

LOCATION MAP

LATITUDE: N39°24'38.8" LONGITUDE: W82°15'57.0"

SCALE IN MILES



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

# ATHENS COUNTY ENGINEER ATH-CR2-1.70 BOX CULVERT

YORK TOWNSHIP  
ATHENS COUNTY

## INDEX OF SHEETS:

TITLE SHEET	1
TYPICAL SECTIONS	2
GENERAL NOTES	3
GENERAL SUMMARY	4
DETOUR PLAN	5
PLAN & PROFILE	6
TYPICAL WINGWALL PLAN & ELEVATION	7
FOOTING & WINGWALL DETAILS	8
FOOTING DETAILS & REINFORCING LIST	9

## PROJECT DESCRIPTION

REMOVAL OF TWO 6' DIAMETER CMP CULVERTS AND CONSTRUCTION OF A 12'x8' CONCRETE BOX CULVERT, INCLUDING ROAD REPAIR AND NEW GUARDRAIL.

## 2023 SPECIFICATIONS

THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, INCLUDING CHANGES AND SUPPLEMENTAL SPECIFICATIONS LISTED IN THE PROPOSAL SHALL GOVERN THIS IMPROVEMENT.

UNDERGROUND UTILITIES	
CONTACT BOTH SERVICES CALL TWO WORKING DAYS BEFORE YOU DIG	
CALL 1-800-362-2764 (TOLL FREE)	
OHIO UTILITIES PROTECTION SERVICE NON-MEMBERS MUST BE CALLED DIRECTLY	
OIL & GAS PRODUCERS UNDERGROUND PROTECTION SERVICE CALL: 1-800-925-0988	

ENGINEER'S SEAL	STANDARD CONSTRUCTION DRAWINGS		SUPPLEMENTAL SPECIFICATIONS
 SIGNED: <i>Rex Jeffrey Maiden</i> DATE: 8/08/25	BP-3.1	1-19-24	SS-800 7-18-25 SS-832 7-18-25
	MGS-1.1	7-16-21	
	MGS-2.1	7-18-25	
	MGS-2.3	7-18-25	
	MGS-4.1	7-18-25	
	MT-97.10	7-18-25	
	MT-97.12	7-18-25	
	MT-101.60	1-17-25	
	TC-42.20	10-18-13	
	TC-52.10	10-18-13	
	TC-52.20	1-15-21	



PLANS PREPARED BY:  
ATHENS COUNTY ENGINEER'S OFFICE  
16000 CANAANVILLE RD  
ATHENS, OHIO 45701

OPWC PROJECT NO.  
CU24X

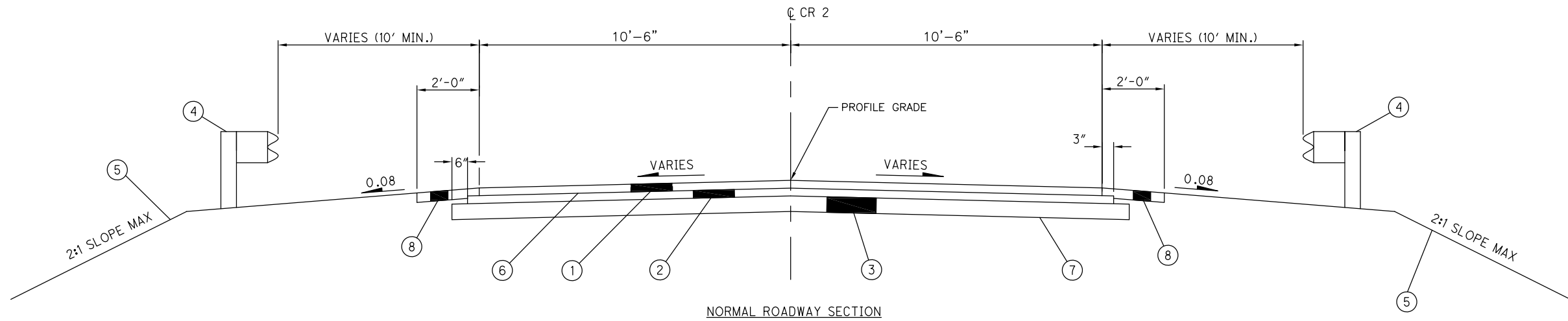
ACEO PROJECT NO.  
25191

CONSTRUCTION PROJECT NO.

RAILROAD INVOLVEMENT  
NONE

ATH-CR2-1.70

1  
9



LEGEND	
①	ITEM 441 - 2" ASPHALT CONCRETE SURFACE COURSE (449), TYPE 1, PG64-22
②	ITEM 301 - 4" ASPHALT CONCRETE BASE, PG64-22
③	ITEM 304 - 6" AGGREGATE BASE
④	ITEM 606 - GUARDRAIL, TYPE MGS
⑤	ITEM 659 - SEEDING AND MULCHING
⑥	ITEM 407 - TACK COAT
⑦	ITEM 204 - SUBGRADE COMPACTION
⑧	ITEM 617 - COMPACTED AGGREGATE, 3" THICK

CONTRACT SPECIFICATIONS

THE JANUARY 1, 2023 VERSION OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS AS PUBLISHED BY THE OHIO DEPARTMENT OF TRANSPORTATION SHALL GOVERN ALL ASPECTS OF THE CONTRACT WORK. THE CONTRACTOR SHOULD BE FAMILIAR WITH THESE SPECIFICATIONS AND THEIR PROCEDURAL REQUIREMENTS.

STANDARD DRAWINGS

REFERENCE SHOULD BE MADE TO THE STANDARD DRAWINGS SHOWN IN THE TABLE ON THE COVER SHEET.

O.U.P.S CALL

THE CONTRACTOR IS RESPONSIBLE FOR CALLING THE OHIO UTILITIES PROTECTION SERVICE AT LEAST TWO DAYS BEFORE DIGGING. THE TOLL-FREE NUMBER IS (800) 362-2764.

UTILITIES

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

- (1) TELEPHONE:

FRONTIER COMMUNICATIONS  
241 SOUTH NELSON AVENUE  
WILMINGTON, OHIO 45177  
CONTACT: ROB LATHAM  
PHONE: 973-382-2222
- (2) WATER:

LE-AX WATER  
PHONE: 740-594-0123

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

UTILITY LINES

ALL EXPENSE INVOLVED IN RELOCATING (INSTALLING) THE AFFECTED UTILITY LINES SHALL BE BORNE BY THE UTILITY(IES). THE CONTRACTOR AND UTILITY ARE TO COOPERATE BY ARRANGING THEIR WORK IN SUCH A MANNER THAT INCONVENIENCE TO EITHER WILL BE HELD TO A MINIMUM.

ELEVATION DATUM

ALL ELEVATIONS ARE ORTHOMETRIC HEIGHTS USING THE NORTH AMERICAN VERTICAL DATUM OF 1988(NAVD 88) AND THE GEOID 12A. HORIZONTAL POSITIONS ARE BASED ON THE OHIO STATE PLANE SOUTH ZONE 3402.

CONTINGENCY QUANTITIES

THE CONTRACTOR SHALL NOT ORDER MATERIALS OR PERFORM WORK FOR ITEMS DESIGNATED BY PLAN NOTE TO BE USED "AS DIRECTED BY THE ENGINEER" UNLESS AUTHORIZED BY THE ENGINEER. THE ACTUAL WORK LOCATIONS AND QUANTITIES USED FOR SUCH ITEMS SHALL BE INCORPORATED INTO THE FINAL CHANGE ORDER GOVERNING COMPLETION OF THIS PROJECT.

CONSTRUCTION NOISE

ACTIVITIES AND LAND USE ADJACENT TO THIS PROJECT MAY BE AFFECTED BY CONSTRUCTION NOISE. IN ORDER TO MINIMIZE ANY ADVERSE CONSTRUCTION NOISE IMPACTS, DO NOT OPERATE POWER-OPERATED CONSTRUCTION-TYPE DEVICES BETWEEN THE HOURS OF 9:00 P.M. AND 7:00 A.M. IN ADDITION, DO NOT OPERATE AT ANY TIME ANY DEVICE IN SUCH A MANNER THAT THE NOISE CREATED SUBSTANTIALLY EXCEEDS THE NOISE CUSTOMARILY AND NECESSARILY ATTENDANT TO THE REASONABLE AND EFFICIENT PERFORMANCE OF SUCH EQUIPMENT.

PREFORMED EXPANSION JOINT FILLER

PREFORMED EXPANSION JOINT FILLER (PEJF) CONFORMING TO CMS 705.03, 1 INCH THICK, SHALL BE PLACED ABOVE THE FOOTING BETWEEN THE SIDES OF THE BOX CULVERT AND THE ENDS OF THE WINGWALLS. PAYMENT SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM 516 - 1" PREFORMED EXPANSION JOINT FILLER, AS PER PLAN AND SHALL INCLUDE ALL LABOR, MATERIAL, AND EQUIPMENT NECESSARY TO COMPLETE THE WORK.

ITEM 201 - 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.

SEEDING AND MULCHING

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

- 659, SEEDING AND MULCHING - 475 SQ. YD.
- 659, COMMERCIAL FERTILIZER - 0.06 TON
- 659, AGRICULTURAL LIME - 0.10 ACRES

SEEDING AND MULCHING SHALL BE APPLIED TO ALL AREAS OF EXPOSED SOIL BETWEEN THE EASEMENT LINES. QUANTITY CALCULATIONS FOR SEEDING AND MULCHING ARE BASED ON THESE LIMITS.

WATERING PERMANENT SEEDED AREAS

THE FOLLOWING ESTIMATED QUANTITIES ARE TO BE USED AS DIRECTED BY THE ENGINEER TO PROMOTE GROWTH AND TO CARE FOR PERMANENT SEEDED AREAS PER 659.09:

- 659, WATER - 1 M. GAL.

CONTRACTOR WILL MAINTAIN & WATER ALL SEEDED AREAS UNTIL THE PROJECT IS COMPLETE AND THE OWNER HAS FORMALLY TAKEN OVER SUCH RESPONSIBILITY.

CONTRACTOR WILL MAINTAIN & WATER ALL AREAS PER CMS 659.17.

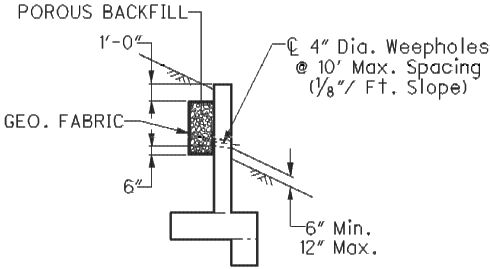
ITEM 617 - COMPACTED AGGREGATE

CONTRACTOR MAY USE ITEM 617 COMPACTED AGGREGATE OR 304 AGGREGATE BASE FOR SHOULDER.

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

POROUS BACKFILL 2'-0" THICK SHALL BE PLACED BEHIND THE WINGWALLS ONLY AND SHALL EXTEND TO 12" BELOW THE EMBANKMENT SURFACE. 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 6" TO 12" ABOVE THE GROUND LINE AND SHALL HAVE A MAXIMUM SPACING OF 10'-0". A MINIMUM OF ONE WEEPHOLE SHALL BE PROVIDED PER WINGWALL. THIS ITEM SHALL ALSO INCLUDE THE 2 CU. YD. FILTER FABRIC BAGGED NO. 3 AGGREGATE PLACED BEHIND WINGWALL AS SHOWN ON SHEET 8.

PAYMENT SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM 518 - POROUS BACKFILL WITH GEOTEXTILE FABRIC, AS PER PLAN AND SHALL INCLUDE ALL LABOR, MATERIAL, AND EQUIPMENT NECESSARY TO COMPLETE THE WORK.



POROUS BACKFILL DETAIL

LOCATION OF GUARDRAIL

THE LOCATIONS OF GUARDRAIL RUNS, AS SHOWN ON THESE PLANS, ARE SUBJECT TO ADJUSTMENT PRIOR TO FINAL ACCEPTANCE. THE ENGINEER SHALL BE SATISFIED THAT ALL INSTALLATIONS WILL AFFORD MAXIMUM PROTECTION FOR TRAFFIC.

ITEM 203 - SPECIAL-EARTHWORK

THIS ITEM INCLUDES THE COST OF ALL LABOR, EQUIPMENT, AND MATERIAL TO PERFORM AND COMPLETE ANY ADDITIONAL EXCAVATION AND EMBANKMENT TO COMPLETE THIS PROJECT INVOLVING BOX CULVERT INSTALLATION AND EXISTING PIPE REMOVALS.

ITEM 614 - MAINTAINING TRAFFIC

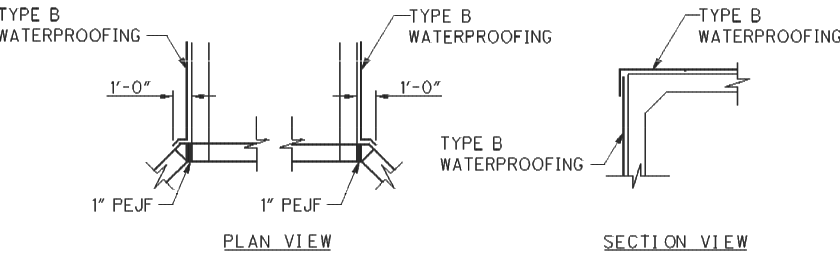
THE ROAD CLOSURE WILL HAVE A DESIGNATED DETOUR ROUTE (SEE SHEET 5). THE CONTRACTOR SHALL ADEQUATELY SIGN THE DETOUR ROUTE AND MAINTAIN ALL DETOUR SIGNAGE AND ADVANCE WARNING SIGNAGE THROUGHOUT THE DURATION OF THE PROJECT. THE CONTRACTOR SHALL PROVIDE, ERECT AND MAINTAIN STANDARD 48"x30" ROAD CLOSED SIGNS, SIGN SUPPORTS, BARRICADES, GATES AND LIGHTS AS DETAILED IN SCD MT-101.60 AT BOTH ENDS OF THE PROJECT DURING THE PERIOD IN WHICH THE ROAD IS CLOSED TO TRAFFIC. THE CONTRACTOR SHALL ALSO PLACE AND MAINTAIN THE THREE SIGNS LEADING IN TO BOTH ENDS OF THE PROJECT PER SCD MT-101.60.

THE CONTRACTOR SHALL ADVISE THE ATHENS COUNTY ENGINEER'S OFFICE A MINIMUM OF FOURTEEN (14) CALENDAR DAYS IN ADVANCE OF WHEN THE DETOUR ROUTE WILL BE IN EFFECT SO THAT ALL LOCAL SCHOOLS, GENERAL PUBLIC, AND EMERGENCY SERVICES WHICH ARE LIKELY TO USE THE ROAD CAN BE NOTIFIED IN ADVANCE OF CONSTRUCTION. THE DURATION OF THE ROAD CLOSURE IS NOT TO EXCEED NINETY (90) CALENDAR DAYS. LIQUID DAMAGES WILL BE ASSESSED AS PER CMS 108.07.

ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH CMS 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.

ITEM 512 - TYPE 2 WATERPROOFING

TYPE 2 WATERPROOFING SHALL EXTEND VERTICALLY DOWN THE ENTIRE SIDES OF THE PRECAST CULVERT SECTIONS FOR ALL PORTIONS OF THE CULVERT WHICH SHALL BE IN CONTACT WITH THE BACKFILL. IT SHALL ALSO BE APPLIED TO THE ENTIRE TOP SURFACE OF THE PRECAST CULVERT SECTIONS AND SHALL EXTEND ONE FOOT VERTICALLY DOWN THE SIDES FOR ALL PORTIONS OF THE CULVERT WHICH SHALL BE IN CONTACT WITH THE BACKFILL.



WATERPROOFING DETAIL

ITEM 611 - 12' X 8' CONDUIT, TYPE A, 706.05, AS PER PLAN

THIS ITEM INCLUDES THE COST OF ALL LABOR, EQUIPMENT, AND MATERIAL TO CONSTRUCT THE NEW 12'x8'x72' CONCRETE BOX CULVERT AS DETAILED IN THESE PLANS. IT SHALL ALSO INCLUDE THE COST OF PROVIDING AND INSTALLING THE PRECAST HEADWALLS AS SHOWN IN THESE PLANS. THE MATERIALS USED FOR THE PRECAST HEADWALLS SHALL BE PER ODOT CMS 509 AND 511.

THIS CONDUIT SHALL BE DESIGNED TO MEET HL-93 DESIGN LOADING. THE LOAD RATING BOOKLET FOR THE STRUCTURE SHALL BE PROVIDED ALONG WITH THE CURRENT ODOT BR100 FORM STAMPED BY A PROFESSIONAL ENGINEER. THE AASHTOWARE BRR XML FILE MUST BE PROVIDED FOR THE STRUCTURE OR A FILE THAT CAN BE IMPORTED INTO AASHTOWARE BRR.

ITEM 511 - CONCRETE, MISC.: PRECAST WINGWALL

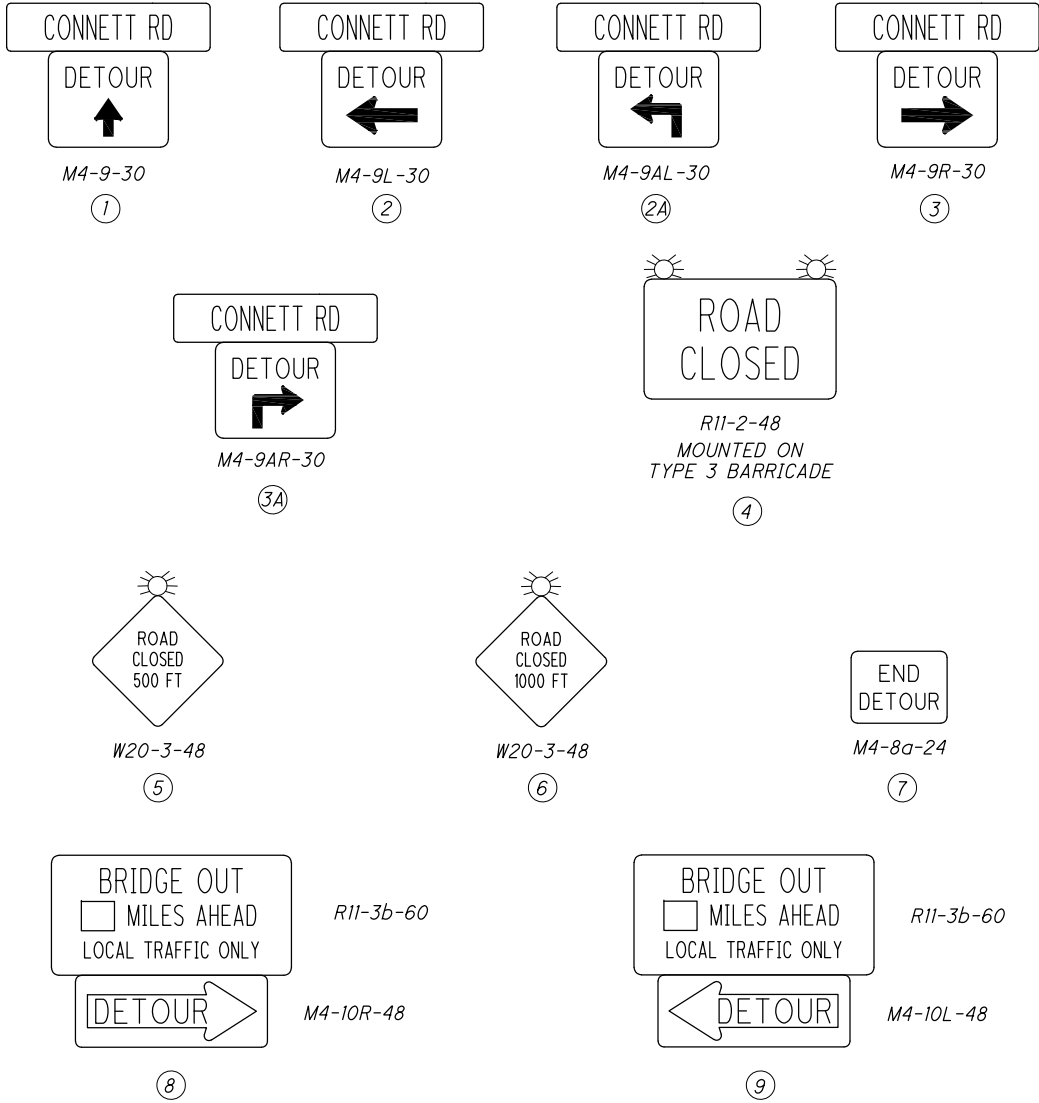
THIS ITEM INCLUDES THE COST OF ALL LABOR, EQUIPMENT, AND MATERIAL TO PROVIDE AND INSTALL THE PRECAST WINGWALLS AS DETAILED IN THESE PLANS. THE MATERIALS USED FOR THE PRECAST WINGWALL SHALL BE PER ODOT CMS 509 AND 511.

CALCULATED  
DES  
CHECKED  
RJM

GENERAL NOTES

ATH-CR2-1.70

[illegible]

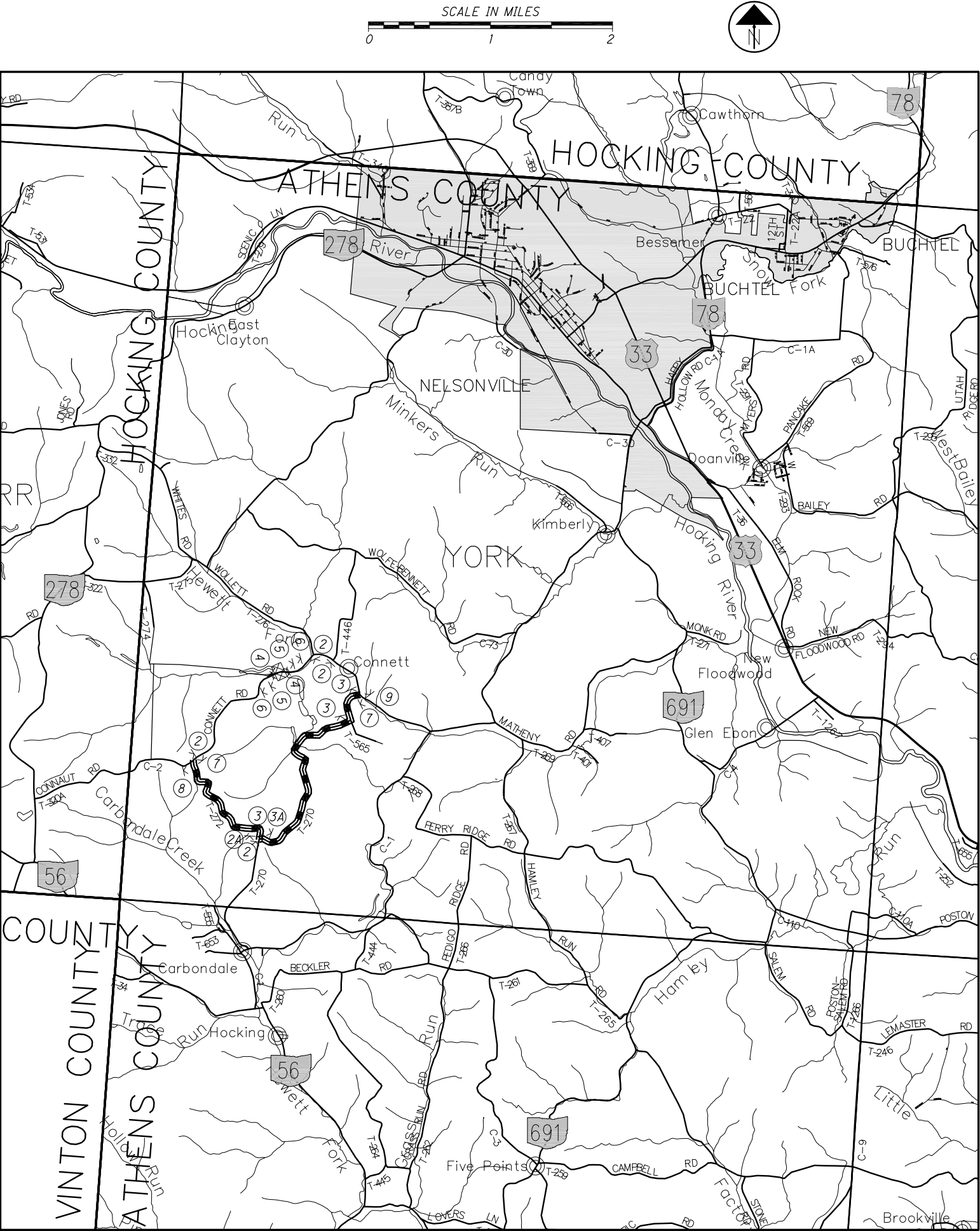


LEGEND

- DETOUR ROUTE
- COUNTY AND TOWNSHIP LINES
- SIGN
- TYPE III BARRICADE
- TYPE A WARNING LIGHT
- WORK AREA

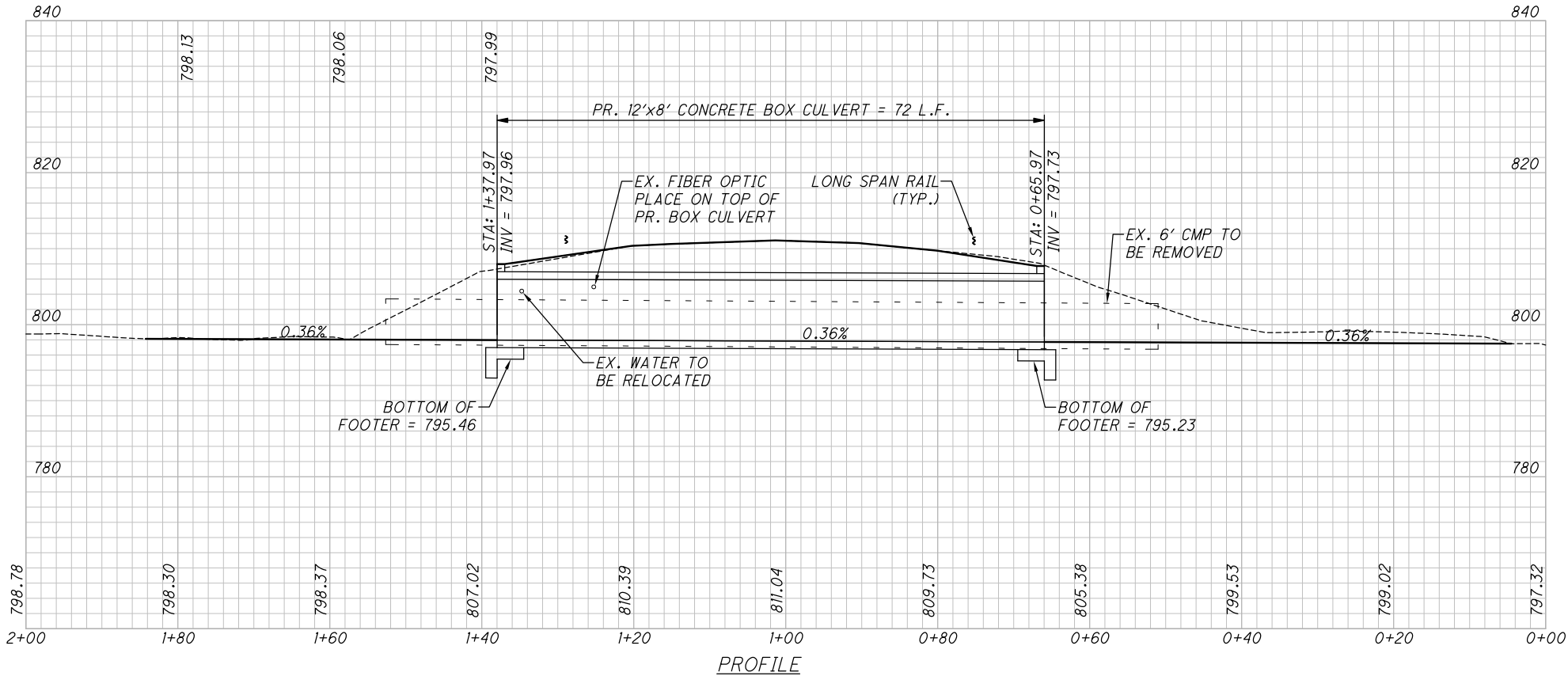
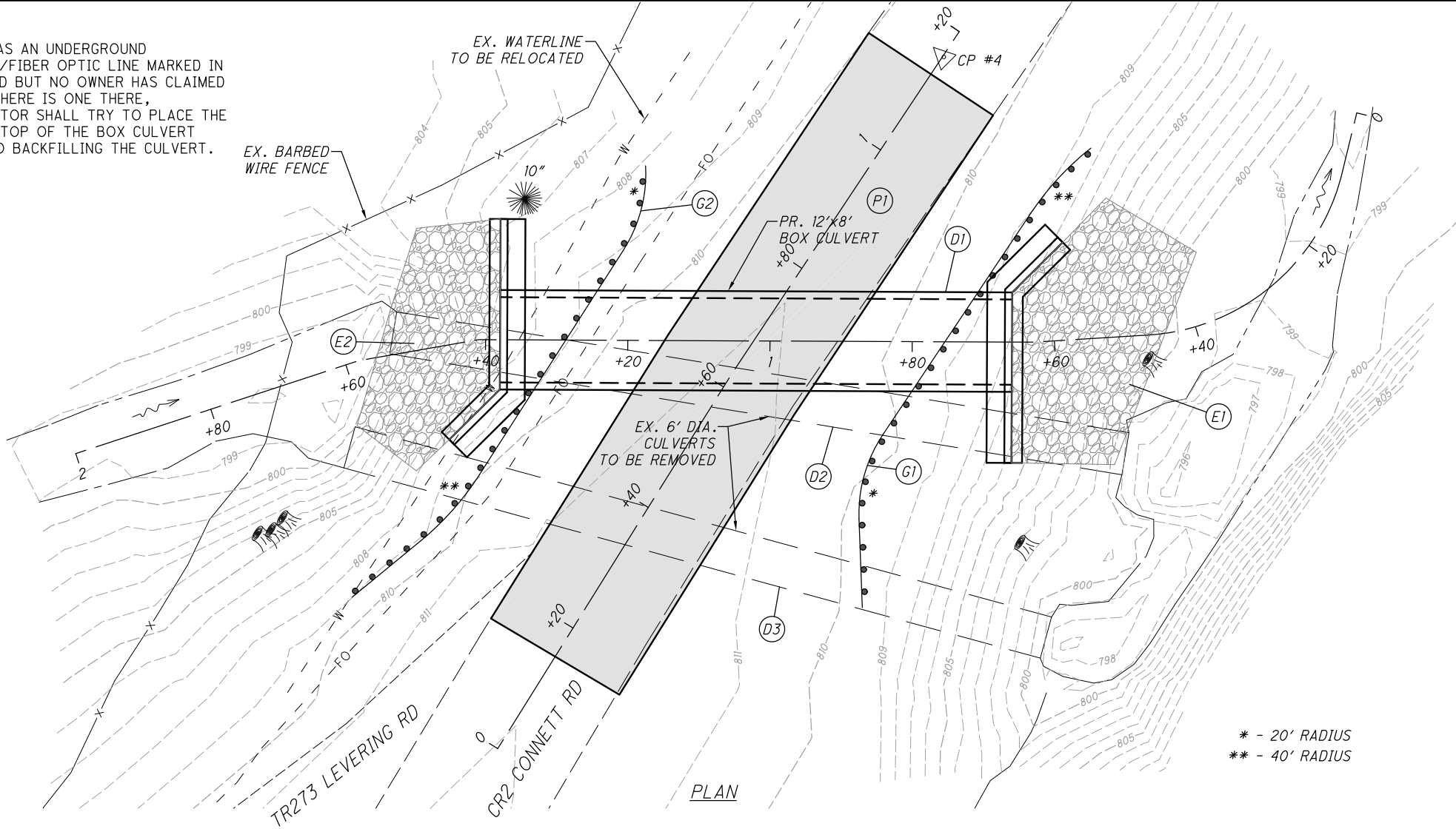
NOTES:


- ALL SIGNS AND BARRICADES SHOWN ON THIS SHEET SHALL BE FURNISHED BY THE CONTRACTOR.
- ALL DETOUR SIGNING INSTALLATIONS FOR THE DETOUR ON THIS SHEET WILL BE INSTALLED, MAINTAINED, & SUBSEQUENTLY REMOVED AND RETAINED BY THE CONTRACTOR.



NOTES:

1. THERE WAS AN UNDERGROUND TELECOM/FIBER OPTIC LINE MARKED IN THE FIELD BUT NO OWNER HAS CLAIMED IT. IF THERE IS ONE THERE, CONTRACTOR SHALL TRY TO PLACE THE LINE ON TOP OF THE BOX CULVERT PRIOR TO BACKFILLING THE CULVERT.



REF #	CR 2 STATION		SIDE	PLAN & PROFILE											ATH-CR2-1.70							
	FROM	TO		202	204	301	304	407	441	601	606	606	611	617	CALCULATED		DES	CHECKED	RJM	 HORIZONTAL SCALE IN FEET		
		PIPE REMOVED, OVER 24" DIAMETER	SUBGRADE COMPACTION	4" ASPHALT CONCRETE BASE, PG64-22 (449)	6" AGGREGATE BASE	TACK COAT (0.10 GAL/SY)	2" ASPHALT CONCRETE SURFACE COURSE, TYPE C 1, (449), PG-64-22	ROCK CHANNEL PROTECTION, TYPE C WITH FABRIC, GROUTED	GUARDRAIL L, TYPE MGS	ANCHOR ASSEMBLY, TYPE T	12"x8" CONDUIT, TYPE A, 706.05, AS PER PLAN			0	5	10	20					
D1		0+43.0	0+93.6																			
D2		0+39.1	0+86.2	105																		
D3		0+22.1	0+51.2	102																		
E1		0+73.5	1+11.9	Rt						49												
E2		0+27.1	0+62.3	Lt						36												
G1		0+44.0	1+16.6	Rt												75	2					
G2		0+07.2	0+79.9	Lt													75	2				
P1		0+15.5	1+12.8				244	26	41	23	13									4		
TOTALS TO GENERAL SUMMARY				207	244	26	41	23	13	85	150	4	72	4							4	



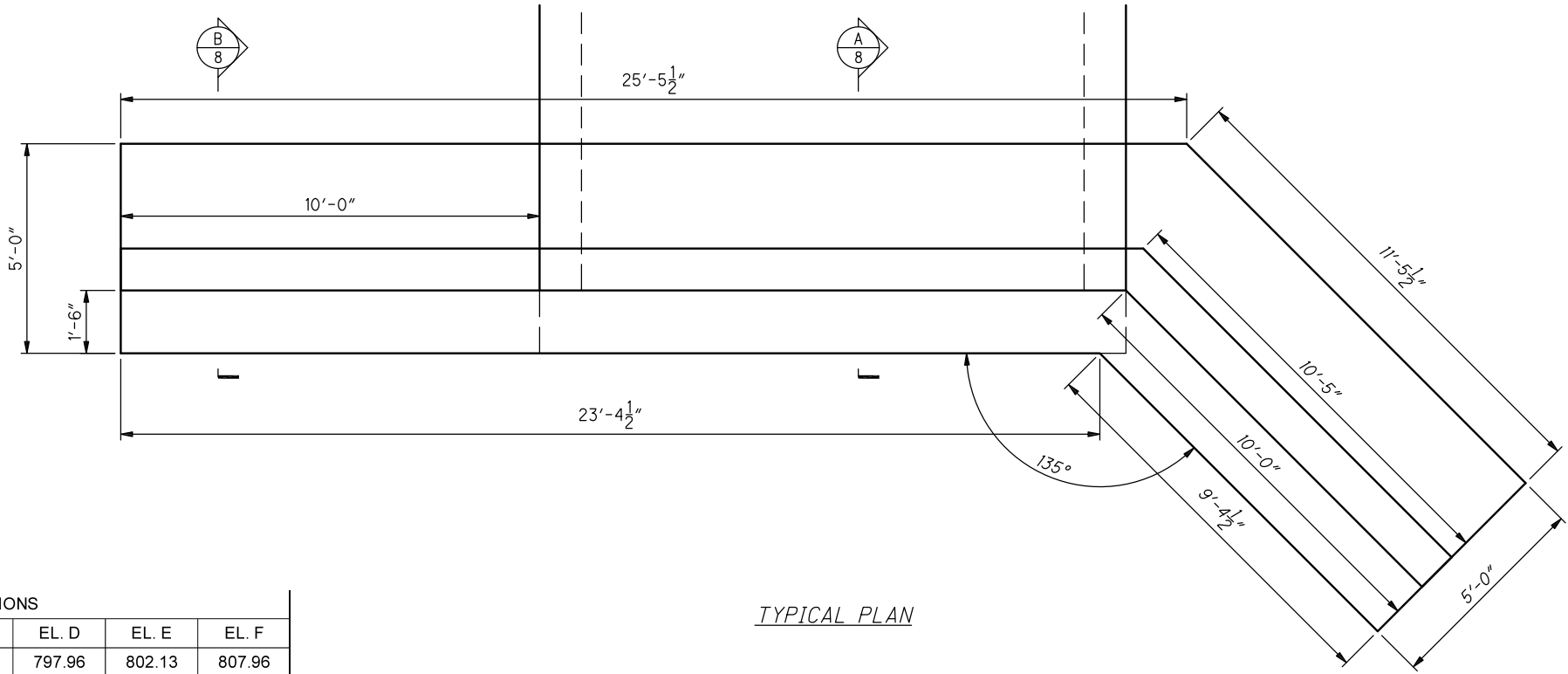
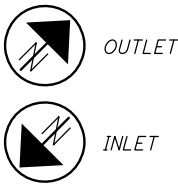
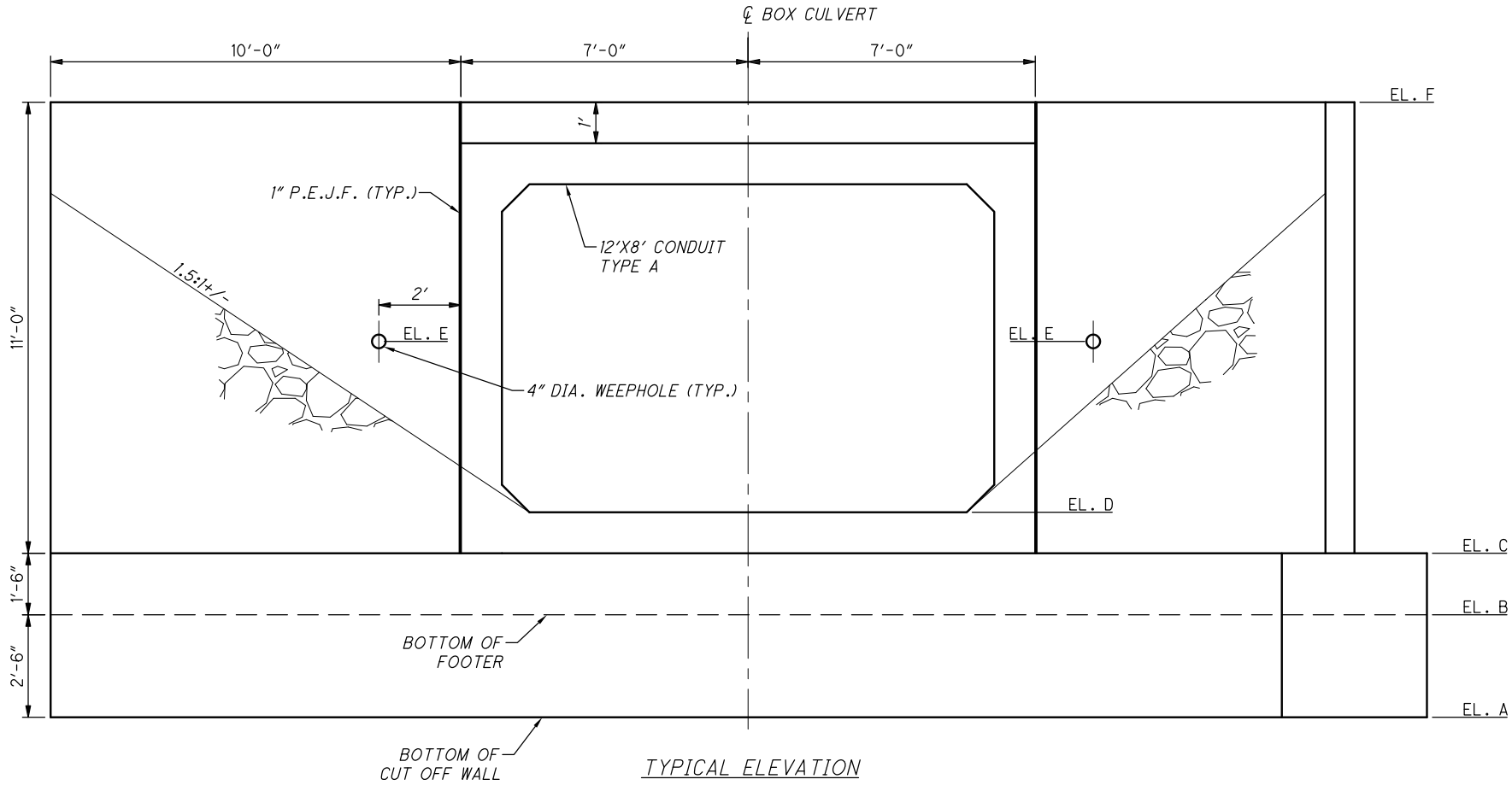


TABLE OF ELEVATIONS						
LOCATION	EL. A	EL. B	EL. C	EL. D	EL. E	EL. F
INLET	792.96	795.46	796.96	797.96	802.13	807.96
OUTLET	792.73	795.23	796.73	797.73	617.14	807.73

TYPICAL PLAN



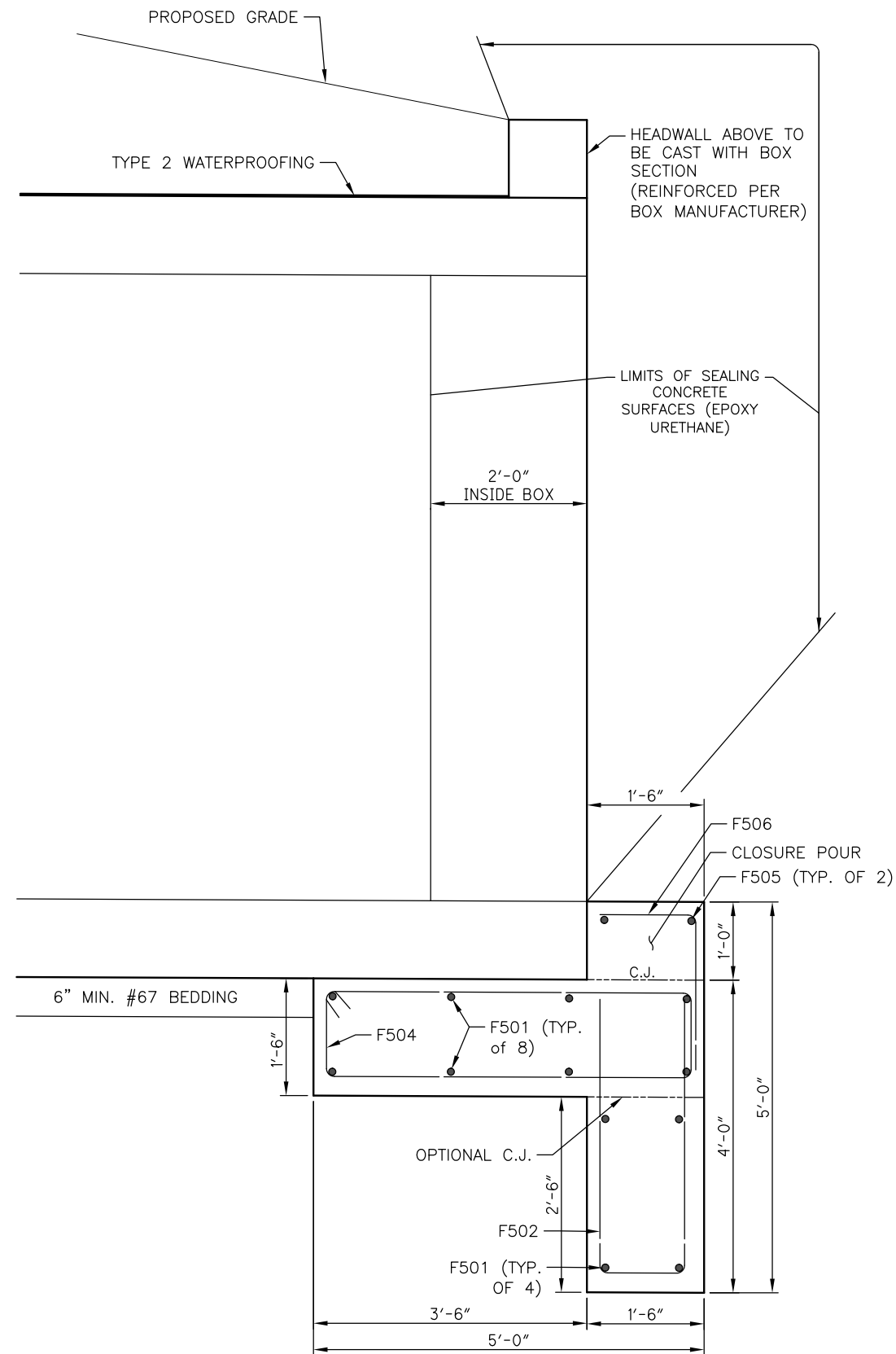
TYPICAL ELEVATION



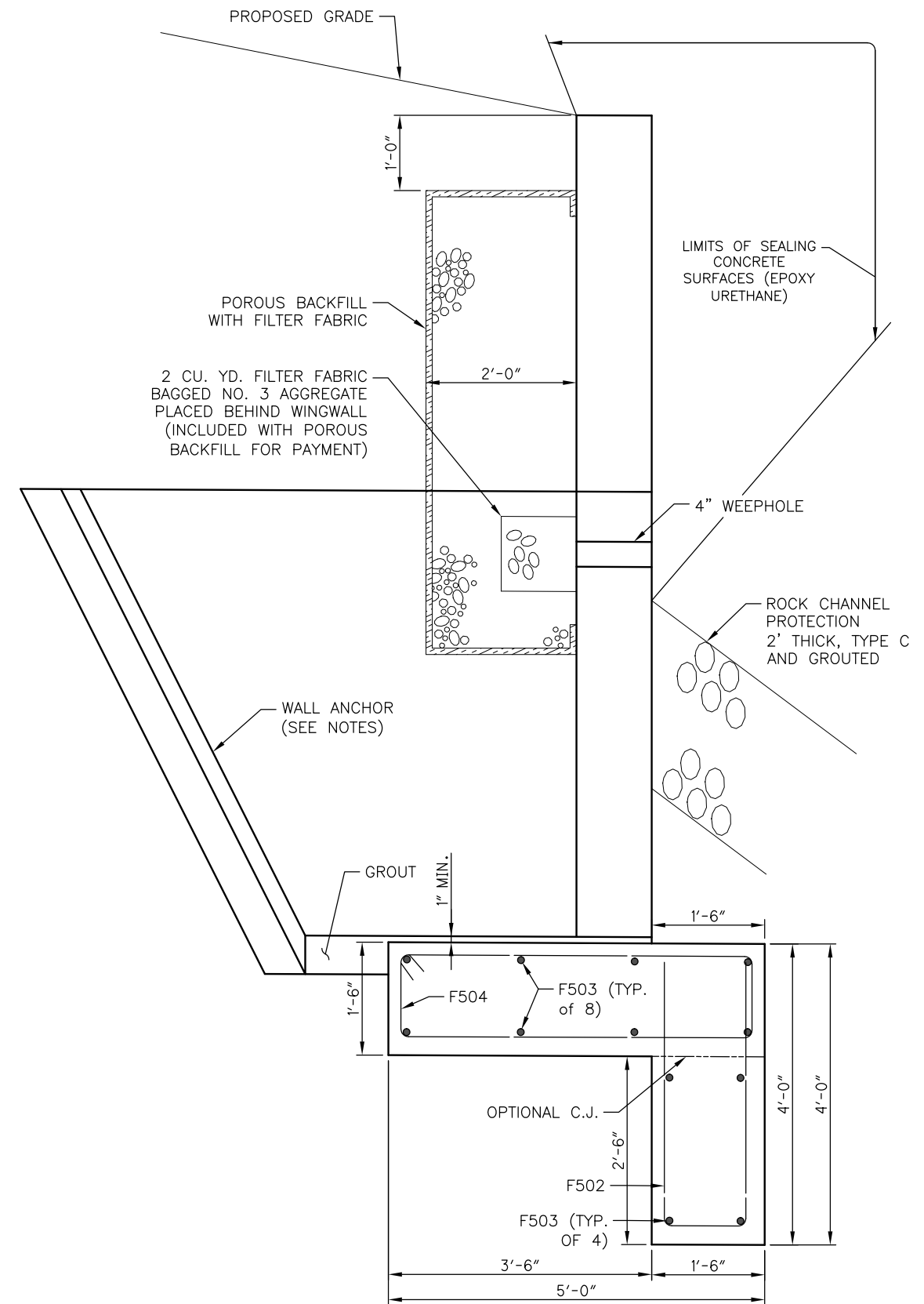
CALCULATED  
DES  
CHECKED  
RJM

TYPICAL WINGWALL PLAN & ELEVATION

ATH-CR2-1.70



SECTION A-A



SECTION B-B

NOTES:

1. THE DIMENSIONS, NUMBER, AND SPACING OF THE WALL ANCHORS SHALL BE DETERMINED BY THE PRECAST WINGWALL SUPPLIER.
2. ADJUST LOCATION OR ADD ADDITIONAL WEEPHOLES AS NECESSARY TO ALLOW FOR DRAINAGE BETWEEN WALL ANCHORS.
3. COST FOR PROVIDING AND INSTALLING THE PRECAST WINGWALLS SHALL BE PAID UNDER ITEM 511 - CONCRETE, MISC.; PRECAST WINGWALL (PER EACH). TOTAL QUANTITY = 4 EACH.

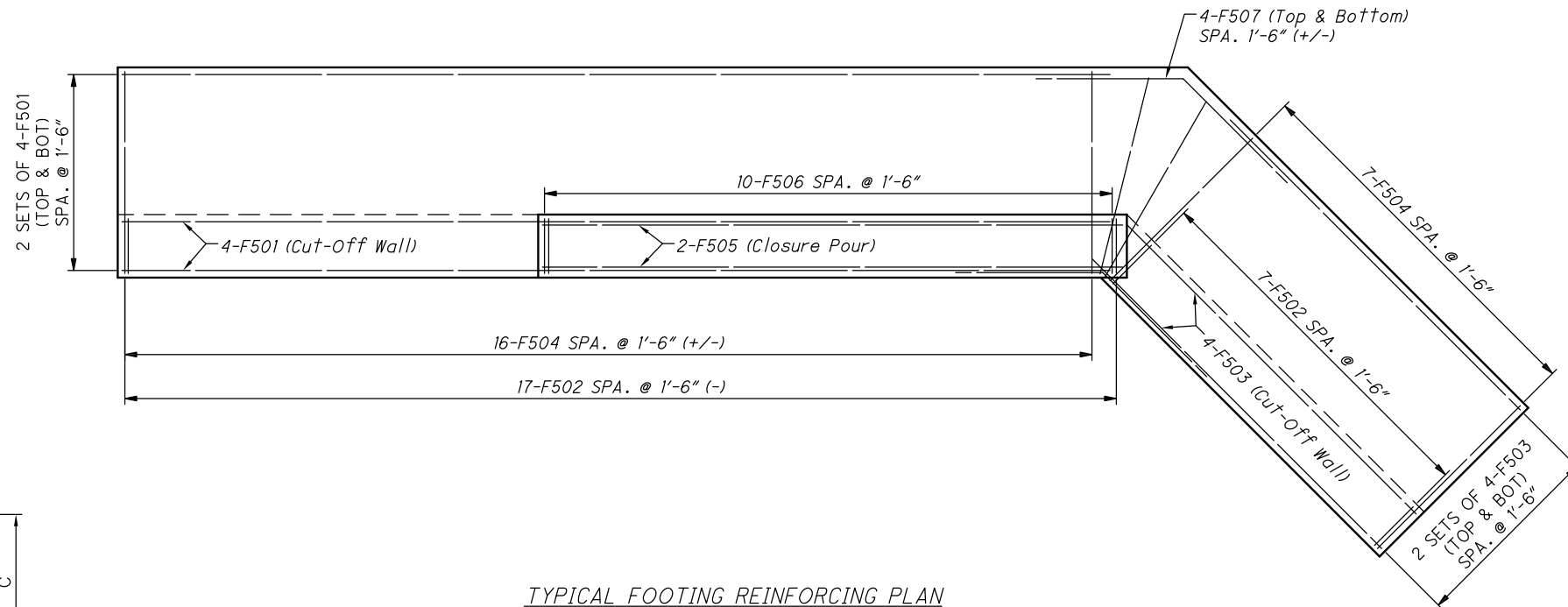
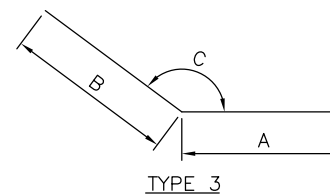
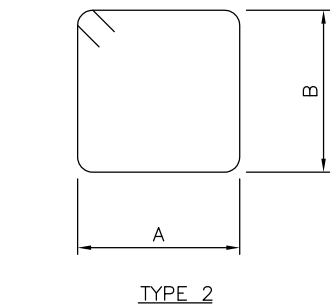
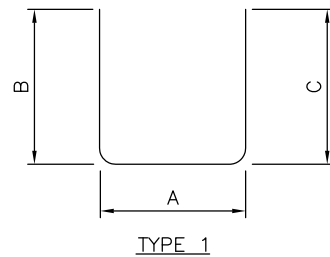
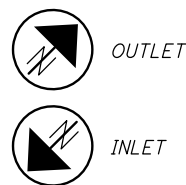


CALCULATED  
DES  
CHECKED  
RJM

FOOTING & WINGWALL DETAILS

ATH-CR2-1.70





TYPICAL FOOTING REINFORCING PLAN

FOOTER												
MARK	REAR QTY.	FWD QTY.	TOTAL QTY.	LENGTH	WEIGHT	TYPE	DIM. A	DIM. B	DIM. C	DIM. D	SERIES INC.	COMMENTS
F501	12	12	24	23 ft 6 in	589	ST						
F502	24	24	48	7 ft 11 in	397	1	1'-2"	3'-6"	3'-6"			
F503	12	12	24	9 ft 9 in	245	ST						
F504	25	25	50	11 ft 5 in	594	2	4'-8"	1'-1"				
F505	2	2	4	13 ft 9 in	58	ST						
F506	10	10	20	3 ft 0 in	63	3	1'-2"	2'-0"	90			
F507	8	8	16	7 ft 0 in	117	3	3'-6"	3'-6"	135			
SUBTOTAL-FOOTERS =					2,063							

NOTES:

1. THE BAR SIZE NUMBER IS SPECIFIED ON THE PLANS IN THE BAR MARK COLUMN. THE FIRST DIGIT WHERE THREE DIGITS ARE USED, AND THE FIRST TWO DIGITS WHERE FOUR ARE USED, INDICATES THE BAR SIZE NUMBER, FOR EXAMPLE, F501 IS A NO. 5 BAR.
2. BAR DIMENSIONS SHOWN ARE OUT TO OUT UNLESS OTHERWISE NOTED.
3. ALL REINFORCING STEEL SHALL BE EPOXY COATED.
4. "ST" IN THE TYPE COLUMN INDICATES STRAIGHT BARS.
5. REFER TO C.M.S. SECTION 509.05 FOR STANDARD BEND DIMENSIONS.
6. IF BARS ARE FIELD CUT, REPAIR ALL DAMAGE TO EPOXY COATING ACCORDING TO C&MS 709.00.