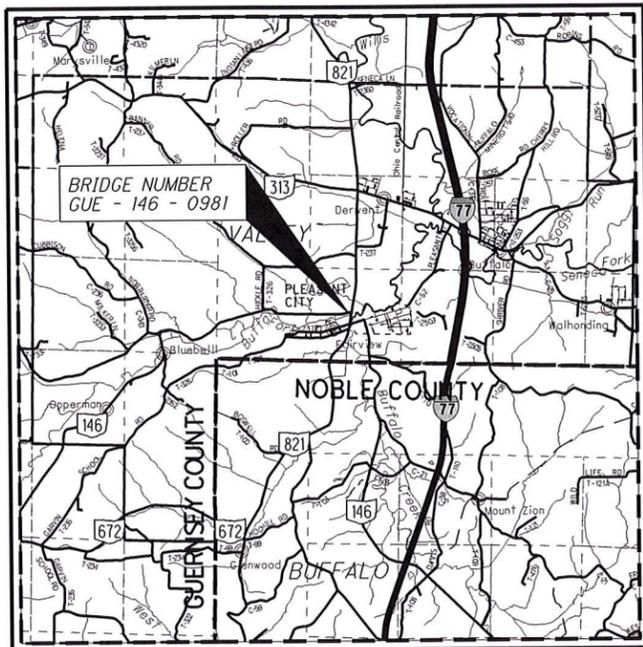


STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

GUE-146-9.81

PART I VALLEY TOWNSHIP GUERNSEY COUNTY (FOR PART II SEE GUE-662-2.40)



LOCATION MAP

LATITUDE: 39°54'15.56" LONGITUDE: -81°33'02.40"



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

DESIGN DESIGNATION

CURRENT ADT (2017)	1900
DESIGN YEAR ADT (2037)	3500
DESIGN HOURLY VOLUME (2037)	385
DIRECTIONAL DISTRIBUTION	55%
TRUCKS (24 HOUR B&C)	3%
DESIGN SPEED	55 MPH
LEGAL SPEED	55 MPH
DESIGN FUNCTIONAL CLASSIFICATION:	
RURAL MAJOR COLLECTOR	
NHS PROJECT	NO
DESIGN EXCEPTIONS	NONE

INDEX OF SHEETS:

TITLE SHEET	1
GUARDRAIL LAYOUT	2
GENERAL SUMMARY	3
GENERAL PLAN & ELEVATION	4
BRIDGE NOTES	5
PILE ENCASEMENTS	6 & 7
TRANSVERSE SECTION	8
DECK RESTEEL LAYOUT	9
REINFORCING STEEL LIST	10
PLAN INSERT SHEETS	11-21

PROJECT DESCRIPTION

SFN 3003876 (GUE-146-0981) CARRYING S.R. 146 OVER BUFFALO FORK - REPLACE DECK EDGE, PILE ENCASEMENTS AND BRIDGE RAILS.

PROJECT EARTH DISTURBED AREA: N/A ACRES
ESTIMATED CONTRACTOR EARTH DISTURBED AREA: N/A ACRES
NOTICE OF INTENT EARTH DISTURBED AREA: N/A ACRES

2016 SPECIFICATIONS

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

I HEREBY APPROVED THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL NOT 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.

UNDERGROUND UTILITIES

CONTACT BOTH SERVICES TWO WORKING DAYS BEFORE YOU DIG.

Call Before You Dig
1-800-362-2764

OHIO UTILITIES PROTECTION SERVICE
(Non-members must be called directly)

OIL & GAS PRODUCERS UNDERGROUND PROTECTION SERVICE
1-800-925-0988

PLAN PREPARED BY:
OHIO DEPARTMENT OF
TRANSPORTATION DISTRICT 5

ENGINEERS SEAL:
STRUCTURE



SIGNED: *Tracy Allen Greenwald*
DATE: 1-30-2017

STANDARD CONSTRUCTION DRAWINGS				SUPPLEMENTAL SPECIFICATIONS	SPECIAL PROVISIONS
AS-1-15	7-17-15	MT-95.45	1-20-17	800 1/20/17	WPC 12/28/16
DS-1-92	7-18-03	MT-95.50	10-16-15	832 1/17/14	
		MT-97-10	7-18-14		ASBESTOS SURVEY REPORT 12/23/2016
		MT-101.60	1-20-17		
		MT-105.10	7-19-13		
DM-4.3	1-15-16				
DM-4.4	1-15-16				
		TC-41.20	10-18-13		
		TC-61.30	1-20-17		

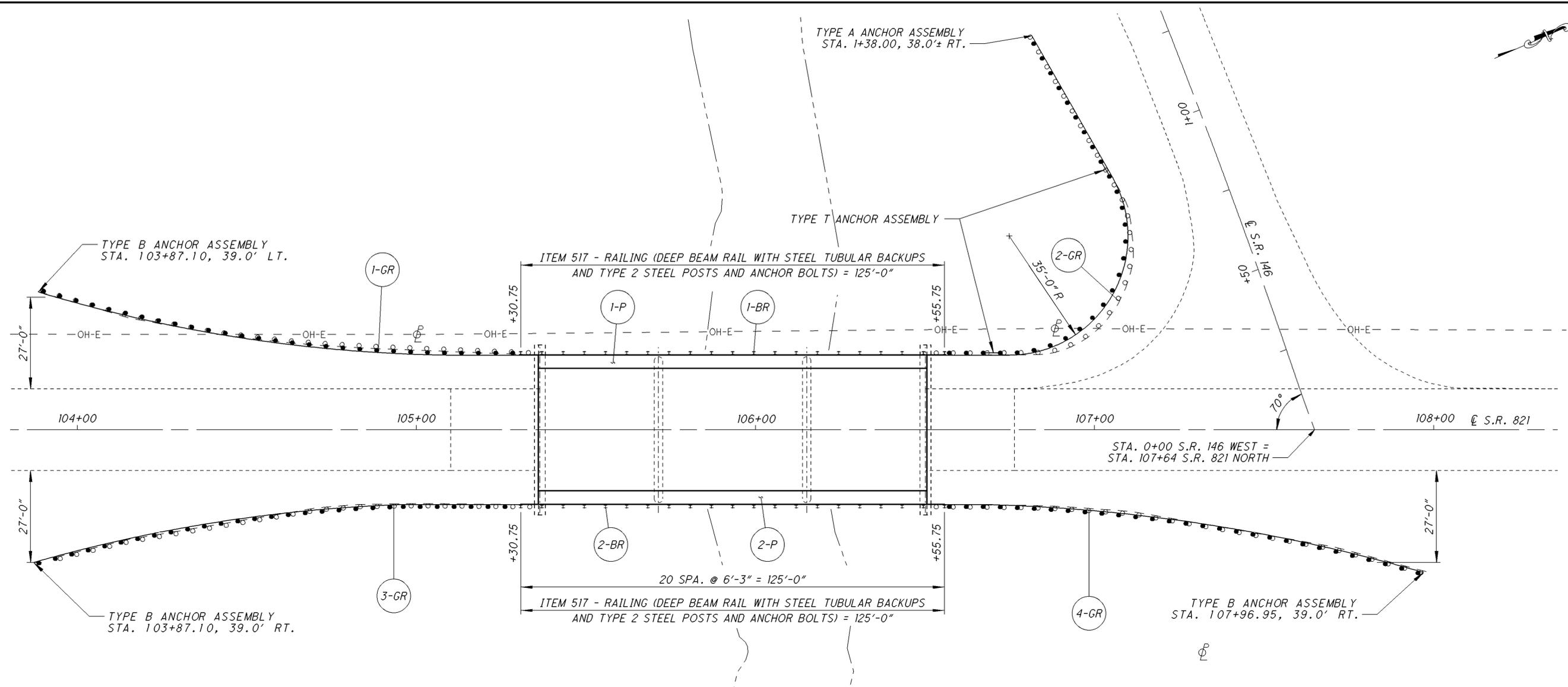
APPROVED: *[Signature]*
DATE: 1/31/17 DISTRICT DEPUTY DIRECTOR

APPROVED: _____
DATE: _____ DIRECTOR, DEPARTMENT OF TRANSPORTATION

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FEDERAL PROJECT NO. E140720
PID NO. 89019
CONSTRUCTION PROJECT NO.
RAILROAD INVOLVEMENT NONE
GUE-146-9.81
1/21

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MARK	STATION	TO	STATION	202	202	202	209	407	441	441	517	517	606	606	606	606	
				GUARDRAIL REMOVED	BRIDGE RAILING REMOVED	ANCHOR ASSEMBLY REMOVED, TYPE A	RESHAPING BERM	TACK COAT (@ 0.070 GAL./SQ YD.)	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), PG64-22	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (448)	RAILING (DEEP BEAM RAIL WITH STEEL TUBULAR BACKUP AND TYPE 2 STEEL POSTS AND ANCHOR BOLTS), AS PER PLAN	DEEP BEAM BRIDGE RETROFIT RAILING	GUARDRAIL, TYPE 5	ANCHOR ASSEMBLY, TYPE A	ANCHOR ASSEMBLY, TYPE B	ANCHOR ASSEMBLY, TYPE T	BRIDGE TERMINAL ASSEMBLY, TYPE 4
				FT	FT	EACH	STA	GAL.	CU YD	CU YD	FT	FT	FT	EACH	EACH	EACH	EACH
1-GR	103+87.10	-	105+30.75	118.75		1	1.44						112.50		1		1
2-GR	103+87.10	-	105+30.75	118.75		1	1.44						112.50	1			1
3-GR	106+55.75	-	01+38.00	118.75		1	1.44						112.50		1	2	1
4-GR	106+55.75	-	107+96.95	118.75		1	1.44						112.50		1		1
1-P	105+30.75	-	106+55.75					7.2	2.0	6.6							
2-P	105+30.75	-	106+55.75					7.2	2.0	6.6							
1-BR	105+30.75	-	106+55.75		125.00						125.0	125.0					
2-BR	105+30.75	-	106+55.75		125.00						125.0	125.0					
TOTAL				475.00	250.00	4	5.76	14.4	4.0	13.2	250.0	250.0	450.00	1	3	2	4

GUARDRAIL LAYOUT
BRIDGE NO. GUE-146-0988
OVER BUFFALO FORK

GUE-146-9.81

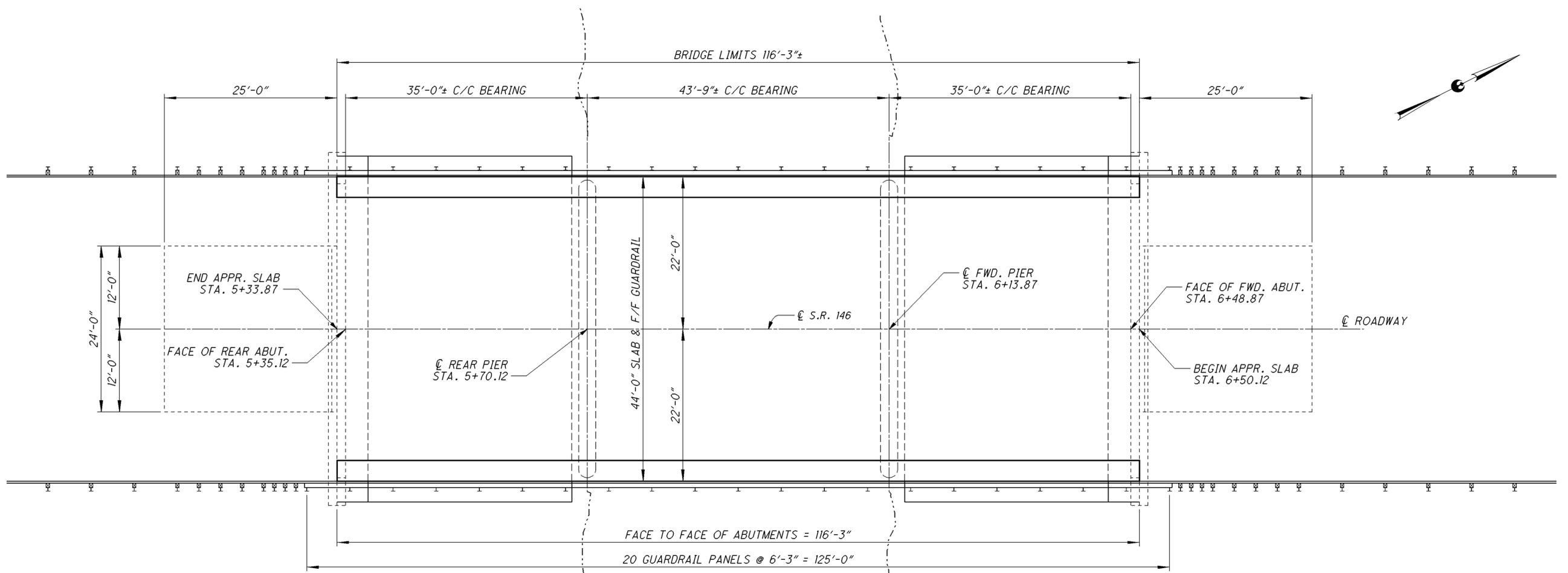
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21

DESIGNED	KMR	CHECKED	CPS
DRAWN	KMR	REVISED	
REVIEWED	TAG	STRUCTURE FILE NUMBER	3003876
DATE	1-23-2017		
DESIGN AGENCY	OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 5		

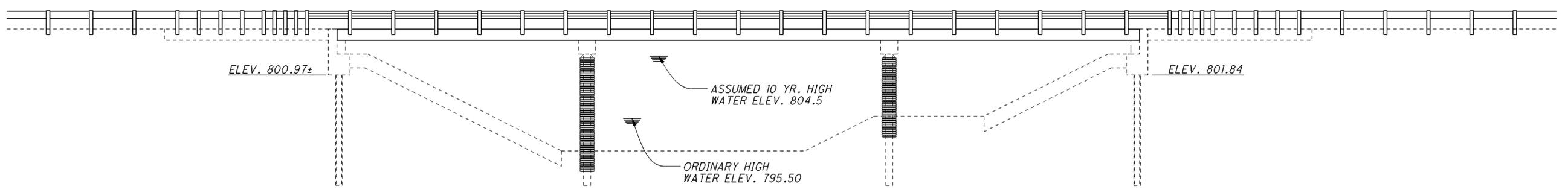
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SHEET NUM.										PART.		ITEM	ITEM	GRAND	UNIT	DESCRIPTION	SEE SHEET NO.	
		2		5						01/STR/BR			EXT	TOTAL				
												201	11000	LS		ROADWAY CLEARING AND GRUBBING		
												202	23500	103	SY	WEARING COURSE REMOVED		
		475										202	38000	475	FT	GUARDRAIL REMOVED		
		250										202	38500	250	FT	BRIDGE RAILING REMOVED		
		4										202	42000	4	EACH	ANCHOR ASSEMBLY REMOVED, TYPE A		
												209	15000	5.76	STA	RESHAPING UNDER GUARDRAIL		
		5.76										209	70000	50	CY	BORROW	5	
				50								606	13000	450	FT	GUARDRAIL, TYPE 5		
		450										606	25000	1	EACH	ANCHOR ASSEMBLY, TYPE A		
		1										606	26000	3	EACH	ANCHOR ASSEMBLY, TYPE B		
		3										606	26500	2	EACH	ANCHOR ASSEMBLY, TYPE T		
		2										606	35140	4	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 4		
		4																
												659	00530	300	SY	EROSION CONTROL SEEDING AND MULCHING, CLASS 3B	5	
				300								659	20000	0.03	TON	COMMERCIAL FERTILIZER	5	
				0.03								659	31000	0.06	ACRE	LIME	5	
				0.06								659	35000	0.81	MGAL	WATER	5	
				0.81								832	30000	350	EACH	EROSION CONTROL		
												407	10000	14	GAL	PAVEMENT TACK COAT		
		14										441	50000	4	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), PG64-22		
		4										441	50300	13	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (448)		
		13																
												630	03100	46	FT	TRAFFIC CONTROL GROUND MOUNTED SUPPORT, NO. 3 POST	5	
				46								630	80100	12	SF	SIGN, FLAT SHEET	5	
				12														
												202	11300	43	CY	STRUCTURE REPAIR (3003876 / GUE-146-9.81) PORTIONS OF STRUCTURE REMOVED		
												SPECIAL	50771200	225	FT	PILE ENCASMENT	5	
												509	10000	10,551	LB	EPOXY COATED REINFORCING STEEL		
												511	34410	43	CY	CLASS QC2 CONCRETE, SUPERSTRUCTURE		
												517	72301	250	FT	RAILING (DEEP BEAM RAIL WITH STEEL TUBULAR BACKUP AND TYPE 2 STEEL POSTS AND ANCHOR BO	8	
												517	75600	250	FT	DEEP BEAM BRIDGE RETROFIT RAILING		
												SPECIAL	51822300	290	FT	STEEL DRIP STRIP	8	
												614	11000	LS		INCIDENTALS MAINTAINING TRAFFIC		
												619	16000	1	MNTH	FIELD OFFICE, TYPE A		
												623	10000	LS		CONSTRUCTION LAYOUT STAKES AND SURVEYING		
												624	10000	LS		MOBILIZATION		

DESIGN AGENCY	OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 5
DATE	1-23-2017
REVISION TAG	3003876
DESIGNED	KMR
CHECKED	CPS
DRAWN	KMR
REVISED	
GENERAL SUMMARY	BRIDGE NO. GUE-146-0988 OVER BUFFALO FORK
GUE-146-9.81	
3	21



GENERAL PLAN



ELEVATION

EXISTING STRUCTURE

TYPE: 3-SPAN CONTINUOUS CONCRETE SLAB BRIDGE ON CAPPED PILE PIERS AND CAPPED PILE ABUTMENTS
 SPANS: 35'-0"±, 43'-9"±, 35'-0"±
 ROADWAY: 44'-0"± F/F GUARDRAILS
 LOADING: HS-20
 SKEW: 0°
 WEARING SURFACE: 5/2" ASPHALT
 APPROACH SLABS: AS-1-67, 25'-0"±
 ALIGNMENT: TANGENT
 CROWN: 0.0156"/'
 STRUCTURAL FILE NUMBER: 3003876
 DATE BUILT: 1973
 COORDINATES:
 LATITUDE: 39°54'15.56"
 LONGITUDE: -81°33'02.40"

PROPOSED STRUCTURE

TYPE: 3-SPAN CONTINUOUS CONCRETE SLAB BRIDGE ON CAPPED PILE PIERS AND CAPPED PILE ABUTMENTS
 SPANS: 35'-0"±, 43'-9"±, 35'-0"±
 ROADWAY: 44'-0"± F/F GUARDRAILS
 LOADING: HS-20
 SKEW: 0°
 WEARING SURFACE: 5/2" ASPHALT
 APPROACH SLABS: AS-1-67, 25'-0"±
 ALIGNMENT: TANGENT
 CROWN: 0.0156"/'
 STRUCTURAL FILE NUMBER: 3003876
 DATE BUILT: 1973
 COORDINATES:
 LATITUDE: 39°54'15.56"
 LONGITUDE: -81°33'02.40"

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DESIGN AGENCY
 OHIO DEPARTMENT OF
 TRANSPORTATION, DISTRICT 5

REVIEWED DATE 1-23-2017
 TAG 1-23-2017
 STRUCTURE FILE NUMBER 3003876

DRAWN KMR
 REVISED

DESIGNED KMR
 CHECKED CPS

GENERAL PLAN & ELEVATION
 BRIDGE NO. GUE-146-0988
 OVER BUFFALO FORK

GUE-146-9.81

CONSTRUCTION NOTIFICATION

THE CONTRACTOR WILL ADVISE THE PROJECT ENGINEER A MINIMUM OF TWENTY ONE (21) DAY SPRIOR TO THE FOLLOWING: THE START OF CONSTRUCTION ACTIVITIES, LANE RESTRICTION, LANE CLOSURES, AND OR ROAD CLOSURES. THE PROJECT ENGINEER WILL FORWARD THIS INFORMATION TO THE FOLLOWING:

DISTRICT PUBLIC INFORMATION OFFICER (PIO) BY FAX AT (614) 887-4510 OR BY EMAIL AT D05.PIO@dot.state.oh.us

DISTRICT PERMIT SECTION BY FAX AT (614) 887-4525 OR EMAIL AT brian.bosch@dot.state.oh.us

CENTRAL OFFICE SPECIAL HAUL PERMITS SECTION BY FAX AT (614) 728-4099 OR BY EMAIL AT hauling.permits@dot.state.oh.us

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

EXISTING STRUCTURE VERIFICATION

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE AND FROM 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, 105.02 AND 513.04.

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

REMOVED MATERIALS

ALL REMOVED MATERIALS EXCEPT AS NOTED ELSEWHERE IN THE PLANS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED BY HIM FROM THE JOB SITE.

CLEARING AND GRUBBING

THE CONTRACTOR IS RESPONSIBLE FOR CLEARING AND GRUBBING AS PER CMS 201, 50' BEYOND EACH SIDE OF BRIDGE LIMITS AND TO THE RIGHT-OF-WAY LIMITS ON EACH SIDE OF THE BRIDGE. LIMITS OF CLEARING AND GRUBBING CAN BE ADJUSTED WITH APPROVAL OF ENGINEER. ALL PROVISIONS 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 PER BRIDGE LOCATION AND HAVE BEEN CARRIED TO THE GENERAL SUMMARY TO BE USED AS DIRECTED BY THE ENGINEER. PLACE ITEM 659 AT LOCATIONS OF GROUND DISTURBANCES DUE TO CONSTRUCTION ACCESS.

Table with 2 columns: Item description and quantity. Includes items for seeding and mulching, commercial fertilizer, lime, and water.

GENERAL PROVISIONS

THE CONTRACTOR'S ATTENTION IS CALLED TO ALL OF SECTION 100 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS OF THE OHIO DEPARTMENT OF TRANSPORTATION.

MOBILIZATION

THE CONTRACTOR SHALL ON ANY CONTRACT FOR WHICH HIS BID EXCEEDS \$50,000.00 INCLUDE AN AMOUNT TO COVER ANY APPLICABLE EXPENDITURES REFERRED TO UNDER ITEM 624 OF THE 2016 CONSTRUCTION AND MATERIAL SPECIFICATIONS. PAYMENT SHALL BE THE LUMP SUM BID PRICE FOR ITEM 624, MOBILIZATION.

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.

LOCATION OF GUARDRAIL

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

EXISTING PLANS

EXISTING PLANS FOR BRIDGE NO. GUE-146-0981 MAY BE INSPECTED IN THE BIDDING DOCUMENTS FOR THIS PROJECT.

ITEM SPECIAL - PILE ENCASEMENT

THIS ITEM SHALL INCLUDE THE FOLLOWING: EXCAVATION, REMOVAL OF EXISTING ENCASEMENTS AND REPLACEMENT OF THE EMBANKMENT TO ITS NATURAL STATE AT THE EXISTING PILES, PILE CLEANING TO REMOVE DEBRIS, CLASS C CONCRETE, POLYETHYLENE OR PVC PIPE, GALVANIZED STEEL BANDS, NUTS AND BOLTS. THE POLYETHYLENE (707.33) OR PVC PIPE (707.42) SHALL BE CUT LENGTHWISE ON ONE SIDE OR IN TWO (2) SECTIONS AS NEEDED TO ENCOMPASS THE EXISTING 14" CAST-IN-PLACE PILES, EXISTING 12" CAST-IN-PLACE PILES, OR THE EXISTING HP 12x53 PILES. POSITION PIPE SO THAT AT LEAST 3 INCHES OF CONCRETE COVER IS PROVIDED AROUND THE EXTERIOR OF THE PILE. THE BANDS SHALL BE 1" IN WIDTH AND THICKNESS SHALL NOT BE LESS THAN 11 GAUGE (0.1196"). BANDS SHALL BE TIGHTENED SO AS NOT TO ELONGATE WHEN CONCRETE IS PLACED WITHIN THE PIPE. MAXIMUM SPACING OF THE BANDS SHALL BE 1'-0". ALTERNATE METHODS MAY BE USED TO CLAMP THE SECTIONS TOGETHER AS APPROVED BY THE ENGINEER. THE POLYETHYLENE OR PVC PIPE SHALL BE FILLED WITH CLASS C CONCRETE HAVING A SLUMP BETWEEN 6 TO 8 INCHES WITH THE USE OF A SUPERPLASTICIZER.

THE DEPARTMENT WILL MEASURE PILE ENCASEMENT BY THE NUMBER OF FEET. THE DEPARTMENT WILL DETERMINE THE SUM AS THE LENGTH MEASURED ALONG THE AXIS OF EACH PILE FROM THE BOTTOM OF THE ENCASEMENT TO THE BOTTOM OF THE PIER CAP. THE DEPARTMENT WILL PAY FOR ACCEPTED QUANTITIES AT THE CONTRACT PRICE FOR ITEM SPECIAL - PILE ENCASEMENT.

ESTIMATED QUANTITIES

DUE TO EROSION AND SILTING IN THE STREAMBED LINE, ELEVATIONS MAY HAVE CHANGED SINCE THE PREPARATION OF THIS PLAN. PRIOR TO ANY EXCAVATION OR ORDERING OF THE POLYETHYLENE OR PVC PIPE, THE CONTRACTOR SHALL FIELD VERIFY THE MEASUREMENT FROM THE STREAMBED LINE TO THE PIER CAP AND ADJUST THE OVERALL LENGTH TO MAINTAIN A MINIMUM OF 3'-0" BELOW THE STREAMBED LINE. (SEE DETAIL SHEETS). LENGTHS AT THE TIME OF PLAN PREPARATION HAVE BEEN CARRIED TO THE GENERAL SUMMARY FOR BIDDING PURPOSES, BUT THE FINAL QUANTITIES SHALL BE DETERMINED BY ACTUAL FIELD MEASUREMENTS AT THE COMPLETION OF THE WORK.

MAINTAINING TRAFFIC

THIS ITEM SHALL CONSIST OF A SHOULDER CLOSURE AS PER FIGURE 6H-6 AND WHEN NECESSARY A SINGLE LANE CLOSURE AS PER FIGURE 6H-10 OF THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, 2011 EDITION AND STANDARD DRAWING MT-97.10. PAYMENT FOR TOOLS, EQUIPMENT, LABOR, AND INCIDENTALS SHALL BE INCLUDED IN ITEM 614 MAINTAINING TRAFFIC.

INSTREAM WORK RESTRICTION

BUFFALO FORK HAS A DRAINAGE AREA GREATER THAN 20 SQUARE MILES AT THE GUE-146-9.81 BRIDGE STRUCTURE, THEREFORE, IN ACCORDANCE WITH ITEM 2(D) OF THE MEMORANDUM OF AGREEMENT BETWEEN THE OHIO DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION, OHIO DEPARTMENT OF NATURAL RESOURCES AND THE UNITED STATES FISH AND WILDLIFE SERVICE FOR INTERAGENCY COORDINATION FOR PROJECTS WHICH REQUIRE CONSULTATION UNDER THE ENDANGERED SPECIES ACT, IMPACT STATE LISTED SPECIES, AND/OR MODIFY JURISDICTIONAL WATERS 2016, NO INSTREAM WORK SHALL OCCUR BETWEEN APRIL 15" AND JUNE 30".

BORROW AND WASTE AREAS

THE CONTRACTOR SHALL COMPLY WITH ODOT CONSTRUCTION AND MATERIAL SPECIFICATIONS SECTION 105.16 FOR WASTE/BORROW AREAS. THE CONTRACTOR SHALL NOT PLACE ANY NEW FILLS IN THE FEMA REGULATED FLOODPLAIN AREA OTHER THAN THE FILL REQUIRED BY THE PROJECT PLANS.

ITEM 209 - BORROW

A QUANTITY OF 50 CU. YD. OF BORROW REQUIRED TO ACHIEVE ITEM 209 RESHAPING UNDER GUARDRAIL HAS BEEN CARRIED TO THE GENERAL SUMMARY TO BE USED AS DIRECTED BY THE ENGINEER.

ITEM 606 - ANCHOR ASSEMBLY, TYPE B

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING ANY OF THE GUARDRAIL END TERMINALS FOR TYPE MGS GUARDRAIL AS LISTED ON ROADWAY ENGINEERING'S WEB PAGE UNDER ROADSIDE SAFETY DEVICES FOR APPROVED GUARDRAIL END TREATMENTS. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS. REFER TO THE MANUFACTURER'S INSTRUCTIONS REGARDING THE INSTALLATION OF, AND THE GRADING AROUND, THE FOUNDATION TUBES AND GROUND STRUT. THE TOP OF ANY FOUNDATION TUBE SHOULD BE LESS THAN 4 INCHES ABOVE THE GROUND. THE PLACEMENT OF THE FOUNDATION TUBES SHOULD BE AN APPROPRIATE DEPTH BELOW THE LEVEL LINE IN ORDER TO MAINTAIN THE FINISHED GUARDRAIL HEIGHT OF 31 INCHES FROM THE EDGE OF THE SHOULDER. ON-SITE GRADING IS REQUIRED IF THE TOP OF THE FOUNDATION TUBES OR TOP OF THE GROUND STRUT DOES PROJECT MORE THAN 4 INCHES ABOVE THE GROUND LINE. THE FACE OF THE TYPE B IMPACT HEAD SHALL BE COVERED WITH TYPE G REFLECTIVE SHEETING, PER CMS 730.19. PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM 606, ANCHOR ASSEMBLY, TYPE B, EACH, AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT A COMPLETE AND FUNCTIONAL ANCHOR ASSEMBLY SYSTEM, INCLUDING REFLECTIVE SHEETING AND ALL RELATED HARDWARE, GRADING, EMBANKMENT AND EXCAVATION NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER.

UTILITIES

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

AMERICAN ELECTRIC POWER CO. 850 TECH CENTER DRIVE GAHANNA, OHIO 43230 ATTN: PAUL PATON 614-883-6831

FRONTIER TELEPHONE CO. 9444 CAMPBELL STREET CAMBRIDGE, OHIO 43725 ATTN: ASHLEY MORAN 740-432-6861

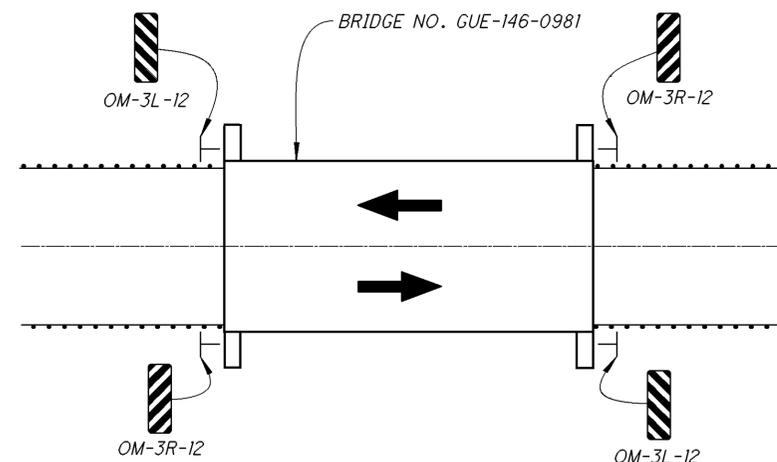
GUERNSEY COUNTY WATER AND SEWER DEPARTMENT 11272 EAST PIKE CAMBRIDGE, OHIO 43725 ATTN: CLEARANCE RIDGLEY 740-439-1269

TIME WARNER CABLE 4547 NORTH LEEDOM ROAD CHANDLERSVILLE, OHIO 43727 ATTN: BRAD ST. CLAIR 740-303-3101

STRUCTURE GUE-662-0240 OBJECT MARKERS

THE CONTRACTOR SHALL INSTALL OM-3L & OM-3R (36"x12") SIGNS AT ALL FOUR (4) WINGWALLS OF THE BRIDGE. SIGNS SHALL BE INSTALLED 1'-0" BEHIND THE GUARDRAIL POST AND BRIDGE WINGWALL. THE BOTTOM OF GROUND MOUNTED SIGN SHALL BE 5'-0" ABOVE PAVEMENT. THE FOLLOWING ITEMS HAVE BEEN CARRIED TO THE GENERAL SUMMARY TO INSTALL THE SIGNS:

ITEM 630 - GROUND MOUNTED SUPPORT, NO. 3. POST..... 46.0 FT. ITEM 630 - SIGN, FLAT SHEET..... 12 SQ.FT.



OEPA NOTIFICATION OF DEMOLITION AND RENOVATION

AN ASBESTOS SURVEY FOR THE GUE-146-9.88 BRIDGE SCHEDULED FOR DEMOLITION WORK WAS CONDUCTED BY A CERTIFIED ASBESTOS HAZARD EVALUATION SPECIALIST. A COPY OF THE ASBESTOS SURVEY REPORT FOR THE BRIDGE HAS BEEN INCLUDED IN THE PLAN PACKAGE FOR THIS PROJECT. THE ASBESTOS SURVEY REPORT DID NOT IDENTIFY THE PRESENCE OF ANY ASBESTOS CONTAINING MATERIALS. (THE REMOVAL AND DISPOSAL OF THE ASBESTOS CONTAINING MATERIAL MUST COMPLY WITH THE OHIO ADMINISTRATIVE CODE (OAC) REGULATIONS AND THE NATIONAL EMISSION STANDARD FOR HAZARDOUS AIR POLLUTANTS (NESHAP) STANDARD FOR ASBESTOS.)

A COPY OF THE OHIO ENVIRONMENTAL PROTECTION AGENCY (OEPA) NOTIFICATION OF DEMOLITION AND RENOVATION FORM, PARTIALLY COMPLETED BY THE ASBESTOS HAZARD EVALUATION SPECIALIST, HAS BEEN INCLUDED AT THE END OF THE ASBESTOS SURVEY REPORT. THE CONTRACTOR SHALL COMPLETE AND SIGN THE FORM AND SUBMIT IT ALONG WITH A COPY OF THE ASBESTOS SURVEY REPORT TO:

OHIO EPA, SEDO 2195 FRONT STREET LOGAN, OH ATTN: KRISTEN PARRISH

AT LEAST 10 WORKING DAYS PRIOR TO THE START OF ANY DEMOLITION WORK. THE CONTRACTOR SHALL PROVIDE A COPY OF THE COMPLETED AND SIGNED FORM TO THE ENGINEER. INFORMATION REQUIRED ON THE FORM SHALL INCLUDE AT A MINIMUM: 1) THE ODOT PROJECT NUMBER, 2) THE CONTRACTORS NAME, ADDRESS AND TELEPHONE NUMBER, 3) THE SCHEDULED DATES FOR THE START AND COMPLETION OF THE BRIDGE DEMOLITION.

BASIS FOR PAYMENT: THE CONTRACTOR SHALL FURNISH ALL FEES, LABOR, AND MATERIAL NECESSARY TO COMPLETE AND SUBMIT THE OEPA NOTIFICATION FORM. PAYMENTS FOR THIS WORK SHALL BE INCIDENTAL TO THE ITEM 202 STRUCTURE REMOVAL ITEM(S) IN THE PLAN.

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DESIGN AGENCY OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 5

DATE 1-23-2017

REVIEWED TAG 3003876

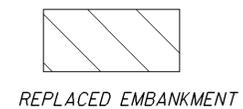
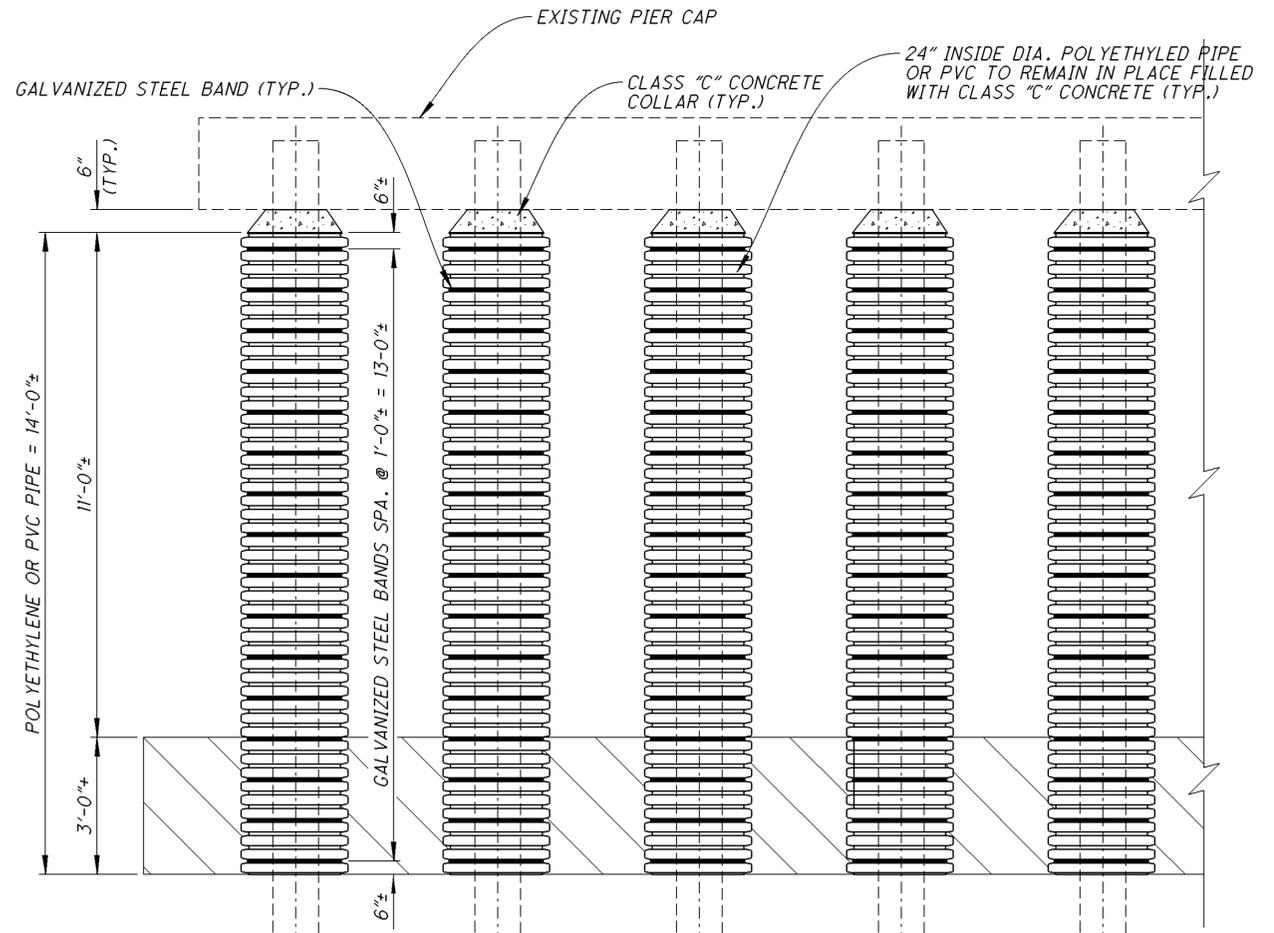
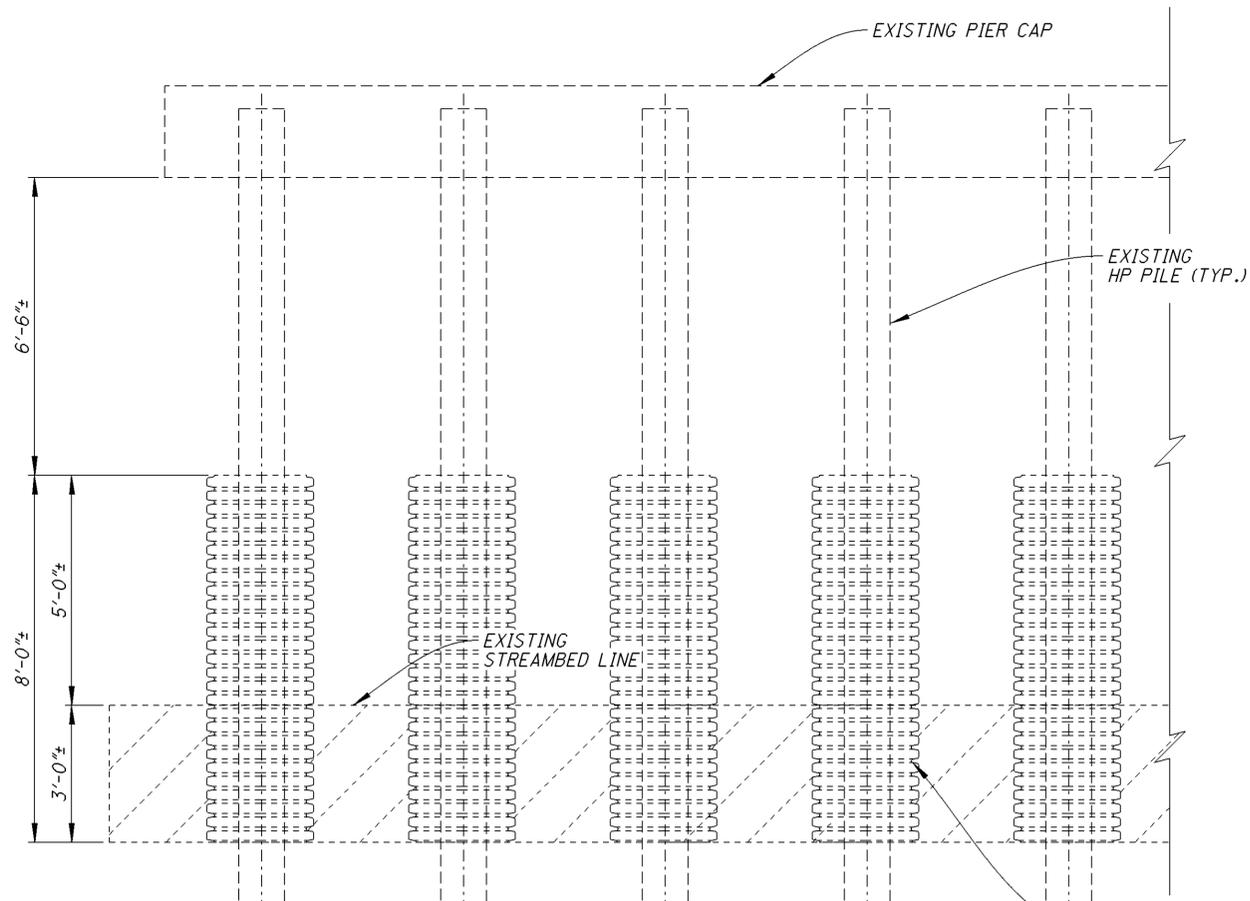
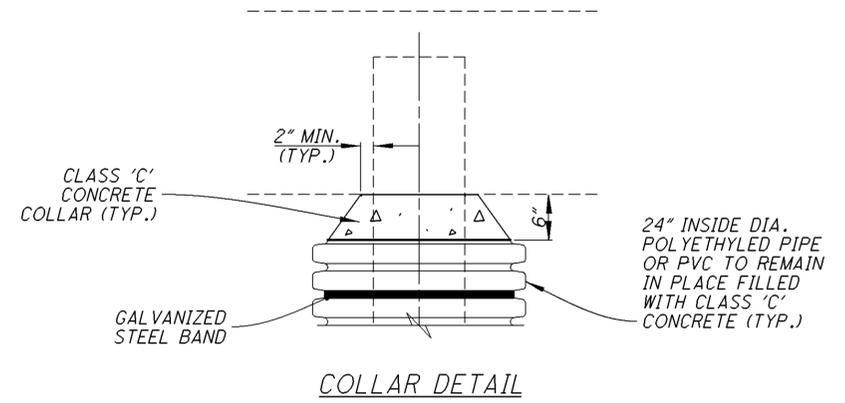
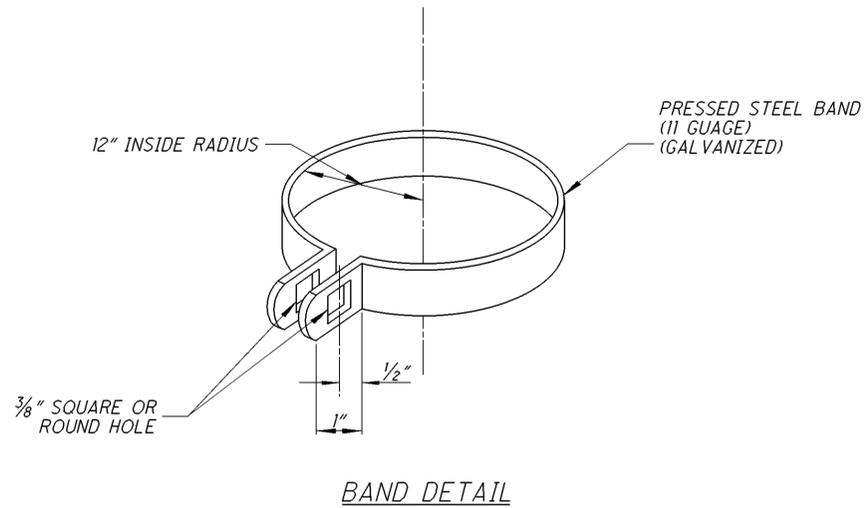
DRAWN KMR

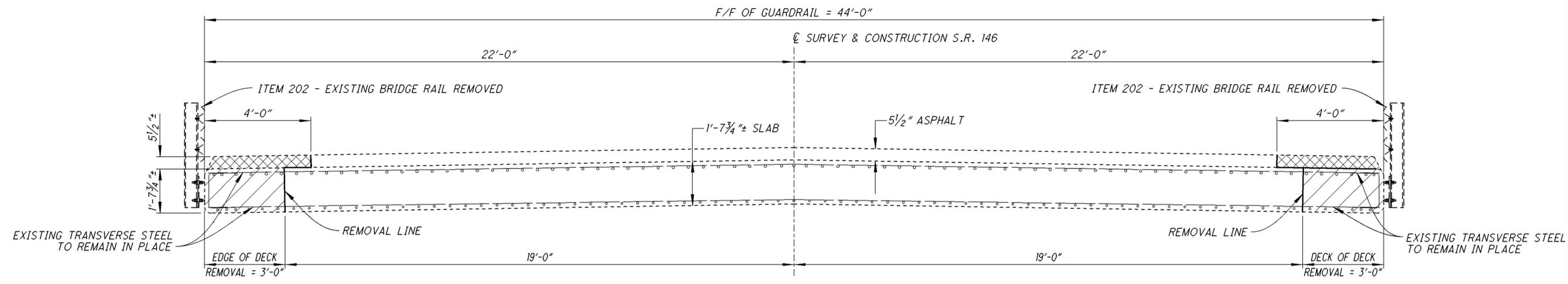
BRIDGE NOTES BRIDGE NO. GUE-146-0988 OVER BUFFALO FORK

GUE-146-9.81

5/21

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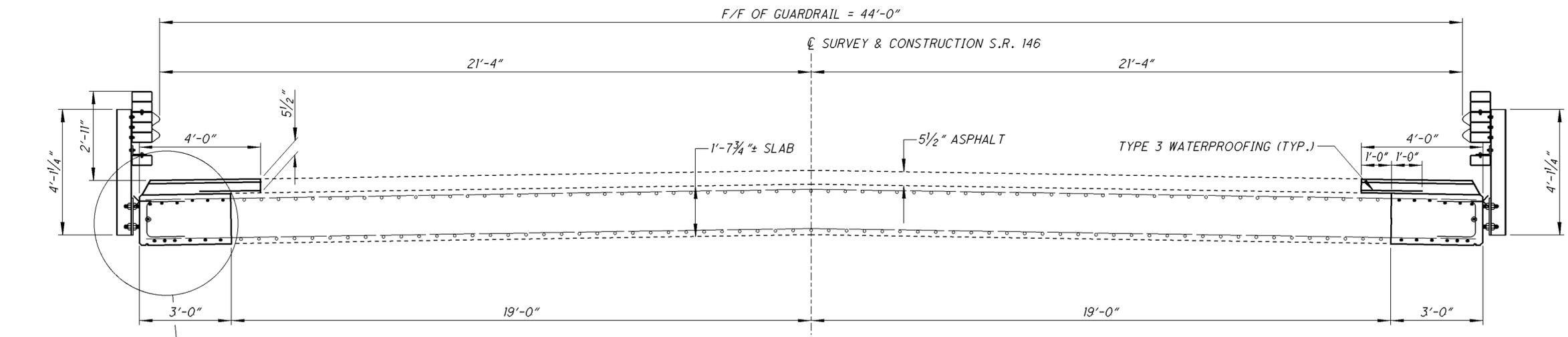




EXISTING TRANSVERSE SECTION

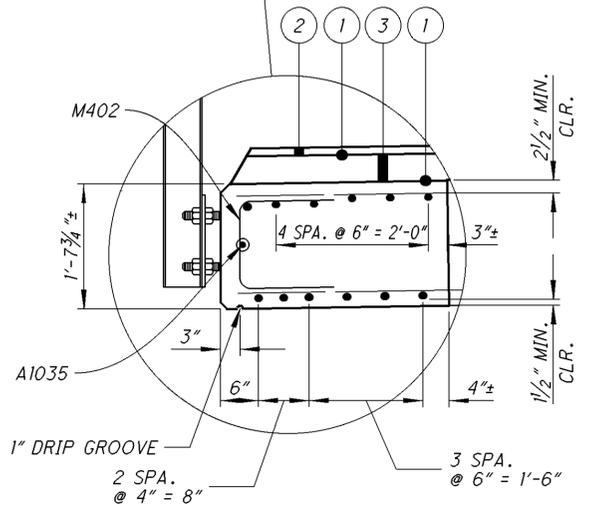
LEGEND

- ITEM 202 - WEARING COURSE REMOVED (5/2" THICKNESS)
- ITEM 202 - PORTIONS OF STRUCTURE REMOVED



PROPOSED TRANSVERSE SECTION

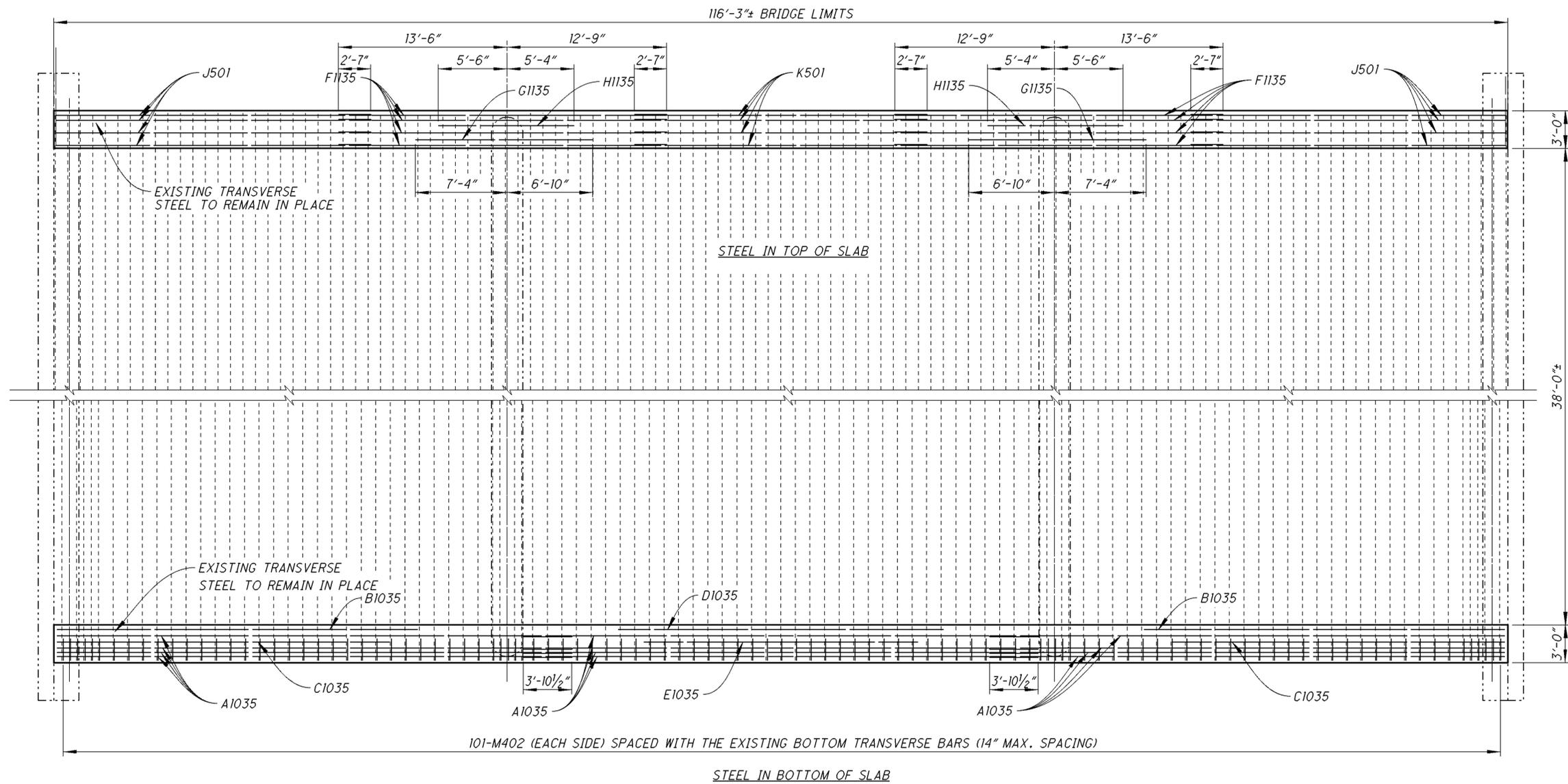
SEE SHEET 9/10 FOR RESTEEL CALLOUTS.



- ① ITEM 407 - TACK COAT
- ② ITEM 441 - ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), PG64-22 (1 1/4" THICK)
- ③ ITEM 441 - ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (448) (1 1/4" THICK)

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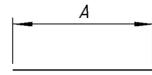
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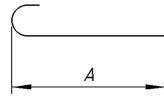
NOTES:
 EXISTING TRANSVERSE STEEL AS DETAILED IN TOP
 AND BOTTOM MAT SHALL REMAIN IN PLACE AFTER
 DECK REMOVAL.

DESIGN AGENCY OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 5	
DATE 1-23-2017	REVIEWED TAG 3003876
DRAWN KMR	CHECKED CPS
DESIGNED KMR	REVISIONS
DECK REINFORCING STEEL LAYOUT BRIDGE NO. GUE-146-0988 OVER BUFFALO FORK	
GUE-146-9.81	
9 21	

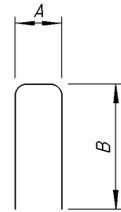
MARK	NUMBER	LENGTH	WEIGHT	TYPE	DIMENSIONS							
	TOTAL				A	B	C	D	E	R	INC	
A1035	30	41'-2"	5314	1								
B1035	4	29'-8"	511	7	27'-5"							
C1035	4	27'-5"	472	7	25'-2"							
D1035	2	26'-10"	231	1								
E1035	2	22'-9"	196	1								
F1135	16	26'-3"	2231	1								
G1135	4	14'-2"	301	1								
H1135	4	10'-10"	230	1								
J501	16	25'-2"	420	1								
K501	8	23'-5"	195	1								
M402	202	3'-4"	450	12	1'-3 ¹ / ₄ "	1'-3"						
SUB-TOTAL			10,551									



TYPE 1



TYPE 7



TYPE 12

NOTES

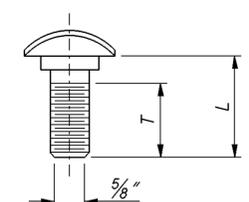
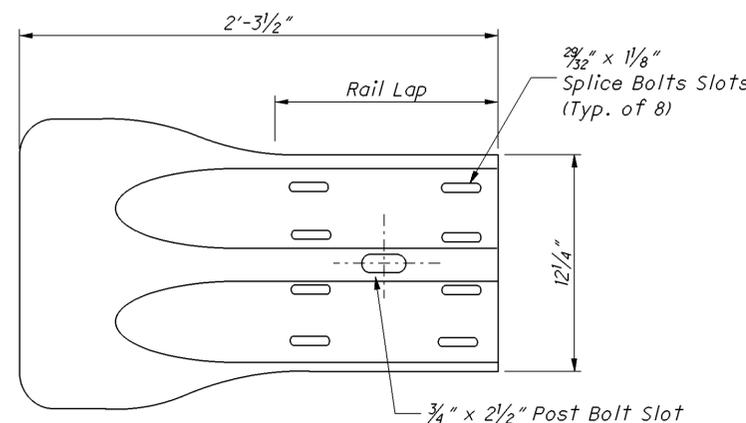
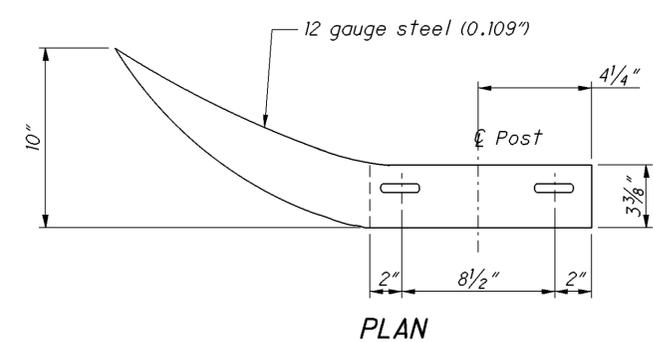
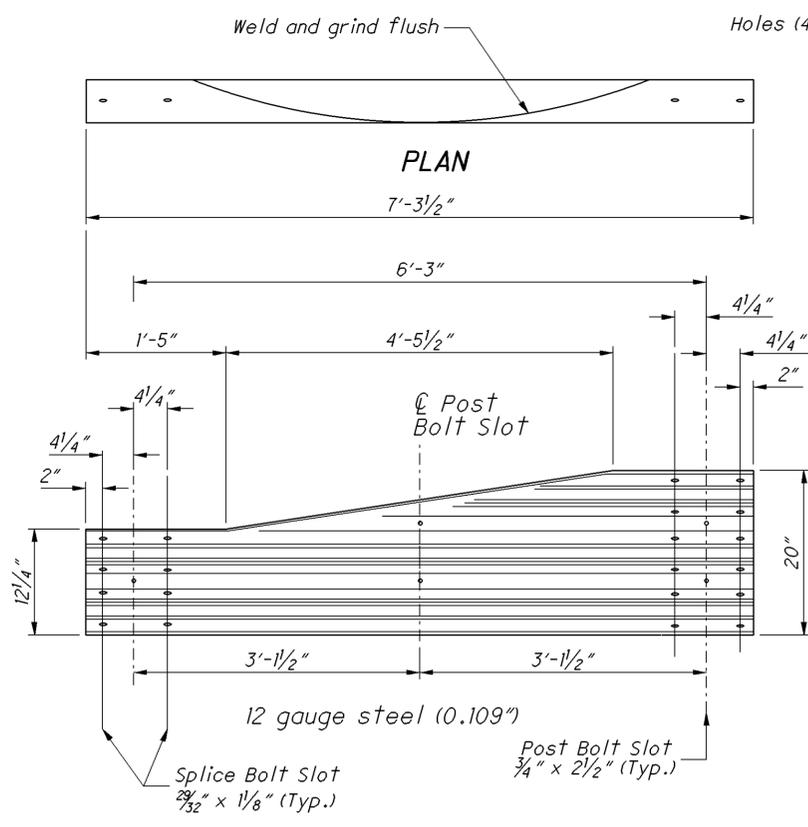
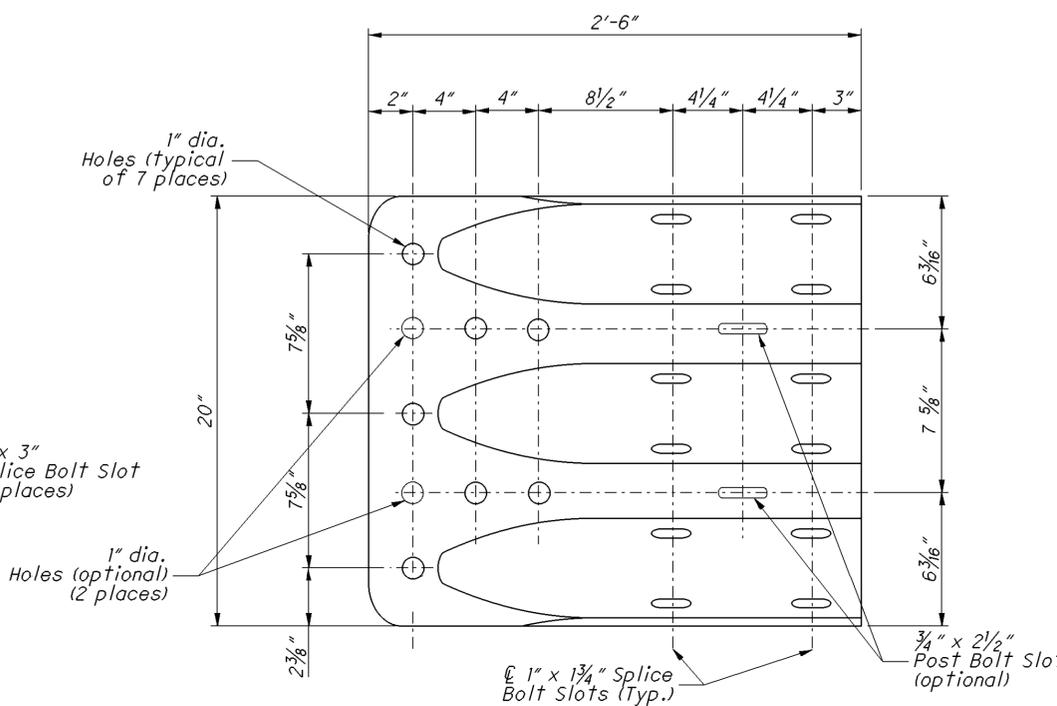
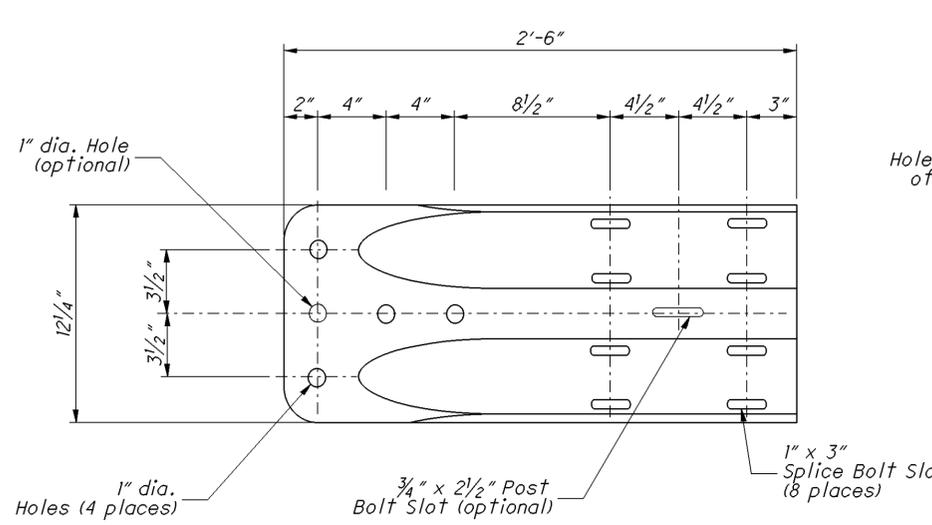
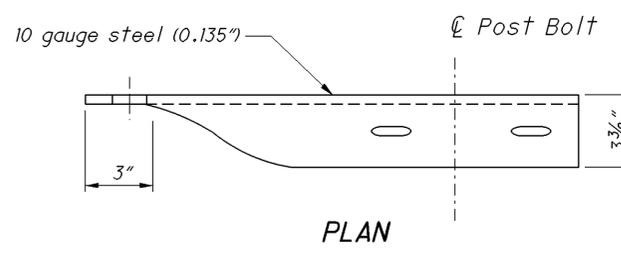
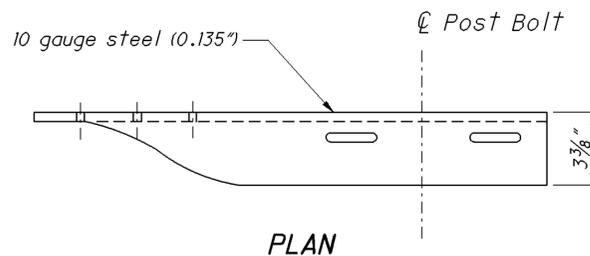
GENERAL: Components shown on this drawing are used in a variety of guardrail systems. See individual guardrail drawing for specific applications.

See CMS 606 for guardrail specifications not covered on these drawings.

Refer to AASHTO M 180 for dimensional details of W-Beam and Thrie-Beam rail elements, related buffer and end sections, beam splices, post and splice bolts, nuts, and Type 1 W-Beam to Thrie-Beam Transition sections.

RAIL ELEMENTS: W-Beam Rail has an effective length of 12'-6" unless otherwise specified, with 3/4" x 2 1/2" post bolt slots on 6'-3" centers regardless of post spacing. Field punch or drill bolt holes or slots for irregularly spaced posts as specified in CMS 606.04.

RAIL SPLICES: Lap splices between two rail elements or between a rail and terminal connector in the direction of traffic. Lap the buffer or flared end sections in the direction of traffic.



GUARDRAIL BOLT (For Post and Splice Bolts)		
L	T min.	Bolt Use
18" (Standard Rail)	4"	Type 5: WP/WB, PB
26" (Barrier Rail)		
10"	4"	Type 5: SP/WB, PB
1 1/4"	1 1/8"	Splice Bolt

WP = Wood Post WB = Wood Blockout
 SP = Steel Post PB = Plastic Blockout

Longer Bolt may be needed for round Wood Post larger than 8" dia.

**ELEVATION
TYPE 2 TRANSITION SECTION**
(Asymmetric W to Thrie-Beam)

For details of Type 1 Transition Section (Symmetric), refer to AASHTO M 180, Figure 4.

**ELEVATION
W-BEAM TERMINAL CONNECTOR**

**ELEVATION
THRIE-BEAM TERMINAL CONNECTOR**

**ELEVATION
W-BEAM FLARED END SECTION**

PLAN INSERT SHEET
**GUARDRAIL DETAILS
(Rail Components)**

DESIGNED	KMR	CHECKED	CPS	DATE	1-23-2017	TAG	3003876
REVISION DATE	1/18/2013	CHECKED	XXX	DESIGNED	XXX	REVIEWED	XXX

OFFICE OF
**ROADWAY
ENGINEERING**

DESIGN AGENCY
OHIO DEPARTMENT OF
TRANSPORTATION, DISTRICT 5

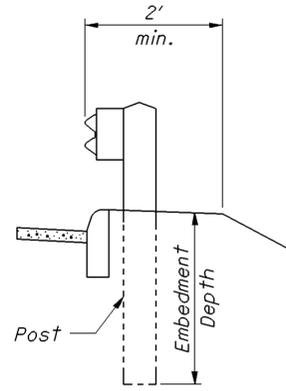
BRIDGE NO. GUE-146-0988
OVER BUFFALO FORK

PIS GR-1.1

GUE-146-9.81

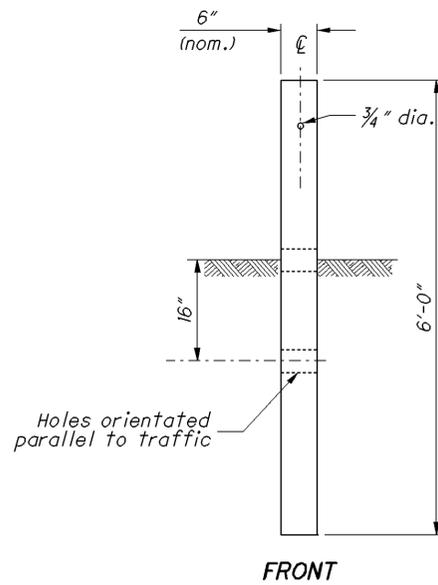
1 / 3

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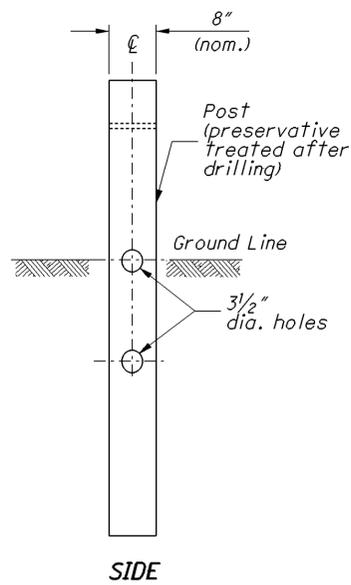


DETAIL A

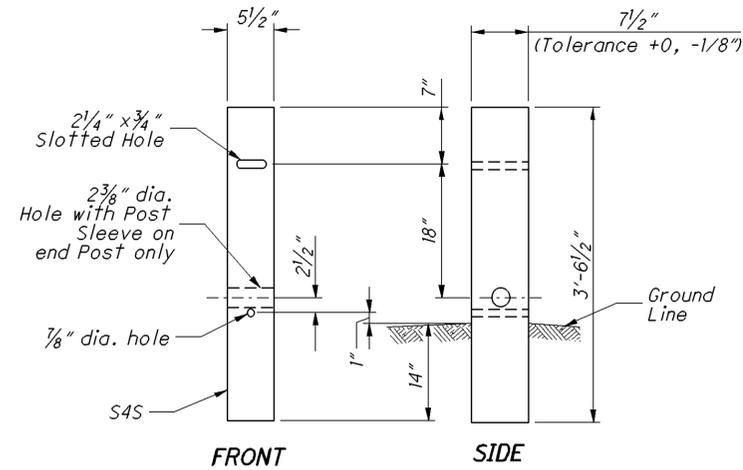
See POST EMBEDMENT DEPTH Note



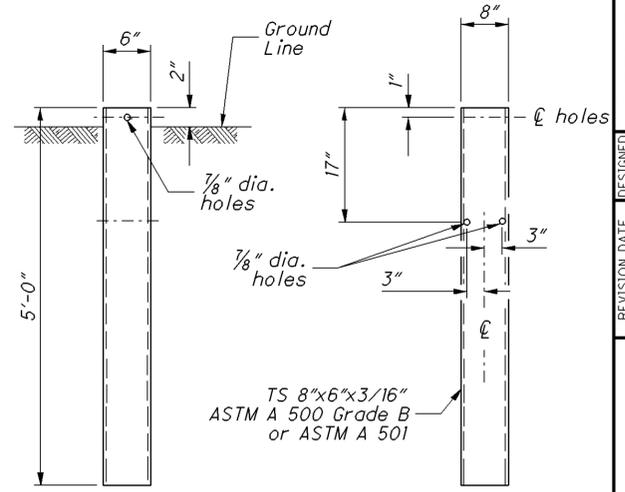
TYPE 1 BREAKAWAY CRT POST



TYPE 2 BREAKAWAY CRT POST



STEEL GROUND TUBE



NOTES

GUARDRAIL HEIGHT: For initial installation, construct the guardrail within $\pm 1"$ of the standard height, h , or **29"** to the top of W-Beam rail. (See MEASURING GUARDRAIL HEIGHT Detail.)

When subsequent projects, such as resurfacings, affect the height of existing guardrail, the finished height is to be within $\pm 2.5"$ of the standard height.

POST EMBEDMENT DEPTH: Standard embedment is 3'-5" min. Where less than 2' of graded shoulder width (10:1 or flatter) exists, measured from the face of the guardrail (see DETAIL "A"), use longer posts so that a minimum of 5'-5" embedment depth is provided. Payment for the longer posts will be made at the unit price bid for **ITEM 606 - GUARDRAIL POST, 9', Each.**

SPECIAL POST MOUNTINGS: Install posts located over a drainage inlet or structure as shown in the FOOTING ANCHOR Detail, or anchor per the details shown on **SCD GR-2.2.**

Install posts located over a footing with a cover of less than 2'-6" with a footing anchor as detailed here. (A plate, as detailed on SECTION B-B of **SCD GR-2.2,** may be used as an alternative attachment method.) Where the cover is between 2'-6" and 3'-5", the footing anchor may be omitted and the post encased instead with 4" (min.) of concrete.

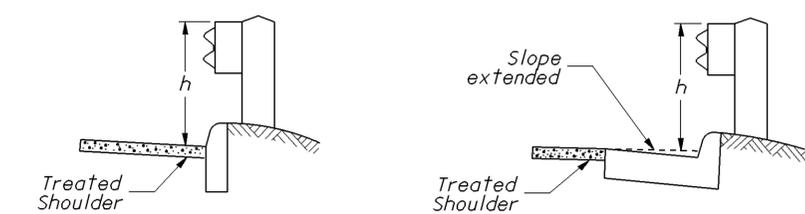
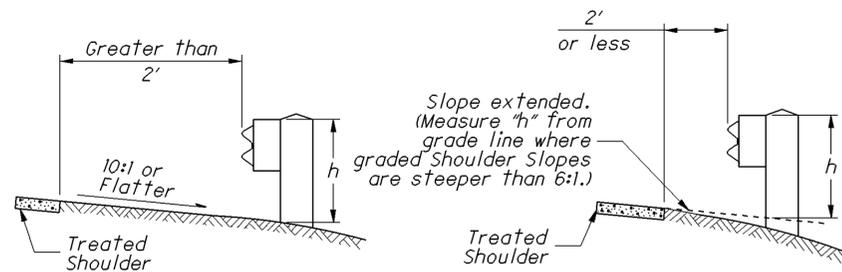
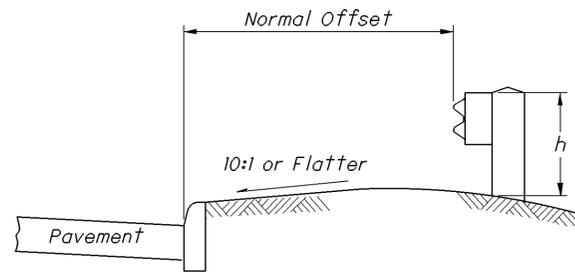
Do not drive posts located over a culvert with less than 4'-3" of cover; instead set in drilled or dug holes. Where the available post embedment depth is less than 3'-5", encase the post with a minimum of 4" concrete.

All costs associated with special post mountings are included in the unit price bid of Item 606 Guardrail of the type specified in the plans.

ANCHORS: Holes and grouting shall comply with CMS 510. Use either cement or non-shrink, nonmetallic grout.

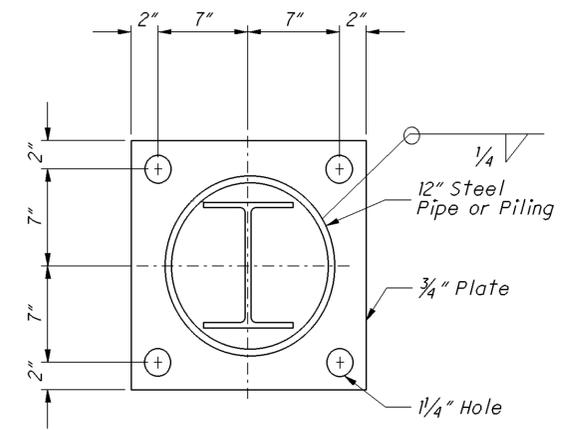
Expansion shield anchors as specified in CMS 712.01 may be substituted except where concrete deterioration has occurred, as determined by the Engineer. Where self-drilling anchors are used, drill the holes with the expansion shield (not by a drill bit) and install the shield flush with the concrete surface.

PROTECTIVE COATING: In lieu of the complying with CMS 710.06, coat expansion shields, anchors and concrete insert anchor assemblies embedded in concrete in accordance with ASTM A 153 or be of stainless steel. Any bolts screwed into these devices shall meet CMS 710.06. (See sheet 3 for Concrete Insert Anchor Assembly Detail.)



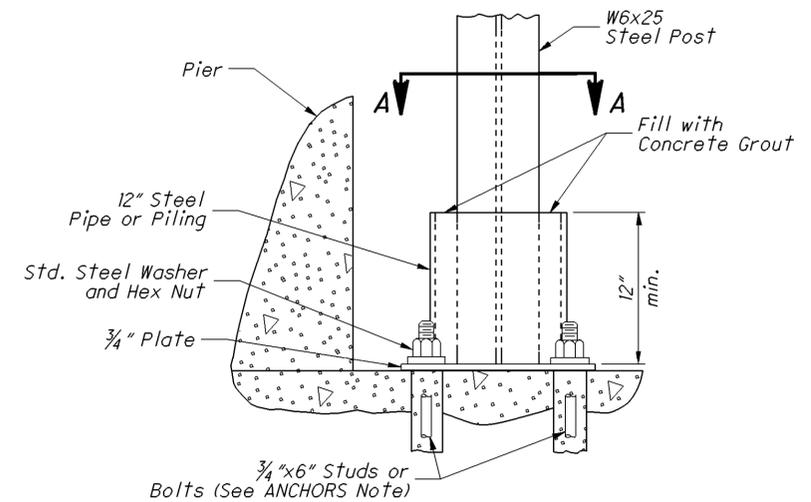
h = Standard Height (See GUARDRAIL HEIGHT Note)

MEASURING GUARDRAIL HEIGHT



Footing Anchor and hardware need not be galvanized

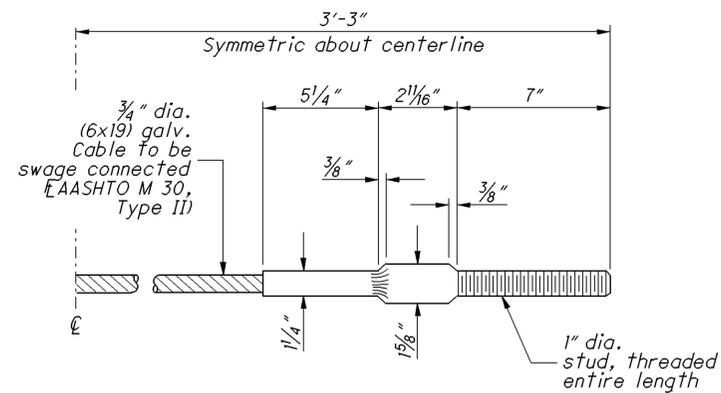
SECTION A-A



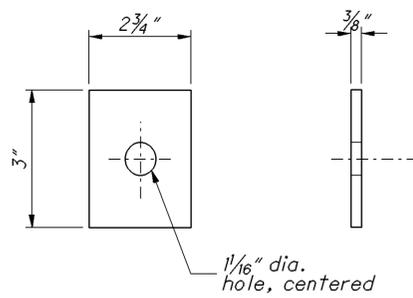
ELEVATION FOOTING ANCHOR

See SPECIAL POST MOUNTINGS Note.

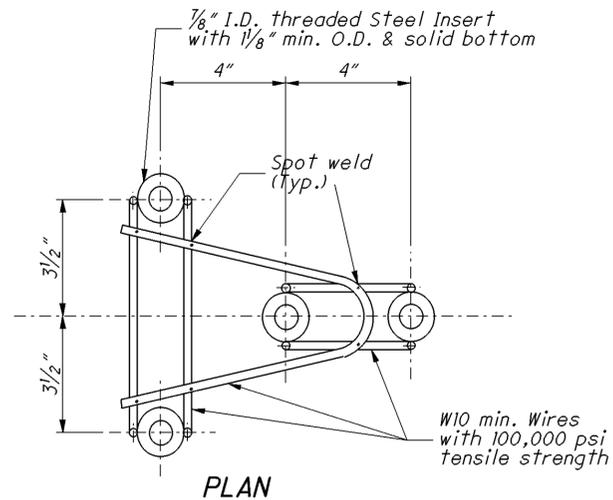
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OFFICE OF ROADWAY ENGINEERING					
REVISION DATE 1/18/2013					
DESIGNED XXX					
CHECKED XXX					
DATE XXX					
TAG XXX					
STRUCTURE FILE NUMBER XXX					
DESIGN AGENCY XXX					
OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 5					
BRIDGE NO. GUE-146-0988 OVER BUFFALO FORK					
PLAN INSERT SHEET GUARDRAIL DETAILS (Rail Components)					
PIS GR-1.1					
GUE-146-9.81					
2 / 3					
12 21					



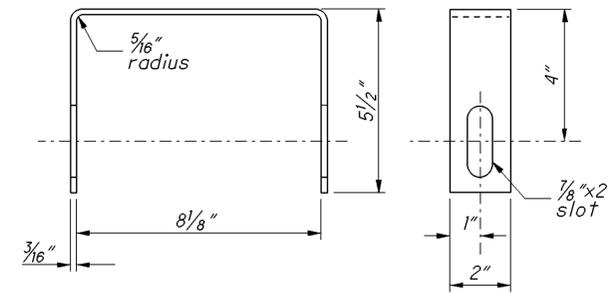
STANDARD SWAGED FITTING AND STUD
CABLE ANCHOR



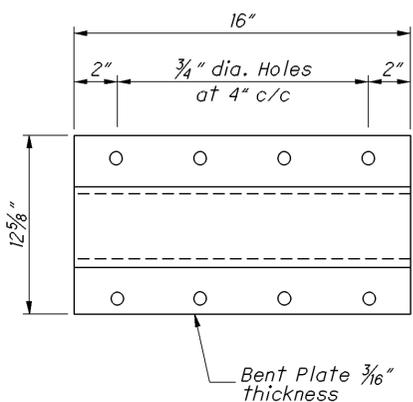
END PLATE



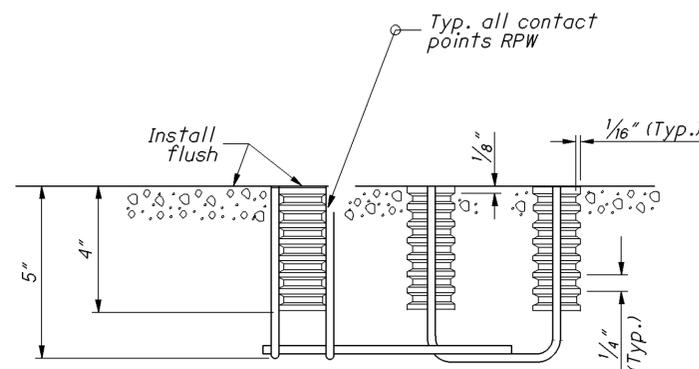
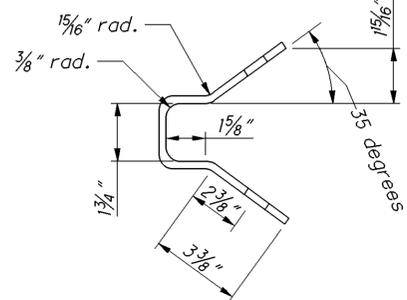
PLAN



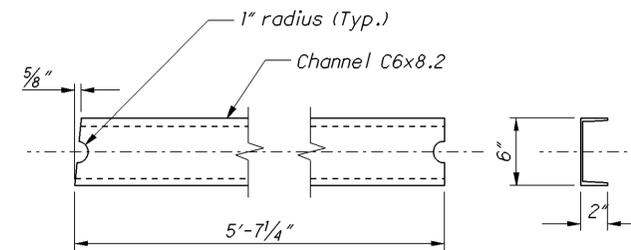
YOKE
Two required in Assembly



ANCHOR BRACKET



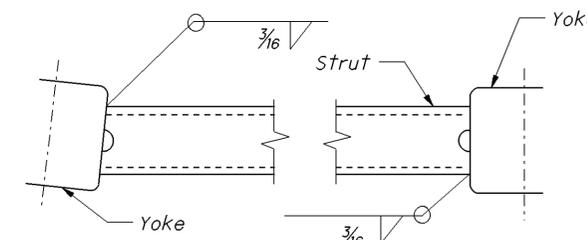
Four 7/8" Bolts required
ELEVATION



STRUT

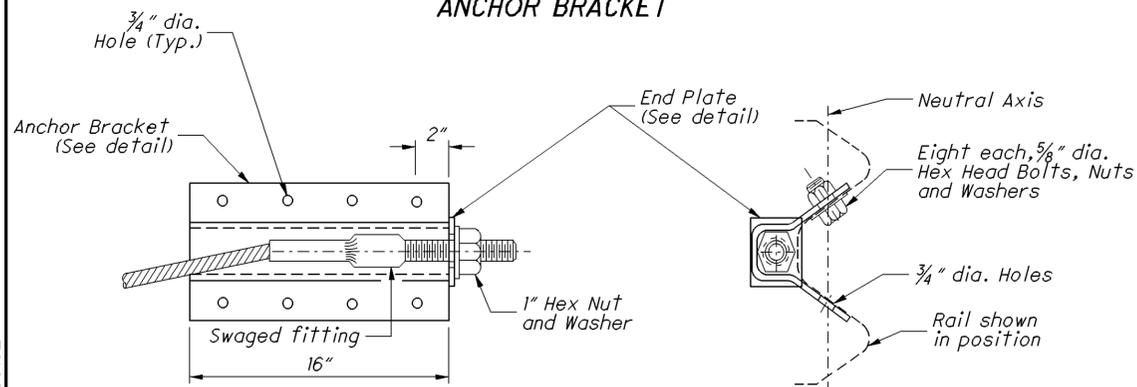
CONCRETE INSERT ANCHOR ASSEMBLY
(W-BEAM ONLY)

See ANCHORS and PROTECTIVE
COATINGS Notes on Sheet 2

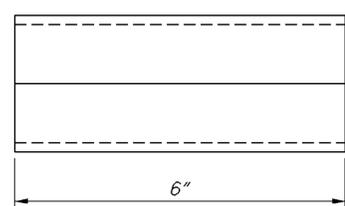


Channel legs shown down. For opposite
hand, install Channel legs up.

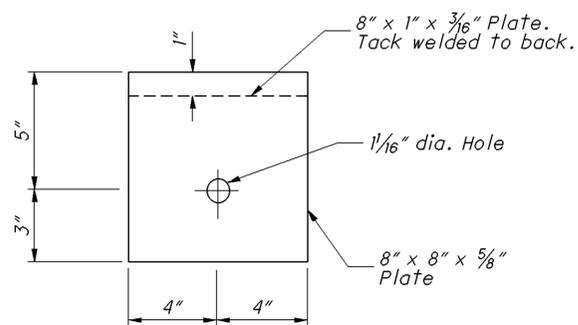
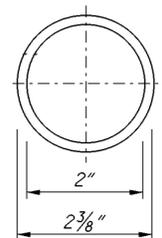
STRUT AND YOKE ASSEMBLY



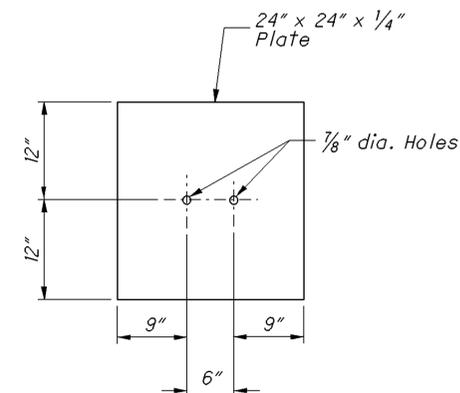
ANCHOR BRACKET ASSEMBLY DETAILS



POST SLEEVE



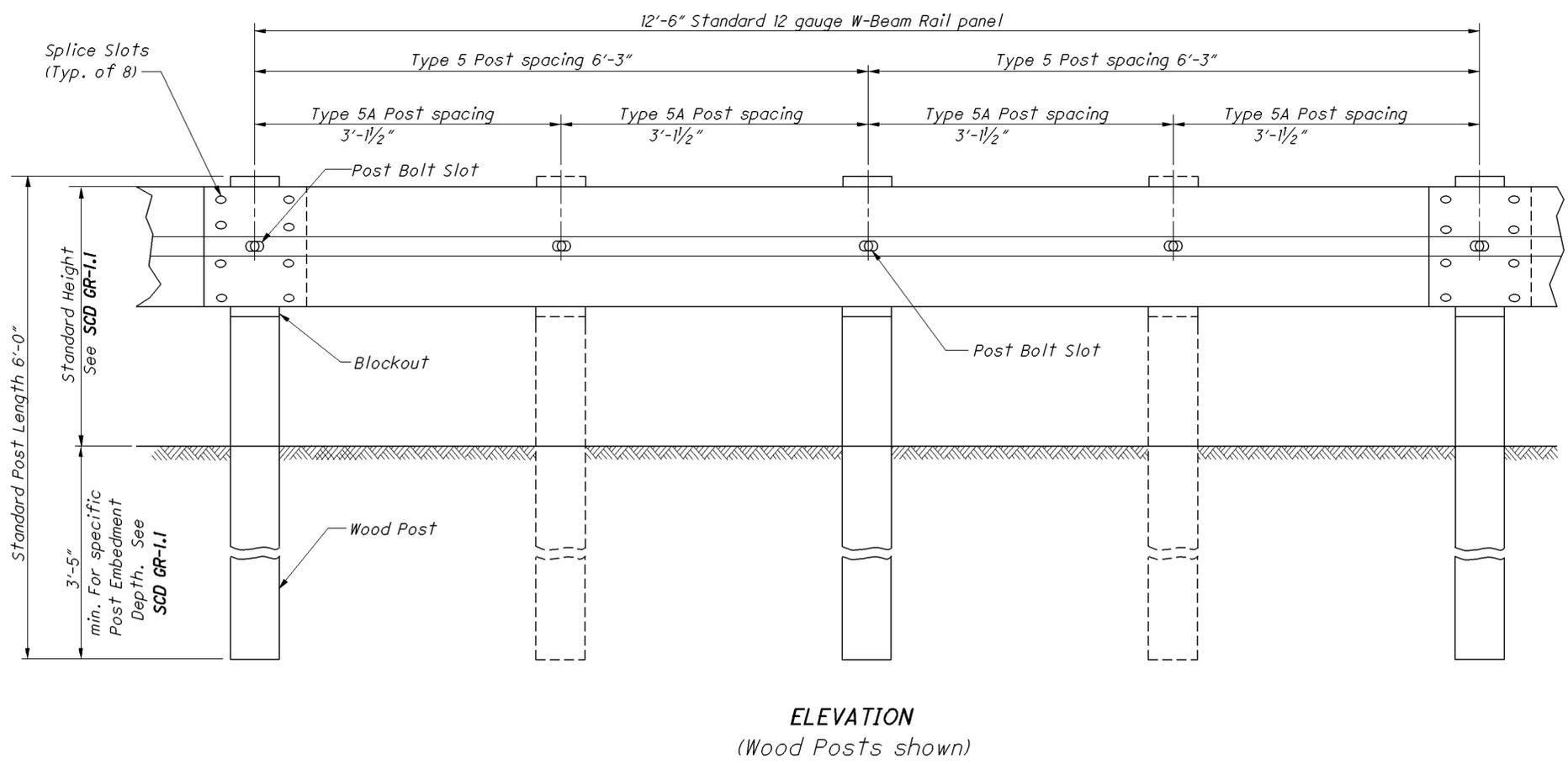
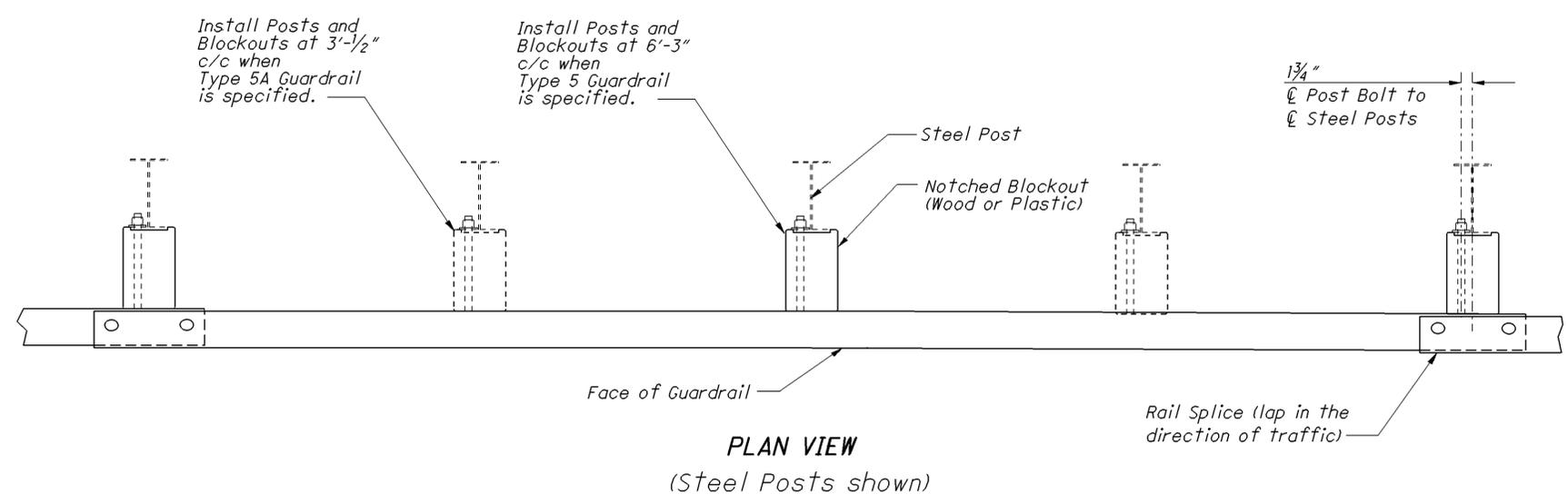
BEARING PLATE



SOIL PLATE

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DESIGNED XXX	CHECKED XXX	DATE 1-23-2017	TAG I-23-2017	STRUCTURE FILE NUMBER 3003876	DESIGN AGENCY OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 5
OFFICE OF ROADWAY ENGINEERING			DESIGNED KMR		
DRAWN KMR			CHECKED CPS		
REVIEWED KMR			REVISOR KMR		
PLAN INSERT SHEET			GUARDRAIL DETAILS (Rail Components)		
BRIDGE NO. GUE-146-0988			OVER BUFFALO FORK		
PIS GR-1.1			GUE-146-9.81		
3 / 3			13 / 21		



NOTES

RAIL: Use W-Beam rail meeting AASHTO M 180 Type II Class A, as specified in CMS 606.

POSTS: Posts may be constructed of wood or steel. Wood posts may be round or 6"x8" square-sawed.

Use round wood posts on runs of single-sided rail. The round posts shall be 8"±1 in diameter at the top and not more than 3" larger at the butt with a uniform Taper.

Fabricated wood posts with square ends. Posts shall be pressure-treated as per CMS 710.14. Bore bolt holes and, if required, trim the tops of posts after the posts are set.

Steel posts are to be W6x9 or W6x8.5 galvanized steel. Use the same type of post throughout the length of the project unless otherwise specified in the plans or permitted by the Engineer.

All posts are 6'-0" long unless specified otherwise in the Contract Document. Posts may be set in drilled holes or may be driven to grade.

WELDED BEAM POSTS: Welded beam guardrail posts may be used for Item 606, Guardrail, provided the web and flange sizes are as shown here. Welding of the web to the flanges must comply with ASTM A 769, Class 1, using Grade 36 steel [250 MPa yield point] with the following exceptions:

- Sec. 7.2 Test reports of tensile properties for each lot shall accompany each shipment.
- Sec. 12 Beams that have imperfections repaired by welding shall not be accepted for use in Item 606.
- Sec. 13 Random samples shall be tested by the Department from materials delivered to the project site, or other locations designated by The Laboratory.

ALTERNATE POSTS: Engineered guardrail posts having met NCHRP 350 criteria, and listed on the **Office of Materials Management's** Approved List are permitted as an equal alternate when installed according to the Manufacturer's instructions and within the limitations shown on the Approved List.

BLOCKOUTS: Blockout dimensions are dependent on post used. Wood Blockouts are to be pressure treated as specified in CMS 710.14. Bore bolt holes. Approved alternate blockouts may be used in lieu of the wood blockouts shown. The approved list is maintained by the **Office of Roadway Engineering**.

WASHERS: Install appropriate sized standard galvanized steel washers on the nut side of bolts installed on wood posts.

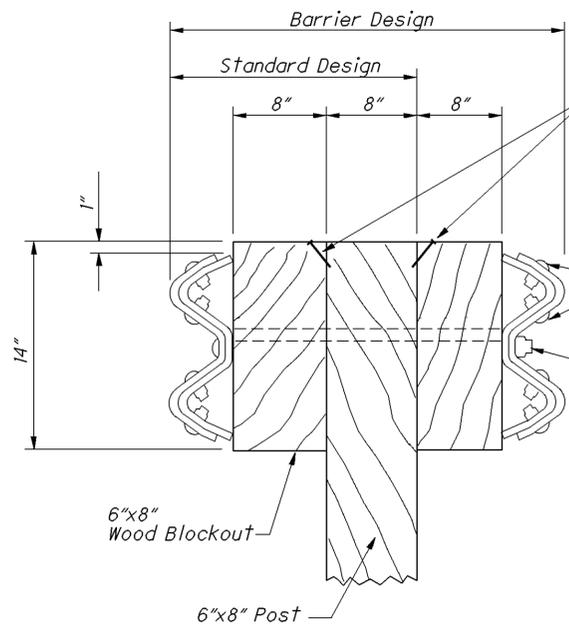
DELINEATION: For barrier reflectors, see CMS 626.

MISCELLANEOUS: For other guardrail details, see SCD GR-1.1.

STEEL BEAM POSTS (English)				
Size	Beam depth	Flange width	Flange thickness	Web thickness
Rolled W6x8.5	5.8"	3.94"	0.193"	0.170"
Rolled W6x9	5.9"	3.94"	0.215"	0.170"
Welded 6x8.5	6.0"	3.94"	0.193"	0.170"
Welded 6x9	6.0"	3.94"	0.215"	0.170"

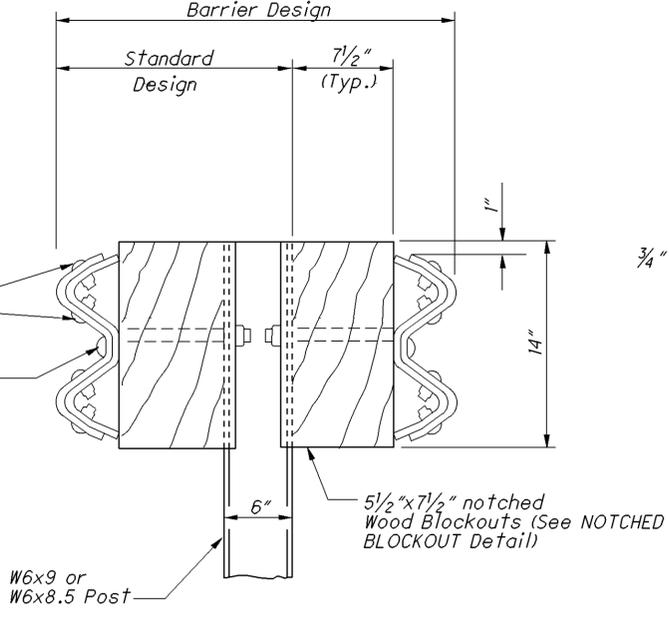
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OFFICE OF ROADWAY ENGINEERING	DESIGNED XXX	REVIEWED XXX	DATE 1/18/2013	CHECKED XXX	DATE 1-23-2017	TAG 3003876	STRUCTURE FILE NUMBER 3003876	DESIGN AGENCY OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 5
	PLAN INSERT SHEET				GUARDRAIL TYPE 5 & 5A			
PIS GR-2.1		BRIDGE NO. GUE-146-0988		OVER BUFFALO FORK		GUE-146-9.81		
1 / 2		14		21				



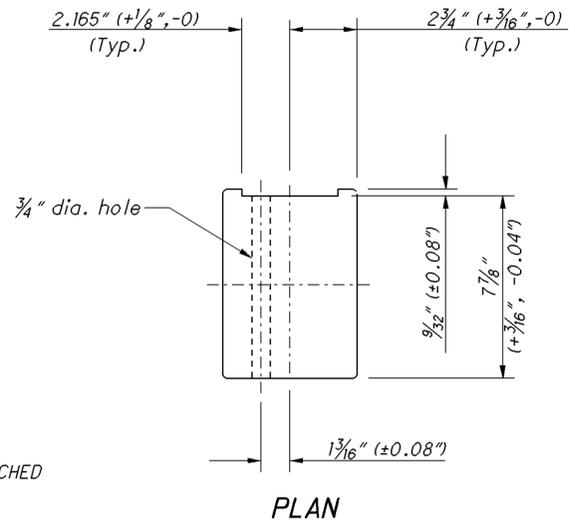
SQUARE WOOD POST

See POSTS and BLOCKOUTS Notes on Sheet 1

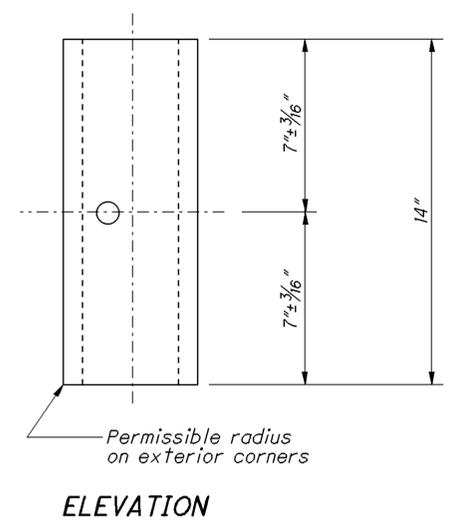


STEEL POST

See POSTS Note, Sheet 1



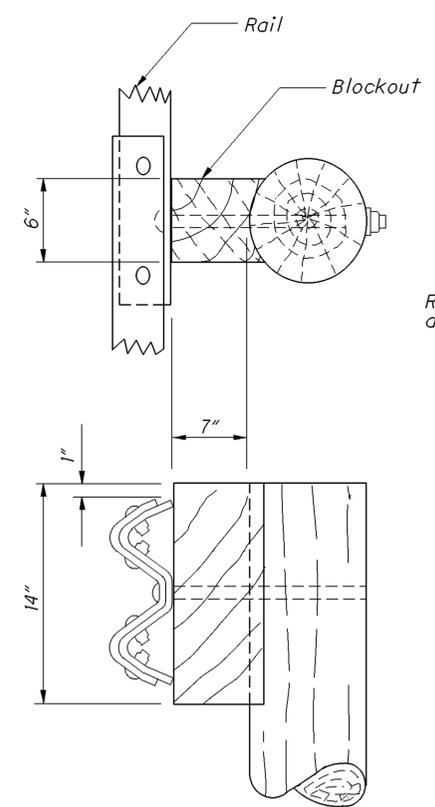
PLAN



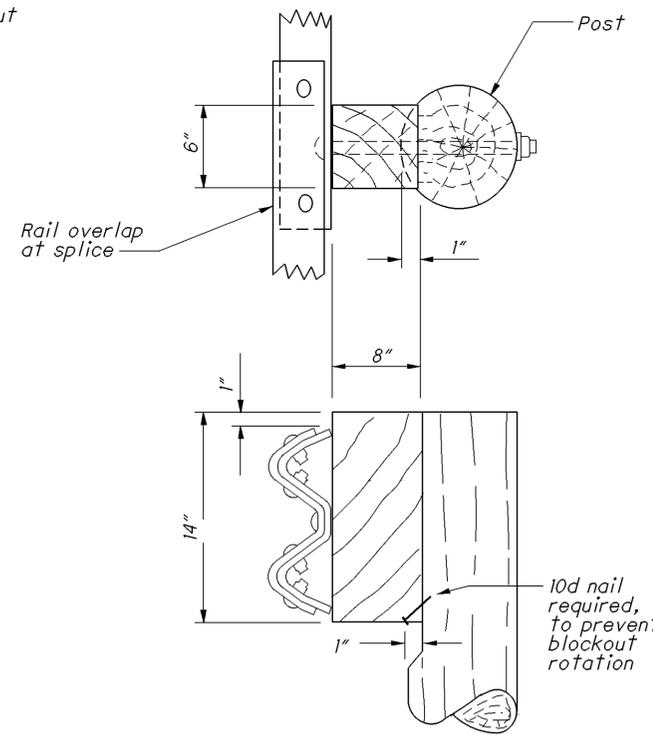
ELEVATION

NOTCHED BLOCKOUTS FOR STEEL POSTS

See BLOCKOUTS Note on Sheet 1

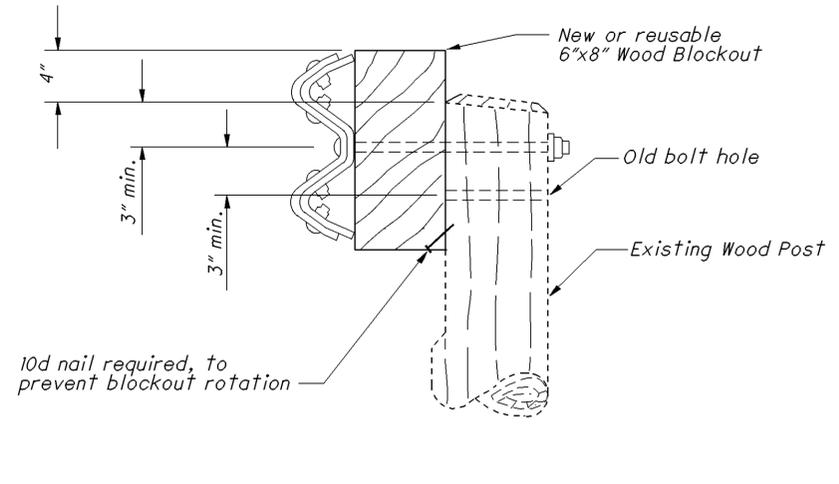


Method 1 Routed Blockout



Method 2 Notched Post

Toenail not required if post is cut as shown



WOOD POSTS WITH WOOD BLOCK RAISING EXISTING GUARDRAIL HEIGHT

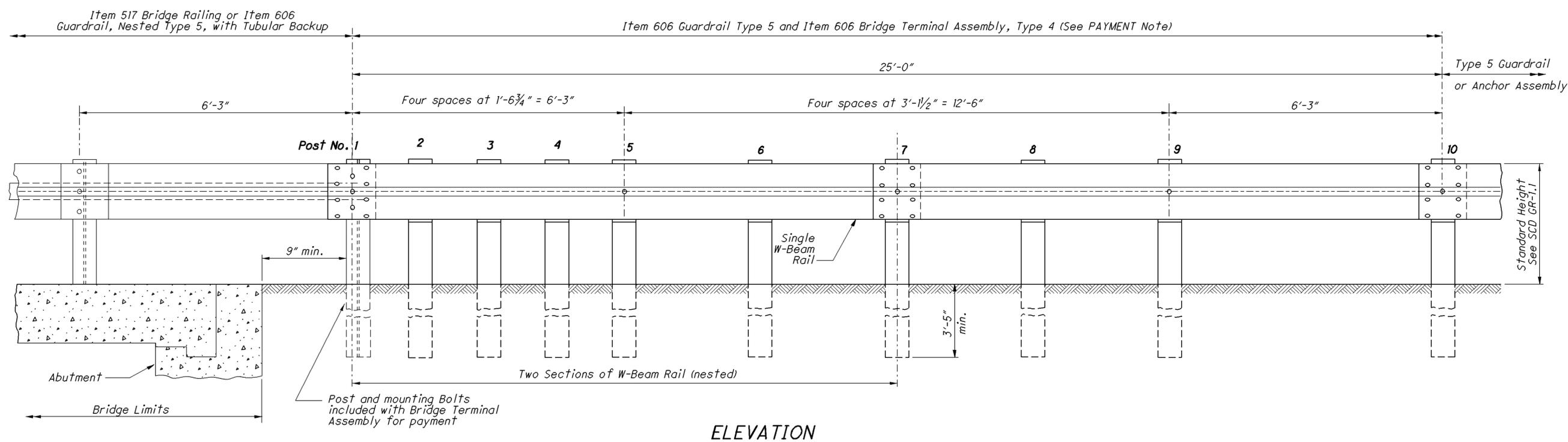
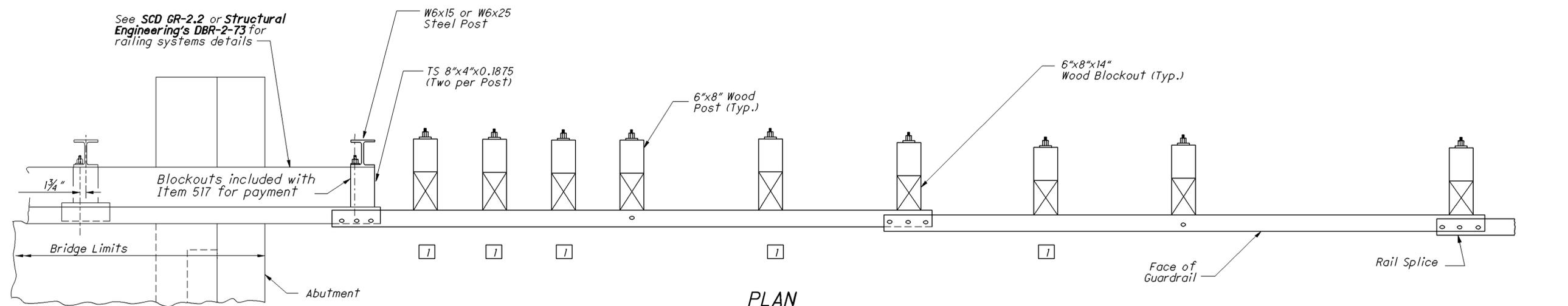
Alternate methods of placing the Blockouts on round Posts may be submitted for consideration and approved by the Engineer.

ROUND WOOD POSTS

Single Sided runs only (Standard Design)

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DESIGNED KMR CHECKED CPS	DRAWN KMR REVISED	TAG I-23-2017	STRUCTURE FILE NUMBER 3003876	DATE 1-23-2017	DESIGNED XXX	REVISION DATE 1/18/2013	OFFICE OF ROADWAY ENGINEERING
					CHECKED XXX	REVIEWED XXX	DESIGN AGENCY OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 5
PLAN INSERT SHEET GUARDRAIL TYPE 5 & 5A				BRIDGE NO. GUE-146-0988 OVER BUFFALO FORK			
PIS GR-2.1				GUE-146-9-81			
2 / 2				15 21			



NOTES

GENERAL: For additional details, see **SCD GR-1.1**.

APPLICATION: The Type 4 Bridge Terminal Assembly shall connect Type 5 Guardrail runs to Type 5 Guardrail with Tubular Backup or to Deep Beam Bridge Guardrail (as shown on **Structural Engineering SCD DBR-2-73**).

DETAIL INFORMATION: The first post off the bridge shall be steel (W6x15 or W6x25). All holes in the off-structure end of the approach panel rail section spanning the abutment are slotted 3/4"x2 1/2". Tighten the bolts as specified for expansion joints in Item 606.05.

POSTS: Posts may be set in drilled holes or driven to grade. See **SCD GR-1.1** for additional Post embedment details. Guardrail is not attached to certain posts (see **LEGEND**).

WOOD POSTS - Use square sawed pressure treated wood as specified in CMS 710.14 and fabricated with square ends. Bore bolt holes and trim the tops of posts, if required after the posts are set.

STEEL POSTS - are allowed as an alternate. Use W6x9 or W6x8.5 in lieu of the 6"x8" wood post. Use same post material through-out assembly.

BLOCKOUTS: Use wood blockouts only. Steel or plastic blockouts are not permitted. Notched wood blockouts are used with steel posts.

FLARED GUARDRAIL: Start Standard Guardrail Flares as shown on **SCD GR-5.1** at or beyond Post No. 10; however, the flare may begin at Post No. 7.

PAYMENT: Item 606 - Bridge Terminal Assembly, Type 4, Each, includes the cost of extra components in excess of normal guardrail, such as additional posts and other hardware. The TS 8"x4" spacers and tubular backup rail extending to the first post off the bridge is included with **Item 517 - Railing,** or **Item 606 - Guardrail, Nested Type 5 with Tubular Backup,** for payment.

LEGEND

1 Guardrail is not attached to posts at Posts 2, 3, 4, 6, and 8. Blockout is fastened to post with standard Post Bolt.

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OFFICE OF ROADWAY ENGINEERING DESIGN AGENCY OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 5	DESIGNED XXX REVIEWED XXX	REVISION DATE 1/18/2013 CHECKED XXX DATE 1-23-2017 TAG 3003876
	DESIGNED KMR CHECKED CPS	DRAWN KMR REVISED KMR
BRIDGE TERMINAL ASSEMBLY, TYPE 4		
BRIDGE NO. GUE-146-0988 OVER BUFFALO FORK		
PIS GR-3.4		
GUE-146-9.81		
16 21		

NOTES

APPLICATION: On Non-NHS roadways it may be used in the clear zone, with restrictions. See Section 603. **Location & Design Manual, Volume 1.**

GENERAL: For details not shown, see **SCD GR-1.1** and other Drawings pertaining to specific guardrail type. Galvanize all steel parts.

OFFSETS: See **SCD GR-5.1** for Standard Guardrail Flare. The 18" flare offset from normal face of rail, shown in the plan view (for single rail installations) will be utilized only where shoulder is insufficient for providing standard flares.

POSTS: Steel posts W6x9 are shown, but W6x8.5 posts are also permitted. See **SCD GR-1.1** for additional embedment details.

SPACERS: Post B Spacers shall be made of $\frac{3}{16}$ " Steel Plate as specified in CMS 710.15 or tow sections of W6x9 or W8x10 cut in the web (see dashed line on POST B Detail) and welded together on both sides.

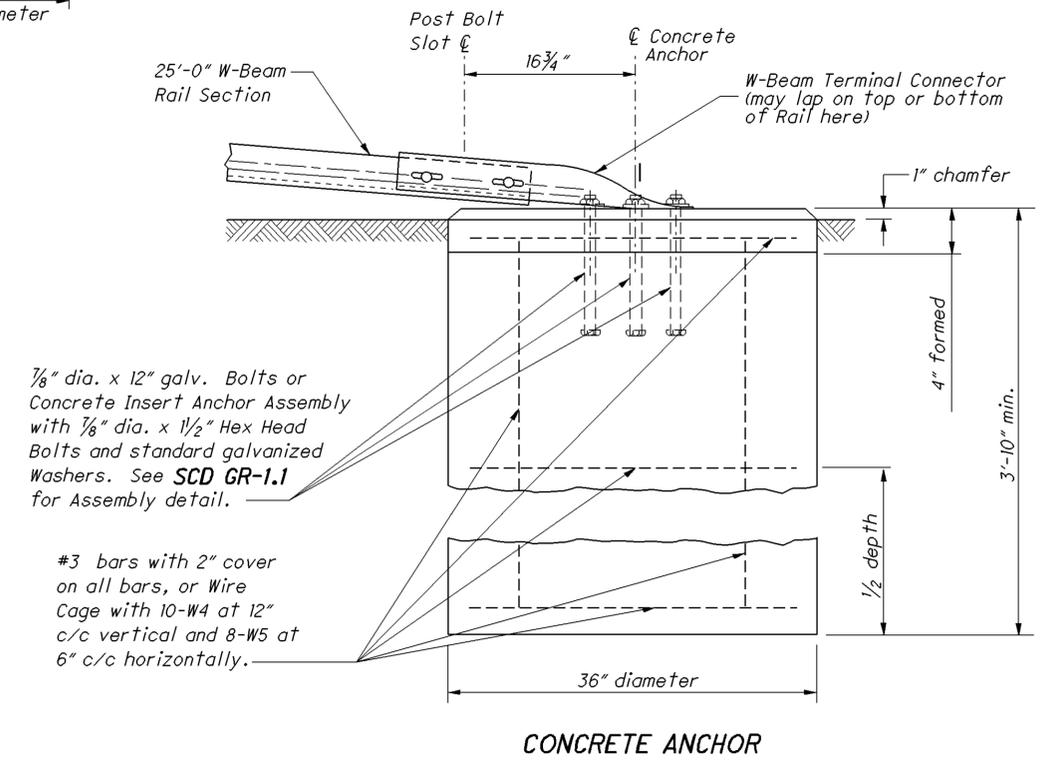
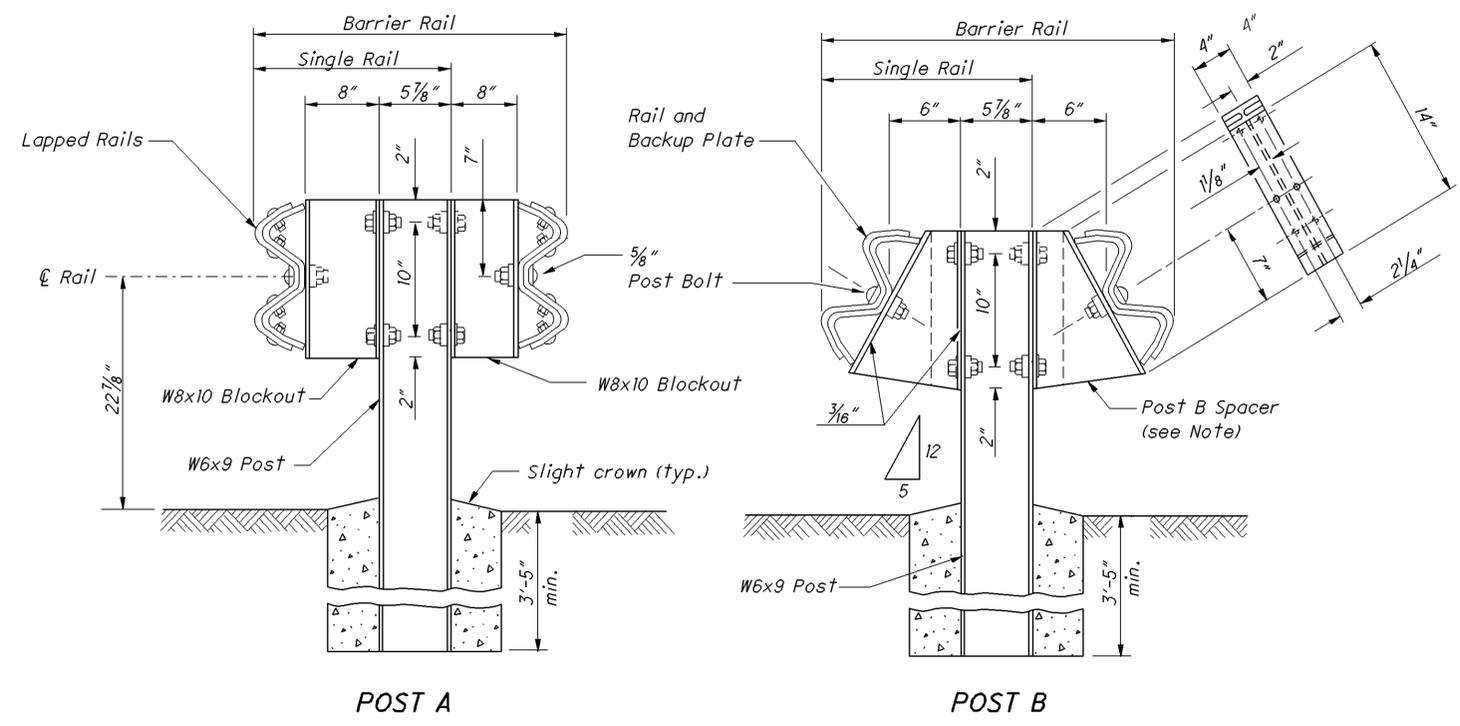
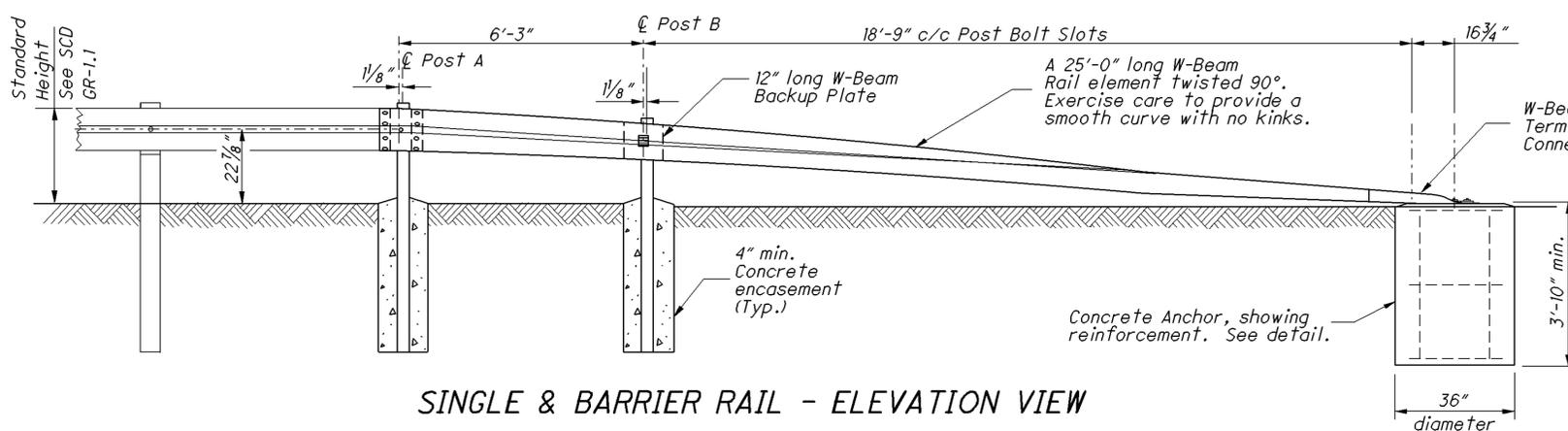
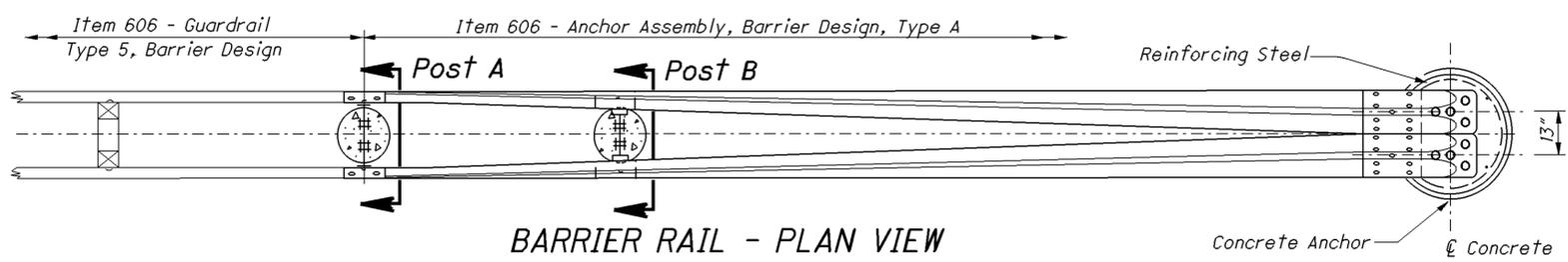
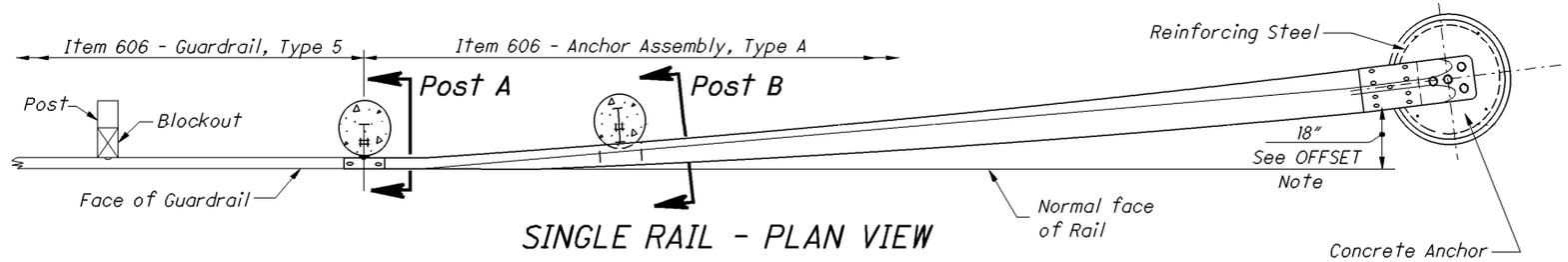
All steel spacers and posts may be provided with additional bolt holes so that these items will not be required to be made right and left handed.

Spacers shall be fastened to Posts with two $\frac{5}{8}$ " hex head bolts and nuts with standard washers on both sides.

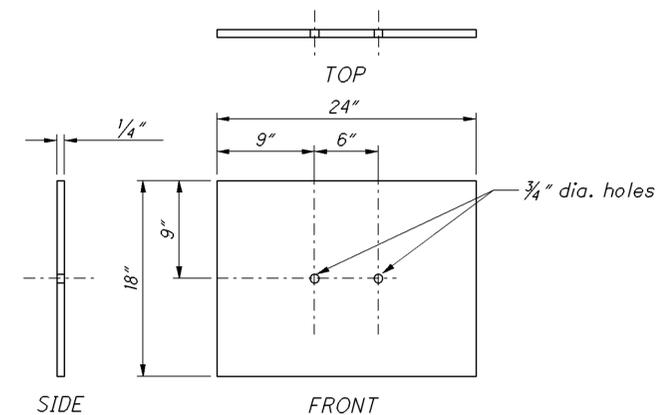
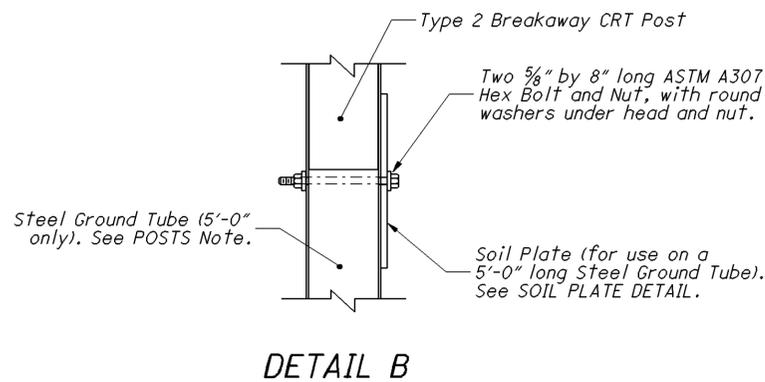
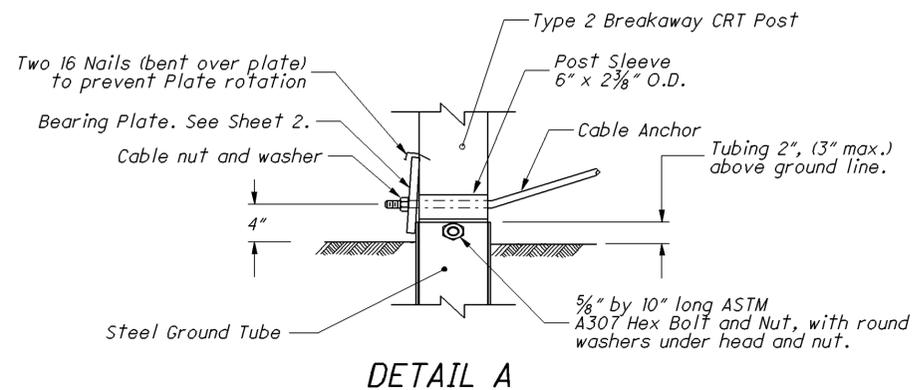
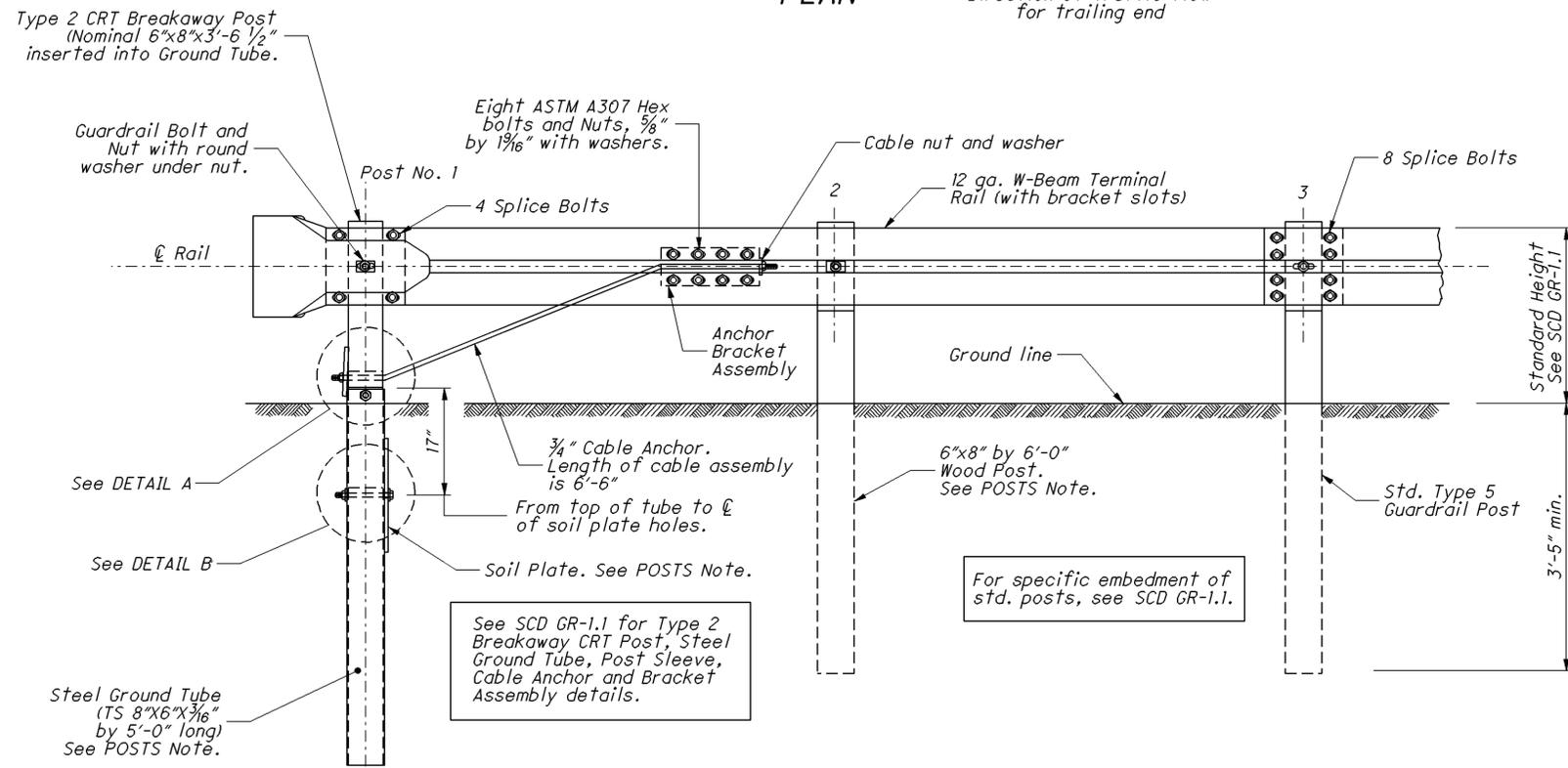
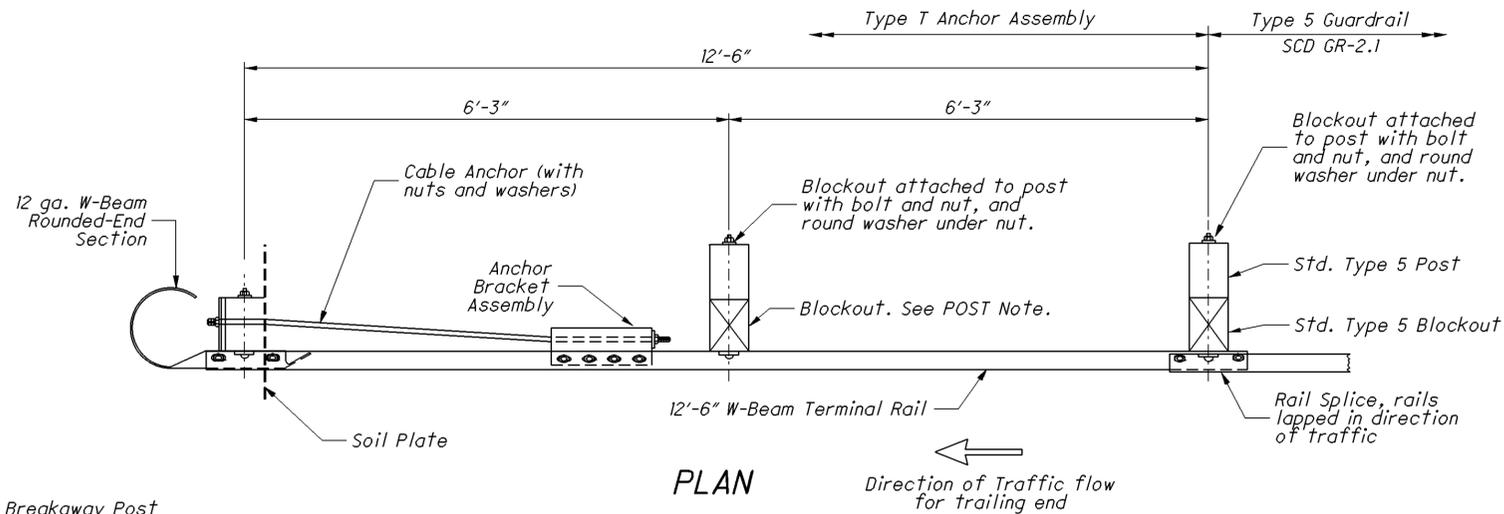
WASHERS: All washers indicated on this drawing are standard galvanized steel of the appropriate size.

CONCRETE ANCHOR: Form top 4" of anchor and slope the top to conform to slope of the adjacent ground. The 36" diameter anchor may be replaced by a 2'-6" square anchor at the contractor's option.

PAYMENT: include all materials and labor for the 25'-0" Single Rail, Type A Anchor Assembly in the unit price bid for **Item 606 - Anchor Assembly, Type A, Each.** Pay for all materials and labor for the 25'-0" Barrier Rail under the unit bid price **Item 606 - Anchor Assembly, Barrier Design, Type A, Each.**



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NOTES

APPLICATION: Use Type T Anchor Assemblies on the trailing end of guardrail runs, located outside of the clear zone of opposing traffic. The assembly is 12'-6" long, none of which can be considered the Length of Need for the guardrail run.

For termination requirements at driveways, see DRIVEWAY OPENING Detail on Sheet 2. For side road approaches and Terminals at Structures, see Location & Design Manual, Volume 1, Figure 603-3.

ANCHORING OPTIONS: Contractor may choose either the foundation tube (shown on this Sheet) or the concrete footing option (Sheet 2) to construct this anchor assembly.

If the foundation tube option is chosen, the contractor will take proper care to insure that the Soil Plate fasteners are not broken during the driving process.

Concrete footings may be cast-in-place or precast. Compact fill after placing precast unit.

MATERIALS: See SCD GR-1.1 for parts used on this anchor, including the CRT Breakaway Posts, Steel Ground Tube, Post Sleeve, Cable Anchor and Bracket Assembly.

Bearing Plate and Soil Plate is ASTM A709 Grade 36. Steel Ground Tube shall be ASTM A500, Grade B, and meet CMS 707.10. All angles, channels and plates shall meet CMS 711.01. All structural steel shall be galvanized as specified in CMS 711.02. All bolt washers indicated are standard galvanized steel of the appropriate size.

Concrete shall be class C.

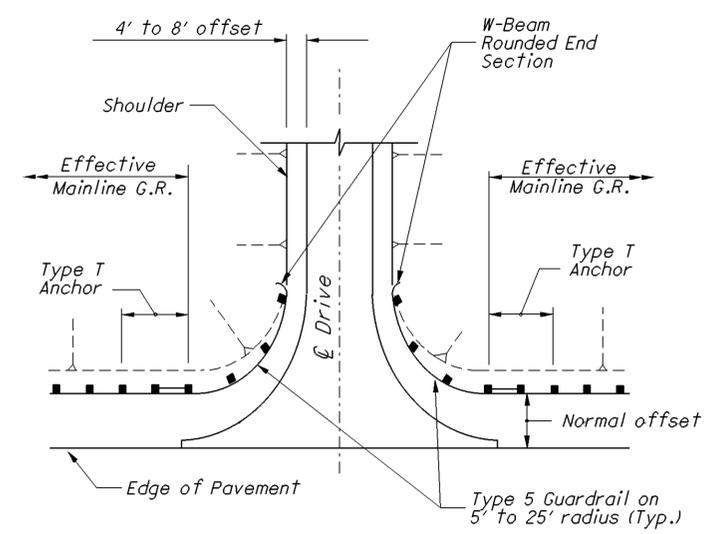
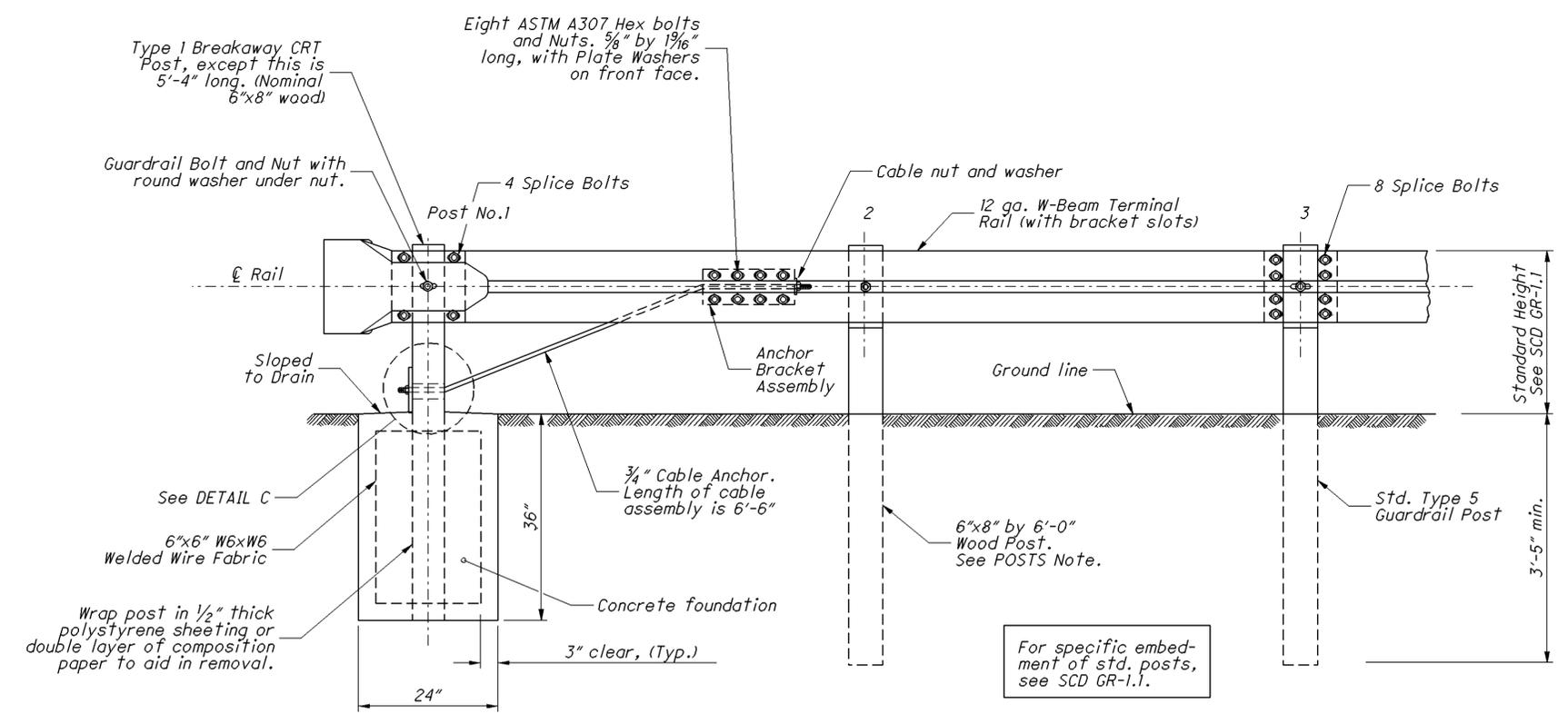
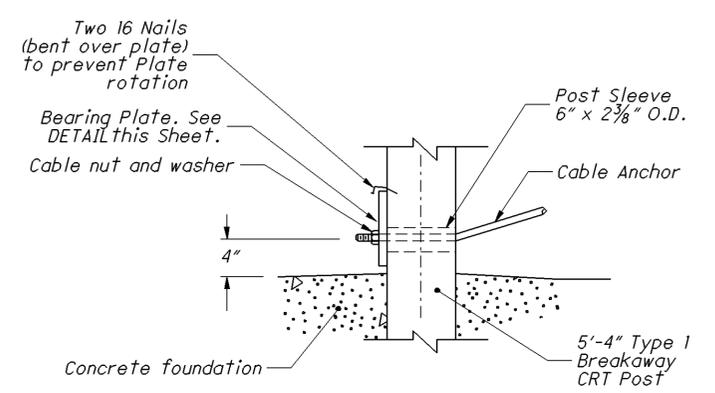
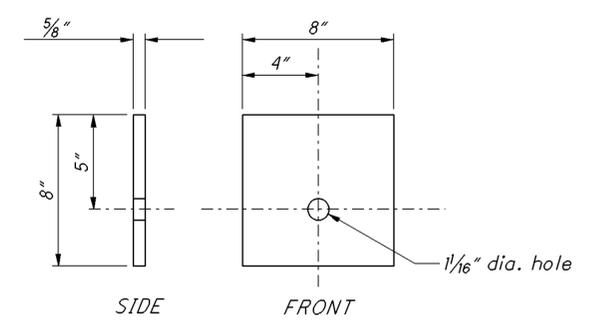
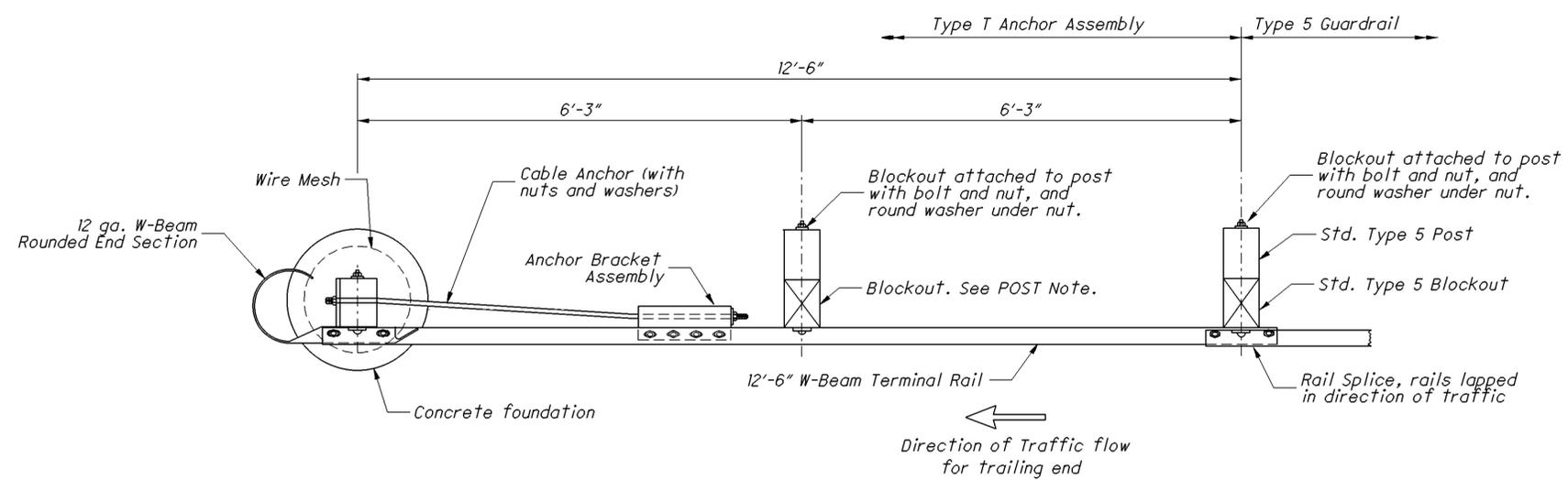
Components on this anchor that are not detailed on SCD GR-1.1 include: 1) 12'-6" W-Beam Terminal Rail (standard part RWM14a), and 2) W-Beam Rounded End Section (RWE03a). For complete details and specifications, see part descriptions in the AASHTO/AGC/ARTBA Standardized Hardware Guide.

POSTS: Post No. 1 may be an 8'-0" long Steel Ground Tube without a Soil Plate in lieu of the 5'-0" tube with Soil Plate.

Post No. 2 can be W6x9 (or W6x8.5) with notched wood blockouts or a standard Type 5 post and blockout. Recycled plastic blockouts are permitted.

PAYMENT: All labor and materials, including the W-Beam Rounded End Section and the W-Beam Terminal Rail for the 12'-6" anchor assembly shall be included in the unit price bid for Item 606 - Anchor Assembly, Type T, Each.

DESIGNED KMR	CHECKED CPS	DRAWN KMR	REVIEWED TAG	DATE 1-23-2017	STRUCTURE FILE NUMBER 3003876	DESIGN AGENCY OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 5	OFFICE OF ROADWAY ENGINEERING
							DESIGNED XXX
PLAN INSERT SHEET							TYPE T ANCHOR ASSEMBLY (Foundation Tube Option)
BRIDGE NO. GUE-146-0988 OVER BUFFALO FORK							
PIS GR-4.2							GUE-146-9.81
1 / 2							



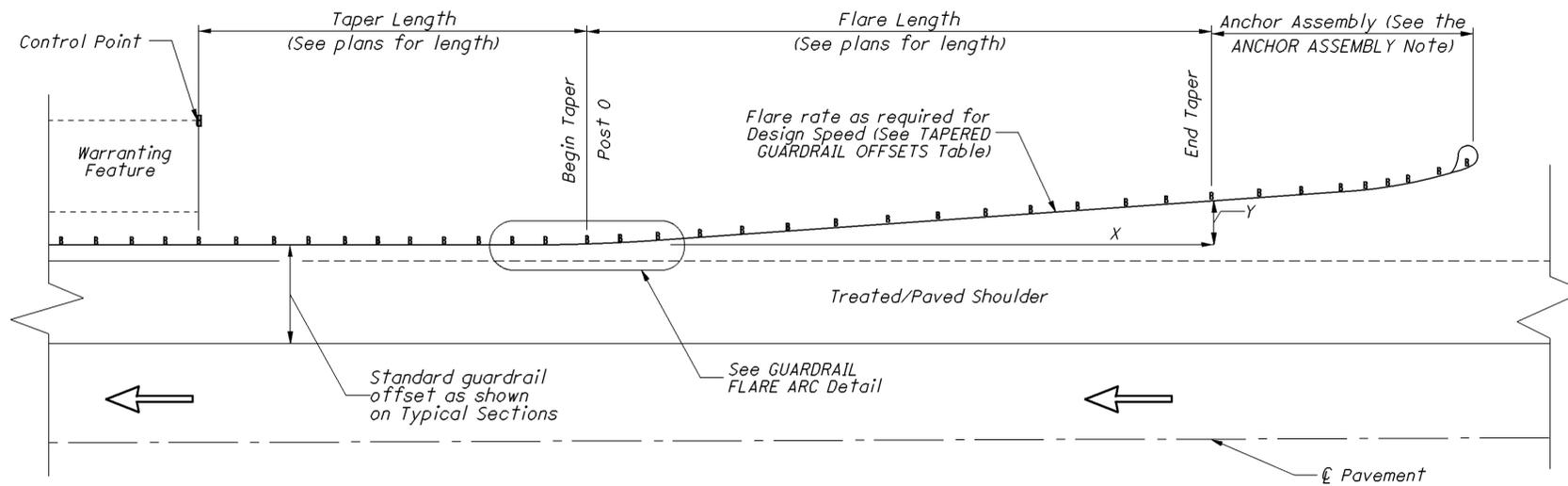
See SCD GR-1.1 for Type 1 Breakaway CRT Post, Steel Ground Tube, Post Sleeve, Cable Anchor and Bracket Assembly details.

For specific embedment of std. posts, see SCD GR-1.1.

DESIGNED KMR	CHECKED CPS	DRAWN KMR	REVIEWED KMR	TAG I-23-2017	STRUCTURE FILE NUMBER 3003876	DESIGN AGENCY OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 5	OFFICE OF ROADWAY ENGINEERING
							DESIGNED XXX
BRIDGE NO. GUE-146-0988 OVER BUFFALO FORK							PIS GR-4.2
GUE-146-9.81							
2 / 2							19
							21

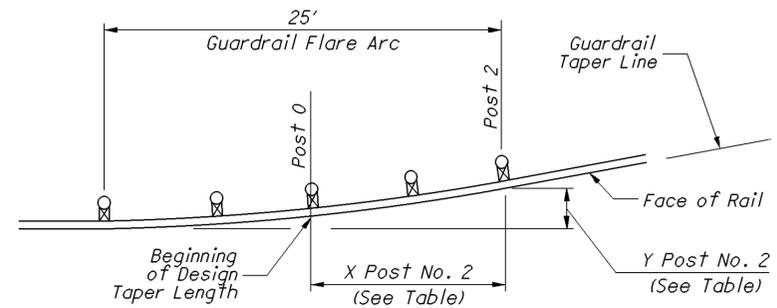
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STANDARD GUARDRAIL FLARE

(Plan View)



GUARDRAIL FLARE ARC DETAIL

NOTES

STANDARD GUARDRAIL FLARE: Construct the flare shown here when indicated in the construction plans and in conjunction with **SCD GR-5.2**.

FLARE RATES AND OFFSET SPEEDS: Use the Design Speed shown on the plans to determine flare rates and offsets. Where a Design Speed is not shown or available, use the legal posted speed limit.

ANCHOR ASSEMBLY: Use a Type B Anchor Assembly with standard guardrail flares unless otherwise specified. The Type A can be used, with restrictions. **Location and Design Manual, Volume 1, Section 603.**

CONTROL POINT: The point shown designates the extent of the hazard being protected and is shown for design use only.

TAPERED GUARDRAIL OFFSETS (Feet)

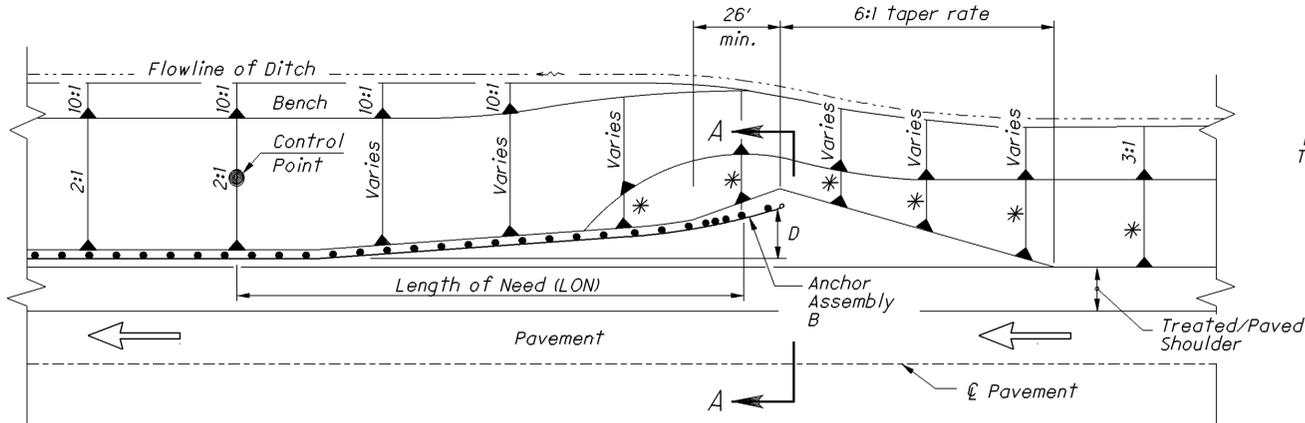
Post No.	Flare Length	45 MPH or less 10:1 Taper		50 MPH 11:1 Taper		55 MPH 12:1 Taper		60 MPH 13:1 Taper		65 MPH 14:1 Taper		70 MPH 15:1 Taper	
		X	Y	X	Y	X	Y	X	Y	X	Y	X	Y
		0	0	0.3	0	0.3	0	0.3	0	0.2	0	0.2	0
2	25	12.4	1.3	12.5	1.1	12.5	1.0	12.5	1.0	12.5	0.9	12.5	0.8
4		24.9	2.5	24.9	2.3	24.9	2.1	24.9	1.9	24.9	1.8	24.9	1.7
6	50	37.3	3.7	37.3	3.4	37.4	3.1	37.4	2.9	37.4	2.7	37.4	2.5
8		49.8	5.0	49.8	4.5	49.8	4.1	49.9	3.8	49.9	3.6	49.9	3.3
10	75	62.2	6.2	62.2	5.7	62.3	5.2	62.3	4.8	62.3	4.5	62.4	4.2
12		74.6	7.5	74.7	6.8	74.7	6.2	74.8	5.7	74.8	5.3	74.8	5.0
14	100	87.1	8.7	87.1	7.9	87.2	7.3	87.2	6.7	87.3	6.2	87.3	5.8
16		99.5	9.9	99.6	9.1	99.7	8.3	99.7	7.7	99.7	7.1	99.8	6.7
18	125	111.9	11.2	112.0	10.2	112.1	9.3	112.2	8.6	112.2	8.0	112.3	7.5
20		124.4	12.4	124.5	11.3	124.6	10.4	124.7	9.5	124.7	8.9	124.7	8.3
22	150	136.8	13.7	136.9	12.5	137.0	11.4	137.1	10.5	137.1	9.8	137.2	9.1
24		149.3	14.9	149.4	13.6	149.5	12.5	149.6	11.5	149.6	10.7	149.7	10.0
26	175	161.7	16.2	161.8	14.7	161.9	13.5	162.0	12.5	162.1	11.6	162.1	10.8
28		174.1	17.4	174.3	15.8	174.4	14.5	174.5	13.4	174.6	12.5	174.6	11.6
30	200	186.6	18.7	186.7	17.0	186.9	15.6	186.9	14.4	187.9	13.4	187.1	12.5
32		199.0	19.9	199.2	18.1	199.3	16.6	199.4	15.3	199.5	14.3	199.6	13.3

All "X" dimensions shown are from the centerline of Post 0 to the centerline of the indicated post along the standard guardrail offset line extended.

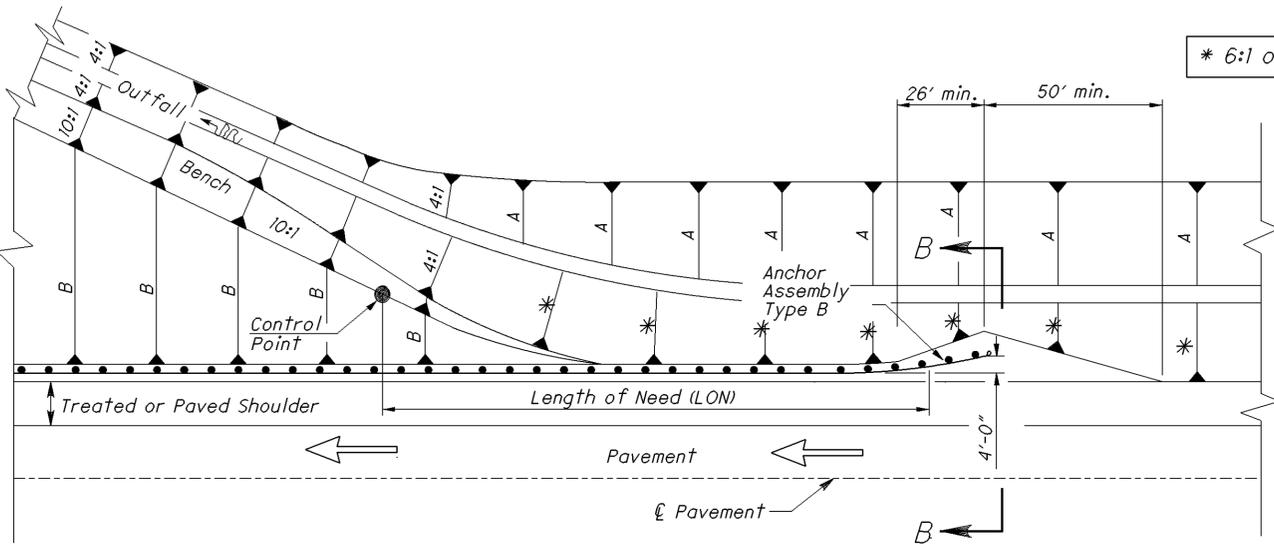
All "Y" dimensions shown are from the standard guardrail offset line extended to the face of rail at the post indicated.

OFFICE OF ROADWAY ENGINEERING
 DESIGN AGENCY: OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 5
 BRIDGE NO. GUE-146-0988 OVER BUFFALO FORK
PIS GR-5.1
 GUE-146-9.81
 20 / 21

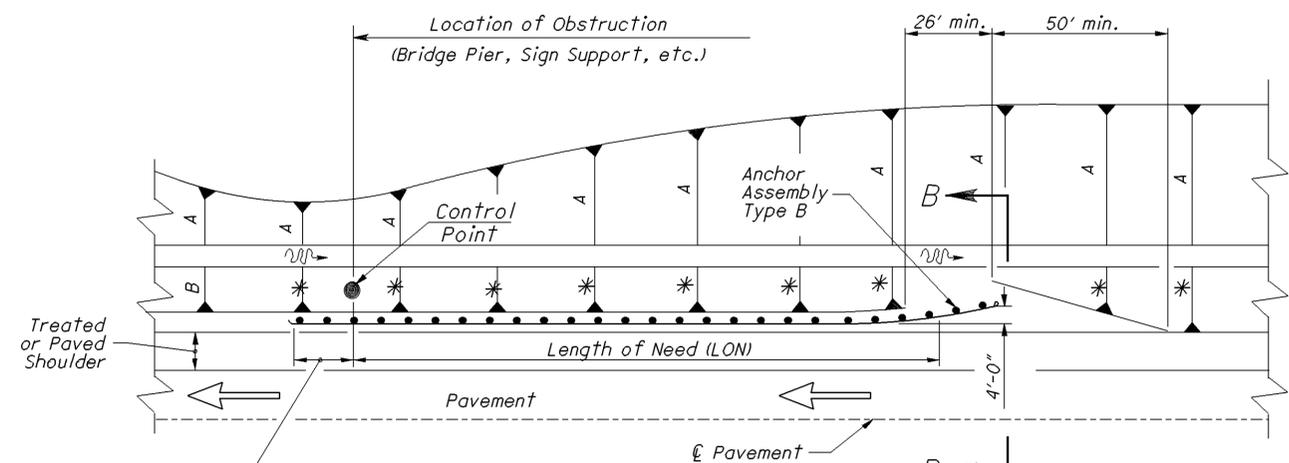
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FILL TO FILL

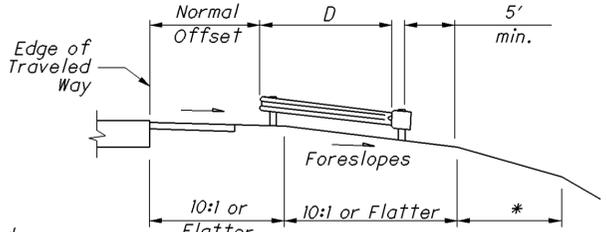


CUT TO FILL

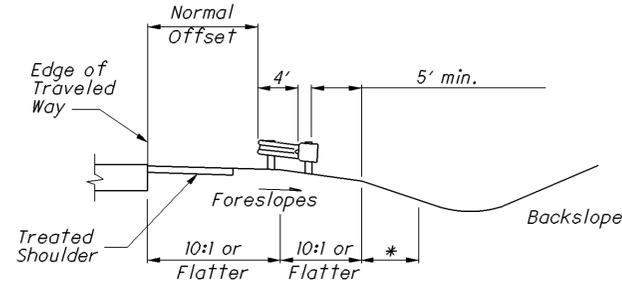


OBSTRUCTION

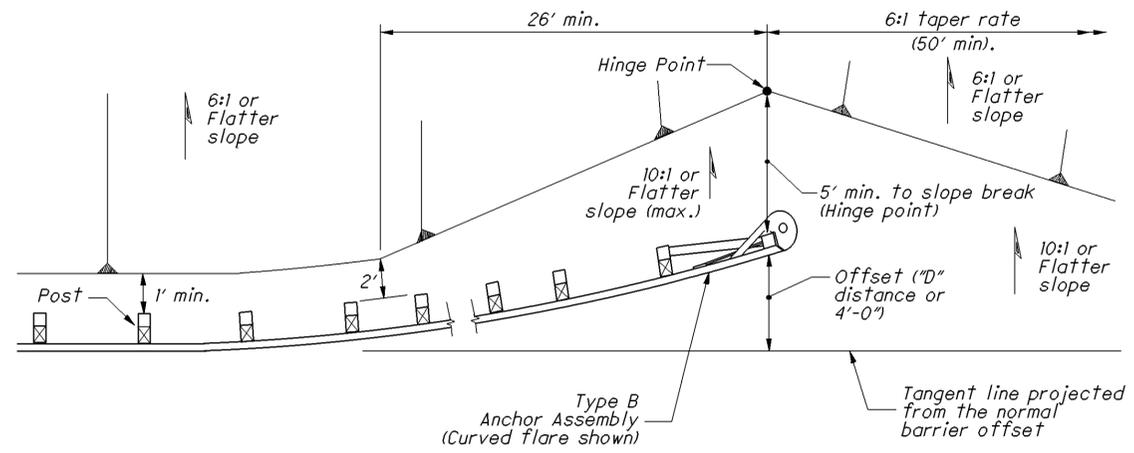
(For Obstructions in Fill Conditions, use above details)



SECTION A-A



SECTION B-B



GRADING PLAN FOR FLARED ANCHOR ASSEMBLIES

Flared Anchor Assemblies are considered gating terminals, and thus, an area 20' by 75' behind and beyond should be reasonably traversable and free from fixed objects hazards.

NOTES

APPLICATION: Utilize details shown here only where approach foreslopes are 6:1 or flatter.

SLOPES: Slopes designated by * are 6:1 or flatter. Construct slopes labeled "A" or "B" as specified in the plans.

DISTANCES: The Length of Need, LON, represents the distance from the control point to the beginning of the end treatment. "D" is the lateral offset of the flare.

See SCD GR-5.1 for additional details on guardrail flares. The control point shown designates the extent of the hazard being shielded and is shown for design use only. See Location & Design Manual, Volume 1, Section 602, for more information.

GRADING: The Anchor Assembly shown requires proper grading to function properly. See GRADING PLAN FOR FLARED ANCHOR ASSEMBLIES for more information.

ANCHOR ASSEMBLY: Install Type B Anchor Assemblies according to the Manufacturer's instructions. Products are install either on a curved flare or straight flare.

DESIGNED KMR	CHECKED CPS	DRAWN KMR	REVISED	REVIEWED TAG	DATE 1-23-2017	STRUCTURE FILE NUMBER 3003876	DESIGN AGENCY OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 5
				DESIGNED XXX	CHECKED XXX		
PLAN INSERT SHEET							
INTRODUCTION OF GUARDRAIL RUNS							
Foreslopes 6:1 or Flatter							
PIS GR-5.2							
BRIDGE NO. GUE-146-0988 OVER BUFFALO FORK							
GUE-146-9.81							
1 / 1							

GENERAL NOTES

CONSTRUCTION NOTIFICATION

THE CONTRACTOR WILL ADVISE THE PROJECT ENGINEER A MINIMUM OF TWENTY ONE (21) DAYS PRIOR TO THE FOLLOWING: THE START OF CONSTRUCTION ACTIVITIES, LANE RESTRICTIONS, LANE CLOSURES, AND/OR ROAD CLOSURES. THE PROJECT ENGINEER WILL FORWARD THIS INFORMATION TO THE FOLLOWING:

DISTRICT PUBLIC INFORMATION OFFICER (PIO) BY FAX AT 614-887-4510 OR EMAIL AT D05.PIO@DOT.STATE.OH.US

DISTRICT PERMIT SECTION BY FAX AT 614-887-4525 OR EMAIL AT BRIAN.BOSCH@DOT.STATE.OH.US

CENTRAL OFFICE SPECIAL HAUL PERMITS SECTION BY FAX AT 614-728-4099 OR EMAIL AT HAULING.PERMIT@DOT.STATE.OH.US

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

UTILITY OWNERSHIP

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

GUERNSEY MUSKINGUM ELECTRIC COOPERATIVE
17 SOUTH LIBERTY STREET
NEW CONCORD, OHIO 43762
ATTN: BOB CAMPBELL
740-826-7661

ASPIRE ENERGY (GAS)
300 TRACY BRIDGE ROAD
ORRVILLE, OHIO 44667
330-682-7726

FRONTIER TELEPHONE CO.
9444 CAMPBELL STREET
CAMBRIDGE, OHIO 43725
ATTN: ASHLEY MORAN
740-432-6861

GENERAL PROVISIONS

THE CONTRACTOR'S ATTENTION IS CALLED TO ALL OF SECTION 100 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS OF THE OHIO DEPARTMENT OF TRANSPORTATION.

MOBILIZATION

THE CONTRACTOR SHALL ON ANY CONTRACT FOR WHICH HIS BID EXCEEDS \$50,000.00 INCLUDE AN AMOUNT TO COVER ANY APPLICABLE EXPENDITURES REFERRED TO UNDER ITEM 624 OF THE 2016 CONSTRUCTION AND MATERIAL SPECIFICATIONS. PAYMENT SHALL BE THE LUMP SUM BID PRICE FOR ITEM 624, MOBILIZATION.

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 AND REMOVED MATERIALS

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

IN ADDITION, ALL REMOVED MATERIALS EXCEPT AS NOTED ELSEWHERE IN THE PLANS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED BY THE CONTRACTOR FROM THE JOB SITE.

INSPECTION FOR BATS

PRIOR TO THE START OF DEMOLITION ACTIVITIES THE CONTRACTOR SHALL INSPECT THE UNDERSIDE OF THE BRIDGE FOR THE PRESENCE OF BATS. THE CONTRACTOR SHALL NOTIFY CHRIS YODER IN THE DISTRICT 5 PLANNING DEPARTMENT @ (740) 323-5193 (chris.yoder@dot.state.oh.us), OR, BRIAN TATMAN @ (740) 323-5191 (brian.tatman@dot.state.oh.us) OF THE RESULTS OF THE INSPECTION.

REMOVALS OVER WATER

REASONABLE CARE SHALL BE USED WHEN REMOVING MATERIAL OVER WATER. ANY MATERIAL DROPPED SHALL BE IMMEDIATELY REMOVED FROM THE WATER AND DISPOSED OF AWAY FROM THE SITE EXCEPT FOR MASONRY MATERIAL WHICH MAY BE USED FOR BANK PROTECTION AS APPROVED BY THE ENGINEER.

PROTECTION OF TRAFFIC

PRIOR TO DEMOLITION OF ANY PORTIONS OF THE EXISTING SUPERSTRUCTURE AND ERECTION OF ANY PORTIONS OF THE PROPOSED SUPERSTRUCTURE, THE CONTRACTOR SHALL SUBMIT PLANS FOR THE PROTECTION OF TRAFFIC (VEHICULAR, PEDESTRIAN, BOAT, ETC.) AS PER CMS 2010 501.05.B.2.

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.

ITEM 601 - ROCK CHANNEL PROTECTION, TYPE C WITH FABRIC FILTER

ROCK CHANNEL PROTECTION, TYPE C, WITH FABRIC FILTER SHALL BE PLACED IN THE AREAS OF THE EMBANKMENT AS DETAILED IN THE BRIDGE PLAN AND IN AREAS DESIGNATED BY THE ENGINEER. CONCRETE REMOVED FROM THE EXISTING ABUTMENT AND/OR PIER MAY BE PLACED ON THE EMBANKMENT SLOPES PROVIDING THAT ALL RE-STEEL FROM THE CONCRETE IS REMOVED. ALL ROCK CHANNEL PROTECTION, TYPE C, WITH FABRIC FILTER SHALL BE AS PER 601.09. AN ESTIMATED AMOUNT OF 63 CU. YD.(TYPE C) HAS BEEN INCLUDED IN THE GENERAL SUMMARY FOR BIDDING PURPOSES, BUT FINAL PAYMENT SHALL BE FOR THE ACTUAL AMOUNT USED AS DIRECTED BY THE ENGINEER.

ITEM 606 - ANCHOR ASSEMBLY, TYPE E

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING ANY OF THE GUARDRAIL END TERMINALS FOR TYPE MGS GUARDRAIL AS LISTED ON ROADWAY ENGINEERING'S WEB PAGE UNDER ROADSIDE SAFETY DEVICES FOR APPROVED GUARDRAIL END TREATMENTS. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

THE FACE OF THE TYPE E IMPACT HEAD SHALL BE COVERED WITH A SHEET OF TYPE G REFLECTIVE SHEETING, PER CMS 730.19.

REFER TO THE MANUFACTURER'S INSTRUCTIONS REGARDING THE INSTALLATION OF, AND THE GRADING AROUND THE FOUNDATION TUBES AND GROUND STRUT. THE TOP OF ANY FOUNDATION TUBE SHOULD BE LESS THAN 4 INCHES ABOVE THE GROUND. THE PLACEMENT OF THE FOUNDATION TUBES SHOULD BE AN APPROPRIATE DEPTH BELOW THE LEVEL LINE IN ORDER TO MAINTAIN THE FINISHED GUARDRAIL HEIGHT OF 31 INCHES FROM THE EDGE OF THE SHOULDER.

ON-SITE GRADING IS REQUIRED IF THE TOP OF THE FOUNDATION TUBES OR TOP OF THE GROUND STRUT DOES PROJECT MORE THAN 4 INCHES ABOVE THE GROUND LINE.

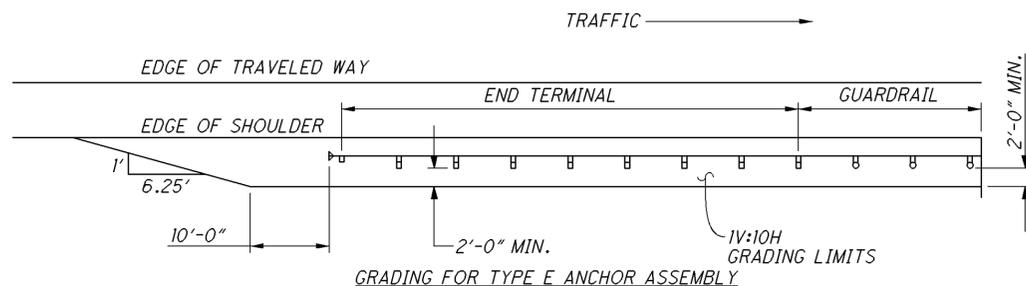
PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM 606, ANCHOR ASSEMBLY, TYPE E, EACH, AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT A COMPLETE AND FUNCTIONAL ANCHOR ASSEMBLY SYSTEM, INCLUDING ALL RELATED TRANSITIONS, REFLECTIVE SHEETING, HARDWARE, GRADING, EMBANKMENT AND EXCAVATION NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER.

LOCATION OF GUARDRAIL

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

GRADING FOR ANCHOR ASSEMBLY, MGS, TYPE E

THE GRADING LAYOUT SHOWN HERE SHALL BE USED WITH ITEM 606 - ANCHOR ASSEMBLY, MGS, TYPE E, AS DETAILED IN THIS PLAN.



ITEM 209 - BORROW

A QUANTITY OF 26 CU. YD. OF BORROW REQUIRED TO ACHIEVE ITEM 209 RESHAPING UNDER GUARDRAIL HAS BEEN BE CARRIED TO THE GENERAL SUMMARY TO BE USED AS DIRECTED BY THE ENGINEER.

WETLAND IMPACT MINIMIZATION

WETLANDS ARE PRESENT AT ALL FOUR CORNERS OF THE GUE-662-2.40 BRIDGE STRUCTURE AS NOTED ON SHEET 6/24. WETLAND IMPACTS OF UP TO 0.08 ACRE HAVE BEEN PERMITTED FOR THE PROJECT. THE WETLANDS BEGIN AT THE TOE OF THE ROADWAY EMBANKMENT EXTEND INTO THE ADJACENT FIELD. THE CONTRACTOR SHALL MINIMIZE THE WETLAND IMPACTS TO THE EXTEND POSSIBLE AND RESTORE ANY IMPACTED WETLAND AREAS TO THE PRE-PROJECT ELEVATIONS. THE WETLAND AREAS SHALL NOT BE IMPACTED BEYOND THE AREA NECESSARY FOR CONSTRUCTION ACCESS.

BORROW AND WASTE AREAS

THE CONTRACTOR SHALL COMPLY WITH ODOT CONSTRUCTION AND MATERIAL SPECIFICATIONS SECTION 105.16 FOR WASTE/BORROW AREAS. THE CONTRACTOR SHALL NOT PLACE ANY NEW FILLS IN THE FEMA REGULATED FLOODPLAIN AREA OTHER THAN THE FILL REQUIRED BY THE PROJECT PLANS.

SEEDING AND MULCHING

THE FOLLOWING QUANTITIES ARE PER BRIDGE LOCATION AND HAVE BEEN CARRIED TO THE GENERAL SUMMARY TO BE USED AS DIRECTED BY THE ENGINEER. PLACE ITEM 659 AT LOCATIONS OF GROUND DISTURBANCES DUE TO CONSTRUCTION ACCESS.

ITEM 659 SEEDING AND MULCHING, CLASS 3B.....300 S.Y.
ITEM 659 COMMERCIAL FERTILIZER.....0.03 TON
ITEM 659 LIME.....0.06 ACRE
ITEM 659 WATER.....0.81 M GAL

OEPA NOTIFICATION OF DEMOLITION AND RENOVATION

AN ASBESTOS SURVEY FOR THE GUE-662-2.40 BRIDGE SCHEDULED FOR DEMOLITION WORK WAS CONDUCTED BY A CERTIFIED ASBESTOS HAZARD EVALUATION SPECIALIST. A COPY OF THE ASBESTOS SURVEY REPORT FOR THE BRIDGE HAS BEEN INCLUDED IN THE PLAN PACKAGE FOR THIS PROJECT. THE ASBESTOS SURVEY REPORT DID NOT IDENTIFY THE PRESENCE OF ANY ASBESTOS CONTAINING MATERIALS. (THE REMOVAL AND DISPOSAL OF THE ASBESTOS CONTAINING MATERIAL MUST COMPLY WITH THE OHIO ADMINISTRATIVE CODE (OAC) REGULATIONS AND THE NATIONAL EMISSION STANDARD FOR HAZARDOUS AIR POLLUTANTS (NESHAP) STANDARD FOR ASBESTOS.)

A COPY OF THE OHIO ENVIRONMENTAL PROTECTION AGENCY (OEPA) NOTIFICATION OF DEMOLITION AND RENOVATION FORM, PARTIALLY COMPLETED BY THE ASBESTOS HAZARD EVALUATION SPECIALIST, HAS BEEN INCLUDED AT THE END OF THE ASBESTOS SURVEY REPORT. THE CONTRACTOR SHALL COMPLETE AND SIGN THE FORM AND SUBMIT IT ALONG WITH A COPY OF THE ASBESTOS SURVEY REPORT TO:

OHIO EPA, SEDO
2195 FRONT STREET
LOGAN, OH
ATTN: KRISTEN PARRISH

AT LEAST 10 WORKING DAYS PRIOR TO THE START OF ANY DEMOLITION WORK. THE CONTRACTOR SHALL PROVIDE A COPY OF THE COMPLETED AND SIGNED FORM TO THE ENGINEER. INFORMATION REQUIRED ON THE FORM SHALL INCLUDE AT A MINIMUM: 1) THE ODOT PROJECT NUMBER, 2) THE CONTRACTOR'S NAME, ADDRESS AND TELEPHONE NUMBER, 3) THE SCHEDULED DATES FOR THE START AND COMPLETION OF THE BRIDGE DEMOLITION.

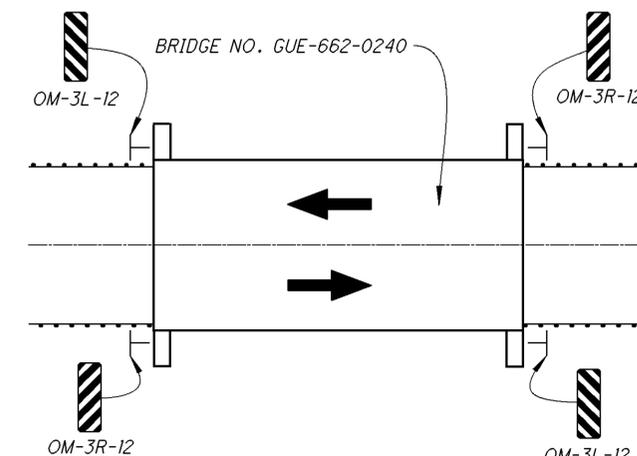
BASIS FOR PAYMENT: THE CONTRACTOR SHALL FURNISH ALL FEES, LABOR, AND MATERIAL NECESSARY TO COMPLETE AND SUBMIT THE OEPA NOTIFICATION FORM. PAYMENTS FOR THIS WORK SHALL BE INCIDENTAL TO THE ITEM 202 STRUCTURE REMOVAL ITEM(S) IN THE PLAN.

STRUCTURE GUE-662-0240 OBJECT MARKERS

THE CONTRACTOR SHALL INSTALL OM-3L & OM-3R (36"x12") SIGNS AT ALL FOUR (4) WINGWALLS OF THE BRIDGE. SIGNS SHALL BE INSTALLED 1'-0" BEHIND THE GUARDRAIL POST AND BRIDGE WINGWALL. THE BOTTOM OF GROUND MOUNTED SIGN SHALL BE 5'-0" ABOVE PAVEMENT.

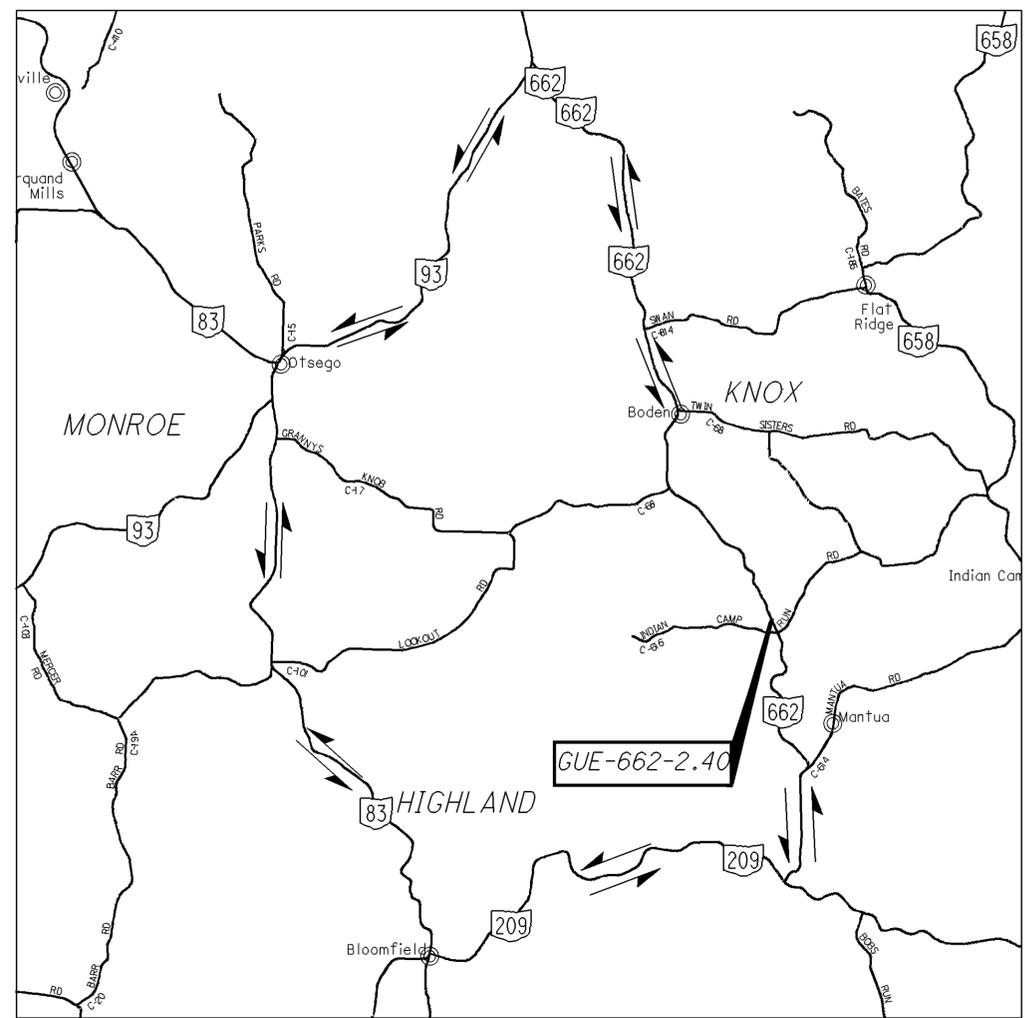
THE FOLLOWING ITEMS HAVE BEEN CARRIED TO THE GENERAL SUMMARY TO INSTALL THE SIGNS:

ITEM 630 - GROUND MOUNTED SUPPORT, NO. 3
POST.....46.0 FT.
ITEM 630 - SIGN, FLAT SHEET.....12.0 SF.

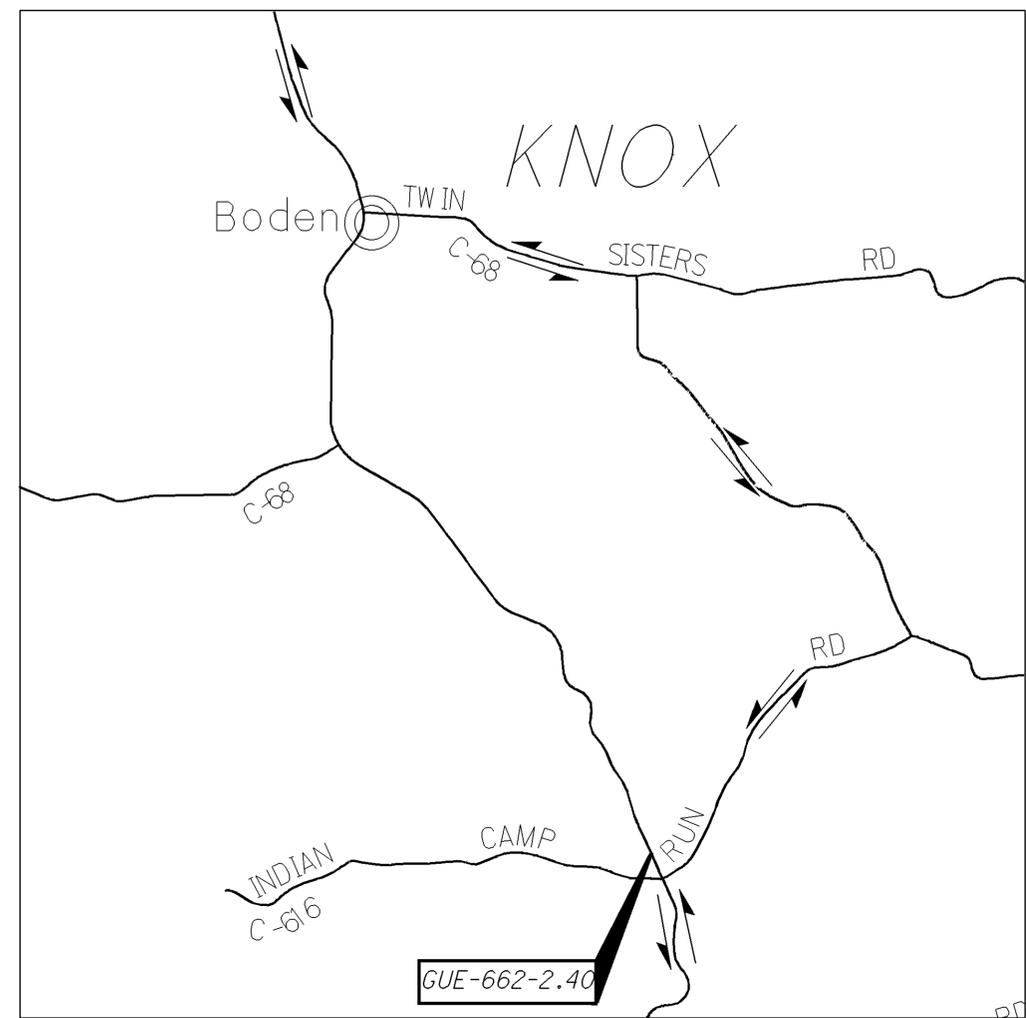


DESIGN AGENCY	OHIO DEPARTMENT OF TRANSPORTATION DISTRICT 5
REVIEWED TAG	DATE 1/30/2017
DRAWN YHK	STRUCTURE FILE NUMBER 3006638
DESIGNED YHK	CHECKED JDR
GENERAL NOTES	
BRIDGE NO. GUE-662-0240 OVER INDIAN CAMP RUN	
GUE-662-2.40	
2/24	

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STATE DETOUR
SCALE IN MILES



LOCAL DETOUR
SCALE IN MILES

ITEM 614 MAINTAINING TRAFFIC

TRAFFIC MAY BE DETOURED AS PER PROPOSAL NOTE 121. DAMAGES SHALL BE AS PER PROPOSAL NOTE 121 FOR EACH CALENDAR DAY THE ROADWAY REMAINS CLOSED TO TRAFFIC BEYOND THE SPECIFIED TIME. THE CONTRACTOR SHALL PROVIDE, ERECT AND MAINTAIN STANDARD 48x30 INCHES ROAD CLOSED SIGNS, SIGN SUPPORTS, BARRICADES, GATES AND LIGHTS, AS DETAILED IN SCD MT-101.60 AT THE FOLLOWING LOCATIONS DURING PERIODS IN WHICH THE AFFECTED ROADS ARE CLOSED TO TRAFFIC.

- S.R. 662: JUST NORTH OF BRIDGE NO. GUE-662-0240
- S.R. 662: JUST SOUTH OF BRIDGE NO. GUE-662-0240

THE CONTRACTOR SHALL PROVIDE, ERECT AND MAINTAIN SIGNS AND SIGN SUPPORTS, AS DETAILED IN THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, AND TYPE III BARRICADES OF THE TYPE AND LOCATION AS FOLLOWS:

- TYPE III BARRICADES
- SR 662 STA. 126+00
- SR 662 STA. 128+00

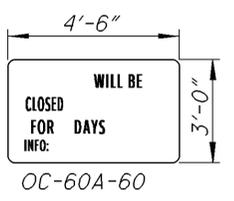
ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH CMS 614 AND OTHER APPLICABLE PORTIONS OF THE SPECIFICATIONS, AS WELL AS THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 614, MAINTAINING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

ITEM 614 DETOUR SIGNING, AS PER PLAN

THE CONTRACTOR SHALL SUPPLY, ERECT, MAINTAIN, AND REMOVE THE DETOUR SIGNING. ROUTE SIGNS DESIGNATED IN THIS PLAN AS ODOT SUPPLIED WILL BE PICKED UP FROM AND RETURNED TO THE ODOT DISTRICT FIVE OFFICE LOCATED AT 9600 JACKSONTOWN ROAD, JACKSONTOWN, OH 43030 BY THE CONTRACTOR. THE CONTRACTOR SHALL NOTIFY THE DISTRICT FIVE ROADWAY SERVICES MANAGER AT 740-323-4400 A MINIMUM OF SEVEN DAYS PRIOR TO PICK UP OF ALL ROUTE SIGNS DESIGNATED IN THIS PLAN AS ODOT SUPPLIED. PAYMENT FOR ALL MATERIAL, LABOR, AND EQUIPMENT TO PERFORM THIS WORK SHALL BE INCLUDED IN THE LUMP SUM BID FOR ITEM 614 DETOUR SIGNING, AS PER PLAN.

NOTICE OF CLOSURE SIGNS

NOTICE OF CLOSURE SIGNS, AS DETAILED BELOW, SHALL BE ERECTED BY THE CONTRACTOR AT LEAST ONE WEEK 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. THEY SHOULD BE ERECTED AT THE POINT OF CLOSURE.



A+B BIDDING CONTRACT TABLE

USE THE FOLLOWING INFORMATION IN COMBINATION WITH PROPOSAL NOTE A+B BIDDING WITH: THE CONTRACTOR WILL BID THE NUMBER OF CALENDAR DAYS TO COMPLETE THE PROJECT AS LISTED IN THE PROPOSAL.

CONTRACT SEGMENT LOCATION OF CRITICAL WORK	MINIMUM DAYS	MAXIMUM DAYS	MAXIMUM INCENTIVE DAYS	INCENTIVE/ DISINCENTIVE \$ PER DAY	MAXIMUM INCENTIVE \$
BRIDGE REPLACE. @ GUE-662-0240 - 2 LANES OF S.R. 662 CLOSED WITHIN SHOWN WORK LIMITS	21	30	9	\$500	\$4500

A+B BIDDING CONTRACT TABLE (CONT.)

IT IS THE INTENT OF THIS PROJECT TO KEEP ANY DISRUPTION TO THE SCHOOLS AT A MINIMUM. CONSTRUCTION WILL NOT BE ALLOWED TO BEGIN UNTIL AFTER THE SCHOOL YEAR HAS ENDED. THEREFORE, CONSTRUCTION CANNOT BEGIN UNTIL JUNE 1, 2017. ANY VIOLATION OF THIS DATE, THE CONTRACTOR WILL BE ACCESSED A DISINCENTIVE FROM THE TABLE ABOVE.

DESIGNATED LOCAL DETOUR ROUTE

IN ADDITION TO THE OFFICIAL, SIGNED DETOUR ROUTE, A LOCAL ROUTE HAS BEEN DETERMINED TO BE THE SECONDARY, UNSIGNED DETOUR ROUTE OR "DESIGNATED LOCAL DETOUR ROUTE." THIS ROUTE IS SHOWN ON THIS SHEET. DURING THE TIME THAT TRAFFIC IS DETOURED, THE CONTRACTOR SHALL MAINTAIN THIS ROUTE IN A CONDITION WHICH IS REASONABLY SMOOTH AND FREE FROM HOLES, RUTS, RIDGES, BUMPS, DUST, AND STANDING WATER. ONCE THE DETOUR IS REMOVED AND TRAFFIC RETURNED TO ITS NORMAL PATTERN, THE DESIGNATED LOCAL DETOUR ROUTE SHALL BE RESTORED TO A CONDITION THAT IS EQUIVALENT TO THAT WHICH EXISTED PRIOR TO ITS USE FOR THIS PURPOSE. ALL SUCH WORK SHALL BE PERFORMED WHEN AND AS DIRECTED BY THE ENGINEER.

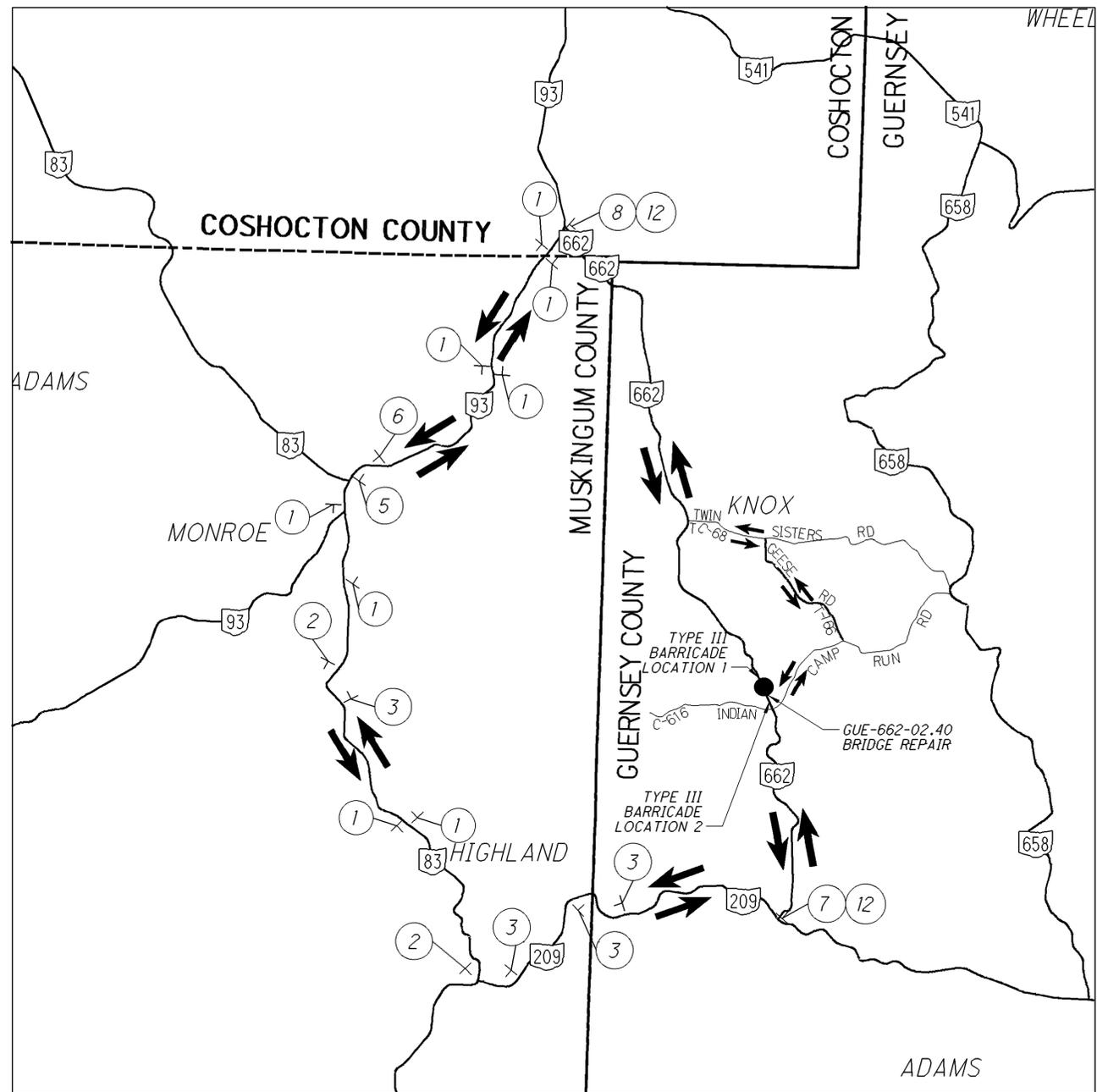
TO PREVENT DUST NUISANCE, USE DUST PALLIATIVE CONSISTING OF 712.02 CALCIUM CHLORIDE OR A BRINE SOLUTION CONTAINING A MINIMUM OF 30 PERCENT BY WEIGHT OF CALCIUM CHLORIDE. SPREAD THE CALCIUM CHLORIDE UNIFORMLY OVER THE SURFACE.

THE FOLLOWING ESTIMATED QUANTITIES ARE PROVIDED FOR USE AS DIRECTED BY THE ENGINEER TO MAINTAIN AND SUBSEQUENTLY RESTORE THE DESIGNATED LOCAL DETOUR ROUTE.

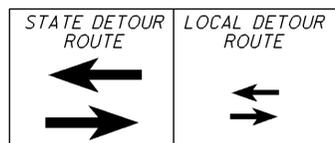
ITEM 410 - TRAFFIC COMPACTED SURFACE, TYPE C	10.00 CU YD
ITEM 616 - WATER	2 M GALLONS
ITEM 616 - CALCIUM CHLORIDE	27 TON

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STATE DETOUR SIGNING PLAN



TYPE III BARRICADE AS PER SCD MT-101.60

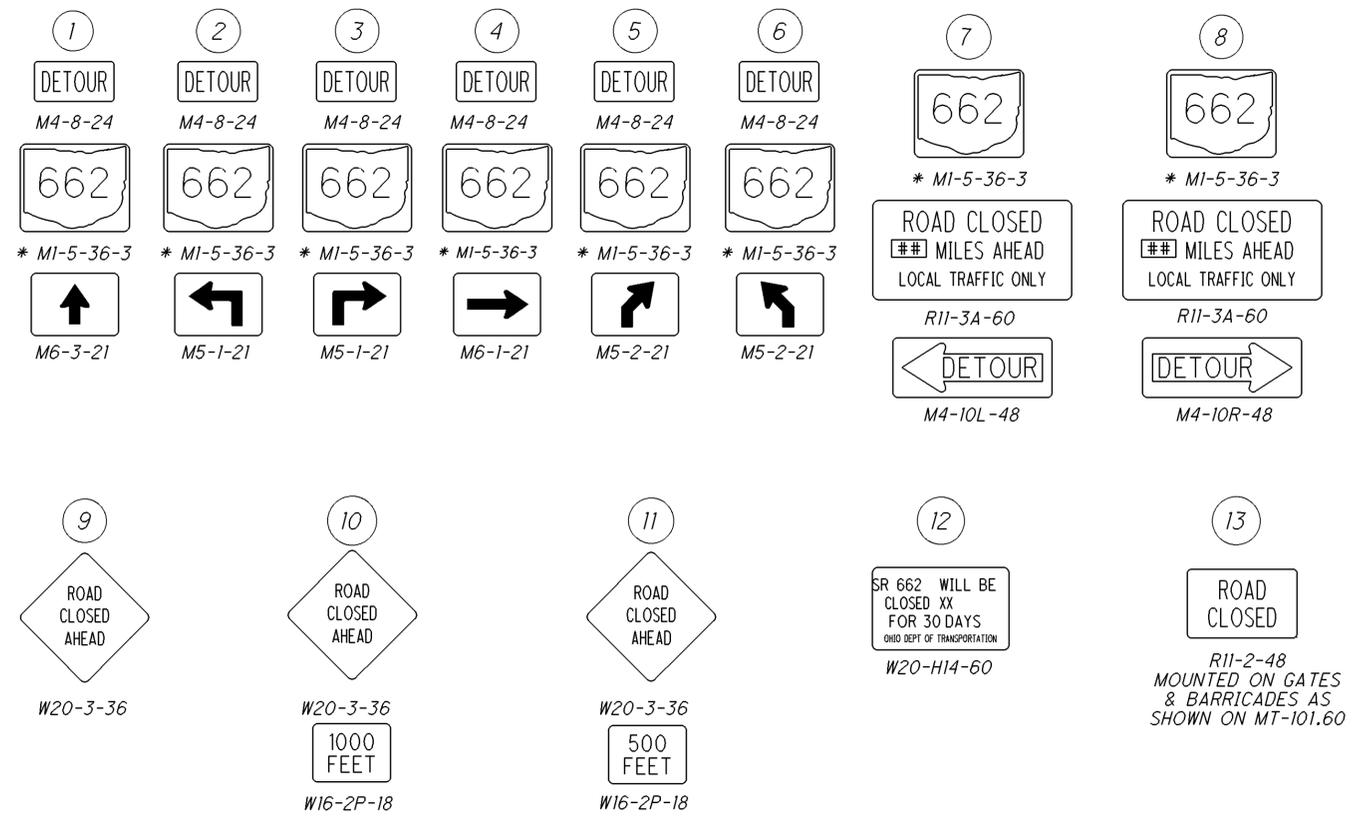
LOCATION 1: JUST NORTH OF THE PROJECT AND SOUTH OF S.R.662
LOCATION 2: JUST SOUTH OF THE PROJECT AND NORTH OF C.R.614, INDIAN CAMP RUN RD.

ADDITIONAL TYPE III BARRICADES MAY BE PLACED AT THE CLOSED COUNTY OR TOWNSHIP ROAD NEAREST THE PROJECT AT THE DIRECTION OF THE PROJECT ENGINEER. ALL ITEMS INCLUDING SIGNS AND BARRICADES SHALL BE INCLUDED IN THE LUMP SUM BID FOR ITEM 614 MAINTAINING TRAFFIC.

SEE SCD MT-101.60 FOR ADDITIONAL BARRICADE DETAILS

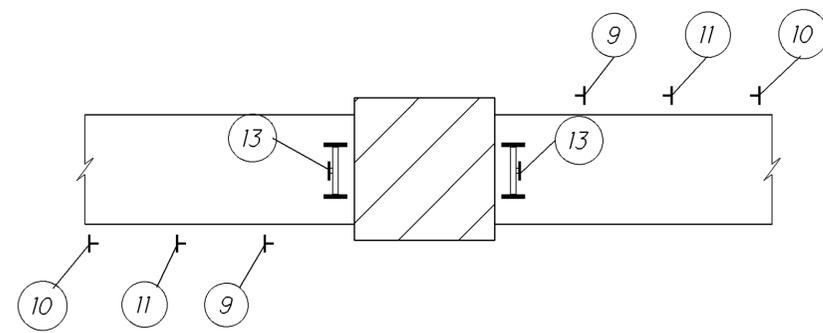
STATE DETOUR:

NORTHBOUND S.R.662 STATE ROUTE DETOUR:
S.R.209 WEST TO S.R. 83 NORTH TO S.R.93 NORTH TO S.R.662
SOUTHBOUND S.R.662 STATE ROUTE DETOUR:
S.R.93 SOUTH TO S.R. 83 SOUTH TO S.R.209 EAST TO S.R.662



* - ODOT SUPPLIED SIGN (STATE ROUTE NUMBER SIGN ONLY ESTIMATED 21 TOTAL)

XX - CONTRACTOR IS RESPONSIBLE TO MEASURE AND INDICATED DISTANCE, LENGTH, & DATE ON SIGN



PROJECT SITE SIGN DETAILS

- CONTRACTOR SHALL INSTALL ACCURATE MILEAGE NUMBERS ON SIGNS AT LOCATIONS WHERE MARKED ON THIS SHEET

* ODOT SUPPLIED SIGNS, SEE DETOUR SIGNING, AS PER PLAN NOTE SHEET 3

NOTICE OF CLOSURE SIGNS

NOTICE OF CLOSURE SIGNS, AS DETAILED BELOW, SHALL BE ERECTED BY THE CONTRACTOR AT LEAST ONE WEEK 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. THEY SHOULD BE ERECTED AT THE POINT OF CLOSURE.

ITEM 614 DETOUR SIGNING, AS PER PLAN

THE CONTRACTOR SHALL SUPPLY, ERECT, MAINTAIN, AND REMOVE THE DETOUR SIGNING. ROUTE SIGNS IN THIS PLAN DESIGNATED AS ODOT SUPPLIED WILL BE PICKED UP FROM AND RETURNED TO THE ODOT DISTRICT 5 OFFICE LOCATED AT 9600 JACKSONTOWN ROAD, JACKSONTOWN, OHIO 43030 BY THE CONTRACTOR. THE CONTRACTOR SHALL NOTIFY THE DISTRICT 5 ROADWAY SERVICES MANAGER AT 740-323-4400 A MINIMUM OF SEVEN DAYS PRIOR TO PICK UP OF ALL ROUTE SIGNS DESIGNATED IN THIS PLAN AS ODOT SUPPLIED. PAYMENT FOR ALL MATERIAL, LABOR, AND EQUIPMENT TO PERFORM THIS WORK SHALL BE INCLUDED IN THE LUMP SUM BID PRICE FOR ITEM 614 - DETOUR SIGNING, AS PER PLAN.

CALCULATED
YHK
CHECKED
TAG

MAINTENANCE OF TRAFFIC NOTES

GUE-662-2.40

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SHEET NUM.											PART.	ITEM	ITEM	GRAND	UNIT	DESCRIPTION	SEE SHEET NO.
2		6	7	15		22					02/NFP/BR	EXT	TOTAL				
											LS	201	11000	LS		ROADWAY	
		343.75									343.75	202	38000	343.75	FT	CLEARING AND GRUBBING	
				11							11	203	10001	11	CY	GUARDRAIL REMOVED	15
26			3.55								3.55	209	15000	3.55	STA	EXCAVATION, AS PER PLAN	
											26	209	70000	26	CY	RESHAPING UNDER GUARDRAIL BORROW	
		156.25									156.25	606	13000	156.25	FT	GUARDRAIL, TYPE 5	
		2									2	606	25000	2	EACH	ANCHOR ASSEMBLY, TYPE A	
		2									2	606	26100	2	EACH	ANCHOR ASSEMBLY, TYPE E	
		2									2	606	26500	2	EACH	ANCHOR ASSEMBLY, TYPE T	
		4									4	606	35140	4	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 4	
																EROSION CONTROL	
			63								63	601	32201	63	CY	ROCK CHANNEL PROTECTION, TYPE C WITH FILTER, AS PER PLAN	2
300											300	659	00530	300	SY	SEEDING AND MULCHING, CLASS 3B	
0.03											0.03	659	20000	0.03	TON	COMMERCIAL FERTILIZER	
0.06											0.06	659	31000	0.06	ACRE	LIME	
0.81											0.81	659	35000	0.81	MGAL	WATER	
											350	832	30000	350	EACH	EROSION CONTROL	
																PAVEMENT	
				30							30	304	20001	30	CY	AGGREGATE BASE, AS PER PLAN	15
																TRAFFIC CONTROL	
											2	621	54000	2	EACH	RAISED PAVEMENT MARKER REMOVED	
											12	626	00100	12	EACH	BARRIER REFLECTOR	
46											46	630	04100	46	FT	GROUND MOUNTED SUPPORT, NO. 4 POST	
12											12	630	80100	12	SF	SIGN, FLAT SHEET	
																STRUCTURE REPAIR (GUE-662-0240)	
											LS	202	11201	LS		PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (SUPERSTRUCTURE) (CONCRETE)	15
											7	202	11301	7	CY	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (SUBSTRUCTURE)	15
											111	202	22900	111	SY	APPROACH SLAB REMOVED	
											111	202	23500	111	SY	WEARING COURSE REMOVED	15
											162.5	202	38500	162.5	FT	BRIDGE RAILING REMOVED	
											LS	503	11100	LS		COFFERDAMS AND EXCAVATION BRACING	
											LS	503	21300	LS		UNCLASSIFIED EXCAVATION	
						7,477					7,477	509	10000	7,477	LB	EPOXY COATED REINFORCING STEEL	
											240	509	10001	240	LB	EPOXY COATED REINFORCING STEEL, AS PER PLAN	15
											212	510	10001	212	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT, AS PER PLAN	15
											19	511	34410	19	CY	CLASS QC2 CONCRETE, SUPERSTRUCTURE	
											11	511	45710	11	CY	CLASS QC1 CONCRETE, ABUTMENT	
											6	511	71100	6	CY	CONCRETE, MISC. WITH HIGH EARLY STRENGTH PUMPED SELF CONSOLIDATING CONCRETE	15
											43	512	10050	43	SY	SEALING OF CONCRETE SURFACES (NON-EPOXY)	
											7	516	13601	7	SF	1" PREFORMED EXPANSION JOINT FILLER, AS PER PLAN	15
											40	516	31001	40	FT	JOINT SEALER, AS PER PLAN	15

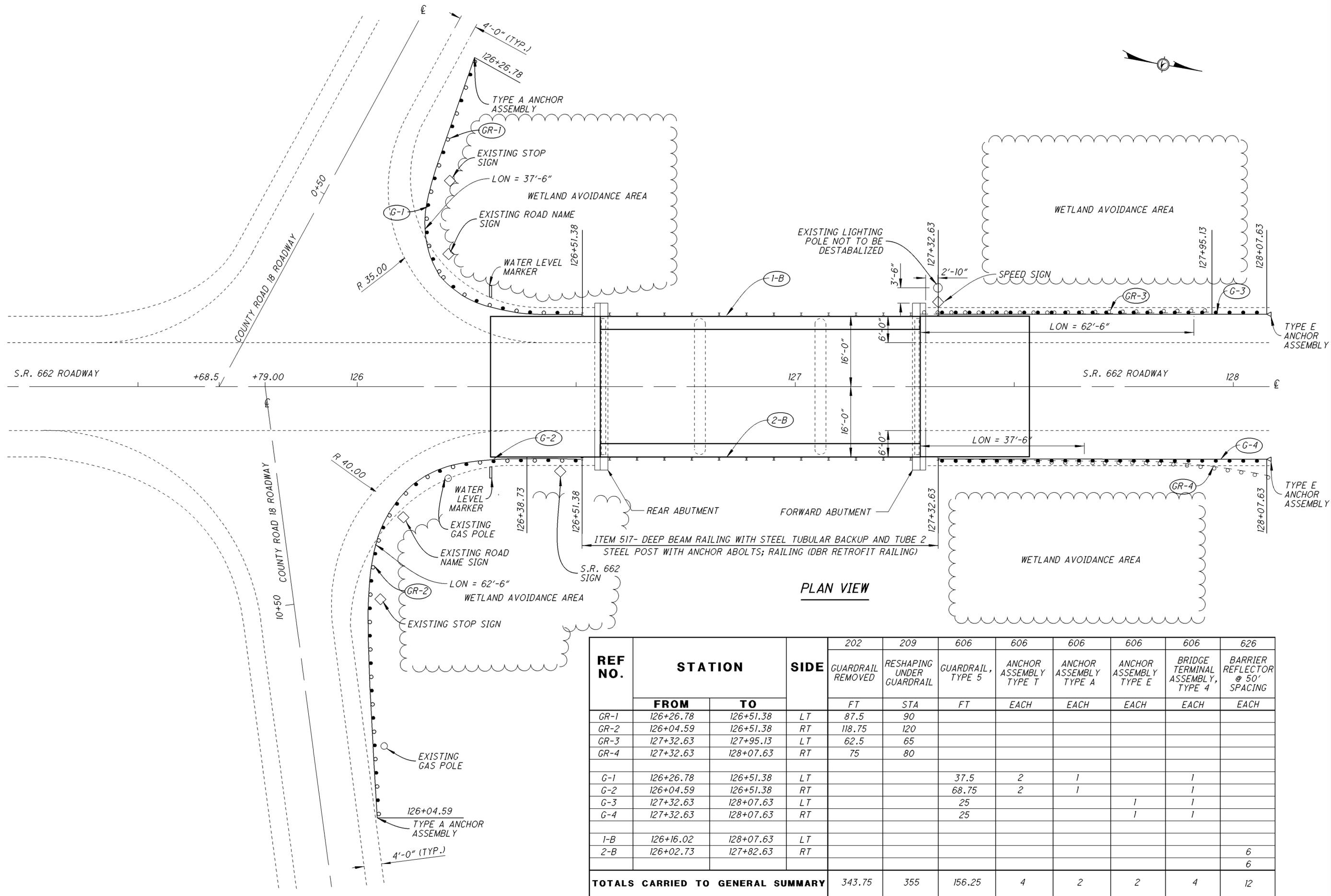
DESIGN AGENCY	OHIO DEPARTMENT OF TRANSPORTATION DISTRICT 5
REVIEWED DATE	1/30/2017
TAG	3006638
STRUCTURE FILE NUMBER	
DRAWN YHK	YHK
REVISION	
DESIGNED YHK	YHK
CHECKED	JDR
GENERAL SUMMARY	
BRIDGE NO. GUE-662-0240 OVER INDIAN CAMP RUN	
GUE-662-2.40	
5/24	

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SHEET NUM.										PART.	ITEM	ITEM	GRAND	UNIT	DESCRIPTION	SEE SHEET NO.
3			15							02/NFP/B R	EXT	TOTAL				
STRUCTURE REPAIR (GUE-662-0240) (CONT.)																
										162.5	517	72300	162.5	FT	RAILING (DEEP BEAM RAIL WITH STEEL TUBULAR BACKUP AND TYPE 2 STEEL POSTS AND ANCHOR BOLTS)	
										162.5	517	75600	162.5	FT	DEEP BEAM BRIDGE RETROFIT RAILING	
										182	SPECIAL	51822300	182	FT	STEEL DRIP STRIP	19
			24							24	519	11101	24	SF	PATCHING CONCRETE STRUCTURE, AS PER PLAN	15
										177.8	526	25011	177.8	SY	REINFORCED CONCRETE APPROACH SLABS WITH QC/QA (T=15"), AS PER PLAN	15
										260	847	10200	260	SY	SUPERPLASTICIZED DENSE CONCRETE OVERLAY(2 INCHES THICK)	
										11	847	20200	11	CY	SUPERPLASTICIZED DENSE CONCRETE OVERLAY (VARIABLE THICKNESS), MATERIAL ONLY	
										LS	847	30000	LS		TEST SLAB	
										260	847	30400	260	SY	EXISTING CONCRETE OVERLAY REMOVED(1 3/4" NOMINAL THICKNESS)	
										260	847	50000	260	SY	HAND CHIPPING	
MAINTENANCE OF TRAFFIC																
	10									10	410	13000	10	CY	TRAFFIC COMPACTED SURFACE, TYPE C	3
										LS	614	12421	LS		DETOUR SIGNING, AS PER PLAN	3
	2									2	616	10000	2	MGAL	WATER	3
	27									27	616	20000	27	TON	CALCIUM CHLORIDE	3
INCIDENTALS																
										LS	614	11000	LS		MAINTAINING TRAFFIC	
										1	619	16000	1	MNTH	FIELD OFFICE, TYPE A	
										LS	623	10000	LS		CONSTRUCTION LAYOUT STAKES AND SURVEYING	
										LS	624	10000	LS		MOBILIZATION	2/24

DESIGN AGENCY OHIO DEPARTMENT OF TRANSPORTATION DISTRICT 5	DATE 1/30/2017 STRUCTURE FILE NUMBER 3006638
DRAWN YHK REVISED	REVIEWED TAG STRUCTURE FILE NUMBER 3006638
DESIGNED YHK CHECKED JDR	GENERAL SUMMARY BRIDGE NO. GUE-662-0240 OVER INDIAN CAMP RUN

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PLAN VIEW

REF NO.	STATION		SIDE	202	209	606	606	606	606	606	626
	FROM	TO		GUARDRAIL REMOVED	RESHAPING UNDER GUARDRAIL	GUARDRAIL, TYPE 5	ANCHOR ASSEMBLY TYPE T	ANCHOR ASSEMBLY TYPE A	ANCHOR ASSEMBLY TYPE E	BRIDGE TERMINAL ASSEMBLY, TYPE 4	BARRIER REFLECTOR @ 50' SPACING
			FT	STA	FT	EACH	EACH	EACH	EACH	EACH	
GR-1	126+26.78	126+51.38	LT	87.5	90						
GR-2	126+04.59	126+51.38	RT	118.75	120						
GR-3	127+32.63	127+95.13	LT	62.5	65						
GR-4	127+32.63	128+07.63	RT	75	80						
G-1	126+26.78	126+51.38	LT			37.5	2	1		1	
G-2	126+04.59	126+51.38	RT			68.75	2	1		1	
G-3	127+32.63	128+07.63	LT			25			1	1	
G-4	127+32.63	128+07.63	RT			25			1	1	
1-B	126+16.02	128+07.63	LT								6
2-B	126+02.73	127+82.63	RT								6
TOTALS CARRIED TO GENERAL SUMMARY				343.75	355	156.25	4	2	2	4	12

DESIGN AGENCY
OHIO DEPARTMENT OF
TRANSPORTATION DISTRICT 5

REVIEWED DATE 1/30/2017
TAG 1/30/2017
STRUCTURE FILE NUMBER 3006638

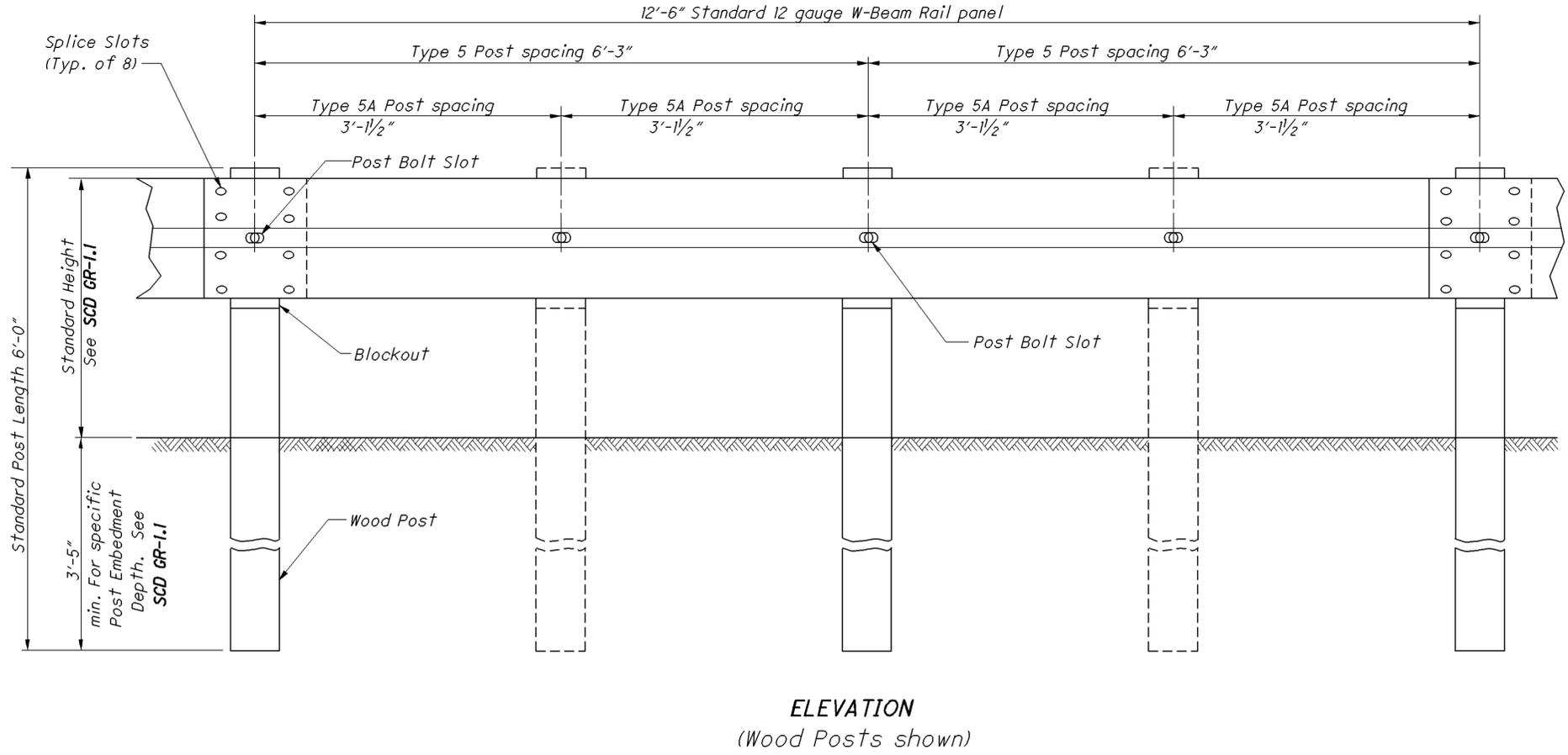
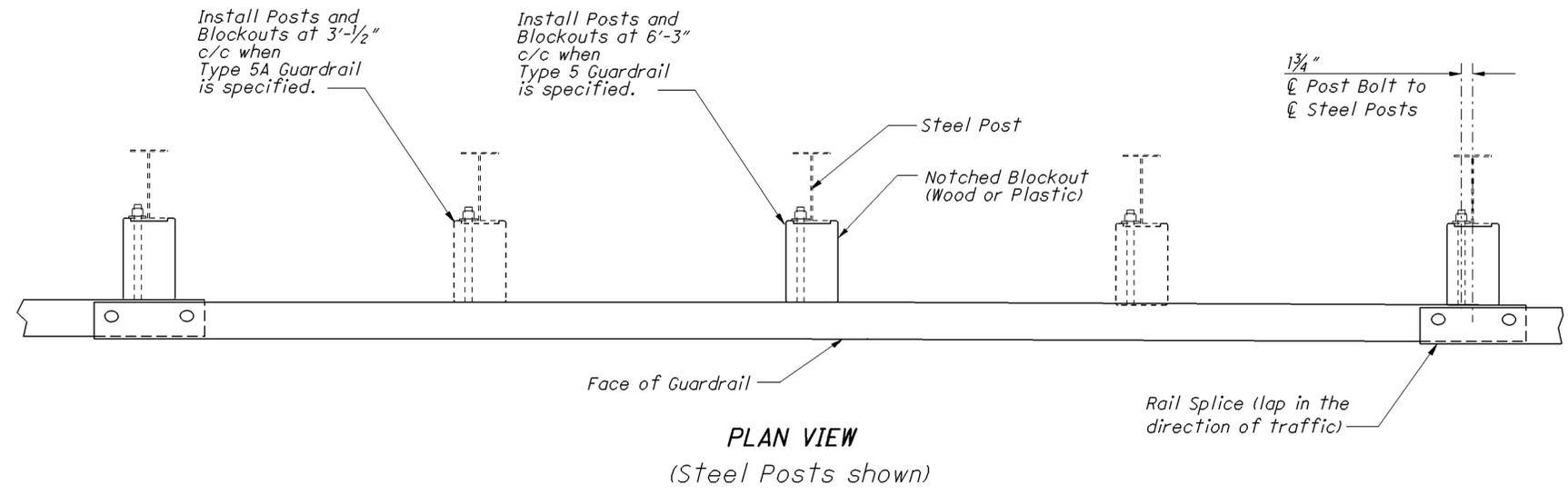
DRAWN YHK
YHK
REVISOR

DESIGNED YHK
YHK
CHECKED JDR

GUARDRAILS DETAILS
BRIDGE NO. GUE-662-0240
OVER INDIAN CAMP RUN

GUE-662-2.40

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NOTES

RAIL: Use W-Beam rail meeting AASHTO M 180 Type II Class A, as specified in CMS 606.

POSTS: Posts may be constructed of wood or steel. Wood posts may be round or 6"x8" square-sawed.

Use round wood posts on runs of single-sided rail. The round posts shall be 8"±1 in diameter at the top and not more than 3" larger at the butt with a uniform Taper.

Fabricated wood posts with square ends. Posts shall be pressure-treated as per CMS 710.14. Bore bolt holes and, if required, trim the tops of posts after the posts are set.

Steel posts are to be W6x9 or W6x8.5 galvanized steel. Use the same type of post throughout the length of the project unless otherwise specified in the plans or permitted by the Engineer.

All posts are 6'-0" long unless specified otherwise in the Contract Document. Posts may be set in drilled holes or may be driven to grade.

WELDED BEAM POSTS: Welded beam guardrail posts may be used for Item 606, Guardrail, provided the web and flange sizes are as shown here. Welding of the web to the flanges must comply with ASTM A 769, Class 1, using Grade 36 steel [250 MPa yield point] with the following exceptions:

- Sec. 7.2 Test reports of tensile properties for each lot shall accompany each shipment.
- Sec. 12 Beams that have imperfections repaired by welding shall not be accepted for use in Item 606.
- Sec. 13 Random samples shall be tested by the Department from materials delivered to the project site, or other locations designated by the Laboratory.

ALTERNATE POSTS: Engineered guardrail posts having met NCHRP 350 criteria, and listed on the **Office of Materials Management's** Approved List are permitted as an equal alternate when installed according to the Manufacturer's instructions and within the limitations shown on the Approved List.

BLOCKOUTS: Blockout dimensions are dependent on post used. Wood Blockouts are to be pressure treated as specified in CMS 710.14. Bore bolt holes. Approved alternate blockouts may be used in lieu of the wood blockouts shown. The approved list is maintained by the **Office of Roadway Engineering**.

WASHERS: Install appropriate sized standard galvanized steel washers on the nut side of bolts installed on wood posts.

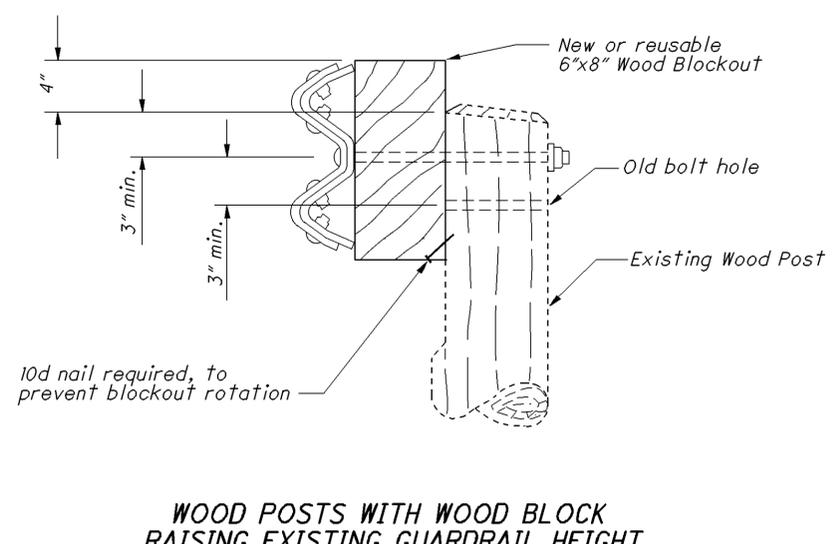
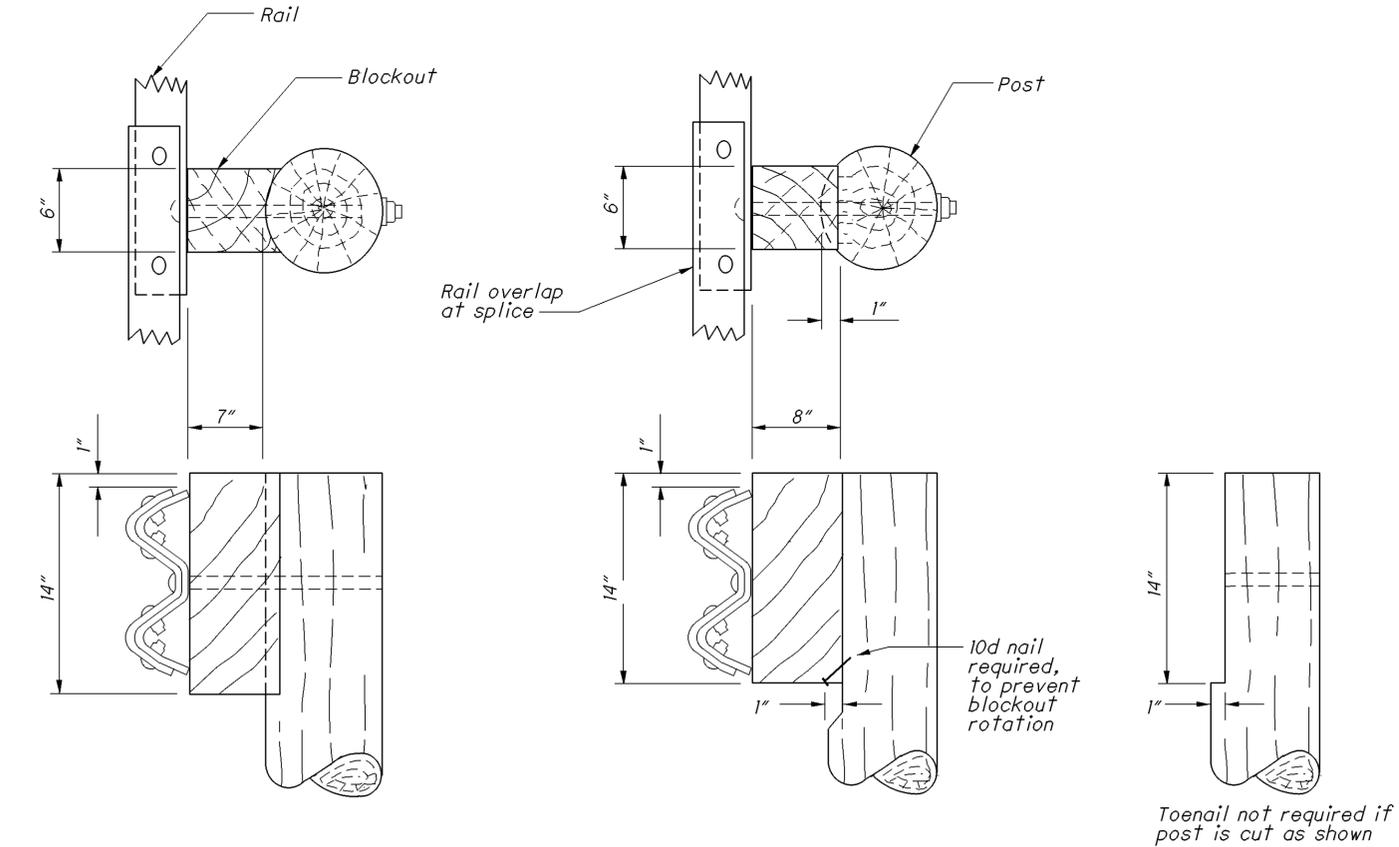
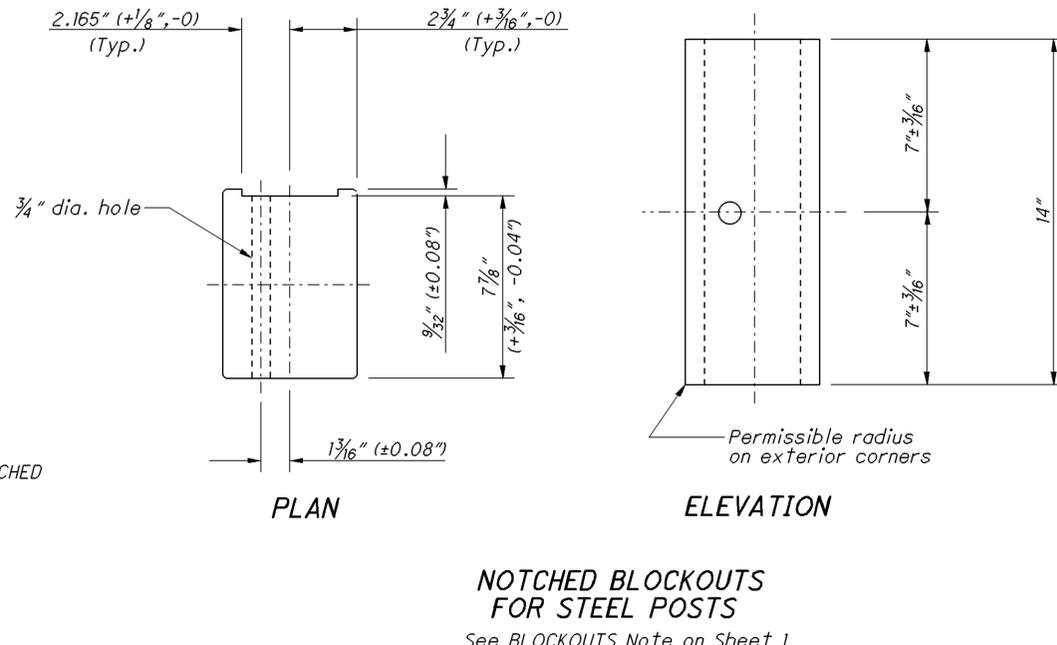
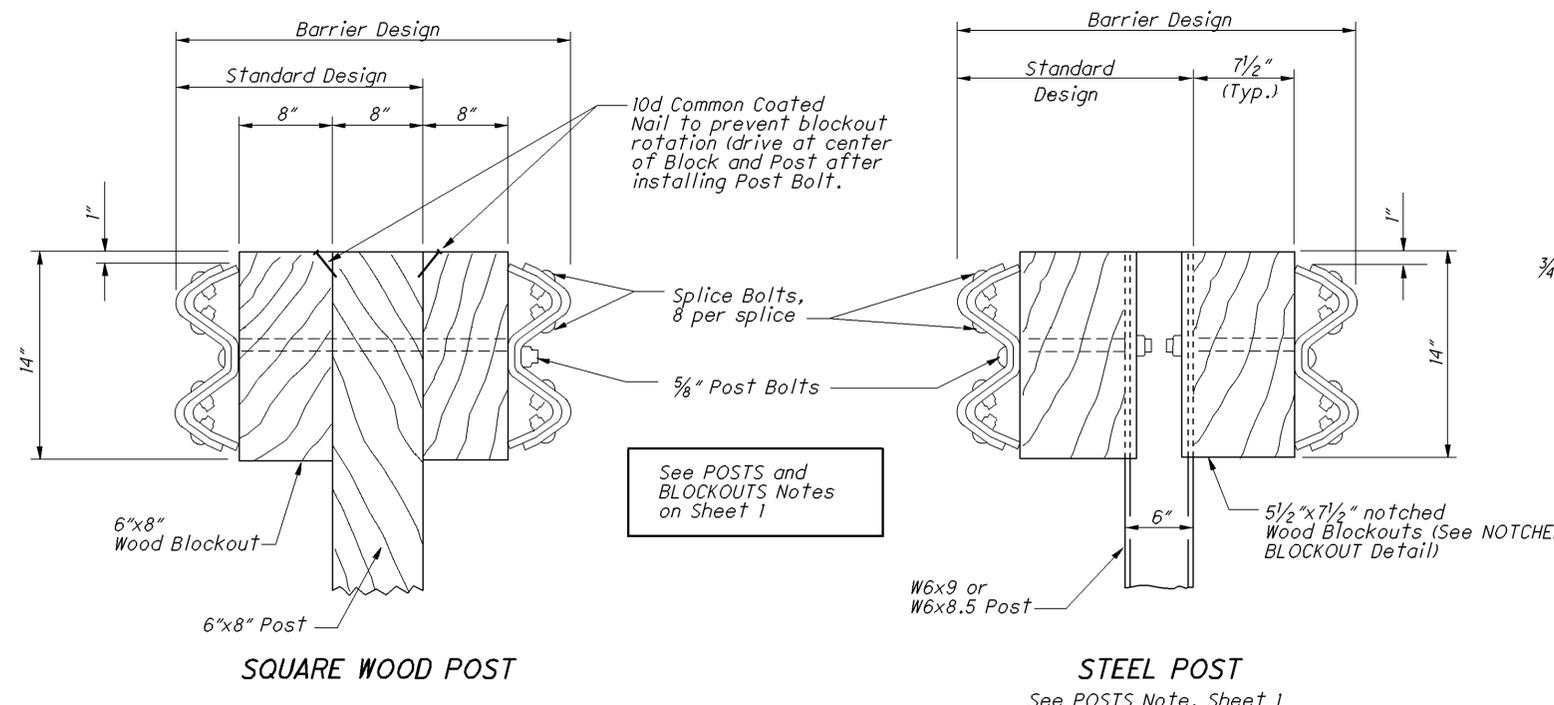
DELINEATION: For barrier reflectors, see CMS 626.

MISCELLANEOUS: For other guardrail details, see SCD GR-1.1.

STEEL BEAM POSTS (English)				
Size	Beam depth	Flange width	Flange thickness	Web thickness
Rolled W6x8.5	5.8"	3.94"	0.193"	0.170"
Rolled W6x9	5.9"	3.94"	0.215"	0.170"
Welded 6x8.5	6.0"	3.94"	0.193"	0.170"
Welded 6x9	6.0"	3.94"	0.215"	0.170"

PIS GR-2.1	DESIGNED XXX	REVIEWED XXX	CALCULATED YHK
	REVISION DATE 1/18/2013	CHECKED XXX	CHECKED TAG
GUARDRAIL TYPE 5 & 5A		OFFICE OF ROADWAY ENGINEERING	
PLAN INSERT SHEET		MAINTENANCE OF TRAFFIC NOTES	
GUE-662-2.40		7 24	

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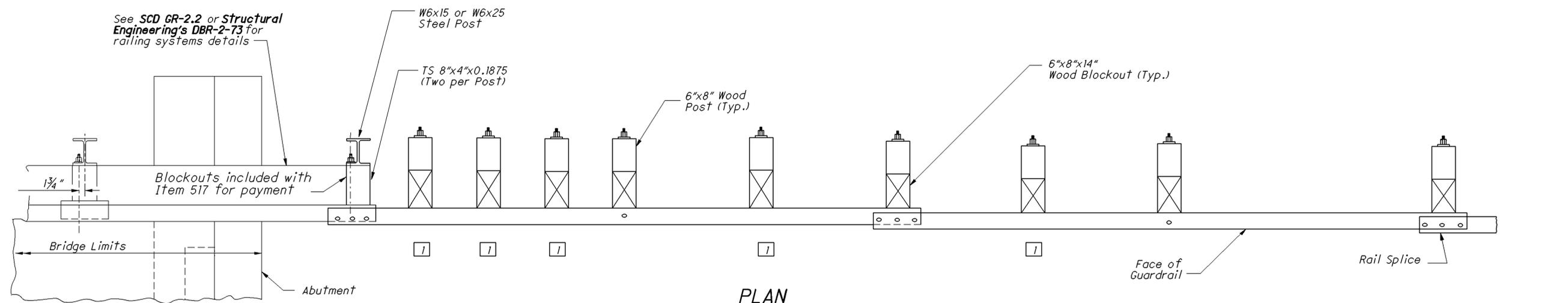


Alternate methods of placing the Blockouts on round Posts may be submitted for consideration and approved by the Engineer.

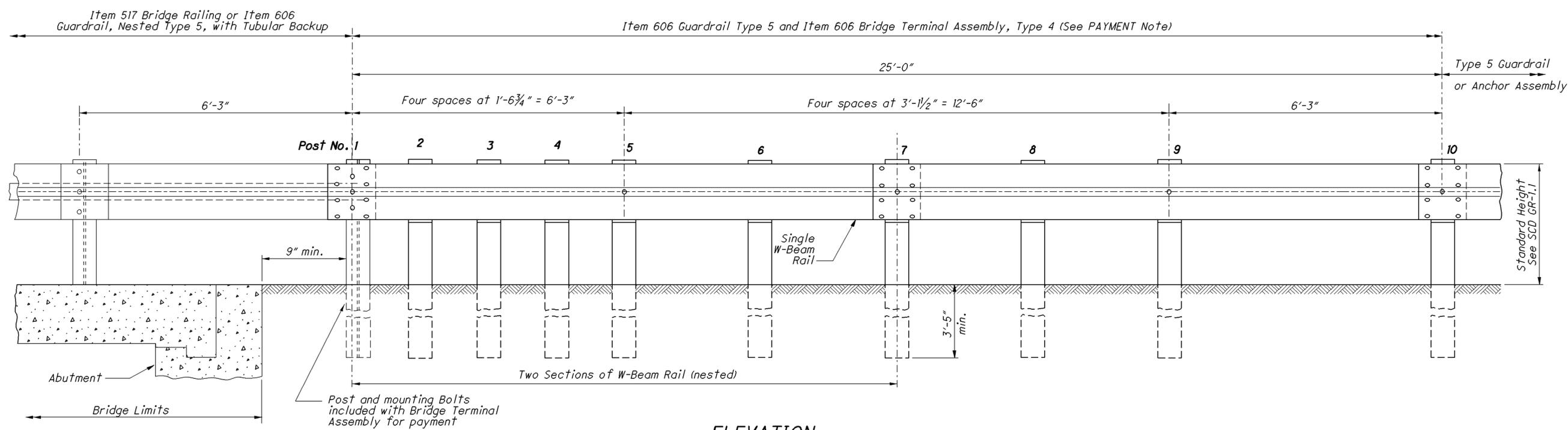
ROUND WOOD POSTS
Single Sided runs only (Standard Design)

DESIGNED XXX	REVIEWED XXX	CHECKED XXX	CALCULATED YHK	OFFICE OF ROADWAY ENGINEERING
				REVISION DATE 1/18/2013
PLAN INSERT SHEET				GUARDRAIL TYPE 5 & 5A
PIS GR-2.1				Maintenance of Traffic Notes
GUE-662-2.40				8 24
2	2			

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PLAN



ELEVATION

NOTES

GENERAL: For additional details, see SCD GR-1.1.

APPLICATION: The Type 4 Bridge Terminal Assembly shall connect Type 5 Guardrail runs to Type 5 Guardrail with Tubular Backup or to Deep Beam Bridge Guardrail (as shown on Structural Engineering SCD DBR-2-73).

DETAIL INFORMATION: The first post off the bridge shall be steel (W6x15 or W6x25). All holes in the off-structure end of the approach panel rail section spanning the abutment are slotted 3/4"x2 1/2". Tighten the bolts as specified for expansion joints in Item 606.05.

POSTS: Posts may be set in drilled holes or driven to grade. See SCD GR-1.1 for additional Post embedment details. Guardrail is not attached to certain posts (see LEGEND).

WOOD POSTS - Use square sawed pressure treated wood as specified in CMS 710.14 and fabricated with square ends. Bore bolt holes and trim the tops of posts, if required after the posts are set.

STEEL POSTS - are allowed as an alternate. Use W6x9 or W6x8.5 in lieu of the 6"x8" wood post. Use same post material through-out assembly.

BLOCKOUTS: Use wood blockouts only. Steel or plastic blockouts are not permitted. Notched wood blockouts are used with steel posts.

FLARED GUARDRAIL: Start Standard Guardrail Flares as shown on SCD GR-5.1 at or beyond Post No. 10; however, the flare may begin at Post No. 7.

PAYMENT: Item 606 - Bridge Terminal Assembly, Type 4, Each, includes the cost of extra components in excess of normal guardrail, such as additional posts and other hardware. The TS 8"x4" spacers and tubular backup rail extending to the first post off the bridge is included with Item 517 - Railing, or Item 606 - Guardrail, Nested Type 5 with Tubular Backup, for payment.

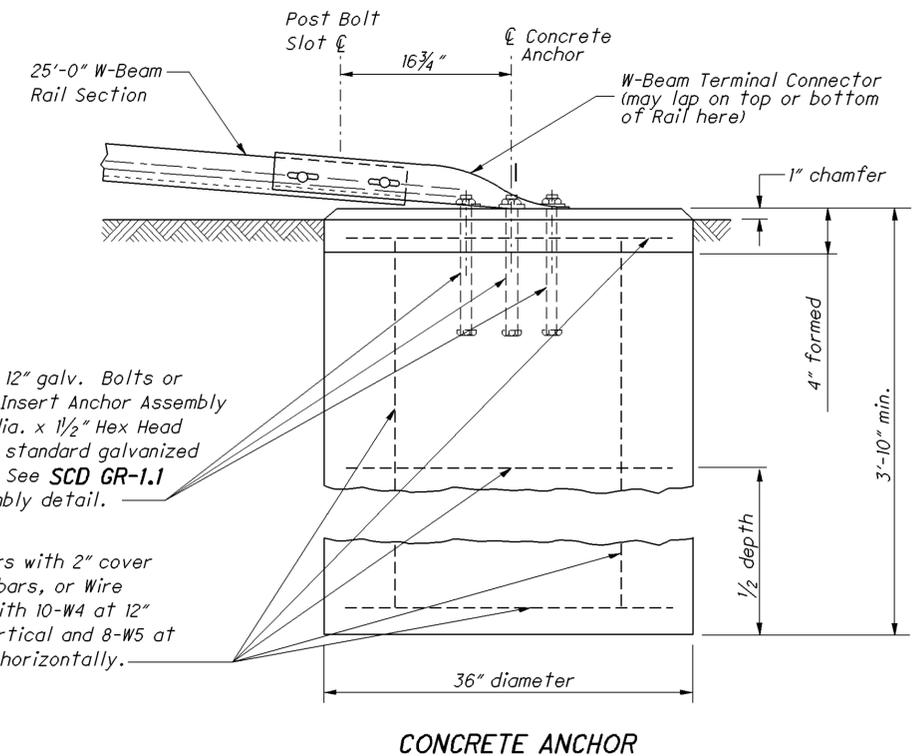
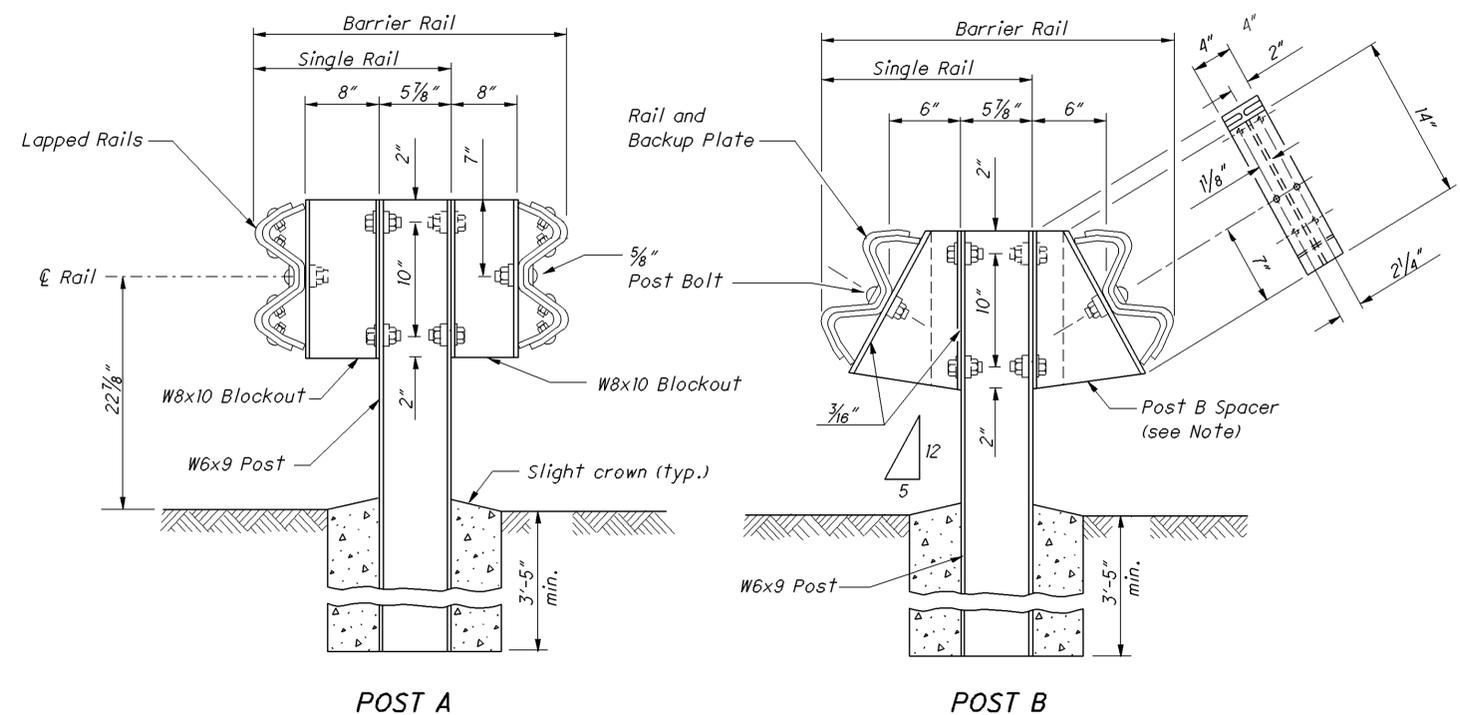
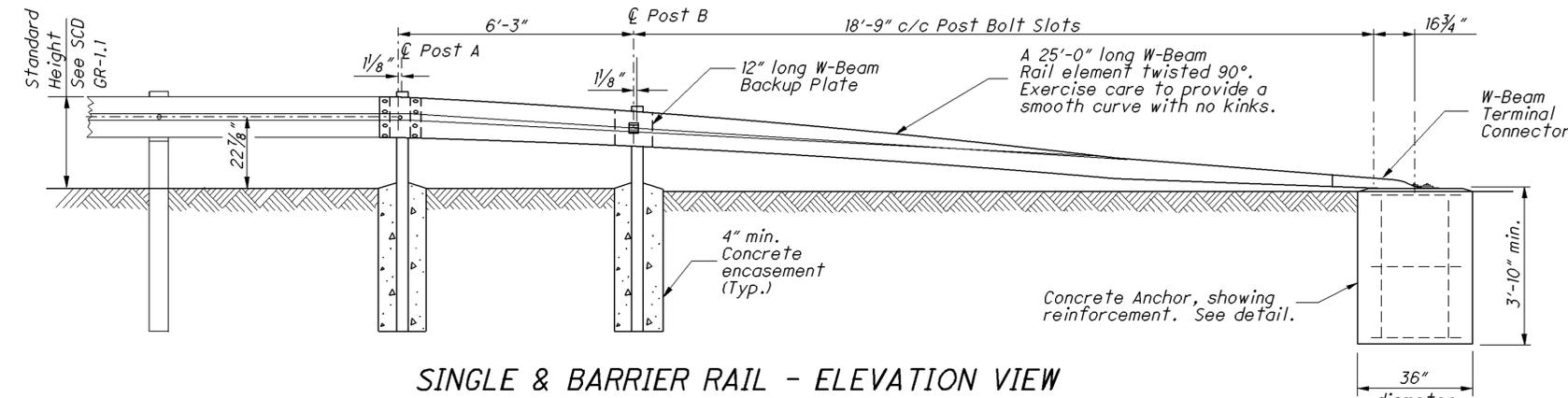
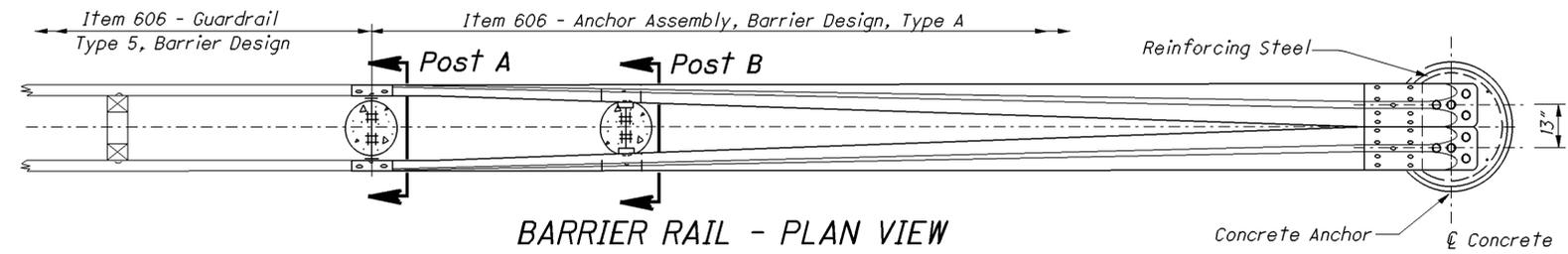
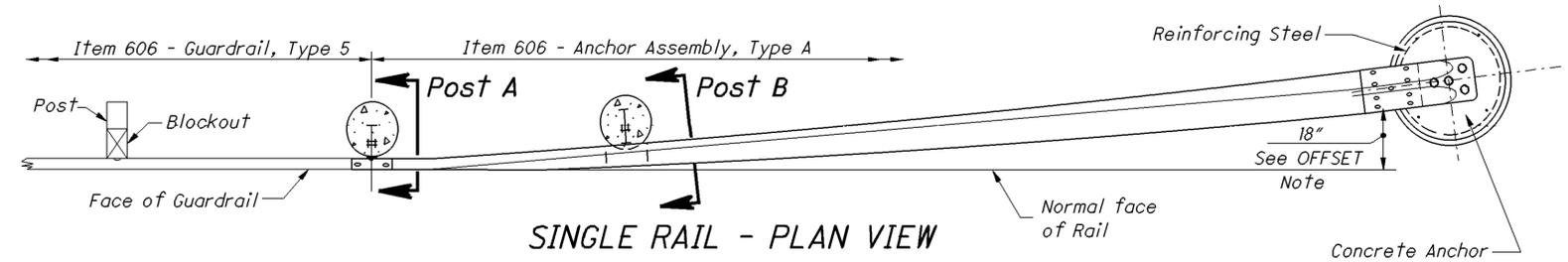
LEGEND

1 Guardrail is not attached to posts at Posts 2, 3, 4, 6, and 8. Blockout is fastened to post with standard Post Bolt.

OFFICE OF ROADWAY ENGINEERING	DESIGNED XXX	CHECKED XXX	CALCULATED YHK
	REVISION DATE 1/18/2013	REVIEWED XXX	CHECKED TAG
PLAN INSERT SHEET			
BRIDGE TERMINAL ASSEMBLY, TYPE 4			
PIS GR-3.4			
GUE-662-2.40			
1 / 1			9 / 24

MAINTENANCE OF TRAFFIC NOTES

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7/8" dia. x 12" galv. Bolts or Concrete Insert Anchor Assembly with 7/8" dia. x 1/2" Hex Head Bolts and standard galvanized Washers. See SCD GR-1.1 for Assembly detail.

#3 bars with 2" cover on all bars, or Wire Cage with 10-W4 at 12" c/c vertical and 8-W5 at 6" c/c horizontally.

NOTES

APPLICATION: On Non-NHS roadways it may be used in the clear zone, with restrictions. See Section 603. **Location & Design Manual, Volume 1.**

GENERAL: For details not shown, see SCD GR-1.1 and other Drawings pertaining to specific guardrail type. Galvanize all steel parts.

OFFSETS: See SCD GR-5.1 for Standard Guardrail Flare. The 18" flare offset from normal face of rail, shown in the plan view (for single rail installations) will be utilized only where shoulder is insufficient for providing standard flares.

POSTS: Steel posts W6x9 are shown, but W6x8.5 posts are also permitted. See SCD GR-1.1 for additional embedment details.

SPACERS: Post B Spacers shall be made of 3/16" Steel Plate as specified in CMS 710.15 or tow sections of W6x9 or W8x10 cut in the web (see dashed line on POST B Detail) and welded together on both sides.

All steel spacers and posts may be provided with additional bolt holes so that these items will not be required to be made right and left handed.

Spacers shall be fastened to Posts with two 5/8" hex head bolts and nuts with standard washers on both sides.

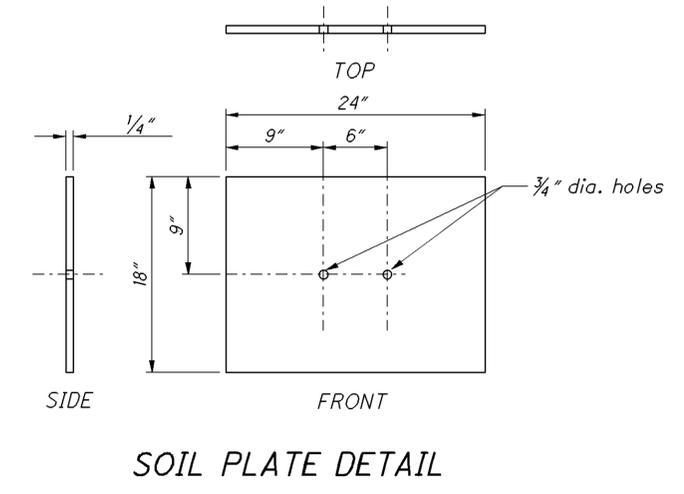
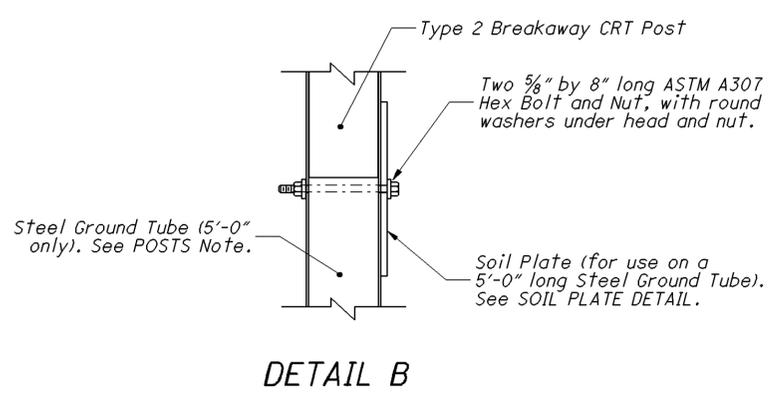
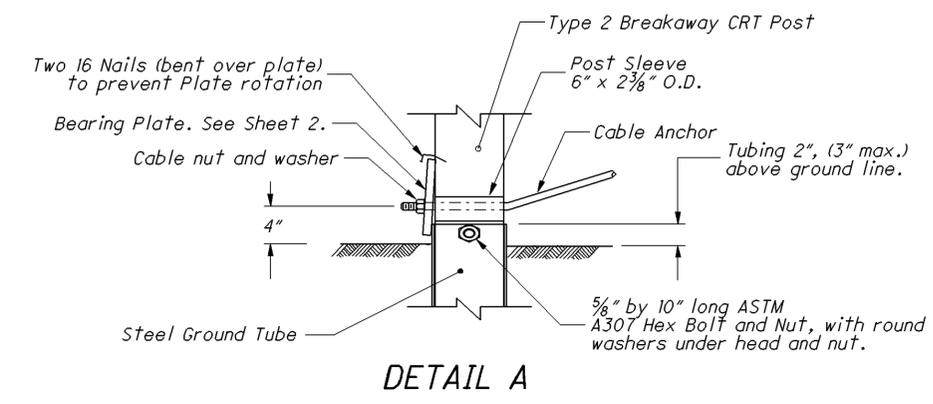
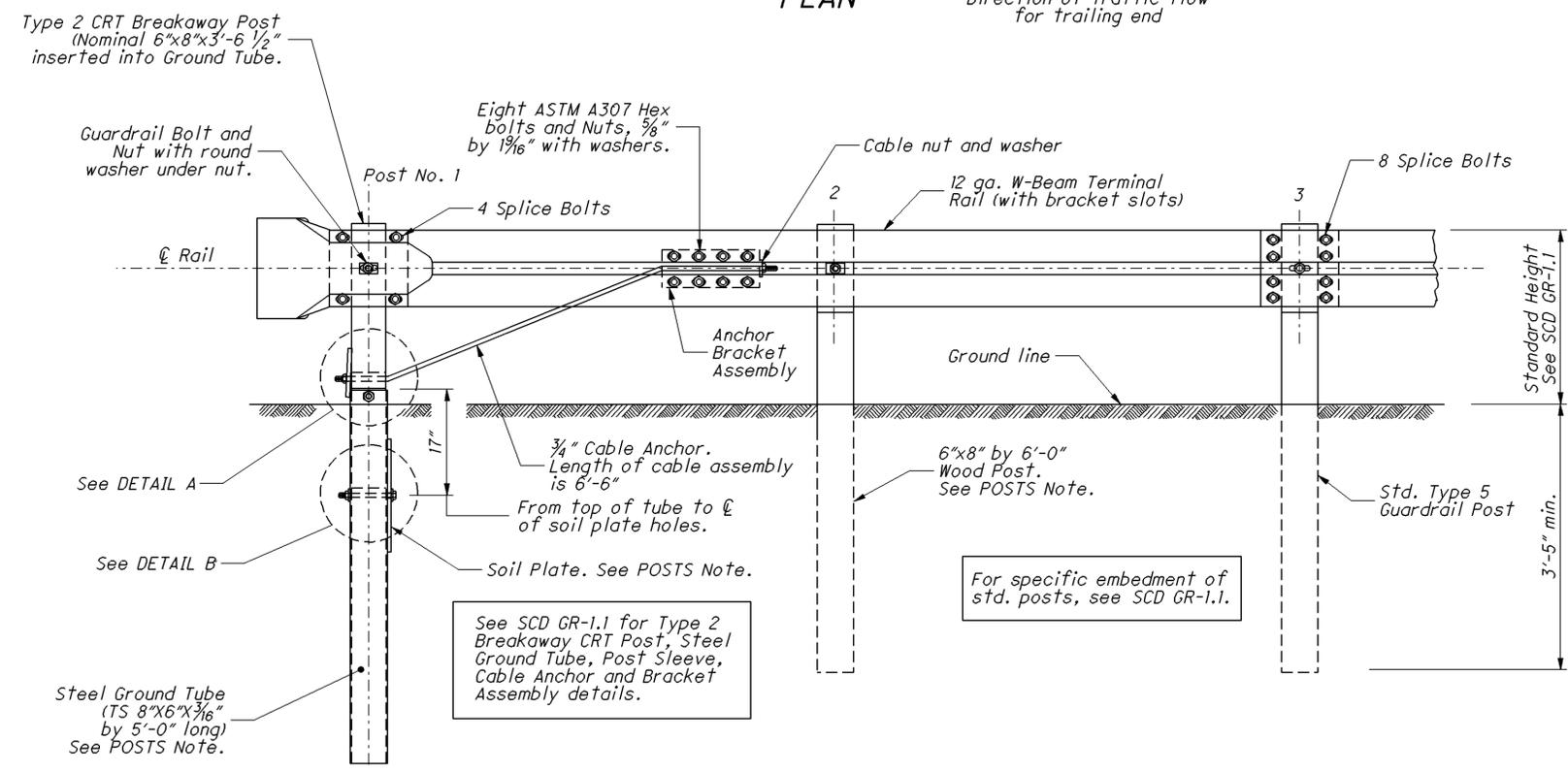
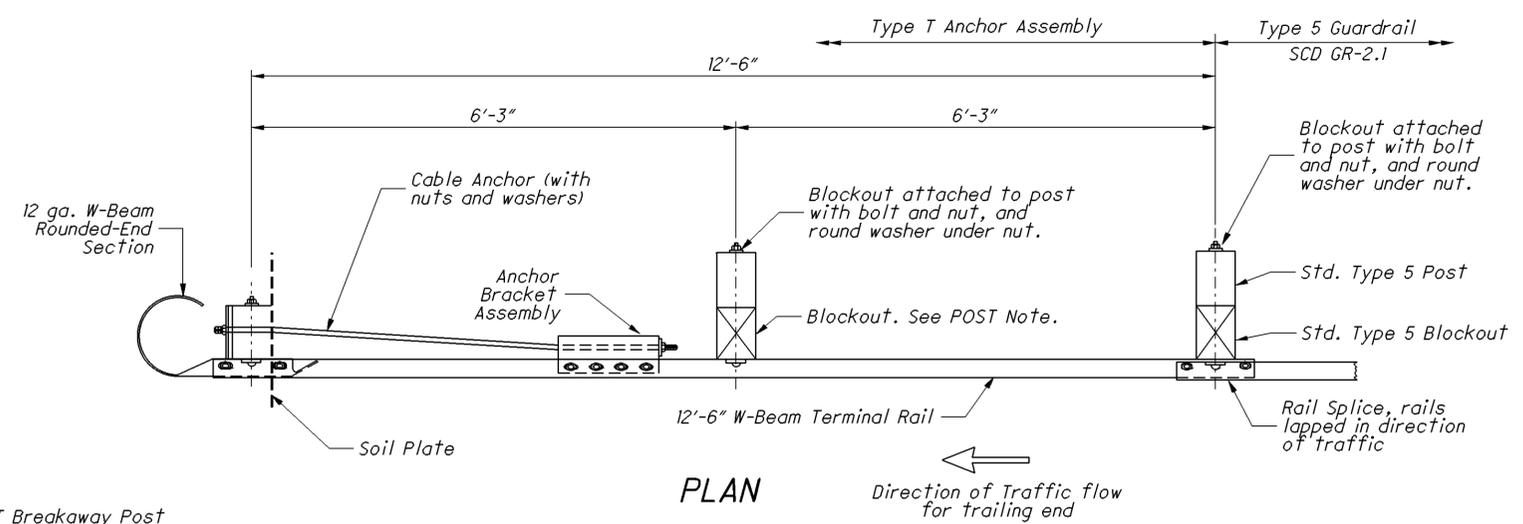
WASHERS: All washers indicated on this drawing are standard galvanized steel of the appropriate size.

CONCRETE ANCHOR: Form top 4" of anchor and slope the top to conform to slope of the adjacent ground. The 36" diameter anchor may be replaced by a 2'-6" square anchor at the contractor's option.

PAYMENT: include all materials and labor for the 25'-0" Single Rail, Type A Anchor Assembly in the unit price bid for **Item 606 - Anchor Assembly, Type A, Each.** Pay for all materials and labor for the 25'-0" Barrier Rail under the unit bid price **Item 606 - Anchor Assembly, Barrier Design, Type A, Each.**

OFFICE OF ROADWAY ENGINEERING	DESIGNED	XXX	CALCULATED	YHK
	REVIEWED	XXX	CHECKED	TAG
REVISION DATE	1/18/2013	CHECKED	CHECKED	
PLAN INSERT SHEET				
TYPE A ANCHOR ASSEMBLY				
MAINTENANCE OF TRAFFIC NOTES				
PIS GR-4.1				
GUE-662-2.40				
				10
				24

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NOTES

APPLICATION: Use Type T Anchor Assemblies on the trailing end of guardrail runs, located outside of the clear zone of opposing traffic. The assembly is 12'-6" long, none of which can be considered the Length of Need for the guardrail run.

For termination requirements at driveways, see DRIVEWAY OPENING Detail on Sheet 2. For side road approaches and Terminals at Structures, see Location & Design Manual, Volume 1, Figure 603-3.

ANCHORING OPTIONS: Contractor may choose either the foundation tube (shown on this Sheet) or the concrete footing option (Sheet 2) to construct this anchor assembly.

If the foundation tube option is chosen, the contractor will take proper care to insure that the Soil Plate fasteners are not broken during the driving process.

Concrete footings may be cast-in-place or precast. Compact fill after placing precast unit.

MATERIALS: See SCD GR-1.1 for parts used on this anchor, including the CRT Breakaway Posts, Steel Ground Tube, Post Sleeve, Cable Anchor and Bracket Assembly.

Bearing Plate and Soil Plate is ASTM A709 Grade 36. Steel Ground Tube shall be ASTM A500, Grade B, and meet CMS 707.10. All angles, channels and plates shall meet CMS 711.01. All structural steel shall be galvanized as specified in CMS 711.02. All bolt washers indicated are standard galvanized steel of the appropriate size.

Concrete shall be class C.

Components on this anchor that are not detailed on SCD GR-1.1 include: 1) 12'-6" W-Beam Terminal Rail (standard part RWM14a), and 2) W-Beam Rounded End Section (RWE03a). For complete details and specifications, see part descriptions in the AASHTO/AGC/ARTBA Standardized Hardware Guide.

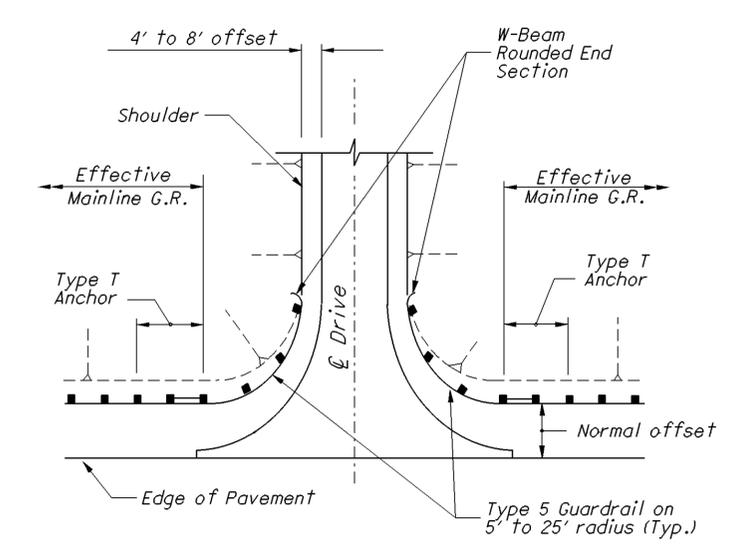
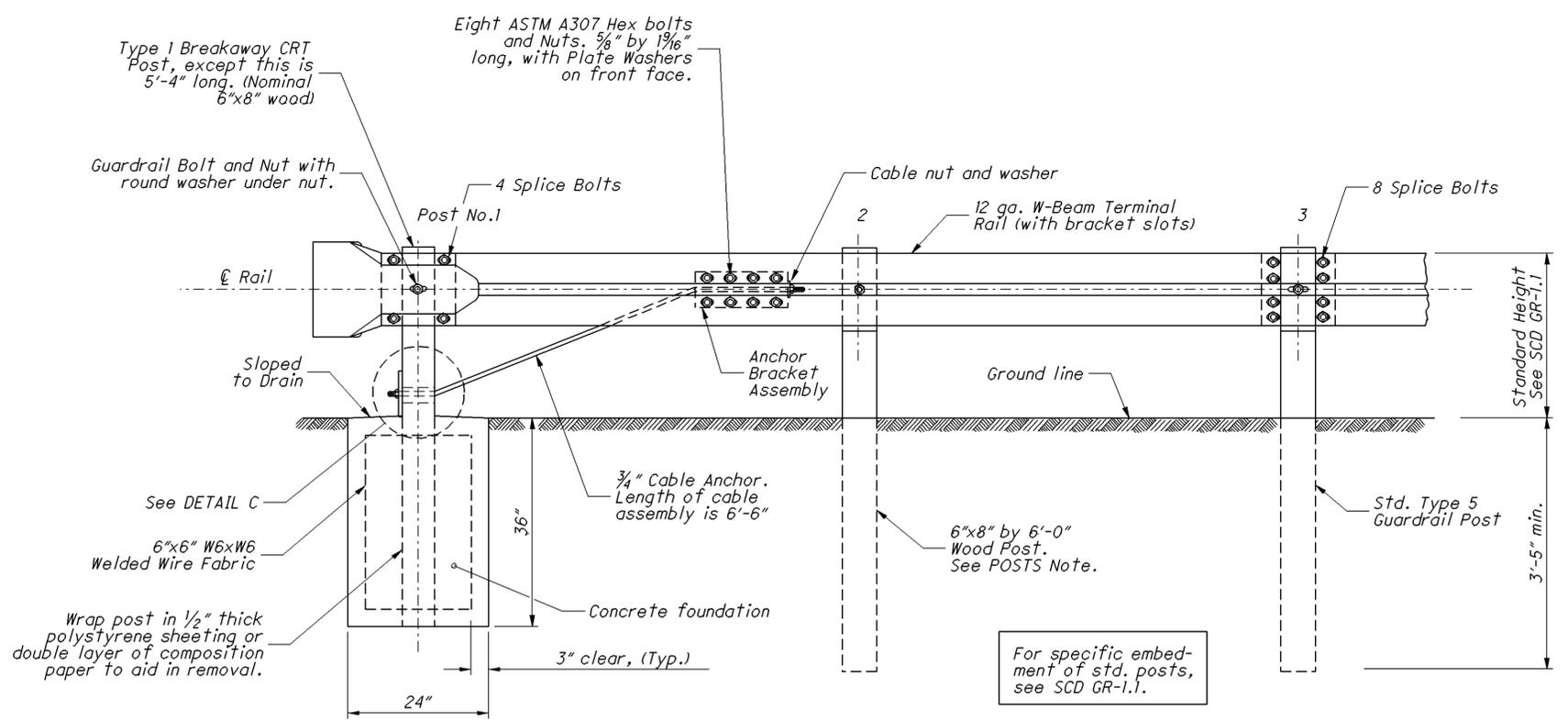
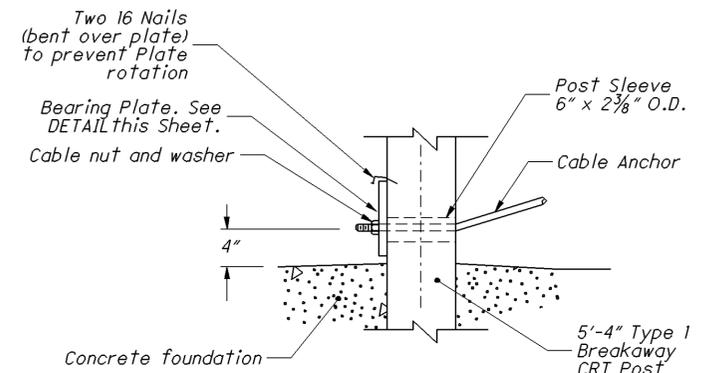
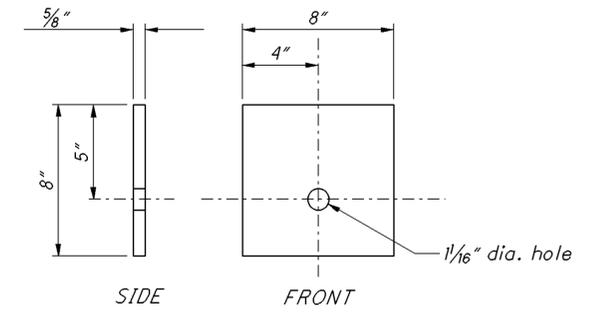
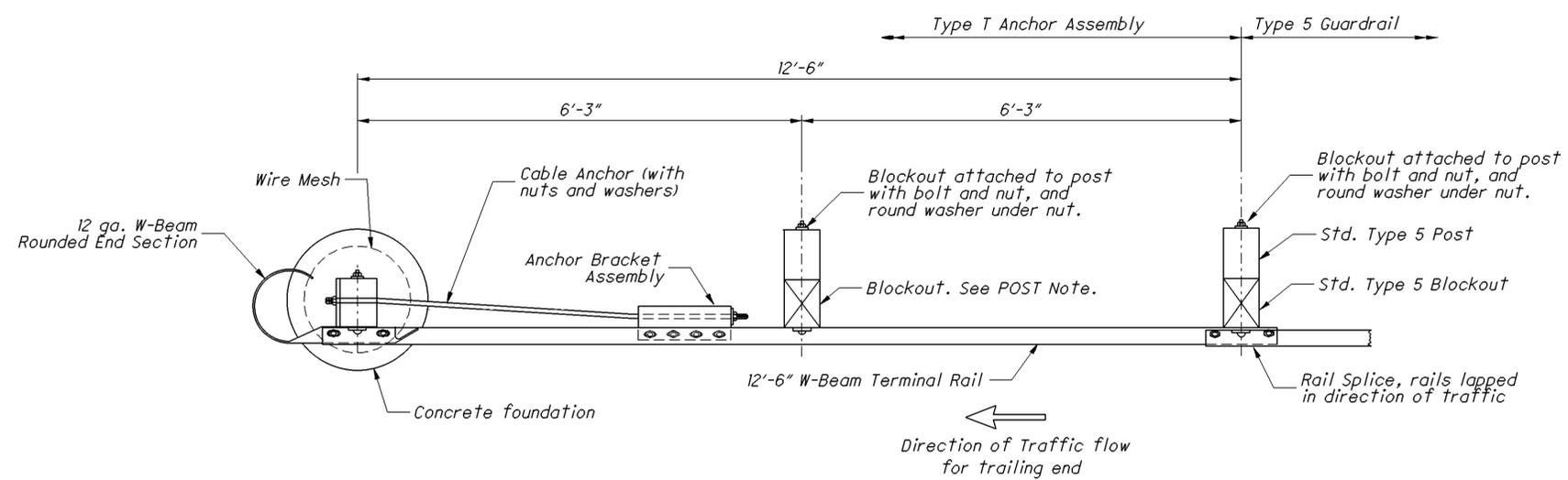
POSTS: Post No. 1 may be an 8'-0" long Steel Ground Tube without a Soil Plate in lieu of the 5'-0" tube with Soil Plate.

Post No. 2 can be W6x9 (or W6x8.5) with notched wood blockouts or a standard Type 5 post and blockout. Recycled plastic blockouts are permitted.

PAYMENT: All labor and materials, including the W-Beam Rounded End Section and the W-Beam Terminal Rail for the 12'-6" anchor assembly shall be included in the unit price bid for Item 606 - Anchor Assembly, Type T, Each.

OFFICE OF ROADWAY ENGINEERING	DESIGNED	XXX	CHECKED	XXX	CALCULATED YHK CHECKED TAG
	REVISION DATE	1/18/2013	CHECKED		
PLAN INSERT SHEET		TYPE T ANCHOR ASSEMBLY (Foundation Tube Option)		MAINTENANCE OF TRAFFIC NOTES	
PIS GR-4.2		GUE-662-2.40		11 24	
1/2					

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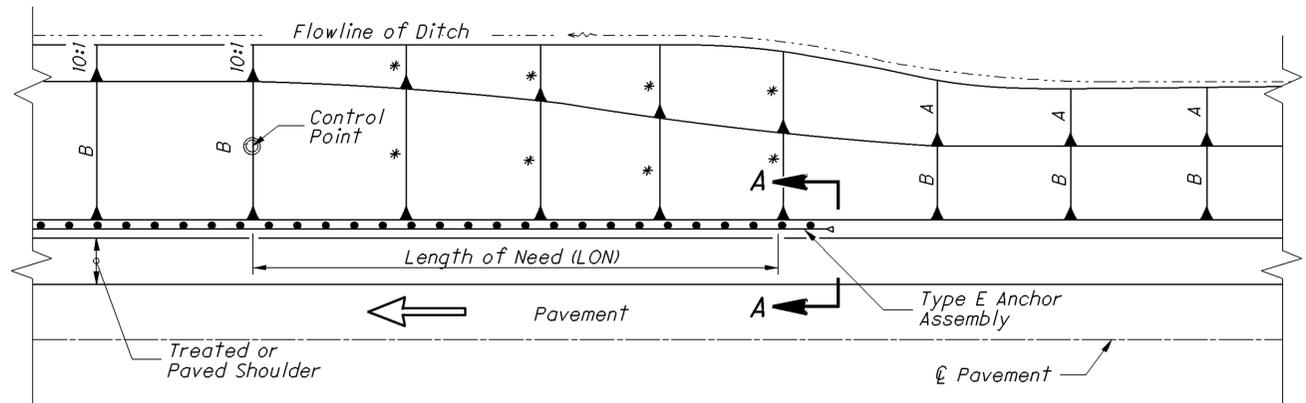


See SCD GR-1.1 for Type 1 Breakaway CRT Post, Steel Ground Tube, Post Sleeve, Cable Anchor and Bracket Assembly details.

For specific embedment of std. posts, see SCD GR-1.1.

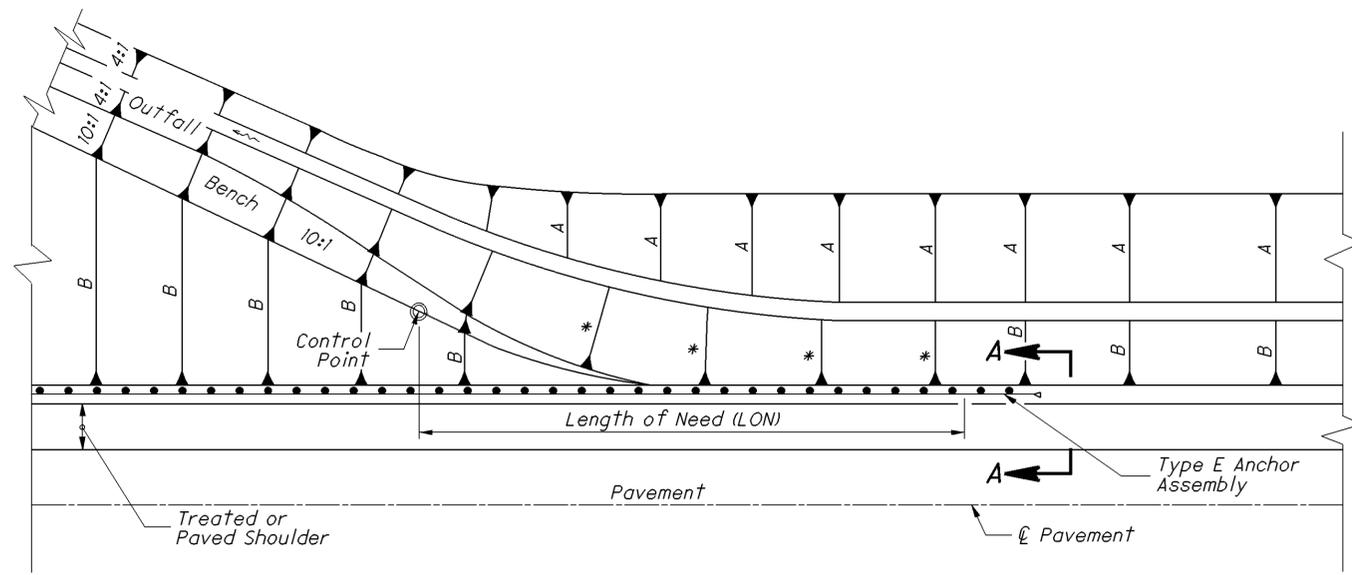
OFFICE OF ROADWAY ENGINEERING	DESIGNED	XXX	CHECKED	XXX	CALCULATED YHK CHECKED TAG
	REVISION DATE	1/18/2013	CHECKED	CHECKED	
PLAN INSERT SHEET					
TYPE T ANCHOR ASSEMBLY (Foundation Tube Option)					
MAINTENANCE OF TRAFFIC NOTES					
PIS GR-4.2			GUE-662-2.40		
2 / 2		12 24			

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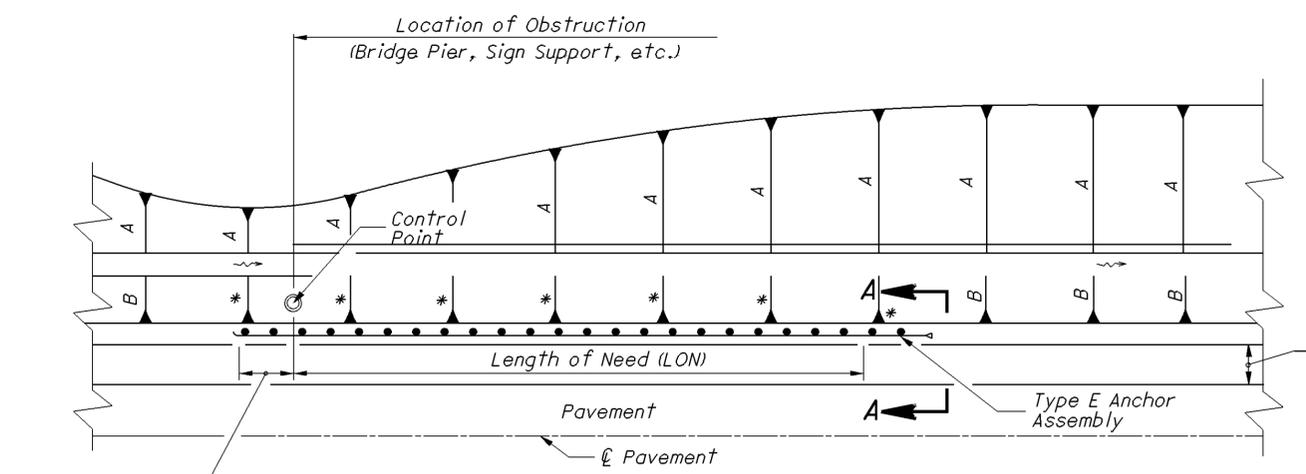


FILL TO FILL

* 3:1 or Flatter

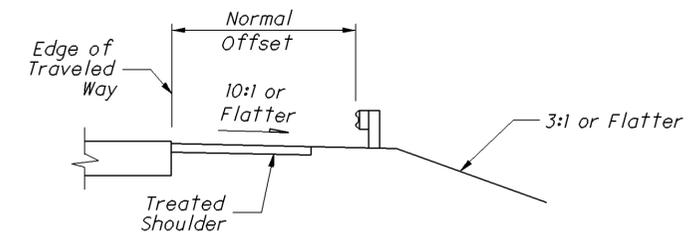


CUT TO FILL



OBSTRUCTION

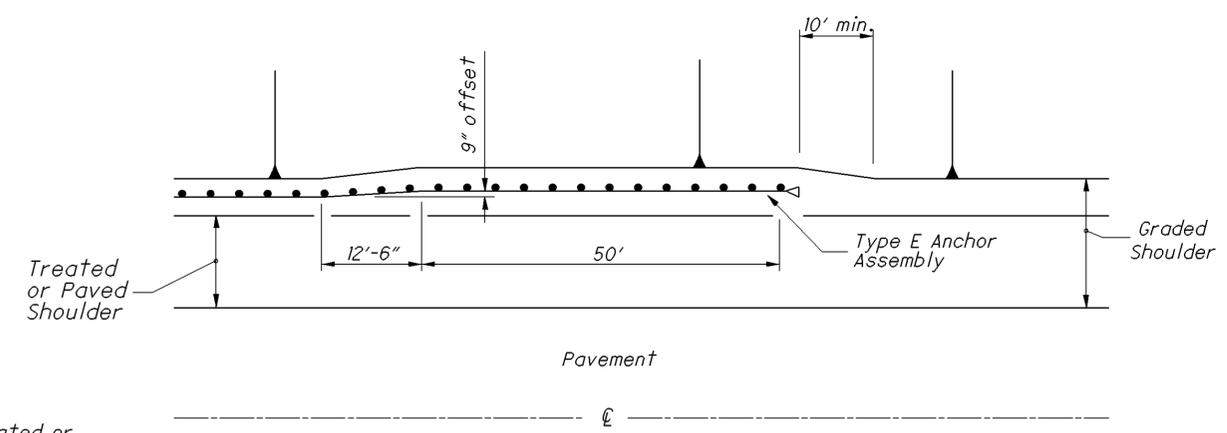
Type T Anchor Assembly. See SCD GR-4.2.



SECTION A-A

NOTES

- APPLICATION:** Utilize details shown here only where approach foreslopes are steeper than 6:1, but not steeper than 3:1.
- SLOPES:** Slopes designated by * shall be 3:1 or flatter. Slopes labeled "A" and "B" shall be constructed as specified in the plans.
- "LON" DISTANCE:** The Length of Need, LON, represents the distance from the control point to the beginning of the end treatment. The control point shown designates the extent of the hazard being shielded and is shown for design use only. See *Location & Design Manual, Volume 1, Section 602.*
- GUARDRAIL END TERMINALS:** Terminals utilized for the situations shown here shall be Type E Anchor Assemblies unless otherwise specified in the plans.
- OBSTRUCTION INSTALLATION:** Use this installation for one-directional roadways only.
- OFFSET DESIGN:** The design shown may be specified on the plans where it is deemed detrimental to lose effective shoulder width due to the dimensions of the Type E Anchor Assembly. The Type E which represents the final 50' of guardrail is to be offset an additional 9" from the normal guardrail offset by tapering within the 12'-6" shown below. The graded shoulder width shall be increased 9" and tapered back to the normal width to 10' as shown.



OFFSET DESIGN
(Plan View)

OFFICE OF ROADWAY ENGINEERING	DESIGNED	XXX	CALCULATED YHK
	REVIEWED	XXX	
REVISION DATE 1/18/2013	CHECKED	XXX	CHECKED TAG
PLAN INSERT SHEET			
INTRODUCTION OF GUARDRAIL RUNS Foreslopes Steeper than 6:1			
MAINTENANCE OF TRAFFIC NOTES			
PIS GR-5.3		GUE-662-2.40	
13		24	

STANDARD DRAWINGS AND SUPPLEMENTAL SPECIFICATIONS

REFER TO THE FOLLOWING STANDARD BRIDGE DRAWING(S):

DS-1-92	DATED/REVISED	07/18/2003
DBR-2-73	DATED/REVISED	07/19/2002
DBR-3-11	DATED/REVISED	07/15/2011
AS-1-15	DATED/REVISED	07/17/2015
AS-2-15	DATED/REVISED	07/17/2015
PCB-91	DATED/REVISED	01/18/2013

DESIGN SPECIFICATIONS

DESIGN SPECIFICATIONS: THIS STRUCTURE CONFORMS TO THE "STANDARD SPECIFICATIONS" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 2010, INCLUDING THE 2010 INTERIM SPECIFICATIONS AND THE ODOT BRIDGE DESIGN MANUAL, 2007.

DESIGN LOADING

DESIGN LOADING: HS-20-44 AND THE ALTERNATIVE MILITARY LOADING

DESIGN DATA

CONCRETE CLASS, QC2 - COMPRESSIVE STRENGTH 4.5 KSI (BRIDGE DECK)
 CONCRETE CLASS, QC1 - COMPRESSIVE STRENGTH 4.0 KSI (SUBSTRUCTURE)
 REINFORCING STEEL - MINIMUM YIELD STRENGTH 60 KSI

DECK PROTECTION METHOD

EPOXY COATED REINFORCING STEEL
 2 1/2" CONCRETE COVER
 1 3/4" SUPERPLASTICIZED DENSE OVERLAY
 STEEL DRIP STRIP
 SEALING OF DECK SURFACE WITH HMWM RESIN

ITEM 519 - PATCHING CONCRETE STRUCTURE, AS PER PLAN

PRIOR TO THE SURFACE CLEANING SPECIFIED IN 519.04 AND WITHIN 24 HOURS OF PLACING PATCHING MATERIAL, BLAST CLEAN ALL SURFACES TO BE PATCHED INCLUDING THE EXPOSED REINFORCING STEEL. ACCEPTABLE METHODS INCLUDE HIGH -PRESSURE WATER BLASTING WITH OR WITHOUT ABRASIVES IN THE WATER, ABRASIVE BLASTING WITH CONTAINMENT, OR VACUUM ABRASIVE BLASTING.

A QUANTITY OF 24 SQ. FT. HAS BEEN CARRIED TO THE GENERAL SUMMARY. PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 519 - PATCHING CONCRETE STRUCTURE, AS PER PLAN.

ITEM 202 - WEARING COURSE REMOVED

APPROACH SLABS ON BRIDGE NO. GUE-662-0240:
 - STA 126+30.50 TO STA 126+55.50
 QUANTITY = (25'x20')/9 = 55.55 S.Y.
 - STA 127+28.50.56 TO 127+53.50
 QUANTITY = (25'x20')/9 = 55.55 S.Y.

TOTAL QUANTITY CARRIED TO BRIDGE SUMMARY:
 55.55 S.Y. + 55.55 S.Y. = 111.1 S.Y.

ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN, SUBSTRUCTURE

THERE SHALL BE SAWCUTS AT WINGWALL ON BOTH REAR AND FORWARD ENDS OF BRIDGE AS SHOWN IN THE PLAN. ALL CONCRETE REMOVED FROM THE SAWCUT DOWN TO THE BEAM SEAT SHALL BE REMOVED BY MEANS OF APPROVED PNEUMATIC HAMMERS EMPLOYING POINTED AND BLUNT CHISEL TOOLS. HYDRAULIC HOE-RAM TYPE HAMMERS WILL NOT BE PERMITTED. THE WEIGHT OF THE HAMMER SHALL NOT BE MORE THAN 35 POUNDS FOR REMOVAL WITHIN 18 INCHES OF PORTIONS TO BE PRESERVED. OUTSIDE THE 18 INCH LIMIT, THE CONTRACTOR MAY USE HAMMERS NOT EXCEEDING 90 POUNDS UPON THE APPROVAL OF THE ENGINEER. DO NOT PLACE PNEUMATIC HAMMERS IN DIRECT CONTACT WITH REINFORCING STEEL THAT IS TO BE RETAINED IN THE REBUILT STRUCTURE.

ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN, SUPERSTRUCTURE (CONCRETE)

DESCRIPTION: THIS WORK CONSISTS OF THE REMOVAL OF BOTH EDGES OF CONCRETE DECK INCLUDING STEEL DRIP STRIP. THE PROVISIONS OF ITEM 202 APPLY EXCEPT AS SPECIFIED BY THE FOLLOWING NOTES. PERFORM WORK CAREFULLY DURING DECK REMOVALS TO PROTECT PORTIONS OF SUCH SYSTEMS THAT ARE TO BE SALVAGED AND INCORPORATED INTO THE PROPOSED STRUCTURE. THE USE OF EXPLOSIVES, HEADACHE BALLS AND/OR HOE RAM TYPE EQUIPMENT IS PROHIBITED. SUBMIT CONSTRUCTION PLANS ACCORDING TO CMS 501.05.

PROTECTION OF TRAFFIC: PRIOR TO DEMOLITION OF ANY PORTIONS OF THE EXISTING SUPERSTRUCTURE, THE CONTRACTOR SHALL SUBMIT PLANS FOR THE PROTECTION OF TRAFFIC (VEHICULAR, PEDESTRIAN, BOAT, ETC.) AS PERCMS 2010 501.05.B.2.

REMOVAL METHODS: THE CONTRACTOR MAY REMOVE CONCRETE BY CUTTING AND BY MEANS OF HAND OPERATED PNEUMATIC HAMMERS EMPLOYING POINTED OR BLUNTED CHISEL TYPE TOOLS. FOR REMOVALS OVER STRUCTURAL MEMBERS (STEEL GIRDERS), THE CONTRACTOR MAY USE A HAMMER HEAVIER THAN 35 POUNDS BUT NOT TO EXCEED 90 POUNDS UNLESS APPROVED BY THE ENGINEER. REMOVAL METHODS OVER STRUCTURAL MEMBERS SHALL ENSURE ADEQUATE DEPTH CONTROL AND PREVENT NICKING OR GOUGING THE PRIMARY STRUCTURAL MEMBERS.

DUE TO THE POSSIBLE PRESENCE OF ATTACHMENTS (E.G., FINISHING MACHINE, SCUPPER AND FORM SUPPORTS, ETC.) TO EXISTING STRUCTURAL MEMBERS, PERFORM WORK CAREFULLY DURING DECK REMOVAL TO AVOID DAMAGING STRUCTURAL MEMBERS THAT ARE TO REMAIN. REPLACE OR REPAIR STRUCTURAL MEMBERS DAMAGED BY THE REMOVAL OPERATIONS AT NO COST TO THE PROJECT. AT LEAST 7 DAYS BEFORE PERFORMING REPAIR WORK, SUBMIT A PROPOSED REPAIR PLAN, DEVELOPED BY AN OHIO REGISTERED PROFESSIONAL ENGINEER TO THE DIRECTOR. OBTAIN THE DIRECTOR'S APPROVAL BEFORE PERFORMING REPAIR. MEASUREMENT & PAYMENT: THE DEPARTMENT WILL MEASURE THE QUANTITY OF CONCRETE REMOVALS ON A CUBIC YARD BASIS. THE DEPARTMENT WILL PAY FOR THE ACCEPTED QUANTITIES OF REMOVALS AT THE CONTRACT PRICE FOR ITEM 202, PORTIONS OF STRUCTURE REMOVED, AS PER PLAN, SUPERSTRUCTURE (CONCRETE).

ITEM 304 - FILL UNDER APPROACH SLABS

AGGREGATE BASE SHALL BE USED TO BRING THE SUBBASE TO GRADE FOR THE NEW APPROACH SLABS AS DETAILED ON THE APPROACH SLAB DETAIL SHEETS AND SHALL EXTEND 1'-6" ON BOTH SIDES OF EACH APPROACH SLAB OR TO THE INSIDE OF TURNED BACK WINGWALLS.

ITEM 503 - UNCLASSIFIED EXCAVATION, AS PER PLAN

USING LIMITS SHOWN IN THE PLAN, PERFORM WORK AS PER ITEM 503 - UNCLASSIFIED EXCAVATION FOLLOWING THE ODOT STANDARD C.M.S.

ITEM 509 - EPOXY COATED REINFORCING STEEL, AS PER PLAN

IN ADDITION TO THE PROVISIONS OF ITEM 509, FIELD BEND AND/OR FIELD CUT THE REINFORCING STEEL DESIGNATED IN THE PLANS, AS NECESSARY, IN ORDER TO MAINTAIN THE REQUIRED CLEARANCES AND BAR SPACINGS. REPAIR ALL DAMAGE TO THE EPOXY COATING, AS A RESULT OF THIS WORK, ACCORDING TO 709.00

AN ADDITIONAL QUANTITY OF 240 LBS. OF RESTEEL HAS BEEN CARRIED TO THE GENERAL SUMMARY TO BE USED AS DIRECTED BY THE ENGINEER TO REPLACE ANY DETERIORATED RESTEEL ENCOUNTERED.

ITEM 510 - DOWEL HOLES, WITH NON SHRINK, NONMETALLIC GROUT, AS PER PLAN

PRIOR TO DRILLING HOLES, LOCATE ALL EXISTING REINFORCING STEEL BARS IN THE AREA OF THE HOLE WITH AID OF A REINFORCING STEEL BAR LOCATOR (PACHOMETER). IF AN EXISTING BAR IS ENCOUNTERED AT THE SAME LOCATION AS A PROPOSED DOWEL HOLE, MOVE THE DOWEL HOLE TO EITHER SIDE OF THE EXISTING BAR. DRILL DOWEL HOLES WHERE SHOWN IN PLANS EXCEPT AS NOTED ABOVE. INSTALL REINFORCING STEEL ACCORDING TO ITEM 510 USING NON SHRINK, NON METALLIC GROUT, 705.20.

ITEM 511 - CONCRETE, MISC.: WITH HIGH EARLY STRENGTH PUMPED SELF CONSOLIDATING CONCRETE

IN ADDITION TO THE WORK ITEMS REQUIRED IN 511, THIS ITEM WILL INCLUDE THE DEVELOPMENT, DELIVERY AND PLACEMENT OF A SPECIAL CONCRETE MIX DESIGN AS DESCRIBED IN THE FOLLOWING NOTE:

PROVIDE A CONCRETE MIX WITH THE FOLLOWING PROPERTIES:

MINIMUM CEMENT CONTENT OF NO MICRO- SILICA	800 LB/CU .YD.
MAXIMUM COARSE AGGREGATE SIZE	8
MAXIMUM WATER/CEMENT RATIO	0.38
COARSE TO FINE AGGREGATE RATIO TO PRODUCE SELF CONSOLIDATING CONCRETE	
MINIMUM 12 HOUR STRENGTH	2500 PSI
MINIMUM 3 DAY STRENGTH	4000 PSI
MINIMUM 28 DAY STRENGTH	5500 PSI
MINIMUM AIR CONTENT	7% ±2%
MINIMUM SPREAD	24"

PROVIDE A CONCRETE MIX AT A SLUMP THAT ALLOWS THE CONCRETE MIX TO BE PUMPED THROUGH AN ACCESS HOLE(S) IN THE FACE OF A VERTICAL FORM(S), SELF CONSOLIDATED, AND THEN PRESSURIZED, FILLING THE FORMWORK TIGHT TO THE UNDERSIDE OF THE DECK SLAB. THE FINAL CONCRETE MIX WILL BE A SELF CONSOLIDATING ADMIXTURE. SUBMIT THE MIX DESIGN AND TEST RESULTS TO THE ENGINEER FOR REVIEW AND ACCEPTANCE.

ACCESS HOLES MAY BE PROVIDED AT A MINIMUM SPACING OF 6 FEET. USE THE ACCESS HOLES TO DELIVER THE CONCRETE. IF MULTIPLE ACCESS HOLES ARE UTILIZED, THOSE NOT USED FOR FINAL CONCRETE DELIVERY SHALL BE BLOCKED PRIOR TO PRESSURE FILLING THE UPPER PORTION OF THE FORMWORK. DRILL 1" BREATHING/MONITORING HOLES IN THE VERTICAL FORMS WITHIN 6 INCHES OF THE TOP OF THE FORMS (BOTTOM OF THE DECK) SPACED BETWEEN 3 AND 5 FEET AND ELSEWHERE THROUGHOUT THE FORMWORK AS DIRECTED BY THE ENGINEER.

PUMP THE CONCRETE INTO THE FORMS UNTIL FULL AND ALL AIR VOIDS ARE DETERMINED TO HAVE BEEN ELIMINATED. THE ENGINEER WILL USE THE 1 INCH BREATHING/MONITORING HOLES DRILLED INTO THE VERTICAL FORMS TO DETERMINE WHEN THE AIR VOIDS HAVE BEEN ELIMINATED, (I.E. WHEN CONCRETE SEEPS FROM THE BREATHING/MONITORING HOLES).

ASSURE THE CONCRETE HAS COMPLETELY FILLED THE FORMS UP TO THE BOTTOM OF THE DECK BEFORE MOVING OPERATIONS TO ANOTHER POUR. USE VIBRATION EQUIPMENT TO HELP CONSOLIDATE THE CONCRETE MIX.

THE CONTRACTOR SHALL PROVIDE FORMWORK TO WITHSTAND THE PRESSURE REQUIRED TO PLACE CONCRETE BY THIS PUMPING/PRESSURIZATION METHOD.

DURING THE CONCRETE OPERATIONS, ASSURE THE REPRESENTATIVES OF THE READY MIX PRODUCER AND THE CHEMICAL ADMIXTURE MANUFACTURER ARE ON SITE TO DETERMINE ANY ADJUSTMENTS REQUIRED TO COMPLETE THE CONCRETE PLACEMENT.

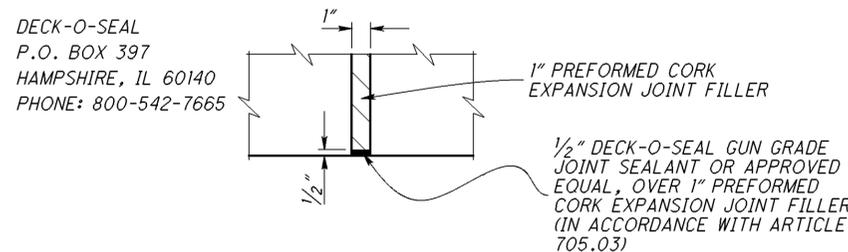
WHEN THE FORMWORK IS REMOVED, THE PROJECT ENGINEER WILL DETERMINE IF THE NEW CONCRETE IS FLUSH WITH THE UNDERSIDE OF THE DECK. IF THERE ARE VOIDS FOUND BETWEEN THE NEW CONCRETE AND THE UNDERSIDE OF THE DECK, THEN THE CONTRACTOR WILL PRESSURE GROUT THE VOIDS UNTIL ALL MATERIAL IS FOUND TO BE IN CONTACT WITH ONE ANOTHER. THE GROUT MATERIAL WILL ACHIEVE AT LEAST 4000 PSI IN 7 DAYS AND CONSIST OF CEMENT AND SAND MEETING ODOT MATERIALS SPECIFICATIONS.

A PROPOSED FORM PUMPING SYSTEM MEETING ALL REQUIREMENTS OF THIS ITEM MUST BE SUBMITTED AND ACCEPTED BY THE PROJECT ENGINEER PRIOR TO THE INSTALLATION OF ANY FORMWORK. A TEST AREA ON THE FIRST BRIDGE ABUTMENT TO BE DONE SHALL BE USED TO DETERMINE THE PERFORMANCE OF THE PROPOSED PUMPING SYSTEM. UPON COMPLETING THE TEST SECTION, THE PROJECT ENGINEER SHALL INSPECT THE AREA FOR THE PRESENCE OF AIR VOIDS TO ENSURE THAT ALL AREAS ARE FILLED. UPON APPROVAL OF THE TEST AREA BY THE PROJECT ENGINEER, THE CONTRACTOR MAY USE THE APPROVED FORM PUMPING SYSTEM. ALL BREST MALL CONCRETE WORK IS TO BE PERFORMED FROM BENEATH THE STRUCTURE.

THE DEPARTMENT WILL PAY FOR THE ACCEPTED QUANTITY OF CUBIC YARDS. PAYMENT WILL INCLUDE FORMWORK, DEVELOPMENT AND PLACEMENT OF THE SELF CONSOLIDATING CONCRETE MIX, PRESSURE GROUTING, EXCAVATION AND ALL OTHER INCIDENTAL WORK PERTAINING TO THIS ITEM.

ITEM 516 - 1" PREFORMED EXPANSION JOINT FILLER, AS PER PLAN

ALL 1" P.E.J.F. CALLED FOR IN PLANS SHALL BE PREFORMED CORK JOINT FILLER (IN ACCORDANCE WITH ARTICLE 705.03). RECESS JOINT FILLER 1/2" FOR ALL JOINTS (SEE DETAIL). SEAL ALL JOINTS THAT ARE ABOVE GRADE WITH DECK-O-SEAL GUN GRADE-JOINT SEALANT OR AN APPROVED EQUAL. THE COLOR SHALL BE STONE GRAY. APPROVED MANUFACTURER'S APPLICATION METHODS SHALL BE FOLLOWED DURING SURFACE PREPARATION AND APPLICATION FOR MAXIMUM EFFECTIVENESS.



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

A 2" DEEP x 1" WIDE STRIP SHALL BE SAWCUT OUT OF ALL ASPHALT ROADWAY SURFACE MATERIAL ABUTTING THE ENDS OF THE APPROACH SLABS AS SHOWN IN THE PLAN AFTER THE DECK, APPROACH SLABS, AND ASPHALT HAVE BEEN CONSTRUCTED. JOINT SEALER AS PER 705.04 SHALL BE USED TO FILL AND SEAL THE JOINT CREATED.

ITEM 526 - REINFORCED CONCRETE APPROACH SLABS (T=15"), AS PER PLAN

FURNISH APPROACH SLABS CONFORMING TO CMS 526. THE ACCEPTED QUANTITIES SHALL INCLUDE: CONCRETE, CURBS, REINFORCING STEEL, JOINT FILLERS, JOINT SEALS, WATERPROOFING, AND ANY OTHER INCIDENTALS SHOWN ON THE APPROACH SLAB DETAIL SHEETS. THE DEPARTMENT WILL MEASURE APPROACH SLABS BY THE NUMBER OF SQUARE YARDS.

EXISTING PLANS

EXISTING PLANS FOR BRIDGE NO. GUE-662-0240 MAY BE DOWNLOADED AT THE <ftp://ftp.dot.state.oh.us/publications/D05/Projects/GUE/89019/GUE-662-2.40>

EXISTING STRUCTURE VERIFICATION

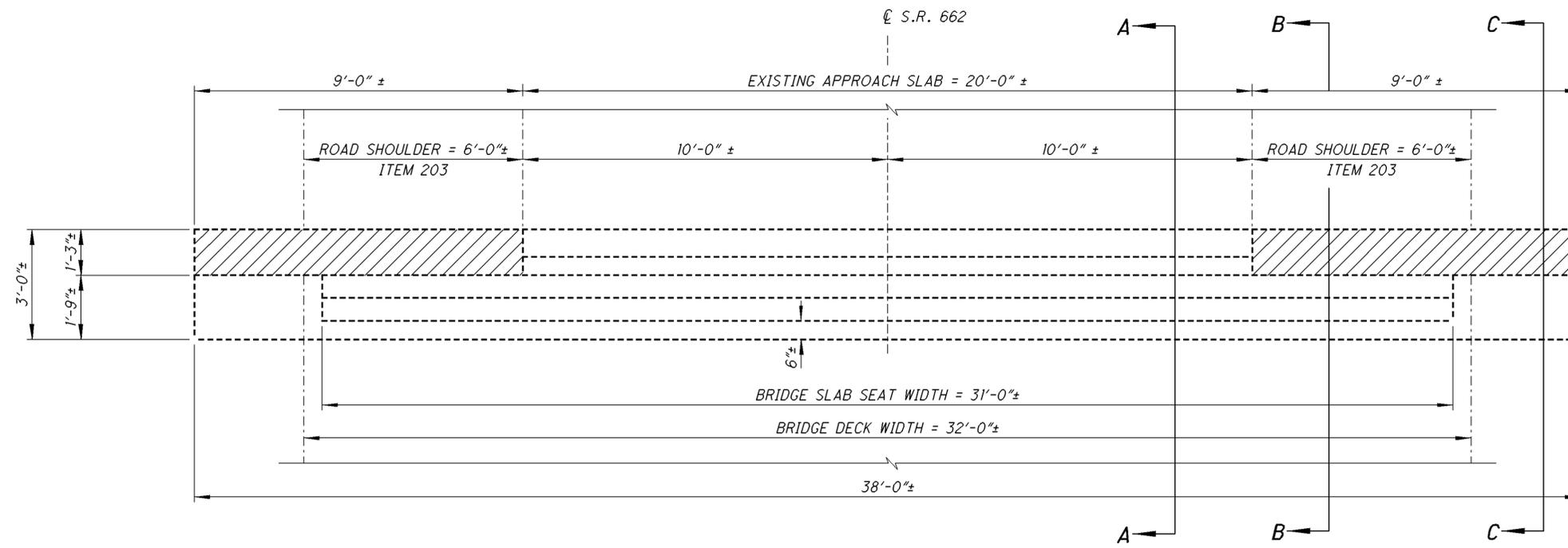
DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE AND FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURE AND THE PROPOSED WORK BUT THEY SHALL BE CONSIDERED TENTATIVE 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 PRE BID EXAMINATION OF THE EXISTING STRUCTURE. HOWEVER, THE DEPARTMENT WILL PAY FOR ALL PROJECT WORK BASED UPON ACTUAL DETAILS AND DIMENSIONS WHICH HAVE BEEN VERIFIED IN THE FIELD.

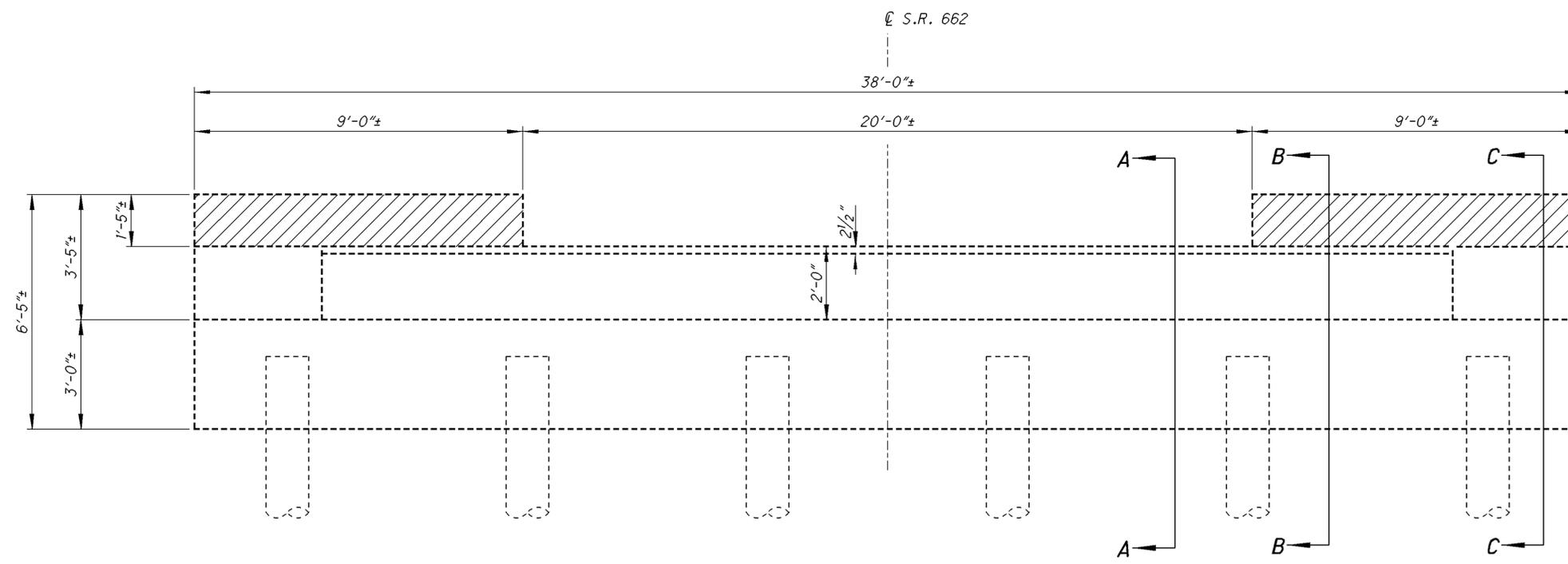
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REVIEWED TAG	DATE	STRUCTURE FILE NUMBER	
YHK	1/30/2017	3006638	
DRAWN YHK	REVISED		
DESIGNED YHK	CHECKED		
	JDR		
BRIDGE NOTES			
BRIDGE NO. GUE-662-0240 OVER INDIAN CAMP RUN			
GUE - 662 - 2.40			
15 24			

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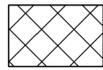


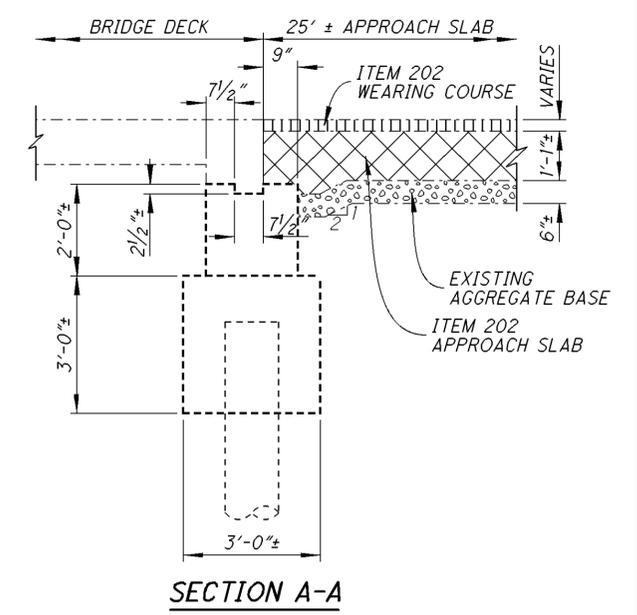
EXISTING REAR & FORWARD ABUTMENT PLAN



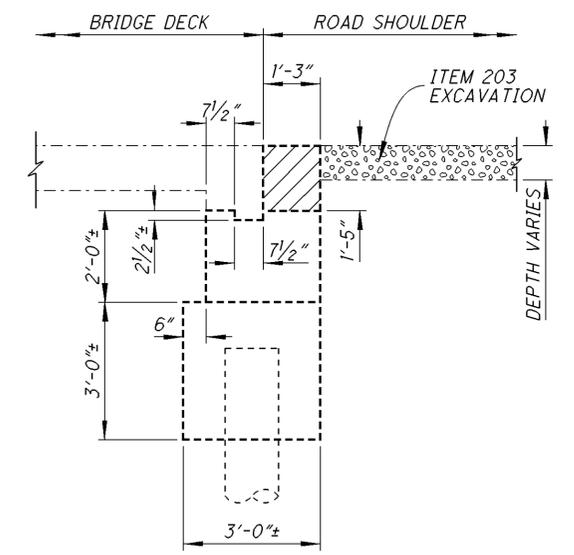
EXISTING REAR & FORWARD ABUTMENT ELEVATION

LEGEND

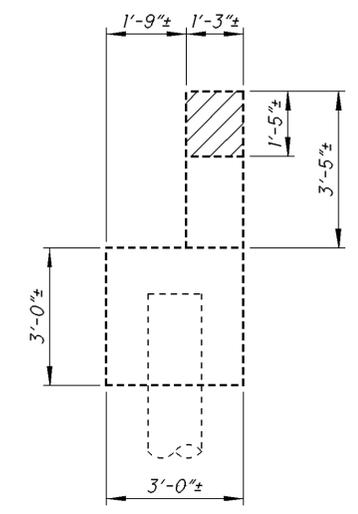
-  ITEM 202 PORTIONS OF STRUCTURE REMOVED AS PER PLAN, SUBSTRUCTURE
-  ITEM 202 WEARING COURSE REMOVED, AS PER PLAN,
-  ITEM 202 APPROACH SLAB REMOVED, AS PER PLAN
-  ITEM 203 EXCAVATION, AS PER PLAN



SECTION A-A



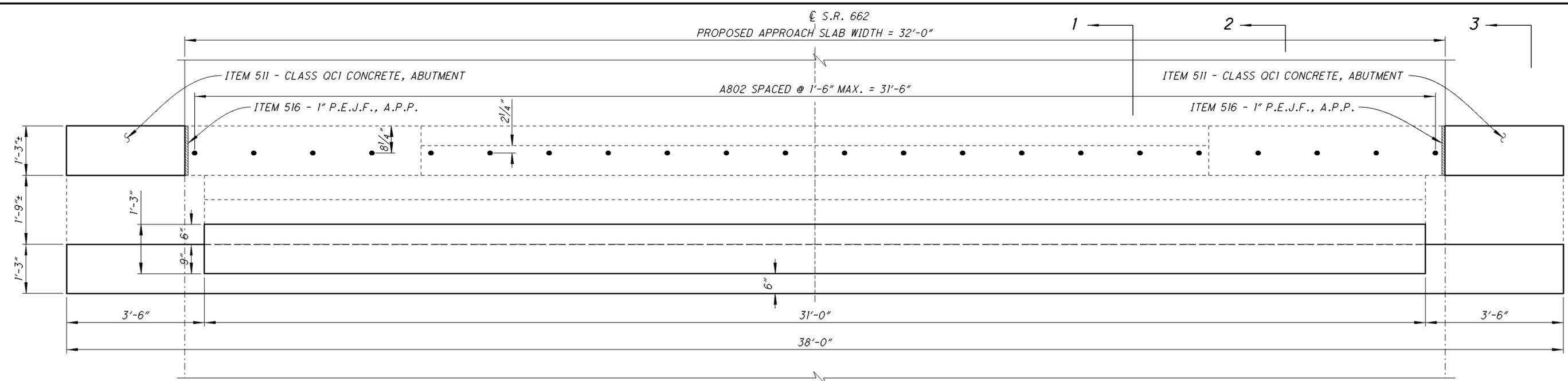
SECTION B-B



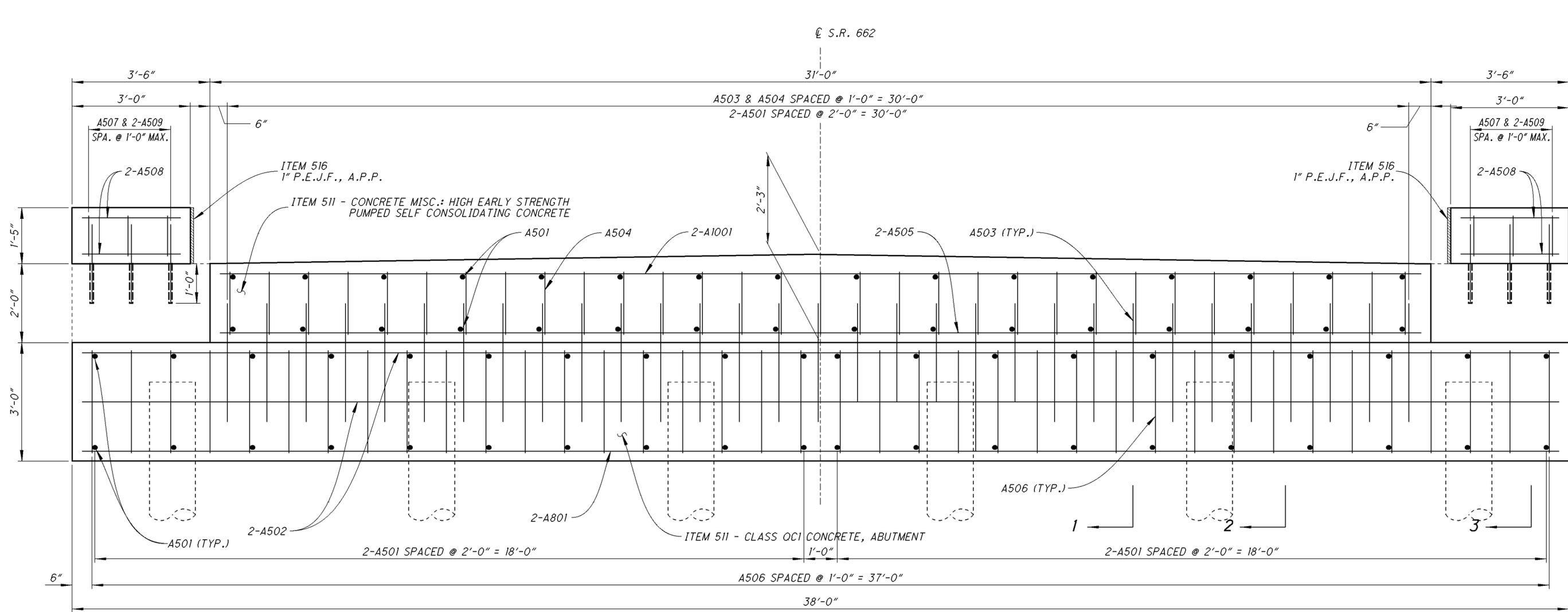
SECTION C-C

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DATE	1/30/2017
REVIEWED TAG	YHK
STRUCTURE FILE NUMBER	3006638
DRAWN	YHK
CHECKED	JDR
DESIGNED	YHK
REVISIONS	JDR
EXISTING ABUTMENT BRIDGE NO. GUE-662-0240 OVER INDIAN CAMP RUN	
GUE-662-2.40	
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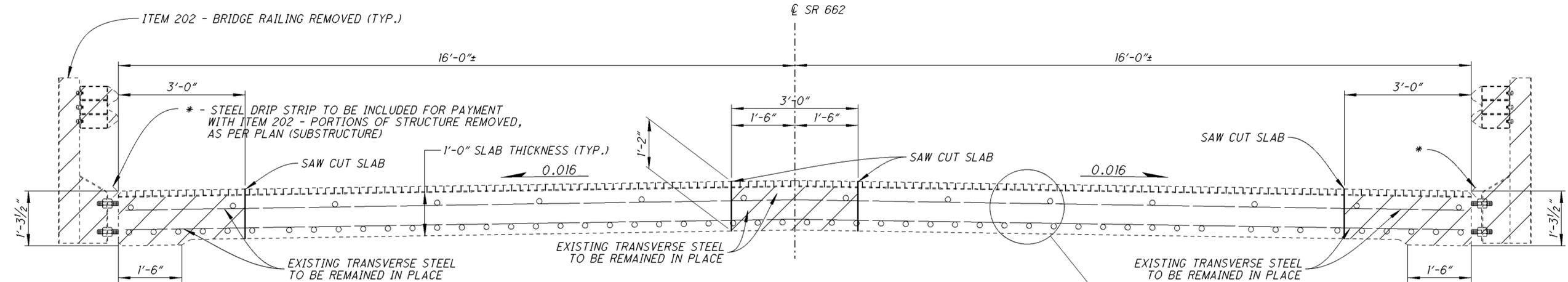
REAR AND FORWARD ABUTMENT PLAN



REAR AND FORWARD ABUTMENT ELEVATION

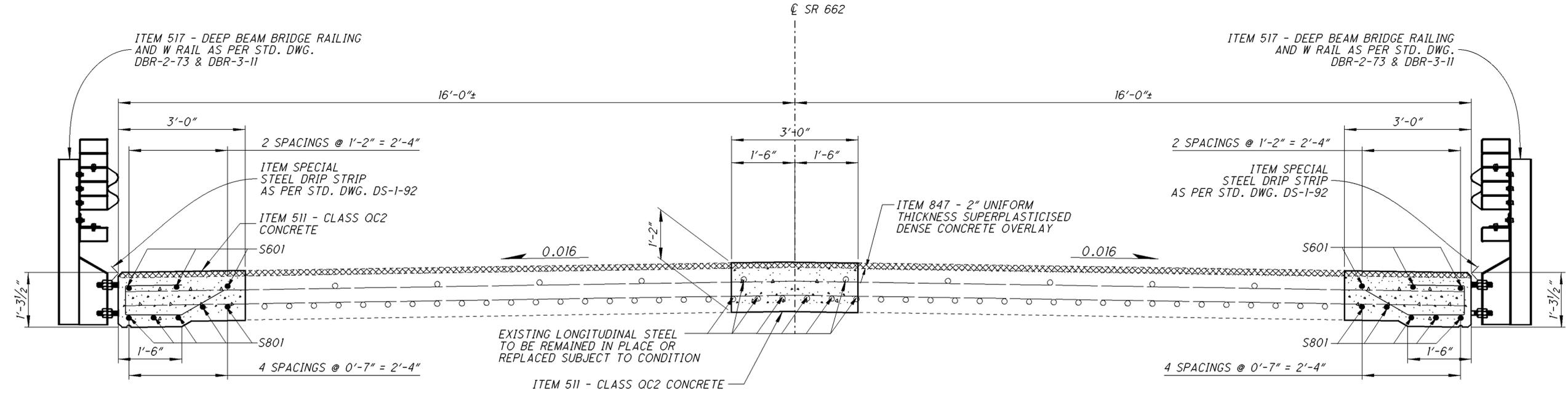
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REVIEWED	DATE	TAG	STRUCTURE FILE NUMBER
YHK	1/30/2017	3006638	3006638
DRAWN	YHK	REVIS	JDR
YHK	JDR		
PROPOSED ABUTMENT DETAILS			
BRIDGE NO. GUE-662-0240 OVER INDIAN CAMP RUN			
GUE-662-2.40			
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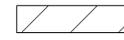


SECTION (S-1)
EXISTING TRANSVERSE SECTION
(MIDDLE SPANS)

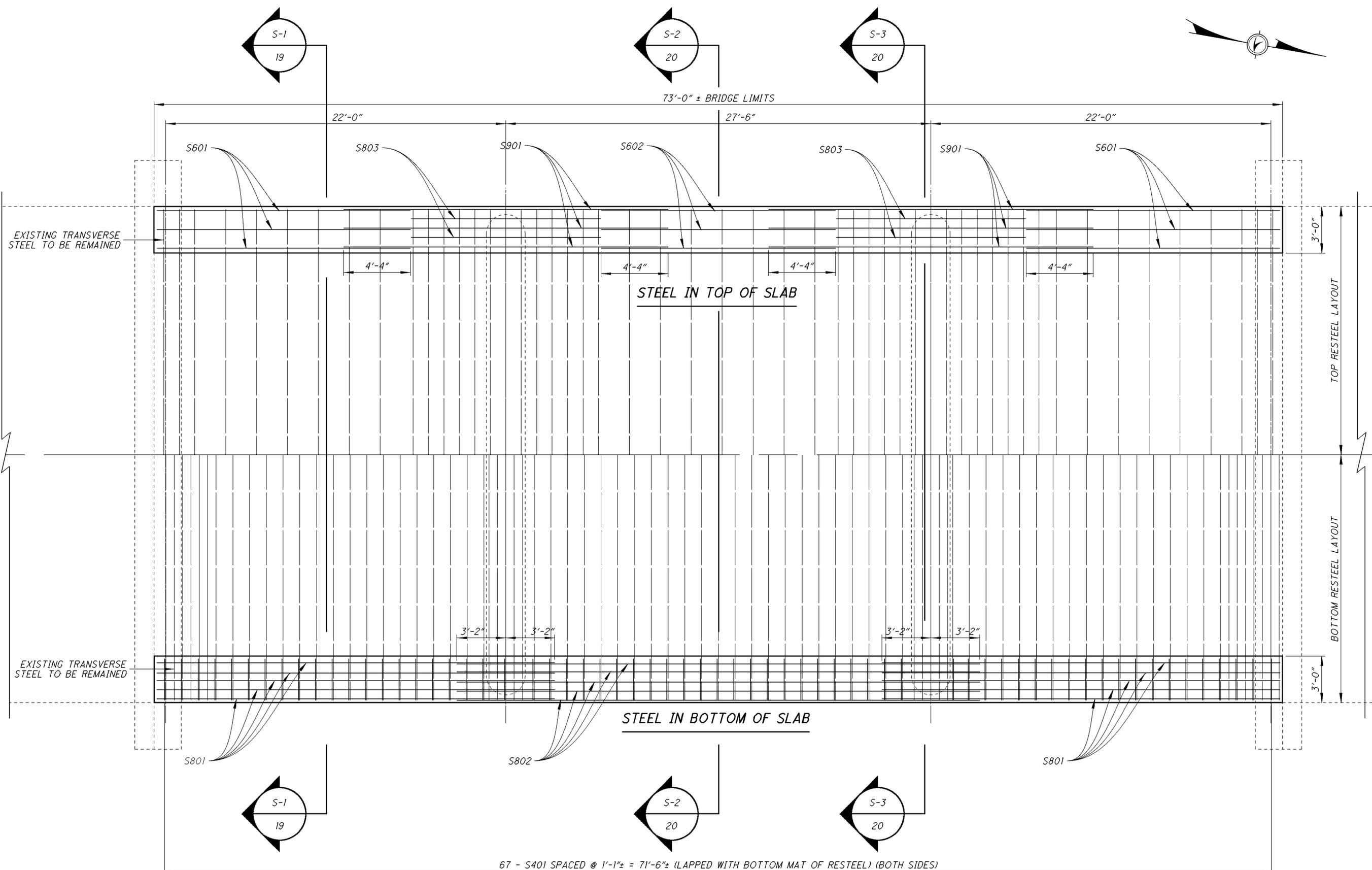
 ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (SUBSTRUCTURE)



SECTION (S-1)
PROPOSED TRANSVERSE SECTION
(MIDDLE SPANS)

 ITEM 202 - EXISTING STRUCTURE REMOVAL
 ITEM 847 - 2" UNIFORM THICKNESS SUPERPLASTICISED DENSE CONCRETE OVERLAY

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73'-0" ± BRIDGE LIMITS

22'-0"

27'-6"

22'-0"

S601

S803

S901

S602

S803

S901

S601

EXISTING TRANSVERSE STEEL TO BE REMAINED

4'-4"

4'-4"

4'-4"

4'-4"

STEEL IN TOP OF SLAB

TOP RESTEEL LAYOUT

BOTTOM RESTEEL LAYOUT

EXISTING TRANSVERSE STEEL TO BE REMAINED

3'-2"

3'-2"

3'-2"

3'-2"

STEEL IN BOTTOM OF SLAB

S801

S802

S801

S-1

19

S-2

20

S-3

20

67 - S401 SPACED @ 1'-1" ± = 71'-6" ± (LAPPED WITH BOTTOM MAT OF RESTEEL) (BOTH SIDES)

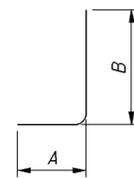
NOTES

1: EXISTING TRANSVERSE STEEL AS DETAILED IN TOP AND BOTTOM MAT SHALL REMAIN IN PLACE AFTER DECK REMOVAL

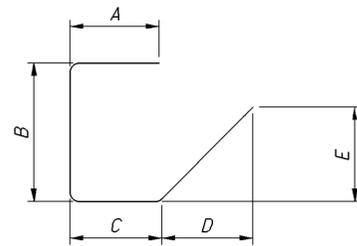
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REVIEWED	DATE	REVIEWED	DATE
YHK	1/30/2017	YHK	1/30/2017
CHECKED	STRUCTURE FILE NUMBER	CHECKED	STRUCTURE FILE NUMBER
JDR	3006638	JDR	3006638
DECK PLAN			
BRIDGE NO. GUE-662-0240 OVER INDIAN CAMP RUN			
GUE-662-2.40		21 24	

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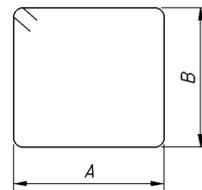
MARK	NUMBER		LENGTH	WEIGHT	TYPE	DIMENSIONS						
	TOTAL					A	B	C	D	E	R	INC
	R	F	ABUTMENTS									
A501	72	72	2'-7"	388	1	0'-8 1/2"	2'-0"					
A502	4	4	37'-8"	314	STR							
A503	31	31	3'-0"	194	STR							
A504	31	31	4'-0"	259	3	0'-9"	1'-6"					
A505	2	2	30'-8"	128	STR							
A506	38	38	6'-0"	476	3	0'-9"	2'-6"					
A507	6	6	2'-10"	35	3	0'-9"	0'-11"					
A508	8	8	2'-8"	45	STR							
A509	12	12	2'-0"	50	STR							
A801	2	2	37'-8"	402	STR							
A802	22	22	3'-2"	372	4	1'-8"	1'-0"	1'-8"				
A1001	2	2	30'-8"	528	STR							
SUBTOTAL				3191								
	L	R	DECK									
S401	67	67	4'-6 3/4"	408	2	1'-4"	0'-7"	1'-4"	1'-0"	0'-7"		
S601	6	6	16'-5"	296	STR							
S602	3	3	15'-2"	137	STR							
S801	10	10	26'-8"	1424	5	25'-9"						
S802	5	5	33'-10"	903	STR							
S803	4	4	12'-3"	262	STR							
S901	6	6	21'-0"	857	STR							
SUBTOTAL				4286								
ABUTMENTS				3191								
SUPERSTRUCTURE				4286								
TOTAL				7477								



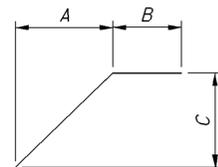
TYPE-1



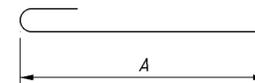
TYPE-2



TYPE-3



TYPE-4



TYPE-5

DESIGN AGENCY
OHIO DEPARTMENT OF
TRANSPORTATION DISTRICT 5

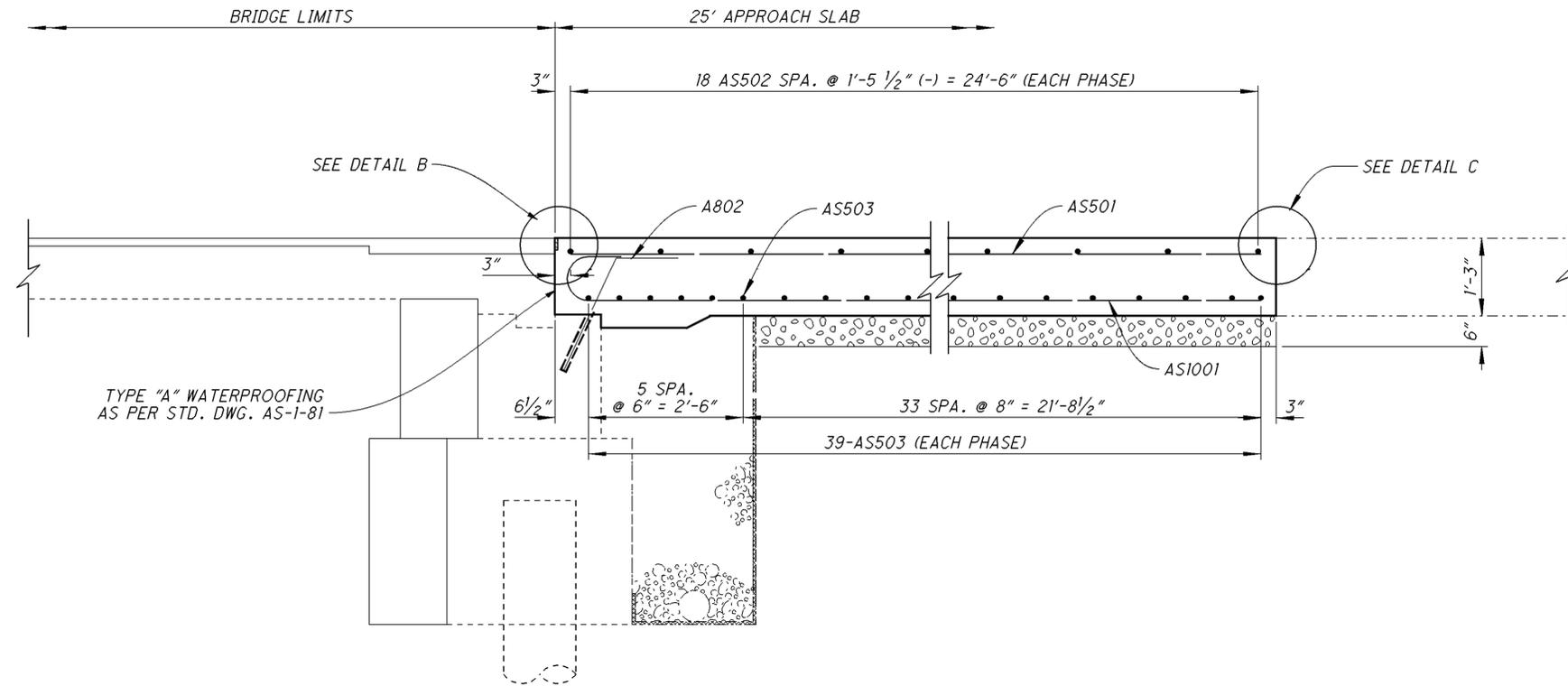
REVIEWED DATE 1/30/2017
TAG
STRUCTURE FILE NUMBER 3006638

DRAWN YHK
YHK
REVISOR
CHECKED JDR

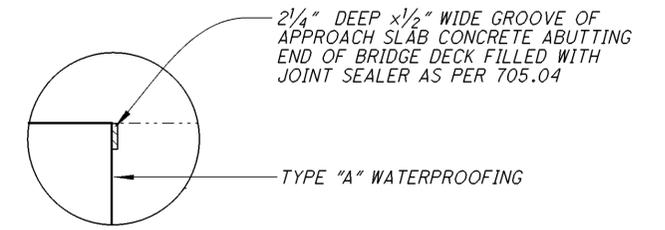
REINFORCING STEEL LIST
BRIDGE NO. GUE-662-0240
OVER INDIAN CAMP RUN

GUE-662-2.40

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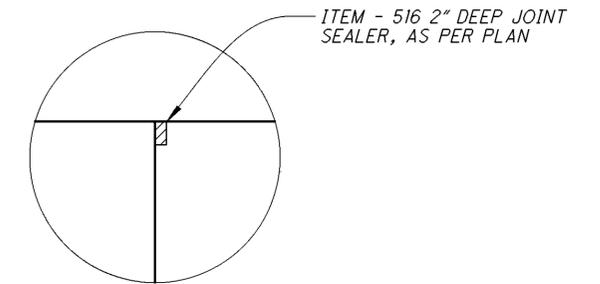


SECTION 1-1



DETAIL B

APPROACH SLAB REINFORCING STEEL NOT SHOWN FOR CLARITY



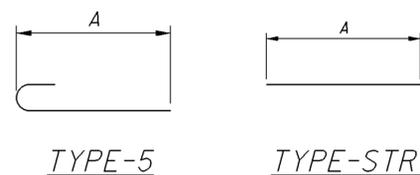
DETAIL C

APPROACH SLAB REINFORCING STEEL NOT SHOWN FOR CLARITY

NOTES:

- ALL LONGITUDINAL CONSTRUCTION JOINTS SHALL BE SEALED 2'-0" IN WIDTH WITH HMWM RESIN (SEE PROPOSED NOTE) APPROACH SLAB SEALING TO BE INCLUDED IN ITEM 526 QC/OA CONCRETE, CLASS OSC2, SUPERSTRUCTURE (APPROACH SLAB), (T=15"), AS PER PLAN
- FOR ADDITIONAL DETAILS SEE STANDARD DRAWING AS-1-15

BENDING DIAGRAMS



MINIMUM LAP
No. 5 BAR = 3'-6"

MARK	REAR	FORWARD	TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS		
							A	B	INC
APPROACH SLABS									
AS501	22	22	44	24'-6"	1124	STR.	24'-6"		
AS502	18	18	36	31'-6"	1183	STR.	31'-6"		
AS503	39	39	78	31'-6"	2563	STR.	31'-6"		
AS1001	55	55	110	25'-11"	12267	5	24'-6"		
SUB-TOTAL					17137				

RE-STEEL TO BE INCLUDED FOR PAYMENT IN ITEM 526 - REINFORCED CONCRETE APPROACH SLABS (T=15"), AS PER PLAN