

1-17-14 LETTING ITEM 125

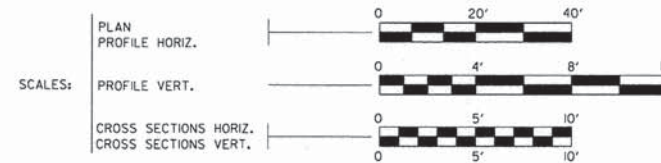
INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1	COVER SHEET
2	SUMMARY OF QTYS & TYPICAL SECTIONS
3	PLAN & PROFILE
4	EROSION CONTROL PLAN
5 - 11	BRIDGE PLANS
12 - 13	CROSS SECTIONS

LIST OF STANDARD DRAWINGS

STANDARD NO.	DESCRIPTION
000001-06	STANDARD SYMBOLS, ABBREVIATIONS, AND PATTERNS
001006	DECIMAL OF AN INCH AND A FOOT
280001-07	TEMPORARY EROSION CONTROL SYSTEMS
515001-03	NAME PLATE FOR BRIDGES
635006-03	REFLECTOR AND TERMINAL MARKER PLACEMENT
701006-05	OFF ROAD OPERATIONS, 2 L, 2 W, 15' TO 24' FROM PAVEMENT EDGE
701301-04	LANE CLOSURE, 2L, 2W SHORT TIME OPERATIONS
701901-03	TRAFFIC CONTROL DEVICES
BLR 21-9	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION OF RURAL LOCAL HIGHWAYS

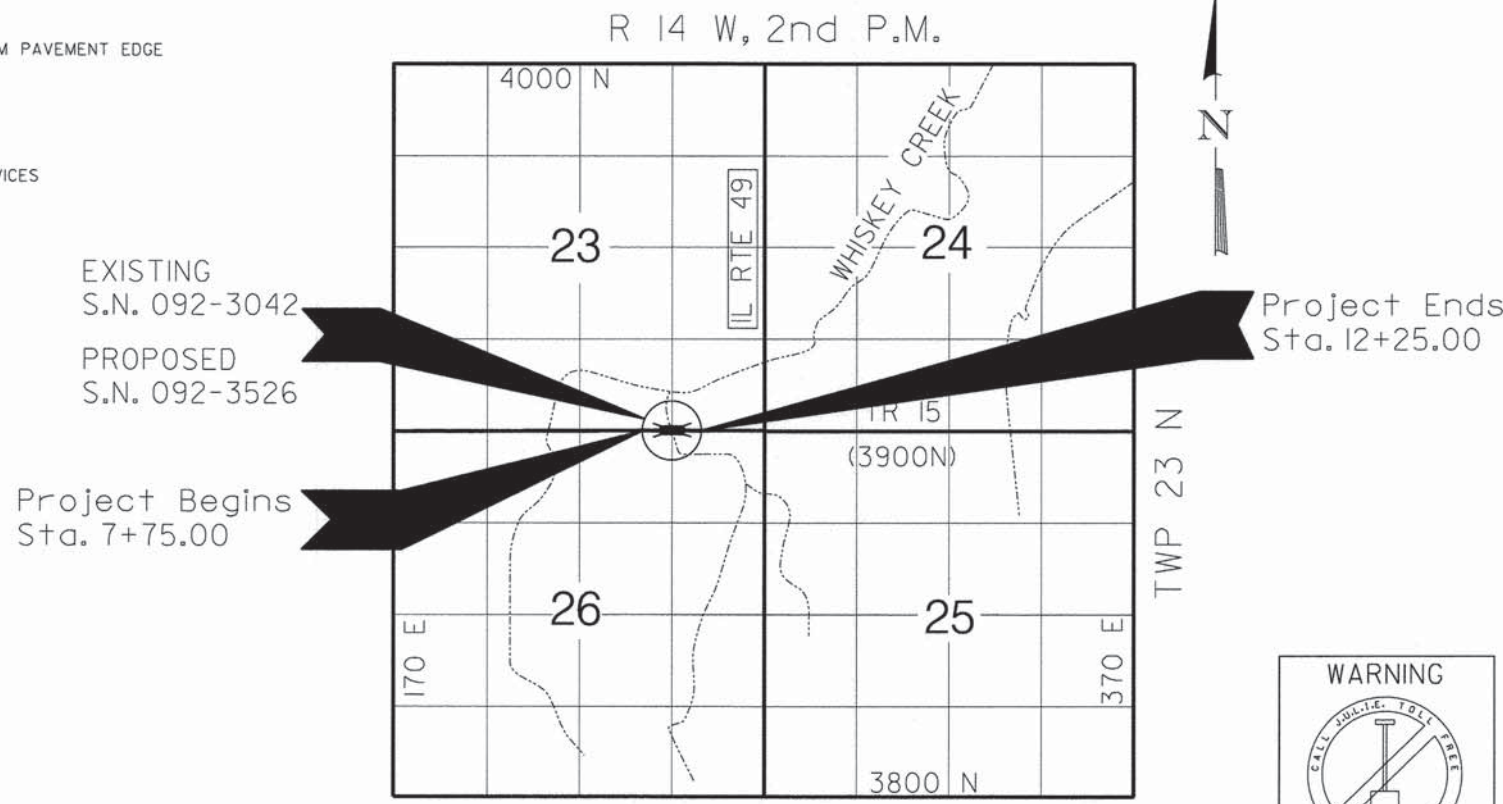
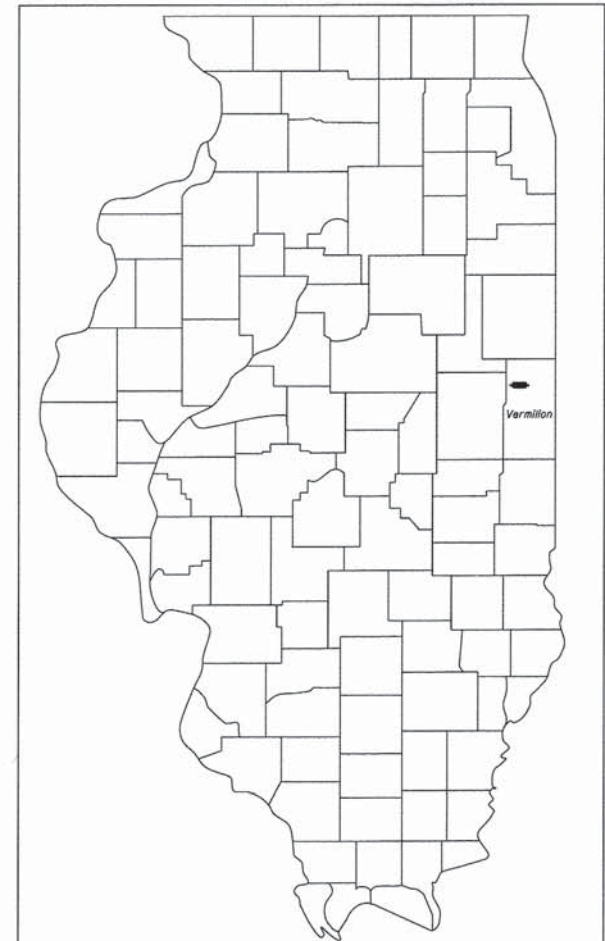
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
PLANS FOR PROPOSED
BRIDGE REPLACEMENT



VERMILION COUNTY
SECTION 12-02148-00-BR
TR 15 (3900 N)
STP - BRIDGE
BROS-0183(319)
C-95-332-13

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 15	*	Vermilion	13	1

FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT-
*12-02148-00-BR



LOCATION MAP

ADT = 50 (CURRENT), 61 (DESIGN)
FUNCTIONAL CLASS = LOCAL ROAD

NET LENGTH OF SECTION = 450 FEET = 0.085 MILES



Kelly Jo Hoffmann
KELLY JO HOFFMANN
Illinois Licensed Professional Engineer Number 58725
License Expires 11/30/2013

APPROVED	10-7	2013
<i>Marvin Dumble</i> BUTLER TOWNSHIP ROADWAY COMMISSIONER		
APPROVED	October 7	2013
<i>Douglas R. Shaska</i> DOUG SHASKE, PE VERMILION COUNTY ENGINEER		
PASSED	October 15	2013
<i>Scott A. Jolly</i> DISTRICT FIVE ENGINEER OF LOCAL ROADS & STREETS		
Releasing For Bid Based on Limited Review	10/15	2013
<i>[Signature]</i> DEPUTY DIRECTOR OF HIGHWAYS, REGION THREE ENGINEER STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION		



ENGINEERING RESOURCE ASSOCIATES, INC.
CONSULTING ENGINEERS, SCIENTISTS & SURVEYORS
3002 CROSSING COURT
CHAMPAIGN, IL 61822
PHONE (217) 351-6268
FAX (217) 355-1902

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 15	*	Vermilion	13	2
FED. ROAD DIST. NO. 7		ILLINOIS		FED. AID PROJECT-

SUMMARY OF QUANTITIES - SEC.12-02148-00-BR

CODE	DESCRIPTION	UNIT	QUANTITY
••20200100	Earth Excavation	Cu. Yd.	64
20400800	Furnished Excavation	Cu. Yd.	20
•25000200	Seeding, Class 2	Acre	0.24
•25000400	Nitrogen Fertilizer Nutrient	Pound	24
•25000500	Phosphorus Fertilizer Nutrient	Pound	24
•25000600	Potassium Fertilizer Nutrient	Pound	24
•25100115	Mulch, Method 2	Acre	0.24
•28000250	Temporary Erosion Control Seeding	Pound	24
•28000305	Temporary Ditch Checks	Foot	40
•28000400	Perimeter Erosion Barrier	Foot	830
•28000500	Inlet and Pipe Protection	Each	1
40200800	Aggregate Surface Course, Type B	Tons	327
50100100	Removal of Existing Structures	Each	1
50200100	Structure Excavation	Cu. Yd.	143
•50300225	Concrete Structures	Cu. Yd.	39.8
•50400405	Precast Prestressed Concrete Deck Beams (21' depth)	Sq. Ft.	1441
•50800105	Reinforcement Bars	Pound	4260
Δ 50900205	Steel Rolling, Type S1	Foot	108
51201400	Furnishing Steel Piles HPI0x42	Foot	500
51202305	Driving Piles	Foot	500
51203400	Test Pile Steel HPI0x42	Each	2
51204650	Pile Shoes	Each	12
51500100	Name Plates	Each	1
59300100	Controlled Low-Strength Material	Cu. Yd.	58
67100100	Mobilization	L. Sum	1
Δ 78201000	Terminal Marker - Direct Applied	Each	4
•20013798	Construction Layout	L. Sum	1
••X2810808	Stone Dumped Riprap, Class A4 (Special)	Tons	250
••X7010216	Traffic Control and Protection (Special)	L. Sum	1
••XX004566	Concrete Cut-Off Wall	Cu. Yd.	8.3

- SEE STATE SPECIAL PROVISIONS.
- SEE SPECIAL PROVISIONS.
- Δ SPECIALTY ITEMS

GENERAL NOTES

- The locations of Existing utilities as shown on the plan are for information only, and are not guaranteed. It shall be the Contractor's responsibility to ascertain their exact location from the utility companies and by field inspection.
- See the Plan & Profile sheet for roadway and shoulder tapers.
- Aggregate Surface Course, Type B shall be crushed limestone, gradation CA-6.
- The following rates of application are used for calculating quantities:

1.80 Ton/C.Y. - Aggregate Surface Course
 1.75 Ton/C.Y. or 0.78 Ton/Sq. Yd. - Stone Riprap / RR4

UTILITIES

Call J.U.L.I.E. 1-800-892-0123
 The Contractor shall coordinate the relocation of any utilities with the utility company where they conflict with the proposed improvements.

EARTHWORK SCHEDULE

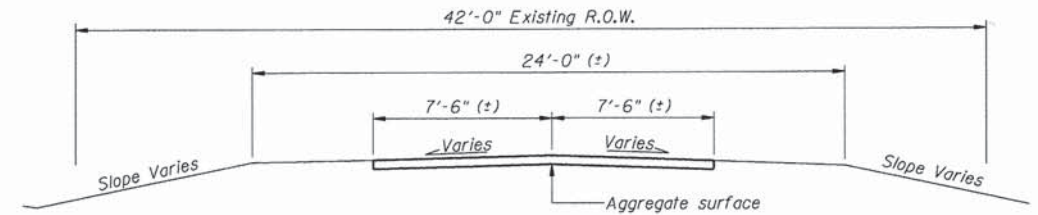
LOCATION	EARTH EXCAVATION	SHRINKAGE FACTOR	% USED	ADJUSTED EXCAVATION	FILL REQUIRED	EARTHWORK BALANCE
	C.Y.			C.Y.	C.Y.	C.Y.
STA 7+75 to STA 8+00	9	25%	100%	7	0	7
STA 8+00.0 to STA 9+00	22	25%	100%	17	13	11
STA 9+00 to STA 9+45	3	25%	100%	2	15	-2
STA 9+56.0 RT (No Net Field Entrance Change)	0	25%	50%	0	0	-2
STA 9+45 to STA 9+72	2	25%	100%	2	11	-11
BRIDGE REMOVAL (SEE NOTE 1)	167	25%	100%	63	0	52
STA 10+28 to STA 10+55	0	25%	100%	0	23	29
STA 10+55 to STA 11+00	0	25%	100%	0	35	-6
STA 11+00 to STA 12+00	19	25%	100%	14	35	-27
STA 12+00 to STA 12+25	9	25%	100%	7	0	-20

TOTALS: 64 = EARTH EXC. DEFICIT = 20
 FURNISHED EXC. = 20

NOTE 1:
 Paid for as removal of existing structures. If suitable, can be used as furnished excavation.

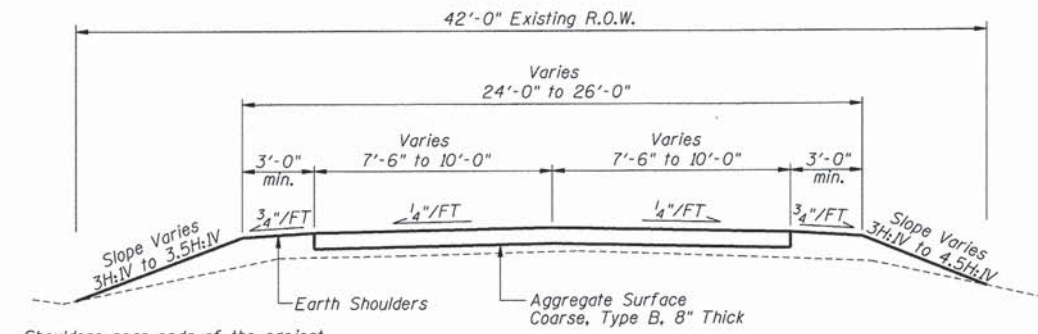
40200800

LOCATION	TONS
STA. 7+75 TO STA. 9+72.25	158
STA. 9+56 RT (Field Ent.)	11
STA. 10+27.75 TO STA. 12+25	158
TOTAL	327



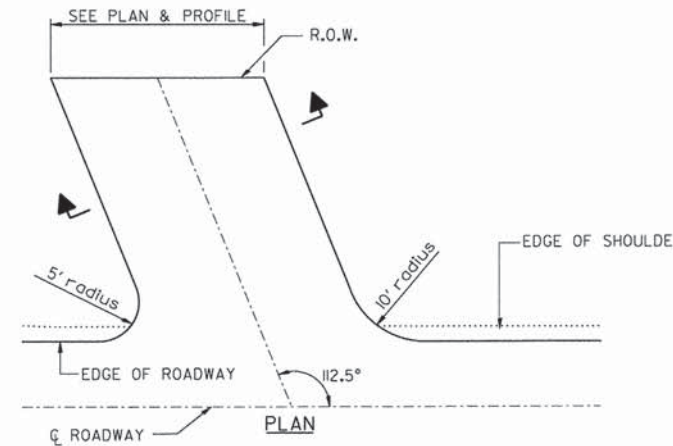
EXISTING ROADWAY SECTION

Sta. 7+75 to Sta. 9+45
 Sta. 10+55 to Sta. 12+25

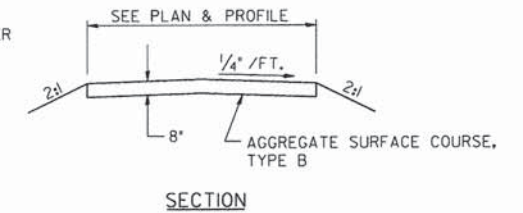


PROPOSED ROADWAY SECTION

Sta. 7+75 to Sta. 9+45
 Sta. 10+55 to Sta. 12+25



ENTRANCE DETAIL
 FIELD ENT = STA. 9+56, RT



ENTRANCE DETAIL-SECTION
 FIELD ENT = STA. 9+56, RT

DSGN	K.J. Hoffmann				
DR	N.J. Liggett				
CHK	J.R. Wolf				
APVD	J.A. Fraenhoffer	NO.	DATE	REVISION	BY



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• 35701 WEST AVENUE, SUITE 150 WARRENVILLE, ILLINOIS 60555
 PHONE 630.393.3060, FAX 630.393.2152
 • 10 S. RIVERSIDE PLAZA, SUITE 1800 CHICAGO, ILLINOIS 60606
 PHONE 312.683.0110, FAX 312.474.6099

SUMMARY OF QUANTITIES AND TYPICAL SECTIONS

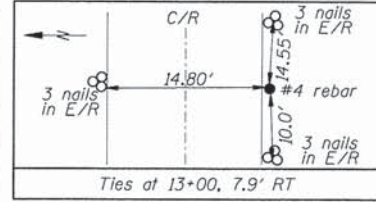
TR15 (3900N) OVER WHISKEY CREEK
 SEC 12-02148-00-BR
 VERMILION COUNTY

SHEET	2
DWG NO.	13012500.dgn
DATE	MAY 2013
PROJ NO.	C13012

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 15	*	Vermilion	13	3



BM #1 - R.R. Spike in NE wing wall, Elev. 99.92
 BM #2 - Chiseled "X" in top of the SW curb of the bridge, Elev. 100.18
 BM #3 - R.R. Spike in post at STA 2+83.5, 26' LT., Elev. 106.07

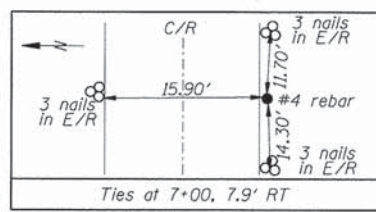
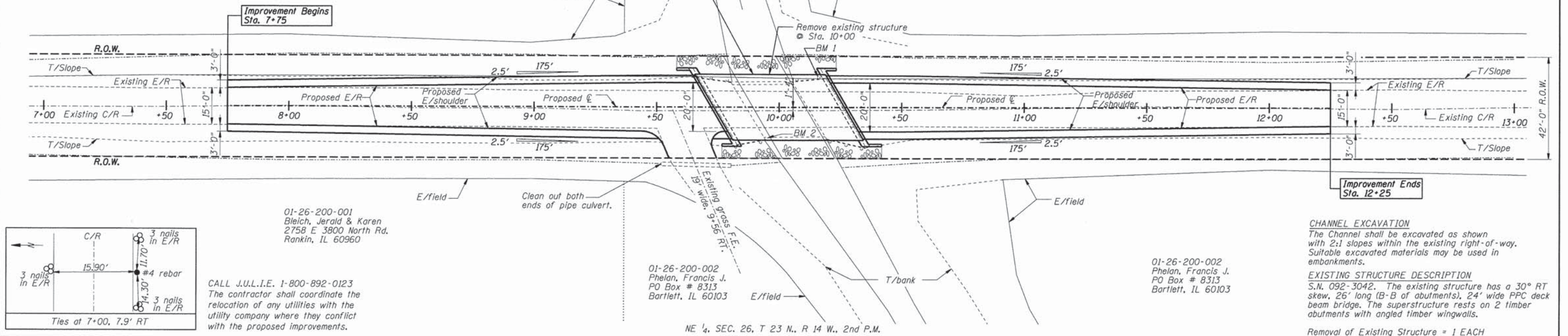


01-23-400-003
 Ray London Co. LLC
 PO Box #69
 Breda, IA 51436

Proposed Structure, New S.N. 092-3526,
 Sta. 10+00, skew 30° RT, single span,
 21" PPC deck beams, 55'-5 9/16" B/B abutments,
 27'-0" O/O deck

01-23-400-002
 Watts, Janet
 1011 Park Terrace
 Paxton, IL 60957

01-23-400-002
 Watts, Janet
 1011 Park Terrace
 Paxton, IL 60957



CALL J.U.L.I.E. 1-800-892-0123
 The contractor shall coordinate the
 relocation of any utilities with the
 utility company where they conflict
 with the proposed improvements.

01-26-200-001
 Bleich, Jerald & Karen
 2758 E 3800 North Rd.
 Rankin, IL 60960

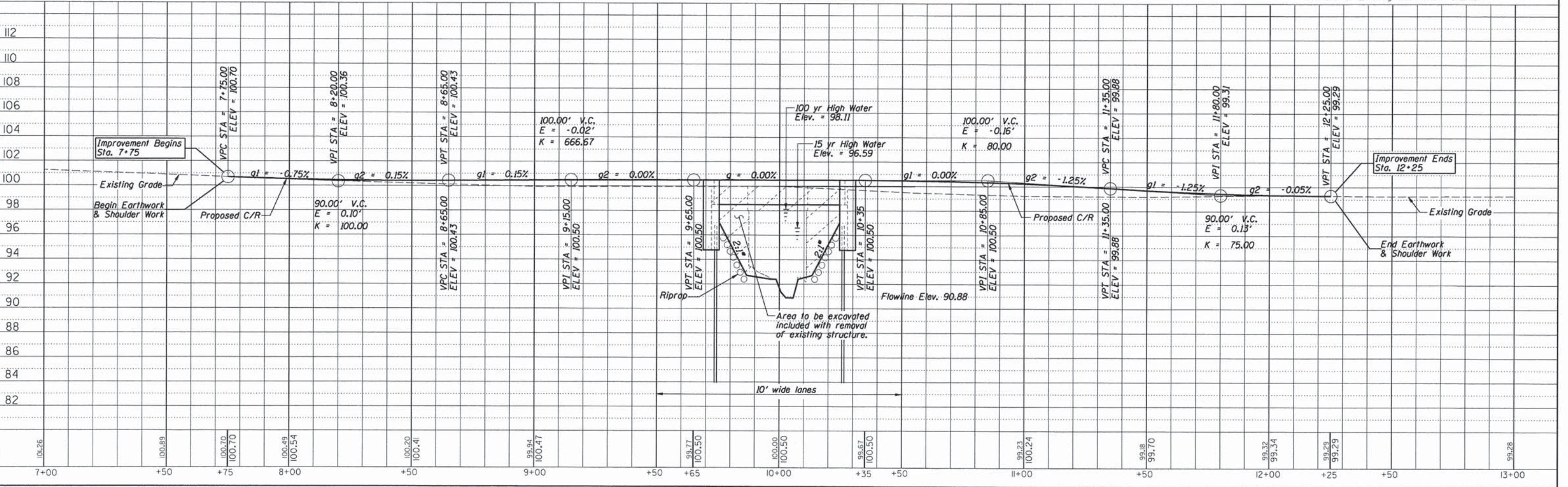
01-26-200-002
 Phelan, Francis J.
 PO Box # 8313
 Bartlett, IL 60103

01-26-200-002
 Phelan, Francis J.
 PO Box # 8313
 Bartlett, IL 60103

CHANNEL EXCAVATION
 The Channel shall be excavated as shown
 with 2:1 slopes within the existing right-of-way.
 Suitable excavated materials may be used in
 embankments.

EXISTING STRUCTURE DESCRIPTION
 S.N. 092-3042. The existing structure has a 30° RT
 skew, 26' long (B-B of abutments), 24' wide PPC deck
 beam bridge. The superstructure rests on 2 timber
 abutments with angled timber wingwalls.

Removal of Existing Structure = 1 EACH



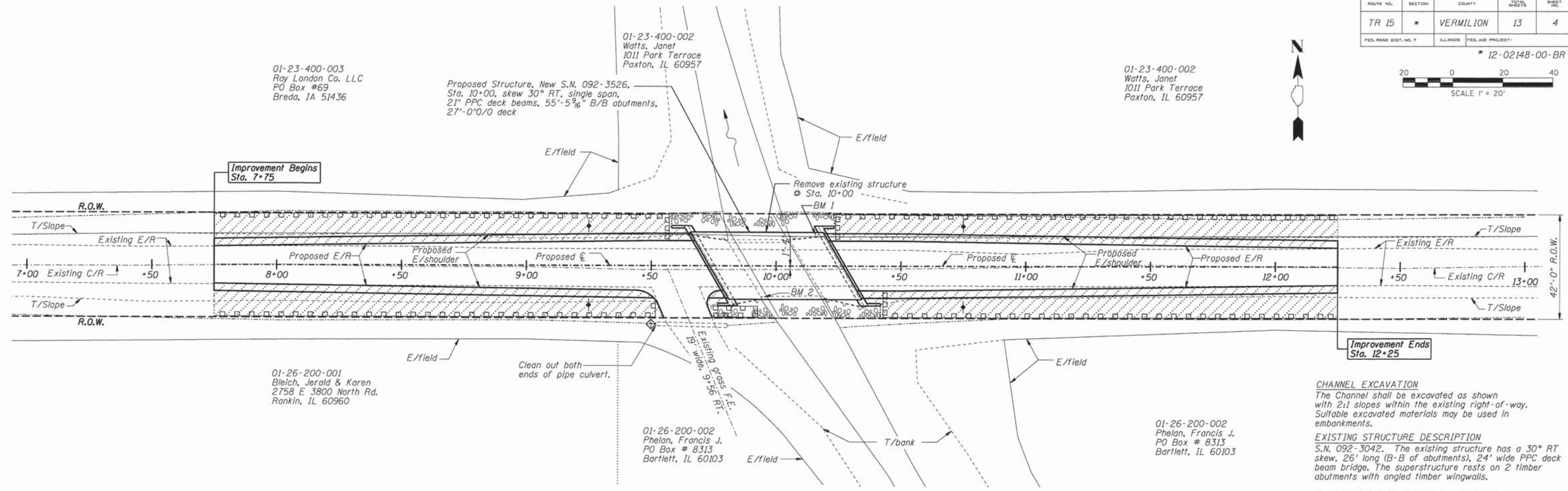
DATE	BY	REVISION

DATE	BY	REVISION



ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 15	*	VERMILION	13	4
FED. RD. DIST. NO. 7		ILLINOIS	FED. AID PROJECT	

* 12-02148-00-BR



CHANNEL EXCAVATION
The Channel shall be excavated as shown with 2:1 slopes within the existing right-of-way. Suitable excavated materials may be used in embankments.

EXISTING STRUCTURE DESCRIPTION
S.N. 092-3042. The existing structure has a 30° RT skew, 26' long (B-B of abutments), 24' wide PPC deck beam bridge. The superstructure rests on 2 timber abutments with angled timber wingwalls.

Removal of Existing Structure = 1 EACH

EROSION CONTROL SEQUENCE

1. Placement of perimeter erosion control barrier prior to commencement of any work. See Standard 280001.
2. Removal of the existing structure
3. Earth excavation & structure excavation.
5. Construction of the substructure.
6. Placement of PPC deck beams
7. Place riprap.
8. Regrade for pavement widening and aggregate placement.
9. Install bridge rail.
10. Removal and proper clean up of the temporary erosion controls.
11. Placement of the permanent erosion controls.

PERMANENT EROSION CONTROL

Seeding, Cl. 2 with Fertilizer and Mulch

TEMPORARY EROSION CONTROL

- Temporary Ditch Check (10' each location)
- Inlet and Pipe Protection
- Perimeter Erosion Barrier
- Temporary Erosion Control Seeding

NITROGEN FERTILIZER NUTRIENT				POUND
PHOSPHORUS FERTILIZER NUTRIENT				
POTASSIUM FERTILIZER NUTRIENT				POUND
LOCATION				
STA. 7+75.00 TO STA. 9+66.49	LT			6
STA. 7+75.00 TO STA. 9+80.97	RT			6
STA. 10+19.02 TO STA. 12+25.00	LT			6
STA. 10+33.50 TO STA. 12+25.00	RT			6
TOTAL				24

SEEDING, CLASS 2				ACRE
MULCH, METHOD 2				
LOCATION				
STA. 7+75.00 TO STA. 9+66.49	LT			0.06
STA. 7+75.00 TO STA. 9+80.97	RT			0.06
STA. 10+19.02 TO STA. 12+25.00	LT			0.06
STA. 10+33.50 TO STA. 12+25.00	RT			0.06
TOTAL				0.24

TEMPORARY DITCH CHECKS				FOOT
LOCATION				
STA. 9+25	LT/RT			20
STA. 10+75	LT/RT			20
TOTAL				40

PERIMETER EROSION BARRIER				FOOT
LOCATION				
STA. 7+75.00 TO STA. 9+58.00	LT			200
STA. 7+75.00 TO STA. 9+55.00	RT			200
STA. 9+72.00 TO STA. 9+92.00	RT			15
STA. 10+23.00 TO STA. 12+25.00	LT			215
STA. 10+41.00 TO STA. 12+25.00	RT			200
TOTAL				830

TEMPORARY EROSION CONTROL SEEDING				POUND
LOCATION				
STA. 7+75.00 TO STA. 9+66.49	LT			6
STA. 7+75.00 TO STA. 9+80.97	RT			6
STA. 10+19.02 TO STA. 12+25.00	LT			6
STA. 10+33.50 TO STA. 12+25.00	RT			6
TOTAL				24

INLET AND PIPE PROTECTION			EACH
LOCATION			
STA. 9+50.00	RT		1
TOTAL			1

BILL OF MATERIAL - EROSION CONTROL		
ITEM	UNIT	QUANTITY
Seeding, Class 2	ACRE	0.24
Nitrogen Fertilizer Nutrient	POUND	24
Phosphorus Fertilizer Nutrient	POUND	24
Potassium Fertilizer Nutrient	POUND	24
Mulch, Method 2	ACRE	0.24
Temporary Erosion Control Seeding	POUND	24
Temporary Ditch Checks	FOOT	40
Perimeter Erosion Barrier	FOOT	830
Inlet and Pipe Protection	EACH	1

BM #1 - R.R. Spike in NE wing wall, Elev. 99.92
 BM #2 - Chiseled "X" in top of the SW curb of the bridge, Elev. 100.18
 BM #3 - R.R. Spike in post at STA 2+83.5, 26' LT., Elev. 106.07

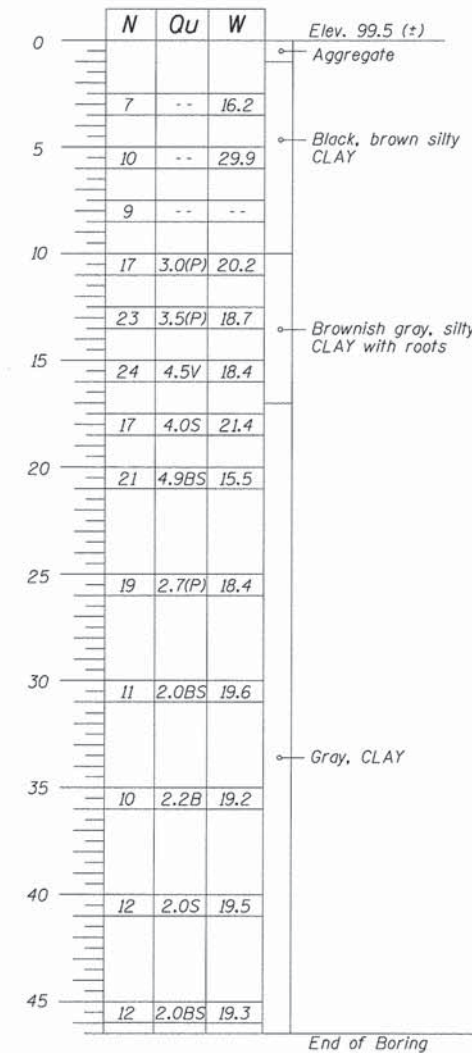
BORING DATA

N - Standard Penetration Test - Blows per foot to drive 2" O.D. split spoon sampler 12" with 140 lb. hammer falling 30".
 Qu - Unconfined Compressive Strength - Tons/Sq. Ft.
 P - Penetrometer Test
 B - Bulging Failure, S - Split Failure, V - Shear Failure
 W - Water Content - Percentage of oven dry weight - %

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 15	*	Vermilion	13	5
FED. ROAD DIST. NO. 7		ILLINOIS FED. AID PROJECT-		
* 12-02148-00-BR				

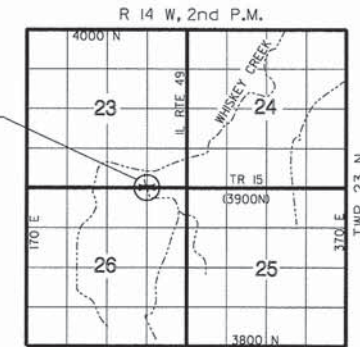
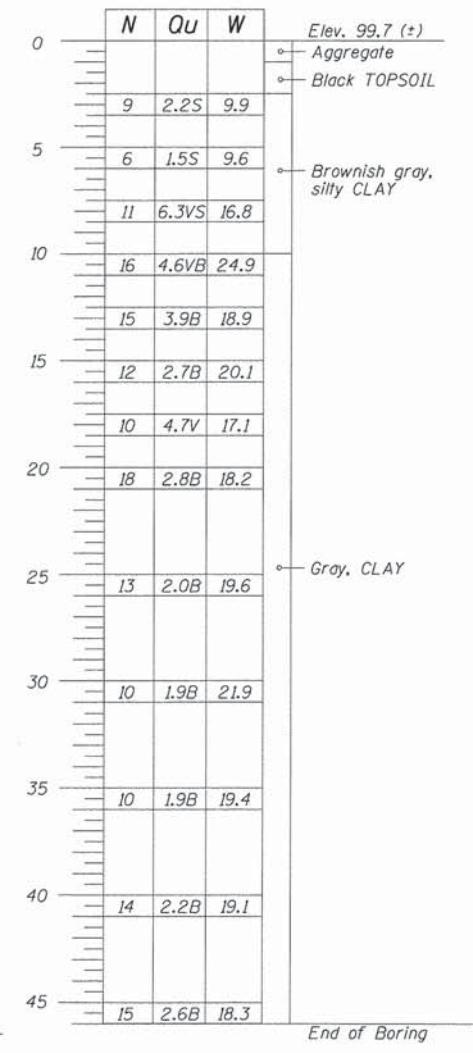
BORING B-1

Location: STA 10+30.5 (+), 0.2' LT.
 Elev. 99.5 (+)
 Water Level: N/A



BORING B-2

Location: STA 9+71.5 (+), 3.5' RT.
 Elev. 99.7 (+)
 Water Level: N/A



LOCATION MAP

Structure No. 092-3526
 Sec. 12-02148-00-BR
 Bull# 20
 TR 15
 Vermilion County
 Loading HL-93

NAME PLATE

See Standard 515001



PROFILE GRADE

DESIGN SPECIFICATIONS

AASHTO (2010) and applicable Interims

DESIGN LOADING

HL-93
 50 P.S.F Future Wearing Surface

DESIGN STRESSES

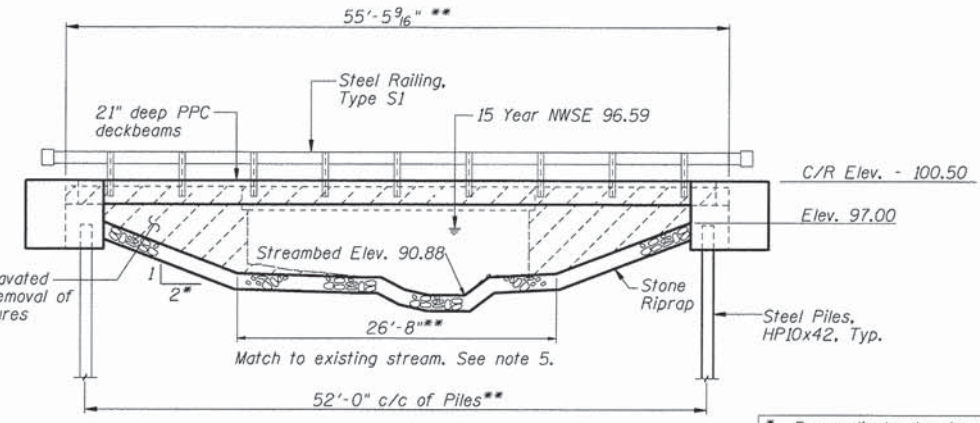
$f'_c = 3,500$ psi (Cast in Place Concrete)
 $f'_c = 5,000$ psi (P.P.C. Units)
 $f'_{ci} = 4,000$ psi (P.P.C. Units)
 $f_y = 60,000$ psi (Reinforcement)
 $f'_s = 270,000$ psi ($1/2"$ ϕ Strands)
 $f'_{si} = 201,960$ psi ($1/2"$ ϕ Strands)

WATERWAY DATA

Drainage Area	1.11 Sq. Mi.
Existing Opening (15 Yr.)	90.2 Sq. Ft.
Required Opening (15 Yr.)	95.2 Sq. Ft.
Proposed Opening (15 Yr.)	137.3 Sq. Ft.
Design Discharge (15 Yr.)	424 C.F.S.
Computed Discharge (100 Yr.)	734 C.F.S.
15 Yr. Head	0.05 Ft.
100 Yr. Head	0.10 Ft.

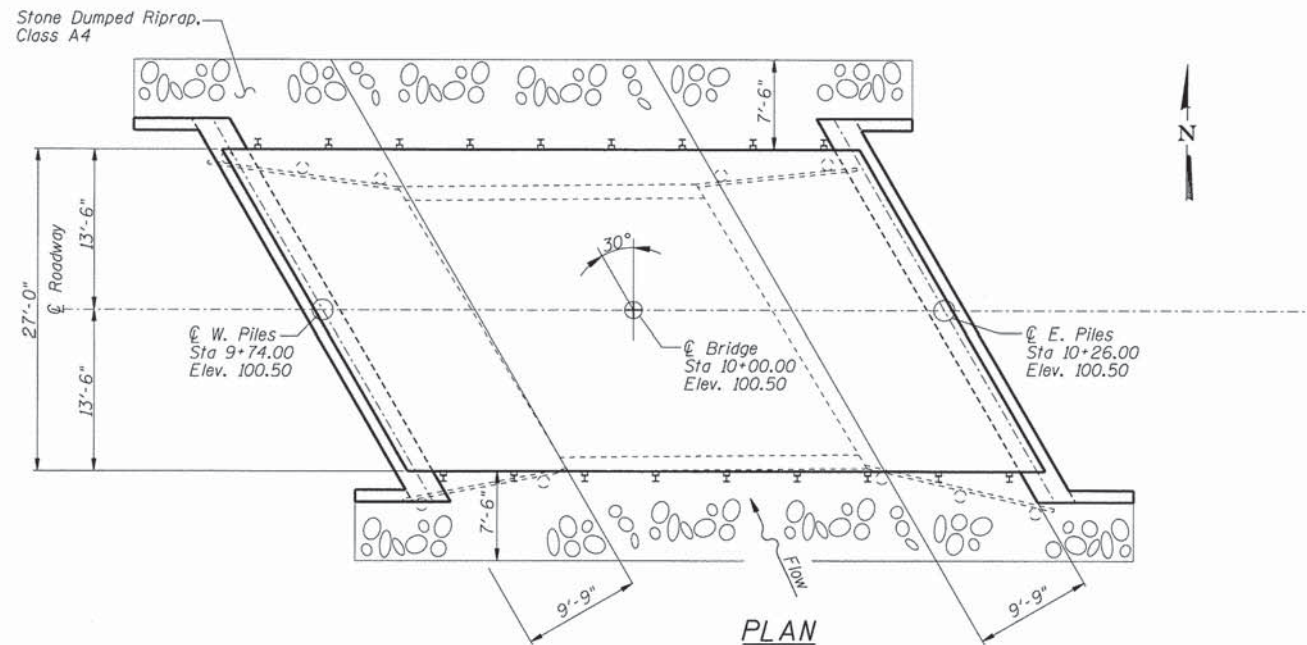
TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Removal of Existing Structures	Each	1	-	1
Structure Excavation	Cu. Yd.	-	143	143
Concrete Structures	Cu. Yd.	-	39.8	39.8
Precast Prestressed Concrete Deck Beams (21" depth)	Sq. Ft.	1441	-	1441
Reinforcement Bars	Pound	-	4260	4260
Steel Railing, Type S1	Foot	108	-	108
Furnishing Steel Piles HP10x42	Foot	-	500	500
Driving Piles	Foot	-	500	500
Test Pile Steel HP10x42	Each	-	2	2
Pile Shoes	Each	-	12	12
Name Plates	Each	-	1	1
Controlled Low-Strength Material	Cu. Yd.	-	58	58
Terminal Marker - Direct Applied	Each	4	-	4
Stone Dumped Riprap, Class A4 (Special)	Tons	-	250	250
Concrete Cut-Off Wall	Cu. Yd.	-	8.3	8.3



ELEVATION

* Perpendicular to skew
 ** Parallel to roadway



PLAN

GENERAL NOTES

- The Contractor shall drive test piles to 110% of the Nominal Required Bearing specified in production locations at the substructures specified or approved by the Engineer before ordering the remainder of the piles.
- Boring Data is shown only as a guide to bidders in estimating soil conditions which may be encountered during construction.
- Class SI or MS Concrete shall be used in the abutments.
- Reinforcement bars shall conform to the requirements of ASTM A706, Grade 60 (IL Modified). See Special Provisions.
- Layout of slope protection system may be varied in the field to suit ground conditions as directed by the Engineer.

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 the requirements of the current "AASHTO LRFD Bridge Design Specifications."



Kelly J. Hoffmann
 KELLY J. HOFFMANN
 Illinois Licensed Structural Engineer Number 6497
 License Expires 11/30/14

DSGN	K. J. Hoffmann				
DR	N. J. Liggett				
CHK	J. R. Wolf				
APVD	J. A. Fraunhoffer	NO.	DATE	REVISION	BY



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 10 S. RIVERSIDE PLAZA, SUITE 1800 CHICAGO, ILLINOIS 60606
 PHONE 312.683.0110, FAX 312.674.6099

GENERAL PLAN AND ELEVATION

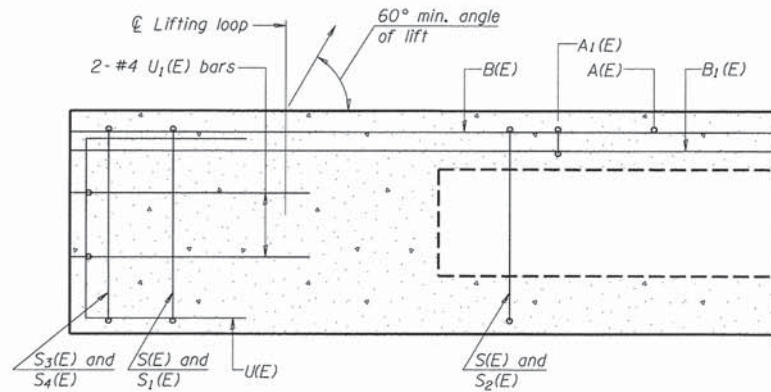
TR15 (3900N) OVER WHISKEY CREEK
 SEC 12-02148-00-BR
 VERMILION COUNTY

SHEET 5

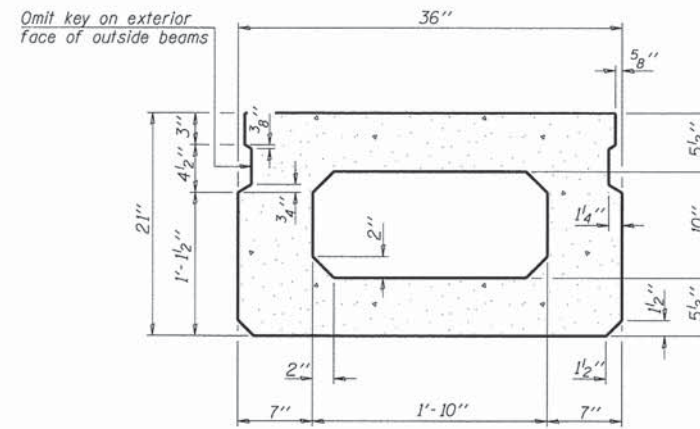
DWG NO. 13012GPE.dgn
 DATE AUG 2013
 PROJ NO. C13012

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 15	*	Vermilion	13	6
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

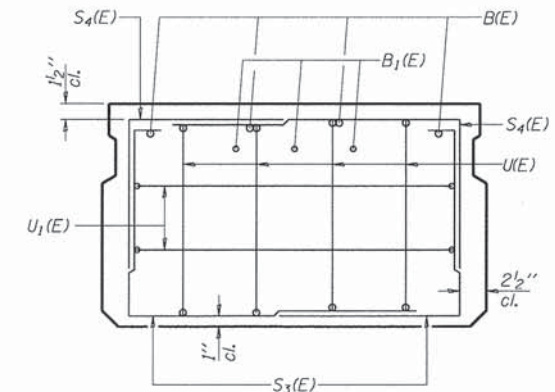
12-02148-00-BR



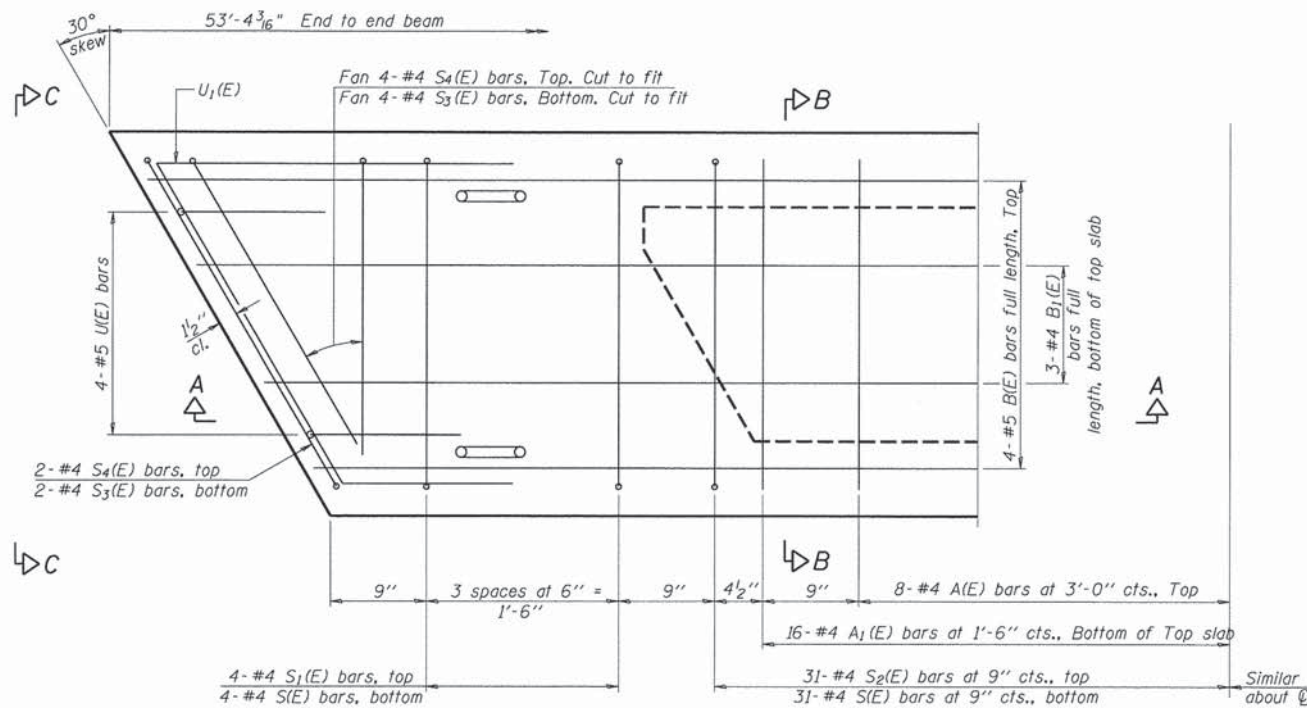
SECTION A-A



SECTION B-B
(Showing dimensions)

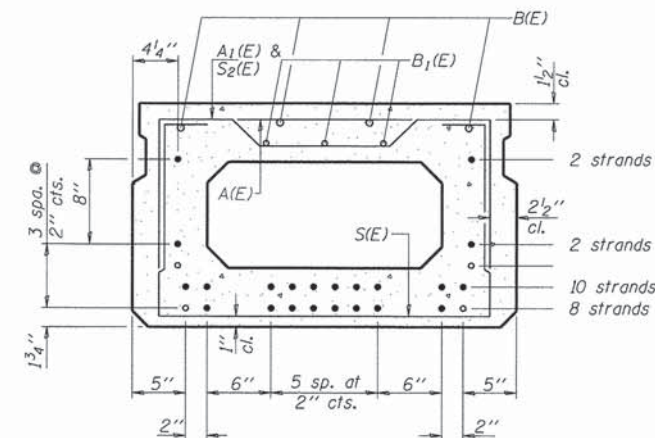


VIEW C-C



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.

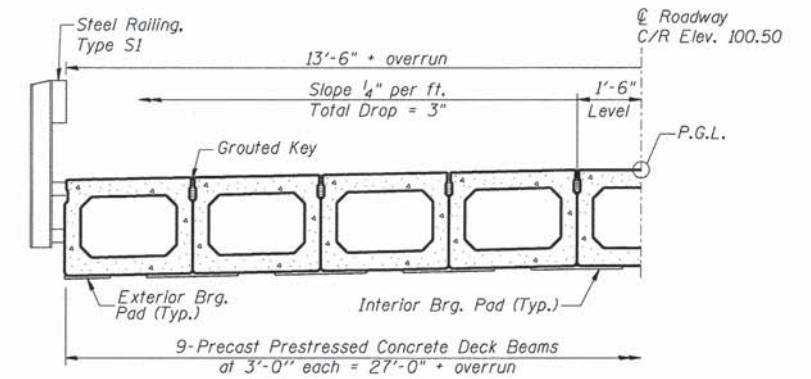


SECTION B-B
(Showing reinforcement and permissible strand locations)

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

MINIMUM BAR LAP

#4 bar = 2'-0"
#5 bar = 2'-6"



HALF CROSS SECTION

BAR LIST
ONE BEAM ONLY
(For information only)

Bar	No.	Size	Length	Shape
A(E)	16	#4	2'-7"	—
A1(E)	32	#4	2'-10"	—
B(E)	12	#5	19'-8"	—
B1(E)	9	#4	19'-8"	—
S(E)	62	#4	6'-5"	⌈
S1(E)	8	#4	4'-11"	⌈
S2(E)	70	#4	5'-2"	⌈
S3(E)	10	#4	4'-7"	⌈
S4(E)	10	#4	3'-10"	⌈
U(E)	8	#5	4'-0"	⌈
U1(E)	4	#4	6'-10"	⌈

Note: See sheet 2 of 2 for additional details and Bill of Material.

21" x 36" PPC DECK BEAM
STRUCTURE NO. 092-3526

PD-2136-R

7-1-10

DSGN	J. Hoffmann				
DR	N.J. Liggett				
CHK	J.R. Wolf				
APVD	J.A. Fraenhoffer	NO.	DATE	REVISION	BY



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RESOURCE
ASSOCIATES, INC.
CONSULTING ENGINEERS, SCIENTISTS
& SURVEYORS

3002 CROSSING COURT
CHAMPAIGN, IL 61822
PHONE (217) 351-6268
FAX (217) 355-1902

38701 WEST AVENUE, SUITE 150 WARRENVILLE, ILLINOIS 60555
PHONE 630.393.3060, FAX 630.393.2152
10 S. RIVERSIDE PLAZA, SUITE 1800 CHICAGO, ILLINOIS 60606
PHONE 312.683.0110, FAX 312.674.6099

SUPERSTRUCTURE DETAILS (SHEET 1 of 2)

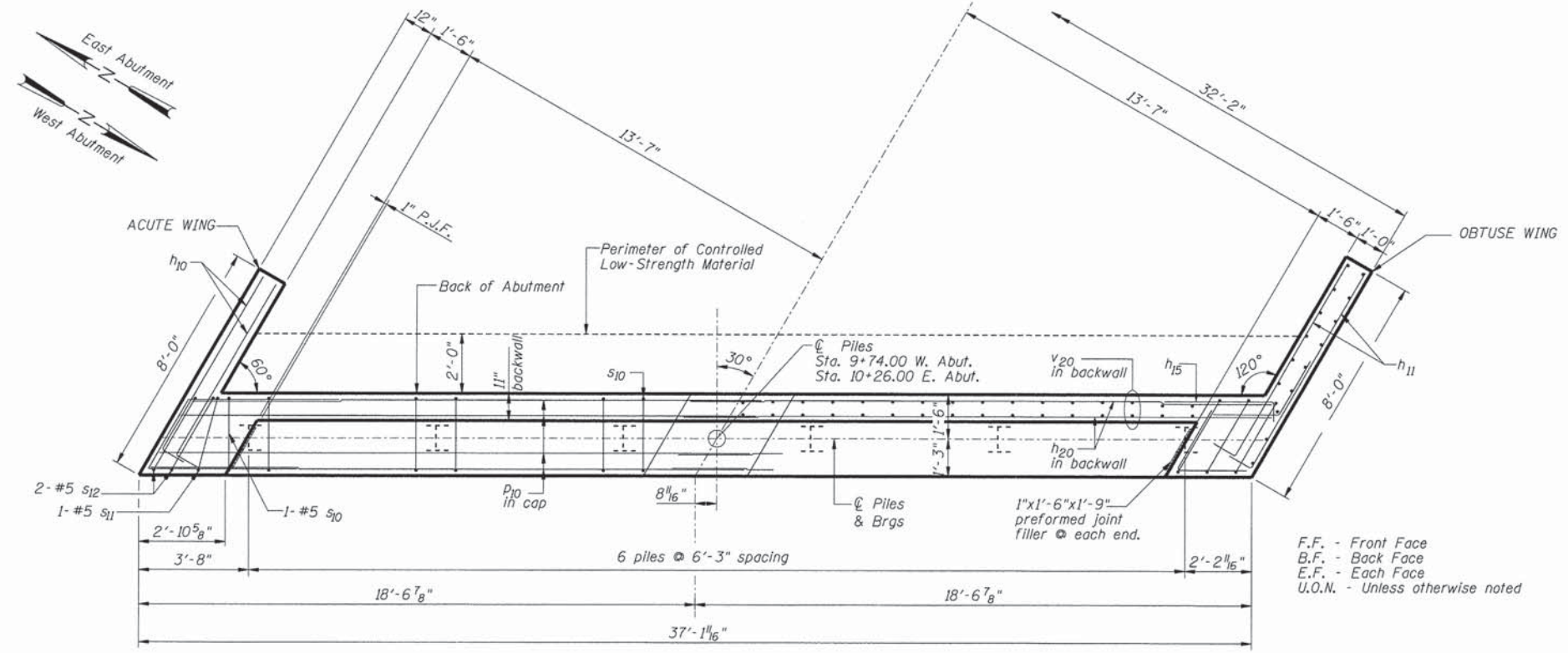
TR15 (3900N) OVER WHISKEY CREEK
SEC 12-02148-00-BR
VERMILION COUNTY

SHEET 6

DWG NO. 13012SUP.dgn
DATE AUG 2013
PROJ NO. C13012

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 15	*	Vermilion	13	8
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

* 12-02148-00-BR



NOTES:
Controlled Low-Strength Material shall be placed behind the abutment up to 6" from finished grade or the bottom of the Aggregate Surface Course, Type B.
Backwall and the tops of wingwalls shall be poured after beams are in place.

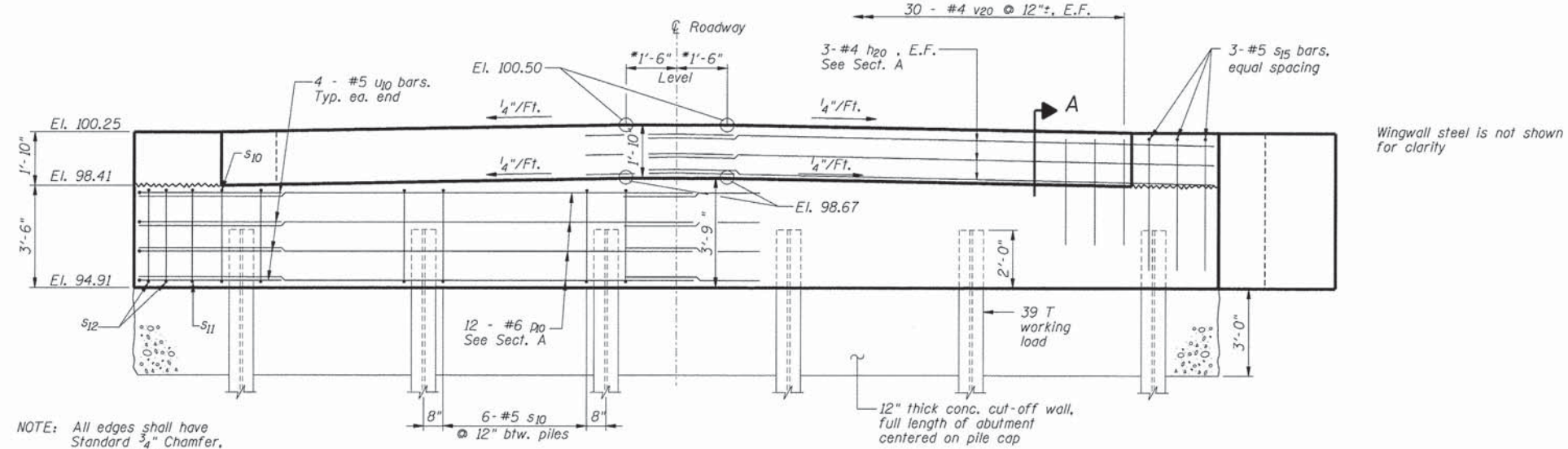
PILE DATA

Type: Steel HP 10x42
Nominal Required Bearing: 235 kips
Factored Resistance Available: 127 kips
Estimated Length: 50 ft.
No. Required: 5 @ West Abutment
5 @ East Abutment
Test Piles: 1 @ West Abutment
1 @ East Abutment

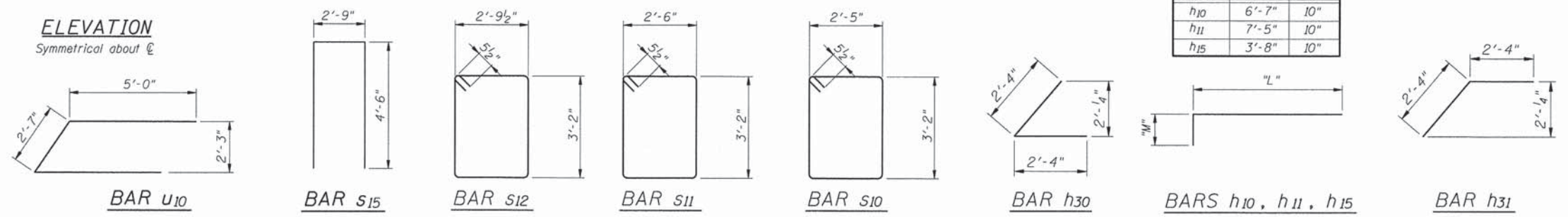
Note: The Steel H-piles shall be according to AASHTO M270 Grade 50.

BILL OF MATERIAL - 2 ABUTS.

Bar	No.	Size	Length	Shape
h ₁₀	24	# 5	7'-5"	□
h ₁₁	24	# 5	8'-3"	□
h ₁₅	12	# 5	4'-6"	□
h ₂₀	24	# 4	19'-8"	□
h ₃₀	12	# 5	4'-8"	□
h ₃₁	12	# 5	4'-8"	□
p ₁₀	48	# 6	20'-4"	□
s ₁₀	64	# 5	12'-1"	□
s ₁₁	4	# 5	12'-3"	□
s ₁₂	8	# 5	12'-10"	□
s ₁₅	12	# 5	11'-10"	□
u ₁₀	16	# 6	12'-7"	□
v ₁₀	60	# 4	5'-0"	□
v ₂₀	120	# 4	3'-8"	□
Concrete Structures			Cu. Yds.	39.8
Reinforcement Bars			Lbs.	4,260
Test Pile, Steel HP10x42			Each	2
Furnishing Steel Piles HP10x42			Foot	500
Driving Piles			Foot	500
Pile Shoes			Each	12
Name Plate			Each	1
Concrete Cut-off Wall			Cu. Yds.	8.3
Structure Excavation			Cu. Yds.	143
Controlled Low-Strength Material			Cu. Yds.	58



NOTE: All edges shall have Standard $\frac{3}{4}$ " Chamfer, except as noted.



DSGN	J. Hoffmann				
DR	N.J. Liggett				
CHK	J.R. Wolf				
APVD	J.A. Fraunhoffer	NO.	DATE	REVISION	BY



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3002 CROSSING COURT
CHAMPAIGN, IL 61822
PHONE (217) 351-6268
FAX (217) 355-1902

35701 WEST AVENUE, SUITE 150 WARRENVILLE, ILLINOIS 60555
PHONE 630.593.3060, FAX 630.393.2152
10 S. RIVERSIDE PLAZA, SUITE 1800 CHICAGO, ILLINOIS 60606
PHONE 312.683.0110, FAX 312.474.6099

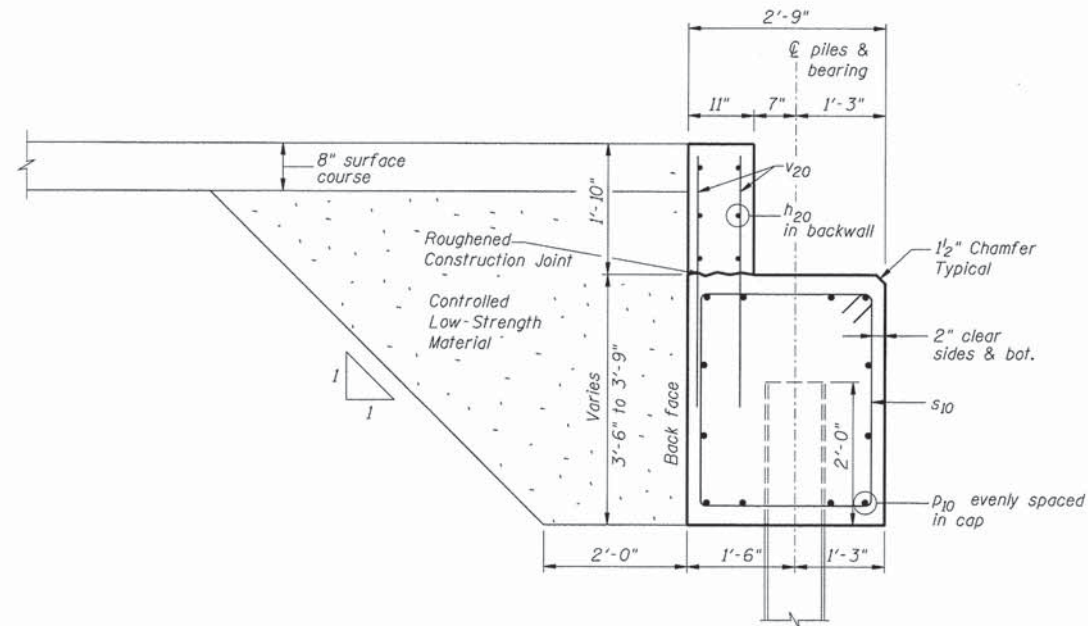
ABUTMENT DETAILS (SHEET 1 of 2)

TR15 (3900N) OVER WHISKEY CREEK
SEC 12-02148-00-BR
VERMILION COUNTY

SHEET	8
DWG NO.	13012abut.dgn
DATE	AUG 2013
PROJ NO.	C13012

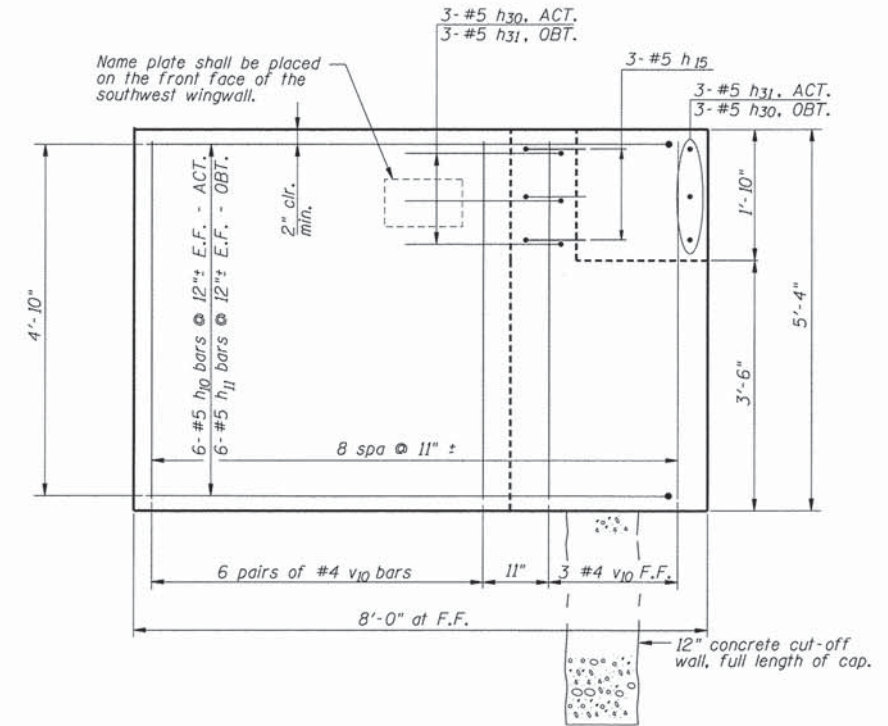
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 15	*	Vermilion	12	9
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

* 12-02148-00-BR



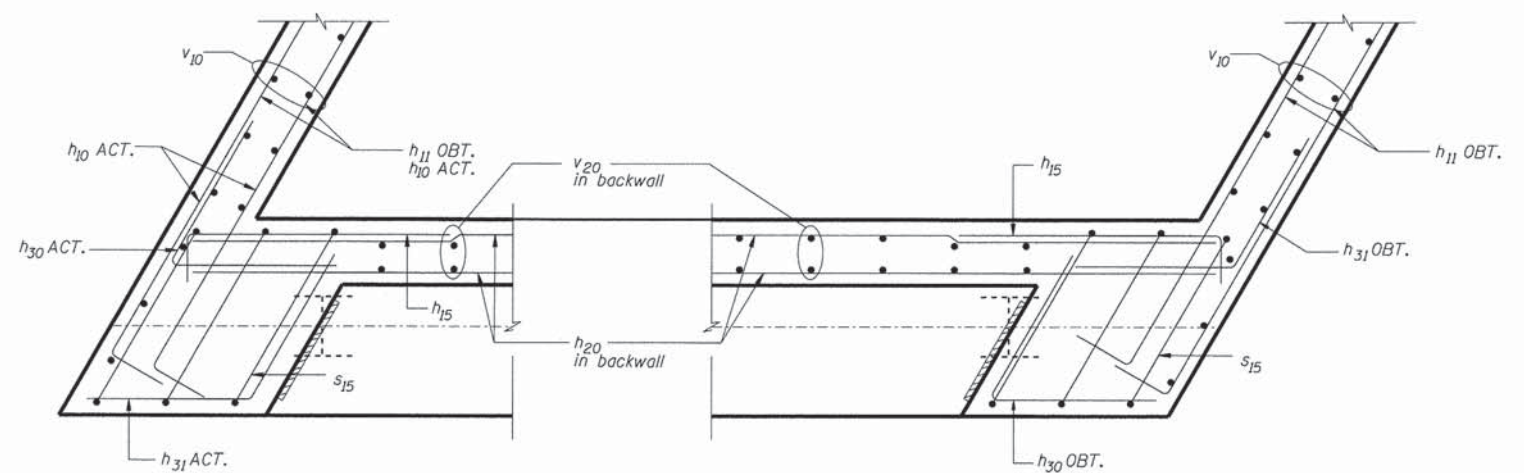
SECTION A
(Perpendicular to \bar{C} of Abutment)

F.F. - Front Face
B.F. - Back Face
E.F. - Each Face
ACT. = Acute Wing
OBT. = Obtuse Wing



WINGWALL ELEVATION

Wingwalls shall be poured after beam is in place



CORNER DETAIL
ACUTE WING SHOWN.

CORNER DETAIL
OBTUSE WING SHOWN.

DSGN	K.J. Hoffmann				
DR	N.J. Liggett				
CHK	J.R. Wolf				
APVD	J.A. Fraunhoffer	NO.	DATE	REVISION	BY



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PHONE 630.393.3060, FAX 630.393.2152
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PHONE 312.683.0110, FAX 321.474.6099

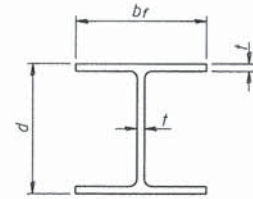
ABUTMENT DETAILS (SHEET 2 of 2)

TR15 (3900N) OVER WHISKEY CREEK
SEC 12-02148-00-BR
VERMILION COUNTY

SHEET	9
DWG NO.	13012abut.dgn
DATE	AUG 2013
PROJ NO.	C13012

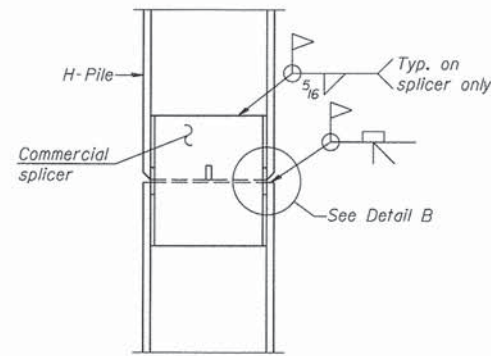
ROUTE NO.	SECTION	COUNTY	SHEET NO.
TR 15	*	Vermilion	13
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT

* 12-02148-00-BR

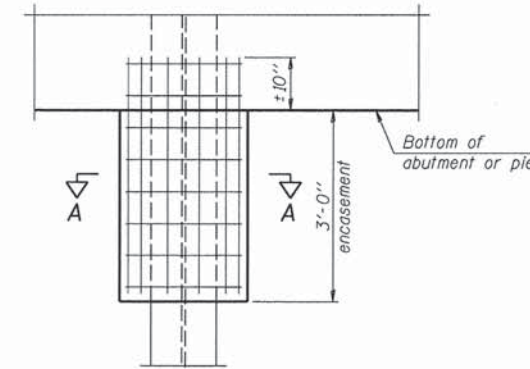


STEEL PILE TABLE

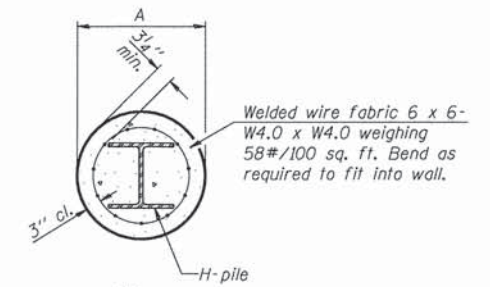
Designation	Depth d	Flange width br	Web and Flange thickness t	Encasement diameter A
HP 14x117	14 1/4"	14 7/8"	13/16"	30"
x102	14"	14 3/4"	1/16"	30"
x89	13 7/8"	14 3/4"	5/8"	30"
x73	13 5/8"	14 5/8"	1/2"	30"
HP 12x84	12 1/4"	12 1/4"	1/16"	24"
x74	12 1/8"	12 1/4"	5/8"	24"
x63	12"	12 1/8"	1/2"	24"
x53	11 3/4"	12"	7/16"	24"
HP 10x57	10"	10 1/4"	9/16"	24"
x42	9 3/4"	10 1/8"	7/16"	24"
HP 8x36	8"	8 1/8"	7/16"	18"



ELEVATION



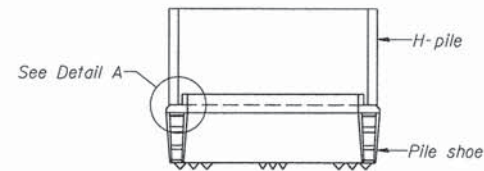
ELEVATION



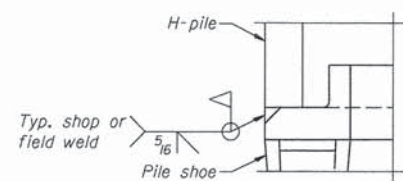
SECTION A-A

Note:
Forms for encasement may be omitted when soil conditions permit.

PILE ENCASEMENT

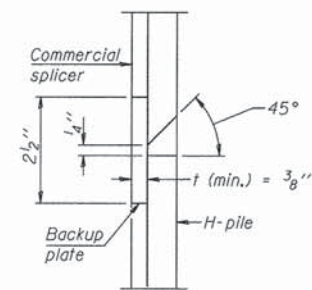


ELEVATION



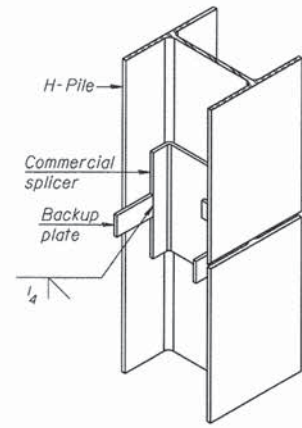
DETAIL A

H-PILE SHOE ATTACHMENT

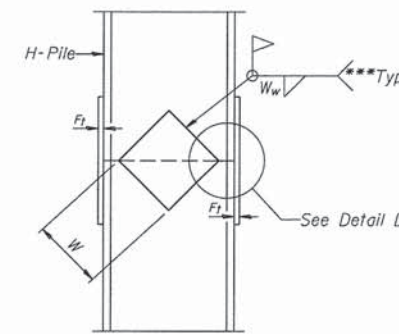


DETAIL "B"

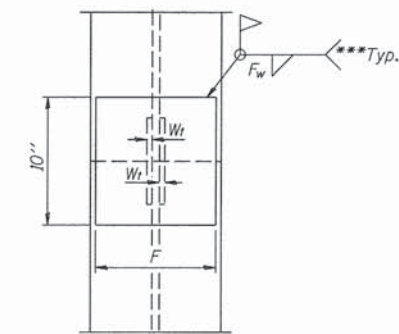
WELDED COMMERCIAL SPLICE



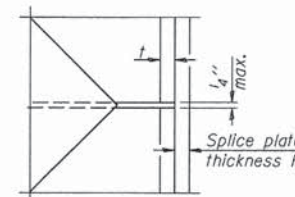
ISOMETRIC VIEW



ELEVATION



END VIEW



DETAIL D

Designation	F	F _t	F _w	W	W _t	W _w
HP 14x117	12 1/2"	1"	7/8"	7 3/4"	5 1/2"	1/2"
x102	12 1/2"	7/8"	3/4"	7 3/4"	5 1/2"	1/2"
x89	12 1/2"	3/4"	1/16"	7 3/4"	5 1/2"	1/2"
x73	12 1/2"	5/8"	9/16"	7 3/4"	5 1/2"	1/2"
HP 12x84	10"	7/8"	1/16"	6 1/2"	5 1/2"	1/2"
x74	10"	7/8"	1/16"	6 1/2"	5 1/2"	1/2"
x63	10"	5/8"	1/2"	6 1/2"	1/2"	3/8"
x53	10"	5/8"	1/2"	6 1/2"	1/2"	3/8"
HP 10x57	8"	3/4"	9/16"	5 1/4"	1/2"	3/8"
x42	8"	5/8"	9/16"	5 1/4"	1/2"	3/8"
HP 8x36	7"	5/8"	7/16"	4 1/4"	1/2"	3/8"

WELDED PLATE FIELD SPLICE

- * Use joint conforming to Figure 3.4 in AWS D1.1. Structure Welding Code - Steel.
- ** Preparation per Fig. 5.2 in AWS D1.1. Structure Welding Code - Steel.
- *** Interrupt welds 1/4" from end of each pile.

Note:
The steel H-piles shall be according to AASHTO M270 Grade 50.

COMPLETE PENETRATION WELD SPLICE

F-HP

10-1-08

DSGN	K.J. Hoffmann				
DR	N.J. Liggett				
CHK	J.R. Wolf				
APVD	J.A. Fraunhoffer	NO.	DATE	REVISION	BY



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3002 CROSSING COURT CHAMPAIGN, IL 61822 PHONE (217) 351-6268 FAX (217) 355-1902

35701 WEST AVENUE, SUITE 150 WARRENVILLE, ILLINOIS 60555 PHONE 630.393.3060, FAX 630.393.2152
10 S. RIVERSIDE PLAZA, SUITE 1800 CHICAGO, ILLINOIS 60606 PHONE 312.683.0110, FAX 321.474.6099

PILE DETAILS

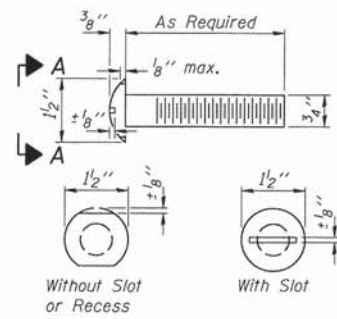
TR15 (3900N) OVER WHISKEY CREEK SEC 12-02148-00-BR VERMILION COUNTY

SHEET 10

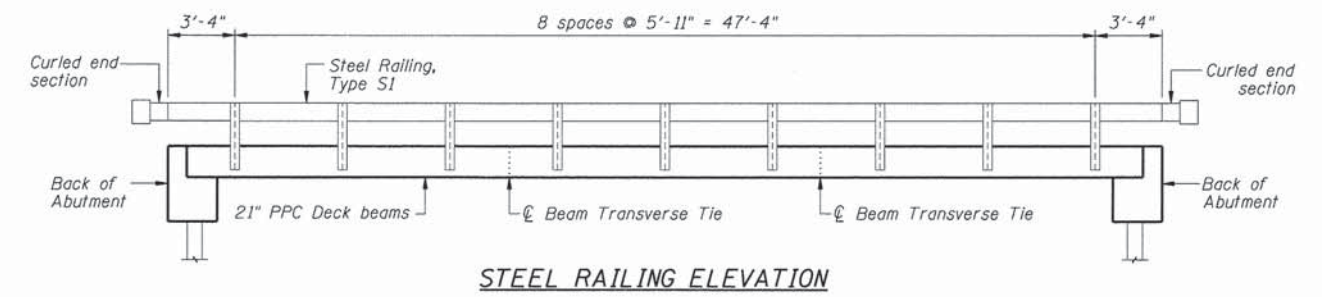
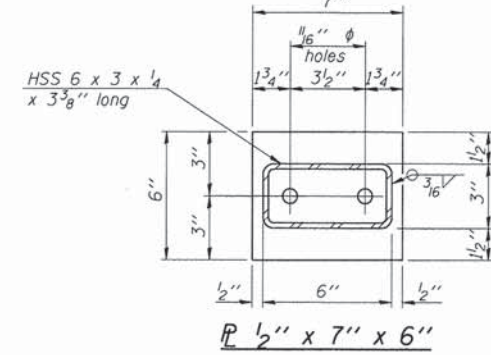
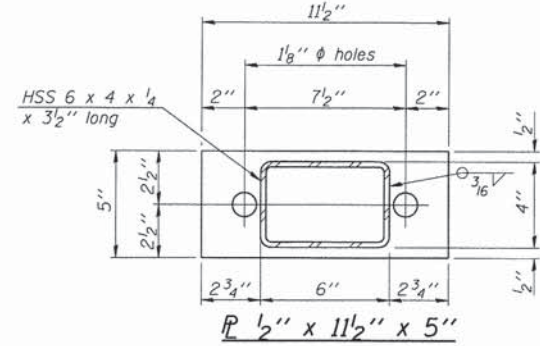
DWG NO. 13012PLE.dgn DATE MAY 2013 PROJ NO. C13012

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 15	#	Vermilion	13	11
FED. ROAD DIST. NO. 7	SECTION	FED. AID PROJECT		

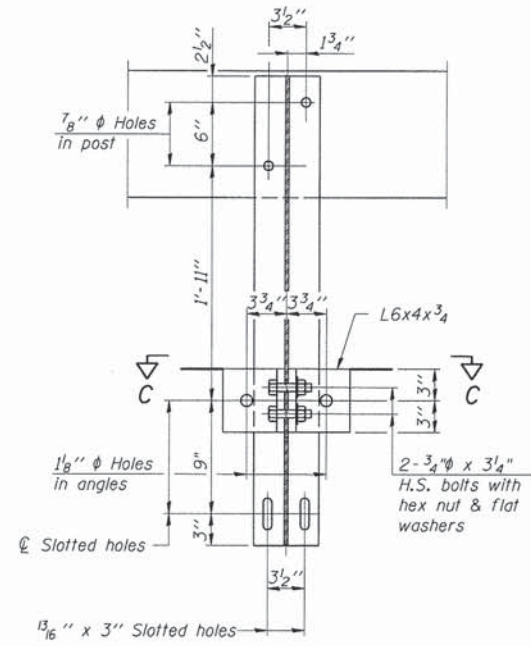
* 12-02148-00-BR



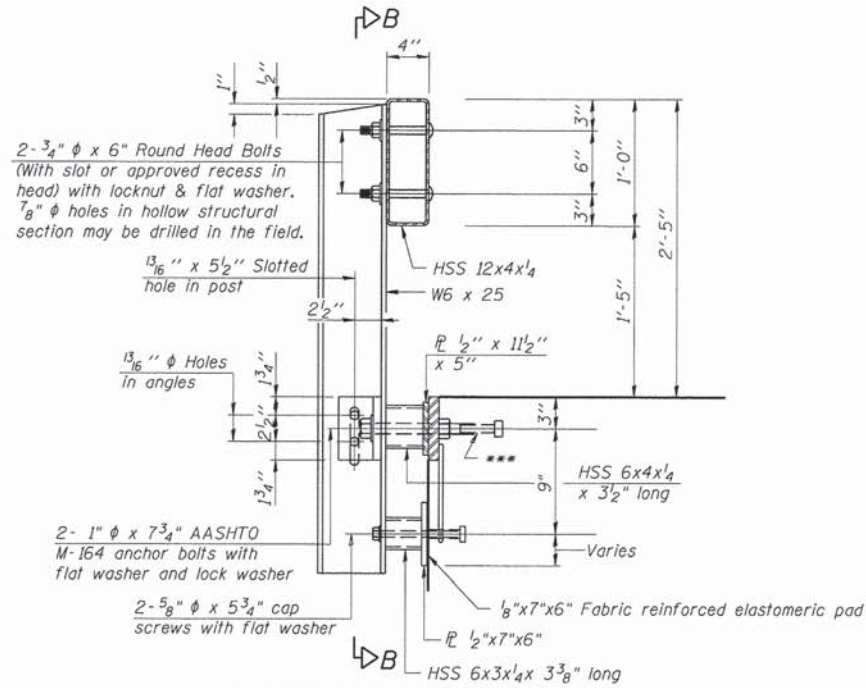
VIEW A-A
ROUND HEAD BOLT



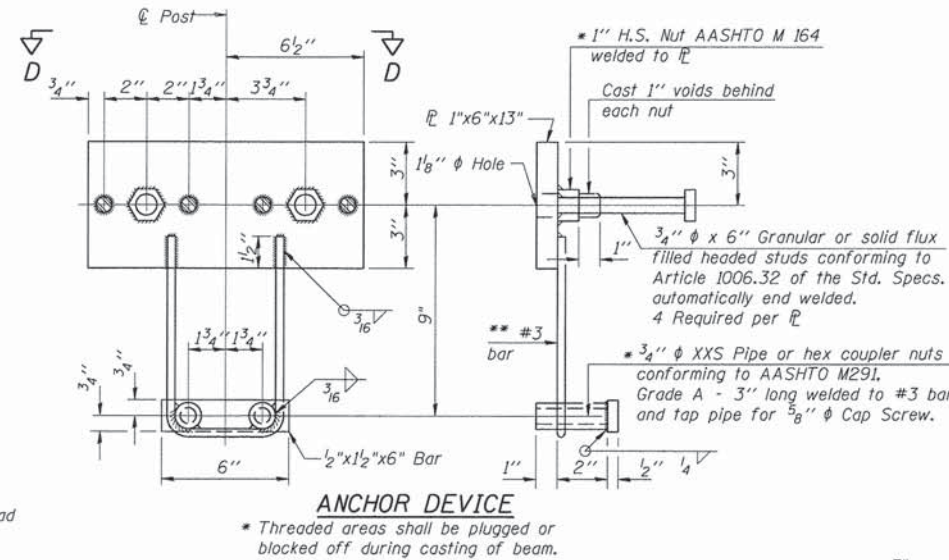
STEEL RAILING ELEVATION



SECTION B-B

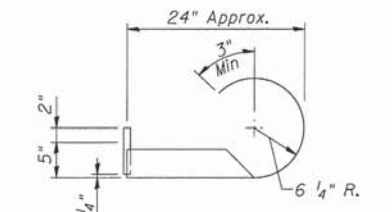


SECTION AT RAILING POST

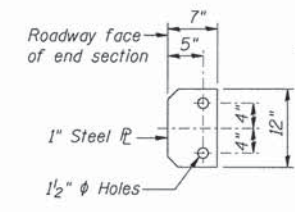


ANCHOR DEVICE

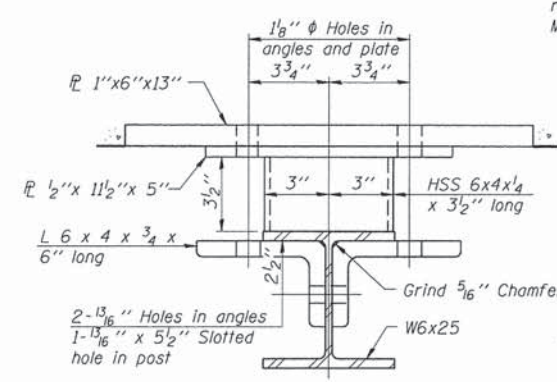
Notes:
All field drilled holes shall be coated with an approved zinc rich paint before erection.
For multi-span bridges, sufficient 1/4 inch x 6 inch x 1-2 inch galvanized steel shims shall be provided to align rail between adjacent spans. Cost included with Steel Railing, Type S-1.
All steel rail elements 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.



CURLED END SECTION DETAIL

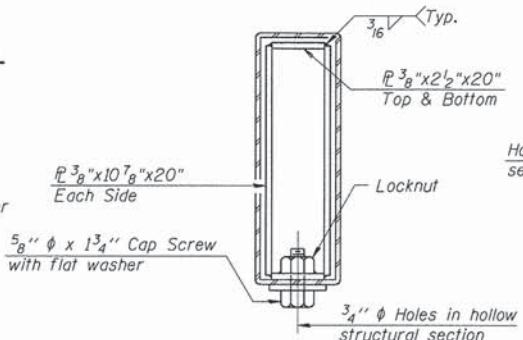


SECTION G-G

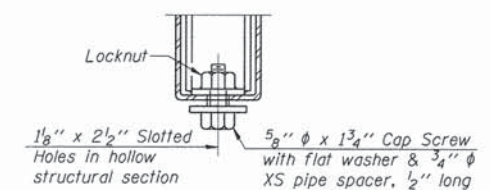


SECTION C-C

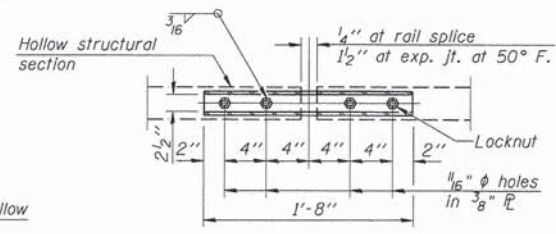
** Whenever the lower insert assemblies interfere with strand locations, the #3 bars shall be cut and adjusted in order to allow raising or lowering of the lower inserts. Maximum adjustment not to exceed 1/2 inch.



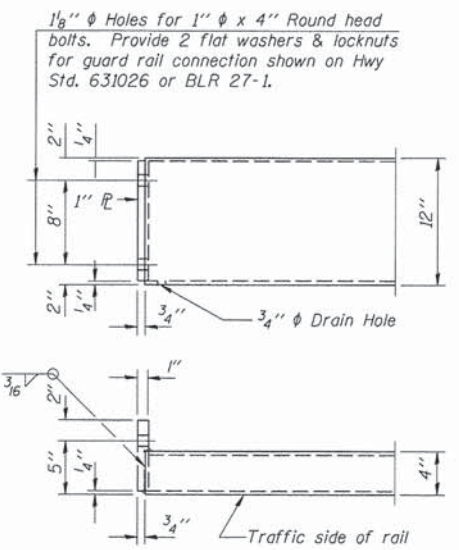
SECTIONS AT RAIL SPLICE



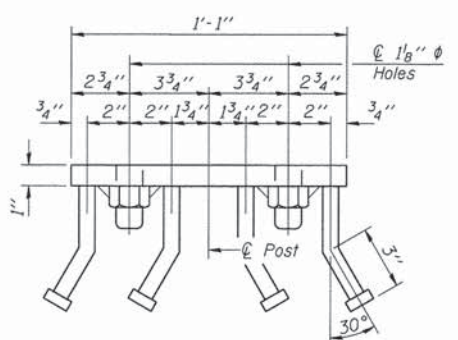
RAIL SPLICE CONNECTION AT EXPANSION JT.



PLAN-BOTT. SPLICE R TYPICAL



END OF RAIL DETAILS



VIEW D-D

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type S1	Foot	108

R-23A 7-1-10
(10'-9" Maximum Post Spacing)

DSGN	K.J. Hoffmann				
DR	N.J. Liggett				
CHK	J.R. Wolf				
APVD	J.A. Frauenhoffer	NO.	DATE	REVISION	BY



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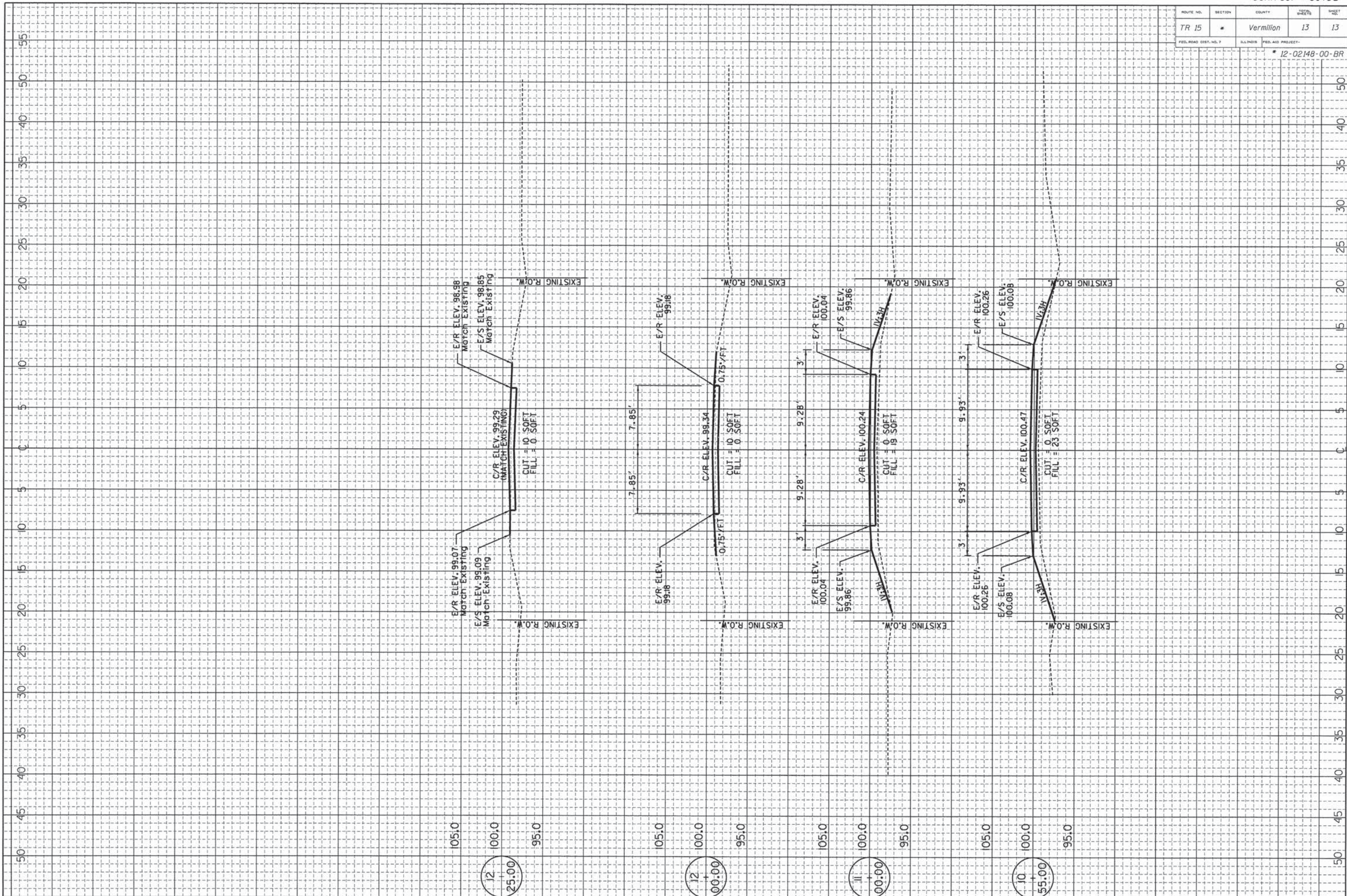
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10 S. RIVERSIDE PLAZA, SUITE 1800 CHICAGO, ILLINOIS 60606 PHONE 312.683.0110, FAX 312.474.6099

STEEL RAILING, TYPE S1
TR15 (3900N) OVER WHISKEY CREEK
SEC 12-02148-00-BR
VERMILION COUNTY

SHEET 11
DWG NO. 13012S1.dgn
DATE AUG 2013
PROJ NO. C13012

ROUTE NO.	SECTION	COUNTY	SHEET NO.	TOTAL SHEETS
TR 15	*	Vermillion	13	13
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	
* 12-02148-00-BR				



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CHAMPAIGN, IL 61822
PHONE (217) 351-6268
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