

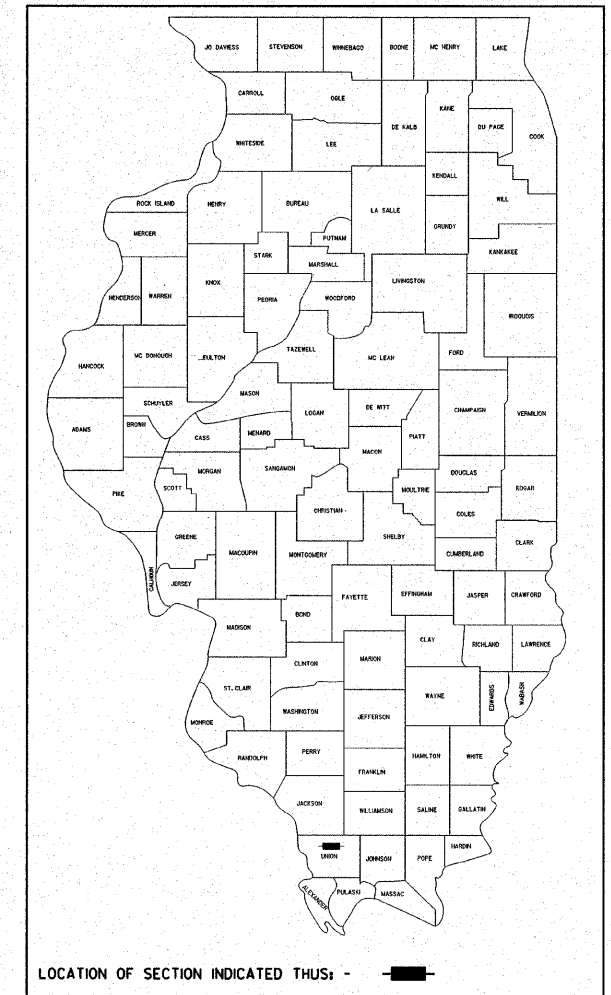
STATE OF ILLINOIS

DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

PLANS FOR PROPOSED HIGHWAY BRIDGE PROGRAM

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 79A	04-01177-00-BR	UNION	15	1
FED. ROAD DIST. NO.		ILLINOIS	CONTRACT NO. 99275	



SCALES	}	PLAN	0' = 50'
		PROFILE HORIZ.	0' = 50'
		PROFILE VERT.	0' = 5'
		CROSS SECTIONS	0' = 5'

PROJECT BROS-181(040)

SECTION 04-01177-00-BR

UNION COUNTY

T.R. 79A / MOUNTAIN GLEN ROAD

C-99-544-04

INDEX OF SHEETS

1. COVER SHEET
2. SUMMARY OF QUANTITIES AND GENERAL NOTES
3. TYPICAL SECTIONS
4. PLAN AND PROFILE
- 5.-8. STATION CROSS SECTIONS
- 9.-14. BRIDGE PLANS
15. BORINGS

HIGHWAY STANDARDS:

- 515001-02 NAME PLATE FOR BRIDGES
- 630301-04 SHOULDER WIDENING FOR TYPE 1 (SPECIAL) GUARDRAIL TERMINALS
- 631026-03 REFLECTOR AND TERMINAL MARKER PLACEMENT
- 702001-06 TRAFFIC CONTROL DEVICES
- BLR 21-6 TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS

UTILITIES

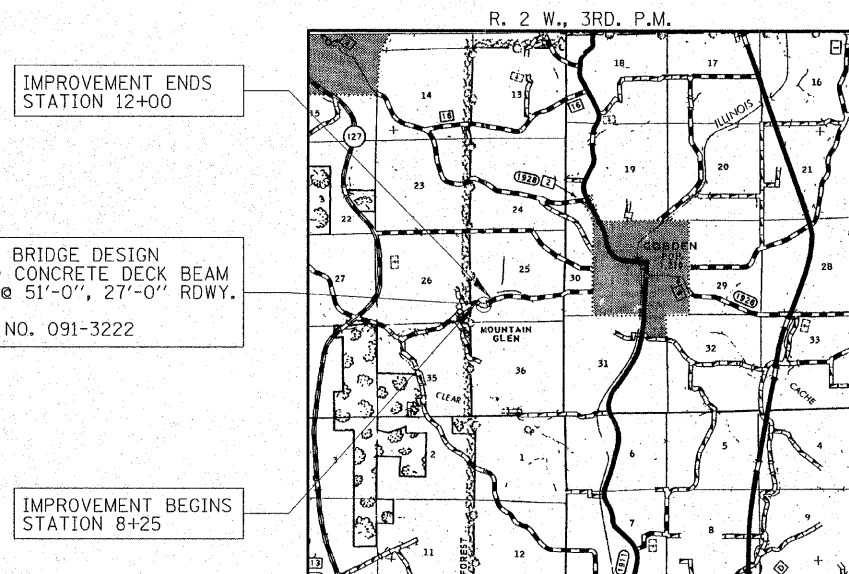
SOUTHERN ILLINOIS ELECTRIC CO-OP
7420 U.S. HIGHWAY 51 SOUTH
DONGOLA, ILLINOIS 62926

VERIZON
608 WEST UNION
MARION, ILLINOIS 62959

DESIGN FUNCTIONAL CLASSIFICATION:
LOCAL COLLECTOR <400 ADT
DESIGN TRAFFIC: 325 ADT (2005)
DESIGN SPEED: 30 M.P.H.

CONTRACT NO. 99275

STA. 10+05 - SPECIAL BRIDGE DESIGN
PRECAST PRESTRESSED CONCRETE DECK BEAM
BRIDGE. SINGLE SPAN @ 51'-0", 27'-0" RDWY.
SKEW = 30°
PROPOSED STRUCTURE NO. 091-3222



LAYOUT

APPROXIMATE SCALE: 0 = 1 MILE
NET LENGTH OF SECTION = 375 FEET = 0.071 MILES

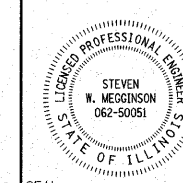


AGENCY RESPONSIBLE FOR LETTING	
APPROVED	<i>April 10 2007</i> COUNTY ENGINEER
PASSED	<i>April 11 2007</i> DISTRICT NINE ENGINEER OF LOCAL ROADS & STREETS
Releasing For Bid Based on Limited Review	<i>April 11 2007</i> DEPUTY DIRECTOR OF HIGHWAYS REGION FIVE ENGINEER
STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	

DATE: *April 3, 2007*

BY: *Steven W. MeGINSON*

LICENSE EXPIRES: NOVEMBER 30, 2007



HAMPTON, LENZINI & RENWICK, INC.
CIVIL & STRUCTURAL ENGINEERS

HLR

3085 STEVENSON DRIVE, SUITE 201
SPRINGFIELD, ILLINOIS 62703
(217) 546-3400

ELGIN • SPRINGFIELD

PROJECT NUMBER: 12-92-0007-1 DATE: 04/03/07

SUMMARY OF QUANTITIES

CODE NO	ITEM	CONSTRUCTION CODE X080-2A	
		UNIT	QUANTITY
20100500	TREE REMOVAL, ACRES	ACRE	0.1
20200100	EARTH EXCAVATION	CU YD	140
20400800	FURNISHED EXCAVATION	CU YD	635
> 20900310	POROUS GRANULAR BACKFILL	TON	790
> 25001000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.5
> 28100807	STONE DUMPED RIPRAP, CLASS A4	TON	350
40200800	AGGREGATE SURFACE COURSE, TYPE B	TON	365
> 50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
50200300	COFFERDAM EXCAVATION	CU YD	560
50200400	ROCK EXCAVATION FOR STRUCTURES	CU YD	24.4
> 50200500	COFFERDAMS	EACH	2
50300225	CONCRETE STRUCTURES	CU YD	211.2
> 50400405	PRECAST PRESTRESSED CONCRETE DECK BEAMS (21" DEPTH)	SQ FT	1,377
> 50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	23,160
50900205	STEEL RAILING, TYPE S1	FOOT	111
51500100	NAME PLATES	EACH	1
54200223	PIPE CULVERTS, CLASS D, TYPE 1 18"	FOOT	40
* 63000000	STEEL PLATE BEAM GUARD RAIL, TYPE A	FOOT	100
> * 63100075	TRAFFIC BARRIER TERMINAL, TYPE 5A	EACH	4
> * 63100167	TRAFFIC BARRIER TERMINAL TYPE 1, SPECIAL (TANGENT)	EACH	4
63200310	GUARDRAIL REMOVAL	FOOT	202
> 67100100	MOBILIZATION	L SUM	1
78201000	TERMINAL MARKER - DIRECT APPLIED	EACH	4

> SEE SPECIAL PROVISIONS

* SPECIALTY ITEMS

GENERAL NOTES

- ALL CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH THE STATE OF ILLINOIS "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION ADOPTED JANUARY 1, 2007," THESE PLANS AND THE SPECIAL PROVISIONS INCLUDED IN THE CONTRACT DOCUMENTS.
- ALL CLEARING AND GRUBBING AND REMOVAL OF EXISTING DRAINAGE STRUCTURES SHALL BE INCLUDED IN THE COST OF EARTH EXCAVATION. THE REMOVAL OF THE EXISTING BITUMINOUS SURFACE WILL BE PAID FOR AS EARTH EXCAVATION. ALL BITUMINOUS MATERIAL SHALL BE PROPERLY DISPOSED OF BY THE CONTRACTOR IN A METHOD APPROVED BY THE ENGINEER. PROPER DISPOSAL OF BITUMINOUS MATERIAL SHALL BE INCLUDED IN THE COST OF EARTH EXCAVATION AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
- THE LOCATION OF EXISTING GAS MAINS, ELECTRIC POWER LINES, TELEPHONE LINES AND OTHER UTILITIES AS SHOWN ON THE PLANS ARE BASED ON CAREFUL FIELD INVESTIGATION AND THE BEST INFORMATION AVAILABLE, BUT THE LOCATIONS ARE NOT GUARANTEED. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ASCERTAIN THEIR EXACT LOCATION FROM THE INDIVIDUAL UTILITY COMPANIES AND BY FIELD INSPECTION.
- WHERE SECTION OR SUBSECTION MONUMENTS ARE ENCOUNTERED, THE ENGINEER SHALL BE NOTIFIED BEFORE SUCH MONUMENTS ARE REMOVED. THE CONTRACTOR SHALL PROTECT AND CAREFULLY PRESERVE ALL PROPERTY MARKS AND MONUMENTS UNTIL THE OWNER, AN AUTHORIZED SURVEYOR OR AGENT HAS WITNESSED OR OTHERWISE REFERENCED THEIR LOCATION.
- THE CONTRACTOR SHALL CONSULT THE ENGINEER IN REGARD TO THE EXACT LENGTH OF PIPE CULVERTS BEFORE ORDERING THESE ITEMS.
- THE FOLLOWING RATES OF APPLICATION HAVE BEEN USED IN CALCULATING PLAN QUANTITIES.

POROUS GRANULAR BACKFILL	2.00 TON/CU YD
AGGREGATE SURFACE COURSE	2.05 TON/CU YD
STONE DUMPED RIPRAP	1.75 TON/CU YD
- THE AREA TO BE SEEDED SHALL CONSIST OF ALL DISTURBED EARTH SURFACES WITHIN THE R.O.W. AS DIRECTED BY THE ENGINEER. ESTIMATED QUANTITY = SEEDING, CLASS 2 (SPECIAL) = 0.5 ACRES
- TREES WITHIN THE RIGHT-OF-WAY WHICH INTERFERE WITH CONSTRUCTION SHALL BE REMOVED ONLY AT THE DIRECTION OF THE ENGINEER.
- EXISTING ROADWAY AND BRIDGE SHALL REMAIN OPEN TO LOCAL TRAFFIC AT ALL TIMES UNTIL THE PROPOSED ROADWAY AND BRIDGE ARE OPEN TO TRAFFIC.

TREE REMOVAL, ACRES		
LOCATION	WIDTH	ACRES
RT. STA. 8+25 TO RT. STA. 9+50	8'	.03
LT. STA. 10+00 TO LT. STA. 12+00	15'	.07
TOTAL		0.1

GUARDRAIL REMOVAL	
LOCATION	FOOT
RT. STA. 9+17 TO RT. STA. 9+68	51
LT. STA. 9+28 TO LT. STA. 9+80	52
RT. STA. 10+20 TO RT. STA. 10+77	57
LT. STA. 10+32 TO LT. STA. 10+74	42
TOTAL	202

EARTHWORK SCHEDULE						
LOCATION	EARTH EXCAVATION (CU YD)	SHRINKAGE FACTOR	PERCENT USED	AVAILABLE EXCAVATION (CU YD)	EMBANKMENT REQUIRED (CU YD)	EARTHWORK BALANCE (CU YD)
STA. 8+50 TO STA. 9+79.50	58	25%	100%	43	198	-155
STA. 9+9+79.50 TO STA. 10+30.50	0	25%	100%	-	-	-
STA. 10+30.50 TO STA. 12+00	83	25%	100%	62	491	-429
COFFERDAM EXCAVATION ENTRANCES	(560)	25%	0%	0	53	0
TOTAL	141			105	742	-637
USE:	140					635

* AVAILABLE EXCAVATION = EXC. x (1-SHRINKAGE FACTOR) x 1/2 USED

(FURN. EXC.)

TRAFFIC BARRIER TERMINAL, TYPE 5A	
LOCATION	EACH
15.0' RT. STA. 9+56.1 TO 13.7' RT. STA. 9+69.4	1
15.0' LT. STA. 9+71.7 TO 13.7' LT. STA. 9+85.0	1
13.7' RT. STA. 10+25.0 TO 15.0' RT. STA. 10+38.3	1
13.1' LT. STA. 10+40.6 TO 15.0' LT. STA. 10+53.9	1
TOTAL	4

STEEL PLATE BEAM GUARD RAIL, TYPE A	
LOCATION	FOOT
15.0' RT. STA. 9+06.1 TO 15.0' RT. STA. 9+56.1	50
15.0' LT. STA. 10+53.9 TO 15.0' LT. STA. 11+03.9	50
TOTAL	100

TRAFFIC BARRIER TERMINAL, TY 1, SPL (TANG)	
LOCATION	EACH
15.0' RT. STA. 8+56.1 TO 15.0' RT. STA. 9+06.1	1
15.0' LT. STA. 9+21.7 TO 15.0' LT. STA. 9+71.7	1
15.0' RT. STA. 10+38.3 TO 15.0' RT. STA. 10+88.3	1
15.0' LT. STA. 11+03.9 TO 15.0' LT. STA. 11+53.9	1
TOTAL	4

HAMPTON, LENZINI & RENWICK, INC.
CIVIL & STRUCTURAL ENGINEERS
LAND SURVEYORS

3085 STEVENSON DRIVE, SUITE 201
SPRINGFIELD, ILLINOIS 62703
(217) 546-3400

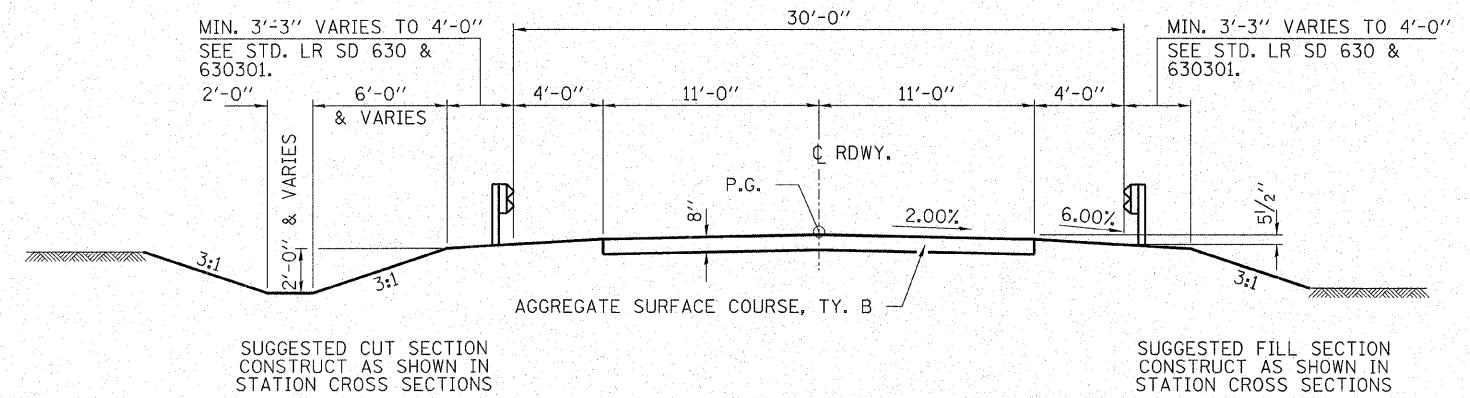
HLR

ELGIN • SPRINGFIELD

PROJECT NUMBER: 12-92-0007-1	DATE: 04/03/07
DESIGNED: J.W.F.	CHECKED: S.W.M. DRAWN: D.B.

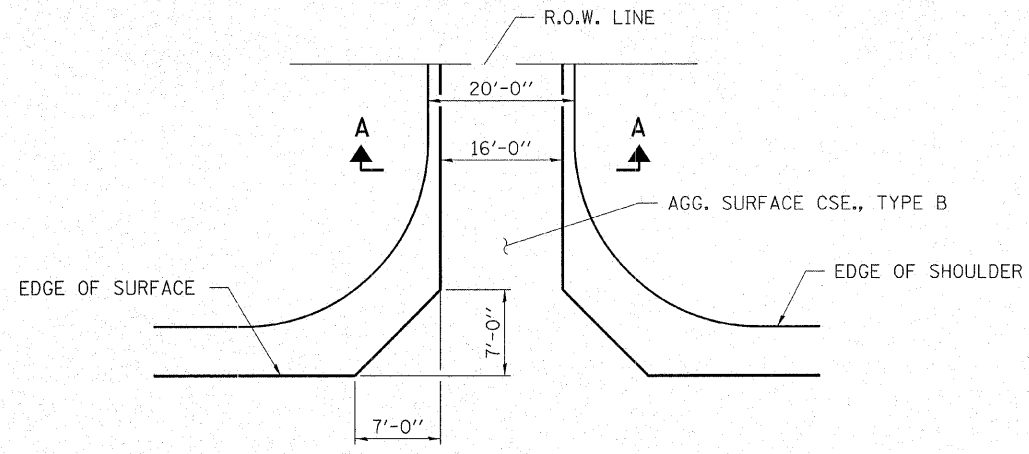
**SUMMARY OF QUANTITIES
AND GENERAL NOTES**
SECTION 04-01177-00-BR
T.R. 79A / MOUNTAIN GLEN ROAD
UNION COUNTY

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 79A	04-01177-00-BR	UNION	15	3
FED. ROAD DIST. NO.		ILLINOIS	CONTRACT NO. 99275	

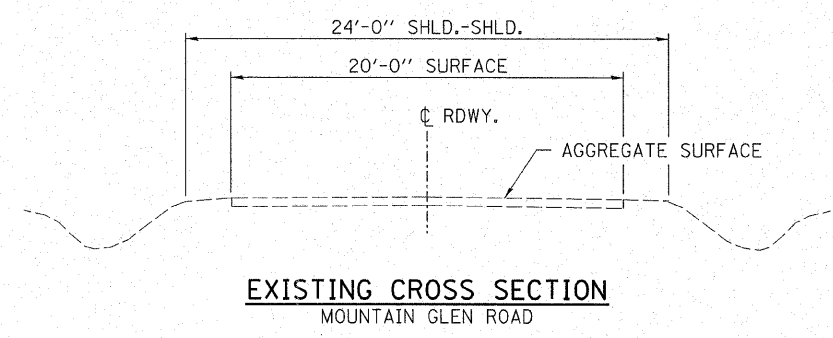
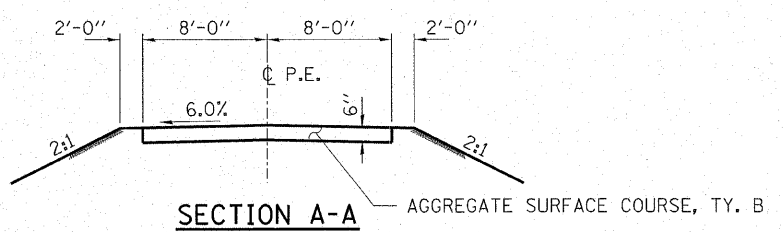


TYPICAL CROSS SECTION

STA. 9+00 TO 11+50
 TRANSITION FROM PROPOSED ROADWAY TO THE EXISTING ROADWAY IS TO BE CONSTRUCTED FROM STA. 8+50 TO STA. 9+00 AND FROM STA. 11+50 TO STA. 12+00. SEE SHEET 8 FOR TRANSITION AT BRIDGE.



PRIVATE ENTRANCE DETAIL



HAMPTON, LENZINI & RENWICK, INC.
 CIVIL & STRUCTURAL ENGINEERS
 LAND SURVEYORS

HLR

3085 STEVENSON DRIVE, SUITE 201
 SPRINGFIELD, ILLINOIS 62703
 (217) 546-3400

ELGIN • SPRINGFIELD

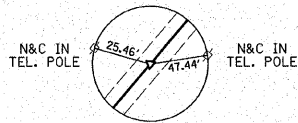
PROJECT NUMBER: 12-92-0007-1 DATE: 04/03/07
 DESIGNED: J.W.F. CHECKED: S.W.M. DRAWN: D.B.

TYPICAL CROSS SECTIONS
 SECTION 04-01177-00-BR
 T.R. 79A / MOUNTAIN GLEN ROAD
 UNION COUNTY

ERNEST CAMDEN
SW 1/4, SW 1/4, SEC 25, T. 11 S., R. 2 W., 3RD P.M.

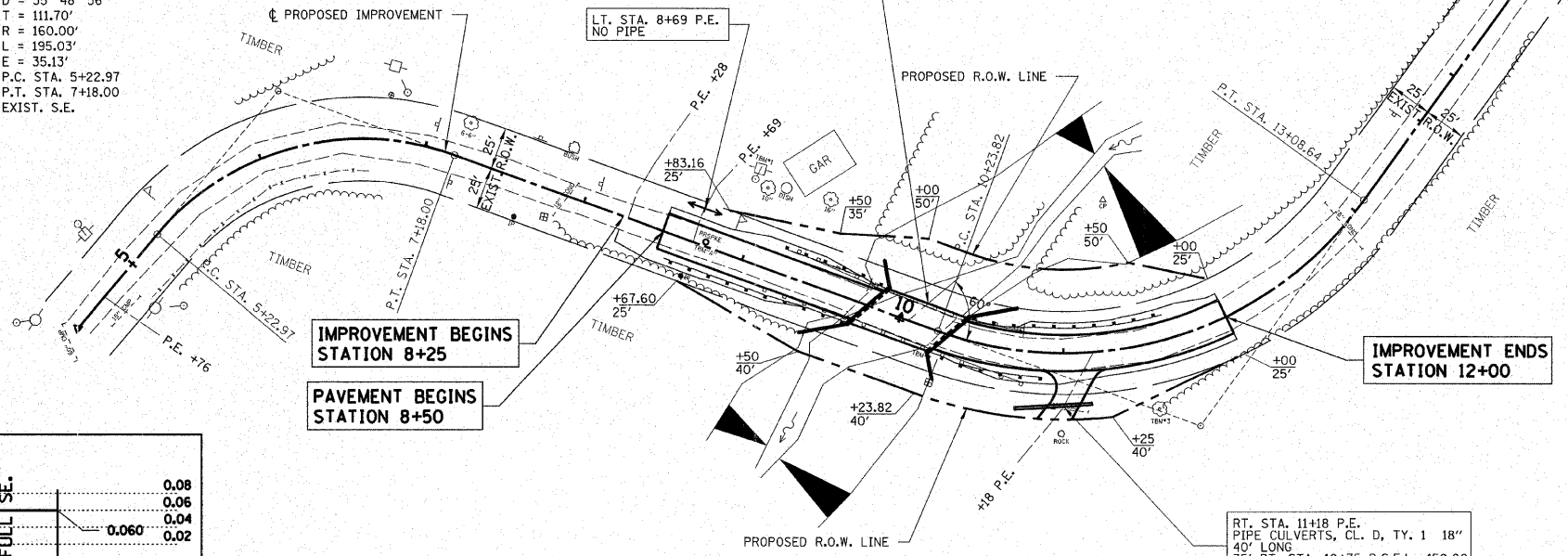
T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
79A	04-01177-00-BR	UNION	15	4
STA. 5+00		TO STA. 15+00		
FED. ROAD DIST. NO.		ILLINOIS	CONTRACT NO. 99275	

CURVE DATA #1
 P.I. STA. 6+34.67
 $\Delta = 69^\circ 50' 21''$ (RT)
 $D = 35^\circ 48' 36''$
 $T = 111.70'$
 $R = 160.00'$
 $L = 195.03'$
 $E = 35.13'$
 P.C. STA. 5+22.97
 P.T. STA. 7+18.00
 EXIST. S.E.



P.O.T. STA. 4+50.00
60d SPIKE (SET)

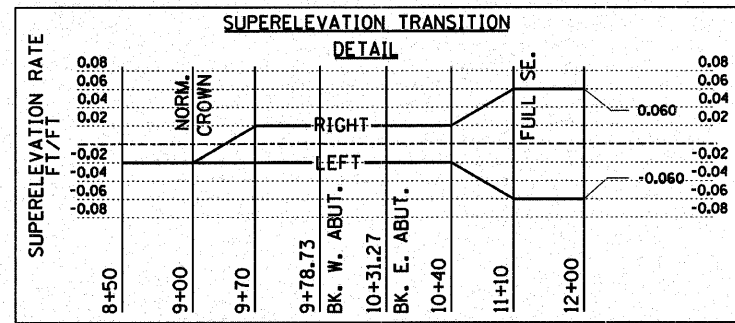
STATION 10+05 - SPECIAL BRIDGE DESIGN
 PRECAST PRESTRESSED CONCRETE DECK BEAM
 BRIDGE, SINGLE SPAN @ 51'-0"; S.E. = 2.0%
 27'-0" RDWY.; SKEW = 30°



IMPROVEMENT BEGINS
STATION 8+25

PAVEMENT BEGINS
STATION 8+50

IMPROVEMENT ENDS
STATION 12+00



CURVE DATA #2
 P.I. STA. 11+90.14
 $\Delta = 74^\circ 10' 38''$ (LT)
 $D = 26^\circ 02' 37''$
 $T = 166.32'$
 $R = 220.00'$
 $L = 284.82'$
 $E = 55.79'$
 P.C. STA. 10+23.82
 P.T. STA. 13+08.64
 S.E. = 6%

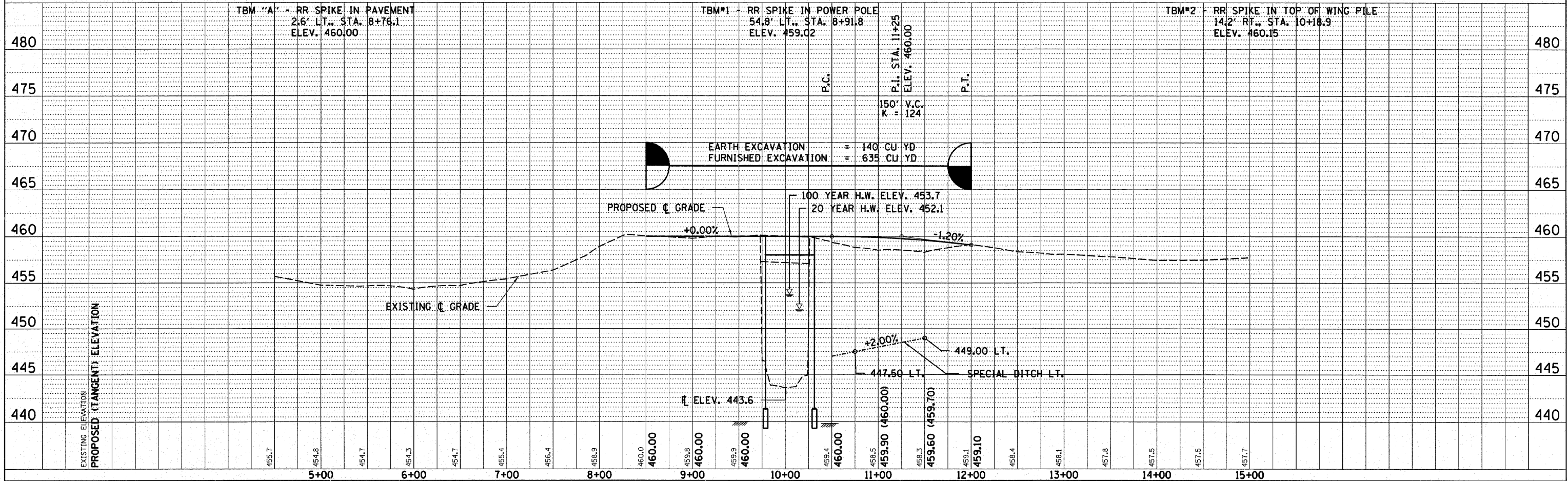
ENTRANCES TO BE BUILT
 LT. STA. 8+69 P.E. -9.2% 20' SURF. AGGR.
 LT. STA. 11+18 P.E. -14.2% 20' SURF. AGGR.
 QUANTITIES INCLUDED IN EARTHWORK TABLE.

EXISTING STRUCTURE NO. 091-3039
 STATION 10+00 SINGLE SPAN PONY TRUSS BRIDGE WITH
 DOUBLE LAYER TIMBER DECK ON CLOSED TIMBER ABUTS.
 52.0' BK.-BK. ABUTS; 22.0' O.-O. DECK
 REMOVAL OF EXISTING STRUCTURES = 1 EACH

RONNIE L. DAVIS
 SW 1/4, SW 1/4, SEC 25, T. 11 S., R. 2 W., 3RD P.M.

DATE	BY

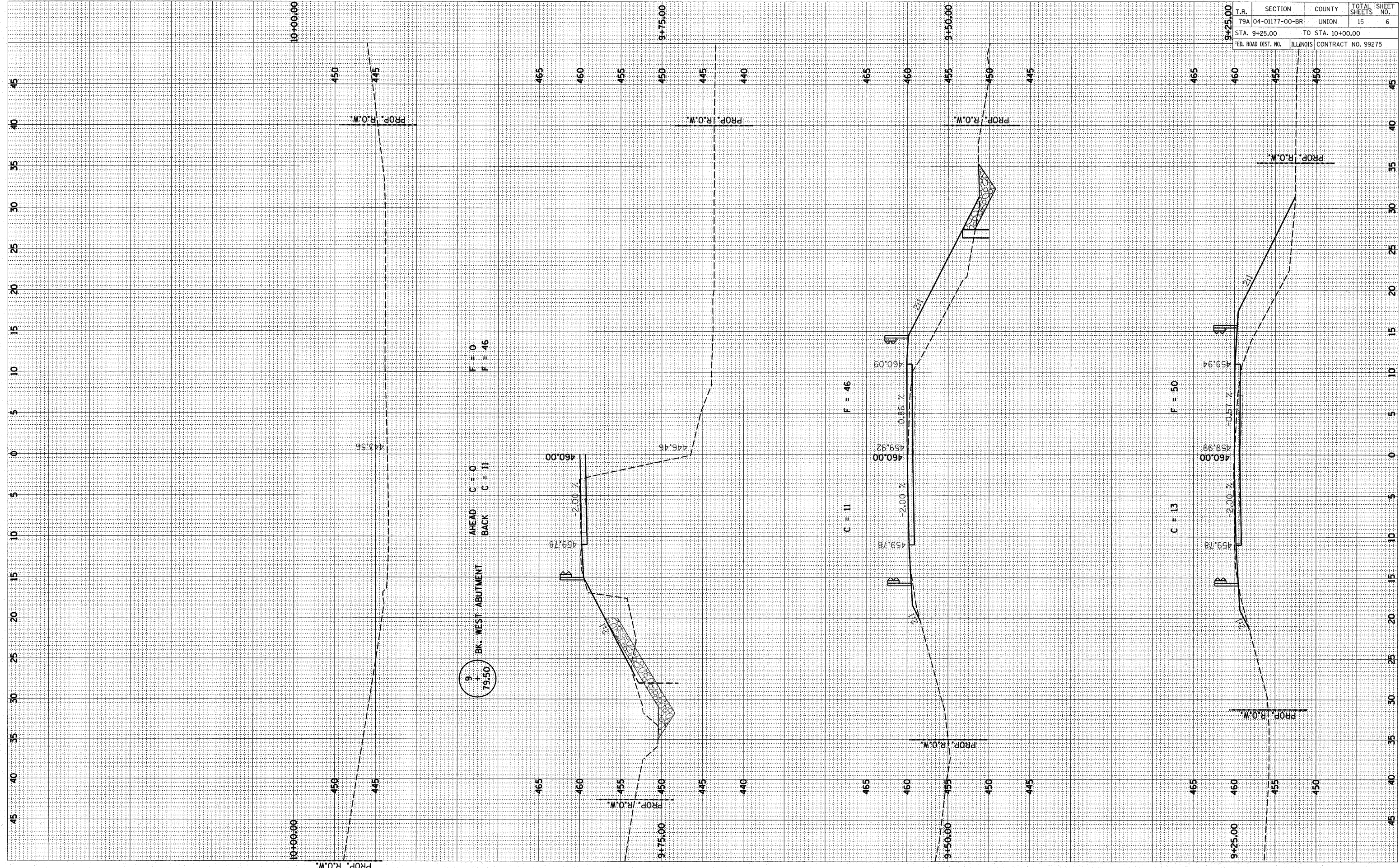
DATE	BY



T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
79A 04-01177-00-BR	UNION		15	6
STA. 9+25.00		TO STA. 10+00.00		
FED. ROAD DIST. NO.		ILLINOIS CONTRACT NO. 99275		

FINAL SURVEY	BY	DATE
SURVEYED		
TEMPLATE		
NOTE BOOK		
AREAS CHECKED		
NO.		

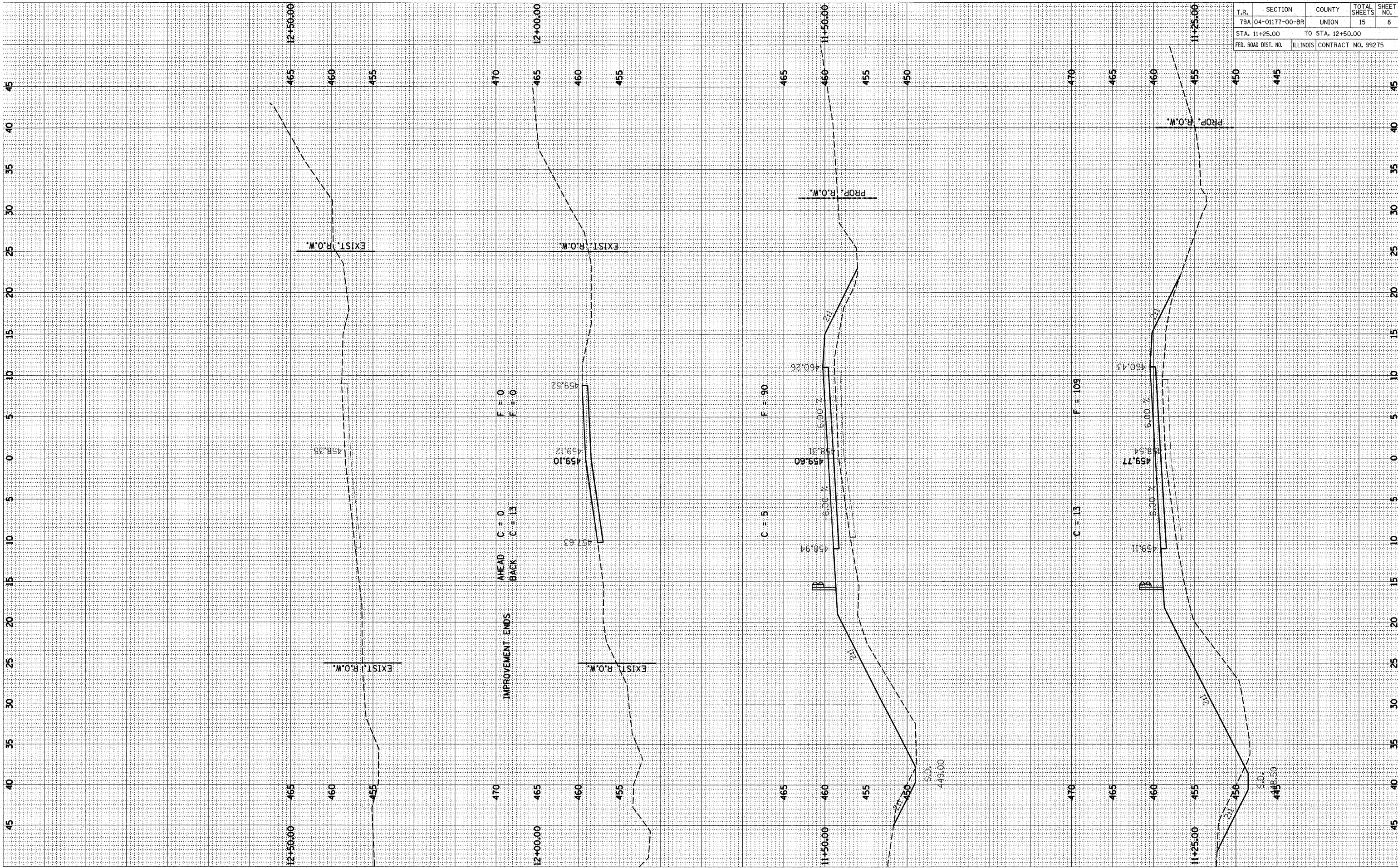
ORIGINAL SURVEY	BY	DATE
SURVEYED		
TEMPLATE		
NOTE BOOK		
AREAS CHECKED		
NO.		



T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
79A	04-01177-00-BR	UNION	15	8
STA. 11+25.00		TO STA. 12+50.00		
FED. ROAD DIST. NO.	ILLINOIS	CONTRACT NO. 99275		

FINAL SURVEY	BY	DATE
NO. _____		
NO. _____		
NO. _____		
NO. _____		

ORIGINAL SURVEY	BY	DATE
NO. _____		
NO. _____		
NO. _____		
NO. _____		

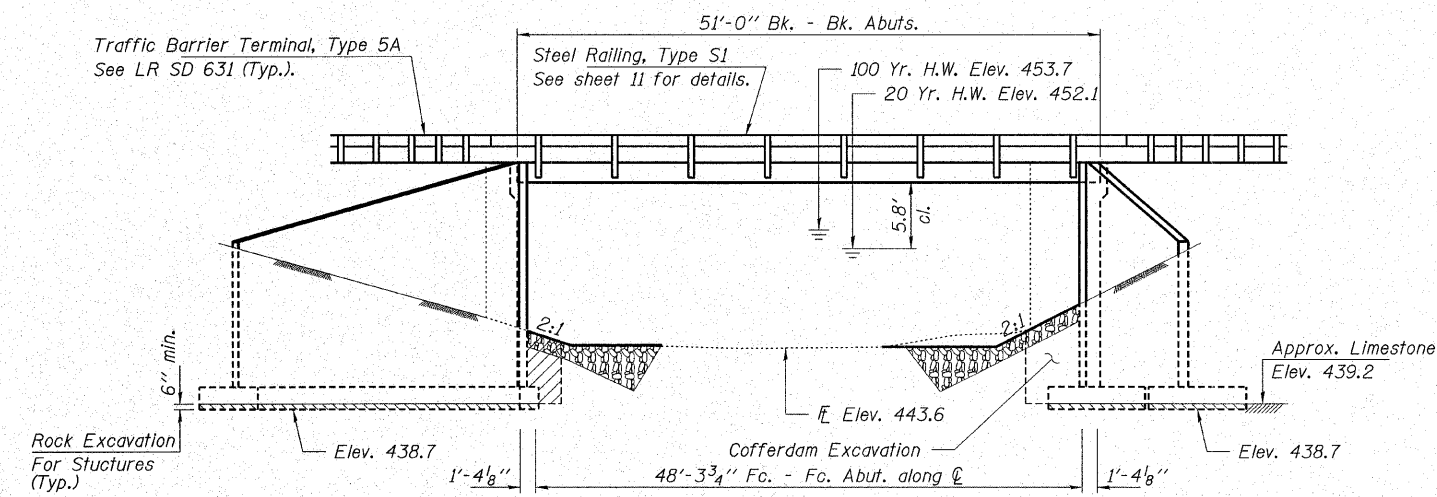


GENERAL NOTES

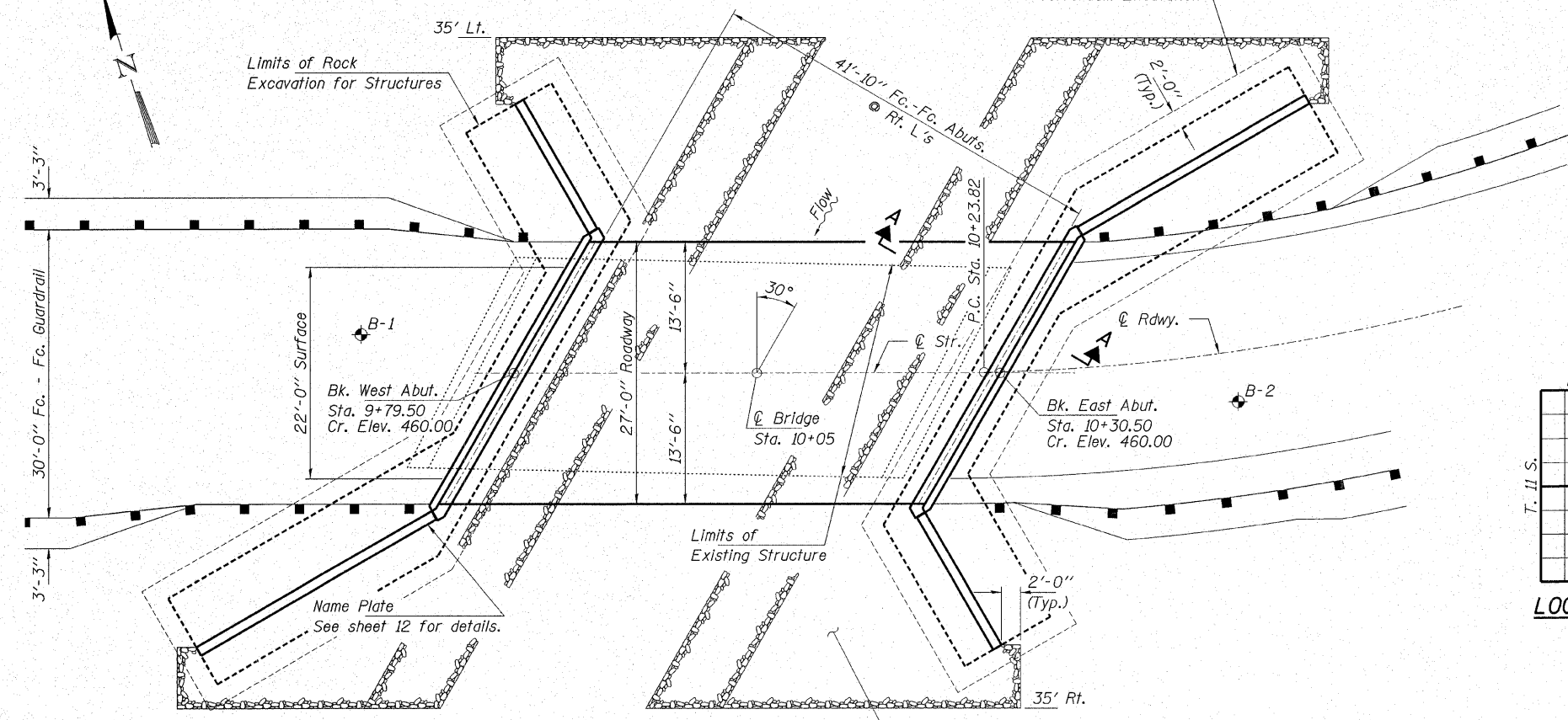
Layout of riprap may be varied in the field to suit ground conditions as directed by the Engineer.
 All proposed construction activity shall be in accordance with Nationwide Permit number 14 of the Department of the Army authorized under Section 404 of the Clean Water Act. The IEPA has issued Section 401 Water Quality Certification for this activity. See Special Provisions for conditions.
 Reinforcement bars shall conform to the requirements of AASHTO M-31 or M-322, Grade 60.
 Cofferdam excavation quantity calculated based on expected conditions after removal of existing structure.
 Excavation in Rock shall be performed in accordance with Article 502.05 of the Standard Specifications.
 Excavation behind existing abutment walls shall be done before removing the existing superstructure. This excavation is included in the cost of Removal of Existing Structures.
 No backfill or embankment shall be placed behind the abutments until the deck beams are in place, dowels are grouted and abutment notches are poured. See Article 502.10 of the Standard Specifications.
 The back face of abutments and wingwalls shall be waterproofed according to Article 503.18 of the Standard Specifications.
 See Sheet 15 for Borings.

BUILT 200_ BY
 UNION COUNTY
 SEC. 04-01177-00-BR
 F.A. PROJ. BROS-181(040)
 STR. NO. 091-3222
 LOADING HS 20

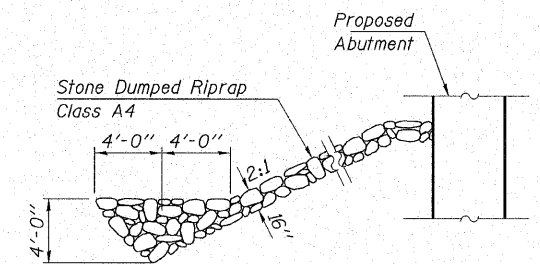
NAME PLATE
 See Std. 515001



ELEVATION

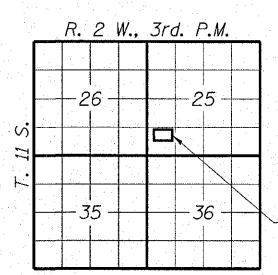


PLAN

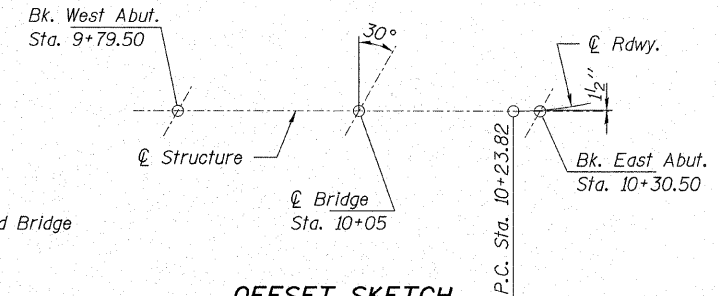


SECTION A-A

Note: See Special Provisions for Stone Dumped Riprap, Class A4



LOCATION SKETCH



OFFSET SKETCH

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Precast Prestressed Concrete Deck Beams (21" Depth)	Sq. Ft.	1,377		1,377
Concrete Structures	Cu. Yd.		211.2	211.2
Reinforcement Bars, Epoxy Coated	Pound		23,160	23,160
Steel Railing, Type S1	Foot	111		111
Name Plates	Each		1	1
Rock Excavation for Structures	Cu. Yd.		24.4	24.4
Cofferdams	Each		2	2
Cofferdam Excavation	Cu Yd		560	560
Stone Dumped Riprap, Class A4	Ton			350
Porous Granular Backfill	Ton		790	790

DESIGN STRESSES

FIELD UNITS

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

PRECAST PRESTRESSED UNITS

$f'_c = 5,000$ psi
 $f'_{ci} = 4,000$ psi
 $f'_s = 270,000$ psi ($\frac{1}{2}$ " low lax. strands)
 $f'_{si} = 201,960$ psi ($\frac{1}{2}$ " low lax. strands)
 $f_y = 60,000$ psi (Reinf.)

Loading HS 20-44
 Design Specifications: 2002 AASHTO & all applicable interims.
 25#/Sq. Ft. included in dead load for future wearing surface.

SEISMIC DATA

Seismic Performance Category (SPC) = B
 Bedrock Acceleration Coefficient (A) = 0.15g
 Site Coefficient (S) = 1.0

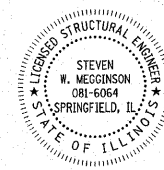
WATERWAY INFORMATION

Drainage Area = 2.6 Sq. Mi. - Low Grade Elev. 454.7 @ Sta. 10+05

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft. Exlst. Prop.	Natural H.W.E. Exlst. Prop.	Head - Ft. Exlst. Prop.	Headwater El. Exlst. Prop.
Design	20	1,760	360 370	452.1 0.0	0.0 0.0	452.1 452.1
Base	100	2,630	420 440	453.7 0.2	0.2 0.2	453.9 453.9
Overtopping						
Max. Calc.	500	3,470	470 500	454.9 0.5	0.4 0.4	455.4 455.3

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 structure and complies with requirements of the current "AASHTO Standard Specifications for Highway Bridges".

Steven W. Mezzanin 4/2/07
 ILLINOIS STRUCTURAL NO. 6064



Expires 11-30-08

HAMPTON, LENZINI & RENWICK, INC.
 CIVIL & STRUCTURAL ENGINEERS

3085 STEVENSON DRIVE, SUITE 201
 SPRINGFIELD, ILLINOIS 62703
 (217) 646-3400

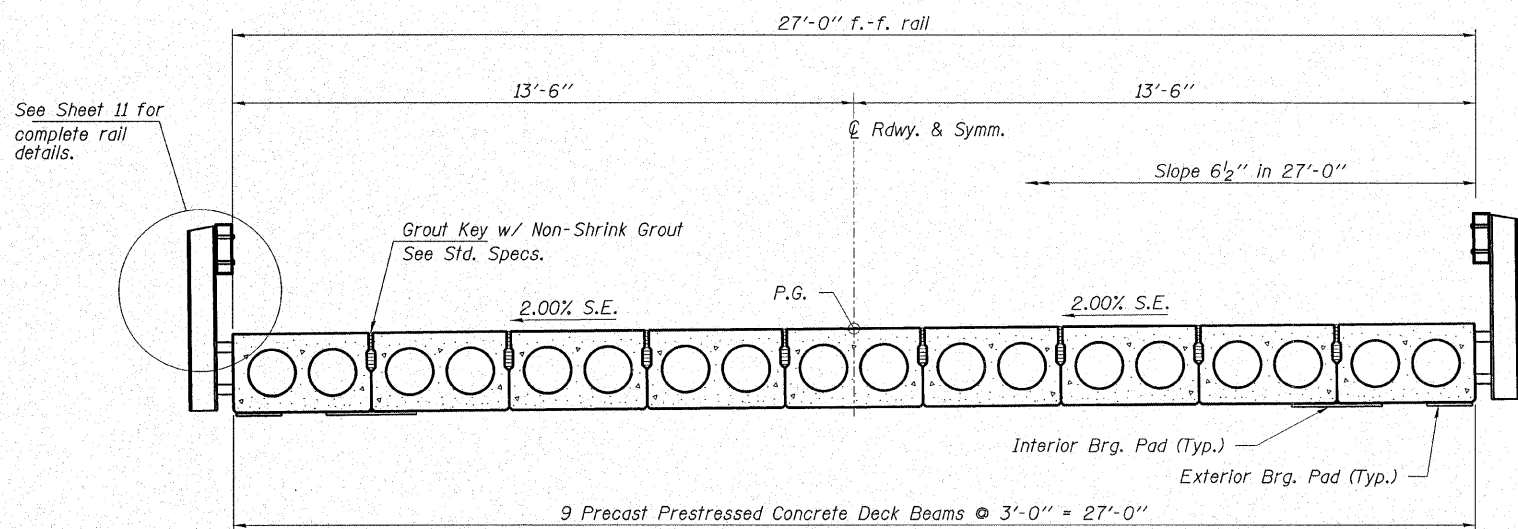
ELGIN • SPRINGFIELD

PROJECT NUMBER: 12-92-0007-1 DATE: 04/03/07
 DESIGNED: J.W.F. CHECKED: S.W.M. DRAWN: D.B.

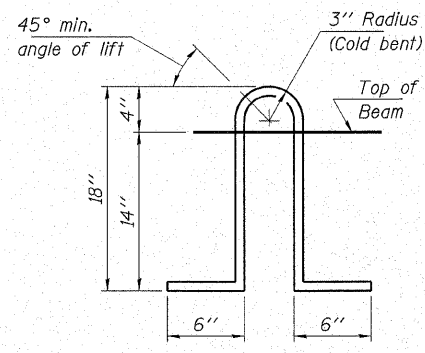
GENERAL PLAN AND ELEVATION

SECTION 04-01177-00-BR
 T.R. 79A / MOUNTAIN GLEN ROAD
 UNION COUNTY
 STR. NO. 091-3222 / STATION 10+05

ROUTE NO. T.R. 79A	SECTION 04-01177 -00-BR	COUNTY UNION	TOTAL SHEETS 15	SHEET NO. 10
FED. ROAD DIST. NO.		ILLINOIS CONTRACT NO. 99275		



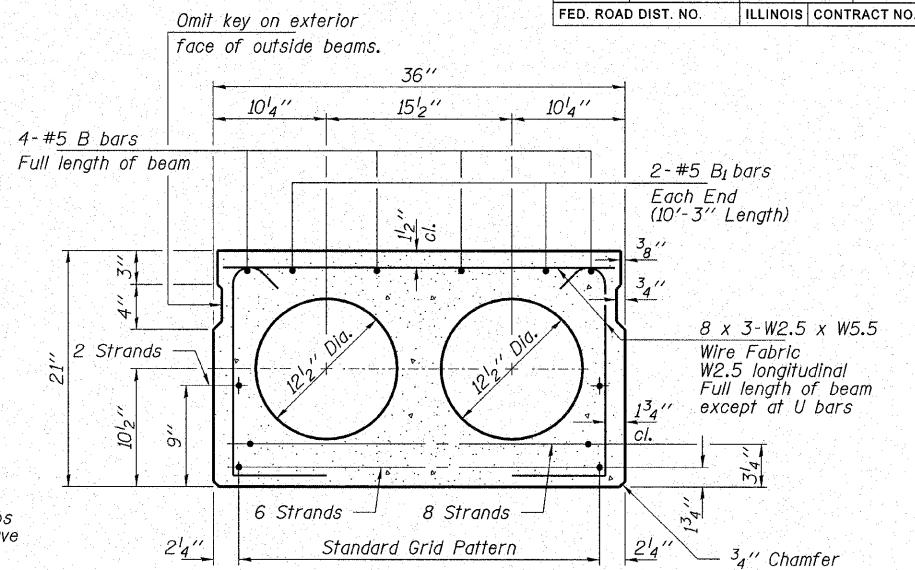
CROSS SECTION



LIFTING LOOP DETAIL

Approved alternate may be substituted for the above.

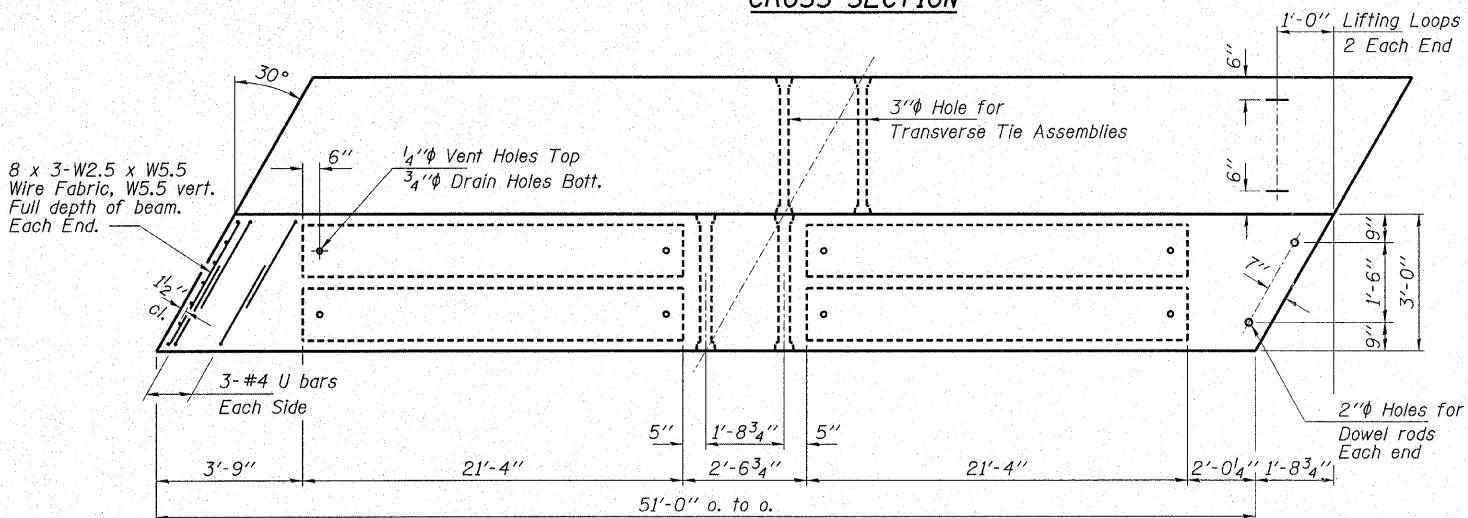
Note:
The loop shall be formed in a manner such that all strands are engaged during lifting. Lifting Loops shall be cut off after the beams have been erected.



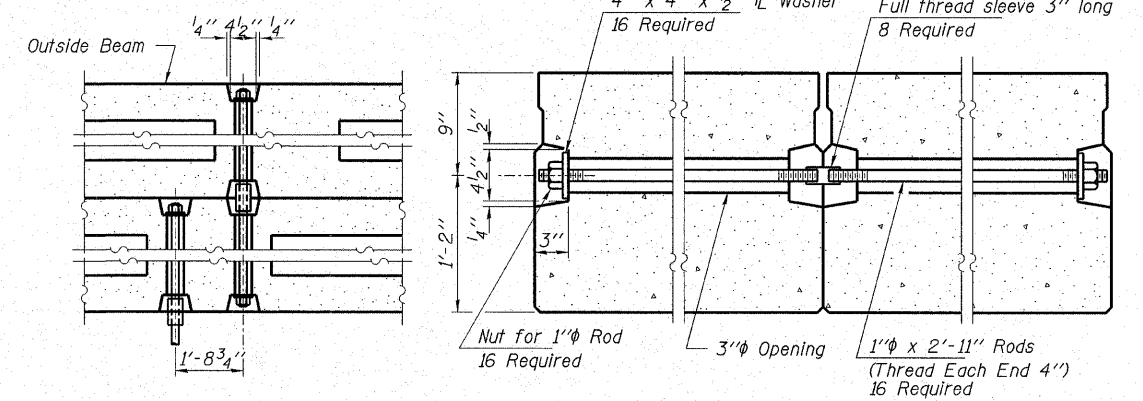
TYPICAL SECTION

16-1/2" φ Strands, Each Strand Stressed to 30,900 Lbs.
6-Strands 1 3/4" up, 8-Strands 3/4" up, 2-Strands 9" up
Expected Camber = 1 1/2"

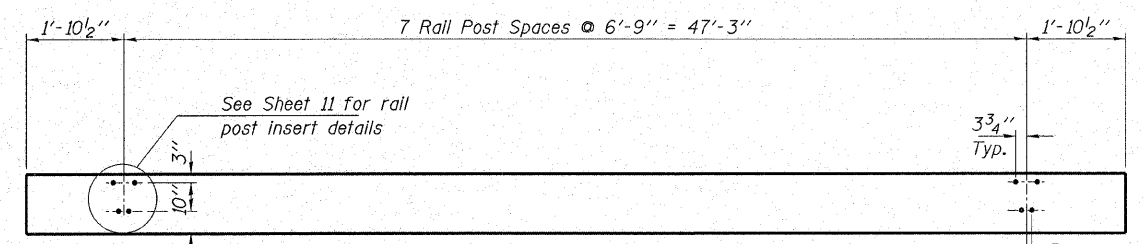
Note: Place strands symmetrically about centerline of beam.



PLAN

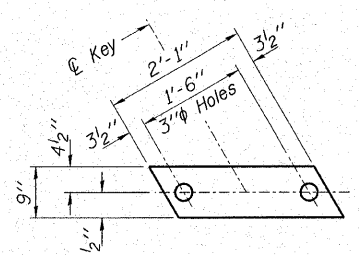


TYPICAL TRANSVERSE TIE ASSEMBLY

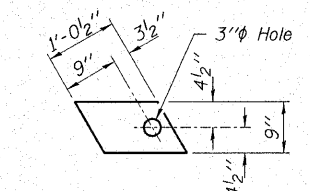


ELEVATION OF OUTSIDE BEAMS

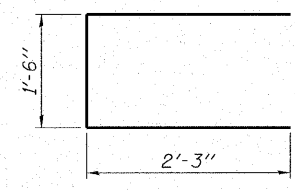
Showing Rail Post Spacing



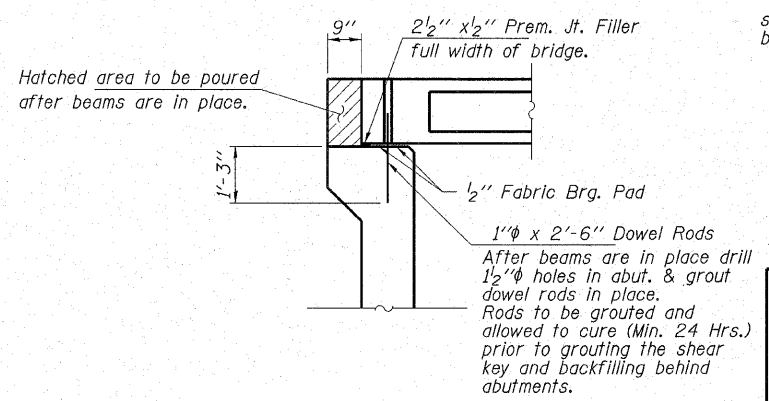
FABRIC BEARING PAD
(16 Req'd - Interior)



FABRIC BEARING PAD
(4 Req'd - Exterior)



BAR U



SECTION AT ABUTMENTS

@ Rt. L's

NOTES

Prestressing steel shall be uncoated high strength, low-relaxation 7-wire strand, Grade 270. The nominal diameter shall be 2" and the nominal cross-sectional area shall be 0.153 sq. in. Lifting loops shall be 2-2" φ-270 ksi strands, as shown.

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 on outside shall be filled with grout after transverse tie assembly is in place.

Reinforcement bars shall conform to the requirements of AASHTO M-31 or M-322 Grade 60. The bearing seat surfaces shall be adjusted by shimming to assure firm and even bearing. Two 1/8" fabric adjusting shims of the dimensions of the Exterior Bearing Pad shall be provided for each bearing.

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 top of the beam and the bottom edge of the key.

Required Release Strength, f'ci, shall be 4,000 p.s.i.

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Precast Prestressed Concrete Deck Beams (21" Depth)	Sq. Ft.	1,377

HAMPTON, LENZINI & RENWICK, INC.
CIVIL & STRUCTURAL ENGINEERS

3085 STEVENSON DRIVE, SUITE 201
SPRINGFIELD, ILLINOIS 62703
(217) 546-3400

ELGIN • SPRINGFIELD

PROJECT NUMBER: 12-92-0007-1 DATE: 04/03/07
DESIGNED: J.W.F. CHECKED: S.W.M. DRAWN: D.B.

SUPERSTRUCTURE

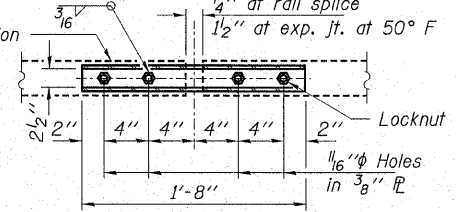
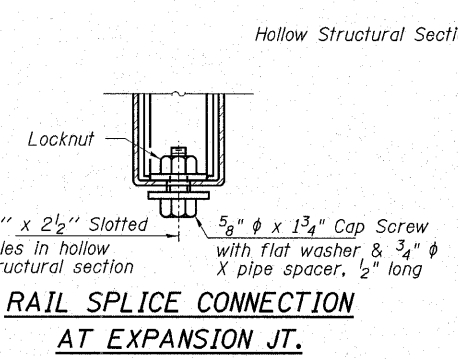
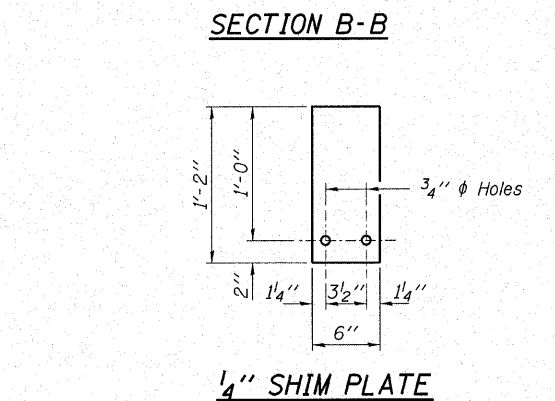
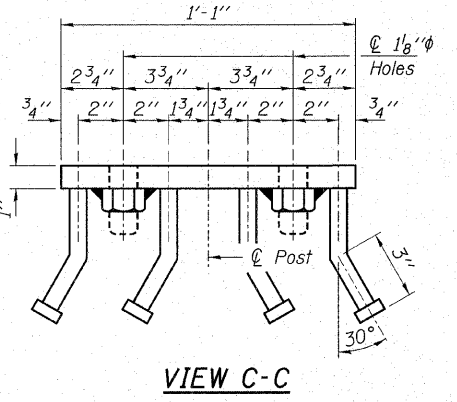
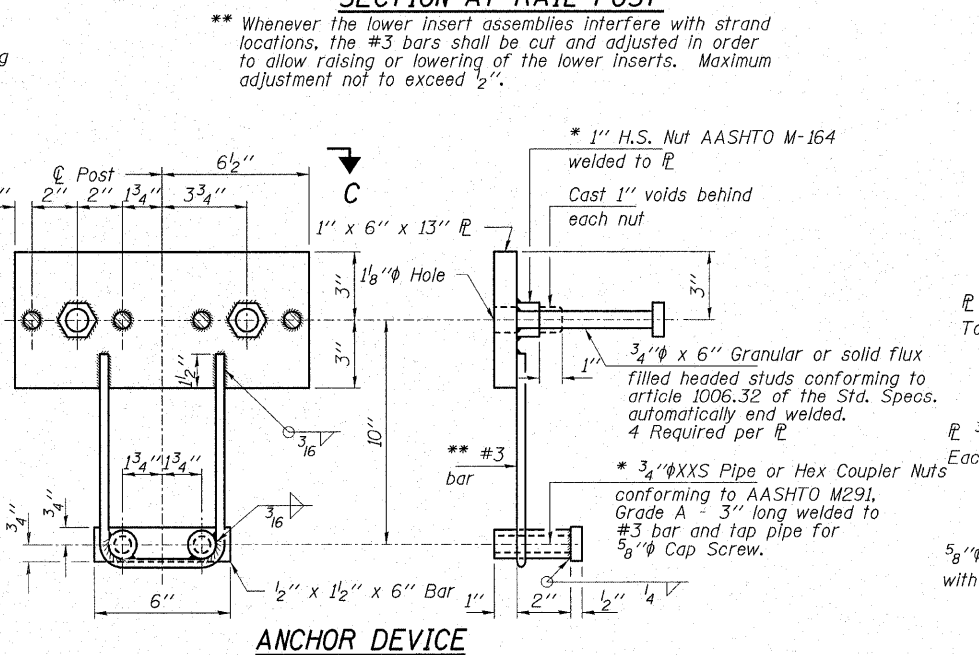
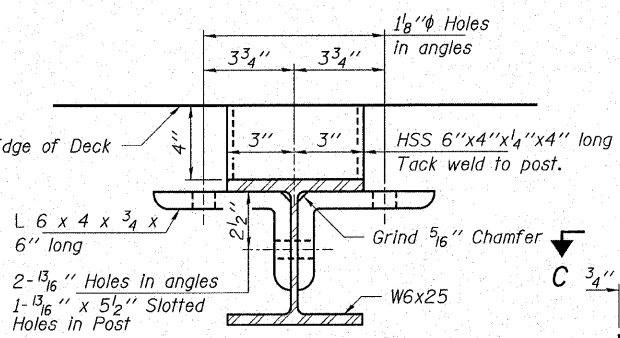
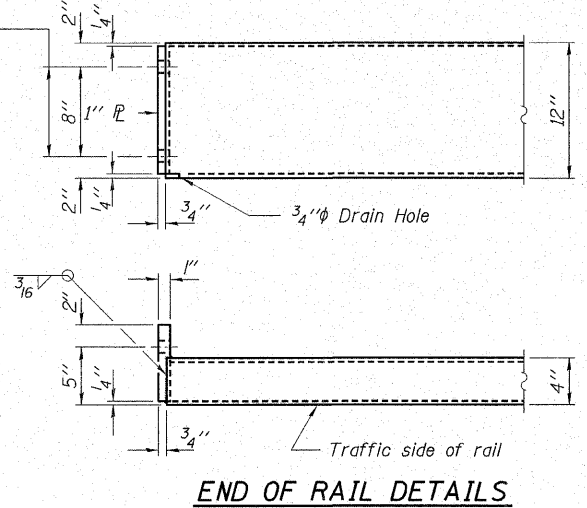
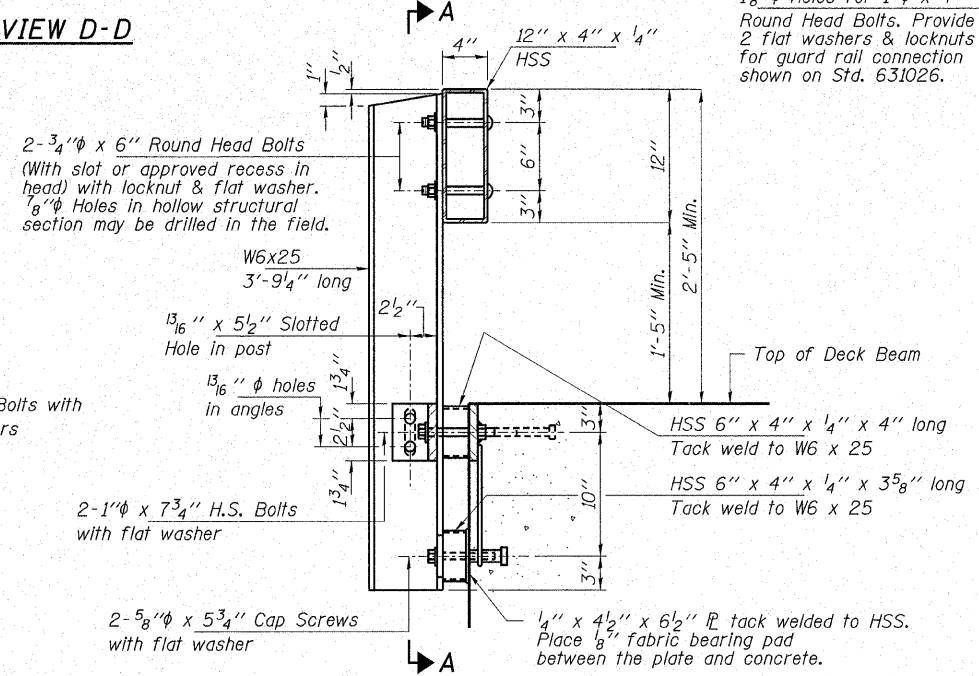
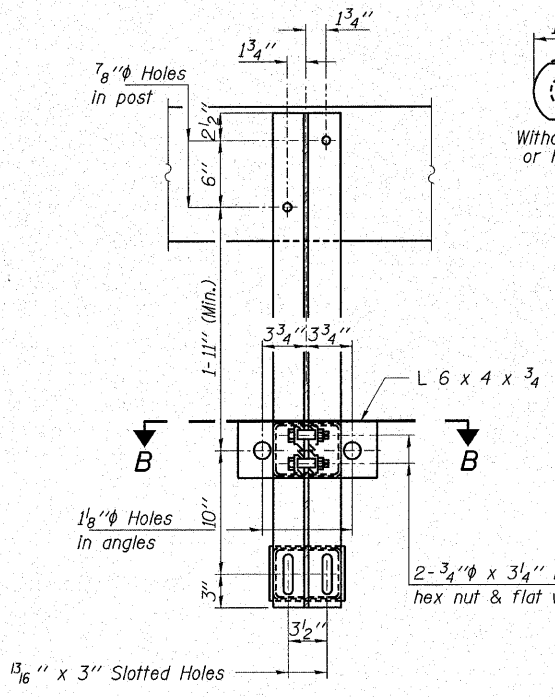
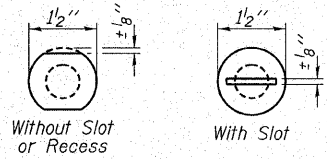
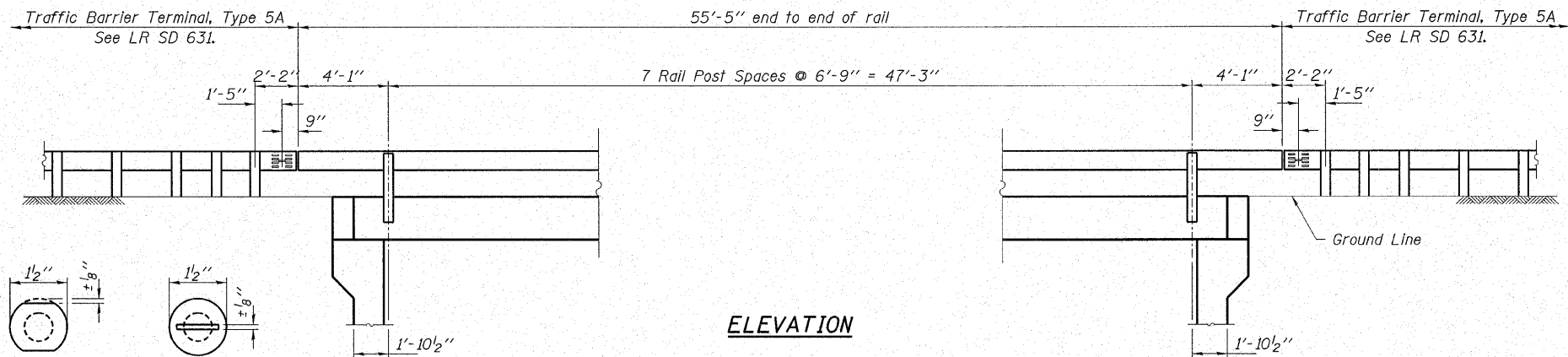
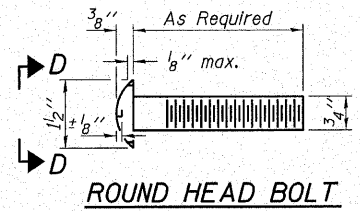
SECTION 04-01177-00-BR

T.R. 79A / MOUNTAIN GLEN ROAD

UNION COUNTY

STR. NO. 091-3222 / STATION 10+05

ROUTE NO. T.R. 79A	SECTION 04-01177 -00-BR	COUNTY UNION	TOTAL SHEETS 15	SHEET NO. 11
FED. ROAD DIST. NO.		ILLINOIS	CONTRACT NO. 99275	



BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type S1	Foot	111

RAILING DETAILS
SECTION 04-01177-00-BR
T.R. 79A / MOUNTAIN GLEN ROAD
UNION COUNTY
STR. NO. 091-3222 / STATION 10+05

HAMPTON, LENZINI & RENWICK, INC.
CIVIL & STRUCTURAL ENGINEERS

3085 STEVENSON DRIVE, SUITE 201
SPRINGFIELD, ILLINOIS 62703
(217) 546-3400

ELGIN • SPRINGFIELD

PROJECT NUMBER: 12-92-0007-1 DATE: 04/03/07
DESIGNED: J.W.F. CHECKED: S.W.M. DRAWN: D.B.

** Whenever the lower insert assemblies interfere with strand locations, the #3 bars shall be cut and adjusted in order to allow raising or lowering of the lower inserts. Maximum adjustment not to exceed 1/2".

1/8" diameter Holes for 1" x 4" Round Head Bolts. Provide 2 flat washers & locknuts for guard rail connection shown on Std. 631026.

1/4" x 4 1/2" x 6 1/2" plate tack welded to HSS. Place 1/8" fabric bearing pad between the plate and concrete.

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

NOTES

Hollow structural sections shall conform to the requirements of A.S.T.M. designation A-500 Grade B Structural Steel Tubing and shall meet the longitudinal CVN requirements of 15 ft-lbs at 0° F.

All other steel shapes and plates shall conform to the requirements of A.A.S.H.T.O. designation M-270 Grade 36 except posts and angles shall conform to A.A.S.H.T.O. M-270 Grade 50.

Bolts, cap screws, and nuts shall conform to the requirements of A.S.T.M. designation A-307 except for high strength bolts, nuts and washers noted which shall conform to A.A.S.H.T.O. designation M-164.

All bolts, nuts, cap screws, washers and lockwashers shall be galvanized in accordance with A.A.S.H.T.O. designation M-232.

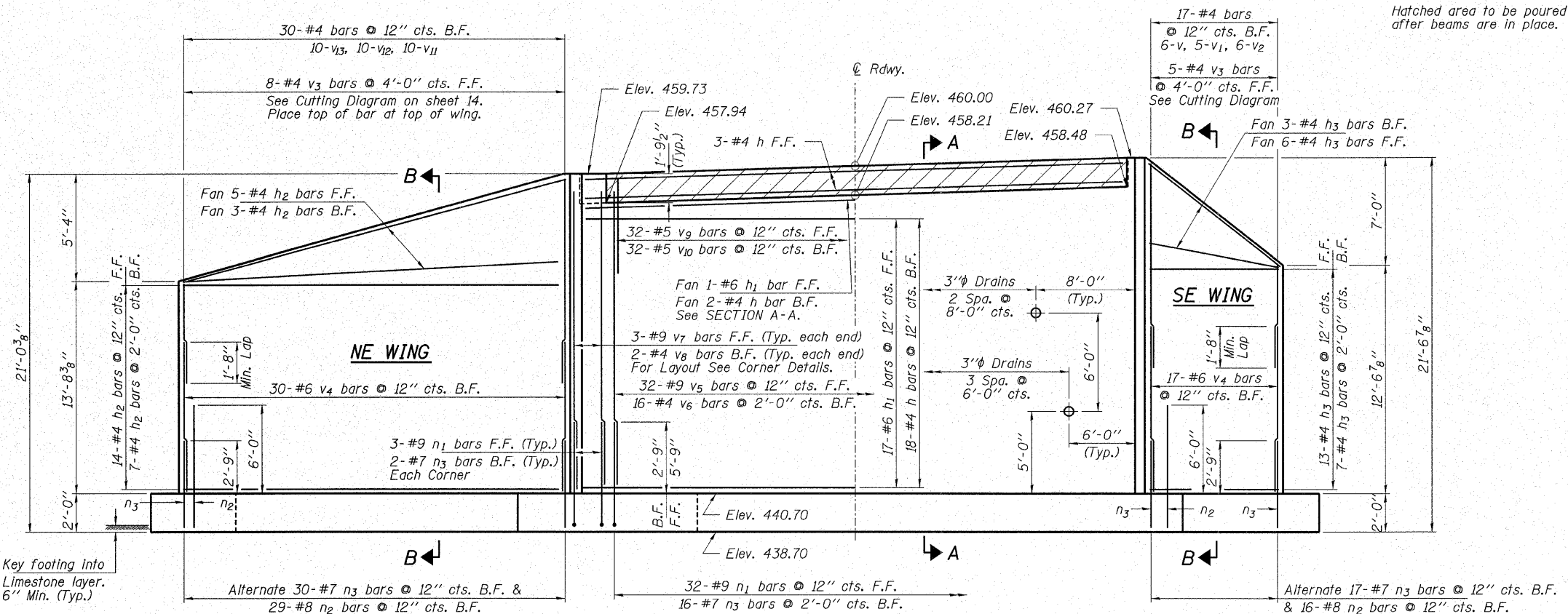
All posts, railing, rail splices, anchor devices and angles shall be galvanized after shop fabrication in accordance with A.S.T.M. A-385 and A.A.S.H.T.O. M-111. Galvanized rail shall not be painted.

Railing shall be in accordance with Section 509 of the Standard Specifications, except as noted, and shall be paid for at the contract unit price per foot for STEEL RAILING, TYPE S1.

All field drilled holes shall be coated with an approved zinc rich paint before erection.

The 3/4" diameter high strength bolts used to connect the 6 x 4 x 3/4 angles to the post shall be tightened in accordance with Art. 505.04(f)(2) of the Standard Specifications. The 1" diameter high strength bolts connecting the angles to the concrete shall be tightened to a snug fit and given an additional 3/8 turn. The 5/8" diameter cap screws in bottom of posts shall be tightened to a snug fit only.

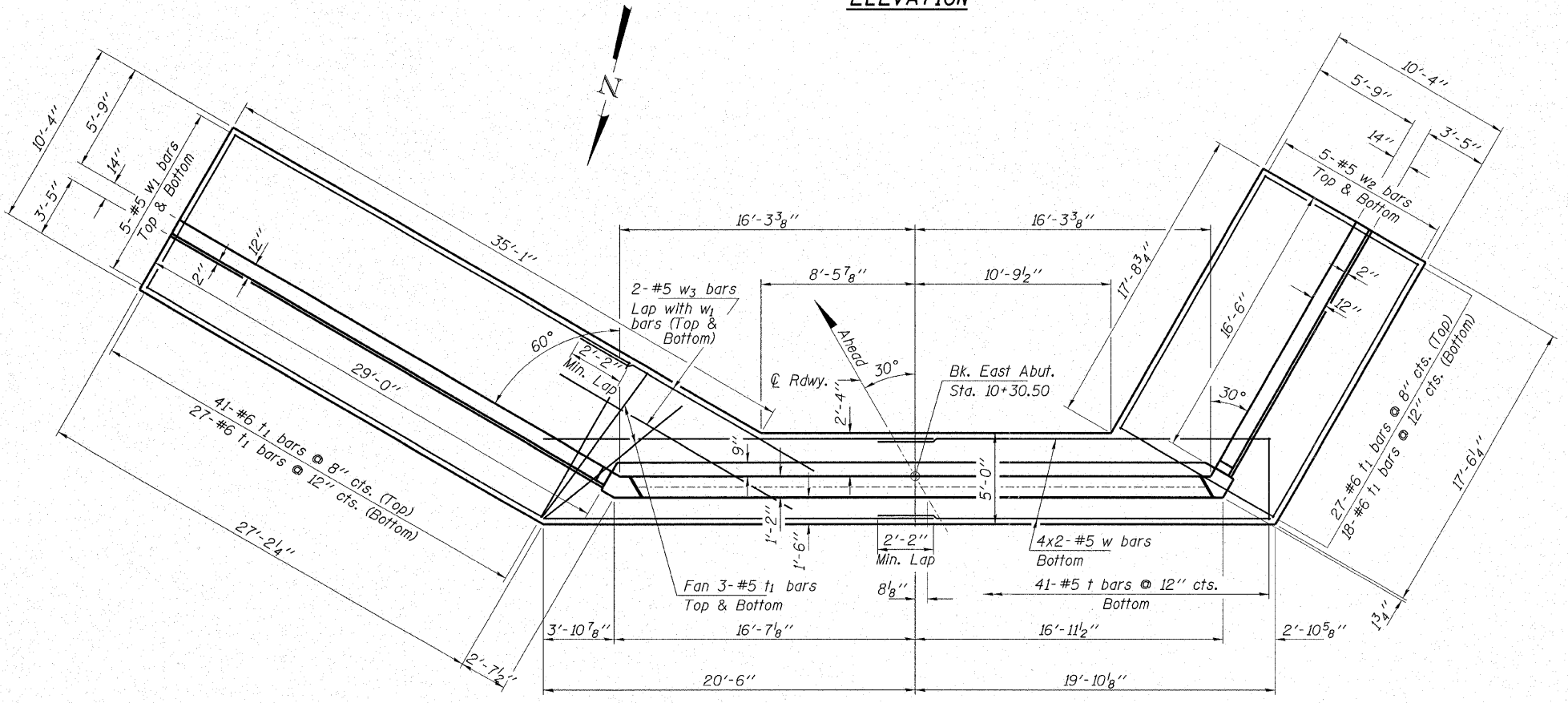
For multi-span bridges, sufficient 1/4" x 6" x 1'-2" galvanized steel shims shall be provided to align rail between adjacent spans. Cost included with STEEL RAILING, TYPE S1.



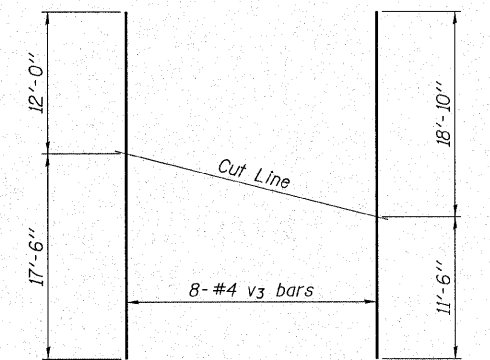
Notes:
The splice lengths shown are minimum length. Additional bar length has been provided.
The Contractor shall consult the Engineer in regard to the wall design if varying rock elevations are found.
All reinforcement bars shall be epoxy coated.
See sheet 14 for Section A-A, Section B-B, and abutment details.
v bars billed in West Abutment Bill of Material. See Cutting Diagram.
Bars indicated thus 4x2-#5 etc. indicates 4 lines of bars with 2 lengths per line.
Hatched area to be poured after beams are in place.

BILL OF MATERIAL - EAST ABUT.

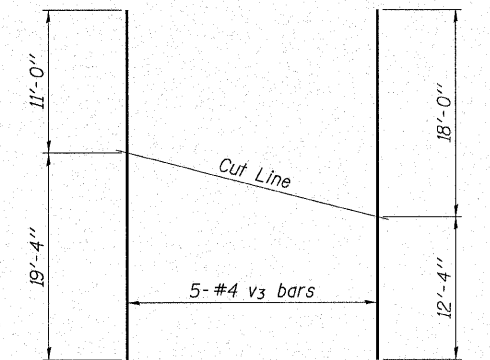
Bar	No.	Size	Length	Shape
h	23	#4	32'-3"	—
h ₁	18	#6	33'-3"	—
h ₂	29	#4	28'-8"	—
h ₃	29	#4	15'-8"	—
n ₁	38	#9	8'-9"	C
n ₂	45	#8	8'-4"	C
n ₃	67	#7	5'-0"	C
t	41	#5	5'-10"	C
t ₁	119	#6	10'-1"	—
v	6	#4	12'-6"	—
v ₁	5	#4	9'-10"	—
v ₂	6	#4	7'-8"	—
v ₄	47	#6	8'-9"	—
v ₅	32	#9	17'-0"	—
v ₆	16	#4	17'-0"	—
v ₇	6	#9	18'-9"	—
v ₈	4	#4	18'-9"	—
v ₉	32	#5	3'-6"	—
v ₁₀	32	#5	6'-1"	—
v ₁₁	10	#4	13'-10"	—
v ₁₂	10	#4	11'-6"	—
v ₁₃	10	#4	9'-0"	—
w	8	#5	21'-1"	—
w ₁	10	#5	26'-10"	—
w ₂	10	#5	17'-4"	—
w ₃	4	#5	12'-6"	—
Concrete Structures			Cu. Yd.	107.4
Reinforcement Bars, Epoxy Coated			Pound	11,550
Rock Excavation for Structure			Cu. Yd.	12.2
Cofferdams			Each	1
Cofferdam Excavation			Cu. Yd.	280
Porous Granular Embankment			Ton	420



ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 79A	04-01177-00-BR	UNION	15	14
FED. ROAD DIST. NO.		ILLINOIS CONTRACT NO. 89275		

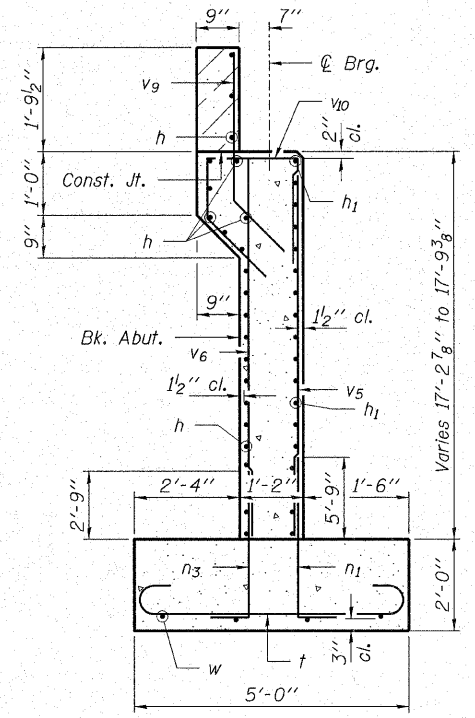


CUTTING DIAGRAM - NE & SW WINGS
Order v₃ bars full length. Cut as shown and use the remainder in opposite Wingwall.

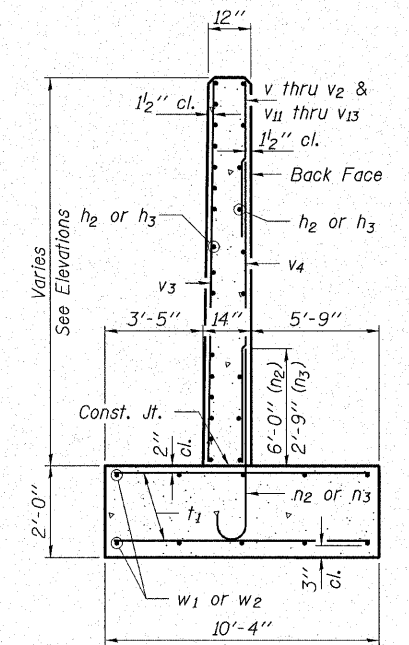


CUTTING DIAGRAM - NW & SE WINGS
Order v₃ bars full length. Cut as shown and use the remainder in opposite Wingwall.

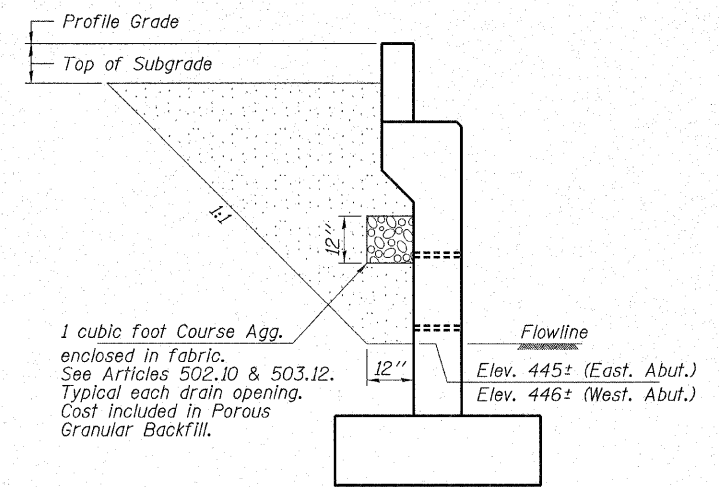
Hatched area to be poured after beams are in place.



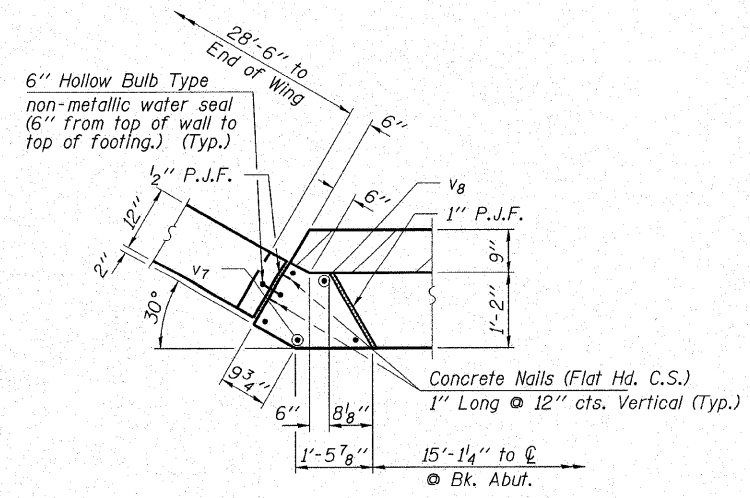
SECTION A-A
qu max = 4.4 k.s.f.



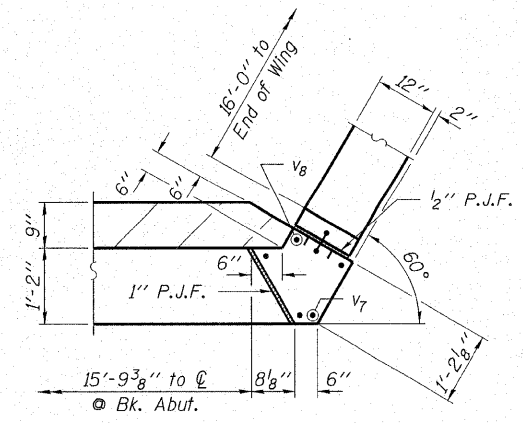
SECTION B-B
qu max = 3.8 k.s.f.



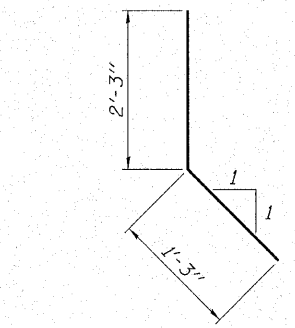
BACKFILL DETAIL



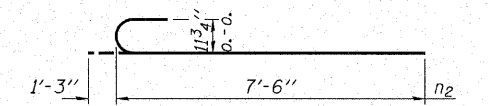
CORNER DETAIL
(Long Wing)



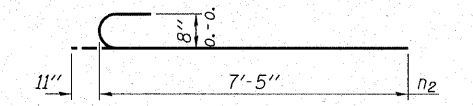
CORNER DETAIL
(Short Wing)



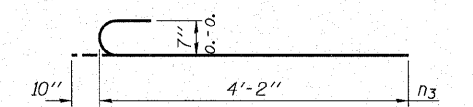
BAR v₉



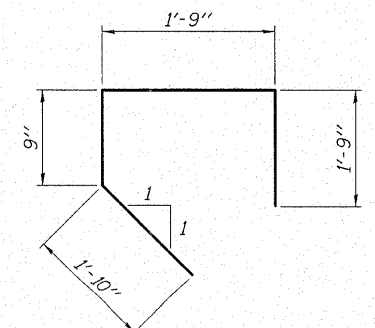
BAR n₁



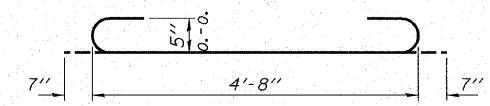
BAR n₂



BAR n₃



BAR v₁₀



BAR t

HAMPTON, LENZINI & RENWICK, INC.
CIVIL & STRUCTURAL ENGINEERS

3085 STEVENSON DRIVE, SUITE 201
SPRINGFIELD, ILLINOIS 62703
(217) 546-3400

ELGIN • SPRINGFIELD

PROJECT NUMBER: 12-92-0007-1 DATE: 04/03/07
DESIGNED: T.P.L. CHECKED: S.W.M. DRAWN: D.B.

ABUTMENT DETAILS
SECTION 04-01177-00-BR
T.R. 79A / MOUNTAIN GLEN ROAD
UNION COUNTY
STR. NO. 091-3222 / STATION 10+05

