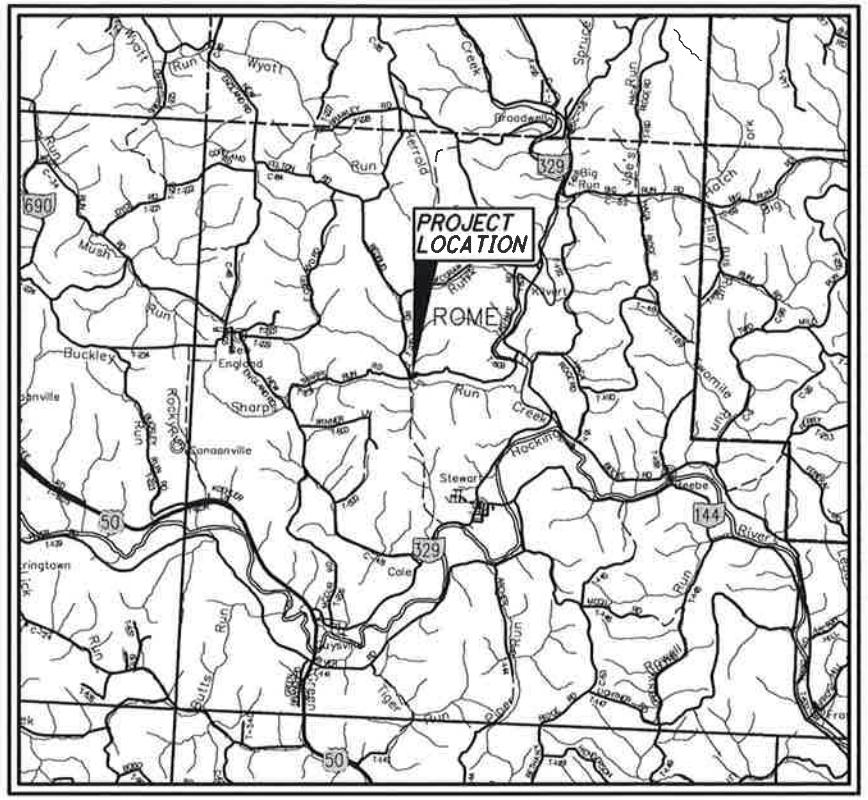


LOCATION MAP

LATITUDE: N39°19'39" LONGITUDE: W81°54'28"

SCALE IN MILES

0 1 2 3 4

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

DESIGN DESIGNATION

CURRENT ADT (2019)	40
DESIGN YEAR ADT (2039)	44
DESIGN HOURLY VOLUME (2039)	4
DIRECTIONAL DISTRIBUTION	55%
TRUCKS (24 HOUR B&C)	15%
DESIGN SPEED	25 MPH
LEGAL SPEED	55 MPH
DESIGN FUNCTIONAL CLASSIFICATION	LOCAL ROAD
NHS PROJECT	NO

DESIGN EXCEPTIONS

NONE

DESIGNED USING THE AASHTO GUIDELINES FOR GEOMETRIC DESIGN OF VERY LOW-VOLUME ROADS

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**

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

ATHENS COUNTY ENGINEER

ATH-TR231-1.62

ROME TOWNSHIP
ATHENS COUNTY

INDEX OF SHEETS:

PROJECT DESCRIPTION

REPLACEMENT OF EXISTING BRIDGE NO. ATH-TR231-1.62, SHARPS RUN RD OVER TRIBUTARY TO SHARPS RUN, INCLUDING REPLACEMENT OF APPROACH PAVEMENT AND NEW GUARDRAIL.

PROJECT EARTH DISTURBED AREA:	0.12 ACRES
ESTIMATED CONTRACTOR EARTH DISTRUBED AREA:	0.04 ACRES
NOTICE OF INTENT EARTH DISTURBED AREA:	N/A (NOI NOT REQUIRED)

2019 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.

I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL REQUIRE THE CLOSING TO TRAFFIC OF THE HIGHWAY AND THAT PROVISIONS FOR THE MAINTENANCE AND SAFETY OF TRAFFIC WILL BE AS SET FORTH ON THE PLANS AND ESTIMATES.

ENGINEER'S SEAL	STANDARD CONSTRUCTION DRAWINGS						SUPPLEMENTAL SPECIFICATIONS	
STATE OF OHIO / Rex Jeffrey Maiden / E-51405 / REGISTERED / PROFESSIONAL ENGINEER	CB-1.1	1-18-13	BD-1-11	7-20-18			SS-800	4-21-23
			DBR-2-73	7-19-02			SS-832	7-15-22
	DM-1.1	7-17-20	DS-1-92	7-15-22				
	DM-4.4	1-15-16	PSBD-2-07	7-20-18				
			SICD-1-96	7-18-14				
	GR-2.1	7-20-12						
	GR-3.4	7-20-12						
	MT-101.60	1-17-20					SPECIAL PROVISIONS	
	MT-105.10	1-17-20						
	TC-42.20	10-18-13						
	TC-52.10	10-18-13						
SIGNED: [signature]	TC-52.20	1-15-21						
DATE: 4/26/23								

APPROVED [signature]
DATE 4/26/23 ATHENS COUNTY COMMISSIONER

APPROVED [signature]
DATE 4·26·23 ATHENS COUNTY COMMISSIONER

APPROVED [signature]
DATE 4-26-23 ATHENS COUNTY COMMISSIONER

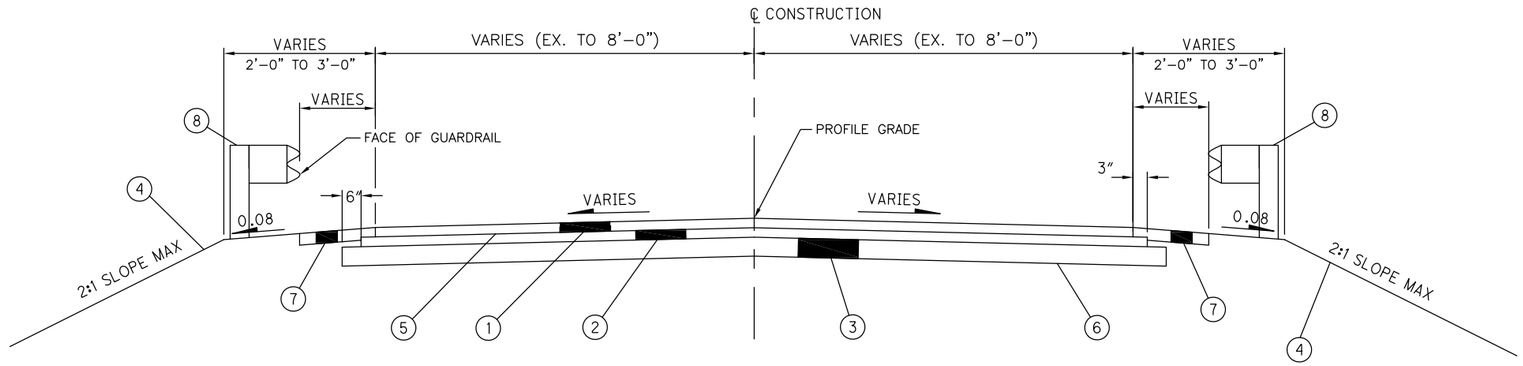
FEDERAL PROJECT NO.
NON-FEDERAL

PID NO.
117524

CONSTRUCTION PROJECT NO.

RAILROAD INVOLVEMENT
NONE

ATH-TR231-1.62



NORMAL ROADWAY SECTION
STATION 0+33.0 TO STATION 0+92.8
STATION 1+42.6 TO STATION 2+39.5

LEGEND

(1)	ITEM 441 – 2" ASPHALT CONCRETE SURFACE COURSE (448), TYPE 1, PG64–22
(2)	ITEM 301 – 4" ASPHALT CONCRETE BASE, PG64–22
(3)	ITEM 304 – 6" AGGREGATE BASE
(4)	ITEM 659 – SEEDING AND MULCHING
(5)	ITEM 407 – TACK COAT
(6)	ITEM 204 – SUBGRADE COMPACTION
(7)	ITEM 617 – COMPACTED AGGREGATE (2' WIDE X 3" THK.)
(8)	ITEM 606 – BRIDGE TERMINAL ASSEMBLY, TYPE 4

CALCULATED DES
CHECKED RJM

TYPICAL SECTIONS

ATH–TR231–1.62

CONTRACT SPECIFICATIONS
THE JANUARY 1, 2019 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

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.

RIGHT–OF–WAY
ALL WORK IS TO BE PERFORMED WITHIN THE EXISTING 60' RIGHT–OF–WAY.

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.

DEMOLITION DEBRIS
THE CONTRACTOR SHALL TAKE PRECAUTIONS TO AVOID AND/OR LIMIT DEMOLITION DEBRIS FROM ENTERING THE STREAM. ANY MATERIAL THAT DOES FALL INTO THE STREAM SHALL BE REMOVED AS SOON AS POSSIBLE.

STREAM AVOIDANCE
UNDER NO CIRCUMSTANCES SHALL ANY EQUIPMENT (LIFT, BACKHOE, EARTH MOVING EQUIPMENT, ETC.) AND/OR MATERIALS ENTER TRIBUTARY TO SHARPS RUN. NO FILL MATERIAL (INCLUDING ROCK, COFFERDAMS, ACCESS/WORK PADS, ETC.) SHALL BE PLACED BELOW THE IDENTIFIED ORDINARY HIGH WATER MARK (OHWM) OF TRIBUTARY TO SHARPS RUN ON THE STREAM SIDE OF THE EXISTING ABUTMENTS. THE CONTRACTOR SHALL TAKE ALL THE PRECAUTIONS NECESSARY TO PREVENT ALL CONSTRUCTION MATERIALS, WASTE MATERIALS, WATER CHEMICALS OR OTHER SUBSTANCES USED TO CONSTRUCT THE PROJECT FROM ENTERING TRIBUTARY TO SHARPS RUN.

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 – 178 SQ. YD.

659, COMMERCIAL FERTILIZER – 0.02 TON

659, AGRICULTURAL LIME – 0.04 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.

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 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 607 – FENCE REBUILT, AS PER PLAN
CONTRACTOR SHALL REMOVE THE EXISTING BARBED WIRE FENCE (5 STRANDS) AND REBUILD FROM STATION 1+74.7 TO STATION 2+16.3 AS SHOWN ON SHEET 6. ALL COSTS TO REMOVE THE EXISTING FENCE AND REBUILD IN NEW LOCATION SHALL BE INCLUDED IN THIS ITEM.

CALCULATED DES
CHECKED RJM

GENERAL NOTES

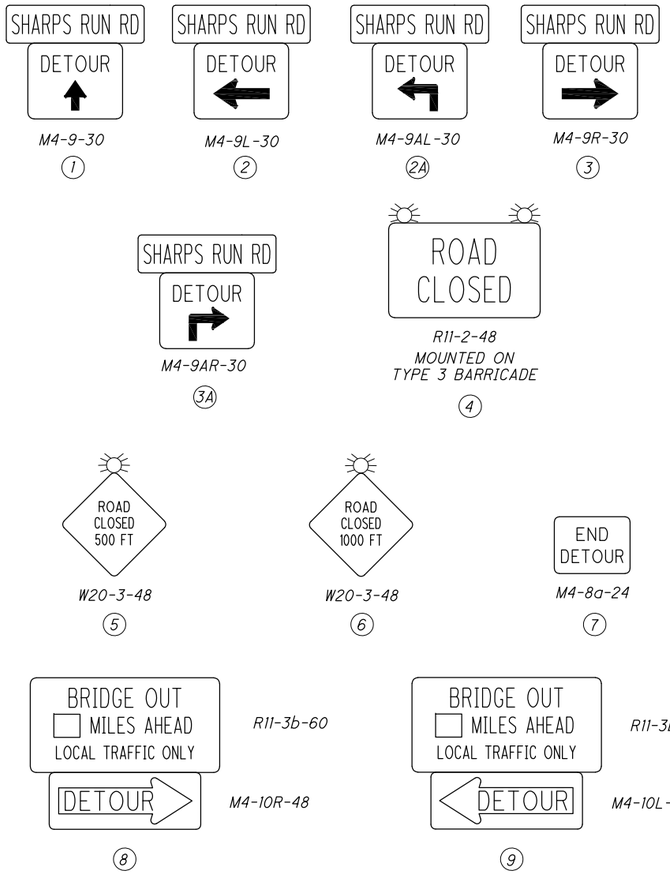
ATH–TR231–1.62

SHEET NUM.										PART.	ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
Office Calcs		3		6	7	8		10		01/NFA/ BR						
															ROADWAY	
		LS								LS	201	11000	LS		CLEARING AND GRUBBING	3
				212						212	202	23000	212	SY	PAVEMENT REMOVED	
					54	21				75	203	10000	75	CY	EXCAVATION	
						58				58	203	20000	58	CY	EMBANKMENT	
				275						275	204	10000	275	SY	SUBGRADE COMPACTION	
				100						100	606	13000	100	FT	GUARDRAIL, TYPE 5	
				4						4	606	35140	4	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 4	
				36						36	607	23101	36	FT	FENCE REBUILT, AS PER PLAN	
															EROSION CONTROL	
				110						110	601	32200	110	CY	ROCK CHANNEL PROTECTION, TYPE C WITH FILTER	
		178								178	659	10000	178	SY	SEEDING AND MULCHING	3
		0.02								0.02	659	20000	0.02	TON	COMMERCIAL FERTILIZER	
		0.04								0.04	659	31000	0.04	ACRE	LIME	
		1								1	659	35000	1	MGAL	WATER	
3,000										3,000	832	30000	3,000	EACH	EROSION CONTROL	
															DRAINAGE	
				38						38	611	05900	38	FT	15" CONDUIT, TYPE B	
				1						1	611	98451	1	EACH	CATCH BASIN, NO. 2-2A, AS PER PLAN	
															PAVEMENT	
				28						28	301	46000	28	CY	ASPHALT CONCRETE BASE, PG64-22	
				45						45	304	20000	45	CY	AGGREGATE BASE	
				25						25	407	10000	25	GAL	TACK COAT	
				13						13	441	50000	13	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), PG64-22	
				3						3	617	10100	3	CY	COMPACTED AGGREGATE	
															STRUCTURE OVER 20 FOOT SPAN (ATH-TR231-1.62)	
								LS		LS	202	11003	LS		STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN	
								LS		LS	503	11100	LS		COFFERDAMS AND EXCAVATION BRACING	
								284		284	503	21100	284	CY	UNCLASSIFIED EXCAVATION	
								38		38	503	31100	38	CY	ROCK EXCAVATION	
								10,332		10,332	509	10000	10,332	LB	EPOXY COATED REINFORCING STEEL	
								21		21	511	21520	21	CY	CLASS QC2 CONCRETE, SUPERSTRUCTURE	
								89		89	511	43510	89	CY	CLASS QC1 CONCRETE, ABUTMENT INCLUDING FOOTING	
								75		75	512	10100	75	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	
								96		96	512	10400	96	SY	TREATING OF CONCRETE BRIDGE DECK WITH SRS	
								4		4	515	12050	4	EACH	PRESTRESSED CONCRETE COMPOSITE BOX BEAM BRIDGE MEMBERS, LEVEL 1, CB21-48 (51'-0")	
								30		30	516	13900	30	SF	2" PREFORMED EXPANSION JOINT FILLER	
								75		75	516	14020	75	FT	SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL	
								8		8	516	41100	8	EACH	1/8" PREFORMED BEARING PAD	
								16		16	516	43100	16	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES ONLY (NEOPRENE) (1.95"x8"x10")	
								112.5		112.5	517	72300	112.5	FT	RAILING (DEEP BEAM RAIL WITH STEEL TUBULAR BACKUP AND TYPE 2 STEEL POSTS AND ANCHOR BOLTS)	
								31		31	518	21200	31	CY	POROUS BACKFILL WITH GEOTEXTILE FABRIC	
								120		120	SPECIAL	51822300	120	FT	STEEL DRIP STRIP	
								65		65	518	40000	65	FT	6" PERFORATED CORRUGATED PLASTIC PIPE	
								33		33	518	40012	33	FT	6" NON-PERFORATED CORRUGATED PLASTIC PIPE	
								53		53	613	41200	53	CY	LOW STRENGTH MORTAR BACKFILL	
															INCIDENTALS	
										LS	614	11000	LS		MAINTAINING TRAFFIC	3
										LS	623	10000	LS		CONSTRUCTION LAYOUT STAKES AND SURVEYING	
										LS	624	10000	LS		MOBILIZATION	

CALCULATED DES
CHECKED RJM

GENERAL SUMMARY

ATH–TR231–1.62

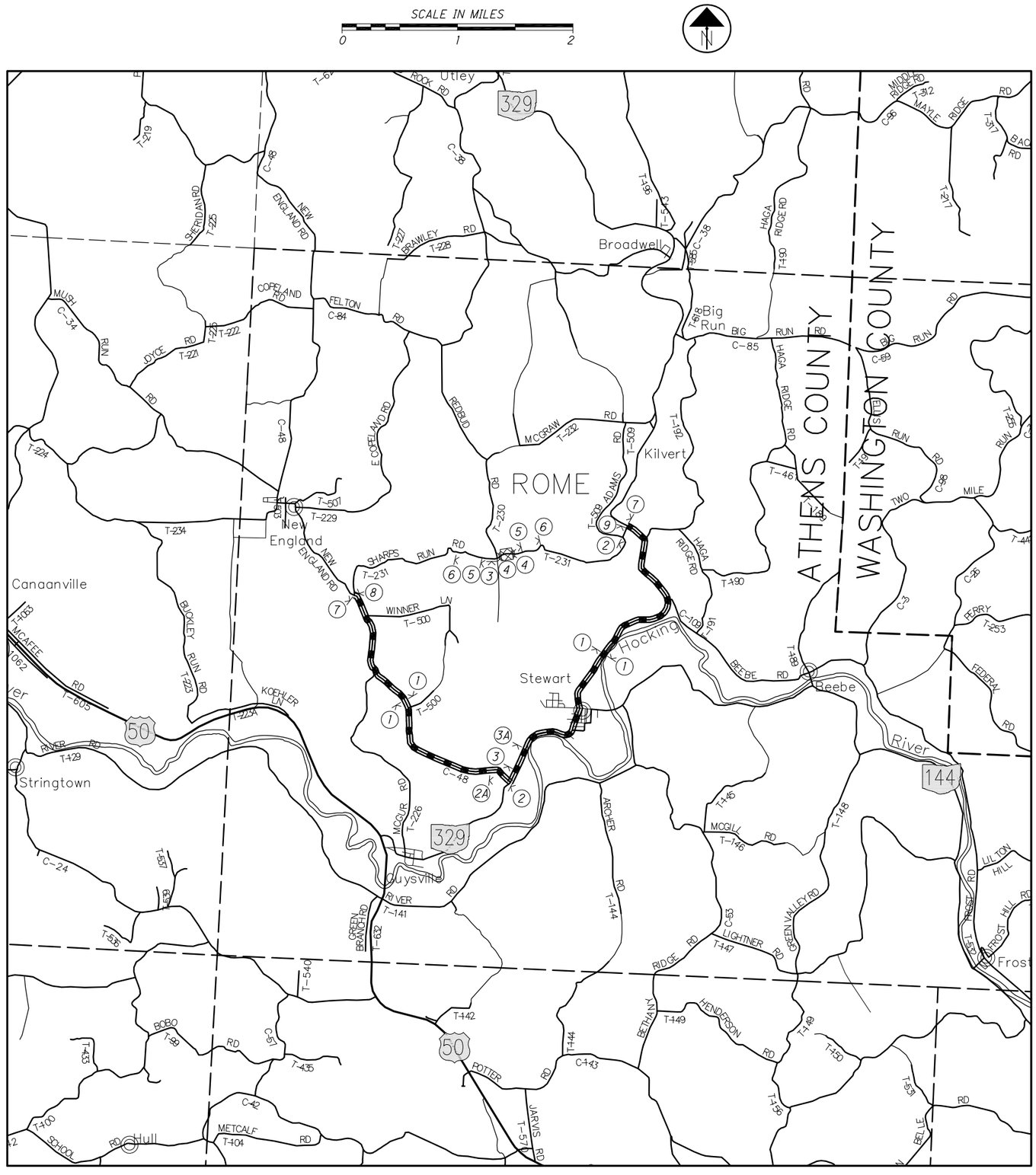


LEGEND

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

NOTES:

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

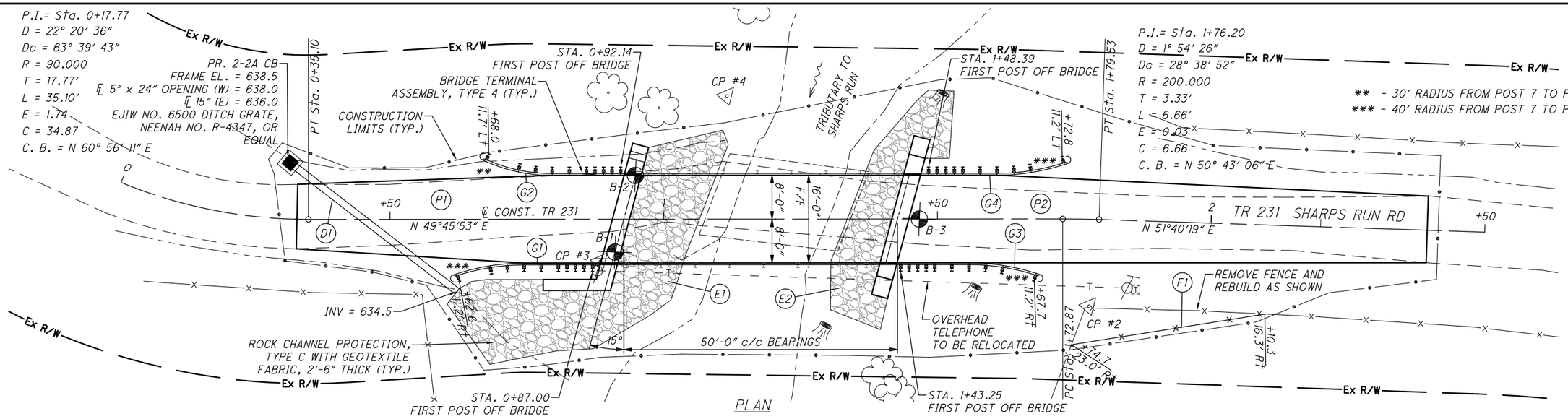


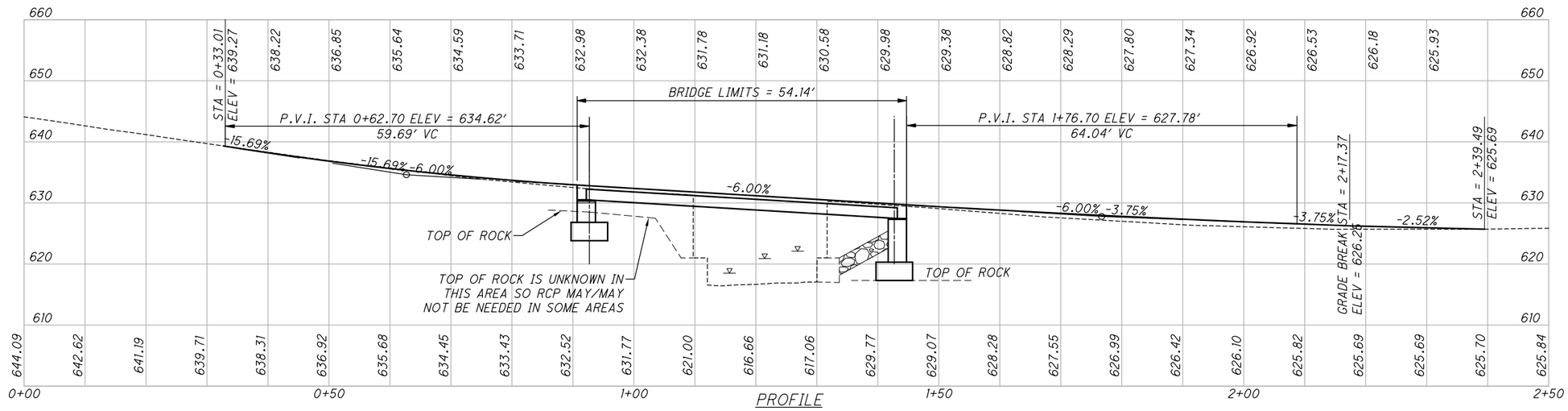
CALCULATED DES
CHECKED RJM

DETOUR PLAN

ATH-TR231-1.62

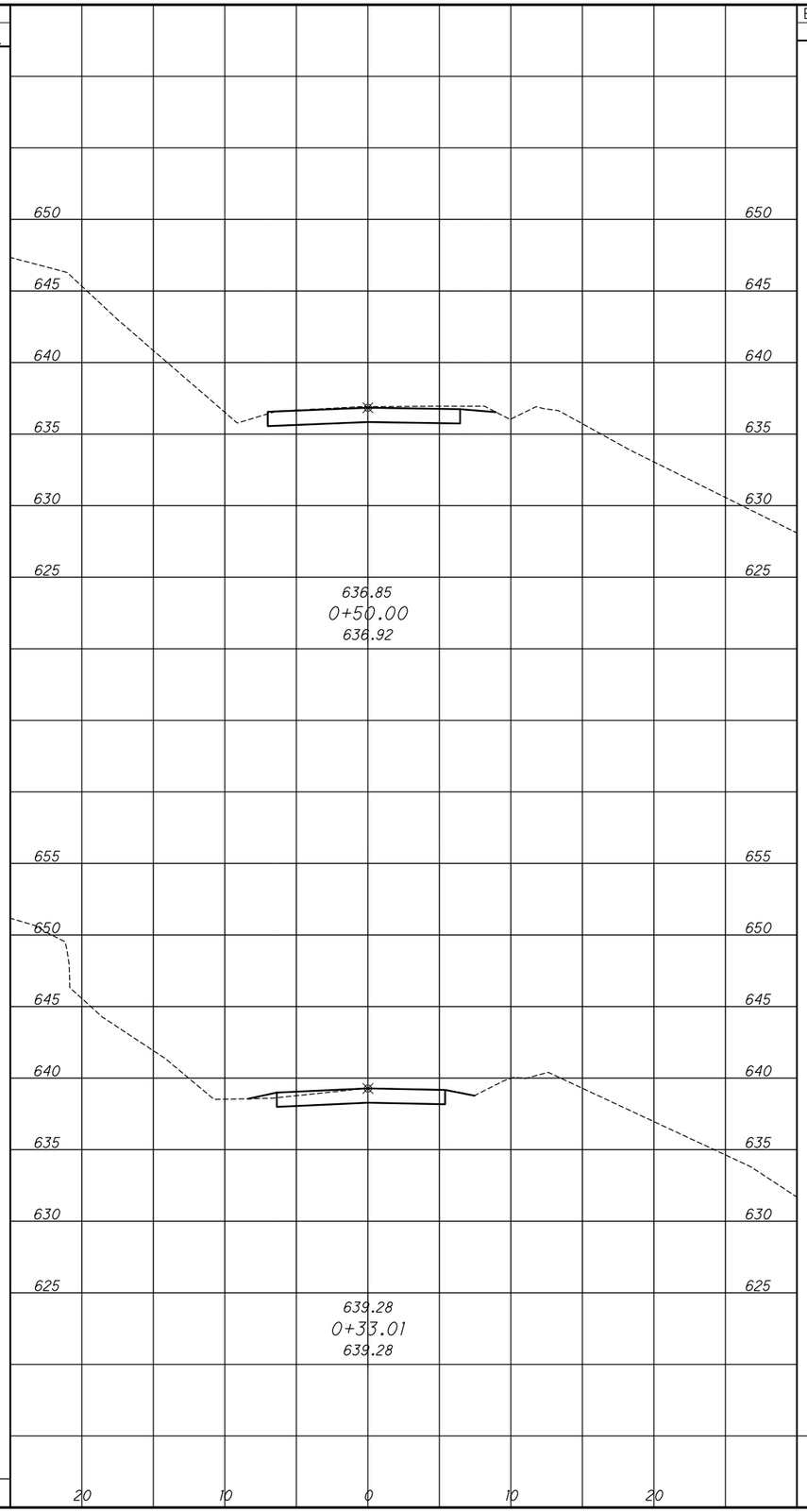
5
18

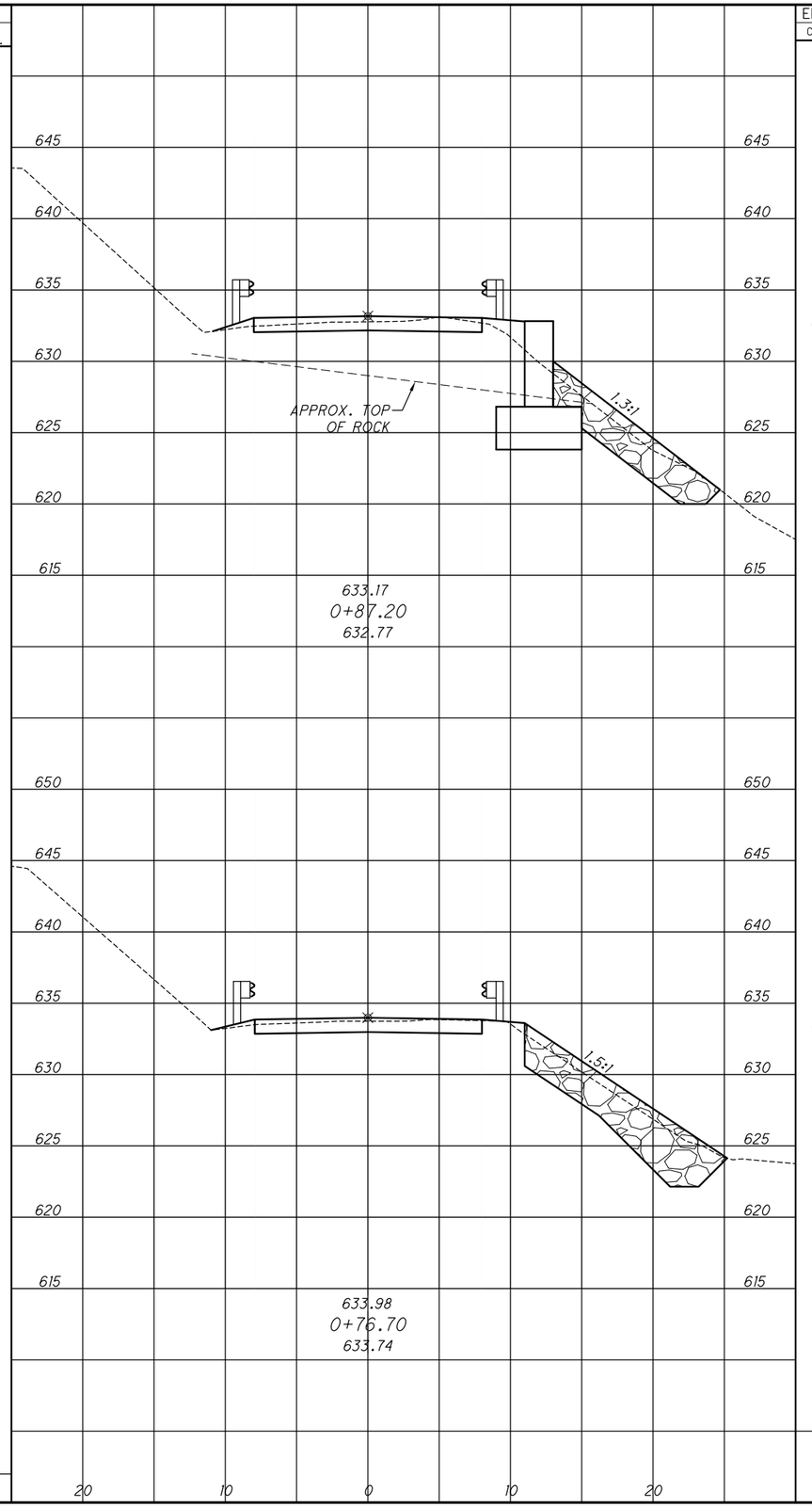




REF #	STATION		SIDE	202	204	301	304	407	441	601	606	606	607	611	611	617
	FROM	TO		PAVEMENT REMOVED	SUBGRADE COMPACTION	4" ASPHALT CONCRETE BASE, PG64-22	6" AGGREGATE BASE	TACK COAT (0.10 GAL/SY)	2" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), PG-64-22	ROCK CHANNEL PROTECTION, TYPE C WITH FABRIC	GUARDRAIL, TYPE 5	BRIDGE TERMINAL ASSEMBLY, TYPE 4	FENCE REBUILT, AS PER PLAN	15" CONDUIT, TYPE B	CATCH BASIN, NO. 2-2A	COMPACTED AGGREGATE
				SY	SY	CY	CY	GAL	CY	CY	FT	EA	FT	FT	EA	CY
D1	0+29.7	0+62.2												38	1	
E1	0+60.4	1+11.8								72						
E2	1+30.5	1+53.1								38						
F1	1+74.7	2+10.3	Rt										36			
G1	0+62.6	0+87.0	Rt								25	1				
G2	0+68.0	0+92.1	Lt								25	1				
G3	1+43.3	1+67.7	Rt								25	1				
G4	1+48.4	1+72.8	Lt								25	1				
P1	0+33.0	0+92.8		91	105	11	17	10	5							1
P2	1+42.6	2+39.5		121	170	17	28	15	8							2
TOTALS TO GENERAL SUMMARY				212	275	28	45	25	13	110	100	4	36	38	1	3

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
0	0	15	0	8	0
0	0	10	0	10	0
0	0	24	0	14	0
0	0	50	0	32	0
0	0	54	0		





CALCULATED DES
CHECKED RJM

CROSS SECTIONS
FROM STA. 0+33.01 TO STA. 0+87.20

ATH-TR231-1.62

7
18

SEEDING	
END WIDTH	SQ. YDS.
15	
	50
28	
	25
15	

END AREA	
CUT	FILL
2	23
7	47
20	25

VOLUME	
CUT	FILL
4	27
5	14

627.82
1+79.53
627.02

628.89
1+58.70
628.39

629.49
1+48.20
629.20

2:1

2:1

1.4:1

2:1

635 630 625 620 615 610

20 10 0 10 20

SEEDING	
END WIDTH	SQ. YDS.
8	
	13
4	
	18
12	
	31
	178

END AREA	
CUT	FILL
12	0
6	3
3	4
2	8
2	12
21	58

VOLUME	
CUT	FILL
7	1

625.69
2+39.49
625.69

626.19
2+20.00
625.69

626.92
2+00.00
626.10

635 630 625 620 615

20 10 0 10 20

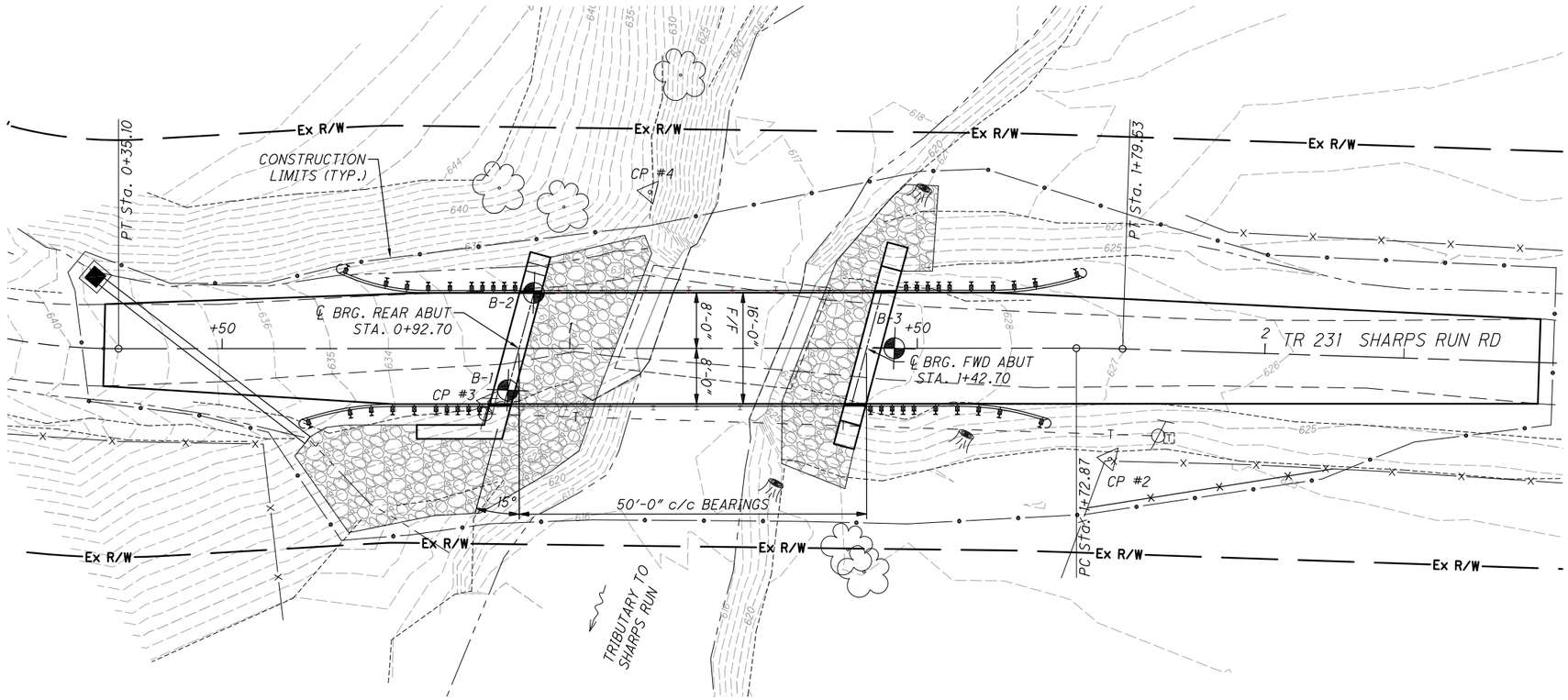
CALCULATED DES
CHECKED RJM

CROSS SECTIONS

FROM STA. 1+48.20 TO STA. 2+39.49

ATH-TR231-1.62

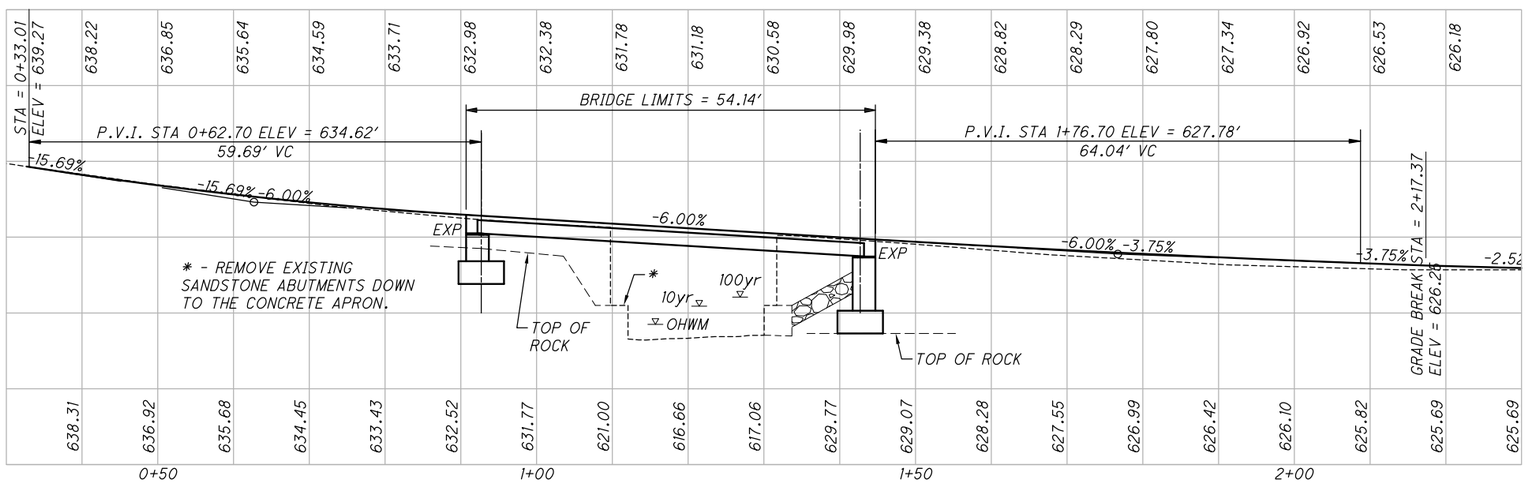
8
18



PLAN

LEGEND

OHWM - ORDINARY HIGH WATER MARK
⌖ - BORING LOCATION
△ - CONTROL POINT



PROFILE

HYDRAULIC DATA

DRAINAGE AREA = 2.72 SQUARE MILES
EXISTING WATERWAY OPENING: 265 SF
PROPOSED WATERWAY OPENING: 350 SF
ORDINARY HIGH WATER MARK: 618.50
Q_{10} = 686 CFS Q_{100} = 1450 CFS
V_{10} = 7.4 FT/S V_{100} = 8.8 FT/S
HW_{10} = 620.89 HW_{100} = 622.10

EXISTING STRUCTURE

TYPE: SINGLE SPAN, STEEL BEAM WITH WOOD DECK ON STONE AND CONCRETE ABUTMENTS
SPAN: 20'-0" (±) CENTER-TO-CENTER OF BEARINGS
ROADWAY: 15'-0" (±) FACE-TO-FACE RAILINGS
LOADING: UNKNOWN
SKEW: NONE
WEARING SURFACE: WOOD
APPROACH SLABS: NONE
ALIGNMENT: TANGENT
DATE BUILT: 1941
STRUCTURE FILE NUMBER: 0545430

PROPOSED STRUCTURE

TYPE: PRESTRESSED CONCRETE BOX BEAMS WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE
SPAN: 50'-0" CENTER-TO-CENTER OF BEARINGS
ROADWAY: 16'-0" FACE-TO-FACE RAILINGS
LOADING: HL-93, 0.060 KSF FUTURE WEARING SURFACE
SKEW: 15°00'00" LEFT FORWARD
WEARING SURFACE: 1" MONOLITHIC CONCRETE
APPROACH SLABS: NONE
ALIGNMENT: TANGENT
CROWN: 0.0156 FT/FT
COORDINATES: LATITUDE = N39°19'39"
LONGITUDE = W81°54'28"

CONTROL POINTS

POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION
CP #2	484083.8780	2136111.4520	622.52	HUB
CP #3	484032.5120	2136038.0250	632.77	HUB
CP #4	484070.5010	2136036.1490	631.63	HUB

SOIL BORINGS

BORING	STATION	OFFSET	EX. GROUND SURFACE ELEV.	APPROX. TOP OF ROCK
B-1	0+91.0	6.0' Rt.	632.7	628.5
B-2	0+95.0	8.0' Lt.	632.1	629.9
B-2	1+47.0	0.0' Rt.	629.1	617.7

0 10 20
HORIZONTAL SCALE IN FEET

DESIGN AGENCY
ATHENS COUNTY ENGINEER
16000 Canaanville Rd, Athens, Oh 45701

DESIGNED	DRAWN	REVIEWED	DATE
DES	DES		
CHECKED	REVISED		STRUCTURE FILE NUMBER
RJM			0545431

SITE PLAN
BRIDGE NO. ATH-TR231-1.62
OVER TRIBUTARY TO SHARPS RUN

ATH-TR231-1.62
PID No. 117524

1 / 10

9 / 18

REFER TO THE FOLLOWING STANDARD BRIDGE DRAWINGS

DS–1–92	REVISED 07–15–22
PSBD–2–07	REVISED 07–20–18
SICD–1–96	REVISED 07–18–14
DBR–2–73	REVISED 07–19–02
BD–1–11	REVISED 07–20–18

AND TO THE FOLLOWING SUPPLEMENTAL SPECIFICATIONS

SS800 DATED 01–20–23

DESIGN SPECIFICATIONS

THIS STRUCTURE CONFORMS TO THE 8TH EDITION OF THE "LRFD BRIDGE DESIGN SPECIFICATIONS" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS AND THE ODOT BRIDGE DESIGN MANUAL, 2019.

OPERATIONAL IMPORTANCE

A LOAD MODIFIER OF 1.00 HAS BEEN ASSUMED FOR THE DESIGN OF THIS STRUCTURE IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, ARTICLE 1.3.5 AND THE ODOT BRIDGE DESIGN MANUAL, 2007.

DESIGN LOADING

HL–93

FUTURE WEARING SURFACE (FWS) OF 0.060 KIPS PER SQUARE FOOT

DESIGN DATA

CONCRETE CLASS QC1 – COMPRESSIVE STRENGTH 4000 PSI (SUBSTRUCTURE)

CONCRETE CLASS QC2 – COMPRESSIVE STRENGTH 4500 PSI (SUPERSTRUCTURE)

REINFORCING STEEL – ASTM A615 OR A996, GRADE 60, MINIMUM YIELD STRENGTH: 60,000 PSI

CONCRETE FOR PRESTRESSED BEAMS:

COMPRESSIVE STRENGTH (FINAL) = 7.0 KSI

COMPRESSIVE STRENGTH (RELEASE) = 5.0 KSI

PRESTRESSING STRAND:

AREA = 0.167 SQ. IN. PER STRAND

ULTIMATE STRENGTH = 270 KSI

INITIAL STRESS = 202.5 KSI (LOW RELAXATION STRANDS)

DECK PROTECTION METHOD

SEAL THE DECK USING SRS (SOLUBLE REACTIVE SILICATE) ACCORDING TO C&MS 512.05

54 ft x 16 ft / 9 = 96 SY CARRIED TO THE GENERAL SUMMARY

EPOXY COATED REINFORCING STEEL

$2\frac{1}{2}$" CONCRETE COVER

STEEL DRIP STRIP

MONOLITHIC WEARING SURFACE

MONOLITHIC WEARING SURFACE IS ASSUMED, FOR DESIGN PURPOSES, TO BE 1" THICK.

EXISTING STRUCTURE VERIFICATION

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM THE FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURE AND THE PROPOSED WORK, BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO CMS SECTIONS 102.05 AND 105.02.

BASE CONTRACT BID PRICES UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE. HOWEVER, THE OWNER WILL PAY FOR ALL PROJECT WORK BASED UPON ACTUAL DETAILS AND DIMENSIONS THAT HAVE BEEN VERIFIED IN THE FIELD.

ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	ABUTMENT		SUPER	GENERAL	REF. SHEET NUMBER
					REAR	FWD			
202	11003	LS		STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN				LS	2/10
503	11100	LS		COFFERDAMS AND EXCAVATION BRACING				LS	
503	21100	284	CY	UNCLASSIFIED EXCAVATION	72	212			
503	31100	38	CY	ROCK EXCAVATION	38			LS	
509	10000	10,332	LB	EPOXY COATED REINFORCING STEEL	7,115		3,217		
511	21520	21	CY	CLASS QC2 CONCRETE, SUPERSTRUCTURE			21		
511	43510	89	CY	CLASS QC1 CONCRETE, ABUTMENT INCLUDING FOOTING	43	46			
512	10100	75	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	22	22	31		
512	10400	96	SY	TREATING OF CONCRETE BRIDGE DECK WITH SRS			96		2/10
515	12050	4	EACH	PRESTRESSED CONCRETE COMPOSITE BOX BEAM BRIDGE MEMBERS, LEVEL 1, CB21-48			4		
516	13900	30	SF	2" PREFORMED EXPANSION JOINT FILLER			30		
516	14020	75	FT	SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL			75		
516	14020	32	FT	2" DEEP JOINT SEALER, AS PER PLAN				32	2/10
516	41100	8	EACH	1/8" PREFORMED BEARING PAD	4	4			
516	43100	16	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES ONLY (NEOPRENE), (1.95"x8"x10")	8	8			
517	72300	112.5	FT	RAILING (DEEP BEAM RAIL WITH STEEL TUBULAR BACKUP AND TYPE 2 POSTS AND ANCHOR BOLTS)			112.5		
518	21200	31	CY	POROUS BACKFILL WITH FILTER FABRIC	13	18			
SPECIAL	51822300	120	FT	STEEL DRIP STRIP			120		
518	40000	65	FT	6" PERFORATED CORRUGATED PLASTIC PIPE	35	30			
518	40012	33	FT	6" NON-PERFORATED CORRUGATED PLASTIC PIPE	20	13			
613	41200	53	CY	LOW STRENGTH MORTAR BACKFILL	18	35			

REMOVAL OF EXISTING STRUCTURE

AFTER ALL DETOUR ROUTES ARE IN PLACE AND THE ROAD IS CLOSED, THE EXISTING STRUCTURE SHALL BE REMOVED.

ITEM 202 – STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN

THIS ITEM SHALL INCLUDE THE REMOVAL OF EXISTING STRUCTURE COMPONENTS AS DETAILED IN THE PLANS AND AS DIRECTED BY THE ENGINEER. THE REMOVALS SHALL INCLUDE BUT ARE NOT NECESSARILY LIMITED TO THE FOLLOWING:

1. THE EXISTING SUPERSTRUCTURE IN ITS ENTIRETY, INCLUDING WOOD DECKING AND RAILING.
2. PORTIONS OF THE EXISTING ABUTMENTS AS DETAILED IN THE PLANS. FOR STONE WALLS, REMOVE STONE TO THE NEAREST FULL COURSE AS SHOWN ON SHEET 1/10. REMOVE THOSE PORTIONS OF EXISTING ABUTMENT WINGWALLS THAT ARE IN CONFLICT WITH THE PROPOSED STRUCTURE IN ACCORDANCE WITH C&MS 202.

THE USE OF EXPLOSIVES AND/OR HEADACHE BALLS WILL NOT BE PERMITTED.

REINFORCING STEEL

NEW REINFORCING STEEL MAY REQUIRE FIELD CUTTING OR BENDING TO BE PROPERLY FITTED. PAYMENT SHALL BE INCLUDED IN ITEM 509.

CONSTRUCTION JOINTS

CONSTRUCTION JOINTS SHALL HAVE ROUGH SURFACES. PRIOR TO CONCRETE PLACEMENT, ALL CONCRETE BONDING SURFACES SHALL BE THOROUGHLY CLEANED OF ALL DIRT, DUST OR OTHER FOREIGN MATERIAL BY THE USE OF WATER, AIR UNDER PRESSURE, OR OTHER METHOD THAT PRODUCES RESULTS SATISFACTORY TO THE ENGINEER. CARE SHALL BE TAKEN TO PROTECT EPOXY COATING ON EXPOSED REINFORCEMENT DURING CLEANING. BONDING SURFACES SHALL BE WET WITHOUT FREE WATER AS CONCRETE IS PLACED.

BEARING PAD SHIMS, PRESTRESSED

PLACE $\frac{1}{8}$" THICK PREFORMED BEARING PAD SHIMS, PLAN AREA 8 INCHES BY 10 INCHES, UNDER THE ELASTOMERIC BEARING PADS WHERE REQUIRED FOR PROPER BEARING. FURNISH TWO SHIMS PER BEAM. THE DEPARTMENT WILL MEASURE THIS ITEM BY THE TOTAL NUMBER SUPPLIED. THE DEPARTMENT WILL PAY FOR THE ACCEPTED QUANTITIES AT THE CONTRACT PRICE FOR ITEM 516 – $\frac{1}{8}$" PREFORMED BEARING PADS. ANY UNUSED SHIMS WILL BE PROPERTY OF THE COUNTY.

ITEM 516 – 2" DEEP JOINT SEALER, AS PER PLAN

A 2" DEEP x 1" WIDE GROOVE SHALL BE SAWCUT OUT OF THE PROPOSED ROADWAY ASPHALT CONCRETE ADJACENT TO THE BACKS OF THE INTEGRAL BACKWALLS (ENDS OF DECK) AFTER THE PROPOSED SUPERSTRUCTURE CONCRETE HAS PROPERLY CURED. EACH GROOVE SHALL BE CLEANED OF FOREIGN MATTER, CURING COMPOUNDS, OIL, GREASE, DIRT, FREE WATER, ETC. BEFORE APPLYING SEALER. JOINT SEALER (705.04) SHALL BE USED TO FILL EACH GROOVE.

SAWCUTTING AND ALL INCIDENTALS NECESSARY TO COMPLETE THIS WORK ARE INCLUDED IN THE COST OF THIS ITEM.

ITEM 613 – LOW STRENGTH MORTAR BACKFILL

PRIOR TO PLACING CONCRETE BOX BEAMS AND SUPERSTRUCTURE CONCRETE, PLACE ITEM 613 – LOW STRENGTH MORTAR BACKFILL FROM THE BOTTOM OF THE POROUS BACKFILL UP TO AN ELEVATION THAT IS ABOUT 1'–6" BELOW THE LOW BEARING SEAT ELEVATION SO THAT THE 3'–0" WIDE NEOPRENE SHEETING CAN BE INSTALLED AFTER THE SEMI–INTEGRAL BACKWALL IS COMPLETED. AFTER CONSTRUCTION OF THE BEAMS AND SUPERSTRUCTURE CONCRETE BACKWALL, FILL THE REMAINDER OF THE LOW STRENGTH MORTAR BACKFILL UP TO THE SUBGRADE (OR 1'–0" BELOW PROPOSED GROUND LINE).

DESIGN AGENCY
ATHENS COUNTY ENGINEER
16000 Canamville Rd, Athens, Oh 45701

REVIEWED DATE

STRUCTURE FILE NUMBER 0545431

DRAWN DES

REVISED

DESIGNED DES

CHECKED RJM

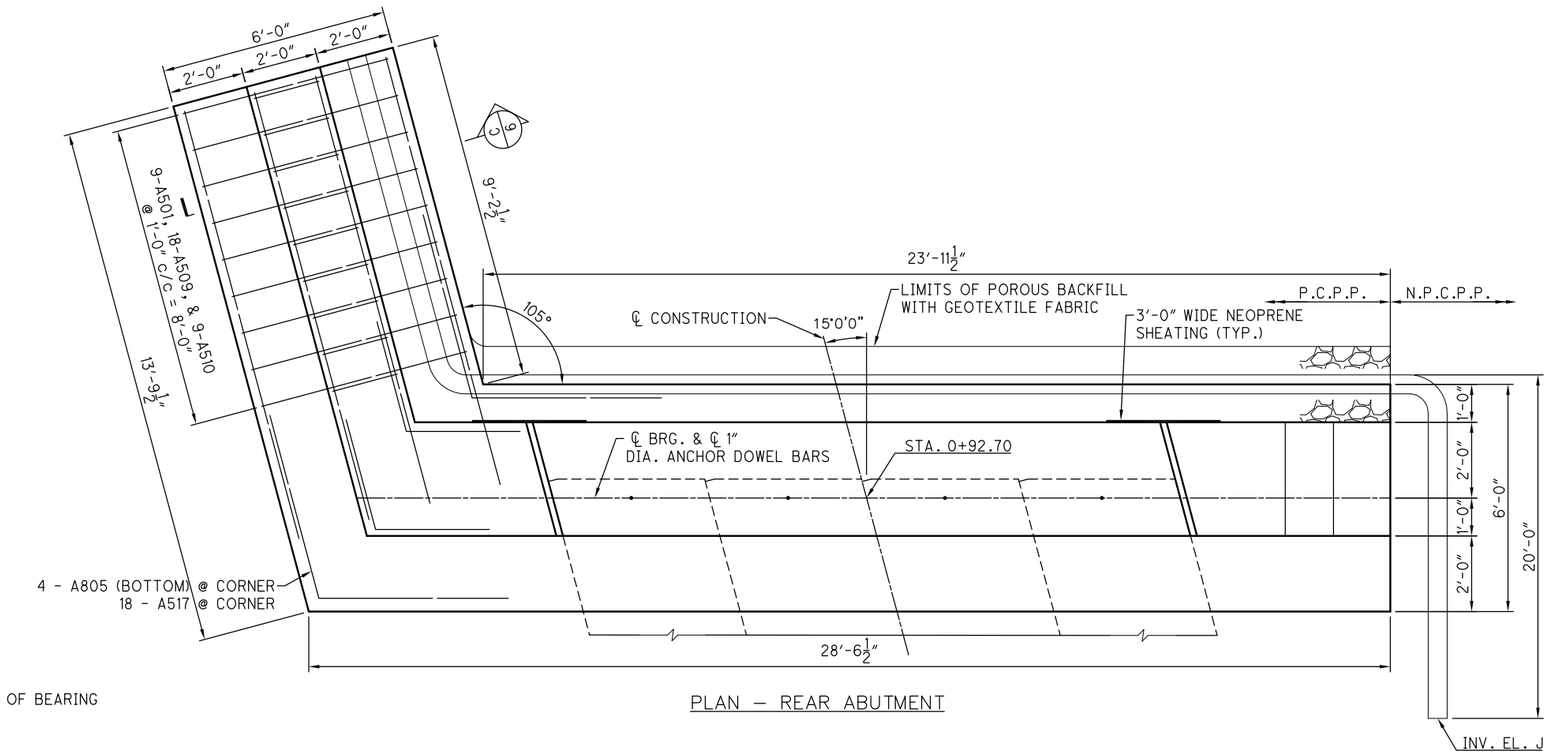
GENERAL BRIDGE NOTES & SUMMARY

BRIDGE NO. ATH-TR231-1.62

OVER TRIBUTARY TO SHARPS RUN

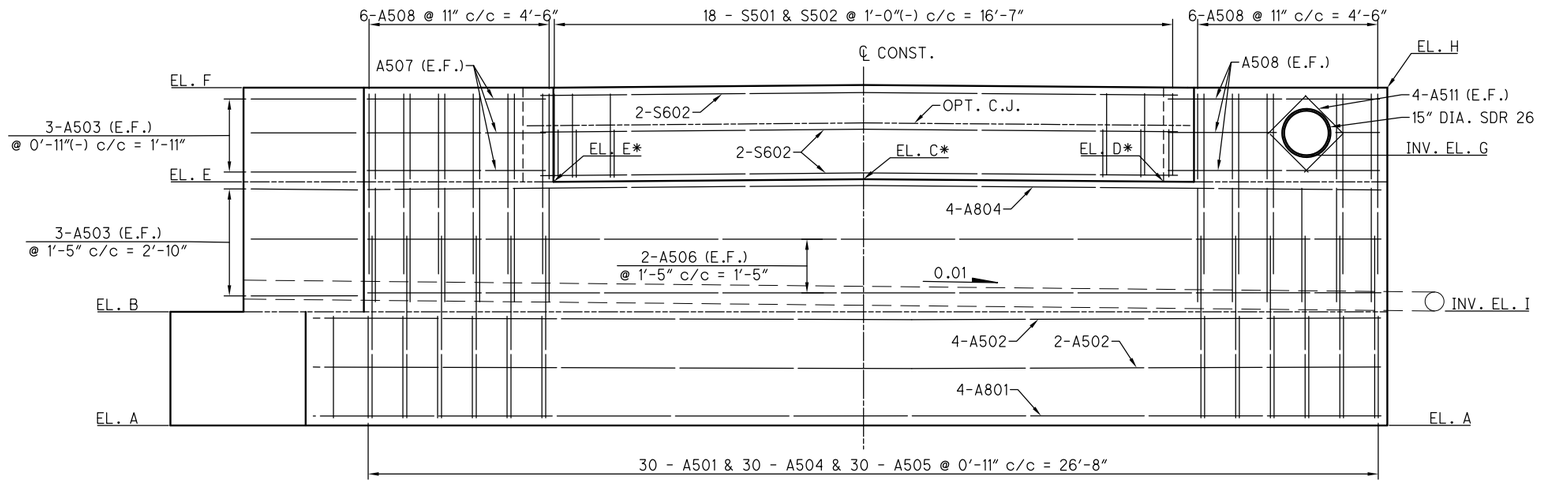
ATH–TR231–1.62

PID No. 117524



PLAN – REAR ABUTMENT

* - ELEVATION IS AT C.L. OF BEARING



ELEVATION – REAR ABUTMENT

TABLE OF ELEVATIONS										
LOCATION	EL. A	EL. B	EL. C	EL. D	EL. E	EL. F	EL. G	EL. H	EL. I	EL. J
REAR ABUT.	623.82	626.82	630.32	630.07	630.32	632.74	631.00	632.50	626.86	626.50

NOTES:

1. BRIDGE SEAT REINFORCING, SETTING ANCHORS: ACCURATELY PLACE REINFORCING STEEL IN THE VICINITY OF THE BRIDGE SEAT TO AVOID INTERFERENCE WITH THE DRILLING OF ANCHOR BAR HOLES.
2. ABUTMENT CONCRETE: DO NOT PLACE ABUTMENT CONCRETE ABOVE THE BRIDGE SEAT CONSTRUCTION JOINT UNTIL THE PRESTRESSED CONCRETE BOX BEAMS HAVE BEEN ERECTED.
3. FOR DETAILS OF ANCHOR DOWEL BARS, SEE ODOT STANDARD DRAWING PSBD-2-07.
4. APPLY EPOXY-URETHANE CONCRETE SEALER TO ALL EXPOSED ABUTMENT AND WINGWALL SURFACES.
5. COST OF 15" SDR 26 SHALL BE INCLUDED IN ITEM 511-CLASS QC1 CONCRETE, ABUTMENT.

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ATHENS COUNTY ENGINEER
16000 Canamville Rd, Athens, Oh 45701

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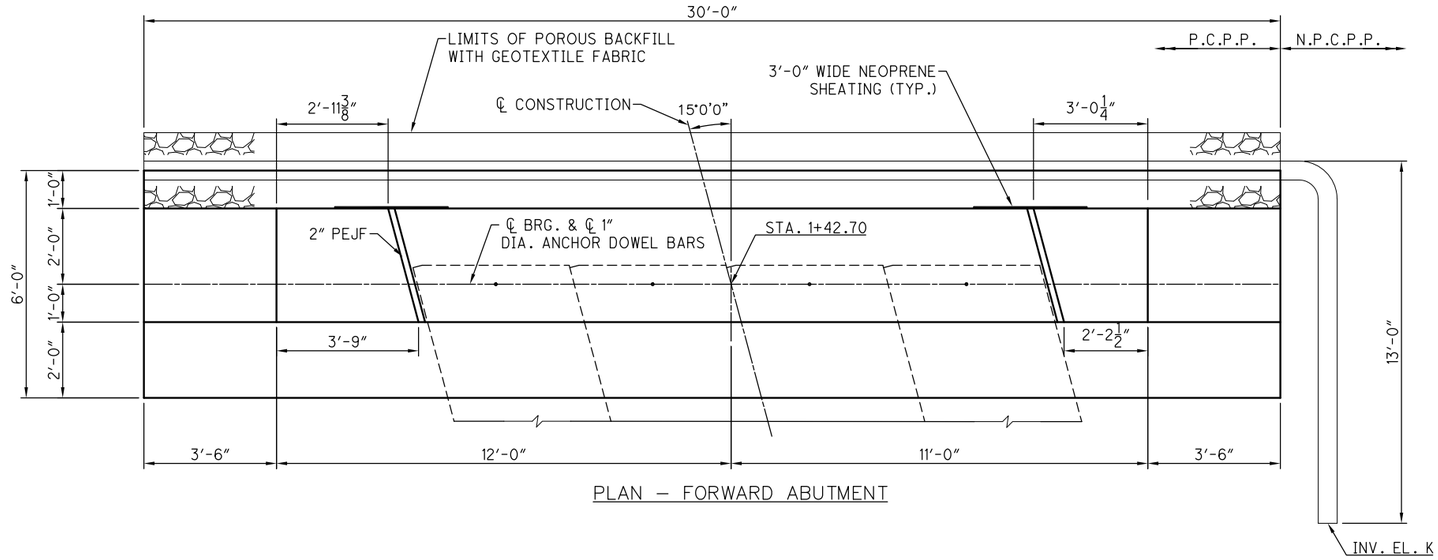
DES	DES		
CHECKED	REVISED		
RJM			

STRUCTURE FILE NUMBER
0545431

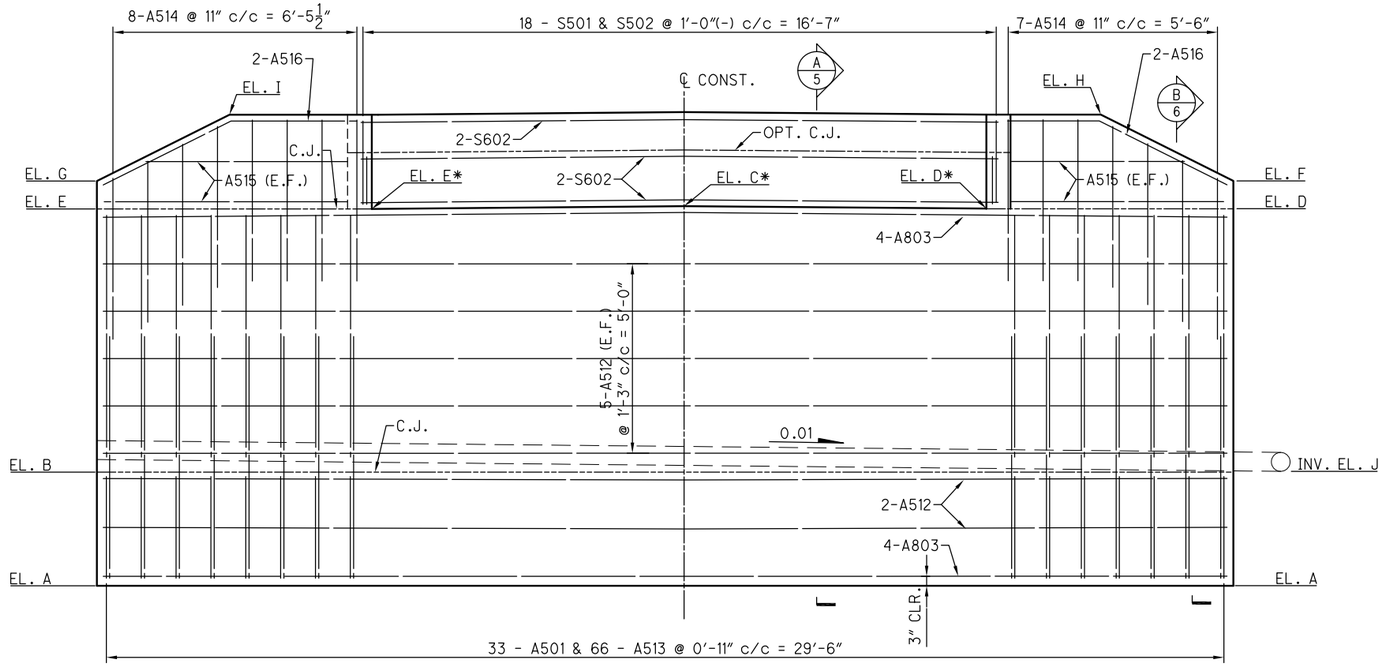
REAR ABUTMENT DETAILS

BRIDGE NO. ATH-TR231-1.62
OVER TRIBUTARY TO SHARPS RUN

ATH – TR231 – 1.62
PID No. 117524



PLAN — FORWARD ABUTMENT



ELEVATION — FORWARD ABUTMENT

* - ELEVATION IS AT C.L. OF BEARING

TABLE OF ELEVATIONS											
LOCATION	EL. A	EL. B	EL. C	EL. D	EL. E	EL. F	EL. G	EL. H	EL. I	EL. J	EL. K
FWD ABUT.	617.30	620.30	627.32	627.32	627.07	628.20	628.00	629.70	629.50	620.34	620.34

NOTES:

1. BRIDGE SEAT REINFORCING, SETTING ANCHORS: ACCURATELY PLACE REINFORCING STEEL IN THE VICINITY OF THE BRIDGE SEAT TO AVOID INTERFERENCE WITH THE DRILLING OF ANCHOR BAR HOLES.
2. ABUTMENT CONCRETE: DO NOT PLACE ABUTMENT CONCRETE ABOVE THE BRIDGE SEAT CONSTRUCTION JOINT UNTIL THE PRESTRESSED CONCRETE BOX BEAMS HAVE BEEN ERECTED.
3. FOR DETAILS OF ANCHOR DOWEL BARS, SEE ODOT STANDARD DRAWING PSBD-2-07.
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ATHENS COUNTY ENGINEER
16000 Canaanville Rd, Athens, Oh 45701

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FORWARD ABUTMENT DETAILS

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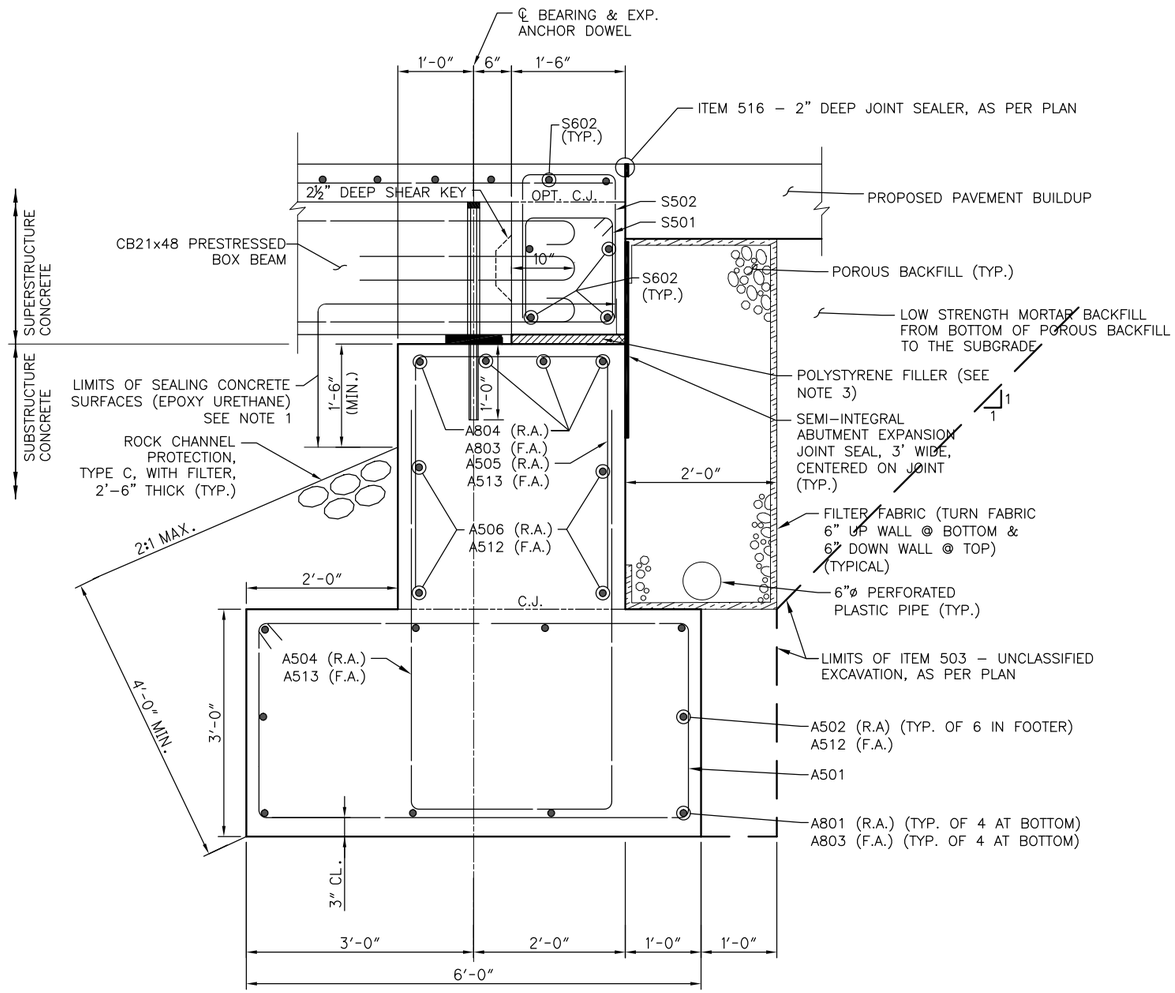
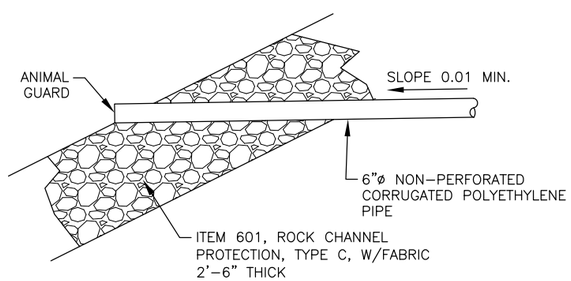


SECTION A–A



OUTLET DRAIN DETAIL

NOTES:

1. THE CONTRACTOR SHALL NOT SEAL THE BEAM SEAT WHERE ELASTOMERIC BEARINGS SIT.
2. ACCURATELY PLACE REINFORCING STEEL IN THE VICINITY OF THE BRIDGE SEAT TO AVOID INTERFERENCE WITH THE DRILLING OF BEARING ANCHOR HOLES OR THE PRE-SETTING OF BEARING ANCHORS.
3. POLYSTYRENE SHALL BE PAID FOR UNDER ITEM 511 - CLASS QC2 CONCRETE, AS PER PLAN. FURNISH MATERIAL MEETING THE REQUIREMENTS OF ASTM C578 TYPE IV. NEATLY CUT MATERIAL AS NECESSARY TO ALLOW FOR PROPER INSTALLATION. JOINTS AT ABUTTING PIECES SHALL BE SEALED WITH DUCT TAPE. ALLOWABLE TOLERANCE FOR THE TOTAL THICKNESS OF THE MATERIAL SHALL BE -0", +1/2". DO NOT PLACE MORE THAN TWO LAYERS OF POLYSTYRENE TO ACHIEVE TOTAL THICKNESS.

DESIGN AGENCY
ATHENS COUNTY ENGINEER
16000 Canaanville Rd, Athens, Oh 45701

DESIGNED	DRAWN	REVIEWED	DATE
DES	DES		
CHECKED	REVISED		
RJM			

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ABUTMENT DETAILS

BRIDGE NO. ATH-TR231-1.62
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ATH–TR231–1.62
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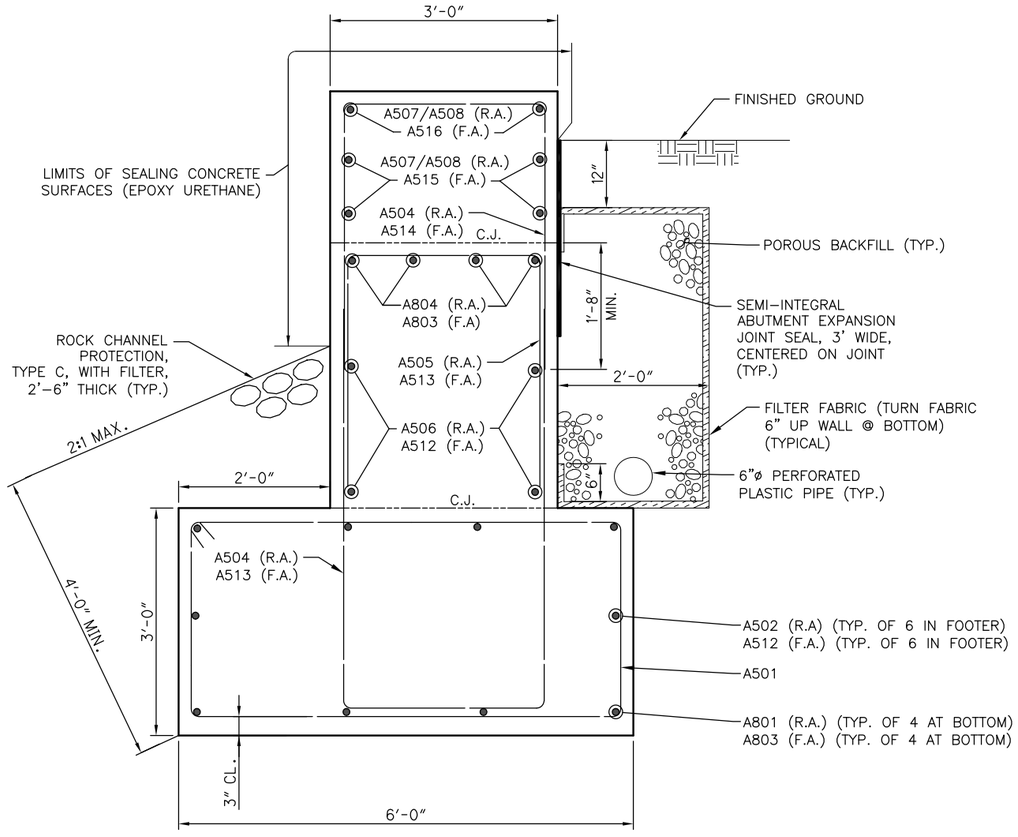
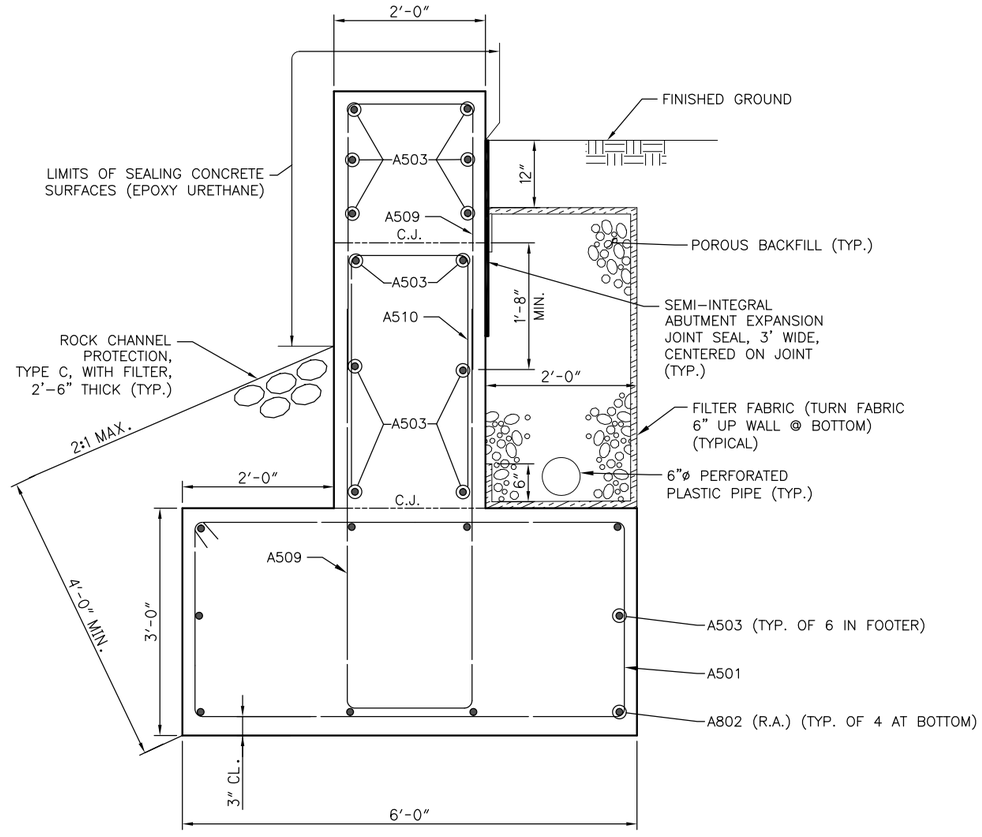


SECTION B–B



SECTION C–C

NOTES:

1. THE CONTRACTOR SHALL NOT SEAL THE BEAM SEAT WHERE ELASTOMERIC BEARINGS SIT.
2. ACCURATELY PLACE REINFORCING STEEL IN THE VICINITY OF THE BRIDGE SEAT TO AVOID INTERFERENCE WITH THE DRILLING OF BEARING ANCHOR HOLES OR THE PRE-SETTING OF BEARING ANCHORS.
3. POLYSTYRENE SHALL BE PAID FOR UNDER ITEM 511 - CLASS QC2 CONCRETE, AS PER PLAN. FURNISH MATERIAL MEETING THE REQUIREMENTS OF ASTM C578 TYPE IV. NEATLY CUT MATERIAL AS NECESSARY TO ALLOW FOR PROPER INSTALLATION. JOINTS AT ABUTTING PIECES SHALL BE SEALED WITH DUCT TAPE. ALLOWABLE TOLERANCE FOR THE TOTAL THICKNESS OF THE MATERIAL SHALL BE -0", +1/2". DO NOT PLACE MORE THAN TWO LAYERS OF POLYSTYRENE TO ACHIEVE TOTAL THICKNESS.

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16000 Canaanville Rd, Athens, Oh 45701

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RJM		0545431	

ABUTMENT DETAILS

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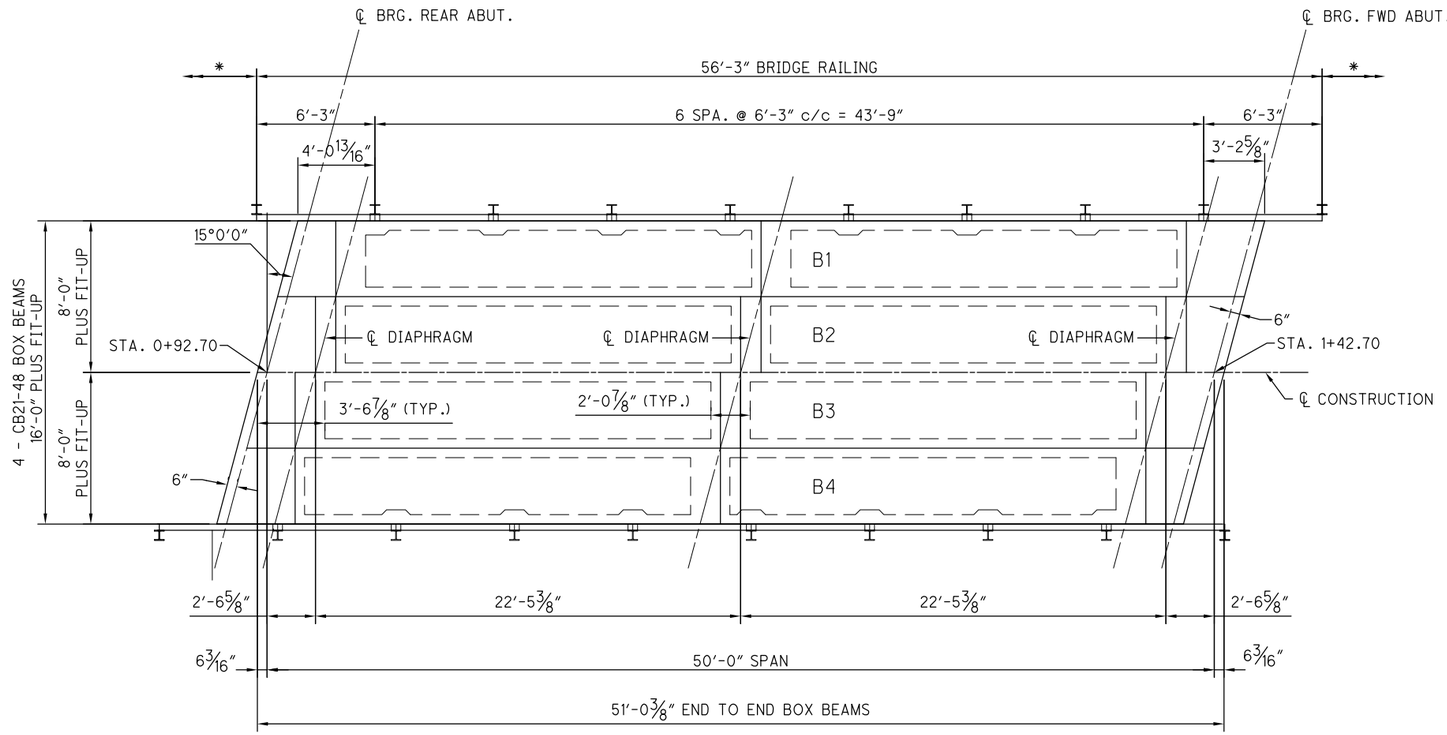
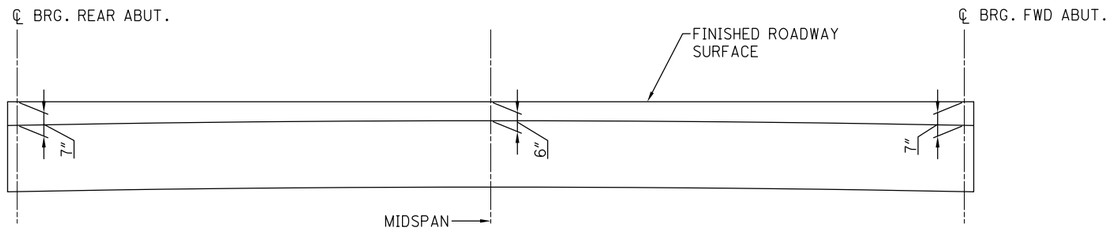
PID No. 117524



BEAM LAYOUT PLAN

* BRIDGE TERMINAL ASSEMBLY, TYPE 4



DECK THICKNESS DIAGRAM

NOTES:

1. BRIDGE RAILING DIMENSIONS SHOWN ARE OPPOSITE HAND FOR THE OTHER SIDE.
2. FOR BOX BEAM DETAILS, SEE SHEET 8 OF 10.
3. FOR DECK SLAB PLAN, SEE SHEET 9 OF 10.

CAMBER:

1. ESTIMATED CAMBER AT DAY 0 (D_0) IS 3/4 INCHES.
2. ESTIMATED CAMBER AT DAY 30 (D_{30}) IS 1 1/4 INCHES.
3. DEFLECTION DUE TO REMAINING DEAD LOAD (E.G. CONCRETE DECK, RAILING, ETC.) IS 1/4 INCHES.
4. THE BEAM SEAT ELEVATIONS ASSUME ESTIMATED CAMBER D_{30}.

DECK SLAB THICKNESS FOR CONCRETE QUANTITY: THE ESTIMATED QUANTITY OF DECK CONCRETE IS MEASURED ACCORDING TO C&MS 511. IN ADDITION TO THE DESIGN SLAB THICKNESS, THE QUANTITY INCLUDES A VARIABLE HAUNCH THICKNESS THE PROVIDES ALLOWANCE FOR: VERTICAL GRADE ADJUSTMENT AND BEAM CAMBER.

DESIGN AGENCY
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DESIGNED	DRAWN	REVIEWED	DATE
DES	DES		
CHECKED	REVISED		
RJM			

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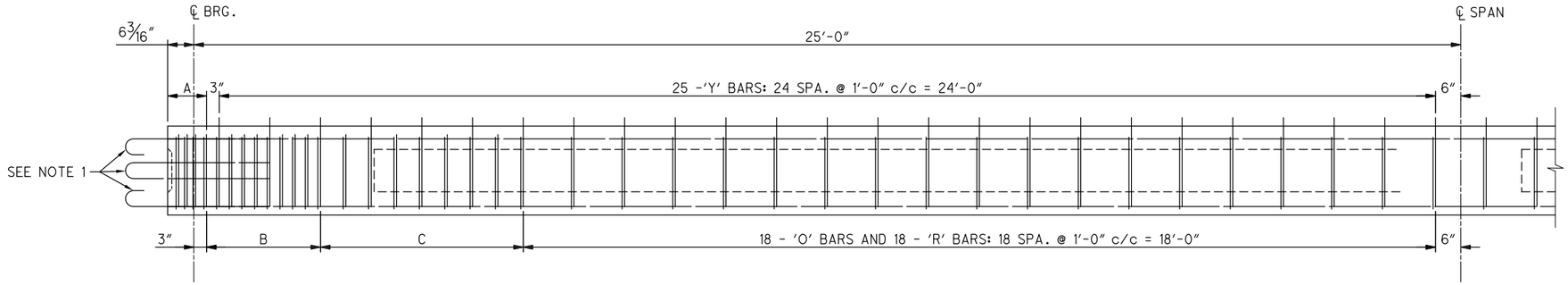
SUPERSTRUCTURE
BRIDGE NO. ATH-TR231-1.62
OVER TRIBUTARY TO SHARPS RUN

ATH-TR231-1.62
PID No. 117524

7 / 10

15
18



LEGEND:

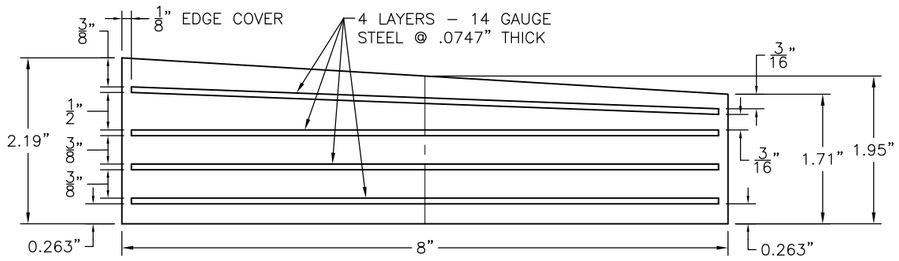
A = SKEWED END REINFORCING, SEE STANDARD DRAWING PSBD-2-07

B = 10 - 'O' AND 10 - 'R' BARS
9 SPA. @ 3" c/c = 2'-3"

C = 8 - 'O' AND 8 - 'R' BARS
8 SPA. @ 6" c/c = 4'-0"

PART ELEVATION – TYPICAL BOX BEAM

NOTE: BEAM IS SYMMETRICAL ABOUT ℄ BEAM



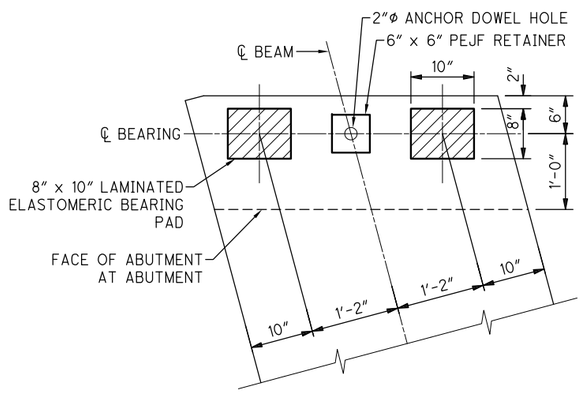
BEARING PAD DETAIL

1.95" THICK @ C.L. X 8" X 10"
LAMINATED ELASTOMERIC BEARING PAD
50 DUROMETER NEOPRENE

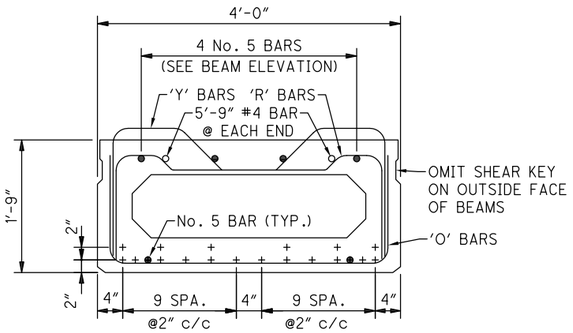
MAXIMUM DEAD LOAD = 16.4 kips
MAXIMUM LIVE LOAD = 24.6 kips
MAXIMUM DESIGN LOAD = 41.0 kips

BASIS OF PAYMENT:
THE UNIT BID PRICE PER EACH SHALL INCLUDE ALL MATERIALS, LABOR, AND INCIDENTALS NECESSARY TO FURNISH AND INSTALL LAMINATED ELASTOMERIC BEARINGS.

ITEM 516 – ELASTOMERIC BEARING WITH INTERNAL LAMINATES ONLY – 16 EACH
(NEOPRENE), 1.95" THICK



BEARING PAD LAYOUT



CB21–48, 50'–0" SPAN
18 - 1/2" STRANDS

SEE BEAM ELEVATION FOR SPACING OF THE 'Y', 'R', & 'O' No. 4 STIRRUP BARS

NOTES:

1. EXTEND TOP AND BOTTOM #5 LONGITUDINAL BARS AN EMBEDMENT OF 10" INTO ABUTMENT BACKWALL AND PROVIDE STANDARD 180° HOOK. BARS TO BE EPOXY COATED AND PAID UNDER ITEM 515.
2. PROVIDE 2½" DEEP SHEAR KEY CENTERED IN BEAM END. THE SHEAR KEY SHALL BE 10½" TALL AND 38" WIDE.
3. REFER TO ODOT STANDARD DRAWING PSBD-2-07 FOR ADDITIONAL DETAILS OF BOX BEAMS.
4. FOR BEAM LAYOUT PLAN, SEE SHEET 7 OF 10.

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SUPERSTRUCTURE DETAILS

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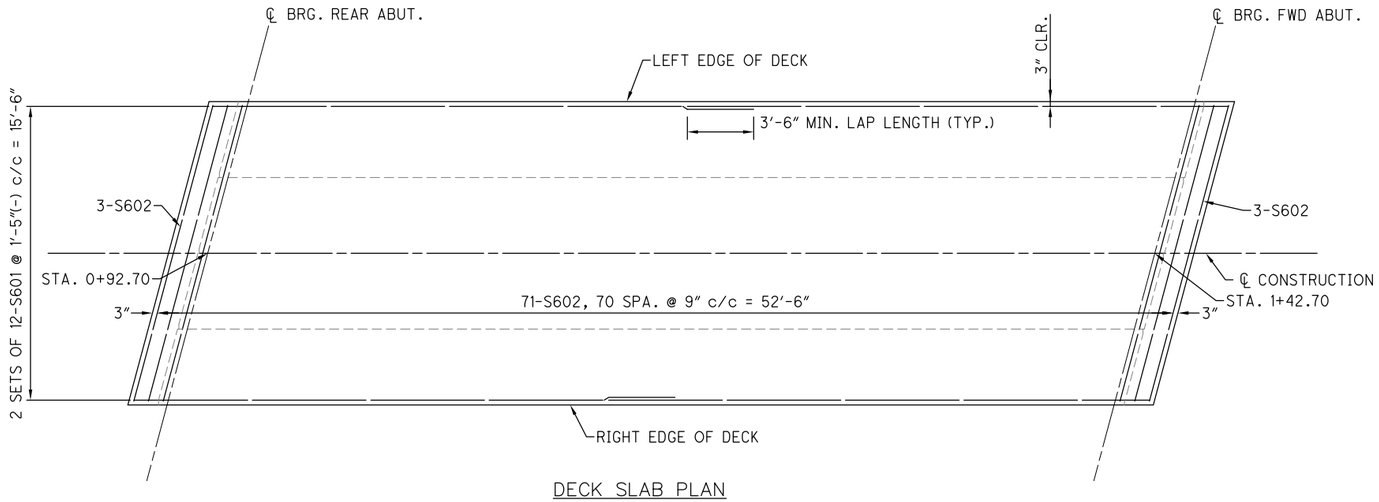
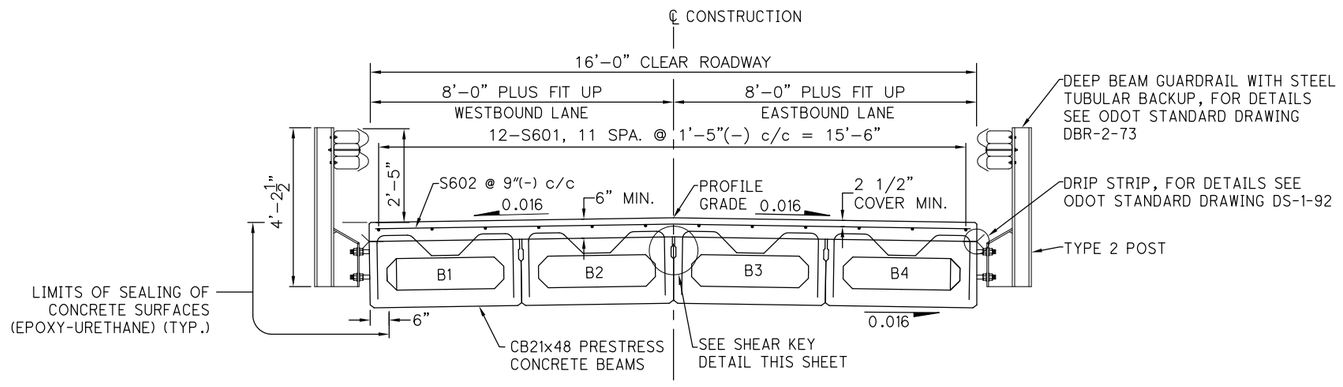
ATH–TR231–1.62
PID No. 117524

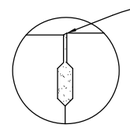


DECK SLAB PLAN

DECK SLAB ELEVATION TABLE							
LOCATION			CL BRG. R.A.	1/4 POINT	MID-SPAN	3/4 POINT	CL BRG. F.A.
LEFT EDGE	8'-0" Lt	STATION	0+94.84	1+07.34	1+19.84	1+32.32	1+44.84
		SCREED EL.	632.56	631.82	631.08	630.32	629.56
		FINAL EL.	632.56	631.81	631.06	630.31	629.56
CENTERLINE	0'-0"	STATION	0+92.70	1+05.20	1+17.70	1+30.20	1+42.70
		SCREED EL.	632.82	632.08	631.34	630.58	629.82
		FINAL EL.	632.82	632.07	631.32	630.57	629.82
RIGHT EDGE	8'-0" Rt	STATION	0+90.56	1+03.06	1+15.56	1+28.06	1+40.56
		SCREED EL.	632.82	632.08	631.34	630.58	629.82
		FINAL EL.	632.82	632.07	631.32	630.57	629.82



TYPICAL TRANSVERSE SECTION



SHEAR KEY DETAIL

NOTES:

1. SCREED ELEVATIONS ARE SHOWN FOR THE DECK SLAB SURFACE PRIOR TO CONCRETE PLACEMENT. ALLOWANCE HAS BEEN MADE FOR ANTICIPATED, CALCULATED DEAD LOAD DEFLECTIONS.
2. FINAL DECK ELEVATIONS SHOWN REPRESENT THE DECK SURFACE LOCATION AFTER ALL ANTICIPATED DEAD LOAD DEFLECTIONS HAVE OCCURRED.
3. REBARS PROJECTING FROM THE BOX BEAM INTO THE COMPOSITE SLAB SHALL BE EPOXY COATED.
4. FIELD BEND TRANSVERSE BARS AS NECESSARY TO FIT THE CROWN.
5. FOR PRESTRESSED BOX BEAM DETAILS, REFER TO STANDARD DRAWING PSBD-2-07.

DESIGN AGENCY
ATHENS COUNTY ENGINEER
16000 Canamville Rd, Athens, Oh 45701

DESIGNED	DRAWN	REVIEWED	DATE
DES	DES		
CHECKED	REVISED	STRUCTURE FILE NUMBER	
RJM		0545431	

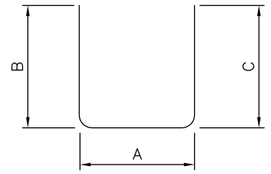
SUPERSTRUCTURE DETAILS

BRIDGE NO. ATH-TR231-1.62
OVER TRIBUTARY TO SHARPS RUN

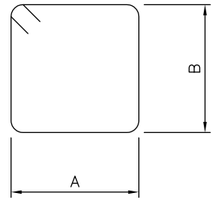
ATH-TR231-1.62
PID No. 117524

ABUTMENTS												
MARK	REAR QTY.	FWD QTY.	TOTAL QTY.	LENGTH	WEIGHT	TYPE	DIM. A	DIM. B	DIM. C	DIM. D	SERIES INC.	COMMENTS
A501	40	73	113	16 ft 11 in	1,994	2	5'-6"	2'-7"				
A502	6		6	28 ft 0 in	176	ST						
A503	18		18	11 ft 8 in	220	ST						
A504	42		42	11 ft 11 in	523	1	2'-8"	4'-9"	4'-9"			
A505	30		30	12 ft 5 in	389	1	2'-8"	3'-0"	3'-0"			
A506	4		4	26 ft 6 in	111	ST						
A507	6		6	4 ft 6 in	29	ST						FIELD CUT AS NECESSARY
A508	6		6	5 ft 4 in	34	ST						FIELD CUT AS NECESSARY
A509	18		18	10 ft 11 in	205	1	1'-8"	4'-9"	4'-9"			
A510	9		9	7 ft 5 in	70	1	1'-8"	3'-0"	3'-0"			
A511	8		8	1 ft 8 in	14	ST						
A512		16	16	29 ft 6 in	493	ST						
A513		66	66	15 ft 1 in	1,039	1	2'-8"	6'-4"	6'-4"			
A514		15	15	10 ft 11 in	171	1	2'-8"	4'-3"	4'-3"			
A515		8	8	6 ft 8 in	56	ST						FIELD CUT AS NECESSARY
A516		4	4	7 ft 5 in	31	3	3'-4"	3'-9"	153			FIELD CUT AS NECESSARY
A517	18		18	6 ft 0 in	113	3	3'-0"	3'-0"	105			
A801	4		4	28 ft 0 in	300	ST						
A802	4		4	11 ft 8 in	125	ST						
A803		8	8	29 ft 6 in	631	ST						
A804	4		4	26 ft 6 in	284	ST						
A805	4		4	10 ft 0 in	107	3	5'-0"	5'-0"	105			
SUBTOTAL--ABUTMENTS =					7,115							

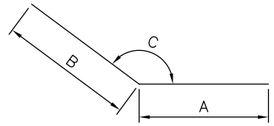
SUPERSTRUCTURE											
MARK	TOTAL QTY.	LENGTH	WEIGHT	TYPE	DIM. A	DIM. B	DIM. C	DIM. D	RADIUS DIM. E	SERIES INC.	COMMENTS
S501	36	5 ft 5 in	204	2	1'-2"	1'-4"					INTEGRAL DIAPHRAGM
S502	36	4 ft 7 in	173	1	1'-2"	1'-10"	1'-10"				INTEGRAL DIAPHRAGM
S601	24	28 ft 6 in	1,028	ST							DECK
S602	75	16 ft 1 in	1,812	ST							DECK
SUBTOTAL--SUPERSTRUCTURE =			3,217								
SUBTOTAL--ABUTMENTS =			7,115								
TOTAL QTY. REINFORCING STEEL =			10,332								



TYPE 1



TYPE 2



TYPE 3

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, S501 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. ALL REINFORCING STEEL CLEARANCES ARE 2" UNLESS OTHERWISE NOTED.
7. IF BARS ARE FIELD CUT, REPAIR ALL DAMAGE TO EPOXY COATING ACCORDING TO C&MS 709.00.

DESIGN AGENCY
ATHENS COUNTY ENGINEER
16000 Canamville Rd, Athens, Oh 45701

REVIEWED DATE
STRUCTURE FILE NUMBER 0545431

DRAWN DES
REVISED

DESIGNED DES
CHECKED RJM

REINFORCING STEEL LIST

BRIDGE NO. ATH-TR231-1.62
OVER TRIBUTARY TO SHARPS RUN

ATH-TR231-1.62
PID No. 117524

LEGEND – BORING LOG TERMINOLOGY

Explanation of each column, progressing from left to right

1. Depth (in feet) – refers to distance below the ground surface.

2. Elevation (in feet) – is referenced to mean sea level, unless otherwise noted.

3. Standard Penetration (N) – the number of blows required to drive a 2-inch O.D., 1-3/8 inch I.D., split-barrel sampler, using a 140-pound hammer with a 30-inch free fall. The blows are recorded in 6-inch drive increments. Standard penetration resistance is determined from the total number of blows required for one foot of penetration by summing the second and third 6-inch increments of an 18-inch drive.

   50/n – indicates number of blows (50) to drive a split-barrel sampler a certain number of inches (n) other than the normal 6-inch increment.

4. The length of the sampler drive is indicated graphically by horizontal lines across the "Standard Penetration" and "Recovery" columns.

5. Sample recovery from each drive is indicated numerically in the column headed "Recovery".

6. The drive sample location is designated by the heavy vertical bar in the "Sample No., Drive" column.

7. The length of hydraulically pressed "Undisturbed" samples is indicated graphically by horizontal lines across the "Press" column.

8. Sample numbers are designated consecutively, increasing in depth.

9. Soil Description

   a. The following terms are used to describe the relative compactness and consistency of soils:

   Granular Soils – Compactness

Term	Blows/Foot Standard Penetration
Very Loose	less than 5
Loose	5 – 10
Medium Dense	11 – 30
Dense	31 – 50
Very Dense	over 50

   Cohesive Soils – Consistency

Term	Unconfined Compression tons/sq.ft.	Blows/Foot Standard Penetration	Hand Manipulation
Very Soft	less than 0.25	less than 2	Easily penetrated 2-in. by fist
Soft	0.25 – 0.50	2 – 4	Easily penetrated 2-in. by thumb
Medium Stiff	0.50 – 1.0	5 – 8	Penetrated by thumb with moderate effort
Stiff	1.0 – 2.0	9 – 15	Readily indented by thumb but not penetrated
Very Stiff	2.0 – 4.0	16 – 30	Readily indented by thumbnail
Hard	over 4.0	over 30	Indented with difficulty by thumbnail

   b. Color – If a soil is a uniform color throughout, the term is single, modified by such adjective as light and dark. If the predominant color is shaded by a secondary color, the secondary color precedes the primary color. If two major and distinct colors are swirled throughout the soil, the colors are modified by the term "mottled".

   c. Texture is based on the Ohio Department of Transportation Classification System. Soil particle size definitions are as follows:

Description		Size	Description		Size
Boulders		Larger than 12"	Sand	– Coarse	2.0 mm to 0.42 mm
Cobbles		12" to 3"		– Fine	0.42 mm to 0.074 mm
Gravel	– Coarse	3" to ¾"	Silt		0.074 mm to 0.005 mm
	– Fine	¾" to 2.0 mm	Clay		smaller than 0.005 mm

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   d. The main soil component is listed first. The minor components are listed in order of decreasing percentage of particle size.

   e. Modifiers to main soil descriptions are indicated as a percentage by weight of particle sizes.

trace	0 to 10%
little	10 to 20%
some	20 to 35%
"and"	35 to 50%

   f. Moisture content of **cohesionless soils** (sands and gravels) is described as follows:

Term	Relative Moisture or Appearance
Dry	Soil leaves no moisture when pressed between fingers
Damp	Soil leaves very little moisture when pressed between fingers.
Moist	Soil leaves small amount of moisture when pressed between fingers.
Wet	The pore space is filled with water and water can be poured from sample with ease.

   g. The moisture content of **cohesive soils** (silts and clays) is expressed relative to plastic properties.

Term	Relative Moisture or Appearance
Dry	Brittle to powdery; Moisture content well below plastic limit
Damp	Moisture content below plastic limit
Moist	Moisture content above plastic limit to -3% liquid limit
Wet	Moisture content near or above liquid limit

10. Rock Hardness and Rock Quality Designation

   a. The following terms are used to describe the relative strength of the **bedrock**.

Term	Description
Very Weak	Core can be carved with a knife and scratched by fingernail. Can be excavated readily with a point of a pick. Pieces 1-inch or more in thickness can be broken by finger pressure.
Weak	Core can be grooved or gouged readily by a knife or pick. Can be excavated in small fragments by moderate blows of a pick point. Small, thin pieces can be broken by finger pressure.
Slightly Strong	Core can be grooved or gouged 0.05 inch deep by firm pressure of a knife or pick point. Can be excavated in small chips to pieces about 1-inch maximum size by hard blows of the point of a geologist's pick.
Moderately Strong	Core can be scratched with a knife or pick. Grooves or gouges to ¼" deep can be excavated by hand blows of a geologist's pick. Requires moderate hammer blows to detach hand specimen.
Strong	Core can be scratched with a knife or pick only with difficulty. Requires hard hammer blows to detach hand specimen. Sharp and resistant edges are present on hand specimen.
Very Strong	Core cannot be scratched by a knife or sharp pick. Breaking of hand specimens requires hard repeated blows of the geologist hammer.
Extremely Strong	Core cannot be scratched by a knife or sharp pick. Chipping of hand specimens requires hard repeated blows of the geologist hammer.

   b. Rock Quality Designation, RQD – This value is expressed in percent and is an indirect measure of rock soundness. It is obtained by summing the total length of all core pieces which are at least four inches long, and then dividing this sum by the total length of the core run.

11. Gradation – when tests are performed, the percentage of each particle size is listed in the appropriate column (defined in Item 9c).

12. When a test is performed to determine the natural moisture content, liquid limit moisture content, or plastic limit moisture content, the moisture content is indicated in tabular form.

13. The corrected standard penetration (N_{60}) value in blows per foot is indicated in tabular form.

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DESIGN AGENCY
ATHENS COUNTY ENGINEER
16000 Canamville Rd, Athens, Oh 45701

DESIGNED	DRAWN	REVIEWED	DATE
DES	DES		
CHECKED	REVISED	STRUCTURE FILE NUMBER	
RJM		0545431	

SOIL PROFILES
BRIDGE NO. ATH-TR231-1.62
OVER TRIBUTARY TO SHARPS RUN

ATH-TR231-1.62
PID No. 117524

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 3/3/23 10:46 - X:\PROJECTS\2022\2221302800 ATHENS COUNTY TR 202_DISCIPLINE\FILES\GEOTECH\2221302800 ATH-TR231-

PROJECT: ATH-TR 231-01.62 | DRILLING FIRM / OPERATOR: DLZ / TZ | DRILL RIG: "22 CME 750-492-498 | STATION / OFFSET: 0+91, 7' RT. | EXPLORATION ID B-001-0-22
TYPE: BRIDGE | SAMPLING FIRM / LOGGER: DLZ / AM | HAMMER: CME AUTOMATIC | ALIGNMENT: TR 231
PID: SFN: | DRILLING METHOD: 3.25" HSA / NQ2 | CALIBRATION DATE: 6/15/22 | ELEVATION: 632.5 (MSL) EOB: 19.0 ft. | PAGE 1 OF 1
START: 12/19/22 END: 12/19/22 | SAMPLING METHOD: SPT / NQ2 | ENERGY RATIO (%): 79.3 | COORD: Not Recorded

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	ABAN-DONED
GRAVEL BASE - 3"	632.5																	
Medium dense brown GRAVEL WITH SAND (A-1-b); damp.	632.3 / 631.0		18 9 9	24	56	SS-1	-	50	18	12	13	7	21	16	5	6	A-1-b (0)	
Very stiff brown SILTY CLAY (A-6b), some sand, little gravel; damp.			5 4 4	11	39	SS-2	2.50	-	-	-	-	-	-	-	-	18	A-6b (V)	
	628.5	TR	5 9 50/1"	-	92	SS-3	2.25	-	-	-	-	-	-	-	-	8	A-6b (V)	
SANDSTONE, brown, weathered.	627.5		50/4"	-	75	SS-4	-	-	-	-	-	-	-	-	-	7	Rock (V)	
SANDSTONE, brown and reddish brown, highly to moderately weathered, very weak, fine to coarse, thick to very thick bedded, heavy iron oxide staining			94		94	NQ2-1											CORE	
@ 9.7' - 10.9', SDI = 90.1%			98		98	NQ2-2											CORE	
			88		88	NQ2-3											CORE	
@ 18.7' - 19.0'; gray, slightly weathered.	613.5	EOB																

NOTES: SEEPAGE: NONE / WATER PRIOR TO CORING: NONE / WATER LEVEL AT COMPLETION 14.8'
ABANDONMENT METHODS, MATERIALS, QUANTITIES: POURED BENTONITE GROUT

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 3/3/23 10:46 - X:\PROJECTS\2022\2221302800 ATHENS COUNTY TR 202_DISCIPLINE\FILES\GEOTECH\2221302800 ATH-TR231-

PROJECT: ATH-TR 231-01.62 | DRILLING FIRM / OPERATOR: DLZ / TZ | DRILL RIG: "22 CME 750-492-498 | STATION / OFFSET: 0+95, 7' LT. | EXPLORATION ID B-002-0-22
TYPE: BRIDGE | SAMPLING FIRM / LOGGER: DLZ / AM | HAMMER: CME AUTOMATIC | ALIGNMENT: TR 231
PID: SFN: | DRILLING METHOD: 3.25" HSA / NQ2 | CALIBRATION DATE: 6/15/22 | ELEVATION: 631.9 (MSL) EOB: 19.0 ft. | PAGE 1 OF 1
START: 12/15/22 END: 12/16/22 | SAMPLING METHOD: SPT / NQ2 | ENERGY RATIO (%): 79.3 | COORD: Not Recorded

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	ABAN-DONED
GRAVEL BASE - 3"	631.9																	
Medium dense brown GRAVEL WITH SAND, SILT, AND CLAY (A-2-6); damp.	631.7 / 629.9		5 6 6	16	72	SS-1	2.50	27	20	19	19	15	31	20	11	19	A-2-6 (0)	
		TR	14 50/5"	-	82	SS-2	-	-	-	-	-	-	-	-	-	9	Rock (V)	
SANDSTONE, brown, weathered.			50/5"	-	0	SS-3	-	-	-	-	-	-	-	-	-	-	Rock (V)	
	626.9		50/4"	-	50	SS-4	-	-	-	-	-	-	-	-	-	-	Rock (V)	
SANDSTONE, brown and reddish brown, heavily to moderately weathered, very weak, fine to coarse, thick to very thick bedded, heavy iron oxide staining			99		99	NQ2-1											CORE	
@ 9.0' - 9.5', Q_u = 651 psi			98		98	NQ2-2											CORE	
@ 16.2' - 19.0'; gray, slightly weathered.			96		96	NQ2-3											CORE	
	612.9	EOB																

NOTES: SEEPAGE: NONE / WATER PRIOR TO CORING: NONE / WATER LEVEL AT COMPLETION 12.7'
ABANDONMENT METHODS, MATERIALS, QUANTITIES: POURED BENTONITE GROUT

PROJECT: ATH-TR 231-01.62	DRILLING FIRM / OPERATOR: DLZ / TZ	DRILL RIG: '22 CME 750-492-498	STATION / OFFSET: 1+47, CL	EXPLORATION ID B-003-0-22
TYPE: BRIDGE	SAMPLING FIRM / LOGGER: DLZ / AM	HAMMER: CME AUTOMATIC	ALIGNMENT: TR 231	
PID: SFN:	DRILLING METHOD: 3.25" HSA / NQ2	CALIBRATION DATE: 6/15/22	ELEVATION: 629.3 (MSL) EOB: 34.5 ft.	PAGE 1 OF 2
START: 12/14/22 END: 12/14/22	SAMPLING METHOD: SPT / NQ2	ENERGY RATIO (%): 79.3	COORD: Not Recorded	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	ABAN-DONED
GRAVEL BASE - 5"	628.9																	
FILL: Stiff to very stiff brown SANDY SILT (A-4a); damp to moist.	626.3		5 6 4	13	33	SS-1	-	-	-	-	-	-	-	-	-	5	A-4a (V)	
			4 6 4	13	39	SS-2	2.00	16	12	17	28	27	29	19	10	14	A-4a (4)	
Hard brown SILT AND CLAY (A-6a); damp.	621.8		2 7 5	16	50	SS-3	4.5+	2	5	9	44	40	37	23	14	17	A-6a (10)	
			7 8 11	25	67	SS-4	4.5+	-	-	-	-	-	-	-	-	13	A-6a (V)	
			5 6 5	15	33	SS-5	4.5+	-	-	-	-	-	-	-	-	12	A-6a (V)	
Stiff brown SILT AND CLAY (A-6a); damp.	618.8		6 5 5	13	39	SS-6	-	3	17	21	31	28	30	19	11	13	A-6a (5)	
			4 5 5	13	33	SS-7	-	-	-	-	-	-	-	-	-	11	A-6a (V)	
Hard brown SANDY SILT (A-4a); damp.	617.7		5 7 25	42	50	SS-8	-	-	-	-	-	-	-	-	-	10	A-4a (V)	
SANDSTONE, brown, weathered, very weak.	615.8	TR	50/5"	-	100	SS-9	-	-	-	-	-	-	-	-	-	-	Rock (V)	
SHALE, gray, highly weathered to moderately weathered, very weak.	605.7		8 41 50/4"	-	50	SS-10	-	-	-	-	-	-	-	-	-	-	Rock (V)	
			22 50/4"	-	50	SS-11	-	-	-	-	-	-	-	-	-	-	Rock (V)	
			24 42 48	119	72	SS-12	-	-	-	-	-	-	-	-	-	-	Rock (V)	
			18 24 17	54	44	SS-13	-	-	-	-	-	-	-	-	-	-	Rock (V)	
			15 6 5	15	33	SS-14	-	-	-	-	-	-	-	-	-	-	Rock (V)	
CLAYSTONE, gray, highly to moderately weathered, slightly strong, very fine, medium **@ 25.1' - 25.6', Q_u = 2,265 psi** **@ 25.6' - 27.0', SDI = 87.7%**	602.1		50/1" 33	-	100/ 67	SS-15 NQ2-1	-	-	-	-	-	-	-	-	-	-	Rock (V) CORE	
SANDSTONE, gray, slightly weathered, weak, fine to coarse, thick to very thick bedded	599.7		58		85	NQ2-2											CORE	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 3/3/23 10:46 - X:\PROJECTS\2022\2222113\02800 ATHENS COUNTY TR 202_DISCIPLINE\FILES\GEOTECH\222113028000 ATH TR231-

PID:	SFN:	PROJECT: ATH-TR 231-01.62	STATION / OFFSET: 1+47, CL	START: 12/14/22	END: 12/14/22	PG 2 OF 2	B-003-0-22

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	ABAN-DONED
SHALE, gray, slightly weathered, weak, very fine, thinly laminated to laminated *(continued)* @ 33.4' - 33.5'; 1 inch clay seam.	594.7	EOB																

NOTES: SEEPAGE: NONE / WATER PRIOR TO CORING: NONE / WATER LEVEL AT COMPLETION 10.3'
ABANDONMENT METHODS, MATERIALS, QUANTITIES: POURED BENTONITE GROUT

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 3/3/23 10:46 - X:\PROJECTS\2022\2222113\02800 ATHENS COUNTY TR 202_DISCIPLINE\FILES\GEOTECH\222113028000 ATH TR231-

3/3	ATH–TR231–1.62 PID No. 117524	SOIL PROFILES BRIDGE NO. ATH-TR231-1.62 OVER TRIBUTARY TO SHARPS RUN	DESIGNED DES CHECKED RJM	DRAWN DES REVISED	REVIEWED DATE STRUCTURE FILE NUMBER 0545431	DESIGN AGENCY ATHENS COUNTY ENGINEER 16000 Canaanville Rd, Athens, Oh 45701