TR 58–2.98

OVER HONEY CREEK
SECTIONS 17 & 20, EDEN TOWNSHIP
SENECA COUNTY, OHIO

LEGEND

○	MANHOLE		RAILROAD SIGNAL
○C.O.	CLEAN OUT		RAILROAD SIGNAL W/LIGHT
◯	SANITARY LIFT STATION		MAIL BOX
—SAN—	SANITARY SEWER		SIGN
	CATCH BASIN		POWER POLE
	CURB INLET		POWER TRANSFORMER
	YARD DRAIN		TELEPHONE POLE
—STM—	STORM SEWER		LIGHT POLE
FH	FIRE HYDRANT		TELEPHONE PEDESTAL
YH	YARD HYDRANT	—E—	OVERHEAD ELECTRIC LINE
WV	WATER VALVE	—UE—	UNDERGROUND ELECTRIC LINE
	WATER METER	—T—	OVERHEAD TELEPHONE LINE
WCV	WATER CURB VALVE	—UT—	UNDERGROUND TELEPHONE LINE
—W—	WATER LINE	—CTV—	OVERHEAD CABLE TV LINE
GV	GAS VALVE	—UCTV—	UNDERGROUND CABLE TV LINE
	GAS MARKER	—FO—	FIBER OPTIC
	GAS METER	—UFO—	UNDERGROUND FIBER OPTIC
—GAS—	GAS LINE	—X—	FENCE LINE
○T.H.	TEST HOLE		GUARDRAIL
			EASEMENT LINE
	DECIDUOUS TREE		PROPERTY LINE
			EDGE OF PAVEMENT
	PINE TREE		LOW WATER MARK
			C/L OF DITCH
			DITCH SLOPE
			BUILDING
			FLOW ARROW

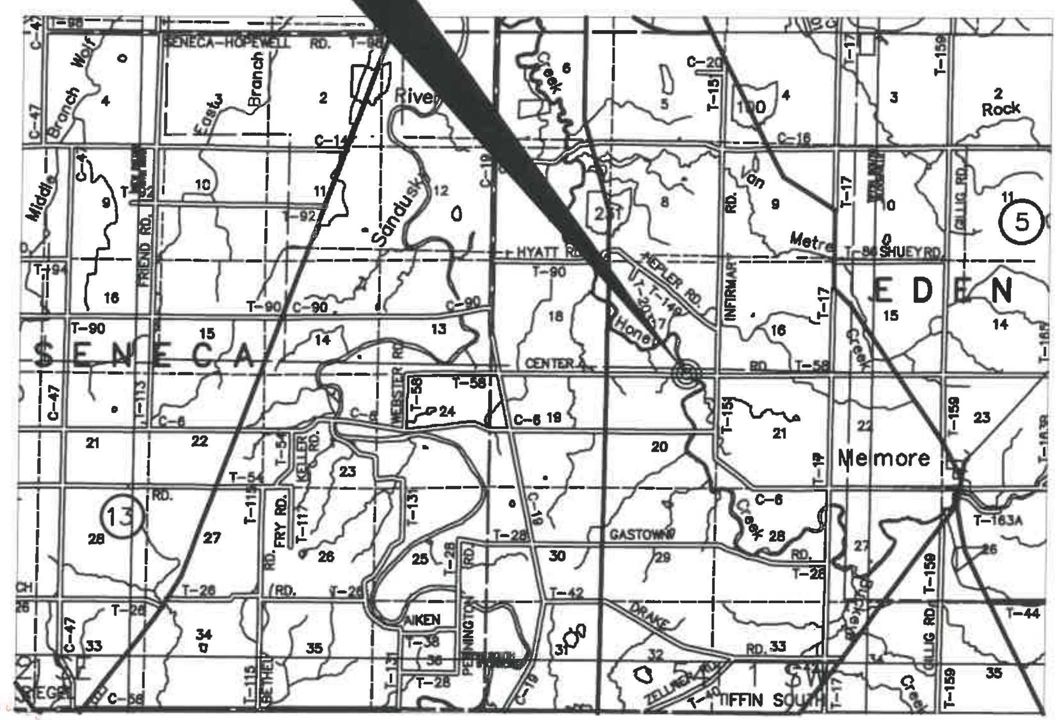
SURVEY MONUMENTS

SET	FOUND	DESCRIPTION
		CONC. MONUMENT
		RAILROAD SPIKE
		NAIL
		IRON ROD
		DRILL HOLE
		STONE
		MONUMENT BOX
		IRON PIPE
		WOOD POST
	(D)	DEED
	(P)	PLAT
	(M)	MEASURED
	(S)	SURVEYED
	(C)	CALCULATED

Project Description:

Replacement and Widening of Existing Warren Style Truss Bridge with Prestressed Box Beams and New Abutments

TR 58–2.98
BRIDGE
REPLACEMENT



VICINITY MAP

NTS

SITE DATA

Latitude: N41°02'11.9"
Longitude: W83°09'23.5"

Township: Eden Secs. 17 & 20

Road ROW: 60.0'
Volume: 1 Page: 82
No Current ADT

Honey Creek
Flow Direction: South to North
Ditch Maintenance: No

Drainage Area = 106,240 Acs.(166 Sq. Miles)

Drainage(cfs)
Q2 = 3,040 cfs
Q10 = 5,370 cfs
Q100 = 8,510 cfs

Bedrock Impact: No

EXISTING STRUCTURE

Type: 93'–0" o/o x 18'–0" Warren Style Truss

Span: 89' ± Clear Span
Roadway: 12'±
Skew: 0°
Date Built: Rehabed in 1984
Condition: Poor
SFN: 7436376

PROPOSED STRUCTURE

Type: 98'–0" o/o x 24' Prestressed Box Beams On New Concrete Abutments

Span: 94'–0" Clear Span
Dim: (6) B42 x 48" x 98'–0" Long Beams

Roadway: 24'±
Skew: 12° RF

STANDARD ODOT DRAWINGS

MGS 2.1	DS-1-92
MGS 4.3	PSBD-2-07
MGS 6.1	PSBDD-2-07
PIS GR 3.6	DBR-2-73

2 WORKING DAYS BEFORE YOU DIG
CALL TOLL FREE 800–362–2764
OHIO UTILITIES PROTECTION SERVICE

Project: EDEN TWP. TR 58–2.98 TITLE SHEET

Revisions:

Seneca County Engineer's Dept.
Mark R. Zimmerman – County Engineer

Drawn By: JAK
Date: 4/28/2023
Approved By: MRZ
DWG File: 2023_BRIDGES\TR58-2.98

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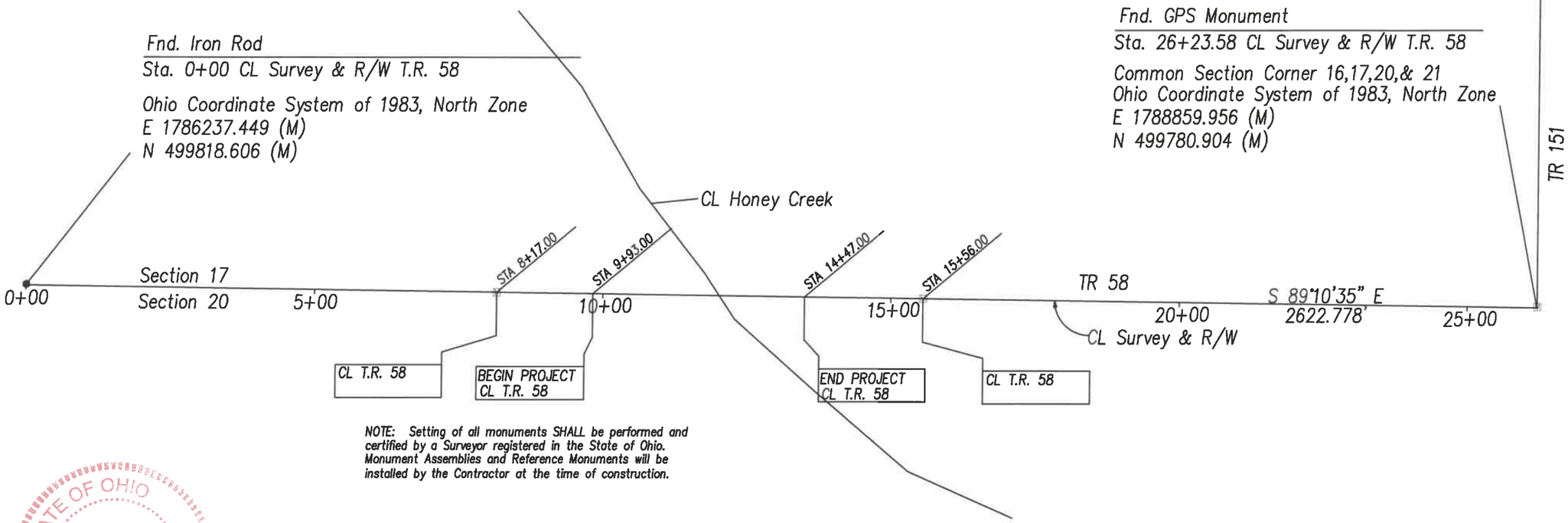
SEN–TR 58–2.98

T–1–N, R–15–E
SECTION 17
EDEN TOWNSHIP
SENECA COUNTY, OHIO

Survey Legend

SET	FOUND	DESCRIPTION
◎	◉	CONC. MONUMENT
⊕	⊕	RAILROAD SPIKE
⊘	◪	NAIL
⬡	●	IRON ROD
⊹	✦	DRILL HOLE
	▲	STONE
Ⓜ	Ⓜ	MONUMENT BOX
	●	IRON PIPE
	■	WOOD POST
	(D)	DEED
	(P)	PLAT
	(M)	MEASURED
	(S)	SURVEYED
	(C)	CALCULATED



NOTE: Setting of all monuments SHALL be performed and certified by a Surveyor registered in the State of Ohio. Monument Assemblies and Reference Monuments will be installed by the Contractor at the time of construction.

STATE OF OHIO
MARK R. ZIMMERMAN
8365
REGISTERED
PROFESSIONAL SURVEYOR

Pro. Mon. Box With Seneca County Engineer's Disk
Sta. 8+17.00 Survey & R/W T.R. 58
Ohio Coordinate System of 1983, (2011) North Zone
N 499806.876 (C)
E 1787054.314 (C)

Pro. Mon. Box With Seneca County Engineer's Disk
Sta. 15+56.00 Survey & R/W T.R. 58
Ohio Coordinate System of 1983, (2011) North Zone
N 499796.239 (C)
E 1787793.281 (C)

BASIS OF BEARINGS AND RIGHT OF WAY
ALL BEARINGS SHOWN ON THESE PLANS ARE ESTABLISHED UNDER NAD83, (2011 ADJ) OHIO STATE PLANE NORTH WITH GPS. BEARINGS ARE ESTABLISHED AS SHOWN.

SURVEYOR SEAL

I HEREBY CERTIFY THIS PLAT IS A TRUE DELINEATION OF A SURVEY MADE AS THE SENECA COUNTY ENGINEEER IN 2023 BY MARK R. ZIMMERMAN PE/PS, SENECA COUNTY ENGINEER THE ESTABLISHMENT OF THE PROPERTY LINES AND EXISTING RIGHT OF WAY LINES SHOWN ON THIS PLAN AS OF THIS DATE WAS PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION.

BY _____
MARK R. ZIMMERMAN PE/PS

SURVEYOR No. 8365 DATE 12/18/24

T–1–N, R–15–E
SECTION 20
EDEN TOWNSHIP
SENECA COUNTY, OHIO

NOTE: THE EXISTING R/W WIDTH AND LOCATION WERE DETERMINED USING DOCUMENTATION ON FILE FROM THE SENECA COUNTY ENGINEERS OFFICE.
TR 58 VOL 1 PAGE 82

RECEIVED _____
RECORDED _____
BOOK _____ PAGE _____
SIGNED _____
SENECA COUNTY RECORDER

Project: TWP. ROAD 58–2.98
ROW Centerline Plat

Revisions:

Seneca County
Engineer's Dept.
Mark R. Zimmerman – County Engineer

Drawn By: MRZ
Dates: 3/10/2023
Approved By: MRZ
DWG Files:

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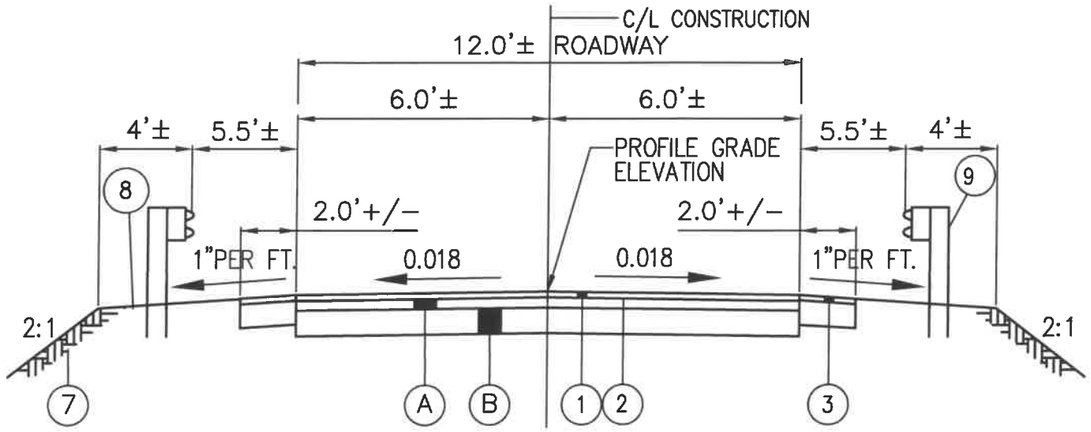
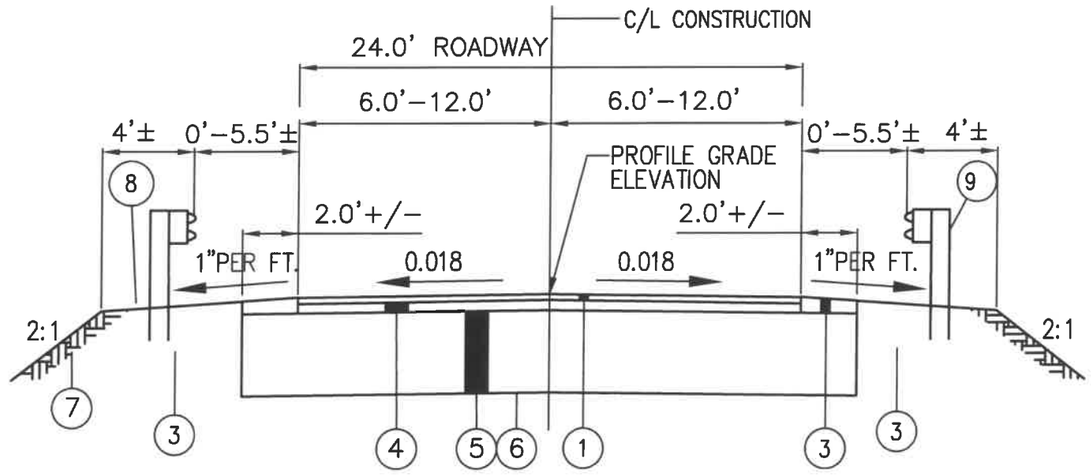


TR 58 TYPICAL SECTION

(STA 8+17 – STA 9+93 AND STA 14+47 – 15+56)



TYPICAL TRANSITION SECTION

(STA 9+93 – STA 14+47)

LEGEND

- (A) EXISTING ASPHALT
- (B) EXISTING STONE BASE
- (C) EXISTING STONE BERM

(1) ITEM 441 1" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG64–22
(2) ITEM 407 TACK COAT, APPLIED AT 0.075 GAL. PER S.Y.
(3) ITEM 411 1 1/4" – 4" STABILIZED CRUSHED AGGREGATE
(4) ITEM 441 2" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG64–22
(5) ITEM 304 12" AGGREGATE BASE (BEYOND ABUT. BACKFILL)
(6) ITEM 204 SUBGRADE COMPACTION
(7) ITEM 203 EMBANKMENT
(8) ITEM 659 SEEDING AND MULCHING
(9) ITEM 606 GUARDRAIL (AS PER PLAN)

NOTES:

1. MAINTAIN 24'–0" ROADWAY WIDTH BETWEEN STATIONS 10+61.12 AND 11+69.12 (4' BEHIND EACH ABUTMENT)
2. TAPER ROADWAY BETWEEN STA 11+48.8 (RW) and 11+25(RW) from 24' to 14.6'
   TAPER ROADWAY BETWEEN STA 12+43.0 (RW) and 12+75(RW) from 24' to 14.8'
   SEE ROADWAY LAYOUT FOR DEATILS ON ROADWAY CONSTRUCTION
3. EXCAVATION ITEM 203 IS FOR (3)
   SUBGRADE COMPACTION ITEM 204 IS FOR (6)
   PAVEMENT REMOVED ITEM 202 IS FOR (1)
4. 304 SHALL BE PLACED IN NEW ROADWAY SECTIONS. PLACE IN 6" LIFTS AND COMPACT WITH VIBRATING ROLLER. EXCAVATE 15" DEEP. (3" AC, 12" 304)
5. EMBANKMENT SHALL MAINTAIN EXISTING CROSS–SECTION. DEPENDING ON CONSTRUCTION METHOD, 80 CUBIC YARDS OF COMPACTED CLAY AND 20 CUBIC YARDS OF TOP SOIL ARE AVAILABLE FOR RESHAPING EMBANKMENT. PAYMENT WILL BE ON ACTUAL QUANTITY USED.

3/20

TR 58–2.98
TYPICAL SECTIONS

Project:

Revisions:

Seneca County
Engineer's Dept.
Mark R. Zimmerman – County Engineer

Drawn By: JAK
Date: 4/28/2023
Approved By: MRZ
DWG File: 2023_BRIDGES\TR58–2.98

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REFERENCE SHALL BE MADE TO THE FOLLOWING STANDARD DRAWINGS:

DS-1-92 (REVISED 7-15-22)
PSBD-2-07 (REVISED 7-20-18)

DESIGN SPECIFICATIONS:

THIS STRUCTURE CONFORMS TO THE "LRFD BRIDGE DESIGN SPECIFICATIONS" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAYS AND TRANSPORTATION OFFICIALS 2007 INCLUDING ALL SUBSEQUENT INTERIM SPECIFICATIONS AND THE ODOT BRIDGE DESIGN MANUAL, 2007.

OPERATIONAL IMPORTANCE: A LOAD MODIFIER OF 1.0 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, 2020.

DESIGN DATA

DESIGN LOADING – HL-93
– 60 PSF FUTURE WEARING SURFACE (FWS)
CONCRETE CLASS QC1 – COMPRESSIVE STRENGTH 4000 PSI (SUBSTRUCTURE)
REINFORCING STEEL – ASTM A615 OR A996
– GRADE 60 WITH MINIMUM YIELD STRESS OF 60 KSI.
– ALL REINFORCING STEEL SHALL BE EPOXY COATED PER MATERIAL SPECIFICATION 709.00
– SPLICES INDICATED FOR GRADE 60 STEEL
CONCRETE CLASS QC2 – COMPRESSIVE STRENGTH 4500 PSI (SUPERSTRUCTURE)
STEEL H PILES – ASTM A572 GRADE 50

CONCRETE FOR PRESTRESSED BEAMS:
COMPRESSIVE STRENGTH (FINAL) = 7.0 KSI
COMPRESSIVE STRENGTH (RELEASE) = 5.0 KSI
PRESTRESSING STRAND:
AREA = 0.167 IN ^{2}
UNTIMATE STRENGTH = 270 KSI
INITIAL STRESS = 202.5 KSI (LOW RELAXATION STRANDS)

ITEM 515 PRESTRESSED CONCRETE BEAMS INCLUDES TIE RODS AND ALL OTHER NECESSARY ITEMS THAT ARE NOT SPECIFICALLY BID.

ITEM 517 RAILING INCLUDES ALL POSTS AND NECESSARY HARDWARE TO INSTALL RAILING TO BRIDGE TERMINAL ASSEMBLY

PILES DRIVEN TO REFUSAL

PILE DESIGN LOADS (ULTIMATE BEARING VALUE):
THE ULTIMATE BEARING VALUE IS 240 KIPS PER PILE FOR THE ABUTMENT PILES.
ABUTMENT PILES SHALL INCLUDE COST FOR PILE POINTS
19 PILES 25 FEET LONG, ORDER LENGTH. ADDITIONAL DRIVING WILL BE AT UNIT PRICE QUOTED
CONTRACTOR SHALL CERTIFY BLOW COUNTS TO REACH PILE CAPACITY BASED UPON THEIR HAMMER

ASPHALT CONCRETE WEARING SURFACE

IS ASSUMED, FOR DESIGN PURPOSES, TO BE 3 INCH THICK.

BEARING PAD SHIMS:

PLACE 1/8" THICK PREFORMED BEARING PAD SHIMS, PLAN AREA 8 INCHES BY 12 INCHES, UNDER THE ELASTOMERIC BEARING PADS WHERE REQUIRED FOR PROPER BEARING. FURNISH FOUR SHIMS PER BEAM. THE DEPARTMENT WILL MEASURE THIS ITEM BY THE TOTAL NUMBER SUPPLIED. THE DEPARTMENT WILL PAY FOR ACCEPTED QUANTITIES AT THE CONTRACT PRICE FOR ITEM 516 – 1/8" PREFORMED BEARING PADS. ANY UNUSED SHIMS WILL BECOME THE PROPERTY OF THE COUNTY.

DECK PROTECTION METHOD:

TYPE 3 WATERPROOFING, ASPHALT
DECK, SEALING OF CONCRETE SURFACES (EPOXY-URETHANE, EXTERIOR BEAMS ONLY)
AND STAINLESS STEEL DRIP STRIP.

REMOVAL OF EXISTING STRUCTURE: WHEN NO LONGER NEEDED TO MAINTAIN TRAFFIC, THE EXISTING STRUCTURE SHALL BE REMOVED UPON RECEIVING PERMISSION FROM THE ENGINEER. EXISTING ABUTMENTS SHALL BE REMOVED AS DIRECTED BY THE SENECA COUNTY ENGINEER. THIS WORK WILL BE PAID FOR UNDER ITEM 202 "STRUCTURE REMOVED, OVER 20 FOOT SPAN". THIS ITEM SHALL ALSO INCLUDE REMOVAL OF WEARING SURFACE.
NOTE: ASPHALT SHALL BE REMOVED BY EXCAVATION. ASPHALT MILLING MACHINE IS NOT RECOMMENDED DUE TO STRUCTURAL CONCERNS.

EARTHWORK

IF UNSUITABLE FOUNDATION SOILS ARE ENCOUNTERED IN THE AREAS OF THE PROPOSED ROADBED, THEY SHALL BE REMOVED AND REPLACED WITH SUITABLE MATERIAL MEETING THE REQUIREMENTS OF 203.03. THE LOCATIONS AND DIMENSIONS WILL BE DETERMINED BY THE ENGINEER.

THE FOLLOWING CONTINGENCY QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY TO BE USED AS DIRECTED BY THE ENGINEER:

ITEM 203, 25 CU. YDS. EMBANKMENT, AS PER PLAN
ITEM 203, 25 CU. YDS. EXCAVATION

STRUCTURE ESTIMATED QUANTITIES

CALCULATED JAK DATED 2/23
CHECKED MRZ DATED 2/23

ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	SUPER.	ABUTS.	GEN'L	SEE SHEET
103	06000		LUMP	PREMIUM FOR CONTRACT PERFORMANCE, PAYMENT, AND MAINTENACE BOND				
202	11002		LUMP	STRUCTURE REMOVED, OVER 20 FOOT SPAN				
202	23500	160	SQ YD	WEARING COURSE REMOVED (OVER BRIDGE)				
503	11100		LUMP	COFFERDAMS AND EXCAVATION BRACING				
503	21100		LUMP	UNCLASSIFIED EXCAVATION (AS PER PLAN)				
505	11100		LUMP	PILE DRIVING EQUIPMENT MOBILIZATION				
507	00100	475	FT	STEEL PILES WITH PILE POINTS HP 10 X 42, FURNISHED 19@ 25'ea				
507	00150	323	FT	STEEL PILES HP 10 X 42, DRIVEN				
509	10000	16841	POUND	EPOXY COATED REINFORCING STEEL				
510	10001	12	EACH	DOWEL HOLES W/ NON-METALIC NON-SHRINK GROUT (AS PER PLAN)				
511	43510	237	CU YD	CLASS QC1 CONCRETE , ABUTMENT INCLUDING FOOTING				
512	33010	261	SQ YD	TYPE 3 WATERPROOFING				
515	12070	6	EACH	PS CONCRETE NON-COMPOSITE BOX BEAM BRIDGE MEMBERS, LEVEL 1, B42-48-98'				
516	13600	230	SQ FT	1" PREFORMED EXPANSION JOINT FILLER				
516	41100	24	EACH	1/8" PREFORMED BEARING PAD SHIMS				
516	43200	24	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES ONLY (NEOPRENE), 2"x8"x12" (AS PER PLAN)				
517	72300	213.5	FT	RAILING (DEEP BEAM RAIL WITH TUBULAR BACKUP) (AS PER PLAN)				
518	21200	82	CU YD	POROUS BACKFILL WITH FILTER FABRIC				
837	10000	84	FT	3" SCH35 Weep Hole Pipe 28@ 3'				
601	34200	110	CU YD	ROCK CHANNEL PROTECTION, TYPE C WITH FILTER				
SS846	00111	20	CU FT	POLYMER MODIFIED ASPHALT JOINT 2@ 14"x4"x24'				
SPECIAL	51822300	196	FT	STAINLESS STEEL DRIP STRIP				

EMBANKMENT CONSTRUCTION:

ALL FILL MATERIAL FOR THE CONSTRUCTION OF THE APPROACH EMBANKMENT AND FOR FILLING THE VOID CREATED BY THE REMOVAL OF THE EXISTING ABUTMENT, AND UNDER THE ROADWAY SHALL BE 304.02 MATERIAL AND PLACED IN ACCORDANCE WITH 304.04. EMBANKMENT BEYOND ROADWAY LIMITS SHALL CONSIST OF SUITABLE CLAY SOIL IF NECESSARY.

ITEM 503, UNCLASSIFIED EXCAVATION, AS PER PLAN:

UNCLASSIFIED EXCAVATION SHALL BE IN ACCORDANCE WITH 503 EXCEPT THAT THE BACKFILL MATERIAL BEHIND THE ABUTMENTS SHALL BE 304.02 MATERIAL PLACED IN ACCORDANCE WITH 304.04. THIS ITEM ALSO INCLUDES REMOVAL OF ROADWAY ASPHALT AND BASE TO ONE FOOT BELOW EXISTING SURFACE. PLACEMENT OF FILL SHALL BE IN ACCORDANCE WITH THE TYPICAL SECTION. THIS ITEM SHALL INCLUDE ALL UNCLASSIFIED EXCAVATION FOR BOTH THE STRUCTURE AND ROADWAY.

REMOVAL OVER WATER:

REASONABLE CARE SHALL BE USED BY THE CONTRACTOR TO PREVENT REMOVED MATERIALS FROM FALLING INTO THE WATER. ANY DROPPED MATERIALS SHALL BE IMMEDIATELY RECOVERED AND DISPOSED OF AWAY FROM THE SITE EXCEPT FOR APPROVED MASONRY MATERIAL WHICH MAY BE USED AS BANK PROTECTION AS DIRECTED BY THE ENGINEER. THIS WORK WILL BE PAID FOR UNDER ITEM 202 "STRUCTURE REMOVED, OVER 20 FOOT SPAN". REFER TO 104.04 OF THE O.D.O.T. C.M.S. FOR ADDITIONAL REQUIREMENTS.

4/20

TR 58-2.98
BRIDGE NOTES AND QUANTITIES

Project:

Revisions:

Seneca County
Engineer's Dept.
Mark R. Zimmerman – County Engineer

Drawn By: JAK
Date: 4/28/2023
Approved By: MRZ
DWG. File: 2023_BRIDGES\TR58-2.98

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ROUNDING:
THE ROUNDING AT THE SLOPE BREAKPOINTS SHOWN ON THE TYPICAL SECTION APPLIES TO ALL CROSS-SECTIONS EVEN THOUGH OTHERWISE SHOWN.

UTILITIES:
LISTED BELOW ARE ALL THE UTILITIES WITHIN THE PROJECT CONSTRUCTION LIMITS TOGETHER WITH THEIR RESPECTIVE OWNERS:
OUPS # A234900980-00A
American Electric Power 419-443-4609
North Central Electric 419-426-3072
AT&T 419-245-5588

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

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

CONSTRUCTION LIMITS
THE CONSTRUCTION LIMITS SHOWN ON THESE PLANS ARE FOR PHYSICAL CONSTRUCTION ONLY. THE INSTALLATION AND OPERATION OF ALL TEMPORARY TRAFFIC CONTROL AND TEMPORARY TRAFFIC CONTROL DEVICES REQUIRED BY THESE PLANS SHALL BE PROVIDED BY THE CONTRACTOR WHETHER INSIDE OR OUTSIDE THESE CONSTRUCTION LIMITS.

ITEM 203 - EMBANKMENT, AS PER PLAN
ALL FILL MATERIAL FOR CONSTRUCTION OF THE APPROACH EMBANKMENT SHALL BE PLACED IN 6 INCH LIFTS.

FARM DRAINS
ALL FARM DRAINS WHICH ARE ENCOUNTERED DURING CONSTRUCTION SHALL BE PROVIDED WITH UNOBSTRUCTED OUTLETS. EXISTING COLLECTORS WHICH ARE LOCATED BELOW THE ROADWAY DITCH ELEVATIONS AND WHICH CROSS THE ROADWAY SHALL BE REPLACED WITHIN THE CONSTRUCTION LIMITS BY ITEM 603 CONDUIT, TYPE B ONE COMMERCIAL SIZE LARGER THAN THE EXISTING CONDUIT.

EXISTING COLLECTORS AND ISOLATED FARM DRAINS WHICH ARE ENCOUNTERED DURING CONSTRUCTION ABOVE THE ELEVATION OF ROADWAY DITCHES SHALL BE OUTLETTED INTO THE ROADWAY DITCH BY ITEM 603, TYPE F CONDUIT. THE OPTIMUM OUTLET ELEVATION SHALL BE ONE (1) FOOT ABOVE THE FLOWLINE ELEVATION OF THE DITCH. LATERAL FIELD TILES WHICH CROSS THE ROADWAY SHALL BE INTERCEPTED BY ITEM 603, TYPE E CONDUIT AND CARRIED IN A LONGITUDINAL DIRECTION TO AN ADEQUATE OUTLET OR ROADWAY CROSSING

THE LOCATION, TYPE, SIZE, AND GRADE OF REPLACEMENTS SHALL BE DETERMINED BY THE ENGINEER AND PAYMENT SHALL BE MADE IN FINAL MEASUREMENTS.

EROSION CONTROL PADS AND ANIMAL GUARDS SHALL BE PROVIDED AT THE OUTLET END OF ALL FARM DRAINS AS PER STANDARD CONSTRUCTION DRAWING DM-1.1, EXCEPT WHEN THEY OUTLET INTO A DRAINAGE STRUCTURE. PAYMENT FOR THE EROSION CONTROL PADS AND ANIMAL GUARDS AND ANY NECESSARY BENDS OR BRANCHES SHALL BE INCLUDED FOR PAYMENT IN THE PERTINENT CONDUIT ITEM.

TREE REMOVAL
ANY UNAVOIDABLE TREE REMOVAL SHALL TAKE PLACE BETWEEN OCTOBER 1 AND MARCH 31 TO AVOID DIRECT IMPACTS TO THE INDIANA BAT.

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.

DUST CONTROL
THE CONTRACTOR SHALL FURNISH AND APPLY WATER FOR DUST CONTROL AS DIRECTED BY THE ENGINEER. THE FOLLOWING CONTINGENCY QUANTITY HAS BEEN INCLUDED FOR DUST CONTROL PURPOSES:

EROSION CONTROL

ITEM 601 IS PROVIDED IN THE PLANS FOR EROSION CONTROL. ROCK OF A STABLE NATURE SHALL NOT BE REMOVED IN ORDER TO PLACE ANY OF THESE ITEMS. THE ENGINEER SHALL CHECK AND NON-PERFORM QUANTITIES OR ADJUST LOCATIONS AND QUANTITIES OF THESE ITEMS WHERE INDICATED BY FIELD CONDITIONS DURING CONSTRUCTION. IN ADDITION, THESE ITEMS SHALL MEET THE REQUIREMENT OF 108.04.

CLEARING AND GRUBBING
ALL TREES AND STUMPS SPECIFICALLY MARKED FOR REMOVAL WITHIN THE CONSTRUCTION LIMITS SHALL BE REMOVED UNDER THE LUMP SUM BID OF ITEM 201, CLEARING AND GRUBBING. THE FOLLOWING IS AN APPROXIMATE ESTIMATE OF THE NUMBER OF TREES AND STUMPS TO BE REMOVED. TREES\BRUSH <12" DBH SHALL BE INCLUDED IN STRUCTURE REMOVED ITEM. THIS ITEM IS IF AUTHORIZED ONLY. IF NO TREES >12" DBH ARE REMOVED, THIS ITEM SHALL NOT BE CONSIDERED.

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.

STRIPING
STRIPING ON THIS PROJECT IS NOT NEEDED.

PROJECT CONSTRUCTION / COMPLETION DATE
TWO-WAY TRAFFIC SHALL BE MAINTAINED AT ALL TIMES, EXCEPT FOR A PERIOD NOT TO EXCEED A TOTAL OF 90 CONSECUTIVE CALENDAR DAYS.

ACCESS TO ADJACENT PROPERTIES AND FIELD DRIVES AFFECTED BY ANY OF THE CONSTRUCTION OPERATIONS SHALL BE MAINTAINED AT ALL TIMES UNLESS PERMISSION TO CLOSE THE FACILITY IS OBTAINED FROM THE OWNERS AND THE ENGINEER.

LIQUIDATED DAMAGES SHALL BE ASSESSED IN ACCORDANCE WITH 108.07 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS FOR EACH CALENDAR DAY THAT THE PROJECT COMPLETION DATE IS NOT MET.

TEMPORARY PAVEMENT MARKINGS (Tape Chips) MUST BE IN PLACE PRIOR TO OPENING THE ROAD TO TRAFFIC. THE CONTRACTOR SHALL NOTIFY THE SENECA COUNTY ENGINEER AT LEAST FOURTEEN (14) CALENDAR DAYS PRIOR TO THE ANTICIPATED BEGINNING OF PROJECT DATE IN ORDER TO INFORM THE PUBLIC.

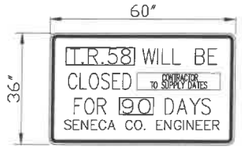
PAYMENT FOR ANY ADDITIONAL SIGNS AND/OR BARRICADES REQUIRED TO PROVIDE CLARITY TO THE TRAFFIC CONTROL SCHEMES SET FORTH IN THE PLANS OR THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, OR PAYMENT FOR ANY SIGNS AND/OR BARRICADES WHICH REQUIRE RELOCATION TO PROVIDE CLARITY AS DIRECTED BY THE ENGINEER, SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 614, "MAINTAINING TRAFFIC".

ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH 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 614, MAINTAINING TRAFFIC, UNLESS SEPARATELY ITEMIZED IN THE PLAN.

ELEVATION DATUM ALL ELEVATIONS ARE BASED ON N.G.V.D. 29 DATUM.

ITEM 614 - MAINTAINING TRAFFIC
NOTICE OF CLOSURE SIGNS, AS DETAILED IN THESE PLANS, SHALL BE ERECTED BY THE CONTRACTOR AT LEAST 14 DAYS IN ADVANCE OF THE SCHEDULED ROAD CLOSURE. THE SIGNS SHALL BE ERECTED ON THE RIGHT HAND SIDE OF THE ROAD 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 THE POINT OF CLOSURE.

THE CONTRACTOR SHALL PROVIDE, ERECT AND MAINTAIN STANDARD 48" X 30" "ROAD CLOSED" SIGNS, SIGN SUPPORTS, BARRICADES, GATES, AND LIGHTS, AS DETAILED IN STANDARD CONSTRUCTION DRAWING MT-101.60 AT THE FOLLOWING LOCATIONS DURING PERIODS IN WHICH THE AFFECTED ROADS ARE CLOSED TO TRAFFIC:



OC-60B
NOTICE OF CLOSURE SIGN

LOCATIONS:
TOWNSHIP ROAD 58 JUST WEST OF TR 151
TOWNSHIP ROAD 58 JUST EAST OF SR 231

ROADWAY ESTIMATED QUANTITIES

CALCULATED JAK DATED _____
CHECKED MRZ DATED _____

ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	SUPER.	ABUTS.	GEN'L	SEE SHEET
201	11000		LUMP	CLEARING AND GRUBBING				
202	23000	570	SQ YDS	PAVEMENT REMOVED				
202	38000	183	FT	GUARDRAIL REMOVED				
203	10000	SEE NOTE	CU YD	UNCLASSIFIED EXCAVATION NOTE: This Item is included in STRUCTURES ITEM 503				
203	10001	284	CU YD	EXCAVATION (See Sheets 6&7)				
203	20001	81	CU YD	EMBANKMENT (AS PER PLAN)				
204	10000	270	SQ YD	SUBGRADE COMPACTION				
304	20000	200	CU YD	AGGREGATE BASE (SEE TYPICAL SECTION)				
407	10000	20	GAL	TACK COAT				
411	10000	10	CU YD	STABILIZED CRUSHED AGGREGATE (BERM)				
441	46050	47	CU YD	2" ASPHALT CONCRETE INTERMEDIATE COURSE T2, PG64-22				
441	47020	24	CU YD	1" ASPHALT CONCRETE SURFACE COURSE T1, PG64-22				
606	15050	200	FT	GUARDRAIL, TYPE MGS				
606	26050	4	EACH	GUARDRAIL ANCHOR ASSEMBLY, MGS TYPE B				
606	35140	4	EACH	BRIDGE END TERMINAL ASSEMBLY, TYPE 4				
614	11000		LUMP	MAINTENANCE OF TRAFFIC				
619	16010	3	MONTH	FIELD OFFICE, TYPE B (IF AUTHORIZED)				
623	10000		LUMP	CONSTRUCTION LAYOUT STAKES AND SURVEYING				
604	40520	2	EACH	ROW MONUMENT (IF AUTHORIZED)				
624	10000	1	LUMP	MOBILIZATION				
626	00100	18	EA	BARRIER REFLECTORS, TYPE A2				
659	00300	20	CU YD	TOPSOIL (3")				
659	10000	1000	SQ YD	SEEDING AND MULCHING				
659	35000	2	MG	WATER				
670	00700	300	SQ FT	DITCH EROSION PROTECTION				
832	15000		LUMP	STORMWATER POLLUTION PREVENTION PLAN (IF AUTHORIZED)				
832	30000	5000	EACH	EROSION CONTROL				

5/12

TR 58-2.98
NOTES AND QUANTITIES

Project:

Revisions:

Seneca County
Engineer's Dept.
Mark R. Zimmerman - County Engineer

Drawn By: JAK
Date: 4/28/2023
Approved By: MRZ
DWG File: 2023_BRIDGES\TR58-2.98

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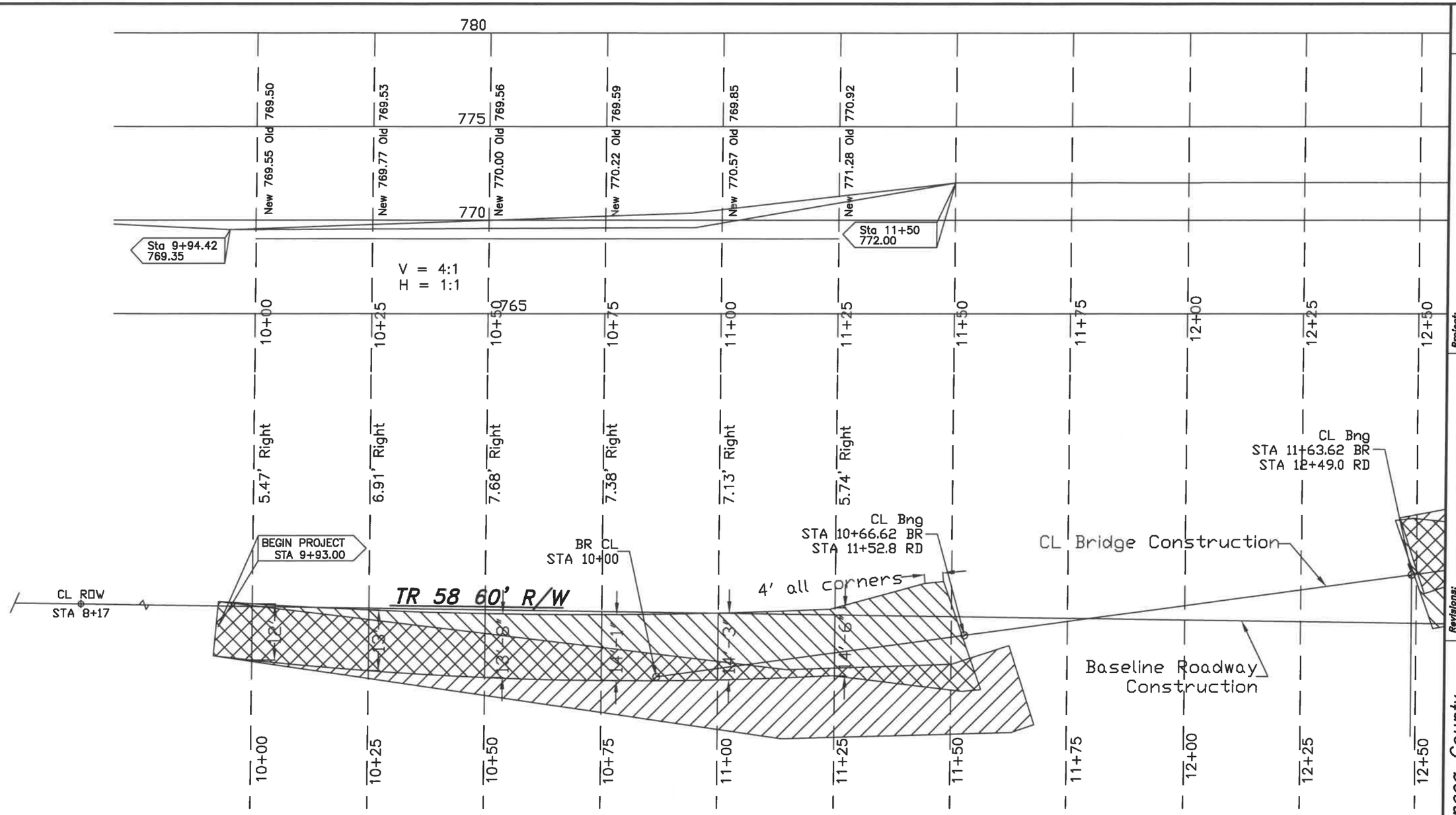

NOTE: BRIDGE AND ROADWAY STATIONING ARE DIFFERENT

10+00 Roadway CL 499798.48,1787237.71
10+25 Roadway CL 499797.17,1787262.71
10+50 Roadway CL 499796.27,1787287.71
10+75 Roadway CL 499795.76,1787312.70
11+00 Roadway CL 499795.65,1787337.71
11+25 Roadway CL 499795.91,1787362.71

Asphalt Removed 270 sq yds
Excavation 1' depth below existing roadway 90 cu. yds
Excavation 1' depth below grade, new roadway 50 cu. yds
Soil replacement outside new roadway 1' depth 47 cu yds
Compacted 304 1' depth under new roadway 90 cu yds
Compacted 411 berm 4"x2' wide beside new roadway 5 cu yds
Asphalt 441 Intermediate 14 cu yds + 15 cu yds Bridge
Asphalt 441 Surface 7 cu yds + 8 cu yds Bridge

6
20

Project:
TWP. ROAD 58-2.98
ROADWAY LAYOUT

Revisions:

Seneca County
Engineer's Dept.
Mark R. Zimmerman - County Engineer

Drawn By: MRZ
Date: 3/10/2023
Approved By: MRZ
DWG File:

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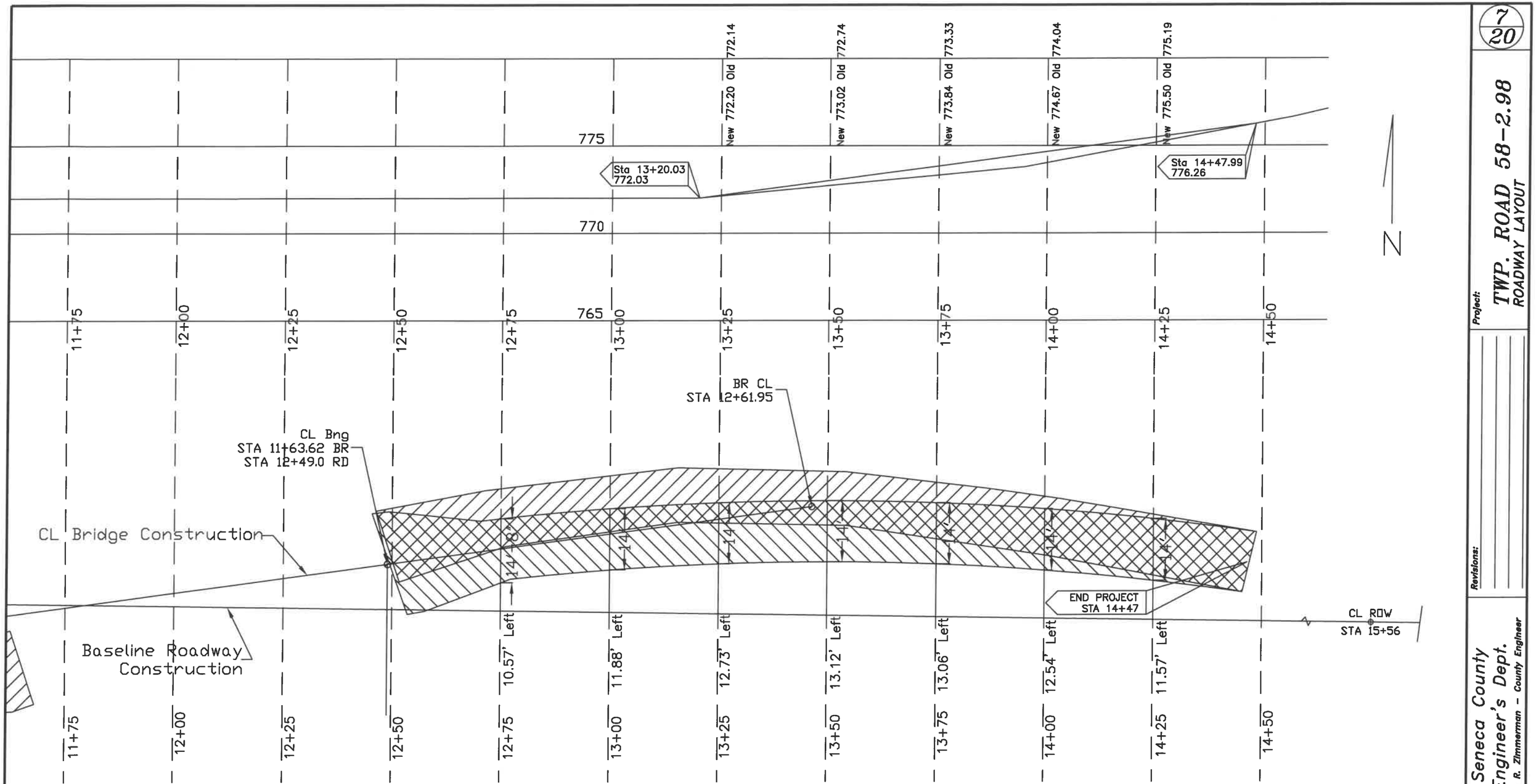

BRIDGE AND ROADWAY STATIONING ARE DIFFERENT

12+75 Roadway CL 499810.84,1787512.71
13+00 Roadway CL 499811.79,1787537.71
13+25 Roadway CL 499812.28,1787562.71
13+50 Roadway CL 499812.32,1787587.71
13+75 Roadway CL 499811.90,1787612.71
14+00 Roadway CL 499811.02,1787637.71
14+25 Roadway CL 499809.68,1787662.71

Asphalt Removed 300 sq yds
Excavation 1' depth below existing roadway 100 cu. yds
Excavation 1' depth below grade, new roadway 44 cu. yds
Soil replacement outside new roadway 1' depth 34 cu yds
Compacted 304 1' depth under new roadway 110 cu yds
Compacted 411 berm 4"x2' wide beside new roadway 5 cu yds
Asphalt 441 Intermediate 18 cu yds
Asphalt 441 Surface 9 cu yds

7/20

Project:
TWP. ROAD 58-2.98
ROADWAY LAYOUT

Revisions:

Seneca County
Engineer's Dept.
Mark R. Zimmerman - County Engineer

Drawn By: MRZ
Date: 3/10/2023
Approved By: MRZ
DWG File:

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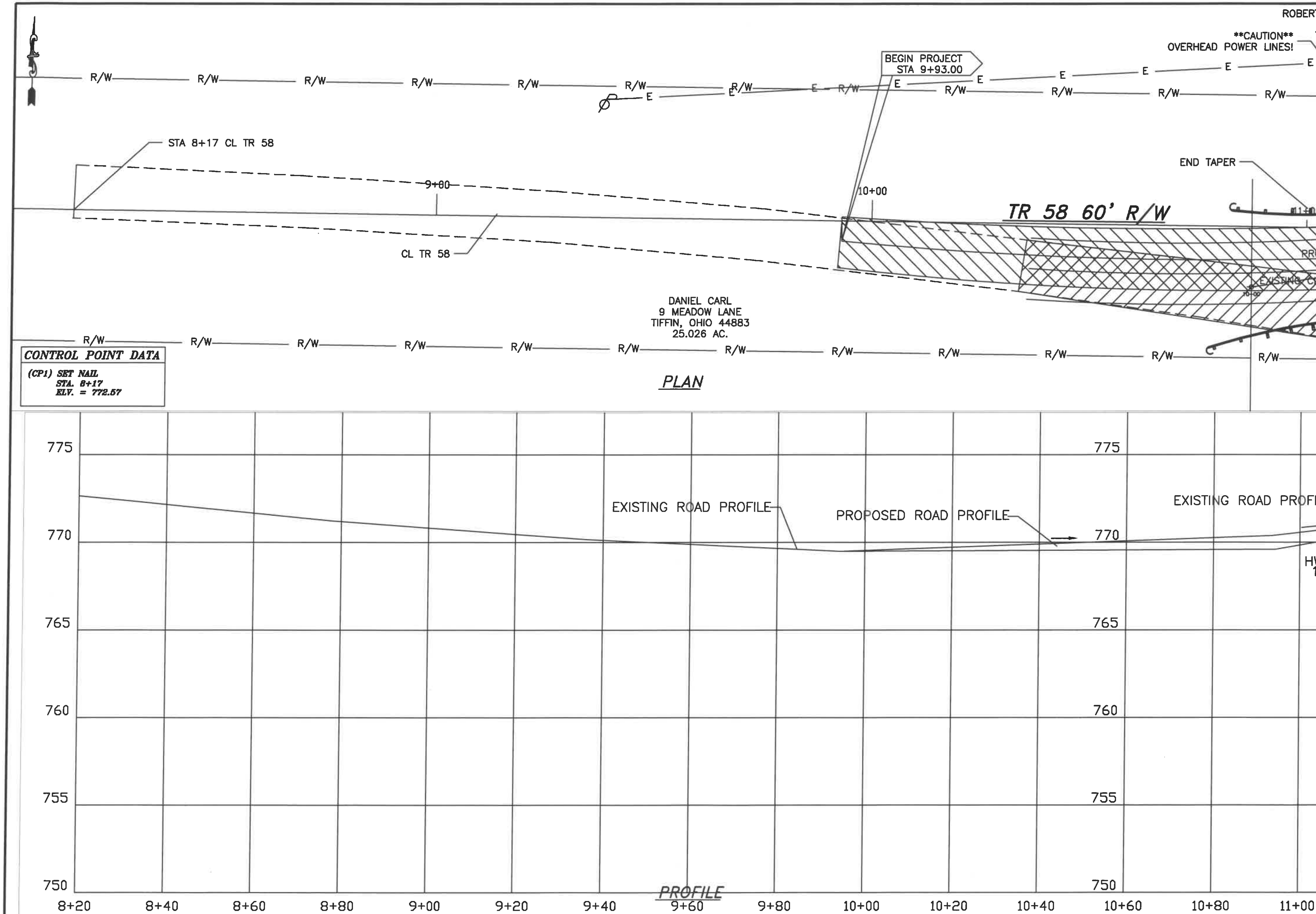

8/20

Project: TR 58-2.98 PLAN / PROFILE

Revisions:

Seneca County Engineer's Dept.
Mark R. Zimmerman - County Engineer

Drawn By: MRZ
Date: 4/28/2023
Approved By: MRZ
DWG File: 2023_BRIDGES\TR58-2.98

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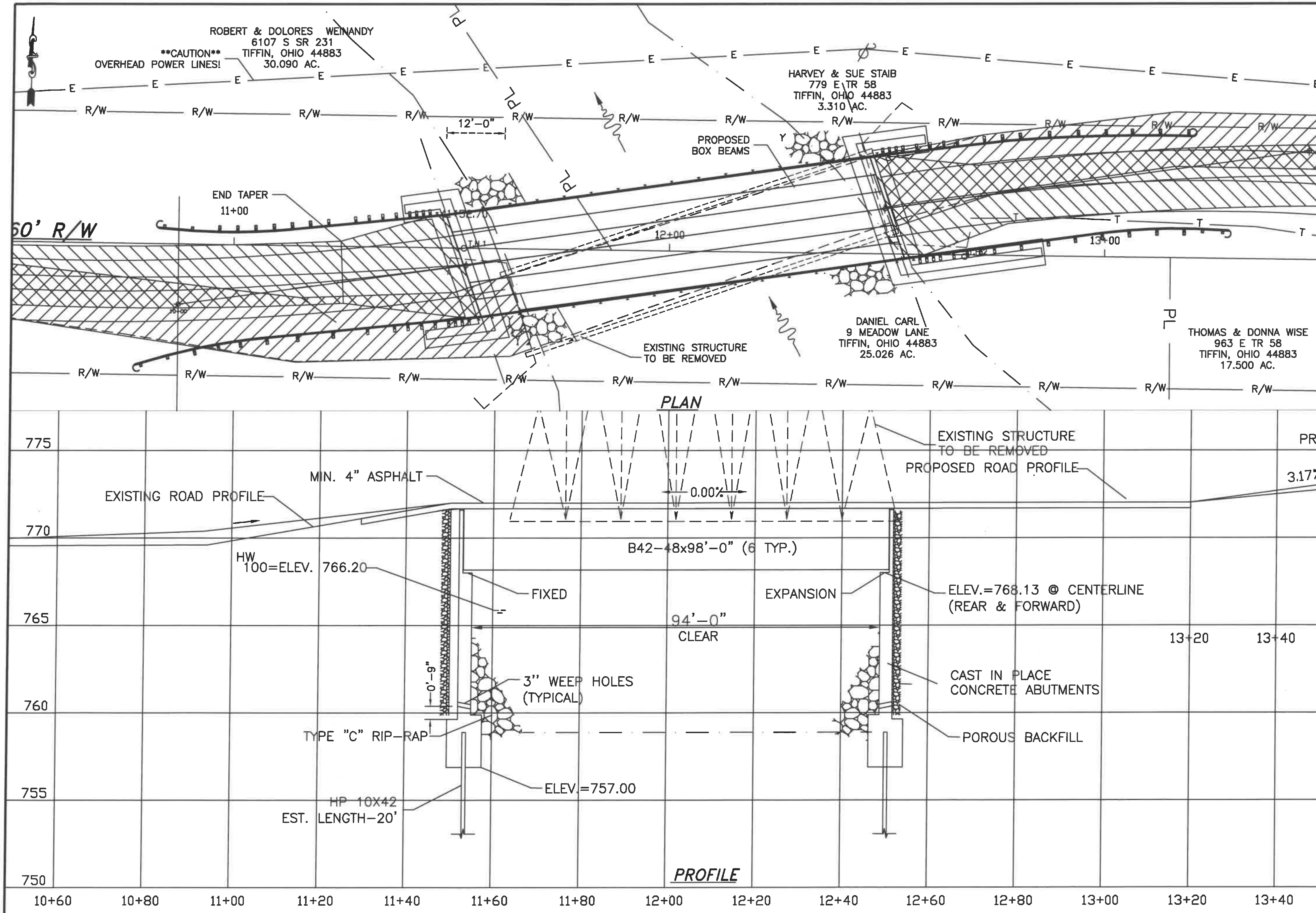
TR 58-2.98
PLAN / PROFILE



Project:

Revisions:

Seneca County Engineer's Dept.
Mark R. Zimmerman - County Engineer

Drawn By: MRZ
Date: 4/28/2023
Approved By: MRZ
DWG File: 2023_BRIDGES\TR58-2.98

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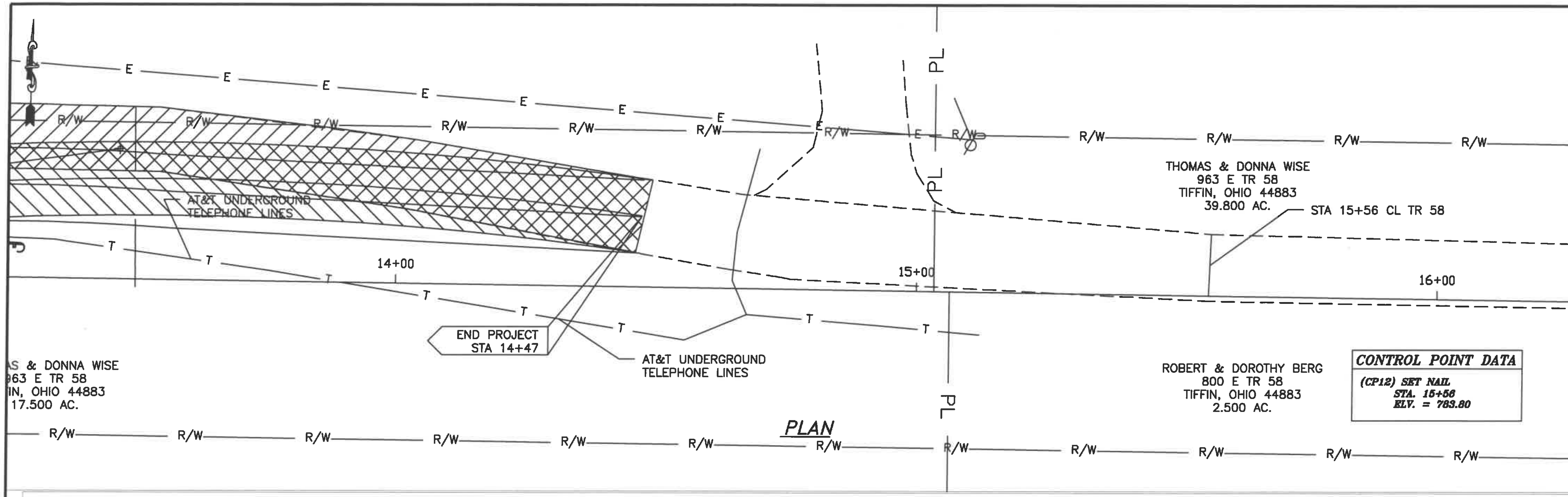
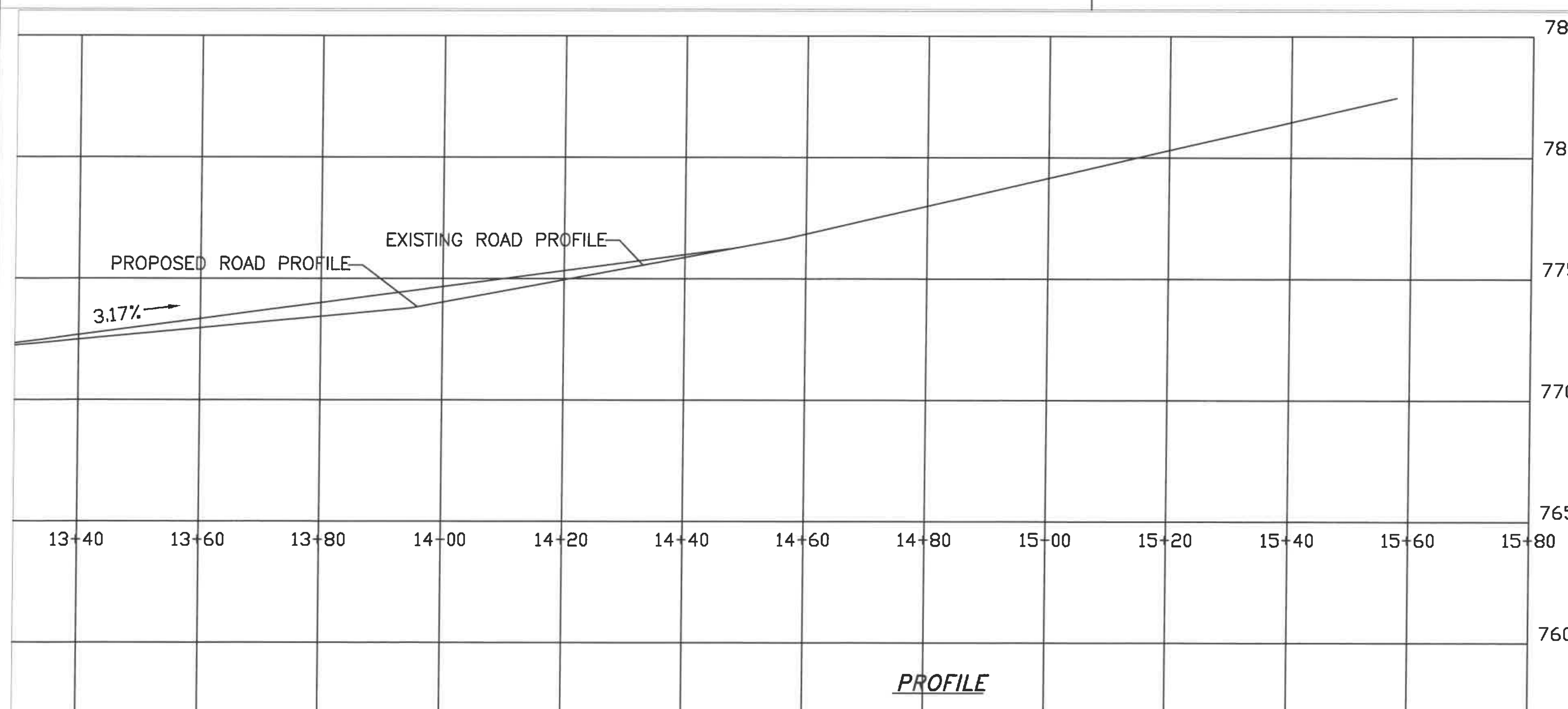
TR 58-2.98
PLAN / PROFILE

Project:



PLAN



PROFILE

Revisions:

Seneca County
Engineer's Dept.
Mark R. Zimmerman - County Engineer

Drawn By: MRZ
Date: 4/28/2023
Approved By: MRZ
DWG File: 2023_BRIDGES\TR58-2.98

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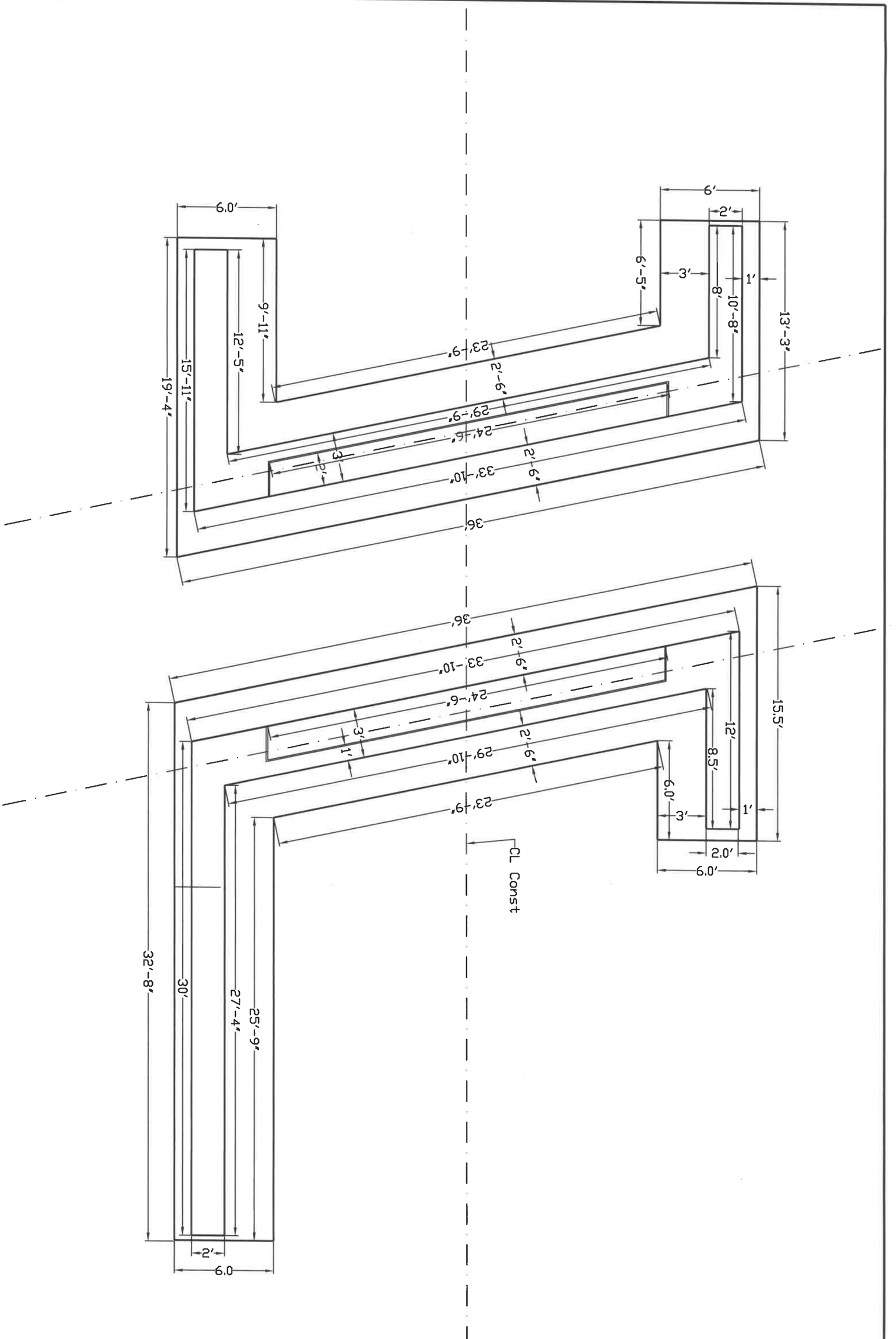

Drawn By: JAK Date: 3/10/2023 Approved By: MRZ DWG File:	Seneca County Engineer's Dept. Mark R. Zimmerman – County Engineer	Revisions:	Project: TWP. ROAD 58–2.98 ABUTMENT DETAILS	11 20

12/20

Project:
TWP. ROAD 58-2.98
ABUTMENT DETAILS PILING LAYOUT

Revisions:

Seneca County
Engineer's Dept.
Mark R. Zimmerman - County Engineer

Drawn By: MRZ
Date: 3/10/2023
Approved By: MRZ
DWG File:

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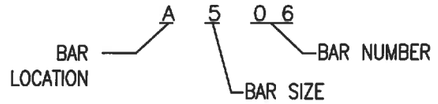
MARK	NUM	LENGTH	TYPE	A	B	C	D	E	WEIGHT
BW401	16 8F 8R	26'0"	STRAIGHT						278#
BW402	54 27F 27R	10' 0"	2	4'-8"	0'-6"	4'-8"			361#
AF501	72 36F 36R	17'-0"	STRAIGHT						1277#
AF502	72 36F 36R	20'-3"	1	7'-8"	2'-3"	Lap Balance			1540#
AF503	36 18F 18R	4'-0"	STRAIGHT						180#
AF504	16F	24'-0"	STRAIGHT						401#
AF505	64 32F 32R	16'-1"	1	5'-6"	2'-3"	Lap Balance			1091#
AF506	16F	6'-0"	STRAIGHT						100#
AF507	64 32F 32R	7'-0"	STRAIGHT						467#
AF508	16R	5'-0"	STRAIGHT						84#
AF509	16R	10'-0"	STRAIGHT						167#
A601	136 68F 68R	13'-0"	3	9'-0"	4'-0"				2656#
A602	100 64F 36R	11'-6"	3	9'-0"	2'-6"				1727#
A1001	8 4F 4R	30'-0"	STRAIGHT						1033#
A603	20 10F 10R	9'-0"	STRAIGHT						270#
A501	12F	8'-0"	STRAIGHT						100#
A502	12F	11'-6"	STRAIGHT						144#
A503	48 24F 24R	4'-0"	4	2'-0"	2'-0"	102°			200#
A504	14 7F 7R	33'-0"	STRAIGHT						482#
A505	12F	29'-6"	STRAIGHT						369#
A506	14 7F 7R	30'-0"	STRAIGHT						438#
A507	12F	27'-0"	STRAIGHT						338#
A508	48 24F 24R	4'-0"	4	2'-0"	2'-0"	78°			200#
A509	16 8F 8R	4'-0"	STRAIGHT						67#
A510	16 8f 8R	2'-0"	STRAIGHT						33#
A511	12R	8'-0"	STRAIGHT						100#
A512	12R	10'-0"	STRAIGHT						125#
A513	12R	12'-0"	STRAIGHT						150#
A514	12R	15'-6"	STRAIGHT						194#
A515	20 10F 10R	18'-6"	2	8'-0"	2'-6"	8'-0"			386#
A516	48 24F 24R	11'-4"	2	4'-4"	2'-6"	4'-4"			568#
A517	72 38F 24R	17'-6"	2	8'-0"	1'-6"	8'-0"			1315#

TOTAL 16841#

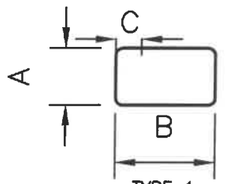
BAR LEGEND



- (A) – ABUTMENT
- (S) – SUPERSTRUCTURE

NOTES:

1. ALL DIMENSIONS ARE OUT TO OUT UNLESS OTHERWISE NOTED.
2. ALL REINFORCING GRADE 60 EPOXY COATED
3. REBAR SPLICE LAP LENGTHS
   - MIN LAP #5 BAR = 15"
   - MIN LAP #6 BAR = 18"
   - MIN LAP #8 BAR = 30"



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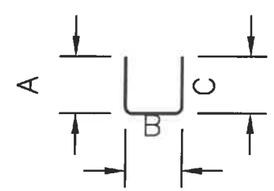
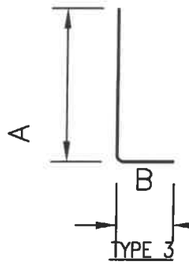


TYPE 2



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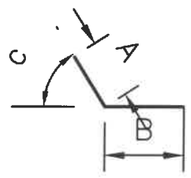


TYPE 4

13/20

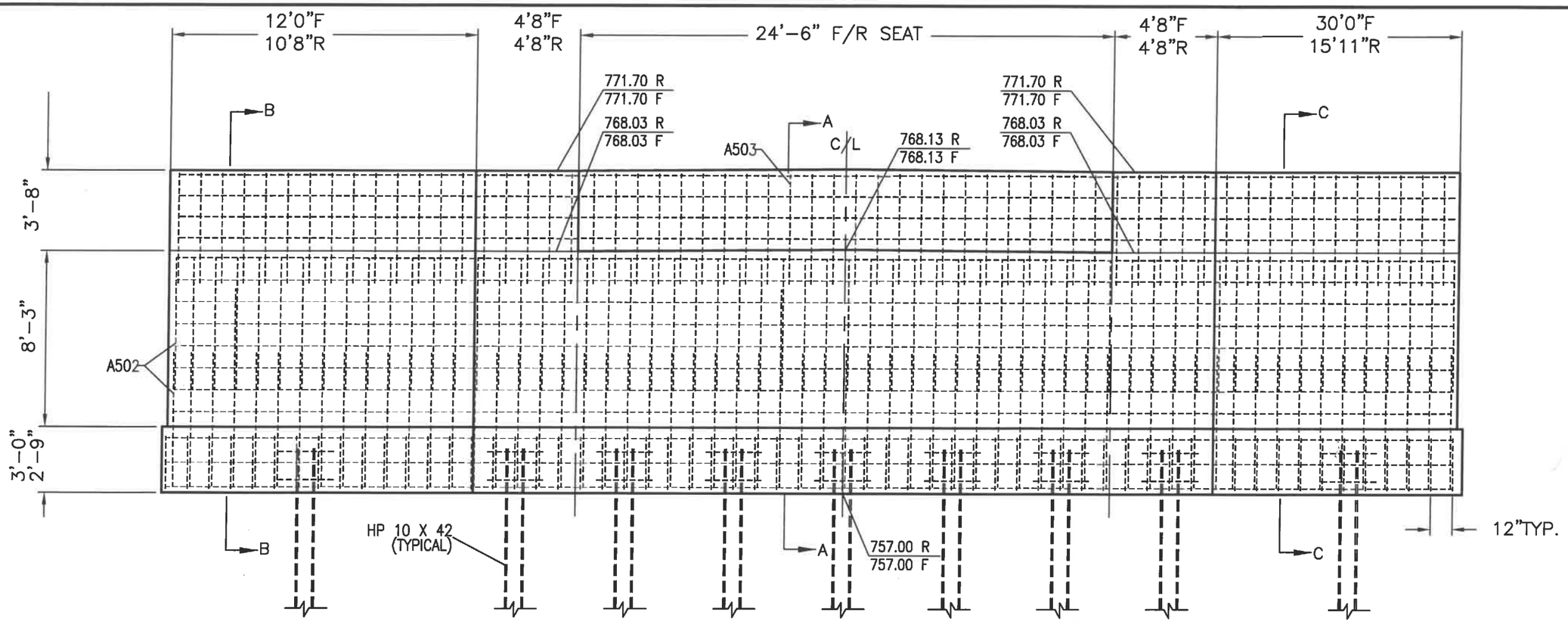
TWP. ROAD 58-2.98 REINFORCEMENT LIST

Project:

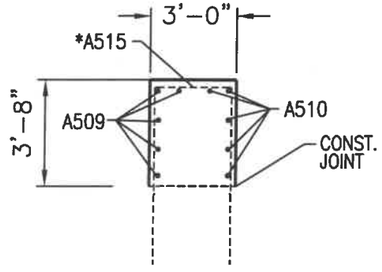
Revisions:

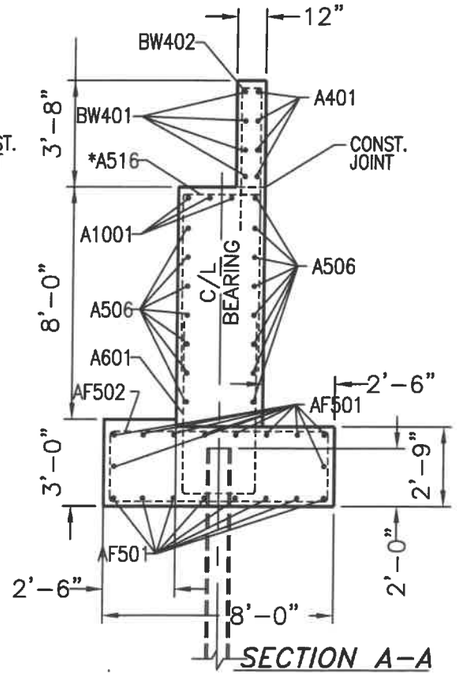
Seneca County Engineer's Dept.
Mark R. Zimmerman – County Engineer

Drawn By: JAK
Date: 3/10/2023
Approved By: MRZ
DWG File:



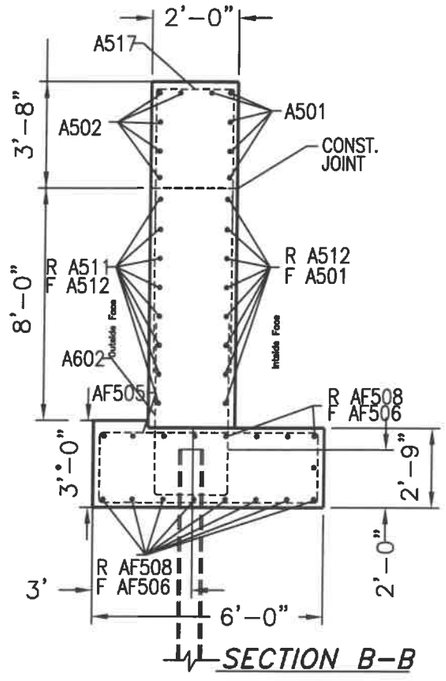
ELEVATION





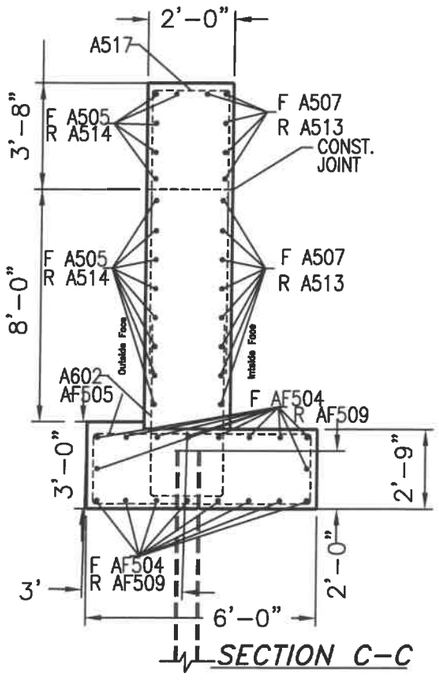
SECTION A-A

North Side



SECTION B-B

South Side



SECTION C-C

14/20

Project:
TWP. ROAD 58-2.98
ABUTMENT DETAILS

Revisions:

Seneca County
Engineer's Dept.
Mark R. Zimmerman - County Engineer

Drawn By: JAK
Date: 3/10/2023
Approved By: MRZ
DWG File:

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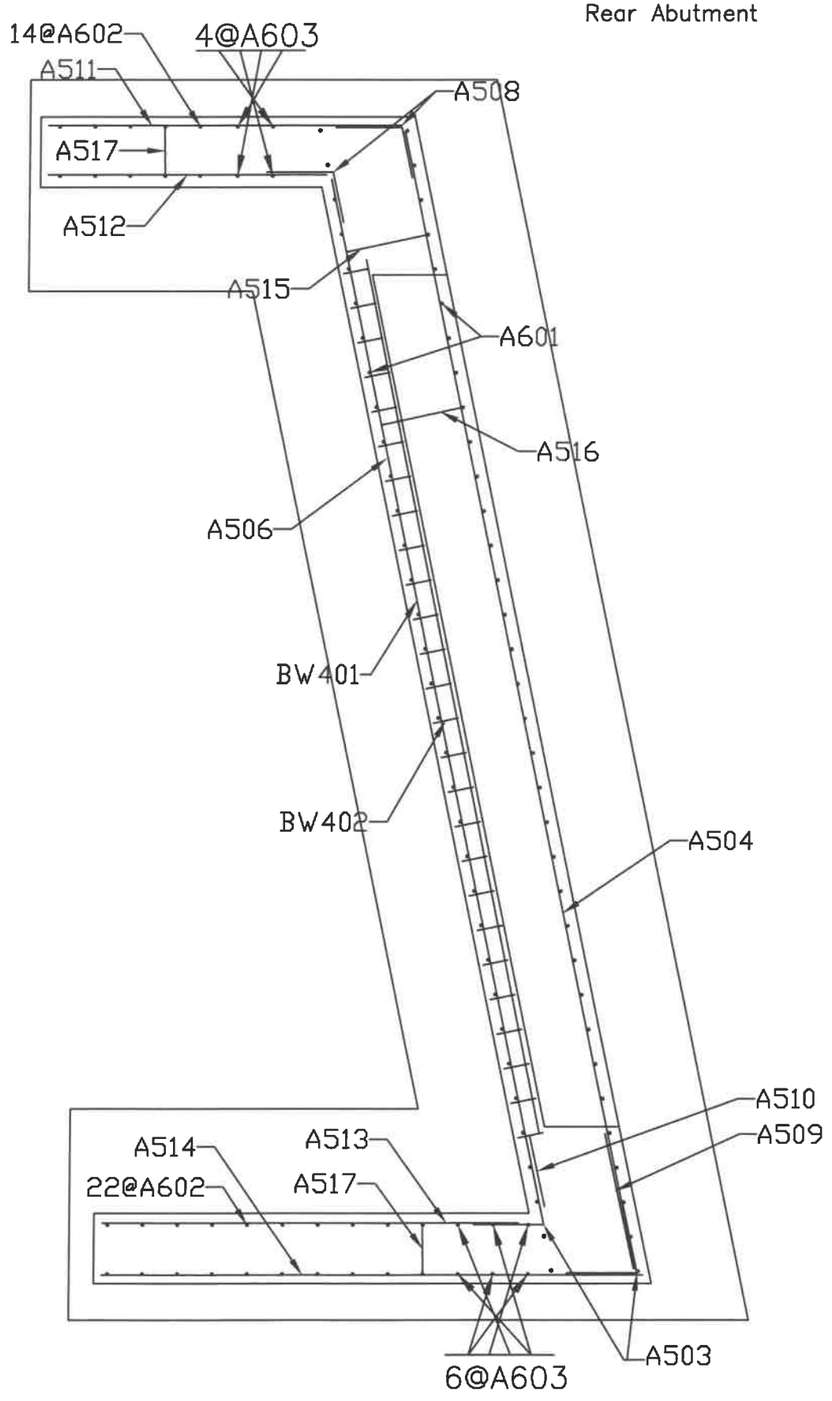
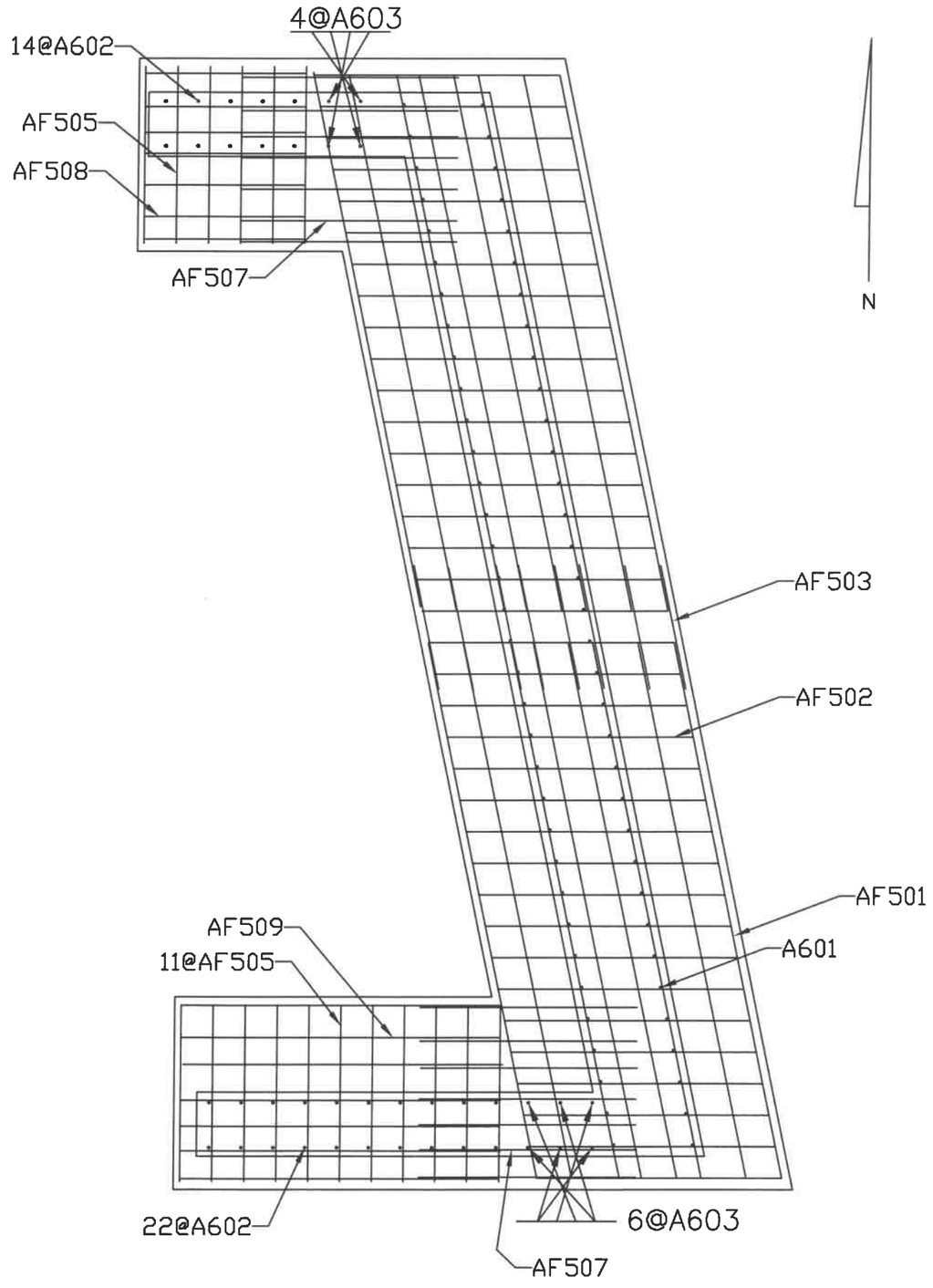
Rear Abutment





15/20

Project: TWP. ROAD 58-2.98 ABUTMENT DETAILS

Revisions:

Seneca County Engineer's Dept.
Mark R. Zimmerman - County Engineer

Drawn By: JAK
Date: 3/10/2023
Approved By: MRZ
DWG. File:

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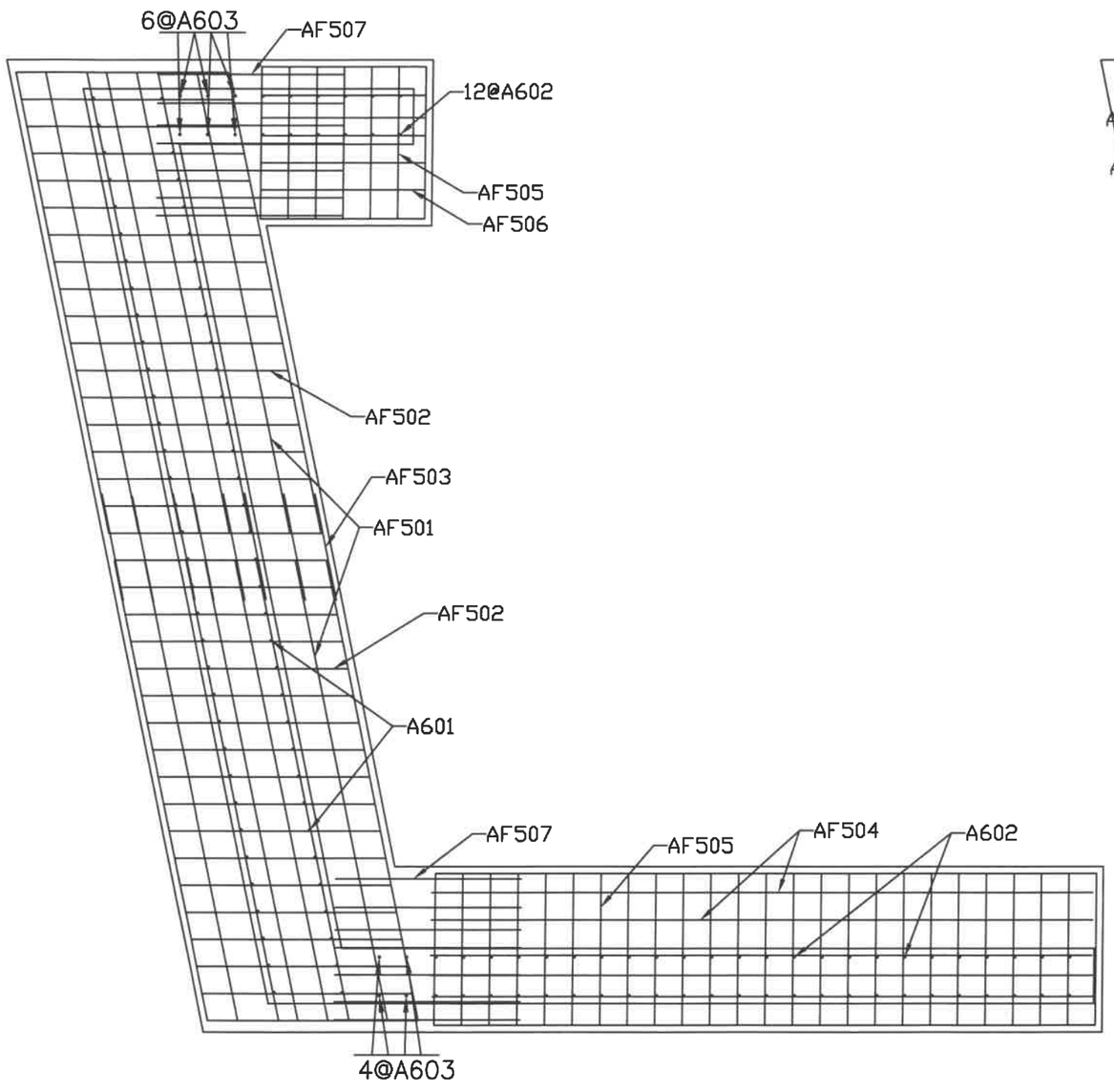
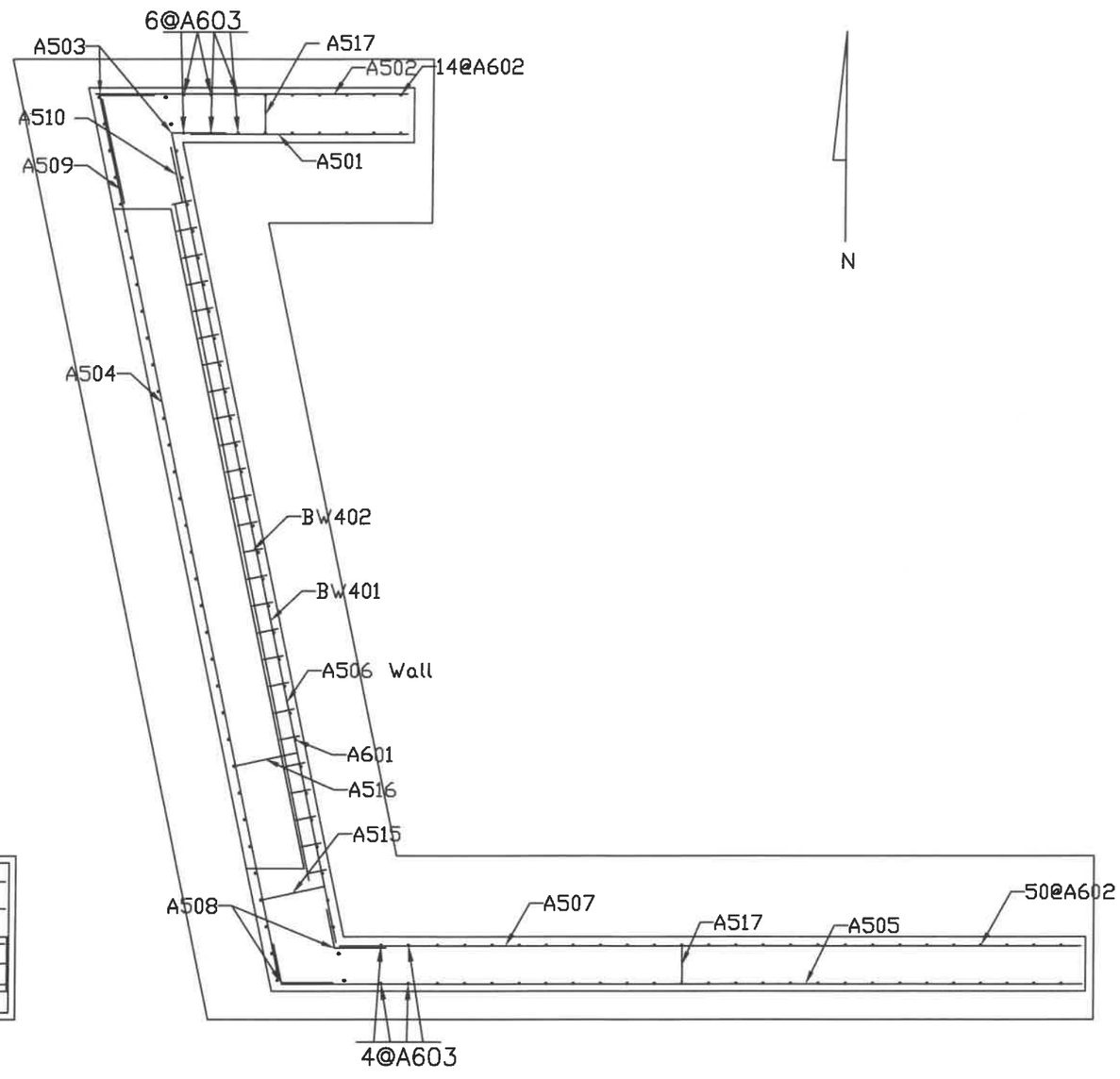
Forward Abutment





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Project: TWP. ROAD 58-2.98 ABUTMENT DETAILS

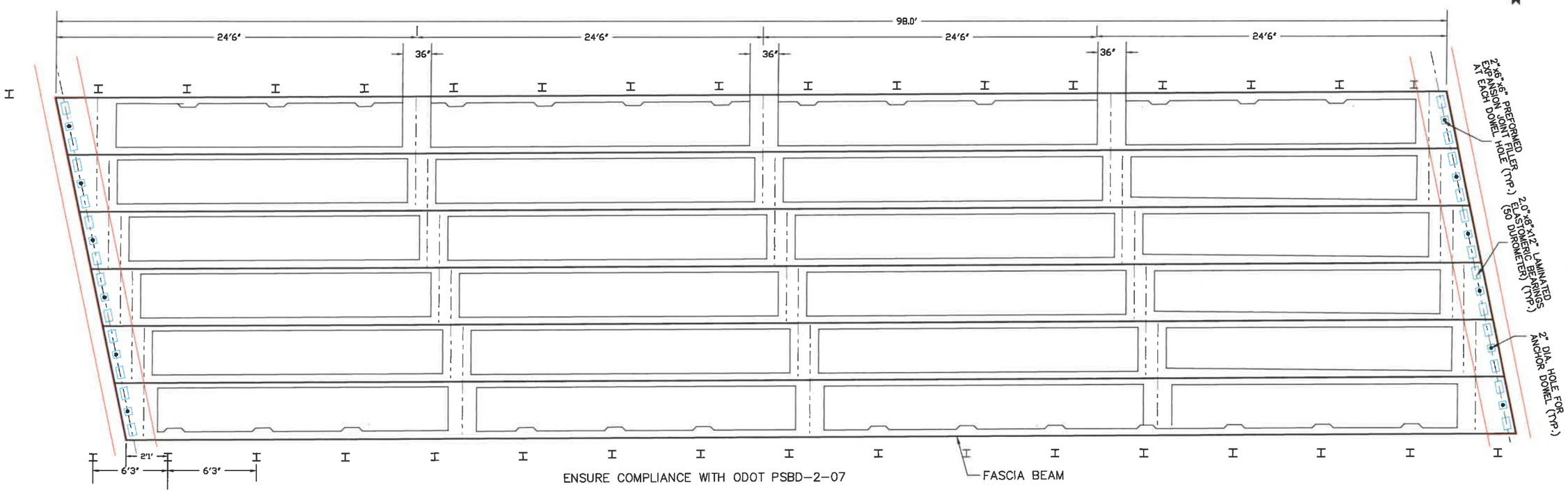
Revisions:

Seneca County Engineer's Dept.
Mark R. Zimmerman - County Engineer

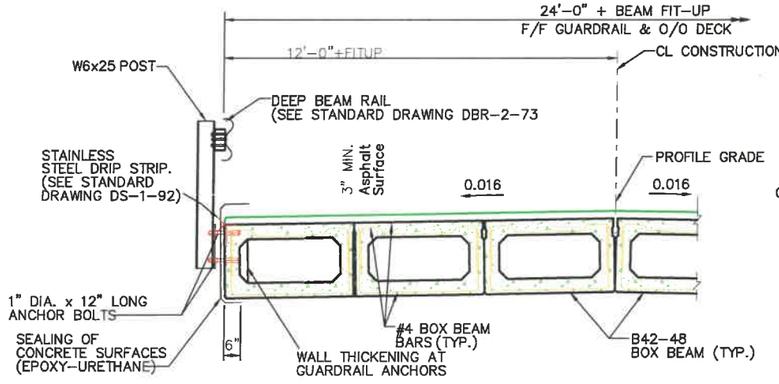
Drawn By: JAK
Date: 3/10/2023
Approved By: MRZ
DWG. File:

TR58-2.98 BRIDGE
BEAM/BEARING DETAILS

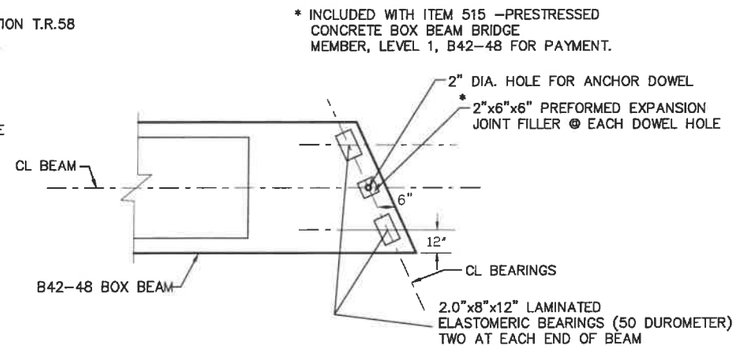
Project:



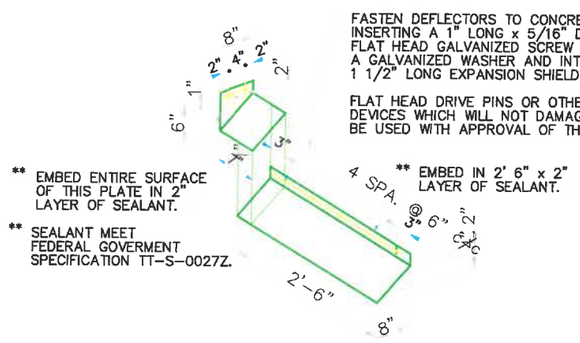
ENSURE COMPLIANCE WITH ODOT PSBD-2-07



HALF TRANSVERSE SECTION



PLACEMENT OF LAMINATED ELASTOMERIC BEARING



FASTEN DEFLECTORS TO CONCRETE BY INSERTING A 1" LONG x 5/16" DIA. FLAT HEAD GALVANIZED SCREW THROUGH A GALVANIZED WASHER AND INTO A 1 1/2" LONG EXPANSION SHIELD.

FLAT HEAD DRIVE PINS OR OTHER SIMILAR DEVICES WHICH WILL NOT DAMAGE THE BEAM MAY BE USED WITH APPROVAL OF THE ENGINEER.

** EMBED ENTIRE SURFACE OF THIS PLATE IN 2" LAYER OF SEALANT.

** SEALANT MEET FEDERAL GOVERMENT SPECIFICATION TT-S-0027Z.

** EMBED IN 2' 6" x 2" LAYER OF SEALANT.

DEFLECTOR DETAIL

DEFLECTOR TO BE PAID FOR UNDER ITEM SPECIAL-
STEEL DRIP STRIP.
ADD 3'-0" TO THE PAY LENGTH OF THE STEEL DRIP STRIP FOR EACH DEFLECTOR (SEE STANDARD DRAWING DS-1-92). DEFLECTORS SHALL BE MADE FROM 22 GAGE THICK STAINLESS STEEL MEETING THE REQUIREMENTS OF ASTM A167, TYPE 304, MILL FINISH STAINLESS STEEL. DEFLECTOR DIMENSIONS TO BE ADJUSTED DURING CONSTRUCTION AS NEEDED TO ACCOUNT FOR SKEW ANGLE.

Revisions:

Seneca County
Engineer's Dept.
Mark R. Zimmerman - County Engineer

Drawn By:
Date:
Approved By: MRZ
DWG. File:

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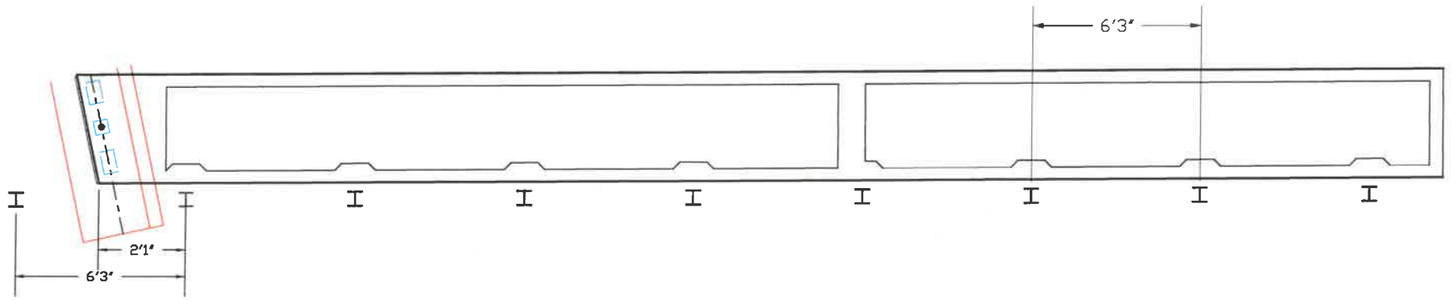
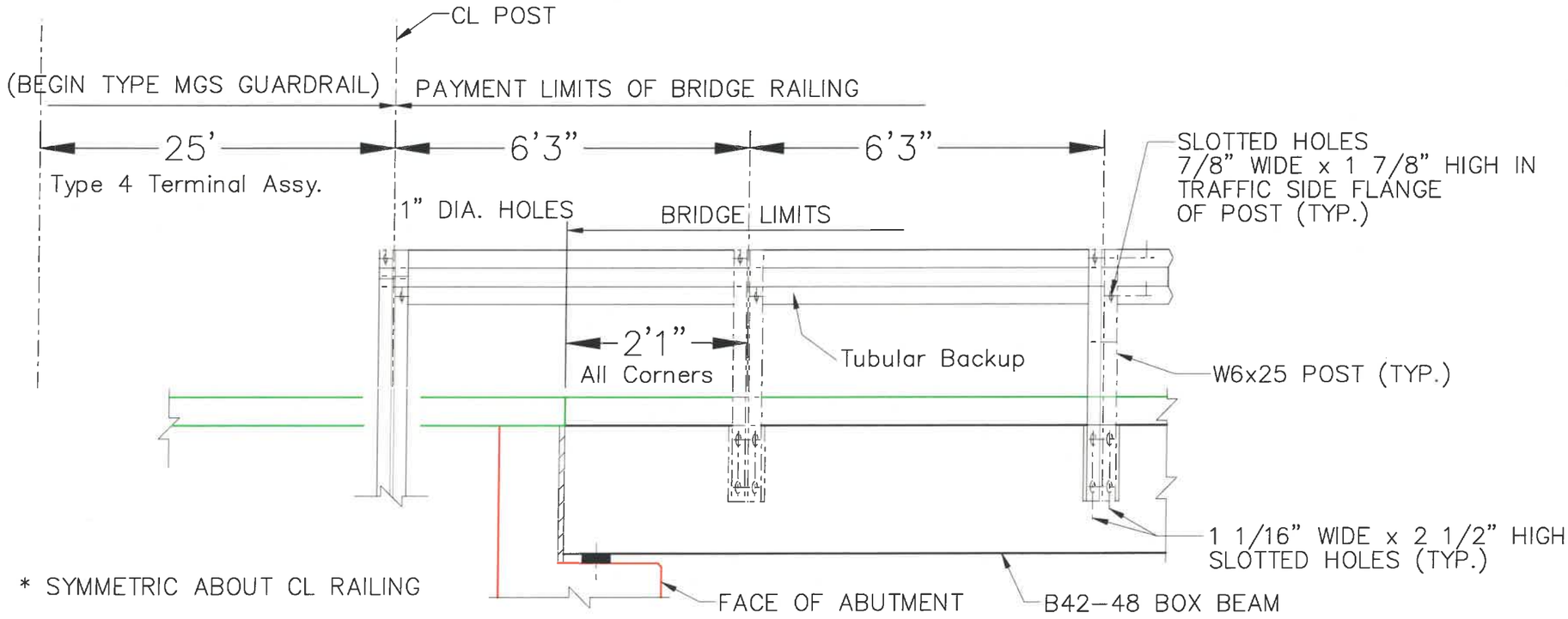




SECTION A-A

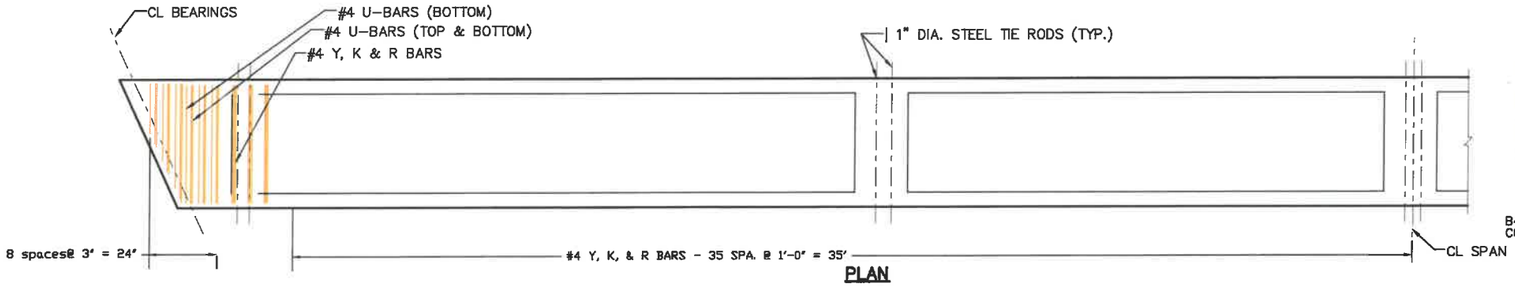
BRIDGE TERMINAL ASSEMBLY NOT SHOWN. REFER TO STANDARD CONSTRUCTION DRAWING GR-3.6 FOR DETAILS.

Project:
TR58-2.98 BRIDGE
Guardrail Layout

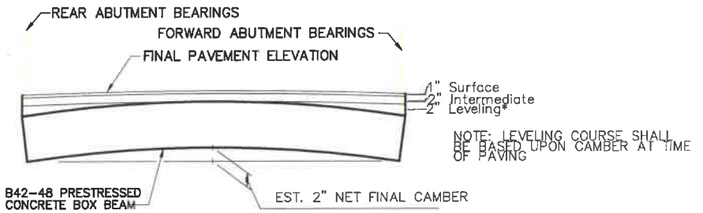
Revisions:

Seneca County
Engineer's Dept.
Mark R. Zimmerman - County Engineer

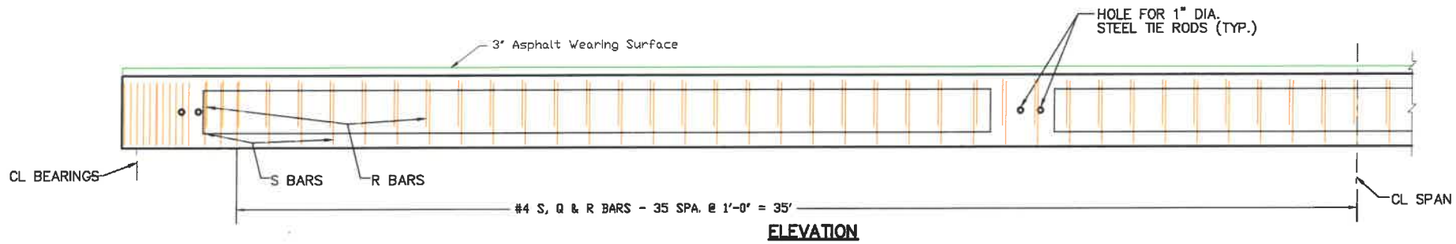
Drawn By:
Date:
Approved By: MRZ
DWG File:



PLAN



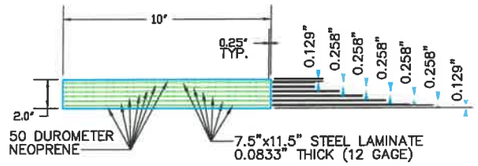
WEARING COURSE THICKNESS DIAGRAM



ELEVATION

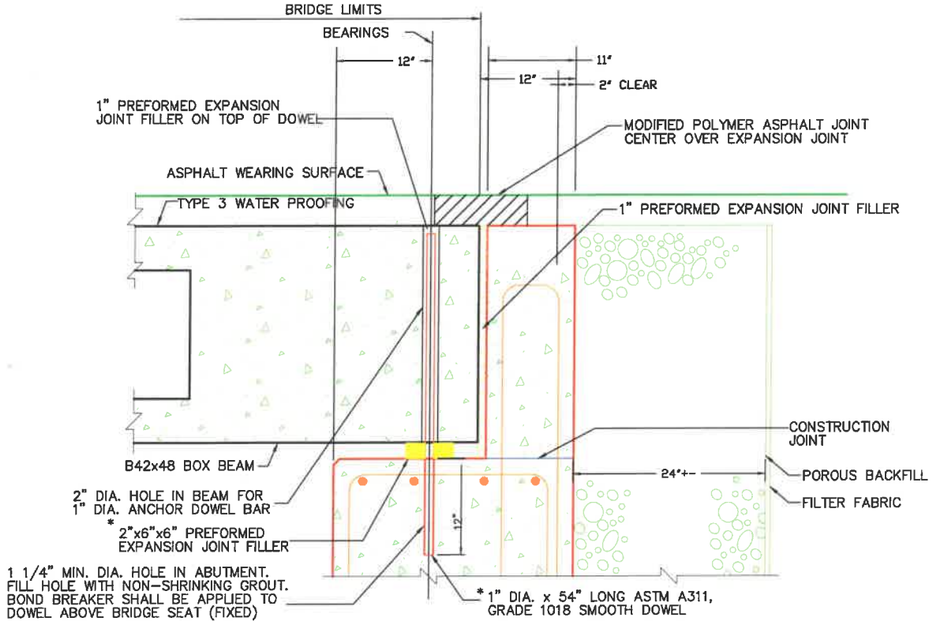
B42-48 BOX BEAM DETAILS

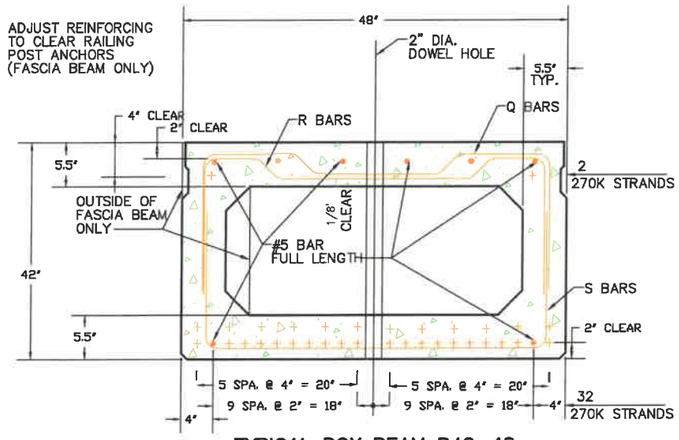
NOTE: SEE STANDARD DRAWING PSBD-2-07 FOR REINFORCING BARS AND DETAILS NOT SHOWN.



LAMINATED ELASTOMERIC (2.0"x8"x12") BEARING DETAIL

DEAD LOAD = 26.2 K
LIVE LOAD = 30.6 K
TOTAL LOAD = 56.8 K





TYPICAL BOX BEAM B42-48

NOTE: SEE STANDARD DRAWING PSBD-2-07 FOR REINFORCING BARS AND DETAILS NOT SHOWN.

ELASTOMERIC BEARINGS:

THE ELASTOMER SHALL HAVE A HARDNESS OF 50 DUROMETER. THE BEARINGS WERE DESIGNED IN ACCORDANCE WITH SECTION 14.7.6 (METHOD A) OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS. THE LONG-TERM COMPRESSION PROOF LOAD TEST (AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, DIVISION II, SECTION 18.7.2.6) IS NOT REQUIRED.

NOTES

CALCULATED CAMBER:

CALCULATED CAMBER AT THE TIME OF RELEASE IS 1.5 INCHES.
CALCULATED CAMBER AT TIME OF PAVING IS 3 INCHES.
LONG TERM CAMBER IS 4 INCHES.
CALCULATED DEFLECTION DUE TO DEAD LOAD APPLIED AFTER THE BEAMS ARE SET (WEIGHT OF SURFACE COURSE, RAILINGS) IS 1.5 INCHES.

Project: TR58-2.98 BRIDGE
BEAM/BEARING DETAILS

Revisions:

Seneca County Engineer's Dept.
Mark R. Zimmerman - County Engineer

Drawn By:
Date:
Approved By: MRZ
DWG File:

GENERAL NOTES AND DETAILS FOR POLYMER MODIFIED ASPHALT EXPANSION JOINT SYSTEM

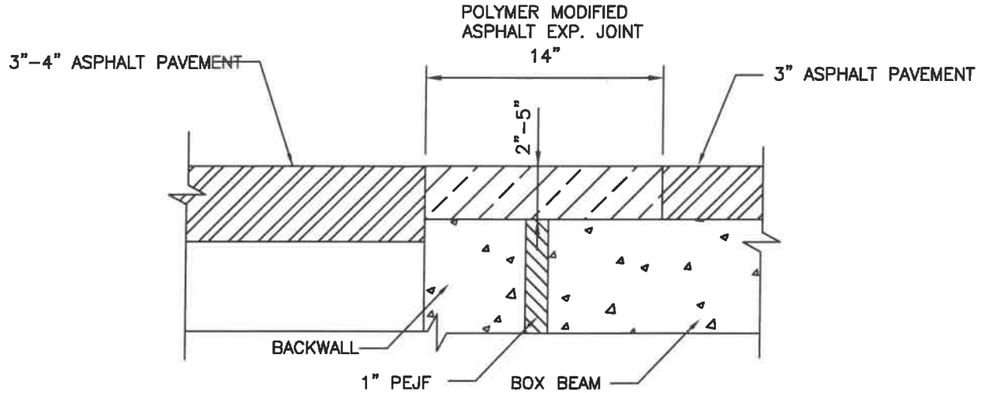
ITEM 846- POLYMER MODIFIED ASPHALT EXPANSION JOINT SYSTEM

THIS ITEM WILL BE USED TO SEAL THE EXPANSION/CONTRACTION JOINTS AS PER THESE DETAILS AND THE MANUFACTURER'S REQUIREMENTS USING A POLYMER-MODIFIED ASPHALT SYSTEM.

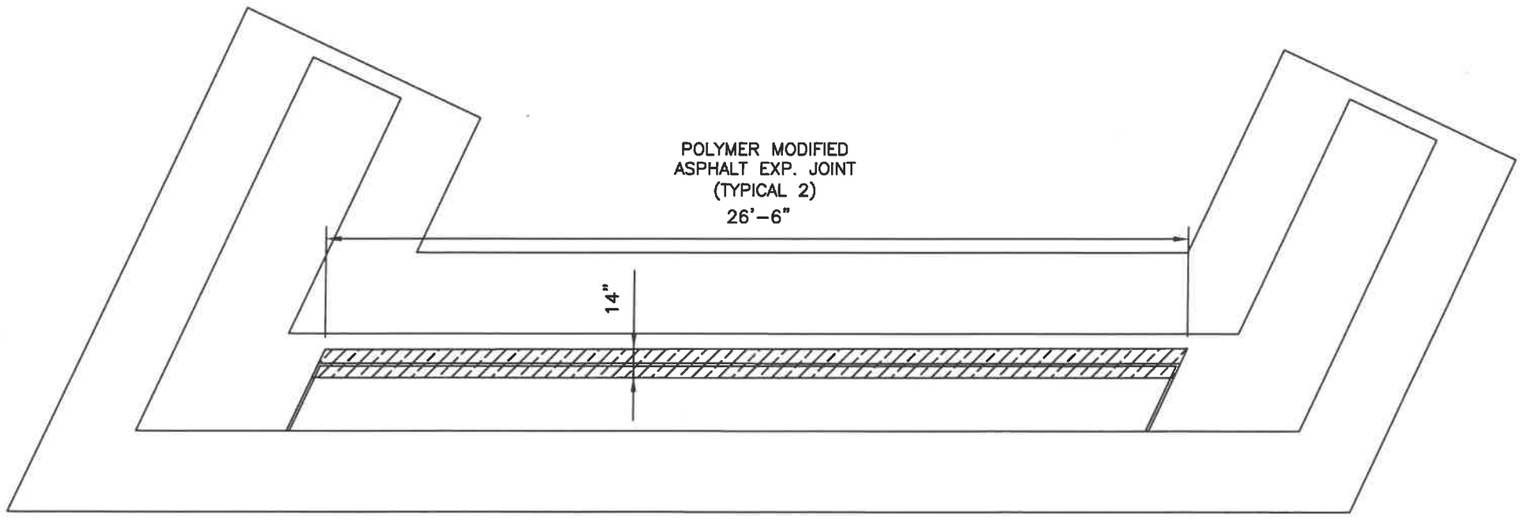
INSTALLATION PROCEDURES:

SAWING AND SURFACE PREPARATION:
AFTER ALL PAVING OPERATIONS ARE COMPLETE, THE OVERLAY IS TO BE TRANSVERSELY SAW CUT FULL DEPTH NO LESS THAN TWO INCHES DEEP(14" CENTERED OVER JOINT OPENING, UNLESS OTHERWISE NOTED). REMOVE ALL MATERIAL, INCLUDING WATERPROOFING MATERIAL, BETWEEN SAW CUTS, THROUGHLY CLEAN AND DRY EXPOSED CONCRETE, STEEL, AND UTURFACES USING COMPRESSES AIR AND A HOT COMPRESSED AIR (HCA) LANCE. THE LANCE MUST PRODUCE A FLAME RETARDED AIR STREAM TEMPERATURE OF 3000 DEGREES F. AT A VELOCITY OF 3,000 FEET PER SECOND WITH 15 PSIG CHAMBER PRESSURE. IF THERE IS AN INTERRUPTION DUE TO WEATHER OR OTHER CAUSES, THE OPERATION WILL BE REPEATED WITH A HCA LANCE IMMEDIATELY BEFORE THE BINDER COAT OPERATION. ALSO, 6 INCHES OF THE ROAD SURFACE ON EITHER SIDE OF THE JOINT WILL BE DRIED SO THAT A SUITABLE SURFACE FOR BITUMEN ADHESION IS OBTAINED.

BINDER COAT:
SEAL ALL PREPARED, EXPOSED SURFACES OF THE JOINT WITH BINDER. POUR THE HOT BINDER OVER THE FLOOR AREA OF THE JOINT AND SPREAD TO COAT ALL EXPOSED SURFACES. THE BINDER WILL BE A MIN. 1/32" THICK ON THE BOTTOM OF THE CAVITY, WITH POOLS OF GREATER THICKNESS WHERE SURFACE IRREGULARITIES EXIST. THE BINDER APPLICATION TEMPERATURE WILL BE BETWEEN 350 TO 390 DEGREES F. THE BINDER WILL NOT BE ALLOWED TO BE HEATED ABOVE 410 DEGREES F. NOR ALLOWED TO EXCEED 390 DEGREES F. FOR MORE THAN 1 HOUR. A DOUBLE JACKETED OIL MELTER WILL BE USED TO HEAT THE BONDER. THE MELTER WILL BE EQUIPPED WITH A CONTINUOUS AGITATION SYSTEM, TEMPERATURE CONTROLS, AND A CALIBRATED THERMOMETER. ALSO A SYSTEM FOR ACCURATELY MEASURING THE WEIGHTS OF THE BINDER AND THE AGGREGATE WILL RE REQ'D.



EXPANSION JOINT SECTION
NTS



TYP. EXPANSION JOINT PLAN
NTS

20
20

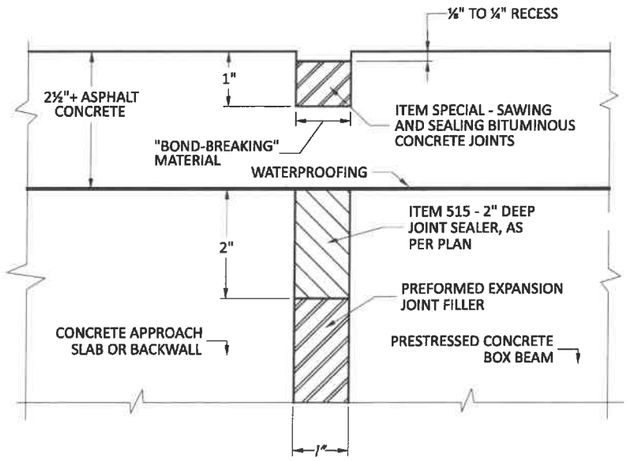
Project: TWP. ROAD 58-2.98 JOINT DETAILS

Revisions:

Seneca County
Engineer's Dept.
Mark R. Zimmerman - County Engineer

Drawn By: JAK
Date: 3/10/2023
Approved By: MRZ
DWG. File:

A:\Mark\data_files\Bridges\LPA\TR58-2.98\TR58 dwgs\Actual\TR58-2.98_trial 2 base dwg.dwg



SEALING OF JOINTS AT ABUTMENTS

ITEM SPECIAL-SAWING AND SEALING BITUMINOUS CONCRETE JOINTS

1) DESCRIPTION:

THIS WORK SHALL CONSIST OF CUTTING AND SEALING TRANSVERSE JOINTS IN THE NEW BITUMINOUS CONCRETE OVERLAY OF BOX BEAM BRIDGES. BITUMINOUS CONCRETE JOINTS SHALL BE CONSTRUCTED DIRECTLY OVER, AND IN LINE WITH, THE EXISTING UNDERLYING TRANSVERSE ABUTMENT JOINT OF THE BOX BEAMS.

2) MATERIALS:

THE JOINT SEALANT SHALL MEET THE REQUIREMENTS OF ITEM 705.04, JOINT SEALANTS, HOT-POURED, FOR CONCRETE AND ASPHALT PAVEMENTS. ACCEPTABLE ALTERNATE MATERIALS ARE:

A SILICONE SEALANT MEETING FEDERAL SPECIFICATIONS TT-S-001543A CLASS A (ONE-PART SILICONE SEALANTS) AND TT-S-00230C CLASS A (ONE-COMPONENT SEALANTS), SUCH AS THOSE MANUFACTURED BY GENERAL ELECTRIC, SILICONE PRODUCTS DIVISION, 4015 EXECUTIVE PARK DRIVE, CINCINNATI, OHIO 45242 (513-243-1953)OR DOW CORNING, 400 TECHNE CENTER, SUITE 103, MILFORD, OHIO 45150 (513-831-3586); OR SOF-SEAL,A COLD-APPLIED, LOW-MODULUS,TWO-COMPONENT POLYMERIC COMPOUND HORIZONTAL SEALANT AS MANUFACTURED BY W.R.MEADOWS, INC., P.O.BOX 543,ELGIN,ILLINOIS 60121 (800-342-5976).

3) CONSTRUCTION DETAILS:

A) GENERAL: THE CONTRACTOR SHALL CONDUCT HIS OPERATION SO THAT THE CUTTING, CLEANING AND SEALING OF TRANSVERSE JOINTS IS A CONTINUOUS OPERATION THAT WILL BE PERFORMED AS SOON AS PRACTICAL AFTER THE PAVING, BUT NO LATER THAN FOUR (4) DAYS AFTER PLACEMENT OF THE ASPHALT CONCRETE SURFACE COURSE. TRAFFIC SHALL NOT BE ALLOWED TO KNEAD TOGETHER OR DAMAGE JOINT CUT PRIOR TO SEALING.

B) CUTTING OF TRANSVERSE JOINTS: THE CONTRACTOR SHALL SAW OR ROUT TRANSVERSE JOINTS TO THE DIMENSIONS SHOWN IN THE DETAILS ON THIS SHEET. THE CUT JOINTS SHALL LIE DIRECTLY ABOVE EACH BOX BEAM ABUTMENT JOINT.

THE BLADE OR BLADES SHALL BE OF SUCH SIZE THAT THE FULL WIDTH AND DEPTH OF THE CUT CAN BE MADE WITH ONE PASS. DRY OR WET CUTTING WILL BE ALLOWED. JOINTS SHALL EXTEND THE FULL WIDTH OF THE BRIDGE.

C) CLEANING JOINTS: DRY SAWED JOINTS SHALL BE THOROUGHLY CLEANED WITH A SUFFICIENT AMOUNT OF COMPRESSED AIR TO REMOVE ANY DIRT, DUST, OR DELETERIOUS MATTER. WET SAWED JOINTS SHALL BE WASHED CLEAN OF ALL CUTTINGS BY FLUSHING WITH A JET OF WATER AND WITH OTHER TOOLS AS NECESSARY. AFTER FLUSHING, THE JOINT SHALL BE BLOWN OUT WITH COMPRESSED AIR. WHEN THE SURFACES ARE THOROUGHLY CLEAN AND DRY, AND JUST PRIOR TO PLACING THE JOINT SEALER, COMPRESSED AIR HAVING A PRESSURE OF AT LEAST 90 P.S.I. SHALL BE USED TO BLOW OUT THE JOINT AND REMOVE ALL TRACES OF DUST.

IN THE EVENT FRESHLY CUT JOINTS BECOME CONTAMINATED BEFORE THEY ARE SEALED, THEY SHALL BE RECLEANED OF ALL FOREIGN MATERIAL BY HIGH PRESSURE WATER JET.

D) SEALING JOINTS: THE JOINT SHALL BE THOROUGHLY DRY WHEN THE SEALANT IS PLACED. AFTER CLEANING AND DRYING, A BOND-BREAKER MATERIAL SHALL BE APPLIED TO THE BOTTOM OF THE GROOVE.

HOT-POURED JOINT SEALANT MATERIAL SHALL BE HEATED IN A KETTLE OR MELTER CONSTRUCTED AS A DOUBLE BOILER, WITH THE SPACE BETWEEN THE INNER AND OUTER SHELLS FILLED WITH OIL OR OTHER HEAT TRANSFER MEDIUM. POSITIVE TEMPERATURE CONTROL AND MECHANICAL AGITATION SHALL BE PROVIDED. HEATING MUST BE IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION. JOINT SEALER MATERIAL SHALL NEVER BE KEPT HEATED AT THE POURING TEMPERATURE FOR MORE THAN FOUR (4) HOURS AND SHALL NEVER BE REHEATED.SEALER LEFT IN THE APPLICATOR AT THE END OF A DAY'S WORK SHALL NOT BE USED.

HOT-POURED SEALANT SHALL BE APPLIED IMMEDIATELY THROUGH A NOZZLE, WHICH MUST PROJECT INTO THE SAWED JOINT, FILLING FROM THE BOTTOM UP.THE SEALANT SHALL COMPLETELY FILL THE JOINT IN SUCH A MANNER THAT, AFTER COOLING, THE LEVEL OF THE SEALANT WILL NOT BE HIGHER THAN ⅛" BELOW THE PAVEMENT SURFACE. ANY DEPRESSION 1N THE COOLED SEAL GREATER THAN ⅛" SHALL BE BROUGHT UP TO THE SPECIFIED LIMIT BY FURTHER ADDITION OF HOT-POURED SEALANT. CARE SHALL BE TAKEN IN THE SEALING OF THE JOINTS SO THAT THE FINAL APPEARANCE WILL PRESENT A NEAT FINE LINE.

THE COLD APPLIED SEALANT MATERIALS (POLYURETHANE, SILICONE, AND POLYMERIC COMPOUNDS) SHALL BE INSTALLED AS PER MANUFACTURERS' RECOMMENDATIONS, EXCEPT AS MODIFIED BY THIS DRAWING. THE SEALANT SHALL BE INSTALLED WHEN THE AMBIENT TEMPERATURE IS 40 DEGREES F OR HIGHER. TRAFFIC SHALL NOT BE ALLOWED ON THE JOINT FOR ONE HOUR AFTER APPLICATION OF THE SEALANT.

4) METHOD OF MEASUREMENT:

THE QUANTITY TO BE PAID FOR UNDER THIS ITEM WILL BE THE NUMBER OF LINEAR FEET OF JOINTS SAWED AND SEALED AS PER THE ABOVE REQUIREMENTS.

5) BASIS OF PAYMENT:

THE UNIT PRICE PER LINEAR FOOT FOR ITEM SPECIAL-"SAWING AND SEALING BITUMINOUS CONCRETE JOINTS" SHALL INCLUDE THE COST OF ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY TO COMPLETE THE WORK, INCLUDING THE FURNISHING AND PLACING OF THE JOINT SEALER MATERIAL.

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

THIS ITEM SHALL MEET THE MATERIAL (SECTION 2) AND SEALING (SECTION 3D) SPECIFICATIONS OF ITEM SPECIAL-SAWING AND SEALING BITUMINOUS CONCRETE JOINTS.

CTY-RTE-SECTION

OFFICE OF STRUCTURAL ENGINEERING

REVISION DATE
01-21-2021

PLAN INSERT SHEET
ABUTMENT JOINTS IN BITUMINOUS CONCRETE BOX BEAM BRIDGES

DESIGN AGENCY

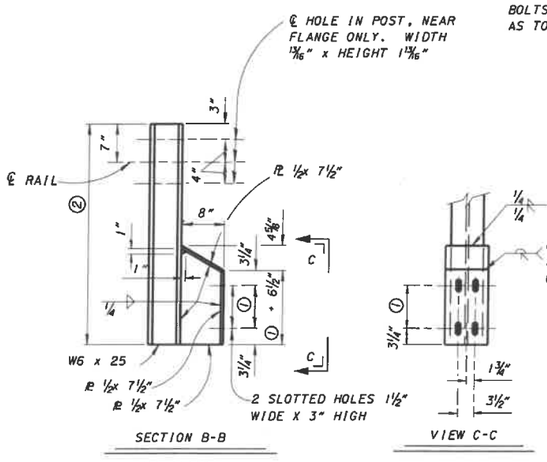
DESIGNER
0

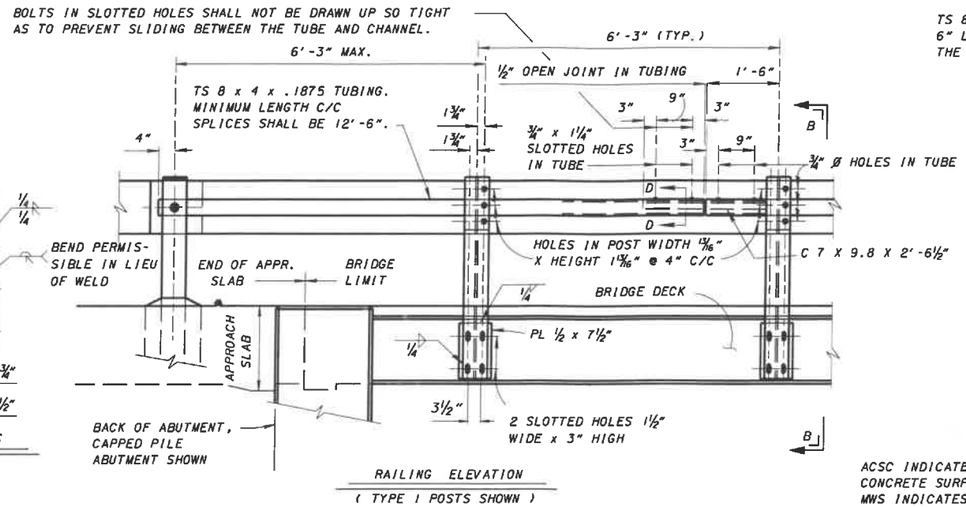
REVIEWER
XXX MM-DD-YY

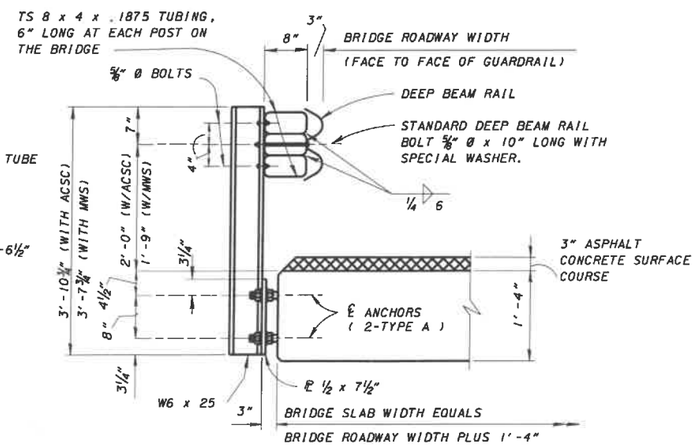
PROJECT ID
0

SUBSET	TOTAL
0	0

SHEET	TOTAL
P.0	0



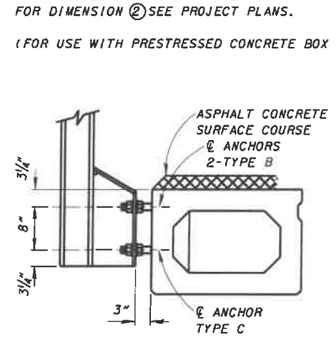


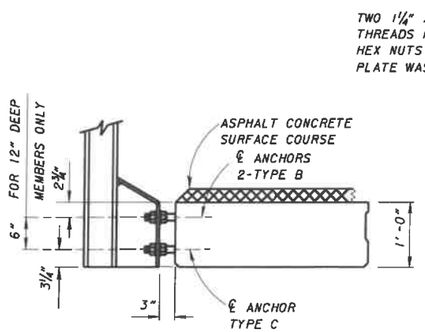


DIMENSION ① IS 6" OR 8" DEPENDING ON BOX BEAM DEPTH. SEE PROJECT PLANS AND POST ANCHORAGE DETAILS, PRESTRESSED CONCRETE BOX BEAMS. FOR DIMENSION ② SEE PROJECT PLANS.

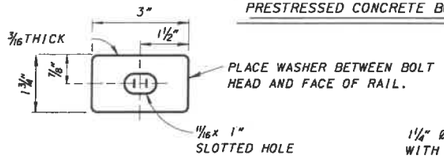
(FOR USE WITH PRESTRESSED CONCRETE BOX BEAMS)

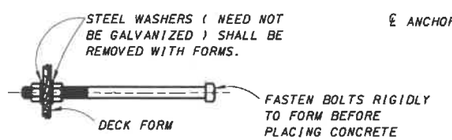
ACSC INDICATES ASPHALT CONCRETE SURFACE COURSE. MWS INDICATES MONOLITHIC WEARING SURFACE.

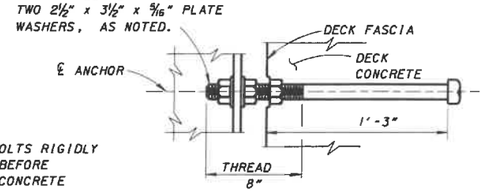




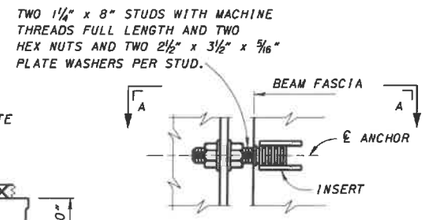
POST ANCHORAGE DETAILS FOR PRESTRESSED CONCRETE BOX BEAMS

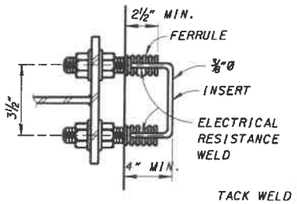


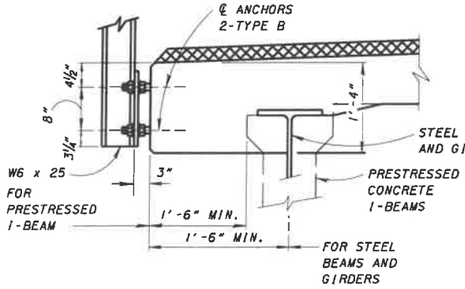


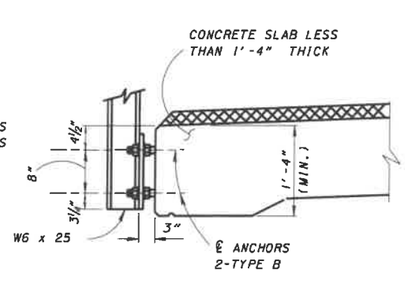


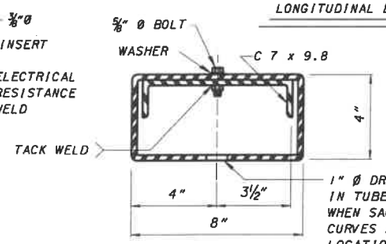
TYPE A ANCHORS SHOULD ONLY BE USED ON PROJECTS WHERE THE ORIGINAL ANCHORS WERE TYPE A AND ALL ANCHORS ON ANY SINGLE STRUCTURE ARE NOT BEING REMOVED OR REPLACED



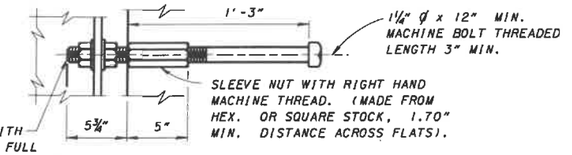








1" Ø DRAIN HOLE (ONLY IN TUBE AT LOWEST POINT WHEN SAG VERTICAL CURVES ARE ENCOUNTERED). LOCATION TO BE SHOWN ON PROJECT PLANS.



POST ANCHORAGE DETAILS

(NOT FOR USE WITH PRESTRESSED BOX BEAMS)

MATERIAL : ALL ANCHOR BOLTS, NUTS AND STUDS SHALL CONFORM TO THE PHYSICAL PROPERTIES OF ASTM-A325 EXCEPT THAT THE ELONGATION SHALL BE 10 % AND THE THREAD LENGTH REQUIREMENTS SHALL BE WAIVED. THE CHEMICAL PROPERTIES ARE WAIVED.

STEEL TUBING SHALL BE AS PER ITEM 707.10. ALL GUARDRAIL POSTS AND PLATE WASHERS SHALL BE ASTM A709 GRADE 36 OR 50.

GALVANIZING: ALL GUARDRAIL POSTS, TUBES, HARDWARE AND ACCESSORIES SHALL BE GALVANIZED IN ACCORDANCE WITH 711.02, EXCEPT AS OTHERWISE NOTED.

TYPE C ANCHOR INSERTS OF A DIFFERENT TYPE MAY BE PROVIDED IF APPROVED BY THE DIRECTOR.

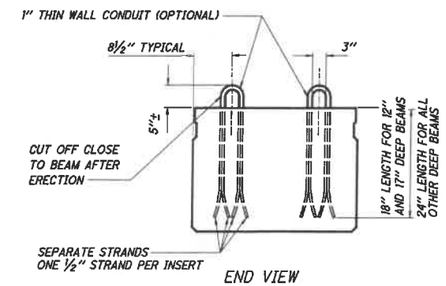
DESIGN AGENCY
OFFICE OF STRUCTURAL ENGINEERING

STATE OF OHIO DEPARTMENT OF TRANSPORTATION
Robert B Price — ENGINEER OF BRIDGES
4-10-73 — DATE

REVISIONS	DESIGNED	CHECKED	REVIEWED
9-15-94	JFF	JAM	LMW
10-20-00	DRAWN BEE		
07-19-02		DBR-2-73	

STANDARD
DEEP BEAM
BRIDGE GUARDRAIL

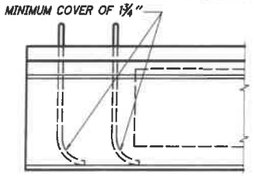
1 / 1



END VIEW

NOTE: ALL LIFTING INSERTS MUST BE UNIFORMLY ENGAGED DURING HANDLING.

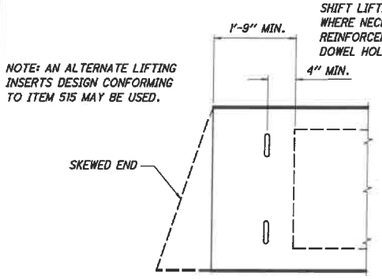
FOR SHALLOW BEAMS BEND LOWER ENDS OF INSERTS TOWARD MIDSPAN TO MAINTAIN MINIMUM COVER OF 1¾"



ELEVATION

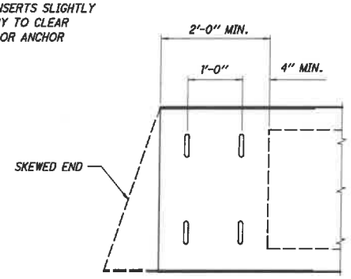
NOTE: AN ALTERNATE LIFTING INSERTS DESIGN CONFORMING TO ITEM 515 MAY BE USED.

SHIFT LIFTING INSERTS SLIGHTLY WHERE NECESSARY TO CLEAR REINFORCEMENT OR ANCHOR DOWEL HOLES.



FOR 12", 17" AND 21" DEEP BEAMS

PLAN

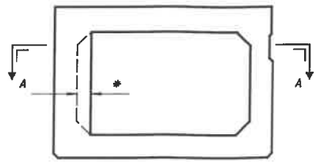


FOR 27", 33" AND 42" DEEP BEAMS

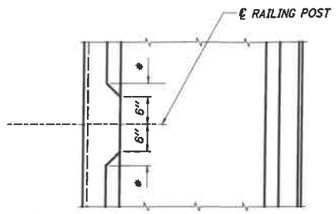
PLAN

BEAM LIFTING INSERTS AT PIER

REFER TO RAILING STANDARD BRIDGE DRAWINGS FOR ADDITIONAL RAILING DETAILS.
REINFORCEMENT NOT SHOWN.

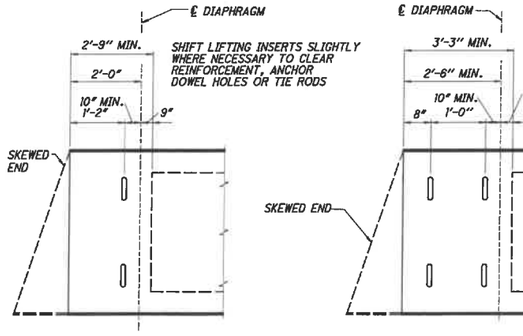


SECTION SHOWING WALL THICKENING AT RAILING ANCHORS



* THIS DIMENSION SAME AS WIDTH OF FILLET IN VOID.

SECTION A-A



FOR 12", 17" AND 21" DEEP BEAMS

PLAN

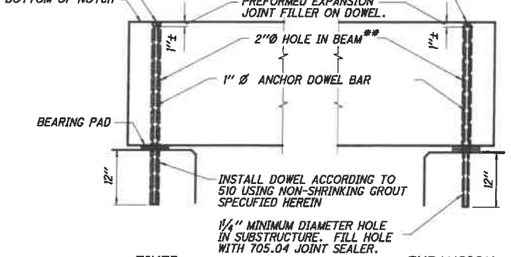
FOR 27", 33" AND 42" DEEP BEAMS

PLAN

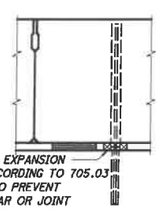
BEAM LIFTING INSERTS AT ABUTMENT

FILL HOLE WITH NON-SHRINKING GROUT. BOND BREAKER SHALL BE APPLIED TO DOWEL ABOVE BRIDGE SEAT.

FILL HOLE WITH 705.04 JOINT SEALER



FIXED EXPANSION

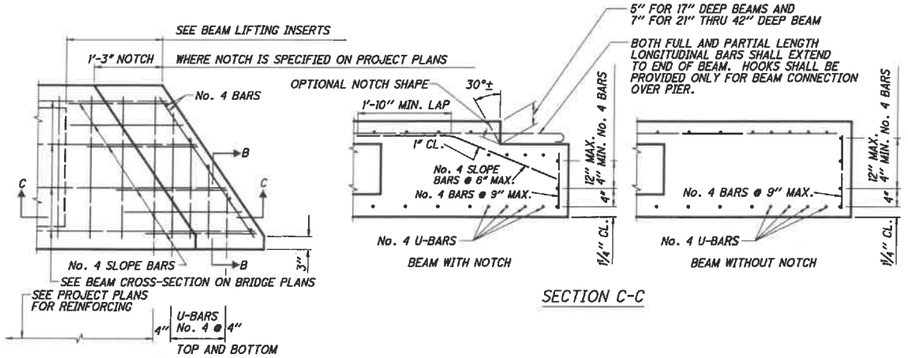


DOWEL CLEARS ELASTOMERIC BEARING

END VIEW

ANCHOR DOWELS

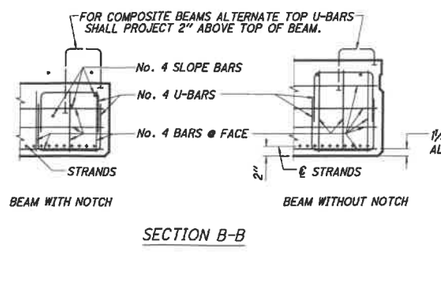
** PROVIDE 2½" Ø HOLE IN BEAM WHEN USING COMPRESSION SEAL EXPANSION JOINT ACCORDING TO STANDARD BRIDGE DRWG. EXJ-3-82



PLAN

INTERIOR BEAM WITH NOTCH AND INTERIOR/EXTERIOR BEAM WITHOUT NOTCH SHOWN. SEE ALTERNATE PLAN FOR FASCIA BEAM WITH NOTCH.

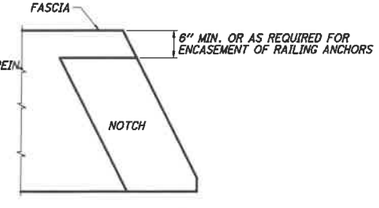
SECTION C-C



SECTION B-B

DETAILS AND REINFORCEMENT OF BEAM ENDS

NOTE: THE FABRICATOR'S SHOP DRAWINGS SHALL SHOW COMPLETE DETAILS OF THE BEAM REINFORCING.



PLAN-FASCIA BEAM WITH NOTCH

GENERAL NOTES:

GENERAL: THIS STANDARD DRAWING PROVIDES DESIGN AND GENERAL CONSTRUCTION DETAILS FOR PRESTRESSED CONCRETE BOX BEAM BRIDGES. THE DETAILS IN THIS STANDARD ARE APPLICABLE TO STRUCTURES WITH SKEW ANGLES OF 30° OR LESS. AS A MINIMUM, THE PROJECT PLANS FOR EACH STRUCTURE SHALL INCLUDE THE FOLLOWING DETAILS:

1. THE DESIGNER SHALL CHOOSE A 28-DAY CONCRETE STRENGTH BETWEEN 5500 PSI AND 7000 PSI; A RELEASE STRENGTH BETWEEN 4000 PSI AND 5000 PSI; AND A NOMINAL STRAND AREA OF 0.153 IN^2 OR 0.167 IN^2. THE DESIGNER SHALL USE THESE VALUES IN THE DESIGN AND LIST THESE VALUES IN THE STRUCTURE GENERAL NOTES.
2. A BEAM LAYOUT PLAN SHOWING: SPAN LENGTH; BEAM LENGTH; SKEW ANGLE; FIXED AND EXPANSION ENDS OF BEAMS; LOCATION OF ANCHOR DOWELS; SIZE, LOCATION AND HARDNESS OF ELASTOMERIC BEARING PADS; LOCATION OF DIAPHRAGM CENTERLINES; AND LOCATIONS OF RAILING POSTS.
3. A TRANSVERSE CROSS SECTION THROUGH THE DECK.
4. A BEAM ELEVATION/LONGITUDINAL CROSS SECTION SHOWING THE STIRRUP SPACING AND VARIABLE TOPPING THICKNESS IN SUFFICIENT DETAIL.
5. A CROSS SECTION OF THE BEAM SHOWING BEAM TYPE AND AND SIZE; SIZE, NUMBER, STRENGTH AND LOCATION OF STRANDS; DEBONDED STRAND REQUIREMENTS; ALL REINFORCING STEEL DETAILS; AND THE DESIGN DATA.
6. EXPANSION JOINT DETAILS.
7. ALL PLAN QUANTITY PAY ITEMS REQUIRED TO PROPERLY COVER THE COST OF FABRICATION, ERECTION AND CONSTRUCTION OF THE BEAMS.
8. DETAILS OF ABUTMENTS AND PIERS.
9. SEALING OF CONCRETE SURFACE LIMITS AND SEALER TYPE.
10. ALL OTHER DETAILS AND INFORMATION NECESSARY TO COMPLETE THE PLANS.

IT IS NOT INTENDED THAT DETAILS SHOWN ON THIS STANDARD DRAWING BE REPEATED ON THE PROJECT PLANS EXCEPT AS MAY BE REQUIRED FOR CLARITY.

DESIGN STRESSES:

PRESTRESSED CONCRETE - F'C = * (28-DAY)

F'Ci = ** (RELEASE)

CAST-IN-PLACE CONCRETE - F'C = 4500 PSI

REINFORCING STEEL - MIN. YIELD STRENGTH = 60,000 PSI. ALL REINFORCING STEEL IN THE COMPOSITE SLAB AND BARS PROJECTING FROM THE PRESTRESSED BOX BEAMS SHALL CONFORM TO 709.00.

PRESTRESSING STRAND - FURNISH MATERIAL CONFORMING TO 711.27 (ASTM A416), GRADE 270, LOW RELAXATION, UNCOATED, SEVEN WIRE STRAND. STRANDS SHALL BE 0.5 INCH DIAMETER WITH A TOTAL CROSS-SECTIONAL AREA OF EITHER 0.153 IN^2 OR 0.167 IN^2 ***

* - THE DESIGNER SHALL SPECIFY A 28-DAY COMPRESSIVE STRENGTH IN THE RANGE OF 5500 PSI MINIMUM TO 7000 PSI MAXIMUM AND LIST THE VALUE IN THE STRUCTURE'S GENERAL NOTES.

** - THE DESIGNER SHALL SPECIFY A RELEASE STRENGTH IN THE RANGE OF 4000 PSI MINIMUM TO 5000 PSI MAXIMUM AND LIST THE VALUE IN THE STRUCTURE'S GENERAL NOTES.

*** - THE DESIGNER SHALL SPECIFY THE STRAND AREA IN THE STRUCTURE'S GENERAL NOTES.

TRANSVERSE TIE RODS SHALL BE 1" DIAMETER STEEL RODS CONFORMING TO ASTM A311, GRADE 1018, AND THREADED AT EACH END. PROVIDE A NUT AND WASHER AT EACH END. THREADS MAY BE CUT OR ROLLED. IF ROLLED THREADS ARE USED, THE MINIMUM DIAMETER AT THE ROOT OF THE THREADS SHALL BE 0.838". INSTALL AND TORQUE RODS TO APPROXIMATELY 250 FT-LBS. AFTER TIGHTENING, FILL THE RECESSES IN THE FASCIA BEAMS WITH NON SHRINK MORTAR OF THE SAME COLOR AS THE BEAM. TIE NO MORE THAN THREE BEAMS TOGETHER WITH ONE TRANSVERSE TIE ROD.

GALVANIZING: GALVANIZE ANCHOR DOWEL BARS, INSERTS, TIE RODS, NUTS AND WASHERS ACCORDING TO 711.02.

ANCHOR DOWELS SHALL BE 1" DIAMETER SMOOTH STEEL RODS RODS CONFORMING TO ASTM A311, GRADE 1018. THE DESIGNER SHALL INDICATE ON THE PLANS WHICH BEAM ENDS ARE TO BE ANCHORED AND IF THE ANCHOR IS FIXED OR EXPANSION. LOCATE THE ANCHOR DOWEL HOLES AND PRESTRESSING STRANDS TO AVOID MUTUAL INTERFERENCE. THE LATERAL SPACING OF THE HOLES IN THE BEAM SHALL BE SUCH THAT THE ANCHOR DOWELS CLEAR THE ELASTOMERIC BEARING AND ARE AS CLOSE TO THE CENTERLINE OF BEAM AS POSSIBLE.

AFTER TENSIONING OF THE TRANSVERSE TIE RODS, DRILL 1⅛" MINIMUM DIAMETER DOWEL HOLES FOR FIXED DOWELS OR 1¼" MINIMUM DIAMETER HOLES FOR EXPANSION DOWELS INTO THE ABUTMENT OR PIER SEAT. CLEAN AND DRY DOWEL HOLES AND INSTALL DOWELS.

ELASTOMERIC BEARINGS: FOUR ELASTOMERIC BEARINGS ARE REQUIRED PER BEAM. POSITION AS SHOWN ON SHEET 4 OF 4.

PREFORMED BEARING PADS: WHERE THE ENGINEER DEEMS THAT SHIMS ARE REQUIRED, INSTALL PREFORMED BEARING PADS, 711.21, ⅛" THICK AND OF THE SAME PLAN DIMENSIONS AS THE ELASTOMERIC BEARINGS.

BEAM ENDS: FIELD APPLY ITEM 512 TYPE B WATERPROOFING TO THE BOX BEAM ENDS THAT ARE NOT COMPLETELY ENCASED IN CONCRETE. SEAL ALL STRANDS WITH A SHOP APPLIED TYPE E WATERPROOFING PER 512.08. WATERPROOFING SHALL EXTEND A MINIMUM OF 2 INCHES SURROUNDING EACH STRAND END.

NOTCHES: PROVIDE NOTCHES IN THE BEAM ENDS AT ABUTMENTS TO ACCOMMODATE EXPANSION JOINT ANCHORAGES AS SHOWN ON STANDARD BRIDGE DRAWINGS EXJ-3-82 AND EXJ-5-93 AND AT PIERS TO ACCOMMODATE CONTINUITY AS SHOWN ON SHEET 4 OF 4.

DRIP GROOVES ON THE UNDERSIDE OF THE FASCIA BEAM ARE NOT PERMITTED.

SURFACE PREPARATION FOR MORTAR: THE FABRICATOR SHALL SANDBLAST THE KEYWAY SURFACES WITHIN FOUR DAYS OF SHIPMENT TO THE PROJECT SITE. THE SANDBLASTING SHALL YIELD A VISUAL APPEARANCE AND TEXTURE EQUAL OR ROUGHER THAN 100 GRIT SANDPAPER OVER THE ENTIRE KEYWAY SURFACE. WHEN STAINS ARE VISIBLE BEFORE BLASTING THE CONCRETE, USE A DEGREASER TO ENSURE REMOVAL OF GREASE, OILS AND OTHER SIMILAR CONTAMINATES. THE DEGREASER SHALL BE WATER SOLUBLE SO IT CAN BE REMOVED BEFORE THE BLASTING BEGINS. BEFORE MORTARING, REMOVE ALL DIRT, DUST, GREASE, OIL AND OTHER FOREIGN MATERIAL FROM THE SURFACES USING A HIGH PRESSURE WASH OF AT LEAST 1000 PSI AT A DELIVERY RATE OF AT LEAST 4 GAL/MIN.

MORTAR:

MORTAR OR GROUT FOR TIE ROD RECESSES, ANCHOR DOWEL HOLES AND KEYWAYS BETWEEN PRESTRESSED CONCRETE BOX BEAMS, SHALL BE A NON-SHRINK TYPE AS DESCRIBED IN THE ALTERNATES BELOW. DURING THE GROUTING OPERATION, PREPARE AT LEAST THREE, 3" DIAMETER BY 6" LONG TEST CYLINDERS OF THE GROUTING MATERIAL. SUBMIT THE CYLINDERS TO THE LABORATORY TO DETERMINE THE MINIMUM COMPRESSIVE STRENGTH OF THE GROUT.

ALTERNATE 1 - OPEN TO TRAFFIC LATER THAN 7 DAYS AFTER GROUTING:

FURNISH MORTAR CONFORMING TO 706.22 OR TO PROPOSAL NOTE FOR HIGH EARLY STRENGTH KEYWAY GROUT. AFTER THE TIE RODS ARE TIGHTENED, PREPARE PLACE AND CURE THE MORTAR ACCORDING TO THE MANUFACTURER'S SPECIFICATIONS. PLACE MORTAR IN A MANNER THAT ENSURES COMPLETE AND SOLID FILLING. THE MINIMUM STRENGTH OF THE MORTAR SHALL BE 5000 PSI BEFORE CONSTRUCTION OR VEHICULAR TRAFFIC IS ALLOWED ON THE BEAMS.

ALTERNATE 2 - PART WIDTH CONSTRUCTION OR OPEN TO TRAFFIC WITHIN 7 DAYS AFTER GROUTING:

FURNISH MORTAR CONFORMING TO PROPOSAL NOTE FOR HIGH EARLY STRENGTH GROUT. AFTER THE TIE RODS ARE TIGHTENED, PREPARE, PLACE AND CURE THE MORTAR ACCORDING TO THE MANUFACTURER'S SPECIFICATIONS. PLACE MORTAR IN A MANNER THAT ENSURES COMPLETE AND SOLID FILLING. THE MINIMUM STRENGTH OF THE MORTAR SHALL BE 5000 PSI BEFORE CONSTRUCTION OR VEHICULAR TRAFFIC IS ALLOWED ON THE BEAMS.

COMPOSITE BRIDGES:

1. SURFACE PREPARATION: THOROUGHLY CLEAN THE TOP SURFACE OF THE BEAMS OF ALL DIRT, DUST AND OTHER FOREIGN MATERIALS WITH WATER, AIR UNDER PRESSURE OR ANY OTHER METHOD THAT PRODUCES SATISFACTORY RESULTS. THOROUGHLY DRENCH THE SURFACE WITH CLEAN WATER. BEFORE PLACING THE CONCRETE, ALLOW THE SURFACE TO DRY TO A DAMP CONDITION.
2. SLAB PLACEMENT: COMPOSITE SLAB POURS ON MULTISPAN SPAN BRIDGES SHALL BE AS LONG AS PRACTICAL. IF NECESSARY, PLACE CONSTRUCTION JOINTS NEAR MIDSPAN, PERPENDICULAR TO THE CENTERLINE OF THE ROADWAY. WHEN STRUCTURAL EXPANSION JOINTS ARE LOCATED AT THE PIERS, PLACE COMPOSITE SLAB BETWEEN THESE JOINTS WITHOUT ADDITIONAL CONSTRUCTION JOINTS EXCEPT AS NOTED IN 511.

BASIS OF PAYMENT: ALL COSTS ASSOCIATED WITH FURNISHING AND INSTALLING THE KEYWAY GROUT, THE ANCHOR DOWELS AND THE PREFORMED EXPANSION JOINT FILLER BETWEEN THE BEARINGS, IS CONSIDERED INCIDENTAL TO THE BOX BEAMS.

THE DEPARTMENT WILL PAY FOR FURNISHING AND INSTALLING TYPE B WATERPROOFING SEPARATELY.

STATE OF OHIO DEPARTMENT OF TRANSPORTATION

10-19-07
DATE

ADMINISTRATOR

REVISIONS
01-21-11
07-20-18

DESIGNED	CHECKED
MRG/SAM	WLF/SEM
DRAWN	REVIEWED
REF	LMW

OFFICE OF STRUCTURAL ENGINEERING

STANDARD BRIDGE DRAWING
PRESTRESSED CONCRETE BOX BEAM BRIDGE DETAILS

SCD NUMBER
PSBD-2-07

1 / 4

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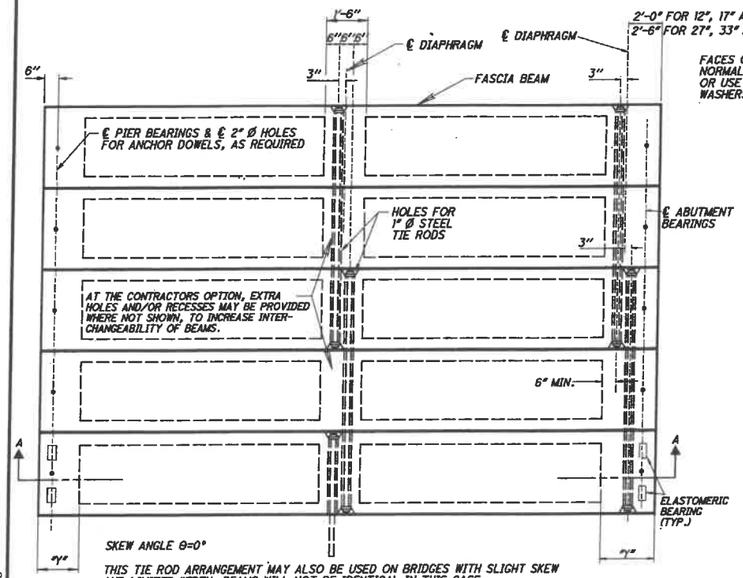
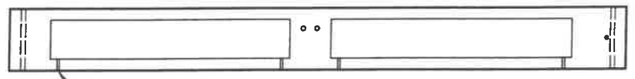
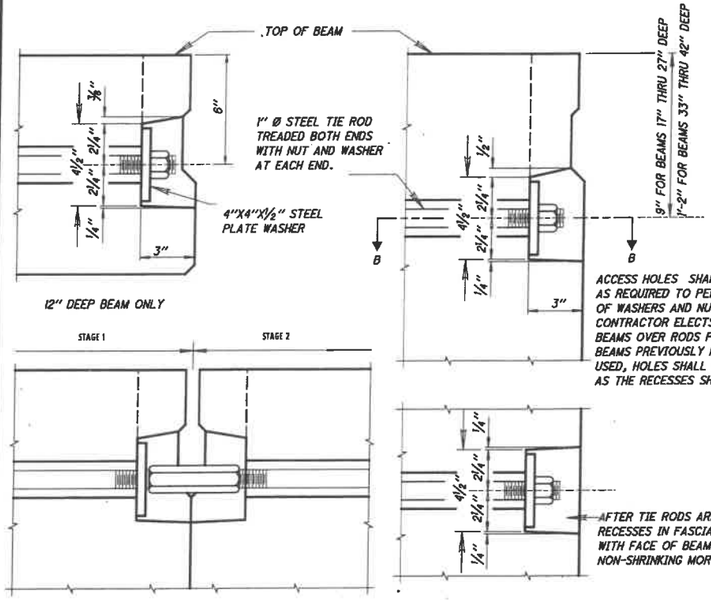


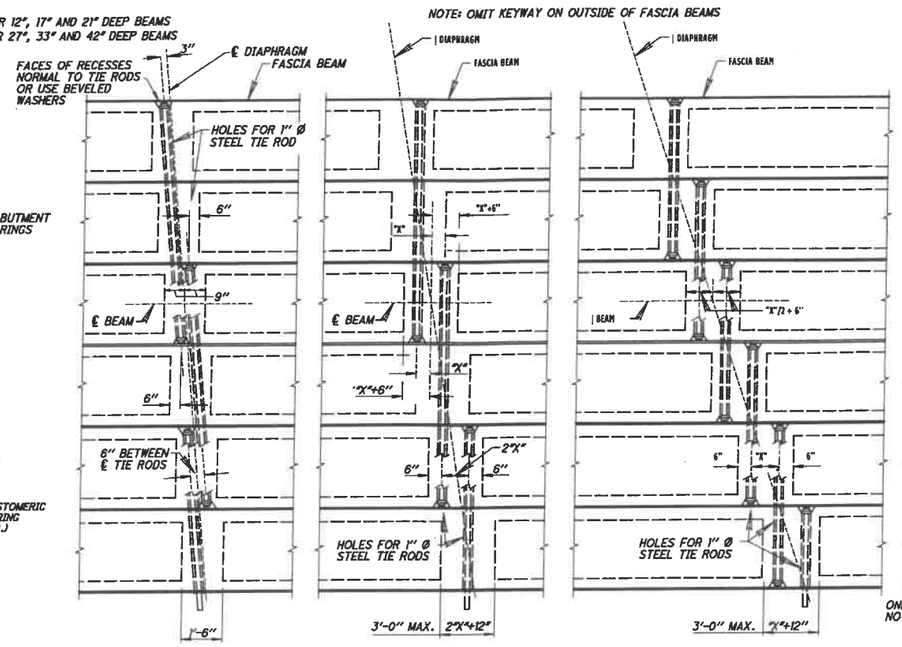


SECTION A-A



SECTION B-B (ALL BEAMS)

END DETAILS OF TRANSVERSE TIE ROD ANCHORAGE

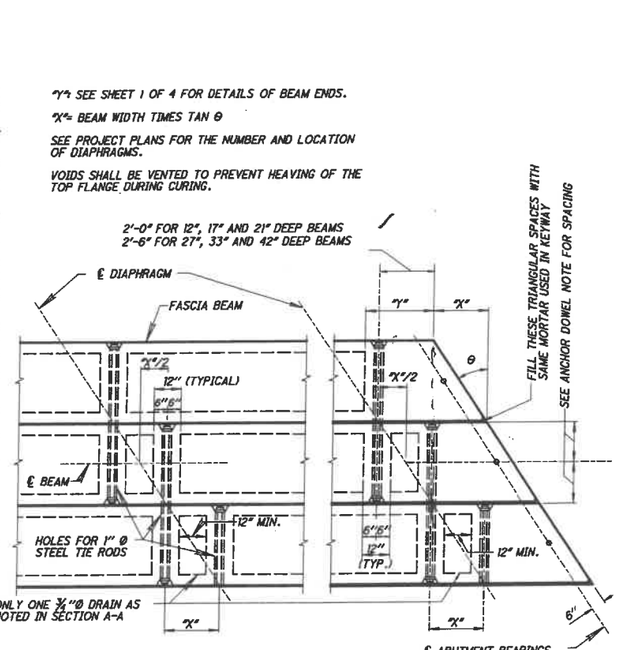


θ=0° TO 5° FOR 3' WIDE BEAMS *
θ=0° TO 4° FOR 4' WIDE BEAMS *

θ OVER 5° TO 18° FOR 3' WIDE BEAMS *
θ OVER 4° TO 14° FOR 4' WIDE BEAMS *

θ OVER 18° TO 30° FOR 3' WIDE BEAMS *
θ OVER 14° TO 26° FOR 4' WIDE BEAMS *

* AS AN OPTION THE FABRICATOR MAY MAKE PROVISION FOR GREATER INTERCHANGEABILITY OF INTERIOR BEAMS BY FURNISHING DOUBLE TIE ROD HOLES IN THE DIAPHRAGMS AND PERMITTING ONE TIE ROD TO TIE TWO BEAMS TOGETHER.

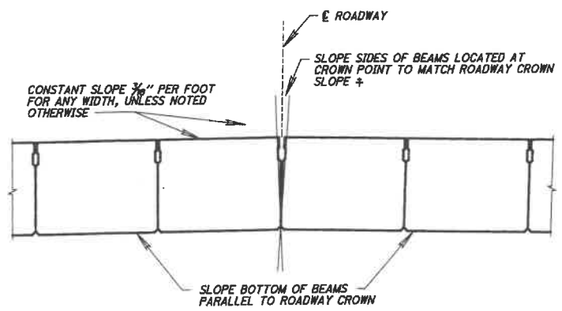


θ OVER 26° TO 30° FOR 4' WIDE BEAMS *

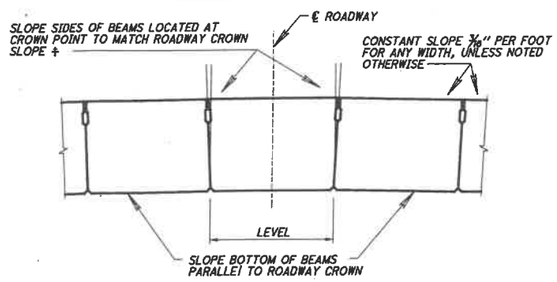
TYPICAL PLANS OF DIAPHRAGMS AND TRANSVERSE TIE RODS

HOLES IN BEAMS FOR TRANSVERSE TIE RODS SHALL BE NOT LESS THAN 2"Ø AND NOT MORE THAN 3"Ø.

DIMENSIONS OF RECESSES IN FASCIA BEAMS AND SHEAR KEYS AND VERTICAL LOCATION OF TRANSVERSE TIE RODS MAY VARY FROM THE DIMENSIONS SHOWN HEREON, SUBJECT TO APPROVAL BY THE DIRECTOR.



JOINT AT ℄ ROADWAY



JOINT OFFSET FROM ℄ ROADWAY

+ REQUIRED ONLY FOR ROADWAY CROWN SLOPES OF ¼" PER FOOT OR GREATER.

NORMAL CROWN TREATMENT AT ℄ ROADWAY

DIAPHRAGM PLACEMENT

PROVIDE INTERMEDIATE DIAPHRGAMS AS FOLLOWS:
SPAN ≤ 50'-0", ONE DIAPHRAGM
50'-0" < SPAN ≤ 75'-0", TWO DIAPHRAGMS
SPAN > 75'-0", THREE DIAPHRAGMS

STATE OF OHIO DEPARTMENT OF TRANSPORTATION
T. Keller
ADMINISTRATOR
10-19-07
DATE

REVISIONS
01-21-11
07-20-18

DESIGNED MRG/SAM | CHECKED WLF/SBM
DRAWN REF | REVIEWED LMW

OFFICE OF STRUCTURAL ENGINEERING

STANDARD BRIDGE DRAWING
PRESTRESSED CONCRETE BOX BEAM BRIDGE DETAILS

SCD NUMBER PSBD-2-07

2 / 4

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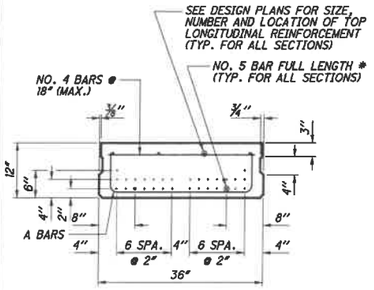
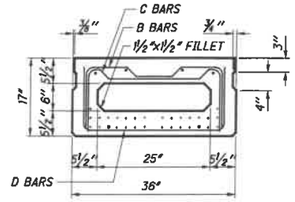
* - TWO BOTTOM REINFORCING BARS (NO. 5 FULL LENGTH) SHALL BE LOCATED AS SHOWN. IF NECESSARY, A LAP OF 3'-3" SHALL BE LOCATED WITHIN THE OUTER QUARTER OF THE SPAN.

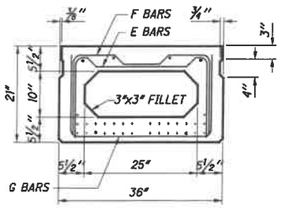


B12-36

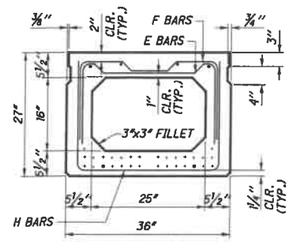
(STRAND PATTERN TYPICAL FOR ALL 36" WIDE BEAMS)



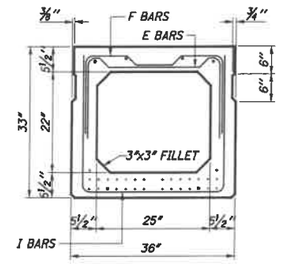
B17-36



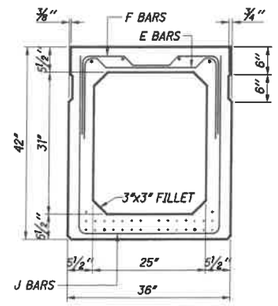
B21-36



B27-36

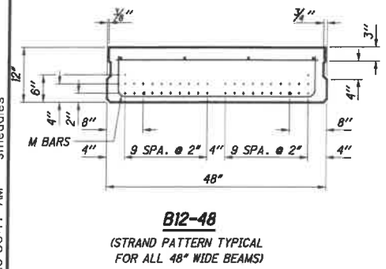


B33-36



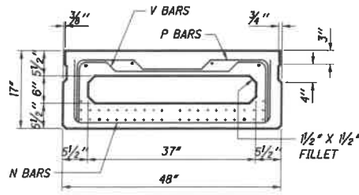
B42-36

36" WIDE NON-COMPOSITE BEAMS



B12-48

(STRAND PATTERN TYPICAL FOR ALL 48" WIDE BEAMS)



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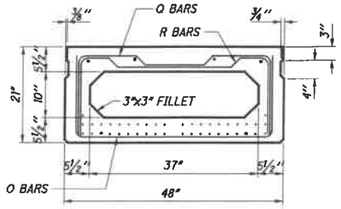

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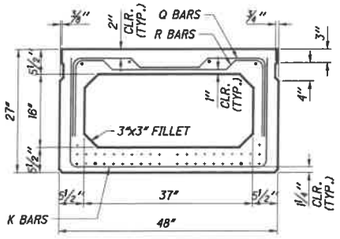

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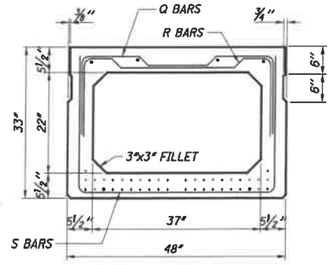

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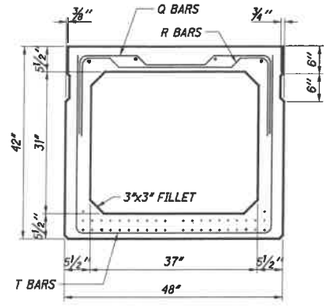
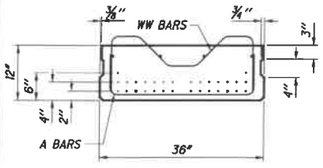


B42-48

48" WIDE NON-COMPOSITE BEAMS



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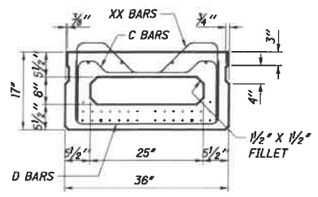

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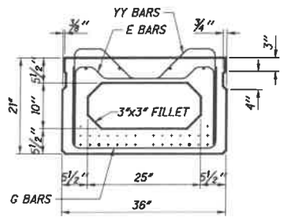

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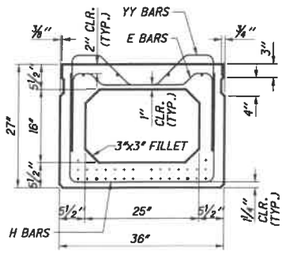

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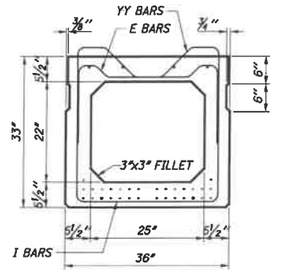

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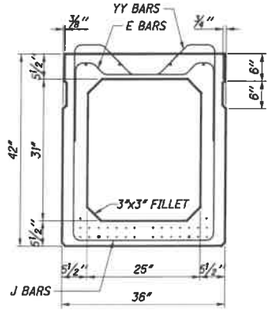
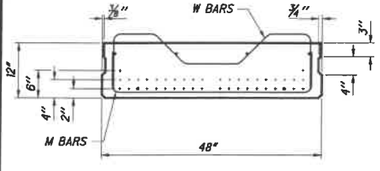
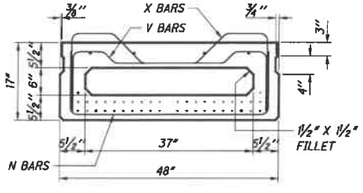


CB42-36

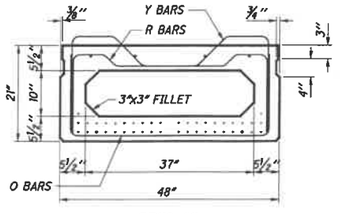
36" WIDE COMPOSITE BEAMS



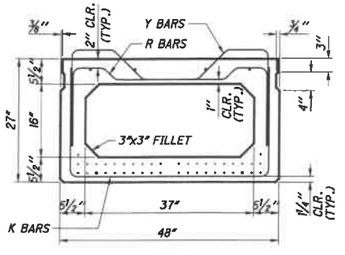
CB12-48



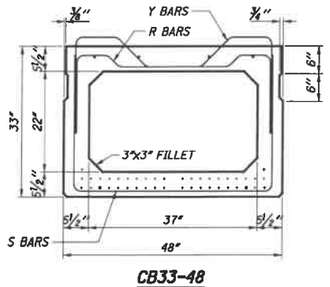
CB17-48



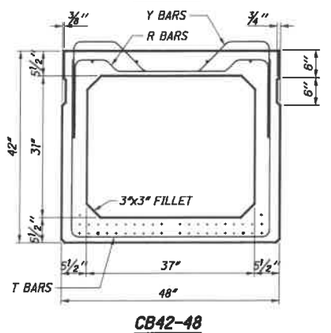
CB21-48



CB27-48



CB33-48



CB42-48

48" WIDE COMPOSITE BEAMS

NOTES:
1. STRANDS SHALL BE PLACED AS SHOWN AND SHALL BE DISTRIBUTED SYMMETRICALLY OVER THE BEAM WIDTH. STRAND PATTERN AND THE DEBOND LENGTH SHALL BE SYMMETRICAL ABOUT THE VERTICAL ℄ OF THE BEAM. DEBONDED STRANDS SHALL BE IN THE BOTTOM LAYER.
2. ALTERNATE TOP STIRRUPS TO LAP BOTTOM STIRRUPS AT EACH END OF BEAM WHERE TWO TYPES OF TOP STIRRUPS ARE PROVIDED.
3. THE MINIMUM TOP LONGITUDINAL REINFORCING STEEL SHALL BE 4-NO. 5 BARS. SEE PROJECT PLANS FOR ADDITIONAL REQUIREMENTS.

NOTES: (CONTINUED)
4. FABRICATOR'S SHOP DRAWINGS SHALL SHOW COMPLETE DETAILS OF BEAM REINFORCING.
5. SEE SHEET 4 OF 4 FOR REINFORCEMENT DETAILS, BENDING DIAGRAMS, AND BEAM SECTION PROPERTIES.

STATE OF OHIO DEPARTMENT OF TRANSPORTATION
10-19-07 DATE
ADMINISTRATOR

REVISIONS
01-21-11
07-20-18

DESIGNED MRG/SAM | CHECKED WLF/SEM
DRAWN REF | REVIEWED LMW

OFFICE OF STRUCTURAL ENGINEERING

STANDARD BRIDGE DRAWING
PRESTRESSED CONCRETE BOX BEAM BRIDGE DETAILS

SCD NUMBER PSBD-2-07

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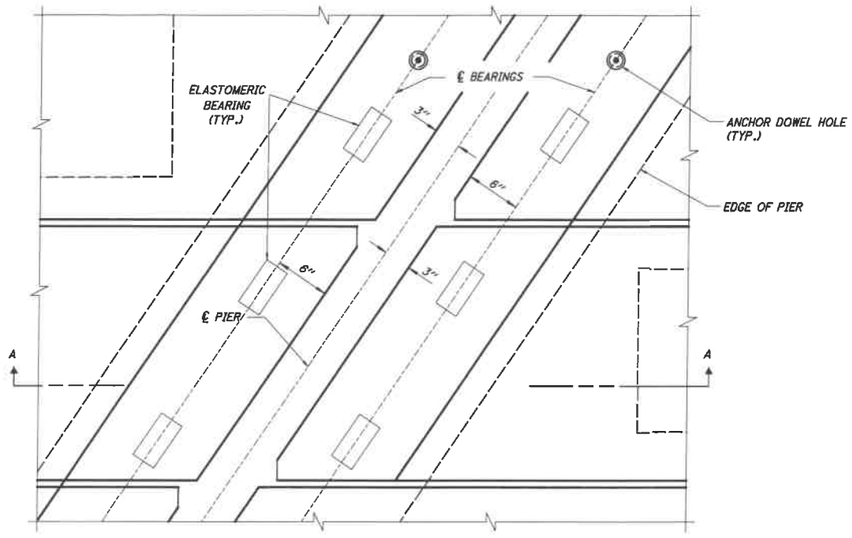
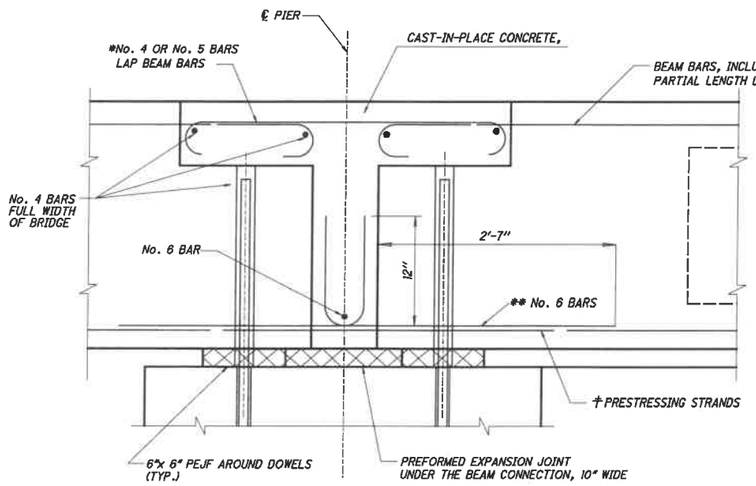


PARTIAL PLAN OF BEAM CONNECTION OVER PIER



SECTION A-A

* LAP BARS SAME SIZE AND NUMBER AS BEAM BARS. HOOKS MAY BE ROTATED FROM THE VERTICAL POSITION TO PROVIDE THE REQUIRED CLEARANCE.

** PROVIDE 6 No. 6 BARS EACH BEAM END IN 48" WIDE BEAMS AND 4 No. 6 BARS EACH BEAM END IN 36" WIDE BEAMS. No. 6 BARS SHALL BE LOCATED ON TOP OF STIRRUPS AND SHALL BE UNIFORMLY SPACED ACROSS THE BEAM.

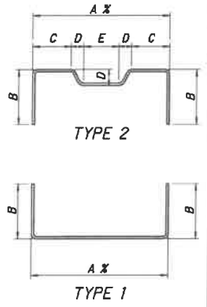
† AT THE FABRICATOR'S OPTION, STRANDS MAY BE EXTENDED AND BENT UP IN LIEU OF No. 6 BARS. 48" WIDE BEAMS WITH A TOTAL OF 12 OR MORE STRANDS SHALL HAVE A MINIMUM OF 6 STRANDS BENT UP. 48" WIDE BEAMS WITH LESS THAN 12 STRANDS TOTAL SHALL HAVE APPROXIMATELY ONE HALF OF THE TOTAL NUMBER OF STRANDS BENT UP. 36" WIDE BEAMS WITH A TOTAL OF 8 OR MORE STRANDS SHALL HAVE A MINIMUM OF 4 STRANDS BENT UP. 36" WIDE BEAMS WITH LESS THAN 8 STRANDS TOTAL SHALL HAVE APPROXIMATELY ONE HALF OF THE TOTAL NUMBER OF STRANDS BENT UP

NOTE: THE PRESTRESSING STRANDS WHICH ARE BENT UP SHALL BE STAGGERED IN ABUTTING BEAM ENDS TO AVOID INTERFERENCE.

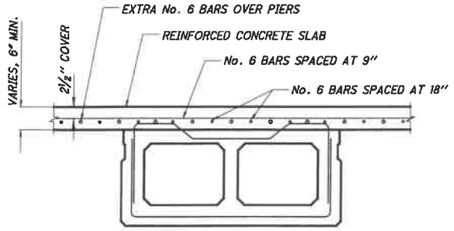
BENT REINFORCING BARS

MARK	TYPE	A	B	C	D	E
A	1	32"	8"			
B	2	32"	13"	10½"	2"	7"
C	2	32"	13"	4½"	2"	19"
D	1	32"	13"			
E	2	32"	17"	4½"	2"	19"
F	2	32"	17"	10½"	2"	7"
G	1	32"	17"			
H	1	32"	23"			
I	1	32"	29"			
J	1	32"	38"			
K	1	44"	23"			
M	1	44"	8"			
N	1	44"	13"			
O	1	44"	17"			
P	2	44"	13"	13½"	2"	13"
Q	2	44"	17"	13½"	2"	13"
R	2	44"	17"	7½"	2"	25"
S	1	44"	29"			
T	1	44"	38"			
V	2	44"	13"	7½"	2"	25"
W	2	44"	12"	9½"	6½"	12"
X	2	44"	17"	9½"	6½"	12"
Y	2	44"	21"	9½"	6½"	12"
WW	2	32"	12"	6½"	6½"	6"
XX	2	32"	17"	6½"	6½"	6"
YY	2	32"	21"	6½"	8½"	6"

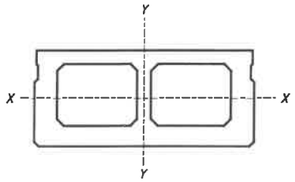
BENDING DIAGRAMS



NOTE: ALL BARS ARE #4



36" OR 48" WIDE COMPOSITE BEAM WITH SLAB



36" OR 48" WIDE COMPOSITE BEAM

48" WIDE BOX BEAM - SECTION PROPERTIES

	D	12"	17"	21"	27"	33"	42"
BEAM ONLY	A_b	567.8	590.3	647.8	713.8	774.5	873.5
	I_b	6850	18819	33884	66222	111342	205459
	Y_b	5.97"	8.44"	10.42"	13.39"	16.33"	20.78"
	Z_t	1136	2198	3202	4866	6681	9684
	Z_b	1147	2230	3253	4945	6816	9886
COMPOSITE SECTION	I_c	18681	38620	62057	109704	173831	303315
	Y_b^c	8.32	11.40	13.69	17.13	20.51	25.49
	Z_t^c	5079	6898	8489	11119	13922	18367
	Z_b^c	2245	3387	4533	6403	8474	11901

36" WIDE BOX BEAMS - SECTION PROPERTIES

	D	12"	17"	21"	27"	33"	42"
BEAM ONLY	A_b	423.8	458.3	515.8	581.8	642.5	741.5
	I_b	5122	14122	25622	50634	86049	161155
	Y_b	5.96"	8.42"	10.40"	13.37"	16.30"	20.75"
	Z_t	848	1646	2416	3714	5153	7582
	Z_b	859	1677	2464	3788	5279	7768
COMPOSITE SECTION	I_c	14003	29153	47126	83956	134078	236517
	Y_b^c	8.32	11.31	13.53	16.88	20.17	25.00
	Z_t^c	3809	5127	6308	8296	10448	13916
	Z_b^c	1682	2577	3483	4974	6649	9459

SECTION PROPERTIES FOR COMPOSITE SECTONS ARE COMPUTED WITH A SLAB THICKNESS OF 5". TOTAL THICKNESS OF SLAB IS 6" WHICH INCLUDES 1" MONOLITHIC WEARING SURFACE.

$$\frac{E_{slab}}{E_{beam}} = 0.90$$

DEFINITIONS:

D = TOTAL DEPTH OF THE NON-COMPOSITE BEAM (IN)

A_b = CROSS-SECTIONAL AREA OF THE NON-COMPOSITE BEAM (IN^2)

I_b = MOMENT OF INERTIA OF THE NON-COMPOSITE BEAM ABOUT THE X-X AXIS (IN^4)

Y_b = LOCATION OF THE NEUTRAL AXIS OF THE NON-COMPOSITE SECTION MEASURED FROM THE EXTREME BOTTOM FIBER (IN)

Z_t = SECTION MODULUS FOR THE EXTREME TOP FIBER OF THE NON-COMPOSITE BEAM (IN^3)

Z_b = SECTION MODULUS FOR THE EXTREME BOTTOM FIBER OF THE NON-COMPOSITE BEAM (IN^3)

I_c = MOMENT OF INERTIA OF THE COMPOSITE BEAM ABOUT THE X-X AXIS (IN^4)

Y_b^c = LOCATION OF NEUTRAL AXIS OF COMPOSITE SECTION MEASURED FROM THE EXTREME BOTTOM FIBER (IN)

Z_t^c = SECTION MODULUS FOR THE EXTREME TOP FIBER OF COMPOSITE SECTION (IN^3)

Z_b^c = SECTION MODULUS FOR THE EXTREME BOTTOM FIBER OF THE COMPOSITE SECTION (IN^3)

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