

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

McDONOUGH COUNTY	SHEET NO.	1
FAS ROUTE 441	TOTAL SHEETS	7
CONTRACT NO. 89747		
PROJECT NO. U37M (517)		
SECTION 17-00108-00-BR		

# PLANS FOR PROPOSED BRIDGE REHABILITATION

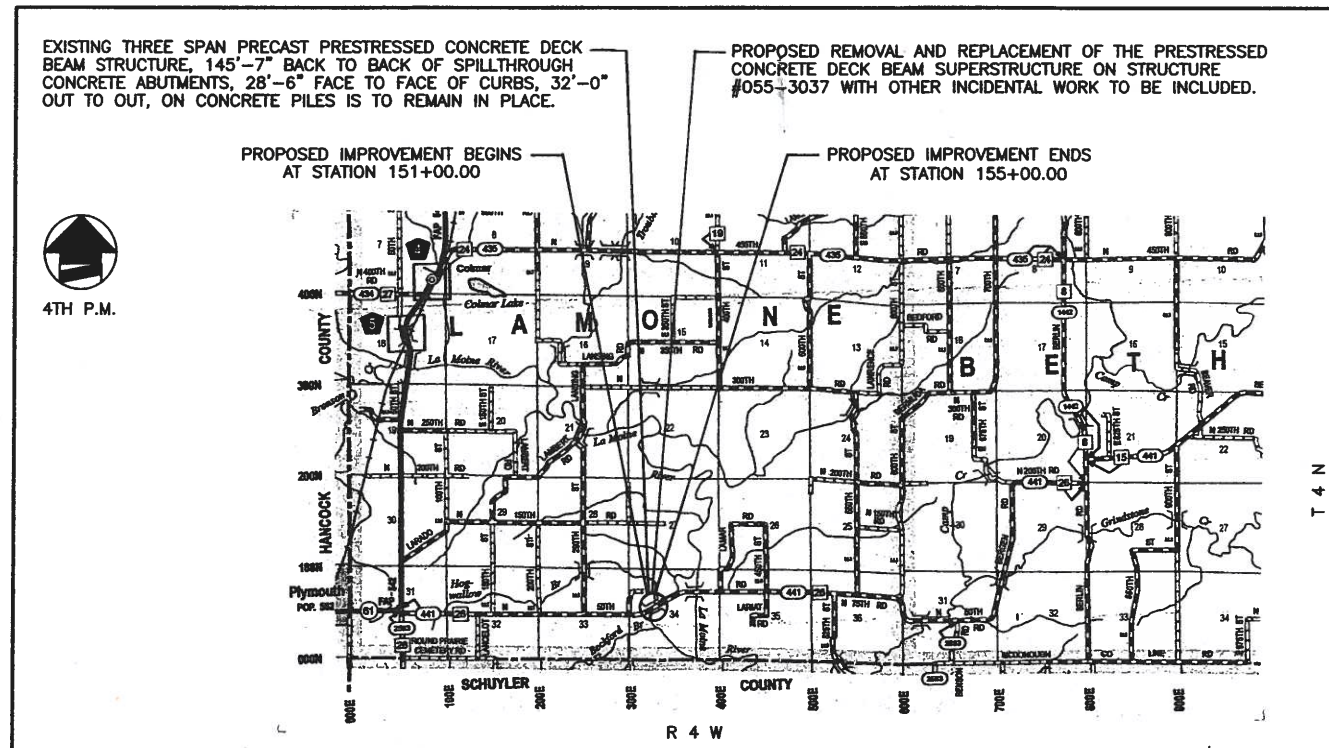
McDONOUGH COUNTY  
F.A.S. ROUTE 441 (N. 50th ROAD/CH 26) OVER HOGWALLOW BRANCH  
SECTION 17-00108-00-BR  
JOB NO. C-94-066-17  
PROJECT NO. U37M (517)  
STRUCTURE NO. 055-3037

INDEX OF SHEETS

1. COVER SHEET
2. GENERAL NOTES AND SUMMARY OF QUANTITIES
3. EROSION CONTROL PLAN
4. GENERAL PLAN AND ELEVATION
5. PPC DECK BEAM SUPERSTRUCTURE DETAILS
6. PPC DECK BEAM DETAILS
7. STEEL RAILING, TYPE S-1 DETAILS

LIST OF STANDARDS

- |           |  |
|-----------|--|
| 000001-06 | STANDARD SYMBOLS, ABBREVIATIONS, AND PATTERNS          |
| 280001-07 | TEMPORARY EROSION CONTROL DEVICES                      |
| 515001-03 | NAME PLATE FOR BRIDGES                                 |
| 630001-12 | STEEL PLATE BEAM GUARDRAIL                             |
| 630301-08 | SHOULDER WIDENING FOR TYPE 1 (SPL) GUARDRAIL TERMINALS |
| 631011-10 | TRAFFIC BARRIER TERMINAL, TYPE 2                       |
| 701901-07 | TRAFFIC CONTROL DEVICES                                |
| 725001-01 | OBJECT AND TERMINAL MARKERS                            |
| BLR21-9   | TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES         |
| BLR26-3   | STEEL PLATE BEAM GUARDRAIL 29" HEIGHT                  |
| BLR27-1   | TRAFFIC BARRIER TERMINAL, TYPE 5A                      |



LOCATION MAP

APPROXIMATE SCALE: 1 0.5 0 1 MILE

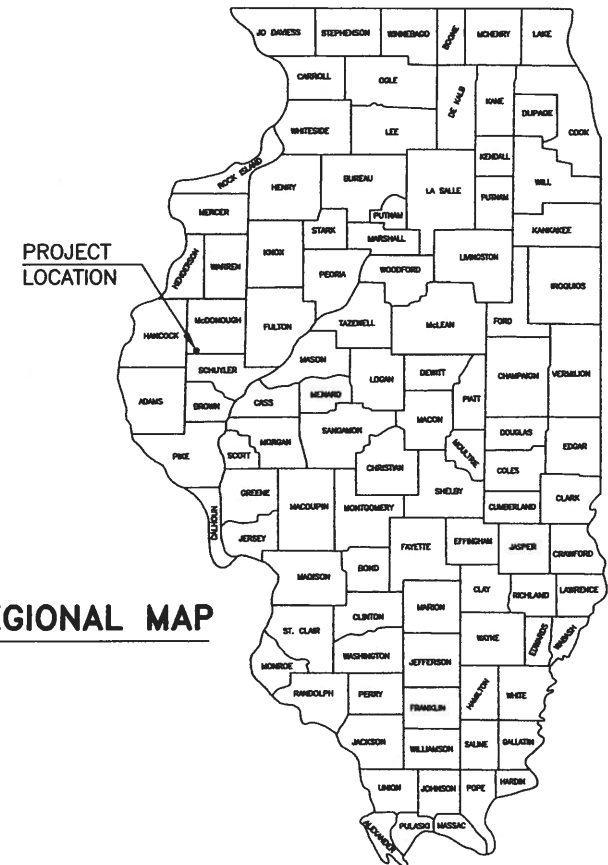
TOTAL & NET LENGTH OF PROJECT: 400.0 FT. = 0.076 MI.

ROADWAY CLASSIFICATION: MAJOR COLLECTOR (ADT = 175)

DESIGN GUIDELINES: RURAL

DESIGN SPEED = 40 M.P.H.

COMMITMENTS: NONE



PLANS PREPARED BY THE  
McDONOUGH COUNTY HIGHWAY DEPARTMENT  
MACOMB, ILLINOIS

APPROVED June 27th 20 18  
Chris Welch  
McDONOUGH COUNTY ENGINEER

PASSED 08-29 20 18  
Tom Jasso  
DISTRICT 4 ENGINEER OF LOCAL ROADS & STREETS

RELEASING FOR BID August 29 20 18  
BASED ON LIMITED REVIEW Kenneth A. Harveth  
REGION 3 ENGINEER

JOSEPH E. HUTCHISON  
P.E. No. 062-058335  
EXPIRES NOVEMBER 30, 2019

6/19/18  
DATE

CALL JULIE TOLL FREE  
1-(800)-892-0123 or 811  
OPERATES 24 HOURS A  
DAY 365 DAYS A YEAR



48 HOURS BEFORE  
YOU DIG

JOB NO. C-94-066-17  
CONTRACT NO. 89747  
CATALOG NO. 035489-00

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

### SUMMARY OF QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	QUANTITY
LR212000	SHAPING ROADWAY	UNIT	400.0
28000400	PERIMETER EROSION BARRIER	FOOT	715.0
28100830	STONE DUMPED RIPRAP, CLASS B4	TON	640.0
50101500	REMOVAL OF EXISTING SUPERSTRUCTURES	EACH	1.0
50102400	CONCRETE REMOVAL	CU YD	1.4
50300225	CONCRETE STRUCTURES	CU YD	2.8
50400305	PRECAST PRESTRESSED CONCRETE DECK BEAMS 17" DP	SQ FT	4616.0
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	470.0
△50900205	STEEL RAILING, TYPE S-1	FOOT	292.0
51500100	NAME PLATES	EACH	1.0
△63000001	STEEL PLATE BEAM GUARDRAIL TYPE A (6' POSTS)	FOOT	100.0
△63100045	TRAFFIC BARRIER TERMINAL, TYPE 2	EACH	2.0
△63100075	TRAFFIC BARRIER TERMINAL, TYPE 5A	EACH	4.0
△63100167	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	EACH	4.0
63200310	GUARDRAIL REMOVAL	FOOT	375.0
67100100	MOBILIZATION	LUMP SUM	1.0
70101830	TRAFFIC CONTROL AND PROTECTION	LUMP SUM	1.0
△72501000	TERMINAL MARKER-DIRECT APPLIED	EACH	4.0

### △ SPECIALTY ITEMS

### QUANTITIES NOT OTHERWISE SHOWN ON THE PLANS

LR212000: SHAPING ROADWAY	STATION 151+51 LT. TO STATION 152+26 LT. = 75.0 FT.
	STATION 151+08 RT. TO STATION 152+08 RT. = 100.0 FT.
	STATION 153+72 LT. TO STATION 154+72 LT. = 100.0 FT.
	STATION 153+54 RT. TO STATION 154+79 RT. = 125.0 FT.
	TOTAL = 400.0 FT.
50400305: PRECAST PRESTRESSED CONCRETE DECK BEAMS (17" DEPTH)	48'-1" x 4'-0" = 192.3 SQ FT x 24 BEAMS = 4615.2 SQ FT — USE 4616.0 SQ FT
63200310: GUARDRAIL REMOVAL	STATION 151+51 LT. TO STATION 152+26 LT. = 75.0 FT.
	STATION 151+08 RT. TO STATION 152+08 RT. = 100.0 FT.
	STATION 153+72 LT. TO STATION 154+72 LT. = 100.0 FT.
	STATION 153+54 RT. TO STATION 153+79 RT. = 25.0 FT.
	STATION 154+04 RT. TO STATION 154+79 RT. = 75.0 FT.
	TOTAL = 375.0 FT.
50102400: CONCRETE REMOVAL	CONCRETE REMOVAL CONSISTS OF THE REMOVAL OF THE BACKWALL ON BOTH ENDS OF THE BRIDGE
	1.00 FT x 0.50 FT x 37.33' x 2 SIDES = 37.33 CU FT/27 = 1.35 CU YD — USE 1.4 CU YD

### GENERAL NOTES

- WHERE SECTION OR SUBSECTION MONUMENTS ARE ENCOUNTERED, THE ENGINEER SHALL BE NOTIFIED BEFORE SUCH MONUMENTS ARE REMOVED. THE CONTRACTOR SHALL CAREFULLY PROTECT AND PRESERVE ALL PROPERTY MARKERS AND MONUMENTS UNTIL THE OWNER, AN AUTHORIZED SURVEYOR, OR AGENT HAS WITNESSED OR OTHERWISE REFERENCED THEIR LOCATION.
  - THE COST OF REMOVING ANY EXISTING FIELD ENTRANCE CULVERTS IS TO BE CONSIDERED INCLUDED IN THE COST PER FOOT FOR SHAPING ROADWAY.
  - THE NECESSARY REMOVAL OF ANY EXISTING FENCES ARE TO BE DONE BY OTHERS PRIOR TO THE BEGINNING OF CONSTRUCTION.
  - THE CONTRACTOR WILL NOT BE ALLOWED TO BURY THE EXISTING STRUCTURES OR TREES NEAR THE JOBSITE. THIS MATERIAL IS TO BE HAULED OFF THE AREA BY THE CONTRACTOR EXCEPT FOR THOSE MATERIALS DEEMED SALVAGABLE BY THE ENGINEER.
  - THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE LOCATION AND ELEVATION OF ALL EXISTING UTILITIES AND TO NOTIFY ALL UTILITY COMPANIES PRIOR TO THE BEGINNING OF CONSTRUCTION. THIS SHALL BE INCIDENTAL TO THE CONTRACT.
  - THE CONTRACTOR WILL BE RESPONSIBLE FOR REMOVING ANY FALLEN TREES IN THE CREEK WHICH LIE WITHIN THE LIMITS OF THE PROPOSED RIGHT OF WAY. THIS COST WILL NOT BE PAID FOR SEPARATELY BUT IS TO BE CONSIDERED INCIDENTAL TO THE CONTRACT.
  - BACKFILLING OF THE ROADWAY AT EACH END OF THE BRIDGE IS TO BE DONE BY THE CONTRACTOR USING CA-6 MATERIAL UP TO 8" FROM THE TOP OF THE NEW DECK BEAMS WITH A BITUMINOUS COLD MIX TO BE USED FOR THE REMAINDER OF THE OF THE AREA TO BE BACKFILLED. THESE MATERIALS SHALL BE PLACED IN 4" LIFTS AND COMPACTED TO THE SATISFACTION OF THE ENGINEER. THIS WORK WILL NOT BE PAID FOR SEPARATELY BUT IS TO BE CONSIDERED INCIDENTAL TO THE CONTRACT. ANY ADDITIONAL WORK TO ENSURE A SMOOTH TRANSITION ON AND OFF THE BRIDGE FROM THE ROADWAY IN BOTH DIRECTIONS IS TO BE DONE BY OTHERS. THE CONTRACTOR'S TRAFFIC CONTROL SHALL REMAIN IN PLACE UNTIL ALL APPROACH WORK HAS BEEN COMPLETED AND THE CONTRACTOR HAS BEEN NOTIFIED BY THE ENGINEER THAT THE ROAD CAN BE REOPENED TO TRAFFIC.
  - THE APPLICATION OF SEED, FERTILIZER NUTRIENTS, AND MULCH IS TO BE DONE BY OTHERS IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
  - ENVIRONMENTAL REVIEWS: PRIOR TO THE USE OF ANY PROPOSED BORROW AREAS, USE AREAS (TEMPORARY ACCESS ROADS, DETOURS, RUN-AROUNDS, ETC.) AND/OR WASTE AREAS, THE CONTRACTOR SHALL FILE THE REQUIRED ENVIRONMENTAL RESOURCE REQUEST SURVEYS ACCORDING TO SECTION 107.22 OF THE STANDARD SPECIFICATIONS. THESE SURVEYS ARE REQUIRED IN ORDER FOR THE DEPARTMENT TO CONDUCT CULTURAL AND BIOLOGICAL RESOURCE SURVEYS FOR THE PROPOSED SITE.
- THE REQUIRED ENVIRONMENTAL RESOURCE DOCUMENTATION SHALL INCLUDE THE FOLLOWING:
- BDE FORM 2289 (CULTURAL AND NATURAL RESOURCES REVIEW OF BORROW AREAS)
  - BDE FORM 2290 (WASTE/USE AREA REVIEW)
  - A LOCATION MAP SHOWING THE SIZE LIMITS AND LOCATION OF THE USE AREA
  - COLOR PHOTOGRAPHS DEPICTING THE USE AREA
  - BORROW AREA ENTRY AGREEMENT FORM - D4 P10101

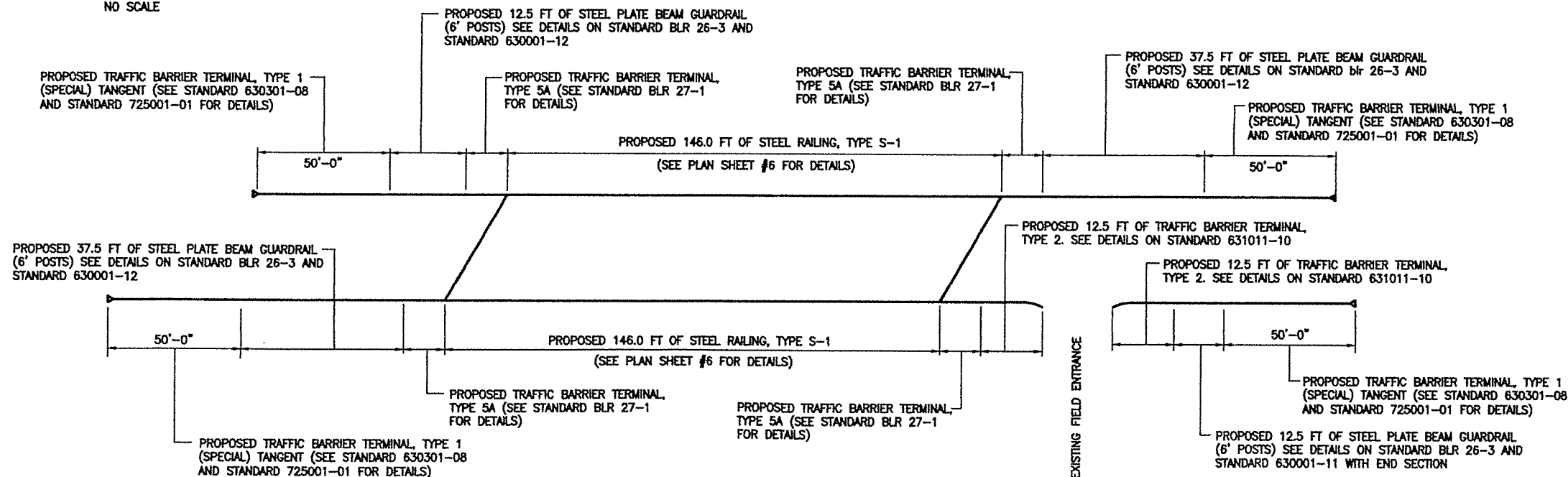
PRIOR TO ANY WASTE MATERIALS BEING REMOVED FROM THE CONSTRUCTION SITE THE REQUIRED ENVIRONMENTAL RESOURCE SURVEYS SHALL BE OBTAINED AND FILED BY THE CONTRACTOR. EXCESS WASTE PRODUCTS REMOVED FROM THE CONSTRUCTION SITE SHALL BE DISPOSED OF AS REQUIRED IN SECTION 202.03 OF THE STANDARD SPECIFICATIONS.

ANY PROTRUDING METAL BARS SHALL BE REMOVED PRIOR TO THE DISPOSAL OF BROKEN CONCRETE AT APPROVED DISPOSAL SITES.

PLEASE NOTE THAT A MINIMUM OF FOUR WEEKS SHALL BE ALLOWED FOR THE DISTRICT TO OBTAIN THE REQUIRED WASTE SITE ENVIRONMENTAL CLEARANCES AND SIX WEEKS FOR THE REQUIRED BORROW SITE ENVIRONMENTAL CLEARANCES.





NO SCALE



PLAN VIEW OF GUARDRAIL AND TRAFFIC BARRIER TERMINAL LOCATIONS

### LEGEND

-  PROPOSED PERIMETER EROSION BARRIER
-  PROPOSED STONE DUMPED RIPRAP

NOTE: PLACEMENT OF THE STONE DUMPED RIPRAP CLASS B4 MATERIAL SHALL BE DONE IN ACCORDANCE WITH ARTICLE 281.04 OF THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION. LAYOUT OF THE SLOPE PROTECTION MATERIAL MAY BE VARIED IN THE FIELD TO SUIT THE EXISTING GROUND CONDITIONS AS DIRECTED BY THE ENGINEER. NO FILTER FABRIC OR BEDDING MATERIAL WILL BE REQUIRED. (SEE LAYOUT DETAILS FOR THE SLOPE PROTECTION ON SHEET #4 OF 7).

NOTE: PLACEMENT OF THE PERIMETER EROSION BARRIER MATERIAL SHALL BE DONE IN ACCORDANCE WITH THE APPLICABLE SECTIONS OF ARTICLE 280 OF THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AND STANDARD 2800001-07 INCLUDED IN THE PLANS. LOCATION OF THE PERIMETER EROSION BARRIER MATERIAL AS SHOWN ON THE PLAN IS ONLY APPROXIMATE AND MAY VARY AS DIRECTED BY THE ENGINEER.

### GREGORY A. MASON

PART OF THE SOUTHEAST QUARTER OF THE NORTHWEST QUARTER OF 34, TOWNSHIP 4 NORTH, RANEG 4 WEST OF THE FOURTH PRINCIPAL MERIDIAN, McDONOUGH COUNTY, ILLINOIS

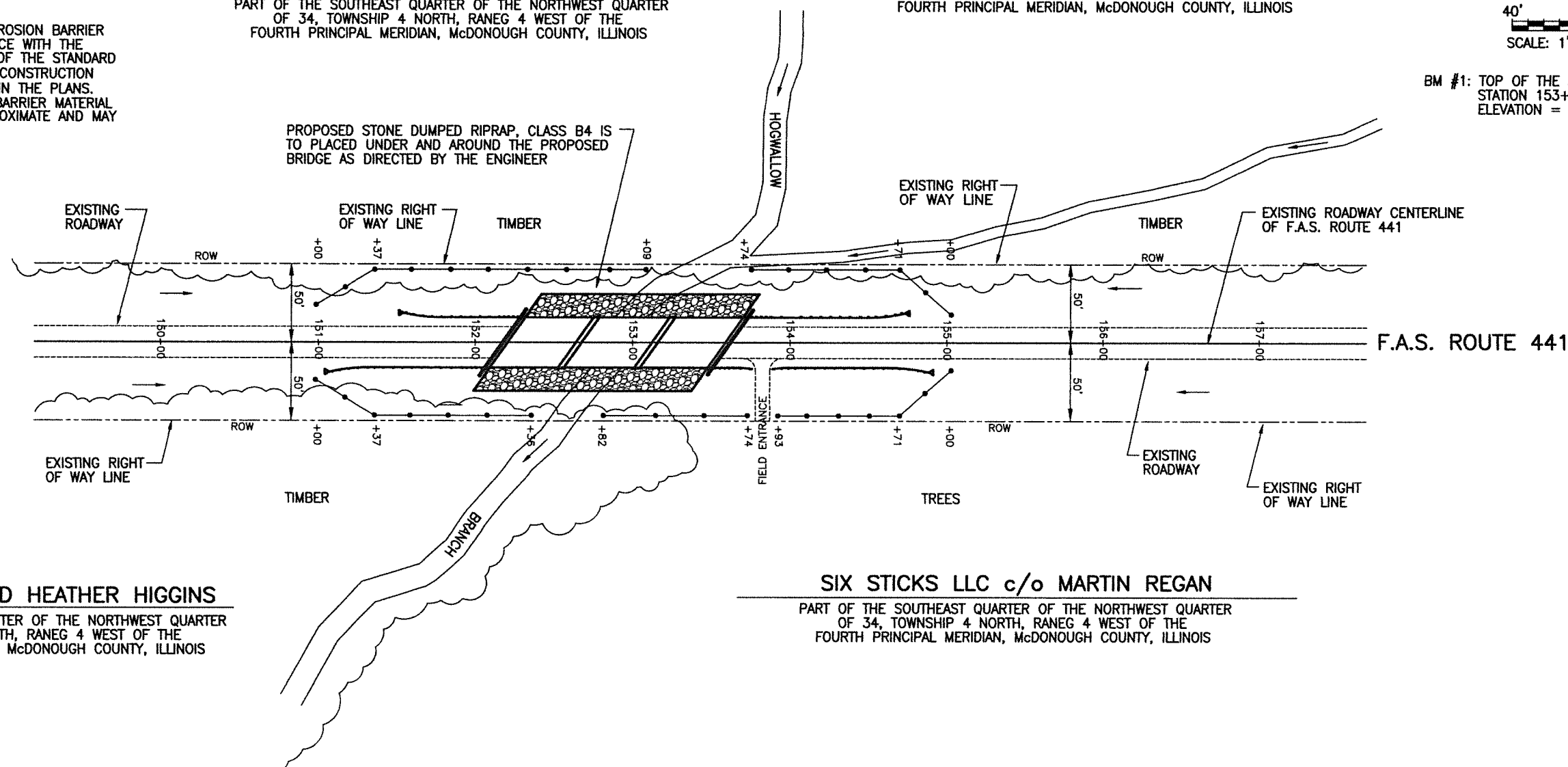
### GREGORY A. MASON

PART OF THE SOUTHEAST QUARTER OF THE NORTHWEST QUARTER OF 34, TOWNSHIP 4 NORTH, RANEG 4 WEST OF THE FOURTH PRINCIPAL MERIDIAN, McDONOUGH COUNTY, ILLINOIS



40' 0 40'  
SCALE: 1" = 40'-0"

BM #1: TOP OF THE SOUTHEAST WINGWALL  
STATION 153+49, 18' RT.  
ELEVATION = 512.66 FT.



### CHRISTOPHER AND HEATHER HIGGINS

PART OF THE SOUTHEAST QUARTER OF THE NORTHWEST QUARTER OF 34, TOWNSHIP 4 NORTH, RANEG 4 WEST OF THE FOURTH PRINCIPAL MERIDIAN, McDONOUGH COUNTY, ILLINOIS

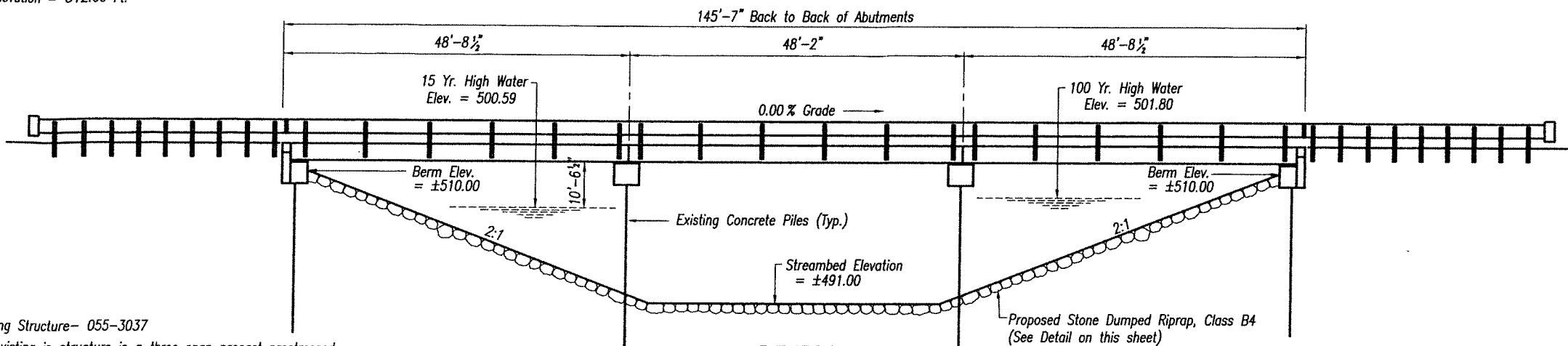
### SIX STICKS LLC c/o MARTIN REGAN

PART OF THE SOUTHEAST QUARTER OF THE NORTHWEST QUARTER OF 34, TOWNSHIP 4 NORTH, RANEG 4 WEST OF THE FOURTH PRINCIPAL MERIDIAN, McDONOUGH COUNTY, ILLINOIS

## EROSION CONTROL PLAN

BM: Painted white dot on the top of the Southeast Wingwall  
Elevation = 512.66 Ft.

McDonough County	Sheet No.	4
FAS Route 441	Total Sheets	7
Contract No. B9747		
Project No. U37M (517)		
Section 17-00108-00-BR		

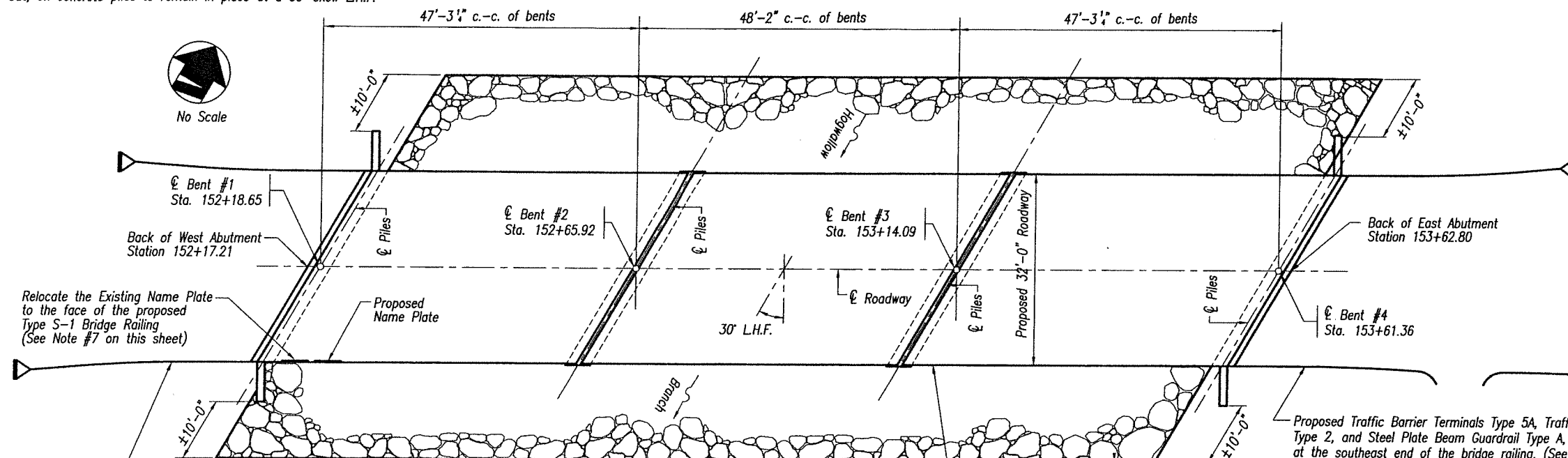


Existing Structure- 055-3037

The existing structure is a three span precast prestressed concrete deck beam bridge, 145'-7" back to back of spillthrough concrete abutments, 28'-6" face to face of curbs, 32'-0" out out, on concrete piles to remain in place at a 30° skew L.H.F.

**GENERAL NOTES**

- Class SI Concrete shall be used throughout except in the deck beams.
- A Corrosion Inhibitor shall be used in the concrete for the Precast Prestressed Concrete Deck Beams according to Article 1020.05(b)(10) of the Standard Specifications.
- Reinforcement Bars shall conform to the requirements of ASTM A706, Grade 60. All Reinforcement Bars shall be Epoxy Coated.
- Backfill behind the abutments shall be placed after the deck beams are in place and the dowels have been grouted.
- Reinforcement Bars designated (E) shall be Epoxy Coated.
- The Aluminum Tubing in the Concrete Parapet Walls and the approach guardrail shall be carefully removed by the Contractor and shall be considered to be salvagable and remain the property of McDonough County. The Contractor shall be responsible for loading the salvaged material onto a trailer provided by the County.
- The existing Name Plate is to be carefully removed and cleaned by the Contractor and reinstalled on the Type S-1 Bridge Rail as shown on the plans. The cost of this work is to be included in the unit price bid for Name Plates.



**TOTAL BILL OF MATERIAL**

Item	Unit	Super	Sub.		Total
			Piers	Abuts.	
Removal of Existing Superstructures	Each	1			1
PP Concrete Deck Beams 17" dp.	Sq Ft	4616			4616
Steel Bridge Rail, Type S-1	Foot	292			292
Name Plates	Each				1
Stone Dumped Riprap, Class B4	Tons				640
Concrete Structures	Cu Yds	2.8			2.8
Reinforcement Bars, Epoxy Coated	Pound	470			470
Concrete Removal	Cu Yds	1.4			1.4
Guardrail Removal	Foot	375			375
Steel Plate Beam Guardrail Ty A (6' Posts)	Foot	100			100
Traffic Barrier Terminal, Ty 1 (Spl) Tangent	Each	4			4
Traffic Barrier Terminal, Type 5A	Each	4			4
Traffic Barrier Terminal, Type 2	Each	2			2
Traffic Control and Protection BLR21	L Sum				1

**PLAN**

The Contractor is responsible for the removal of the existing concrete parapet walls on both sides of the bridge. This work is to be included in the contract unit price for Removal of Existing Superstructure

Note: Layout and Placement of the Proposed Stone Dumped Riprap, Class B4 may be varied by the Engineer to best meet the existing field conditions.

**BRIDGE DESIGN SPECIFICATIONS**

(Existing Substructure)  
2002 AASHTO & Interims  
(Proposed Superstructure)  
2018 AASHTO (LRFD) 8th Edition

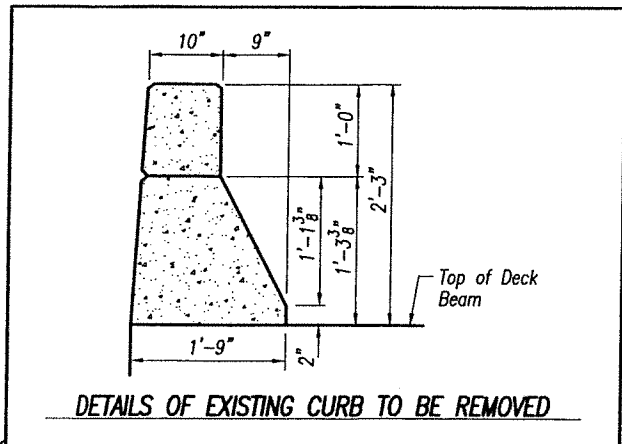
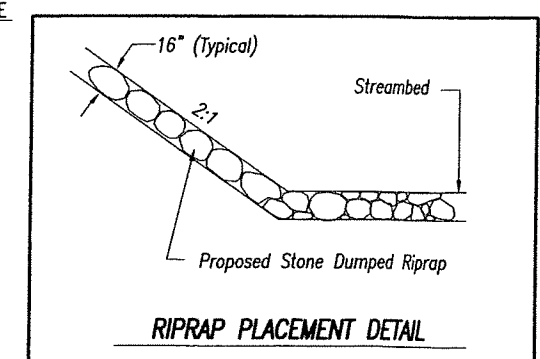
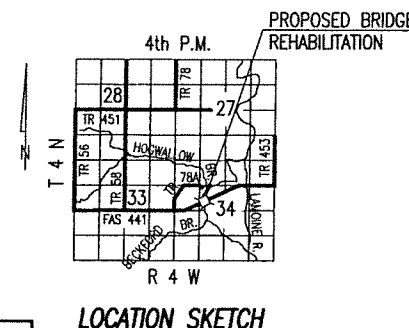
**WATERWAY INFORMATION**

Drainage Area = 2.86 Sq. Mi.		Low Grade Elev. = 512.77		At Sta. 162+00.00		
Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft. Exist. Prop.	Natural H.W.E.	Head - Ft. Exist. Prop.	Headwater El. Exist. Prop.
Design	15	1142	360 360	500.59	0.00 0.00	500.59 500.59
Base	100	1860	428 428	501.80	0.02 0.02	501.82 501.82
Overtopping						
Max. Calc.	500					

STATION 152+90.00  
FAS 441 OVER HOGWALLOW BRANCH  
SECTION 17-00108-00-BR  
RE-BUILT 2018  
McDONOUGH COUNTY  
LOADING HL-93  
STRUCTURE NO. 055-3037

**LETTERING FOR NAME PLATE**  
Locate Name Plate on the Bridge Rail face at the Southwest Bridge corner (See Standard 515001)

**DESIGN STRESSES**  
Existing -  $f'c = 3,500$  psi  
 $f_y = 60,000$  psi  
Proposed - Field Units  
 $f'c = 3,500$  psi  
 $f_y = 60,000$  psi  
Precast Prestressed Units  
 $f'c = 6,000$  psi  
 $f'ci = 5,000$  psi  
 $f's = 270,000$  psi ( $\frac{1}{2}$ " strand)  
 $f'si = 201,960$  psi ( $\frac{1}{2}$ " strand)



I certify that to the best of my 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 the structure and complies with the requirements of the current AASHTO Standard Specifications for Highway Bridges. This design complies with all the requirements of the current AASHTO Guide Specifications for Seismic Design of Highway Bridges.

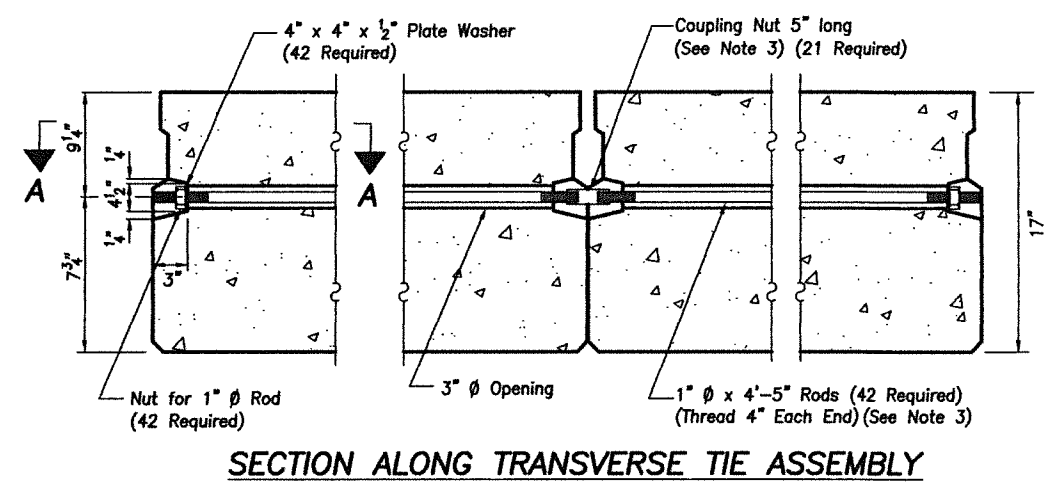
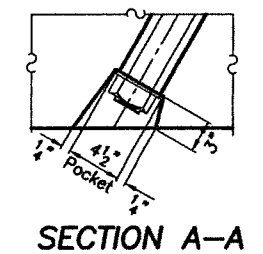
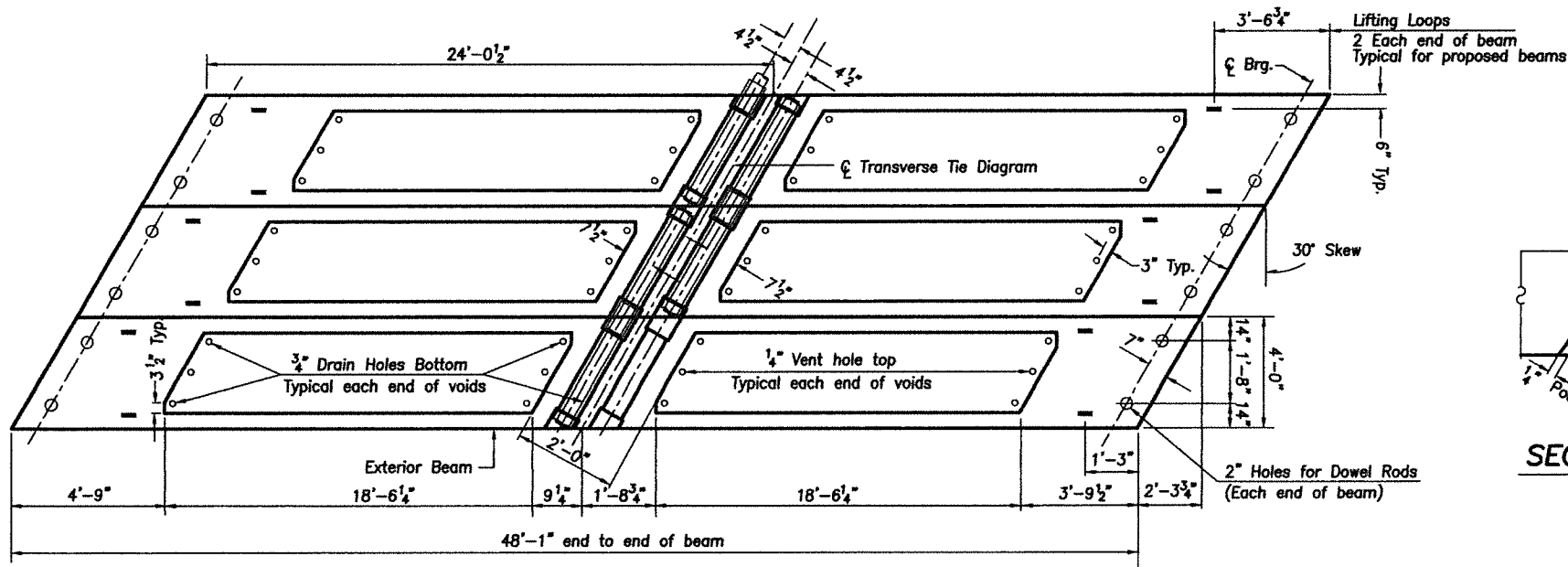
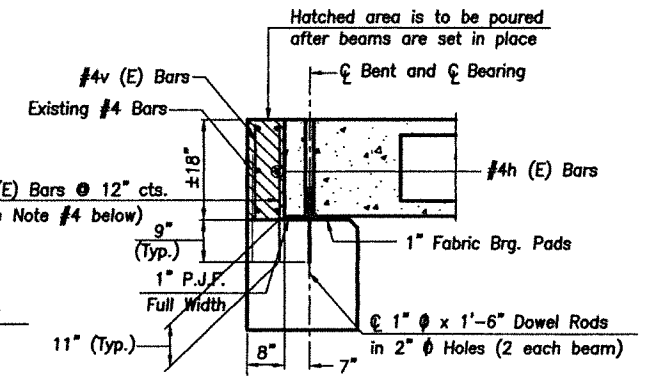
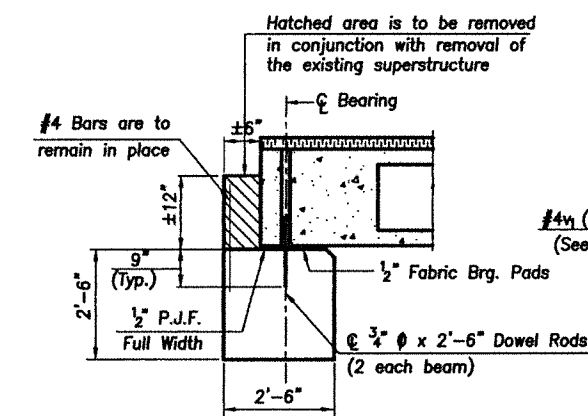
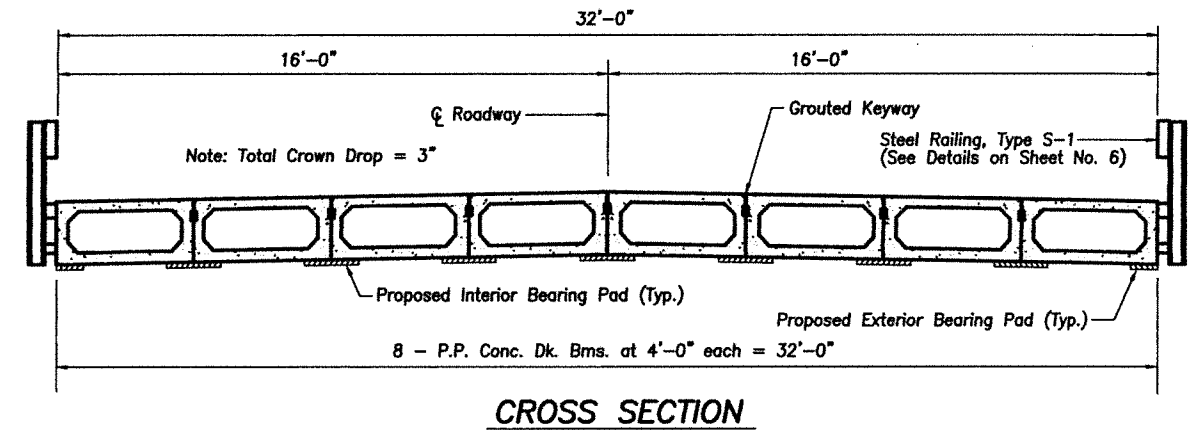
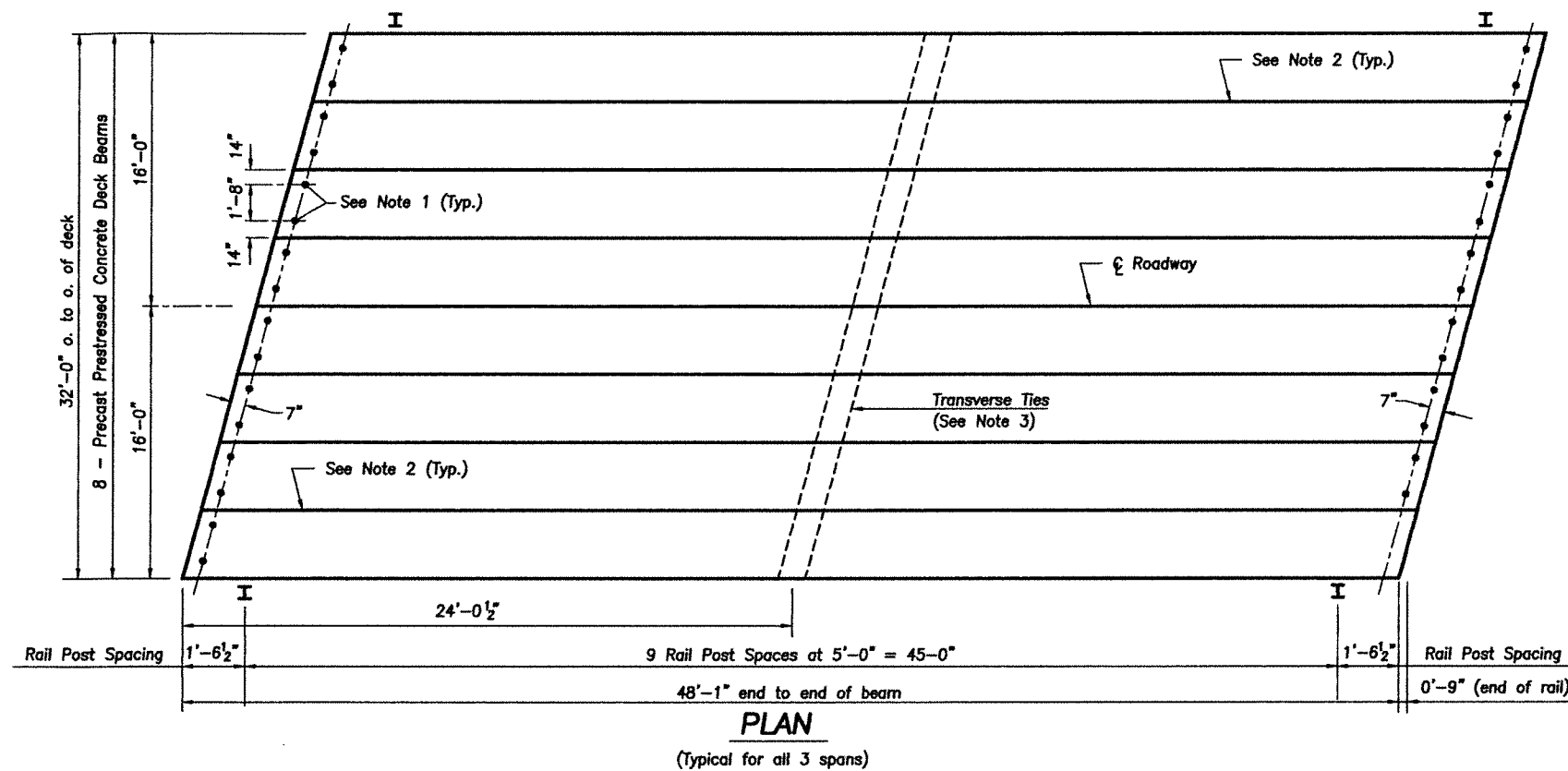
Benjamin A. Nebel  
Illinois Structural Engineer No. 081-006927  
Expires 11/30/2018

6/18/18  
Date

Benjamin A. Nebel  
Professional Engineer  
ILLINOIS

**GENERAL PLAN & ELEVATION**  
F.A.S. ROUTE 441 OVER HOGWALLOW BRANCH  
SECTION 17-00108-00-BR  
McDONOUGH COUNTY  
STATION 152+90.00





**NOTES**

1. After beams have been erected, holes shall be drilled into substructure and anchor dowels placed. Dowel holes shall be filled with non-shrink grout to top of beam and allowed to cure min. 24 hrs. prior to grouting the shear keys.

2. Longitudinal keys shall be grouted.

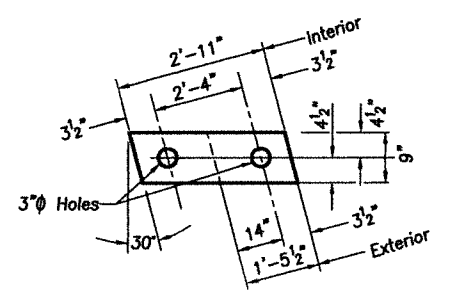
3. The 1" ⌀ rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets that receive transverse tie bar outside shall be filled with grout after transverse tie assembly is in place.

4. Epoxy grout the v<sub>1</sub>(E) bars in drilled holes according to Article 584 of the Standard Specifications. The grout and method of application shall be approved by the Engineer. Bars are to be spaced to miss existing reinforcement.

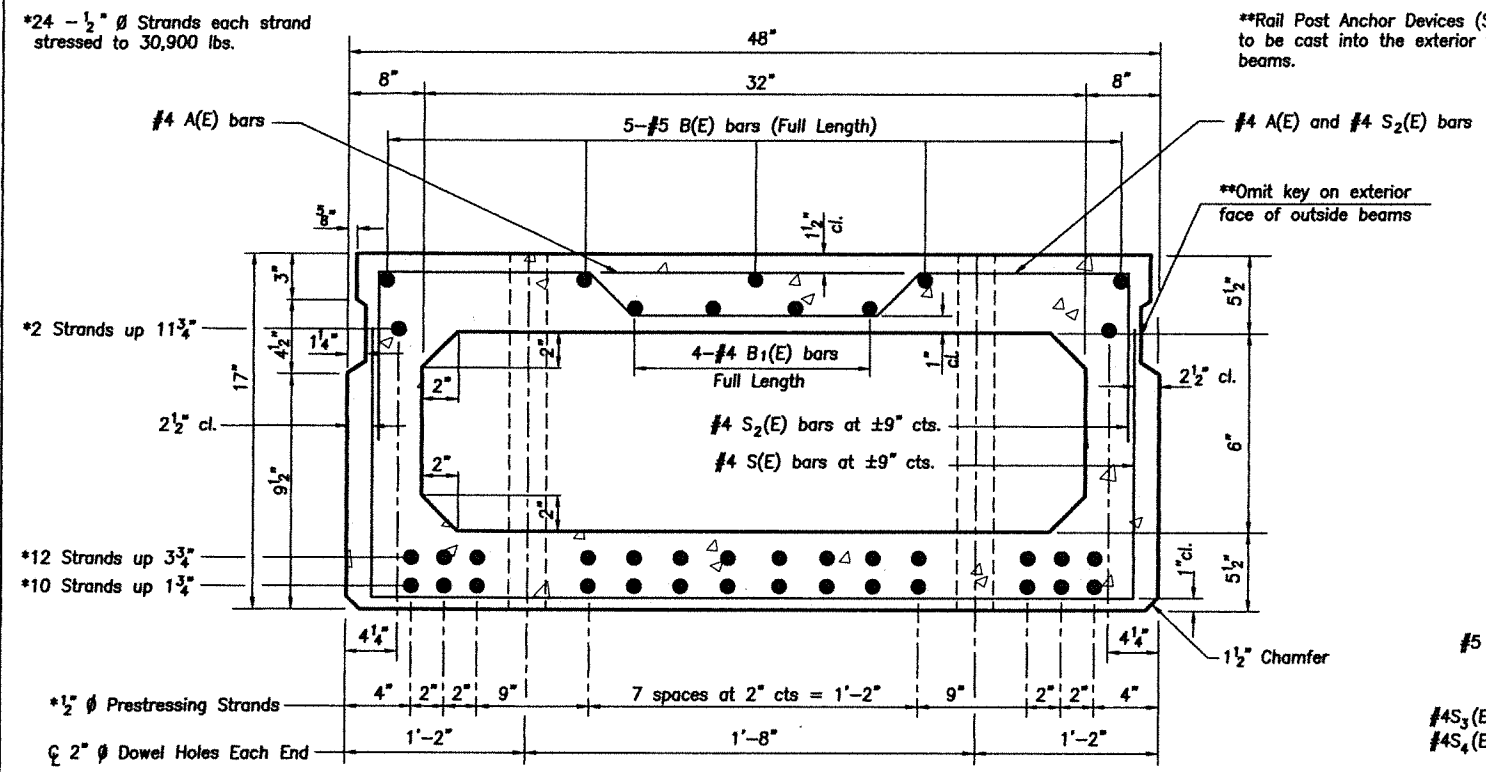
5. The existing #4 vertical bars extending from the cap into backwall are to remain in place after the existing backwalls have been removed, cleaned of all concrete, and spliced with the proposed #4v Bars.

**REINFORCEMENT BAR LIST FOR 2 BACKWALLS**

BAR	SIZE	NO.	LENGTH	SHAPE
h	#4(E)	12	37'-0"	—
v	#4(E)	76	1'-3"	—
v <sub>1</sub>	#4(E)	76	2'-2"	—
Reinforcement Bars, Epoxy Coated				470.0 Lbs.
Concrete Structures				2.8 Cu. Yds.

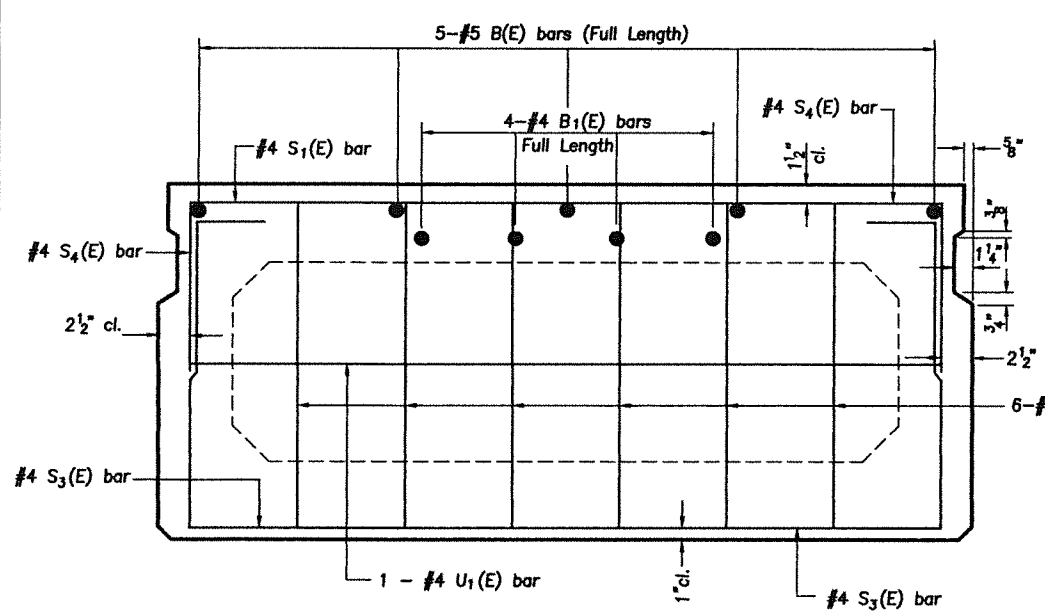


**1" FABRIC BEARING PAD DETAILS**  
42 Interior Bearing Pads and 12 Exterior Bearing Pads Required  
(Provide four 1/8" Fabric Shim Pads for each bearing pad location)

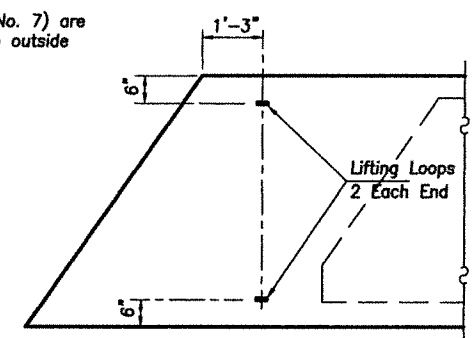


**CROSS SECTION**

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

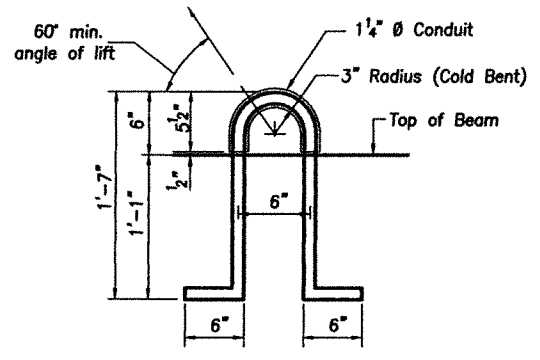


**VIEW A-A**



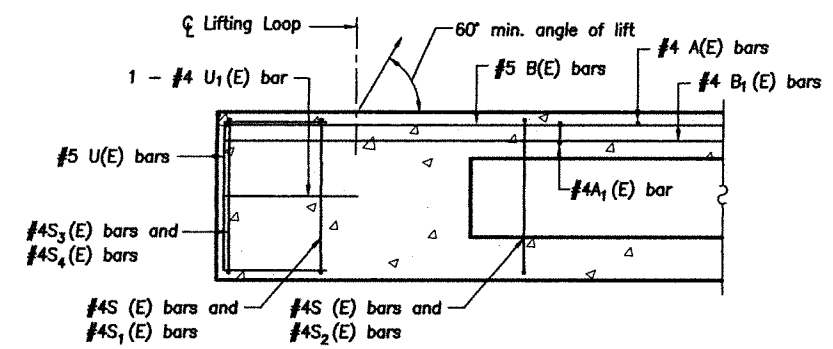
**END BLOCK DETAIL**

Each beam shall have four Lifting Loops, two at each end of beam cast in locations shown above. Loops shall be burned off after beams have been erected.

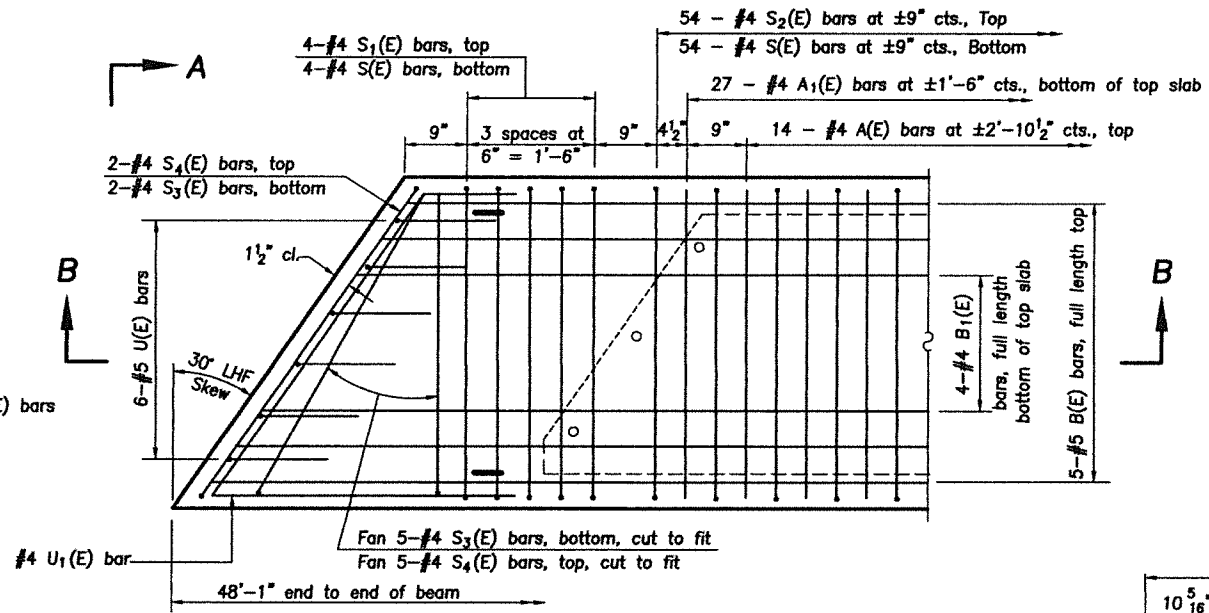


**LIFTING LOOP DETAIL**

Lifting loops shall be 3, 1/2 inch diameter-270 ksi strands, as shown.

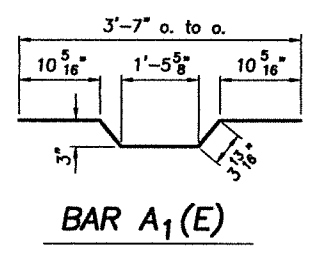


**VIEW B-B**

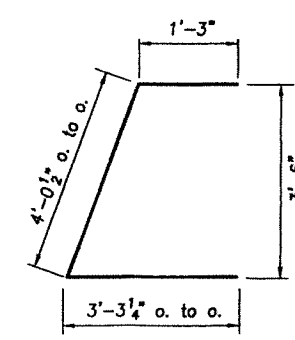


**END REINFORCEMENT**

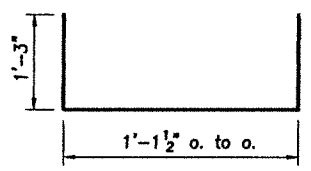
Note: Spacing of the S(E) and S2(E) bars may be adjusted up to 4 inches in the immediate area of the transverse tie diaphragms to miss the block outs for the transverse ties.



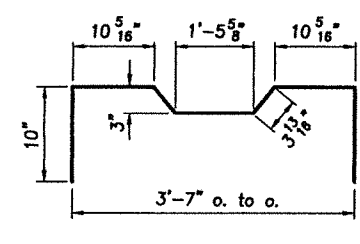
**BAR A1(E)**



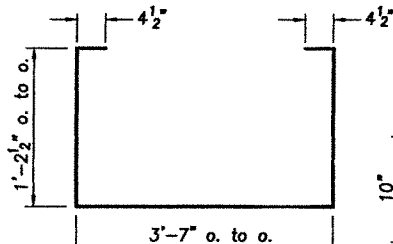
**BAR U1(E)**



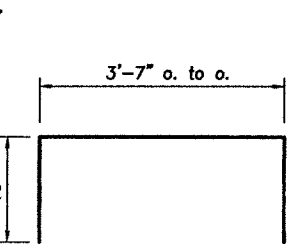
**BAR U(E)**



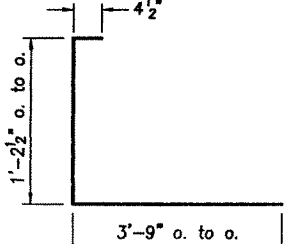
**BAR S2(E)**



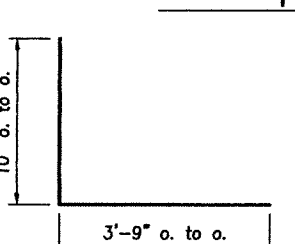
**BAR S(E)**



**BAR S1(E)**



**BAR S3(E)**



**BAR S4(E)**

**DESIGN STRESSES**

$f_c = 6,000$  psi  
 $f_{ci} = 5,000$  psi

**MINIMUM BAR LAP**

#4 bar = 1'-11"  
#5 bar = 2'-6"

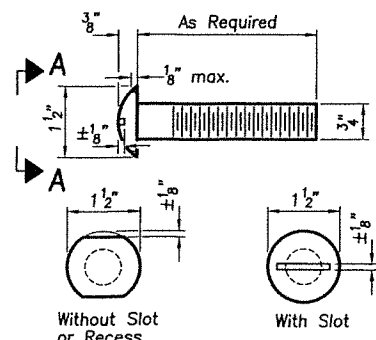
**NOTES**

1. Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270.
2. The nominal diameter shall be 1/2 inch and the nominal cross-sectional area shall be 0.153 square inches.
3. Reinforcement bars shall conform to ASTM A 706, Grade 60.
4. Rail Post anchor devices shall be cast into outside beam as elsewhere specified.
5. Keyway surfaces shall be cleaned to remove form oil or other bond breaking material prior to shipment of the beams. Cleaning shall be done by sandblasting the keyway areas between the top of the beam and the bottom edge of the key.
6. The 1 inch rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets on exterior faces of bridge shall be filled with grout after the transverse tie assembly is in place.
7. Four 1/8 inch fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location.
8. A minimum 2 1/2 inch diameter lifting pin shall be used to engage the lifting loops during handling.
9. A corrosion inhibitor, per Article 1020.05(b)(10) and Article 1021.07 of the Standard Specifications, shall be used in the concrete for the precast prestressed concrete deck beams.

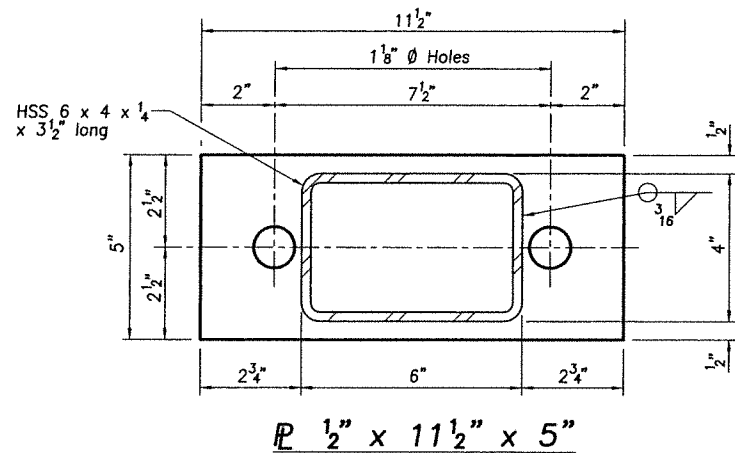
**BAR LIST FOR ONE BEAM ONLY**

Bar	No.	Size	Length	Shape
A(E)	14	#4	3'-7"	U
A1(E)	27	#4	3'-10"	U
B(E)	5	#5	47'-10"	U
B1(E)	4	#4	47'-10"	U
S(E)	62	#4	6'-9"	U
S1(E)	8	#4	5'-3"	U
S2(E)	54	#4	5'-6"	U
S3(E)	14	#4	5'-4"	U
S4(E)	14	#4	4'-7"	U
U(E)	12	#5	3'-8"	U
U1(E)	2	#4	8'-7"	U

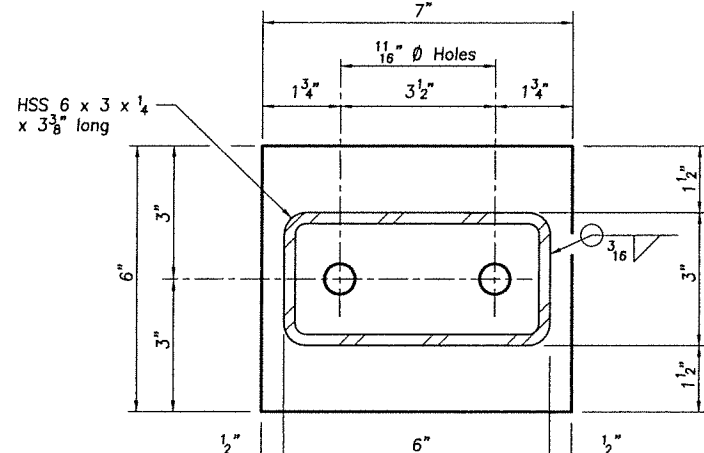
Note: Lengths shown for B and B1 bars as listed is the total length and does not include any splices. Additional length will need to be added for any laps in the bars at splices.



VIEW A-A  
ROUND HEAD BOLT



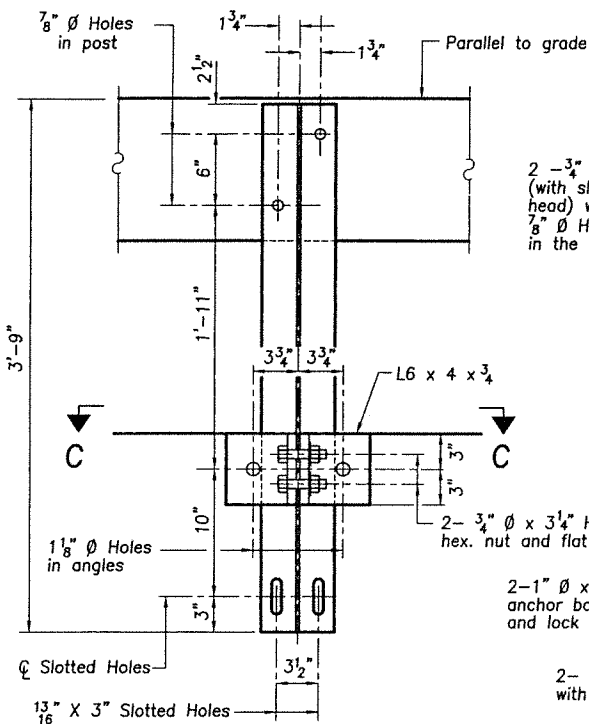
$\bar{P}$  1/2" x 11 1/2" x 5"



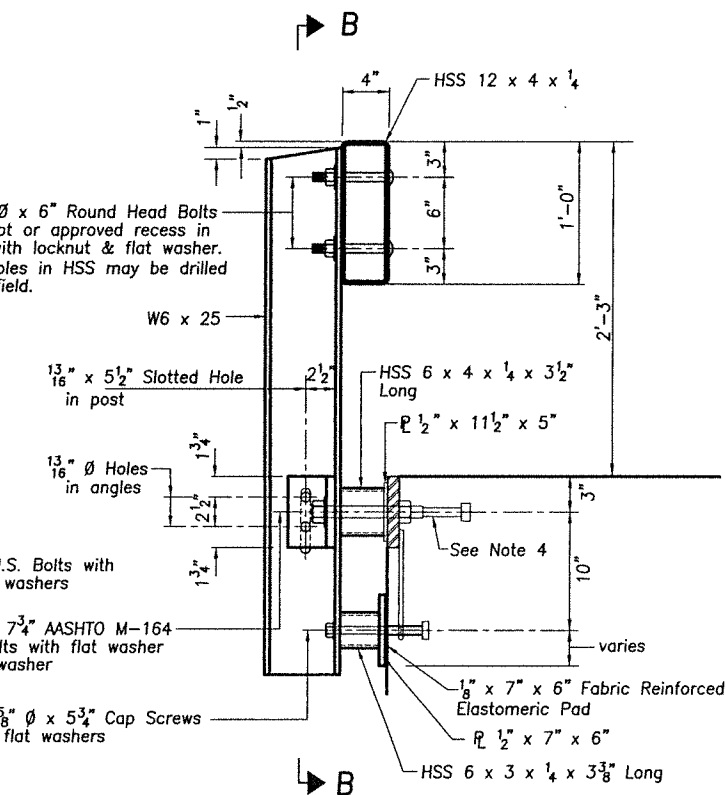
$\bar{P}$  1/2" x 7" x 6"

NOTES

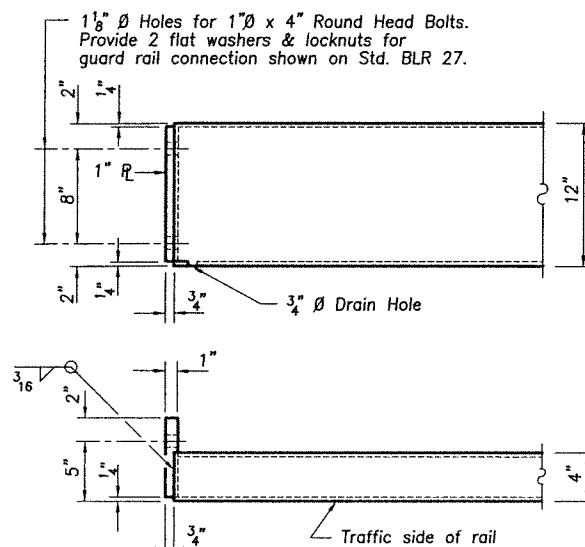
- All field drilled holes shall be coated with an approved zinc rich paint before erection.
- For multi-span bridges, sufficient 1/4" X 6" X 1'-2" galvanized steel shims shall be provided to align rail between adjacent spans. Cost included with STEEL RAILING, TYPE S-1.
- All steel railing elements shall be galvanized according to Article 509.05 of the Standard Specifications.
- The studs of the anchor devices shall be placed below the top reinforcement bars and the outermost longitudinal reinforcement bar shall be placed directly above the studs of the rail post anchor device. The anchorage studs may be bent down 1/2" to accommodate the reinforcement bar placement.



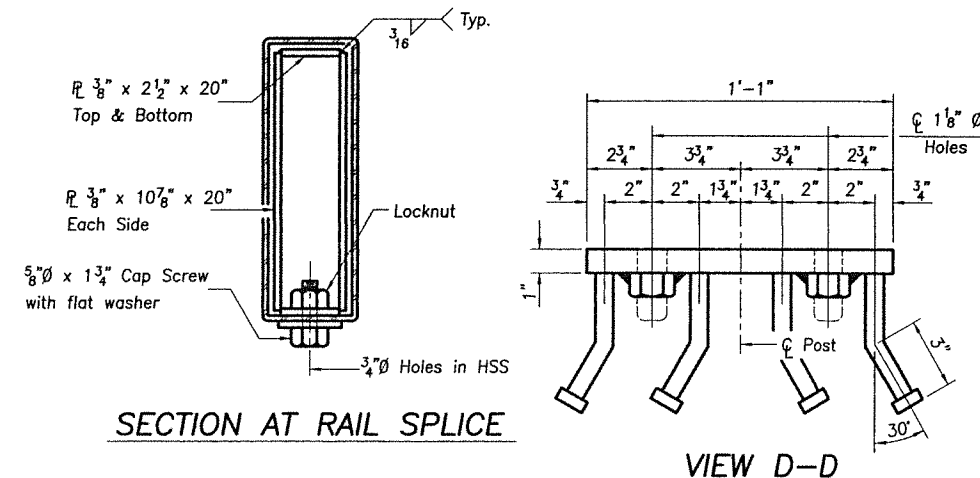
SECTION B-B



SECTION AT RAIL POST



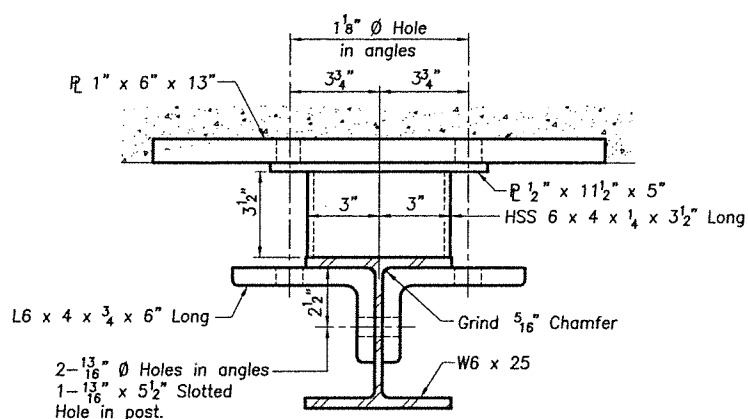
END OF RAIL DETAILS



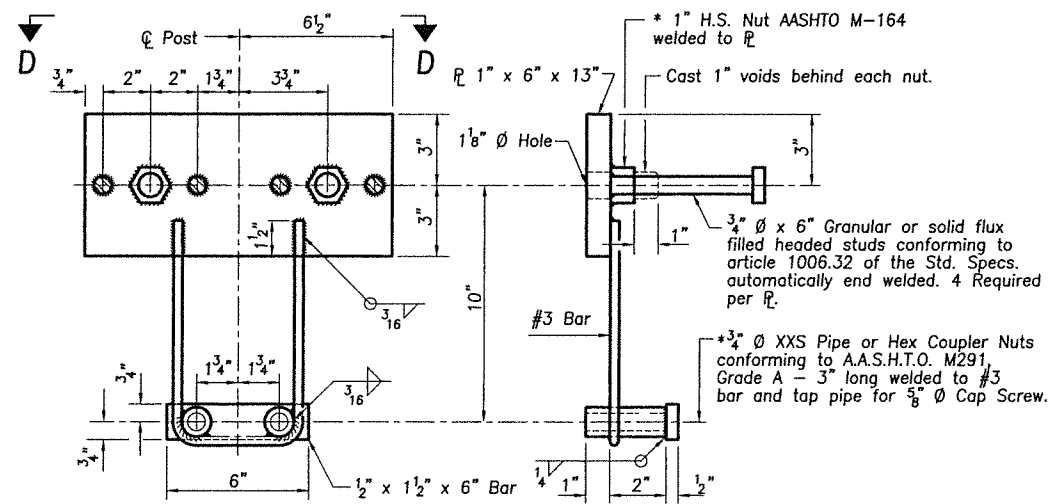
SECTION AT RAIL SPLICE

VIEW D-D

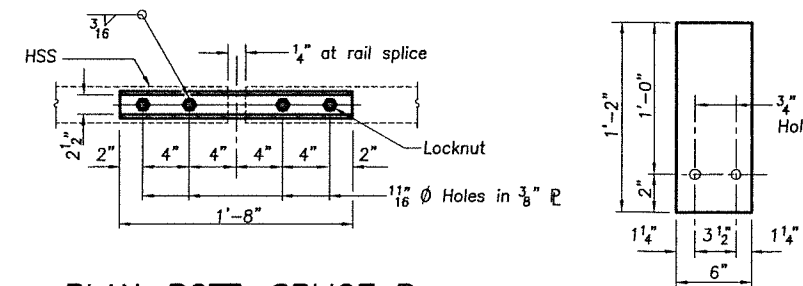
\*Threaded areas shall be plugged or blocked off during casting of beam.



SECTION C-C



ANCHOR DEVICE



PLAN-BOTT. SPLICE PLATE  
TYPICAL

1/4" SHIM PLATE