TENNESSEE D.O.T.
DESIGN DIVISION
FILE NO.

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2017	STP-4500(28); 45945-3690-14	S-1

SWPPP INDEX OF SHEETS

NOTE: CITATIONS IN PARENTHESIS INDICATE SECTIONS OF THE CURRENT CGP.

1. SWPPP REQUIREMENTS (3.0)

1.1. HAS THE SWPPP TEMPLATE BEEN PREPARED BY AN INDIVIDUAL THAT HAS THE FOLLOWING LICENSING AND/OR CERTIFICATIONS (3.1.1)?

☒ YES (CHECK ALL THAT APPLY BELOW) OR ☐ NO

- ☐ CERTIFIED PROFESSIONAL IN EROSION AND SEDIMENT CONTROL (CPESC)
- ☐ A TN LICENSED PROFESSIONAL ENGINEER OR LANDSCAPE ARCHITECT
- ☒ HAS SUCCESSFULLY COMPLETED TDEC LEVEL II COURSE

1.2. DO THE EPSC PLANS INVOLVE STRUCTURAL DESIGN, HYDRAULIC, HYDROLOGIC OR OTHER ENGINEERING CALCULATIONS FOR EPSC STRUCTURAL MEASURES (E.G. SEDIMENT BASINS) (3.1.1)? YES ☐ NO ☒

IF YES, HAVE THE EPSC PLANS BEEN PREPARED, STAMPED AND CERTIFIED BY A TN LICENSED PROFESSIONAL ENGINEER OR LANDSCAPE ARCHITECT? ☐ YES ☐ NO

1.3. DO THE PROJECT STORMWATER OUTFALLS DIRECTLY DISCHARGE INTO THE FOLLOWING (5.4.1)? ☐ YES (CHECK ALL THAT APPLY BELOW) ☒ NO

- ☐ WATERS WITH UNAVAILABLE PARAMETERS (303d FOR SILTATION OR HABITAT ALTERATION)
- ☐ EXCEPTIONAL TENNESSEE WATERS

IF YES TO SECTION 1.3, HAS THE SWPPP TEMPLATE BEEN PREPARED BY AN INDIVIDUAL THAT HAS THE FOLLOWING LICENSING AND/OR CERTIFICATIONS (5.4.1.b)?

☐ YES (CHECK ALL THAT APPLY BELOW) ☐ NO

- ☐ CERTIFIED PROFESSIONAL IN EROSION AND SEDIMENT CONTROL (CPESC)
- ☐ A TN LICENSED PROFESSIONAL ENGINEER OR LANDSCAPE ARCHITECT
- ☐ HAS SUCCESSFULLY COMPLETED TDEC LEVEL II COURSE

2. SITE DESCRIPTION (3.5.1)

2.1. PROJECT LIMITS (3.5.1.h): REFER TO TITLE SHEET

2.2. PROJECT DESCRIPTION (3.5.1.a):

TITLE: BUSH BROTHERS PROPERTY STREAM MITIGATION
COUNTY: JEFFERSON
PIN: 104027.02

2.3. SITE MAP(S) (2.6.2.): REFER TO TITLE SHEET

2.4. DESCRIPTION OF EXISTING SITE TOPOGRAPHY (3.5.1.d): REFER TO EXISTING PLAN AND PROFILE SHEET(S) NS-4 TO NS-4H AND NS-14 TO NS-14C, PROPOSED PLAN AND PROFILE SHEET(S) NS-5 TO NS-5H AND NS-15 TO NS-15D, USGS QUAD MAP, AND THE OUTFALL TABLE IN SECTION 17.

2.5. MAJOR SOIL DISTURBING ACTIVITIES (3.5.1.b) (CHECK ALL THAT ALLY):

- ☒ CLEARING AND GRUBBING
- ☒ EXCAVATION
- ☒ CUTTING AND FILLING
- ☒ FINAL GRADING AND SHAPING
- ☐ UTILITIES
- ☐ OTHER (DESCRIBE): _____

2.6. TOTAL PROJECT AREA (3.5.1.c): HALL BRANCH SITE: 6.94 ACRES
UT1 TO CLEAR CREEK SITE: 5.60 ACRES

2.7. TOTAL AREA TO BE DISTURBED (3.5.1.c): HALL BRANCH SITE: 6.94 ACRES
UT1 TO CLEAR CREEK SITE: 5.60 ACRES

2.8. NO MORE THAN 50 ACRES OF ACTIVE SOIL DISTURBANCE IS ALLOWED AT ANY TIME DURING THE CONSTRUCTION OF THE PROJECT.

2.9. ARE THERE ANY SEASONAL LIMITATIONS ON WORK? ☐ YES ☒ NO
IF YES, LIST THE CORRESPONDING PLAN SHEET: _____

2.10. WAS ROW FINALIZED PRIOR TO FEBRUARY 1, 2010 (4.1.2.2)?
☐ YES _____ (DATE) ☒ NO
IF ROW WAS FINALIZED PRIOR TO FEBRUARY 1, 2010, THIS PROJECT IS CONSIDERED A PRE-APPROVED SITE (4.1.2.2)

2.11. SOIL PROPERTIES (3.5.1.f) (4.1.1).
SOIL PROPERTIES FOR THE PRIMARY SOILS ARE LISTED IN THE TABLE BELOW.

SOIL PROPERTIES HALL BRANCH SITE			
PRIMARY SOIL NAME	**HSG**	**% OF SITE**	**ERODIBILITY (k value)**
DANDRIDGE CHANNERY SILT LOAM, 12 TO 25% SLOPE	D	1.3	0.2
DANDRIDGE CHANNERY SILT LOAM 25 TO 70% SLOPE	D	90.8	0.2
LINDSIDE SILT LOAM	C	7.9	0.37
SOIL PROPERTIES UT1 TO CLEAR CREEK SITE			
PRIMARY SOIL NAME	**HSG**	**% OF SITE**	**ERODIBILITY (k value)**
COLLEGEDALE-TALBOTT-ROCK OUTCROP COMPLEX	C	10.9	0.43
ENNIS COBBLY LOAM	A	89.1	0.15

2.12. IS ACID PRODUCING ROCK (APR) (i.e. PYRITE) LOCATED WITHIN THE PROJECT LIMITS? ☐ YES ☒ NO

2.12.1. IF YES TO SECTION 2.13, HAVE APR LOCATIONS BEEN IDENTIFIED WITHIN THE CONSTRUCTION PLANS AND/OR THE GEOTECHNICAL REPORT? ☐ YES ☐ NO; AND

2.12.2. IF YES TO SECTION 2.12.1, HAS A SPECIAL HANDLING PLAN AND/OR ADAPTIVE MANAGEMENT PLAN (AMP) BEEN PREPARED FOR THE PROJECT? ☐YES ☐ NO ☐ N/A (TDOT SP107L WILL BE APPLIED.)

2.13. PROJECT RUNOFF COEFFICIENTS AND AREA PERCENTAGES (3.5.1.g).

RUNOFF COEFFICIENTS FOR EXISTING CONDITIONS HALL BRANCH SITE				
AREA TYPE	**AREA(AC)**	**PERCENTAGE OF TOTAL AREA (%)**	**RUNOFF CN**	**C FACTOR**
IMPERVIOUS	0	0		N/A
PERVIOUS	6.94	100		0.45
WEIGHTED CURVE NUMBER OR C-FACTOR =				0.45

RUNOFF COEFFICIENTS FOR POST-CONSTRUCTION CONDITIONS HALL BRANCH SITE				
AREA TYPE	**AREA(AC)**	**PERCENTAGE OF TOTAL AREA (%)**	**RUNOFF CN**	**C FACTOR**
IMPERVIOUS	0	0		N/A
PERVIOUS	6.94	100		0.43
WEIGHTED CURVE NUMBER OR C-FACTOR =				0.43

RUNOFF COEFFICIENTS FOR EXISTING CONDITIONS UT1 CLEAR CREEK SITE				
AREA TYPE	**AREA(AC)**	**PERCENTAGE OF TOTAL AREA (%)**	**RUNOFF CN**	**C FACTOR**
IMPERVIOUS	0	0		N/A
PERVIOUS	5.60	100		0.09
WEIGHTED CURVE NUMBER OR C-FACTOR =				0.09

RUNOFF COEFFICIENTS FOR POST-CONSTRUCTION CONDITIONS UT1 CLEAR CREEK SITE				
AREA TYPE	**AREA(AC)**	**PERCENTAGE OF TOTAL AREA (%)**	**RUNOFF CN**	**C FACTOR**
IMPERVIOUS	0	0		N/A
PERVIOUS	5.60	100		0.01
WEIGHTED CURVE NUMBER OR C-FACTOR =				0.01

3. ORDER OF CONSTRUCTION ACTIVITIES (3.5.1.b, 3.5.2.a)

CONSTRUCTION SHALL BE SEQUENCED AND STAGED TO: MINIMIZE THE EXPOSURE TIME OF GRADED OR DENUDED SOIL AREAS, PRESERVE TOPSOIL, AND MINIMIZE SOIL COMPACTION. NO WORK SHALL BE STARTED UNTIL THE CONTRACTOR'S PLAN FOR THE STAGING OF THEIR OPERATIONS, INCLUDING THE PLAN FOR STAGING OF TEMPORARY AND PERMANENT EPSC MEASURES, HAS BEEN ACCEPTED BY THE ENGINEER. THE CONTRACTOR'S EPSC PLAN SHALL INCORPORATE AND SUPPLEMENT, AS ACCEPTABLE, THE ORDER OF CONSTRUCTION ACTIVITIES AND THE BASIC EPSC DEVICES DEPICTED ON THE EPSC PLAN CONTAINED WITHIN THE APPROVED SWPPP.

3.1. SPECIAL SEQUENCING REQUIREMENTS (SEE SHEETS NS-11)

3.2. INSTALL STABILIZED CONSTRUCTION EXITS.

3.3. IDENTIFY LIMITS OF DISTURBANCE, CLEARLY MARK AREAS TO REAMAIN UNDISTURBED, INSTALL CAUTION FENCE IF NECESSARY

3.4. INSTALL INITIAL EPSC MEASURES BEFORE CLEARING, GRUBBING, EXCAVATION, GRADING, CULVERT INSTALLATION, CUTTING, FILLING, OR ANY OTHER EARTHWORK OCCURS, EXCEPT AS SUCH WORK MAY BE NECESSARY TO INSTALL EPSC MEASURES.

3.5. PERFORM CLEARING AND GRUBBING (NOT MORE THAN 14 DAYS PRIOR TO GRADING OR EARTH-MOVING. REFER TO THE STABILIZATION PRACTICES BELOW.).

3.6. PROCEED WITH GRADING ACTIVITIES MAKING USE OF PUMP AROUND DIVERSION AS NOTED ON PLANS

3.7. UTILIZE COIR FIBER MATTING TO STABILIZE CONSTRUCTED CHANNELS AS NOTED ON PLANS

3.8. STABILIZE DISTURBED AREAS WITHIN 14 DAYS OF COMPLETING ANY STAGE AND/OR PHASE OF ACTIVITY.

3.9. COMPLETE FINAL STABILIZATION (TOPSOIL, SEEDING, MULCH, EROSION CONTROL MATTING/BLANKET, TREE PLANITING, ETC.)

3.10. REMOVE TEMPORARY EROSION CONTROLS AND ACCUMULATED SEDIMENT FROM AREAS THAT HAVE ESTABLISHED AT LEAST 70 PERCENT UNIFORM PERMANENT VEGETATIVE COVER.

3.11. RE-STABILIZE AREAS DISTURBED BY REMOVAL ACTIVITIES.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

STORMWATER POLLUTION PREVENTION PLAN

TENNESSEE D.O.T. | DESIGN DIVISION | FILE NO.

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2017	STP-4500(28); 45945-3690-14	S-2

4. STREAM, OUTFALL, WETLAND, TMDL AND ECOLOGY INFORMATION

4.1. STREAM INFORMATION (3.5.1.j, 3.5.1.k)

4.1.1. WILL CONSTRUCTION AND/OR EROSION PREVENTION AND SEDIMENT CONTROLS IMPACT ANY STREAMS WITHIN THE PROJECT LIMITS? ☒ YES ☐ NO

IF YES, THE IMPACT(S) HAVE BEEN INCLUDED IN THE TOTAL PROJECT IMPACTS AND HAVE BEEN INCLUDED IN THE WATER QUALITY PERMITS.

4.1.2. HAVE ANY OF THE RECEIVING STATE WATERS LESS THAN OR EQUAL TO 1 FLOW MILE DOWN GRADIENT OF THE PROJECT LIMITS BEEN CLASSIFIED BY TDEC AS FOLLOWS (CHECK ALL THAT APPLY):

☐ 303d WITH UNAVAILABLE PARAMETERS FOR SILTATION

☐ 303d WITH UNAVAILABLE PARAMETERS FOR HABITAT ALTERATION

☐ EXCEPTIONAL TENNESSEE WATERS (ETW)

4.1.3. RECEIVING WATERS OF THE STATE (3.5.1.k).

RECEIVING WATERS OF THE STATE INFORMATION HALL BRANCH SITE						
TDOT STATE WATER LABEL FROM EBR	LABEL FROM CONSTRUCTION PLANS	NAME OF RECEIVING STATE WATER	303d WITH UNAVAILABLE PARAMETERS FOR SILTATION OR HABITAT ALTERATION (YES OR NO)	ETW (YES OR NO)	LOCATED WITHIN PROJECT LIMITS (YES OR NO)	LOCATED WITHIN ≤ 1 FLOW MILE DOWN GRADIENT OF PROJECT LIMITS (YES OR NO)
STR-1	HALL BRANCH	HALL BRANCH	NO	NO	YES	YES
STR-2	UT1 HALL BRANCH	UNNAMED TRIBUTARY TO HALL BRANCH	NO	NO	YES	YES
STR-4	UT3 HALL BRANCH	UNNAMED TRIBUTARY TO HALL BRANCH	NO	NO	YES	YES
RECEIVING WATERS OF THE STATE INFORMATION UT1 TO CLEAR CREEK SITE						
TDOT STATE WATER LABEL FROM EBR	LABEL FROM CONSTRUCTION PLANS	NAME OF RECEIVING STATE WATER	303d WITH UNAVAILABLE PARAMETERS FOR SILTATION OR HABITAT ALTERATION (YES OR NO)	ETW (YES OR NO)	LOCATED WITHIN PROJECT LIMITS (YES OR NO)	LOCATED WITHIN ≤ 1 FLOW MILE DOWN GRADIENT OF PROJECT LIMITS (YES OR NO)
STR-1	UT1 CLEAR CREEK	UNNAMED TRIBUTARY TO CLEAR CREEK	NO	NO	YES	YES
SPG-1/STR-2	UT2 CLEAR CREEK	UNNAMED TRIBUTARY TO CLEAR CREEK	NO	NO	YES	YES
STR-3	UT3 CLEAR CREEK	UNNAMED TRIBUTARY TO CLEAR CREEK	NO	NO	YES	YES

4.1.4. ARE THERE ANY WATER QUALITY RIPARIAN BUFFER ZONES REQUIRED FOR WATERS OF THE STATE? (4.1.2, 5.4.2)

☐ YES ☒ NO

BUFFER ZONE REQUIREMENTS ARE NOT REQUIRED FOR PRE-APPROVED SITES (4.1.2.2.)

IF YES, THEY HAVE BEEN INCLUDED ON PLAN SHEET(S) _____.

IF YES, CHECK THE APPROPRIATE BOX BELOW FOR SIZE OF BUFFER.

☐ 60-FEET FOR WATERS WITH UNAVAILABLE PARAMETERS AND EXCEPTIONAL TENNESSEE WATERS (AVERAGE WIDTH PER SIDE WITH A MINIMUM OF 30-FEET).

A 60 FOOT NATURAL WATER QUALITY RIPARIAN BUFFER ZONE ADJACENT TO AND ON BOTH SIDES OF THE RECEIVING STATE STREAM WITH THIS DESIGNATION SHALL BE PRESERVED TO THE MAXIMUM EXTENT PRACTICABLE DURING CONSTRUCTION ACTIVITIES AT THE SITE. THE 60 FOOT CRITERION FOR THE WIDTH OF THE BUFFER ZONE CAN BE ESTABLISHED ON AN AVERAGE WIDTH BASIS AT A PROJECT, AS LONG AS THE MINIMUM WIDTH OF THE BUFFER ZONE IS MORE THAN 30 FEET AT ANY MEASURED LOCATION. IF THE CONSTRUCTION SITE ENCOMPASSES BOTH SIDES OF A STREAM, BUFFER AVERAGING CAN BE APPLIED TO BOTH SIDES, BUT MUST BE APPLIED INDEPENDENTLY.

☐ 30-FEET FOR ALL OTHER STREAMS (AVERAGE WIDTH PER SIDE WITH A MINIMUM OF 15-FEET).

A 30 FOOT NATURAL WATER QUALITY RIPARIAN BUFFER ZONE ADJACENT TO AND ON BOTH SIDES OF THE RECEIVING STATE STREAM SHALL BE PRESERVED TO THE MAXIMUM EXTENT PRACTICABLE DURING CONSTRUCTION ACTIVITIES AT THE SITE. THE 30 FOOT CRITERION FOR THE WIDTH OF THE BUFFER ZONE CAN BE ESTABLISHED ON AN AVERAGE WIDTH BASIS AT A PROJECT, AS LONG AS THE MINIMUM WIDTH OF THE BUFFER ZONE IS MORE THAN 15 FEET AT ANY MEASURED LOCATION. IF THE CONSTRUCTION SITE ENCOMPASSES BOTH SIDES OF A STREAM, BUFFER AVERAGING CAN BE APPLIED TO BOTH SIDES, BUT MUST BE APPLIED INDEPENDENTLY.

4.1.5. ARE THERE ANY WATER QUALITY RIPARIAN BUFFER ZONES NOT REQUIRED FOR STATE WATERS DUE TO A TDEC ARAP? (9.0)

☒ YES ☐ NO

4.1.6. ARE THERE WATER QUALITY RIPARIAN BUFFER ZONE EXEMPTIONS? (4.1.2.1) ☐ YES ☒ NO

IF YES, EXISTING CONDITIONS DESCRIPTION:_____

4.1.7. EVERY ATTEMPT SHOULD BE MADE FOR CONSTRUCTION ACTIVITIES TO NOT TAKE PLACE WITHIN THE WATER QUALITY RIPARIAN BUFFER ZONE AND FOR EXISTING FORESTED AREAS TO BE PRESERVED. (5.4.2.)

4.1.8. BECAUSE OF HEAVY SEDIMENT LOAD ASSOCIATED WITH CONSTRUCTION SITE RUNOFF, WATER QUALITY RIPARIAN BUFFER ZONES ARE NOT SEDIMENT CONTROL MEASURES AND SHOULD NOT BE RELIED UPON AS PRIMARY SEDIMENT CONTROL MEASURES. THE WATER QUALITY RIPARIAN BUFFER ZONE SHALL BE ESTABLISHED BETWEEN THE TOP OF THE STREAM BANK AND THE DISTURBED CONSTRUCTION AREA.

4.1.9. WHERE IT IS NOT PRACTICABLE TO MAINTAIN A FULL WATER QUALITY RIPARIAN BUFFER, BEST MANAGEMENT PRACTICES (BMPS) PROVIDING EQUIVALENT PROTECTION AS THE NATURAL RIPARIAN ZONE MUST BE USED. A JUSTIFICATION FOR USE AND DESIGN EQUIVALENCY SHALL BE DOCUMENTED WITHIN THE SWPPP. THE ENVIRONMENTAL AND ROADWAY DESIGN DIVISIONS SHALL REVIEW AND APPROVE THIS REVISION OF THE SWPPP BEFORE DISTURBANCE OF THE SITE PROCEEDS, UNLESS PREVIOUSLY EXEMPT IN THE NPDES CGP. WHERE ISSUED, ARAP/401 REQUIREMENTS WILL PREVAIL IF IN CONFLICT WITH THESE BUFFER ZONE REQUIREMENTS.

4.2. RECEIVING WATERS OF THE UNITED STATES (WOTUS) (EPHEMERAL)

WILL CONSTRUCTION AND/OR EROSION AND SEDIMENT CONTROLS IMPACT ANY WOTUS (EPHEMERAL)? ☐ YES ☒ NO

RECEIVING WOTUS (EPHEMERAL) INFORMATION HALL BRANCH SITE			
TDOT WOTUS LABEL	CONSTRUCTION PLANS LABEL	LOCATED WITHIN PROJECT LIMITS (YES OR NO)	LOCATED WITHIN 15-FT OF THE PROJECT LIMITS (YES OR NO)
WWC-1 / EPH-1	UT2 HALL BRANCH	YES	YES

4.2.1. ARE WATER QUALITY RIPARIAN BUFFER ZONES REQUIRED FOR WOTUS (4.1.2)? ☐ YES ☒ NO

IF YES, A 15 FOOT NATURAL WATER QUALITY RIPARIAN BUFFER ZONE ADJACENT TO AND ON BOTH SIDES OF THE RECEIVING EPHEMERAL STREAM IDENTIFIED AS A WOTUS (EPHEMERAL) BY THE U.S. ARMY CORPS OF ENGINEERS (USACE) OR THE ENVIRONMENTAL PROTECTION AGENCY SHALL BE PRESERVED TO THE MAXIMUM EXTENT PRACTICABLE DURING CONSTRUCTION ACTIVITIES AT THE SITE.

IF YES, THEY HAVE BEEN INCLUDED ON PLAN SHEET(S) _____

4.2.2. ARE THERE ANY WATER QUALITY RIPARIAN BUFFER ZONES NOT REQUIRED FOR WOTUS (EPHEMERAL) DUE TO A USACE PERMIT?

☒ YES ☐ NO

4.3. OUTFALL INFORMATION

4.3.1. OUTFALL TABLE (3.5.1.e). SEE SWPPP SHEET S-8 FOR OUTFALL INFORMATION.

4.3.2. HAVE ALL OUTFALLS BEEN LABELED ON THE EPSC PLAN SHEETS (3.5.1.h)? ☐ YES ☐ NO ☒ N/A

4.3.3. HAVE ALL OUTFALLS BEEN LABELED ON A USGS TOPOGRAPHIC MAP INCLUDED IN THE "DOCUMENTATION AND PERMITS" BINDER (2.6.2)? ☐ YES ☐ NO ☒ N/A

4.3.4. WHERE POSSIBLE, HAS NON-PROJECT RUN-ON BEEN DIVERTED AROUND OR THROUGH THE PROJECT TO ELIMINATE CONTACT WITH DISTURBED AREAS OF THE PROJECT AND SEPARATE IT FROM PROJECT RUN-OFF THEREBY REDUCING THE DRAINAGE AREA OF TO THE OUTFALLS IN THIS AREA?

☐ YES ☐ NO ☒ N/A

4.3.5. ARE EQUIVALENT MEASURES BEING SUBSTITUTED FOR A SEDIMENT BASIN(S)? ☐ YES ☐ NO ☒ N/A

4.3.6. A SEDIMENT BASIN OR EQUIVALENT MEASURE(S) WILL BE PROVIDED FOR ANY OUTFALL IN A DRAINAGE AREA:

OF TEN ACRES OR MORE FOR AN OUTFALL(S) THAT DOES NOT DISCHARGE TO A STATE STREAM WITH UNAVAILABLE PARAMETERS OR EXCEPTIONAL TENNESSEE WATERS. A TEMPORARY (OR PERMANENT) SEDIMENT BASIN OR EQUIVALENT CONTROL MEASURES THAT PROVIDES STORAGE FOR A CALCULATED VOLUME OF RUNOFF FROM A MINIMUM 2-YEAR/ 24-HOUR STORM EVENT, SHALL BE PROVIDED UNTIL FINAL STABILIZATION OF THE SITE. (3.5.3.3)

OR

OF FIVE ACRES OR MORE FOR AN OUTFALL(S) THAT DISCHARGES TO A STATE STREAM WITH UNAVAILABLE PARAMETERS OR EXCEPTIONAL TENNESSEE WATERS. A TEMPORARY (OR PERMANENT) SEDIMENT BASIN THAT PROVIDES STORAGE FOR A CALCULATED VOLUME OF RUNOFF FROM A 5-YEAR/ 24-HOUR STORM EVENT AND RUNOFF FROM EACH ACRE DRAINED, OR EQUIVALENT CONTROL MEASURES, SHALL BE PROVIDED UNTIL FINAL STABILIZATION OF THE SITE. (5.4.1.g).

IN BOTH INSTANCES, THE ENVIRONMENTAL AND ROADWAY DESIGN DIVISIONS MAY BE CONTACTED TO REVIEW AND CONCUR WITH ANY REVISION OF THE SWPPP BEFORE DISTURBANCE OF THE OUTFALL PROCEEDS.

4.4. WETLAND INFORMATION

WILL CONSTRUCTION AND/OR EROSION AND SEDIMENT CONTROLS IMPACT ANY WETLANDS? ☐ YES ☒ NO

IF YES, THE STRUCTURAL EPSC MEASURES HAVE BEEN INCLUDED IN THE TOTAL PROJECT IMPACTS AND IN THE WATER QUALITY PERMITS.

WETLAND INFORMATION				
TDOT WETLAND LABEL	FROM STATION LT OR RT	TO STATION LT OR RT	TEMPORARY IMPACTS (AC)	PERMANENT IMPACTS (AC)
N/A	N/A	N/A	N/A	N/A

4.5. TOTAL MAXIMUM DAILY LOADS (TMDL) INFORMATION (3.5.10)

4.5.1. IS THIS PROJECT LOCATED IN A HUC-8 WATERSHED THAT MAINTAINS AN EPA APPROVED TMDL FOR SILTATION AND HABITAT ALTERATION?

☒YES ☐ NO

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STORMWATER POLLUTION PREVENTION PLAN

4.5.2. IF YES, IS THIS PROJECT LOCATED WITHIN A HUC-12 SUBWATERSHED WITH A WASTE LOAD ALLOCATION (WLA)?
☐ YES ☒ NO

4.5.3. IF YES, DOES THE PROJECT HAVE A DIRECT DISCHARGE TO A 303(d) LISTED STREAM FOR SILTATION OR HABITAT ALTERATION?
☐ YES ☐ NO

4.5.4. IF YES, HAS A SUMMARY OF THE CONSULTATION LETTER BEEN SUBMITTED/RECEIVED?
☐ YES ☐ NO

4.6. ECOLOGY INFORMATION (3.5.5.e)
DOES THE TDOT ENVIRONMENTAL BOUNDARIES REPORT SPECIFY SPECIAL NOTES TO BE ADDED TO THE PLAN SHEETS?
☐ YES ☒ NO
IF YES, THEY HAVE BEEN INCLUDED ON PLAN SHEET(S) _____.

4.7. ENVIRONMENTAL COMMITMENTS
ARE THERE ANY NOTES ON THE ENVIRONMENTAL COMMITMENT SHEET?
☐ YES ☒ NO
IF YES, THEY HAVE BEEN INCLUDED ON PLAN SHEET(S) _____.

5. EROSION PREVENTION AND SEDIMENT CONTROL (EPSC) MEASURES (3.5.3)

5.1. EPSC MEASURES MUST BE DESIGNED, INSTALLED AND MAINTAINED TO CONTROL STORMWATER VOLUME AND VELOCITY WITHIN THE SITE TO MINIMIZE EROSION (4.1.1).

5.2. EPSC MEASURES MUST CONTROL STORMWATER DISCHARGES, INCLUDING BOTH PEAK FLOWS AND TOTAL STORMWATER VOLUME, TO MINIMIZE EROSION AT OUTLETS, STREAM CHANNELS, AND STREAM BANKS. (4.1.1)

5.3. HAVE THE CONTROL MEASURES BEEN DESIGNED PER THE SIZE AND SLOPE OF THE DISTURBED DRAINAGE AREA (3.5.3.3)?
☒YES ☐ NO

5.4. THE CONTROL MEASURES HAVE, AT A MINIMUM, BEEN DESIGNED FOR THE 2-YEAR, 24 HOUR STORM EVENT (3.5.3.3, 5.4.1.a).

5.5. ARE THE LIMITS OF DISTURBANCE CLEARLY MARKED ON THE EPSC PLANS (3.5.1.h)? ☒ YES ☐ NO

5.6. AREAS TO BE UNDISTURBED SHALL BE CLEARLY MARKED IN THE FIELD BEFORE CONSTRUCTION ACTIVITIES BEGIN.

5.7. UNLESS OTHERWISE NOTED IN THE PLANS, THE CONTRACTOR SHALL NOT CLEAR/DISTURB ANY AREA BEYOND 15 FEET FROM SLOPE LINES OR ROW/ EASEMENT LINE, WHICHEVER IS LESSER.

5.8. CLEARING, GRUBBING, AND OTHER DISTURBANCE TO RIPARIAN VEGETATION SHALL BE LIMITED TO THE MINIMUM NECESSARY FOR SLOPE CONSTRUCTION AND EQUIPMENT OPERATIONS. EXISTING VEGETATION, INCLUDING STREAM AND WETLAND BUFFERS (UNLESS PERMITTED), SHOULD BE PRESERVED TO THE MAXIMUM EXTENT POSSIBLE. UNNECESSARY VEGETATION REMOVAL IS PROHIBITED.

5.9. HAVE STAGED EPSC PLANS BEEN PREPARED FOR THE PROJECT (3.5.2)?
YES ☒ NO ☐ (IF YES, CHECK ONE BELOW)

5.9.1. ☐ PROJECT DISTURBED AREA IS THAN LESS THAN 5 ACRES (MINIMUM OF TWO STAGES OF EPSC PLANS)

5.9.2. ☒ PROJECT DISTURBED AREA IS GREATER THAN 5 ACRES (MINIMUM OF THREE STAGES OF EPSC PLANS)

5.10. STEEP SLOPES ARE DEFINED AS A NATURAL OR CREATED SLOPE OF 35% GRADE OR GREATER REGARDLESS OF HEIGHT. HAVE STEEP SLOPES BEEN MINIMALLY DISTURBED AND/OR PROTECTED BY CONVEYING RUNOFF NON-EROSIVELY AROUND OR OVER THE SLOPE (3.5.3.2) (10. "STEEP SLOPE")? ☒ YES ☐ NO ☐ N/A

5.11. THE STRUCTURAL EPSC MEASURES HAVE BEEN INCLUDED IN THE TOTAL PROJECT IMPACTS AND HAVE BEEN INCLUDED IN THE AQUATIC RESOURCE ALTERATION (ARAP) PERMIT OR SECTION 401 CERTIFICATION (3.5.1.j). REFER TO THE LIST OF APPLICABLE ENVIRONMENTAL PERMITS LOCATED ON SWPPP SHEET S-7. ALL PERMITS WILL BE MAINTAINED ON SITE WITHIN THE "DOCUMENTATION AND PERMITS" BINDER.

5.12. THE EPSC CONTROL MEASURES LISTED IN THE QUANTITIES TABLE ON SHEET NS-2 HAVE BEEN SELECTED IN ACCORDANCE WITH TDOT STANDARD DRAWINGS AND GOOD ENGINEERING PRACTICES (3.5.3.1.b).

5.13. EPSC MEASURES SHALL BE INSTALLED PER TDOT STANDARDS (i.e. STANDARD DRAWINGS) AND SHALL BE FUNCTIONAL PRIOR TO ANY EARTH MOVING OPERATIONS.

5.14. EPSC MEASURES WILL NOT BE INSTALLED WITHIN A STREAM WITHOUT FIRST OBTAINING APPROVAL FROM THE PERMITS SECTION.

5.15. TEMPORARY EPSC MEASURES MAY BE REMOVED AT THE BEGINNING OF THE WORKDAY, BUT MUST BE REINSTALLED AT THE END OF THE WORKDAY OR BEFORE A PRECIPITATION EVENT.

5.16. EPSC MEASURES LOCATED IN WOTUS (EPHEMERAL STREAMS) MUST BE CONSIDERED TEMPORARY AND SHALL BE REMOVED AT THE END OF CONSTRUCTION.

5.17. THE CONTRACTOR SHALL ESTABLISH AND MAINTAIN A PROACTIVE METHOD TO PREVENT THE OFF-SITE MIGRATION OR DEPOSIT OF SEDIMENT OFF THE PROJECT LIMITS (E.G. R.O.W., EASEMENTS, ETC.), INTO WATERS OF THE STATE/U.S., OR ONTO ROADWAYS USED BY THE PUBLIC. IF SEDIMENT ESCAPES THE CONSTRUCTION SITE, OFF-SITE ACCUMULATIONS OF SEDIMENT THAT HAVE NOT REACHED A STREAM MUST BE REMOVED TO A LEVEL SUFFICIENT TO MINIMIZE OFF-SITE IMPACTS (E.G., FUGITIVE SEDIMENT THAT HAS ESCAPED THE CONSTRUCTION SITE AND HAS COLLECTED IN A STREET MUST BE REMOVED SO THAT IT IS NOT SUBSEQUENTLY WASHED INTO STORM SEWERS AND STREAMS BY THE NEXT RAIN AND/OR SO THAT IT DOES NOT POSE A SAFETY HAZARD TO USERS OF PUBLIC STREETS). ARRANGEMENTS CONCERNING REMOVAL OF SEDIMENT ON ADJOINING PROPERTY MUST BE SETTLED WITH THE ADJOINING PROPERTY OWNER BEFORE REMOVAL OF SEDIMENT. SEDIMENT THAT MIGRATES INTO WATERS OF THE STATE/US SHALL NOT BE REMOVED WITHOUT GUIDANCE FROM TDOT ENVIRONMENTAL PERSONNEL.

5.18. OFFSITE VEHICLE TRACKING OF SEDIMENTS AND THE GENERATION OF DUST SHALL BE MINIMIZED. A STABILIZED CONSTRUCTION EXIT (A POINT OF ENTRANCE/EXIT TO THE CONSTRUCTION PROJECT) SHALL BE PROVIDED TO REDUCE THE TRACKING OF MUD AND DIRT ONTO PUBLIC ROADS BY CONSTRUCTION VEHICLES.

5.19. THE QUANTITIES REQUIRED FOR STABILIZED CONSTRUCTION EXITS PER TDOT STANDARDS HAVE BEEN SPECIFIED ON SHEET NS-2 (3.5.3.1.n).

5.20. DISCHARGES FROM DEWATERING ACTIVITIES ARE PROHIBITED UNLESS MANAGED BY APPROPRIATE CONTROLS THAT PROVIDE THE LEVEL OF TREATMENT (FILTRATION) NECESSARY TO COMPLY WITH PERMIT REQUIREMENTS. (4.1.4).

5.21. SETTLING BASINS AND SEDIMENT TRAPS SHALL BE PROPERLY DESIGNED PER THE SIZE OF THE DRAINAGE AREAS OR VOLUME OF WATER TO BE TREATED. TREATED WATER MUST BE DISCHARGED THROUGH A PIPE OR WELL VEGETATED OR LINED CHANNEL, SO THAT THE DISCHARGE DOES NOT CAUSE EROSION OR SEDIMENT TRANSPORT.

5.22. DISCHARGES FROM SEDIMENT BASINS AND IMPOUNDMENTS SHALL UTILIZE OUTLET STRUCTURES THAT ONLY WITHDRAW WATER FROM NEAR THE SURFACE OF THE BASIN OR IMPOUNDMENT. TREATED WATER MUST BE DISCHARGED THROUGH A PIPE, WELL- VEGETATED AND/OR LINED CHANNEL, SO THAT THE DISCHARGE DOES NOT CAUSE EROSION OR SEDIMENT TRANSPORT. (4.1.7).

5.23. THE DEWATERING OF WORK AREAS, TRENCHES, FOUNDATIONS, EXCAVATIONS, ETC. THAT HAVE COLLECTED STORMWATER, WATER FROM VEHICLE WASH AREAS, OR GROUNDWATER SHALL BE EITHER HELD IN SETTLING BASINS OR TREATED BY FILTRATION AND/OR CHEMICAL TREATMENT PRIOR TO ITS DISCHARGE. ALL CHEMICAL TREATMENTS MUST BE APPLIED PER SECTION 6 FLOCCULANTS.

5.24. WATER DISCHARGED FROM DEWATERING ACTIVITIES SHALL NOT CAUSE AN OBJECTIONABLE COLOR CONTRAST WITHIN THE RECEIVING NATURAL RESOURCE. WATER MUST BE HELD WITHIN SETTLING BASINS UNTIL IT IS AT LEAST AS CLEAR AS THE RECEIVING WATERS.

5.25. DEWATERING STRUCTURES, SEDIMENT FILTER BAGS, SEDIMENT BASINS AND TRAPS SHALL NOT BE LOCATED CLOSER THAN 30 FEET (60 FEET DESIRABLE VEGETATIVE BUFFER) FOR WATERS WITH UNAVAILABLE PARAMETERS AND EXCEPTIONAL TENNESSEE WATERS AND 15 FEET (30 FEET DESIRABLE VEGETATIVE BUFFER) FOR ALL OTHER FEATURES FROM THE TOP BANK OF A STREAM, WOTUS (EPHEMERAL), WETLAND OR OTHER NATURAL RESOURCE AND SHALL BE PROPERLY DESIGNED PER THE SIZE OF THE DRAINAGE AREAS OR VOLUME OF WATER TO BE TREATED.

5.26. STABILIZATION PRACTICES: PRE-CONSTRUCTION VEGETATIVE COVER WILL NOT BE DESTROYED, REMOVED OR DISTURBED MORE THAN 14 DAYS PRIOR TO GRADING OR EARTH MOVING UNLESS THE AREA WILL BE SEEDED AND/OR MULCHED OR OTHER TEMPORARY COVER IS INSTALLED (3.5.3.1.h).

5.27. STABILIZATION MEASURES WILL BE INITIATED AS SOON AS POSSIBLE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED. TEMPORARY OR PERMANENT STABILIZATION WILL BE COMPLETED WITHIN 14 DAYS AFTER ACTIVITY HAS TEMPORARILY OR PERMANENTLY CEASED IN THAT AREA. PERMANENT STABILIZATION WILL REPLACE TEMPORARY MEASURES AS SOON AS PRACTICABLE (3.5.3.2).

5.28. PRIORITY SHALL BE GIVEN TO FINISHING OPERATIONS AND PERMANENT EPSC MEASURES OVER TEMPORARY EPSC MEASURES ON ALL PROJECTS. UNPACKED GRAVEL CONTAINING FINES (SILT AND CLAY SIZED PARTICLES) OR CRUSHER-RUN WILL NOT BE CONSIDERED A NON-ERODIBLE SURFACE

5.29. DELAYING THE PLANTING OF COVER VEGETATION UNTIL WINTER MONTHS OR DRY MONTHS SHOULD BE AVOIDED, IF POSSIBLE.

5.30. A SOIL ANALYSIS SHALL BE PERFORMED PRIOR TO THE APPLICATION OF FERTILIZERS TO ANY PORTION OF THE STE. SOILS SHOULD BE ANALYZED FOR pH, BUFFER VALUE, PHOSPHOROUS, POTASSIUM, CALCIUM AND MAGNESIUM. SOIL SAMPLES SHOULD BE REPRESENTATIVE OF THE AREA FOR WHICH FERTILIZER WILL BE APPLIED. SAMPLE TYPE SHOULD BE COLLECTED AND ANALYZED IN ACCORDANCE WITH THE UT EXTENSION "SOIL TESTING" BROCHURE PB1061. (4.1.5.)

5.31. FERTILIZERS SHALL BE APPLIED ONLY IN THE AMOUNTS SPECIFIED FROM THE ANALYSES. ONCE APPLIED, FERTILIZERS SHALL BE WORKED INTO THE SOIL TO LIMIT THE EXPOSURE TO STORMWATER.

5.32. STEEP SLOPES SHALL BE TEMPORARILY STABILIZED NOT LATER THAN 7 DAYS AFTER CONSTRUCTION ACTIVITY ON THE SLOPE HAS TEMPORARILY OR PERMANENTLY CEASED. (3.5.3.2).

6. FLOCCULANTS (3.5.3.1.b)

IS ADDITIONAL PHYSICAL OR CHEMICAL TREATMENT OF STORMWATER RUNOFF NECESSARY (5.4.1.a)? ☐ YES ☒ NO

IF YES, THE FOLLOWING NOTES APPLY:

6.1. POLYACRYLAMIDES (PAM) SHALL BE OF THE ANIONIC OR NEUTRALLY CHARGED TYPE ONLY. PAM REQUIREMENTS ARE AS FOLLOWS:

6.1.1. CATIONIC PAM IS NOT ALLOWED BECAUSE OF ITS TOXICITY TO FISH AND AQUATIC LIFE.

6.1.2. ANIONIC AND NEUTRALLY CHARGED PAM SHALL MEET THE EPA AND FDA ACRYLAMIDE MONOMER LIMITS OF EQUAL TO OR LESS THAN 0.05% BY WEIGHT ACRYLAMIDE MONOMER.

6.1.3. ANIONIC AND NEUTRALLY CHARGED PAM SHALL HAVE A DENSITY OF 10% TO 55% BY WEIGHT AND A MOLECULAR WEIGHT OF 16 TO 24 MG/MOLES.

6.1.4. PAM MIXTURES SHALL BE NON-COMBUSTIBLE.

6.1.5. PAM SHALL CONTAIN ONLY MANUFACTURER-RECOMMENDED ADDITIVES.

6.2. ALL PHYSICAL AND/OR CHEMICAL TREATMENT WILL BE RESEARCHED, APPLIED IN ACCORDANCE WITH MANUFACTURE'S GUIDELINES AND FULLY DESCRIBED ON THE EPSC PLANS (3.5.3.1.b).

6.3. FLOCCULANTS SHALL BE HANDLED IN ACCORDANCE WITH ALL OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) MATERIAL SAFETY DATA SHEET (MSDS) REQUIREMENTS AND SHALL BE APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS FOR THE SPECIFIED USE CONFORMING TO ALL FEDERAL, STATE AND LOCAL LAWS, RULES AND REGULATIONS.

6.4. ALL VENDORS AND SUPPLIERS OF FLOCCULANTS SHALL PRESENT OR SUPPLY A WRITTEN TOXICITY REPORT FOR BOTH ACUTE AND CHRONIC TOXICITY TESTS WHICH VERIFIES THAT THE FLOCCULANT EXHIBITS ACCEPTABLE TOXICITY PARAMETERS WHICH MEET OR EXCEED THE EPA REQUIREMENTS FOR THE STATE AND FEDERAL WATER QUALITY STANDARDS. WHOLE EFFLUENT TESTING DOES NOT MEET THIS REQUIREMENT AS PRIMARY REACTIONS HAVE OCCURRED AND TOXIC POTENTIALS HAVE BEEN REDUCED.

6.5. DO NOT APPLY FLOCCULANTS DIRECTLY TO, OR WITHIN 60 FEET, OF ANY STREAMS, WETLANDS, OR OTHER NATURAL WATER RESOURCE LOCATED ON OR ADJACENT TO THE CONSTRUCTION SITE. DO NOT APPLY FLOCCULANTS DIRECTLY INTO WATERS CONTAINED WITHIN SEDIMENT PONDS OR TO SLOPES THAT PRODUCE RUNOFF DIRECTLY INTO A STREAM, WETLAND, OR OTHER NATURAL WATER RESOURCE. DO NOT APPLY FLOCCULANTS IMMEDIATELY AT A STORMWATER OUTFALL WHERE RUNOFF LEAVES THE PROJECT LIMITS.

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CONST.	2017	STP-4500(28); 45945-3690-14	S-4

6.6. BEFORE FLOCCULANTS CAN BE USED ON A CONSTRUCTION PROJECT, SITE-SPECIFIC SOIL SAMPLES MUST BE OBTAINED AND TESTED BY THE MANUFACTURER OR THEIR REPRESENTATIVE, TO IDENTIFY THE OPTIMUM FLOCCULANT TYPE AND APPLICATION RATE. SINCE FLOCCULANT EFFICACY IS HIGHLY DEPENDENT ON SOIL TYPE, SOIL SAMPLES WILL NEED TO BE OBTAINED FROM EACH SOIL HORIZON THAT WILL BE ACCESSED DURING EXCAVATION. FLOCCULANTS SHOULD BE APPLIED ON A CONSTRUCTION SITE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDED APPLICATION OR DOSAGE RATE. APPLICATION METHOD SHALL ENSURE UNIFORM COVERAGE TO THE TARGET AREA. DO NOT APPLY EMULSION FORMS OF FLOCCULANTS DIRECTLY TO STORMWATER RUNOFF OR TO STREAMS, WETLANDS, OR OTHER WATER RESOURCES DUE TO SURFACTANT TOXICITY.

6.7. FLOCCULANT POWDER MAY BE APPLIED BY A HAND SPREADER OR A MECHANICAL SPREADER. IF APPROVED BY THE MANUFACTURER, FLOCCULANT MAY BE MIXED WITH DRY SILICA SAND, FERTILIZER, SEED, OR OTHER SOIL AMENDMENTS TO AID IN SPREADING. FLOCCULANTS MAY ALSO BE APPLIED WITH A WATER TRUCK OR AS PART OF HYDRO-SEEDING. APPLICATION METHOD SHALL ENSURE UNIFORM COVERAGE TO THE TARGET AREA.

6.8. MANUFACTURER'S GUIDANCE SHOULD BE FOLLOWED FOR BLOCK, LOG AND SOCK SPACING CONFIGURATIONS. BEFORE FLOCCULANTS CAN BE USED ON A CONSTRUCTION PROJECT, SITE-SPECIFIC SOIL SAMPLES MUST BE OBTAINED AND TESTED BY THE MANUFACTURER OR THEIR REPRESENTATIVE, TO IDENTIFY THE OPTIMUM FLOCCULANT TYPE AND APPLICATION RATE. SINCE FLOCCULANT EFFICACY IS HIGHLY DEPENDENT ON SOIL TYPE, SOIL SAMPLES WILL NEED TO BE OBTAINED FROM EACH SOIL HORIZON THAT WILL BE ACCESSED DURING EXCAVATION. FLOCCULANTS SHOULD BE APPLIED ON A CONSTRUCTION SITE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDED APPLICATION OR DOSAGE RATE.

7. UTILITY RELOCATION

ARE UTILITIES INCLUDED IN THE CONTRACT? ☐ YES ☒ NO

IF YES, THE FOLLOWING APPLY:

7.1. STORMWATER WHICH COLLECTS IN THE UTILITY TRENCH SHALL BE PUMPED INTO A DEWATERING STRUCTURE OR SEDIMENT FILTER BAG AND TREATED PRIOR TO DISCHARGE.

7.2. SILT FENCE SHALL BE INSTALLED ON THE DOWNGRADIENT SIDE OF STOCKPILED SOIL. ANY TRENCHING ACROSS WET WEATHER CONVEYANCES SHALL BE DONE DURING DRY CONDITIONS, REMOVED AND STABILIZED BY THE END OF THE WORK DAY.

7.3. UTILITY CROSSINGS IN ENVIRONMENTAL FEATURES SHALL BE CONSTRUCTED IN ACCORDANCE WITH TDOT STANDARDS AND NO WORK SHALL BE CONDUCTED IN FLOWING WATERS. ENVIRONMENTAL PERMITS APPLY TO UTILITIES IN THIS PROJECT. THE STATE CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS OF THE PERMITS.

7.4. IT IS THE RESPONSIBILITY OF THE STATE UTILITY CONTRACTOR TO PROTECT EXPOSED EARTH FROM EROSION AND TO PROVIDE FOR CONTAINMENT OF SEDIMENT THAT MAY RESULT FROM THEIR WORK. PRIOR TO BEGINNING WORK, ADEQUATE EPSC MEASURES MUST BE IN PLACE TO TRAP ANY SEDIMENT THAT MAY TRAVEL OFF-SITE IN THE EVENT OF RAIN. DURING THE PROGRESSION OF THEIR WORK, EXPOSED EARTH AREAS SHALL BE STABILIZED AS SOON AS POSSIBLE TO PREVENT EROSION. AT NO TIME, SHALL EXPOSED EARTH RESULTING FROM THEIR OPERATIONS HAVE UNPROTECTED ACCESS TO FLOWING OFF-SITE AND ENTERING WATERS OF THE STATE/U.S.

7.5. FOR THE INSTALLATION OF BURIED UTILITIES (PIPES AND CABLES), TRENCHES SHALL BE BACKFILLED DAILY AS CONSTRUCTION PROCEEDS. BACKFILLED TRENCHES SHALL BE SEEDED AND MULCHED OR SODDED DAILY IF POSSIBLE, BUT NO LATER THAN FOURTEEN DAYS AFTER BEING BACKFILLED. ANY TEMPORARY SPOILS OF EXCAVATED EARTH SHALL BE LOCATED WITHIN TDOT EPSC MEASURES OR RECEIVE SEPARATE EPSC MEASURES. IF TRENCHES ARE NOT BACKFILLED OVERNIGHT, APPROPRIATE EPSC MEASURES WILL BE INSTALLED BY THE STATE UTILITY CONTRACTOR UNTIL THE TRENCH IS BACKFILLED.

7.6. IN REGARDS TO EPSC, TDEC REGULATIONS APPLY TO THE STATE UTILITY CONTRACTORS ON THIS PROJECT. THE STATE CONTRACTOR IS RESPONSIBLE FOR EPSC MEASURES RELATED TO UTILITY CONSTRUCTION INCLUDED IN THE STATE CONTRACT.

7.7. TRENCHES FORMED FOR THE INSTALLATION OF BURIED UTILITIES MAY CAUSE STORMWATER RUNOFF TO CONCENTRATE AT THE TRENCH LINE. ADDITIONAL EPSC MEASURES MAY BE REQUIRED TO BE INSTALLED AS APPROVED BY THE TDOT PROJECT ENGINEER.

7.8. FOR THE INSTALLATION OF UNDERGROUND UTILITIES OUTSIDE OF THE TDOT RIGHT-OF-WAY, EPSC MEASURES SHALL BE INSTALLED PRIOR TO CLEARING (TRENCHING AND ASSOCIATED BLASTING) IN THOSE AREAS NECESSARY TO PREVENT SEDIMENT FROM LEAVING THE CONSTRUCTION AREA. THESE EPSC MEASURES SHALL REMAIN UNTIL THE BACKFILLED TRENCH IS STABILIZED WITH FINAL VEGETATIVE COVER.

7.9. THE UTILITY CONTRACTOR SHALL RESTORE ALL AFFECTED WET WEATHER CONVEYANCES TO THE EXISTING TOPOGRAPHIC CONDITIONS AS APPROVED BY THE TDOT RESPONSIBLE PARTY.

7.10. THE UTILITY CONTRACTOR WILL PROVIDE APPROPRIATE EPSC MEASURES TO REPLACE ONSITE EPSC MEASURES REMOVED TO FACILITATE THE INSTALLATION OF UTILITIES. REPLACEMENT OF EPSC MEASURES WILL BE COORDINATED WITH THE TDOT ENGINEER BEFORE COMMENCING WORK.

7.11. FOR UTILITY CROSSINGS THAT UTILIZE HORIZONTAL DIRECTIONAL DRILLING THE FOLLOWING SHALL APPLY:

7.11.1. THE ENTRY AND EXIT POINTS SHALL BE AT LEAST 50 FEET FROM THE STREAM BANK OR WETLAND BOUNDARY.

7.11.2. THE DEPTH OF BORE BELOW THE STREAMBED IS SUFFICIENT TO PREVENT RELEASE OF DRILLING FLUID, BASED ON THE PARENT MATERIAL.

7.11.3. A SITE-SPECIFIC CONTINGENCY AND CONTAINMENT PLAN FOR INADVERTENT RELEASE OF DRILLING FLUID SHALL BE ESTABLISHED PRIOR TO COMMENCEMENT OF WORK. THIS PLAN SHALL BE SUBMITTED TO THE TDOT PROJECT ENGINEER AND THE TDOT ENVIRONMENTAL DIVISION PERMITS AND/OR COMPLIANCE AND FIELD SERVICES OFFICE FOR REVIEW AND APPROVAL.

8. MAINTENANCE AND INSPECTION

8.1. INSPECTION PRACTICES (3.5.8)

8.1.1. PROJECT EPSC INSPECTORS AND ENGINEERS (INCLUDING TDOT STAFF, CONSULTANTS AND CONTRACTOR STAFF) RESPONSIBLE FOR THE INSPECTION, IMPLEMENTATION, MAINTENANCE. AND/OR REPAIR OF EPSC MEASURES SHALL MEET ONE OF THE FOLLOWING REQUIREMENTS (3.5.8.1.):

8.1.1.1. SUCCESSFULLY COMPLETED THE TDOT EPSC INSPECTIONS TRAINING AND ANY RECERTIFICATION COURSE AS REQUIRED.

8.1.1.2. SUCCESSFULLY COMPLETED THE TDEC "LEVEL I - FUNDAMENTALS OF EROSION PREVENTION AND SEDIMENT CONTROL" COURSE AND ANY RECERTIFICATION COURSES AS REQUIRED

8.1.1.3. BE A CURRENT TN LICENSED PROFESSIONAL ENGINEER OR LANDSCAPE ARCHITECT.

8.1.1.4. BE A CURRENT CERTIFIED PROFESSIONAL IN EROSION AND SEDIMENT CONTROL (CPESC).

8.1.1.5. SUCCESSFULLY COMPLETED TDEC "LEVEL II – DESIGN PRINCIPLES FOR EROSION PREVENTION AND SEDIMENT CONTROL FOR CONSTRUCTION SITES" COURSE AND ANY RECERTIFICATION COURSE AS REQUIRED.

8.1.2. THE TDOT CONSTRUCTION ENGINEER (OR THEIR DULY AUTHORIZED REPRESENTATIVE) AND THE CONTRACTOR'S SITE SUPERINTENDENT ARE RESPONSIBLE FOR INSPECTIONS. MAINTENANCE AND REPAIR ACTIVITIES ARE THE RESPONSIBILITY OF THE CONTRACTOR. THE TDOT CONSTRUCTION ENGINEER OR THEIR DULY AUTHORIZED REPRESENTATIVE SHALL COMPLETE THE EPSC INSPECTION REPORTS AND DISTRIBUTE COPIES PER THE CONTRACT.

8.1.3. THE INSPECTOR SHALL CONDUCT PRE-CONSTRUCTION INSPECTIONS TO VERIFY AREAS THAT ARE NOT TO BE DISTURBED HAVE BEEN MARKED IN THE SWPPP AND IN THE FIELD BEFORE LAND DISTURBANCE ACTIVITIES BEGIN AND INITIAL MEASURES HAVE BEEN INSTALLED (10 "INSPECTOR") (3.5.1.o).

8.1.4. EPSC CONTROLS SHALL BE INSPECTED TO VERIFY MEASURES HAVE BEEN INSTALLED AND MAINTAINED IN ACCORDANCE WITH TDOT STANDARD DRAWINGS, SPECIFICATIONS, AND GOOD ENGINEERING PRACTICES. EPSC INSPECTIONS SHALL BE DOCUMENTED ON THE TDOT EPSC INSPECTION REPORT FORM AND THE TDEC CONSTRUCTION STORMWATER INSPECTION CERTIFICATION (TWICE-WEEKLY INSPECTIONS) FORM.

8.1.5. OUTFALL POINTS SHALL BE INSPECTED TO ASCERTAIN WHETHER EPSC MEASURES ARE EFFECTIVE IN PREVENTING EROSION AND CONTROLLING SEDIMENT INCLUDING SIGNIFICANT IMPACTS TO SURROUNDING STATE WATERS, WOTUS (EPHEMERAL), WETLANDS, OTHER NATURAL RESOURCES AND ADJACENT PROPERTY OWNERS. WHERE DISCHARGE LOCATIONS ARE INACCESSIBLE, NEARBY DOWN GRADIENT LOCATIONS SHALL BE INSPECTED. LOCATIONS WHERE VEHICLES ENTER AND EXIT THE SITE SHALL BE INSPECTED FOR EVIDENCE OF OFF-SITE ROADWAY SEDIMENT TRACKING.

8.1.6. INSPECTIONS WILL BE CONDUCTED AT LEAST TWICE EVERY CALENDAR WEEK AND AT LEAST 72 HOURS APART (3.5.8.2.a). A CALENDAR WEEK IS DEFINED AS SUNDAY THROUGH SATURDAY. QUALITY ASSURANCE INSPECTIONS OF TDOT EPSC, NPDES AND WATER QUALITY PERMIT REQUIREMENTS SHALL BE PERFORMED PER THE TDOT ENVIRONMENTAL DIVISION COMPLIANCE AND FIELD SERVICES OFFICE.

8.1.7. THE FREQUENCY OF EPSC INSPECTIONS MAY BE REDUCED TO ONCE A MONTH WHERE SITES OR PORTIONS OF SITES HAVE BEEN TEMPORARILY STABILIZED UNTIL CONSTRUCTION ACTIVITIES RESUME WITH WRITTEN NOTIFICATION BY THE TDOT REGIONAL ENGINEER TO TDEC NASHVILLE CENTRAL OFFICE AND SUBSEQUENT TDEC APPROVAL. WRITTEN NOTIFICATION MUST INCLUDE THE INTENT TO CHANGE FREQUENCY AND JUSTIFICATION (3.5.8.2.a).

8.1.8. ALL DISTURBED AREAS OF THE SITE THAT HAVE NOT BEEN FINALLY STABILIZED, AREAS USED FOR MATERIAL STORAGE THAT ARE EXPOSED TO PRECIPITATION, STRUCTURAL CONTROL MEASURES, AND LOCATIONS WHERE VEHICLES ENTER OR EXIT THE SITE, AND EACH OUTFALL WILL BE INSPECTED (3.5.8.2.b).

8.1.9. THE INSPECTOR WILL OVERSEE THE REQUIREMENTS OF OTHER CONSTRUCTION-RELATED WATER QUALITY PERMITS (I.E. TDEC ARAP, USACE SECTION 404, AND TVA SECTION 26a PERMITS) FOR CONSTRUCTION ACTIVITIES AROUND WATERS OF THE STATE (10 "INSPECTOR").

8.1.10. THE SWPPP WILL BE REVISED AS NECESSARY BASED ON THE RESULTS OF THE INSPECTION. REVISION(S) WILL BE RECORDED WITHIN 7 DAYS OF THE INSPECTION. REVISION(S) WILL BE IMPLEMENTED WITHIN 14 DAYS OF THE INSPECTION (3.5.8.2.e AND 3.5.8.2.f).

8.1.11. DOCUMENTATION OF INSPECTIONS WILL BE MAINTAINED ON SITE IN THE "DOCUMENTATION AND PERMITS" BINDER. REPORTS WILL BE SUBMITTED TO THE TDOT PROJECT ENGINEER PER THE CONTRACT.

8.1.12. THESE INSPECTION REQUIREMENTS DO NOT APPLY TO DEFINABLE AREAS OF THE SITE THAT HAVE MET FINAL STABILIZATION REQUIREMENTS AND HAVE BEEN NOTED IN THE SWPPP.

8.1.13. TRAINED CERTIFIED INSPECTORS SHALL COMPLETE INSPECTION TO THE BEST OF THEIR ABILITY. FALSIFYING INSPECTION RECORDS OR OTHER DOCUMENTATION OR FAILURE TO COMPLETE INSPECTION DOCUMENTATION SHALL RESULT IN A VIOLATION OF THIS PERMIT AND ANY OTHER APPLICABLE ACTS OR RULES (3.5.8.2.h).

8.2. DULY AUTHORIZED REPRESENTATIVE (7.7.3)

THE PROJECT ENGINEER MAY DELEGATE AN INDIVIDUAL AND/OR CONSULTANT TO SIGN EPSC INSPECTIONS REPORTS. FOR SATISFYING SIGNATORY REQUIREMENTS FOR EPSC INSPECTION REPORTS, THE PROJECT ENGINEER AND NEWLY AUTHORIZED INDIVIDUAL ACCEPTING RESPONSIBILITY MUST COMPLETE AND SIGN THE TDOT CONSTRUCTION DIVISION EPSC DELEGATION OF AUTHORITY.

8.3. MAINTENANCE PRACTICES (3.5.3.1 AND 3.5.7)

8.3.1. ALL CONTROLS WILL BE MAINTAINED IN GOOD AND EFFECTIVE OPERATING ORDER AND IN ACCORDANCE WITH TDOT STANDARD DRAWINGS AND GOOD ENGINEERING PRACTICES. (3.5.3.1.b)

8.3.2. MAINTENANCE AND REPAIR ACTIVITIES ARE THE RESPONSIBILITY OF THE CONTRACTOR.

8.3.3. UPON CONCLUSION OF THE INSPECTIONS, EPSC MEASURES FOUND TO BE INEFFECTIVE SHALL BE REPAIRED, REPLACED, OR MODIFIED BEFORE THE NEXT RAIN EVENT, IF POSSIBLE, BUT IN NO CASE, MORE THAN 24 HOURS AFTER THE INSPECTION OR WHEN THE CONDITION IS IDENTIFIED. IF THE REPAIR, REPLACEMENT OR MODIFICATION IS NOT PRACTICAL WITHIN THE 24-HOUR TIMEFRAME, WRITTEN DOCUMENTATION PROVIDED BY THE CONTRACTOR SHALL BE PLACED IN THE FIELD DIARY AND EPSC INSPECTION REPORT. AN ESTIMATED REPAIR, REPLACEMENT OR

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MODIFICATION SCHEDULE SHALL BE DOCUMENTED WITHIN 24 HOURS AFTER IDENTIFICATION. (3.5.8.2.e).

8.3.4. SEDIMENT SHALL BE REMOVED FROM SEDIMENT CONTROL STRUCTURES (SEDIMENT TRAPS, SILT FENCE, SEDIMENT BASINS, OTHER CONTROLS, ETC.) WHEN THE DESIGN CAPACITY HAS BEEN REDUCED BY FIFTY PERCENT (50%). (3.5.3.1.e).

8.3.5. DURING SEDIMENT REMOVAL, THE CONTRACTOR SHALL TAKE STEPS TO ENSURE THAT STRUCTURAL COMPONENTS OF EPSC MEASURES ARE NOT DAMAGED AND THUS MADE INEFFECTIVE. IF DAMAGE DOES OCCUR, THE CONTRACTOR SHALL REPAIR THE EPSC MEASURES AT THE CONTRACTOR'S OWN EXPENSE.

8.3.6. CHECK DAMS WILL BE INSPECTED FOR STABILITY. SEDIMENT WILL BE REMOVED WHEN DEPTH REACHES ONE-HALF (½) THE HEIGHT OF THE DAM.

8.3.7. SEDIMENT REMOVED FROM SEDIMENT CONTROL STRUCTURES SHALL BE PLACED AND TREATED IN A MANNER SO THAT THE SEDIMENT IS CONTAINED WITHIN THE PROJECT LIMITS, DOES NOT MIGRATE INTO FEATURES REMOVED FROM, AND DOES NOT MIGRATE ONTO ADJACENT PROPERTIES AND/OR INTO WATERS OF THE STATE/U.S.

8.3.8. LITTER, CONSTRUCTION DEBRIS, AND CONSTRUCTION CHEMICALS EXPOSED TO STORMWATER WILL BE PICKED UP AND REMOVED FROM STORMWATER EXPOSURE PRIOR TO ANTICIPATED STORM EVENTS OR BEFORE BEING CARRIED OFF THE SITE BY WIND, OR OTHERWISE PREVENTED FROM BECOMING A POLLUTANT SOURCE FOR STORMWATER DISCHARGES. AFTER USE, MATERIALS USED FOR EROSION CONTROL WILL BE REMOVED (3.5.3.1.f).

8.3.9. ALL SEEDED AREAS WILL BE CHECKED FOR BARE SPOTS, EROSION WASHOUTS, AND VIGOROUS GROWTH FREE OF SIGNIFICANT WEED INFESTATIONS.

9. SITE ASSESSMENTS (3.1.2)

QUALITY ASSURANCE SITE ASSESSMENTS OF EROSION PREVENTION AND SEDIMENT CONTROLS SHALL BE PERFORMED PER THE TDOT ENVIRONMENTAL DIVISION COMPLIANCE AND FIELD SERVICES OFFICE GUIDELINES.

10. STORMWATER MANAGEMENT (3.5.4)

10.1. STORMWATER MANAGEMENT WILL BE HANDLED BY TEMPORARY CONTROLS OUTLINED IN THIS SWPPP AND ANY PERMANENT CONTROLS NEEDED TO MEET PERMANENT STORMWATER MANAGEMENT NEEDS IN THE POST CONSTRUCTION PERIOD. PERMANENT CONTROLS WILL BE DEPICTED ON THE PLANS AND NOTED AS PERMANENT.

10.2. DESCRIBE ANY SPECIFIC POST-CONSTRUCTION MEASURES THAT WILL CONTROL VELOCITY, POLLUTANTS, AND/OR EROSION (3.5.4): BUFFER PLANTING

10.3. OTHER ITEMS NEEDING CONTROL (3.5.5)

CONSTRUCTION MATERIALS: THE FOLLOWING MATERIALS OR SUBSTANCES ARE EXPECTED TO BE PRESENT ON THE SITE DURING THE CONSTRUCTION PERIOD. (CHECK ALL THAT APPLY).

☐ LUMBER, GUARDRAIL, TRAFFIC CONTROL DEVICES
☐ CONCRETE WASHOUT
☒ PIPE CULVERTS (I.E. CONCRETE, CORRUGATED METAL, HDPE, ETC.)
☐ MINERAL AGGREGATES, ASPHALT
☒ EARTH
☐ LIQUID TRAFFIC STRIPING MATERIALS, PAINT
☒ ROCK
☐ CURING COMPOUND
☐ EXPLOSIVES
☐ OTHER _____

THESE MATERIALS WILL BE HANDLED AS NOTED IN THIS SWPPP.

10.4. WASTE MATERIALS (3.5.5.b)

WASTE MATERIAL (EARTH, ROCK, ASPHALT, CONCRETE, ETC.) NOT REQUIRED FOR THE CONSTRUCTION OF THE PROJECT WILL BE DISPOSED OF BY THE CONTRACTOR IN ACCORDANCE WITH THE TDOT CONSTRUCTION CONTRACT AND FEDERAL AND STATE REGULATIONS. IMPACTS TO WATERS OF THE STATE/U.S. SHALL BE AVOIDED IF POSSIBLE. IF UNAVOIDABLE, THE CONTRACTOR WILL OBTAIN ALL NECESSARY PERMITS INCLUDING, BUT NOT LIMITED TO NPDES, AQUATIC RESOURCES ALTERATION PERMIT(S) CORPS OF ENGINEERS SECTION 404 PERMITS, AND TVA SECTION 26A PERMITS TO DISPOSE OF WASTE MATERIALS.

10.5. HAZARDOUS WASTE (3.5.5.c) (7.9)

ALL HAZARDOUS WASTE MATERIALS WILL BE DISPOSED OF IN A MANNER WHICH IS COMPLIANT WITH LOCAL OR STATE REGULATIONS. SITE PERSONNEL WILL BE INSTRUCTED IN THESE PRACTICES, AND THE INDIVIDUAL DESIGNATED AS THE CONTRACTOR'S ON-SITE REPRESENTATIVE WILL BE RESPONSIBLE FOR SEEING THAT THESE PRACTICES ARE FOLLOWED. THE CONTRACTOR WILL OBTAIN ALL NECESSARY PERMITS TO DISPOSE OF HAZARDOUS MATERIAL.

10.6. SANITARY WASTE (3.5.5.b)

PORTABLE SANITARY FACILITIES WILL BE PROVIDED ON ALL CONSTRUCTION SITES. SANITARY WASTE WILL BE COLLECTED FROM THE PORTABLE UNITS IN A TIMELY MANNER BY A LICENSED WASTE MANAGEMENT CONTRACTOR OR AS REQUIRED BY ANY LOCAL REGULATIONS. THE CONTRACTOR WILL OBTAIN ALL NECESSARY PERMITS TO DISPOSE OF SANITARY WASTE.

10.7. OTHER MATERIALS

THE FOLLOWING MATERIALS OR SUBSTANCES ARE EXPECTED TO BE PRESENT ON THE SITE DURING THE CONSTRUCTION PERIOD. (CHECK ALL THAT APPLY).

☒ FERTILIZERS AND LIME
☒ PESTICIDES AND/OR HERBICIDES
☒ DIESEL AND GASOLINE
☒ MACHINERY LUBRICANTS (OIL AND GREASE)

THESE MATERIALS WILL BE HANDLED AS NOTED IN THIS SWPPP.

11. NON-STORMWATER DISCHARGES (3.5.9)

11.1. THE FOLLOWING NON-STORMWATER DISCHARGES ARE ANTICIPATED DURING THE CONSTRUCTION OF THIS PROJECT (CHECK ALL THAT APPLY):

☒ DEWATERING OF WORK AREAS OF COLLECTED STORMWATER AND GROUND WATER.
☒ WATERS USED TO WASH VEHICLES (OF DUST AND SOIL) WHERE DETERGENTS ARE NOT USED AND DETENTION AND/OR FILTERING IS PROVIDED BEFORE THE WATER LEAVES THE SITE.
☒ WATER USED TO CONTROL DUST. (3.5.3.1.n)
☐ POTABLE WATER SOURCES INCLUDING WATERLINE FLUSHING FROM WHICH CHLORINE HAS BEEN REMOVED TO THE MAXIMUM EXTENT PRACTICABLE.
☒ UNCONTAMINATED GROUNDWATER OR SPRING WATER.
☐ FOUNDATION OR FOOTING DRAINS WHERE FLOWS ARE NOT CONTAMINATED WITH POLLUTANTS.
☐ OTHER: _____

11.2. ALL ALLOWABLE NON-STORMWATER DISCHARGES WILL BE DIRECTED TO STABLE DISCHARGE STRUCTURES PRIOR TO LEAVING THE SITE. FILTERING OR CHEMICAL TREATMENT MAY BE NECESSARY PRIOR TO DISCHARGE. ALL CHEMICAL TREATMENTS MUST BE APPLIED PER SECTION 6 FLOCCULANTS.

11.3. THE DESIGN OF ALL IMPACTED EPSC MEASURES RECEIVING FLOW FROM ALLOWABLE NON-STORMWATER DISCHARGES MUST BE DESIGNED TO HANDLE THE VOLUME OF THE NON-STORMWATER COMPONENT.

11.4. WASH DOWN OR WASTE DISCHARGE OF CONCRETE TRUCKS WILL NOT BE PERMITTED ON-SITE UNLESS PROPER SETTLEMENT AREAS HAVE BEEN PROVIDED IN ACCORDANCE WITH BOTH STATE AND FEDERAL REGULATIONS.

11.5. ARE ANY DISCHARGES ASSOCIATED WITH INDUSTRIAL (NON-CONSTRUCTION STORMWATER) ACTIVITY EXPECTED (3.5.1.i)?

☐ YES ☒ NO

IF YES, SPECIFY THE LOCATION OF THE ACTIVITY AND ITS PERMIT NUMBER: _____

12. SPILL PREVENTION, MANAGEMENT AND NOTIFICATION (3.5.5.c, 5.1)

12.1. SPILL PREVENTION (3.5.5.c)

12.1.1. CONTRACTOR'S BULK FUEL AND PETROLEUM PRODUCTS STORED ON-SITE OR ADJACENT TO THE R.O.W. IN ABOVE GROUND STORAGE TANKS WITH AGGREGATE STORAGE CAPACITY IN EXCESS OF 1,320 GALLONS SHALL HAVE SECONDARY CONTAINMENT.

12.1.2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREPARING A SPILL PREVENTION CONTROL AND COUNTERMEASURE (SPCC) PLAN AS REQUIRED BY TDOT SPECIAL PROVISION 107FP (REGARDING WATER QUALITY AND STORM WATER PERMITS) AND THE LAW.

12.1.3. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR OBTAINING ANY NECESSARY LOCAL, STATE, AND FEDERAL PERMITS. THE SPCC PLAN AND/OR PERMITS SHALL BE KEPT ON-SITE AND A COPY PROVIDED TO THE TDOT CONSTRUCTION ENGINEER.

12.2. MATERIAL MANAGEMENT

12.2.1. HOUSEKEEPING

ONLY NEEDED PRODUCTS WILL BE STORED ON-SITE BY THE CONTRACTOR. EXCEPT FOR BULK MATERIALS THE CONTRACTOR WILL STORE ALL MATERIALS UNDER COVER AND IN APPROPRIATE CONTAINERS. PRODUCTS MUST BE STORED IN ORIGINAL CONTAINERS AND LABELED. MATERIAL MIXING WILL BE CONDUCTED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. WHEN POSSIBLE, ALL PRODUCTS WILL BE USED COMPLETELY BEFORE PROPERLY DISPOSING OF THE CONTAINER OFF SITE. THE MANUFACTURER'S DIRECTIONS FOR DISPOSAL OF MATERIALS AND CONTAINERS WILL BE FOLLOWED. THE CONTRACTOR'S SITE SUPERINTENDENT WILL INSPECT MATERIALS STORAGE AREAS REGULARLY TO ENSURE PROPER USE AND DISPOSAL. DUST GENERATED WILL BE CONTROLLED IN AN ENVIRONMENTALLY SAFE MANNER. VEGETATION AREAS NOT ESSENTIAL TO THE CONSTRUCTION PROJECT WILL BE PRESERVED AND MAINTAINED AS NOTED ON THE PLANS.

12.2.2. HAZARDOUS MATERIALS

PRODUCTS WILL BE KEPT IN ORIGINAL CONTAINERS UNLESS THE CONTAINER IS NOT RE-SEALABLE. ORIGINAL LABELS AND MATERIAL SAFETY DATA SHEETS WILL BE RETAINED IN A SAFE PLACE TO RELAY IMPORTANT PRODUCT INFORMATION. IF SURPLUS PRODUCT MUST BE DISPOSED OF, MANUFACTURER'S LABEL DIRECTIONS FOR DISPOSAL WILL BE FOLLOWED. MAINTENANCE AND REPAIR OF ALL EQUIPMENT AND VEHICLES INVOLVING OIL CHANGES, HYDRAULIC SYSTEM DRAIN DOWN, DE-GREASING OPERATIONS, FUEL TANK DRAIN DOWN AND REMOVAL, AND OTHER ACTIVITIES WHICH MAY RESULT IN THE ACCIDENTAL RELEASE OF CONTAMINANTS WILL BE CONDUCTED ON AN IMPERVIOUS SURFACE AND UNDER COVER DURING WET WEATHER TO PREVENT THE RELEASE OF CONTAMINANTS ONTO THE GROUND. WHEEL WASH WATER WILL BE COLLECTED AND ALLOWED TO SETTLE OUT SUSPENDED SOLIDS PRIOR TO DISCHARGE. WHEEL WASH WATER WILL NOT BE DISCHARGED DIRECTLY INTO ANY STORMWATER SYSTEM OR STORMWATER TREATMENT SYSTEM. POTENTIAL pH-MODIFYING MATERIALS SUCH AS: BULK CEMENT, CEMENT KILN DUST, FLY ASH, NEW CONCRETE WASHINGS AND CURING WATERS, CONCRETE PUMPING, AND MIXER WASHOUT WATERS WILL BE COLLECTED ON SITE AND MANAGED TO PREVENT CONTAMINATION OF STORMWATER RUNOFF.

12.3. PRODUCT SPECIFIC PRACTICES

12.3.1. PETROLEUM PRODUCTS: ALL ON-SITE VEHICLES WILL BE MONITORED FOR LEAKS AND RECEIVE REGULAR PREVENTIVE MAINTENANCE TO REDUCE THE CHANCE OF LEAKAGE. PETROLEUM PRODUCTS WILL BE STORED IN TIGHTLY SEALED CONTAINERS WHICH ARE CLEARLY LABELED.

12.3.2. FERTILIZERS: FERTILIZERS WILL BE APPLIED ONLY IN THE AMOUNTS SPECIFIED BY THE SOIL ANALYSIS OR TDOT. ONCE APPLIED, FERTILIZERS WILL BE WORKED INTO THE SOIL TO LIMIT THE EXPOSURE TO STORMWATER. FERTILIZERS WILL BE STORED IN AN ENCLOSED AREA UNDER COVER. THE CONTENTS OF PARTIALLY USED FERTILIZER BAGS WILL BE TRANSFERRED TO SEALABLE CONTAINERS TO AVOID SPILLS.

12.3.3. PAINTS: ALL CONTAINERS WILL BE TIGHTLY SEALED AND STORED WHEN NOT REQUIRED FOR USE. THE EXCESS WILL BE DISPOSED OF PER THE MANUFACTURER'S INSTRUCTIONS AND APPLICABLE STATE AND LOCAL REGULATIONS.

12.3.4. CONCRETE TRUCKS: CONTRACTORS WILL PROVIDE DESIGNATED TRUCK WASHOUT AREAS ON THE SITE. THESE AREAS MUST BE SELF CONTAINED AND NOT CONNECTED TO ANY STORMWATER

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OUTLET OF THE SITE. UPON COMPLETION OF CONSTRUCTION WASHOUT AREAS WILL BE PROPERLY STABILIZED.

12.4. SPILL MANAGEMENT

IN ADDITION TO THE PREVIOUS HOUSEKEEPING AND MANAGEMENT PRACTICES, THE FOLLOWING PRACTICES WILL BE FOLLOWED FOR SPILL PREVENTION AND CLEANUP IF NECESSARY:

12.4.1. FOR ALL HAZARDOUS MATERIALS STORED ON SITE, THE MANUFACTURER'S RECOMMENDED METHODS FOR SPILL CLEAN UP WILL BE CLEARLY POSTED. SITE PERSONNEL WILL BE MADE AWARE OF THE PROCEDURES AND THE LOCATIONS OF THE INFORMATION AND CLEANUP SUPPLIES.

12.4.2. APPROPRIATE CLEANUP MATERIALS AND EQUIPMENT WILL BE MAINTAINED BY THE CONTRACTOR IN THE MATERIALS STORAGE AREA ON-SITE AND UNDER COVER. AS APPROPRIATE, EQUIPMENT AND MATERIALS MAY INCLUDE ITEMS SUCH AS BOOMS, DUST PANS, MOPS, RAGS, GLOVES, GOGGLES, KITTY LITTER, SAND, SAWDUST, AND PLASTIC AND METAL TRASH CONTAINERS SPECIFICALLY FOR CLEAN UP PURPOSES.

12.4.3. ALL SPILLS WILL BE CLEANED IMMEDIATELY AFTER DISCOVERY AND THE MATERIALS DISPOSED OF PROPERLY. THE SPILL AREA WILL BE KEPT WELL VENTILATED AND PERSONNEL WILL WEAR APPROPRIATE PROTECTIVE CLOTHING TO PREVENT INJURY FROM CONTACT WITH A HAZARDOUS SUBSTANCE.

12.4.4. THE CONTRACTOR'S RESPONSIBLE PARTY WILL BE THE SPILL PREVENTION AND CLEANUP COORDINATOR. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT THE SITE SUPERINTENDENT HAS HAD APPROPRIATE TRAINING FOR HAZARDOUS MATERIALS HANDLING, SPILL MANAGEMENT, AND CLEANUP.

12.4.5. IF SPILLS REPRESENT AN IMMINENT THREAT OF ESCAPING THE SITE AND ENTERING RECEIVING WATERS, PERSONNEL WILL RESPOND IMMEDIATELY TO CONTAIN THE RELEASE AND NOTIFY THE SUPERINTENDENT AFTER THE SITUATION HAS BEEN STABILIZED.

12.4.6. IF AN OIL SHEEN IS OBSERVED ON SURFACE WATER (E.G. SETTLING PONDS, DETENTION PONDS, SWALES), ACTION WILL BE TAKEN IMMEDIATELY TO REMOVE THE MATERIAL CAUSING THE SHEEN. THE CONTRACTOR WILL USE APPROPRIATE MATERIALS TO CONTAIN AND ABSORB THE SPILL. THE SOURCE OF THE OIL SHEEN WILL ALSO BE IDENTIFIED AND REMOVED OR REPAIRED AS NECESSARY TO PREVENT FURTHER RELEASES.

12.4.7. IF A SPILL OCCURS THE CONTRACTOR'S SITE SUPERINTENDENT SHALL BE RESPONSIBLE FOR COMPLETING THE SPILL REPORTING FORM AND FOR REPORTING THE SPILL TO THE TDOT CONSTRUCTION ENGINEER AND/OR PROJECT ENGINEER. ALL SPILLS MUST BE REPORTED TO THE APPROPRIATE AGENCY, AND MEASURES SHALL BE TAKEN IMMEDIATELY TO PREVENT THE POLLUTION OF WATERS OF THE STATE/U.S., INCLUDING GROUNDWATER, SHOULD A SPILL OCCUR.

12.4.8. APPROPRIATE CLEANUP MATERIALS AND EQUIPMENT SHALL BE MAINTAINED BY THE CONTRACTOR IN THE MATERIALS STORAGE AREA ON-SITE AND UNDER COVER. SPILL RESPONSE EQUIPMENT SHALL BE INSPECTED AND MAINTAINED BY THE CONTRACTOR AS NECESSARY TO REPLACE ANY MATERIALS USED IN SPILL RESPONSE ACTIVITIES.

12.5. SPILL NOTIFICATION (5.1)

WHERE A RELEASE CONTAINING A HAZARDOUS SUBSTANCE IN AN AMOUNT EQUAL TO, OR MORE THAN A REPORTABLE QUANTITY ESTABLISHED UNDER EITHER 40 CFR 117 OR 40 CFR 302 OCCURS DURING A 24 HOUR PERIOD:

12.5.1. THE TDOT PROJECT ENGINEER IS RESPONSIBLE FOR NOTIFYING THE REGIONAL PROJECT DEVELOPMENT OFFICE (E.G. TRANSPORTATION ENVIRONMENTAL STUDIES SPECIALIST) AS SOON AS HE OR SHE HAS KNOWLEDGE OF THE DISCHARGE.

12.5.2. THE TDOT REGIONAL PROJECT DEVELOPMENT OFFICE WILL NOTIFY THE LOCAL TDEC ENVIRONMENTAL FIELD OFFICE AND ANY OTHER APPLICABLE REGULATORY AGENCIES WITHIN 24 HOURS OF THE SPILL.

12.5.3. IN ADDITION TO ANY FOLLOW UP NOTIFICATIONS REQUIRED BY FEDERAL LAW, A WRITTEN DESCRIPTION OF THE RELEASE, DATE OF RELEASE AND CIRCUMSTANCES LEADING TO THE RELEASE, WHAT ACTIONS WERE TAKEN TO MITIGATE EFFECTS OF THE RELEASE, AND STEPS TAKEN TO MINIMIZE THE CHANCE OF FUTURE OCCURRENCES WILL BE SUBMITTED TO THE APPROPRIATE TDEC ENVIRONMENTAL FIELD OFFICE WITHIN 14 DAYS OF KNOWLEDGE OF THE RELEASE.

12.5.4. THE SWPPP MUST BE MODIFIED WITHIN 14 DAYS OF KNOWLEDGE OF THE RELEASE PROVIDING A DESCRIPTION OF THE RELEASE, CIRCUMSTANCES LEADING TO THE RELEASE, AND THE DATE OF RELEASE. THE SWPPP WILL BE REVIEWED AND MODIFIED AS NECESSARY TO IDENTIFY MEASURES TO PREVENT THE REOCCURRENCE OF SUCH RELEASES AND TO RESPOND TO SUCH RELEASES.

13. RECORD-KEEPING

13.1. REQUIRED RECORDS

TDOT OR THEIR DULY AUTHORIZED REPRESENTATIVE WILL MAINTAIN AT THE SITE THE FOLLOWING RECORDS OF CONSTRUCTION ACTIVITIES (3.5.3.1.m) (4.1.5.) (6.2.1):

13.1.1. THE DATES WHEN MAJOR GRADING ACTIVITIES OCCUR.

13.1.2. THE DATES WHEN CONSTRUCTION ACTIVITIES TEMPORARILY OR PERMANENTLY CEASE ON A PORTION OF THE SITE.

13.1.3. THE DATES WHEN STABILIZATION MEASURES ARE INITIATED.

13.1.4. RECORDS EPSC INSPECTION REPORTS AND CORRECTIVE MEASURES.

13.1.5. RECORDS OF QUALITY ASSURANCE SITE ASSESSMENTS.

13.1.6. COPY OF SITE EPSC INSPECTOR'S CERTIFICATION AND/OR LICENSING

13.1.7. COPY OF REQUIRED SOIL ANALYSIS

13.1.8. A COPY OF ANY REGULATORY CORRESPONDENCE REGARDING THE EFFECTIVENESS OF THE *SWPPP* OR EPSC CONTROLS.

13.2. RAINFALL MONITORING PLAN (3.5.3.1.o):

13.2.1. EQUIPMENT

AT A MINIMUM, THE CONTRACTOR WILL INSTALL A FENCE POST TYPE RAIN GAUGE TO MEASURE RAINFALL. THE STANDARD FENCE POST RAIN GAUGE WILL BE A WEDGE-SHAPED GAUGE THAT MEASURES UP TO 6 INCHES OF RAINFALL. AN ENGLISH SCALE WILL BE PROVIDED ON ONE FACE, WITH A METRIC SCALE ON THE OTHER FACE. GRADUATION WILL BE PERMANENTLY MOLDED IN DURABLE WEATHER-RESISTANT PLASTIC. THE MINIMUM GRADUATION WILL BE 0.01 INCH (OR 0.1MM). AN ALUMINUM BRACKET WITH SCREWS MAY BE USED TO MOUNT THE GAUGE ON A WOODEN SUPPORT.

13.2.2. LOCATION

THE RAIN GAUGE WILL BE LOCATED AT OR ALONG THE PROJECT SITE, AS DEFINED IN THE NOI OF THE NPDES PERMIT, IN AN OPEN AREA SUCH THAT THE MEASUREMENT WILL NOT BE INFLUENCED BY OUTSIDE FACTORS (I.E. OVERHANGS, GUTTER, TREES, ETC.). AT LEAST ONE RAIN GAUGE PER LINEAR MILE IS REQUIRED ALONG (AS MEASURED ALONG THE CENTERLINE OF THE PRIMARY ALIGNMENT) THE PROJECT WHERE CLEARING, GRUBBING, EXCAVATION, GRADING, CUTTING OR FILLING IS ACTIVELY PERFORMED, OR EXPOSED SOIL HAS NOT YET BEEN PERMANENTLY STABILIZED.

13.2.3. METHODS

RAINFALL MONITORING WILL BE INITIATED PRIOR TO CLEARING, GRUBBING, EXCAVATION, GRADING, CUTTING, OR FILLING, EXCEPT AS SUCH MINIMAL CLEARING MAY BE NECESSARY TO INSTALL A RAIN GAUGE IN AN OPEN AREA. THE RAIN GAUGE WILL BE CHECKED FOR OPERATIONAL SOUNDNESS DAILY (DURING NORMAL BUSINESS HOURS) IN WET TIMES AND WEEKLY IN DRY TIMES. GAUGES WILL BE REPAIRED OR REPLACED ON THE SAME DAY IF FOUND TO BE NON-OPERATIONAL OR MISSING.

13.2.4. EACH RAIN GAUGE WILL BE READ (FOR DETAILED RECORDS OF RAINFALL) AND EMPTIED AFTER EVERY RAINFALL EVENT OCCURRING ON THE PROJECT SITE AT APPROXIMATELY THE SAME TIME OF THE DAY (DURING NORMAL BUSINESS HOURS). DURING PERIODS OF DRY CONDITIONS, IT WILL NOT BE NECESSARY TO READ THE RAIN GAUGE EVERY DAY. IN LIEU OF THIS REQUIREMENT ON WEEKENDS AND ON STATE HOLIDAYS, THE RAIN GAUGES CAN BE EMPTIED THE NEXT BUSINESS DAY AND A REFERENCE SITE USED FOR A RECORD OF DAILY AMOUNT OF PRECIPITATION FOR THOSE DAYS. A REFERENCE SITE IS THE DOCUMENTATION FROM THE CLOSEST GAUGE WITHIN PROXIMITY OF THE PROJECT FROM A RECOGNIZED SOURCE SUCH AS THE NOAA NATIONAL WEATHER SERVICE.

13.2.5. DETAILED RECORDS WILL BE RECORDED OF RAINFALL EVENTS INCLUDE DATES, AMOUNTS OF RAINFALL, AND THE APPROXIMATE DURATION (OR THE STARTING AND ENDING TIMES). THE RAINFALL RECORDS SHALL BE RECORDED ON THE TDOT RAINFALL RECORD SHEET AND SHALL BE MAINTAINED IN THE "DOCUMENTATION AND PERMITS" BINDER.

13.2.6. IF THE RAINFALL EVENT IS STILL IN PROGRESS AT THE DAILY RECORDING TIME, THE GAUGE WILL BE EMPTIED AND THE RECORD WILL INDICATE THAT THE STORM EVENT WAS STILL IN PROGRESS.

13.2.7. RAIN GAUGE INFORMATION (DETAILED RECORDS), INCLUDING THE LOCATION OF THE NEAREST OUTFALL, WILL BE RECORDED ON THE EPSC INSPECTION REPORT FORMS AT THE TIME OF MEASUREMENT.

13.3. KEEPING PLANS CURRENT (3.4)

13.3.1. THE EPSC PLAN IS TO SERVE AS AN INITIAL GUIDE FOR SITE PERSONNEL AS THE CONSTRUCTION PROCESS DEVELOPS. IT MUST BE AMENDED, MODIFIED, AND UPDATED WHENEVER EPSC INSPECTIONS INDICATE, OR WHERE STATE OR FEDERAL REGULATORY OFFICIALS DETERMINE EPSC MEASURES ARE PROVING INEFFECTIVE IN ELIMINATING OR SIGNIFICANTLY MINIMIZING POLLUTANT SOURCES OR ARE OTHERWISE NOT ACHIEVING THE GENERAL OBJECTIVES OF CONTROLLING POLLUTANTS IN STORMWATER DISCHARGES ASSOCIATED WITH THE CONSTRUCTION ACTIVITY.

13.3.2. THE STAGES DEPICTED WITHIN THE EPSC PLANS MAY NOT COINCIDE WITH THE ACTUAL STAGES OF CONSTRUCTION ESTABLISHED BY THE CONTRACTOR DURING CONSTRUCTION, THUS MODIFICATIONS WILL BE REQUIRED TO ENSURE THE EPSC PLAN IS MAINTAINED TO DEPICT CURRENT SITE CONDITIONS. IT SHOULD BE MAINTAINED SUCH THAT IT WILL ALWAYS REFLECT THE MEASURES THAT ARE INSTALLED DURING THE VARIOUS STAGES OF CONSTRUCTION. IT IS IMPRACTICAL TO DETERMINE ALL THE INTERMEDIATE STAGES OF CONSTRUCTION THAT WILL OCCUR, THUS THESE DOCUMENTS MUST BE UPDATED THROUGHOUT THE LIFE OF THE CONSTRUCTION PROJECT.

13.3.3. THE TDOT EPSC INSPECTOR OR THEIR DULY AUTHORIZED REPRESENTATIVE WILL MODIFY AND UPDATE THE SWPPP WHEN ANY OF THE FOLLOWING CONDITIONS APPLY:

13.3.3.1. WHENEVER THERE IS A CHANGE IN THE SCOPE OF THE PROJECT THAT WOULD BE EXPECTED TO HAVE A SIGNIFICANT EFFECT ON THE DISCHARGE OF POLLUTANTS TO THE WATERS OF THE STATE AND WHICH HAS NOT OTHERWISE BEEN ADDRESSED IN THE SWPPP;

13.3.3.2. WHENEVER INSPECTIONS OR INVESTIGATIONS BY SITE OPERATORS, LOCAL, STATE, OR FEDERAL OFFICIALS INDICATE THE SWPPP IS PROVING INEFFECTIVE IN ELIMINATING OR SIGNIFICANTLY MINIMIZING POLLUTANTS FROM CONSTRUCTION ACTIVITY SOURCES, OR IS OTHERWISE NOT ACHIEVING THE GENERAL OBJECTIVES OF CONTROLLING POLLUTANTS IN STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY; WHERE LOCAL, STATE, OR FEDERAL OFFICIALS DETERMINE THAT THE SWPPP IS INEFFECTIVE IN ELIMINATING OR SIGNIFICANTLY MINIMIZING POLLUTANT SOURCES, A COPY OF ANY CORRESPONDENCE TO THAT EFFECT MUST BE RETAINED IN THE SWPPP;

13.3.3.3. WHEN ANY NEW OPERATOR AND/OR SUB-OPERATOR IS ASSIGNED OR RELIEVED OF THEIR RESPONSIBILITY TO IMPLEMENT A PORTION OF THE SWPPP;

13.3.3.4. TO PREVENT A NEGATIVE IMPACT TO LEGALLY PROTECTED STATE OR FEDERALLY LISTED OR PROPOSED THREATENED OR ENDANGERED AQUATIC FAUNA;

13.3.3.5. WHEN THERE IS A CHANGE IN CHEMICAL TREATMENT METHODS INCLUDING: USE OF DIFFERENT TREATMENT CHEMICALS, DIFFERENT DOSAGE OR APPLICATION RATES OR A DIFFERENT AREA OF APPLICATION NOT SPECIFIED ON THE EPSC PLANS.

13.3.3.6. ALL SWPPP REVISION(S) SHALL BE RECORDED WITHIN 7 DAYS BY THE PROJECT EPSC INSPECTOR.

13.3.3.7. WHEN A TMDL IS DEVELOPED FOR THE RECEIVING WATERS FOR A POLLUTANT OF CONCERN (SILTATION

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AND/OR HABITAT ALTERATION), CONSTRUCTION SHALL NOTIFY THE PERMITS SECTION FOR PROPER COORDINATION.

13.4. MAKING PLANS ACCESSIBLE

13.4.1. TDOT WILL RETAIN A COPY OF THIS SWPPP (INCLUDING A COPY OF THE "DOCUMENTATION AND PERMITS" BINDER AT THE CONSTRUCTION SITE (OR OTHER LOCATION ACCESSIBLE TO TDEC AND THE PUBLIC) FROM THE DATE CONSTRUCTION COMMENCES TO THE DATE OF FINAL STABILIZATION. TDOT WILL HAVE A COPY OF THE SWPPP AVAILABLE AT THE LOCATION WHERE WORK IS OCCURRING ON-SITE FOR THE USE OF OPERATORS AND THOSE IDENTIFIED AS HAVING RESPONSIBILITIES UNDER THE SWPPP WHENEVER THEY ARE ON THE CONSTRUCTION SITE (6.2).

13.4.2. PRIOR TO THE INITIATION OF LAND DISTURBING ACTIVITIES AND UNTIL THE SITE HAS MET THE FINAL STABILIZATION CRITERIA, TDOT OR THEIR DULY AUTHORIZED REPRESENTATIVE WILL POST A NOTICE NEAR THE MAIN ENTRANCE OF THE CONSTRUCTION SITE WITH THE FOLLOWING INFORMATION (3.3.3) (6.2.1):

13.4.2.1. A COPY OF THE NOTICE OF COVERAGE (NOC) WITH THE NPDES PERMIT NUMBER FOR THE PROJECT;

13.4.2.2. THE INDIVIDUAL NAME, COMPANY NAME, E-MAIL ADDRESS (IF APPLICABLE) AND TELEPHONE NUMBER OF THE LOCAL PROJECT SITE OWNER AND OPERATOR CONTACT;

13.4.2.3. A BRIEF DESCRIPTION OF THE PROJECT; AND

13.4.2.4. THE LOCATION OF THE SWPPP.

13.4.3. ALL INFORMATION DESCRIBED IN SECTION 13.4.2 MUST BE MAINTAINED IN LEGIBLE CONDITION. IF POSTING THIS INFORMATION NEAR A MAIN ENTRANCE IS INFEASIBLE DUE TO SAFETY CONCERNS, THE NOTICE SHALL BE POSTED IN A LOCAL BUILDING. THE NOTICE MUST BE PLACED IN A PUBLICLY ACCESSIBLE LOCATION WHERE CONSTRUCTION IS ACTIVELY UNDERWAY AND MOVED AS NECESSARY.

13.5. NOTICE OF TERMINATION (8.0)

13.5.1. WHEN ALL STORMWATER DISCHARGES FROM CONSTRUCTION ACTIVITIES THAT ARE AUTHORIZED BY THE PERMIT ARE ELIMINATED BY FINAL STABILIZATION, THE TDOT REGIONAL ENGINEER WILL SUBMIT A NOTICE OF TERMINATION (NOT) THAT IS SIGNED IN ACCORDANCE WITH THE PERMIT TO THE TDEC CENTRAL OFFICE IN NASHVILLE, TN.

13.5.2. FOR THE PURPOSES OF THE CERTIFICATION REQUIRED BY THE NOT, THE ELIMINATION OF STORMWATER DISCHARGES ASSOCIATED WITH THE CONSTRUCTION ACTIVITY MEANS THE

13.5.2.1. ALL EARTH-DISTURBING ACTIVITIES ON THE SITE ARE COMPLETED AND ALL DISTURBED SOILS AT THE PORTION OF THE CONSTRUCTION SITE WHERE THE OPERATOR HAD CONTROL HAVE BEEN FINALLY STABILIZED; AND

13.5.2.2. ALL CONSTRUCTION MATERIALS, WASTE AND WASTE HANDLING DEVICES, AND ALL EQUIPMENT, AND VEHICLES THAT WERE USED DURING CONSTRUCTION HAVE BEEN REMOVED AND PROPERLY DISPOSED; AND

13.5.2.3. ALL STORMWATER CONTROLS THAT WERE INSTALLED AND MAINTAINED DURING CONSTRUCTION, EXCEPT THOSE THAT ARE INTENDED FOR LONG-TERM USE FOLLOWING TERMINATION OF PERMIT COVERAGE, HAVE BEEN REMOVED; AND

13.5.2.4. ALL POTENTIAL POLLUTANTS AND POLLUTANT GENERATING ACTIVITIES ASSOCIATED WITH CONSTRUCTION HAVE BEEN REMOVED; AND

13.5.2.5. THE PERMITTEE HAS IDENTIFIED WHO IS RESPONSIBLE FOR ONGOING MAINTENANCE OF ANY STORMWATER CONTROLS LEFT ON THE SITE FOR LONG-TERM USE FOLLOWING TERMINATION OF PERMIT COVERAGE; AND

13.5.2.6. TEMPORARY EPSC MEASURES HAVE BEEN OR WILL BE REMOVED AT AN APPROPRIATE TIME TO ENSURE FINAL STABILIZATION IS MAINTAINED; AND

13.5.2.7. ALL STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITIES FROM THE IDENTIFIED SITE THAT ARE AUTHORIZED BY A NPDES GENERAL PERMIT HAVE OTHERWISE BEEN ELIMINATED FROM THE PORTION OF THE CONSTRUCTION SITE WHERE THE OPERATOR HAD CONTROL.

13.6. RETENTION OF RECORDS (6.2)

TDOT WILL RETAIN COPIES OF THE SWPPP, ALL REPORTS REQUIRED BY THE PERMIT, AND RECORDS OF ALL DATA USED TO COMPLETE THE NOTICE OF INTENT FOR THE PROJECT FOR A PERIOD OF AT LEAST THREE (3) YEARS FROM THE DATE THE NOT WAS FILED.

14. SITE WIDE/PRIMARY PERMITTEE CERTIFICATION (7.7.5)

I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED BY ME, OR UNDER MY DIRECTION OR SUPERVISION. THE SUBMITTED INFORMATION IS TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. AS SPECIFIED IN TENNESSEE CODE ANNOTATED SECTION 39-16-702(a)(4), THIS DECLARATION IS MADE UNDER PENALTY OF PERJURY.

John L. Hewitt

AUTHORIZED TDOT PERSONNEL SIGNATURE (3.3.1)

John Hewitt

PRINTED NAME

CE Manager 2

TITLE

October 4, 2017

DATE

15. SECONDARY PERMITTEE (OPERATOR) CERTIFICATION (7.7.6)

I CERTIFY UNDER PENALTY OF LAW THAT I HAVE REVIEWED THIS DOCUMENT, ANY ATTACHMENTS, AND THE SWPPP REFERENCED ABOVE. BASED ON MY INQUIRY OF THE CONSTRUCTION SITE OWNER/DEVELOPER IDENTIFIED ABOVE AND/OR MY INQUIRY OF THE PERSON DIRECTLY RESPONSIBLE FOR ASSEMBLING THIS NOI AND SWPPP, I BELIEVE THE INFORMATION SUBMITTED IS ACCURATE. I AM AWARE THAT THIS NOI, IF APPROVED, MAKES THE ABOVE-DESCRIBED CONSTRUCTION ACTIVITY SUBJECT TO NPDES PERMIT NUMBER TNR100000, AND THAT CERTAIN OF MY ACTIVITIES ONSITE ARE THEREBY REGULATED. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS, AND FOR FAILURE TO COMPLY WITH THESE PERMIT REQUIREMENTS. AS SPECIFIED IN TENNESSEE CODE ANNOTATED SECTION 39-16-702(a)(4), THIS DECLARATION IS MADE UNDER PENALTY OF PERJURY.

AUTHORIZED TDOT PERSONNEL SIGNATURE (3.3.1)

PRINTED NAME

TITLE

DATE

16. ENVIRONMENTAL PERMITS (9.0)

LIST ALL ENVIRONMENTAL PERMITS AND EXPIRATION DATES FOR PROJECT **(TO BE COMPLETED AT THE ENVIRONMENTAL PRECONSTRUCTION MEETING BY TDOT CONSTRUCTION OR THEIR DULY AUTHORIZED REPRESENTATIVE)**:

ENVIRONMENTAL PERMITS			
PERMIT	**YES OR NO**	**PERMIT OR TRACKING NO.**	**EXPIRATION DATE***
TDEC ARAP			
CORPS OF ENGINEERS (USACE)			
TVA 26A			
TDEC CGP			
OTHER:			

*THE TDOT ENVIRONMENTAL DIVISION MUST BE NOTIFIED SIX MONTHS PRIOR TO PERMIT EXPIRATION DATE.

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17. **OUTFALL TABLE (3.5.1.d, 5.4.1.g)**

EPSC STAGE	OUTFALL LABEL	SUB OUT-FALL	STATION CL, LT OR RT	SLOPE WITHIN ROW (%)	STAGE 1 DRAINAGE AREA (AC)	STAGE 2 DRAINAGE AREA (AC)	STAGE 3 DRAINAGE AREA (AC)	SEDIMENT BASIN OR EQUIVALENT MEASURE(S) (YES, NO OR N/A)	RECEIVING RESOURCE (TDOT EBR LABEL) OR OTHER	COMMENTS
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	ALL FLOWS AT BOTH THE HALL BRANCH SITE AND THE UT1 TO CLEAR CREEK SITE OCCUR AS SHEETFLOW. NO OUTFALLS EXIST FOR THIS PROJECT

ALL UNUSED FIELDS WITHIN THE OUTFALL TABLE ARE TO BE SHADED, HATCHED, OR REMOVED TO INDICATE THEIR NON-USAGE.

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SWPPP INDEX OF SHEETS

NOTE: CITATIONS IN PARENTHESIS INDICATE SECTIONS OF THE CURRENT CGP.

1. SWPPP REQUIREMENTS (3.0)

1.1. HAS THE SWPPP TEMPLATE BEEN PREPARED BY AN INDIVIDUAL THAT HAS THE FOLLOWING LICENSING AND/OR CERTIFICATIONS (3.1.1)?

☒ YES (CHECK ALL THAT APPLY BELOW) OR ☐ NO

- ☐ CERTIFIED PROFESSIONAL IN EROSION AND SEDIMENT CONTROL (CPESC)
- ☐ A TN LICENSED PROFESSIONAL ENGINEER OR LANDSCAPE ARCHITECT
- ☒ HAS SUCCESSFULLY COMPLETED TDEC LEVEL II COURSE

1.2. DO THE EPSC PLANS INVOLVE STRUCTURAL DESIGN, HYDRAULIC, HYDROLOGIC OR OTHER ENGINEERING CALCULATIONS FOR EPSC STRUCTURAL MEASURES (E.G. SEDIMENT BASINS) (3.1.1)? YES ☐ NO ☒

IF YES, HAVE THE EPSC PLANS BEEN PREPARED, STAMPED AND CERTIFIED BY A TN LICENSED PROFESSIONAL ENGINEER OR LANDSCAPE ARCHITECT? ☐ YES ☐ NO

1.3. DO THE PROJECT STORMWATER OUTFALLS DIRECTLY DISCHARGE INTO THE FOLLOWING (5.4.1)? ☐ YES (CHECK ALL THAT APPLY BELOW) ☒ NO

- ☐ WATERS WITH UNAVAILABLE PARAMETERS (303d FOR SILTATION OR HABITAT ALTERATION)
- ☐ EXCEPTIONAL TENNESSEE WATERS

IF YES TO SECTION 1.3, HAS THE SWPPP TEMPLATE BEEN PREPARED BY AN INDIVIDUAL THAT HAS THE FOLLOWING LICENSING AND/OR CERTIFICATIONS (5.4.1.b)?

☐ YES (CHECK ALL THAT APPLY BELOW) ☐ NO

- ☐ CERTIFIED PROFESSIONAL IN EROSION AND SEDIMENT CONTROL (CPESC)
- ☐ A TN LICENSED PROFESSIONAL ENGINEER OR LANDSCAPE ARCHITECT
- ☐ HAS SUCCESSFULLY COMPLETED TDEC LEVEL II COURSE

2. SITE DESCRIPTION (3.5.1)

2.1. PROJECT LIMITS (3.5.1.h): REFER TO TITLE SHEET

2.2. PROJECT DESCRIPTION (3.5.1.a):

TITLE: BUSH BROTHERS PROPERTY STREAM MITIGATION
COUNTY: JEFFERSON
PIN: 104027.02

2.3. SITE MAP(S) (2.6.2.): REFER TO TITLE SHEET

2.4. DESCRIPTION OF EXISTING SITE TOPOGRAPHY (3.5.1.d): REFER TO EXISTING PLAN AND PROFILE SHEET(S) NS-4 TO NS-4H AND NS-14 TO NS-14C, PROPOSED PLAN AND PROFILE SHEET(S) NS-5 TO NS-5H AND NS-15 TO NS-15D, USGS QUAD MAP, AND THE OUTFALL TABLE IN SECTION 17.

2.5. MAJOR SOIL DISTURBING ACTIVITIES (3.5.1.b) (CHECK ALL THAT APPLY):

- ☒ CLEARING AND GRUBBING
- ☒ EXCAVATION
- ☒ CUTTING AND FILLING
- ☒ FINAL GRADING AND SHAPING
- ☐ UTILITIES
- ☐ OTHER (DESCRIBE): _____

2.6. TOTAL PROJECT AREA (3.5.1.c): HALL BRANCH SITE: 6.94 ACRES
UT1 TO CLEAR CREEK SITE: 5.60 ACRES

2.7. TOTAL AREA TO BE DISTURBED (3.5.1.c): HALL BRANCH SITE: 6.94 ACRES
UT1 TO CLEAR CREEK SITE: 5.60 ACRES

2.8. NO MORE THAN 50 ACRES OF ACTIVE SOIL DISTURBANCE IS ALLOWED AT ANY TIME DURING THE CONSTRUCTION OF THE PROJECT.

2.9. ARE THERE ANY SEASONAL LIMITATIONS ON WORK? ☐ YES ☒ NO
IF YES, LIST THE CORRESPONDING PLAN SHEET: _____

2.10. WAS ROW FINALIZED PRIOR TO FEBRUARY 1, 2010 (4.1.2.2)?
☐ YES _____ (DATE) ☒ NO
IF ROW WAS FINALIZED PRIOR TO FEBRUARY 1, 2010, THIS PROJECT IS CONSIDERED A PRE-APPROVED SITE (4.1.2.2)

2.11. SOIL PROPERTIES (3.5.1.f) (4.1.1).
SOIL PROPERTIES FOR THE PRIMARY SOILS ARE LISTED IN THE TABLE BELOW.

SOIL PROPERTIES HALL BRANCH SITE			
PRIMARY SOIL NAME	**HSG**	**% OF SITE**	**ERODIBILITY (k value)**
DANDRIDGE CHANNERY SILT LOAM, 12 TO 25% SLOPE	D	1.3	0.2
DANDRIDGE CHANNERY SILT LOAM 25 TO 70% SLOPE	D	90.8	0.2
LINDSIDE SILT LOAM	C	7.9	0.37
SOIL PROPERTIES UT1 TO CLEAR CREEK SITE			
PRIMARY SOIL NAME	**HSG**	**% OF SITE**	**ERODIBILITY (k value)**
COLLEGEDALE-TALBOTT-ROCK OUTCROP COMPLEX	C	10.9	0.43
ENNIS COBBLY LOAM	A	89.1	0.15

2.12. IS ACID PRODUCING ROCK (APR) (i.e. PYRITE) LOCATED WITHIN THE PROJECT LIMITS? ☐ YES ☒ NO

2.12.1. IF YES TO SECTION 2.13, HAVE APR LOCATIONS BEEN IDENTIFIED WITHIN THE CONSTRUCTION PLANS AND/OR THE GEOTECHNICAL REPORT? ☐ YES ☐ NO; AND

2.12.2. IF YES TO SECTION 2.12.1, HAS A SPECIAL HANDLING PLAN AND/OR ADAPTIVE MANAGEMENT PLAN (AMP) BEEN PREPARED FOR THE PROJECT? ☐YES ☐ NO ☐ N/A (TDOT SP107L WILL BE APPLIED.)

2.13. PROJECT RUNOFF COEFFICIENTS AND AREA PERCENTAGES (3.5.1.g).

RUNOFF COEFFICIENTS FOR EXISTING CONDITIONS HALL BRANCH SITE				
AREA TYPE	**AREA(AC)**	**PERCENTAGE OF TOTAL AREA (%)**	**RUNOFF CN**	**C FACTOR**
IMPERVIOUS	0	0		N/A
PERVIOUS	6.94	100		0.45
WEIGHTED CURVE NUMBER OR C-FACTOR =				0.45

RUNOFF COEFFICIENTS FOR POST-CONSTRUCTION CONDITIONS HALL BRANCH SITE				
AREA TYPE	**AREA(AC)**	**PERCENTAGE OF TOTAL AREA (%)**	**RUNOFF CN**	**C FACTOR**
IMPERVIOUS	0	0		N/A
PERVIOUS	6.94	100		0.43
WEIGHTED CURVE NUMBER OR C-FACTOR =				0.43

RUNOFF COEFFICIENTS FOR EXISTING CONDITIONS UT1 CLEAR CREEK SITE				
AREA TYPE	**AREA(AC)**	**PERCENTAGE OF TOTAL AREA (%)**	**RUNOFF CN**	**C FACTOR**
IMPERVIOUS	0	0		N/A
PERVIOUS	5.60	100		0.09
WEIGHTED CURVE NUMBER OR C-FACTOR =				0.09

RUNOFF COEFFICIENTS FOR POST-CONSTRUCTION CONDITIONS UT1 CLEAR CREEK SITE				
AREA TYPE	**AREA(AC)**	**PERCENTAGE OF TOTAL AREA (%)**	**RUNOFF CN**	**C FACTOR**
IMPERVIOUS	0	0		N/A
PERVIOUS	5.60	100		0.01
WEIGHTED CURVE NUMBER OR C-FACTOR =				0.01

3. ORDER OF CONSTRUCTION ACTIVITIES (3.5.1.b, 3.5.2.a)

CONSTRUCTION SHALL BE SEQUENCED AND STAGED TO: MINIMIZE THE EXPOSURE TIME OF GRADED OR DENUDED SOIL AREAS, PRESERVE TOPSOIL, AND MINIMIZE SOIL COMPACTION. NO WORK SHALL BE STARTED UNTIL THE CONTRACTOR'S PLAN FOR THE STAGING OF THEIR OPERATIONS, INCLUDING THE PLAN FOR STAGING OF TEMPORARY AND PERMANENT EPSC MEASURES, HAS BEEN ACCEPTED BY THE ENGINEER. THE CONTRACTOR'S EPSC PLAN SHALL INCORPORATE AND SUPPLEMENT, AS ACCEPTABLE, THE ORDER OF CONSTRUCTION ACTIVITIES AND THE BASIC EPSC DEVICES DEPICTED ON THE EPSC PLAN CONTAINED WITHIN THE APPROVED SWPPP.

3.1. SPECIAL SEQUENCING REQUIREMENTS (SEE SHEETS NS-11)

3.2. INSTALL STABILIZED CONSTRUCTION EXITS.

3.3. IDENTIFY LIMITS OF DISTURBANCE, CLEARLY MARK AREAS TO REAMAIN UNDISTURBED, INSTALL CAUTION FENCE IF NECESSARY

3.4. INSTALL INITIAL EPSC MEASURES BEFORE CLEARING, GRUBBING, EXCAVATION, GRADING, CULVERT INSTALLATION, CUTTING, FILLING, OR ANY OTHER EARTHWORK OCCURS, EXCEPT AS SUCH WORK MAY BE NECESSARY TO INSTALL EPSC MEASURES.

3.5. PERFORM CLEARING AND GRUBBING (NOT MORE THAN 14 DAYS PRIOR TO GRADING OR EARTH-MOVING. REFER TO THE STABILIZATION PRACTICES BELOW.).

3.6. PROCEED WITH GRADING ACTIVITIES MAKING USE OF PUMP AROUND DIVERSION AS NOTED ON PLANS

3.7. UTILIZE COIR FIBER MATTING TO STABILIZE CONSTRUCTED CHANNELS AS NOTED ON PLANS

3.8. STABILIZE DISTURBED AREAS WITHIN 14 DAYS OF COMPLETING ANY STAGE AND/OR PHASE OF ACTIVITY.

3.9. COMPLETE FINAL STABILIZATION (TOPSOIL, SEEDING, MULCH, EROSION CONTROL MATTING/BLANKET, TREE PLANITING, ETC.)

3.10. REMOVE TEMPORARY EROSION CONTROLS AND ACCUMULATED SEDIMENT FROM AREAS THAT HAVE ESTABLISHED AT LEAST 70 PERCENT UNIFORM PERMANENT VEGETATIVE COVER.

3.11. RE-STABILIZE AREAS DISTURBED BY REMOVAL ACTIVITIES.

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4. STREAM, OUTFALL, WETLAND, TMDL AND ECOLOGY INFORMATION

4.1. STREAM INFORMATION (3.5.1.j, 3.5.1.k)

4.1.1. WILL CONSTRUCTION AND/OR EROSION PREVENTION AND SEDIMENT CONTROLS IMPACT ANY STREAMS WITHIN THE PROJECT LIMITS? ☒ YES ☐ NO

IF YES, THE IMPACT(S) HAVE BEEN INCLUDED IN THE TOTAL PROJECT IMPACTS AND HAVE BEEN INCLUDED IN THE WATER QUALITY PERMITS.

4.1.2. HAVE ANY OF THE RECEIVING STATE WATERS LESS THAN OR EQUAL TO 1 FLOW MILE DOWN GRADIENT OF THE PROJECT LIMITS BEEN CLASSIFIED BY TDEC AS FOLLOWS (CHECK ALL THAT APPLY):

☐ 303d WITH UNAVAILABLE PARAMETERS FOR SILTATION

☐ 303d WITH UNAVAILABLE PARAMETERS FOR HABITAT ALTERATION

☐ EXCEPTIONAL TENNESSEE WATERS (ETW)

4.1.3. RECEIVING WATERS OF THE STATE (3.5.1.k).

RECEIVING WATERS OF THE STATE INFORMATION HALL BRANCH SITE						
TDOT STATE WATER LABEL FROM EBR	LABEL FROM CONSTRUCTION PLANS	NAME OF RECEIVING STATE WATER	303d WITH UNAVAILABLE PARAMETERS FOR SILTATION OR HABITAT ALTERATION (YES OR NO)	ETW (YES OR NO)	LOCATED WITHIN PROJECT LIMITS (YES OR NO)	LOCATED WITHIN ≤ 1 FLOW MILE DOWN GRADIENT OF PROJECT LIMITS (YES OR NO)
STR-1	HALL BRANCH	HALL BRANCH	NO	NO	YES	YES
STR-2	UT1 HALL BRANCH	UNNAMED TRIBUTARY TO HALL BRANCH	NO	NO	YES	YES
STR-4	UT3 HALL BRANCH	UNNAMED TRIBUTARY TO HALL BRANCH	NO	NO	YES	YES
RECEIVING WATERS OF THE STATE INFORMATION UT1 TO CLEAR CREEK SITE						
TDOT STATE WATER LABEL FROM EBR	LABEL FROM CONSTRUCTION PLANS	NAME OF RECEIVING STATE WATER	303d WITH UNAVAILABLE PARAMETERS FOR SILTATION OR HABITAT ALTERATION (YES OR NO)	ETW (YES OR NO)	LOCATED WITHIN PROJECT LIMITS (YES OR NO)	LOCATED WITHIN ≤ 1 FLOW MILE DOWN GRADIENT OF PROJECT LIMITS (YES OR NO)
STR-1	UT1 CLEAR CREEK	UNNAMED TRIBUTARY TO CLEAR CREEK	NO	NO	YES	YES
SPG-1/STR-2	UT2 CLEAR CREEK	UNNAMED TRIBUTARY TO CLEAR CREEK	NO	NO	YES	YES
STR-3	UT3 CLEAR CREEK	UNNAMED TRIBUTARY TO CLEAR CREEK	NO	NO	YES	YES

4.1.4. ARE THERE ANY WATER QUALITY RIPARIAN BUFFER ZONES REQUIRED FOR WATERS OF THE STATE? (4.1.2, 5.4.2)

☐ YES ☒ NO

BUFFER ZONE REQUIREMENTS ARE NOT REQUIRED FOR PRE-APPROVED SITES (4.1.2.2.)

IF YES, THEY HAVE BEEN INCLUDED ON PLAN SHEET(S) _____.

IF YES, CHECK THE APPROPRIATE BOX BELOW FOR SIZE OF BUFFER.

☐ 60-FEET FOR WATERS WITH UNAVAILABLE PARAMETERS AND EXCEPTIONAL TENNESSEE WATERS (AVERAGE WIDTH PER SIDE WITH A MINIMUM OF 30-FEET).

A 60 FOOT NATURAL WATER QUALITY RIPARIAN BUFFER ZONE ADJACENT TO AND ON BOTH SIDES OF THE RECEIVING STATE STREAM WITH THIS DESIGNATION SHALL BE PRESERVED TO THE MAXIMUM EXTENT PRACTICABLE DURING CONSTRUCTION ACTIVITIES AT THE SITE. THE 60 FOOT CRITERION FOR THE WIDTH OF THE BUFFER ZONE CAN BE ESTABLISHED ON AN AVERAGE WIDTH BASIS AT A PROJECT, AS LONG AS THE MINIMUM WIDTH OF THE BUFFER ZONE IS MORE THAN 30 FEET AT ANY MEASURED LOCATION. IF THE CONSTRUCTION SITE ENCOMPASSES BOTH SIDES OF A STREAM, BUFFER AVERAGING CAN BE APPLIED TO BOTH SIDES, BUT MUST BE APPLIED INDEPENDENTLY.

☐ 30-FEET FOR ALL OTHER STREAMS (AVERAGE WIDTH PER SIDE WITH A MINIMUM OF 15-FEET).

A 30 FOOT NATURAL WATER QUALITY RIPARIAN BUFFER ZONE ADJACENT TO AND ON BOTH SIDES OF THE RECEIVING STATE STREAM SHALL BE PRESERVED TO THE MAXIMUM EXTENT PRACTICABLE DURING CONSTRUCTION ACTIVITIES AT THE SITE. THE 30 FOOT CRITERION FOR THE WIDTH OF THE BUFFER ZONE CAN BE ESTABLISHED ON AN AVERAGE WIDTH BASIS AT A PROJECT, AS LONG AS THE MINIMUM WIDTH OF THE BUFFER ZONE IS MORE THAN 15 FEET AT ANY MEASURED LOCATION. IF THE CONSTRUCTION SITE ENCOMPASSES BOTH SIDES OF A STREAM, BUFFER AVERAGING CAN BE APPLIED TO BOTH SIDES, BUT MUST BE APPLIED INDEPENDENTLY.

4.1.5. ARE THERE ANY WATER QUALITY RIPARIAN BUFFER ZONES NOT REQUIRED FOR STATE WATERS DUE TO A TDEC ARAP? (9.0)

☒ YES ☐ NO

4.1.6. ARE THERE WATER QUALITY RIPARIAN BUFFER ZONE EXEMPTIONS? (4.1.2.1) ☐ YES ☒ NO

IF YES, EXISTING CONDITIONS DESCRIPTION:_____

4.1.7. EVERY ATTEMPT SHOULD BE MADE FOR CONSTRUCTION ACTIVITIES TO NOT TAKE PLACE WITHIN THE WATER QUALITY RIPARIAN BUFFER ZONE AND FOR EXISTING FORESTED AREAS TO BE PRESERVED. (5.4.2.)

4.1.8. BECAUSE OF HEAVY SEDIMENT LOAD ASSOCIATED WITH CONSTRUCTION SITE RUNOFF, WATER QUALITY RIPARIAN BUFFER ZONES ARE NOT SEDIMENT CONTROL MEASURES AND SHOULD NOT BE RELIED UPON AS PRIMARY SEDIMENT CONTROL MEASURES. THE WATER QUALITY RIPARIAN BUFFER ZONE SHALL BE ESTABLISHED BETWEEN THE TOP OF THE STREAM BANK AND THE DISTURBED CONSTRUCTION AREA.

4.1.9. WHERE IT IS NOT PRACTICABLE TO MAINTAIN A FULL WATER QUALITY RIPARIAN BUFFER, BEST MANAGEMENT PRACTICES (BMPS) PROVIDING EQUIVALENT PROTECTION AS THE NATURAL RIPARIAN ZONE MUST BE USED. A JUSTIFICATION FOR USE AND DESIGN EQUIVALENCY SHALL BE DOCUMENTED WITHIN THE SWPPP. THE ENVIRONMENTAL AND ROADWAY DESIGN DIVISIONS SHALL REVIEW AND APPROVE THIS REVISION OF THE SWPPP BEFORE DISTURBANCE OF THE SITE PROCEEDS, UNLESS PREVIOUSLY EXEMPT IN THE NPDES CGP. WHERE ISSUED, ARAP/401 REQUIREMENTS WILL PREVAIL IF IN CONFLICT WITH THESE BUFFER ZONE REQUIREMENTS.

4.2. RECEIVING WATERS OF THE UNITED STATES (WOTUS) (EPHEMERAL)

WILL CONSTRUCTION AND/OR EROSION AND SEDIMENT CONTROLS IMPACT ANY WOTUS (EPHEMERAL)? ☐ YES ☒ NO

RECEIVING WOTUS (EPHEMERAL) INFORMATION HALL BRANCH SITE			
TDOT WOTUS LABEL	CONSTRUCTION PLANS LABEL	LOCATED WITHIN PROJECT LIMITS (YES OR NO)	LOCATED WITHIN 15-FT OF THE PROJECT LIMITS (YES OR NO)
WWC-1 / EPH-1	UT2 HALL BRANCH	YES	YES

4.2.1. ARE WATER QUALITY RIPARIAN BUFFER ZONES REQUIRED FOR WOTUS (4.1.2)? ☐ YES ☒ NO

IF YES, A 15 FOOT NATURAL WATER QUALITY RIPARIAN BUFFER ZONE ADJACENT TO AND ON BOTH SIDES OF THE RECEIVING EPHEMERAL STREAM IDENTIFIED AS A WOTUS (EPHEMERAL) BY THE U.S. ARMY CORPS OF ENGINEERS (USACE) OR THE ENVIRONMENTAL PROTECTION AGENCY SHALL BE PRESERVED TO THE MAXIMUM EXTENT PRACTICABLE DURING CONSTRUCTION ACTIVITIES AT THE SITE.

IF YES, THEY HAVE BEEN INCLUDED ON PLAN SHEET(S) _____

4.2.2. ARE THERE ANY WATER QUALITY RIPARIAN BUFFER ZONES NOT REQUIRED FOR WOTUS (EPHEMERAL) DUE TO A USACE PERMIT?

☒ YES ☐ NO

4.3. OUTFALL INFORMATION

4.3.1. OUTFALL TABLE (3.5.1.e). SEE SWPPP SHEET S-8 FOR OUTFALL INFORMATION.

4.3.2. HAVE ALL OUTFALLS BEEN LABELED ON THE EPSC PLAN SHEETS (3.5.1.h)? ☐ YES ☐ NO ☒ N/A

4.3.3. HAVE ALL OUTFALLS BEEN LABELED ON A USGS TOPOGRAPHIC MAP INCLUDED IN THE "DOCUMENTATION AND PERMITS" BINDER (2.6.2)? ☐ YES ☐ NO ☒ N/A

4.3.4. WHERE POSSIBLE, HAS NON-PROJECT RUN-ON BEEN DIVERTED AROUND OR THROUGH THE PROJECT TO ELIMINATE CONTACT WITH DISTURBED AREAS OF THE PROJECT AND SEPARATE IT FROM PROJECT RUN-OFF THEREBY REDUCING THE DRAINAGE AREA OF TO THE OUTFALLS IN THIS AREA?

☐ YES ☐ NO ☒ N/A

4.3.5. ARE EQUIVALENT MEASURES BEING SUBSTITUTED FOR A SEDIMENT BASIN(S)? ☐ YES ☐ NO ☒ N/A

4.3.6. A SEDIMENT BASIN OR EQUIVALENT MEASURE(S) WILL BE PROVIDED FOR ANY OUTFALL IN A DRAINAGE AREA:

OF TEN ACRES OR MORE FOR AN OUTFALL(S) THAT DOES NOT DISCHARGE TO A STATE STREAM WITH UNAVAILABLE PARAMETERS OR EXCEPTIONAL TENNESSEE WATERS. A TEMPORARY (OR PERMANENT) SEDIMENT BASIN OR EQUIVALENT CONTROL MEASURES THAT PROVIDES STORAGE FOR A CALCULATED VOLUME OF RUNOFF FROM A MINIMUM 2-YEAR/ 24-HOUR STORM EVENT, SHALL BE PROVIDED UNTIL FINAL STABILIZATION OF THE SITE. (3.5.3.3)

OR

OF FIVE ACRES OR MORE FOR AN OUTFALL(S) THAT DISCHARGES TO A STATE STREAM WITH UNAVAILABLE PARAMETERS OR EXCEPTIONAL TENNESSEE WATERS. A TEMPORARY (OR PERMANENT) SEDIMENT BASIN THAT PROVIDES STORAGE FOR A CALCULATED VOLUME OF RUNOFF FROM A 5-YEAR/ 24-HOUR STORM EVENT AND RUNOFF FROM EACH ACRE DRAINED, OR EQUIVALENT CONTROL MEASURES, SHALL BE PROVIDED UNTIL FINAL STABILIZATION OF THE SITE. (5.4.1.g).

IN BOTH INSTANCES, THE ENVIRONMENTAL AND ROADWAY DESIGN DIVISIONS MAY BE CONTACTED TO REVIEW AND CONCUR WITH ANY REVISION OF THE SWPPP BEFORE DISTURBANCE OF THE OUTFALL PROCEEDS.

4.4. WETLAND INFORMATION

WILL CONSTRUCTION AND/OR EROSION AND SEDIMENT CONTROLS IMPACT ANY WETLANDS? ☐ YES ☒ NO

IF YES, THE STRUCTURAL EPSC MEASURES HAVE BEEN INCLUDED IN THE TOTAL PROJECT IMPACTS AND IN THE WATER QUALITY PERMITS.

WETLAND INFORMATION				
TDOT WETLAND LABEL	FROM STATION LT OR RT	TO STATION LT OR RT	TEMPORARY IMPACTS (AC)	PERMANENT IMPACTS (AC)
N/A	N/A	N/A	N/A	N/A

4.5. TOTAL MAXIMUM DAILY LOADS (TMDL) INFORMATION (3.5.10)

4.5.1. IS THIS PROJECT LOCATED IN A HUC-8 WATERSHED THAT MAINTAINS AN EPA APPROVED TMDL FOR SILTATION AND HABITAT ALTERATION?

☒YES ☐ NO

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4.5.2. IF YES, IS THIS PROJECT LOCATED WITHIN A HUC-12 SUBWATERSHED WITH A WASTE LOAD ALLOCATION (WLA)?
☐ YES ☒ NO

4.5.3. IF YES, DOES THE PROJECT HAVE A DIRECT DISCHARGE TO A 303(d) LISTED STREAM FOR SILTATION OR HABITAT ALTERATION?
☐ YES ☐ NO

4.5.4. IF YES, HAS A SUMMARY OF THE CONSULTATION LETTER BEEN SUBMITTED/RECEIVED?
☐ YES ☐ NO

4.6. ECOLOGY INFORMATION (3.5.5.e)
DOES THE TDOT ENVIRONMENTAL BOUNDARIES REPORT SPECIFY SPECIAL NOTES TO BE ADDED TO THE PLAN SHEETS?
☐ YES ☒ NO
IF YES, THEY HAVE BEEN INCLUDED ON PLAN SHEET(S) _____.

4.7. ENVIRONMENTAL COMMITMENTS
ARE THERE ANY NOTES ON THE ENVIRONMENTAL COMMITMENT SHEET?
☐ YES ☒ NO
IF YES, THEY HAVE BEEN INCLUDED ON PLAN SHEET(S) _____.

5. EROSION PREVENTION AND SEDIMENT CONTROL (EPSC) MEASURES (3.5.3)

5.1. EPSC MEASURES MUST BE DESIGNED, INSTALLED AND MAINTAINED TO CONTROL STORMWATER VOLUME AND VELOCITY WITHIN THE SITE TO MINIMIZE EROSION (4.1.1).

5.2. EPSC MEASURES MUST CONTROL STORMWATER DISCHARGES, INCLUDING BOTH PEAK FLOWS AND TOTAL STORMWATER VOLUME, TO MINIMIZE EROSION AT OUTLETS, STREAM CHANNELS, AND STREAM BANKS. (4.1.1)

5.3. HAVE THE CONTROL MEASURES BEEN DESIGNED PER THE SIZE AND SLOPE OF THE DISTURBED DRAINAGE AREA (3.5.3.3)?
☒YES ☐ NO

5.4. THE CONTROL MEASURES HAVE, AT A MINIMUM, BEEN DESIGNED FOR THE 2-YEAR, 24 HOUR STORM EVENT (3.5.3.3, 5.4.1.a).

5.5. ARE THE LIMITS OF DISTURBANCE CLEARLY MARKED ON THE EPSC PLANS (3.5.1.h)? ☒ YES ☐ NO

5.6. AREAS TO BE UNDISTURBED SHALL BE CLEARLY MARKED IN THE FIELD BEFORE CONSTRUCTION ACTIVITIES BEGIN.

5.7. UNLESS OTHERWISE NOTED IN THE PLANS, THE CONTRACTOR SHALL NOT CLEAR/DISTURB ANY AREA BEYOND 15 FEET FROM SLOPE LINES OR ROW/ EASEMENT LINE, WHICHEVER IS LESSER.

5.8. CLEARING, GRUBBING, AND OTHER DISTURBANCE TO RIPARIAN VEGETATION SHALL BE LIMITED TO THE MINIMUM NECESSARY FOR SLOPE CONSTRUCTION AND EQUIPMENT OPERATIONS. EXISTING VEGETATION, INCLUDING STREAM AND WETLAND BUFFERS (UNLESS PERMITTED), SHOULD BE PRESERVED TO THE MAXIMUM EXTENT POSSIBLE. UNNECESSARY VEGETATION REMOVAL IS PROHIBITED.

5.9. HAVE STAGED EPSC PLANS BEEN PREPARED FOR THE PROJECT (3.5.2)?
YES ☒ NO ☐ (IF YES, CHECK ONE BELOW)

5.9.1. ☐ PROJECT DISTURBED AREA IS THAN LESS THAN 5 ACRES (MINIMUM OF TWO STAGES OF EPSC PLANS)

5.9.2. ☒ PROJECT DISTURBED AREA IS GREATER THAN 5 ACRES (MINIMUM OF THREE STAGES OF EPSC PLANS)

5.10. STEEP SLOPES ARE DEFINED AS A NATURAL OR CREATED SLOPE OF 35% GRADE OR GREATER REGARDLESS OF HEIGHT. HAVE STEEP SLOPES BEEN MINIMALLY DISTURBED AND/OR PROTECTED BY CONVEYING RUNOFF NON-EROSIVELY AROUND OR OVER THE SLOPE (3.5.3.2) (10. "STEEP SLOPE")? ☒ YES ☐ NO ☐ N/A

5.11. THE STRUCTURAL EPSC MEASURES HAVE BEEN INCLUDED IN THE TOTAL PROJECT IMPACTS AND HAVE BEEN INCLUDED IN THE AQUATIC RESOURCE ALTERATION (ARAP) PERMIT OR SECTION 401 CERTIFICATION (3.5.1.j). REFER TO THE LIST OF APPLICABLE ENVIRONMENTAL PERMITS LOCATED ON SWPPP SHEET S-7. ALL PERMITS WILL BE MAINTAINED ON SITE WITHIN THE "DOCUMENTATION AND PERMITS" BINDER.

5.12. THE EPSC CONTROL MEASURES LISTED IN THE QUANTITIES TABLE ON SHEET NS-2 HAVE BEEN SELECTED IN ACCORDANCE WITH TDOT STANDARD DRAWINGS AND GOOD ENGINEERING PRACTICES (3.5.3.1.b).

5.13. EPSC MEASURES SHALL BE INSTALLED PER TDOT STANDARDS (i.e. STANDARD DRAWINGS) AND SHALL BE FUNCTIONAL PRIOR TO ANY EARTH MOVING OPERATIONS.

5.14. EPSC MEASURES WILL NOT BE INSTALLED WITHIN A STREAM WITHOUT FIRST OBTAINING APPROVAL FROM THE PERMITS SECTION.

5.15. TEMPORARY EPSC MEASURES MAY BE REMOVED AT THE BEGINNING OF THE WORKDAY, BUT MUST BE REINSTALLED AT THE END OF THE WORKDAY OR BEFORE A PRECIPITATION EVENT.

5.16. EPSC MEASURES LOCATED IN WOTUS (EPHEMERAL STREAMS) MUST BE CONSIDERED TEMPORARY AND SHALL BE REMOVED AT THE END OF CONSTRUCTION.

5.17. THE CONTRACTOR SHALL ESTABLISH AND MAINTAIN A PROACTIVE METHOD TO PREVENT THE OFF-SITE MIGRATION OR DEPOSIT OF SEDIMENT OFF THE PROJECT LIMITS (E.G. R.O.W., EASEMENTS, ETC.), INTO WATERS OF THE STATE/U.S., OR ONTO ROADWAYS USED BY THE PUBLIC. IF SEDIMENT ESCAPES THE CONSTRUCTION SITE, OFF-SITE ACCUMULATIONS OF SEDIMENT THAT HAVE NOT REACHED A STREAM MUST BE REMOVED TO A LEVEL SUFFICIENT TO MINIMIZE OFF-SITE IMPACTS (E.G., FUGITIVE SEDIMENT THAT HAS ESCAPED THE CONSTRUCTION SITE AND HAS COLLECTED IN A STREET MUST BE REMOVED SO THAT IT IS NOT SUBSEQUENTLY WASHED INTO STORM SEWERS AND STREAMS BY THE NEXT RAIN AND/OR SO THAT IT DOES NOT POSE A SAFETY HAZARD TO USERS OF PUBLIC STREETS). ARRANGEMENTS CONCERNING REMOVAL OF SEDIMENT ON ADJOINING PROPERTY MUST BE SETTLED WITH THE ADJOINING PROPERTY OWNER BEFORE REMOVAL OF SEDIMENT. SEDIMENT THAT MIGRATES INTO WATERS OF THE STATE/US SHALL NOT BE REMOVED WITHOUT GUIDANCE FROM TDOT ENVIRONMENTAL PERSONNEL.

5.18. OFFSITE VEHICLE TRACKING OF SEDIMENTS AND THE GENERATION OF DUST SHALL BE MINIMIZED. A STABILIZED CONSTRUCTION EXIT (A POINT OF ENTRANCE/EXIT TO THE CONSTRUCTION PROJECT) SHALL BE PROVIDED TO REDUCE THE TRACKING OF MUD AND DIRT ONTO PUBLIC ROADS BY CONSTRUCTION VEHICLES.

5.19. THE QUANTITIES REQUIRED FOR STABILIZED CONSTRUCTION EXITS PER TDOT STANDARDS HAVE BEEN SPECIFIED ON SHEET NS-2 (3.5.3.1.n).

5.20. DISCHARGES FROM DEWATERING ACTIVITIES ARE PROHIBITED UNLESS MANAGED BY APPROPRIATE CONTROLS THAT PROVIDE THE LEVEL OF TREATMENT (FILTRATION) NECESSARY TO COMPLY WITH PERMIT REQUIREMENTS. (4.1.4).

5.21. SETTLING BASINS AND SEDIMENT TRAPS SHALL BE PROPERLY DESIGNED PER THE SIZE OF THE DRAINAGE AREAS OR VOLUME OF WATER TO BE TREATED. TREATED WATER MUST BE DISCHARGED THROUGH A PIPE OR WELL VEGETATED OR LINED CHANNEL, SO THAT THE DISCHARGE DOES NOT CAUSE EROSION OR SEDIMENT TRANSPORT.

5.22. DISCHARGES FROM SEDIMENT BASINS AND IMPOUNDMENTS SHALL UTILIZE OUTLET STRUCTURES THAT ONLY WITHDRAW WATER FROM NEAR THE SURFACE OF THE BASIN OR IMPOUNDMENT. TREATED WATER MUST BE DISCHARGED THROUGH A PIPE, WELL- VEGETATED AND/OR LINED CHANNEL, SO THAT THE DISCHARGE DOES NOT CAUSE EROSION OR SEDIMENT TRANSPORT. (4.1.7).

5.23. THE DEWATERING OF WORK AREAS, TRENCHES, FOUNDATIONS, EXCAVATIONS, ETC. THAT HAVE COLLECTED STORMWATER, WATER FROM VEHICLE WASH AREAS, OR GROUNDWATER SHALL BE EITHER HELD IN SETTLING BASINS OR TREATED BY FILTRATION AND/OR CHEMICAL TREATMENT PRIOR TO ITS DISCHARGE. ALL CHEMICAL TREATMENTS MUST BE APPLIED PER SECTION 6 FLOCCULANTS.

5.24. WATER DISCHARGED FROM DEWATERING ACTIVITIES SHALL NOT CAUSE AN OBJECTIONABLE COLOR CONTRAST WITHIN THE RECEIVING NATURAL RESOURCE. WATER MUST BE HELD WITHIN SETTLING BASINS UNTIL IT IS AT LEAST AS CLEAR AS THE RECEIVING WATERS.

5.25. DEWATERING STRUCTURES, SEDIMENT FILTER BAGS, SEDIMENT BASINS AND TRAPS SHALL NOT BE LOCATED CLOSER THAN 30 FEET (60 FEET DESIRABLE VEGETATIVE BUFFER) FOR WATERS WITH UNAVAILABLE PARAMETERS AND EXCEPTIONAL TENNESSEE WATERS AND 15 FEET (30 FEET DESIRABLE VEGETATIVE BUFFER) FOR ALL OTHER FEATURES FROM THE TOP BANK OF A STREAM, WOTUS (EPHEMERAL), WETLAND OR OTHER NATURAL RESOURCE AND SHALL BE PROPERLY DESIGNED PER THE SIZE OF THE DRAINAGE AREAS OR VOLUME OF WATER TO BE TREATED.

5.26. STABILIZATION PRACTICES: PRE-CONSTRUCTION VEGETATIVE COVER WILL NOT BE DESTROYED, REMOVED OR DISTURBED MORE THAN 14 DAYS PRIOR TO GRADING OR EARTH MOVING UNLESS THE AREA WILL BE SEEDED AND/OR MULCHED OR OTHER TEMPORARY COVER IS INSTALLED (3.5.3.1.h).

5.27. STABILIZATION MEASURES WILL BE INITIATED AS SOON AS POSSIBLE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED. TEMPORARY OR PERMANENT STABILIZATION WILL BE COMPLETED WITHIN 14 DAYS AFTER ACTIVITY HAS TEMPORARILY OR PERMANENTLY CEASED IN THAT AREA. PERMANENT STABILIZATION WILL REPLACE TEMPORARY MEASURES AS SOON AS PRACTICABLE (3.5.3.2).

5.28. PRIORITY SHALL BE GIVEN TO FINISHING OPERATIONS AND PERMANENT EPSC MEASURES OVER TEMPORARY EPSC MEASURES ON ALL PROJECTS. UNPACKED GRAVEL CONTAINING FINES (SILT AND CLAY SIZED PARTICLES) OR CRUSHER-RUN WILL NOT BE CONSIDERED A NON-ERODIBLE SURFACE

5.29. DELAYING THE PLANTING OF COVER VEGETATION UNTIL WINTER MONTHS OR DRY MONTHS SHOULD BE AVOIDED, IF POSSIBLE.

5.30. A SOIL ANALYSIS SHALL BE PERFORMED PRIOR TO THE APPLICATION OF FERTILIZERS TO ANY PORTION OF THE STE. SOILS SHOULD BE ANALYZED FOR pH, BUFFER VALUE, PHOSPHOROUS, POTASSIUM, CALCIUM AND MAGNESIUM. SOIL SAMPLES SHOULD BE REPRESENTATIVE OF THE AREA FOR WHICH FERTILIZER WILL BE APPLIED. SAMPLE TYPE SHOULD BE COLLECTED AND ANALYZED IN ACCORDANCE WITH THE UT EXTENSION "SOIL TESTING" BROCHURE PB1061. (4.1.5.)

5.31. FERTILIZERS SHALL BE APPLIED ONLY IN THE AMOUNTS SPECIFIED FROM THE ANALYSES. ONCE APPLIED, FERTILIZERS SHALL BE WORKED INTO THE SOIL TO LIMIT THE EXPOSURE TO STORMWATER.

5.32. STEEP SLOPES SHALL BE TEMPORARILY STABILIZED NOT LATER THAN 7 DAYS AFTER CONSTRUCTION ACTIVITY ON THE SLOPE HAS TEMPORARILY OR PERMANENTLY CEASED. (3.5.3.2).

6. FLOCCULANTS (3.5.3.1.b)

IS ADDITIONAL PHYSICAL OR CHEMICAL TREATMENT OF STORMWATER RUNOFF NECESSARY (5.4.1.a)? ☐ YES ☒ NO

IF YES, THE FOLLOWING NOTES APPLY:

6.1. POLYACRYLAMIDES (PAM) SHALL BE OF THE ANIONIC OR NEUTRALLY CHARGED TYPE ONLY. PAM REQUIREMENTS ARE AS FOLLOWS:

6.1.1. CATIONIC PAM IS NOT ALLOWED BECAUSE OF ITS TOXICITY TO FISH AND AQUATIC LIFE.

6.1.2. ANIONIC AND NEUTRALLY CHARGED PAM SHALL MEET THE EPA AND FDA ACRYLAMIDE MONOMER LIMITS OF EQUAL TO OR LESS THAN 0.05% BY WEIGHT ACRYLAMIDE MONOMER.

6.1.3. ANIONIC AND NEUTRALLY CHARGED PAM SHALL HAVE A DENSITY OF 10% TO 55% BY WEIGHT AND A MOLECULAR WEIGHT OF 16 TO 24 MG/MOLES.

6.1.4. PAM MIXTURES SHALL BE NON-COMBUSTIBLE.

6.1.5. PAM SHALL CONTAIN ONLY MANUFACTURER-RECOMMENDED ADDITIVES.

6.2. ALL PHYSICAL AND/OR CHEMICAL TREATMENT WILL BE RESEARCHED, APPLIED IN ACCORDANCE WITH MANUFACTURE'S GUIDELINES AND FULLY DESCRIBED ON THE EPSC PLANS (3.5.3.1.b).

6.3. FLOCCULANTS SHALL BE HANDLED IN ACCORDANCE WITH ALL OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) MATERIAL SAFETY DATA SHEET (MSDS) REQUIREMENTS AND SHALL BE APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS FOR THE SPECIFIED USE CONFORMING TO ALL FEDERAL, STATE AND LOCAL LAWS, RULES AND REGULATIONS.

6.4. ALL VENDORS AND SUPPLIERS OF FLOCCULANTS SHALL PRESENT OR SUPPLY A WRITTEN TOXICITY REPORT FOR BOTH ACUTE AND CHRONIC TOXICITY TESTS WHICH VERIFIES THAT THE FLOCCULANT EXHIBITS ACCEPTABLE TOXICITY PARAMETERS WHICH MEET OR EXCEED THE EPA REQUIREMENTS FOR THE STATE AND FEDERAL WATER QUALITY STANDARDS. WHOLE EFFLUENT TESTING DOES NOT MEET THIS REQUIREMENT AS PRIMARY REACTIONS HAVE OCCURRED AND TOXIC POTENTIALS HAVE BEEN REDUCED.

6.5. DO NOT APPLY FLOCCULANTS DIRECTLY TO, OR WITHIN 60 FEET, OF ANY STREAMS, WETLANDS, OR OTHER NATURAL WATER RESOURCE LOCATED ON OR ADJACENT TO THE CONSTRUCTION SITE. DO NOT APPLY FLOCCULANTS DIRECTLY INTO WATERS CONTAINED WITHIN SEDIMENT PONDS OR TO SLOPES THAT PRODUCE RUNOFF DIRECTLY INTO A STREAM, WETLAND, OR OTHER NATURAL WATER RESOURCE. DO NOT APPLY FLOCCULANTS IMMEDIATELY AT A STORMWATER OUTFALL WHERE RUNOFF LEAVES THE PROJECT LIMITS.

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6.6. BEFORE FLOCCULANTS CAN BE USED ON A CONSTRUCTION PROJECT, SITE-SPECIFIC SOIL SAMPLES MUST BE OBTAINED AND TESTED BY THE MANUFACTURER OR THEIR REPRESENTATIVE, TO IDENTIFY THE OPTIMUM FLOCCULANT TYPE AND APPLICATION RATE. SINCE FLOCCULANT EFFICACY IS HIGHLY DEPENDENT ON SOIL TYPE, SOIL SAMPLES WILL NEED TO BE OBTAINED FROM EACH SOIL HORIZON THAT WILL BE ACCESSED DURING EXCAVATION. FLOCCULANTS SHOULD BE APPLIED ON A CONSTRUCTION SITE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDED APPLICATION OR DOSAGE RATE. APPLICATION METHOD SHALL ENSURE UNIFORM COVERAGE TO THE TARGET AREA. DO NOT APPLY EMULSION FORMS OF FLOCCULANTS DIRECTLY TO STORMWATER RUNOFF OR TO STREAMS, WETLANDS, OR OTHER WATER RESOURCES DUE TO SURFACTANT TOXICITY.

6.7. FLOCCULANT POWDER MAY BE APPLIED BY A HAND SPREADER OR A MECHANICAL SPREADER. IF APPROVED BY THE MANUFACTURER, FLOCCULANT MAY BE MIXED WITH DRY SILICA SAND, FERTILIZER, SEED, OR OTHER SOIL AMENDMENTS TO AID IN SPREADING. FLOCCULANTS MAY ALSO BE APPLIED WITH A WATER TRUCK OR AS PART OF HYDRO-SEEDING. APPLICATION METHOD SHALL ENSURE UNIFORM COVERAGE TO THE TARGET AREA.

6.8. MANUFACTURER'S GUIDANCE SHOULD BE FOLLOWED FOR BLOCK, LOG AND SOCK SPACING CONFIGURATIONS. BEFORE FLOCCULANTS CAN BE USED ON A CONSTRUCTION PROJECT, SITE-SPECIFIC SOIL SAMPLES MUST BE OBTAINED AND TESTED BY THE MANUFACTURER OR THEIR REPRESENTATIVE, TO IDENTIFY THE OPTIMUM FLOCCULANT TYPE AND APPLICATION RATE. SINCE FLOCCULANT EFFICACY IS HIGHLY DEPENDENT ON SOIL TYPE, SOIL SAMPLES WILL NEED TO BE OBTAINED FROM EACH SOIL HORIZON THAT WILL BE ACCESSED DURING EXCAVATION. FLOCCULANTS SHOULD BE APPLIED ON A CONSTRUCTION SITE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDED APPLICATION OR DOSAGE RATE.

7. UTILITY RELOCATION

ARE UTILITIES INCLUDED IN THE CONTRACT? ☐ YES ☒ NO

IF YES, THE FOLLOWING APPLY:

7.1. STORMWATER WHICH COLLECTS IN THE UTILITY TRENCH SHALL BE PUMPED INTO A DEWATERING STRUCTURE OR SEDIMENT FILTER BAG AND TREATED PRIOR TO DISCHARGE.

7.2. SILT FENCE SHALL BE INSTALLED ON THE DOWNGRADIENT SIDE OF STOCKPILED SOIL. ANY TRENCHING ACROSS WET WEATHER CONVEYANCES SHALL BE DONE DURING DRY CONDITIONS, REMOVED AND STABILIZED BY THE END OF THE WORK DAY.

7.3. UTILITY CROSSINGS IN ENVIRONMENTAL FEATURES SHALL BE CONSTRUCTED IN ACCORDANCE WITH TDOT STANDARDS AND NO WORK SHALL BE CONDUCTED IN FLOWING WATERS. ENVIRONMENTAL PERMITS APPLY TO UTILITIES IN THIS PROJECT. THE STATE CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS OF THE PERMITS.

7.4. IT IS THE RESPONSIBILITY OF THE STATE UTILITY CONTRACTOR TO PROTECT EXPOSED EARTH FROM EROSION AND TO PROVIDE FOR CONTAINMENT OF SEDIMENT THAT MAY RESULT FROM THEIR WORK. PRIOR TO BEGINNING WORK, ADEQUATE EPSC MEASURES MUST BE IN PLACE TO TRAP ANY SEDIMENT THAT MAY TRAVEL OFF-SITE IN THE EVENT OF RAIN. DURING THE PROGRESSION OF THEIR WORK, EXPOSED EARTH AREAS SHALL BE STABILIZED AS SOON AS POSSIBLE TO PREVENT EROSION. AT NO TIME, SHALL EXPOSED EARTH RESULTING FROM THEIR OPERATIONS HAVE UNPROTECTED ACCESS TO FLOWING OFF-SITE AND ENTERING WATERS OF THE STATE/U.S.

7.5. FOR THE INSTALLATION OF BURIED UTILITIES (PIPES AND CABLES), TRENCHES SHALL BE BACKFILLED DAILY AS CONSTRUCTION PROCEEDS. BACKFILLED TRENCHES SHALL BE SEEDED AND MULCHED OR SODDED DAILY IF POSSIBLE, BUT NO LATER THAN FOURTEEN DAYS AFTER BEING BACKFILLED. ANY TEMPORARY SPOILS OF EXCAVATED EARTH SHALL BE LOCATED WITHIN TDOT EPSC MEASURES OR RECEIVE SEPARATE EPSC MEASURES. IF TRENCHES ARE NOT BACKFILLED OVERNIGHT, APPROPRIATE EPSC MEASURES WILL BE INSTALLED BY THE STATE UTILITY CONTRACTOR UNTIL THE TRENCH IS BACKFILLED.

7.6. IN REGARDS TO EPSC, TDEC REGULATIONS APPLY TO THE STATE UTILITY CONTRACTORS ON THIS PROJECT. THE STATE CONTRACTOR IS RESPONSIBLE FOR EPSC MEASURES RELATED TO UTILITY CONSTRUCTION INCLUDED IN THE STATE CONTRACT.

7.7. TRENCHES FORMED FOR THE INSTALLATION OF BURIED UTILITIES MAY CAUSE STORMWATER RUNOFF TO CONCENTRATE AT THE TRENCH LINE. ADDITIONAL EPSC MEASURES MAY BE REQUIRED TO BE INSTALLED AS APPROVED BY THE TDOT PROJECT ENGINEER.

7.8. FOR THE INSTALLATION OF UNDERGROUND UTILITIES OUTSIDE OF THE TDOT RIGHT-OF-WAY, EPSC MEASURES SHALL BE INSTALLED PRIOR TO CLEARING (TRENCHING AND ASSOCIATED BLASTING) IN THOSE AREAS NECESSARY TO PREVENT SEDIMENT FROM LEAVING THE CONSTRUCTION AREA. THESE EPSC MEASURES SHALL REMAIN UNTIL THE BACKFILLED TRENCH IS STABILIZED WITH FINAL VEGETATIVE COVER.

7.9. THE UTILITY CONTRACTOR SHALL RESTORE ALL AFFECTED WET WEATHER CONVEYANCES TO THE EXISTING TOPOGRAPHIC CONDITIONS AS APPROVED BY THE TDOT RESPONSIBLE PARTY.

7.10. THE UTILITY CONTRACTOR WILL PROVIDE APPROPRIATE EPSC MEASURES TO REPLACE ONSITE EPSC MEASURES REMOVED TO FACILITATE THE INSTALLATION OF UTILITIES. REPLACEMENT OF EPSC MEASURES WILL BE COORDINATED WITH THE TDOT ENGINEER BEFORE COMMENCING WORK.

7.11. FOR UTILITY CROSSINGS THAT UTILIZE HORIZONTAL DIRECTIONAL DRILLING THE FOLLOWING SHALL APPLY:

7.11.1. THE ENTRY AND EXIT POINTS SHALL BE AT LEAST 50 FEET FROM THE STREAM BANK OR WETLAND BOUNDARY.

7.11.2. THE DEPTH OF BORE BELOW THE STREAMBED IS SUFFICIENT TO PREVENT RELEASE OF DRILLING FLUID, BASED ON THE PARENT MATERIAL.

7.11.3. A SITE-SPECIFIC CONTINGENCY AND CONTAINMENT PLAN FOR INADVERTENT RELEASE OF DRILLING FLUID SHALL BE ESTABLISHED PRIOR TO COMMENCEMENT OF WORK. THIS PLAN SHALL BE SUBMITTED TO THE TDOT PROJECT ENGINEER AND THE TDOT ENVIRONMENTAL DIVISION PERMITS AND/OR COMPLIANCE AND FIELD SERVICES OFFICE FOR REVIEW AND APPROVAL.

8. MAINTENANCE AND INSPECTION

8.1. INSPECTION PRACTICES (3.5.8)

8.1.1. PROJECT EPSC INSPECTORS AND ENGINEERS (INCLUDING TDOT STAFF, CONSULTANTS AND CONTRACTOR STAFF) RESPONSIBLE FOR THE INSPECTION, IMPLEMENTATION, MAINTENANCE. AND/OR REPAIR OF EPSC MEASURES SHALL MEET ONE OF THE FOLLOWING REQUIREMENTS (3.5.8.1.):

8.1.1.1. SUCCESSFULLY COMPLETED THE TDOT EPSC INSPECTIONS TRAINING AND ANY RECERTIFICATION COURSE AS REQUIRED.

8.1.1.2. SUCCESSFULLY COMPLETED THE TDEC "LEVEL I - FUNDAMENTALS OF EROSION PREVENTION AND SEDIMENT CONTROL" COURSE AND ANY RECERTIFICATION COURSES AS REQUIRED.

8.1.1.3. BE A CURRENT TN LICENSED PROFESSIONAL ENGINEER OR LANDSCAPE ARCHITECT.

8.1.1.4. BE A CURRENT CERTIFIED PROFESSIONAL IN EROSION AND SEDIMENT CONTROL (CPESC).

8.1.1.5. SUCCESSFULLY COMPLETED TDEC "LEVEL II – DESIGN PRINCIPLES FOR EROSION PREVENTION AND SEDIMENT CONTROL FOR CONSTRUCTION SITES" COURSE AND ANY RECERTIFICATION COURSE AS REQUIRED.

8.1.2. THE TDOT CONSTRUCTION ENGINEER (OR THEIR DULY AUTHORIZED REPRESENTATIVE) AND THE CONTRACTOR'S SITE SUPERINTENDENT ARE RESPONSIBLE FOR INSPECTIONS. MAINTENANCE AND REPAIR ACTIVITIES ARE THE RESPONSIBILITY OF THE CONTRACTOR. THE TDOT CONSTRUCTION ENGINEER OR THEIR DULY AUTHORIZED REPRESENTATIVE SHALL COMPLETE THE EPSC INSPECTION REPORTS AND DISTRIBUTE COPIES PER THE CONTRACT.

8.1.3. THE INSPECTOR SHALL CONDUCT PRE-CONSTRUCTION INSPECTIONS TO VERIFY AREAS THAT ARE NOT TO BE DISTURBED HAVE BEEN MARKED IN THE SWPPP AND IN THE FIELD BEFORE LAND DISTURBANCE ACTIVITIES BEGIN AND INITIAL MEASURES HAVE BEEN INSTALLED (10 "INSPECTOR") (3.5.1.o).

8.1.4. EPSC CONTROLS SHALL BE INSPECTED TO VERIFY MEASURES HAVE BEEN INSTALLED AND MAINTAINED IN ACCORDANCE WITH TDOT STANDARD DRAWINGS, SPECIFICATIONS, AND GOOD ENGINEERING PRACTICES. EPSC INSPECTIONS SHALL BE DOCUMENTED ON THE TDOT EPSC INSPECTION REPORT FORM AND THE TDEC CONSTRUCTION STORMWATER INSPECTION CERTIFICATION (TWICE-WEEKLY INSPECTIONS) FORM.

8.1.5. OUTFALL POINTS SHALL BE INSPECTED TO ASCERTAIN WHETHER EPSC MEASURES ARE EFFECTIVE IN PREVENTING EROSION AND CONTROLLING SEDIMENT INCLUDING SIGNIFICANT IMPACTS TO SURROUNDING STATE WATERS, WOTUS (EPHEMERAL), WETLANDS, OTHER NATURAL RESOURCES AND ADJACENT PROPERTY OWNERS. WHERE DISCHARGE LOCATIONS ARE INACCESSIBLE, NEARBY DOWN GRADIENT LOCATIONS SHALL BE INSPECTED. LOCATIONS WHERE VEHICLES ENTER AND EXIT THE SITE SHALL BE INSPECTED FOR EVIDENCE OF OFF-SITE ROADWAY SEDIMENT TRACKING.

8.1.6. INSPECTIONS WILL BE CONDUCTED AT LEAST TWICE EVERY CALENDAR WEEK AND AT LEAST 72 HOURS APART (3.5.8.2.a). A CALENDAR WEEK IS DEFINED AS SUNDAY THROUGH SATURDAY. QUALITY ASSURANCE INSPECTIONS OF TDOT EPSC, NPDES AND WATER QUALITY PERMIT REQUIREMENTS SHALL BE PERFORMED PER THE TDOT ENVIRONMENTAL DIVISION COMPLIANCE AND FIELD SERVICES OFFICE.

8.1.7. THE FREQUENCY OF EPSC INSPECTIONS MAY BE REDUCED TO ONCE A MONTH WHERE SITES OR PORTIONS OF SITES HAVE BEEN TEMPORARILY STABILIZED UNTIL CONSTRUCTION ACTIVITIES RESUME WITH WRITTEN NOTIFICATION BY THE TDOT REGIONAL ENGINEER TO TDEC NASHVILLE CENTRAL OFFICE AND SUBSEQUENT TDEC APPROVAL. WRITTEN NOTIFICATION MUST INCLUDE THE INTENT TO CHANGE FREQUENCY AND JUSTIFICATION (3.5.8.2.a).

8.1.8. ALL DISTURBED AREAS OF THE SITE THAT HAVE NOT BEEN FINALLY STABILIZED, AREAS USED FOR MATERIAL STORAGE THAT ARE EXPOSED TO PRECIPITATION, STRUCTURAL CONTROL MEASURES, AND LOCATIONS WHERE VEHICLES ENTER OR EXIT THE SITE, AND EACH OUTFALL WILL BE INSPECTED (3.5.8.2.b).

8.1.9. THE INSPECTOR WILL OVERSEE THE REQUIREMENTS OF OTHER CONSTRUCTION-RELATED WATER QUALITY PERMITS (I.E. TDEC ARAP, USACE SECTION 404, AND TVA SECTION 26a PERMITS) FOR CONSTRUCTION ACTIVITIES AROUND WATERS OF THE STATE (10 "INSPECTOR").

8.1.10. THE SWPPP WILL BE REVISED AS NECESSARY BASED ON THE RESULTS OF THE INSPECTION. REVISION(S) WILL BE RECORDED WITHIN 7 DAYS OF THE INSPECTION. REVISION(S) WILL BE IMPLEMENTED WITHIN 14 DAYS OF THE INSPECTION (3.5.8.2.e AND 3.5.8.2.f).

8.1.11. DOCUMENTATION OF INSPECTIONS WILL BE MAINTAINED ON SITE IN THE "DOCUMENTATION AND PERMITS" BINDER. REPORTS WILL BE SUBMITTED TO THE TDOT PROJECT ENGINEER PER THE CONTRACT.

8.1.12. THESE INSPECTION REQUIREMENTS DO NOT APPLY TO DEFINABLE AREAS OF THE SITE THAT HAVE MET FINAL STABILIZATION REQUIREMENTS AND HAVE BEEN NOTED IN THE SWPPP.

8.1.13. TRAINED CERTIFIED INSPECTORS SHALL COMPLETE INSPECTION TO THE BEST OF THEIR ABILITY. FALSIFYING INSPECTION RECORDS OR OTHER DOCUMENTATION OR FAILURE TO COMPLETE INSPECTION DOCUMENTATION SHALL RESULT IN A VIOLATION OF THIS PERMIT AND ANY OTHER APPLICABLE ACTS OR RULES (3.5.8.2.h).

8.2. DULY AUTHORIZED REPRESENTATIVE (7.7.3)

THE PROJECT ENGINEER MAY DELEGATE AN INDIVIDUAL AND/OR CONSULTANT TO SIGN EPSC INSPECTIONS REPORTS. FOR SATISFYING SIGNATORY REQUIREMENTS FOR EPSC INSPECTION REPORTS, THE PROJECT ENGINEER AND NEWLY AUTHORIZED INDIVIDUAL ACCEPTING RESPONSIBILITY MUST COMPLETE AND SIGN THE TDOT CONSTRUCTION DIVISION EPSC DELEGATION OF AUTHORITY.

8.3. MAINTENANCE PRACTICES (3.5.3.1 AND 3.5.7)

8.3.1. ALL CONTROLS WILL BE MAINTAINED IN GOOD AND EFFECTIVE OPERATING ORDER AND IN ACCORDANCE WITH TDOT STANDARD DRAWINGS AND GOOD ENGINEERING PRACTICES. (3.5.3.1.b)

8.3.2. MAINTENANCE AND REPAIR ACTIVITIES ARE THE RESPONSIBILITY OF THE CONTRACTOR.

8.3.3. UPON CONCLUSION OF THE INSPECTIONS, EPSC MEASURES FOUND TO BE INEFFECTIVE SHALL BE REPAIRED, REPLACED, OR MODIFIED BEFORE THE NEXT RAIN EVENT, IF POSSIBLE, BUT IN NO CASE, MORE THAN 24 HOURS AFTER THE INSPECTION OR WHEN THE CONDITION IS IDENTIFIED. IF THE REPAIR, REPLACEMENT OR MODIFICATION IS NOT PRACTICAL WITHIN THE 24-HOUR TIMEFRAME, WRITTEN DOCUMENTATION PROVIDED BY THE CONTRACTOR SHALL BE PLACED IN THE FIELD DIARY AND EPSC INSPECTION REPORT. AN ESTIMATED REPAIR, REPLACEMENT OR

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MODIFICATION SCHEDULE SHALL BE DOCUMENTED WITHIN 24 HOURS AFTER IDENTIFICATION. (3.5.8.2.e).

8.3.4. SEDIMENT SHALL BE REMOVED FROM SEDIMENT CONTROL STRUCTURES (SEDIMENT TRAPS, SILT FENCE, SEDIMENT BASINS, OTHER CONTROLS, ETC.) WHEN THE DESIGN CAPACITY HAS BEEN REDUCED BY FIFTY PERCENT (50%). (3.5.3.1.e).

8.3.5. DURING SEDIMENT REMOVAL, THE CONTRACTOR SHALL TAKE STEPS TO ENSURE THAT STRUCTURAL COMPONENTS OF EPSC MEASURES ARE NOT DAMAGED AND THUS MADE INEFFECTIVE. IF DAMAGE DOES OCCUR, THE CONTRACTOR SHALL REPAIR THE EPSC MEASURES AT THE CONTRACTOR'S OWN EXPENSE.

8.3.6. CHECK DAMS WILL BE INSPECTED FOR STABILITY. SEDIMENT WILL BE REMOVED WHEN DEPTH REACHES ONE-HALF (½) THE HEIGHT OF THE DAM.

8.3.7. SEDIMENT REMOVED FROM SEDIMENT CONTROL STRUCTURES SHALL BE PLACED AND TREATED IN A MANNER SO THAT THE SEDIMENT IS CONTAINED WITHIN THE PROJECT LIMITS, DOES NOT MIGRATE INTO FEATURES REMOVED FROM, AND DOES NOT MIGRATE ONTO ADJACENT PROPERTIES AND/OR INTO WATERS OF THE STATE/U.S.

8.3.8. LITTER, CONSTRUCTION DEBRIS, AND CONSTRUCTION CHEMICALS EXPOSED TO STORMWATER WILL BE PICKED UP AND REMOVED FROM STORMWATER EXPOSURE PRIOR TO ANTICIPATED STORM EVENTS OR BEFORE BEING CARRIED OFF THE SITE BY WIND, OR OTHERWISE PREVENTED FROM BECOMING A POLLUTANT SOURCE FOR STORMWATER DISCHARGES. AFTER USE, MATERIALS USED FOR EROSION CONTROL WILL BE REMOVED (3.5.3.1.f).

8.3.9. ALL SEEDED AREAS WILL BE CHECKED FOR BARE SPOTS, EROSION WASHOUTS, AND VIGOROUS GROWTH FREE OF SIGNIFICANT WEED INFESTATIONS.

9. SITE ASSESSMENTS (3.1.2)

QUALITY ASSURANCE SITE ASSESSMENTS OF EROSION PREVENTION AND SEDIMENT CONTROLS SHALL BE PERFORMED PER THE TDOT ENVIRONMENTAL DIVISION COMPLIANCE AND FIELD SERVICES OFFICE GUIDELINES.

10. STORMWATER MANAGEMENT (3.5.4)

10.1. STORMWATER MANAGEMENT WILL BE HANDLED BY TEMPORARY CONTROLS OUTLINED IN THIS SWPPP AND ANY PERMANENT CONTROLS NEEDED TO MEET PERMANENT STORMWATER MANAGEMENT NEEDS IN THE POST CONSTRUCTION PERIOD. PERMANENT CONTROLS WILL BE DEPICTED ON THE PLANS AND NOTED AS PERMANENT.

10.2. DESCRIBE ANY SPECIFIC POST-CONSTRUCTION MEASURES THAT WILL CONTROL VELOCITY, POLLUTANTS, AND/OR EROSION (3.5.4): BUFFER PLANTING

10.3. OTHER ITEMS NEEDING CONTROL (3.5.5)

CONSTRUCTION MATERIALS: THE FOLLOWING MATERIALS OR SUBSTANCES ARE EXPECTED TO BE PRESENT ON THE SITE DURING THE CONSTRUCTION PERIOD. (CHECK ALL THAT APPLY).

☐ LUMBER, GUARDRAIL, TRAFFIC CONTROL DEVICES
☐ CONCRETE WASHOUT
☒ PIPE CULVERTS (I.E. CONCRETE, CORRUGATED METAL, HDPE, ETC.)
☐ MINERAL AGGREGATES, ASPHALT
☒ EARTH
☐ LIQUID TRAFFIC STRIPING MATERIALS, PAINT
☒ ROCK
☐ CURING COMPOUND
☐ EXPLOSIVES
☐ OTHER _____

THESE MATERIALS WILL BE HANDLED AS NOTED IN THIS SWPPP.

10.4. WASTE MATERIALS (3.5.5.b)

WASTE MATERIAL (EARTH, ROCK, ASPHALT, CONCRETE, ETC.) NOT REQUIRED FOR THE CONSTRUCTION OF THE PROJECT WILL BE DISPOSED OF BY THE CONTRACTOR IN ACCORDANCE WITH THE TDOT CONSTRUCTION CONTRACT AND FEDERAL AND STATE REGULATIONS. IMPACTS TO WATERS OF THE STATE/U.S. SHALL BE AVOIDED IF POSSIBLE. IF UNAVOIDABLE, THE CONTRACTOR WILL OBTAIN ALL NECESSARY PERMITS INCLUDING, BUT NOT LIMITED TO NPDES, AQUATIC RESOURCES ALTERATION PERMIT(S) CORPS OF ENGINEERS SECTION 404 PERMITS, AND TVA SECTION 26A PERMITS TO DISPOSE OF WASTE MATERIALS.

10.5. HAZARDOUS WASTE (3.5.5.c) (7.9)

ALL HAZARDOUS WASTE MATERIALS WILL BE DISPOSED OF IN A MANNER WHICH IS COMPLIANT WITH LOCAL OR STATE REGULATIONS. SITE PERSONNEL WILL BE INSTRUCTED IN THESE PRACTICES, AND THE INDIVIDUAL DESIGNATED AS THE CONTRACTOR'S ON-SITE REPRESENTATIVE WILL BE RESPONSIBLE FOR SEEING THAT THESE PRACTICES ARE FOLLOWED. THE CONTRACTOR WILL OBTAIN ALL NECESSARY PERMITS TO DISPOSE OF HAZARDOUS MATERIAL.

10.6. SANITARY WASTE (3.5.5.b)

PORTABLE SANITARY FACILITIES WILL BE PROVIDED ON ALL CONSTRUCTION SITES. SANITARY WASTE WILL BE COLLECTED FROM THE PORTABLE UNITS IN A TIMELY MANNER BY A LICENSED WASTE MANAGEMENT CONTRACTOR OR AS REQUIRED BY ANY LOCAL REGULATIONS. THE CONTRACTOR WILL OBTAIN ALL NECESSARY PERMITS TO DISPOSE OF SANITARY WASTE.

10.7. OTHER MATERIALS

THE FOLLOWING MATERIALS OR SUBSTANCES ARE EXPECTED TO BE PRESENT ON THE SITE DURING THE CONSTRUCTION PERIOD. (CHECK ALL THAT APPLY).

☒ FERTILIZERS AND LIME
☒ PESTICIDES AND/OR HERBICIDES
☒ DIESEL AND GASOLINE
☒ MACHINERY LUBRICANTS (OIL AND GREASE)

THESE MATERIALS WILL BE HANDLED AS NOTED IN THIS SWPPP.

11. NON-STORMWATER DISCHARGES (3.5.9)

11.1. THE FOLLOWING NON-STORMWATER DISCHARGES ARE ANTICIPATED DURING THE CONSTRUCTION OF THIS PROJECT (CHECK ALL THAT APPLY):

☒ DEWATERING OF WORK AREAS OF COLLECTED STORMWATER AND GROUND WATER.
☒ WATERS USED TO WASH VEHICLES (OF DUST AND SOIL) WHERE DETERGENTS ARE NOT USED AND DETENTION AND/OR FILTERING IS PROVIDED BEFORE THE WATER LEAVES THE SITE.
☒ WATER USED TO CONTROL DUST. (3.5.3.1.n)
☐ POTABLE WATER SOURCES INCLUDING WATERLINE FLUSHING FROM WHICH CHLORINE HAS BEEN REMOVED TO THE MAXIMUM EXTENT PRACTICABLE.
☒ UNCONTAMINATED GROUNDWATER OR SPRING WATER.
☐ FOUNDATION OR FOOTING DRAINS WHERE FLOWS ARE NOT CONTAMINATED WITH POLLUTANTS.
☐ OTHER: _____

11.2. ALL ALLOWABLE NON-STORMWATER DISCHARGES WILL BE DIRECTED TO STABLE DISCHARGE STRUCTURES PRIOR TO LEAVING THE SITE. FILTERING OR CHEMICAL TREATMENT MAY BE NECESSARY PRIOR TO DISCHARGE. ALL CHEMICAL TREATMENTS MUST BE APPLIED PER SECTION 6 FLOCCULANTS.

11.3. THE DESIGN OF ALL IMPACTED EPSC MEASURES RECEIVING FLOW FROM ALLOWABLE NON-STORMWATER DISCHARGES MUST BE DESIGNED TO HANDLE THE VOLUME OF THE NON-STORMWATER COMPONENT.

11.4. WASH DOWN OR WASTE DISCHARGE OF CONCRETE TRUCKS WILL NOT BE PERMITTED ON-SITE UNLESS PROPER SETTLEMENT AREAS HAVE BEEN PROVIDED IN ACCORDANCE WITH BOTH STATE AND FEDERAL REGULATIONS.

11.5. ARE ANY DISCHARGES ASSOCIATED WITH INDUSTRIAL (NON-CONSTRUCTION STORMWATER) ACTIVITY EXPECTED (3.5.1.i)?

☐ YES ☒ NO

IF YES, SPECIFY THE LOCATION OF THE ACTIVITY AND ITS PERMIT NUMBER: _____

12. SPILL PREVENTION, MANAGEMENT AND NOTIFICATION (3.5.5.c, 5.1)

12.1. SPILL PREVENTION (3.5.5.c)

12.1.1. CONTRACTOR'S BULK FUEL AND PETROLEUM PRODUCTS STORED ON-SITE OR ADJACENT TO THE R.O.W. IN ABOVE GROUND STORAGE TANKS WITH AGGREGATE STORAGE CAPACITY IN EXCESS OF 1,320 GALLONS SHALL HAVE SECONDARY CONTAINMENT.

12.1.2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREPARING A SPILL PREVENTION CONTROL AND COUNTERMEASURE (SPCC) PLAN AS REQUIRED BY TDOT SPECIAL PROVISION 107FP (REGARDING WATER QUALITY AND STORM WATER PERMITS) AND THE LAW.

12.1.3. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR OBTAINING ANY NECESSARY LOCAL, STATE, AND FEDERAL PERMITS. THE SPCC PLAN AND/OR PERMITS SHALL BE KEPT ON-SITE AND A COPY PROVIDED TO THE TDOT CONSTRUCTION ENGINEER.

12.2. MATERIAL MANAGEMENT

12.2.1. HOUSEKEEPING

ONLY NEEDED PRODUCTS WILL BE STORED ON-SITE BY THE CONTRACTOR. EXCEPT FOR BULK MATERIALS THE CONTRACTOR WILL STORE ALL MATERIALS UNDER COVER AND IN APPROPRIATE CONTAINERS. PRODUCTS MUST BE STORED IN ORIGINAL CONTAINERS AND LABELED. MATERIAL MIXING WILL BE CONDUCTED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. WHEN POSSIBLE, ALL PRODUCTS WILL BE USED COMPLETELY BEFORE PROPERLY DISPOSING OF THE CONTAINER OFF SITE. THE MANUFACTURER'S DIRECTIONS FOR DISPOSAL OF MATERIALS AND CONTAINERS WILL BE FOLLOWED. THE CONTRACTOR'S SITE SUPERINTENDENT WILL INSPECT MATERIALS STORAGE AREAS REGULARLY TO ENSURE PROPER USE AND DISPOSAL. DUST GENERATED WILL BE CONTROLLED IN AN ENVIRONMENTALLY SAFE MANNER. VEGETATION AREAS NOT ESSENTIAL TO THE CONSTRUCTION PROJECT WILL BE PRESERVED AND MAINTAINED AS NOTED ON THE PLANS.

12.2.2. HAZARDOUS MATERIALS

PRODUCTS WILL BE KEPT IN ORIGINAL CONTAINERS UNLESS THE CONTAINER IS NOT RE-SEALABLE. ORIGINAL LABELS AND MATERIAL SAFETY DATA SHEETS WILL BE RETAINED IN A SAFE PLACE TO RELAY IMPORTANT PRODUCT INFORMATION. IF SURPLUS PRODUCT MUST BE DISPOSED OF, MANUFACTURER'S LABEL DIRECTIONS FOR DISPOSAL WILL BE FOLLOWED. MAINTENANCE AND REPAIR OF ALL EQUIPMENT AND VEHICLES INVOLVING OIL CHANGES, HYDRAULIC SYSTEM DRAIN DOWN, DE-GREASING OPERATIONS, FUEL TANK DRAIN DOWN AND REMOVAL, AND OTHER ACTIVITIES WHICH MAY RESULT IN THE ACCIDENTAL RELEASE OF CONTAMINANTS WILL BE CONDUCTED ON AN IMPERVIOUS SURFACE AND UNDER COVER DURING WET WEATHER TO PREVENT THE RELEASE OF CONTAMINANTS ONTO THE GROUND. WHEEL WASH WATER WILL BE COLLECTED AND ALLOWED TO SETTLE OUT SUSPENDED SOLIDS PRIOR TO DISCHARGE. WHEEL WASH WATER WILL NOT BE DISCHARGED DIRECTLY INTO ANY STORMWATER SYSTEM OR STORMWATER TREATMENT SYSTEM. POTENTIAL pH-MODIFYING MATERIALS SUCH AS: BULK CEMENT, CEMENT KILN DUST, FLY ASH, NEW CONCRETE WASHINGS AND CURING WATERS, CONCRETE PUMPING, AND MIXER WASHOUT WATERS WILL BE COLLECTED ON SITE AND MANAGED TO PREVENT CONTAMINATION OF STORMWATER RUNOFF.

12.3. PRODUCT SPECIFIC PRACTICES

12.3.1. PETROLEUM PRODUCTS: ALL ON-SITE VEHICLES WILL BE MONITORED FOR LEAKS AND RECEIVE REGULAR PREVENTIVE MAINTENANCE TO REDUCE THE CHANCE OF LEAKAGE. PETROLEUM PRODUCTS WILL BE STORED IN TIGHTLY SEALED CONTAINERS WHICH ARE CLEARLY LABELED.

12.3.2. FERTILIZERS: FERTILIZERS WILL BE APPLIED ONLY IN THE AMOUNTS SPECIFIED BY THE SOIL ANALYSIS OR TDOT. ONCE APPLIED, FERTILIZERS WILL BE WORKED INTO THE SOIL TO LIMIT THE EXPOSURE TO STORMWATER. FERTILIZERS WILL BE STORED IN AN ENCLOSED AREA UNDER COVER. THE CONTENTS OF PARTIALLY USED FERTILIZER BAGS WILL BE TRANSFERRED TO SEALABLE CONTAINERS TO AVOID SPILLS.

12.3.3. PAINTS: ALL CONTAINERS WILL BE TIGHTLY SEALED AND STORED WHEN NOT REQUIRED FOR USE. THE EXCESS WILL BE DISPOSED OF PER THE MANUFACTURER'S INSTRUCTIONS AND APPLICABLE STATE AND LOCAL REGULATIONS.

12.3.4. CONCRETE TRUCKS: CONTRACTORS WILL PROVIDE DESIGNATED TRUCK WASHOUT AREAS ON THE SITE. THESE AREAS MUST BE SELF CONTAINED AND NOT CONNECTED TO ANY STORMWATER

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OUTLET OF THE SITE. UPON COMPLETION OF CONSTRUCTION WASHOUT AREAS WILL BE PROPERLY STABILIZED.

12.4. SPILL MANAGEMENT

IN ADDITION TO THE PREVIOUS HOUSEKEEPING AND MANAGEMENT PRACTICES, THE FOLLOWING PRACTICES WILL BE FOLLOWED FOR SPILL PREVENTION AND CLEANUP IF NECESSARY:

12.4.1. FOR ALL HAZARDOUS MATERIALS STORED ON SITE, THE MANUFACTURER'S RECOMMENDED METHODS FOR SPILL CLEAN UP WILL BE CLEARLY POSTED. SITE PERSONNEL WILL BE MADE AWARE OF THE PROCEDURES AND THE LOCATIONS OF THE INFORMATION AND CLEANUP SUPPLIES.

12.4.2. APPROPRIATE CLEANUP MATERIALS AND EQUIPMENT WILL BE MAINTAINED BY THE CONTRACTOR IN THE MATERIALS STORAGE AREA ON-SITE AND UNDER COVER. AS APPROPRIATE, EQUIPMENT AND MATERIALS MAY INCLUDE ITEMS SUCH AS BOOMS, DUST PANS, MOPS, RAGS, GLOVES, GOGGLES, KITTY LITTER, SAND, SAWDUST, AND PLASTIC AND METAL TRASH CONTAINERS SPECIFICALLY FOR CLEAN UP PURPOSES.

12.4.3. ALL SPILLS WILL BE CLEANED IMMEDIATELY AFTER DISCOVERY AND THE MATERIALS DISPOSED OF PROPERLY. THE SPILL AREA WILL BE KEPT WELL VENTILATED AND PERSONNEL WILL WEAR APPROPRIATE PROTECTIVE CLOTHING TO PREVENT INJURY FROM CONTACT WITH A HAZARDOUS SUBSTANCE.

12.4.4. THE CONTRACTOR'S RESPONSIBLE PARTY WILL BE THE SPILL PREVENTION AND CLEANUP COORDINATOR. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT THE SITE SUPERINTENDENT HAS HAD APPROPRIATE TRAINING FOR HAZARDOUS MATERIALS HANDLING, SPILL MANAGEMENT, AND CLEANUP.

12.4.5. IF SPILLS REPRESENT AN IMMINENT THREAT OF ESCAPING THE SITE AND ENTERING RECEIVING WATERS, PERSONNEL WILL RESPOND IMMEDIATELY TO CONTAIN THE RELEASE AND NOTIFY THE SUPERINTENDENT AFTER THE SITUATION HAS BEEN STABILIZED.

12.4.6. IF AN OIL SHEEN IS OBSERVED ON SURFACE WATER (E.G. SETTLING PONDS, DETENTION PONDS, SWALES), ACTION WILL BE TAKEN IMMEDIATELY TO REMOVE THE MATERIAL CAUSING THE SHEEN. THE CONTRACTOR WILL USE APPROPRIATE MATERIALS TO CONTAIN AND ABSORB THE SPILL. THE SOURCE OF THE OIL SHEEN WILL ALSO BE IDENTIFIED AND REMOVED OR REPAIRED AS NECESSARY TO PREVENT FURTHER RELEASES.

12.4.7. IF A SPILL OCCURS THE CONTRACTOR'S SITE SUPERINTENDENT SHALL BE RESPONSIBLE FOR COMPLETING THE SPILL REPORTING FORM AND FOR REPORTING THE SPILL TO THE TDOT CONSTRUCTION ENGINEER AND/OR PROJECT ENGINEER. ALL SPILLS MUST BE REPORTED TO THE APPROPRIATE AGENCY, AND MEASURES SHALL BE TAKEN IMMEDIATELY TO PREVENT THE POLLUTION OF WATERS OF THE STATE/U.S., INCLUDING GROUNDWATER, SHOULD A SPILL OCCUR.

12.4.8. APPROPRIATE CLEANUP MATERIALS AND EQUIPMENT SHALL BE MAINTAINED BY THE CONTRACTOR IN THE MATERIALS STORAGE AREA ON-SITE AND UNDER COVER. SPILL RESPONSE EQUIPMENT SHALL BE INSPECTED AND MAINTAINED BY THE CONTRACTOR AS NECESSARY TO REPLACE ANY MATERIALS USED IN SPILL RESPONSE ACTIVITIES.

12.5. SPILL NOTIFICATION (5.1)

WHERE A RELEASE CONTAINING A HAZARDOUS SUBSTANCE IN AN AMOUNT EQUAL TO, OR MORE THAN A REPORTABLE QUANTITY ESTABLISHED UNDER EITHER 40 CFR 117 OR 40 CFR 302 OCCURS DURING A 24 HOUR PERIOD:

12.5.1. THE TDOT PROJECT ENGINEER IS RESPONSIBLE FOR NOTIFYING THE REGIONAL PROJECT DEVELOPMENT OFFICE (E.G. TRANSPORTATION ENVIRONMENTAL STUDIES SPECIALIST) AS SOON AS HE OR SHE HAS KNOWLEDGE OF THE DISCHARGE.

12.5.2. THE TDOT REGIONAL PROJECT DEVELOPMENT OFFICE WILL NOTIFY THE LOCAL TDEC ENVIRONMENTAL FIELD OFFICE AND ANY OTHER APPLICABLE REGULATORY AGENCIES WITHIN 24 HOURS OF THE SPILL.

12.5.3. IN ADDITION TO ANY FOLLOW UP NOTIFICATIONS REQUIRED BY FEDERAL LAW, A WRITTEN DESCRIPTION OF THE RELEASE, DATE OF RELEASE AND CIRCUMSTANCES LEADING TO THE RELEASE, WHAT ACTIONS WERE TAKEN TO MITIGATE EFFECTS OF THE RELEASE, AND STEPS TAKEN TO MINIMIZE THE CHANCE OF FUTURE OCCURRENCES WILL BE SUBMITTED TO THE APPROPRIATE TDEC ENVIRONMENTAL FIELD OFFICE WITHIN 14 DAYS OF KNOWLEDGE OF THE RELEASE.

12.5.4. THE SWPPP MUST BE MODIFIED WITHIN 14 DAYS OF KNOWLEDGE OF THE RELEASE PROVIDING A DESCRIPTION OF THE RELEASE, CIRCUMSTANCES LEADING TO THE RELEASE, AND THE DATE OF RELEASE. THE SWPPP WILL BE REVIEWED AND MODIFIED AS NECESSARY TO IDENTIFY MEASURES TO PREVENT THE REOCCURRENCE OF SUCH RELEASES AND TO RESPOND TO SUCH RELEASES.

13. RECORD-KEEPING

13.1. REQUIRED RECORDS

TDOT OR THEIR DULY AUTHORIZED REPRESENTATIVE WILL MAINTAIN AT THE SITE THE FOLLOWING RECORDS OF CONSTRUCTION ACTIVITIES (3.5.3.1.m) (4.1.5.) (6.2.1):

13.1.1. THE DATES WHEN MAJOR GRADING ACTIVITIES OCCUR.

13.1.2. THE DATES WHEN CONSTRUCTION ACTIVITIES TEMPORARILY OR PERMANENTLY CEASE ON A PORTION OF THE SITE.

13.1.3. THE DATES WHEN STABILIZATION MEASURES ARE INITIATED.

13.1.4. RECORDS EPSC INSPECTION REPORTS AND CORRECTIVE MEASURES.

13.1.5. RECORDS OF QUALITY ASSURANCE SITE ASSESSMENTS.

13.1.6. COPY OF SITE EPSC INSPECTOR'S CERTIFICATION AND/OR LICENSING

13.1.7. COPY OF REQUIRED SOIL ANALYSIS

13.1.8. A COPY OF ANY REGULATORY CORRESPONDENCE REGARDING THE EFFECTIVENESS OF THE *SWPPP* OR EPSC CONTROLS.

13.2. RAINFALL MONITORING PLAN (3.5.3.1.o):

13.2.1. EQUIPMENT

AT A MINIMUM, THE CONTRACTOR WILL INSTALL A FENCE POST TYPE RAIN GAUGE TO MEASURE RAINFALL. THE STANDARD FENCE POST RAIN GAUGE WILL BE A WEDGE-SHAPED GAUGE THAT MEASURES UP TO 6 INCHES OF RAINFALL. AN ENGLISH SCALE WILL BE PROVIDED ON ONE FACE, WITH A METRIC SCALE ON THE OTHER FACE. GRADUATION WILL BE PERMANENTLY MOLDED IN DURABLE WEATHER-RESISTANT PLASTIC. THE MINIMUM GRADUATION WILL BE 0.01 INCH (OR 0.1MM). AN ALUMINUM BRACKET WITH SCREWS MAY BE USED TO MOUNT THE GAUGE ON A WOODEN SUPPORT.

13.2.2. LOCATION

THE RAIN GAUGE WILL BE LOCATED AT OR ALONG THE PROJECT SITE, AS DEFINED IN THE NOI OF THE NPDES PERMIT, IN AN OPEN AREA SUCH THAT THE MEASUREMENT WILL NOT BE INFLUENCED BY OUTSIDE FACTORS (I.E. OVERHANGS, GUTTER, TREES, ETC.). AT LEAST ONE RAIN GAUGE PER LINEAR MILE IS REQUIRED ALONG (AS MEASURED ALONG THE CENTERLINE OF THE PRIMARY ALIGNMENT) THE PROJECT WHERE CLEARING, GRUBBING, EXCAVATION, GRADING, CUTTING OR FILLING IS ACTIVELY PERFORMED, OR EXPOSED SOIL HAS NOT YET BEEN PERMANENTLY STABILIZED.

13.2.3. METHODS

RAINFALL MONITORING WILL BE INITIATED PRIOR TO CLEARING, GRUBBING, EXCAVATION, GRADING, CUTTING, OR FILLING, EXCEPT AS SUCH MINIMAL CLEARING MAY BE NECESSARY TO INSTALL A RAIN GAUGE IN AN OPEN AREA. THE RAIN GAUGE WILL BE CHECKED FOR OPERATIONAL SOUNDNESS DAILY (DURING NORMAL BUSINESS HOURS) IN WET TIMES AND WEEKLY IN DRY TIMES. GAUGES WILL BE REPAIRED OR REPLACED ON THE SAME DAY IF FOUND TO BE NON-OPERATIONAL OR MISSING.

13.2.4. EACH RAIN GAUGE WILL BE READ (FOR DETAILED RECORDS OF RAINFALL) AND EMPTIED AFTER EVERY RAINFALL EVENT OCCURRING ON THE PROJECT SITE AT APPROXIMATELY THE SAME TIME OF THE DAY (DURING NORMAL BUSINESS HOURS). DURING PERIODS OF DRY CONDITIONS, IT WILL NOT BE NECESSARY TO READ THE RAIN GAUGE EVERY DAY. IN LIEU OF THIS REQUIREMENT ON WEEKENDS AND ON STATE HOLIDAYS, THE RAIN GAUGES CAN BE EMPTIED THE NEXT BUSINESS DAY AND A REFERENCE SITE USED FOR A RECORD OF DAILY AMOUNT OF PRECIPITATION FOR THOSE DAYS. A REFERENCE SITE IS THE DOCUMENTATION FROM THE CLOSEST GAUGE WITHIN PROXIMITY OF THE PROJECT FROM A RECOGNIZED SOURCE SUCH AS THE NOAA NATIONAL WEATHER SERVICE.

13.2.5. DETAILED RECORDS WILL BE RECORDED OF RAINFALL EVENTS INCLUDE DATES, AMOUNTS OF RAINFALL, AND THE APPROXIMATE DURATION (OR THE STARTING AND ENDING TIMES). THE RAINFALL RECORDS SHALL BE RECORDED ON THE TDOT RAINFALL RECORD SHEET AND SHALL BE MAINTAINED IN THE "DOCUMENTATION AND PERMITS" BINDER.

13.2.6. IF THE RAINFALL EVENT IS STILL IN PROGRESS AT THE DAILY RECORDING TIME, THE GAUGE WILL BE EMPTIED AND THE RECORD WILL INDICATE THAT THE STORM EVENT WAS STILL IN PROGRESS.

13.2.7. RAIN GAUGE INFORMATION (DETAILED RECORDS), INCLUDING THE LOCATION OF THE NEAREST OUTFALL, WILL BE RECORDED ON THE EPSC INSPECTION REPORT FORMS AT THE TIME OF MEASUREMENT.

13.3. KEEPING PLANS CURRENT (3.4)

13.3.1. THE EPSC PLAN IS TO SERVE AS AN INITIAL GUIDE FOR SITE PERSONNEL AS THE CONSTRUCTION PROCESS DEVELOPS. IT MUST BE AMENDED, MODIFIED, AND UPDATED WHENEVER EPSC INSPECTIONS INDICATE, OR WHERE STATE OR FEDERAL REGULATORY OFFICIALS DETERMINE EPSC MEASURES ARE PROVING INEFFECTIVE IN ELIMINATING OR SIGNIFICANTLY MINIMIZING POLLUTANT SOURCES OR ARE OTHERWISE NOT ACHIEVING THE GENERAL OBJECTIVES OF CONTROLLING POLLUTANTS IN STORMWATER DISCHARGES ASSOCIATED WITH THE CONSTRUCTION ACTIVITY.

13.3.2. THE STAGES DEPICTED WITHIN THE EPSC PLANS MAY NOT COINCIDE WITH THE ACTUAL STAGES OF CONSTRUCTION ESTABLISHED BY THE CONTRACTOR DURING CONSTRUCTION, THUS MODIFICATIONS WILL BE REQUIRED TO ENSURE THE EPSC PLAN IS MAINTAINED TO DEPICT CURRENT SITE CONDITIONS. IT SHOULD BE MAINTAINED SUCH THAT IT WILL ALWAYS REFLECT THE MEASURES THAT ARE INSTALLED DURING THE VARIOUS STAGES OF CONSTRUCTION. IT IS IMPRACTICAL TO DETERMINE ALL THE INTERMEDIATE STAGES OF CONSTRUCTION THAT WILL OCCUR, THUS THESE DOCUMENTS MUST BE UPDATED THROUGHOUT THE LIFE OF THE CONSTRUCTION PROJECT.

13.3.3. THE TDOT EPSC INSPECTOR OR THEIR DULY AUTHORIZED REPRESENTATIVE WILL MODIFY AND UPDATE THE SWPPP WHEN ANY OF THE FOLLOWING CONDITIONS APPLY:

13.3.3.1. WHENEVER THERE IS A CHANGE IN THE SCOPE OF THE PROJECT THAT WOULD BE EXPECTED TO HAVE A SIGNIFICANT EFFECT ON THE DISCHARGE OF POLLUTANTS TO THE WATERS OF THE STATE AND WHICH HAS NOT OTHERWISE BEEN ADDRESSED IN THE SWPPP;

13.3.3.2. WHENEVER INSPECTIONS OR INVESTIGATIONS BY SITE OPERATORS, LOCAL, STATE, OR FEDERAL OFFICIALS INDICATE THE SWPPP IS PROVING INEFFECTIVE IN ELIMINATING OR SIGNIFICANTLY MINIMIZING POLLUTANTS FROM CONSTRUCTION ACTIVITY SOURCES, OR IS OTHERWISE NOT ACHIEVING THE GENERAL OBJECTIVES OF CONTROLLING POLLUTANTS IN STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY; WHERE LOCAL STATE, OR FEDERAL OFFICIALS DETERMINE THAT THE SWPPP IS INEFFECTIVE IN ELIMINATING OR SIGNIFICANTLY MINIMIZING POLLUTANT SOURCES, A COPY OF ANY CORRESPONDENCE TO THAT EFFECT MUST BE RETAINED IN THE SWPPP;

13.3.3.3. WHEN ANY NEW OPERATOR AND/OR SUB-OPERATOR IS ASSIGNED OR RELIEVED OF THEIR RESPONSIBILITY TO IMPLEMENT A PORTION OF THE SWPPP;

13.3.3.4. TO PREVENT A NEGATIVE IMPACT TO LEGALLY PROTECTED STATE OR FEDERALLY LISTED OR PROPOSED THREATENED OR ENDANGERED AQUATIC FAUNA;

13.3.3.5. WHEN THERE IS A CHANGE IN CHEMICAL TREATMENT METHODS INCLUDING: USE OF DIFFERENT TREATMENT CHEMICALS, DIFFERENT DOSAGE OR APPLICATION RATES OR A DIFFERENT AREA OF APPLICATION NOT SPECIFIED ON THE EPSC PLANS.

13.3.3.6. ALL SWPPP REVISION(S) SHALL BE RECORDED WITHIN 7 DAYS BY THE PROJECT EPSC INSPECTOR.

13.3.3.7. WHEN A TMDL IS DEVELOPED FOR THE RECEIVING WATERS FOR A POLLUTANT OF CONCERN (SILTATION

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DEPARTMENT OF TRANSPORTATION

STORMWATER POLLUTION PREVENTION PLAN

TENNESSEE D.O.T.
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AND/OR HABITAT ALTERATION), CONSTRUCTION SHALL NOTIFY THE PERMITS SECTION FOR PROPER COORDINATION.

13.4. MAKING PLANS ACCESSIBLE

13.4.1. TDOT WILL RETAIN A COPY OF THIS SWPPP (INCLUDING A COPY OF THE "DOCUMENTATION AND PERMITS" BINDER AT THE CONSTRUCTION SITE (OR OTHER LOCATION ACCESSIBLE TO TDEC AND THE PUBLIC) FROM THE DATE CONSTRUCTION COMMENCES TO THE DATE OF FINAL STABILIZATION. TDOT WILL HAVE A COPY OF THE SWPPP AVAILABLE AT THE LOCATION WHERE WORK IS OCCURRING ON-SITE FOR THE USE OF OPERATORS AND THOSE IDENTIFIED AS HAVING RESPONSIBILITIES UNDER THE SWPPP WHENEVER THEY ARE ON THE CONSTRUCTION SITE (6.2).

13.4.2. PRIOR TO THE INITIATION OF LAND DISTURBING ACTIVITIES AND UNTIL THE SITE HAS MET THE FINAL STABILIZATION CRITERIA, TDOT OR THEIR DULY AUTHORIZED REPRESENTATIVE WILL POST A NOTICE NEAR THE MAIN ENTRANCE OF THE CONSTRUCTION SITE WITH THE FOLLOWING INFORMATION (3.3.3) (6.2.1):

13.4.2.1. A COPY OF THE NOTICE OF COVERAGE (NOC) WITH THE NPDES PERMIT NUMBER FOR THE PROJECT;

13.4.2.2. THE INDIVIDUAL NAME, COMPANY NAME, E-MAIL ADDRESS (IF APPLICABLE) AND TELEPHONE NUMBER OF THE LOCAL PROJECT SITE OWNER AND OPERATOR CONTACT;

13.4.2.3. A BRIEF DESCRIPTION OF THE PROJECT; AND

13.4.2.4. THE LOCATION OF THE SWPPP.

13.4.3. ALL INFORMATION DESCRIBED IN SECTION 13.4.2 MUST BE MAINTAINED IN LEGIBLE CONDITION. IF POSTING THIS INFORMATION NEAR A MAIN ENTRANCE IS INFEASIBLE DUE TO SAFETY CONCERNS, THE NOTICE SHALL BE POSTED IN A LOCAL BUILDING. THE NOTICE MUST BE PLACED IN A PUBLICLY ACCESSIBLE LOCATION WHERE CONSTRUCTION IS ACTIVELY UNDERWAY AND MOVED AS NECESSARY.

13.5. NOTICE OF TERMINATION (8.0)

13.5.1. WHEN ALL STORMWATER DISCHARGES FROM CONSTRUCTION ACTIVITIES THAT ARE AUTHORIZED BY THE PERMIT ARE ELIMINATED BY FINAL STABILIZATION, THE TDOT REGIONAL ENGINEER WILL SUBMIT A NOTICE OF TERMINATION (NOT) THAT IS SIGNED IN ACCORDANCE WITH THE PERMIT TO THE TDEC CENTRAL OFFICE IN NASHVILLE, TN.

13.5.2. FOR THE PURPOSES OF THE CERTIFICATION REQUIRED BY THE NOT, THE ELIMINATION OF STORMWATER DISCHARGES ASSOCIATED WITH THE CONSTRUCTION ACTIVITY MEANS THE

13.5.2.1. ALL EARTH-DISTURBING ACTIVITIES ON THE SITE ARE COMPLETED AND ALL DISTURBED SOILS AT THE PORTION OF THE CONSTRUCTION SITE WHERE THE OPERATOR HAD CONTROL HAVE BEEN FINALLY STABILIZED; AND

13.5.2.2. ALL CONSTRUCTION MATERIALS, WASTE AND WASTE HANDLING DEVICES, AND ALL EQUIPMENT, AND VEHICLES THAT WERE USED DURING CONSTRUCTION HAVE BEEN REMOVED AND PROPERLY DISPOSED; AND

13.5.2.3. ALL STORMWATER CONTROLS THAT WERE INSTALLED AND MAINTAINED DURING CONSTRUCTION, EXCEPT THOSE THAT ARE INTENDED FOR LONG-TERM USE FOLLOWING TERMINATION OF PERMIT COVERAGE, HAVE BEEN REMOVED; AND

13.5.2.4. ALL POTENTIAL POLLUTANTS AND POLLUTANT GENERATING ACTIVITIES ASSOCIATED WITH CONSTRUCTION HAVE BEEN REMOVED; AND

13.5.2.5. THE PERMITTEE HAS IDENTIFIED WHO IS RESPONSIBLE FOR ONGOING MAINTENANCE OF ANY STORMWATER CONTROLS LEFT ON THE SITE FOR LONG-TERM USE FOLLOWING TERMINATION OF PERMIT COVERAGE; AND

13.5.2.6. TEMPORARY EPSC MEASURES HAVE BEEN OR WILL BE REMOVED AT AN APPROPRIATE TIME TO ENSURE FINAL STABILIZATION IS MAINTAINED; AND

13.5.2.7. ALL STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITIES FROM THE IDENTIFIED SITE THAT ARE AUTHORIZED BY A NPDES GENERAL PERMIT HAVE OTHERWISE BEEN ELIMINATED FROM THE PORTION OF THE CONSTRUCTION SITE WHERE THE OPERATOR HAD CONTROL.

13.6. RETENTION OF RECORDS (6.2)

TDOT WILL RETAIN COPIES OF THE SWPPP, ALL REPORTS REQUIRED BY THE PERMIT, AND RECORDS OF ALL DATA USED TO COMPLETE THE NOTICE OF INTENT FOR THE PROJECT FOR A PERIOD OF AT LEAST THREE (3) YEARS FROM THE DATE THE NOT WAS FILED.

14. SITE WIDE/PRIMARY PERMITTEE CERTIFICATION (7.7.5)

I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED BY ME, OR UNDER MY DIRECTION OR SUPERVISION. THE SUBMITTED INFORMATION IS TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. AS SPECIFIED IN TENNESSEE CODE ANNOTATED SECTION 39-16-702(a)(4), THIS DECLARATION IS MADE UNDER PENALTY OF PERJURY.

John L. Hewitt

AUTHORIZED TDOT PERSONNEL SIGNATURE (3.3.1)

John Hewitt

PRINTED NAME

CE Manager 2

TITLE

October 4, 2017

DATE

15. SECONDARY PERMITTEE (OPERATOR) CERTIFICATION (7.7.6)

I CERTIFY UNDER PENALTY OF LAW THAT I HAVE REVIEWED THIS DOCUMENT, ANY ATTACHMENTS, AND THE SWPPP REFERENCED ABOVE. BASED ON MY INQUIRY OF THE CONSTRUCTION SITE OWNER/DEVELOPER IDENTIFIED ABOVE AND/OR MY INQUIRY OF THE PERSON DIRECTLY RESPONSIBLE FOR ASSEMBLING THIS NOI AND SWPPP, I BELIEVE THE INFORMATION SUBMITTED IS ACCURATE. I AM AWARE THAT THIS NOI, IF APPROVED, MAKES THE ABOVE-DESCRIBED CONSTRUCTION ACTIVITY SUBJECT TO NPDES PERMIT NUMBER TNR100000, AND THAT CERTAIN OF MY ACTIVITIES ONSITE ARE THEREBY REGULATED. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS, AND FOR FAILURE TO COMPLY WITH THESE PERMIT REQUIREMENTS. AS SPECIFIED IN TENNESSEE CODE ANNOTATED SECTION 39-16-702(a)(4), THIS DECLARATION IS MADE UNDER PENALTY OF PERJURY.

AUTHORIZED TDOT PERSONNEL SIGNATURE (3.3.1)

PRINTED NAME

TITLE

DATE

16. ENVIRONMENTAL PERMITS (9.0)

LIST ALL ENVIRONMENTAL PERMITS AND EXPIRATION DATES FOR PROJECT **(TO BE COMPLETED AT THE ENVIRONMENTAL PRECONSTRUCTION MEETING BY TDOT CONSTRUCTION OR THEIR DULY AUTHORIZED REPRESENTATIVE)**:

ENVIRONMENTAL PERMITS			
PERMIT	**YES OR NO**	**PERMIT OR TRACKING NO.**	**EXPIRATION DATE***
TDEC ARAP			
CORPS OF ENGINEERS (USACE)			
TVA 26A			
TDEC CGP			
OTHER:			

*THE TDOT ENVIRONMENTAL DIVISION MUST BE NOTIFIED SIX MONTHS PRIOR TO PERMIT EXPIRATION DATE.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

STORMWATER POLLUTION PREVENTION PLAN

TENNESSEE D.O.T.
DESIGN DIVISION
FILE NO.

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2017	STP-4500(28); 45945-3690-14	S-8

17. **OUTFALL TABLE (3.5.1.d, 5.4.1.g)**

EPSC STAGE	OUTFALL LABEL	SUB OUT-FALL	STATION CL, LT OR RT	SLOPE WITHIN ROW (%)	STAGE 1 DRAINAGE AREA (AC)	STAGE 2 DRAINAGE AREA (AC)	STAGE 3 DRAINAGE AREA (AC)	SEDIMENT BASIN OR EQUIVALENT MEASURE(S) (YES, NO OR N/A)	RECEIVING RESOURCE (TDOT EBR LABEL) OR OTHER	COMMENTS
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	ALL FLOWS AT BOTH THE HALL BRANCH SITE AND THE UT1 TO CLEAR CREEK SITE OCCUR AS SHEETFLOW. NO OUTFALLS EXIST FOR THIS PROJECT

ALL UNUSED FIELDS WITHIN THE OUTFALL TABLE ARE TO BE SHADED, HATCHED, OR REMOVED TO INDICATE THEIR NON-USAGE.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

STORMWATER POLLUTION PREVENTION PLAN

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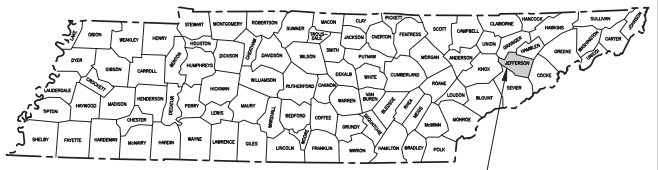
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF ENGINEERING

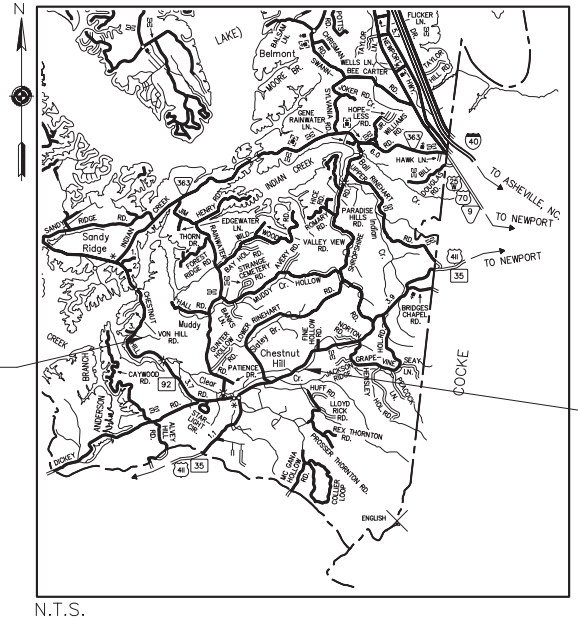
JEFFERSON COUNTY

BUSH BROTHERS PROPERTY, STREAM MITIGATION

CONSTRUCTION

TENN.	YEAR	SHEET NO.
	2017	NS-1
FED. AID PROJ. NO.	STP-4500(28)	
STATE PROJ. NO.	45945-3690-14	





N.T.S.

NO EQUATIONS
NO EXCLUSIONS

PROJECT STP-4500(28);45945-3690-14
HALL BRANCH SITE
(INCLUDES HALL BRANCH, UT1 HALL BRANCH, UT2 HALL BRANCH, UT3 HALL BRANCH, DRAINAGEWAY 1, AND DRAINAGEWAY 2)

PROJECT STP-4500(28);45945-3690-14
UT1 CLEAR CREEK SITE
(INCLUDES UT1 CLEAR CREEK, UT2 CLEAR CREEK, AND UT3 CLEAR CREEK)

SEALED BY

APPROVED: Paul D. Degges
PAUL D. DEGGES, CHIEF ENGINEER

DATE:

APPROVED:
JOHN SCHROER, COMMISSIONER

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED:

DIVISION ADMINISTRATOR DATE

SPECIAL NOTES

PROPOSALS MAY BE REJECTED BY THE COMMISSIONER IF ANY OF THE UNIT PRICES CONTAINED THEREIN ARE OBVIOUSLY UNBALANCED, EITHER EXCESSIVE OR BELOW THE REASONABLE COST ANALYSIS VALUE.

THIS PROJECT TO BE CONSTRUCTED UNDER THE STANDARD SPECIFICATIONS OF THE TENNESSEE DEPARTMENT OF TRANSPORTATION DATED JANUARY 1, 2015 AND ADDITIONAL SPECIFICATIONS AND SPECIAL PROVISIONS CONTAINED IN THE PLANS AND IN THE PROPOSAL CONTRACT.

TDOT C.E. MANAGER 2: CHRISTIE BROWN, PE

DESIGNED BY: CIVIL & ENVIRONMENTAL CONSULTANTS, INC.

DESIGNER: JOSHUA M. CLEMMONS, EI CHECKED BY: GREGORY S. BABBIT, PWS

P.E. NO.: STP-4500(28);45945-3690-14

PIN NO.: 104027.02

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2017	STP-4500(28);45945-3690-14	NS-2

ESTIMATED QUANTITIES FOR HALL BRANCH SITE STREAM MITIGATION			
ITEM NO.	DESCRIPTION	UNIT	QUANTITY
201-01	CLEARING AND GRUBBING	L.S.	1
201-07.01	REMOVAL AND DISPOSAL OF BRUSH AND TREES	L.S.	1
203-01	ROAD & DRAINAGE EXCAVATION (UNCLASSIFIED)	C.Y.	14,727
203-15.03	COMPACTED CLAY	C.Y.	434
209-03.34	STREAM MITIGATION - LOG VANES	L.F.	42
209-03.36	STREAM MITIGATION - STEP POOL	EACH	71
209-08.02	TEMPORARY SILT FENCE (WITH BACKING)	L.F.	500
209-65.01	TEMPORARY STREAM DIVERSION (PUMP AROUND)	L.S.	1
202-02.21	REMOVAL OF PIPE	L.F.	100
209-09.03	SEDIMENT FILTER BAG (15X15)	EACH	5
303-10.01	MINERAL AGGREGATE (SIZE 57)	TON	50
621-03.04	30" TEMPORARY DRAINAGE PIPE	L.F.	20
709-06.01	ROCK RIFFLES	L.S.	1
709-05.05	MACHINED RIP-RAP (CLASS A-3)	TON	104
709-05.06	MACHINED RIP-RAP (CLASS A-1)	TON	47
709-05.08	MACHINED RIP-RAP (CLASS B)	TON	105
713-16.20	SIGNS (PROTECTED AREA SIGNS)	EACH	10
740-10.03	GEOTEXTILE TYPE (III) (EROSION CONTROL)	S.Y.	672
801-01.04	SEEDING (WILDFLOWER MIXTURE)	UNIT	497
801-01.30	COVER CROP SEED MIX (RIPZ/FLPL) W/MULCH	UNIT	487
801-01.35	GRASS SEED MIX (RIPZ/FLPL) W/MULCH	UNIT	487
801-01.36	SPECIAL WETLAND SEED MIXTURE	UNIT	188
802-02.30	CUTTINGS SALIX NIGRA (18IN-24IN LENGTH)	EACH	1000
802-02.37	CUTTINGS ALNUS SERRULATA (18IN-24IN)	EACH	600
802-02.32	CUTTINGS CORNUS AMOMUM (18IN-24IN)	EACH	1400
802-02.33	CUTTINGS SAMBUCUS CANADENSIS (18IN-24IN)	EACH	800
802-12.02	ACER RUBRUM (RED MAPLE SEEDLING B.R.)	EACH	450
802-12.14	DIOSPYROS VIRGINIANA (PERSIMMON SEEDLING B.R.)	EACH	450
802-12.19	LIRIODENDRON TULIPIFERA (TULIP POPLAR SEEDLING B.R.)	EACH	450
802-12.26	PLATANUS OCCIDENTALIS (SYCAMORE SEEDLING B.R.)	EACH	450
802-12.32	QUERCUS LYRATA (OVERCUP OAK SEEDLING B.R.)	EACH	450
802-12.33	QUERCUS MICHAUXII (SWAMP CHESTNUT OAK SEEDLING B.R.)	EACH	450
802-12.38	QUERCUS PHELLOS (WILLOW OAK SEEDLING B.R.)	EACH	450
802-12.45	CARPINUS CAROLINIANA (AMERICAN HORNBEAM SEEDLING B.R.)	EACH	450
802-12.46	QUERCUS SHUMARDII (SHUMARD OAK SEEDLING B.R.)	EACH	400
802-12.51	CORNUS AMOMUM (SILKY DOGWOOD SEEDLING B.R.)	EACH	450
802-12.59	LINDERA BENZOIN (SPICEBUSH SEEDLING BARE ROOT)	EACH	450
805-12.02	EROSION CONTROL BLANKET (TYPE I)	S.Y.	1,910
805-12.08	700 GRAM COIR FIBER EROSION CONTROL BLANKET	S.Y.	4,100

ESTIMATED QUANTITIES FOR UT1 CLEAR CREEK SITE STREAM MITIGATION			
ITEM NO.	DESCRIPTION	UNIT	QUANTITY
203-01	ROAD & DRAINAGE EXCAVATION (UNCLASSIFIED)	C.Y.	7,129
203-15.03	COMPACTED CLAY	C.Y.	700
209-03.34	STREAM MITIGATION - LOG VANES	L.F.	160
209-03.36	STREAM MITIGATION - STEP POOL	EACH	11
209-08.02	TEMPORARY SILT FENCE (WITH BACKING)	L.F.	500
209-65.01	TEMPORARY STREAM DIVERSION (PUMP AROUND)	L.S.	1
209-09.03	SEDIMENT FILTER BAG (15X15)	EACH	5
303-10.01	MINERAL AGGREGATE (SIZE 57)	TON	50
621-03.04	30" TEMPORARY DRAINAGE PIPE	L.F.	20
707-06.05	REMOVAL OF FENCE	L.F.	65
707-03.01	STOCK FENCE	L.F.	1,645
707-03.02	END, BRACED LINE, CORNER POST ASSEMBLY (STOCK FENCE)	EACH	11
707-03.20	DRIVE GATE (STOCK FENCE)	EACH	4
709-06.01	ROCK RIFFLES	L.S.	1
709-05.05	MACHINED RIP-RAP (CLASS A-3)	TON	150
709-05.06	MACHINED RIP-RAP (CLASS A-1)	TON	52
713-16.20	SIGNS (PROTECTED AREA SIGNS)	EACH	6
740-10.03	GEOTEXTILE TYPE (III) (EROSION CONTROL)	S.Y.	289
801-01.04	SEEDING (WILDFLOWER MIXTURE)	UNIT	220
801-01.30	COVER CROP SEED MIX (RIPZ/FLPL) W/MULCH	UNIT	230
801-01.35	GRASS SEED MIX (RIPZ/FLPL) W/MULCH	UNIT	230
802-02.30	CUTTINGS SALIX NIGRA (18IN-24IN LENGTH)	EACH	500
802-02.31	CUTTINGS SALIX SERICEA (18IN-24IN)	EACH	600
802-02.32	CUTTINGS CORNUS AMOMUM (18IN-24IN)	EACH	800
802-02.33	CUTTINGS SAMBUCUS CANADENSIS (18IN-24IN)	EACH	800
802-11.02	ACER RUBRUM (RED MAPLE 2-5FT CNTNR GRWN)	EACH	94
802-11.14	DIOSPYROS VIRGINIANA (PERSIMMON 2-5FT CNTNR GRWN)	EACH	94
802-11.19	LIRIODENDRON TULIPIFERA (TULIP POPLAR 2-5FT CNTNR GRWN)	EACH	94
802-11.26	PLATANUS OCCIDENTALIS (SYCAMORE 2-5FT CNTNR GRWN)	EACH	94
802-11.32	QUERCUS LYRATA (OVERCUP OAK 2-5FT CNTNR GRWN)	EACH	94
802-11.33	QUERCUS MICHAUXII (SWAMP CHESTNUT OAK 2-5FT CNTNR GRWN)	EACH	94
802-11.38	QUERCUS PHELLOS (WILLOW OAK 2-5FT CNTNR GRWN)	EACH	94
802-11.45	CARPINUS CAROLINIANA (AMERICAN HORNBEAM 2-5FT CONTAINER GRWN)	EACH	94
802-11.46	QUERCUS SHUMARDII (SHUMARD OAK 2-5FT CNTNR GRWN)	EACH	94
802-11.63	HAMAMELIS VIRGINIANA (AMERICAN WITCH-HAZEL 2-5FT CNTNR GRWN)	EACH	94
802-13.04	CORNUS AMOMUM (SILKY DOGWOOD 2-5FT CNTNR GRWN)	EACH	94
802-13.09	LINDERA BENZOIN (SPICEBUSH 2-5FT CNTNR GRWN)	EACH	94
802-15.06	CASTANEA DENTATA (AMERICAN CHESTNUT 2-5FT CNTNR GRWN)	EACH	75
805-12.08	700 GRAM COIR FIBER EROSION CONTROL BLANKET	S.Y.	3,100

ESTIMATED QUANTITIES FOR COMBINED BUSH BROTHERS PROPERTY STREAM MITIGATION				
ITEM NO.	DESCRIPTION	UNIT	QUANTITY	
201-01	CLEARING AND GRUBBING	L.S.	1	
201-07.01	REMOVAL AND DISPOSAL OF BRUSH AND TREES	L.S.	1	(9)
203-01	ROAD & DRAINAGE EXCAVATION (UNCLASSIFIED)	C.Y.	21856	(1)
203-15.03	COMPACTED CLAY	C.Y.	1134	(4)
209-03.34	STREAM MITIGATION - LOG VANES	L.F.	224	(2)
209-03.36	STREAM MITIGATION - STEP POOL	EACH	82	(3)
209-08.02	TEMPORARY SILT FENCE (WITH BACKING)	L.F.	1000	
209-65.01	TEMPORARY STREAM DIVERSION (PUMP AROUND)	L.S.	2	(7)
202-02.21	REMOVAL OF PIPE	L.F.	100	
209-09.03	SEDIMENT FILTER BAG (15X15)	EACH	10	(13)
303-10.01	MINERAL AGGREGATE (SIZE 57)	TON	100	
621-03.04	30" TEMPORARY DRAINAGE PIPE	L.F.	40	
707-06.05	REMOVAL OF FENCE	L.F.	65	
707-03.01	STOCK FENCE	L.F.	1645	
707-03.02	END, BRACED LINE, CORNER POST ASSEMBLY (STOCK FENCE)	EACH	11	
707-03.20	DRIVE GATE (STOCK FENCE)	EACH	4	
709-06.01	ROCK RIFFLES	L.S.	2	(5)
709-05.05	MACHINED RIP-RAP (CLASS A-3)	TON	254	(6)
709-05.06	MACHINED RIP-RAP (CLASS A-1)	TON	99	
709-05.08	MACHINED RIP-RAP (CLASS B)	TON	105	
713-16.20	SIGNS (PROTECTED AREA SIGNS)	EACH	16	
740-10.03	GEOTEXTILE TYPE (III) (EROSION CONTROL)	S.Y.	961	
801-01.04	SEEDING (WILDFLOWER MIXTURE)	UNIT	717	(11)
801-01.30	COVER CROP SEED MIX (RIPZ/FLPL) W/MULCH	UNIT	717	(11)
801-01.35	GRASS SEED MIX (RIPZ/FLPL) W/MULCH	UNIT	717	(11)
801-01.36	SPECIAL WETLAND SEED MIXTURE	UNIT	188	(11)
802-02.30	CUTTINGS SALIX NIGRA (18IN-24IN LENGTH)	EACH	1500	
802-02.37	CUTTINGS ALNUS SERRULATA (18IN-24IN)	EACH	600	
802-02.31	CUTTINGS SALIX SERICEA (18IN-24IN)	EACH	600	
802-02.32	CUTTINGS CORNUS AMOMUM (18IN-24IN)	EACH	2200	
802-02.33	CUTTINGS SAMBUCUS CANADENSIS (18IN-24IN)	EACH	1600	
802-12.02	ACER RUBRUM (RED MAPLE SEEDLING B.R.)	EACH	450	
802-12.14	DIOSPYROS VIRGINIANA (PERSIMMON SEEDLING B.R.)	EACH	450	
802-12.19	LIRIODENDRON TULIPIFERA (TULIP POPLAR SEEDLING B.R.)	EACH	450	
802-12.26	PLATANUS OCCIDENTALIS (SYCAMORE SEEDLING B.R.)	EACH	450	
802-12.32	QUERCUS LYRATA (OVERCUP OAK SEEDLING B.R.)	EACH	450	
802-12.33	QUERCUS MICHAUXII (SWAMP CHESTNUT OAK SEEDLING B.R.)	EACH	450	
802-12.38	QUERCUS PHELLOS (WILLOW OAK SEEDLING B.R.)	EACH	450	
802-12.45	CARPINUS CAROLINIANA (AMERICAN HORNBEAM SEEDLING B.R.)	EACH	450	
802-12.46	QUERCUS SHUMARDII (SHUMARD OAK SEEDLING B.R.)	EACH	400	
802-12.51	CORNUS AMOMUM (SILKY DOGWOOD SEEDLING B.R.)	EACH	450	
802-12.59	LINDERA BENZOIN (SPICEBUSH SEEDLING BARE ROOT)	EACH	450	
802-11.02	ACER RUBRUM (RED MAPLE 2-5FT CNTNR GRWN)	EACH	94	
802-11.14	DIOSPYROS VIRGINIANA (PERSIMMON 2-5FT CNTNR GRWN)	EACH	94	
802-11.19	LIRIODENDRON TULIPIFERA (TULIP POPLAR 2-5FT CNTNR GRWN)	EACH	94	
802-11.26	PLATANUS OCCIDENTALIS (SYCAMORE 2-5FT CNTNR GRWN)	EACH	94	
802-11.32	QUERCUS LYRATA (OVERCUP OAK 2-5FT CNTNR GRWN)	EACH	94	
802-11.33	QUERCUS MICHAUXII (SWAMP CHESTNUT OAK 2-5FT CNTNR GRWN)	EACH	94	
802-11.38	QUERCUS PHELLOS (WILLOW OAK 2-5FT CNTNR GRWN)	EACH	94	
802-11.45	CARPINUS CAROLINIANA (AMERICAN HORNBEAM 2-5FT CONTAINER GRWN)	EACH	94	
802-11.46	QUERCUS SHUMARDII (SHUMARD OAK 2-5FT CNTNR GRWN)	EACH	94	
802-11.63	HAMAMELIS VIRGINIANA (AMERICAN WITCH-HAZEL 2-5FT CNTNR GRWN)	EACH	94	
802-13.04	CORNUS AMOMUM (SILKY DOGWOOD 2-5FT CNTNR GRWN)	EACH	94	
802-13.09	LINDERA BENZOIN (SPICEBUSH 2-5FT CNTNR GRWN)	EACH	94	
802-15.06	CASTANEA DENTATA (AMERICAN CHESTNUT 2-5FT CNTNR GRWN)	EACH	75	(10)
805-12.02	EROSION CONTROL BLANKET (TYPE I)	S.Y.	1910	
805-12.08	700 GRAM COIR FIBER EROSION CONTROL BLANKET	S.Y.	7200	(8)

(12) (applies to items 201-01 through 805-12.08 of the combined table)

FOOTNOTES:

1. INCLUDES ALL MATERIALS, EQUIPMENT, AND LABOR NECESSARY TO EXCAVATE THE PROPOSED CHANNEL AND FLOODPLAIN, AND TO FILL THE ABANDONED CHANNEL; THE CONTRACTOR SHALL MAKE PROVISIONS FOR THE SATISFACTORY DISPOSAL OF 21856 C.Y. OF EXCESS MATERIAL
2. INCLUDES ALL MATERIALS, EQUIPMENT, AND LABOR NECESSARY TO CONSTRUCT AS SHOWN IN (3/23) LF SHALL BE MEASURED AS TOTAL LF OF LOG VANE
3. INCLUDES ALL MATERIALS, EQUIPMENT, AND LABOR NECESSARY TO CONSTRUCT AS SHOWN IN (4/23)
4. INCLUDES ALL MATERIALS, EQUIPMENT, AND LABOR NECESSARY TO CONSTRUCT AS SHOWN IN (2/23)
5. INCLUDES ALL MATERIALS, EQUIPMENT, AND LABOR NECESSARY TO CONSTRUCT AS SHOWN IN (1/23)
6. QUANTITY DOES NOT INCLUDE A-3 RIP RAP USED IN CONSTRUCTION OF ALLUVIAL RIFFLE
7. INCLUDES MULTIPLE SETUPS AND RELOCATIONS OF STREAM DIVERSION PUMP AROUND AS CONSTRUCTION PROGRESSES. INCLUDES ALL MATERIALS, EQUIPMENT, AND LABOR NECESSARY TO CONSTRUCT AND RELOCATE AS SHOWN AND DESCRIBED IN (2/23A) WITH THE EXCEPTION OF SEDIMENT FILTER BAGS, MINERAL AGGREGATE (SIZE 57), AND GEOTEXTILE TYPE (III) USED FOR DEWATERING CONSTRUCTION AREA
8. COIR FIBER EROSION BLANKETS SHALL BE 700 GRAMS PER SQUARE METER.
9. INCLUDES ALL MATERIALS, EQUIPMENT, AND LABOR NECESSARY TO COMPLETELY REMOVE ROOT SYSTEMS AND STEMS OF EXISTING BAMBOO
10. PLANTED AT DIRECTION OF ENGINEER
11. COVER CROP SEED MIX W/ MULCH IS CONSIDERED TEMPORARY SEEDING; SEEDING (WILDFLOWER MIXTURE), GRASS SEED MIX W/ MULCH, AND SPECIAL WETLAND SEED MIXTURE (HALL BRANCH SITE ONLY) ARE CONSIDERED PERMANENT SEEDING
12. ALL QUANTITIES ARE TO BE USED AS DIRECTED BY THE ENGINEER
13. QUANTITY IS BASED ON AN ASSUMPTION OF 5 PUMP AROUND RELOCATIONS AT THE UT1 TO CLEAR CREEK SITE AND 5 PUMP AROUND RELOCATIONS AT THE HALL BRANCH SITE AND AN ASSUMPTION OF 1 SEDIMENT FILTER BAG PER PUMP AROUND RELOCATION, FINAL QUANTITY MAY VARY BASED ON ACTUAL NUMBER OF RELOCATIONS NEEDED AND SEDIMENT FILTER BAG USAGE RATE

SEALED BY

COORDINATES ARE NAD/83(1995), ARE DATUM ADJUSTED BY THE FACTOR OF 1.00010637 AND TIED TO THE TGRN. ALL ELEVATIONS ARE REFERENCED TO THE NAVD 1988.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

BUSH BROTHERS PROPERTY– STREAM MITIGATION

COMBINED PROJECT QUANTITIES

$$$$DGNSPEC$$

$$$$SYTIME$$$$$$

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2017	STP-4500(28);45945-3690-14	NS-2A

GENERAL NOTES

GRADING

(1) ANY AREA THAT IS DISTURBED OUTSIDE LIMITS OF CONSTRUCTION DURING THE LIFE OF THIS PROJECT SHALL BE REPAIRED BY THE CONTRACTOR AT HIS EXPENSE.

(2) CERTIFICATION FOR ALL BORROW PITS MUST BE OBTAINED IN ACCORDANCE WITH SUBSECTION 107.06 OF THE STANDARD SPECIFICATIONS.

(3) THE CONTRACTOR SHALL NOT DISPOSE OF ANY MATERIAL EITHER ON OR OFF STATE-OWNED R.O.W. IN A REGULATORY FLOOD WAY AS DEFINED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY WITHOUT APPROVAL BY SAME. ALL MATERIAL SHALL BE DISPOSED OF IN UPLAND (NON-WETLAND) AREAS AND ABOVE ORDINARY HIGH WATER OF ANY ADJACENT WATERCOURSE. THIS DOES NOT ELIMINATE THE NEED TO OBTAIN ANY OTHER LICENSES OR PERMITS THAT MAY BE REQUIRED BY ANY OTHER FEDERAL, STATE OR LOCAL AGENCY.

SEEDING AND SODDING

(4) ALL EXISTING ROADS WITHIN THE RIGHT-OF-WAY AND NOT IN THE GRADED AREA THAT ARE TO BE ABANDONED SHALL BE SCARIFIED, OBLITERATED, TOPSOILED AND SEEDED. SCARIFYING AND OBLITERATING THE PAVEMENT WILL NOT BE MEASURED AND PAID FOR DIRECTLY, BUT THE COST WILL BE INCLUDED IN THE COST OF OTHER ITEMS. TOPSOIL, IN ACCORDANCE WITH SECTION 203 OF THE STANDARD SPECIFICATIONS, WILL BE MEASURED AND PAID FOR UNDER ITEMS 203-04 AND/OR 203-07. SEEDING, IN ACCORDANCE WITH SECTION 801 OF THE STANDARD SPECIFICATIONS, WILL BE MEASURED AND PAID FOR UNDER ITEM 801-01.

DRAINAGE

(5) THE CONTRACTOR SHALL SHAPE DITCHES TO THE SPECIFIED DESIGN. THIS WORK WILL NOT BE MEASURED AND PAID FOR DIRECTLY, BUT THE COST WILL BE INCLUDED IN THE COST OF OTHER ITEMS.

(6) EXCAVATION FOR 621-03.04 WILL NOT BE MEASURED AND PAID FOR DIRECTLY, BUT WILL BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF PIPE (PIPE CULVERTS, STORM SEWERS, CONDUITS, ALL OTHER CULVERTS AND MINOR STRUCTURES).

(7) THE CUTTING OF INLET AND OUTLET DITCHES WHERE SHOWN ON PLANS OR AS DIRECTED BY THE ENGINEER WILL BE MEASURED AND PAID FOR AS ITEM NO. 203-01 ROAD AND DRAINAGE EXCAVATION (UNCLASSIFIED).

(8) DURING CONSTRUCTION OF DRAINAGE STRUCTURES ALL COST ASSOCIATED WITH MAINTAINING THE FLOW OF WATER AND TRAFFIC, AT THESE STRUCTURES, DURING THE PHASED CONSTRUCTION OF THIS PROJECT ARE TO BE INCLUDED IN THE UNIT PRICE OF THE DRAINAGE STRUCTURES AND TRAFFIC CONTROL ITEMS.

FENCING

(9) FENCES SHALL BE TURNED IN AT DRAINAGE STRUCTURES, STOCK PASSES AND BRIDGES WHERE DIRECTED BY THE ENGINEER SO AS TO ABUT WINGWALLS AND/OR ABUTMENTS.

(10) THE CONTRACTOR SHALL GIVE THE AFFECTED PROPERTY OWNERS TWO WEEKS NOTICE PRIOR TO CUTTING FENCES.

(11) THE CONTRACTOR SHALL BE REQUIRED TO INSTALL ACCESS CONTROL FENCES PRIOR TO CUTTING EXISTING STOCK FENCES IN AREAS UTILIZED BY DOMESTIC LIVESTOCK OR OTHER AREAS AS DIRECTED BY THE ENGINEER.

MISCELLANEOUS

(12) ALL DETOUR, ACCESS, SERVICE AND FRONTAGE ROADS SHALL BE CONSTRUCTED WITH A MINIMUM OF ONE (1) COURSE OF BASE MATERIAL BEFORE TRAFFIC IS INTERRUPTED ON EXISTING ROADS.

(13) THE CONTRACTOR SHALL BE REQUIRED TO REMOVE AND RESET MAILBOXES WHERE AND AS DIRECTED BY THE ENGINEER.

(14) NOTHING IN THE GENERAL NOTES OR SPECIAL PROVISIONS SHALL RELIEVE THE CONTRACTOR FROM HIS RESPONSIBILITIES TOWARD THE SAFETY AND CONVENIENCE OF THE GENERAL PUBLIC AND THE RESIDENTS ALONG THE PROPOSED CONSTRUCTION AREA.

ROAD CLOSURE

(15) NO LESS THAN SEVEN (7) DAYS PRIOR TO THE CLOSURE OF THE ROAD, THE CONTRACTOR SHALL NOTIFY THE FOLLOWING INDIVIDUALS OR AGENCIES COMPLETELY DESCRIBING THE AFFECTED ROADS AND THE APPROXIMATE DURATION OF THE CONSTRUCTION. THESE PARTIES INCLUDE, BUT ARE NOT LIMITED TO: (1) LOCAL LAW ENFORCEMENT OFFICE, (2) LOCAL FIRE DEPARTMENT, (3) AMBULANCE SERVICE, (4) LOCAL SCHOOL SUPERINTENDENT, (5) UNITED STATES POSTAL SERVICE, AND (6) LOCAL ROAD SUPERINTENDENT.

RIPRAP

(16) IF THE CONTRACTOR ELECTS TO USE MACHINED RIPRAP, IT SHALL BE IN ACCORDANCE WITH SECTION 709 OF THE STANDARD SPECIFICATIONS.

CONSTRUCTION WORK ZONE & TRAFFIC CONTROL

(17) ADVANCED WARNING SIGNS SHALL NOT BE DISPLAYED MORE THAN FORTY-EIGHT (48) HOURS BEFORE PHYSICAL CONSTRUCTION BEGINS. SIGNS MAY BE ERECTED UP TO ONE WEEK BEFORE NEEDED, IF THE SIGN FACE IS FULLY COVERED.

(18) IF THE CONTRACTOR MOVES OFF THE PROJECT, HE SHALL COVER OR REMOVE ALL UNNEEDED SIGNS AS DIRECTED BY THE ENGINEER. COSTS OF REMOVAL, COVERING, AND REINSTALLING SIGNS SHALL NOT BE MEASURED AND PAID FOR SEPARATELY, BUT ALL COSTS SHALL BE INCLUDED IN THE ORIGINAL UNIT PRICE BID FOR ITEM NO 712-06, SIGNS (CONSTRUCTION) PER SQUARE FOOT.

(19) A LONG TERM BUT SPORADIC USE WARNING SIGN, SUCH AS A FLAGGER SIGN, MAY REMAIN IN PLACE WHEN NOT REQUIRED PROVIDED THE SIGN FACE IS FULLY COVERED.

(20) TRAFFIC CONTROL DEVICES SHALL NOT BE DISPLAYED OR ERECTED UNLESS RELATED CONDITIONS ARE PRESENT NECESSITATING WARNING.

(21) USE OF BARRICADES, PORTABLE BARRIER RAILS, VERTICAL PANELS, AND DRUMS SHALL BE LIMITED TO THE IMMEDIATE AREAS OF CONSTRUCTION WHERE A HAZARD IS PRESENT. THESE DEVICES SHALL NOT BE STORED ALONG THE ROADWAY WITHIN THIRTY (30) FEET OF THE EDGE OF THE TRAVELED WAY BEFORE OR AFTER USE UNLESS PROTECTED BY GUARDRAIL, BRIDGE RAIL, AND/OR BARRIERS INSTALLED FOR OTHER PURPOSES FOR ROADWAYS WITH CURRENT ADT'S LESS THAN 1500 AND DESIGN SPEED OF LESS THAN 60 MPH. THIS DISTANCE SHALL INCREASE TO FORTY-FIVE (45) FEET FOR ROADWAYS WITH CURRENT ADT'S OF 1500 OR GREATER AND DESIGN SPEED OF 60 MPH OR GREATER OR ON THE OUTSIDE OF A HORIZONTAL CURVE. THESE DEVICES SHALL BE REMOVED FROM THE CONSTRUCTION WORK ZONE WHEN THE ENGINEER DETERMINES THEY ARE NO LONGER NEEDED. WHERE THERE IS INSUFFICIENT RIGHT-OF-WAY TO PROVIDE FOR THIS REQUIRED SETBACK, THE CONTRACTOR SHALL DETERMINE THE ALTERNATE LOCATIONS AND REQUEST THE ENGINEER'S APPROVAL TO USE THEM.

(22) THE CONTRACTOR SHALL NOT BE PERMITTED TO PARK ANY VEHICLES OR CONSTRUCTION EQUIPMENT DURING PERIODS OF INACTIVITY, WITHIN THIRTY (30) FEET OF THE EDGE OF PAVEMENT WHEN THE LANE IS OPEN TO TRAFFIC UNLESS PROTECTED BY GUARDRAIL, BRIDGE RAIL, AND/OR BARRIERS INSTALLED FOR OTHER PURPOSES FOR ROADWAYS WITH CURRENT ADT'S LESS THAN 1500 AND DESIGN SPEED OF LESS THAN 60 MPH. THIS DISTANCE SHALL BE INCREASED TO FORTY-FIVE (45) FEET FOR ROADWAYS WITH CURRENT ADT'S OF 1500 OR GREATER AND DESIGN SPEED OF 60 MPH OR GREATER OR ON THE OUTSIDE OF A HORIZONTAL CURVE. PRIVATELY OWNED VEHICLES SHALL NOT BE ALLOWED TO PARK WITHIN THIRTY (30) FEET OF AN OPEN TRAFFIC LANE AT ANY TIME UNLESS PROTECTED AS DESCRIBED ABOVE FOR ROADWAYS WITH CURRENT ADT'S LESS THAN 1500 AND DESIGN SPEED OF LESS THAN 60 MPH. THIS DISTANCE SHALL BE INCREASED TO FORTY-FIVE (45) FEET FOR ROADWAYS WITH CURRENT ADT'S OF 1500 OR GREATER AND DESIGN SPEED OF 60 MPH OR GREATER OR ON THE OUTSIDE OF A HORIZONTAL CURVE. WHERE THERE IS INSUFFICIENT RIGHT-OF-WAY TO PROVIDE FOR THIS REQUIRED SETBACK, THE CONTRACTOR SHALL DETERMINE THE ALTERNATE LOCATIONS AND REQUEST THE ENGINEER'S APPROVAL TO USE THEM.

(23) ALL DETOUR AND CONSTRUCTION SIGNING SHALL BE IN STRICT ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

(24) ALL DETOURS SHALL BE PAVED, STRIPED, SIGNED AND THE VERTICAL PANELS ARE TO BE IN PLACE BEFORE IT IS OPENED TO TRAFFIC.

EROSION PREVENTION AND SEDIMENT CONTROL

NATURAL RESOURCES

(25) SOIL MATERIALS MUST BE PREVENTED FROM ENTERING WATERS OF THE STATE/U.S. EPSC MEASURES TO PROTECT NATURAL RESOURCES AND WATER QUALITY SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD. APPROPRIATE EPSC MEASURES MUST BE INSTALLED ALONG THE BASE OF ALL FILLS AND CUTS, ON THE DOWNHILL SIDE OF STOCKPILED SOIL, AND ALONG NATURAL RESOURCES IN CLEARED AREAS TO PREVENT SEDIMENT MIGRATION INTO STREAMS, WETLANDS OR OTHER NATURAL FEATURES IN ACCORDANCE WITH TDOT STANDARDS. EPSC MEASURES SHALL BE INSTALLED ON THE CONTOUR, ENTRENCHED AND STAKED, AND EXTEND THE WIDTH OF THE AREA TO BE CLEARED.

(26) NEW CHANNEL CONSTRUCTION SHALL BE COMPLETED IN THE DRY AND STABILIZED FOR AT LEAST 72 HOURS PRIOR TO DIVERTING WATER FROM THE EXISTING AND/OR TEMPORARY CHANNEL.

(27) INSTREAM EPSC DEVICES REQUIRE THE TDOT ENVIRONMENTAL DIVISION, PERMITS SECTION REVIEW AND MUST BE PROCESSED BY THE PERMITS SECTION TO OBTAIN WATER QUALITY PERMITS.

(28) THE OPERATION OF EQUIPMENT IN WATERS OF THE STATE/U.S., INCLUDING WETLANDS AND EPHEMERAL, INTERMITTENT, AND PERENNIAL STREAMS, IS NOT ALLOWED.

(29) THE WIDTH OF THE FILL ASSOCIATED WITH TEMPORARY CROSSINGS SHALL BE LIMITED TO THE MINIMUM NECESSARY FOR THE ACTUAL CROSSING, NOT TO EXCEED THE WIDTH SPECIFIED IN THE STANDARD DRAWING.

(30) STREAM BEDS SHALL NOT BE USED AS TRANSPORTATION ROUTES FOR CONSTRUCTION EQUIPMENT. TEMPORARY CULVERT CROSSINGS SHALL BE LIMITED TO ONE POINT PER STREAM AND EPSC MEASURES SHALL BE USED WHERE THE STREAM BANKS ARE DISTURBED. WHERE THE STREAMBED IS NOT COMPOSED OF BEDROCK, A PAD OF CLEAN ROCK SHALL BE USED AT THE CROSSING POINT AND CULVERTED TO PREVENT THE IMPOUNDMENT OF WATER FLOW. CLEAN ROCK IS ROCK OF VARIOUS TYPE AND SIZE, DEPENDING UPON APPLICATION, WHICH CONTAINS NO FINES, SOILS, OR OTHER WASTES OR CONTAMINANTS. OTHER MATERIALS USED FOR ALL TEMPORARY FILLS SHALL BE COMPLETELY REMOVED IN THEIR ENTIRETY AFTER THE WORK IS COMPLETED AND THE AFFECTED AREAS RETURNED TO PREEXISTING ELEVATIONS. ALL TEMPORARY CROSSINGS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. DWG. EC-STR-25 UNLESS SPECIFICALLY ADDRESSED IN THE EPSC PLANS. ALTERNATIVELY, PLACING A TEMPORARY BRIDGE (E.G. BAILEY BRIDGE OR EQUIVALENT, TIMBERS, ETC.) FROM TOP OF BANK TO TOP OF BANK OR THE APPROPRIATE USE OF BARGES AT THE CROSSING TO AVOID DISTURBANCE OF THE STREAMBED IS AN ACCEPTABLE OPTION.

(31) HEAVY EQUIPMENT WORKING IN WETLANDS WITH PERMITTED TEMPORARY IMPACTS SHALL BE PLACED ON MATS, OR OTHER MEASURES MUST BE TAKEN TO MINIMIZE SOIL DISTURBANCE AND COMPACTION UNLESS SPECIFICALLY ADDRESSED IN THE CONSTRUCTION PLANS. ANY MATS AND OTHER MEASURES USED FOR HEAVY EQUIPMENT SHALL BE REMOVED IN THEIR ENTIRETY AFTER THE WORK IS COMPLETED. ALL AFFECTED AREAS SHOULD BE RETURNED TO PRE-EXISTING CONDITIONS.

(32) WETLANDS SHALL NOT BE USED AS EQUIPMENT STORAGE, STAGING, OR TRANSPORTATION AREAS, UNLESS SPECIFICALLY PROVIDED FOR IN THE CONSTRUCTION PLANS AND PERMITS.

(33) THE CONTRACTOR SHALL TAKE APPROPRIATE STEPS PRIOR TO ANY CONSTRUCTION AND MAINTENANCE ACTIVITIES TO ENSURE THAT ENVIRONMENTAL FEATURES (E.G., STREAMS, WETLANDS, SPRINGS, ETC.) ARE NOT IMPACTED BEYOND PERMITTED LOCATIONS. IF THE CONTRACTOR OR TDOT INSPECTOR IS UNSURE OF THE IDENTITY OF AN ENVIRONMENTAL FEATURE, THE INSPECTOR SHALL CONTACT THE TDOT REGION ENVIRONMENTAL TECH GROUP IMMEDIATELY.

SEALED BY

COORDINATES ARE NAD/83(1995), ARE DATUM ADJUSTED BY THE FACTOR OF 1.00010637 AND TIED TO THE TGRN. ALL ELEVATIONS ARE REFERENCED TO THE NAVD 1988.

STATE OF TENNESSEE
DEPARTMENT OF
TRANSPORTATION

BUSH BROTHERS PROPERTY–
STREAM MITIGATION

PROJECT NOTES

$$$$DGNSPEC$$$$
$$$$SYTIME$$$$$

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2017	STP-4500(28);45945-3690-14	NS-2B

SPECIES

(34) NO ACTIVITY MAY SUBSTANTIALLY DISRUPT THE MOVEMENT OF THOSE SPECIES OF AQUATIC LIFE INDIGENOUS TO THE WATER BODY, INCLUDING THOSE SPECIES THAT NORMALLY MIGRATE THROUGH THE AREA.

(35) SHOULD CLIFF SWALLOW OR BARN SWALLOW NESTS, EGGS, OR BIRDS (YOUNG AND ADULTS) BE PRESENT, THE CONTRACTOR SHALL CONTACT THE REGIONAL ECOLOGY OFFICE TO DETERMINE IF SEASONAL RESTRICTIONS WILL BE NECESSARY. GENERALLY, BIRDS, NESTS, AND EGGS MAY NOT BE DISTURBED BETWEEN APRIL 15 AND JULY 31. FROM AUGUST 1 TO APRIL 14, NESTS CAN BE REMOVED OR DESTROYED SO LONG AS BIRDS OR EGGS ARE NOT PRESENT, AND MEASURES IMPLEMENTED TO PREVENT FUTURE NEST BUILDING AT THE SITE (I.E., CLOSING OFF AREA USING NETTING).

(36) IF THE REMOVAL OF ANY TREES WITH A DIAMETER AT BREAST HEIGHT (DBH) GREATER THAN 3 INCHES IS DEEMED NECESSARY THE TDOT SUPERVISOR SHALL CONTACT THE TDOT ENVIRONMENTAL DIVISION, ECOLOGY SECTION IMMEDIATELY.

INSPECTION, MAINTENANCE & REPAIR

(37) REFER TO THE STORM WATER POLLUTION AND PREVENTION PLAN SHEETS (S-1) FOR SWPPP, PERMITS, AND RECORDS NOTES.

PERMITS, PLANS & RECORDS

(38) THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR AND OBTAIN ANY NECESSARY ENVIRONMENTAL PERMITS OR APPROVALS, INCLUDING BUT NOT LIMITED TO ARCHAEOLOGY, ECOLOGY, HISTORICAL, HAZARDOUS MATERIALS, AIR AND NOISE, TDEC ARAP/401, USACE SECTION 404, TVA SECTION 26A, AND TDEC NPDES PERMITS, FROM FEDERAL, STATE AND/OR LOCAL AGENCIES REGARDING ANY MATERIAL AND STAGING AREAS AND THE OPERATION OF ANY PROJECT-DEDICATED ASPHALT AND/OR CONCRETE PLANTS TO BE USED. ANY SUCH PERMITS SHALL BE SUPPLIED TO THE TDOT PROJECT RESPONSIBLE PARTY PRIOR TO THE USE OF THE PERMITTED AREA(S).

(39) ANY DISAGREEMENT BETWEEN THE CONSTRUCTION PLANS, THE PROJECT AS CONSTRUCTED, AND THE PERMIT(S) ISSUED FOR THE PROJECT, SHALL BE BROUGHT TO THE ATTENTION OF THE TDOT PROJECT RESPONSIBLE PARTY. THE ENVIRONMENTAL DIVISION, DESIGN DIVISION, AND HEADQUARTERS CONSTRUCTION OFFICE SHALL BE CONTACTED IN THESE INSTANCES AND DECIDE WHICH HAS PRECEDENCE AND WHETHER PERMIT OR PLANS REVISIONS ARE NEEDED. IN GENERAL, PERMIT CONDITIONS WILL PREVAIL.

(40) IF A CHANGE IN PROJECT SCOPE OCCURS DURING CONSTRUCTION, INCLUDING VALUE ENGINEERING, THE TDOT PERMIT SECTION SHALL BE CONTACTED TO DETERMINE WHETHER PERMIT REVISIONS ARE NEEDED. THE ROADWAY DESIGN DIVISION SHALL BE CONTACTED TO DETERMINE IF ANY PLAN REVISIONS ARE NEEDED.

(41) THE CONTRACTOR SHALL REVIEW ALL EXISTING PERMITS TO ENSURE THAT WORK AT PERMITTED SITES DOES NOT EXCEED EXPIRATION DATE. IF WORK IS GOING TO BE CONTINUED AFTER EXPIRATION DATES, THE CONTRACTOR SHALL CONTACT THE TDOT PROJECT RESPONSIBLE PARTY TO COMMENCE PERMIT RENEWAL PROCESS.

(42) ALL WATER QUALITY PERMITS SHALL BE POSTED NEAR THE MAIN ENTRANCE OF THE CONSTRUCTION SITE ACCESSIBLE TO THE PUBLIC. THE NAME, COMPANY NAME, EMAIL ADDRESS, TELEPHONE NUMBER AND ADDRESS OF THE PROJECT SITE OWNER, OPERATOR, OR A LOCAL CONTACT PERSON WITH A BRIEF DESCRIPTION OF THE PROJECT SHALL ALSO BE POSTED. IF POSTING THIS INFORMATION NEAR A MAIN ENTRANCE IS INFEASIBLE, THE INFORMATION SHALL BE PLACED IN A PUBLICLY ACCESSIBLE LOCATION NEAR WHERE THE CONSTRUCTION IS ACTIVELY UNDERWAY AND MOVED AS NECESSARY. THIS LOCATION SHALL BE POSTED AT THE CONSTRUCTION SITE. ALL POSTINGS SHALL BE MAINTAINED IN LEGIBLE CONDITION.

GOOD HOUSEKEEPING MEASURES & WASTE DISPOSAL

(43) THE CONTRACTOR SHALL ESTABLISH AND MAINTAIN A PROACTIVE METHOD TO PREVENT LITTER AND CONSTRUCTION WASTES FROM ENTERING WATERS OF THE STATE/U.S. THESE MATERIALS SHALL BE REMOVED FROM STORMWATER EXPOSURE PRIOR TO ANTICIPATED STORM EVENTS OR BEFORE BEING CARRIED OFFSITE BY WIND, OR OTHERWISE PREVENTED FROM BECOMING A POLLUTANT SOURCE FOR STORMWATER DISCHARGES. AFTER USE, MATERIALS USED FOR EPSC SHALL BE REMOVED FROM THE SITE.

(44) THE CONTRACTOR SHALL TAKE APPROPRIATE STEPS TO ENSURE THAT PETROLEUM PRODUCTS OR OTHER CHEMICAL POLLUTANTS ARE PREVENTED FROM ENTERING WATERS OF THE STATE/U.S. ALL EQUIPMENT REFUELING, SERVICING, AND STAGING AREAS SHALL COMPLY WITH ALL LOCAL, STATE, AND FEDERAL LAWS, RULES, REGULATIONS, AND ORDINANCES, INCLUDING THOSE OF THE NATIONAL FIRE PROTECTION ASSOCIATION. APPROPRIATE CONTAINMENT MEASURES FOR THESE AREAS SHALL BE USED.

(45) CONTRACTORS SHALL PROVIDE DESIGNATED TRUCK WASHOUT AREAS ON THE SITE. THESE AREAS MUST BE SELF CONTAINED, NOT CONNECTED TO ANY STORMWATER OUTLET OF THE SITE, AND PROPERLY SIGNED. WASH DOWN OR WASTE DISCHARGE OF CONCRETE TRUCKS SHALL NOT BE PERMITTED ONSITE UNLESS PROPER SETTLEMENT AREAS HAVE BEEN PROVIDED IN ACCORDANCE WITH BOTH STATE AND FEDERAL REGULATIONS.

(46) WHEEL WASH WATER SHALL BE COLLECTED AND ALLOWED TO SETTLE OUT SUSPENDED SOLIDS PRIOR TO DISCHARGE. WHEEL WASH WATER SHALL NOT BE DISCHARGED DIRECTLY INTO ANY STORMWATER SYSTEM OR STORMWATER TREATMENT SYSTEM.

(47) IF PORTABLE SANITARY FACILITIES ARE PROVIDED ON CONSTRUCTION SITES, SANITARY WASTE SHALL BE COLLECTED FROM THE PORTABLE UNITS IN A TIMELY MANNER BY A LICENSED WASTE MANAGEMENT CONTRACTOR OR AS REQUIRED BY ANY REGULATIONS. THE CONTRACTOR SHALL OBTAIN ANY AND ALL NECESSARY PERMITS TO DISPOSE OF SANITARY WASTE.

(48) ONLY CONSTRUCTION PRODUCTS NEEDED SHALL BE STORED ONSITE BY THE CONTRACTOR. THE CONTRACTOR SHALL STORE ALL MATERIALS UNDER COVER AND IN APPROPRIATE CONTAINERS. PRODUCTS MUST BE STORED IN ORIGINAL CONTAINERS AND LABELED. MATERIAL MIXING SHALL BE CONDUCTED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. THE CONTRACTOR'S RESPONSIBLE PARTY SHALL INSPECT MATERIALS STORAGE AREAS REGULARLY TO ENSURE PROPER USE AND DISPOSAL.

(49) WHEN POSSIBLE, ALL PRODUCTS SHALL BE USED COMPLETELY BEFORE PROPERLY DISPOSING OF THE CONTAINER OFFSITE. THE MANUFACTURER'S DIRECTIONS FOR DISPOSAL OF MATERIALS AND CONTAINERS SHALL BE FOLLOWED.

(50) ALL PAINT CONTAINERS SHALL BE TIGHTLY SEALED AND STORED WHEN NOT REQUIRED FOR USE. EXCESS PAINT SHALL BE DISPOSED OF ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS AND APPLICABLE STATE AND LOCAL REGULATIONS.

(51) ALL HAZARDOUS WASTE MATERIALS SHALL BE DISPOSED OF IN A MANNER WHICH IS COMPLIANT WITH LOCAL OR STATE REGULATIONS. SITE PERSONNEL SHALL BE INSTRUCTED IN THESE PRACTICES, AND THE INDIVIDUAL DESIGNATED AS THE CONTRACTOR'S RESPONSIBLE PARTY SHALL BE RESPONSIBLE FOR SEEING THAT THESE PRACTICES ARE FOLLOWED. THE CONTRACTOR SHALL OBTAIN ANY AND ALL NECESSARY PERMITS TO DISPOSE OF HAZARDOUS MATERIAL.

(52) OPEN BURNING IS PROHIBITED UNLESS IT IS SPECIFICALLY ALLOWED BY LAW. IF ALLOWED, NATURAL VEGETATION, TREES, AND UNTREATED LUMBER SHALL BE THE ONLY MATERIALS THAT CAN BE OPEN BURNED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL APPLICABLE STATE AND LOCAL PERMITS PRIOR TO ANY BURNING.

(53) DISPOSAL OF ONSITE VEGETATION AND TREES BY CHIPPING THEM INTO MULCH IS PREFERABLE TO OPEN BURNING. THIS MULCH MAY BE USED AS AN ONSITE SOIL STABILIZATION MEASURE WHERE APPROPRIATE.

(54) WASTE MATERIAL (EARTH, ROCK, ASPHALT, CONCRETE, ETC.) NOT REQUIRED FOR THE CONSTRUCTION OF THE PROJECT WILL BE DISPOSED OF BY THE CONTRACTOR. IMPACTS TO WATERS OF THE STATE/U.S. SHALL BE AVOIDED IF POSSIBLE. IF UNAVOIDABLE, THE CONTRACTOR WILL OBTAIN ANY AND ALL NECESSARY PERMITS INCLUDING, BUT NOT LIMITED TO NPDES, AQUATIC RESOURCES ALTERATION PERMIT(S), CORPS OF ENGINEERS SECTION 404 PERMITS, AND TVA SECTION 26A PERMITS TO DISPOSE OF WASTE MATERIALS.

SUPPORT ACTIVITIES

(55) MATERIALS AND STAGING AREAS SHALL NOT AFFECT ANY WATERS OF THE STATE/U.S. UNLESS THESE AREAS ARE SPECIFICALLY COVERED BY ENVIRONMENTAL PERMITS, OBTAINED SOLELY BY THE CONTRACTOR. THE CONTRACTOR SHALL REVIEW ALL EXISTING PERMITS TO ENSURE THAT WORK AT PERMITTED SITES DOES NOT EXCEED EXPIRATION DATES. IF WORK IS GOING TO BE CONTINUED AFTER EXPIRATION DATES, THE CONTRACTOR SHALL CONTACT THE TDOT PROJECT RESPONSIBLE PARTY TO COMMENCE PERMIT RENEWAL PROCESS.

SPECIAL NOTES

EROSION PREVENTION AND SEDIMENT CONTROL

ENVIRONMENTAL

(56) STAFF FROM THE TDOT ENVIRONMENTAL DIVISION COMPLIANCE AND FIELD SERVICES OFFICE SHALL BE INVITED TO ALL PRE-CONSTRUCTION MEETINGS.

ECOLOGY

(57) STAFF FROM THE TDOT ENVIRONMENTAL DIVISION OR A DESIGNEE SHALL ADVISE THE CONTRACTOR DURING THE PRE-CONSTRUCTION MEETING WHEN ENVIRONMENTAL DIVISION PERSONNEL OR A DESIGNATED CONSULTANT WILL NEED TO BE ONSITE FOR WORK BEING DONE WHICH COULD AFFECT WATERS OF THE STATE/U.S. OR SPECIES.

(58) STAFF FROM THE TDOT ENVIRONMENTAL DIVISION OR A DESIGNEE SHALL ATTEND THE PRE-CONSTRUCTION MEETING FOR ALL PROJECTS WHICH HAVE THREATENED OR ENDANGERED SPECIES OR CRITICAL HABITAT PROXIMAL TO SCHEDULED WORK. THIS WILL PROVIDE THE OPPORTUNITY TO ENSURE THAT PERSONNEL INCLUDING THE CONTRACTOR'S PERSONNEL AND SUBCONTRACTORS ARE MADE AWARE OF THE NECESSARY PRECAUTIONS THAT MUST BE FOLLOWED.

(59) ALL PROJECTS WITH LEGALLY PROTECTED SPECIES OR CRITICAL HABITAT IDENTIFIED SHALL HAVE MEASURES IN PLACE TO CONTAIN CONCRETE DUST, CEMENT DUST AND ALL OTHER MATERIALS. THESE MATERIALS ARE NOT ALLOWED TO ENTER WATERS OF THE STATE/U.S.

EPSC NOTES

STREAMS, WETLANDS & BUFFER ZONES

(60) ONCE WATER IS DIVERTED INTO A NEWLY CONSTRUCTED AND STABILIZED RELOCATED STREAM / CHANNEL, THE ECOLOGY SECTION SHALL BE NOTIFIED. THE STREAM NAME, STREAM NUMBER, AND DATE THE WATER WAS DIVERTED INTO THE NEWLY CONSTRUCTED STREAM / CHANNEL SHALL BE SUPPLIED WITH THE NOTIFICATION.

ENVIRONMENTAL

(61) EXCEPT AS OTHERWISE SPECIFIED, THERE ARE NO KNOWN SPECIAL ENVIRONMENTAL FACTORS PRESENT ON THIS PROJECT THAT INDICATE A NEED FOR SEASONAL LIMITATIONS ON THE CLEARING, GRUBBING, EXCAVATION, GRADING, CUTTING OR FILLING OPERATIONS OR ON THE TOTAL AREA OF EXPOSED SOIL.

SEALED BY

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STATE OF TENNESSEE
DEPARTMENT OF
TRANSPORTATION

BUSH BROTHERS PROPERTY–
STREAM MITIGATION

PROJECT NOTES

$$$$SYTIME$$$$$$
$$$$DGNSPEC$$

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2017	STP-4500(28);45945-3690-14	NS-3

TDOT STANDARD DRAWINGS		
DRAWING NO.	DESCRIPTION	REV. DATE
D-NSD-26	LOG VANES, ROOT WADS, AND BOULDER J-HOOK	N/A
D-NSD-27	LOG AND BOULDER STEP POOLS	N/A
D-NSD-29	CONSTRUCTED ALLUVIAL RIFFLE	N/A
D-NSD-31	CLAY CHANNEL PLUG	N/A
D-NSD-33	COIR FIBER EROSION CONTROL BLANKET AND COIR FIBER ROLLS	N/A
D-NSD-34	LIVE STAKES AND LIVE SILTATION	N/A
D-NSD-37	SPECIAL NOTES FOR NATURAL STREAM DESIGN	N/A
EC-STR-2	SEDIMENT FILTER BAG	8/1/2012
EC-STR-3C	SILT FENCE WITH WIRE BACKING	8/1/2012
EC-STR-25	TEMPORARY CULVERT CROSSING, CONSTRUCTION EXIT, CONSTRUCTION FORD	8/1/2012
EC-STR-34	EROSION CONTROL BLANKET FOR SLOPE INSTALLATION	8/1/2012

NOTES

1. CONTRACTOR SHALL SUBMIT DOCUMENTATION OF THE FOLLOWING MINIMUM QUALIFICATIONS AND EXPERIENCE PRIOR TO STREAM CONSTRUCTION:
A. A MINIMUM OF TWO WEEKS OF NATURAL CHANNEL DESIGN COURSES COVERING PRINCIPLES OF FLUVIAL GEOMORPHOLOGY.
B. SUCCESSFUL COMPLETION OF AT LEAST 2000 LINEAR FEET OF STREAM RESTORATION CONSTRUCTION IN THE LAST FIVE YEARS CONSISTING OF EXCAVATION OF A NEW STREAM CHANNEL AND/OR FLOODPLAIN OR STABILIZATION OF AN EXISTING CHANNEL USING IN-STREAM NATURAL CHANNEL STABILIZATION STRUCTURES SUCH AS CONSTRUCTED ALLUVIAL RIFFLES, CROSS-VANES, J-HOOKS, LOG AND/OR ROCK VANES, ROOT WADS, BOULDER SILLS AND BIO-ENGINEERING TECHNIQUES.
C. EXPERIENCE WORKING WITH PLANT MATERIALS AND TRANSPLANTED VEGETATION SUCH AS NATIVE SEED MIX, BARE ROOT SEEDLINGS, LIVE STAKES, CONTAINER TREES AND BALLED AND BURLAP TREES.
D. TENNESSEE EROSION PREVENTION AND SEDIMENT CONTROL TRAINING, LEVEL I AND LEVEL II.
2. CONTRACTOR SHALL HAVE AN OPERATOR ON SITE WITH AT LEAST 2 YEARS OF EXPERIENCE CONSTRUCTING STREAMS AND IN-STREAM STRUCTURES BASED ON NATURAL CHANNEL DESIGN PRINCIPLES.
3. IF BEDROCK IS ENCOUNTERED DURING STREAM CONSTRUCTION, CONTACT THE T.D.O.T. ENVIRONMENTAL DIVISION IMMEDIATELY. THE PROPOSED DESIGN ASSUMES BEDROCK WILL NOT BE ENCOUNTERED.

CONSTRUCTION SUPERVISION

4. CONSTRUCTION OVERSIGHT WILL BE PERFORMED BY AN INDIVIDUAL EXPERIENCED IN NATURAL CHANNEL DESIGN IN ORDER TO ENSURE THAT THE CONTRACTOR BUILDS THE PROJECT IN ACCORDANCE WITH THE PLANS.

AS-BUILT DRAWINGS

5. DURING CONSTRUCTION, THE CONTRACTOR AND THE ENGINEER SHALL WORK TOGETHER TO MAINTAIN A SET OF PRINTS SHOWING ANY CHANGES OR CORRECTIONS IN RED. THESE PRINTS SHALL BE SUBMITTED TO THE ENGINEER AT THE COMPLETION OF THE WORK.
6. THE AS-BUILT SURVEY WILL BE PERFORMED BY THE CONTRACTOR AND SHALL INCLUDE DELIVERY OF AS-BUILT DRAWINGS. THE CONTRACTOR IS REQUIRED TO PROVIDE AS-BUILT SURVEYING AND WILL BID ON THIS ITEM.

ENVIRONMENTAL-ECOLOGY

1. THE FOLLOWING IS THE RECOMMENDED CONSTRUCTION SEQUENCE:
a. FLAG EDGE OF THE NEW CHANNEL TOP BANK PRIOR TO CLEARING. DO NOT CLEAR LARGE TREES IN POSITION TO SHADE THE NEW CHANNEL. LEAVE AS MANY TREES AND SHRUBS AS POSSIBLE AS A STREAM BUFFER.
b. EXCAVATE CHANNEL "IN THE DRY" LEAVING AREAS OF UNDISTURBED EARTH AT BOTH ENDS.
c. SHAPE CHANNEL TO SPECIFICATIONS SHOWN. REMOVE LOOSE SOILS AND DEBRIS.
d. PLACE TOPSOIL, SEED & EROSION CONTROL BLANKET AS SPECIFIED.
e. REMOVE DIVERSIONS, BANKS AND BOTTOM ELEVATION OF THE OLD CHANNEL SHOULD TRANSITION SMOOTHLY INTO THE NEW CHANNEL. THE ELEVATIONS OF THE NEW CHANNEL BOTTOM AT EACH END OF THE RELOCATION SEQUENCE SHOULD MATCH THE ELEVATIONS OF THE EXISTING CHANNEL, AND A STEADY PERCENT SLOPE SHOULD BE MAINTAINED THROUGHOUT THE RELOCATED CHANNEL CENTERLINE OR AS SPECIFIED.
f. INSTALL TREES ACCORDING TO STREAM MITIGATION PLANTING DETAIL ON SHEET NS-8.
2. STABILIZE THE BANKS OF THE NEW CHANNEL WITH SEED AND COIR EROSION CONTROL BLANKET BEFORE ANTICIPATED RAINFALL.
3. THE NEW CHANNEL SHALL BE EXCAVATED AND STABILIZED DURING A LOW-WATER PERIOD. LIVE STAKES, BIOENGINEERING MEASURES, SEEDING, AND MULCH SHALL BE INSTALLED IMMEDIATELY FOLLOWING CHANNEL COMPLETION. TREES SHALL BE INSTALLED IN THE FIRST PLANTING SEASON FOLLOWING CHANNEL EXCAVATION. WATER SHALL BE DIVERTED INTO THE NEW CHANNEL ONLY AFTER IT IS COMPLETELY STABILIZED, AND ONLY DURING A LOW-WATER PERIOD. STABILIZED MEANS THAT ALL SPECIFIED ROCK AND EROSION CONTROL BLANKET OR FLEXIBLE CHANNEL LINER IS IN PLACE, AND SEEDING AND SOD ARE IN PLACE AND ESTABLISHED.
4. REQUESTS BY ANY AGENCY THAT WOULD REQUIRE THE MODIFICATION OF CHANNELS, DITCHES, ELEVATIONS, RIP-RAP OR ANY OTHER STREAM MITIGATION ITEMS ASSOCIATED WITH THE CHANNEL RELOCATIONS SHALL BE REFERRED TO THE PROJECT ENGINEER.
5. FLOW DIVERSION CAN BE ACCOMPLISHED USING PUMPS. A "PUMP AROUND TYPICAL" DETAIL IS LOCATED ON SHEET NS-23A.

SPECIAL NOTES

1. THIS IS A STREAM MITIGATION PROJECT THAT IS TO BE DONE IN ACCORDANCE WITH 404/401 WATER QUALITY CERTIFICATION.
2. ALL DISTURBED AREAS SHALL BE PROPERLY STABILIZED AS SOON AS PRACTICABLE WITH SEED/STRAW MULCH UNLESS OTHERWISE NOTED IN THE PLANS OR BY THE ENGINEER.

TREES

1. NO SUBSTITUTIONS OF TREE SPECIES OR SIZES SHALL BE ALLOWED WITHOUT WRITTEN APPROVAL FROM THE ENGINEER/LANDSCAPE ARCHITECT. CONCERNING STREAM MITIGATION, TREES SHALL BE OF THE VARIETY REQUESTED, BARE ROOT (ROOTS MUST BE KEPT MOIST AT ALL TIMES), AND FIRST QUALITY. ANY FOUND TO BE INCORRECT SPECIES, OR IMPROPERLY PLANTED, AT ANY TIME PRIOR TO TERMINATION OF THE CONTRACT SHALL BE REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE. STAKES AND WIRES SHALL BE REMOVED IMMEDIATELY PRIOR TO CONTRACT TERMINATION, UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER.
2. TREE AND SHRUB SPECIES SHOULD BE 2-5 FT CONTAINER GROWN OR BALL AND BURLAP STOCK. SHRUBS SHOULD BE PLACED ON 12-FOOT CENTERS.
3. LIVE STAKE ELDERBERRY, SILKY DOGWOOD, BLACK WILLOW, AND SILKY WILLOW WILL ALSO BE USED ALONG THE STREAM BANK.

CONSTRUCTION SPECIFICATIONS FOR LIVE STAKES

1. HARVESTING:

A. LIVE STAKES MAY CONSIST OF A COMBINATION OF BLACK WILLOW, SILKY DOGWOOD, ALDER, AND ELDERBERRY.

B. STAKES SHOULD BE HARVESTED AND PLANTED WHEN THE WILLOWS OR OTHER CHOSEN SPECIES ARE DORMANT. THIS PERIOD IS GENERALLY FROM LATE FALL TO EARLY SPRING, OR BEFORE THE BUDS START TO BREAK.

C. WHEN HARVESTING CUTTINGS, SELECT HEALTHY, LIVE WOOD THAT IS REASONABLY STRAIGHT.

D. USE LIVE WOOD AT LEAST 1 YEAR OLD OR OLDER. THE BEST WOOD IS 2 TO 5 YEARS OLD WITH SMOOTH BARK THAT IS NOT DEEPLY FURROWED.

E. MAKE CLEAN CUTS WITH UNSPLIT ENDS. TRIM BRANCHES FROM CUTTING AS CLOSE AS POSSIBLE. CUT THE BUTT END OF THE CUTTING AT AN ANGLE (~45 DEGREES) AND THE TOP END PERPENDICULAR (90 DEGREES)

F. THE TOP (SQUARE CUT END) SHOULD BE PAINTED AND SEALED BY DIPPING THE TOP 1-INCH TO 2-INCHES INTO A 50-50 MIX OF LIGHT COLORED LATEX PAINT AND WATER. THIS REDUCES THE POSSIBILITY OF DESICCATION AND DISEASE CAUSING MORTALITY AND MAKES THEM MORE VISIBLE FOR SUBSEQUENT PLANTING EVALUATIONS. ASSURE THE STAKES ARE PLANTED WITH THE TOP UP.

G. CUTTINGS SHOULD GENERALLY BE BETWEEN 0.75-INCHES TO 2-INCHES IN DIAMETER BUT CAN BE LARGER DEPENDING ON THE SPECIES. HIGHEST SURVIVAL RATES ARE OBTAINED FROM USING CUTTINGS 2-INCHES TO 3-INCHES IN DIAMETER. LARGER DIAMETER CUTTINGS ARE NEEDED FOR PLANTING INTO ROCK RIPRAP.

H. CUTTINGS OF SMALL DIAMETER (UP TO 1.5-INCHES) SHOULD BE 18 INCHES LONG MINIMUM. THICKER CUTTINGS SHOULD BE LONGER.

I. STAKES SHOULD BE CUT SO A TERMINAL BUD SCAR IS WITHIN 1-INCH TO 4-INCHES OF THE TOP. AT LEAST TWO BUDS AND/OR BUD SCARS SHOULD BE ABOVE THE GROUND AFTER PLANTING.

2. INSTALLATION:

A. STAKES MUST BE PLANTED WITH BUTT-ENDS INTO THE GROUND. LEAF BUD SCARS OR EMERGING BUDS SHOULD ALWAYS POINT UP.

B. STAKES MUST NOT BE ALLOWED TO DRY OUT. THE CUTTINGS NOT PLANTED THE DAY THEY ARE HARVESTED SHOULD BE SOAKED IN WATER FOR A MINIMUM OF 24 HOURS AS SOAKING SIGNIFICANTLY INCREASES THE SURVIVAL RATE OF THE CUTTINGS.

C. PLANT STAKES 3 FEET CENTER AND ALTERNATE SPECIES.

D. SET THE STAKE AS DEEP AS POSSIBLE INTO THE SOIL, PREFERABLY WITH 80 PERCENT OF ITS LENGTH BURIED BUT NO LESS THAN ONE-HALF OF THE TOTAL LENGTH BURIED.

E. TAMP THE SOIL AROUND THE CUTTING.

USE AN IRON STAKE OR BAR TO MAKE A PILOT HOLE IN FIRM SOIL OR BETWEEN RIPRAP. DRIVE LIVE STAKES INTO THE SOIL WITH A RUBBER MALLET OR DEAD-BLOW HAMMER.

MULCHING OF SEEDED AREAS

ALL SEEDED AREAS ARE TO BE COVERED BY STRAW MULCH.

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COORDINATES ARE NAD/83(1995), ARE DATUM ADJUSTED BY THE FACTOR OF 1.00010637 AND TIED TO THE TGRN. ALL ELEVATIONS ARE REFERENCED TO THE NAVD 1988.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

BUSH BROTHERS PROPERTY- STREAM MITIGATION

HALL BRANCH SITE
NOTES AND STANDARD DRAWINGS

$$$$SYTIME$$$$$$
$$$$DGNSPEC$$

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2017	STP-4500(28);45945-3690-14	NS-3A

ESTIMATED QUANTITIES FOR HALL BRANCH STREAM MITIGATION

Note	ITEM NO.	DESCRIPTION	UNIT	QUANTITY
(11)	201-01	CLEARING AND GRUBBING	L.S.	1
(9)	201-07.01	REMOVAL AND DISPOSAL OF BRUSH AND TREES	L.S.	1
(1)	203-01	ROAD & DRAINAGE EXCAVATION (UNCLASSIFIED)	C.Y.	14,707
(4)	203-15.03	COMPACTED CLAY	C.Y.	434
(2)	209-03.34	STREAM MITIGATION - LOG VANES	L.F.	42
(3)	209-03.36	STREAM MITIGATION - STEP POOL	EACH	71
	209-08.02	TEMPORARY SILT FENCE (WITH BACKING)	L.F.	500
(7)	209-65.01	TEMPORARY STREAM DIVERSION (PUMP AROUND)	L.S.	1
	202-02.21	REMOVAL OF PIPE	L.F.	100
(12)	209-09.03	SEDIMENT FILTER BAG (15' X 15')	EACH	5
	303-10.01	MINERAL AGGREGATE (SIZE 57)	TON	50
	621-03.04	30" TEMPORARY DRAINAGE PIPE	L.F.	20
(5)	709-05.81	ROCK RIFFLES	L.S.	1
(6)	709-05.05	MACHINED RIP-RAP (CLASS A-3)	TON	104
	709-05.06	MACHINED RIP-RAP (CLASS A-1)	TON	47
	709-05.08	MACHINED RIP-RAP (CLASS B)	TON	105
	713-16.20	SIGNS (PROTECTED AREA SIGNS)	EACH	10
	740-10.03	GEOTEXTILE TYPE (III) (EROSION CONTROL)	S.Y.	672
(10)	801-01.04	SEEDING (WILDFLOWER MIXTURE)	UNIT	487
(10)	801-01.30	COVER CROP SEED MIX (RIPZN/FLPL) W/MULCH	UNIT	487
(10)	801-01.35	GRASS SEED MIX (RIPZN/FLPL) W/MULCH	UNIT	487
(10)	801-01.36	SPECIAL WETLAND SEED MIXTURE	UNIT	168
	802-02.30	CUTTINGS: SALIX NIGRA (18IN-24IN LENGTH)	EACH	1000
	802-02.37	CUTTINGS: ALNUS SERRULATA (18IN-24IN)	EACH	800
	802-02.32	CUTTINGS: CORNUS AMOMUM (18IN-24IN)	EACH	1400
	802-02.33	CUTTINGS: SAMBUCUS CANADENSIS (18IN-24IN)	EACH	800
	802-12.02	ACER RUBRUM (RED MAPLE SEEDLING B.R.)	EACH	450
	802-12.14	DIOSPYROS VIRGINIANA (PERSIMMON SEEDLING B.R.)	EACH	450
	802-12.19	LIRIODENDRON TULIPIFERA (TULIP POPLAR SEEDLING B.R.)	EACH	450
	802-12.26	PLATANUS OCCIDENTALIS (SYCAMORE SEEDLING B.R.)	EACH	450
	802-12.32	QUERCUS LYRATA (OVERCUP OAK SDLNG SEEDLING B.R.)	EACH	450
	802-12.33	QUERCUS MICHAUXII (SWMP CHSTNT OAK SEEDLING B.R.)	EACH	450
	802-12.38	QUERCUS PHELLOS (WILLOW OAK SEEDLING B.R.)	EACH	450
	802-12.45	CARPINUS CAROLINIANA (AMERICAN HORNBEAM SEEDLING B.R.)	EACH	450
	802-12.46	QUERCUS SHUMARDII (SHUMARD OAK SEEDLING B.R.)	EACH	400
	802-12.51	CORNUS AMOMUM (SILKY DOGWOOD SEEDLING B.R.)	EACH	450
	802-13.59	LINDERA BENZOIN (SPICEBUSH SDLNG BARE ROOT)	EACH	450
	805-12.02	EROSION CONTROL BLANKET (TYPE II)	S.Y.	1,910
(8)	805-12.08	700 GRAM COIR FIBER EROSION CONTROL BLANKET	S.Y.	4,100

Note (11) applies to all items from 201-01 through 805-12.08; note (10) applies to items 801-01.04 through 801-01.36.

FOOTNOTES:

1. INCLUDES ALL MATERIALS, EQUIPMENT, AND LABOR NECESSARY TO EXCAVATE THE PROPOSED CHANNEL AND FLOODPLAIN, AND TO FILL THE ABANDONED CHANNEL; EXISTING POND TOPOGRAPHY WAS SURVEYED BY ROBERT G. CAMPBELL & ASSOC., L.P.; THE CONTRACTOR SHALL MAKE PROVISIONS FOR THE SATISFACTORY DISPOSAL OF 14707 C.Y. OF EXCESS MATERIAL
2. INCLUDES ALL MATERIALS, EQUIPMENT, AND LABOR NECESSARY TO CONSTRUCT AS SHOWN IN (3/23) LF SHALL BE MEASURED AS TOTAL LF OF LOG VANE
3. INCLUDES ALL MATERIALS, EQUIPMENT, AND LABOR NECESSARY TO CONSTRUCT AS SHOWN IN (4/23)
4. INCLUDES ALL MATERIALS, EQUIPMENT, AND LABOR NECESSARY TO CONSTRUCT AS SHOWN IN (2/23)
5. INCLUDES ALL MATERIALS, EQUIPMENT, AND LABOR NECESSARY TO CONSTRUCT AS SHOWN IN (1/23)
6. QUANTITY DOES NOT INCLUDE A-3 RIP RAP USED IN CONSTRUCTION OF ALLUVIAL RIFFLE
7. INCLUDES MULTIPLE SETUPS AND RELOCATIONS OF STREAM DIVERSION PUMP AROUND AS CONSTRUCTION PROGRESSES. INCLUDES ALL MATERIALS, EQUIPMENT, AND LABOR NECESSARY TO CONSTRUCT AND RELOCATE AS SHOWN AND DESCRIBED IN (2/23A) WITH THE EXCEPTION OF SEDIMENT FILTER BAGS, MINERAL AGGREGATE (SIZE 57), AND GEOTEXTILE TYPE (III) USED FOR DEWATERING CONSTRUCTION AREA
8. COIR FIBER EROSION BLANKETS SHALL BE 700 GRAMS PER SQUARE METER.
9. INCLUDES ALL MATERIALS, EQUIPMENT, AND LABOR NECESSARY TO COMPLETELY REMOVE ROOT SYSTEMS AND STEMS OF EXISTING BAMBOO
10. COVER CROP SEED MIX W/ MULCH IS CONSIDERED TEMPORARY SEEDING; SEEDING (WILDFLOWER MIXTURE), GRASS SEED MIX W/ MULCH, AND SPECIAL WETLAND SEED MIXTURE ARE CONSIDERED PERMANENT SEEDING
11. ALL QUANTITIES ARE TO BE USED AS DIRECTED BY THE ENGINEER
12. QUANTITY IS BASED ON AN ASSUMPTION OF 5 PUMP AROUND RELOCATIONS AND AN ASSUMPTION OF 1 SEDIMENT FILTER BAG PER PUMP AROUND RELOCATION. FINAL QUANTITY MAY VARY BASED ON ACTUAL NUMBER OF RELOCATIONS NEEDED AND SEDIMENT FILTER BAG USAGE RATE

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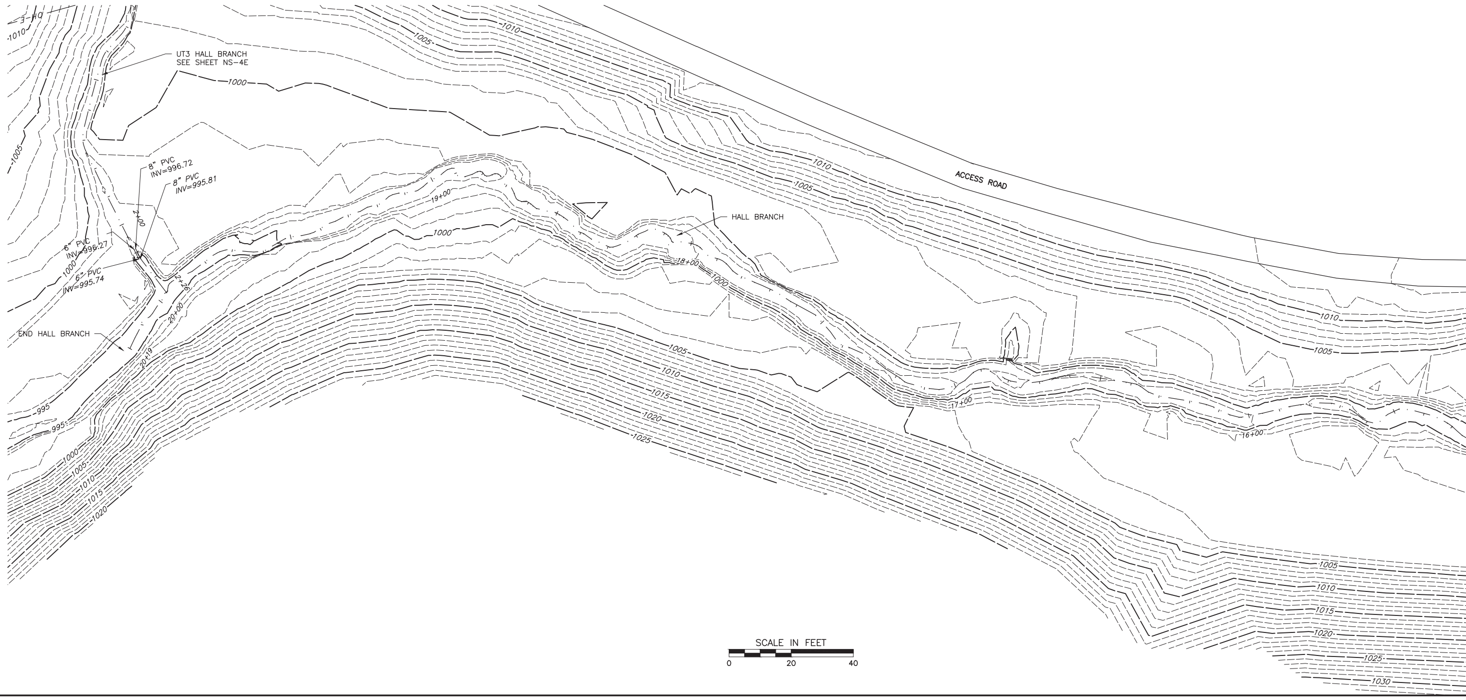
STATE OF TENNESSEE
DEPARTMENT OF
TRANSPORTATION

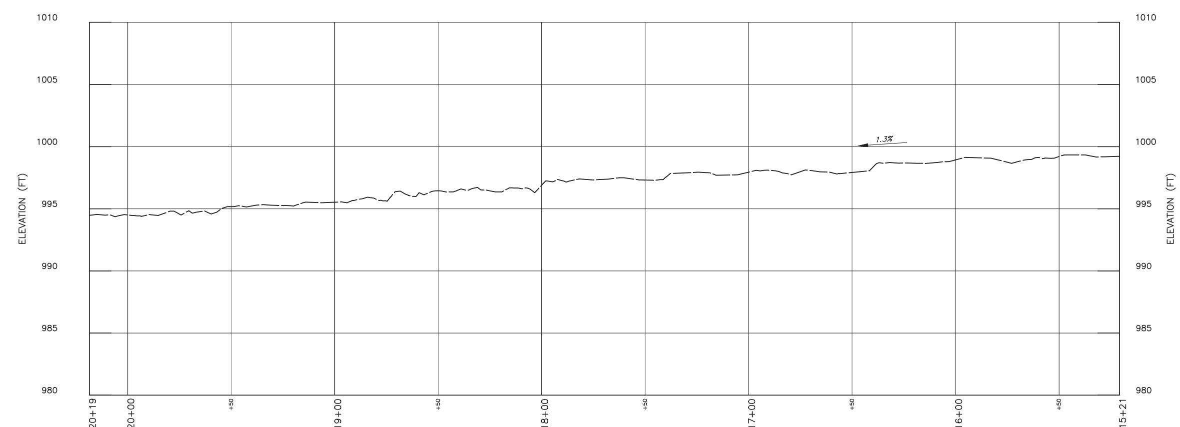
BUSH BROTHERS PROPERTY– STREAM MITIGATION

HALL BRANCH SITE
STREAM MITIGATION
QUANTITIES

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2017	STP-4500(28);45945-3690-14	NS-4



- EXISTING STREAM CENTERLINE
- EXISTING MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- EXISTING FENCE
- OH-E EXISTING OVERHEAD ELECTRICITY LINE



HALL BRANCH EXISTING ALIGNMENT PROFILE

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SCALE IN FEET 0 30 60

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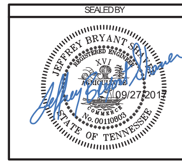

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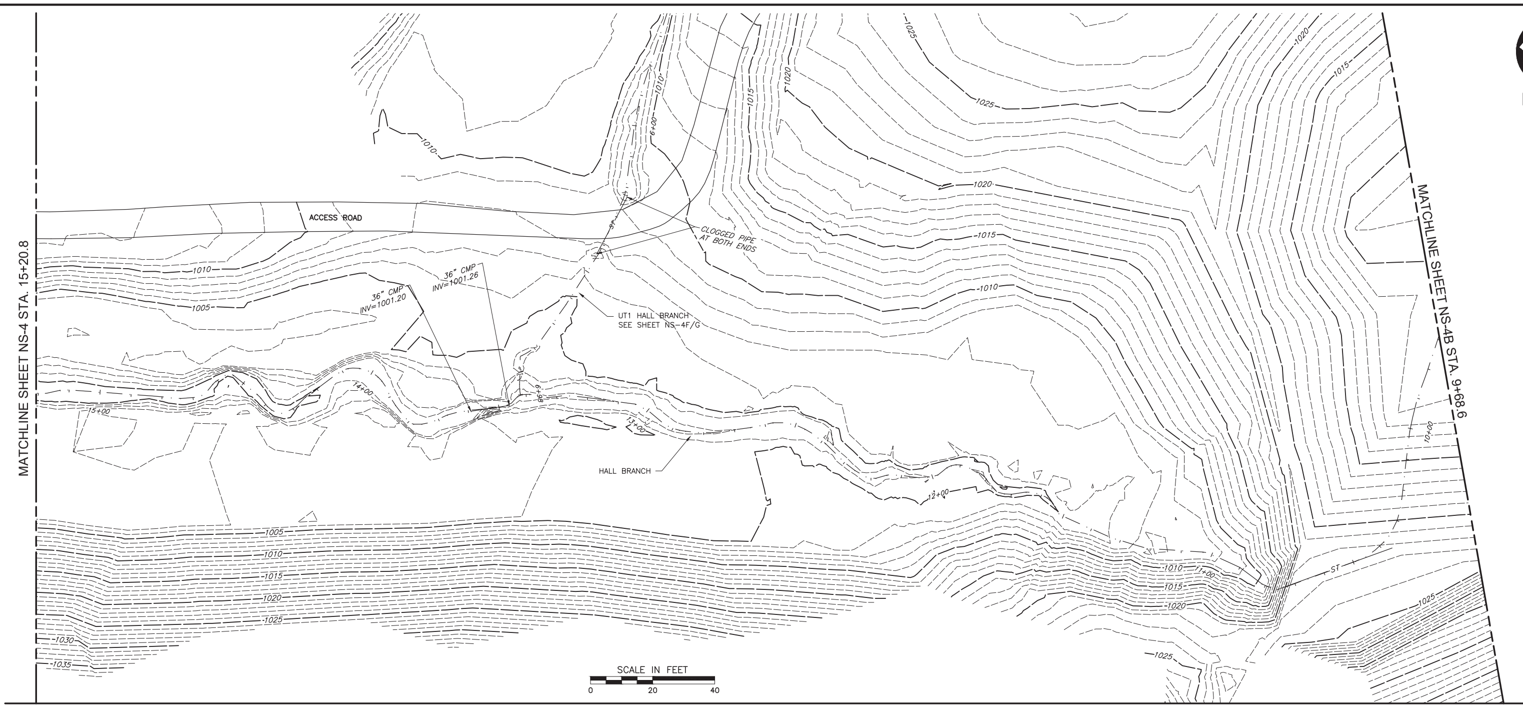
STATE OF TENNESSEE
DEPARTMENT OF
TRANSPORTATION

BUSH BROTHERS PROPERTY– STREAM MITIGATION

HALL BRANCH
STREAM MITIGATION
EXISTING PLAN AND PROFILE

$$$$SYTIME$$$$$$
$$$$DGNSPEC$$$

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2017	STP-4500(28);45945-3690-14	NS-4A

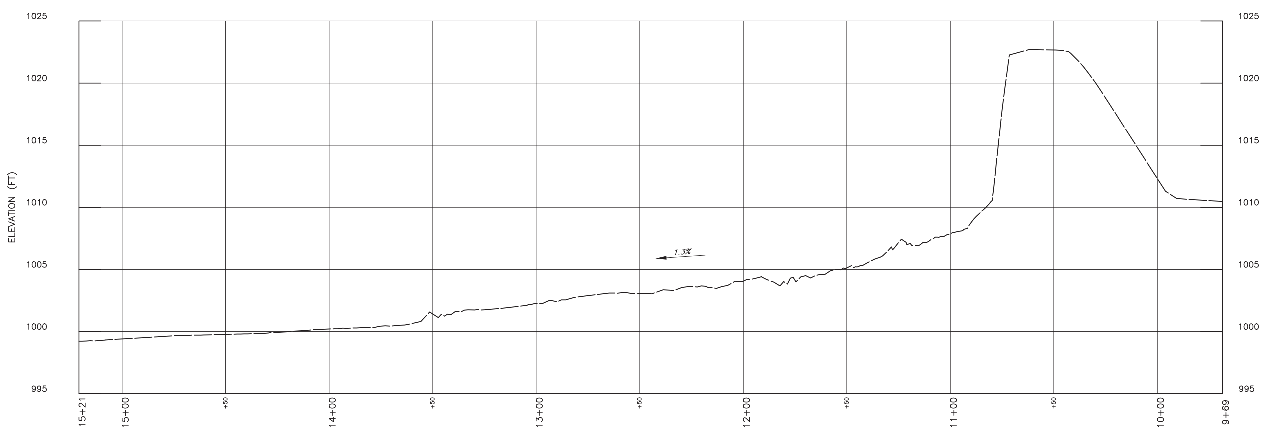


EXISTING STREAM CENTERLINE

EXISTING MINOR CONTOUR

EXISTING MAJOR CONTOUR

EXISTING DRAINAGE STRUCTURE



HALL BRANCH EXISTING ALIGNMENT PROFILE

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SCALE IN FEET 0 5 10

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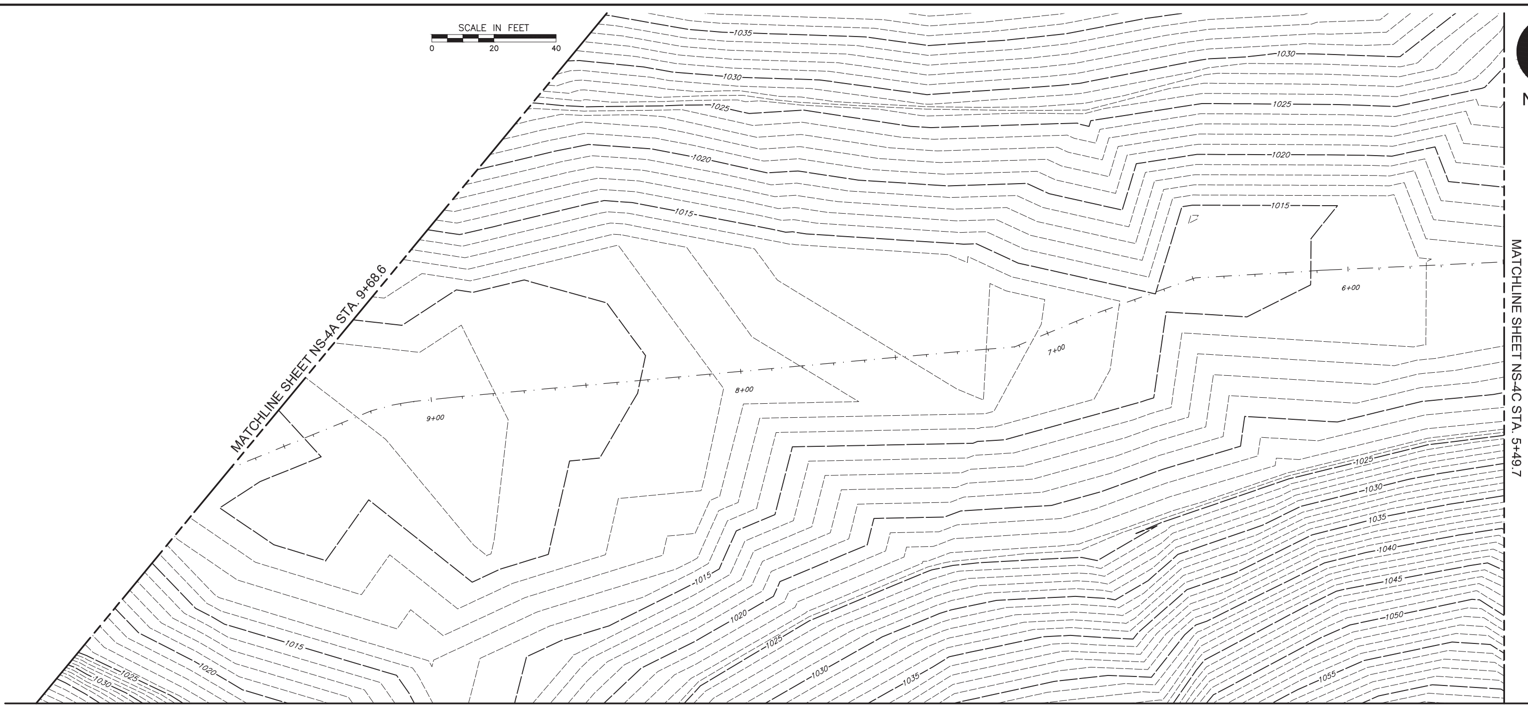
STATE OF TENNESSEE
DEPARTMENT OF
TRANSPORTATION

BUSH BROTHERS
PROPERTY–
STREAM MITIGATION

HALL BRANCH
STREAM MITIGATION
EXISTING PLAN AND PROFILE

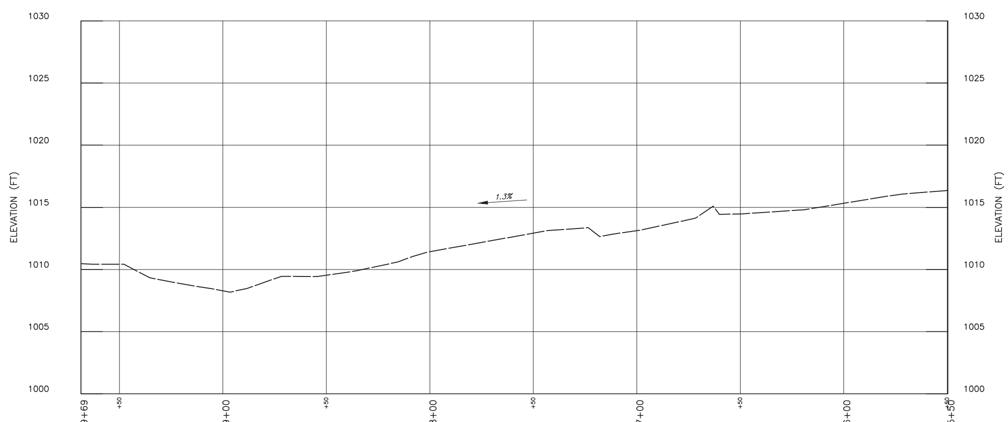
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2017	STP-4500(28);45945-3690-14	NS-4B



EXISTING STREAM CENTERLINE

EXISTING MINOR CONTOUR

EXISTING MAJOR CONTOUR



HALL BRANCH EXISTING ALIGNMENT PROFILE

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SCALE IN FEET 0 5 10

SCALE IN FEET 0 30 60

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STATE OF TENNESSEE
DEPARTMENT OF
TRANSPORTATION

BUSH BROTHERS
PROPERTY–
STREAM MITIGATION

HALL BRANCH
STREAM MITIGATION
EXISTING PLAN AND PROFILE

$$$$SYTIME$$$$$$

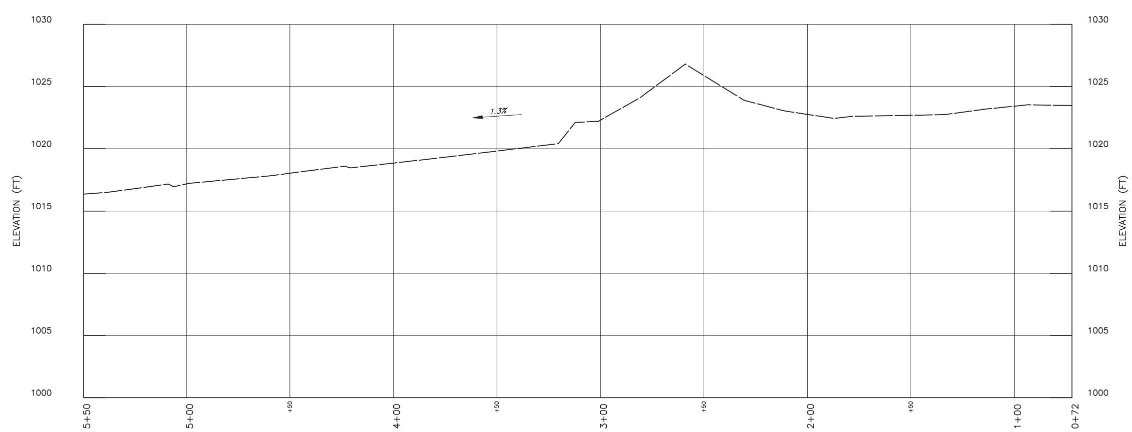
$$$$DGNSPEC$$$

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2017	STP-4500(28);45945-3690-14	NS-4C

EXISTING STREAM CENTERLINE

EXISTING MINOR CONTOUR

EXISTING MAJOR CONTOUR



HALL BRANCH EXISTING ALIGNMENT PROFILE

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SCALE IN FEET 0 5 10

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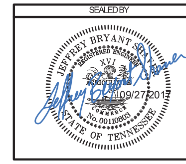

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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

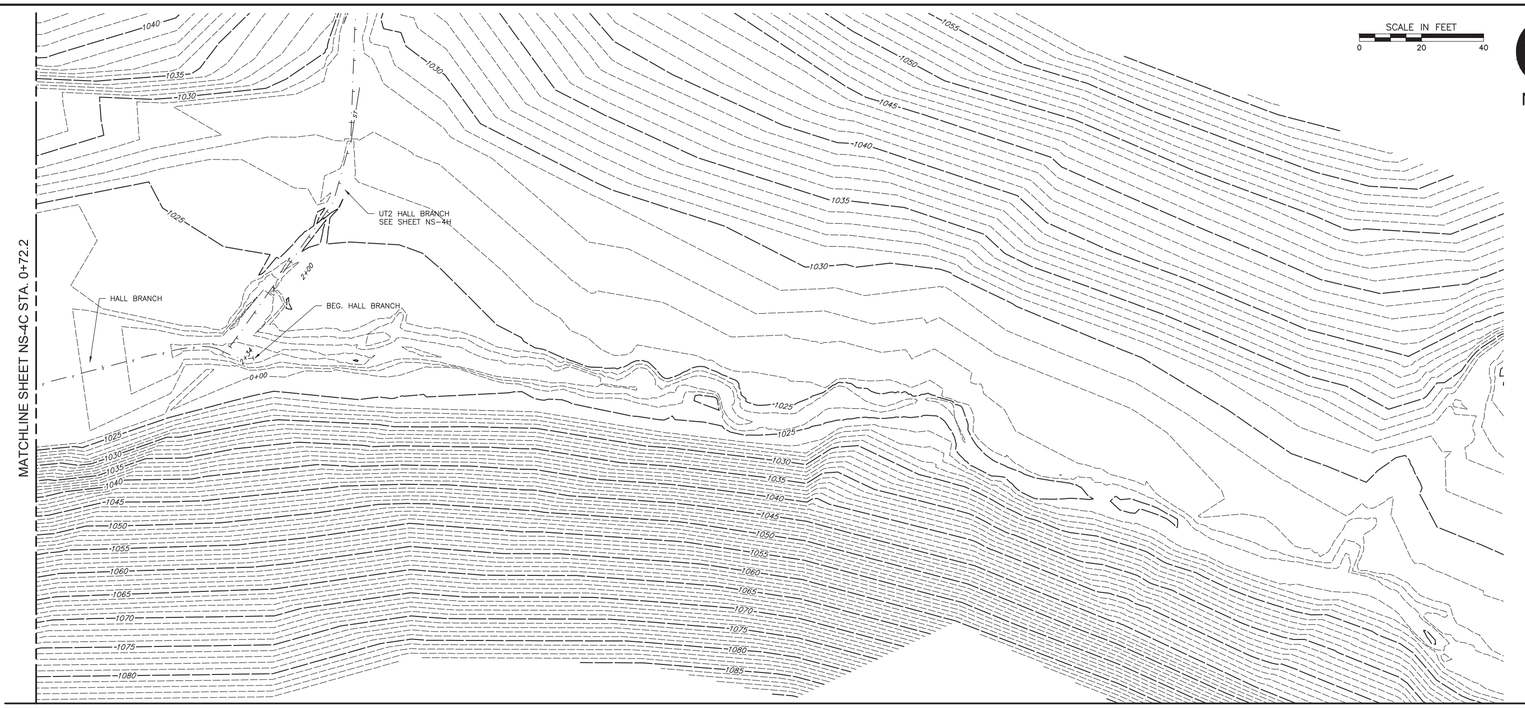
BUSH BROTHERS PROPERTY– STREAM MITIGATION

HALL BRANCH
STREAM MITIGATION
EXISTING PLAN AND PROFILE

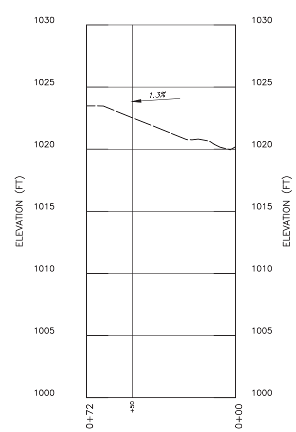
$$$$SYTIME$$$$$$

$$$$DGNSPEC$$

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2017	STP-4500(28);45945-3690-14	NS-4D



- · — · — EXISTING STREAM CENTERLINE
- - - - - EXISTING MINOR CONTOUR
— — — EXISTING MAJOR CONTOUR
—— ST —— EXISTING DRAINAGE STRUCTURE



HALL BRANCH EXISTING ALIGNMENT PROFILE
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SCALE IN FEET 0 5 10

SCALE IN FEET 0 30 60

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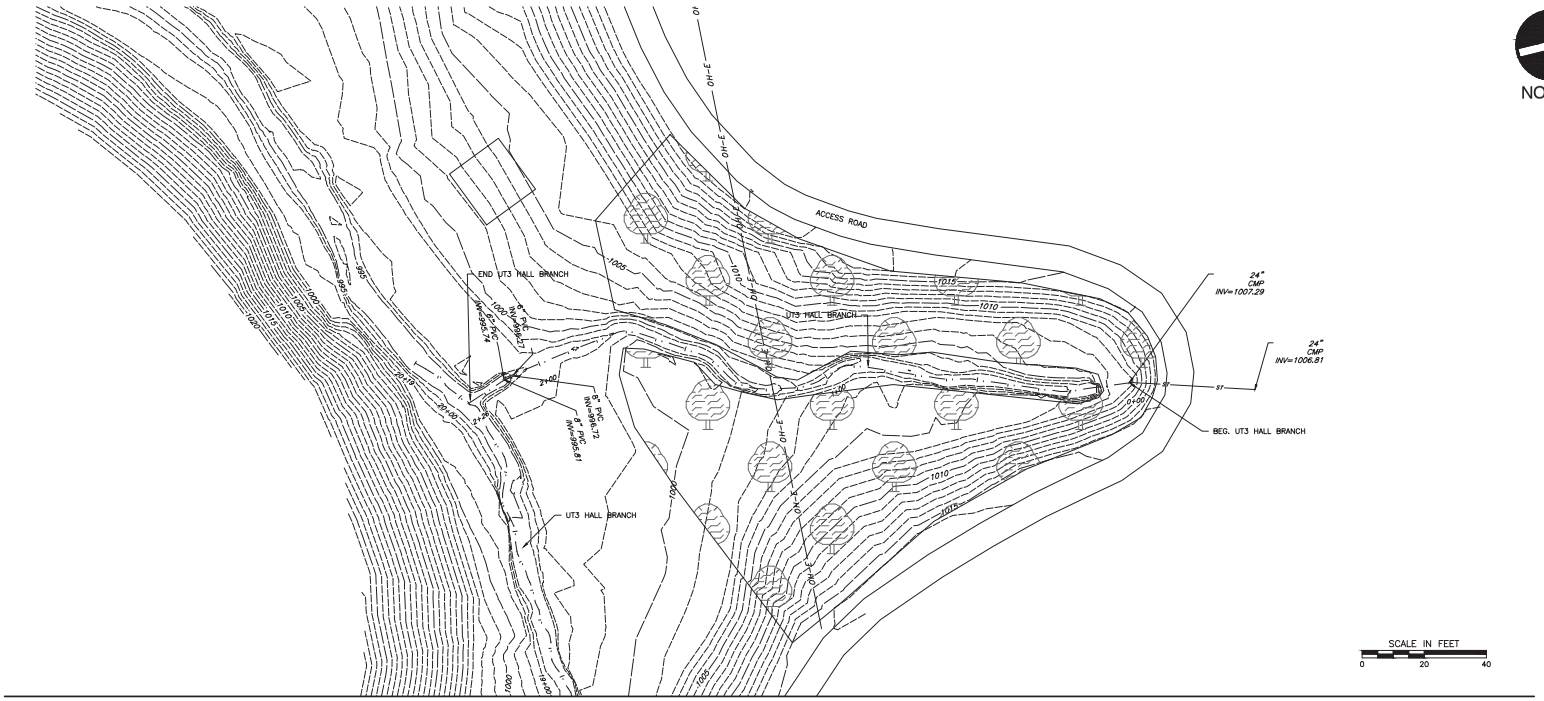
STATE OF TENNESSEE
DEPARTMENT OF
TRANSPORTATION

BUSH BROTHERS PROPERTY– STREAM MITIGATION

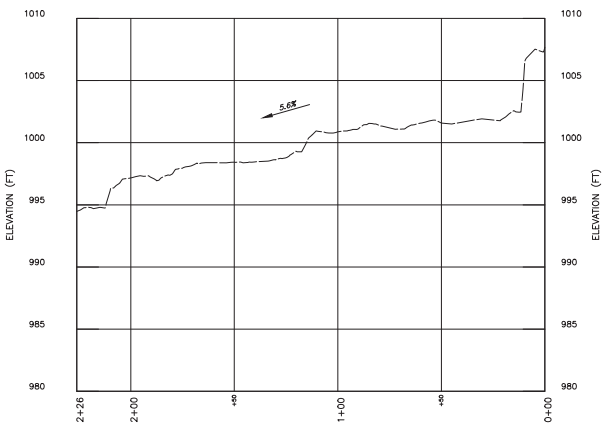
HALL BRANCH
STREAM MITIGATION
EXISTING PLAN AND PROFILE

$$$$SYTIME$$$$$$$
$$$$DGNSPEC$$$



TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2017	STP-4500(28);45945-3690-14	NS-4E

- EXISTING STREAM CENTERLINE
- EXISTING MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- ST — EXISTING DRAINAGE STRUCTURE
- OH-E — EXISTING OVERHEAD ELECTRICITY LINE
- APPROX. LOCATION OF EXISTING BAMBOO PATCH TO BE REMOVED



UT3 HALL BRANCH EXISTING ALIGNMENT PROFILE

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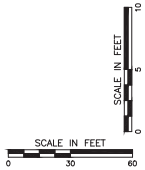

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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

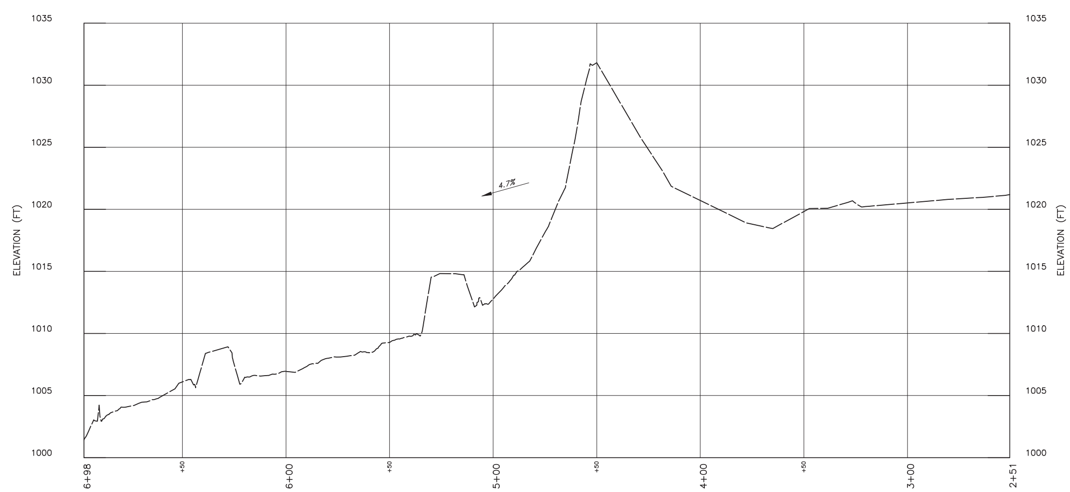
BUSH BROTHERS PROPERTY– STREAM MITIGATION

UT3 HALL BRANCH STREAM MITIGATION EXISTING PLAN AND PROFILE

$$$$SYSTMESSSSSS
$$$$DGNSPEC

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2017	STP-4500(28);45945-3690-14	NS-4F

EXISTING STREAM CENTERLINE
EXISTING MINOR CONTOUR
EXISTING MAJOR CONTOUR
EXISTING DRAINAGE STRUCTURE



UT1 HALL BRANCH EXISTING ALIGNMENT PROFILE

SCALE H:1"=30'; V:1"=5'

SCALE IN FEET
0 5 10
0 30 60

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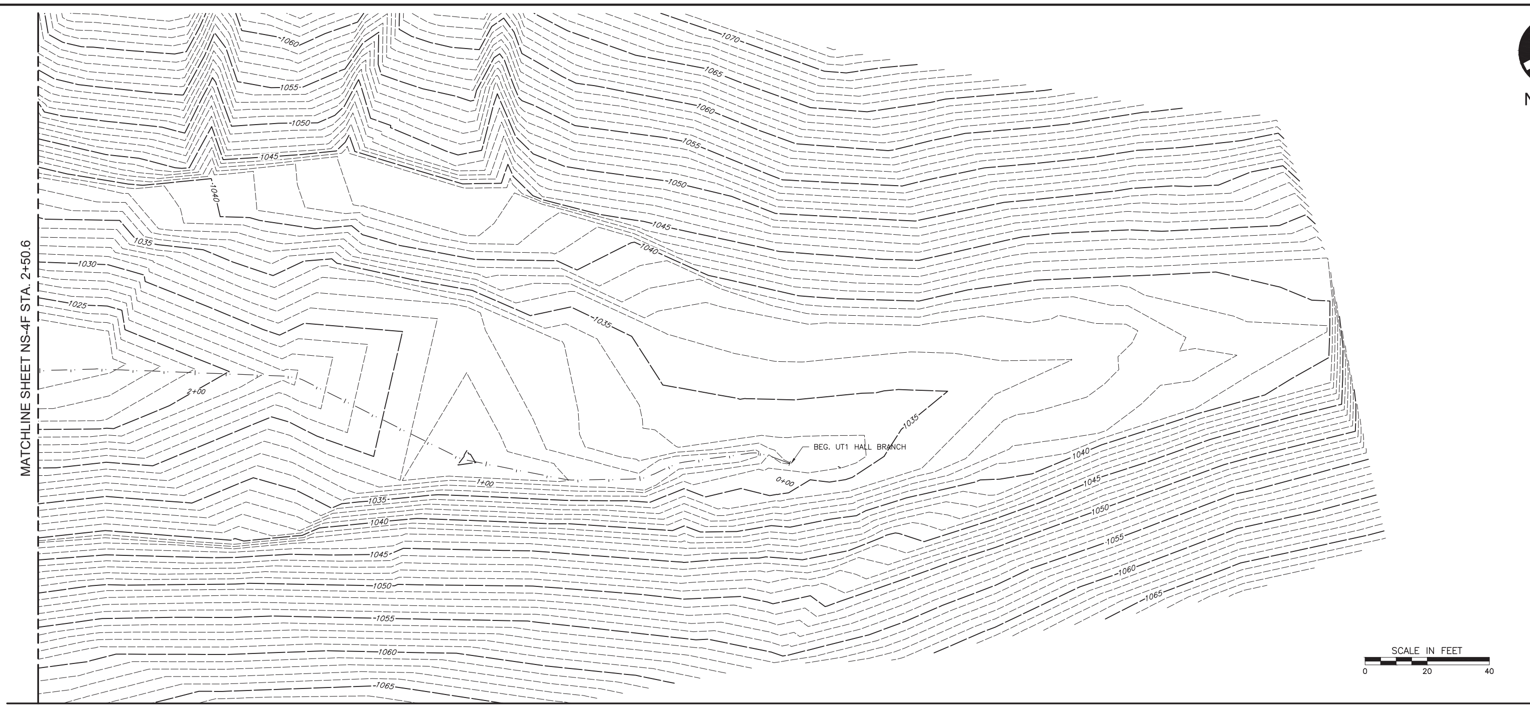
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

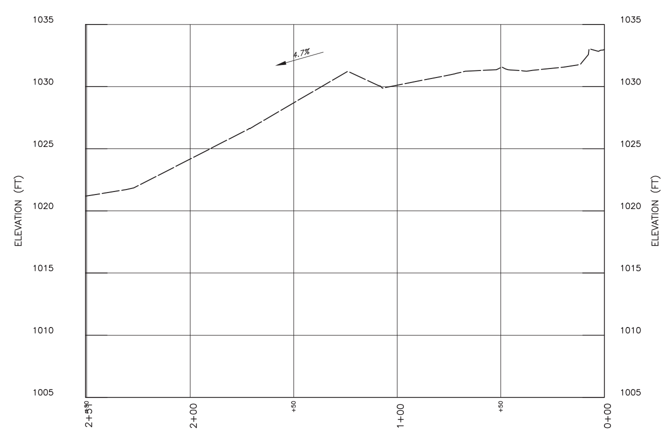
BUSH BROTHERS PROPERTY– STREAM MITIGATION

UT1 HALL BRANCH
STREAM MITIGATION
EXISTING PLAN AND PROFILE

$$$$SYTIME$$$$$$
$$$$DGNSPEC$$

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2017	STP-4500(28);45945-3690-14	NS-4G





UT1 HALL BRANCH EXISTING ALIGNMENT PROFILE

SCALE H:1"=30'; V:1"=5'

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STATE OF TENNESSEE
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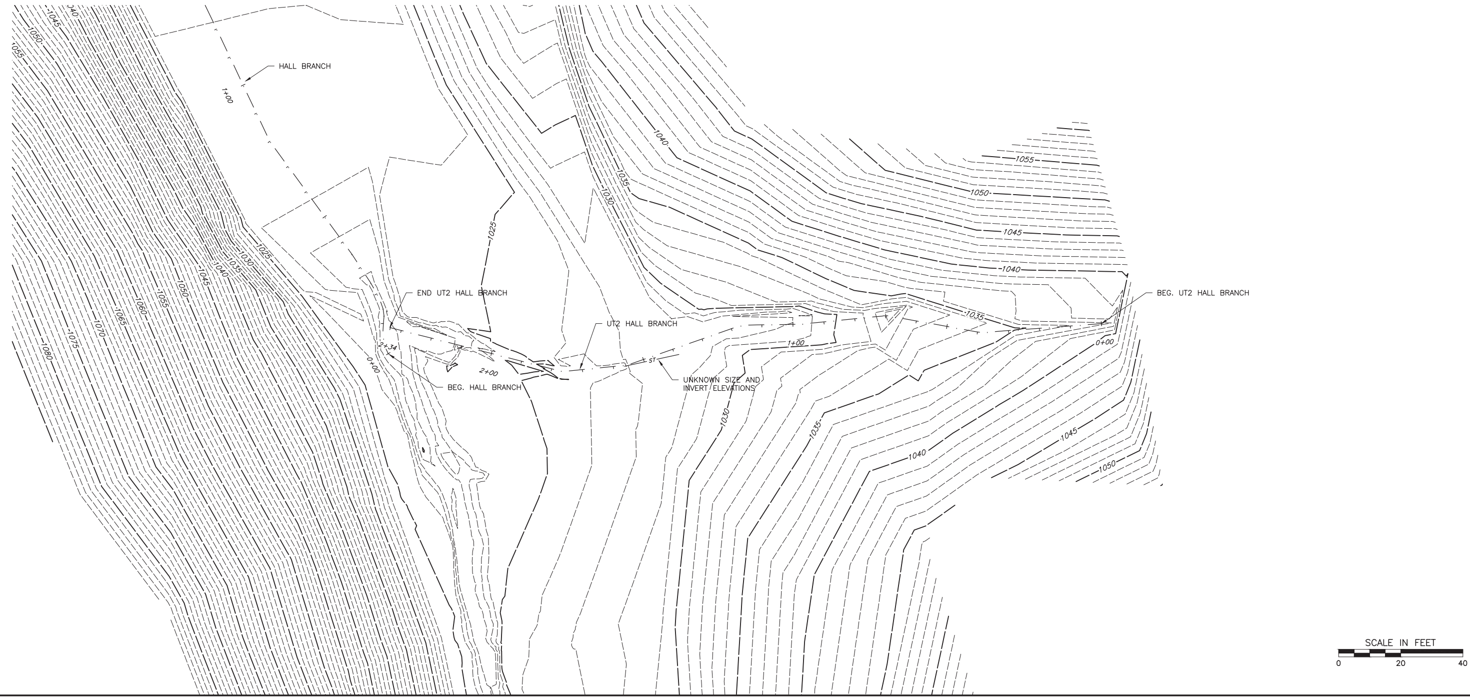
TRANSPORTATION

BUSH BROTHERS PROPERTY– STREAM MITIGATION

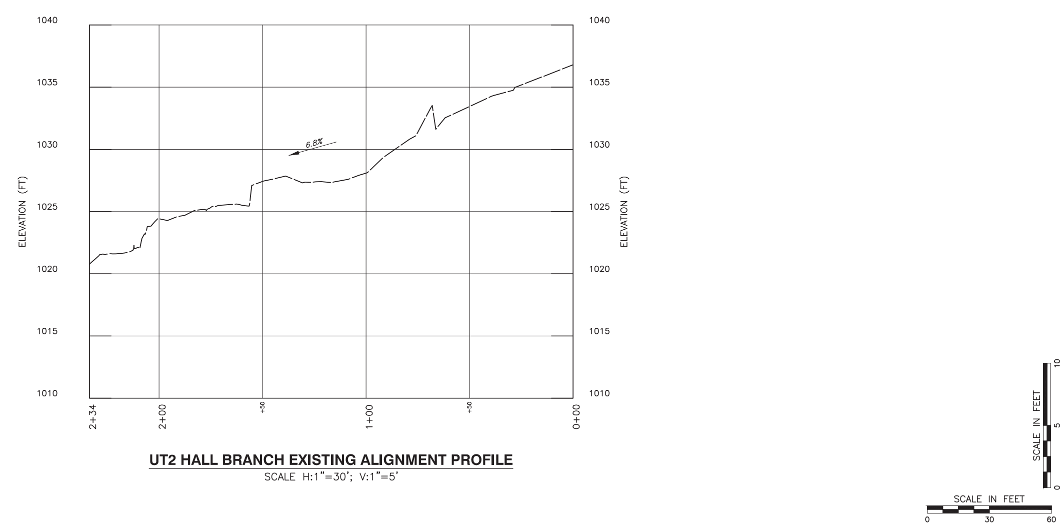
UT1 HALL BRANCH
STREAM MITIGATION
EXISTING PLAN AND PROFILE

$$$$SYTIME$$$$$$$$
$$$$DGNSPEC$$

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2017	STP-4500(28);45945-3690-14	NS-4H



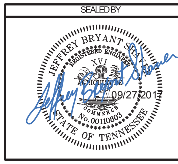
EXISTING STREAM CENTERLINE
EXISTING MINOR CONTOUR
EXISTING MAJOR CONTOUR
ST EXISTING DRAINAGE STRUCTURE



UT2 HALL BRANCH EXISTING ALIGNMENT PROFILE

SCALE H:1"=30'; V:1"=5'

SEALED BY



COORDINATES ARE NAD/83(1995), ARE DATUM ADJUSTED BY THE FACTOR OF 1.00010637 AND TIED TO THE TGRN. ALL ELEVATIONS ARE REFERENCED TO THE NAVD 1988.

STATE OF TENNESSEE
DEPARTMENT OF
TRANSPORTATION

BUSH BROTHERS PROPERTY– STREAM MITIGATION

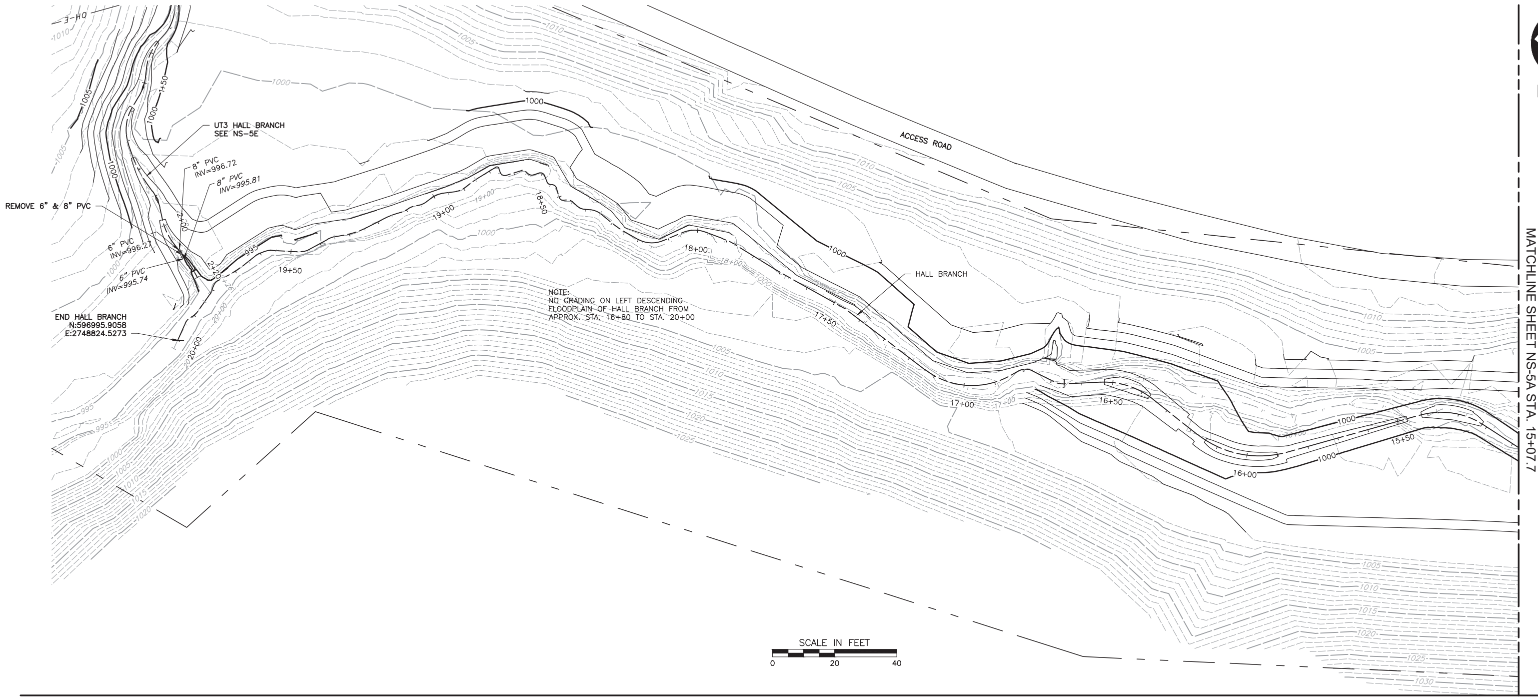
UT2 HALL BRANCH
STREAM MITIGATION
EXISTING PLAN AND PROFILE

$$$$SYTIME$$$$$$
$$$$DGNSPEC$$

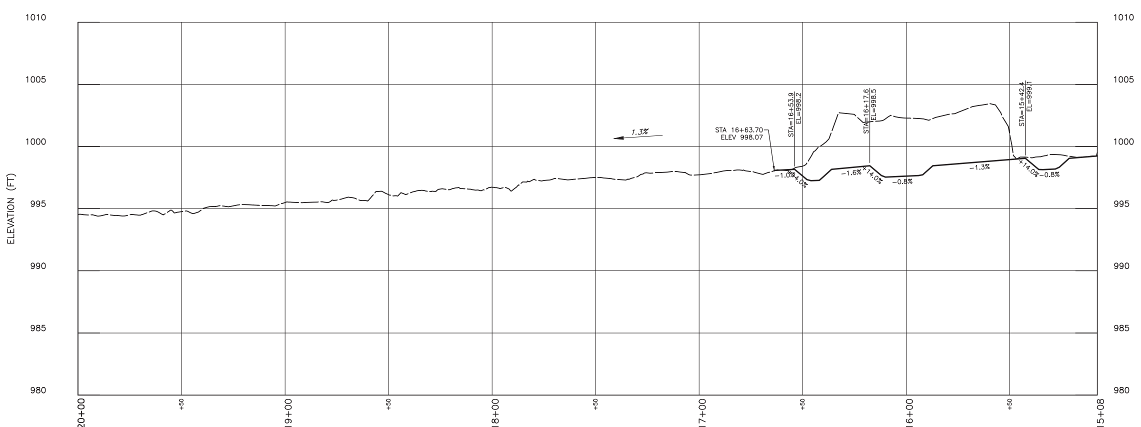
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2017	STP-4500(28);45945-3690-14	NS-5

NORTH

MATCHLINE SHEET NS-5A STA. 15+07.7



- PROPOSED STREAM CENTERLINE
- EXISTING STREAM CENTERLINE
- PROPOSED MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- OH-E EXISTING OVERHEAD ELECTRICITY LINE
- PROPOSED CONSERVATION EASEMENT



HALL BRANCH PROPOSED CENTERLINE PROFILE

SCALE H:1"=30'; V:1"=5'

SCALE IN FEET 0 30 60

SCALE IN FEET 0 5 10

SEALED BY

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STATE OF TENNESSEE DEPARTMENT OF TRANSPORTATION

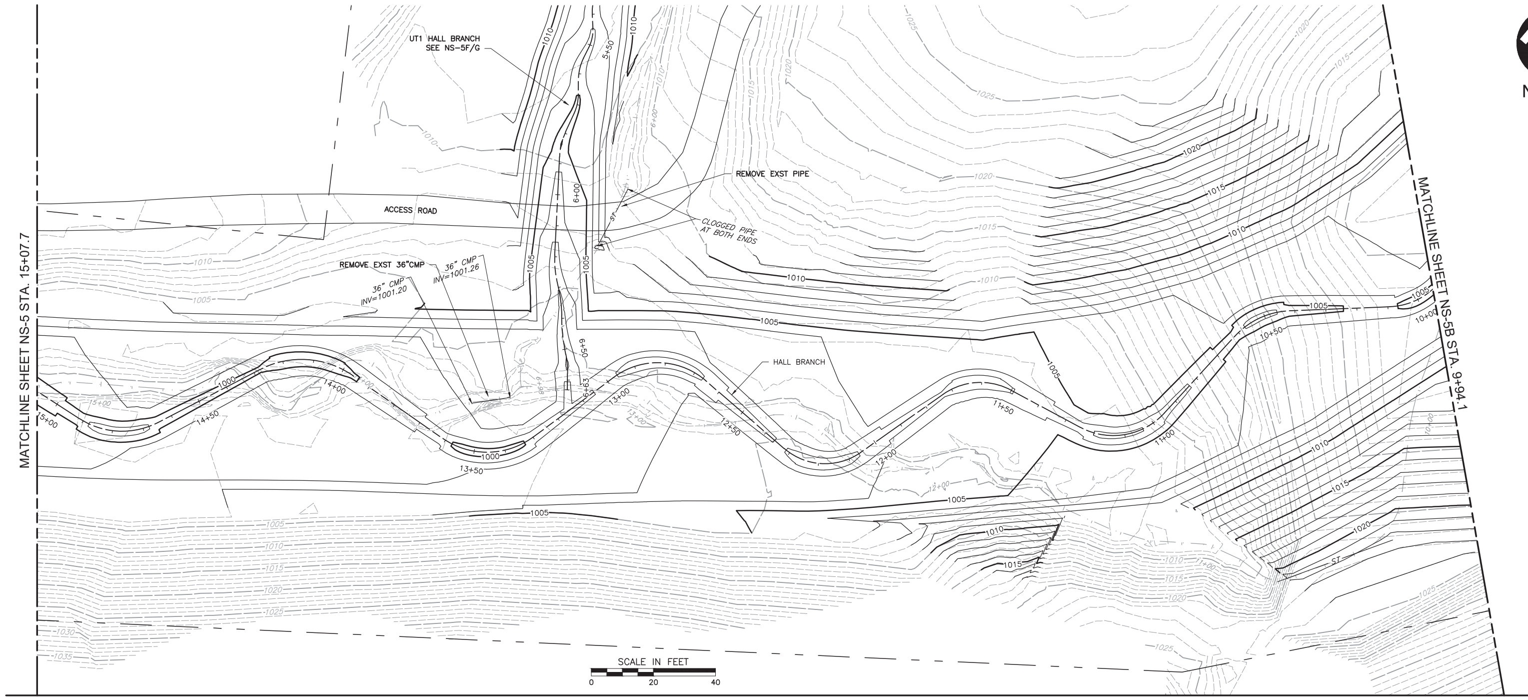
BUSH BROTHERS PROPERTY– STREAM MITIGATION

HALL BRANCH STREAM MITIGATION PROPOSED PLAN AND PROFILE

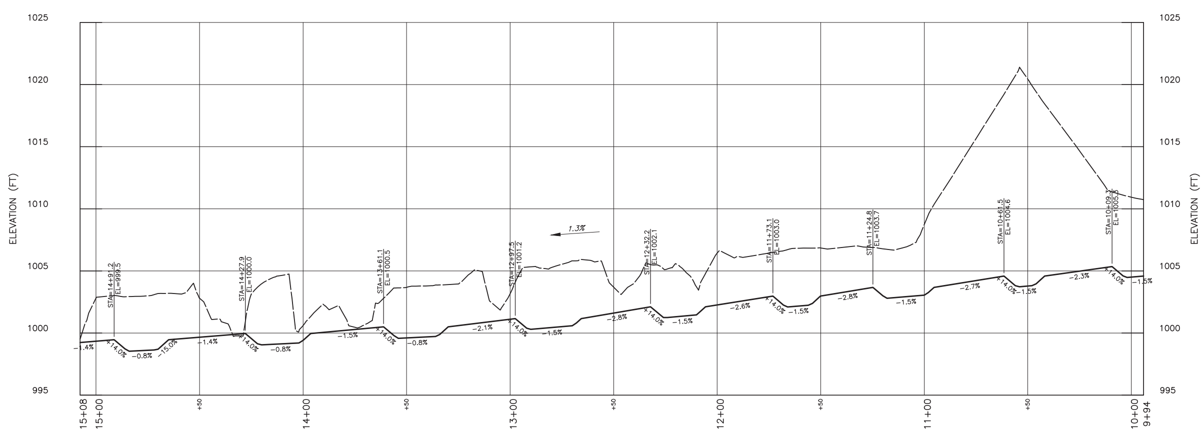
$$$$SYTIME$$$$$$$

$$$$DGNSPEC$$$

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2017	STP-4500(28);45945-3690-14	NS-5A



PROPOSED STREAM CENTERLINE
EXISTING STREAM CENTERLINE
PROPOSED MINOR CONTOUR
PROPOSED MAJOR CONTOUR
EXISTING MINOR CONTOUR
EXISTING MAJOR CONTOUR
PROPOSED CONSERVATION EASEMENT
EXISTING DRAINAGE STRUCTURE



HALL BRANCH PROPOSED CENTERLINE PROFILE

SCALE H:1"=30'; V:1"=5'

SCALE IN FEET
0 30 60

SEALED BY

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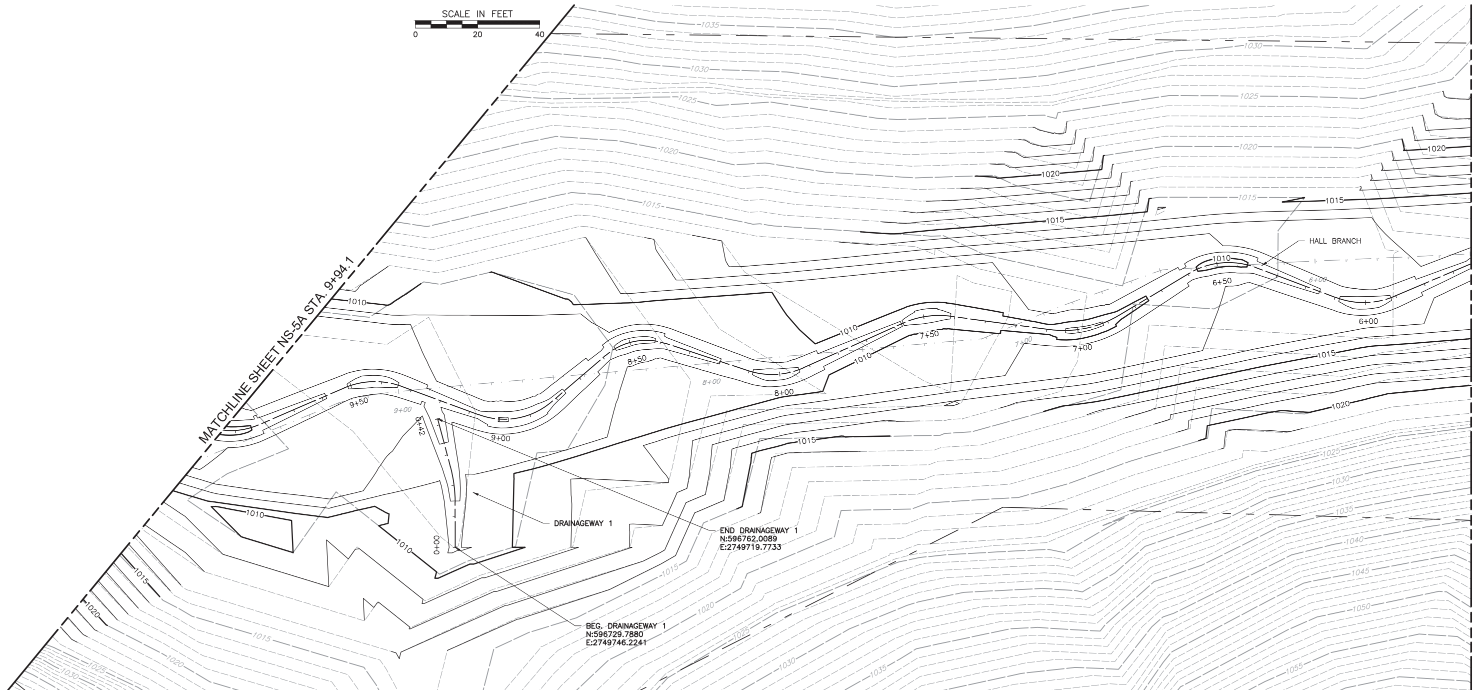
STATE OF TENNESSEE
DEPARTMENT OF
TRANSPORTATION

BUSH BROTHERS
PROPERTY–
STREAM MITIGATION

HALL BRANCH
STREAM MITIGATION
PROPOSED PLAN AND
PROFILE

$$$$SYTIME$$$$$$
$$$$DGNSPEC$$

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2017	STP-4500(28);45945-3690-14	NS-5B



PROPOSED STREAM CENTERLINE

EXISTING STREAM CENTERLINE

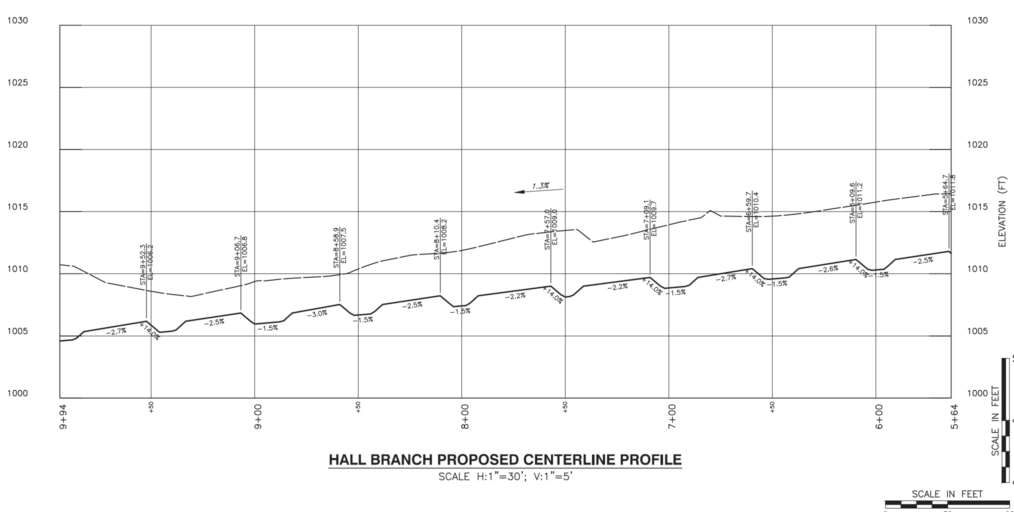
PROPOSED MINOR CONTOUR

PROPOSED MAJOR CONTOUR

EXISTING MINOR CONTOUR

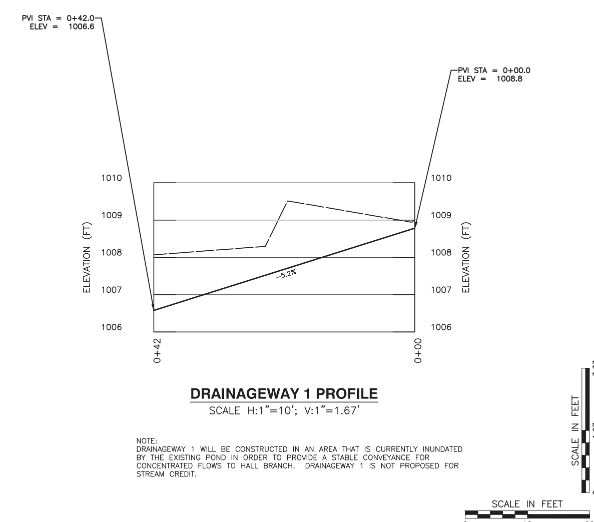
EXISTING MAJOR CONTOUR

PROPOSED CONSERVATION EASEMENT



HALL BRANCH PROPOSED CENTERLINE PROFILE

SCALE H:1"=30'; V:1"=5'



DRAINAGEWAY 1 PROFILE

SCALE H:1"=10'; V:1"=1.67'

NOTE:
DRAINAGEWAY 1 WILL BE CONSTRUCTED IN AN AREA THAT IS CURRENTLY INUNDATED BY THE EXISTING POND IN ORDER TO PROVIDE A STABLE CONVEYANCE FOR CONCENTRATED FLOWS TO HALL BRANCH. DRAINAGEWAY 1 IS NOT PROPOSED FOR STREAM CREDIT.

SEALED BY

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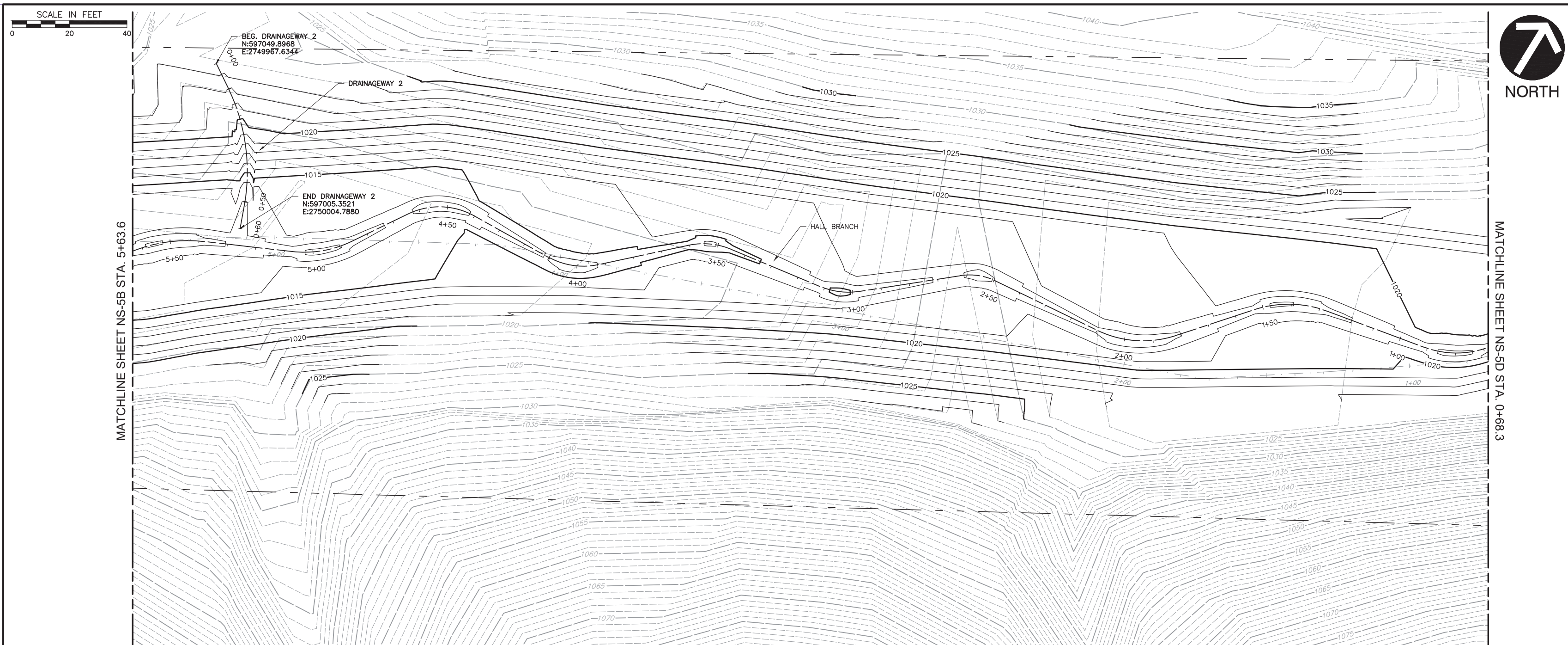
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

BUSH BROTHERS PROPERTY– STREAM MITIGATION

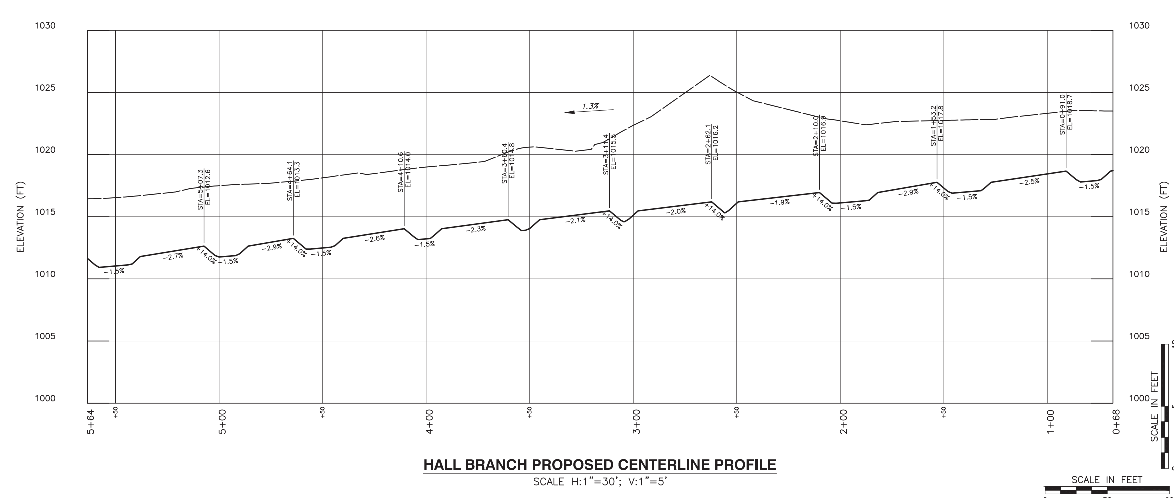
HALL BRANCH STREAM MITIGATION PROPOSED PLAN AND PROFILE

$$$$SYTIME$$$$$$
$$$$DGNSPEC$$

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2017	STP-4500(28);45945-3690-14	NS-5C

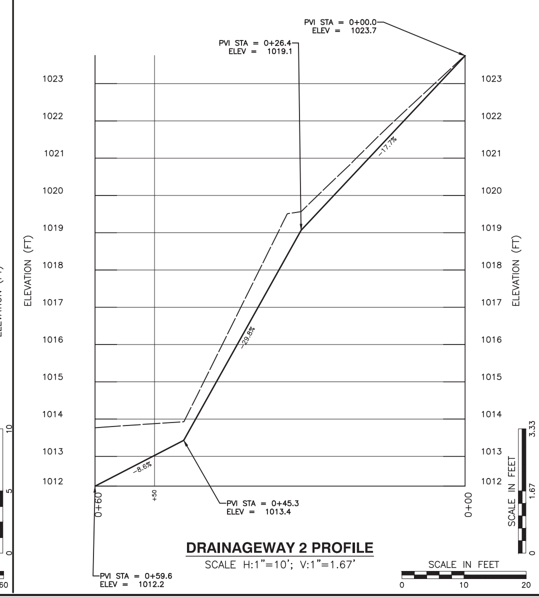


PROPOSED STREAM CENTERLINE
EXISTING STREAM CENTERLINE
PROPOSED MINOR CONTOUR
PROPOSED MAJOR CONTOUR
EXISTING MINOR CONTOUR
EXISTING MAJOR CONTOUR
PROPOSED CONSERVATION EASEMENT



HALL BRANCH PROPOSED CENTERLINE PROFILE

SCALE H:1"=30'; V:1"=5'



DRAINAGEWAY 2 PROFILE

SCALE H:1"=10'; V:1"=1.67'

NOTE:
DRAINAGEWAY 2 WILL BE CONSTRUCTED IN AN AREA THAT IS CURRENTLY PARTIALLY INUNDATED BY THE EXISTING POND IN ORDER TO PROVIDE A STABLE CONVEYANCE FOR CONCENTRATED FLOWS TO HALL BRANCH. DRAINAGEWAY 2 IS NOT PROPOSED FOR STREAM CREDIT.

SEALED BY

JEFFREY BRYANT ... STATE OF TENNESSEE No. 00110865 — 09/27/2017

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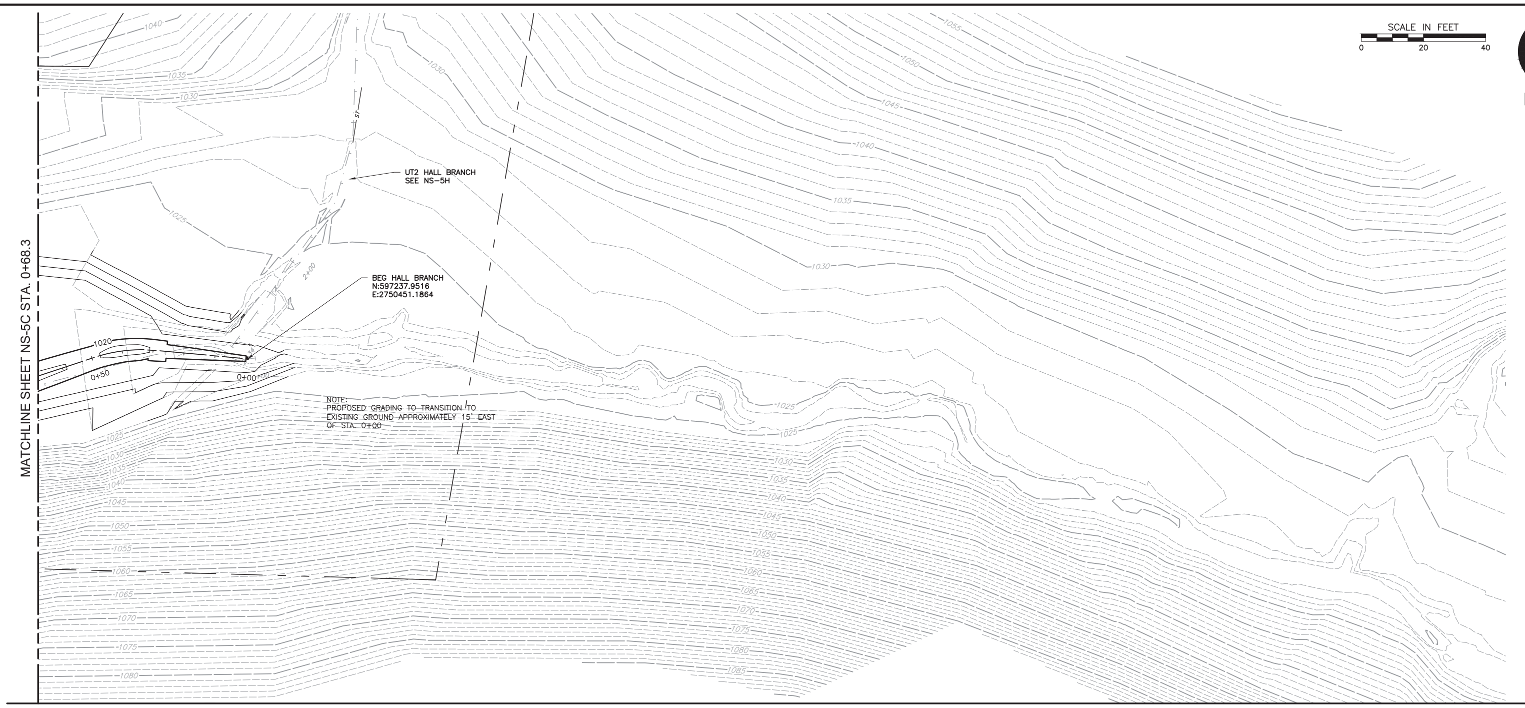
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

BUSH BROTHERS PROPERTY– STREAM MITIGATION

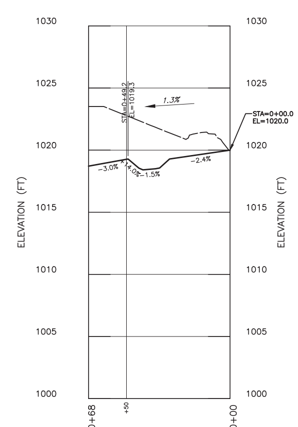
HALL BRANCH STREAM MITIGATION PROPOSED PLAN AND PROFILE

$$$$SYTIME$$$$$$
$$$$DGNSPEC$$

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2017	STP-4500(28);45945-3690-14	NS-5D



- PROPOSED STREAM CENTERLINE
- EXISTING STREAM CENTERLINE
- PROPOSED MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- PROPOSED CONSERVATION EASEMENT
- ST — EXISTING DRAINAGE STRUCTURE



HALL BRANCH PROPOSED CENTERLINE PROFILE

SCALE H:1"=30'; V:1"=5'

SEALED BY

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STATE OF TENNESSEE
DEPARTMENT OF
TRANSPORTATION

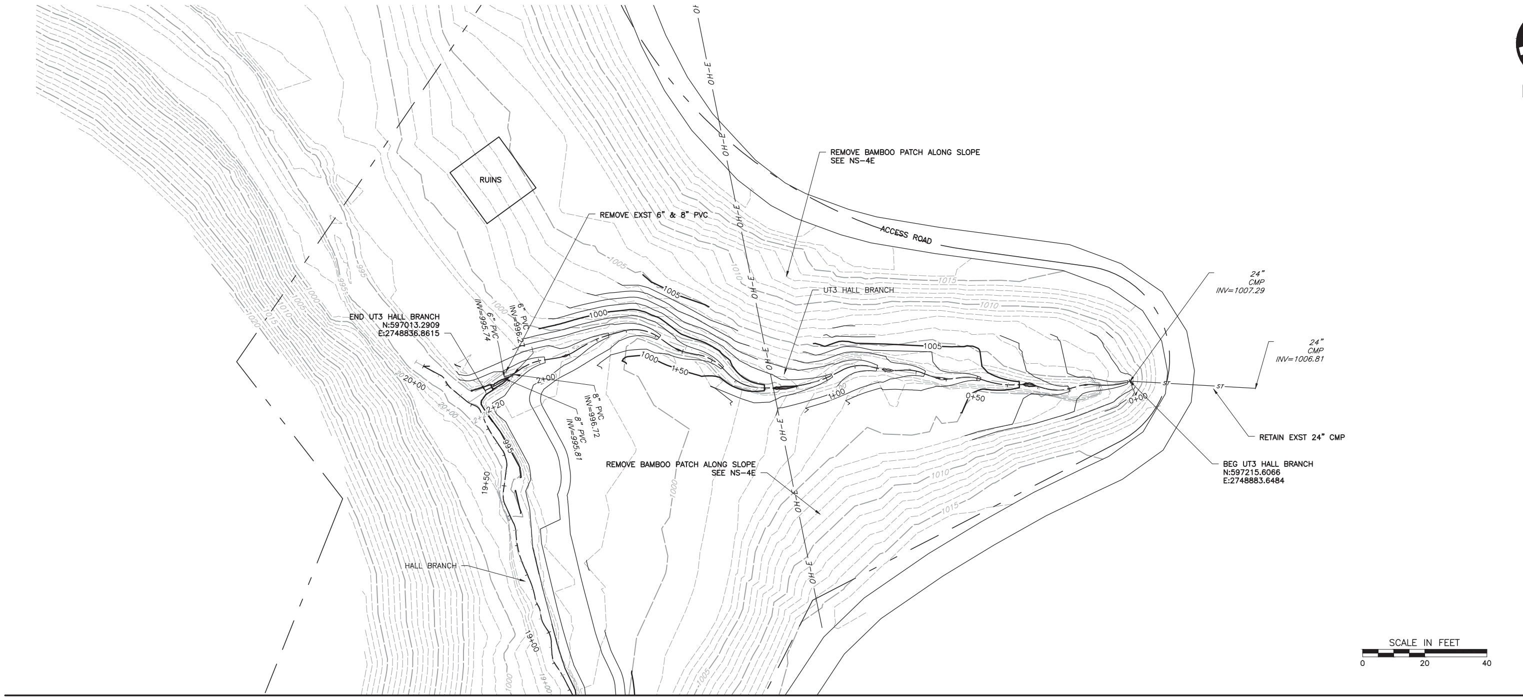
BUSH BROTHERS PROPERTY– STREAM MITIGATION

HALL BRANCH
STREAM MITIGATION
PROPOSED PLAN AND
PROFILE

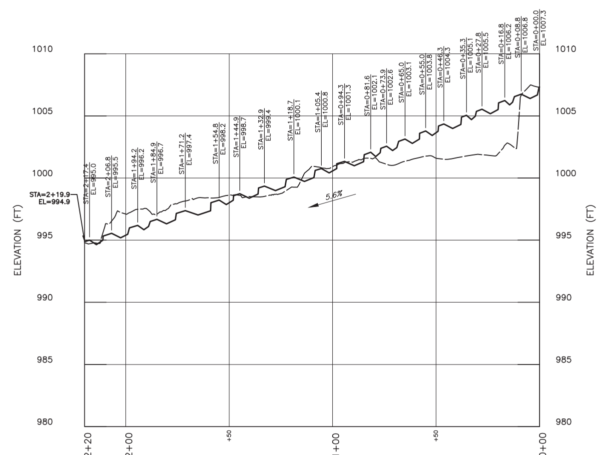
$$$$SYTIME$$$$$$
$$$$DGNSPEC$$$

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2017	STP-4500(28);45945-3690-14	NS-5E

NORTH



PROPOSED STREAM CENTERLINE
EXISTING STREAM CENTERLINE
PROPOSED MINOR CONTOUR
PROPOSED MAJOR CONTOUR
EXISTING MINOR CONTOUR
EXISTING MAJOR CONTOUR
PROPOSED CONSERVATION EASEMENT
EXISTING OVERHEAD ELECTRICITY LINE
EXISTING DRAINAGE STRUCTURE



UT3 HALL BRANCH PROPOSED CENTERLINE PROFILE

SCALE H:1"=30'; V:1"=5'

SCALE IN FEET

SEALED BY

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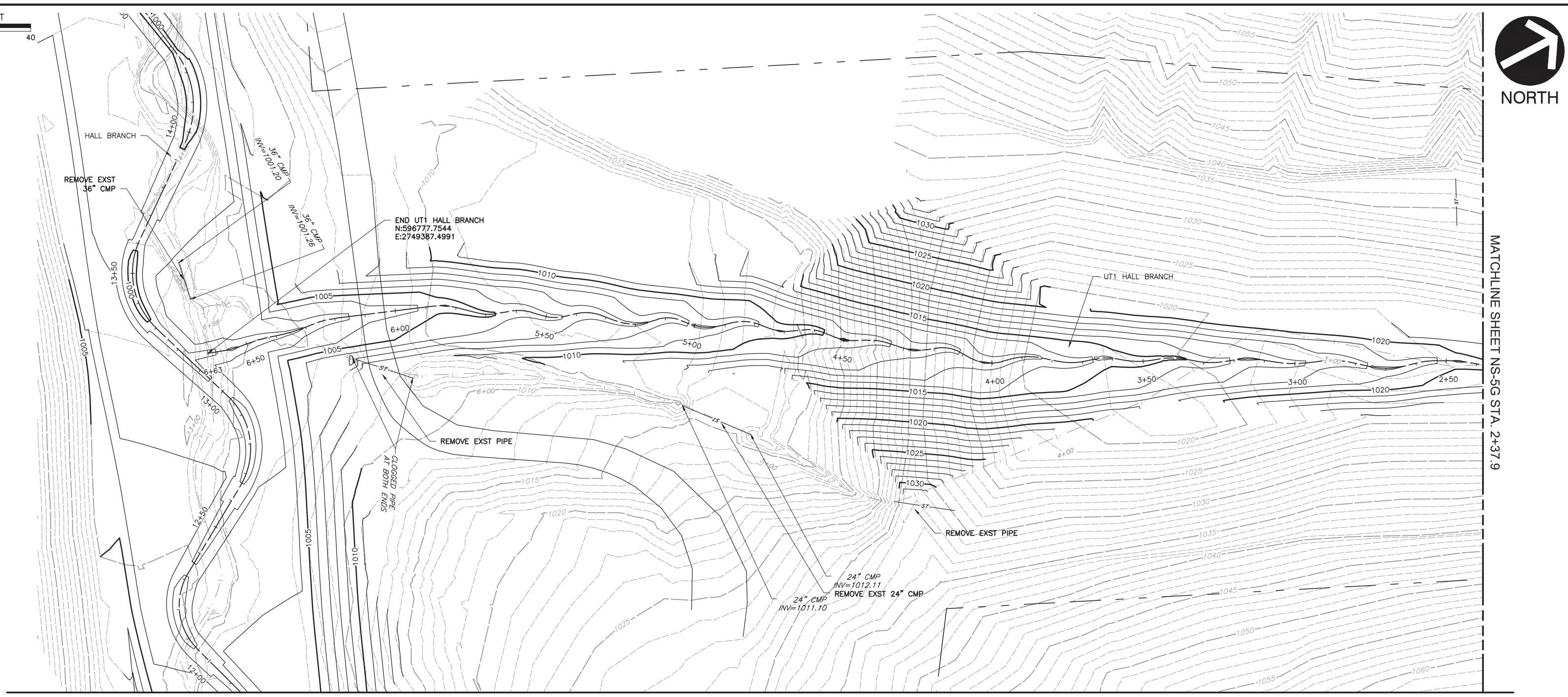
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

BUSH BROTHERS PROPERTY– STREAM MITIGATION

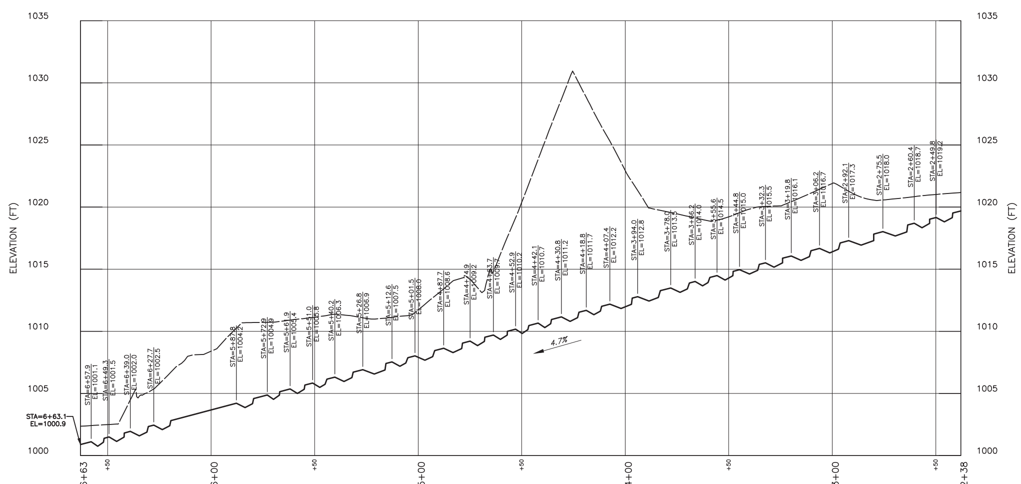
UT3 HALL BRANCH STREAM MITIGATION PROPOSED PLAN AND PROFILE

$$$$SYTIME$$$$$$
$$$$DGNSPEC$$

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2017	STP-4500(28);45945-3690-14	NS-5F



PROPOSED STREAM CENTERLINE
EXISTING STREAM CENTERLINE
PROPOSED MINOR CONTOUR
PROPOSED MAJOR CONTOUR
EXISTING MINOR CONTOUR
EXISTING MAJOR CONTOUR
PROPOSED CONSERVATION EASEMENT
EXISTING DRAINAGE STRUCTURE



UT1 HALL BRANCH PROPOSED CENTERLINE PROFILE

SCALE H:1"=30'; V:1"=5'

SCALE IN FEET
0 5 10
SCALE IN FEET
0 30 60

SEALED BY

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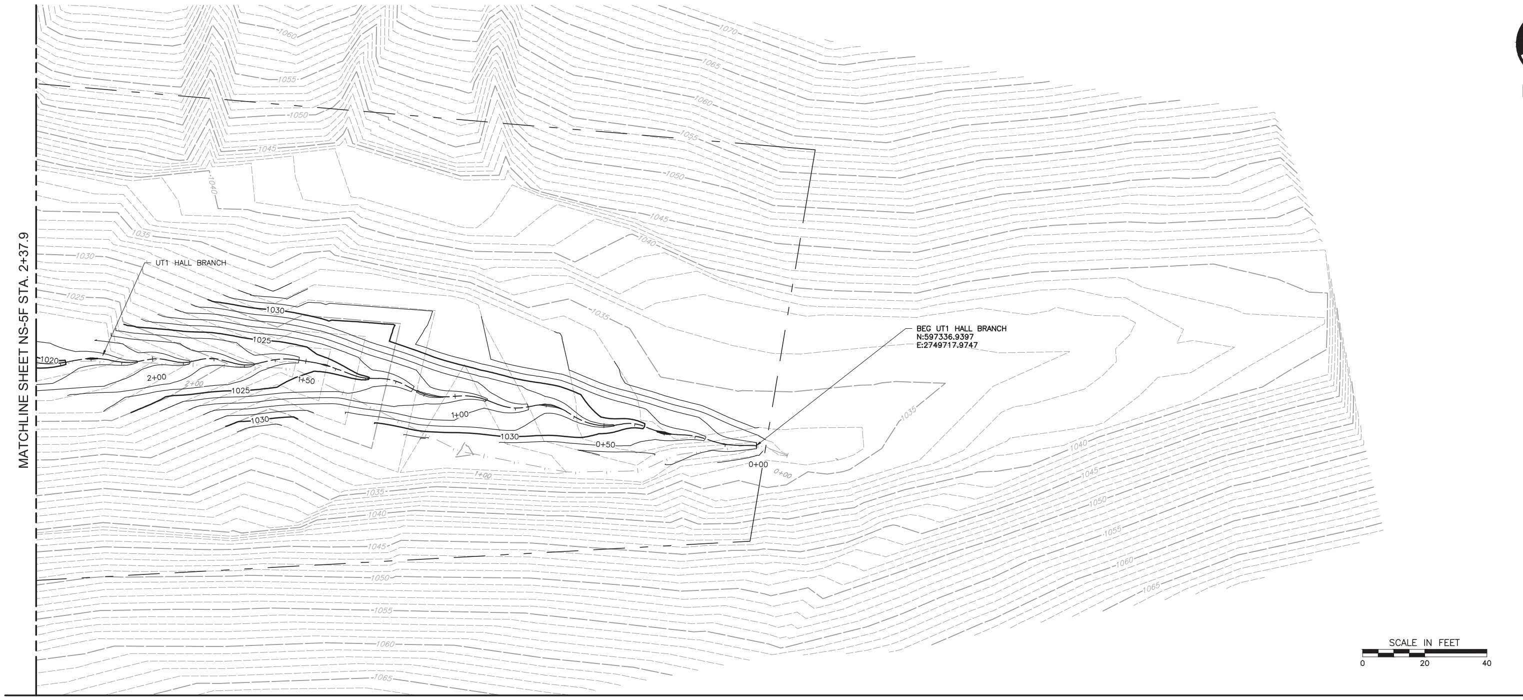
STATE OF TENNESSEE
DEPARTMENT OF
TRANSPORTATION

BUSH BROTHERS PROPERTY– STREAM MITIGATION

UT1 HALL BRANCH STREAM MITIGATION PROPOSED PLAN AND PROFILE

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2017	STP-4500(28);45945-3690-14	NS-5G

NORTH



PROPOSED STREAM CENTERLINE

EXISTING STREAM CENTERLINE

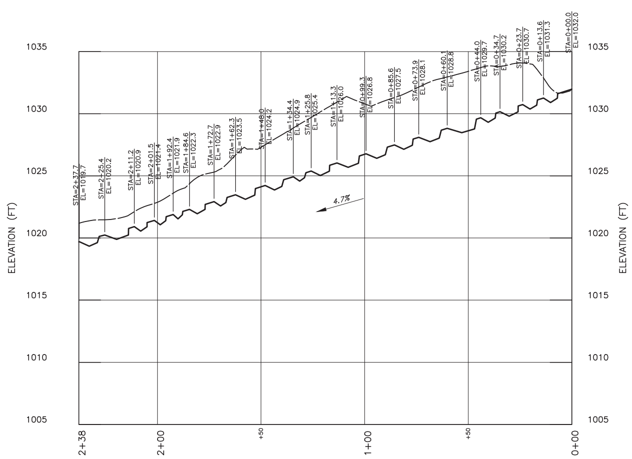
PROPOSED MINOR CONTOUR

PROPOSED MAJOR CONTOUR

EXISTING MINOR CONTOUR

EXISTING MAJOR CONTOUR

PROPOSED CONSERVATION EASEMENT



UT1 HALL BRANCH PROPOSED CENTERLINE PROFILE

SCALE H:1"=30'; V:1"=5'

SCALE IN FEET

SEALED BY

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STATE OF TENNESSEE
DEPARTMENT OF
TRANSPORTATION

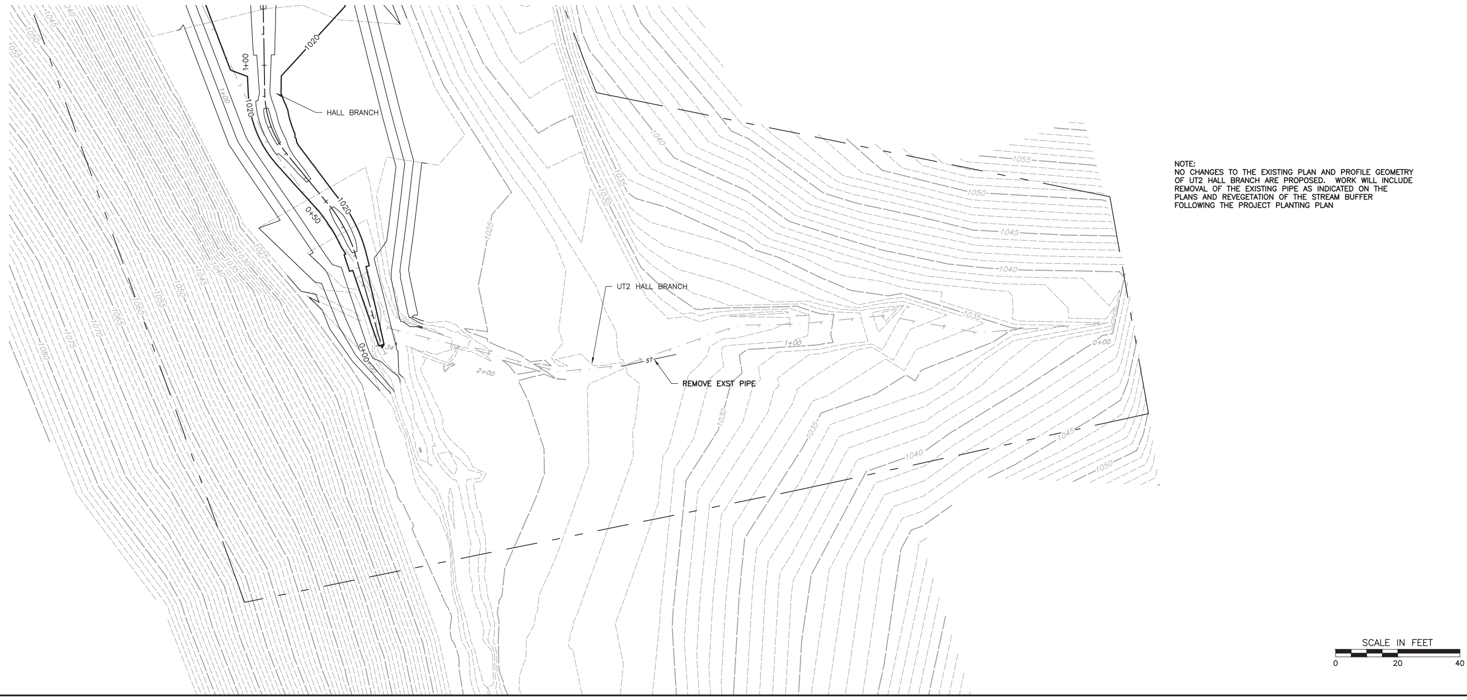
BUSH BROTHERS PROPERTY– STREAM MITIGATION

UT1 HALL BRANCH STREAM MITIGATION PROPOSED PLAN AND PROFILE

$$$$SYTIME$$$$$$

$$$$DGNSPEC$$

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2017	STP-4500(28);45945-3690-14	NS-5H



NOTE:
NO CHANGES TO THE EXISTING PLAN AND PROFILE GEOMETRY OF UT2 HALL BRANCH ARE PROPOSED. WORK WILL INCLUDE REMOVAL OF THE EXISTING PIPE AS INDICATED ON THE PLANS AND REVEGETATION OF THE STREAM BUFFER FOLLOWING THE PROJECT PLANTING PLAN

PROPOSED STREAM CENTERLINE
EXISTING STREAM CENTERLINE
PROPOSED MINOR CONTOUR
PROPOSED MAJOR CONTOUR
EXISTING MINOR CONTOUR
EXISTING MAJOR CONTOUR
PROPOSED CONSERVATION EASEMENT
ST EXISTING DRAINAGE STRUCTURE

SEALED BY

JEFFREY BRYANT ... STATE OF TENNESSEE No. 00110865 09/27/2017

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STATE OF TENNESSEE DEPARTMENT OF TRANSPORTATION

BUSH BROTHERS PROPERTY– STREAM MITIGATION

UT2 HALL BRANCH STREAM MITIGATION PROPOSED PLAN AND PROFILE

$$$$SYTIME$$$$$$$$

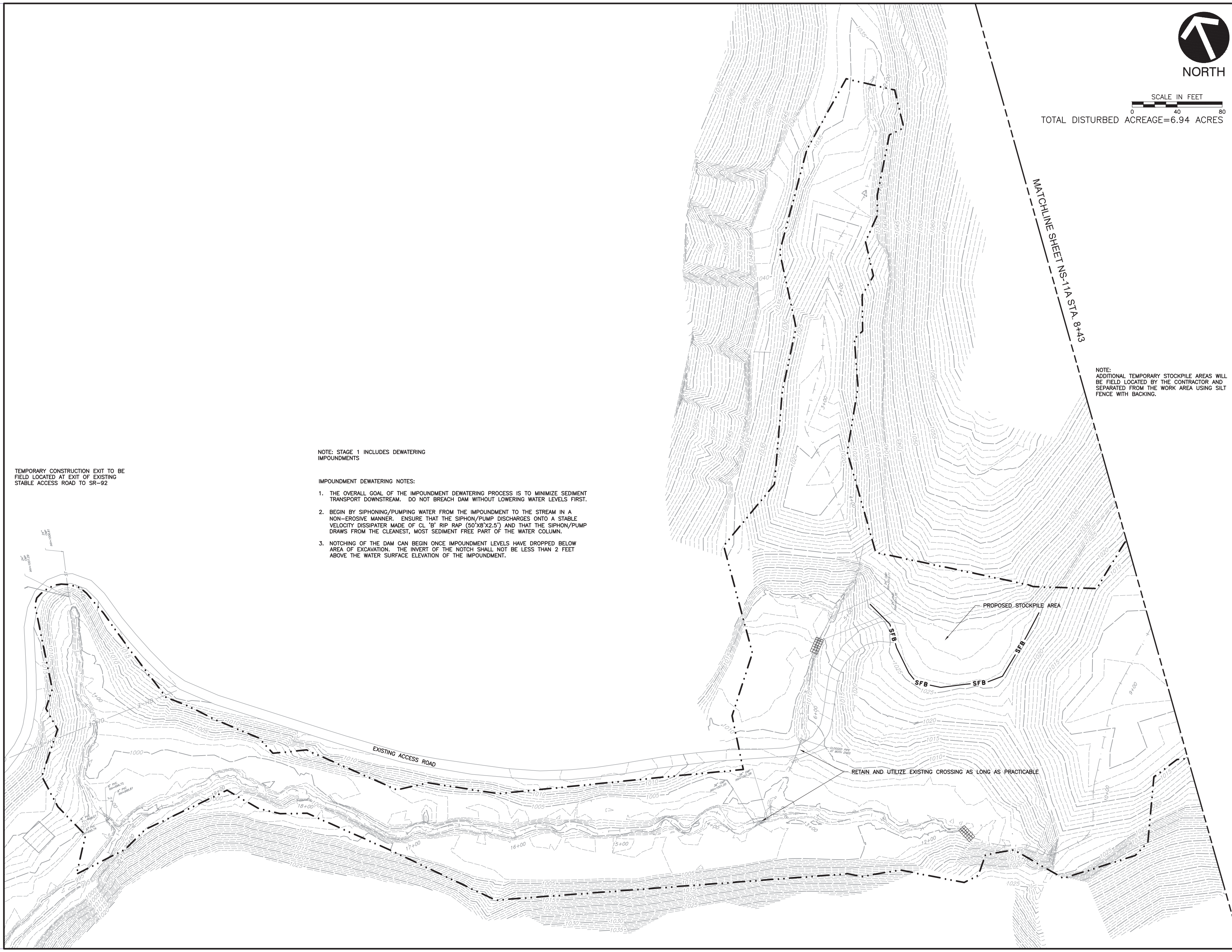
$$$$DGNSPEC$$

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2017	STP-4500(28);45945-3690-14	NS-11

NORTH

SCALE IN FEET
0 40 80

TOTAL DISTURBED ACREAGE=6.94 ACRES



- EXISTING STREAM CENTERLINE
- EXISTING MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- ST EXISTING DRAINAGE STRUCTURE
- LIMITS OF DISTURBANCE
- SFB SILT FENCE WITH BACKING
- RIP-RAP VELOCITY DISSIPATER 50' X 8' X 2.5'

NOTE:
ADDITIONAL TEMPORARY STOCKPILE AREAS WILL BE FIELD LOCATED BY THE CONTRACTOR AND SEPARATED FROM THE WORK AREA USING SILT FENCE WITH BACKING.

TEMPORARY CONSTRUCTION EXIT TO BE FIELD LOCATED AT EXIT OF EXISTING STABLE ACCESS ROAD TO SR-92

NOTE: STAGE 1 INCLUDES DEWATERING IMPOUNDMENTS

IMPOUNDMENT DEWATERING NOTES:

1. THE OVERALL GOAL OF THE IMPOUNDMENT DEWATERING PROCESS IS TO MINIMIZE SEDIMENT TRANSPORT DOWNSTREAM. DO NOT BREACH DAM WITHOUT LOWERING WATER LEVELS FIRST.
2. BEGIN BY SIPHONING/PUMPING WATER FROM THE IMPOUNDMENT TO THE STREAM IN A NON-EROSIVE MANNER. ENSURE THAT THE SIPHON/PUMP DISCHARGES ONTO A STABLE VELOCITY DISSIPATER MADE OF CL 'B' RIP RAP (50'X8'X2.5') AND THAT THE SIPHON/PUMP DRAWS FROM THE CLEANEST, MOST SEDIMENT FREE PART OF THE WATER COLUMN.
3. NOTCHING OF THE DAM CAN BEGIN ONCE IMPOUNDMENT LEVELS HAVE DROPPED BELOW AREA OF EXCAVATION. THE INVERT OF THE NOTCH SHALL NOT BE LESS THAN 2 FEET ABOVE THE WATER SURFACE ELEVATION OF THE IMPOUNDMENT.

SEALED BY

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STATE OF TENNESSEE
DEPARTMENT OF
TRANSPORTATION

BUSH BROTHERS PROPERTY– STREAM MITIGATION

HALL BRANCH SITE
PROPOSED EPSC
STAGE 1

$$$$SYTIME$$$$$$
$$$$DGNSPEC$$

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2017	STP-4500(28)/45945-3690-14	NS-11A

NORTH

SCALE IN FEET
0 40 80

TOTAL DISTURBED ACREAGE=6.94 ACRES

EXISTING STREAM CENTERLINE
EXISTING MINOR CONTOUR
EXISTING MAJOR CONTOUR
ST EXISTING DRAINAGE STRUCTURE
LIMITS OF DISTURBANCE

NOTE:
ADDITIONAL TEMPORARY STOCKPILE AREAS WILL BE FIELD LOCATED BY THE CONTRACTOR AND SEPARATED FROM THE WORK AREA USING SILT FENCE WITH BACKING.

MATCHLINE SHEET NS-11 STA 8+43

SEALED BY

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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

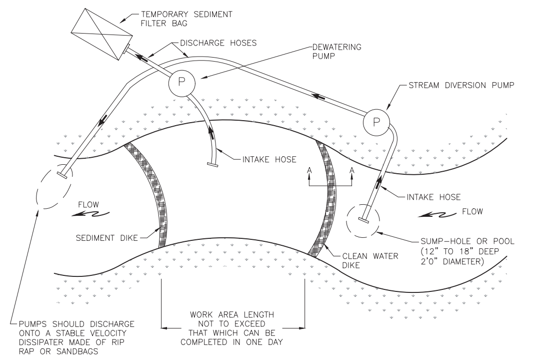
BUSH BROTHERS PROPERTY– STREAM MITIGATION

HALL BRANCH SITE
PROPOSED EPSC
STAGE 1

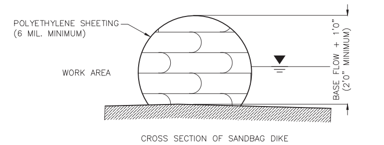
SSSSSYTMESSSSSSS
SSSSDGNSPEC

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2017	STP-4500(28);45945-3690-14	NS-11B

STAGE 2



SECTION A–A



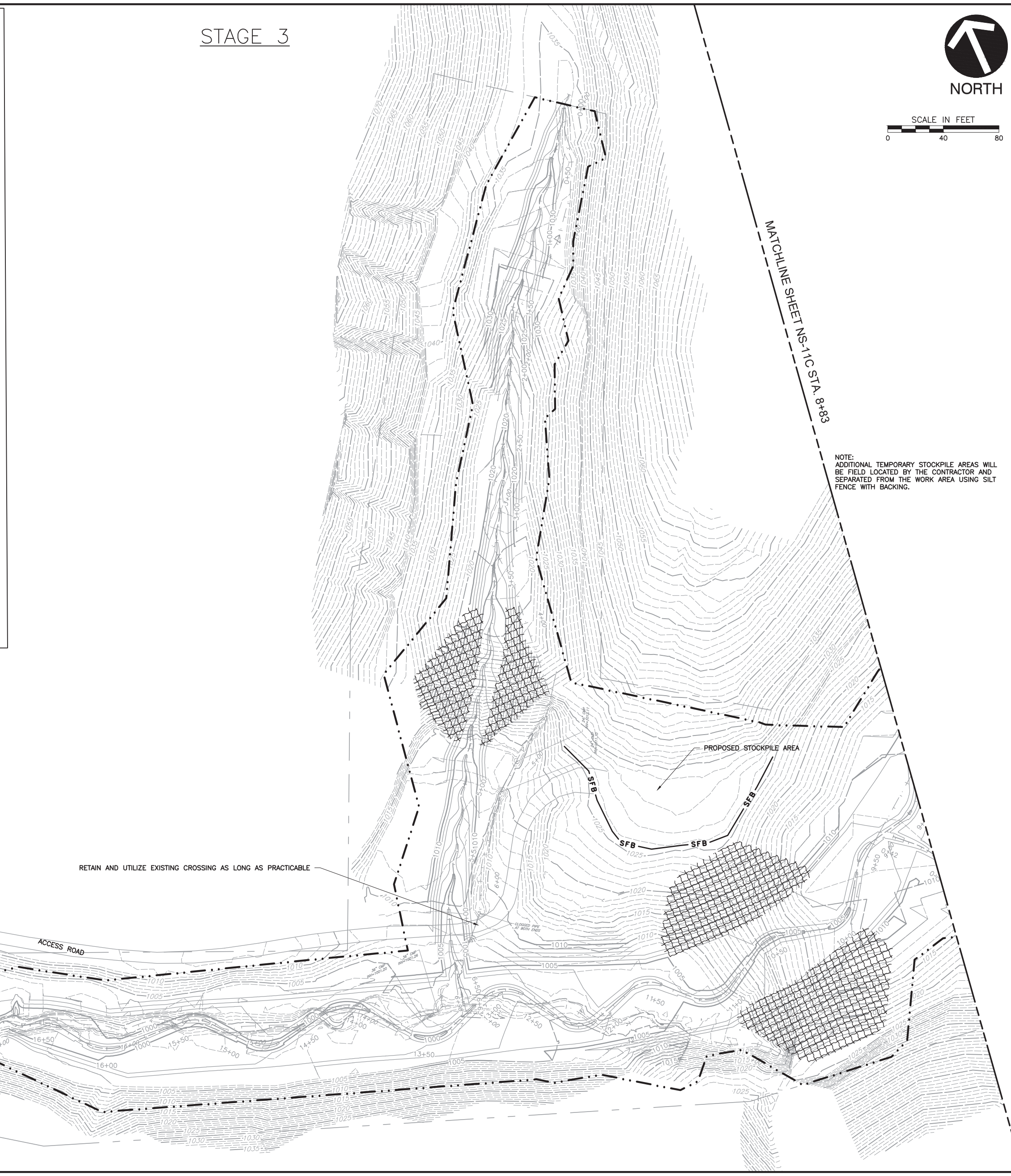
CROSS SECTION OF SANDBAG DIKE

ALL IN STREAM WORK IS TO BE PERFORMED IN THE DRY, SEPARATED FROM FLOWING WATER.

NOTE:

STAGE 2 CONSISTS OF PROGRESSIVELY CONSTRUCTING THE PROPOSED CHANNELS "IN THE DRY" USING A PUMP AROUND DIVERSION AS DESCRIBED ABOVE. ADDITIONAL PUMP AROUND DIVERSION GUIDELINES CAN BE FOUND IN DETAIL (2/23A). COIR FIBER MATTING WILL BE USED TO STABILIZE THE PROPOSED CHANNEL AS IT IS CONSTRUCTED; SEE DETAIL (1/23A).

STAGE 3



NOTE:
ADDITIONAL TEMPORARY STOCKPILE AREAS WILL BE FIELD LOCATED BY THE CONTRACTOR AND SEPARATED FROM THE WORK AREA USING SILT FENCE WITH BACKING.

- PROPOSED STREAM CENTERLINE
- EXISTING STREAM CENTERLINE
- PROPOSED MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- PROPOSED CONSERVATION EASEMENT
- ST — EXISTING DRAINAGE STRUCTURE
- LIMITS OF DISTURBANCE
- SFB — SILT FENCE WITH BACKING
- EROSION CONTROL BLANKET

SEALED BY

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STATE OF TENNESSEE
DEPARTMENT OF
TRANSPORTATION

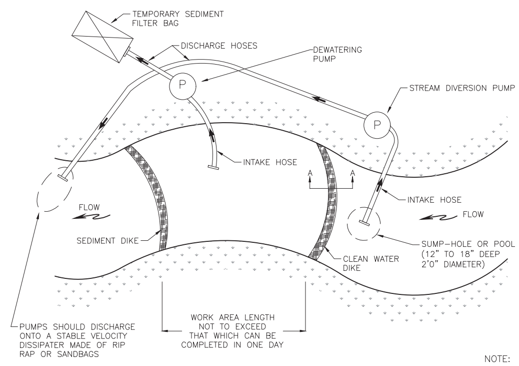
BUSH BROTHERS PROPERTY–
STREAM MITIGATION

HALL BRANCH SITE
PROPOSED EPSC
STAGES 2 & 3

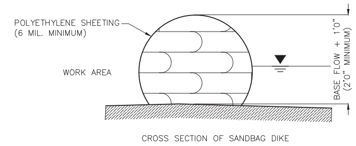
$$$$SYTIME$$$$$$
$$$$DGNSPEC$$$

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2017	STP-4500(28);45945-3690-14	NS-11C

STAGE 2



SECTION A–A



CROSS SECTION OF SANDBAG DIKE

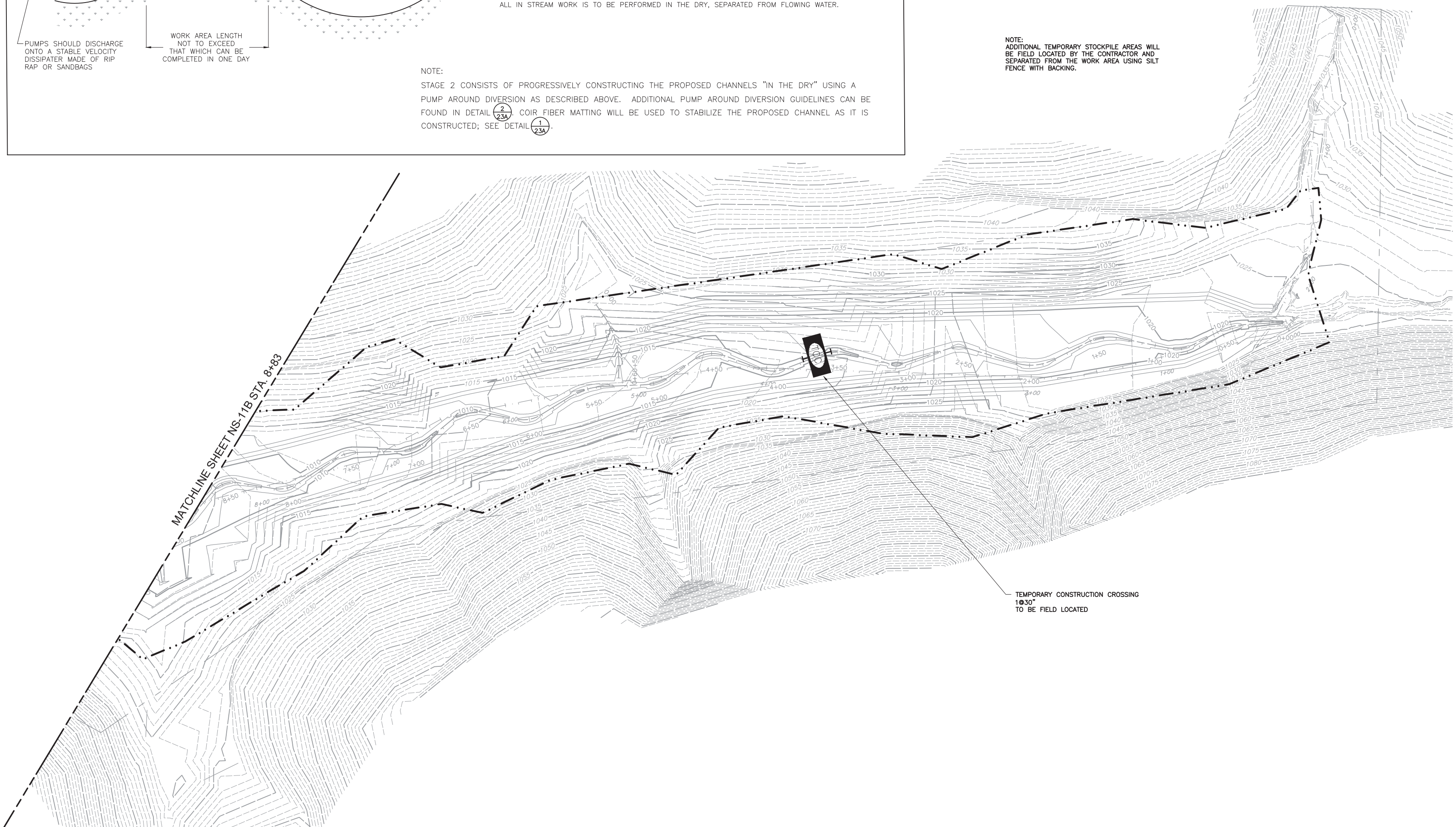
ALL IN STREAM WORK IS TO BE PERFORMED IN THE DRY, SEPARATED FROM FLOWING WATER.

NOTE:

STAGE 2 CONSISTS OF PROGRESSIVELY CONSTRUCTING THE PROPOSED CHANNELS "IN THE DRY" USING A PUMP AROUND DIVERSION AS DESCRIBED ABOVE. ADDITIONAL PUMP AROUND DIVERSION GUIDELINES CAN BE FOUND IN DETAIL (2/23A). COIR FIBER MATTING WILL BE USED TO STABILIZE THE PROPOSED CHANNEL AS IT IS CONSTRUCTED; SEE DETAIL (1/23A)

STAGE 3

NOTE:
ADDITIONAL TEMPORARY STOCKPILE AREAS WILL BE FIELD LOCATED BY THE CONTRACTOR AND SEPARATED FROM THE WORK AREA USING SILT FENCE WITH BACKING.



NORTH

SCALE IN FEET
0 40 80

- PROPOSED STREAM CENTERLINE
- EXISTING STREAM CENTERLINE
- PROPOSED MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- PROPOSED CONSERVATION EASEMENT
- ST EXISTING DRAINAGE STRUCTURE
- LIMITS OF DISTURBANCE
- TCC TEMPORARY CONSTRUCTION CROSSING

SEALED BY

COORDINATES ARE NAD/83(1995), ARE DATUM ADJUSTED BY THE FACTOR OF 1.00010637 AND TIED TO THE TGRN. ALL ELEVATIONS ARE REFERENCED TO THE NAVD 1988.

STATE OF TENNESSEE
DEPARTMENT OF
TRANSPORTATION

BUSH BROTHERS PROPERTY–
STREAM MITIGATION

HALL BRANCH SITE
PROPOSED EPSC
STAGES 2 & 3

$$$$SYTIME$$$$$$$
$$$$DGNSPEC$$$

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2017	STP-4500(28);45945-3690-14	NS-12

Perennial Grass Seed Mix (20 lbs/acre) Item #801-01.35

Common Name	Scientific Name	lbs/acre	Composition %
Switchgrass	Panicum virgatum	7.5	38%
Indiangrass	Sorghastrum nutans	5	25%
Big Blue Stem	Andropogon gerardii	2.5	13%
Virginia Wild Rye	Elymus virginicus	1	5%
Deer Tongue	Panicum clandestinum	1	5%
Bottlebrush Grass	Elymus hystrix	1	5%
River Wood Oats	Chasmanthium latifolium	1	5%
Fowl Manna Grass	Glyceria striata	1	5%
TOTAL		20	100%

Cover Crop Seed Mix (50 lbs/acre) Item #801-01.30

Common Name	Scientific Name	Rate (lbs/acre)	Area (ac)	Total (lbs)
Winter Rye	Lolium multiflorum	50	11.2	560
Browntop Millet	Panicum ramosum	50	11.2	560

Wildflower Seed Mix (6 lbs/acre) Item #801-01.64

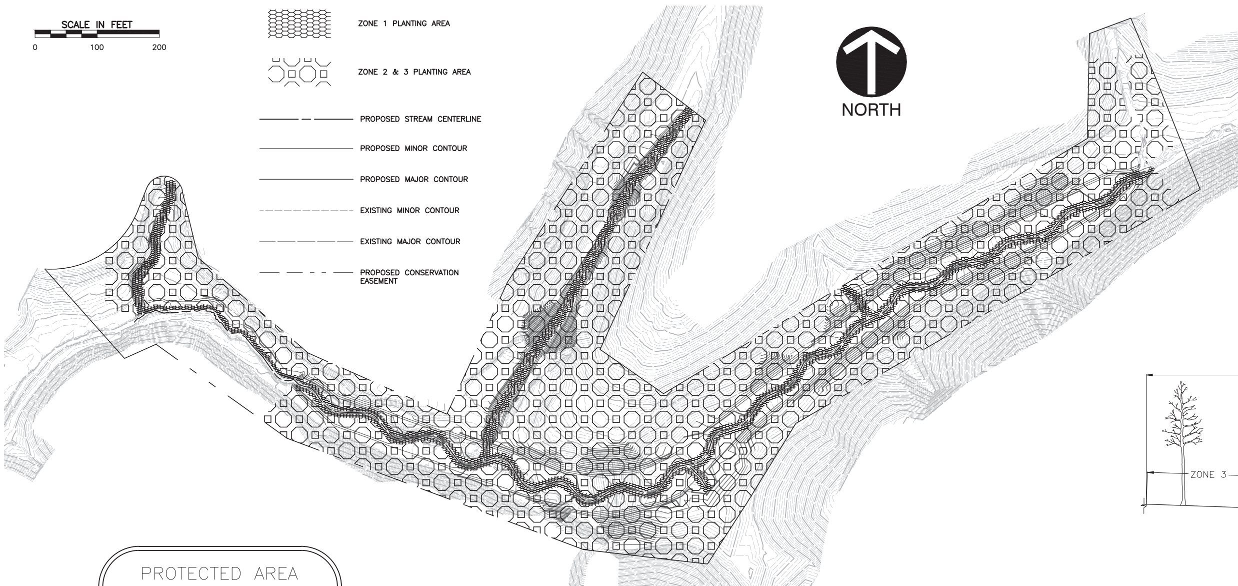
Common Name	Scientific Name	lbs/acre	Composition %
Partridge Pea	Cassia fasciculata	1	17%
Common Milkweed	Asclepias syriaca	0.25	4%
Butterflyweed	Asclepias tuberosa	0.25	4%
Wild Bergamot	Monarda fistulosa	0.5	8%
Tall Coreopsis	Coreopsis tripteris	0.5	8%
Small-headed Sunflower	Helianthus microcephalus	0.25	4%
Hairy Sunflower	Helianthus mollis	0.25	4%
Dense Blazing Star	Liatris spicata	0.5	8%
White-flowered Leafcup	Polymnia canadensis	0.25	4%
Black-eyed Susan	Rudbeckia hirta	1	17%
Tall Goldenrod	Solidago altissima	0.5	8%
Gray Goldenrod	Solidago nemoralis	0.25	4%
Tall Ironweed	Vernonia gigantea	0.5	8%
TOTAL		6	100%

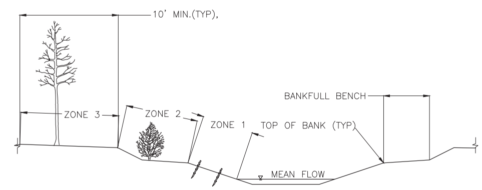
Special Wetland Seed Mix (6.5 lbs/acre) Item #801-01.36

Common Name	Scientific Name	lbs/acre	Composition %
Fox Sedge	Carex vulpinoidea	0.5	8%
Frank's Sedge	Carex frankii	0.5	8%
Swamp Milkweed	Asclepias incarnata	0.25	4%
Soft Rush	Juncus effusus	0.5	8%
New England Aster	Aster novae-angliae	1	15%
Crooked-stem Aster	Aster prenanthoides	0.5	8%
Grass-leaved Goldenrod	Solidago (Euthamia) graminifolia	0.5	8%
Tall Goldenrod	Solidago altissima	0.5	8%
Cardinal Flower	Lobelia cardinalis	0.25	4%
Great Blue Lobelia	Lobelia siphilitica	0.25	4%
Monkey Flower	Mimulus ringens	0.25	4%
Rattlebox	Ludwigia alternifolia	0.25	4%
Joe Pye Weed	Eupatorium fistulosum	0.5	8%
Boneset	Eupatorium perfoliatum	0.25	4%
Beggar Ticks	Bidens frondosa	0.5	8%
TOTAL		6.5	100%

HALL BRANCH AND TRIBUTARIES PLANTING TABLE

Common Name	Scientific Name	Spacing	Plant Material Size	Quantity
ZONE 1 STREAMBANK				
Silky Dogwood	Cornus amomum	3x3	Live Stake	1400
Black Willow	Salix nigra	3x3	Live Stake	1300
Alder	Alnus serrulata	3x3	Live Stake	900
Elderberry	Sambucus canadensis	3x3	Live Stake	900
SUBTOTAL				4500
ZONE 2 & 3 FLOODPLAIN & TERRACE				
Red Maple	Acer rubrum	8x8	Bare Root	450
Tulip Poplar	Liriodendron tulipifera	8x8	Bare Root	450
Sycamore	Platanus occidentalis	8x8	Bare Root	450
Swamp Chestnut Oak	Quercus michauxii	8x8	Bare Root	450
Overcup Oak	Quercus lyrata	8x8	Bare Root	450
Willow Oak	Quercus phellos	8x8	Bare Root	450
Shumard Oak	Quercus shumardii	8x8	Bare Root	450
Ironwood	Carpinus caroliniana	8x8	Bare Root	450
Spicebush	Lindera benzoin	8x8	Bare Root	450
Silky Dogwood	Cornus amomum	8x8	Bare Root	450
Persimmon	Diospyros virginiana	8x8	Bare Root	450
SUBTOTAL				4950





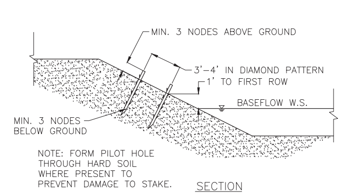
PLANTING ZONES
NTS

PROTECTED AREA
NO TREE CLEARING
OR CUTTING OR
MOWING ALLOWED
CONTACT TDOT ENVIRONMENT DIVISION
(615) 741-3655

NOTES:

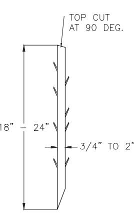
1. THE PROTECTED AREA SIGN SHALL BE WHITE WITH BLACK LETTERING.
2. LINES 1, 2, 3 & 4 SHALL BE 2 INCHES IN HEIGHT. LINES 5 & 6 SHALL BE 1 INCH IN HEIGHT.
3. PROTECTED AREA SIGN SHALL BE PAID FOR UNDER ITEM NO. 713-16.20, PROTECTED AREA SIGN, PER EACH, AS SHOWN IN DETAIL ON THIS SHEET. PAYMENT SHOULD INCLUDE ALL MATERIALS, EQUIPMENT, AND LABOR NECESSARY TO CONSTRUCT AS SHOWN IN DETAIL.
4. LOCATION AND NUMBER OF SIGNS TO BE DETERMINED IN THE FIELD OR AS DIRECTED BY THE ENGINEER.

PROTECTED AREA SIGN
N.T.S.



SECTION

LIVE STAKING
NTS



LIVE STAKE DETAIL

SEALED BY

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STATE OF TENNESSEE
DEPARTMENT OF
TRANSPORTATION

BUSH BROTHERS PROPERTY-
STREAM MITIGATION

HALL BRANCH SITE
PLANTING PLAN

$$$$SYTIME$$$$$$
$$$$DGNSPEC$$$

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2017	STP-4500(28):45945-3690-14	NS-13

TDOT STANDARD DRAWINGS		
DRAWING NO.	DESCRIPTION	REV. DATE
D-NSD-26	LOG VANES, ROOT WADS, AND BOULDER J-HOOK	N/A
D-NSD-27	LOG AND BOULDER STEP POOLS	N/A
D-NSD-29	CONSTRUCTED ALLUVIAL RIFFLE	N/A
D-NSD-31	CLAY CHANNEL PLUG	N/A
D-NSD-33	COIR FIBER EROSION CONTROL BLANKET AND COIR FIBER ROLLS	N/A
D-NSD-34	LIVE STAKES AND LIVE SILTATION	N/A
D-NSD-37	SPECIAL NOTES FOR NATURAL STREAM DESIGN	N/A
EC-STR-2	SEDIMENT FILTER BAG	8/1/2012
EC-STR-3C	SILT FENCE WITH WIRE BACKING	8/1/2012
EC-STR-25	TEMPORARY CULVERT CROSSING, CONSTRUCTION EXIT, CONSTRUCTION FORD	8/1/2012
S-F-10A	STANDARD RIGHT-OF-WAY STOCK FENCE WITH TIMBER POSTS	6/1/2009
S-FG-11	STANDARD STOCK FENCE GATE	5/14/2010

NOTES

1. CONTRACTOR SHALL SUBMIT DOCUMENTATION OF THE FOLLOWING MINIMUM QUALIFICATIONS AND EXPERIENCE PRIOR TO STREAM CONSTRUCTION:

A. A MINIMUM OF TWO WEEKS OF NATURAL CHANNEL DESIGN COURSES COVERING PRINCIPLES OF FLUVIAL GEOMORPHOLOGY.

B. SUCCESSFUL COMPLETION OF AT LEAST 2000 LINEAR FEET OF STREAM RESTORATION CONSTRUCTION IN THE LAST FIVE YEARS CONSISTING OF EXCAVATION OF A NEW STREAM CHANNEL AND/OR FLOODPLAIN OR STABILIZATION OF AN EXISTING CHANNEL USING IN-STREAM NATURAL CHANNEL STABILIZATION STRUCTURES SUCH AS CONSTRUCTED ALLUVIAL RIFFLES, CROSS-VANES, J-HOOKS, LOG AND/OR ROCK VANES, ROOT WADS, BOULDER SILLS AND BIO-ENGINEERING TECHNIQUES.

C. EXPERIENCE WORKING WITH PLANT MATERIALS AND TRANSPLANTED VEGETATION SUCH AS NATIVE SEED MIX, BARE ROOT SEEDLINGS, LIVE STAKES, CONTAINER TREES AND BALLED AND BURLAP TREES.

D. TENNESSEE EROSION PREVENTION AND SEDIMENT CONTROL TRAINING, LEVEL I AND LEVEL II.

2. CONTRACTOR SHALL HAVE AN OPERATOR ON SITE WITH AT LEAST 2 YEARS OF EXPERIENCE CONSTRUCTING STREAMS AND IN-STREAM STRUCTURES BASED ON NATURAL CHANNEL DESIGN PRINCIPLES.

3. IF BEDROCK IS ENCOUNTERED DURING STREAM CONSTRUCTION. CONTACT THE T.D.O.T. ENVIRONMENTAL DIVISION IMMEDIATELY. THE PROPOSED DESIGN ASSUMES BEDROCK WILL NOT BE ENCOUNTERED.

CONSTRUCTION SUPERVISION

4. CONSTRUCTION OVERSIGHT WILL BE PERFORMED BY AN INDIVIDUAL EXPERIENCED IN NATURAL CHANNEL DESIGN IN ORDER TO ENSURE THAT THE CONTRACTOR BUILDS THE PROJECT IN ACCORDANCE WITH THE PLANS.

AS-BUILT DRAWINGS

5. DURING CONSTRUCTION, THE CONTRACTOR AND THE ENGINEER SHALL WORK TOGETHER TO MAINTAIN A SET OF PRINTS SHOWING ANY CHANGES OR CORRECTIONS IN RED. THESE PRINTS SHALL BE SUBMITTED TO THE ENGINEER AT THE COMPLETION OF THE WORK.

6. THE AS-BUILT SURVEY WILL BE PERFORMED BY THE CONTRACTOR AND SHALL INCLUDE DELIVERY OF AS-BUILT DRAWINGS. THE CONTRACTOR IS REQUIRED TO PROVIDE AS-BUILT SURVEYING AND WILL BID ON THIS ITEM.

ENVIRONMENTAL-ECOLOGY

1. THE FOLLOWING IS THE RECOMMENDED CONSTRUCTION SEQUENCE:
   a. FLAG EDGE OF THE NEW CHANNEL TOP BANK PRIOR TO CLEARING. DO NOT CLEAR LARGE TREES IN POSITION TO SHADE THE NEW CHANNEL. LEAVE AS MANY TREES AND SHRUBS AS POSSIBLE AS A STREAM BUFFER.
   b. EXCAVATE CHANNEL "IN THE DRY" LEAVING AREAS OF UNDISTURBED EARTH AT BOTH ENDS.
   c. SHAPE CHANNEL TO SPECIFICATIONS SHOWN. REMOVE LOOSE SOILS AND DEBRIS.
   d. PLACE TOPSOIL, SEED & EROSION CONTROL BLANKET AS SPECIFIED.
   e. REMOVE DIVERSIONS, BANKS AND BOTTOM ELEVATION OF THE OLD CHANNEL SHOULD TRANSITION SMOOTHLY INTO THE NEW CHANNEL. THE ELEVATIONS OF THE NEW CHANNEL BOTTOM AT EACH END OF THE RELOCATION SEQUENCE SHOULD MATCH THE ELEVATIONS OF THE EXISTING CHANNEL, AND A STEADY PERCENT SLOPE SHOULD BE MAINTAINED THROUGHOUT THE RELOCATED CHANNEL CENTERLINE OR AS SPECIFIED.
   f. INSTALL TREES ACCORDING TO STREAM MITIGATION PLANTING DETAIL ON SHEET NS-8.
2. STABILIZE THE BANKS OF THE NEW CHANNEL WITH SEED AND COIR EROSION CONTROL BLANKET BEFORE ANTICIPATED RAINFALL.
3. THE NEW CHANNEL SHALL BE EXCAVATED AND STABILIZED MULCH DURING A LOW-WATER PERIOD. LIVE STAKES, BIOENGINEERING MEASURES, SEEDING, AND SOD SHALL BE INSTALLED IMMEDIATELY FOLLOWING CHANNEL COMPLETION. TREES SHALL BE INSTALLED IN THE FIRST PLANTING SEASON FOLLOWING CHANNEL EXCAVATION. WATER SHALL BE DIVERTED INTO THE NEW CHANNEL ONLY AFTER IT IS COMPLETELY STABILIZED, AND ONLY DURING A LOW-WATER PERIOD. STABILIZED MEANS THAT ALL SPECIFIED ROCK AND EROSION CONTROL BLANKET OR FLEXIBLE CHANNEL LINER IS IN PLACE, AND SEEDING AND SOD ARE IN PLACE AND ESTABLISHED.
4. REQUESTS BY ANY AGENCY THAT WOULD REQUIRE THE MODIFICATION OF CHANNELS, DITCHES, ELEVATIONS, RIP-RAP OR ANY OTHER STREAM MITIGATION ITEMS ASSOCIATED WITH THE CHANNEL RELOCATIONS SHALL BE REFERRED TO THE PROJECT ENGINEER.
5. FLOW DIVERSION CAN BE ACCOMPLISHED USING PUMPS. A "PUMP AROUND TYPICAL" DETAIL IS LOCATED ON SHEET NS-23A.

SPECIAL NOTES

1. THIS IS A STREAM MITIGATION PROJECT THAT IS TO BE DONE IN ACCORDANCE WITH 404/401 WATER QUALITY CERTIFICATION.
2. ALL DISTURBED AREAS SHALL BE PROPERLY STABILIZED AS SOON AS PRACTICABLE WITH SEED/STRAW MULCH UNLESS OTHERWISE NOTED IN THE PLANS OR BY THE ENGINEER.

TREES

1. NO SUBSTITUTIONS OF TREE SPECIES OR SIZES SHALL BE ALLOWED WITHOUT WRITTEN APPROVAL FROM THE ENGINEER/LANDSCAPE ARCHITECT. CONCERNING STREAM MITIGATION, TREES SHALL BE OF THE VARIETY REQUESTED, BARE ROOT (ROOTS MUST BE KEPT MOIST AT ALL TIMES), AND FIRST QUALITY. ANY FOUND TO BE INCORRECT SPECIES, OR IMPROPERLY PLANTED, AT ANY TIME PRIOR TO TERMINATION OF THE CONTRACT SHALL BE REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE. STAKES AND WIRES SHALL BE REMOVED IMMEDIATELY PRIOR TO CONTRACT TERMINATION, UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER.
2. TREE & SHRUB SPECIES SHOULD BE 2-5FT CONTAINER GROWN OR BALL AND BURLAP STOCK. SHRUBS SHOULD BE PLACED ON 12-FOOT CENTERS.
3. LIVE STAKE ELDERBERRY BLACK WILLOW, SILKY WILLOW AND SILKY DOGWOODS WILL ALSO BE USED ALONG THE STREAM BANK.

CONSTRUCTION SPECIFICATIONS FOR LIVE STAKES

1. HARVESTING:

   A. LIVE STAKES MAY CONSIST OF A COMBINATION OF BLACK WILLOW, SILKY DOGWOOD, SILKY WILLOW AND ELDERBERRY.

   B. STAKES SHOULD BE HARVESTED AND PLANTED WHEN THE WILLOWS OR OTHER CHOSEN SPECIES ARE DORMANT. THIS PERIOD IS GENERALLY FROM LATE FALL TO EARLY SPRING, OR BEFORE THE BUDS START TO BREAK.

   C. WHEN HARVESTING CUTTINGS, SELECT HEALTHY, LIVE WOOD THAT IS REASONABLY STRAIGHT.

   D. USE LIVE WOOD AT LEAST 1 YEAR OLD OR OLDER. THE BEST WOOD IS 2 TO 5 YEARS OLD WITH SMOOTH BARK THAT IS NOT DEEPLY FURROWED.

   E. MAKE CLEAN CUTS WITH UNSPLIT ENDS. TRIM BRANCHES FROM CUTTING AS CLOSE AS POSSIBLE. CUT THE BUTT END OF THE CUTTING AT AN ANGLE (~45 DEGREES) AND THE TOP END PERPENDICULAR (90 DEGREES)

   F. THE TOP (SQUARE CUT END) SHOULD BE PAINTED AND SEALED BY DIPPING THE TOP 1-INCH TO 2-INCHES INTO A 50-50 MIX OF LIGHT COLORED LATEX PAINT AND WATER. THIS REDUCES THE POSSIBILITY OF DESICCATION AND DISEASE CAUSING MORTALITY AND MAKES THEM MORE VISIBLE FOR SUBSEQUENT PLANTING EVALUATIONS. ASSURE THE STAKES ARE PLANTED WITH THE TOP UP.

   G. CUTTINGS SHOULD GENERALLY BE BETWEEN 0.75-INCHES TO 2-INCHES IN DIAMETER BUT CAN BE LARGER DEPENDING ON THE SPECIES. HIGHEST SURVIVAL RATES ARE OBTAINED FROM USING CUTTINGS 2-INCHES TO 3-INCHES IN DIAMETER. LARGER DIAMETER CUTTINGS ARE NEEDED FOR PLANTING INTO ROCK RIPRAP.

   H. CUTTINGS OF SMALL DIAMETER (UP TO 1.5-INCHES) SHOULD BE 18 INCHES LONG MINIMUM. THICKER CUTTINGS SHOULD BE LONGER.

   I. STAKES SHOULD BE CUT SO A TERMINAL BUD SCAR IS WITHIN 1-INCH TO 4-INCHES OF THE TOP. AT LEAST TWO BUDS AND/OR BUD SCARS SHOULD BE ABOVE THE GROUND AFTER PLANTING.

2. INSTALLATION:

   A. STAKES MUST BE PLANTED WITH BUTT-ENDS INTO THE GROUND. LEAF BUD SCARS OR EMERGING BUDS SHOULD ALWAYS POINT UP.

   B. STAKES MUST NOT BE ALLOWED TO DRY OUT. THE CUTTINGS NOT PLANTED THE DAY THEY ARE HARVESTED SHOULD BE SOAKED IN WATER FOR A MINIMUM OF 24 HOURS AS SOAKING SIGNIFICANTLY INCREASES THE SURVIVAL RATE OF THE CUTTINGS.

   C. PLANT STAKES 3 FEET CENTER AND ALTERNATE SPECIES.

   D. SET THE STAKE AS DEEP AS POSSIBLE INTO THE SOIL, PREFERABLY WITH 80 PERCENT OF ITS LENGTH BURIED BUT NO LESS THAN ONE-HALF OF THE TOTAL LENGTH BURIED.

   E. TAMP THE SOIL AROUND THE CUTTING.

USE AN IRON STAKE OR BAR TO MAKE A PILOT HOLE IN FIRM SOIL OR BETWEEN RIPRAP. DRIVE LIVE STAKES INTO THE SOIL WITH A RUBBER MALLET OR DEAD-BLOW HAMMER.

MULCHING OF SEEDED AREAS

ALL SEEDED AREAS ARE TO BE COVERED BY STRAW MULCH.

SEALED BY

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STATE OF TENNESSEE
DEPARTMENT OF
TRANSPORTATION

BUSH BROTHERS PROPERTY-
STREAM MITIGATION
UT1 TO CLEAR CREEK SITE
STREAM MITIGATION
NOTES AND STANDARD
DRAWINGS

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SSSSDNSPEC

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2017	STP-4500(28):45945-3690-14	NS-13A

ESTIMATED QUANTITIES FOR UT1 CLEAR CREEK STREAM MITIGATION

	ITEM NO.	DESCRIPTION	UNIT	QUANTITY
(1)	203-01	ROAD & DRAINAGE EXCAVATION (UNCLASSIFIED)	C.Y.	7,149
(4)	203-15.03	COMPACTED CLAY	C.Y.	700
(2)	209-03.34	STREAM MITIGATION - LOG VANES	L.F.	192
(3)	209-03.36	STREAM MITIGATION - STEP POOL	EACH	11
	209-08.02	TEMPORARY SILT FENCE (WITH BACKING)	L.F.	500
(8)	209-65.01	TEMPORARY STREAM DIVERSION (PUMP AROUND)	L.S.	1
(12)	209-09.03	SEDIMENT FILTER BAG (15'X15')	EACH	5
	303-10.01	MINERAL AGGREGATE (SIZE 57)	TON	50
	621-03.04	30" TEMPORARY DRAINAGE PIPE	L.F.	20
	707-06.05	REMOVAL OF FENCE	L.F.	65
	707-03.01	STOCK FENCE	L.F.	1,819
	707-03.02	END, BRACED LINE, CORNER POST ASSEMBLY (STOCK FENCE)	EACH	11
	707-03.20	DRIVE GATE (STOCK FENCE)	EACH	4
(5)	709-05.81	ROCK RIFFLES	L.S.	1
(6)	709-05.05	MACHINED RIP-RAP (CLASS A-3)	TON	150
	709-05.06	MACHINED RIP-RAP (CLASS A-1)	TON	52
	713-16.20	SIGNS (PROTECTED AREA SIGNS)	EACH	6
(11)	740-10.03	GEOTEXTILE TYPE (III) (EROSION CONTROL)	S.Y.	289
	801-01.04	SEEDING (WILDFLOWER MIX)	UNIT	230
(10)	801-01.30	COVER CROP SEED MIX (RIPZN/FLPL) W/MULCH	UNIT	230
	801-01.35	GRASS SEED MIX (RIPZN/FLPL) W/MULCH	UNIT	230
	802-02.30	CUTTINGS: SALIX NIGRA (18IN-24IN LENGTH)	EACH	800
	802-02.31	CUTTINGS: SALIX SERICEA (18IN-24IN)	EACH	800
	802-02.32	CUTTINGS: CORNUS AMOMUM (18IN-24IN)	EACH	800
	802-02.33	CUTTINGS: SAMBUCUS CANADENSIS (18IN-24IN)	EACH	800
	802-11.02	ACER RUBRUM (RED MAPLE 2-5FT CNTNR GRWN)	EACH	84
	802-11.14	DIOSPYROS VIRGINIANA (PERSIMMON 2-5FT CNTNR GRWN)	EACH	84
	802-11.19	LIRIODENDRON TULIPIFERA (TULIP POPLAR 2-5FT CNTNR GRWN)	EACH	84
	802-11.26	PLATANUS OCCIDENTALIS (SYCAMORE 2-5FT CNTNR GRWN)	EACH	84
	802-11.32	QUERCUS LYRATA (OVERCUP OAK 2-5FT CNTNR GRWN)	EACH	84
	802-11.33	QUERCUS MICHAUXII (SWMP CHSTNT OAK 2-5FT CNTNR GRWN)	EACH	84
	802-11.38	QUERCUS PHELLOS (WILLOW OAK 2-5FT CNTNR GRWN)	EACH	84
	802-11.45	CARPINUS CAROLINIANA (AMERICAN HORNBEAM 2-5FT CONTAINER GRWN)	EACH	84
	802-11.46	QUERCUS SHUMARDII (SHUMARD OAK 2-5 FT CNTNR GRWN)	EACH	84
	802-11.63	HAMAMELIS VIRGINIANA (AMERICAN WITCHHAZEL 2-5FT CNTNR GRWN)	EACH	84
	802-13.04	CORNUS AMOMUM (SILKY DOGWOOD 2-5FT CNTNR GRWN)	EACH	84
	802-13.09	LINDERA BENZOIN (SPICEBUSH 2-5FT CNTNR GRWN)	EACH	84
(7)	802-15.06	CASTANEA DENTATA (AMERICAN CHESTNUT 2-5 FT CNTNR GRWN)	EACH	25
(9)	805-12.08	700 GRAM COIR FIBER EROSION CONTROL BLANKET	S.Y.	3,100

FOOTNOTES:

1. INCLUDES ALL MATERIALS, EQUIPMENT, AND LABOR NECESSARY TO EXCAVATE THE PROPOSED CHANNEL AND FLOODPLAIN, AND TO FILL THE ABANDONED CHANNEL; THE CONTRACTOR SHALL MAKE PROVISIONS FOR THE SATISFACTORY DISPOSAL OF 7149 C.Y. OF EXCESS MATERIAL
2. INCLUDES ALL MATERIALS, EQUIPMENT, AND LABOR NECESSARY TO CONSTRUCT AS SHOWN IN (3/23) LF SHALL BE MEASURED AS TOTAL LF OF LOG VANE
3. INCLUDES ALL MATERIALS, EQUIPMENT, AND LABOR NECESSARY TO CONSTRUCT AS SHOWN IN (4/23)
4. INCLUDES ALL MATERIALS, EQUIPMENT, AND LABOR NECESSARY TO CONSTRUCT AS SHOWN IN (2/23)
5. INCLUDES ALL MATERIALS, EQUIPMENT, AND LABOR NECESSARY TO CONSTRUCT AS SHOWN IN (1/23)
6. QUANTITY DOES NOT INCLUDE A-3 RIP RAP USED IN CONSTRUCTION OF ALLUVIAL RIFFLE
7. PLANTED AT DIRECTION OF ENGINEER.
8. INCLUDES MULTIPLE SETUPS AND RELOCATIONS OF STREAM DIVERSION PUMP AROUND AS CONSTRUCTION PROGRESSES. INCLUDES ALL MATERIALS, EQUIPMENT, AND LABOR NECESSARY TO CONSTRUCT AND RELOCATE AS SHOWN AND DESCRIBED IN (2/23A) WITH THE EXCEPTION OF SEDIMENT FILTER BAGS, MINERAL AGGREGATE (SIZE 57), AND GEOTEXTILE TYPE (III) USED FOR DEWATERING CONSTRUCTION AREA
9. COIR FIBER EROSION BLANKETS SHALL BE 700 GRAMS PER SQUARE METER.
10. COVER CROP SEED MIX W/ MULCH IS CONSIDERED TEMPORARY SEEDING; SEEDING (WILDFLOWER MIXTURE) AND GRASS SEED MIX W/ MULCH ARE CONSIDERED PERMANENT SEEDING
11. ALL QUANTITIES ARE TO BE USED AS DIRECTED BY THE ENGINEER
12. QUANTITY IS BASED ON AN ASSUMPTION OF 5 PUMP AROUND RELOCATIONS AND AN ASSUMPTION OF 1 SEDIMENT FILTER BAG PER PUMP AROUND RELOCATION. FINAL QUANTITY MAY VARY BASED ON ACTUAL NUMBER OF RELOCATIONS NEEDED AND SEDIMENT FILTER BAG USAGE RATE

SEALED BY

COORDINATES ARE NAD/83(1995), ARE DATUM ADJUSTED BY THE FACTOR OF 1.0001067 AND TIED TO THE TGRN. ALL ELEVATIONS ARE REFERENCED TO THE NAVD 1988.

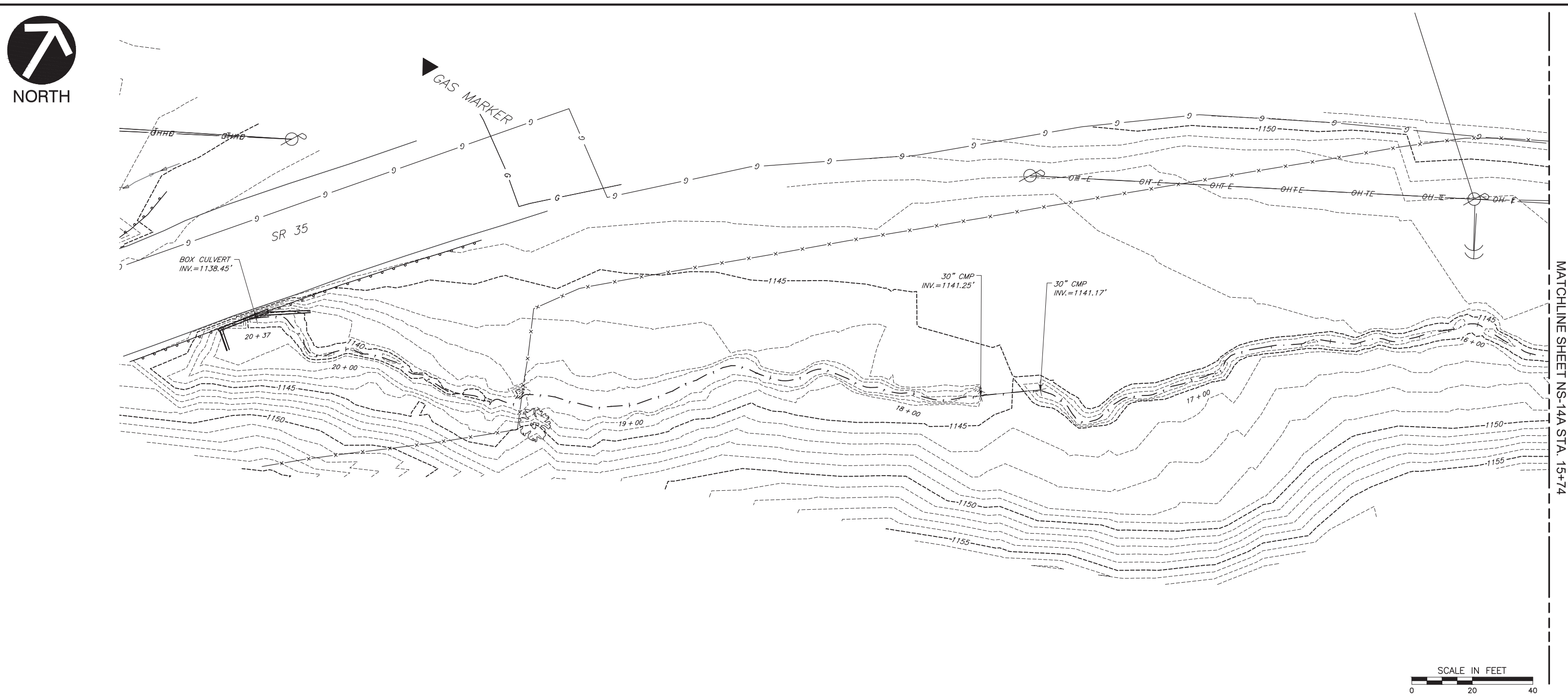
STATE OF TENNESSEE
DEPARTMENT OF
TRANSPORTATION

BUSH BROTHERS PROPERTY– STREAM MITIGATION

UT1 TO CLEAR CREEK SITE STREAM MITIGATION QUANTITIES

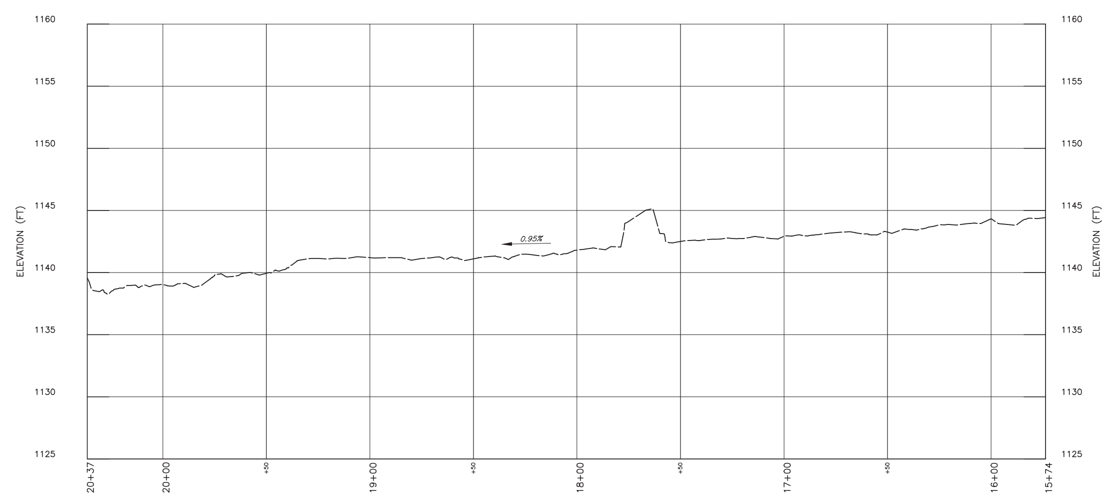
SSSSS7TNESSSSSS
SSSSDGNSPEC

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2017	STP-4500(28);45945-3690-14	NS-14



LEGEND

- EXISTING STREAM CENTERLINE
- EXISTING MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- EXISTING FENCE
- OH-E EXISTING OVERHEAD ELECTRICITY LINE
- T EXISTING TELEPHONE LINE
- G EXISTING GAS LINE
- EXISTING UTILITY POLE: POWER
- EXISTING GUY-WIRE
- EXISTING UTILITY POLE: TELEPHONE

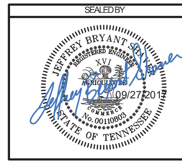


UT1 TO CLEAR CREEK EXISTING PROFILE

SCALE H:1"=30'; V:1"=5'

SCALE IN FEET
0 30 60

SEALED BY



COORDINATES ARE NAD/83(1995), ARE DATUM ADJUSTED BY THE FACTOR OF 1.00010637 AND TIED TO THE TGRN. ALL ELEVATIONS ARE REFERENCED TO THE NAVD 1988.

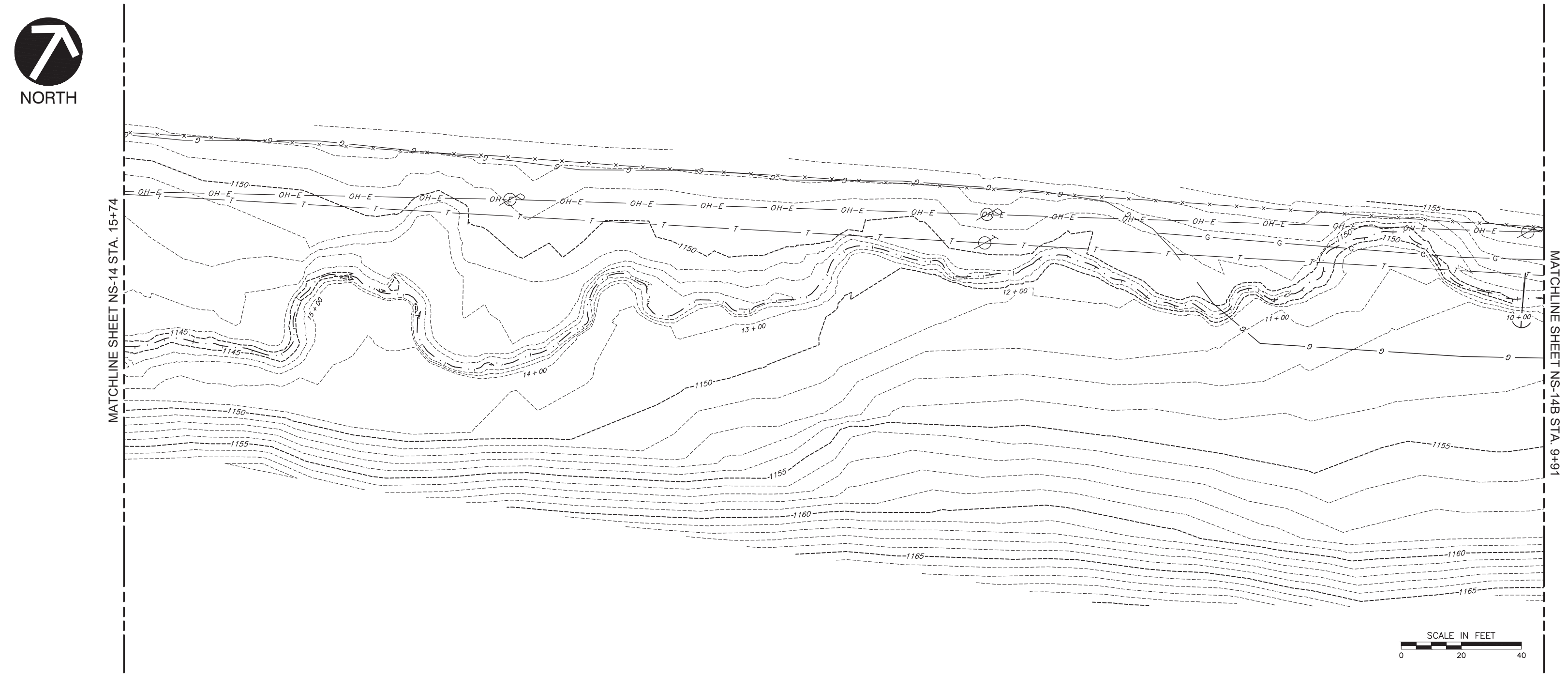
STATE OF TENNESSEE
DEPARTMENT OF
TRANSPORTATION

BUSH BROTHERS PROPERTY– STREAM MITIGATION

UT1 TO CLEAR CREEK STREAM MITIGATION EXISTING PLAN AND PROFILE

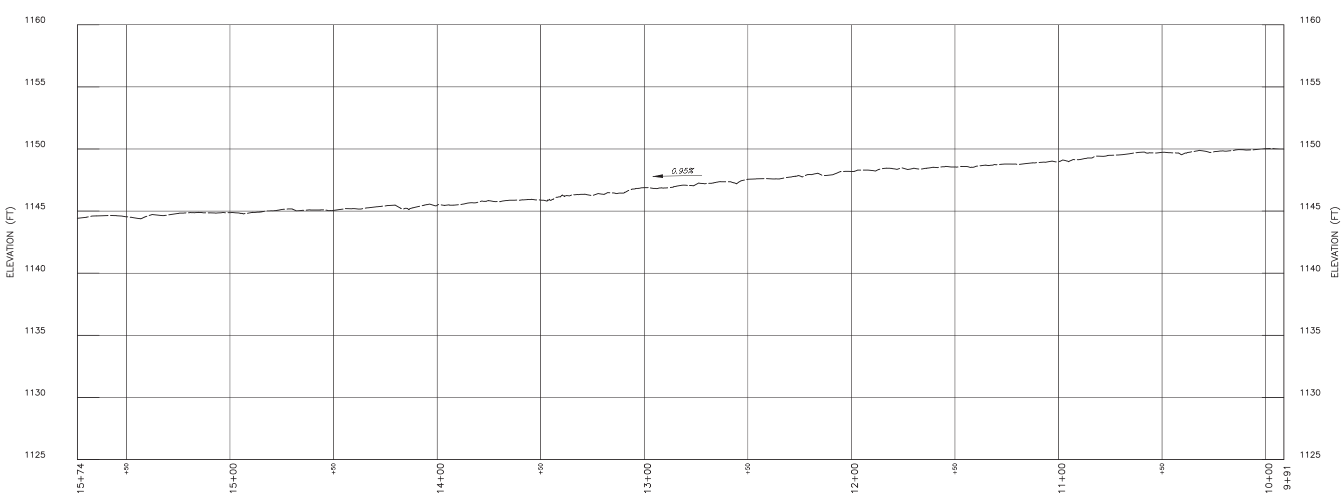
$$$$SYTIME$$$$$$
$$$$DGNSPEC$$

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2017	STP-4500(28);45945-3690-14	NS-14A



LEGEND

- EXISTING STREAM CENTERLINE
- EXISTING MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- EXISTING FENCE
- OH-E EXISTING OVERHEAD ELECTRICITY LINE
- T EXISTING TELEPHONE LINE
- G EXISTING GAS LINE
- EXISTING UTILITY POLE: POWER
- EXISTING GUY-WIRE
- EXISTING UTILITY POLE: TELEPHONE
- G EXISTING RELOCATED GAS LINE

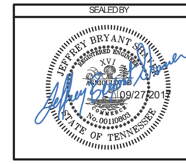


UT1 TO CLEAR CREEK EXISTING PROFILE

SCALE H:1"=30'; V:1"=5'

SCALE IN FEET 0 30 60

SEALED BY



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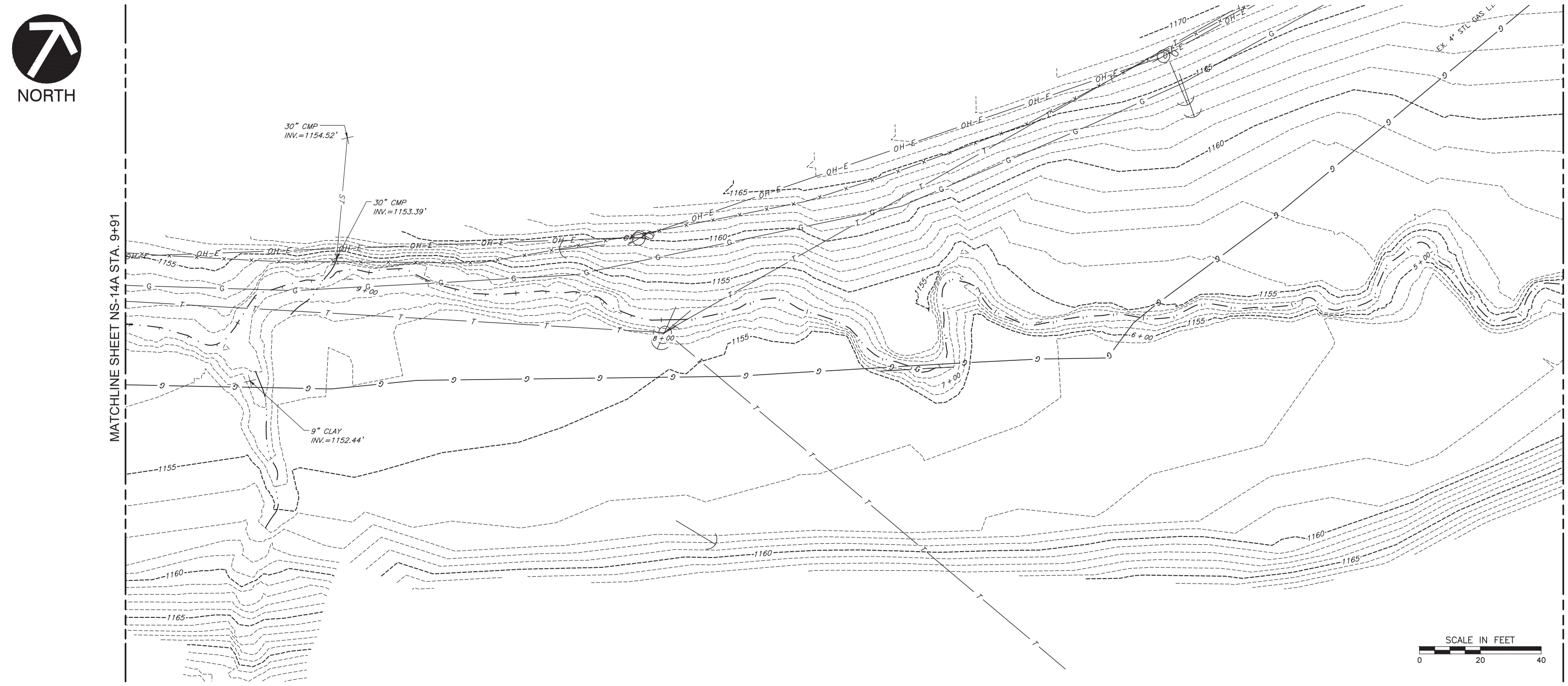
STATE OF TENNESSEE
DEPARTMENT OF
TRANSPORTATION

BUSH BROTHERS PROPERTY– STREAM MITIGATION

UT 1 TO CLEAR CREEK STREAM MITIGATION EXISTING PLAN AND PROFILE

$$$$DGNSPEC$$
$$$$SYTIME$$$$$$$$

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2017	STP-4500(28);45945-3690-14	NS-14B



LEGEND

- EXISTING STREAM CENTERLINE
- EXISTING MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- EXISTING FENCE
- OH-E EXISTING OVERHEAD ELECTRICITY LINE
- T EXISTING TELEPHONE LINE
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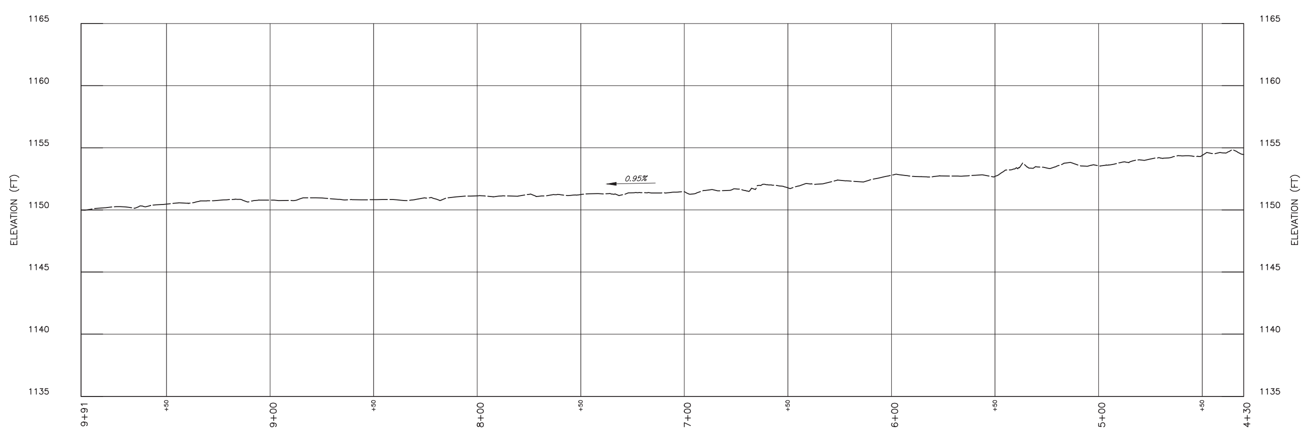
- EXISTING UTILITY POLE: POWER
- EXISTING GUY-WIRE
- EXISTING UTILITY POLE: TELEPHONE
- G EXISTING RELOCATED GAS LINE



UT1 TO CLEAR CREEK EXISTING PROFILE

SCALE H:1"=30'; V:1"=5'

SCALE IN FEET
0 30 60

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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

BUSH BROTHERS PROPERTY– STREAM MITIGATION

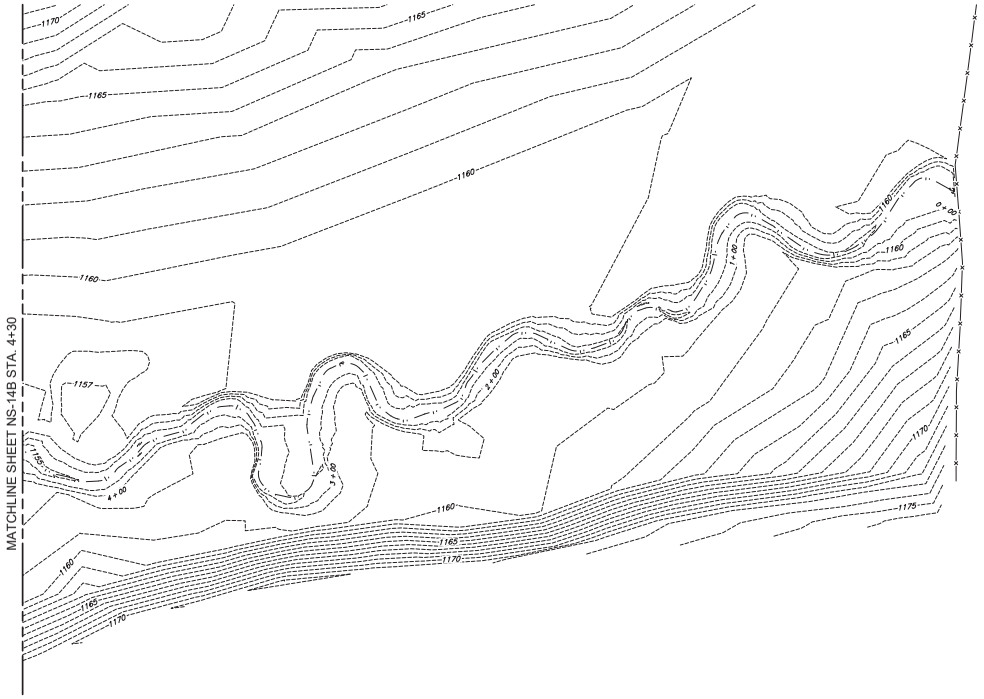
UT1 TO CLEAR CREEK STREAM MITIGATION EXISTING PLAN AND PROFILE

$$$$$$DGNSPEC$$$

$$$$$$SYTIME$$$$$$$$

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2017	STP-4500(28):45945-3690-14	NS-14C

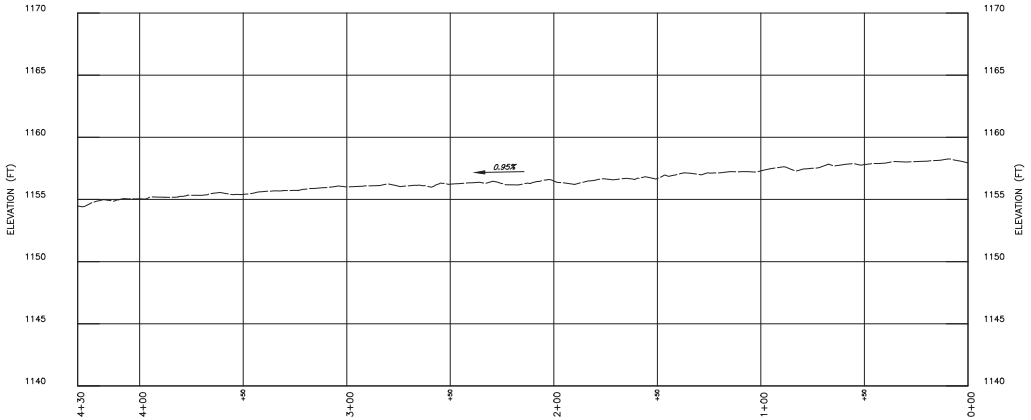
NORTH



SCALE IN FEET
0 20 40

LEGEND

- EXISTING STREAM CENTERLINE
- EXISTING MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- EXISTING FENCE
- OH-E — EXISTING OVERHEAD ELECTRICITY LINE
- T — EXISTING TELEPHONE LINE
- G — EXISTING GAS LINE
- EXISTING UTILITY POLE: POWER
- EXISTING GUY-WIRE
- EXISTING UTILITY POLE: TELEPHONE



UT1 TO CLEAR CREEK EXISTING PROFILE
SCALE H:1"=30'; V:1"=5'

SCALE IN FEET
0 30 60

SEALED BY

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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

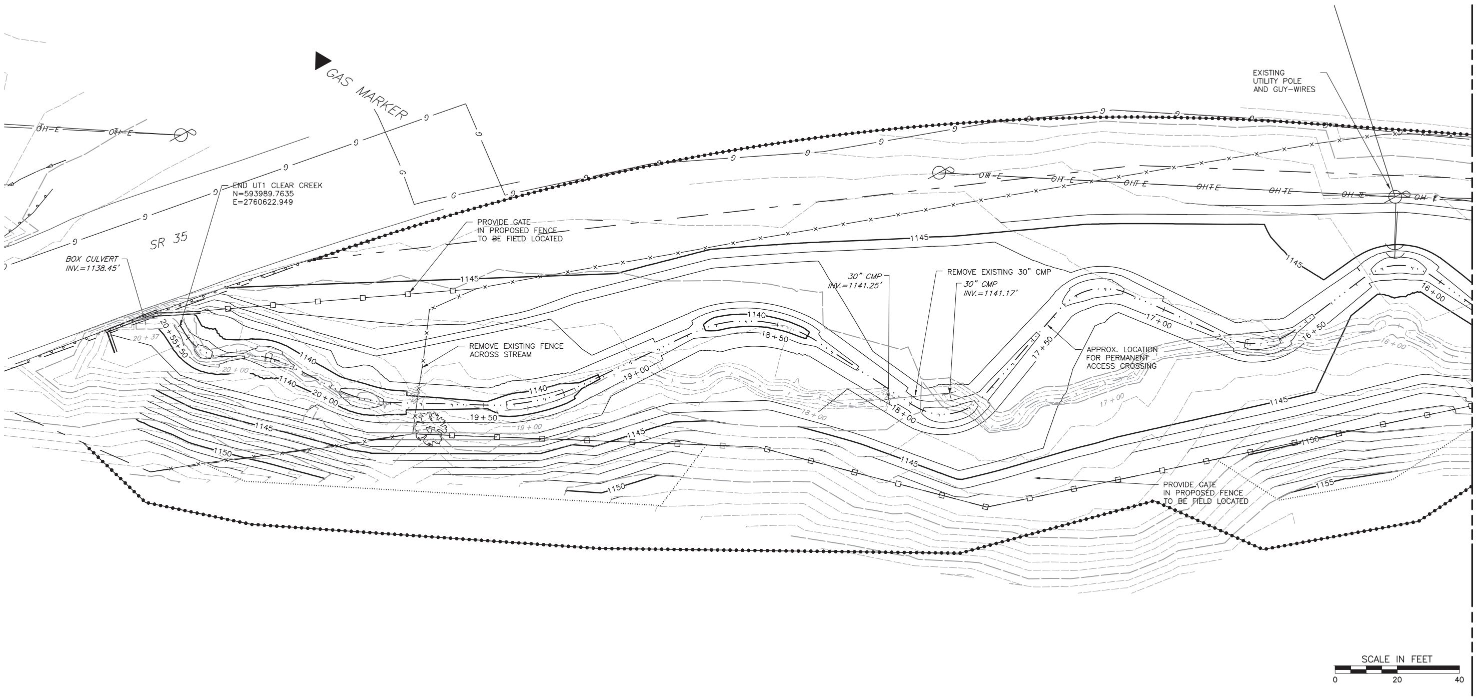
BUSH BROTHERS PROPERTY– STREAM MITIGATION

UT1 TO CLEAR CREEK STREAM MITIGATION EXISTING PLAN AND PROFILE

SSSSSYTMESSSSSSS
SSSSDGNSPEC

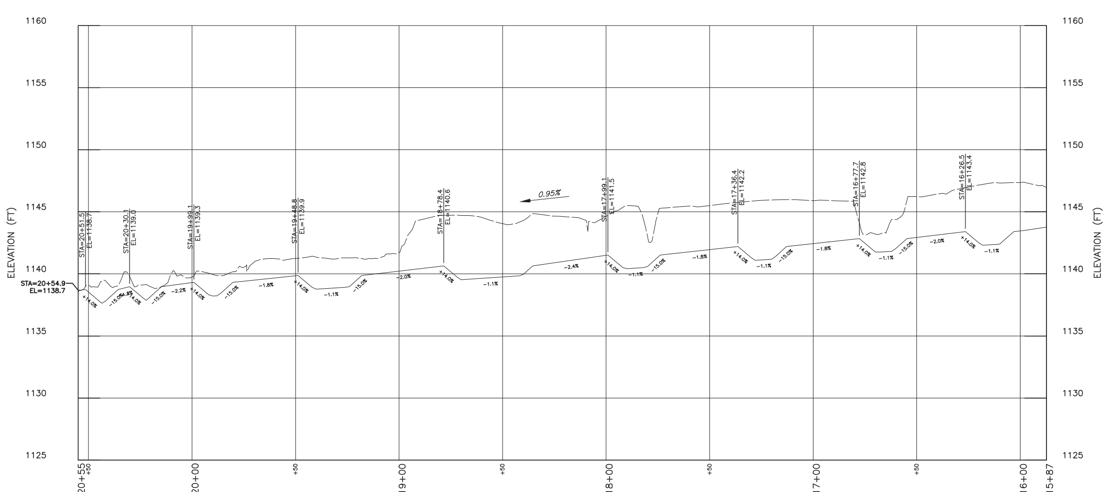
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2017	STP-4500(28);45945-3690-14	NS-15

NORTH



LEGEND

- PROPOSED FENCE
- PROPOSED STREAM CENTERLINE
- EXISTING STREAM CENTERLINE
- PROPOSED MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- EXISTING FENCE
- OH-E EXISTING OVERHEAD ELECTRICITY LINE
- T EXISTING TELEPHONE LINE
- G EXISTING GAS LINE
- PROPOSED CONSERVATION EASEMENT
- EXISTING UTILITY POLE: POWER
- EXISTING GUY-WIRE
- EXISTING UTILITY POLE: TELEPHONE
- PROPOSED SLOPE EASEMENT
- PROPOSED CONSTRUCTION EASEMENT



UT1 TO CLEAR CREEK PROPOSED PROFILE

SCALE H:1"=30'; V:1"=5'

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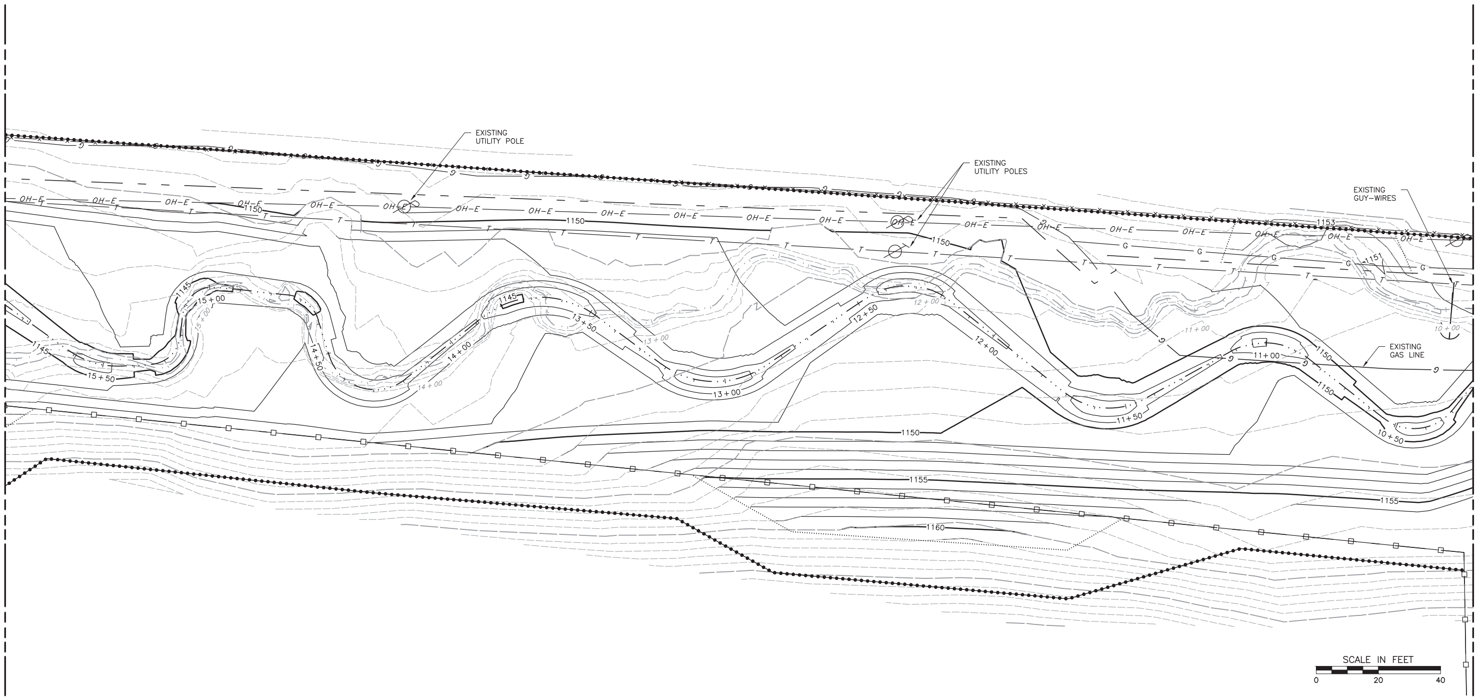
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

BUSH BROTHERS PROPERTY– STREAM MITIGATION
UT1 TO CLEAR CREEK STREAM MITIGATION PROPOSED PLAN AND PROFILE

$$$$SYTIME$$$$$$
$$$$DGNSPEC$$

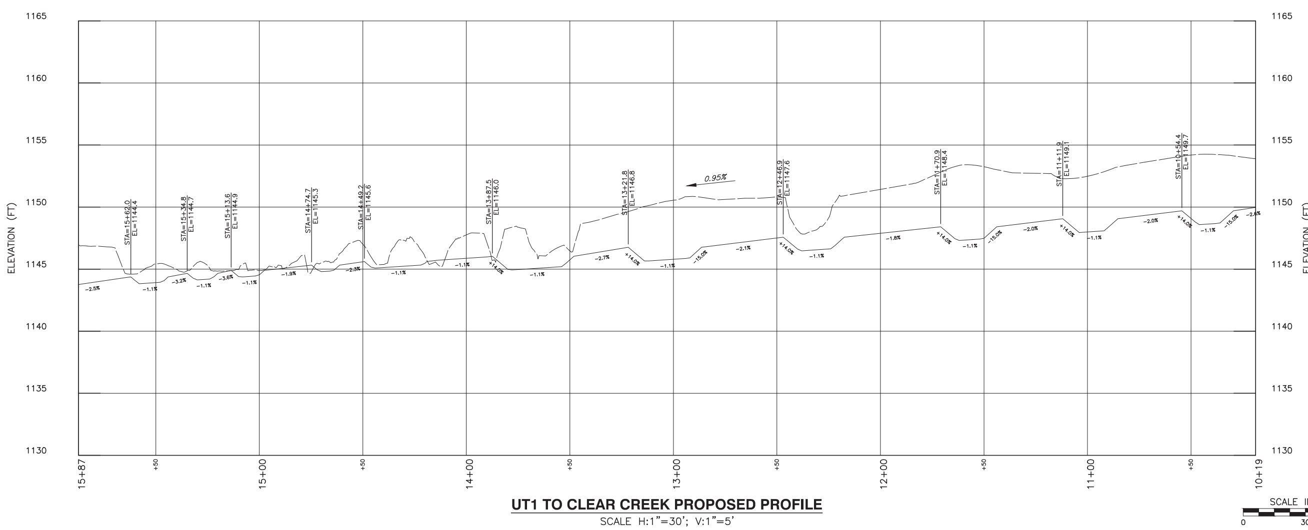
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2017	STP-4500(28);45945-3690-14	NS-15A

NORTH



LEGEND

- PROPOSED FENCE
- PROPOSED STREAM CENTERLINE
- EXISTING STREAM CENTERLINE
- PROPOSED MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- EXISTING FENCE
- EXISTING OVERHEAD ELECTRICITY LINE
- EXISTING TELEPHONE LINE
- EXISTING GAS LINE
- PROPOSED CONSERVATION EASEMENT
- EXISTING UTILITY POLE: POWER
- EXISTING GUY-WIRE
- EXISTING UTILITY POLE: TELEPHONE
- EXISTING RELOCATED GAS LINE
- PROPOSED SLOPE EASEMENT
- PROPOSED CONSTRUCTION EASEMENT



UT1 TO CLEAR CREEK PROPOSED PROFILE

SCALE H:1"=30'; V:1"=5'

SEALED BY

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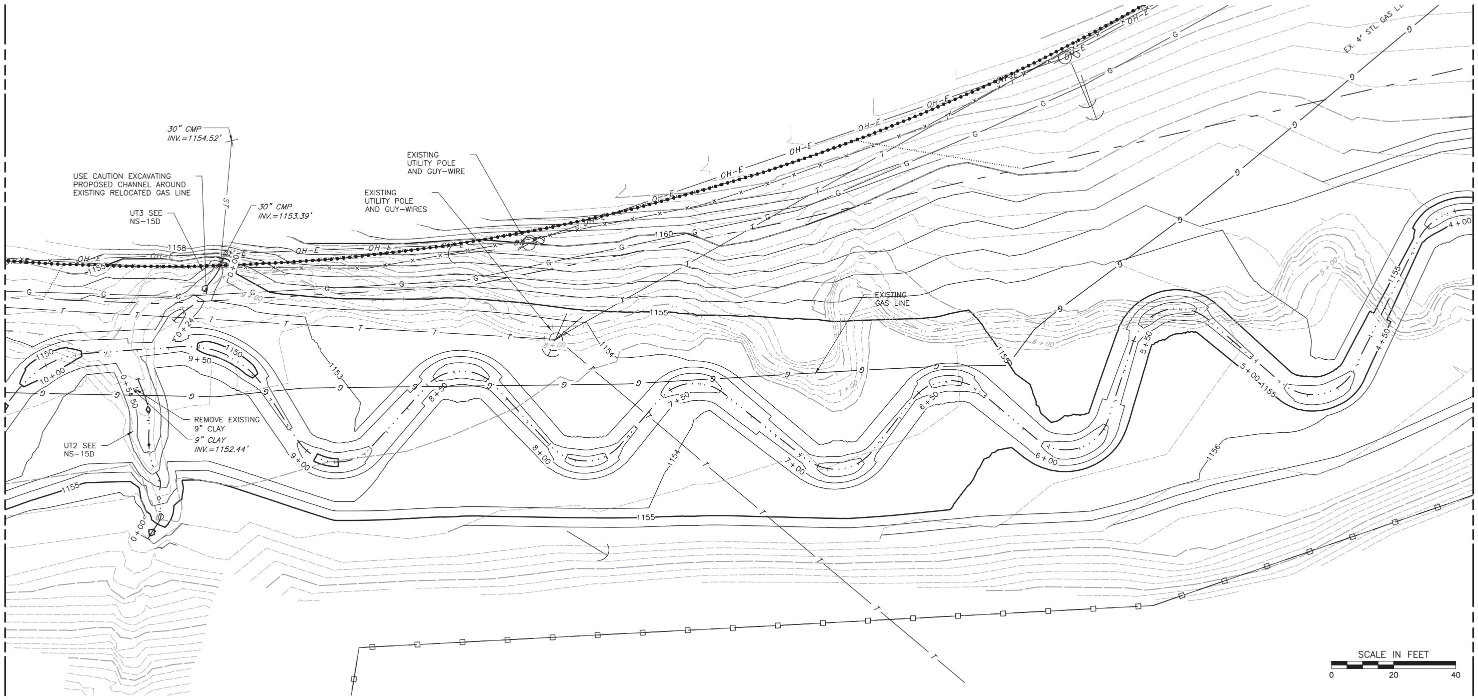
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

BUSH BROTHERS PROPERTY– STREAM MITIGATION
UT1 TO CLEAR CREEK STREAM MITIGATION
PROPOSED PLAN AND PROFILE

$$$$SYTIME$$$$$$
$$$$DGNSPEC$$$

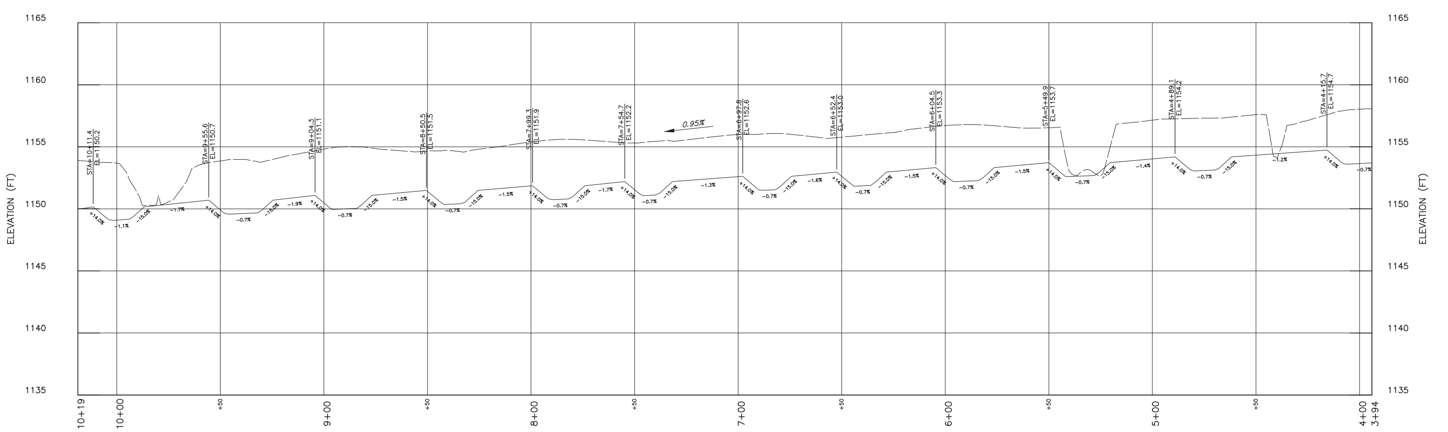
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2017	STP-4500(28);45945-3690-14	NS-15B

NORTH



LEGEND

Symbol	Description
—□—	PROPOSED FENCE
—··—··—	PROPOSED STREAM CENTERLINE
— · —	EXISTING STREAM CENTERLINE
——	PROPOSED MINOR CONTOUR
——	PROPOSED MAJOR CONTOUR
——	EXISTING MINOR CONTOUR
——	EXISTING MAJOR CONTOUR
—x—x—	EXISTING FENCE
OH–E	EXISTING OVERHEAD ELECTRICITY LINE
T	EXISTING TELEPHONE LINE
G	EXISTING GAS LINE
— — —	PROPOSED CONSERVATION EASEMENT
Ø	EXISTING UTILITY POLE: POWER
↘	EXISTING GUY-WIRE
Ø	EXISTING UTILITY POLE: TELEPHONE
—G—	EXISTING RELOCATED GAS LINE
· · · · ·	PROPOSED SLOPE EASEMENT
◆◆◆◆◆	PROPOSED CONSTRUCTION EASEMENT



UT1 TO CLEAR CREEK PROPOSED PROFILE

SCALE H:1"=30'; V:1"=5'

SEALED BY

JEFFREY BRYANT ... STATE OF TENNESSEE ... No. 00110803 ... 09/27/2017

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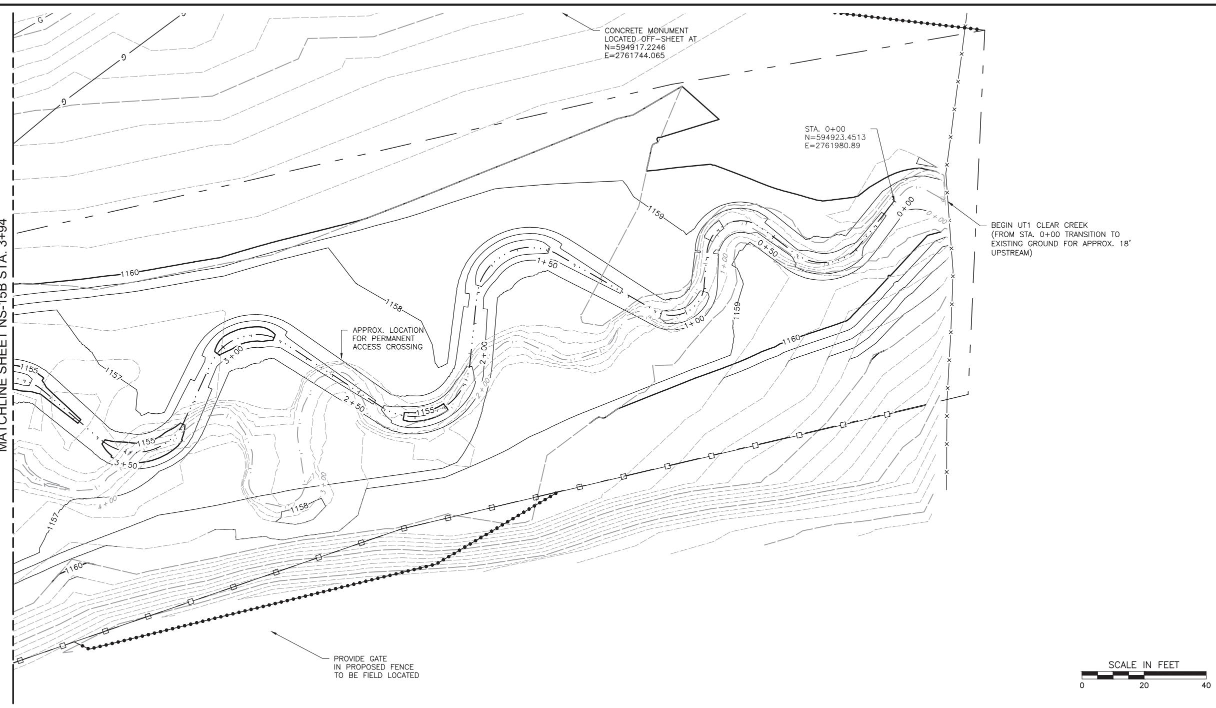
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

BUSH BROTHERS PROPERTY–
STREAM MITIGATION
UT1 TO CLEAR CREEK
STREAM MITIGATION
PROPOSED PLAN AND PROFILE

$$$$SYTIME$$$$$$$
$$$$DGNSPEC$$

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2017	STP-4500(28);45945-3690-14	NS-15C

NORTH



SCALE IN FEET
0 20 40

LEGEND

- PROPOSED FENCE
- PROPOSED STREAM CENTERLINE
- EXISTING STREAM CENTERLINE
- PROPOSED MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- EXISTING FENCE
- OH-E EXISTING OVERHEAD ELECTRICITY LINE
- T EXISTING TELEPHONE LINE
- G EXISTING GAS LINE
- PROPOSED CONSERVATION EASEMENT
- EXISTING UTILITY POLE: POWER
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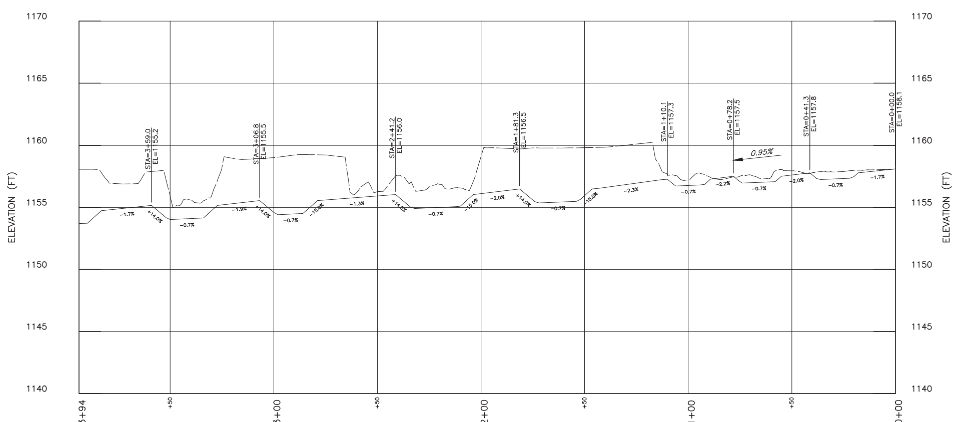
- EXISTING UTILITY POLE: TELEPHONE
- G EXISTING RELOCATED GAS LINE
- PROPOSED SLOPE EASEMENT
- PROPOSED CONSTRUCTION EASEMENT



UT1 TO CLEAR CREEK PROPOSED PROFILE

SCALE H:1"=30'; V:1"=5'

SCALE IN FEET
0 30 60

SEALED BY

JEFFREY BRYANT DUNN, REGISTERED ENGINEER, No. 00110803, STATE OF TENNESSEE, 09/27/2017

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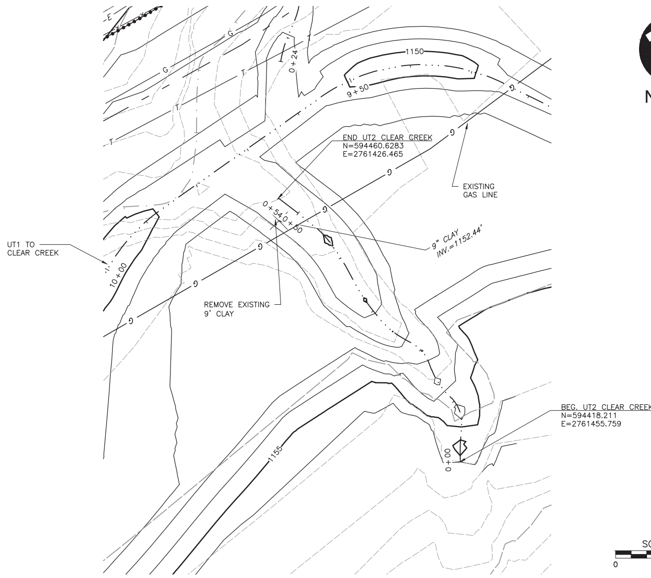
STATE OF TENNESSEE DEPARTMENT OF TRANSPORTATION

BUSH BROTHERS PROPERTY– STREAM MITIGATION
UT1 TO CLEAR CREEK STREAM MITIGATION PROPOSED PLAN AND PROFILE

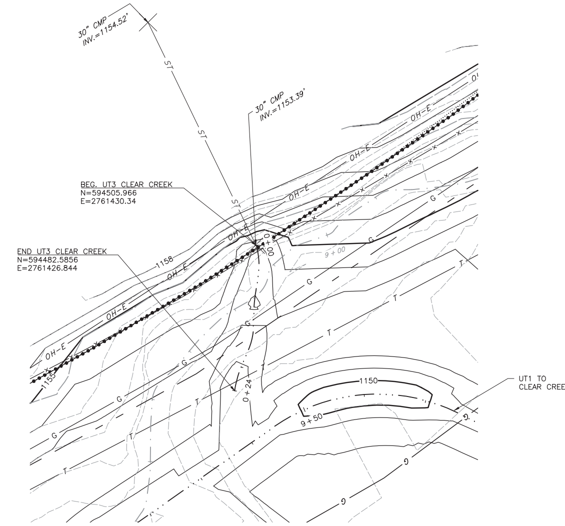
$$$$SYTIME$$$$$$$$
$$$$DGNSPEC$$

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2017	STP-4500(28);45945-3690-14	NS-15D



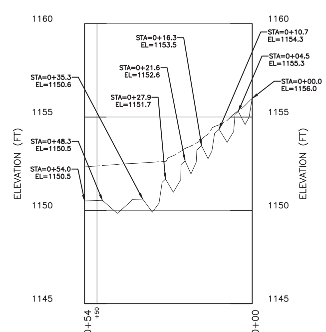
NORTH

SCALE IN FEET
0 10 20



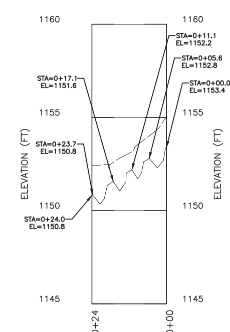
LEGEND

- PROPOSED FENCE
- PROPOSED STREAM CENTERLINE
- EXISTING STREAM CENTERLINE
- PROPOSED MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- EXISTING FENCE
- EXISTING OVERHEAD ELECTRICITY LINE
- EXISTING TELEPHONE LINE
- EXISTING GAS LINE
- EXISTING UTILITY POLE: POWER
- EXISTING GUY-WIRE
- EXISTING UTILITY POLE: TELEPHONE
- EXISTING RELOCATED GAS LINE
- PROPOSED CONSERVATION EASEMENT
- PROPOSED CONSTRUCTION EASEMENT



UT2 to CLEAR CREEK PROPOSED PROFILE

SCALE H:1"=20'; V:1"=3'



UT3 to CLEAR CREEK PROPOSED PROFILE

SCALE H:1"=20'; V:1"=3'

SCALE IN FEET
0 20 40

SEALED BY

JEFFREY BRYANT SPARKS — STATE OF TENNESSEE — No. 00110863 — 09/27/2017

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STATE OF TENNESSEE
DEPARTMENT OF
TRANSPORTATION

BUSH BROTHERS PROPERTY–
STREAM MITIGATION
UT2 / UT3 TO CLEAR CREEK
STREAM MITIGATION
PROPOSED PLAN AND
PROFILE

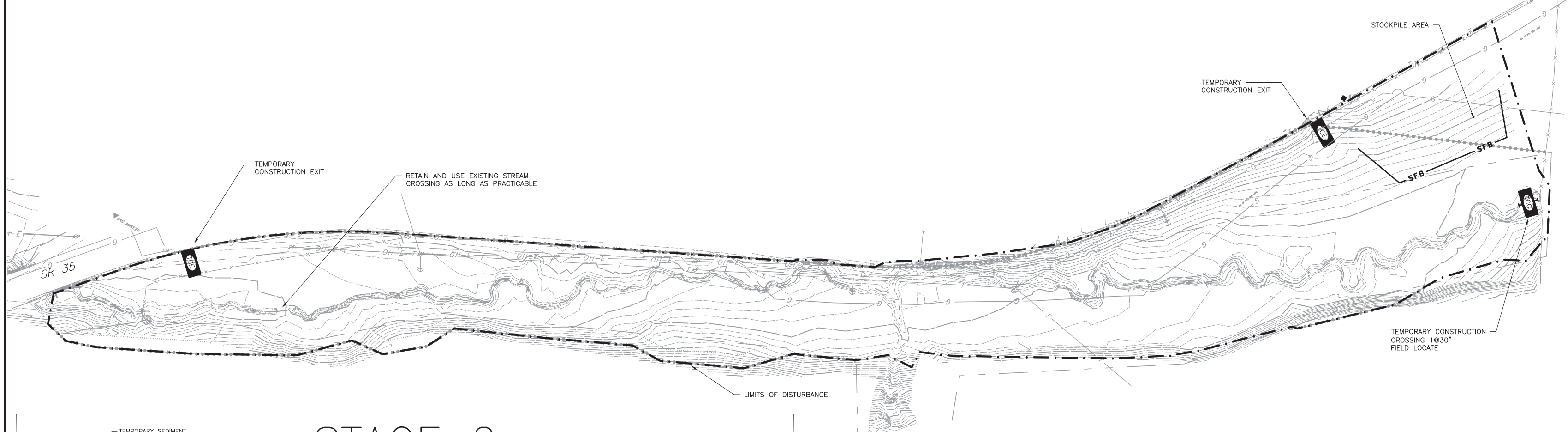
$$$$SYTIME$$$$$$
$$$$DGNSPEC$$$

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2017	STP-4500(28);45945-3690-14	NS-21

STAGE 1

NORTH

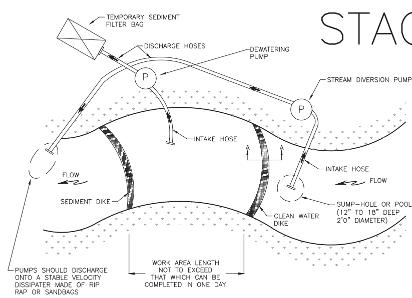
NOTE:
ADDITIONAL TEMPORARY STOCKPILE AREAS WILL BE FIELD LOCATED BY THE CONTRACTOR AND SEPARATED FROM THE WORK AREA USING SILT FENCE WITH BACKING.



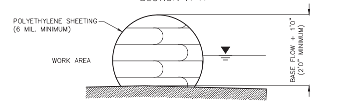
DISTURBED ACREAGE=5.60 ACRES

SCALE IN FEET
0 65 130

STAGE 2



SECTION A-A



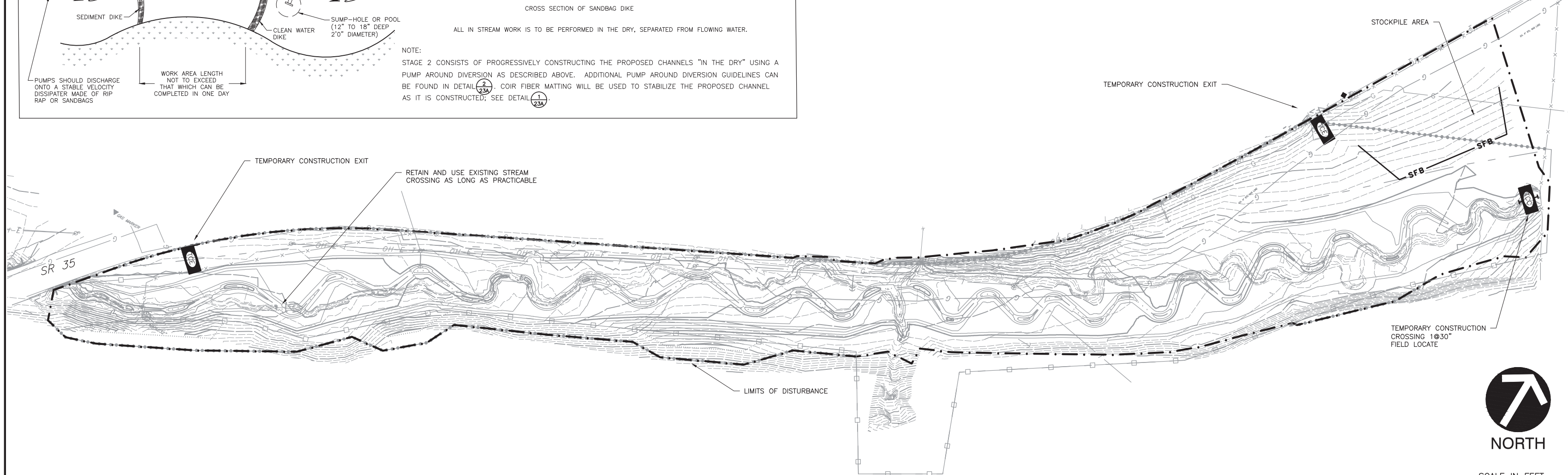
CROSS SECTION OF SANDBAG DIKE

ALL IN STREAM WORK IS TO BE PERFORMED IN THE DRY, SEPARATED FROM FLOWING WATER.

NOTE:
STAGE 2 CONSISTS OF PROGRESSIVELY CONSTRUCTING THE PROPOSED CHANNELS "IN THE DRY" USING A PUMP AROUND DIVERSION AS DESCRIBED ABOVE. ADDITIONAL PUMP AROUND DIVERSION GUIDELINES CAN BE FOUND IN DETAIL (2/23A). COIR FIBER MATTING WILL BE USED TO STABILIZE THE PROPOSED CHANNEL AS IT IS CONSTRUCTED; SEE DETAIL (1/23A).

STAGE 3

NOTE:
ADDITIONAL TEMPORARY STOCKPILE AREAS WILL BE FIELD LOCATED BY THE CONTRACTOR AND SEPARATED FROM THE WORK AREA USING SILT FENCE WITH BACKING.



NORTH

SCALE IN FEET
0 65 130

LEGEND

- PROPOSED FENCE
- PROPOSED STREAM CENTERLINE
- EXISTING STREAM CENTERLINE
- PROPOSED MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- EXISTING FENCE
- OH-E EXISTING OVERHEAD ELECTRICITY LINE
- T EXISTING TELEPHONE LINE
- G EXISTING GAS LINE
- EXISTING UTILITY POLE: POWER
- EXISTING GUY-WIRE
- EXISTING UTILITY POLE: TELEPHONE
- PROPOSED CONSERVATION EASEMENT
- PROPOSED SLOPE EASEMENT
- PROPSOED CONSTRUCTION EASEMENT
- SFB PROPOSED SILT FENCE WITH BACKING
- TCE TEMPORARY CONSTRUCTION EXIT
- TCC TEMPORARY CONSTRUCTION CROSSING
- G EXISTING RELOCATED GAS LINE

SEALED BY

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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

BUSH BROTHERS PROPERTY– STREAM MITIGATION

UT1 TO CLEAR CREEK SITE
STREAM MITIGATION
PROPOSED EPSC

$$$$SYTIME$$$$$$
$$$$DGNSPEC$$

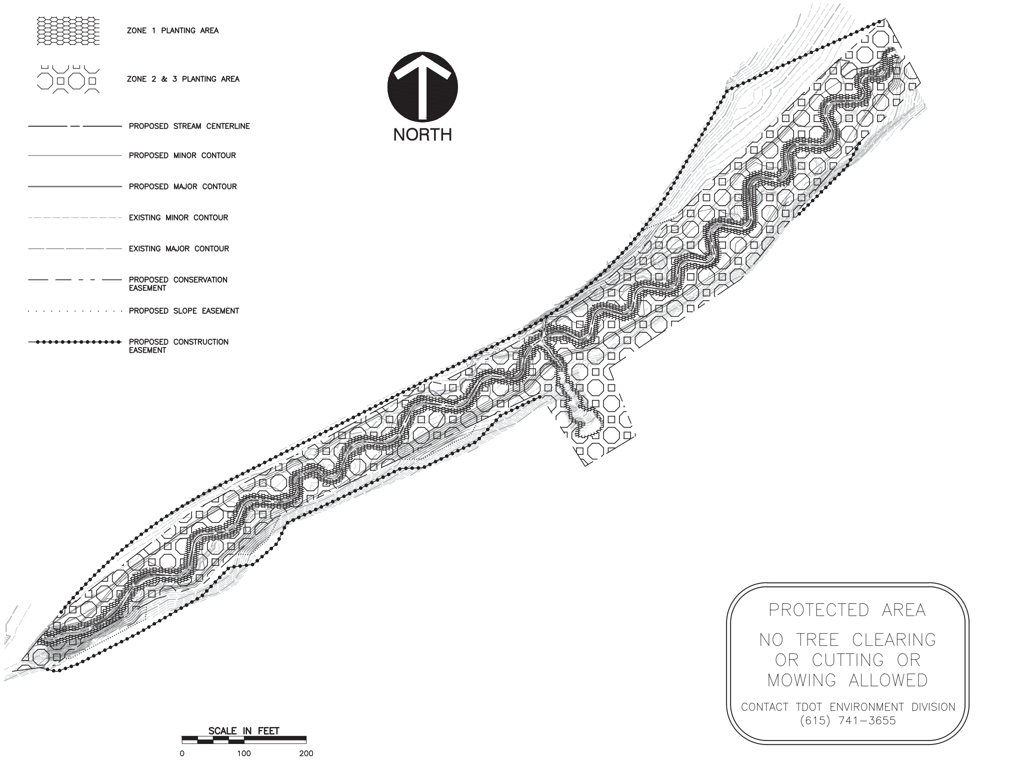
Perennial Grass Seed Mix (20 lbs/acre) Item #801-01.35			
Common Name	Scientific Name	lbs/acre	Composition %
Switchgrass	Panicum virgatum	7.5	35%
Indiangrass	Sorghastrum nutans	5	25%
Big Blue Stem	Andropogon gerardii	2.5	13%
Virginia Wild Rye	Elymus virginicus	1	5%
Deer Tongue	Panicum clandestinum	1	5%
Bottlebrush Grass	Elymus hystrix	1	5%
River Wood Oats	Chasmanthium latifolium	1	5%
Fowl Manna Grass	Glyceria striata	1	5%
TOTAL		20	100%

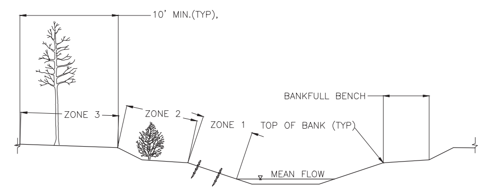
Wildflower Seed Mix (6 lbs/acre) Item #801-01.04			
Common Name	Scientific Name	lbs/acre	Composition %
Partridge Pea	Cassia fasciculata	1	17%
Common Milkweed	Asclepias syriaca	0.25	4%
Butterflyweed	Asclepias tuberosa	0.25	4%
Wild Bergamot	Monarda fistulosa	0.5	8%
Tall Coreopsis	Coreopsis tripteris	0.5	8%
Small-headed Sunflower	Helianthus microcephalus	0.25	4%
Hairy Sunflower	Helianthus mollis	0.25	4%
Dense Blazing Star	Liatris spicata	0.5	8%
[illegible]	[illegible] canadensis	0.25	4%
Black Eyed Susan	Rudbeckia hirta	1	17%
Tall Goldenrod	Solidago altissima	0.5	8%
Gray Goldenrod	Solidago nemoralis	0.25	4%
Tall Ironweed	Vernonia gigantea	0.5	8%
TOTAL		6	100%

Cover Crop Seed Mix (50 lbs/acre) Item #801-01.30				
Common Name	Scientific Name	Rate (lbs/acre)	Area (ac)	Total (lbs)
Winter Rye	Lolium multiflorum	50	5.1	255
Brown top Millet	Panicum ramosum	50	5.1	255

CLEAR CREEK PLANTING TABLE				
Common Name	Scientific Name	Spacing	Plant Material Size	Quantity
ZONE 1 STREAMBANK				
Silky Dogwood	Cornus amomum	3x3	Live Stake	800
Black Willow	Salix nigra	3x3	Live Stake	800
Silky Willow	Salix Sericea	3x3	Live Stake	800
Elderberry	Sambucus canadensis	3x3	Live Stake	800
SUBTOTAL				3200
ZONE 2 & 3 FLOODPLAIN & TERRACE				
Red maple	Acer rubrum	12x12	2-5FT CNTNR GRWN	84
American Witchhazel	Hamamelis Virginiana	12x12	2-5FT CNTNR GRWN	84
Tulip Poplar	Liriodendron tulipifera	12x12	2-5FT CNTNR GRWN	84
Sycamore	Platanus occidentalis	12x12	2-5FT CNTNR GRWN	84
Swamp Chestnut Oak	Quercus michauxii	12x12	2-5FT CNTNR GRWN	84
Overcup oak	Quercus lyrata	12x12	2-5FT CNTNR GRWN	84
Willow oak	Quercus phellos	12x12	2-5FT CNTNR GRWN	84
Shumard Oak	Quercus shumardii	12x12	2-5FT CNTNR GRWN	84
American hornbeam	Carpinus caroliniana	12x12	2-5FT CNTNR GRWN	84
Spicebush	Lindera benzoin	10x10	2-5FT CNTNR GRWN	84
Silky Dogwood	Cornus amomum	10x10	2-5FT CNTNR GRWN	84
Persimmon	Diospyrus virginiana	12x12	2-5FT CNTNR GRWN	84
SUBTOTAL				1008

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2017	STP-4500(28);45945-3690-14	NS-22





PLANTING ZONES

NTS

PROTECTED AREA

NO TREE CLEARING OR CUTTING OR MOWING ALLOWED

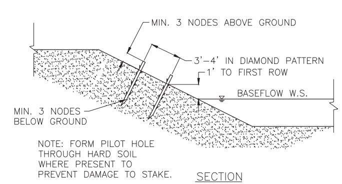
CONTACT TDOT ENVIRONMENT DIVISION (615) 741-3655

NOTES:

1. THE PROTECTED AREA SIGN SHALL BE WHITE WITH BLACK LETTERING.
2. LINES 1, 2, 3 & 4 SHALL BE 2 INCHES IN HEIGHT. LINES 5 & 6 SHALL BE 1 INCH IN HEIGHT.
3. PROTECTED AREA SIGN SHALL BE PAID FOR UNDER ITEM NO. 713-16.20, PROTECTED AREA SIGN, PER EACH, AS SHOWN IN DETAIL ON THIS SHEET. PAYMENT SHOULD INCLUDE ALL MATERIALS, EQUIPMENT, AND LABOR NECESSARY TO CONSTRUCT AS SHOWN IN DETAIL.
4. LOCATION AND NUMBER OF SIGNS TO BE DETERMINED IN THE FIELD OR AS DIRECTED BY THE ENGINEER.

PROTECTED AREA SIGN

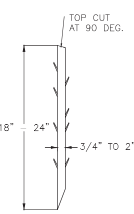
N.T.S.



SECTION

LIVE STAKING

NTS



LIVE STAKE DETAIL

SEALED BY

COORDINATES ARE NAD/83(1995), ARE DATUM ADJUSTED BY THE FACTOR OF 1.00010637 AND TIED TO THE TGRN. ALL ELEVATIONS ARE REFERENCED TO THE NAVD 1988.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

BUSH BROTHERS PROPERTY– STREAM MITIGATION

UT1 TO CLEAR CREEK SITE
STREAM MITIGATION
PLANTING PLAN

$$$$SYTIME$$$$$$
$$$$DGNSPEC$$$