

LOCATION MAP

LATITUDE: N 40°10'05" LONGITUDE: W 81°54'55"



PORTION TO BE IMPROVED .....	
INTERSTATE HIGHWAY .....	
FEDERAL ROUTES .....	
STATE ROUTES .....	
COUNTY & TOWNSHIP ROADS .....	
OTHER ROADS .....	

DESIGN DESIGNATION

	SR-16	T-483C
CURRENT ADT (2022) .....	8,400	100
DESIGN YEAR ADT (2042) .....	9,300	120
DESIGN HOURLY VOLUME (2042) .....	930	14
DIRECTIONAL DISTRIBUTION .....	50%	54%
TRUCKS (24 HOUR B&C) .....	8%	1%
DESIGN SPEED .....	60 MPH	55 MPH
LEGAL SPEED .....	55 MPH	55 MPH
DESIGN FUNCTIONAL CLASSIFICATION:	RURAL PRINCIPAL ARTERIAL	RURAL MINOR COLLECTOR
NHS PROJECT .....	YES	NO

DESIGN EXCEPTIONS

NONE

ADA DESIGN WAIVERS

NONE

UNDERGROUND UTILITIES

Contact Two Working Days  
Before You Dig

Before You Dig

OHIO 811, 8-1-1, or 1-800-362-2764  
(Non members must be called directly)

PLAN PREPARED BY:

AECOM

277 W NATIONWIDE BLVD, SUITE 500 COLUMBUS, OHIO 43215  
(614) 464-4500

STATE OF OHIO  
DEPARTMENT OF TRANSPORTATION

COS-16-1.40

VIRGINIA TOWNSHIP

COSHOCTON COUNTY

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STAGE 3 SUBMISSION  
OCTOBER 1, 2025

STANDARD CONSTRUCTION DRAWINGS							SUPPLEMENTAL SPECIFICATIONS		SPECIAL PROVISIONS
BP-3.1	1/19/24	TC-41.20	10/18/13				800	1/16/26	WATERWAY
BP-3.2	1/18/19	TC-41.30	4/21/23				832	7/18/25	PERMIT
BP-4.1	7/19/13	TC-42.20	10/18/13						X/XX/XX
DM-4.3	1/15/16								
DM-4.4	1/15/16								
HW-1.1	7/18/25								
HWDD-1	1/17/25								
MGS-2.1	7/18/25								
MGS-4.2	7/18/25								
MGS-4.3	7/18/25								
MT-101.60	1/17/25								

FEDERAL PROJECT NUMBER

E250045

RAILROAD INVOLVEMENT

COLUMBUS & OHIO RIVER RAILROAD  
OHIO CENTRAL RAILROAD

PROJECT DESCRIPTION

PROPOSED IMPROVEMENTS INCLUDE THE RECONSTRUCTION OF 0.05 MILES OF T-483C, THE INSTALLATION, VIA PILOT TUBE GUIDED AUGER BORING METHODS, OF THREE LARGE DIAMETER CULVERT PIPES UNDER THE TOWNSHIP ROAD AND RAILROAD FACILITIES, AND SITE REGRADING.

EARTH DISTURBED AREAS

PROJECT EARTH DISTURBED AREA:	0.91 ACRES
ESTIMATED CONTRACTOR EARTH DISTURBED AREA:	0.00 ACRES
NOTICE OF INTENT EARTH DISTURBED AREA:	0.91 ACRES

2023 SPECIFICATIONS

THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, INCLUDING SUPPLEMENTAL SPECIFICATIONS LISTED IN THE PLANS, CHANGES LISTED IN THE PROPOSAL, AND THE SUPPLEMENTAL SPECIFICATION 800 VERSION INDICATED ON THE PROPOSAL SHALL GOVERN THIS IMPROVEMENT.

I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL NOT REQUIRE THE CLOSING TO TRAFFIC OF THE HIGHWAY EXCEPT FOR THE SIDE ROAD AS DESCRIBED ON SHEET P.7 AND THAT PROVISIONS FOR THE MAINTENANCE AND SAFETY OF TRAFFIC WILL BE AS SET FORTH ON THE PLANS AND ESTIMATES.

Jason L. Sturgeon, P.E.  
District 05 Deputy Director

Pamela Boratyn  
Director, Department of Transportation

ENGINEER'S SEAL



TITLE SHEET

DESIGN AGENCY

AECOM

DESIGNER

HG

REVIEWER

MAW 10-01-25

PROJECT ID

119871

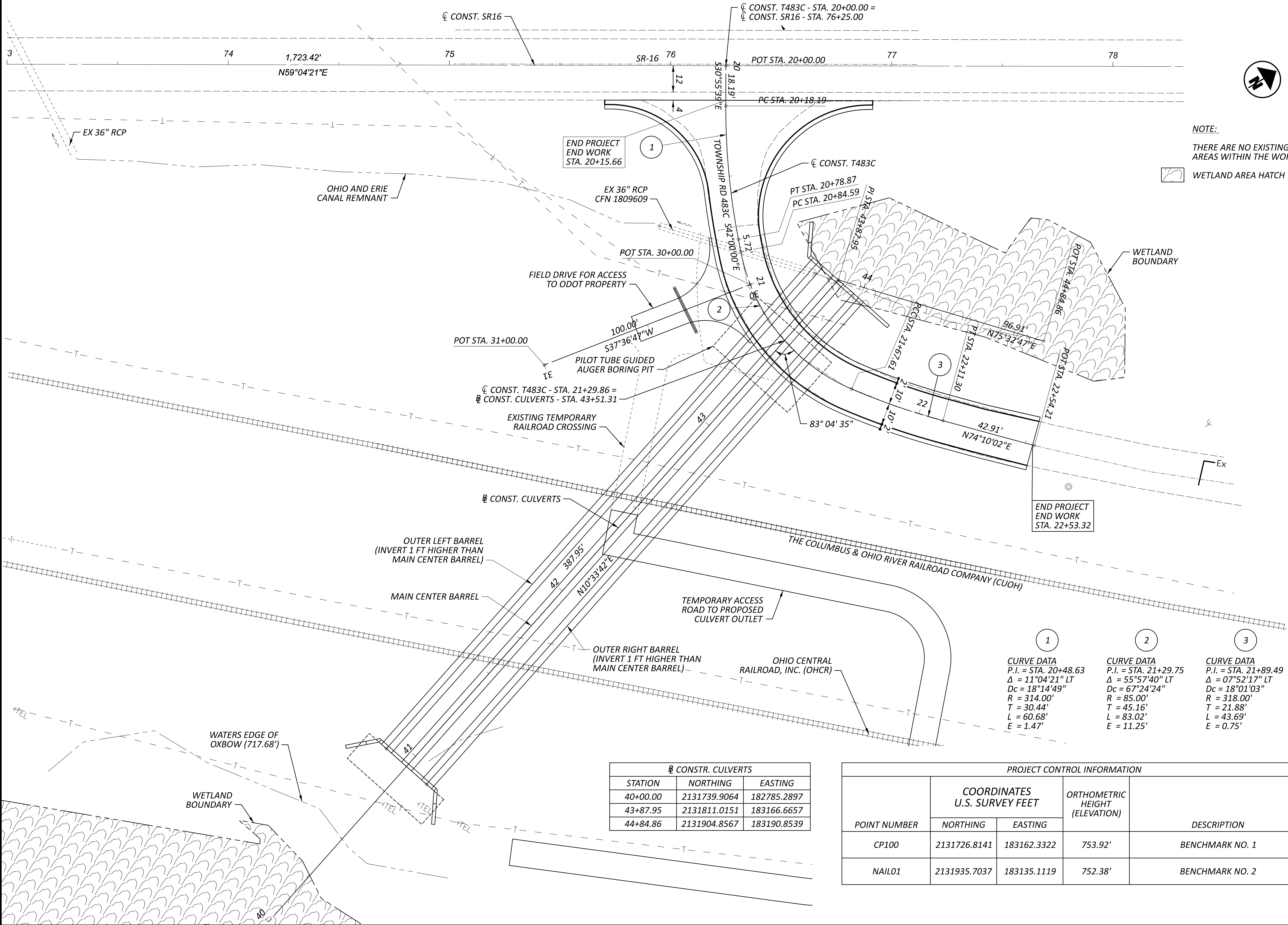
SHEET

TOTAL

P.1

34





CONST. CULVERTS		
STATION	NORTHING	EASTING
40+00.00	2131739.9064	182785.2897
43+87.95	2131811.0151	183166.6657
44+84.86	2131904.8567	183190.8539

PROJECT CONTROL INFORMATION				
POINT NUMBER	COORDINATES U.S. SURVEY FEET		ORTHOMETRIC HEIGHT (ELEVATION)	DESCRIPTION
	NORTHING	EASTING		
CP100	2131726.8141	183162.3322	753.92'	BENCHMARK NO. 1
NAIL01	2131935.7037	183135.1119	752.38'	BENCHMARK NO. 2

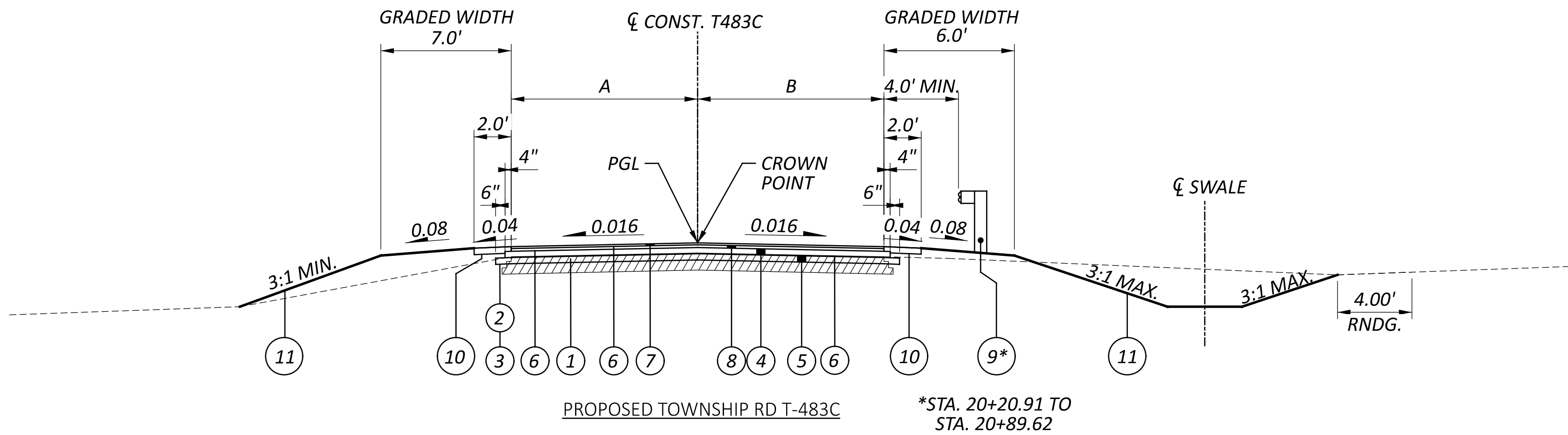
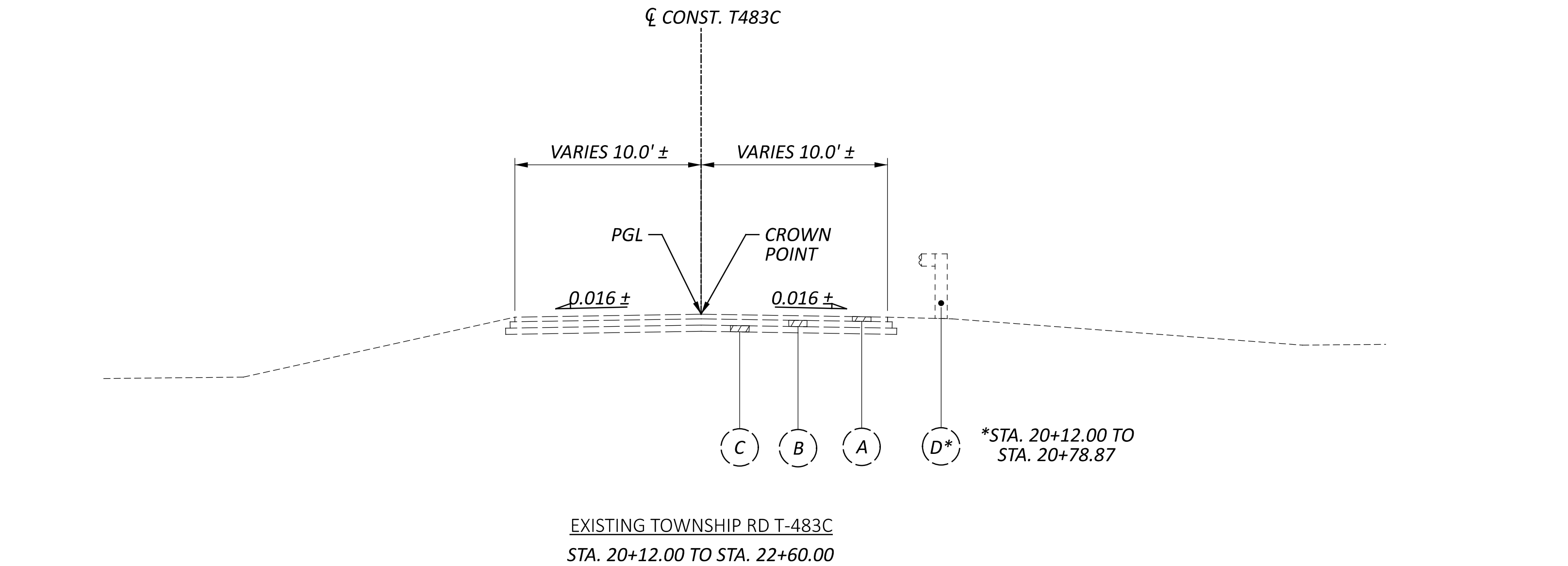


EXISTING LEGEND

- (A) EX. ASPHALT CONCRETE SURFACE AND INTERMEDIATE COURSE
- (B) EX. ASPHALT CONCRETE BASE
- (C) EX. AGGREGATE BASE
- (D) EX. GUARDRAIL

PROPOSED LEGEND

- (1) ITEM 202 - PAVEMENT REMOVED
- (2) ITEM 204 - SUBGRADE COMPACTION
- (3) ITEM 204 - PROOF ROLLING
- (4) ITEM 301 - ASPHALT CONCRETE BASE, PG64-22, (449) [T=4"]
- (5) ITEM 304 - AGGREGATE BASE [T=6"]
- (6) ITEM 407 - NON-TRACKING TACK COAT
- (7) ITEM 441 - ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (449), PG64-22 [T=1.25"]
- (8) ITEM 441 - ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (449) [T=1.75"]
- (9) ITEM 606 - GUARDRAIL, TYPE MGS
- (10) ITEM 617 - COMPACTED AGGREGATE [T=4"]
- (11) ITEM 659 - SEEDING AND MULCHING



STATION RANGE	A (LEFT)	B (RIGHT)	LENGTH
STA. 20+15.66 TO STA. 20+56.14	VARIES 66.42' TO 14.50'	VARIES 54.76' TO 10.00'	40.48'
STA. 20+56.14 TO STA. 20+79.59	VARIES 14.50' TO 10.00'	10.00'	23.45'
STA. 20+79.59 TO STA. 22+28.32	10.00'	10.00'	148.73'
STA. 22+28.32 TO STA. 22+53.32	VARIES 10.00' TO 11.10'	VARIES 10.00' TO 9.57'	25.00'



GENERAL

UTILITIES

LISTED BELOW ARE ALL UTILITIES LOCATED WITHIN THE PROJECT CONSTRUCTION LIMITS TOGETHER WITH THEIR RESPECTIVE OWNERS:

ELECTRIC:  
AMERICAN ELECTRIC POWER CO. (DISTRIBUTION):  
38831 STATE ROUTE 7  
REEDSVILLE, OHIO 45772  
ATTN: CLARKE SAUNDERS  
740-985-3054  
CMSAUNDERS@AEP.COM

TELEPHONE:  
AT&T OHIO  
160 NORTH SIXTH STREET  
ZANESVILLE, OHIO 43701  
ATTN: BARRETT TAMASOVICH  
740-454-3552  
BT2178@ATT.COM

CABLE:  
SPECTRUM CABLE TV  
737 HOWARD ST.  
ZANESVILLE, OHIO 43701  
ATTN: ZACK ALLEN  
614-255-2819  
ZACKARY.ALLEN1@CHARTER.COM

ENTERPRISE PRODUCTS:  
LAND ENCROACHMENTS GROUP  
PO BOX 4324  
HOUSTON, TX 77210  
LAND\_ENCROACHMENTS@FPROD.COM  
866-901-8170  
FIELD REPRESENTATIVES:  
MATT CUREE  
740-294-8674  
CHRIS JONES  
412-316-7799

VERIZON/MCI METRO  
7575 COMMERCE COURT  
LEWIS CENTER, OHIO 43035  
ATTN.: BOB DERN  
VZ.NET.COLUMBUS@VERIZON.COM  
614-381-8852

RAILROAD:  
OHIO CENTRAL RAILROAD, INC.  
THE COLUMBUS & OHIO RIVER RAIL ROAD COMPANY  
47849 PAPERMILL RD  
COSHOCOTON, OH 43812  
ATTN: TIMOTHY SLUSSER  
TSLUSSER@GWRR.COM  
740-202-0843

THE LOCATION OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE AS OBTAINED FROM THE OWNERS AS REQUIRED BY SECTION 153.64 O.R.C.

ROUNDING

THE ROUNDING AT SLOPE BREAKPOINTS SHOWN ON THE TYPICAL SECTIONS APPLIES TO ALL CROSSSECTIONS, EVEN THOUGH OTHERWISE SHOWN.

WORK LIMITS

THE WORK LIMITS SHOWN ON THESE PLANS ARE FOR PHYSICAL CONSTRUCTION ONLY. PROVIDE THE INSTALLATION AND OPERATION OF ALL WORK ZONE TRAFFIC CONTROL AND WORK ZONE TRAFFIC CONTROL DEVICES REQUIRED BY THESE PLANS WHETHER INSIDE OR OUTSIDE THESE WORK LIMITS.

SURVEYING PARAMETERS

PRIMARY PROJECT CONTROL MONUMENTS GOVERN ALL POSITIONING ON ODOT PROJECTS. SEE SHEET P.2 FOR A TABLE CONTAINING PROJECT CONTROL INFORMATION.  
USE THE FOLLOWING PROJECT CONTROL, VERTICAL POSITIONING, AND HORIZONTAL POSITIONING PARAMETERS FOR ALL SURVEYING:

PROJECT CONTROL

POSITIONING METHOD: CONTROL HELD FROM PID95464 / RTK/ ROBOTIC TOTAL STATION  
MONUMENT TYPE: TYPE B

VERTICAL POSITIONING

ORTHOMETRIC HEIGHT DATUM: NAVD88  
GEOID: GEOID 18

HORIZONTAL POSITIONING

REFERENCE FRAME: NAD83 (2011)  
ELLIPSOID: GRS80  
COORDINATE SYSTEM: (NAD83/2011) SPCS, OHIO NORTH ZONE  
COMBINED SCALE FACTOR: 1.00002015  
ORIGIN OF COORDINATE SYSTEM: 0,0

USE THE POSITIONING METHODS AND MONUMENT TYPE USED IN THE ORIGINAL SURVEY TO RESTORE ALL MONUMENTS RELATED TO PRIMARY PROJECT CONTROL THAT ARE DAMAGED OR DESTROYED BY CONSTRUCTION ACTIVITIES. RESTORE THE DAMAGED OR DESTROYED MONUMENTS IN ACCORDANCE WITH CMS 623.

UNITS ARE IN U.S. SURVEY FEET.

CONSTRUCTION NOTIFICATION AND FLAGGING REQUEST

JARED RISHEL  
AVP ENGINEERING NORTHERN REGION  
4349 EASTON WAY, SUITE 110  
COLUMBUS, OH 43219  
(814)-249-3040  
EMAIL: jrishel@gwrr.com

RIGHT-OF-ENTRY AGREEMENT/INSURANCE POLICIES

DONNA KILLINGSWORTH, MBA  
REAL ESTATE MANAGER  
GENESEE & WYOMING RAILROAD SERVICES, INC.  
13901 SUTTON PARK DRIVE SOUTH, SUITE 160  
JACKSONVILLE, FL 32224  
(904)-900-6286  
EMAIL: jwappseast@gwrr.com

CRYSTAL GALBREATH  
MANAGER - REAL ESTATE  
GENESEE & WYOMING RAILROAD SERVICES, INC.  
13901 SUTTON PARK DRIVE SOUTH, SUITE 270  
JACKSONVILLE, FL 32224  
(904)-596-7782  
EMAIL: crystal.galbreath@gwrr.com

ROADWAY

CLEARING AND GRUBBING

ALTHOUGH THERE ARE NO TREES OR STUMPS SPECIFICALLY MARKED FOR REMOVAL WITHIN THE LIMITS OF THE PROJECT, A LUMP SUM QUANTITY IS INCLUDED IN THE GENERAL SUMMARY FOR ITEM 201, CLEARING AND GRUBBING. ALL PROVISIONS AS SET FORTH IN THE SPECIFICATIONS UNDER THIS ITEM ARE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 201, CLEARING AND GRUBBING.

ITEM 204 - SUBGRADE COMPACTION AND PROOF ROLLING

CONSTRUCT THE SUBGRADE AS FOLLOWS AND IN THE FOLLOWING SEQUENCE:

- SHAPE THE SUBGRADE TO WITHIN 0.2 FEET OF THE PLAN SUBGRADE ELEVATION.
- EXCAVATE AND REPLACE UNSUITABLE SUBGRADE BEFORE PROOF ROLLING. THE EXCAVATION LIMITS ARE SHOWN AND LABELED ON THE CROSS SECTIONS AS UNSUITABLE SUBGRADE. UNSUITABLE SUBGRADE INCLUDES UNSUITABLE SOIL (A-4B, A-2-5, A-5, A-7-5, AND SOIL WITH A LIQUID LIMIT GREATER THAN 65) AND ANY COAL, SHALE, OR ROCK WHICH NEEDS TO BE REMOVED ACCORDING TO SECTION 204.05 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS (C&MS).

IF THERE IS UNSUITABLE SUBGRADE IN A SHALLOW FILL LOCATION, EXCAVATE AND REPLACE THE UNSUITABLE SUBGRADE BEFORE CONSTRUCTING THE SHALLOW FILL AND SHAPING THE SUBGRADE.

- COMPACT THE SUBGRADE ACCORDING TO C&MS 204.03.

- APPROXIMATE LIMITS FOR EXCAVATION OF UNSTABLE SUBGRADE ARE SHOWN AND LABELED ON THE CROSS SECTIONS AS UNSTABLE SUBGRADE. THE ENGINEER WILL IDENTIFY THE ACTUAL LIMITS OF EXCAVATION FOR UNSTABLE SUBGRADE BASED ON THE PROOF ROLLING RESULTS AND VISUAL OBSERVATIONS.

PROOF ROLL THE COMPACTED SUBGRADE ACCORDING TO C&MS 204.06.

- EXCAVATE UNSTABLE SUBGRADE AS DIRECTED BY THE ENGINEER AND STABILIZE BY REPLACING WITH THE SPECIFIED MATERIALS ACCORDING TO C&MS 204.07. EXCAVATIONS WILL EXTEND 18 INCHES BEYOND THE EDGE OF THE SURFACE OF THE PAVEMENT, PAVED SHOULDERS, OR PAVED MEDIANS.

- PROOF ROLL THE STABILIZED AREAS ACCORDING TO C&MS 204.06 TO VERIFY STABILITY.

- FINE GRADE THE SUBGRADE TO THE SPECIFIED GRADE.

THE QUANTITIES FOR EXCAVATING THE UNSUITABLE SUBGRADE AND UNSTABLE SUBGRADE ARE BOTH PAID UNDER ITEM 204, EXCAVATION OF SUBGRADE

THE FOLLOWING ITEMS HAVE BEEN INCLUDED IN THE GENERAL SUMMARY TO BE USED AS DIRECTED BY THE ENGINEER TO STABILIZE THE SUBGRADE.

ITEM 204 – EXCAVATION OF SUBGRADE	50 CY
ITEM 204 – GRANULAR MATERIAL, TYPE B	50 CY
ITEM 204 – GEOTECTILE FABRIC	75 SY

ITEM 623 CONSTRUCTION LAYOUT STAKES AND SURVEYING, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF ITEM 623 CONSTRUCTION LAYOUT STAKES AND SURVEYING, THE CONTRACTOR SHALL PROVIDE THE FOLLOWING INFORMATION TO THE DEPARTMENT:

THE CONTRACTOR SHALL PROVIDE AS-BUILT DATA FOR THE SPECIFIED COMPLETED CONSTRUCTION ITEMS IN OHIO STATE PLANE COORDINATES (GRID). THE CONSTRUCTION ITEMS SHALL BE LOCATED AS PER THE SURVEY FEATURE CODE LIST FOUND ON THE OHIO DEPARTMENT OF TRANSPORTATION OFFICE OF CADD & MAPPING SERVICES WEBSITE. AN EMAIL CONTAINING A COMMA DELIMITED ASCII FILE AND A SURVEYOR'S CERTIFICATION SHALL BE DELIVERED TO THE PROJECT ENGINEER AND TO Cody.Gierhart@dot.ohio.gov AFTER ALL INFORMATION HAS BEEN COLLECTED. THE ASCII FILE SHALL INCLUDE A HEADER CONTAINING NAME OF SURVEYOR, DATE(S) OF COLLECTION, HORIZONTAL DATUM (I.E. NAD83 (2011)), OHIO STATE PLANE COORDINATE SYSTEM (NORTH OR SOUTH), VERTICAL DATUM (I.E. NAVD 88, GEOID12A) AND METHOD OF COLLECTION (I.E. OHIO VRS, GPS RTK, TOTAL STATION, ETC.), AND BE IN A TABLE FORMAT AS FOLLOWS:

POINT NUMBER, NORTHING, EASTING, ELEVATION, FEATURE CODE, DESCRIPTION.

BELOW IS A LIST OF THE ITEMS THE CONTRACTOR IS REQUIRED TO PROVIDE FOR THE PROJECT:

- GUARDRAIL
- CULVERT INLET AND OUTLET LOCATION AND ELEVATION (TAKEN AT THE CL AND CROWN OF THE CULVERT)

THE ABOVE ITEMS SHALL BE COLLECTED USING SURVEY GRADE EQUIPMENT MEETING THE REQUIREMENTS OF SECTION 400 IN THE OHIO DEPARTMENT OF TRANSPORTATION SURVEY & MAPPING SPECIFICATIONS MANUAL.

ALL COST ASSOCIATED WITH OBTAINING THE INFORMATION LISTED ABOVE SHALL BE INCLUDED IN THE LUMP SUM BID FOR ITEM 623 CONSTRUCTION LAYOUT STAKES AND SURVEYING, AS PER PLAN.

CONNECTION BETWEEN EXISTING AND PROPOSED GUARDRAIL

WHEN IT IS NECESSARY TO SPLICE PROPOSED GUARDRAIL TO EXISTING GUARDRAIL, ONLY THE EXISTING GUARDRAIL SHALL BE CUT, DRILLED, OR PUNCHED. THE CONNECTION SHALL BE MADE USING A W-BEAM, BEAM SPLICE AS SHOWN IN AASHTO M 180-12, EXCEPT THE BEAM WASHERS ARE NOT TO BE USED. PAYMENT SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE RESPECTIVE GUARDRAIL ITEMS.

GENERAL NOTES

DESIGN AGENCY

AECOM

DESIGNER

HG

REVIEWER

MAW 10-01-25

PROJECT ID

119871

SHEET

P.4

TOTAL

34



EROSION CONTROL

SEEDING AND MULCHING

THE FOLLOWING QUANTITIES ARE PROVIDED TO PROMOTE GROWTH AND CARE OF PERMANENT SEEDED AREAS:

ITEM 659, SEEDING AND MULCHING  
29831 SF X (1 SY PER 9 SF) = 3315 SY

ITEM 659, REPAIR SEEDING AND MULCHING  
3315 SY X (0.05) = 166 SY

ITEM 659, COMMERCIAL FERTILIZER  
3315 SY X (1 TON PER 7410 SY) = 0.45 TONS

ITEM 659, LIME  
3315 SY ÷ (4840 SY PER ACRE) = 0.68 ACRES

ITEM 659, WATER (15 M. GAL)  
3315 SY X (0.0054 M GAL PER SY) = 18 M GAL

APPLY SEEDING AND MULCHINGS TO ALL AREAS OF EXPOSED SOIL BETWEEN THE RIGHT-OF-WAY LINES AND WITHIN THE CONSTRUCTION LIMITS FOR AREAS OUTSIDE THE RIGHT-OF-WAY LINES COVERED BY WORK AGREEMENT OR SLOPE EASEMENT. QUANTITY CALCULATIONS FOR SEEDING AND MULCHING ARE BASED ON THESE LIMITS.

ITEM 832 - EROSION CONTROL

THE FOLLOWING QUANTITY HAS BEEN PROVIDED FOR EROSION CONTROL IN ACCORDANCE WITH THE REQUIREMENTS OF ODOT SUPPLEMENTAL SPECIFICATION 832 ANS HAS BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM 832, EROSION CONTROL 45,000 EACH

ENVIRONMENTAL

ENDANGERED BAT HABITAT REMOVAL

THE PROJECT IS LOCATED WITHIN THE KNOWN HABITAT RANGES OF THE FEDERALLY LISTED AND PROTECTED INDIANA BAT AND NORTHERN LONG-EARED BAT. NO TREES SHALL BE REMOVED UNDER THIS PROJECT FROM APRIL 1 THROUGH SEPTEMBER 30. ALL NECESSARY TREE REMOVAL SHALL OCCUR FROM OCTOBER 1 THROUGH MARCH 31. THIS REQUIREMENT IS NECESSARY TO AVOID AND MINIMIZE IMPACTS TO THESE SPECIES AS REQUIRED BY THE ENDANGERED SPECIES ACT. FOR THE PURPOSES OF THIS NOTE, A TREE IS DEFINED AS A LIVE, DYING, OR DEAD WOODY PLANT, WITH A TRUNK THREE INCHES OR GREATER IN DIAMETER AT A HEIGHT OF 4.5 FEET ABOVE THE GROUND SURFACE, AND WITH A MINIMUM HEIGHT OF 13 FEET. THE CONTRACTOR SHALL REMOVE ONLY THE TREES NECESSARY TO CONSTRUCT THE PROJECT.

DRAINAGE

REVIEW OF DRAINAGE FACILITIES

PRIOR TO THE START OF WORK AND AGAIN BEFORE FINAL ACCEPTANCE, PERFORM AN INSPECTION WITH REPRESENTATIVES OF THE DEPARTMENT, CONTRACTOR AND LOCALS OF ALL EXISTING DRAINAGE FACILITIES THAT ARE TO REMAIN IN SERVICE WHICH MAY BE AFFECTED BY THE WORK. THE CONDITION OF THE EXISTING CONDUITS AND THEIR APPURTENANCES IS DETERMINED FROM FIELD OBSERVATIONS. RECORDS OF THE INSPECTION ARE MAINTAINED BY THE DEPARTMENT.

CONFIRM ALL EXISTING SEWERS INSPECTED INITIALLY BY THE ABOVE-MENTIONED PARTIES ARE MAINTAINED AND LEFT IN A CONDITION COMPARABLE TO THAT DETERMINED BY THE ORIGINAL INSPECTION. THE CONTRACTOR IS RESPONSIBLE TO CORRECT ANY CHANGE IN THE CONDITION RESULTING FROM THEIR OPERATIONS AS DIRECTED AND APPROVED BY THE ENGINEER.

PAYMENT FOR ALL OPERATIONS DESCRIBED ABOVE IS INCLUDED IN THE CONTRACT PRICE FOR THE PERTINENT 611 CONDUIT ITEMS.

CONDUIT END TREATMENT

IMMEDIATELY AFTER THE PLACEMENT OF ANY CONDUITS, THE CONTRACTOR SHALL CONSTRUCT THE END TREATMENTS AS REQUIRED BY THE PLANS.

ITEM 611 - CONDUIT UNDER RAILROAD

THE DEPARTMENT WILL PAY TO THE RAIL COMPANY ALL COSTS FOR WATCHMEN OR FLAGGERS DEEMED NECESSARY BY THE RAIL COMPANY DURING THE INSTALLATION OF CONDUIT UNDER THE RAILROAD. ANY COSTS FOR WATCHMEN OR FLAGGERS REQUIRED BY AN ALTERNATE METHOD OF INSTALLATION ARE THE RESPONSIBILITY OF THE CONTRACTOR. THE COSTS FOR WATCHMEN OR FLAGGERS DUE TO THE NEGLIGENCE OF THE CONTRACTOR, OR ANY SUB-CONTRACTOR, IN CONNECTION WITH THE INSTALLATION OF THE CONDUIT MUST BE PAID BY THE CONTRACTOR.

TRACK SUPPORTS REQUIRED BY THE RAIL COMPANY IN CONNECTION WITH THE INSTALLATION OF THE CONDUIT ARE INCLUDED IN THE COMPANY FORCE ACCOUNT WORK AND PAID BY THE DEPARTMENT. THE COST OF ANY TRACK SUPPORTS REQUIRED BY AN ALTERNATE METHOD OF INSTALLATION OF CONDUIT ARE THE RESPONSIBILITY OF THE CONTRACTOR.

THE CONTRACTOR IS RESPONSIBLE TO SECURE APPROVAL OF OPERATIONS FROM THE DEPARTMENT AND THE RAIL COMPANY. THE RAIL COMPANY WILL PERFORM AN ENGINEERING REVIEW OF METHODS OF OPERATIONS AND ENGINEERING SUPERVISION OF CONSTRUCITON WITHOUT COST TO THE CONTRACTOR.

EXECUTE A BOND IN FAVOR OF BOTH THE STATE AND THE COMPANY AS REQUIRED BY SECTION 6 OF THE RAILROAD SPECIAL CLAUSES.

COORDINATE WITH THE RAIL COMPANY CONCERNING WORK ADJACENT TO RAILROAD TRACKS, IN ORDER TO AVOID DELAY TO, OR INTERFERENCE WITH RAILROAD TRAFFIC, AND NOTIFY THE RAIL COMPANY HOURS IN ADVANCE OF CONSTRUCTION OPERATIONS.

ITEM 611 - 72" CONDUIT, TYPE A, AS PER PLAN, 748.06

THE CONTRACTOR SHALL PERFORM THIS ITEM FOLLOWING THE INSTALLATION OF THE CONDUIT BY THE PILOT TUBE GUIDED AUGER BORING METHOD. THE CONTRACTOR SHALL USE OPEN CUT EXCAVATION FOR THE LENGTH SPECIFIED FOR ITEM 611 - 72" CONDUIT, TYPE A, AS PER PLAN, 748.06.

THE STEEL CASING PIPE SHALL FOLLOW THE REQUIREMENTS OF ODOT CMS 748.06. IN ADDITION TO THE REQUIREMENTS OF ODOT CMS ITEM 748.06, THE MINIMUM WALL THICKNESS OF THE STEEL CONDUIT SHALL BE 1.00 INCHES.

ALL PIPE JOINTS MUST BE WELDED IN ACCORDANCE WITH AISC SPECIFICATIONS, SECTION 1-7-2. ALL JOINT WELDS MUST BE FULL PENETRATION, INCLUDING THE CONNECTION TO THE CASING PIPE INSTALLED THROUGH THE SPECIFIED BORING METHOD.

ITEM 611 - CONDUIT, MISC.: GEOTECHNICAL INSTRUMENTATION AND MONITORING

FOR DETAILED REQUIREMENTS FOR ITEM 611E97300 - CONDUIT, MISC.: GEOTECHNICAL INSTRUMENTATION AND MONITORING, SEE THE SUPPLEMENTAL SPECIFICATION WITH THE SAME TITLE IN THE CONTRACT DOCUMENTS.

ITEM 611 - CONDUIT, MISC.: PILOT TUBE GUIDED AUGER BORING, 72" CONDUIT, TYPE A, 748.06

FOR DETAILED REQUIREMENTS FOR ITEM 611E97400 - CONDUIT, MISC.: PILOT TUBE GUIDED AUGER BORING, 72" CONDUIT, TYPE A, 748.06, SEE THE SUPPLEMENTAL SPECIFICATION WITH THE SAME TITLE IN THE CONTRACT DOCUMENTS.

IN ADDITION TO THE REQUIREMENTS OF ODOT CMS ITEM 748.06, THE MINIMUM WALL THICKNESS OF THE STEEL CONDUIT SHALL BE 1.00 INCHES.

ALL CONSTRUCTION, MATERIAL, AND INCIDENTAL COSTS TO THE PILOT TUBE GUIDED AUGER RECEIVING PIT AND PILOT TUBE GUIDED AUGER BORING PIT WILL BE INCLUDED UNDER THE COST OF ITEM CONDUIT MISC.: PILOT TUBE GUIDED AUGER BORING, 72", TYPE A, 748.06.

PAVEMENT

ITEM 407 - NON-TRACKING TACK COAT

THE RATE OF APPLICATION OF ITEM 407, NON-TRACKING TACK COAT SHALL BE PER CMS TABLE 407.06-1 AND SUBJECT TO ADJUSTMENT AS DIRECTED BY THE ENGINEER. PLAN QUANTITIES INDICATE AN AVERAGE APPLICATION RATE OF 0.08 GAL/SY FOR TACK COAT UNDER THE INTERMEDIATE COURSE AND AN AVERAGE APPLICATION RATE OF 0.05 GAL/SY FOR TACK COAT UNDER THE SURFACE COURSE, (FOR ESTIMATING PURPOSES ONLY).

TRAFFIC CONTROL

ITEM 630 - GROUND MOUNTED SUPPORT, NO. 2 POST, AS PER PLAN

SIGN POST SUPPORTS SHALL CONFORM TO SCD TC-41.20, EXCEPT ONLY THE TYPE S POSTS SHALL BE FUNISHED FOR THIS PROJECT ALONG WITH AN ANCHOR BASE. THE TYPE P AND TYPE F POSTS WILL NOT BE ACCEPTED.

DESIGN AGENCY

AECOM

DESIGNER

SMS

REVIEWER

MAW 10-01-25

PROJECT ID

119871

SHEET

TOTAL

P.5

34



MAINTENANCE OF TRAFFIC

ITEM 614, MAINTAINING TRAFFIC (TIME LIMITATION ON A DETOUR)

A MINIMUM OF ONE LANE OF TRAFFIC IN EACH DIRECTION SHALL BE MAINTAINED AT ALL TIMES, EXCEPT FOR A PERIOD NOT TO EXCEED 60 CONSECUTIVE CALENDAR DAYS, WHEN THROUGH TRAFFIC MAY BE DETOURED AS SHOWN ON SHEET P.7. ALL EXISTING LANES SHALL BE OPEN AND AVAILABLE TO TRAFFIC BY OCTBER 15, 2026. A DISINCENTIVE SHALL BE ASSESSED ACCORDING TO CMS 108.07 FOR EACH CALENDAR DAY THE ROADWAY REMAINS CLOSED TO TRAFFIC BEYOND THE SPECIFIED LIMITS.

ITEM 614, MAINTAINING TRAFFIC (LANE CLOSURE/REDUCTION REQUIRED)

LENGTH AND DURATION OF LANE CLOSURES AND RESTRICTIONS SHALL BE APPROVED BY THE ENGINEER. IT IS THE INTENT TO MINIMIZE THE IMPACT TO THE TRAVELING PUBLIC. LANE CLOSURES OR RESTRICTIONS OVER SEGMENTS OF THE PROJECT IN WHICH NO WORK IS ANTICIPATED WITHIN A REASONABLE TIME FRAME, AS DETERMINED BY THE ENGINEER, SHALL NOT BE PERMITTED. THE LEVEL OF UTILIZATION OF MAINTENANCE OF TRAFFIC DEVICES SHALL BE COMMENSURATE WITH THE WORK IN PROGRESS.

ITEM 614, MAINTAINING TRAFFIC (NOTICE OF CLOSURE SIGN)

NOTICE OF CLOSURE SIGNS (W20-H13) SHALL BE ERECTED BY THE CONTRACTOR PRIOR TO THE SCHEDULED ROAD OR RAMP CLOSURE IN ACCORDANCE WITH THE NOTICE OF CLOSURE TIME TABLE BELOW. [AT THE APPROVAL OF THE ENGINEER, PORTABLE CHANGEABLE MESSAGE SIGNS MAY BE USED IN LIEU OF THE STANDARD FLATSHEET SIGN FOR CLOSURE DURATIONS OF LESS THAN 1 WEEK.]

THE SIGNS SHALL BE ERECTED ON THE RIGHT-HAND SIDE OF THE ROAD/RAMP FACING TRAFFIC. THEY SHALL BE PLACED SO AS NOT TO INTERFERE WITH THE VISIBILITY OF ANY OTHER TRAFFIC CONTROL SIGNS. ON ROADWAYS, THEY SHOULD BE ERECTED AT OR NEAR THE POINT OF CLOSURE. THE SIGNS MAY BE ERECTED ANYWHERE ON RAMPS AS LONG AS THEY ARE VISIBLE TO THE MOTORISTS USING THE RAMP. ON ENTRANCE RAMPS, THE SIGN SHALL BE ERECTED WELL IN ADVANCE OF THE MERGE AREA TO AVOID DISTRACTING MOTORISTS.

NOTICE OF CLOSURE SIGN TIME TABLE		
ITEM	DURATION OF CLOSURE	SIGN DISPLAYED TO PUBLIC
RAMP &	>=2 WEEKS	14 CALENDAR DAYS PRIOR TO CLOSURE
ROAD	> 12 HOURS & < 2 WEEKS	7 CALENDAR DAYS PRIOR TO CLOSURE
CLOSURES	<= 12 HOURS	2 BUSINESS DAYS PRIOR TO CLOSURE

THE SIGN SHALL DISPLAY THE DATE OF THE CLOSURE IN MMM-DD FORMAT AND THE NUMBER OF DAYS OF THE CLOSURE. THE LAST LINE OF THE W20-H13 SIGN LISTS A PHONE NUMBER WHICH A MOTORIST MAY CALL FOR ADDITIONAL INFORMATION. THIS IS TO BE A SPECIFIC OFFICE WITHIN THE DISTRICT RATHER THAN THE GENERAL SWITCHBOARD NUMBER.

DUST CONTROL

THE CONTRACTOR SHALL FURNISH AND APPLY WATER FOR DUST CONTROL AS DIRECTED BY THE ENGINEER. THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED FOR DUST CONTROL PURPOSES AND CARRIED TO THE GENERAL SUMMARY:

ITEM 616, WATER  
(1109 CY + 409 CY) X (0.002 M GAL) = 3 M GAL

ITEM 614, MAINTAINING TRAFFIC (CLOSING PARAGRAPH FOR NOTE)

ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH C&MS 614 AND OTHER APPLICABLE PORTIONS OF THE SPECIFICATIONS, AS WELL AS THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 614, MAINTAINING TRAFFIC, UNLESS SEPARATELY ITEMIZED IN THE PLAN.

CONSTRUCTION NOTIFICATION

THE CONTRACTOR WILL ADVISE THE PROJECT ENGINEER A MINIMUM OF TWENTY-ONE (21) DAYS PRIOR TO THE FOLLOWING:

THE START OF CONSTRUCTION ACTIVITIES, LANE RESTRICTIONS, LANE CLOSURES, AND/OR ROAD CLOSURES. THE PROJECT ENGINEER WILL FORWARD THIS INFORMATION TO THE FOLLOWING:

DISTRICT PUBLIC INFORMATION OFFICER (PIO)  
BY FAX: (614) 887-4510 OR  
BY EMAIL: D05.PIO@DOT.OHIO.GOV

DISTRICT PERMIT SECTION  
BY FAX: (614) 887-4525 OR  
BY EMAIL: BRIAN.BOSCH@DOT.OHIO.GOV

CENTRAL OFFICE SPECIAL HAUL PERMITS SECTION  
BY FAX: (614) 728-4099 OR  
BY EMAIL: HAULING.PERMIT@DOT.OHIO.GOV

THE PIO WILL, IN TURN, NOTIFY THE PUBLIC, THE LOCAL EMERGENCY SERVICES, AFFECTED SCHOOLS AND BUSINESSES, AND ANY OTHER IMPACTED LOCAL PUBLIC AGENCY OF ANY OF THE ABOVE MENTIONED ITEMS VIA MEDIA SOURCES.

CONTRACTOR TO NOTIFY G&W PUBLIC PROJECTS DEPARTMENT 30 DAYS PRIOR TO STARTING CONSTRUCTION.

G&W FLAGGING SERVICES WILL BE REQUIRED FOR ALL WORK WITHIN G&W RIGHT-OF-WAY OR ANY WORK THAT HAS A "POTENTIAL TO FOUL".

THE CONTRACTOR MUST NOT USE THE RAILROAD RIGHT OF WAY FOR STORAGE OF MATERIALS OR EQUIPMENT DURING CONSTRUCTION. THE RAILROADS RIGHT OF WAY MUST REMAIN CLEAR AT ALL TIMES. THE CONTRACTOR MUST PLAN AND PERFORM THE WORK IN A MANNER SUCH THAT THE RAILROAD TRACKS AT THE PROJECT LOCATION REMAIN FULLY CAPABLE OF OPERATING RAIL TRAFFIC THROUGHOUT THE WORK PERIOD AND RAIL TRAFFIC IS NOT DELAYED OR OTHERWISE IMPACTED DUE TO THE WORK BEING PERFORMED.

ALL WORK PERFORMED ON, ABOVE, OR ADJACENT TO RAILRAOD PROPERTY SHALL BE IN ACCORDANCE WITH THE PUBLIC PROJECT MANUAL, CURRENT EDITION. WORK PLANS SHALL BE SUBMITTED FOR REVIEW TO THE RAILROAD FOR TASKS RELATED TO SITE ACCESS, SOIL AND WATER MANAGEMENT EXCAVATION, HOISTING, BORING, TRACK MONITORING, AND ALL OTHER WORK THAT PRESENTS POTENTIALLY AFFECTS RAILROAD PROPERTY OR OPERATIONS. ALL WORK PLANS SHALL BE PREPARED AND SUBMITTED TO THE RAILROAD IN ADHERENCE WITH THE PUBLIC PROJECT MANUAL, SECTION 1.11 CONSTRUCTION SUBMISSION CRITERIA.

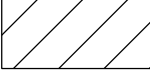
THE CONTRACTOR WILL BE REQUIRED TO REACH OUT TO G&W REAL ESTATE FOR AN ROE APPLICATION AND AGREEMENT FOR WORK TO TAKE PLACE ON THE G&W ROW.

THE WEBSITE FOR THE ROE INFORMATION IS LISTED BELOW:  
<https://www.gwrr.com/real-estate/accessing-property/>


DESIGN AGENCY	
AECOM	
DESIGNER	HG
REVIEWER	MAW
PROJECT ID	10-01-25
	119871
SHEET	TOTAL
P.6	34




**LEGEND:**




WORK AREA




SIGN



DIRECTION OF TRAVEL



DETOUR ROUTE



TYPE III BARICADE

**NOTE:**

1. USE BLACK LEGEND AND BORDER ON AN ORANGE BACKGROUND FOR D3-1 SIGN PER OMUTCD SECTION 6F.55.

1

ROAD CLOSED

R11-2-48  
MOUNTED ON  
TYPE III BARICADE

2

ROAD CLOSED  
1.2 MILES AHEAD  
LOCAL TRAFFIC ONLY

DETOUR

R11-3a-60  
M4-10R-48

3

DETOUR

TWP RD 483C

M4-8-24  
D3-1-24  
M6-1-12  
SEE NOTE 1

4

DETOUR

TWP RD 483C

M4-8-24  
D3-1-24 (EX)  
M6-3-12  
MOUNTED ON  
EXISTING SIGN POST

5

DETOUR  
AHEAD

W20-2-36

6

ROAD  
WORK  
AHEAD

W20-1-36

7

ROAD  
CLOSED  
AHEAD

TWP RD 483C

W20-3-36  
D3-1-24

8

DETOUR

TWP RD 483C

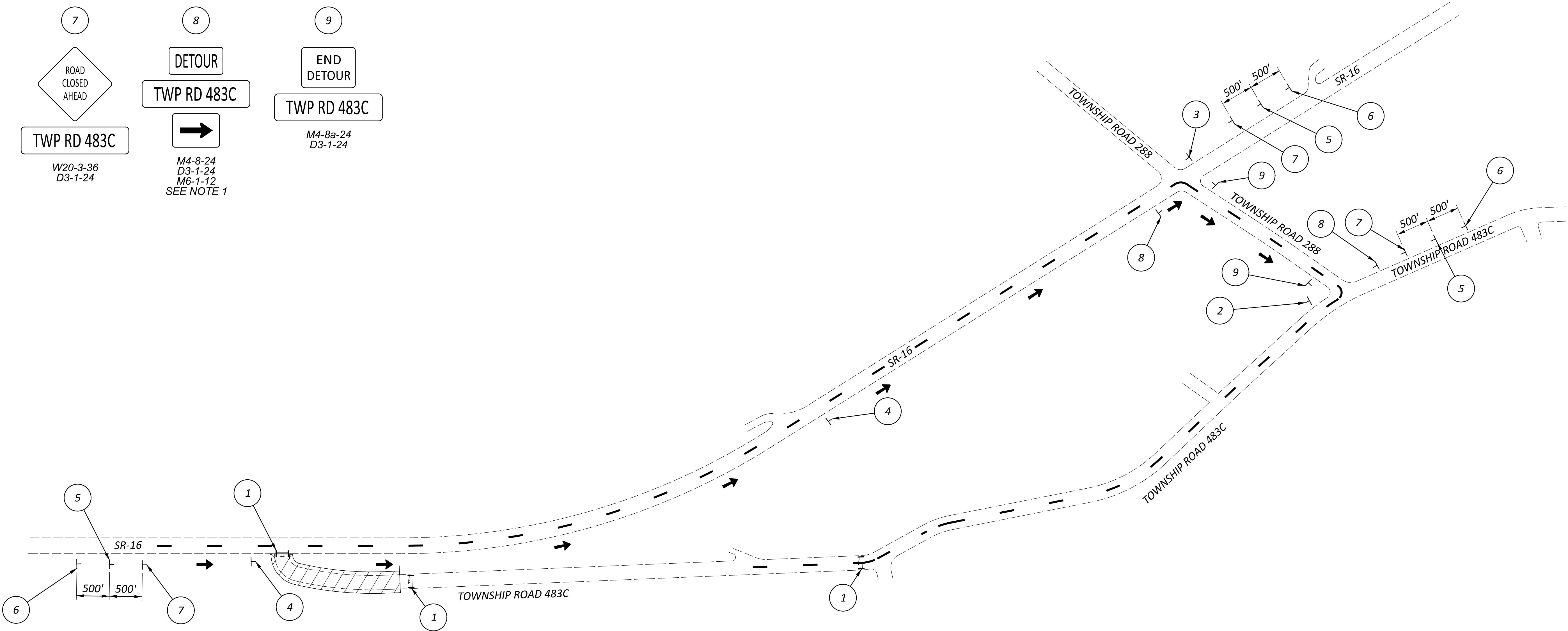
M4-8-24  
D3-1-24  
M6-1-12  
SEE NOTE 1

9

END  
DETOUR

TWP RD 483C

M4-8a-24  
D3-1-24



DETOUR PLAN - TOWNSHIP RD 483C

DESIGN AGENCY

**AECOM**

DESIGNER

HG

REVIEWER

MAW 10-01-25

PROJECT ID

119871

SHEET

P.7

TOTAL

34



SHEET NUMBER											PART.	ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
P.4	P.5	P.10	P.11	P.12	P.13	P.21	P.22										
												201	11000	LS		ROADWAY	P.4
												202	23000	745	SY	CLEARING AND GRUBBING	
					745							202	35200	74	FT	PAVEMENT REMOVED	
			74									202	38000	108	FT	PIPE REMOVED, OVER 24" DIAMETER	
		108														GUARDRAIL REMOVED	
												203	10000	409	CY	EXCAVATION	
		409 1,109										203	20000	1,109	CY	EMBANKMENT	
												204	10000	726	SY	SUBGRADE COMPACTION	
50					726							204	13000	50	CY	EXCAVATION OF SUBGRADE	
50												204	30010	50	CY	GRANULAR MATERIAL, TYPE B	
												204	45000	1	hour	PROOF ROLLING	
75					1							204	50000	75	SY	GEOTEXTILE FABRIC	
		137.5 2										606	15050	137.5	FT	GUARDRAIL, TYPE MGS	
												606	26500	2	EACH	ANCHOR ASSEMBLY, TYPE T	
												623	50000	LS		PRECONSTRUCTION SURVEY MONUMENT VERIFICATION AND REPORT	
												623	51000	LS		POST CONSTRUCTION SURVEY MONUMENT VERIFICATION AND REPORT	
																EROSION CONTROL	
						251						601	32000	251	CY	ROCK CHANNEL PROTECTION, TYPE A WITH FILTER	
						29						601	32100	29	CY	ROCK CHANNEL PROTECTION, TYPE B WITH FILTER	
	3,315											659	10000	3,315	SY	SEEDING AND MULCHING	
	166											659	14000	166	SY	REPAIR SEEDING AND MULCHING	
	0.45											659	20000	0.45	TON	COMMERCIAL FERTILIZER	
	0.68											659	31000	0.68	ACRE	LIME	
	18											659	35000	18	MGAL	WATER	
	45,000											832	30000	45,000	EACH	EROSION CONTROL	
																DRAINAGE	
			23									611	04900	23	FT	12" CONDUIT, TYPE D	
						180						611	26001	180	FT	72" CONDUIT, TYPE A, AS PER PLAN, 748.06	P.5
												611	97300	LS		CONDUIT, MISC.: GEOTECHNICAL INSTRUMENTATION AND MONITORING	P.5
						702						611	97400	702	FT	CONDUIT, MISC.: PILOT TUBE GUIDED AUGER BORING, 72", TYPE A, 748.06	P.5
																PAVEMENT	
					147							252	01500	147	FT	FULL DEPTH PAVEMENT SAWING	
					78							301	56000	78	CY	ASPHALT CONCRETE BASE, PG64-22, (449)	
					135							304	20000	135	CY	AGGREGATE BASE	
					116							407	20000	116	GAL	NON-TRACKING TACK COAT	
					24							441	70000	24	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (449), PG64-22	
					33							441	70300	33	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (449)	
					14							617	10100	14	CY	COMPACTED AGGREGATE	
																TRAFFIC CONTROL	
				51								630	02100	51	FT	GROUND MOUNTED SUPPORT, NO. 2 POST	
				21								630	02101	21	FT	GROUND MOUNTED SUPPORT, NO. 2 POST, AS PER PLAN	P.5
				1								630	08600	1	EACH	SIGN POST REFLECTOR	
				5								630	85100	5	EACH	REMOVAL OF GROUND MOUNTED SIGN AND REERECTION	
				30								644	00500	30	FT	STOP LINE	
																MISCELLANEOUS STRUCTURE	
												503	11101	LS		COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN	P.22
												503	21301	LS		UNCLASSIFIED EXCAVATION, AS PER PLAN	P.22
												509	26000	21,121	LB	GALVANIZED STEEL REINFORCEMENT	
												511	46510	97	CY	CLASS QC1 CONCRETE, FOOTING	
												511	46610	54	CY	CLASS QC1 CONCRETE, HEADWALL	

GENERAL SUMMARY

DESIGN AGENCY

AECOM

DESIGNER

SMS

REVIEWER

MAW 10-01-25

PROJECT ID

119871

SHEET

P.8

TOTAL

34



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## GENERAL SUMMARY

DESIGN AGENCY



DESIGNER

SMS

REVIEWER

MAW 10-01-25

PROJECT ID:

119871

SHEET	TOTAL
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P.9 | 34



**COS-16-1.40**

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## ROADWAY AND EARTHWORK SUBSUMMARY

DESIGN AGENCY



DESIGNER

## SMS

REVIEWER

MAW 10-01-25

PROJECT ID  
119871

SHEET	TOTAL
P.10	3



REF NO.	SHEET NO.	STATION TO STATION						202	611																				
								PIPE REMOVED, OVER 24" DIAMETER	12" CONDUIT, TYPE D																				
								FT	FT																				
D-1	P.14	20+72.51	RT	TO	21+23.12	LT	74																						
D-2	P.14	20+97.20	RT	TO	21+14.62	RT	23																						



**COS-16-1.40**

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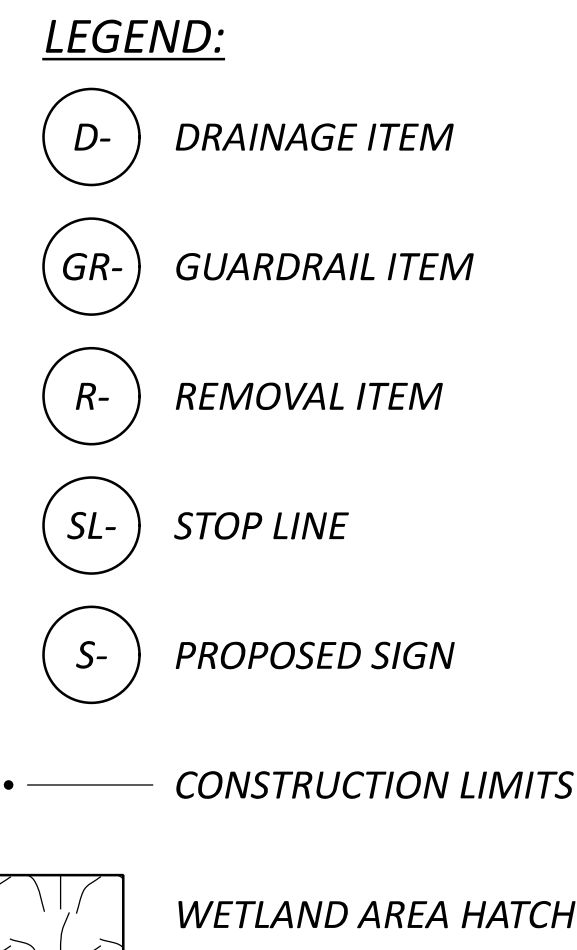
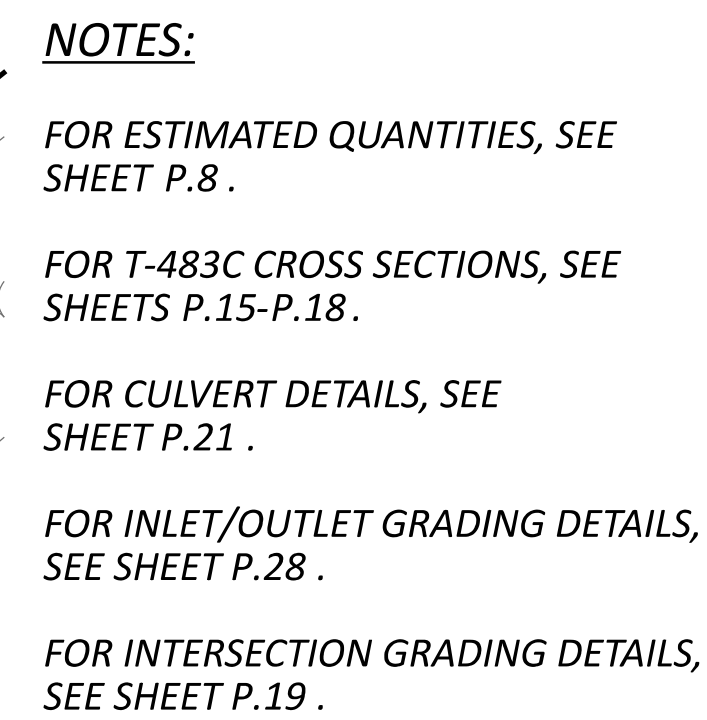
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SIGNING AND PAVEMENT MARKING SUBSUMMARY	
DESIGNER	
SMS	
REVIEWER	
MAW 10-01-25	
PROJECT ID	
119871	
SHEET	TOTAL
P.12	34



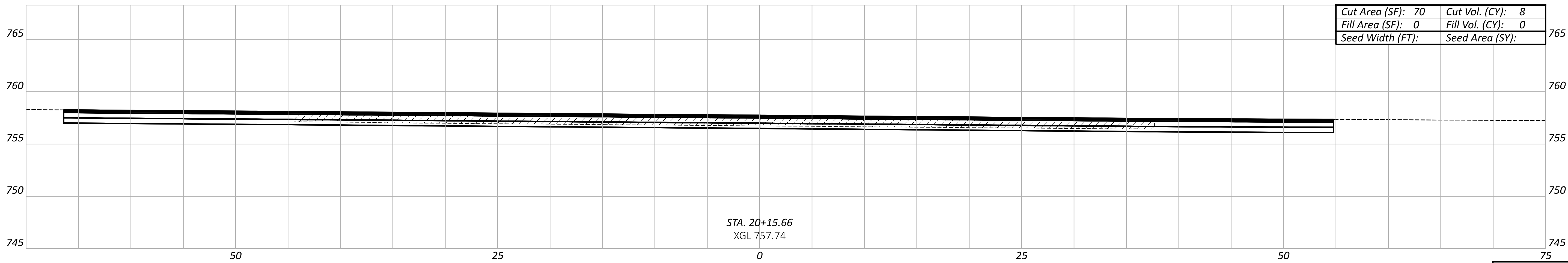
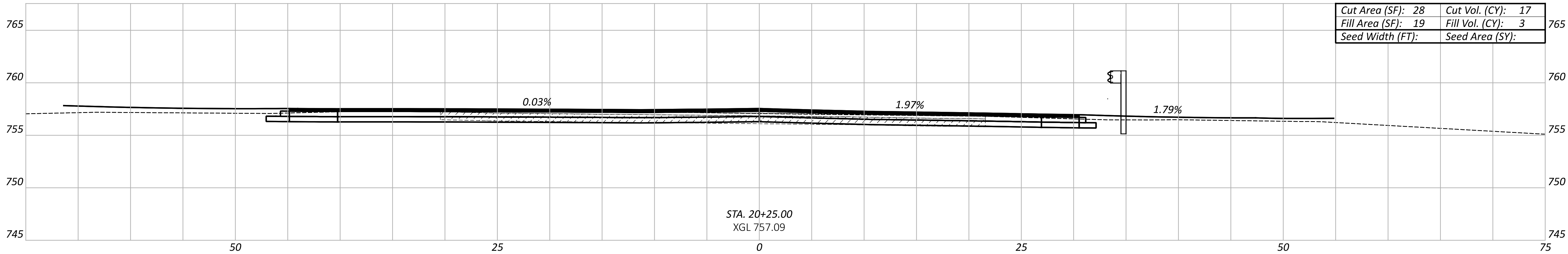
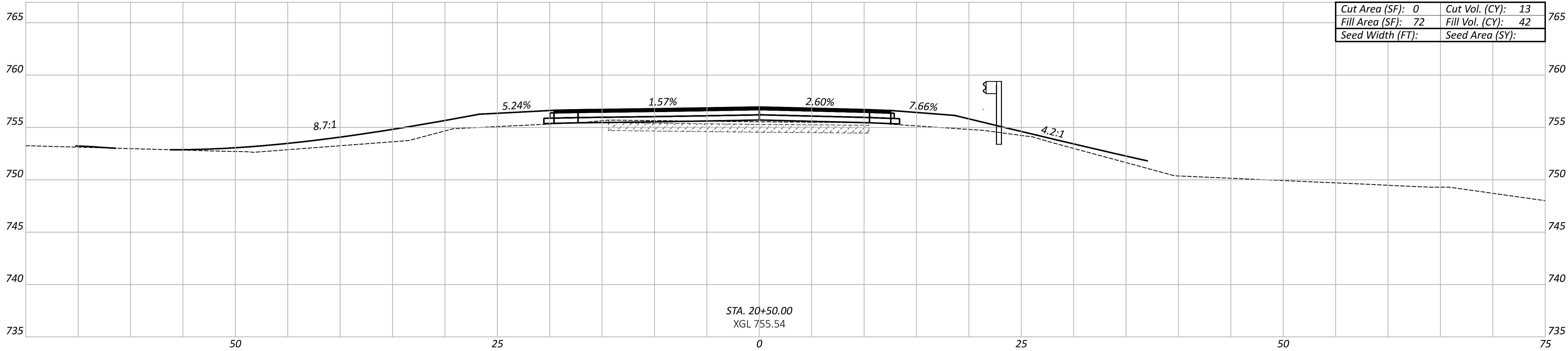
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<b>AECOM</b>	
DESIGNER	
SMS	
REVIEWER	
MAW 10-01-25	
PROJECT ID	
119871	
SHEET	TOTAL
P.13	34







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Sheet Totals			SHEET	TOTAL
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T483C CROSS SECTIONS  
BEGINNING TO STA. 20+50

DESIGN AGENCY

AECOM

DESIGNER

HG

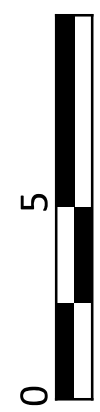
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MAW 10-01-25

PROJECT ID

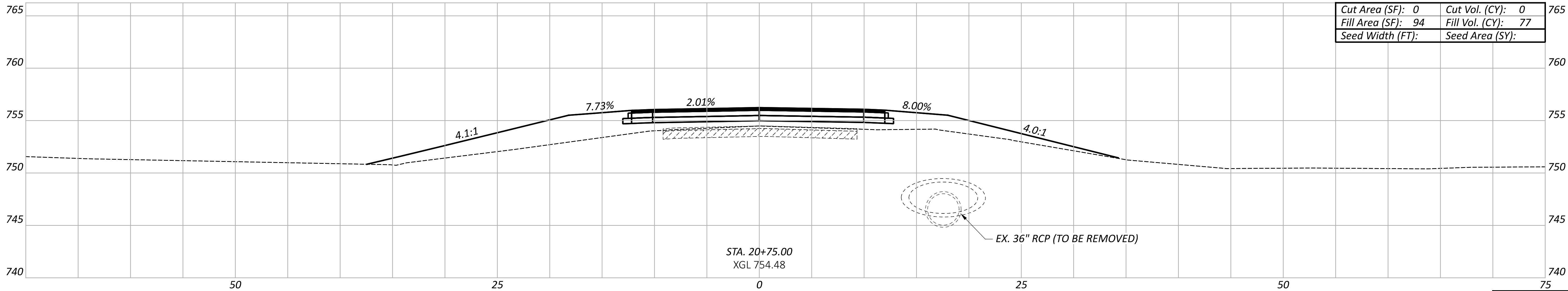
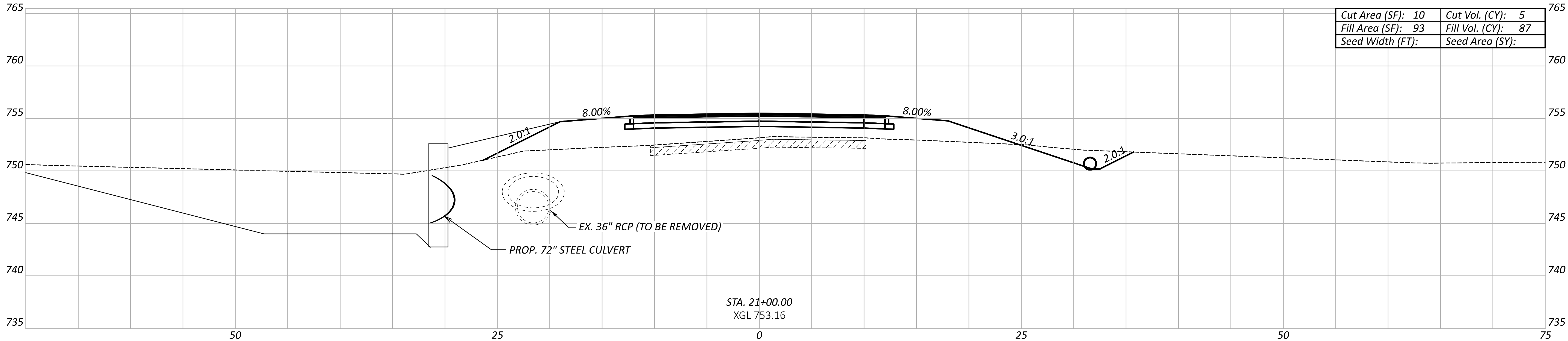
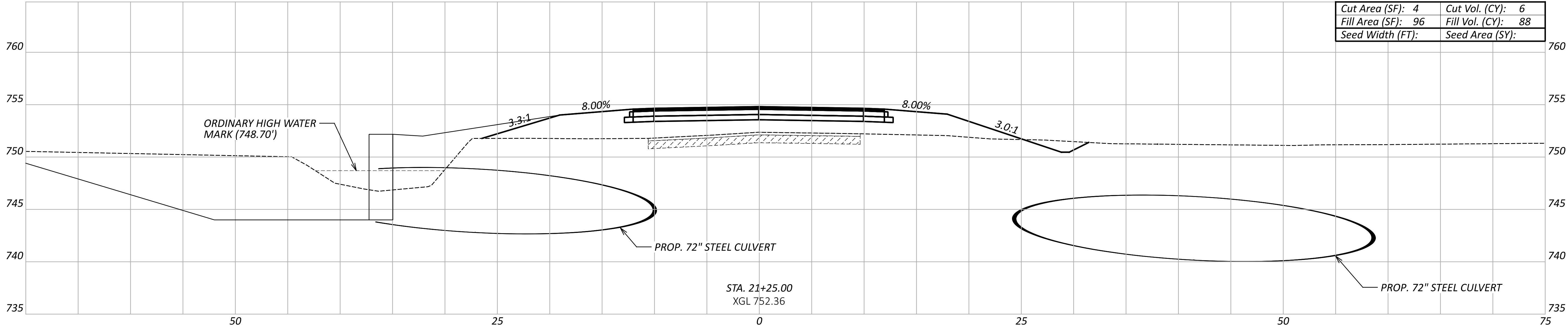
119871

HORIZONTAL  
SCALE IN FEET

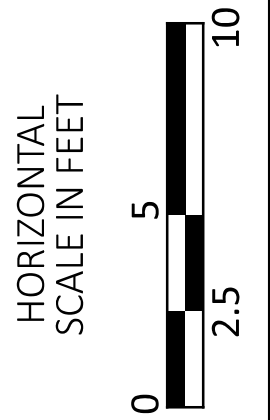




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T483C CROSS SECTIONS  
STA. 20+75.00 TO STA. 21+25.00

DESIGN AGENCY

**AECOM**

DESIGNER

HG

REVIEWER

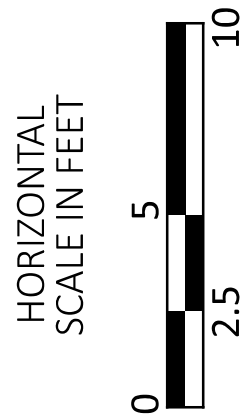
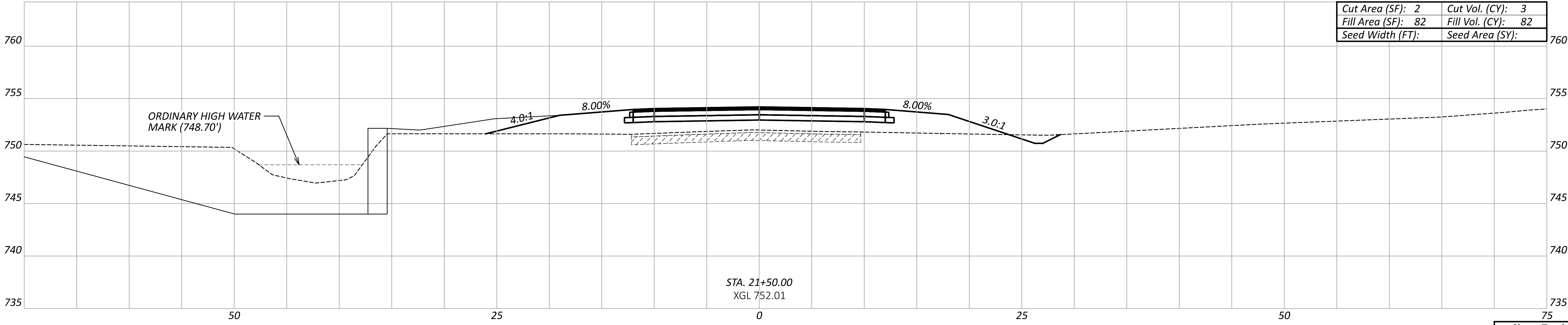
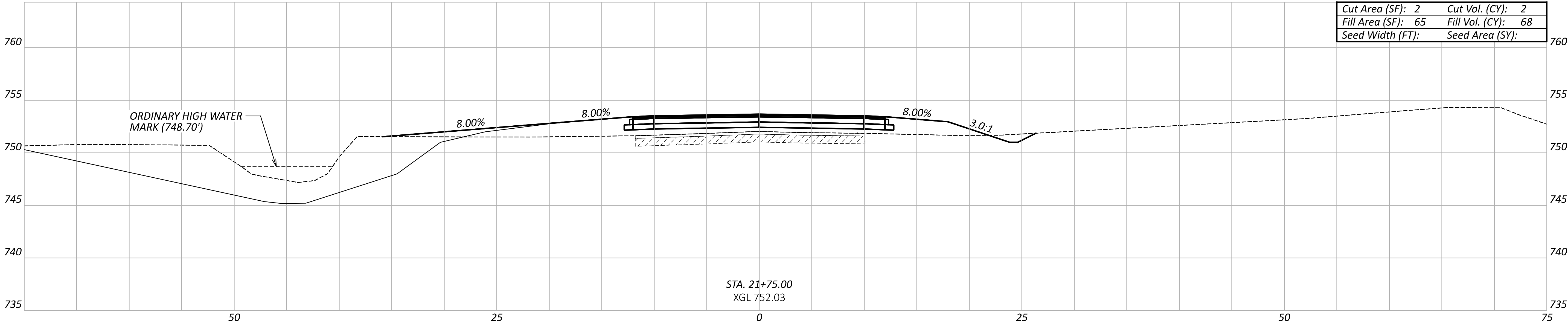
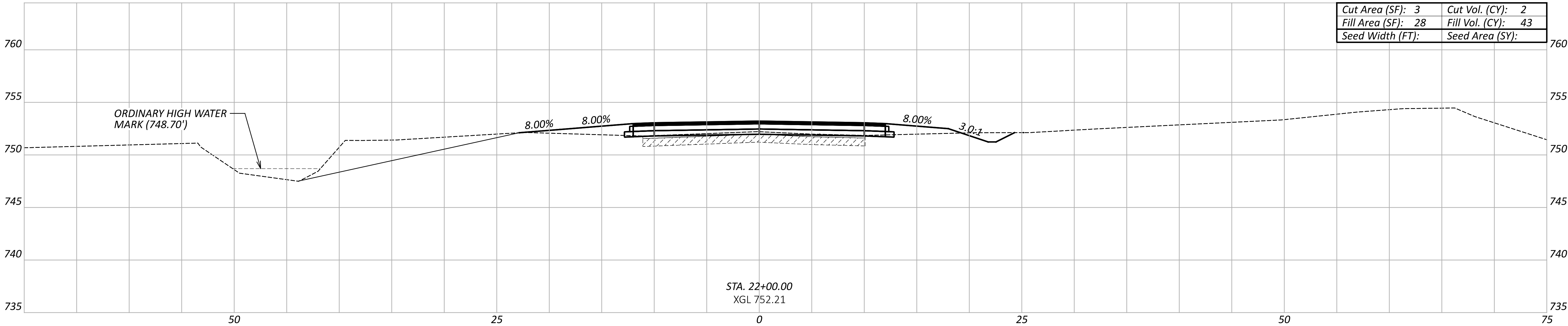
MAW 10-01-25

PROJECT ID

119871



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T483C CROSS SECTIONS  
STA. 21+50.00 TO STA. 22+00.00

DESIGN AGENCY

**AECOM**

DESIGNER

HG

REVIEWER

MAW 10-01-25

PROJECT ID

119871

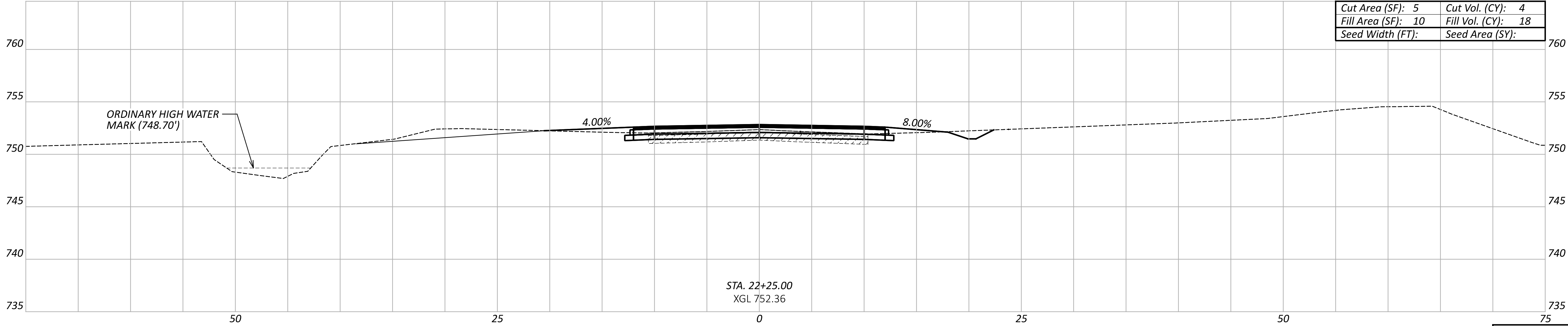
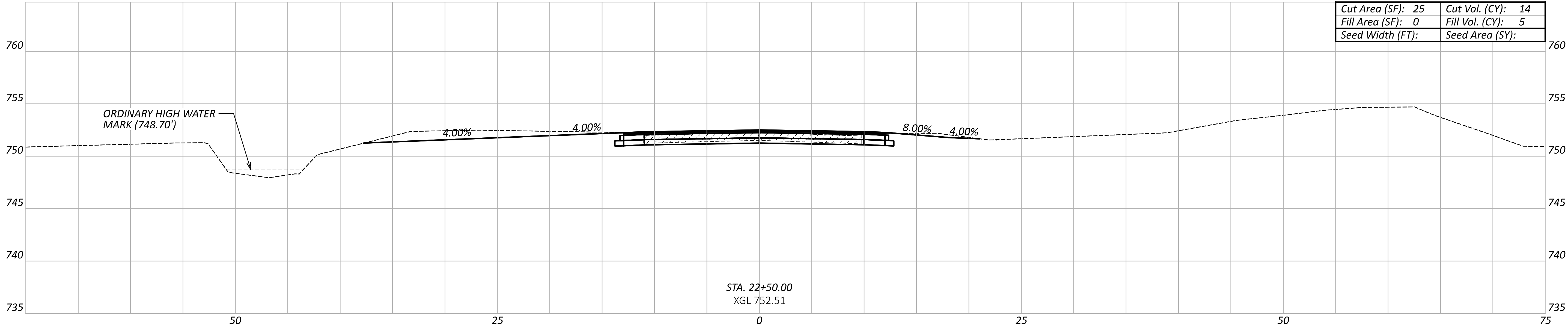
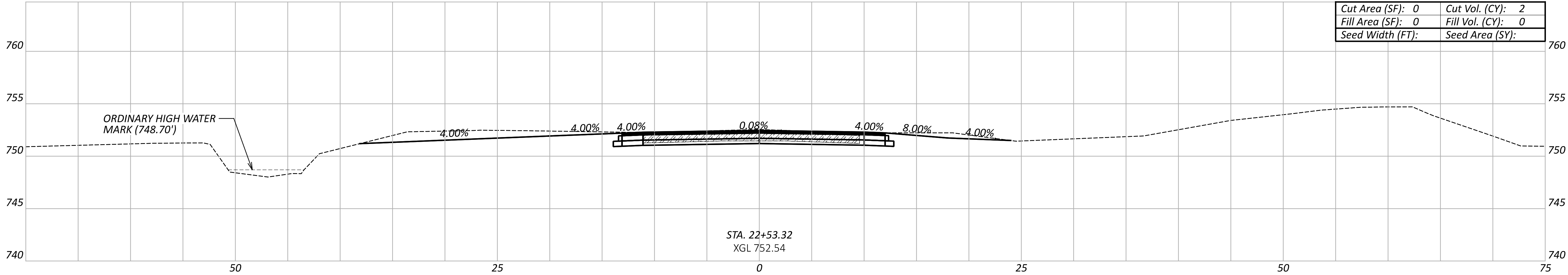
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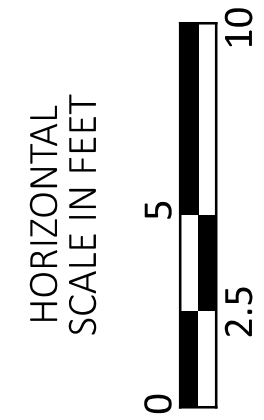
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P.17	34



 EXISTING PAVEMENT ( TO BE REMOVED)



T483C CROSS SECTIONS  
STA. 22+25.00 TO ENDING



DESIGN AGENCY

**AECOM**

DESIGNER

HG

REVIEWER

MAW 10-01-25

PROJECT ID

119871

Sheet Totals

Seeding	Cut	Fill
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SHEET	TOTAL
P.18	34



MODEL: Intersection Detail [Sheet] PAPER:SIZE: 34x22 (in.) DATE: 9/30/2025 TIME: 9:04:14 PM USER: sydney.stefanek  
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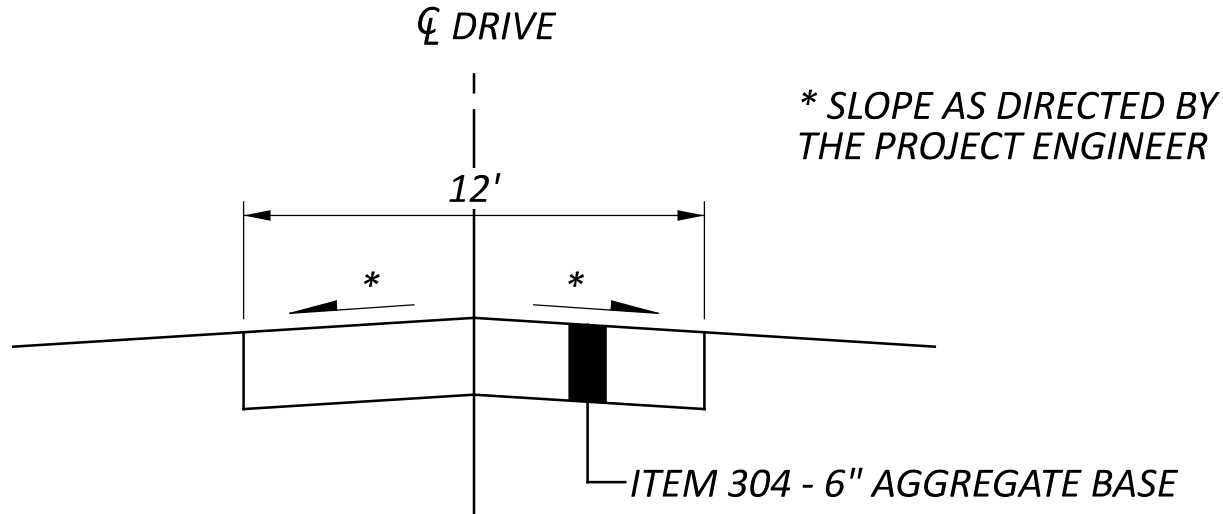
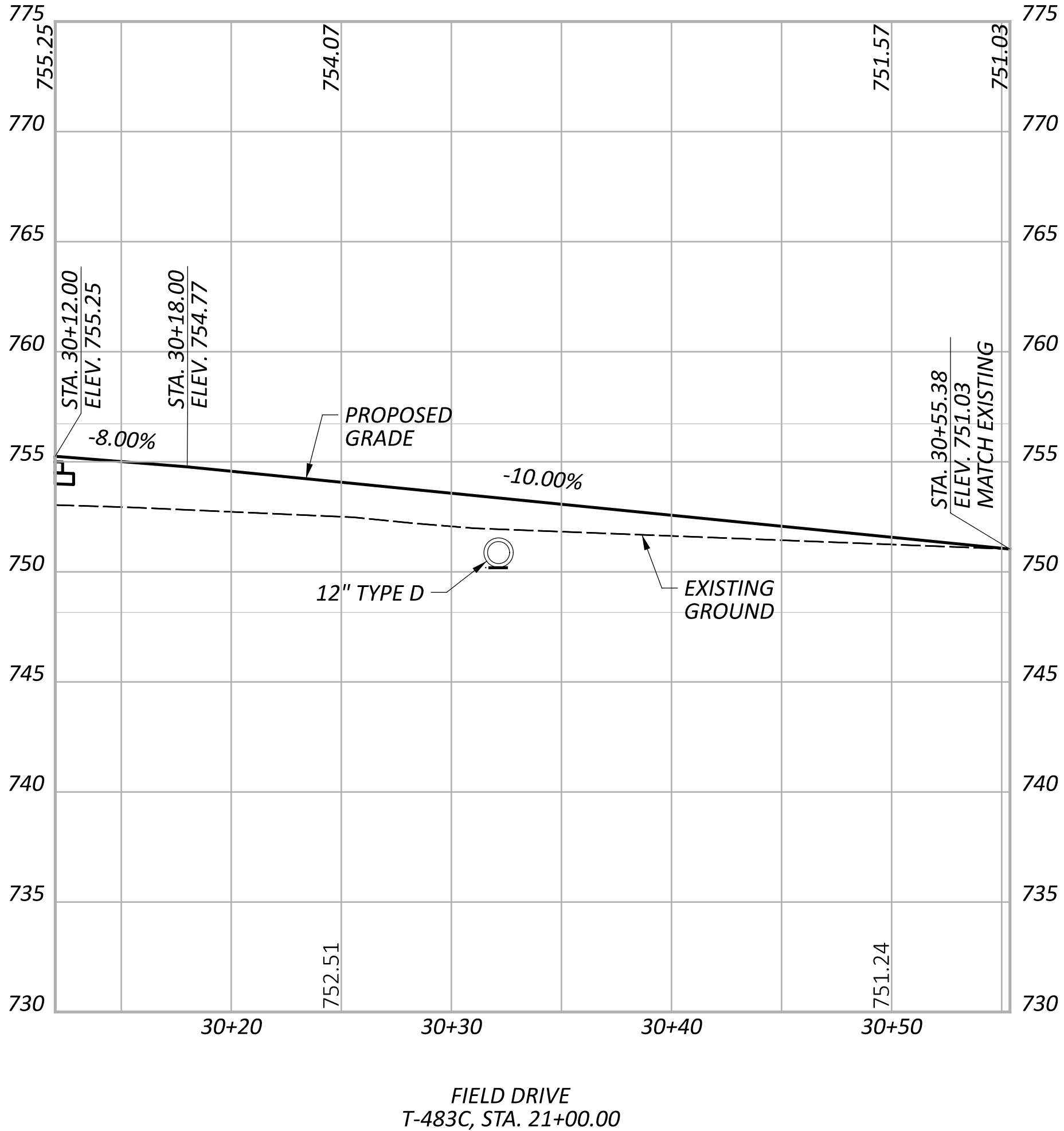
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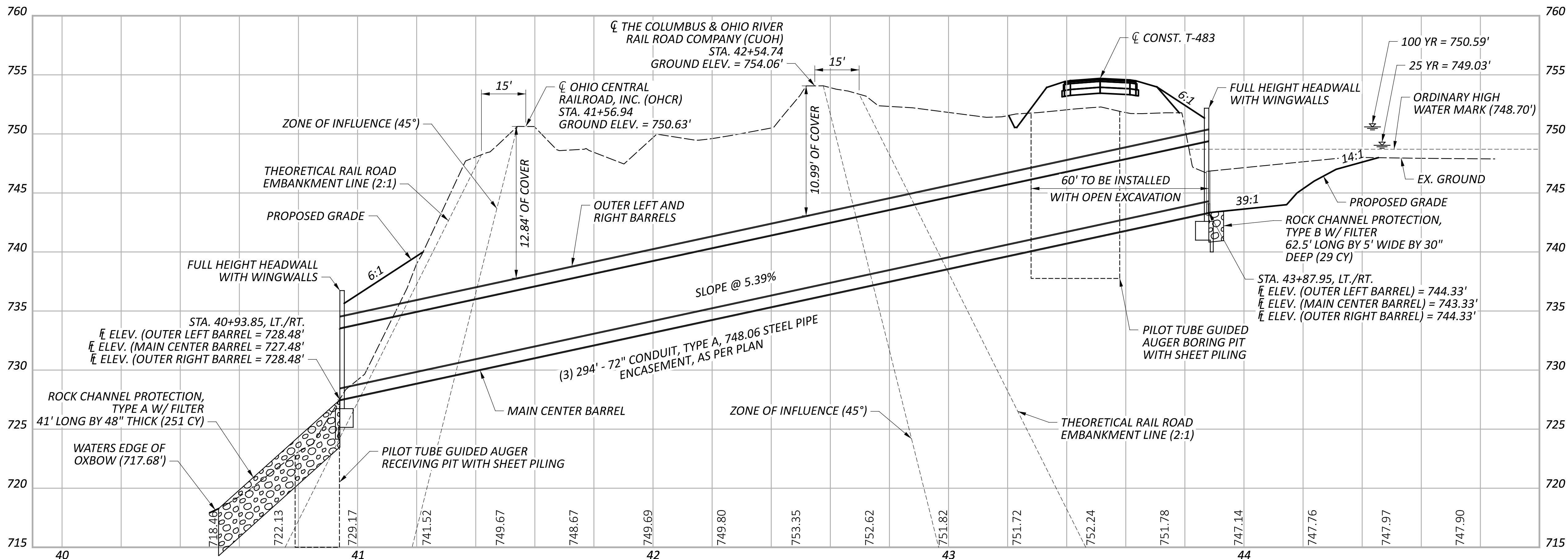
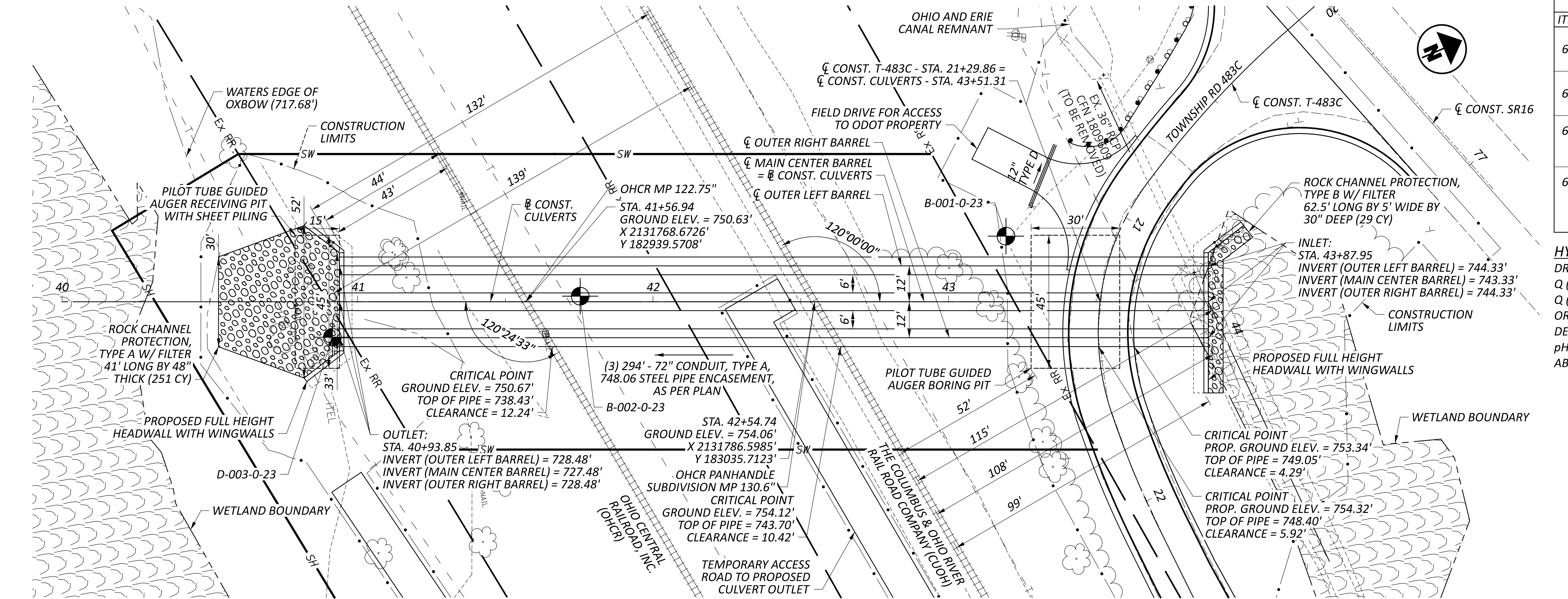
INTERSECTION DETAIL  
S.R. 16 & TWP RD 483C

SHEET	TOTAL
P.19	3









ESTIMATED QUANTITIES			
ITEM	QUANTITY	UNIT	DESCRIPTION
601	251	CY	ROCK CHANNEL PROTECTION, TYPE A WITH FILTER
601	29	CY	ROCK CHANNEL PROTECTION, TYPE B WITH FILTER
611	180	FT	72" CONDUIT, TYPE A, AS PER PLAN, 748.06
611	702	FT	PILOT TUBE GUIDED AUGER BORING, 72", TYPE A, 748.06

**HYDRAULIC DATA**  
DRAINAGE AREA = 1,070.73 ACRES  
Q (25) = 673.35 CFS V(25) = 12.39 FPS  
Q (100) = 1,011.41 CFS V(100) = 15.62 FPS  
ORDINARY HIGH WATER MARK: 748.70  
DESIGN SERVICE LIFE: 75 YEARS  
pH: 7.3  
ABRASION LEVEL: LEVEL 2

**EXISTING STRUCTURE**  
TYPE: 36" REINFORCED CONCRETE PIPE SKEW:  
ALIGNMENT:  
CFN: 1809609

**PROPOSED STRUCTURE**  
TYPE: 72" CONDUIT, TYPE A, 748.06 STEEL PIPE ENCASMENT, AS PER PLAN  
SKEW:  
ALIGNMENT:  
WORKING FROM LEFT TO RIGHT WITH RESPECT TO SR16:  
COS-16-1.452=CFN 1994943  
COS-16-1.453=CFN 1994944  
COS-16-1.454=CFN 1994945

**NOTES:**  
FOR DETAILED REQUIREMENTS FOR ITEM 611E97400 - CONDUIT, MISC.: PILOT TUBE GUIDED AUGER BORING, 72", TYPE A, 748.06, SEE THE SUPPLEMENTAL SPECIFICATION WITH THE SAME TITLE IN THE CONTRACT DOCUMENTS.



DESIGN SPECIFICATIONS:

THE STRUCTURES CONFORM TO THE 9TH EDITION OF THE "LRFD BRIDGE DESIGN SPECIFICATIONS" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 2020 AND THE ODOT BRIDGE DESIGN MANUAL, 2020 AND CURRENT UPDATES.

DESIGN LOADING:

SECTIONS UNDER ROADWAY INFLUENCE AREA:  
DESIGN AS PER ODOT SUPPLEMENT 1086

SECTIONS UNDER RAILROAD UNFLUENCE AREA:  
RAILROAD BRIDGES SHALL BE DESIGNED FOR ALL LOADS SPECIFIED IN AREMA. LIVE LOADS FOR STEEL STRUCTURES SHALL CONSIDER BOTH THE COOPER E80 LOADING AND THE ALTERNATIVE LIVE LOAD WITH FULL DIESEL IMPACT, WHICHEVER PRODUCES THE GREATER STRESS. LIVE LOADS FOR CONCRETE STRUCTURES SHALL CONSIDER COOPER E80 LOADING WITH FULL DIESEL IMPACT.  
ALL BRIDGES SHALL BE DESIGNED WITH NON-COMPOSITE INTERACTION BETWEEN SUPERSTRUCTURE AND DECK. MECHANICAL CONNECTIONS SHALL BE PROVIDED AS NECESSARY TO SATISFY DESIGN LOAD REQUIREMENTS.  
THE WEIGHT OF THE MINIMUM BALLAST DEPTH ONE FOOT (1'-0") PLUS AN ADDITIONAL TWO FEET (2'-0") OF BALLAST BELOW THE TIE SHALL BE INCLUDED WHEN COMPUTING THE DEAD LOAD OF THE STRUCTURE.

ADDITIONALLY, STEEL CASING CONDUIT MIN WALL THICKNESS=  
0.938 FOR COATED STEEL  
1.000" FOR UNCOATED STEEL  
(SEE GWI UTILITY SPEC'S ACCOMPANYING PLAN SET)

DESIGN DATA:

THE FOLLOWING DESIGN DATA IS ASSUMED:

INTERNAL ANGLE OF FRICTION OF BACKFILL SOIL = 30°  
UNIT WEIGHT OF SOIL = 120 PCF  
SLOPE OF BACKFILL: 2:1 (MAX)  
UNIT WEIGHT OF CONCRETE = 150 PCF  
INTERNAL ANGLE OF FRICTION (DRAINED),  
FOUNDATION SOIL = 28°  
UNDRAINED SHEAR STRENGTH (COHESIVE),  
FOUNDATION SOIL, S<sub>u</sub> = 1500 PSF

THE FOLLOWING DESIGN DATA IS ASSUMED FOR THE CAST-IN-PLACE SECTIONS:

CLASS QC1 CONCRETE - COMPRESSIVE STRENGTH 4 KSI  
REINFORCING STEEL - ASTM A615, A616, OR A617  
GRADE 60 MINIMUM YIELD STRENGTH 60,000 PSI

FOUNDATION BEARING RESISTANCE:

THE CAST-IN-PLACE FOOTINGS SHOWN IN THE PLANS, AS DESIGNED, PRODUCE A MAXIMUM SERVICE LIMIT STATE BEARING PRESSURE OF 2.2 KIPS PER SQUARE FOOT AND MAXIMUM STRENGTH LIMIT STATE BEARING PRESSURE OF 4.0 KIPS PER SQUARE FOOT. THE FACTORED BEARING RESISTANCE SHALL BE A MINIMUM OF \_\_\_\_ KIPS PER SQUARE FOOT. THE CONTRACTOR SHALL REPORT ANY POOR SOIL CONDITIONS EXPERIENCED IN THE FIELD PRIOR TO THE PLACEMENT OF THE CULVERT, WINGWALLS, AND/OR HEADWALLS. IF POOR SOIL IS OBSERVED, THE CONTRACTOR SHALL TAKE APPROPRIATE MEASURES TO IMPROVE THE SOIL SO THAT THE REQUIRED BEARING RESISTANCE MAY BE ACHIEVED. SEE ITEM 503-UNCLASSIFIED EXCAVATION, AS PER PLAN NOTE.

UTILITY LINES:

ALL EXPENSE INVOLVED IN RELOCATING (INSTALLING) THE AFFECTED UTILITY LINES SHALL BE BORNE BY THE UTILITY(IES). THE CONTRACTOR AND UTILITY(IES) ARE TO COOPERATE BY ARRANGING THEIR WORK IN SUCH A MANNER THAT INCONVENIENCE TO EITHER WILL BE HELD TO A MINIMUM. SEE ROADWAY GENERAL NOTES FOR A LISTING OF UTILITY OWNERS AND CONTACT INFORMATION.

ITEM 518 - POROUS BACKFILL WITH GEOTEXTILE FABRIC, AS PER PLAN:

POROUS BACKFILL 1'-6" THICK SHALL BE PLACED BEHIND THE HEADWALLS AND WINGWALLS AND SHALL EXTEND FROM 12" BELOW THE EMBANKMENT SURFACE TO MIN, OF 6" BELOW THE WEEP HOLE. GEOTEXTILE FABRIC SHALL BE PLACED BETWEEN THE POROUS BACKFILL AND REPLACED EXCAVATION ADJACENT TO THE STRUCTURE. IT SHALL TURN UNDER THE BOTTOM OF THE POROUS BACKFILL AND RETURN 6" ABOVE THE TOP ELEVATION OF THE WEEPHOLE.

WEEPHOLES SHALL BE PLACED 12" ABOVE THE NORMAL WATER ELEVATION OR GROUND LINE.

ITEM 503 – COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN:

COFFERDAMS AND EXCAVATION BRACING SHALL BE IN ACCORDANCE WITH 503. BRACING FOR THE JACKING AND RECEIVING PITS IS INCLUDED IN THIS ITEM, INCLUDING ALL SHEETING AND BRACING DESIGNS, INSTALLATIONS, CUTTING, REMOVALS, ETC., NECESSARY FOR THE JACKING OPERATIONS. PAYMENT FOR ALL DESCRIBED WORK SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 503 – COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN.

ITEM 503 – UNCLASSIFIED EXCAVATION, AS PER PLAN:

UNCLASSIFIED EXCAVATION SHALL BE IN ACCORDANCE WITH 503. THE FOUNDATIONS FOR THE INLET AND OUTLET HEADWALLS SHALL SATISFY THE REQUIRED BEARING PRESSURES. UNSUITABLE MATERIAL ENCOUNTERED BELOW THE FOUNDATIONS SHALL BE REMOVED TO THE DEPTH DIRECTED BY THE ENGINEER AND REPLACED WITH 203 GRANULAR MATERIAL TYPE B COMPACTED AS DIRECTED IN 503.08. PAYMENT FOR ALL DESCRIBED WORK SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 503 – UNCLASSIFIED EXCAVATION, AS PER PLAN.

ESTIMATED QUANTITIES					
ITEM	EXTENSION	TOTAL	UNIT	DESCRIPTION	SEE SHEET
503	11101	LS	LS	COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN	P.22
503	21301	LS	LS	UNCLASSIFIED EXCAVATION, AS PER PLAN	P.22
509	26000	21121	LB	GALVANIZED STEEL REINFORCEMENT	
511	46510	97	CY	CLASS QC1 CONCRETE, FOOTING	
511	46610	54	CY	CLASS QC1 CONCRETE, HEADWALL	
512	10050	129	SY	SEALING OF CONCRETE SURFACES (NON-EPOXY)	
518	21201	45	CY	POROUS BACKFILL WITH GEOTEXTILE FABRIC, AS PER PLAN	P.22

DESIGN AGENCY

AECOM

DESIGNER

MJT

REVIEWER

ZRD 10-01-25

PROJECT ID

119871

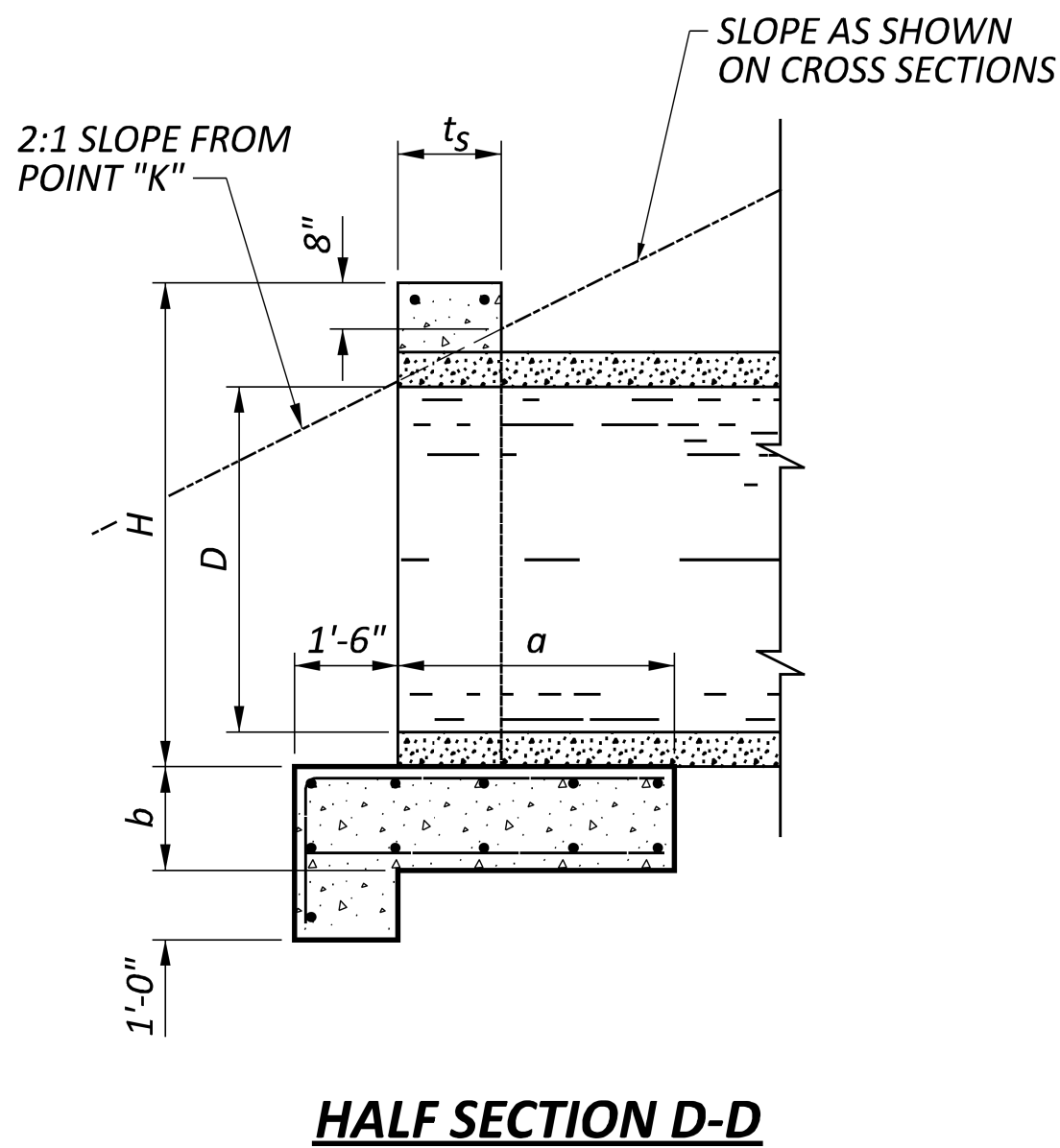
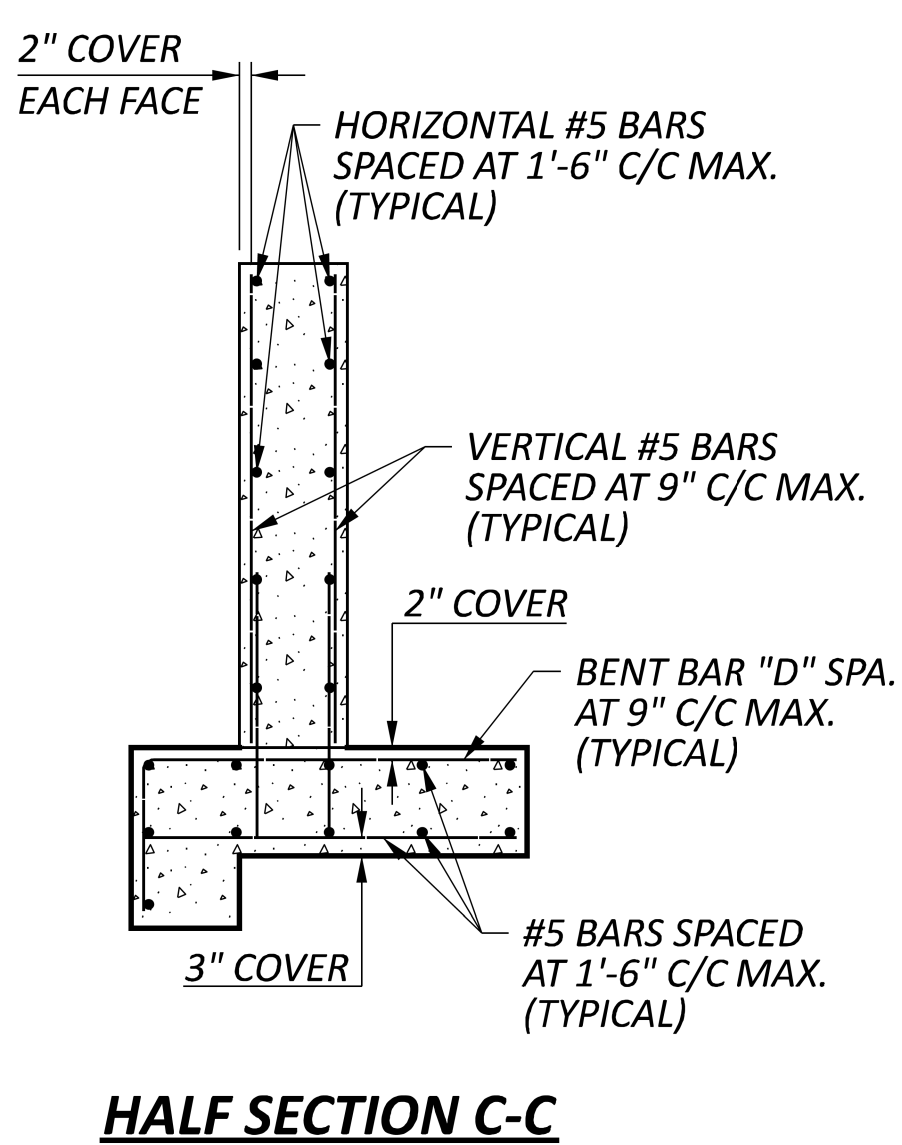
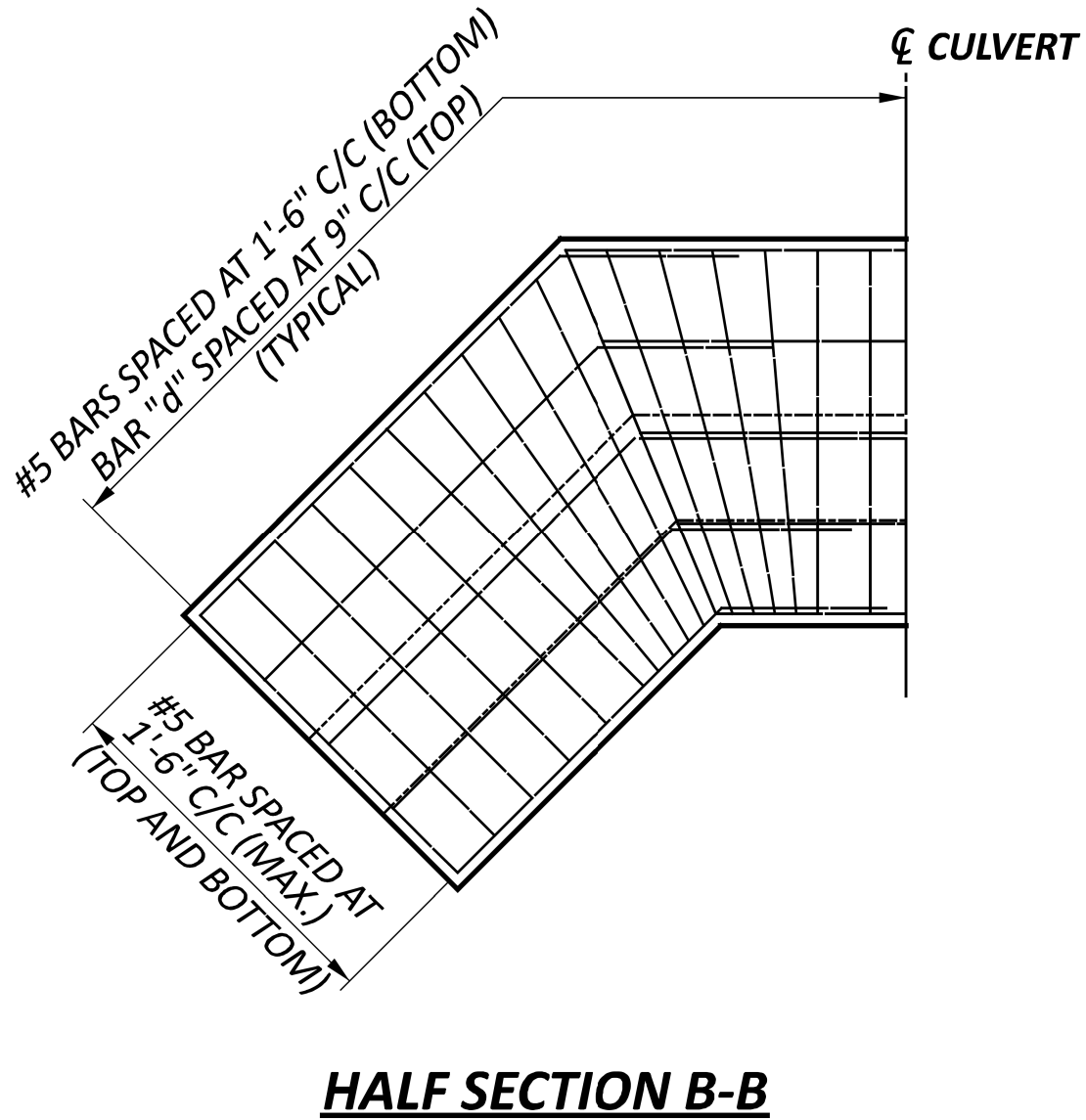
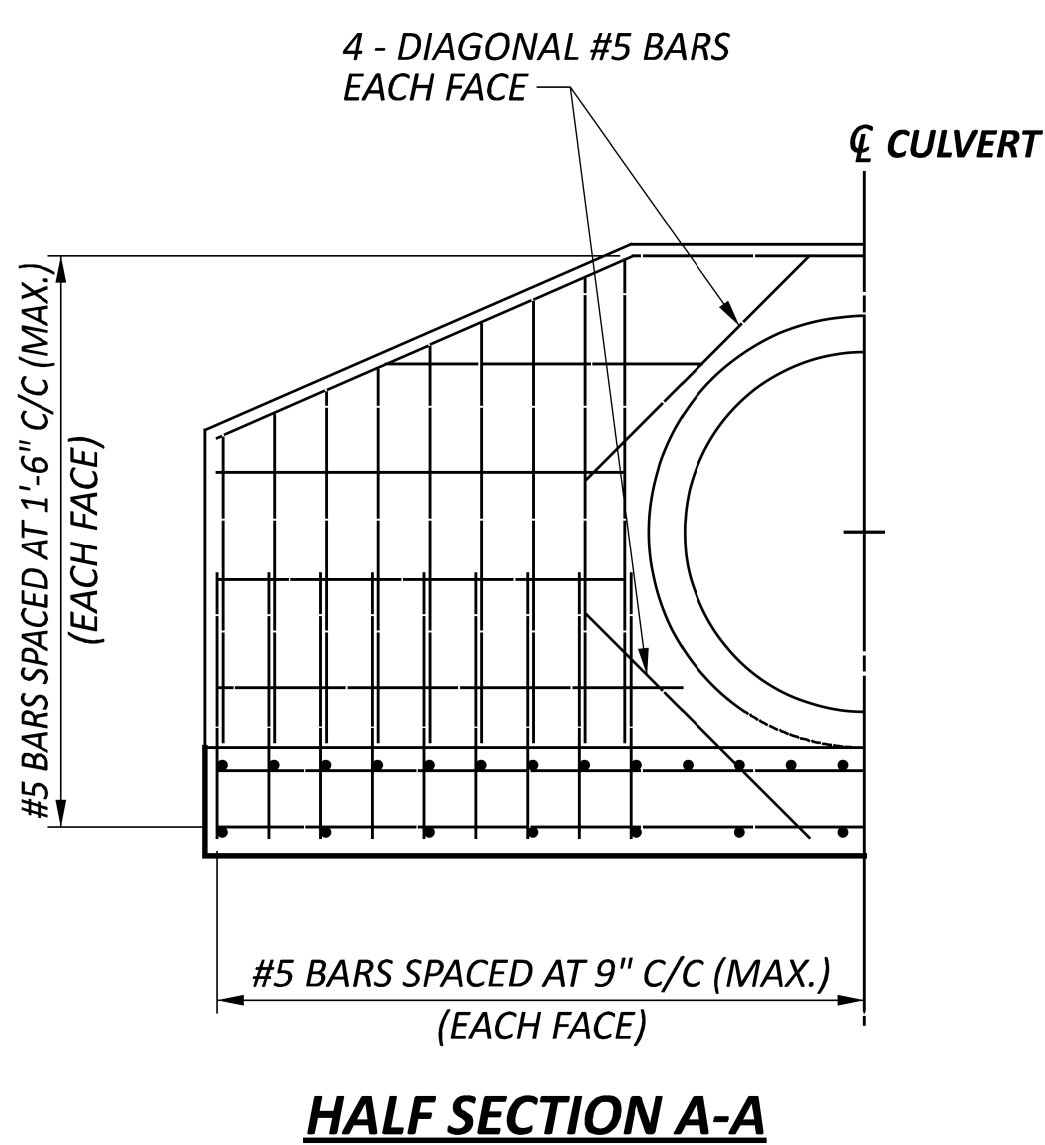
SHEET

P.22

TOTAL

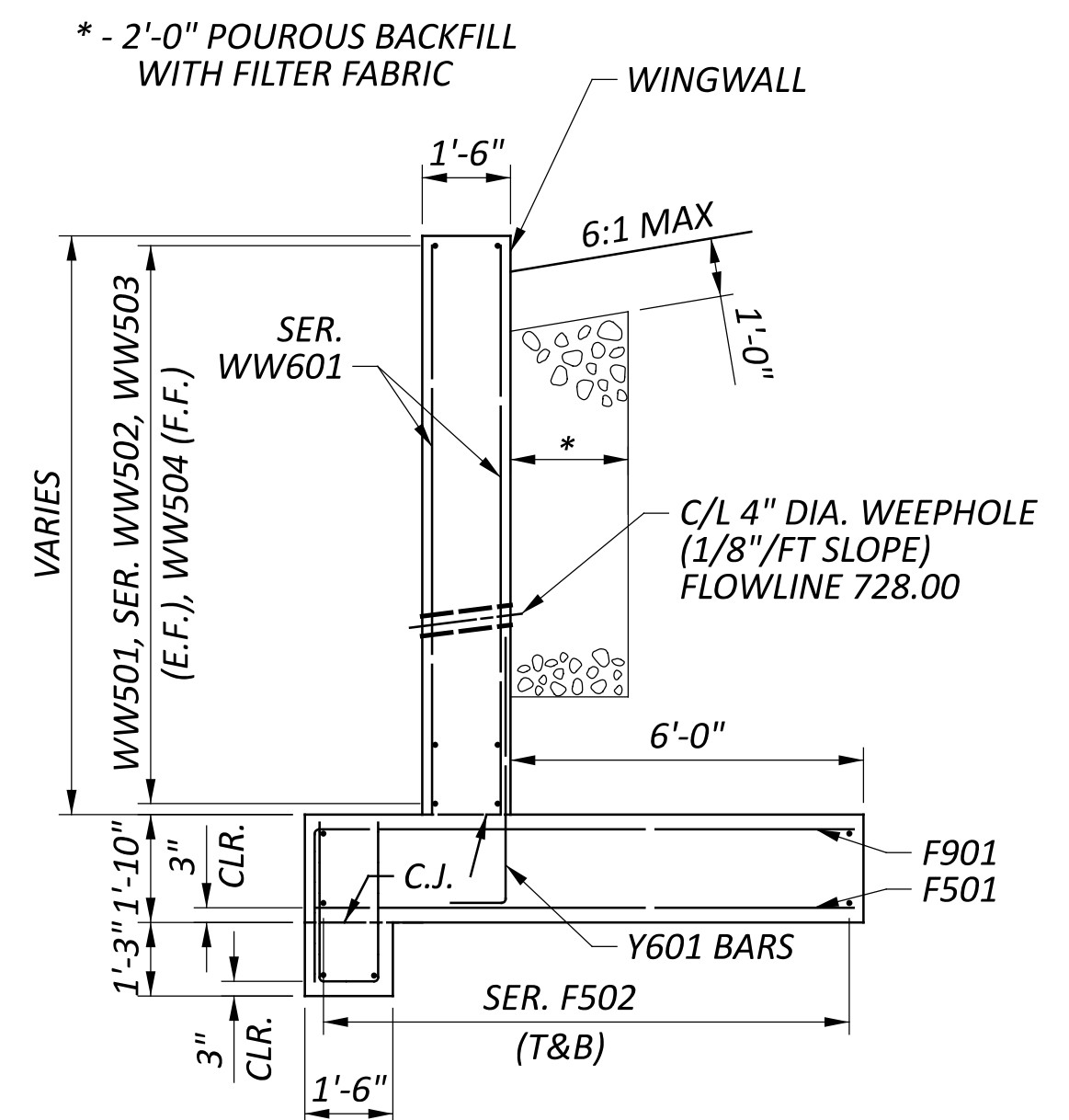
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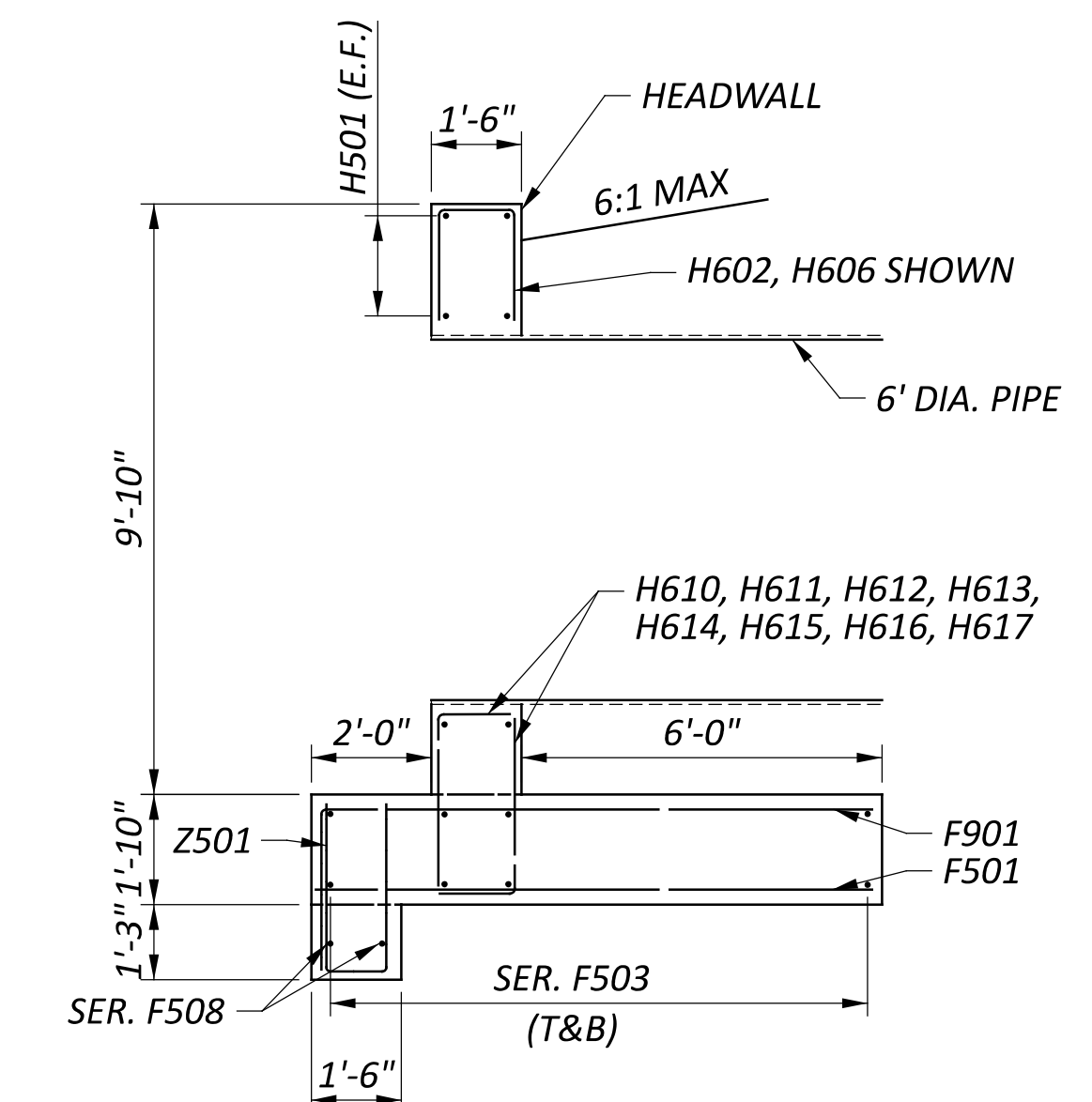




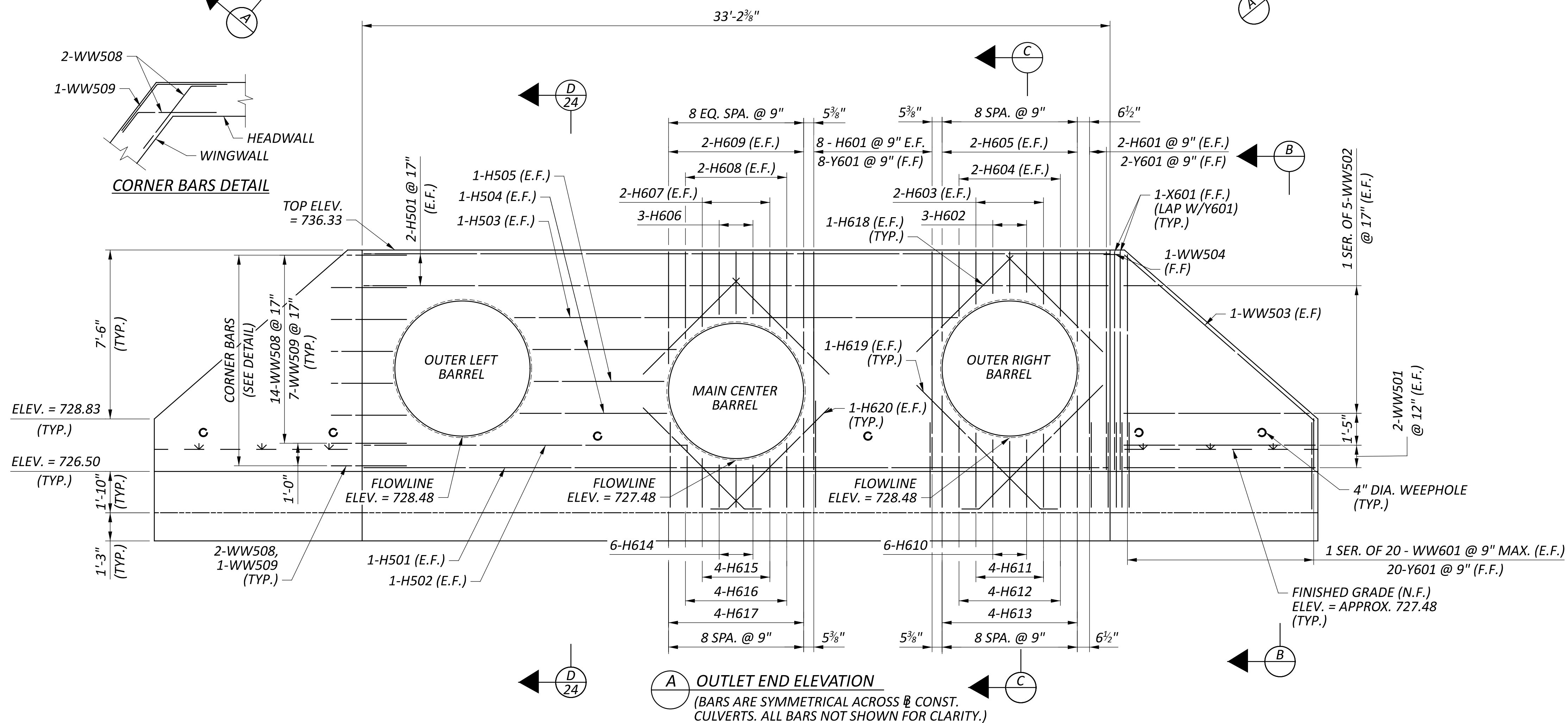
1. FOR CULVERT LOCATION PLAN, SEE SHEET 21.
2. FOR REINFORCING LIST, SEE SHEET 26.
3. FOR FOOTING PLAN, SEE SHEET 25.
4. FOR ADDITIONAL NOTES, SEE SHEETS 22.
5. CUT LONGITUDINAL AND TRANSVERSE BARS AS NECESSARY TO MAINTAIN 2" CLEAR TO 6' DIA. PIPES.



**B** SECTION THROUGH WINGWALL  
(OTHER WINGWALL SIMILAR)



**C SECTION THROUGH HEADWALL**  
(SEE ELEVATION FOR ADDITIONAL  
BARS OVER PIPE. OUTLET FOOTING  
BARS SHOWN)





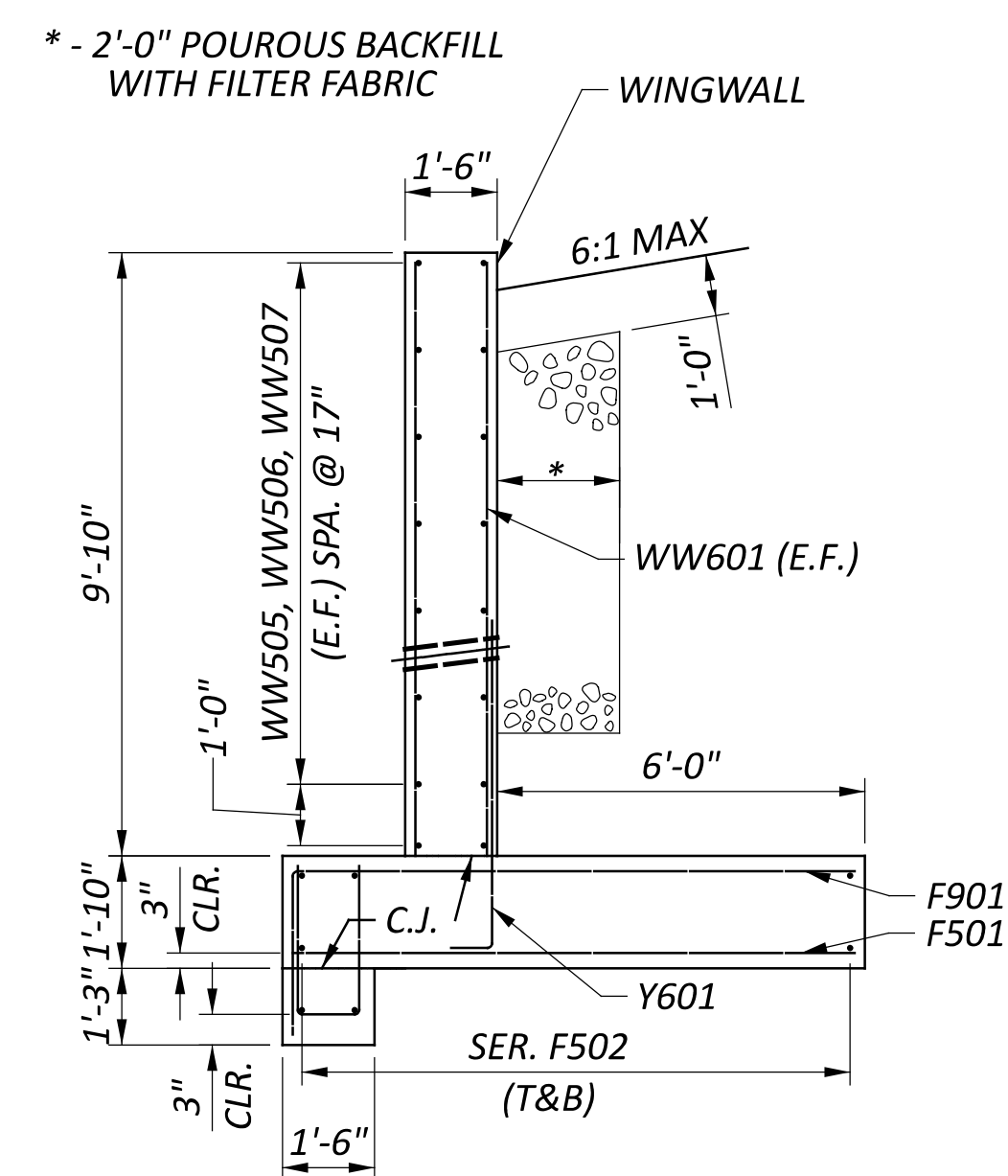


1. FOR CULVERT LOCATION PLAN, SEE SHEET 21.
2. FOR REINFORCING LIST, SEE SHEET 26.
3. FOR FOOTING PLAN, SEE SHEET 25.
4. FOR ADDITIONAL NOTES, SEE SHEETS 22
5. CUT LONGITUDINAL AND TRANSVERSE BARS AS NECESSARY TO MAINTAIN 2" CLEAR TO 6' DIA. PIPES.
6. FOR CORNER BARS DETAIL, SEE SHEET 23.

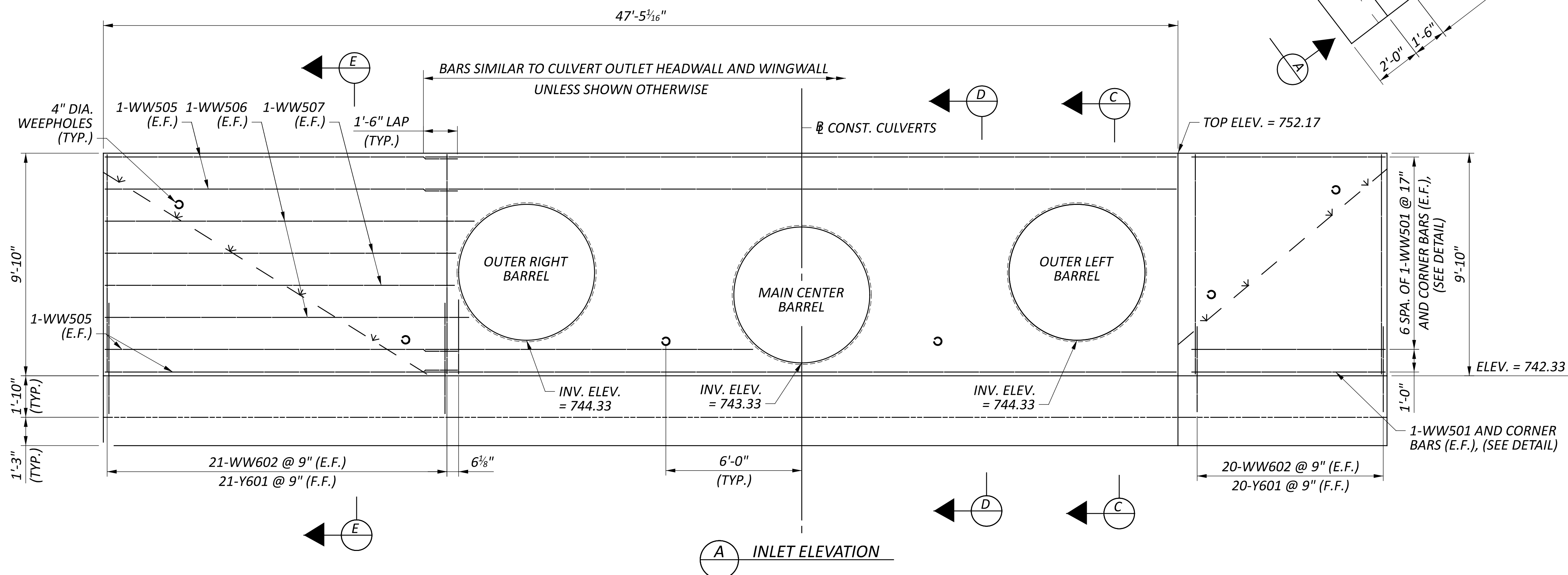
HORIZONTAL  
SCALE IN FEET

A horizontal scale bar with a black background. It features four white rectangular segments of equal length. Below the bar, the numbers 0, 15, 30, and 60 are printed in white, corresponding to the segment boundaries. The segments represent 0-15, 15-30, 30-45, and 45-60 feet.

CULVERT INLET  
PLAN, ELEVATION, AND SECTIONS

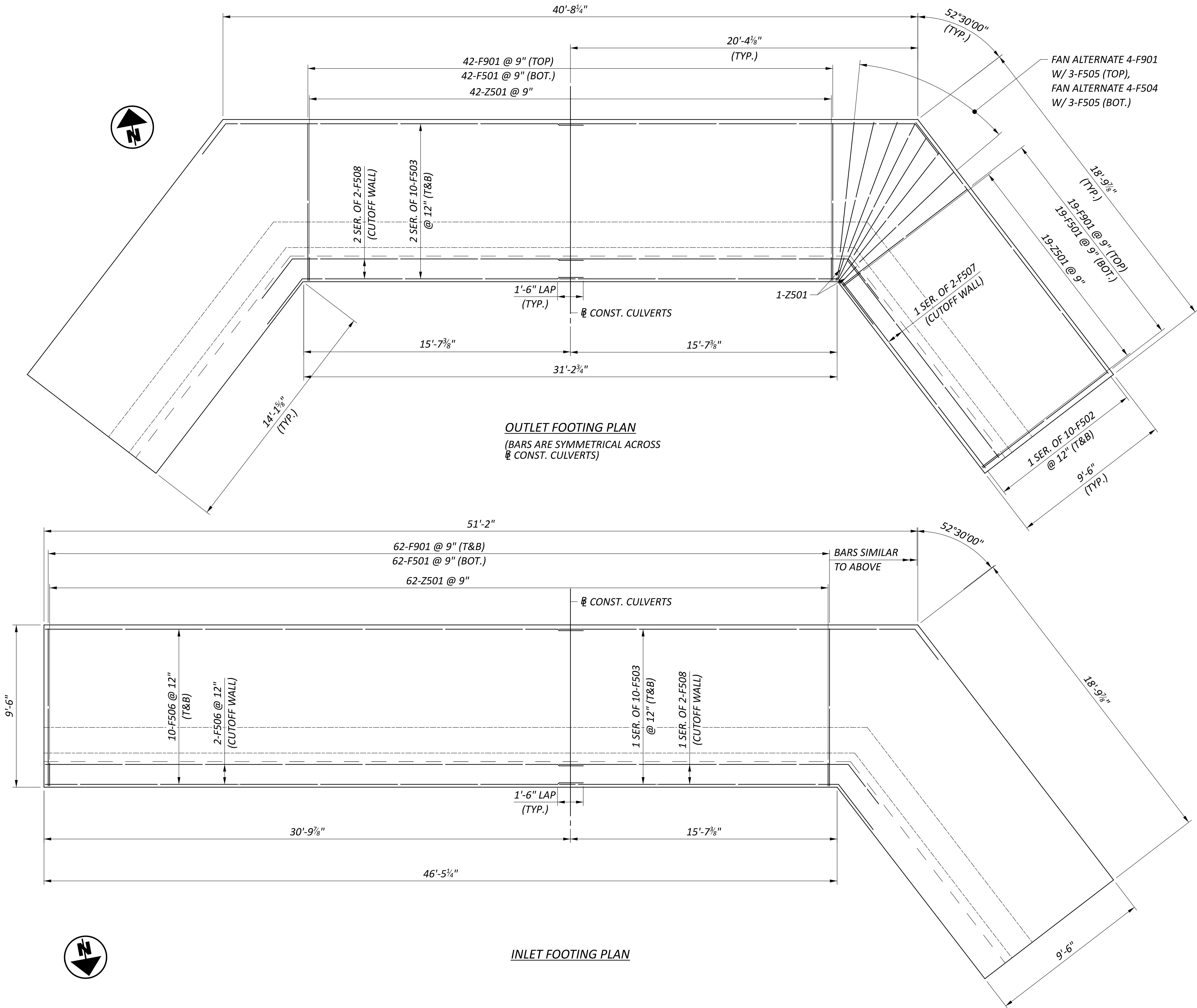


E SECTION THROUGH WINGWALL



**D** SECTION BETWEEN PIPES  
(INLET FOOTING BARS SHOWN.  
POROUS BACKFILL NOT SHOWN  
FOR CLARITY.)





NOTES

1. FOR CULVERT LOCATION PLAN, SEE SHEET 21.
2. FOR REINFORCING LIST, SEE SHEET 26.
3. FOR ADDITIONAL NOTES, SEE SHEETS 22
4. FOR Y601 BAR LOCATIONS AND SPACING, AND OTHER FOOTING BARS, SEE SHEETS 23 & 24.

CULVERT OUTLET & INLET  
FOOTING DETAILS

DESIGN AGENCY

AECOM

DESIGNER

MSK

REVIEWER

ZRD 10-01-25

PROJECT ID

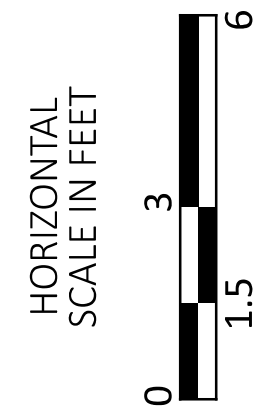
119871

SHEET

P.26

TOTAL

34



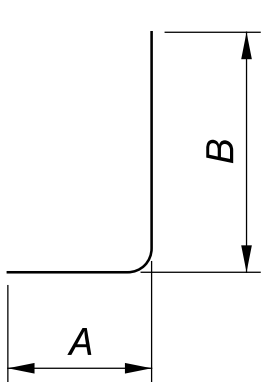


MARK	NUMBER			LENGTH	WEIGHT	TYPE	DIMENSIONS						
	TOTAL	OUTLET	INLET				A	B	C	D	E	R	INC
WINGWALLS													
WW501	24	8	16	14'-9"	369	STR							
	4 SR	4 SR		2'-8"									
WW502	OF	OF		TO	174	STR							2'-10"
	5	5		14'-0"									
WW503	4	4		16'-6"	69	STR							
WW504	2	2		3'-1"	6	12	1'-4"	0'-8"	0'-4 ½"	1'-2"	0'-4 ½"		
WW505	8		8	15'-6"	129	STR							
WW506	4		4	16'-1"	67	STR							
WW507	4		4	15'-4"	64	STR							
WW508	48	32	16	4'-6"	225	19	3'-5 ¼"	0'-8 ½"	0'-10 ½"				
WW509	24	16	8	6'-8"	167	19	3'-6"	2'-1 ½"	2'-4 ½"				
	4 SR	4 SR		2'-1"									
WW601	OF	OF		TO	676	STR							0'-4 ½"
	20	20		9'-2"									
WW602	82		82	9'-6"	1170	STR							
X601	6	4	2	9'-6"	86	STR							
SUB-TOTAL					3,202								
FOOTINGS AND CUTOFF WALLS													
F501	161	80	81	9'-2"	1539	STR							
	6 SR	4 SR	2 SR	13'-10"									
F502	OF	OF	OF	TO	1006	STR							0'-6"
	10	10	10	18'-4"									
	6 SR	4 SR	2 SR	19'-5"			17'-0"						
F503	OF	OF	OF	TO	1361	19	TO	1'-5 ¾"	1'-11 ¼"				0'-6 ¼"
	10	10	10	24'-2"			21'-9"						
F504	12	8	4	9'-4"	117	STR							
F505	18	12	6	7'-10"	147	STR							
F506	22		22	32'-0"	734	STR							
	3 SR	2 SR	1 SR	13'-10"									0'-6"
F507	OF	OF	OF	TO	88	STR							
	2	2	2	14'-5"									
	3 SR	2 SR	1 SR	19'-5"			17'-0"						
F508	OF	OF	OF	TO	123	19	TO	1'-5 ¾"	1'-11 ¼"				0'-6"
	2	2	2	19'-11"			17'-6"						
													1'-0"
F901	173	88	85	11'-7"	6813	1	2'-8"	9'-2"					
Z501	167	84	83	6'-3"	1089	2	2'-8"	1'-2"	2'-8"				
Y601	125	64	61	5'-10"	1095	1	1'-0"	5'-0"					
SUB-TOTAL					14,112								

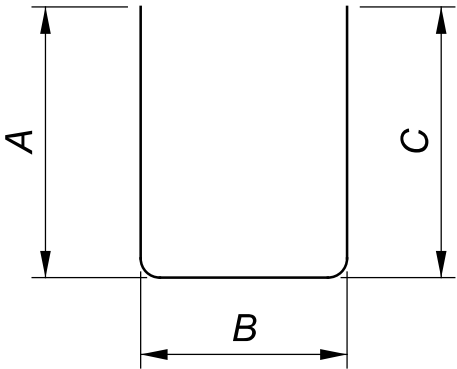
NOTES:

1. ALL REINFORCING STEEL SHALL BE GALVANIZED.
2. THE COVER FOR REINFORCING STEEL SHALL BE 2" UNLESS NOTED OTHERWISE.
3. THE BAR SIZE NUMBER IS SPECIFIED ON THE PLANS IN THE BAR MARK COLUMN. THE FIRST DIGIT INDICATES THE BAR SIZE NUMBER. FOR EXAMPLE X601 IS A #6 BAR. DIMENSIONS SHOWN ARE OUT TO OUT.
4. FOR OUTLET PLAN AND DETAILS, SEE SHEET 24
5. FOR INLET PLAN AND DETAILS, SEE SHEET 25
6. FOR ADDITIONAL NOTES, SEE SHEET 22

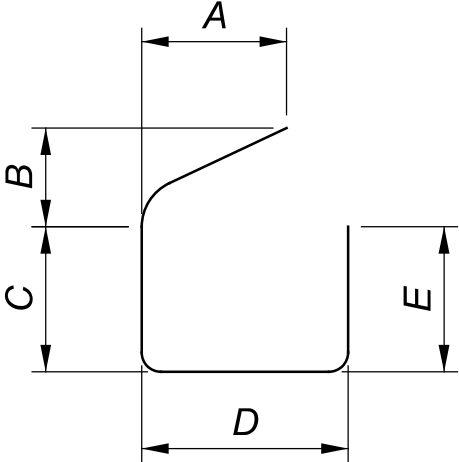
MARK	NUMBER			LENGTH	WEIGHT	TYPE	DIMENSIONS						
	TOTAL	OUTLET	INLET				A	B	C	D	E	R	INC
HEADWALLS													
H501	12	6	6	32'-11"	411	STR							
H502	8	4	4	14'-3"	119	STR							
H503	4	2	2	19'-8"	82	STR							
H504	16	8	8	6'-4"	106	STR							
H505	8	4	4	5'-9"	48	STR							
H601	76	40	36	9'-6"	1084	STR							
H602	12	6	6	3'-10"	69	2	1'-6"	1'-2"	1'-6"				
H603	16	8	8	2'-3"	54	STR							
H604	16	8	8	2'-9"	66	STR							
H605	16	8	8	3'-10"	92	STR							
H606	6	3	3	5'-10"	53	2	2'-6"	1'-2"	2'-6"				
H607	8	4	4	3'-3"	39	STR							
H608	8	4	4	3'-9"	45	STR							
H609	8	4	4	4'-10"	58	STR							
H610	24	12	12	4'-1"	147	1	1'-0"	3'-3"					
H611	16	8	8	5'-1"	122	1	1'-0"	4'-3"					
H612	16	8	8	6'-1"	146	1	1'-0"	5'-3"					
H613	16	8	8	7'-1"	170	1	1'-0"	6'-3"					
H614	12	6	6	3'-1"	56	1	1'-0"	2'-3"					
H615	8	4	4	4'-1"	49	1	1'-0"	3'-3"					
H616	8	4	4	5'-1"	61	1	1'-0"	4'-3"					
H617	8	4	4	6'-1"	73	1	1'-0"	5'-3"					
H618	24	12	12	9'-0"	324	STR							
H619	16	8	8	8'-9"	210	19	7'-9"	0'-9"	0'-9"				
H620	8	4	4	10'-3"	123	19	9'-3"	0'-9"	0'-9"				
SUB-TOTAL					3,807								



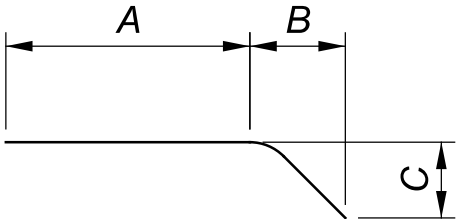
TYPE-1



TYPE-2



TYPE-12




TYPE-19

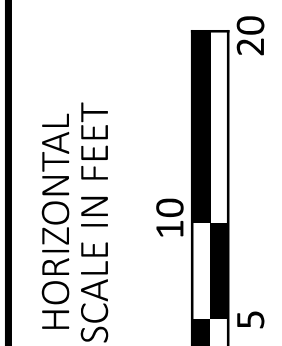
BAR BENDING DIAGRAMS





- LEGEND**

-----	<i>EXISTING MAJOR CONTOUR</i>
- - - - -	<i>EXISTING MINOR CONTOUR</i>
=====	<i>PROPOSED MAJOR CONTOUR</i>
=====	<i>PROPOSED MINOR CONTOUR</i>
----- •	<i>CONSTRUCTION LIMITS</i>
	<i>ROCK CHANNEL PROTECTION WITH FILTER</i>



## GRADING PLAN CULVERT INLET AND OUTLET

DESIGN AGENCY



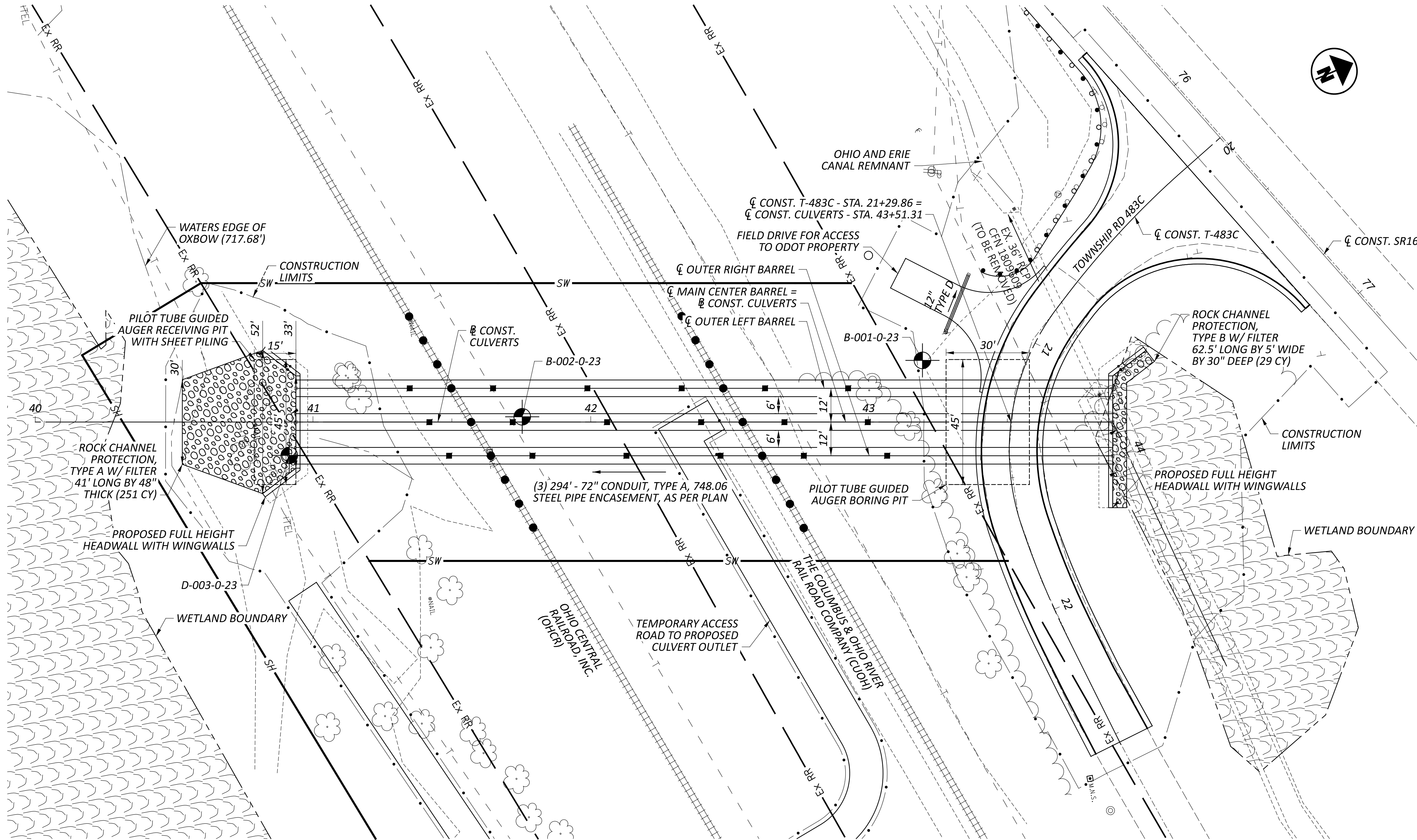
DESIGNER  
SMS

REVIEWER  
MAW 10-01-25

PROJECT ID  
119871

SHEET	TOTAL
P.28	34





NOTES:  
FOR DETAILED REQUIREMENTS FOR ITEM  
611E97300 - CONDUIT, MISC.: GEOTECHNICAL  
INSTRUMENTATION AND MONITORING, SEE THE  
SUPPLEMENTAL SPECIFICATION WITH THE SAME  
TITLE IN THE CONTRACT DOCUMENTS.

- LEGEND
- RAIL MONITORING POINT (RMP)
  - GROUND MONITORING POINT (GMP)
  - AUTOMATED MOTORIZED TOTAL STATION (AMTS)

INSTRUMENTATION AND MONITORING LAYOUT DETAIL

DESIGN AGENCY

**AECOM**

DESIGNER

MJT

REVIEWER

MAW 10-01-25

PROJECT ID

119871

SHEET

P.29

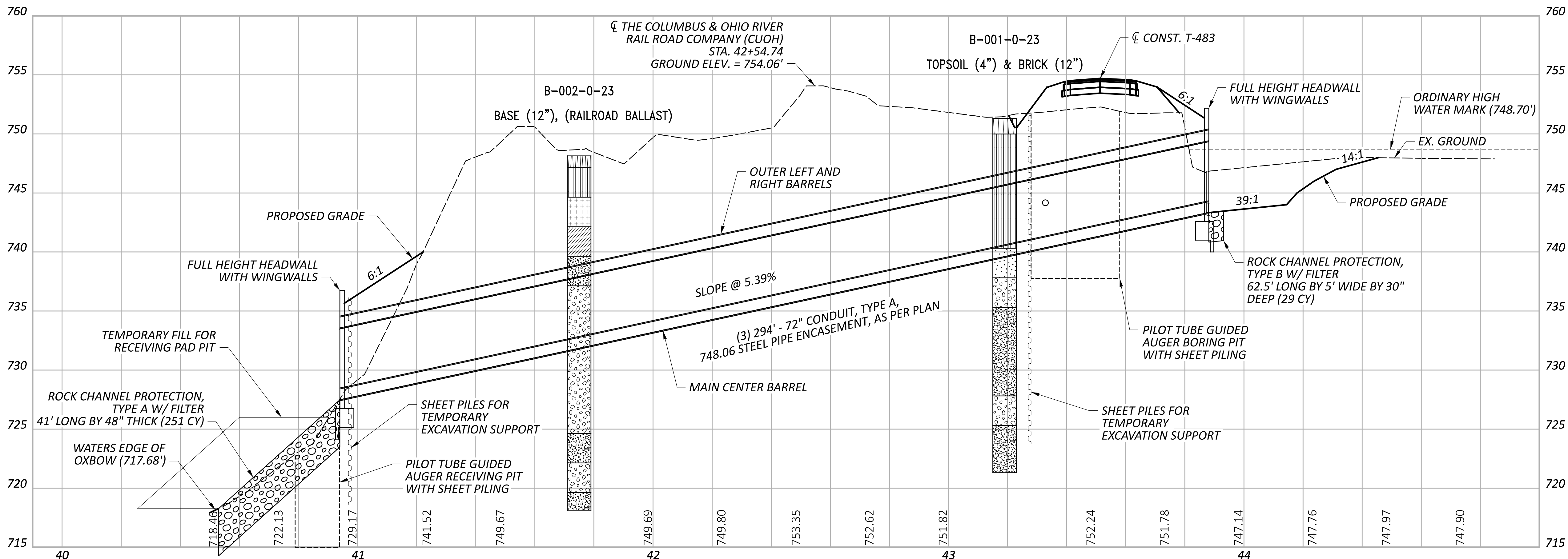
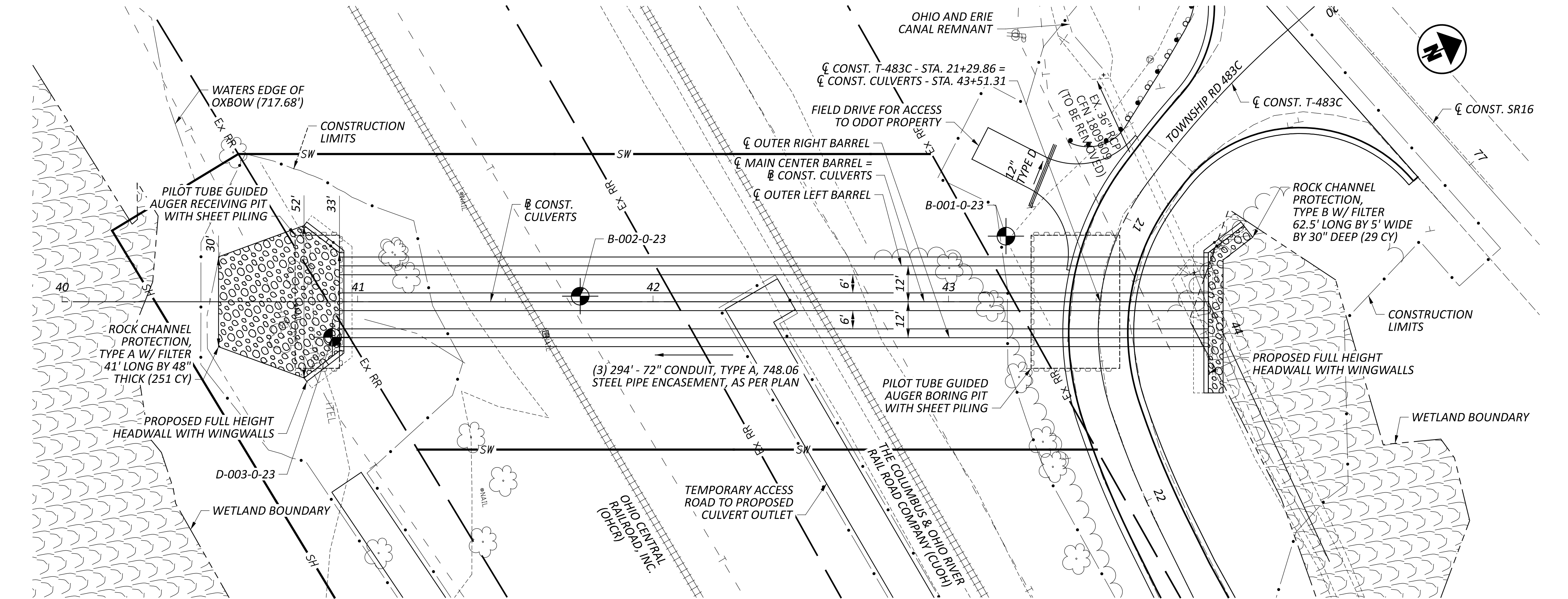
TOTAL

34

HORIZONTAL  
SCALE IN FEET







NOTES:

1. SHEET PILE SUPPORT OF EXCAVATION IS ONLY PRESENTED FOR GENERAL GUIDANCE TO THE CONTRACTOR. ACTUAL SUPPORT OF EXCAVATION MATERIALS AND METHODS ARE TO BE DESIGNED BY THE CONTRACTOR. THE CONTRACTOR SHALL SUBMIT A DESIGN, SIGNED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF OHIO FOR THE SUPPORT OF EXCAVATION.
2. SOIL AND GROUNDWATER CONDITIONS TO BE USED FOR DESIGN OF EXCAVATION SUPPORT ARE PROVIDED IN THE GEOTECHNICAL DATA.
3. THE CONTRACTOR SHALL DETERMINE THE SIZE OF EXCAVATION SUPPORT SYSTEM AS REQUIRED FOR THEIR MEANS AND METHODS.

HORIZONTAL SCALE IN FEET  
0 10 20 40

CULVERT DETAIL  
SOIL PROFILE

DESIGN AGENCY	
AECOM	
DESIGNER	
MJT	
REVIEWER	
MAW 10-01-25	
PROJECT ID	
119871	
SHEET	TOTAL
P.30	34



PROJECT DESCRIPTION

PROPOSED IMPROVEMENTS INCLUDE THE RECONSTRUCTION OF 0.05 MILES OF T-483C, THE INSTALLATION, VIA PILOT TUBE GUIDED AUGER BORING METHODS, OF THREE (3) LARGE DIAMETER CULVERT PIPES UNDER THE TOWNSHIP ROAD AND RAILROAD FACILITIES, AND SITE REGRADING.

HISTORIC RECORDS

HISTORICAL RECORDS WERE OBTAINED AND REVIEWED FROM ODOT’S TRANSPORTATION INFORMATION MAPPING SYSTEM (TIMS) FOR MUS-COS-16-(11.79-14.23)(0.00-3.42) AND COS-16-1.89, SUB-BATCH 14013 AND 10702, RESPECTIVELY, COMPLETED IN 1949 AND 1950, RESPECTIVELY, FOR THE ORIGINAL ROADWAY ALIGNMENT. ADDITIONALLY, HISTORICAL RECORDS WERE REVIEWED FOR COS-16-0.82, SUB-BATCH 600775, COMPLETED IN 2020 FOR THE CURRENT ROADWAY ALIGNMENT. RESULTS OF THE EXPLORATIONS INDICATED A VARIETY OF SOILS WITH THE MAJORITY BEING COHESIVE AND CHARACTERIZED AS SANDY SILT (A-4a), SILT (A-4b) SILT AND CLAY (A-6a), SILTY CLAY (A-6b), ELASTIC CLAY (A-7-5), AND CLAY (A-7-6). HISTORICAL INFORMATION WAS REVIEWED BUT NOT UTILIZED WITHIN THE CURRENT DESIGN DUE TO DEPTH AND OFFSET RELATIVE TO CURRENT PROJECT LOCATION THEREFORE NOT PRESENTED FOR CLARITY.

GEOLOGY

THE PROJECT IS IN THE NON-GLACIATED MUSKINGUM-PITTSBURGH PLATEAU PHYSIOGRAPHIC REGION WHICH IS CHARACTERIZED AS A MODERATE TO HIGH RELIEF DISSECTED PLATEAU WITH BROAD MAJOR DRAINAGE VALLEYS. THE MUSKINGUM RIVER IS PRESENT WITHIN A PREGLACIAL VALLEY AND CONTAINS MANY OXBOW LAKES. THESE DRAINAGE VALLEYS CONTAIN OUTWASH AND LACUSTRINE TERRACES. THE OHIO DEPARTMENT OF NATURAL RESOURCES (ODNR) INTERACTIVE GEOLOGIC MAP INDICATES THAT THE OVERBURDEN SURFACE ALLUVIUM SOILS ARE UNDERLAIN BY WISCONSINAN OUTWASH, OLDER OUTWASH AND LACUSTRINE SOILS. THE OVERBURDEN SOILS IN THIS AREA ARE PREDOMINATELY COHESIVE WITH NON-COHESIVE SOILS ALONG THE MAJOR STREAMS. THESE SOILS ARE UNDERLAIN BY PENNSYLVANIAN-AGED SHALE, SILTSTONE, SANDSTONE, CONGLOMERATE, AND SUBORDINATE AMOUNTS OF LIMESTONE, CLAY, FLINT, AND COAL BEDROCK FROM THE ALLEGHENY AND POTTSVILLE GROUPS UNDIVIDED. UPPER MISSISSIPPIAN ROCK CAN BE FOUND WITHIN THE CENTRAL SECTION OF THE MUSKINGUM RIVER VALLEY. THIS REGION IS KNOWN TO HAVE RAPID VERTICAL AND HORIZONTAL CHANGES OF ROCK TYPES.

RECONNAISSANCE

FIELD RECONNAISSANCE WAS COMPLETED BY PERSONNEL FROM THE OFFICE OF GEOTECHNICAL ENGINEERING (OGE) ON FEBRUARY 21, 2024. THE EXISTING STRUCTURE WAS NOTED AS BEING IN POOR AND NON-FUNCTIONAL CONDITION. THE ROADWAY PAVEMENT ALONG S.R. 16 WAS NOTED AS BEING IN VERY GOOD CONDITION WHILE THE PAVEMENT OF T-483C WAS IN POOR CONDITION WITH SEVERE CRACKING AND SHOULDER DETERIORATION. S.R. 16 IS SUPPORTED ON A MINOR EMBANKMENT WHICH DOES NOT SHOW SIGNS OF INSTABILITY. TWO (2) SETS OF RAILROAD TRACKS ARE PRESENT SOUTH OF S.R. 16 AND T-483C SUPPORTED BY AN EMBANKMENT CONSTRUCTED ON RAILROAD BALLAST. THE NORTHERN TRACK IS ACTIVE, AND THE SOUTHERN TRACK IS ABANDONED DUE TO UNDERMINING AND LOSS OF SUPPORT TO THE EAST. THE SOUTHERN BANK LEADS TO AN OXBOW LAKE, IS VEGETATED PREDOMINATELY WITH TREES AND BRUSH, AND IS STEEP BUT APPEARS TO BE STABLE. HEAVY SEDIMENT BUILDUP WAS NOTED AT THE INLET AND CONTINUES THROUGH THE STRUCTURE RESULTING IN THE CULVERT BEING ABOUT HALF FULL OF WATER. DUE TO THE POOR CONDITION OF THE EXISTING STRUCTURE IT WAS DETERMINED TO BE ABANDONED WITH A NEW STRUCTURE TO BE INSTALLED ALONG A NEW ALIGNMENT. THE ADJACENT LAND USAGE WAS NOTED AS BEING PREDOMINATELY WOODED NORTH OF S.R. 16, WOODED RIPARIAN CORRIDOR UPSTREAM, GRASSY DOWNSTREAM AND RAILROAD SYSTEMS SOUTH OF THE PROJECT AREA.

SUBSURFACE EXPLORATION

TWO (2) BORINGS WERE COMPLETED AS PART OF THE SUBSURFACE EXPLORATION. ONE (1) BORING, B-001-0-23, WAS COMPLETED ON MARCH 14, 2024 USING A TRUCK MOUNTED CME 55 ROTARY DRILL RIG AND ONE (1) BORING, B-002-0-23, WAS COMPLETED ON DECEMBER 16, 2024 USING A TRACK MOUNTED ACKER REBEL XL ROTARY DRILL RIG. BOTH BORINGS WERE COMPLETED USING 3.25-INCH I.D. HOLLOW STEM AUGERS TO ADVANCE THE BORINGS THROUGH THE SOIL. DISTURBED SAMPLES WERE COLLECTED IN ACCORDANCE WITH THE STANDARD PENETRATION TEST (AASHTO T206) AT 2.5-FOOT INTERVALS FOR THE FULL DEPTH OF THE BORINGS. THE HAMMER SYSTEMS WERE CALIBRATED ON NOVEMBER 7, 2023, WITH AN AVERAGE DRILL ROD ENERGY RATIO (ER) OF 88% FOR THE CME 55 AND 91.5% FOR THE ACKER, WHICH WAS CAPPED AT 90% PER ODOT SPECIFICATIONS FOR GEOTECHNICAL EXPLORATIONS (SGE), SECTION 404.3.

ADDITIONALLY, ONE (1) DYNAMIC CONE PENETRATION SOUNDING, D-003-0-23, WAS PERFORMED USING A WILDCAT DYNAMIC CONE PENETROMETER (WDCP) ON DECEMBER 4, 2024.

EXPLORATION FINDINGS

BORING B-001-0-23 WAS COMPLETED NEAR THE INLET AND INITIALLY ENCOUNTERED 4-INCHES OF TOPSOIL UNDERLAIN BY 12-INCHES OF BRICK. B-002-0-23 WAS COMPLETED BETWEEN THE RAILROAD TRACKS NEAR THE ABANDONED SOUTHERN TRACK AND INITIALLY ENCOUNTERED 12-INCHES OF RAILROAD BALLAST. BENEATH THE SURFACE MATERIALS BOTH BORINGS ENCOUNTERED STIFF TO VERY STIFF SANDY SILT (A-4a) IN DAMP TO MOIST CONDITION WHICH WAS SLIGHTLY ORGANIC IN B-002-0-23. COHESIVE SOILS CONTINUED IN B-002-0-23 CONSISTING OF SILT (A-4b) AND SILT AND CLAY (A-6a) IN HARD CONSISTENCY AND DAMP CONDITION. BELOW ELEVATION 740.3 AND 739.6 FEET BORINGS B-001-0-23 AND B-002-0-23, RESPECTIVELY, ENCOUNTERED NON-COHESIVE SOILS INTO WHICH THEY WERE TERMINATED. THE NON-COHESIVE SOILS WERE CLASSIFIED AS GRAVEL (A-1-a), GRAVEL WITH SAND (A-1-b), AND COARSE AND FINE SAND (A-3a) IN VARYING COMPACTNESS RANGING FROM LOOSE TO DENSE AND DAMP TO MOIST CONDITION. SEVERAL COBBLE ZONES WERE NOTED WITHIN THE NON-COHESIVE SOIL LAYERS.

WDCP SOUNDING D-003-0-23 WAS COMPLETED NEAR THE OUTLET OF THE PROPOSED CULVERT DUE TO DIFFICULT ACCESS. RESULTS OF THE WDCP SOUNDING INDICATED WEAK SOILS AT THE GROUND SURFACE BECOMING STRONGER WITH DEPTH.

ALL GEOTECHNICAL EXPLORATION LOCATIONS WERE REPORTED DRY UPON COMPLETION.

LEGEND		ODOT CLASS	CLASSIFIED MECH./VISUAL	
DESCRIPTION				
	GRAVEL	A-1-a	8	-
	GRAVEL WITH SAND	A-1-b	6	2
	COARSE AND FINE SAND	A-3a	1	-
	SANDY SILT	A-4a	3	2
	SILT	A-4b	1	-
	SILT AND CLAY	A-6a	1	-
		TOTAL	20	4
	BRICK OR BASE = X = APPROXIMATE THICKNESS	VISUAL		
	TOPSOIL = X = APPROXIMATE THICKNESS	VISUAL		
	BORING OR WDCP SOUNDING LOCATION - PLAN VIEW.			
	WDCP SOUNDING PLOTTED TO VERTICAL SCALE ONLY.			
	DRIVE SAMPLE BORING PLOTTED TO VERTICAL SCALE ONLY. HORIZONTAL BAR INDICATES A CHANGE IN STRATIGRAPHY.			
WC	INDICATES WATER CONTENT IN PERCENT.			
N <sub>60</sub>	INDICATES STANDARD PENETRATION RESISTANCE NORMALIZED TO 60% DRILL ROD ENERGY RATIO.			
●	INDICATES A PLASTIC MATERIAL WITH A MOISTURE CONTENT EQUAL TO OR GREATER THAN THE LIQUID LIMIT MINUS 3.			
LOI	INDICATES ORGANIC CONTENT BY LOSS ON IGNITION, AASHTO T267.			
NP	INDICATES A NON-PLASTIC SAMPLE.			
SS	INDICATES A SPLIT SPOON SAMPLE.			

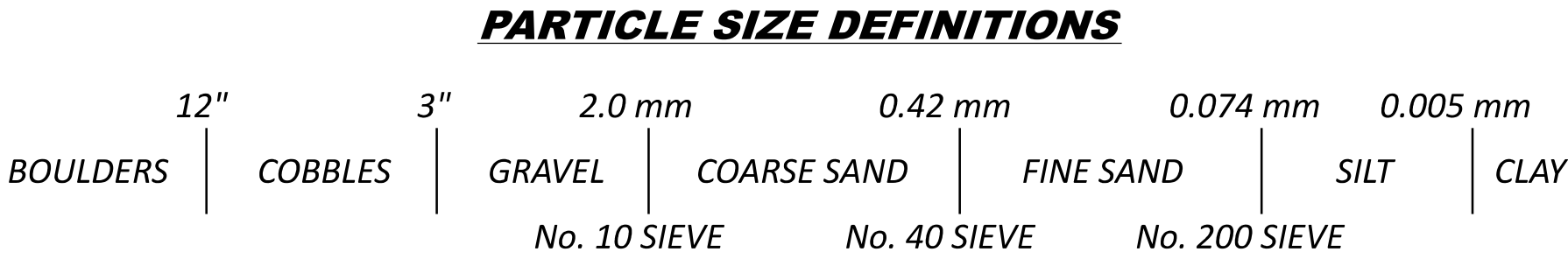
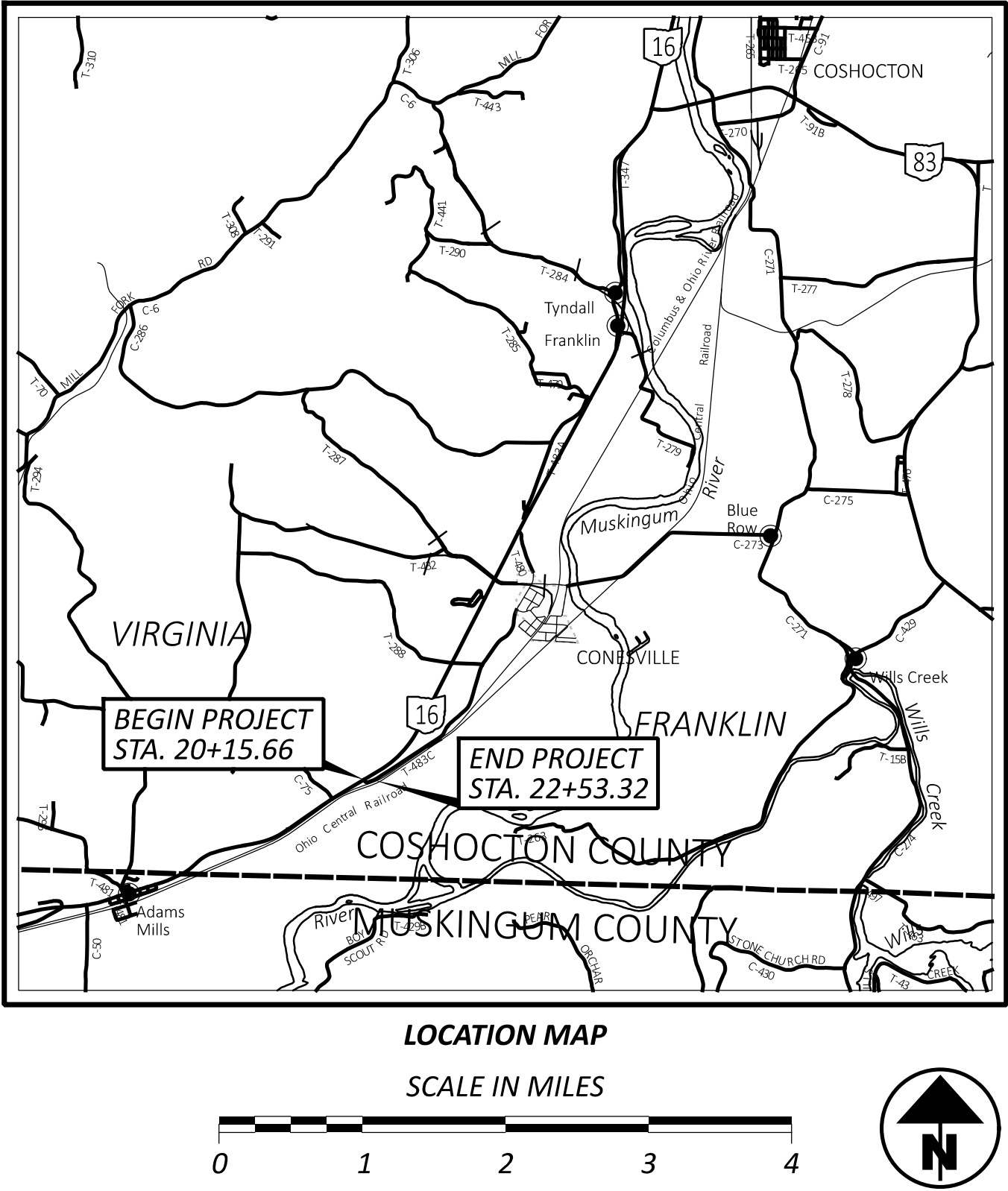
SPECIFICATIONS

THIS GEOTECHNICAL EXPLORATION WAS PERFORMED IN ACCORDANCE WITH THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, OFFICE OF GEOTECHNICAL ENGINEERING, SPECIFICATIONS FOR GEOTECHNICAL EXPLORATIONS, DATED JANUARY 2024.

AVAILABLE INFORMATION

THE SOIL, BEDROCK, AND GROUNDWATER INFORMATION COLLECTED FOR THIS SUBSURFACE EXPLORATION THAT CAN BE CONVENIENTLY DISPLAYED ON THE GEOTECHNICAL PROFILE SHEETS HAS BEEN PRESENTED. GEOTECHNICAL REPORTS, IF PREPARED, ARE AVAILABLE FOR REVIEW ON THE OFFICE OF CONTRACT SALES WEBSITE.

ORGANIC CONTENT BY LOSS ON IGNITION TEST				
EXPLOR. ID	SAMPLE ID	SAMPLE ELEVATION	SAMPLE DEPTH	LOI (%)
B-002-0-23	SS-1	746.6' - 745.1'	1.5' - 3.0'	3.8



RECON. -	AMJ, JAS	02/21/24
DRILLING -	DML (CME 55)	03/14/24
	JFK (ACKER)	12/16/24
SOUNDING -	MKK (WDCP)	12/04/24
DRAWN -	ARR	07/28/25
REVIEWED -	SAT	07/29/25

DESIGN AGENCY



DESIGNER

ARR

REVIEWER

SAT 07/29/25

PROJECT ID

119871

SUBSET

1 4

SHEET

P.O. 0







COS-16-1-40

MODEL: Boring Logs B-001-0-23 and B-002-0-23 PAPERSIZE: 34x22 (in.)    DATE: 9/30/2025    TIME: 9:07:13 PM    USER: sydney.stefanek  
pw:\ohiodot-pw.bentley.com\ohiodot-pw-02\Documents\01\_Active Projects\District 05\Coshocton\119871\400-Engineering\Geotechnical\Sheets\119871\_2\0001.dgn

PROJECT: COS-16-1-40		DRILLING FIRM / OPERATOR: ODOT / DALEY		DRILL RIG: CME 55 TRUCK		STATION / OFFSET: 43+19, 22' LT.				EXPLORATION ID: B-001-0-23																											
TYPE: CULVERT		SAMPLING FIRM / LOGGER: ODOT / LEWIS		HAMMER: CME AUTOMATIC		ALIGNMENT: BL PROP CULVERT																															
PID: 119871 SFN: (E) 1809609		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 11/7/23		ELEVATION: 751.3 (ft) EOB: 30.0 ft.				PAGE 1 OF 1																											
START: 3/14/24 END: 3/14/24		SAMPLING METHOD: SPT		ENERGY RATIO (%): 88		LAT / LONG: 40.167747, -81.915664																															
MATERIAL DESCRIPTION AND NOTES		ELEV.		SPT/ RQD		N <sub>60</sub>		REC SAMPLE ID (%)		HP (tsf)		GR		GRADATION (%)				ATTERBERG		WC		ODOT CLASS (g)		BACK FILL													
		751.3																																			
TOPSOIL (4") BRICK (12") VERY STIFF, BROWN, SANDY SILT, SOME CLAY, TRACE GRAVEL, DAMP  @3.5'; POOR RECOVERY, AUGER CUTTINGS TAKEN, MOIST  @6.0'; LITTLE CLAY, NO GRAVEL, DAMP  @8.5'; STIFF		751.0		1																																	
		750.0		2		7		15		33		SS-1		2.75		3		4		18		48		27		30		22		8		20		A-4a (8)			
				3		5		5																													
				4		2		6		17		SS-2				-		-		-		-		-		-		-		-		26		A-4a (V)			
				5		2		2																													
				6																																	
				7		7		10		41		100		SS-3		2.00		0		1		50		34		15		20		17		3		17		A-4a (3)	
				8		18																															
				9		3		5		15		78		SS-4		1.50		-		-		-		-		-		-		-		16		A-4a (V)			
				10		5																															
MEDIUM DENSE, BROWN, COARSE AND FINE SAND, LITTLE SILT, TRACE GRAVEL, TRACE CLAY, MOIST		740.3		11		3		12		72		SS-5		-		7		20		51		16		6		NP		NP		NP		11		A-3a (0)			
				12		3		5																													
				13																																	
				14		3		10		44		SS-6		-		50		21		19		7		3		NP		NP		NP		11		A-1-a (0)			
				15		4																															
LOOSE, BROWN, GRAVEL, "AND" SAND, TRACE SILT, TRACE CLAY, CONTAINS COBBLES, MOIST		735.3		16		3		10		44		SS-7		-		20		48		22		7		3		NP		NP		NP		11		A-1-b (0)			
				17		3		4																													
				18																																	
				19		2		3		10		39		SS-8		-		-		-		-		-		-		-		-		9		A-1-b (V)			
				20		4																															
@18.5'; DAMP				21		3		9		33		SS-9		-		48		26		16		8		2		NP		NP		NP		9		A-1-b (0)			
				22		3		3																													
				23																																	
				24		1		3		10		33		SS-10		-		55		29		8		6		2		NP		NP		9		A-1-a (0)			
				25		4																															
LOOSE, BROWN, GRAVEL, "AND" SAND, TRACE SILT, TRACE CLAY, CONTAINS COBBLES, DAMP		727.8		26		3		12		33		SS-11		-		26		49		16		6		3		NP		NP		NP		8		A-1-b (0)			
				27		4		4																													
				28																																	
				29		1		3		12		33		SS-12		-		-		-		-		-		-		-		-		9		A-1-b (V)			
				EOB		5																															
MEDIUM DENSE, BROWN, GRAVEL WITH SAND, TRACE SILT, TRACE CLAY, CONTAINS COBBLES, DAMP		725.3																																			
NOTES: HOLE DRY UPON COMPLETION. LAT/LONG/ELEV FROM DISTRICT SURVEY GRADE INSTRUMENTS.		721.3																																			

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 7/17/25 08:56 - X:\GINT\PROJECTS\601116.GPJ

PROJECT: COS-16-1-40		DRILLING FIRM / OPERATOR: ODOT / SPROUSE		DRILL RIG: ACKER REBEL XL		STATION / OFFSET: 41+75, 2' LT.				EXPLORATION ID: B-002-0-23																													
TYPE: CULVERT		SAMPLING FIRM / LOGGER: ODOT / KOLBERG		HAMMER: ACKER AUTOMATIC		ALIGNMENT: BL PROP CULVERT				PAGE: 1 OF 1																													
PID: 119871 SFN: (E) 1809609		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 11/7/23		ELEVATION: 748.1 (ft) EOB: 30.0 ft.																																	
START: 12/16/24 END: 12/16/24		SAMPLING METHOD: SPT		ENERGY RATIO (%): 90*		LAT / LONG: 40.167348, -81.915681																																	
MATERIAL DESCRIPTION AND NOTES				ELEV.		SPT/ RQD		REC SAMPLE ID (%)		HP (tsf)		GRADATION (%)		ATTERBERG		ODOT CLASS (gl)		BACK FILL																					
				748.1				N <sub>60</sub>						GR CS FS SI CL LL PL PI WC																									
BASE (12"), (RAILROAD BALLAST)  VERY STIFF, BROWN AND DARK GRAY, SANDY SILT, SOME CLAY, TRACE GRAVEL, SLIGHTLY ORGANIC (LOI = 3.8%), DAMP				747.1		1																																	
						2		3		12		50		SS-1		4.00		9		6		14		47		24		30		20		10		15		A-4a (7)			
						3																																	
						4		5		8		27		81		SS-2		4.50		2		1		14		58		25		26		19		7		11		A-4b (8)	
						5				10																													
HARD, BROWN, SILT, SOME CLAY, LITTLE SAND, TRACE GRAVEL AND STONE FRAGMENTS, DAMP				742.1		6		7		12		41		83		SS-3		4.50		11		6		11		47		25		29		18		11		13		A-6a (8)	
						7		15																															
						8																																	
						9		4		3		11		72		SS-4		-		49		23		16		7		5		NP		NP		NP		6		A-1-b (0)	
						10						4																											
HARD, BROWN, SILT AND CLAY, LITTLE SAND, LITTLE GRAVEL AND STONE FRAGMENTS, DAMP				737.1		11		3		5		18		53		SS-5		-		51		19		18		8		4		NP		NP		7		A-1-a (0)			
						12				7																													
						13																																	
						14		9		16		50		75		SS-6		-		54		27		11		6		2		NP		NP		4		A-1-a (0)			
						15						17																											
@13.5'; DENSE, DAMP						16		9		8		24		78		SS-7		-		61		17		11		9		2		NP		NP		5		A-1-a (0)			
						17				8																													
						18																																	
						19		7		9		15		44		SS-8		-		62		19		10		7		2		NP		NP		4		A-1-a (0)			
						20				1																													
@16.0'; MEDIUM DENSE, SOME SAND						21		7		8		27		44		SS-9		-		60		19		12		7		2		NP		NP		4		A-1-a (0)			
						22				10																													
						23																																	
						24		6		8		24		67		SS-10		-		45		22		8		3		NP		NP		3		A-1-b (0)					
						25																																	
MEDIUM DENSE, BROWN, GRAVEL WITH SAND, TRACE SILT, TRACE CLAY, CONTAINS COBBLES, DAMP				722.1		26		3		5		20		39		SS-11		-		66		14		9		2		NP		NP		7		A-1-a (0)					
						27				8																													
						28																																	
						29		3		4		14		47		SS-12		-		46		31		10		10		3		NP		NP		7		A-1-b (0)			
						EOB				5																													
MEDIUM DENSE, BROWN, GRAVEL WITH SAND, TRACE SILT, TRACE CLAY, CONTAINS COBBLES, DAMP				724.6		30		7		9		15		44		SS-8		-		62		19		10		7		2		NP		NP		4		A-1-a (0)			
						31				1																													
						32																																	
						33																																	
						34																																	
MEDIUM DENSE, BROWN, GRAVEL, TRACE SILT, TRACE CLAY, CONTAINS COBBLES, MOIST				719.6		35		8		24		67		SS-10		-		45		22		8		3		NP		NP		3		A-1-b (0)							
						36																																	
						37																																	
						38																																	
						39																																	
MEDIUM DENSE, BROWN, GRAVEL WITH SAND, TRACE SILT, TRACE CLAY, CONTAINS COBBLES, MOIST				718.1		40		3		4		14		47		SS-12		-		46		31		10		10		3		NP		NP		7		A-1-b (0)			
						41				5																													
						42																																	
						43																																	
						44																																	
NOTES: HOLE DRY UPON COMPLETION. LAT/LONG/ELEV FROM DISTRICT SURVEY GRADE INSTRUMENTS. ABANDONMENT METHODS, MATERIALS, QUANTITIES: AUGER CUTTINGS MIXED WITH 50 LB. BENTONITE CHIPS																																							

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 7/17/25 08:57 - X:\GINT\PROJECTS\601116.GPJ



DESIGN AGENCY

DESIGNER

ARR

REVIEWER

SAT 07/29/25

PROJECT ID

119871

SUBSET

3

TOTAL

4

SHEET

P.0

TOTAL

0

GEOTECHNICAL PROFILE - CULVERT  
MULTIPLE BARREL CULVERTS AT COS-16-1.40 OVER OHIO & ERIE CANAL REMNANT  
BORING LOGS FOR B-001-0-23 & B-002-0-23



WILDCAT DYNAMIC CONE LOG

The Ohio Department of Transportation  
Office of Geotechnical Engineering  
1600 West Broad Street, Columbus, Ohio 43223

PROJECT NUMBER: COS-16-1.40  
DATE STARTED: 12-04-2024  
DATE COMPLETED: 12-04-2024


HOLE #: D-003-0-23  
CREW: Painter, Kerins  
PROJECT: 119871  
LAT/LONG: 40.167115, -81.915689  
LOCATION: Coshocton County

SURFACE ELEVATION: 725.4  
WATER ON COMPLETION: Dry  
HAMMER WEIGHT: 35 lbs.  
CONE AREA: 10 sq. cm

DEPTH	BLOWS PER 10 cm	RESISTANCE Kg/cm²	GRAPH OF CONE RESISTANCE 050100150	N'	TESTED CONSISTENCY	
					NON-COHESIVE	COHESIVE
-	2	8.9	••	2	VERY LOOSE	SOFT
-	3	13.3	•••	3	VERY LOOSE	SOFT
- 1 ft	4	17.8	••••	5	LOOSE	MEDIUM STIFF
-	4	17.8	••••	5	LOOSE	MEDIUM STIFF
-	6	26.6	•••••	7	LOOSE	MEDIUM STIFF
- 2 ft	10	44.4	••••••••	12	MEDIUM DENSE	STIFF
-	15	66.6	••••••••••	19	MEDIUM DENSE	VERY STIFF
-	27	119.9	••••••••••••••••	25+	DENSE	HARD
- 3 ft	28	124.3	••••••••••••••••	25+	DENSE	HARD
- 1 m	36	159.8	••••••••••••••••••••	25+	DENSE	HARD
-						
- 4 ft						
-						
- 5 ft						
-						
- 6 ft						
- 2 m						
- 7 ft						
-						
- 8 ft						
-						
- 9 ft						
- 3 m	10 ft					
-						
-						
- 11 ft						
-						
-						
- 12 ft						
-						
- 4 m	13 ft					

Latitude, Longitude & Elevation from District Survey Grade Instruments.

DESIGN AGENCY



DESIGNER

ARR

REVIEWER

SAT 07/29/25

PROJECT ID

119871

SUBSET

4

TOTAL

4

SHEET

P.0

TOTAL

0