

INDEX OF SHEETS

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- 6 & 7 - SUPERSTRUCTURE
- 8 - RAILING
- 9 - ABUTMENTS
- 10 - METAL SHELL PILE DETAILS
- 11 - 15 - CROSS SECTIONS

STANDARDS

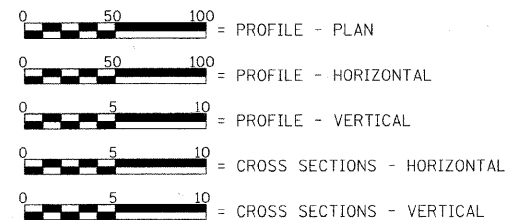
- STANDARD 515001-03
- STANDARD 630301-05
- STANDARD 701011-02
- STANDARD 701901-02
- STANDARD BLR 21-9
- STANDARD BLR 27-1

LIST OF UTILITIES

FRONTIER COMMUNICATIONS  
1-800-921-8101

MENARD ELECTRIC COOPERATIVE  
14300 STATE HWY 97  
P.O. BOX 200  
PETERSBURG, ILLINOIS 62675  
1-800-872-1203  
1-217-632-7746

SCALE IN FEET



LAND SECTION - 21  
 LAND QUARTER SECTION - N.E.  
 FUNCTIONAL CLASSIFICATION: MAJOR COLLECTOR (NON-URBAN)  
 A.D.T. - 550 (2004)  
 A.D.T. - 725 (2032)  
 50 M.P.H. DESIGN SPEED

TOLL FREE

"JOINT UTILITY LOCATION INFORMATION FOR EXCAVATORS"  
 (J.U.L.I.E.) TELEPHONE NUMBER  
 1-800-892-0123

CONTRACT NO. 93561

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

**PLANS FOR PROPOSED  
 SURFACE TRANSPORTATION /RURAL PROGRAM**

F.A.S. 573 (C.H. 1) OVER UNNAMED STREAM

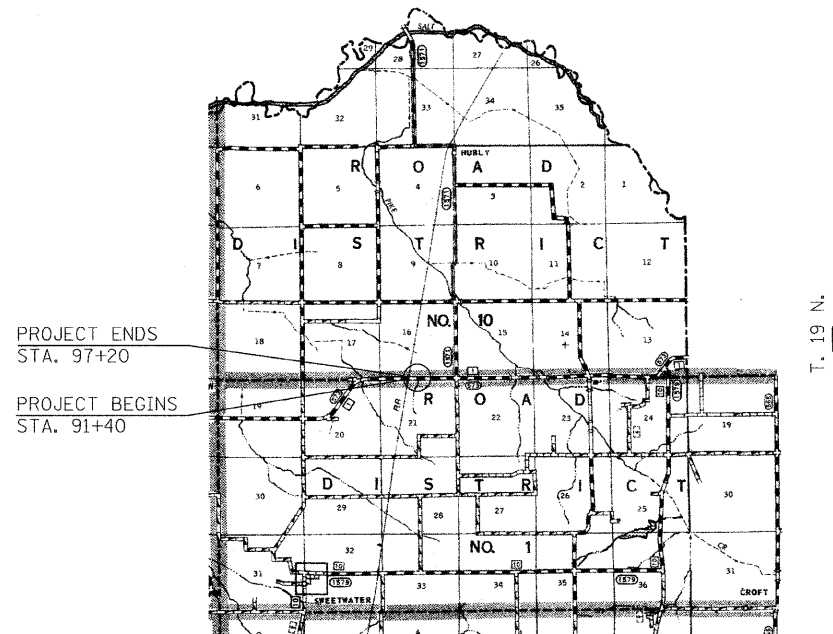
SECTION 10-00060-00-BR

PROJECT RS-0573(318)

MENARD COUNTY / [REDACTED]

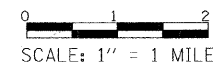
C-96-211-12

R. 5 W. 3rd P.M.



LOCATION PLAN

LENGTH OF SECTION - 580.00 FEET = 0.110 MILES



EXISTING STRUCTURE: SINGLE SPAN PRECAST CONCRETE DECK BEAMS SUPPORTED BY CLOSED TIMBER ABUTMENTS WITH TIMBER WINGWALLS. ±20'-3" BK.-BK. ABUTMENTS, ±30'-3" OUT.-OUT. DECK. CONCRETE CURBS AND STEEL RAILING. ±0° SKEW. EXIST. S.N. - NONE

PROPOSED STRUCTURE: SINGLE SPAN PRECAST PRESTRESSED CONCRETE DECK BEAM BRIDGE (27" DEPTH) ON OPEN CONCRETE ABUTMENTS. 30'-0" OUT.-OUT. DECK, 60'-0" BK.-BK. ABUTMENTS. STEEL RAILING TYPE S-1, 0° SKEW. PROP. S.N. - 065-3125



Christopher P. Koleski 11/15/11  
 EXPIRATION: 11/30/2011

APPROVED Nov. 14, 2011  
*Thomas R. Casson*  
 COUNTY ENGINEER

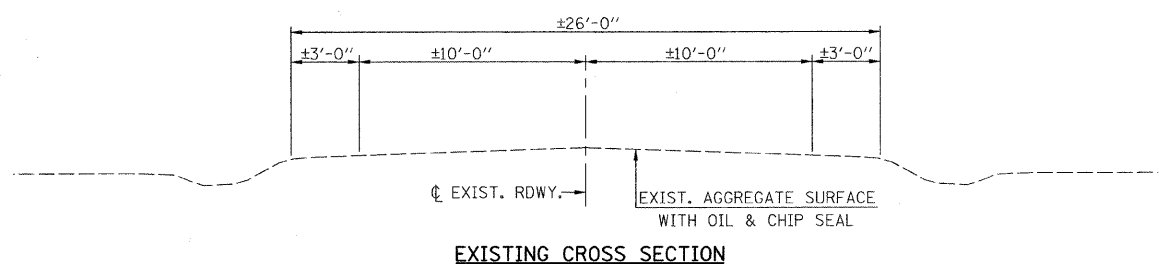
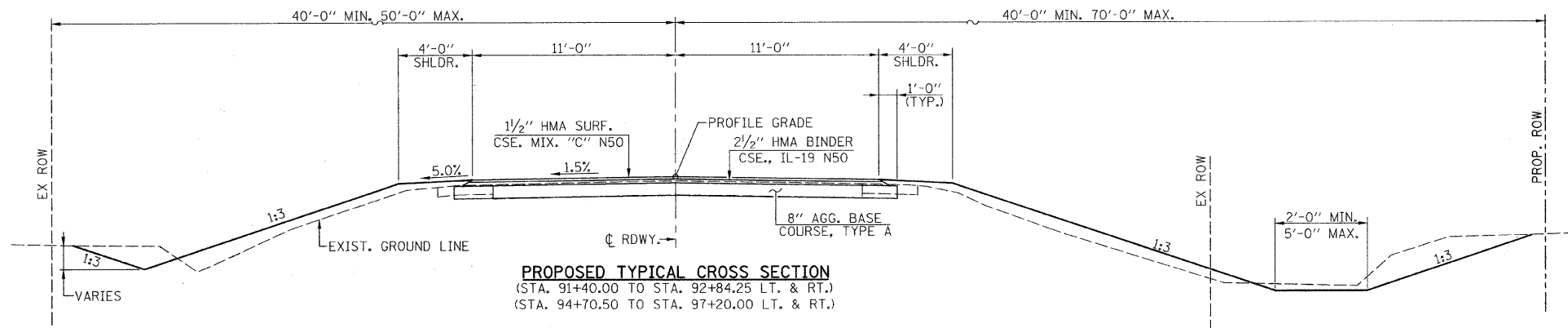
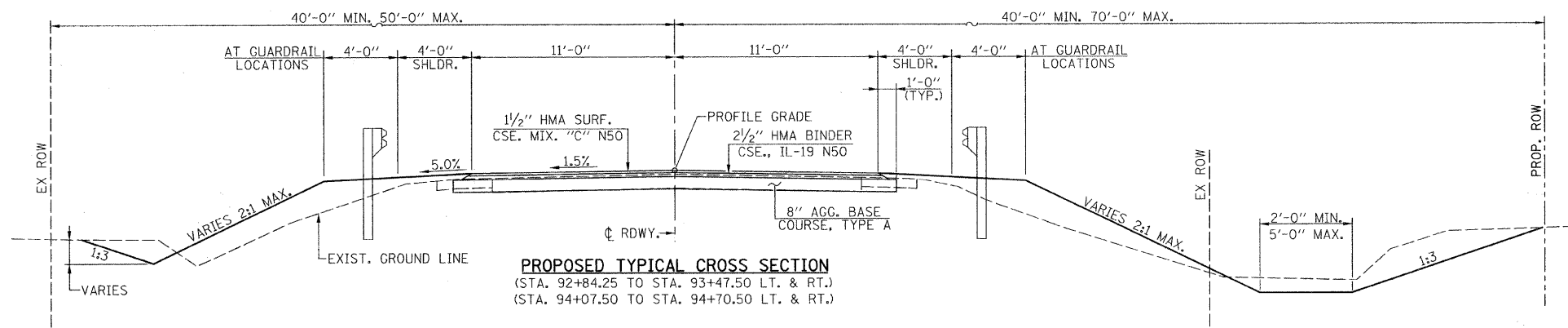
PASSED December 14, 2011  
*Thomas H. Koleski*  
 DISTRICT SIX ENGINEER OF LOCAL ROADS & STREETS

PASSED December 14, 2011  
*Ron A. Chamberlain*  
 DISTRICT SIX CONSTRUCTION ENGINEER

Releasing For Bid Based on Limited Review December 14, 2011  
*Ray J. Smith*  
 DEPUTY DIRECTOR OF HIGHWAYS, REGION FOUR ENGINEER

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

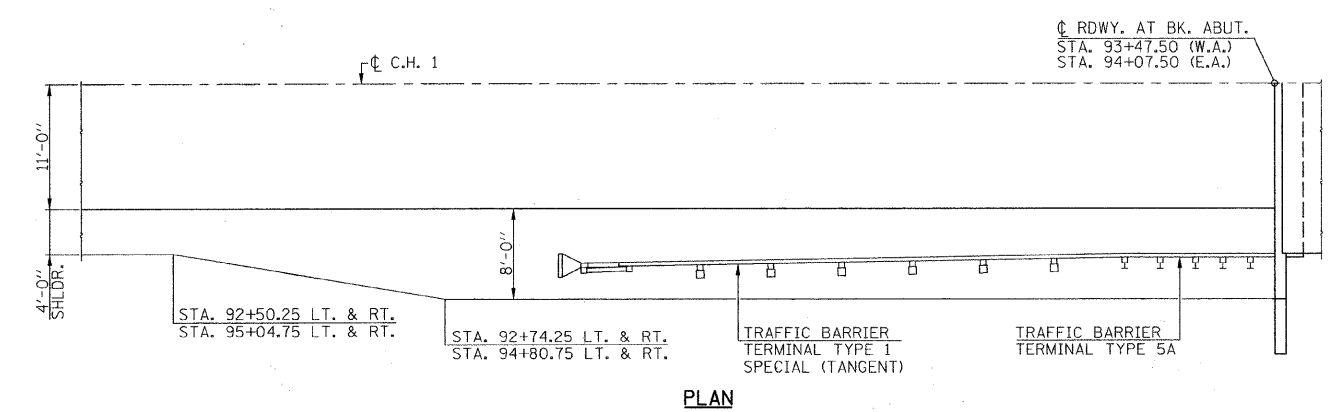
FILE NAME: #FILEL#	USER NAME: #USER#	DESIGNED	REVISED	Allen Henderson & Associates, Inc. Civil and Structural Engineers Springfield, IL 62703 Phone: (217)544-8033 IL Design Firm No. 184-001907	TITLE SHEET SCALE: 1" = 1 MILE SHEET NO. 1 OF 15 SHEETS STA. 91+40.00 TO STA. 97+20.00	C.H. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
	PLOT SCALE: #SCALE#	DRAWN	REVISED			1	10-00060-00-BR	MENARD	15	1	
	PLOT DATE: #DATE#	CHECKED	REVISED			CONTRACT NO. 93561					
		DATE	REVISED			FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT					



**MIXTURE REQUIREMENTS**

MIXTURE USE(S)	HOT MIX ASPHALT SURFACE COURSE, MIX "C", N50	HOT MIX ASPHALT BINDER COURSE IL-19.0, N50
AC/PG	PG 64-22	PG 64-22
DESIGN	4.0% @ N DESIGN = 50	4.0% @ N DESIGN = 50
AIR VOIDS		
MIXTURE COMPOSITION	IL 9.5 OR 12.5	IL 19.0
FRICTION		
AGGREGATE	MIX C	N/A

**PAVEMENT DESIGN INFORMATION**  
 2022 DESIGN TRAFFIC: 662  
 PV-622, MU-20, SU-20  
 CLASS III ROAD DESIGN FOR 80,000 POUND LOAD  
 T.F. = 0.10  
 TEMP. = -77°  
 Eac = 620 ksf  
 Sac = 291  
 USE: 4" HMA ON 8" AGGREGATE BASE



**SUMMARY OF QUANTITIES**

CODE NO.	ITEM	UNIT	QUANTITY
20100500	TREE REMOVAL, ACRES	ACRE	0.1
20200100	EARTH EXCAVATION	CU. YD.	1174
20300100	CHANNEL EXCAVATION	CU. YD.	597
28000250	TEMPORARY EROSION CONTROL SEEDING	POUND	90
28000305	TEMPORARY DITCH CHECKS	FOOT	14
28100807	STONE DUMPED RIPRAP, CLASS A4	TON	522
28200200	FILTER FABRIC	SQ. YD.	829
35100100	AGGREGATE BASE COURSE, TYPE A	TON	632
40600100	BITUMINOUS MATERIALS (PRIME COAT)	GALLON	520
40603080	HOT MIX ASPHALT BINDER COURSE, IL-19.0 N50	TON	183
40603310	HOT MIX ASPHALT SURFACE COURSE, MIX "C" N50	TON	109
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
50200100	STRUCTURE EXCAVATION	CU. YD.	156
50300225	CONCRETE STRUCTURES	CU. YD.	30.6
50400505	PRECAST PRESTRESSED CONCRETE DECK BEAMS (27" DEPTH)	SO. FT.	1760
50800105	REINFORCEMENT BARS	POUND	3740
50900205	STEEL RAILING, TYPE S-1	FOOT	120
51200957	FURNISHING METAL SHELL PILES 12"x0.250"	FOOT	344
51202305	DRIVING PILES	FOOT	344
51203200	TEST PILE METAL SHELLS	EACH	2
51500100	NAME PLATES	EACH	1
63100075	TRAFFIC BARRIER TERMINAL, TYPE 5A	EACH	4
63100167	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	EACH	4
67100100	MOBILIZATION	L. SUM	1
78001110	PAINT PAVEMENT MARKING - LINE 4"	FOOT	1517
78201000	TERMINAL MARKER - DIRECT APPLIED	EACH	4
X7010216	TRAFFIC CONTROL AND PROTECTION, (SPECIAL)	L. SUM	1
X2501000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.9

\* SEE SPECIAL PROVISIONS  
 Δ SPECIALTY ITEMS

CONSTRUCTION TYPE CODE: 0011  
 BRIDGE TYPE: X080

**GENERAL NOTES**

WHERE SECTION OR SUBSECTION STONES ARE ENCOUNTERED, THE ENGINEER SHALL BE NOTIFIED BEFORE SUCH STONES ARE REMOVED. THE CONTRACTOR SHALL PROTECT AND PRESERVE ALL PROPERTY MARKERS AND MONUMENTS UNTIL THE OWNER, AUTHORIZED SURVEYOR, OR AGENT HAS WITNESSED OR REFERENCED THEIR LOCATION.

SEEDING: FERTILIZER NUTRIENTS SHALL BE APPLIED AT A RATIO OF 1:1:1 AND AT A RATE OF 90 POUNDS PER ACRE FOR EACH NUTRIENT.

MULCH SHALL BE APPLIED AT THE RATE OF 2 TONS PER ACRE.

AREAS TO BE SEEDDED SHALL CONSIST OF ALL DISTURBED EARTH SURFACES WITHIN THE RIGHT OF WAY AS DIRECTED BY THE ENGINEER.

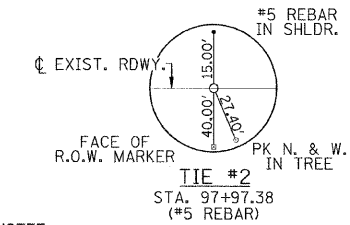
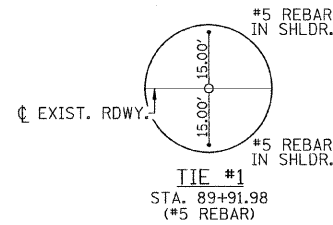
NO COMMITMENTS.

**EARTHWORK SCHEDULE**

LOCATION	EARTH EXCAVATION	EARTH EXCAVATION ADJUSTED FOR SHRINKAGE	EMBANKMENT	EARTHWORK BALANCE WASTE (+) OR SHORTAGE (-)
	CU. YD.	CU. YD.	CU. YD.	CU. YD.
STA. 91+40.00 TO STA. 91+50.00	6	4	0	4
STA. 91+50.00 TO STA. 92+00.00	69	52	17	35
STA. 92+00.00 TO STA. 92+50.00	114	85	31	54
STA. 92+50.00 TO STA. 93+00.00	78	59	30	29
STA. 93+00.00 TO STA. 93+25.00	52	39	16	23
STA. 93+25.00 TO STA. 93+47.50	65	49	15	34
BRIDGE OMISSION - STA. 93+47.50 TO STA. 94+07.50				
STA. 94+07.50 TO STA. 94+25.00	22	17	26	-9
STA. 94+25.00 TO STA. 94+50.00	56	42	66	-24
STA. 94+50.00 TO STA. 95+00.00	294	221	108	113
STA. 95+00.00 TO STA. 95+50.00	223	167	60	107
STA. 95+50.00 TO STA. 96+00.00	51	38	107	-69
STA. 96+00.00 TO STA. 96+50.00	52	39	98	-59
STA. 96+50.00 TO STA. 97+00.00	76	57	61	-4
STA. 97+00.00 TO STA. 97+20.00	16	12	5	7
TOTAL	1174	881	640	241**

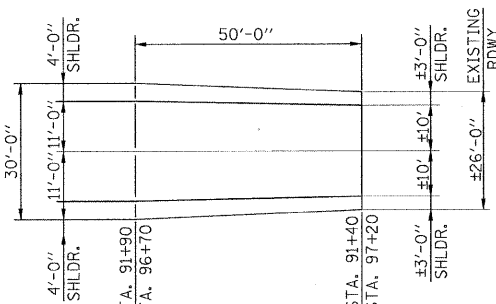
\*\* - NO FURNISHED EXCAVATION WILL BE REQUIRED. THE COST OF DISPOSING EXCESS EARTH, STRUCTURE OR CHANNEL EXCAVATION SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE FOR EARTH EXCAVATION.

SECTION 16, T. 19 N., R. 5 W. 3rd P.M.

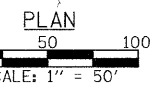
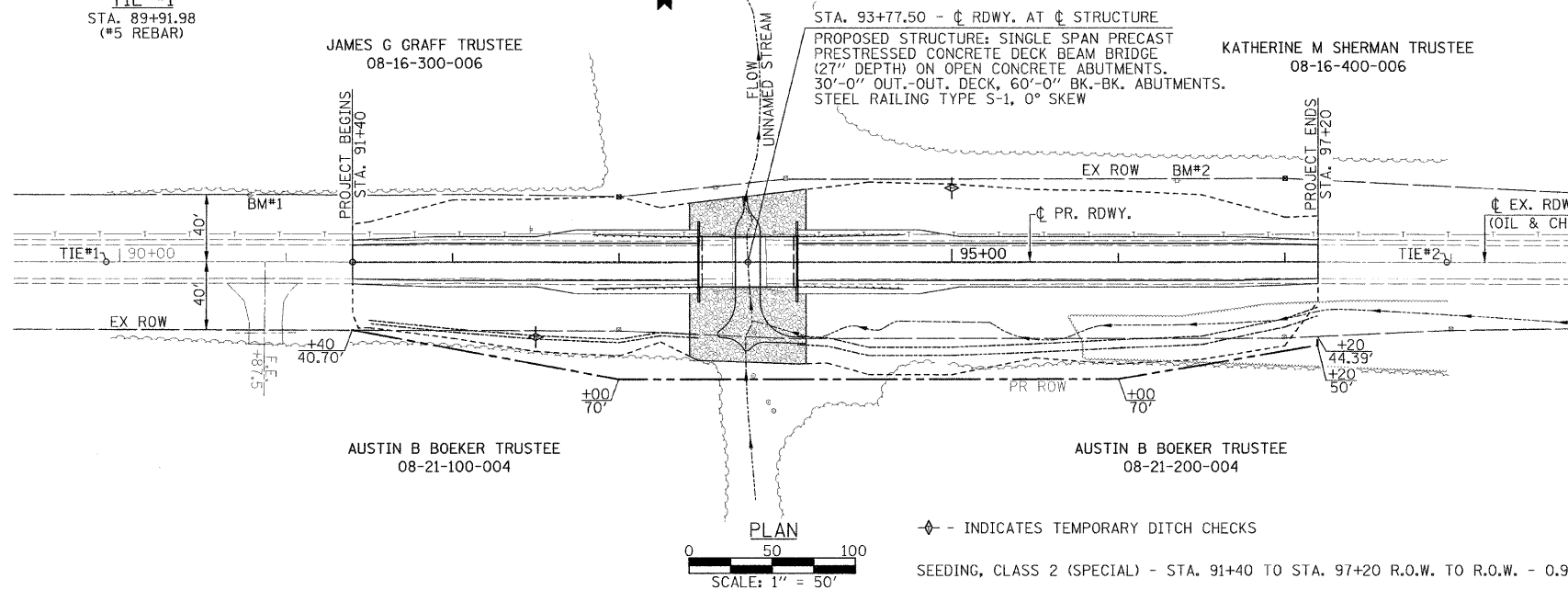


PAINT PAVEMENT MARKING - LINE 4"

LOCATION	NO PASSING (YELLOW) FOOT	SKIP DASH (YELLOW) FOOT	EDGE LINE WHITE (FOOT)
STA. 91+40 TO STA. 93+47	207	50	414
STA. 96+47 TO STA. 97+20		100	746
SUB-TOTAL	207	150	1160
TOTAL		1517	



ROADWAY TRANSITION DETAIL



◆ - INDICATES TEMPORARY DITCH CHECKS

SEEDING, CLASS 2 (SPECIAL) - STA. 91+40 TO STA. 97+20 R.O.W. TO R.O.W. - 0.90 ACRE

TEMPORARY DITCH CHECKS

LOCATION	QUANTITY (FOOT)
STA. 92+50 45' RT.	8
STA. 95+00 44' LT.	6
TOTAL	14

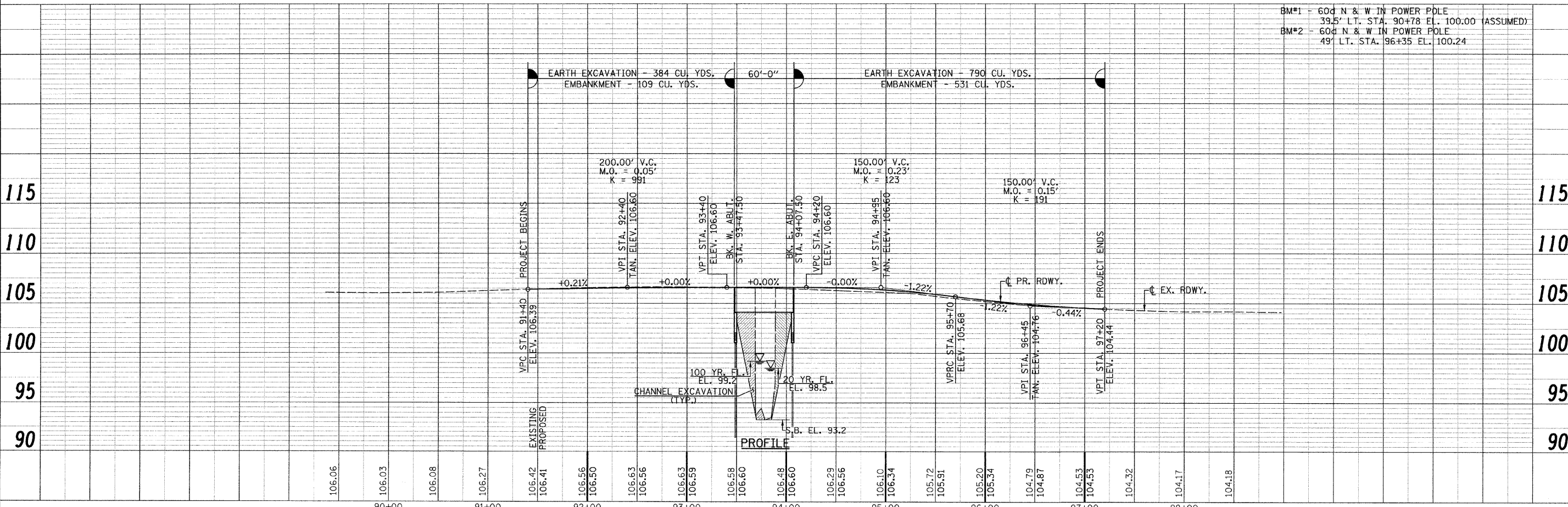
TREE REMOVAL, ACRES

LOCATION	QUANTITY (ACRE)
STA. 95+78 48' RT. TO STA. 97+20 44' RT.	0.04
STA. 93+81 42' RT. - 30" Ø *	
STA. 93+82 68' RT. - 6" Ø *	
TOTAL	0.04

\* SAY 0.1 ACRE

\* QUANTITY TO INCLUDE TREES LOCATED AT STA. 93+81 & STA. 93+82.

SECTION 21, T. 19 N., R. 5 W. 3rd P.M.



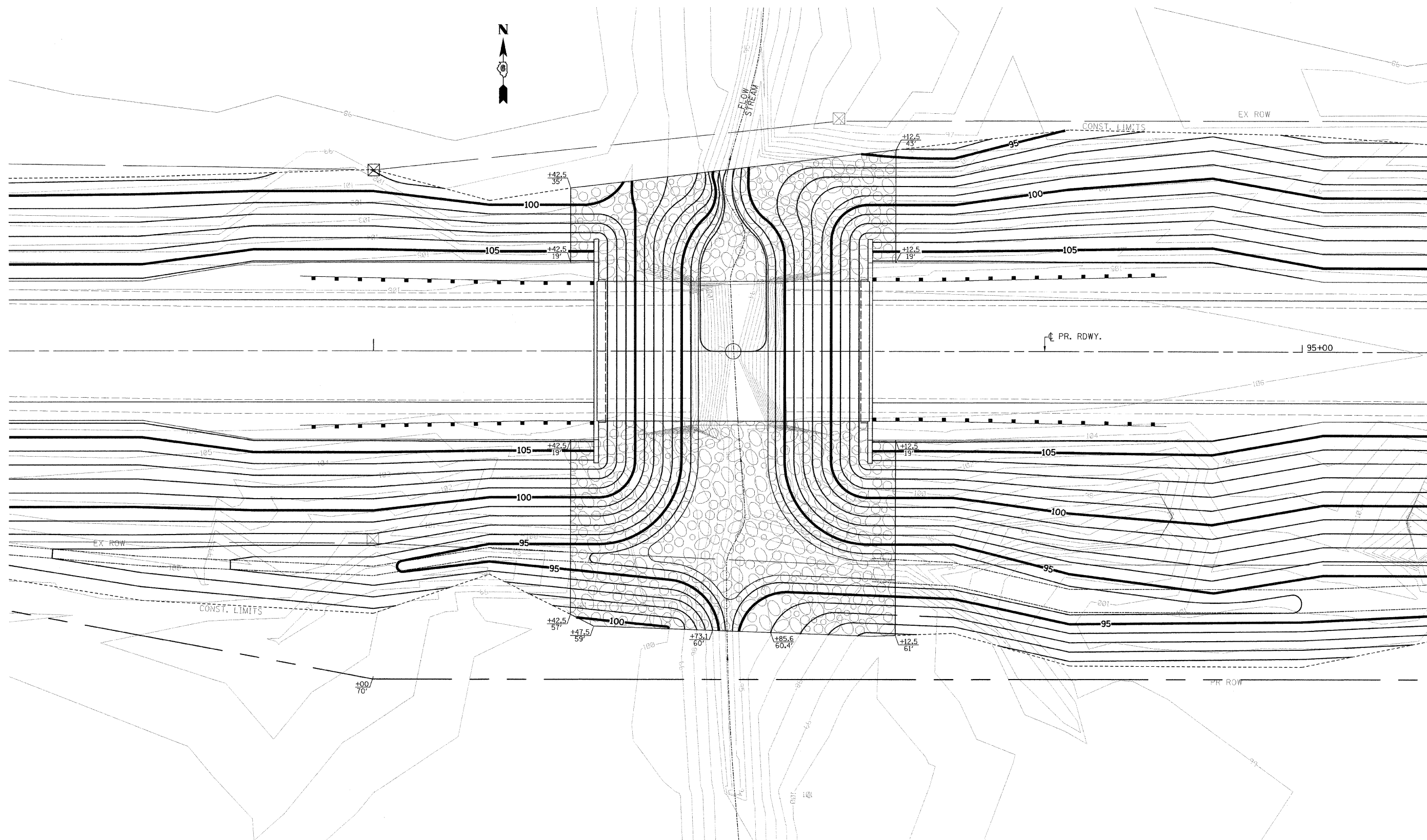
BM#1 - 60d N & W IN POWER POLE 39.5' LT. STA. 90+78 EL. 100.00 (ASSUMED)  
 BM#2 - 60d N & W IN POWER POLE 49' LT. STA. 96+35 EL. 100.24

DATE	
BY	
REVISIONS	
NO.	
DESCRIPTION	

DATE	
BY	
REVISIONS	
NO.	
DESCRIPTION	

FILE NAME =	USER NAME = #USER#	DESIGNED -	REVISED -	<p><b>Allen Henderson &amp; Associates, Inc.</b>                  Civil and Structural Engineers Springfield, IL                  62703 Phone: (217)544-8033 IL Design Firm                  No. 184-001907</p>	<p><b>PLAN &amp; PROFILE</b></p>	C.H. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
#FILE#	DESIGNED -	REVISED -	1			10-00060-00-BR	MENARD	15	3	
PLOT SCALE = #SCALE#	CHECKED -	REVISED -	CONTRACT NO. 93561							
PLOT DATE = #DATE#	DRAWN -	REVISED -	FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT							
	CHECKED -	REVISED -	SCALE: 1" = 50'	SHEET NO. 3 OF 15 SHEETS	STA. 91+40.00 TO STA. 97+20.00					

SECTION 16, T. 19 N., R. 5 W. 3rd P.M.



SECTION 21, T. 19 N., R. 5 W. 3rd P.M.



**Allen Henderson & Associates, Inc.**  
 Civil and Structural Engineers Springfield, IL  
 62703 Phone: (217)544-8033 IL Design Firm  
 No. 184-001907

**RIPRAP LAYOUT & GRADING PLAN**

SCALE: 1" = 10' SHEET NO. 4 OF 15 SHEETS STA. 91+40.00 TO STA. 97+20.00

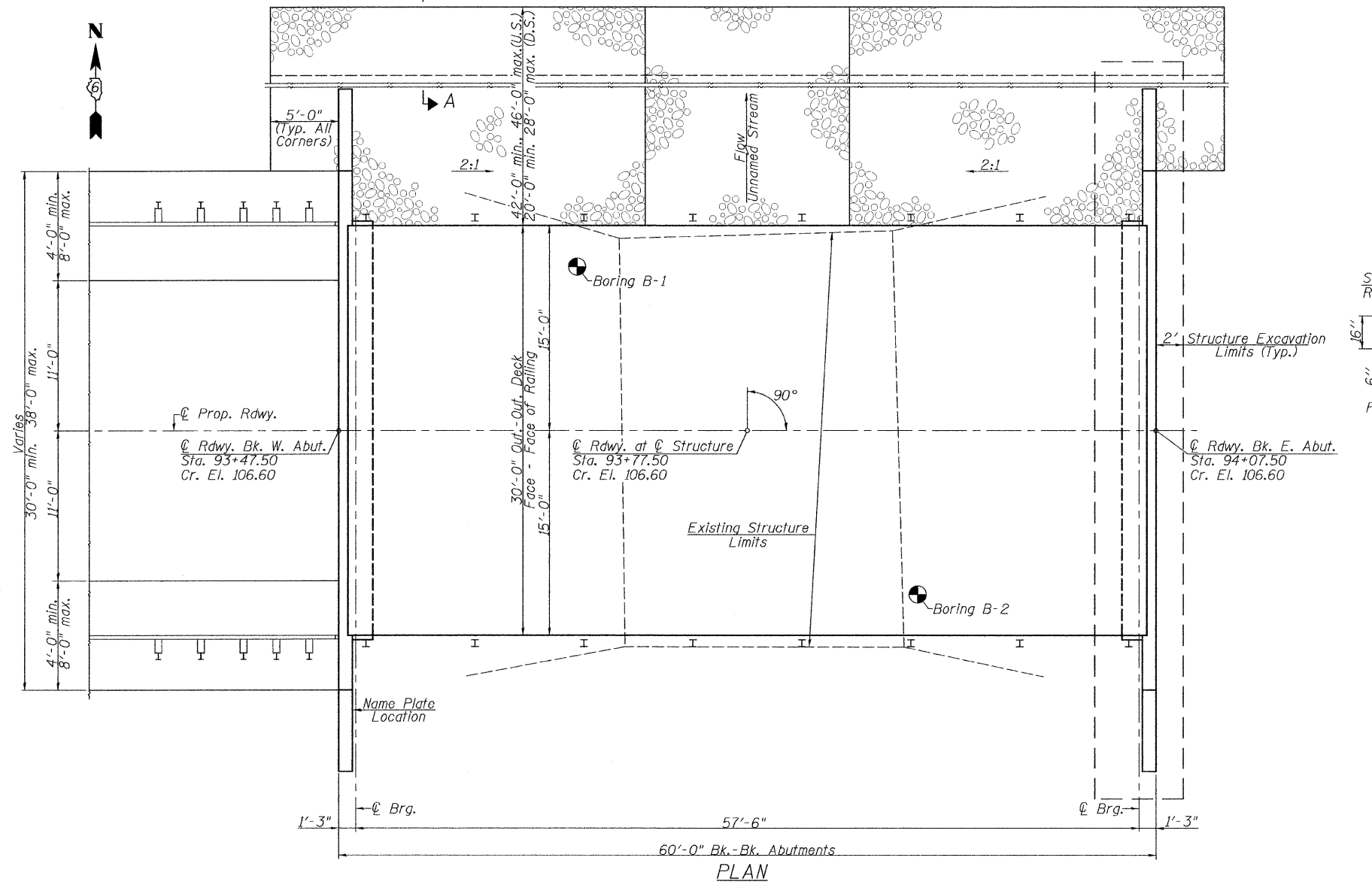
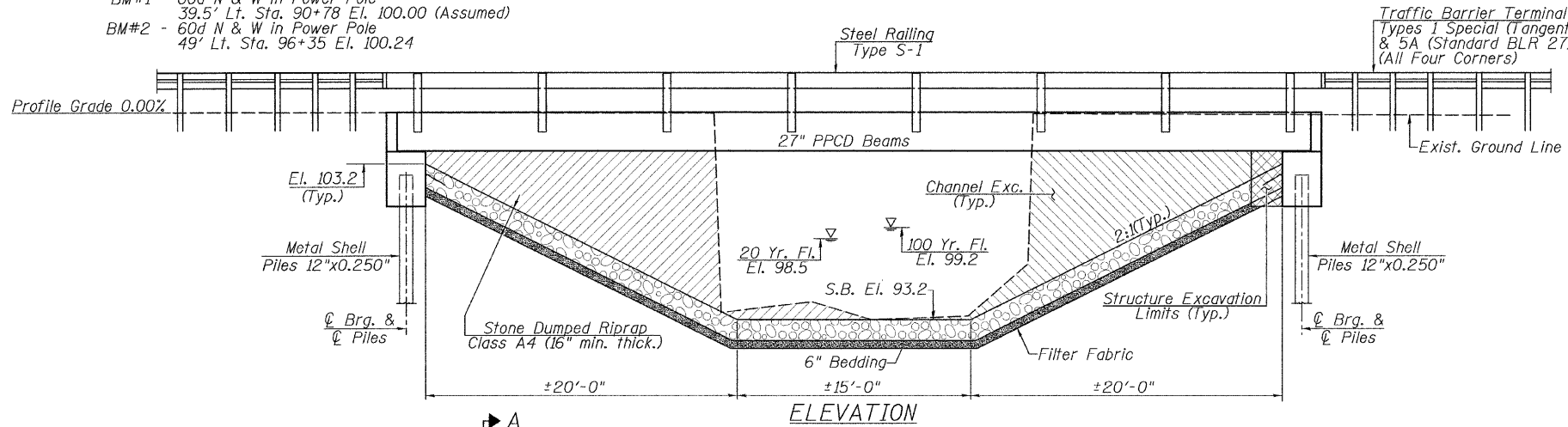
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PLOT DATE = #DATE#	

DESIGNED -	REVISED -
DRAWN -	REVISED -
CHECKED -	REVISED -
DATE -	REVISED -

C.H. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1	10-00060-00-BR	MENARD	15	4
FED. ROAD DIST. NO. - [ILLINOIS] FED. AID PROJECT			CONTRACT NO. <b>93561</b>	

Existing Structure: Single span precast concrete deck beams supported by closed timber abutments with timber wingwalls. ±20'-3" Bk.-Bk. Abutments, ±30'-3" Out.-Out. Deck, Concrete Curbs and Steel Railing. ±0° Skew.

- Est. Quantities - 608 Sq. Ft. Deck Beams  
 - 2.7 Cu. Yd. Concrete  
 BM#1 - 60d N & W in Power Pole  
 39.5' Lt. Sta. 90+78 El. 100.00 (Assumed)  
 BM#2 - 60d N & W in Power Pole  
 49' Lt. Sta. 96+35 El. 100.24



**TOTAL BILL OF MATERIAL**

ITEM	UNIT	SUPER	SUB	TOTAL
Channel Excavation	Cu. Yd.			597
Stone Dumped Riprap, Class A4	Ton		522	522
Filter Fabric	Sq. Yd.		829	829
Removal of Existing Structures	Each		1	1
Structure Excavation	Cu. Yd.		156	156
Concrete Structures	Cu. Yd.		30.6	30.6
Precast Prestressed Concrete Deck Beams (27" Depth)	Sq. Ft.	1760		1760
Reinforcement Bars	Pound		3740	3740
Steel Railing, Type S-1	Foot	120		120
Metal Shell Piles 12"x0.250"	Foot		344	344
Driving Piles	Foot		344	344
Test Pile Metal Shells	Each		2	2
Name Plates	Each		1	1

**WATERWAY INFORMATION**

Drainage Area = 1.16 Sq. Mi. Pr. Low Grade Elev. 104.17 Sta. 98+00

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Natural H.W.E.	Head - ft.		Headwater El.	
			Exist.	Prop.		Exist.	Prop.	Exist.	Prop.
Design	20	478	88	132	98.5	2.8	0.3	101.3	98.8
Base	100	772	102	159	99.2	4.0	0.8	103.2	100.0
Exist. Overtop.	Greater than 500 Years								
Prop. Overtop.	Greater than 500 Years								
Max. Calc.	500	1080	110	174	99.6	5.1	1.4	104.7	101.0

**DESIGN SCOUR ELEVATION TABLE**

Design Scour Elevation (FT.)	N. Abut.	S. Abut.
	100.5	100.5

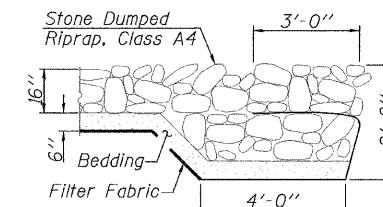
**DESIGN STRESSES**

**FIELD UNITS**

f'c = 3500 psi  
 fy = 60000 psi  
 (Reinforcement)

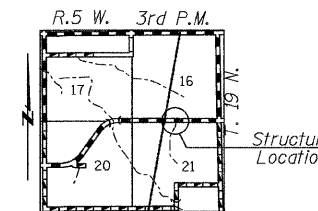
**PRECAST PRESTRESSED UNITS**

f'c = 6000 psi  
 f'ci = 5000 psi  
 fpu = 270000 psi (1/2" low lax strands)  
 fpbt = 201960 psi (1/2" low lax strands)



UNNAMED STREAM  
 BUILT 20 BY  
 MENARD COUNTY  
 SECTION 10-00060-00-BR  
 PROJECT RS-0573(318)  
 STR. NO. 065-3125 LOADING HL-93

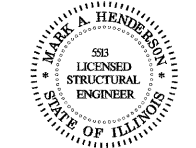
**NAME PLATE**  
 (Standard 515001)



**GENERAL NOTES**  
 See Proposal for Boring Data.  
 Reinforcement bars shall conform to the requirements of ASTM A706, Grade 60.  
 Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.  
 The contractor shall drive one test pile in a permanent location at the East and West Abutments as directed by the Engineer in the field prior to ordering the remainder of piles.  
 Excavation behind existing abutment walls shall be performed to balance front and back soil pressure before removing the existing superstructure.

**DESIGN SPECIFICATIONS**  
 2010 AASHTO LRFD Bridge Design Specifications, 4th Edition with 2009 Interims.

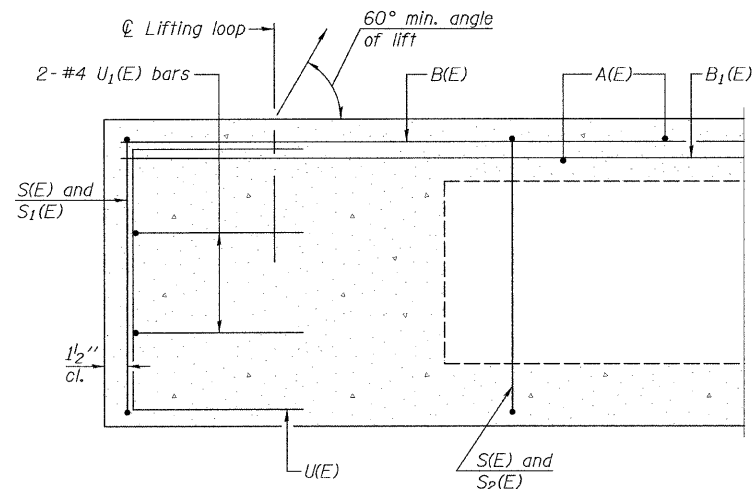
**LOADING HL-93**  
 Allow 50#/sq. ft. for future wearing surface.



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 "A.A.S.H.T.O. Standard Specifications For Highway Bridges".

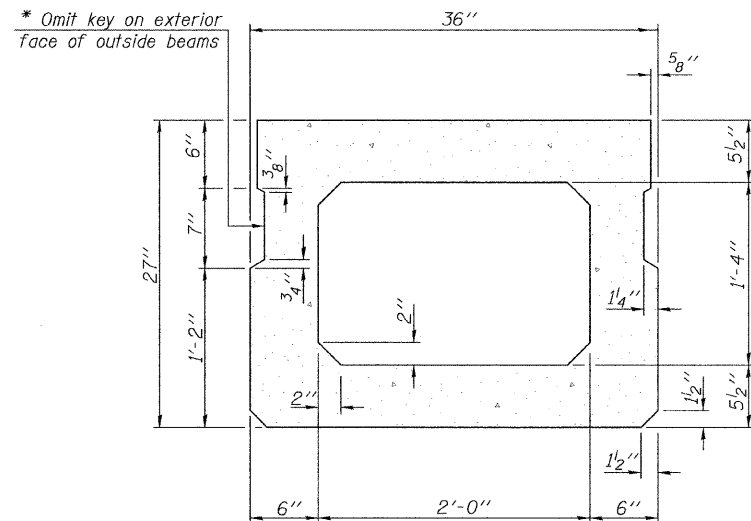
Mary A. Henderson 11/15/2011  
 Expiration Date 11/30/2012



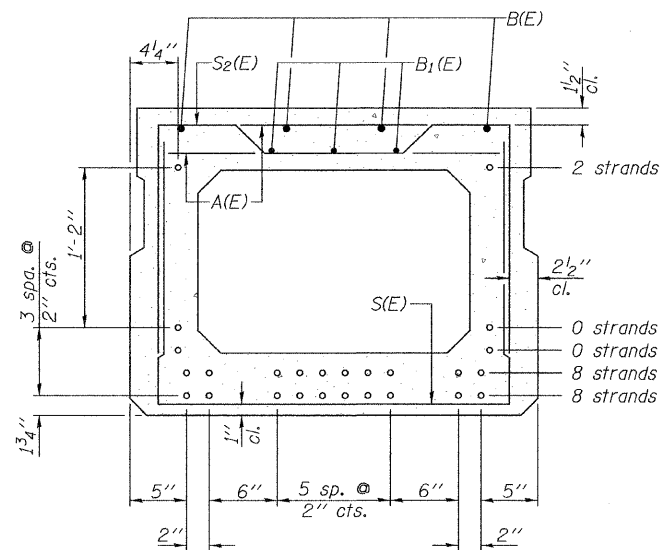


SECTION A-A

\* Roll post anchors (Sht. 8) to be cast into exterior face of outside beams.

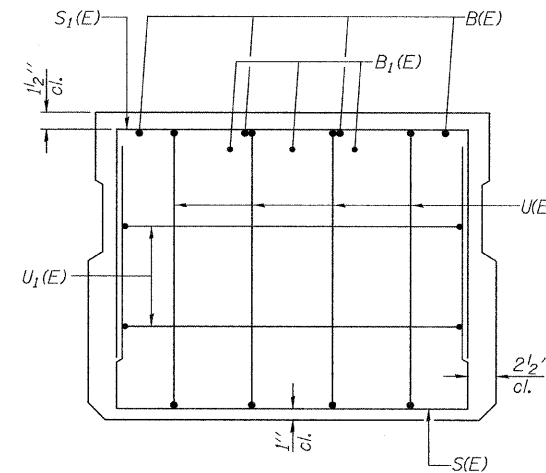


SECTION B-B  
(Showing dimensions)

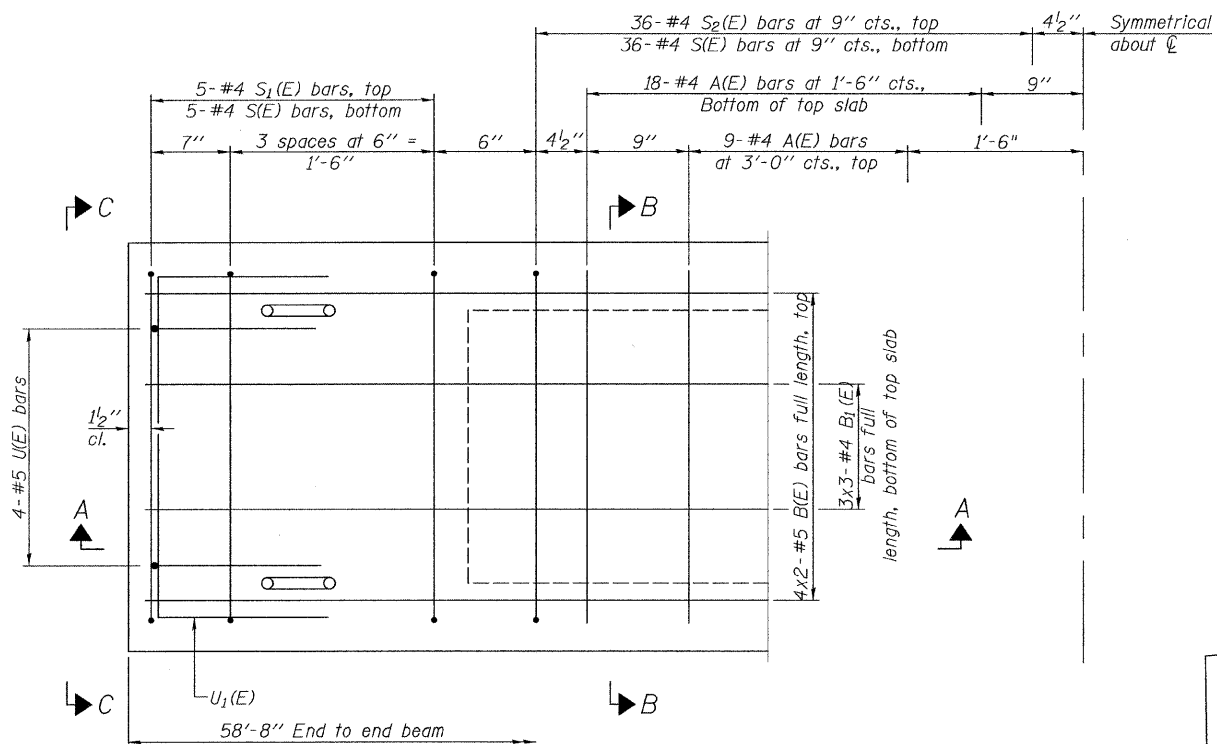


SECTION B-B

(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.



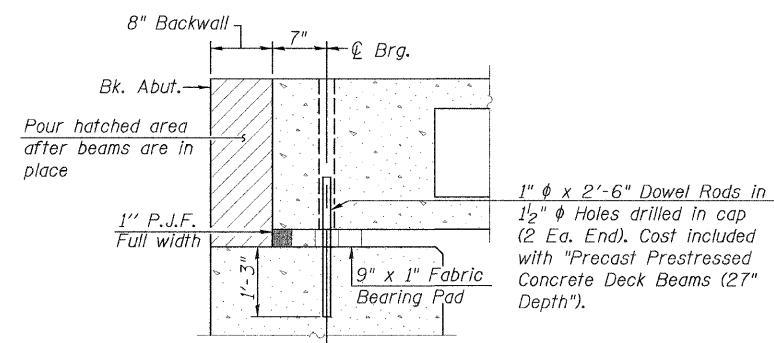
VIEW C-C



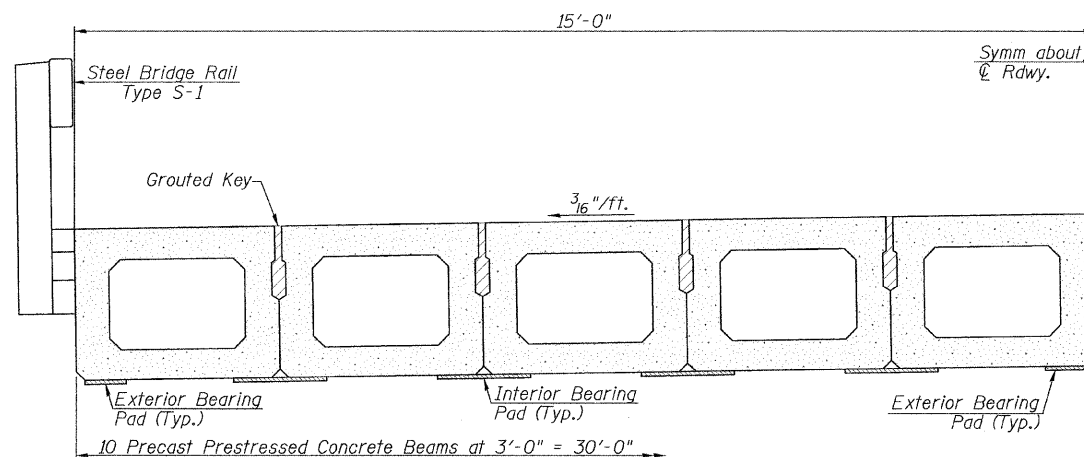
PLAN VIEW

MINIMUM BAR LAP  
#4 bar = 2'-0"  
#5 bar = 2'-6"

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 THRU ABUTMENT  
(At Right Angles)



HALF CROSS SECTION

BAR LIST  
ONE BEAM ONLY  
(For information only)

Bar	No.	Size	Length	Shape
A(E)	54	#4	2'-7"	—
B(E)	8	#5	30'-6"	—
B1(E)	9	#4	20'-10"	—
S(E)	82	#4	6'-5"	U
S1(E)	10	#4	5'-11"	U
S2(E)	72	#4	6'-2"	U
U(E)	8	#5	4'-6"	C
U1(E)	4	#4	5'-0"	C

Note: See sheet 7 of 15 for additional details and Bill of Material. Reinforcement designated (E) to be epoxy coated.

PD-2736-0

7-1-10

FILE NAME =	USER NAME =	DESIGNED -	REVISED -
		CHECKED -	REVISED -
		DRAWN -	REVISED -
		CHECKED -	REVISED -

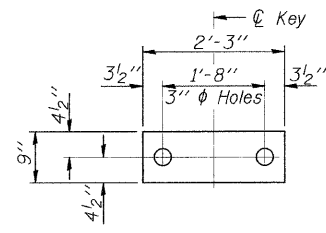


Allen Henderson & Associates, Inc.  
Civil and Structural Engineers Springfield, IL.  
62703 Phone: (217)544-8033 IL. Design Firm  
No. 184-001907

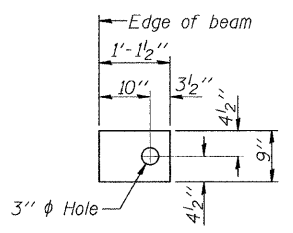
27" x 36" PPC DECK BEAM  
STRUCTURE NO. 065-3125

SHEET NO. 2 OF 6 SHEETS

C.H. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1	10-00060-00-BR	MENARD	15	6
CONTRACT NO. 93561				
ILLINOIS FED. AID PROJECT				



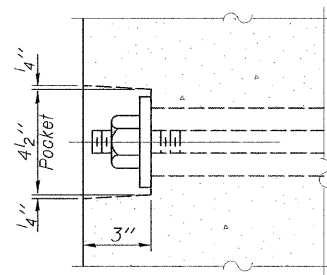
FABRIC BEARING PAD  
(Interior)  
(16 Required)



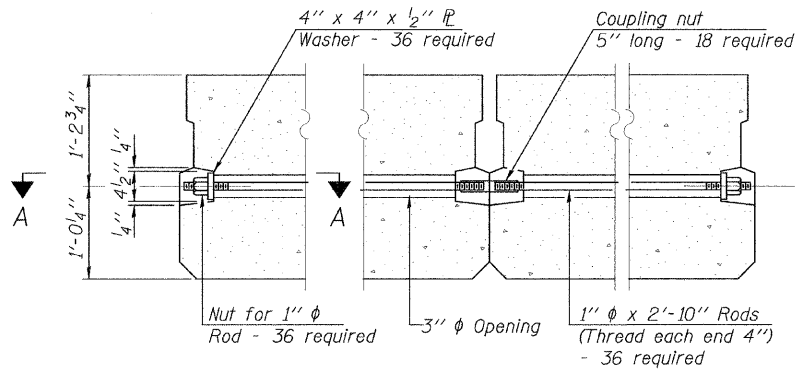
FABRIC BEARING PAD  
(Exterior)  
(8 Required)

Notes:  
All bearing pads shall be 1" thick.

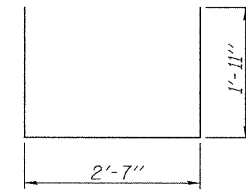
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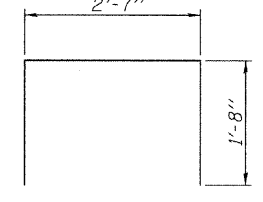
SECTION A-A



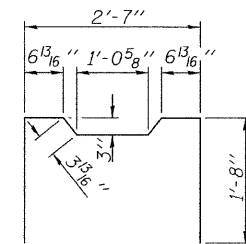
TYPICAL TRANSVERSE TIE ASSEMBLY



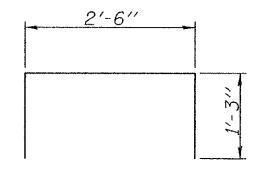
BAR S1(E)



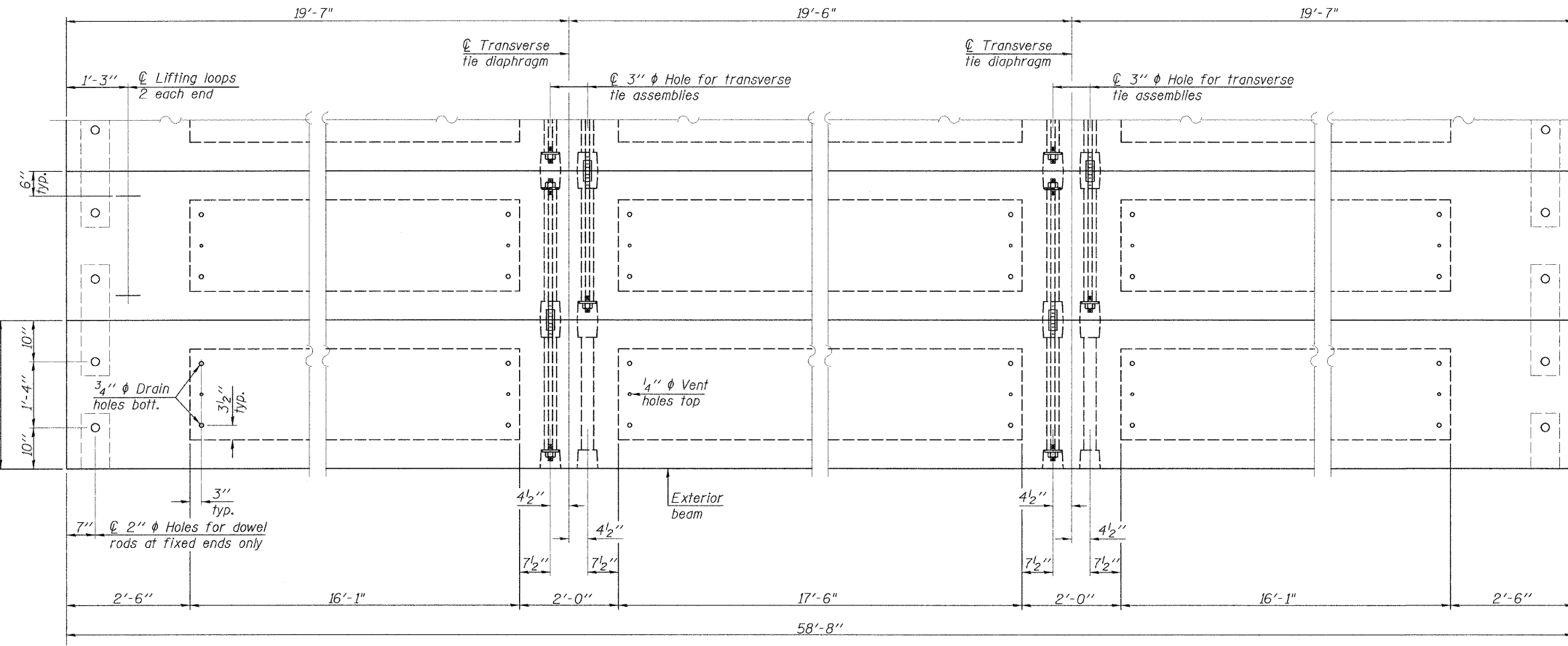
BAR S2(E)



BAR U1(E)



BAR U2(E)

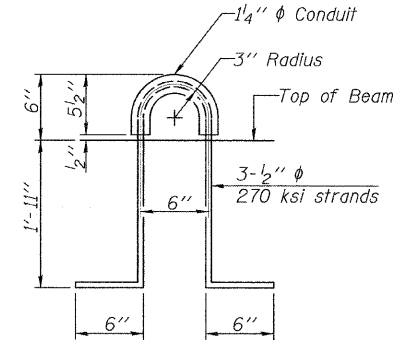


PLAN VIEW

Note: Connect beams in pairs with the transverse tie configuration shown.

NOTES

- Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq. in.
- The 1" diameter 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 transverse tie assembly is in place.
- Reinforcement bars shall conform to ASTM A 706, Grade 60.
- Two 1/8" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location.
- A minimum 2 1/2" diameter lifting pin shall be used to engage the lifting loops during handling.
- Corrosion Inhibitor, per Article 1020.05(b)(12) and 1021.06 of the Standard Specifications, shall be used in the concrete for precast prestressed concrete deck beams.
- Compressive strength of prestressed concrete, f'c, shall be 6000 psi.
- Compressive strength of prestressed concrete at release, f'ci, shall be 5000 psi.



LIFTING LOOP DETAIL

BILL OF MATERIAL

Precast Prestressed Conc. Deck Bms. (27" depth)	Sq. Ft.	1760
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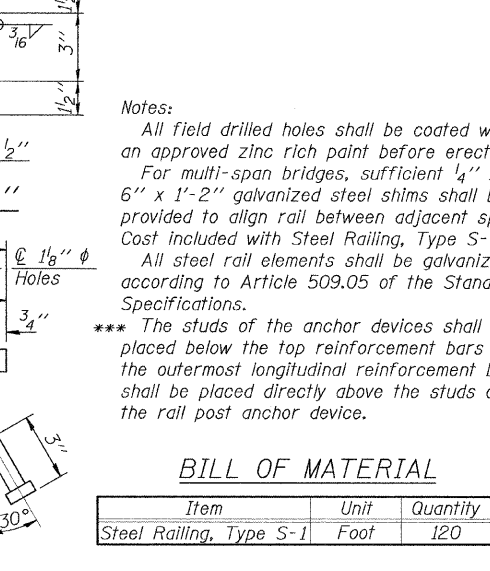
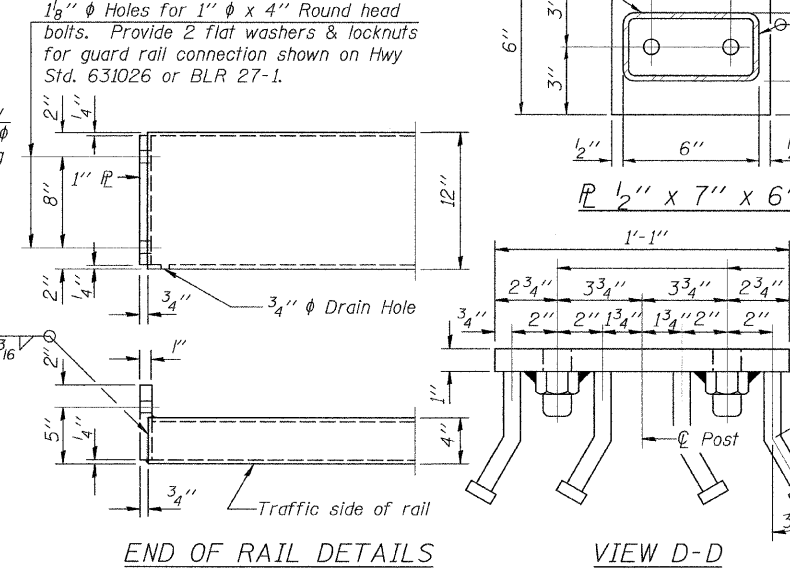
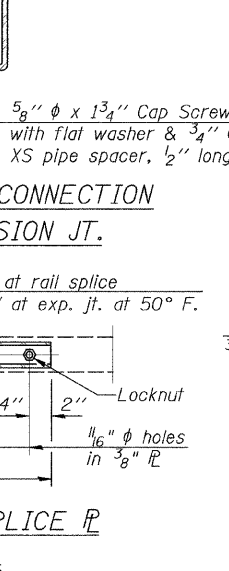
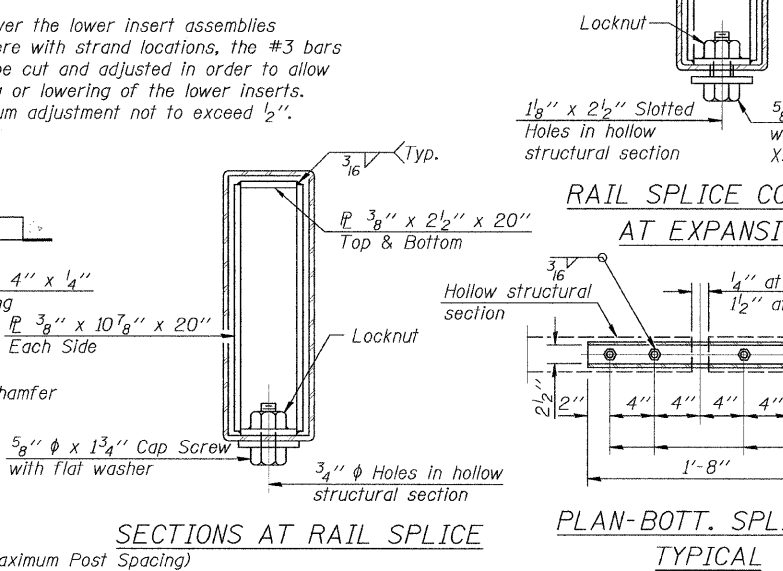
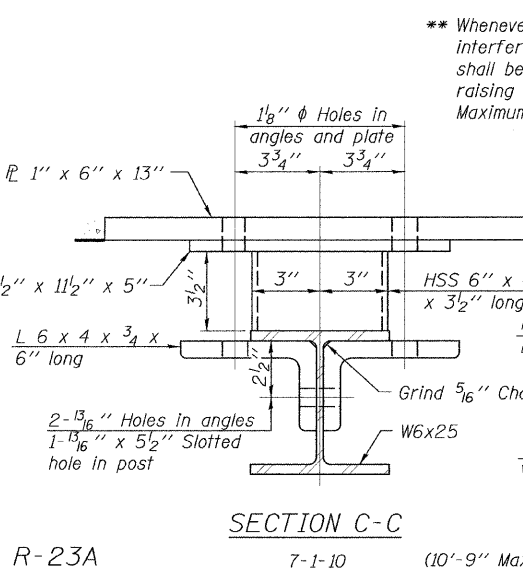
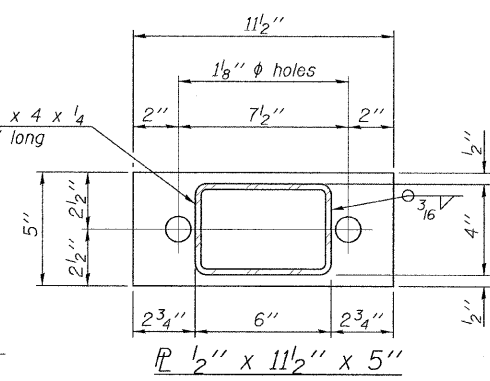
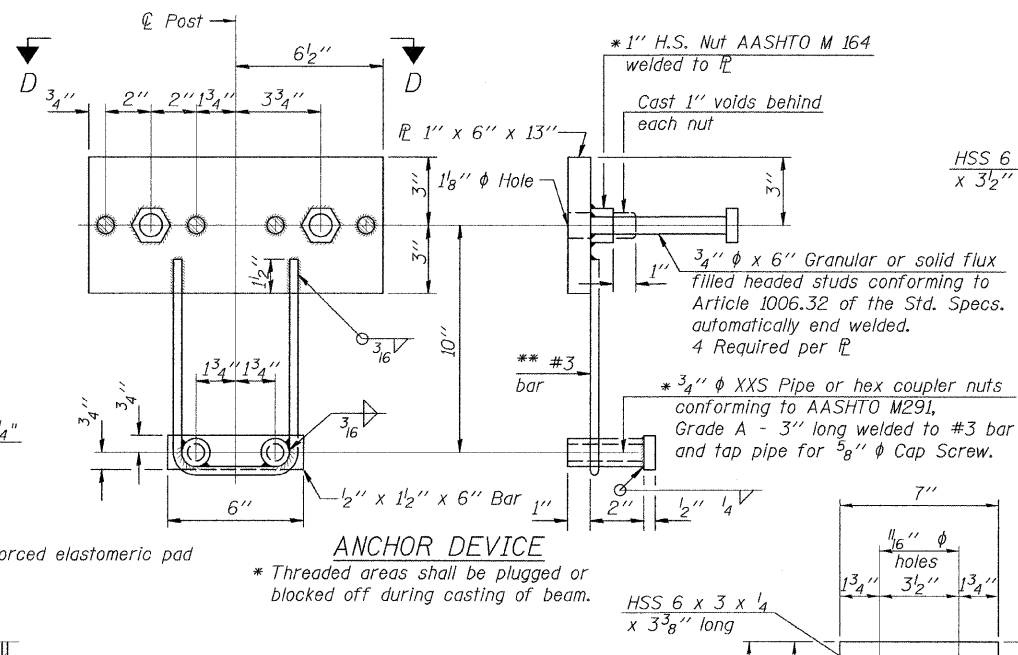
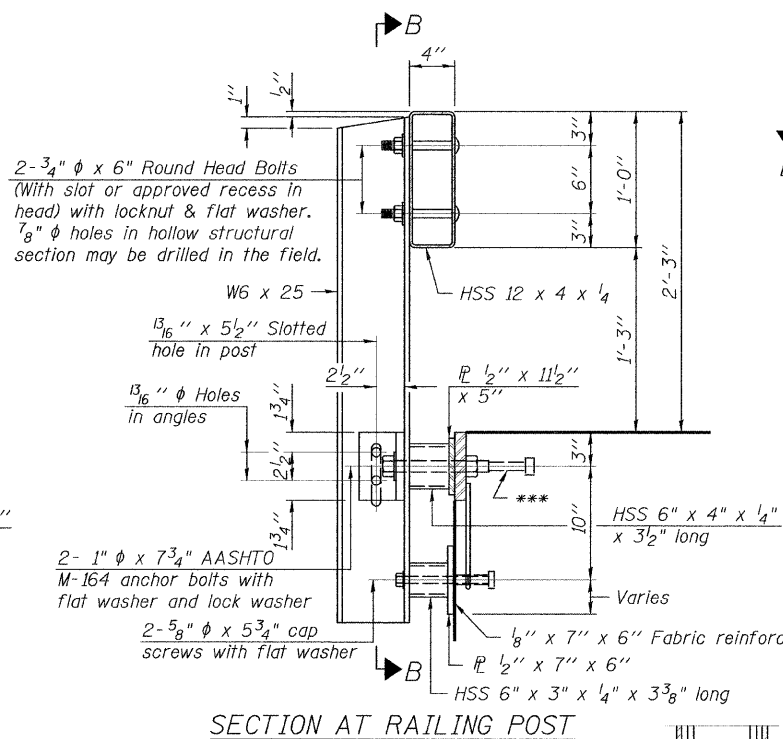
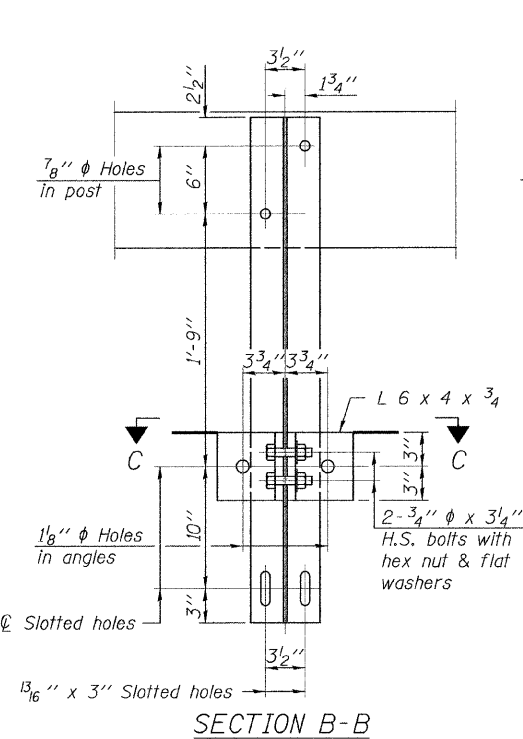
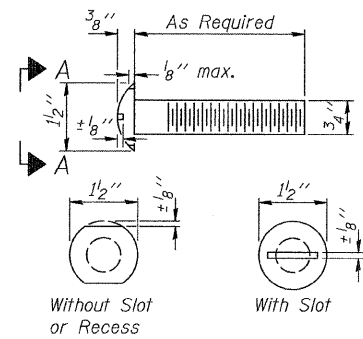
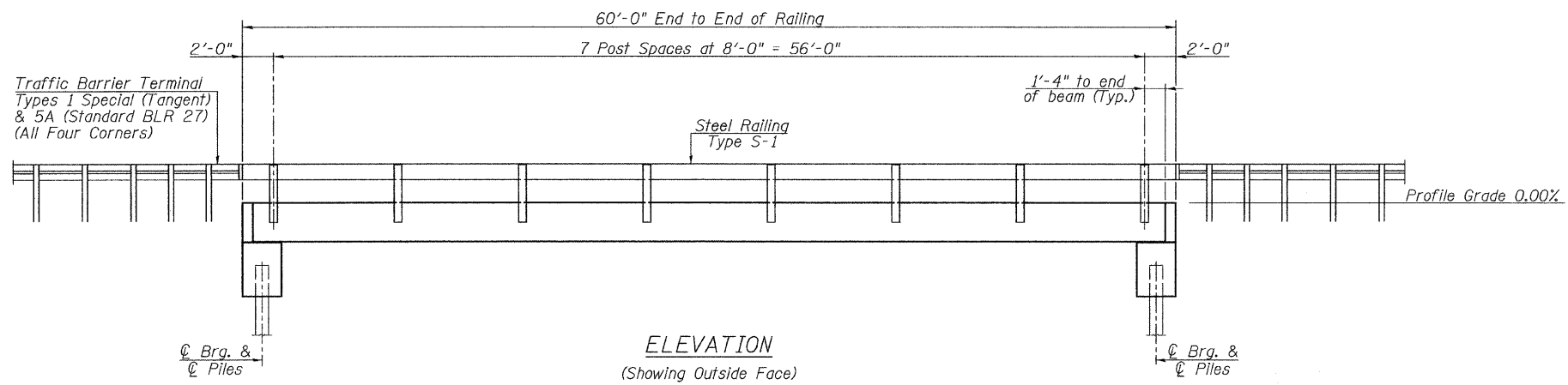
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	PLOT DATE =	CHECKED -	REVISED -

**Allen Henderson & Associates, Inc.**  
Civil and Structural Engineers Springfield, IL.  
62703 Phone: (217)544-8033 IL. Design Firm  
No. 184-001907

**27" x 36" PPC DECK BEAM DETAILS**  
STRUCTURE NO. 065-3125

SHEET NO. 3 OF 6 SHEETS

C.H. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1	10-00060-00-BR	MENARD	15	7
CONTRACT NO. 93561				
ILLINOIS FED. AID PROJECT				



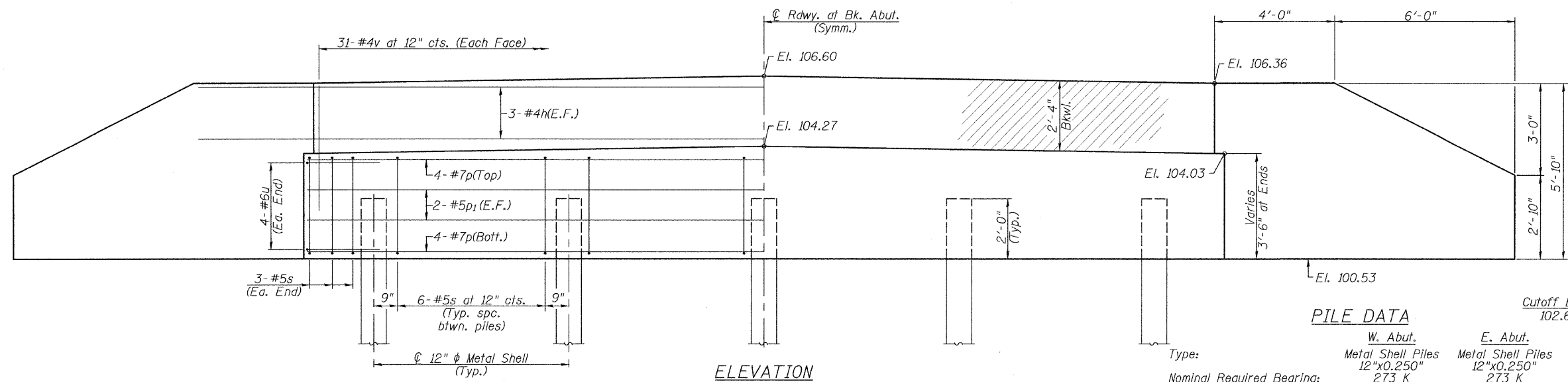
\*\* Whenever the lower insert assemblies interfere with strand locations, the #3 bars shall be cut and adjusted in order to allow raising or lowering of the lower inserts. Maximum adjustment not to exceed 1/2".

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 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.

**BILL OF MATERIAL**

Item	Unit	Quantity
Steel Railing, Type S-1	Foot	120

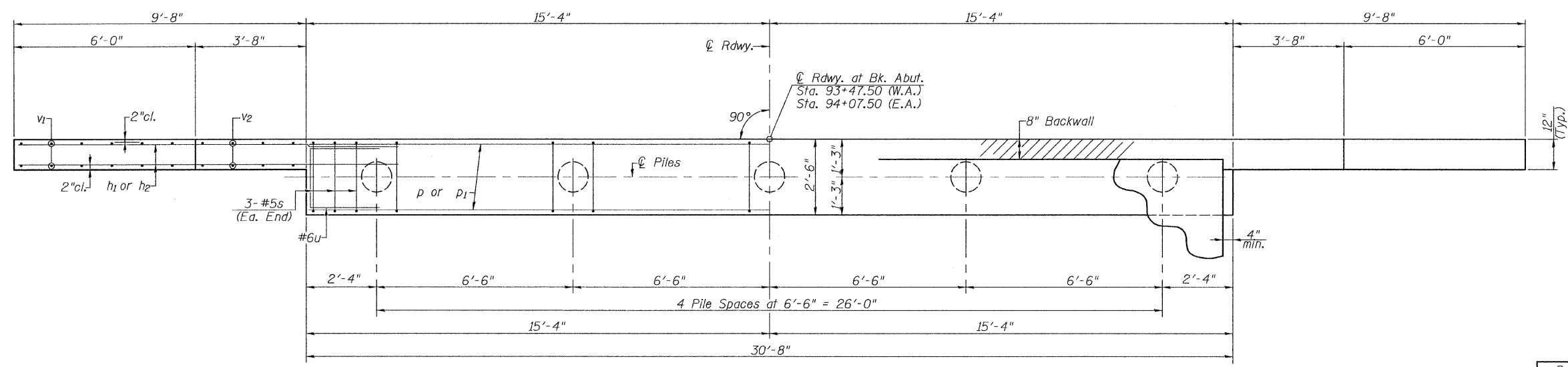
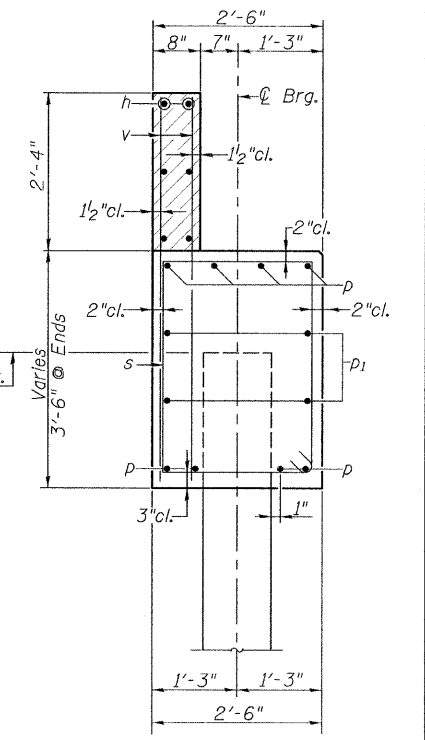




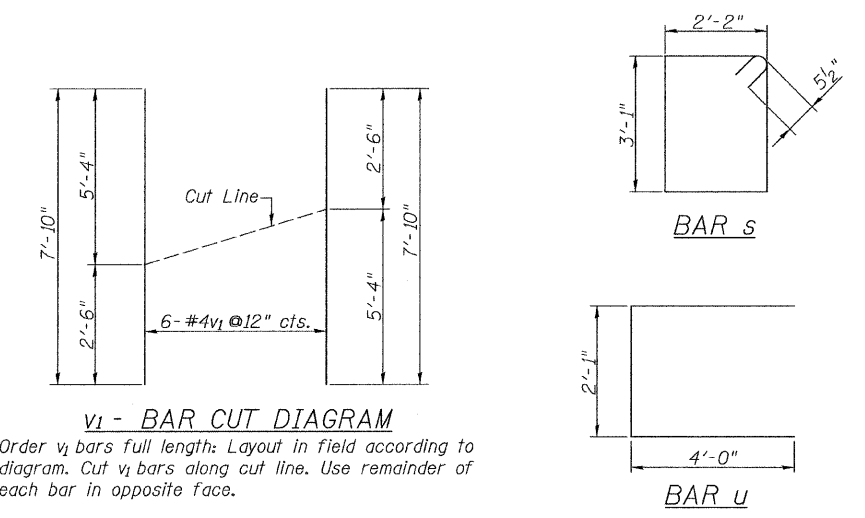
**ELEVATION**  
(W. Abut. Looking West)  
(E. Abut. Looking East)

**PILE DATA**

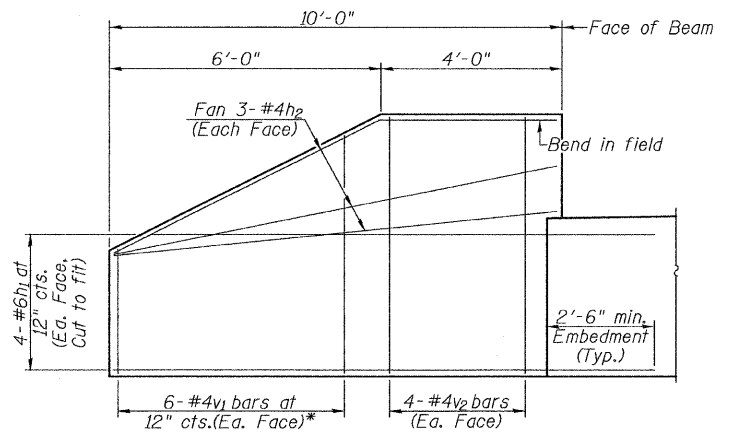
Type:	W. Abut.	E. Abut.
	Metal Shell Piles	Metal Shell Piles
	12"x0.250"	12"x0.250"
Nominal Required Bearing:	273 K	273 K
Factored Resistance Available:	150 K	150 K
Estimated Pile Length:	47'	39'
Number of Production:	4	4
Number of Test Piles:	1	1



**PLAN**



**v1 - BAR CUT DIAGRAM**



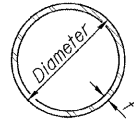
**WINGWALL ELEVATION**  
(Showing Reinforcement)  
\* See v1 - bar cut diagram

**NOTES**

All exposed edges shall have standard  $\frac{3}{4}$ " chamfer.  
Space reinforcement in cap to miss beam anchor dowels.  
Wingwalls and Backwalls may, at the contractor's option, be cast monolithically.  
Hatched area and wingwalls shall be poured after deck beams are anchored in place.  
The Contractor shall drive test piles to 110% of the nominal required bearing specified in production locations at substructures specified or approved by the Engineer before ordering the remainder of piles.  
See Sheet 10 of 15 for pile details.

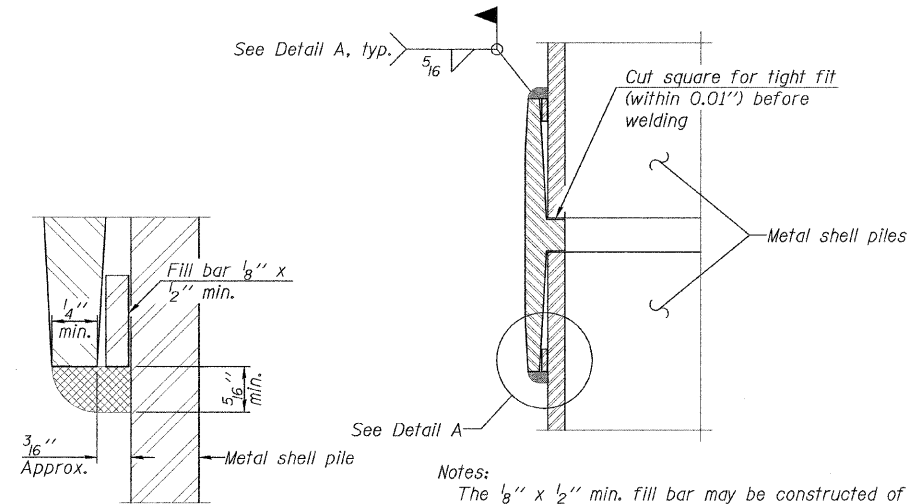
**BILL OF MATERIAL**  
**TWO ABUTMENTS**

BAR	NO.	SIZE	LENGTH	SHAPE
h	12	#4	34'-0"	—
h1	32	#6	12'-0"	—
h2	24	#4	9'-8"	—
p	16	#7	30'-4"	—
p1	8	#5	30'-4"	—
s	60	#5	11'-5"	□
u	16	#6	10'-1"	□
v	124	#4	3'-6"	—
v1	24	#4	7'-10"	—
v2	32	#4	5'-5"	—
Concrete Structures			Cu. Yd.	30.6
Reinforcement Bars			Pound	3740
Structure Excavation			Cu. Yd.	156
Furnishing Metal Shell Piles 12"x0.250"			Foot	344
Driving Piles			Foot	344
Test Pile Metal Shells			Each	2



METAL SHELL PILE TABLE

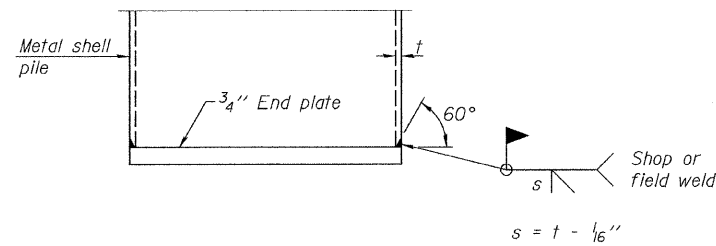
Designation and outside diameter	Wall thickness t	Weight per foot (Lbs./ft.)	Inside volume (yd. <sup>3</sup> /ft.)
PP12	0.179"	22.60	0.0274
PP12	0.250"	31.37	0.0267
PP14	0.250"	36.71	0.0368
PP14	0.312"	45.61	0.0361



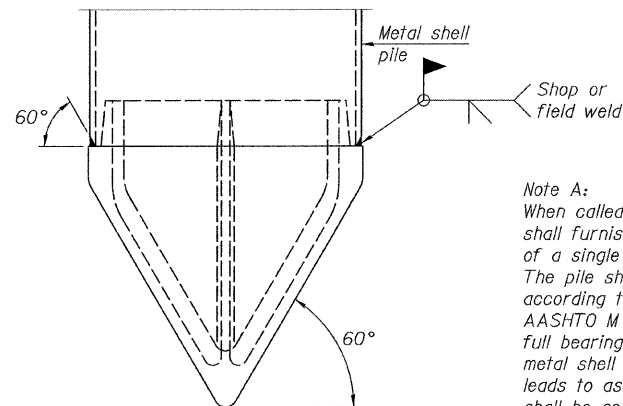
DETAIL A

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

WELDED COMMERCIAL SPLICE



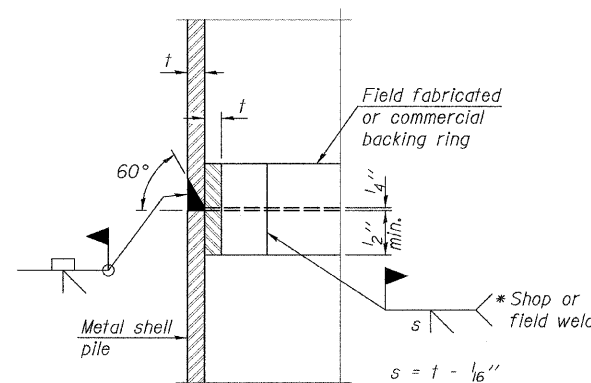
END PLATE ATTACHMENT



Note A:  
 When called for on the plans, the Contractor shall furnish metal shell pile shoes consisting of a single piece conical pile point as shown. The pile shoes shall be cast in one piece steel according to either ASTM A 148 Grade 90-60 or AASHTO M 103 Grade 65-35 and shall provide full bearing over the full circumference of the metal shell pile. The pile shoe shall have tapered leads to assure proper alignment and fitting and shall be secured to the pile with a circumferential weld.

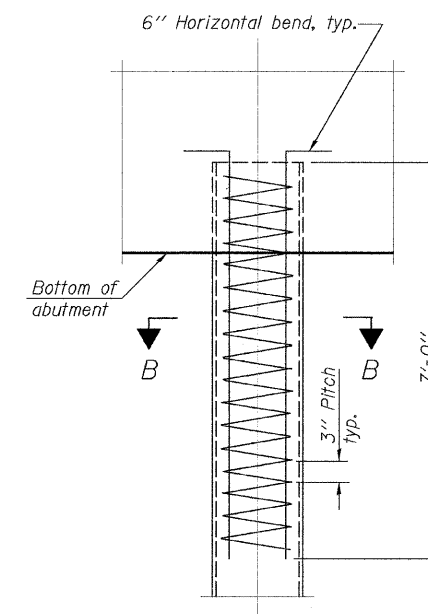
METAL SHELL PILE SHOE ATTACHMENT

(See Note A)



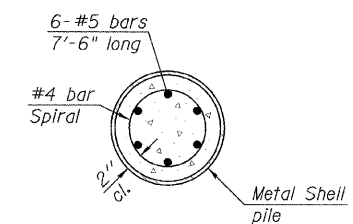
COMPLETE PENETRATION WELD SPLICE

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



ELEVATION

METAL SHELL REINFORCEMENT AT ABUTMENTS



SECTION B-B

Note:  
 The metal shell piles shall be according to ASTM A 252 Grade 3.

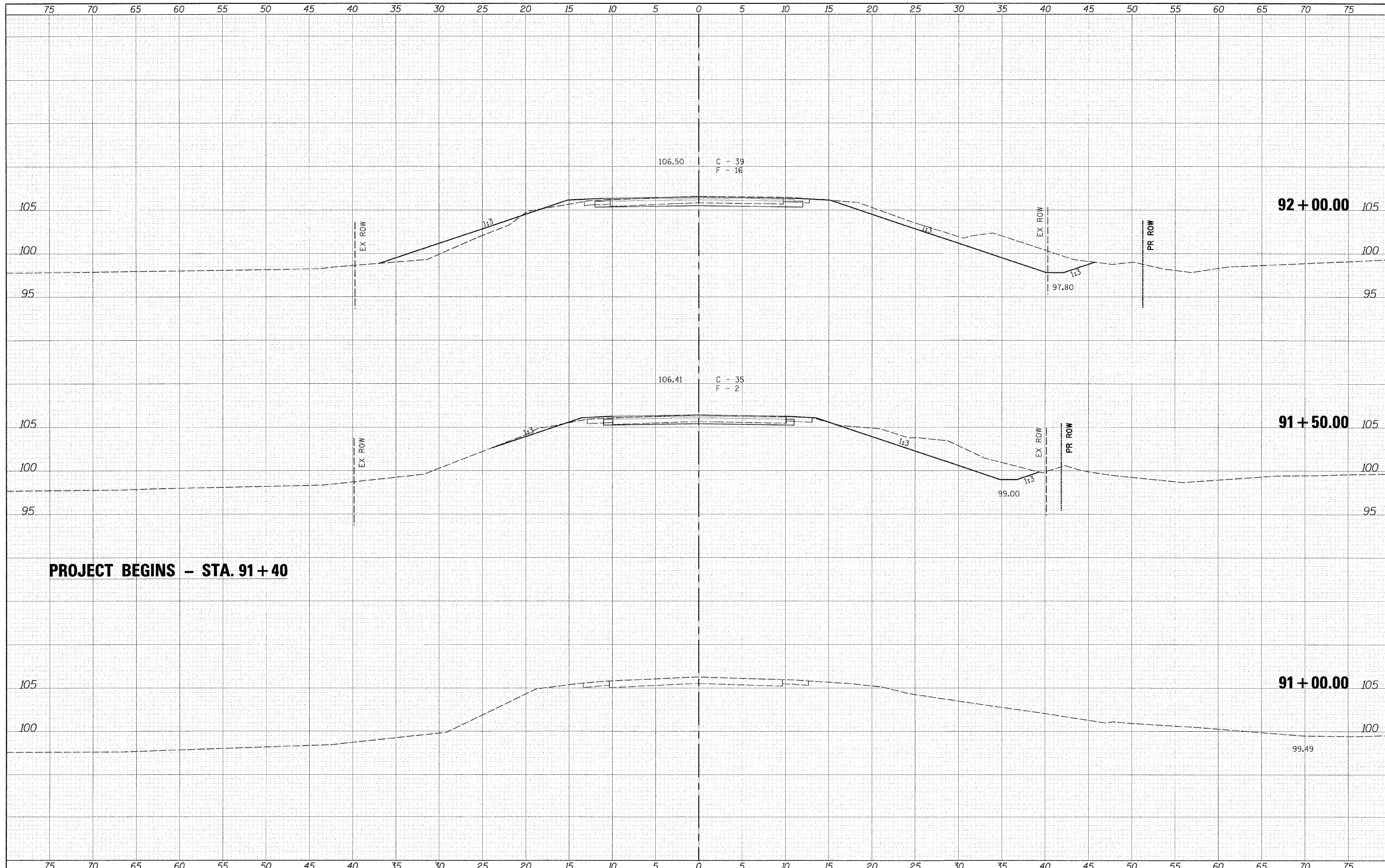
F-MS

7-1-10

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						ILLINOIS FED. AID PROJECT				

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SURVEY	BY
NOTE BOOK	
AREAS CHECKED	
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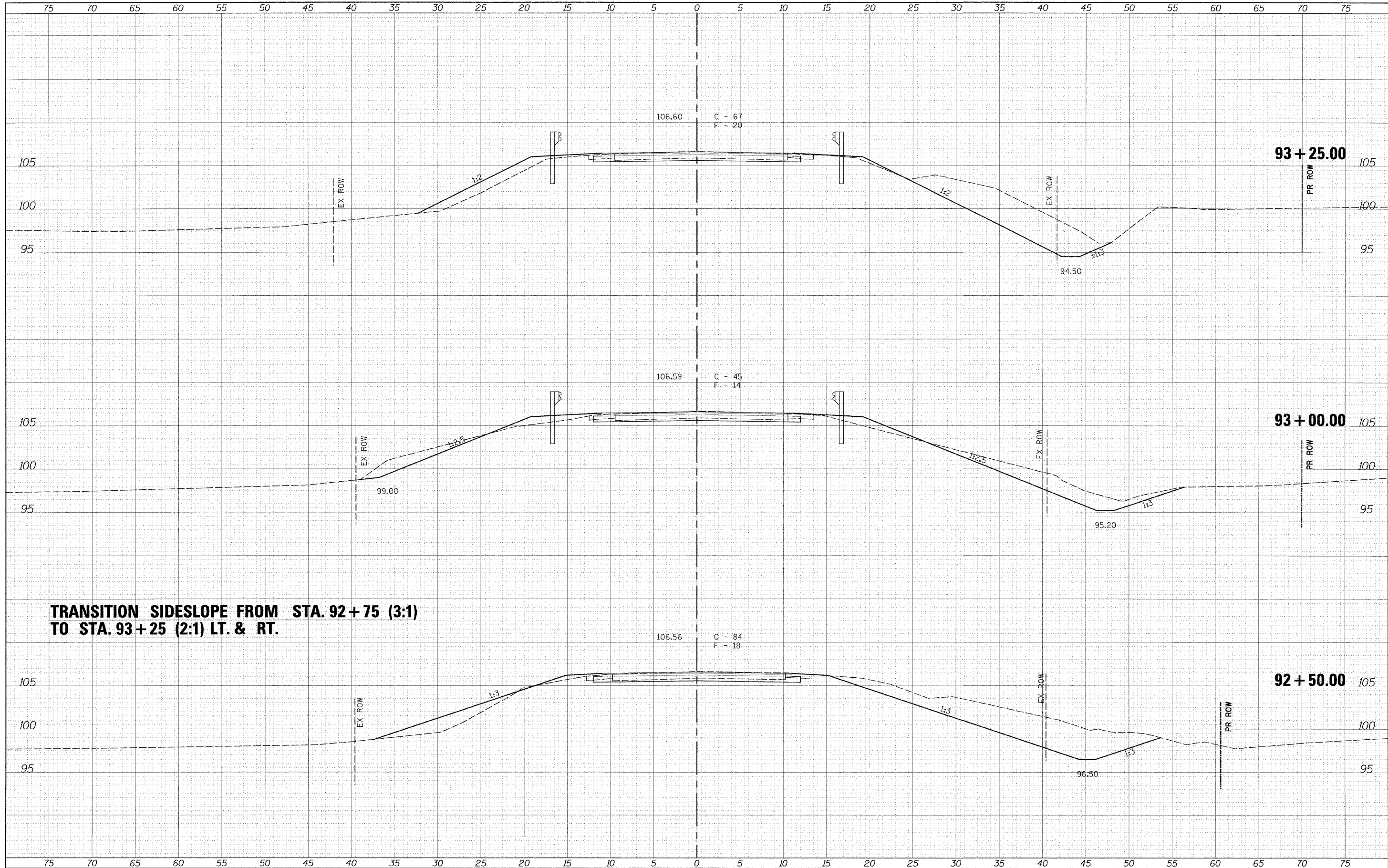
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SURVEY	BY
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DATE	
BY	
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NOTE BOOK	
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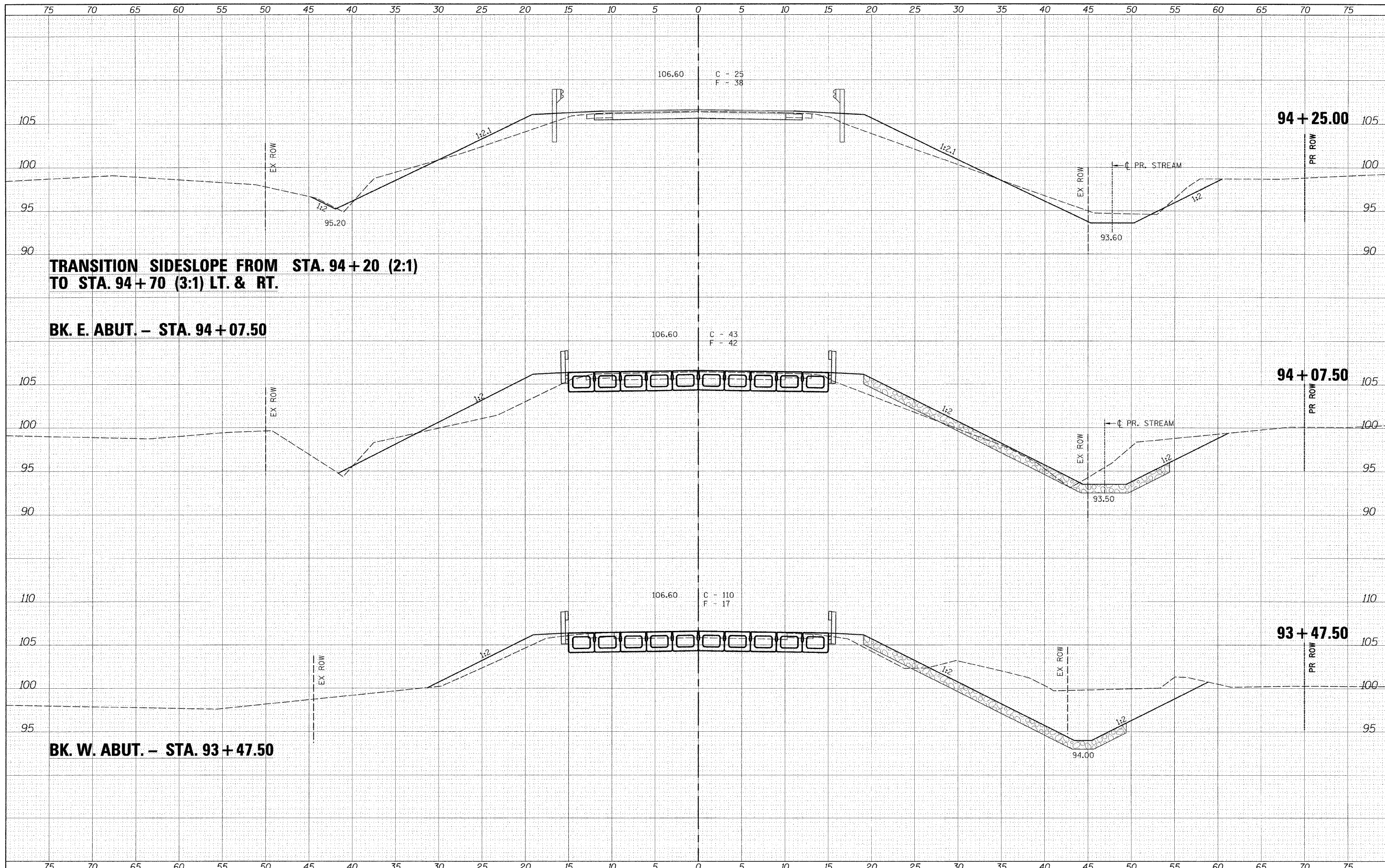
**TRANSITION SIDESLOPE FROM STA. 92 + 75 (3:1)  
TO STA. 93 + 25 (2:1) LT. & RT.**

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BY	
FINAL SURVEY	
SUPERVISED	
NOTE BOOK	
TEMPLATE	
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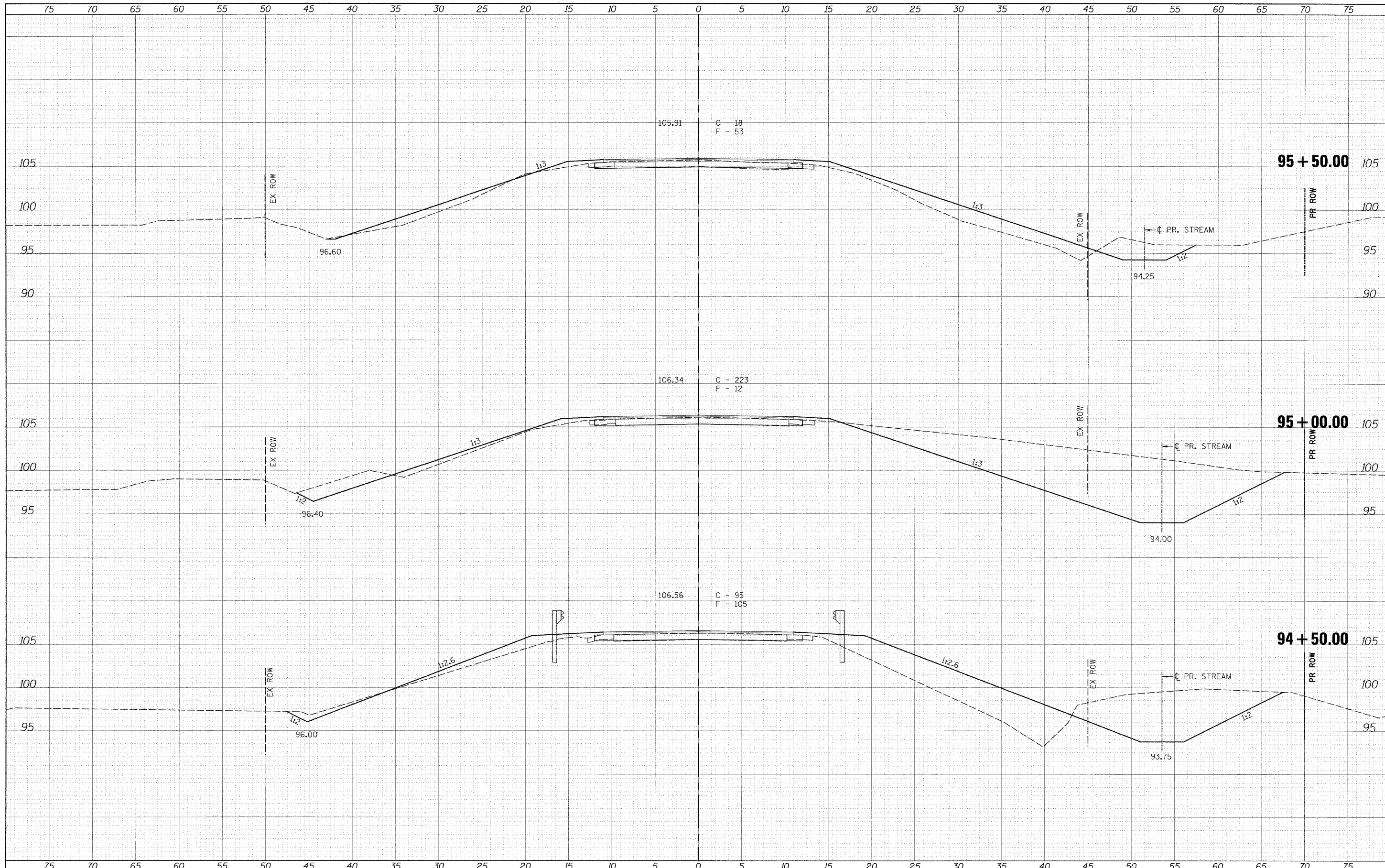



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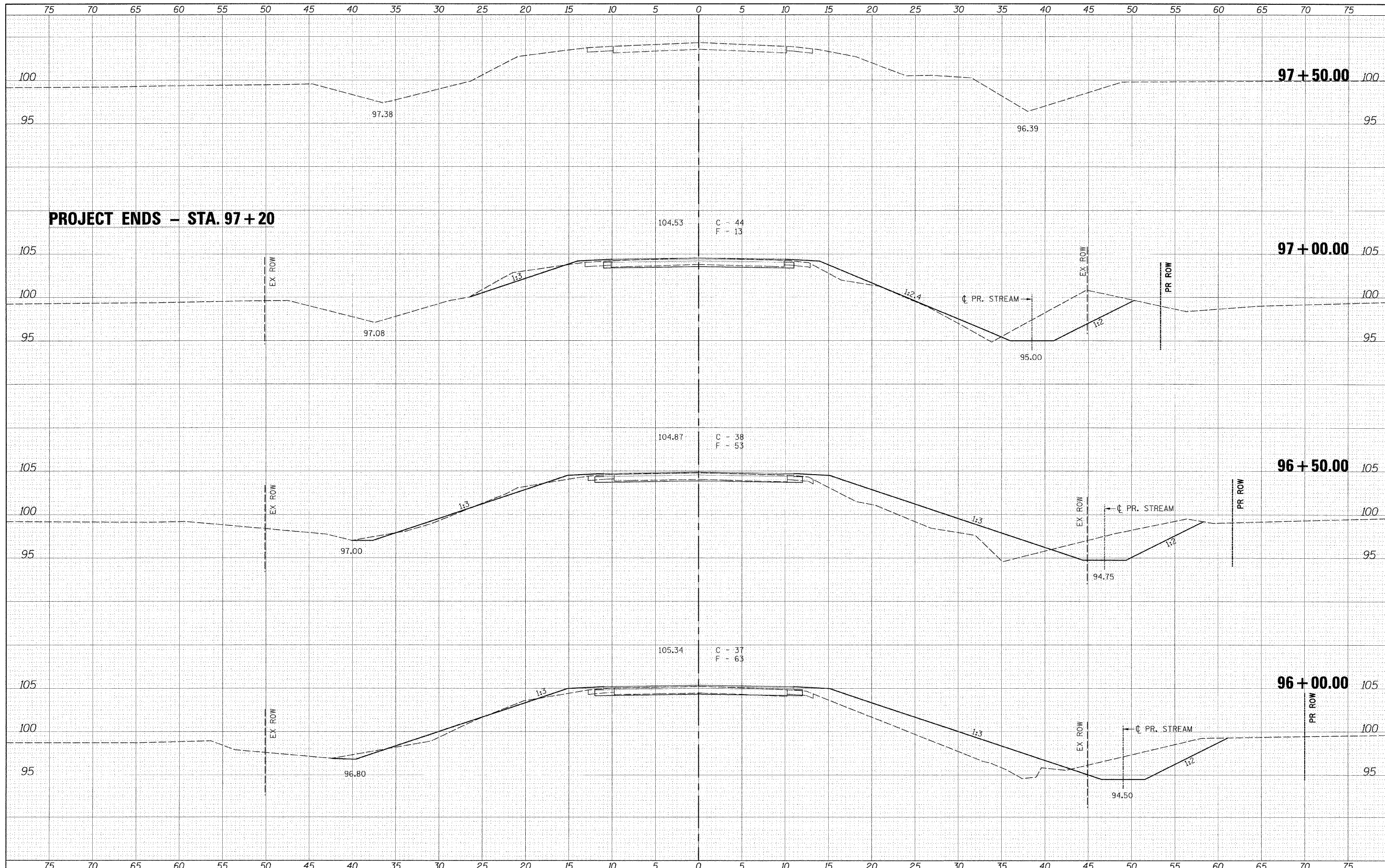
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