

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONSTR. CODE	
				BRACEVILLE RD	CARBON HILL RD
				80%FED 20%LOCAL	80%FED 20%LOCAL
				BOX CULVERT	BRIDGE
				0010	0013
				S.N. 032-3251	S.N. 032-5121
20200100	EARTH EXCAVATION	CU YD	707	215	492
20400800	FURNISHED EXCAVATION	CU YD	220	155	65
20700220	POROUS GRANULAR EMBANKMENT	CU YD	350	350	
21001000	GEOTECHNICAL FABRIC FOR GROUND STABILIZATION	SQ YD	817	341	476
25000300	SEEDING, CLASS 3	ACRE	0.50	0.25	0.25
25000400	NITROGEN FERTILIZER NUTRIENT	POUND	45	23	22
25000500	PHOSPHORUS FERTILIZER NUTRIENT	POUND	45	23	22
25000600	POTASSIUM FERTILIZER NUTRIENT	POUND	45	23	22
25100630	EROSION CONTROL BLANKET	SQ YD	1739	868	871
28000305	TEMPORARY DITCH CHECKS	FOOT	30	30	
28000400	PERIMETER EROSION BARRIER	FOOT	1351	598	753
28100107	STONE RIPRAP, CLASS A4	SQ YD	1147	102	1045
28200200	FILTER FABRIC	SQ YD	1147	102	1045
30300112	AGGREGATE SUBGRADE IMPROVEMENT 12"	SQ YD	817	341	476
35300300	PORTLAND CEMENT CONCRETE BASE COURSE 6"	SQ YD	134	134	
40600275	BITUMINOUS MATERIALS (PRIME COAT)	POUND	1838	767	1071
40600290	BITUMINOUS MATERIALS (TACK COAT)	POUND	233	126	107
40603080	HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N50	TON	275	115	160
40604050	HOT-MIX ASPHALT SURFACE COURSE, IL-9.5, MIX "C", N50	TON	192	49	143
48101600	AGGREGATE SHOULDERS, TYPE B 8"	SQ YD	743	263	480
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1	1	
50101500	REMOVAL OF EXISTING SUPERSTRUCTURES	EACH	1		1
50102400	CONCRETE REMOVAL	CU YD	35		35
50300225	CONCRETE STRUCTURES	CU YD	29		29
50400605	PRECAST PRESTRESSED CONCRETE DECK BEAMS (33" DEPTH)	SQ FT	4350		4350

*DENOTES SPECIALTY ITEM

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONSTR. CODE	
				BRACEVILLE RD	CARBON HILL RD
				80%FED 20%LOCAL	80%FED 20%LOCAL
				BOX CULVERT	BRIDGE
				0010	0013
				S.N. 032-3251	S.N. 032-5121
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	2086		2086
50900209	STEEL RAILING, TYPE SMX	FOOT	318		318
51500100	NAME PLATES	EACH	2	1	1
54001001	BOX CULVERT END SECTIONS, CULVERT NO. 1	EACH	2	2	
54011010	PRECAST CONCRETE BOX CULVERTS 10' X 10'	FOOT	99	99	
58100200	WATERPROOFING MEMBRANE SYSTEM	SQ YD	483		483
58300100	PORTLAND CEMENT MORTAR FAIRING COURSE	FOOT	932		932
58600101	GRANULAR BACKFILL FOR STRUCTURES	CU YD	122		122
59100100	GEOCOMPOSITE WALL DRAIN	SQ YD	205	138	67
60100060	CONCRETE HEADWALLS FOR PIPE DRAINS	EACH	4		4
60146304	PIPE UNDERDRAINS FOR STRUCTURES 4"	FOOT	107		107
63000003	STEEL PLATE BEAM GUARDRAIL, TYPE A, 9 FOOT POSTS	FOOT	470	259	211
63000030	STRONG POST GUARDRAIL ATTACHED TO CULVERT	FOOT	70	70	
63100087	TRAFFIC BARRIER TERMINAL, TYPE 6A	EACH	4		4
63100167	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	EACH	8	4	4
63200310	GUARDRAIL REMOVAL	FOOT	526	366	160
67100100	MOBILIZATION	L SUM	1	0.5	0.5
72501000	TERMINAL MARKER - DIRECT APPLIED	EACH	8	4	4
78001110	PAINT PAVEMENT MARKING - LINE 4"	FOOT	1785	400	1385
X5810103	MEMBRANE WATERPROOFING SYSTEM FOR BURIED STRUCTURES	SQ YD	138	138	
X7010216	TRAFFIC CONTROL AND PROTECTION, (SPECIAL)	L SUM	1	0.5	0.5
Z0001900	ASBESTOS BEARING PAD REMOVAL	EACH	20		20
Z0012754	STRUCTURAL REPAIR OF CONCRETE (DEPTH EQUAL TO OR LESS THAN 5 INCHES)	SQ FT	100		100
Z0012755	STRUCTURAL REPAIR OF CONCRETE (DEPTH GREATER THAN 5 INCHES)	SQ FT	30		30
Z0013798	CONSTRUCTION LAYOUT	L SUM	1	0.5	0.5

*DENOTES SPECIALTY ITEM

CHALMERS & ASSOCIATES, INC. © 2024
 Drawn: HAJJABU, HAJJABU, HAJJABU
 Checked: DAH
 Date: 02/2023
 2024-02-23 04:35:00 PM
 Plotted On: Monday, Aug 1, 2024, 04:35:00 PM
 by: Xcel Center

CONTRACT NO. 87791

DRAWN BY: NET	LEVEL	BY	DATE	REVISIONS	DESCRIPTION
CHECKED BY: DAH	▲	KED	04/01/2024	REVISED	STEEL RAILING, TYPE SMX QUANTITY
DATE: 02/2023					

CHALMERS & ASSOCIATES, INC.
 PERU MORRIS
 OTTAWA MENDOTA
 ILLINOIS

CH 34V SECTION 19-00178-00-BR
 FAS 272 SECTION 22-00192-00-BR
 GRUNDY COUNTY

SUMMARY OF QUANTITIES

BID SET

CURRENT AS OF: 04/01/2024
 SCALE: AS NOTED
 FILE NO.: 111506.00 Y- OF 51

EXISTING STRUCTURE NO: 032-5121

TWO SPAN (76'-6", 76'-6") PRECAST CONCRETE DECK BEAM BRIDGE
158'-9" BACK TO BACK OF ABUTMENT, 28'-5 1/2" FACE TO FACE OF RAIL
EXISTING SUPERSTRUCTURE TO BE REMOVED
SALVAGE EXISTING SUBSTRUCTURE

DESIGN STRESSES

PRECAST UNITS
f'c = 5,000 psi
fy = 60,000 psi (Bar Reinforcement)
fy = 65,000 psi (Welded Wire Reinforcement)
FIELD UNITS
Pc = 3,500 psi
fy = 60,000 psi (Reinforcement)

GENERAL NOTES

Plan dimensions and details relative to existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.

Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.

All bars to be epoxy coated

All proposed construction activities shall be in accordance with Statewide Permit 12 of the Illinois DNR Office of Water Resources and Nationwide Permit 3 of the US Army Corps of Engineers.

Structure Excavation shall be included in cost of Concrete Structures.

Protective Coat shall not be applied to surfaces to which Waterproofing Membrane System is applied.

Table with columns: F.A.S. RATE, SECTION, COUNTY, TOTAL SHEETS, SHEET NO. Values: 34, 22-00192-00-BR, 19-00178-00-BR, GRUNDY, 51, 31.

Sheet 1 of 15

TOTAL BILL OF MATERIAL

Table with columns: ITEM, UNIT, SUPER, SUB, TOTAL. Lists materials like Stone Riprap, Filter Fabric, Concrete Structures, etc.

DESIGN SPECIFICATIONS

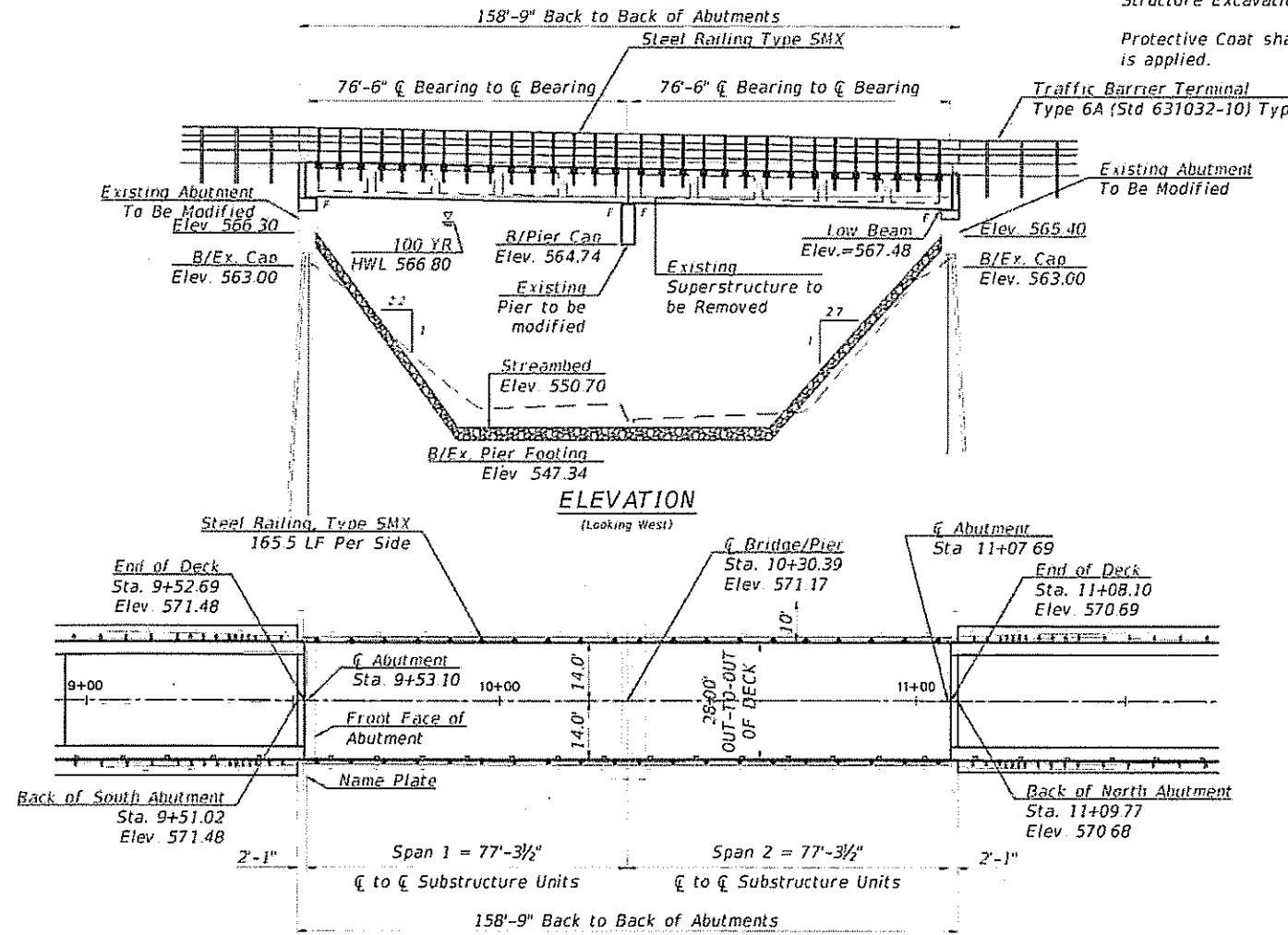
2020 AASHTO LRFD Bridge Design Specifications
Customary U.S. Units, 9th Edition

LOADING HL-93

Allow 50#/sq ft for future wearing surface

SEISMIC DATA

Seismic Performance Zone (SPZ) = 1
Design Spectral Acceleration at 1.0 Sec (S_{D1}) = 0.117
Design Spectral Acceleration at 0.2 Sec (S_{D5}) = 0.148
Soil Site Class = D (Assumed)



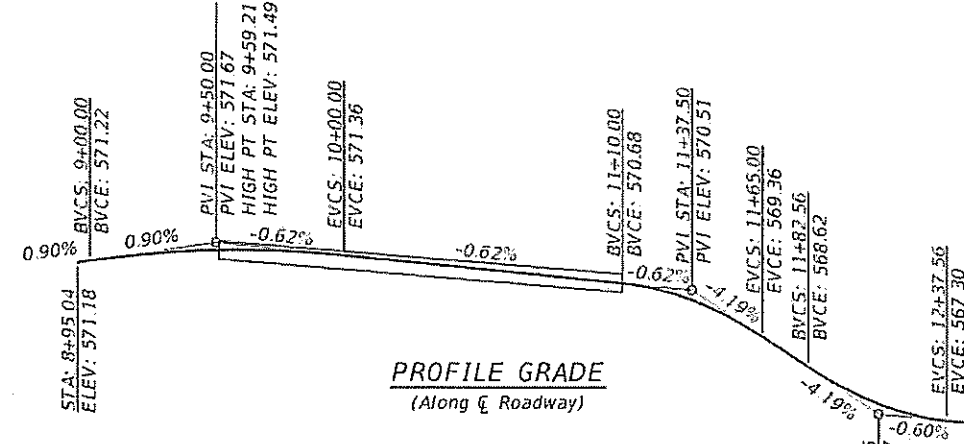
INDEX OF SHEETS

- 1. General Plan and Elevation
2. Rip Rap Details
3. Superstructure
4-5. Deck Beams
6. Railings
7. North Abutment Modification
8. South Abutment Modification
9. Pier Modification
10-15. Existing Plans

STA. 10+30.40
RE-BUILT 2024 BY
GRUNDY COUNTY
CH 34V - SEC 19-00178-00-BR
LOADING HL-93
STR NO. 032-5121

NAME PLATE

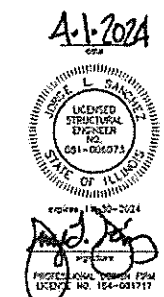
Clean existing name plate and install next to new name plate. Cost included with Name Plates.



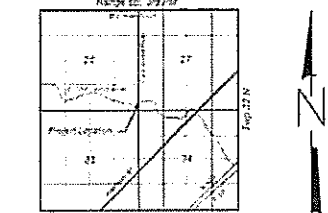
DESIGN SCOUR ELEVATION TABLE

Table with columns: Event/Limit, Design Scour Elevations (ft), Item 113. Rows for State, Q100, Q200, Design, Check.

Design and check elevations for abutments taken as bottom of existing cap. Design and check elevations for pier spread footings taken as bottom of existing footing. Abutment scour elevations not computed since abutments will be protected with rip-rap. Item 113 rated as 5 per ABD 14.2 due to proposed rip-rap installation around piers.



I certify that to the best of knowledge, information and belief, this bridge design is structurally adequate for the design loading shown on the plans. The design is an economical one for the style of structure and complies with requirements of the current AASHTO LRFD Bridge Design Specifications.



GENERAL PLAN AND ELEVATION
CARBON HILL ROAD (CH 34V)
OVER E. FORK MAZON RIVER
SEC. 19-00178-00-BR
GRUNDY COUNTY
STATION 10+30.40
S.N. 032-5121 (EX & PROP)

WATERWAY INFORMATION table with columns: Flood, Freq Yr, Q C.F.S., Opening Sq. Ft., Nat. H.W.E., Head - Ft., Headwater El.

Exist 10 Year Velocity: 5.90 (ft/sec)
Prop 10 Year Velocity: 5.91 (ft/sec)

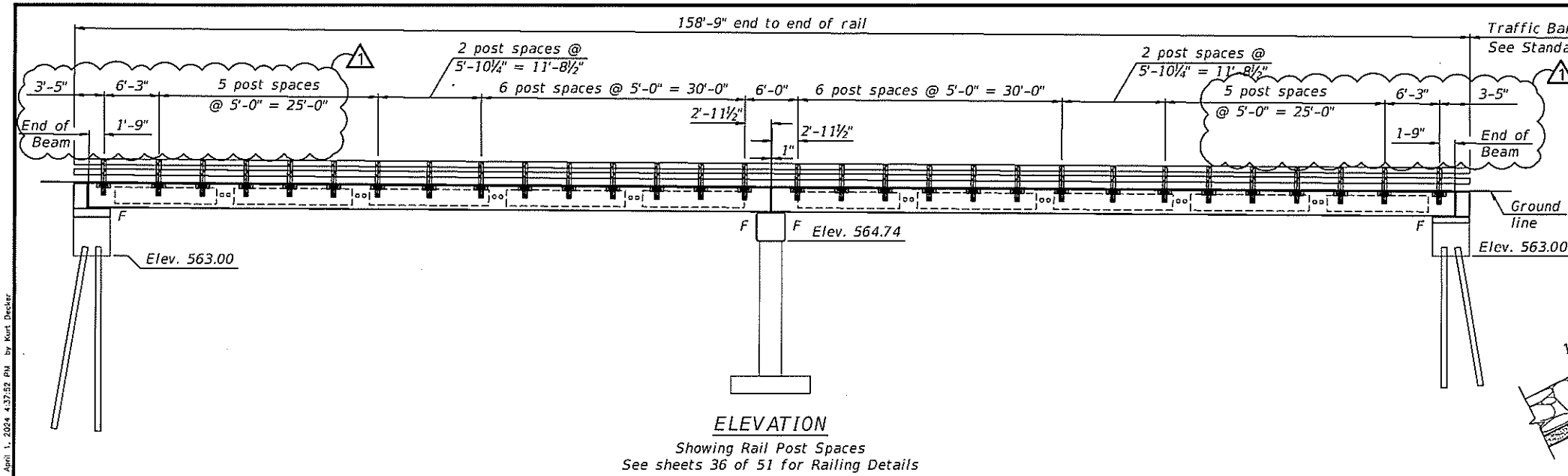
Table with columns: DRAWN BY, CHECKED BY, DATE, REVISIONS, DESCRIPTION.

Peru Morris Ottawa Mendota Illinois logo and project information: CH 34V SECTION 19-00178-00-BR, FAS 272 SECTION 22-00192-00-BR, GRUNDY COUNTY.

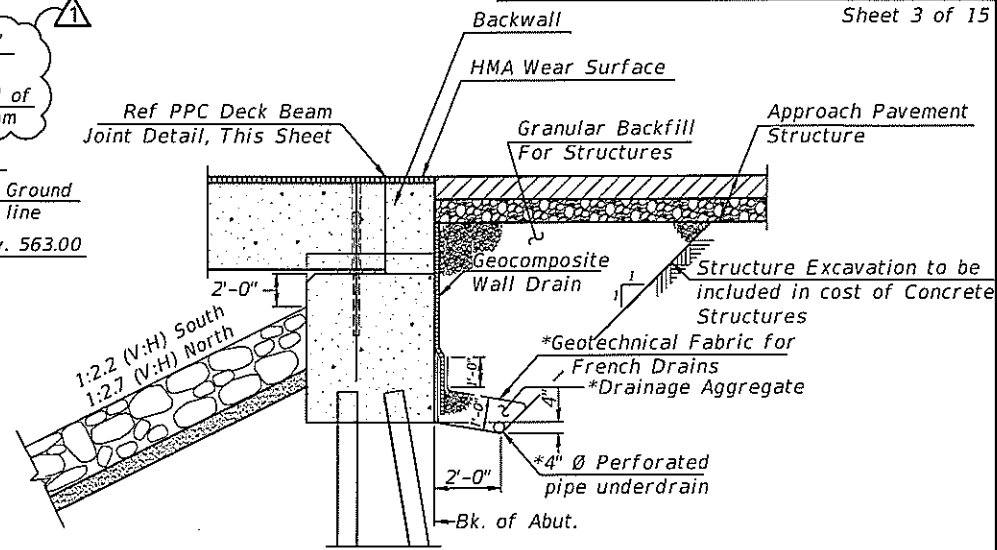
GENERAL PLAN AND ELEVATION STR 032-5121 (E)(P) BID SET CURRENT AS OF: 04/01/2024 SCALE: AS NOTED SHEET 31 FILE NO.: 111506.00 Y- OF 51

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
34	22-00192-00-BR	GRUNDY	51	33
		ILLINOIS	CONTRACT NO. 87791	

Sheet 3 of 15



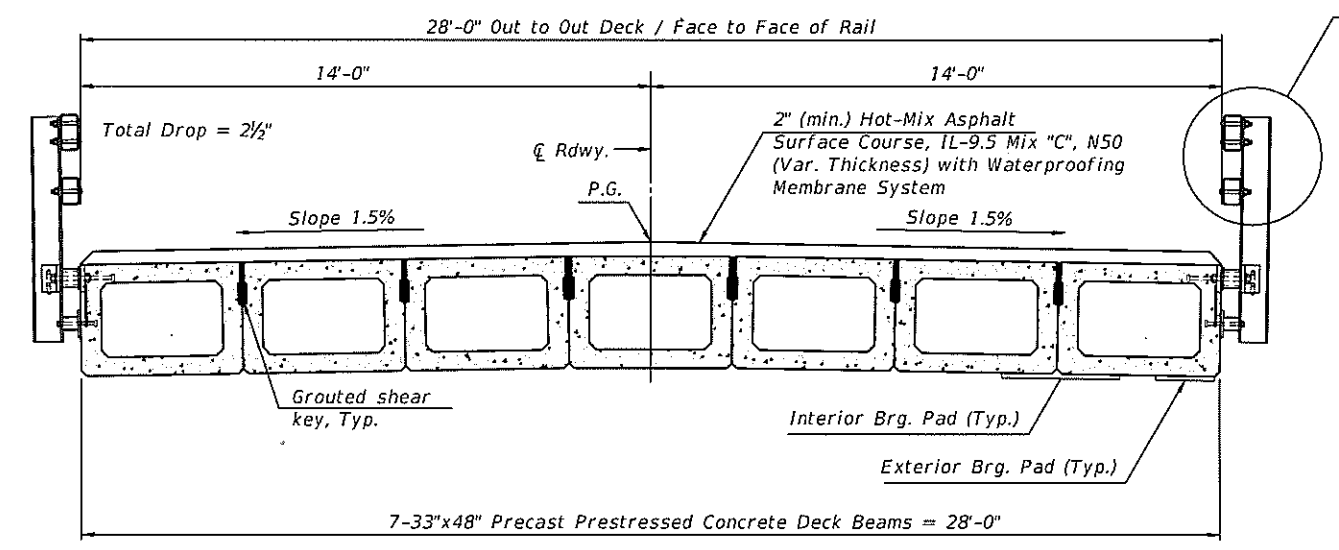
ELEVATION
Showing Rail Post Spaces
See sheets 36 of 51 for Railing Details



SECTION THRU ABUTMENT

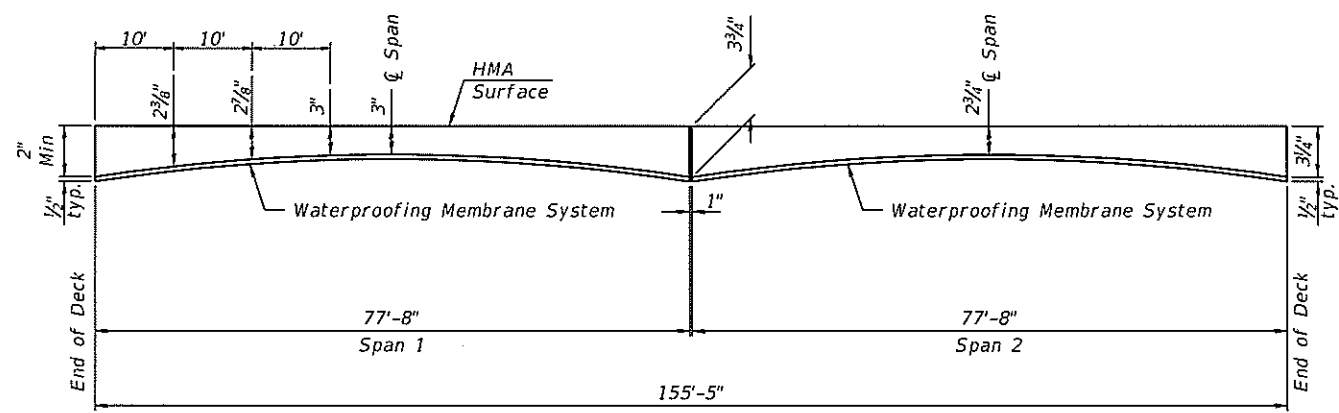
*Included in the cost of Pipe Underdrains for Structures. (See Special Provisions)

Note:
All drainage system components shall extend to 2'-0" from the end of each wingwall except an outlet pipe shall extend until intersecting with the side slopes. The pipes shall drain into concrete headwalls. (See Article 601.05 of the Standard Specifications and Highway Standard 601101).

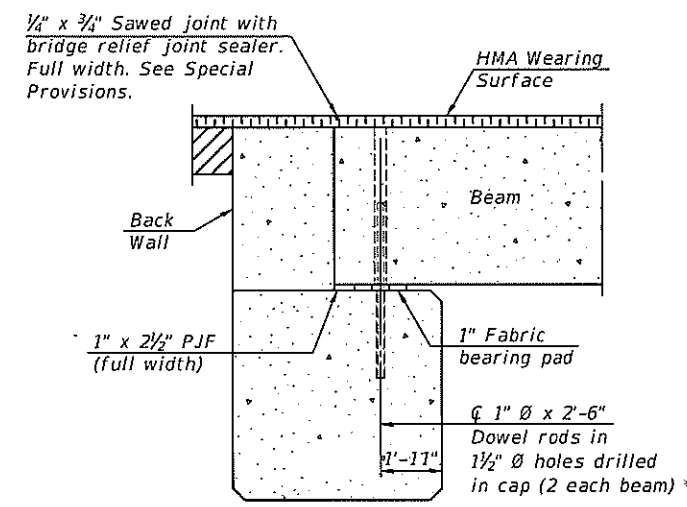


CROSS SECTION

See sheets 36 of 51 for complete rail details.

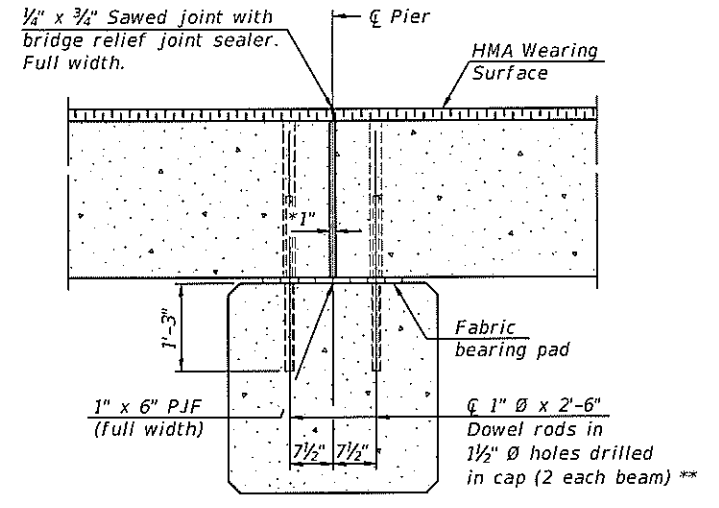


ANTICIPATED HMA WEARING SURFACE PROFILE
(For information only - beam camber may vary in field)



SECTION AT ABUTMENTS

* Rods to be grouted and allowed to cure (min. 24 hours) prior to grouting shear keys.



SECTION AT PIER

*1" It. shall be filled with non-shrink grout. 1" dimension may vary to accommodate tolerance in beam lengths.

** Rods to be grouted and allowed to cure (min. 24 hours) prior to grouting shear keys.

Notes:
See sheet 35 of 51 for fabric bearing pad details.

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
HMA Wearing Surface	Tons	90

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CONTRACT NO. 87791

DRAWN BY: KED	LEVEL: A	BY: KED	DATE: 04/01/2024	REVISIONS:	DESCRIPTION:
CHECKED BY: DAH				REVISED STEEL RAILING, TYPE SMX SPACING	
DATE: 02/2023					

PERU MORRIS
OTTAWA MENDOTA
ILLINOIS

CH 34V SECTION 19-00178-00-BR
FAS 272 SECTION 22-00192-00-BR
GRUNDY COUNTY

SUPERSTRUCTURE
STR 032-5121 (E)(P)

BID SET

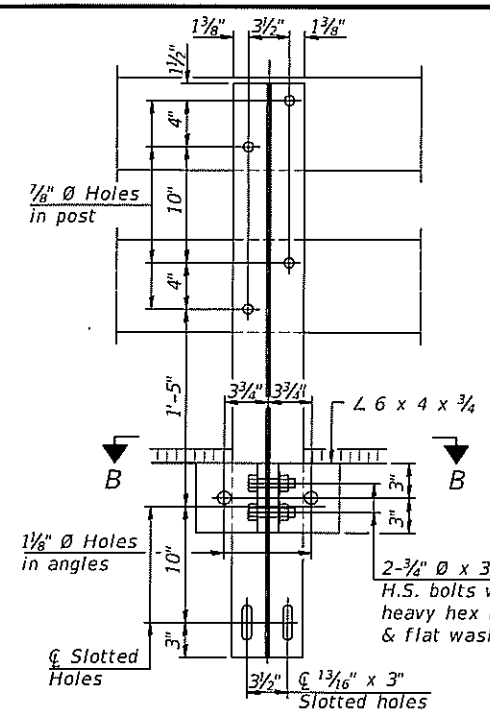
CURRENT AS OF: 04/01/2024

SCALE: AS NOTED

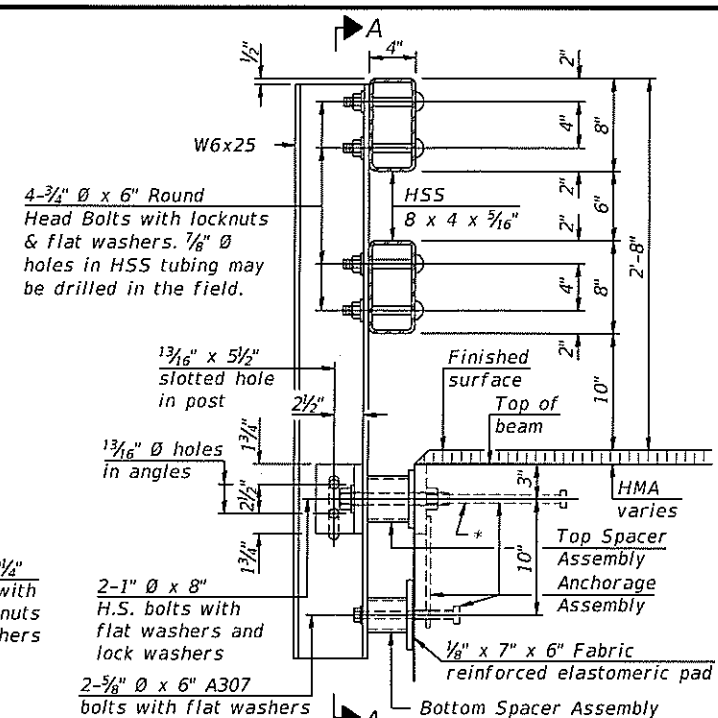
FILE NO.: 111506.00 Y-

SHEET 33 OF 51

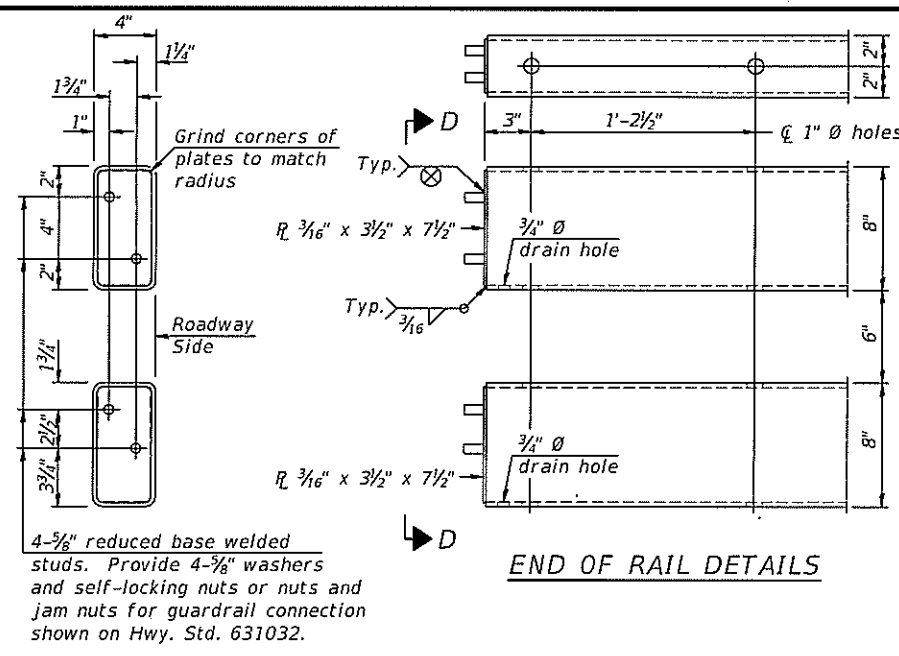
Notes:
 A sufficient number of shims of various thicknesses, sized to fit behind the top spacer assembly, 5" x 11 1/2", and bottom spacer assembly, 6" x 7", shall be provided to adjust posts for proper alignment. If the summation of shims is greater than 1/4" (top) or 1/2" (bottom), longer bolts are required. Cost included with Steel Railing, Type SMX.
 All steel rail elements including shims shall be galvanized according to Article 509.05 of the Standard Specifications.
 All HSS tubing serving as railing shall be CVN tested according to Article 1006.34(b) of the Standard Specifications.
 Rail splice inserts may be built out of 2 - 3/8" bent plates in lieu of the 4 plate rail splice inserts shown, provided the outside dimensions are matched.
 All round head bolts shall be ASTM A307 with locknuts according to ASTM A563 grade A.



SECTION A-A

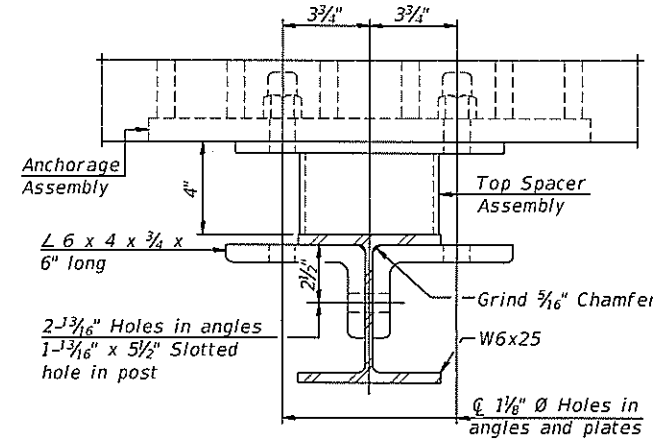


SECTION AT RAIL POST



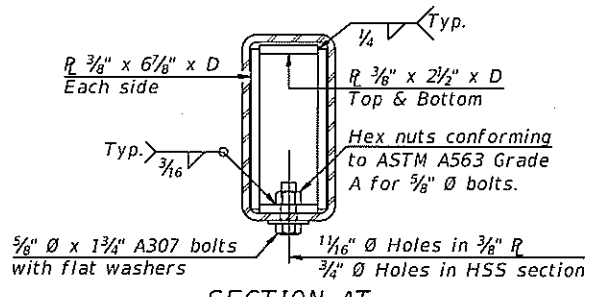
END OF RAIL DETAILS

VIEW D-D

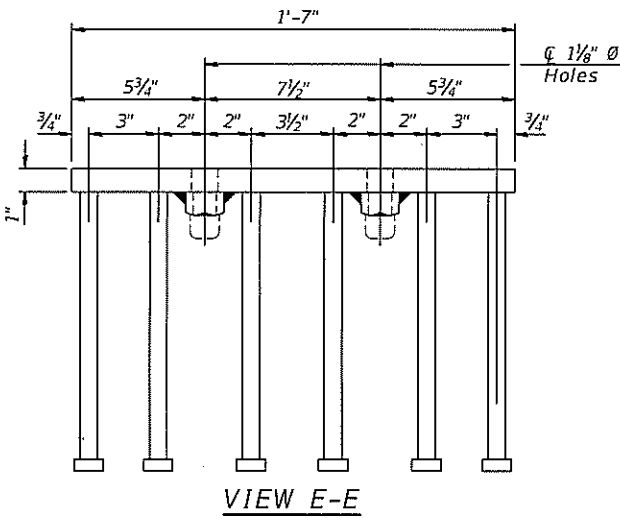


SECTION B-B

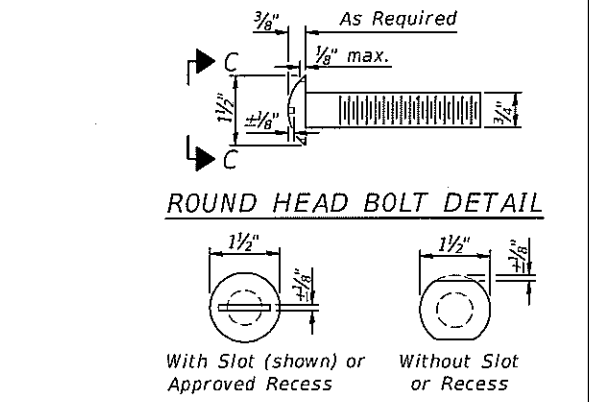
* The outermost longitudinal reinforcement bar shall be placed directly above the studs of the rail post anchorage assembly. The anchorage studs may be bent down 1/2" to accommodate the top reinforcement bar placement.



SECTION AT RAIL SPLICE



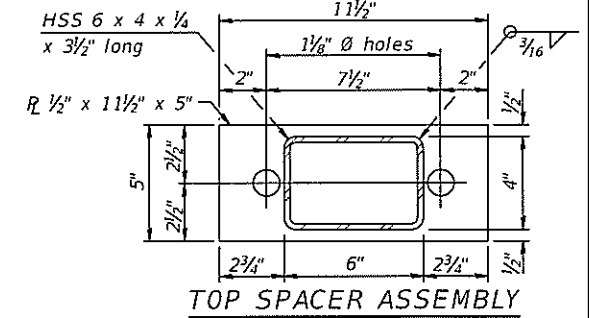
VIEW E-E



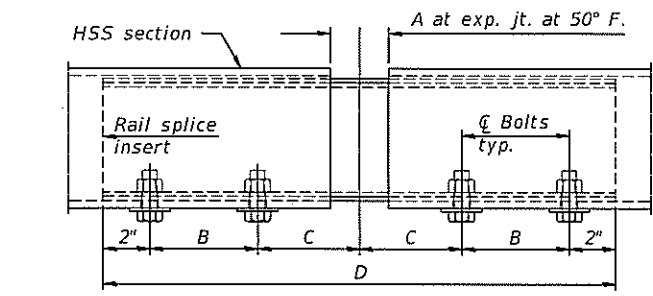
ROUND HEAD BOLT DETAIL

With Slot (shown) or Approved Recess Without Slot or Recess

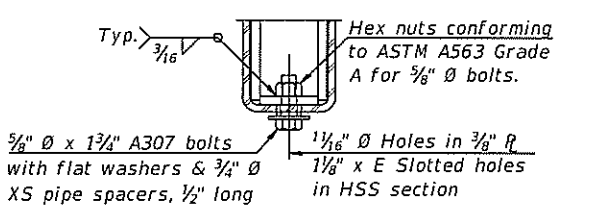
VIEW C-C



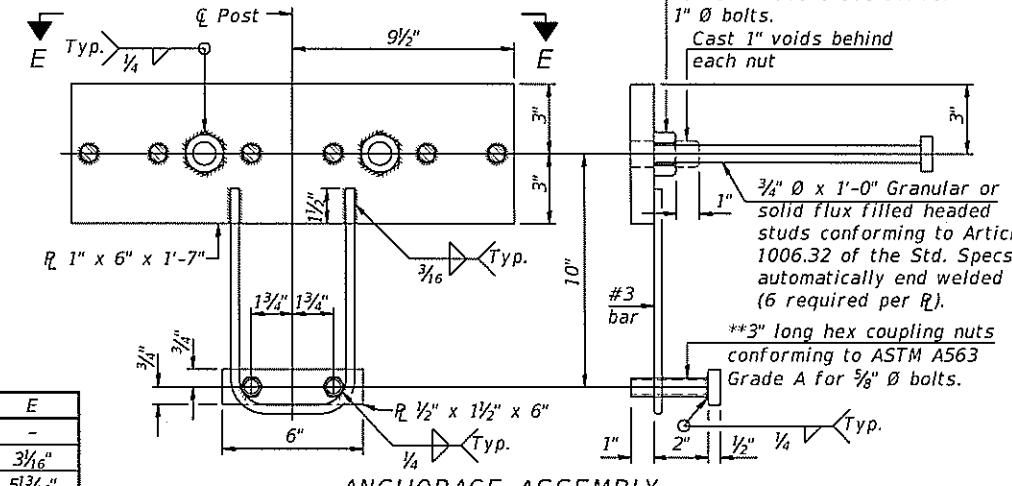
TOP SPACER ASSEMBLY



RAIL SPLICE ELEVATION

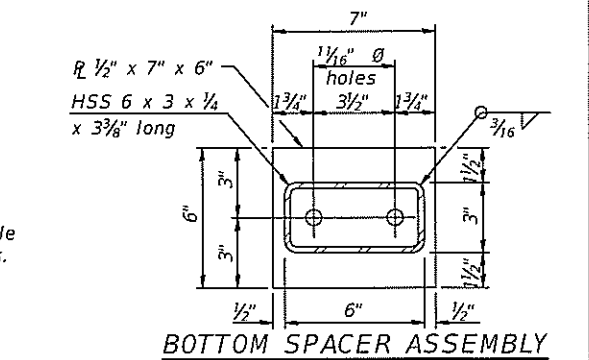


RAIL SPLICE CONNECTION AT EXPANSION JT.



ANCHORAGE ASSEMBLY

** Threaded areas shall be plugged or blocked off during casting of concrete.



BOTTOM SPACER ASSEMBLY

BILL OF MATERIAL		
Item	Unit	Quantity
Steel Railing, Type SMX	Foot	318

RAILING CRITERIA	
MASH 2016 Conditional Test Level	3
Railing Weight (plf)	90
Min f'c (psi)	5,000
Max Post Spacing	6'-3"
HMA thickness range (in)	1 1/4 - 3/4

Location	T	A	B	C	D	E
All locs. not over exp. jts.	0	1/4"	4"	4"	1'-8"	-
Over Strip Seal Jt.	≤4"	2 1/2"	4 5/8"	4 7/8"	1'-10"	3 1/2"
Over Finger or Modular Jt.	≤9 1/2"	5 1/2"	7 3/8"	7 1/4"	2'-9 1/4"	5 1/2"
Over Finger or Modular Jt.	≤15"	8 1/2"	10 1/8"	10"	3'-8 1/4"	8 1/2"

T = ; total movement along centerline of roadway at expansion joint.

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 CHECKED BY: DAH
 DATE: 02/2023
 CONTRACT NO. 87791
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