SECONDARY ACCESS ROAD TO WEST RIDGE HIGH SCHOOL

DECEMBER 15, 2023

PROJECT NUMBER: 030122(KD)

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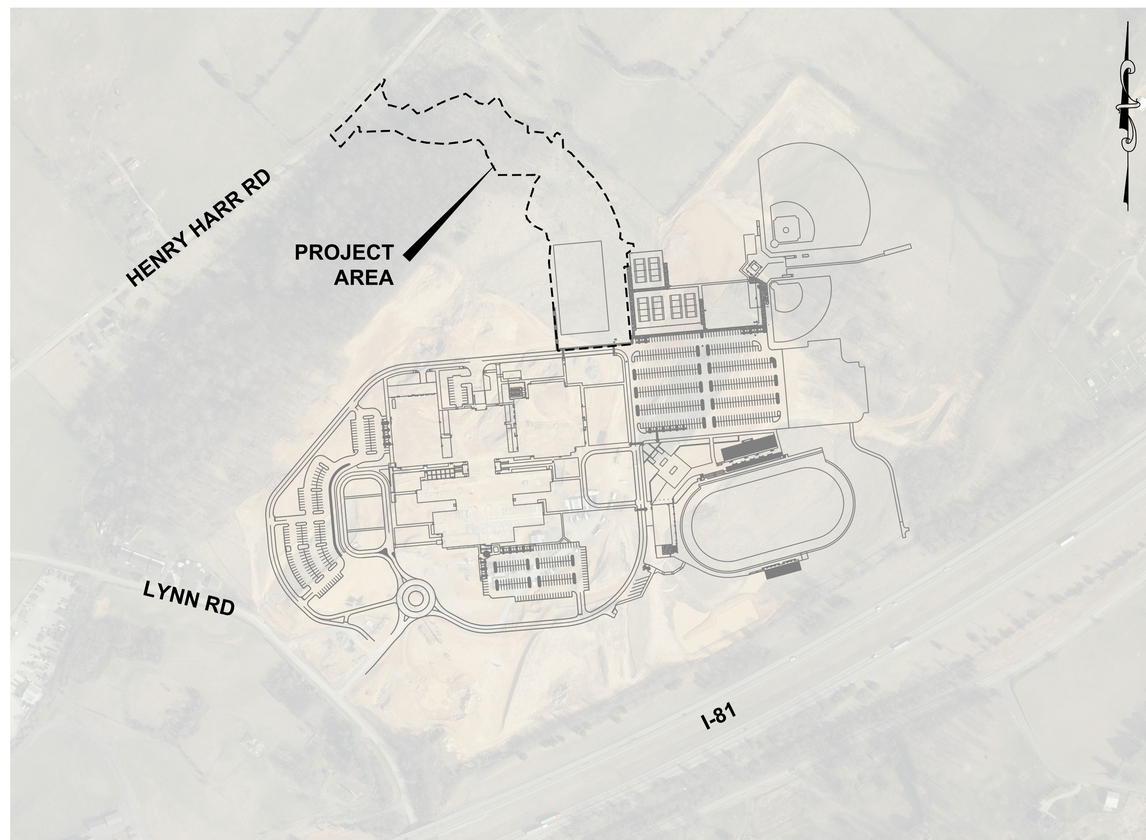

VICINITY MAP
NOT TO SCALE

Tennessee 811

CONTRACTOR MUST CALL 811 OR (800) 351-1111, 3 WORKING DAYS PRIOR TO THE START OF WORK. THE EXCAVATOR MUST NOTIFY ALL PUBLIC UTILITY COMPANIES WITH UNDERGROUND FACILITIES IN THE AREA OF PROPOSED EXCAVATION AND HAVE THOSE FACILITIES LOCATED BY THE UTILITY COMPANIES PRIOR TO COMMENCING EXCAVATION. THE EXCAVATOR IS ALSO RESPONSIBLE FOR COMPLIANCE WITH REQUIREMENTS OF SULLIVAN COUNTY.

PROJECT ENGINEER
DON RISSMEYER, P.E.
(804) 276-6231
100 GATEWAY CENTRE PKWY
SUITE 200
RICHMOND, VIRGINIA 23235

LAND OWNER
SULLIVAN COUNTY BOARD OF EDUCATION
(423) 354-1000
154 BLOUNTVILLE BYPASS
BLOUNTVILLE, TENNESSEE 37617

DEVELOPER/OWNER
SULLIVAN COUNTY BOARD OF EDUCATION
(423) 354-1000
154 BLOUNTVILLE BYPASS
BLOUNTVILLE, TENNESSEE 37617

PROPERTY INFO
380 LYNN ROAD
BLOUNTVILLE, TENNESSEE 37617
PARCEL ID: 036.00
MAP: 079 CLT MAP: 079

AMT
A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
200 EAST MAIN STREET, SUITE 301
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CONSULTANTS

NOT FOR CONSTRUCTION

SULLIVAN COUNTY SCHOOLS

SECONDARY ACCESS ROAD TO WEST RIDGE

SULLIVAN COUNTY BOARD OF EDUCATION
154 BLOUNTVILLE BYPASS
BLOUNTVILLE, TN 37617

PROJECT NUMBER: 030122(KD)

MARK	DATE	DESCRIPTION

FINAL PLANS

PROJECT NO:	18-0070.001
SCALE:	N.T.S.
DESIGNED BY:	CER
DRAWN BY:	CER/DEC
CHECKED BY:	DEC

SHEET TITLE

COVER SHEET

C1.0

SHEET 1 OF 54

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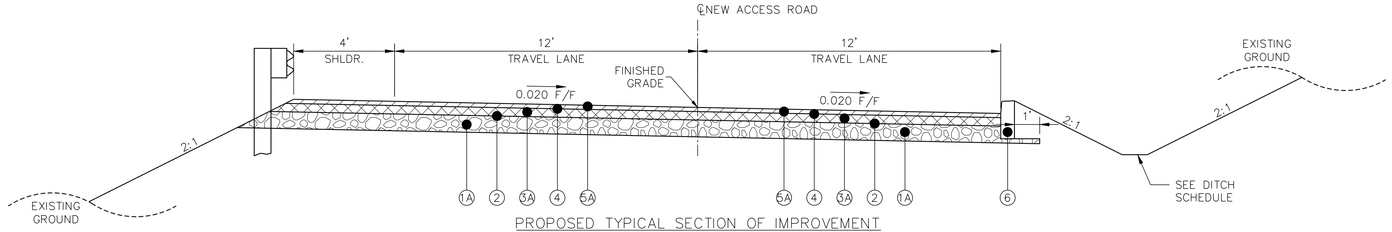
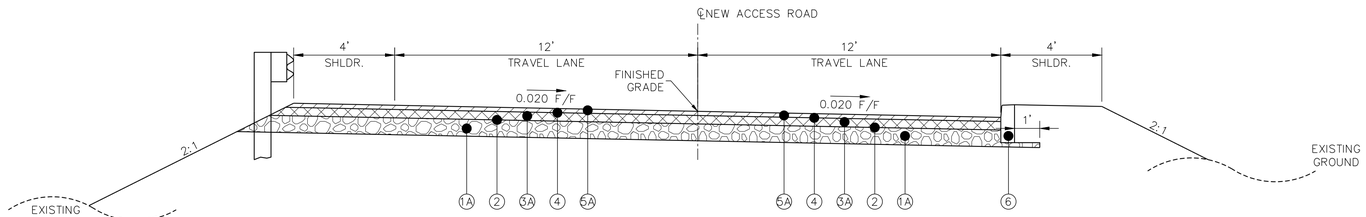


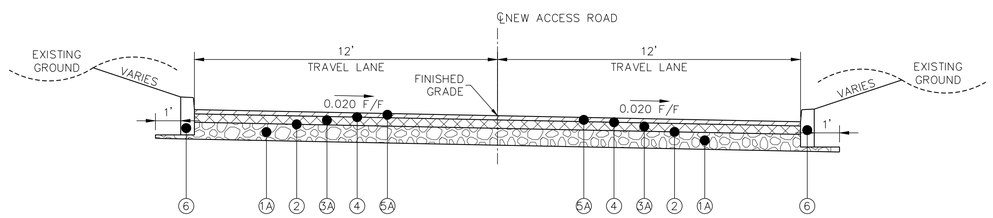
PROPOSED TYPICAL SECTION OF IMPROVEMENT

STA. 11+45.49 TO STA. 15+75.15



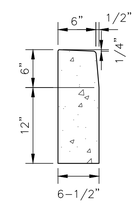
PROPOSED TYPICAL SECTION OF IMPROVEMENT

STA. 17+80.72 TO STA. 21+11.21

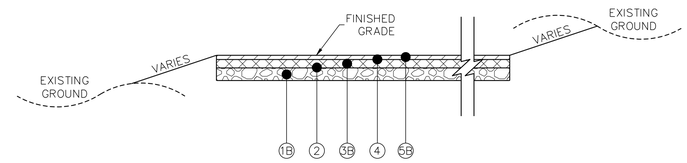


PROPOSED TYPICAL SECTION OF IMPROVEMENT

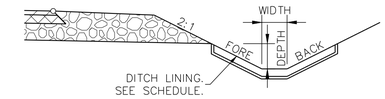
STA. 21+11.21 TO STA. 22+92.11



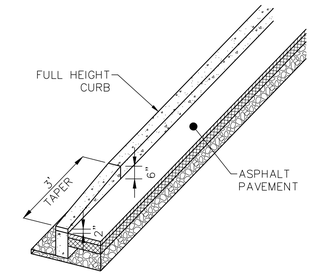
6" DETACHED CONCRETE CURB



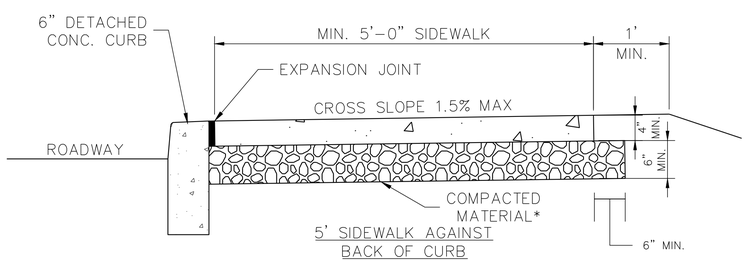
PROPOSED TYPICAL SECTION OF PARKING LOT



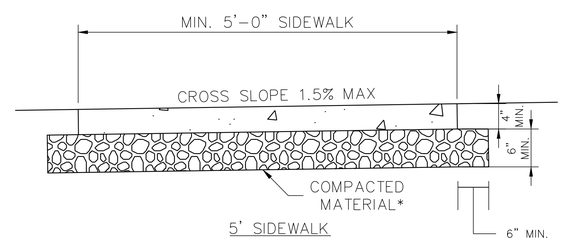
DRAINAGE DITCH



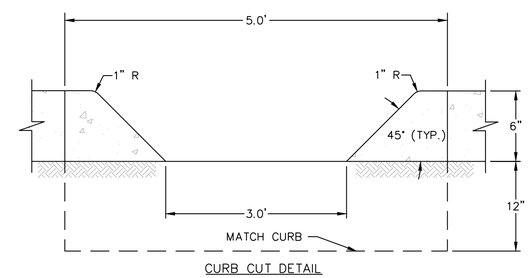
CURB TRANSITION



5' SIDEWALK AGAINST BACK OF CURB



5' SIDEWALK



CURB CUT DETAIL

NTS

* SHAPE AND COMPACT THE SUBGRADE TO A FIRM, EVEN SURFACE IN REASONABLY CLOSE CONFORMITY WITH THE GRADE AND CROSS-SECTION SHOWN ON THE PLANS. REMOVE ALL SOFT AND YIELDING MATERIAL, REPLACE IT WITH ACCEPTABLE MATERIAL, AND COMPACT IT AS DIRECTED BY THE ENGINEER.

PAVEMENT SCHEDULE

(1A) MINERAL AGGREGATE BASE (8" THICK) ITEM 303-01 MINERAL AGGREGATE, TYPE "A" BASE, GRADING "D"	(4) TACK COAT @ 0.07 GAL./S.Y. ITEM 403-01 BITUMINOUS MATERIAL FOR TACK COAT (TC)
(1B) MINERAL AGGREGATE BASE (6" THICK) ITEM 303-01 MINERAL AGGREGATE, TYPE "A" BASE, GRADING "D"	(5A) BITUMINOUS SURFACE @ 2" THICK (APPROX. 212 LBS./S.Y.) ITEM 411-01.10 ASPHALT CEMENT (PG64-22) GRADING "D"
(2) PRIME COAT (PC) ITEM 401-01 BITUMINOUS MATERIAL FOR PRIME COAT (0.35 GAL./S.Y.)	(5B) BITUMINOUS SURFACE @ 1" THICK (APPROX. 212 LBS./S.Y.) ITEM 411-01.10 ASPHALT CEMENT (PG64-22) GRADING "D"
(3A) BITUMINOUS PLANT MIX BASE @ 4" THICK (APPROX. 452 LBS./S.Y.) ITEM 307-01.08 ASPHALT CEMENT MIX (PG-64-22) GRADING (B-M2)	(6) 6" DETACHED CONCRETE CURB ITEM 702-01
(3B) BITUMINOUS PLANT MIX BASE @ 2" THICK (APPROX. 452 LBS./S.Y.) ITEM 307-01.08 ASPHALT CEMENT MIX (PG-64-22) GRADING (B-M2)	

DRAINAGE DITCH SCHEDULE

DITCH NO.	LOCATION	STATION		SLOPE		WIDTH (MIN.)	DEPTH (MIN.)	LINING
		FROM	TO	FORE	BACK			
1-1	MAINLINE	10+55± RT	11+50± RT	2:1	2:1	3'	1'	TDOT CLASS B RIP-RAP
1-2	MAINLINE	11+50± RT	12+50± RT	3:1	2:1	3'	1'	TDOT CLASS A-1 RIP-RAP
1-3	MAINLINE	12+50± RT	13+37± RT	2:1	2:1	3'	1'	TDOT TY. 1 EC BLANKET
2-1	MAINLINE	13+37± RT	17+42± RT	2:1	2:1	3'	1'	TDOT TY. 1 EC BLANKET
3-1	MAINLINE	11+65± LT	12+09± LT	2:1	2:1	3'	1'	TDOT CLASS A-1 RIP-RAP
3-2	MAINLINE	12+09± LT	13+37± LT	3:1	2:1	1'	1'	TDOT TY. 1 EC BLANKET
4-1	MAINLINE	13+37± LT	14+37± LT	2:1	2:1	1'	1'	TDOT TY. 1 EC BLANKET
4-2	MAINLINE	14+37± LT	14+52± LT	2:1	2:1	3'	1'	TDOT CLASS A-1 RIP-RAP
4-3	MAINLINE	14+52± LT	15+75± LT	2:1	2:1	3'	1'	TDOT TY. 1 EC BLANKET
4-4	MAINLINE	15+75± LT	15+60± LT	2:1	2:1	3'	1'	TDOT CLASS A-1 RIP-RAP

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DESIGNED BY:	CER
DRAWN BY:	CER/DEC
CHECKED BY:	DEC

SHEET TITLE

TYPICAL SECTIONS

C2.0

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GENERAL NOTES

SCOPE OF WORK

(1) THIS PROJECT WILL PROVIDE A SECONDARY ACCESS ROAD TO THE WEST RIDGE HIGH SCHOOL FROM HENRY HARR ROAD. THE APPROXIMATE LENGTH OF THE NEW ROAD WILL BE 1,400-FEET WITH PORTIONS OF THE SECONDARY ACCESS ROAD HAVING TWO 12-FOOT TRAVEL LANES, A 4-FOOT PAVED SHOULDER ON THE WESTBOUND LANE, AND A CONCRETE CURB ON THE EAST BOUND LANE. THE REMAINING PORTION OF THE SECONDARY ACCESS WILL HAVE TWO 12-FOOT TRAVEL LANES AND CONCRETE CURB ON EACH SIDE. ASSOCIATED IMPROVEMENTS WILL CONSIST OF STORM DRAIN, GUARDRAIL, PAVEMENT MARKINGS, TRAFFIC SIGNAGE, AND STORMWATER MANAGEMENT. THE BAND PRACTICE FIELD WILL BE USED AS THE PRIMARY STAGING AREA AND RESTORED AS A PAVED PARKING LOT

SURVEY

(1) EXISTING CONDITIONS DEPICTED WITHIN THESE PLANS ARE FROM A COMBINATION OF SURVEYS BY ALLEY & ASSOCIATES, J.A. STREET, AND TH&P FOR THIS PROJECT.

UTILITY

(1) THE LOCATIONS OF UTILITIES SHOWN WITHIN THESE PLANS ARE APPROXIMATE ONLY. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES. ABOVE GRADE AND UNDERGROUND UTILITIES SHOWN WERE TAKEN FROM VISIBLE APPURTENANCES AT THE SITE, PUBLIC RECORDS, AND/OR MAPS PREPARED BY OTHERS. THEREFORE, CONFIRMATION OF THE TYPE, SIZE, AND LOCATION OF UTILITIES SHOWN SHOULD BE DONE BY THE CONTRACTOR WITH THIS CIRCUMSTANCE CONSIDERED.

(2) THE CONTRACTOR WILL PROVIDE ALL NECESSARY PROTECTIVE MEASURES TO SAFEGUARD EXISTING UTILITIES FROM DAMAGE DURING CONSTRUCTION OF THIS PROJECT. IN THE EVENT THAT SPECIAL EQUIPMENT IS REQUIRED TO WORK OVER AND AROUND THE UTILITIES, THE CONTRACTOR WILL BE REQUIRED TO FURNISH SUCH EQUIPMENT.

(3) THE CONTRACTOR SHALL NOTIFY EACH INDIVIDUAL UTILITY OWNER OF HIS PLAN OF OPERATION IN THE AREA OF THE UTILITIES. PRIOR TO COMMENCING WORK, THE CONTRACTOR SHALL CONTACT THE UTILITY OWNERS AND REQUEST THEM TO PROPERLY LOCATE THEIR RESPECTIVE UTILITY ON THE GROUND. THIS NOTIFICATION SHALL BE GIVEN AT LEAST THREE (3) BUSINESS DAYS PRIOR TO COMMENCEMENT OF OPERATIONS AROUND THE UTILITY IN ACCORDANCE WITH TCA 65-31-106. NOTIFICATION BY CALLING THE TENNESSEE ONE CALL SYSTEM, INC AT 1-800-351-1111 WILL BE REQUIRED.

GRADING

(1) ANY AREA THAT IS DISTURBED OUTSIDE THE LIMITS OF CONSTRUCTION DURING THE LIFE OF THIS PROJECT SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COMPENSATION.

(2) 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 (FEMA) WITHOUT APPROVAL BY FEMA. 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. ALL PERMIT CONDITIONS SHALL APPLY.

(3) THE CONTRACTOR SHALL UTILIZE ALL INFORMATION PROVIDED IN THE PLANS, CROSS-SECTIONS AND CONTRACT DOCUMENTS AS WELL AS UTILIZING HIS PAST EXPERIENCE WITH PROJECTS OF SIMILAR NATURE, SCOPE AND LOCATION IN PREPARATION OF HIS BID. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE AND PROVIDE EQUIPMENT AND MEANS NECESSARY TO CONDUCT THE EXCAVATION ACTIVITIES IN ACCORDANCE WITH PLANS AND SPECIFICATIONS.

SEEDING

(1) ALL DISTURBED AREAS SHALL RECEIVE PERMANENT STABLIZATION AND BE ESTABLISHED IN ACCORDANCE WITH THE SPECIFICATIONS.

DRAINAGE

(1) THE CONTRACTOR SHALL MAINTAIN THE FLOW OF WATER AND TRAFFIC DURING THE INSTALLATION OF DRAINAGE STRUCTURES.

MISCELLANEOUS

(1) NOTHING IN THE GENERAL NOTES OR SPECIAL PROVISIONS SHALL RELIEVE THE CONTRACTOR FROM THEIR RESPONSIBILITIES TOWARD THE SAFETY AND CONVENIENCE OF THE GENERAL PUBLIC AND SCHOOL OPERATIONS.

FINAL PAVEMENT MARKINGS

(1) PERMANENT PAVEMENT LINE MARKINGS SHALL BE 4" SPRAY THERMOPLASTIC (60 mil) INSTALLED IN ACCORDANCE WITH THE SPECIFICATIONS, UNLESS OTHERWISE NOTED.

PAVEMENT

(1) THE CONTRACTOR SHALL ATTACH A DEVICE TO THE SCREED OF THE PAVER SUCH THAT MATERIAL IS CONFINED AT THE END GATE AND EXTRUDES THE ASPHALT MATERIAL IN SUCH A WAY THAT RESULTS IN A CONSOLIDATED WEDGE-SHAPE PAVEMENT EDGE OF APPROXIMATELY 25 TO 30 DEGREES AS IT LEAVES THE PAVER (MEASURED FROM A LINE PARALLEL TO THE PAVEMENT SURFACE.) THE DEVICE SHALL MEET THE REQUIREMENTS THAT ARE CURRENTLY SET FORTH IN TDOT SPECIAL PROVISION 407SE.

SIGNING

(1) THE LETTERS, DIGITS, ARROWS, BORDERS, AND ALPHABET ACCESSORIES ON ALL FLAT SHEET SIGNS SHALL BE APPLIED BY SILK SCREENING PROCESS, EXCEPT THAT CUT-OUT DIRECT APPLIED COPY SHALL BE USED ON ALL FLAT SHEET SIGNS WITH A GREEN BACKGROUND.

(2) THE TOP OF THE SIGN FOOTINGS SHALL BE PLACED LEVEL WITH THE GROUND LINE.

EROSION PREVENTION AND SEDIMENT CONTROL

DISTURBED AREA

(1) AREAS TO BE UNDISTURBED SHALL BE CLEARLY MARKED IN THE FIELD BEFORE CONSTRUCTION ACTIVITIES BEGIN.

(2) UNLESS OTHERWISE NOTED IN THE PLANS, THE CONTRACTOR SHALL NOT CLEAR/DISTURB ANY AREA BEYOND 15 FEET FROM SLOPE LINES.

(3) PRE-CONSTRUCTION VEGETATIVE GROUND COVER SHALL NOT BE DESTROYED, REMOVED OR DISTURBED (I.E. CLEARING AND GRUBBING INITIATED) MORE THAN 14 CALENDAR DAYS PRIOR TO GRADING OR EARTH MOVING ACTIVITIES UNLESS THE AREA IS MULCHED, SEEDED WITH MULCH, OR OTHER TEMPORARY COVER IS APPLIED.

(4) 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.

SEDIMENT CONTROL

(1) EPSC MEASURES SHALL BE INSTALLED AND FUNCTIONAL PRIOR TO ANY EARTH MOVING OPERATIONS, AND SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD EXCEPT AS SUCH WORK MAY BE NECESSARY TO INSTALL EPSC MEASURES.

(2) TEMPORARY EPSC MEASURES MAY BE REMOVED AT THE BEGINNING OF THE WORKDAY, BUT MUST BE REINSTALLED AT THE END OF THE WORKDAY OR BEFORE/DURING A PRECIPITATION EVENT.

(3) THE CONTRACTOR SHALL ESTABLISH AND MAINTAIN A PROACTIVE METHOD TO PREVENT THE OFFSITE 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 GENERAL PUBLIC. IF SEDIMENT ESCAPES THE CONSTRUCTION SITE, OFFSITE ACCUMULATIONS OF SEDIMENT THAT HAVE NOT REACHED A STREAM MUST BE REMOVED AT A FREQUENCY SUFFICIENT TO MINIMIZE OFFSITE 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 NEGOTIATED WITH THE ADJOINING PROPERTY OWNER BEFORE REMOVAL OF SEDIMENT.

(4) 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.

SEDIMENT CONTROL – CONT.

(5) 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 PHYSICAL AND/OR CHEMICAL TREATMENT WILL BE APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S GUIDELINES AND FULLY DESCRIBED IN THE EPSC PLANS. WATER DISCHARGED SHALL NOT CAUSE AN OBJECTIONABLE COLOR CONTRAST WITHIN THE RECEIVING NATURAL RESOURCE. WATER MUST BE HELD IN SETTLING BASINS UNTIL AT LEAST AS CLEAR AS THE RECEIVING WATERS. SETTLING BASINS SHALL NOT BE LOCATED CLOSER THAN 20 FEET FROM THE TOP BANK OF A STREAM. SETTLING BASINS AND SEDIMENT TRAPS SHALL BE PROPERLY DESIGNED ACCORDING TO 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. DISCHARGES FROM BASINS AND IMPOUNDMENTS SHALL UTILIZE OUTLET STRUCTURES THAT ONLY WITHDRAW WATER FROM NEAR THE SURFACE OF THE BASIN OR IMPOUNDMENT. DISCHARGES MUST NOT CAUSE AN OBJECTIONABLE COLOR CONTRAST WITH THE RECEIVING STREAM.

NATURAL RESOURCES

(1) 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.

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

(3) 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.

(4) STREAM BEDS SHALL NOT BE USED AS TRANSPORTATION ROUTES FOR CONSTRUCTION EQUIPMENT.

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

(6) 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 IS UNSURE OF THE IDENTITY OF AN ENVIRONMENTAL FEATURE, THE INSPECTOR SHALL CONTACT THE ENGINEER IMMEDIATELY.

INSPECTION, MAINTENANCE & REPAIR

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

PERMITS, PLANS & RECORDS

(1) 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 ENGINEER. THE ENGINEER 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.

(2) IF A CHANGE IN PROJECT SCOPE OCCURS DURING CONSTRUCTION, INCLUDING VALUE ENGINEERING, THE ENGINEER SHALL BE CONTACTED TO DETERMINE WHETHER PERMIT REVISIONS ARE NEEDED. THE ENGINEER SHALL BE CONTACTED TO DETERMINE IF ANY PLAN REVISIONS ARE NEEDED.

(3) 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 ENGINEER TO COMMENCE PERMIT RENEWAL PROCESS.

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CONSULTANTS

NOT FOR CONSTRUCTION

SULLIVAN COUNTY SCHOOLS

SECONDARY ACCESS ROAD TO WEST RIDGE

SULLIVAN COUNTY BOARD OF EDUCATION
154 BLOUNTVILLE BYPASS
BLOUNTVILLE, TN 37617

PROJECT NUMBER: 030122(KD)

MARK	DATE	DESCRIPTION

FINAL PLANS

PROJECT NO:	18-0070.001
SCALE:	N.T.S.
DESIGNED BY:	CER
DRAWN BY:	CER/DEC
CHECKED BY:	DEC

SHEET TITLE

GENERAL NOTES

C2.1

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GENERAL NOTES

PERMITS, PLANS & RECORDS – CONT.

(4) 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

(1) 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.

(2) 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.

(3) 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.

(4) 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.

(5) 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.

(6) 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.

(7) 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.

(8) 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.

(9) 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.

(10) 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.

GOOD HOUSEKEEPING MEASURES & WASTE DISPOSAL – CONT.

(11) 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

(1) 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 ENGINEER TO COMMENCE PERMIT RENEWAL PROCESS.

STREAM, WETLANDS & BUFFER ZONES

(1) ANY WORK WITHIN THE STREAM CHANNEL AREA (E.G., PIER FOOTING, RIP-RAP PLACEMENT, CULVERT/BRIDGE CONSTRUCTION, ETC.) SHALL BE SEPARATED FROM FLOWING WATER OR EXPECTED FLOW PATH AND PERFORMED DURING LOW FLOW CONDITIONS. ALL ITEMS USED WITHIN THE STREAM CHANNEL AREA FOR DIVERSION OF FLOW (OR EXPECTED FLOW), UNLESS SPECIFIED IN THE PLANS, SHALL NOT BE PAID FOR DIRECTLY BUT SHALL BE INCLUDED IN THE COST OF OTHER ITEMS. THIS NOTE EXCLUDES ANY ITEMS SPECIFIED IN THE PLANS FOR THE TEMPORARY DIVERSION CHANNELS (EC-STR-31) AND TEMPORARY DIVERSION CULVERTS (EC STR-32) FOR SINGLE BARREL CULVERT CONSTRUCTION.

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CONSULTANTS

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SULLIVAN COUNTY SCHOOLS

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PROJECT NUMBER: 030122(KD)

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DESIGNED BY:	CER
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CHECKED BY:	DEC

SHEET TITLE

GENERAL NOTES

C2.2

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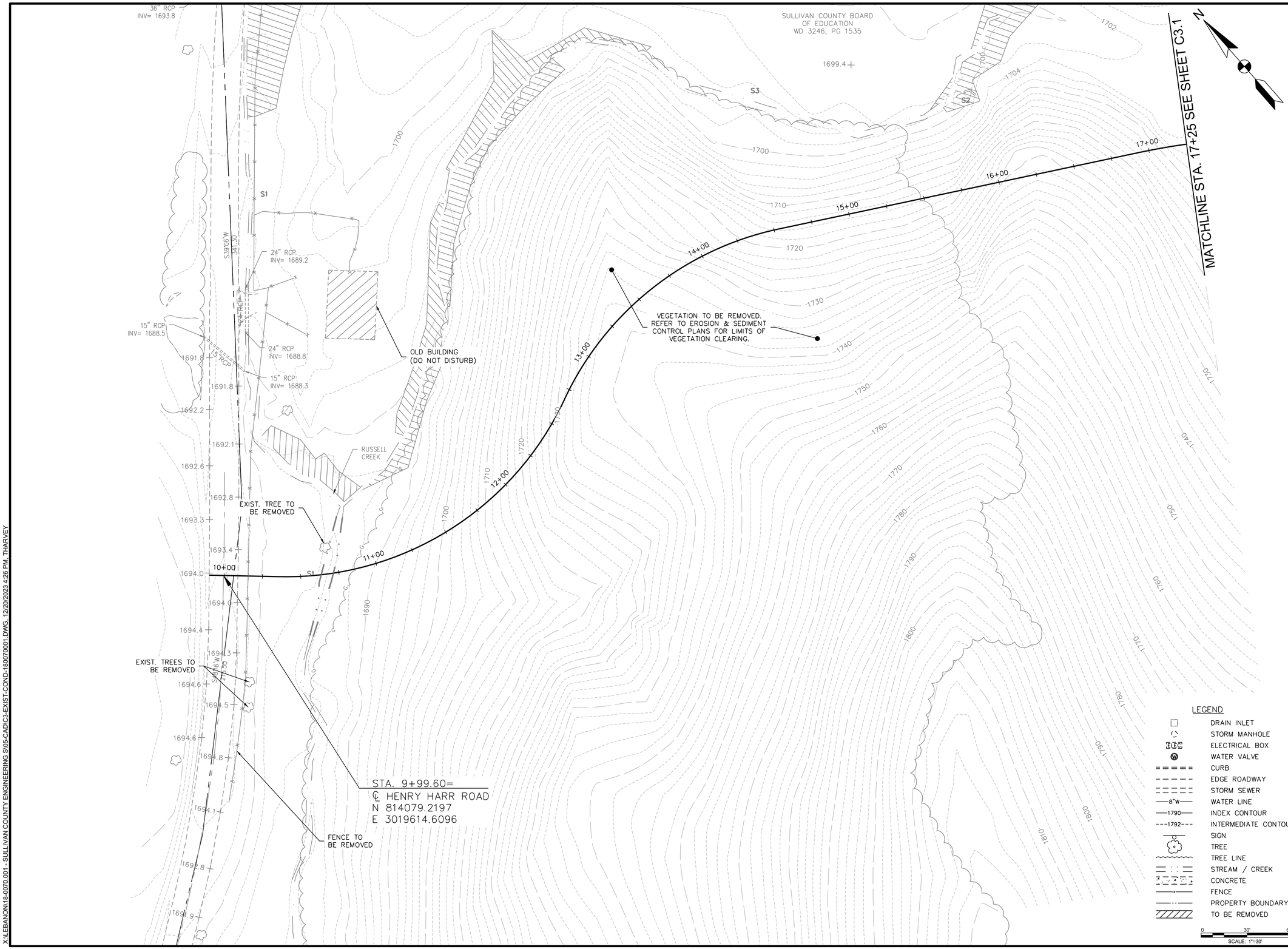

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SHEET TITLE

EXISTING CONDITIONS PLAN

C3.0

SHEET 5 OF 54

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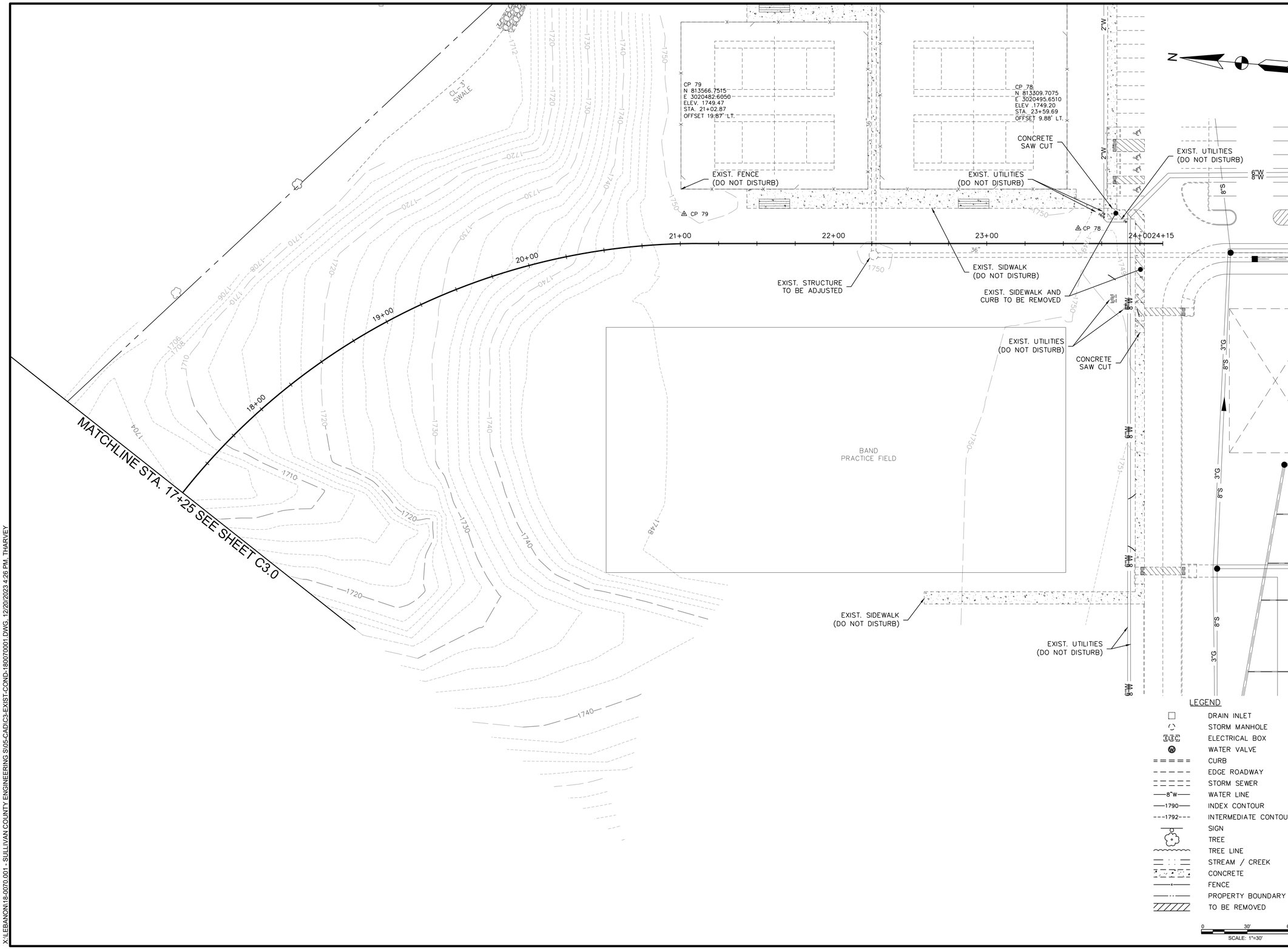

LEGEND

- DRAIN INLET
- STORM MANHOLE
- ELECTRICAL BOX
- WATER VALVE
- CURB
- EDGE ROADWAY
- STORM SEWER
- 8"W — WATER LINE
- 1790 — INDEX CONTOUR
- 1792 — INTERMEDIATE CONTOUR
- SIGN
- TREE
- TREE LINE
- STREAM / CREEK
- CONCRETE
- FENCE
- PROPERTY BOUNDARY
- TO BE REMOVED

0 30' 60'
SCALE: 1"=30'

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SHEET TITLE

EXISTING CONDITIONS PLAN

C3.1

SHEET 6 OF 54

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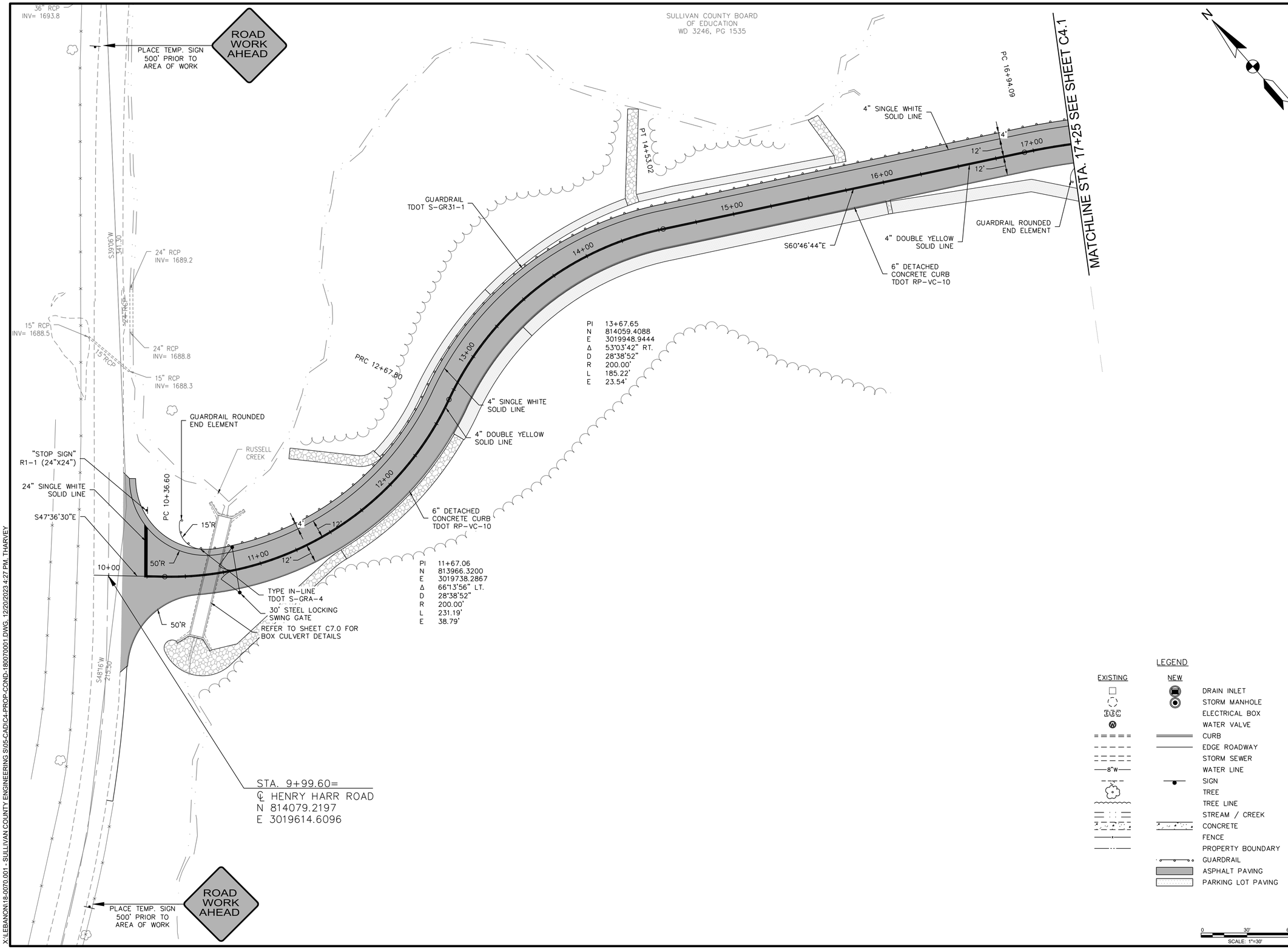

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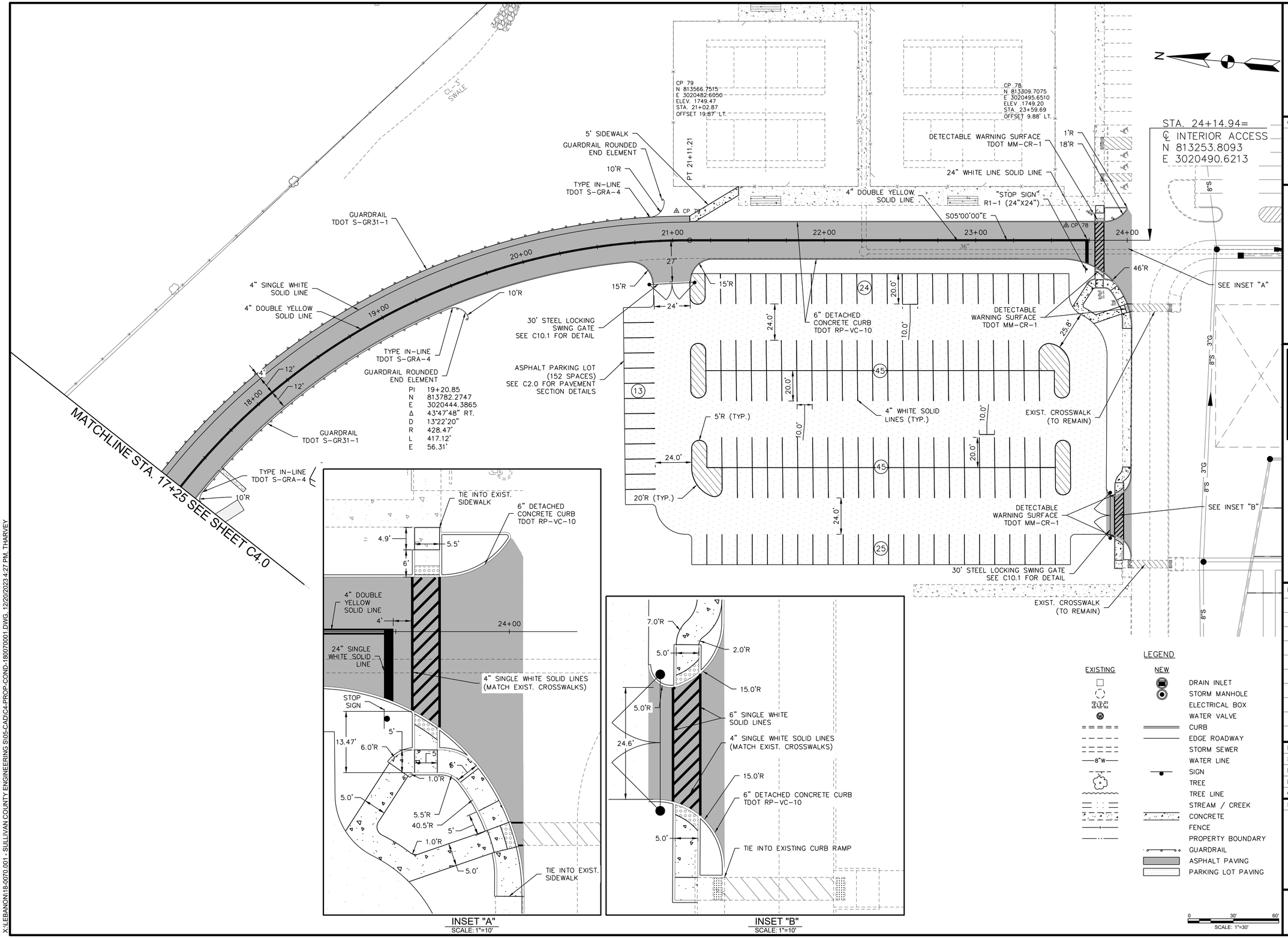
SHEET TITLE

PROPOSED CONDITIONS PLAN

C4.0

SHEET 7 OF 54



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CHECKED BY:	DEC

SHEET TITLE

PROPOSED CONDITIONS PLAN

C4.1

SHEET 8 OF 54

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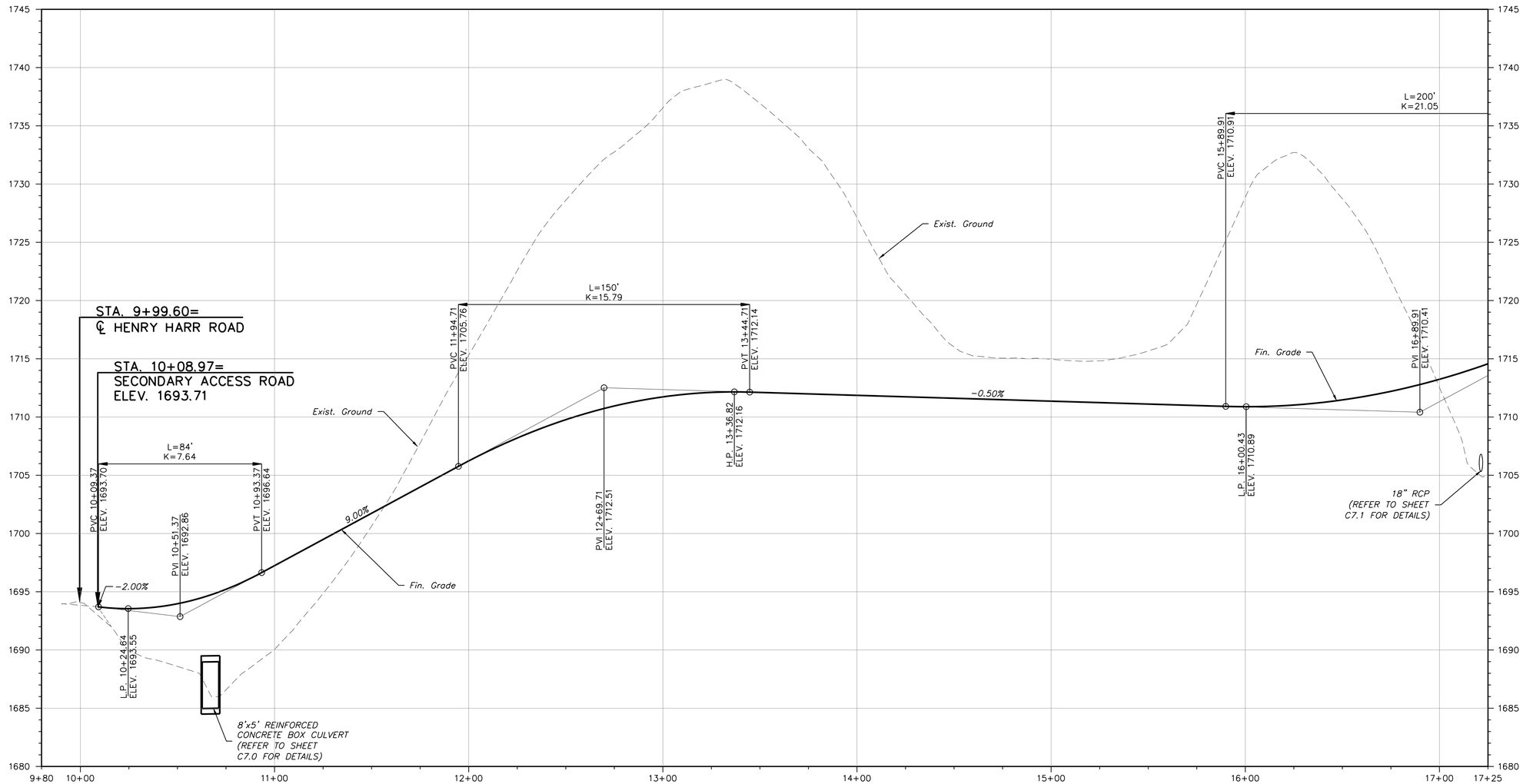

SECONDARY ACCESS ROAD - STA. 10+08.97 TO 17+25

SCALE: 1"=30' HORIZONTAL
1"=5' VERTICAL

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SHEET TITLE

ROADWAY PROFILE

C5.0

SHEET 9 OF 54

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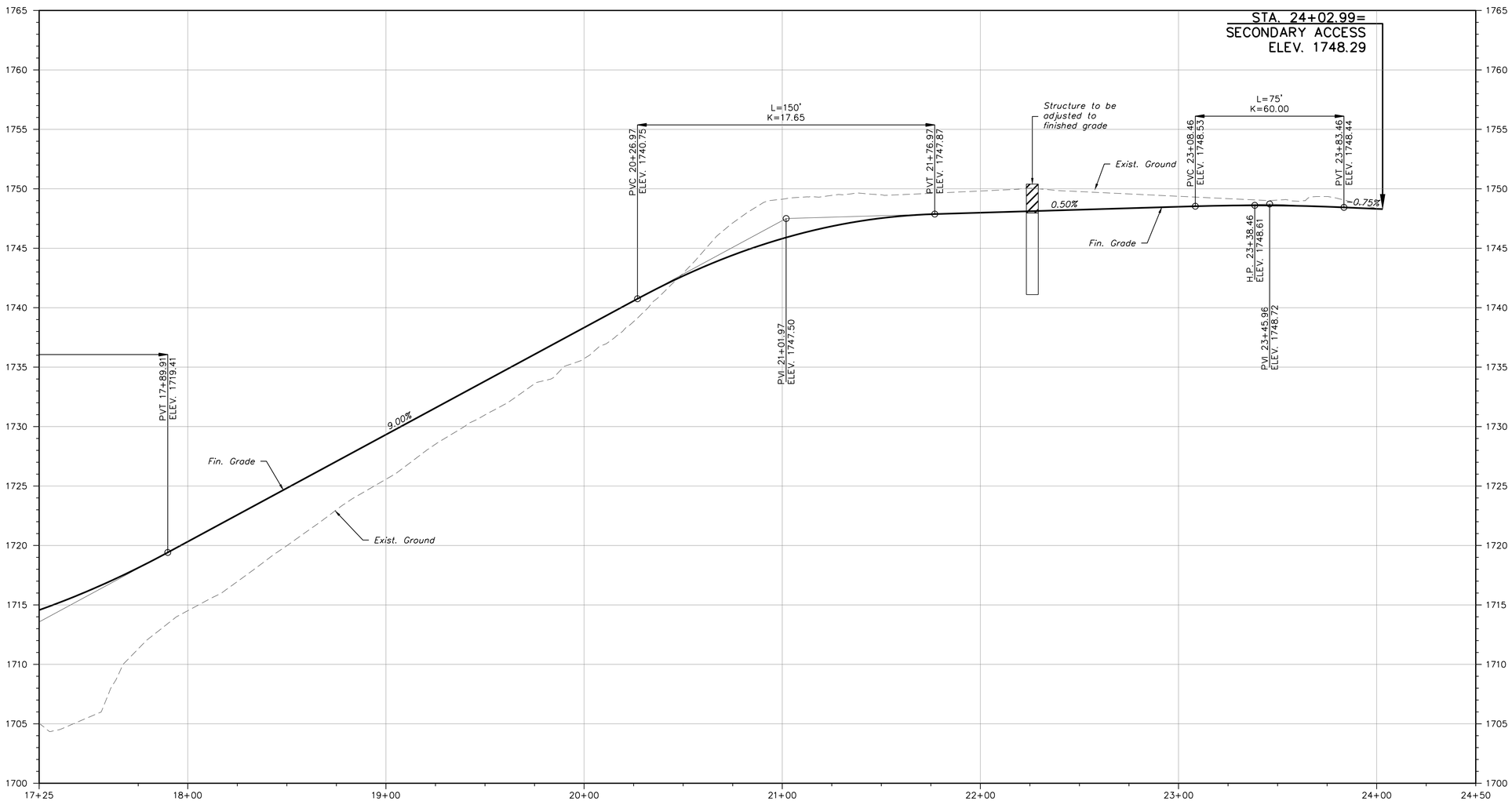

SECONDARY ACCESS ROAD - STA. 17+25 TO 24+02.99

SCALE: 1"=30' HORIZONTAL
1"=5' VERTICAL

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SHEET TITLE

ROADWAY PROFILE

C5.1

SHEET 10 OF 54

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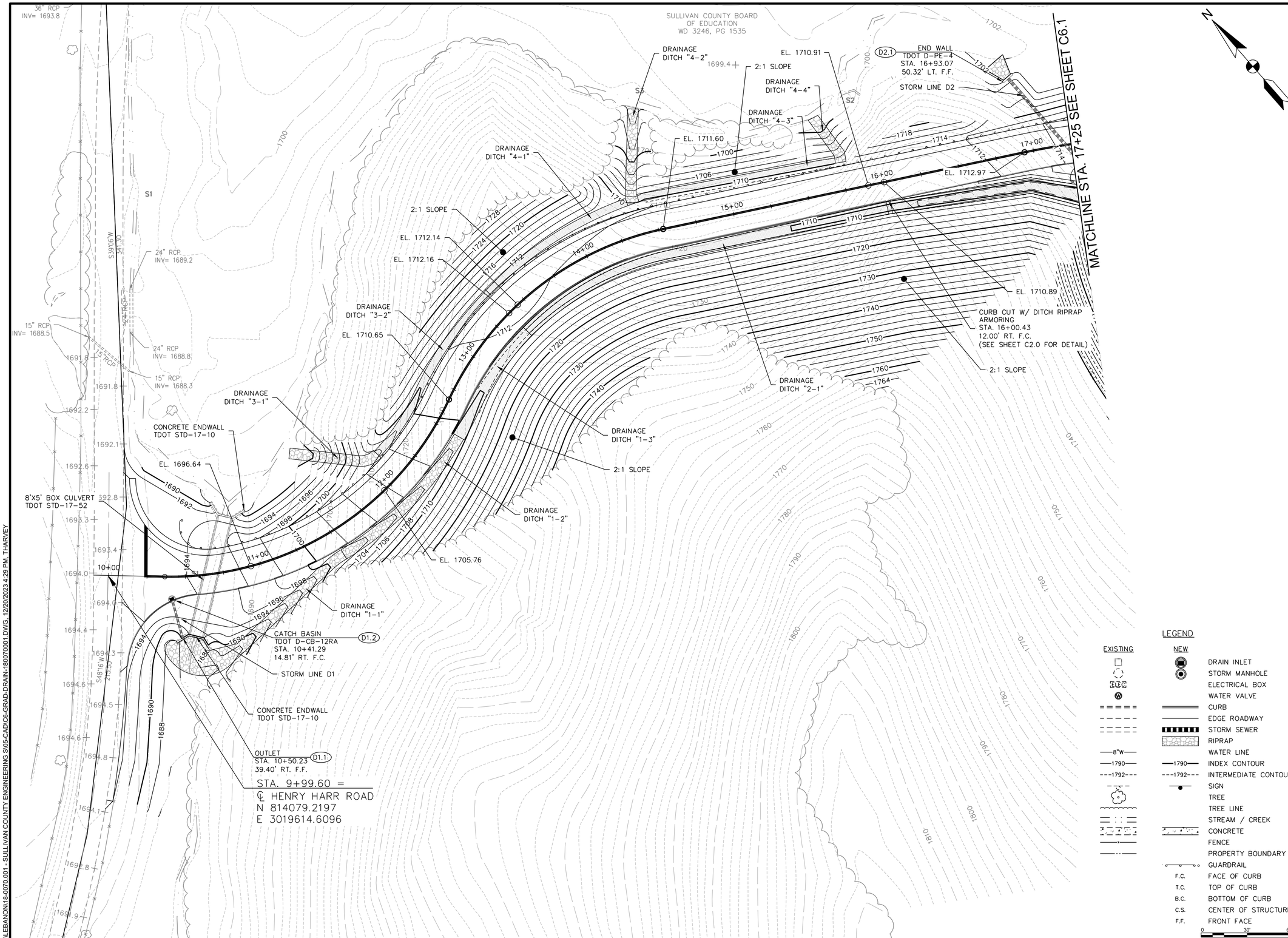

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CONSULTANTS

DONALD I. RUSSMYER REGISTERED ENGINEER AGRICULTURE COMMERCE No. 116081 STATE OF TENNESSEE

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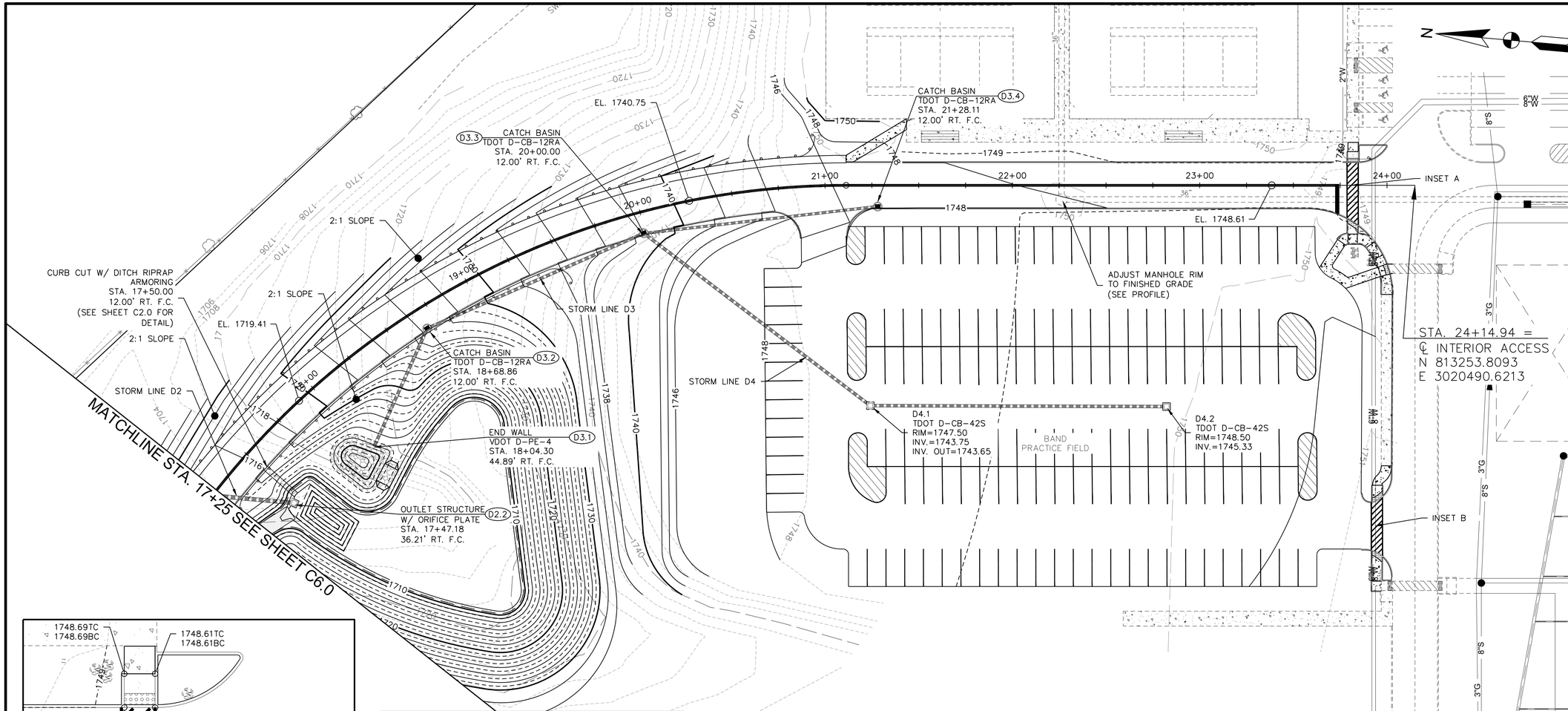
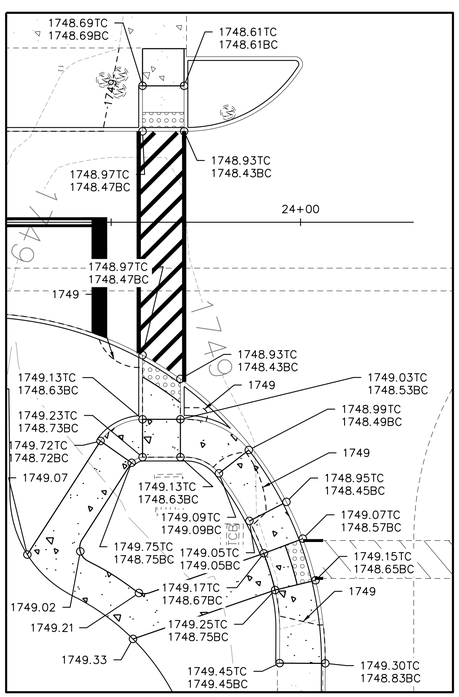
SHEET TITLE

GRADING & DRAINAGE PLAN

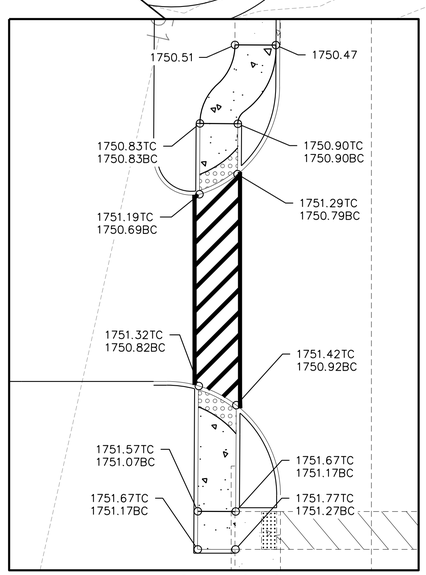
C6.0

SHEET 11 OF 54





RAMP GRADING INSET A
SCALE: 1"=10'



RAMP GRADING INSET B
SCALE: 1"=10'

LEGEND

EXISTING	NEW	
		DRAIN INLET
		STORM MANHOLE
		ELECTRICAL BOX
		WATER VALVE
		CURB
		EDGE ROADWAY
		STORM SEWER
		RIPRAP
8"W		WATER LINE
1790	1790	INDEX CONTOUR
1792	1792	INTERMEDIATE CONTOUR
		SIGN
		TREE
		TREE LINE
		STREAM / CREEK
		CONCRETE
		FENCE
		PROPERTY BOUNDARY
		GUARDRAIL
	F.C.	FACE OF CURB
	T.C.	TOP OF CURB
	B.C.	BOTTOM OF CURB
	C.S.	CENTER OF STRUCTURE
	F.F.	FRONT FACE

0 30' 60'
SCALE: 1"=30'

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CONSULTANTS

DONALD I. RUSSMYER
REGISTERED ENGINEER
AGRICULTURE
COMMERCE
No. 116081
STATE OF TENNESSEE

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SHEET TITLE

GRADING & DRAINAGE PLAN

C6.1

SHEET 12 OF 54

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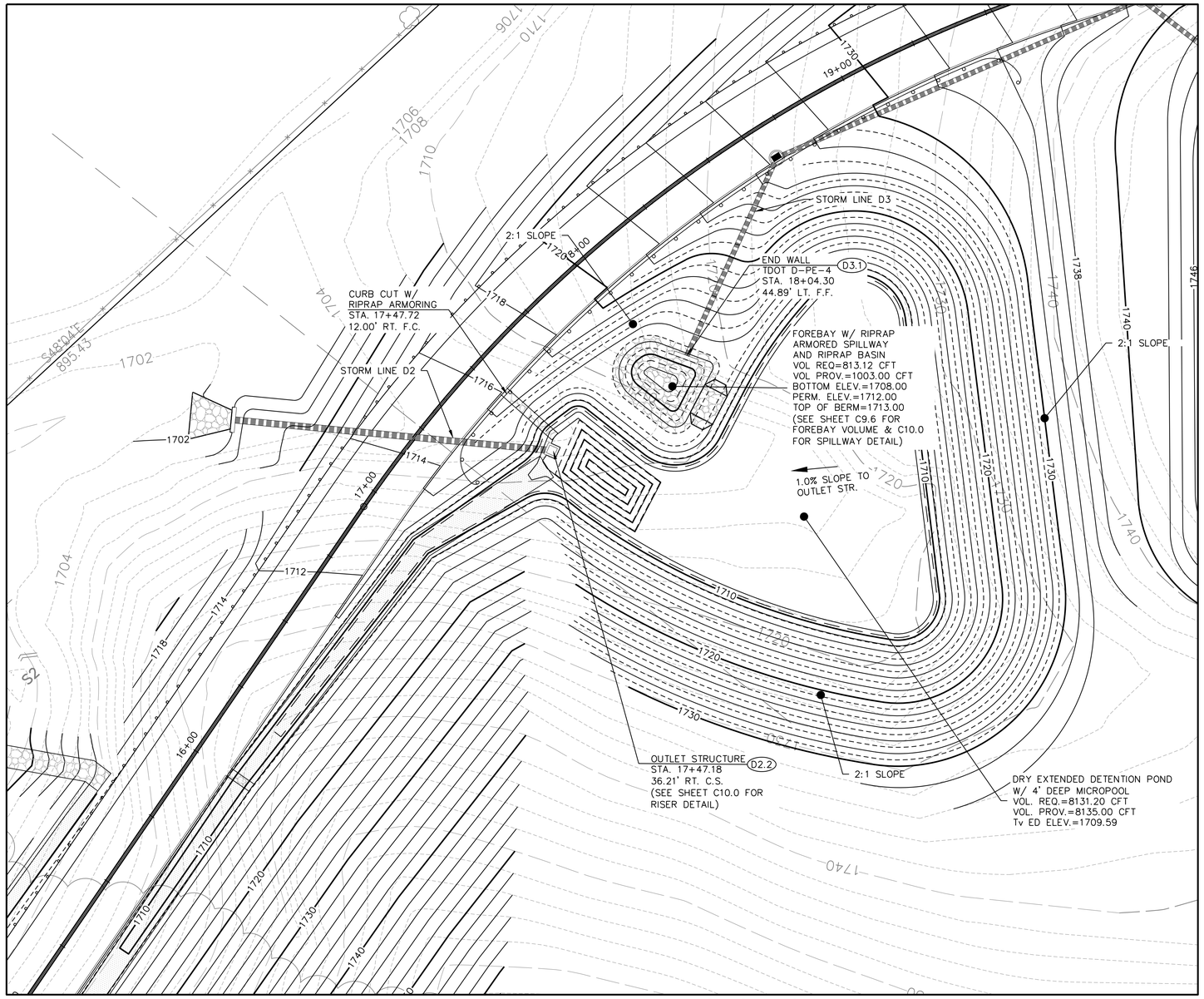

POND GRADING PLAN
SCALE: 1"=20'

NOTES:

1. CONTRACTOR SHALL PROVIDE SHOP DRAWINGS OF OUTLET CONTROL STRUCTURE FOR APPROVAL PRIOR TO CONSTRUCTION.
2. OUTLET STRUCTURE SHALL BE DESIGNED AND MANUFACTURED TO ASTM C478 AND AASHTO M199.
3. SUBGRADE INSPECTION BY A GEOTECHNICAL ENGINEER IS REQUIRED FOR ALL DRAINAGE PIPES AND STRUCTURES.
4. SEE TDEC SPECIFICATION 5.4.1 FOR PLATE & DETAILS FOR TRASH RACK AND CRADLE/ANTI-SEEP COLLAR DETAILS/INFORMATION.
5. SEE SHEET C10.0 FOR OUTLET STRUCTURE AND ORIFICE DETAILS.
6. SEE SHEET C2.0 FOR CURB CUT DETAIL.

TREATMENT VOLUME REQUIREMENTS:
(PER TDEC SPECIFICATION 4.4 FOR RUNOFF TREATMENT VOLUME)

Tv = 1" x (ADDITIONAL IMPERVIOUS AREA TO POND)

Tv = 1"/12 x 2.24 ACRES OF IMPERVIOUS x 43,560 SF/AC

TREATMENT VOLUME REQUIRED 8,131.20 CFT @ ELEV 1709.59
(VOLUME PER HYDROCAD)

FOREBAY VOLUME REQUIREMENTS:

VOL REQ = 10.0% OF 8,1131.20 CFT = 813.12 CFT

VOL PROV = 1003.00 CFT (12.3%)

MICROPOOL VOLUME REQUIREMENTS:

4' DEEP

VOL PROV = 1051.00 CFT (12.9%)

LEGEND

EXISTING	NEW	
		DRAIN INLET
		STORM MANHOLE
ELEC		ELECTRICAL BOX
W		WATER VALVE
		CURB
		EDGE ROADWAY
		STORM SEWER
		RIPRAP
8"W		WATER LINE
1790	1790	INDEX CONTOUR
1792	1792	INTERMEDIATE CONTOUR
		SIGN
		TREE
		TREE LINE
		STREAM / CREEK
		CONCRETE
		FENCE
		PROPERTY BOUNDARY
		GUARDRAIL
	F.C.	FACE OF CURB
	T.C.	TOP OF CURB
	B.C.	BOTTOM OF CURB
	C.S.	CENTER OF STRUCTURE
	F.F.	FRONT FACE

AMT
A. MORTON THOMAS AND ASSOCIATES, INC.
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EMAIL: AMT1@AMTENGINEERING.COM

CONSULTANTS

NOT FOR CONSTRUCTION

SULLIVAN COUNTY SCHOOLS

SECONDARY ACCESS ROAD TO WEST RIDGE

SULLIVAN COUNTY
BOARD OF EDUCATION
154 BLOUNTVILLE BYPASS
BLOUNTVILLE, TN 37617

PROJECT NUMBER: 030122(KD)

MARK	DATE	DESCRIPTION

FINAL PLANS

PROJECT NO:	18-0070.001
SCALE:	1"=30'
DESIGNED BY:	CER
DRAWN BY:	CER/DEC
CHECKED BY:	DEC

SHEET TITLE

GRADING & DRAINAGE PLAN

C6.2

SHEET 13 OF 54

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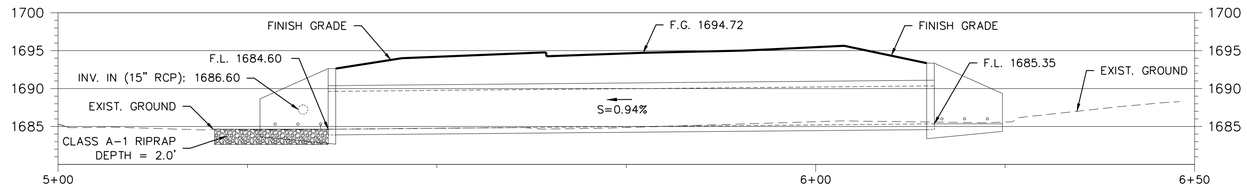
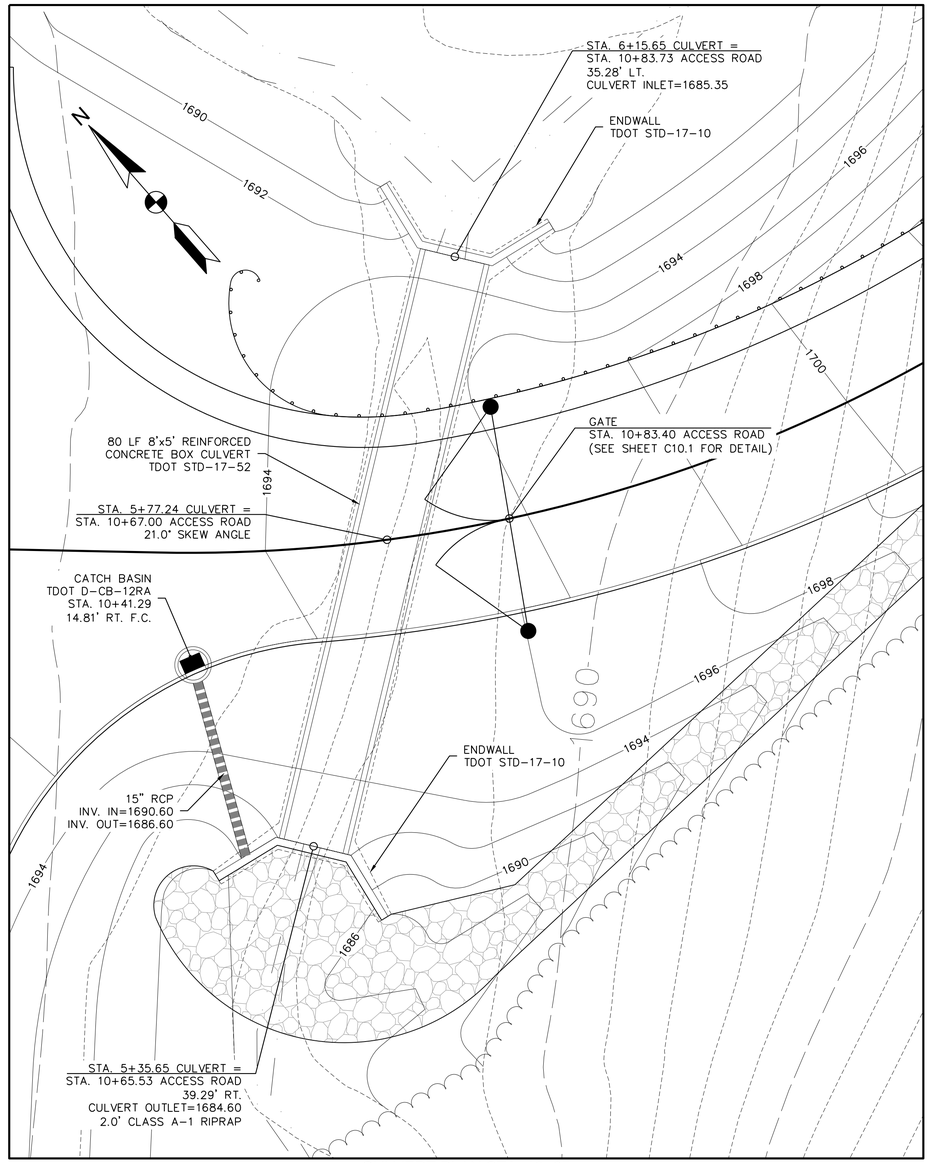


CULVERT SECTION STA. 10+67
SCALE: 1"=10'



CULVERT PLAN STA. 10+67
SCALE: 1"=10'

0 10' 20'
SCALE: 1"=10'

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CHECKED BY:	DEC

SHEET TITLE

CULVERT SECTION

C7.0

SHEET 14 OF 54

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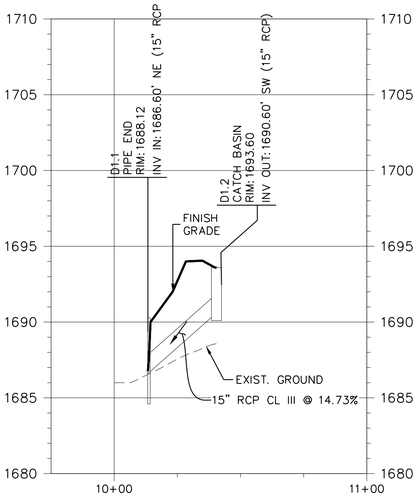
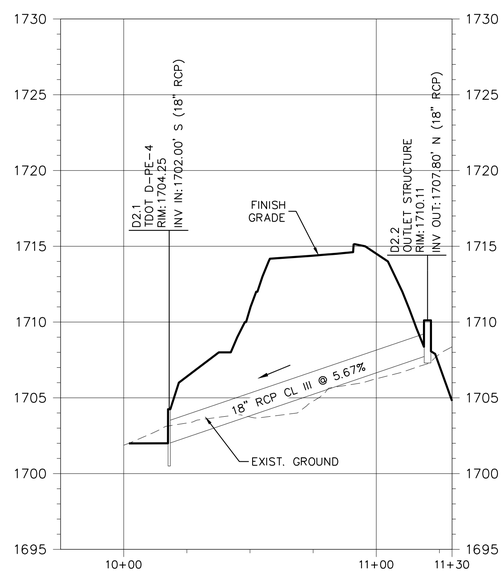


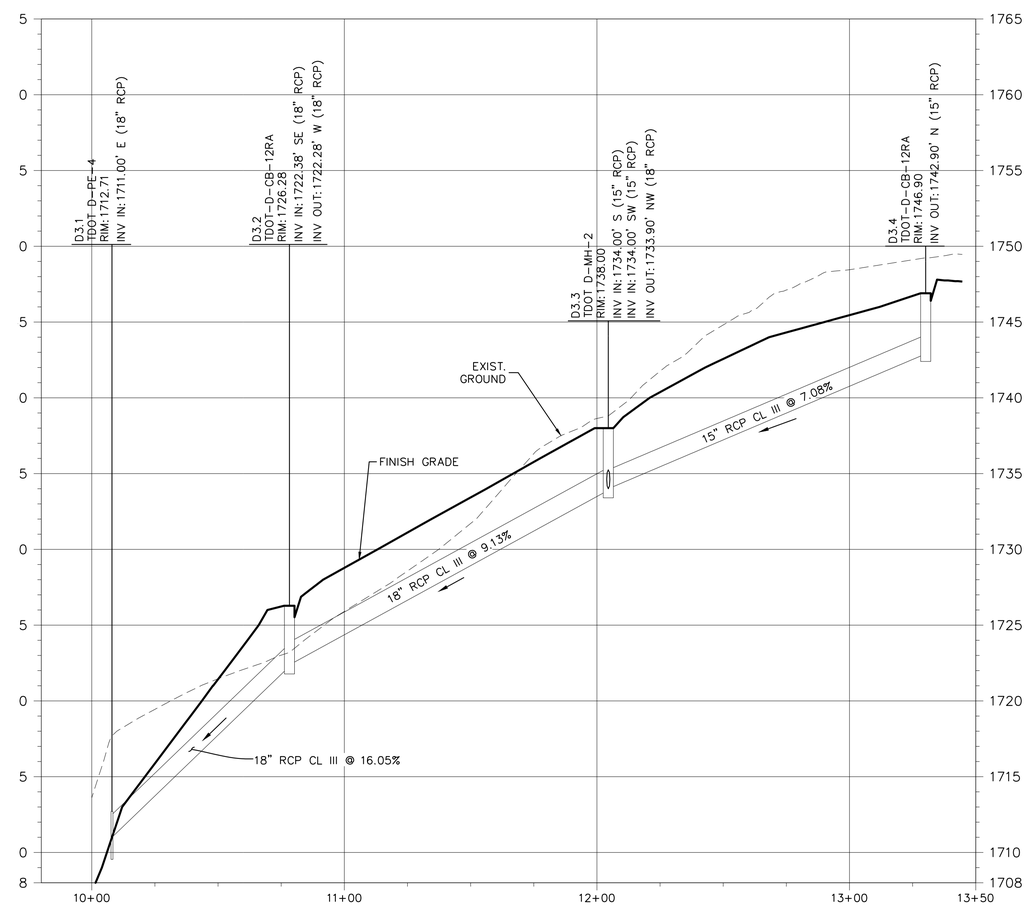
STORM LINE D1

SCALE: HORZ 1"=30'
VERT 1"=5'



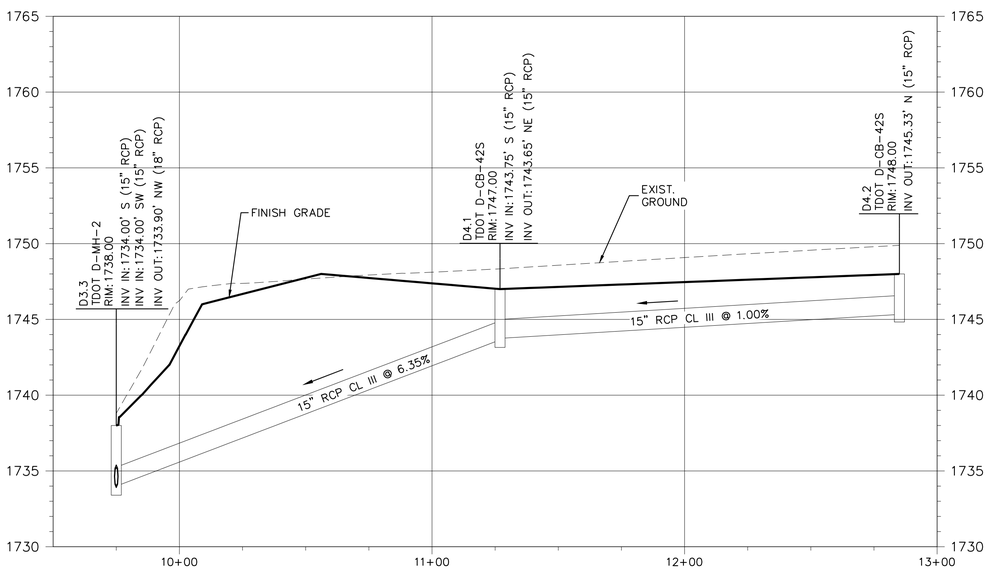
STORM LINE D2

SCALE: HORZ 1"=30'
VERT 1"=5'



STORM LINE D3

SCALE: HORZ 1"=30'
VERT 1"=5'



STORM LINE D4

SCALE: HORZ 1"=30'
VERT 1"=5'

HORIZONTAL SCALE
0 30' 60'
SCALE: 1"=30'

VERTICAL SCALE
0 5' 10'
SCALE: 1"=5'

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FINAL PLANS

PROJECT NO:	18-0070.001
SCALE:	AS SHOWN
DESIGNED BY:	CER
DRAWN BY:	CER/DEC
CHECKED BY:	DEC

SHEET TITLE

STORM DRAIN PROFILES

C7.1

SHEET 14 OF 54

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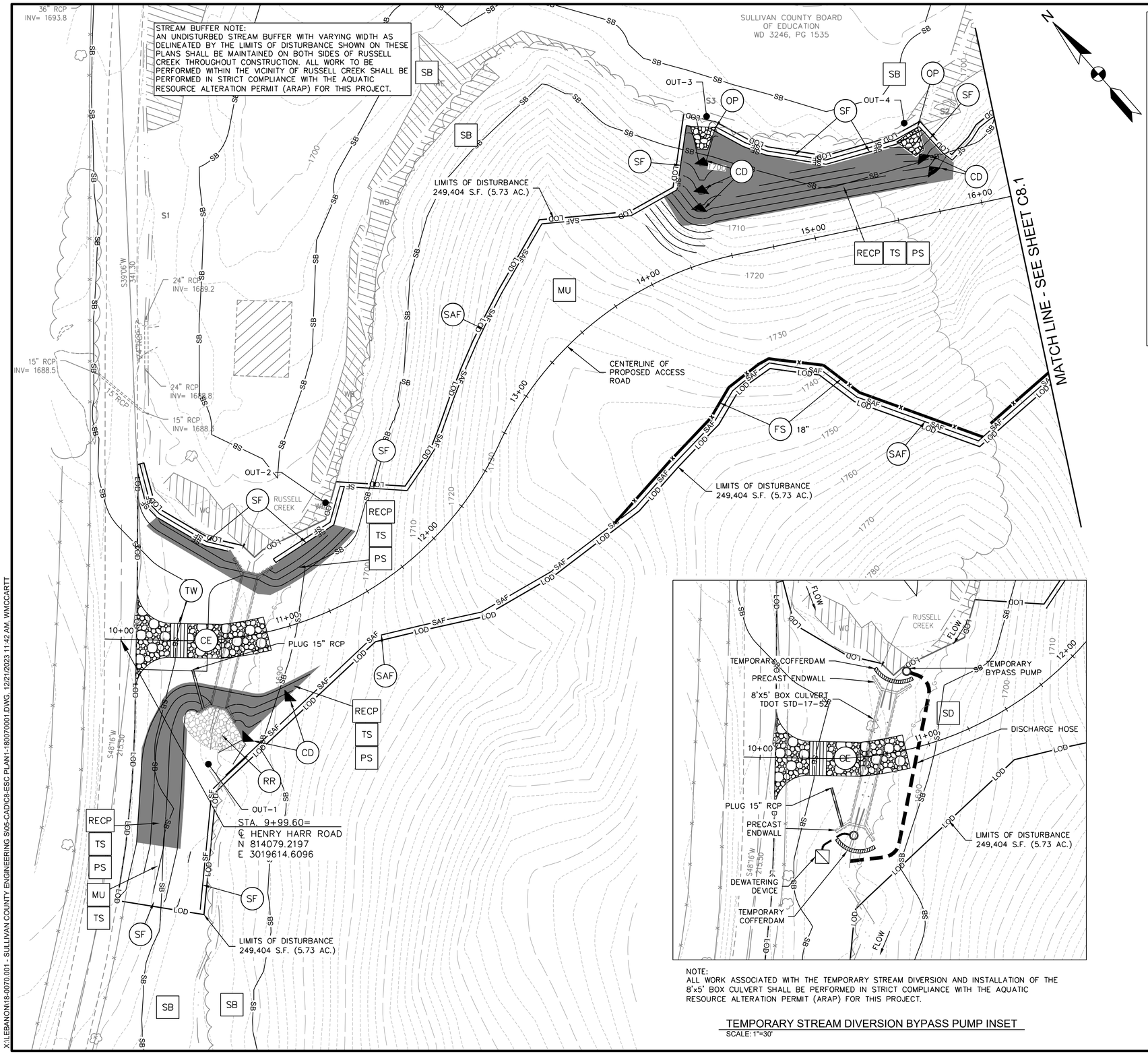
STREAM BUFFER NOTE:
AN UNDISTURBED STREAM BUFFER WITH VARYING WIDTH AS DELINEATED BY THE LIMITS OF DISTURBANCE SHOWN ON THESE PLANS SHALL BE MAINTAINED ON BOTH SIDES OF RUSSELL CREEK THROUGHOUT CONSTRUCTION. ALL WORK TO BE PERFORMED WITHIN THE VICINITY OF RUSSELL CREEK SHALL BE PERFORMED IN STRICT COMPLIANCE WITH THE AQUATIC RESOURCE ALTERATION PERMIT (ARAP) FOR THIS PROJECT.



NOTE:
ALL WORK ASSOCIATED WITH THE TEMPORARY STREAM DIVERSION AND INSTALLATION OF THE 8'x5' BOX CULVERT SHALL BE PERFORMED IN STRICT COMPLIANCE WITH THE AQUATIC RESOURCE ALTERATION PERMIT (ARAP) FOR THIS PROJECT.

TEMPORARY STREAM DIVERSION BYPASS PUMP INSET

SCALE: 1"=30'

PROPOSED PHASE 1 SEQUENCE OF CONSTRUCTION

1. OWNER SHALL ACQUIRE ALL PERMITS NECESSARY AND SUBMIT NOI TO OBTAIN GENERAL NPDES PERMIT COVERAGE AS THE PRIMARY PERMITTEE.
2. CONTRACTOR SHALL SUBMIT NOI AND OBTAIN GENERAL NPDES PERMIT COVERAGE AS A SECONDARY PERMITTEE.
3. CONTRACTOR SHALL INSTALL PERIMETER SILT FENCE AT LOCATIONS SHOWN ON EROSION PREVENTION & SEDIMENT CONTROL (EPSC) PLAN ALONG THE LAYDOWN AND STAGING AREAS.
4. CONTRACTOR SHALL PREPARE LAYDOWN AND STAGING AREAS.
5. CONTRACTOR SHALL INSTALL TEMPORARY CONSTRUCTION EXIT AS SHOWN ON THE EPSC PLAN.
6. CONTRACTOR SHALL CONSTRUCT TEMPORARY DEWATERING DEVICE, INSTALL COFFERDAMS, AND ESTABLISH TEMPORARY STREAM DIVERSION BYPASS PUMP SYSTEM. SEE INSET ON SHEET C8.0.
7. CONTRACTOR SHALL INSTALL 8'x5' BOX CULVERT AND ASSOCIATED ENDWALLS DURING STREAM LOW FLOW CONDITIONS.
8. CONTRACTOR SHALL INSTALL SILT FENCE ON THE WEST SIDE OF CULVERT.
9. CONTRACTOR SHALL REMOVE TEMPORARY DEWATERING DEVICE, COFFERDAMS, AND STREAM DIVERSION BYPASS PUMP SYSTEM.
10. CONTRACTOR SHALL PLACE FILL MATERIAL OVER NEW CULVERT TO ESTABLISH PERMANENT STREAM CROSSING.
11. CONTRACTOR SHALL INSTALL PERIMETER CONTROLS (SILT FENCE, SAFETY FENCE, FILTER SOCK, ETC.) ON EAST SIDE OF CULVERT AS SHOWN ON THE PLANS. CLEAR ONLY AREAS NECESSARY TO INSTALL PERIMETER CONTROLS AND ESTABLISH A TEMPORARY ACCESS ROUTE BETWEEN CONSTRUCTION EXIT AND OUTFALL 5. INSTALL TWO ROWS OF SILT FENCE WHERE INDICATED.
12. CONTRACTOR SHALL INSTALL STORM DRAINAGE PIPES & OUTLET STRUCTURE TO BYPASS OFF-SITE RUNOFF THROUGH THE PROJECT WORK AREA TO OUTFALL 5. CONSTRUCT FILTER RING AND OUTLET PROTECTION CONCURRENTLY WITH STORM DRAINAGE PIPES.
13. CONTRACTOR SHALL CONSTRUCT FILL SLOPES AND DRAINAGE CHANNELS THAT OUTFALL AT EXISTING STREAM AS SHOWN ON THE PLANS. INSTALL CHECK DAMS AND IMMEDIATELY STABILIZE SLOPES WITH SEEDING, RIPRAP AND RECP.
14. CONTRACTOR SHALL TEMPORARILY STABILIZE THROUGHOUT CONSTRUCTION ALL DISTURBED PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES WILL CEASE FOR 14 DAYS OR MORE.

EROSION PREVENTION AND SEDIMENT CONTROL LEGEND

TITLE	KEY	SYMBOL	TESCH PRACTICE NUMBER
LIMITS OF DISTURBANCE		LOD	
SAFETY FENCE	SAF	SAF	7.1
STRAW MULCH	MU		7.6
TEMPORARY SEEDING	TS		7.8
PERMANENT SEEDING	PS		7.9
ROLLED EROSION CONTROL PRODUCTS (TDOT TYPE II)	RECP		7.11
VEHICLE MAINTENANCE	VM		7.17
CHEMICAL STORAGE	CS		7.18
TRASH AND DEBRIS MANAGEMENT	TDM		7.18
CHECK DAM	CD		7.20
OUTLET PROTECTION (PERMANENT)	OP		7.23
SLOPE DRAIN (PERMANENT AND TEMPORARY)	DR		7.24
CONSTRUCTION EXIT	CE		7.28
TIRE WASHING FACILITY	TW		7.29
FILTER RING	FR		7.30
SILT FENCE	SF	SF	7.34
INLET PROTECTION	IP		7.35
FILTER SOCK	FS	X	7.37
STREAM BUFFER	SB	SB	7.41
STREAM DIVERSION	SD		7.42

CONCRETE WASHOUT NOTE:
CONTRACTOR SHALL PROVIDE ON-SITE CONCRETE WASHOUT FACILITIES IN ACCORDANCE WITH THE TENNESSEE EROSION & SEDIMENT CONTROL HANDBOOK REQUIREMENTS OR WASHOUT SHALL BE PERFORMED OFF-SITE.

0 30' 60'
SCALE: 1"=30'

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CONSULTANTS

DONALD L. BUSSMYER REGISTERED ENGINEER STATE OF TENNESSEE DEPARTMENT OF AGRICULTURE COMMISSION No. 116083

NOT FOR CONSTRUCTION

SULLIVAN COUNTY SCHOOLS

SECONDARY ACCESS ROAD TO WEST RIDGE

SULLIVAN COUNTY BOARD OF EDUCATION
154 BLOUNTVILLE BYPASS
BLOUNTVILLE, TN 37617

PROJECT NUMBER: 030122(KD)

MARK	DATE	DESCRIPTION

FINAL PLANS

PROJECT NO:	18-0070.001
SCALE:	1"=30'
DESIGNED BY:	CER
DRAWN BY:	CER/DEC
CHECKED BY:	DEC

SHEET TITLE

PHASE 1 EROSION & SEDIMENT CONTROL PLAN

C8.0

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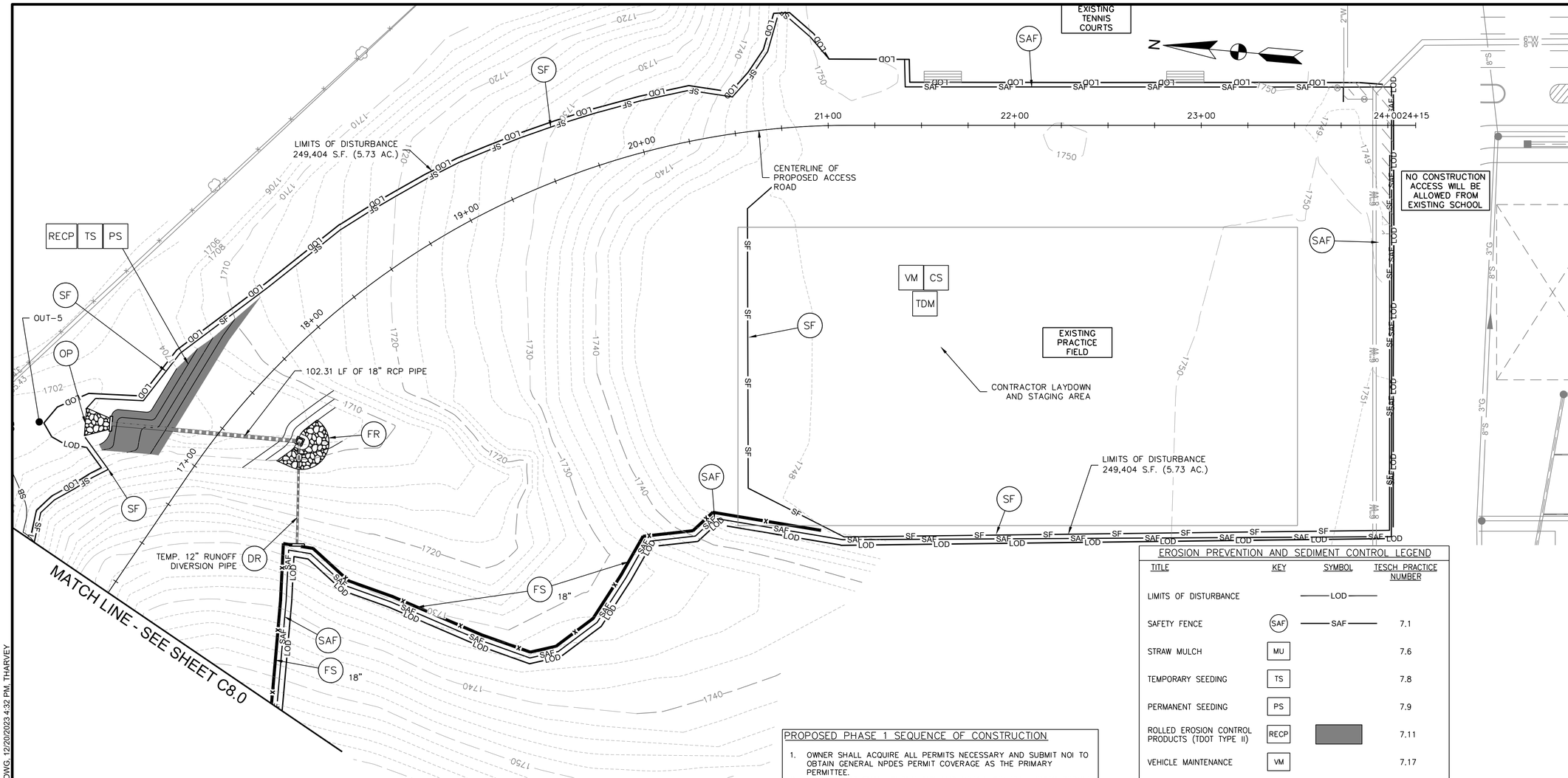

PROPOSED PHASE 1 SEQUENCE OF CONSTRUCTION

1. OWNER SHALL ACQUIRE ALL PERMITS NECESSARY AND SUBMIT NOI TO OBTAIN GENERAL NPDES PERMIT COVERAGE AS THE PRIMARY PERMITTEE.
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14. CONTRACTOR SHALL TEMPORARILY STABILIZE THROUGHOUT CONSTRUCTION ALL DISTURBED PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES WILL CEASE FOR 14 DAYS OR MORE.

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EROSION PREVENTION AND SEDIMENT CONTROL LEGEND

TITLE	KEY	SYMBOL	TESCH PRACTICE NUMBER
LIMITS OF DISTURBANCE		LOD	
SAFETY FENCE	SAF	SAF	7.1
STRAW MULCH	MU		7.6
TEMPORARY SEEDING	TS		7.8
PERMANENT SEEDING	PS		7.9
ROLLED EROSION CONTROL PRODUCTS (TDOT TYPE II)	RECP		7.11
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0 30' 60'
SCALE: 1"=30'

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SECONDARY ACCESS ROAD TO WEST RIDGE

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PROJECT NUMBER: 030122(KD)

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DRAWN BY:	CER/DEC
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SHEET TITLE

PHASE 1 EROSION & SEDIMENT CONTROL PLAN

C8.1

SHEET 16 OF 54

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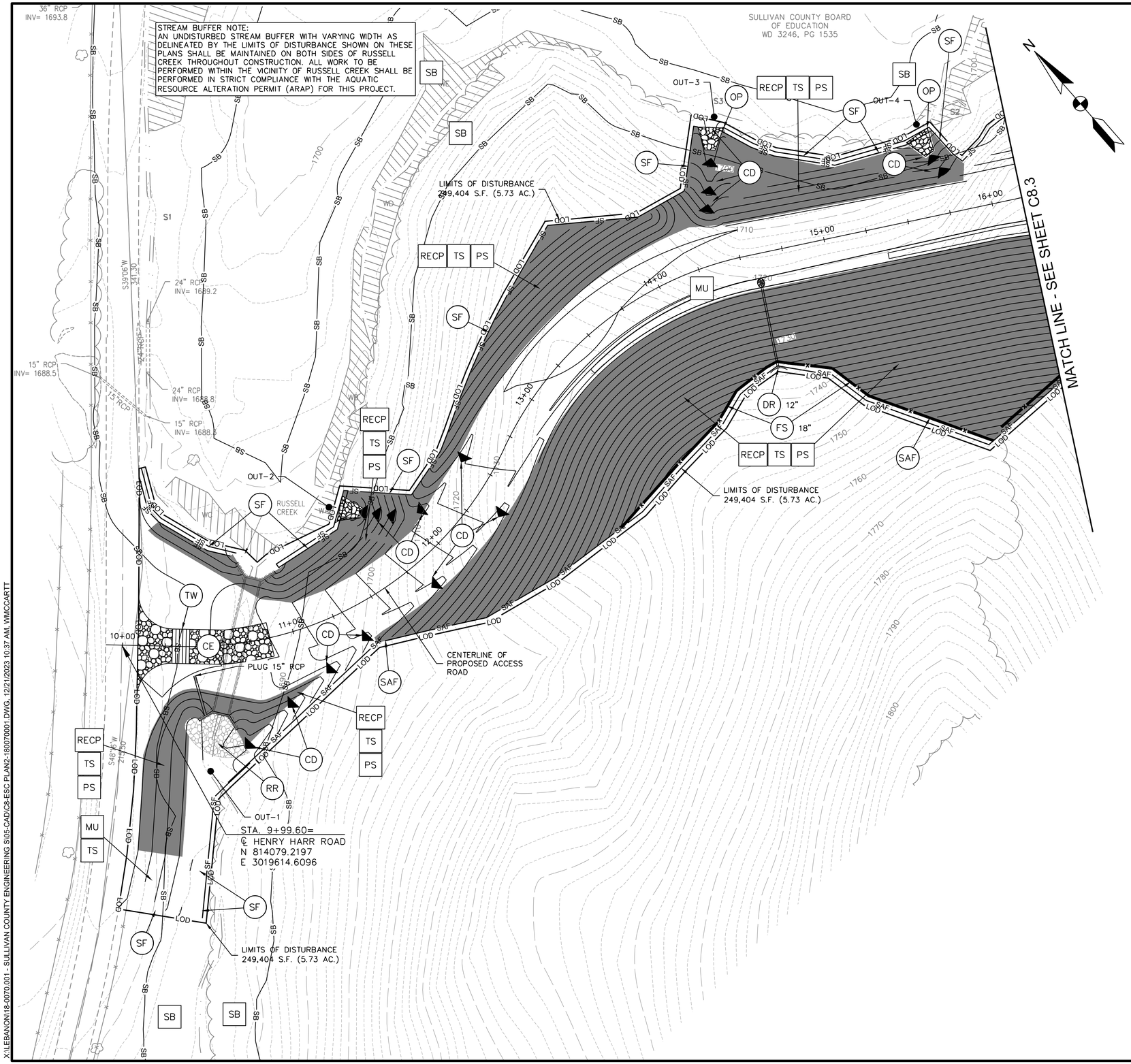

PROPOSED PHASE 2 SEQUENCE OF CONSTRUCTION

1. CONTRACTOR SHALL UTILIZE TEMPORARY PLUGS OR OTHER MEANS TO PREVENT STORMWATER AND SEDIMENT FROM ENTERING WATER QUALITY DEVICE UNTIL AFTER FINAL STABILIZATION HAS BEEN ACHIEVED.
2. COMMENCE MASS GRADING ACTIVITIES ASSOCIATED WITH CONSTRUCTION OF NEW ROADWAY.
3. CONTRACTOR SHALL INSURE POSITIVE DRAINAGE OF BYPASS OFF-SITE RUNOFF TO TEMPORARY DRAIN PIPE THROUGH WORK AREA TO OUTFALL 5.
4. INSTALL SLOPE DRAIN.
5. ALL CUT AND FILL SLOPES STEEPER THAN 3:1 SHALL BE STABILIZED WITH SEEDING AND RECP IMMEDIATELY UPON ESTABLISHMENT OF FINISHED GRADE SHOWN ON THE PLANS.
6. EXCESS EXCAVATED MATERIALS SHALL BE IMMEDIATELY EXPORTED FROM THE SITE TO A PERMITTED DISPOSAL SITE. CONTRACTOR SHALL BE RESPONSIBLE FOR SELECTING THE DISPOSAL SITE LOCATION AND OBTAINING ALL NECESSARY PERMITS.
7. TEMPORARILY STABILIZE THROUGHOUT CONSTRUCTION ALL DISTURBED PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES WILL CEASE FOR 14 DAYS OR MORE.

EROSION PREVENTION AND SEDIMENT CONTROL LEGEND

TITLE	KEY	SYMBOL	TESCH PRACTICE NUMBER
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[redacted]

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DRAWN BY:	CER/DEC
CHECKED BY:	DEC

SHEET TITLE

PHASE 2 EROSION & SEDIMENT CONTROL PLAN

C8.2

SHEET 17 OF 54

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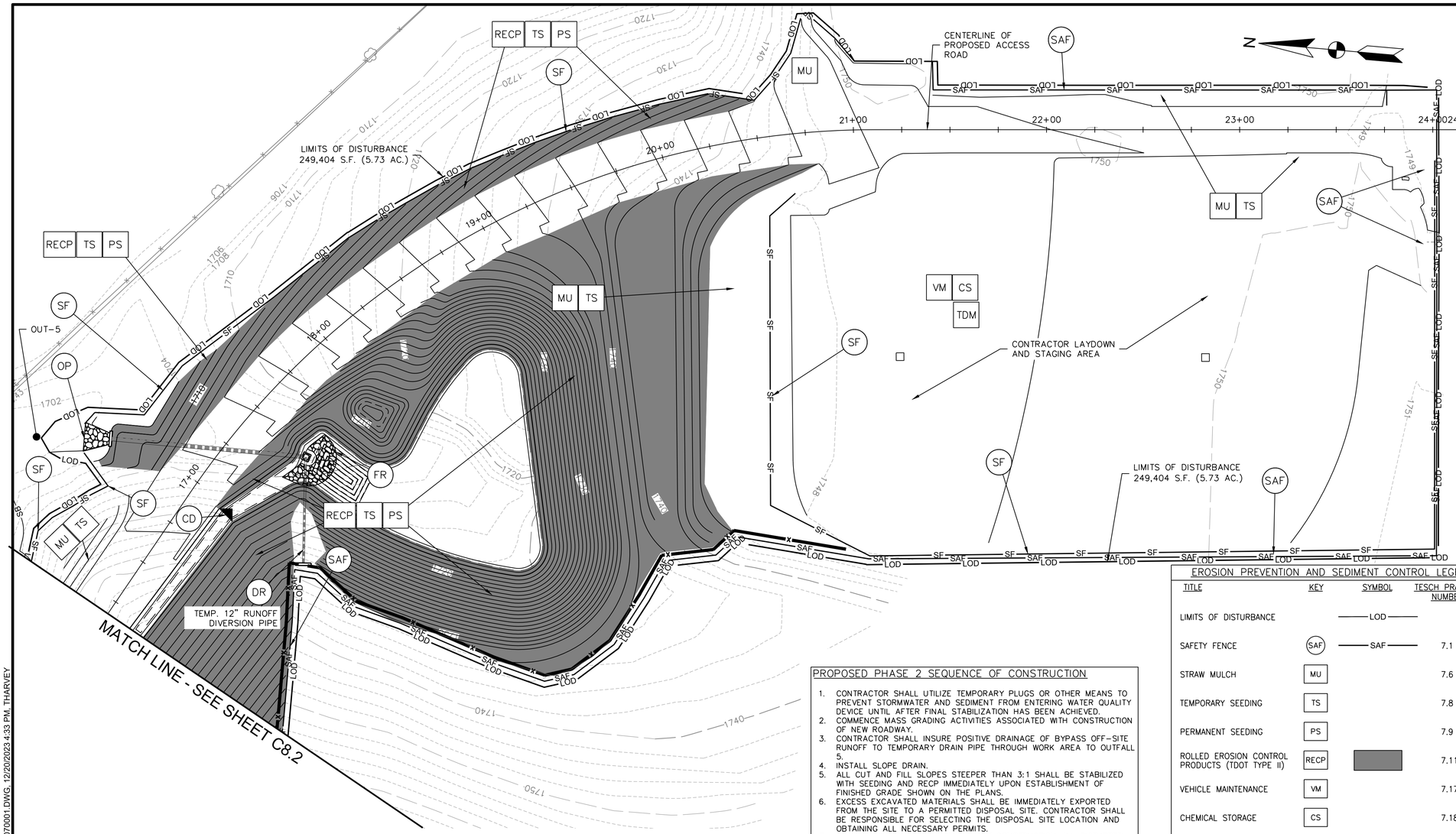

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EROSION PREVENTION AND SEDIMENT CONTROL LEGEND

TITLE	KEY	SYMBOL	TESCH PRACTICE NUMBER
LIMITS OF DISTURBANCE		LOD	
SAFETY FENCE	SAF	SAF	7.1
STRAW MULCH	MU		7.6
TEMPORARY SEEDING	TS		7.8
PERMANENT SEEDING	PS		7.9
ROLLED EROSION CONTROL PRODUCTS (TDOT TYPE II)	RECP		7.11
VEHICLE MAINTENANCE	VM		7.17
CHEMICAL STORAGE	CS		7.18
TRASH AND DEBRIS MANAGEMENT	TDM		7.18
CHECK DAM	CD		7.20
OUTLET PROTECTION (PERMANENT)	OP		7.23
SLOPE DRAIN (PERMANENT AND TEMPORARY)	DR		7.24
CONSTRUCTION EXIT	CE		7.28
TIRE WASHING FACILITY	TW		7.29
FILTER RING	FR		7.30
SILT FENCE	SF	SF	7.34
INLET PROTECTION	IP		7.35
FILTER SOCK	FS	X	7.37
STREAM BUFFER	SB	SB	7.41
STREAM DIVERSION	SD		7.42

0 30' 60'
SCALE: 1"=30'

AMT
A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
200 EAST MAIN STREET, SUITE 301
KINGSPORT, TN 37660
PHONE (423) 398-5550
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CONSULTANTS

NOT FOR CONSTRUCTION

SULLIVAN COUNTY SCHOOLS

SECONDARY ACCESS ROAD TO WEST RIDGE

SULLIVAN COUNTY BOARD OF EDUCATION
154 BLOUNTVILLE BYPASS
BLOUNTVILLE, TN 37617

PROJECT NUMBER: 030122(KD)

MARK	DATE	DESCRIPTION

FINAL PLANS

PROJECT NO:	18-0070.001
SCALE:	1"=30'
DESIGNED BY:	CER
DRAWN BY:	CER/DEC
CHECKED BY:	DEC

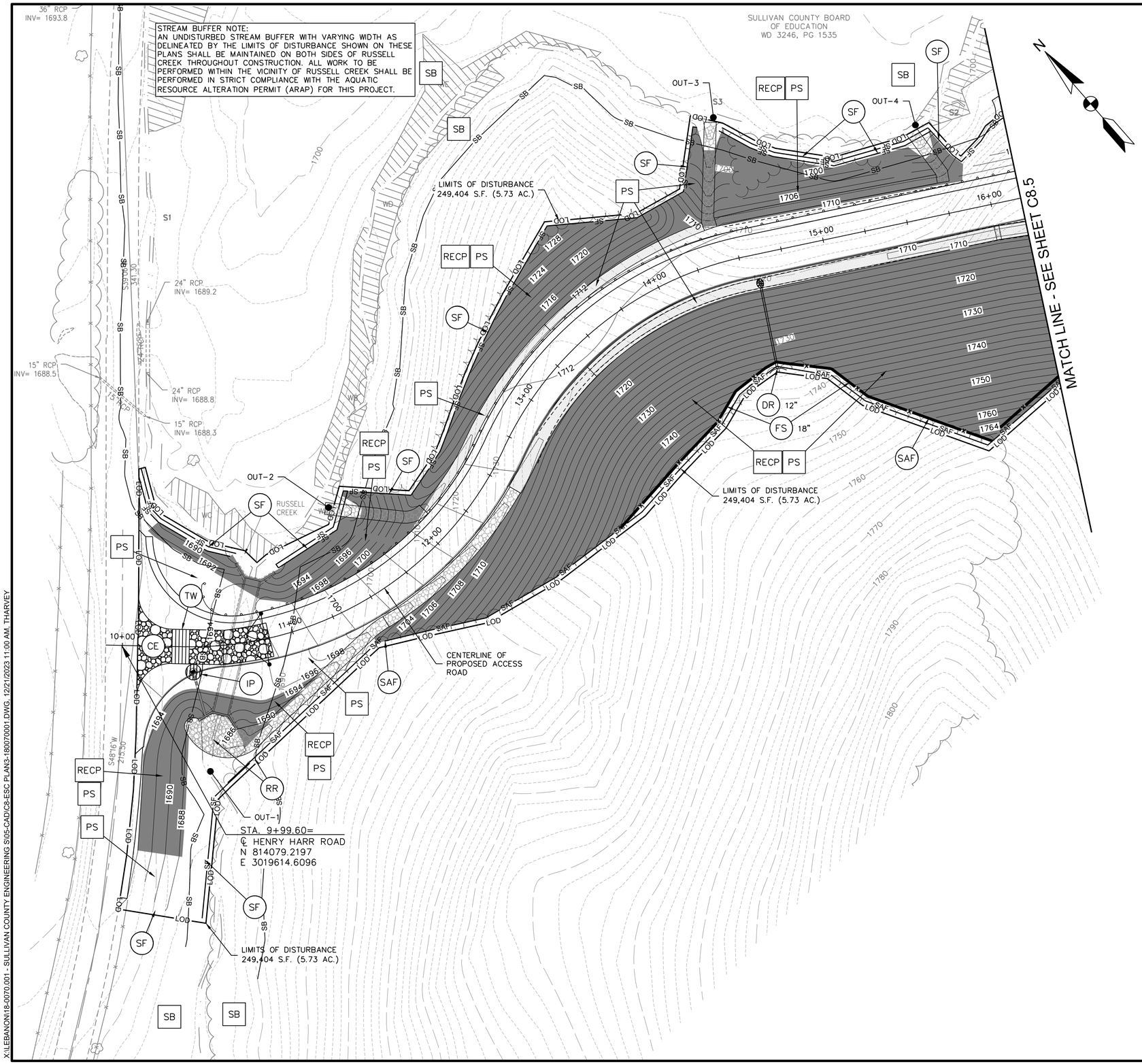
SHEET TITLE

PHASE 2 EROSION & SEDIMENT CONTROL PLAN

C8.3

SHEET 18 OF 54

X:\LEBANON\18-0070.001 - SULLIVAN COUNTY ENGINEERING S\05-CAD\C8-ESC PLAN2-180070001.DWG, 12/20/2023 4:33 PM, THARVEY



PROPOSED PHASE 3 SEQUENCE OF CONSTRUCTION

1. CONSTRUCT REMAINING STORM DRAINAGE INFRASTRUCTURE SHOWN ON THE PLANS. INSTALL INLET PROTECTION CONCURRENTLY WITH STORM DRAINAGE STRUCTURES.
2. INSTALL PERMANENT CHANNEL LININGS IN ALL ON-SITE DRAINAGE DITCHES.
3. PERFORM FINE GRADING ACTIVITIES AND PREPARE ROADWAY FOR PAVING.
4. PAVE THE ROADWAY.
5. PERMANENTLY STABILIZE ALL REMAINING PERVIOUS AREAS OF THE SITE WITH VEGETATION.
6. REMOVE ALL REMAINING TEMPORARY EROSION PREVENTION AND SEDIMENT CONTROL MEASURES AFTER INSPECTOR APPROVAL. PERMANENTLY STABILIZE ALL AREAS DISTURBED DURING REMOVAL OF TEMPORARY BMPs.
7. INSPECT EXTENDED DETENTION POND AND CLEAN AS NECESSARY TO REMOVE ALL ACCUMULATED SEDIMENT AND DEBRIS.
8. TERMINATE GENERAL NPDES PERMIT COVERAGE BY SUBMITTING A NOTE AFTER ALL OF THE TERMINATION REQUIREMENTS IN THE PERMIT HAVE BEEN MET.

EROSION PREVENTION AND SEDIMENT CONTROL LEGEND

TITLE	KEY	SYMBOL	TESCH PRACTICE NUMBER
LIMITS OF DISTURBANCE		LOD	
SAFETY FENCE	SAF	SAF	7.1
STRAW MULCH	MU		7.6
TEMPORARY SEEDING	TS		7.8
PERMANENT SEEDING	PS		7.9
ROLLED EROSION CONTROL PRODUCTS (TDOT TYPE II)	RECP		7.11
VEHICLE MAINTENANCE	VM		7.17
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SILT FENCE	SF	SF	7.34
INLET PROTECTION	IP		7.35
FILTER SOCK	FS	X	7.37
STREAM BUFFER	SB	SB	7.41
STREAM DIVERSION	SD		7.42

CONCRETE WASHOUT NOTE:
CONTRACTOR SHALL PROVIDE ON-SITE CONCRETE WASHOUT FACILITIES IN ACCORDANCE WITH THE TENNESSEE EROSION & SEDIMENT CONTROL HANDBOOK REQUIREMENTS OR WASHOUT SHALL BE PERFORMED OFF-SITE.

0 30' 60'
SCALE: 1"=30'

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SULLIVAN COUNTY BOARD OF EDUCATION
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BLOUNTVILLE, TN 37617

PROJECT NUMBER: 030122(KD)

MARK	DATE	DESCRIPTION

FINAL PLANS

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SCALE:	1"=30'
DESIGNED BY:	CER
DRAWN BY:	CER/DEC
CHECKED BY:	DEC

SHEET TITLE

PHASE 3 EROSION & SEDIMENT CONTROL PLAN

C8.4

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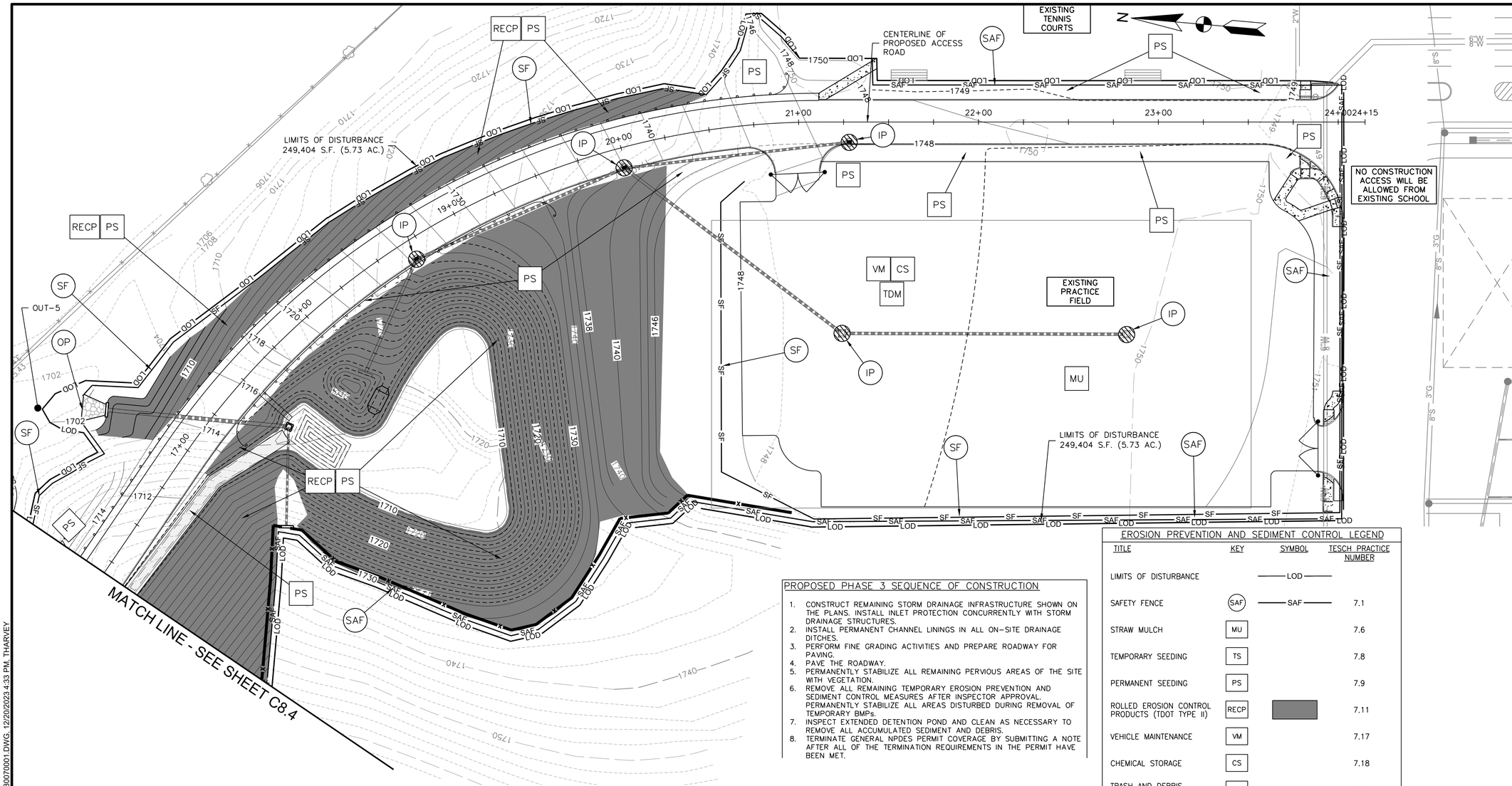

PROPOSED PHASE 3 SEQUENCE OF CONSTRUCTION

1. CONSTRUCT REMAINING STORM DRAINAGE INFRASTRUCTURE SHOWN ON THE PLANS. INSTALL INLET PROTECTION CONCURRENTLY WITH STORM DRAINAGE STRUCTURES.
2. INSTALL PERMANENT CHANNEL LININGS IN ALL ON-SITE DRAINAGE DITCHES.
3. PERFORM FINE GRADING ACTIVITIES AND PREPARE ROADWAY FOR PAVING.
4. PAVE THE ROADWAY.
5. PERMANENTLY STABILIZE ALL REMAINING PERVIOUS AREAS OF THE SITE WITH VEGETATION.
6. REMOVE ALL REMAINING TEMPORARY EROSION PREVENTION AND SEDIMENT CONTROL MEASURES AFTER INSPECTOR APPROVAL. PERMANENTLY STABILIZE ALL AREAS DISTURBED DURING REMOVAL OF TEMPORARY BMPs.
7. INSPECT EXTENDED DETENTION POND AND CLEAN AS NECESSARY TO REMOVE ALL ACCUMULATED SEDIMENT AND DEBRIS.
8. TERMINATE GENERAL NPDES PERMIT COVERAGE BY SUBMITTING A NOTE AFTER ALL OF THE TERMINATION REQUIREMENTS IN THE PERMIT HAVE BEEN MET.

CONCRETE WASHOUT NOTE:
CONTRACTOR SHALL PROVIDE ON-SITE CONCRETE WASHOUT FACILITIES IN ACCORDANCE WITH THE TENNESSEE EROSION & SEDIMENT CONTROL HANDBOOK REQUIREMENTS OR WASHOUT SHALL BE PERFORMED OFF-SITE.

STREAM BUFFER NOTE:
AN UNDISTURBED STREAM BUFFER WITH VARYING WIDTH AS DELINEATED BY THE LIMITS OF DISTURBANCE SHOWN ON THESE PLANS SHALL BE MAINTAINED ON BOTH SIDES OF RUSSELL CREEK THROUGHOUT CONSTRUCTION. ALL WORK TO BE PERFORMED WITHIN THE VICINITY OF RUSSELL CREEK SHALL BE PERFORMED IN STRICT COMPLIANCE WITH THE AQUATIC RESOURCE ALTERATION PERMIT (ARAP) FOR THIS PROJECT.

EROSION PREVENTION AND SEDIMENT CONTROL LEGEND

TITLE	KEY	SYMBOL	TESCH PRACTICE NUMBER
LIMITS OF DISTURBANCE		LOD	
SAFETY FENCE	SAF	SAF	7.1
STRAW MULCH	MU		7.6
TEMPORARY SEEDING	TS		7.8
PERMANENT SEEDING	PS		7.9
ROLLED EROSION CONTROL PRODUCTS (TDOT TYPE II)	RECP		7.11
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CONSTRUCTION EXIT	CE		7.28
TIRE WASHING FACILITY	TW		7.29
FILTER RING	FR		7.30
SILT FENCE	SF	SF	7.34
INLET PROTECTION	IP		7.35
FILTER SOCK	FS	x	7.37
STREAM BUFFER	SB	SB	7.41
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0 30' 60'
SCALE: 1"=30'

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SECONDARY ACCESS ROAD TO WEST RIDGE

SULLIVAN COUNTY BOARD OF EDUCATION
154 BLOUNTVILLE BYPASS
BLOUNTVILLE, TN 37617

PROJECT NUMBER: 030122(KD)

MARK	DATE	DESCRIPTION

FINAL PLANS

PROJECT NO:	18-0070.001
SCALE:	1"=30'
DESIGNED BY:	CER
DRAWN BY:	CER/DEC
CHECKED BY:	DEC

SHEET TITLE

PHASE 3 EROSION & SEDIMENT CONTROL PLAN

C8.5

SHEET 20 OF 54

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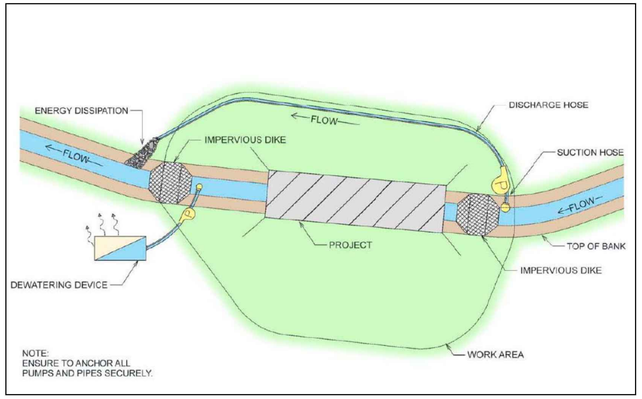
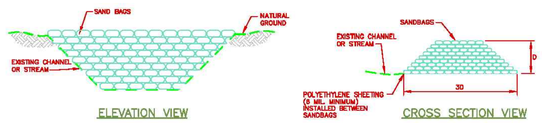
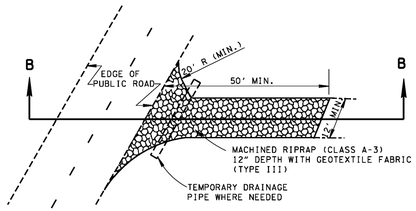




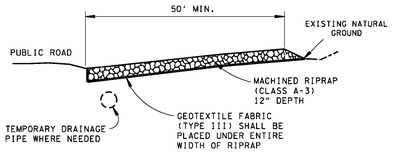
TEMPORARY COFFERDAM / IMPERVIOUS DIKE

STREAM DIVERSION USING BYPASS PUMPING (SD)

NTS



PLAN VIEW OF TEMPORARY CONSTRUCTION ROAD

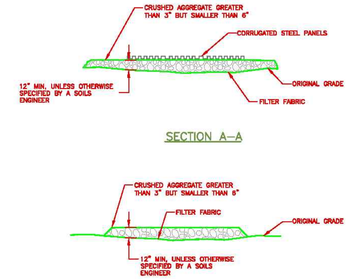


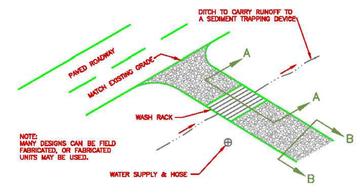
SECTION B-B

NOTE: REFER TO TDOT STANDARD DRAWING EC-STR-25 FOR ADDITIONAL INFORMATION.

CONSTRUCTION EXIT (CE)

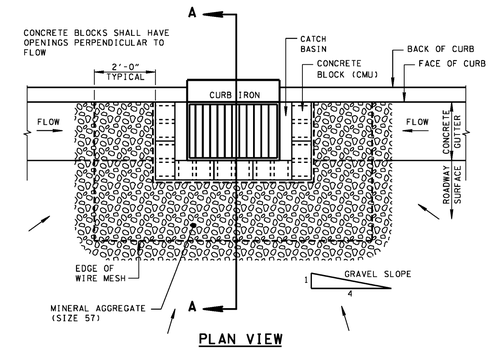
NTS

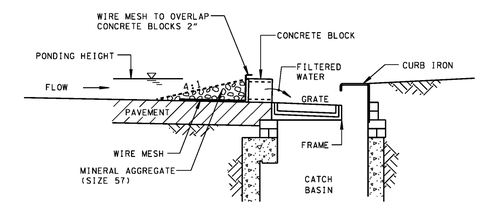




TIRE WASHING FACILITY (TW)

NTS



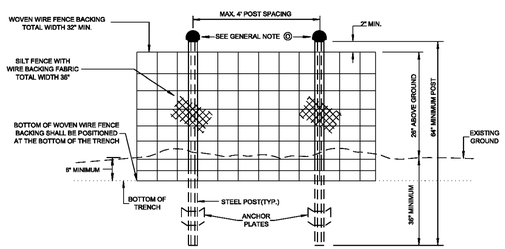


SECTION A-A

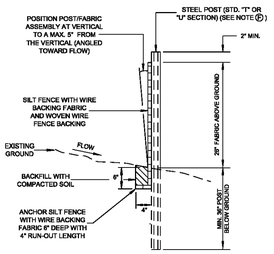
NOTE: REFER TO TDOT STANDARD DRAWING EC-STR-39 FOR ADDITIONAL INFORMATION.

INLET PROTECTION (IP)

NTS



ELEVATION VIEW



SECTIONAL VIEW

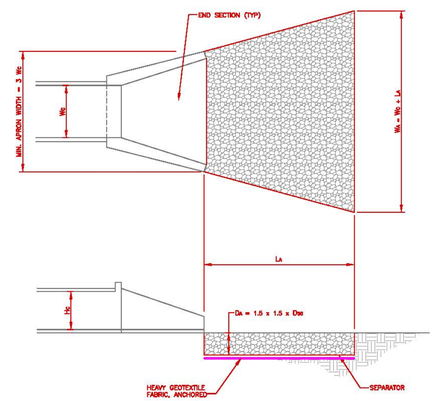
SILT FENCE WITH WIRE BACKING FABRIC SPECIFICATIONS	
FABRIC PROPERTY AND TEST METHODS	REQUIRED PHYSICAL PROPERTIES (MARV VALUES OF TEST DATA)
GEOTEXTILE FABRIC TYPE	WOVEN MONOFILAMENT
APPARENT OPENING SIZE (ASTM D4751)	# 70 TO # 100 STANDARD SIEVE
WATER FLUX (ASTM D4491)	≥ 18 GPM/FT ^{2}
TENSILE STRENGTH (ASTM D4632)	≥ 310 LB. (WARP DIRECTION) X 200 LB. (FILL DIRECTION)
ULTRAVIOLET STABILITY (AFTER 500 HRS PER ASTM D4355)	≥ 90%
BURST STRENGTH (ASTM D3786)	≥ 400 PSI
PUNCTURE STRENGTH (ASTM D4833)	≥ 105 LB.
TRAPEZOIDAL TEAR (ASTM D4533)	≥ 100 LB. (WARP DIRECTION) X 80 LB. (FILL DIRECTION)

NOTES:

1. REFER TO TDOT STANDARD DRAWING EC-STR-3C FOR ADDITIONAL INFORMATION.
2. WHEN TWO SECTIONS OF SILT FENCE ADJOIN EACH OTHER THEY SHALL BE JOINED IN ACCORDANCE WITH TDOT STANDARD DRAWING EC-STR-3E.

SILT FENCE (SF)

NTS



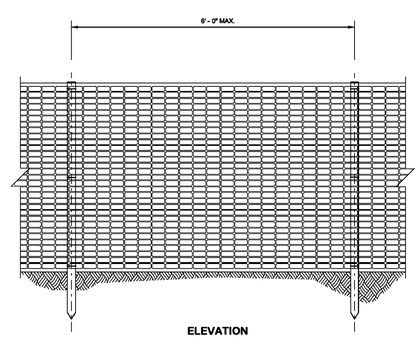
TAILWATER < 0.5 Hc AND ASSUMING FULL CULVERT FLOW (LOW TAILWATER CONDITIONS)

Hc = HEIGHT OF CULVERT
Wc = WIDTH OF CULVERT
La = LENGTH OF RIP-RAP APRON
Wa = WIDTH OF RIP-RAP APRON AT END
D50 = MEDIAN RIP-RAP SIZE
Da = DEPTH OF RIP-RAP APRON
SEPARATOR = GEOTEXTILE OR GRAVEL FILTER BLANKET

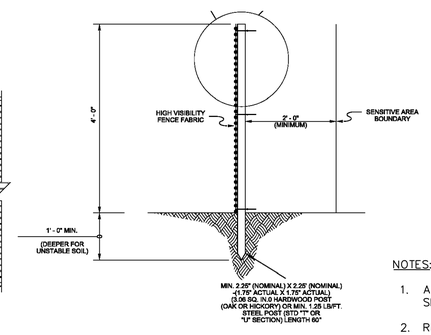
OUTFALL	PHASE	Wc	La	Wa	STONE CLASS	D50	Da
STREAM DIVERSION	1	12"	20'	10'	A-3	4"	9"
D2.1	1	18"	9'	10.5'	A-1	3.5"	7.9"

OUTLET PROTECTION (OP)

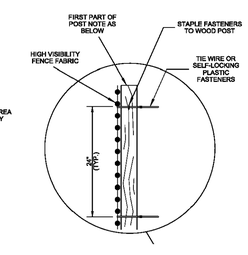
NTS



ELEVATION



TYPICAL SECTION



NOTES:

1. ALL SAFETY FENCE FOR THIS PROJECT SHALL UTILIZE WOOD POSTS.
2. REFER TO TDOT STANDARD DRAWING S-F-1 FOR ADDITIONAL INFORMATION.

SAFETY FENCE (SAF)

NTS

AMT
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PROJECT NUMBER: 030122(KD)

MARK	DATE	DESCRIPTION

FINAL PLANS

PROJECT NO:	18-0070.001
SCALE:	N/A
DESIGNED BY:	CER
DRAWN BY:	CER/DEC
CHECKED BY:	DEC

SHEET TITLE

EROSION & SEDIMENT CONTROL DETAILS

C8.6

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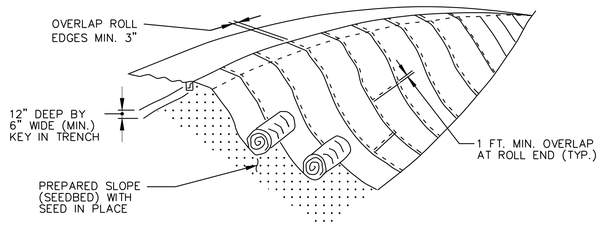


ISOMETRIC VIEW

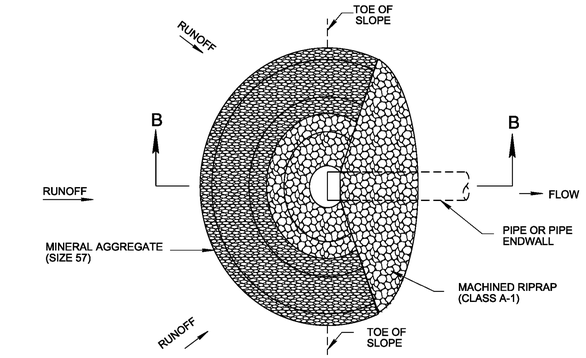
NOTES:

1. ALL RECP USED FOR SLOPE PROTECTION ON THIS PROJECT SHALL BE TDOT TYPE II OR GREATER.
2. SECURE MATTING USING 11 GAUGE STAPLES (AT LEAST 6 INCHES IN LENGTH BY 1 INCH WIDTH) OR 12 INCH MINIMUM LENGTH WOODEN STAKES.
3. PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDBED PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS. PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION PREVENTION & SEDIMENT CONTROL PLAN.
4. UNROLL MATTING DOWNSLOPE. LAY MAT SMOOTHLY AND FIRMLY UPON THE SEEDED SURFACE TO ENSURE GOOD CONTACT WITH THE GROUND. AVOID STRETCHING THE MATTING.
5. OVERLAP ROLL EDGES PER MANUFACTURER RECOMMENDATIONS (MIN. 3 INCHES). OVERLAP ROLL ENDS BY 1 FOOT (MINIMUM), WITH THE UPSLOPE MAT PLACED ON TOP OF THE DOWNSLOPE MAT.
6. KEY IN THE UPSLOPE END OF MAT 6 INCHES (MINIMUM) BY DIGGING A TRENCH, PLACING THE MATTING ROLL END IN THE TRENCH, PINNING THE MAT IN PLACE, BACKFILLING THE EXCAVATED MATERIAL, AND COMPACTING TO SECURE THE MAT END IN THE KEY.
7. STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 3 FOOT (MAXIMUM) CENTERS THROUGHOUT AND 1 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, OVERLAPS, AND ROLL ENDS.
8. ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET.
9. REFER TO TDOT STANDARD DRAWING EC-STR-34 FOR ADDITIONAL INFORMATION.

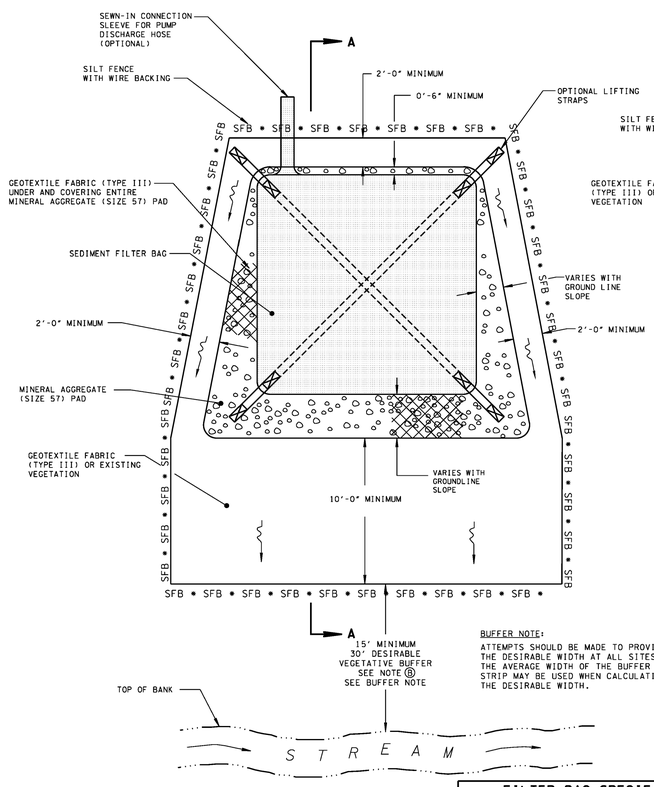
ROLLED EROSION CONTROL PRODUCTS

NTS

RECP

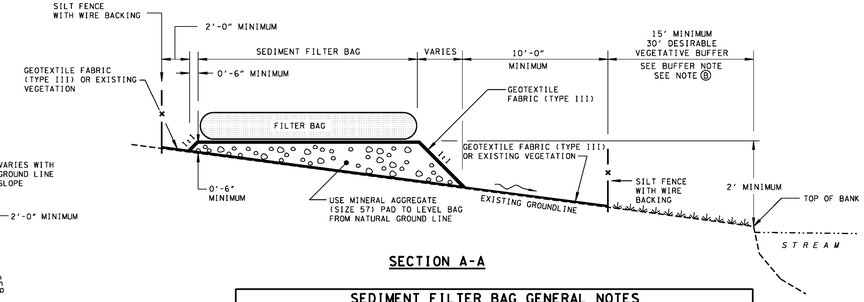


PLAN VIEW

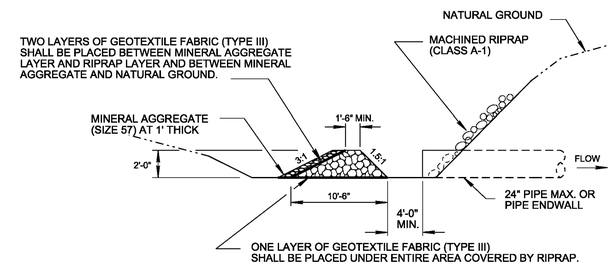


BUFFER NOTE:
ATTEMPTS SHOULD BE MADE TO PROVIDE THE DESIRABLE WIDTH AT ALL SITES. THE AVERAGE WIDTH OF THE BUFFER STRIP MAY BE USED WHEN CALCULATING THE DESIRABLE WIDTH.

PLAN VIEW



SECTION A-A



NOTE: REFER TO TDOT STANDARD DRAWING EC-STR-11 FOR ADDITIONAL INFORMATION.

SECTION B - B

FILTER RING

NTS

FR

SEDIMENT FILTER BAG GENERAL NOTES

(A) SPECIAL PROVISION 209B IS TO BE USED FOR SEDIMENT FILTER BAGS. ALL REFERENCES IN SPECIAL PROVISION 209B TO PUMPING FROM SEDIMENT TRAPS ALSO APPLIES TO PUMPING FROM COFFERDAMS.

(B) SEDIMENT FILTER BAG INSTALLATION, INCLUDING DOWNSLOPE GEOTEXTILE AND SILT FENCE WITH WIRE BACKING SHOULD NOT BE PLACED WITHIN A JURISDICTIONAL WETLAND OR WITHIN 15 FEET (30 FEET DESIRABLE) OF A STABILIZED OUTLET, STREAM, OR OTHER NATURAL WATER RESOURCE. WHEN DISCHARGING TO SEDIMENT-IMPAIRED STREAMS OR EXCEPTIONAL TENNESSEE WATERS, THE BUFFER SHALL BE A MINIMUM OF 30 FEET WITH A DESIRABLE WIDTH OF 60 FEET. BUFFER REQUIREMENT DOES NOT APPLY TO ANY LOCATION ON SITE WITH A VALID ARAP OR EQUIVALENT PERMIT BY FEDERAL AGENCIES.

(C) CONTRACTOR SHALL EXERCISE CAUTION NOT TO BURST OR DAMAGE THE SEDIMENT FILTER BAG WHEN PUMPING.

(D) THE LENGTH AND WIDTH OF THE SEDIMENT BAG SHOWN ON THIS DRAWING MAY VARY PER VENDOR SPECIFICATIONS. THE MINIMUM "FOOTPRINT" OF THE BAG SHALL BE 150 SQUARE FEET.

(E) SEDIMENT FILTER BAGS MAY BE EQUIPPED WITH A SEWN-IN SLEEVE OF SUFFICIENT SIZE TO ACCEPT A MINIMUM FOUR-INCH DIAMETER PUMP DISCHARGE HOSE. A HOSE CONNECTION THROUGH A SLIT IN THE BAG IS ALSO ACCEPTABLE. THE DISCHARGE HOSE SHOULD BE EXTENDED INTO THIS SLEEVE A MINIMUM OF SIX INCHES AND BE TIGHTLY SECURED WITH A HOSE CLAMP OR OTHER SUITABLE MEANS TO PREVENT LEAKAGE.

(F) THE PUMP DISCHARGE HOSE CONNECTION SLEEVE, OR SLIT, SHALL BE SECURELY TIED OFF DURING DISPOSAL OF THE SEDIMENT FILTER BAG IN ORDER TO PREVENT LEAKAGE OF COLLECTED SEDIMENTS.

(G) ONLY GEOTEXTILE FABRIC (TYPE III) LISTED ON THE QUALIFIED PRODUCTS LIST SHALL BE USED.

(H) SURROUND SEDIMENT FILTER BAG ASSEMBLY WITH SILT FENCE WITH WIRE BACKING. SEE STANDARD DRAWING EC-STR-3C AND EC-STR-3E FOR INSTALLATION DETAILS.

(I) EXISTING VEGETATIVE BUFFER TO REMAIN BETWEEN SILT FENCE WITH WIRE BACKING AND STABILIZED OUTLET, STREAM OR OTHER NATURAL WATER RESOURCE. BUFFER ZONE EXEMPTIONS ARE DEFINED BASED ON EXISTING LAND USES.

(J) SEDIMENT TUBES OR FILTER SOCKS MAY BE USED AS AN ALTERNATIVE TO SILT FENCE WITH WIRE BACKING. SEE STANDARD DRAWINGS EC-STR-37 AND EC-STR-8 FOR INSTALLATION DETAILS. FILTER SOCKS MAY NOT REQUIRE STAKING WHEN APPROVED BY THE ENGINEER.

(K) SEDIMENT FILTER BAGS SHALL BE PAID FOR UNDER THE FOLLOWING ITEM NUMBERS:

209-09.03	SEDIMENT FILTER BAG (15' X 15') PER EACH
209-09.04	SEDIMENT FILTER BAG (15' X 10') PER EACH
303-10.01	MINERAL AGGREGATE (SIZE 57) PER TON
740-10.03	GEOTEXTILE (TYPE III) (EROSION CONTROL) PER SQUARE YARD

SILT FENCE WITH BACKING, SEDIMENT TUBES, AND FILTER SOCKS SHALL BE PAID FOR ACCORDING TO ITS RESPECTIVE STANDARD DRAWING.

PAYMENT SHALL INCLUDE ALL MATERIALS AND LABOR NECESSARY FOR CONSTRUCTION, MAINTENANCE, AND REMOVAL OF SEDIMENT FILTER BAGS.

(L) WHEN SEDIMENT FILTER BAGS ARE REPLACED ONLY THE REPLACEMENT BAG SHALL BE PAID FOR. MAINTENANCE ON ALL OTHER PARTS OF THE SEDIMENT FILTER BAG ASSEMBLY SHALL BE INCLUDED IN THE INITIAL PAYMENT.

(M) ONLY SEDIMENT FILTER BAGS LISTED ON THE QUALIFIED PRODUCTS LIST MAY BE USED.

(N) SEDIMENT FILTER BAGS SHALL BE REPLACED WHEN SEDIMENT HAS ACCUMULATED TO ONE-HALF OF THE BAGS CAPACITY OR IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

FILTER BAG SPECIFICATIONS

PROPERTIES		TEST METHOD
WEIGHT	10.0 oz/yd.	ASTM D3776
TENSILE STRENGTH	250 lbs.	ASTM D4632
TENSILE ELONGATION AT BREAK	50%	ASTM D4632
PUNCTURE STRENGTH	115 lbs.	ASTM D4833
TRAPEZOIDAL TEAR	100 lbs.	ASTM D4533
MULLEN BURST	350 lbs.	ASTM D3786
WATER FLOW RATE	80 gpm/ft.2	ASTM D4491
PERMITTIVITY	1.2 sec.-1	ASTM D4491
UV RESISTANCE	70% str. Ret.	ASTM D4355

STANDARD BAG MINIMUM DIMENSIONS	MAXIMUM FLOW RATE
15 X 10 ft.	up to 1500 gpm
15 X 15 ft.	up to 2000 gpm

NOTE:
THE MATERIAL SHALL BE A NON-WOVEN GEOTEXTILE FABRIC BAG RESISTANT TO ROT, MILDEW, PUNCTURE AND TEARING, WITH A MINIMUM SEAM BREAKING STRENGTH OF 200 LBS (90 Kgs) THE SEAMS SHALL DEMONSTRATE LESS ELONGATION AND DEFORMATION OF THE GEOTEXTILE FABRIC.

DEWATERING DEVICE

NTS

AMT
A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
200 EAST MAIN STREET, SUITE 301
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CONSULTANTS

NOT FOR CONSTRUCTION

SULLIVAN COUNTY SCHOOLS

SECONDARY ACCESS ROAD TO WEST RIDGE

SULLIVAN COUNTY BOARD OF EDUCATION
154 BLOUNTVILLE BYPASS
BLOUNTVILLE, TN 37617

PROJECT NUMBER: 030122(KD)

MARK	DATE	DESCRIPTION

FINAL PLANS

PROJECT NO:	18-0070.001
SCALE:	N/A
DESIGNED BY:	CER
DRAWN BY:	CER/DEC
CHECKED BY:	DEC

SHEET TITLE

EROSION & SEDIMENT CONTROL DETAILS

C8.7

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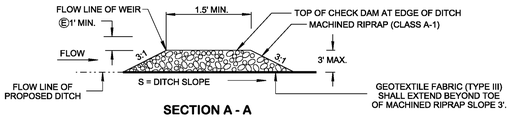

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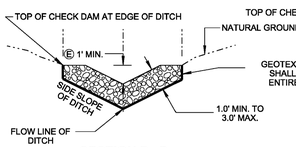

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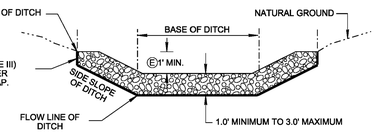

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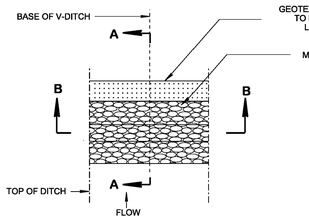
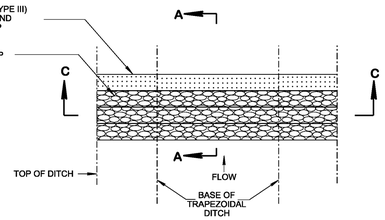


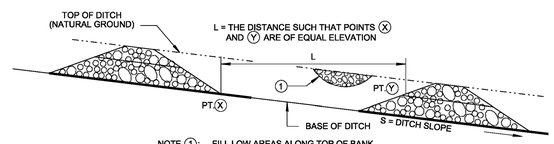
PLAN VIEW

DETAIL FOR V-DITCH



PLAN VIEW

DETAIL FOR TRAPEZOIDAL DITCH



NOTE 1: FILL LOW AREAS ALONG TOP OF BANK TO PREVENT BACKWATER FROM EXISTING DITCH

DETAIL FOR SPACING BETWEEN CHECK DAMS

ROCK CHECK DAM ESTIMATED QUANTITIES

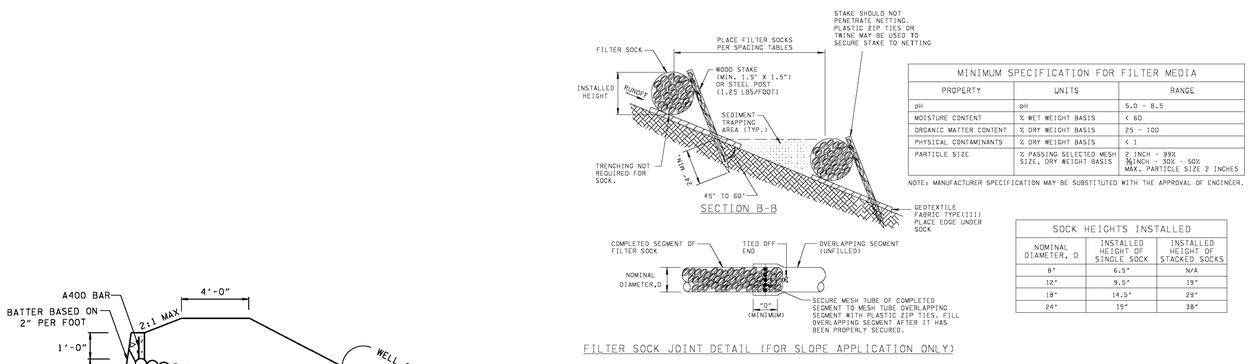
	2:1 DITCH SLOPE			3:1 DITCH SLOPE			4:1 DITCH SLOPE		
V-DITCH 2	HEIGHT FT	RIP RAP TON	GEOTEXTILE SF	HEIGHT FT	RIP RAP TON	GEOTEXTILE SF	HEIGHT FT	RIP RAP TON	GEOTEXTILE SF
	1.5	6.5	16.8	1.5	9.2	23.7	1.5	12.0	30.9
	2.0	13.0	24.6	2.0	18.4	34.8	2.0	24.1	45.4
	2.5	22.8	33.9	2.5	32.3	48.0	2.5	42.1	62.5
	3.0	36.5	44.7	3.0	51.7	63.2	3.0	67.3	82.5
TRAPEZOIDAL DITCH 3	HEIGHT FT	RIP RAP TON	GEOTEXTILE SF	HEIGHT FT	RIP RAP TON	GEOTEXTILE SF	HEIGHT FT	RIP RAP TON	GEOTEXTILE SF
	1.5	8.9	22.8	1.5	11.6	29.7	1.5	14.4	38.9
	2.0	16.9	31.9	2.0	22.3	42.1	2.0	27.9	52.7
	2.5	28.7	42.6	2.5	38.1	56.6	2.5	47.9	71.2
	3.0	44.7	54.7	3.0	59.8	73.2	3.0	75.5	92.4

2 ESTIMATED QUANTITIES BASED ON 4:1 SIDE SLOPES. QUANTITIES WILL VARY BASED ON ACTUAL DITCH CONFIGURATION.

3 ESTIMATED QUANTITIES BASED ON 4 FT BOTTOM WIDTH, AND 4:1 SIDE SLOPES. QUANTITIES WILL VARY BASED ON ACTUAL DITCH CONFIGURATION.

NOTE: REFER TO TDOT STANDARD DRAWING EC-STR-6 FOR ADDITIONAL INFORMATION.

CHECK DAM (CD)
NTS



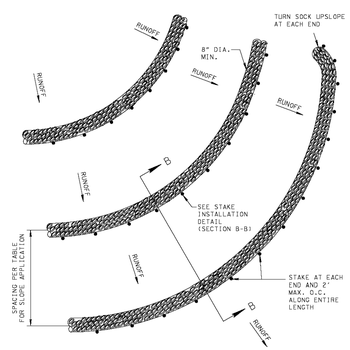
MINIMUM SPECIFICATION FOR FILTER MEDIA

PROPERTY	UNITS	RANGE
pH	pH	5.0 - 8.5
MOISTURE CONTENT	% WET WEIGHT BASIS	< 60
ORGANIC MATTER CONTENT	% DRY WEIGHT BASIS	25 - 100
PHYSICAL CONTAMINANTS	% DRY WEIGHT BASIS	< 1
PARTICLE SIZE	% PASSING SELECTED MESH SIZE, DRY WEIGHT BASIS	2 INCH - 99% ½INCH - 30% - 50% MAX. PARTICLE SIZE 2 INCHES

NOTE: MANUFACTURER SPECIFICATION MAY BE SUBSTITUTED WITH THE APPROVAL OF ENGINEER.

SOCK HEIGHTS INSTALLED

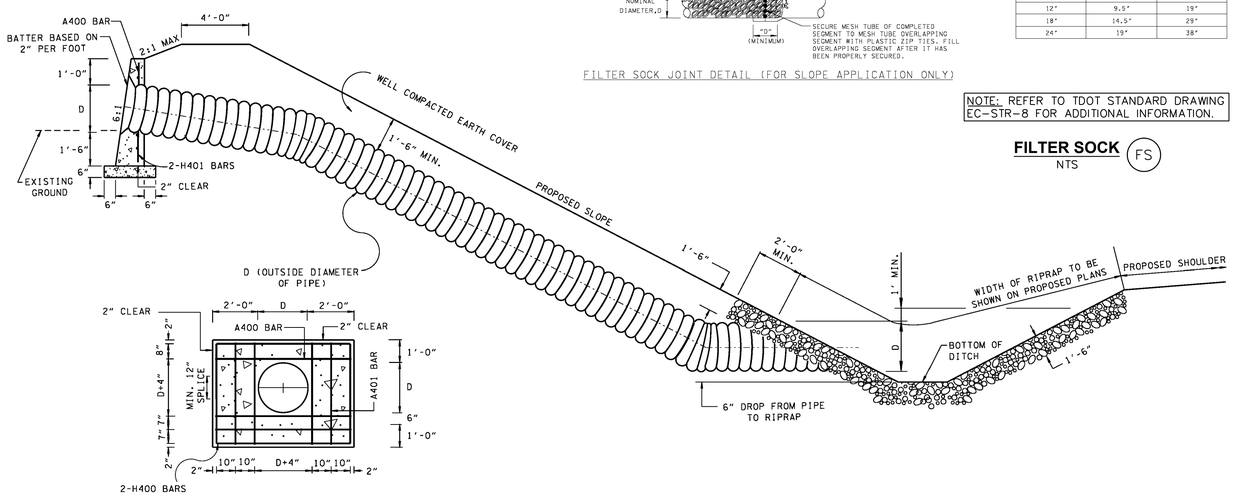
NOMINAL DIAMETER, D	INSTALLED HEIGHT OF SINGLE SOCK	INSTALLED HEIGHT OF STACKED SOCKS
8"	6.5"	N/A
12"	9.5"	19"
18"	14.5"	29"
24"	19"	38"



PLAN VIEW FOR SLOPE APPLICATION

NOTE: REFER TO TDOT STANDARD DRAWING EC-STR-8 FOR ADDITIONAL INFORMATION.

FILTER SOCK (FS)
NTS



FRONTAL ELEVATION VIEW FOR INLET HEADWALL FOR CASE I

NOTE: REFER TO TDOT STANDARD DRAWING EC-STR-29 FOR ADDITIONAL INFORMATION.

SLOPE DRAIN (DR)
NTS

Species	Rate (lb/acre)
Rye	120

Seeding dates
East .....Above 2500 feet: Feb. 15 - May 15
Below 2500 feet: Feb. 1- May 1
Middle ..... Jan. 1 - May 1
West ..... Dec. 1 - Apr. 15

Soil amendments
Follow recommendations of soil tests or apply 2,000 lb/acre ground agricultural limestone and 750 lb/acre 10-10-10 fertilizer.

Mulch
Apply 4,000 lb/acre straw. Anchor straw by tacking with asphalt, netting, or a mulch anchoring tool. A disk with blades set nearly straight can be used as a mulch anchoring tool.

Maintenance
Refertilize if growth is not fully adequate. Reseed, refertilize and mulch immediately following erosion or other damage.

Figure 7.8-1 Temporary Seeding Recommendation for Late Winter and Early Spring

Species	Rate (lb/acre)
Oats	60
Brown top millet	30

Seeding dates
East ..... May 15 - Aug. 15
Middle ..... May 1 - Aug. 15
West ..... Apr. 15 - Aug. 15

Soil amendments
Follow recommendations of soil tests or apply 2,000 lb/acre ground agricultural limestone and 750 lb/acre 10-10-10 fertilizer.

Mulch
Apply 4,000 lb/acre straw. Anchor straw by tacking with asphalt, netting, or a mulch anchoring tool. A disk with blades set nearly straight can be used as a mulch anchoring tool.

Maintenance
Refertilize if growth is not fully adequate. Reseed, refertilize and mulch immediately following erosion or other damage.

Figure 7.8-2 Temporary Seeding Recommendation for Summer

Species	Rate (lb/acre)
Oats	30
Winter wheat	30

Seeding dates
East ..... Aug 15 – Dec 15
Middle ..... Aug. 15 – Dec 30
West ..... Aug. 15 – Dec 30

Soil amendments
Follow recommendations of soil tests or apply 2,000 lb/acre ground agricultural limestone and 750 lb/acre 10-10-10 fertilizer.

Mulch
Apply 4,000 lb/acre straw. Anchor straw by tacking with asphalt, netting, or a mulch anchoring tool. A disk with blades set nearly straight can be used as a mulch anchoring tool.

Maintenance
Refertilize if growth is not fully adequate. Reseed, refertilize and mulch immediately following erosion or other damage. If necessary to extend temporary cover beyond June 15, overseed with 50 lb/ac crimson clover in late February or early March.

Figure 7.8-3 Temporary Seeding Recommendations for Fall

TEMPORARY SEEDING SCHEDULES (TS)
NTS

TABLE 7.9-1 PREFERRED SEED MIXES USING NATIVE OR NATURALIZED PLANTS AND PLANTING DATES (REGION III)

ZONE	BEST	MARGINAL	PREFERRED RATE/MIX (LB/AC PLS)
< 2500 FEET ELEVATION; STEEP SLOPES	AUG 15 - SEPT 1 MAR 1 - APR 1	SEPT 1 - SEPT 15 APR 1 - JUNE 10	15 BROWNTOP MILLET (NURSE CROP) 5 PURPLETOP 10 LITTLE BLUESTEM 10 INDIAN GRASS 2 BLACK-EYED SUSAN 0.5 MONARDA (BERGAMOT) 4 MARYLAND SENNA
< 2500 FEET ELEVATION; SHALLOW SOILS	AUG 15 - SEPT 1 MAR 1 - APR 1	SEPT 1 - SEPT 15 APR 1 - JUNE 10	15 BROWNTOP MILLET (NURSE CROP) 4 PURPLETOP 10 LITTLE BLUESTEM 10 BROOMSEDGE 2 PARTRIDGE PEA 2 BLACK-EYED SUSAN 0.5 MONARDA (BERGAMOT)
< 2500 FEET ELEVATION; MODERATE SLOPES	AUG 15 - SEPT 1 MAR 1 - APR 1	SEPT 1 - SEPT 15 APR 1 - JUNE 10	15 BROWNTOP MILLET (NURSE CROP) 4 PURPLETOP 10 LITTLE BLUESTEM 10 INDIAN GRASS 2 BLACK-EYED SUSAN 0.5 MONARDA (BERGAMOT) 4 MARYLAND SENNA
< 2500 FEET ELEVATION; HIGH MAINTENANCE	AUG 15 - SEPT 1 MAR 1 - APR 1	SEPT 1 - SEPT 15 APR 1 - JUNE 10	15 BROWNTOP MILLET (NURSE CROP) 45 RED FESCUE 45 HARD FESCUE 25 CHEWING FESCUE

TABLE 7.9-2 ALLOWABLE SEED MIXES AND PLANTING DATES (REGION III)

ZONE	BEST	MARGINAL	PREFERRED RATE/MIX (LB/AC PLS)
< 2500 FEET ELEVATION; STEEP SLOPES	AUG 15 - SEPT 1 MAR 1 - APR 1	JULY 25 - AUG 15 SEPT 1 - SEPT 15 APR 1 - MAY 10	100 KY 31 FESCUE 20 KOBE LESPEDEZA 10 KOREAN LESPEDEZA 5 REDTOP
< 2500 FEET ELEVATION; SHALLOW SOILS	AUG 15 - SEPT 1 MAR 1 - APR 1	JULY 25 - AUG 15 SEPT 1 - SEPT 15 APR 1 - MAY 10	40 KY 31 FESCUE 10 KOREAN LESPEDEZA 10 REDTOP 10 CROWN VETCH
< 2500 FEET ELEVATION; MODERATE SLOPES	AUG 15 - SEPT 1 MAR 1 - APR 1	JULY 25 - AUG 15 SEPT 1 - SEPT 15 APR 1 - MAY 10	60 KY 31 FESCUE 15 KOBE LESPEDEZA 15 KOREAN LESPEDEZA
< 2500 FEET ELEVATION; HIGH MAINTENANCE	AUG 15 - SEPT 1 MAR 1 - APR 1	JULY 25 - AUG 15 SEPT 1 - SEPT 15 APR 1 - MAY 10	200 KY 31 FESCUE

PERMANENT SEEDING SCHEDULES (PS)
NTS

AMT
A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
200 EAST MAIN STREET, SUITE 301
KINGSPORT, TN 37660
PHONE (423) 398-5550
EMAIL: AMT1@AMTENGINEERING.COM

CONSULTANTS

DONALD L. BUSSMAN REGISTERED ENGINEER TENNESSEE AGRICULTURE COMMERCE No. 116608 STATE OF TENNESSEE

NOT FOR CONSTRUCTION

SULLIVAN COUNTY SCHOOLS

SECONDARY ACCESS ROAD TO WEST RIDGE

SULLIVAN COUNTY BOARD OF EDUCATION
154 BLOUNTVILLE BYPASS
BLOUNTVILLE, TN 37617

PROJECT NUMBER: 030122(KD)

MARK	DATE	DESCRIPTION

FINAL PLANS

PROJECT NO:	18-0070.001
SCALE:	N/A
DESIGNED BY:	CER
DRAWN BY:	CER/DEC
CHECKED BY:	DEC

SHEET TITLE

EROSION & SEDIMENT CONTROL DETAILS

C8.8

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CITATIONS IN PARENTHESIS INDICATE SECTIONS OF THE CURRENT CGP (EFFECTIVE: 10/1/21).

1. SWPPP REQUIREMENTS (5.0)

1.1. HAS THE SWPPP NARRATIVE BEEN PREPARED BY AN INDIVIDUAL THAT HAS THE FOLLOWING CERTIFICATIONS (REQUIRED FOR SITES GREATER THAN 5 ACRES OF DISTURBANCE)? (5.2)

☐ NO

☒ YES (CHECK ALL THAT APPLIY BELOW)

1.1.1 ☒ REGISTERED ENGINEER OR LANDSCAPE ARCHITECT

1.1.2 ☐ CERTIFIED PROFESSIONAL IN EROSION AND SEDIMENT CONTROL (CPESC)

1.1.3 ☒ TDEC LEVEL II

1.2 DOES THE EPSC PLAN INVOLVE STRUCTURAL DESIGN, HYDRAULIC, HYDROLOGIC OR OTHER ENGINEERING CALCULATIONS FOR EPSC STRUCTURAL MEASURES (SEDIMENT BASINS, ETC.)? (5.2)

☒ YES ☐ NO

IF YES, HAVE THE EPSC PLANS BEEN PREPARED, STAMPED AND CERTIFIED BY A LICENSED PROFESSIONAL ENGINEER OR LANDSCAPE ARCHITECT?

☒ YES ☐ NO

1.3 DO THE PROJECT STORMWATER OUTFALLS DISCHARGE INTO THE FOLLOWING? (6.4.1)

YES ☐ NO ☒ (CHECK ALL THAT APPLY BELOW)

1.3.1 ☐ WATERS WITH UNAVAILABLE PARAMETERS (303d FOR SILTATION)

1.3.2 ☐ EXCEPTIONAL TENNESSEE WATERS

2. SITE DESCRIPTION (5.5.1)

2.1. PROJECT LIMITS (5.5.1.f): REFER TO EROSION PREVENTION AND SEDIMENT CONTROL PLAN SHEETS C8.0 TO C8.5.

2.2. PROJECT DESCRIPTION (5.5.1.a)

TITLE: SECONDARY ACCESS ROAD TO WEST RIDGE HIGH SCHOOL

COUNTY: SULLIVAN COUNTY

LOCATION: HENRY HARR ROAD, BLOUNTVILLE, TN

2.3. SITE MAP(S): REFER TO SWPPP SHEET C1.0 & C9.3.

2.4. DESCRIPTION OF EXISTING SITE TOPOGRAPHY (5.5.1.c): THE PROJECT AREA GENERALLY DRAINS TO THE NORTH AND WEST TOWARDS RUSSELL CREEK. RUSSELL CREEK FLOWS IN A NORTH TO SOUTH DIRECTION ALONG THE WESTERN LIMITS OF THE SUBJECT PROPERTY. ELEVATIONS WITHIN THE PROJECT AREA VARY FROM A LOW OF 1685 AT RUSSELL CREEK TO A HIGH OF 1822 ON THE SOUTH SIDE OF THE PROJECT.

2.5. MAJOR SOIL DISTURBING ACTIVITIES (5.5.1.a) (CHECK ALL THAT APPLY)

2.5.1 X CLEARING AND GRUBBING
2.5.2 X EXCAVATION
2.5.3 X CUTTING AND FILLING
2.5.4 X FINAL GRADING AND SHAPING
2.5.5 ☐ UTILITIES
2.5.6 X OTHER (DESCRIBE): STORMWATER MANAGEMENT DRY DETENTION POND

2.6 TOTAL PARCEL AREA (5.5.1.b): 90 ACRES

2.7 TOTAL AREA TO BE DISTURBED (5.5.1.b): 5.73 ACRES

HAS CONSTRUCTION PROJECT PHASING BEEN SPECIFIED IN SECTION 3 BELOW AND IN THE PLANS (REQUIRED FOR PROJECTS OF MORE THAN 50 ACRES)? (5.5.1.m)

☒ YES ☐ NO

2.8 ARE THERE ANY SEASONAL LIMITATIONS ON WORK? ☐ YES ☒ NO

IF YES, DESCRIBE AND LIST THE CORRESPONDING PLAN SHEET:

2.9 SOIL PROPERTIES (4.1.1)

SOIL PROPERTIES FOR THE PRIMARY SOILS ARE LISTED IN THE TABLE BELOW.

SOIL PROPERTIES			
PRIMARY SOIL NAME	HSG	% OF SITE	ERODIBILITY (k value)
COLLEGEDALE-ETOWAH COMPLEX (CeC2)	C	38%	0.37
MONTEVALLO CHANNERY SILT LOAM (MoF)	D	10%	N/A
STEADMAN SILTY CLAY LOAM (St)	C	52%	0.37

2.10 PROJECT RUNOFF COEFFICIENTS AND AREA PERCENTAGES

RUNOFF COEFFICIENTS FOR EXISTING CONDITIONS			
AREA TYPE	AREA (AC)	% OF PROJECT	RUNOFF COEFFICIENT
TURF	2.81	49%	0.30
FOREST	2.92	51%	0.25
WEIGHTED CURVE NUMBER OR C-FACTOR =			0.27

RUNOFF COEFFICIENTS FOR POST-CONSTRUCTION CONDITIONS			
AREA TYPE	AREA (AC)	% OF PROJECT	RUNOFF COEFFICIENT
IMPERVIOUS	2.29	40%	0.90
TURF	3.44	60%	0.30
WEIGHTED CURVE NUMBER OR C-FACTOR =			0.54

3. ORDER OF CONSTRUCTION ACTIVITIES (5.5.1.a) (5.5.2)

STAGE	DESCRIPTION
1	SEE PROPOSED PHASE 1 SEQUENCE OF CONSTRUCTION NOTES ON PLAN SHEETS C8.0 AND C8.1.
2	SEE PROPOSED PHASE 2 SEQUENCE OF CONSTRUCTION NOTES ON PLAN SHEETS C8.2 AND C8.3.
3	SEE PROPOSED PHASE 3 SEQUENCE OF CONSTRUCTION NOTES ON PLAN SHEETS C8.4 AND C8.5.

3.1 PERFORM CLEARING AND GRUBBING NOT MORE THAN 14 DAYS PRIOR TO GRADING OR EARTH-MOVING ACTIVITIES UNLESS THE AREA IS SUBSEQUENTLY TEMPORARILY OR PERMANENTLY STABILIZED. (5.5.3.1.f)

3.2 STABILIZE ALL DISTURBED AREAS WITHIN 14 DAYS OF COMPLETING ANY PHASE OF ACTIVITY. STEEP SLOPES SHALL BE STABILIZED WITHIN 7 DAYS. (5.5.3.4)

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

4.1 STREAM INFORMATION

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

4.1.1 STREAM INFORMATION

4.1.1.1 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 (5.5.1.h). REFER TO THE LIST OF APPLICABLE ENVIRONMENTAL PERMITS AT THE END OF THIS SWPPP. ALL PERMITS WILL BE MAINTAINED ON SITE IN THE "DOCUMENTATION AND PERMITS" BINDER.

4.1.1.2 RECEIVING STREAMS (5.5.1.i/j/k)

RECEIVING STREAM INFORMATION			
NATURAL RESOURCE LABEL	NAME OF RECEIVING NATURAL RESOURCE	UNAVAILABLE PARAMETERS FOR SILTATION (YES OR NO)	EXCEPTIONAL TENNESSEE WATERS (YES OR NO)
STR-1	RUSSELL CREEK	NO	NO

4.1.2 ARE BUFFER ZONES REQUIRED? (4.1.2) (5.5.1.l) ☒ YES ☐ NO

IF YES, THEY HAVE BEEN INCLUDED ON PLAN SHEET(S): C8.0 TO C8.5

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

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

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

4.1.3 ARE THERE BUFFER ZONE EXEMPTIONS?

☒ YES ☐ NO

4.2 OUTFALL INFORMATION

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

4.2.1 OF TEN ACRES OR MORE FOR AN OUTFALL(S) THAT DOES NOT DISCHARGE TO WATERS WITH UNAVAILABLE PARAMETERS FOR SILTATION OR EXCEPTIONAL TENNESSEE WATERS (5.5.3.5)

4.2.2 OF FIVE ACRES OR MORE FOR AN OUTFALL(S) THAT DISCHARGES TO WATERS WITH UNAVAILABLE PARAMETERS FOR SILTATION OR EXCEPTIONAL TENNESSEE WATERS (6.4.1.e).

4.2.3 OUTFALL SUMMARY TABLE

OUTFALL INFORMATION					
OUTFALL LABEL	SLOPE (%)	DRAINAGE AREA (AC)	SEDIMENT BASIN OR EQUIVALENT MEASURE(S) (YES, NO, OR N/A)	SUB-OUTFALL (e.g. A, B, C)†	RECEIVING NATURAL RESOURCE NAME OR LABEL
OUT-1	9%-50%	2.00	N/A	N/A	RUSSELL CREEK
OUT-2	20%-50%	0.08	N/A	N/A	RUSSELL CREEK
OUT-3	25%-50%	0.11	N/A	N/A	RUSSELL CREEK
OUT-4	20%-50%	0.05	N/A	N/A	RUSSELL CREEK
OUT-5	8%-50%	7.84*	N/A	N/A	RUSSELL CREEK

*NOTE: INCLUDES 3.65 AC OF OFF-SITE RUN-ON THAT IS DIVERTED THROUGH THE PROJECT SO AS TO NOT FLOW OVER DISTURBED AREAS.

†NOTE: SUB-OUTFALLS ARE DEFINED AS OUTFALLS THAT DISCHARGE WITHIN THE PROJECT AND DO NOT DIRECTLY DISCHARGE OFF ROW OR INTO WATERS OF THE STATE.

4.2.4 WHERE POSSIBLE, HAS NON-PROJECT RUN-ON BEEN DIVERTED THROUGH THE PROJECT SO THAT THE OFF-SITE RUN-ON WILL NOT FLOW OVER DISTURBED AREAS WITHIN THE ROW, THUS SEPARATING NON-PROJECT RUN-OFF FROM PROJECT RUN-OFF THEREBY REDUCING THE DRAINAGE AREA TO ANY ONE OUTFALL? ☒ YES ☐ NO

4.2.5 ARE EQUIVALENT MEASURES BEING SUBSTITUTED FOR A SEDIMENT BASIN(S)?

☐ YES ☒ NO

4.2.6 HAVE ALL OUTFALLS BEEN LABELED ON THE EPSC PLAN SHEETS?

☒ YES ☐ NO

4.2.7 HAVE ALL OUTFALLS BEEN LABELED ON A USGS TOPOGRAPHIC MAP INCLUDED IN THE "DOCUMENTATION AND PERMITS" BINDER (3.2.2)? ☒ YES ☐ NO

4.3 WETLAND INFORMATION

WILL CONSTRUCTION AND/OR EROSION AND SEDIMENT CONTROLS IMPACT ANY WETLANDS?

☒ YES ☐ NO

4.4 TOTAL MAXIMUM DAILY LOADS (TMDL) INFORMATION (1.3.j)

4.4.1 IS THIS PROJECT LOCATED IN A WATERSHED THAT MAINTAINS AN EPA APPROVED TMDL FOR SILTATION?

☒ YES ☐ NO

4.4.2 IF YES, IS THIS PROJECT LOCATED WITHIN A SUBWATERSHED WITH A WASTE LOAD ALLOCATION (WLA)? ☐ YES ☒ NO

4.4.3 IF YES, DOES THE PROJECT HAVE A DIRECT DISCHARGE TO A 303(d) LISTED STREAM FOR SILTATION? ☐ YES ☐ NO ☒ N/A

4.4.4 IF YES, HAS A SUMMARY OF THE CONSULTATION (LETTER) BEEN INCLUDED WITH THE SWPPP DOCUMENTATION?

☐ YES ☐ NO ☒ N/A

4.5 ECOLOGY INFORMATION (1.3.h)

ARE THERE STATE OR FEDERALLY LISTED SPECIES LOCATED WITHIN THE PROJECT AREA? SPECIAL NOTES ARE REQUIRED TO DESCRIBE MEASURES NECESSARY TO PREVENT "TAKING" OF LEGALLY PROTECTED STATE OR FEDERALLY LISTED THREATENED OR ENDANGERED AQUATIC FAUNA AND/OR CRITICAL HABITAT.

☐ YES ☒ NO ☐ NO NOTES REQUIRED

IF YES, LIST ALL PLAN SHEETS WHERE SPECIAL NOTES HAVE BEEN ADDED:

5. EROSION PREVENTION AND SEDIMENT CONTROL (EPSC) MEASURES (5.5.3)

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 ACCORDING TO THE SIZE AND SLOPE OF THE DISTURBED DRAINAGE AREA? (5.5.3.5)

☒ YES ☐ NO

5.4 THE CONTROL MEASURES HAVE, AT A MINIMUM, BEEN DESIGNED FOR THE 2-YEAR AND/OR 5-YEAR, 24 HOUR STORM EVENT AS REQUIRED. (5.5.3.5) (6.4.1.b)

5.5 ARE THE LIMITS OF DISTURBANCE CLEARLY MARKED ON THE EPSC PLANS?

☒ YES ☐ NO

5.6 HAVE PHASED EPSC PLANS BEEN PREPARED FOR THE PROJECT? (5.5.3.2)

☒ YES ☐ NO

5.7 IS ADDITIONAL PHYSICAL OR CHEMICAL TREATMENT OF STORMWATER RUNOFF NECESSARY? (5.5.3.5) ☐ YES ☒ NO

5.8 HAVE STEEP SLOPES (GREATER THAN 35%) BEEN MINIMALLY DISTURBED AND/OR PROTECTED BY CONVEYING RUNOFF NON-EROSIVELY AROUND OR OVER THE SLOPE? (5.5.3.4)

☒ YES ☐ NO

5.9 ALL PHYSICAL AND/OR CHEMICAL TREATMENT WILL BE RESEARCHED, APPLIED IN ACCORDANCE WITH MANUFACTURE'S GUIDELINES AMD FULLY DESCRIBED ON THE EPSC PLANS. (5.5.3.5)

5.10 ALL EPSC CONTROL MEASURES WILL BE INSTALLED ACCORDING TO REFERENCED STANDARDS.

5.11 EPSC MEASURES WILL NOT BE INSTALLED IN A STREAM WITHOUT FIRST OBTAINING US COE SECTION 404, TDEC ARAP, AND/OR TVA PERMITS. (5.5.3.4)

5.12 DISCHARGES FROM DEWATERING ACTIVITIES ARE PROHIBITED UNLESS MANAGED BY CONTROLS PROVIDING EQUIVALENT LEVEL OF TREATMENT (FILTRATION). (4.1.3)

5.13 DISCHARGES FROM SEDIMENT BASINS AND IMPOUNDMENTS MUST USE OUTLET STRUCTURES THAT ONLY WITHDRAW WATER FROM NEAR THE SURFACE OF THE BASIN OR IMPOUNDMENT, UNLESS INFEASIBLE. (5.5.3.5)

5.14 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 OR PERMANENT COVER IS INSTALLED. (5.5.3.1.f)

5.15 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. (5.5.3.4)

5.16 STEEP SLOPES (5.5.3.4)

STEEP SLOPES ARE DEFINED AS A NATURAL OR CREATED SLOPE OF 35% GRADE OR STEEPER REGARDLESS OF HEIGHT. STEEP SLOPES SHALL BE TEMPORARILY STABILIZED NOT LATER THAN 7 DAYS AFTER CONSTRUCTION ACTIVITY ON THE SLOPE HAS TEMPORARILY OR PERMANENTLY CEASED.

6. CONSTRUCTION SUPPORT ACTIVITIES – BORROW AND WASTE AREAS (1.2.2)(5.5.3.1.e)

WASTE MATERIAL (EARTH, ROCK, ASPHALT, CONCRETE, ETC) NOT REQUIRED FOR THE CONSTRUCTION OF THE PROJECT WILL BE DISPOSED OF BY THE CONTRACTOR. 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.

7. MAINTENANCE AND INSPECTION

7.1 INSPECTION PRACTICES (5.5.3.9)

7.1.1 INSPECTORS MUST HAVE SUCCESSFULLY COMPLETED THE TDEC FUNDAMENTALS OF EROSION AND SEDIMENT CONTROL COURSE (TDEC LEVEL I) AND MAINTAIN THE CERTIFICATION. A COPY OF THE INSPECTOR'S CERTIFICATION SHOULD BE KEPT ON SITE. (5.5.3.10)

7.1.2 INSPECTIONS WILL BE CONDUCTED AT LEAST TWICE EVERY CALENDAR WEEK AND AT LEAST 72 HOURS APART. (5.5.3.11.a)

7.1.3 THE FREQUENCY OF EPSC INSPECTIONS MAY BE REDUCED TO ONCE A MONTH (I.E. EXTREME DROUGHT CONDITIONS, FROZEN GROUND, ETC.). WRITTEN JUSTIFICATION MUST BE INCLUDED IN THE RECORDS KEPT ON SITE. (5.5.3.11.a)

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CONSULTANTS

NOT FOR CONSTRUCTION

SULLIVAN COUNTY SCHOOLS

SECONDARY ACCESS ROAD TO WEST RIDGE

SULLIVAN COUNTY BOARD OF EDUCATION
154 BLOUNTVILLE BYPASS
BLOUNTVILLE, TN 37617

PROJECT NUMBER: 030122(KD)

MARK	DATE	DESCRIPTION

FINAL PLANS

PROJECT NO:	18-0070.001
SCALE:	N.T.S.
DESIGNED BY:	CER
DRAWN BY:	CER/DEC
CHECKED BY:	DEC

SHEET TITLE

STORMWATER POLLUTION PREVENTION PLAN

C9.0

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7.1.4 ALL DISTURBED AREAS OF THE SITE THAT HAVE NOT BEEN PERMANENTLY 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. (5.5.3.11.b)

7.1.5 THE INSPECTOR WILL OVERSEE THE REQUIREMENTS OF OTHER CONSTRUCTION-RELATED WATER QUALITY PERMITS (I.E. TDEC ARAP, US COE AND TVA SECTION 26a PERMITS) FOR CONSTRUCTION ACTIVITIES AROUND WATERS OF THE STATE.

7.1.6 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. (5.5.3.11.e/f)

7.1.7 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") (5.5.1.m)

7.1.8 INSPECTIONS WILL BE DOCUMENTED ON THE CONSTRUCTION STORMWATER INSPECTION CERTIFICATION FORM PROVIDED IN APPENDIX C OF THE CGP AND INCLUDE THE SCOPE OF THE INSPECTION, NAME(S), TITLE AND TN EPSC CERTIFICATION NUMBER OF PERSONNEL MAKING THE INSPECTION, THE DATE(S) OF THE INSPECTION, CURRENT APPROXIMATE DISTURBED ACREAGE AT TIME OF INSPECTION, CHECKLIST (NOC, SWPPP, RAIN GAUGE, SITE CONTACT INFORMATION, ETC.) AND MAJOR OBSERVATIONS RELATING TO THE IMPLEMENTATION OF THE SWPPP. (5.5.3.11.g)

7.1.9 DOCUMENTATION OF INSPECTIONS WILL BE MAINTAINED ON SITE IN THE "DOCUMENTATION AND PERMITS" BINDER.

7.1.10 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. (5.5.3.11.a)

7.1.11 TRAINED CERTIFIED INSPECTORS SHALL COMPLETE INSPECTION DOCUMENTATION 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. (5.5.3.11.h)

7.2 DULY AUTHORIZED REPRESENTATIVE (8.7.3)

THE PROJECT SUPERVISOR/CONTRACTOR MAY DELEGATE AN INDIVIDUAL AND/OR CONSULTANT TO SIGN EPSC INSPECTIONS REPORTS. FOR SATISFYING SIGNATORY REQUIREMENTS FOR EPSC INSPECTION REPORTS, THE PROJECT SUPERVISOR/CONTRACTOR AND DULY AUTHORIZED INDIVIDUAL ACCEPTING RESPONSIBILITY MUST SUBMIT WRITTEN AUTHORIZATION TO THE LOCAL TDEC EFO.

7.3 MAINTENANCE PRACTICES (5.5.3.1)

7.3.1 ALL CONTROLS WILL BE MAINTAINED IN GOOD AND EFFECTIVE OPERATING ORDER. NECESSARY REPAIRS OR MAINTENANCE WILL BE ACCOMPLISHED BEFORE THE NEXT STORM EVENT AND IN NO CASE MORE THAN 7 DAYS AFTER THE NEED IS IDENTIFIED. IN A CASE WHERE THE ACTIVITY IS DEEMED IMPRACTICABLE, ANY SUCH CONDITIONS WILL BE DOCUMENTED (5.5.3.11.e).

7.3.2 ALL CONTROLS WILL BE MAINTAINED IN ACCORDANCE WITH STANDARD DRAWINGS AND GOOD ENGINEERING PRACTICES. (5.5.3.1.b)

7.3.3 SEDIMENT WILL BE REMOVED FROM SEDIMENT TRAPS, SILT FENCE, SEDIMENT BASINS, AND OTHER CONTROLS WHEN THE DESIGN CAPACITY HAS BEEN REDUCED BY 50%. (5.5.3.1.d)

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

7.3.5 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 OF 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. (5.5.3.7.a)

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

7.3.7 THE PROJECT SUPERVISOR OR THEIR DESIGNEE AND THE CONTRACTOR'S SITE SUPERINTENDENT ARE RESPONSIBLE FOR INSPECTIONS. MAINTENANCE AND REPAIR ACTIVITIES ARE THE RESPONSIBILITY OF THE CONTRACTOR. THE PROJECT SUPERVISOR OR THEIR DESIGNEE WILL COMPLETE THE INSPECTION REPORTS AND DISTRIBUTE COPIES PER THE CONTRACT.

8. SITE ASSESSMENTS (5.5.3.8)

QUALITY ASSURANCE SITE ASSESSMENTS OF EROSION PREVENTION AND SEDIMENT CONTROLS REQUIRED:

☐ YES ☒ NO

9. STORMWATER MANAGEMENT (5.5.3.6)

9.1 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 SHOWN ON THE PLANS AND NOTED AS PERMANENT.

9.2 DESCRIBE ANY SPECIFIC POST-CONSTRUCTION MEASURES THAT WILL CONTROL VELOCITY, POLLUTANTS, AND/OR EROSION (5.5.3.6.c): LINED DRAINAGE DITCHES, SLOPE DRAIN, RIP-RAP OUTLET PROTECTION, DRY DETENTION POND AND STORMWATER PIPING SYSTEM.

9.3 OTHER ITEMS NEEDING CONTROL (5.5.3.7)

9.3.1 CONSTRUCTION MATERIALS

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

9.3.1.1 X LUMBER, GUARDRAIL
9.3.1.2 X CONCRETE WASHOUT
9.3.1.3 X CONCRETE AND PVC PIPE
9.3.1.4 X MINERAL AGGREGATE, ASPHALT
9.3.1.5 X EARTH
9.3.1.6 X LIQUID TRAFFIC STRIPING MATERIALS
9.3.1.7 X ROCK
9.3.1.8 X CURING COMPOUNDS
9.3.1.9 X EXPLOSIVES
9.3.1.10 ☐ OTHER

THESE MATERIALS WILL BE HANDLED AS NOTED IN THIS SWPPP.

9.3.2 WASTE MATERIALS (5.5.3.7.c)

WASTE MATERIAL (EARTH, ROCK, ASPHALT, CONCRETE, ETC.) NOT REQUIRED FOR THE CONSTRUCTION OF THE PROJECT WILL BE DISPOSED OF BY THE CONTRACTOR. 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.

9.3.3 HAZARDOUS WASTE (8.8)

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 ANY AND ALL NECESSARY PERMITS TO DISPOSE OF HAZARDOUS MATERIAL.

9.3.4 SANITARY WASTE (5.5.3.7.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 ANY AND ALL NECESSARY PERMITS TO DISPOSE OF SANITARY WASTE.

9.3.5 OTHER MATERIALS

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

9.3.5.1 X FERTILIZERS AND LIME
9.3.5.2 ☐ PESTICIDES AND/OR HERBICIDES
9.3.5.3 X DIESEL AND GASOLINE
9.3.5.4 X MACHINERY LUBRICANTS

THESE MATERIALS WILL BE HANDLED AS NOTED IN THIS SWPPP.

10. NON-STORMWATER DISCHARGES (5.5.3.12)

10.1 THE FOLLOWING NON-STORMWATER DISCHARGES ARE ANTICIPATED DURING THE COURSE OF THIS PROJECT (CHECK ALL THAT APPLY):

10.1.1 X DEWATERING OF WORK AREAS OF COLLECTED STORMWATER AND GROUND WATER

10.1.2 X 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 SITE

10.1.3 X WATER USED TO CONTROL DUST (5.5.3.1.j)

10.1.4 ☐ POTABLE WATER SOURCES INCLUDING WATERLINE FLUSHINGS FROM WHICH CHLORINE HAS BEEN REMOVED TO THE MAXIMUM EXTENT PRACTICABLE

10.1.5 X UNCONTAMINATED GROUNDWATER OR SPRING WATER

10.1.6 ☐ FOUNDATION OR FOOTING DRAINS WHERE FLOWS ARE NOT CONTAMINATED WITH POLLUTANTS

10.1.7 ☐ OTHER

10.2 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.

10.3 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.

10.4 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.

10.5 ARE ANY DISCHARGES ASSOCIATED WITH INDUSTRIAL (NON-CONSTRUCTION STORMWATER) ACTIVITY EXPECTED (5.5.1.g)?

☐ YES ☒ NO

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

11. SPILL PREVENTION, MANAGEMENT AND NOTIFICATION (4.1.4)(5.5.3.7.c)(6.1)

11.1 SPILL PREVENTION (5.5.3.7.c)

11.1.1 MATERIAL MANAGEMENT

11.1.1.1 HOUSEKEEPING

ONLY PRODUCTS NEEDED 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.

11.1.1.2 HAZARDOUS MATERIALS

PRODUCTS WILL BE KEPT IN ORIGINAL CONTAINERS UNLESS THE CONTAINER IS NOT RESEALABLE. 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, DEGREASING 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.

11.1.1.3 PRODUCT SPECIFIC PRACTICES

11.1.1.3.1 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.

11.1.1.3.2 FERTILIZERS: FERTILIZERS WILL BE APPLIED ONLY IN THE AMOUNTS SPECIFIED BY THE MANUFACTURER. 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.

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

11.1.1.3.4 CONCRETE TRUCKS: CONTRACTORS WILL PROVIDE DESIGNATED TRUCK WASHOUT AREAS ON THE SITE. THESE AREAS MUST BE SELF CONTAINED AND NOT CONNECTED TO ANY STORMWATER OUTLET OF THE SITE. UPON COMPLETION OF CONSTRUCTION WASHOUT AREAS WILL BE PROPERLY STABILIZED.

11.2 SPILL MANAGEMENT (5.5.3.7.c)

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

11.2.2 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.

11.2.3 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.

11.2.4 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.

11.2.5 THE CONTRACTOR'S SITE SUPERINTENDENT 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.

11.2.6 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.

11.2.7 IF 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.

11.2.8 IF A SPILL OCCURS THE CONTRACTOR WILL BE RESPONSIBLE FOR COMPLETING THE SPILL REPORTING FORM.

11.2.9 SPILL RESPONSE EQUIPMENT WILL BE INSPECTED AND MAINTAINED BY THE CONTRACTOR AS NECESSARY TO REPLACE ANY MATERIALS USED IN SPILL RESPONSE ACTIVITIES.

11.3 SPILL NOTIFICATION (6.1)

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

11.3.1 A WRITTEN DESCRIPTION OF THE RELEASE, DATE OF RELEASE AND

11.3.2 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.

11.3.3 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.

12. RECORD-KEEPING

12.1 REQUIRED RECORDS

CONTRACTOR OR THEIR DESIGNEE WILL MAINTAIN AT THE SITE THE FOLLOWING RECORDS OF CONSTRUCTION ACTIVITIES (7.2):

12.1.1 THE DATES WHEN MAJOR GRADING ACTIVITIES OCCUR

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

12.1.3 THE DATES WHEN STABILIZATION MEASURES ARE INITIATED

12.1.4 RECORDS OF TWICE WEEKLY EPSC INSPECTION REPORTS AND CORRECTIVE MEASURES

12.1.5 RECORDS OF QUALITY ASSURANCE SITE ASSESSMENTS

12.1.6 COPY OF SITE EPSC INSPECTOR'S TDEC LEVEL 1 CERTIFICATION

12.1.7 RAINFALL MONITORING PLAN (7.2.1)

12.1.7.1 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 BEPERMANENTLY 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.

12.1.7.2 LOCATION

THE RAIN GAUGE WILL BE LOCATED AT THE PROJECT SITE, IN AN OPEN AREA SUCH THAT THE MEASUREMENT WILL NOT BE INFLUENCED BY OUTSIDE FACTORS (I.E. OVERHANGS, GUTTER, TREES, ETC). ALTERNATIVELY, A REFERENCE SITE MAY BE USED. A REFERENCE SITE IS THE DOCUMENTATION FROM THE CLOSEST GAUGE WITHIN PROXIMITY OF

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NOT FOR CONSTRUCTION

SULLIVAN COUNTY SCHOOLS

SECONDARY ACCESS ROAD TO WEST RIDGE

SULLIVAN COUNTY BOARD OF EDUCATION
154 BLOUNTVILLE BYPASS
BLOUNTVILLE, TN 37617

PROJECT NUMBER: 030122(KD)

MARK	DATE	DESCRIPTION

FINAL PLANS

PROJECT NO:	18-0070.001
SCALE:	N.T.S.
DESIGNED BY:	CER
DRAWN BY:	CER/DEC
CHECKED BY:	DEC

SHEET TITLE

STORMWATER POLLUTION PREVENTION PLAN

C9.1

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THE PROJECT FROM A RECOGNIZED SOURCE SUCH AS THE NOAA NATIONAL WEATHER SERVICE.

12.1.7.3 METHODS

12.1.7.3.1 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 NONOPERATIONAL OR MISSING.

12.1.7.3.2 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.

12.1.7.3.3 DETAILED RECORDS WILL BE RECORDED OF RAINFALL EVENTS INCLUDING DATES, AMOUNTS OF RAINFALL, AND THE APPROXIMATE DURATION (OR THE STARTING AND ENDING TIMES).

12.1.7.3.4 IF, IN THE EVENT THAT 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.

12.1.7.3.5 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.

12.2 KEEPING PLANS CURRENT (5.4)

CONTRACTOR OR THEIR DESIGNEE WILL MODIFY AND UPDATE THE SWPPP WHEN ANY OF THE FOLLOWING CONDITIONS APPLY:

12.2.1 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;

12.2.2 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;

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

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

12.2.5 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; OR

12.2.6 WHEN A TMDL IS DEVELOPED FOR THE RECEIVING WATERS FOR A POLLUTANT OF CONCERN (SILTATION)

12.3 MAKING PLANS ACCESSIBLE

12.3.1 CONTRACTOR 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. CONTRACTOR WILL HAVE A COPY OF THE SWPPP AVAILABLE AT THE LOCATION WHERE WORK IS OCCURRING ONSITE FOR THE USE OF OPERATORS AND THOSE IDENTIFIED AS HAVING RESPONSIBILITIES UNDER THE SWPPP WHENEVER THEY ARE ON THE CONSTRUCTION SITE. (7.2)

12.3.2 PRIOR TO THE INITIATION OF LAND DISTURBING ACTIVITIES AND UNTIL THE SITE HAS MET THE FINAL STABILIZATION CRITERIA, CONTRACTOR OR THEIR DESIGNEE WILL POST A NOTICE NEAR THE MAIN ENTRANCE OF THE CONSTRUCTION SITE WITH THE FOLLOWING INFORMATION (7.2.1):

12.3.2.1 COPY OF THE NOTICE OF COVERAGE (NOC) WITH THE NPDES PERMIT NUMBER FOR THE PROJECT;

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

12.3.2.3 A BRIEF DESCRIPTION OF THE PROJECT; AND

12.3.2.4 THE LOCATION OF THE SWPPP.

12.3.3. ALL INFORMATION DESCRIBED IN SECTION 12.3.2 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.

12.4 NOTICE OF TERMINATION (9.0)

12.4.1 WHEN ALL STORMWATER DISCHARGES FROM CONSTRUCTION ACTIVITIES THAT ARE AUTHORIZED BY THE PERMIT ARE ELIMINATED BY FINAL STABILIZATION, CONTRACTOR WILL SUBMIT A NOTICE OF TERMINATION (NOT) THAT IS SIGNED IN ACCORDANCE WITH THE PERMIT TO THE LOCAL ENVIRONMENTAL FIELD OFFICE.

12.4.2 FOR THE PURPOSES OF THE CERTIFICATION REQUIRED BY THE NOT, THE ELIMINATION OF STORMWATER DISCHARGES ASSOCIATED WITH THE CONSTRUCTION ACTIVITY MEANS THE FOLLOWING:

12.4.2.1 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

12.4.2.2 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

12.4.2.3 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

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

12.4.2.5 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

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

12.4.2.7 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.

12.5 RETENTION OF RECORDS (7.1)

THE PERMITTEE 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.

13. PRIMARY PERMITTEE (OWNER/DEVELOPER) CERTIFICATION (8.7.5)

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.

AUTHORIZED PERSONNEL SIGNATURE (8.7.1)

CHARLES CARTER

PRINTED NAME

DIRECTOR OF SCHOOLS

TITLE

DATE

14. SECONDARY PERMITTEE (CONTRACTOR) CERTIFICATION (8.7.6)

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 ON-SITE 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 PERSONNEL SIGNATURE (8.7.1)

PRINTED NAME

TITLE

DATE

15. ENVIRONMENTAL PERMITS

LIST ALL ENVIRONMENTAL PERMITS AND EXPIRATION DATES FOR PROJECT

ENVIRONMENTAL PERMITS			
PERMIT	YES OR NO	PERMIT OR TRACKING NO.	EXPIRATION DATE
TDEC ARAP	YES	NR2306.004	
CORPS OF ENGINEERS (COE)	NO		
TVA 26A	NO		
TDEC CGP	YES	TNR161923	
OTHER	YES	N/A	

NOTE: THE ADDITIONAL SECONDARY PERMITTEE CERTIFICATIONS BELOW ARE TO BE USED ON AN AS-NEEDED BASIS.

SECONDARY PERMITTEE (CONTRACTOR) CERTIFICATION (8.7.6)

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DONALD J. RISSMEYER
REGISTERED ENGINEER
AGRICULTURE COMMERCE
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SECONDARY ACCESS ROAD TO WEST RIDGE

SULLIVAN COUNTY BOARD OF EDUCATION
154 BLOUNTVILLE BYPASS
BLOUNTVILLE, TN 37617

PROJECT NUMBER: 030122(KD)

MARK	DATE	DESCRIPTION

FINAL PLANS

PROJECT NO:	18-0070.001
SCALE:	N.T.S.
DESIGNED BY:	CER
DRAWN BY:	CER/DEC
CHECKED BY:	DEC

SHEET TITLE

STORMWATER POLLUTION PREVENTION PLAN

C9.2

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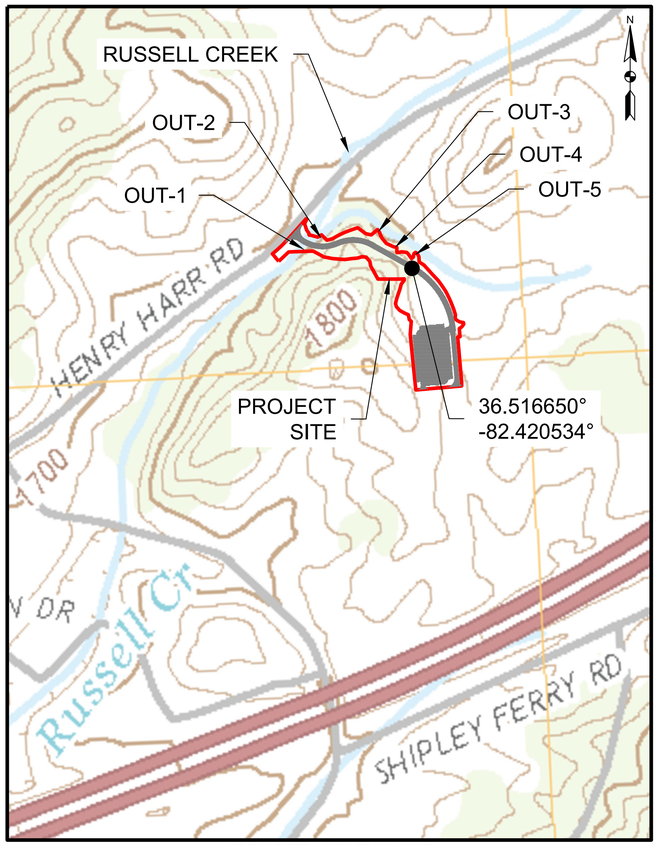
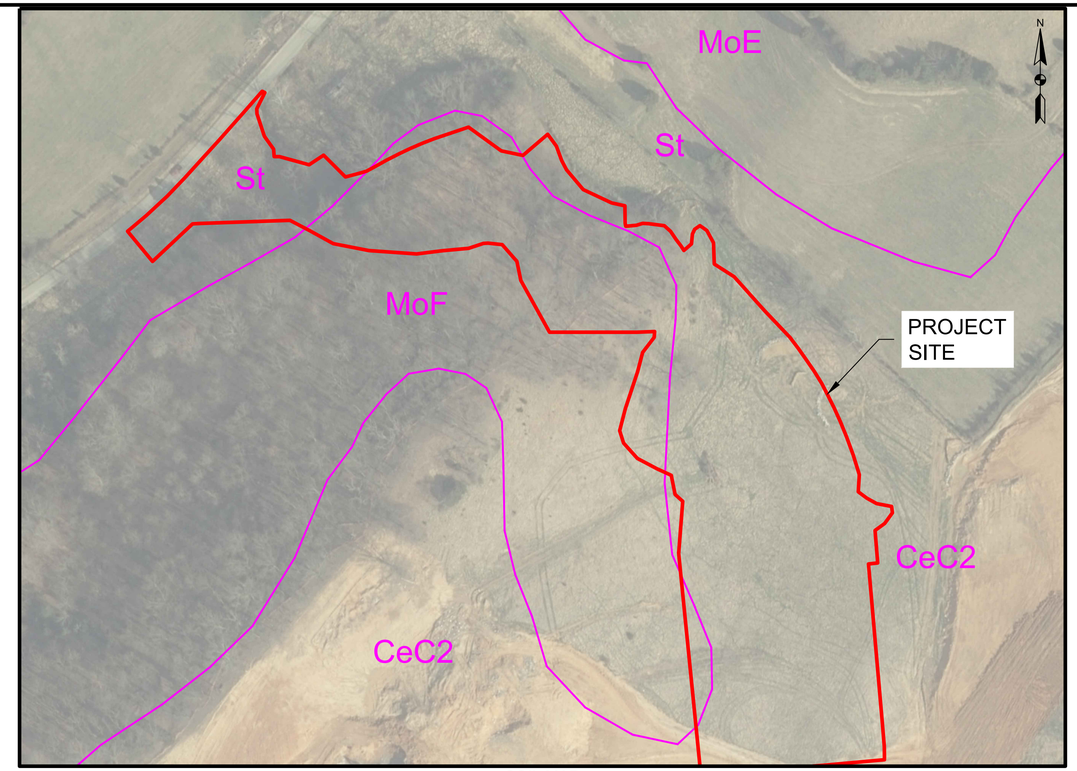
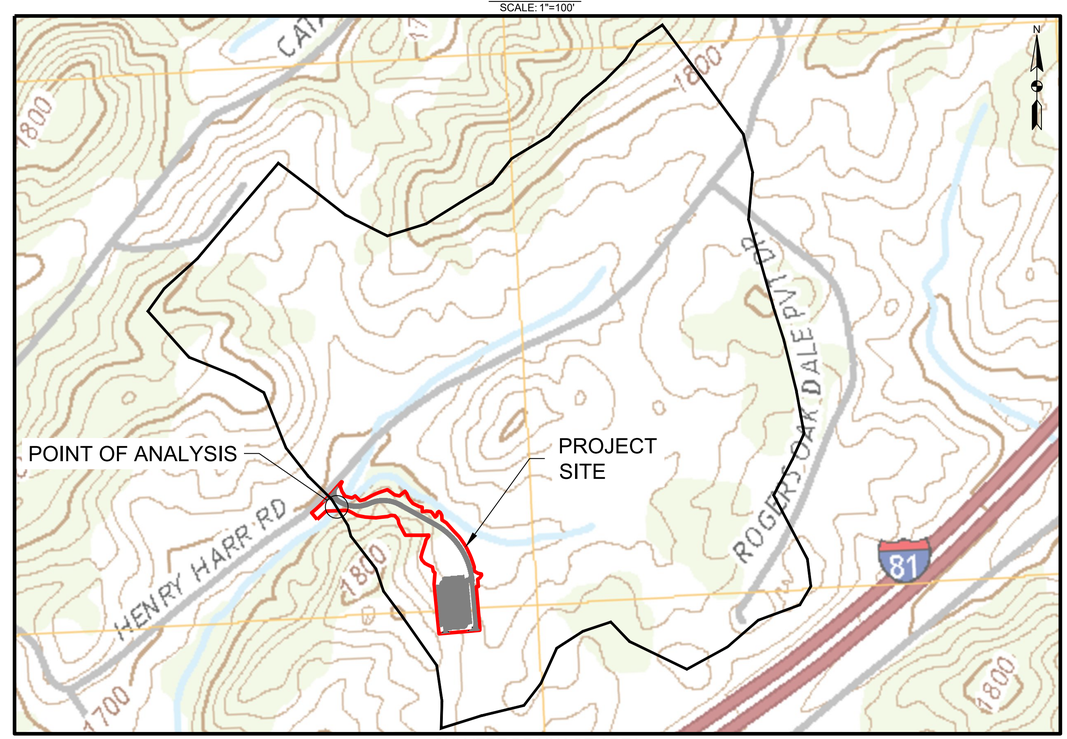


USGS SITE LOCATION MAP
SCALE: 1"=400'



SOIL MAP
SCALE: 1"=100'



CULVERT DRAINAGE AREA
SCALE: 1"=450'

NOTE: SEE SHEETS C9.4, C9.5 AND C9.6 FOR POINT OF ANALYSIS STORMWATER RUNOFF ANALYSIS

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SHEET TITLE

DRAINAGE AREA MAPS

C9.3

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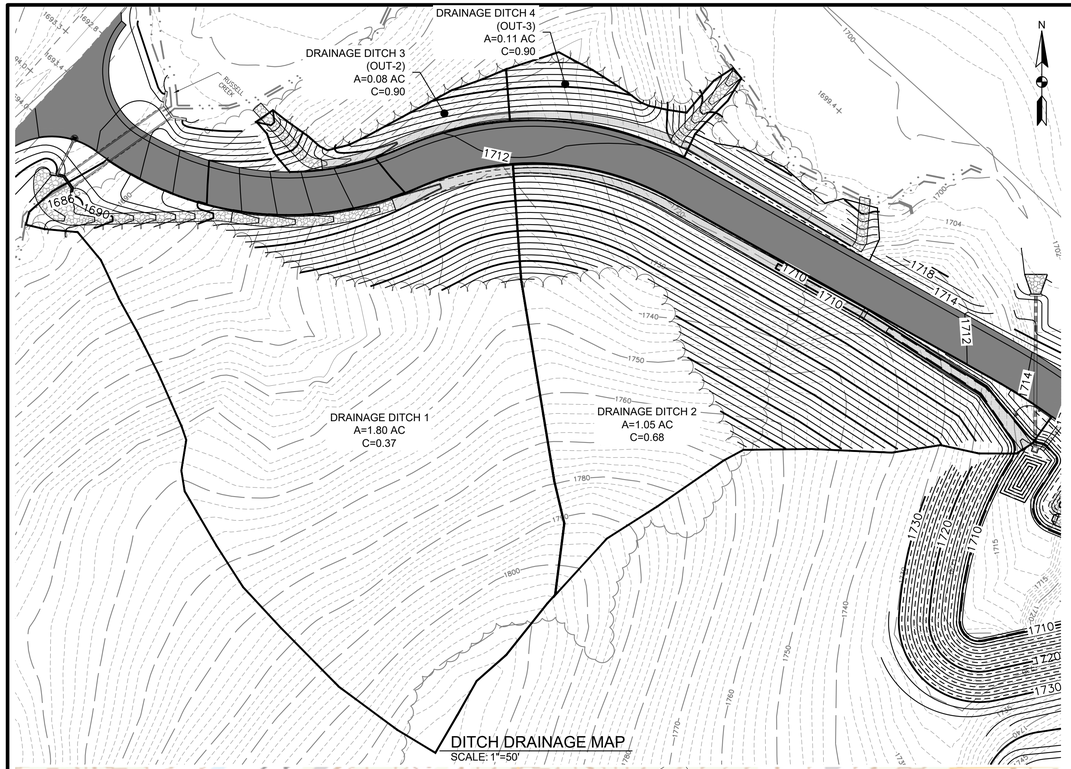
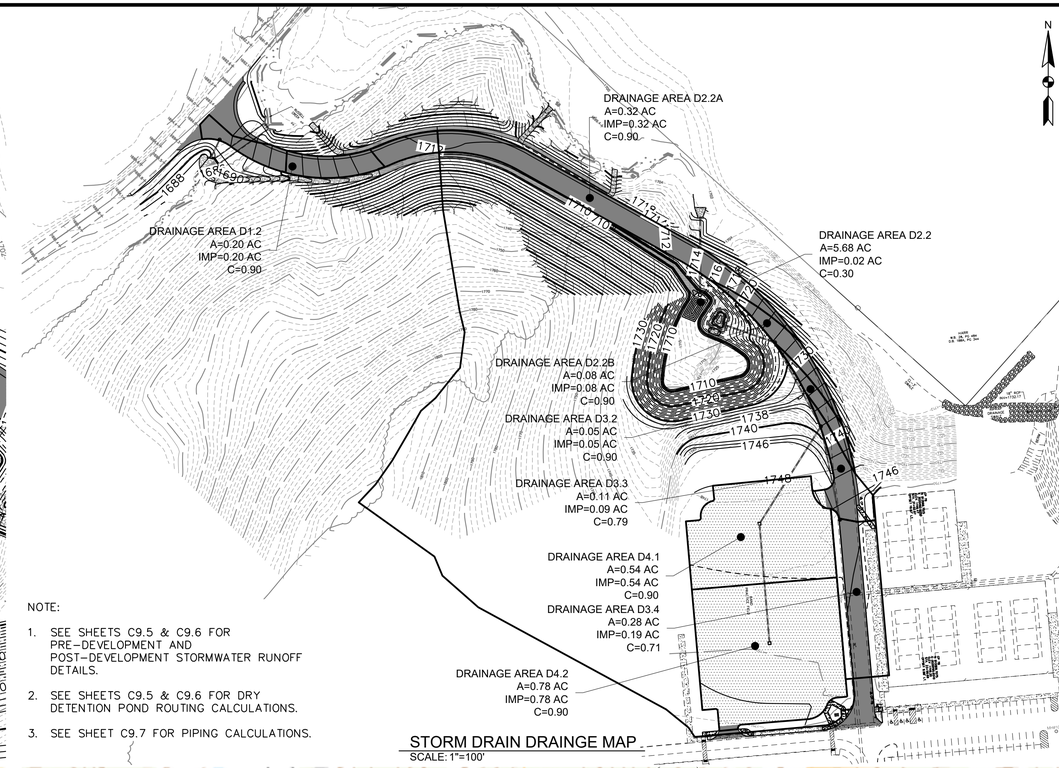


DITCH DRAINAGE MAP
SCALE: 1"=50'



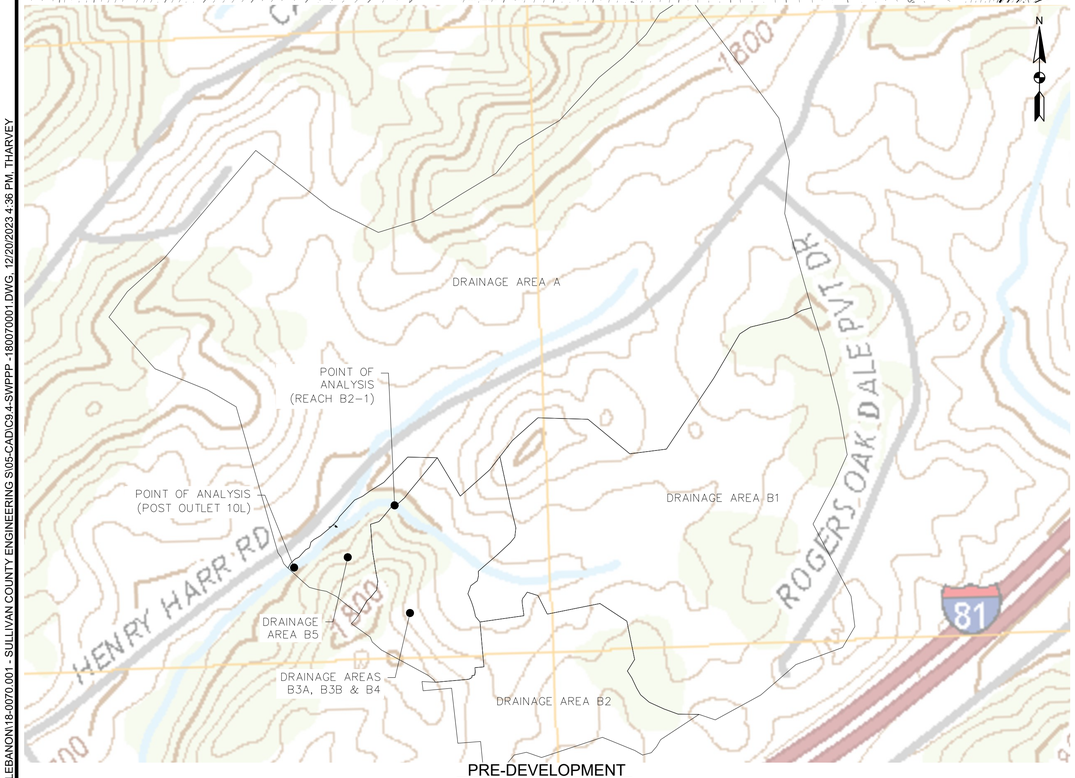
STORM DRAIN DRAINGE MAP
SCALE: 1"=100'

NOTE:

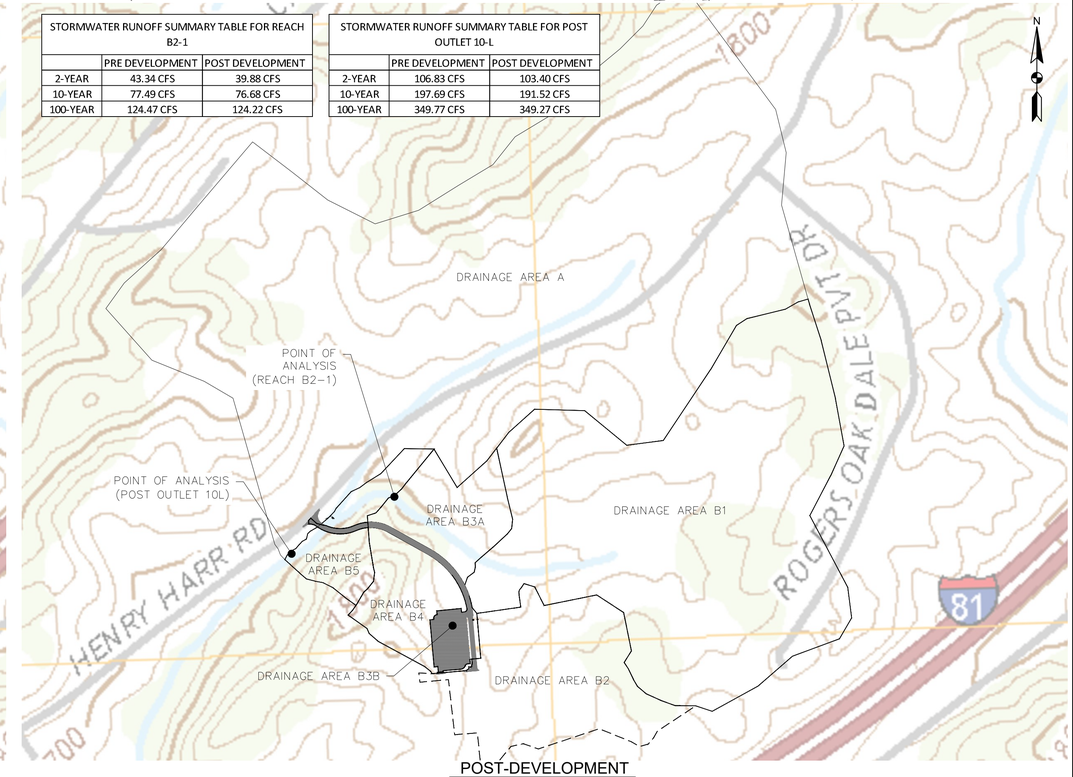
1. SEE SHEETS C9.5 & C9.6 FOR PRE-DEVELOPMENT AND POST-DEVELOPMENT STORMWATER RUNOFF DETAILS.
2. SEE SHEETS C9.5 & C9.6 FOR DRY DETENTION POND ROUTING CALCULATIONS.
3. SEE SHEET C9.7 FOR PIPING CALCULATIONS.

STORMWATER RUNOFF SUMMARY TABLE FOR REACH B2-1		
	PRE DEVELOPMENT	POST DEVELOPMENT
2-YEAR	43.34 CFS	39.88 CFS
10-YEAR	77.49 CFS	76.68 CFS
100-YEAR	124.47 CFS	124.22 CFS

STORMWATER RUNOFF SUMMARY TABLE FOR POST OUTLET 10-L		
	PRE DEVELOPMENT	POST DEVELOPMENT
2-YEAR	106.83 CFS	103.40 CFS
10-YEAR	197.69 CFS	191.52 CFS
100-YEAR	349.77 CFS	349.27 CFS



PRE-DEVELOPMENT
SCALE: 1"=400'



POST-DEVELOPMENT
SCALE: 1"=400'

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SHEET TITLE

DRAINAGE AREA MAPS

C9.4

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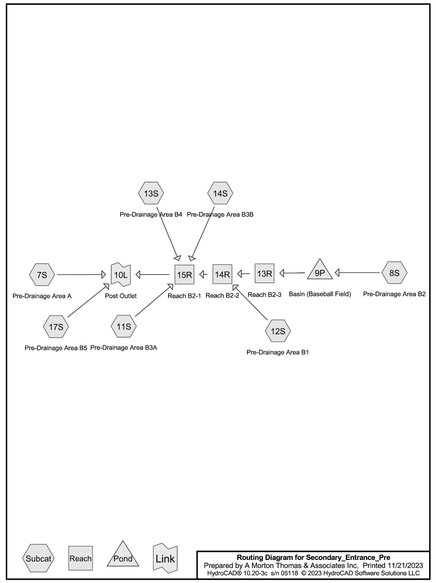

PRE-DEVELOPMENT OVERALL DRAINAGE MODEL
NTS

Secondary_Entrance_Pre *Type II 24-hr 2-Year Rainfall=2.46"*
Prepared by A Morton Thomas & Associates Inc Printed 11/21/2023
HydroCAD® 10.20-3c s/n 05118 © 2023 HydroCAD Software Solutions LLC Page 7

Time span=0.00-96.00 hrs, dt=0.01 hrs, 9601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 7S: Pre-Drainage Area A Runoff Area=121.560 ac 1.38% Impervious Runoff Depth=0.59"
Flow Length=3,917' Tc=23.8 min CN=74 Runoff=61.63 cfs 5.935 af

Subcatchment 8S: Pre-Drainage Area B2 Runoff Area=16.230 ac 51.76% Impervious Runoff Depth=1.28"
Flow Length=1,284' Tc=8.6 min CN=87 Runoff=33.61 cfs 1.728 af

Subcatchment 11S: Pre-Drainage Area B3A Runoff Area=6.200 ac 0.00% Impervious Runoff Depth=0.72"
Flow Length=749' Tc=25.4 min CN=77 Runoff=3.91 cfs 0.370 af

Subcatchment 12S: Pre-Drainage Area B1 Runoff Area=57.900 ac 0.00% Impervious Runoff Depth=0.59"
Flow Length=2,544' Tc=36.0 min CN=74 Runoff=21.92 cfs 2.827 af

Subcatchment 13S: Pre-Drainage Area B4 Runoff Area=6.720 ac 0.00% Impervious Runoff Depth=0.72"
Flow Length=652' Tc=25.1 min CN=77 Runoff=4.27 cfs 0.401 af

Subcatchment 14S: Pre-Drainage Area B3B Runoff Area=1.000 ac 0.00% Impervious Runoff Depth=0.81"
Flow Length=652' Tc=25.1 min CN=79 Runoff=0.74 cfs 0.068 af

Subcatchment 17S: Pre-Drainage Area B5 Runoff Area=4.850 ac 0.00% Impervious Runoff Depth=0.67"
Flow Length=441' Slope=0.3000 '/' Tc=15.0 min CN=76 Runoff=3.92 cfs 0.271 af

Reach 13R: Reach B2-3 Avg. Flow Depth=0.57' Max Vel=8.29 fps Inflow=20.73 cfs 1.722 af
n=0.030 L=256.0' S=0.0910 '/' Capacity=654.91 cfs Outflow=20.73 cfs 1.722 af

Reach 14R: Reach B2-2 Avg. Flow Depth=0.96' Max Vel=6.85 fps Inflow=35.87 cfs 4.549 af
n=0.030 L=288.0' S=0.0350 '/' Capacity=163.66 cfs Outflow=35.67 cfs 4.549 af

Reach 15R: Reach B2-1 Avg. Flow Depth=1.27' Max Vel=5.54 fps Inflow=44.57 cfs 5.386 af
n=0.030 L=814.0' S=0.0170 '/' Capacity=283.06 cfs Outflow=43.34 cfs 5.386 af

Pond 9P: Basin (Baseball Field) Peak Elev=1,737.30' Storage=0.511 af Inflow=33.61 cfs 1.728 af
Outflow=20.73 cfs 1.722 af

Link 10L: Post Outlet Inflow=106.83 cfs 11.592 af
Primary=106.83 cfs 11.592 af

Total Runoff Area = 214.460 ac Runoff Volume = 11.599 af Average Runoff Depth = 0.65"
95.30% Pervious = 204.380 ac 4.70% Impervious = 10.080 ac

PRE 2-YEAR OVERALL RUNOFF SUMMARY
NTS

Secondary_Entrance_Pre *Type II 24-hr 10-Year Rainfall=3.22"*
Prepared by A Morton Thomas & Associates Inc Printed 11/21/2023
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Time span=0.00-96.00 hrs, dt=0.01 hrs, 9601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 7S: Pre-Drainage Area A Runoff Area=121.560 ac 1.38% Impervious Runoff Depth=1.05"
Flow Length=3,917' Tc=23.8 min CN=74 Runoff=121.00 cfs 10.644 af

Subcatchment 8S: Pre-Drainage Area B2 Runoff Area=16.230 ac 51.76% Impervious Runoff Depth=1.93"
Flow Length=1,284' Tc=8.6 min CN=87 Runoff=50.31 cfs 2.614 af

Subcatchment 11S: Pre-Drainage Area B3A Runoff Area=6.200 ac 0.00% Impervious Runoff Depth=1.23"
Flow Length=749' Tc=25.4 min CN=77 Runoff=7.08 cfs 0.633 af

Subcatchment 12S: Pre-Drainage Area B1 Runoff Area=57.900 ac 0.00% Impervious Runoff Depth=1.05"
Flow Length=2,544' Tc=36.0 min CN=74 Runoff=43.37 cfs 5.070 af

Subcatchment 13S: Pre-Drainage Area B4 Runoff Area=6.720 ac 0.00% Impervious Runoff Depth=1.23"
Flow Length=652' Tc=25.1 min CN=77 Runoff=7.76 cfs 0.687 af

Subcatchment 14S: Pre-Drainage Area B3B Runoff Area=1.000 ac 0.00% Impervious Runoff Depth=1.35"
Flow Length=652' Tc=25.1 min CN=79 Runoff=1.29 cfs 0.113 af

Subcatchment 17S: Pre-Drainage Area B5 Runoff Area=4.850 ac 0.00% Impervious Runoff Depth=1.17"
Flow Length=441' Slope=0.3000 '/' Tc=15.0 min CN=76 Runoff=7.17 cfs 0.471 af

Reach 13R: Reach B2-3 Avg. Flow Depth=0.70' Max Vel=9.32 fps Inflow=31.24 cfs 2.607 af
n=0.030 L=256.0' S=0.0910 '/' Capacity=654.91 cfs Outflow=31.19 cfs 2.607 af

Reach 14R: Reach B2-2 Avg. Flow Depth=1.29' Max Vel=8.01 fps Inflow=64.13 cfs 7.677 af
n=0.030 L=288.0' S=0.0350 '/' Capacity=163.66 cfs Outflow=64.09 cfs 7.677 af

Reach 15R: Reach B2-1 Avg. Flow Depth=1.67' Max Vel=6.45 fps Inflow=77.91 cfs 9.110 af
n=0.030 L=814.0' S=0.0170 '/' Capacity=283.06 cfs Outflow=77.49 cfs 9.110 af

Pond 9P: Basin (Baseball Field) Peak Elev=1,738.27' Storage=0.733 af Inflow=50.31 cfs 2.614 af
Outflow=31.24 cfs 2.607 af

Link 10L: Post Outlet Inflow=197.69 cfs 20.225 af
Primary=197.69 cfs 20.225 af

Total Runoff Area = 214.460 ac Runoff Volume = 20.232 af Average Runoff Depth = 1.13"
95.30% Pervious = 204.380 ac 4.70% Impervious = 10.080 ac

PRE 10-YEAR OVERALL RUNOFF SUMMARY
NTS

Secondary_Entrance_Pre *Type II 24-hr 100-Year Rainfall=4.29"*
Prepared by A Morton Thomas & Associates Inc Printed 11/21/2023
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Time span=0.00-96.00 hrs, dt=0.01 hrs, 9601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 7S: Pre-Drainage Area A Runoff Area=121.560 ac 1.38% Impervious Runoff Depth=1.81"
Flow Length=3,917' Tc=23.8 min CN=74 Runoff=217.25 cfs 18.358 af

Subcatchment 8S: Pre-Drainage Area B2 Runoff Area=16.230 ac 51.76% Impervious Runoff Depth=2.90"
Flow Length=1,284' Tc=8.6 min CN=87 Runoff=74.34 cfs 3.928 af

Subcatchment 11S: Pre-Drainage Area B3A Runoff Area=6.200 ac 0.00% Impervious Runoff Depth=2.04"
Flow Length=749' Tc=25.4 min CN=77 Runoff=12.11 cfs 1.055 af

Subcatchment 12S: Pre-Drainage Area B1 Runoff Area=57.900 ac 0.00% Impervious Runoff Depth=1.81"
Flow Length=2,544' Tc=36.0 min CN=74 Runoff=78.44 cfs 8.744 af

Subcatchment 13S: Pre-Drainage Area B4 Runoff Area=6.720 ac 0.00% Impervious Runoff Depth=2.04"
Flow Length=652' Tc=25.1 min CN=77 Runoff=13.27 cfs 1.143 af

Subcatchment 14S: Pre-Drainage Area B3B Runoff Area=1.000 ac 0.00% Impervious Runoff Depth=2.20"
Flow Length=652' Tc=25.1 min CN=79 Runoff=2.14 cfs 0.183 af

Subcatchment 17S: Pre-Drainage Area B5 Runoff Area=4.850 ac 0.00% Impervious Runoff Depth=1.96"
Flow Length=441' Slope=0.3000 '/' Tc=15.0 min CN=76 Runoff=12.31 cfs 0.794 af

Reach 13R: Reach B2-3 Avg. Flow Depth=1.00' Max Vel=11.27 fps Inflow=62.26 cfs 3.921 af
n=0.030 L=256.0' S=0.0910 '/' Capacity=654.91 cfs Outflow=62.16 cfs 3.921 af

Reach 14R: Reach B2-2 Avg. Flow Depth=1.59' Max Vel=9.01 fps Inflow=100.42 cfs 12.665 af
n=0.030 L=288.0' S=0.0350 '/' Capacity=163.66 cfs Outflow=100.35 cfs 12.665 af

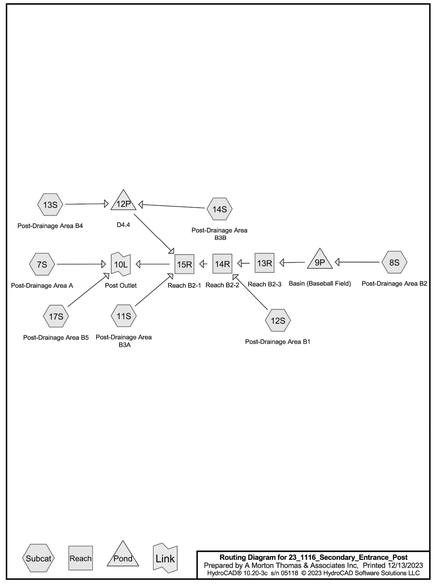
Reach 15R: Reach B2-1 Avg. Flow Depth=2.08' Max Vel=7.29 fps Inflow=124.55 cfs 15.047 af
n=0.030 L=814.0' S=0.0170 '/' Capacity=283.06 cfs Outflow=124.47 cfs 15.047 af

Pond 9P: Basin (Baseball Field) Peak Elev=1,738.85' Storage=0.882 af Inflow=74.34 cfs 3.928 af
Outflow=62.26 cfs 3.921 af

Link 10L: Post Outlet Inflow=349.77 cfs 34.199 af
Primary=349.77 cfs 34.199 af

Total Runoff Area = 214.460 ac Runoff Volume = 34.205 af Average Runoff Depth = 1.91"
95.30% Pervious = 204.380 ac 4.70% Impervious = 10.080 ac

PRE 100-YEAR OVERALL RUNOFF SUMMARY
NTS



POST-DEVELOPMENT OVERALL DRAINAGE MODEL
NTS

23_1116_Secondary_Entrance_Post *Type II 24-hr 2-Year Rainfall=2.46"*
Prepared by A Morton Thomas & Associates Inc Printed 12/13/2023
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Time span=0.00-96.00 hrs, dt=0.01 hrs, 9601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 7S: Post-Drainage Area A Runoff Area=121.560 ac 1.38% Impervious Runoff Depth=0.59"
Flow Length=3,917' Tc=23.8 min CN=74 Runoff=61.63 cfs 5.935 af

Subcatchment 8S: Post-Drainage Area B2 Runoff Area=16.230 ac 51.76% Impervious Runoff Depth=1.28"
Flow Length=1,284' Tc=8.6 min CN=87 Runoff=33.61 cfs 1.728 af

Subcatchment 11S: Post-Drainage Area B3A Runoff Area=6.200 ac 2.74% Impervious Runoff Depth=0.76"
Flow Length=749' Tc=25.4 min CN=78 Runoff=4.23 cfs 0.394 af

Subcatchment 12S: Post-Drainage Area B1 Runoff Area=57.900 ac 0.00% Impervious Runoff Depth=0.59"
Flow Length=2,544' Tc=36.0 min CN=74 Runoff=21.92 cfs 2.827 af

Subcatchment 13S: Post-Drainage Area B4 Runoff Area=5.680 ac 3.87% Impervious Runoff Depth=0.76"
Flow Length=652' Tc=25.1 min CN=78 Runoff=3.91 cfs 0.361 af

Subcatchment 14S: Post-Drainage Area Runoff Area=2.150 ac 94.88% Impervious Runoff Depth=2.12"
Flow Length=289' Tc=9.0 min CN=97 Runoff=6.59 cfs 0.381 af

Subcatchment 17S: Post-Drainage Area B5 Runoff Area=4.850 ac 4.12% Impervious Runoff Depth=0.67"
Flow Length=441' Slope=0.3000 '/' Tc=15.0 min UI Adjusted CN=76 Runoff=3.92 cfs 0.271 af

Reach 13R: Reach B2-3 Avg. Flow Depth=0.57' Max Vel=8.29 fps Inflow=20.73 cfs 1.722 af
n=0.030 L=256.0' S=0.0910 '/' Capacity=654.91 cfs Outflow=20.73 cfs 1.722 af

Reach 14R: Reach B2-2 Avg. Flow Depth=0.96' Max Vel=6.85 fps Inflow=35.87 cfs 4.549 af
n=0.030 L=288.0' S=0.0350 '/' Capacity=163.66 cfs Outflow=35.67 cfs 4.549 af

Reach 15R: Reach B2-1 Avg. Flow Depth=1.22' Max Vel=5.42 fps Inflow=41.06 cfs 5.674 af
n=0.030 L=814.0' S=0.0170 '/' Capacity=283.06 cfs Outflow=39.88 cfs 5.674 af

Pond 9P: Basin (Baseball Field) Peak Elev=1,737.30' Storage=0.511 af Inflow=33.61 cfs 1.728 af
Outflow=20.73 cfs 1.722 af

Pond 12P: D4.4 Peak Elev=1,710.06' Storage=12,332 cf Inflow=8.38 cfs 0.741 af
Outflow=1.31 cfs 0.732 af

Link 10L: Post Outlet Inflow=103.40 cfs 11.880 af
Primary=103.40 cfs 11.880 af

Total Runoff Area = 214.570 ac Runoff Volume = 11.896 af Average Runoff Depth = 0.67"
94.08% Pervious = 201.860 ac 5.92% Impervious = 12.710 ac

POST 2-YEAR OVERALL RUNOFF SUMMARY
NTS

23_1116_Secondary_Entrance_Post *Type II 24-hr 2-Year Rainfall=2.46"*
Prepared by A Morton Thomas & Associates Inc Printed 12/13/2023
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Summary for Pond 12P: D4.4

Inflow Area = 7.830 ac, 28.86% Impervious, Inflow Depth = 1.14" for 2-Year event
Inflow = 8.38 cfs @ 12.02 hrs, Volume= 0.741 af
Outflow = 1.31 cfs @ 12.81 hrs, Volume= 0.732 af, Atten= 84%, Lag= 47.6 min
Primary = 1.31 cfs @ 12.81 hrs, Volume= 0.732 af
Routed to Reach 15R : Reach B2-1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
Peak Elev= 1,710.06' @ 12.81 hrs Surf.Area= 9,364 sf Storage= 12,332 cf

Plug-Flow detention time= 98.0 min calculated for 0.732 af (99% of inflow)
Center-of-Mass det. time= 90.0 min (914.3 - 824.4)

Volume	Invert	Avail.Storage	Storage Description
#1	1,703.90'	22,230 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
1,703.90	1	4.0	0	0	1
1,704.00	2	5.6	0	0	2
1,704.90	25	20.0	10	10	34
1,705.00	29	21.6	3	13	40
1,706.00	88	37.6	56	69	120
1,707.00	180	53.6	131	200	245
1,707.90	289	68.0	209	409	395
1,708.00	376	82.9	33	442	574
1,709.00	7,259	408.3	3,096	3,538	13,296
1,709.59	8,337	641.2	4,597	8,135	32,749
1,710.00	9,202	812.7	3,594	11,729	52,594
1,710.92	11,634	1,194.3	9,563	21,292	113,547
1,711.00	11,825	1,195.1	938	22,230	113,726

Device	Routing	Invert	Outlet Devices
#1	Primary	1,707.90'	**18.0" Round Culvert** L= 99.7' RCP, groove end w/headwall, Ke= 0.200 Inlet / Outlet Invert= 1,707.90' / 1,702.00' S= 0.0592 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Device 1	1,707.90'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	1,710.11'	**16.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Primary OutFlow Max=1.31 cfs @ 12.81 hrs HW=1,710.06' TW=1,699.58' (Dynamic Tailwater)
└─**1=Culvert** (Passes 1.31 cfs of 12.65 cfs potential flow)
├─**2=Orifice/Grate** (Orifice Controls 1.31 cfs @ 6.66 fps)
└─**3=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

POST 2-YEAR POND SUMMARY
NTS

23_1116_Secondary_Entrance_Post *Type II 24-hr 2-Year Rainfall=2.46"*
Prepared by A Morton Thomas & Associates Inc Printed 12/13/2023
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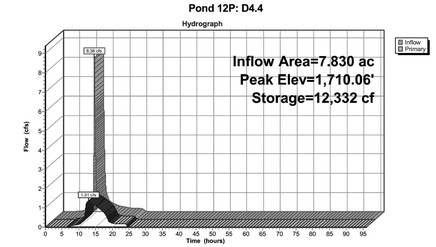
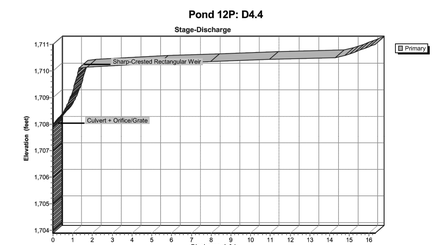
Pond 12P: D4.4



Pond 12P: D4.4



POST 2-YEAR POND HYDROGRAPH
NTS

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
200 EAST MAIN STREET, SUITE 301
KINGSPORT, TN 37660
PHONE (423) 398-5550
EMAIL: AMT1@AMTENGINEERING.COM

CONSULTANTS

NOT FOR CONSTRUCTION

SULLIVAN COUNTY SCHOOLS

SECONDARY ACCESS ROAD TO WEST RIDGE

SULLIVAN COUNTY BOARD OF EDUCATION
154 BLOUNTVILLE BYPASS
BLOUNTVILLE, TN 37617

PROJECT NUMBER: 030122(KD)

MARK	DATE	DESCRIPTION

FINAL PLANS

PROJECT NO:	18-0070.001
SCALE:	N/A
DESIGNED BY:	CER
DRAWN BY:	CER/DEC
CHECKED BY:	DEC
SHEET TITLE	

STORMWATER CALCS

C9.5

X:\LEBANON\18-0070.001 - SULLIVAN COUNTY ENGINEERING S\05-CAD\C9.5-SWM CALCS - 180070001.DWG, 12/20/2023 4:37 PM, THARVEY

Time span=0.00-96.00 hrs, dt=0.01 hrs, 9601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 7S: Post-Drainage Area A Runoff Area=121.560 ac 1.38% Impervious Runoff Depth=1.05"
Flow Length=3,917' Tc=23.8 min CN=74 Runoff=121.00 cfs 10.644 af

Subcatchment 8S: Post-Drainage Area B2 Runoff Area=16.230 ac 51.76% Impervious Runoff Depth=1.93"
Flow Length=1,284' Tc=8.6 min CN=87 Runoff=50.31 cfs 2.614 af

Subcatchment 11S: Post-Drainage Area B3A Runoff Area=6.200 ac 2.74% Impervious Runoff Depth=1.29"
Flow Length=749' Tc=25.4 min CN=78 Runoff=7.49 cfs 0.665 af

Subcatchment 12S: Post-Drainage Area B1 Runoff Area=57.900 ac 0.00% Impervious Runoff Depth=1.05"
Flow Length=2,544' Tc=36.0 min CN=74 Runoff=43.37 cfs 5.070 af

Subcatchment 13S: Post-Drainage Area B4 Runoff Area=5.680 ac 3.87% Impervious Runoff Depth=1.29"
Flow Length=652' Tc=25.1 min CN=78 Runoff=6.94 cfs 0.610 af

Subcatchment 14S: Post-Drainage Area Runoff Area=2.150 ac 94.88% Impervious Runoff Depth=2.88"
Flow Length=289' Tc=9.0 min CN=97 Runoff=8.77 cfs 0.515 af

Subcatchment 17S: Post-Drainage Area B5 Runoff Area=4.850 ac 4.12% Impervious Runoff Depth=1.17"
Flow Length=441' Slope=0.3000 '/' Tc=15.0 min UI Adjusted CN=76 Runoff=7.17 cfs 0.471 af

Reach 13R: Reach B2-3 Avg. Flow Depth=0.70' Max Vel=9.32 fps Inflow=31.24 cfs 2.607 af
n=0.030 L=256.0' S=0.0910 '/' Capacity=654.91 cfs Outflow=31.19 cfs 2.607 af

Reach 14R: Reach B2-2 Avg. Flow Depth=1.29' Max Vel=8.01 fps Inflow=64.13 cfs 7.677 af
n=0.030 L=288.0' S=0.0350 '/' Capacity=163.66 cfs Outflow=64.09 cfs 7.677 af

Reach 15R: Reach B2-1 Avg. Flow Depth=1.66' Max Vel=6.43 fps Inflow=77.07 cfs 9.458 af
n=0.030 L=814.0' S=0.0170 '/' Capacity=283.06 cfs Outflow=76.68 cfs 9.458 af

Pond 9P: Basin (Baseball Field) Peak Elev=1,738.27' Storage=0.733 af Inflow=50.31 cfs 2.614 af
Outflow=31.24 cfs 2.607 af

Pond 12P: D4.4 Peak Elev=1,710.33' Storage=14,910 cf Inflow=12.40 cfs 1.125 af
Outflow=6.80 cfs 1.116 af

Link 10L: Post Outlet Inflow=191.52 cfs 20.573 af
Primary=191.52 cfs 20.573 af

Total Runoff Area = 214.570 ac Runoff Volume = 20.589 af Average Runoff Depth = 1.15"
94.08% Pervious = 201.860 ac 5.92% Impervious = 12.710 ac

POST 10-YEAR OVERALL RUNOFF SUMMARY
NTS

Summary for Pond 12P: D4.4

Inflow Area = 7.830 ac, 28.86% Impervious, Inflow Depth = 1.72" for 10-Year event
Inflow = 12.40 cfs @ 12.03 hrs, Volume= 1.125 af
Outflow = 6.80 cfs @ 12.32 hrs, Volume= 1.116 af, Atten= 45%, Lag= 17.8 min
Primary = 6.80 cfs @ 12.32 hrs, Volume= 1.116 af
Routed to Reach 15R : Reach B2-1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
Peak Elev= 1,710.33' @ 12.32 hrs Surf.Area= 10,043 sf Storage= 14,910 cf

Plug-Flow detention time= 85.8 min calculated for 1.116 af (99% of inflow)
Center-of-Mass det. time= 80.5 min (898.7 - 818.2)

Volume	Invert	Avail.Storage	Storage Description
#1	1,703.90'	22,230 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

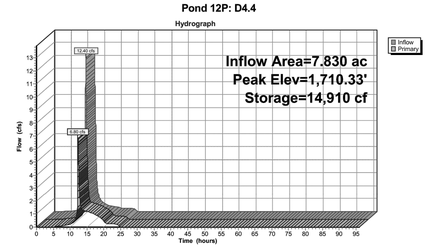
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
1,703.90	1	4.0	0	0	1
1,704.00	2	5.6	0	0	2
1,704.90	25	20.0	10	10	34
1,705.00	29	21.6	3	13	40
1,706.00	88	37.6	56	69	120
1,707.00	180	53.6	131	200	245
1,707.90	289	68.0	209	409	395
1,708.00	376	82.9	33	442	574
1,709.00	7,259	408.3	3,096	3,538	13,296
1,709.59	8,337	641.2	4,597	8,135	32,749
1,710.00	9,202	812.7	3,594	11,729	52,594
1,710.92	11,634	1,194.3	9,563	21,292	113,547
1,711.00	11,825	1,195.1	938	22,230	113,726

Device	Routing	Invert	Outlet Devices
#1	Primary	1,707.90'	**18.0" Round Culvert** L= 99.7' RCP, groove end w/headwall, Ke= 0.200 Inlet / Outlet Invert= 1,707.90' / 1,702.00' S= 0.0592 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Device 1	1,707.90'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	1,710.11'	**16.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

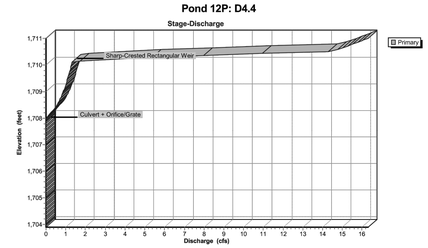
Primary OutFlow Max=6.80 cfs @ 12.32 hrs HW=1,710.33' TW=1,700.45' (Dynamic Tailwater)
└─**1=Culvert** (Passes 6.80 cfs of 13.79 cfs potential flow)
├─**2=Orifice/Grate** (Orifice Controls 1.40 cfs @ 7.11 fps)
└─**3=Sharp-Crested Rectangular Weir** (Weir Controls 5.41 cfs @ 1.54 fps)

POST 10-YEAR POND SUMMARY
NTS

Pond 12P: D4.4



Pond 12P: D4.4



POST 10-YEAR POND HYDROGRAPH
NTS

Time span=0.00-96.00 hrs, dt=0.01 hrs, 9601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 7S: Post-Drainage Area A Runoff Area=121.560 ac 1.38% Impervious Runoff Depth=1.81"
Flow Length=3,917' Tc=23.8 min CN=74 Runoff=217.25 cfs 18.358 af

Subcatchment 8S: Post-Drainage Area B2 Runoff Area=16.230 ac 51.76% Impervious Runoff Depth=2.90"
Flow Length=1,284' Tc=8.6 min CN=87 Runoff=74.34 cfs 3.928 af

Subcatchment 11S: Post-Drainage Area B3A Runoff Area=6.200 ac 2.74% Impervious Runoff Depth=2.12"
Flow Length=749' Tc=25.4 min CN=78 Runoff=12.61 cfs 1.096 af

Subcatchment 12S: Post-Drainage Area B1 Runoff Area=57.900 ac 0.00% Impervious Runoff Depth=1.81"
Flow Length=2,544' Tc=36.0 min CN=74 Runoff=78.44 cfs 8.744 af

Subcatchment 13S: Post-Drainage Area B4 Runoff Area=5.680 ac 3.87% Impervious Runoff Depth=2.12"
Flow Length=652' Tc=25.1 min CN=78 Runoff=11.68 cfs 1.004 af

Subcatchment 14S: Post-Drainage Area Runoff Area=2.150 ac 94.88% Impervious Runoff Depth=3.94"
Flow Length=289' Tc=9.0 min CN=97 Runoff=11.81 cfs 0.706 af

Subcatchment 17S: Post-Drainage Area B5 Runoff Area=4.850 ac 4.12% Impervious Runoff Depth=1.96"
Flow Length=441' Slope=0.3000 '/' Tc=15.0 min UI Adjusted CN=76 Runoff=12.31 cfs 0.794 af

Reach 13R: Reach B2-3 Avg. Flow Depth=1.00' Max Vel=11.27 fps Inflow=62.26 cfs 3.921 af
n=0.030 L=256.0' S=0.0910 '/' Capacity=654.91 cfs Outflow=62.16 cfs 3.921 af

Reach 14R: Reach B2-2 Avg. Flow Depth=1.59' Max Vel=9.01 fps Inflow=100.42 cfs 12.665 af
n=0.030 L=288.0' S=0.0350 '/' Capacity=163.66 cfs Outflow=100.35 cfs 12.665 af

Reach 15R: Reach B2-1 Avg. Flow Depth=2.08' Max Vel=7.29 fps Inflow=124.33 cfs 15.461 af
n=0.030 L=814.0' S=0.0170 '/' Capacity=283.06 cfs Outflow=124.22 cfs 15.461 af

Pond 9P: Basin (Baseball Field) Peak Elev=1,738.85' Storage=0.882 af Inflow=74.34 cfs 3.928 af
Outflow=62.26 cfs 3.921 af

Pond 12P: D4.4 Peak Elev=1,710.51' Storage=16,717 cf Inflow=18.48 cfs 1.710 af
Outflow=14.45 cfs 1.700 af

Link 10L: Post Outlet Inflow=349.27 cfs 34.613 af
Primary=349.27 cfs 34.613 af

Total Runoff Area = 214.570 ac Runoff Volume = 34.629 af Average Runoff Depth = 1.94"
94.08% Pervious = 201.860 ac 5.92% Impervious = 12.710 ac

POST 100-YEAR OVERALL RUNOFF SUMMARY
NTS

Summary for Pond 12P: D4.4

Inflow Area = 7.830 ac, 28.86% Impervious, Inflow Depth = 2.62" for 100-Year event
Inflow = 18.48 cfs @ 12.03 hrs, Volume= 1.710 af
Outflow = 14.45 cfs @ 12.19 hrs, Volume= 1.700 af, Atten= 22%, Lag= 9.8 min
Primary = 14.45 cfs @ 12.19 hrs, Volume= 1.700 af
Routed to Reach 15R : Reach B2-1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
Peak Elev= 1,710.51' @ 12.19 hrs Surf.Area= 10,506 sf Storage= 16,717 cf

Plug-Flow detention time= 73.0 min calculated for 1.700 af (99% of inflow)
Center-of-Mass det. time= 69.3 min (880.5 - 811.3)

Volume	Invert	Avail.Storage	Storage Description
#1	1,703.90'	22,230 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

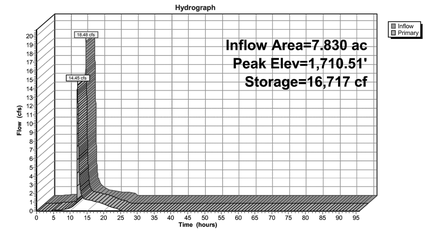
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
1,703.90	1	4.0	0	0	1
1,704.00	2	5.6	0	0	2
1,704.90	25	20.0	10	10	34
1,705.00	29	21.6	3	13	40
1,706.00	88	37.6	56	69	120
1,707.00	180	53.6	131	200	245
1,707.90	289	68.0	209	409	395
1,708.00	376	82.9	33	442	574
1,709.00	7,259	408.3	3,096	3,538	13,296
1,709.59	8,337	641.2	4,597	8,135	32,749
1,710.00	9,202	812.7	3,594	11,729	52,594
1,710.92	11,634	1,194.3	9,563	21,292	113,547
1,711.00	11,825	1,195.1	938	22,230	113,726

Device	Routing	Invert	Outlet Devices
#1	Primary	1,707.90'	**18.0" Round Culvert** L= 99.7' RCP, groove end w/headwall, Ke= 0.200 Inlet / Outlet Invert= 1,707.90' / 1,702.00' S= 0.0592 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Device 1	1,707.90'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	1,710.11'	**16.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

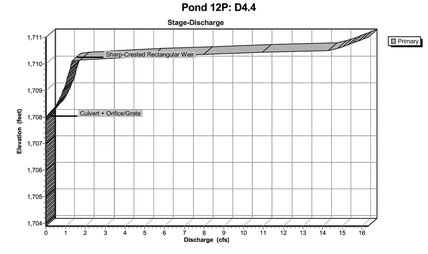
Primary OutFlow Max=14.45 cfs @ 12.19 hrs HW=1,710.51' TW=1,700.86' (Dynamic Tailwater)
└─**1=Culvert** (Passes 14.45 cfs of 14.49 cfs potential flow)
├─**2=Orifice/Grate** (Orifice Controls 1.45 cfs @ 7.39 fps)
└─**3=Sharp-Crested Rectangular Weir** (Weir Controls 13.00 cfs @ 2.06 fps)

POST 100-YEAR POND SUMMARY
NTS

Pond 12P: D4.4



Pond 12P: D4.4



POST 100-YEAR POND HYDROGRAPH
NTS

Summary for Pond 1P: NEW FOREBAY VOLUME

[43] Hint: Has no inflow (Outflow=Zero)

Volume	Invert	Avail.Storage	Storage Description
#1	1,707.90'	1,622 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,707.90	0	0	0
1,708.00	47	2	2
1,709.00	122	85	87
1,710.00	228	175	262
1,711.00	364	296	558
1,712.00	526	445	1,003
1,713.00	712	619	1,622

FOREBAY VOLUME TABLE
NTS

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NOT FOR CONSTRUCTION

SULLIVAN COUNTY SCHOOLS

SECONDARY ACCESS ROAD TO WEST RIDGE

SULLIVAN COUNTY BOARD OF EDUCATION
154 BLOUNTVILLE BYPASS
BLOUNTVILLE, TN 37617

PROJECT NUMBER: 030122(KD)

MARK	DATE	DESCRIPTION

FINAL PLANS

PROJECT NO:	18-0070.001
SCALE:	AS SHOWN
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DRAWN BY:	CER/DEC
CHECKED BY:	DEC

SHEET TITLE

STORMWATER CALCS

C9.6

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STORM DRAIN DESIGN COMPUTATIONS

FROM POINT (UPSTREAM)	TO POINT (DWNSTREAM)	AREA DRAIN "A"	RUNOFF COEFF.	CA		INLET TIME	RAINFALL	RUNOFF Q	INVERT ELEVATIONS		LENGTH	SLOPE	DIAMETER	CAPACITY	VELOCITY FULL	VELOCITY PARTIAL	FLOW MINUTES	Manning's "n" value	REMARKS
		(ACRES)	C	INCREMENT	ACCUM	MINUTES	IN / HR	CFS	UPPER	LOWER	FT	FT / FT	IN	CFS	FPS	FPS	INCREMENT		
D1.2	**D1.1**	0.2	0.9	0.18	0.18	5.00	5.33	1.0	1690.60	1686.60	27.15	0.1473	15	29.29	23.87	10.78	0.04	0.011	RCP
D2.2	**D2.1**	5.68	0.3	1.70	3.58	25.10	2.87	10.3	1707.80	1702.00	102.31	0.0567	18	29.55	16.72	15.37	0.11	0.011	RCP
D3.2	**D3.1**	0.05	0.9	0.05	1.52	5.37	5.23	7.9	1722.28	1711.00	70.26	0.1605	18	49.72	28.14	20.47	0.06	0.011	RCP
D3.3	**D3.2**	0.11	0.79	0.09	1.47	5.24	5.27	7.8	1733.90	1722.38	126.25	0.0912	18	37.49	21.21	16.67	0.13	0.011	RCP
D3.4	**D3.3**	0.28	0.71	0.20	0.20	5.00	5.33	1.1	1742.90	1734.00	125.67	0.0708	15	20.31	16.55	8.60	0.24	0.011	RCP
D4.1	**D3.3**	0.54	0.9	0.49	1.19	5.42	5.22	6.2	1743.65	1734.00	151.94	0.0635	15	19.23	15.67	14.08	0.18	0.011	RCP
D4.2	**D4.1**	0.78	0.9	0.70	0.70	5.00	5.33	3.7	1745.33	1743.75	158.15	0.0100	15	7.63	6.22	6.33	0.42	0.011	RCP

10-YEAR PIPING TABLE

NTS

HYDRAULIC GRADE LINE COMPUTATIONS

Structure Number	Outlet Water Surface Elev.	Do	Qo	Lo	Sfo (%)	Hf	Junction Loss												Final H	Inlet Water Surface Elev.	Rim. Elev
							Vo	Ho	Qi	Vi	QiVi	Vi^2/2/g	Hi	Angle	Hdelta	Ht	1.3xHt	0.5xHt			
D1.2	1687.60	15	1.0	27.15	0.02%	0.00	10.78	0.45	0.0	0.00	0.00	0.00	0.00	0	0.00	0.45	0.59	0.23	0.59	1688.19	1693.60
D2.2	1703.20	18	10.3	102.31	0.69%	0.70	15.37	0.92	0.0	0.00	0.00	0.00	0.00	0	0.00	0.92	1.19	0.46	1.90	1705.10	1710.11
D3.4	1735.00	15	1.1	125.67	0.02%	0.02	8.60	0.29	0.0	0.00	0.00	0.00	0.00	0	0.00	0.29	0.37	0.14	0.40	1735.40	1746.90
D3.3	1735.40	18	7.8	126.25	0.39%	0.49	16.67	1.08	1.1	8.60	9.10	1.15	0.40	20	0.18	1.66	2.16	0.83	2.16	1737.55	1738.00
D3.2	1712.20	18	7.9	70.26	0.41%	0.29	20.47	1.63	7.8	16.67	129.38	4.32	1.51	40	1.64	4.78	6.21	2.39	5.07	1717.27	1726.28
D4.2	1744.75	15	3.7	158.15	0.24%	0.38	6.33	0.16	0.0	0.00	0.00	0.00	0.00	0	0.00	0.16	0.20	0.08	0.58	1745.33	1748.00
D4.1	1735.00	15	6.2	151.94	0.66%	1.00	14.08	0.77	6.2	6.33	39.35	0.62	0.22	50	0.29	1.28	1.66	0.64	2.67	1737.67	1747.00

10-YEAR HYDRAULIC GRADE LINE TABLE

NTS

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CONSULTANTS

NOT FOR CONSTRUCTION

SULLIVAN COUNTY SCHOOLS

SECONDARY ACCESS ROAD TO WEST RIDGE

SULLIVAN COUNTY BOARD OF EDUCATION
154 BLOUNTVILLE BYPASS
BLOUNTVILLE, TN 37617

PROJECT NUMBER: 030122(KD)

MARK	DATE	DESCRIPTION

FINAL PLANS

PROJECT NO:	18-0070.001
SCALE:	AS SHOWN
DESIGNED BY:	CER
DRAWN BY:	CER/DEC
CHECKED BY:	DEC

SHEET TITLE

STORMWATER CALCS

C9.7

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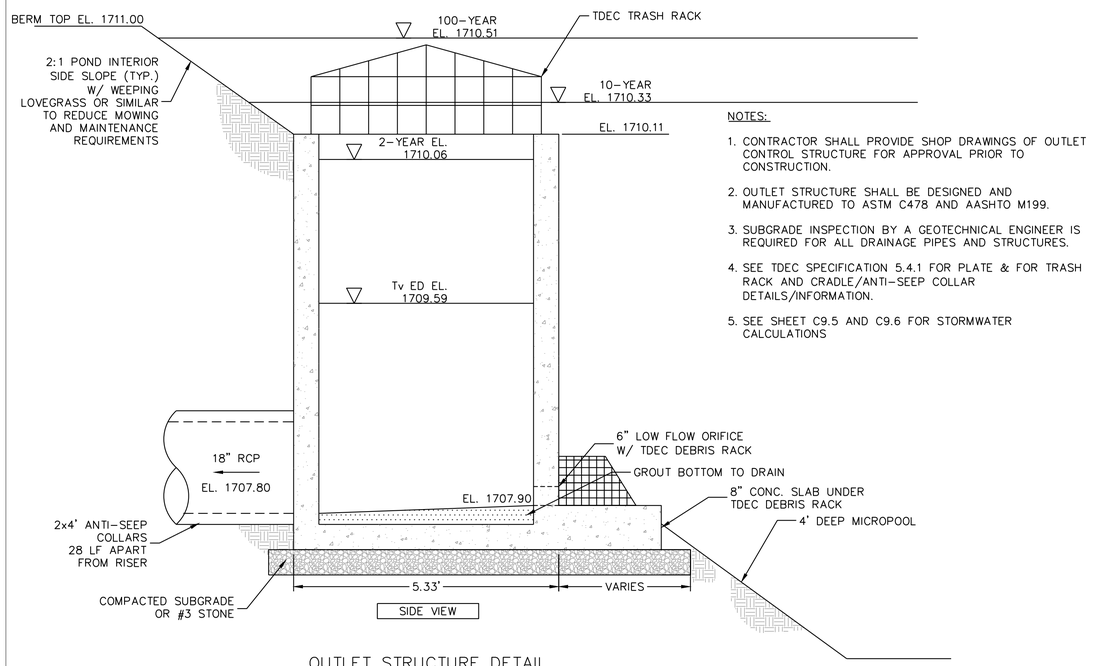
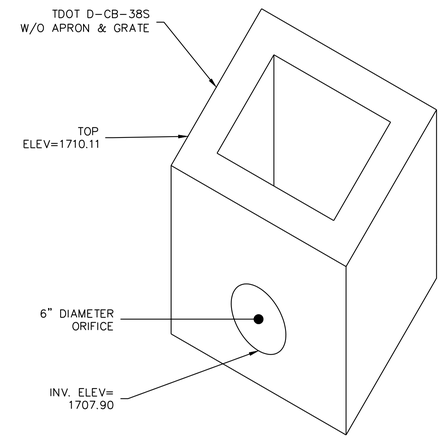


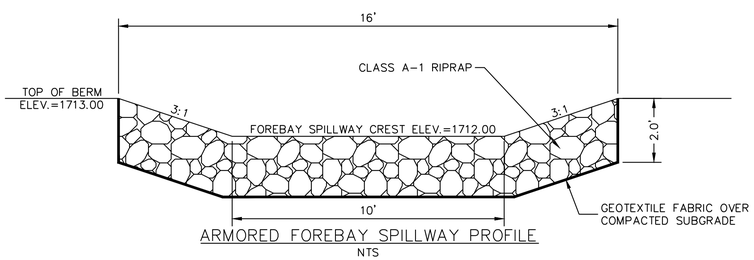
NOTES:

1. CONTRACTOR SHALL PROVIDE SHOP DRAWINGS OF OUTLET CONTROL STRUCTURE FOR APPROVAL PRIOR TO CONSTRUCTION.
2. OUTLET STRUCTURE SHALL BE DESIGNED AND MANUFACTURED TO ASTM C478 AND AASHTO M199.
3. SUBGRADE INSPECTION BY A GEOTECHNICAL ENGINEER IS REQUIRED FOR ALL DRAINAGE PIPES AND STRUCTURES.
4. SEE TDEC SPECIFICATION 5.4.1 FOR PLATE & FOR TRASH RACK AND CRADLE/ANTI-SEEP COLLAR DETAILS/INFORMATION.
5. SEE SHEET C9.5 AND C9.6 FOR STORMWATER CALCULATIONS

OUTLET STRUCTURE DETAIL
NTS



LOW FLOW ORIFICE DETAIL
SCALE: N.T.S.



ARMORED FOREBAY SPILLWAY PROFILE
NTS

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CHECKED BY:	DEC

SHEET TITLE

BMP DETAILS

C10.0

SHEET 32 OF 54

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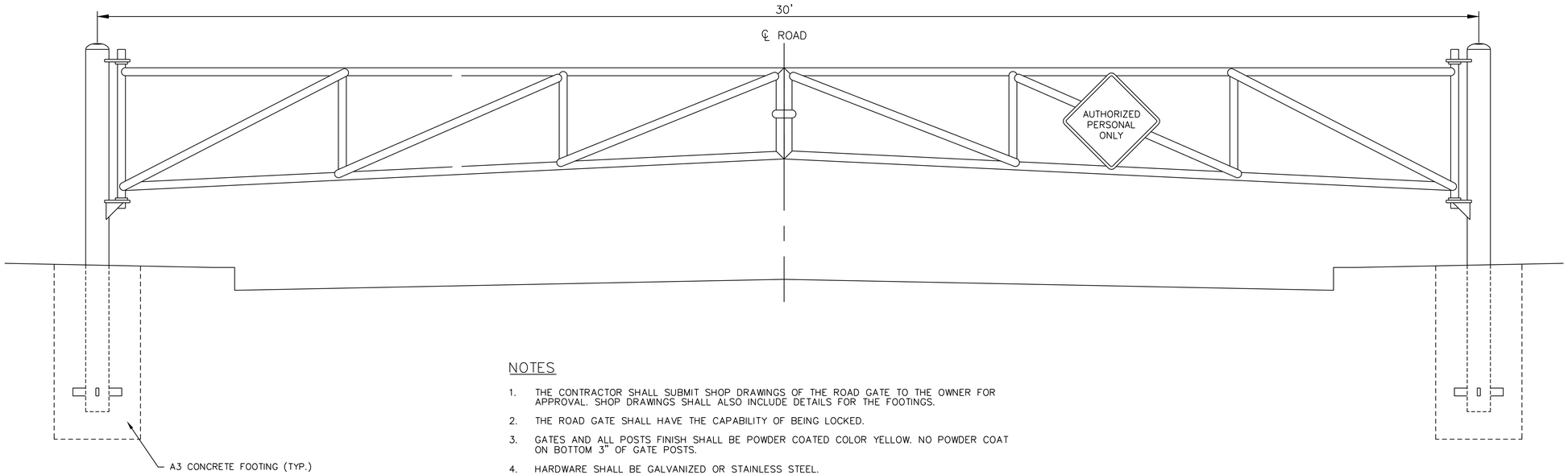

NOTES

1. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF THE ROAD GATE TO THE OWNER FOR APPROVAL. SHOP DRAWINGS SHALL ALSO INCLUDE DETAILS FOR THE FOOTINGS.
2. THE ROAD GATE SHALL HAVE THE CAPABILITY OF BEING LOCKED.
3. GATES AND ALL POSTS FINISH SHALL BE POWDER COATED COLOR YELLOW. NO POWDER COAT ON BOTTOM 3" OF GATE POSTS.
4. HARDWARE SHALL BE GALVANIZED OR STAINLESS STEEL.
5. SIGNS SHALL BE REFLECTIVE YELLOW WITH BLACK LETTERING.

ROAD GATE
SCALE: N.T.S.

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CHECKED BY:	DEC

SHEET TITLE

GATE DETAIL

C10.1

SHEET 33 OF 54

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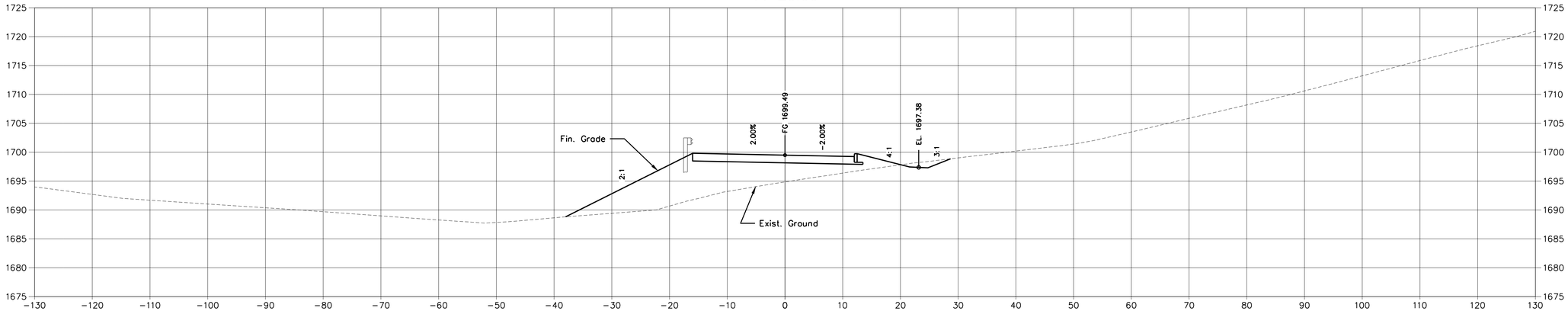

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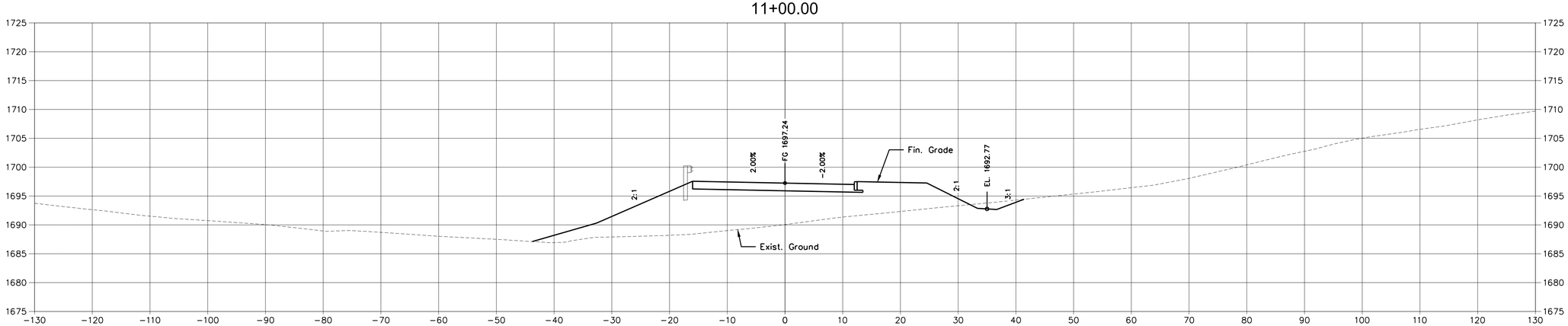

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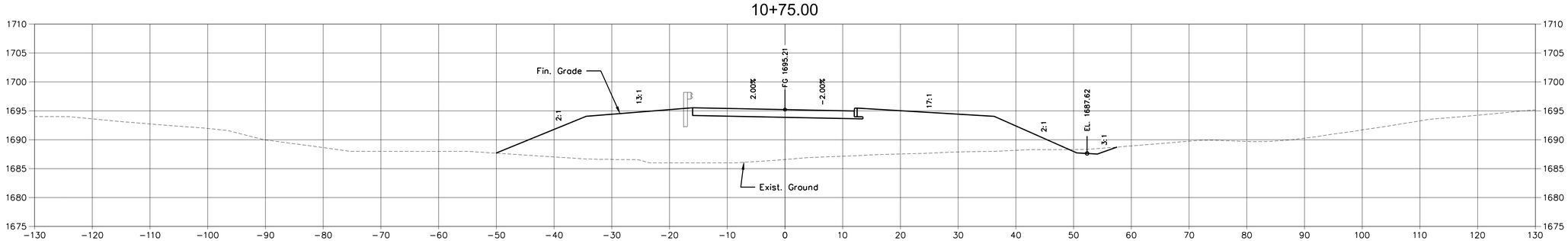

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SCALE:	1"=10'
DESIGNED BY:	CER
DRAWN BY:	CER/DEC
CHECKED BY:	DEC

SHEET TITLE

CROSS SECTIONS

C11.0

SHEET 34 OF 54

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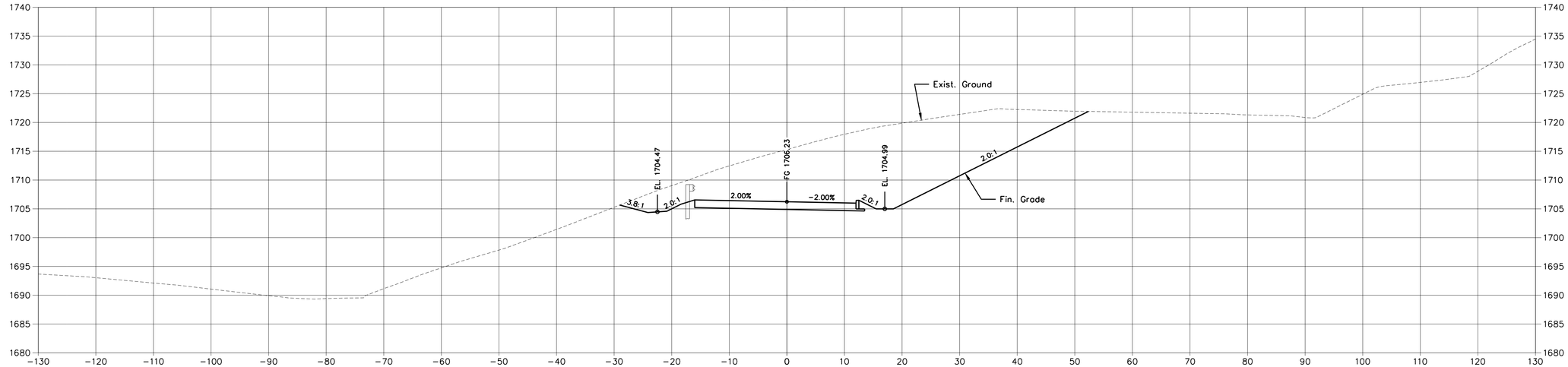

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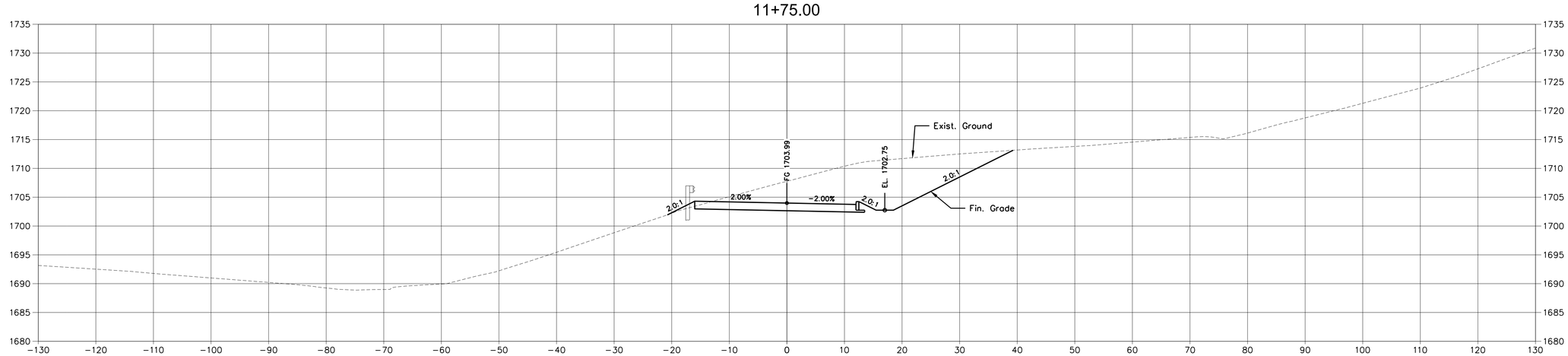

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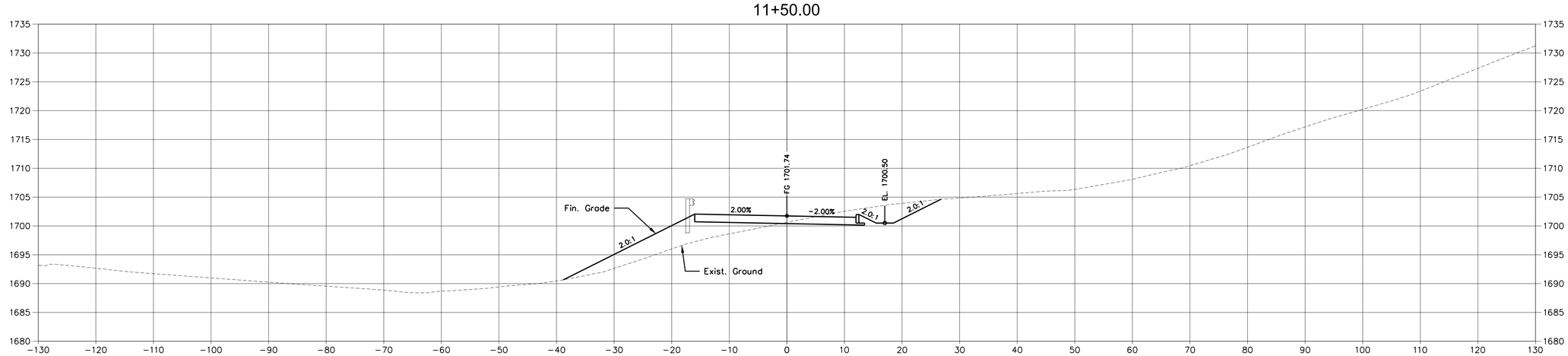

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SHEET TITLE

CROSS SECTIONS

C11.1

SHEET 35 OF 54

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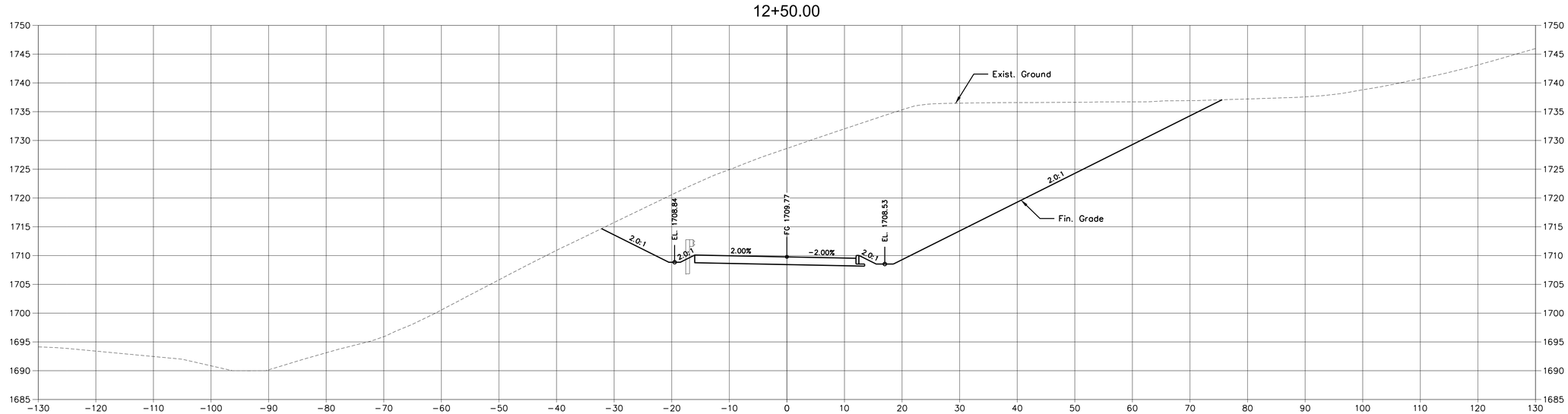

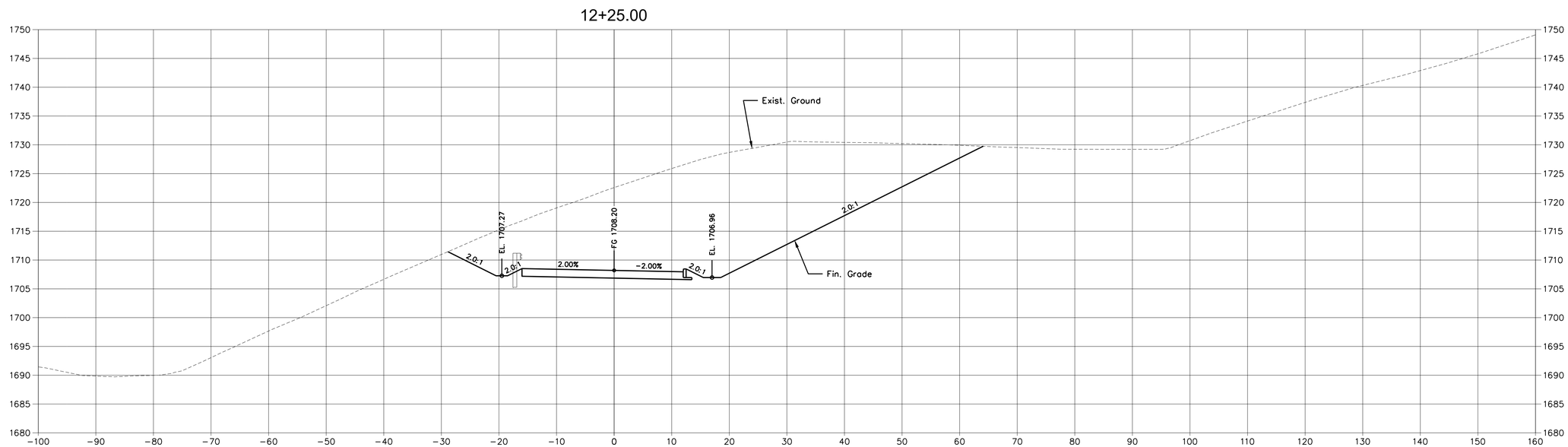

A. MORTON THOMAS AND ASSOCIATES, INC.
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SULLIVAN COUNTY SCHOOLS

SECONDARY ACCESS ROAD TO WEST RIDGE

SULLIVAN COUNTY
BOARD OF EDUCATION
154 BLOUNTVILLE BYPASS
BLOUNTVILLE, TN 37617

PROJECT NUMBER: 030122(KD)

MARK	DATE	DESCRIPTION

FINAL PLANS

PROJECT NO:	18-0070.001
SCALE:	1"=10'
DESIGNED BY:	CER
DRAWN BY:	CER/DEC
CHECKED BY:	DEC

SHEET TITLE

CROSS SECTIONS

C11.2

SHEET 36 OF 54

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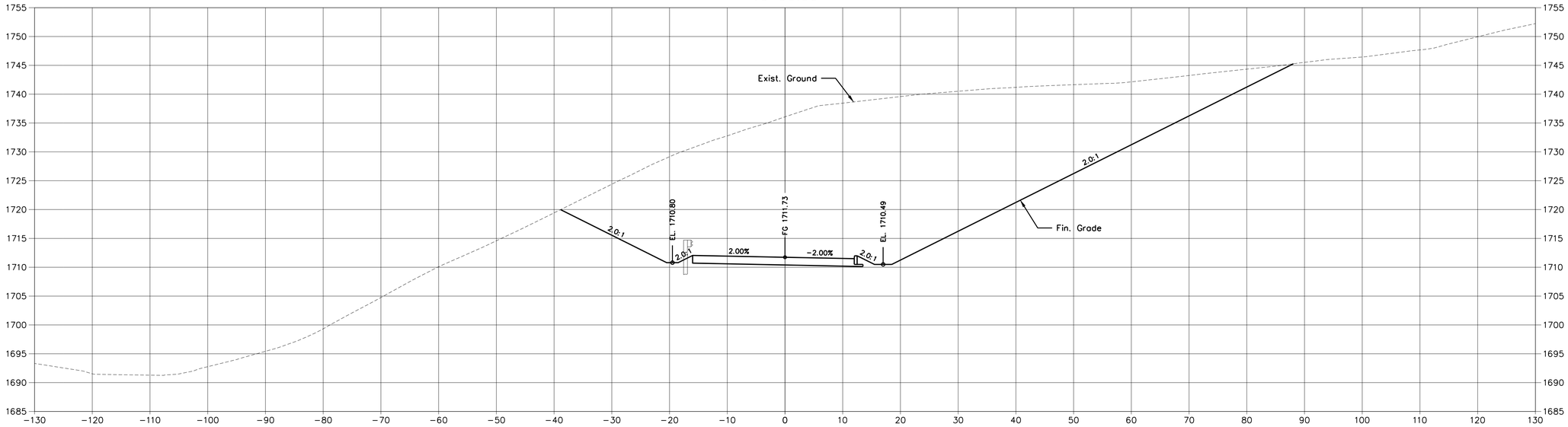

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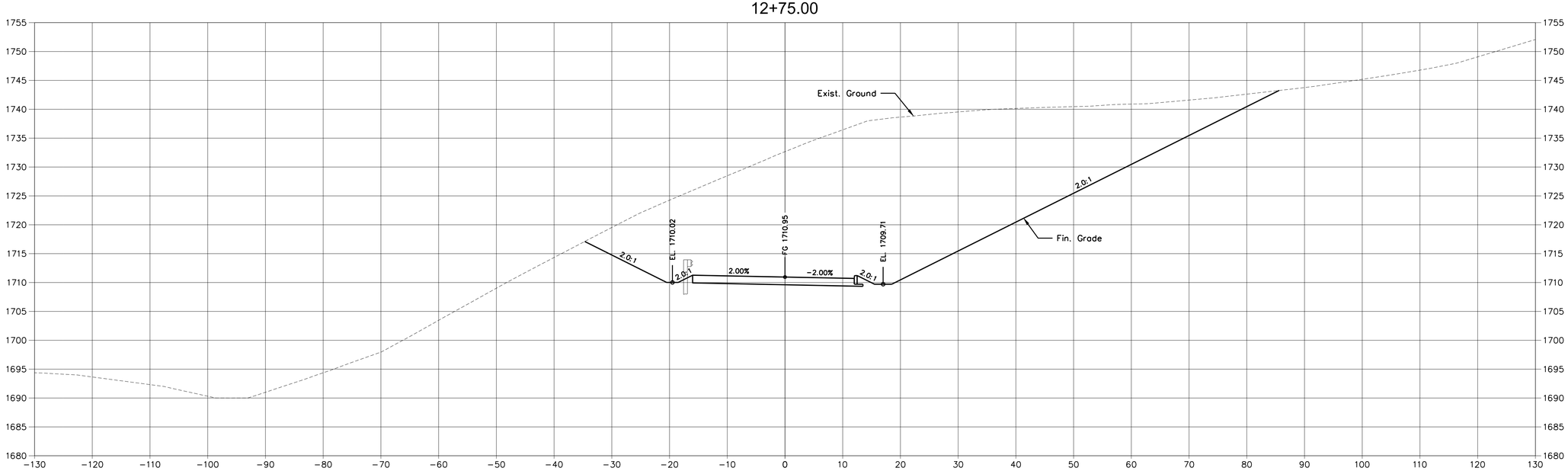

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CHECKED BY:	DEC

SHEET TITLE

CROSS SECTIONS

C11.3

SHEET 37 OF 54

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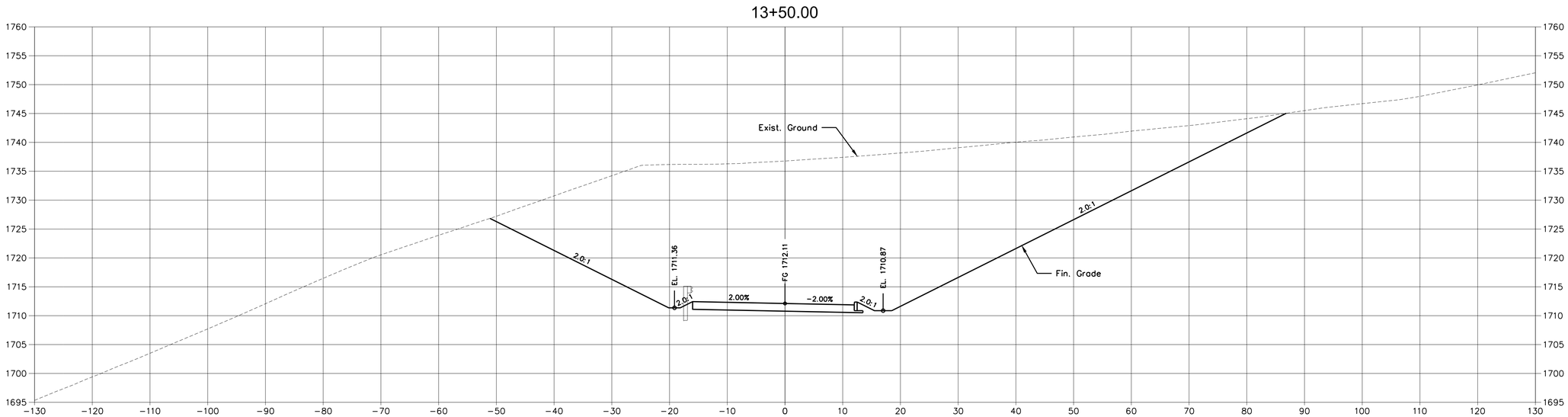

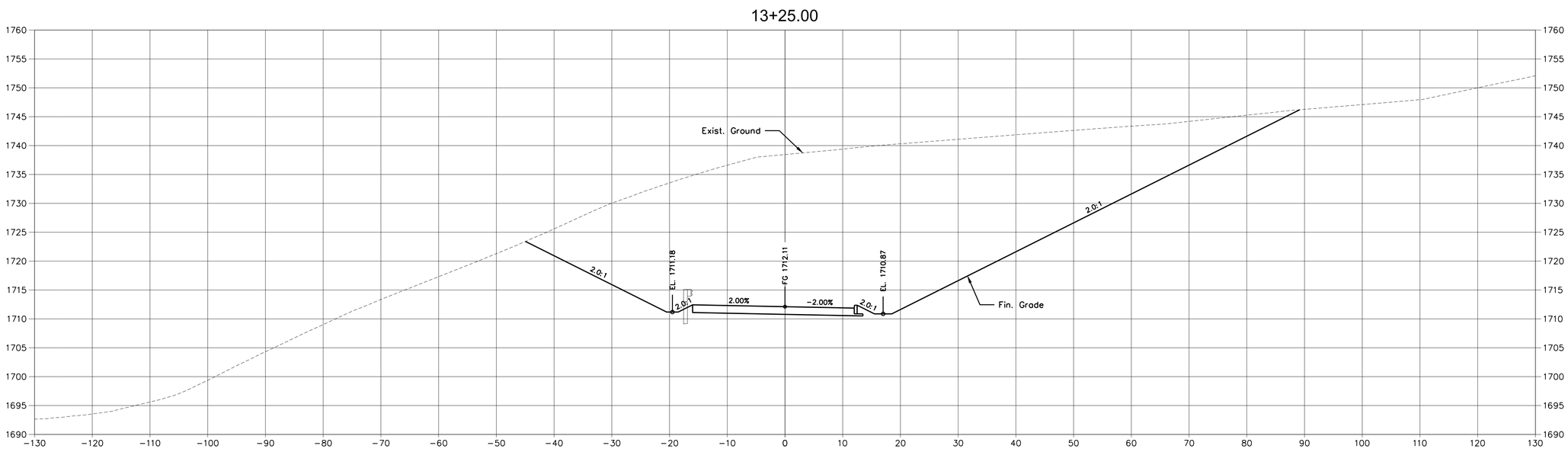

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SHEET TITLE

CROSS SECTIONS

C11.4

SHEET 38 OF 54

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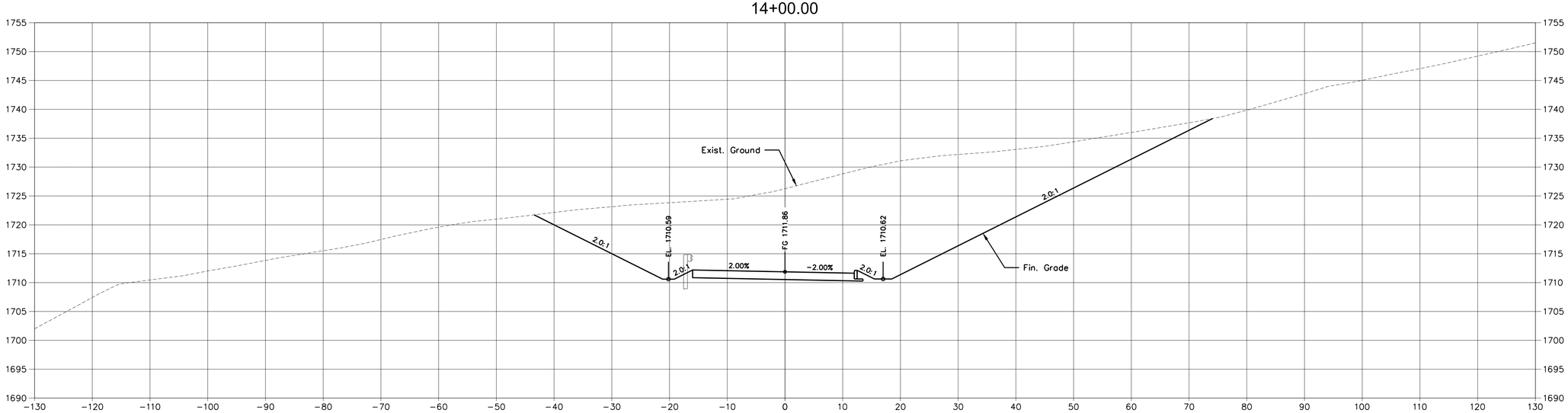

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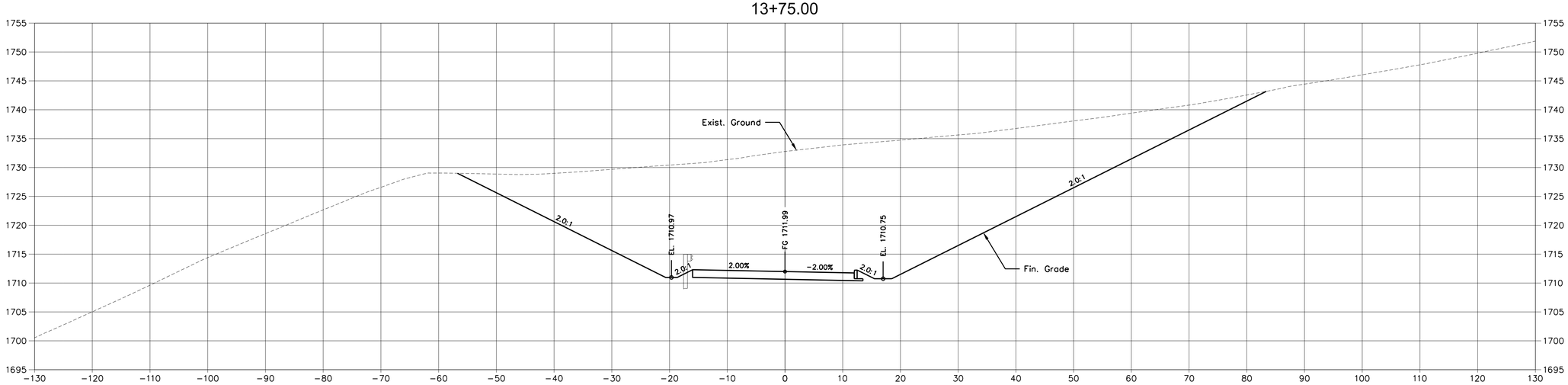

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SHEET TITLE

CROSS SECTIONS

C11.5

SHEET 39 OF 54

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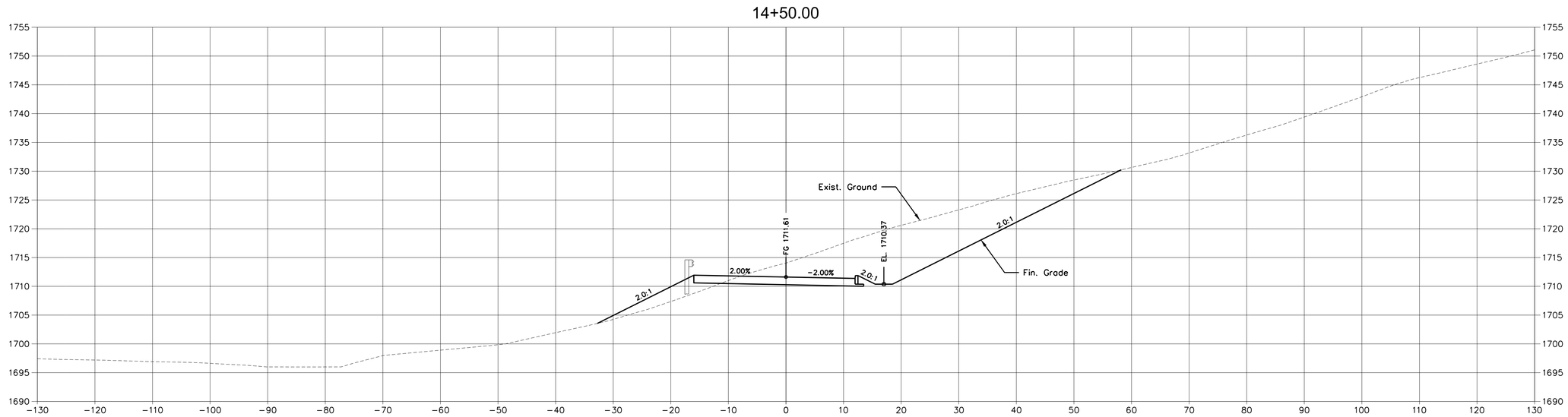

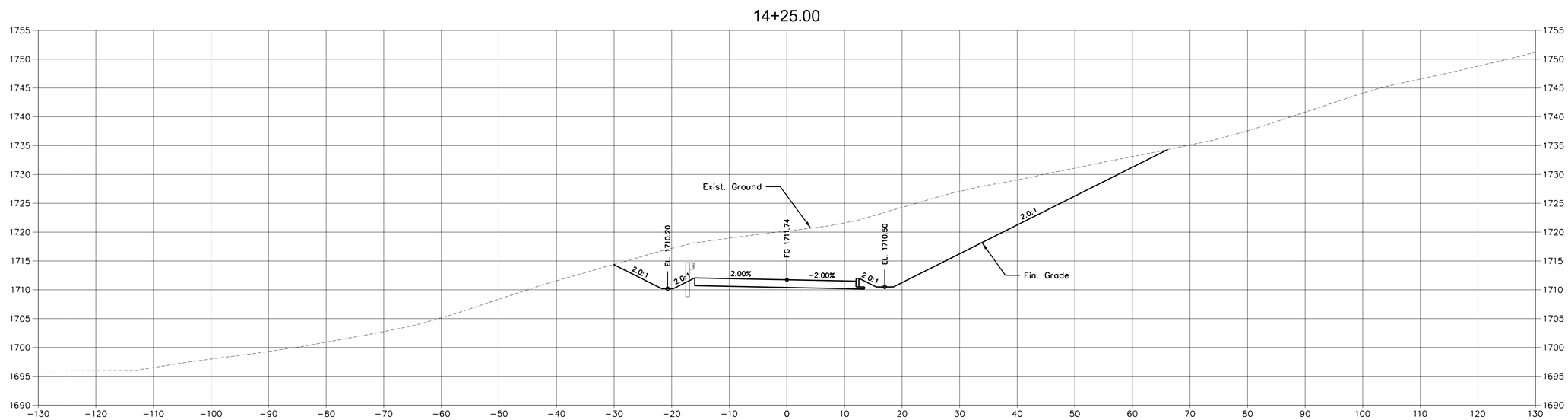

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SHEET TITLE

CROSS SECTIONS

C11.6

SHEET 40 OF 54

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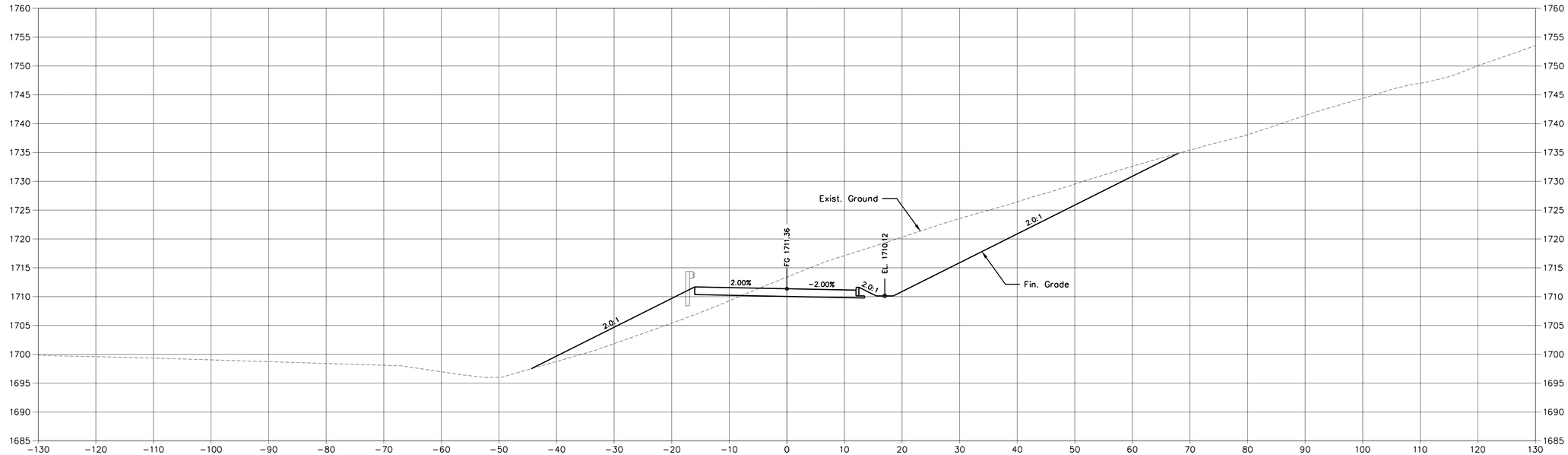

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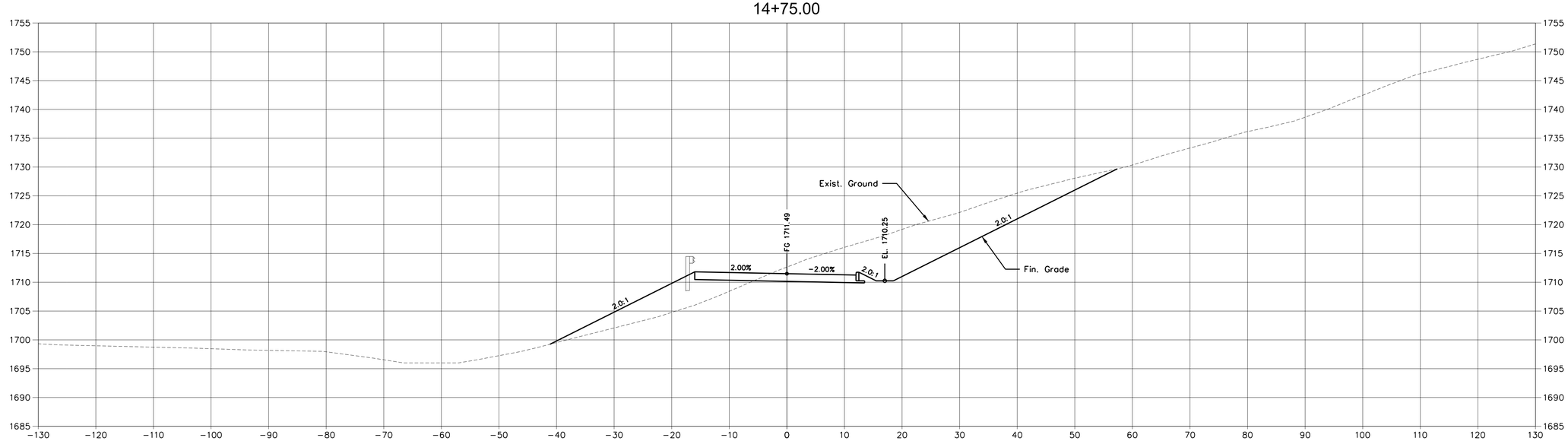

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CHECKED BY:	DEC

SHEET TITLE

CROSS SECTIONS

C11.7

SHEET 41 OF 54

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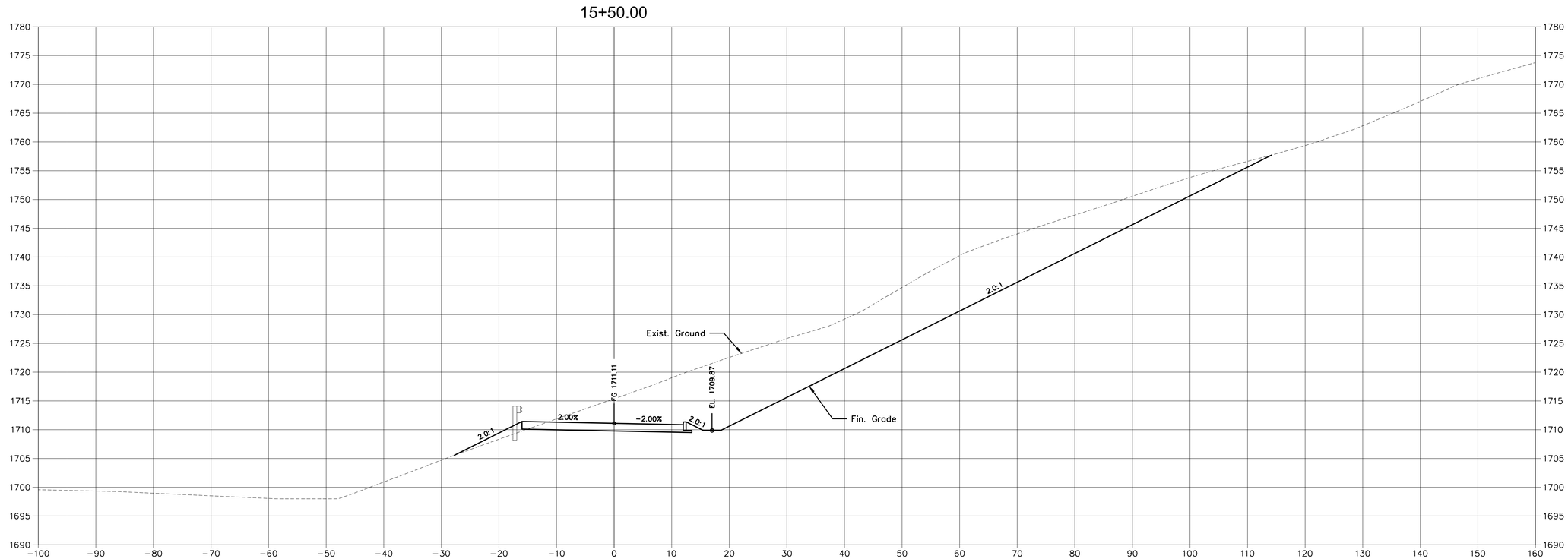

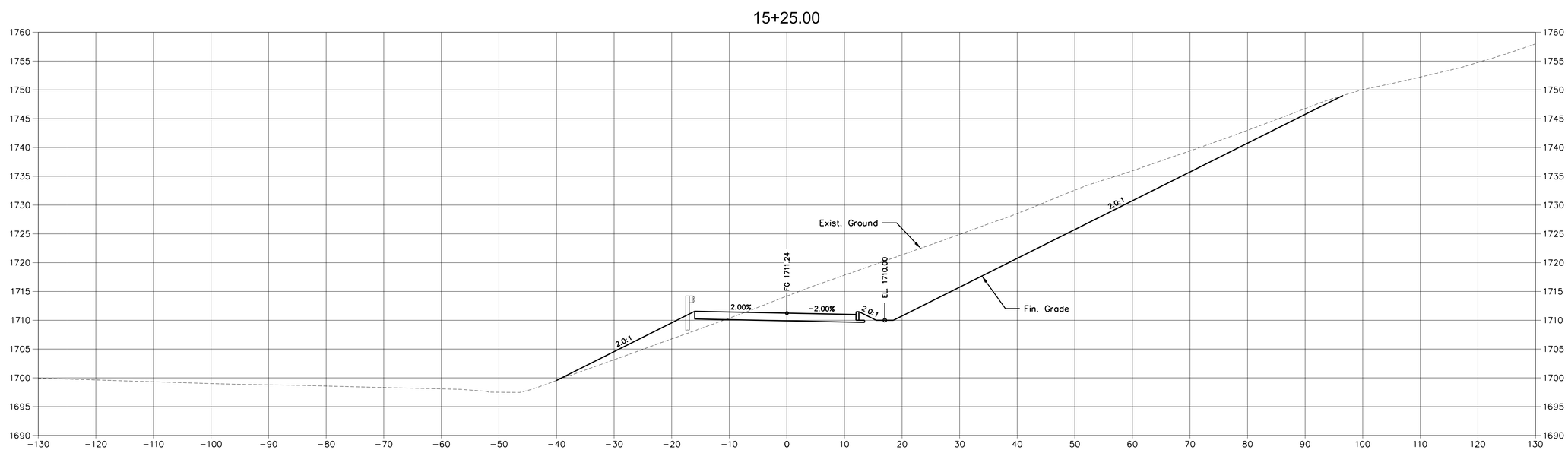

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SHEET TITLE

CROSS SECTIONS

C11.8

SHEET 42 OF 54

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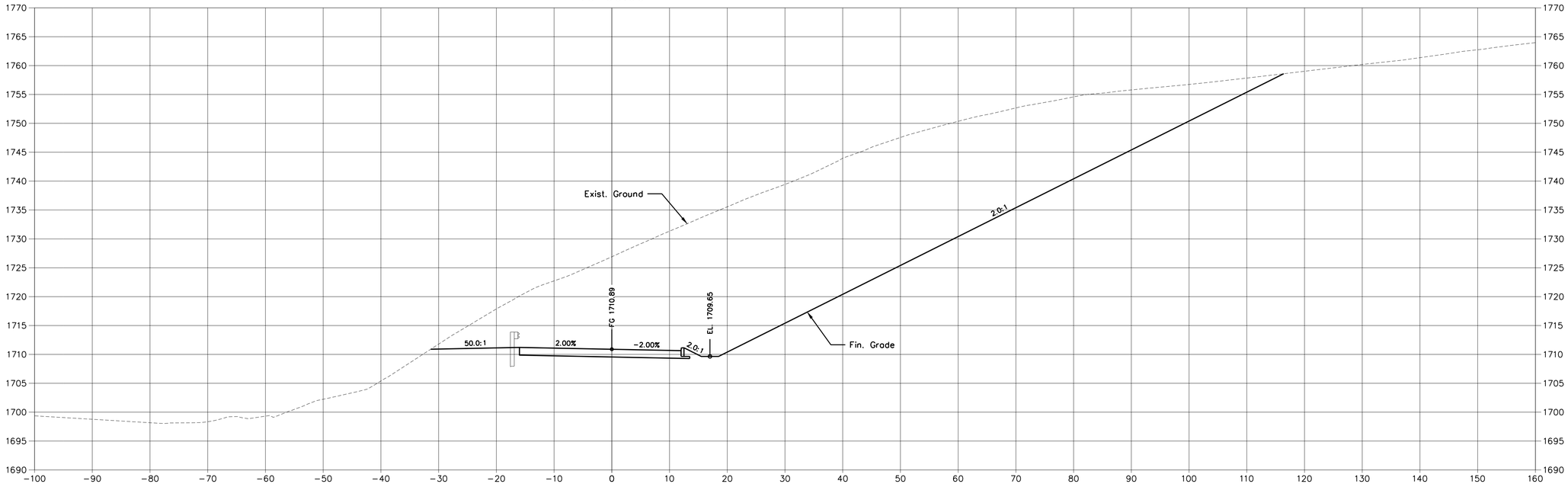

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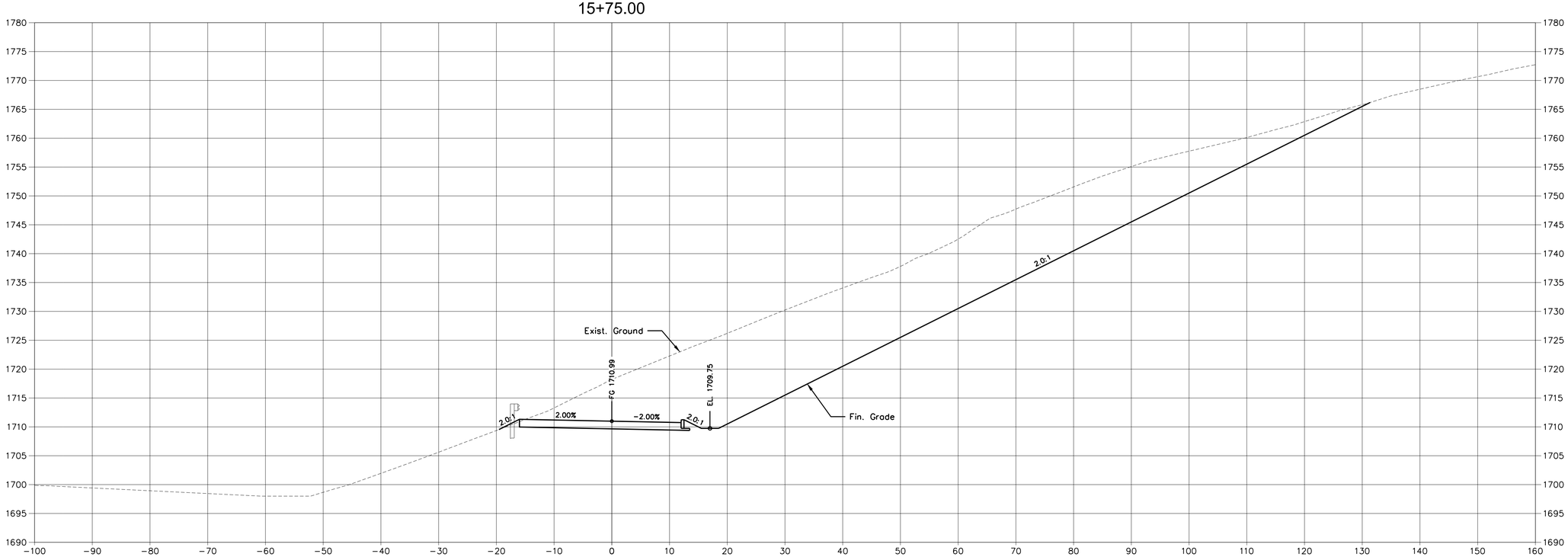

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154 BLOUNTVILLE BYPASS
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PROJECT NUMBER: 030122(KD)

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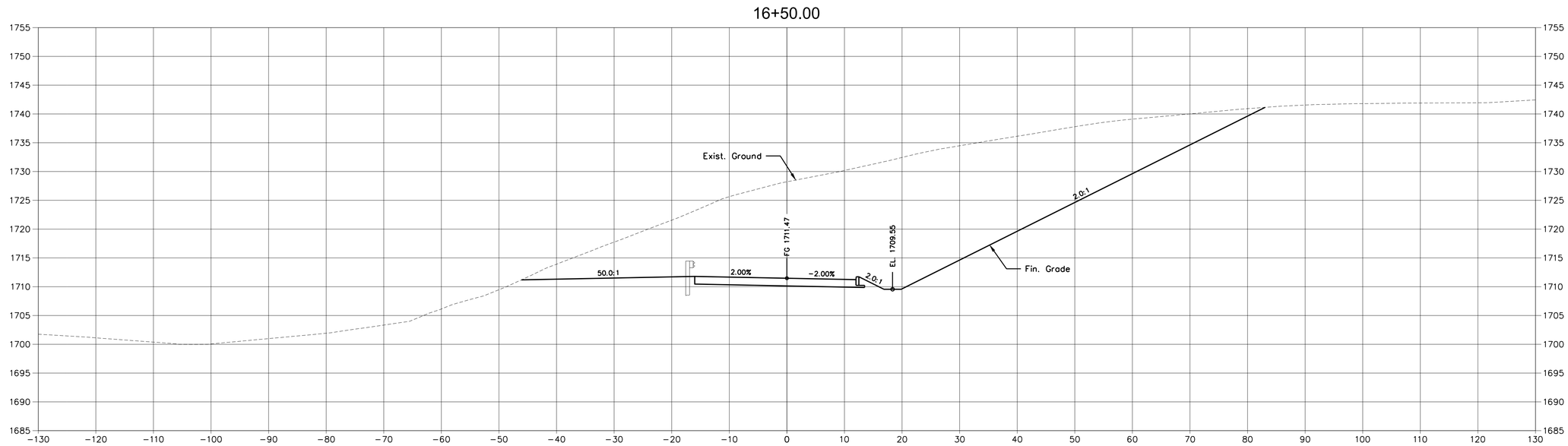
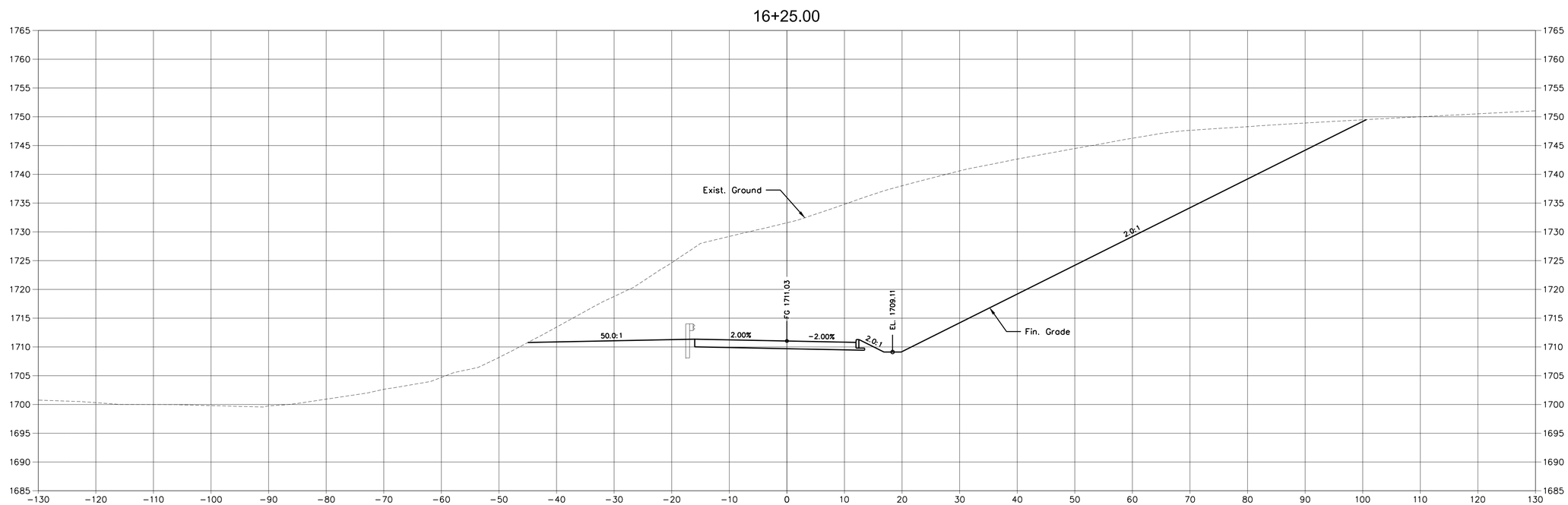
SHEET TITLE

CROSS SECTIONS

C11.9





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CHECKED BY:	DEC

SHEET TITLE

CROSS SECTIONS

C11.10

SHEET 44 OF 54

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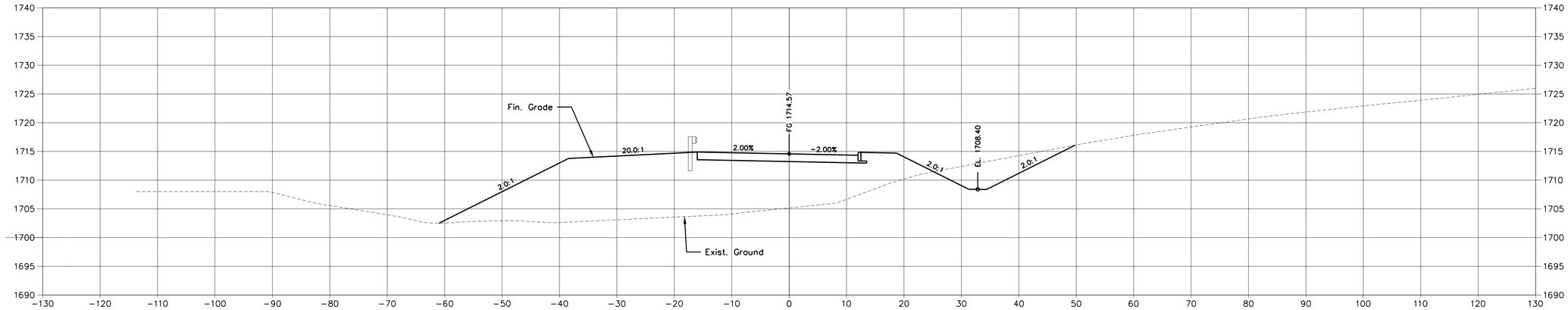

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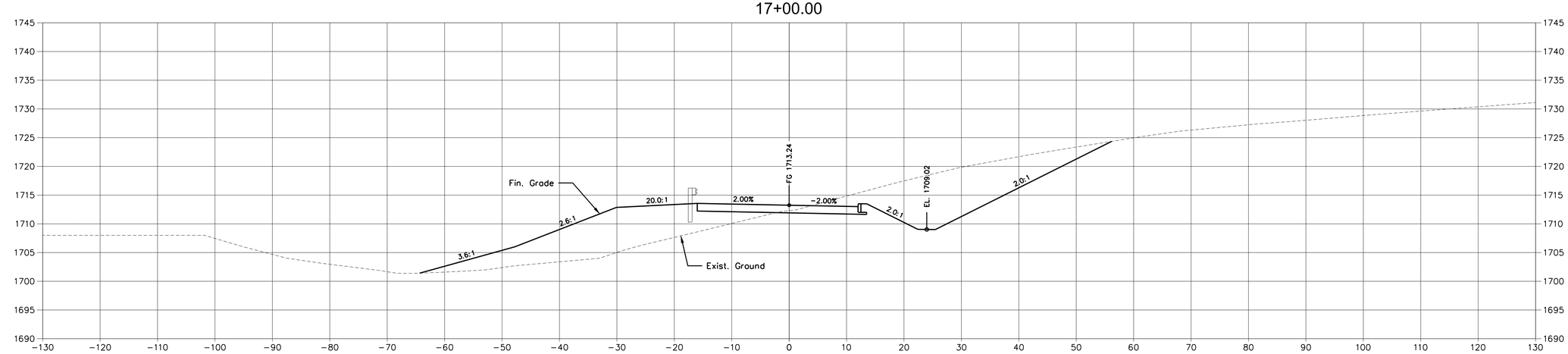

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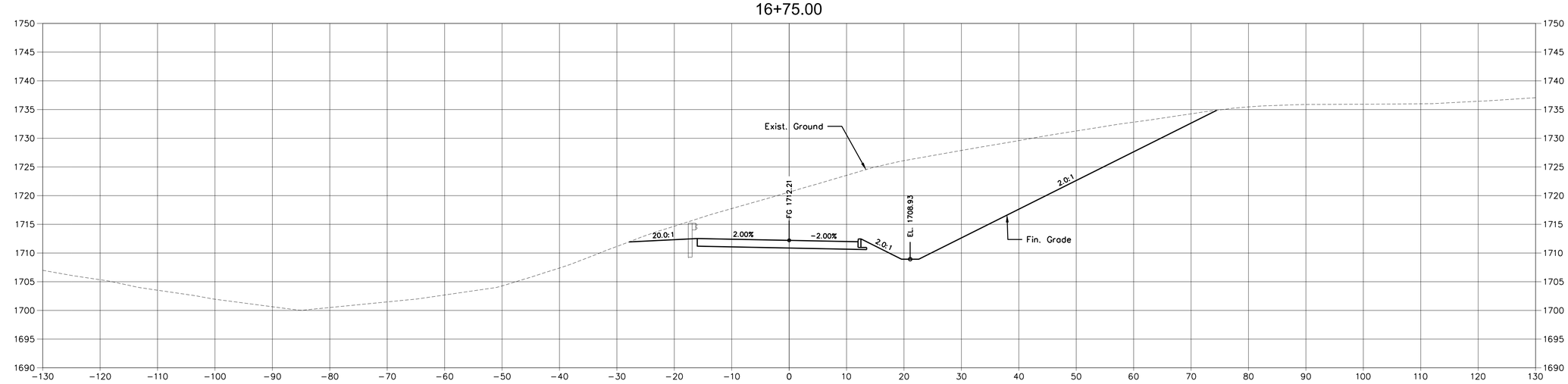

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SHEET TITLE

CROSS SECTIONS

C11.11

SHEET 45 OF 54

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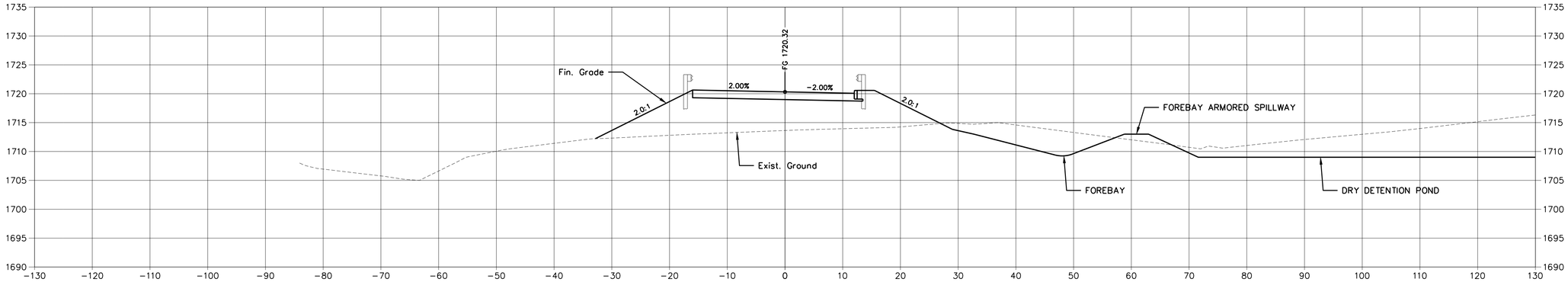

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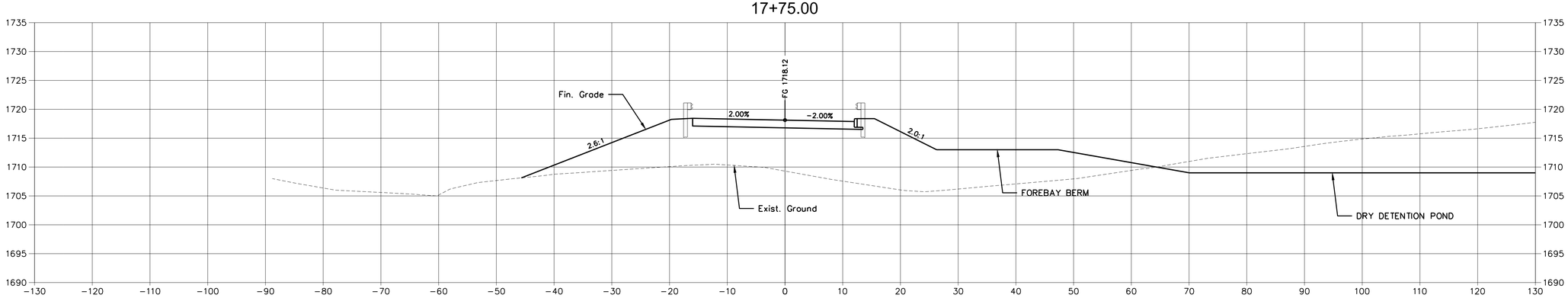

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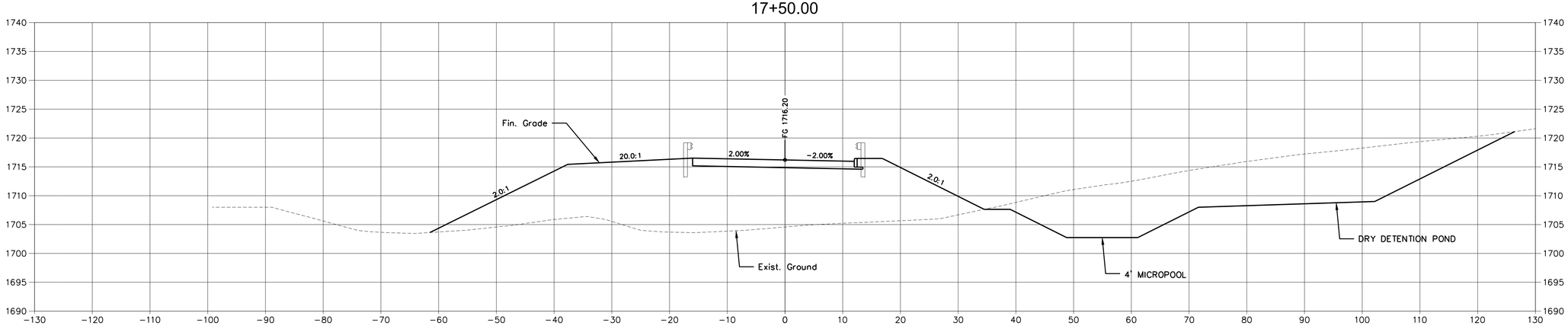

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CROSS SECTIONS

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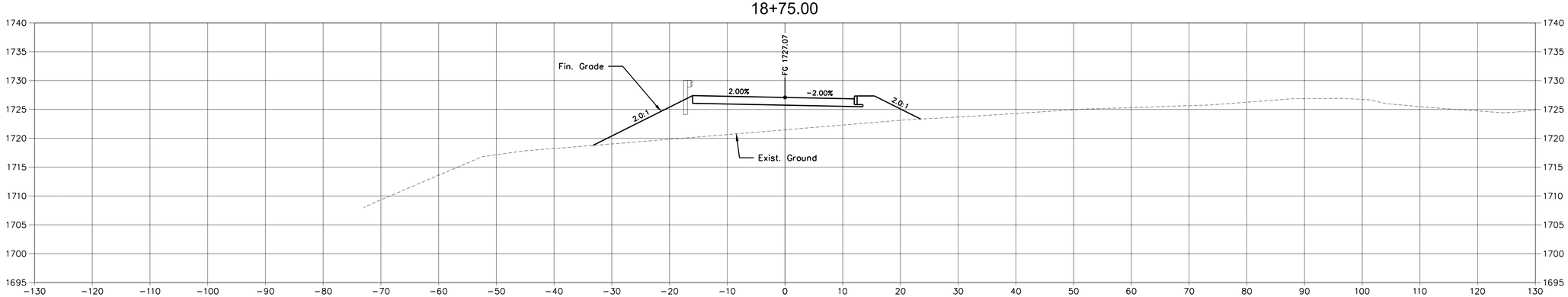

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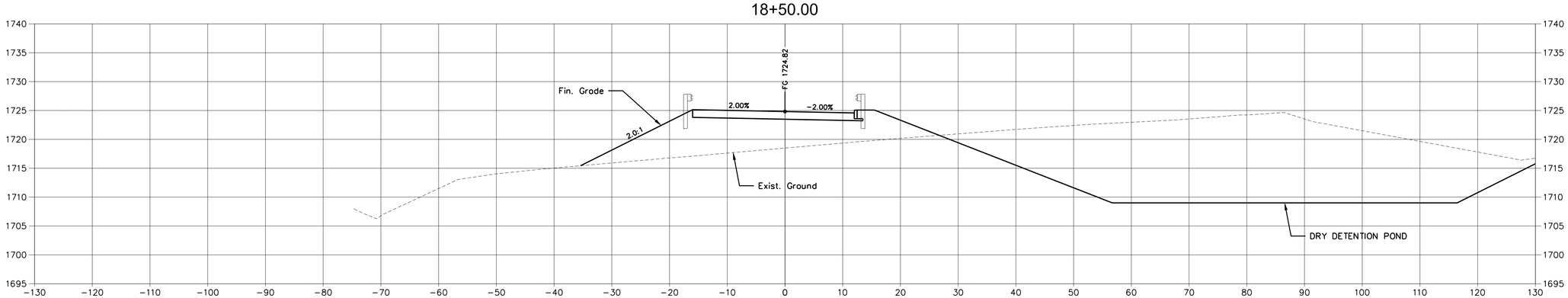

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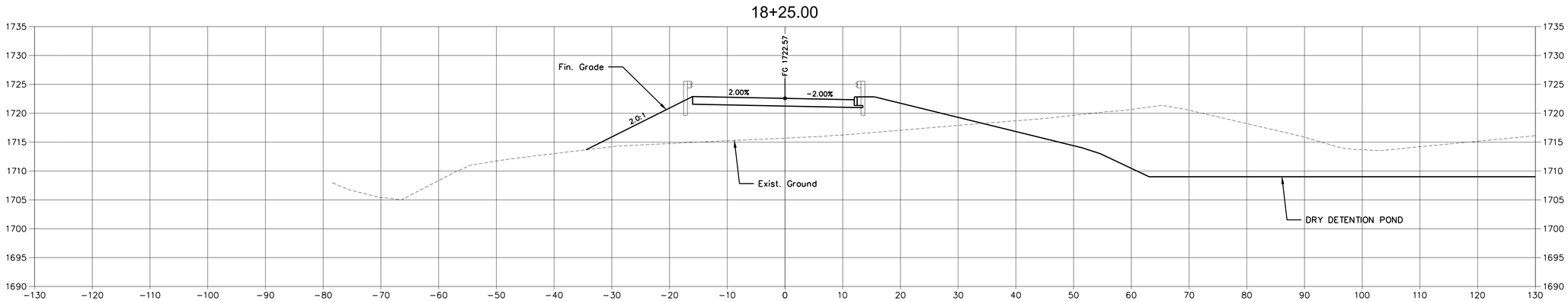

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C11.13

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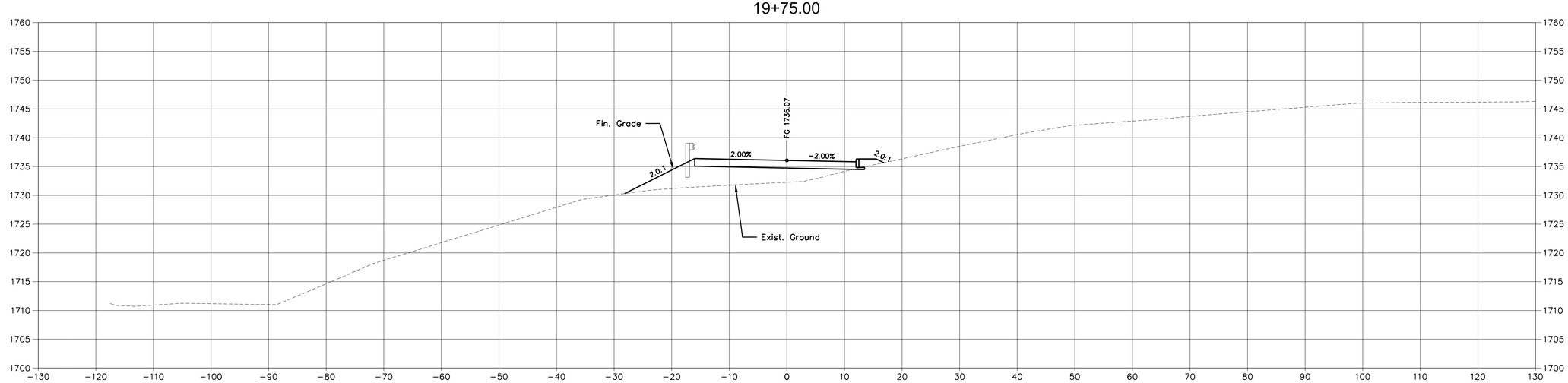

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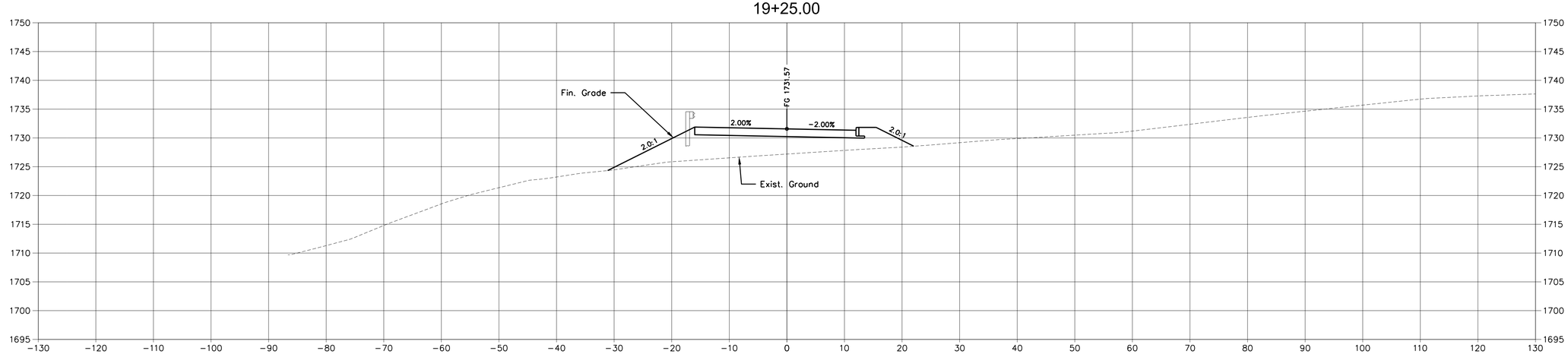

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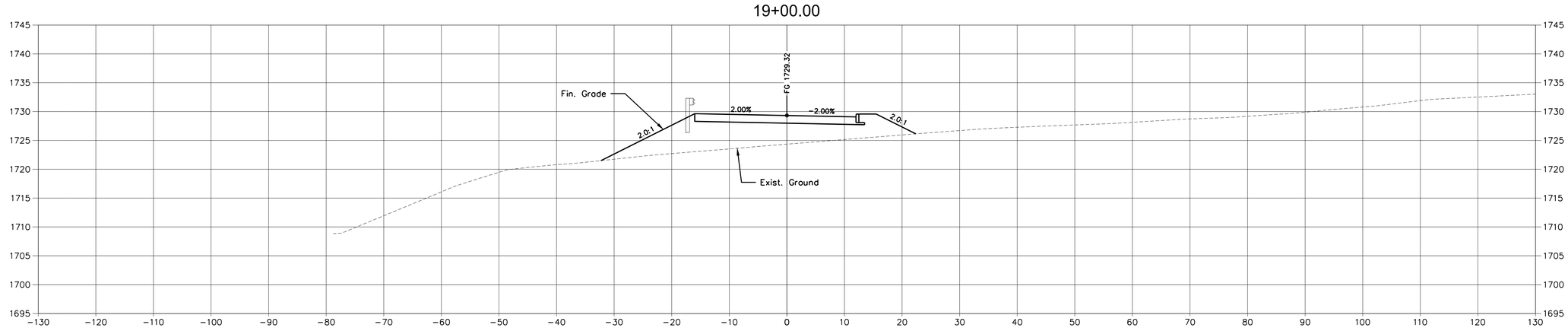

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SULLIVAN COUNTY SCHOOLS

SECONDARY ACCESS ROAD TO WEST RIDGE

SULLIVAN COUNTY
BOARD OF EDUCATION
154 BLOUNTVILLE BYPASS
BLOUNTVILLE, TN 37617

PROJECT NUMBER: 030122(KD)

MARK	DATE	DESCRIPTION

FINAL PLANS

PROJECT NO:	18-0070.001
SCALE:	1"=10'
DESIGNED BY:	CER
DRAWN BY:	CER/DEC
CHECKED BY:	DEC

SHEET TITLE

CROSS SECTIONS

C11.14

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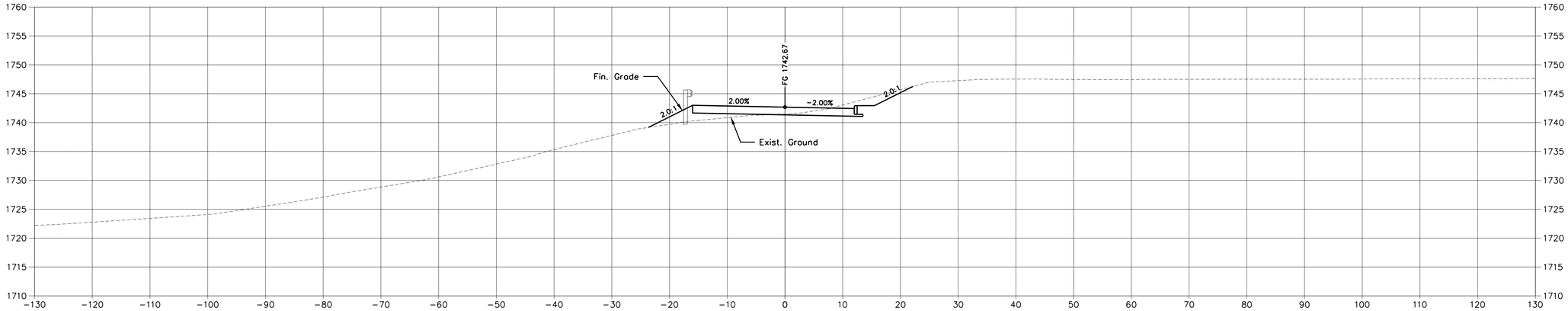

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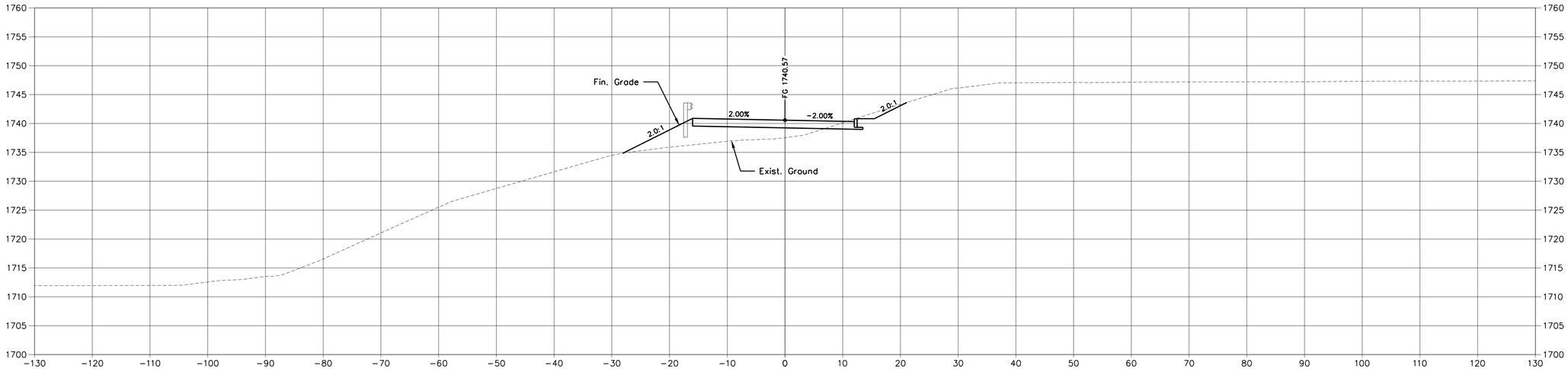

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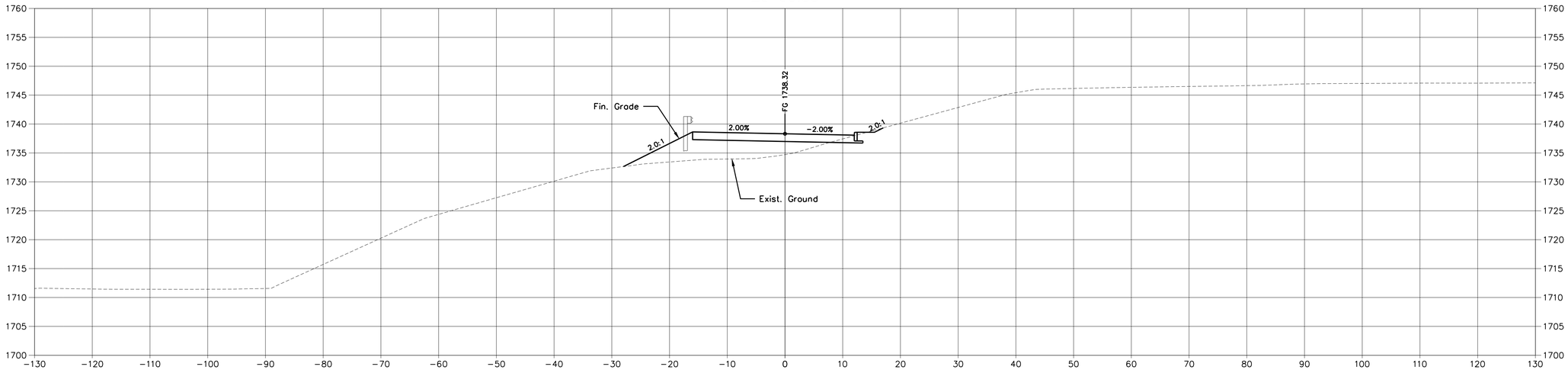

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SHEET TITLE

CROSS SECTIONS

C11.15

SHEET 49 OF 54

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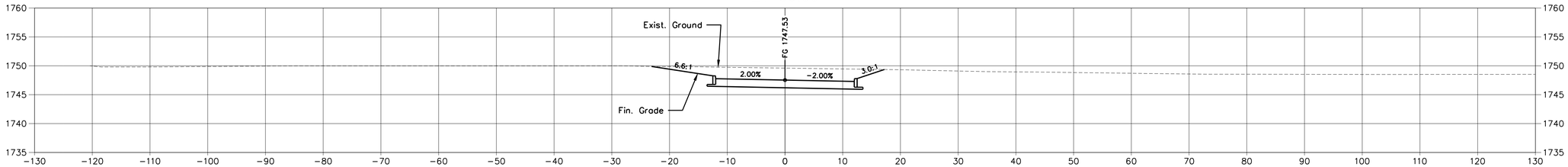
21+50.00



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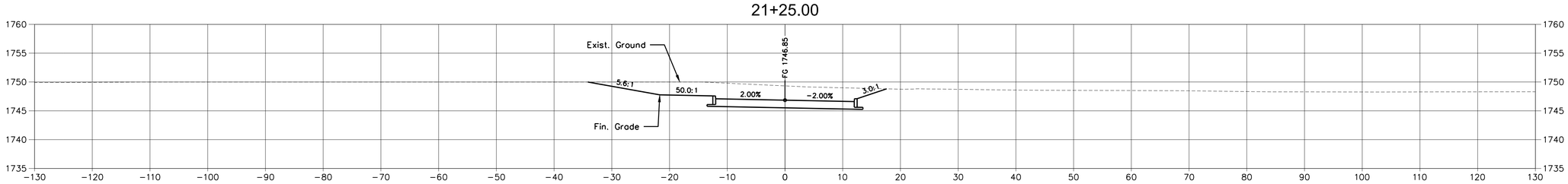

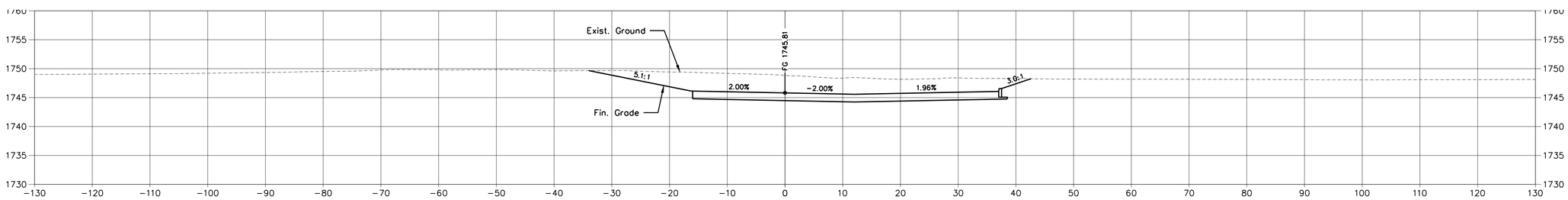

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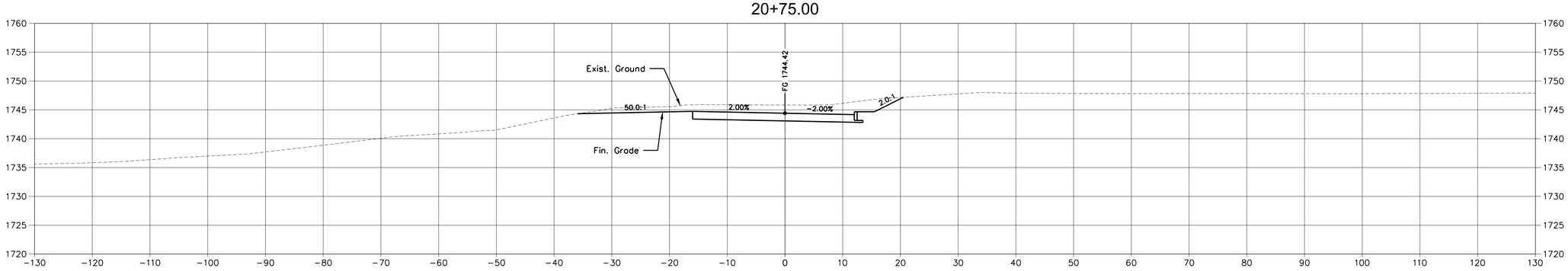

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CROSS SECTIONS

C11.16

SHEET 50 OF 54

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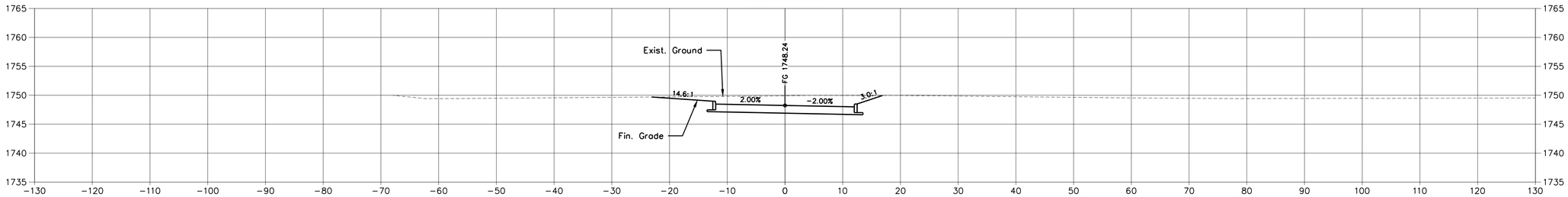
22+50.00



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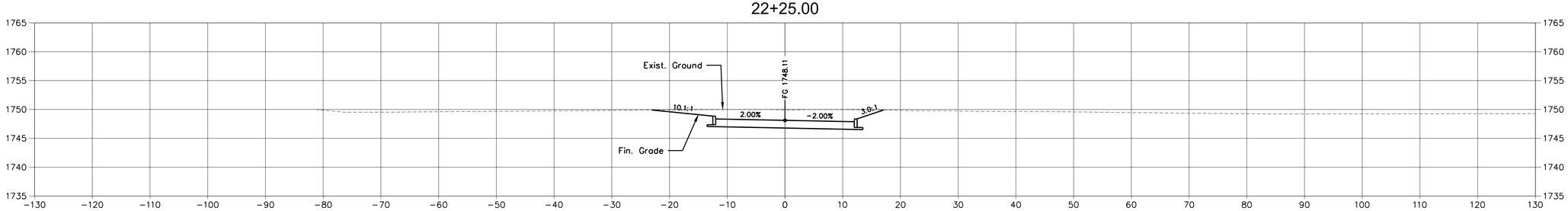

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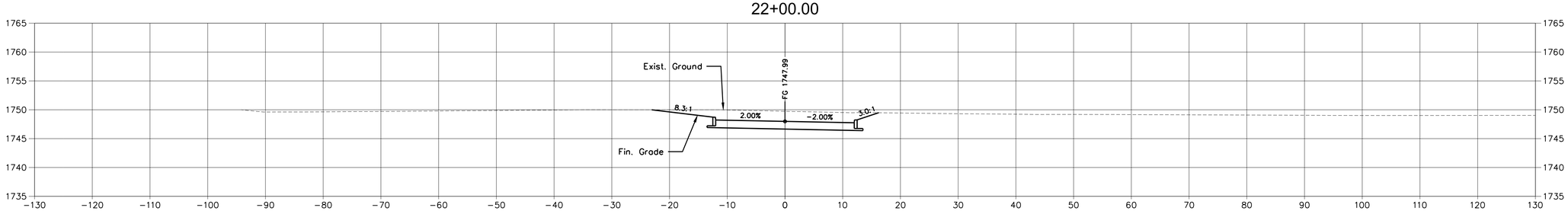

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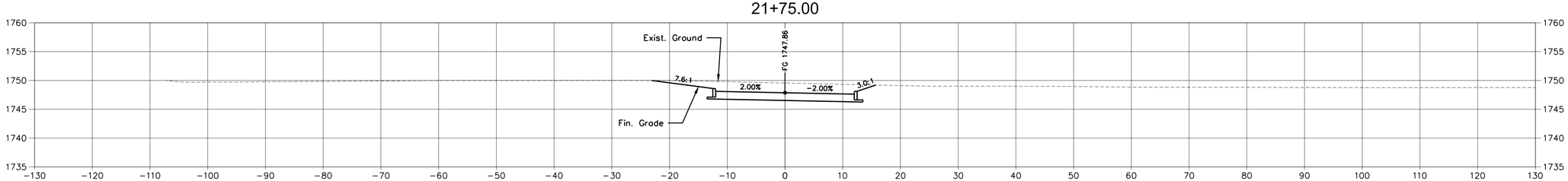

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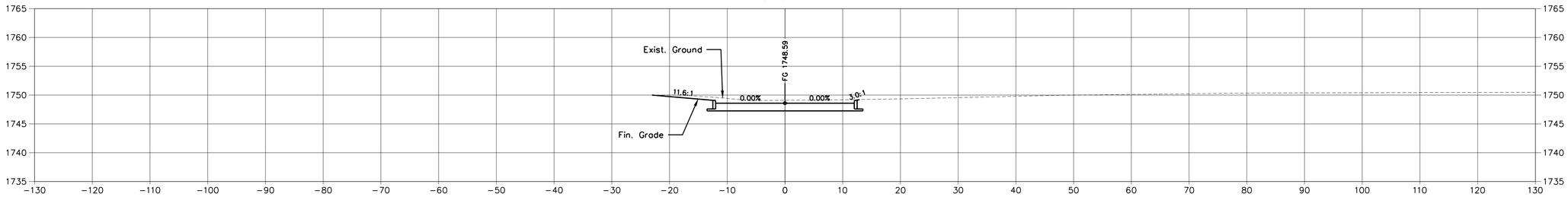

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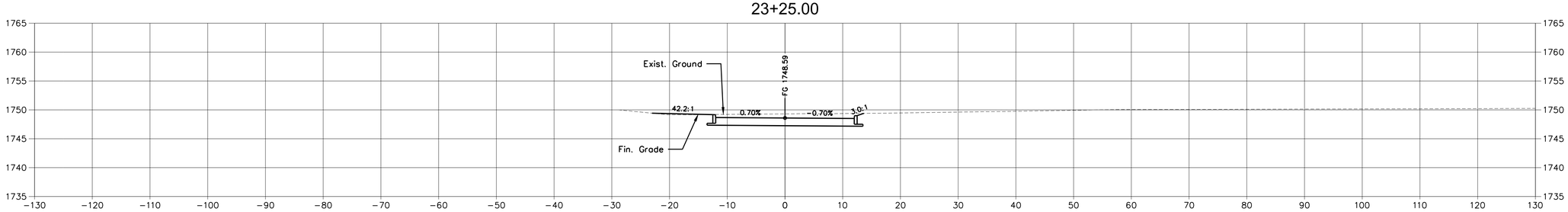

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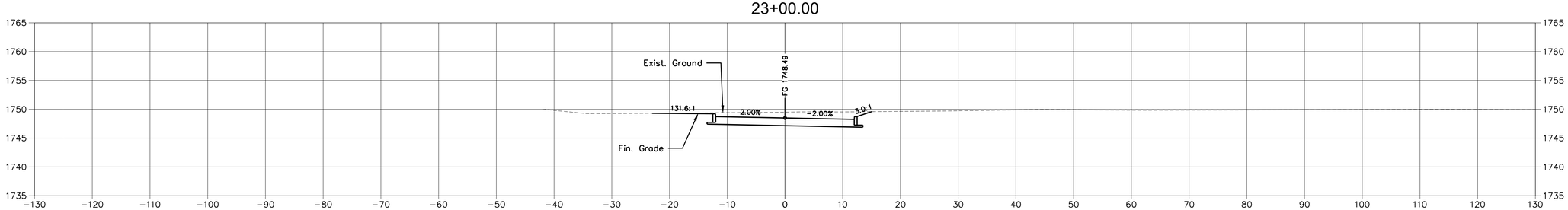

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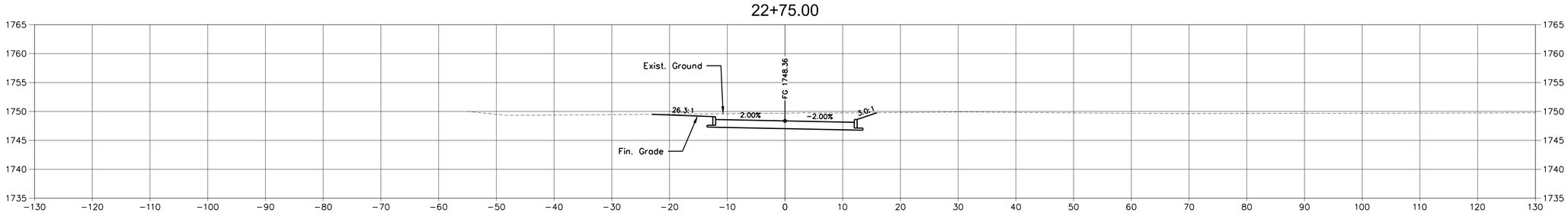

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SHEET TITLE

CROSS SECTIONS

C11.18

SHEET 52 OF 54

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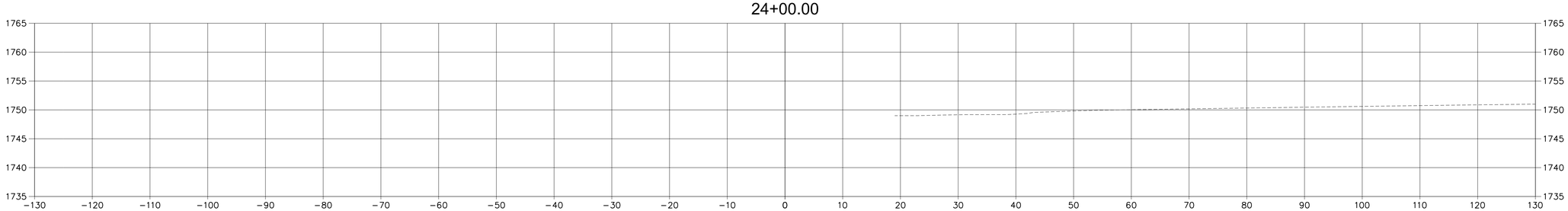

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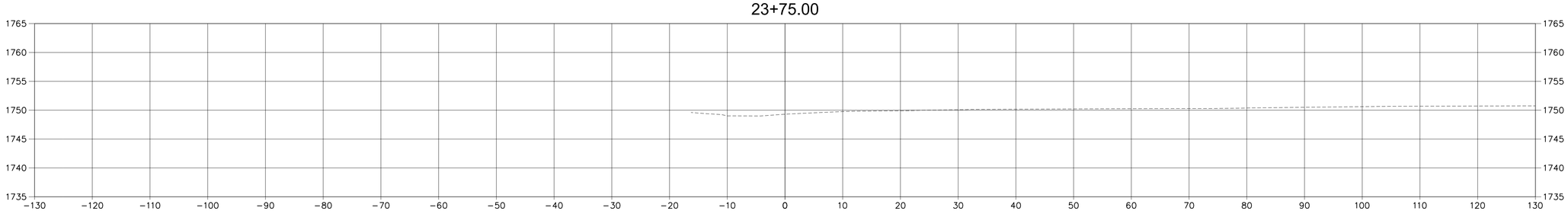

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CROSS SECTIONS

C11.19

SHEET 53 OF 54

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