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**01-20-2023 LETTING ITEM 142**

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- 10-11. 33" X 36" PPC DECK BEAM
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15. METAL SHELL PILE DETAILS
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**LIST OF STANDARDS**

	000001-08
	001001-02
ROADWAY STANDARDS	630001-12
	643001-02
	701201-05
	701321-18
	701901-08
	704001-08
	782006-01
GUARDRAIL STANDARD	BLR 27-1

**STRUCTURE NUMBERS**

**MONROE COUNTY**

EXISTING 067-0013  
PROPOSED 067-3191

**SCALES**

PLAN	1" = 50'	0' 50' 100'
PROFILE HOR.	1" = 50'	0' 50' 100'
PROFILE VERT.	1" = 5'	0' 5' 10'

**DESIGN CLASSIFICATION**

ROAD CLASSIFICATION = LOCAL ROAD  
CURRENT ADT 2021 = 400 VEHICLES  
DESIGN SPEED 40 MPH  
BRIDGE CLASS HL-93 LOADING  
DESIGN ADT = CURRENT ADT  
DESIGN GUIDELINES = 3R

**UTILITIES**

CALL J.U.L.I.E. BEFORE YOU DIG  
800-892-0123 OR 811

**TELEPHONE:**

HARRISONVILLE TELEPHONE COMPANY  
WATERLOO, ILLINOIS 62298  
(618) 939-6112

**ELECTRIC:**

AMEREN ILLINOIS  
BELLEVILLE, ILLINOIS 62221  
(618) 236-4372

**WATER:**

FOUNTAIN WATER DISTRICT  
VALMEYER, ILLINOIS 62295  
(618) 935-2121

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISIONS OF HIGHWAYS  
PLANS FOR PROPOSED

FEDERAL AID HIGHWAY IMPROVEMENT

OLD ROUTE 156 (C.H. 12)-SCHOOL BRIDGE

SECTION 21-00084-00-BR

PROJECT NO. D17A(312)

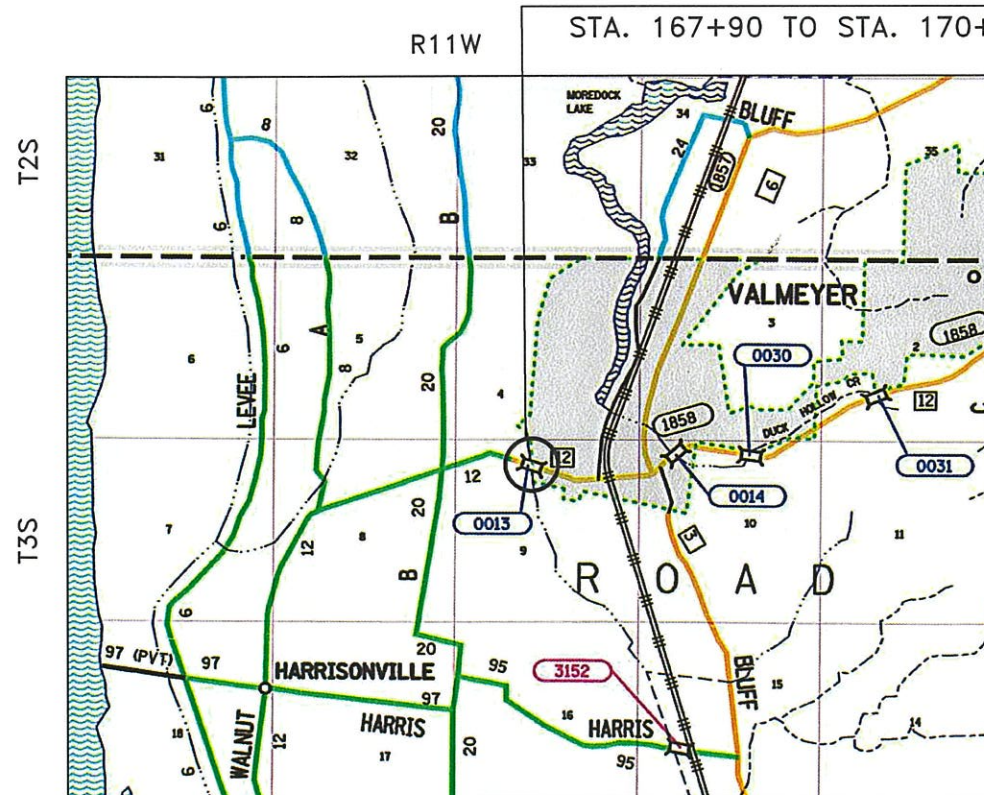
COUNTY OF MONROE

STRUCTURE REPLACEMENT

JOB NO. C-98-035-23

FUND TYPE-STP-BR

**PROJECT LOCATION**



**LOCATION MAP**

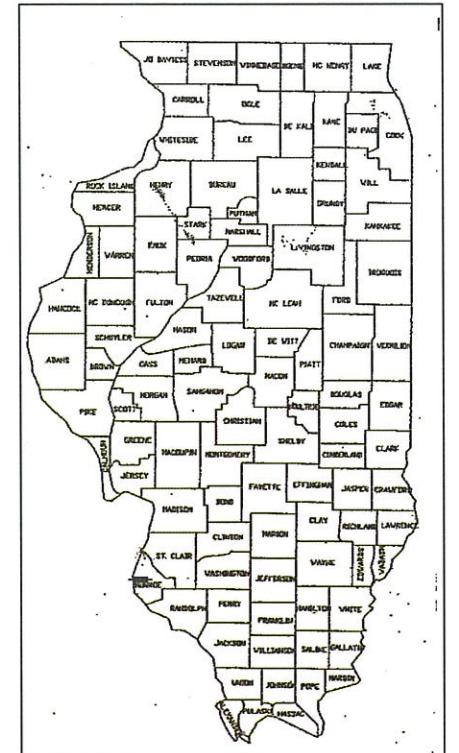
SCALE: 1" = 1.0 MILE

GROSS LENGTH OF PROJECT 260.00 FEET - 0.049 MILES

NET LENGTH OF PROJECT 260.00 FEET - 0.049 MILES

PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS

COUNTY HIGHWAY	IDOT SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
12	21-00084-00-BR	MONROE	18	1
FEDERAL AID PROJECT			ILLINOIS	
IDOT CONTRACT NO. 97797				



LOCATION OF SECTION INDICATED THIS: [Symbol]

DRAWN BY BARRY A. FELDMEIER DATE 08-18-22

CHECKED BY KARON W. METZGER DATE 08-23-22

DESIGN CERTIFICATION  
These plans were prepared by me or a full time member of my staff under my personal supervision.  
County Engineer Date  
Illinois Registered Professional Engineer No. 55382  
Expiration Date: 11/30/23

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

APPROVED October 18 20 22  
MONROE COUNTY ENGINEER

PASSED 11-2 20 22  
DISTRICT 8 ENGINEER OF LOCAL ROADS & STREETS

RELEASED FOR BID 11-2 20 22  
BASED ON LIMITED REVIEW  
REGION 5 ENGINEER

DRAWING FILE: S:\COUNTY PROJECTS\2022\142 BRIDGE COVER.dwg

## SUMMARY OF QUANTITIES

CODE	ITEM	UNIT	QUANT.
40600290	BITUMINOUS MATERIAL (TACK COAT)	POUND	197.0
40600982	HOT-MIX ASPHALT SURFACE REMOVAL - BUTT JOINT	SQ YD	98.0
40600990	TEMPORARY RAMP	SQ YD	24.0
40604062	HOT-MIX ASPHALT SURFACE COURSE, IL-9.5, MIX "D", N70	TON	61.0
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1.0
50200100	STRUCTURE EXCAVATION	CU YD	12.0
50300225	CONCRETE STRUCTURES	CU YD	45.2
50400605	PRECAST PRESTRESSED CONCRETE DECK BEAMS (33" DEPTH)	SQ FT	2370.0
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	5980.0
50800515	BAR SPLICERS	EACH	44.0
* 50900205	STEEL RAILING, TYPE S1	FOOT	163.0
51200957	FURNISHING METAL SHELL PILES 12"x0.250"	FOOT	365.0
51202305	DRIVING PILES	FOOT	365.0
51203200	TEST PILE METAL SHELLS	EACH	2.0
51204650	PILE SHOES	EACH	12.0
51500100	NAME PLATES	EACH	1.0
* 63000001	STEEL PLATE BEAM GUARDRAIL, TYPE A, 6 FOOT POSTS	FOOT	100.0

## SUMMARY OF QUANTITIES

CODE	ITEM	UNIT	QUANT.
* 63100075	TRAFFIC BARRIER TERMINAL, TYPE 5A	EACH	4.0
63200310	GUARDRAIL REMOVAL	FOOT	153.0
67100100	MOBILIZATION	L SUM	1.0
70100405	TRAFFIC CONTROL AND PROTECTION, STANDARD 701321	EACH	1.0
70100450	TRAFFIC CONTROL AND PROTECTION, STANDARD 701201	L SUM	1.0
70106500	TEMPORARY BRIDGE TRAFFIC SIGNALS	EACH	1.0
* 70300221	TEMPORARY PAVEMENT MARKING-LINE 4"-PAINT	FOOT	950.0
70400100	TEMPORARY CONCRETE BARRIER	FOOT	237.5
70400200	RELOCATE TEMPORARY CONCRETE BARRIER	FOOT	237.5
70600240	IMPACT ATTENUATORS, TEMPORARY (NON-REDIRECTIVE), TEST LEVEL 2	EACH	2.0
70600340	IMPACT ATTENUATORS, RELOCATE (NON-REDIRECTIVE), TEST LEVEL 2	EACH	2.0
* 78200011	BARRIER WALL REFLECTORS, TYPE C	EACH	27.0
X2810808	STONE DUMPED RIPRAP, CLASS A4 (SPECIAL)	TON	197.0
* X6330800	GUARDRAIL POST VERTICAL ADJUSTMENT	EACH	34.0
XX009564	CEMENT AGGREGATE MIXTURE	CU YD	36.0

\* SPECIALITY ITEMS

DRAWING FILE: S\COUNTY PROJECTS\OLD 156 BRIDGE\SUMMARY OF QUANTITY

USER NAME =	DESIGNED - BAF	REVISED - 10/12/2022
	DRAWN - BAF	REVISED -
PLOT SCALE = 1 = 100	CHECKED - AWM	REVISED -
PLOT DATE = 10/12/2022	DATE - 08/18/2022	REVISED -

MONROE COUNTY  
HIGHWAY DEPARTMENT

### SUMMARY OF QUANTITIES

SCALE: N.T.S.    SHEET 1 OF 1 SHEETS    STA.    TO STA.

C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
12	21-00084-00-BR	MONROE	18	2
CONTRACT NO. 97797				
ILLINOIS FEDERAL AID PROJECT				



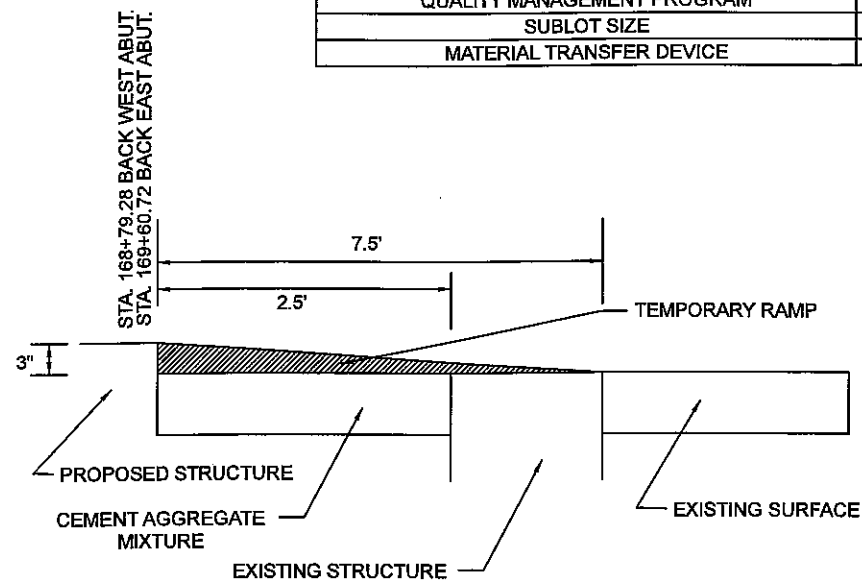
**GENERAL NOTES**

- TRAFFIC CONTROL AND PROTECTION AND PROPER BARRICADES SHALL BE MAINTAINED BY THE CONTRACTOR.
- THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE MONROE COUNTY HIGHWAY DEPARTMENT AT LEAST 48 HOURS IN ADVANCE PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION ACTIVITIES OR WORK REQUIRING INSPECTION OR APPROVAL.
- USE ALL FLORESCENT ORANGE 48" CONSTRUCTION SIGNS.
- FACTORS USED FOR QUANTITY CALCULATIONS ARE AS FOLLOWS:  
ALL HOT-MIX ASPHALT - 112 LBS/SQ YD PER 1" THICKNESS  
ALL BITUMINOUS MATERIAL (TACK COAT) - 0.05 LB/SQ FT
- BRIDGE SHALL BE BUILT IN THREE STAGES:  
STAGE 1  
PERFORM STAGE 1 CONSTRUCTION (SOUTH SIDE BRIDGE).  
PLACE ASPHALT TAPER SEE DETAIL THIS PAGE.  
STAGE 2  
PERFORM STAGE 2 CONSTRUCTION (NORTH SIDE BRIDGE).  
PLACE ASPHALT TAPER SEE DETAIL THIS PAGE.  
STAGE 3  
PLACE HOT-MIX ASPHALT SURFACE.
- TEMPORARY RUMBLE STRIP AS SHOWN ON STANDARD 701321 WILL NOT BE REQUIRED.
- THERE SHOULD NOT BE ANY UTILITY CONFLICTS.
- ALL SEEDING SHALL BE PERFORMED BY LOCAL AGENCY.
- AGGREGATE WEDGE BY LOCAL AGENCY.
- PERMANENT PAVEMENT MARKINGS BY LOCAL AGENCY.

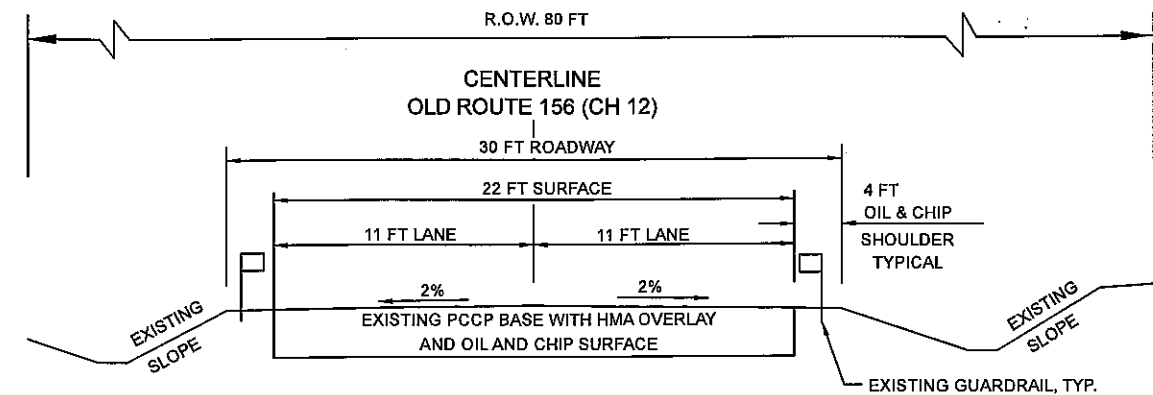
**COMMITMENTS**

THE BRIDGE BAT ASSESSMENT EXPIRES 9-30-2024

HOT-MIX ASPHALT MIXTURE REQUIREMENTS	
LOCATIONS	ALL
MIXTURE USE	SURFACE
AC/PG	PG 64-22
RAP % (MAX)	SEE ARTICLE 1031.06
DESIGN AIR VOIDS	4.0% @ Ndes= 70
MIXTURE COMPOSITION (GRADATION MIXTURE)	IL 9.5
FRICTION AGGREGATE	MIXTURE D
MIXTURE WEIGHT	112.0 LB/SQ YD/IN
QUALITY MANAGEMENT PROGRAM	QC/QA
SUBLOT SIZE	N/A
MATERIAL TRANSFER DEVICE	NO



**TEMPORARY RAMP DETAIL**

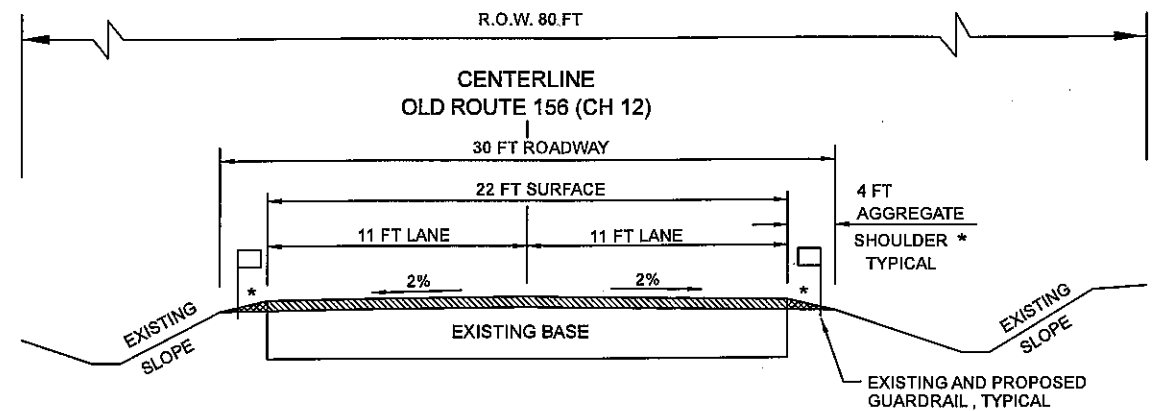


**EXISTING TYPICAL SECTION**

STA 167+90 TO STA 170+50

**BRIDGE OMISSION**

STA 168+73.17 TO STA 169+88.83



**PROPOSED TYPICAL SECTION**

STA 167+90 TO STA 170+50

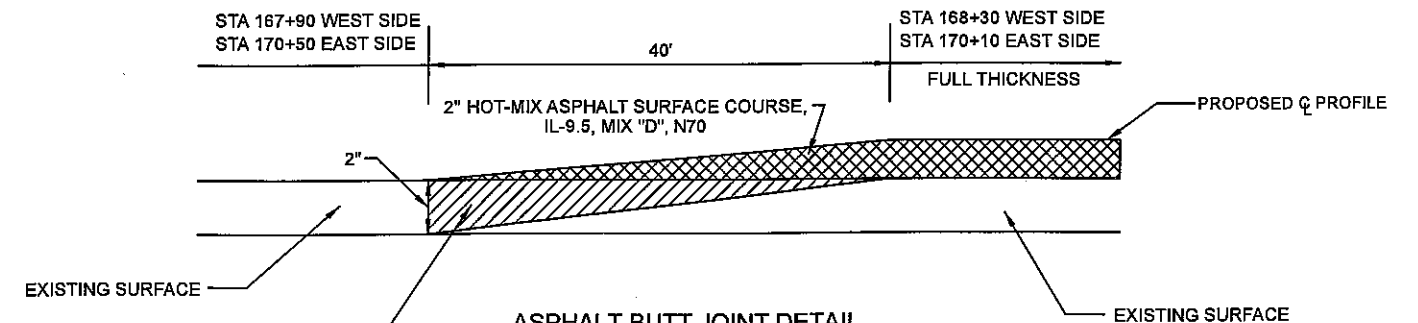
**BRIDGE OMISSION**

STA 168+79.28 TO STA 169+60.72

2" TO 3" HOT MIX ASPHALT SURFACE COURSE  
0" TO 3" AGGREGATE WEDGE

2" STA 168+30 TO 3" STA 168+79.28  
3" STA 169+60.72 TO 2" STA 170+10  
2" STA 167+90 TO STA 168+30  
STA 170+10 TO STA 170+50

\* AGGREGATE SHOULDER BY LOCAL AGENCY SLOPE, 4%-6%



**ASPHALT BUTT JOINT DETAIL**

STA 167+90 TO STA 168+30  
STA 170+10 TO STA 170+50

COLD MILL EXISTING PAVEMENT AS INDICATED. COST OF COLD MILLING SHALL BE PAID AS HMA SURFACE REMOVAL - BUTT JOINT

DRAWING FILE: S:\COUNTY PROJECTS\OLD 156 BRIDGE\TYPICAL SECTION

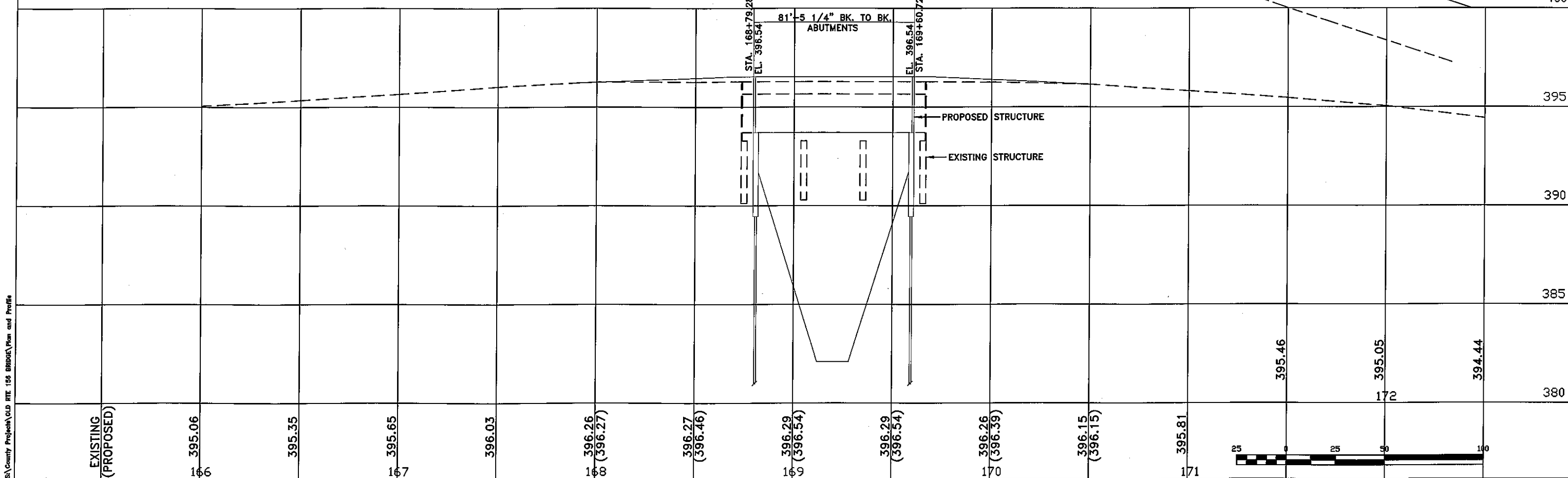
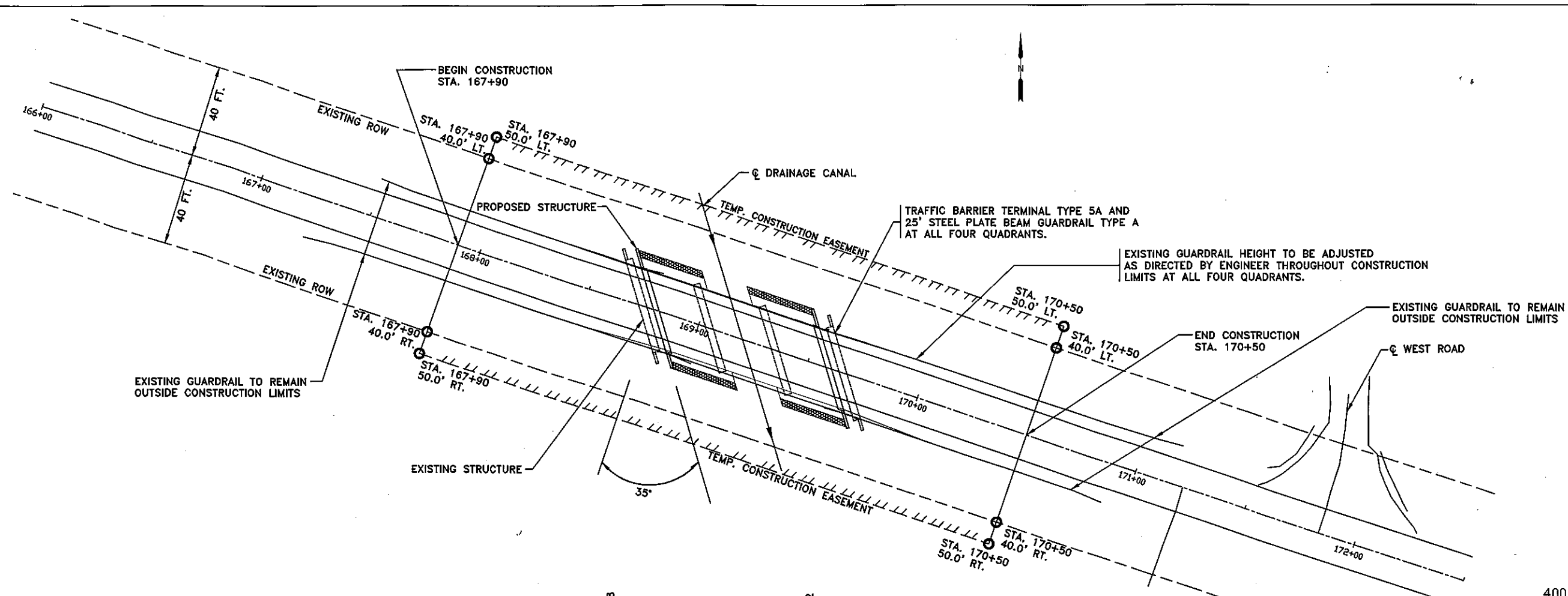
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	DRAWN - BAF	REVISED -
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PLOT DATE = 10/12/2022	DATE - 08/16/2022	REVISED -

MONROE COUNTY  
HIGHWAY DEPARTMENT

TYPICAL SECTION, GENERAL NOTES  
AND COMMITMENTS

SCALE: NTS SHEET 1 OF 1 SHEETS STA. TO STA.

C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
12	21-00384-00-BR	MONROE	18	3
CONTRACT NO. 87797				
ILLINOIS FED. AID PROJECT				



DRAWING FILE: S:\County Projects\OLD RTE 156 BRIDGE\Plan and Profile

EXISTING  
(PROPOSED)

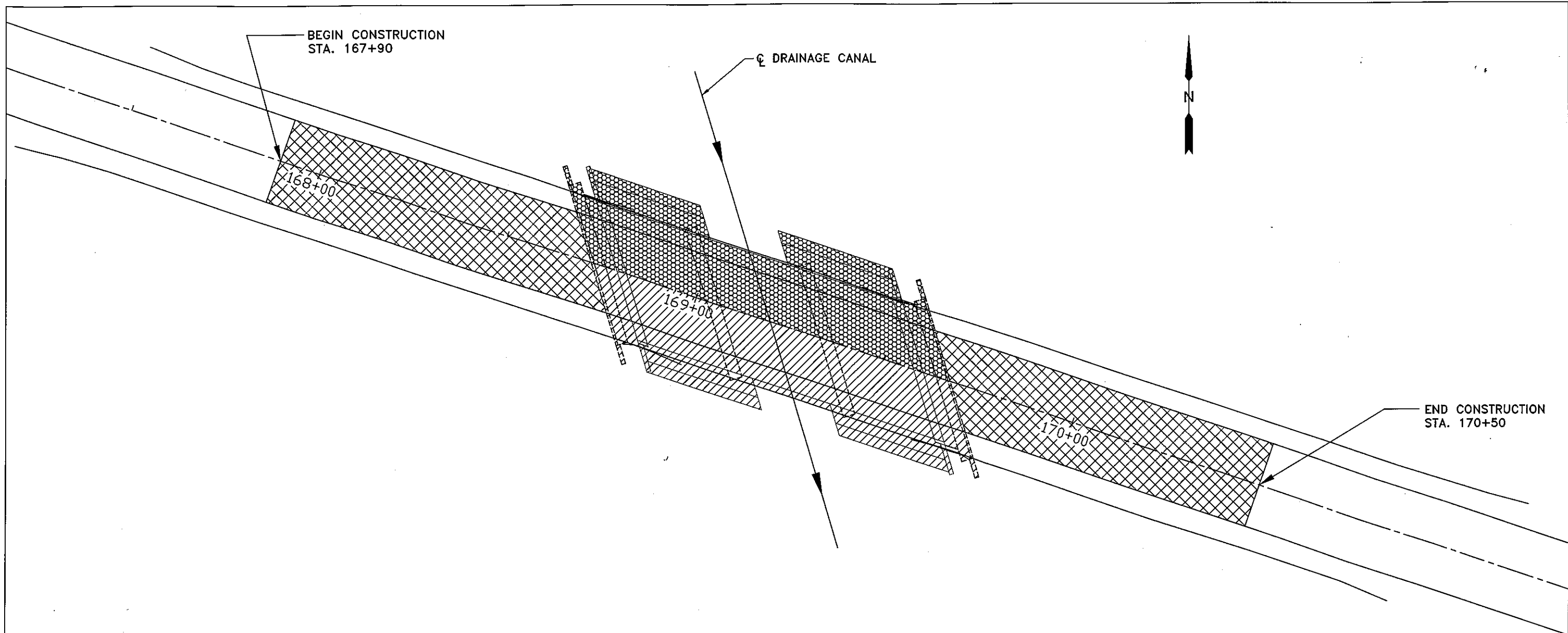
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PLOT DATE = 10/12/2022	DATE - 8/18/2022	REVISED -

MONROE COUNTY  
HIGHWAY DEPARTMENT




PLAN AND PROFILE

SCALE: 1" = 50' SHEET 1 OF 1 SHEETS STA. 166+00 TO STA. 172+50

C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
12	21-00084-00-BR	MONROE	18	4
CONTRACT NO. 97797			ILLINOIS FED. AID PROJECT	



**CONSTRUCTION STAGES**

-  STAGE 1
-  STAGE 2
-  STAGE 3

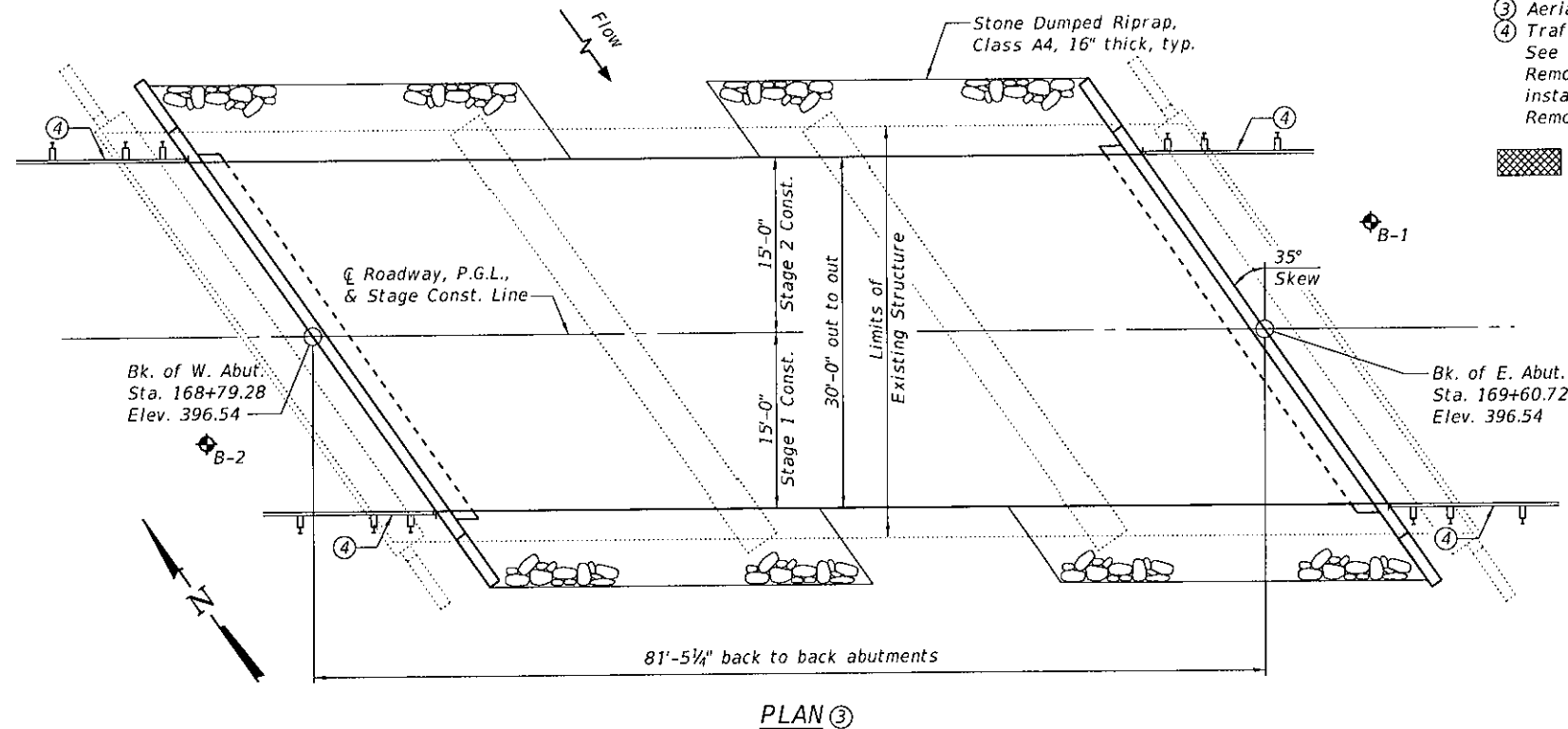
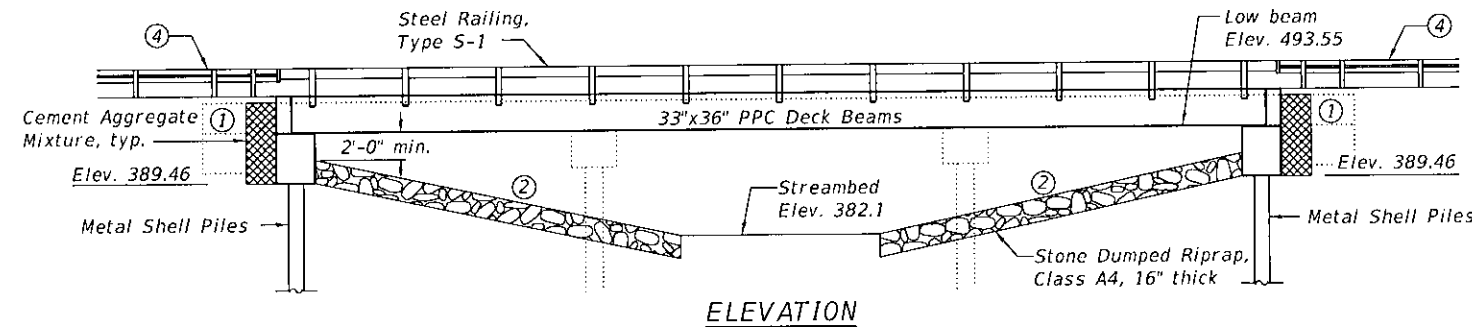


USER NAME =	DESIGNED - BAF	REVISED -	MONROE COUNTY HIGHWAY DEPARTMENT	STAGE CONSTRUCTION PLAN			C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	DRAWN - BAF	REVISED -		12	21-00084-00-BR	MONROE	18	5			
PLOT SCALE = 25	CHECKED - AWM	REVISED -		SCALE: 1" = 50'   SHEET 1 OF 1 SHEETS   STA. 167+90 TO STA. 170+50			CONTRACT NO. 97797				
PLOT DATE = 10/12/2022	DATE - 8/23/2022	REVISED -		ILLINOIS FED. AID PROJECT							

Existing Structure: S.N. 067-0013 - originally built in 1934, rehabilitated in 1989, consists of three spans of concrete deck on steel beams supported by integral abutments and pile bent piers. Back to back abutment length 93'-8". Out to out deck width 35'-2".

Traffic Control: Utilize staged construction to maintain one lane of traffic.

Salvage: None



**INDEX OF SHEETS**

Sheet No.	Description
1	General Plan & Elevation
2	Construction Details
3	Temporary Concrete Barrier
4	Superstructure
5	33" x 36" PPC Deck Beam
6	33" x 36" PPC Deck Beam Details
7	Steel Railing, Type S-1
8	Abutment Details
9	Bar Splicer Assembly Details
10	Metal Shell Pile Details
11	Name Plate Details
12-13	Soil Boring Logs

**Notes:**

- ① Existing abutments to remain in place unless noted otherwise. Place Cement Aggregate Mixture between front of existing abutment and back of proposed abutment for full width of superstructure. See sheet 2 of 13 for additional details.
- ② Match existing ground line. Cost of excavation to place riprap included in Stone Dumped Riprap, Class A4.
- ③ Aerial lines not shown.
- ④ Traffic Barrier Terminal, Type 5A, Std. BLR 27. See roadway plans for guardrail transition. Remove part of existing abutment as needed to install guardrail posts, cost included with Removal of Existing Structures.

Cement Aggregate Mixture

**GENERAL NOTES**

Keyway surfaces shall be cleaned to remove form oil or other bond breaking material prior to shipment of beams. Cleaning shall be done by sandblasting the keyway areas between the top of the beam and the bottom edge of the key.

Do not place Cement Aggregate Mixture behind bents until backwall concrete has cured for 14 days or has met concrete strength requirements. The two end bents shall be backfilled simultaneously and the difference in elevation between the backfills of the end bents shall not exceed 2 ft.

The Contractor shall drive test piles to 110% of the nominal required bearing specified, in production locations of the substructures specified, or approved by the Engineer before ordering the remainder of the piles.

Reinforcement bars designated (E) shall be epoxy coated.

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

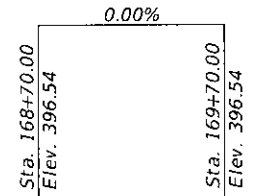
Do not scale these drawings.

The abutment bearing seat surfaces for the Precast Prestressed Concrete Deck Beams shall be adjusted by shimming to assure firm and even bearing. As required, 1/8" fabric adjusting shims of the dimensions of the Exterior Bearing Pad shall be provided for each bearing.

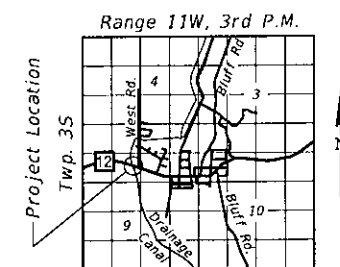
The top surface of the beams shall be finished according to the IDOT Manual for Fabrication of Precast Prestressed Concrete Products.

**TOTAL BILL OF MATERIAL**

ITEM	UNIT	SUPER	SUB	TOTAL
Stone Dumped Riprap, Class A4 (Special)	Ton	-	197	197
Removal of Existing Structures	Each	-	-	1
Structure Excavation	Cu. Yd.	-	12	12
Concrete Structures	Cu. Yd.	-	45.2	45.2
Precast Prestressed Concrete Deck Beams (33" Depth)	Sq. Ft.	2,370	-	2,370
Reinforcement Bars, Epoxy Coated	Pound	-	5,980	5,980
Bar Splicers	Each	-	44	44
Steel Railing, Type S1	Foot	163	-	163
Furnishing Metal Shell Piles 12"x0.250"	Foot	-	365	365
Driving Piles	Foot	-	365	365
Test Pile Metal Shells	Each	-	2	2
Pile Shoes	Each	-	12	12
Name Plates	Each	-	1	1
Cement Aggregate Mixture	Cu. Yd.	-	36	36



**PROFILE GRADE**  
(Along  $\bar{C}$  Roadway)



**LOCATION SKETCH**

**OLD IL 156 (CH12)  
SCHOOL BRIDGE  
SEC. 21-00084-00-BR  
MONROE COUNTY  
STATION 169+20  
STRUCTURE NO. 067-3191**

**DESIGN SPECIFICATIONS**

2020 AASHTO LRFD Bridge Design Specifications, 9th Edition

**LOADING HL-93**

Allow 75#/sq. ft. for future wearing surface.

**SEISMIC DATA**

Seismic Performance Zone (SPZ) = 2  
Design Spectral Acceleration at 1.0 sec. (SD1) = 0.253  
Design Spectral Acceleration at 0.2 sec. (SDS) = 0.579  
Soil Site Class = D

**DESIGN STRESSES**

**FIELD UNITS**

$f'_c = 3,500$  psi  
 $f_y = 60,000$  psi (Reinforcement)

**PRECAST PRESTRESSED UNITS**

$f'_c = 6,000$  psi  
 $f'_{ci} = 5,000$  psi  
 $f_{pu} = 270,000$  psi (1/2"  $\varnothing$  low lax. strands)  
 $f_{pbt} = 201,960$  psi (1/2"  $\varnothing$  low lax. strands)

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

**LICENSED STRUCTURAL ENGINEER**  
DANIEL GEORGE LUTZ  
081 006772  
STATE OF ILLINOIS  
*[Signature]*  
DATE: 6/21/2022  
EXPIRATION: 11/30/2022

SCHOOL BRIDGE  
BUILT 202\_ BY  
MONROE COUNTY  
SEC. 21-00084-00-BR  
STATION 169+20.00  
STR. NO. 067-3191 LOADING HL-93

**NAME PLATE LETTERING**

Locate Name Plate at southwest corner of bridge (see sheet 11 of 13 for details)



USER NAME =	DESIGNED - NBB	REVISED -
DESIGNED - NBB	CHECKED - ETH	REVISED -
CHECKED - ETH	DRAWN - NBB	REVISED -
DRAWN - NBB	CHECKED - DGL	REVISED -
CHECKED - DGL		

**MONROE COUNTY  
HIGHWAY DEPARTMENT**

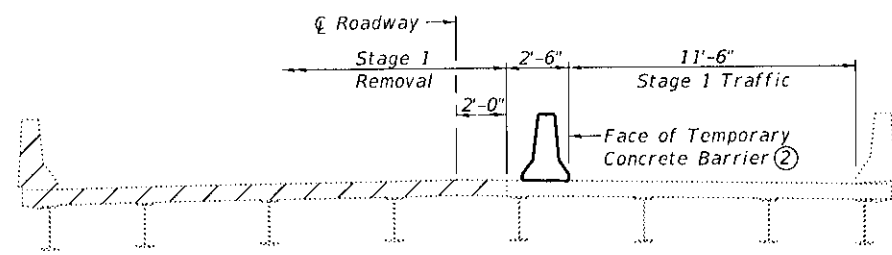
**GENERAL PLAN & ELEVATION  
STRUCTURE NO. 067-3191**

SHEET 1 OF 13 SHEETS

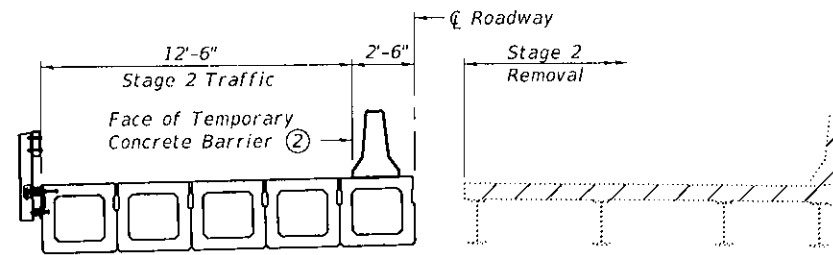
C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
12	21-00084-00-BR	MONROE	18	6

CONTRACT NO. 97797  
ILLINOIS FED. AID PROJECT

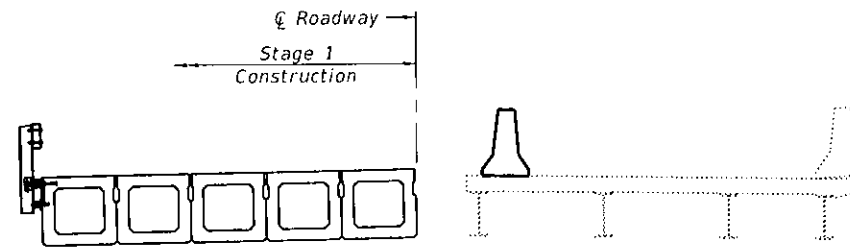
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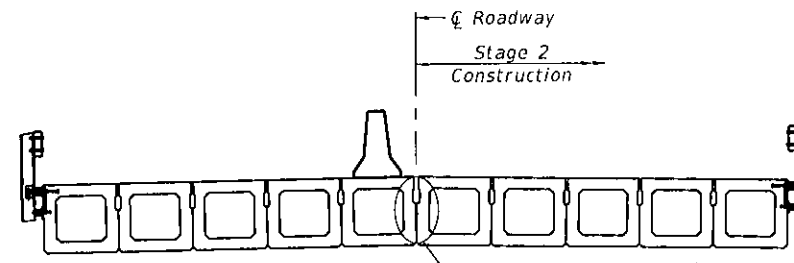
STAGE 1 REMOVAL ①



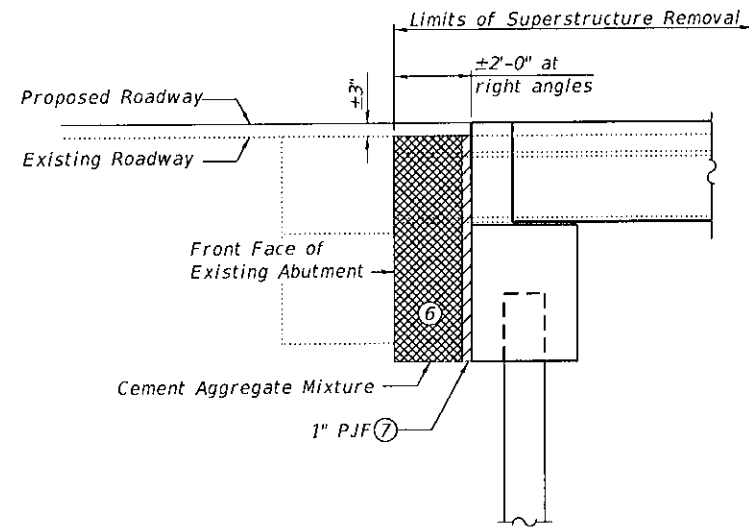
STAGE 2 REMOVAL ①



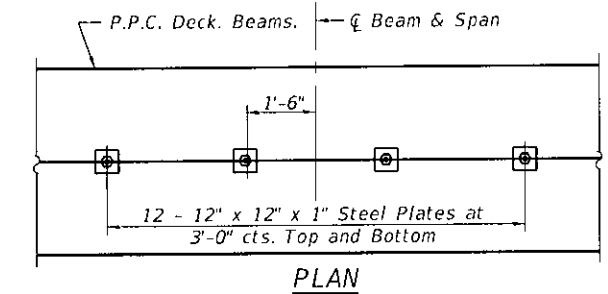
STAGE 1 CONSTRUCTION ①



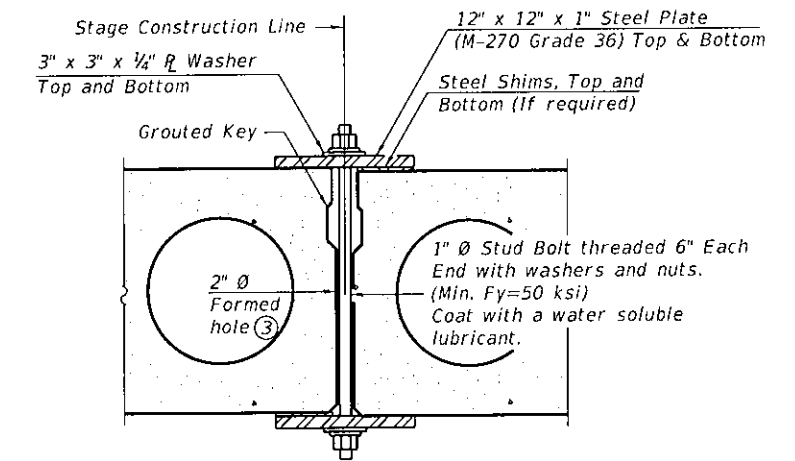
STAGE 2 CONSTRUCTION ①



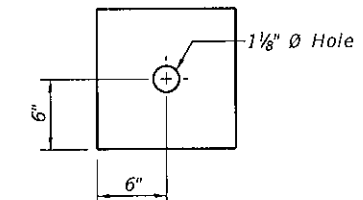
EAST & WEST ABUTMENT



PLAN



SECTION



CLAMPING PLATE

SHEAR KEY CLAMPING DETAILS AT STAGE CONST. JT. ④

Notes:

- ① All views shown looking West.
- ② For details of Temporary Concrete Barrier, see sheet 3 of 13.
- ③ Cast semicircular recesses in the sides of each beam adjacent to the stage construction line. These recesses should align to form a hole at the appropriate locations for the clamping device bolts.
- ④ Cost included with Precast Prestressed Concrete Deck Beams (33" Depth).
- ⑤ Cut existing steel beams at the front face of existing abutments. Existing abutment to remain. Cost included with Removal of Existing Structures.
- ⑥ Contractor shall provide adequate forming system to retain Cement Aggregate Mixture (CAM) at the stage line until the CAM has reached design strength. Cost included with Cement Aggregate Mixture.
- ⑦ 1" Preformed Joint Filler in accordance with Section 1051 shall be placed at the back of the proposed abutment for the limits of the CAM. Cost included with Concrete Structures.

Cement Aggregate Mixture

FILE NAME: \\0aces-652\data\p22\1047 - SN 067-0013 Rehab\W02-Structure Plans\Microstation\0673191-002-Stage Construction Details.dgn



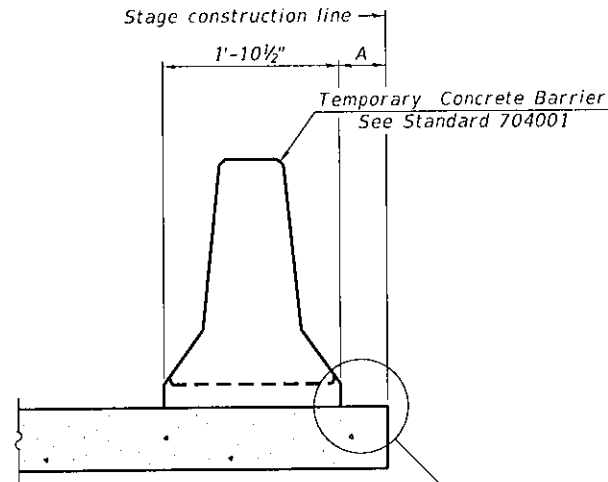
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	CHECKED - ETH	REVISED -
PLOT SCALE =	DRAWN - NBB	REVISED -
PLOT DATE = 10/18/2022	CHECKED - ETH	REVISED -

MONROE COUNTY  
HIGHWAY DEPARTMENT

CONSTRUCTION DETAILS  
STRUCTURE NO. 067-3191

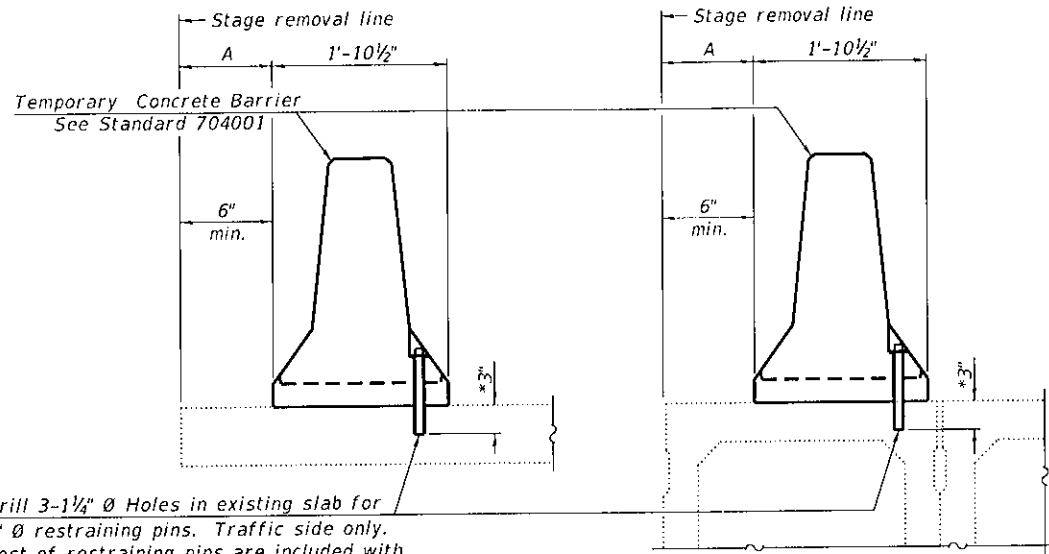
SHEET 2 OF 13 SHEETS

C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
12	21-00084-00-BR	MONROE	18	7
				CONTRACT NO. 97797
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When "A" is 3'-1" or less, the temporary concrete barrier shall be restrained to the new slab according to Detail I, II or III. No restraint is required when "A" is greater than 3'-1".

NEW SLAB OR NEW DECK BEAM

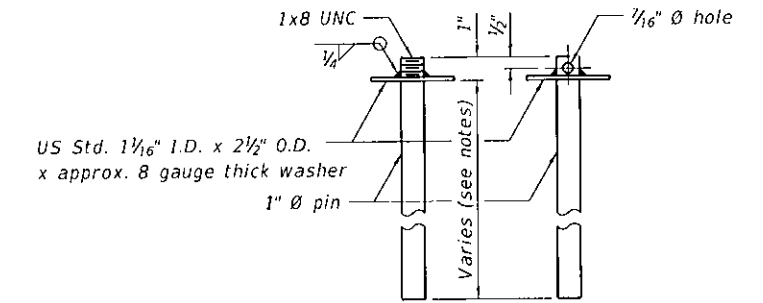


Drill 3-1/4" Ø Holes in existing slab for 1" Ø restraining pins. Traffic side only. Cost of restraining pins are included with Temporary Concrete Barrier. No restraint is required when "A" is greater than 3'-1".

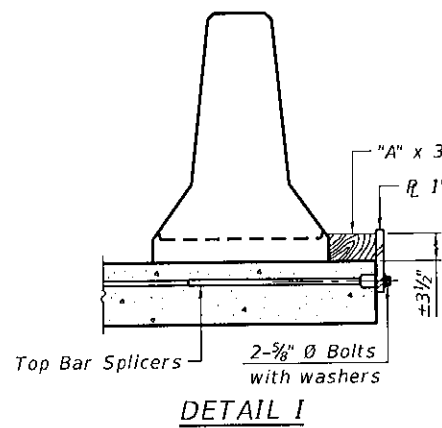
EXISTING SLAB

EXISTING DECK BEAM

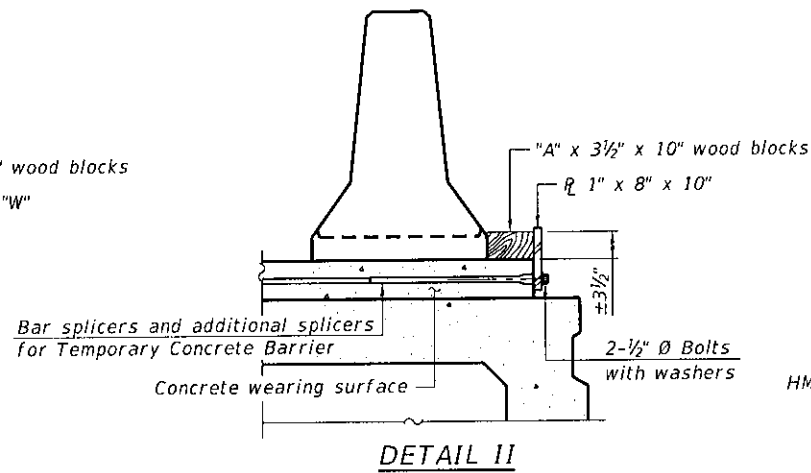
SECTIONS THRU SLAB OR DECK BEAM



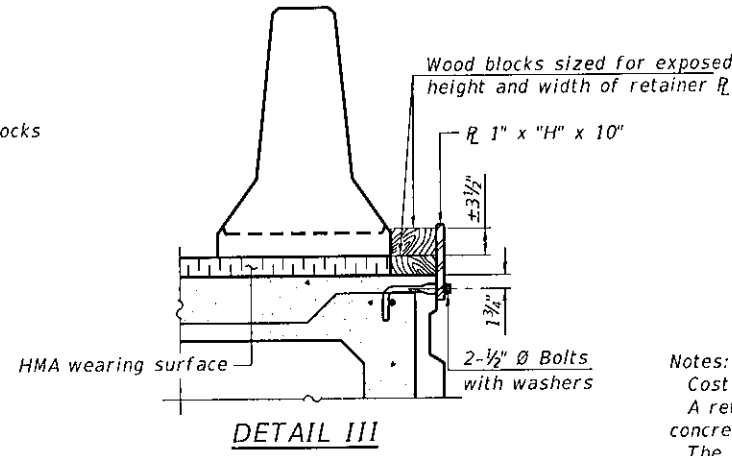
RESTRAINING PIN



DETAIL I

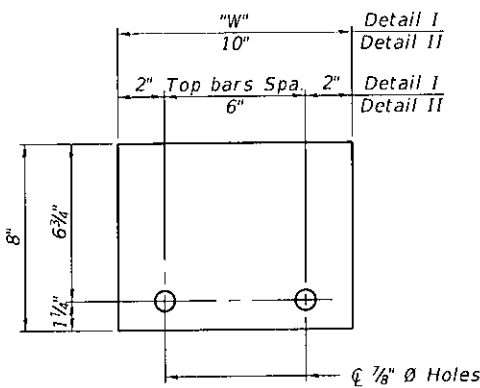


DETAIL II

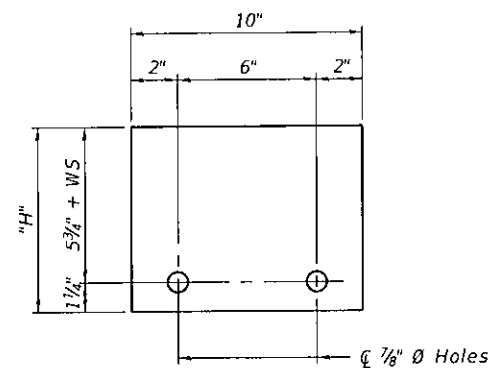


DETAIL III

BAR SPLICER FOR #4 BAR - DETAIL III



STEEL RETAINER R 1" x 8" x "W"  
(Detail I and II)



STEEL RETAINER R 1" x "H" x 10"  
(Detail III)

Notes:  
 Cost of retainer assembly is included with Temporary Concrete Barrier.  
 A retainer assembly shall be located at the approximate C of each temporary concrete barrier.  
 The retainer plate shall not be removed until the concrete on the adjacent stage is ready to be poured. For Detail III applications the retainer plate shall not be removed until just prior to placing the adjacent beam.  
 When the 'A' dimension is less than 1 1/2', the wood block shall be omitted and the barrier shall be placed in direct contact with the steel retainer plate. For deck beam applications the minimum required 'A' distance is 6" to accommodate the shear key clamping device.

Detail I - Installation for a new bridge deck or bridge slab.

Detail II - Installation for a new deck beam with an initial concrete wearing surface. Additional bar splicers shall be provided at 6'-0" centers and paired with the bar splicers of the concrete wearing surface reinforcement to accommodate the installation of the retainer assemblies. The cost of the additional bar splicers is included with the concrete wearing surface.

Detail III - Installation for a new deck beam with no initial wearing surface or with an initial hot-mix asphalt (HMA) wearing surface present. The deck beam directly beneath the temporary concrete barrier shall be fabricated with bar splicer inserts in the side of the beam, as detailed, to accommodate the installation of the retainer assemblies. A pair of bar splicers, 6" apart, shall be placed at 6'-0" centers along the length of the beam. The cost of the bar splicers is included with the deck beam.

RAILING CRITERIA

NCHRP 350 Test Level	3
Railing Weight (plf)	440

R-27 10-12-2021



USER NAME \*  
 PLOT SCALE \*  
 PLOT DATE \* 10/18/2022

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 CHECKED - ETH

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 REVISED -

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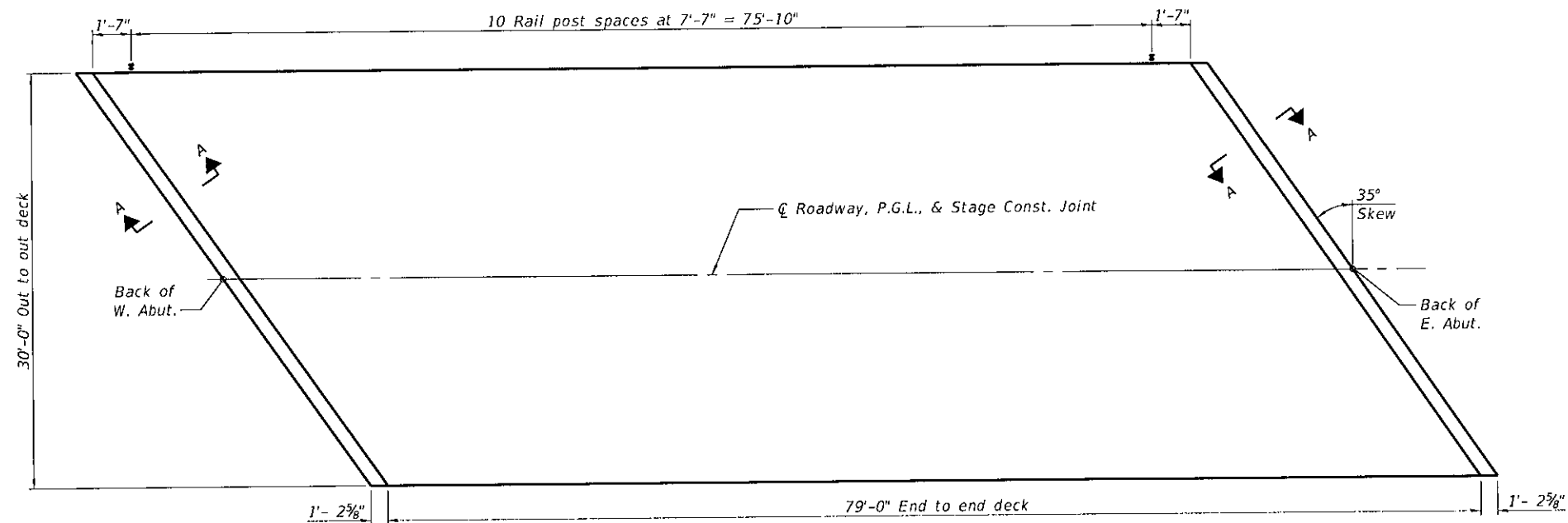
TEMPORARY CONCRETE BARRIER  
 STRUCTURE NO. 067-3191

SHEET 3 OF 13 SHEETS

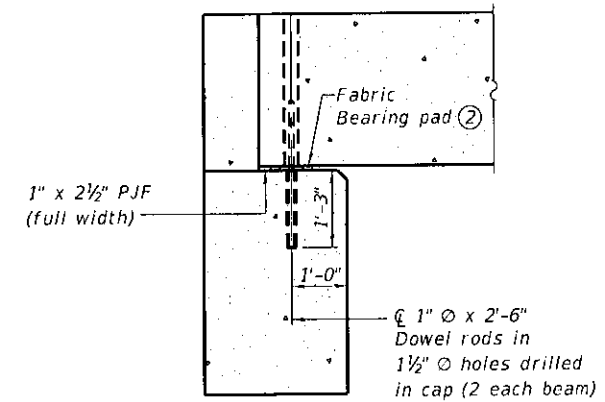
C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
12	21-00084-00-BR	MONROE	18	8
CONTRACT NO. 97797				
ILLINOIS FED. AID PROJECT				

FILE NAME: \\oates-602\data\p2221047 - SN 067-0013 Rehab\W02-Structure Plans\Microstation\0673191-003-Temporary Concrete Barrier.dgn

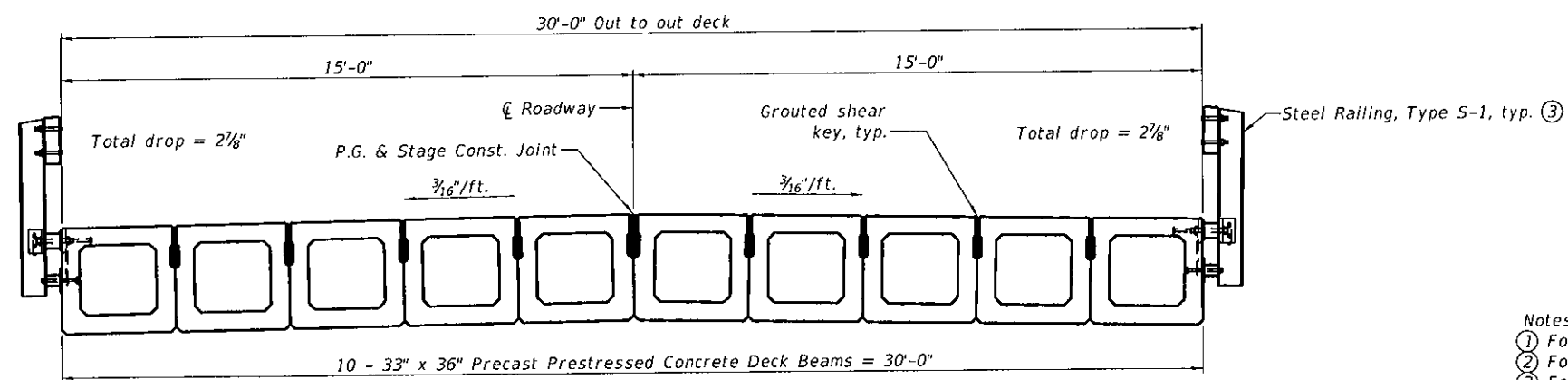




PLAN



SECTION A-A  
(Dimensions are at Rt. L's)



CROSS SECTION

- Notes:
- ① For PPC Deck Beam details and Bill of Material, see sheet 5 and 6 of 13.
  - ② For fabric bearing pad details, see sheet 6 of 13.
  - ③ For Steel Railing, Type S-1 details, see sheet 7 of 13.

FILE NAME: \\Oates-fs02\data\p\221047 - SN 067-0013 RehabW02-Structure Plans\Microstation\0673191.004-Superstructure.dgn



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PLOT SCALE =	CHECKED - ETH	REVISED -
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	CHECKED - ETH	REVISED -

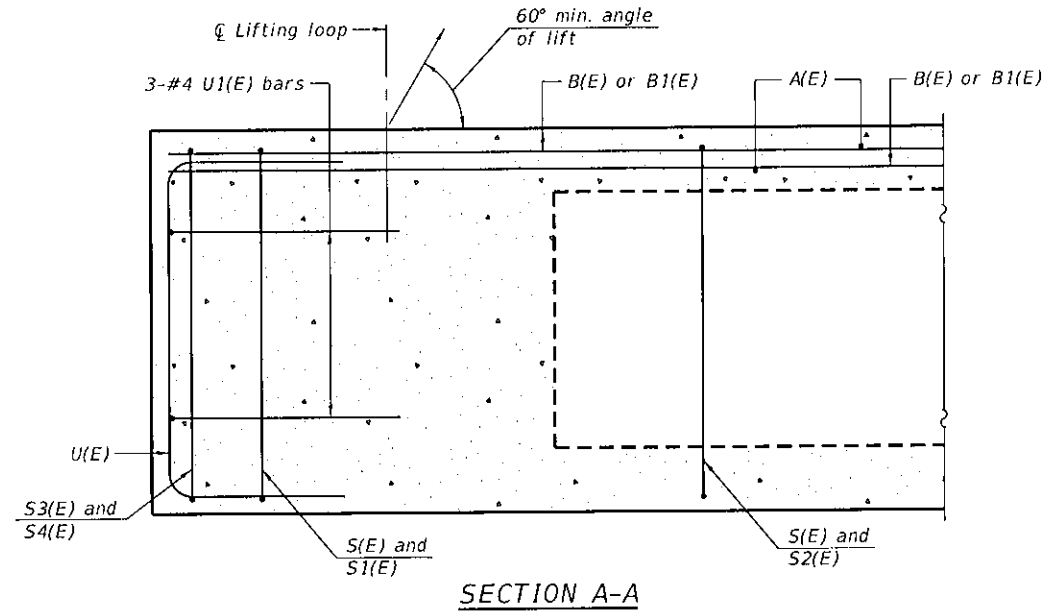
MONROE COUNTY  
HIGHWAY DEPARTMENT

SUPERSTRUCTURE  
STRUCTURE NO. 067-3191

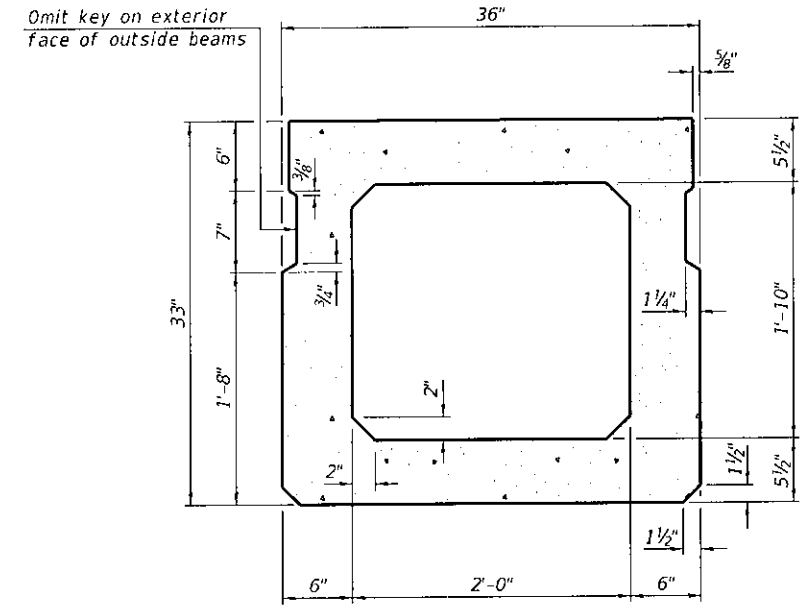
SHEET 4 OF 13 SHEETS

C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
12	21-00084-00-BR	MONROE	18	9
ILLINOIS FED. AID PROJECT				

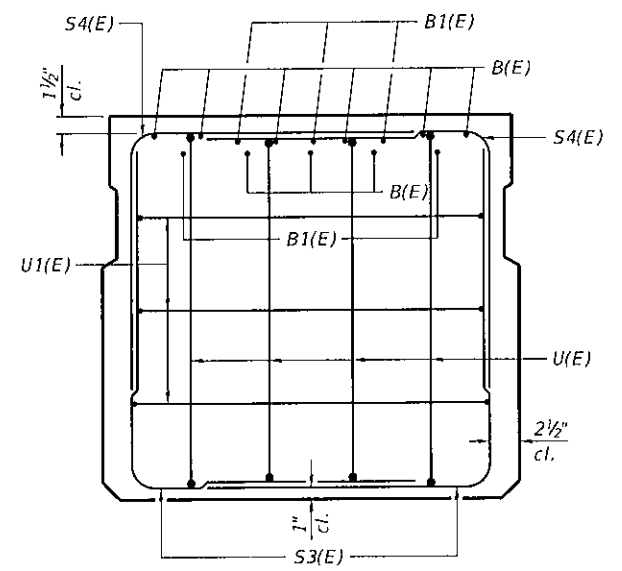
CONTRACT NO. 97797



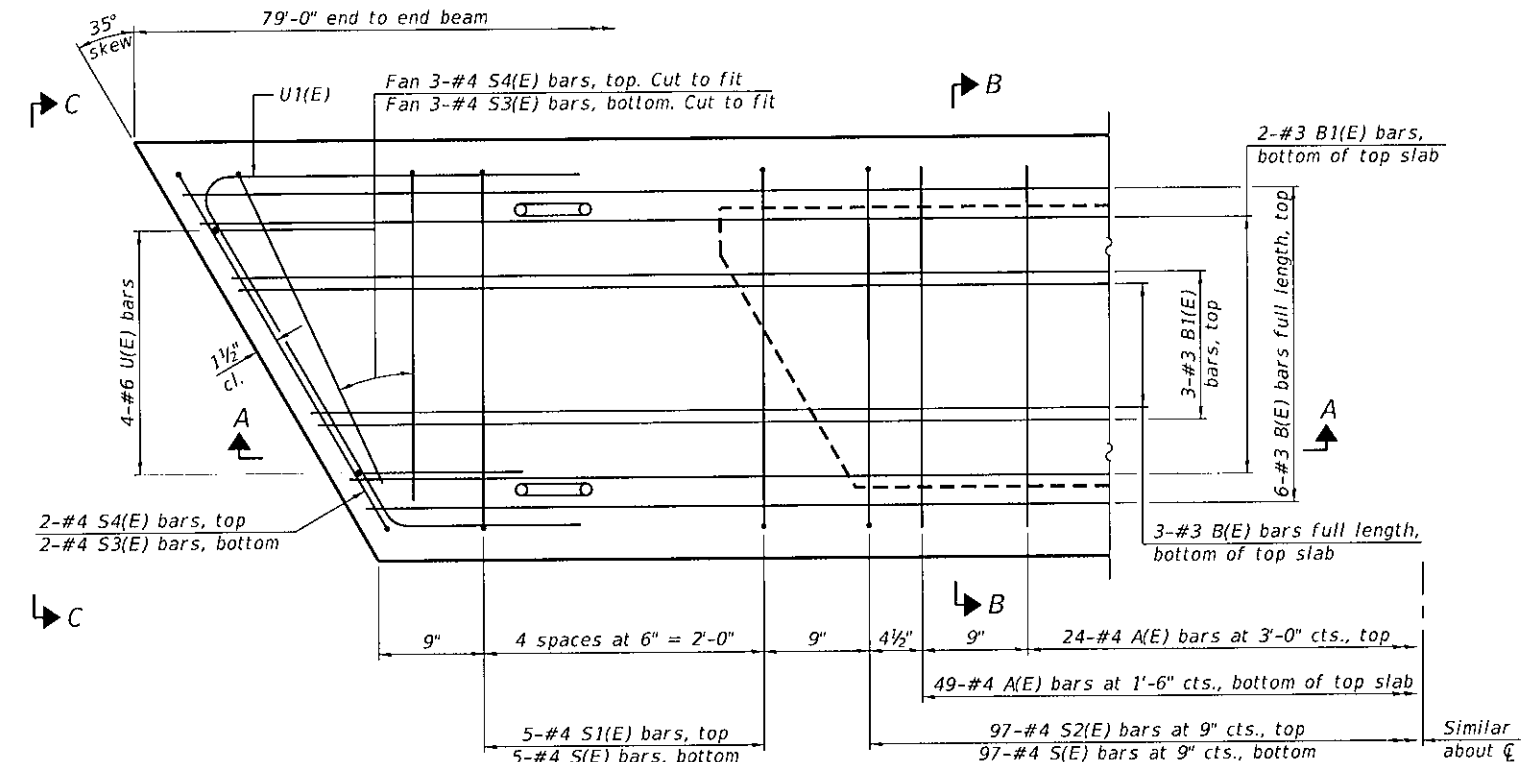
SECTION A-A



SECTION B-B  
(Showing dimensions)



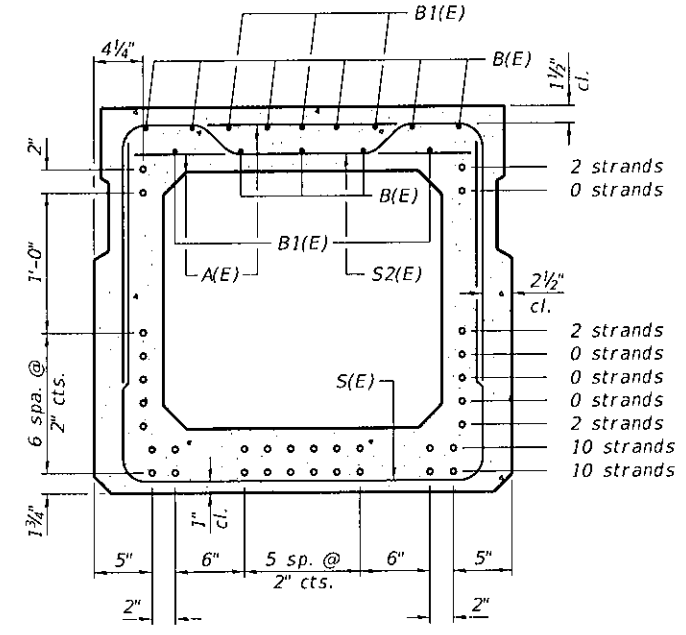
VIEW C-C



PLAN VIEW

Note:  
Spacing of S(E) and S2(E) bars may be adjusted up to 4" in the immediate area of the transverse tie diaphragms to miss the block outs for the transverse ties.

MINIMUM BAR LAP  
#3 bar = 1'-6"



SECTION B-B  
(Showing reinforcement and permissible strand locations)

Note:  
Place the number of strands specified in each row symmetrically about the centerline of beam in the permissible strand locations shown.

BAR LIST  
ONE BEAM ONLY  
(For information only)

Bar	No.	Size	Length	Shape
A(E)	73	#4	2'-7"	—
B(E)	9	#3	78'-9"	—
B1(E)	10	#3	10'-0"	—
S(E)	107	#4	7'-8"	U
S1(E)	10	#4	6'-5"	U
S2(E)	97	#4	6'-8"	U
S3(E)	10	#4	5'-8"	U
S4(E)	10	#4	5'-0"	U
U(E)	8	#6	5'-0"	C
U1(E)	6	#4	7'-3"	C

Note:  
See sheet 6 of 13 for additional details and Bill of Material.  
See sheet 2 of 13 for shear key clamping details.

FILE NAME: \\oates\is02\data\p22.1047 - SK 067-0013 RehabW02-Structure Plans\Microstation\0673191.005-33x36 PPC Deck Beam.dgn

PD-3336-R 1-1-2020



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PLOT DATE *	DRAWN - NBB	REVISED -
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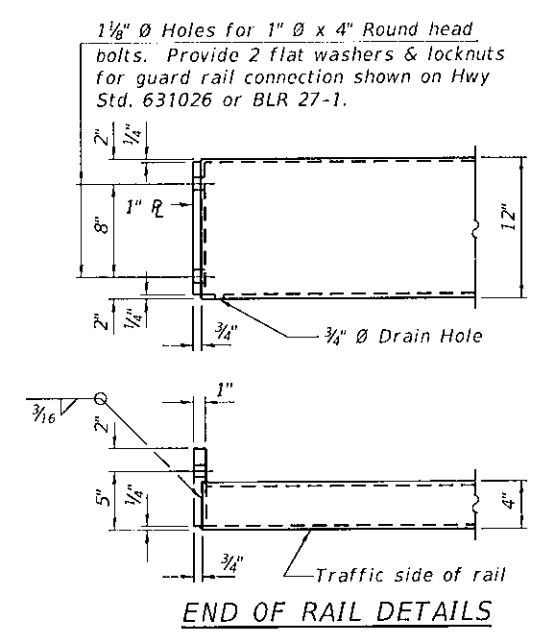
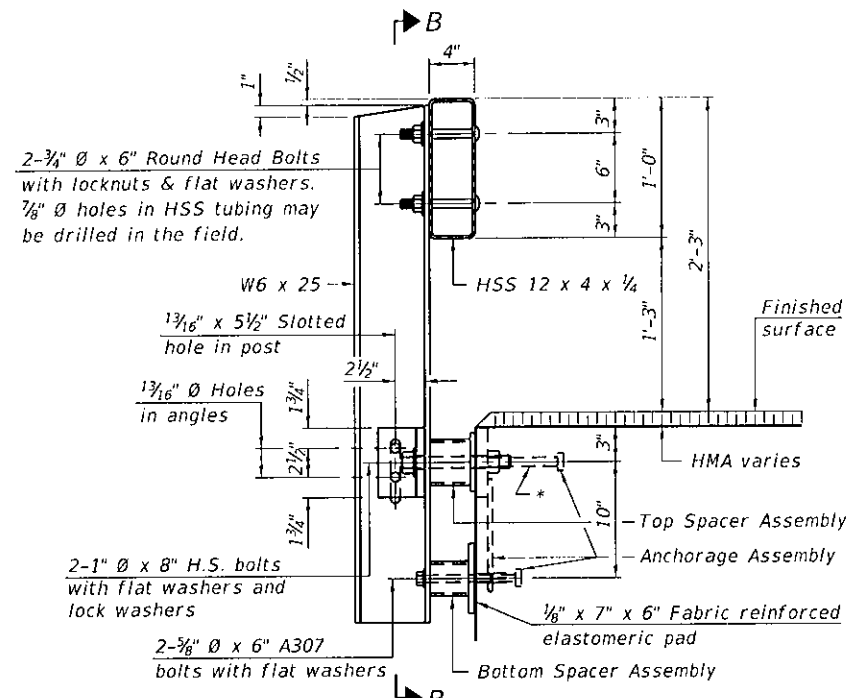
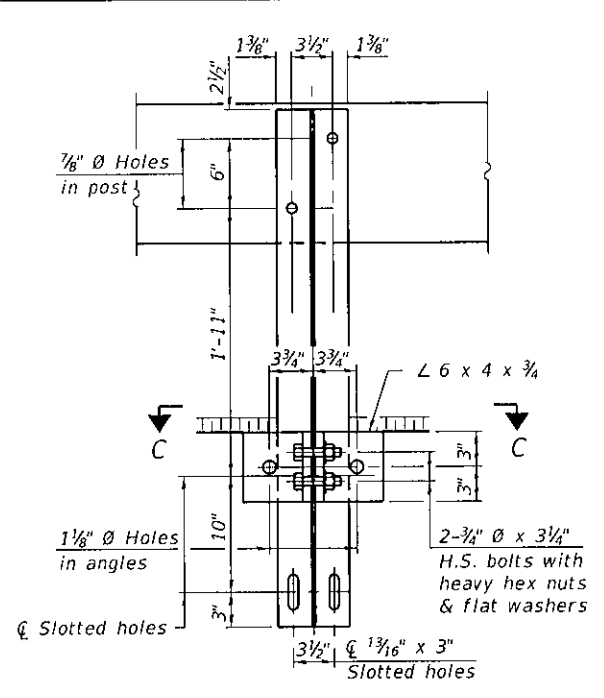
MONROE COUNTY  
HIGHWAY DEPARTMENT

33" x 36" PPC DECK BEAM  
STRUCTURE NO. 067-3191

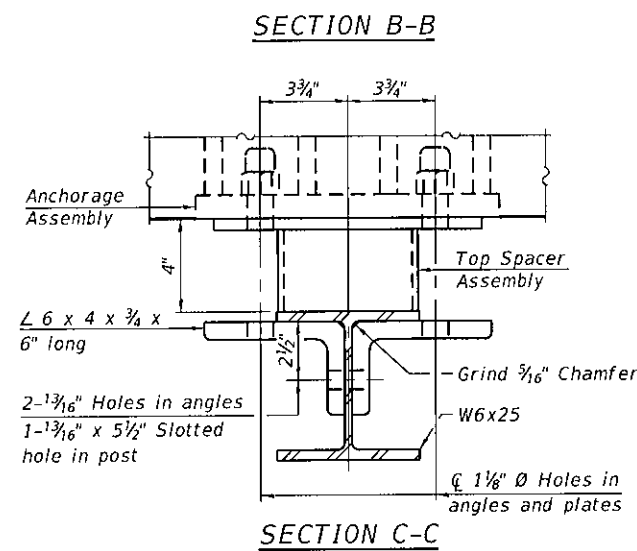
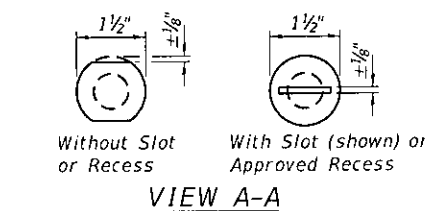
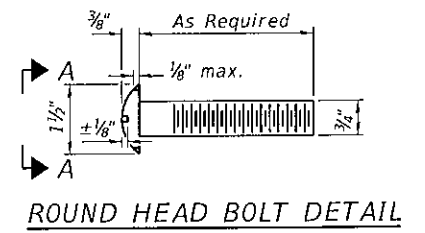
SHEET 5 OF 13 SHEETS

C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
12	21-00084-00-BR	MONROE	18	10
CONTRACT NO. 97797				
ILLINOIS FED. AID PROJECT				

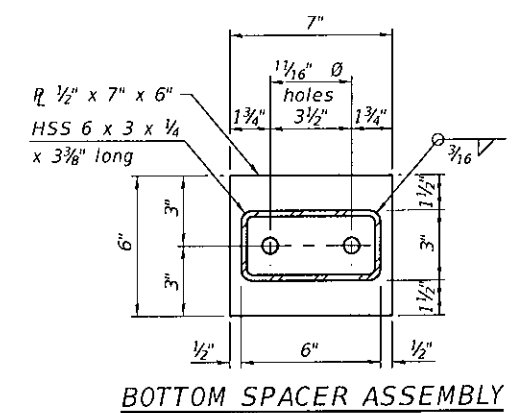
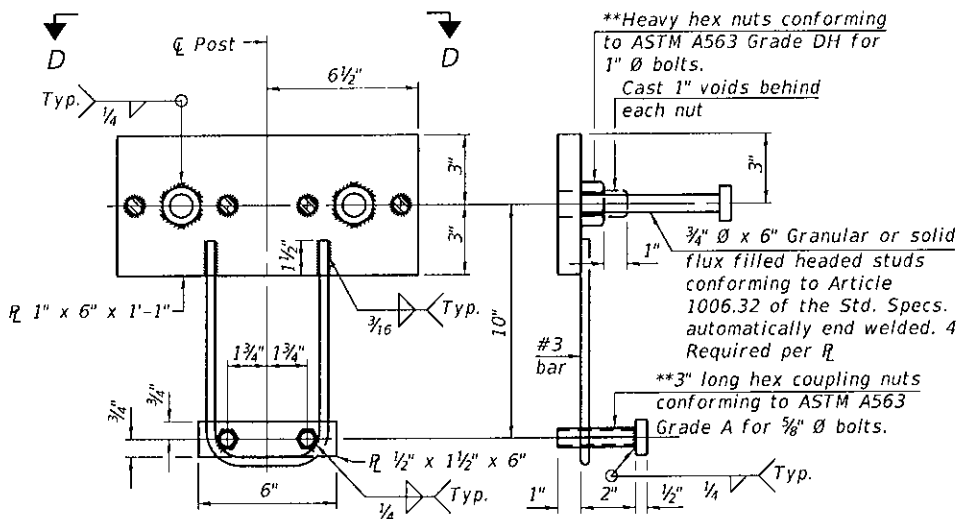
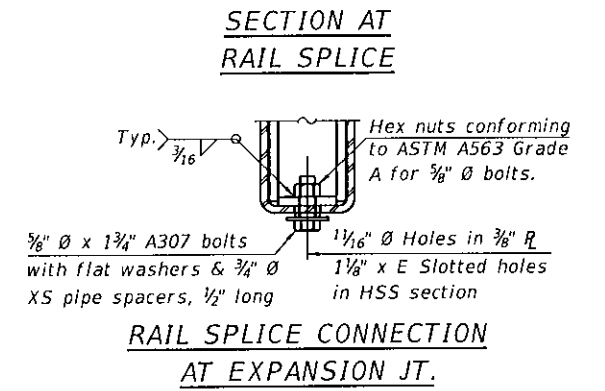
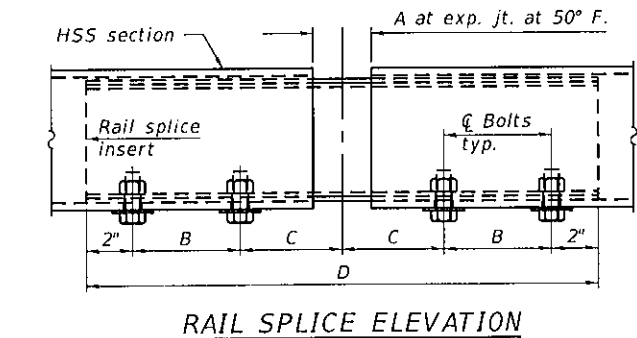
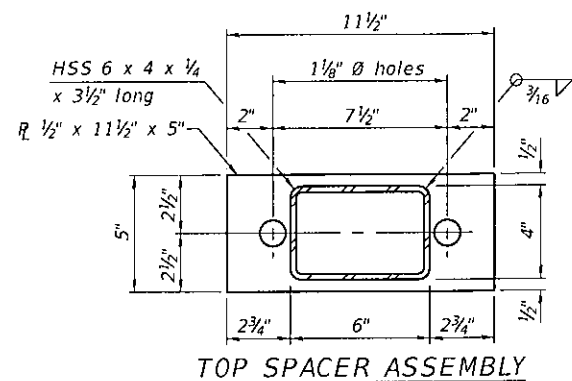
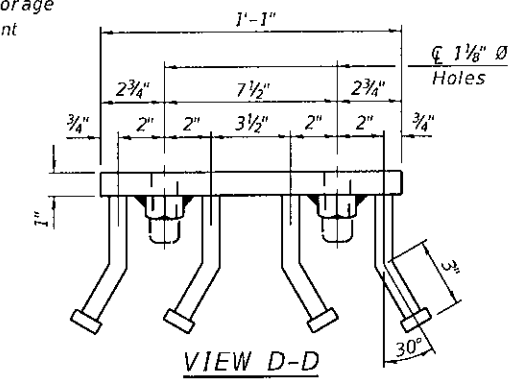
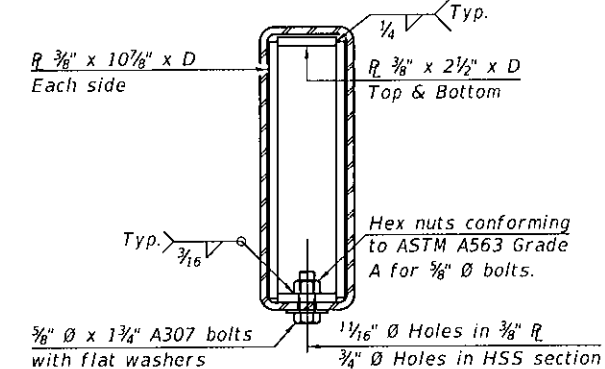




Notes:  
 A sufficient number of shims of various thicknesses, sized to fit behind the top spacer assembly, 5" x 11 1/2", and bottom spacer assembly, 6" x 7", shall be provided to adjust posts for proper alignment. If the summation of shims is greater than 1/4" (top) or 1/2" (bottom), longer bolts are required. Cost included with Steel Railing, Type S-1.  
 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.



\* 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.



**RAILING CRITERIA**

NCHRP 350 Test Level	2
Railing Weight (plf)	50
Max Post Spacing	10'-9"
HMA thickness range (in)	1 1/4" - 3 1/2"

**SPLICE DIMENSIONS**

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 3/8"	4 3/8"	1'-10"	3 1/16"
Over Finger or Modular Jt.	≤9 1/2"	5 1/2"	7 3/8"	7 1/4"	2'-9 1/4"	5 1 3/16"
Over Finger or Modular Jt.	≤15"	8 1/4"	10 1/8"	10"	3'-8 1/4"	8 9/16"

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

**BILL OF MATERIAL**

Item	Unit	Quantity
Steel Railing, Type S1	Foot	163

FILE NAME: \\G:\Users\fs02\hual\p2221047 - SN 067-0013 Rehab\W02-Structur\Plan\Struct\0673191-007-Steel Railing, Type S-1 Details.dgn



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 PLOT DATE = 10/18/2022

DESIGNED - NBB  
 CHECKED - ETH  
 REVISIONS -

REVISIONS -

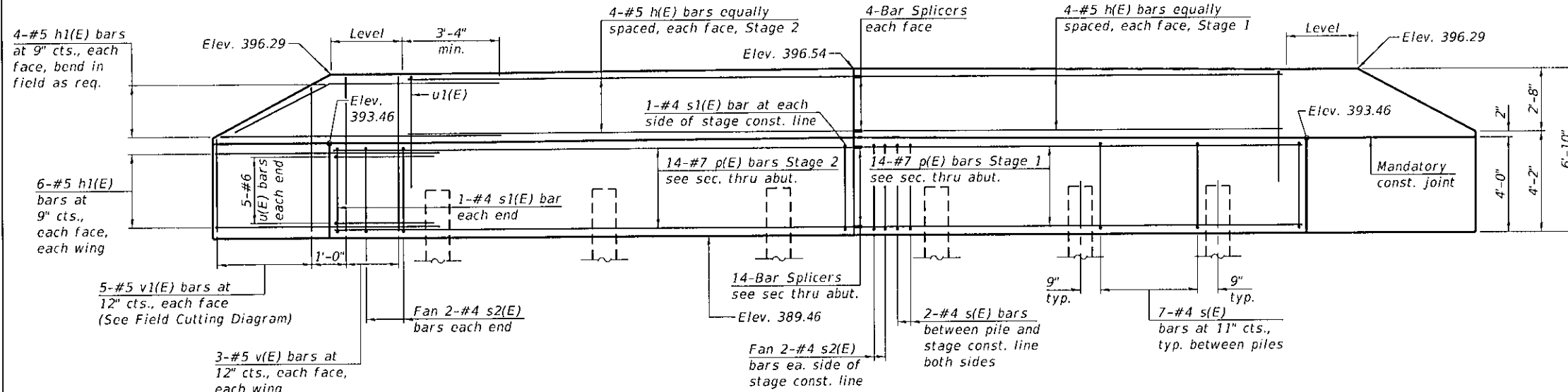
MONROE COUNTY  
 HIGHWAY DEPARTMENT

STEEL RAILING, TYPE S-1  
 STRUCTURE NO. 067-3191

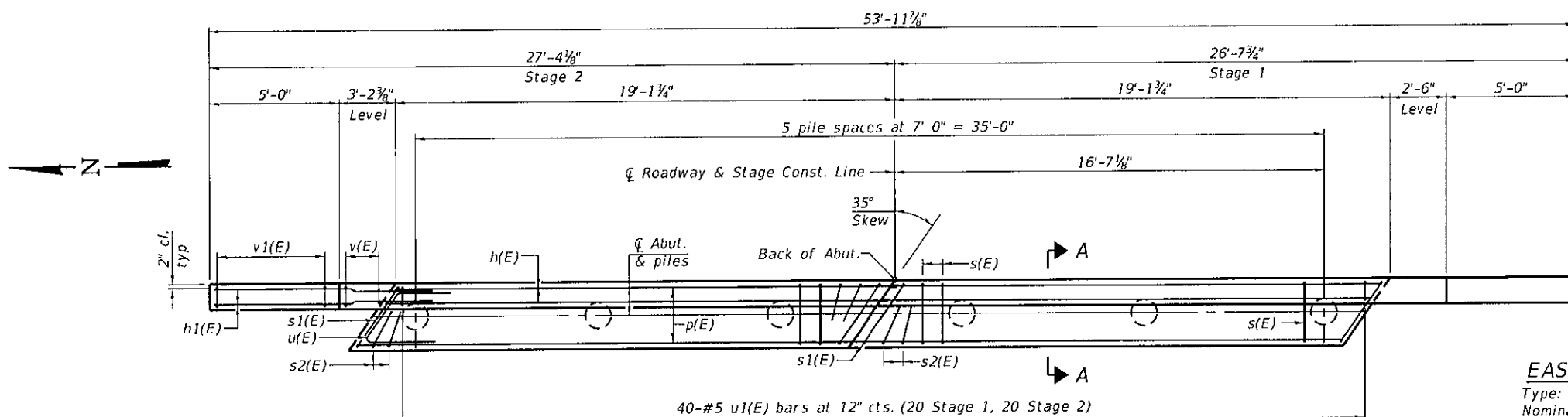
SHEET 7 OF 13 SHEETS

C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
12	21-00084-00-BR	MONROE	18	12

CONTRACT NO. 97797  
 ILLINOIS FED. AID PROJECT

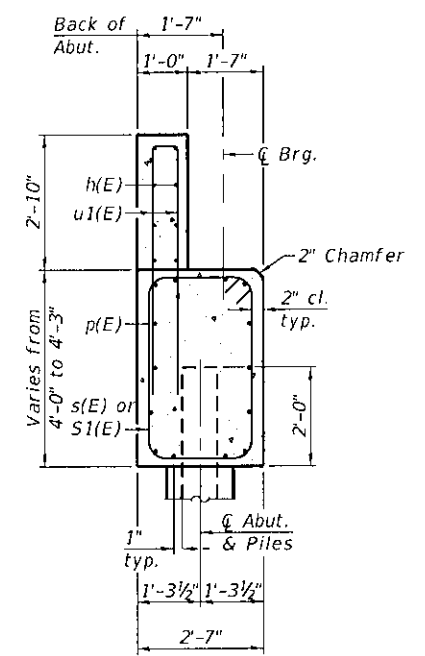


ELEVATION



PLAN

(East Abutment shown, West Abutment similar)



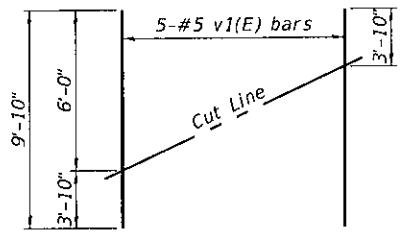
SECTION A-A  
(Dimensions are at Rt. L's)

BILL OF MATERIAL  
(for two abutments)

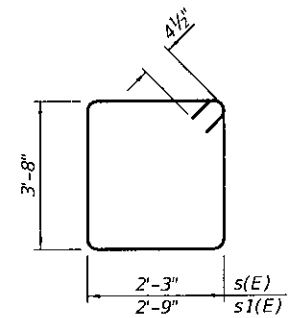
Bar	No.	Size	Length	Shape
h(E)	32	#5	18'-10"	—
h1(E)	80	#5	11'-5"	—
p(E)	56	#7	18'-10"	—
s(E)	64	#4	12'-7"	□
s1(E)	8	#4	13'-7"	□
s2(E)	16	#4	8'-2"	□
u(E)	20	#6	11'-4"	└
u1(E)	80	#5	10'-0"	└
v(E)	24	#5	6'-6"	—
v1(E)	20	#5	9'-10"	—
Structure Excavation	Cu. Yd.		12	
Concrete Structures	Cu. Yd.		45.2	
Reinforcement Bars, Epoxy Coated	Pound		5,980	
Furnishing Metal Shell Piles 12"x0.250"	Foot		365	
Driving Piles	Foot		365	
Test Pile Metal Shells	Each		2	
Pile Shoes	Each		12	

**EAST ABUT. PILE DATA**  
 Type: MS 12" x 0.250"  
 Nominal Required Bearing: 325  
 Factored Resistance Available: 179  
 Est. Length: 34'  
 No. Production Piles: 5  
 No. Test Piles: 1

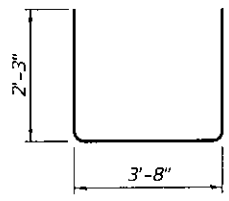
**WEST ABUT. PILE DATA**  
 Type: MS 12" x 0.250"  
 Nominal Required Bearing: 325  
 Factored Resistance Available: 179  
 Est. Length: 39'  
 No. Production Piles: 5  
 No. Test Piles: 1



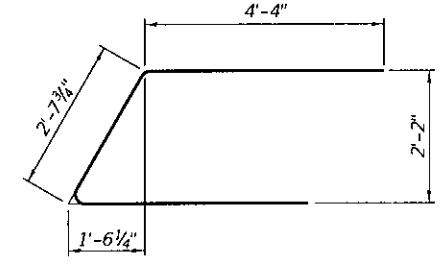
FIELD CUTTING DIAGRAM  
 Order v1(E) bars full length. Cut as shown and use remainder of bars in opposite face.



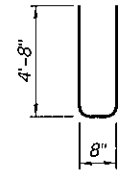
BARS s(E) & s1(E)



BAR s2(E)



BAR u(E)



BAR u1(E)

- Notes:
- For details of piles, see sheet 10 of 13.
  - Space reinforcement in cap to miss dowel rods.
  - The backwall and portion of wingwalls above the mandatory construction joint shall be cast against the in-place beams.
  - Cost of reinforcement in piles included in the cost of Furnishing Piles MS 12"x0.250".

FILE NAME: \\Oates\607\data\p221047 - SN 067-0013 Rehab\WD2-Structure Plans\Microstation\0673191-008-Abutment Details.dgn



USER NAME	DESIGNED - NBB	REVISD -
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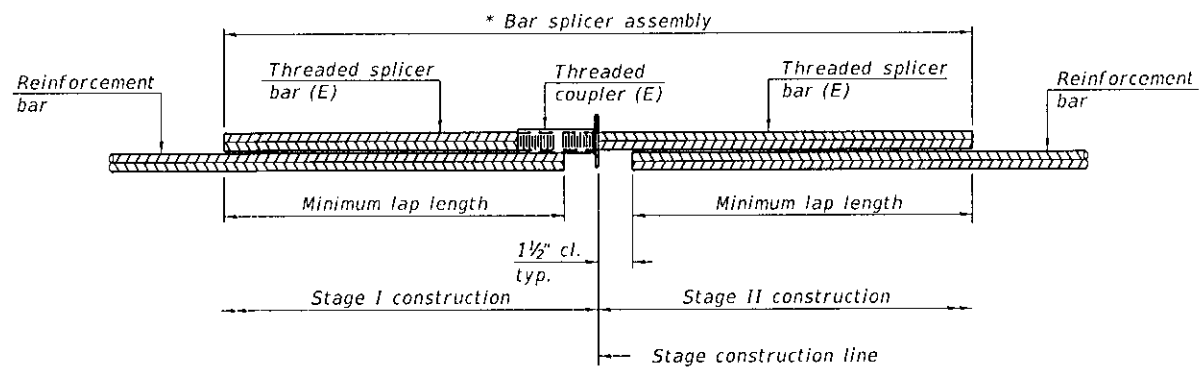
DESIGNED - NBB	REVISD -
CHECKED - ETH	REVISD -
DRAWN - NBB	REVISD -
CHECKED - ETH	REVISD -

MONROE COUNTY  
HIGHWAY DEPARTMENT

ABUTMENT DETAILS  
STRUCTURE NO. 067-3191  
SHEET 8 OF 13 SHEETS

C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
12	21-00084-00-BR	MONROE	18	13
CONTRACT NO. 97797				
ILLINOIS FED. AID PROJECT				



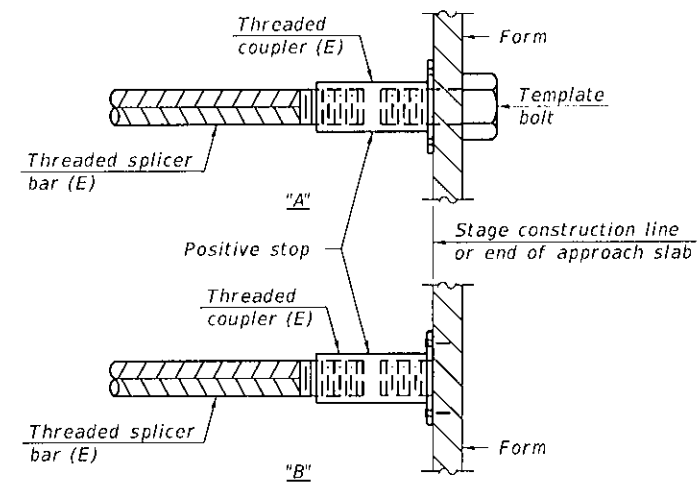


**STANDARD BAR SPLICER ASSEMBLY PLAN**  
(All components shall be provided from one supplier)

Threaded splicer bar length = min. lap length + 1 1/2" + thread length

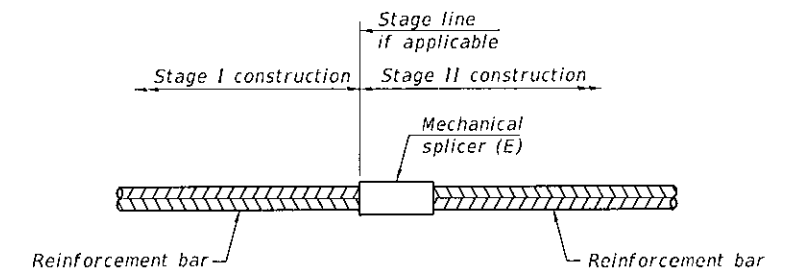
\* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Minimum lap length
Abutment Cap	7	28	5'-0"
Backwall	5	16	3'-7"



**INSTALLATION AND SETTING METHODS**

"A" : Set bar splicer assembly by means of a template bolt.  
 "B" : Set bar splicer assembly by nailing to wood forms or cementing to steel forms.  
 (E) : Indicates epoxy coating.



**STANDARD MECHANICAL SPLICER**

Location	Bar size	No. assemblies required

Notes:  
 Splicer bars shall be deformed with threaded ends and have a minimum 60 ksi yield strength.  
 All reinforcement shall be lapped and tied to the splicer bars.  
 Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars. See Section 508 of the Standard Specifications.  
 See approved list of bar splicer assemblies and mechanical splicers for alternatives.

FILE NAME: \\oates-602\data\p22\1047 - SM 067-0013 Rehab\W02-Structure Plans\Microstation\0673191-009-Bar Splicer Assembly Details.dgn

BSD-1

1-1-2020



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PLOT SCALE =	CHECKED - ETH	REVISED -
PLOT DATE = 10/18/2022	DRAWN - NBB	REVISED -
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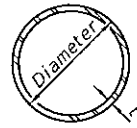
**MONROE COUNTY  
HIGHWAY DEPARTMENT**

**BAR SPLICER ASSEMBLY DETAILS  
STRUCTURE NO. 067-3191**

SHEET 9 OF 13 SHEETS

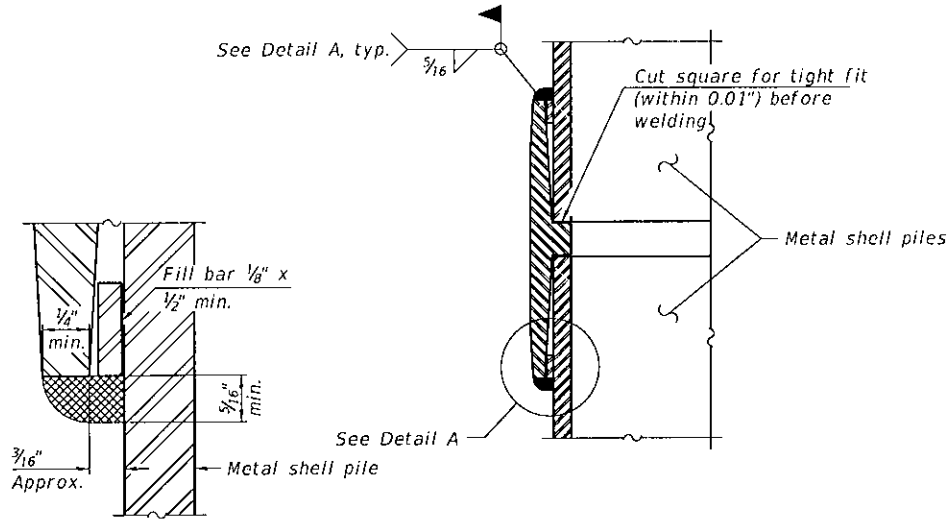
C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
12	21-00084-00-BR	MONROE	18	14

CONTRACT NO. 97797  
ILLINOIS FED. AID PROJECT

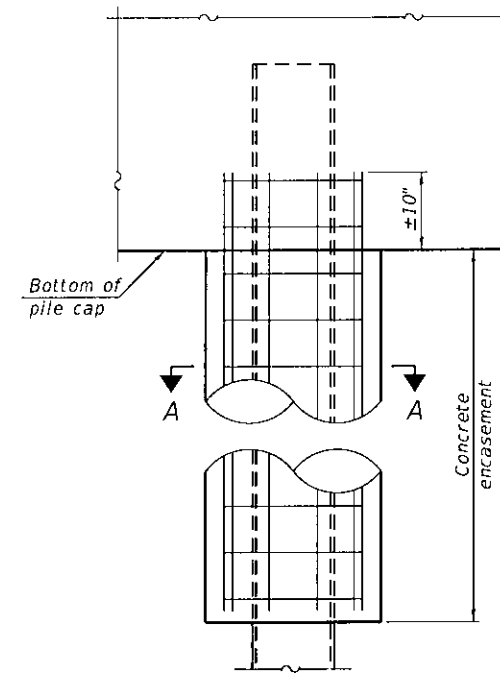


**METAL SHELL PILE TABLE**

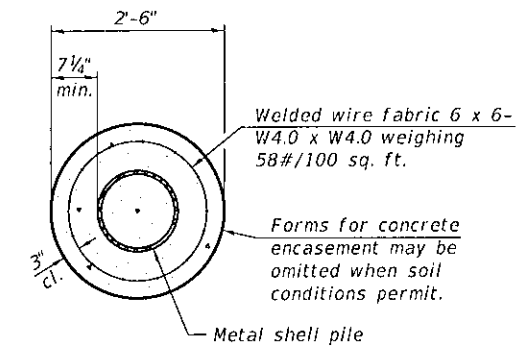
Designation and outside diameter	Wall thickness t	Weight per foot (Lbs./ft.)	Inside volume (yd. <sup>3</sup> /ft.)
PP12	0.250"	31.37	0.0267
PP14	0.250"	36.71	0.0368
PP14	0.312"	45.61	0.0361
PP16	0.312"	52.32	0.0478
PP16	0.375"	62.64	0.0470



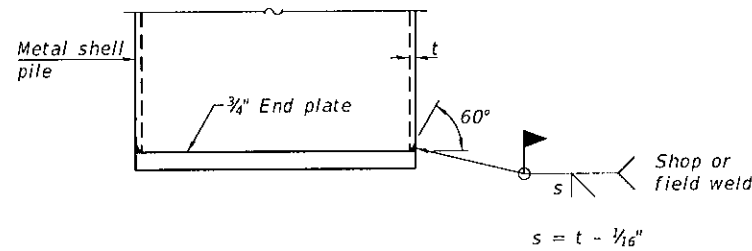
**DETAIL A**



**ELEVATION**



**SECTION A-A**

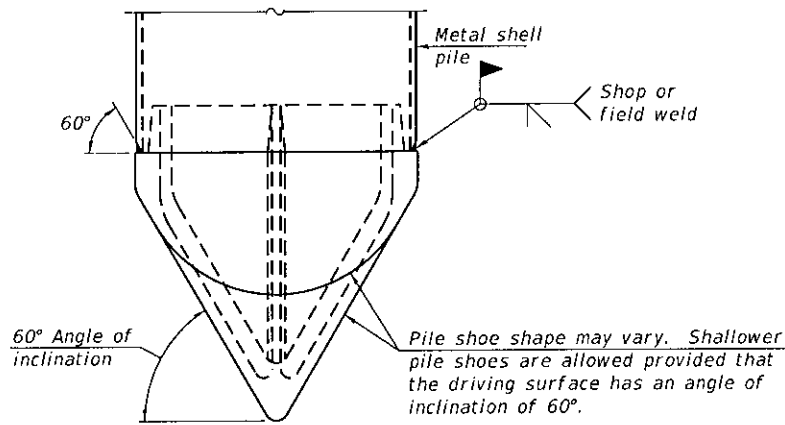


**END PLATE ATTACHMENT**

**WELDED COMMERCIAL SPLICE**

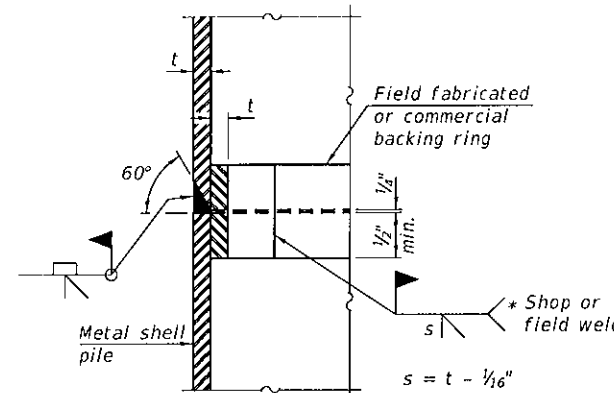
Notes:  
 The 1/8" x 1/2" min. fill bar may be constructed of 2 bars with a 1/8" max. gap between them.  
 Pile segments shall be driven to solid contact with splicer before welding.

**INDIVIDUAL PILE CONCRETE ENCASUREMENT**  
 (When specified)



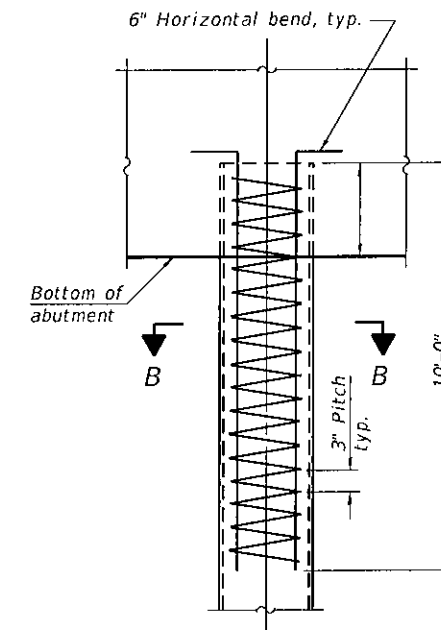
**PILE SHOE ATTACHMENT**

(When called for on the plans, the Contractor shall furnish metal shell pile shoes consisting of a single piece conical pile point as shown. The pile shoes shall be cast in one piece steel according to either ASTM A 148 Grade 80-50 or AASHTO M 103 Grade 65-35 and shall provide full bearing over the full circumference of the metal shell pile. The pile shoe shall have tapered leads to assure proper alignment and fitting and shall be secured to the pile with a circumferential weld).

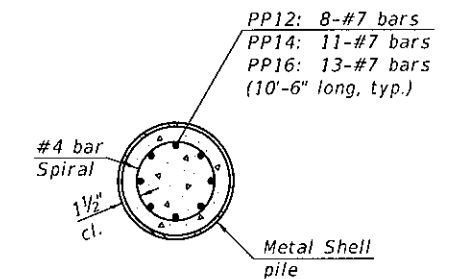


**COMPLETE PENETRATION WELD SPLICE**

\* Field fabricated backing ring may be made from pile shell by removing segment to allow reducing circumference and vertically rejoin with partial joint penetration weld.



**ELEVATION**



**SECTION B-B**

**REINFORCEMENT AT ABUTMENTS**  
 (Omit when concrete encasement is specified)

Note:  
 The metal shell piles shall be according to Article 1006.05 of the Standard Specifications.

FILE NAME: \\Oates-607\data\p22\2027 - SM 067-0013 rehab\W02-Structure Plans\Misc\station\0673191-010-Metal Shell Pile Details.dgn

F-MS

1-1-2020



USER NAME =	DESIGNED - NBB	REVISED -
PLOT SCALE =	CHECKED - ETH	REVISED -
PLOT DATE = 10/18/2022	DRAWN - NBB	REVISED -
	CHECKED - ETH	REVISED -

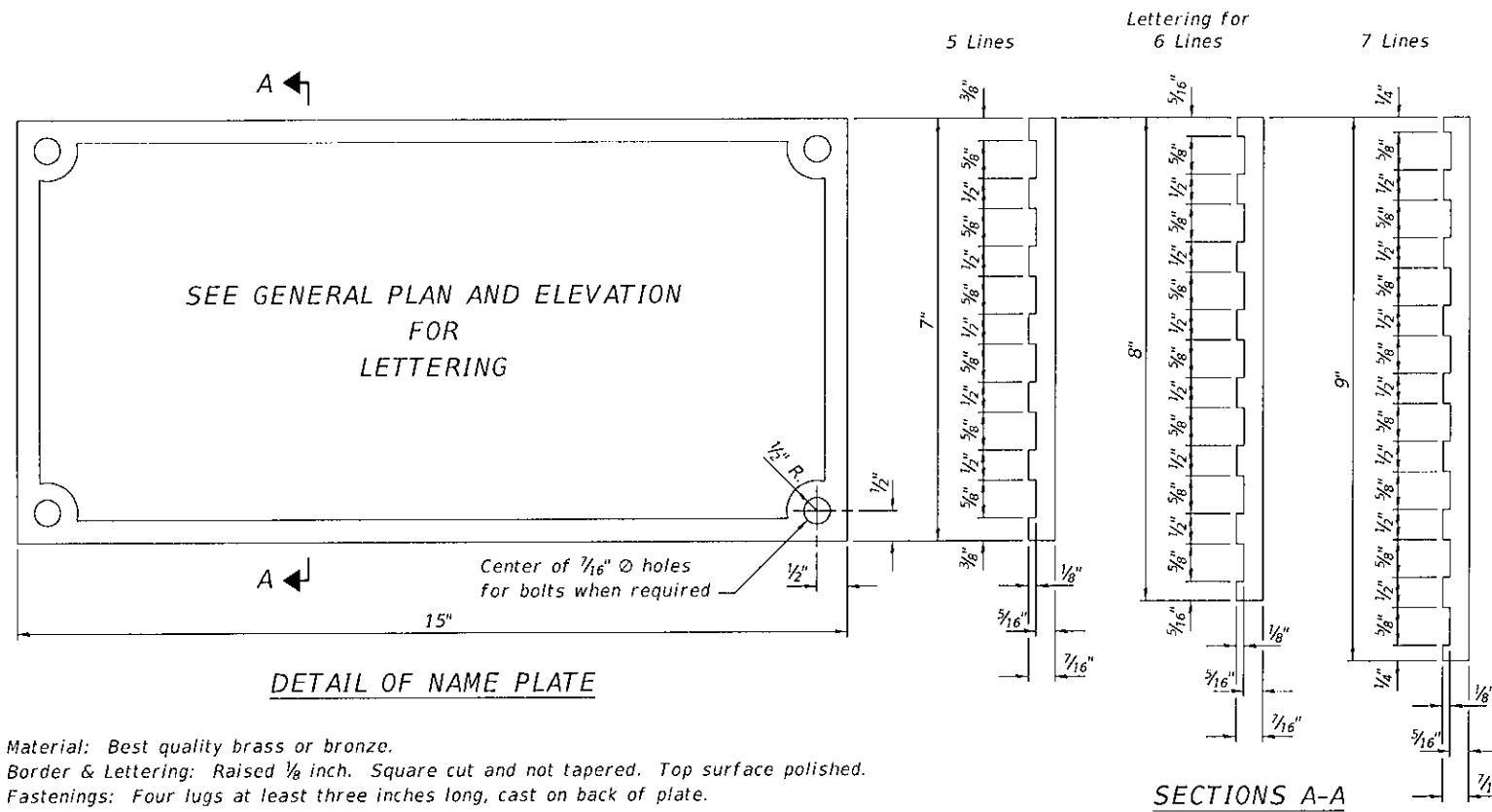
**MONROE COUNTY HIGHWAY DEPARTMENT**

**METAL SHELL PILE DETAILS  
 STRUCTURE NO. 067-3191**

SHEET 10 OF 13 SHEETS

C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
12	21-00084-00-BR	MONROE	18	15
CONTRACT NO. 97797				

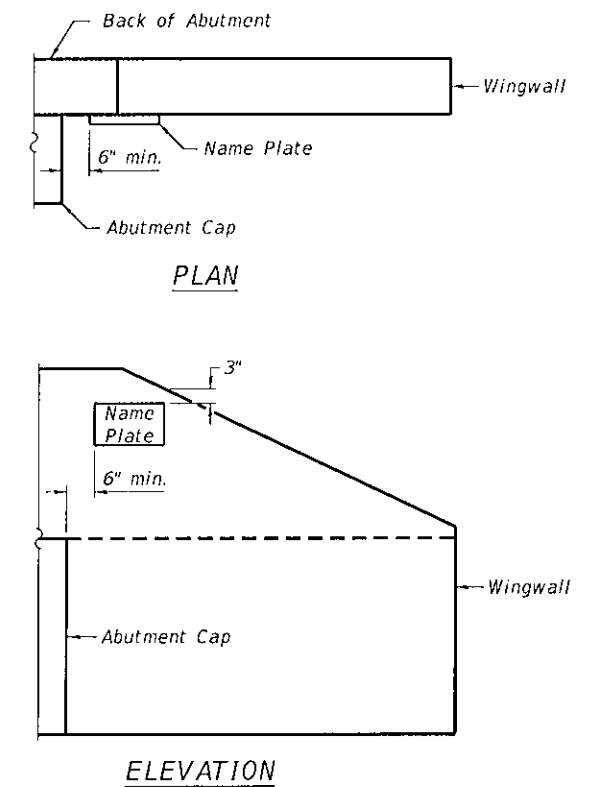
ILLINOIS FED. AID PROJECT



**DETAIL OF NAME PLATE**

Material: Best quality brass or bronze.  
 Border & Lettering: Raised 1/8 inch. Square cut and not tapered. Top surface polished.  
 Fastenings: Four lugs at least three inches long, cast on back of plate.

**SECTIONS A-A**



**LOCATION OF NAME PLATE**

FILE NAME: \\Oates-f021dca3\p221047 - SN 067-0013 Rehab\W02-Structure Plans\Microstation\0673191-011-Name Plate Details.dgn



USER NAME =	DESIGNED - NBB	REVISED -
	CHECKED - ETH	REVISED -
PLOT SCALE =	DRAWN - NBB	REVISED -
PLOT DATE = 10/18/2022	CHECKED - ETH	REVISED -

**MONROE COUNTY  
HIGHWAY DEPARTMENT**

**NAME PLATE DETAILS  
STRUCTURE NO. 067-3191**

SHEET 11 OF 13 SHEETS

C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
12	21-00084-00-BR	MONROE	18	16
CONTRACT NO. 97797				
ILLINOIS FED. AID PROJECT				



