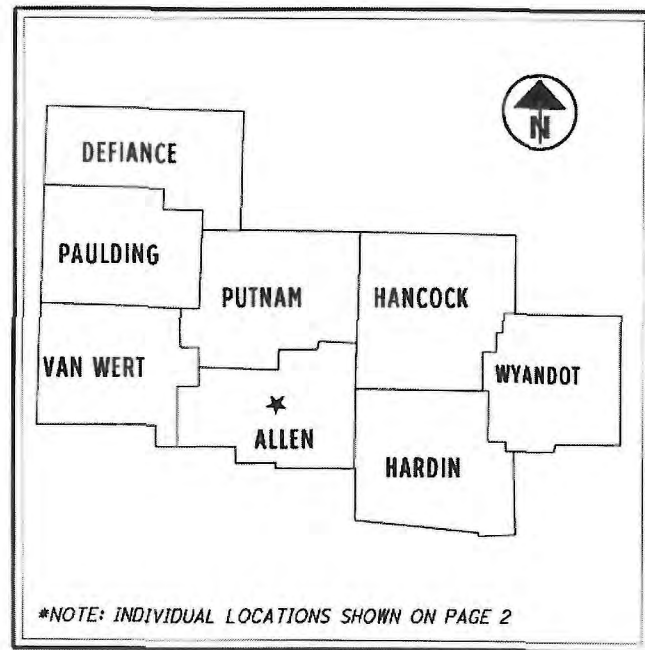


STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

D01 EROSION REPAIR FY23

**AMANDA TOWNSHIP (HAN)
HARRISON TOWNSHIP (PAU)
CRANE TOWNSHIP (WYA)
ANTRIM TOWNSHIP (WYA)**



*NOTE: INDIVIDUAL LOCATIONS SHOWN ON PAGE 2

LOCATION MAP

LATITUDE: 40°46'18" LONGITUDE: 84°05'34"

DESIGN DESIGNATION PAU-US 24

CURRENT ADT (2023)	15,500
DESIGN YEAR ADT (2043)	26,000
DESIGN HOURLY VOLUME (2043)	2,300
DIRECTIONAL DISTRIBUTION	51%
TRUCKS (24 HOUR B&C)	44%
DESIGN SPEED	70
LEGAL SPEED	65
DESIGN FUNCTIONAL CLASSIFICATION:	
02 FREEWAY	
NHS PROJECT	YES

DESIGN DESIGNATION WYA-US 30

CURRENT ADT (2023)	11,500
DESIGN YEAR ADT (2043)	17,500
DESIGN HOURLY VOLUME (2043)	2,300
DIRECTIONAL DISTRIBUTION	53%
TRUCKS (24 HOUR B&C)	52%
DESIGN SPEED	70
LEGAL SPEED	70
DESIGN FUNCTIONAL CLASSIFICATION:	
02 FREEWAY	
NHS PROJECT	YES

DESIGN EXCEPTIONS: NONE REQUIRED



PLAN PREPARED BY:
DISTRICT ONE
OHIO DEPARTMENT OF TRANSPORTATION
LIMA, OHIO

ENGINEERS SEAL:



SIGNED: *Eric J. Schenk*
DATE: August 29, 2022

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(FOR ADDITION DESIGN DESIGNATION FOR HAN-SR 15 & WYA-US 23 SEE SHT.2)

STANDARD CONSTRUCTION DRAWINGS				SUPPLEMENTAL SPECIFICATIONS	SPECIAL PROVISIONS		
DM-1.1	7/17/20	MGS-4.3	1/18/13	MT-101.75	1/17/20	800-2019 SEE PROPOSAL	
DM-4.1	7/17/20	MGS-5.2	7/15/16	MT-101.90	7/17/20	821 4/20/2012	
DM-4.2	7/20/12	MGS-6.1	1/19/18	MT-102.10	1/17/20	832 7/15/2022	
DM-4.3	1/15/16			MT-102.20	4/19/19	902 7/19/2019	
DM-4.4	1/15/16	RM-4.2	4/17/20	MT-105.10	1/17/20	921 4/20/2012	
BP-5.1	7/15/22	MT-95.30	7/19/19	TC-41.20	10/18/13		
CB-3	7/16/21	MT-95.40	1/17/20	TC-42.20	10/18/13		
CB-3A	7/16/21	MT-95.45	1/17/20	TC-52.10	10/18/13		
		MT-95.50	7/21/17	TC-52.20	1/15/21		
MGS-1.1	7/16/21	MT-98.10	1/17/20	TC-61.30	7/19/19		
MGS-2.1	1/19/18	MT-98.11	1/17/20				
		MT-98.28	1/17/20	BP-2.1	1/21/22		
MGS-3.2	1/18/13	MT-99.20	4/19/19	BP-2.2	1/15/21		
MGS-4.2	7/19/13	MT-99.30	1/17/20	BP-9.1	1/18/19		
		MT-101.70	1/17/20				

PROJECT DESCRIPTION

EROSION REPAIR PROJECT COMPLETED IN FIVE DIFFERENT LOCATIONS THROUGHOUT DISTRICT ONE. MISCELLANEOUS GUARDRAIL WORK AT TWO OTHER LOCATIONS.

EARTH DISTURBED AREAS

PROJECT EARTH DISTURBED AREA: 1.24 ACRES
ESTIMATED CONTRACTOR EARTH DISTURBED AREA: 0.1 ACRES
NOTICE OF INTENT EARTH DISTURBED AREA: N/A *
*- MAINTENANCE PROJECT (NOI NOT REQUIRED)

LIMITED ACCESS

THIS IMPROVEMENT IS ESPECIALLY DESIGNED FOR THROUGH TRAFFIC AND HAS BEEN DECLARED A LIMITED ACCESS HIGHWAY OR FREEWAY BY ACTION OF THE DIRECTOR IN ACCORDANCE WITH THE PROVISIONS OF SECTION 5511.02 OF THE OHIO REVISED CODE.

2019 SPECIFICATIONS

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

I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL NOT REQUIRE THE CLOSING TO TRAFFIC OF THE HIGHWAY EXCEPT AS NOTED ON SHEETS 6-10, AND THAT PROVISIONS FOR THE MAINTENANCE AND THE SAFETY OF TRAFFIC WILL BE AS SET FORTH ON THE PLANS AND ESTIMATES.

ADA DESIGN WAIVERS: NONE REQUIRED

APPROVED: *Christina A. Hise*
DATE: 8/21/22 DISTRICT DEPUTY DIRECTOR

APPROVED: _____
DATE: _____ DIRECTOR, DEPARTMENT OF TRANSPORTATION

I:\Pr-0\ecr\data\107806\Design\Roadway\Sheets\107806_010\plan Design_25_AUG_2022_4:55PM_escrhecke

FEDERAL PROJECT NO. E190(434)

PID NO. 107806

CONSTRUCTION PROJECT NO.

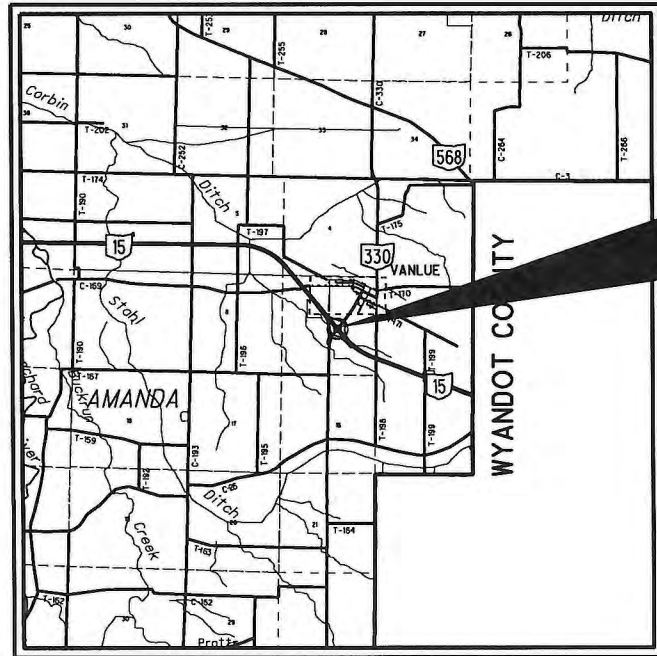
RAILROAD INVOLVEMENT NONE

D01-EROSION REPAIR-FY23



DESIGN DESIGNATION HAN-SR 15

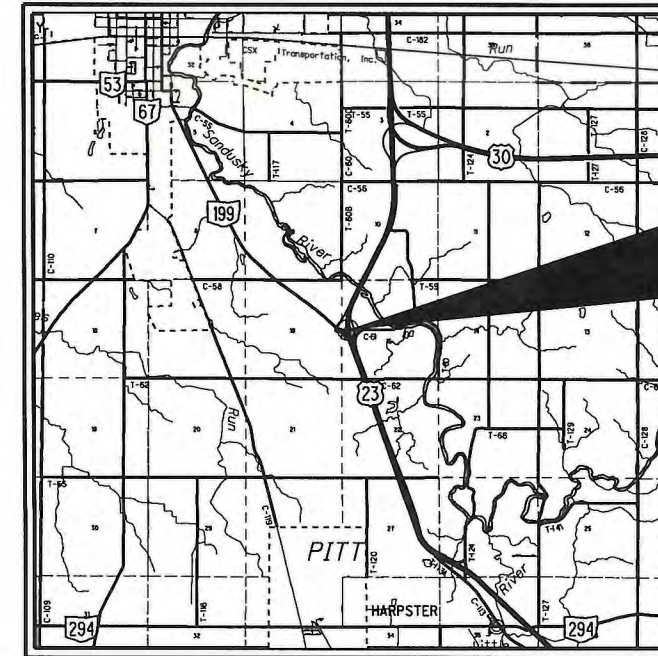
CURRENT ADT (2023)	-----	15,000
DESIGN YEAR ADT (2043)	-----	15,000
DESIGN HOURLY VOLUME (2043)	-----	1,500
DIRECTIONAL DISTRIBUTION	-----	51%
TRUCKS (24 HOUR B&C)	-----	22%
DESIGN SPEED	-----	70
LEGAL SPEED	-----	65
DESIGN FUNCTIONAL CLASSIFICATION:		
02 FREEWAY	-----	
NHS PROJECT	-----	YES



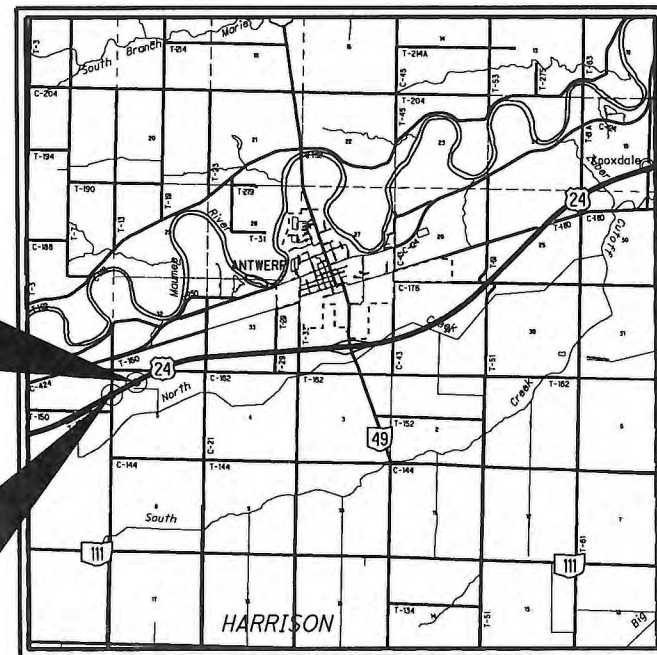
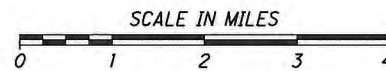
HAN-SR 15-26.68
(SR 15 INTERCHANGE W/ SR 330)

DESIGN DESIGNATION WYA-23

CURRENT ADT (2023)	-----	16,000
DESIGN YEAR ADT (2043)	-----	17,000
DESIGN HOURLY VOLUME (2043)	-----	2,000
DIRECTIONAL DISTRIBUTION	-----	53%
TRUCKS (24 HOUR B&C)	-----	15%
DESIGN SPEED	-----	70
LEGAL SPEED	-----	65
DESIGN FUNCTIONAL CLASSIFICATION:		
02 FREEWAY	-----	
NHS PROJECT	-----	YES

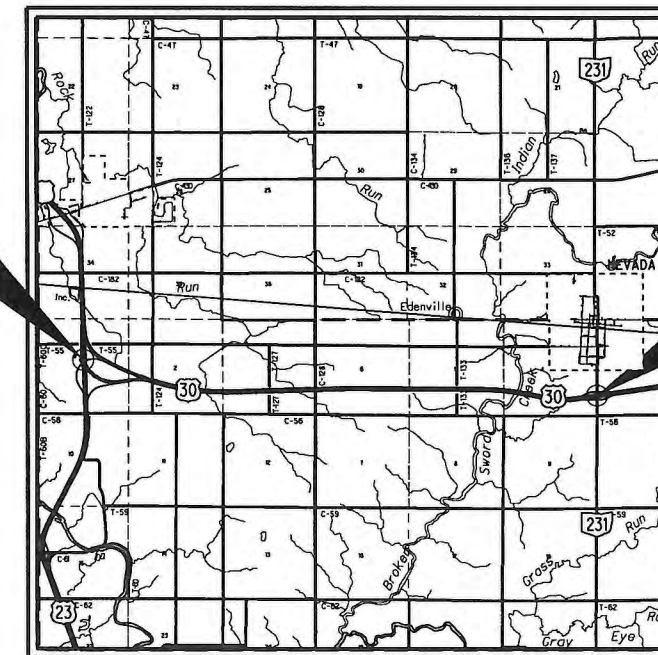


WYA-US 23-7.22
(US 23 INTERCHANGE W/ SR 199)



PAU-US 24-1.00
(US 24 OVER CR 11)
PAU-US 24-1.32
(US 24 OVER RAILROAD)

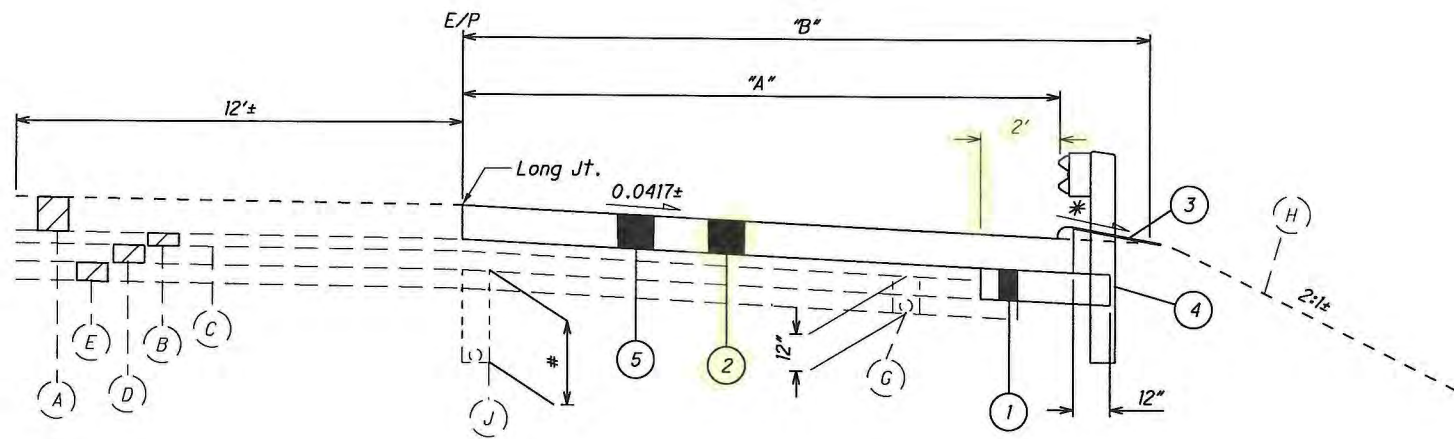
WYA-US 30
SLM 17.73



WYA-US 30-17.73
(US 30 INTERCHANGE W/ US 23)
WYA-US 30-23.55
(US 30 INTERCHANGE W/ SR 231)

WYA-US 30
SLM 23.55

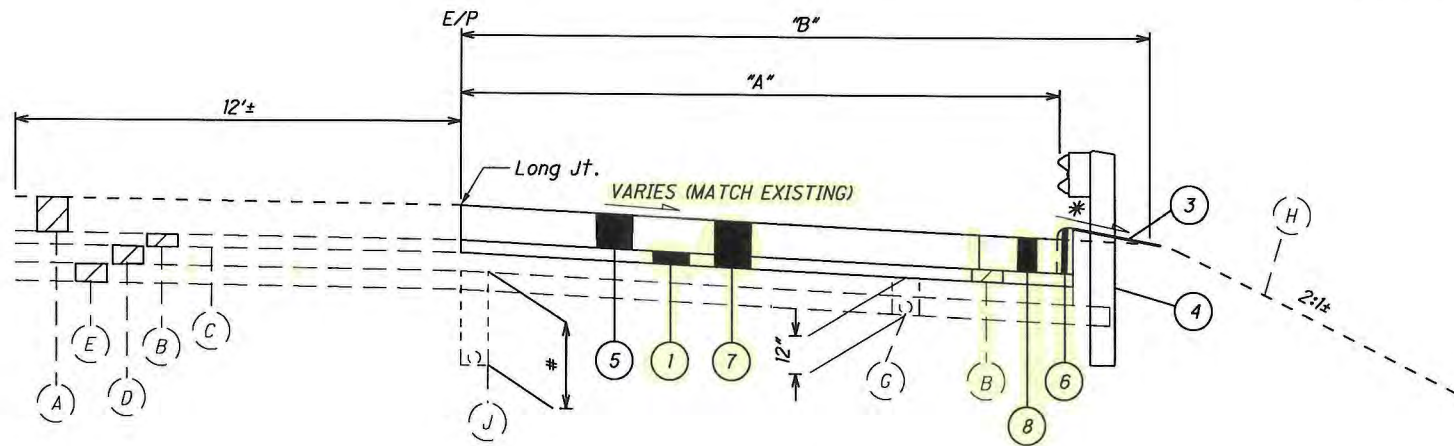
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PROPOSED SECTION 1

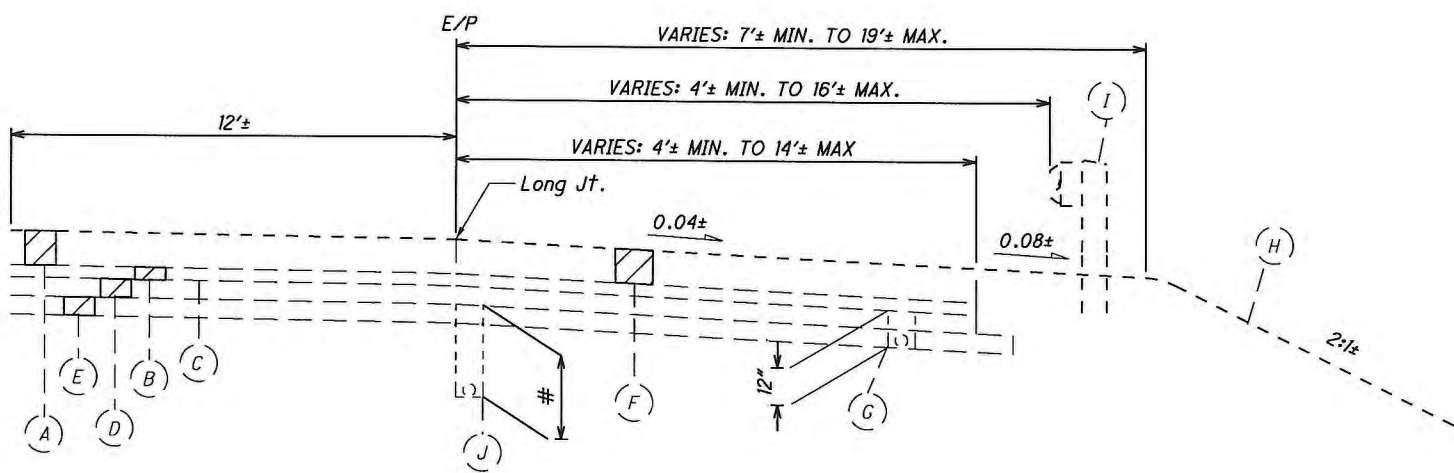
(PAU-24-1.00 SHOWN)

* - 0.1 FT./FT. (MAX.)



PROPOSED SECTION 2

(EB U.S.R. 30 SHOWN)



EXISTING SECTION

(PAU-24-1.00 SHOWN)

- Item 605 Underdrain:
4" Shallow Pipe Underdrain - (30" In Fill)
6" Deep Pipe Underdrain - (50" In Earth Cut)
or as Shown On Plans

LOCATION	PROPOSED SECTION	START	END	DIMENSION	
				A	B
PAU-24-1.00 (RT)	1	STA. 756+92.10	STA. 757+47.10	12'	14.5' TO 15'
PAU-24-1.35 (RT)	1	STA. 771+36.80	STA. 771+96.80	12'	14.5' TO 15'
PAU-24-1.35 (RT)	1	STA. 775+26.40	STA. 775+86.40	12'	14.5' TO 15'
EB U.S.R. 30 (RT)	2	SLM 17.73	SLM 17.79	16'	18.5' TO 19'
EB U.S.R. 30 (LT)	2	SLM 17.95	SLM 18.06	6'	8.5' TO 9'
EB U.S.R. 30 (LT)	2	SLM 18.29	SLM 18.49	4' TO 6'	8.5' TO 9'
RAMP B - WB U.S.R. 30 TO SB U.S.R. 23 (LT)	2	SLM 10.24, RAMP B	SLM 18.34, WB U.S.R. 30	4'	6.5' TO 7'
RAMP M - WB U.S.R. 30 TO S.R. 231 (RT)	2	SLM 10.11, RAMP M	SLM 23.87, WB U.S.R. 30	6' TO 8'	10.5' TO 11'
RAMP N - S.R. 231 TO EB U.S.R. 30 (RT)	2	SLM 0.20, RAMP N	SLM 23.95, EB U.S.R. 30	6' TO 8'	10.5' TO 11'

NOTE:

(RT) - RIGHT SIDE OF TRAVELED LANES FACING DIRECTION OF TRAVEL
(LT) - LEFT SIDE OF TRAVELED LANES FACING DIRECTION OF TRAVEL
SEE PLAN SHEETS FOR MORE DETAILS

EXISTING LEGEND

- (A) ITEM 451 - 11"± REINFORCED CONCRETE PAVEMENT
- (B) ITEM SPECIAL - 4"± ASPHALT TREATED FREE DRAINING BASE (ONLY APPLIES TO US 30)
- (C) ITEM 408 - BITUMINOUS PRIME COAT
- (D) ITEM 304 - 6"± AGGREGATE BASE
- (E) ITEM 206 - LIME STABILIZED SOIL SUBGRADE
- (F) ITEM 452 - 11"± PLAIN CONCRETE PAVEMENT
- (G) ITEM 605 - 4" SHALLOW PIPE UNDERDRAIN
- (H) ITEM 659 - SEEDING AND MULCHING
- (I) ITEM 606 - GUARDRAIL, TYPE 5
- (J) ITEM 605 - 4" SHALLOW PIPE UNDERDRAIN OR 6" DEEP PIPE UNDERDRAIN

PROPOSED LEGEND

- (1) ITEM 304, 4" TO 6" AGGREGATE BASE
- (2) ITEM 202, PAVEMENT REMOVED
- (3) ITEM 209, RESHAPING UNDER GUARDRAIL
- (4) ITEM 606, GUARDRAIL, TYPE MGS WITH LONG POSTS, AS PER PLAN
- (5) ITEM 452, 11" NON-REINFORCED CONCRETE PAVEMENT, CLASS QC1, AS PER PLAN
- (6) ITEM 202, CURB REMOVED
- (7) ITEM 202, PAVEMENT REMOVED, AS PER PLAN (APPLIES ALONG US 30)
- (8) ITEM 609, COMBINATION CURB & GUTTER, TYPE 4 (APPLIES ALONG US 30 RAMPS M & N ONLY)

TYPICAL SECTIONS

D01-EROSION REPAIR-FY23

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.

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.

EXISTING PLANS

EXISTING PLANS ENTITLED PAU-24-0.00 AND WYA/CRA-30-28.009/0.000 (METRIC) MAY BE INSPECTED IN THE ODOT DISTRICT 1 OFFICE IN LIMA.

ENVIRONMENTAL COMMITMENTS

1.) THIS PROJECT WAS DEVELOPED TO BE CONSTRUCTED WITHOUT EQUIPMENT OR MATERIALS BEING PLACED (PERMANENTLY OR TEMPORARILY) BELOW THE ORDINARY HIGH WATER MARK OF FERRARE DITCH AT THE PAU-US24-1.10 LOCATION. NO WORK BELOW THE ORDINARY HIGH WATER MARK OF FERRARE DITCH IS AUTHORIZED FOR THIS PROJECT

2.) IN ORDER TO PROTECT ODOT POLLINATOR HABITAT SITES, THE CONTRACTOR IS NOT ALLOWED TO STAGE EQUIPMENT AND MATERIALS AT THE POLLINATOR PLOT LOCATED WITHIN THE WYA-US30/23 INTERCHANGE.

SEEDING AND MULCHING

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

659, SOIL ANALYSIS TEST	4 EACH
659, TOPSOIL	475 CU. YD.
659, SEEDING AND MULCHING	6,295 SQ. YD.
659, REPAIR SEEDING AND MULCHING	300 SQ. YD
659, LIME	1.27 ACRE
659, COMMERCIAL FERTILIZER	0.87 TON
659, WATER	35 M. GAL.

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

EROSION CONTROL

THE QUANTITY BELOW HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR EROSION CONTROL.

ITEM 832 EROSION CONTROL = 60,000 EACH

PROTECTION OF INCOMPLETE WORK

ANY HAZARD DURING NON-WORKING HOURS SHALL BE ADEQUATELY PROTECTED WITH DRUMS OR BARRIER, OR AS DIRECTED BY THE ENGINEER. FOR ANY SUCH WORK REQUIRED, IT SHALL BE CONSIDERED AS INCIDENTAL AND INCLUDED IN THE UNIT PRICE BID FOR THE APPROPRIATE REPAIR ITEMS.

UTILITIES

THERE ARE NO UNDERGROUND UTILITIES SHOWN ON THIS PLAN. BECAUSE OF THE NATURE OF THE WORK REQUIRED BY THIS PROJECT, THE EXACT LOCATION OF ANY UNDERGROUND UTILITIES THAT EXIST IS UNKNOWN. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION IN THE AREAS WITH UNDERGROUND WATER-LINES, DRAINS, CABLES, SEWERS OR OTHER UTILITIES. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ALL DAMAGE INFLICTED ON UNDERGROUND UTILITIES IN THE EXECUTION OF THIS CONTRACT. SECTIONS 105.07 AND 107.16 OF THE C&MS REQUIRE, AMONG OTHER THINGS, THAT THE CONTRACTOR COOPERATE WITH ALL UTILITIES LOCATED WITHIN THE LIMITS OF THIS CONSTRUCTION PROJECT AND TAKE FULL RESPONSIBILITY FOR THE PROTECTION OF THE UTILITY PROPERTY AND SERVICES.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING ANY UTILITIES THAT MAY BE AFFECTED BY THE WORK PERFORMED FOR THIS CONTRACT. THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER, THE OHIO UTILITY PROTECTION SERVICE (OUPS) AND ALL NON-REGISTERED UTILITY OWNERS AT LEAST TWO (2) WORKING DAYS PRIOR TO COMMENCING ANY CONSTRUCTION OPERATIONS SO THAT THE COMPANIES CAN LOCATE AND MARK THE LOCATION OF THEIR FACILITIES BEFORE ANY EXCAVATION OR POST DRIVING BEGINS.

PERSONAL PROTECTION EQUIPMENT (PPE)

THE CONTRACTOR SHALL FOLLOW ALL REQUIREMENTS OF SECTIONS XXIV AND XXXIV OF THE OHIO DEPARTMENT OF TRANSPORTATION SAFETY & HEALTH STANDARD OPERATING PROCEDURE 220-006(SP) EFFECTIVE: NOVEMBER 1, 2018 (EXCEPT AS AMENDED BELOW) AND ALL SUBSEQUENT UPDATES POSTED AT THE FOLLOWING WEBSITE:

HTTP://WWW.DOT.STATE.OH.US/POLICY/POLICIESANDSOPS/POLICIES/220-006(SP).PDF

AMENDMENTS TO THE REQUIREMENTS OF THIS DOCUMENT ARE:

III. HEAD PROTECTION (HARD HATS)

ALL PERSONS WITHIN THE RIGHT-OF-WAY OF ANY HIGHWAY OR ANY OTHER TYPE OF ROADWAY OR CONSTRUCTION SITE WHO ARE EXPOSED TO EITHER TRAFFIC (VEHICLES USING THE HIGHWAY FOR PURPOSES OF TRAVEL) OR CONSTRUCTION EQUIPMENT WITHIN THE WORK AREA, REGARDLESS OF JOB TYPE, SHALL WEAR APPROPRIATE HEAD PROTECTION. ALL HARD HATS MUST MEET OR EXCEED ANSI Z89.1-2009 TYPE 1 CLASS E-G REQUIREMENTS.

X. HIGH VISIBILITY SAFETY APPAREL

ALL PERSONS WITHIN THE RIGHT-OF-WAY OF ANY HIGHWAY OR ANY OTHER TYPE OF ROADWAY OR CONSTRUCTION SITE WHO ARE EXPOSED TO EITHER TRAFFIC (VEHICLES USING THE HIGHWAY FOR PURPOSES OF TRAVEL) OR CONSTRUCTION EQUIPMENT WITHIN THE WORK AREA, REGARDLESS OF JOB TYPE, SHALL WEAR A HIGH-VISIBILITY SAFETY VEST THAT MEETS THE PERFORMANCE CLASS II OR CLASS III REQUIREMENTS OF THE ANSI/ISEA 107-2015 PUBLICATION ENTITLED "AMERICAN NATIONAL STANDARD FOR HIGH-VISIBILITY SAFETY APPAREL AND ACCESSORIES.

WORKERS MAY WEAR AN ANSI CLASS II OR ANSI CLASS III APPROVED RAIN SUIT, JACKET OR OTHER APPAREL WITHOUT A SAFETY VEST OVER IT.

COORDINATION OF CONTRACTORS

SINCE THE MAINTENANCE OF TRAFFIC AND WORK ON THIS PROJECT MAY OVERLAP OTHER PROJECTS, IT IS ESSENTIAL THAT EACH CONTRACTOR CONDUCT THEIR WORK AND COOPERATE WITH EACH OTHER IN SUCH A MANNER AS NOT TO HINDER THE PROGRESS OR COMPLETION OF THE WORK BEING PERFORMED BY THE OTHER CONTRACTOR.

ITEM 606 - MGS BRIDGE TERMINAL ASSEMBLY, TYPE 2, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF ITEM 606, THIS ITEM REQUIRES THE USE OF STEEL POSTS. STEEL POSTS SHALL BE PROVIDED AS SPECIFIED ON STANDARD CONSTRUCTION DRAWING MGS-3.2. ALL COSTS ASSOCIATED WITH PROVIDING AND INSTALLING STEEL POSTS SHALL BE INCLUDED IN THE UNIT BID FOR THE FOLLOWING ITEM:

ITEM 606, MGS BRIDGE TERMINAL ASSEMBLY, TYPE 2, AS PER PLAN

GUARDRAIL (GENERAL PROVISIONS)

ALL MATERIAL EXCAVATED FOR POST HOLES OR FOUNDATION TUBES SHALL BE REMOVED AND PROPERLY DISPOSED OF BY THE CONTRACTOR IN ACCORDANCE WITH 202.02 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS AND THE AREA RESTORED TO A NEAT CONDITION SATISFACTORY TO THE ENGINEER. THE COST OF THIS WORK IS TO BE INCLUDED IN THE APPLICABLE GUARDRAIL BID ITEM. THE LOCATIONS OF THE GUARDRAIL LISTED IN THESE PLANS ARE SUBJECT TO ADJUSTMENTS TO ASSURE THAT THE PLANNED INSTALLATION WILL AFFORD MAXIMUM PROTECTION FOR TRAFFIC.

CONNECTION BETWEEN EXISTING AND PROPOSED GUARDRAIL

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

ITEM 202 - GUARDRAIL REMOVED FOR REUSE, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF 202, THIS ITEM INCLUDES THE ADDITION OF TYPE T ANCHOR ASSEMBLIES (TYPE 5) TO THE ENDS OF REMAINING PORTIONS OF EXISTING GUARDRAIL NOT BEING REMOVED WITH THIS ITEM. THE PLACEMENT OF THE TYPE T, AA'S SHALL BE AT THE TRAILING ENDS OF THE REMAINING GUARDRAIL OR OPEN ENDS OF TEMPORARY REMOVALS OF MID SECTIONS OF REMAINING GUARDRAIL. IF THE ENTIRE SECTION OF REMAINING GUARDRAIL WILL BE BEHIND PCB, A TYPE T, AA IS NOT REQUIRED.

THE TYPE T, AA SHALL BE INSTALLED IN ACCORDANCE WITH 606 OF THE C&MS AND PER PLAN INSERT SHEETS. THE DETERMINATION OF WHETHER A TYPE T, AA IS NEEDED OR NOT NEEDED SHALL BE APPROVED BY THE ENGINEER. PAYMENT FOR THE ABOVE SHALL BE INCLUDED WITH THE UNIT PRICE FOR ITEM 202 GUARDRAIL, APP.

ITEM 202 - GUARDRAIL REMOVED, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF 202, THIS ITEM INCLUDES THE REMOVAL OF ANY ANCHOR ASSEMBLIES, BRIDGE TERMINAL ASSEMBLIES, AND ANY CONCRETE ENCASED POSTS. THE CONCRETE AND ALL GUARDRAIL COMPONENTS SHALL BE DISPOSED OF IN ACCORDANCE WITH C&MS 202.

ALL HOLES REMAINING AFTER THE REMOVAL OF GUARDRAIL POSTS AND THE REMOVAL OF ANY CONCRETE ENCASED POSTS SHALL BE FILLED IN ACCORDANCE WITH 202.02 OF THE C&MS. FILL MATERIAL CONTAINING SOD SHALL NOT BE USED. FILL MATERIAL MUST MEET THE SPECIFICATIONS OF C&MS 703.11 AND MUST MEET THE APPROVAL OF THE ENGINEER PRIOR TO ITS USE. ALL HOLES SHALL BE FILLED AND THOROUGHLY COMPACTED TO THE SATISFACTION OF THE ENGINEER PRIOR TO THE CONTRACTOR PERFORMING THE RESHAPING UNDER GUARDRAIL WORK. PAYMENT FOR THE ABOVE SHALL BE INCLUDED WITH THE UNIT PRICE FOR ITEM 202 GUARDRAIL, AS PER PLAN.

ITEM 606 - GUARDRAIL REBUILT, TYPE 5, AS PER PLAN

THE CONTRACTOR SHALL REMOVED THE EXISTING 6" x 8" POSTS AND BLOCKOUTS AND ANY CONCRETE ANCHORING SURROUNDING THE POSTS AND REPLACE WITH A NEW W6x15 STEEL POST AND NEW BLOCKOUT AND IF NEEDED, CONCRETE. THE STEEL POSTS SHALL BE SET IN 4" MINIMUM CONCRETE ENCASEMENT AT A MINIMUM DEPTH OF 3'-5". THE NEW BLOCKOUT SHALL BE COMPOSITE OR POLYMER AND SHALL REPLACE THE EXISTING. THE CONTRACTOR SHALL ALSO PROVIDE NEW HARDWARE TO REATTACH THE GUARDRAIL TO THE NEW POST AND BLOCKOUT.

ALL MATERIALS, LABOR, EQUIPMENT & INCIDENTALS REQUIRED TO COMPLETE THE POST AND BLOCKOUT REPLACEMENT PER THE ABOVE NOTE SHALL BE INCLUDED IN THE UNIT BID PER EACH FOR FOR ITEM 606 GUARDRAIL REBUILT, AS PER PLAN.

ITEM 209- RESHAPING UNDER GUARDRAIL

THE CONTRACTOR SHALL RE-SHAPE THE SHOULDERS TO ENSURE A SMOOTH SURFACE FREE OF IRREGULARITIES AT LOCATIONS WHERE EXISTING GUARDRAIL IS REMOVED OR WHERE NEW GUARDRAIL IS TO BE ERECTED. THE REMOVAL AND DISPOSAL OF THE EXCESS EXCAVATED MATERIAL RESULTING FROM THIS OPERATION SHALL BE PROPERLY DISPOSED OF BY THE CONTRACTOR AS DESCRIBED IN 209 OF THE C&MS. THE CONTRACTOR SHALL NOT PERFORM THIS WORK UNTIL ALL POST HOLES FROM THE EXISTING GUARDRAIL HAVE BEEN FILLED AND COMPACTED TO THE SATISFACTION OF THE ENGINEER. THIS WORK SHALL BE INCLUDED IN THE UNIT BID PRICE PER MILE FOR ITEM 209 RESHAPING UNDER GUARDRAIL.

ITEM 606 - GUARDRAIL, TYPE MGS WITH LONG POSTS, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF ITEM 606, THIS ITEM REQUIRES STEEL POSTS AND COMPOSITE OR POLYMER ALTERNATIVE BLOCKOUTS. THE BLOCKOUTS SHALL BE FROM THE APPROVED PRODUCTS LIST THAT IS MAINTAINED BY THE OFFICE OF ROADWAY ENGINEERING AND INSTALLED PER CMS 606 AND ALL PERTINENT STANDARD DRAWINGS AND PLAN INSERT SHEETS. ALL COSTS ASSOCIATED WITH PROVIDING AND INSTALLING STEEL POSTS AND APPROVED ALTERNATIVE MGS BLOCKOUTS SHALL BE INCLUDED IN THE UNIT BIDS FOR THE FOLLOWING ITEMS:

ITEM 606, GUARDRAIL, TYPE MGS, WITH LONG POSTS AS PER PLAN

ITEM 606 - GUARDRAIL, TYPE 5, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF ITEM 606, THIS ITEM REQUIRES STEEL POSTS AND COMPOSITE OR POLYMER BLOCKOUTS. ALL COSTS ASSOCIATED WITH PROVIDING AND INSTALLING STEEL POSTS AND COMPOSITE OR POLYMER BLOCKOUTS SHALL BE INCLUDED IN THE UNIT BID FOR THE FOLLOWING ITEM:

ITEM 606, GUARDRAIL, TYPE 5, AS PER PLAN

ITEM 606 - MGS BRIDGE TERMINAL ASSEMBLY, TYPE 1, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF ITEM 606, THIS ITEM REQUIRES THE USE OF STEEL POSTS. STEEL POSTS SHALL BE PROVIDED AS SPECIFIED ON STANDARD CONSTRUCTION DRAWING MGS-3.1. ALL COSTS ASSOCIATED WITH PROVIDING AND INSTALLING STEEL POSTS SHALL BE INCLUDED IN THE UNIT BID FOR THE FOLLOWING ITEM:

ITEM 606, MGS BRIDGE TERMINAL ASSEMBLY, TYPE 1, AS PER PLAN

ITEM 606 - ANCHOR ASSEMBLY, MGS TYPE E (MASH 2016)

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, MGS 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.

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EMBANKMENT FOR TYPE E'S

AN ESTIMATED QUANTITY OF EMBANKMENT IS PROVIDED IN THE SUBSUMMARY. THE EMBANKMENT QUANTITY IS PROVIDED FOR ACHIEVING PROPER SHOULDER GRADING FOR ANCHOR ASSEMBLY TYPE E'S PER STANDARD CONSTRUCTION DRAWING MGS-5.3 AND AS DIRECTED BY THE ENGINEER.

ITEM 452 - 9" NON-REINFORCED CONCRETE PAVEMENT, CLASS QC 1P, AS PER PLAN

IN ADDITION TO THE REQUIRMENTS OF ITEM 452, THIS ITEM INCLUDES THE SEALING OF THE JOINT BETWEEN THE EXISTING ASPHALT PAVEMENT AND THE PROPOSED CONCRETE PAVEMENT. THE JOINT SHALL BE SEALED BY APPLYING A 2 TO 4 INCH WIDE STRIP OF APPROVED 704.04 MATRIAL OR 702.01 APPROVED PG BINDER.

PAVEMENT WORK FOR CONCRETE BARRIER (HAN-SR 12 & WYA-US 23)

THE FOLLOWING ITEMS AND ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY IN ORDER TO COMPLETE THE PAVEMENT WORK NEAR THE PROPOSED CONCRETE BARRIER, PER THE DETAIL ON SHEET 23:

ITEM 252 - FULL DEPTH PAVEMENT SAWING (9") 79'+79'+92'+79' = 329 FT	329 FT
ITEM 452 - 9" NON-REINFORCED CONCRETE PAVEMENT, CLASS QC 1P, APP (49' + 49' + 62' + 49') x 2.0' = 46.4 SY (30' + 30' + 30' + 30') x 1.5' AVG. = 20.0 SY	66 SY
ITEM 204 - SUBGRADE COMPACTION 209' x 4.17' = 96.8 SY 120' x 3' AVG. = 40.0 SY	137 SY
ITEM 304 - AGGREGATE BASE 209' x 4.17' x 0.5' = 16.1 CY 120' x 2' AVG. x 0.5' = 4.4 CY	21 CY
ITEM 203 - EXCAVATION 209' x 4.17' x 1.25' = 40.3 CY 120' x 3' AVG. x 1.25' = 16.7 CY	57 CY

EXISTING SUBSURFACE DRAINAGE

PROVIDE UNOBSTRUCTED OUTLETS FOR ALL EXISTING UNDERDRAINS OR AGGREGATE DRAINS ENCOUNTERED DURING CONSTRUCTION.

PROVIDE AN OUTLET PER STANDARD CONSTRUCTION DRAWING DM-1.1 FOR ALL UNDERDRAINS THAT OUTLET TO A SLOPE.

UNDERDRAINS THAT CAN BE CONNECTED TO THE NEW OR EXISTING UNDERDRAINS AT THE END OF THE PROJECT LIMITS AS WELL AS ALL NECESSARY BENDS OR BRANCHES REQUIRED FOR CONNECTION ARE INCLUDED IN THE BASIS OF PAYMENT FOR UNCLASSIFIED PIPE UNDERDRAINS.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR THE WORK NOTED ABOVE:

601, TIED CONCRETE BLOCK MAT, TYPE 1	10 SQ. YD.
605, AGGREGATE DRAINS	50 FT.
611, 12" CONDUIT, TYPE F	50 FT.
611, PRECAST REINFORCED CONCRETE OUTLET	5 EACH
605, 4" UNCLASSIFIED PIPE UNDERDRAINS	50 FT.

DRAINAGE STRUCTURES AND PIPES

THE CONTRACTOR SHALL LOCATE AND AVOID ALL UNDERGROUND DRAINAGE STRUCTURES AND PIPES NOT ASSOCIATED WITH A PARTICULAR UTILITY COMPANY. IF ANY CONFLICTS OCCUR THE ENGINEER SHALL DETERMINE WHETHER THE POSITION OF THE GUARDRAIL CAN BE ADJUSTED TO AVOID THE STRUCTURE OR PIPE. PER STANDARD CONSTRUCTION DRAWING MGS-1.1, DO NOT DRIVE POSTS WHEN THERE IS LESS THAN 4'-3" OF COVER.

REVIEW OF DRAINAGE FACILITIES

BEFORE ANY WORK IS STARTED ON THE PROJECT AND AGAIN BEFORE FINAL ACCEPTANCE BY THE STATE, REPRESENTATIVES OF THE STATE AND THE CONTRACTOR, ALONG WITH LOCAL REPRESENTATIVES, SHALL MAKE AN INSPECTION OF ALL EXISTING SEWERS WHICH ARE TO REMAIN IN SERVICE AND WHICH MAY BE AFFECTED BY THE WORK. THE CONDITION OF THE EXISTING CONDUITS AND THEIR APPURTENANCE SHALL BE DETERMINED FROM FIELD OBSERVATIONS. RECORDS OF THE INSPECTION SHALL BE KEPT IN WRITING BY THE STATE.

ALL NEW CONDUITS, INLETS, CATCH BASINS, AND MANHOLES CONSTRUCTED AS A PART OF THE PROJECT SHALL BE FREE OF ALL FOREIGN MATTER AND IN A CLEAN CONDITION BEFORE THE PROJECT WILL BE ACCEPTED BY THE STATE.

ALL EXISTING SEWERS INSPECTED INITIALLY BY THE ABOVE MENTIONED PARTIES SHALL BE MAINTAINED AND LEFT IN A CONDITION REASONABLY COMPARABLE TO THAT DETERMINED BY THE ORIGINAL INSPECTION. ANY CHANGE IN THE CONDITION RESULTING FROM THE CONTRACTOR'S OPERATIONS SHALL BE CORRECTED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER.

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

ITEM 605 - AGGREGATE DRAINS

AGGREGATE DRAINS SHALL BE PLACED AT 50 FOOT INTERVALS ON EACH SIDE OF NORMAL CROWNED SECTIONS, STAGGERED SO THAT EACH DRAIN IS 25 FEET FROM THE ADJACENT DRAIN ON THE OPPOSITE SIDE, AND AT 25 FOOT INTERVALS ON THE LOW SIDE ONLY OF SUPERELEVATED SECTIONS. AN AGGREGATE DRAIN SHALL BE PLACED AT THE LOW POINT OF EACH SAG VERTICAL CURVE.

PIPE CONNECTIONS TO CORRUGATED METAL STRUCTURES

CONNECTIONS OF PROPOSED LONGITUDINAL DRAINAGE TO CORRUGATED METAL STRUCTURES SHALL BE MADE BY MEANS OF A SHOP FABRICATED OR FIELD WELDED STUB ON THE STRUCTURE. THE STUB SHALL MEET THE REQUIREMENTS OF 707 AND HAVE A MINIMUM LENGTH OF 2 FEET AND A MINIMUM WALL THICKNESS OF 0.064 INCHES.

THE LOCATION AND ELEVATION OF THE STUB ARE TO BE CONSIDERED APPROXIMATE AND MAY BE ADJUSTED BY THE ENGINEER TO AVOID CUTTING THROUGH JOINTS IN THE STRUCTURE.

THE FIELD WELDED JOINT, IF USED, SHALL BE THOROUGHLY CLEANED AND REGALVANIZED OR OTHERWISE SUITABLY REPAIRED. WELDING SHALL MEET THE REQUIREMENTS OF 513.21.

A MASONRY COLLAR, AS PER STANDARD DRAWING DM-1.1, WILL BE REQUIRED TO CONNECT THE LONGITUDINAL DRAINAGE TO THE STUB, WHEN PIPE OTHER THAN CORRUGATED METAL IS PROVIDED FOR THE LONGITUDINAL DRAINAGE.

PAYMENT FOR CUTTING INTO THE STRUCTURE AND PROVIDING THE CONNECTION DESCRIBED, SHALL BE INCLUDED IN THE CONTRACT PRICE FOR ITEM 611.

ITEM 606 - ANCHOR ASSEMBLY, MGS 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, MGS 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.

ITEM 611, CATCH BASIN NO. 3A, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF CMS 611 AND THESE PLANS, THE CONTRACTOR SHALL PROVIDE 4" OR 6" CONDUIT, TYPE F, FOR OUTLETTING EXISTING UNDERDRAINS INTO THE PROPOSED CATCH BASINS AS NEEDED AND DIRECTED BY THE PROEJCT ENGINEER.

THE 4"/6" CONDUIT, TYPE F UNDERDRAIN OUTLETS SHALL BE INSTALLED PER CMS 605 AND 611.

ALSO, VOIDS AROUND CATCH BASINS SHALL BE BACKFILLED WITH ITEM 613, LOW STRENGTH MORTAR BACKFILL. AN ITEM 613, LOW STRENGTH MORTAR BACKFILL AND QUANTITY HAVE BEEN PROVIDED IN THE PLANS FOR THIS WORK.

THE COST FOR ALL LABOR, MATERIALS AND EQUIPMENT NEEDED TO CONSTRUCT AND CONNECT THE UNDERDRAIN OUTLETS INTO THE CATCH BASINS SHALL BE INCLUDED IN THE CONTRACT UNIT PRCE FOR EACH, ITEM 611, CATCH BASIN NO. 3A, AS PER PLAN.

ITEM 202, PAVEMENT REMOVED, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF ITEM 202, THIS ITEM INCLUDES THE REMOVAL OF EXISTING ASPHALT FREE DRAINING BASE.

THE COST FOR ALL LABOR, MATERIALS AND EQUIPMENT NEEDED TO REMOVE THE EXISTING ASPHALT FREE DRAINING BASE SHALL BE INCLUDED IN THE UNIT PRICE FOR SY, ITEM 202, PAVEMENT REMOVED, AS PER PLAN.

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ITEM 255 - FULL DEPTH PAVEMENT REMOVAL AND RIGID REPLACEMENT, CLASS QC1, AS PER PLAN

THE CONCRETE MIX DESIGN FOR THE MATERIAL FOR THIS ITEM SHALL MEET THE ROADWAY/RAMP CLOSURE RESTRICTIONS. THE CONCRETE MIX DESIGN FOR THE MATERIAL FOR THIS NOTED IN THE PLANS. THE CONTRACTOR SHALL PROVIDE A QC 1P HIGH-EARLY STRENGTH CONCRETE MIX DESIGN OR OTHER EQUAL CONCRETE MIX DESIGN TO PROVIDE STRENGTH AND CURE TIMES TO MEET THE PERMITTED CLOSURE DURATIONS. ADDITIONALLY, THE CONTRACTOR'S PROPOSED CONCRETE MIX DESIGN SHALL MEET THE REQUIREMENTS OF CONSTRUCTION MATERIALS SPECIFICATIONS, SECTION 499, SUPPLEMENTAL 1126. AND THE APPROVAL OF THE PROJECT ENGINEER. THIS MATERIAL SHALL BE FOR RAMP REPAIRS.

IN ADDITION TO THE REQUIREMENTS OF ITEM 255, THIS ITEM INCLUDES THE REMOVAL OF EXISTING ASPHALT FREE DRAINING BASE.

THE COST FOR ALL LABOR, MATERIALS AND EQUIPMENT NEEDED TO REMOVE THE EXISTING ASPHALT FREE DRAINING BASE AND NOTED CONCRETE MIX SHALL BE INCLUDED IN THE UNIT PRICE FOR SY, ITEM 255, FULL DEPTH PAVEMENT REMOVAL AND RIGID REPLACEMENT, CLASS QC1, AS PER PLAN

ITEM 452 - 11" NON-REINFORCED CONCRETE PAVEMENT, AS PER PLAN

THE CONCRETE MIX DESIGN FOR THE MATERIAL FOR THIS ITEM SHALL MEET THE ROADWAY/RAMP CLOSURE RESTRICTIONS NOTED IN THE PLANS. THE CONTRACTOR SHALL PROVIDE A QC 1P HIGH-EARLY STRENGTH CONCRETE MIX DESIGN TO PROVIDE STRENGTH AND CURE TIMES TO MEET THE PERMITTED CLOSURE DURATIONS. ADDITIONALLY, THE CONTRACTOR'S PROPOSED MIX DESIGN SHALL MEET THE REQUIREMENTS OF CONSTRUCTION AND MATERIALS SPECIFICATIONS (CMS), SECTION 499, SUPPLEMENTAL SPECIFICATION 1126, AND THE APPROVAL OF THE PROJECT ENGINEER.

IN ADDITION TO THE REQUIREMENTS OF ITEM 452, THIS ITEM INCLUDES THE INSTALLATION OF AN INTEGRAL TYPE 4-A CONCRETE CURB AS REQUIRED IN THE PLANS. THE TYPE 4-A CONCRETE CURB SHALL BE INSTALLED AS DETAILED IN STANDARD CONSTRUCTION DRAWING BP-5.1 AND PER CMS 609.

THE COST FOR ALL LABOR, MATERIALS AND EQUIPMENT NEEDED TO INCLUDE THE INTEGRAL CURB AND NOTED CONCRETE MIX SHALL BE INCLUDED IN THE UNIT PRICE FOR SY, ITEM 452, 11" NON-REINFORCED CONCRETE PAVEMENT, AS PER PLAN.

ITEM 252 - FULL DEPTH PAVEMENT SAWING (11" THICK)

THE NOTED ITEM AND ESTIMATED QUANTITIES HAVE BEEN PROVIDED IN THE PLANS TO COMPLETE CONCRETE PAVEMENT REMOVALS ALONG SECTIONS OF US 24 AND THE RAMPS AT THE INTERCHANGE OF SR 231 AND US 30 WHERE THERE IS NO ASPHALT TREATED FREE DRAINING BASE.

ITEM 202, CATCH BASIN REMOVED, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF CMS 202 AND THESE PLANS, THE INTENT IS TO REPLACE THE REMOVED CATCH BASINS WITH PROPOSED CATCH BASINS WITH THE SAME DEPTH AND FLOW LINE ELEVATIONS. PRIOR TO REMOVAL OF THE EXISTING CATCH BASINS, THE CONTRACTOR SHALL COLLECT THE EXISTING DEPTHS AND FLOW LINE ELEVATIONS. THE CONTRACTOR SHALL CONFIRM THE PROPOSED REPLACEMENT CATCH BASINS MATCH THE COLLECTED EXISTING DEPTHS AND FLOW LINE ELEVATIONS.

THE COST FOR ALL LABOR, MATERIALS AND EQUIPMENT NEEDED TO COLLECT AND COORDINATE THE EXISTING DATA SHALL BE INCLUDED IN THE CONTRACT UNIT PRCE FOR EACH, ITEM 202, CATCH BASIN REMOVED, AS PER PLAN.

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ITEM 614 - MAINTAINING TRAFFIC, AS PER PLAN

THE CONTRACTOR SHALL MAINTAIN AT LEAST ONE ELEVEN (11) FOOT LANE OF TRAFFIC IN EACH DIRECTION AT ALL TIMES ON MAINLINE S.R. 15, U.S. 23, U.S. 24, AND U.S. 30 AND ONE TEN (10) FOOT LANE OF TRAFFIC AT ALL TIMES ON ALL RAMP...

LENGTH AND DURATION OF LANE CLOSURES AND RESTRICTIONS ON S.R. 15, U.S. 23, U.S. 24, U.S. 30 AND ALL RAMP SHALL BE AT THE APPROVAL OF THE ENGINEER. IT IS THE INTENT TO MINIMIZE THE IMPACT TO THE TRAVELING PUBLIC...

AS DETAILED IN THESE PLANS, CLOSURES ARE ONLY PERMITTED ALONG THE RAMP FOR U.S. 30 FOR A PERIOD NOT TO EXCEED FOURTEEN (14) CONSECUTIVE CALENDAR DAYS DURING WHICH A RAMP'S TRAFFIC MAY BE DETOURED FOR INSTALLATION OF CURB AND GUTTER, CATCH BASINS, TIED CONCRETE BLOCK MATTING/FLUMES AND/OR FULL DEPTH PAVEMENT REMOVAL AND REPLACEMENT OPERATIONS ARE PERFORMED...

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ERECTING AND MAINTAINING SAFE AND EFFECTIVE TRAFFIC CONTROL 24 HOURS A DAY FOR THE DURATION OF THIS PROJECT. ALL TRAFFIC CONTROL DEVICES SHALL BE FURNISHED, ERECTED, MAINTAINED, AND REMOVED BY THE CONTRACTOR.

THE CONTRACTOR SHALL DESIGNATE TO THE ENGINEER, A PERSON RESPONSIBLE FOR MAINTENANCE OF TRAFFIC CONTROL DURING NON-WORK HOURS WHO SHALL BE AVAILABLE ON SITE WITHIN THIRTY (30) MINUTES AFTER NOTIFICATION.

UNLESS PHYSICALLY IMPOSSIBLE, ALL CONSTRUCTION EQUIPMENT SHALL EXIT ALL WORK ZONES FROM THE DOWNSTREAM END OF THE WORK ZONE OR BY INTERCHANGE RAMP.

UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR BE PERMITTED TO DIRECTLY TRANSPORT OR OPERATE EQUIPMENT ACROSS THE OPEN LANES OF S.R. 15, U.S. 23, U.S. 24 AND U.S. 30. THE CONTRACTOR WILL NOT BE PERMITTED TO UTILIZE THE EMERGENCY TURNAROUNDS AS PART OF THE HAUL ROUTE.

ALL WORK ZONE PAVEMENT MARKINGS REQUIRED BY THE STANDARD CONSTRUCTION DRAWINGS AND CMS 614 FOR ESTABLISHING AND MAINTAINING TRAFFIC THROUGH WORK ZONES SHALL BE INCLUDED WITH THIS ITEM. THE CONTRACTOR SHALL USE 740.06 TYPE I OR II PREFORMED MATERIAL ONLY.

ADVISORY SPEED (W13-IP) PLAQUES SHALL BE USED FOR LANE CLOSURES ON THE SECTIONS OF S.R. 15, U.S. 24, AND U.S. 30. THE ADVISORY SPEED PLAQUES SHALL NOTE AN ADVISORY SPEED 10 MILES LESS THAN THE LEGAL SPEED, AND THEY SHALL BE PLACED AS PER THE APPLICABLE (MT) STANDARD CONSTRUCTION DRAWING.

ITEM 614 - MAINTAINING TRAFFIC, AS PER PLAN (CONTINUED)

ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH THE ABOVE, CMS 614 AND OTHER APPLICABLE PORTIONS OF THE SPECIFICATIONS, AS WELL AS THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES AND ALL APPLICABLE STANDARD CONSTRUCTION DRAWINGS.

NOTIFICATION OF TRAFFIC RESTRICTIONS

THROUGHOUT THE DURATION OF THE PROJECT, THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER IN WRITING OF ALL TRAFFIC RESTRICTIONS AND UPCOMING MAINTENANCE OF TRAFFIC CHANGES. THE CONTRACTOR SHALL ENSURE THE WRITTEN NOTIFICATION IS SUBMITTED IN A TIMELY MANNER TO ALLOW THE PROJECT ENGINEER TO MEET THE REQUIRED TIME FRAMES SET FORTH IN THE TABLE BELOW...

INFORMATION SHOULD INCLUDE, BUT IS NOT LIMITED TO, ALL CONSTRUCTION ACTIVITIES THAT IMPACT OR INTERFERE WITH TRAFFIC AND SHALL LIST THE SPECIFIC LOCATION, TYPE OF WORK, ROAD STATUS, DATE AND TIME OF RESTRICTION, DURATION OF RESTRICTION, NUMBER OF LANES MAINTAINED, NUMBER OF LANES CLOSED, MINIMUM VERTICAL CLEARANCE, MINIMUM WIDTH OF DRIVABLE PAVEMENT, DETOUR ROUTES, IF APPLICABLE, AND ANY OTHER INFORMATION REQUESTED BY THE PROJECT ENGINEER.

Table with 3 columns: ITEM, DURATION OF CLOSURE, NOTICE DUE TO PERMITS & PIO. Rows include RAMP & ROAD CLOSURES, LANE CLOSURES AND RESTRICTIONS, and START OF CONSTRUCTION & TRAFFIC PATTERN CHANGES.

ANY UNFORESEEN CONDITIONS NOT SPECIFIED IN THE PLANS REQUIRING TRAFFIC RESTRICTIONS SHALL ALSO BE REPORTED TO THE PROJECT ENGINEER USING THE NOTIFICATION TIME TABLE.

ITEM 614 - LAW ENFORCEMENT OFFICER (WITH PATROL CAR) FOR ASSISTANCE DURING CONSTRUCTION OPERATIONS

USE OF LAW ENFORCEMENT OFFICERS (LEOS) BY CONTRACTORS OTHER THAN THE USES SPECIFIED BELOW WILL NOT BE PERMITTED AT PROJECT COST. LEOS SHOULD NOT BE USED WHERE THE OMTCD INTENDS THAT FLAGGERS BE USED.

IN ADDITION TO THE REQUIREMENT OF C&MS 614 AND THE OMTCD, A UNIFORMED LEO WITH AN OFFICIAL PATROL CAR (CAR WITH TOP-MOUNTED EMERGENCY FLASHING LIGHTS AND COMPLETE MARKINGS OF THE APPROPRIATE LAW ENFORCEMENT AGENCY) SHOULD BE PROVIDED FOR THE FOLLOWING TRAFFIC CONTROL TASKS AS APPROVED BY THE ENGINEER:

FOR LANE CLOSURES: DURING INITIAL SET-UP PERIODS, TEAR DOWN PERIODS, SUBSTANTIAL SHIFTS OF A CLOSURE POINT OR WHEN NEW LANE CLOSURE ARRANGEMENTS ARE INITIATED FOR LONG-TERM LANE CLOSURES/SHIFTS...

LEOS SHOULD NOT FORGO THEIR TRAFFIC CONTROL RESPONSIBILITIES TO APPREHEND MOTORISTS FOR ROUTINE TRAFFIC VIOLATIONS. HOWEVER, IF A MOTORIST'S ACTIONS ARE CONSIDERED TO BE RECKLESS, THEN PURSUIT OF THE MOTORIST IS APPROPRIATE.

THE LEOS WORK AT THE DIRECTION OF THE CONTRACTOR. THE CONTRACTOR IS RESPONSIBLE FOR SECURING THE SERVICES OF THE LEOS WITH THE APPROPRIATE AGENCIES AND COMMUNICATING THE INTENTIONS OF THE PLANS WITH RESPECT TO DUTIES OF THE LEOS.

THE LEO SHALL REPORT IN TO THE CONTRACTOR PRIOR TO THE START OF THE SHIFT, IN ORDER TO RECEIVE INSTRUCTIONS REGARDING SPECIFIC WORK ASSIGNMENTS DURING HIS/HER SHIFT. THE LEO IS EXPECTED TO STAY AT THE PROJECT SITE FOR THE ENTIRE DURATION OF HIS/HER SHIFT.

LEOS (WITH PATROL CAR) REQUIRED BY THE TRAFFIC MAINTENANCE TASKS ABOVE SHALL BE PAID FOR ON A UNIT PRICE (HOURLY) BASIS UNDER ITEM 614, LAW ENFORCEMENT OFFICER (WITH PATROL CAR) FOR ASSISTANCE. THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY.

ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE 160 HOURS

THE HOURS PAID SHALL INCLUDE ANY MINIMUM SHOW-UP TIME REQUIRED BY THE LAW ENFORCEMENT AGENCY INVOLVED.

ANY ADDITIONAL COSTS (ADMINISTRATIVE OR OTHERWISE) INCURRED BY THE CONTRACTOR TO OBTAIN THE SERVICES OF AN LEO ARE INCLUDED WITH THE BID UNIT PRICE FOR ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE.

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MAINTENANCE OF TRAFFIC GENERAL NOTES

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ITEM 614, REPLACEMENT DRUM

DRUMS FURNISHED BY THE CONTRACTOR IN ACCORDANCE WITH THE REQUIREMENTS OF THE PLANS, SPECIFICATIONS AND PROPOSAL WHICH BECOME DAMAGED BY TRAFFIC FOR REASONS BEYOND THE CONTROL OF THE CONTRACTOR SHALL BE REPLACED IN KIND WHEN ORDERED BY THE ENGINEER. REPLACEMENT DRUMS SHALL BE NEW.

PAYMENT FOR THE NEW DRUMS SHALL BE MADE AT THE CONTRACT PRICE PER EACH FOR ITEM 614, REPLACEMENT DRUM, AND SHALL INCLUDE THE COST OF REMOVING AND DISPOSING OF THE DAMAGED DRUM, AND PROVIDING AND MAINTAINING THE REPLACEMENT DRUM IN ACCORDANCE WITH THE CONTRACT REQUIREMENTS FOR THE ORIGINAL DRUM.

AN ESTIMATED QUANTITY OF 5 EACH HAS BEEN PROVIDED IN THE GENERAL SUMMARY.

ITEM 614, WORK ZONE IMPACT ATTENUATOR FOR 24" WIDE HAZARDS UNIDIRECTIONAL

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING A NON-GATING IMPACT ATTENUATOR. FURNISH AN IMPACT ATTENUATOR FROM THE OFFICE OF ROADWAY ENGINEERING'S APPROVED LIST FOR WORK ZONE IMPACT ATTENUATORS, FROM THE ROADWAY STANDARDS WEB PAGE FOR ROADWAY STANDARDS WEB PAGE.

INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

THE CONTRACTOR SHALL REPAIR OR REPLACE A DAMAGED UNIT WITHIN 24 HOURS OF A DAMAGING IMPACT.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT AND MAINTAIN A COMPLETE AND FUNCTIONAL IMPACT ATTENUATOR SYSTEM, INCLUDING ALL RELATED BACKUPS, TRANSITIONS, LEVELING PADS, HARDWARE AND GRADING, NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER.

AN ESTIMATED QUANTITY OF 5 EACH HAS BEEN PROVIDED IN THE GENERAL SUMMARY.

DELINEATION OF PORTABLE AND PERMANENT BARRIER

BARRIER REFLECTORS AND OBJECT MARKERS SHALL BE INSTALLED ON ALL PORTABLE BARRIER (PB) USED FOR TRAFFIC CONTROL AND ON PERMANENT CONCRETE BARRIER (INCLUDING BRIDGE PARAPETS) LOCATED WITHIN 5 FEET OF THE EDGE OF THE ADJACENT TRAVEL LANE.

BARRIER REFLECTORS SHALL CONFORM TO C&MS 626, EXCEPT THAT THE SPACING SHALL BE AS PER TRAFFIC SCD MT-101.70. OBJECT MARKERS AND THEIR INSTALLATION SHALL CONFORM TO C&MS 614.03 AND SCD MT-101.70. WHEN THE PB CONTAINS GLARE SCREEN, ONE SET OF THREE VERTICAL STRIPES OF SHEETING SHALL BE CONSIDERED EQUIVALENT TO AN OBJECT MARKER, ONE-WAY.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE PLANS AND CARRIED TO THE GENERAL SUMMARY:

ITEM 614, BARRIER REFLECTOR, TYPE 1, ONE-WAY = 200 EACH
ITEM 614, OBJECT MARKER, ONE-WAY = 200 EACH

PAYMENT SHALL BE FULL COMPENSATION FOR ALL MATERIAL, LABOR, INCIDENTALS AND EQUIPMENT NECESSARY FOR FURNISHING, INSTALLING, MAINTAINING AND REMOVING EACH OF THE ABOVE ITEMS.

ITEM 614, PORTABLE CHANGEABLE MESSAGE SIGNS, AS PER PLAN

THE CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN AND REMOVE, WHEN NO LONGER NEEDED, A CHANGEABLE MESSAGE SIGN. THE SIGN SHALL BE OF A TYPE SHOWN ON A LIST OF APPROVED PCMS UNITS AVAILABLE ON THE OFFICE OF MATERIALS MANAGEMENT WEB PAGE. THE LIST CONTAINS CLASS A AND B UNITS WITH MINIMUM LEGIBILITY DISTANCES OF 800 FEET AND 650 FEET, RESPECTIVELY.

EACH SIGN SHALL BE TRAILER-MOUNTED AND EQUIPPED WITH A FUNCTIONAL DIMMING MECHANISM, TO DIM THE SIGN DURING DARKNESS, AND A TAMPER AND VANDAL PROOF ENCLOSURE. EACH SIGN SHALL BE PROVIDED WITH APPROPRIATE TRAINING AND OPERATION INSTRUCTIONS TO ENABLE ON-SITE PERSONNEL TO OPERATE AND TROUBLESHOOT THE UNIT. THE SIGN SHALL ALSO BE CAPABLE OF BEING POWERED BY AN ELECTRICAL SERVICE DROP FROM A LOCAL UTILITY COMPANY. THE PCMS SHALL BE DELINEATED IN ACCORDANCE WITH C&MS 614.03.

PLACEMENT, OPERATION, MAINTENANCE AND ALL ACTIVATION OF THE SIGNS BY THE CONTRACTOR SHALL BE AS DIRECTED BY THE ENGINEER. THE PCMS SHALL BE LOCATED IN A HIGHLY VISIBLE POSITION YET PROTECTED FROM TRAFFIC. THE CONTRACTOR SHALL, AT THE DIRECTION OF THE ENGINEER, RELOCATE THE PCMS TO IMPROVE VISIBILITY OR ACCOMMODATE CHANGED CONDITIONS. WHEN NOT IN USE, THE PCMS SHALL BE TURNED OFF. ADDITIONALLY, WHEN NOT IN USE FOR EXTENDED PERIODS OF TIME, THE PCMS SHALL BE TURNED AWAY FROM ALL TRAFFIC.

THE ENGINEER SHALL BE PROVIDED ACCESS TO EACH SIGN UNIT AND SHALL BE PROVIDED WITH APPROPRIATE TRAINING AND OPERATION INSTRUCTIONS TO ENABLE ODOT PERSONNEL TO OPERATE AND TROUBLESHOOT THE UNIT, AND TO REVISE SIGN MESSAGES, IF NECESSARY.

ALL MESSAGES TO BE DISPLAYED ON THE SIGN WILL BE PROVIDED BY THE ENGINEER.

THE SIGN SHALL HAVE THE CAPABILITY TO STORE UP TO 99 MESSAGES. MESSAGE MEMORY OR PRE-PROGRAMMED DISPLAYS SHALL NOT BE LOST AS A RESULT OF POWER FAILURES TO THE ON-BOARD COMPUTER. THE SIGN LEGEND SHALL BE CAPABLE OF BEING CHANGED IN THE FIELD. THREE-LINE PRESENTATION FORMATS WITH UP TO SIX MESSAGE PHASES SHALL BE SUPPORTED. PCMS FORMAT SHALL PERMIT THE COMPLETE MESSAGE FOR EACH PHASE TO BE READ AT LEAST TWICE. THE PCMS SHALL CONTAIN AN ACCURATE CLOCK AND PROGRAMMING LOGIC WHICH WILL ALLOW THE SIGN TO BE ACTIVATED, DEACTIVATED OR MESSAGES CHANGED AUTOMATICALLY AT DIFFERENT TIMES OF THE DAY FOR DIFFERENT DAYS OF THE WEEK.

THE PCMS UNIT SHALL BE MAINTAINED IN GOOD WORKING ORDER BY THE CONTRACTOR IN ACCORDANCE WITH THE PROVISIONS OF C&MS 614.07. THE CONTRACTOR SHALL, PRIOR TO ACTIVATING THE UNIT, MAKE ARRANGEMENTS, WITH AN AUTHORIZED SERVICE AGENT FOR THE PCMS, TO ASSURE PROMPT SERVICE IN THE EVENT OF FAILURE. ANY FAILURE SHALL NOT RESULT IN THE SIGN BEING OUT OF SERVICE FOR MORE THAN 12 HOURS, INCLUDING WEEKENDS. FAILURE TO COMPLY MAY RESULT IN AN ORDER TO STOP WORK AND OPEN ALL TRAFFIC LANES AND/OR IN THE DEPARTMENT TAKING APPROPRIATE ACTION TO SAFELY CONTROL TRAFFIC. THE ENTIRE COST TO CONTROL TRAFFIC, ACCRUED BY THE DEPARTMENT DUE TO THE CONTRACTOR'S NONCOMPLIANCE, WILL BE DEDUCTED FROM MONEYS DUE, OR TO BECOME DUE THE CONTRACTOR ON HIS CONTRACT.

ITEM 614, PCMS, AS PER PLAN (CONTINUED)

THE CONTRACTOR SHALL BE RESPONSIBLE FOR 24-HOUR-PER-DAY OPERATION AND MAINTENANCE OF THESE SIGNS ON THE PROJECT FOR THE DURATION OF THE PHASES WHEN THE PLAN REQUIRES THEIR USE.

PAYMENT FOR THE ABOVE DESCRIBED ITEM SHALL BE AT THE CONTRACT UNIT PRICE. PAYMENT SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT, FUELS, LUBRICATING OILS, SOFTWARE, HARDWARE AND INCIDENTALS TO PERFORM THE ABOVE DESCRIBED WORK.

ITEM 614, PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN
12 SIGN MONTH

ASSUMING 2 PCMS SIGNS FOR 6 MONTHS

ALTERNATE METHODS

IF THE CONTRACTOR SO ELECTS, THEY MAY SUBMIT ALTERNATE METHODS FOR MAINTENANCE OF TRAFFIC PROVIDED THE INTENT OF THE ABOVE PROVISIONS ARE FOLLOWED AND NO ADDITIONAL INCONVENIENCE TO THE TRAVELING PUBLIC RESULTS THERE FROM. NO ALTERNATE PLAN SHALL BE PLACED INTO EFFECT UNTIL APPROVAL HAS BEEN GRANTED, IN WRITING, BY THE DISTRICT CONSTRUCTION ENGINEER. ALLOW 2 WEEKS FOR REVIEW WITH NO DELAY TO THE PROJECT. NO ADDITIONAL MONEY WILL BE PAID FOR ALTERNATE METHODS.

ITEM 614, REPLACEMENT SIGN

FLAT SHEET SIGNS FURNISHED BY THE CONTRACTOR IN ACCORDANCE WITH THE REQUIREMENTS OF THE PLANS, SPECIFICATIONS AND PROPOSAL WHICH BECOME DAMAGED BY TRAFFIC FOR REASONS BEYOND THE CONTROL OF THE CONTRACTOR SHALL BE REPLACED IN KIND WHEN ORDERED BY THE ENGINEER. REPLACEMENT SIGNS SHALL BE NEW. OTHER MATERIALS MAY BE IN USED, BUT GOOD, CONDITION SUBJECT TO APPROVAL BY THE ENGINEER.

PAYMENT FOR THE NEW SIGNS SHALL BE MADE AT THE CONTRACT PRICE PER EACH FOR ITEM 614, REPLACEMENT SIGN, AND SHALL INCLUDE THE COST OF REMOVING AND DISPOSING OF DAMAGED SIGNS, HARDWARE AND SUPPORTS, AND PROVIDING THE NECESSARY REPLACEMENT HARDWARE, SUPPORTS, ETC.

AN ESTIMATED QUANTITY OF 5 EACH HAS BEEN PROVIDED IN THE GENERAL SUMMARY.

EXTRA ADVANCE WARNING SIGNS

AN EXTRA ADVANCE WARNING SIGN GROUP CONSISTS OF TWO W20-1 (ROAD WORK AHEAD) SIGNS, TWO W20-5 (RIGHT/LEFT LANE CLOSED AHEAD) SIGNS WITH W16-3A DISTANCE PLATES, AND TWO W3-H7 (WATCH FOR STOPPED TRAFFIC) SIGNS AND REQUIRED WARNING LIGHTS.

THE CONTRACTOR SHALL PROVIDE, ERECT, MAINTAIN AND REMOVE EXTRA ADVANCE WARNING SIGN GROUPS AS SHOWN ON TRAFFIC SCD MT-95.50 AT A DISTANCE OF 2 MILES IN ADVANCE OF THE LANE TAPERS WITH THE APPROPRIATE W16-3A DISTANCE PLATES.

PAYMENT FOR PROVIDING, ERECTING, MAINTAINING AND REMOVING EXTRA ADVANCE WARNING SIGN GROUPS SHALL BE INCLUDED IN THE LUMP SUM BID FOR ITEM 614, MAINTAINING TRAFFIC, AS PER PLAN.

CONTRACTOR'S EQUIPMENT - OPERATION AND STORAGE

IN ADDITION TO THE REQUIREMENTS OF SECTION 614.03 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS, THE FOLLOWING SHALL APPLY.

THE CONTRACTOR'S EQUIPMENT SHALL BE OPERATED IN THE DIRECTION OF TRAFFIC WHERE PRACTICAL.

NO EQUIPMENT SHALL BE PARKED BEHIND A GUARDRAIL ATTENUATOR. AT TIMES OF SUSPENSION OF WORK, EQUIPMENT SHALL BE STORED AT A STORAGE AREA REMOVED FROM THE RIGHT OF WAY. NO EQUIPMENT SHALL BE PARKED IN THE MEDIAN OF THE HIGHWAY.

ADEQUATE BARRELS SHALL BE PLACED ON THE PAVEMENT SIDE OF THE EQUIPMENT TO IDENTIFY THE LIMITS OF THE EQUIPMENT.

ALL OTHER EQUIPMENT, INCLUDING PRIVATE VEHICLES, SHALL BE STORED AT THE APPROVED CONTRACTOR'S STORAGE AREA.

REMOVAL OF PAVEMENT MARKINGS

THE CONTRACTOR SHALL REMOVE ALL CONFLICTING PAVEMENT MARKINGS ALONG THE WORK ZONE. THE CONTRACTOR SHALL ORGANIZE HIS WORK TO REQUIRE ONLY THE REMOVAL OF CONFLICTING PAVEMENT MARKINGS ALONG ONE LANE IN EACH DIRECTION OF THE ROADWAY. THE LINE TYPE MAY VARY THROUGHOUT THE ZONE. PAYMENT TO REMOVE THESE MARKINGS AND ANY OTHER CONFLICTING MARKINGS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 614, MAINTAINING TRAFFIC, AS PER PLAN.

ITEM 622, PORTABLE BARRIER, 32"

THIS WORK SHALL CONSIST OF FURNISHING, MAINTAINING, AND SUBSEQUENTLY REMOVING A 32-INCH PORTABLE BARRIER FOR THE WORK SHOWN IN THE PLANS, PER THESE NOTES AND PER THE DETAILS IN THE STANDARD CONSTRUCTION DRAWINGS

PAYMENT SHALL INCLUDE ALL LABOR, MATERIAL, AND EQUIPMENT NECESSARY TO PERFORM THE WORK AND SHALL BE PAID FOR AT THE CONTRACT PRICE PER FOOT FOR ITEM 622, PORTABLE BARRIER, 32". AS PER PLAN

ITEM 622, PORTABLE BARRIER, 32" = 9,900 FT

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MAINTENANCE OF TRAFFIC GENERAL NOTES

D01-EROSION
REPAIR-FY23

ITEM 614, MAINTAINING TRAFFIC (SIGNS AND BARRICADES)

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 SHOWN IN THE PLANS AND STANDARD CONSTRUCTION DRAWINGS.

ITEM 614, MAINTAINING TRAFFIC (NOTICE OF CLOSURE SIGN)

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

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

NOTICE OF CLOSURE SIGN TIME TABLE
 ITEM DURATION SIGN DISPLAYED
 OF CLOSURE TO PUBLIC

RAMP &	>=2 WEEKS	14 CALENDAR DAYS PRIOR TO CLOSURE
ROAD	> 12 HOURS & < 2 WEEKS	7 CALENDAR DAYS PRIOR TO CLOSURE
CLOSURES < 12 HOURS		2 BUSINESS DAYS PRIOR TO CLOSURE

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

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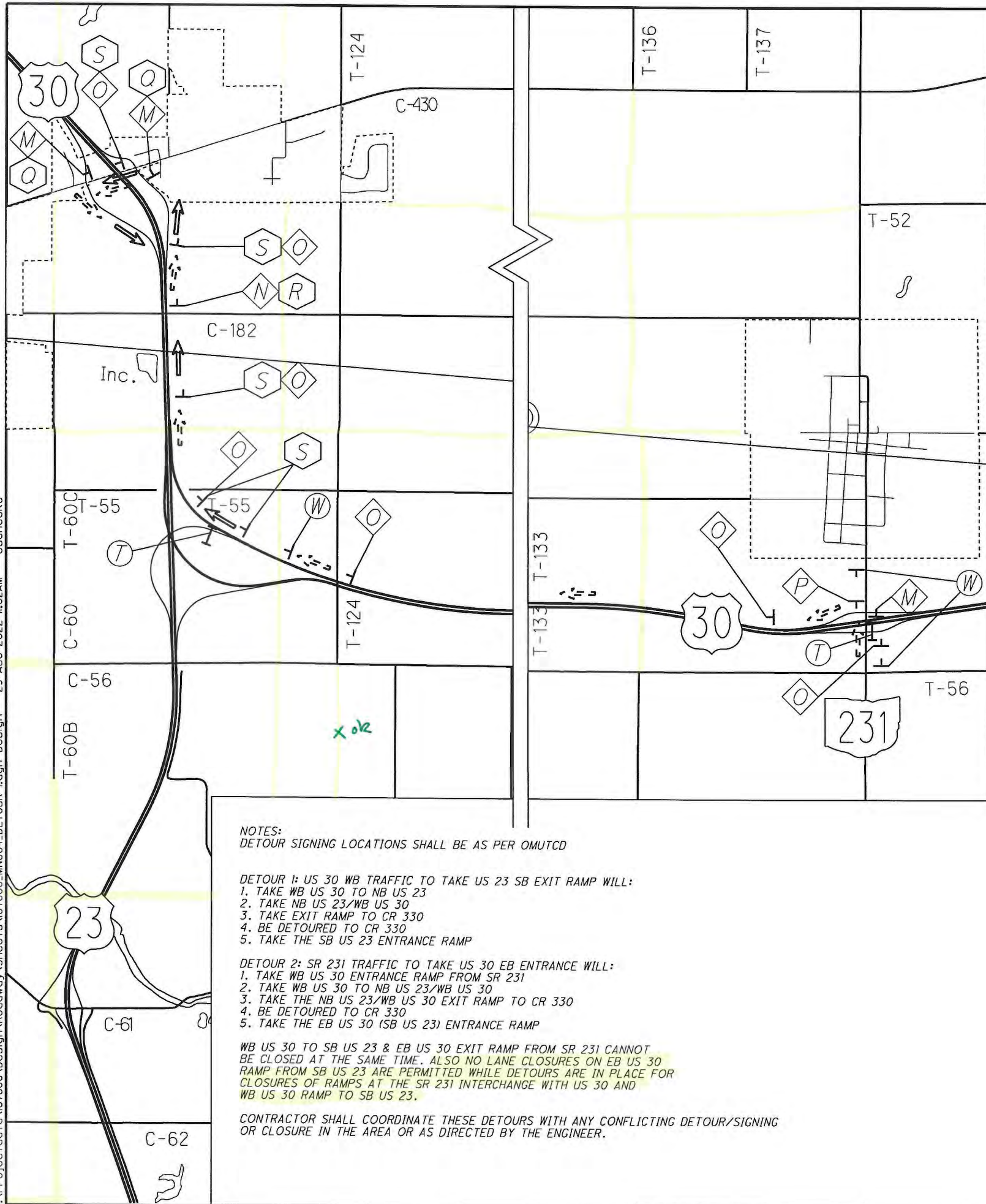
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MAINTENANCE OF TRAFFIC GENERAL NOTES

D01-EROSION
 REPAIR-FY23

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NOTES:
DETOUR SIGNING LOCATIONS SHALL BE AS PER OMUTCD

DETOUR 1: US 30 WB TRAFFIC TO TAKE US 23 SB EXIT RAMP WILL:
 1. TAKE WB US 30 TO NB US 23
 2. TAKE NB US 23/WB US 30
 3. TAKE EXIT RAMP TO CR 330
 4. BE DETOURED TO CR 330
 5. TAKE THE SB US 23 ENTRANCE RAMP

DETOUR 2: SR 231 TRAFFIC TO TAKE US 30 EB ENTRANCE WILL:
 1. TAKE WB US 30 ENTRANCE RAMP FROM SR 231
 2. TAKE WB US 30 TO NB US 23/WB US 30
 3. TAKE THE NB US 23/WB US 30 EXIT RAMP TO CR 330
 4. BE DETOURED TO CR 330
 5. TAKE THE EB US 30 (SB US 23) ENTRANCE RAMP

WB US 30 TO SB US 23 & EB US 30 EXIT RAMP FROM SR 231 CANNOT BE CLOSED AT THE SAME TIME. ALSO NO LANE CLOSURES ON EB US 30 RAMP FROM SB US 23 ARE PERMITTED WHILE DETOURS ARE IN PLACE FOR CLOSURES OF RAMPS AT THE SR 231 INTERCHANGE WITH US 30 AND WB US 30 RAMP TO SB US 23.

CONTRACTOR SHALL COORDINATE THESE DETOURS WITH ANY CONFLICTING DETOUR/SIGNING OR CLOSURE IN THE AREA OR AS DIRECTED BY THE ENGINEER.

LEGEND:

- TRAFFIC FLOW ARROW (EB US 30 WB TO SB US 23)
- TRAFFIC FLOW ARROW (SR 231 TO EB US 30)
- SIGN
- TYPE III BARRICADE
- DETOUR SIGNING FOR CLOSURE US 30 WB EXIT TO US 23 SB
- DETOUR SIGNING FOR CLOSURE OF SR 231 TO EB US 30 ENTRANCE RAMP

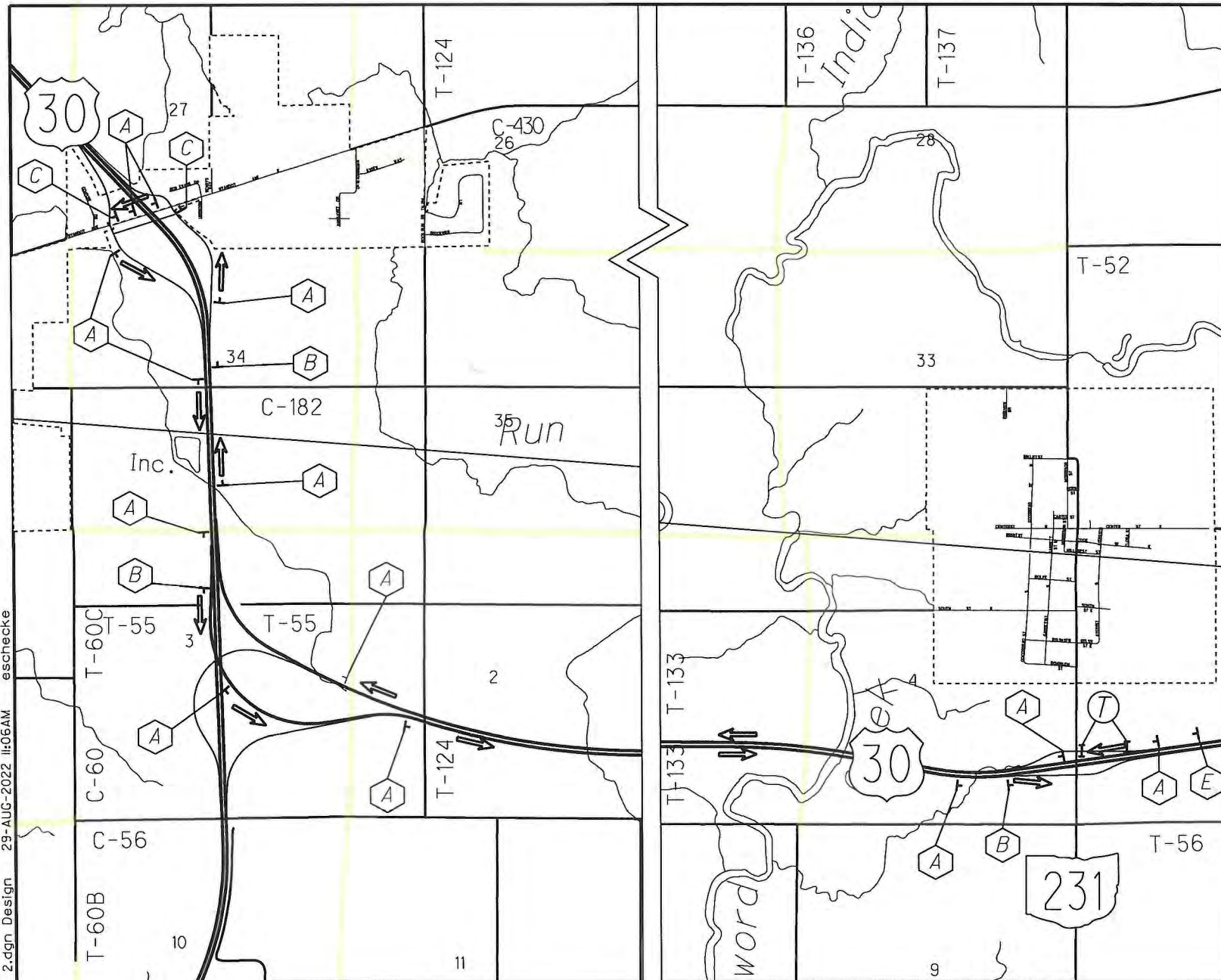
SOLID ACROSS US 30 EB EXIT RAMP & US 23 SB EXIT RAMP
TYPE III BARRICADES PER MT-101.60

DETOUR M4-8-30	DETOUR M4-8-30	DETOUR M4-8-30
TO M4-5-30	TO M4-5-30	TO M4-5-30
EAST M3-2-30	EAST M3-2-30	EAST M3-2-30
M1-4-30	M1-4-30	M1-4-30
M6-1L-24	M6-2R-24	M6-3-24
DETOUR M4-8-30	DETOUR M4-8-30	DETOUR M4-8-30
TO M4-5-30	TO M4-5-30	TO M4-5-30
EAST M3-2-30	SOUTH M3-3-30	SOUTH M3-3-30
M1-4-30	M1-4-30	M1-4-30
M6-1R-24	M6-1L-24	M6-2R-24
DETOUR 1500 FT W20-2-36	DETOUR M4-8-30	
	TO M4-5-30	
	SOUTH M3-3-30	
	M1-4-30	
	M6-3-24	
US30 EB WILL BE CLOSED ## FOR 14 DAYS OHIO DEPT OF TRANSPORTATION W20-H14	US23 SB EXIT WILL BE CLOSED ## FOR 14 DAYS OHIO DEPT OF TRANSPORTATION W20-H14	

- CONTRACTOR TO PROVIDE DATE ACCEPTED BY PROJECT ENGINEER

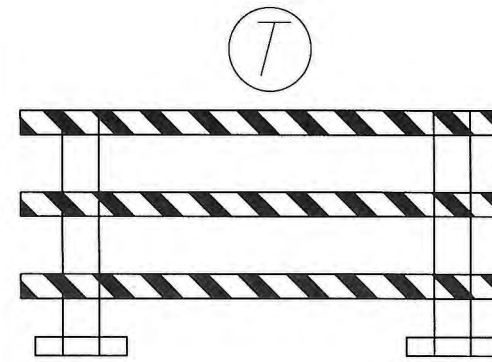
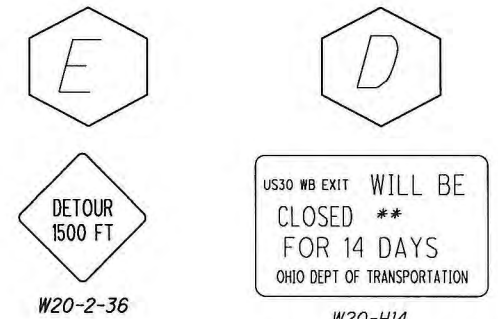
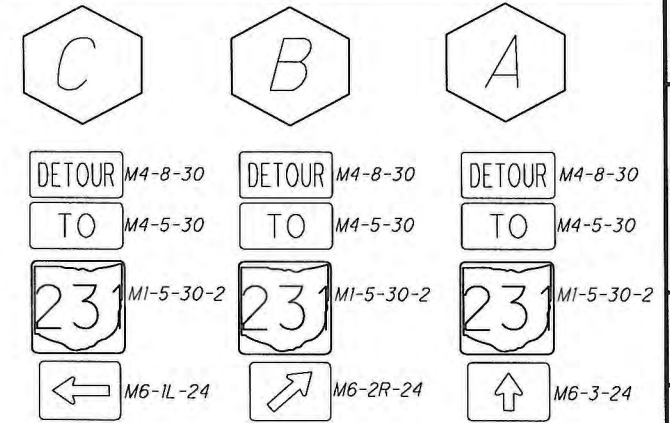
D01-EROSION REPAIR-FY23
 US 23 AND US 30 DETOUR
 WB US 30 TO 23 SB & EB US 30 ENTRANCE RAMP CLOSURES
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 32

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LEGEND:

- TRAFFIC FLOW ARROW (US30 WB TO SR 231)
- SIGN
- TYPE III BARRICADE
- DETOUR SIGNING FOR CLOSURE OF WB US30 EXIT TO SR 231



SOLID ACROSS US30 WB EXIT RAMP, TYPE III BARRICADES PER MT-101.60

NOTES:
DETOUR SIGNING LOCATIONS SHALL BE AS PER OMUTCD & THESE PLANS

- DETOUR : WB US 30 TRAFFIC TO THE EXIT RAMP TO SR 231 WILL:
1. BE DETOURED ALONG WB US 30 TO NB US 23/WB US 30
 2. TAKE THE NB US 23/WB US 30 EXIT RAMP TO CR 330
 3. TAKE WB CR 330
 4. TAKE THE SB US 23/EB US 30 ENTRANCE RAMP TO SB US 23/EB US 30
 5. TAKE THE SB US 23 EXIT RAMP TO EB US 30
 6. TAKE EB US 30 TO EXIT RAMP TO SR 231

WHILE SR 231 ENTRANCE RAMP TO EB US 30 IS CLOSED WB US 30 EXIT RAMP TO SR 231 *MUST* REMAIN OPEN. ALSO NO LANE CLOSURES ON EB US 30 RAMP FROM SB US 23 ARE PERMITTED WHILE DETOURS ARE IN PLACE FOR CLOSURES OF RAMPS AT THE SR 231 INTERCHANGE WITH US 30 AND WB US 30 RAMP TO SB US 23.

CONTRACTOR SHALL COORDINATE THIS DETOURS WITH ANY CONFLICTING DETOUR/SIGNING OR CLOSURE IN THE AREA OR AS DIRECTED BY THE ENGINEER.

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MAINTENANCE OF TRAFFIC
DETOUR FOR WB US 30 EXIT RAMP CLOSURE

D01-EROSION
REPAIR-FY23

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32

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SHEET NUM.													PART.	ITEM	ITEM	GRAND	UNIT	DESCRIPTION	SEE SHEET NO.
4	5	6	7	8	9			13	14	15		23	01/NHS/OT	EXT	TOTAL				
ROADWAY																			
LS													LS	201	11000	LS		CLEARING AND GRUBBING	
									313				313	202	23000	313	SY	PAVEMENT REMOVED	
									5,293				5,293	202	23001	5,293	SY	PAVEMENT REMOVED, AS PER PLAN	5
									7,820				7,820	202	32000	7,820	FT	CURB REMOVED	
								92					92	202	35100	92	FT	PIPE REMOVED, 24" AND UNDER OK	
									8,350			1,137.5	9,487.5	202	38001	9,487.5	FT	GUARDRAIL REMOVED, AS PER PLAN	4
									293.75				293.75	202	38201	293.75	FT	GUARDRAIL REMOVED FOR REUSE, AS PER PLAN	4
									2				2	202	47000	2	EACH	BRIDGE TERMINAL ASSEMBLY REMOVED	
													10	202	58101	10	EACH	CATCH BASIN REMOVED, AS PER PLAN	5
													2	202	98100	2	EACH	REMOVAL MISC.:PRECAST CONCRETE OUTLET	13
57													22	203	10000	79	CY	EXCAVATION	
												20	315	20000	315	CY	EMBANKMENT		
137										626			763	204	10000	763	SY	SUBGRADE COMPACTION	
													78	209	15000	87	STA	RESHAPING UNDER GUARDRAIL	
													125	606	13001	125	FT	GUARDRAIL, TYPE 5, AS PER PLAN	4
													575	606	15051	575	FT	GUARDRAIL, TYPE MGS, AS PER PLAN	4
													8,287.5	606	15101	8,287.5	FT	GUARDRAIL, TYPE MGS WITH LONG POSTS, AS PER PLAN	4
													293.75	606	16501	293.75	FT	GUARDRAIL REBUILT, TYPE 5, AS PER PLAN	4
													1	606	26050	1	EACH	ANCHOR ASSEMBLY, MGS TYPE B (MASH 2016)	
													4	606	26150	4	EACH	ANCHOR ASSEMBLY, MGS TYPE E (MASH 2016)	
													2	606	26550	3	EACH	ANCHOR ASSEMBLY, MGS TYPE T (MASH 2016)	
													4	606	35003	4	EACH	MGS BRIDGE TERMINAL ASSEMBLY, TYPE 1, AS PER PLAN	4
													2	606	35010	2	EACH	BRIDGE TERMINAL ASSEMBLY REBUILT, TYPE 1	
													1	606	35103	1	EACH	MGS BRIDGE TERMINAL ASSEMBLY, TYPE 2, AS PER PLAN	4
													94	622	10160	94	FT	CONCRETE BARRIER, SINGLE SLOPE, TYPE D	
													5	622	25000	5	EACH	CONCRETE BARRIER END SECTION, TYPE D	
													3	622	25050	3	EACH	CONCRETE BARRIER, END ANCHORAGE, REINFORCED, TYPE D	
EROSION CONTROL																			
	10												10	601	21050	10	SY	TIED CONCRETE BLOCK MAT WITH TYPE 1 UNDERLAYMENT	
													420	601	21060	420	SY	TIED CONCRETE BLOCK MAT WITH TYPE 2 UNDERLAYMENT	
													2	659	00100	4	EACH	SOIL ANALYSIS TEST	
													475	659	00300	475	CY	TOPSOIL	
													5,995	659	10000	6,295	SY	SEEDING AND MULCHING	
													300	659	14000	300	SY	REPAIR SEEDING AND MULCHING	
													0.83	659	20000	0.87	TON	COMMERCIAL FERTILIZER	
													1.21	659	31000	1.27	ACRE	LIME	
													33	659	35000	35	MGAL	WATER	
													3,667	670	00530	3,667	SY	SLOPE EROSION PROTECTION MAT, TYPE C	
60,000													60,000	832	30000	60,000	EACH	EROSION CONTROL	
DRAINAGE																			
	50												50	605	05200	50	FT	4" UNCLASSIFIED PIPE UNDERDRAINS	
	50												50	605	31100	50	FT	AGGREGATE DRAINS	
	50												50	611	05200	50	FT	12" CONDUIT, TYPE F	
													60	611	05200	60	FT	12" CONDUIT, TYPE F, 707.05 TYPE C OR 707.21	
													374	611	06700	374	FT	15" CONDUIT, TYPE F, 707.05 TYPE C OR 707.21	
													16	611	98151	16	EACH	CATCH BASIN, NO. 3, AS PER PLAN	5
	5												5	611	99710	5	EACH	PRECAST REINFORCED CONCRETE OUTLET	
													116	613	41200	116	CY	LOW STRENGTH MORTAR BACKFILL	

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GENERAL SUMMARY	
D01-EROSION REPAIR - FY23	
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SHEET NUM.											PART.		ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
4	5	6	7	8	9		13	14	15	23	01/NHS/OT							
PAVEMENT																		
	329											329	252	01500	329	FT	FULL DEPTH PAVEMENT SAWING (9" THICK)	
								2,354	5,031			7,385	252	01500	7,385	FT	FULL DEPTH PAVEMENT SAWING (11" THICK)	
								5,712	4,039			9,751	252	01500	9,751	FT	FULL DEPTH PAVEMENT SAWING (17" THICK)	
									2,069			2,069	255	10010	2,069	SY	FULL DEPTH PAVEMENT REMOVAL AND RIGID REPLACEMENT, CLASS QC1	
									2,028			2,028	255	10011	2,028	SY	FULL DEPTH PAVEMENT REMOVAL AND RIGID REPLACEMENT, CLASS QC1, AS PER PLAN	5
	21							882				903	304	20000	903	CY	AGGREGATE BASE	
									777			777	423	00150	777	LB	CRACK SEALING, TYPE IV	
	66											66	452	13011	66	SY	9" NON-REINFORCED CONCRETE PAVEMENT, CLASS QC 1P, AS PER PLAN	5
								5,035				5,035	452	14111	5,035	SY	11" NON-REINFORCED CONCRETE PAVEMENT, CLASS QC 1P, AS PER PLAN	5
								2,166				2,166	609	23000	2,166	FT	COMBINATION CURB AND GUTTER, TYPE 4	
									1,038			1,038	SPECIAL	69098000	1,038	EACH	INSTALLATION OF DEFORMED BAR (CROSS STITCHING)	16
TRAFFIC CONTROL																		
									5,448			5,448	618	40200	5,448	FT	RUMBLE STRIPS, SHOULDER (CONCRETE)	
							2			4		6	620	00500	6	EACH	DELINEATOR, POST GROUND MOUNTED	
								32				32	621	00100	32	EACH	RPM	
										4		4	626	00102	4	EACH	BARRIER REFLECTOR, TYPE 1 (1-WAY)	
										16		16	626	00110	16	EACH	BARRIER REFLECTOR, TYPE 2 (1-WAY)	
							95					95	626	00110	95	EACH	BARRIER REFLECTOR, TYPE 2 (BI-DIRECTIONAL)	
								0.96				0.96	642	00104	0.96	MILE	EDGE LINE, 6", TYPE 1	
MAINTENANCE OF TRAFFIC																		
		160										160	614	11110	160	hour	LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE	
			5									5	614	12380	5	EACH	WORK ZONE IMPACT ATTENUATOR, 24" WIDE HAZARDS, (UNIDIRECTIONAL)	
			5									5	614	12500	5	EACH	REPLACEMENT SIGN	
			5									5	614	12600	5	EACH	REPLACEMENT DRUM	
			200									200	614	13310	200	EACH	BARRIER REFLECTOR, TYPE 1, ONE-WAY	
			200									200	614	13350	200	EACH	OBJECT MARKER, ONE WAY, ONE-WAY	
			12									12	614	18601	12	SNMT	PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN	7
			9,900									9,900	622	41100	9,900	FT	PORTABLE BARRIER, UNANCHORED	
<i>Missing</i>																		
INCIDENTALS																		
		LS										LS	614	11001	LS		MAINTAINING TRAFFIC, AS PER PLAN	6
												LS	623	10000	LS		CONSTRUCTION LAYOUT STAKES AND SURVEYING	
												LS	624	10000	LS		MOBILIZATION	

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GENERAL SUMMARY

D01-EROSION
REPAIR-FY23

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EROSION CONTROL - E					601	659	670		
REFERENCE NO.	SHEET NO.	LOCATION	PLAN SPLIT	SIDE	TIED CONCRETE BLOCK MAT, TYPE 2	DUMP ROCK FILL, TYPE D	SEEDING AND MULCHING	TOP SOIL (4" THICK)	SLOPE EROSION PROTECTION
					SY	CY	SY	CY	SY
E1	24	PAU-24-1.05	01/NHS/OT	RT	44.0		100.0	11.0	
E2	25	PAU-24-1.35	01/NHS/OT	RT	54.0		147.0	17.0	
E3	25	PAU-24-1.35	01/NHS/OT	RT	82.4		62.0	7.0	
E4	25	PAU-24-1.35	01/NHS/OT	RT			1333.0	148.0	1333.0
E5	25	PAU-24-1.35	01/NHS/OT	RT			779.0	87.0	779.0
E6	26	WYA-30-17.79 (RAMP A - EB US 30)	01/NHS/OT	RT	44.0		44.0	5.0	
E7	26	WYA-30-17.84 (RAMP A - EB US 30)	01/NHS/OT	RT	28.0		218.0	24.0	190.0
E8	27	WYA-30-18.35 (RAMP A - EB US 30)	01/NHS/OT	LT			43.7	5.0	
E9	27	WYA-30-18.47 (RAMP A - EB US 30)	01/NHS/OT	LT	50.0		70.0	8.0	20.0
E10	30	WYA-30-18.34 (RAMP B - WB US 30)	01/NHS/OT	LT	37.0		37.0	4.0	
E11	31	RAMP M-10.10 (WYA-US 30 WB @ SR 231)	01/NHS/OT	RT	33.0		33.0	4.0	
E12	32	RAMP N-0.14 (WYA-US 30 EB @ SR 231)	01/NHS/OT	RT	47.0		1392.0	155.0	1345.0
TOTALS TO GENERAL SUMMARY					419.4	0	4258.7	475	3667

CALCULATIONS	
ITEM 659 - SEEDING AND MULCHING (01/NHS/OT) = 4259 SY (EROISION CONTROL SUBSUMMARY) PLUS: ((78.1 STA. x 100) x 21/9)	= 1736 SY
	= 5995 SY
ITEM 659 - SOIL ANALYSIS TEST (01/NHS/OT) =	= 2 EACH
ITEM 659 - LIME (01/NHS/OT) = (5995)(9)(1/43560)	= 1.2 ACRE
ITEM 659 - REPAIR SEEDING & MULCHING & INTER-SEEDING (01/NHS/OT) = (5995)(5%)	= 300 SY
ITEM 659 - COMMERCIAL FERTILIZER (01/NHS/OT) = [(5995)(9)(1/1000)(30)+(20/1000)(213)(9)(1/2000)]	= 0.83 TON
ITEM 659 - WATER (01/NHS/OT) = [(2)(5995)(9/1000)(300)+(213)(9)(300/1000)(1/1000)]	= 32.9 MGAL
TOTALS CARRIED TO GENERAL SUMMARY	

New

DRAINAGE & ITEMS OF WORK - D & I					202	611	613					
REFERENCE NO.	SHEET NO.	LOCATION	SPLIT	SIDE	PIPE REMOVED, 24" UNDER	CATCH BASIN REMOVED, AS PER PLAN	REMOVAL MISC.: PRECAST CONCRETE OUTLET	12" CONDUIT, TYPE F, 707.05 TYPE C OR 707.21	15" CONDUIT, TYPE F, 707.05 TYPE C OR 707.21	CATCH BASIN, NO. 3A	CATCH BASIN, NO. 3, AS PER PLAN	LOW STRENGTH MORTAR BACKFILL
					FT	EACH	EACH	FT	FT	EACH	EACH	CY
D1	24	PAU-24-1.05 (EB)	01NHS/OT	RT					74		1	5
D2	24	PAU-24-1.35 (EB)	01/NHS/OT	RT					81		1	5
D3	24	PAU-24-1.35 (EB)	01/NHS/OT	RT					83		1	5
D4	26	WYA-30-17.84 (EB)	01/NHS/OT	RT	32		2		72			
D5	26	WYA-30-17.96 (EB)	01/NHS/OT	RT	5.0	1		5.0			1	6.0
D6	27	WYA-30-18.35 (EB)	01/NHS/OT	LT	5.0	1		5.0			1	15.0
D7	27	WYA-30-18.47 (EB)	01/NHS/OT	LT	5.0	1		5.0			1	15.0
D8	28	RAMP B - SLM 10.12	01/NHS/OT	LT	5.0	1		5.0			1	5.0
D9	28	RAMP B - SLM 10.05	01/NHS/OT	LT	5.0	1		5.0			1	5.0
D10	29	RAMP B - SLM 10.00	01/NHS/OT	LT	5.0	1		5.0			1	5.0
D11	29	RAMP B - SLM 9.98	01/NHS/OT	LT	5.0	1		5.0			1	5.0
D12	29	RAMP B - SLM 9.95	01/NHS/OT	LT	5.0	1		5.0			1	5.0
D13	29	RAMP B - SLM 9.85 = WYA-30-18.37 (WB)	01/NHS/OT	LT	5.0	1		5.0			1	5.0
D14	30	WYA-30-18.48 (WB)	01/NHS/OT	LT	5.0	1		5.0			1	
D15	30	WYA-30-18.51 (WB)	01/NHS/OT	LT					64.0		1	5.0
D16	31	RAMP M - SLM 10.09	01/NHS/OT	RT	5.0			5.0			1	15.0
D17	32	RAMP N - SLM 0.21	01/NHS/OT	RT	5.0			5.0			1	15.0
TOTALS TO GENERAL SUMMARY					92	10	2	60	374	0	16	116

PROPOSED CATCH BASIN DATA						
REPLACEMENT & PROPOSED CATCH BASIN INFORMATION						
REF. NO.	Prop. CB Type	Northing	Easting	Catch Basin Elev	*Depth to Pipe Invert (FT)	Pipe Size
D1	CB-3	New	New	New	2.5	15"
D2	CB-3	New	New	New	2.5	15"
D3	CB-3	New	New	New	2.5	15"
D5	CB-3	Match Existing	Match Existing	Match Existing	2.7	12"
D6	CB-3	Match Existing	Match Existing	Match Existing	4.9	12"
D7	CB-3	Match Existing	Match Existing	Match Existing	4.9	12"
D8	CB-3	Match Existing	Match Existing	Match Existing	2.6	12"
D9	CB-3	Match Existing	Match Existing	Match Existing	2.5	12"
D10	CB-3	Match Existing	Match Existing	Match Existing	2.5	12"
D11	CB-3	Match Existing	Match Existing	Match Existing	2.4	12"
D12	CB-3	Match Existing	Match Existing	Match Existing	2.6	12"
D13	CB-3	Match Existing	Match Existing	Match Existing	2.5	12"
D14	CB-3	Match Existing	Match Existing	Match Existing	1.5	12"
D15	CB-3	New	New	New	2.5	15"
D16	CB-3	Match Existing	Match Existing	Match Existing	4.9	12"
D17	CB-3	Match Existing	Match Existing	Match Existing	4.8	12"

*Depth measured in feet from center of the grate next to the face of curb to flowline of 12" or 15", Type F, 707.05 Type C or 707.21

ITEM 202 - REMOVAL MISC.; PRECAST CONCRETE OUTLET

THE CONTRACTOR SHALL REMOVED AND STORE THE EXISTING PRECAST CONCRETE OUTLET FOR REUSE. THE REUSED PRECAST CONCRETE OUTLET SHALL BE INSTALLED PER SCD DM-1.1 AND CMS SECTION 611.

ALL MATERIALS, LABOR, EQUIPMENT & INCIDENTALS REQUIRED TO COMPLETE THE REMOVAL, STORAGE AND REUSE OF THE EXISTING PRECAST CONCRETE OUTLET AS NOTED ABOVE SHALL BE INCLUDED IN THE UNIT BID PER EACH FOR FOR ITEM 202, REMOVAL MISC.: PRECAST CONCRETE OUTLET.

SUBSUMMARY

D01-EROSION REPAIR - FY23

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ROADWAY & PAVEMENT - R & C & D					202			203		204	209	NA	255	255	304	452	609	618
REFERENCE NO.	SHEET	LOCATION	PLAN SPLIT	SIDE	PAVEMENT REMOVED	PAVEMENT REMOVED, AS PER PLAN	CURB REMOVED	EXCAVATION	EMBANKMENT	SUBGRADE COMPACTION	RESHAPING UNDER GUARDRAIL	EMBANKMENT NEEDED FOR RESHAPING UNDER GUARDRAIL (FOR INFORMATION ONLY)	FULL DEPTH PAVEMENT SAWING (17'+/2)	FULL DEPTH PAVEMENT SAWING (17'+/2)	AGGREGATE BASE	11" NON-REINFORCED CONCRETE PAVEMENT, CLASS QC1, AS PER PLAN	COMBINATION CURB AND GUTTER, TYPE 4	RUMBLE STRIPS, SHOULDER (CONCRETE)
					SY	SY	FT	CY	CY	SY	STA	CY	FT	FT	CY	SY	FT	FT
P1	24	PAU-24-1.05 (EB)	01/NHS/OT	RT	66								78			66		55
P2	25	PAU-24-1.35 (EB)	01/NHS/OT	RT	72								83			78		60
P3	25	PAU-24-1.35 (EB)	01/NHS/OT	RT	72								99			78		60
P4	26	WYA-30-17.73 (EB)	01/NHS/OT	RT	103			11						101		125		75
P5	26-27	WYA-30-17.73 (EB)	01/NHS/OT	LT		1989	2750	6	100	212	27.5	102		2819	330	1976		2852
P6	28-30	RAMP B (WB US 30 TO SB US 23)	01/NHS/OT	LT		1392	2904		110	233	29	108		2792	232	1392		1531
P7	31	RAMP M - SLM 10.09	01/NHS/OT	RT		994	1162	5	45	96	11.6	43	1089		167	681	1162	285
P8	32	RAMP N - SLM 0.20	01/NHS/OT	RT		918	1004		40	85	10	38	1005		153	639	1004	530
TOTALS CARRIED TO GENERAL SUMMARY					313	5293	7820	22	295	626	78.1	NA	2354	5712	882	5035	2166	5448

GUARDRAIL - R					202			606					620			
REFERENCE NO.	SHEET	LOCATION	PLAN SPLIT	SIDE	GUARDRAIL REMOVED, AS PER PLAN	GUARDRAIL REMOVED FOR REUSE, AS PER PLAN	BRIDGE TERMINAL ASSEMBLY REMOVED	GUARDRAIL, TYPE 5, AS PER PLAN	GUARDRAIL, TYPE MGS WITH LONG POSTS, AS PER PLAN	GUARDRAIL REBUILT, TYPE 5, AS PER PLAN	ANCHOR ASSEMBLY, MGS TYPE B (MASH 2016)	ANCHOR ASSEMBLY, MGS TYPE T (MASH 2016)	BRIDGE TERMINAL ASSEMBLY REBUILT, TYPE 1	BRIDGE TERMINAL ASSEMBLY, TYPE 1	DELINEATOR, POST GROUND MOUNTED (TYPE C)	BARRIER REFLECTOR, TYPE 2 (BI-DIRECTIONAL)
					FT	FT	EACH	FT	FT	FT	EACH	EACH	EACH	EACH	EACH	EACH
R1	24	PAU-24-1.05 (EB)	01/NHS/OT	RT		56.3				56.25						1
R2	24	PAU-24-1.35 (EB)	01/NHS/OT	RT		62.5				62.5						1
R3	24	PAU-24-1.35 (EB)	01/NHS/OT	RT		88				88						2
R4	26	WYA-30-17.73 (EB)	01/NHS/OT	RT		50.0				50.0						1
R5	26	WYA-30-17.84 (EB)	01/NHS/OT	RT		37.5				37.5						2
R6	26-27	WYA-30-17.95 (EB)	01/NHS/OT	LT	2712.5		1	31.3	2700.0			1	1	1	1	28
R7	28-30	RAMP B (WB US 30 TO SB US 23)	01/NHS/OT	LT	2925.0		1	62.5	2887.5		1		1	1	1	31
R8	31	RAMP M - SLM 10.09	01/NHS/OT	RT	1075.0			31.3	1062.5			1				12
R9	32	RAMP N - SLM 0.14	01/NHS/OT	RT	1637.5				1637.5							17
TOTALS CARRIED TO GENERAL SUMMARY					8350		2	125	8287.5	293.75	1	2	2	2	2	95

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SUBSUMMARY

D01-EROSION REPAIR - FY23

Location	Section of Ramp or Roadway	No. of Repair Locations				202				255				256	255 (6' FULL DEPTH REPAIR)		255 (FULL SLAB REPLACEMENT)		423	452	617	618	690	643							621						
		Full Depth Locations - 6' Repair	Full Depth Locations - Slab Replacements	Bonded Patch Locations	Cross Stitching Locations	Pavement Removed	Full Depth Pavement Sawing				Bonded Patching of PCC Pavement Type A	Full Depth Pavement Removal and Rigid Replacement, Class QC1, As Per PLAN	Full Depth Pavement Removal and Rigid Replacement, Class QC1	Full Depth Pavement Removal and Rigid Replacement, Class QC1, As Per PLAN	Full Depth Pavement Removal and Rigid Replacement, Class QC1	Crack Sealing, Type IV	9" Non-Reinforced Concrete Pavement, Class QC1, As Per Plan	Compacted Aggregate	Rumble Strips, (Concrete)	Special - Installation of Deformed Bar	6" Edge Line (Yellow)	6" Edge Line (White)	4" Edge Line (White)	6" Lane Line	4" Lane Line	Centerline	Transverse/Diagonal Line	Lane Arrow	Stop Line	RPM (2-Way, White/Red)	RPM (2-Way, Yellow/White)	RPM (2-Way, Yellow/Red)					
							6' Repair		Slab Repair																								17" THICK	11" THICK	17" THICK	11" THICK	9" THICK
							SY	FT	SY	FT																											
11"	17"	11"	17"																																		
US 30 WB TO US 23 SB	RAMP	9	51	0	92	0	324		3188	0	96	0	1632	0	324	0	0	0	644	0.18	0.18	0	0	0	0	0	0	0	0	0	0	12					
US 30 EB ENTRANCE RAMP FROM SR 231	RAMP	6	45	0	8	0	216		2800	0	0	64	0	1200	28	0	0	0	56	0.16	0.16	0	0	0	0	0	0	0	0	0	11						
US 30 WB EXIT RAMP TO SR 231	RAMP	3	20	0	29	0	108		1250	0	0	32	0	533	324	0	0	0	203	0.07	0.07	0	0	0	0	0	0	16	0	0	5						
CONTINGENCY						0	49	49	608	478	0	20	15	280	225	101	0	0	0	135	0.06	0.06	0	0	0	0	0	2	0	0	4						
SUBTOTALS (01/NHS/OT)						0	373	373	4658	3666	0	116	111	1912	1958	777	0	0	0	1038	0.48	0.48	0.00	0.00	0.00	0.00	0	0	18	0	0	32					

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PAVEMENT REPAIR SUBSUMMARY

D01-EROSION REPAIR - FY23

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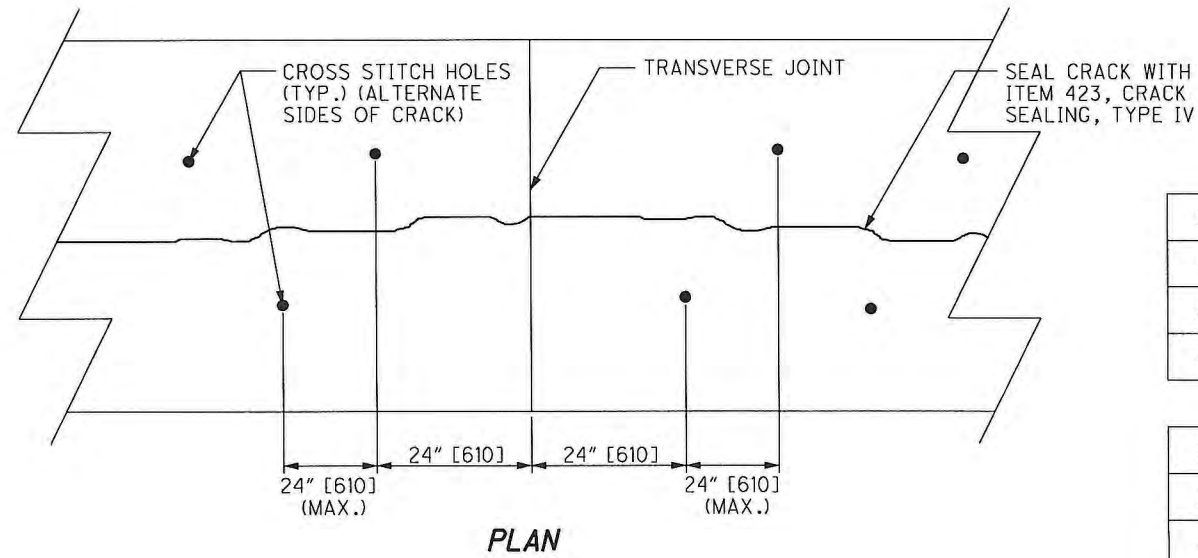
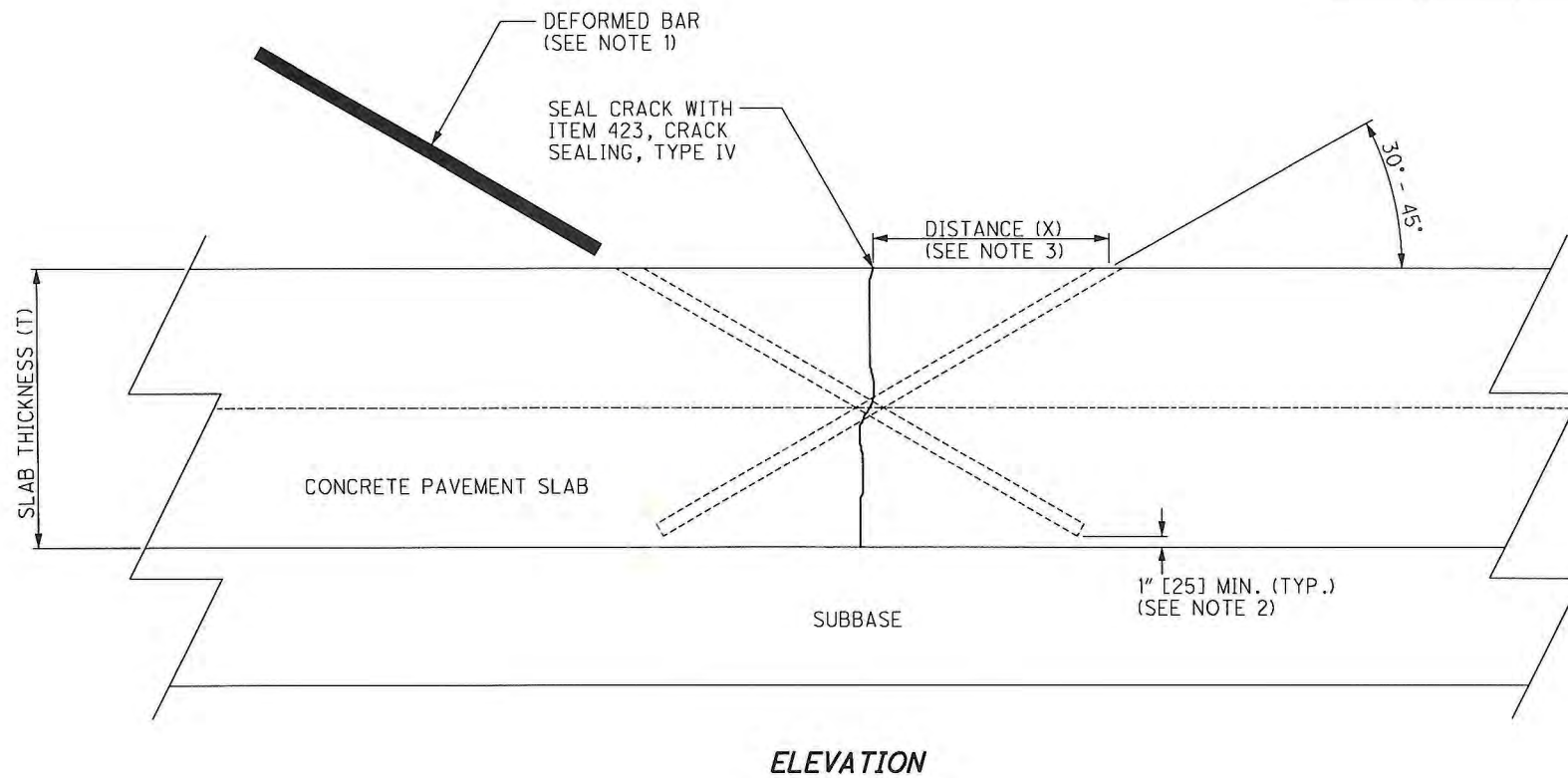


TABLE 1

	SLAB THICKNESS, T (IN.)													
	8	8.5	9	9.5	10	10.5	11	11.5	12	12.5	13	13.5	14	14.5
	DISTANCE TO HOLE, X (IN.)													
	30°	7.00	7.50	8.00	8.25	8.75	9.25	9.75	10.00	10.50	11.00	-	-	-
35°	5.75	6.25	6.50	7.00	7.25	7.50	8.00	8.25	8.75	9.00	-	-	-	-
40°	-	-	-	5.75	6.00	6.50	6.75	7.00	7.25	7.50	7.75	8.25	8.50	8.75
45°	-	-	-	-	-	-	-	5.75	6.00	6.25	6.50	6.75	7.00	7.25
	LENGTH OF DEFORMED BAR (IN.)													
	30°	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0	18.0	19.0	-	-	-
35°	9.0	10.0	10.5	11.5	12.5	13.5	14.0	15.0	16.0	17.0	-	-	-	-
40°	-	-	-	10.5	11.0	12.0	12.5	13.5	14.0	15.0	16.0	16.5	17.5	18.0
45°	-	-	-	-	-	-	-	12.5	13.0	13.5	14.5	15.0	16.0	16.5
	DIAMETER OF DEFORMED BAR (IN.)													
	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	1.0	1.0	1.0	1.0	1.0



NOTES:

1. EPOXY COATED DEFORMED BAR PLACED INTO DRILLED HOLE. BAR LENGTHS IN TABLE 1 PROVIDE APPROXIMATELY 1 TO 1.5 INCHES (25 TO 38 MM) COVER AT PAVEMENT SURFACE AND ARE BASED ON SLAB THICKNESS AND DRILLING ANGLE.
2. ENSURE A MINIMUM OF 1" COVER AT PAVEMENT SURFACE.
3. DO NOT DRILL HOLE COMPLETELY THROUGH SLAB. STOP DRILLING NO LESS THAN 1 INCH (25 MM) FROM BOTTOM OF SLAB TO ENSURE EPOXY GROUT IS RETAINED IN THE HOLE WHEN BACKFILLING.
4. DISTANCE FROM CRACK TO CENTERLINE OF BAR VARIES WITH SLAB THICKNESS AND DRILLING ANGLE AS SHOWN IN TABLE 1.
5. UNLESS OTHERWISE SPECIFIED IN THE PLANS, TABLE 1 IS PROVIDED TO ALLOW THE CONTRACTOR SELECTION OF THE DRILLING ANGLE.
6. UPON COMPLETING THE CROSS STITCHING, THE CRACK SHALL BE CRACK SEALED.

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CROSS STITCHING DETAIL (ITEM SPECIAL, MISC.: INSTALLATION OF DEFORMED BAR)

D01-CPR-FY23

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NOTES

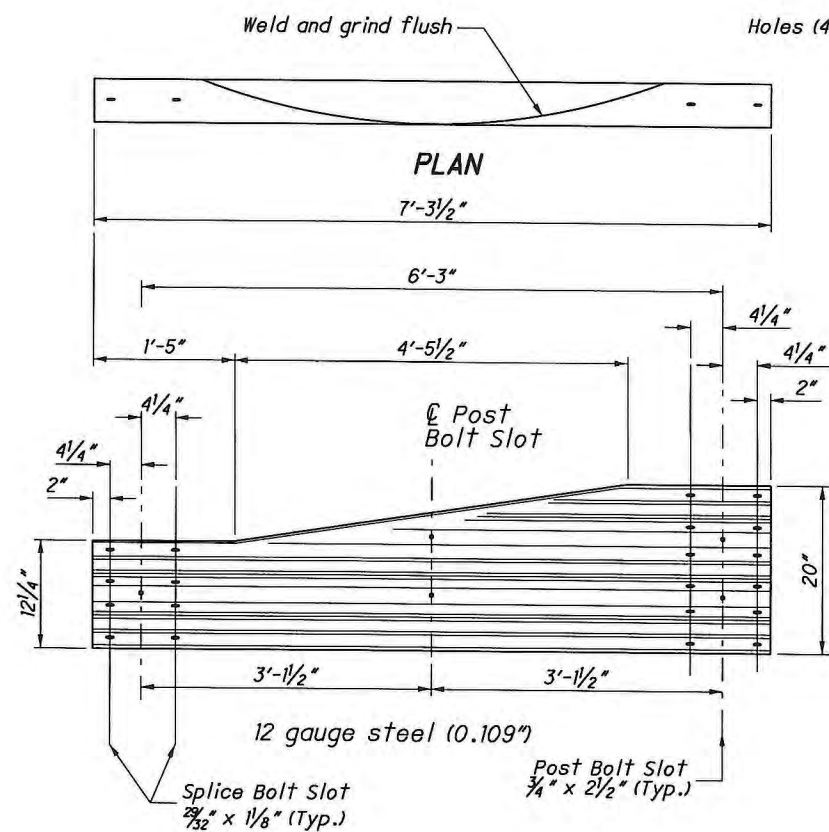
GENERAL: Components shown on this drawing are used in a variety of guardrail systems. See individual guardrail drawing for specific applications.

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

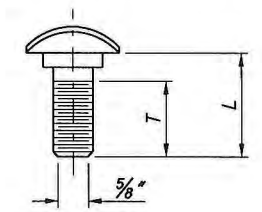
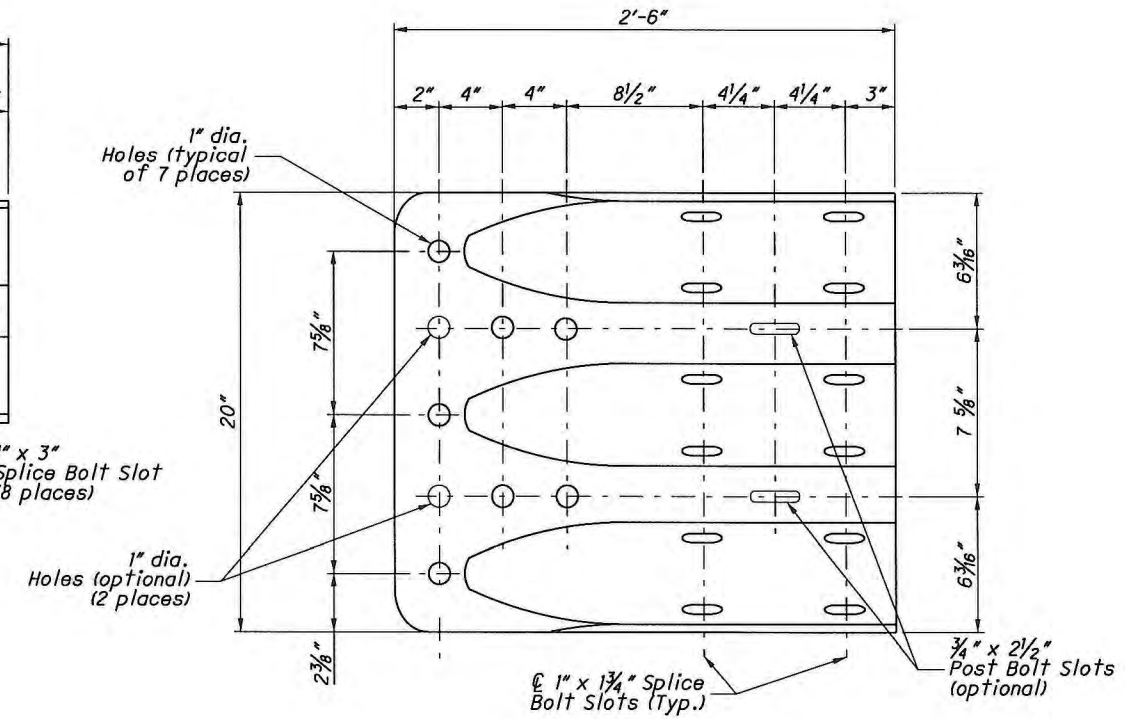
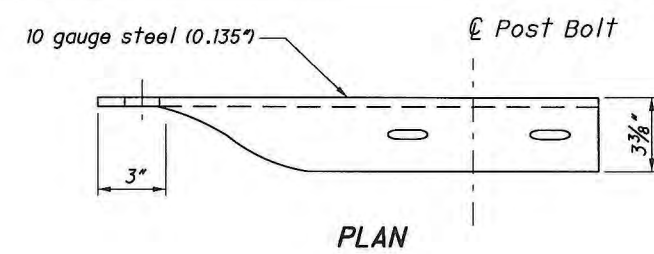
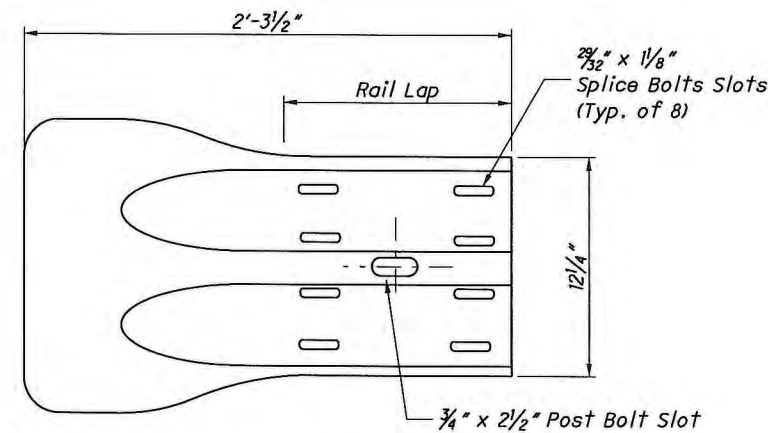
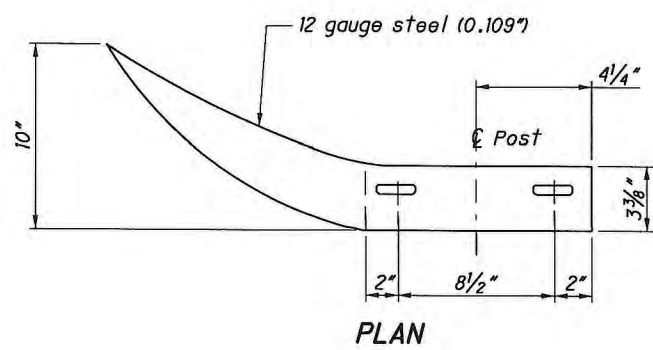
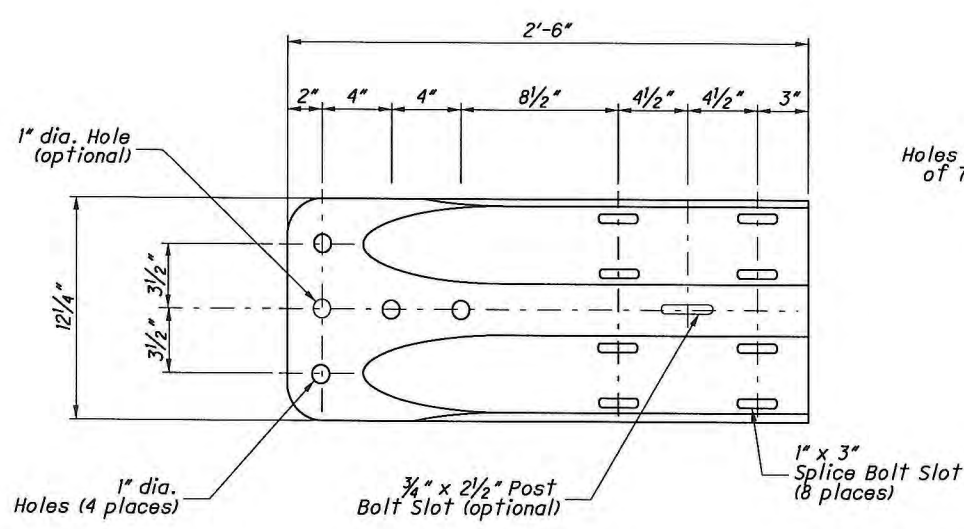
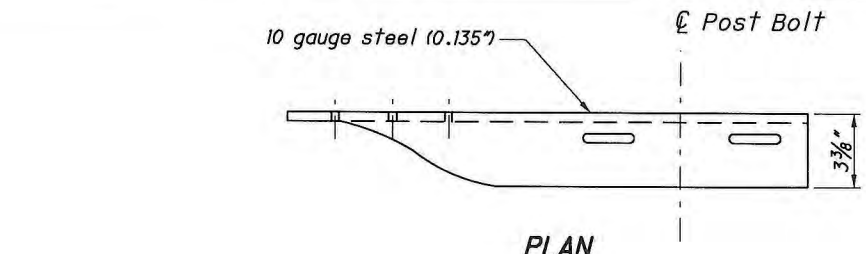
Refer to AASHTO M 180 for dimensional details of W-Beam and Thrie-Beam rail elements, related buffer and end sections, beam splices, post and splice bolts, nuts, and Type I W-Beam to Thrie-Beam Transition sections.

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.



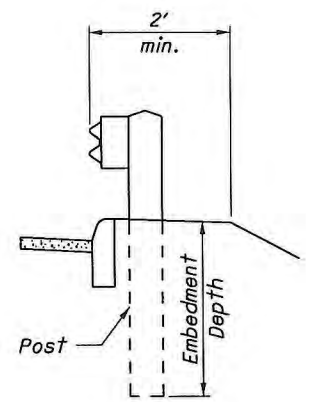
For details of Type 1 Transition Section (Symmetric), refer to AASHTO M 180, Figure 4.



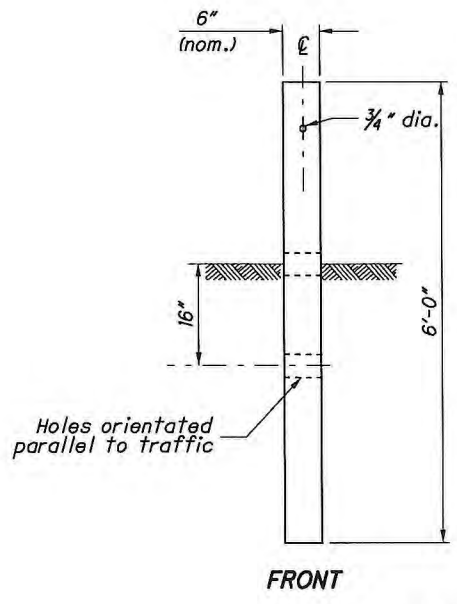
GUARDRAIL BOLT (For Post and Splice Bolts)		
L	T min.	Bolt Use
18" (Standard Rail)	4"	Type 5: WP/WB, PB
26" (Barrier Rail)		
10"	4"	Type 5: SP/WB, PB
1 1/4"	1 1/8"	Splice Bolt

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

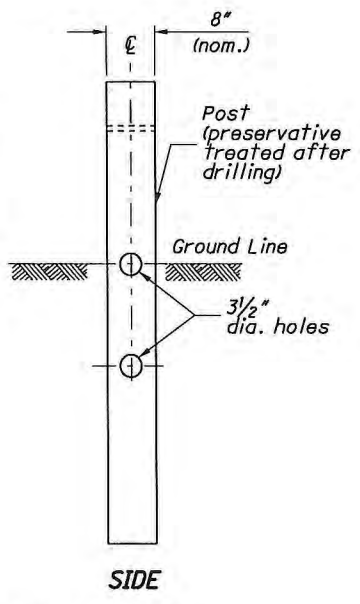
Longer Bolt may be needed for round Wood Post larger than 8" dia.



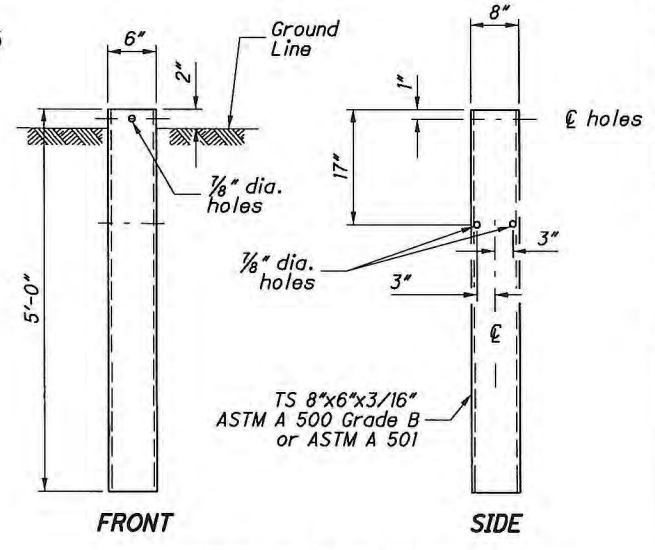
DETAIL A
See POST EMBEDMENT DEPTH Note



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 **PIS 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 **PIS 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.

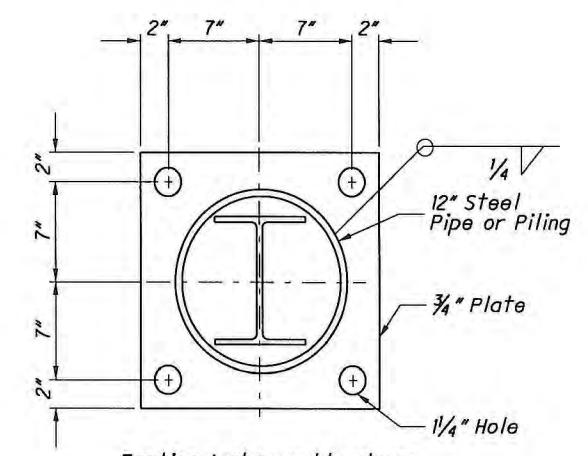
Do not drive posts located over a culvert with less than 4'-3" of cover; instead set in drilled or dug holes. Where the available post embedment depth is less than 3'-5", encase the post with a minimum of 4" concrete.

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.

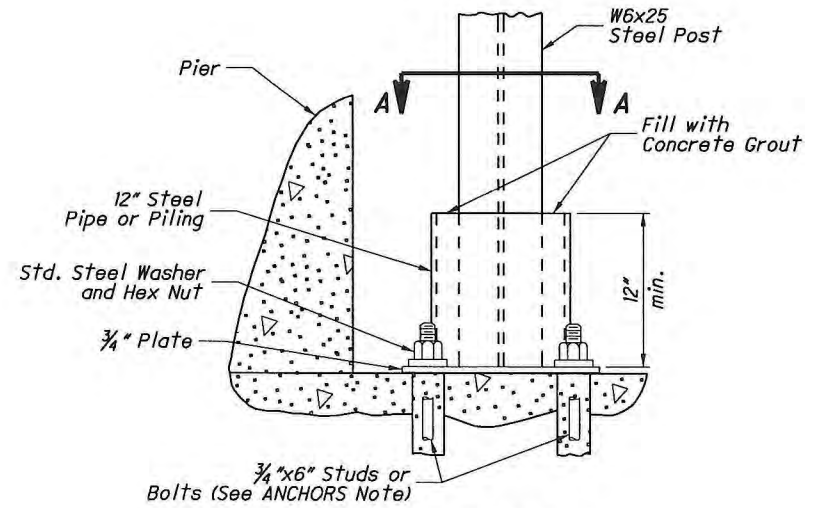
Expansion shield anchors as specified in CMS 712.01 may be substituted except where concrete deterioration has occurred, as determined by the Engineer. Where self-drilling anchors are used, drill the holes with the expansion shield (not by a drill bit) and install the shield flush with the concrete surface.

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.)



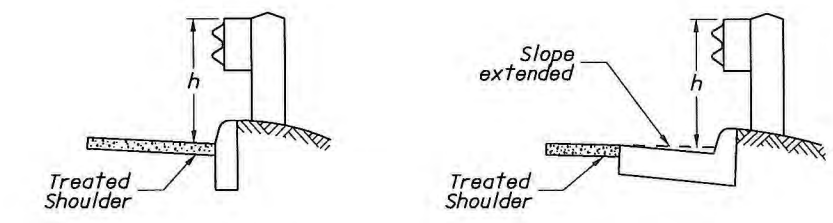
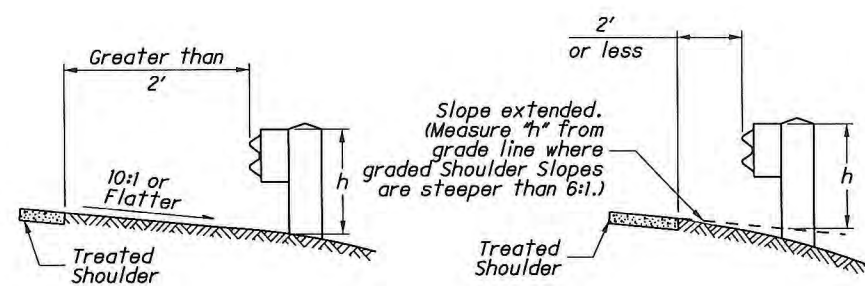
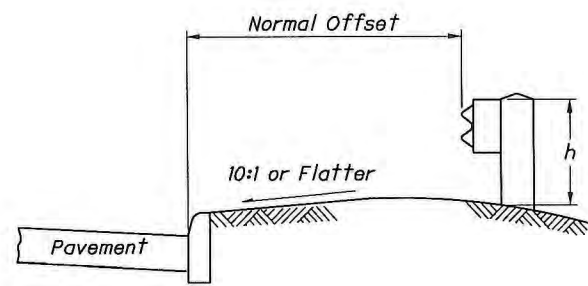
Footing Anchor and hardware need not be galvanized

SECTION A-A



ELEVATION FOOTING ANCHOR

See SPECIAL POST MOUNTINGS Note.

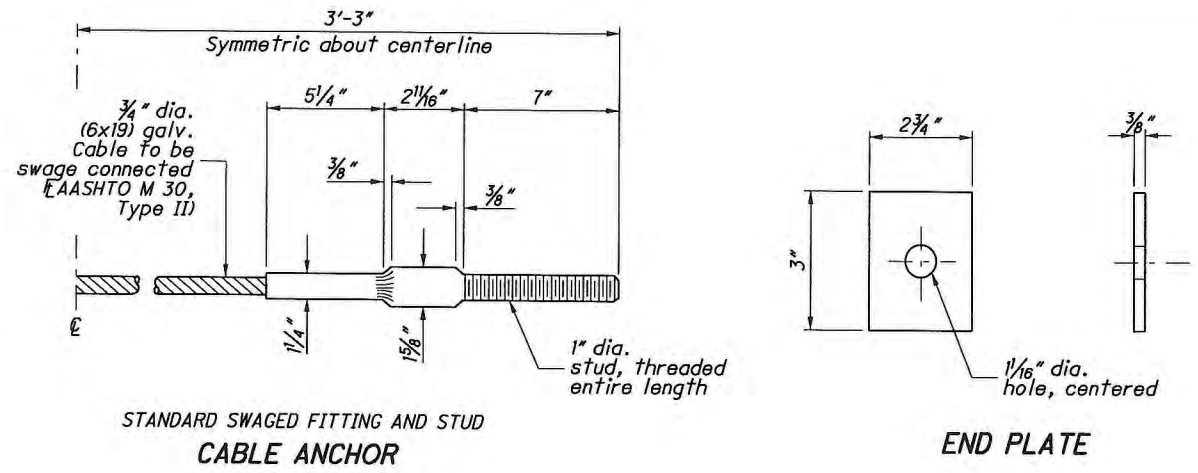


h = Standard Height (See GUARDRAIL HEIGHT Note)

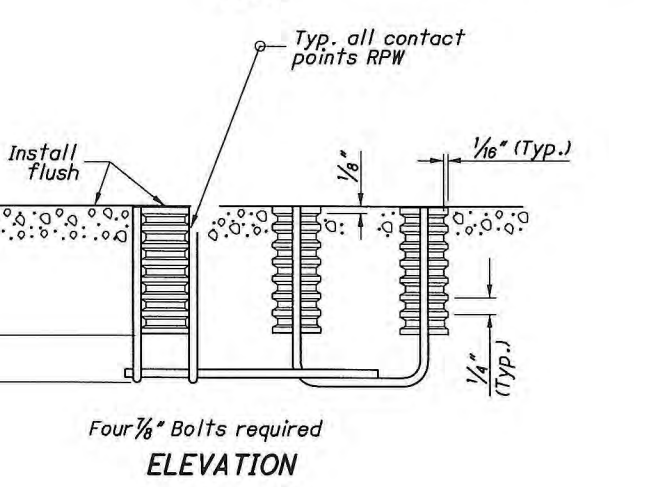
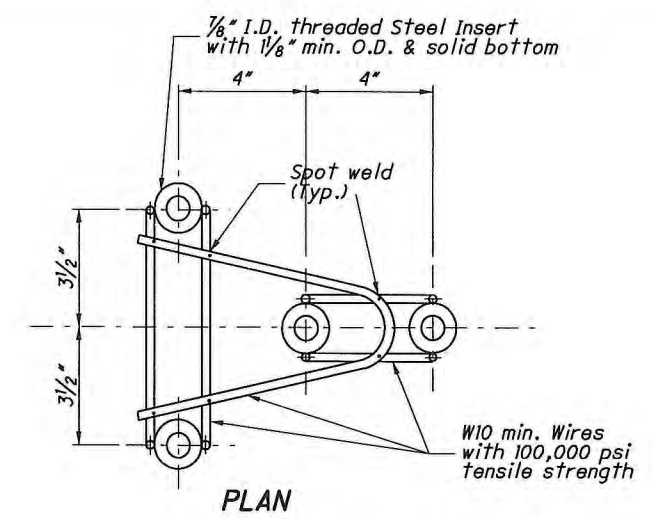
MEASURING GUARDRAIL HEIGHT

I:\Projectdata\107806\Design\Roadway\Sheets\PIS_GR-1.1_1-18-2013.dgn Sheet 2 29-AUG-2022 11:25AM eschecke

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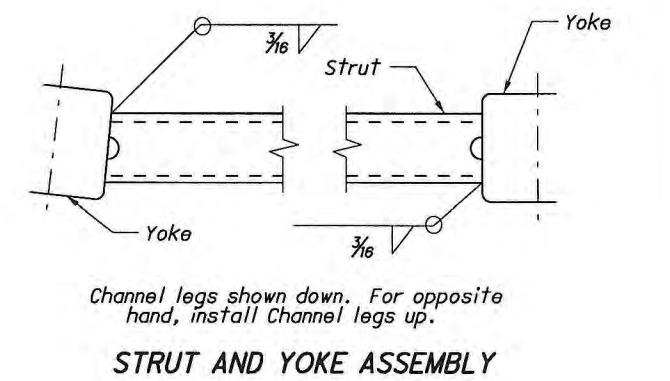
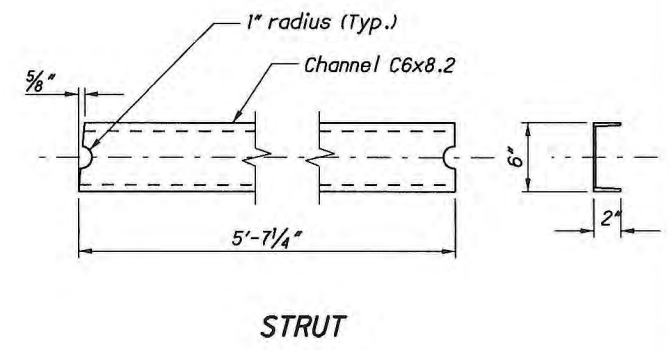
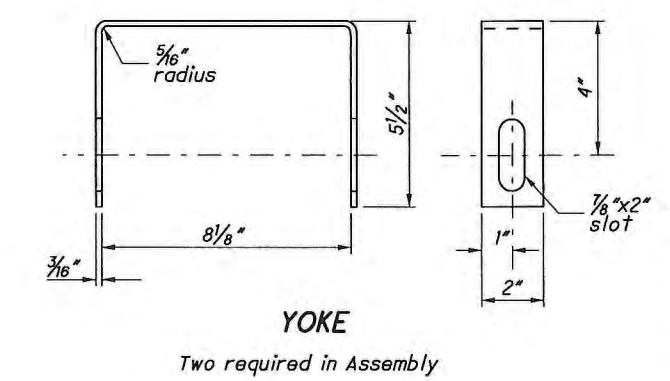


END PLATE

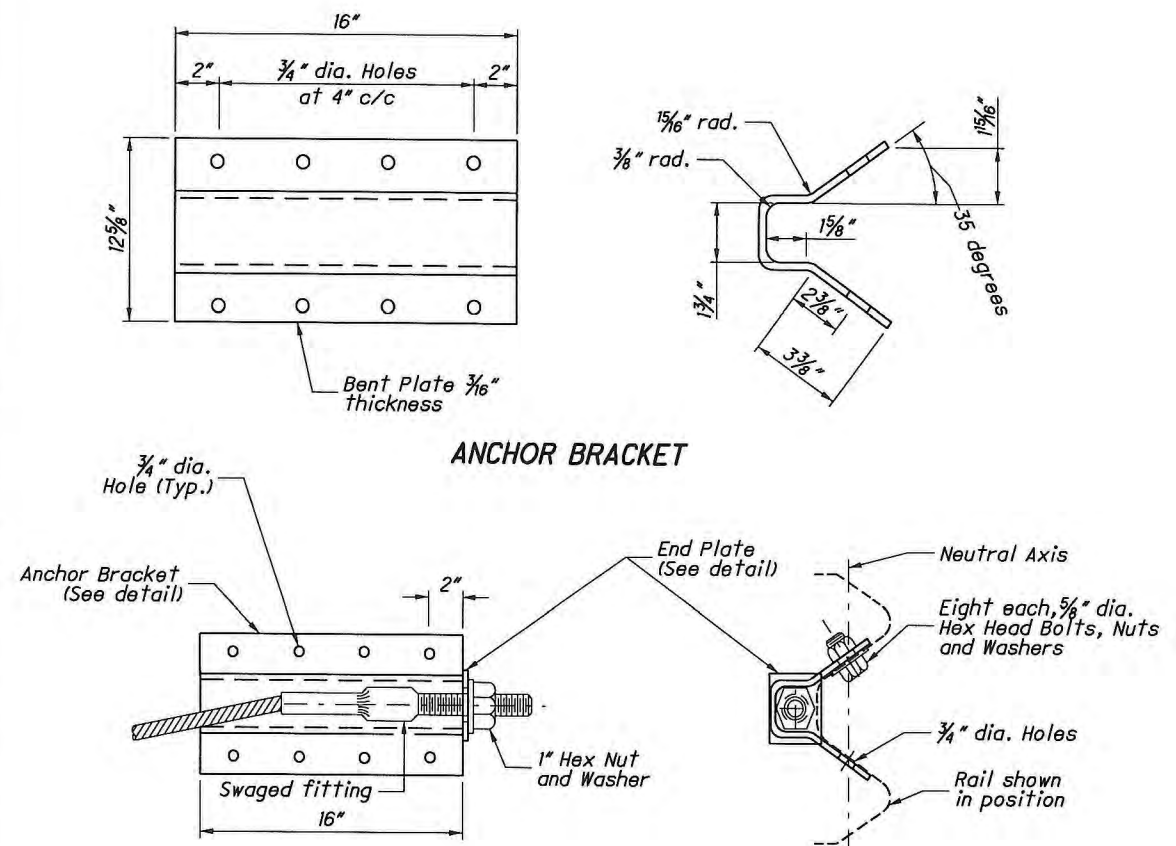


CONCRETE INSERT ANCHOR ASSEMBLY (W-BEAM ONLY)

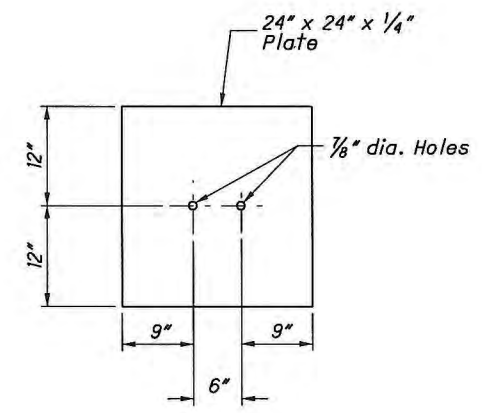
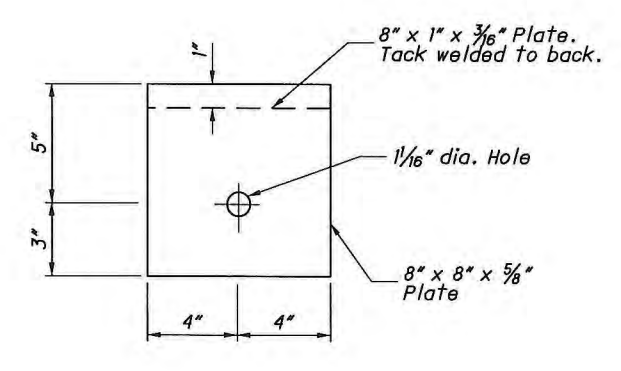
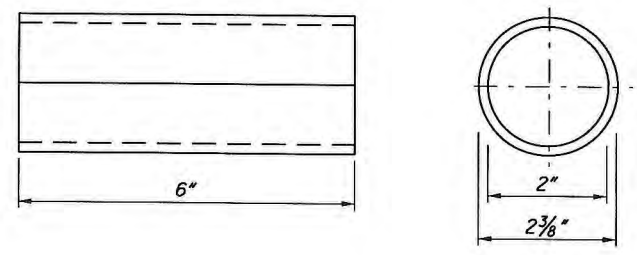
See ANCHORS and PROTECTIVE COATINGS Notes on Sheet 2



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



ANCHOR BRACKET ASSEMBLY DETAILS

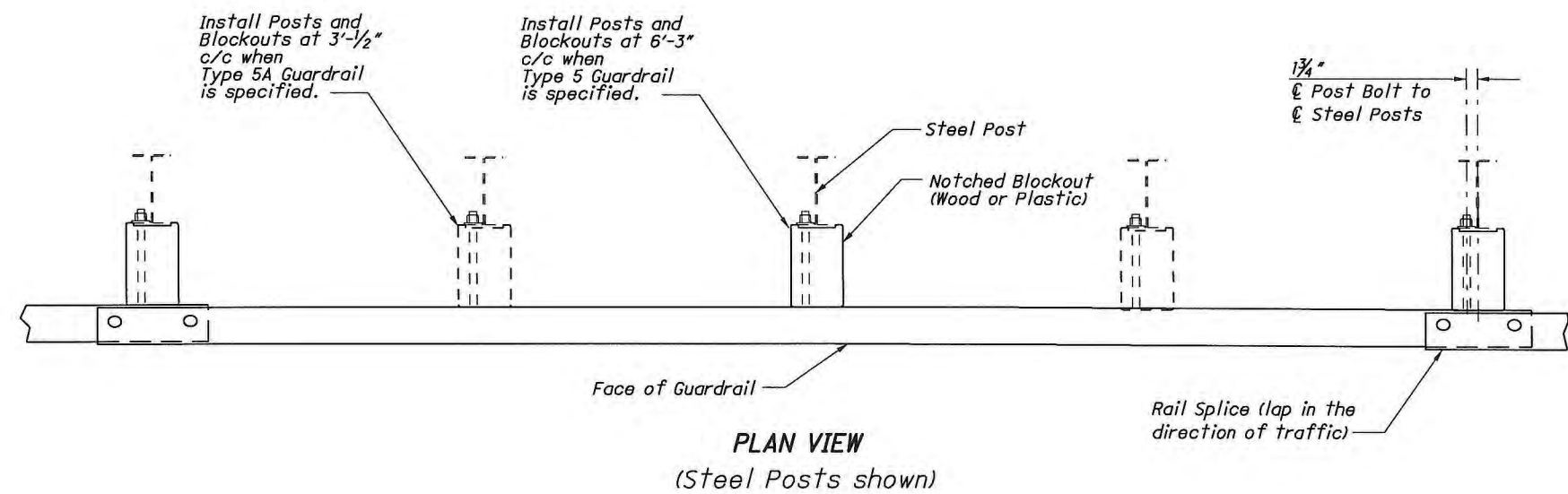


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REVISION DATE	1/18/2013
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REVIEWED	XXX
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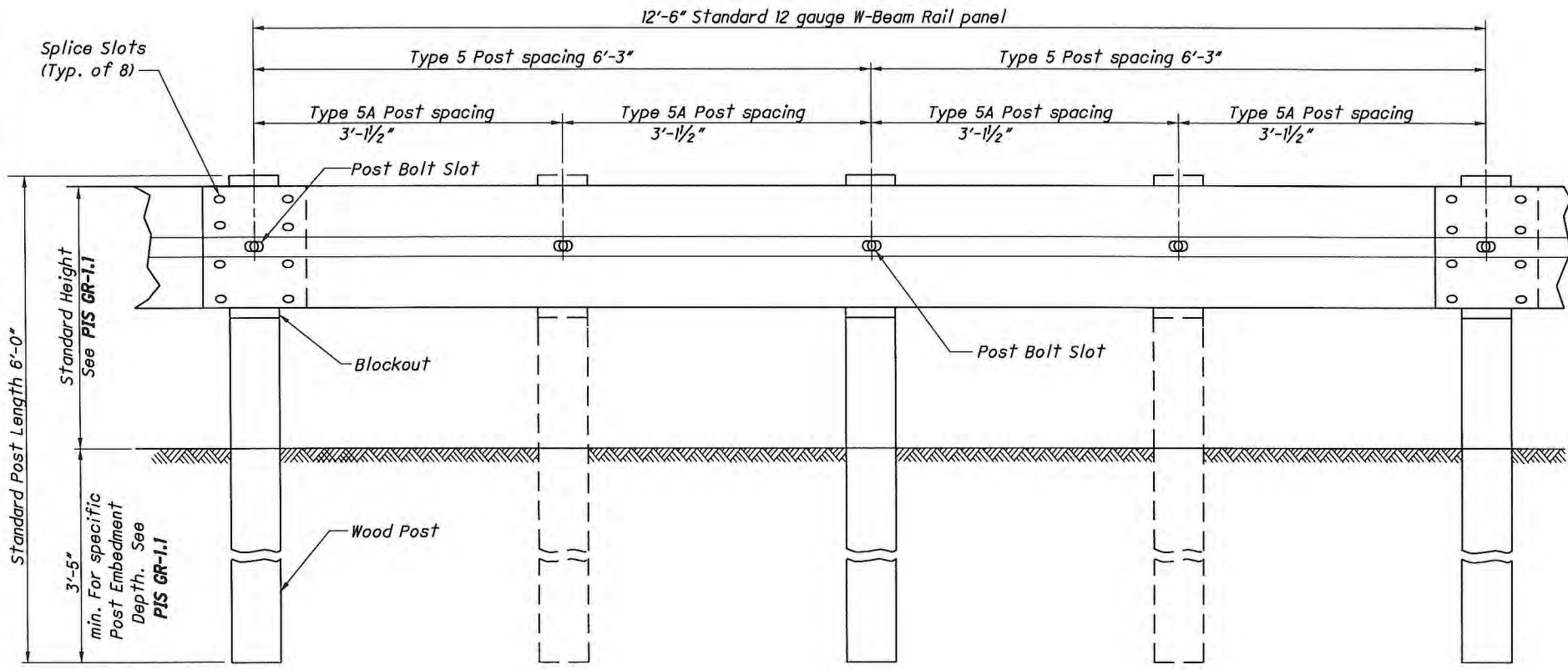
OFFICE OF ROADWAY ENGINEERING
GUARDRAIL DETAILS (Type 5 Rail Components)
GR-1.1

D01-EROSION REPAIR-FY23

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PLAN VIEW
(Steel Posts shown)



ELEVATION
(Wood Posts shown)

NOTES

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

POSTS: Posts shall be constructed of steel.

~~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 shall be used in lieu of the wood blockouts shown. The approved list is maintained by the Office of Roadway Engineering.~~

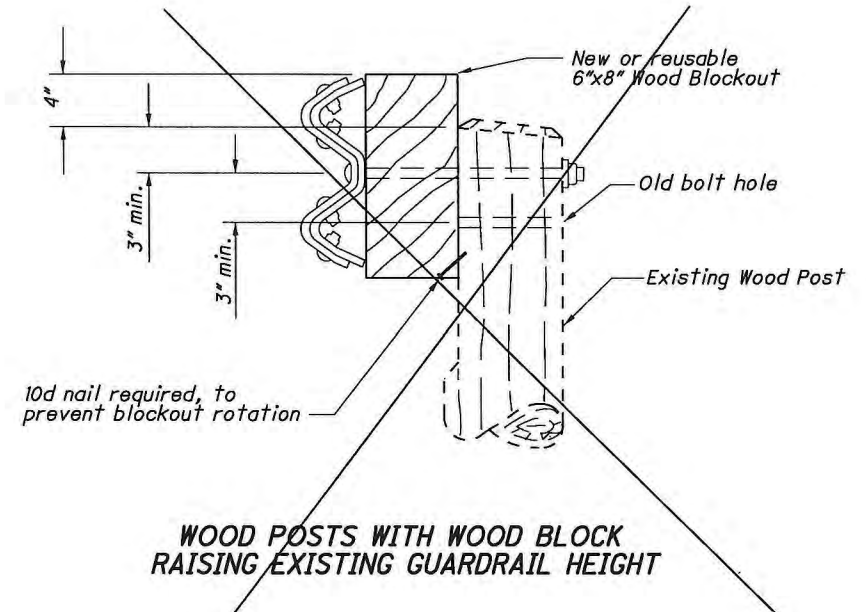
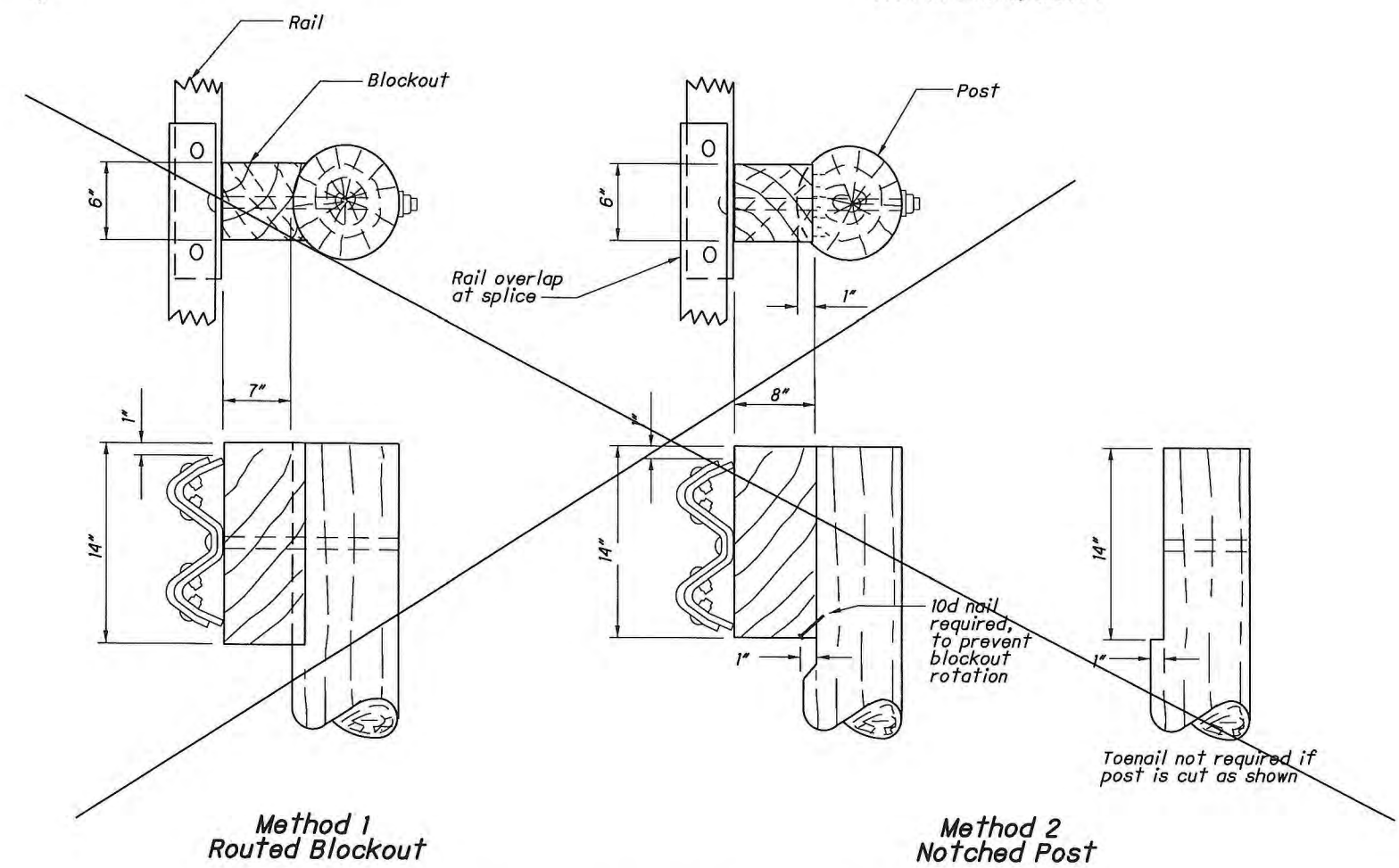
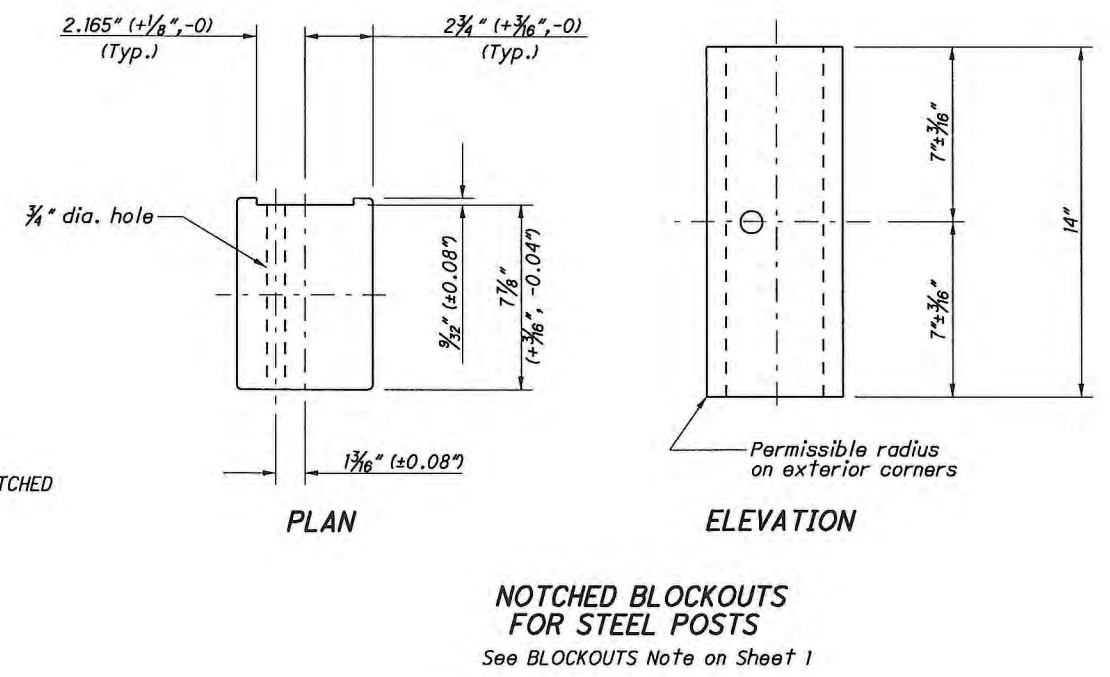
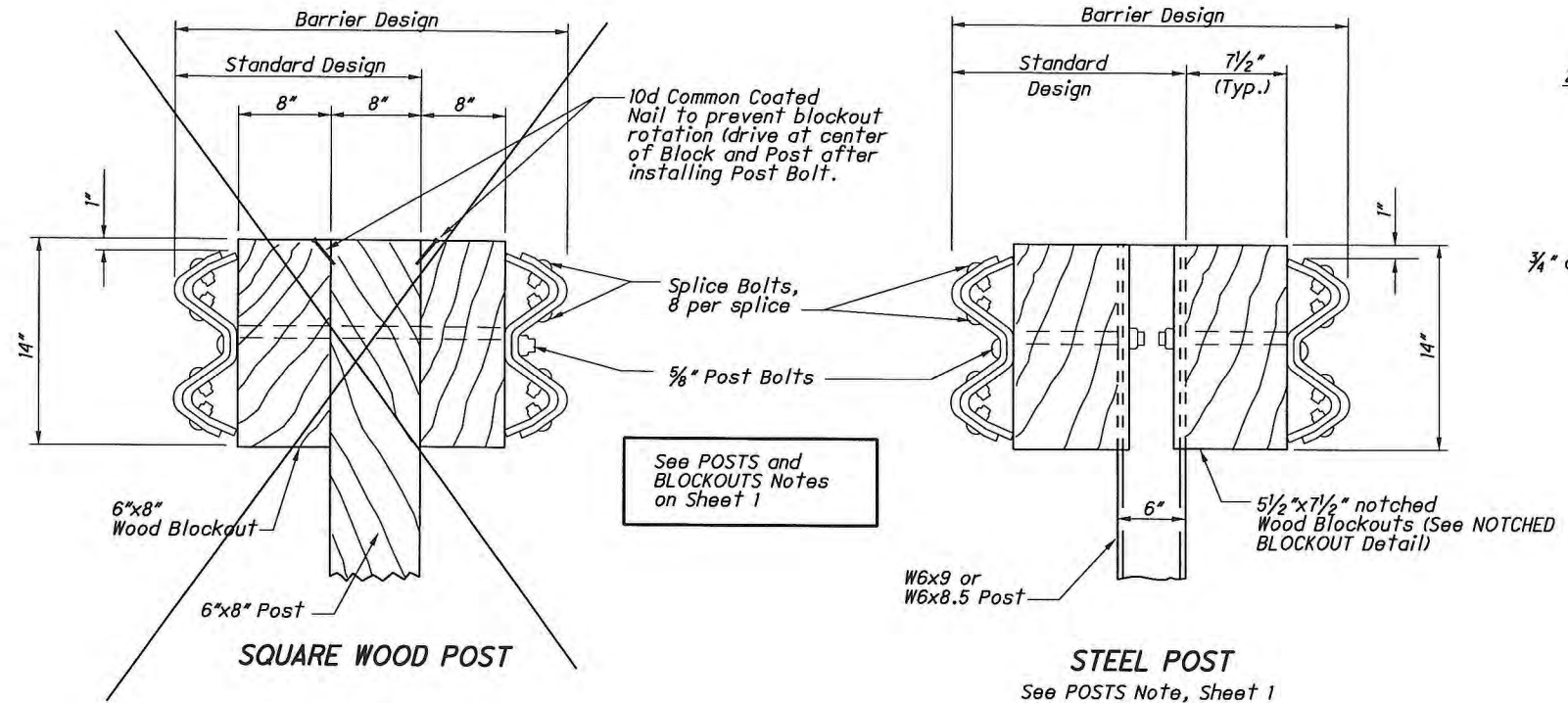
WASHERS: Install appropriate sized standard galvanized steel washers on the nut side of bolts installed on wood posts.

DELINEATION: For barrier reflectors, see CMS 626.

MISCELLANEOUS: For other guardrail details, see PIS 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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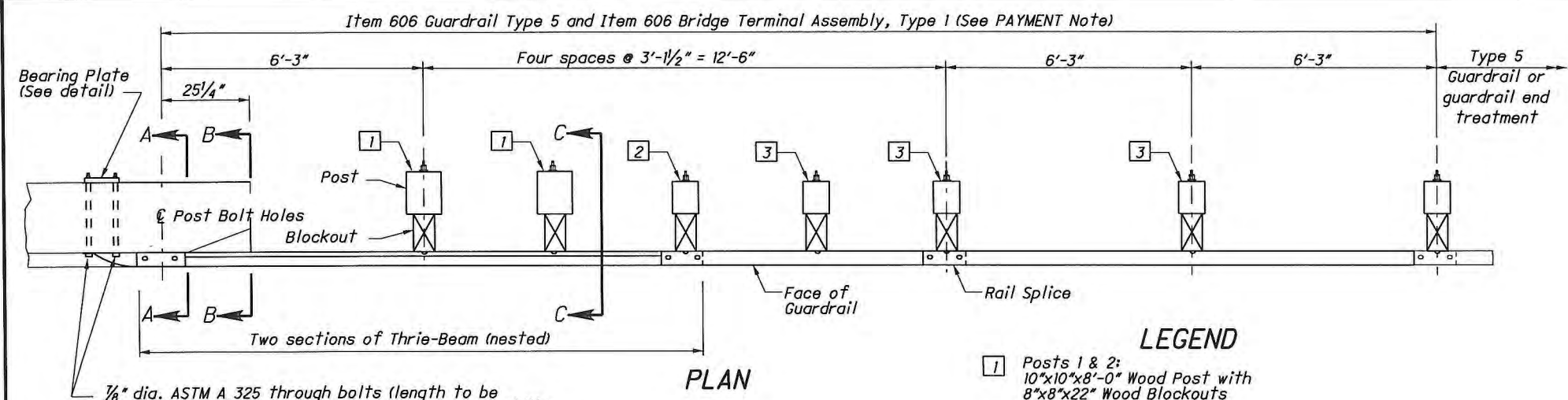


Alternate methods of placing the Blockouts on round Posts may be submitted for consideration and approved by the Engineer.

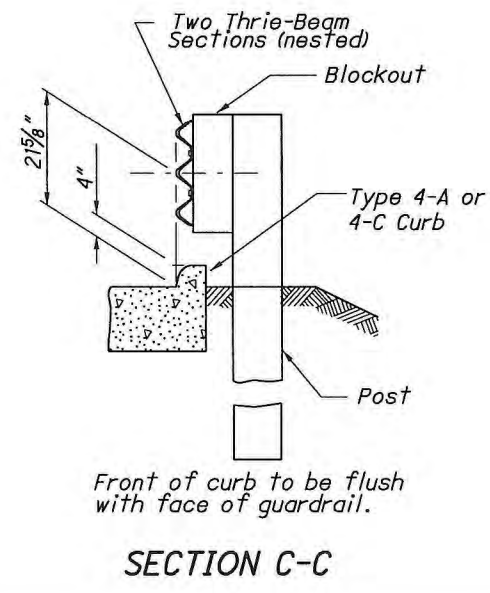
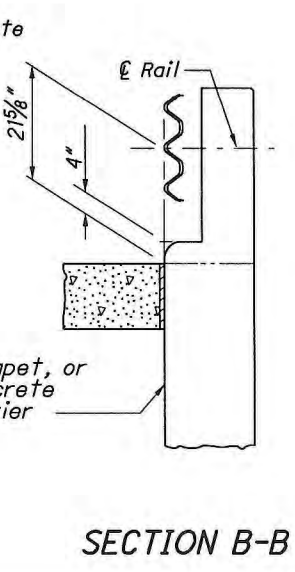
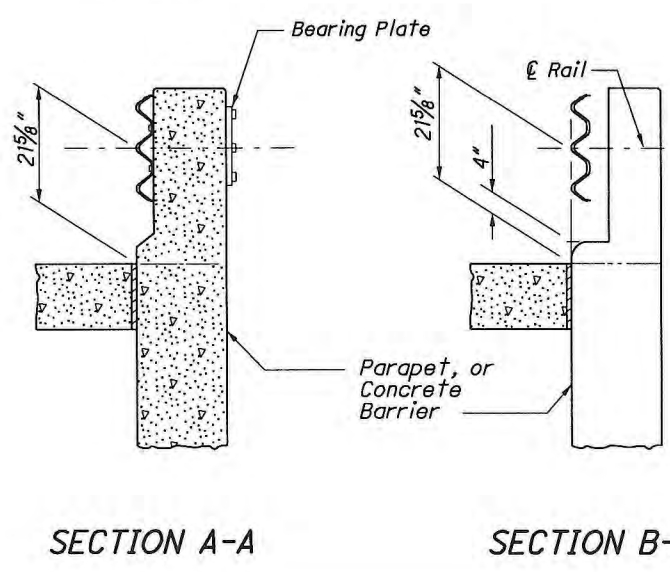
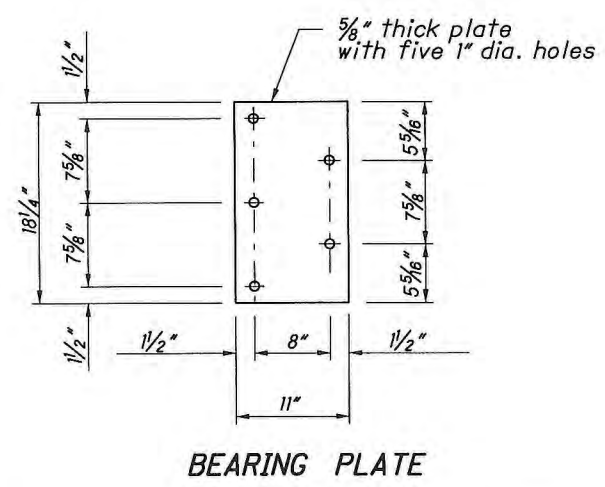
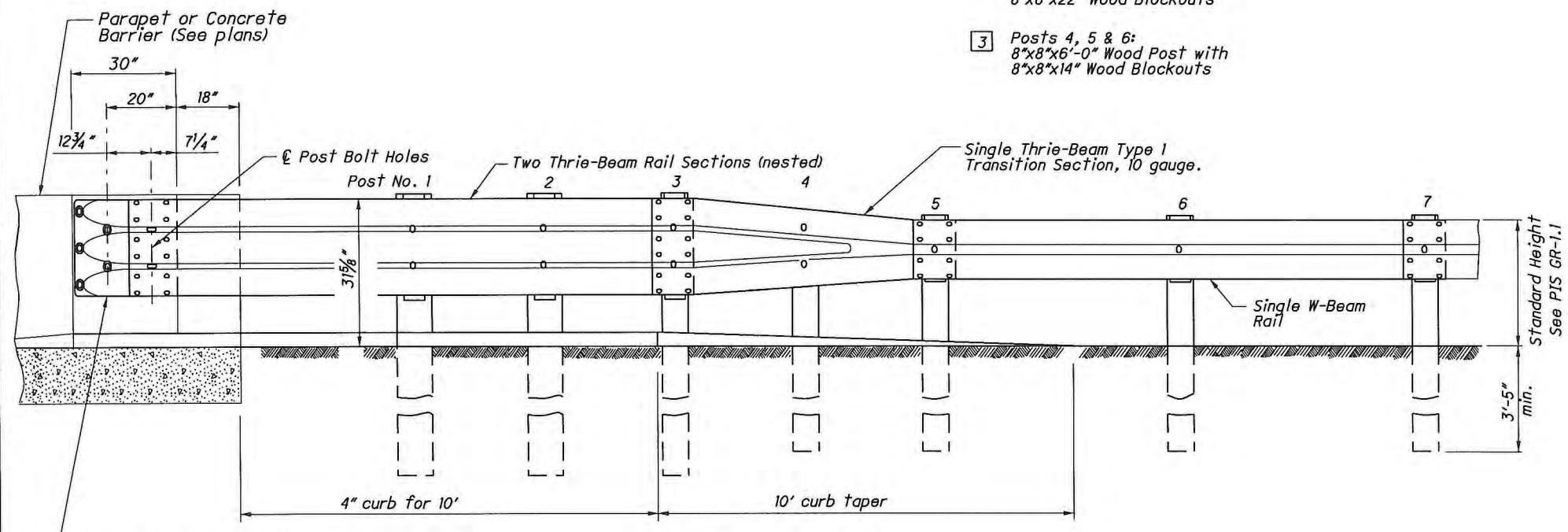
ROUND WOOD POSTS
Single Sided runs only (Standard Design)

DESIGNED		OFFICE OF ROADWAY ENGINEERING	
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PLAN INSERT SHEET			
GUARDRAIL TYPE 5 & 5A			
GR-2.1			
D01-EROSION		REPAIR-FY23	
2 / 2		19 32	

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- LEGEND**
- 1 Posts 1 & 2:
10"x10"x8'-0" Wood Post with
8"x8"x22" Wood Blockouts
 - 2 Post 3:
8"x8"x8'-0" Wood Post with
8"x8"x22" Wood Blockouts
 - 3 Posts 4, 5 & 6:
8"x8"x6'-0" Wood Post with
8"x8"x14" Wood Blockouts



NOTES

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

APPLICATION: Use Type 1 Bridge Terminal Assembly to connect guardrail runs to bridges having deflector Parapet Type Bridge Railing (see Structural Engineering's SCD BR-1). It may also be used to connect guardrail runs to the approach ends of Concrete Barrier (see SCD RM-4.6).

On undivided, bi-directional roadways, Type 1's may be used to anchor guardrail runs to the trailing end of Deflector Parapets or Concrete Barrier installations.

THRIE BEAM TRANSITION: Symmetrical W-Beam to Thrie Beam transition panel shall be 10 gauge.

POSTS: Posts may be set in drilled holes or driven to grade. See PIS GR-1.1 for additional Post embedment details.

WOOD POSTS - Use square sawed pressure treated wood as per CMS 710.14 and fabricate 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 W8x24 for 10"x10" wood posts and use W6x25 for 8"x8" posts. Use same post material throughout assembly.

BLOCKOUTS: Use wood blockouts only, steel or plastic blockouts are not permitted. Use notched blockouts with steel posts.

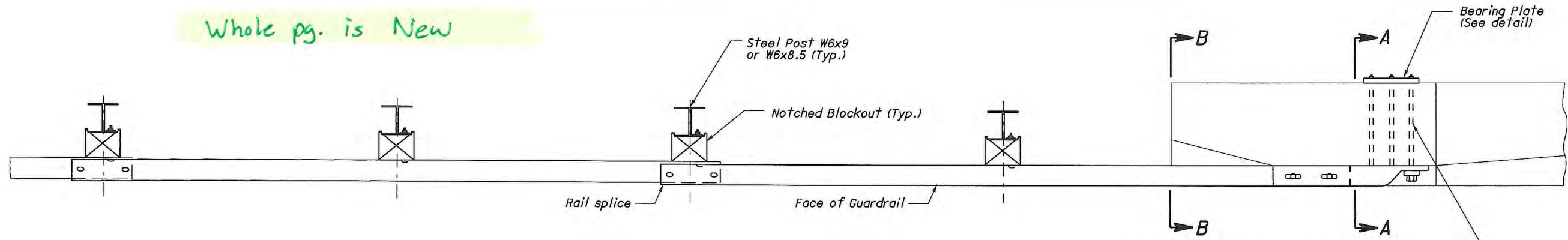
CURB: Provide a Type 4A or 4C concrete curb minimum of 20', or longer as shown on plans, including a 10' taper (from curb height to flush). Front of curb to be flush with face of guardrail.

FLARED GUARDRAIL: Begin Standard Guardrail Flares as shown on SCD MGS 6.1 preferably at or beyond Post No. 7; however, the flare may begin at Post No. 5.

PAYMENT: Item 606 - Bridge Terminal Assembly, Type 1, Each, includes the cost of extra components, in excess of normal guardrail, for additional and different size of posts and blockouts, nested Thrie-Beam, transition and connector sections, Bearing Plate, bolts, washers, nuts, and other hardware.

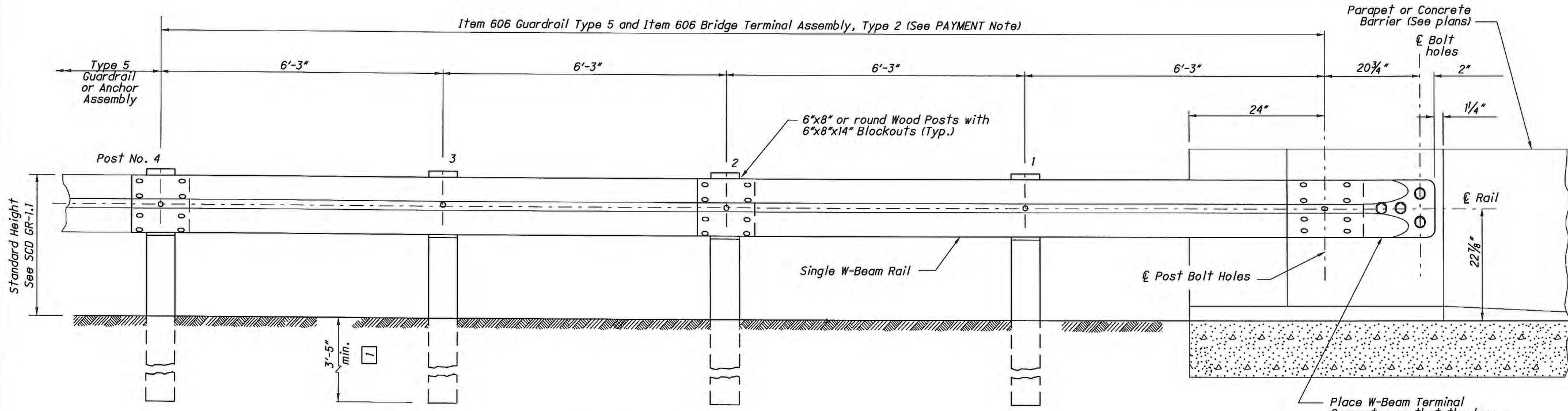
~~The curb is required in this design, and is paid separately under Item 609 - Curb, Type 4A for 4C, per Foot, for the curb and taper sections, including materials, forming and labor needed to construct as shown.~~

Whole pg. is New

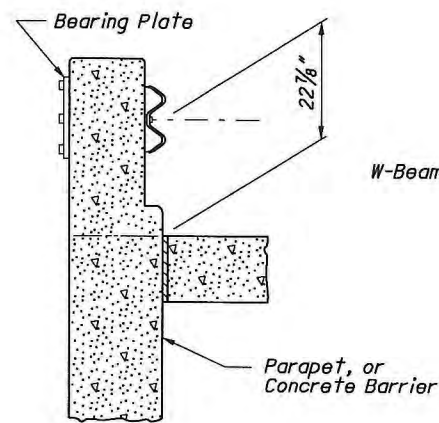


PLAN (Steel Posts shown. See POSTS Note.)

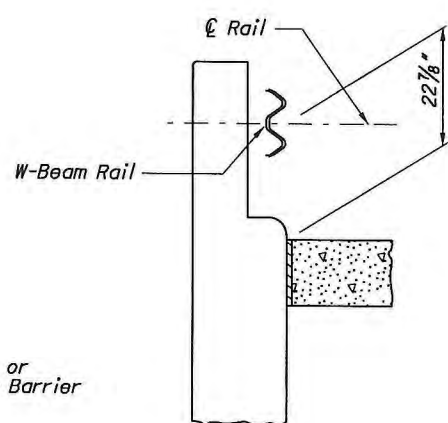
1/8" dia. ASTM A 325 through bolts (length to be determined in field in accordance with Parapet width) into Bearing Plate with standard washers and hex nuts



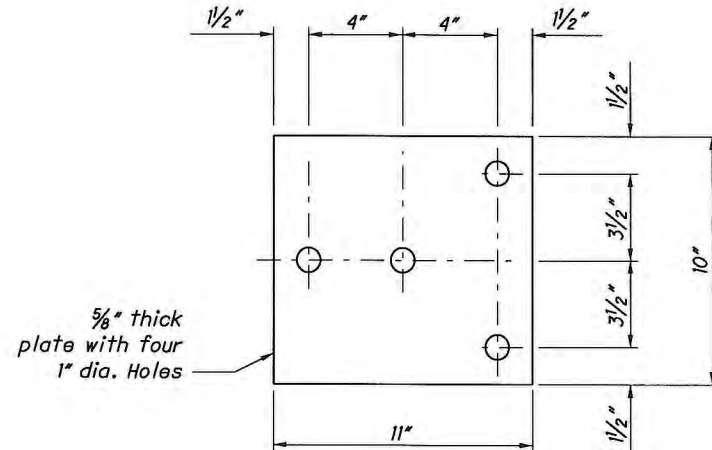
ELEVATION (Wood Posts shown. See POSTS Note.)



SECTION A-A



SECTION B-B



BEARING PLATE

NOTES

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

APPLICATION: Use Type 2 Bridge Terminal Assembly to connect guardrail runs to the trailing end of Parapets or Concrete Barriers (see SCD RM-4.6 for barrier) on one-directional roadways. Do not use if located within clear zone of opposing traffic.

POSTS: Posts shall be of standard size and material specified for the appropriate type of guardrail to be installed leaving the bridge or barrier. For Type 5 guardrail, see SCD GR-2.1.

BLOCKOUTS: Wood or plastic blockouts are permitted.

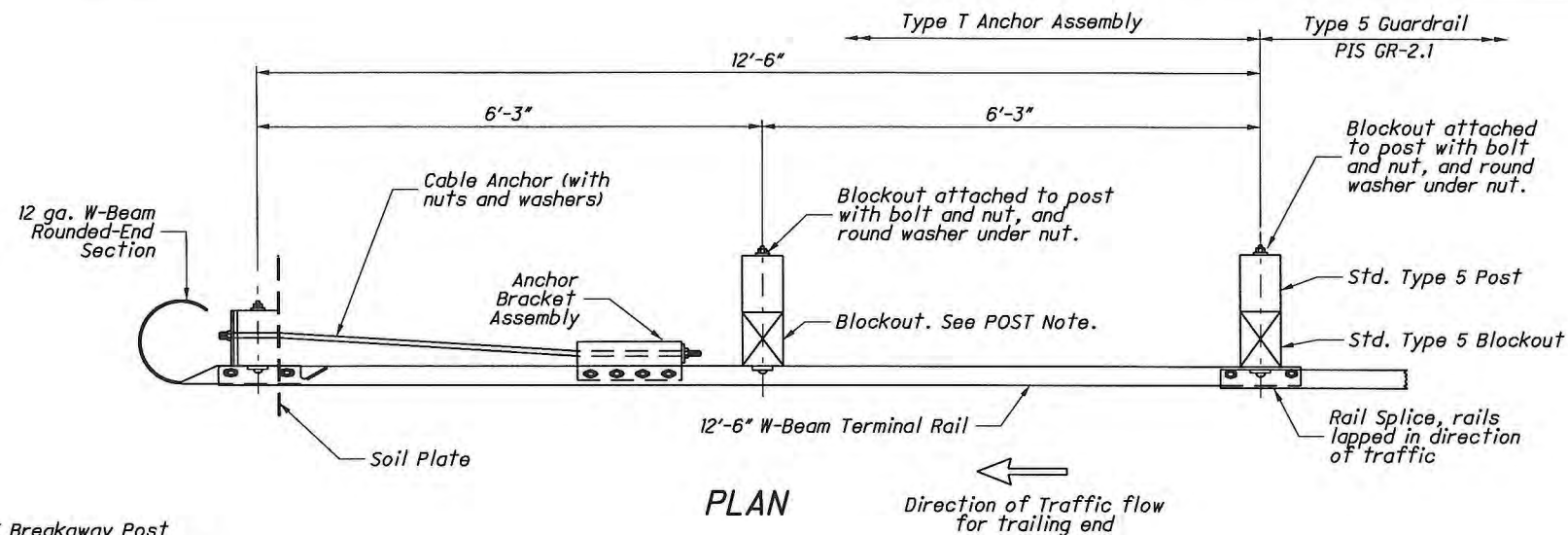
FLARED GUARDRAIL: Begin Standard Guardrail Flares as shown on SCD GR-5.1, preferably at or beyond Post No. 4, however, the flare may begin at Post No. 2.

PAYMENT: Item 606 - Bridge Terminal Assembly, Type 2, Each, includes the cost of extra components, in excess of normal guardrail for the Terminal connector, Bearing Plates, bolts, washers, nuts, and other hardware.

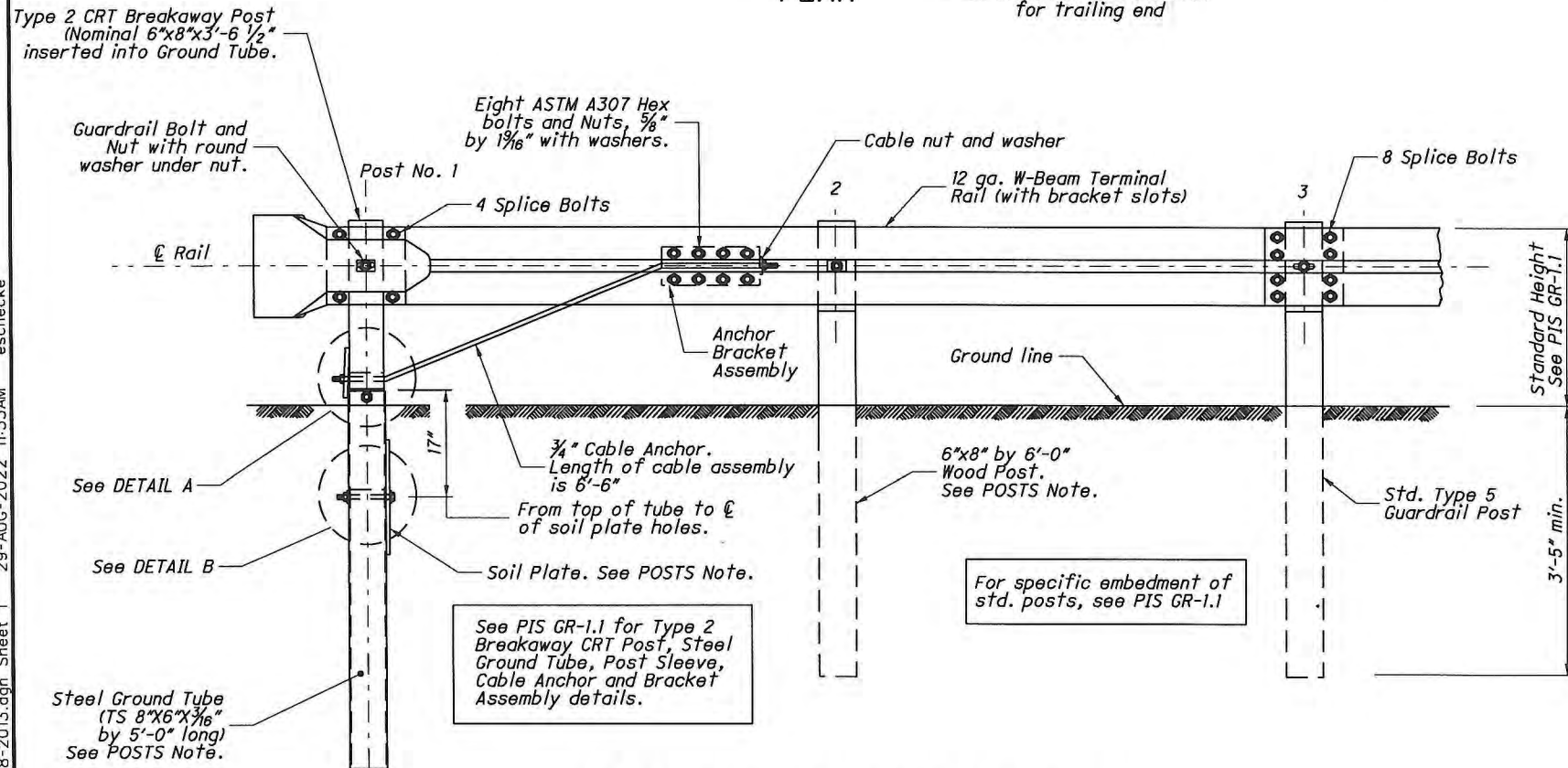
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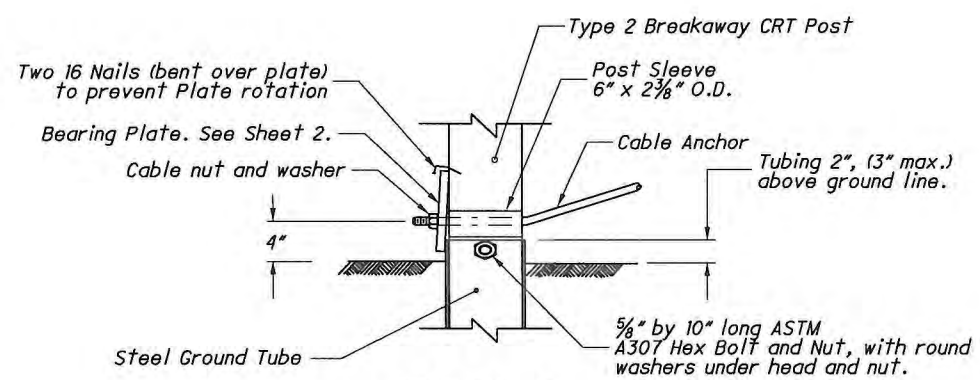
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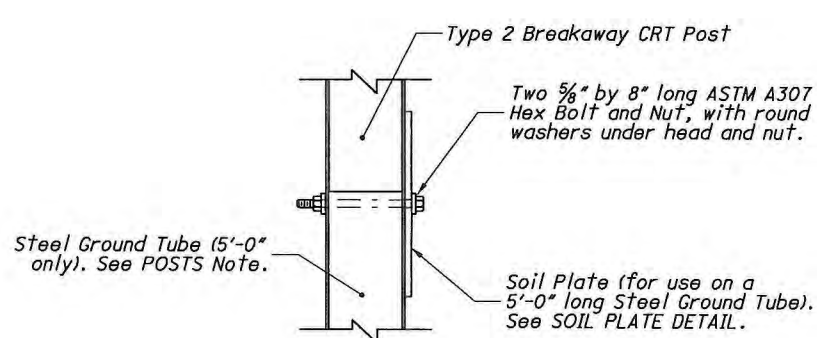
PLAN



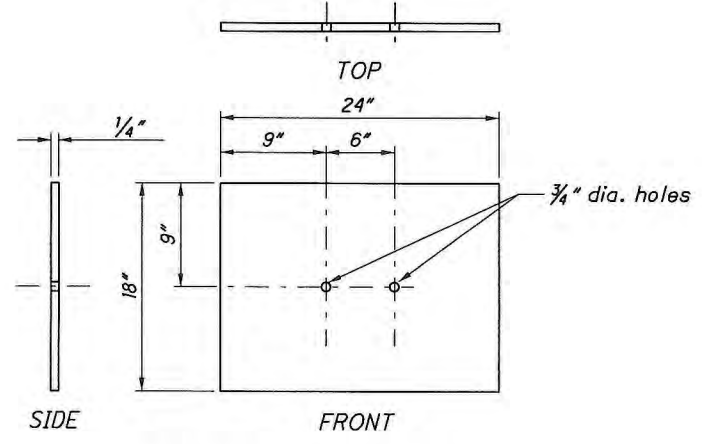
ELEVATION - FOUNDATION TUBE



DETAIL A



DETAIL B



SOIL PLATE DETAIL

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 PIS 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.

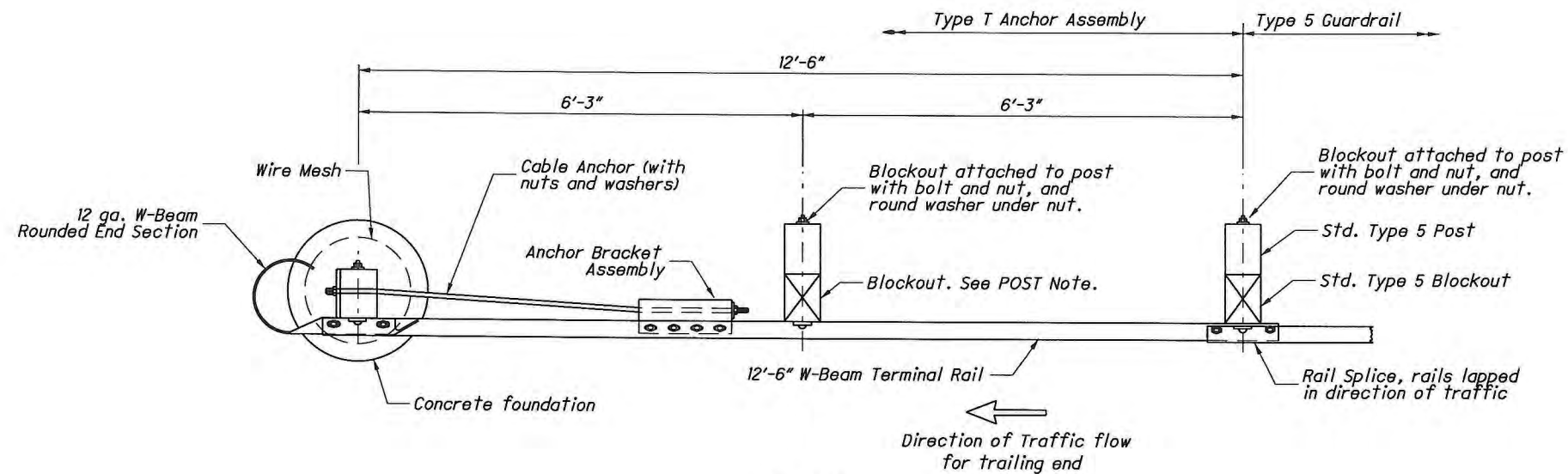
Concrete shall be class C.

Components on this anchor that are not detailed on PIS 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.

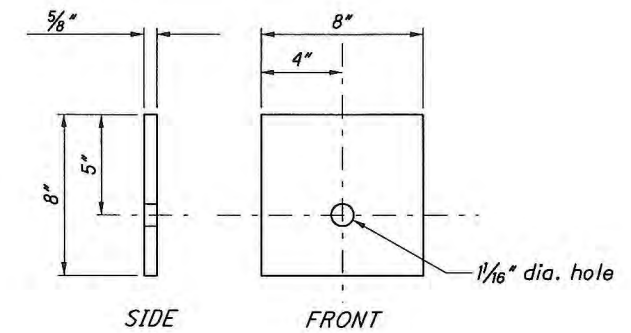
POSTS: Post No. 1 may be an 8'-0" long Steel Ground Tube without a Soil Plate in lieu of the 5'-0" tube with Soil Plate.

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.

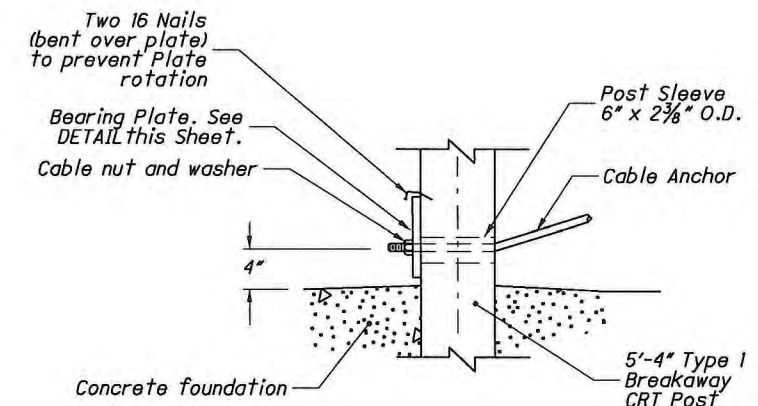
PAYMENT: All labor and materials, including the W-Beam Rounded End Section and the W-Beam Terminal Rail for the 12'-6" anchor assembly shall be included in the unit price bid for Item 606 - Anchor Assembly, Type T, Each.



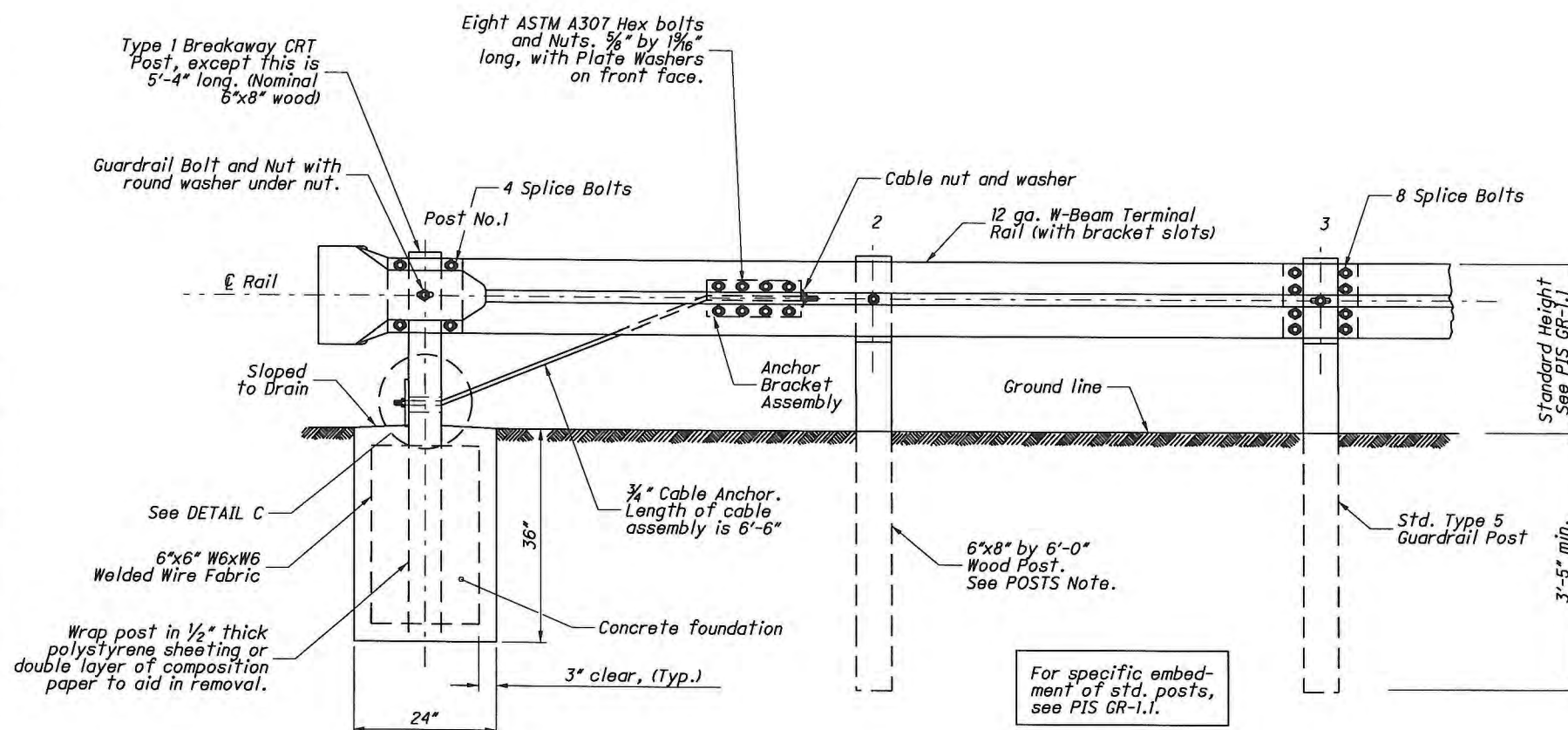
PLAN



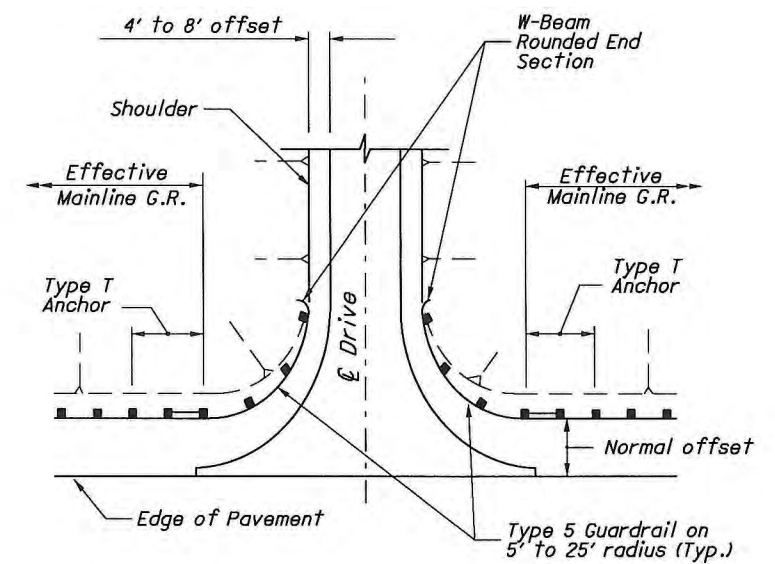
BEARING PLATE DETAIL



DETAIL C



ELEVATION - CONCRETE FOOTER

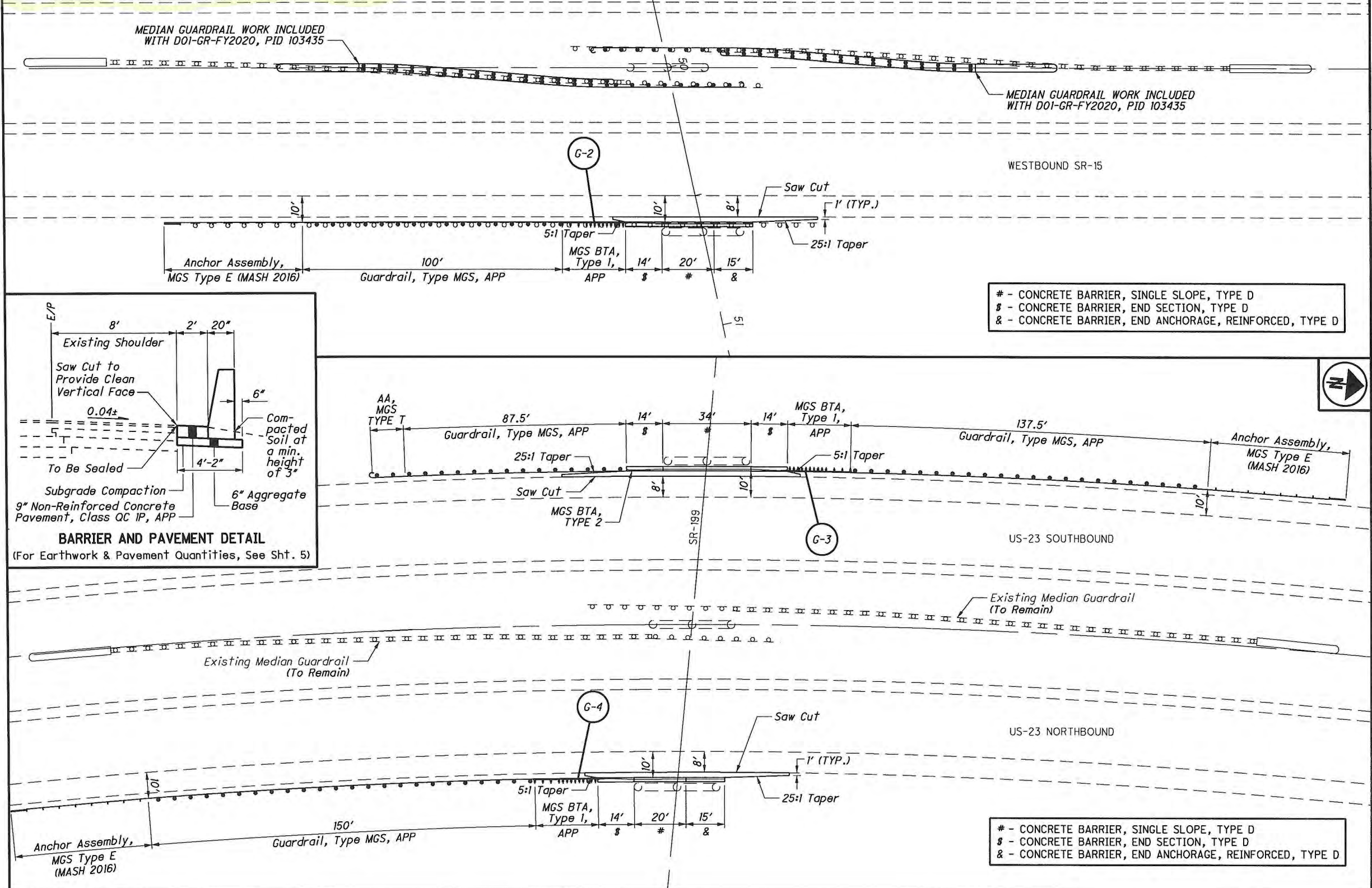


DRIVEWAY OPENING

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REVISION DATE	1/18/2013	CHECKED	XXX
PLAN INSERT SHEET			
TYPE T ANCHOR ASSEMBLY (Foundation Tube Option)			
GR-4.2 (Type 5 Railing)			
D01-EROSION REPAIR-FY23		2 / 2	
22			
32			

CALCULATIONS	
ITEM 659 - SOIL ANALYSIS TEST (01/NHS/OT) =	= 2 EACH
ITEM 659 - LIME (01/NHS/OT) = (300)(9)(1/43560)	= 0.06 ACRE
ITEM 659 - COMMERCIAL FERTILIZER (01/NHS/OT) = [(300)(9)(1/1000)(30)(1/2000)]	= 0.04 TON
ITEM 659 - WATER (01/NHS/OT) = [(2)(300)(9/1000)(300)(1/1000)]	= 1.6 MGAL
TOTALS CARRIED TO GENERAL SUMMARY	



- CONCRETE BARRIER, SINGLE SLOPE, TYPE D
 \$ - CONCRETE BARRIER, END SECTION, TYPE D
 & - CONCRETE BARRIER, END ANCHORAGE, REINFORCED, TYPE D

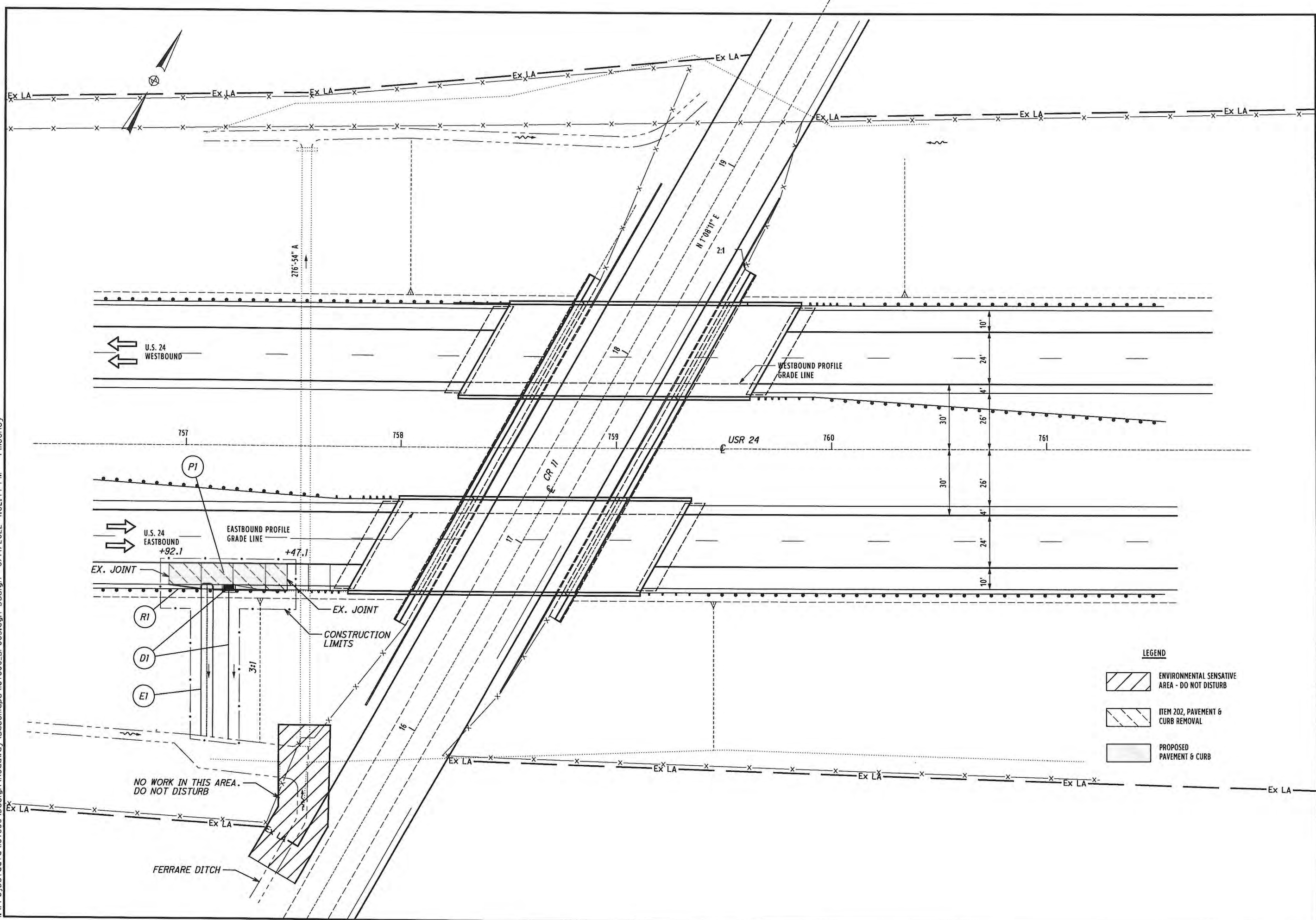
- CONCRETE BARRIER, SINGLE SLOPE, TYPE D
 \$ - CONCRETE BARRIER, END SECTION, TYPE D
 & - CONCRETE BARRIER, END ANCHORAGE, REINFORCED, TYPE D

ITEM NO.	DESCRIPTION	UNIT	QUANTITY	CALCULATED	CHECKED	EJS
659	SEEDING AND MULCHING	SY	300			
626	REFLECTOR, TYPE 2 (1-WAY) BARRIER	EACH	16			
626	REFLECTOR, TYPE 1 (1-WAY) BARRIER	EACH	4			
622	CONCRETE BARRIER END SECTION, TYPE D	EACH	5			
620	CONCRETE BARRIER, SINGLE SLOPE, TYPE D	FT	94			
620	DELINATOR, POST (GROUND MOUNTED TYPE C)	EACH	4			
606	MGS BRIDGE TERMINAL ASSEMBLY, TYPE 1, AS PER PLAN	EACH	4			
606	MGS BRIDGE TERMINAL ASSEMBLY, TYPE 2, AS PER PLAN	EACH	1			
606	ANCHOR ASSEMBLY, MGS TYPE 1	EACH	1			
606	ANCHOR ASSEMBLY, MGS TYPE E (MASH 2016)	EACH	4			
208	GUARDRAIL, TYPE MGS, AS PER PLAN	FT	575.00			
203	RESHAPING UNDER GUARDRAIL	STA.	9			
202	GUARDRAIL REMOVED, AS PER PLAN	FT	1137.50			

COUNTY-ROUTE-SECTION	DIRECTION	SIDE	TOTALS CARRIED TO GENERAL SUMMARY			
			RT	LT	RT	LT
G-1	EB	RT				
G-2	WB	RT				
G-3	SB	RT				
G-4	NB	RT				

GUARDRAIL DETAILS

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U.S. 24 WESTBOUND

U.S. 24 EASTBOUND

EX. JOINT

R1

D1

E1

EASTBOUND PROFILE GRADE LINE

EX. JOINT

CONSTRUCTION LIMITS

NO WORK IN THIS AREA. DO NOT DISTURB

FERRARE DITCH

WESTBOUND PROFILE GRADE LINE

USR 24

LEGEND

- ENVIRONMENTAL SENSITIVE AREA - DO NOT DISTURB
- ITEM 202, PAVEMENT & CURB REMOVAL
- PROPOSED PAVEMENT & CURB

CALCULATED
XXX
CHECKED
XXX

HORIZONTAL SCALE IN FEET

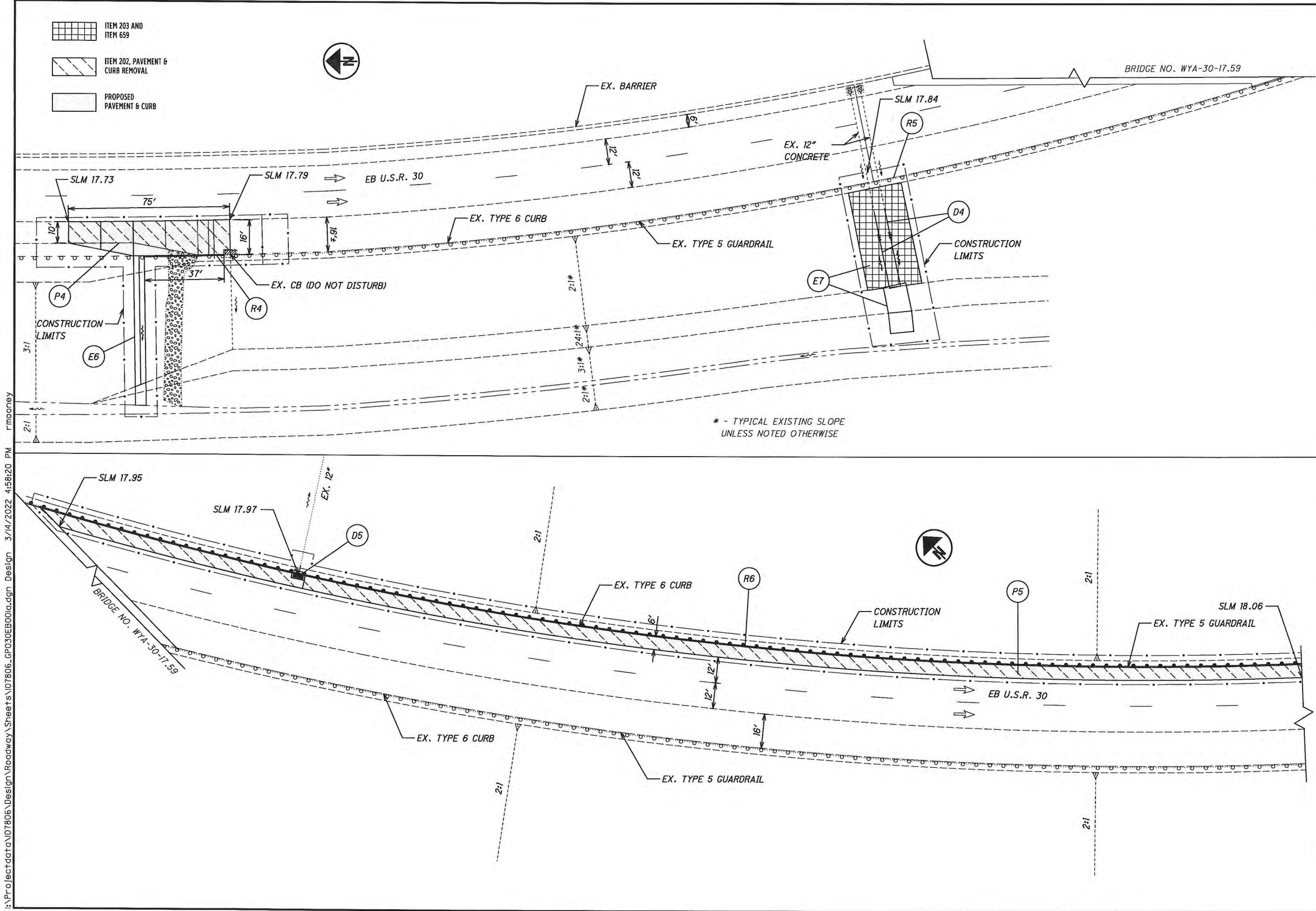
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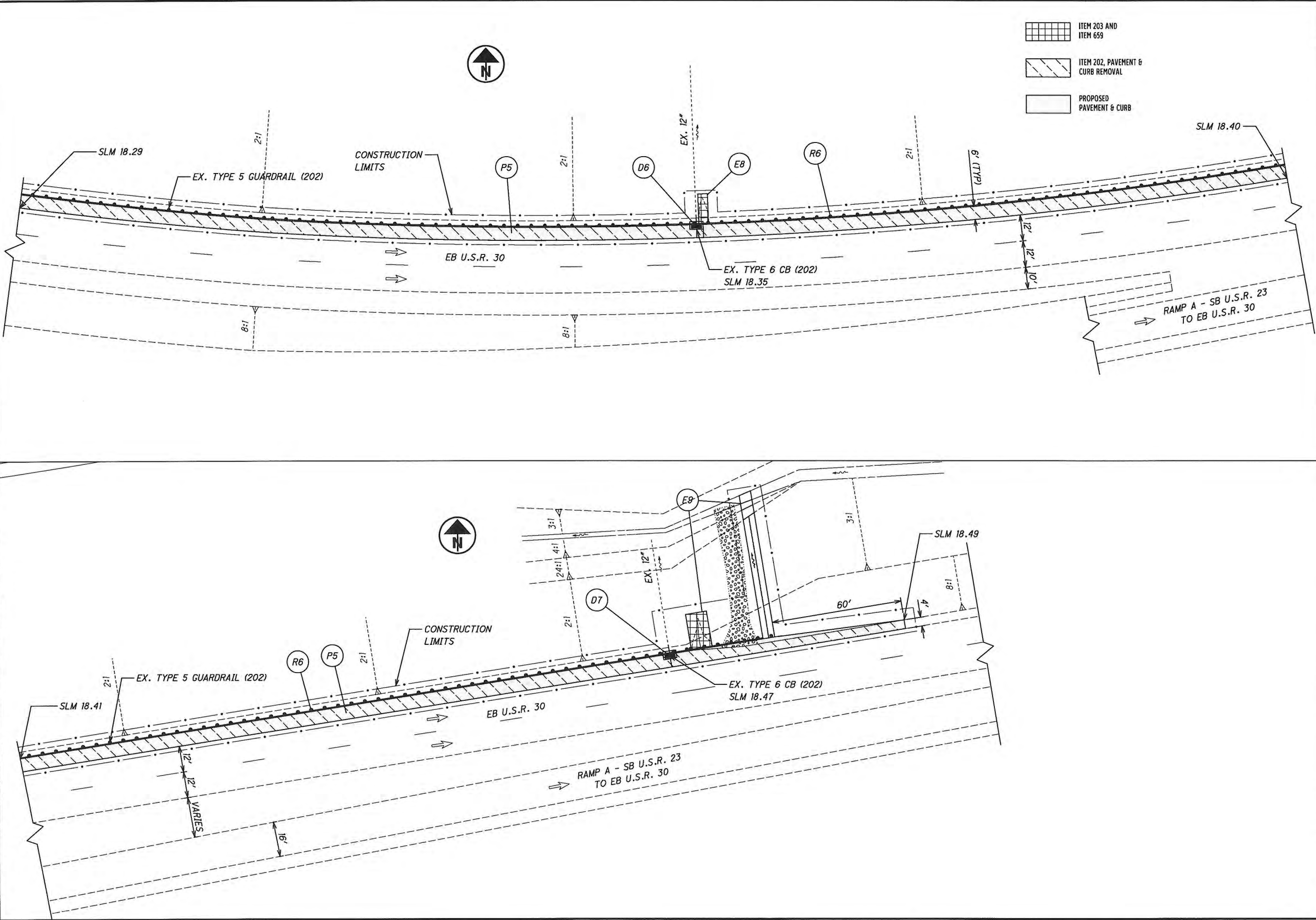
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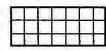
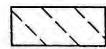

D01-EROSION
REPAIR-FY23



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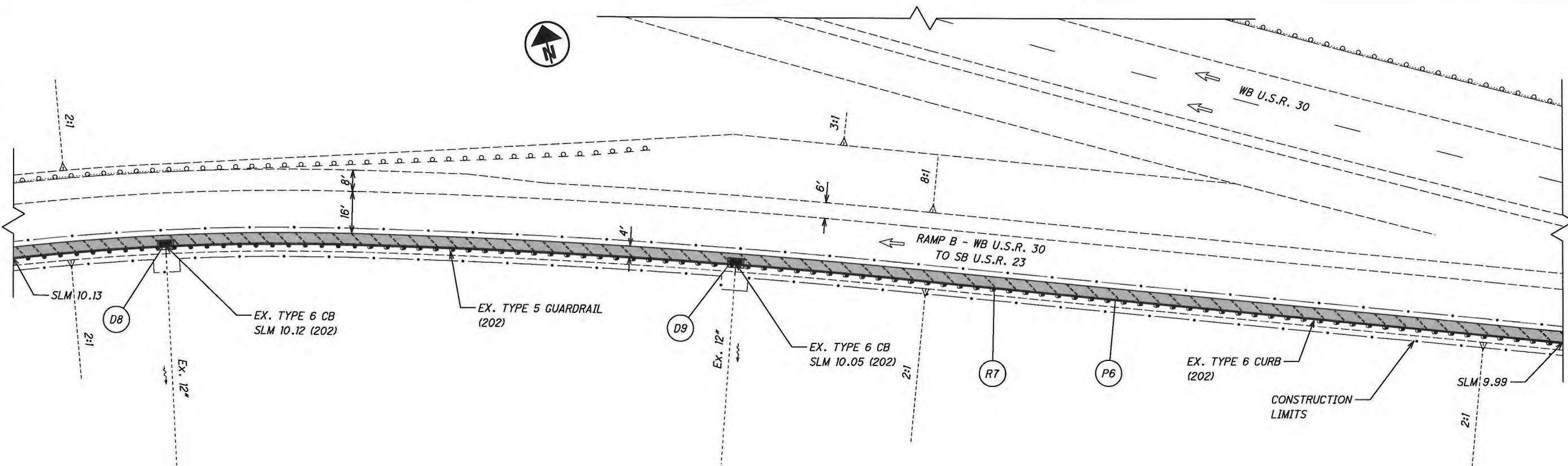
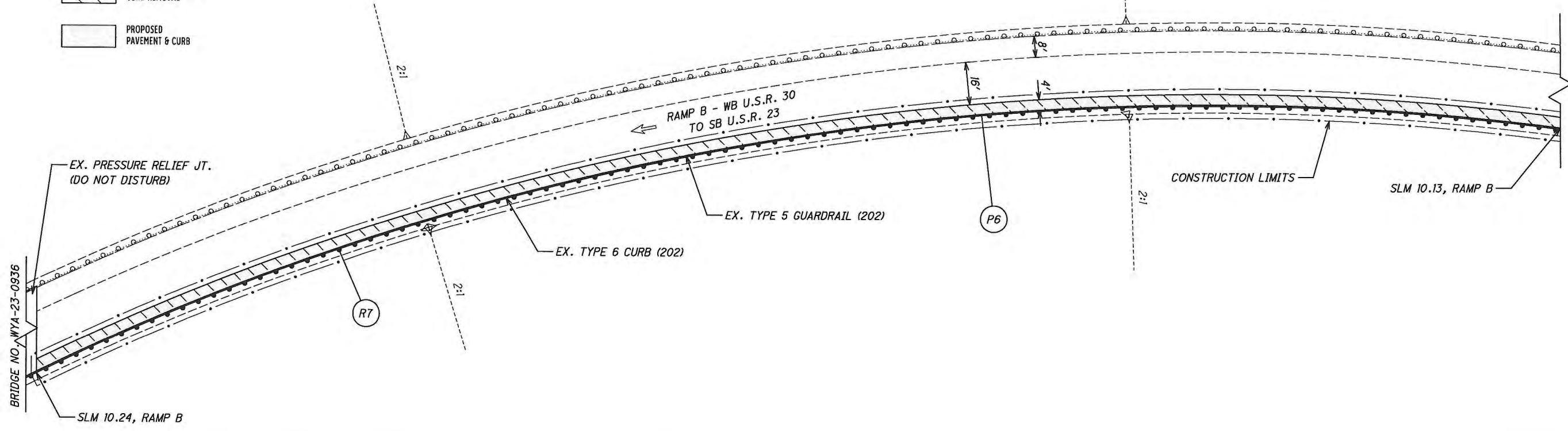


-  ITEM 203 AND ITEM 659
-  ITEM 202, PAVEMENT & CURB REMOVAL
-  PROPOSED PAVEMENT & CURB

CALCULATED XXX CHECKED XXX	PLAN SHEET - EB U.S.R. 30 - SLM 18.29 TO SLM 18*.49
D01-EROSION REPAIR-FY23	
27 32	

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ITEM 202, PAVEMENT & CURB REMOVAL
PROPOSED PAVEMENT & CURB

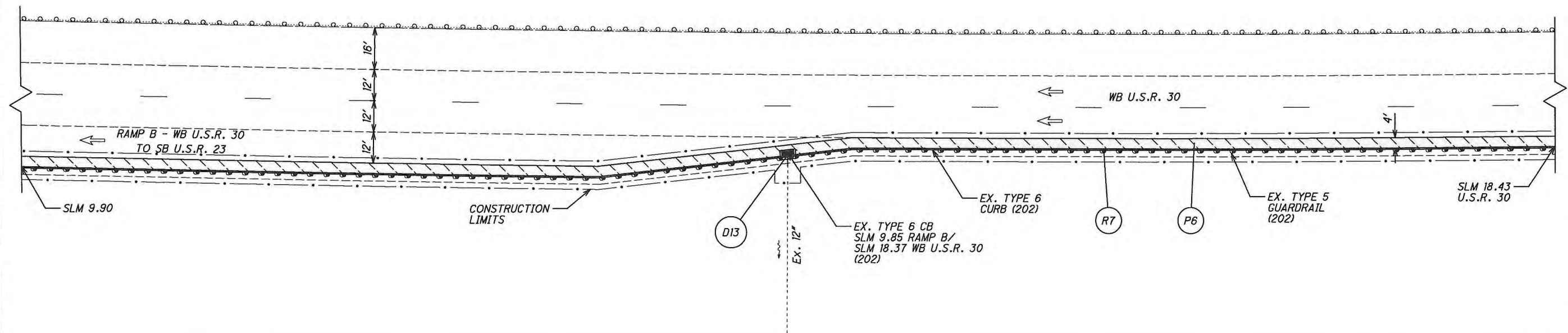
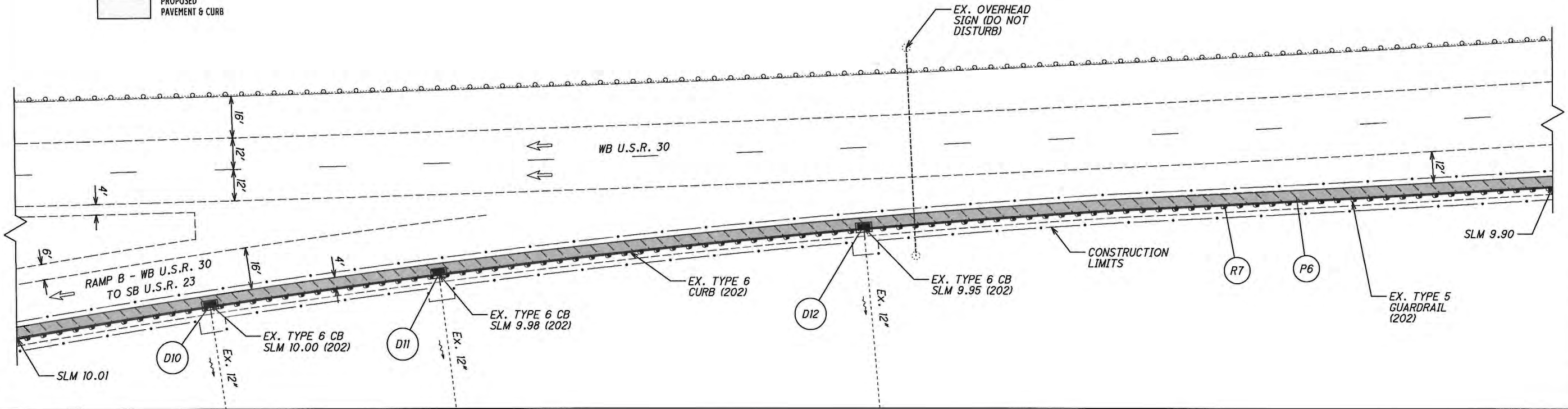


CALCULATED XXX
CHECKED XXX
PLAN SHEET - RAMP B - WB U.S.R. 30 TO SB U.S.R. 23
SLM 10.24 TO SLM 9.99 (RAMP B)
D01-EROSION REPAIR-FY23
28
32

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ITEM 202, PAVEMENT & CURB REMOVAL

PROPOSED PAVEMENT & CURB



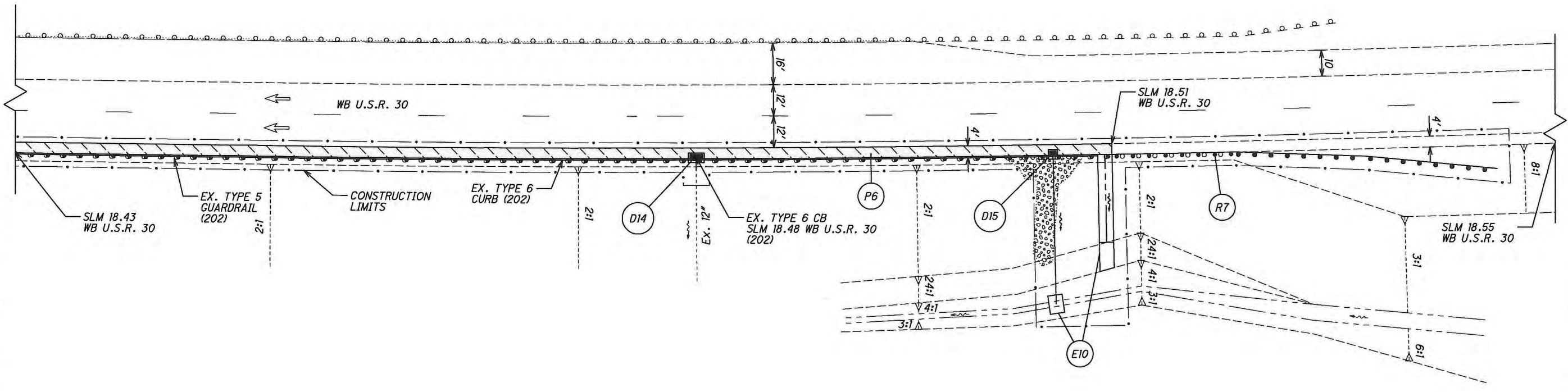
CALCULATED
XXX
CHECKED
XXX

PLAN SHEET - RAMP B - WB U.S.R. 30 TO SB U.S.R. 23
SLM 10.01 (RAMP B) TO SLM 18.43 (WB U.S.R. 30)

D01-EROSION
REPAIR-FY23

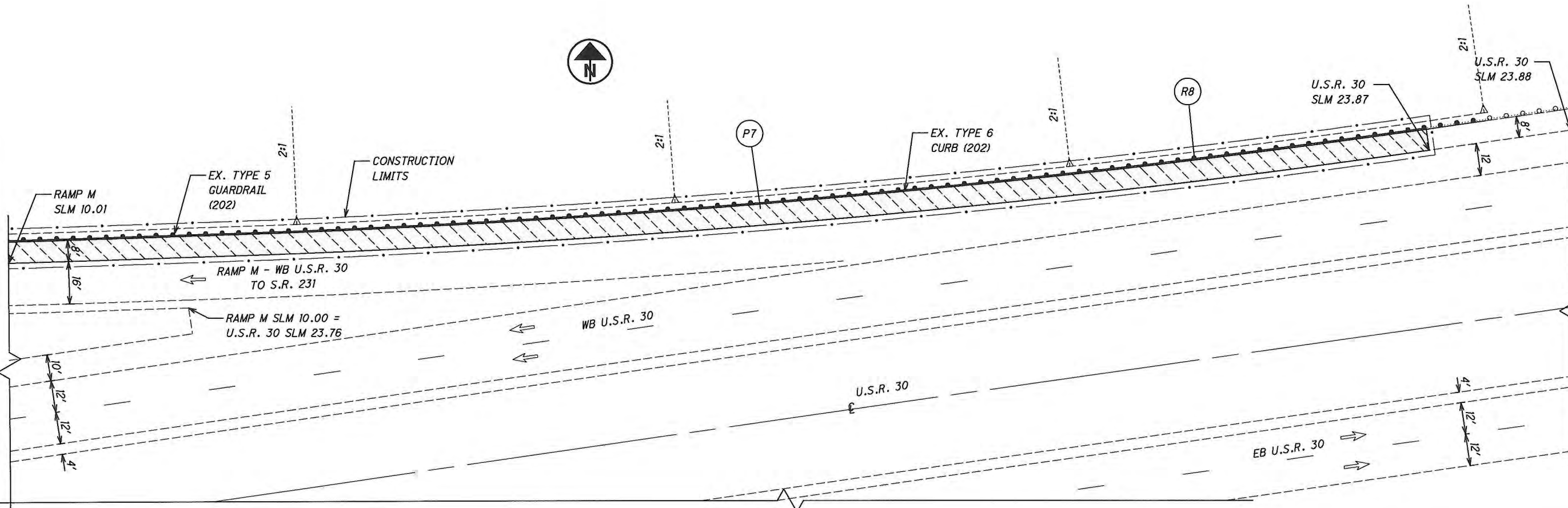
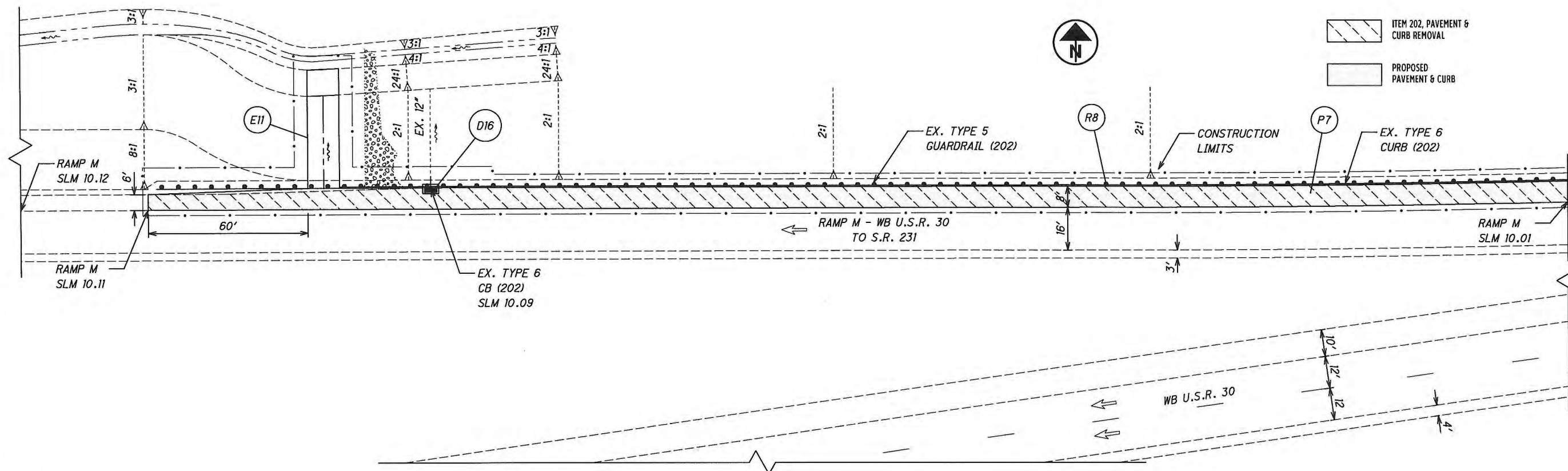
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- ITEM 202, PAVEMENT & CURB REMOVAL
- PROPOSED PAVEMENT & CURB



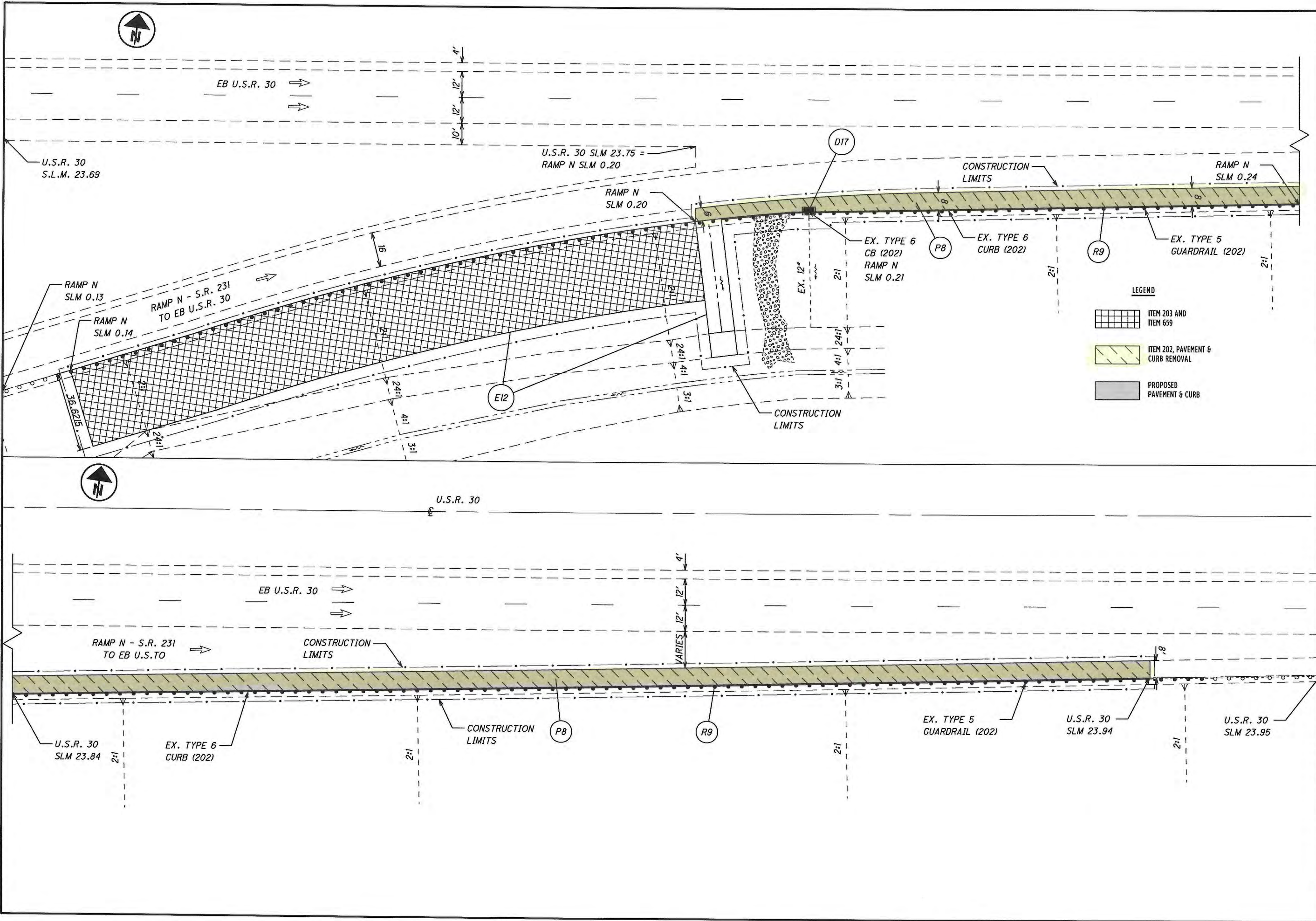
CALCULATED XXX	CHECKED XXX	PLAN SHEET - RAMP B - WB U.S.R. 30 TO SB U.S.R. 23 SLM 18.42 (WB U.S.R. 30) TO SLM 18.31 (WB U.S.R. 30)
30		32

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CALCULATED	XXX
	XXX
CHECKED	XXX
	XXX
PLAN SHEET - RAMP M - WB U.S.R. 30 TO S.R. 231	
SLM 10.12 (RAMP M) TO SLM 23.88 (U.S.R. 30)	
D01-EROSION	
REPAIR - FY23	
31	
32	

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PLAN SHEET - RAMP N - S.R. 231 TO EB U.S.R. 30
 SLM 0.13 (RAMP N) TO SLM 23.95 (U.S.R. 30)

D01-EROSION
 REPAIR-FY23

CALCULATED XXX
 CHECKED XXX

32
 32