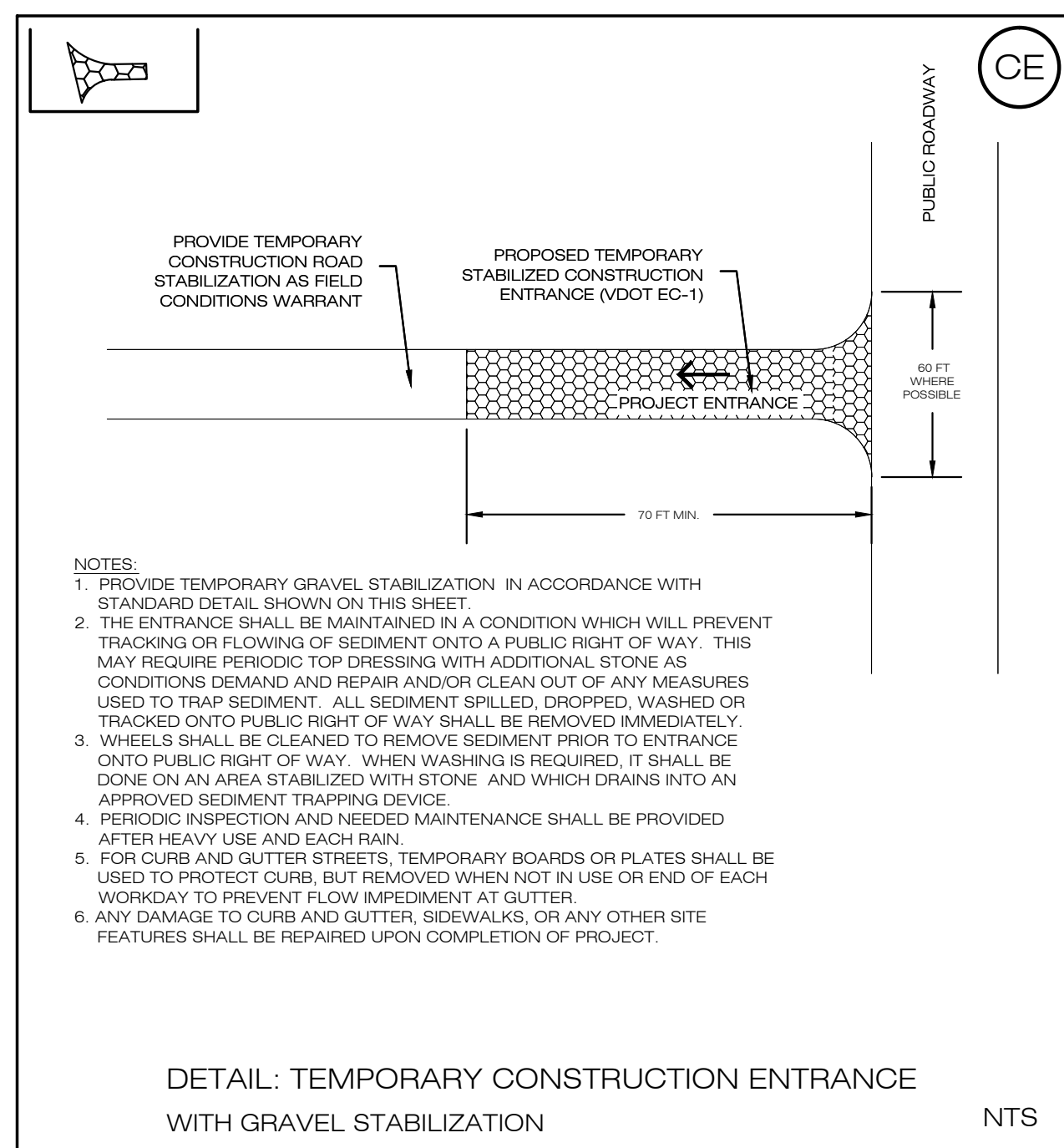
APRIL 2014	
SMALLTOWN, VIRGINIA DEPARTMENT OF PUBLIC WORKS	
SITE PLANNING DIVISION	
T&L COMMERCIAL DEVELOPMENT EROSION & SEDIMENT NOTES	
DEQ TRAINING CASE STUDY	
DESIGNED BY: K. PROBST	SHEET 6
DRAFTED BY: K. PROBST	
CHECKED BY: J. SMITH	
SCALE 1"=40'	
DATE	DATE
BY	APPROVED
DESCRIPTION	APPROVED BY SITE PLANNING DIVISION
REVISIONS	



PERMANENT SEEDING:		
TYPE OF SLOPE	SEED	TOTAL LBS PER ACRE
GENERAL SLOPE (3:1 OR LESS)	KENTUCKY 31 FESCUE RED TOP GRASS SEASONAL NURSE CROP**	128 LBS 2 LBS 20 LBS
LOW MAINTENANCE SLOPE (STEEPER THAN 3:1)	KENTUCKY 31 FESCUE RED TOP GRASS SEASONAL NURSE CROP*** PARTRIDGE DEA	108 LBS 2 LBS 20 LBS 20 LBS
** USE SEASONAL NURSE CROP IN ACCORDANCE WITH SEEDING DATES AS STATED BELOW		
MARCH, APRIL THROUGH MAY 15TH.....ANNUAL RYE MAY 16TH THROUGH AUGUST 15TH.....FOXTAIL MILLET AUGUST 16TH THROUGH SEPT. OCT.....ANNUAL RYE NOVEMBER THROUGH FEBRUARY.....WINTER RYE		

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

DETAIL: PLANTING AND SEEDING



SEDIMENT TRAP CALCULATIONS

SEDIMENT TRAP OUTFALL 1

DA = 5.3 ACRES

REQUIRED STORAGE = 134 CY PER ACRE = 710.2 CY

WET STORAGE VOLUME = 0.85 X NORMAL POOL S.A. X WET DEPTH

THE REQUIRED WET S.A. = 355.1 CY / (0.85 X 4 FT) = 313.3 SY

DRY STORAGE VOLUME = [(NORMAL POOL S.A. + DRY STORAGE S.A.) / 2] X DRY DEPTH

THE REQUIRED DRY S.A. = [2 X (355.1 CY / 3 FT)] - 313.3 SY = 396.9 SY

SEDIMENT TRAP OUTFALL 2

DA = 1.05 ACRES

REQUIRED STORAGE = 134 CY PER ACRE = 140.7 CY

WET STORAGE VOLUME = 0.85 X NORMAL POOL S.A. X WET DEPTH

THE REQUIRED WET S.A. = 70.35 CY / (0.85 X 4 FT) = 62.1 SY

DRY STORAGE VOLUME = [(NORMAL POOL S.A. + DRY STORAGE S.A.) / 2] X DRY DEPTH

THE REQUIRED DRY S.A. = [2 X (70.35 CY / 3 FT)] - 62.1 SY = 78.6 SY

SEDIMENT TRAP SUMMARY		
NODE	1	2
WET POOL S.A.	313.3 SY	62.1 SY
WET STORAGE EXCAVATION DEPTH	4 FT	4 FT
TOP OF WET STORAGE ELEVATION	514 FT	522 FT
BOTTOM OF WET SOTRAGE ELEVATION	510 FT	518 FT
TOP OF BANK HEIGHT	3 FT	3 FT
TOP OF BANK ELEVATION	517 FT	525 FT
OUTLET ELEVATION	516.8 FT	524.8 FT
MINIMUM WEIR LENGTH	31.8 FT	6.3 FT
MINIMUM EXCAVATION SIDE SLOPE	1:1	1:1
MINIMUM EMBANKMENT SIDE SLOPE	2:1	2:1
MINIMUM BERM TOP WIDTH	2.5 FT	2.5 FT

