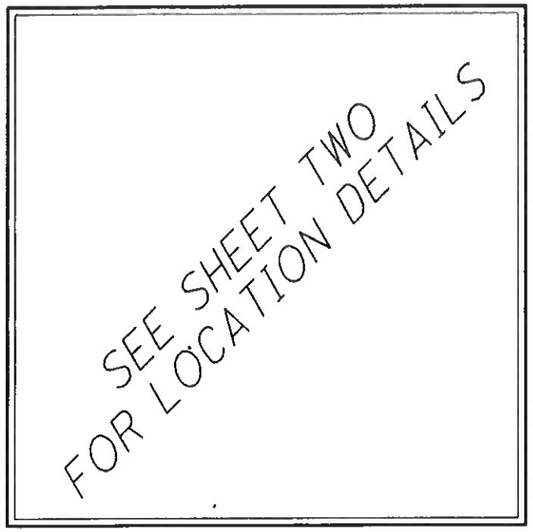
ERI - Deck Overlay
190501 PID - 105587
Dist 3 10/10/2019



LOCATION MAP

STATE OF OHIO

DEPARTMENT OF TRANSPORTATION

ERI-DECK-OVERLAY

BERLIN TOWNSHIP
HURON TOWNSHIP
VERMILION TOWNSHIP

ERIE COUNTY

INDEX OF SHEETS:

PROJECT DESCRIPTION

THIS PROJECT WILL MAINTAIN AND REPAIR THREE BRIDGES OVER STATE ROUTE 2 IN ERIE COUNTY.

WORK INCLUDES SEALING, CONCRETE REPAIRS, MILLING, PAVING, HYDRODEMOLITION, AND GUARDRAIL.

EARTH DISTURBED AREAS

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

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 REQUIRE THE CLOSING TO TRAFFIC OF THE HIGHWAY AND THAT DETOURS WILL BE PROVIDED AS INDICATED ON SHEETS 6-8.

APPROVED _____ DISTRICT DEPUTY DIRECTOR
DATE 07-12-19

APPROVED _____ DIRECTOR, DEPARTMENT OF TRANSPORTATION
DATE 7/23/19

DESIGN DESIGNATION

SEE SHEET 2

DESIGN EXCEPTIONS

NONE REQUIRED

UNDERGROUND UTILITIES
Contact Two Working Days Before You Dig
OHIO811.org Before You Dig
OHIO811, 8-1-1, or 1-800-362-2764
(Non-members must be called directly)

ENGINEERS SEAL

STATE OF OHIO
CRAIG A. DEVORE
E-70370
REGISTERED PROFESSIONAL ENGINEER

SIGNED: _____
DATE: 7.12.2019

STANDARD CONSTRUCTION DRAWINGS

BP-3.1	7/18/14	MT-97.10	4/19/19		
		MT-99.30	1/19/18		
MGS-1.1	1/19/18	MT-99.60	7/15/16		
MGS-2.1	1/19/18	MT-101.60	1/20/17		
MGS-3.1	1/19/18	MT-102.10	1/18/19		
MGS-3.2	1/18/13	MT-102.20	4/19/19		
MGS-4.1	1/20/17	MT-104.10	10/16/15		
MGS-4.2	7/19/13	MT-105.10	7/19/13		
MGS-4.3	1/18/13				
MGS-5.2	7/15/16	TC-41.20	10/18/13		
MGS-5.3	7/15/16	TC-42.20	10/18/13		
MGS-6.1	1/19/18	TC-52.10	10/18/13		
		TC-52.20	7/20/18		
MT-95.30	4/19/19	TC-61.30	1/20/17		
MT-95.40	1/20/17				
MT-95.50	7/21/17				

SUPPLEMENTAL SPECIFICATIONS

800	7/19/19
832	10/19/18
848	1/20/17

PLANS PREPARED BY:

OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT THREE
PLANNING AND ENGINEERING

FEDERAL PROJECT NO. E190087
PID NO. 105587
CONSTRUCTION PROJECT NO.
ERI-DECK-OVERLAY
1/20

Contract Proposal Available @ www.contracts.dot.state.oh.us/home

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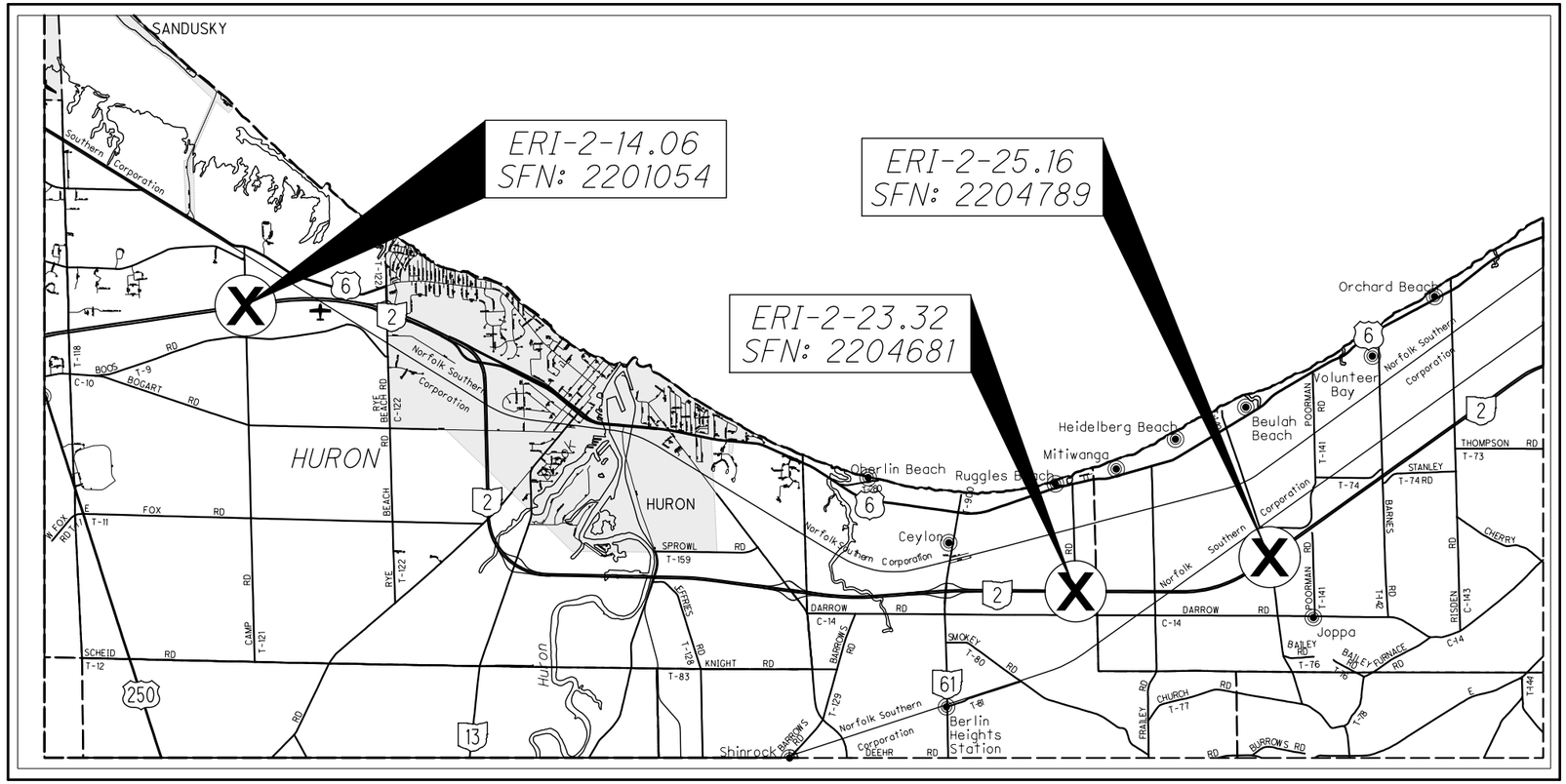

N

SCALE IN MILES

0 1 2 3 4

ERI-2-1406 SFN: 2201054
LATITUDE: 41°24'19" N LONGITUDE: 82°36'57" W

ERI-2-2332 SFN: 2204681
LATITUDE: 41°22'4" N LONGITUDE: 82°28'18" W

ERI-2-2516 SFN: 2204789
LATITUDE: 41°22'20" N LONGITUDE: 82°26'17" W

PORTION TO BE IMPROVED ---------- X

INTERSTATE HIGHWAY ----------

FEDERAL ROUTES ----------

STATE ROUTES ----------

COUNTY & TOWNSHIP ROADS ----------

OTHER ROADS ----------

SPEED LIMITS

ROUTE	SLM	MPH
ERI SR 2	14.06	70
ERI SR 2	23.32	70
ERI SR 2	25.16	70
ERI CR 121 (CAMP RD)	-	55
ERI TR 140 (JOPPA RD)	-	55
ERI TR 135 (HAHN RD)	-	45

DESIGN DESIGNATION	ERI-2-12.33-15.07	ERI-2-22.52-29.14	ERI-2-14.06	ERI-2-23.32	ERI-2-25.16
CURRENT YEAR ADT (2020)	21,500	24,500	2,900	260	180
DESIGN YEAR ADT (2040)	23,000	26,000	3,300	280	200
DESIGN HOURLY VOLUME	2,100	2,600	360	30	20
DIRECTIONAL DISTRIBUTION	52%	55%	60%	60%	60%
TRUCKS (24 HOUR B&C)	12%	15%	3%	3%	3%
Td	7%	8%	2%	2%	2%
NHS PROJECT	YES	YES	YES	YES	YES
DESIGN FUNCTIONAL CLASS	FREEWAYS & EXPRESSWAYS	FREEWAYS & EXPRESSWAYS	FREEWAYS & EXPRESSWAYS	FREEWAYS & EXPRESSWAYS	FREEWAYS & EXPRESSWAYS

CALCULATED AGG
CHECKED CAD

LOCATION MAP & DESIGN DESIGNATIONS

ERI-DECK-OVERLAY

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UTILITIES

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

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

CABLE
BUCKEYE CABLE
4818 ANGOLA ROAD
TOLEDO, OH 43615
419.724.3768

COUNTY
ERIE COUNTY ENGINEERS
2700 COLUMBUS AVENUE
SANDUSKY, OH 44870
419.627.7710

COUNTY
ERIE COUNTY SEWER
554 RIVER ROAD
HURON, OH 44839
419.433.7303

ELECTRIC
OHIO EDISON
1717 ASHLAND ROAD
MANSFIELD, OH 44905
419.521.6213

GAS
COLUMBIA GAS OF OHIO
1800 BROAD AVENUE
FINDLAY, OH 45840
419.427.3225

WATER
ERIE COUNTY WATER
2614 COLUMBUS AVENUE
SANDUSKY, OH 44870
419.627.7666

THE AFOREMENTIONED UTILITY COMPANIES AND AGENCIES HAVE VARIOUS FACILITIES IN THE AREA THAT WILL REMAIN IN PLACE DURING CONSTRUCTION.

EXTREME CAUTION SHOULD BE EXERCISED IN AREAS WITH UTILITIES. SECTIONS 105.07 AND 107.16 OF THE DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIALS SPECIFICATIONS REQUIRE, AMONG OTHER THINGS, THAT THE CONTRACTOR COOPERATE WITH ALL UTILITIES LOCATED WITHIN THE LIMITS OF THIS CONSTRUCTION PROJECT AND TAKE RESPONSIBILITY FOR THE PROTECTION OF THE UTILITY PROPERTY AND SERVICES.

CONSTRUCTION NOTIFICATION

THE CONTRACTOR SHALL ADVISE THE PROJECT ENGINEER A MINIMUM OF FOURTEEN (14) DAYS PRIOR TO THE FOLLOWING: THE START OF CONSTRUCTION ACTIVITIES, LANE RESTRICTIONS, LANE CLOSURES, AND OR ROAD CLOSURES. THE PROJECT ENGINEER WILL FORWARD THIS INFORMATION TO THE FOLLOWING:

DISTRICT PUBLIC INFORMATION OFFICE (PIO) BY EMAIL AT D03.PIO@DOT.OHIO.GOV

DISTRICT PERMIT SECTION BY FAX AT (614) 887-4318 OR EMAIL AT LOUIS.TUMBLIN@DOT.OHIO.GOV

CENTRAL OFFICE SPECIAL HAUL PERMITS SECTION BY FAX AT (614) 728-4099 OR EMAIL AT HAULING.PERMITS@DOT.OHIO.GOV

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

EXISTING PLANS:

THE ORIGINAL CONSTRUCTION PLANS OF THE EXISTING BRIDGES ARE AVAILABLE UPON REQUEST AT THE DISTRICT 3 OFFICE OF THE OHIO DEPARTMENT OF TRANSPORTATION, ASHLAND, OH.

STRUCTURE#	PLAN NAME	DATE
ERI-2-14.06	ERI-6-11.30	1960
ERI-2-23.32	ERI-2-22.24	1972
ERI-2-25.16	ERI-2-22.24	1972

ROUTINE MAINTENANCE

BETWEEN THE TIME THAT BIDS ARE TAKEN AND THE START OF CONSTRUCTION, THE MAINTAINING AGENCY MAY ENTER UPON THE PROJECT AND PERFORM ROUTINE MAINTENANCE SUCH AS CRACK SEALING, PATCHING, AND BERM AND SHOULDER REPAIR. THE EFFECTS, IF ANY, OF THE PERFORMANCE OF ROUTINE MAINTENANCE SHALL BE CONSIDERED AS INHERENT IN WORK OF THE CHARACTER PROVIDED FOR IN THE PLAN AND THE RESULTING CONDITIONS SHALL NOT BE CONSIDERED AS DIFFERING MATERIALLY FROM THOSE EXISTING AT THE TIME BIDS WERE TAKEN.

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.

LOCATIONS OF GUARDRAIL

THE GUARDRAIL PROTECTION PROVIDED IN THIS PLAN SHALL BE LOCATED IN THE FIELD TO ASSURE THAT THE INSTALLATION WILL AFFORD THE MAXIMUM PROTECTION FOR TRAFFIC. THIS LOCATION SHALL BE POSITIONED AS FAR AS POSSIBLE FROM THE EDGE OF PAVEMENT WHILE MAINTAINING PROPER GRADE IN FRONT OF GUARDRAIL AS PER STANDARD DRAWINGS AND PLAN DETAILS.

ITEM 202 - ANCHOR ASSEMBLY REMOVED, TYPE A

THIS ITEM SHALL INCLUDE THE REMOVAL OF THE EXISTING TYPE A, ANCHOR ASSEMBLY INCLUDING ALL POSTS, HARDWARE, RAIL ELEMENTS, AND CONCRETE ANCHORS. ALL ITEMS REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE PROPERLY DISPOSED OF.

THE EXISTING CONCRETE ANCHOR AND CONCRETE AT POSTS SHALL BE REMOVED ENTIRELY. ALL HOLES REMAINING AFTER REMOVAL SHALL BE FILLED WITH GRANULAR MATERIAL OR EXCESS MATERIAL RESULTING FROM GUARDRAIL CONSTRUCTION. ALL FILL MATERIAL SHALL BE THOROUGHLY COMPACTED AND LEVELED, AS DIRECTED BY THE ENGINEER.

PAYMENT FOR ALL OF THE ABOVE SHALL BE INCLUDED IN THE UNIT BID PRICE FOR ITEM 202, ANCHOR ASSEMBLY REMOVED, TYPE A.

ITEM 202 - ANCHOR ASSEMBLY REMOVED, TYPE T

THIS ITEM SHALL INCLUDE THE REMOVAL OF THE EXISTING TYPE T, ANCHOR ASSEMBLY INCLUDING ALL POSTS, HARDWARE, RAIL ELEMENTS, AND CONCRETE ANCHORS. ALL ITEMS REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE PROPERLY DISPOSED OF.

THE EXISTING CONCRETE ANCHOR AND CONCRETE AT POSTS SHALL BE REMOVED ENTIRELY. ALL HOLES REMAINING AFTER REMOVAL SHALL BE FILLED WITH GRANULAR MATERIAL OR EXCESS MATERIAL RESULTING FROM GUARDRAIL CONSTRUCTION. ALL FILL MATERIAL SHALL BE THOROUGHLY COMPACTED AND LEVELED, AS DIRECTED BY THE ENGINEER.

PAYMENT FOR ALL OF THE ABOVE SHALL BE INCLUDED IN THE UNIT BID PRICE FOR ITEM 202, ANCHOR ASSEMBLY REMOVED, TYPE T.

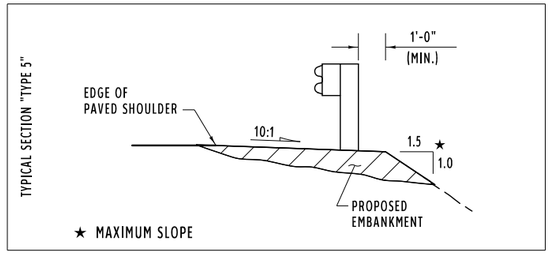
ITEM 203 - EMBANKMENT, AS PER PLAN

AT SPECIFIED LOCATIONS AND LOCATIONS AS DIRECTED BY THE ENGINEER, EMBANKMENT SHALL BE PLACED AS TO PROVIDE A SUITABLE AREA TO CONSTRUCT GUARDRAIL AND TO PROVIDE STRUCTURAL INTEGRITY OF THE ROADWAY SHOULDER.

AREAS WHERE EMBANKMENT MATERIAL IS TO BE PLACED SHALL BE SCALPED. THE REQUIREMENTS FOR BENCHING SHALL BE WAIVED. THE DEPTH OF LAYERS IN WHICH THE EMBANKMENT IS PLACED SHALL BE LIMITED TO EIGHT (8) INCHES IN THICKNESS. THE METHOD OF COMPACTION AND EQUIPMENT USED SHALL BE SUFFICIENT TO PROVIDE A MINIMUM OF 60 PERCENT OF RELATIVE COMPACTION.

AFTER THE EMBANKMENT HAS BEEN PLACED, THE AREAS SHALL BE FERTILIZED, SEEDED, MULCHED, AND WATERED AS PER ITEM 659. THE COST SHALL BE INCLUDED IN THIS ITEM FOR PAYMENT.

THE METHOD OF MEASUREMENT FOR EMBANKMENT MATERIAL SHALL BE BY THE NUMBER OF CUBIC YARDS MEASURED BY LOOSE VOLUME IN THE CARRIER AT THE WORK SITE, IN LIEU OF THE REQUIREMENTS OF 203.09. PAYMENT FOR ACCEPTED QUANTITIES WILL BE MADE AT THE CONTRACT UNIT BID PRICE PER CUBIC YARD FOR ITEM 203 - EMBANKMENT, AS PER PLAN AND SHALL INCLUDE ALL WORK DESCRIBED ABOVE.



ITEM 209 - RESHAPING UNDER GUARDRAIL

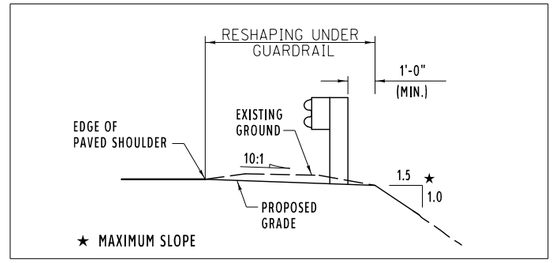
THIS ITEM SHALL BE USED AT LOCATIONS INDICATED IN THE PLANS.

THIS WORK SHALL BE COMPLETED AT LOCATIONS SPECIFIED FOR WORK AS WELL AS PER CMS 209.05 AND AS DESCRIBED HEREIN, AND SHALL AT ALL TIMES BE AS DIRECTED BY THE ENGINEER.

THE AREA IN FRONT OF, UNDER, AND BEHIND THE GUARDRAIL SHALL BE GRADED AND RESHAPED TO PROVIDE AN AREA THAT HAS A SLOPE OF 10:1 MAXIMUM (SEE DETAIL BELOW AS WELL AS THE GUARDRAIL DETAIL SHEETS FOR FURTHER DETAILS AND INFORMATION OF THE LIMITS OF THIS WORK).

EXCESS MATERIAL RESULTING SHALL BE USED ELSEWHERE FOR THIS ITEM IF SO DIRECTED OR DISPOSED OF PROPERLY. IF EXTRA MATERIAL IS REQUIRED IT SHALL BE PAID FOR WITH ITEM 203 - EMBANKMENT, AS PER PLAN. THIS WORK SHALL NOT BE STARTED UNTIL AFTER THE RESURFACING AND BERM WORK HAS BEEN COMPLETED.

THE ABOVE WORK SHALL BE PAID FOR PER STATION WITH ITEM 209, RESHAPING UNDER GUARDRAIL WITH THE EXCEPTION OF ANY EXTRA MATERIAL REQUIRED TO MEET THE SLOPE REQUIREMENTS WHICH SHALL BE PAID BY ITEM 203 - EMBANKMENT, AS PER PLAN.



ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE, AS PER PLAN

PAVEMENT PLANING, AS PER PLAN SHALL CONSIST OF THE CONTRACTOR REMOVING ALL MATERIAL ON THE APPROACH SLABS & BRIDGE DECKS DOWN TO BARE CONCRETE. THE CONTRACTOR SHALL USE CAUTION IN THE LAST 0.5" OF MATERIAL TO BE REMOVED.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER SQUARE YARD FOR THE ABOVE ITEM, WHICH WILL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

ITEM 442 - ASPHALT CONCRETE SURFACE COURSE, 9.5 MM, TYPE A (448), AS PER PLAN

ALL OPEN TRANSVERSE JOINTS SHALL BE TAPERED TO MEET EXISTING PAVEMENT BEFORE INTRODUCING TRAFFIC. A "BUMP" SIGN (W8-1-36) SHALL BE ERECTED ON EACH SIDE OF TRANSVERSE JOINTS LEFT OPEN OVER NIGHT, INCLUDING A SPEED ADVISORY SIGN. THESE SIGNS SHALL BE REMOVED IMMEDIATELY AFTER JOINT HAS BEEN CLOSED. PLACEMENT OF SIGNS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 614 MAINTAINING TRAFFIC.

CARE SHALL BE TAKEN TO MATCH EXISTING PAVEMENT ELEVATIONS AT EXISTING PAVED BERMS, DRIVES, INTERSECTIONS, ETC.

REQUIREMENTS OF 442 APPLY EXCEPT AS FOLLOWS:
MIX DESIGN: FOR Ndes USE 50 GYRATIONS, FOR Nmax USE 75 GYRATIONS.
CHOOSE OPTIMUM BINDER CONTENT AT DESIGN AIR VOIDS OF 3.5%.
MINIMUM TOTAL PG BINDER CONTENT IS 6.3 PERCENT.
MINIMUM VIRGIN PG BINDER CONTENT IS 5.2 PERCENT.
USE A PG 64-22 BINDER.
WHEN AN AGGREGATE SOURCE IS SPECIALLY DESIGNATED WITH AN SR ON THE AGGREGATE GRAVITY LIST DO NOT USE THE AGGREGATE EXCEPT AS ALLOWED FOR MEDIUM TRAFFIC IN THE GUIDELINES FOR MAINTAINING ADEQUATE PAVEMENT FRICTION IN SURFACE PAVEMENT.
QUALITY CONTROL: DO NOT PERFORM Nmax IN QUALITY CONTROL TESTING. DO NOT TAKE EXTRA ASPHALT BINDER SAMPLES AS OUTLINED IN CMS 442.05.

CALCULATED MAE CHECKED CAD

GENERAL NOTES

ERI-DECK-OVERLAY

EXISTING STRUCTURE VERIFICATION:

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURES HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURES AND FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURES AND THE PROPOSED WORK BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO CMS SECTIONS 102.05, 105.02 AND 513.04.

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

DESIGN SPECIFICATIONS:

THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 2002, INCLUDING THE 2003, 2004, 2005 AND 2006 SPECIFICATIONS AND THE ODOT BRIDGE DESIGN MANUAL.

DESIGN DATA:

CONCRETE CLASS QC2 - COMPRESSIVE STRENGTH 4,500 PSI
CONCRETE CLASS QC5 - COMPRESSIVE STRENGTH 4,500 PSI

DECK PROTECTION METHOD:

SUPERPLASTICIZED DENSE CONCRETE OVERLAY

TAKE CARE WHEN REMOVING AND REPLACING THE CONCRETE OVERLAY IN THE AREA OF THE EXISTING SCUPPERS. MAINTAIN POSITIVE DRAINAGE AT ALL TIMES. PLACE THE NEW CONCRETE OVERLAY WITH A 12" TAPERED AREA LEADING TO EACH SCUPPER TO ENHANCE DRAINAGE.

PLACEMENT OF ADJACENT CONCRETE POURS

DO NOT PLACE ADJACENT CONCRETE POURS SIMULTANEOUSLY. ALLOW SUFFICIENT TIME FOR THE FIRST POUR TO CURE TO THE POINT FORMS CAN BE STRIPPED WITHOUT DETRIMENT TO THE POUR BEFORE PLACING THE SECOND POUR. ALL CONSTRUCTION JOINTS NOT SPECIFICALLY LABELLED IN THE PLANS AS OPTIONAL ARE TO BE PERFORMED AS DETAILED ABOVE. SHOULD THE CONTRACTOR FAIL TO PERFORM THE CONSTRUCTION JOINT AS DESCRIBED, THE ENGINEER WILL DIRECT THE CONTRACTOR TO REMOVE THE INADEQUATELY PLACED CONCRETE AND REPLACE IT AS DESCRIBED ABOVE AT NO COST TO THE DEPARTMENT.

ALL LABOR, MATERIAL, EQUIPMENT, AND INCIDENTALS NEEDED TO PERFORM THE DESCRIBED WORK IS TO BE CONSIDERED INCIDENTAL TO THE RESPECTIVE CONCRETE ITEM AND WILL BE PAID FOR UNDER THAT CONTRACT BID PRICE.

PLACING ASPHALT CONCRETE ON APPROACHES TO BRIDGES:

SPECIAL CARE SHALL BE TAKEN WHEN PLACING THE ASPHALT CONCRETE BUTT JOINT TO EFFECT A SMOOTH TRANSITION FROM THE EXISTING APPROACH PAVEMENT TO THE BRIDGE DECK, THE CONTRACTOR'S ATTENTION IS CALLED TO STANDARD DRAWING BP-3.1 FOR REQUIRED TOLERANCES.

ITEM 202 - REMOVAL MISC.: JOINT SEAL

THIS ITEM SHALL BE USED TO REMOVE ANY JOINT SEAL AND THE EXISTING ELASTOMERIC COMPRESSION SEAL GLAND LOCATED BETWEEN THE APPROACH SLAB AND THE DECK OR BACKWALL.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER FOOT FOR THE ABOVE ITEM, WHICH WILL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

REFERENCE SHALL BE MADE TO SUPPLEMENTAL SPECIFICATIONS:

SUPPLEMENTAL SPECIFICATIONS: 848 1/20/2017

ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

THIS ITEM SHALL INCLUDE THE ELEMENTS INDICATED IN THE PLANS AND GENERAL NOTES. ITEMS TO BE REMOVED INCLUDE ALL EXISTING MATERIALS BEING REPLACED BY NEW CONSTRUCTION AND MISCELLANEOUS ITEMS THAT ARE NOT SHOWN TO BE INCORPORATED INTO THE FINAL CONSTRUCTION AND ARE DIRECTED TO BE REMOVED BY THE ENGINEER. THE USE OF EXPLOSIVES, HEADACHE BALLS AND/OR HOE-RAMS WILL NOT BE PERMITTED. THE METHOD OF REMOVAL SHALL BE APPROVED BY THE ENGINEER. PERFORM ALL WORK IN A MANNER THAT WILL NOT CUT, ELONGATE OR DAMAGE THE EXISTING REINFORCING STEEL TO BE PRESERVED. CHIPPING HAMMERS SHALL NOT BE HEAVIER THAN THE NOMINAL 90-POUND CLASS. PNEUMATIC HAMMERS SHALL NOT BE PLACED IN DIRECT CONTACT WITH REINFORCING STEEL THAT IS TO BE RETAINED IN THE REBUILT STRUCTURE. SUBMIT CONSTRUCTION PLANS ACCORDING TO CMS 501.05.

CUT LINE CONSTRUCTION JOINT PREPARATION: SAW CUT BOUNDARIES OF PROPOSED CONCRETE REMOVALS 1 INCH DEEP. REMOVE CONCRETE TO A ROUGH SURFACE. LEAVE THE EXISTING REINFORCING STEEL, IF REQUIRED IN THE PLANS, IN PLACE. PRIOR TO CONCRETE PLACEMENT. ABRASIVELY CLEAN JOINT SURFACES AND EXISTING EXPOSED REINFORCEMENT TO REMOVE LOOSE AND DISINTEGRATED CONCRETE AND LOOSE RUST. THOROUGHLY CLEAN THE JOINT SURFACE AND EXPOSED REINFORCEMENT OF ALL DIRT, DUST, RUST OR OTHER FOREIGN MATERIAL BY THE USE OF WATER, AIR UNDER PRESSURE, OR OTHER METHODS THAT PRODUCE SATISFACTORY RESULTS. EXISTING REINFORCING STEEL DOES NOT HAVE TO HAVE A BRIGHT STEEL FINISH, BUT REMOVE ALL PACK AND LOOSE RUST. THOROUGHLY DRENCH EXISTING CONCRETE SURFACES WITH CLEAN WATER AND ALLOW TO DRY TO A DAMP CONDITION BEFORE PLACING CONCRETE.

PAYMENT FOR ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK SHALL BE INCLUDED IN THE UNIT PRICE BID PER CUBIC YARD OF ITEM 202, PORTIONS OF STRUCTURE REMOVED, AS PER PLAN.

ITEM 511 - CLASS QC2 CONCRETE, MISC.: APPROACH SLAB REPAIR
ITEM 511 - CLASS QC2 CONCRETE, MISC.: BACKWALL REPAIR

USE EACH ITEM AT THE LOCATIONS INDICATED IN THE PLANS.

USE LIMESTONE AS THE COARSE AGGREGATE.

CLEAN ALL EXISTING SURFACES TO WHICH THE CONCRETE IS TO BOND TO USING ABRASIVE BLASTING. ENSURE THESE SURFACES ARE FREE OF SPILLS, LAITANCE, AND OTHER CONTAMINANTS DETRIMENTAL TO ACHIEVING AN ADEQUATE BOND.

PAYMENT FOR ALL THE ABOVE WILL BE MADE AT THE UNIT BID PRICE FOR EACH OF THE ABOVE ITEMS PER CUBIC YARD AND IS TO INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS NEEDED TO COMPLETE THE WORK.

ITEM 848 - SUPERPLASTICIZED DENSE CONCRETE OVERLAY USING HYDRODEMOLITION, AS PER PLAN (2.50" THICKNESS)

ITEM 848 - SUPERPLASTICIZED DENSE CONCRETE OVERLAY (VARIABLE THICKNESS). MATERIAL ONLY, AS PER PLAN

EACH ITEM SHALL BE USED AT THE LOCATIONS INDICATED IN THE PLANS.

THE COARSE AGGREGATE SHALL BE LIMESTONE.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID FOR EACH OF THE ABOVE ITEMS WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

ITEM 509 - REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN

REPLACE ALL EXISTING REINFORCING BARS DEEMED BY THE ENGINEER TO BE UNUSABLE BECAUSE OF CORROSION. THE DEPARTMENT WILL MEASURE THE REPLACEMENT REINFORCING STEEL BY THE NUMBER OF POUNDS ACCEPTED IN PLACE. REPLACE ALL EXISTING REINFORCING STEEL BARS WHICH ARE TO BE INCORPORATED INTO THE NEW WORK AND ARE DEEMED BY THE ENGINEER TO BE MADE UNUSABLE BY CONCRETE REMOVAL OPERATIONS WITH NEW EPOXY COATED REINFORCING STEEL OF THE SAME SIZE AT NO COST TO THE DEPARTMENT.

CALCULATED MAE CHECKED CAD

STRUCTURE NOTES

ERI-DECK-OVERLAY

ITEM 614 - MAINTAINING TRAFFIC (LANES OPEN DURING HOLIDAYS OR SPECIAL EVENTS)

NO WORK SHALL BE PERFORMED AND ALL EXISTING LANES SHALL BE OPEN TO TRAFFIC DURING THE FOLLOWING DESIGNATED HOLIDAYS OR EVENTS:

CHRISTMAS	FOURTH OF JULY
NEW YEARS	LABOR DAY
MEMORIAL DAY	THANKSGIVING

THE PERIOD OF TIME THAT THE LANES ARE TO BE OPEN DEPENDS ON THE DAY OF THE WEEK ON WHICH THE HOLIDAY OR EVENT FALLS. THE FOLLOWING SCHEDULE SHALL BE USED TO DETERMINE THIS PERIOD:

DAY OF THE WEEK	TIME ALL LANES MUST BE OPEN TO TRAFFIC
SUNDAY	12:00N FRIDAY THROUGH 6:00 AM MONDAY
MONDAY	12:00N FRIDAY THROUGH 6:00 AM TUESDAY
TUESDAY	12:00N MONDAY THROUGH 6:00 AM WEDNESDAY
WEDNESDAY	12:00N TUESDAY THROUGH 6:00 AM THURSDAY
THURSDAY	12:00N WEDNESDAY THROUGH 6:00 AM MONDAY
FRIDAY	12:00N THURSDAY THROUGH 6:00 AM MONDAY
SATURDAY	12:00N FRIDAY THROUGH 6:00 AM MONDAY

SHOULD THE CONTRACTOR FAIL TO MEET ANY OF THESE REQUIREMENTS, THE CONTRACTOR SHALL BE ASSESSED A DISINCENTIVE IN THE AMOUNT OF $50 FOR EACH MINUTE THE ABOVE DESCRIBED LANE CLOSURE RESTRICTIONS ARE VIOLATED.

ITEM 614 - MAINTAINING TRAFFIC LANE CLOSURE/REDUCTION REQUIRED

LENGTH AND DURATION OF LANE CLOSURES AND RESTRICTIONS SHALL BE AT THE APPROVAL OF THE ENGINEER. IT IS THE INTENT TO MINIMIZE THE IMPACT TO THE TRAVELING PUBLIC. LANE CLOSURES OR RESTRICTIONS OVER SEGMENTS OF THE PROJECT IN WHICH NO WORK IS ANTICIPATED WITHIN A REASONABLE TIME FRAME, AS DETERMINED BY THE ENGINEER, SHALL NOT BE PERMITTED. THE LEVEL OF UTILIZATION OF MAINTENANCE OF TRAFFIC DEVICES SHALL BE COMMENSURATE WITH THE WORK IN PROGRESS.

PERMITTED LANE CLOSURE RESTRICTIONS

DURING THE PROJECT DURATION, LANE CLOSURES SHALL BE PERMITTED AS LISTED ON THE ODOT PLCM WEB SITE AT:
http://plcm.dot.state.oh.us

DETOUR SIGNING

THE FOLLOWING QUANTITY IS INCLUDED FOR THE CONTRACTOR TO PROVIDE THE DETOUR SIGNING AS SHOWN AS PER 614.06 (B):

ITEM 614 - DETOUR SIGNING	LUMP (01/NHS/BR)

NOTIFICATIONS OF TRAFFIC RESTRICTIONS

THROUGHOUT THE DURATION OF THE PROJECT, THE CONTRACTOR SHALL NOTIFY THE DISTRICT OFFICE AND 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 DISRICT TO MEET THE REQUIRED TIME FRAMES SET FORTH IN THE TABLE BELOW. NOTIFICATIONS SHALL BE SENT TO THE EMAIL ADDRESS D03.Detour.Notification@dot.ohio.gov AND THE PROJECT ENGINEER. PRIOR TO THE PHYSICAL SETUP OF ANY APPLICABLE NOTIFICATION SIGNS OR MESSAGE BOARDS. UPON RECEIPT OF NOTIFICATION BY THE CONTRACTOR, THE DISTRICT OFFICE WILL ARRANGE NOTIFICATION OF THE FOLLOWING ORGANIZATIONS, IN WRITING, IN ACCORDANCE WITH THE BELOW TABLE:

ERIE COUNTY ENGINEER'S OFFICE
TOWNSHIP TRUSTEES
LOCAL POLICE, FIRE, AND EMERGENCY MEDICAL SERVICES
LOCAL SCHOOL DISTRICTS
ERIE COUNTY SHERIFF'S OFFICE
ODOT DISTRICT THREE OFFICE OF ROADWAY SERVICES
ODOT DISTRICT THREE PUBLIC INFORMATION OFFICE
SPECIAL HAULING PERMITS SECTION (Hauling.Permits@dot.ohio.gov)

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.

NOTIFICATION TIME TABLE

ITEM	DURATION OF CLOSURE	NOTICE LEAD TIME REQUIRED*
RAMP AND/OR ROAD CLOSURES	TWO WEEKS OR GREATER	21 CALENDAR DAYS
	12 HOURS TO TWO WEEKS	14 CALENDAR DAYS
	12 HOURS OR LESS	4 BUSINESS DAYS
LANE CLOSURES AND RESTRICTIONS	TWO WEEKS OR GREATER	14 CALENDAR DAYS
	LESS THAN TWO WEEKS	5 BUSINESS DAYS
START OF CONSTRUCTION AND TRAFFIC PATTERN CHANGES	N/A	14 CALENDAR DAYS PRIOR TO IMPLEMENTATION

* - PRIOR TO CLOSURE DATE, UNLESS NOTED OTHERWISE

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 - ASPHALT CONCRETE FOR MAINTAINING TRAFFIC

TEMPORARY WEDGES AT END OF RAMPS, PAVEMENT LAYER ENDS, APPROACH SLABS OR BRIDGE DECKS ARE TO BE CONSTRUCTED AS PER STANDARD DRAWING BP-3.1.

THIS ITEM IS TO BE CONSIDERED INCIDENTAL TO MAINTAINING TRAFFIC ON THE PROJECT AND WILL BE PAID FOR UNDER THE LUMP SUM CONTRACT BID PRICE FOR ITEM 614 MAINTAINING TRAFFIC.

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.

THIS ITEM IS TO BE CONSIDERED INCIDENTAL TO MAINTAINING TRAFFIC ON THE PROJECT AND WILL BE PAID FOR UNDER THE LUMP SUM CONTRACT BID PRICE FOR ITEM 614 MAINTAINING TRAFFIC. IT SHALL INCLUDE THE COST OF REMOVING AND DISPOSING OF THE DAMAGED SIGN, AND PROVIDING AND MAINTAINING THE REPLACEMENT SIGN IN ACCORDANCE WITH THE CONTRACT REQUIREMENTS FOR THE ORIGINAL SIGN.

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.

THIS ITEM IS TO BE CONSIDERED INCIDENTAL TO MAINTAINING TRAFFIC ON THE PROJECT AND WILL BE PAID FOR UNDER THE LUMP SUM CONTRACT BID PRICE FOR ITEM 614 MAINTAINING TRAFFIC. IT 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.

CALCULATED MAE CHECKED CAD

MAINTENANCE OF TRAFFIC

ERI-DECK-OVERLAY

ITEM 614 - MAINTENANCE OF TRAFFIC (NOTICE OF CLOSURE SIGNS)

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 ONE WEEK.

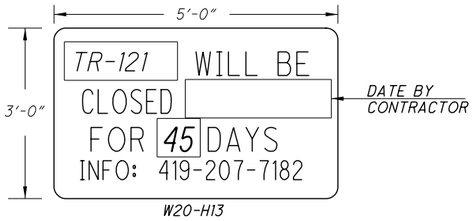
THE SIGNS SHALL BE ERECTED ON THE RIGHT-HAND SIDE OF THR ROAD/RAMP FACING TRAFFIC. THEY SHALL BE PLACED SO AS NOT TO INTERFERE WITH THE VISIBILITY OF ANY OTHER TRAFFIC CONTROL SIGNS. ON ROADWAYS, THEY SHOULD BE ERECTED AT OR NEAR THE POINT OF CLOSURE. THE SIGNS MAY BE ERECTED ANYWHERE ON RAMPS AS LONG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

NOTICE OF CLOSURE SIGN TIME TABLE

ITEM	DURATION OF CLOSURE	SIGN DISPLAYED TO PUBLIC*
RAMP AND/OR ROAD CLOSURES	TWO WEEKS OR GREATER	14 CALENDAR DAYS
	12 HOURS TO TWO WEEKS	7 CALENDAR DAYS
	12 HOURS OR LESS	2 BUSINESS DAYS

* - PRIOR TO CLOSURE DATE, UNLESS NOTED OTHERWISE

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 MOTORISTS MAY CALL FOR ADDITIONAL INFORMATION. THIS IS TO BE A SPECIFIC OFFICE WITHIN THE DISTRICT RATHER THAN THE GENERAL SWITCHBOARD NUMBER.



W20-H13

ITEM 614 - MAINTAINING TRAFFIC

DETOUR LIMITATION:
TWO WAY TRAFFIC SHALL BE MAINTAINED AT ALL TIMES, EXCEPT FOR A PERIOD NOT TO EXCEED FORTY-FIVE (45) CONSECUTIVE CALENDAR DAYS. THROUGH TRAFFIC WILL BE DETOURED AS SHOWN ON THIS SHEET.

THE CONTRACTOR WILL INSTALL, MAINTAIN, AND SUBSEQUENTLY REMOVE THE DETOUR SIGNING.

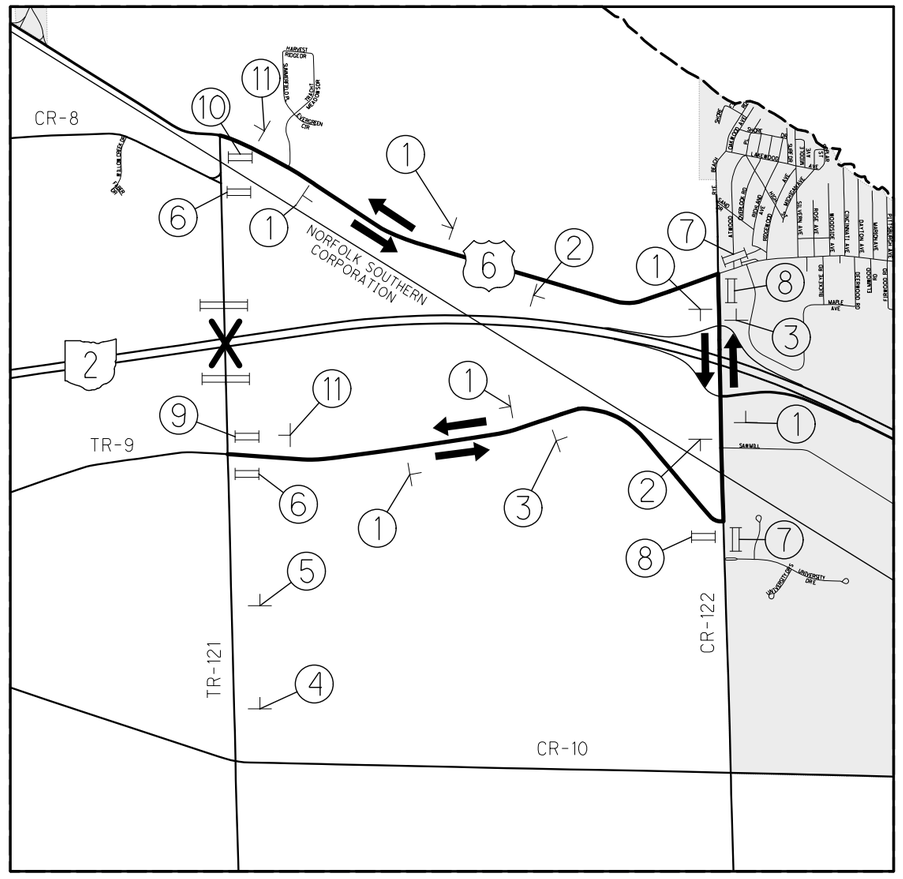
THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING, INSTALLING, MAINTAINING AND REMOVING THE GATES AND BARRICADES AT THE APPROXIMATE WORK LIMITS OF THE PROJECT, AND THE ADVANCE WARNING SIGNS AS SHOWN ON STANDARD CONSTRUCTION DRAWING MT-101.60.

INTERIM COMPLETION DATE:
THE FORTY-FIVE (45) CONSECUTIVE CALENDAR DAYS SHALL BE CONSIDERED AN INTERIM COMPLETION DATE, AND FOR EACH CALENDAR DAY BEYOND THE FORTY-FIVE (45) CONSECUTIVE CALENDAR DAYS THAT THE ROADWAY REMAINS CLOSED TO TRAFFIC, THE CONTRACTOR SHALL BE ASSESSED A DISINCENTIVE OF $300/DAY.

ACCESS TO ADJACENT PROPERTIES SHALL BE MAINTAINED AT ALL TIMES, AS PER SECTION 614.02 (A).

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

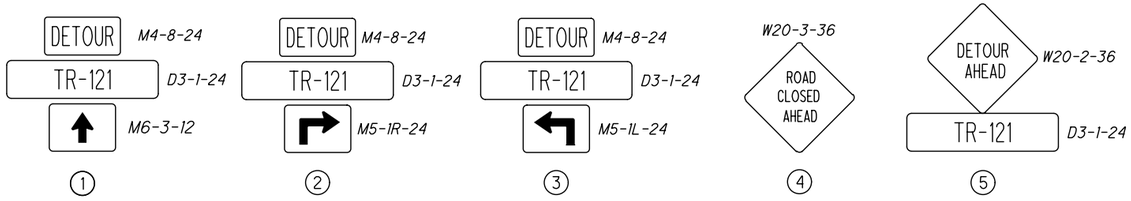
ERI-121-3.22 DETOUR MAP

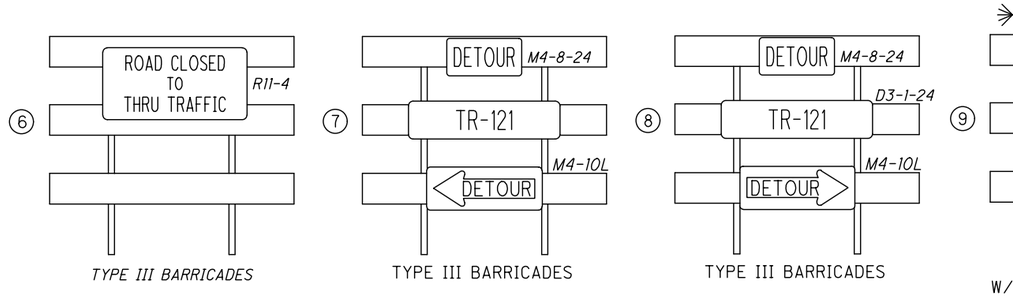


SCALE IN MILES
0 1/4 1/2 3/4 1

N

SIGN LEGEND





MAP LEGEND

- PROJECT LOCATION
- OFFICIAL STATE SIGNED DETOUR
- GATES AND BARRICADES, AS PER MT-101.60
- SIGNS AS SHOWN ON LEFT
- SIGNS AS SHOWN ON LEFT

CALCULATED AGG
CHECKED CAD

DETOUR PLAN

ERI-DECK-OVERLAY

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ITEM 614 - MAINTENANCE OF TRAFFIC (NOTICE OF CLOSURE SIGNS)

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 ONE WEEK.

THE SIGNS SHALL BE ERECTED ON THE RIGHT-HAND SIDE OF THR 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 RAMPS AS LONG AS THEY ARE VISIBLE TO THE MOTORISTS USING THE RAMP. ON ENTRANCE RAMPS, THE SIGN SHALL BE ERECTED WELL IN ADVANCE OF THE MERGE AREA TO AVOID DISTRACTING MOTORISTS.

NOTICE OF CLOSURE SIGN TIME TABLE

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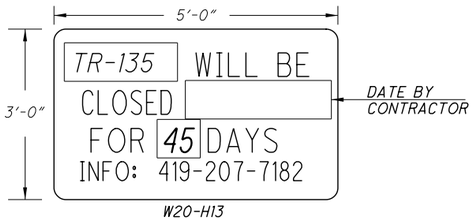

W20-H13

ITEM 614 - MAINTAINING TRAFFIC

DETOUR LIMITATION:
TWO WAY TRAFFIC SHALL BE MAINTAINED AT ALL TIMES, EXCEPT FOR A PERIOD NOT TO EXCEED FORTY-FIVE (45) CONSECUTIVE CALENDAR DAYS. THROUGH TRAFFIC WILL BE DETOURED AS SHOWN ON THIS SHEET.

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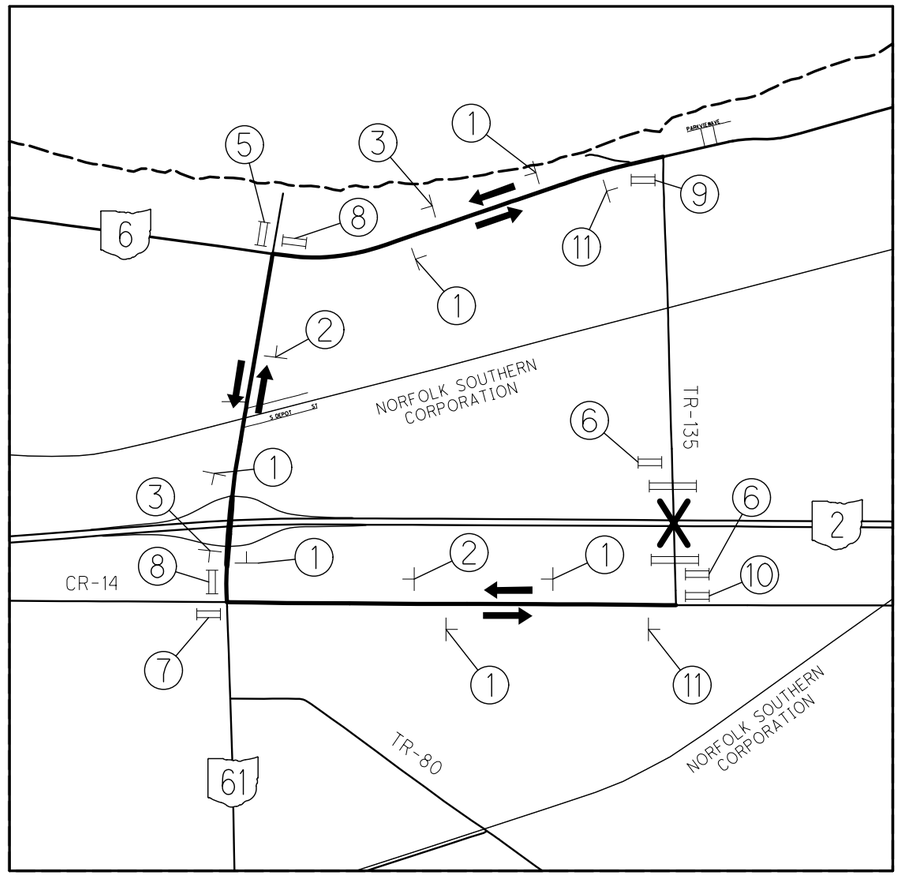
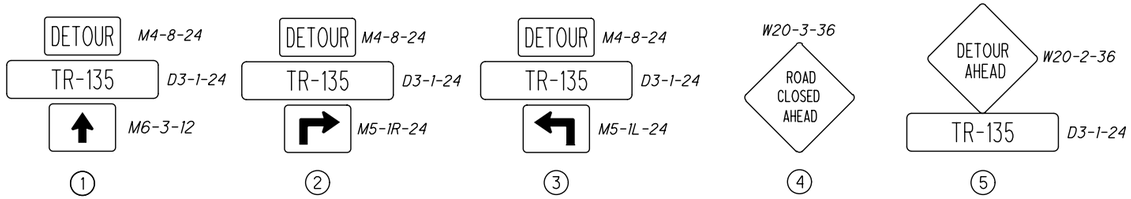
ERI-135-0.22 DETOUR MAP

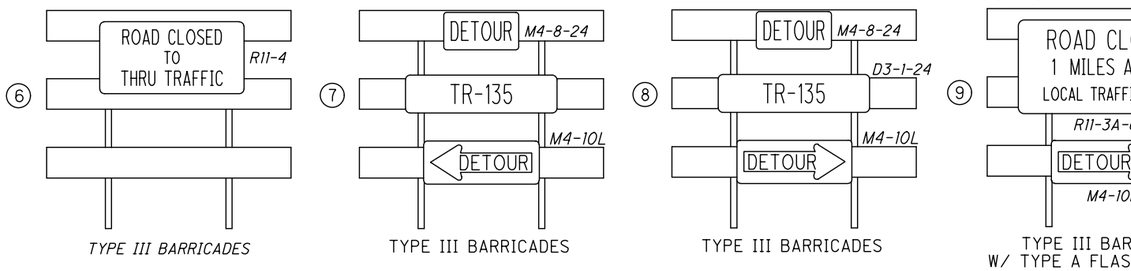


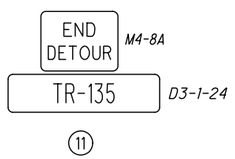
SCALE IN MILES
0 1/4 1/2 3/4 1

N

SIGN LEGEND







MAP LEGEND

- PROJECT LOCATION
- OFFICIAL STATE SIGNED DETOUR
- GATES AND BARRICADES, AS PER MT-101.60
- SIGNS AS SHOWN ON LEFT
- SIGNS AS SHOWN ON LEFT

CALCULATED AGG
CHECKED CAD

DETOUR PLAN

ERI-DECK-OVERLAY

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ITEM 614 - MAINTENANCE OF TRAFFIC (NOTICE OF CLOSURE SIGNS)

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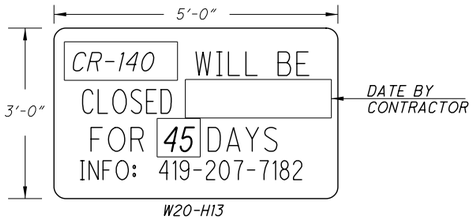

W20-H13

ITEM 614 - MAINTAINING TRAFFIC

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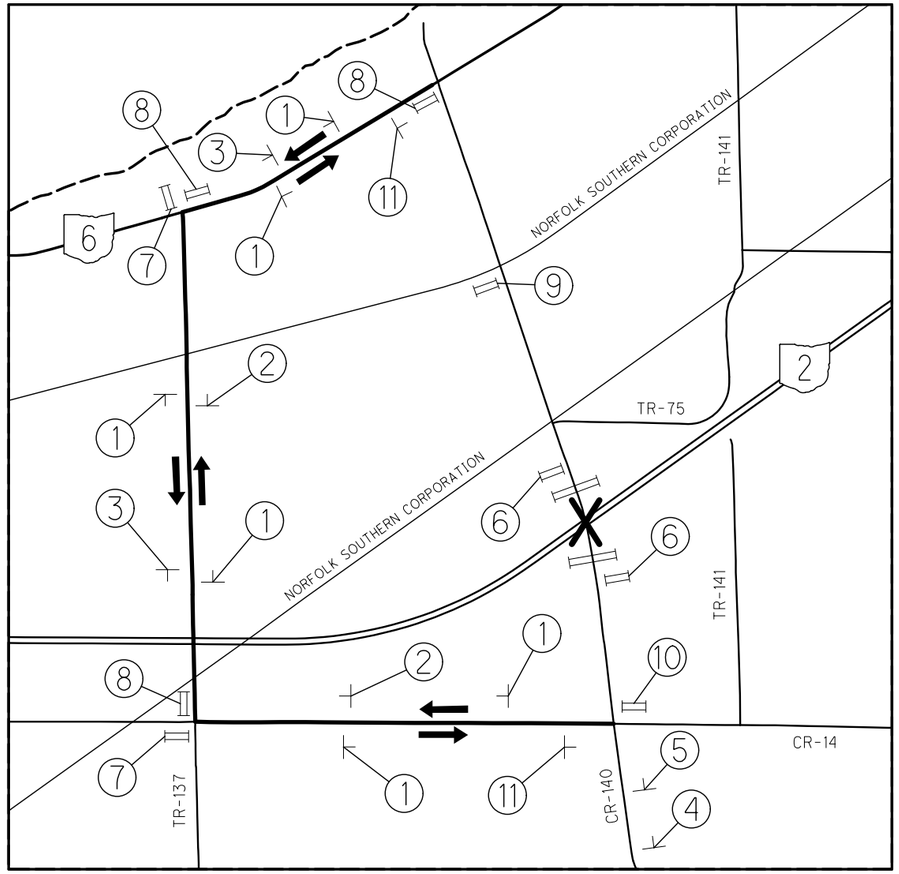
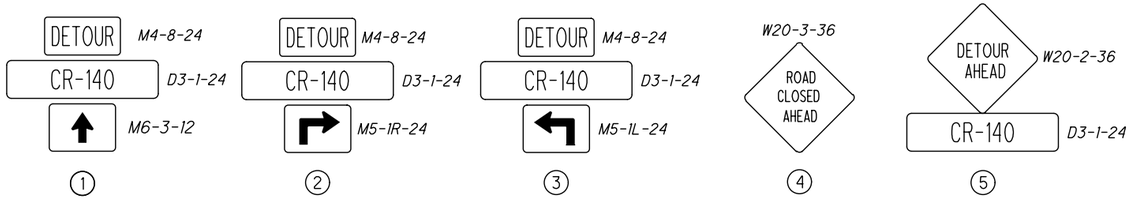
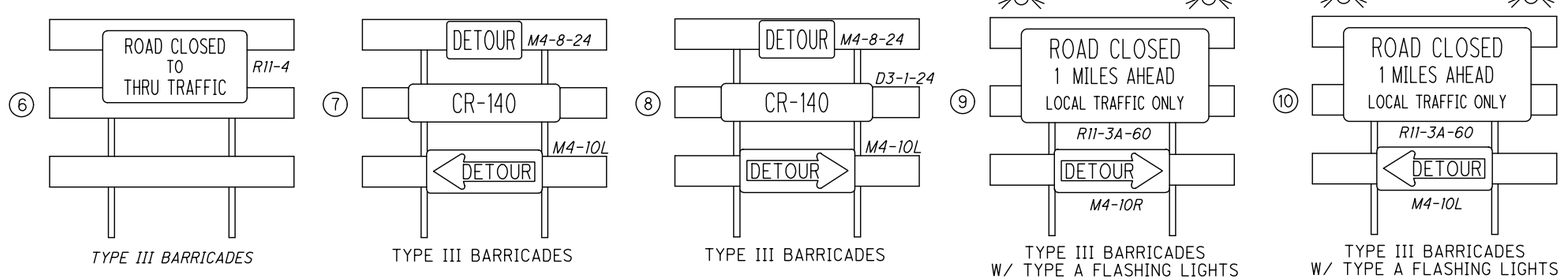
ERI-140-0.22 DETOUR MAP

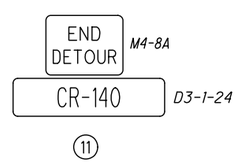


SCALE IN MILES
0 1/4 1/2 3/4 1

SIGN LEGEND







MAP LEGEND

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- SIGNS AS SHOWN ON LEFT
- SIGNS AS SHOWN ON LEFT

CALCULATED AGG
CHECKED CAD

DETOUR PLAN

ERI-DECK-OVERLAY

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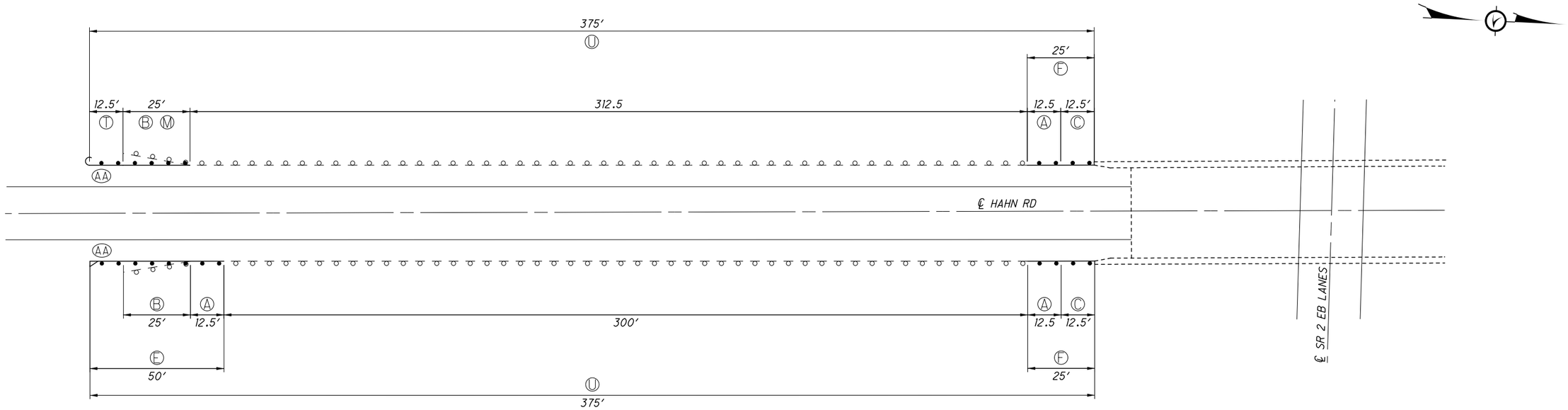
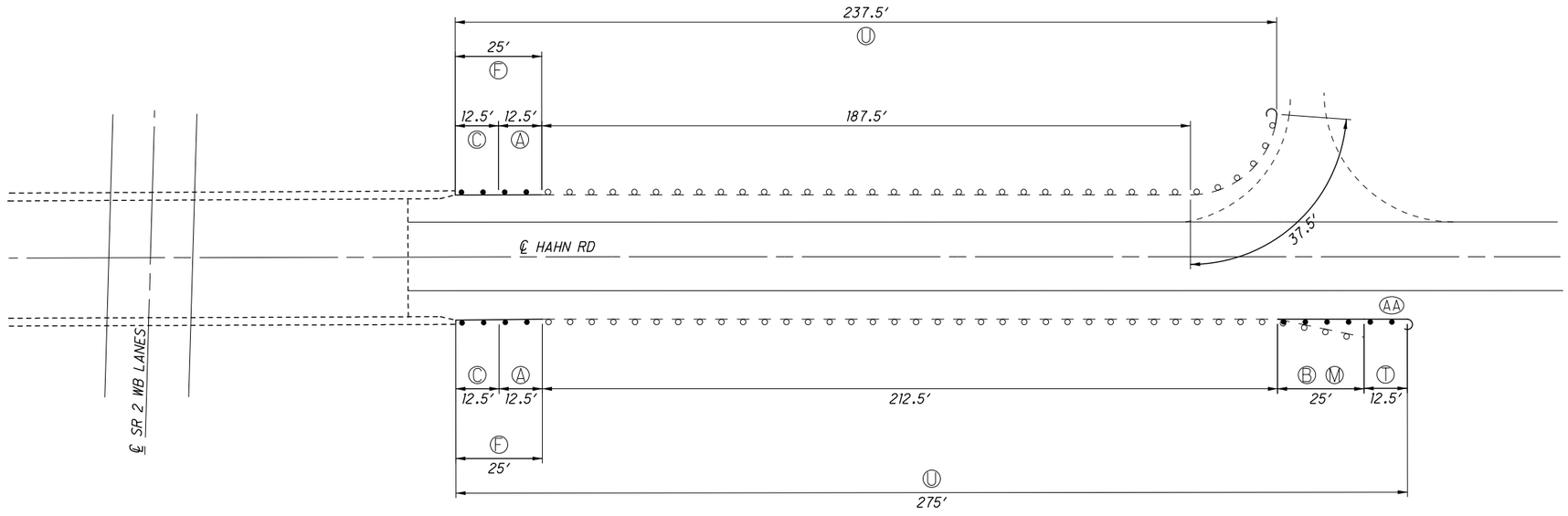
SHEET NUM.										PART.	ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
5	10	11	12	13	14					01/NHS/BR						
															ROADWAY	
	62.5	75								137.5	202	38000	137.5	FT	GUARDRAIL REMOVED	
	3	3								6	202	42000	6	EACH	ANCHOR ASSEMBLY REMOVED, TYPE A	
	4									4	202	47000	4	EACH	BRIDGE TERMINAL ASSEMBLY REMOVED	
	12	13.25								25.25	209	15000	25.25	STA	RESHAPING UNDER GUARDRAIL	
	50									50	606	15050	50	FT	GUARDRAIL, TYPE MGS	
	1	3								4	606	26150	4	EACH	ANCHOR ASSEMBLY, MGS TYPE E (MASH 2016)	
	2									2	606	26550	2	EACH	ANCHOR ASSEMBLY, MGS TYPE T	
	4									4	606	35000	4	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 1	
	3	3								6	626	00102	6	EACH	BARRIER REFLECTOR, TYPE 1 , BI-DIRECTIONAL	
															PAVEMENT	
				1,265	1,341					2,606	254	01001	2,606	SY	PAVEMENT PLANING, ASPHALT CONCRETE, AS PER PLAN, (1")	3
				42	42					84	407	10000	84	GAL	TACK COAT	
				18	18					36	442	10501	36	CY	ASPHALT CONCRETE SURFACE COURSE, 9.5 MM, TYPE A (448), AS PER PLAN, (2")	3
															EROSION CONTROL	
										2,000	832	30000	2,000	EACH	EROSION CONTROL	
															TRAFFIC CONTROL	
										0.3	646	10010	0.3	MILE	EDGE LINE, 6"	
										0.15	646	10200	0.15	MILE	CENTER LINE	
															STRUCTURE REPAIR (ERI-2-14.06)	
			1,002							1,002	512	73500	1,002	SY	TREATING CONCRETE BRIDGE DECKS WITH GRAVITY FED RESIN	
			465							465	512	10100	465	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	
			500							500	519	11100	500	SF	PATCHING CONCRETE STRUCTURE	
															STRUCTURE REPAIR (ERI-2-23.32)	
				4						4	202	11301	4	CY	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN	4
				72						72	202	98200	72	FT	REMOVAL MISC.: JOINT SEAL	4
				25						25	509	20001	25	LB	REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN	4
				3						3	511	53012	3	CY	CLASS QC2 CONCRETE, MISC.: APPROACH SLAB REPAIR	4
				2						2	511	53012	2	CY	CLASS QC2 CONCRETE, MISC.:BACKWALL REPAIR	4
				14						14	512	10100	14	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	
				72						72	516	11800	72	FT	VERTICAL EXTENSION OF STRUCTURAL EXPANSION JOINT	
				152						152	516	31000	152	FT	JOINT SEALER	
				120						120	519	11100	120	SF	PATCHING CONCRETE STRUCTURE, (PARAPETS)	
				932						932	848	10201	932	SY	SUPERPLASTICIZED DENSE CONCRETE OVERLAY USING HYDRODEMOLITION, AS PER PLAN (2.5")	4
				932						932	848	20000	932	SY	SURFACE PREPARATION USING HYDRODEMOLITION	
				10						10	848	30201	10	CY	SUPERPLASTICIZED DENSE CONCRETE OVERLAY (VARIABLE THICKNESS), MATERIAL ONLY, AS PER PLAN	4
				65						65	848	50000	65	SY	HAND CHIPPING	
				LUMP	LUMP					LUMP	848	50100	LS		TEST SLAB	
															STRUCTURE REPAIR (ERI-2-25.16)	
					4					4	202	11301	4	CY	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN	4
					78					78	202	98200	78	FT	REMOVAL MISC.: JOINT SEAL	4
					25					25	509	20001	25	LB	REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN	4
					3					3	511	53012	3	CY	CLASS QC2 CONCRETE, MISC.: APPROACH SLAB REPAIR	4
					2					2	511	53012	2	CY	CLASS QC2 CONCRETE, MISC.:BACKWALL REPAIR	4
					56					56	512	10100	56	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	
					78					78	516	11800	78	FT	VERTICAL EXTENSION OF STRUCTURAL EXPANSION JOINT	
					164					164	516	31000	164	FT	JOINT SEALER	
					504					504	519	11100	504	SF	PATCHING CONCRETE STRUCTURE, (PARAPETS)	
					1,008					1,008	848	10201	1,008	SY	SUPERPLASTICIZED DENSE CONCRETE OVERLAY USING HYDRODEMOLITION, AS PER PLAN (2.5")	4
					1,008					1,008	848	20000	1,008	SY	SURFACE PREPARATION USING HYDRODEMOLITION	
					10					10	848	30201	10	CY	SUPERPLASTICIZED DENSE CONCRETE OVERLAY (VARIABLE THICKNESS), MATERIAL ONLY, AS PER PLAN	4
					71					71	848	50000	71	SY	HAND CHIPPING	
					LUMP					LUMP	848	50100	LS		TEST SLAB	
															MAINTENANCE OF TRAFFIC	
LUMP										LUMP	614	12420	LS		DETOUR SIGNING	
										0.15	614	21550	0.15	MILE	WORK ZONE CENTER LINE, CLASS III, 642 PAINT	
															INCIDENTALS	
										LUMP	614	11000	LS		MAINTAINING TRAFFIC	
										7	619	16000	7	MNTH	FIELD OFFICE, TYPE A	
										LUMP	623	10000	LS		CONSTRUCTION LAYOUT STAKES AND SURVEYING	
										LUMP	624	10000	LS		MOBILIZATION	

CALCULATED MAE
CHECKED CAD

GENERAL SUMMARY

ERI-DECK-OVERLAY





LOCATION	ITEM	DESCRIPTION	UNIT	QUANTITY		TOTAL
				LEFT	RIGHT	
Ⓐ	202	GUARDRAIL REMOVED	FT	37.5	25	62.5
Ⓑ	202	ANCHOR ASSEMBLY REMOVED, TYPE A	EACH	2	1	3
Ⓒ	202	BRIDGE TERMINAL ASSEMBLY REMOVED	EACH	2	2	4
Ⓤ	209	RESHAPING UNDER GUARDRAIL	STA	7.50	4.50	12
Ⓜ	606	GUARDRAIL, TYPE MGS	FT	25	25	50
Ⓔ	606	ANCHOR ASSEMBLY, MGS TYPE E	EACH	1		1
Ⓣ	606	ANCHOR ASSEMBLY, MGS TYPE T	EACH	1	1	2
Ⓕ	606	BRIDGE TERMINAL ASSEMBLY, TYPE 1	EACH	2	2	4
Ⓐⓐ	626	BARRIER REFLECTOR	EACH	2	1	3

CALCULATED AGG
CHECKED CAD

GUARDRAIL DETAIL
ERI-2-23.32

ERI-DECK-OVERLAY

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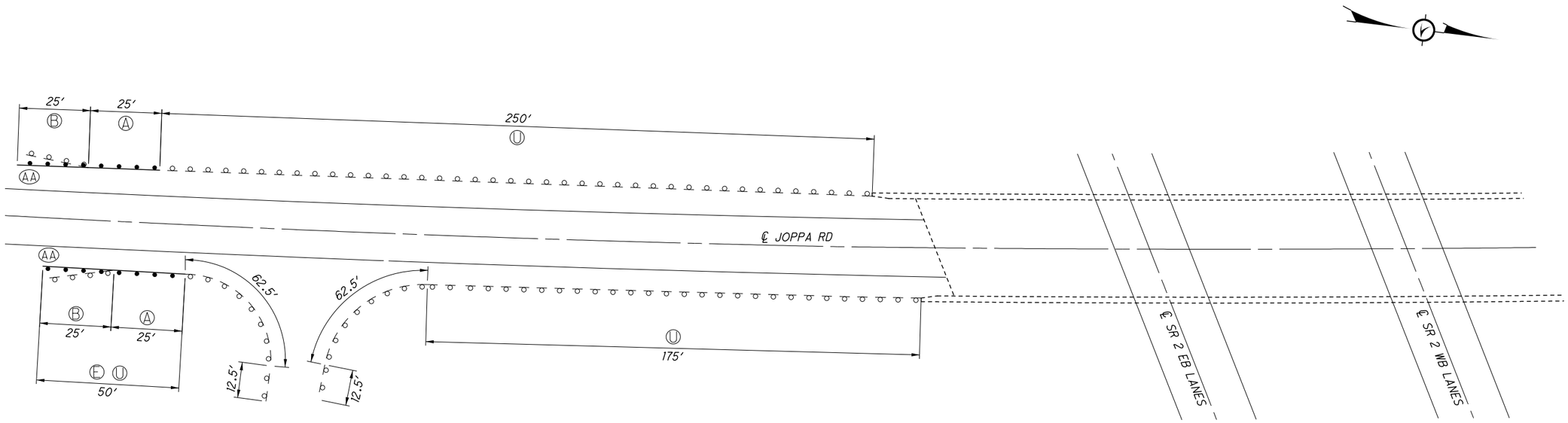

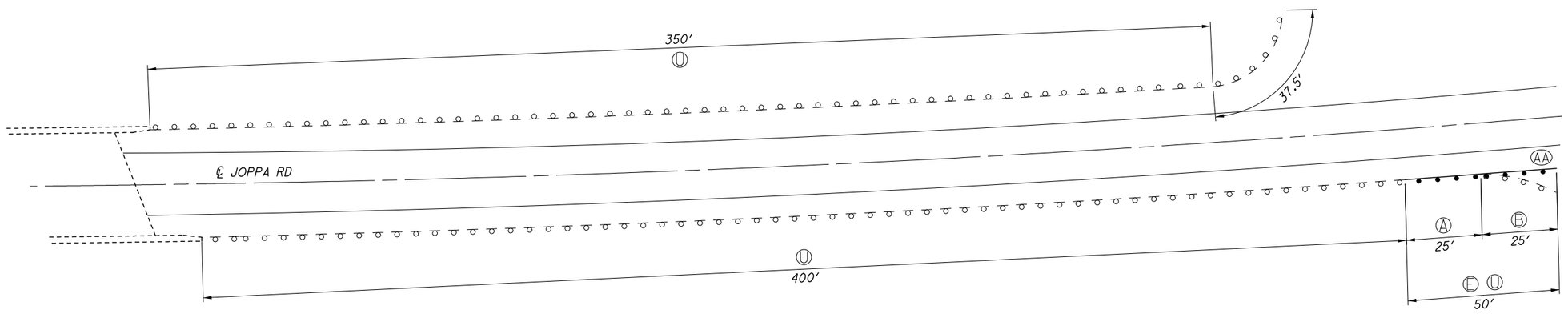

LOCATION	ITEM	DESCRIPTION	UNIT	QUANTITY		TOTAL
				LEFT	RIGHT	
Ⓐ	202	GUARDRAIL REMOVED	FT	50	25	75
Ⓑ	202	ANCHOR ASSEMBLY REMOVED, TYPE A	EACH	2	1	3
Ⓤ	209	RESHAPING UNDER GUARDRAIL	STA	5.25	8.00	13.25
Ⓔ	606	ANCHOR ASSEMBLY, MGS TYPE E	EACH	2	1	3
AA	626	BARRIER REFLECTOR	EACH	2	1	3

CALCULATED AGG
CHECKED CAD

GUARDRAIL DETAIL

ERI-2-25.16

ERI-DECK-OVERLAY

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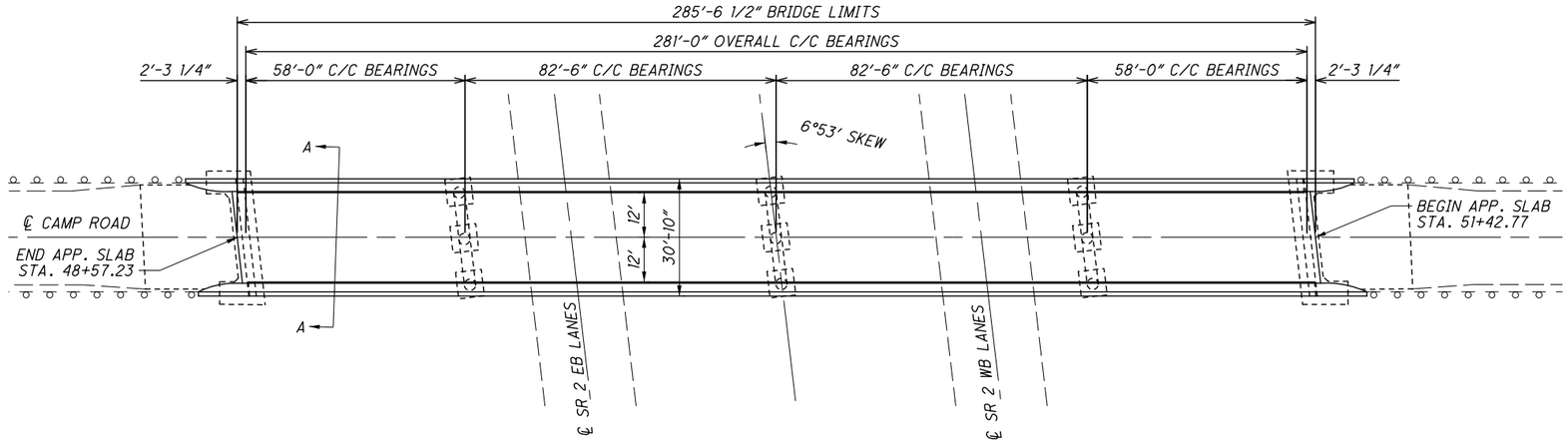
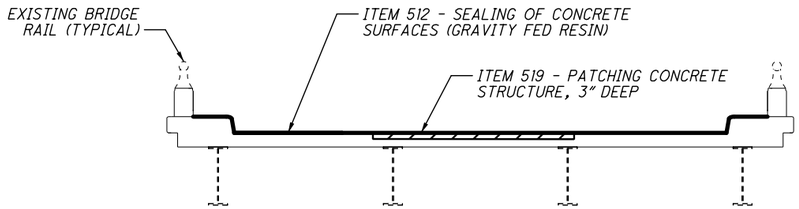
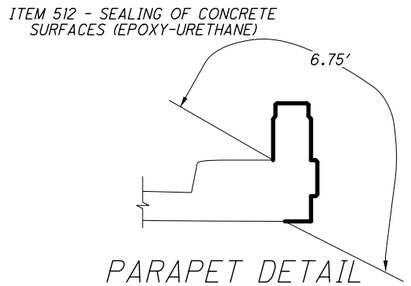




SECTION A-A

SCALE 5:1



PARAPET DETAIL

SCALE 10:1
SHOWN WITHOUT EXISTING BRIDGE RAIL

ESTIMATED QUANTITIES ERI-2-14.06			
ITEM	QUANTITY	UNIT	DESCRIPTION
512	1002	SY	TREATING CONCRETE BRIDGE DECKS WITH GRAVITY FED RESIN
512	465	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)
519	500	SF	PATCHING CONCRETE STRUCTURE

ALL QUANTITIES CARRIED TO THE GENERAL SUMMARY.

NOTES:

1) REPAIR BRIDGE DECK AT LOCATIONS DIRECTED BY THE ENGINEER.
2) SEAL ENTIRE DECK INCLUDING SAFETY CURBS (HORIZONTAL SURFACES AND FACE OF CURBS) WITH GRAVITY FED RESIN.
3) SEAL ENTIRE PARAPET WITH EPOXY-URETHANE FROM INSIDE FACE TO 1' UNDER BRIDGE DECK AS SHOWN IN DETAIL VIEW.

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED MAE
CHECKED CAD

STRUCTURE DETAILS
TR 121 OVER ERI-2-14.06

ERI-DECK-OVERLAY

12
20

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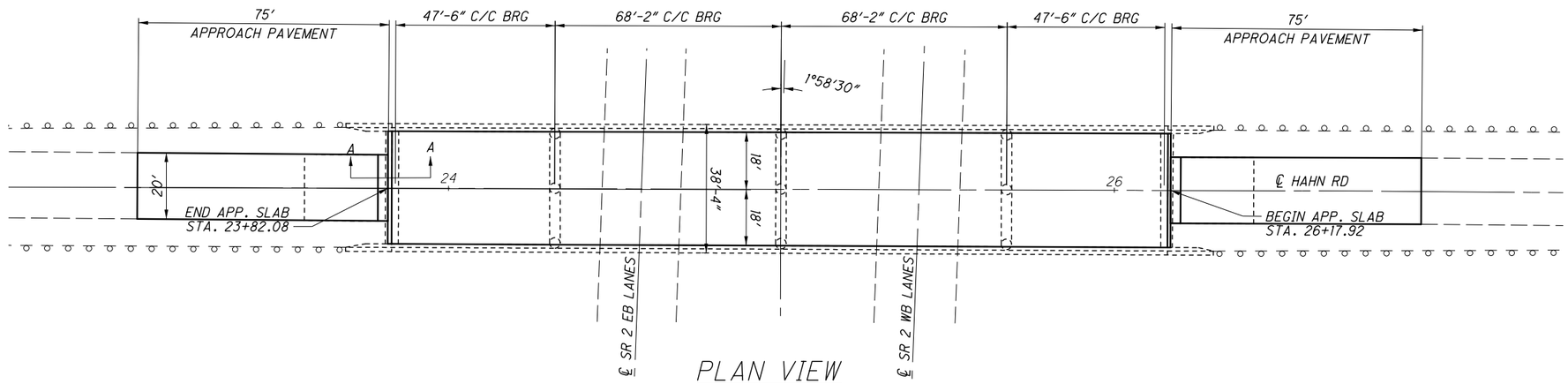
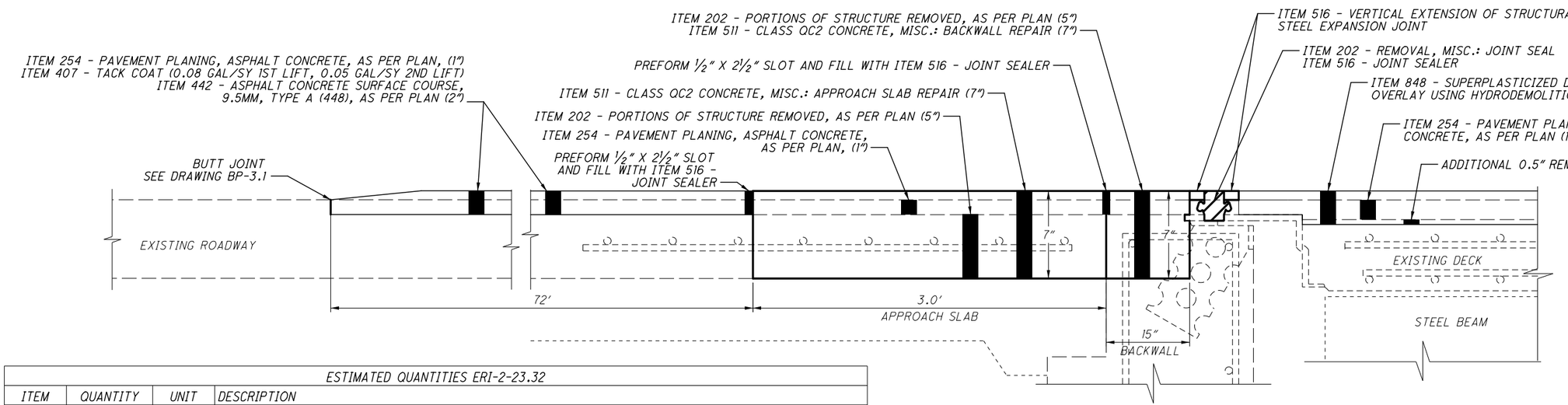


PLAN VIEW

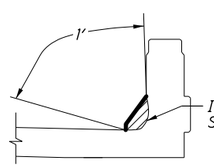


SECTION A-A

ESTIMATED QUANTITIES ERI-2-23.32			
ITEM	QUANTITY	UNIT	DESCRIPTION
202	4	CY	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN
202	72	FT	REMOVAL MISC.: JOINT SEAL
254	1265	SY	PAVEMENT PLANING ASPHALT CONCRETE, AS PER PLAN (1")
407	42	GAL	TACK COAT
442	18	CY	ASPHALT CONCRETE SURFACE COURSE, 9.5MM, TYPE A (448), AS PER PLAN
509	25	LB	REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN
511	3	CY	CLASS QC2 CONCRETE, MISC.: APPROACH SLAB REPAIR
511	2	CY	CLASS QC2 CONCRETE, MISC.: BACKWALL REPAIR
512	14	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)
516	72	FT	VERTICAL EXTENSION OF STRUCTURAL EXPANSION JOINT
516	152	FT	JOINT SEALER
519	120	SF	PATCHING CONCRETE STRUCTURE, (PARAPETS)
848	932	SY	SUPERPLASTICIZED DENSE CONCRETE OVERLAY USING HYDRO-DEMOLITION, AS PER PLAN (2.5")
848	932	SY	SURFACE PREPERATION USING HYDRODEMOLITION
848		LS	TEST SLAB
848	10	CY	SUPERPLASTICIZED DENSE CONCRETE OVERLAY (VARIABLE THICKNESS), MATERIAL ONLY, AS PER PLAN
848	65	SY	HAND CHIPPING

ALL QUANTITIES CARRIED TO THE GENERAL SUMMARY.

ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)



PARAPET DETAIL

NOTES:

1) MILLING SHALL BE USED TO REMOVED 1.00" ASPHALT FROM EXISTING DECK OVERLAY.
2) 0.5" OF EXISTING CONCRETE SHALL BE REMOVED USING HYDRODEMOLITION.
3) REPAIR TOP OF BACKWALL 7" DEEP FULL WIDTH.
4) REMOVE EXISTING STRIP SEAL AT EXPANSION JOINT, EXTEND STEEL PLATES AT EXPANSION JOINT TO MATCH PROPOSED PROFILE AND RESEAL WITH ITEM 516.
5) REPAIR APPROACH SLAB AT JUNCTION TO BACKWALL (3' WIDE X 7" DEEP X FULL WIDTH).
6) PLANE AND PAVE APPROACH SLABS AND APPROACH ASPHALT FOR A TOTAL LENGTH OF 75'.
7) REPAIR AND SEAL THE TOE OF BRIDGE PARAPET (60' RIGHT & 60' LEFT).
8) PAVEMENT MARKINGS TO BE REPLACED USING ITEM 646.

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED MAE
CHECKED CAD

STRUCTURE DETAILS
TR 135 OVER ERI-2-23.32

ERI-DECK-OVERLAY

13
20

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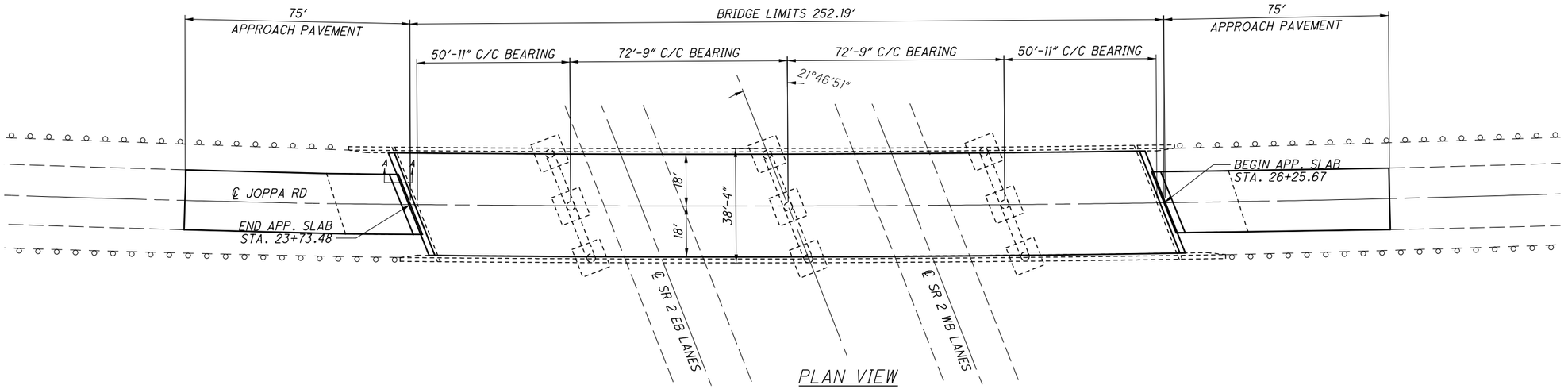
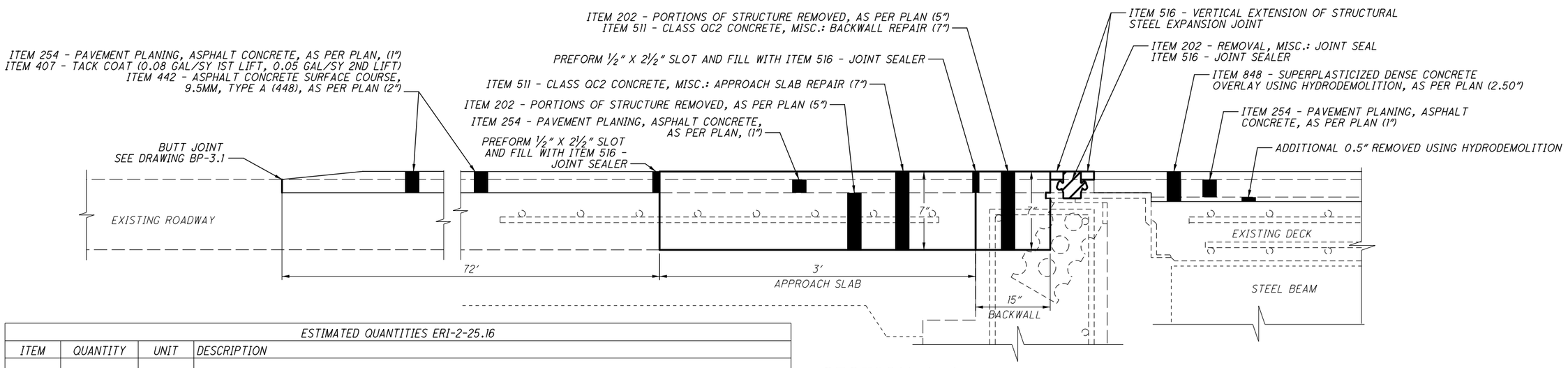


PLAN VIEW

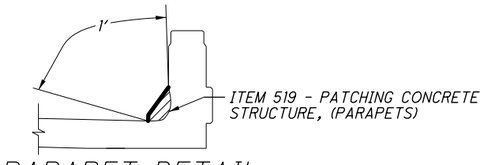


SECTION A-A

ESTIMATED QUANTITIES ERI-2-25.16			
ITEM	QUANTITY	UNIT	DESCRIPTION
202	4	CY	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN
202	78	FT	REMOVAL MISC.: JOINT SEAL
254	1341	SY	PAVEMENT PLANING ASPHALT CONCRETE, AS PER PLAN (1")
407	42	GAL	TACK COAT
442	18	CY	ASPHALT CONCRETE SURFACE COURSE, 9.5MM, TYPE A (448), AS PER PLAN
509	25	LB	REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN
511	3	CY	CLASS QC2 CONCRETE, MISC.: APPROACH SLAB REPAIR
511	2	CY	CLASS QC2 CONCRETE, MISC.: BACKWALL REPAIR
512	56	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)
516	78	FT	VERTICAL EXTENSION OF STRUCTURAL EXPANSION JOINT
516	164	FT	JOINT SEALER
519	504	SF	PATCHING CONCRETE STRUCTURE, (PARAPETS)
848	1008	SY	SUPERPLASTICIZED DENSE CONCRETE OVERLAY USING HYDRO-DEMOLITION, AS PER PLAN (2.5")
848	1008	SY	SURFACE PREPERATION USING HYDRODEMOLITION
848		LS	TEST SLAB
848	10	CY	SUPERPLASTICIZED DENSE CONCRETE OVERLAY (VARIABLE THICKNESS), MATERIAL ONLY, AS PER PLAN
848	71	SY	HAND CHIPPING

ALL QUANTITIES CARRIED TO THE GENERAL SUMMARY.

ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)



PARAPET DETAIL

NOTES:

1) MILLING SHALL BE USED TO REMOVED 1.00" ASPHALT FROM EXISTING DECK OVERLAY.
2) 0.5" OF EXISTING CONCRETE SHALL BE REMOVED USING HYDRODEMOLITION.
3) REPAIR TOP OF BACKWALL 7" DEEP FULL WIDTH.
4) REMOVE EXISTING STRIP SEAL AT EXPANSION JOINT, EXTEND STEEL PLATES AT EXPANSION JOINT TO MATCH PROPOSED PROFILE AND RESEAL WITH ITEM 516.
5) REPAIR APPROACH SLAB AT JUNCTION TO BACKWALL (3' WIDE X 7" DEEP X FULL WIDTH).
6) PLANE AND PAVE APPROACH SLABS AND APPROACH ASPHALT FOR A TOTAL LENGTH OF 75'.
7) REPAIR AND SEAL THE TOE OF BRIDGE PARAPET (ENTIRE LENGTH RIGHT & LEFT).
8) PAVEMENT MARKINGS TO BE REPLACED USING ITEM 646.

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED MAE
CHECKED CAD

STRUCTURE DETAILS
CR 140 OVER ERI-2-25.16

ERI-DECK-OVERLAY

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NOTES

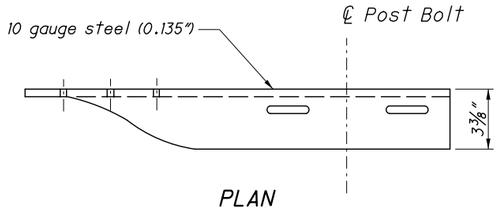
GENERAL: Components shown on this drawing are used in a variety of guardrail systems. See individual guardrail drawing for specific applications.

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

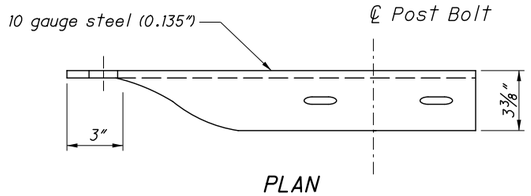
Refer to AASHTO M 180 for dimensional details of W-Beam and Thrie-Beam rail elements, related buffer and end sections, beam splices, post and splice bolts, nuts, and Type 1 W-Beam to Thrie-Beam Transition sections.

RAIL ELEMENTS: W-Beam Rail has an effective length of 12'-6" unless otherwise specified, with ¾" x 2½" 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.

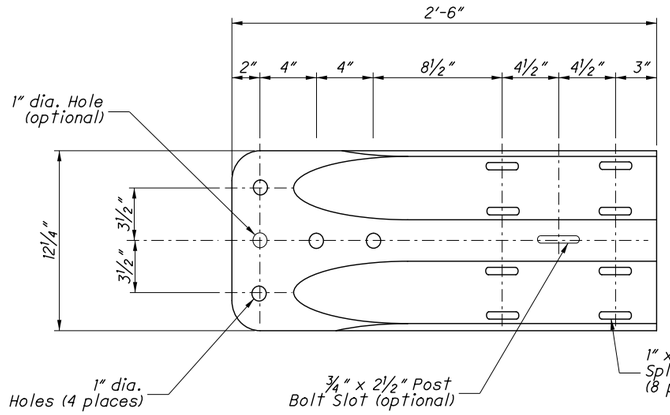
RAIL SPLICES: Lap splices between two rail elements or between a rail and terminal connector in the direction of traffic. Lap the buffer or flared end sections in the direction of traffic.



PLAN

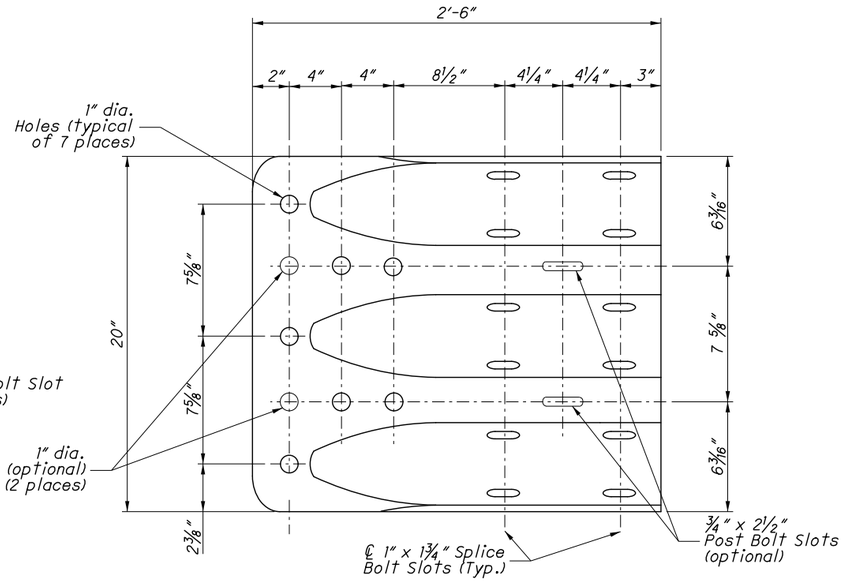


PLAN



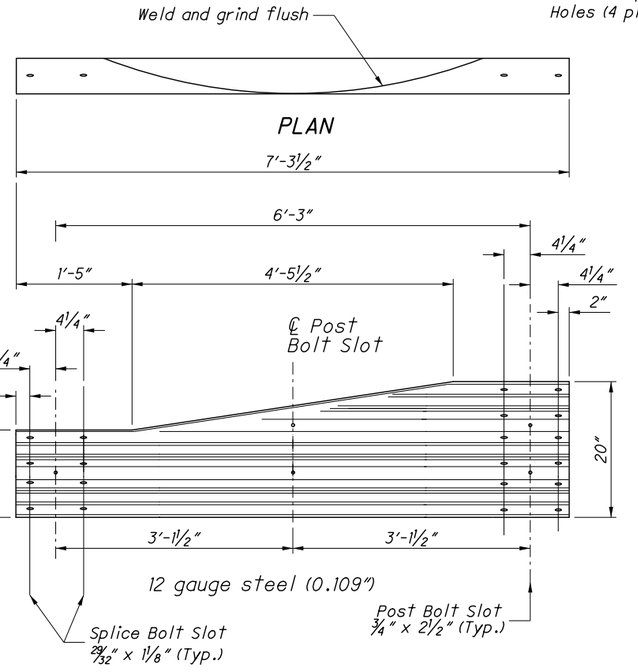
ELEVATION

W-BEAM TERMINAL CONNECTOR



ELEVATION

THRIE-BEAM TERMINAL CONNECTOR

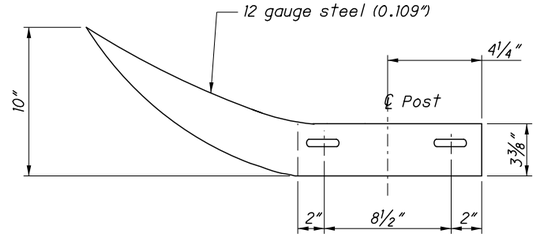


ELEVATION

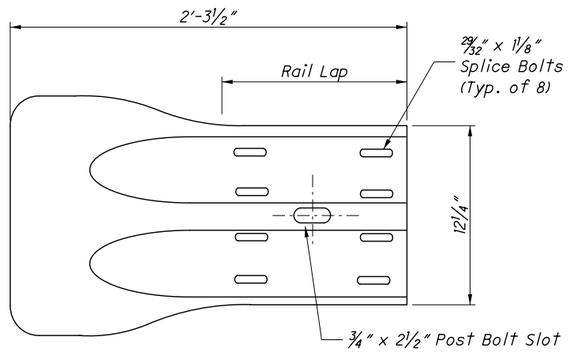
TYPE 2 TRANSITION SECTION

(Asymmetric W to Thrie-Beam)

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

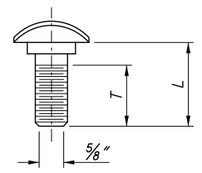


PLAN



ELEVATION

W-BEAM FLARED END SECTION



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
1¼"	1⅛"	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.

OFFICE OF ROADWAY ENGINEERING

DESIGNED . REVIEWED .

REVISION DATE . CHECKED .

PLAN INSERT SHEET

GUARDRAIL DETAILS (Rail Components)

PIS GR-1.1

1 / 3

15 / 20

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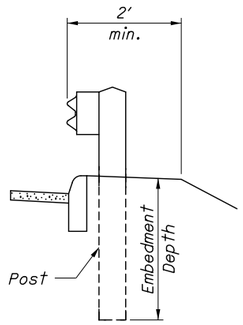
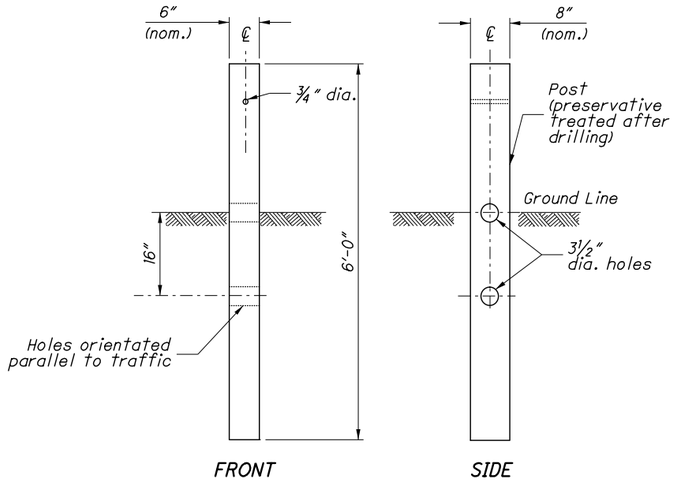
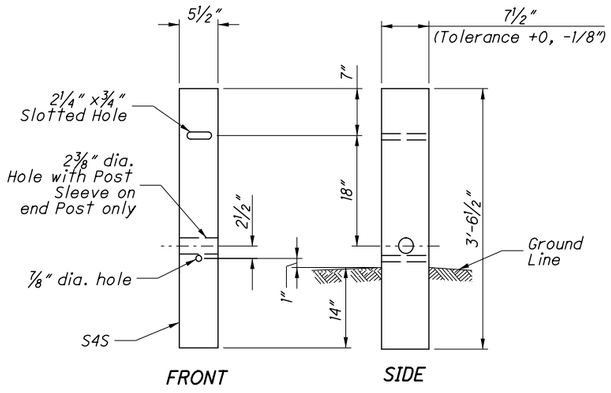


DETAIL A

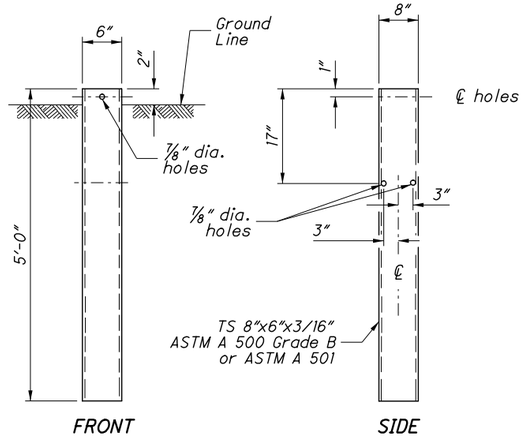
See POST EMBEDMENT DEPTH Note



TYPE 1 BREAKAWAY CRT POST



TYPE 2 BREAKAWAY CRT POST



STEEL GROUND TUBE

NOTES

GUARDRAIL HEIGHT: *For initial installation, construct the guardrail within ± 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 ±2.5″ of the standard height.

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

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

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

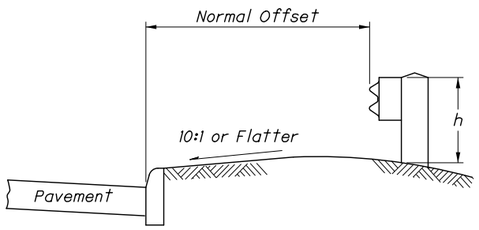
Do not drive posts located over a culvert with less than 4′-3″ of cover; instead set in drilled or dug holes. Where the available post embedment depth is less than 3′-5″, encase the post with a minimum of 4″ concrete.

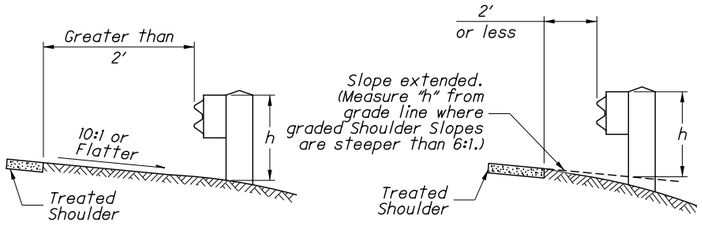
All costs associated with special post mountings are included in the unit price bid of Item 606 Guardrail of the type specified in the plans.

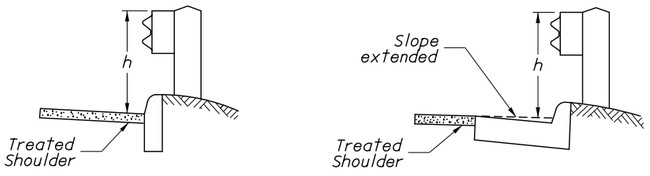
ANCHORS: *Holes and grouting shall comply with CMS 510. Use either cement or non-shrink, nonmetallic grout.*

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

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

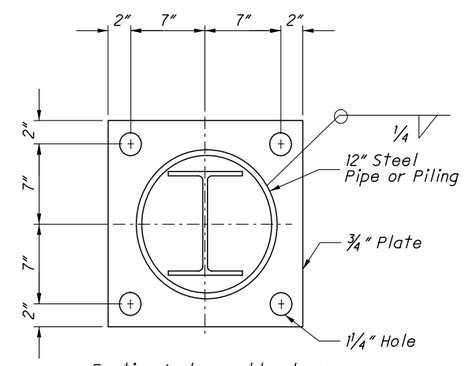






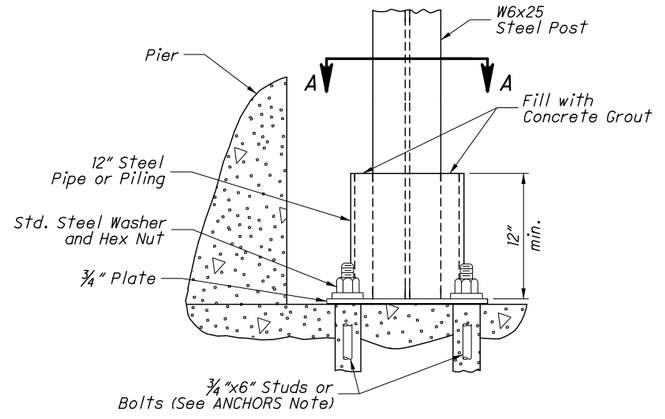
h = Standard Height (See GUARDRAIL HEIGHT Note)

MEASURING GUARDRAIL HEIGHT



Footing Anchor and hardware need not be galvanized

SECTION A-A



ELEVATION
FOOTING ANCHOR

See SPECIAL POST MOUNTINGS Note.

OFFICE OF ROADWAY ENGINEERING

DESIGNED : . REVIEWED : .

REVISION DATE : CHECKED : .

PLAN INSERT SHEET

GUARDRAIL DETAILS (Rail Components)

PIS GR-1.1

2 / 3

16 / 20

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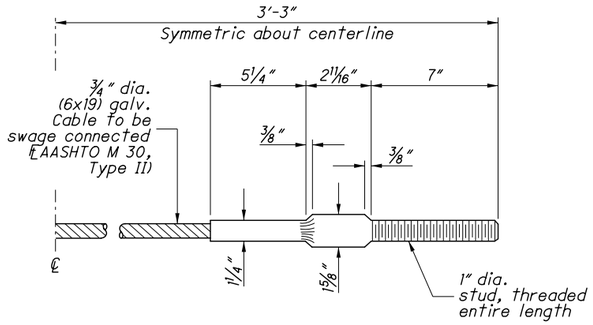
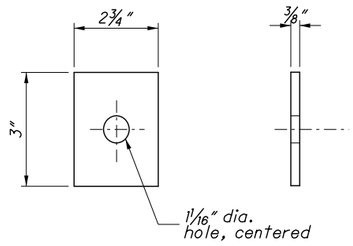
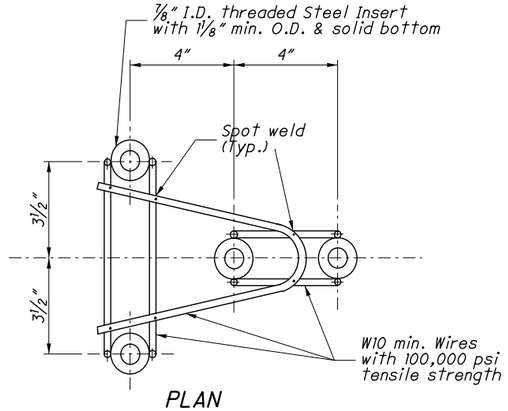


STANDARD SWAGED FITTING AND STUD

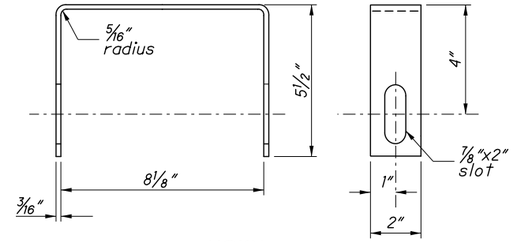
CABLE ANCHOR



END PLATE

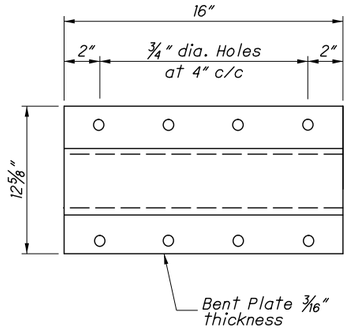


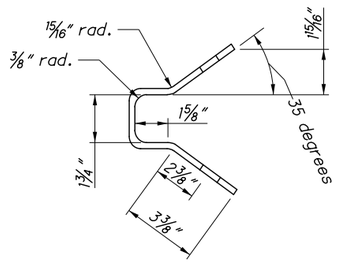
PLAN



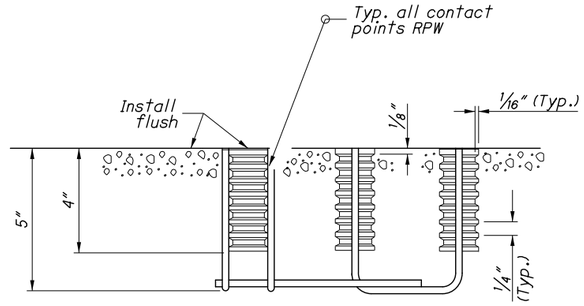
YOKE

Two required in Assembly





ANCHOR BRACKET

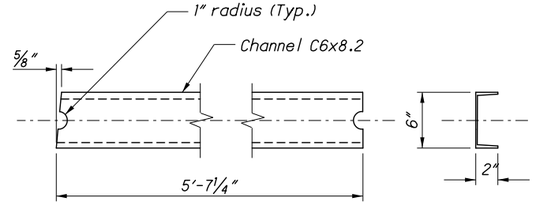


Four 7/8" Bolts required

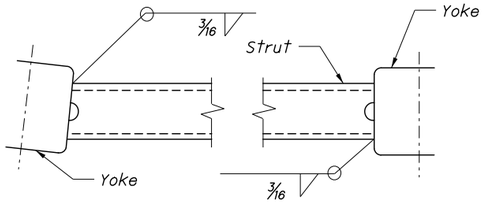
ELEVATION

CONCRETE INSERT ANCHOR ASSEMBLY (W-BEAM ONLY)

See ANCHORS and PROTECTIVE COATINGS Notes on Sheet 2

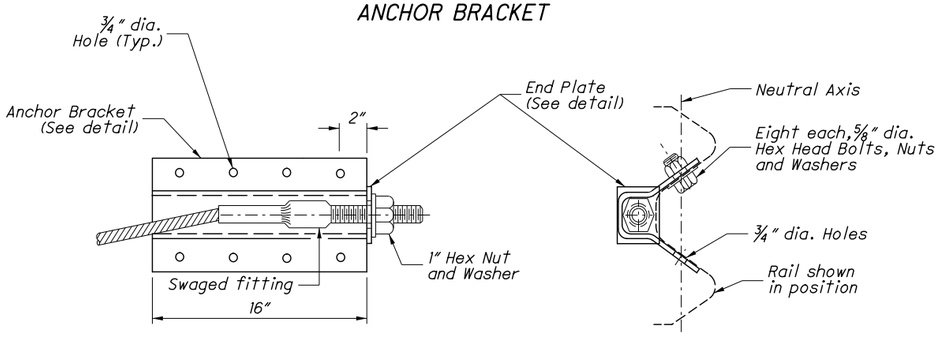


STRUT

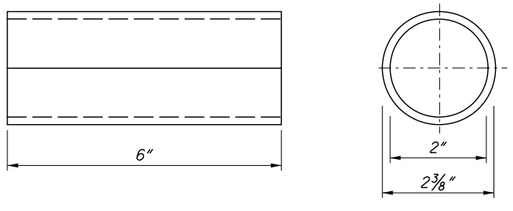


Channel legs shown down. For opposite hand, install Channel legs up.

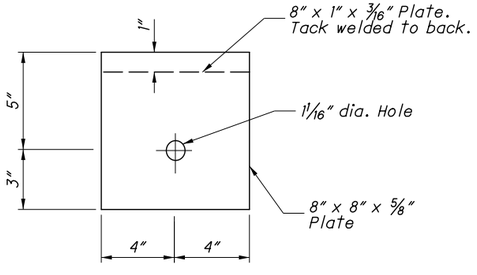
STRUT AND YOKE ASSEMBLY



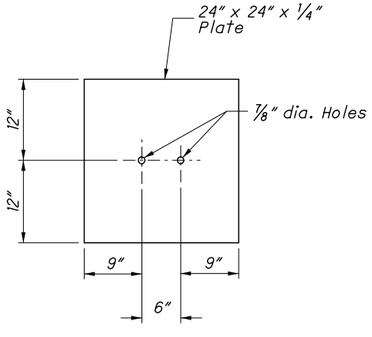
ANCHOR BRACKET ASSEMBLY DETAILS



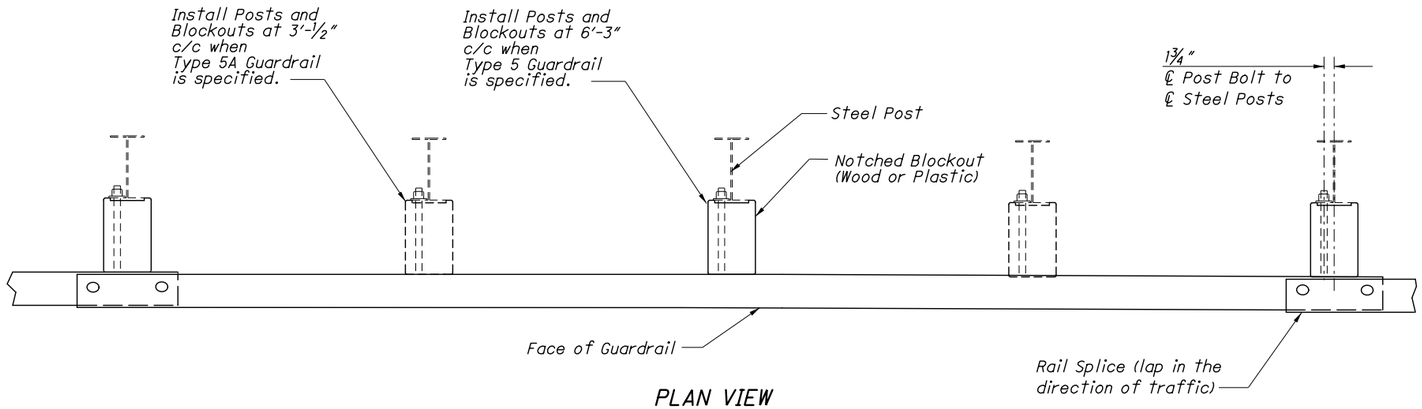
POST SLEEVE



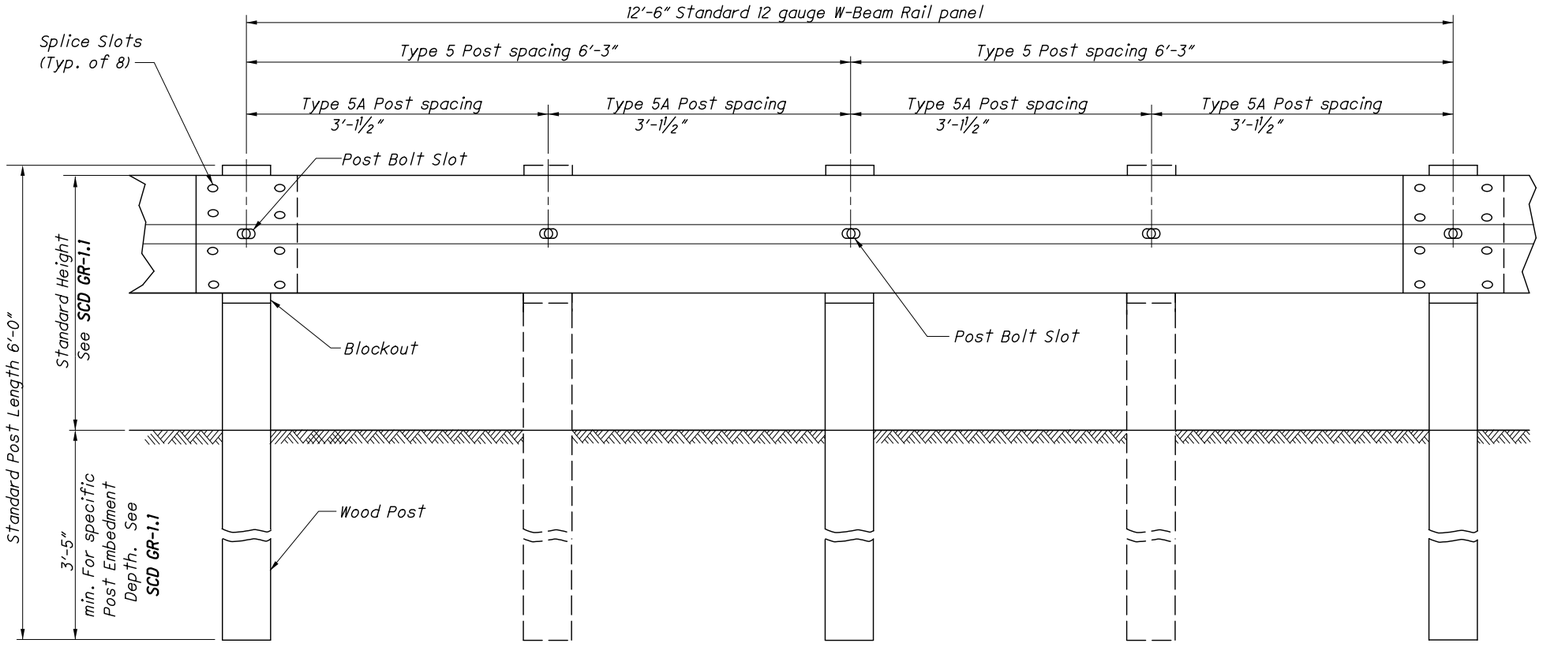
BEARING PLATE



SOIL PLATE



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

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

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

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

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

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

Sec. 7.2 *Test reports of tensile properties for each lot shall accompany each shipment.*

Sec. 12 *Beams that have imperfections repaired by welding shall not be accepted for use in Item 606.*

Sec. 13 *Random samples shall be tested by the Department from materials delivered to the project site, or other locations designated by the Laboratory.*

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

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

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

DELINEATION: *For barrier reflectors, see CMS 626.*

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

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

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PLAN INSERT SHEET
GUARDRAIL TYPE 5 & 5A

PIS GR-2.1

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18 / 20

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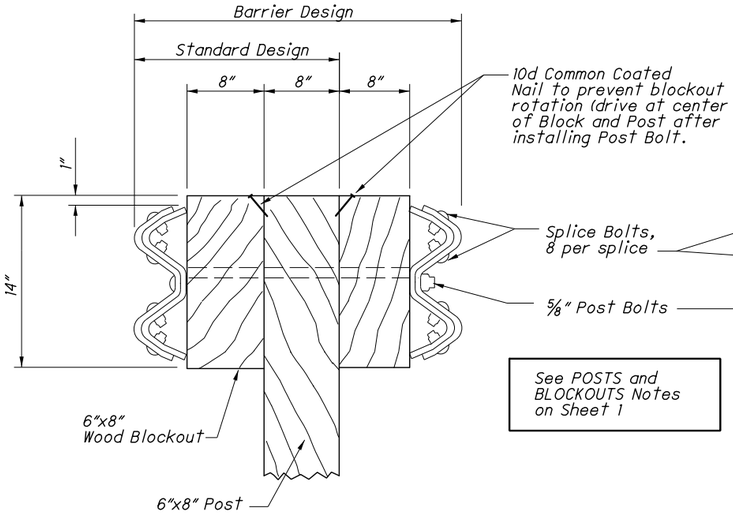
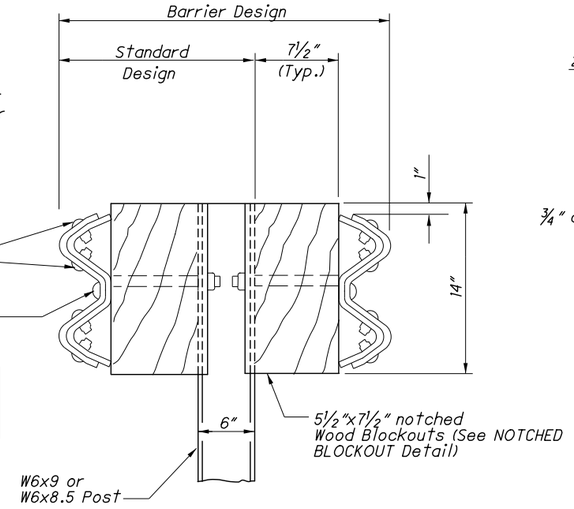
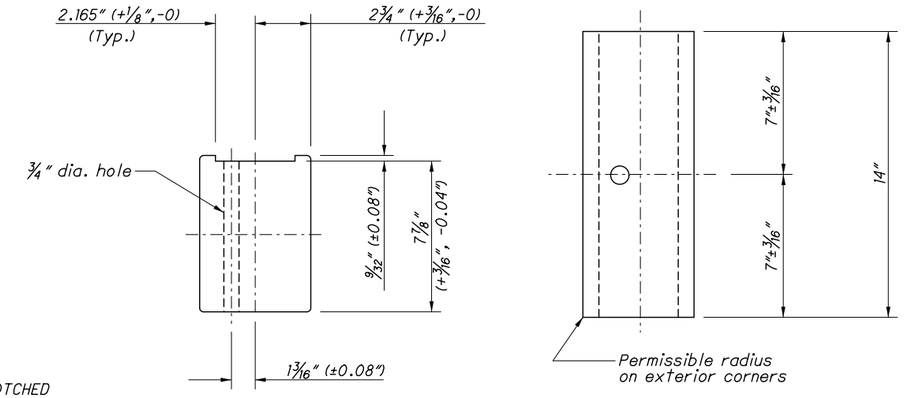


SQUARE WOOD POST



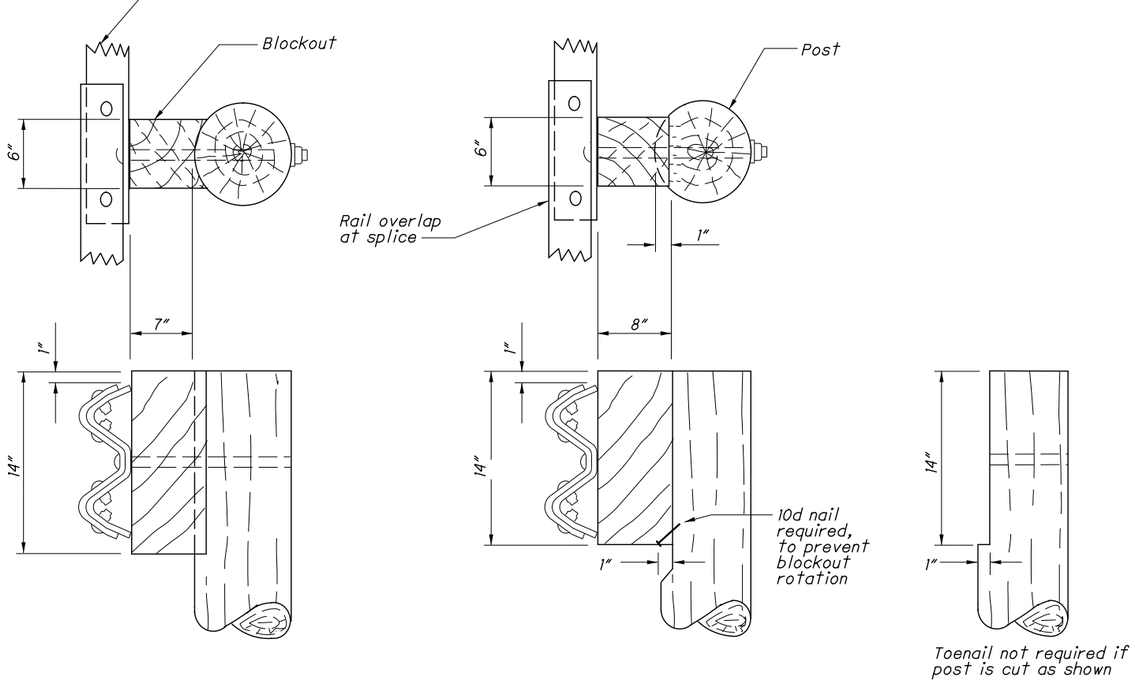
STEEL POST

See POSTS Note, Sheet 1



NOTCHED BLOCKOUTS FOR STEEL POSTS

See BLOCKOUTS Note on Sheet 1



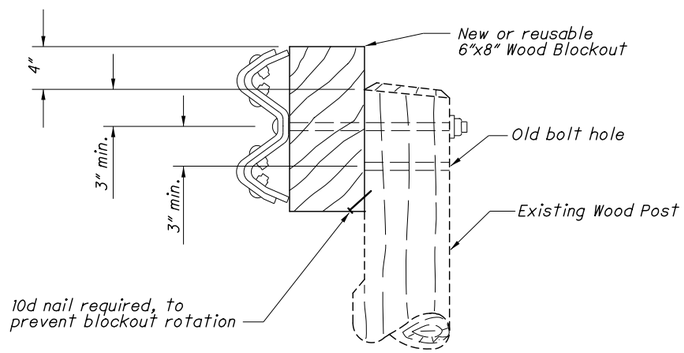
Method 1
Routed Blockout

Method 2
Notched Post

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)



WOOD POSTS WITH WOOD BLOCK RAISING EXISTING GUARDRAIL HEIGHT

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REVISION DATE : CHECKED .

PLAN INSERT SHEET

GUARDRAIL TYPE 5 & 5A

PIS GR-2.1

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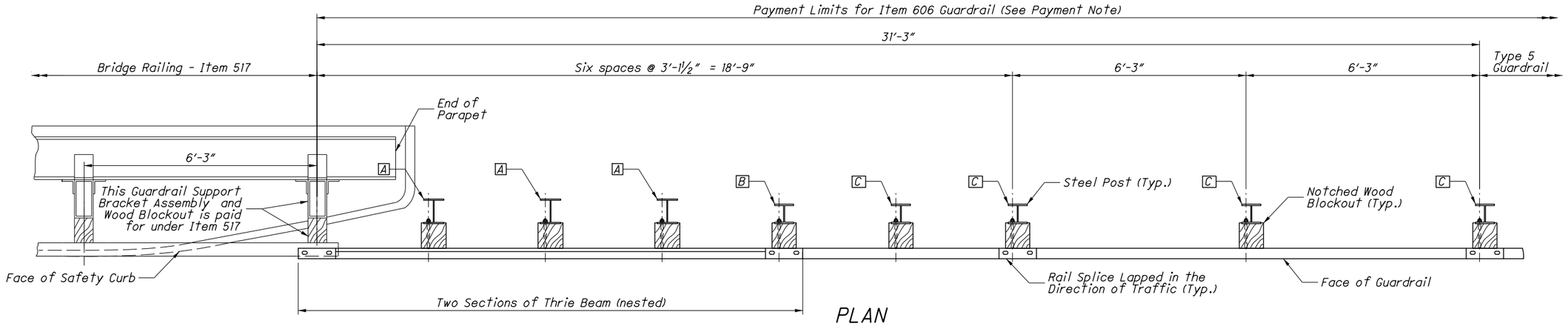
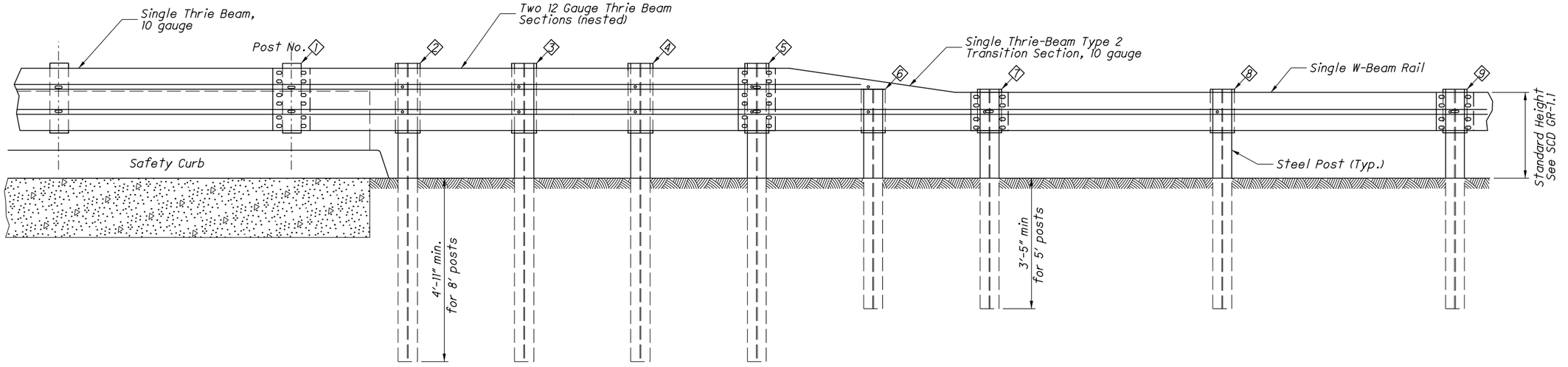


PLAN



ELEVATION

NOTES

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

APPLICATION: *Use Type 3 Bridge Terminal Assembly to connect guardrail runs for both the approach and trailing ends of Thrie Beam Bridge Railings. The design detailed on this sheet is approved to NCHRP 350 Test Level 3. See* ***Structural Engineering's SCD TBR-1-11*** *for the associated Bridge Railing.*

THRIE BEAM TRANSITION: *The asymmetrical W-Beam to Thrie Beam transition panel shall be 10 guage.*

FLARED GUARDRAIL: *Start Standard Guardrail Flares as shown on* ***SCD GR-5.1*** *at or beyond Post No. 9; However, where sight constraints exist, the flare may begin at Post No. 7.*

POSTS: *- Use steel posts only. Wood posts are not permitted in this design. Posts may be set in drilled holes or driven to grade. After placing posts in drilled holes, backfill and tamp disturbed soil. See* ***SCD GR-1.1*** *for additional post embedment details.*

BLOCKOUTS: *Steel posts in this design require the use of notched wood blockouts similar to those shown on* ***SCD GR-2.1.*** *The Blockout's notch shall be sized to accept the post's flange. Steel or plastic blockouts are not permitted.*

PAYMENT: ITEM 606 - Bridge Terminal Assembly, Type 3, Each, *includes the cost of extra components, in excess of normal guardrail, for additional and different types of posts and blockouts, nested Thrie-Beam, transition and connector sections, and other hardware.*

LEGEND

A *Posts 2, 3, & 4:*
W8x24x8'-0" Steel Post with 8"x8"x22½" Notched Wood Blockout

B *Post 5:*
W6x25x8'-0" Steel Post with 8"x8"x22½" Notched Wood Blockout

C *Post 6, 7, 8, & 9:*
W6x25x6'-0" Steel Post with 8"x8"x14" Notched Wood Blockout

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REVISION DATE : CHECKED :

PLAN INSERT SHEET

BRIDGE TERMINAL ASSEMBLY, TYPE 3

PIS GR-3.3

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