

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
817	421B-1	ST. CLAIR	56	1
FED. ROAD DIST. NO.		ILLINOIS	CONTRACT NO. 76885	

56-1-55

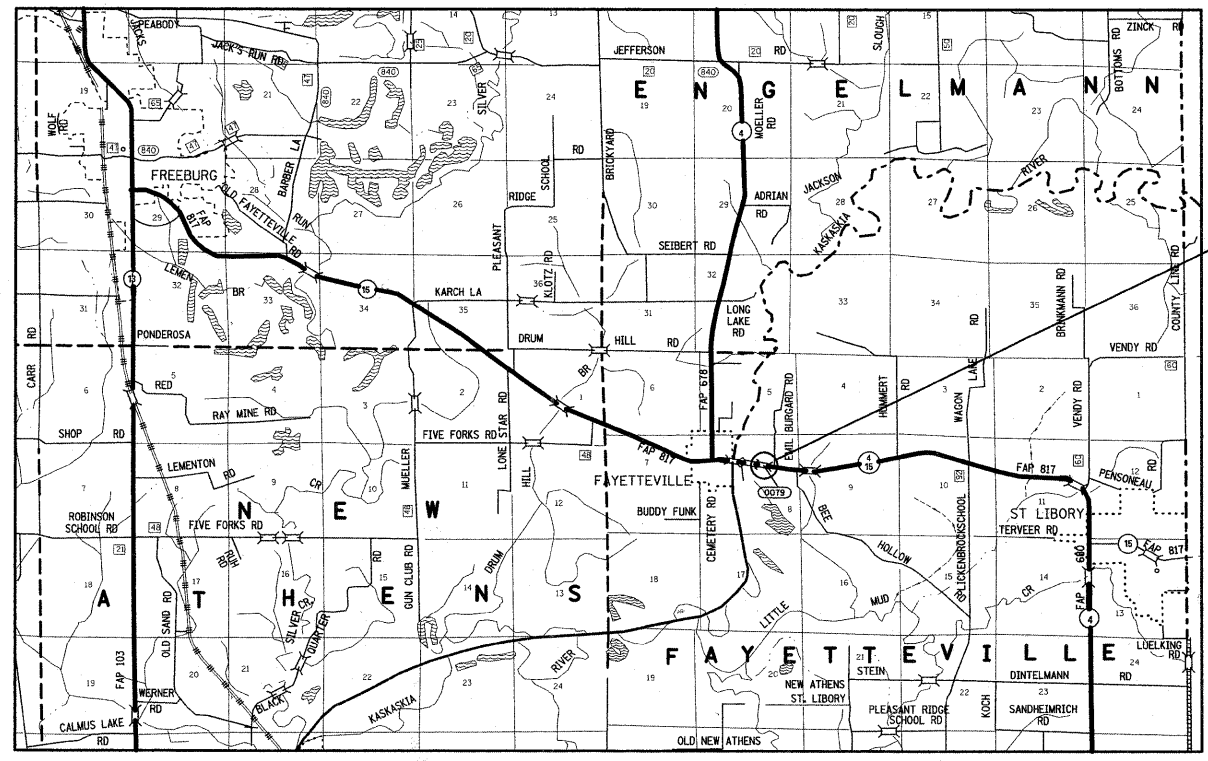
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

**PROPOSED
HIGHWAY PLANS**

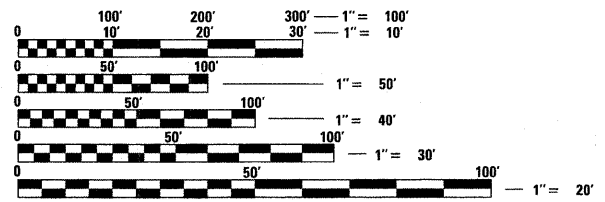
FAP ROUTE 817 (IL ROUTE 4 / 15)
SECTION 421B-1
PROJECT: *BRF-0817(009)*
STRUCTURE REPLACEMENT
ST. CLAIR COUNTY

C-98-041-05

FOR INDEX OF SHEETS, SEE SHEET NO. 2



THREE SPAN STEEL I-BEAM
STRUCTURE TO BE REPLACED
IN-KIND OVER KASKASKIA
OVERFLOW CHANNEL.
SN 082-0079 (E)
SN 082-0275 (P)
STA 149+50.00
145'-6" BK TO BK ABUTMENTS



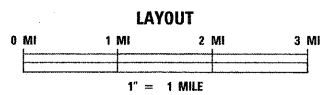
FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD
ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT
CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS
ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

J.U.L.I.E.
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION
1-800-892-0123
OR 811

PROJECT ENGINEER: PATTI LeBEAU (618) 346-3179
PROJECT MANAGER: ARTHUR MUEHLFELD (618) 346-3209

CONTRACT NO. 76885

DESIGN DESIGNATION
N/A



LATITUDE = 38.37649
LONGITUDE = 89.78470

ADT = 5000 (2007)
ADT = 6500 (2029)
SU = 4.5%
MU = 3.5%

T 2 S

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED *Oct 15 20 08*
Mar C Ramis
DEPUTY DIRECTOR OF HIGHWAYS, REGION 5 ENGINEER

December 5, 20 08
Eric E. Harau
INTERIM ENGINEER OF DESIGN AND ENVIRONMENT

December 5, 20 08
Christine M. Reed
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

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OF THE STATE OF ILLINOIS**

INDEX OF SHEETS

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GENERAL NOTES:

1. THE STANDARDS AND REVISION NUMBERS SHALL APPLY TO THIS PROJECT.
2. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO CONSTRUCTION AND ORDERING MATERIALS.
3. ILLINOIS STATE LAW REQUIRES A 48-HOUR NOTICE BE GIVEN TO UTILITIES WITHIN THE PROJECT AREA BEFORE DIGGING BY CALLING J.U.L.I.E. AND BY NOTIFYING NON-J.U.L.I.E. MEMBERS INDIVIDUALLY. AGENCIES KNOWN TO HAVE FACILITIES WITHIN THE PROJECT AREA ARE AS FOLLOWS:
 - AMERENIP (GAS & ELECTRIC)
 - AT&T ILLINOIS
 - VILLAGE OF FAYETTEVILLE (WATER & SEWER)
 - VERIZON NORTH, INC.
 MEMBERS OF J.U.L.I.E. (800) 892-0123 OR 811 ARE INDICATED BY *. NON-MEMBERS MUST BE NOTIFIED INDIVIDUALLY.
4. THE RESIDENT ENGINEER SHALL VERIFY THE EXISTENCE OF HIGHWAY LIGHTING AND/OR I.T.S. UTILITIES WITHIN THE PROJECT LIMITS. IF HIGHWAY LIGHTING AND/OR I.T.S. EXISTS WITHIN THE PROJECT LIMITS, AND IF THESE ITEMS REQUIRE LOCATING, THE CONTRACTOR SHALL BE DIRECTED TO DO SO ACCORDING TO SECTION 803 OF THE STANDARD SPECIFICATIONS. THIS WORK SHALL BE PAID FOR ACCORDING TO ARTICLE 109.04 OF THE STANDARD SPECIFICATIONS.
5. ^{CONSTRUCTION} "ROAD CLOSED AHEAD" SIGNS SHALL BE PLACED AT EACH END OF THE PROJECT AND ALL INTERSECTING SIDE ROADS AND WILL BE INCLUDED IN THE TRAFFIC CONTROL PAY ITEMS. ALL CONSTRUCTION SIGNS SHALL BE FLOURESCENT ORANGE, 48".
6. REMOVAL OF THE EXISTING BRIDGE APPROACH PAVEMENT SHALL BE INCLUDED IN THE COST OF "PAVEMENT REMOVAL".
7. MINIMAL CHANNEL EXCAVATION IS NECESSARY FOR PLACEMENT OF RIPRAP. THIS GRADING AND SHAPING SHALL BE INCLUDED IN THE COST OF "STONE RIPRAP, CLASS A4".
8. THE PROPOSED STEEL PLATE BEAM GUARDRAIL AND TRAFFIC BARRIER TERMINAL IN THE NORTH WEST QUADRANT OF THE STRUCTURE SHALL COMPLY WITH THE DETAILS IN THE PLANS AND MANUFACTURER'S DETAILS IN ORDER TO MATCH THE EXISTING GUARDRAIL ELEMENTS THAT WERE ERECTED PRIOR TO JANUARY 1, 2007.
9. ~~CHANGEABLE MESSAGE SIGNS SHALL BE PLACED ON EITHER SIDE OF THE STRUCTURE TWO WEEKS PRIOR TO CLOSURE AND REMAIN FOR ONE WEEK AFTER CLOSURE.~~
10. ALL EXISTING RIGHT-OF-WAY LINES SHOWN ON THE PLAN SHEETS ARE GRAPHICAL REPRESENTATIONS AND SHALL NOT BE USED AS A MEANS TO ESTABLISH OWNERSHIP. IN ALL MATTERS RELATING TO RIGHT-OF-WAY, THE PLAT OF HIGHWAYS SHALL BE THE CONTROLLING DOCUMENT.
11. A TEMPORARY RUNAROUND WILL BE CONSTRUCTED BY OTHERS UNDER CONTRACT NO. 76C74. CLOSURE OF THIS STRUCTURE BY THE CONTRACTOR WILL NOT BE PERMITTED UNTIL SUCH TIME AS THE TEMPORARY RUNAROUND IS COMPLETE AND READY FOR TRAFFIC.
12. THE CONTRACTOR FOR CONTRACT NO. 76C74 SHALL MAINTAIN THE RUNAROUND AND REMOVE THE RUNAROUND WHEN THE PROPOSED STRUCTURE IS COMPLETE AND OPEN TO TRAFFIC.

EROSION CONTROL NOTES

1. ALL EROSION CONTROL PRODUCTS FURNISHED SHALL BE SPECIFICALLY RECOMMENDED BY THE MANUFACTURER FOR THE USE SPECIFIED IN THE EROSION CONTROL PLAN. PRIOR TO APPROVAL AND USE OF THE PRODUCT, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER A NOTARIZED CERTIFICATION BY THE PRODUCER STATING THE INTENDED USE OF THE PRODUCT AND THAT THE PHYSICAL PROPERTIES REQUIRED FOR THIS APPLICATION ARE MET OR EXCEEDED. THE CONTRACTOR SHALL PROVIDE MANUFACTURER RECOMMENDED INSTALLATION PROCEDURES TO FACILITATE THE ENGINEER IN CONSTRUCTION INSPECTION.
2. STRAW BALES, HAY BALES, PERIMETER EROSION BARRIER, AND SILT FENCES WILL NOT BE PERMITTED FOR TEMPORARY OR PERMANENT DITCH CHECKS. DITCH CHECKS SHALL BE COMPOSED OF AGGREGATE, SILT PANELS, ROLLED EXCELSIOR, URETHANE FOAM/GEOTEXTILE (SILT WEDGES), EARTH MEDIAN AND/OR OTHER MATERIAL APPROVED BY THE EROSION AND SEDIMENT CONTROL COORDINATOR.
3. TEMPORARY DITCH CHECKS, AGGREGATE USES GRADING NO. 3 - REMOVE AT END OF CONSTRUCTION.
4. TEMPORARY SEEDING SHALL BE COMPLETED ON A WEEKLY BASIS ON EXPOSED GROUND AND SHALL BE PAID FOR AS "TEMPORARY EROSION CONTROL SEEDING" AND NO OTHER PAYMENT WILL BE PERMITTED. FOR CALCULATION PURPOSES, THREE APPLICATIONS OF TEMPORARY SEEDING WERE ASSUMED.
5. ALL AREAS DISTURBED FOR ANY REASON SHALL BE PERMANENTLY SEEDED AS DIRECTED BY THE ENGINEER. ALL AREAS DISTURBED BY THE CONTRACTOR OUTSIDE THE PROPOSED CONSTRUCTION LIMITS SHALL BE SEEDED AT THE CONTRACTOR'S EXPENSE
6. EROSION CONTROL BLANKET SHALL BE PLACED ON ALL SLOPES 2.5:1 AND STEEPER.
7. EARTH STOCKPILES SHALL BE TEMPORARILY SEEDED IF THEY ARE TO REMAIN UNUSED FOR MORE THAN FOURTEEN DAYS.
8. CLASS 2 SEEDING AND EROSION CONTROL BLANKET IS TO BE PLACED AS SOON AS EARTHWORK IS COMPLETED.

COMMITMENTS

NONE

PERTINENT INFORMATION

THE VILLAGE OF FAYETTEVILLE SHALL BE INFORMED 2 WEEKS PRIOR TO CLOSURE AND IMPLEMENTATION OF THE RUNAROUND. CONTACT BOARD PRESIDENT BRIAN FUNK AT 618-677-3343

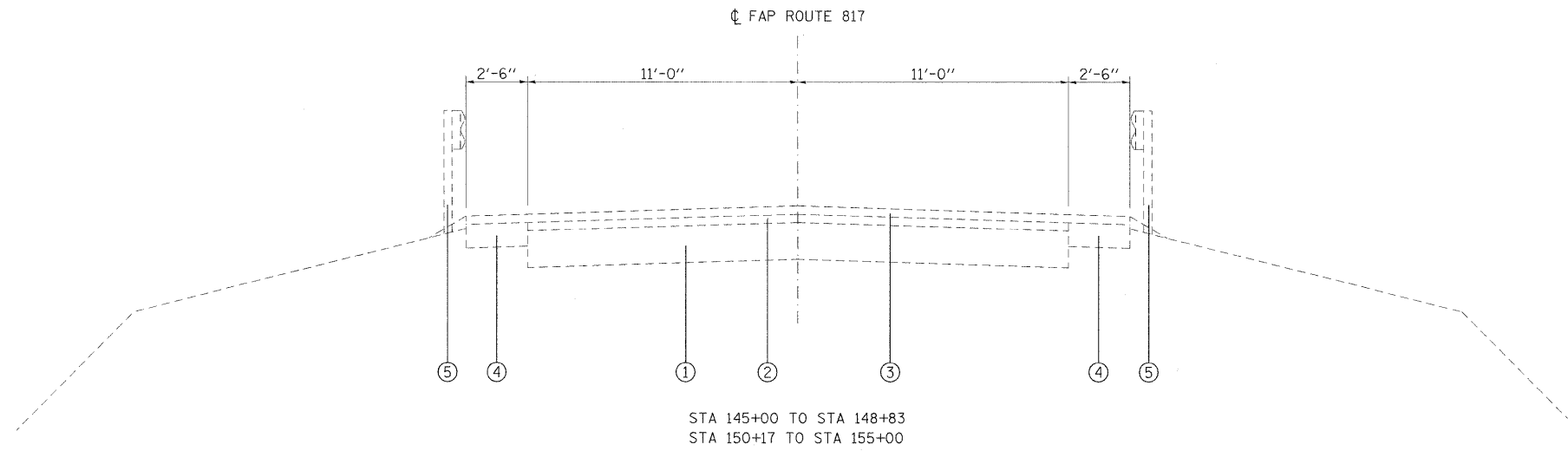
AN APPROXIMATE AREA OF THE WETLAND LOCATED WITHIN THE PROJECT LIMITS IS SHOWN ON THE EROSION CONTROL SHEETS. THE ACTUAL WETLAND WILL BE STAKED BY I.N.H.S. PRIOR TO CONSTRUCTION. THERE IS AN ADDITIONAL AREA SHOWN AS WETLAND REMOVAL FOR PLACEMENT OF THE RIPRAP UNDERNEATH THE STRUCTURE. CARE SHALL BE TAKEN TO MINIMIZE IMPACTS TO THE WETLAND. IF ANY ADDITIONAL IMPACTS ARE ANTICIPATED, THE R.E. SHALL NOTIFY JENNIFER HUNT AT 618-346-3156 PRIOR TO IMPLEMENTING THE CONSTRUCTION ACTIVITY.

UPON OPENING THE STRUCTURE TO TRAFFIC, THE RESIDENT ENGINEER FOR THIS PROJECT SHALL CONTACT THE CONTRACTOR FOR CONTRACT NO. 76C74 AND NOTIFY HIM THAT THE RUNAROUND IS AVAILABLE FOR REMOVAL.

HIGHWAY STANDARDS

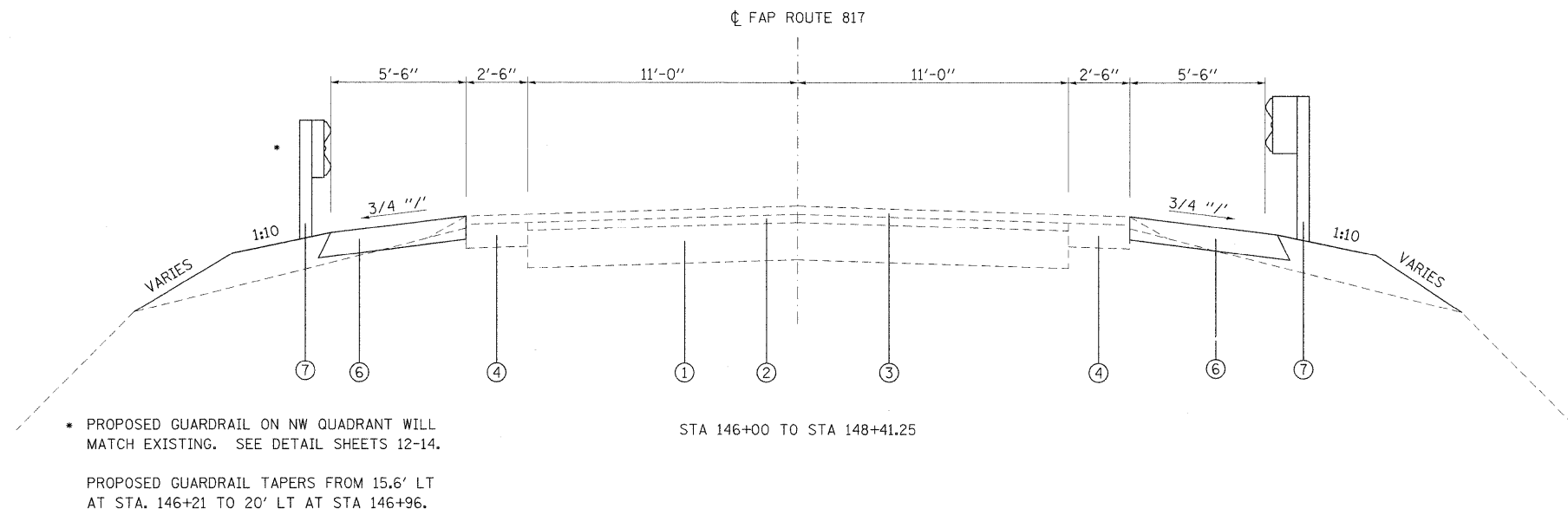
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631031-07	781001-03
	BLR 21-8

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		CHECKED -	REVISED -			CONTRACT NO. 76885					
		DATE -	REVISED -			SCALE:	SHEET NO. OF SHEETS STA.	TO STA.	FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT	



LEGEND

- ① EXISTING PAVEMENT
- ② EXISTING RESURFACING
- ③ EXISTING BITUMINOUS CONCRETE SURFACE COURSE, 2"
- ④ EXISTING BITUMINOUS SHOULDER
- ⑤ EXISTING GUARDRAIL
- ⑥ PROPOSED AGGREGATE SHOULDER, TYPE A - 6"
- ⑦ PROPOSED GUARDRAIL

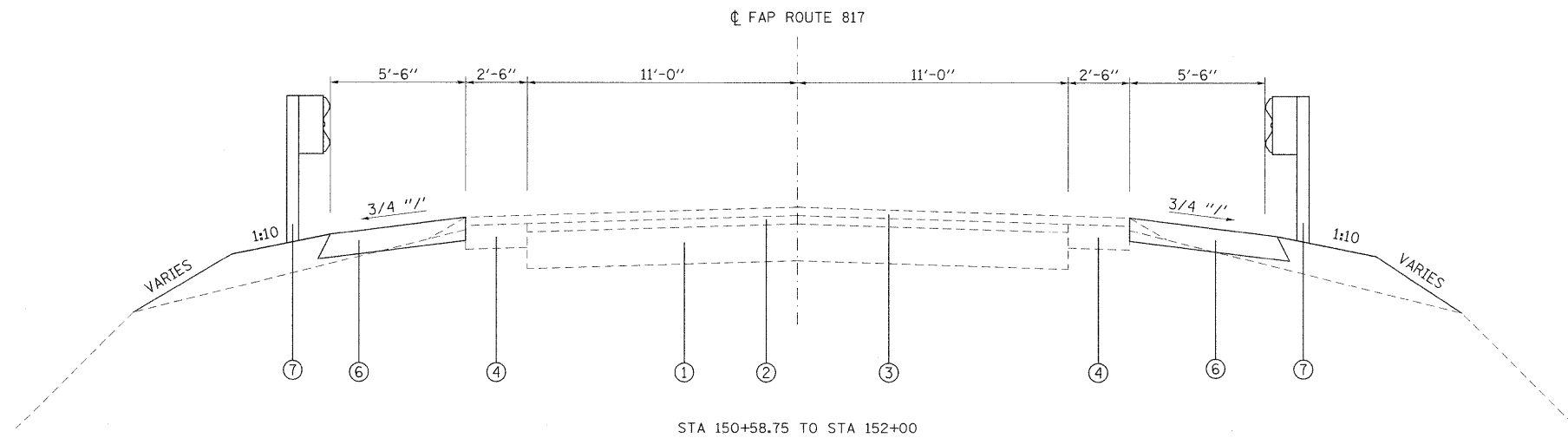


* PROPOSED GUARDRAIL ON NW QUADRANT WILL MATCH EXISTING. SEE DETAIL SHEETS 12-14.
 PROPOSED GUARDRAIL TAPERS FROM 15.6' LT AT STA. 146+21 TO 20' LT AT STA 146+96.

BITUMINOUS MIXTURE CHART

MIXTURE USE	BINDER
AC/PG	PG 64-22
RAP % (MAX)	15%
DESIGN AIR VOIDS	4.0% @ Ndes=70
MIX COMPOSITION (GRADATION MIXTURE)	
FRICITION AGG	MIXTURE "B"

PLAN QUANTITIES FOR BITUMINOUS CONCRETE SURFACE COURSE ITEMS ARE CALCULATED USING A UNIT WEIGHT OF 112 LB/SQ YD/IN (59.8 KG/SQ M/25 MM THICKNESS).



EARTHWORK SCHEDULE

LOCATION		EARTH EXCAVATION	EARTH EXCAVATION ADJUSTED FOR SHRINKAGE (25%)	EMBANKMENT	EARTHWORK BALANCE WASTE (+) OR SHORTAGE (-)
STATION	TO STATION	CU YD	CU YD	CU YD	CUYD
STA 146+00.00	TO STA 146+50.00	5.5	4.1	1.1	3.0
STA 146+50.00	TO STA 147+00.00	9.5	7.0	4.0	3.0
STA 147+00.00	TO STA 147+50.00	7.7	5.8	7.6	-1.8
STA 147+50.00	TO STA 148+00.00	7.4	5.5	7.6	-2.1
STA 148+00.00	TO STA 148+50.00	42.2	31.6	95.0	-63.4
STA 150+50.00	TO STA 151+00.00	53.9	40.3	120.0	-79.7
STA 151+00.00	TO STA 151+50.00	15.6	11.6	53.4	-41.8
STA 151+50.00	TO STA 152+00.00	6.5	4.9	84.3	-79.4
STA 152+00.00	TO STA 152+50.00	1.7	1.2	49.0	-47.8
SUBTOTAL		150	112	422	-310

TREE REMOVAL SCHEDULE

LOCATION			RIGHT OR	TREE REMOVAL
STATION	TO	STATION	LEFT	ACRE
148+46	TO	148+75	RT	0.005
149+17	TO	151+86	RT	0.095
TOTAL				0.10
ROUNDED				0.25

EROSION CONTROL SCHEDULE

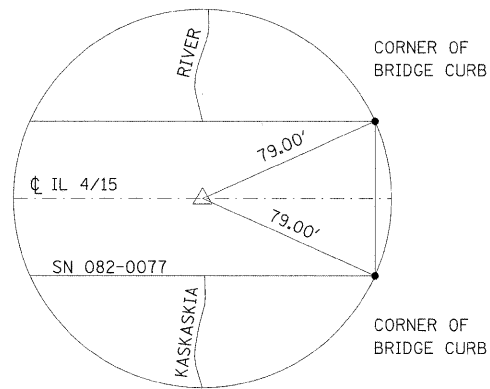
LOCATION		RIGHT OR	PERIMETER EROSION BARRIER	EROSION CONTROL BLANKET
STATION	TO STATION	LEFT	FOOT	SQ YD
STA 146+00	TO STA 148+67	LT	295	
STA 146+00	TO STA 148+67	RT	290	
STA 148+25	TO STA 148+67	LT		163
STA 150+33	TO STA 151+86	LT	181	
STA 150+33	TO STA 152+50	RT	244	
STA 150+33	TO STA 150+75	LT		193
STA 150+33	TO STA 152+38	RT		684
TOTAL			1010	1040

PAVEMENT MARKING SCHEDULE

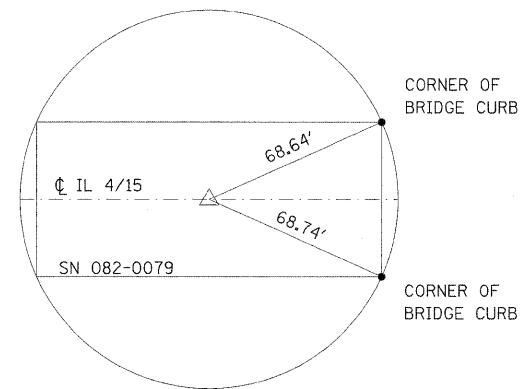
LOCATION		POLYUREA PAVEMENT MARKING		RAISED REFLECTIVE PAVEMENT MARKER (BRIDGE)
STATION	TO STATION	SKIP-DASH CENTERLINE	EDGE LINE 4" WHITE	2-WAY AMBER
		4" YELLOW	LT RT	
		FOOT	FOOT	FOOT
STA 148+41.25	TO STA 150+58.75	60	217.5	217.5
TOTAL			495	3

GUARDRAIL SCHEDULE

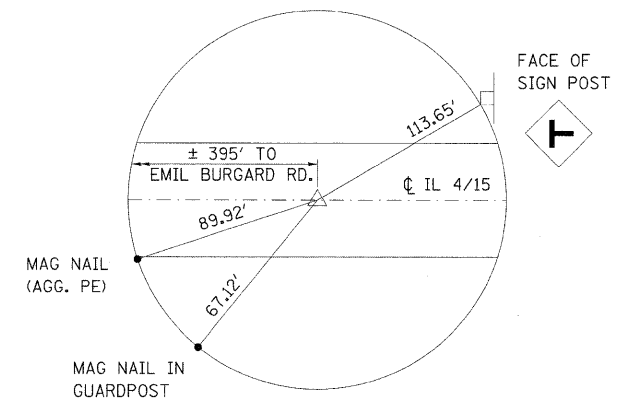
LOCATION	GUARDRAIL REMOVAL	STEEL PLATE BEAM GUARDRAIL, TYPE A	TRAFFIC BARRIER TERMINAL, TYPE 1, (SPECIAL) TANGENT	TRAFFIC BARRIER TERMINAL, TYPE 6	GUARDRAIL MARKERS, TYPE A	BARRIER WALL MARKERS, TYPE B	BARRIER WALL MARKERS, TYPE C	TERMINAL MARKER - DIRECT APPLIED
	FOOT	FOOT	EACH	EACH	EACH	EACH	EACH	EACH
NORTH SIDE					5	2	2	
SOUTH SIDE					5	2	2	
NW QUADRANT	260	212.5		1				
NE QUADRANT	127	50	1	1				1
SW QUADRANT	215	125	1	1				1
SE QUADRANT	151	50	1	1				1
TOTAL	753	437.5	3	4	10	4	4	3



TIE POINT
CUT " + "
P.O.T. STA 144+00



TIE POINT
CUT " + "
P.O.T. STA 149+50



TIE POINT
MAG NAIL
P.O.T. STA 156+00

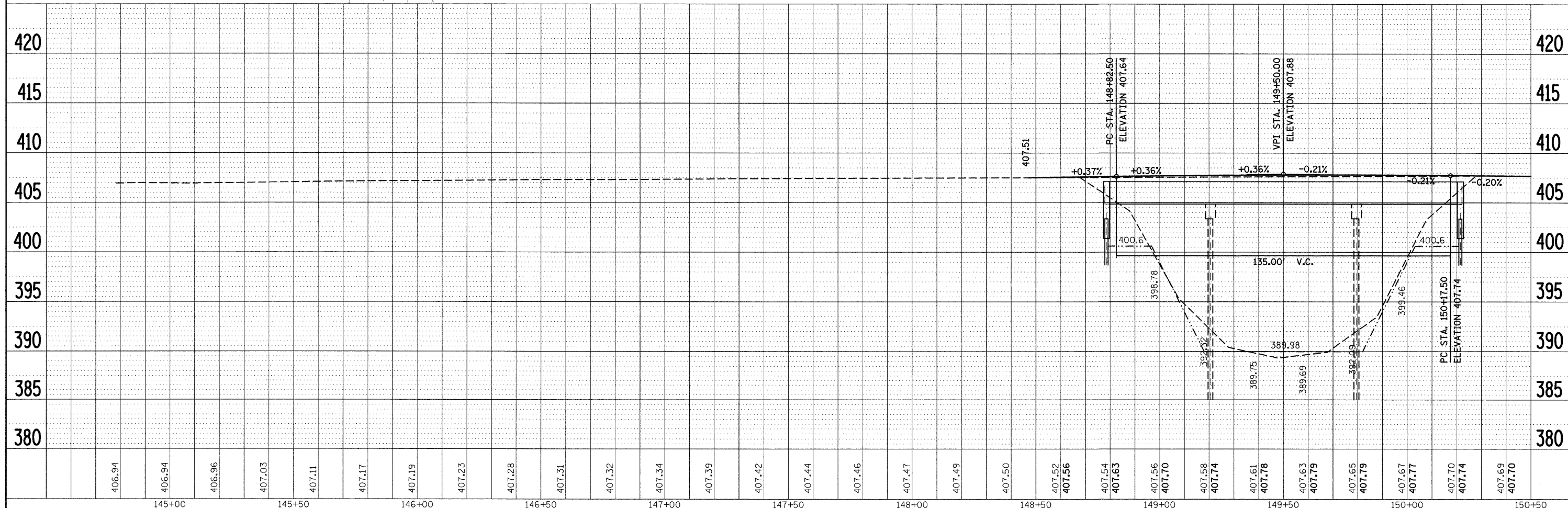
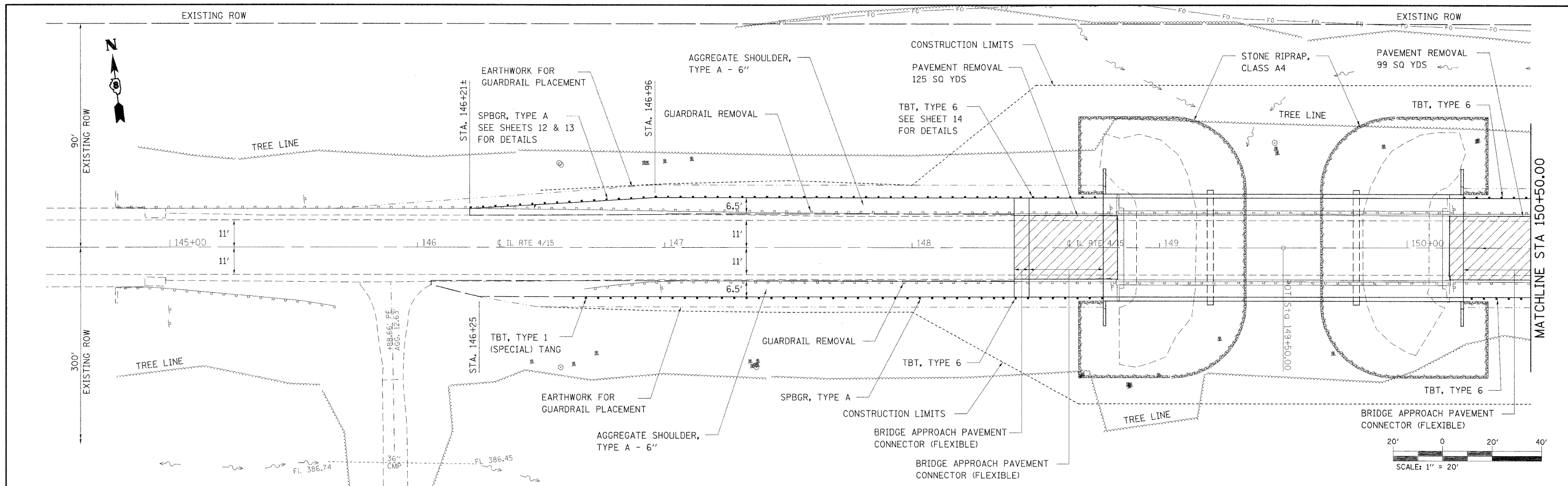
BENCHMARKS

- BM 13 - RR SPIKE IN POWER POLE AT SW CORNER OF WEST MAIN ST (IL 15) & SOUTH 3RD ST IN FAYETTEVILLE
STA. 117+67.5
OFFSET = 24' RT
ELEV = 413.481
- BM 14 - CUT SQUARE ON BRIDGE CURB (NOT WINGWALL) AT NE CORNER OF IL 15/IL 4 BRIDGE OVER KASKASKIA RIVER (SN 082-0077)
STA. 137+06
OFFSET = 16.9' LT
ELEV = 406.805
- BM 1 - CUT SQUARE ON BRIDGE CURB AT NE CORNER OF IL 15/IL 4 BRIDGE OVER KASKASKIA OVERFLOW (SN 082-0078)
STA. 144+77
OFFSET = 17.5' LT
ELEV = 407.525

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		CHECKED -	REVISED -		FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT							
		DATE -	REVISED -									

PLAN	SURVEYED	DATE
	PLOTTED	
	ALIGNED	
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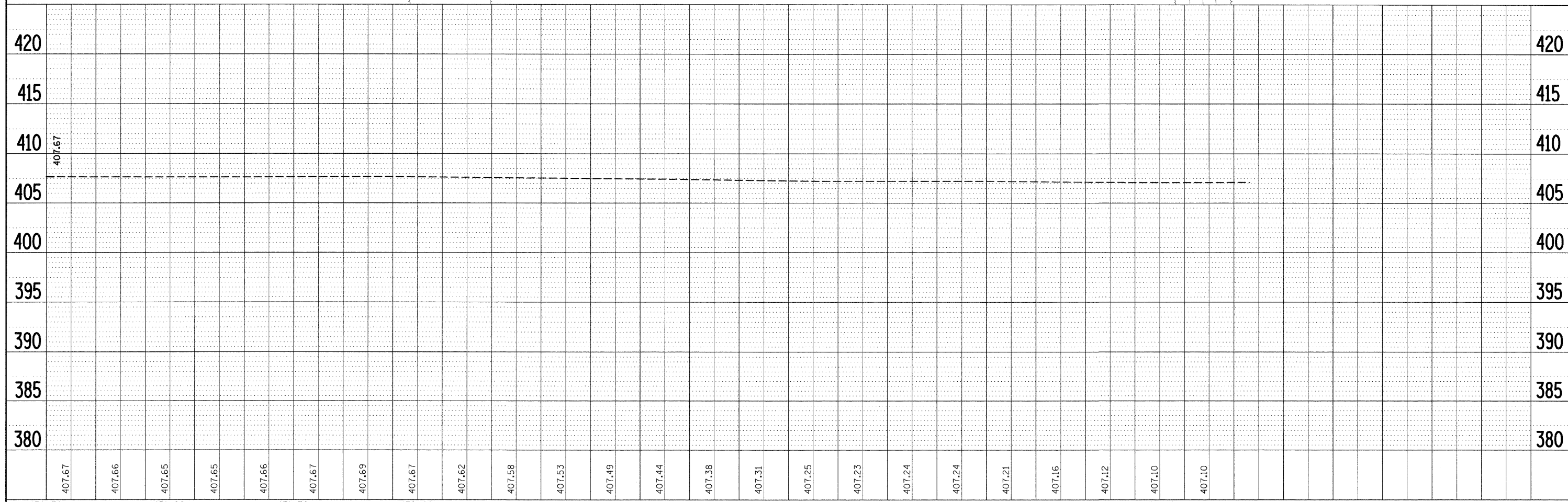
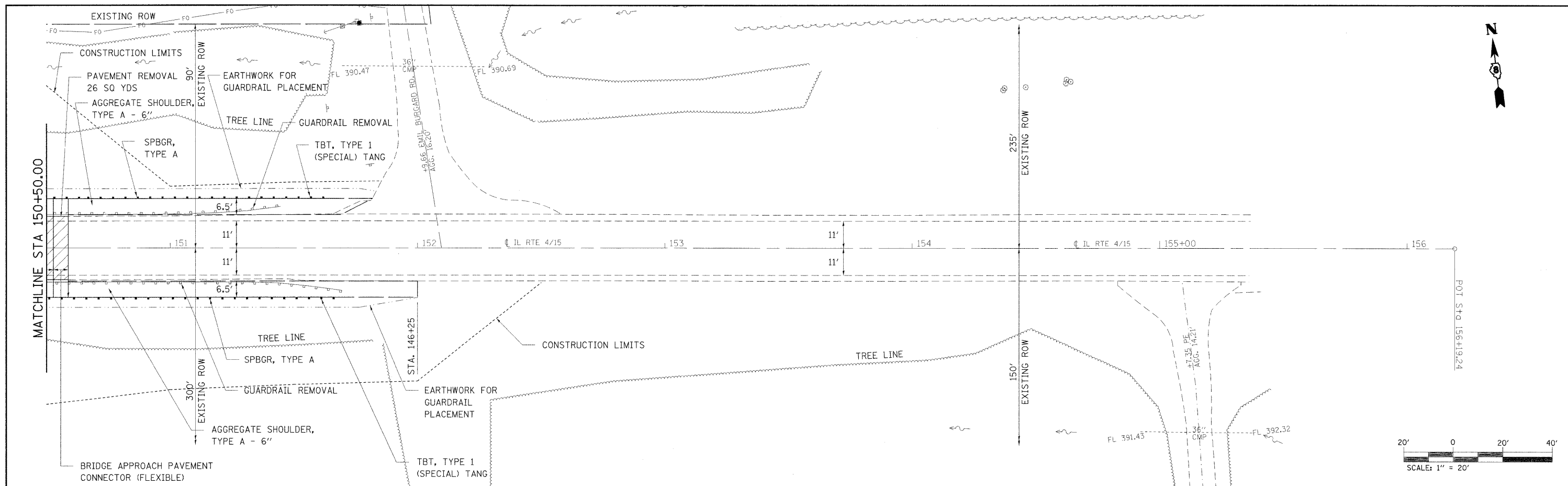
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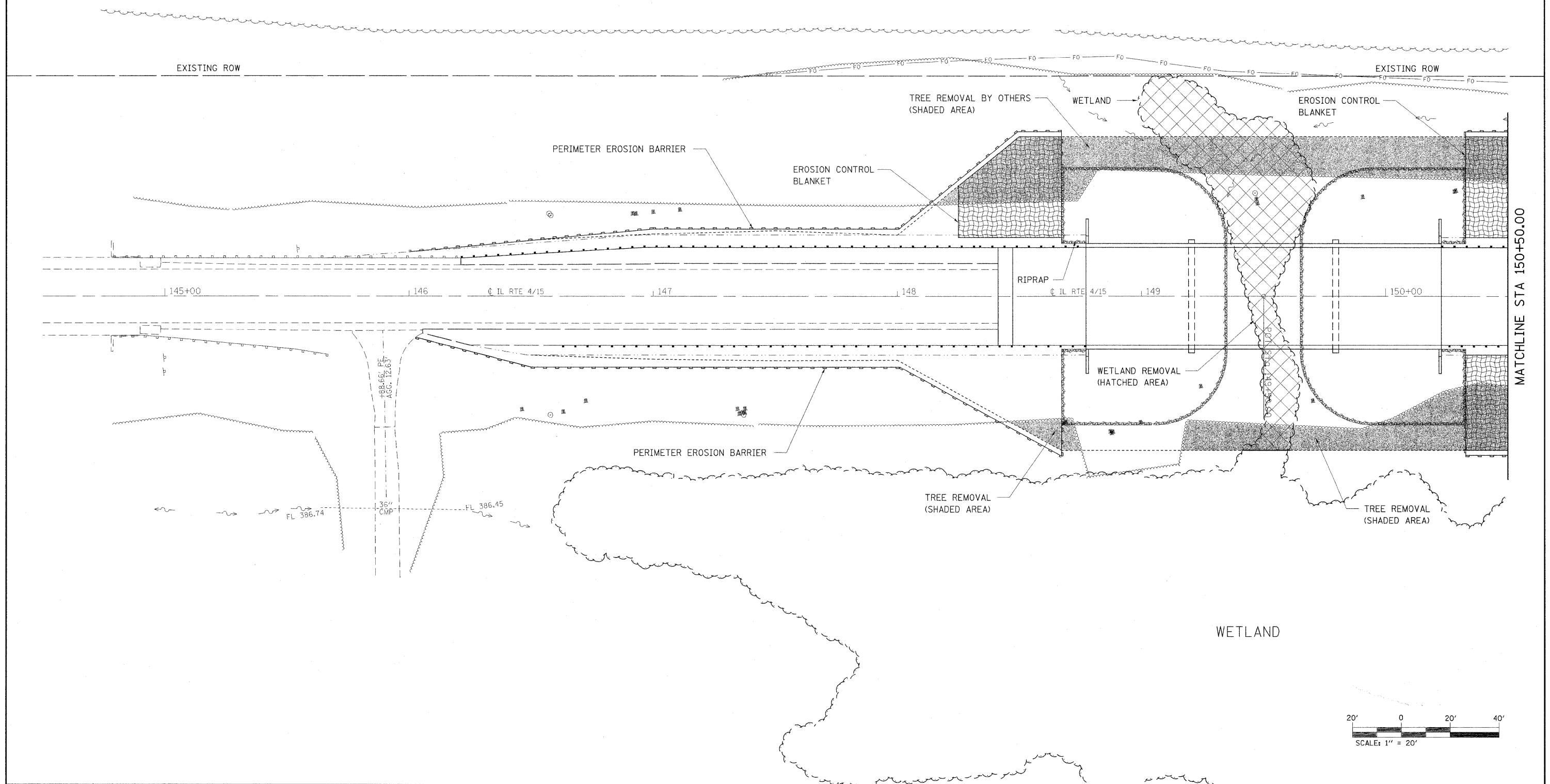
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PLAN
 SURVEYED BY
 PLOTTED DATE
 NOTE BOOK NO.
 ALIGNED CHECKED
 CAD FILE NAME

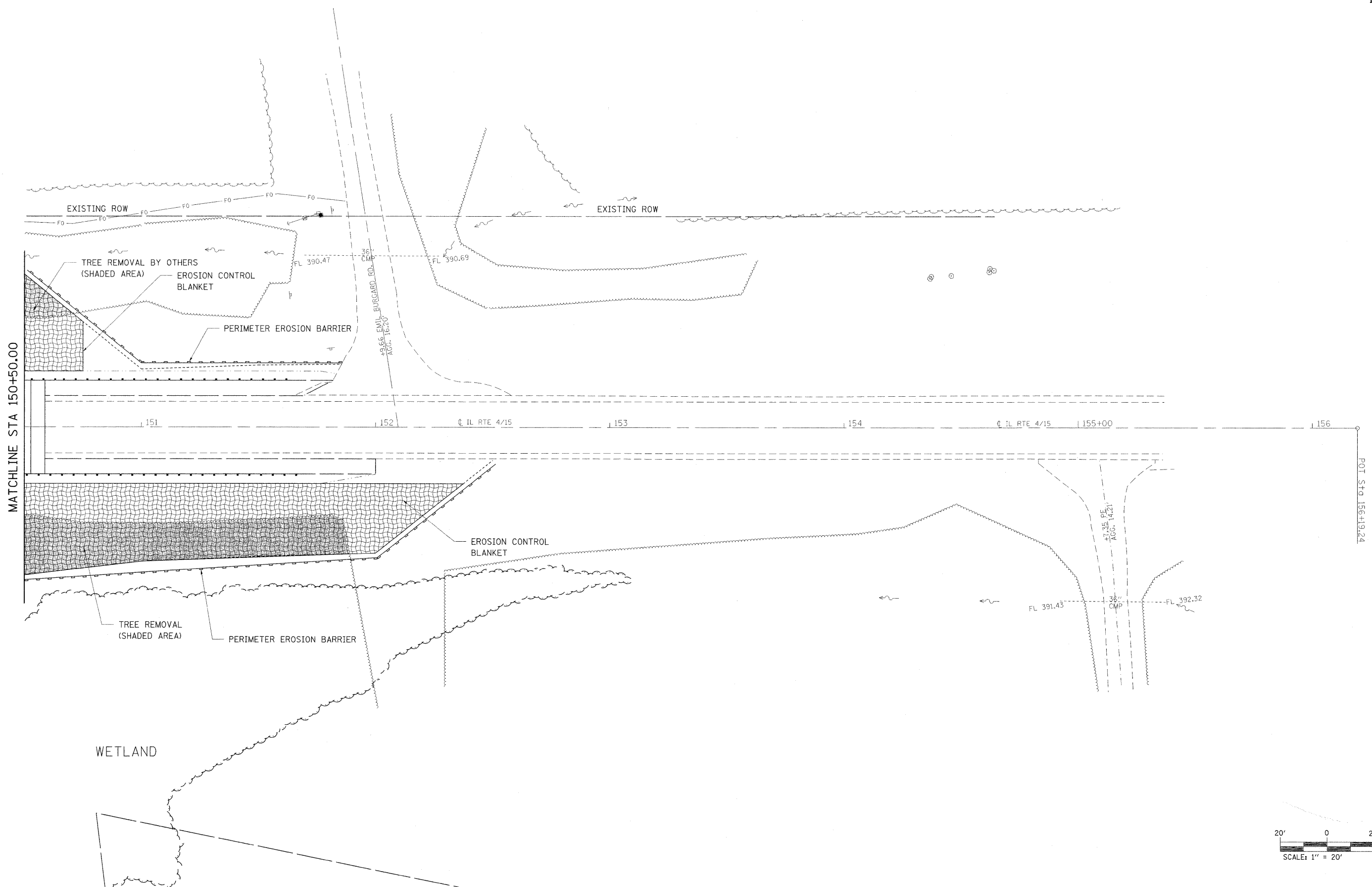
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 STRUCTURE NOTATIONS CHKD



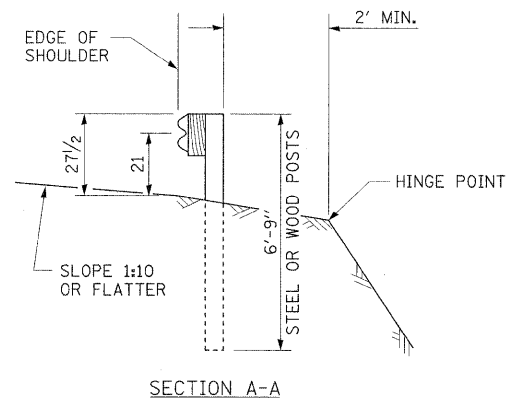
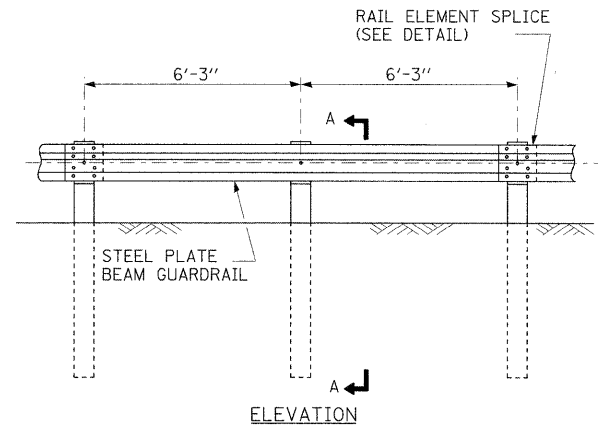
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FILE NAME =	USER NAME = owenbj	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	EROSION CONTROL			F.A.P. RTE. 817	SECTION 421B-1	COUNTY ST. CLAIR	TOTAL SHEETS 56	SHEET NO. 10
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		DATE -	REVISED -									



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		DATE	REVISED -		FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT								



GENERAL NOTES

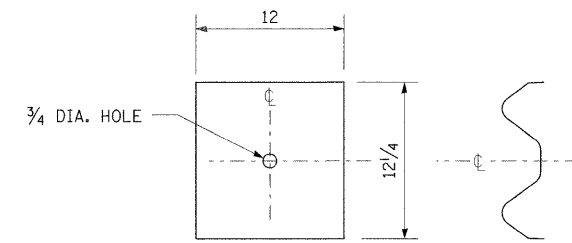
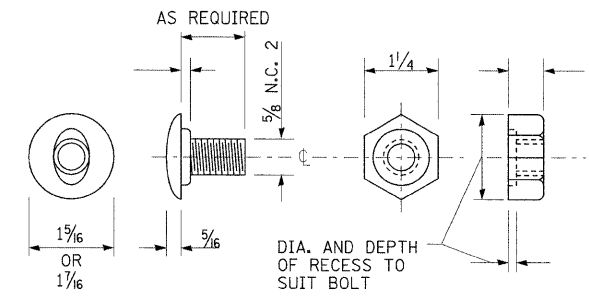
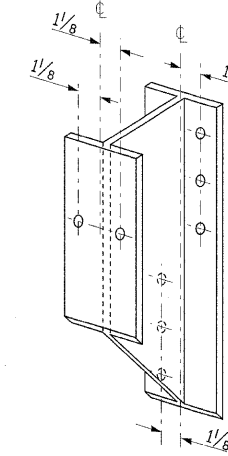
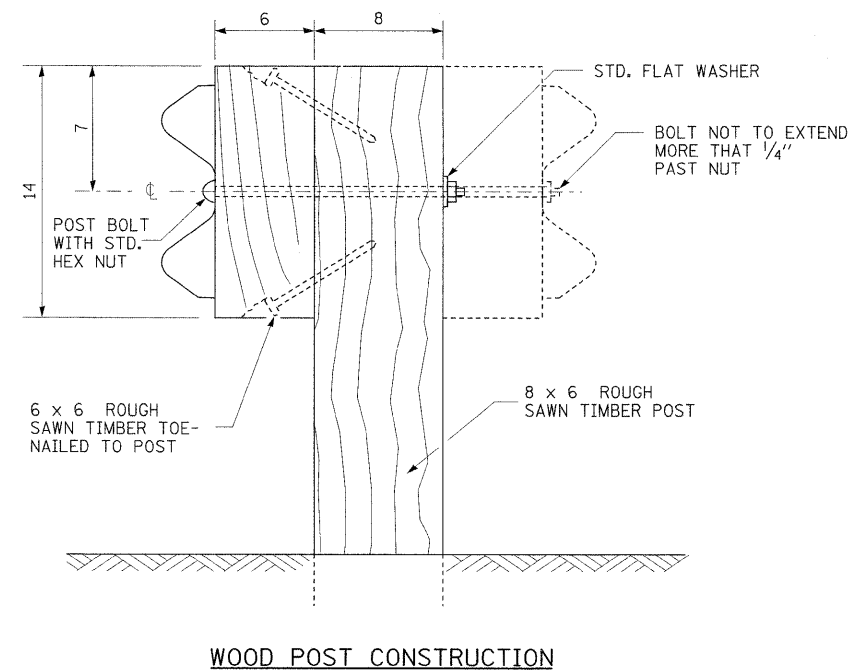
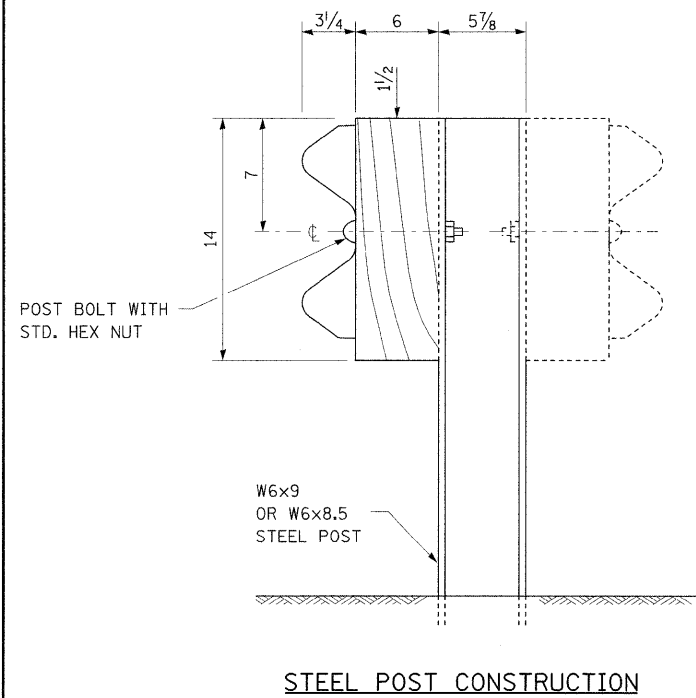
ALL SLOPE RATIOS ARE EXPRESSED AS UNITS OF VERTICAL DISPLACEMENT TO UNITS OF HORIZONTAL DISPLACEMENT (V:H).

ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SHOWN.

THE EXISTING STEEL POSTS MAY BE DRILLED TO MATCH THE BOLT PATTERN SHOWN HEREIN FOR THE WOOD BLOCK-OUT, OR A NEW STEEL POST SHALL BE PROVIDED.

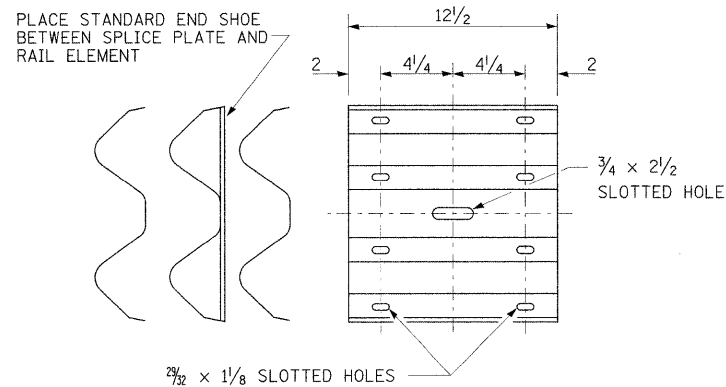
THIS DETAIL IS APPLICABLE TO THE GUARDRAIL SYSTEM USED PRIOR TO JANUARY 1, 2007. FOR DETAILS ON THE MIDWEST GUARDRAIL SYSTEM, SEE STANDARD 630001.

TYPE A

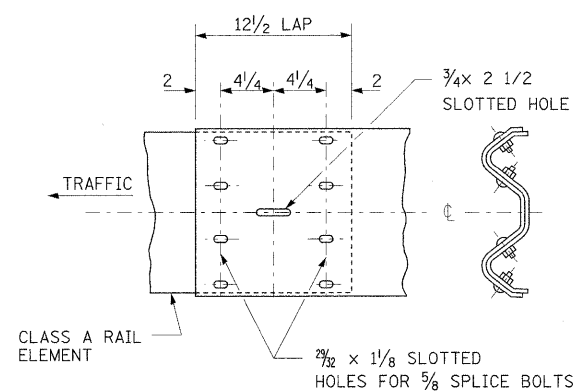


NOTE:
PLATE A SHALL BE PLACED BETWEEN RAIL ELEMENT AND BLOCK-OUT AT NON-SPLICE MOUNTING POINTS ONLY WHEN STEEL BLOCK-OUTS ARE USED.

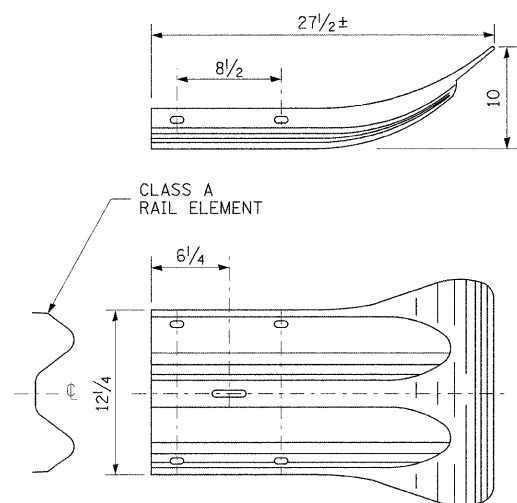
FILE NAME = #FILEL#	USER NAME = #USER#	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	STEEL PLATE BEAM GUARDRAIL, TYPE A DETAIL			F.A.P. RTE. 817	SECTION 421B-1	COUNTY ST. CLAIR	TOTAL SHEETS 56	SHEET NO. 12
	PLOT SCALE = #SCALE#	DRAWN -	REVISED -		SCALE:	SHEET NO. 1 OF 3 SHEETS	STA.	TO STA.	CONTRACT NO. 76885			
	PLOT DATE = #DATE#	CHECKED -	REVISED -		FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT							
		DATE -	REVISED -									



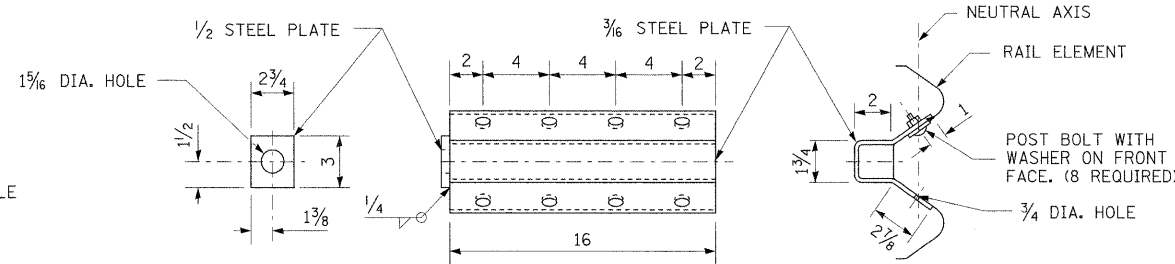
SPLICE PLATE



RAIL ELEMENT SPLICE

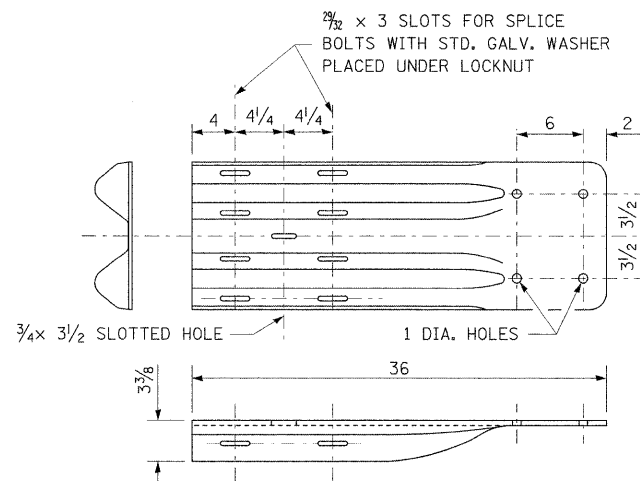


END SECTION



NOTE
ANCHOR PLATE T SHALL BE USED TO ATTACH CABLE ASSEMBLY TO GUARDRAIL WHEN REQUIRED ON TRAFFIC BARRIER TERMINALS.

ANCHOR PLATE T DETAILS

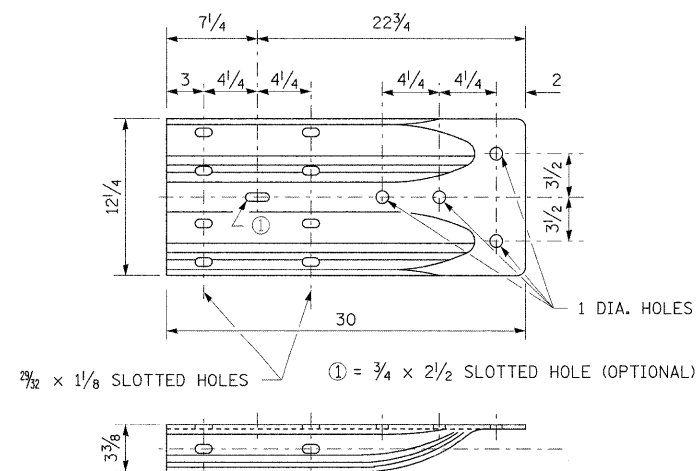


NOTE
WHEN END SHOE IS ATTACHED TO A BRIDGE PARAPET WHICH HAS AN EXPANSION JOINT, THE BOLTS SHALL BE PROVIDED WITH A LOCKNUT OR DOUBLE NUT AND SHALL BE TIGHTENED ONLY TO A POINT THAT WILL ALLOW GUARDRAIL MOVEMENT.

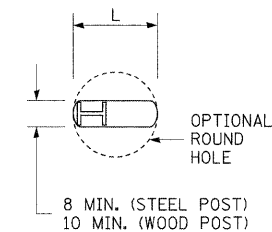
THE STANDARD END SHOE SHALL BE ATTACHED TO THE CONCRETE WITH PRE-DRILLED OR SELF-DRILLING ANCHOR BOLTS. THE ANCHOR CONE SHALL BE SET FLUSH WITH THE SURFACE OF THE CONCRETE.

EXTERNALLY THREADED STUDS PROTRUDING FROM THE SURFACE OF THE CONCRETE WILL NOT BE PERMITTED.

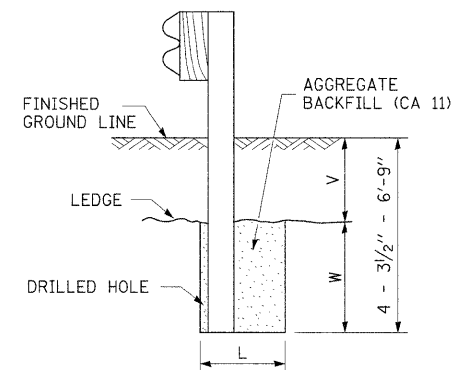
END SHOE



ALTERNATE END SHOE



PLAN

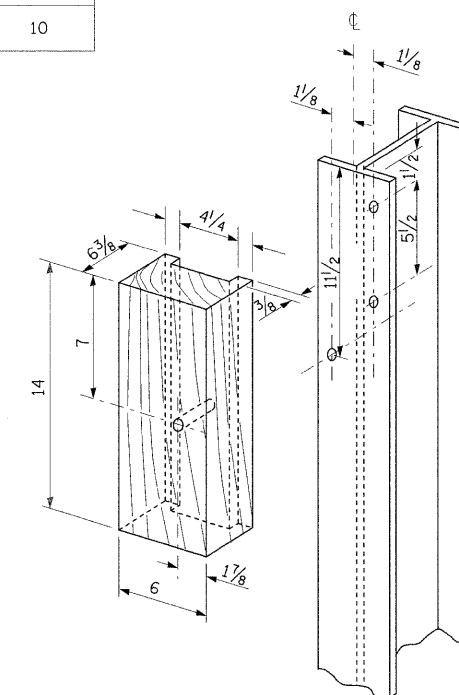


NOTE:
LEDGE LINE IS TOP OF ROCK LEDGE OR HARD SLAG FILL.

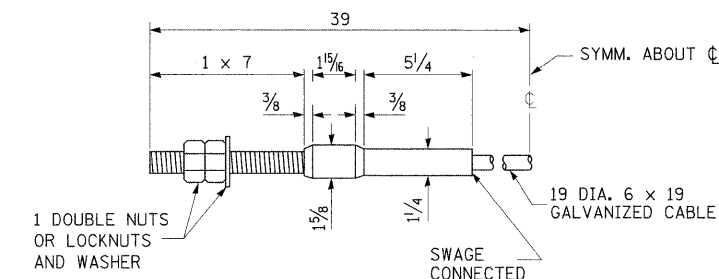
ELEVATION

FOOTING FOR POST WHEN IMPERVIOUS MATERIAL IS ENCOUNTERED

V	W	L	
		STEEL POST	WOOD POST
0 - 18	24	21	23
>18 - 41.5	12	8	10
>41.5 - 53.5	12 - 0	8	10

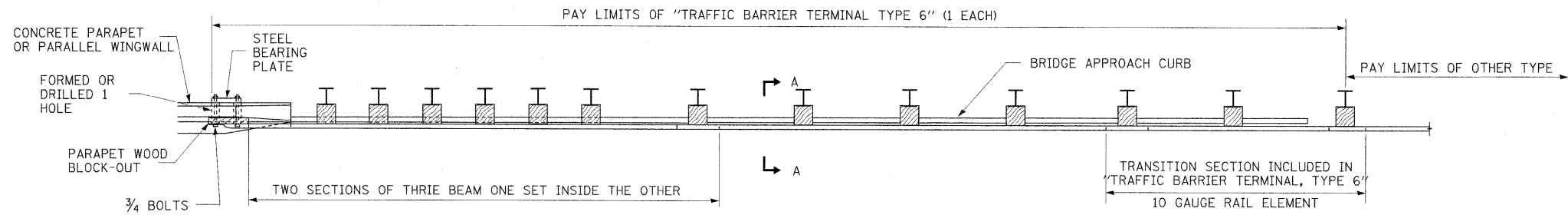


WOOD BLOCK-OUT AND STEEL POST DETAILS

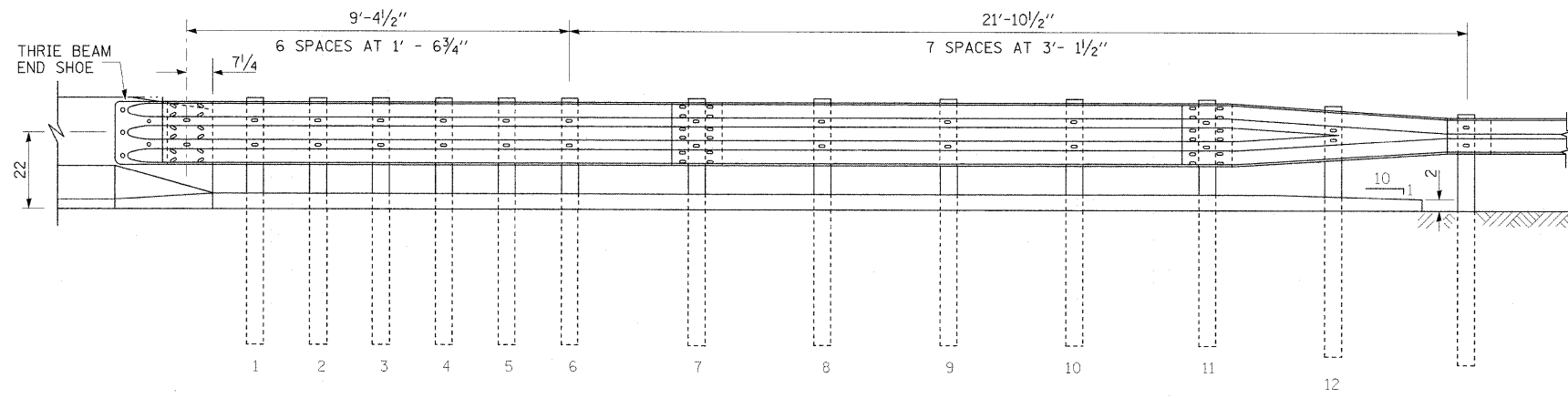


CABLE ASSEMBLY

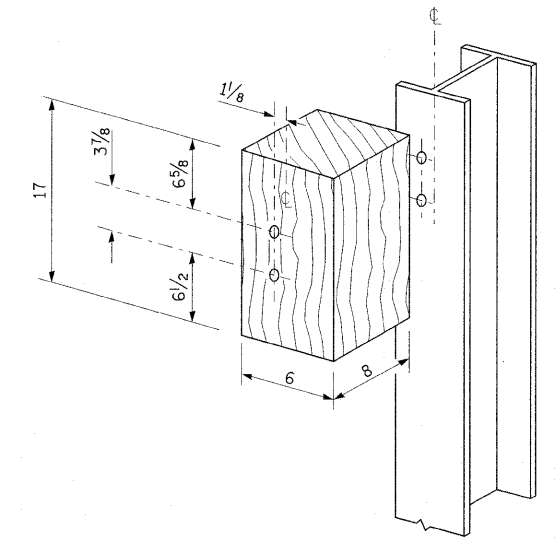
40,000 LBS. MIN. BREAKING STRENGTH
TIGHTEN TO TAUT TENSION.



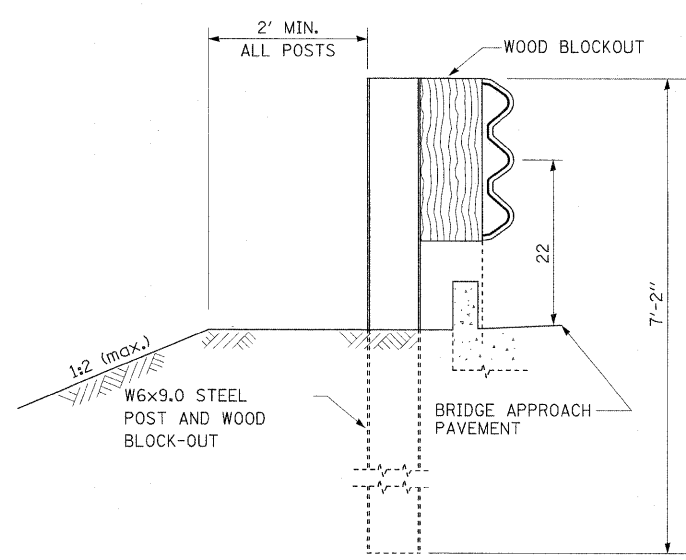
PLAN



ELEVATION



POST 12 WOOD BLOCKOUT DETAIL



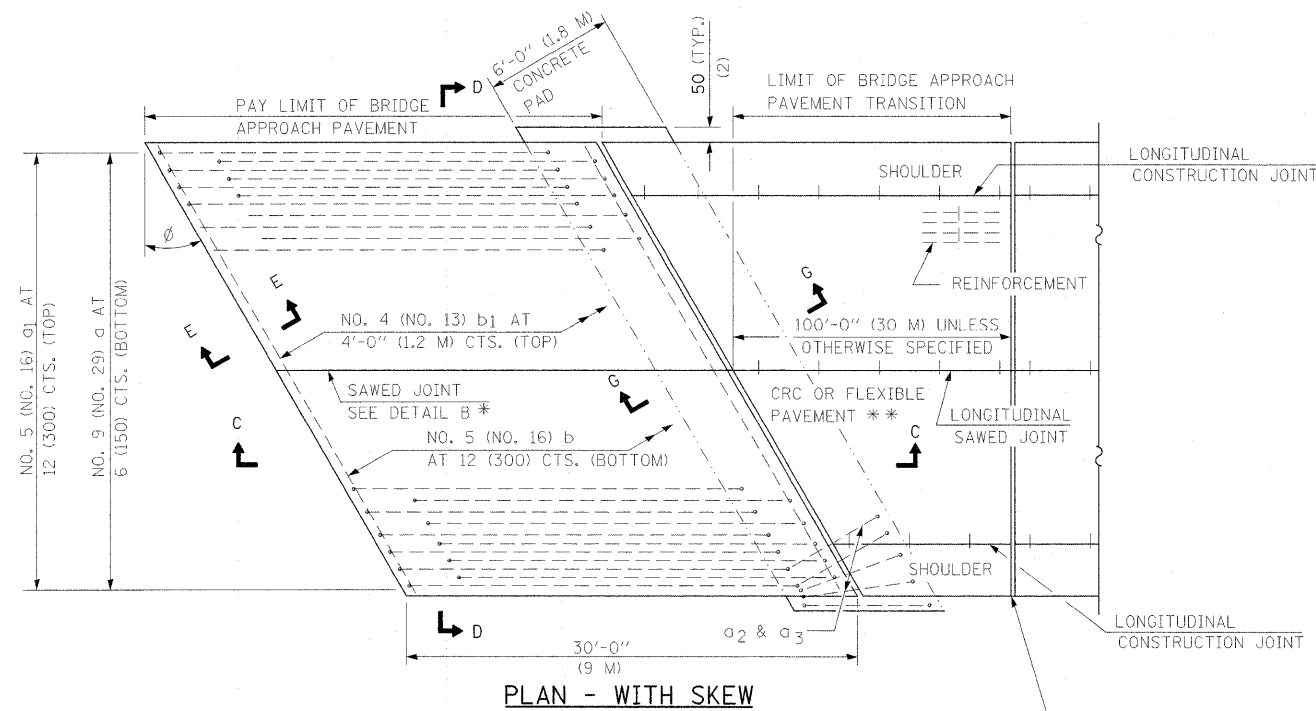
SECTION A-A

GENERAL NOTES

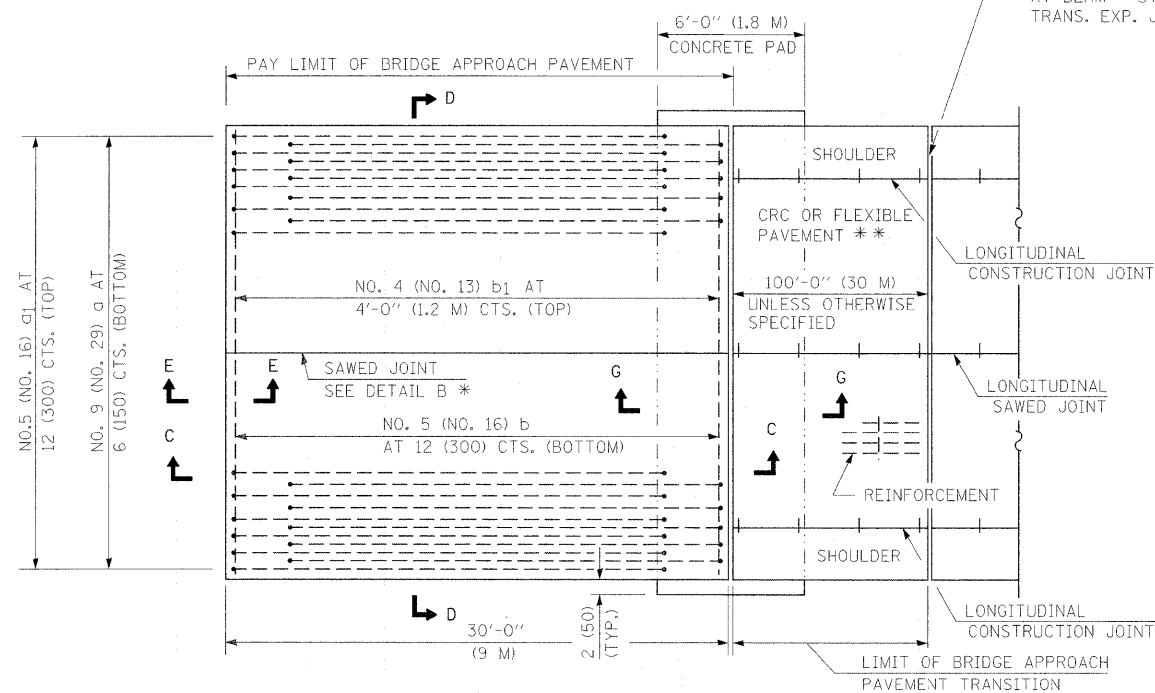
- SEE STEEL PLATE BEAM GUARDRAIL, TYPE A DETAIL FOR DETAILS OF GUARDRAIL NOT SHOWN.
- THRIE BEAM RAIL SHALL BE BOLTED TO BLOCK-OUT AT ALL POSTS.
- SEE STANDARD 420401 FOR DETAILS OF BRIDGE APPROACH PAVEMENT.
- ALL SLOPE RATIOS ARE EXPRESSED AS UNITS OF VERTICAL DISPLACEMENT TO UNITS OF HORIZONTAL DISPLACEMENT (V:H).
- ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SHOWN.

FILE NAME = #FILE#	USER NAME = #USER#	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	TRAFFIC BARRIER TERMINAL, TYPE 6 DETAIL			F.A.P. RTE. #	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
	PLOT SCALE = #SCALE#	DRAWN -	REVISED -		SCALE:	SHEET NO. 3 OF 3 SHEETS	STA.	TO STA.	817	421B-1	ST. CLAIR	56	14
	PLOT DATE = #DATE#	CHECKED -	REVISED -					CONTRACT NO. 76885					
		DATE -	REVISED -					ILLINOIS FED. AID PROJECT					

NEW CONSTRUCTION



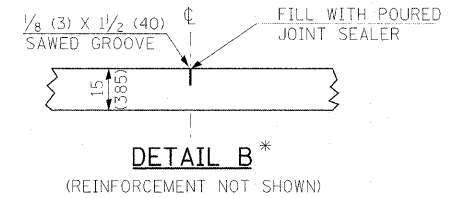
PLAN - WITH SKEW



PLAN - WITHOUT SKEW

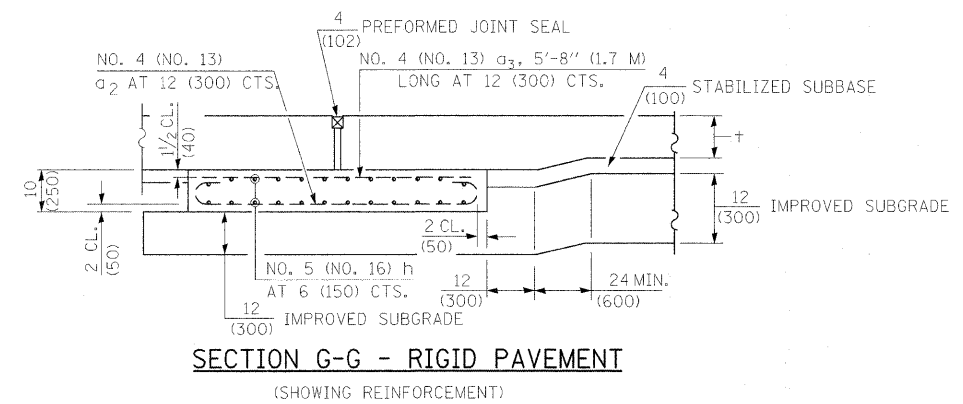
* SAW ϕ OR LANE EDGE IF POURED TWO OR MORE LANE WIDTHS AT A TIME.
 ** OMIT REINFORCEMENT, TIE BARS AND LONG. SAWED JT. FOR FLEXIBLE PAVEMENT.

RIGID PAVEMENT ONLY:
 WIDE FLANGE BEAM TERMINAL JOINT (SEE DETAIL AT BEAM - STANDARD 421101 OR 421106) OR 2 (50) TRANS. EXP. JOINT AS DETAILED ON STANDARD 420001.



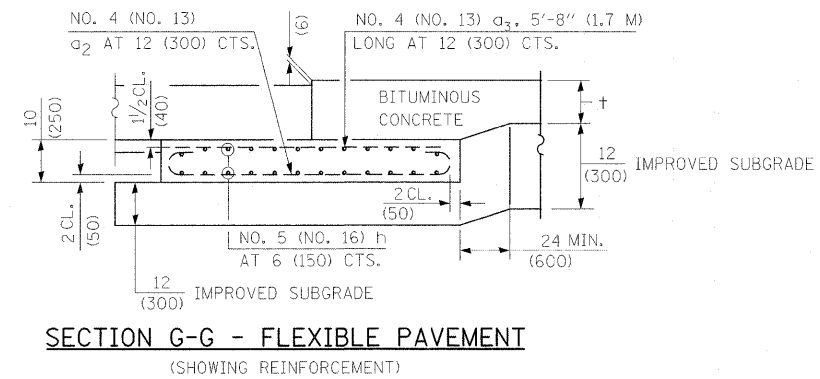
DETAIL B*

(REINFORCEMENT NOT SHOWN)



SECTION G-G - RIGID PAVEMENT

(SHOWING REINFORCEMENT)



SECTION G-G - FLEXIBLE PAVEMENT

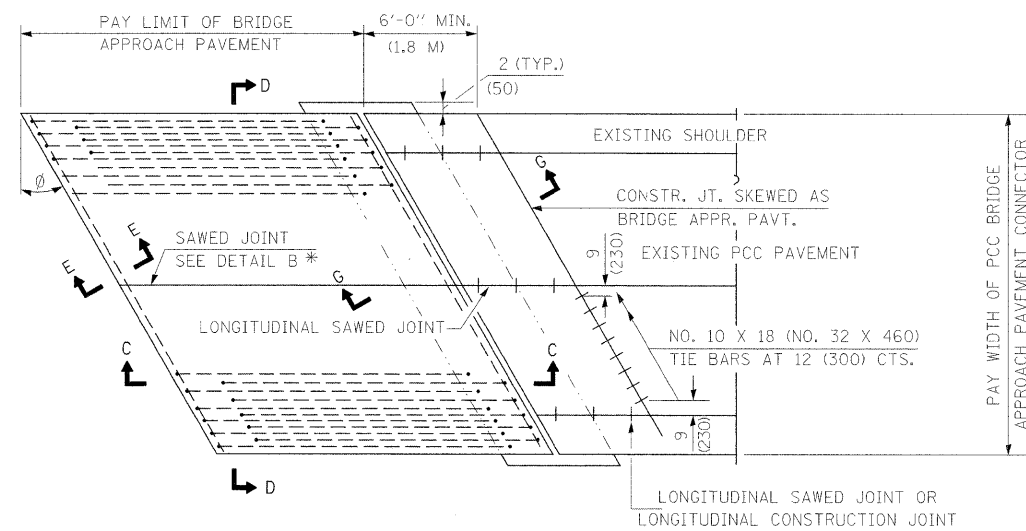
(SHOWING REINFORCEMENT)

GENERAL NOTES

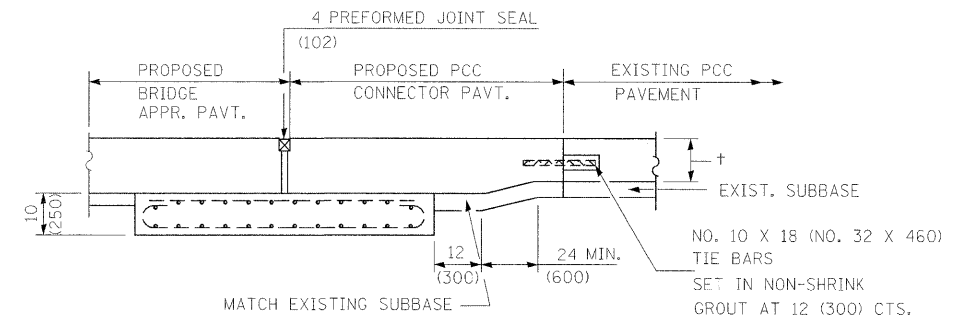
THICKNESS--"t"--THICKNESS OF PAVEMENT.
 SEE STANDARD 421001 FOR REINFORCEMENT DETAILS NOT SHOWN.
 SEE STANDARD 420001 FOR JOINT DETAILS NOT SHOWN.
 ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.

FILE NAME =	USER NAME = owanbj	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	BRIDGE APPROACH PAVEMENT DETAIL			F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
et:\pw_work\pwidot\owanj\dms51591\p1n02205b.dgn		DRAWN -	REVISED -					817	421B-1	ST. CLAIR	56	15
PLOT SCALE = 20,0000 ' / IN.		CHECKED -	REVISED -		CONTRACT NO. 76885							
PLOT DATE = 10/18/2008		DATE -	REVISED -		SCALE:	SHEET NO. 1 OF 4 SHEETS	STA.	TO STA.	FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT		

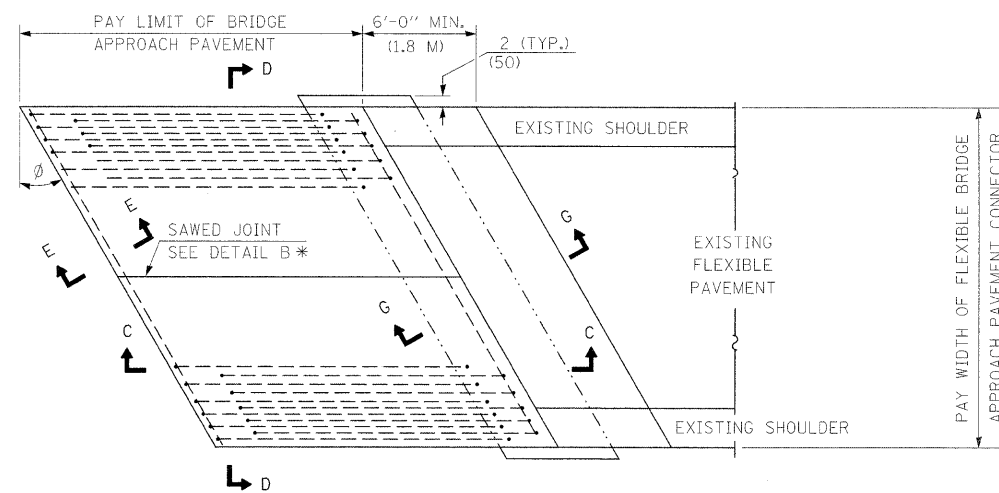
EXISTING CONSTRUCTION



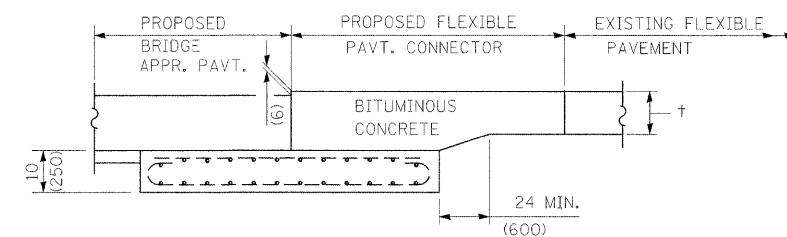
BRIDGE APPROACH PAVEMENT CONNECTOR (PCC)



SECTION G-G - RIGID PAVEMENT

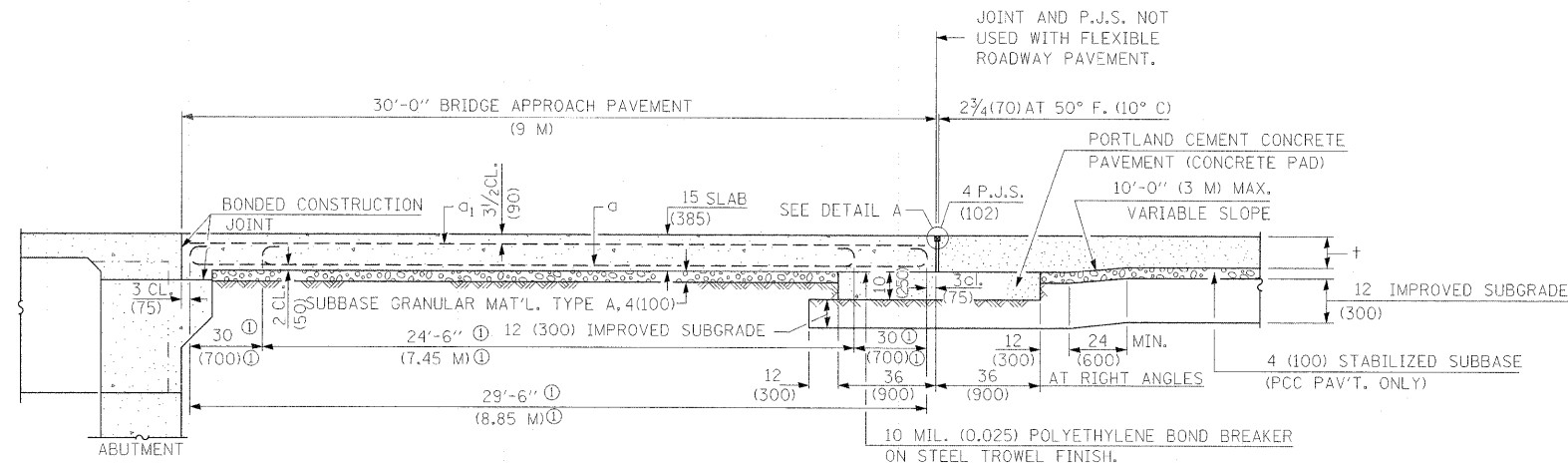


BRIDGE APPROACH PAVEMENT CONNECTOR (FLEXIBLE)



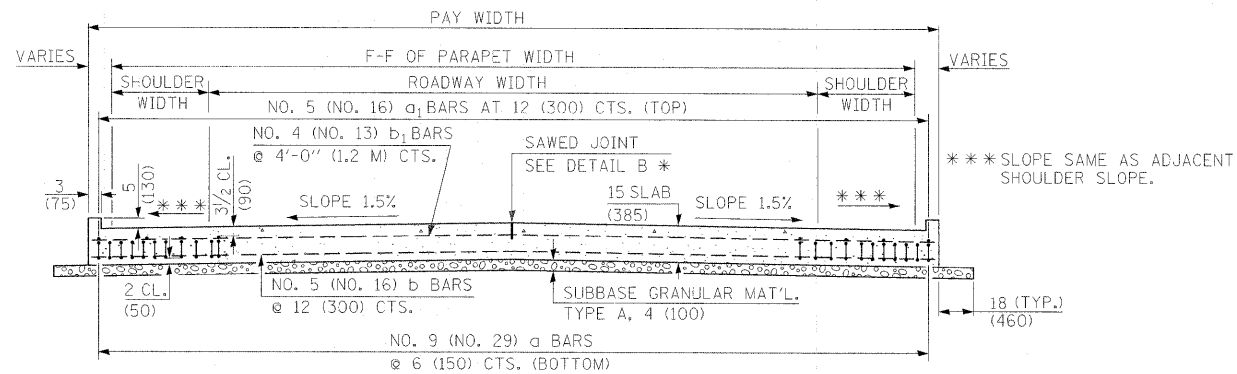
SECTION G-G - FLEXIBLE PAVEMENT

FILE NAME =	USER NAME = owerbj	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	BRIDGE APPROACH PAVEMENT DETAIL			F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
dr:\pw_work\pwrtdot\owenbj\dms51591\p1n02205b.dgn		DRAWN -	REVISED -					817	421B-1	ST. CLAIR	56	16
PILOT SCALE = 20.0000' / IN.		CHECKED -	REVISED -					CONTRACT NO. 76885				
DATE = 10/10/2008		DATE -	REVISED -					ILLINOIS FED. AID PROJECT				
				SCALE:	SHEET NO. 2 OF 4 SHEETS	STA.	TO STA.					



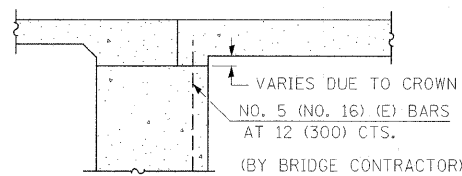
SECTION C-C

① STAGGER NO. 9 (NO. 29) A BARS AS SHOWN ON PLAN - FULL WIDTH



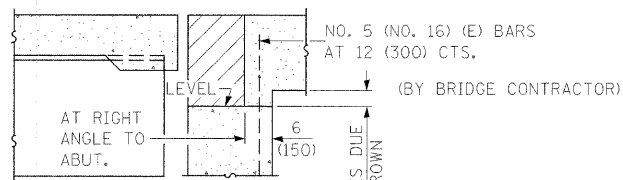
SECTION D-D

(SEE PLAN FOR DIMENSIONS NOT SHOWN)



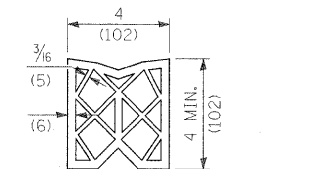
SECTION E-E

(INTEGRAL ABUTMENTS)

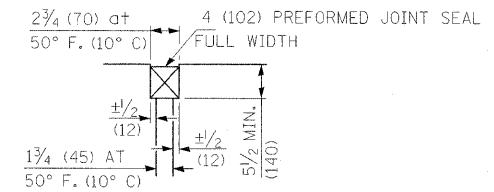


SECTION E-E

(JOINTED ABUTMENTS)

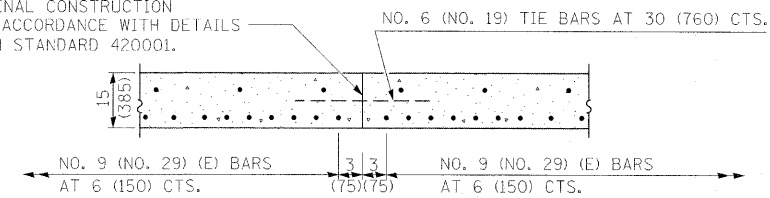


PREFORMED JOINT SEAL



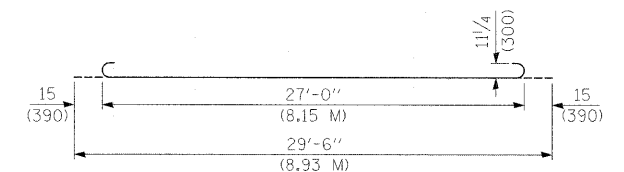
DETAIL A

LONGITUDINAL CONSTRUCTION JOINT IN ACCORDANCE WITH DETAILS SHOWN ON STANDARD 420001.

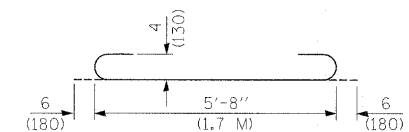


OPTIONAL LONGITUDINAL CONSTRUCTION JOINT

AS APPROVED BY THE ENGINEER, THE CONTRACTOR MAY ELECT TO REDUCE THE WIDTHS OF POUR BY USE OF THE OPTIONAL LONGITUDINAL CONSTRUCTION JOINT SHOWN. JOINTS SHALL BE LOCATED AT THE EDGE OF A TRAFFIC LANE.



BAR a

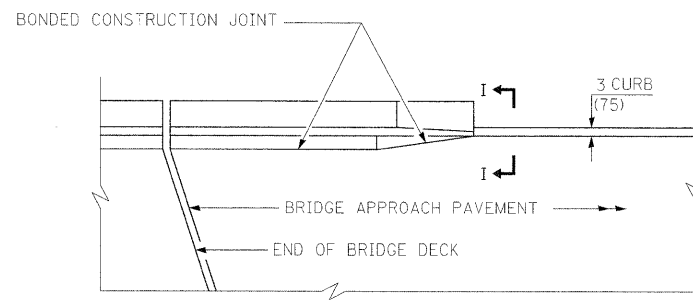


BAR a2

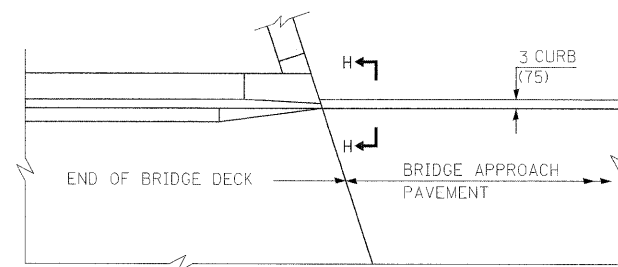
DESIGN STRESSES

$f_y = 60,000$ P.S.I. (400 MPA)
 $f'_c = 3,500$ P.S.I. (24 MPA)
 $n = 8.5$

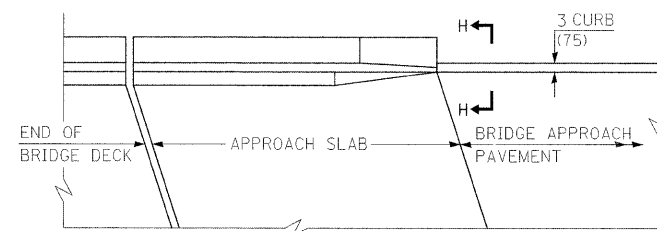
FILE NAME =	USER NAME = owenbj	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	BRIDGE APPROACH PAVEMENT DETAIL	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
ci:\pw_work\pawid\owenbj\dms51591\p1n02205b.dgn	DRAWN -	REVISED -	817			421B-1	ST. CLAIR	56	17	
PLOT SCALE = 20,0000' / IN.	CHECKED -	REVISED -	CONTRACT NO. 76885							
PLOT DATE = 10/10/2008	DATE -	REVISED -	ILLINOIS FED. AID PROJECT							
SCALE:		SHEET NO. 3 OF 4 SHEETS		STA.	TO STA.					



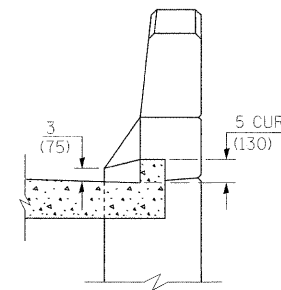
**PARAPET TO CURB TRANSITION
PILE BENT ABUTMENT**



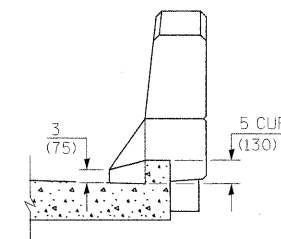
**PARAPET TO CURB TRANSITION
INTEGRAL ABUTMENT**



**PARAPET TO CURB TRANSITION
VAULTED ABUTMENT**

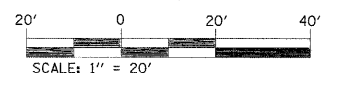
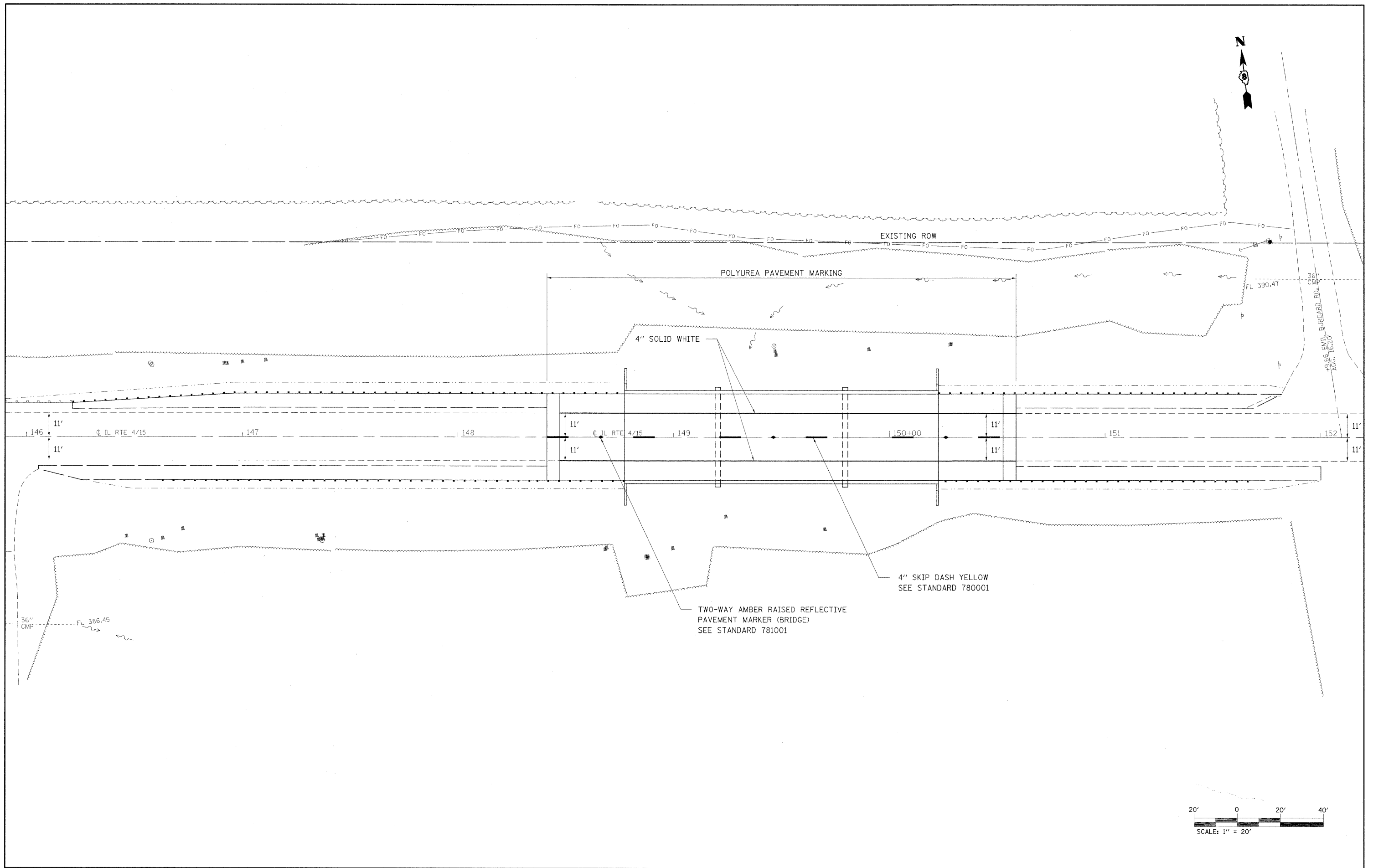


SECTION I - I



SECTION H - H

FILE NAME =	USER NAME = owerbj	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	BRIDGE APPROACH PAVEMENT DETAIL			F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
si:\pw-work\p\p\dot\owenbj\dms51591\p\in0225b.dgn	PLOT SCALE = 20.0000' / IN.	DRAWN -	REVISED -					817	421B-1	ST. CLAIR	56	18
PLOT DATE = 10/10/2008	DATE -	CHECKED -	REVISED -		SCALE: SHEET NO. 4 OF 4 SHEETS STA. TO STA.			CONTRACT NO. 76885				
		DATE -	REVISED -					FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				



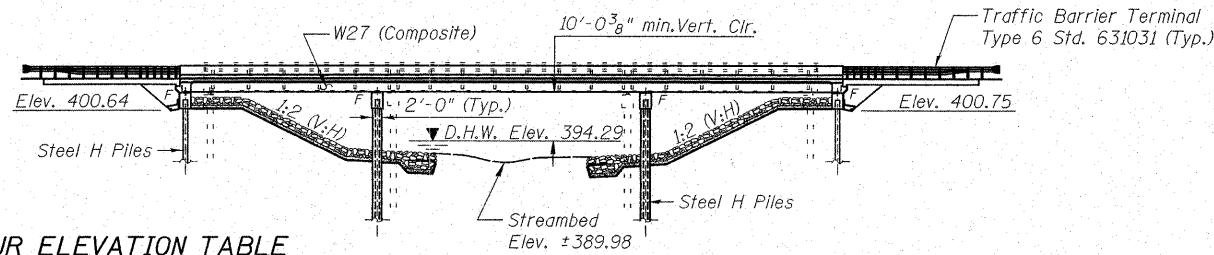
FILE NAME = c:\pwwork\pwwid\owenbj\dms51591\p1n0225b.dgn	USER NAME = owenbj	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PAVEMENT MARKING			F.A.P. RTE. 817	SECTION 421B-1	COUNTY ST. CLAIR	TOTAL SHEETS 56	SHEET NO. 19
PLOT SCALE = 20,0000' / IN.	PLOT DATE = 11/26/2008	DRAWN -	REVISED -		SCALE:	SHEET NO.	OF SHEETS	STA.	TO STA.	CONTRACT NO. 76885		
CHECKED -	DATE -	REVISED -	REVISED -		FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT							

Bench Mark 14: Cut "□" on bridge curb (NOT WINGWALL) at NE corner of IL15/IL4 bridge over Kaskaskia River (SN 082-0077), Elev. 406.80

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

Existing Structure: S.N. 082-0079 was built in 1946 under F.A. Rte 68, Section 421B at Sta. 149+50.00 as 3 spans, using continuous WF beams and a reinforced concrete deck supported by pile bent piers with precast concrete piles and closed abutments with precast concrete piles. The deck was constructed with a 7" thickness. In 1983, 1.5" of the deck was removed and replaced with a 3" concrete wearing surface. The O.-O. width is 30'-0" and the total structure length is 134'-11" Bk. to Bk. Abutments. Traffic will be detoured.

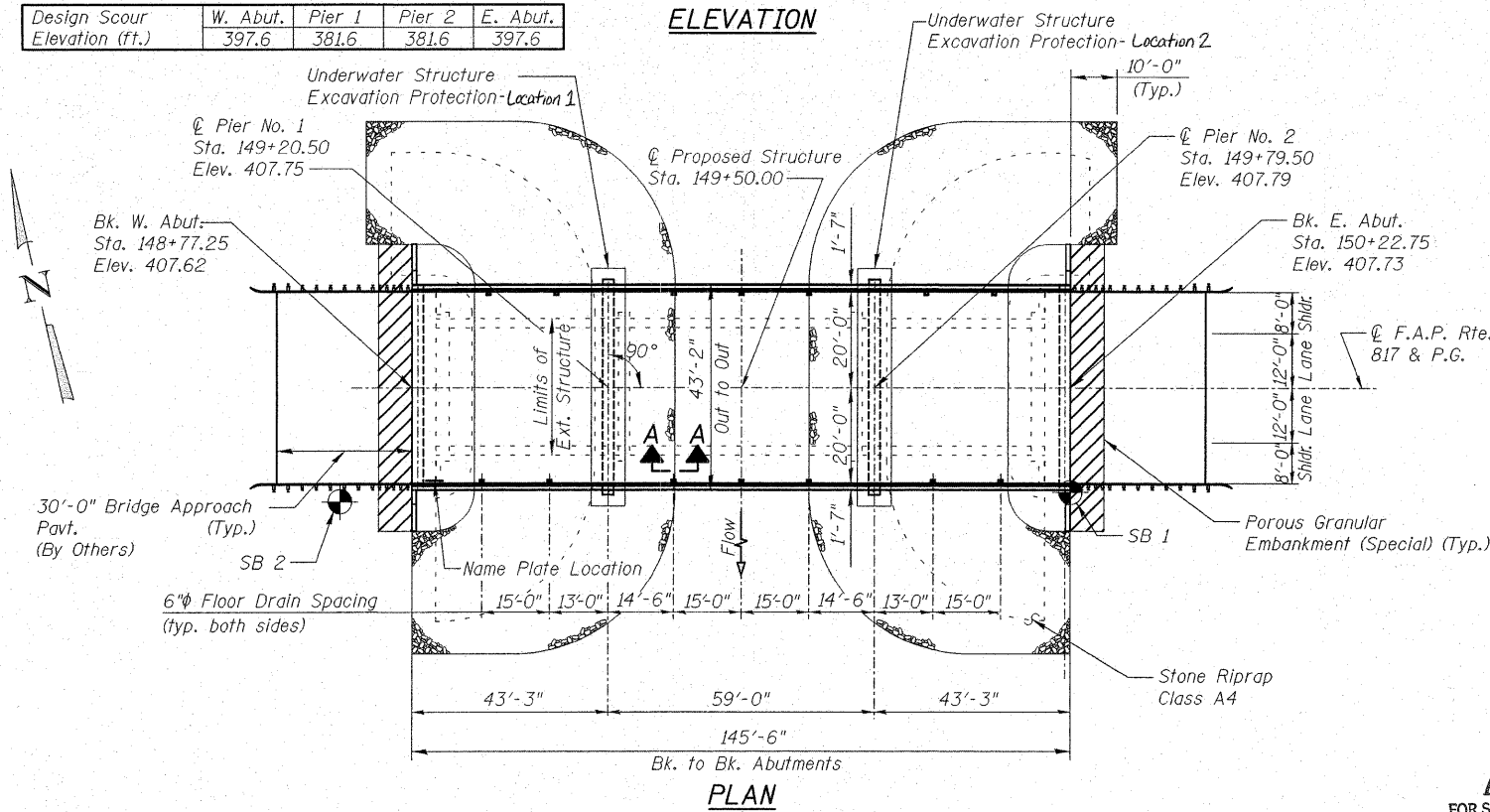
No salvage



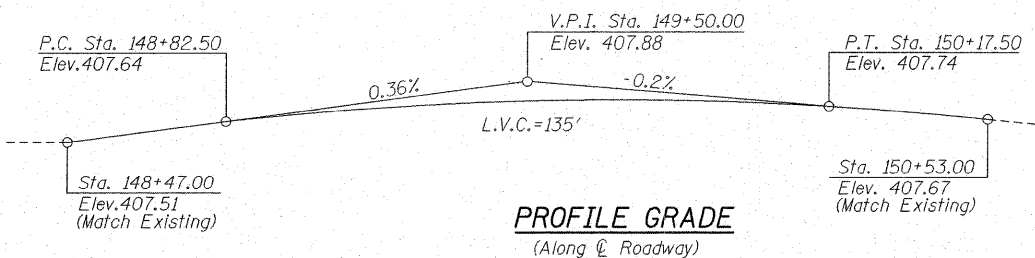
DESIGN SCOUR ELEVATION TABLE

Design Scour Elevation (ft.)	W. Abut.	Pier 1	Pier 2	E. Abut.
	397.6	381.6	381.6	397.6

ELEVATION

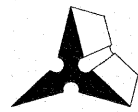


PLAN



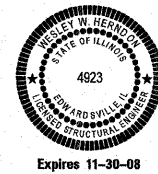
PROFILE GRADE
(Along Center Roadway)

DESIGNED	DB
CHECKED	RS
DRAWN	ER
CHECKED	WWH



Juneau Associates, Inc. P.C.
CONSULTING ENGINEERS AND LAND SURVEYORS
2100 State Street
Granite City, Illinois 62040
Phone: (618) 977-1400
Fax: (618) 452-9541
Registered Professional Service Corporation License No. 184-000380

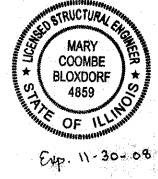
100 North Research Drive
Edwardsville, Illinois 62025
Phone: (618) 659-0200/(618) 659-0800
Fax: (618) 659-0841



APPROVED
FOR STRUCTURAL ADEQUACY ONLY

Wesley W. Herndon (TS)
ENGINEER OF BRIDGES AND STRUCTURES

Wesley W. Herndon 9/30/08
WESLEY W. HERNDON, S.E. DATE
THIS SEAL IS FOR SHEETS 1-9 AND 15-28 OF 28

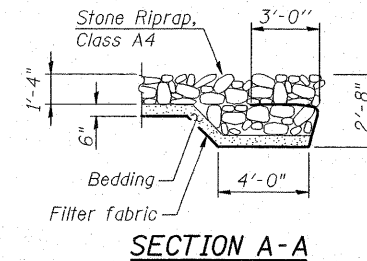


Mary Coombe Bloxdorf 9/25/08
MARY COOMBE BLOXDORF, P.E., S.E. DATE
THIS SEAL IS FOR SHEETS 10-14 OF 28

WATERWAY INFORMATION

		Drainage Area = 4,542 mi ²		Low Grade Elev. 405.37		Sta. 192+27.88		
Flood	Freq. Yr.	Existing SN	Q C.F.S.	Opening Sq. Ft.	Nat. H.W.E.	Head - Ft.	Headwater El.	
			Exst. Prop.	Exst. Prop.	Exst. Prop.	Exst. Prop.	Exst. Prop.	
Design	50	082-0077	56,548.93	56,498.17	12,483.10	12,483.10		
		082-0078	4,107.07	4,099.66	2,069.39	2,069.39		
		082-0079	444.00	502.17	246.86	295.75	394.29	0.36
		Total	61,100.00	61,100.00	14,799.35	14,848.24		
Base	100	082-0077	62,070.63	61,990.04	14,116.27	14,116.27		
		082-0078	6,839.80	6,829.43	2,954.77	2,954.77		
		082-0079	889.57	980.53	401.69	456.53	396.27	0.43
		Total	69,800.00	69,800.00	17,472.73	17,527.57		
Overtopping	N/A							
Max. Calc.	500	082-0077	83,325.14	83,158.48	18,330.75	18,330.75		
		082-0078	17,283.78	17,244.13	5,265.36	5,265.36		
		082-0079	2,691.08	2,897.39	870.34	934.43	401.29	0.81
		Total	103,300.00	103,300.00	24,466.45	24,530.54		
Scour	10	082-0077	41,485.46	41,485.45	8,443.08	8,443.08		
		082-0078	114.54	114.55	88.91	88.91		
		082-0079	0.00	0.00	0.00	0.00	389.30	0.21
		Total	41,600.00	41,600.00	8,531.99	8,531.99		

Note: Existing Velocity (ft/s) / Frequency (yr) for SN 082-0079: 0.00/10; 1.46/50; 1.90/100; 2.74/500
Proposed Velocity (ft/s) / Frequency (yr) for SN 082-0079: 0.00/10; 1.41/50; 1.86/100; 2.76/500
Note: Existing Low Beam Elevation (ft) for SN 082-0079: 404.69 US / 404.75 DS
Proposed Low Beam Elevation (ft) for SN 082-0079: 404.20 US / 404.20 DS
Note: SN 082-0077 carries IL4/IL15 over Kaskaskia River
SN 082-0078 carries IL4/IL15 over Kaskaskia River Overflow
SN 082-0079 carries IL4/IL15 over Kaskaskia River Overflow



SECTION A-A

STATION 149+50.00
BUILT 20 BY
STATE OF ILLINOIS
F.A.P. RTE 817 SEC. 421B-1
LOADING HL93
STRUCTURE NO. 082-0275

NAME PLATE
See Std. 515001

DESIGN SPECIFICATIONS
2007 AASHTO LRFD Bridge Design Specifications

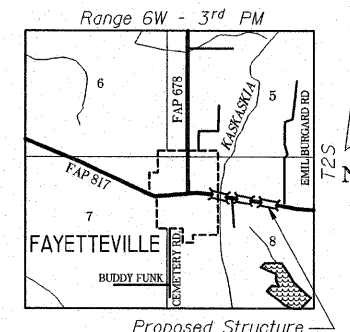
LOADING HL-93
Allow 50#/sq. ft. for future wearing surface.

DESIGN STRESSES
FIELD UNITS
f'c = 3,500 psi
fy = 60,000 psi (Reinforcement)
fy = 50,000 psi (M270 Grade 50W)

SEISMIC DATA
Seismic Performance Zone (SPZ) = 2
Bedrock Acceleration Coefficient (A) = 11.5%
Site Coefficient (S) = 1.5

INDEX OF DRAWINGS

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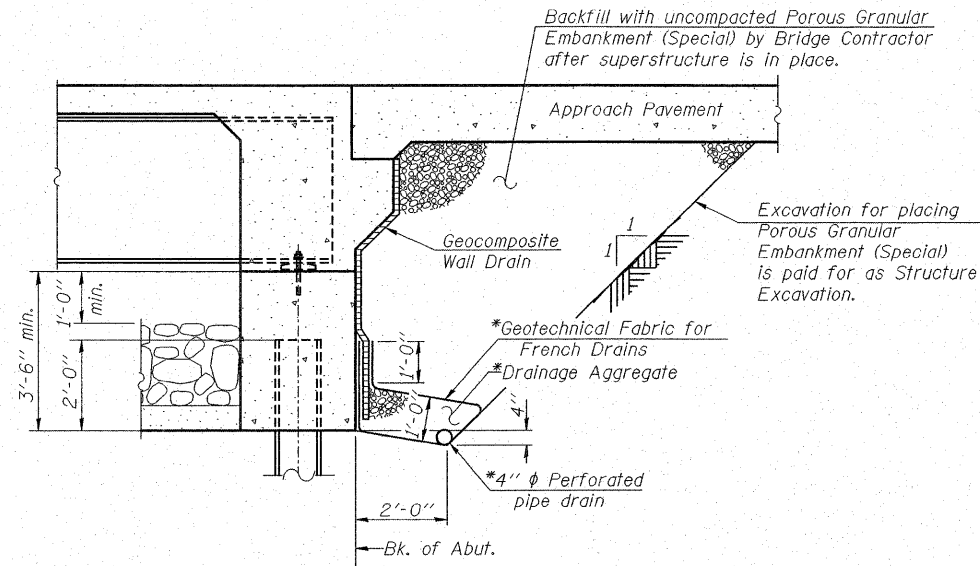


LOCATION SKETCH

GENERAL PLAN AND ELEVATION
ILLINOIS ROUTE 4/15 OVER
KASKASKIA OVERFLOW
F.A.P. ROUTE 817 SEC 421B-1
ST. CLAIR COUNTY
STATION 149+50.00
STRUCTURE NO. 082-0275

SHEET NO. 1	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	817	421B-1	ST. CLAIR	56	20
28 SHEETS	STRUCTURE NO. 082-0275		CONTRACT NO. 76885		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



SECTION THRU INTEGRAL ABUTMENTS

(Horiz. dim. @ Rt. L's)

*Included in the cost of Pipe Underdrains for Structures.

Note:

All drainage system components shall extend to 2'-0" from the end of each wingwall except an outlet pipe shall extend until intersecting with the side slopes. The pipes shall drain into concrete headwalls. (See Article 601.05 of the Standard Specifications and Highway Standard 601101).

TOTAL BILL OF MATERIAL

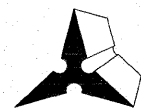
ITEM	UNIT	SUPER	SUB	TOTAL
Porous Granular Embankment (Special)	Cu. Yd.		129	129
Stone Riprap, Class A4	Sq. Yd.		1506	1506
Filter Fabric	Sq. Yd.		1506	1506
Removal of Existing Structures	Each			1
Slope Wall Removal	Sq. Yd.		860	860
Structure Excavation	Cu. Yd.		236	236
Floor Drains	Each	14		14
Concrete Structures	Cu. Yd.		144.6	144.6
Concrete Superstructure	Cu. Yd.	215.6		215.6
Bridge Deck Grooving	Sq. Yd.	615		615
Concrete Encasement	Cu. Yd.		10.6	10.6
Protective Coat	Sq. Yd.	768		768
Furnishing and Erecting Structural Steel	Lump Sum	1		1
Stud Shear Connectors	Each	3843		3843
Reinforcement Bars (Epoxy Coated)	Pound	51020	15420	66440
Bar Splicers	Each	80		80
Furnishing Steel Piles HP 12x53	Foot		2049	2049
Driving Piles	Foot		2049	2049
Test Piles HP 12x53	Each		4	4
Name Plates	Each	1		1
Anchor Bolts 1" φ	Each	56		56
Geocomposite Wall Drain	Sq. Yd.		78	78
Pipe Underdrain for Structures 4"	Foot		139	139
Mechanical Splice	Each		48	48
Underwater Structure Excavation Protection - Location 1	Each		1	1
Underwater Structure Excavation Protection - Location 2	Each		1	1

GENERAL NOTES

- Fasteners shall be AASHTO M164 Type 1, mechanically galvanized bolts in painted areas and M164 Type 3 in unpainted areas. Bolts 7/8 in. φ, holes 15/16 in. φ, unless otherwise noted.
- Calculated weight of Structural Steel = 132,200 lbs.
- All structural steel shall be AASHTO M 270 Grade 50W.
- No field welding is permitted except as specified in the contract documents.
- Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60. See Special Provisions.
- Reinforcement bars designated (E) shall be epoxy coated.
- Bearing seat surfaces shall be constructed or adjusted to their designated elevations within a tolerance of 1/8 inch (0.01 ft.). Adjustment shall be made either by grinding the surface or by shimming the bearings.
- The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.
- Structural steel shall only be painted for a distance equal to the depth of embedment into the concrete cap plus 3 inches. Those areas shall be primed in the shop with a Department approved zinc rich primer. No field painting shall be required. All structural steel shall be cleaned as specified in the Special Provision for "Surface Preparation and Painting Requirements for Weathering Steel".
- Layout of slope protection system may be varied in the field to suit ground conditions as directed by the Engineer.
- 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.
- All cross frames or diaphragms shall be installed as steel is erected and secured with erection pins and bolts except as otherwise noted. Individual cross frames or diaphragms at supports may be temporarily disconnected to install bearing anchor rods.
- Load carrying components designated "NTR" shall conform to the Supplemental Requirements for Notch Toughness, Zone 2.
- Two 1/8 in. adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.
- If a portion of the pier wall or concrete encasement is under water, reinforcement may be placed under water into forms. Concrete shall be tremied according to Article 503.08 of the Standard Specifications to an elevation of 1'-0" above the water line at the time of construction.

GENERAL DETAILS
ILLINOIS ROUTE 4/15 OVER
KASKASKIA OVERFLOW
F.A.P. ROUTE 817 SEC 421B-1
ST. CLAIR COUNTY
STATION 149+50.00
STRUCTURE NO. 082-0275

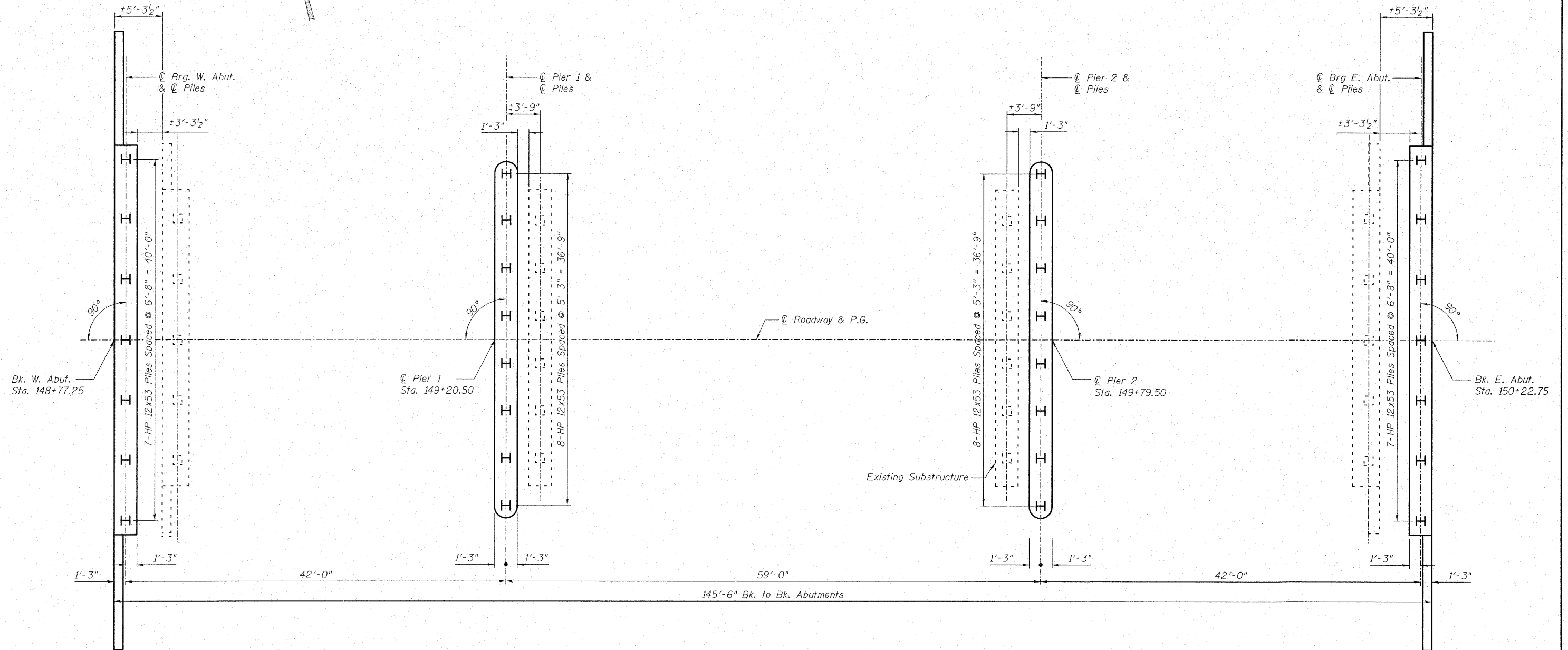
DESIGNED	DB
CHECKED	RS
DRAWN	ER
CHECKED	WWH



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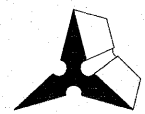
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	817	421B-1	ST. CLAIR	56	21
28 SHEETS	STRUCTURE NO. 082-0275		CONTRACT NO. 76885		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



SUBSTRUCTURE LAYOUT
ILLINOIS ROUTE 4/15 OVER
KASKASKIA OVERFLOW
F.A.P. ROUTE 817 SEC 421B-1
ST. CLAIR COUNTY
STATION 149+50.00
STRUCTURE NO. 082-0275

DESIGNED	DB
CHECKED	RS
DRAWN	ER
CHECKED	WWH

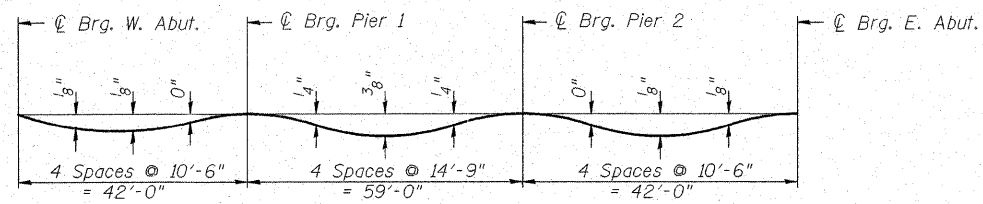


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SHEET NO. 3 28 SHEETS	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	817	421B-1	ST. CLAIR	56	22
STRUCTURE NO. 082-0275		CONTRACT NO. 76885			
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT			

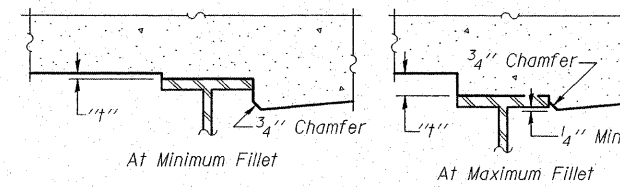
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



DEAD LOAD DEFLECTION DIAGRAM

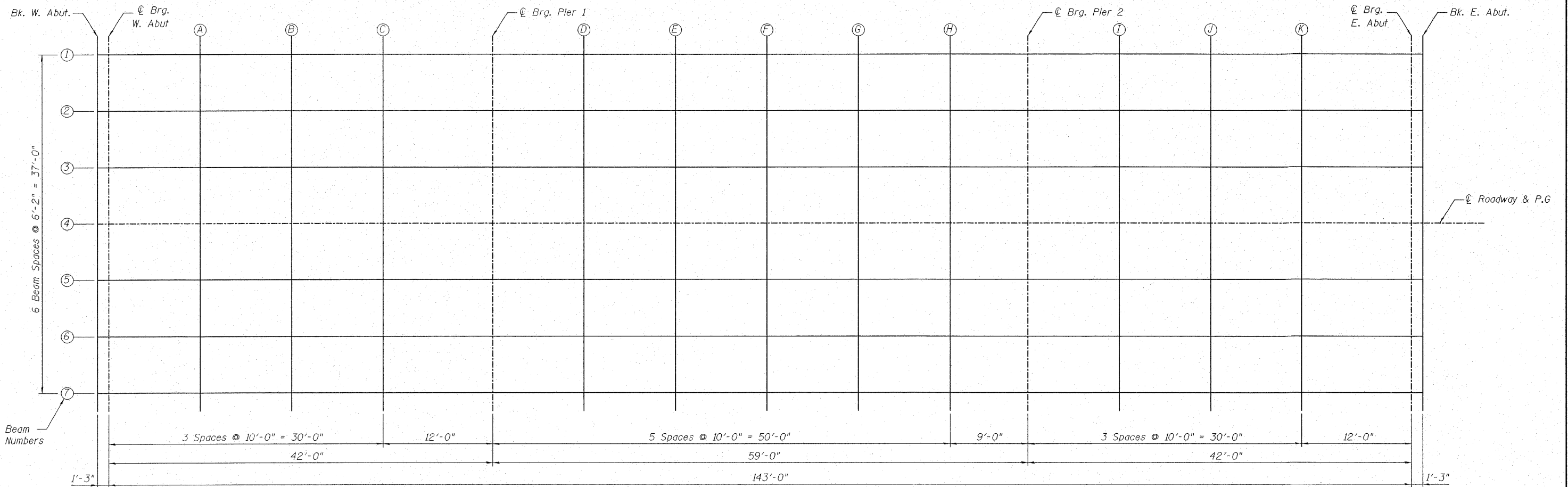
(Includes weight of concrete only.)

Note: The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown on sheet 5, 6, & 7 of 28



To determine "t": After all structural steel has been erected, elevations of the top flanges of the beams shall be taken at intervals shown below. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" shown on sheet 5, 6, & 7 of 28, minus slab thickness, equals the fillet heights "t" above top flange of beams.

FILLET HEIGHTS



PLAN

**TOP OF SLAB ELEVATIONS
ILLINOIS ROUTE 4/15 OVER
KASKASKIA OVERFLOW
F.A.P. ROUTE 817 SEC 421B-1
ST. CLAIR COUNTY
STATION 149+50.00
STRUCTURE NO. 082-0275**

Note: Work this sheet with sheet 5, 6, & 7 of 28

DESIGNED	DB
CHECKED	RS
DRAWN	ER
CHECKED	WWH

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SHEET NO. 4 28 SHEETS	F.A.P. RTE. 817	SECTION 421B-1	COUNTY ST. CLAIR	TOTAL SHEETS 56	SHEET NO. 23
	STRUCTURE NO. 082-0275		CONTRACT NO. 76885		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT			

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BEAM 1

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abutment	148+77.2500	-18.500	407.2952	407.2952
☉ Brg. W. Abutment	148+78.5000	-18.500	407.2997	407.2997
A	148+88.5000	-18.500	407.3349	407.3434
B	148+98.5000	-18.500	407.3664	407.3756
C	149+08.5000	-18.500	407.3937	407.3962
☉ Brg. Pier 1	149+20.5000	-18.500	407.4209	407.4209
D	149+30.5000	-18.500	407.4391	407.4522
E	149+40.5000	-18.500	407.4531	407.4817
F	149+50.5000	-18.500	407.4630	407.4976
G	149+60.5000	-18.500	407.4687	407.4961
H	149+70.5000	-18.500	407.4703	407.4817
☉ Brg. Pier 2	149+79.5000	-18.500	407.4681	407.4681
I	149+89.5000	-18.500	407.4618	407.4643
J	149+99.5000	-18.500	407.4514	407.4602
K	150+09.5000	-18.500	407.4368	407.4459
☉ Brg. E. Abutment	150+21.5000	-18.500	407.4141	407.4141
Bk. E. Abutment	150+22.7500	-18.500	407.4116	407.4116

BEAM 2

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abutment	148+77.2500	-12.3334	407.4237	407.4237
☉ Brg. W. Abutment	148+78.5000	-12.3334	407.4282	407.4282
A	148+88.5000	-12.3334	407.4634	407.4718
B	148+98.5000	-12.3334	407.4948	407.5041
C	149+08.5000	-12.3334	407.5221	407.5246
☉ Brg. Pier 1	149+20.5000	-12.3334	407.5494	407.5494
D	149+30.5000	-12.3334	407.5676	407.5807
E	149+40.5000	-12.3334	407.5816	407.6102
F	149+50.5000	-12.3334	407.5914	407.6261
G	149+60.5000	-12.3334	407.5972	407.6246
H	149+70.5000	-12.3334	407.5987	407.6102
☉ Brg. Pier 2	149+79.5000	-12.3334	407.5966	407.5966
I	149+89.5000	-12.3334	407.5903	407.5928
J	149+99.5000	-12.3334	407.5798	407.5887
K	150+09.5000	-12.3334	407.5652	407.5744
☉ Brg. E. Abutment	150+21.5000	-12.3334	407.5426	407.5426
Bk. E. Abutment	150+22.7500	-12.3334	407.5401	407.5401

BEAM 3

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abutment	148+77.2500	-6.1667	407.5217	407.5217
☉ Brg. W. Abutment	148+78.5000	+6.1667	407.5262	407.5262
A	148+88.5000	-6.1667	407.5615	407.5699
B	148+98.5000	-6.1667	407.5929	407.6022
C	149+08.5000	-6.1667	407.6202	407.6227
☉ Brg. Pier 1	149+20.5000	-6.1667	407.6475	407.6475
D	149+30.5000	-6.1667	407.6657	407.6787
E	149+40.5000	-6.1667	407.6797	407.7083
F	149+50.5000	-6.1667	407.6895	407.7242
G	149+60.5000	-6.1667	407.6953	407.7227
H	149+70.5000	-6.1667	407.6968	407.7082
☉ Brg. Pier 2	149+79.5000	-6.1667	407.6947	407.6947
I	149+89.5000	-6.1667	407.6884	407.6909
J	149+99.5000	-6.1667	407.6779	407.6868
K	150+09.5000	-6.1667	407.6633	407.6725
☉ Brg. E. Abutment	150+21.5000	-6.1667	407.6406	407.6406
Bk. E. Abutment	150+22.7500	-6.1667	407.6381	407.6381

**TOP OF SLAB ELEVATIONS
ILLINOIS ROUTE 4/15 OVER
KASKASKIA OVERFLOW
F.A.P. ROUTE 817 SEC 421B-1
ST. CLAIR COUNTY
STATION 149+50.00
STRUCTURE NO. 082-0275**

Notes:

Elevations are at top of concrete.

Work this sheet with sheet 4, 6, & 7 of 28.

All stations and offsets are given with respect to centerline of the profile grade.

DESIGNED	DB
CHECKED	RS
DRAWN	ER
CHECKED	WWH



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SHEET NO. 5	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	817	421B-1	ST. CLAIR	56	24
28 SHEETS	STRUCTURE NO. 082-0275		CONTRACT NO. 76885		
FED. ROAD DIST. NO.		ILLINOIS		FED. AID PROJECT	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CL ROADWAY, P.G. & BEAM 4

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abutment	148+77.2500	0.0000	407.6181	407.6181
CL Brg. W. Abutment	148+78.5000	0.0000	407.6226	407.6226
A	148+88.5000	0.0000	407.6579	407.6663
B	148+98.5000	0.0000	407.6893	407.6985
C	149+08.5000	0.0000	407.7166	407.7191
CL Brg. Pier 1	149+20.5000	0.0000	407.7439	407.7439
D	149+30.5000	0.0000	407.7620	407.7751
E	149+40.5000	0.0000	407.7760	407.8046
F	149+50.5000	0.0000	407.7859	407.8206
G	149+60.5000	0.0000	407.7916	407.8190
H	149+70.5000	0.0000	407.7932	407.8046
CL Brg. Pier 2	149+79.5000	0.0000	407.7911	407.7911
I	149+89.5000	0.0000	407.7847	407.7872
J	149+99.5000	0.0000	407.7743	407.7831
K	150+09.5000	0.0000	407.7597	407.7688
CL Brg. E Abutment	150+21.5000	0.0000	407.7370	407.7370
Bk. E. Abutment	150+22.7500	0.0000	407.7345	407.7345

BEAM 5

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abutment	148+77.2500	6.1667	407.5217	407.5217
CL Brg. W. Abutment	148+78.5000	6.1667	407.5262	407.5262
A	148+88.5000	6.1667	407.5615	407.5699
B	148+98.5000	6.1667	407.5929	407.6022
C	149+08.5000	6.1667	407.6202	407.6227
CL Brg. Pier 1	149+20.5000	6.1667	407.6475	407.6475
D	149+30.5000	6.1667	407.6657	407.6787
E	149+40.5000	6.1667	407.6797	407.7083
F	149+50.5000	6.1667	407.6895	407.7242
G	149+60.5000	6.1667	407.6953	407.7227
H	149+70.5000	6.1667	407.6968	407.7082
CL Brg. Pier 2	149+79.5000	6.1667	407.6947	407.6947
I	149+89.5000	6.1667	407.6884	407.6909
J	149+99.5000	6.1667	407.6779	407.6868
K	150+09.5000	6.1667	407.6633	407.6725
CL Brg. E Abutment	150+21.5000	6.1667	407.6406	407.6406
Bk. E. Abutment	150+22.7500	6.1667	407.6381	407.6381

Notes:

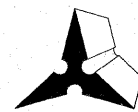
Elevations are at top of concrete.

Work this sheet with sheet 4, 5, & 7 of 28.

All stations and offsets are given with respect to centerline of the profile grade.

**TOP OF SLAB ELEVATIONS
ILLINOIS ROUTE 4/15 OVER
KASKASKIA OVERFLOW
F.A.P. ROUTE 817 SEC 421B-1
ST. CLAIR COUNTY
STATION 149+50.00
STRUCTURE NO. 082-0275**

DESIGNED	DB
CHECKED	RS
DRAWN	ER
CHECKED	WWH



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SHEET NO. 6	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	817	421B-1	ST. CLAIR	56	25
28 SHEETS	STRUCTURE NO. 082-0275		CONTRACT NO. 76885		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT			

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BEAM 6

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abutment	148+77.2500	12.3334	407.4237	407.4237
☉ Brg. W. Abutment	148+78.5000	12.3334	407.4282	407.4282
A	148+88.5000	12.3334	407.4634	407.4718
B	148+98.5000	12.3334	407.4948	407.5041
C	149+08.5000	12.3334	407.5221	407.5246
☉ Brg. Pier 1	149+20.5000	12.3334	407.5494	407.5494
D	149+30.5000	12.3334	407.5676	407.5807
E	149+40.5000	12.3334	407.5816	407.6102
F	149+50.5000	12.3334	407.5914	407.6261
G	149+60.5000	12.3334	407.5972	407.6246
H	149+70.5000	12.3334	407.5987	407.6102
☉ Brg. Pier 2	149+79.5000	12.3334	407.5966	407.5966
I	149+89.5000	12.3334	407.5903	407.5928
J	149+99.5000	12.3334	407.5798	407.5887
K	150+09.5000	12.3334	407.5652	407.5744
☉ Brg. E Abutment	150+21.5000	12.3334	407.5426	407.5426
Bk. E. Abutment	150+22.7500	12.3334	407.5401	407.5401

BEAM 7

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abutment	148+77.2500	18.500	407.2952	407.2952
☉ Brg. W. Abutment	148+78.5000	18.500	407.2997	407.2997
A	148+88.5000	18.500	407.3349	407.3434
B	148+98.5000	18.500	407.3664	407.3756
C	149+08.5000	18.500	407.3937	407.3962
☉ Brg. Pier 1	149+20.5000	18.500	407.4209	407.4209
D	149+30.5000	18.500	407.4391	407.4522
E	149+40.5000	18.500	407.4531	407.4817
F	149+50.5000	18.500	407.4630	407.4976
G	149+60.5000	18.500	407.4687	407.4961
H	149+70.5000	18.500	407.4703	407.4817
☉ Brg. Pier 2	149+79.5000	18.500	407.4681	407.4681
I	149+89.5000	18.500	407.4618	407.4643
J	149+99.5000	18.500	407.4514	407.4602
K	150+09.5000	18.500	407.4368	407.4459
☉ Brg. E Abutment	150+21.5000	18.500	407.4141	407.4141
Bk. E. Abutment	150+22.7500	18.500	407.4116	407.4116

**TOP OF SLAB ELEVATIONS
ILLINOIS ROUTE 4/15 OVER
KASKASKIA OVERFLOW
F.A.P. ROUTE 817 SEC 421B-1
ST. CLAIR COUNTY
STATION 149+50.00
STRUCTURE NO. 082-0275**

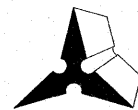
Notes:

Elevations are at top of concrete.

Work this sheet with sheet 4, 5, & 6 of 28

All stations and offsets are given with respect to centerline of the profile grade.

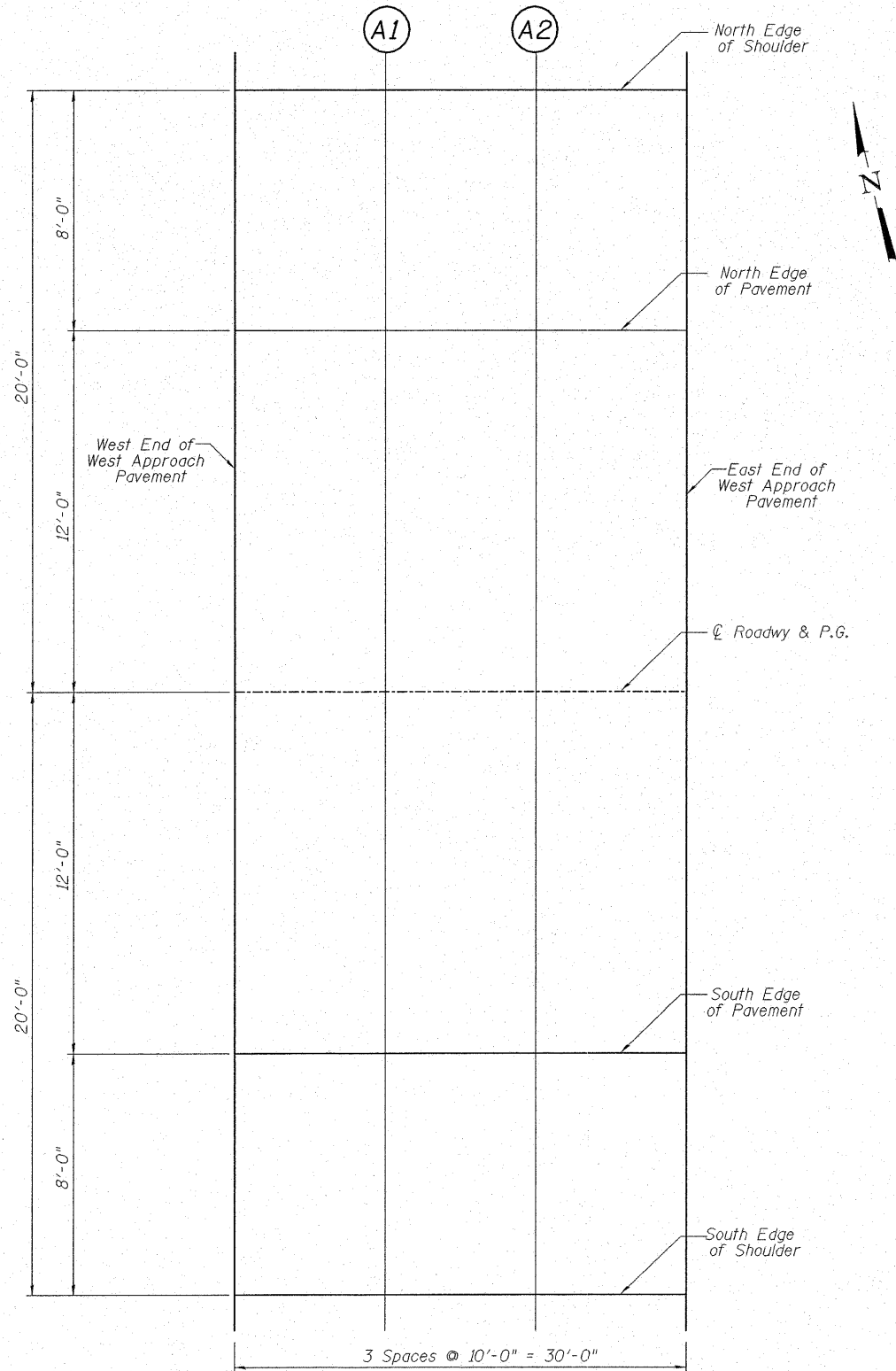
DESIGNED	DB
CHECKED	RS
DRAWN	ER
CHECKED	WWH



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CONSULTING ENGINEERS AND LAND SURVEYORS
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Fax: (618) 659-0941

SHEET NO. 7	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	817	421B-1	ST. CLAIR	56	26
28 SHEETS	STRUCTURE NO. 082-0275		CONTRACT NO. 76885		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



NORTH EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations
West End of West Approach Pavement	148+47.25	-20.00	407.16
A1	148+57.25	-20.00	407.19
A2	148+67.25	-20.00	407.23
East End of West Approach Pavement	148+77.25	-20.00	407.26

NORTH EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
West End of West Approach Pavement	148+47.25	-12.00	407.32
A1	148+57.25	-12.00	407.36
A2	148+67.25	-12.00	407.39
East End of West Approach Pavement	148+77.25	-12.00	407.43

CL ROADWAY & PROFILE GRADE

Location	Station	Offset	Theoretical Grade Elevations
West End of West Approach Pavement	148+47.25	0.00	407.51
A1	148+57.25	0.00	407.55
A2	148+67.25	0.00	407.58
East End of West Approach Pavement	148+77.25	0.00	407.62

SOUTH EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
West End of West Approach Pavement	148+47.25	12.00	407.32
A1	148+57.25	12.00	407.36
A2	148+67.25	12.00	407.39
East End of West Approach Pavement	148+77.25	12.00	407.43

SOUTH EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations
West End of West Approach Pavement	148+47.25	20.00	407.16
A1	148+57.25	20.00	407.19
A2	148+67.25	20.00	407.23
East End of West Approach Pavement	148+77.25	20.00	407.26

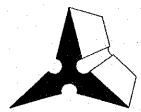
TOP OF APPROACH
SLAB ELEVATIONS
ILLINOIS ROUTE 4/15 OVER
KASKASKIA OVERFLOW
F.A.P. ROUTE 817 SEC 421B-1
ST. CLAIR COUNTY
STATION 149+50.00
STRUCTURE NO. 082-0275

Notes:

Elevations are at top of concrete.
All stations and offsets are given with respect to centerline of profile grade.

DESIGNED	DB
CHECKED	RS
DRAWN	ER
CHECKED	WWH

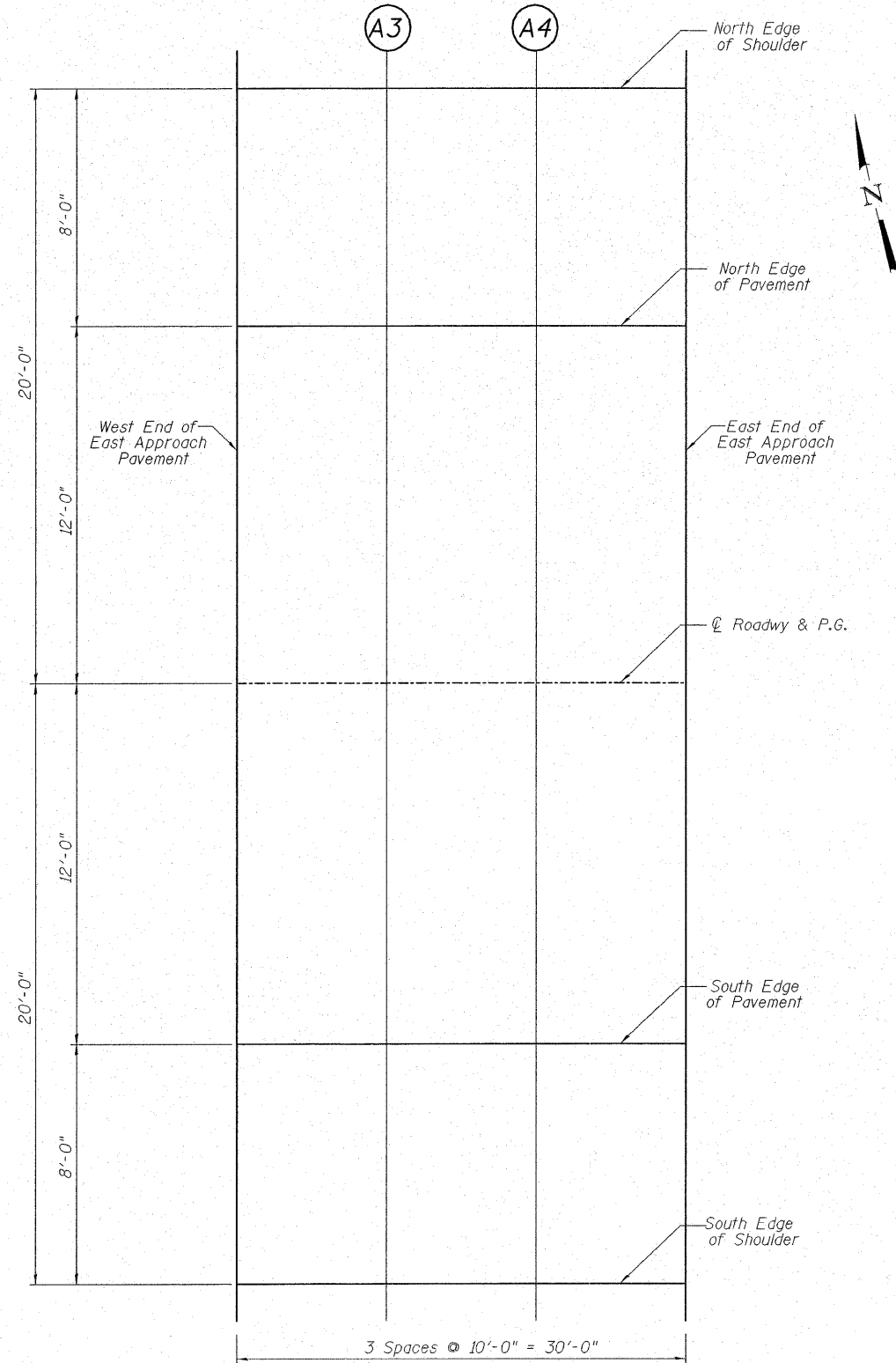
PLAN
West Approach



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Fax: (618) 659-0841

SHEET NO. 8 28 SHEETS	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	817	421B-1	ST. CLAIR	56	27
STRUCTURE NO. 082-0275			CONTRACT NO. 76885		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT			

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



NORTH EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations
West End of East Approach Pavement	150+22.75	-20.00	407.38
A1	150+32.75	-20.00	407.36
A2	150+42.75	-20.00	407.34
East End of East Approach Pavement	150.52.75	-20.00	407.32

NORTH EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
West End of East Approach Pavement	150+22.75	-12.00	407.55
A1	150+32.75	-12.00	407.53
A2	150+42.75	-12.00	407.51
East End of East Approach Pavement	150.52.75	-12.00	407.49

CL ROADWAY & PROFILE GRADE

Location	Station	Offset	Theoretical Grade Elevations
West End of East Approach Pavement	150+22.75	0.00	407.73
A1	150+32.75	0.00	407.71
A2	150+42.75	0.00	407.69
East End of East Approach Pavement	150.52.75	0.00	407.67

SOUTH EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
West End of East Approach Pavement	150+22.75	12.00	407.55
A1	150+32.75	12.00	407.53
A2	150+42.75	12.00	407.51
East End of East Approach Pavement	150.52.75	12.00	407.49

SOUTH EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations
West End of East Approach Pavement	150+22.75	20.00	407.38
A1	150+32.75	20.00	407.36
A2	150+42.75	20.00	407.34
East End of East Approach Pavement	150.52.75	20.00	407.32

PLAN
East Approach

DESIGNED	DB
CHECKED	RS
DRAWN	ER
CHECKED	WWH



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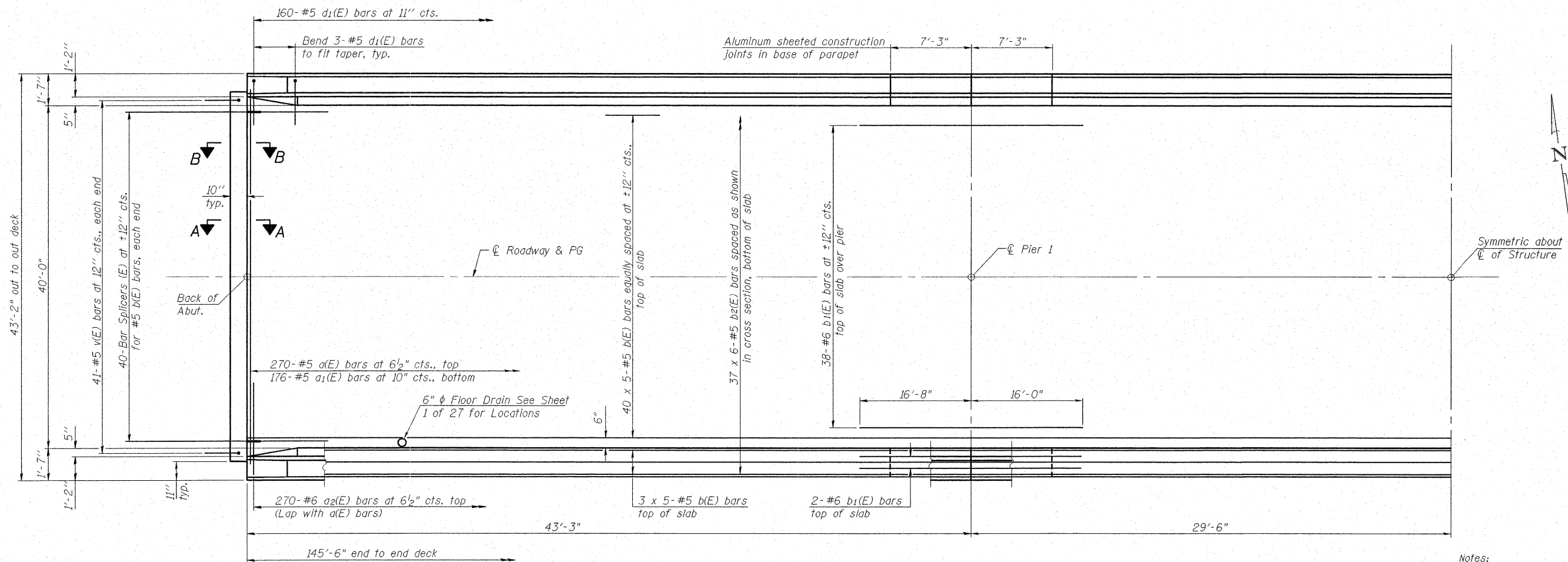
100 North Research Drive
Edwardsville, Illinois 62025
Phone: (618) 659-0200/(618) 659-0800
Fax: (618) 659-0441

Notes:

Elevations are at top of concrete.
All stations and offsets are given with respect to centerline of profile grade.

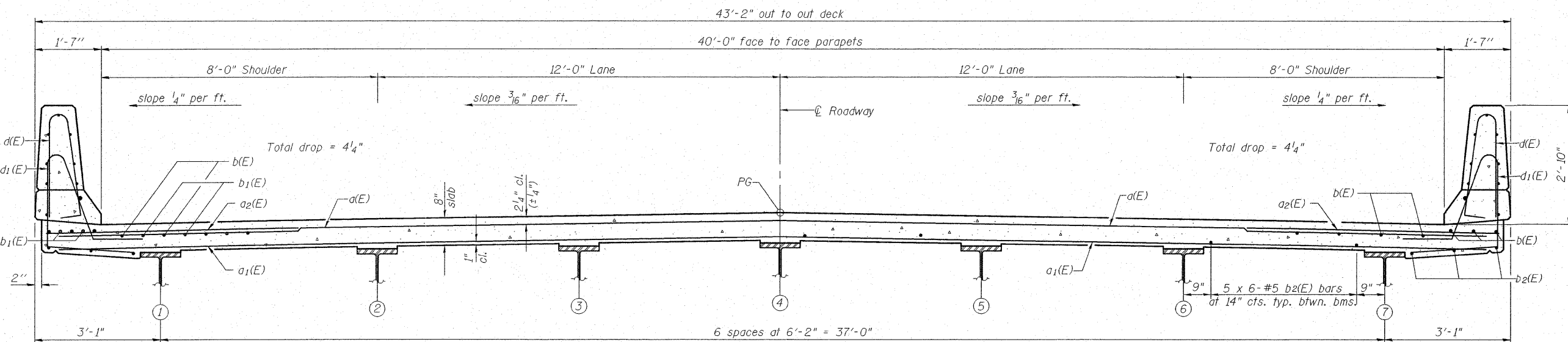
TOP OF APPROACH
SLAB ELEVATIONS
ILLINOIS ROUTE 4/15 OVER
KASKASKIA OVERFLOW
F.A.P. ROUTE 817 SEC 421B-1
ST. CLAIR COUNTY
STATION 149+50.00
STRUCTURE NO. 082-0275

SHEET NO. 9 28 SHEETS	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	817	421B-1	ST. CLAIR	56	28
STRUCTURE NO. 082-0275		CONTRACT NO. 76885			
FED. ROAD DIST. NO.		ILLINOIS		FED. AID PROJECT	



PARTIAL PLAN

Notes:
 See Sheet 11 of 28 for superstructure details and Bill of Material.
 Bars indicated thus 40 x 5-#5 etc. indicates 40 lines of bars with 5 lengths per line.
 See Sheet 11 of 28 for parapet reinforcement.
 See Sheet 12 of 28 for Sec. A-A and Sec. B-B.



NEAR PIER

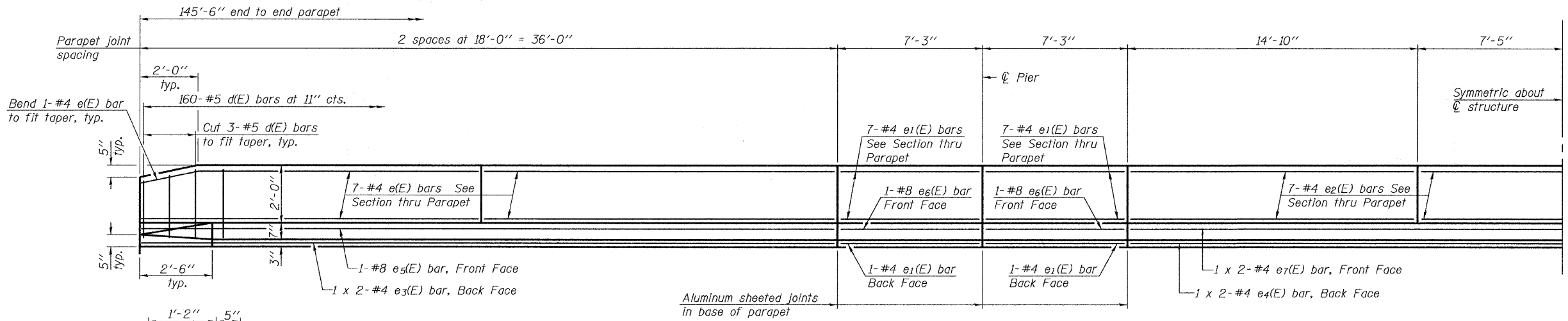
NEAR MIDSPAN

CROSS SECTION
(Looking East)

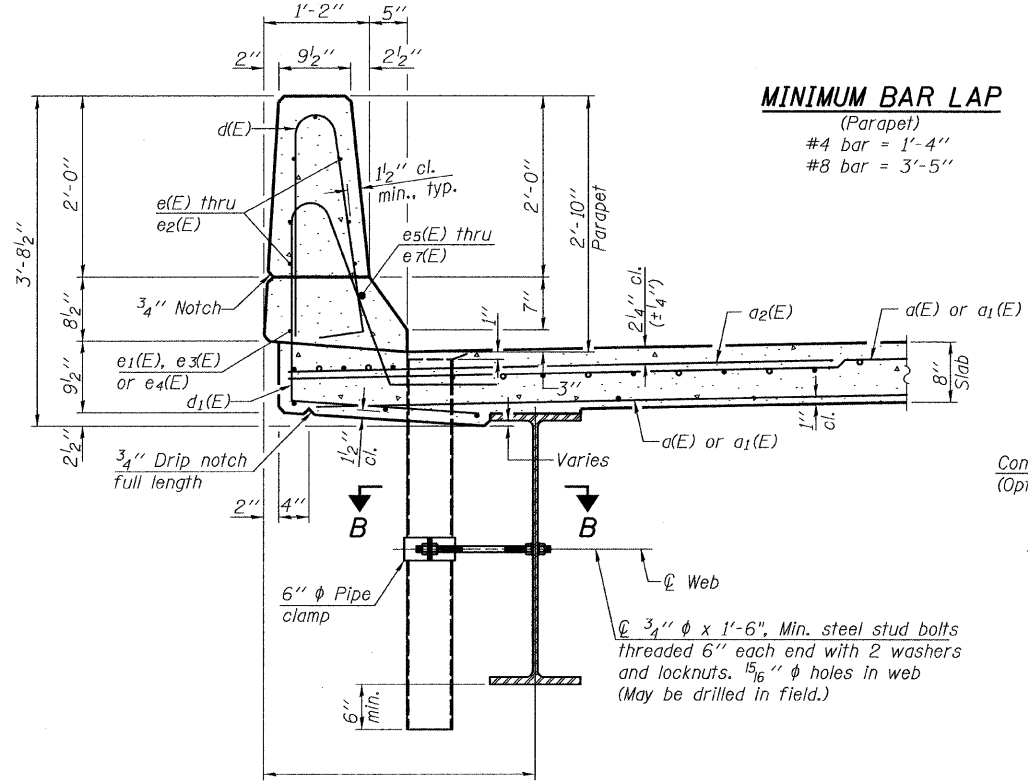
MIN. BAR LAP
 #5 bars = 1'-8"

SUPERSTRUCTURE
IL ROUTE 4/15 OVER
KASKASKIA OVERFLOW
F.A.P. RT. 817 SEC. 421B-1
ST. CLAIR COUNTY
STATION 149+50.00
STRUCTURE NO. 082-0275

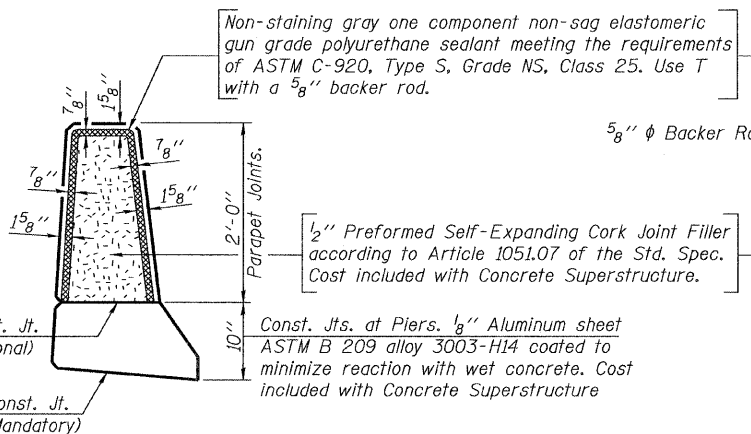
COOMBE-BLOXDORF P.C. Engineers / Land Surveyors Springfield, Illinois Design Firm License No. 184-002703	PROJECT NO. 06001-13 SCALE DATE 9/18/08 DRAWN BY TFG CHECKED BY RM/CME/MCB.	SHEET NO. 10 28 SHEETS	F.A.P. RTE. 817 SECTION 421B-1	COUNTY ST. CLAIR	TOTAL SHEETS 56	SHEET NO. 29
	FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT			CONTRACT NO.		



INSIDE ELEVATION OF PARAPET

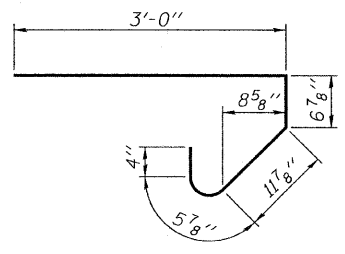


SECTION THRU PARAPET

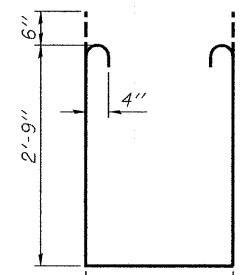


PARAPET JOINT DETAILS

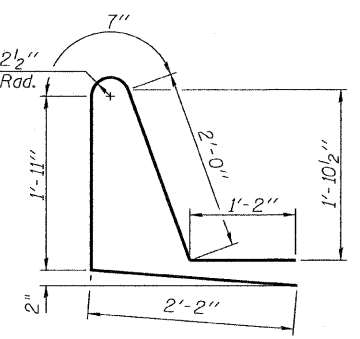
Notes:
 Floor drains need not be painted.
 Fiberglass pipe shall conform to ASTM D 2996, with short-time rupture strength hoop tensile stress of 30,000 p.s.i. minimum.



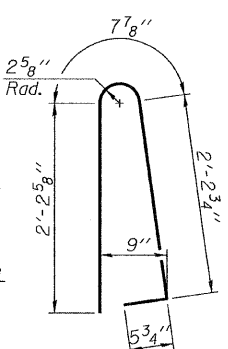
BAR s(E)



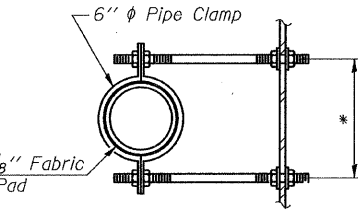
BAR s1(E)



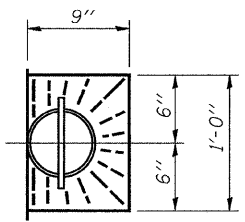
BAR d1(E)



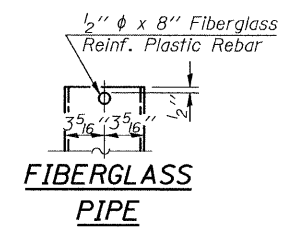
BAR d(E)



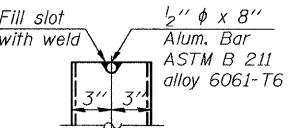
SECTION B-B
 *Dimension as required by Pipe Clamp



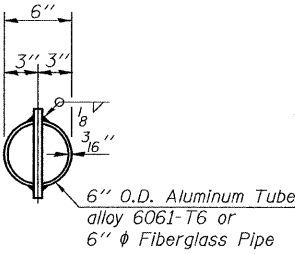
TOP PLAN



FIBERGLASS PIPE



ALUMINUM TUBE



TOP PLAN (Showing Aluminum Tube)

SUPERSTRUCTURE BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	270	#5	42'-6"	—
a1(E)	176	#5	41'-0"	—
a2(E)	540	#6	6'-0"	—
b(E)	230	#5	30'-6"	—
b1(E)	84	#6	32'-8"	—
b2(E)	222	#5	25'-8"	—
d(E)	320	#5	5'-7"	—
d1(E)	320	#5	7'-10"	—
e(E)	56	#4	17'-8"	—
e1(E)	64	#4	7'-0"	—
e2(E)	42	#4	14'-6"	—
e3(E)	8	#4	18'-6"	—
e4(E)	4	#4	22'-9"	—
e5(E)	4	#8	35'-8"	—
e6(E)	8	#8	7'-0"	—
e7(E)	4	#8	23'-10"	—
m(E)	8	#6	22'-0"	—
m1(E)	12	#6	22'-10"	—
m2(E)	28	#6	9'-0"	—
m3(E)	12	#6	5'-10"	—
m4(E)	4	#6	2'-10"	—
s(E)	96	#5	5'-5"	—
s1(E)	84	#4	8'-8"	—
v(E)	82	#5	3'-4"	—
Reinforcement Bars, Epoxy Coated			Pound	51,020
Concrete Superstructure			Cu. Yds.	215.6
Bar Splicers			Each	80

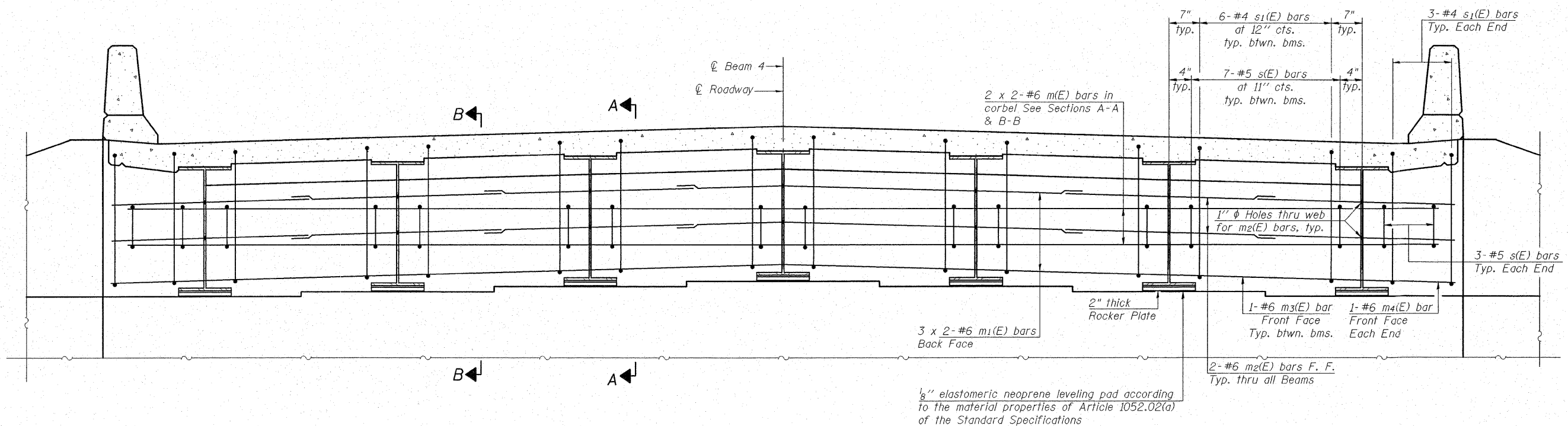
Bars indicated thus 1 x 2-#5 etc. indicates 1 line of bars with 2 lengths per line.

**SUPERSTRUCTURE DETAILS
 IL ROUTE 4/15 OVER
 KASKASKIA OVERFLOW
 F.A.P. RT. 817 SEC. 421B-1
 ST. CLAIR COUNTY
 STATION 149+50.00
 STRUCTURE NO. 082-0275**

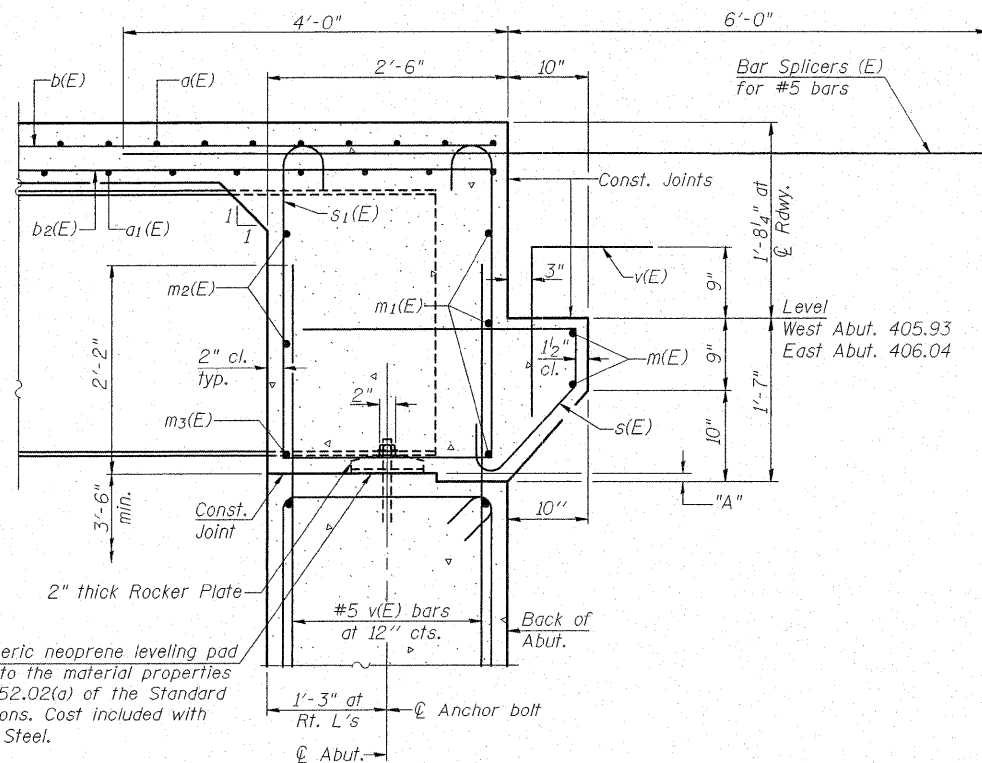
COOMBE-BLOXDORF P.C. Engineers / Land Surveyors Springfield, Illinois Design Firm License No. 184-002703	PROJECT NO. 06001-13	SHEET NO. 11 28 SHEETS	F.A.P. RTE. 817	SECTION 421B-1	COUNTY ST. CLAIR	TOTAL SHEETS 56	SHEET NO. 30
	DATE 11/20/08 DRAWN BY TFC CHECKED BY RM/CME/MCB		CONTRACT NO.				FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT

PLOT DATE = 11/20/2008
 FILE NAME = ...bridge-plansuper-detail.dgn
 PLOT SCALE = 0.10000 1" = 10'
 USER NAME = JML

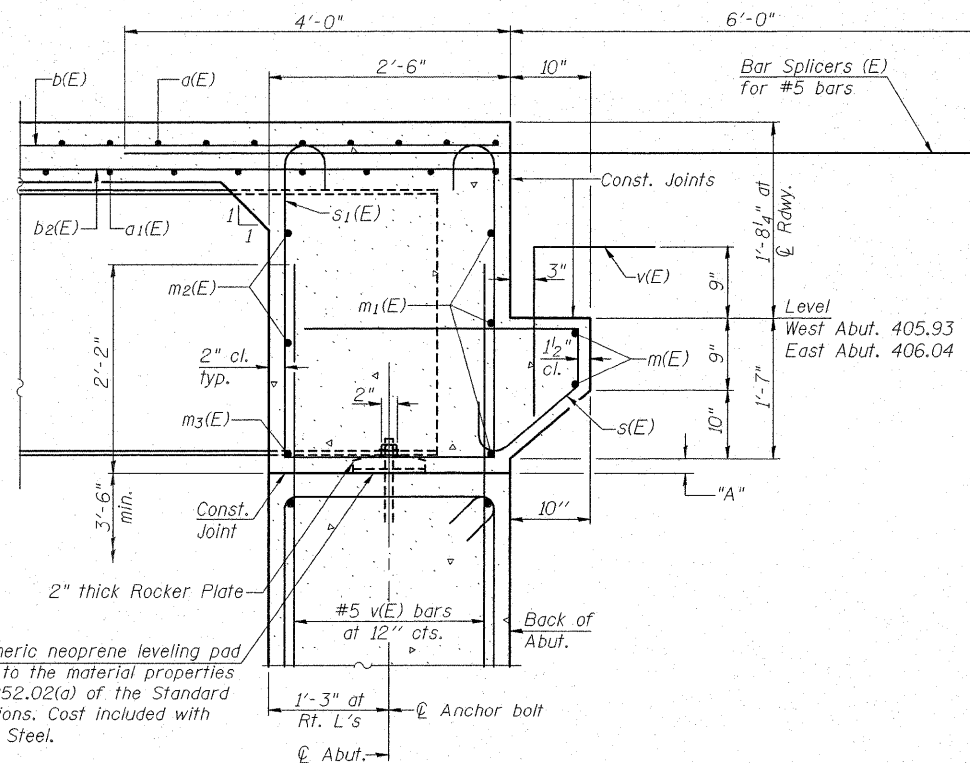
S-I-D 5-16-08



DIAPHRAGM ELEVATION AT ABUTMENT



SECTION A-A
At Seats for Beams 3, 4, & 5



SECTION B-B
At Seats for Beams 1, 2, 6 & 7

DIMENSION "A"

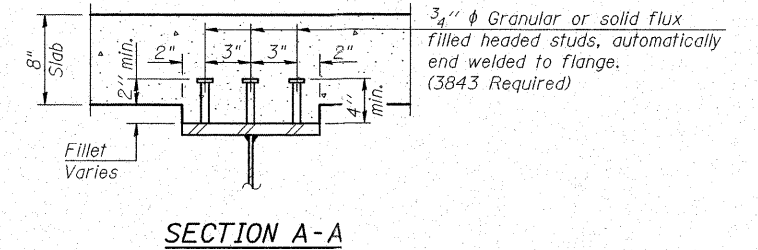
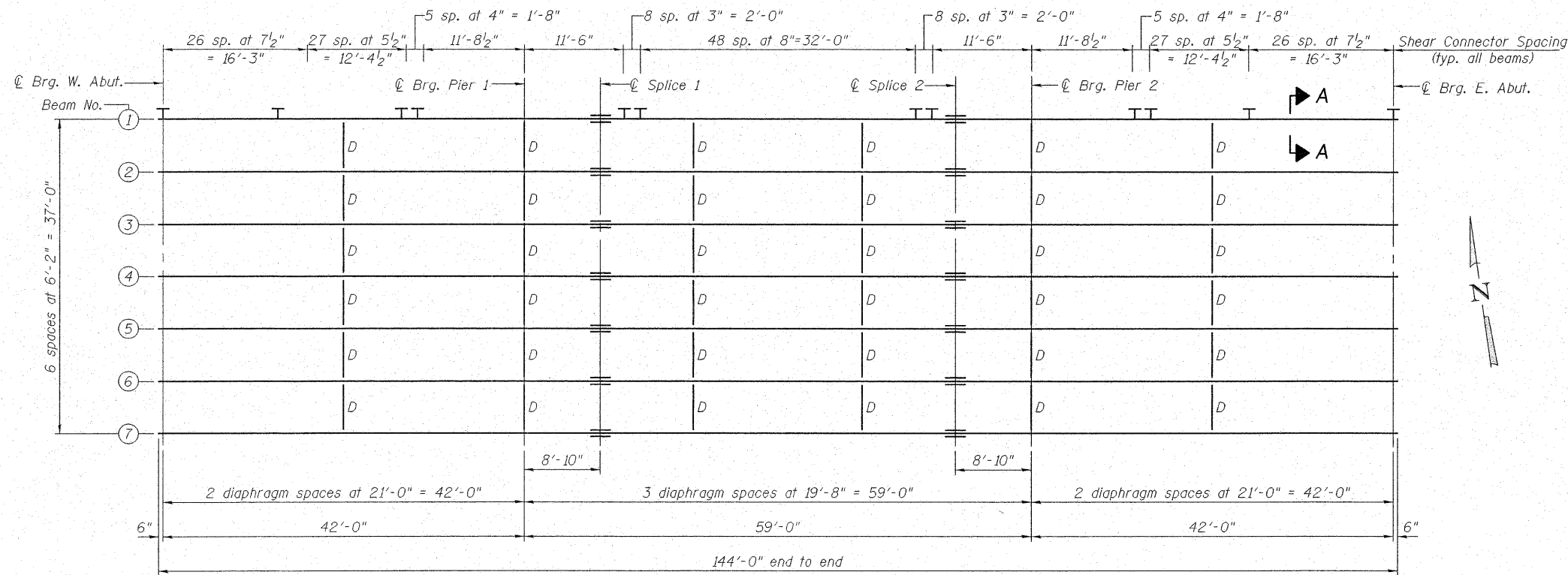
Beam	1	2	3	4	5	6	7
W. Abut.	2 1/2"	1"	1 1/4"	1 3/8"	1 1/4"	1"	2 1/2"
E. Abut.	2 1/2"	1"	1 1/4"	1 3/8"	1 1/4"	1"	2 1/2"

See Section A-A and Section B-B for Dimension "A" locations

NOTES
 Reinforcement bars in diaphragm are billed with superstructure on sheet 11 of 28.
 Concrete in diaphragm is included with Concrete Superstructure on sheet 11 of 28.
 For details of bars s(E) & s₁(E) see sheet 11 of 28.

MIN. BAR LAP
 #6 bar = 2'-9"

DIAPHRAGM DETAILS
IL ROUTE 4/15 OVER
KASKASKIA OVERFLOW
F.A.P. RT. 817 SEC. 421B-1
ST. CLAIR COUNTY
STATION 149+50.00
STRUCTURE NO. 082-0275



PLAN

All beams are W27 x 114 (N.T.R.) M270 Grade 50W

TOP OF BEAM ELEVATIONS

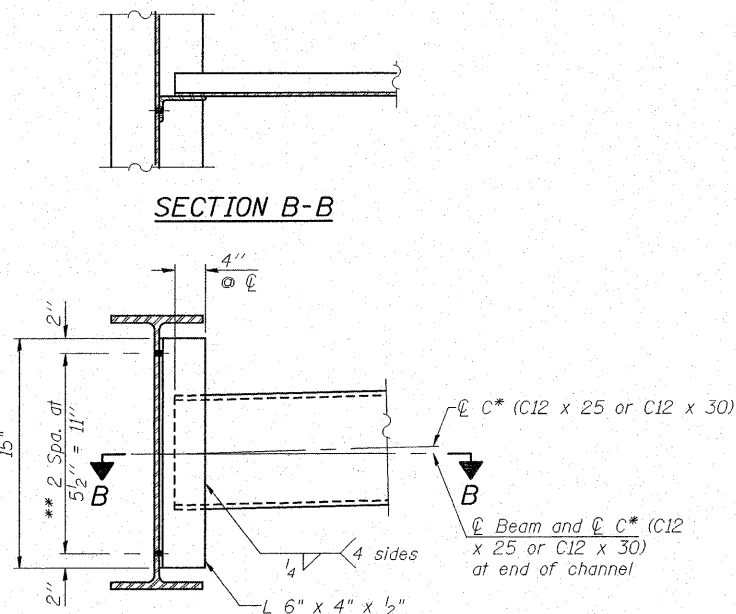
Location	Beam 1	Beam 2	Beam 3	Beam 4	Beam 5	Beam 6	Beam 7
℄ Brg. W. Abut.	406.59	406.72	406.82	406.91	406.82	406.72	406.59
℄ Brg. Pier 1	406.66	406.78	406.88	406.98	406.88	406.78	406.66
℄ Splice 1	406.67	406.80	406.90	406.99	406.90	406.80	406.67
℄ Splice 2	406.70	406.83	406.93	407.02	406.93	406.83	406.70
℄ Brg. Pier 2	406.70	406.83	406.93	407.03	406.93	406.83	406.70
℄ Brg. E. Abut.	406.71	406.83	406.93	407.03	406.93	406.83	406.71

(For Fabrication only)

NOTES

Load carrying components designated "NTR" shall conform to the Supplemental Requirements for Notch Toughness, Zone 2.
All cross frames or diaphragms shall be installed as steel is erected and secured with erection pins and bolts. Individual cross frames or diaphragms at supports may be temporarily disconnected to install bearing anchor rods.

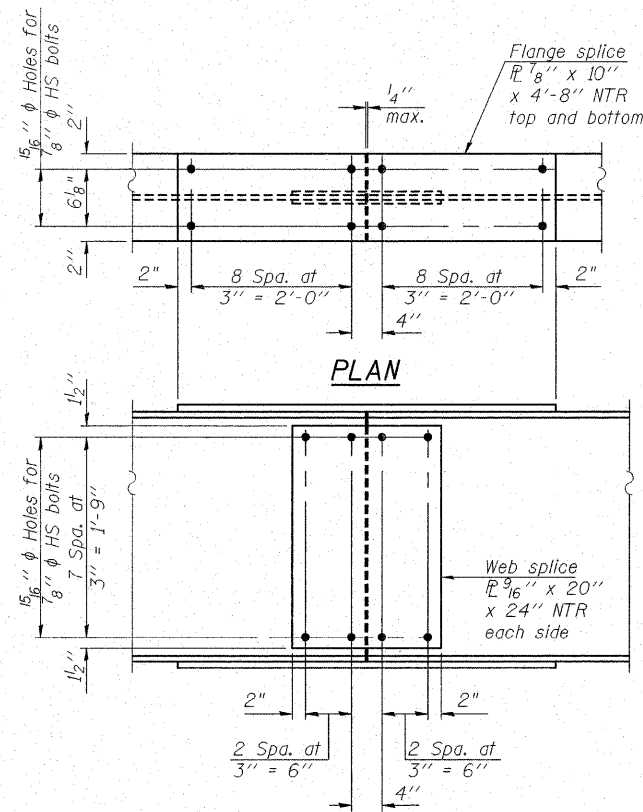
STRUCTURAL STEEL DETAILS
IL ROUTE 4/15 OVER
KASKASKIA OVERFLOW
F.A.P. RT. 817 SEC. 421B-1
ST. CLAIR COUNTY
STATION 149+50.00
STRUCTURE NO. 082-0275



INTERIOR DIAPHRAGM

Note: 36 Required.
Two hardened washers required for each set of oversized holes.

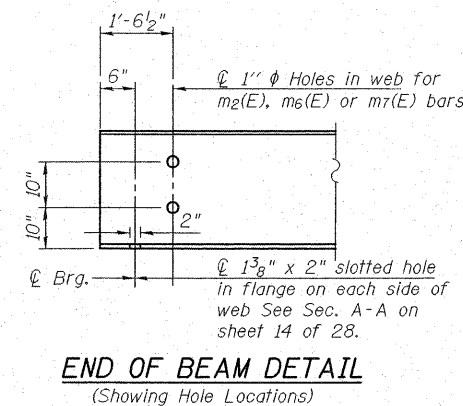
* Alternate channels are permitted to facilitate material acquisition. Calculated weight of structural steel is based on the lighter section.
** 3/4" φ HS bolts, 15/16" φ holes



ELEVATION

TYPICAL SPLICE DETAIL

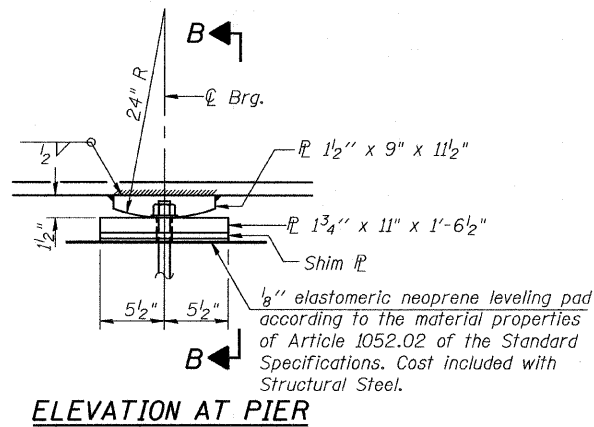
(14 Required)



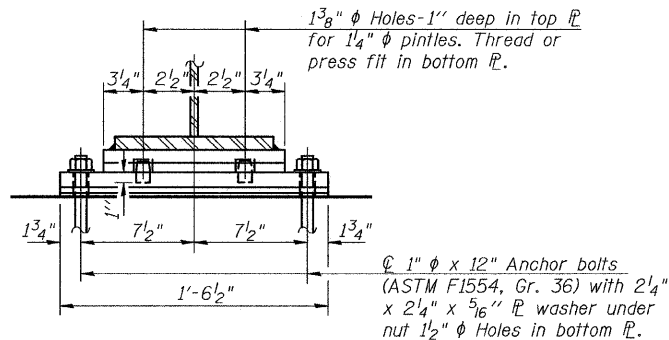
END OF BEAM DETAIL

(Showing Hole Locations)

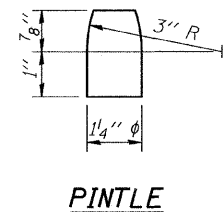
COOMBE-BLOXDORF P.C. Engineers / Land Surveyors Springfield, Illinois Design Firm License No. 184-002703	PROJECT NO. 06001-13 SCALE DATE 9/17/08 DRAWN BY TFG CHECKED BY RM/CME/MCB	SHEET NO. 13 28 SHEETS	F.A.P. RTE. 817	SECTION 421B-1	COUNTY ST. CLAIR	TOTAL SHEETS 56	SHEET NO. 32
	FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT						



ELEVATION AT PIER



SECTION B-B



PINTLE

FIXED BEARING

14 Required

NOTES

Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. ASTM A307 Grade C anchor bolts may be used in lieu of ASTM F1554 Grade 36 (Fy=36ksi). The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.

Anchor bolts at fixed bearings may be either cast in place or installed in holes drilled after the supported member is in place.

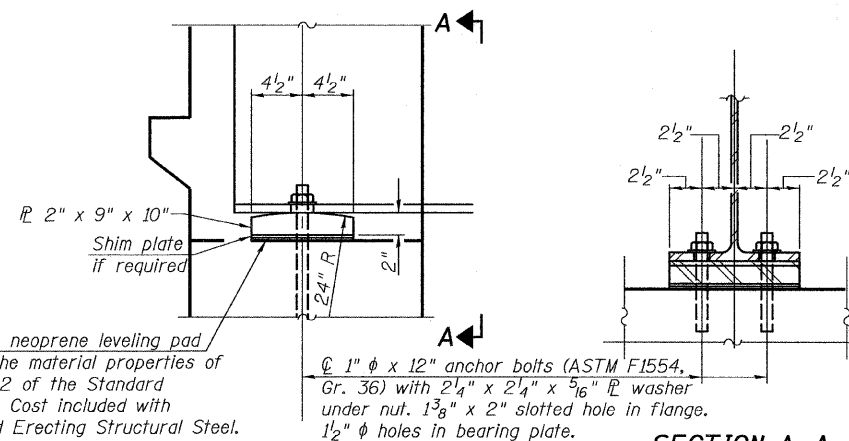
Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.

Two 1/8" adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.

INTERIOR GIRDER MOMENT TABLE				
		0.4 Sp. 1 or 0.6 Sp. 3	Pier 1 or 2	0.5 Span 2
I_s	(in ⁴)	4090	4090	4090
$I_c(n)$	(in ⁴)	11351	---	11351
$I_c(3n)$	(in ⁴)	8333	---	8333
S_s	(in ³)	299	299	299
$S_c(n)$	(in ³)	448	---	448
$S_c(3n)$	(in ³)	404	---	404
DC1	(k/')	0.76	0.76	0.76
M _{DC1}	('k)	80.7	202.4	129.9
DC2	(k/')	0.13	0.13	0.13
M _{DC2}	('k)	13.5	34.0	21.8
DW	(k/')	0.29	0.29	0.29
M _{DW}	('k)	30.2	75.7	48.6
M _{ℓ + Imp}	('k)	395.1	374.4	446.9
M _u (Strength I)	('k)	851.0	1064.2	1044.6
φ _r M _n , φ _r M _{nc}	('k)	2347	1198	2347
f _s DC1	(ksi)	3.24	8.12	5.21
f _s DC2	(ksi)	0.36	1.36	0.58
f _s DW	(ksi)	0.89	3.04	1.44
f _s 1.3(ℓ+I)	(ksi)	13.7	19.5	15.6
f _s (Service II)	(ksi)	18.2	32.0	22.8
V _r	(k)	19		18

- I_s, S_s : Non-composite moment of inertia and section modulus of the steel section used for computing f_s (Total-Strength I, and Service II) due to non-composite dead loads (in.⁴ and in.³).
- $I_c(n), S_c(n)$: Composite moment of inertia and section modulus of the steel and deck based upon the modular ratio, "n", used for computing f_s (Total-Strength I, and Service II) due to short-term composite live loads (in.⁴ and in.³).
- $I_c(3n), S_c(3n)$: Composite moment of inertia and section modulus of the steel and deck based upon 3 times the modular ratio, "3n", used for computing f_s (Total-Strength I, and Service II) due to long-term composite (superimposed) dead loads (in.⁴ and in.³).
- DC1: Un-factored non-composite dead load (kips/ft.).
- M_{DC1}: Un-factored moment due to non-composite dead load (kip-ft.).
- DC2: Un-factored long-term composite (superimposed excluding future wearing surface) dead load (kips/ft.).
- M_{DC2}: Un-factored moment due to long-term composite (superimposed excluding future wearing surface) dead load (kip-ft.).
- DW: Un-factored long-term composite (superimposed future wearing surface only) dead load (kips/ft.).
- M_{DW}: Un-factored moment due to long-term composite (superimposed future wearing surface only) dead load (kip-ft.).
- M_{ℓ + Imp}: Un-factored live load moment plus dynamic load allowance (impact) (kip-ft.).
- M_u (Strength I): Factored design moment (kip-ft.).
1.25 (M_{DC1} + M_{DC2}) + 1.5 M_{DW} + 1.75 M_{ℓ + Imp}
- φ_rM_n: Compact composite positive moment capacity computed according to Article 6.10.7.1 (kip-ft.).
- φ_rM_{nc}: Compact non-composite negative moment capacity computed according to Article A6.11.1 (kip-ft.).
- f_s (Service II): Sum of stresses as computed from the moments below (ksi).
M_{DC1} + M_{DC2} + M_{DW} + 1.3 M_{ℓ + Imp}
- V_r: Factored shear range computed according to Article 6.10.10.

INTERIOR GIRDER REACTION TABLE			
HL93 Loading			
	Abut.	Pier	
R _{DC1}	(k)	11.2	43.4
R _{DC2}	(k)	1.9	7.3
R _{DW}	(k)	4.1	16.2
R _{ℓ + Imp}	(k)	58.1	110.6
R _{Total}	(k)	75.3	177.5



SECTION A-A

BEARING AT INTEGRAL ABUTMENTS

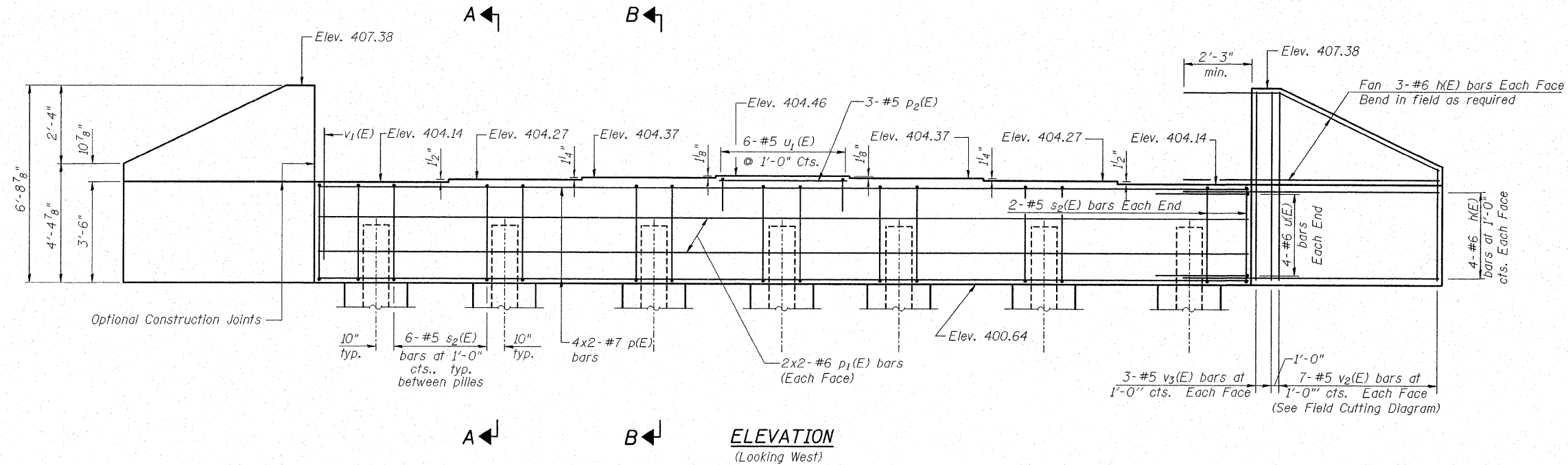
14 Required

BEARING DETAILS
IL ROUTE 4/15 OVER
KASKASKIA OVERFLOW
F.A.P. RT. 817 SEC. 421B-1
ST. CLAIR COUNTY
STATION 149+50.00
STRUCTURE NO. 082-0275

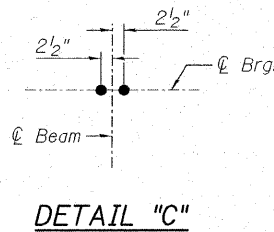
COOMBE-BLOXDORF P.C. Engineers / Land Surveyors Springfield, Illinois Design Firm License No. 184-002703	PROJECT NO. 06001-13	SHEET NO. 14 28 SHEETS	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	DATE 11/20/08 DRAWN BY TFG CHECKED BY RM/CME/MCB		817	421B-1	ST. CLAIR	56	33
			CONTRACT NO.				
			FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT				

Notes: Four steps monolithically with cap.

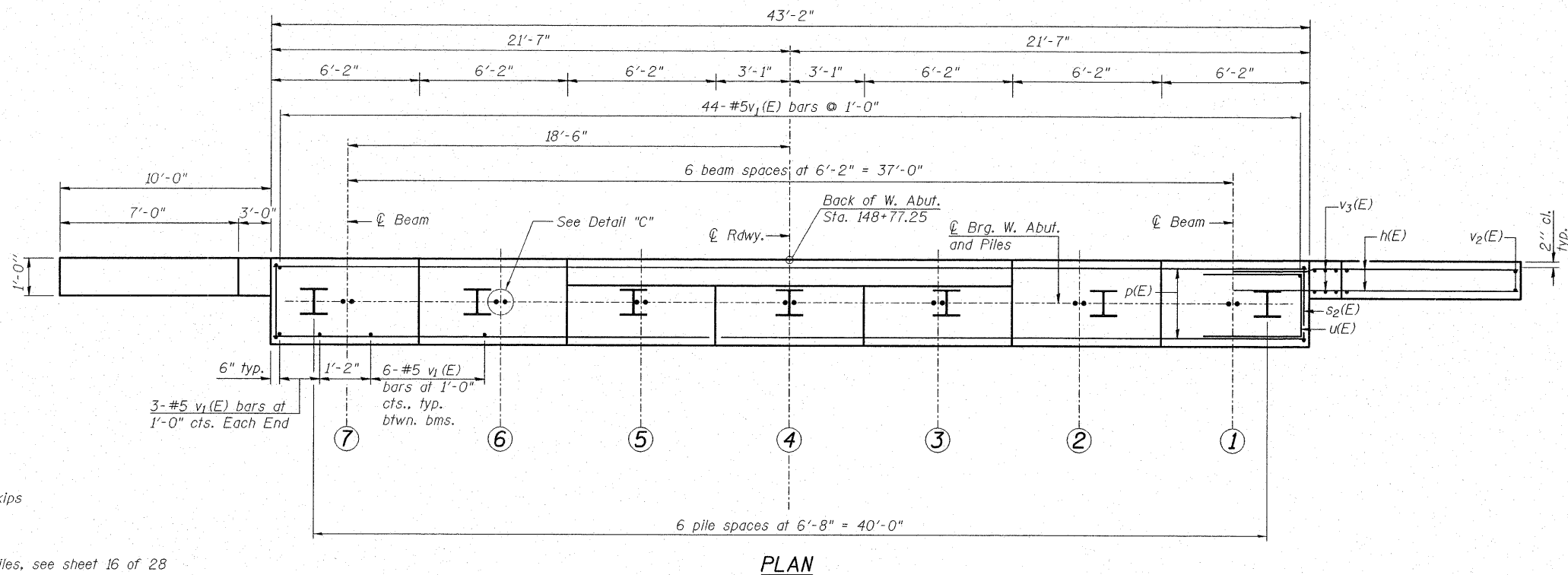
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



ELEVATION
(Looking West)



DETAIL "C"



PLAN

MIN. BAR LAP

#6 bars = 2'-7"
#7 bars = 3'-5"

Notes:

See Sheet No. 16 of 28 for Section A-A and B-B.

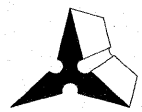
See Sheet No. 16 of 28 for West Abutment Bill of Material.

Bars indicated thus 40 x 5-#5 etc. indicates 40 lines of bars with 5 lengths per line.

PILE DATA

Type: HP 12x53
Nominal Required Bearing: 300 kips
Factored Resistance Available: 150 kips
Est. Length: 76 ft.
No. Production Piles: 6
No. Test Piles: 1
HP Pile Anchorage required for all piles, see sheet 16 of 28

DESIGNED	DB
CHECKED	RS
DRAWN	ER
CHECKED	WWH

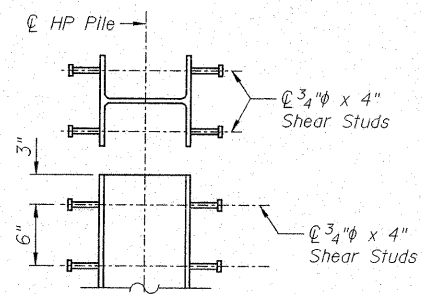


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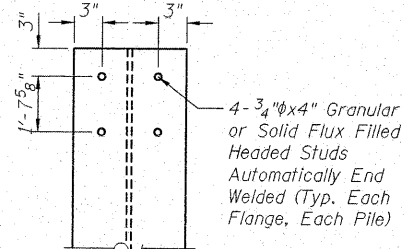
WEST ABUTMENT
ILLINOIS ROUTE 4/15 OVER
KASKASKIA OVERFLOW
F.A.P. ROUTE 817 SEC 421B-1
ST. CLAIR COUNTY
STATION 149+50.00
STRUCTURE NO. 082-0275

SHEET NO. 15 28 SHEETS	F.A.P. RTE. 817	SECTION 421B-1	COUNTY ST. CLAIR	TOTAL SHEETS 56	SHEET NO. 34
	STRUCTURE NO. 082-0275		CONTRACT NO. 76885		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT			

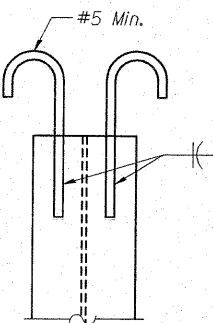
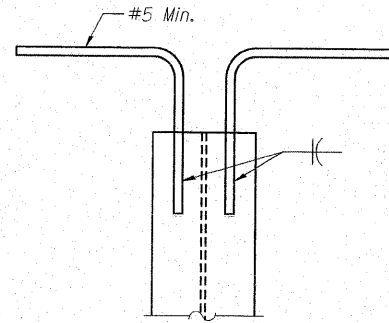
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



OPTION A



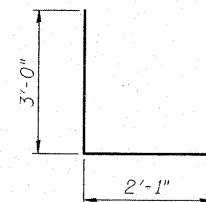
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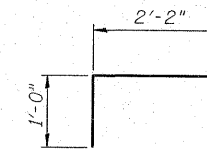
OPTION C

HP PILE ANCHORAGE

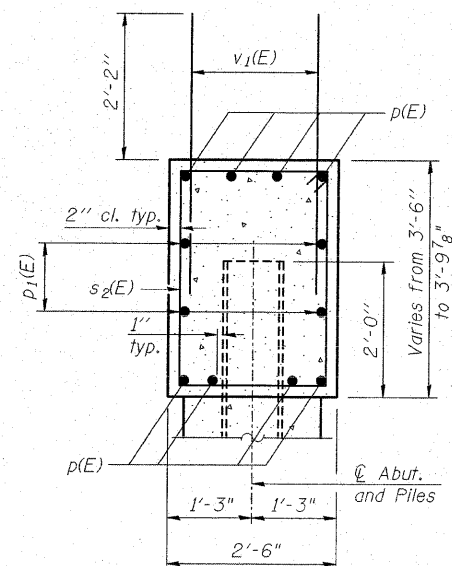
Cost of furnishing and installing HP Pile Anchorage for Option A, B or C is included in the cost unit price for Furnishing Steel Piles HP 12x53.



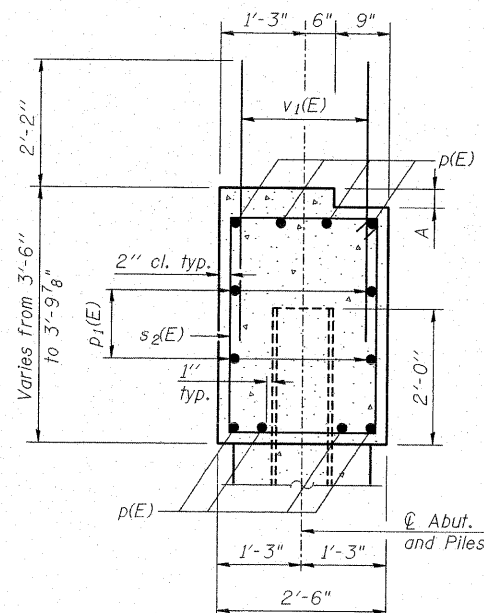
BAR u(E)



BAR u₁(E)



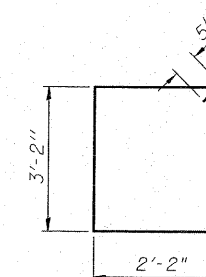
SECTION A-A
At Beam Seat 1, 2, 6, 7



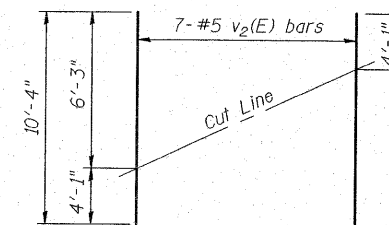
SECTION B-B
At Beam Seat 3, 4, 5

DIMENSION "A"

Beam	1	2	3	4	5	6	7
"A"	-	-	1/4"	1 3/8"	1/4"	-	-



BAR s₂(E)



FIELD CUTTING DIAGRAM

Order v₂(E) full length. Cut as shown and use remainder of bars in opposite face.

**WEST ABUTMENT
BILL OF MATERIAL**

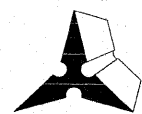
Bar	No.	Size	Length	Shape
h(E)	28	#6	12'-6"	—
p(E)	16	#7	23'-2"	—
p ₁ (E)	8	#6	22'-9"	—
p ₂ (E)	3	#5	5'-10"	—
s ₂ (E)	40	#5	11'-7"	□
u(E)	8	#6	8'-1"	—
u ₁ (E)	6	#5	4'-2"	—
v ₁ (E)	86	#5	4'-4"	—
v ₂ (E)	14	#5	10'-4"	—
v ₃ (E)	12	#5	6'-5"	—
Structure Excavation		Cu. Yd.	105	
Concrete Structures		Cu. Yd.	19.0	
Reinforcement Bars, Epoxy Coated		Pound	2800	
Furnishing Steel Piles HP12x53		Foot	456	
Driving Piles		Foot	456	
Test Piles HP12x53		Each	1	
Concrete Encasement		Cu. Yd.	2.5	

For HP Pile details see sheet 23 of 28.

Space reinforcement in cap to miss anchor bolts.

**WEST ABUTMENT DETAILS
ILLINOIS ROUTE 4/15 OVER
KASKASKIA OVERFLOW
F.A.P. ROUTE 817 SEC 421B-1
ST. CLAIR COUNTY
STATION 149+50.00
STRUCTURE NO. 082-0275**

DESIGNED	DB
CHECKED	RS
DRAWN	ER
CHECKED	WWH

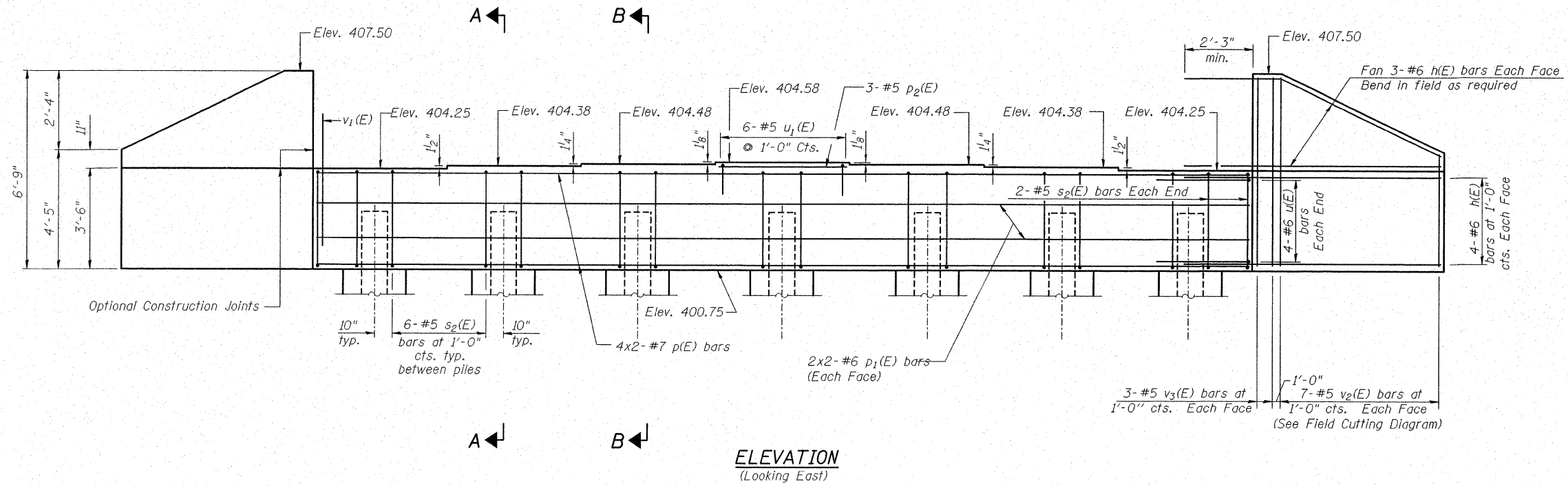


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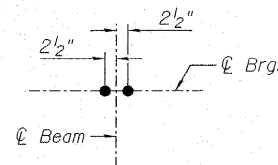
SHEET NO. 16	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
28 SHEETS	817	421B-1	ST. CLAIR	56	35
STRUCTURE NO. 082-0275			CONTRACT NO. 76885		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

Notes: Four steps monolithically with cap.

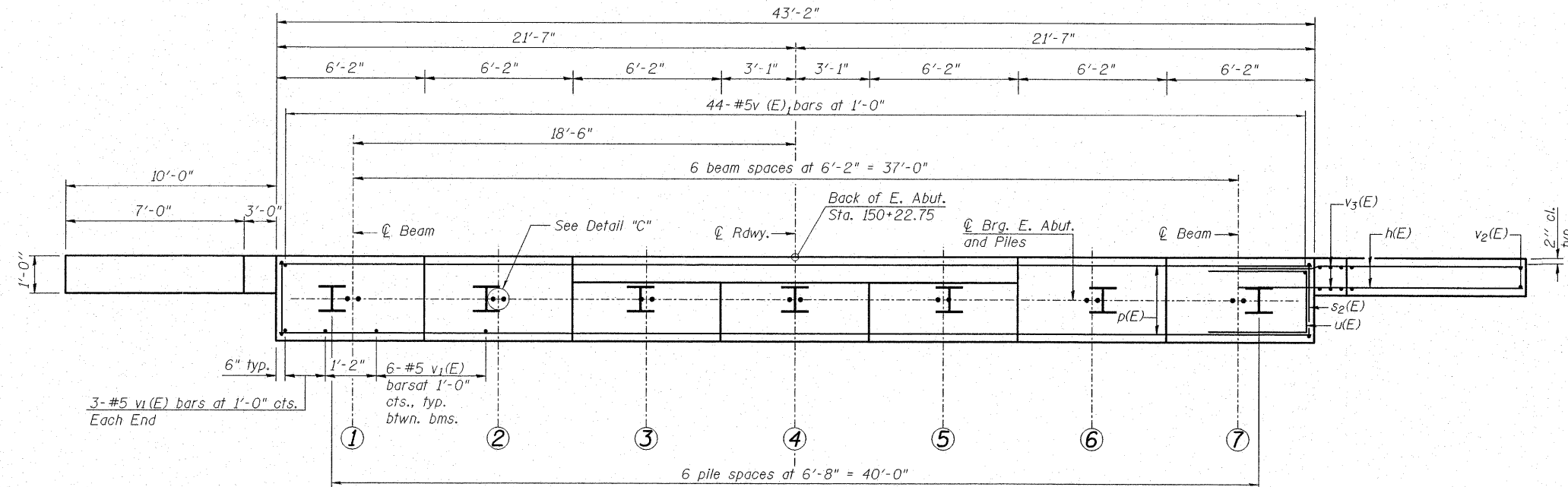
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



ELEVATION
(Looking East)



DETAIL "C"



PLAN

MIN. BAR LAP

#6 bars = 2'-7"
#7 bars = 3'-5"

PILE DATA

Type: HP 12x53
Nominal Required Bearing: 300 kips
Factored Resistance Available: 150 kips
Est. Length: 76 ft.
No. Production Piles: 6
No. Test Piles: 1
HP Pile Anchorage required for all piles, see sheet 18 of 28

Notes:

See Sheet No. 18 of 28 for Section A-A and B-B.

See Sheet No. 18 of 28 for East Abutment Bill of Material.

Bars indicated thus 40 x 5-#5 etc. indicates 40 lines of bars with 5 lengths per line.

EAST ABUTMENT
ILLINOIS ROUTE 4/15 OVER
KASKASKIA OVERFLOW
F.A.P. ROUTE 817 SEC 421B-1
ST. CLAIR COUNTY
STATION 149+50.00
STRUCTURE NO. 082-0275

DESIGNED	DB
CHECKED	RS
DRAWN	ER
CHECKED	WWH

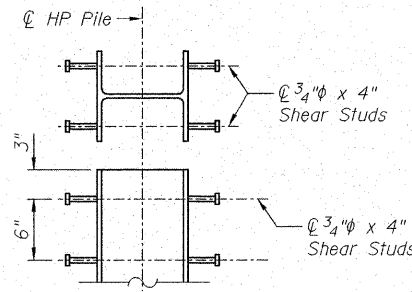
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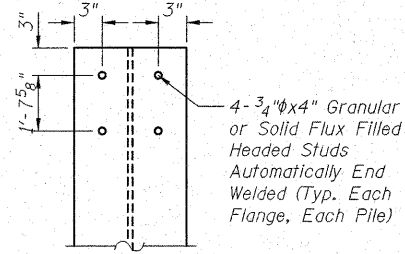
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SHEET NO. 17 28 SHEETS	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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STRUCTURE NO. 082-0275			CONTRACT NO. 76885		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT			

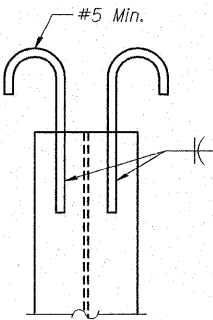
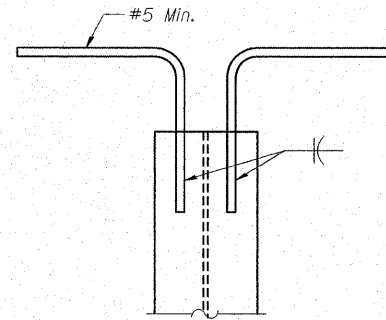
STATE OF ILLINOIS
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OPTION A



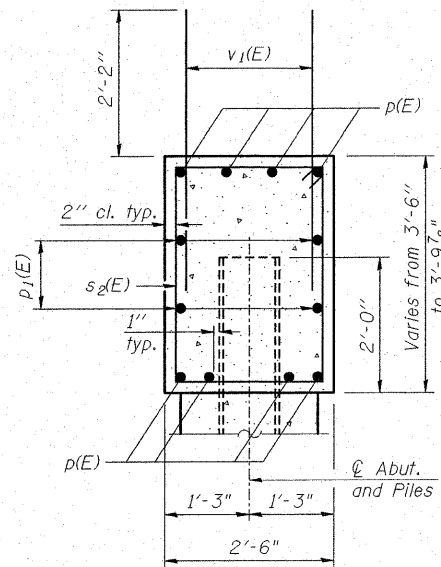
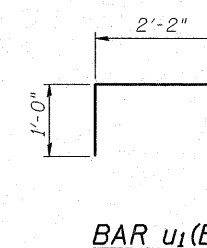
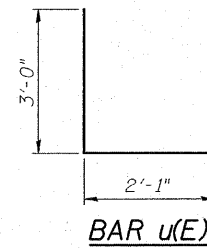
OPTION B



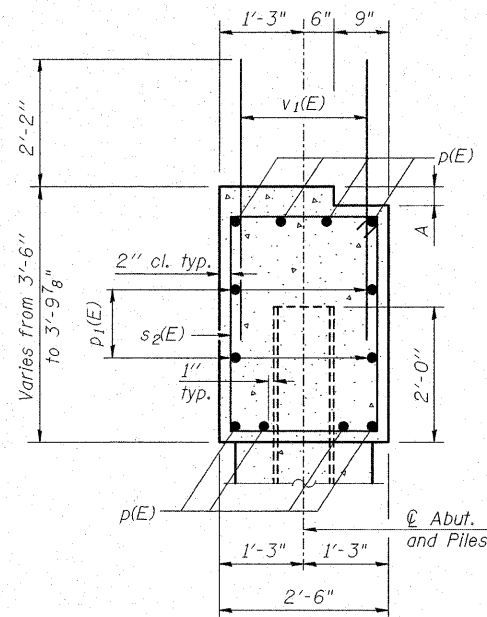
OPTION C

HP PILE ANCHORAGE

Cost of furnishing and installing HP Pile Anchorage for Option A, B or C is included in the cost unit price for Furnishing Steel Piles HP 12x53.



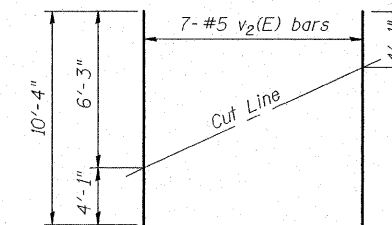
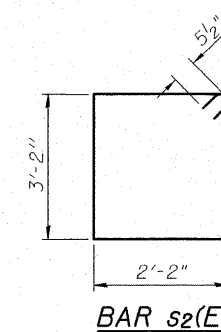
SECTION A-A
At Beam Seat 1, 2, 6, 7



SECTION B-B
At Beam Seat 3, 4, 5

DIMENSION "A"

Beam	1	2	3	4	5	6	7
"A"	-	-	1/4"	1 3/8"	1/4"	-	-



FIELD CUTTING DIAGRAM

Order v2(E) full length. Cut as shown and use remainder of bars in opposite face.

EAST ABUTMENT
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	28	#6	12'-6"	—
p(E)	16	#7	23'-2"	—
p1(E)	8	#6	22'-9"	—
p2(E)	3	#5	5'-10"	—
s2(E)	40	#5	11'-7"	□
u(E)	8	#6	8'-1"	—
u1(E)	6	#5	4'-2"	—
v1(E)	86	#5	4'-4"	—
v2(E)	14	#5	10'-4"	—
v3(E)	12	#5	6'-5"	—
Structure Excavation		Cu. Yd.	105	
Concrete Structures		Cu. Yd.	19.0	
Reinforcement Bars, Epoxy Coated		Pound	2800	
Furnishing Steel Piles HP12x53		Foot	438	
Driving Piles		Foot	438	
Test Piles HP12x53		Each	1	
Concrete Encasement		Cu. Yd.	2.5	

For HP Pile details see sheet 23 of 28.

Space reinforcement in cap to miss anchor bolts.

EAST ABUTMENT DETAILS
ILLINOIS ROUTE 4/15 OVER
KASKASKIA OVERFLOW
F.A.P. ROUTE 817 SEC 421B-1
ST. CLAIR COUNTY
STATION 149+50.00
STRUCTURE NO. 082-0275

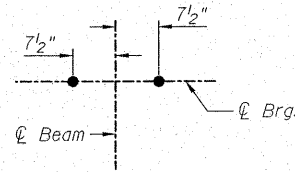
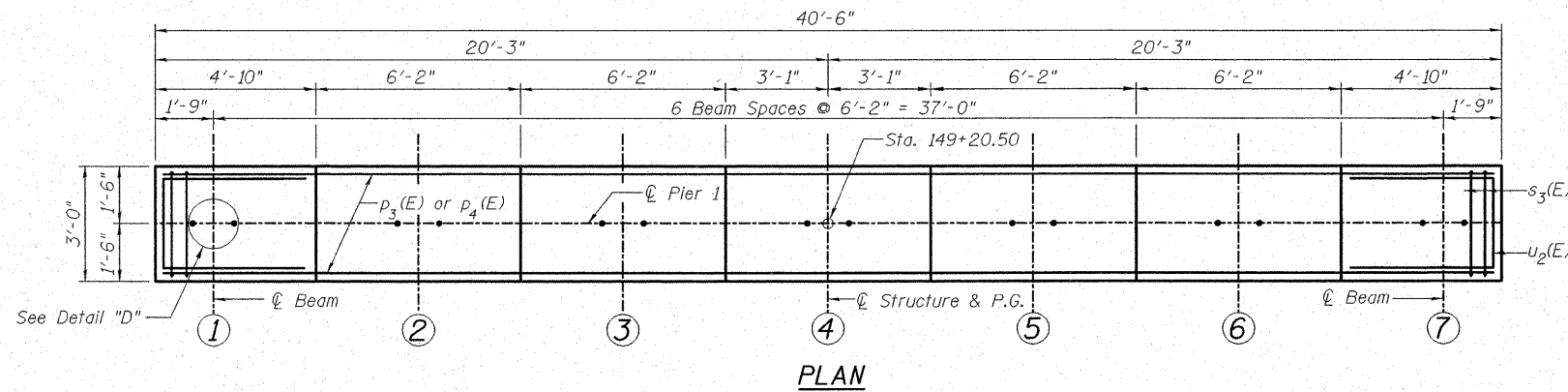
DESIGNED	DB
CHECKED	RS
DRAWN	ER
CHECKED	WWH



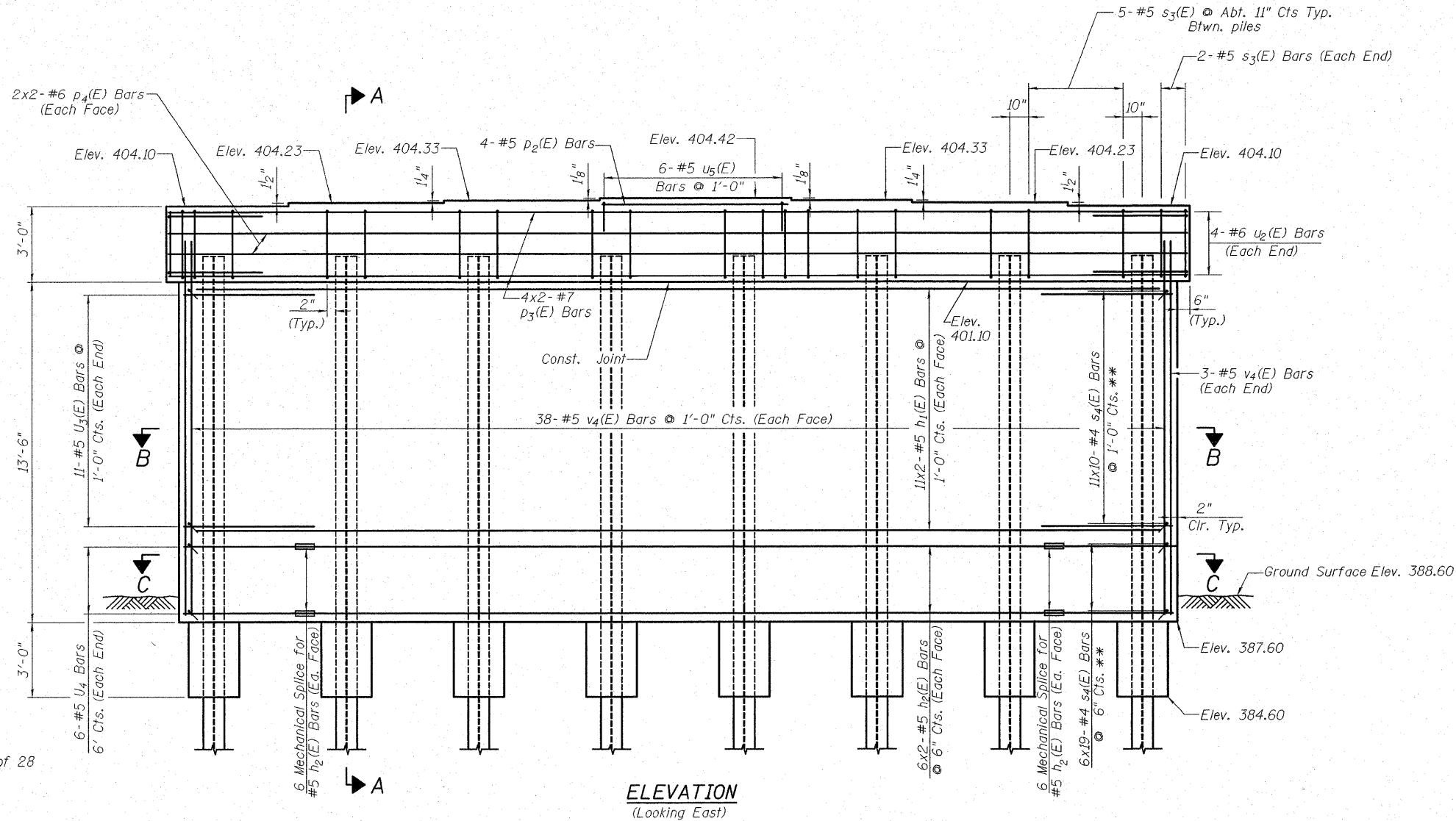
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Fax: (618) 659-0841

SHEET NO. 18 28 SHEETS	F.A.P. RTE. 817	SECTION 421B-1	COUNTY ST. CLAIR	TOTAL SHEETS 56	SHEET NO. 37
	STRUCTURE NO. 082-0275		CONTRACT NO. 76885		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT			

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



DETAIL "D"



MIN. BAR CAP

- #5 bars = 2'-2"
- #6 bars = 2'-7"
- #7 bars = 3'-5"

Notes:

See Sheet No. 20 of 28 for Section A-A, B-B and C-C.

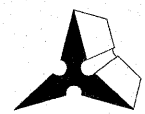
See Sheet No. 20 of 28 for Pier 1 Bill of Material.

Bars indicated thus 40 x 5-#5 etc. indicates 40 lines of bars with 5 lengths per line.

PILE DATA

Type: HP 12x53
Nominal Required Bearing: 374 kips
Factored Resistance Available: 180 kips
Est. Length: 85 ft.
No. Production Piles: 7
No. Test Piles: 1
HP Pile Anchorage required for all piles, see sheet 20 of 28

DESIGNED	DB
CHECKED	RS
DRAWN	ER
CHECKED	WWH



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Fax: (618) 659-0911

Registered Professional Service Corporation License No. 184-003389

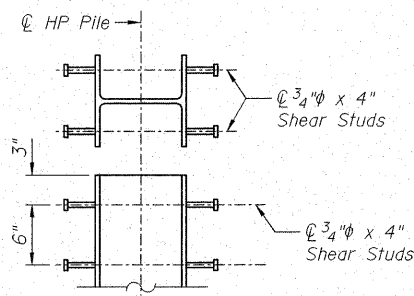
** Notes:

The 90° hooks of two successive crossties, s4(E), engaging the same vertical bar shall be alternated end for end.
Bars indicated thus 20x3-#5 etc. indicates 20 lines of bars with 3 bars per line.

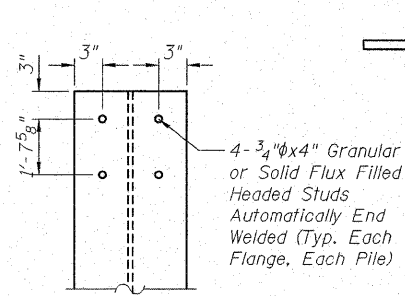
PIER 1
ILLINOIS ROUTE 4/15 OVER
KASKASKIA OVERFLOW
F.A.P. ROUTE 817 SEC 421B-1
ST. CLAIR COUNTY
STATION 149+50.00
STRUCTURE NO. 082-0275

SHEET NO. 19 28 SHEETS	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	817	421B-1	ST. CLAIR	56	38
STRUCTURE NO. 082-0275			CONTRACT NO. 76885		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT			

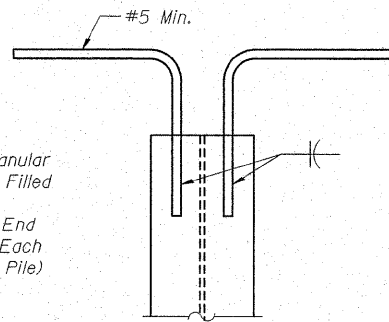
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



OPTION A



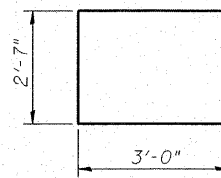
OPTION B



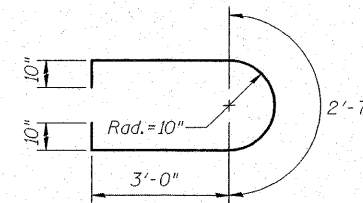
OPTION C

HP PILE ANCHORAGE

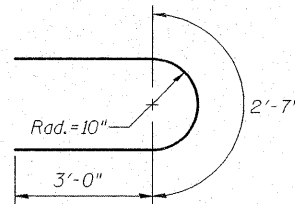
Cost of furnishing and installing HP Pile Anchorage for Option A, B or C is included in the cost unit price for Furnishing Steel Piles HP 12x53.



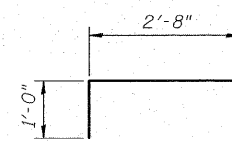
BAR u₂(E)



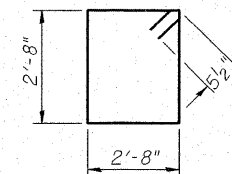
BAR u₃(E)



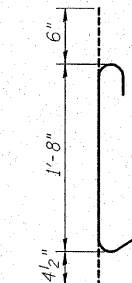
BAR u₄(E)



BAR u₅(E)



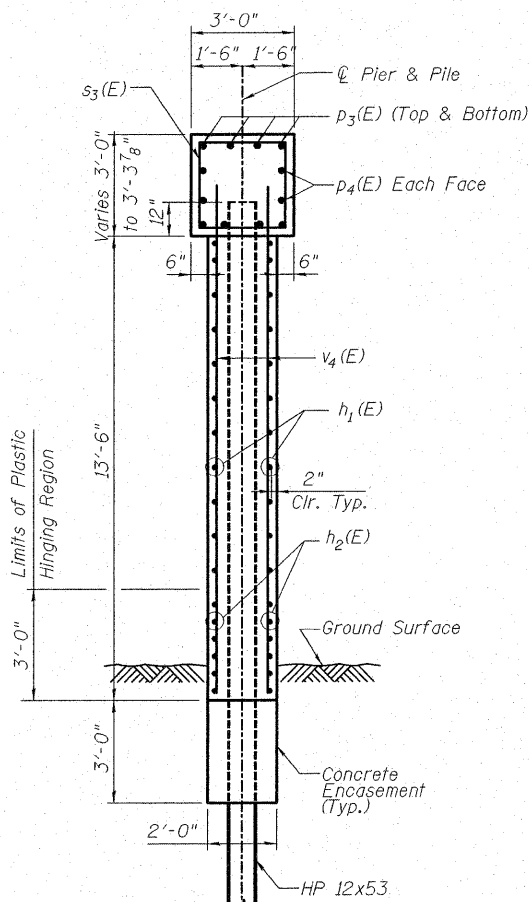
BAR s₃(E)



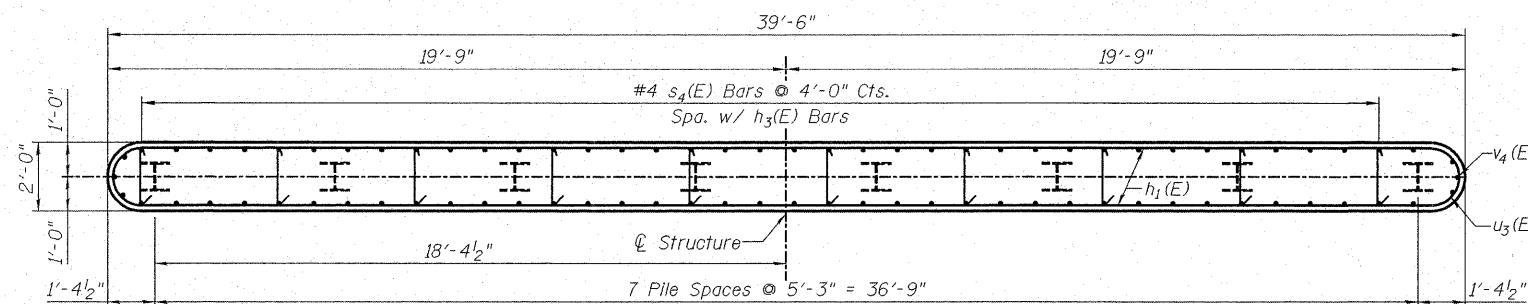
BAR s₄(E)

PIER 1
BILL OF MATERIAL

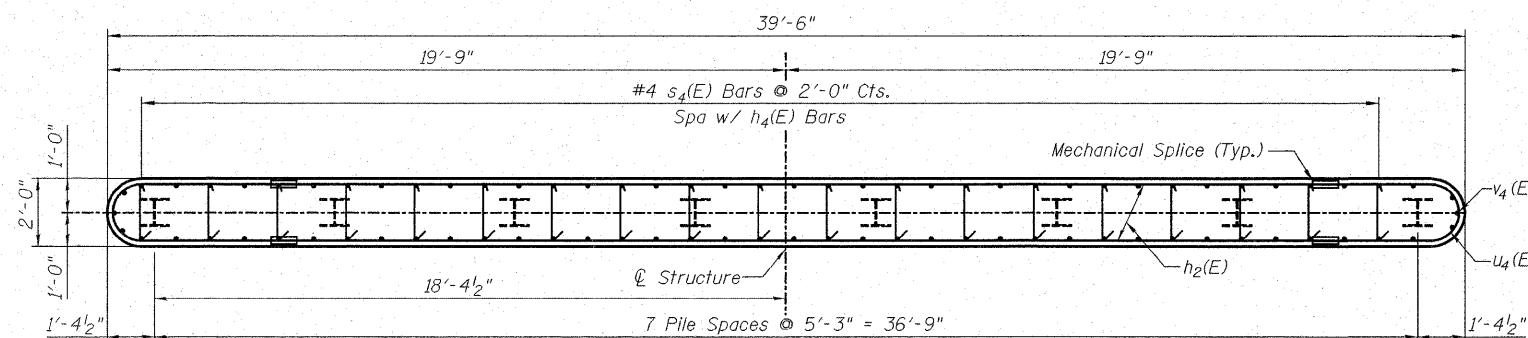
Bar	No.	Size	Length	Shape
h ₁ (E)	44	#5	19'-10"	—
h ₂ (E)	24	#5	17'-0"	—
p ₂ (E)	4	#5	5'-10"	—
p ₃ (E)	16	#7	21'-10"	—
p ₄ (E)	8	#6	21'-5"	—
s ₃ (E)	39	#5	11'-7"	□
s ₄ (E)	224	#4	2'-7"	U
u ₂ (E)	8	#6	8'-7"	U
u ₃ (E)	22	#5	10'-3"	U
u ₄ (E)	12	#5	8'-7"	U
u ₅ (E)	6	#5	4'-8"	U
v ₄ (E)	82	#5	14'-6"	—
Structure Excavation		Cu. Yd.	13	
Concrete Structures		Cu. Yd.	53.3	
Reinforcement Bars, Epoxy Coated		Pound	4910	
Furnishing Steel Piles HP12x53		Foot	595	
Driving Piles		Foot	595	
Test Piles HP12x53		Each	1	
Mechanical Splice		Each	24	
Concrete Encasement		Cu. Yd.	2.8	



SECTION A-A



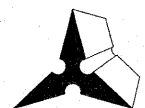
SECTION C-C



Notes:
Space reinforcement in cap to miss anchor bolts.
Pour steps monolithically with cap.
For HP Pile details see sheet 23 of 28.

PIER 1 DETAILS
ILLINOIS ROUTE 4/15 OVER
KASKASKIA OVERFLOW
F.A.P. ROUTE 817 SEC 421B-1
ST. CLAIR COUNTY
STATION 149+50.00
STRUCTURE NO. 082-0275

DESIGNED	DB
CHECKED	RS
DRAWN	ER
CHECKED	WWH



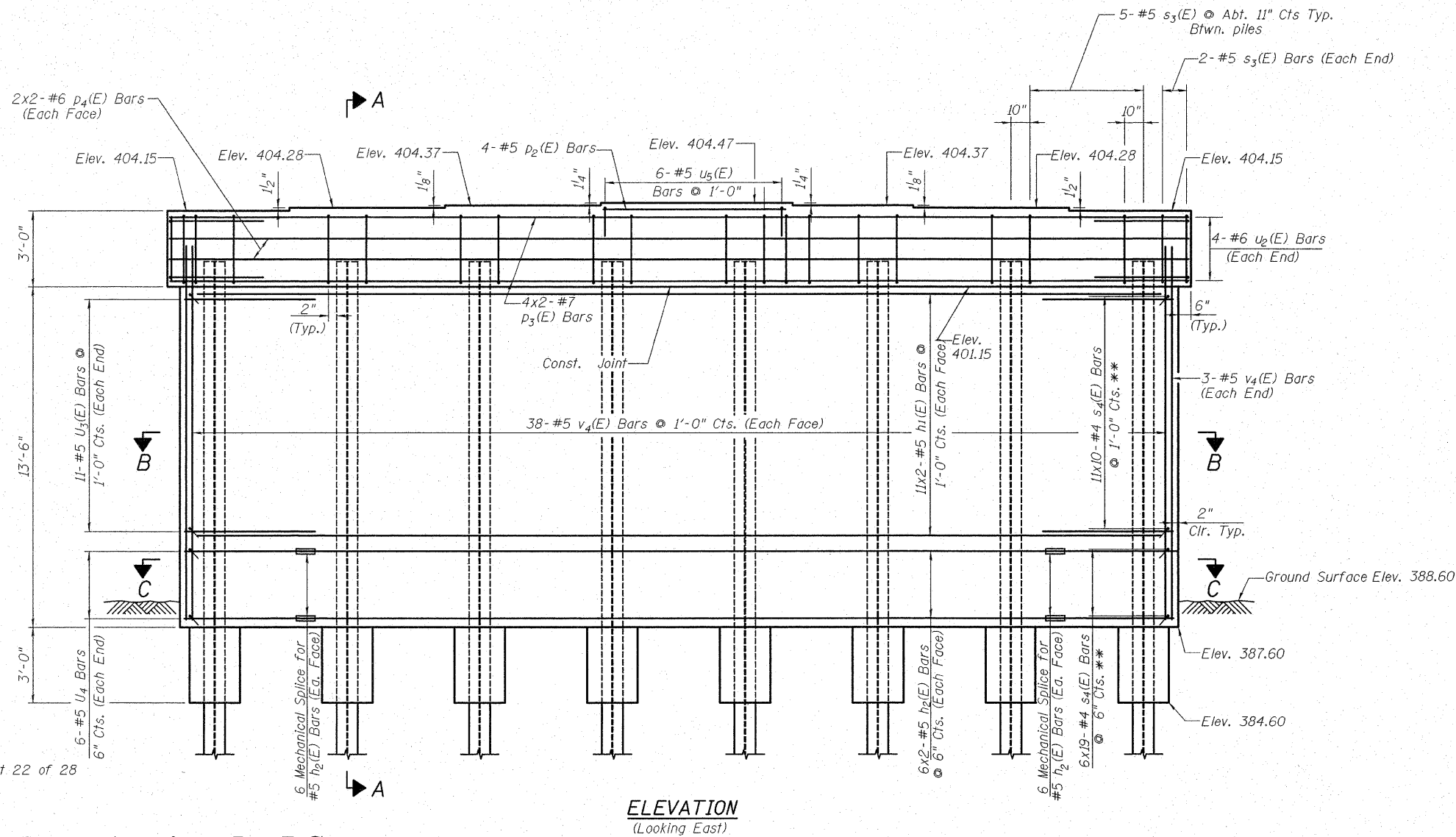
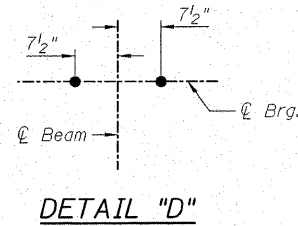
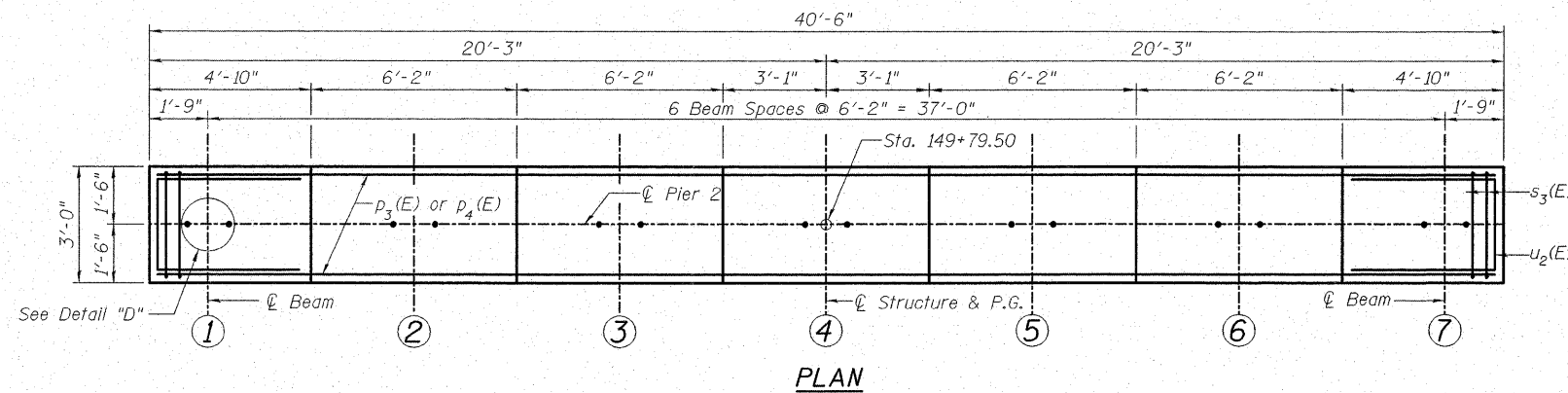
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SHEET NO. 20 28 SHEETS	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	817	421B-1	ST. CLAIR	56	39
STRUCTURE NO. 082-0275		CONTRACT NO. 76885			
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT			

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



MIN. BAR CAP

#5 bars = 2'-2"
#6 bars = 2'-7"
#7 bars = 3'-5"

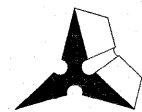
Notes:
See Sheet No. 22 of 28 for Section A-A, B-B and C-C.
See Sheet No. 22 of 28 for Pier 2 Bill of Material.
Bars indicated thus 40 x 5-#5 etc. indicates 40 lines of bars with 5 lengths per line.

PIER 2
ILLINOIS ROUTE 4/15 OVER
KASKASKIA OVERFLOW
F.A.P. ROUTE 817 SEC 421B-1
ST. CLAIR COUNTY
STATION 149+50.00
STRUCTURE NO. 082-0275

PILE DATA

Type: HP 12x53
Nominal Required Bearing: 374 kips
Factored Resistance Available: 180 kips
Est. Length: 80 ft.
No. Production Piles: 7
No. Test Piles: 1
HP Pile Anchorage required for all piles, see sheet 22 of 28

DESIGNED	DB
CHECKED	RS
DRAWN	ER
CHECKED	WWH

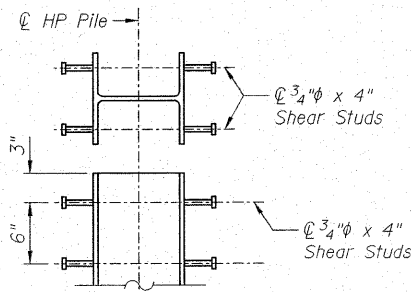


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Fax: (618) 659-0841

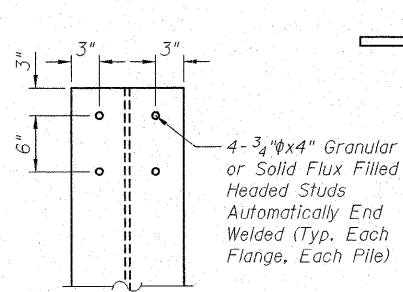
** Notes:
The 90° hooks of two successive crossties, s₄(E), engaging the same vertical bar shall be alternated end for end.
Bars indicated thus 20x3-#5 etc. indicates 20 lines of bars with 3 bars per line.

SHEET NO. 21	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	817	421B-1	ST. CLAIR	56	40
28 SHEETS	STRUCTURE NO. 082-0275		CONTRACT NO. 76885		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

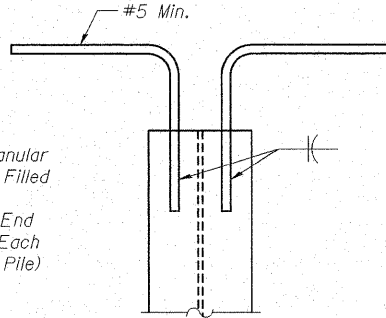
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



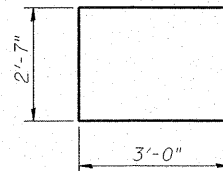
OPTION A



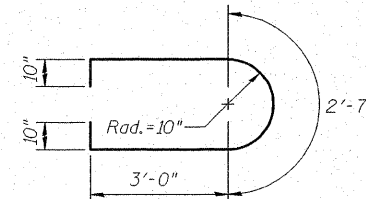
OPTION B



OPTION C



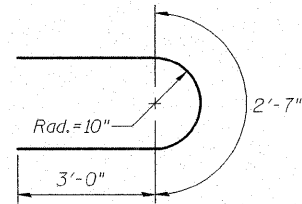
BAR u2(E)



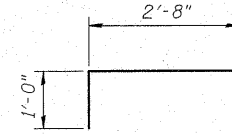
BAR u3(E)

HP PILE ANCHORAGE

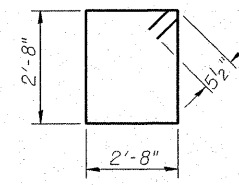
Cost of furnishing and installing HP Pile Anchorage For Option A, B or C is included in the cost unit price for Furnishing Steel Piles HP 12x53.



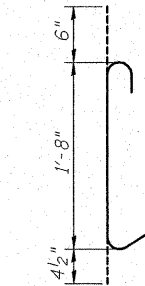
BAR u4(E)



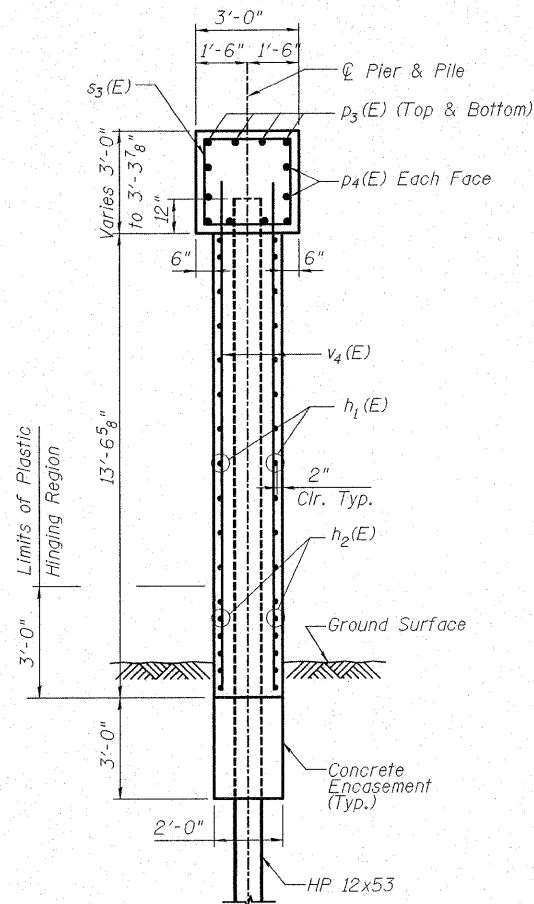
BAR u5(E)



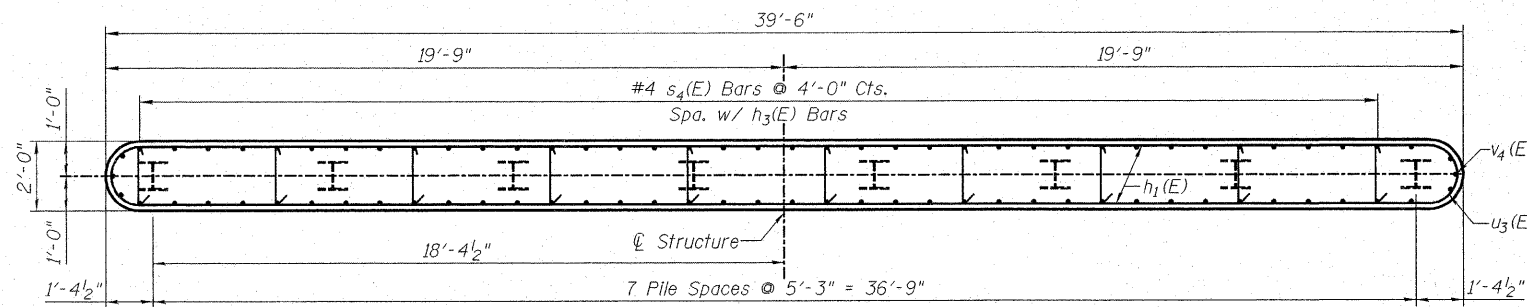
BAR s3(E)



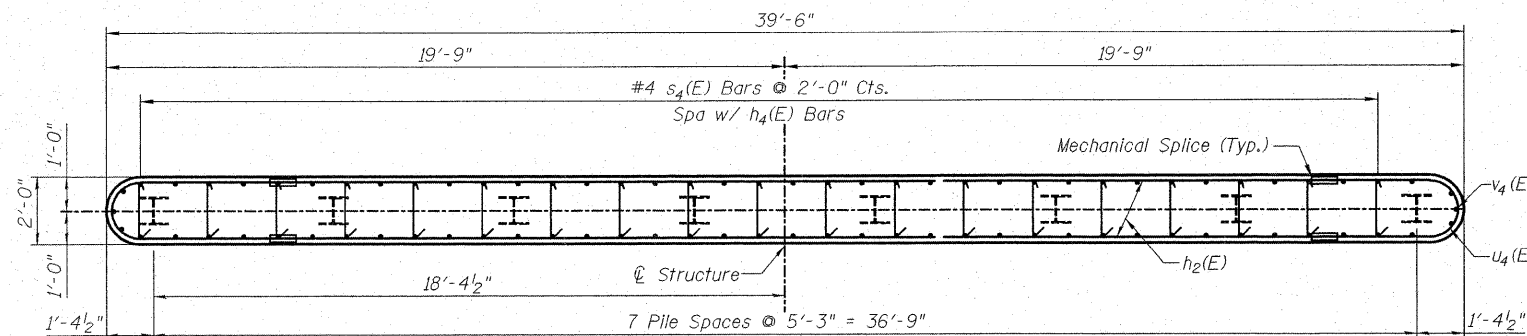
BAR s4(E)



SECTION A-A



SECTION C-C



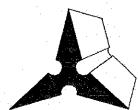
PIER 2
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h ₁ (E)	44	#5	19'-10"	—
h ₂ (E)	24	#5	17'-0"	—
p ₂ (E)	4	#5	5'-10"	—
p ₃ (E)	16	#7	21'-10"	—
p ₄ (E)	8	#6	21'-5"	—
s ₃ (E)	39	#5	11'-7"	□
s ₄ (E)	224	#4	2'-7"	U
u ₂ (E)	8	#6	8'-7"	U
u ₃ (E)	22	#5	10'-3"	U
u ₄ (E)	12	#5	8'-7"	U
u ₅ (E)	8	#5	4'-8"	U
v ₄ (E)	82	#5	14'-6"	—
Structure Excavation	Cu. Yd.		13	
Concrete Structures	Cu. Yd.		53.3	
Reinforcement Bars, Epoxy Coated	Pound		4910	
Furnishing Steel Piles HP12x53	Foot		560	
Driving Piles	Foot		560	
Test Piles HP12x53	Each		1	
Mechanical Splice	Each		24	
Concrete Encasement	Cu. Yd.		2.8	

Notes:
Space reinforcement in cap to miss anchor bolts.
Four steps monolithically with cap.
For HP Pile details see sheet 23 of 28.

PIER 2 DETAILS
ILLINOIS ROUTE 4/15 OVER
KASKASKIA OVERFLOW
F.A.P. ROUTE 817 SEC 421B-1
ST. CLAIR COUNTY
STATION 149+50.00
STRUCTURE NO. 082-0275

DESIGNED	DB
CHECKED	RS
DRAWN	ER
CHECKED	WWH



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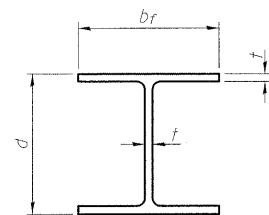
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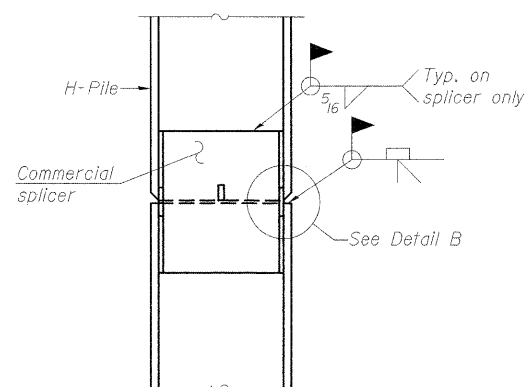
SHEET NO. 22 28 SHEETS	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	817	421B-1	ST. CLAIR	56	41
STRUCTURE NO. 082-0275		CONTRACT NO. 76885			
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT			

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

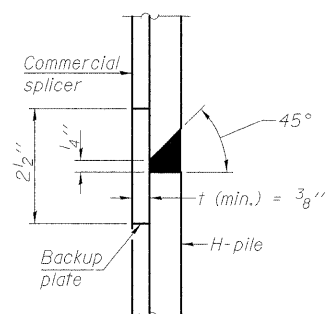


STEEL PILE TABLE

Designation	Depth d	Flange width b _f	Web and Flange thickness t	Encasement diameter A
HP 14x117	14 1/4"	14 7/8"	1 3/16"	30"
x102	14"	14 3/4"	1 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 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"

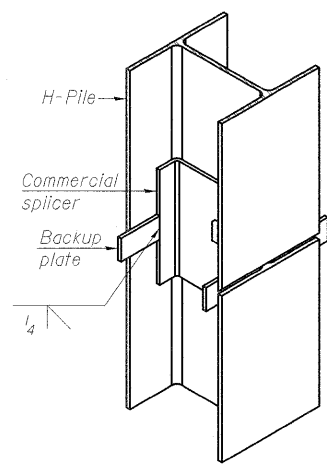


ELEVATION

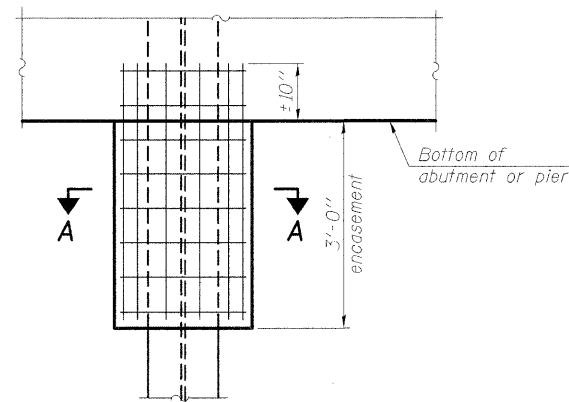


DETAIL "B"

WELDED COMMERCIAL SPLICE

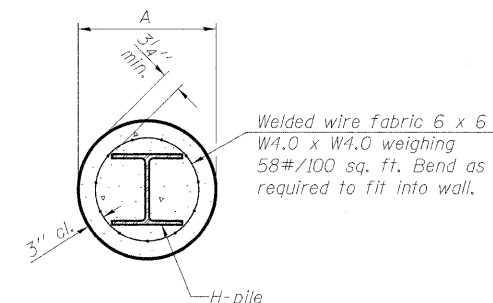


ISOMETRIC VIEW



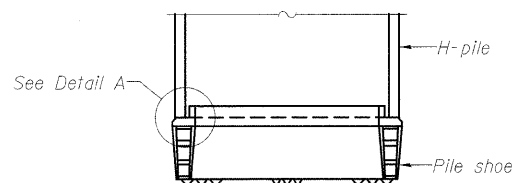
ELEVATION

PILE ENCASEMENT

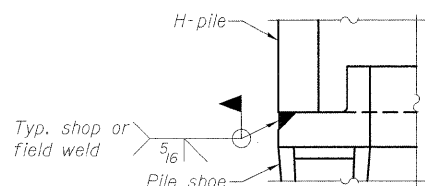


SECTION A-A

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

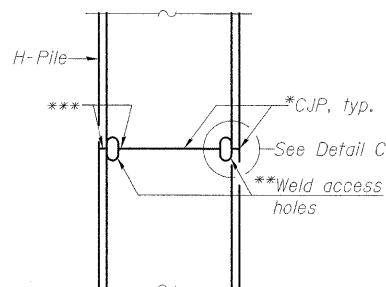


ELEVATION



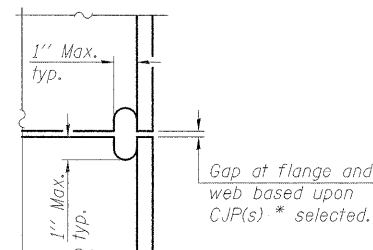
DETAIL A

H-PILE SHOE ATTACHMENT

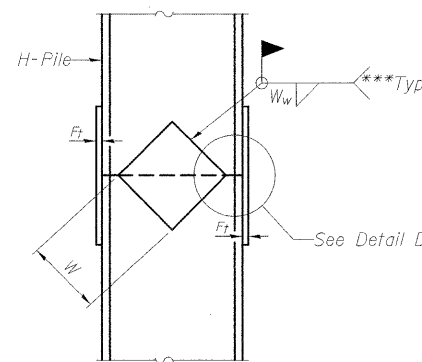


ELEVATION

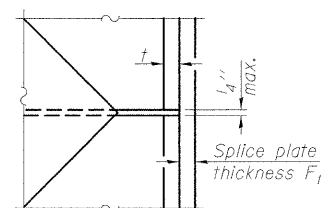
COMPLETE PENETRATION WELD SPLICE



DETAIL C

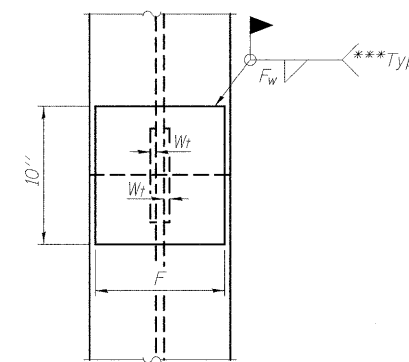


ELEVATION



DETAIL D

WELDED PLATE FIELD SPLICE



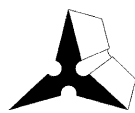
END VIEW

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

HP PILE DETAILS
ILLINOIS ROUTE 4/15 OVER
KASKASKIA OVERFLOW
F.A.P. ROUTE 817 SEC 421B-1
ST. CLAIR COUNTY
STATION 149+50.00
STRUCTURE NO. 082-0275

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

DESIGNED	DB
CHECKED	RS
DRAWN	ER
CHECKED	WWH



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*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.

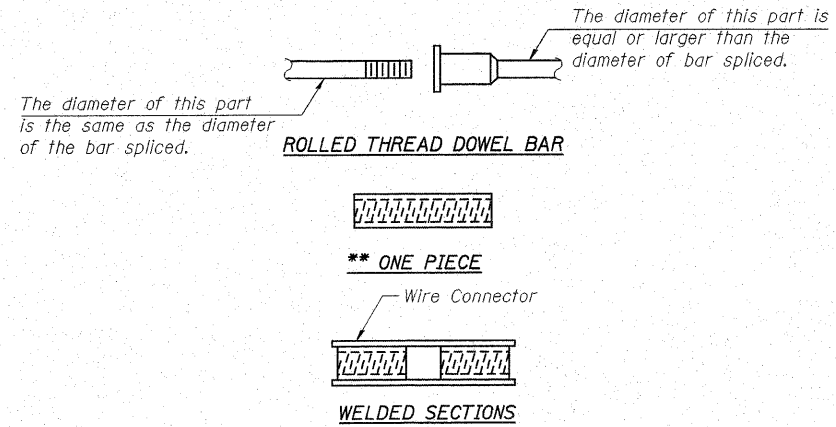
SHEET NO. 23	F.A.P. RTE. 817	SECTION 421B-1	COUNTY ST. CLAIR	TOTAL SHEETS 56	SHEET NO. 42
28 SHEETS	STRUCTURE NO. 082-0275		CONTRACT NO. 76885		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT			

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

NOTES

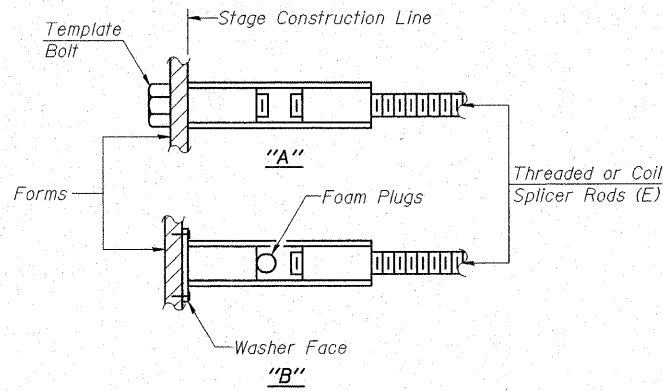
Bar splicer assemblies shall be of an approved type and shall develop in tension at least 125 percent of the yield strength of the lapped reinforcement bars.
Splicer rods shall be of minimum 60 ksi yield strength, threaded or coiled full length.
All reinforcement bars shall be lapped and tied to the splicer rods or dowel bars.
Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars.
Other systems of similar design may be submitted to the Engineer for approval. Approval shall be based on certified test results from an approved testing laboratory that the proposed bar splicer assembly satisfies the following requirements:

- ① Minimum Capacity (Tension in kips) = $1.25 \times f_y \times A_l$
 - ② Minimum *Pull-out Strength (Tension in kips) = $0.66 \times f_y \times A_l$
- Where f_y = Yield strength of lapped reinforcement bars in ksi.
 A_l = Tensile stress area of lapped reinforcement bars.
* = 28 day concrete



BAR SPLICER ASSEMBLY ALTERNATIVES

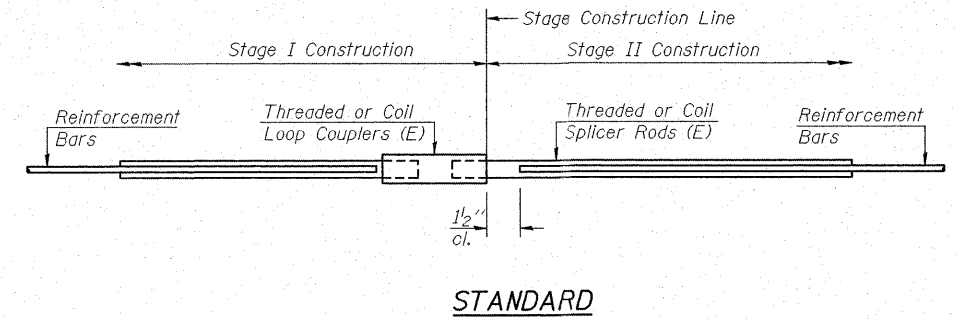
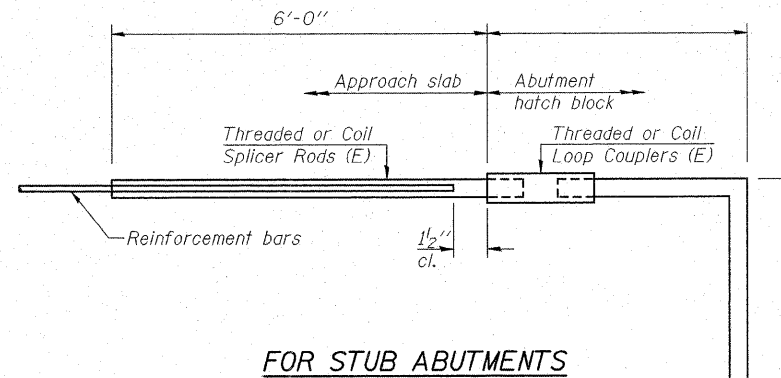
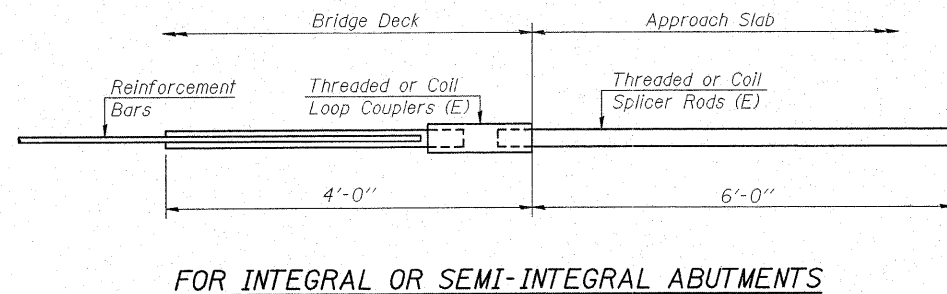
**Heavy Hex Nuts conforming to ASTM A 563, Grade C, D or DH may be used.



INSTALLATION AND SETTING METHODS

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

Bar Size to be Spliced	Splicer Rod or Dowel Bar Length	Strength Requirements	
		Min. Capacity kips - tension	Min. Pull-Out Strength kips - tension
#4	1'-8"	14.7	7.9
#5	2'-0"	23.0	12.3
#6	2'-7"	33.1	17.4
#7	3'-5"	45.1	23.8
#8	4'-6"	58.9	31.3
#9	5'-9"	75.0	39.6
#10	7'-3"	95.0	50.3
#11	9'-0"	117.4	61.8



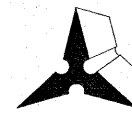
Bar Size	No. Assemblies Required	Location

BAR SPLICER ASSEMBLY DETAILS
ILLINOIS ROUTE 4/15 OVER
KASKASKIA OVERFLOW
F.A.P. ROUTE 817 SEC 421B-1
ST. CLAIR COUNTY
STATION 149+50.00
STRUCTURE NO. 082-0275

DESIGNED DB
CHECKED RS
DRAWN ER
CHECKED WWH

Bar Splicer for #5 bar
Min. Capacity = 23.0 kips - tension
Min. Pull-out Strength = 12.3 kips - tension
No. Required = 80

Bar Splicer for #5 bar
Min. Capacity = 23.0 kips - tension
Min. Pull-out Strength = 12.3 kips - tension
No. Required =



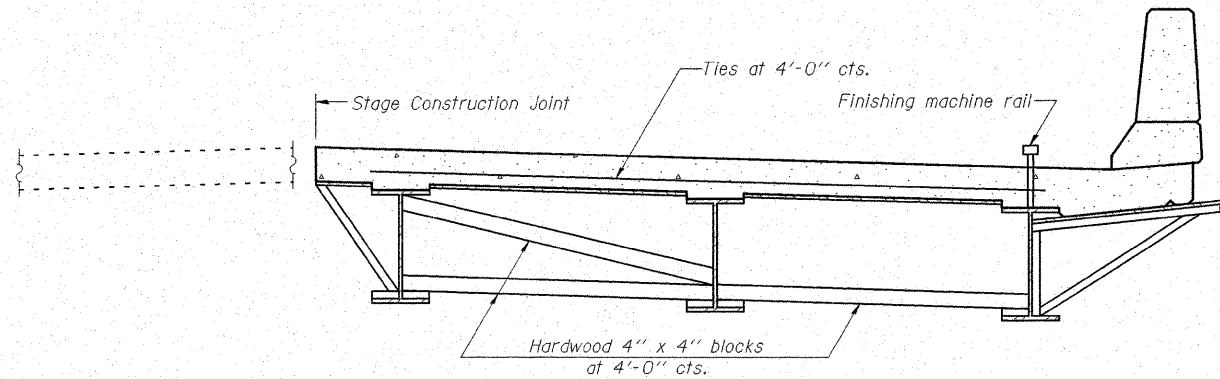
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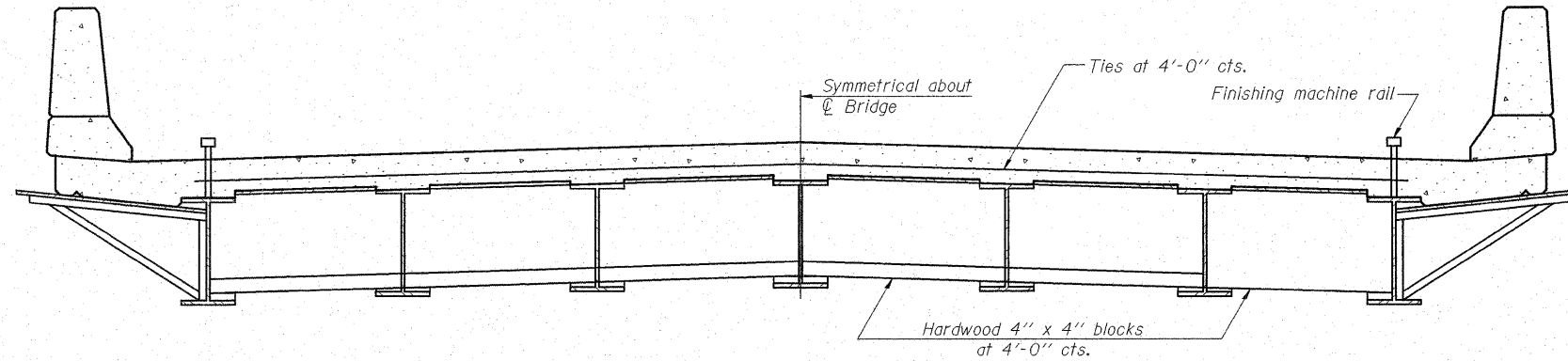
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Fax: (618) 659-0841

SHEET NO. 24	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	817	421B-1	ST. CLAIR	54	43
28 SHEETS	STRUCTURE NO. 082-0275		CONTRACT NO. 76885		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



FORM BRACES FOR STAGE CONSTRUCTION

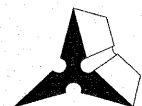


FORM BRACES FOR STANDARD CONSTRUCTION

When cantilever forming brackets are used, the work shall be done according to Article 503.06(b) of the Standard Specifications, except as modified below and in the details shown on this sheet.
The finishing machine rails shall be placed on the top flange of the exterior beams.
The beams or girders, supporting cantilever forming brackets, shall be tied together at 4 foot intervals.
For Standard construction, or Stage Construction the Hardwood bracing materials shall be placed as shown between webs of beams in each bay.

CANTILEVER FORMING BRACKET
ILLINOIS ROUTE 4/15 OVER
KASKASKIA OVERFLOW
F.A.P. ROUTE 817 SEC 421B-1
ST. CLAIR COUNTY
STATION 149+50.00
STRUCTURE NO. 082-0275

DESIGNED	DB
CHECKED	RS
DRAWN	ER
CHECKED	WWH



Juneau Associates, Inc. P.C.
CONSULTING ENGINEERS AND LAND SURVEYORS

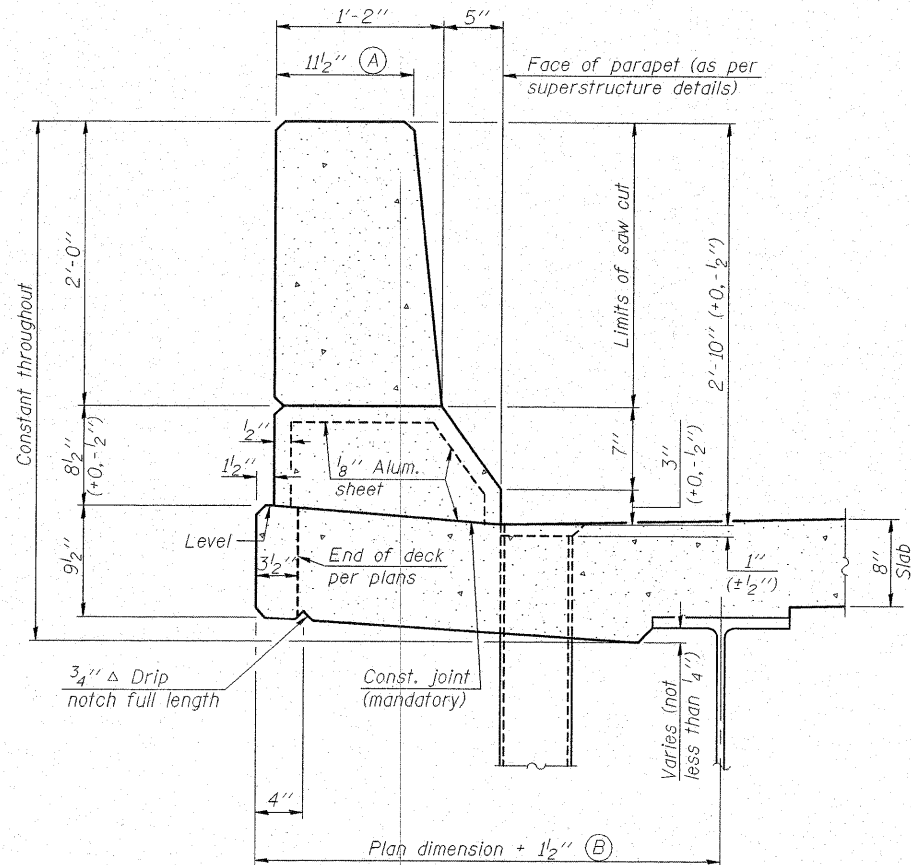
2100 State Street
Granite City, Illinois 62040
Phone: (618) 877-1400
Fax: (618) 452-5541

100 North Research Drive
Edwardsville, Illinois 62025
Phone: (618) 659-0900/(618) 959-0900
Fax: (618) 659-0941

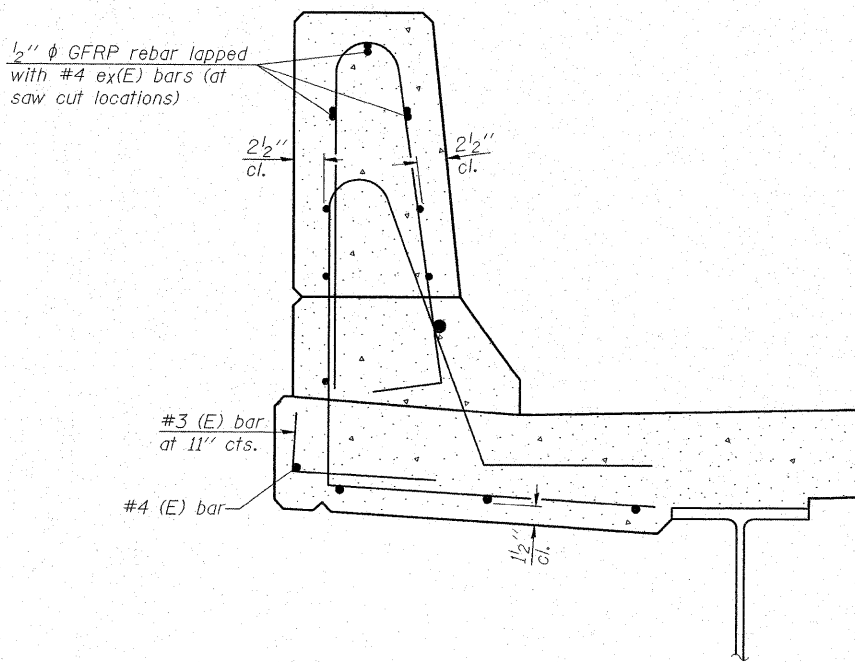
Registered Professional Service Corporation License No. 194-003890

SHEET NO. 25	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	817	421B-1	ST. CLAIR	56	44
28 SHEETS	STRUCTURE NO. 082-0275		CONTRACT NO. 76885		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



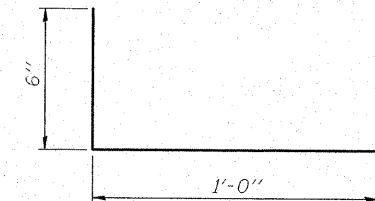
SECTION
(Showing dimensions)



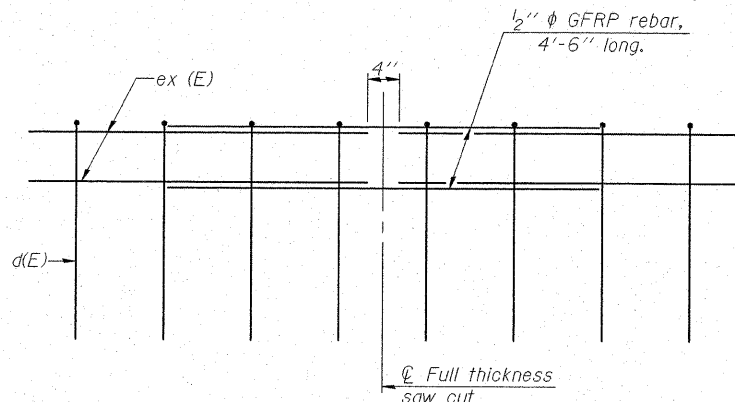
SECTION
(Showing reinforcement clearances for slip forming and additional reinforcement bars)

GENERAL NOTES

All dimensions shall remain the same as shown on contract plans, except dimensions A and B which are to be revised as shown to provide additional clearance. Additional concrete needed to revise dimension A and B = 0.0165 cu. yds./ft. of parapet.
Place aluminum sheet in curb portion at and near piers. Full thickness saw cut at all joint locations in lieu of cork joint filler.



#3 (E) BAR



GFRP REBAR STIFFENING DETAIL

(Place as shown in parapet section at each parapet joint location.)

**CONCRETE PARAPET
SLIPFORMING OPTION
ILLINOIS ROUTE 4/15 OVER
KASKASKIA OVERFLOW
F.A.P. ROUTE 817 SEC 421B-1
ST. CLAIR COUNTY
STATION 149+50.00
STRUCTURE NO. 082-0275**

DESIGNED DB
CHECKED RS
DRAWN ER
CHECKED WWH

SFP-34 5-16-08

Juneau Associates, Inc. P.C.
CONSULTING ENGINEERS AND LAND SURVEYORS

2100 State Street
Granite City, Illinois 62040
Phone: (618) 977-1400
Fax: (618) 452-5541

100 North Research Drive
Edwardsville, Illinois 62025
Phone: (618) 659-0000/(618) 659-0800
Fax: (618) 659-0841

Registered Professional Service Corporation License No. 184-000389

SHEET NO. 26 28 SHEETS	F.A.P. RTE. 817	SECTION 421B-1	COUNTY ST. CLAIR	TOTAL SHEETS 56	SHEET NO. 45
	STRUCTURE NO. 082-0275		CONTRACT NO. 76885		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT			

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

Illinois Department of Transportation SOIL BORING LOG Page 1 of 3
Date 7/16/07

ROUTE FAP 817 DESCRIPTION IL 4/15 over Kaskaskia River Overflow LOGGED BY S. Waszkon

SECTION 421B-1 LOCATION NE 1/4, SEC. 5, TWP. 2S, RNG. 6W, 3 PM

COUNTY St. Clair DRILLING METHOD Hollow Stem Auger HAMMER TYPE 140# Automatic

STRUCT. NO. 082-0275 (E) / 082-0275 (P)
Station 149+50 (E)

BORING NO. SB 2 W. Abut
Station 149+51
Offset 25.00ft Right
Ground Surface Elev. 428.0 ft

DEPTH (ft)	SOIL DESCRIPTION	DRILLING METHOD	HAMMER TYPE	DEPTH (ft)	SOIL DESCRIPTION	DRILLING METHOD	HAMMER TYPE
0	Surface Water Elev. _____ ft			0	1.30	25	
0	Stream Bed Elev. _____ ft			0	5/20		
	Groundwater Elev. _____ ft						
	First Encounter _____ ft						
	Upon Completion _____ ft						
	After _____ Hrs. _____ ft						
1	Brown Silty Clay LOAM			1	5	1.30	25
2				2	4		
2	0.45	24		3	8	1.43	20
4	5/15			4	7	5/20	19
				5	7	0.18	
				6	7	5/10	
				7	9		8
				8	13	NC	
				9	5		8
				10	7	NC	
				11	7		8
				12	4		7
				13	7	NC	
				14	5		7
				15	7	NC	
				16	7		7
				17	4		7
				18	5		7
				19	7	NC	
				20	7		7
				21	7		7
				22	7		7
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				36	7		7
				37	7		7
				38	7		7
				39	7		7
				40	7		7

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (ASTM T208)

BBS, from 137 (Rev. 8-99)

Illinois Department of Transportation SOIL BORING LOG Page 2 of 3
Date 7/16/07

ROUTE FAP 817 DESCRIPTION IL 4/15 over Kaskaskia River Overflow LOGGED BY S. Waszkon

SECTION 421B-1 LOCATION NE 1/4, SEC. 5, TWP. 2S, RNG. 6W, 3 PM

COUNTY St. Clair DRILLING METHOD Hollow Stem Auger HAMMER TYPE 140# Automatic

STRUCT. NO. 082-0275 (E) / 082-0275 (P)
Station 149+50 (E)

BORING NO. SB 2 W. Abut
Station 149+51
Offset 25.00ft Right
Ground Surface Elev. 428.0 ft

DEPTH (ft)	SOIL DESCRIPTION	DRILLING METHOD	HAMMER TYPE	DEPTH (ft)	SOIL DESCRIPTION	DRILLING METHOD	HAMMER TYPE
0	Surface Water Elev. _____ ft			0	1.30	25	
0	Stream Bed Elev. _____ ft			0	5/20		
	Groundwater Elev. _____ ft						
	First Encounter _____ ft						
	Upon Completion _____ ft						
	After _____ Hrs. _____ ft						
1	Mottled Loamy SAND			1	7	NC	21
2	See Gradation @ 40 ft (continued)			2	13	NC	18
3				3	13	NC	18
4				4			
5				5			
6				6			
7				7			
8				8			
9				9			
10				10			
11				11			
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The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (ASTM T208)

BBS, from 137 (Rev. 8-99)

Illinois Department of Transportation SOIL BORING LOG Page 3 of 3
Date 7/16/07

ROUTE FAP 817 DESCRIPTION IL 4/15 over Kaskaskia River Overflow LOGGED BY S. Waszkon

SECTION 421B-1 LOCATION NE 1/4, SEC. 5, TWP. 2S, RNG. 6W, 3 PM

COUNTY St. Clair DRILLING METHOD Hollow Stem Auger HAMMER TYPE 140# Automatic

STRUCT. NO. 082-0275 (E) / 082-0275 (P)
Station 149+50 (E)

BORING NO. SB 2 W. Abut
Station 149+51
Offset 25.00ft Right
Ground Surface Elev. 428.0 ft

DEPTH (ft)	SOIL DESCRIPTION	DRILLING METHOD	HAMMER TYPE	DEPTH (ft)	SOIL DESCRIPTION	DRILLING METHOD	HAMMER TYPE
0	Surface Water Elev. _____ ft			0	1.30	25	
0	Stream Bed Elev. _____ ft			0	5/20		
	Groundwater Elev. _____ ft						
	First Encounter _____ ft						
	Upon Completion _____ ft						
	After _____ Hrs. _____ ft						
1	Gray Coarse to Fine SAND			1	3	NC	18
2	See Gradation @ 60 ft (continued)			2	3	NC	18
3				3			
4				4			
5				5			
6				6			
7				7			
8				8			
9				9			
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39				39			
40				40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (ASTM T208)

BBS, from 137 (Rev. 8-99)

DESIGNED DB
CHECKED RS
DRAWN ER
CHECKED WWH

Juneau Associates, Inc. P.C.
CONSULTING ENGINEERS AND LAND SURVEYORS
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Phone: (618) 877-1400
Fax: (618) 452-4541
Registered Professional Service Corporation License No. 184-010389

100 North Research Drive
Edwardsville, Illinois 62025
Phone: (618) 656-8000 / (618) 460-0800
Fax: (618) 659-0811

BORING LOGS
ILLINOIS ROUTE 4/15 OVER
KASKASKIA OVERFLOW
F.A.P. ROUTE 817 SEC 421B-1
ST. CLAIR COUNTY
STATION 149+50.00
STRUCTURE NO. 082-0275

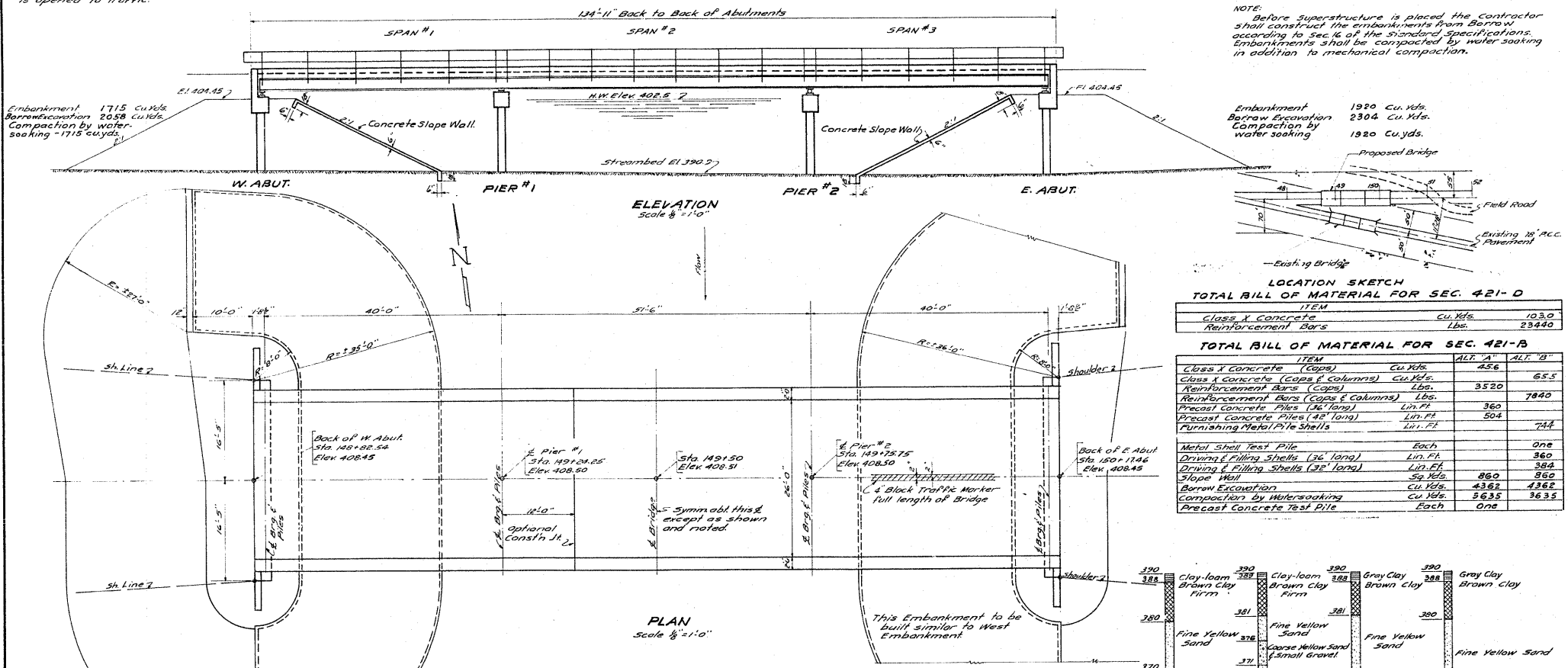
SHEET NO. 28 28 SHEETS	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	817	421B-1	ST. CLAIR	56	47
STRUCTURE NO. 082-0275		CONTRACT NO. 76885			
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT			

341' Top of Subguard of NW Corner of Bridge
 33' RT. Sta. 149+02 Elev. 402.42
 Existing Structure - 3-32' I-Beam spans on
 cross-tied Pile Bents to be removed by
 Pavement Contractor after New Pavement
 is opened to traffic.

STATE OF ILLINOIS
 DEPARTMENT OF PUBLIC WORKS & BUILDINGS
 DIVISION OF HIGHWAYS

SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
421-B	St. Clair	41	31

SHEET NO. 1
5 SHEETS



NOTE: Before Superstructure is placed the Contractor shall construct the embankments from Borrow according to sec. 16 of the Standard Specifications. Embankments shall be compacted by water-soaking in addition to mechanical compaction.

Embankment 1715 Cu. Yds.
 Borrow Excavation 2058 Cu. Yds.
 Compaction by water-soaking - 1715 Cu. Yds.

Embankment 1920 Cu. Yds.
 Borrow Excavation 2304 Cu. Yds.
 Compaction by water-soaking 1920 Cu. Yds.



TOTAL BILL OF MATERIAL FOR SEC. 421-D

ITEM	CU. YDS.	103.0
Class X Concrete		
Reinforcement Bars	Lbs.	23440

TOTAL BILL OF MATERIAL FOR SEC. 421-B

ITEM	CU. YDS.	ALT. 'A'	ALT. 'B'
Class X Concrete (Cops)	45.6		
Class X Concrete (Caps & Columns)	65.5		
Reinforcement Bars (Cops)	3520		65.5
Reinforcement Bars (Caps & Columns)	7840		
Precast Concrete Piles (36' long)	360		
Precast Concrete Piles (42' long)	504		
Furnishing Metal Pile Shells			744
Metal Shell Test Pile	One		
Driving & Filling Shells (36' long)	360		
Driving & Filling Shells (42' long)	504		
Slope Wall	860		860
Borrow Excavation	4362		4362
Compaction by Water-soaking	5635		5635
Precast Concrete Test Pile	One		

GENERAL NOTES

Class X concrete shall be used throughout. Concrete floor slab shall be poured in one continuous operation between construction. Its shown and finished in accordance with Art. 613(e) of the Standard Specifications. Reinforced Joint filler shall conform with Art. 115.67 or 115.68 of the Standard Specifications. Slope walls shall be reinforced with welded wire fabric, 6"x6" mesh, #4 wire, weighing 50 lbs. per 100 sq. ft. All rivets and open holes shall be except as noted. All connections shall be riveted except as noted. All splices for stringers shall have rivet holes punched and reamed to proper size with all stringers of a continuous unit assembled in shop in their proper positions, with or without the Diaphragms in place. Leave assembled for shop inspection. See sheet #2 for field reaming of Rail Post connections and alignment of Rolling. Provide one Lock Washer on all bolts connecting Rail to Posts, also provide 1/2" and 1-3/8" Shims for Rail connections to 80% of Posts. All Rollers, Bearing Plates, Lead Plates and Anchor Bolts shall be furnished, painted and set in accordance with Art. 54.3(d) of the Standard Specifications and paid for as Structural Steel. No sectional construction joints will be allowed in concrete floor slab.

Anchor Bolts shall be set before riveting Diaphragms over Abutments and Piers. Inspection of Structural Steel by Illinois Division of Highways before painting. Structural Steel shall receive one shop coat of red lead paint, see Art. 55.8 of the Standard Specifications for painting of contact and inaccessible surfaces and surfaces in contact with concrete. Shop paint shall be furnished and applied by the Contractor for section 421-B.

After erection rivet heads and abrasions to shop coat shall be spot painted with red lead paint by Contractor for Sec. 421-B.

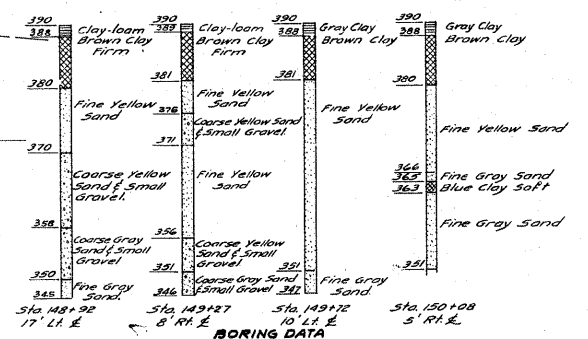
All structural steel shall receive two field coats of aluminum paint which shall be furnished and applied by Contractor for Sec. 421-B.

The Contractor shall drive one Test Pile (Metal Shell or Precast Concrete Pile) as directed by the Engineer before casting or ordering remainder of Piles. Boring Data are shown on the drawings only as a guide to bidders in estimating soil conditions which may be encountered in the work.

WATERWAY DATA

Waterway Area 294250 Acres
 Character - Rolling - Bridges
 Equivalent (Railroad) 34
 Present Bridge Opening 720 Sq. Ft.
 Opening Provided 1050 Sq. Ft. This Bridge
 Opening Provided (4 Bridges) 2450 Sq. Ft.

$f_s = 12000 \frac{1}{2} \frac{1}{2}$ 5/8 Steel
 $f_c = 20000 \frac{1}{2}$ Reinf.
 $f_c = 17500 \frac{1}{2}$
 $n = 18$
 N=20 LOADING



TOTAL BILL OF MATERIAL FOR SECS. 421-F, 421-E & 421-P

ITEM	LIB.	SEC. 421-F	SEC. 421-E	SEC. 421-P
Structural Steel	Lbs.	100,680	100,680	
Name Plates	Each		One	
Painting Structural Steel	Lbs.			100,680

GENERAL PLAN & ELEVATION
 OVERFLOW CHANNEL OF KASKASKIA RIVER
 S.B.I. RT. 150 (F.A. RT. 68) SEC. 421-BDE-F-P
 ST. CLAIR COUNTY
 STA. 149+50

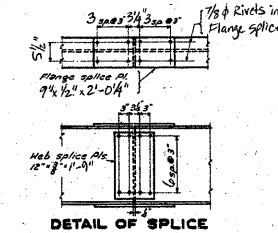
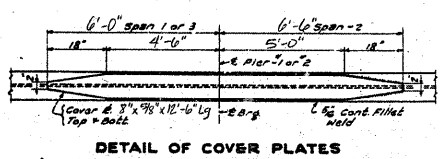
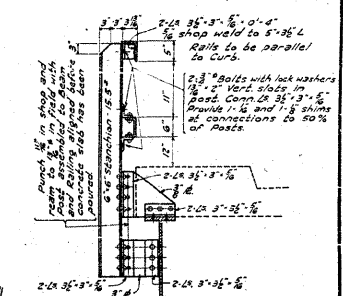
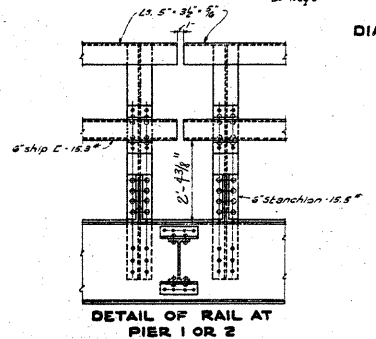
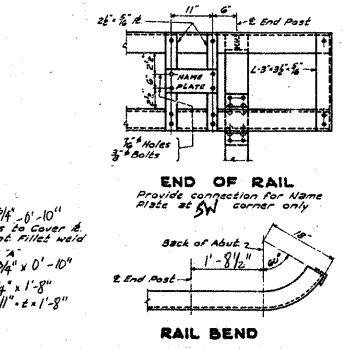
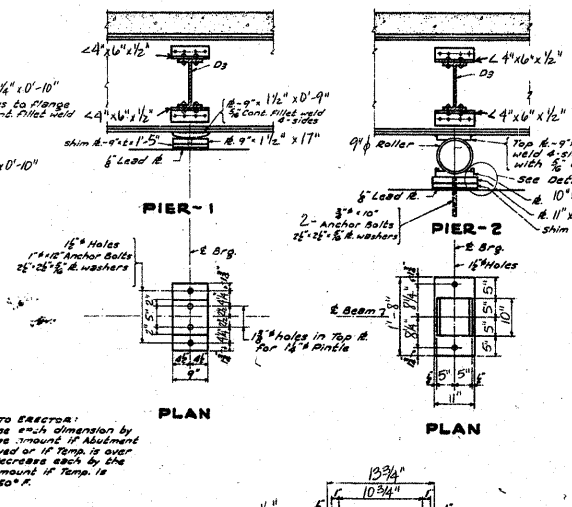
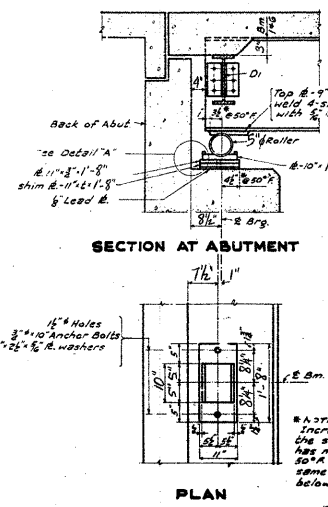
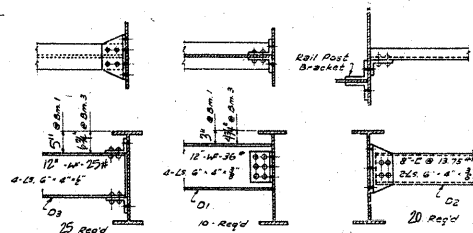
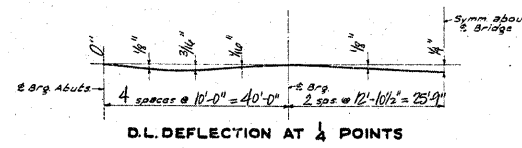
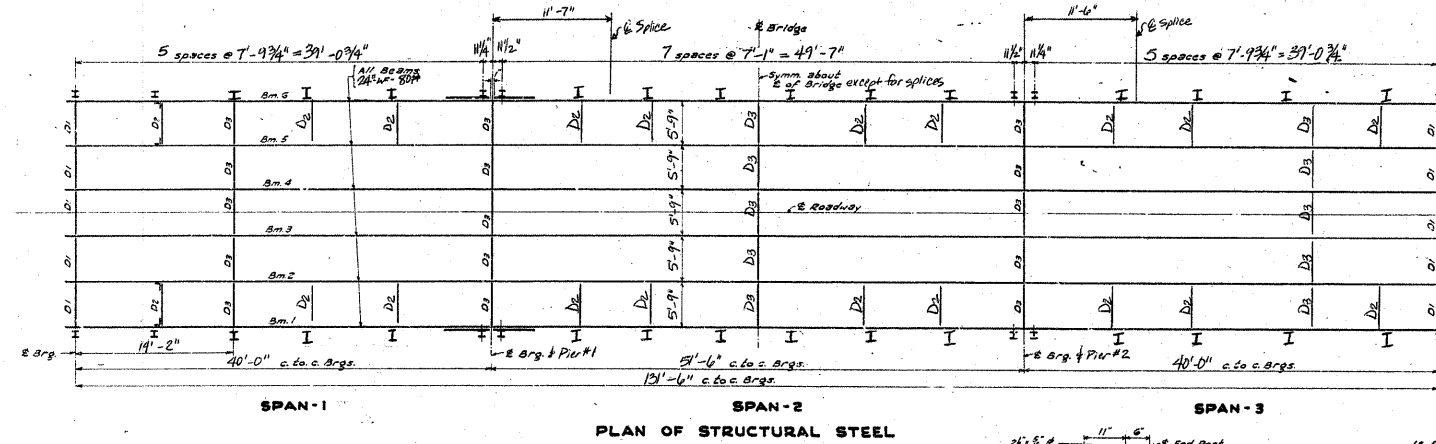
COMPUTED	Edward J. Dublin	EXAMINED	
CHECKED	R. J. Smith	PASSED	
DRAWN	E. P. Robinson	APPROVED	
CHECKED	R. J. S.		
ASSEMBLED			
CHECKED			

Revised 1-4-46 L.A.W.

FOR INFORMATION ONLY

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

DESIGN NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
PA-108	ST. CLAIR	41	32	5
SHEETS				

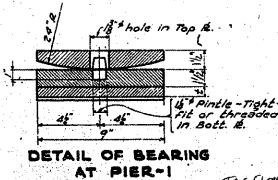
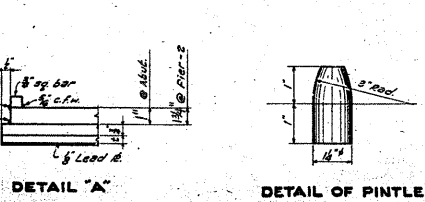
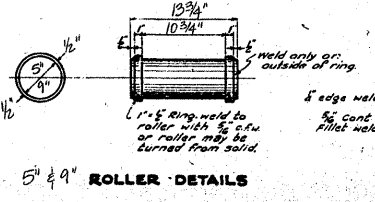


Estimated weight of Rollers, Bearing Plates, Anchor Bolts and Lead Plates 5970 lbs. included in item "structural steel" of Bill of Material

BEAM NO.	1	2	3	4	5
ABUTTS	0	0	0	0	0
PIER-1	0	0	0	0	0
PIER-2	0	0	0	0	0

Note: Filler lbs. over 1" thick may be made up of thinner if so welded.

Note: The Contractor for Sec. 421-D shall make final adjustment for alignment of horizontal rail members after the floor is completed.



STANDARD	COMPUTED	EDWARD J. DUBROW	EXAMINED	8-18-44
CHECKED	DRAWN	E. J. DUBROW	PASSED	
CHECKED	ASSEMBLED		APPROVED	
CHECKED				

TABLE OF DIMENSIONS

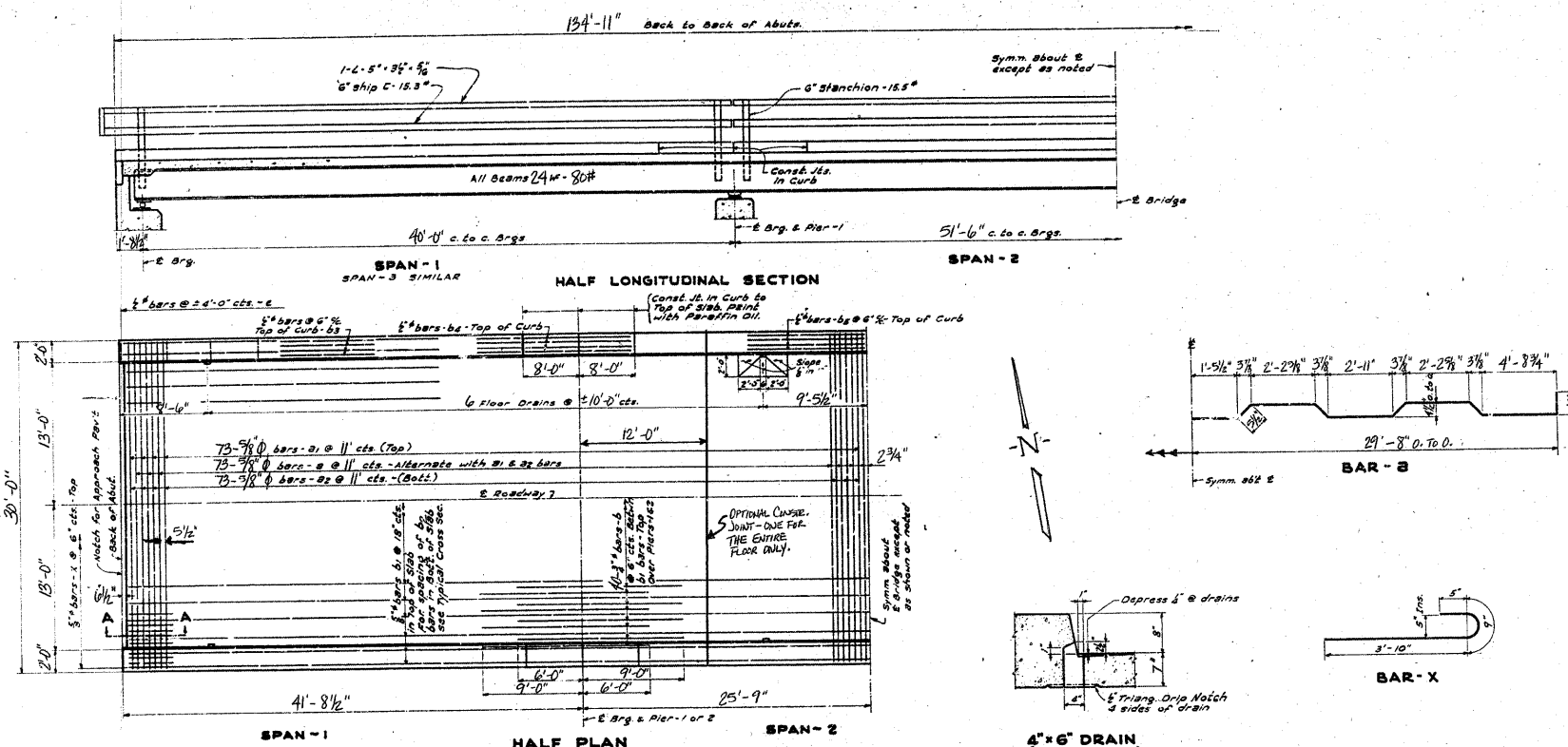
Note: The Contractor for Sec. 421-D shall make final adjustment for alignment of horizontal rail members after the floor is completed.

SUPERSTRUCTURE
OVERFLOW CHANNEL OF KASKASKIA RIVER
SBI 2150 (PA. 21 10) SEC. 421-D-F-E
ST. CLAIR COUNTY
STA. 149+50
TMS. 5455/8000/10
STANDARD No. 2000 Sheet 2 of 3

FOR INFORMATION ONLY

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

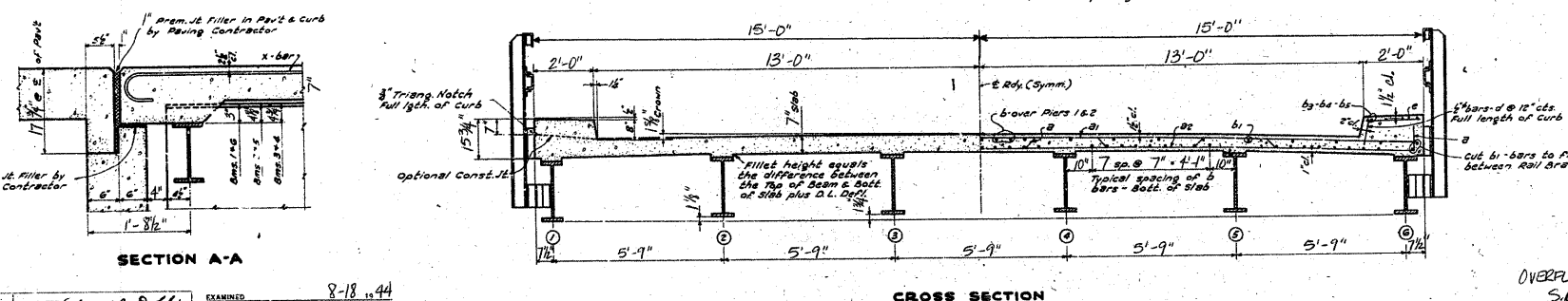
PROJECT NO.	SECTION	COUNTY	SHEET NO.	TOTAL SHEETS
FA 68	421B	ST. CLAIR	41	50



BILL OF MATERIAL

BAR	No.	SIZE	LENGTH
1	146	5/8"	201'-9"
21	146	3/8"	241'-9"
22	146	5/8"	241'-6"
3	90	3/4"	15'-0"
41	124	5/8"	231'-9"
42	210	1/2"	28'-6"
43	30	5/8"	17'-9"
44	32	5/8"	7'-9"
45	16	5/8"	18'-6"
4	70	5/8"	1'-9"
4	270	5/8"	1'-0"
X	120	5/8"	5'-0"

Class X Concrete Cu Yds. 103.0
Reinforcement Bars Lbs. 23440



STANDARD	COMPUTED & DRAWN BY Edward J. Dalbin	EXAMINED	8-18-11
CHECKED		PASSED	
DRAWN BY	Edward J. Dalbin	CHECKED BY	
CHECKED		APPROVED	
SPECIAL	ASSEMBLED		
CHECKED			

CONCRETE FLOOR DETAILS
OVERFLOW CHANNEL OF KASKASKIA RIVER
S.B.I. RT. 150 (F.A. RT. 68) SEC. 421-D.E.F.
ST. CLAIR COUNTY
STA. 149+50

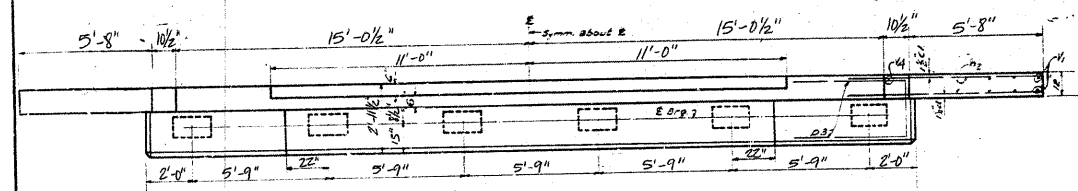
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 $f'_c = 1200 \text{ #/in}^2$
H-20 LOADINGS, STANDARD No. 2000 SHEET 1 OF 3

FOR INFORMATION ONLY

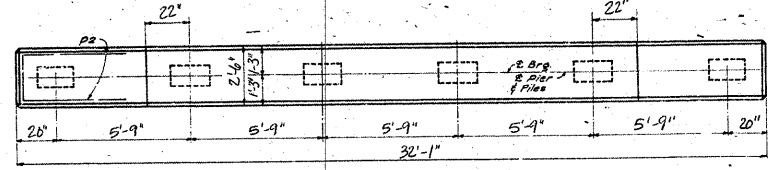
STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

REVISIONS
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BY
REASON
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99
100

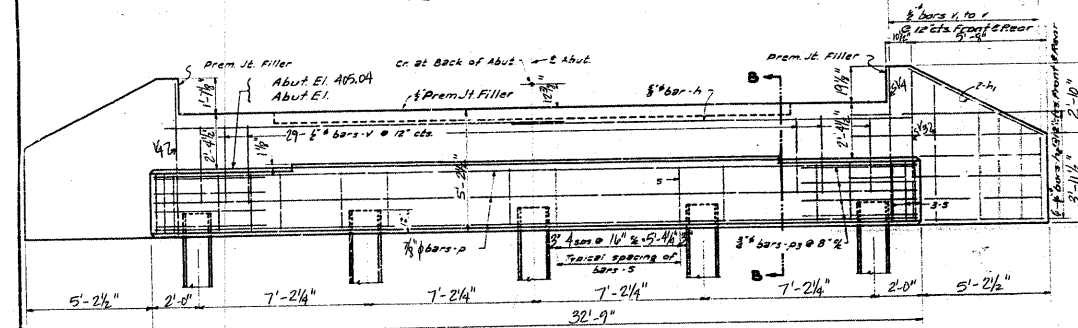
SHEET NO. 4
5 SHEETS



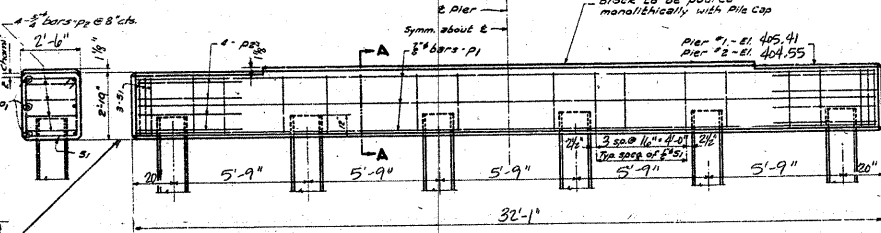
PLAN OF ABUTMENT



PLAN OF PIERS 1 & 2



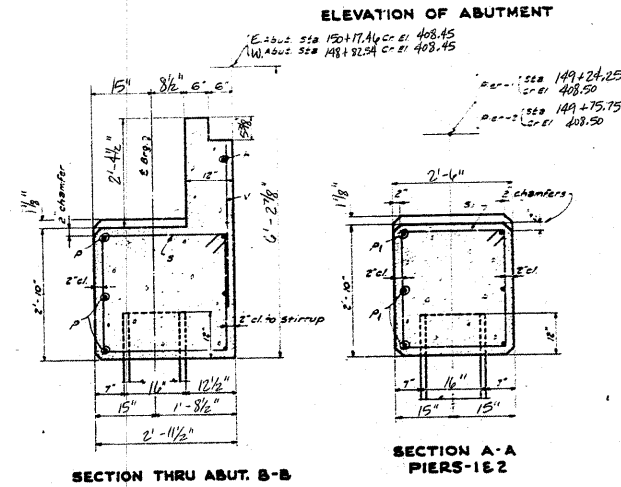
ELEVATION OF ABUTMENT



ELEVATION OF PIERS 1 & 2

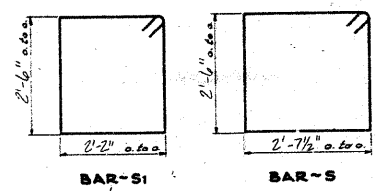
Construction above this line is the same for both Alt 'A' & Alt 'B'. See details of Piles & Columns for Alt 'B' See Sheet #5

Precast Concrete Piles
28 Ton Capacity
Est Length = 42'-0"
12 Reg'd - Piers 1 & 2



SECTION THRU ABUT. B-B

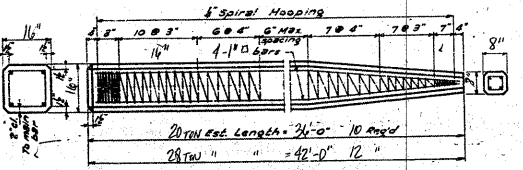
SECTION A-A PIERS 1 & 2



BAR-S1

BAR-S

BARS-P2 & P3



DETAIL OF PRECAST CONCRETE PILES

BILL OF MATERIAL FOR E & W ABUTS. AND PIERS "1 & 2" ALT. "A"

Class X Concrete (caps) Cu. Yds.	45.6
Reinforcement Bars (cap) Lbs.	3520
Precast Concrete Piles (24 Lg) Lin. Ft.	360
Precast Concrete Piles (42 Lg) Lin. Ft.	304
Precast Concrete Test Pile	One

BILL OF MATERIAL

BAR	No.	SIZE	LENGTH
A	4	5"	17'-0"
A1	8	5"	6'-3"
A2	48	5"	8'-0"
V	58	5"	3'-6"
V1	16	5"	3'-9"
V2	16	5"	4'-9"
V3	16	5"	5'-9"
V4	8	1/2" #8	6'-3"
S	52	5"	11'-0"
S1	52	5"	10'-0"
P	12	5"	32'-3"
P1	12	5"	31'-9"
P2	16	5"	11'-0"
P3	16	5"	11'-6"

Class X Concrete Cords
Reinforcement Bars Lbs.
Precast Conc. Piles Lin. Ft.
Precast Conc. Test Piles Ea.

Stresses
 $f_c = 20,000 \text{ #/in}^2$
 $f_s = 12,000 \text{ #/in}^2$

SUBSTRUCTURE - ALT "A"
OVERFLOW CHANNEL OF KASKASKIA RIVER
SBI RT 150 (PA RT W) SEC 421-B
ST. CLAIR COUNTY
STA 149+50

STANDARD No. 2000 Sheet 3 of 3

COMPUTED	E. Howard J. Dublin	EXAMINED	8-18-44
CHECKED		PASSED	
DRAWN	E. J. Dublin	DESIGNED	
CHECKED	J. S. Malachuk	APPROVED	
ASSEMBLED			
CHECKED			

FILE NAME =
c:\projects\led02205\plan\p1n02205a.dgn

USER NAME = owenbj
PLOT SCALE = 50.0000' / IN.
PLOT DATE = 6/17/2008

DESIGNED -
DRAWN -
CHECKED -
DATE -

REVISED -
REVISED -
REVISED -
REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLAN

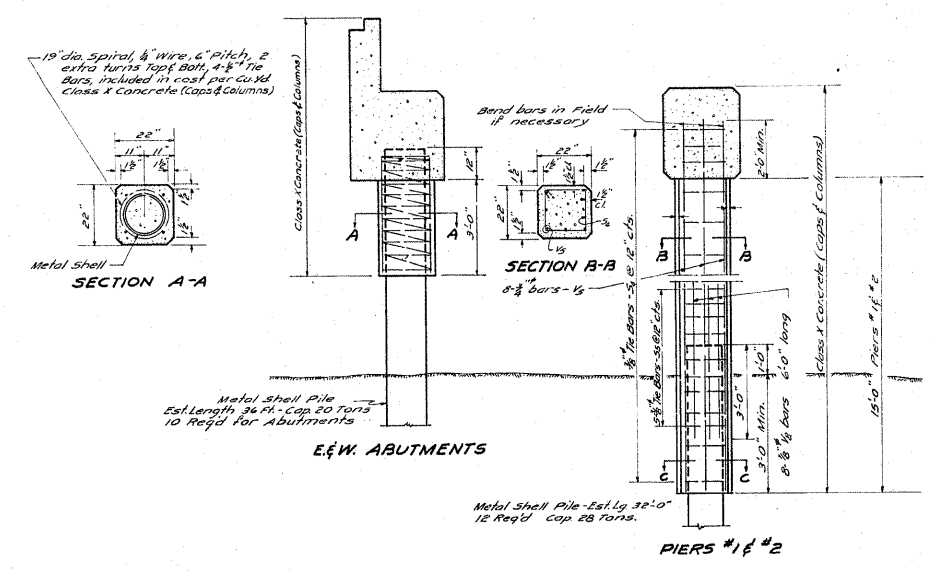
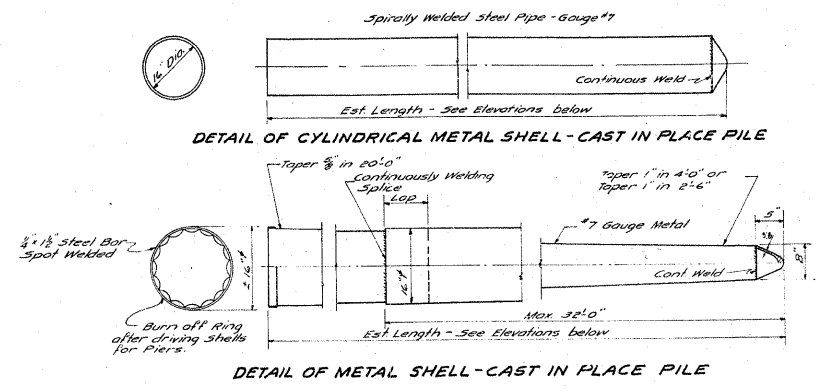
SCALE: SHEET NO. OF SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
B17	421B-1	ST. CLAIR	56	51
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		CONTRACT NO. 76885

FOR INFORMATION ONLY

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

ROAD DIST. NO.	SECTION	COUNTY	SHEET NO.	SHEET NO.
150	421B	St. Clair	41	35
SHEETS				

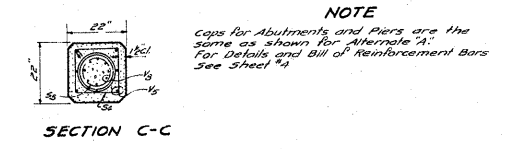


BILL OF MATERIAL FOR E&W ABUTS AND PIERS #1 & 2 - ALTERNATE "B"

ITEM	QUANTITY	UNIT
Class I Concrete (Caps & Columns) Cu Yds.	683	
Reinforcement Bars (Caps & Columns) Cu Yds.	780	
Furnishing Metal Pile Shells Lin. Ft.	744	
Metal Shell Test Pile	One	
Driving & Filling Shells (36'0" Lg.) Lin. Ft.	360	
Driving & Filling Shells (32'0" Lg.) Lin. Ft.	384	

ADDITIONAL BARS FOR ALTERNATE "B" ONLY

BAR NO.	SIZE	LENGTH
15	3/8"	17'0"
16	3/8"	2'0"
21	3/8"	7'3"
22	3/8"	4'3"



NOTE
Caps for Abutments and Piers are the same as shown for alternate "A".
For Details and Bill of Reinforcement Bars See sheet "A".

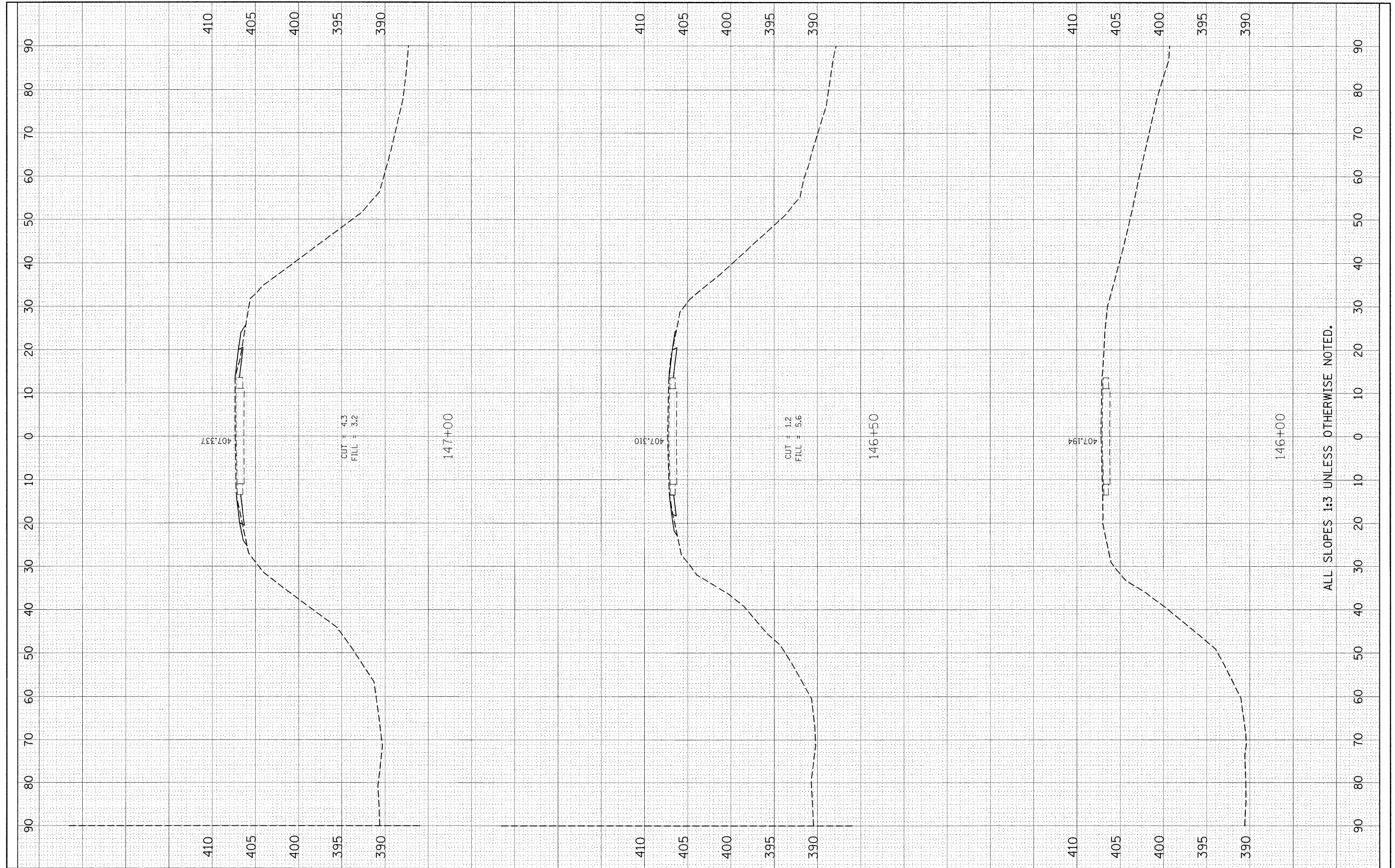
ALTERNATE "B"
SUBSTRUCTURE
OVERFLOW CHANNEL OF KASKASKIA RIVER
S.B.I. RT. 150 (F.A. RT. 68) SEC. 421-B
ST. CLAIR COUNTY
STA. 149+50

COMPUTED	Edward J. Dalbin	EXAMINED	3-15-1974
CHECKED	R. Smith	PASSED	
DRAWN	E. D. Alvisson	APPROVED	
CHECKED	R. L. S.		
SPECIAL			
ASSEMBLED			
CHECKED			

FOR INFORMATION ONLY

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

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

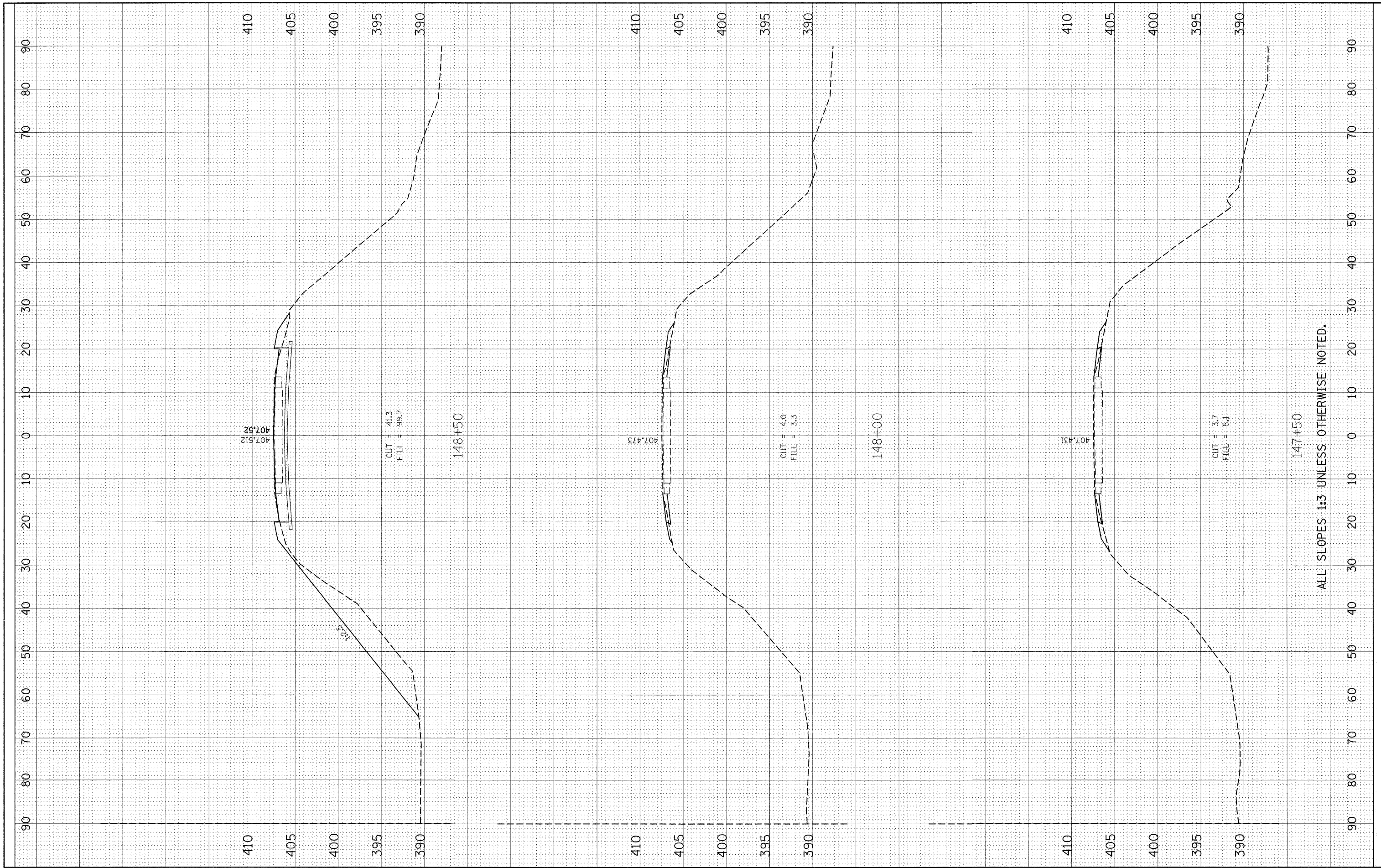


ALL SLOPES 1:3 UNLESS OTHERWISE NOTED.

FILE NAME =	USER NAME = #USER#	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	CROSS SECTION SHEET			F.A.P. RTE. 817	SECTION 421B-1	COUNTY ST. CLAIR	TOTAL SHEETS 56	SHEET NO. 53
#FILE#		DRAWN -	REVISED -		SCALE:	SHEET NO. 1 OF 4 SHEETS	STA. 146+00 TO STA. 147+00	FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT	CONTRACT NO. 76885		
		CHECKED -	REVISED -									
		DATE -	REVISED -									

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

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



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 PLOT DATE = #DATE#

DESIGNED -
 DRAWN -
 CHECKED -
 DATE -

REVISED -
 REVISED -
 REVISED -
 REVISED -

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

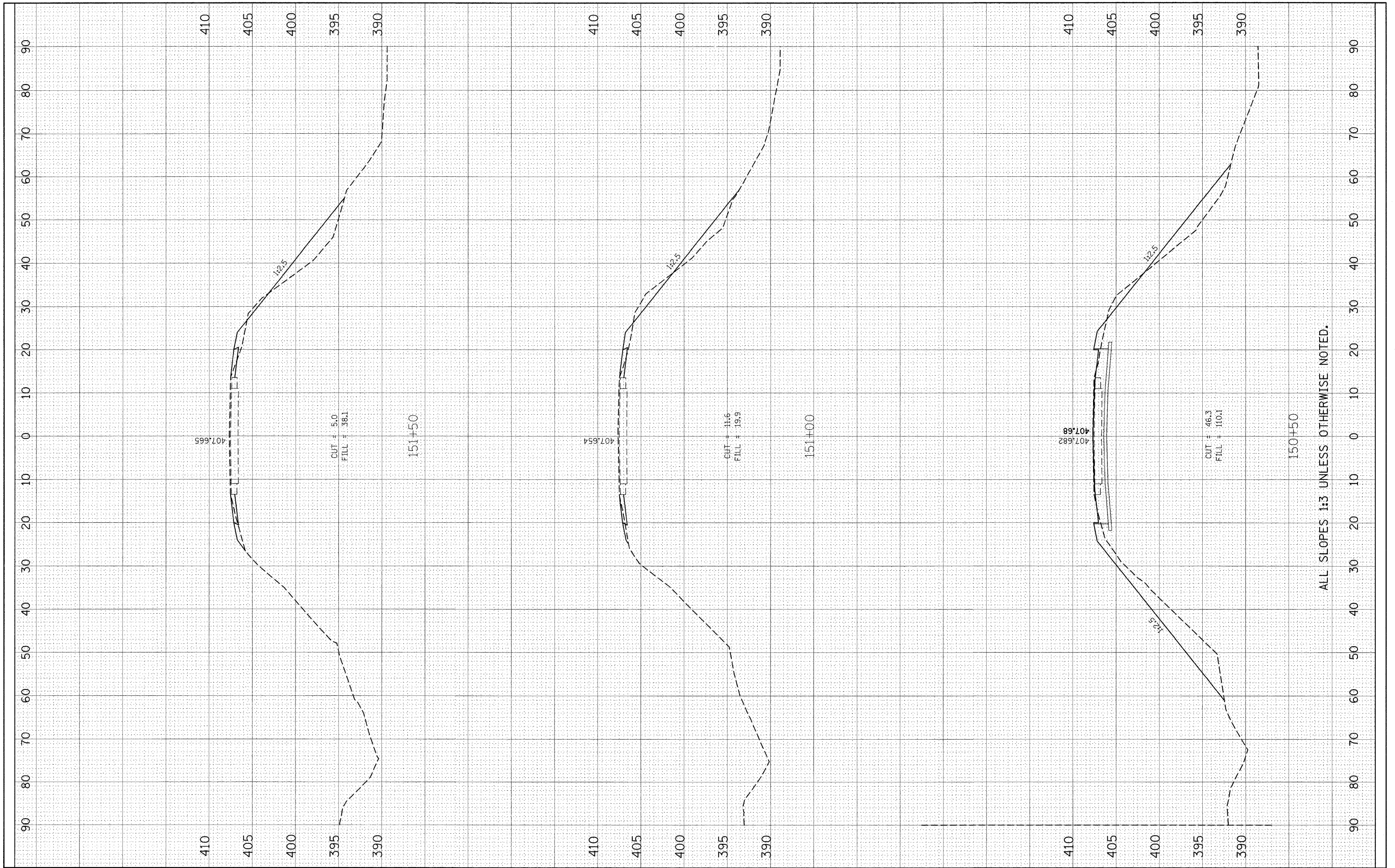
CROSS SECTION SHEET

SCALE: SHEET NO. 2 OF 4 SHEETS STA. 147+50 TO STA. 148+50

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
817	421B-1	ST. CLAIR	56	54
CONTRACT NO. 76885				
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				

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

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



ALL SLOPES 1:3 UNLESS OTHERWISE NOTED.

FILE NAME = #FILE#

USER NAME = #USER#
 DESIGNED -
 DRAWN -
 CHECKED -
 DATE -

REVISOR -
 REVISION -
 REVISION -
 REVISION -

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

CROSS SECTION SHEET

SCALE: SHEET NO. 3 OF 4 SHEETS STA. 150+50 TO STA. 151+50

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
817	421B-1	ST. CLAIR	56	55
CONTRACT NO. 76885				
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				

