11-5-10 LETTING ITEM 012

INDEX OF SHEETS

0 50 100 150 200
SCALE IN FEET

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

MICROFILMED _____
REEL NUMBER _____
AWARDED _____
RESIDENT ENGINEER _____
AS BUILT CHANGES WERE MADE
ON THE FOLLOWING SHEETS _____

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

DISTRICT 3 NO. (815) 434-6131

PROJECT ENGINEER: CRAIG REED
UNIT CHIEF: BRAD DUNCAN

CONTRACT NO. 66861

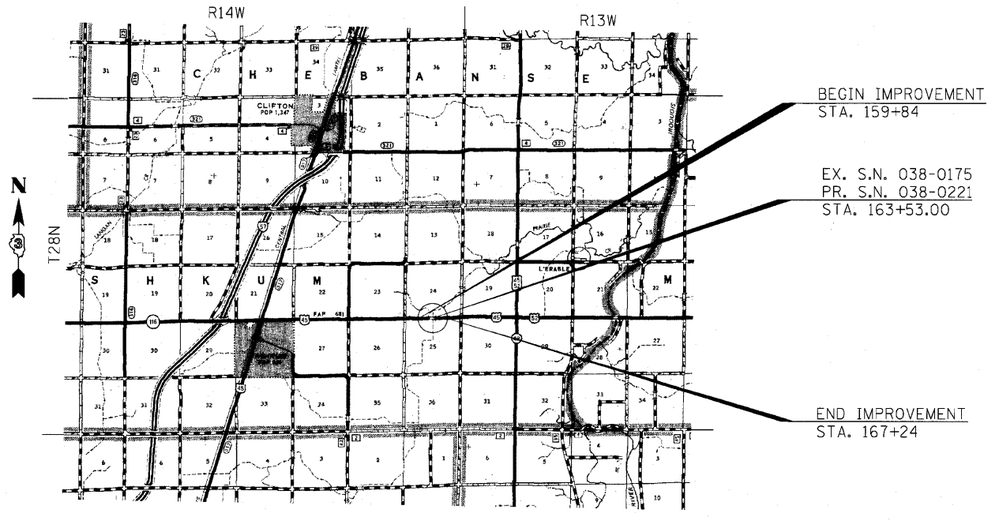
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROPOSED
HIGHWAY PLANS

F.A.P. ROUTE 681 (US 45)
SECTION 118 BR
PROJECT ACBRF-0681(040)
IROQUOIS COUNTY

C - 93 - 003 - 09

REPLACEMENT OF EXISTING BRIDGE



LOCATION MAP
NOT TO SCALE

GROSS LENGTH = 800 FT. = 0.15 MI.
NET LENGTH = 800 FT. = 0.15 MI.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
681	118BR	IROQUOIS	42	1
FED. ROAD DIST. NO. 7	ILLINOIS	CONTRACT NO. 66861		

P-93-033-08
D-93-008-09

LOCATION OF SECTION INDICATED THUS: -■-

HIGHWAY CLASSIFICATION

ROUTE: FAP ROUTE 681 (IL 45)
FUNCTIONAL CLASS: MINOR ARTERIAL (NON-URBAN)
ADT: 1,350 (2011) 1700 (2031)
PV = 76.0% SU = 16.0% MU = 8.0%
ADTT = 24%
DESIGN SPEED: 55 MPH
POSTED SPEED: 55 MPH

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED August 12 **20** 10
Greg Byrnes
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER
October 1 **20** 10
Scott E. Stitt P.E. /a
acting **ENGINEER OF DESIGN AND ENVIRONMENT**
October 1 **20** 10
Christine M. Reed /a
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

STATE OF ILLINOIS
ROBERT A. CRISTY
062-044545
LICENSED PROFESSIONAL ENGINEER

Robert Cristy 07/28/10
Signature Date
November 30, 2011
Expires

PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS

STANDARD DRAWINGS

000001-05 STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
001001-02 AREAS OF REINFORCEMENT BARS
001006 DECIMAL OF AN INCH AND OF A FOOT
280001-05 TEMPORARY EROSION CONTROL SYSTEMS
420401-08 BRIDGE APPROACH PAVEMENT CONNECTOR
482001-02 HMA SHOULDER ADJACENT TO FLEXIBLE PAVEMENT
482011-03 HMA SHOULDER STRIPS/SHOULDERS WITH RESURFACING OR WIDENING AND RESURFACING PROJECTS
515001-03 NAME PLATE FOR BRIDGES
542401-01 METAL END SECTIONS FOR PIPE CULVERTS
610001-05 SHOULDER INLET WITH CURB
630001-08 STEEL PLATE BEAM GUARDRAIL
630201-06 PCC/HMA STABILIZATION AT STEEL PLATE BEAM GUARDRAI
630301-05 SHOULDER WIDENING FOR TYPE 1 (SPECIAL) GUARDRAIL TERMINALS
631031-08 TRAFFIC BARRIER TERMINAL, TYPE 6
635001-01 DELINEATORS
635006-03 REFLECTOR AND TERMINAL MARKER PLACEMENT
635011-02 REFLECTOR MARKER AND MOUNTING DETAILS
701001-02 OFF-ROAD OPERATIONS, 2L, 2W, MORE THAN 4.5 M (15') AWAY
701006-03 OFF-ROAD OPERATIONS, 2L, 2W, 4.5 M (15') TO 600 MM (24 9/32) FROM PAVEMENT EDGE
701201-03 LANE CLOSURE, 2L, 2W, DAY ONLY, FOR SPEEDS > 45 MPH
701301-03 LANE CLOSURE, 2L, 2W, SHORT TIME OPERATIONS
701306-02 LANE CLOSURE, 2L, 2W, SLOW MOVING OPERATIONS DAY ONLY, FOR SPEEDS > 45 MPH
701311-03 LANE CLOSURE, 2L, 2W, MOVING OPERATIONS - DAY ONLY
701321-10 LANE CLOSURE, 2L, 2W, BRIDGE REPAIR WITH BARRIER
701326-03 LANE CLOSURE, 2L, 2W, PAVEMENT WIDENING, FOR SPEEDS > 45 MPH
701901-01 TRAFFIC CONTROL DEVICES
704001-06 TEMPORARY CONCRETE BARRIER
720001-01 SIGN PANEL MOUNTING DETAILS
780001-02 TYPICAL PAVEMENT MARKINGS
781001-03 TYPICAL APPLICATIONS RAISED REFLECTIVE PAVEMENT MARKERS

GENERAL NOTES

THE THICKNESS OF HMA SHOWN ON THE PLANS IS THE NOMINAL THICKNESS. DEVIATIONS FROM THE NOMINAL THICKNESS WILL BE PERMITTED WHEN SUCH DEVIATIONS OCCUR DUE TO IRREGULARITIES IN THE EXISTING SURFACE OR BASE ON WHICH THE HMA IS PLACED.

EXCEPT AS NOTED ON THE PLANS, PAVEMENT GRADES SHOWN ARE AT THE TOP OF PAVEMENT SURFACES.

BEFORE ORDERING PIPE CULVERTS OR PIPE DRAINS, THE CONTRACTOR SHALL CONSULT THE ENGINEER FOR EXACT LENGTHS.

THE ENGINEER WILL BE THE SOLE JUDGE CONCERNING CURING TIME FOR THE VARIOUS HMA LIFTS.

FOR STABILIZATION, ALL TYPE III BARRICADES SHALL REQUIRE A MINIMUM OF FOUR SAND BAGS PER BARRICADE.

SEEDING SHALL NOT BE PERMITTED AT ANY TIME WHEN THE GROUND IS FROZEN, WET, OR IN AN UNTILLABLE CONDITION. LOCATIONS TO BE SEEDED WILL BE DETERMINED BY THE ENGINEER.

THE FINISHED EARTHWORK SHALL HAVE A VEGETATION SUSTAINING SOIL COVERING THE TOP FOUR INCHES IN AREAS TO BE SEEDED OR SODDED. THE VEGETATION SUSTAINING SOIL REQUIRED WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE COST OF SEEDING, CLASS 2.

ALL ELEVATIONS REFERRING TO U.S.C.S. MEAN SEA LEVEL DATUM.

ABANDONED UNDERGROUND UTILITIES THAT CONFLICT WITH CONSTRUCTION SHALL BE DISPOSED OF OUTSIDE THE LIMITS OF THE RIGHT OF WAY ACCORDING TO ARTICLE 202.03 OF THE STANDARD SPECIFICATIONS AND AS DIRECTED BY THE ENGINEER. THIS WORK WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE COST OF EARTH EXCAVATION.

ANY REFERENCE TO A STANDARD IN THESE PLANS SHALL BE INTERPRETED TO MEAN THE EDITION AS INDICATED BY THE SUBNUMBER SHOWN IN THE LIST OF STANDARDS OR THE COPY INCLUDED IN THESE PLANS.

THE FOLLOWING RATES OF APPLICATION HAVE BEEN USED IN CALCULATING PLAN QUANTITIES:

GRANULAR MATERIALS	2.05	TONS / CU YD
BIT MATERIALS (PRIME COAT) ON AGGREGATE BASES	0.375	GAL / SQ YD
BITUMINOUS MATERIALS (PRIME COAT)	0.08	GAL / SQ YD
POLYMERIZED BIT MATERIALS (PRIME COAT)	0.10	GAL / SQ YD
FOR ADDITIONAL HMA LIFTS "FOG COAT"	0.05	GAL / SQ YD
AGGREGATE PRIME COAT	0.002	TONS / SQ YD
HMA RESURFACING	112	LBS / SQ YD / IN
SHORT TERM PAVEMENT MARKING	10	FT / 100 FT OF APPLICATION
MIX FOR CRACKS, JTS & FLGWYS	0.0003	TONS / SQ YD
LEVEL BINDER (HAND METHOD)	0.0005	TONS / SQ YD

MEMBERS OF JULIE KNOWN TO BE WITHIN THE LIMITS OF THE IMPROVEMENT ARE: VERIZON

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DISTRICT THREE

REVIEWED BY: Acting, DISTRICT STUDIES & PLANS ENGINEER

DATE: 08/12/10

EXAMINED BY: DISTRICT CONSTRUCTION ENGINEER

DISTRICT MATERIALS ENGINEER

DISTRICT OPERATIONS ENGINEER

FILE NAME = ...\D366861-SHT-Hwy Stnds and Plan Notes.dgn	USER NAME = SAW	DESIGNED - RAC	REVISED -
		DRAWN - RAC	REVISED -
	PLOT SCALE = 50.0000 ' / IN.	CHECKED - DAZ	REVISED -
	PLOT DATE = 7/29/2010	DATE - 07/30/10	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ZROKA engineering
Zroka Engineering, P.C.
4216 North Hermitage
Chicago, IL 60613

SCALE: 1" = 50' | SHEET NO. 2 OF 42 SHEETS

HIGHWAY STANDARDS AND PLAN NOTES

STA. 159+89 TO STA. 167+17

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
681	118 BR	IROQUOIS	42	2
		CONTRACT NO. 66861		
		ILLINOIS FED. AID PROJECT		

SUMMARY OF QUANTITIES

80% FED. 20% STATE

CODE NO.	ITEM	UNIT	CONSTRUCTION CODE TYPE: 0005 ROADWAY QUANTITY	0011 SN 038-0175(EX) SN 038-0221(PR)	TOTAL QUANTITY
20200100	EARTH EXCAVATION	CU YD	19		19
20400800	FURNISHED EXCAVATION	CU YD	146		146
X2070304	POROUS GRANULAR EMBANKMENT, SPECIAL	CU YD		64	64
* 25000200	SEEDING, CLASS 2	ACRE	0.4		0.4
* 25000400	NITROGEN FERTILIZER NUTRIENT	POUND	40		40
* 25000500	PHOSPHORUS FERTILIZER NUTRIENT	POUND	40		40
* 25000600	POTASSIUM FERTILIZER NUTRIENT	POUND	40		40
* 25100115	MULCH, METHOD 2	ACRE	0.4		0.4
* 25100630	EROSION CONTROL BLANKET	SQ YD	875		875
28000250	TEMPORARY EROSION CONTROL SEEDING	POUND	30		30
28000400	PERIMETER EROSION BARRIER	FOOT	1159		1159
28100107	STONE RIPRAP, CLASS A4	SQ YD		744	744
28200200	FILTER FABRIC	SQ YD		744	744
40600100	BITUMINOUS MATERIALS (PRIME COAT)	GALLON	149		149
40600300	AGGREGATE (PRIME COAT)	TON	3.7		3.7
40600525	LEVELING BINDER (HAND METHOD), N50	TON	1		1
40600625	LEVELING BINDER (MACHINE METHOD), N50	TON	14		14
40600982	HOT-MIX ASPHALT SURFACE REMOVAL - BUTT JOINT	SQ YD	346		346
40600990	TEMPORARY RAMP	SQ YD	16		16
40603080	HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N50	TON	154		154
40603335	HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N50	TON	94		94
48203029	HOT-MIX ASPHALT SHOULDERS, 8"	SQ YD	786		786
50100100	REMOVAL OF EXISTING STRUCTURES	EACH		1	1
50200100	STRUCTURE EXCAVATION	CU YD		120	120
50300100	FLOOR DRAINS	EACH		6	6
50300225	CONCRETE STRUCTURES	CU YD		145.4	145.4
50300255	CONCRETE SUPERSTRUCTURE	CU YD		288.7	288.7
50300260	BRIDGE DECK GROOVING	SQ YD		504	504
50300280	CONCRETE ENCASEMENT	CU YD		9.8	9.8
50300300	PROTECTIVE COAT	SQ YD		547	547
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND		91870	91870
50800515	BAR SPLICERS	EACH		526	526
51201700	FURNISHING STEEL PILES HP12X74	FOOT		1395	1395
51202305	DRIVING PILES	FOOT		1395	1395
51203700	TEST PILE STEEL HP12X74	EACH		1	1
51204650	PILE SHOES	EACH		28	28
51500100	NAME PLATES	EACH		1	1
54213867	STEEL END SECTIONS 12"	EACH	2		2
59100100	GEOCOMPOSITE WALL DRAIN	SQ YD		33	33

SUMMARY OF QUANTITIES

80% FED. 20% STATE

CODE NO.	ITEM	UNIT	CONSTRUCTION CODE TYPE: 0005 ROADWAY QUANTITY	0011 SN 038-0175(EX) SN 038-0221(PR)	TOTAL QUANTITY
60103500	PIPE DRAINS, CORRUGATED STEEL 12"	FOOT	30		30
Z0046304	PIPE UNDERDRAINS FOR STRUCTURES 4"	FOOT		140	140
60900515	CONCRETE THRUST BLOCKS	EACH	2		2
* 63000001	STEEL PLATE BEAM GUARD RAIL, TYPE A, 6 FOOT POSTS	FOOT	500		500
* 63100085	TRAFFIC BARRIER TERMINAL, TYPE 6	EACH	4		4
* 63100167	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	EACH	1		1
* 63100169	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) FLARED	EACH	3		3
63200310	GUARDRAIL REMOVAL	FOOT	422		422
* 63300575	REMOVE AND REERECT RAIL ELEMENT OF EXISTING GUARD RAIL	FOOT	202		202
66201120	CONCRETE SHOULDER CURB	FOOT	20		20
67000400	ENGINEER'S FIELD OFFICE, TYPE A	CAL MO	4		4
67100100	MOBILIZATION	L SUM	1		1
70100405	TRAFFIC CONTROL AND PROTECTION, STANDARD 701321	EACH	1		1
70100460	TRAFFIC CONTROL AND PROTECTION, STANDARD 701306	L SUM	1		1
70100500	TRAFFIC CONTROL AND PROTECTION, STANDARD 701326	L SUM	1		1
70103815	TRAFFIC CONTROL SURVEILLANCE	CAL DA	5		5
70106500	TEMPORARY BRIDGE TRAFFIC SIGNALS	EACH	1		1
70300100	SHORT-TERM PAVEMENT MARKING	FOOT	244		244
70300220	TEMPORARY PAVEMENT MARKING - LINE 4"	FOOT	2443		2443
70300280	TEMPORARY PAVEMENT MARKING - LINE 24"	FOOT	24		24
70301000	WORK ZONE PAVEMENT MARKING REMOVAL	SQ FT	862		862
70400100	TEMPORARY CONCRETE BARRIER	FOOT	412.5		412.5
70400200	RELOCATE TEMPORARY CONCRETE BARRIER	FOOT	375		375
* 78005110	EPOXY PAVEMENT MARKING - LINE 4"	FOOT	1080		1080
* 78005130	EPOXY PAVEMENT MARKING - LINE 6"	FOOT	135		135
* 78100100	RAISED REFLECTIVE PAVEMENT MARKER	EACH	7		7
* 78200410	GUARDRAIL MARKERS, TYPE A	EACH	12		12
* 78201000	TERMINAL MARKER - DIRECT APPLIED	EACH	8		8
78300100	PAVEMENT MARKING REMOVAL	SQ FT	428		428
78300200	RAISED REFLECTIVE PAVEMENT MARKER REMOVAL	EACH	7		7
Z0073002	TEMPORARY SOIL RETENTION SYSTEM	SQ FT		96.6	96.6
X0325446	SHOULDER INLET WITH CURB (4 FT SHOULDER)	EACH	2		2
Z0062456	TEMPORARY PAVEMENT	SQ YD	174		174
X5020501	UNDERWATER STRUCTURE EXCAVATION PROTECTION - LOCATION 1	EACH		1	1
X5020502	UNDERWATER STRUCTURE EXCAVATION PROTECTION - LOCATION 2	EACH		1	1
Z0030150	IMPACT ATTENUATORS (NON-REDIRECTIVE), TEST LEVEL 3	EACH	2		2
Z0030350	IMPACT ATTENUATORS, RELOCATE (NON- REDIRECTIVE), TEST LEVEL 3	EACH	2		2
Z0001900	ASBESTOS BEARING PAD REMOVAL	EACH		72	

* SPECIALTY ITEMS

FILE NAME = c:\pw_work\pwidot\duncanbd\dms64386\D366861-SHT-Quantities REV.dgn	USER NAME = duncanbd	DESIGNED - RAC	REVISED -
	PLOT SCALE = 1.00000 ' / IN.	DRAWN - RAC	REVISED -
	PLOT DATE = Aug 16, 2010 - 07:49:37 AM	CHECKED - DAZ	REVISED -
		DATE - 07/30/10	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

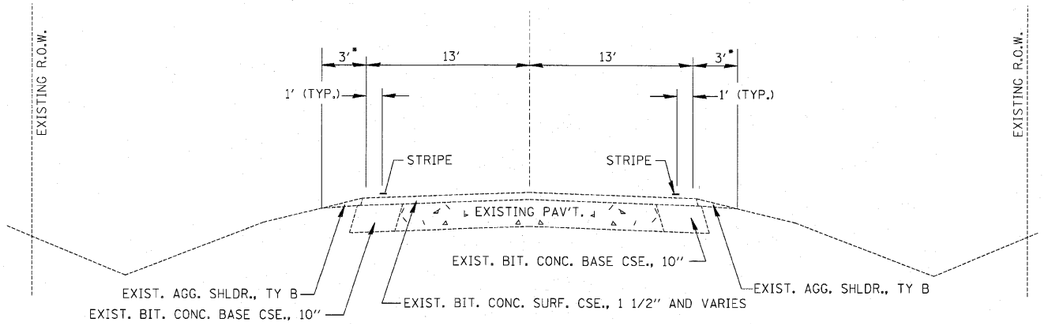
ZROKA engineering
Zroka Engineering, P.C.
4216 North Hermitage
Chicago, IL 60613

SCALE: N/A | SHEET NO. 3 OF 42 SHEETS

SUMMARY OF QUANTITIES

STA. 159+89 TO STA. 167+17

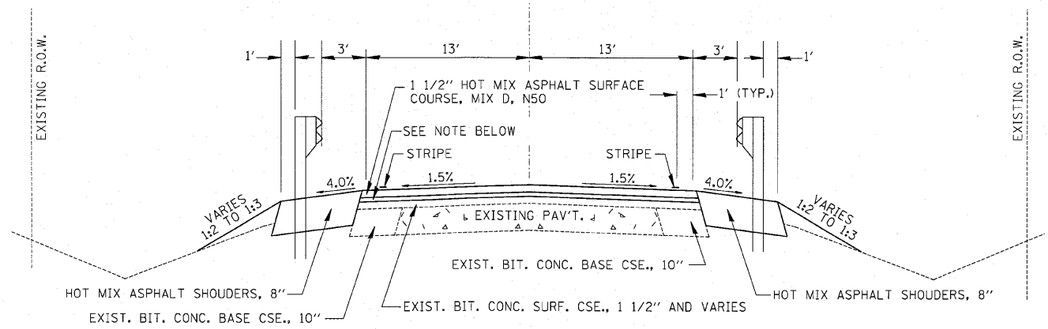
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
681	118 BR	IROQUOIS	42	3
		CONTRACT NO. 66861		
	ILLINOIS FED. AID PROJECT			



EXISTING TYPICAL SECTION

*SHOULDER WIDTH VARIES AT GUARDRAIL LOCATIONS

STA. 159+89 TO STA. 162+77
STA. 164+29 TO STA. 167+17



	HMA BINDER COURSE	HMA LEVEL BINDER	HMA SURFACE	TEMPORARY PAVEMENT	HMA SHOULDERS
PG GRADE	PG64-22	PG64-22	PG64-22	PG64-22	PG64-22
DESIGN AIR VOIDS	4.0% @ N50	4.0% @ N50	4.0% @ N50	4.0% @ N50	4.0% @ N50
MIXTURE COMPOSITION	IL 19.0	IL 9.5	IL 9.5	IL 19.0	IL 19.0
FRICTION AGGREGATE			MIXTURE C		
DENSITY TEST METHOD	CORES	SATISFACTION OF ENGINEER	CORES	CORES/ SATISFACTION OF ENGINEER	CORES

* MATERIAL SHALL BE COMPACTED TO 93.0-97.4 PERCENT OF THE MAXIMUM THEORETICAL DENSITY, EXCEPT THAT WHEN PLACED AS FIRST LIFT ON AN UNIMPROVED SUBGRADE THE MINIMUM PERCENT COMPACTION SHALL BE 92.0 PERCENT. THE MAXIMUM THEORETICAL DENSITY SHALL BE DETERMINED FROM THE MOVING AVERAGE AS SPECIFIED IN THE QC/QA SPECIFICATION.

PROPOSED TYPICAL SECTION

STA. 159+89 TO STA. 162+77
STA. 164+29 TO STA. 167+17

NOTE:
USE LEVELING BINDER (MACHINE METHOD), N50 WHEN THICKNESS IS 3/4" TO 2 1/4" - STA 160+81 TO 161+30 & STA. 164+50 TO 164+90
USE HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N50 WHEN THICKNESS IS GREATER THAN 2 1/4" - STA 161+30 TO 162+77 & STA. 164+29 TO 164+50

FILE NAME = ...\D366861-SHT-Typical Sections.dgn	USER NAME = SAW	DESIGNED - RAC	REVISED -
		DRAWN - RAC	REVISED -
	PLOT SCALE = 50.0000 ' / IN.	CHECKED - DAZ	REVISED -
	PLOT DATE = 7/29/2010	DATE - 07/30/10	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ZROKA engineering
Zroka Engineering, P.C.
4216 North Hermitage
Chicago, IL 60613

SCALE: 1" = 50' | SHEET NO. 4 OF 42 SHEETS | STA. 159+89 TO STA. 167+17

TYPICAL SECTIONS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
681	118 BR	IROQUOIS	42	4
		CONTRACT NO. 66861		
		ILLINOIS FED. AID PROJECT		

HOT MIX ASPHALT SCHEDULE

LOCATION	HMA SURF COURSE	HMA LEVEL BINDER MACHINE	HMA LEVEL BINDER HAND	HMA BINDER COURSE	HMA SHLDR 8"	HMA SUR REM BUTT JT	BIT MAT (PR CT)	AGG (PR CT)
	TON	TON		TON	SQ YD	SQ YD	GAL	TON
STA. 160+10 TO STA. 160+70						173		
STA. 160+10 TO STA. 162+77	65						62	1.5
STA. 160+81 TO STA. 161+30		8	0.1				11	0.3
STA. 161+30 TO STA. 162+77			0.2	143			34	0.9
STA. 160+10 TO STA. 162+92					204			
STA. 159+89 TO STA. 162+92 LT					226			
STA. 164+29 TO STA. 165+50 RT	29						28	0.7
STA. 164+29 TO STA. 164+50			0.1	11			5	0.1
STA. 164+50 TO STA. 164+90		6	0.1				9	0.2
STA. 164+14 TO STA. 167+17					228			
STA. 164+14 TO STA. 166+13 LT					128			
STA. 164+90 STA. 165+50 RT						173		
TOTALS	94	14	0.5	154	786	346	149	3.7

GUARDRAIL SCHEDULE

LOCATION	GUARDRAIL REMOVAL	SPBGR	TR BAR TRM TRM T1 SPL TAN	TR BAR TRM T1 SPL FLAR	TR BAR TRM T6	GUARDRAIL MARK	TERM MARK DIR APPLIED	R&R RAIL ELEM EX GDRL
	FOOT	FOOT	EACH	EACH	EACH	EACH	EACH	FOOT
STA. 162+10 TO STA. 163+28 LT	118							
STA. 161+24 TO STA. 161+74 LT				1			1	
STA. 161+74 TO STA. 162+49 LT		75				2		
STA. 162+49 TO STA. 162+92 LT					1		1	
STA. 162+09 TO STA. 163+10 RT	101							101
STA. 160+24 TO STA. 160+74 RT				1			1	
STA. 160+74 TO STA. 162+49 RT		175				4		
STA. 162+49 TO STA. 162+92 RT					1		1	
STA. 163+96 TO STA. 164+97 LT	101							101
STA. 164+14 TO STA. 164+57 LT					1		1	
STA. 164+57 TO STA. 166+32 LT		175				4		
STA. 166+32 TO STA. 166+82 LT				1			1	
STA. 163+95 TO STA. 164+97 RT	102							
STA. 164+14 TO STA. 164+57 RT					1		1	
STA. 164+57 TO STA. 165+32 RT		75				2		
STA. 165+32 TO STA. 165+82 RT			1				1	
TOTALS =	422	500	1	3	4	12	8	202

PAVEMENT MARKING

LOCATION	PVMT MARK WHITE, 4"	PVMT MARK YELLOW, 6"	RAISED REF PVMT MARK REMOVAL	RAISED REFLECT PVMT MARK	PAVEMENT MARKING REMOVAL
	FOOT	FOOT	EACH	EACH	SQ FT
STA. 160+10 TO STA. 165+50 LT	540				180
STA. 160+10 TO STA. 165+50 RT	540				180
STA. 160+10 TO STA. 165+50		135	7	7	68
TOTALS =	1080	135	7	7	428

EARTHWORK

LOCATION	EARTH EXCAVATION	FURNISHED EXCAVATION
	CU YD	CU YD
STA. 160+10 TO STA. 163+07 LT	3	28
STA. 159+84 TO STA. 163+07 RT	4	25
STA. 163+99 TO STA. 167+17 RT	7	71
STA. 163+99 TO STA. 165+13 LT	5	22
TOTALS =	19	146

SEEDING

LOCATION	SEEDING CL 2	MULCH METHOD 2	EROSION CONTROL BLANKET	NITRO FERTILIZER NUTRIENT	PHOSPHORUS FERTILIZER NUTRIENT	POTASSIUM FERTILIZER NUTRIENT
	ACRE	ACRE	SQ YD	POUND	POUND	POUND
STA. 160+10 TO STA. 163+07 LT	0.1	0.1	300	9	9	9
STA. 159+84 TO STA. 163+07 RT	0.1	0.1	100	11	11	11
STA. 163+99 TO STA. 167+24 LT	0.1	0.1	275	11	11	11
STA. 163+99 TO STA. 166+13 RT	0.1	0.1	200	9	9	9
TOTALS =	0.4	0.4	875	40	40	40

TEMPORARY PAVEMENT MARKING

LOCATION	TEMP PVMT MARK WHITE, 4"	TEMP PVMT MARK WHITE, 24"	SHORT TERM PVMT MARK	WORK ZONE PAVT MARK REMOVAL
	FOOT	FOOT	FOOT	SQ FT
STAGE I				
STA. 159+82 RT		12		24
STA. 159+82 LT TO STA. 167+14 LT	732		73	244
STA. 159+82 RT TO STA. 165+27 RT	545		55	182
STA. 167+14 LT		12		24
STAGE II				
STA. 160+12 LT TO STA. 165+45 LT	533		53	178
STA. 160+12 RT TO STA. 166+45 RT	633		63	211
TOTALS =	2443	24	244	862

DRAINAGE SCHEDULE

LOCATION	SHOULDER INLET	PIPE DRAINS CS 12	STEEL END SECT. 12"	THRUST BLOCKS	CONCRETE SHOULDER CURB
	EACH	FOOT	EACH	EACH	FOOT
STA. 164+34 15.0' LT	1				
STA. 164+34 15.0' LT TO STA. 164+34 28.0' LT		15			
STA. 164+34 28.0' LT			1	1	*
STA. 164+29 16.0' LT TO STA. 164+39 16.0' LT					10
STA. 164+34 15.0' RT	1				
STA. 164+34 15.0' RT TO STA. 164+34 28.0' RT		15			
STA. 164+34 28.0' RT			1	1	
STA. 164+29 16.0' RT TO STA. 164+39 16.0' RT					10
TOTALS =	2	30	2	2	20

STAGE CONSTRUCTION SCHEDULE

LOCATION	TEMPORARY CONCRETE BARRIER FOOT	RELOCATE TEMP. CONC BARRIER FOOT	IMPACT ATTENUATORS EACH	RELOCATE IMPACT ATTENUATORS EACH
STAGE I				
STA. 161+44 TO STA. 165+58	412.5		2	
STAGE II				
STA. 161+68 TO STA. 165+43		375.0		2
TOTALS =	412.5	375.0	2	2

TEMPORARY PAVEMENT SCHEDULE

LOCATION	TEMPORARY PAVMENT	TEMPORARY RAMP
	SY	SY
STAGE I TEMPORARY PAVEMENT		
STA. 161+74 TO STA. 163+11 RT	91	8
STA. 163+95 TO STA. 165+19 RT	83	8
TOTAL =	174	16

TEMPORARY EROSION CONTROL

LOCATION	TEMP EROSION SEEDING	PERIM EROSION BARRIER
	POUND	FOOT
STA. 160+10 TO STA. 163+07 LT	9	297
STA. 159+84 TO STA. 163+07 RT	6	323
STA. 163+99 TO STA. 167+24 RT	9	325
STA. 163+99 TO STA. 166+13 LT	6	214
TOTALS =	30	1159

FILE NAME = ...\D366861-SHT-Schedules.dgn

USER NAME = SAW | PLOT SCALE = 1.00000 ' / IN. | PLOT DATE = 7/29/2010

DESIGNED - RAC | DRAWN - RAC | CHECKED - DAZ | DATE - 07/30/10

REVISED - | REVISED - | REVISED - | REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

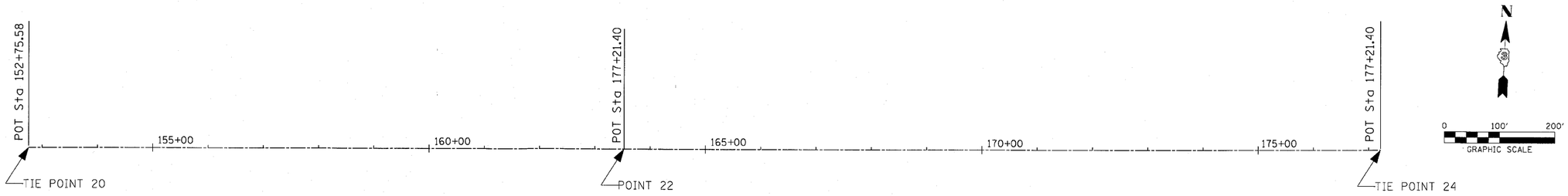
ZROKA engineering
Zroka Engineering, P.C.
4216 North Hermitage
Chicago, IL 60613

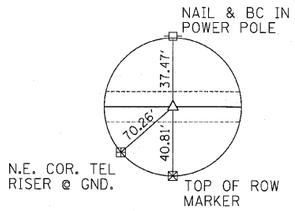
SHEET NO. 5 OF 42 SHEETS

SCHEDULE OF QUANTITIES

STA. 159+89 TO STA. 167+17

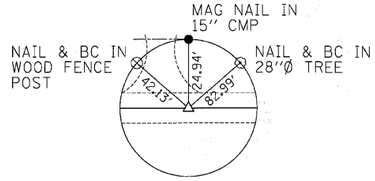
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
681	118 BR	IROQUOIS	42	5
		CONTRACT NO. 66861		
	ILLINOIS FED. AID PROJECT			





TIE POINT 20

P.O.T. STA. 152+75.58
MAG NAIL (SET)
N. 1,537,071.53
E. 1,104,536.41



TIE POINT 24

P.O.T. STA. 177+21.40
MAG NAIL (SET)
N. 1,537,187.13
E. 1,106,979.50

TIE POINT DATA

POINT NO.	NORTHING	EASTING	STATION	OFFSET
20	1,537,071.5319	1,104,536.4135	152+75.58	0.0000
22	1,537,122.4554	1,105,612.6260	163+53.00	0.0000
24	1,537,187.1320	1,106,979.4960	177+21.40	0.0000

BENCHMARKS

BM#1 - CHISELED "□" TOP S.W. COR.
BRIDGE DECK
17' RT., STA. 163+11.11
ELEV. 630.85

BM#2 - RAILROAD SPIKE IN POWER POLE
40' RT., STA. 162+98
ELEV. 630.78

BENCHMARK DATA

POINT NO.	NORTHING	EASTING	STATION	OFFSET
BM1	1,537,103.7440	1,105,571.5780	163+11.11	16.7504
BM2	1,537,079.7370	1,105,559.5480	162+97.96	40.1620

FILE NAME = ...\D366861-SHT-Align Survey Ties and Benchmarks.dgn	USER NAME = SAW	DESIGNED - RAC	REVISED -
		DRAWN - RAC	REVISED -
	PLOT SCALE = 1.00000 ' / IN.	CHECKED - DAZ	REVISED -
	PLOT DATE = 7/29/2010	DATE - 07/30/10	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

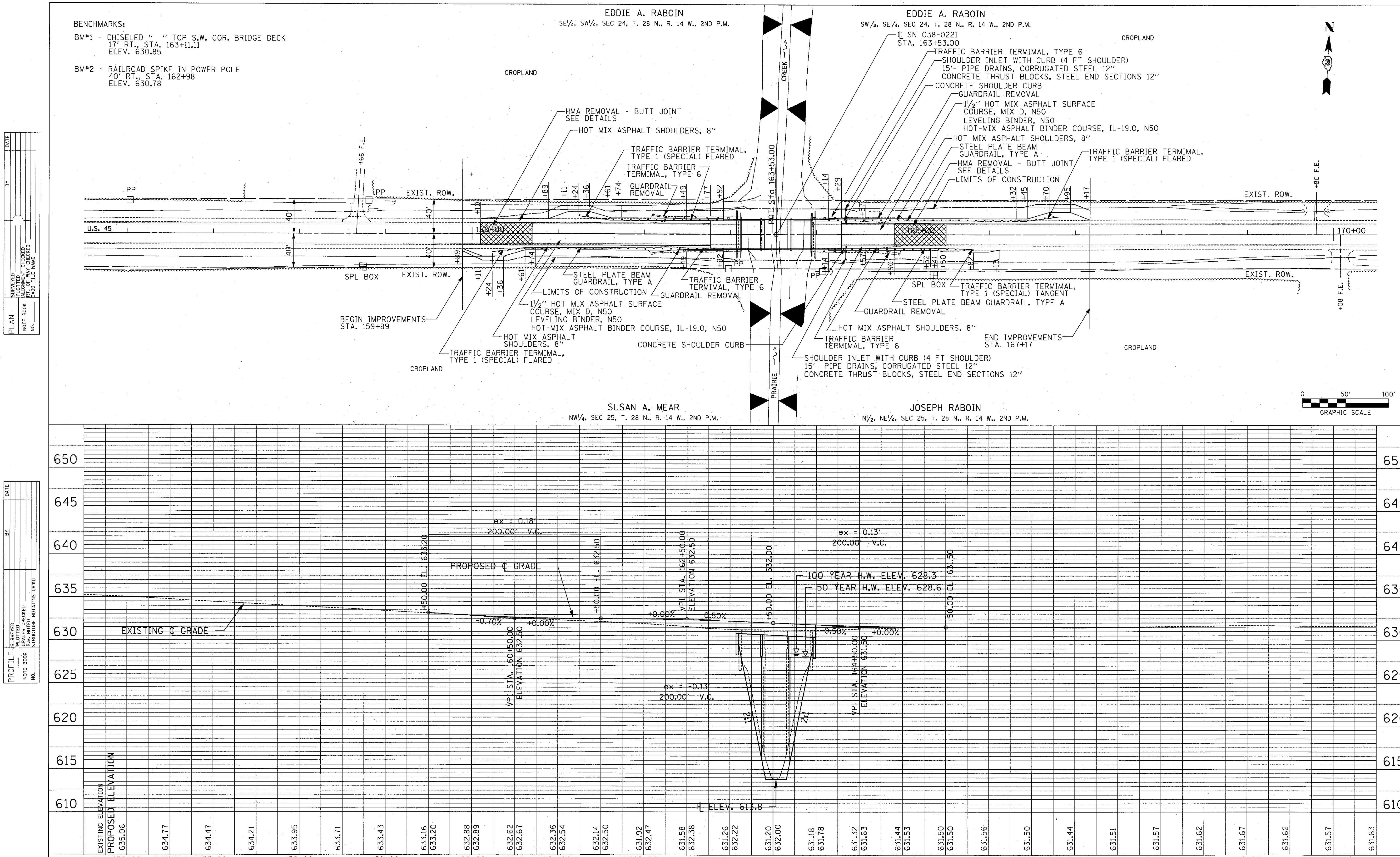
ZROKA engineering
Zroka Engineering, P.C.
4216 North Hermitage
Chicago, IL 60613

SCALE: 1" = 100' | SHEET NO. 6 OF 42 SHEETS

ALIGNMENT, SURVEY TIES AND BENCHMARKS

STA. 159+89 TO STA. 167+17

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
681	118 BR	IROQUOIS	42	6
		CONTRACT NO. 66861		
	ILLINOIS FED. AID PROJECT			



BENCHMARKS:
BM#1 - CHISELED " " TOP S.W. COR. BRIDGE DECK 17' RT., STA. 163+11.11 ELEV. 630.85
BM#2 - RAILROAD SPIKE IN POWER POLE 40' RT., STA. 162+98 ELEV. 630.78
EDDIE A. RABOIN
SE1/4, SW1/4, SEC 24, T. 28 N., R. 14 W., 2ND P.M.
EDDIE A. RABOIN
SW1/4, SE1/4, SEC 24, T. 28 N., R. 14 W., 2ND P.M.
CROPLAND
℄ SN 038-0221 STA. 163+53.00
TRAFFIC BARRIER TERMINAL, TYPE 6
SHOULDER INLET WITH CURB (4 FT SHOULDER) 15'- PIPE DRAINS, CORRUGATED STEEL 12" CONCRETE THRUST BLOCKS, STEEL END SECTIONS 12"
CONCRETE SHOULDER CURB
GUARDRAIL REMOVAL
1½" HOT MIX ASPHALT SURFACE COURSE, MIX D, N50 LEVELING BINDER, N50 HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N50
HOT MIX ASPHALT SHOULDERS, 8"
STEEL PLATE BEAM GUARDRAIL, TYPE A
HMA REMOVAL - BUTT JOINT SEE DETAILS
LIMITS OF CONSTRUCTION
TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) FLARED
HMA REMOVAL - BUTT JOINT SEE DETAILS
HOT MIX ASPHALT SHOULDERS, 8"
TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) FLARED
TRAFFIC BARRIER TERMINAL, TYPE 6
GUARDRAIL REMOVAL
CREEK
PRAIRIE
Pot Sta 163+53.00
PP
EXIST. ROW.
U.S. 45
40'
+66 F.E.
+80 F.E.
+08 F.E.
160+00
165+00
170+00
SPL BOX
STEEL PLATE BEAM GUARDRAIL, TYPE A
LIMITS OF CONSTRUCTION
1½" HOT MIX ASPHALT SURFACE COURSE, MIX D, N50 LEVELING BINDER, N50 HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N50
TRAFFIC BARRIER TERMINAL, TYPE 6
GUARDRAIL REMOVAL
BEGIN IMPROVEMENTS STA. 159+89
HOT MIX ASPHALT SHOULDERS, 8"
TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) FLARED
CONCRETE SHOULDER CURB
TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT
STEEL PLATE BEAM GUARDRAIL, TYPE A
GUARDRAIL REMOVAL
HOT MIX ASPHALT SHOULDERS, 8"
TRAFFIC BARRIER TERMINAL, TYPE 6
END IMPROVEMENTS STA. 167+17
SHOULDER INLET WITH CURB (4 FT SHOULDER) 15'- PIPE DRAINS, CORRUGATED STEEL 12" CONCRETE THRUST BLOCKS, STEEL END SECTIONS 12"
SUSAN A. MEAR
NW1/4, SEC 25, T. 28 N., R. 14 W., 2ND P.M.
JOSEPH RABOIN
N1/2, NE1/4, SEC 25, T. 28 N., R. 14 W., 2ND P.M.
N
0 50' 100'
GRAPHIC SCALE
650 645 640 635 630 625 620 615 610
ex = 0.18' 200.00' V.C.
ex = 0.13' 200.00' V.C.
ex = -0.13' 200.00' V.C.
PROPOSED ℄ GRADE
EXISTING ℄ GRADE
+50.00 EL. 633.20
+50.00 EL. 632.50
VPI STA. 162+50.00 ELEVATION 632.50
+50.00 EL. 632.00
+50.00 EL. 631.50
VPI STA. 160+50.00 ELEVATION 632.50
VPI STA. 164+50.00 ELEVATION 631.50
-0.70%
+0.00%
+0.00%
-0.50%
-0.50%
+0.00%
100 YEAR H.W. ELEV. 628.3
50 YEAR H.W. ELEV. 628.6
2:1
℄ ELEV. 613.8
EXISTING ELEVATION
PROPOSED ELEVATION
635.06 634.77 634.47 634.21 633.95 633.71 633.43 633.16 633.20 632.88 632.89 632.62 632.67 632.36 632.54 632.14 632.50 631.92 632.47 631.58 632.38 631.26 632.22 631.20 632.00 631.18 631.78 631.32 631.63 631.44 631.53 631.50 631.50 631.56 631.50 631.44 631.51 631.57 631.62 631.67 631.62 631.57 631.63
156+00 157+00 158+00 159+00 160+00 161+00 162+00 163+00 164+00 165+00 166+00 167+00 168+00 169+00 170+00
PLAN NOTE BOOK NO. SURVEYED PLOTTED ALIGNMENT CHECKED R.O.W. CHECKED CADD FILE NAME BY DATE
PROFILE NOTE BOOK NO. SURVEYED PLOTTED GRADES CHECKED B.M. NOTED STRUCTURE NOTATIONS CHKD BY DATE

FILE NAME = ...\D366861-SHT-plan&profile.dgn	USER NAME = SAW	DESIGNED - RAC	REVISED -
		DRAWN - SAW	REVISED -
	PLOT SCALE = 52.0000 ' / IN.	CHECKED - RAC	REVISED -
	PLOT DATE = 7/29/2010	DATE - 07/30/10	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

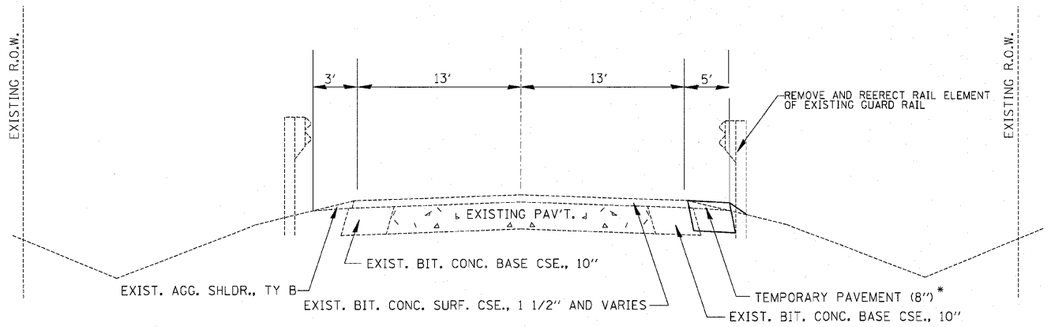
ZROKA engineering — Zroka Engineering, P.C. 4216 North Hermitage Chicago, IL 60613

SCALE: 50 | SHEET NO. 7 OF 42 SHEETS | STA. 159+84 TO STA. 167+24

PLAN & PROFILE

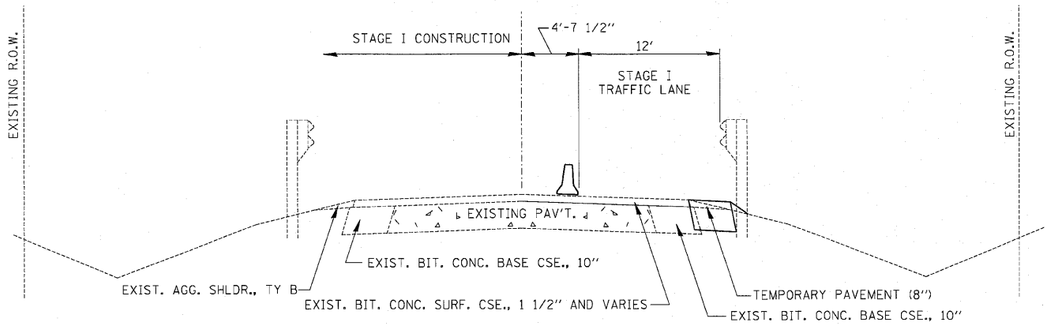
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
681	118 BR	IROQUOIS	42	7
		CONTRACT NO. 66861		

FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT

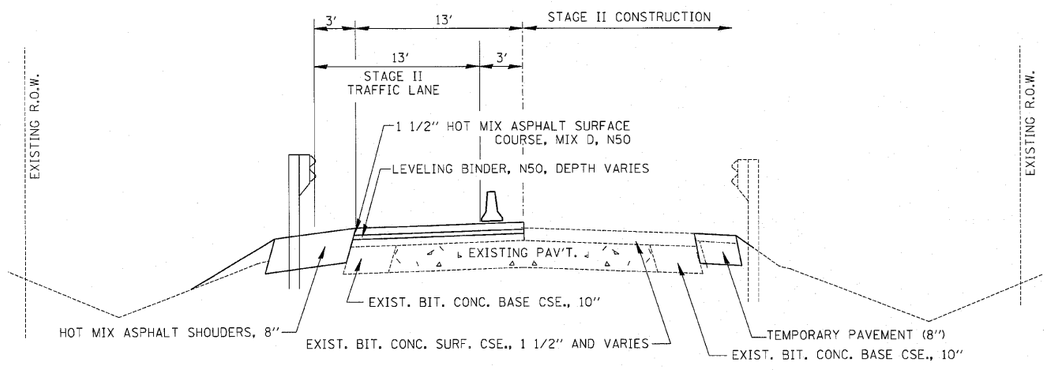


PRE-STAGE I SECTION

*REMOVAL OF EXISTING SHOULDER AND SUBGRADE TO BE INCLUDED IN COST OF TEMPORARY PAVEMENT



STAGE I SECTION



STAGE II SECTION

PRE-STAGE I CONSTRUCTION NOTES

1. INSTALL TRAFFIC CONTROL PER STANDARD 701326.
2. REMOVE RAIL ELEMENT OF EXISTING GUARDRAIL AT TEMPORARY PAVEMENT.
3. CONSTRUCT TEMPORARY PAVEMENT.
4. REINSTALL RAIL ELEMENT OF GUARDRAIL

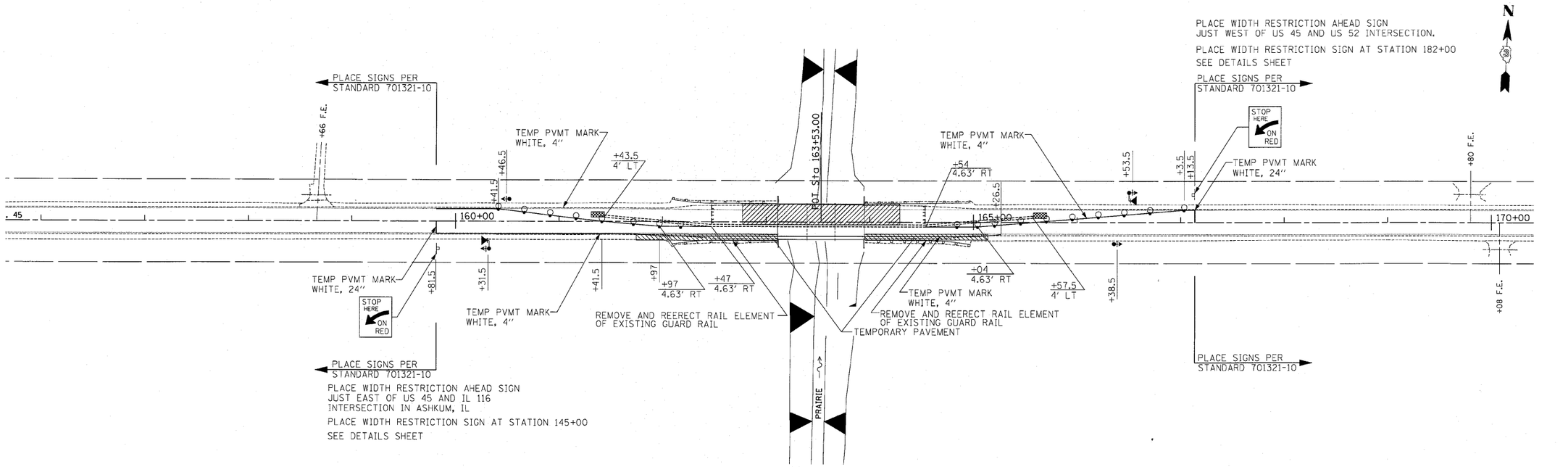
STAGE I CONSTRUCTION NOTES

1. INSTALL TRAFFIC SIGNALS, TEMPORARY CONCRETE BARRIER, SIGNS AND ETC. ACCORDING TO DETAILS AND TRAFFIC CONTROL STANDARD 701321 MAINTAINING ALL TRAFFIC ON THE EASTBOUND LANE.
2. REMOVE STAGE I PORTION OF THE EXISTING BRIDGE STRUCTURE, GUARDRAIL AND PAVEMENT AS SHOWN ON THE PLANS.
3. CONSTRUCT THE STAGE I PORTION OF THE PROPOSED STRUCTURE, APPROACH PAVEMENT, HMA LEVELING BINDER, TEMPORARY RAMP AND GUARDRAIL.

STAGE II CONSTRUCTION NOTES

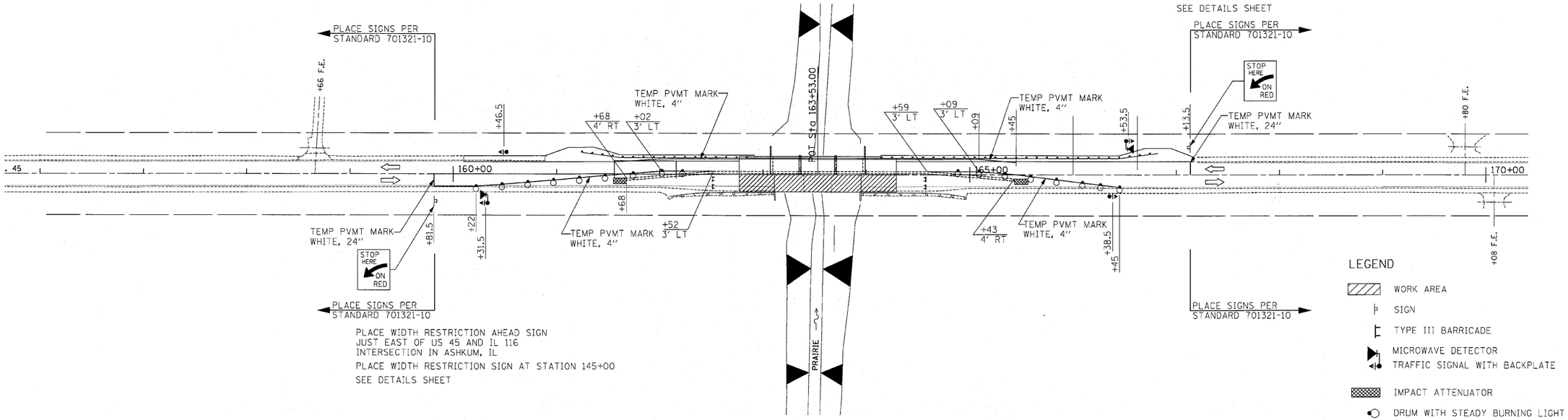
1. RELOCATE THE TRAFFIC CONTROL PER STANDARD 701321 AND AS DETAILED IN THESE PLANS. REDIRECT TRAFFIC TO THE WESTBOUND LANE.
2. REMOVE THE STAGE II PORTION OF THE EXISTING BRIDGE STRUCTURE, GUARDRAIL AND PAVEMENT AS SHOWN ON THE PLANS.
3. CONSTRUCT THE STAGE II PORTION OF THE PROPOSED STRUCTURE, APPROACH PAVEMENT, HMA BINDER, HMA LEVELING BINDER, AND GUARDRAIL.
4. REMOVE TRAFFIC SIGNALS AND ETC. CALLED FOR IN STANDARD 701321. PLACE HMA SURFACE, PAVEMENT MARKINGS AND ALL REMAINING WORK USING STANDARD 701201.

FILE NAME = ...\D366861-SHT-Stage Const Traffic Control XS.dgn	USER NAME = SAW	DESIGNED - RAC	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	ZROKA engineering	Zroka Engineering, P.C. 4216 North Hermitage Chicago, IL 60613	STAGE CONSTRUCTION TRAFFIC CONTROL	F.A. RTE.	SECTION	COUNTY / TOTAL SHEETS / SHEET NO.
		DRAWN - RAC	REVISED -					681	118 BR	IROQUOIS / 42 / 8
	PLOT SCALE = 50.0000 ' / IN.	CHECKED - DAZ	REVISED -							CONTRACT NO. 66861
	PLOT DATE = 7/29/2010	DATE - 07/30/10	REVISED -		N/A	SHEET NO. 8 OF 42 SHEETS	STA. 159+84 TO STA. 167+24		ILLINOIS	FED. AID PROJECT



STAGE I CONSTRUCTION

0 50' 100'
GRAPHIC SCALE



STAGE II CONSTRUCTION

LEGEND

- WORK AREA
- SIGN
- TYPE III BARRICADE
- MICROWAVE DETECTOR
- TRAFFIC SIGNAL WITH BACKPLATE
- IMPACT ATTENUATOR
- DRUM WITH STEADY BURNING LIGHT
- TEMPORARY CONCRETE BARRIER
- DOUBLE VERTICAL PANEL

FILE NAME = ...\0366861-SHT-Stage Const Traffic Control.dgn	USER NAME = SAW	DESIGNED - RAC	REVISED -
		DRAWN - RAC	REVISED -
	PLOT SCALE = 50.0000 ' / IN.	CHECKED - DAZ	REVISED -
	PLOT DATE = 7/29/2010	DATE - 07/30/10	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ZROKA engineering
Zroka Engineering, P.C.
4216 North Hermitage
Chicago, IL 60613

SCALE: 1" = 50' | SHEET NO. 9 OF 42 SHEETS

STAGE CONSTRUCTION TRAFFIC CONTROL

STA. 159+84 TO STA. 167+17

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
681	118 BR	IROQUOIS	42	9
		CONTRACT NO. 66861		
		ILLINOIS FED. AID PROJECT		

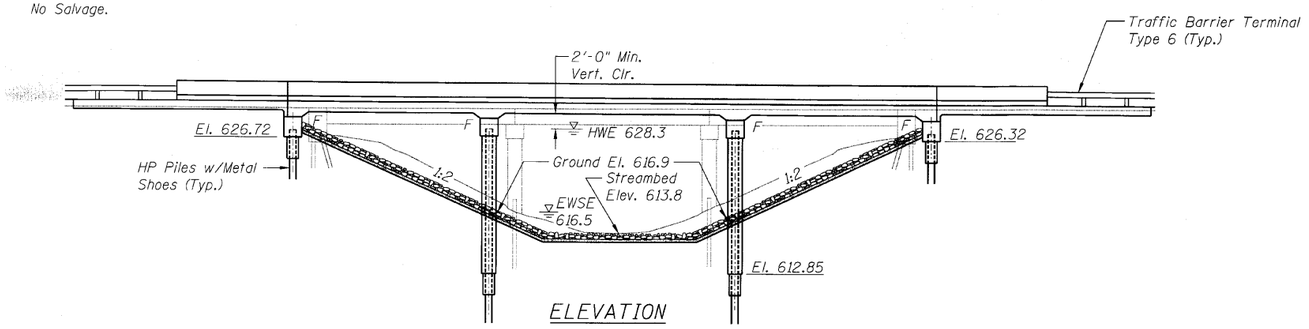
Bench Mark: Railroad Spike in Power Pole 40' Rt., Sta. 162+98, Elev. 630.78.

Existing Structure: S.N. 038-0175 originally constructed in 1974 as SBI Route 116 Section 118X-BR. Three simple span PPC Channel Beams (Nelson Beams) superstructure supported on pile bent abutments and solid wall pile bent piers. Bk. to Bk. abutments is 85'-0" and Out to Out width is 33'-9".

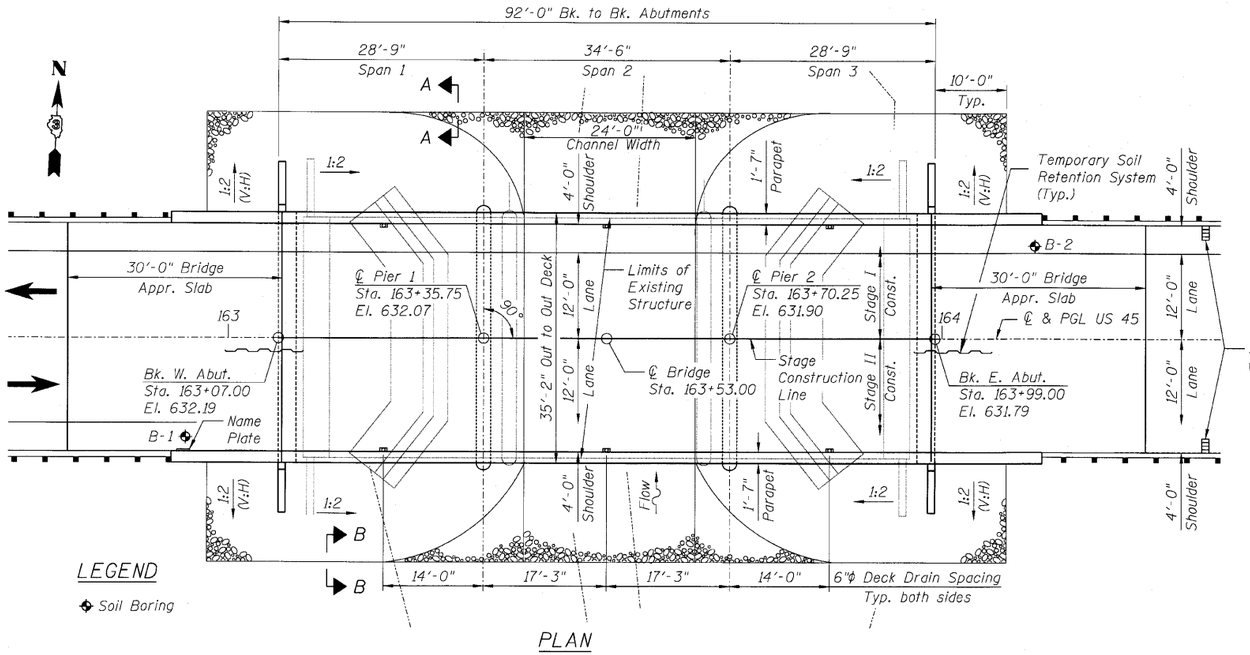
Existing structure shall be removed and replaced using stage construction to maintain one lane of traffic.

No Salvage.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



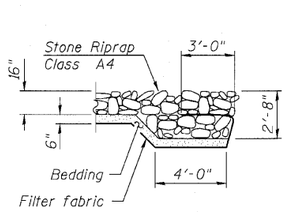
ELEVATION



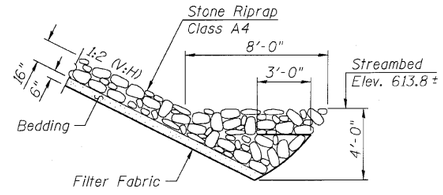
PLAN

LEGEND

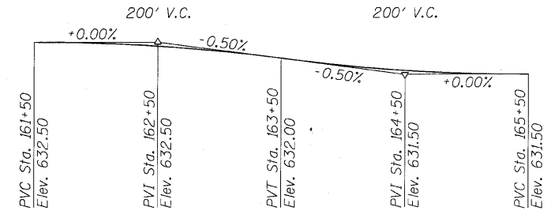
◆ Soil Boring



SECTION A-A



SECTION B-B



PROFILE GRADE
(along ℄ US Route 45)

LOADING HL-93

Allow 50#/sq. ft. for future wearing surface

DESIGN SPECIFICATIONS

2007 AASHTO LRFD Bridge Design Specifications with 2008 and 2009 Interims

DESIGN STRESSES

FIELD UNITS

f'_c = 3,500 psi

f_y = 60,000 psi (reinforcement)

SEISMIC DATA

Seismic Performance Zone (SPZ) = 1

Design Spectral Acceleration @ 1.0 sec (SDI) = 0.078g

Design Spectral Acceleration @ 0.2 sec (SDS) = 0.137g

Soil Site Class = C

STATE OF ILLINOIS DEBORAH A. ZROKA 081-005152 LICENSED STRUCTURAL ENGINEER

Signature — July 29, 2010 Date

November 30, 2010 Expires

APPROVED
FOR STRUCTURAL ADEQUACY ONLY

ENGINEER OF BRIDGES AND STRUCTURES

DESIGN SCOUR ELEVATION TABLE

W. Abut.	Pier 1	Pier 2	E. Abut.
626.7	609.8	609.8	626.3

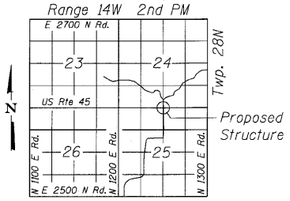
WATERWAY INFORMATION

Drainage Area = 68.7 sq. mi.

Exist. Low Grade Elev. = 631.20 @ Sta. 164+00
Prop. Low Grade Elev. = 631.44 @ Sta. 167+00

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft. Exist.	Opening Sq. Ft. Prop.	Nat. H.W.E.	Head - Ft. Exist.	Head - Ft. Prop.	Headwater El. Exist.	Headwater El. Prop.
	10	2427	509	776	627.3	0.4	0.4	627.7	627.7
Design	50	3695	586	860	628.3	0.8	0.6	629.1	629.0
Base	100	4234	608	884	628.6	0.9	0.8	629.6	629.4
Max. Calc.	500	5512	632	929	629.2	1.5	1.1	630.6	630.3

10-Year Velocity through Existing Bridge = 4.8 fps
10-Year Velocity through Proposed Bridge = 3.8 fps



LOCATION SKETCH

GENERAL PLAN AND ELEVATION
US 45 OVER PRAIRIE CREEK
F.A.P. RTE. 681
SECTION 118BR
IROQUOIS COUNTY
STATION 163+53.00
STRUCTURE NO. 038-0221

SHEET NO. 1 OF 20 SHEETS	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	681	118BR	IROQUOIS	42	10
			CONTRACT NO. 66861		
	FED. ROAD DIST. NO. _	ILLINOIS	FED. AID PROJECT		

ZROKA engineering
Zroka Engineering, P.C.
4216 North Hermitage
Chicago, IL 60613

Date: 7-28-10 Drawn By: FJS Checked By: DZ

7/29/2010 6:29:40 PM C:\Drawings\55000-IDOT\US45\Final\Structural Plans\S1_General Plan.dgn

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

1. Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60. See Special Provisions.
2. Reinforcement bars designated (E) shall be epoxy coated.
3. Layout of slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.
4. The Contractor shall make allowance for the deflection of forms, shrinkage and settlement of falsework, in addition to allowance for dead load deflection. Forms for deck slab shall be removed prior to placement of bridge approach slab.
5. Slip forming of the parapets is not allowed.

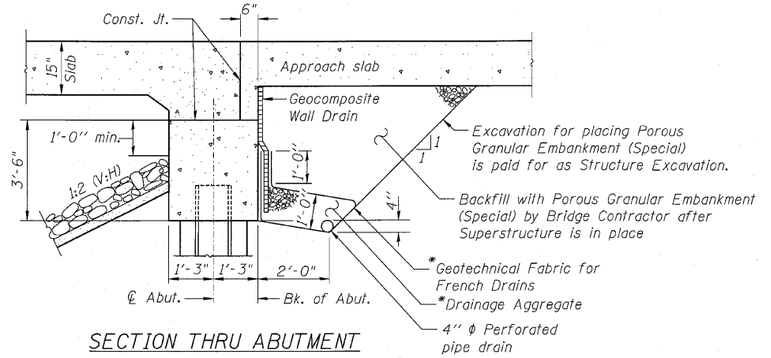
TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Porous Granular Embankment, Special	Cu Yd	-	64	64
Stone Riprap, Class A4	Sq Yd	-	744	744
Filter Fabric	Sq Yd	-	744	744
Removal of Existing Structures	Each	-	-	1
Structure Excavation	Cu Yd	-	120	120
Floor Drains	Each	6	-	6
Concrete Structures	Cu Yd	20.8	124.6	145.4
Concrete Superstructure	Cu Yd	288.7	-	288.7
Bridge Deck Grooving	Sq Yd	504	-	504
Concrete Encasement	Cu Yd	-	9.8	9.8
Protective Coat	Sq Yd	536	11	547
Reinforcement Bars, Epoxy Coated	Pound	79,010	12,860	91,870
Bar Splicers	Each	418	108	526
Furnishing Steel Piles HP12x74	Foot	-	1,395	1,395
Driving Piles	Foot	-	1,395	1,395
Test Pile Steel HP12x74	Each	-	1	1
Pile Shoes	Each	-	28	28
Name Plates	Each	1	-	1
Geocomposite Wall Drain	Sq Yd	-	33	33
Pipe Underdrains For Structures 4"	Foot	-	140	140
Temporary Soil Retention System	Sq Ft	-	96.6	96.6
Underwater Structure Excavation Protection Location 1	Each	-	1	1
Underwater Structure Excavation Protection Location 2	Each	-	1	1
Asbestos Bearing Pad Removal	**Each**	**36**	**36**	**72**

INDEX OF SHEETS

STATION 163+53.00
BUILT 2010 BY
STATE OF ILLINOIS
F.A.P. RT. 681 SEC. 118BR
LOADING HL-93
STR NO. 038-0221

NAME PLATE
See Std. 515001



SECTION THRU ABUTMENT

* 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).

GENERAL DATA
STRUCTURE NO. 038-0221

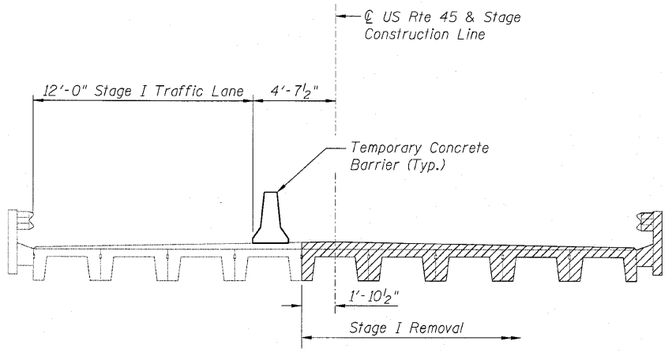
SHEET NO. 2 OF 20 SHEETS	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	681	118BR	IROQUOIS	42	11
			CONTRACT NO. 66861		
	FED. ROAD DIST. NO. _	ILLINOIS	FED. AID PROJECT		

ZROKA engineering
Zroka Engineering, P.C.
4216 North Hermitage
Chicago, IL 60613

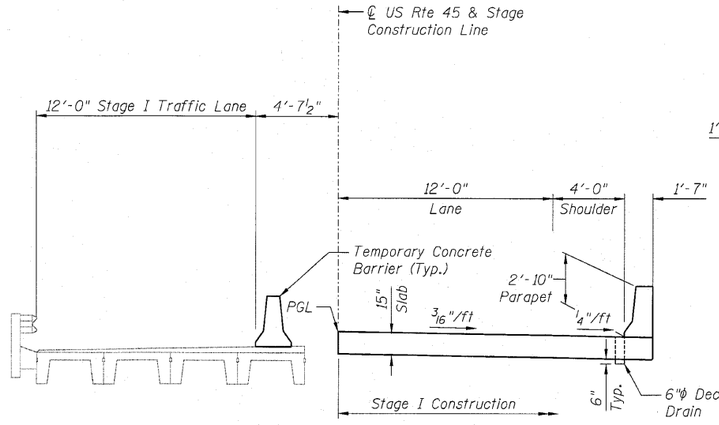
Date: 7-28-10 Drawn By: FJS Checked By: DZ

7/29/2010 6:30:26 PM C:\Drawings\5500-IOIU545\Final Structural Plans\S2_General Data.dgn

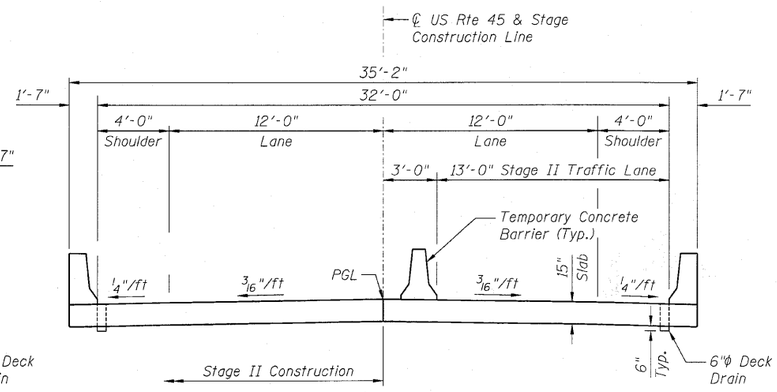
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



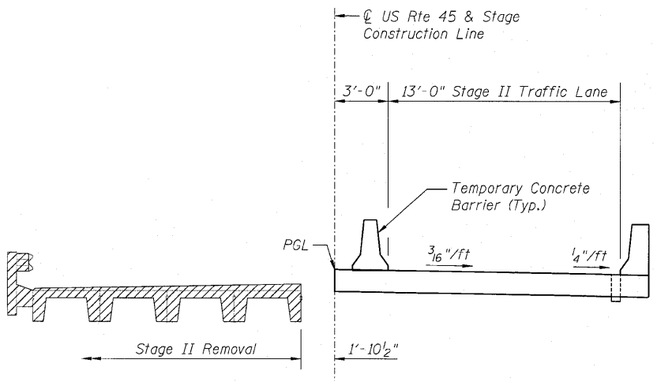
STAGE I REMOVAL
(Looking West)



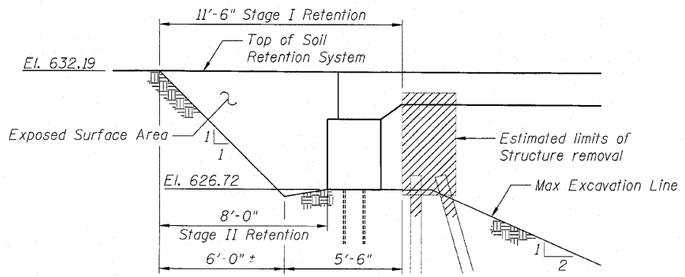
STAGE I CONSTRUCTION
(Looking West)



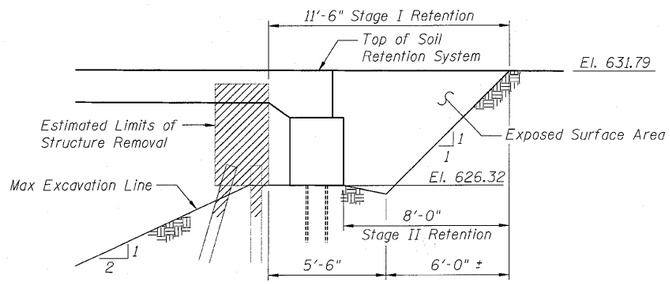
STAGE II CONSTRUCTION
(Looking West)



STAGE II REMOVAL
(Looking West)



WEST ABUTMENT



EAST ABUTMENT

ELEVATION TEMPORARY SOIL RETENTION SYSTEM

A cantilevered sheet piling design does not appear feasible and additional members or other retention systems may be necessary. The Contractor shall submit a temporary soil retention system design including plan details and calculations for review and acceptance by the Engineer.

Notes:

Hatched areas indicate removal of existing structures.

For quantity of temporary concrete barrier, see Roadway Plans.

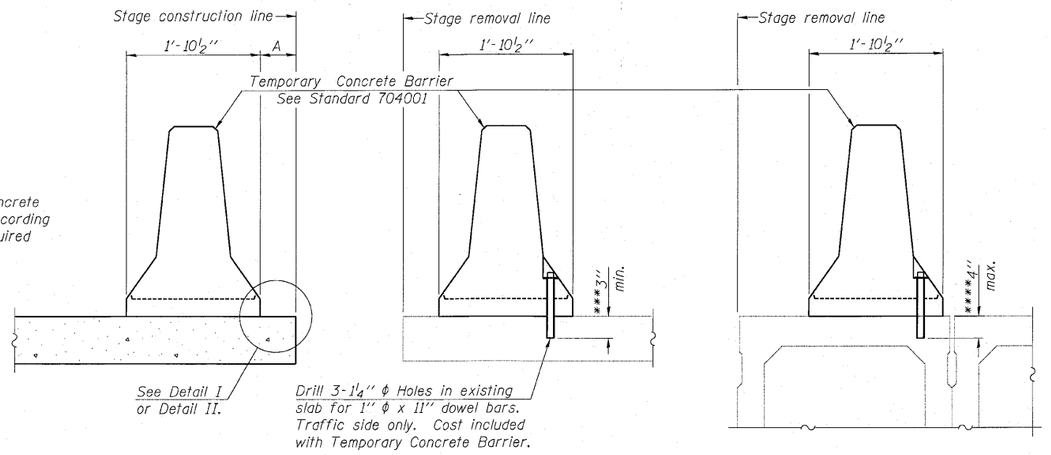
STAGE CONSTRUCTION DETAILS
STRUCTURE NO. 038-0221

ZROKA engineering
Zroka Engineering, P.C.
4216 North Hermitage
Chicago, IL 60613

Date: 7-28-10 Drawn By: AJP Checked By: DZ

SHEET NO. 3 OF 20 SHEETS	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	681	118BR	IROQUOIS	42	12
			CONTRACT NO. 66861		
	FED. ROAD DIST. NO. _	ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



NEW SLAB | EXISTING SLAB | EXISTING DECK BEAM

When "A" is 3'-6" or less, the temporary concrete barrier shall be anchored to the new slab according to Detail I or Detail II. No anchorage is required when "A" is greater than 3'-6".

NOTES

Detail I - With Bar Splicer or Couplers:
Connect one (1) 1"x9"x10" steel ℙ to the top layer of couplers with 2-⅝" ϕ bolts screwed to coupler at approximate ℄ of each barrier panel.

Detail II - With Extended Reinforcement Bars:
Connect one (1) 1"x9"x 10" steel ℙ to the concrete slab or concrete wearing surface with 2-⅝" ϕ Expansion Anchors or cast in place inserts spaced between the top layer of reinforcement at approximate ℄ of each barrier panel.

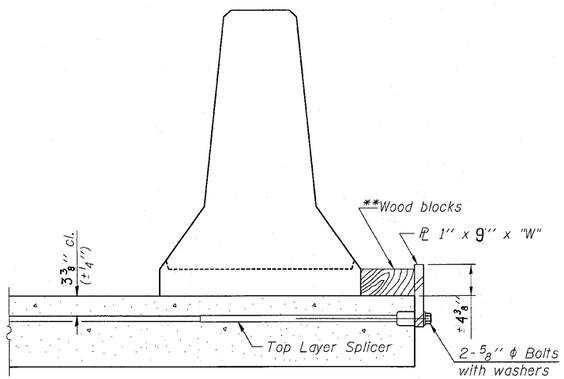
Cost of anchorage is included with Temporary Concrete Barrier.

The 1" x 9" x 10" plate shall not be removed until stage II construction forms and all reinforcement bars are in place and the concrete is ready to be placed.

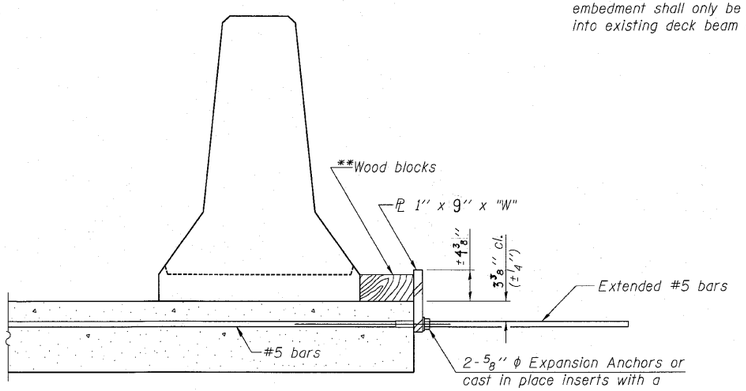
SECTIONS THRU SLAB OR DECK BEAM

*** Dimension shown is minimum required embedment into concrete. If hot-mix asphalt wearing surface is present, minimum embedment shall be in addition to wearing surface depth.

**** If existing deck beam is to remain in place after stage construction, embedment shall only be into wearing surface and not into existing deck beam concrete.



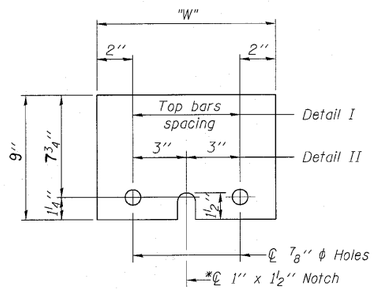
DETAIL I



DETAIL II

** Wood blocks may be omitted when required to provide minimum stage traffic lane width. When the wood blocks are omitted, the concrete barrier shall be in direct contact with the steel retainer plate.

"W" = Top bars spacing + 4"



STEEL RETAINER ℙ 1" x 9" x 10"

* Required only with Detail II

TEMPORARY CONCRETE BARRIER FOR STAGE CONSTRUCTION STRUCTURE NO. 038-0221

SHEET NO. 4 OF 20 SHEETS	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	681	118BR	IROQUOIS	42	13
			CONTRACT NO. 66861		
	FED. ROAD DIST. NO. _	ILLINOIS	FED. AID PROJECT		

ZROKA engineering
Zroka Engineering, P.C.
4216 North Hermitage
Chicago, IL 60613

Date: 7-28-10 Drawn By: FJS Checked By: DZ

R-27

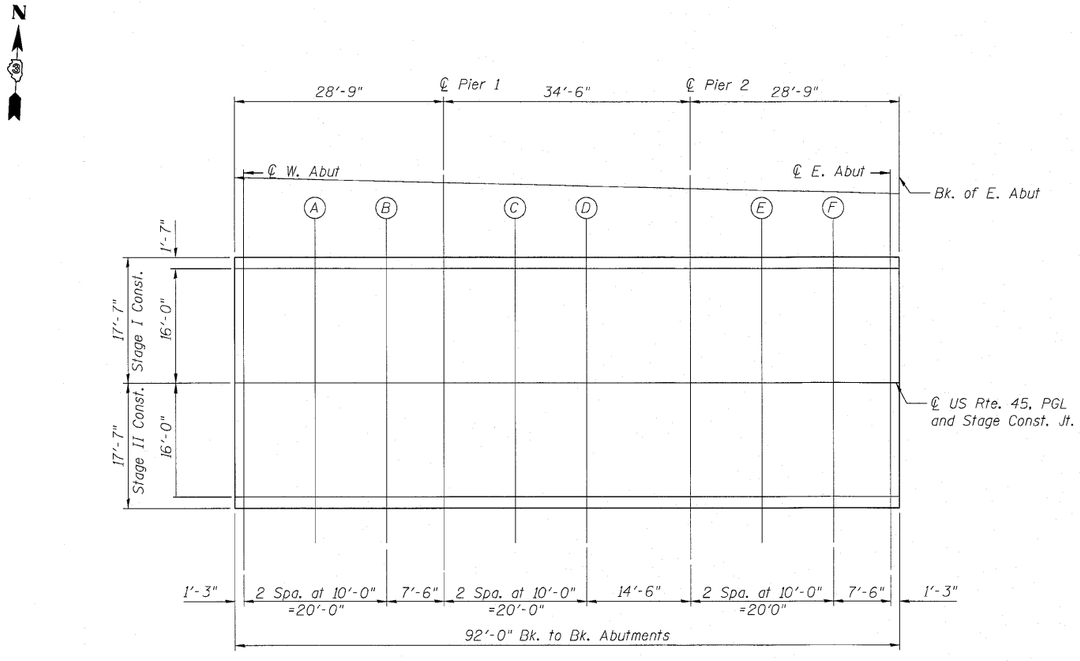
11-1-09

7/29/2010 6:31:12 PM C:\Drawings\5500-10\US45\Final\Structural\Plans\S4_Temp Concrete Barrier for Stage Construction.dgn

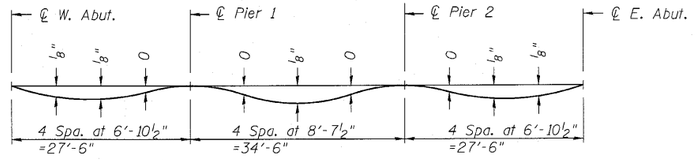
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CL ROADWAY, PROFILE GRADE & STAGE CONSTRUCTION LINE

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BK. W. ABUT	163+07.00	0.00	632.19	632.19
CL W. ABUT.	163+08.25	0.00	632.19	632.19
A	163+18.25	0.00	632.15	632.16
B	163+28.25	0.00	632.10	632.11
CL PIER 1	163+35.75	0.00	632.07	632.07
C	163+45.75	0.00	632.02	632.03
D	163+55.75	0.00	631.97	631.98
CL PIER 2	163+70.25	0.00	631.90	631.90
E	163+80.25	0.00	631.86	631.87
F	163+90.25	0.00	631.82	631.83
CL E. ABUT.	163+97.75	0.00	631.79	631.79
BK. E. ABUT.	163+99.00	0.00	631.79	631.79



PLAN



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 in table.

TOP OF SLAB ELEVATIONS
STRUCTURE NO. 038-0221

SHEET NO. 5 OF 20 SHEETS	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	681	118BR	IROQUOIS	42	14
			CONTRACT NO. 66861		
	FED. ROAD DIST. NO. _	ILLINOIS	FED. AID PROJECT		

ZROKA engineering
Zroka Engineering, P.C.
4216 North Hermitage
Chicago, IL 60613

Date: 7-28-10 Drawn By: FJS Checked By: DZ

E-S

11-1-09

7/29/2010 6:31:31 PM C:\Drawings\5500-10\US45\Final Structural Plans\S5_ Top of Slab Elevations.dgn

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

N. EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations
W End West Appr. Pvmt.	162+77.50	-16.00	632.03
A1	162+87.50	-16.00	631.99
A2	162+97.50	-16.00	631.96
E End West Appr. Pvmt.	163+07.50	-16.00	631.92

N. EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
W End West Appr. Pvmt.	162+77.50	-12.00	632.11
A1	162+87.50	-12.00	632.08
A2	162+97.50	-12.00	632.04
E End West Appr. Pvmt.	163+07.50	-12.00	632.00

℄ ROADWAY, PROFILE GRADE & STAGE CONSTRUCTION LINE

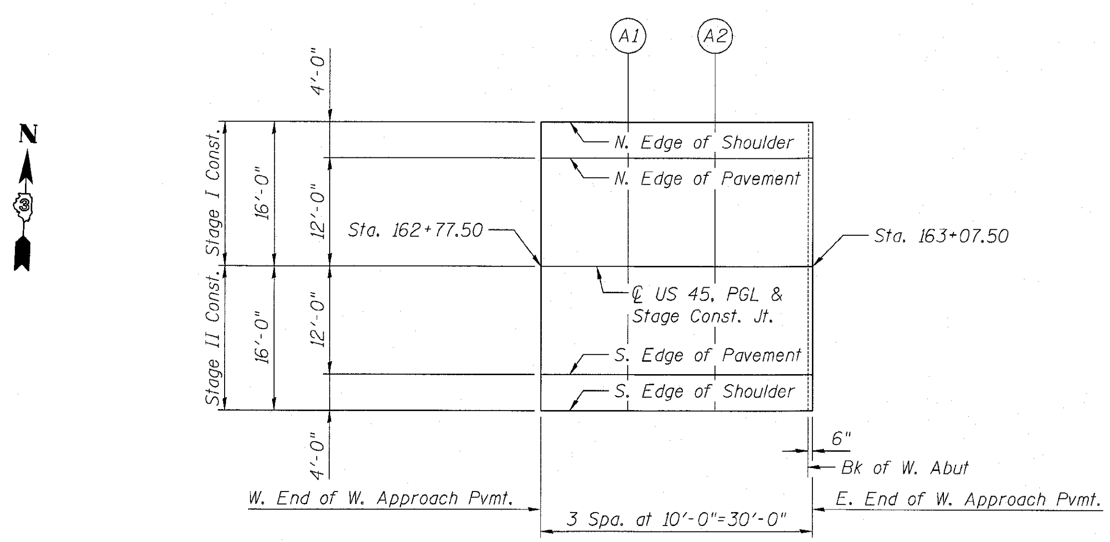
Location	Station	Offset	Theoretical Grade Elevations
W End West Appr. Pvmt.	162+77.50	0.00	632.30
A1	162+87.50	0.00	632.26
A2	162+97.50	0.00	632.23
E End West Appr. Pvmt.	163+07.50	0.00	632.19

S. EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
W End West Appr. Pvmt.	162+77.50	12.00	632.11
A1	162+87.50	12.00	632.08
A2	162+97.50	12.00	632.04
E End West Appr. Pvmt.	163+07.50	12.00	632.00

S. EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations
W End West Appr. Pvmt.	162+77.50	16.00	632.03
A1	162+87.50	16.00	631.99
A2	162+97.50	16.00	631.96
E End West Appr. Pvmt.	163+07.50	16.00	631.92



PLAN

TOP OF WEST APPROACH SLAB ELEVATIONS STRUCTURE NO. 038-0221

SHEET NO. 6 OF 20 SHEETS	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	681	118BR	IROQUOIS	42	15
			CONTRACT NO. 66861		
	FED. ROAD DIST. NO. _	ILLINOIS	FED. AID PROJECT		

ZROKA engineering
Zroka Engineering, P.C.
4216 North Hermitage
Chicago, IL 60613

Date: 7-28-10 Drawn By: FJS Checked By: DZ E-AS 11-1-09

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

N. EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations
W End East Appr. Pvmt.	163+98.50	-16.00	631.52
A3	164+08.50	-16.00	631.48
A4	164+18.50	-16.00	631.45
E End East Appr. Pvmt.	164+28.50	-16.00	631.41

N. EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
W End East Appr. Pvmt.	163+98.50	-12.00	631.60
A3	164+08.50	-12.00	631.56
A4	164+18.50	-12.00	631.53
E End East Appr. Pvmt.	164+28.50	-12.00	631.50

℄ ROADWAY, PROFILE GRADE & STAGE CONSTRUCTION LINE

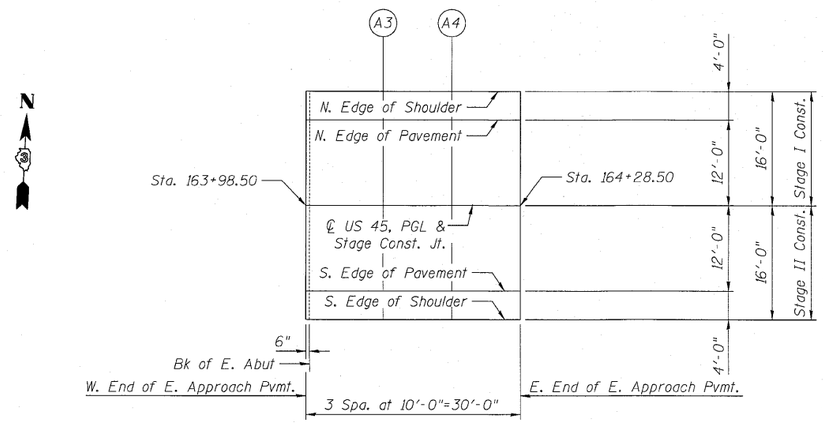
Location	Station	Offset	Theoretical Grade Elevations
W End East Appr. Pvmt.	163+98.50	0.00	631.79
A3	164+08.50	0.00	631.75
A4	164+18.50	0.00	631.72
E End East Appr. Pvmt.	164+28.50	0.00	631.68

S. EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
W End East Appr. Pvmt.	163+98.50	12.00	631.60
A3	164+08.50	12.00	631.56
A4	164+18.50	12.00	631.53
E End East Appr. Pvmt.	164+28.50	12.00	631.50

S. EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations
W End East Appr. Pvmt.	163+98.50	16.00	631.52
A3	164+08.50	16.00	631.48
A4	164+18.50	16.00	631.45
E End East Appr. Pvmt.	164+28.50	16.00	631.41



PLAN

TOP OF EAST APPROACH SLAB ELEVATIONS STRUCTURE NO. 038-0221

SHEET NO. 7 OF 20 SHEETS	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	681	118BR	IROQUOIS	42	16
			CONTRACT NO. 66861		
	FED. ROAD DIST. NO. _	ILLINOIS	FED. AID PROJECT		

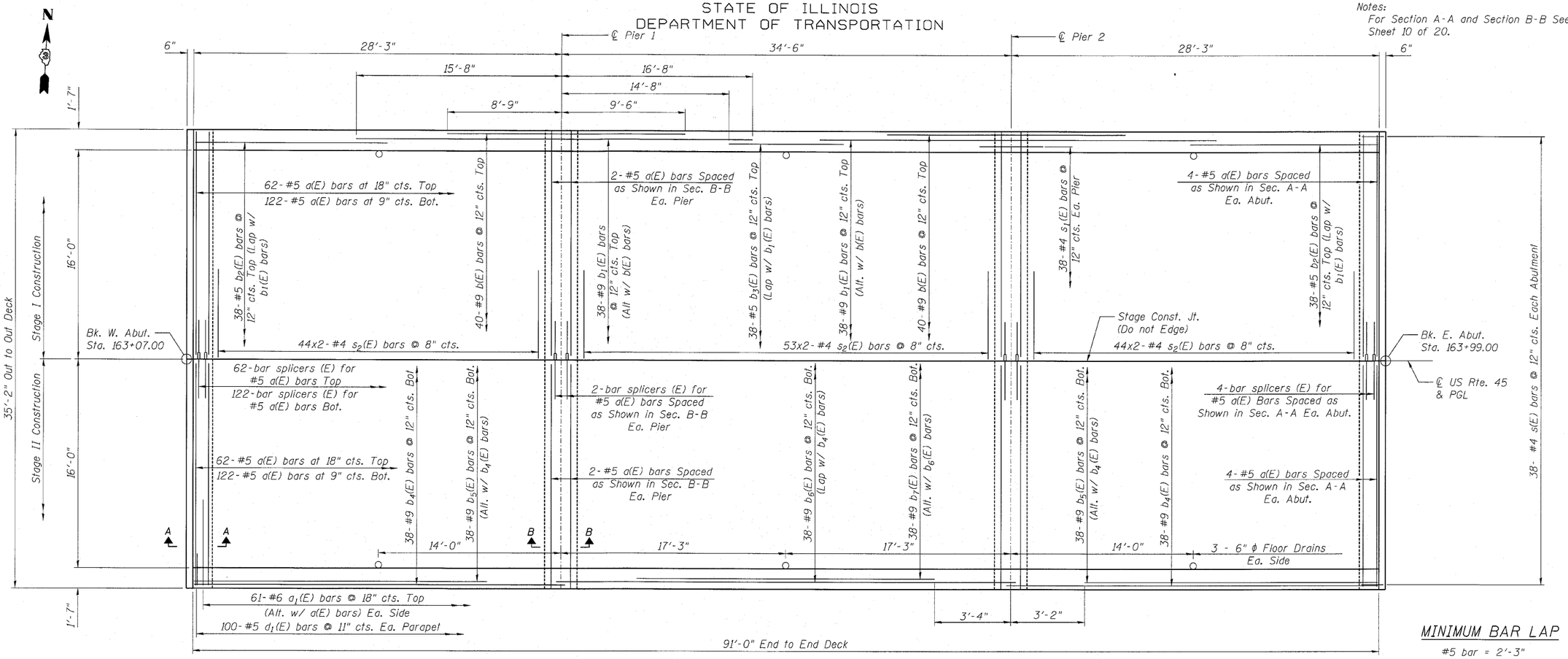
ZROKA engineering
Zroka Engineering, P.C.
4216 North Hermitage
Chicago, IL 60613

Date: 7-28-10 Drawn By: FJS Checked By: DZ E-AS 11-1-09

7/29/2010 6:52:50 PM C:\Drawings\5500-10\US45\FinalStructuralPlans\S7 - Top of East Approach Slab Elevations.dgn

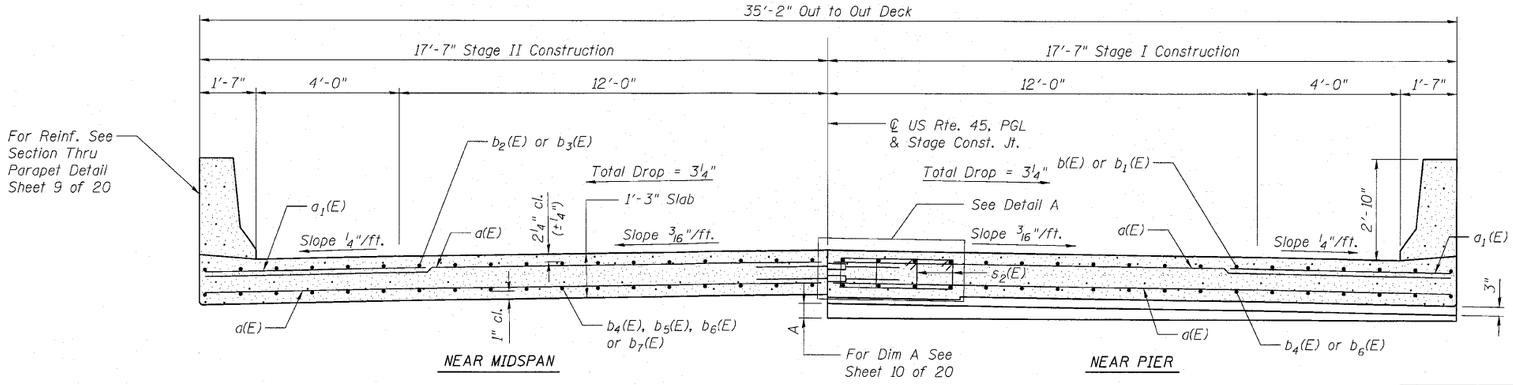
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

Notes:
For Section A-A and Section B-B See Sheet 10 of 20.

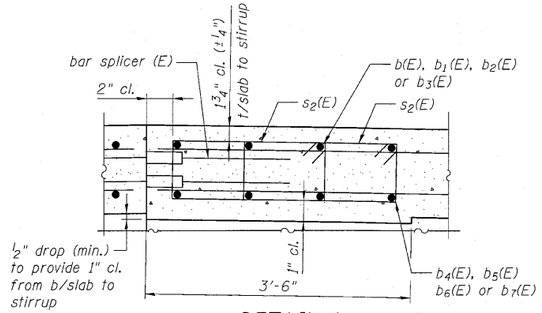


DECK PLAN

MINIMUM BAR LAP
#5 bar = 2'-3"



CROSS SECTION
(Looking West)



DETAIL A

SUPERSTRUCTURE
STRUCTURE NO. 038-0221

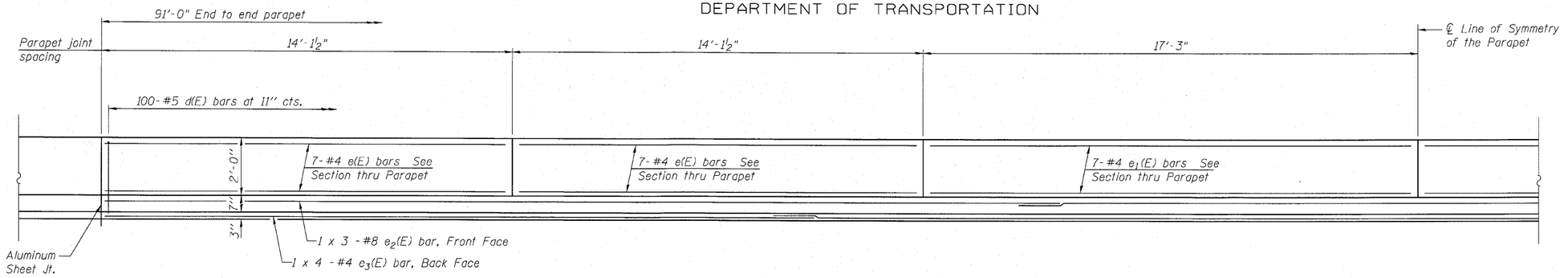
ZROKA engineering
Zroka Engineering, P.C.
4216 North Hermitage
Chicago, IL 60613

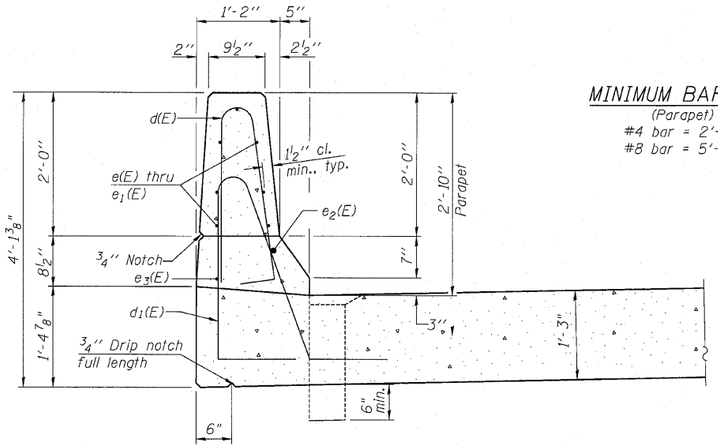
Date: 7-28-10 Drawn By: FJS Checked By: DZ

SHEET NO. 8 OF 20 SHEETS	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	681	118BR	IROQUOIS	42	17
			CONTRACT NO. 66861		
	FED. ROAD DIST. NO. _	ILLINOIS	FED. AID PROJECT		

7/29/2010 6:32:28 PM C:\Drawings\5500-10\US45\Final\Structural\Plans\SB_Superstructure.dgn

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION





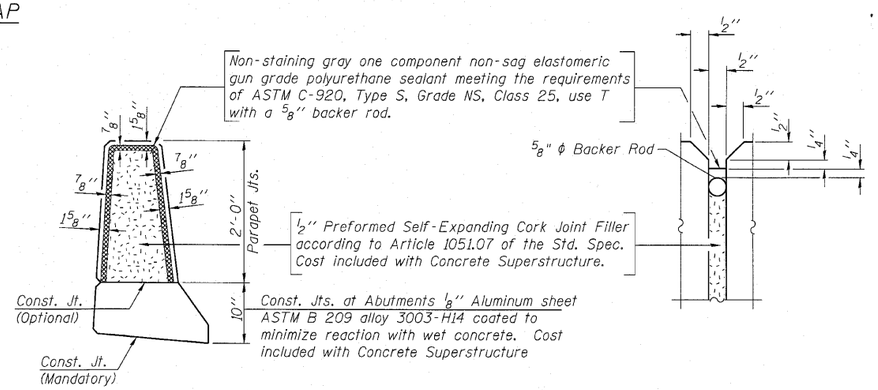
SECTION THRU PARAPET

MINIMUM BAR LAP

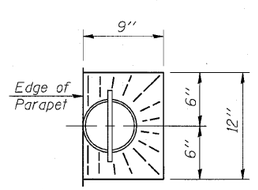
(Parapet)
#4 bar = 2'-0"
#8 bar = 5'-2"

INSIDE ELEVATION OF PARAPET

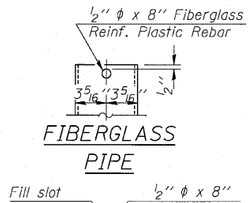
(North Parapet Shown, South Parapet Similar, Opposite Hand)



PARAPET JOINT DETAILS

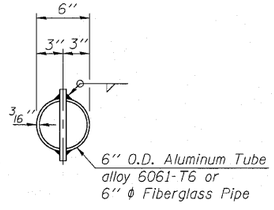


TOP PLAN



FIBERGLASS PIPE

ALUMINUM TUBE



TOP PLAN
(Showing Aluminum Tube)

Notes:
The exterior surfaces of the floor drains shall be coated or pigmented by the Manufacturer with a color that matches the concrete.

Fiberglass pipe shall conform to ASTM D 2996, with short-time rupture strength hoop tensile stress of 30,000 p.s.i. minimum.

SUPERSTRUCTURE DETAILS
STRUCTURE NO. 038-0221

SHEET NO. 9 OF 20 SHEETS	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	681	118BR	IROQUOIS	42	18
			CONTRACT NO. 66861		
	FED. ROAD DIST. NO. _	ILLINOIS	FED. AID PROJECT		

ZROKA engineering
Zroka Engineering, P.C.
4216 North Hermitage
Chicago, IL 60613

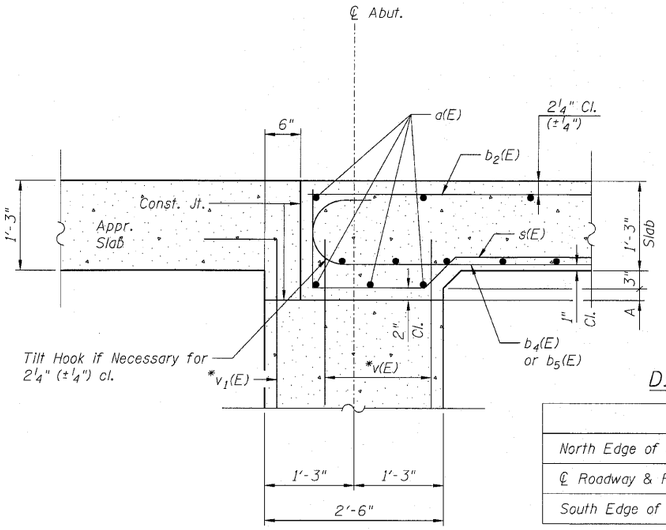
Date: 7-28-10 Drawn By: FJS Checked By: DZ

S-I-D

11-1-09

7/29/2010 6:32:49 PM C:\Drawings\5500-IOIUS45\Final\StructuralPlans\S9_ Superstructure Details .ldgn

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

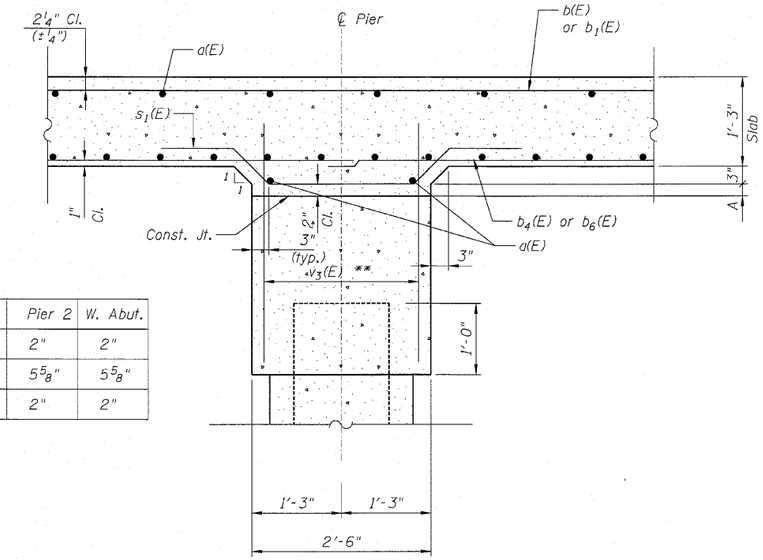


SECTION A-A

* v(E) and v_1(E) bars billed with Abutments

DIMENSION "A"

	E. Abut.	Pier 1	Pier 2	W. Abut.
North Edge of Bridge	2"	2"	2"	2"
℄ Roadway & PGL	$5\frac{5}{8}$"	$5\frac{5}{8}$"	$5\frac{5}{8}$"	$5\frac{5}{8}$"
South Edge of Bridge	2"	2"	2"	2"



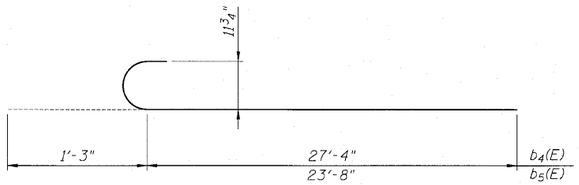
SECTION B-B

** v_3(E) bars billed with pier

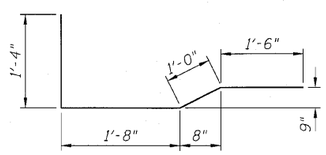
SUPERSTRUCTURE BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	392	#5	17'-3"	
a_1(E)	122	#6	6'-6"	
b(E)	80	#9	18'-3"	
b_1(E)	76	#9	32'-4"	
b_2(E)	76	#5	14'-8"	
b_3(E)	38	#5	5'-2"	
b_4(E)	76	#9	28'-7"	
b_5(E)	76	#9	24'-11"	
b_6(E)	38	#9	35'-6"	
b_7(E)	38	#9	28'-10"	
d(E)	200	#5	5'-7"	
d_1(E)	200	#5	7'-11"	
e(E)	56	#4	13'-9"	
e_1(E)	28	#4	16'-11"	
e_2(E)	6	#8	33'-8"	
e_3(E)	8	#4	24'-2"	
s(E)	76	#4	5'-6"	
s_1(E)	76	#4	7'-0"	
s_2(E)	282	#4	6'-9"	
Reinforcement Bars, Epoxy Coated		Pound	51,290	
Concrete Superstructure		Cu. Yds.	176.5	

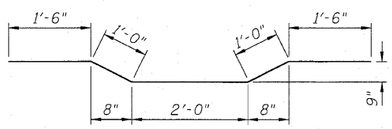
For Bar Splicers See Sheet 17 of 20



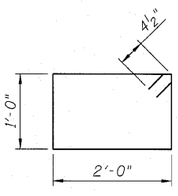
BARS b_4(E) & b_5(E)



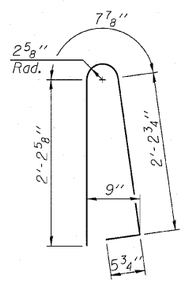
BAR s(E)



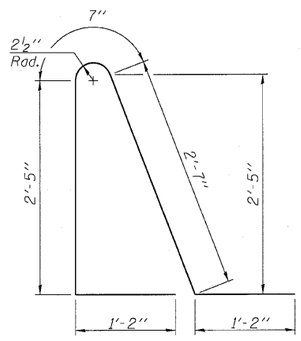
BAR s_1(E)



BAR s_2(E)



BAR d(E)



BAR d_1(E)

SUPERSTRUCTURE DETAILS
STRUCTURE NO. 038-0221

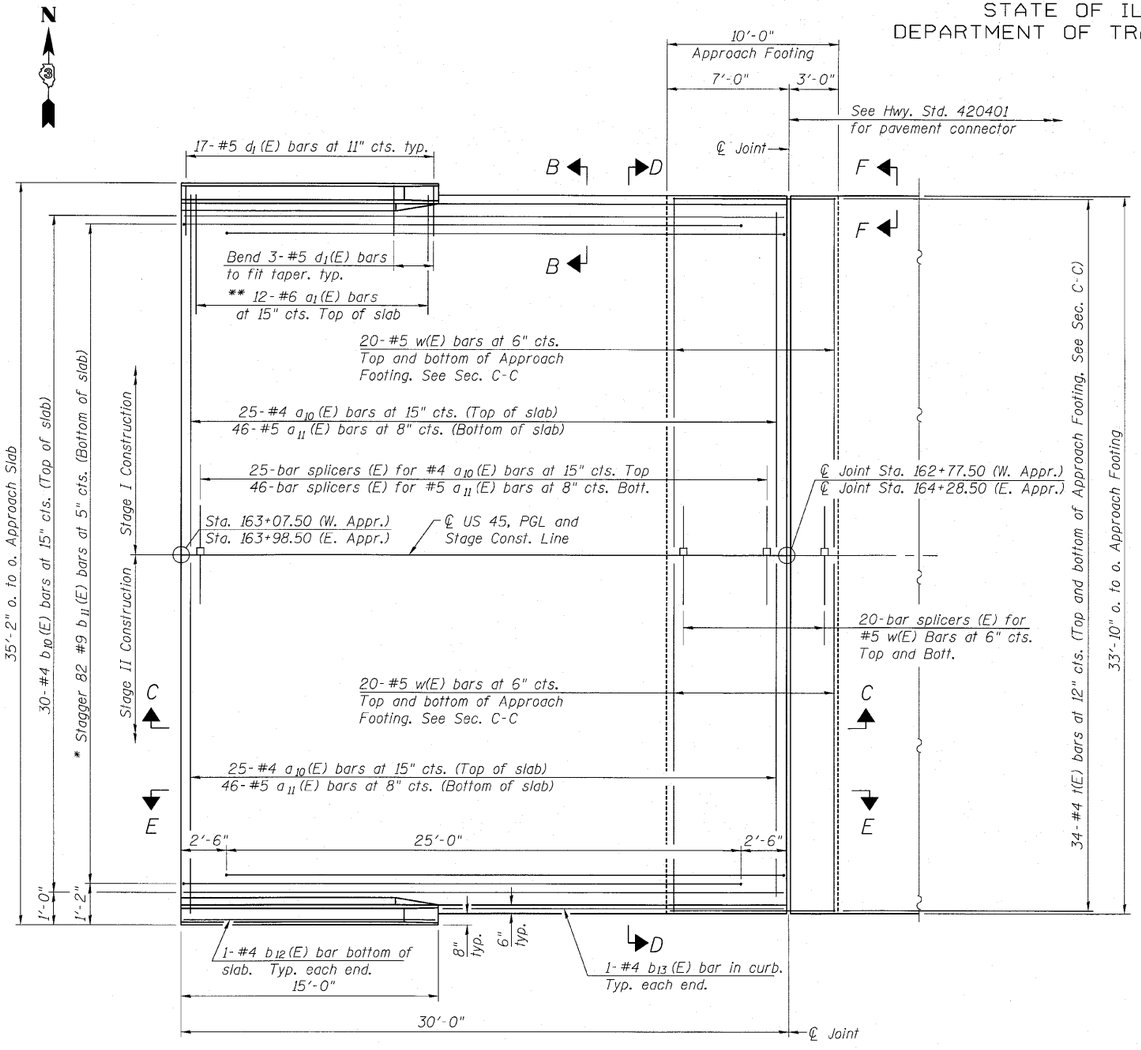
SHEET NO. 10 OF 20 SHEETS	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	681	118BR	IROQUOIS	42	19
			CONTRACT NO. 66861		
	FED. ROAD DIST. NO. _	ILLINOIS	FED. AID PROJECT		

ZROKA engineering
Zroka Engineering, P.C.
4216 North Hermitage
Chicago, IL 60613

Date: 7-28-10 Drawn By: FJS Checked By: DZ

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

Notes:
See sheet 12 of 20 for Sections C-C & D-D and View E-E.
a_{10}(E) and a_{11}(E) bar spacings measured along ℄ Rdwy.

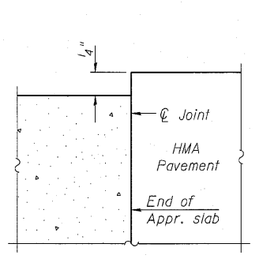


PLAN

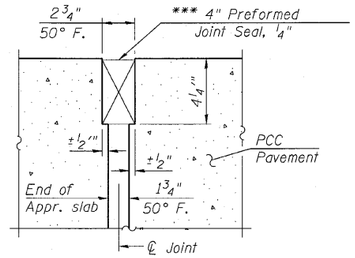
* Tilt #9 b_{11}(E) bars as required to maintain clearance.
** Space between a_{10}(E) bars, typ. ea. parapet.

East Approach Slab shown.
West Approach Slab similar opposite hand.

*** Cost included with Concrete Superstructure.

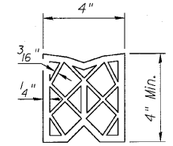


FLEXIBLE PAVEMENT

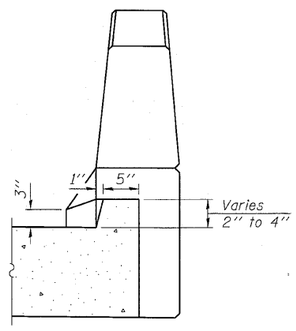


RIGID PAVEMENT

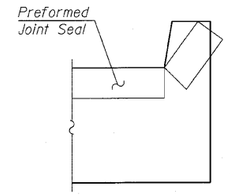
DETAIL A



PREFORMED JOINT SEAL



VIEW B-B



VIEW F-F

Angle Preformed Joint Seal at 45° at curbs when req'd for drainage.

BRIDGE APPROACH SLAB DETAILS
STRUCTURE NO. 038-0221

SHEET NO. 11 OF 20 SHEETS	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	681	118BR	IROQUOIS	42	20
			CONTRACT NO. 66861		
	FED. ROAD DIST. NO. _	ILLINOIS	FED. AID PROJECT		

ZROKA engineering
Zroka Engineering, P.C.
4216 North Hermitage
Chicago, IL 60613

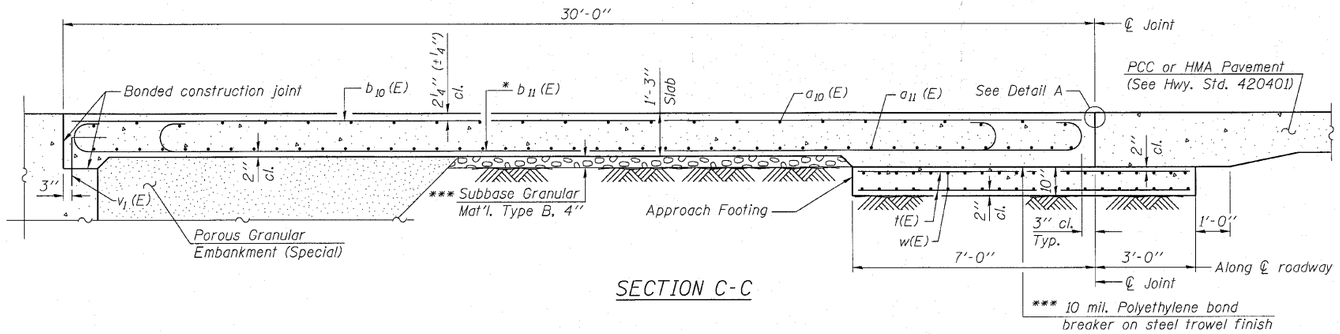
Date: 7-28-10 Drawn By: AJP Checked By: DZ

BA-0

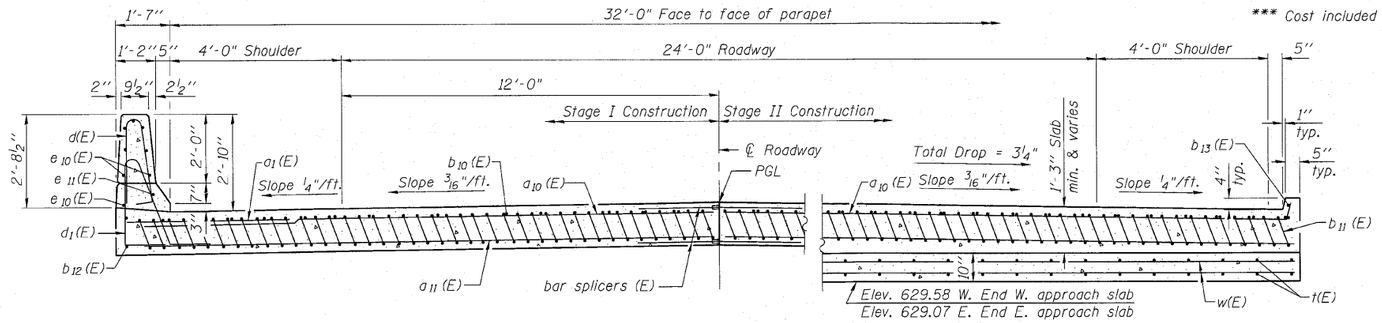
11-1-09

7/29/2010 6:25:55 PM C:\Drawings\5500-IOUS45\FinalStructuralPlans\SII_ Bridge Approach Slab Details 1.dgn

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

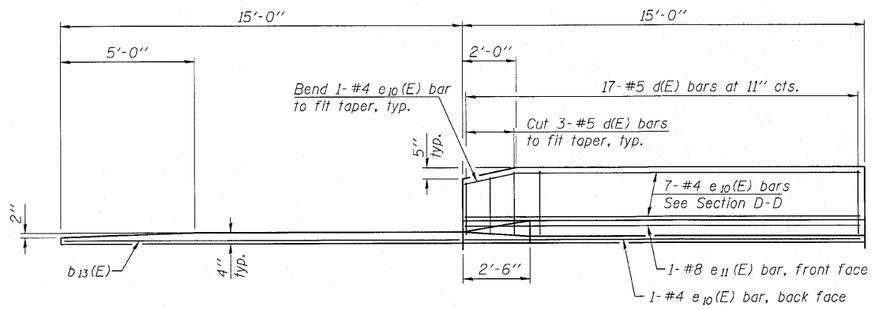


SECTION C-C

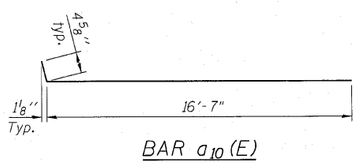


NEAR ABUTMENT — SECTION D-D — AT APPROACH FOOTING

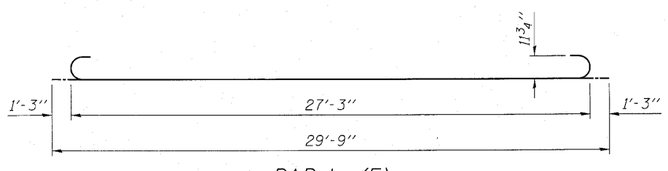
(See Plan for dimensions not shown)



VIEW E-E



BAR a_{10}(E)

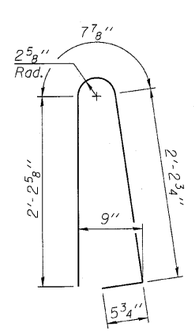


BAR b_{11}(E)

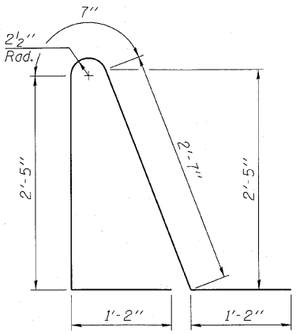
Notes:
See sheet 11 of 20 for Detail A.
Approach slab and parapet concrete shall be paid for as Concrete Superstructure.
Approach footing concrete shall be paid for as Concrete Structures.
Reinforcement shall be paid for as Reinforcement Bars, Epoxy Coated.
For v_1(E) bar details, see sheet 13 of 20 and sheet 14 of 20.
The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.
For bar splicer details, see sheet 17 of 20.
Cost of excavation for approach footing included with Concrete Structures.
For Porous Granular Embankment (Special) and drainage treatment details, see sheet 2 of 20.
For additional parapet details, see sheet 9 of 20.

* Tilt #9 b_{11} (E) bars as required to maintain clearance.

*** Cost included with Concrete Superstructure.



BAR d(E)



BAR d_1(E)

TWO APPROACHES
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a_{10}(E)	100	#4	16'-11"	
a_{11}(E)	184	#5	16'-7"	
a_1(E)	48	#6	6'-6"	
b_{10}(E)	60	#4	29'-8"	
b_{11}(E)	164	#9	29'-9"	
b_{12}(E)	4	#4	14'-8"	
b_{13}(E)	4	#4	14'-8"	
d(E)	68	#5	5'-7"	
d_1(E)	68	#5	7'-11"	
e_{10}(E)	32	#4	14'-8"	
e_{11}(E)	4	#8	14'-8"	
t(E)	136	#4	9'-8"	
w(E)	160	#5	16'-7"	
Concrete Superstructure			Cu. Yd.	112.2
Concrete Structures			Cu. Yd.	20.8
Reinforcement Bars, Epoxy Coated			Pound	27,720

For Bar Splicers See Sheets 17 of 20.

BRIDGE APPROACH SLAB DETAILS
STRUCTURE NO. 038-0221

SHEET NO. 12 OF 20 SHEETS	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	681	118BR	IROQUOIS	42	21
			CONTRACT NO. 66861		
	FED. ROAD DIST. NO. _	ILLINOIS	FED. AID PROJECT		

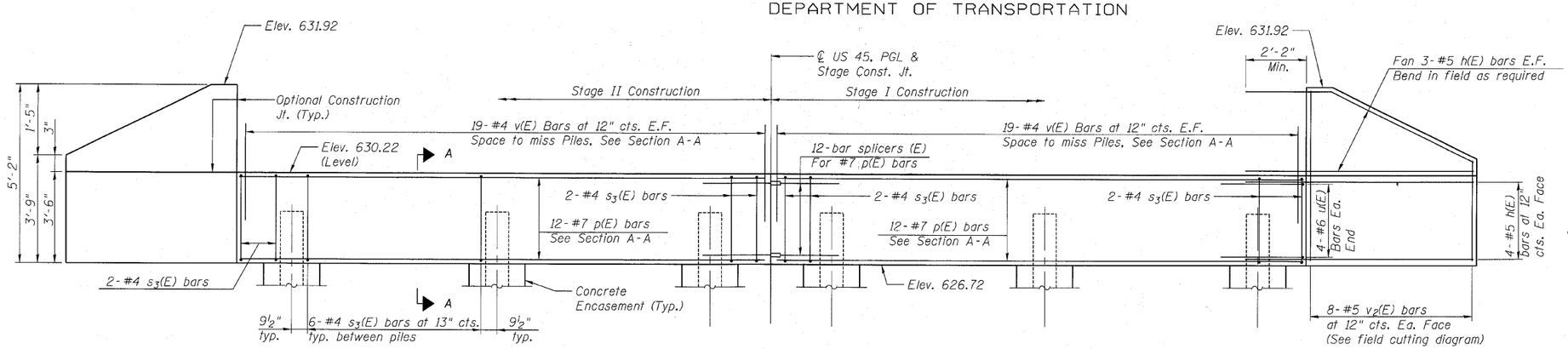
ZROKA engineering
Zroka Engineering, P.C.
4216 North Hermitage
Chicago, IL 60613

Date: 7-28-10 Drawn By: AJP Checked By: DZ

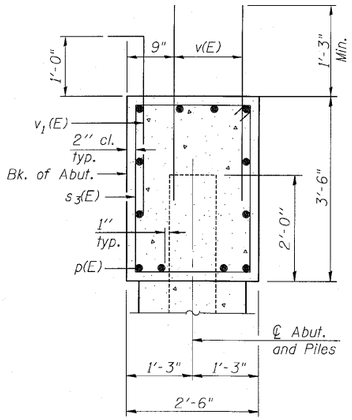
BA-0 11-1-09

7/29/2010 6:26:37 PM C:\Drawings\5500-10\US45\Final Structural Plans\SI2_ Bridge Approach Slab Details 2.dgn

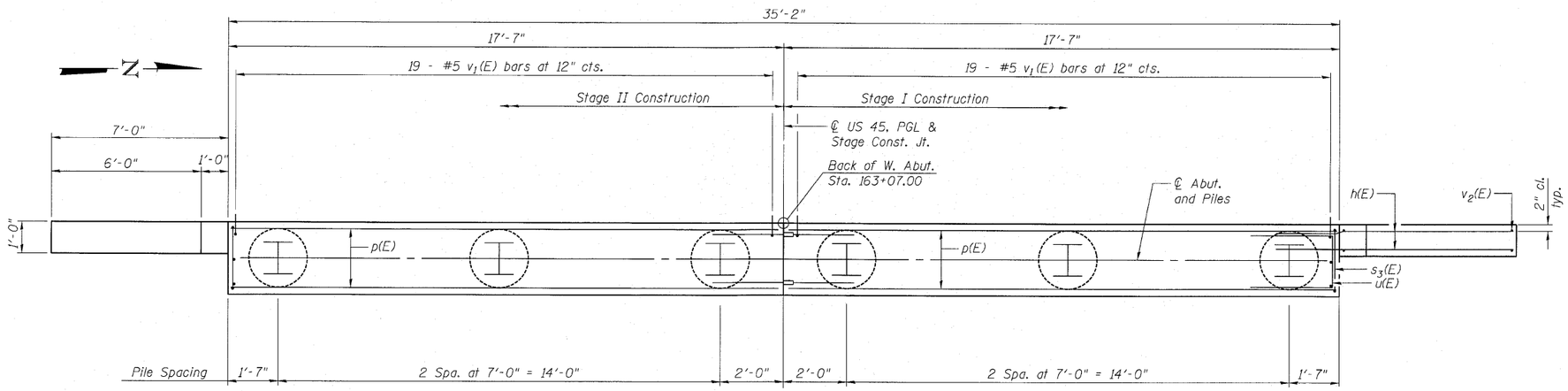
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



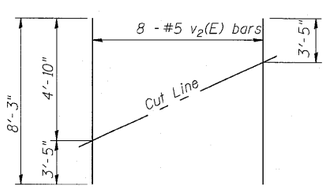
ELEVATION



SECTION A-A

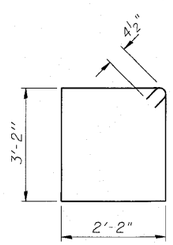


PLAN

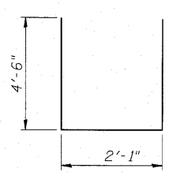


FIELD CUTTING DIAGRAM

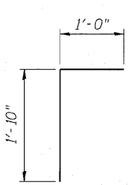
Order $v_2(E)$ full length. Cut as shown and use remainder of bars in opposite face.



BAR s3(E)



BAR u(E)



BAR $v_1(E)$

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	28	#5	9'-0"	
p(E)	24	#7	17'-3"	
s3(E)	32	#4	11'-5"	
u(E)	8	#6	11'-1"	
v(E)	76	#4	2'-9"	
v1(E)	38	#5	2'-10"	
v2(E)	32	#5	8'-3"	
Structure Excavation		Cu. Yd.	23.8	
Concrete Structures		Cu. Yd.	13.8	
Reinforcement Bars, Epoxy Coated		Pound	2,015	
Furnishing Steel Piles HP12x74		Foot	205	
Driving Piles		Foot	205	
Test Pile HP12x74		Each	1	
Pile Shoes		Each	6	
Concrete Encasement		Cu. Yd.	2.1	

PILE DATA

Type: HP 12x74 with Pile Shoes
Nominal Required Bearing: 359 kips
Factored Resistance Available: 180 kips
Est. Length: 41'-0"
No. Production Piles: 5
No. Test Piles: 1

Notes:
For Details of Bar Splicers, see Sheet 17 of 20.

For Details of Piles and Concrete Encasement, see Sheet 18 of 20.

For section thru abutment showing drainage see Sheet 2 of 20.

WEST ABUTMENT
STRUCTURE NO. 038-0221

SHEET NO. 13 OF 20 SHEETS	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	681	118BR	IROQUOIS	42	22
			CONTRACT NO. 66861		
	FED. ROAD DIST. NO. _	ILLINOIS	FED. AID PROJECT		

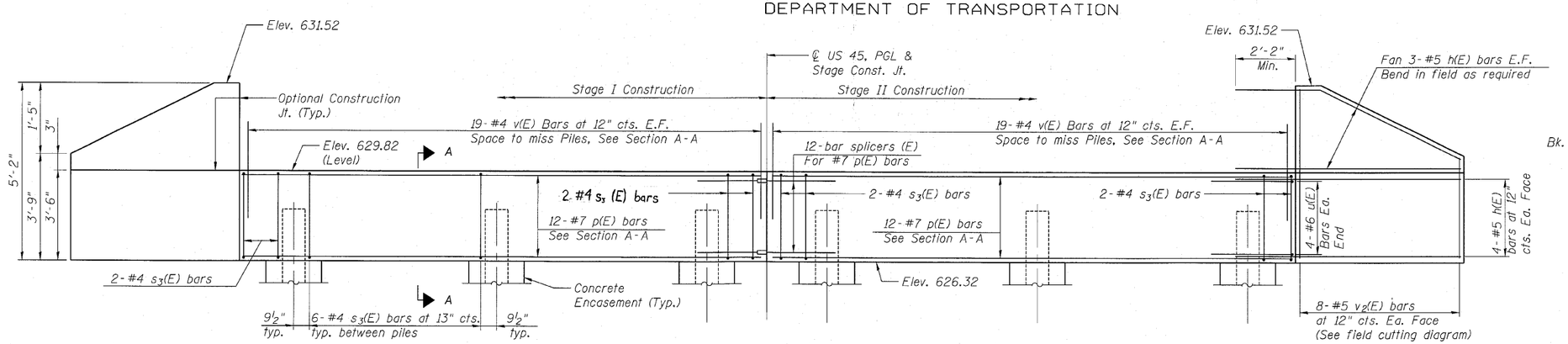
ZROKA engineering
Zroka Engineering, P.C.
4216 North Hermitage
Chicago, IL 60613

Date: 7-28-10 Drawn By: FJS Checked By: DZ

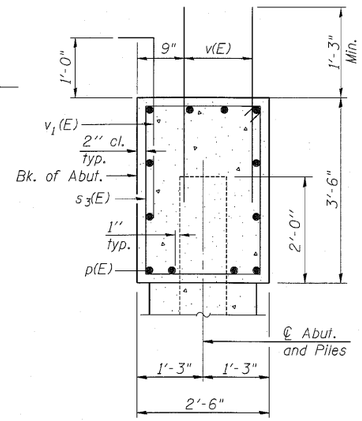
AI-0 11-1-09

7/29/2010 6:26:59 PM C:\Drawings\5500-10\US45\Final\Structural Plans\S13_ West Abutment.dgn

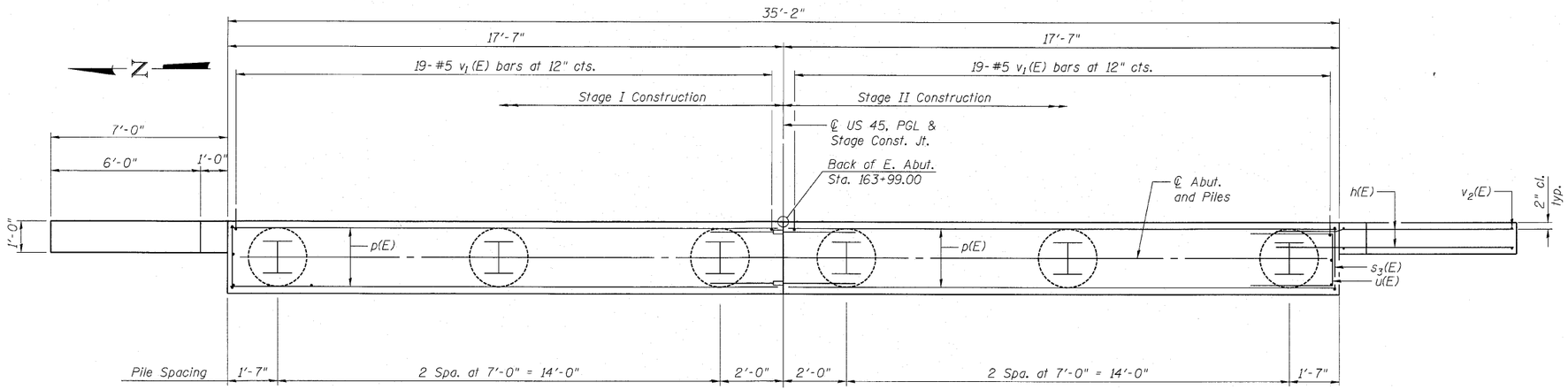
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



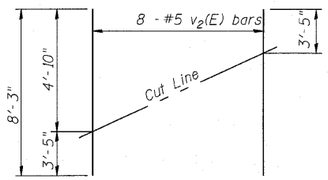
ELEVATION



SECTION A-A

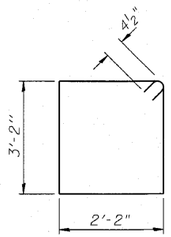


PLAN

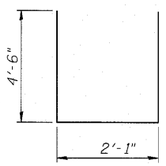


FIELD CUTTING DIAGRAM

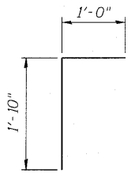
Order $v_2(E)$ full length. Cut as shown and use remainder of bars in opposite face.



BAR s3(E)



BAR u(E)



BAR $v_1(E)$

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	28	#5	9'-0"	———
p(E)	24	#7	17'-3"	———
s3(E)	32	#4	11'-5"	□
u(E)	8	#6	11'-1"	⊐
v(E)	76	#4	2'-9"	———
v1(E)	38	#5	2'-10"	⊔
v2(E)	32	#5	8'-3"	———

Structure Excavation	Cu. Yd.	26.2
Concrete Structures	Cu. Yd.	13.8
Reinforcement Bars, Epoxy Coated	Pound	2,015
Furnishing Steel Piles HP12x74	Foot	246
Driving Piles	Foot	246
Pile Shoes	Each	6
Concrete Encasement	Cu. Yd.	2.1

PILE DATA

Type: HP 12x74 with Pile Shoes
Nominal Required Bearing: 347 kips
Factored Resistance Available: 173 kips
Est. Length: 41'-0"
No. Production Piles: 6
No. Test Piles: 0

Notes:

For Details of Bar Splicers, see Sheet 17 of 20.

For Details of Piles and Concrete Encasement, see Sheet 18 of 20.

For section thru abutment showing drainage see Sheet 2 of 20.

EAST ABUTMENT
STRUCTURE NO. 038-0221

SHEET NO. 14 OF 20 SHEETS	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	681	118BR	IROQUOIS	42	23
			CONTRACT NO. 66861		
	FED. ROAD DIST. NO. _	ILLINOIS	FED. AID PROJECT		

ZROKA engineering
Zroka Engineering, P.C.
4216 North Hermitage
Chicago, IL 60613

Date: 7-28-10 Drawn By: FJS Checked By: DZ

AI-0 11-1-09

7/29/2010 6:27:22 PM C:\Drawings\5500-10\US45\Final Structural Plans\S14_ East Abutment.dgn

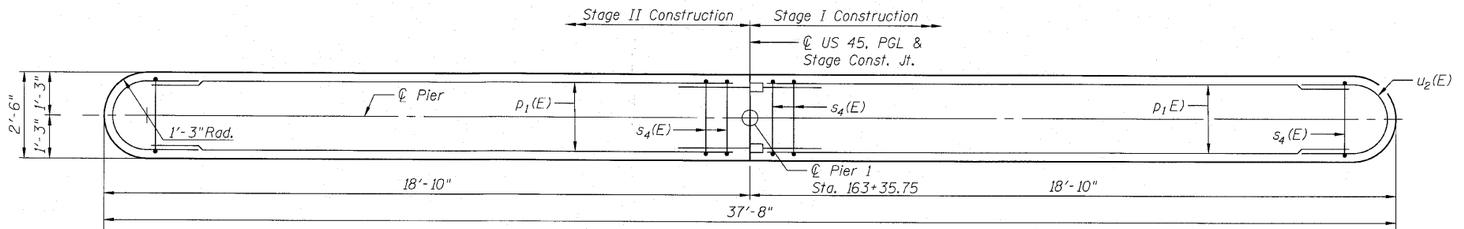
Notes:
For Pile Details See Sheet 18 of 20.

For Bar Splicer Details See Sheet 17 of 20.

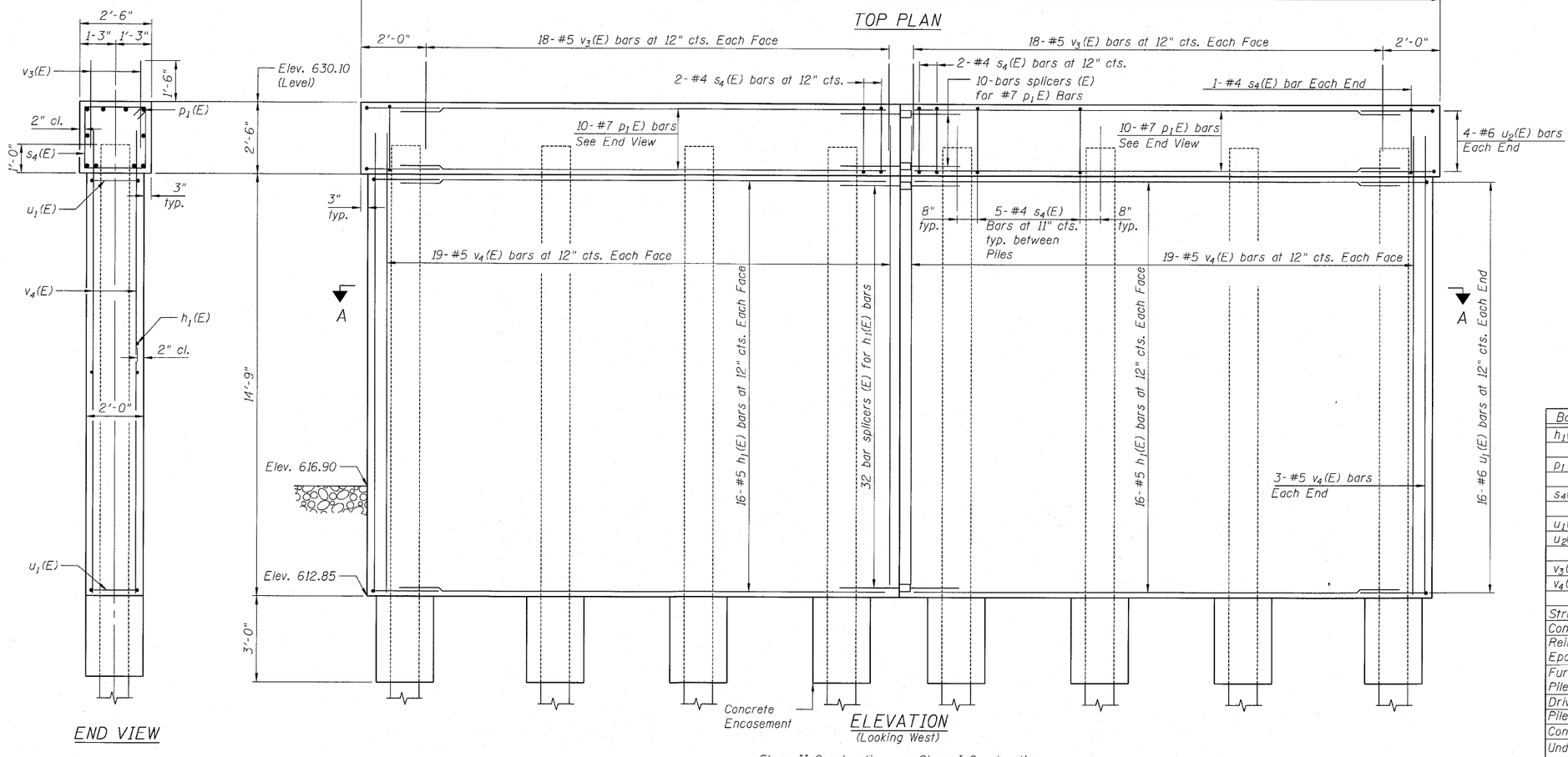
If a portion of the pier or concrete encasement is under water, reinforcement may be placed underwater into forms. Concrete shall be tremied according to article 503.08 of the Standard Specifications to an elevation of 1'-0" above the water line at the time of construction.

Item Underwater Structure Excavation Protection Location 1 is located at Pier 1.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

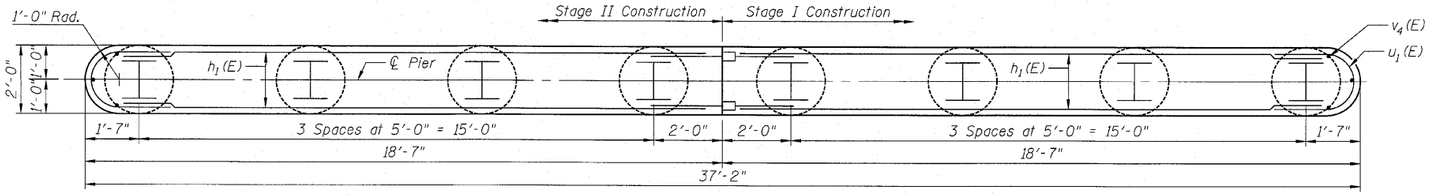


TOP PLAN

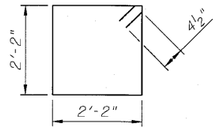


END VIEW

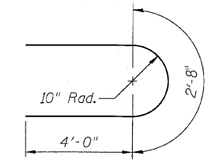
ELEVATION
(Looking West)



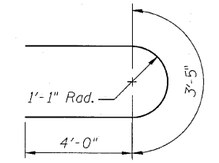
SECTION A-A



BAR $s_4(E)$



BAR $u_1(E)$



BAR $u_2(E)$

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
$h_1(E)$	64	#5	17'-5"	——
p_1E)	20	#7	17'-5"	——
$s_4(E)$	36	#4	9'-5"	□
$u_1(E)$	32	#6	10'-8"	⊃
$u_2(E)$	8	#6	11'-5"	⊃
$v_3(E)$	72	#5	3'-6"	——
$v_4(E)$	82	#5	16'-4"	——
Structure Excavation		Cu. Yd.	33.5	
Concrete Structures		Cu. Yd.	48.7	
Reinforcement Bars, Epoxy Coated		Pound	4,415	
Furnishing Steel Piles HP12x74		Foot	480	
Driving Piles		Foot	480	
Pile Shoes		Each	8	
Concrete Encasement		Cu. Yd.	2.8	
Underwater Structure Excavation Protection Location 1		Each	1	

PILE DATA

Type: HP 12X74 with Pile Shoes
Nominal Required Bearing: 499 kips
Factored Resistance Available: 249 kips
Est. Length: 60'-0"
No. Production Piles: 8
No. Test Piles: 0

PIER 1
STRUCTURE NO. 038-0221

ZROKA engineering
Zroka Engineering, P.C.
4216 North Hermitage
Chicago, IL 60613

Date: 7-28-10 Drawn By: AJP Checked By: DZ

PC-1

11-1-09

SHEET NO. 15 OF 20 SHEETS	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	681	118BR	IROQUOIS	42	24
			CONTRACT NO. 66861		
	FED. ROAD DIST. NO. _	ILLINOIS	FED. AID PROJECT		

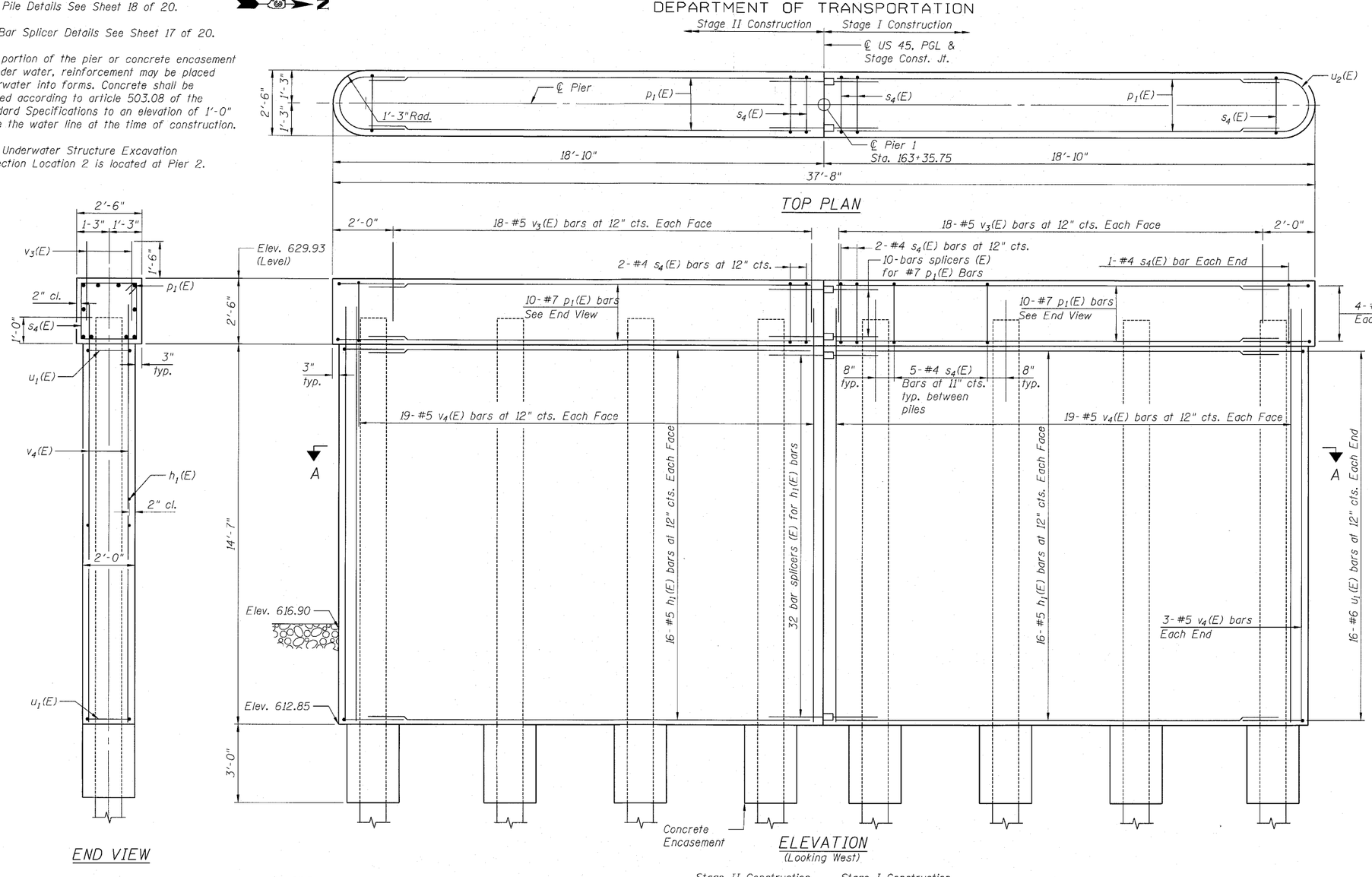
Notes:
For Pile Details See Sheet 18 of 20.

For Bar Splicer Details See Sheet 17 of 20.

If a portion of the pier or concrete encasement is under water, reinforcement may be placed underwater 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.

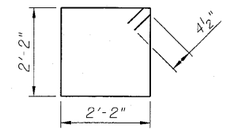
Item Underwater Structure Excavation Protection Location 2 is located at Pier 2.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

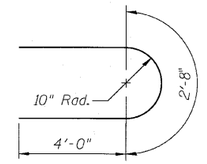


END VIEW

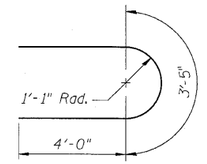
ELEVATION
(Looking West)



BAR $s_4(E)$



BAR $u_1(E)$



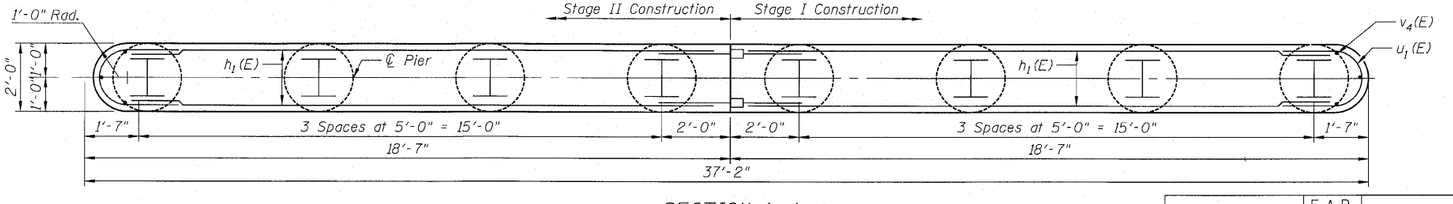
BAR $u_2(E)$

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
$h_1(E)$	64	#5	17'-5"	——
$p_1(E)$	20	#7	17'-5"	——
$s_4(E)$	36	#4	9'-5"	□
$u_1(E)$	32	#6	10'-8"	⊃
$u_2(E)$	8	#6	11'-5"	⊃
$v_3(E)$	72	#5	3'-6"	——
$v_4(E)$	82	#5	16'-4"	——
Structure Excavation		Cu. Yd.	36.5	
Concrete Structures		Cu. Yd.	48.3	
Reinforcement Bars, Epoxy Coated		Pound	4,415	
Furnishing Steel Piles HP12x74		Foot	464	
Driving Piles		Foot	464	
Pile Shoes		Each	8	
Concrete Encasement		Cu. Yd.	2.8	
Underwater Structure Excavation Protection Location 2		Each	1	

PILE DATA

Type: HP 12X74 with Pile Shoes
Nominal Required Bearing: 446 Kips
Factored Resistance Available: 223 Kips
Est. Length: 58'-0"
No. Production Piles: 8
No. Test Piles: 0



SECTION A-A

PIER 2
STRUCTURE NO. 038-0221

Zroka Engineering, P.C.
4216 North Hermitage
Chicago, IL 60613

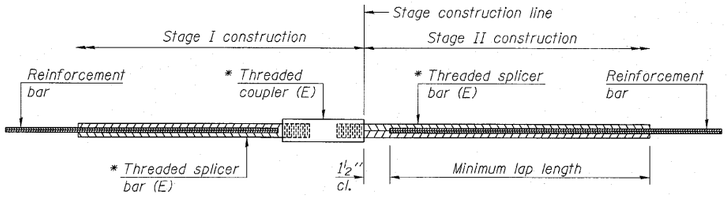
Date: 7-28-10 Drawn By: AJP Checked By: DZ

PC-1 11-1-09

SHEET NO. 16 OF 20 SHEETS	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	681	118BR	IROQUOIS	42	25
			CONTRACT NO. 66861		
	FED. ROAD DIST. NO. _	ILLINOIS	FED. AID PROJECT		

7/29/2010 6:28:07 PM C:\Drawings\5500-10\US45\Final Structural Plans\SI6_ Pier 2.dgn

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



STANDARD BAR SPLICER ASSEMBLY

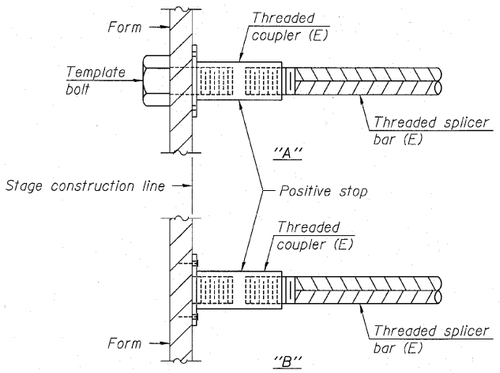
Minimum Lap Lengths				
Bar size to be spliced	Table 1	Table 2	Table 3	Table 4
3, 4	1'-5"	1'-11"	2'-1"	2'-4"
5	1'-9"	2'-5"	2'-7"	2'-11"
6	2'-1"	2'-11"	3'-1"	3'-6"
7	2'-9"	3'-10"	4'-2"	4'-8"
8	3'-8"	5'-1"	5'-5"	6'-2"
9	4'-7"	6'-5"	6'-10"	7'-9"

Table 1: Black bar, 0.8 Class C
Table 2: Black bar, Top bar lap, 0.8 Class C
Table 3: Epoxy bar, 0.8 Class C
Table 4: Epoxy bar, Top bar lap, 0.8 Class C

Threaded splicer bar length = min. lap length + 1½" + thread length

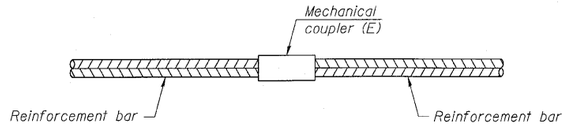
* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Table for minimum lap length
Approach Slab	#4	50	Table 4
Deck	#5	196	Table 4
Approach Slab	#5	172	Table 4
Pier	#5	64	Table 4
Abutment	#7	24	Table 4
Pier	#7	20	Table 4



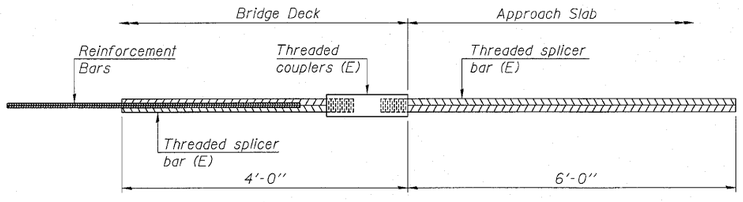
INSTALLATION AND SETTING METHODS

"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.



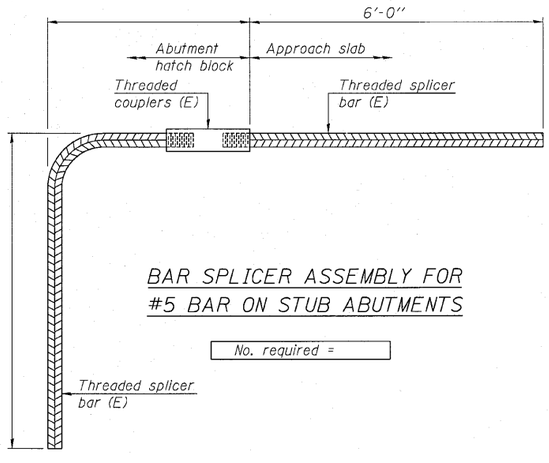
STANDARD MECHANICAL SPLICER

Location	Bar size	No. assemblies required



BAR SPLICER ASSEMBLY FOR #5 BAR ON INTEGRAL OR SEMI-INTEGRAL ABUTMENTS

No. required =



BAR SPLICER ASSEMBLY FOR #5 BAR ON STUB ABUTMENTS

No. required =

NOTES

Splicer bars shall be deformed with threaded ends and have a minimum 60 ksi yield strength.

All reinforcement shall be lapped and tied to the splicer bars.

Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars. See Section 508 of the Standard Specifications.

See special provision for Mechanical Splicers.

See approved list of bar splicer assemblies and mechanical splicers for alternatives.

BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS STRUCTURE NO. 038-0221

SHEET NO. 17 OF 20 SHEETS	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	681	118BR	IROQUOIS	42	26
			CONTRACT NO. 66861		
	FED. ROAD DIST. NO. _	ILLINOIS	FED. AID PROJECT		

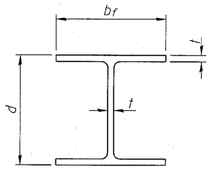
ZROKA engineering
Zroka Engineering, P.C.
4216 North Hermitage
Chicago, IL 60613

Date: 7-28-10 Drawn By: FJS Checked By: DZ

BSD-1

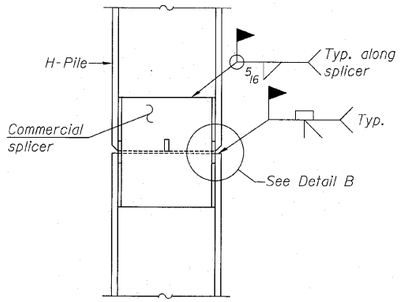
11-1-09

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

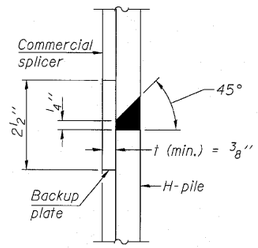


STEEL PILE TABLE

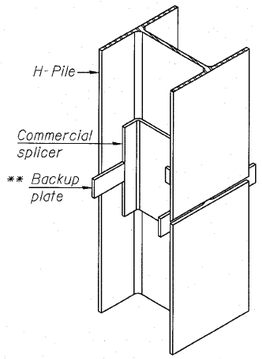
Designation	Depth d	Flange width b_f	Web and Flange thickness t	Encasement diameter A
HP 14x117	$14\frac{1}{4}''$	$14\frac{7}{8}''$	$\frac{13}{16}''$	30''
x102	14''	$14\frac{3}{4}''$	$\frac{11}{16}''$	30''
x89	$13\frac{7}{8}''$	$14\frac{3}{4}''$	$\frac{5}{8}''$	30''
x73	$13\frac{5}{8}''$	$14\frac{5}{8}''$	$\frac{1}{2}''$	30''
HP 12x84	$12\frac{1}{4}''$	$12\frac{1}{4}''$	$\frac{11}{16}''$	24''
x74	$12\frac{1}{8}''$	$12\frac{1}{4}''$	$\frac{5}{8}''$	24''
x63	12''	$12\frac{1}{8}''$	$\frac{1}{2}''$	24''
x53	$11\frac{3}{4}''$	12''	$\frac{7}{16}''$	24''
HP 10x57	10''	$10\frac{1}{4}''$	$\frac{9}{16}''$	24''
x42	$9\frac{3}{4}''$	$10\frac{1}{8}''$	$\frac{7}{16}''$	24''
HP 8x36	8''	$8\frac{1}{8}''$	$\frac{7}{16}''$	18''



ELEVATION

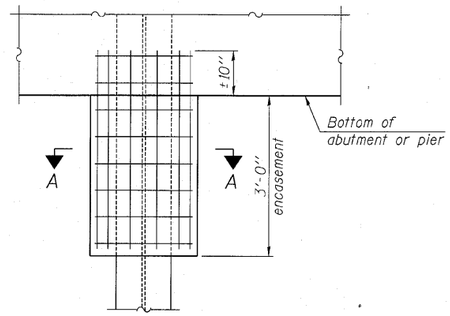


DETAIL "B"

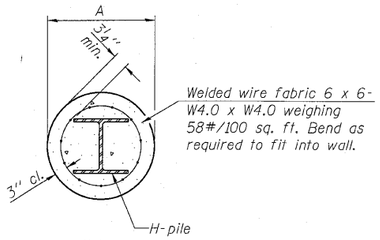


ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE



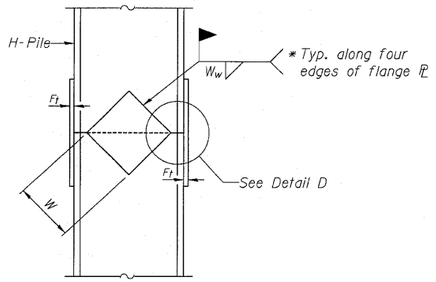
ELEVATION



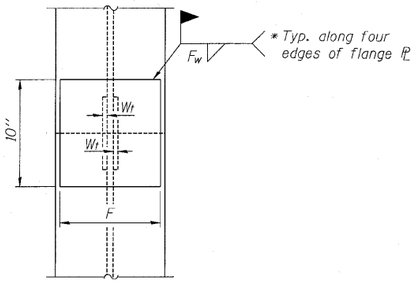
Note:
Forms for encasement may be omitted when soil conditions permit.

SECTION A-A

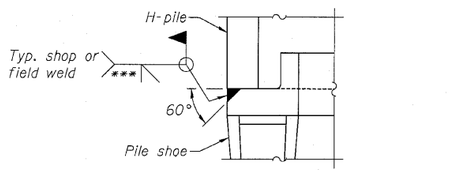
PILE ENCASEMENT



ELEVATION



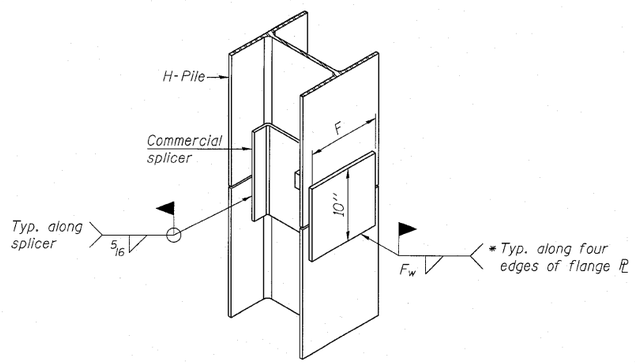
END VIEW



ELEVATION

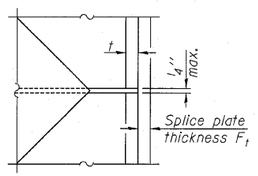
DETAIL A

H-PILE SHOE ATTACHMENT



ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE ALTERNATE



DETAIL D

Designation	F	F_t	F_w	W	W_t	W_w
HP 14x117	$12\frac{1}{2}''$	1''	$\frac{7}{8}''$	$7\frac{3}{4}''$	$\frac{5}{8}''$	$\frac{1}{2}''$
x102	$12\frac{1}{2}''$	$\frac{7}{8}''$	$\frac{3}{4}''$	$7\frac{3}{4}''$	$\frac{5}{8}''$	$\frac{1}{2}''$
x89	$12\frac{1}{2}''$	$\frac{3}{4}''$	$\frac{11}{16}''$	$7\frac{3}{4}''$	$\frac{5}{8}''$	$\frac{1}{2}''$
x73	$12\frac{1}{2}''$	$\frac{5}{8}''$	$\frac{9}{16}''$	$7\frac{3}{4}''$	$\frac{5}{8}''$	$\frac{1}{2}''$
HP 12x84	10''	$\frac{7}{8}''$	$\frac{11}{16}''$	$6\frac{1}{2}''$	$\frac{5}{8}''$	$\frac{1}{2}''$
x74	10''	$\frac{7}{8}''$	$\frac{11}{16}''$	$6\frac{1}{2}''$	$\frac{5}{8}''$	$\frac{1}{2}''$
x63	10''	$\frac{5}{8}''$	$\frac{1}{2}''$	$6\frac{1}{2}''$	$\frac{1}{2}''$	$\frac{3}{8}''$
x53	10''	$\frac{5}{8}''$	$\frac{1}{2}''$	$6\frac{1}{2}''$	$\frac{1}{2}''$	$\frac{3}{8}''$
HP 10x57	8''	$\frac{3}{4}''$	$\frac{9}{16}''$	$5\frac{1}{4}''$	$\frac{1}{2}''$	$\frac{3}{8}''$
x42	8''	$\frac{5}{8}''$	$\frac{9}{16}''$	$5\frac{1}{4}''$	$\frac{1}{2}''$	$\frac{3}{8}''$
HP 8x36	7''	$\frac{5}{8}''$	$\frac{7}{16}''$	$4\frac{1}{4}''$	$\frac{1}{2}''$	$\frac{3}{8}''$

WELDED PLATE FIELD SPLICE

* Interrupt welds $\frac{1}{4}''$ from end of web and/or each flange.

** Remove portions of backup plates that extend outside the flanges.

*** Weld size per pile shoe manufacturer ($\frac{5}{16}''$ min.).

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

HP PILE DETAILS
STRUCTURE NO. 038-0221

SHEET NO. 18 OF 20 SHEETS	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	681	118BR	IROQUOIS	42	27
			CONTRACT NO. 66861		
	FED. ROAD DIST. NO. _	ILLINOIS	FED. AID PROJECT		

ZROKA engineering
Zroka Engineering, P.C.
4216 North Hermitage
Chicago, IL 60613

Date: 7-28-10 Drawn By: FJS Checked By: DZ F-HP 11-1-09

7/29/2010 6:28:53 PM C:\Drawings\5500-I01\US45\Final Structural Plans\SIB_ HP Pile Details.dgn

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

Illinois Department of Transportation
Division of Highways
District #3, Ottawa

SOIL BORING LOG

Date 5/22/09

ROUTE FAP 681 (US 45) DESCRIPTION US 45 over Prairie Creek, 2.3 Miles East of Ashkum LOGGED BY LM

SECTION 118 BR LOCATION NW 1/4, SEC. 25, TWP. 28N, RNG. 14W, 2nd PM

COUNTY Iroquois DRILLING METHOD Hollow Stem Auger HAMMER TYPE CME Automatic

STRUCT. NO. 038-0175 (Exist.)
Station 163+53

BORING NO. 1 (S.W. Quad.)
Station 162+94
Offset 14.00ft Rt.
Ground Surface Elev. 631.10 ft

Surface Water Elev. 614.95 ft
Stream Bed Elev. 613.80 ft

Groundwater Elev.:
First Encounter Dry ft
Upon Completion Dry ft
After ____ Hrs. ____ ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Augered Bit, shoulder, Brown & Gray Silty Clay Loam Fill			
628.60			
Very Stiff Brown & Gray Silty Clay Loam Fill	4		
	4	3.0	19.6
	5	P	
627.10			
Very Stiff Black Silty Clay/Silty Clay Loam	-5		
	2		
	4	3.1	27.7
	4	B	
624.10			
Very Stiff Brown & Gray Silty Clay Loess			
	2		
	3	2.6	24.7
	4	B	
621.60			
Hard Brown Silty Clay Loam Till	-10		
	5		
	7	7.2	18.7
	9	S	
	8		
	10	7.8	19.8
	12	S	
	-15		
	5		
	5	5.1	23.7
	8	S	
	4		
	6	5.0	21.3
	7	S	
611.10	-20		
Very Stiff Gray Clay Till			
		3	
	3	2.7	21.4
	5	B	
		3	
	4	2.7	21.8
	5	B	
	-25		
	2		
	4	3.5	22.4
	6	B	
		3	
	4	3.5	21.5
	6	B	
	-30		
	3		
	3	3.1	21.9
	5	B	
		3	
	3	3.1	21.8
	6	B	
	-35		
	3		
	4	3.1	22.0
	5	B	
		3	
	5	3.1	21.5
	5	B	
	-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 (AASHTO T206)

BBS, from 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
District #3, Ottawa

SOIL BORING LOG

Date 5/22/09

ROUTE FAP 681 (US 45) DESCRIPTION US 45 over Prairie Creek, 2.3 Miles East of Ashkum LOGGED BY LM

SECTION 118 BR LOCATION NW 1/4, SEC. 25, TWP. 28N, RNG. 14W, 2nd PM

COUNTY Iroquois DRILLING METHOD Hollow Stem Auger HAMMER TYPE CME Automatic

STRUCT. NO. 038-0175 (Exist.)
Station 163+53

BORING NO. 1 (S.W. Quad.)
Station 162+94
Offset 14.00ft Rt.
Ground Surface Elev. 631.10 ft

Surface Water Elev. 614.95 ft
Stream Bed Elev. 613.80 ft

Groundwater Elev.:
First Encounter Dry ft
Upon Completion Dry ft
After ____ Hrs. ____ ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Very Stiff Gray Clay Till *(continued)*			
	4		
	4	3.1	22.0
	5	B	
	2		
	4	3.1	22.7
	6	B	
	-45		
	3		
	4	3.1	23.5
	5	B	
	4		
	5	3.1	23.1
	7	B	
	-50		
	4		
	4	3.1	22.1
	7	B	
579.10			
Very Stiff Gray Silty Clay Loam Till			
	4		
	5	3.2	21.9
	6	B	
576.60			
Hard Gray Silty Clay Loam Till with Layers of Silty Loam	-55		
	7		
	9	4.7	12.1
	12	S	
574.10			
Very Hard & Dense Gray Silty Clay Loam/Silty Loam Till			
	20		
	35	>11.5	12.6
	50	S	
	-60		
Very Hard & Dense Gray Silty Clay Loam/Silty Loam Till *(continued)*			
	23		
	32	>11.5	10.4
	36	S	
	25		
	23	>11.5	
	35	S	
	-65		
	28		
	28	>11.5	
	39	S	
564.60			
End of Boring			
	-70		
	-75		
	-80		

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 (AASHTO T206)

BBS, from 137 (Rev. 8-99)

SOIL BORINGS
STRUCTURE NO. 038-0221

ZROKA engineering
Zroka Engineering, P.C.
4216 North Hermitage
Chicago, IL 60613

Date: 7-28-10 Drawn By: FJS Checked By: DZ

SHEET NO. 19 OF 20 SHEETS	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	681	118BR	IROQUOIS	42	28
			CONTRACT NO. 66861		
	FED. ROAD DIST. NO. _	ILLINOIS	FED. AID PROJECT		

7/29/2010 6:29:48 PM C:\Drawings\5500\00\US45\NT\net\Structural\Plans\S19_ Soil Boring Logs .dgn

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

Illinois Department of Transportation
Division of Highways
District #3, Ottawa

SOIL BORING LOG

Date 5/27/09

ROUTE FAP 681 (US 45) DESCRIPTION US 45 over Prairie Creek, 2.3 Miles East of Ashkum LOGGED BY LM

SECTION 118 BR LOCATION NW 1/4, SEC. 25, TWP. 28N, RNG. 14W, 2nd PM

COUNTY Iroquois DRILLING METHOD Hollow Stem Auger HAMMER TYPE CME Automatic

STRUCT. NO. 038-0175 (Exist.)
Station 163+53

BORING NO. 2 (N.E. Quad.)
Station 164+13
Offset 13.00ft Lt.
Ground Surface Elev. 630.91 ft

Surface Water Elev. 614.95 ft
Stream Bed Elev. 613.35 ft

Groundwater Elev.:
First Encounter Dry ft
Upon Completion Dry ft
After ___ Hrs. ___ ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Augered Bit, shoulder, Brown & Gray Silty Clay Loam Fill			
625.91 -5	3		
Very Stiff Brown & Gray Silty Clay Loam Fill	3	2.5	26.5
	3	P	
623.91			
Stiff to Very Stiff Brown & Gray Silty Clay Loam/ Silty Loam	2		
	3	3.1	22.2
	3	B	
-10	2		
	2	2.0	23.4
	2	P	
618.91			
Hard Brown Silty Clay Loam Till	5		
	9	8.0	19.6
	11	S	
-15	5		
	7	8.0	19.0
	9	S	
613.91			
Very Stiff Gray Clay Till	3		
	4	3.5	20.2
	6	B	
-20			

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Very Stiff Gray Clay Till *(continued)*	3		
	5	3.5	20.3
	9	B	
	3		
	5	3.5	20.3
	7	B	
-25	5		
	5	3.5	20.6
	7	B	
	5		
	5	3.5	19.0
	7	B	
-30	5		
	6	3.5	21.6
	8	B	
	4		
	5	3.5	20.9
	7	B	
-35	4		
	6	3.5	20.9
	7	B	
	4		
	5	3.5	20.8
	7	B	
-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 (AASHTO T206)

BBS, from 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
District #3, Ottawa

SOIL BORING LOG

Date 5/27/09

ROUTE FAP 681 (US 45) DESCRIPTION US 45 over Prairie Creek, 2.3 Miles East of Ashkum LOGGED BY LM

SECTION 118 BR LOCATION NW 1/4, SEC. 25, TWP. 28N, RNG. 14W, 2nd PM

COUNTY Iroquois DRILLING METHOD Hollow Stem Auger HAMMER TYPE CME Automatic

STRUCT. NO. 038-0175 (Exist.)
Station 163+53

BORING NO. 2 (N.E. Quad.)
Station 164+13
Offset 13.00ft Lt.
Ground Surface Elev. 630.91 ft

Surface Water Elev. 614.95 ft
Stream Bed Elev. 613.35 ft

Groundwater Elev.:
First Encounter Dry ft
Upon Completion Dry ft
After ___ Hrs. ___ ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Very Stiff Gray Clay Till *(continued)*	5		
	5	3.5	21.0
	7	B	
-45	5		
	6	3.3	21.9
	7	B	
	5		
	8	3.0	22.5
	9	B	
577.91			
Hard Gray Silty Clay Loam Till with pockets of Silty Loam			
-55	8		
	9	5.0	14.4
	11	S	
573.91			
Hard & Brittle Gray Silty Loam/Silty Clay Loam Till			
-60			

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Hard & Brittle Gray Silty Loam/Silty Clay Loam Till *(continued)*	39		
	56	>12	7.4
	72	S	
-65			
	25		
	47	11.5	10.1
564.41	61	S	
End of Boring			
-70			
-75			
-80			

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 (AASHTO T206)

BBS, from 137 (Rev. 8-99)

SOIL BORINGS
STRUCTURE NO. 038-0221

ZROKA engineering
Zroka Engineering, P.C.
4216 North Hermitage
Chicago, IL 60613

Date: 7-28-10 Drawn By: FJS Checked By: DZ

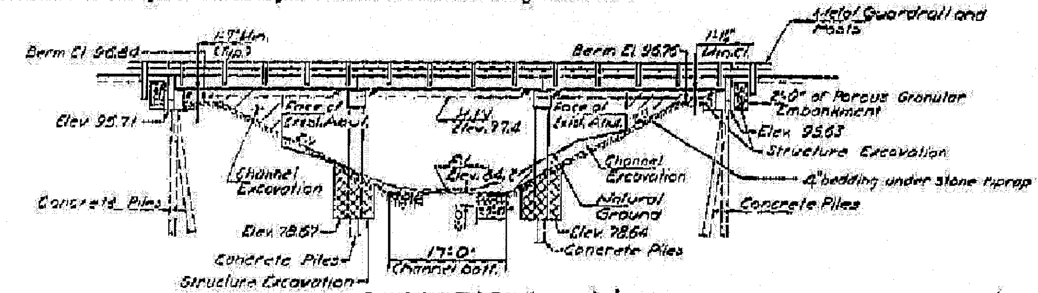
	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
SHEET NO. 20 OF 20 SHEETS	681	118BR	IROQUOIS	42	29
			CONTRACT NO. 66861		
	FED. ROAD DIST. NO. _	ILLINOIS	FED. AID PROJECT		

7/29/2010 6:30:06 PM C:\Drawings\5500-10\US45\Final\Structural\Plans\S20_ Soil Boring Logs 2.dgn

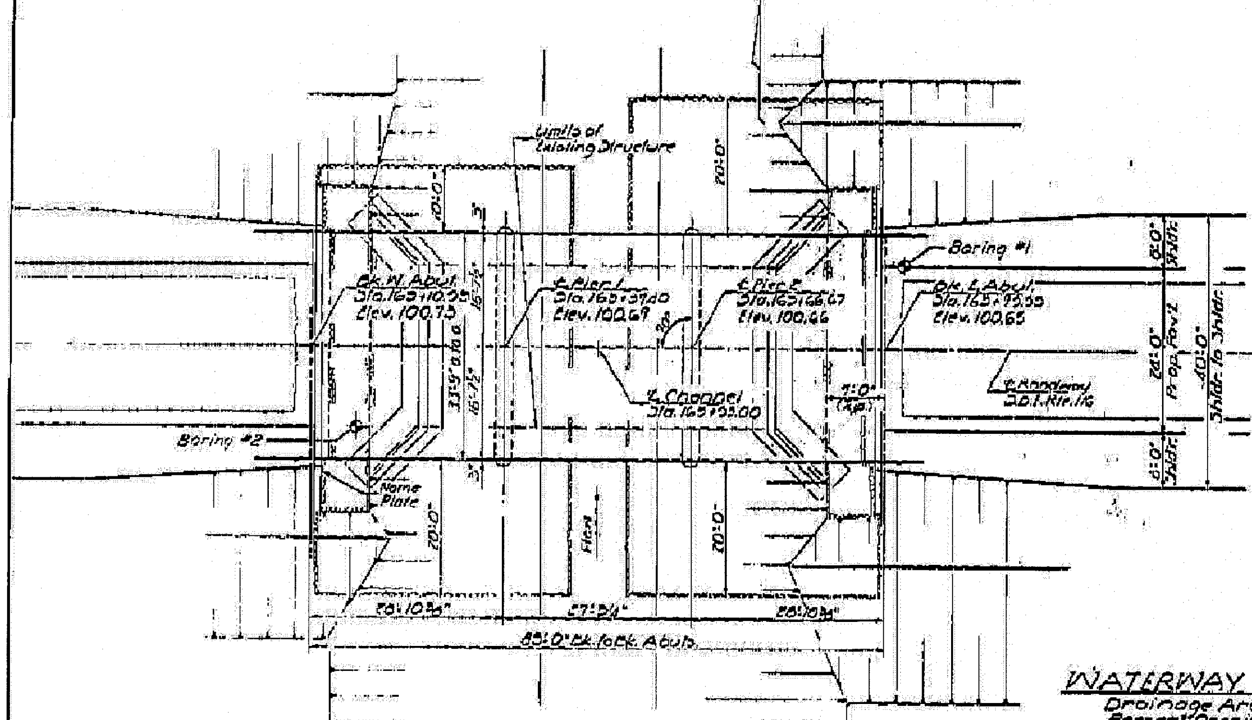
Bench Mark: □ 1/4"Ø on NW corner of N.W. wingwall
14.5' Lt. Sta. 163+66.0 Elev. 100.00
Existing Struct.: Structure No. 038-0102 Built in 1922 as a State Aid Route, Section X-1102 at Station 163+53.00. One R.C. Thru Girder Span of 30'0" Face to Face of R.C. Closed Abutments. Superstructure and portions of Substructure to be removed by Bridge Contractor before new construction begins. No salvage. Road to be closed during Construction.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

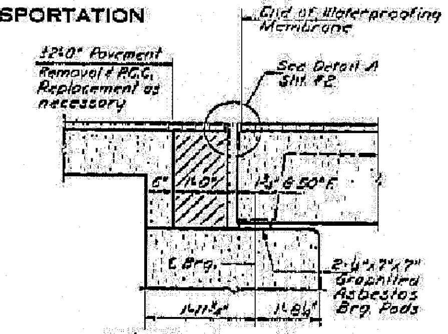
					SHEET NO. 1
	118X-BR	IROQUOIS	13	5	6 SHEETS



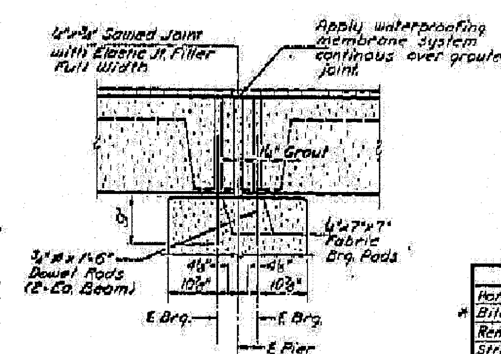
ELEVATION



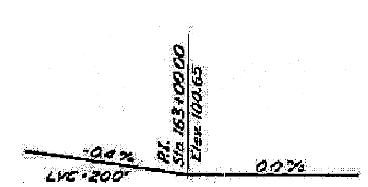
PLAN



SECTION THRU ABUTMENTS



SECTION THRU PIERS



PROFILE GRADE

GENERAL NOTES

All reinforcement bars shall be lapped 24 diameters unless otherwise shown.

All Structural Steel shall be shop painted with two coats of basic lead silico chromate paint.

The Contractor shall drive 1 Concrete test pile in a permanent location at Pier 1 before ordering the remainder of piles.

See Special Provisions for Waterproofing Membrane System.

For Boring Data see the Proposal.

Expansion guards which are not cast in the precast units shall be fabricated and erected in accordance with Article 503.07 (e) of the Standard Specifications and are included in quantity of structural steel.

TOTAL BILL OF MATERIAL

Item	Unit	Super	Sub	Total
Porous Granular Embankment	Cu. Yd.		20	20
* Bituminous Concrete Surface Course, Class I	Tons	25		25
Removal of Existing Structures	Each			1
Structure Excavation	Cu. Yd.		170	170
Class X Concrete	Cu. Yd.		123.3	123.3
Precast Concrete Bridge Slab	Sq. Ft.	2751		2751
Structural Steel	Lbs.	2620		2620
Steel Railing, Type S	Lin. Ft.	168		168
Reinforcement Bars	Lbs.		10280	10280
Concrete Piles	Lin. Ft.		1039	1039
Test Pile Concrete	Each		1	1
Portland Cement Mortar Fairing Course	Lin. Ft.	652		652
Channel Excavation	Cu. Yd.		270	270
Stone Riprap	Sq. Yd.		620	620
Pavement Removal & P.C.C. Replacement, Type II (10")	Sq. Yd.	9		9
Name Plates	Each		1	1
Waterproofing Membrane System	Sq. Yd.	306		306
Preformed Joint Sealer (2½")	Lin. Ft.	68		68

* Quantity is from end to end of precast concrete bridge slab.

WATERWAY INFORMATION

Drainage Area ---- 70 Sq. Miles
Present Opening ---- 473 Sq. Ft.
Required Opening ---- 519 Sq. Ft.
Proposed Opening ---- 554 Sq. Ft.
Q(50) = 2370 cfs
Created Head = 0.15'
All Time H.W. Elev. 97.7

DESIGN STRESSES

FIELD UNITS

f'c = 1400 psi - Sub.
fs = 20,000 psi - Reinf.
fs = 20,000 psi - Struct.
n = 10

PRECAST UNITS

f'c = 4500 psi
fc = 1800 psi
fs = 20,000 psi - Reinf.
n = 8

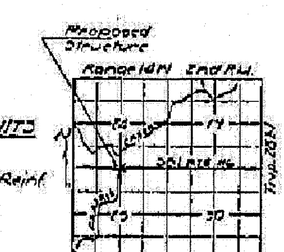
Allow 25#/□' for Fut. W. Surf.

Design Specifications AASHO 1973 (as applicable)

DESIGN LOADING HS20-44

STATION 163+53.00
BUILT 19 BY
STATE OF ILLINOIS
S.B.I. RT. 116 - SEC. 118X-BR
LOADING HS20

NAME PLATE
See Std. 2113



LOCATION SKETCH

DESIGNED	
CHECKED	
DRAWN	
CHECKED	

Aug 28 1974
EXAMINED
PASSED
APPROVED
ENGINEER OF BRIDGES AND TRAFFIC STRUCTURES

GENERAL PLAN AND ELEVATION
S.B.I. RTE. 116 OVER PRAIRIE CREEK
S.B.I. ROUTE 116
SECTION 118X-BR
IROQUOIS COUNTY
STATION 163+53.00

45.7

FILE NAME = ...\D36686I-SHT-Existing Bridge Plans.dgn	USER NAME = SAW	DESIGNED - RAC	REVISED -
		DRAWN - RAC	REVISED -
	PLOT SCALE = 50.00000 ' / IN.	CHECKED - DAZ	REVISED -
	PLOT DATE = 7/29/2010	DATE - 07/30/10	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ZROKA engineering — Zroka Engineering, P.C. 4216 North Hermitage Chicago, IL 60613

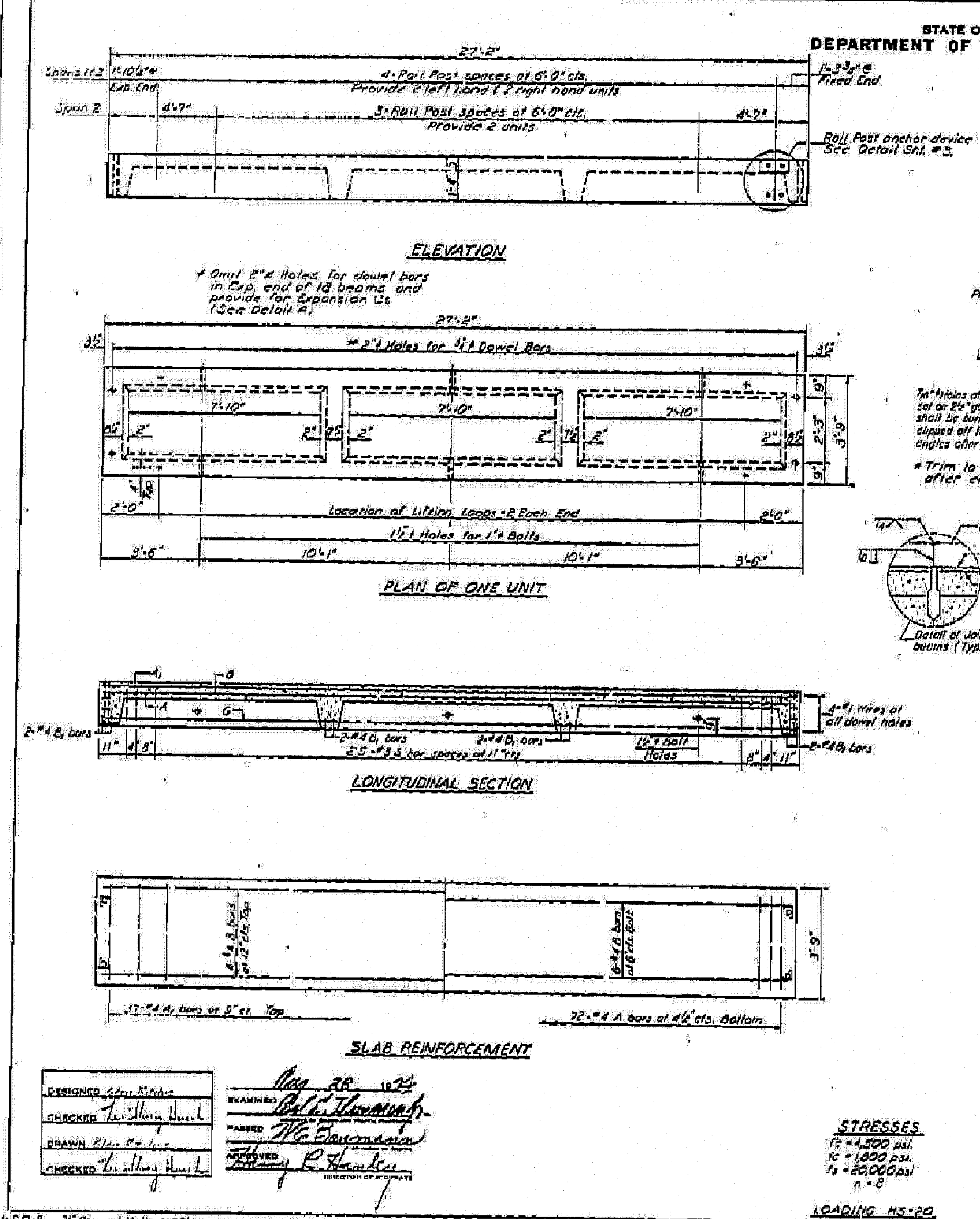
SCALE: 1" = 50' | SHEET NO. 30 OF 42 SHEETS

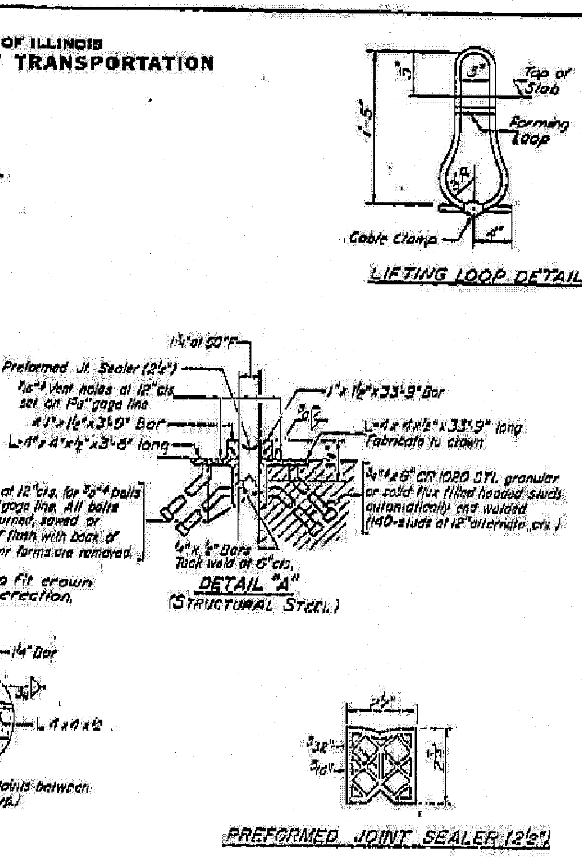
EXISTING BRIDGE PLANS FOR INFORMATION ONLY

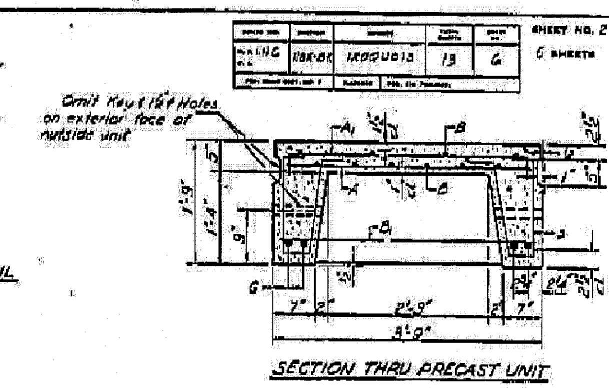
STA. 159+89 TO STA. 167+17

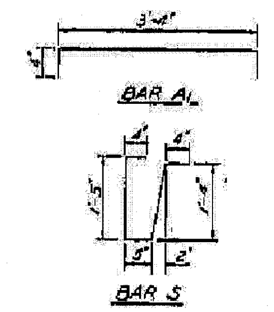
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
681	118 BR	IROQUOIS	42	30
		CONTRACT NO. 66861		

ILLINOIS FED. AID PROJECT









BAR LIST - ONE UNIT

Reinforcement to be cast into slab

Bar	No.	Size	Length	Shape
A	12	#4	3'-9"	
A_1	37	#4	6'-0"	
B	10	#4	25'-9"	
B_1	8	#4	3'-6"	
G	4	#11	25'-9"	
S	60	#3	3'-10"	

NOTES

Unless otherwise approved by the Engineer, lifting loops shall be ½" ϕ 6 x 19 class wire rope with fiber core and shall have a minimum ultimate strength of 18,700 lbs. Loops shall be burned off after slab has been erected.

Holes shall be drilled and anchor dowels grouted in place.

Cost of reinforcement and accessories cast into the slab unit, bearing pads, furnishing, drilling for, placing and grouting anchor dowels is included in Unit bid price for "Precast Concrete Bridge Slab."

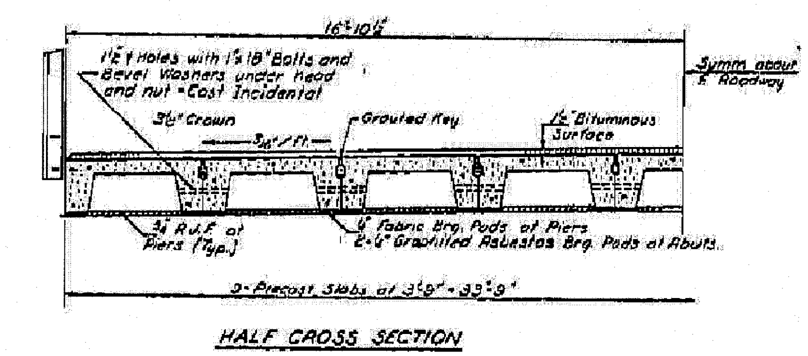
Longitudinal shear keys shall be packed with a very dry mix of 2:1 sand and P.C. mortar.

The transverse tie bolts, nuts and washers shall be hot-dipped galvanized in accordance with A.A.S.H.O. Designation M232.

End of beams shall be aligned at the expansion joints. Any lineal variation in the beam lengths shall be placed at the fixed joint.

BILL OF MATERIAL

Item	Unit	Quantity
Precast Concrete Bridge Slab	Sq. Ft.	2751
Removal of Existing Structure	Each	1



SUPERSTRUCTURE
S.B.I. RT. 116 - SEC. 118X-BR
IROQUOIS COUNTY
STA. 163+53.00

W-SR-8 21' Precast Units = 25' lg. (11-15-71)

FILE NAME = ...\D366861-SHT-Existing Bridge Plans.dgn	USER NAME = SAW	DESIGNED - RAC	REVISED -
		DRAWN - SAW	REVISED -
	PLOT SCALE = 50.0000 ' / IN.	CHECKED - DAZ	REVISED -
	PLOT DATE = 7/29/2010	DATE - 07/30/10	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ZROKA engineering — Zroka Engineering, P.C., 4216 North Hermitage, Chicago, IL 60613

SCALE: 1" = 50' | SHEET NO. 31 OF 42 SHEETS

EXISTING BRIDGE PLANS FOR INFORMATION ONLY

STA. 159+89 TO STA. 167+17

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
681	118 BR	IROQUOIS	42	31

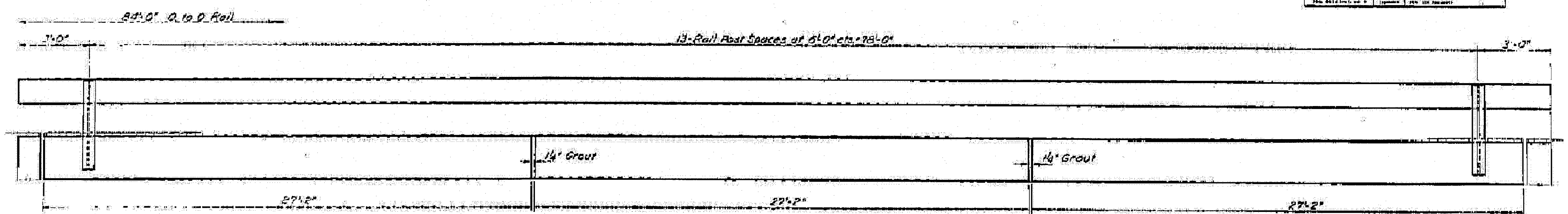
CONTRACT NO. 66861

ILLINOIS | FED. AID PROJECT

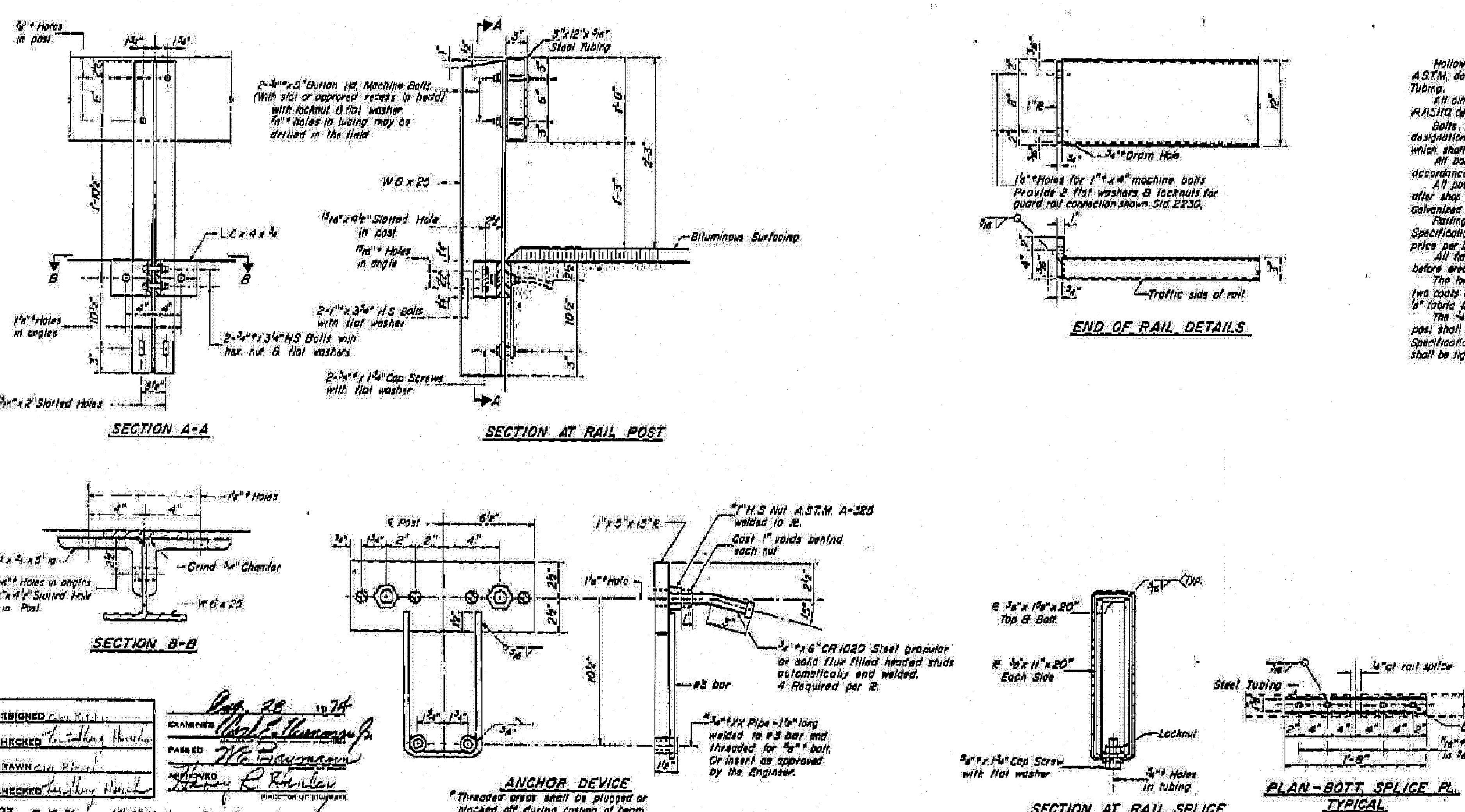
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. RTE.	118X-BR	IROQUOIS	13	7

SHEET NO. 3
6 SHEETS



ELEVATION



NOTES

Hollow structural steel tubing shall conform to the requirements of A.S.T.M. designation A-500 Grade B or A-501 Structural Steel Tubing.

All other steel shapes and plates shall conform to the requirements of A.A.S.H.O. designation M183 except posts shall conform to A.A.S.H.O. M188.

Bolts, cap screws, and nuts shall conform to the requirement of A.S.T.M. designation A-307 except for high strength bolts, nuts and washers noted which shall conform to A.S.T.M. designation A-325.

All bolts, nuts, cap screws, washers and lock washers shall be galvanized in accordance with A.A.S.H.O. designation M232.

All posts, railing, rail splices, anchor devices and angles shall be galvanized after shop fabrication in accordance with A.A.S.H.O. M111 and A.S.T.M. A-385. Galvanized rail shall not be painted.

Railing shall be in accordance with Section 79 of the Standard Specifications, except as noted, and shall be paid for at the contract unit price per lineal foot for STEEL RAILING, TYPE S.

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

The lower portion of the post flange in contact with concrete shall receive two coats of asphalt paint conforming to Section 714.08 Type B or place 1/8" fabric bearing pad between the post and concrete.

The 3/4" ϕ high strength bolts used to connect the 6 x 4 x 3/4 angles to the post shall be tightened in accordance with Article 507.04(g)(3) of the Standard Specifications. The 1" ϕ high strength bolts connecting the angles to the concrete shall be tightened to a snug fit and given an additional 1/8 turn.

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type S	Lin. Ft.	165

DESIGNED
CHECKED
DRAWN
CHECKED
EXAMINED
PASSED
APPROVED
Aug. 28, 1974

R-23 12-10-71 (6'-3" Maximum Post Spacing)

TYPE S-STEEL RAILING
S.B.I. RT. 116 - SEC. 118X-BR
IROQUOIS COUNTY
STA. 163+53.00

FILE NAME =	USER NAME = SAW	DESIGNED - RAC	REVISED -
...\D366861-SHT-Existing Bridge Plans.dgn		DRAWN - SAW	REVISED -
	PLOT SCALE = 50.00000 ' / IN.	CHECKED - DAZ	REVISED -
	PLOT DATE = 7/29/2010	DATE - 07/30/10	REVISED -

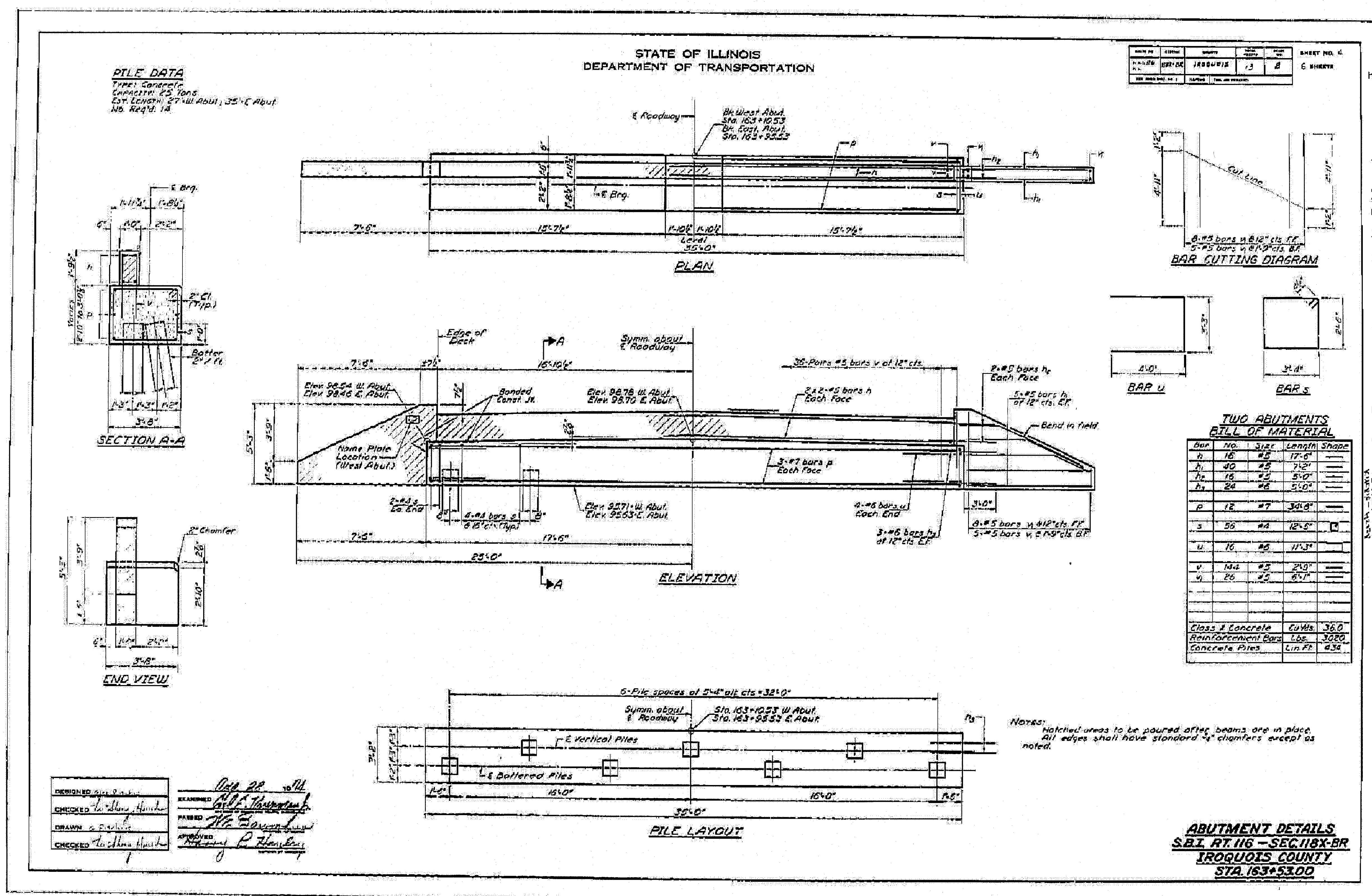
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ZROKA engineering — Zroka Engineering, P.C., 4216 North Hermitage, Chicago, IL 60613

SCALE: 1" = 50' | SHEET NO. 32 OF 42 SHEETS

EXISTING BRIDGE PLANS FOR INFORMATION ONLY
STA. 159+89 TO STA. 167+17

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
681	118 BR	IROQUOIS	42	32
		CONTRACT NO. 66861		
		ILLINOIS FED. AID PROJECT		



TWO ABUTMENTS BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h	16	#5	17'-6"	—
h1	40	#5	7'-2"	—
h2	16	#5	5'-0"	—
h3	24	#6	5'-0"	—
p	12	#7	34'-8"	—
s	56	#4	12'-5"	□
u	16	#6	11'-3"	⊐
v	144	#5	2'-9"	—
v1	26	#5	6'-1"	—
Class X Concrete			Cu.Yds.	36.0
Reinforcement Bars			Lbs.	3020
Concrete Piles			Lin.Ft.	434

FILE NAME = ...\D366861-SHT-Existing Bridge Plans.dgn	USER NAME = SAW	DESIGNED - RAC	REVISED -
		DRAWN - SAW	REVISED -
	PLOT SCALE = 50.00000 '/ IN.	CHECKED - DAZ	REVISED -
	PLOT DATE = 7/29/2010	DATE - 07/30/10	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ZROKA engineering — Zroka Engineering, P.C., 4216 North Hermitage, Chicago, IL 60613

SCALE: 1" = 50' | SHEET NO. 33 OF 42 SHEETS

EXISTING BRIDGE PLANS FOR INFORMATION ONLY

STA. 159+89 TO STA. 167+17

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
681	118 BR	IROQUOIS	42	33

CONTRACT NO. 66861

ILLINOIS FED. AID PROJECT

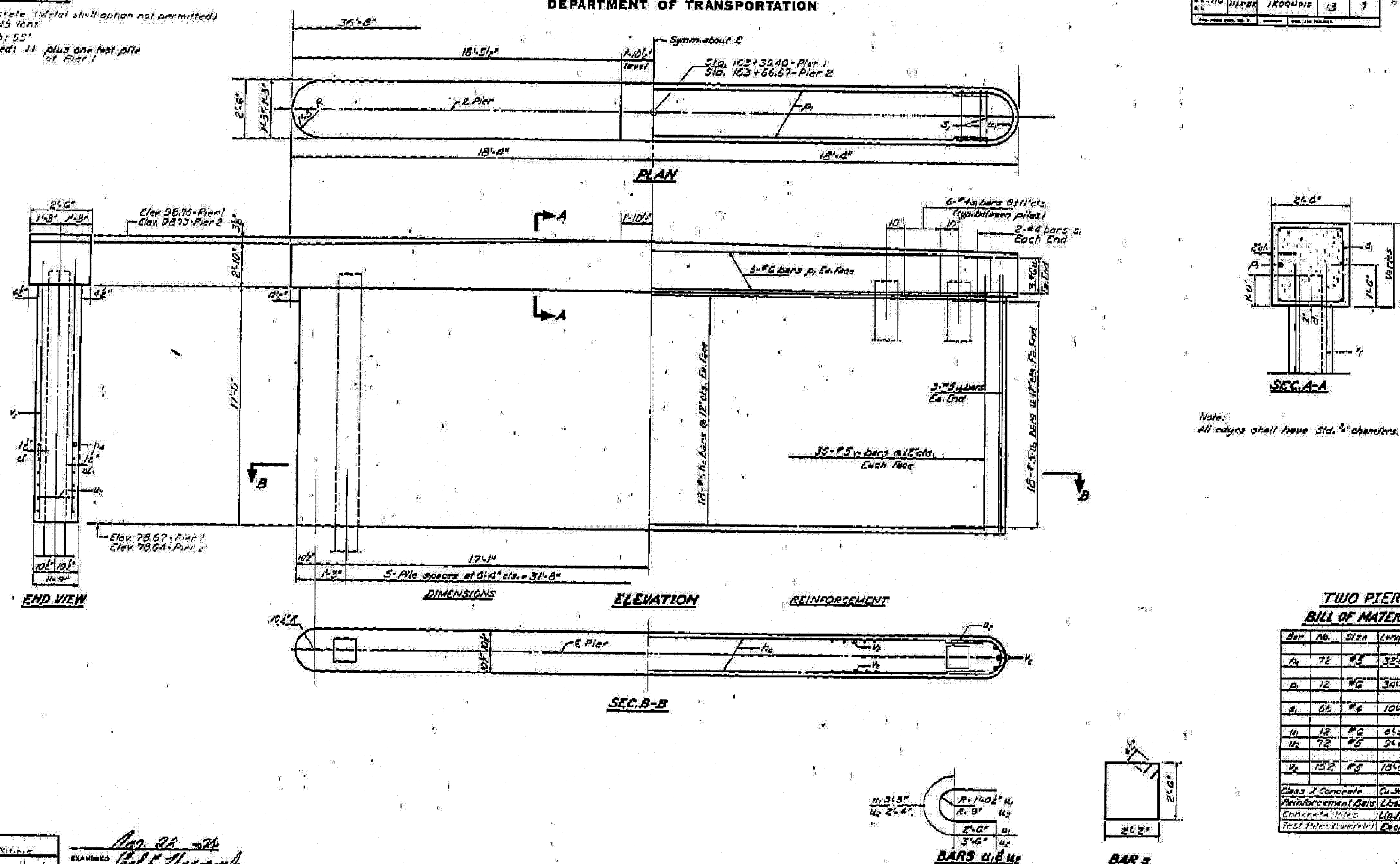
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET NO. 5
6 SHEETS

S.B.I. 116	118X-BR	IROQUOIS	13	7

PILE DATA

Type: Concrete (Metal shell option not permitted)
Capacity: 45 Tons
Est. length: 55'
No. Required: 11 plus one test pile of Pier 1



Note:
All edges shall have Std. ¾" chamfers.

TWO PIERS
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h_1	72	#5	32'-0"	—
p_1	12	#6	34'-0"	—
s_1	66	#4	10'-1"	▭
u_1	12	#6	6'-3"	⊏
u_2	72	#5	5'-4"	⊏
v_1	152	#5	18'-6"	—
Class X Concrete			Cu. Yds.	87.3
Reinforcement Bars			Lbs.	7260
Concrete Piles			Lin. Ft.	605
Test Piles (Concrete)			Each	1

DESIGNED
CHECKED
DRAWN
CHECKED
EXAMINED
PASSED
APPROVED

PIERS 1 & 2
S.B.I. RT. 116 - SEC. 118X-BR
IROQUOIS COUNTY
STA. 163+53.00

W-P-1 (3-15-71)

FILE NAME = ...\D366861-SHT-Existing Bridge Plans.dgn	USER NAME = SAW	DESIGNED - RAC	REVISED -
		DRAWN - SAW	REVISED -
	PLOT SCALE = 50.0000 ' / IN.	CHECKED - DAZ	REVISED -
	PLOT DATE = 7/29/2010	DATE - 07/30/10	REVISED -

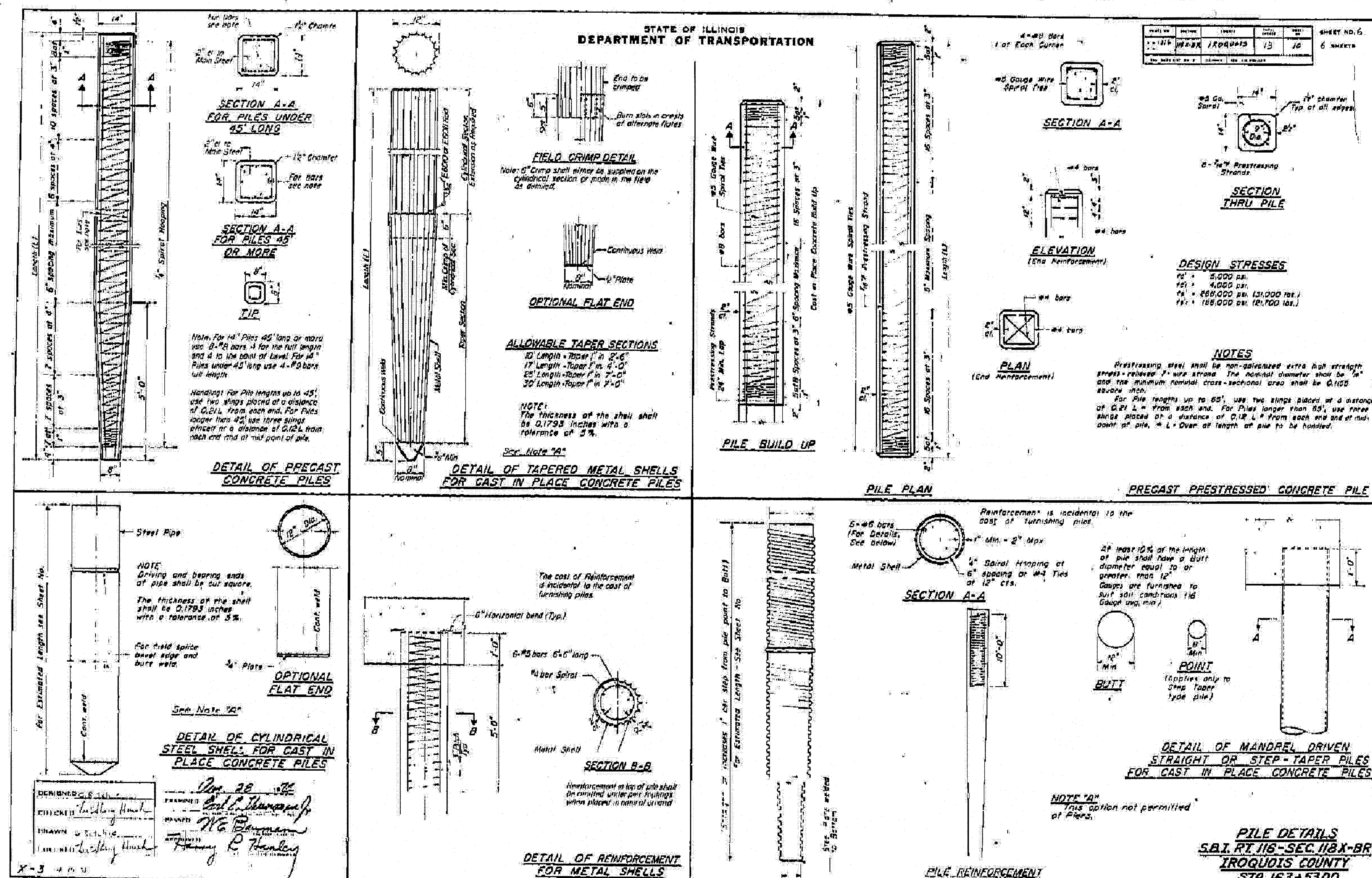
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ZROKA engineering — Zroka Engineering, P.C., 4216 North Hermitage, Chicago, IL 60613

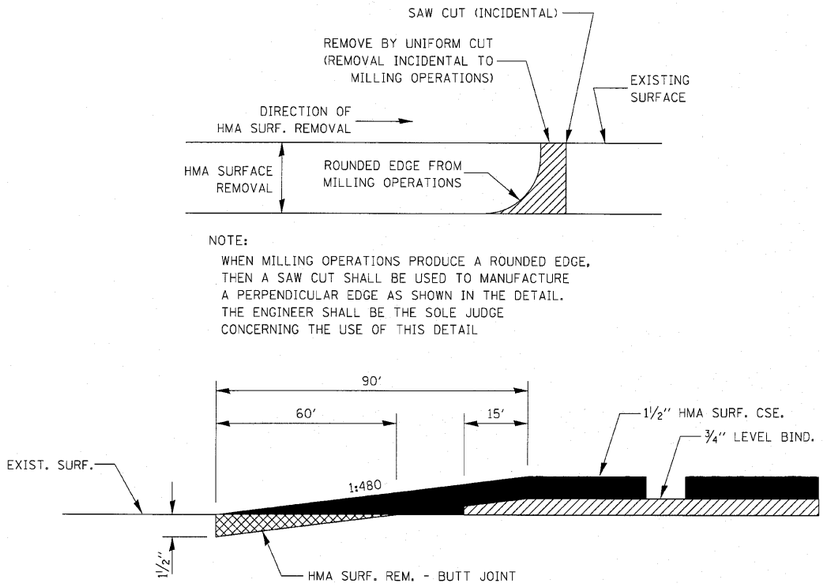
SCALE: 1" = 50' | SHEET NO. 34 OF 42 SHEETS

EXISTING BRIDGE PLANS FOR INFORMATION ONLY
STA. 159+89 TO STA. 167+17

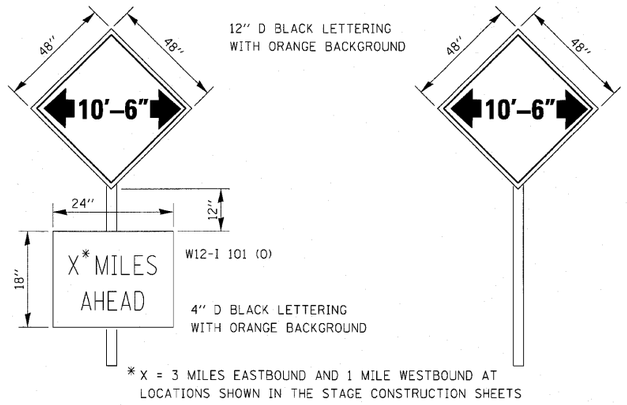
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
681	118 BR	IROQUOIS	42	34
		CONTRACT NO. 66861		
		ILLINOIS FED. AID PROJECT		


STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
SECTION A-A FOR PILES UNDER 45' LONG
SECTION A-A FOR PILES 45' OR MORE
TIP
DETAIL OF PRECAST CONCRETE PILES
FIELD CRIMP DETAIL
OPTIONAL FLAT END
ALLOWABLE TAPER SECTIONS
DETAIL OF TAPERED METAL SHELLS FOR CAST IN PLACE CONCRETE PILES
PILE BUILD UP
PILE PLAN
SECTION A-A
ELEVATION
(End Reinforcement)
PLAN
(End Reinforcement)
SECTION THRU PILE
DESIGN STRESSES
f'c = 5,000 psi.
f'ci = 4,000 psi.
f's = 250,000 psi. (31,000 lbs.)
fsi = 188,000 psi. (21,700 lbs.)
NOTES
Prestressing steel shall be non-galvanized extra high strength stress-relieved 7-wire strand. The nominal diameter shall be 7/16" and the minimum nominal cross-sectional area shall be 0.1155 square inch.
For Pile lengths up to 65', use two slings placed at a distance of 0.21 L * from each end. For Piles longer than 65', use three slings placed at a distance of 0.12 L * from each end and at mid-point of pile. * L = Over all length of pile to be handled.
PRECAST PRESTRESSED CONCRETE PILE
DETAIL OF CYLINDRICAL STEEL SHELL FOR CAST IN PLACE CONCRETE PILES
OPTIONAL FLAT END
SECTION B-B
DETAIL OF REINFORCEMENT FOR METAL SHELLS
SECTION A-A
BUTT
POINT
PILE REINFORCEMENT
DETAIL OF MANDREL DRIVEN STRAIGHT OR STEP-TAPER PILES FOR CAST IN PLACE CONCRETE PILES
NOTE "A"
This option not permitted of Piers.
PILE DETAILS
S.B.I. RT. 116-SEC. 118X-BR
IROQUOIS COUNTY
STA. 163+53.00

FILE NAME = ...\D366861-SHT-Existing Bridge Plans.dgn	USER NAME = SAW	DESIGNED - RAC	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	ZROKA engineering — Zroka Engineering, P.C. 4216 North Hermitage Chicago, IL 60613	EXISTING BRIDGE PLANS FOR INFORMATION ONLY	F.A. RTE. 681	SECTION 118 BR	COUNTY IROQUOIS; TOTAL SHEETS 42; SHEET NO. 35
		DRAWN - SAW	REVISED -						CONTRACT NO. 66861
	PLOT SCALE = 50.00000 ' / IN.	CHECKED - DAZ	REVISED -		SCALE: 1" = 50'	SHEET NO. 35 OF 42 SHEETS	STA. 159+89 TO STA. 167+17		ILLINOIS FED. AID PROJECT
	PLOT DATE = 7/29/2010	DATE - 07/30/10	REVISED -						



HMA DETAIL AT BUTT JOINTS



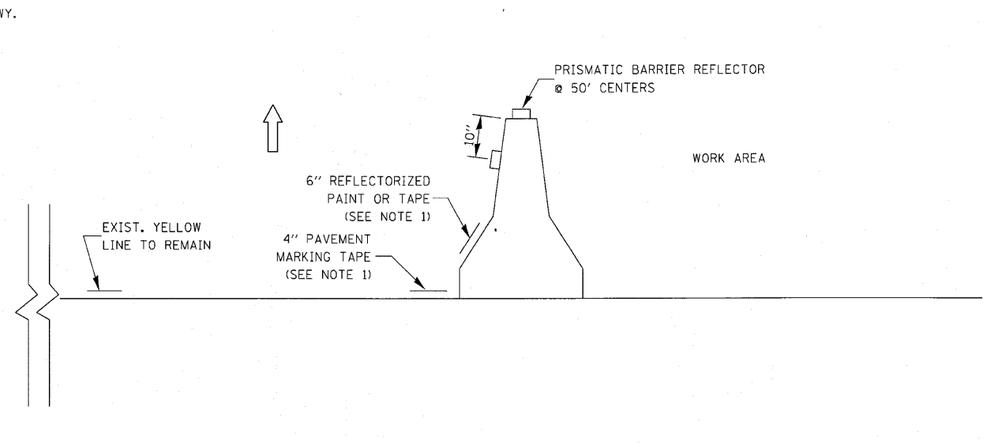
TO BE POST MOUNTED AS SHOWN ELSEWHERE IN THE PLANS.

THE ENGINEER WILL NOTIFY DISTRICT 3 BUREAU OF OPERATIONS 14 CALENDAR DAYS PRIOR TO INSTALLING ANY TRAFFIC CONTROL DEVICES THAT WILL RESTRICT THE PAVEMENT WIDTH.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH THE ENGINEER TO MEET THIS REQUIREMENT.

COST OF SUPPLYING, INSTALLING, MAINTAINING AND REMOVING WIDTH RESTRICTION SIGNS SHALL BE INCLUDED IN THE COST OF THE TRAFFIC CONTROL AND PROTECTION PAY ITEMS.

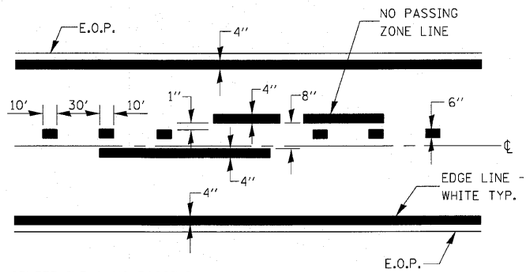
WIDTH RESTRICTION SIGNING DETAILS



NOTES:

1. THE CONTRACTOR HAS THE OPTION OF USING EITHER THE LINE ON THE TEMPORARY CONCRETE BARRIER OR ON THE PAVEMENT.
2. THE COLOR OF THE REFLECTORS AND PAVEMENT/BARRIER MARKING LINE WILL VARY WITH STAGING AND SHALL MATCH THE EXISTING LINE IN THE WORK AREA.
3. THE COST OF THE REFLECTORS AND THE PAVEMENT/BARRIER MARKING LINE IS INCLUDED IN THE COST OF THE TEMPORARY CONCRETE BARRIER.

TRAFFIC CONTROL DETAILS FOR TEMPORARY CONCRETE BARRIER



(SEE TYPICAL SECTIONS)

PAVEMENT MARKING

FILE NAME =	USER NAME = SAW	DESIGNED - RAC	REVISED -
...\D366861-SHT-Details.dgn		DRAWN - RAC	REVISED -
	PLOT SCALE = 50.00000 ' / IN.	CHECKED - DAZ	REVISED -
	PLOT DATE = 7/29/2010	DATE - 07/30/10	REVISED -

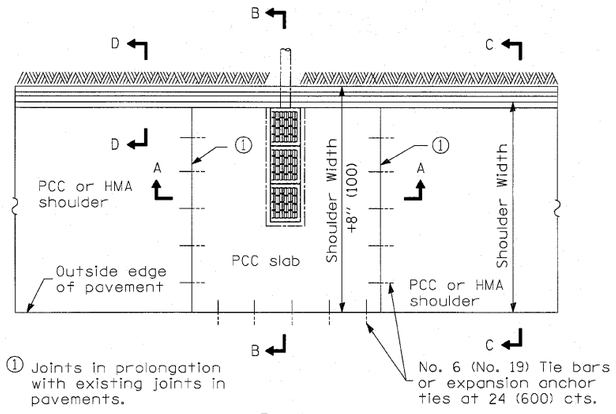
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ZROKA engineering
Zroka Engineering, P.C.
4216 North Hermitage
Chicago, IL 60613

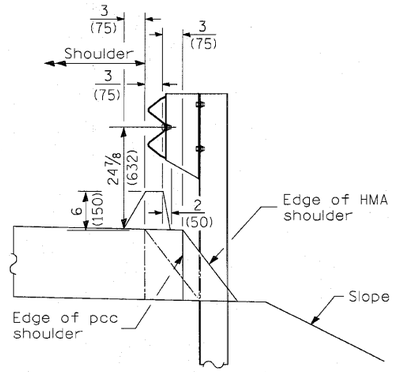
DETAILS

SCALE: 1" = 50' | SHEET NO. 36 OF 42 SHEETS | STA. 159+89 TO STA. 167+17

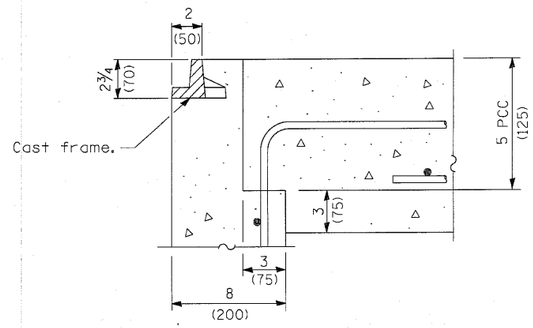
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
681	118 BR	IROQUOIS	42	36
		CONTRACT NO. 66861		
	ILLINOIS FED. AID PROJECT			



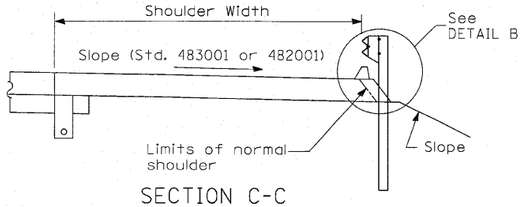
PLAN



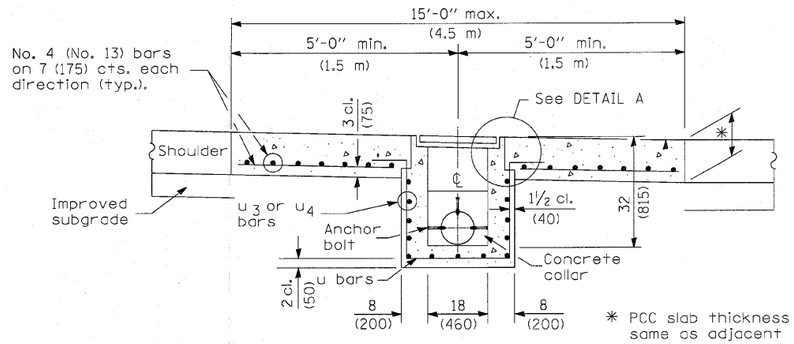
DETAIL B



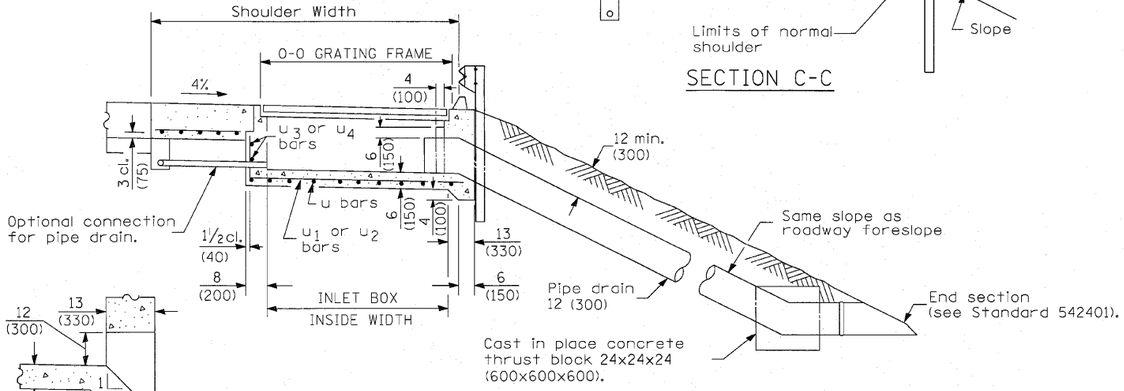
DETAIL A



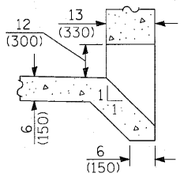
SECTION C-C



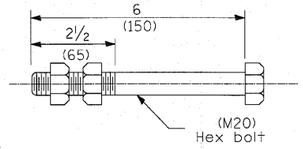
SEC. A-A



SEC. B-B



BOX OUTLET WHEN PRECAST



ANCHOR BOLT

(Used to tie pipe to concrete collar)

INLET TYPE	SHOULDER WIDTH	0-0 GRATING FRAME	INLET BOX INSIDE WIDTH	INLET BOX INSIDE LENGTH
Type E	8' (2.4 m)	4'-4" (1.325 m)	3'-11" (1.195 m)	18 (460)
Type F	10' (3.0 m)	6'-5" (1.960 m)	6'-0" (1.830 m)	18 (460)
Type G	Less Than 5' (1.5 m)	2'-3" (0.690 m)	1'-10" (0.560 m)	18 (460)

GENERAL NOTES

See Standard 420001 for joint details not shown.

All exposed edges of the inlet, except the upper perimeter, shall be beveled ¾ (20).

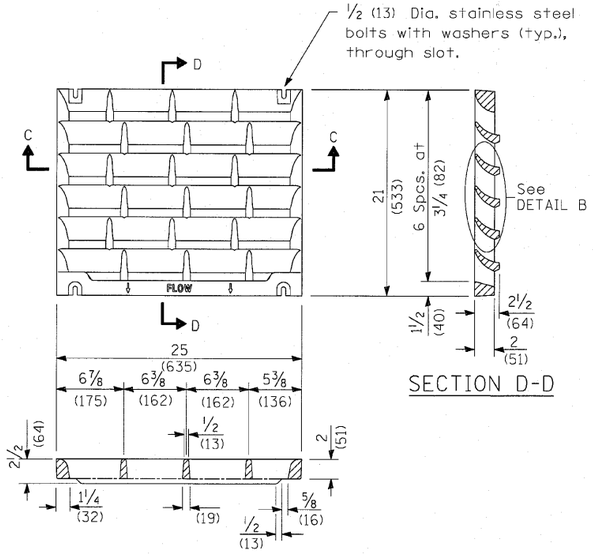
For placement of drainage elements on existing construction with existing rigid pavement, substitute expansion anchor ties for tie bars. For nonrigid pavements or monolithic construction of pcc slab and shoulder, omit tie bars.

Alldiminsions are in inches (millimeters) unless otherwise shown.

SHOULDER INLET WITH CURB

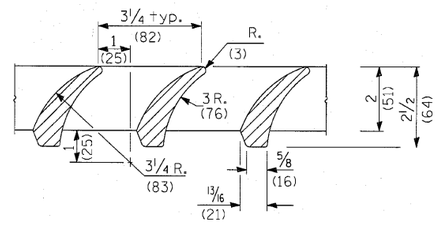
(Sheet 1 of 2)

FILE NAME = ...\0366861-SHT-Details.dgn	USER NAME = SAW	DESIGNED - RAC	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	ZROKA engineering	Zroka Engineering, P.C. 4216 North Hermitage Chicago, IL 60613	DETAILS	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS / SHEET NO.
		DRAWN - SAW	REVISED -					681	118 BR	IROQUOIS	42 / 37
	PLOT SCALE = 50.00000 ' / IN.	CHECKED - DAZ	REVISED -							CONTRACT NO. 66861	
	PLOT DATE = 7/29/2010	DATE - 07/30/10	REVISED -		SCALE: 1" = 50'	SHEET NO. 37 OF 42 SHEETS	STA. 159+89 TO STA. 167+17			ILLINOIS FED. AID PROJECT	

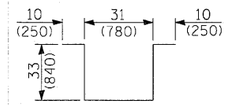


SECTION C-C

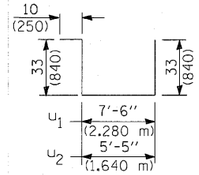
SECTION D-D



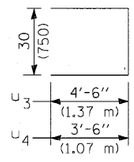
DETAIL B



BAR u



BARS u_1, u_2



Bars u_3, u_4

INLET BOX

REQUIRED MATERIAL

TYPE F

Bar	Qty.	Size	Length
u	8	No. 4 (No. 13)	9'-9" (2.96 m)
u_1	3	No. 4 (No. 13)	13'-10" (4.21 m)
u_3	6	No. 4 (No. 13)	11'-6" (3.49 m)
Concrete		cu. yds. (m^3)	1.7 (1.3)
Reinf. bars		lbs. (kg)	126 (57.2)
Grating		sq. ft. (m^2)	10.9 (1.02)

TYPE E

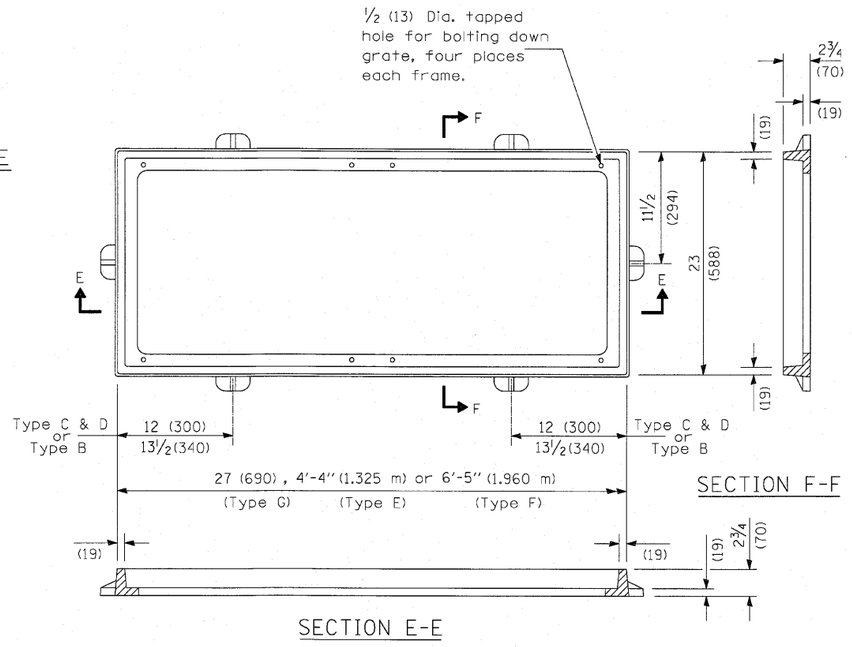
Bar	Qty.	Size	Length
u	6	No. 4 (No. 13)	9'-9" (2.96 m)
u_2	3	No. 4 (No. 13)	11'-9" (3.57 m)
u_4	6	No. 4 (No. 13)	9'-6" (2.89 m)
Concrete		cu. yds. (m^3)	1.3 (1.0)
Reinf. bars		lbs. (kg)	101 (45.8)
Grating		sq. ft. (m^2)	7.3 (0.68)

TYPE G

Bar	Qty.	Size	Length
u	6	No. 4 (No. 13)	8'-5" (2.550 m)
u_5	3	No. 4 (No. 13)	8'-0" (2.425 m)
u_6	6	No. 4 (No. 13)	6'-2" (1.870 m)
Concrete		cu. yds. (m^3)	0.5 (0.4)
Reinf. bars		lbs. (kg)	55.0 (25.0)
Grating		sq. ft. (m^2)	3.6 (0.34)

DETAIL OF CAST GRATE

Type G requires 1 grate
Type E requires 2 grates
Type F requires 3 grates



SECTION F-F

SECTION E-E

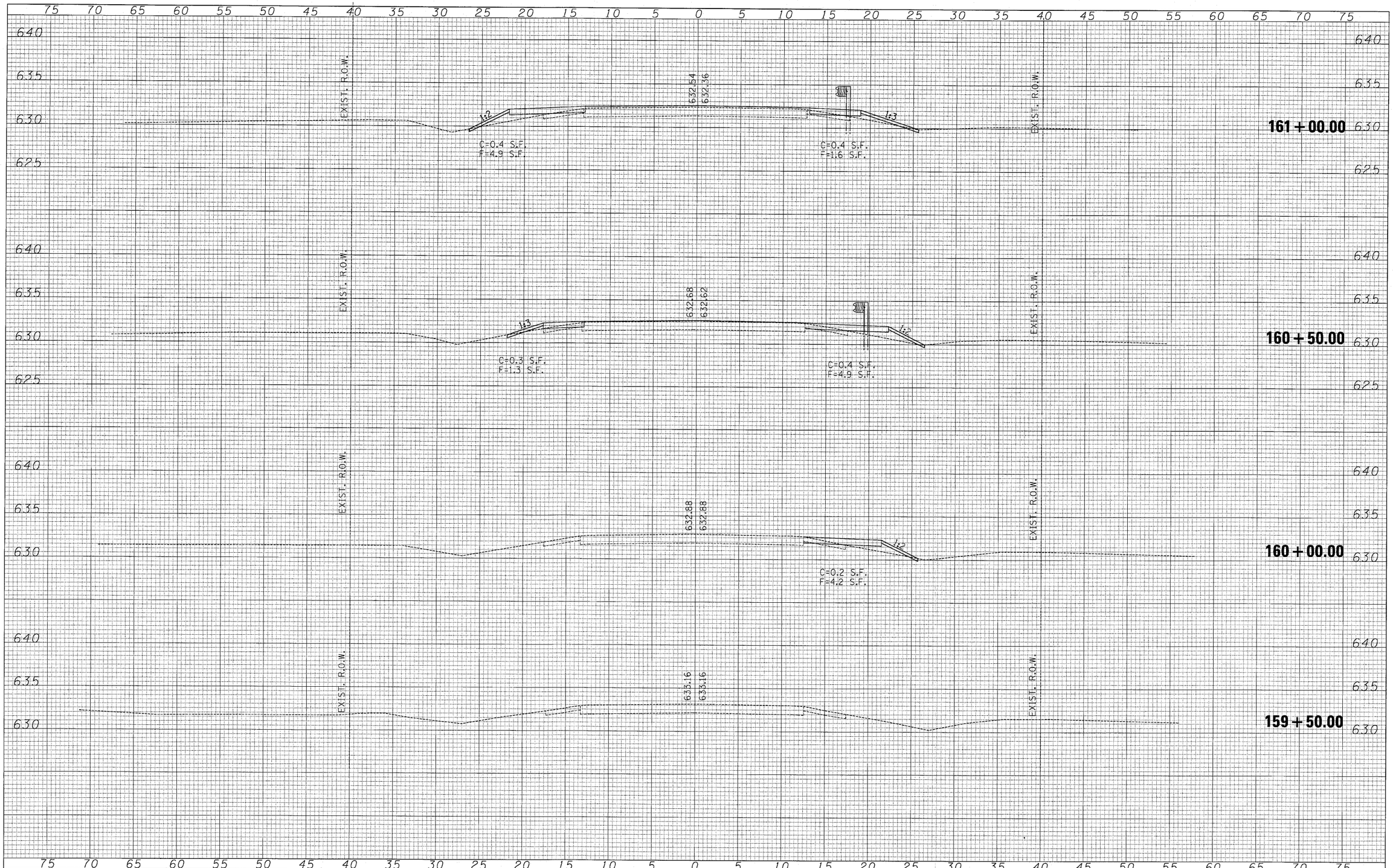
DETAIL OF CAST FRAME

(Type E shown)

SHOULDER INLET WITH CURB

(Sheet 2 of 2)

FILE NAME = ...\0366861-SHT-Details.dgn	USER NAME = SAW	DESIGNED - RAC	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	ZROKA engineering	Zroka Engineering, P.C. 4216 North Hermitage Chicago, IL 60613	DETAILS	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS / SHEET NO.
		DRAWN - SAW	REVISED -					681	118 BR	IROQUOIS	42 / 38
	PLOT SCALE = 50.00000 ' / IN.	CHECKED - DAZ	REVISED -							CONTRACT NO. 66861	
	PLOT DATE = 7/29/2010	DATE - 07/30/10	REVISED -		SCALE: 1" = 50'	SHEET NO. 38 OF 42 SHEETS	STA. 159+89 TO STA. 167+17			ILLINOIS FED. AID PROJECT	



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

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

FILE NAME = ...\D366861-SHT-Cross Sections.dgn	USER NAME = SAW	DESIGNED - RAC	REVISED -
		DRAWN - RAC	REVISED -
	PLOT SCALE = 5.0000 ' / IN.	CHECKED - DAZ	REVISED -
	PLOT DATE = 7/29/2010	DATE - 07/30/10	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ZROKA engineering

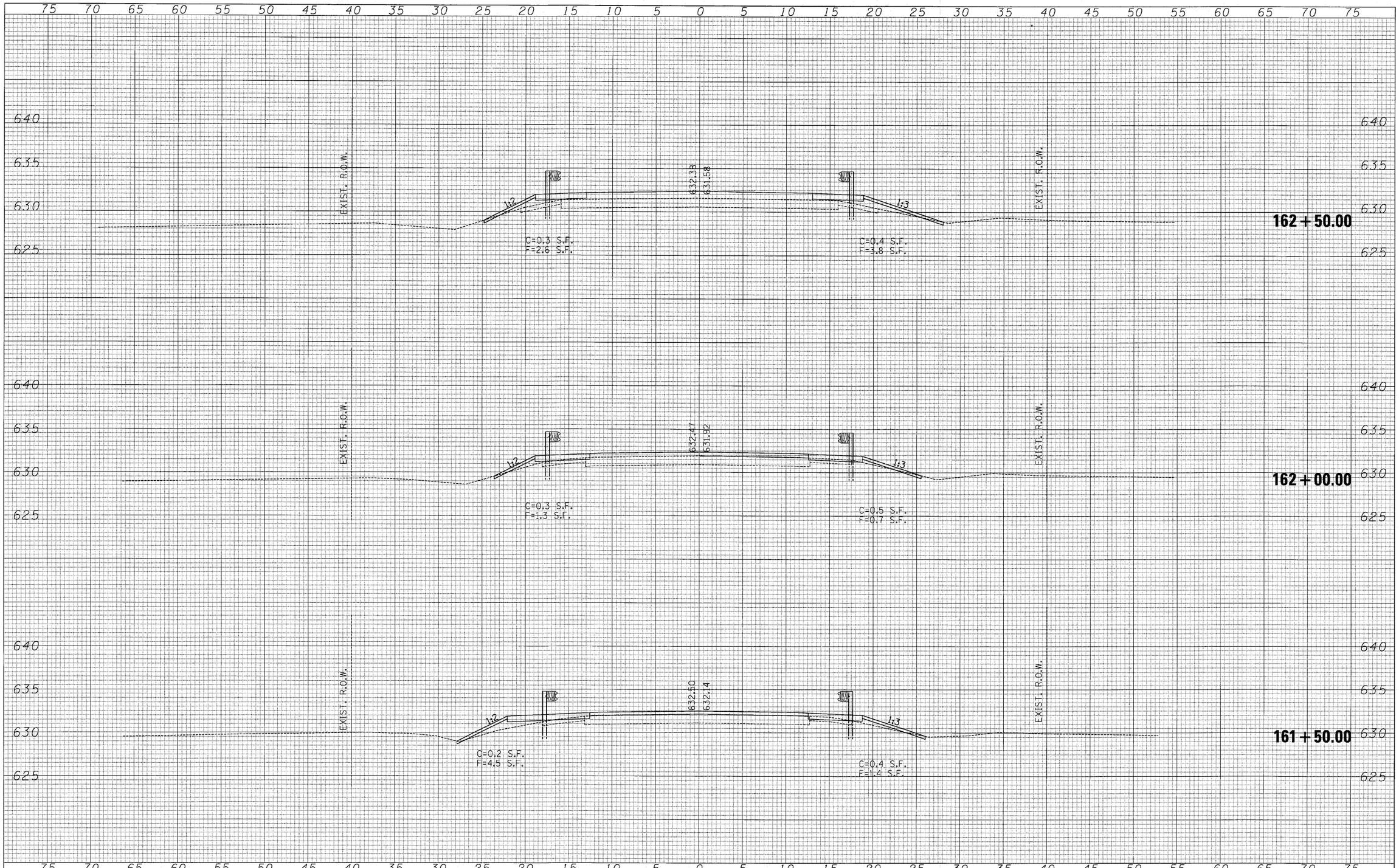
Zroka Engineering, P.C.
4216 North Hermitage
Chicago, IL 60613

SHEET NO. 39 OF 42 SHEETS

CROSS SECTIONS

STA. 159+89 TO STA. 167+17

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
681	118 BR	IROQUOIS	42	39
		CONTRACT NO. 66861		
	ILLINOIS FED. AID PROJECT			



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

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

FILE NAME = ...\D386861-SHT-Cross Sections.dgn	USER NAME = SAW	DESIGNED - RAC	REVISED -
		DRAWN - RAC	REVISED -
	PLOT SCALE = 5.0000 ' / IN.	CHECKED - DAZ	REVISED -
	PLOT DATE = 7/29/2010	DATE - 07/30/10	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ZROKA engineering

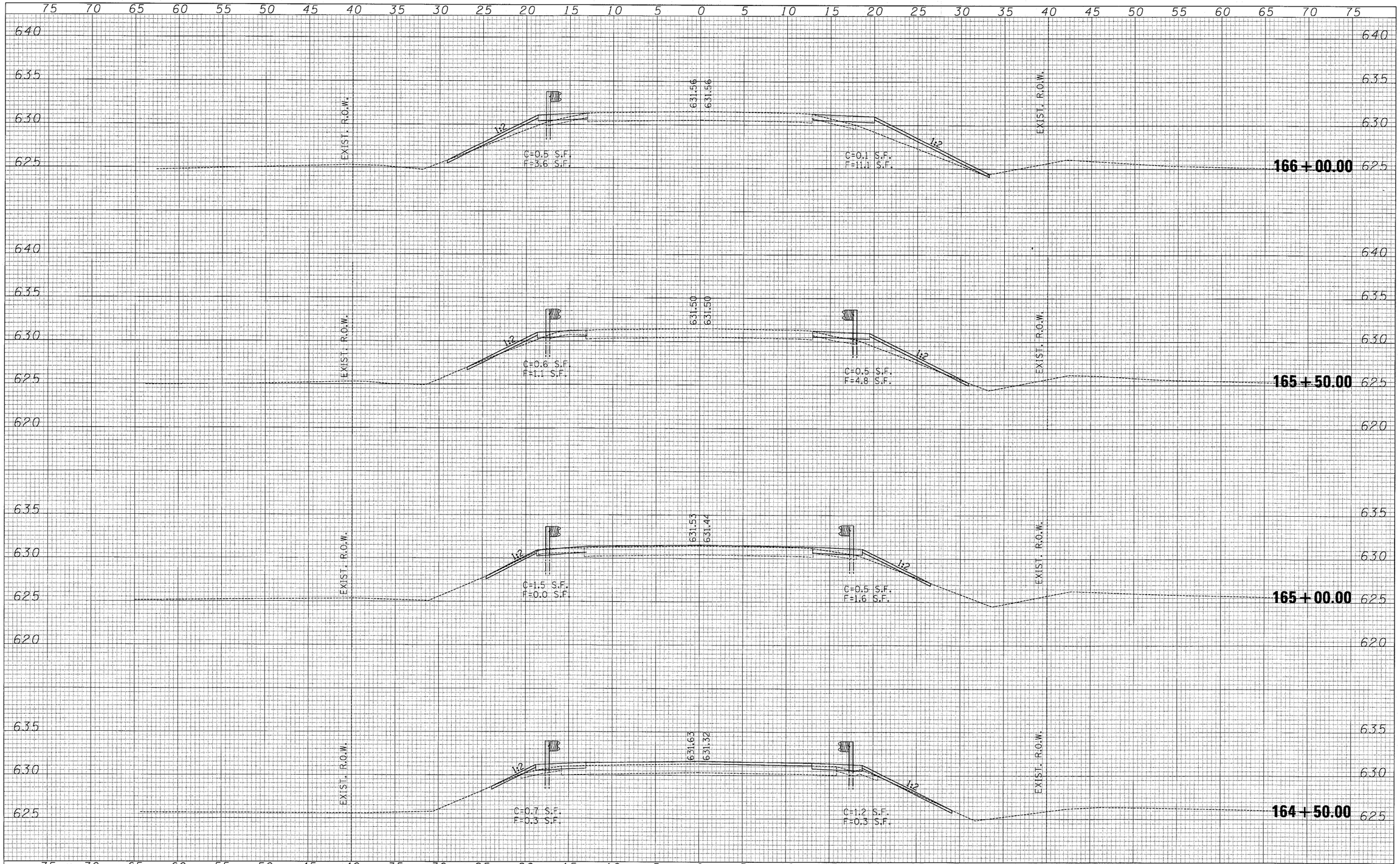
Zroka Engineering, P.C.
4216 North Hermitage
Chicago, IL 60613

SHEET NO. 40 OF 42 SHEETS

CROSS SECTIONS

STA. 159+89 TO STA. 167+17

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
681	118 BR	IROQUOIS	42	40
		CONTRACT NO. 66861		
	ILLINOIS	FED. AID PROJECT		



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

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

FILE NAME = ...\0366861-SHT-Cross Sections.dgn	USER NAME = SAW	DESIGNED - RAC	REVISED -
		DRAWN - RAC	REVISED -
	PLOT SCALE = 5.0000 ' / IN.	CHECKED - DAZ	REVISED -
	PLOT DATE = 7/29/2010	DATE - 07/30/10	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

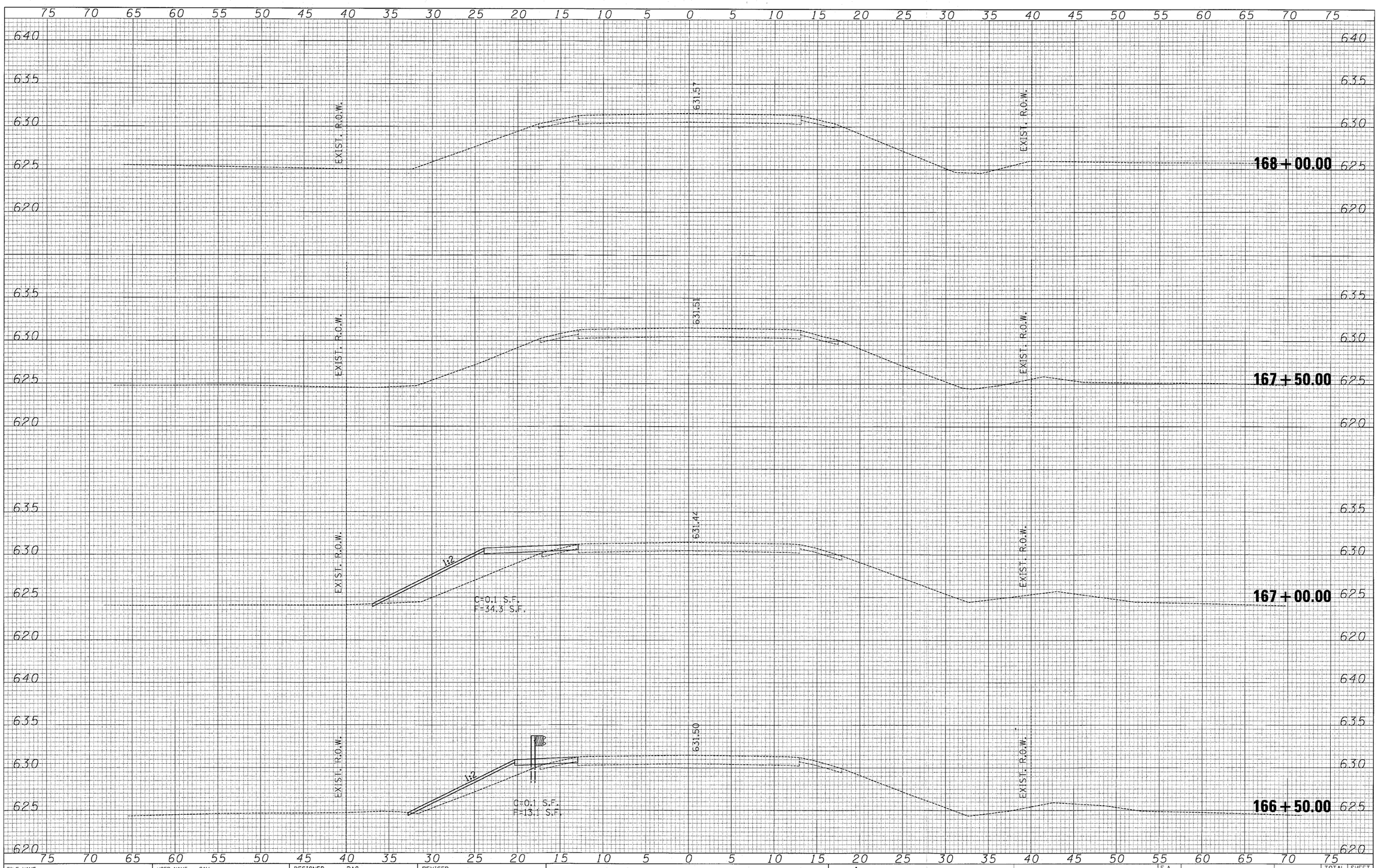
ZROKA engineering
Zroka Engineering, P.C.
4216 North Hermitage
Chicago, IL 60613

SHEET NO. 41 OF 42 SHEETS

CROSS SECTIONS

STA. 159+89 TO STA. 167+17

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
681	118 BR	IROQUOIS	42	41
		CONTRACT NO. 66861		
	ILLINOIS FED. AID PROJECT			



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

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

FILE NAME = ...\D366861-SHT-Cross Sections.dgn	USER NAME = SAW	DESIGNED - RAC	REVISED -
		DRAWN - RAC	REVISED -
	PLOT SCALE = 5.0000 ' / IN.	CHECKED - DAZ	REVISED -
	PLOT DATE = 7/29/2010	DATE - 07/30/10	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ZROKA engineering

Zroka Engineering, P.C.
4216 North Hermitage
Chicago, IL 60613

SHEET NO. 42 OF 42 SHEETS

CROSS SECTIONS

STA. 159+89 TO STA. 167+17

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
681	118 BR	IROQUOIS	42	42
		CONTRACT NO. 66861		
	ILLINOIS	FED. AID PROJECT		