

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2697	142 B-1-I	COOK	48	1
FED. ROAD DIST. NO.	ILLINOIS CONTRACT NO.	60D89		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

**PROPOSED
HIGHWAY PLANS**

FAU 2697 / WILLOW SPRINGS ROAD
OVER DES PLAINES RIVER AND I & M CANAL
SECTION 142 B-1-I
BRIDGE DECK OVERLAY
PROJECT: ESP-2697(005)
COOK COUNTY
C-91-123-08

FOR INDEX OF SHEETS SEE SHEET NUMBER 2

THIS IMPROVEMENT IS LOCATED IN
THE VILLAGE OF WILLOW SPRINGS

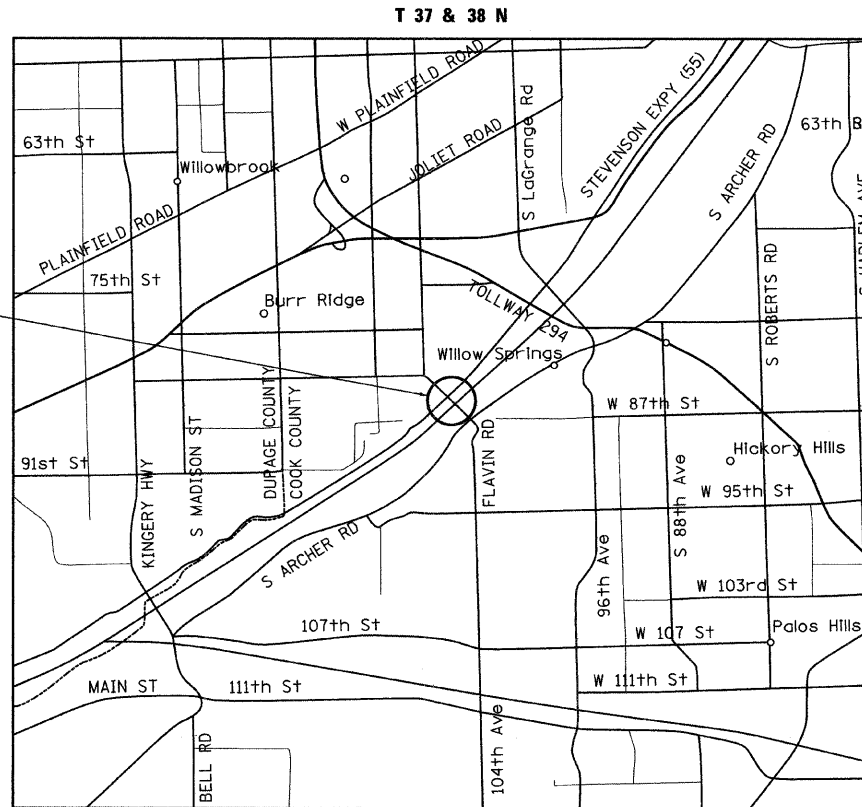
TRAFFIC DATA

2005 ADT - 17,700
POSTED SPEED LIMIT - 40 MPH

WILLOW SPRINGS ROAD

SN: 016-0540 (STA. 114 + 54.50 TO 129 + 84.00)
9 - SPAN STEEL CONTINUOUS MULTIBEAM
WITH REINFORCED CONCRETE DECK
ON PIERS AND CLOSED ABUTMENTS

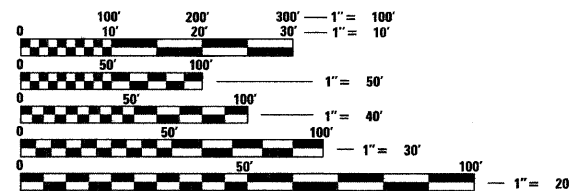
IMPROVEMENT LOCATION
SN: 016-0540



LYONS TOWNSHIP

LOCATION MAP
1" = 5000'

GROSS AND NET LENGTH OF PROJECT = 2080 FT = 0.39 MI



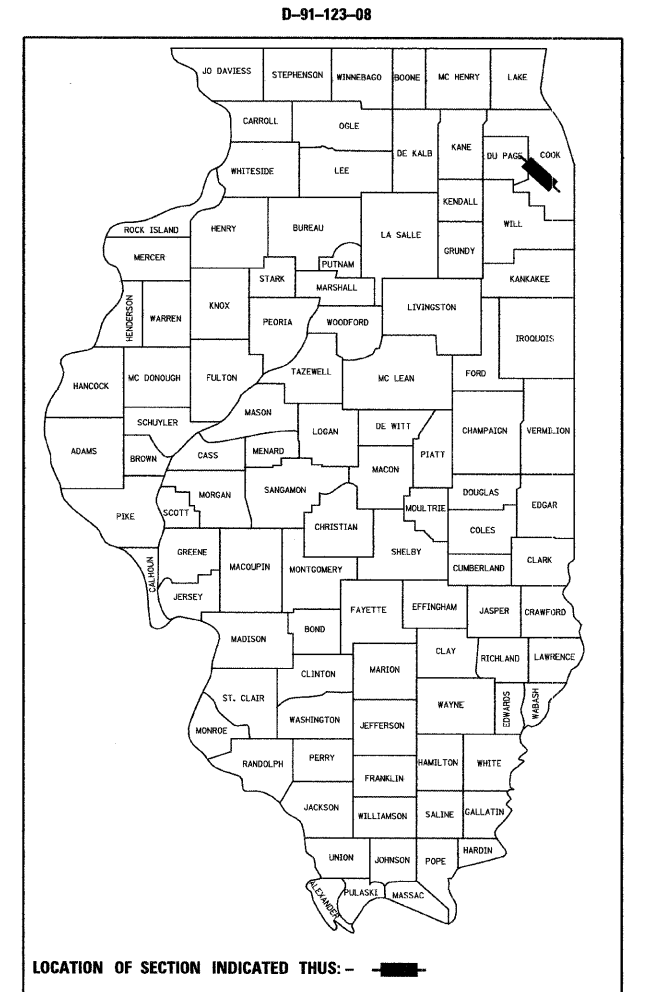
FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD
ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT
CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS
ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

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

Ciorba Group, Inc.
DESIGN FIRM
REGISTRATION NUMBER
184-001016
CONSULTING ENGINEERS
SUITE 402, 5507 NORTH CUMBERLAND AVE
CHICAGO, ILLINOIS 60656 ☎ (773) 775-4009

STATE OF ILLINOIS
062-057159
LICENSED
PROFESSIONAL
ENGINEER
OF
ILLINOIS
Matthew J. Lehman
DATE: 2/2/2009
SEAL EXPIRES: 11/30/2009

STATE OF ILLINOIS
EWA K. MROCZEK
081-006067
STRUCTURAL ENGINEER
DATE: 2/2/2009
SEAL EXPIRES: 11/30/2010



LOCATION OF SECTION INDICATED THIS: -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
SUBMITTED FEBRUARY 3, 2009
Diana M. O'Keefe DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER
March 27, 2009
Charles J. Sponessold ENGINEER OF DESIGN AND ENVIRONMENT
March 27, 2009
Christine M. Keed DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

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OF THE STATE OF ILLINOIS**

DISTRICT 1 DESIGN PLAN PREPARATION ENGINEER: K. ENG (847) 705-4247

CONTRACT NO. 60D89

INDEX OF SHEETS

SHEET NO	DESCRIPTION
1	TITLE
2	INDEX OF SHEETS, GENERAL NOTES AND STATE STANDARDS
3	SUMMARY OF QUANTITIES
4	ALIGNMENT & TIES
5	EXISTING CONDITIONS AND REMOVAL PLAN
6	PROPOSED ROADWAY PLAN
7-8	TRAFFIC CONTROL AND PROTECTION - STAGE 1
9-10	TRAFFIC CONTROL AND PROTECTION - STAGE 2
11-12	PAVEMENT MARKING PLAN
13-14	EXISTING TRAFFIC SIGNAL PLANS
15-17	GENERAL PLAN AND ELEVATION
18	GENERAL NOTES AND BILL OF MATERIALS
19	STAGE CONSTRUCTION DETAILS
20	TEMPORARY CONCRETE BARRIER
21-26	SUPERSTRUCTURE REPAIRS
27-29	EXPANSION JOINT REPLACEMENT
30	NORTH ABUTMENT BEARINGS
31	STEEL REPAIRS
32	ABUTMENTS - CONCRETE REPAIRS
33-36	PIERS
37	DRAINAGE SYSTEM
38	BAR SPLICER DETAILS
39-40	EXISTING FRAMING PLAN
41	EXISTING STRUCTURAL STEEL DETAILS
42	BUTT JOINT AND HMA TAPER DETAILS ARTERIAL ROAD INFORMATION SIGN (BD-32)
43	TRAFFIC CONTROL AND PROTECTION FOR SIDE ROADS, INTERSECTIONS, AND DRIVEWAYS (TC-10)
44	TYPICAL APPLICATIONS RAISED REFLECTIVE PAVEMENT MARKERS (SNOW PLOW RESISTANT) (TC-11)
45	DISTRICT ONE TYPICAL PAVEMENT MARKINGS (TC-13)
46	TRAFFIC CONTROL AND PROTECTION AT TURN BAYS (TO REMAIN OPEN TO TRAFFIC) (TC-14)
47	PAVEMENT MARKING LETTERS AND SYMBOLS FOR TRAFFIC STAGING (TC-16)
48	ARTERIAL ROAD INFORMATION SIGN (TC-22)

STATE STANDARDS

000001	STANDARD SYMBOLS, ABBREVIATIONS, AND PATTERNS
442101	CLASS B PATCHES
515001	NAME PLATE FOR BRIDGES
630001	STEEL PLATE BEAM GUARDRAIL
631011	TRAFFIC BARRIER TERMINAL, TYPE 2
631031	TRAFFIC BARRIER TERMINAL, TYPE 6
631032	TRAFFIC BARRIER TERMINAL, TYPE 6A
635006	REFLECTOR AND TERMINAL MARKER PLACEMENT
635011	REFLECTOR MARKER AND MOUNTING DETAILS
701606	URBAN LANE CLOSURE, MULTILANE, 2W WITH MOUNTABLE MEDIAN
701901	TRAFFIC CONTROL DEVICES
704001	TEMPORARY CONCRETE BARRIER

GENERAL NOTES

- BEFORE STARTING ANY EXCAVATION, THE CONTRACTOR SHALL CALL "JULIE" AT 800-892-0123 OR 811 FOR FIELD LOCATIONS OF BURIED ELECTRIC, TELEPHONE, AND GAS FACILITIES. (48 HOUR NOTIFICATIONS IS REQUIRED)
- THE CONTRACTOR SHALL COORDINATE CONSTRUCTION ACTIVITIES WITH UTILITY COMPANIES.
- WHEN ARTIFICIAL LIGHTING IS USED IN NIGHT OPERATIONS THE CONTRACTOR SHALL EXERCISE THE UTMOST PRECAUTIONS IN PREVENTING ADVERSE VISIBILITY TO THE MOTORING PUBLIC AND ADJOINING RESIDENTIAL AREAS.
- THE RESIDENT ENGINEER SHALL CONTACT THE TRAFFIC CONTROL SUPERVISOR AT (847) 705-4470 A MINIMUM OF 72 HOURS PRIOR TO THE PLACEMENT OF ANY TEMPORARY TRAFFIC CONTROL DEVICES.
- THE REMOVAL OF TEMPORARY PAVEMENT MARKING ON ALL NEW SURFACES REQUIRES THE USE OF EQUIPMENT THAT DOES NOT DAMAGE THE SURFACE OR TEXTURE OF THE PAVEMENT. USE HYDRO BLASTING TO REMOVE ANY EXISTING OR TEMPORARY PAVEMENT MARKING ON EXISTING OR NEW PAVEMENT. ANY DAMAGE DONE TO THE NEW PAVEMENT BY THE CONTRACTOR SHALL BE REPAIRED BY THE CONTRACTOR AT HIS OWN EXPENSE.

COMMITMENTS

NONE

HOT-MIX ASPHALT MIXTURE REQUIREMENTS

OPERATIONS	MIXTURE TYPE	AC TYPE	PERCENT AIR VOIDS
ROADWAY RESURFACING	HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N70 (IL-9.5 mm), 1 1/2"	PG 64-22	4% @ 70 GYR
	LEVELING BINDER (MACHINE METHOD), N70, 1"	PG 64-22*	4% @ 70 GYR

THE UNIT WEIGHT USED TO CALCULATE ALL HMA SURFACE MIXTURE QUANTITIES IS 112 LBS/SQ YD/IN.

* WHEN RAP EXCEEDS 20%, THE NEW ASPHALT BINDER IN THE MIX SHALL BE PG 58-22.

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USER NAME = wlenoaster	DESIGNED - JCC	REVISED -
	DRAWN - JCC	REVISED -
PLOT SCALE = 1.0000' / IN.	CHECKED - MJL	REVISED -
PLOT DATE = 2/4/2009	DATE - 02/25/08	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**FAU 2697 / WILLOW SPRINGS ROAD
OVER DESPLAINES STREET
INDEX OF SHEETS, STATE STANDARDS & GENERAL NOTES**

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

F.A.J. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2697	142 B-1-I	COOK	48	2
CONTRACT NO. 60D89				
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				

SUMMARY OF QUANTITIES			URBAN 100% FED. TOTAL QUANTITY	CONSTRUCTION CODE	
CODE NO.	DESCRIPTION	UNIT		ROADWAY 1000-2A	BRIDGE X081-2A
28000510	INLET FILTERS	EACH	25	25	
31101200	SUB-BASE GRANULAR MATERIAL, TYPE B 4"	SQ YD	20	20	
40600100	BITUMINOUS MATERIALS (PRIME COAT)	GALLON	35	35	
40600300	AGGREGATE (PRIME COAT)	TON	1	1	
40600635	LEVELING BINDER (MACHINE METHOD), N70	TON	20	20	
40600982	HOT-MIX ASPHALT SURFACE REMOVAL - BUTT JOINT	SQ YD	60	60	
40603340	HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N70	TON	30	30	
42400200	PORTLAND CEMENT CONCRETE SIDEWALK 5 INCH	SQ FT	180	180	
44000159	HOT-MIX ASPHALT SURFACE REMOVAL, 2 1/2"	SQ YD	340	340	
44000600	SIDEWALK REMOVAL	SQ FT	180	180	
44000915	HOT-MIX ASPHALT SURFACE REMOVAL (DECK)	SQ YD	9,611		9,611
50102400	CONCRETE REMOVAL	CU YD	63.2		63.2
50157300	PROTECTIVE SHIELD	SQ YD	11,910		11,910
50300255	CONCRETE SUPERSTRUCTURE	CU YD	70.0		70.0
50300260	BRIDGE DECK GROOVING	SQ YD	8,930		8,930
50300300	PROTECTIVE COAT	SQ YD	10,099		10,099
50500405	FURNISHING AND ERECTING STRUCTURAL STEEL	POUND	5,870		5,870
50500715	JACK AND REMOVE EXISTING BEARINGS	EACH	5		5
50501110	STRUCTURAL STEEL REMOVAL	POUND	4,050		4,050
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	14,240		14,240
50800515	BAR SPLICERS	EACH	106		106
51500100	NAME PLATES	EACH	1		1
52100020	ELASTOMERIC BEARING ASSEMBLY, TYPE II	EACH	5		5
52100530	ANCHOR BOLTS, 1 1/4"	EACH	20		20
58700300	CONCRETE SEALER	SQ FT	694		694
63000000	STEEL PLATE BEAM GUARD RAIL, TYPE A	FOOT	550	550	
63100045	TRAFFIC BARRIER TERMINAL, TYPE 2	EACH	1	1	
63100085	TRAFFIC BARRIER TERMINAL, TYPE 6	EACH	2	2	
63100087	TRAFFIC BARRIER TERMINAL, TYPE 6A	EACH	1	1	
63100167	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	EACH	2	2	
63200310	GUARDRAIL REMOVAL	FOOT	466	466	
67000400	ENGINEER'S FIELD OFFICE, TYPE A	CAL MO	6	2	4
67100100	MOBILIZATION	L SUM	1	0.2	0.8
70101800	TRAFFIC CONTROL AND PROTECTION (SPECIAL)	L SUM	1	0.2	0.8
70301000	WORK ZONE PAVEMENT MARKING REMOVAL	SQ FT	6,650	6,650	
70400100	TEMPORARY CONCRETE BARRIER	FOOT	2,100	2,100	

* DENOTES SPECIALTY ITEM
 @ Y080

SUMMARY OF QUANTITIES			URBAN 100% FED. TOTAL QUANTITY	CONSTRUCTION CODE	
CODE NO.	DESCRIPTION	UNIT		ROADWAY 1000-2A	BRIDGE X081-2A
70400200	RELOCATE TEMPORARY CONCRETE BARRIER	FOOT	2,050	2,050	
78000100	THERMOPLASTIC PAVEMENT MARKING - LETTERS AND SYMBOLS	SQ FT	110	110	
78000200	THERMOPLASTIC PAVEMENT MARKING - LINE 4"	FOOT	10,200	10,200	
78000400	THERMOPLASTIC PAVEMENT MARKING - LINE 6"	FOOT	525	525	
78000600	THERMOPLASTIC PAVEMENT MARKING - LINE 12"	FOOT	330	330	
78000650	THERMOPLASTIC PAVEMENT MARKING - LINE 24"	FOOT	90	90	
78008210	POLYUREA PAVEMENT MARKING TYPE I - LINE 4"	FOOT	7,200	7,200	
78100100	RAISED REFLECTIVE PAVEMENT MARKER	EACH	20	20	
78100105	RAISED REFLECTIVE PAVEMENT MARKER (BRIDGE)	EACH	85	85	
78100300	REPLACEMENT REFLECTOR	EACH	175	175	
* 78200410	GUARDRAIL MARKERS, TYPE A	EACH	25	25	
* 78200530	BARRIER WALL MARKERS, TYPE C	EACH	170	170	
78300100	PAVEMENT MARKING REMOVAL	SQ FT	6,700	6,700	
78300200	RAISED REFLECTIVE PAVEMENT MARKER REMOVAL	EACH	80	80	
85000200	MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION	EACH	1	1	
89502200	MODIFY EXISTING CONTROLLER	EACH	1	1	
X0322050	RAISED REFLECTIVE PAVEMENT MARKER, REFLECTOR REMOVAL	EACH	175	175	
X0322256	TEMPORARY INFORMATION SIGNING	SQ FT	52	52	
X0322489	BRIDGE DECK LATEX CONCRETE OVERLAY, 2 1/2 INCHES	SQ YD	9,491		9,491
X0323426	SEDIMENT CONTROL, DRAINAGE STRUCTURE INLET FILTER CLEANING	EACH	50	50	
X0325303	STRUCTURAL REPAIR OF CONCRETE (DEPTH GREATER THAN 5 INCHES)	SQ FT	478		478
X0325305	STRUCTURAL REPAIR OF CONCRETE (DEPTH EQUAL TO OR LESS THAN 5 INCHES)	SQ FT	4,888		4,888
X0325775	WET REFLECTIVE TEMPORARY TAPE, TYPE III, 4 INCH	FOOT	18,800	18,800	
X0325837	WET REFLECTIVE TEMPORARY TAPE TYPE III, 6 INCH	FOOT	250	250	
X0325841	WET REFLECTIVE TEMPORARY TAPE, TYPE III, 24 INCH	FOOT	160	160	
X0325842	WET REFLECTIVE TEMPORARY TAPE, TYPE III, LETTERS AND SYMBOLS	SQ FT	73	73	
Z0006201	BRIDGE DECK HYDRO-SCARIFICATION 1"	SQ YD	9,611		9,611
Z0013798	CONSTRUCTION LAYOUT	L SUM	1	0.2	0.8
Z0016002	DECK SLAB REPAIR (FULL DEPTH, TYPE II)	SQ YD	2,780		2,780
Z0018800	DRAINAGE SYSTEM	L SUM	1		1
Z0030240	IMPACT ATTENUATORS, TEMPORARY (NON- REDIRECTIVE), TEST LEVEL 2	EACH	2	2	
Z0030340	IMPACT ATTENUATORS, RELOCATE (NON- REDIRECTIVE), TEST LEVEL 2	EACH	2	2	
Z0034390	MODULAR EXPANSION JOINT 6"	FOOT	205		205
Z0034393	MODULAR EXPANSION JOINT 9"	FOOT	68		68
Z0048665	RAILROAD PROTECTIVE LIABILITY INSURANCE	L SUM	1	1	

© 20076400 TRAINEES

HOURLY 1000 1000

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 Tel. 773.775.4009 Fax 773.775.4014

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PLOT SCALE = 1:8000' / IN.	DRAWN - JCC	REVISED -
PLOT DATE = 2/4/2009	CHECKED - MJL	REVISED -
	DATE - 02/25/08	REVISED -

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

FAU 2697 / WILLOW SPRINGS ROAD
 OVER DESPLAINES STREET
 SUMMARY OF QUANTITIES

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

F.A.I.L. RTE. 2697	SECTION 142 B-1-I	COUNTY COOK	TOTAL SHEETS 48	SHEET NO. 3
FED. ROAD DIST. NO. - ILLINOIS FED. AID PROJECT				
CONTRACT NO. 60D89				

EXIST. Curve WILLOW-1
 PI STA. = 98+79.26
 $\Delta = 40^\circ 30' 18''$ (LT)
 $D = 11^\circ 27' 32''$
 $R = 500.00'$
 $T = 184.48'$
 $L = 353.47'$
 $E = 32.94'$
 P.C. STA. = 96+94.78
 P.T. STA. = 100+48.25
 DESIGN SPEED = 40 MPH

EXIST. CURVE WILLOW-2
 PI STA. = 103+35.89
 $\Delta = 4^\circ 18' 37''$ (LT)
 $D = 11^\circ 27' 32.96''$
 $R = 500.00'$
 $T = 18.81'$
 $L = 37.61'$
 $E = 0.35'$
 P.C. STA. = 103+17.07
 P.T. STA. = 103+54.69
 DESIGN SPEED = 40 MPH

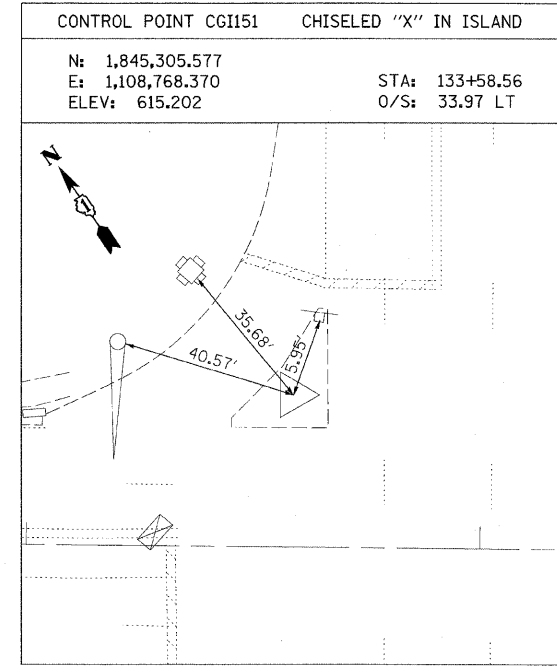
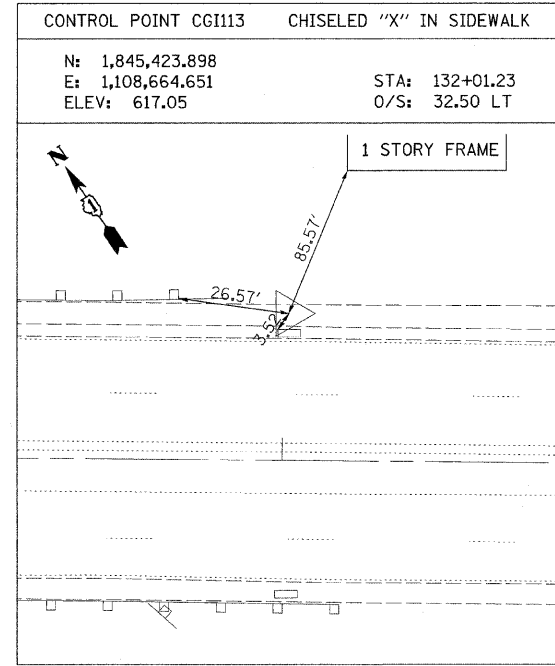
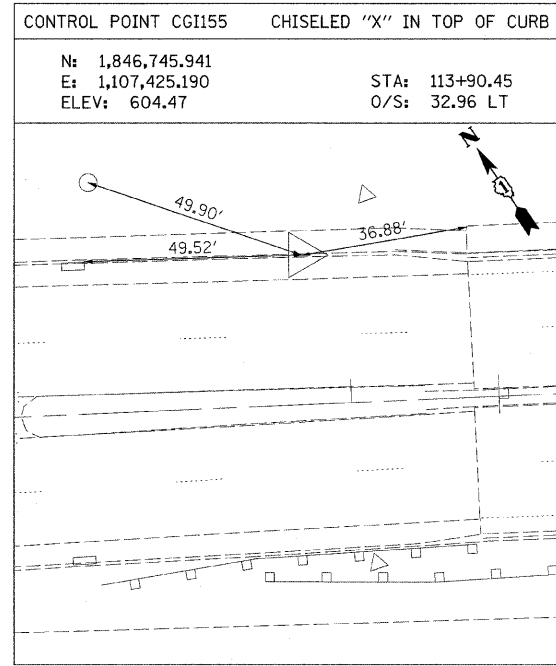
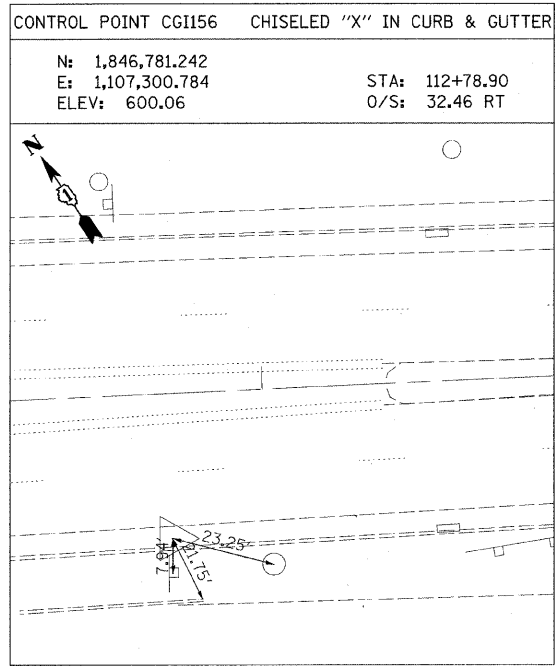
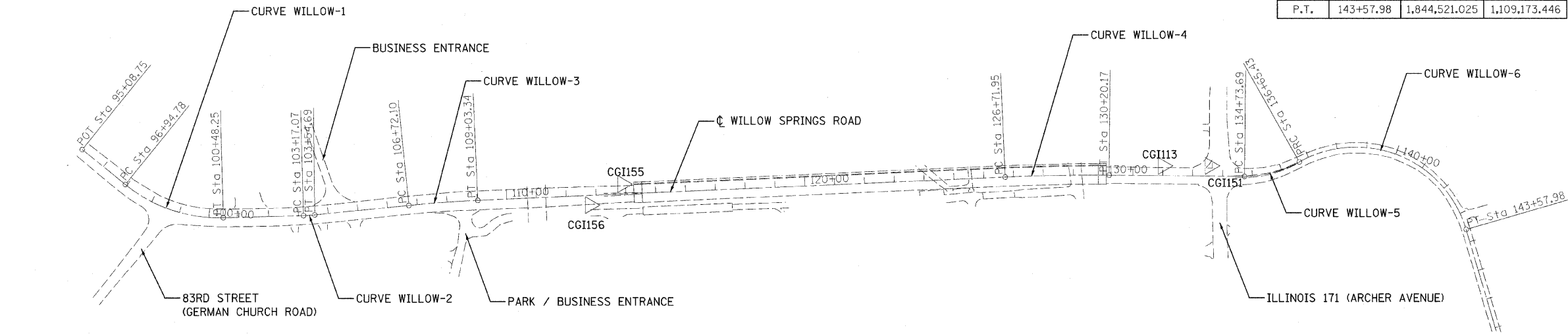
EXIST. CURVE WILLOW-3
 PI STA. = 107+87.75
 $\Delta = 3^\circ 18' 44''$ (RT)
 $D = 1^\circ 25' 56''$
 $R = 4,000.00'$
 $T = 115.65'$
 $L = 231.24'$
 $E = 1.67'$
 P.C. STA. = 106+72.10
 P.T. STA. = 109+03.34
 DESIGN SPEED = 40 MPH

EXIST. CURVE WILLOW-4
 PI STA. = 128+46.10
 $\Delta = 3^\circ 04' 10''$ (RT)
 $D = 0^\circ 52' 53''$
 $R = 6,500.00'$
 $T = 174.15'$
 $L = 348.22'$
 $E = 2.33'$
 P.C. STA. = 126+71.95
 P.T. STA. = 130+20.17
 DESIGN SPEED = 40 MPH

EXIST. CURVE WILLOW-5
 PI STA. = 135+71.70
 $\Delta = 29^\circ 17' 44''$ (LT)
 $D = 15^\circ 16' 44''$
 $R = 375.00'$
 $T = 98.01'$
 $L = 191.74'$
 $E = 12.60'$
 P.C. STA. = 134+73.69
 P.T. STA. = 136+65.43
 DESIGN SPEED = 40 MPH

EXIST. CURVE WILLOW-6
 PI STA. = 141+50.01
 $\Delta = 103^\circ 03' 59''$ (RT)
 $D = 14^\circ 52' 55''$
 $R = 385.00'$
 $T = 484.58'$
 $L = 692.56'$
 $E = 233.91'$
 P.C. STA. = 136+65.43
 P.T. STA. = 143+57.98
 DESIGN SPEED = 40 MPH

WILLOW ROUTE CENTERLINE			
DESCRIPTION	NORTHING	EASTING	
P.O.T.	95+08.75	1,848,182.889	1,106,318.209
P.C.	96+94.78	1,847,997.005	1,106,325.570
P.T.	100+48.25	1,847,677.243	1,106,458.152
P.C.	103+17.07	1,847,479.915	1,106,640.705
P.T.	103+54.69	1,847,453.290	1,106,667.263
P.C.	106+72.10	1,847,237.150	1,106,899.720
P.T.	109+03.34	1,847,074.885	1,107,064.422
P.C.	126+71.95	1,845,797.750	1,108,287.903
P.T.	130+20.17	1,845,539.965	1,108,521.945
P.C.	134+73.69	1,845,196.146	1,108,817.690
P.R.C.	136+65.43	1,845,090.348	1,108,975.096
P.T.	143+57.98	1,844,521.025	1,109,173.446



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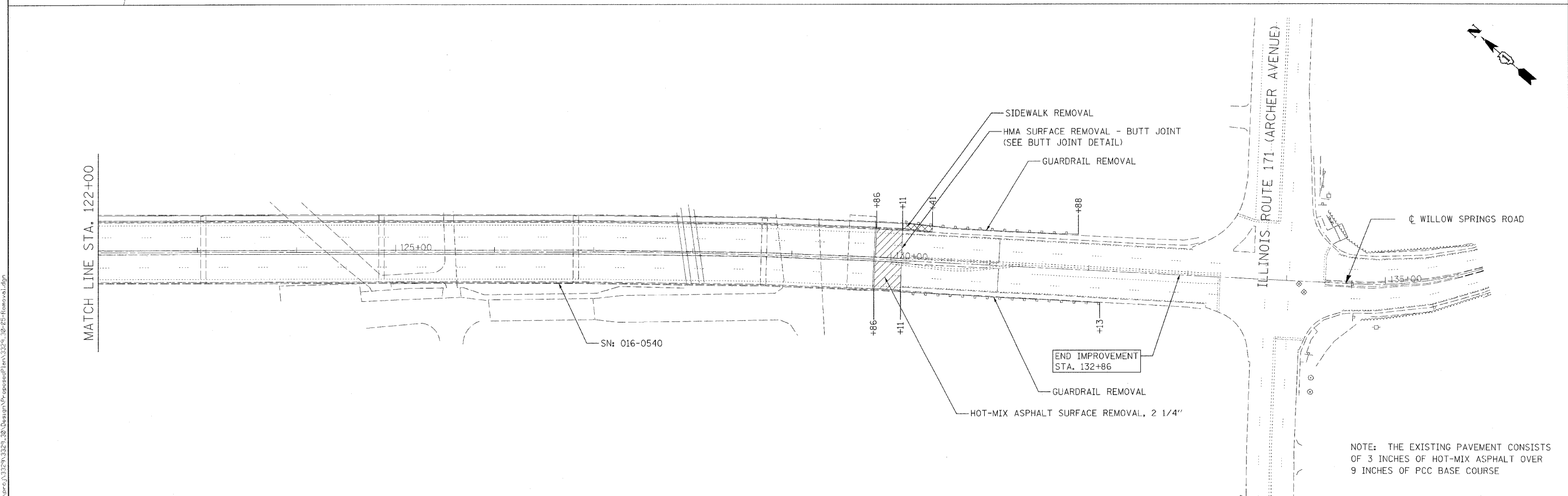
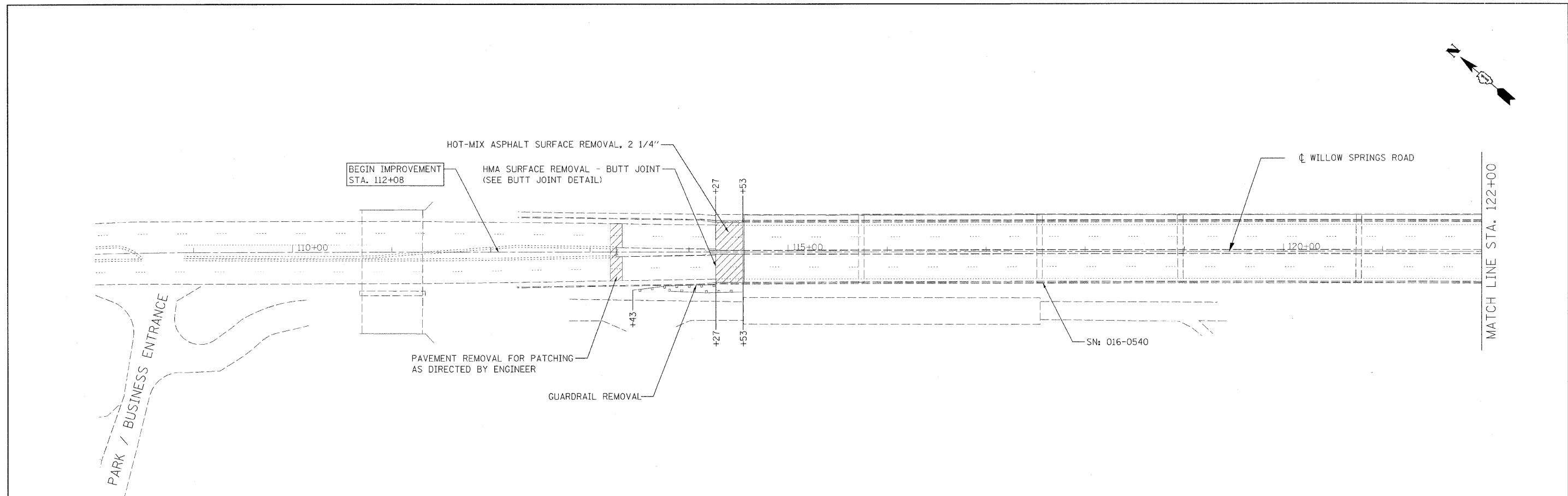
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	DATE - 02/25/08	REVISED -

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**FAU 2697 / WILLOW SPRINGS ROAD
 OVER DESPLAINES STREET
 ALIGNMENT AND CONTROL POINTS**

SCALE: 1"=200' SHEET NO. OF SHEETS STA. TO STA.

F.A.U. RTE. 2697	SECTION 142 B-1-I	COUNTY COOK	TOTAL SHEETS 48	SHEET NO. 4
FED. ROAD DIST. NO. ILLINOIS		FED. AID PROJECT		



NOTE: THE EXISTING PAVEMENT CONSISTS OF 3 INCHES OF HOT-MIX ASPHALT OVER 9 INCHES OF PCC BASE COURSE

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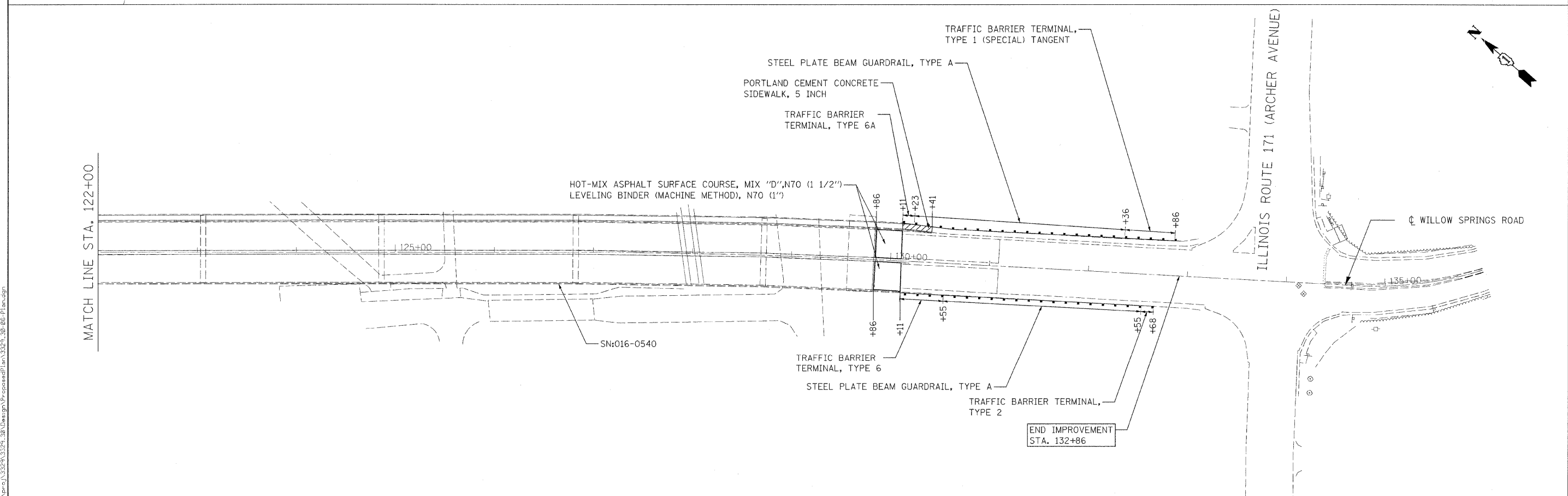
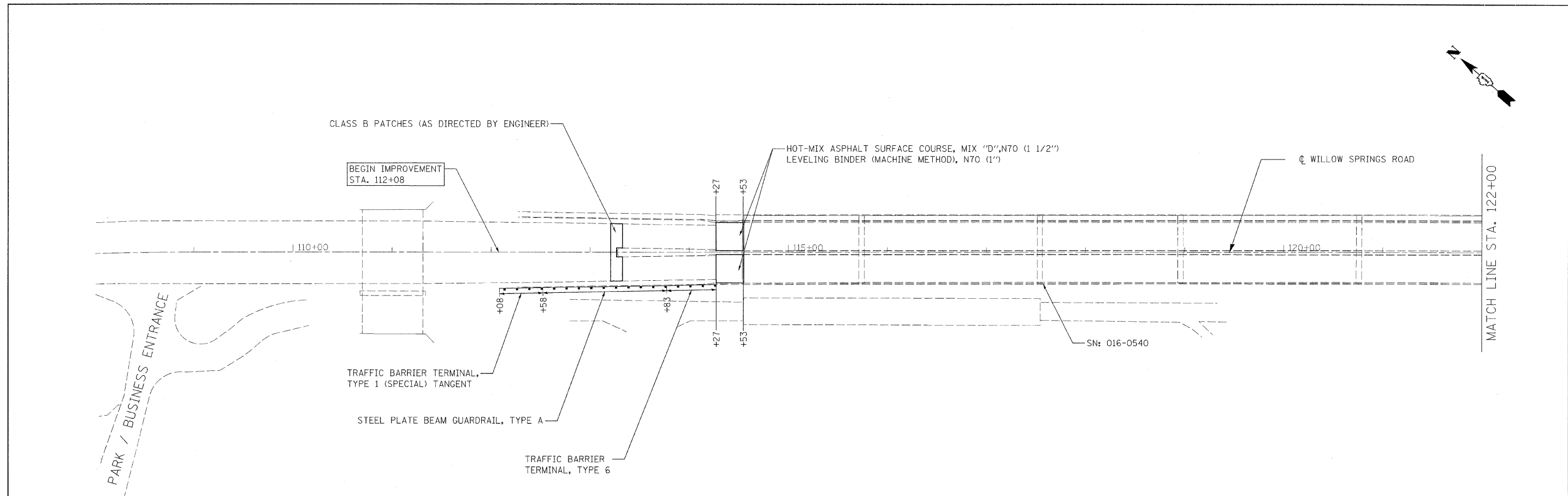
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PLOT DATE = 2/4/2009	CHECKED - MJL	REVISED -
	DATE - 02/25/08	REVISED -

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**FAU 2697 / WILLOW SPRINGS ROAD
 OVER DES PLAINES RIVER
 EXISTING CONDITIONS & REMOVAL PLAN**

SCALE: 1"=50' SHEET NO. OF SHEETS STA. TO STA.

F.A.U. RTE. 2697	SECTION 142 B-1-I	COUNTY COOK	TOTAL SHEETS 48	SHEET NO. 5
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT CONTRACT NO. 60D89				



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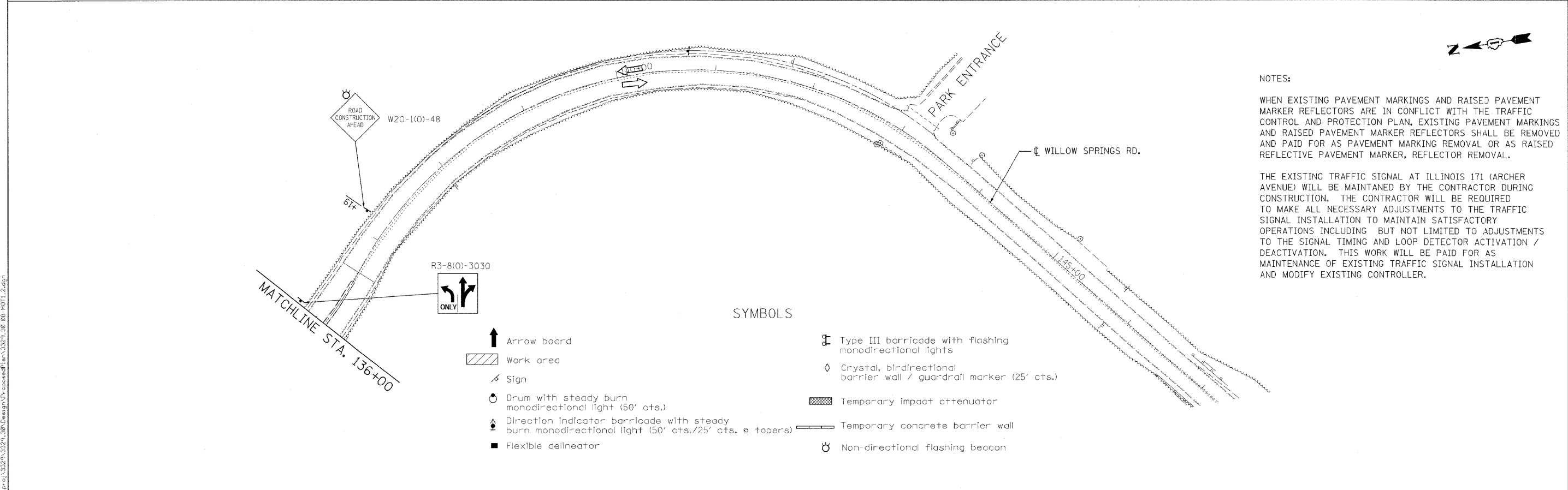
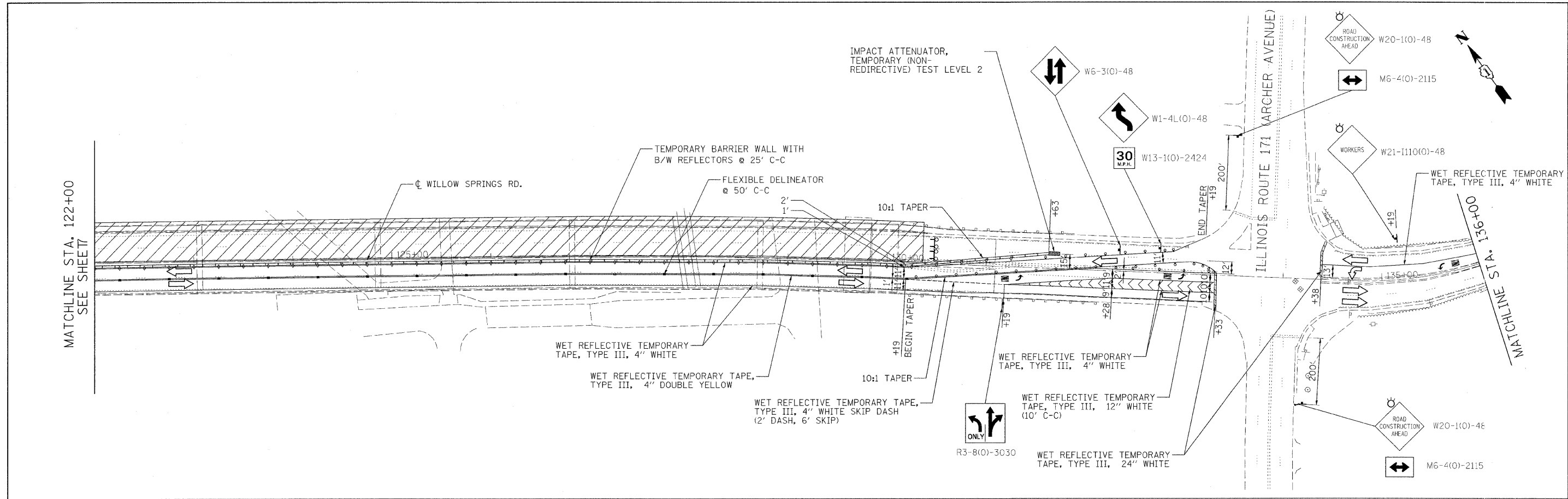
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PLOT DATE = 2/4/2009	CHECKED - MJL	REVISED -
	DATE - 02/25/08	REVISED -

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**FAU 2697 / WILLOW SPRINGS ROAD
 OVER DES PLAINES RIVER
 PROPOSED ROADWAY PLAN**

SCALE: 1"=50' SHEET NO. OF SHEETS STA. TO STA.

F.A.U. RTE. 2697	SECTION 142 B-1-I	COUNTY COOK	TOTAL SHEETS 48	SHEET NO. 6
FED. ROAD DIST. NO. ILLINOIS		FED. AID PROJECT		
CONTRACT NO. 60D89				



NOTES:

WHEN EXISTING PAVEMENT MARKINGS AND RAISED PAVEMENT MARKER REFLECTORS ARE IN CONFLICT WITH THE TRAFFIC CONTROL AND PROTECTION PLAN, EXISTING PAVEMENT MARKINGS AND RAISED PAVEMENT MARKER REFLECTORS SHALL BE REMOVED AND PAID FOR AS PAVEMENT MARKING REMOVAL OR AS RAISED REFLECTIVE PAVEMENT MARKER, REFLECTOR REMOVAL.

THE EXISTING TRAFFIC SIGNAL AT ILLINOIS 171 (ARCHER AVENUE) WILL BE MAINTAINED BY THE CONTRACTOR DURING CONSTRUCTION. THE CONTRACTOR WILL BE REQUIRED TO MAKE ALL NECESSARY ADJUSTMENTS TO THE TRAFFIC SIGNAL INSTALLATION TO MAINTAIN SATISFACTORY OPERATIONS INCLUDING BUT NOT LIMITED TO ADJUSTMENTS TO THE SIGNAL TIMING AND LOOP DETECTOR ACTIVATION / DEACTIVATION. THIS WORK WILL BE PAID FOR AS MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION AND MODIFY EXISTING CONTROLLER.

- SYMBOLS**
- ↑ Arrow board
 - ▨ Work area
 - ◇ Sign
 - ⊙ Drum with steady burn monodirectional light (50' cts.)
 - ⬆ Direction indicator barricade with steady burn monodirectional light (50' cts./25' cts. @ tapers)
 - Flexible delineator
 - ⚡ Type III barricade with flashing monodirectional lights
 - ◇ Crystal, bidirectional barrier wall / guardrail marker (25' cts.)
 - ▨ Temporary impact attenuator
 - ▬ Temporary concrete barrier wall
 - ⊙ Non-directional flashing beacon

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 CONSULTING ENGINEERS
 5507 North Cumberland Avenue, Suite 402
 Chicago, Illinois 60658
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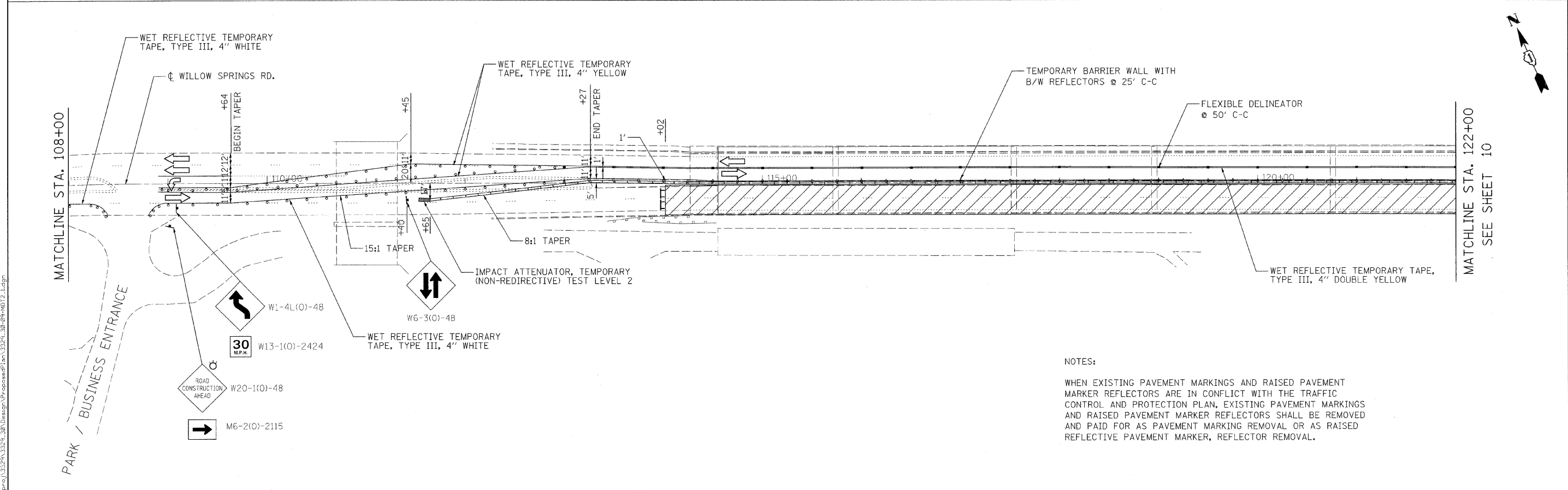
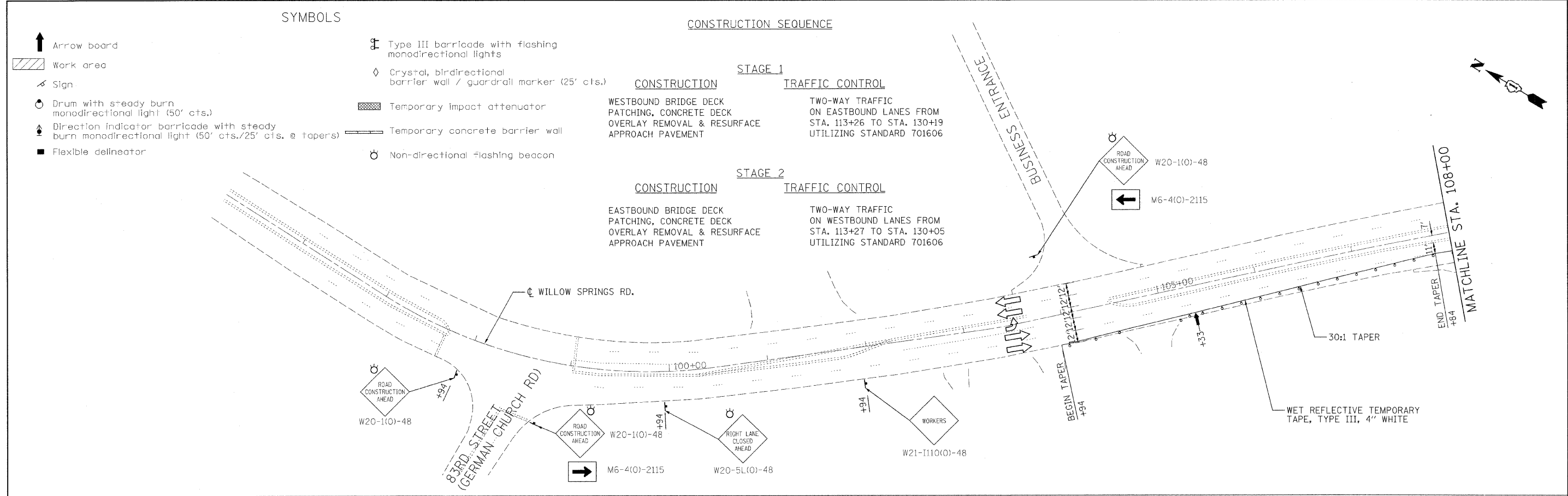
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PLOT DATE = 2/4/2009	CHECKED - MJL	REVISED -
	DATE - 02/25/08	REVISED -

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**FAU 2697 / WILLOW SPRINGS ROAD
 OVER DES PLAINES RIVER
 TRAFFIC CONTROL AND PROTECTION - STAGE 1**

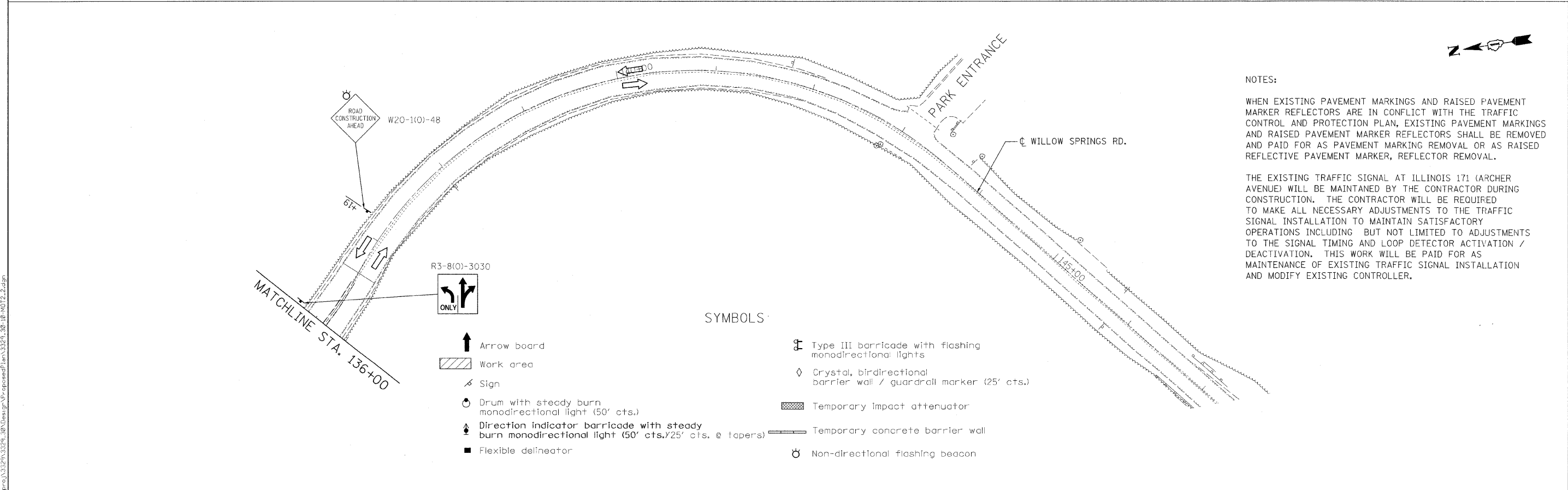
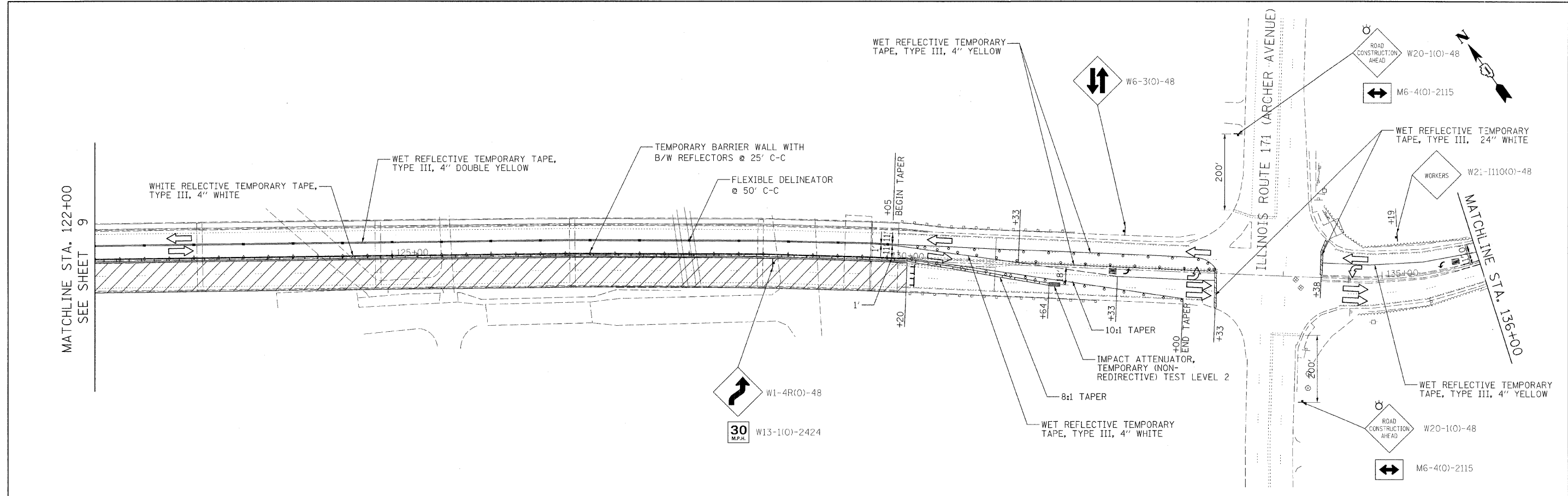
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F.A.U. RTE. 2697	SECTION 142 B-1-I	COUNTY COOK	TOTAL SHEETS 48	SHEET NO. 8
FED. ROAD DIST. NO. - ILLINOIS FED. AID PROJECT			CONTRACT NO. 60D89	



NOTES:

WHEN EXISTING PAVEMENT MARKINGS AND RAISED PAVEMENT MARKER REFLECTORS ARE IN CONFLICT WITH THE TRAFFIC CONTROL AND PROTECTION PLAN, EXISTING PAVEMENT MARKINGS AND RAISED PAVEMENT MARKER REFLECTORS SHALL BE REMOVED AND PAID FOR AS PAVEMENT MARKING REMOVAL OR AS RAISED REFLECTIVE PAVEMENT MARKER, REFLECTOR REMOVAL.



NOTES:

WHEN EXISTING PAVEMENT MARKINGS AND RAISED PAVEMENT MARKER REFLECTORS ARE IN CONFLICT WITH THE TRAFFIC CONTROL AND PROTECTION PLAN, EXISTING PAVEMENT MARKINGS AND RAISED PAVEMENT MARKER REFLECTORS SHALL BE REMOVED AND PAID FOR AS PAVEMENT MARKING REMOVAL OR AS RAISED REFLECTIVE PAVEMENT MARKER, REFLECTOR REMOVAL.

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- SYMBOLS:**
- ↑ Arrow board
 - ▨ Work area
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 - ◇ Crystal, bidirectional barrier wall / guardrail marker (25' cts.)
 - ▨ Temporary impact attenuator
 - ▬ Temporary concrete barrier wall
 - ⊙ Non-directional flashing beacon

FILE NAME: m:\proj\329\329.dwg; 30\Design\Prepared\Plan\329_30-18-MOT2.dwg

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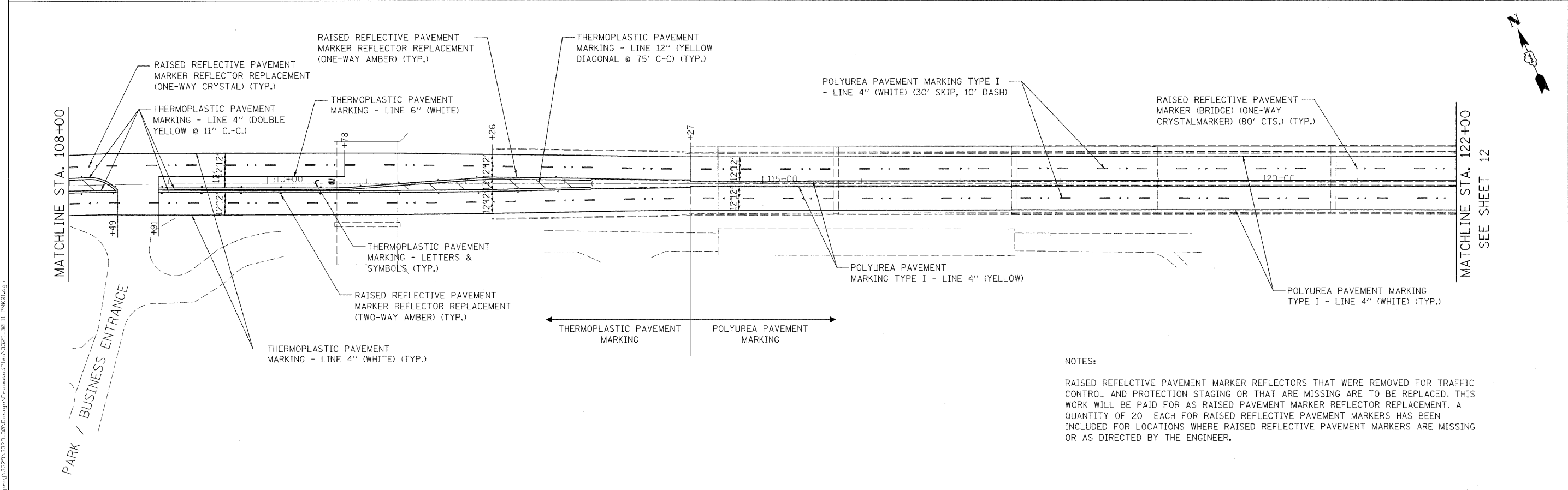
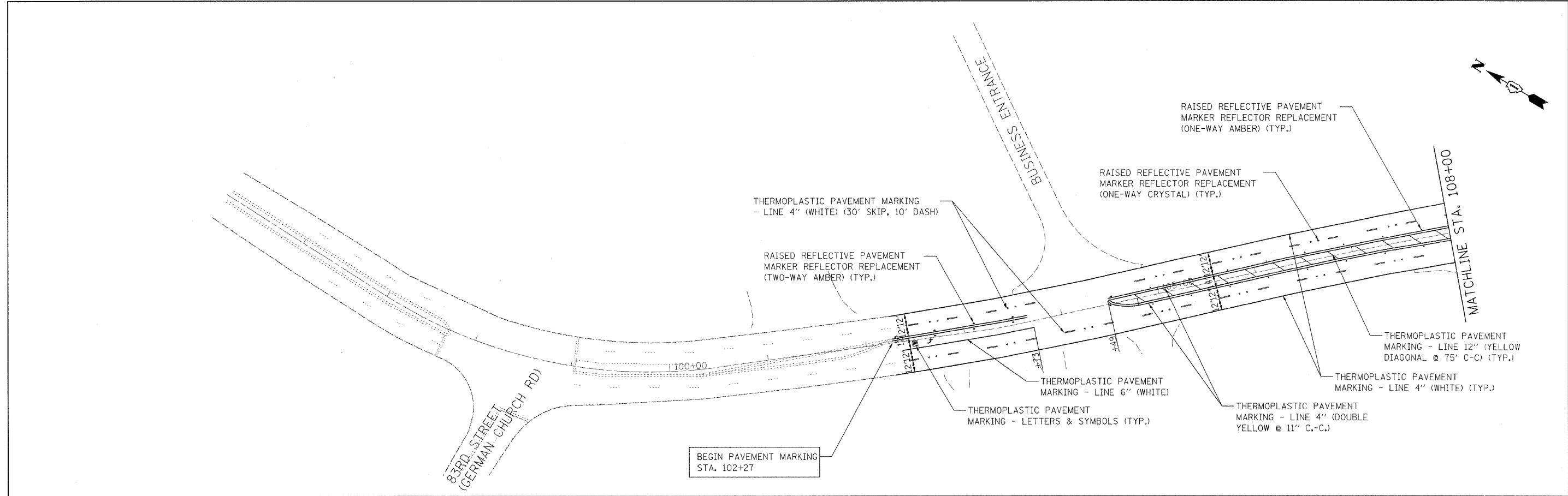
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	DATE - 02/25/08	REVISED -

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**FAU 2697 / WILLOW SPRINGS ROAD
 OVER DES PLAINES RIVER
 TRAFFIC CONTROL AND PROTECTION - STAGE 2**

SCALE: 1"=50' SHEET NO. 2 OF 2 SHEETS STA. TO STA.

F.A.U. RTE. 2697	SECTION 142 B-1-I	COUNTY COOK	TOTAL SHEETS 48	SHEET NO. 10
FED. ROAD DIST. NO. ILLINOIS			CONTRACT NO. 60D89	



NOTES:
 RAISED REFLECTIVE PAVEMENT MARKER REFLECTORS THAT WERE REMOVED FOR TRAFFIC CONTROL AND PROTECTION STAGING OR THAT ARE MISSING ARE TO BE REPLACED. THIS WORK WILL BE PAID FOR AS RAISED PAVEMENT MARKER REFLECTOR REPLACEMENT. A QUANTITY OF 20 EACH FOR RAISED REFLECTIVE PAVEMENT MARKERS HAS BEEN INCLUDED FOR LOCATIONS WHERE RAISED REFLECTIVE PAVEMENT MARKERS ARE MISSING OR AS DIRECTED BY THE ENGINEER.

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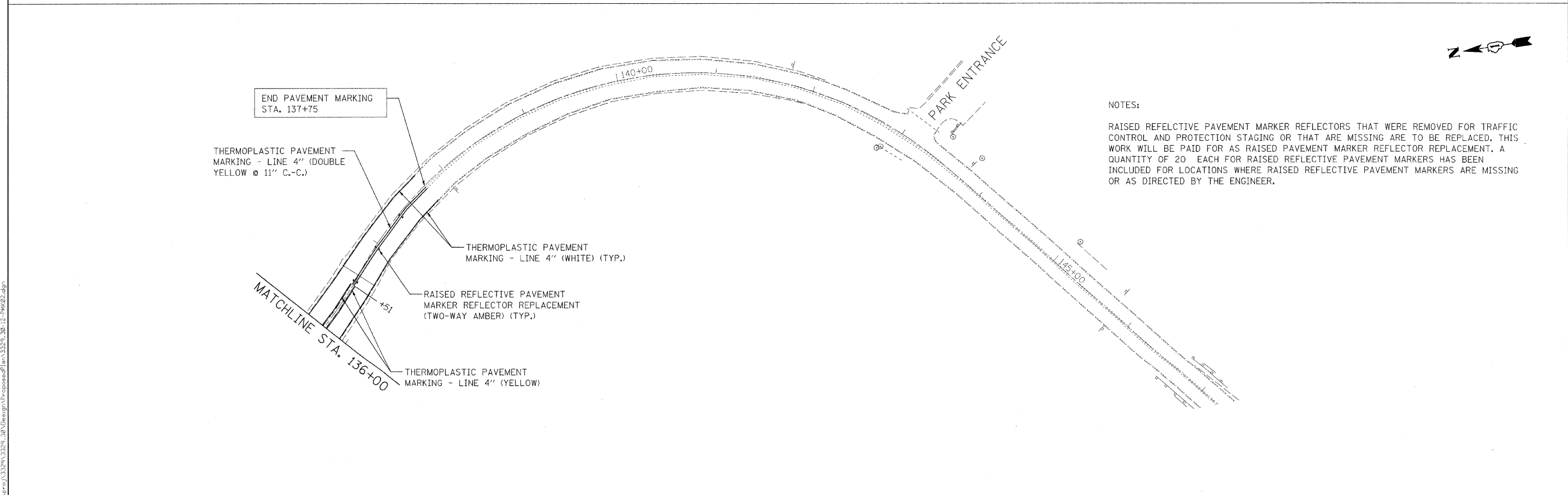
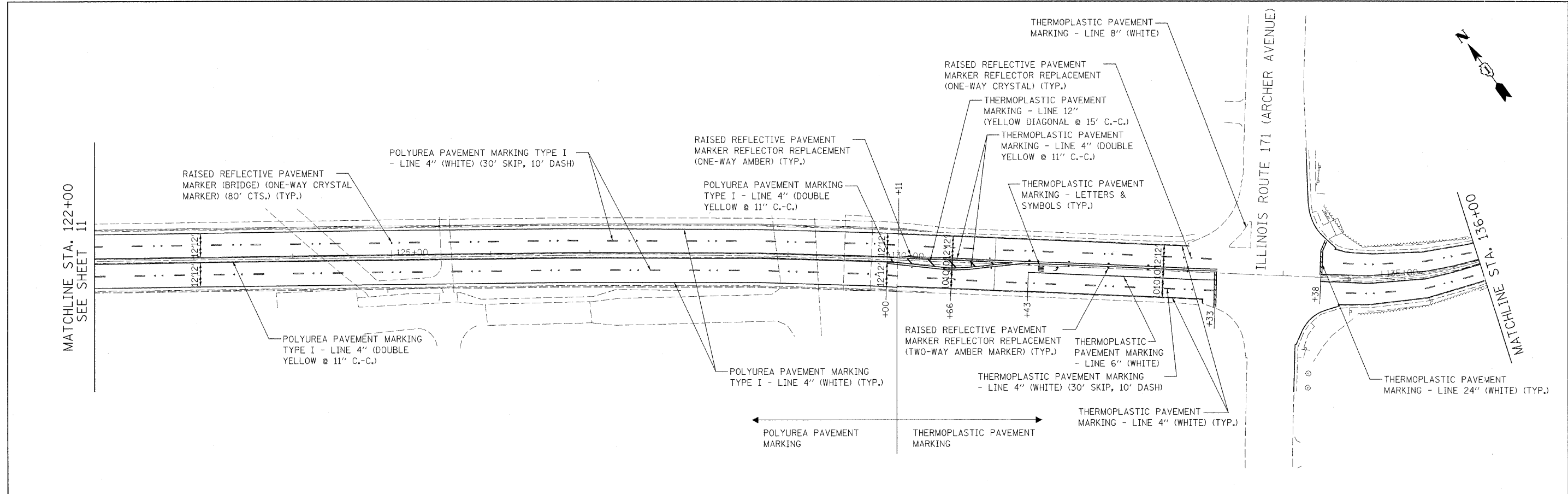
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PLOT DATE = 2/4/2009	CHECKED - MJL	REVISED -
	DATE - 02/25/08	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FAU 2697 / WILLOW SPRINGS ROAD
OVER DES PLAINES RIVER
PAVEMENT MARKING PLAN

SCALE: 1"=50' SHEET NO. 1 OF 2 SHEETS STA. TO STA.

F.A.U. RTE. 2697	SECTION 142 B-1-I	COUNTY COOK	TOTAL SHEETS 48	SHEET NO. 11
FED. ROAD DIST. NO. - ILLINOIS FED. AID PROJECT			CONTRACT NO. 60DB9	



NOTES:
 RAISED REFLECTIVE PAVEMENT MARKER REFLECTORS THAT WERE REMOVED FOR TRAFFIC CONTROL AND PROTECTION STAGING OR THAT ARE MISSING ARE TO BE REPLACED. THIS WORK WILL BE PAID FOR AS RAISED PAVEMENT MARKER REFLECTOR REPLACEMENT. A QUANTITY OF 20 EACH FOR RAISED REFLECTIVE PAVEMENT MARKERS HAS BEEN INCLUDED FOR LOCATIONS WHERE RAISED REFLECTIVE PAVEMENT MARKERS ARE MISSING OR AS DIRECTED BY THE ENGINEER.

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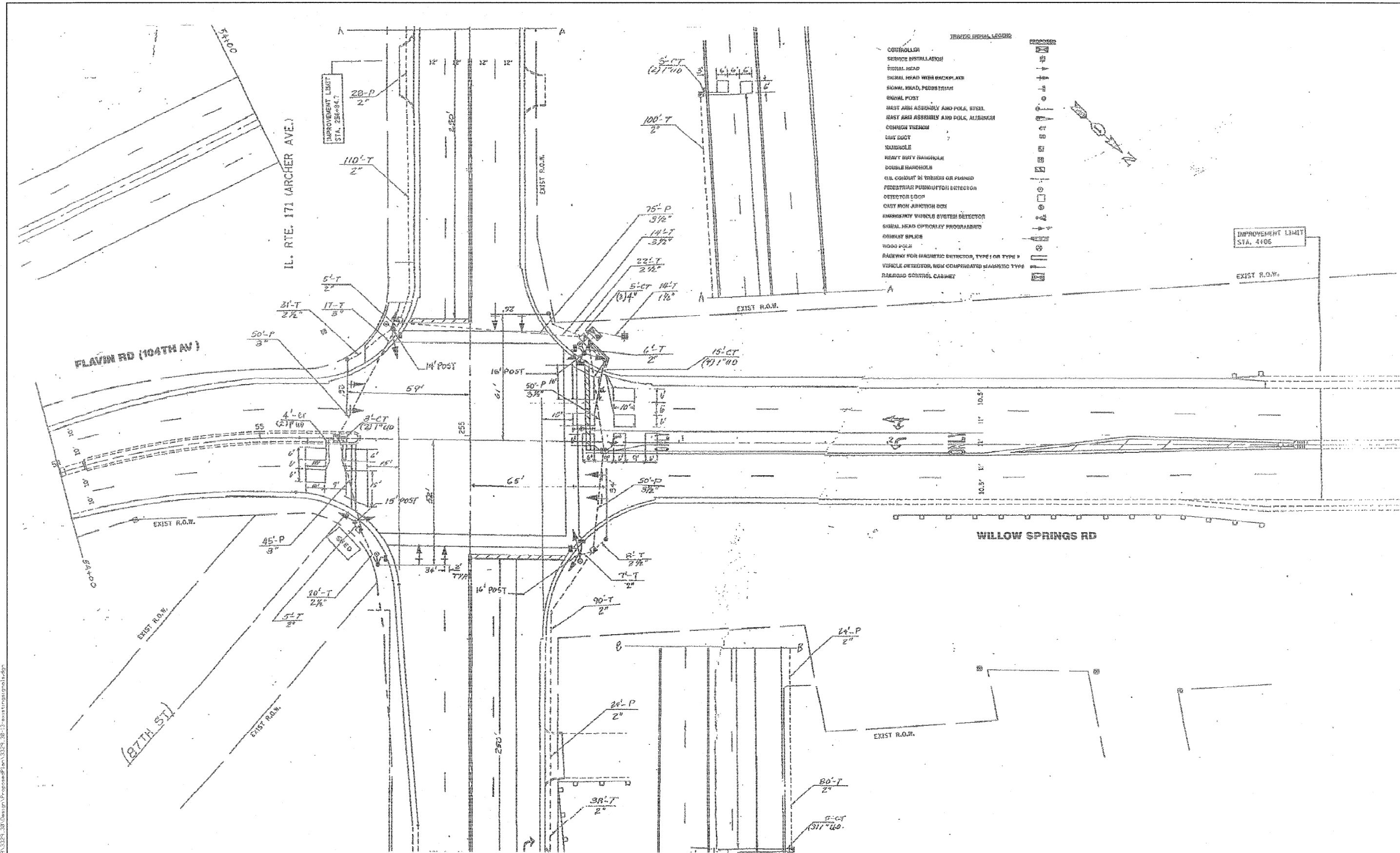
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	DATE - 02/25/08	REVISED -

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**FAU 2697 / WILLOW SPRINGS ROAD
 OVER DES PLAINES RIVER
 PAVEMENT MARKING PLAN**

SCALE: 1"=50' SHEET NO. 2 OF 2 SHEETS STA. TO STA.

F.A.J. RTE. 2697	SECTION 142 B-1-I	COUNTY COOK	TOTAL SHEETS 48	SHEET NO. 12
FED. ROAD DIST. NO. - ILLINOIS FED. AID PROJECT			CONTRACT NO. 60D89	



- TRAFFIC SIGNAL LEGEND**
- CONTROLLER
 - SERVICE INSTALLATION
 - SIGNAL HEAD
 - SIGNAL HEAD WITH BACKPLATE
 - SIGNAL HEAD, PEDIESTRIAN
 - SIGNAL POST
 - RAST ARM ASSEMBLY AND POLE, STEEL
 - RAST ARM ASSEMBLY AND POLE, ALUMINUM
 - COMMON TRENCH
 - CONCRETE
 - RAIDHOLE
 - HEAVY DUTY HANDHOLE
 - DOUBLE HANDHOLE
 - U.S. CONDUIT IN TRENCH OR PUSHER
 - PEDIESTRIAN PUSHBUTTON DETECTOR
 - DETECTOR LOOP
 - CAST IRON JUNCTION BOX
 - EMERGENCY VEHICLE SYSTEM DETECTOR
 - SIGNAL HEAD OPTICALLY PROGRAMMED
 - DOUBLE SPIDER
 - WOOD POLE
 - RAILWAY FOR MAGNETIC DETECTOR, TYPE I OR TYPE II
 - VEHICLE DETECTOR, NON COMPENSATED MAGNETIC TYPE
 - RAILROAD CONTROL CABINET

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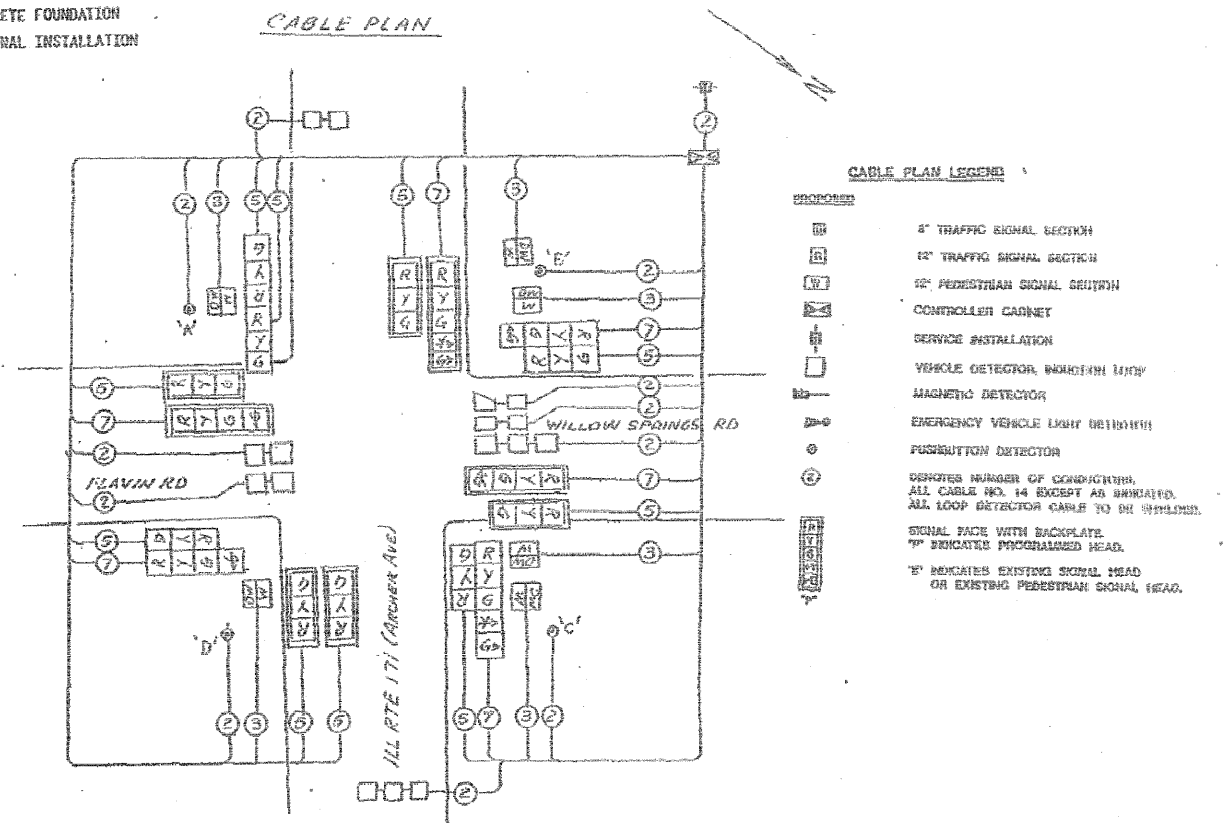
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	DATE - 02/25/08	REVISED -

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**FAU 2697 / WILLOW SPRINGS ROAD
 EXISTING TRAFFIC SIGNAL PLAN WILLOW SPRINGS ROAD
 AT ILLINOIS ROUTE 171 (ARCHER AVENUE)**

F.A.U. RTE. 2697	SECTION 142 B-1-I	COUNTY COOK	TOTAL SHEETS 48	SHEET NO. 13
SCALE: SHEET NO. OF SHEETS STA. TO STA.			CONTRACT NO. 60D89	
FED. ROAD DIST. NO. - ILLINOIS FED. AID PROJECT				

QUANTITY		ITEM		UNIT		DESCRIPTION		REMARKS	
12	SQ. FT.	12	1	7	EACH	INDUCTION LOOP DETECTOR AMPLIFIER	4	EACH	REMOVE EXISTING HANDHOLE
57.5	SQ. FT.	57.5	1	629	LIN. FT.	DETECTOR LOOP, TYPE I	8	EACH	REMOVE EXISTING CONCRETE FOUNDATION
5	EACH	5	1	4	EACH	PEDESTRIAN PUSHBUTTON	1	EACH	TEMPORARY TRAFFIC SIGNAL INSTALLATION
2	EACH	2	1	14	LIN. FT.	GALVANIZED STEEL CONDUIT IN TRENCH 1-1/2"			
1	EACH	1	1	441	LIN. FT.	GALVANIZED STEEL CONDUIT IN TRENCH 2"			
2	EACH	2	1	81	LIN. FT.	GALVANIZED STEEL CONDUIT IN TRENCH 2-1/2"			
1	EACH	1	1	17	LIN. FT.	GALVANIZED STEEL CONDUIT IN TRENCH 3"			
1	EACH	1	1	14	LIN. FT.	GALVANIZED STEEL CONDUIT IN TRENCH 3-1/2"			
1	EACH	1	1	10	LIN. FT.	GALVANIZED STEEL CONDUIT IN TRENCH 4"			
1	EACH	1	1	76	LIN. FT.	GALVANIZED STEEL CONDUIT, PUSHED 2"			
1	EACH	1	1	96	LIN. FT.	GALVANIZED STEEL CONDUIT, PUSHED 3"			
2	EACH	2	1	126	LIN. FT.	GALVANIZED STEEL CONDUIT, PUSHED 3-1/2"			
1	EACH	1	1	121	LIN. FT.	UNIT DUCT, WITHOUT CABLE IN TRENCH 1"			
1	EACH	1	1	15	LIN. FT.	ELECTRIC CABLE IN CONDUIT NO. 6 2/C			
2	EACH	2	1	650	LIN. FT.	ELECTRIC CABLE IN CONDUIT NO. 14 2/C			
2	EACH	2	1	741	LIN. FT.	ELECTRIC CABLE IN CONDUIT NO. 14 3/C			
2	EACH	2	1	1615	LIN. FT.	ELECTRIC CABLE IN CONDUIT NO. 14 6/C			
2	EACH	2	1	775	LIN. FT.	ELECTRIC CABLE IN CONDUIT NO. 14 7/C			
2	EACH	2	1	1154	LIN. FT.	ELECTRIC CABLE IN CONDUIT NO. 14 2/C TWISTED, SHIELDED			
8	EACH	8	1	1	EACH	SERVICE INSTALLATION, TYPE C			
1	EACH	1	1	12	LIN. FT.	CONCRETE FOUNDATION, TYPE A			
2	EACH	2	1	3.6	LIN. FT.	CONCRETE FOUNDATION, TYPE D			
1	EACH	1	1	20	LIN. FT.	CONCRETE FOUNDATION, TYPE E 24-INCH DIAMETER			
2	EACH	2	1	30	LIN. FT.	CONCRETE FOUNDATION, TYPE E 30-INCH DIAMETER			
2	EACH	2	1	6	EACH	CONCRETE HANDHOLE			
1	EACH	1	1	1	EACH	CONCRETE HEAVY-DUTY HANDHOLE			
1	EACH	1	1	1	EACH	CONCRETE DOUBLE HANDHOLE			
1	EACH	1	1	610	LIN. FT.	TRENCH AND BACKFILL			
1	EACH	1	1	1	EACH	REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT			



PUSHBUTTON NOTES

- PUSHBUTTON "A" IS TO PLACE A CALL FOR PHASE 2.
- PUSHBUTTON "B" IS TO PLACE A CALL FOR PHASES 3 AND 2 + 6.
- PUSHBUTTON "C" IS TO PLACE A CALL FOR PHASES 4 AND 2 + 6.
- PUSHBUTTON "D" IS TO PLACE A CALL FOR PHASE 4.

MOVEMENT	TRAFFIC SIGNAL SEQUENCE OF OPERATIONS																P
	1	2	3A	3B	4A	4B	5	6	7A	7B	8	9	10A	10B	11A	11B	
WILLOW SPRINGS RD. (WENTWORTH AVE.) NEAR RIGHT & FAR RIGHT SIGNALS	G	B	Y	R	V	R	R	R	R	R	R	R	R	R	R	R	R
WILLOW SPRINGS RD. (WENTWORTH AVE.) END WEST ARM & FAR LEFT SIGNALS	G	B	Y	R	V	R	R	R	R	R	R	R	R	R	R	R	R
FLAVIN RD. NEAR RIGHT & FAR RIGHT SIGNALS	R	R	R	R	R	R	G	G	Y	R	R	R	R	R	R	R	R
FLAVIN RD. END WEST ARM & FAR LEFT SIGNALS	R	R	R	R	R	R	G	G	Y	R	R	R	R	R	R	R	R
ILL. 171 SIGNALS	R	R	R	R	R	R	R	R	R	R	B	B	Y	R	Y	R	R
ILL. 171 NEAR RIGHT & MID MAST ARM SIGNALS	R	R	R	R	R	R	R	R	R	R	G	G	Y	R	Y	R	R
ILL. 171 END WEST ARM & FAR LEFT SIGNALS	R	R	R	R	R	R	R	R	R	R	G	G	Y	R	Y	R	R
PEDESTRIAN CROSSING WILLOW SPRINGS RD. NORTH SIDE OF ILL. 171	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	FLW	DW	DW	DW	DW	DW	DR
PEDESTRIAN CROSSING ILL. 171 WEST SIDE OF WILLOW SPRINGS RD./FLAVIN RD.	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	FLW	DW	DW	DW	DW	DW	DR
PEDESTRIAN CROSSING ILL. 171 EAST SIDE OF WILLOW SPRINGS RD./FLAVIN RD.	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	FLW	DW	DW	DW	DW	DW	DR

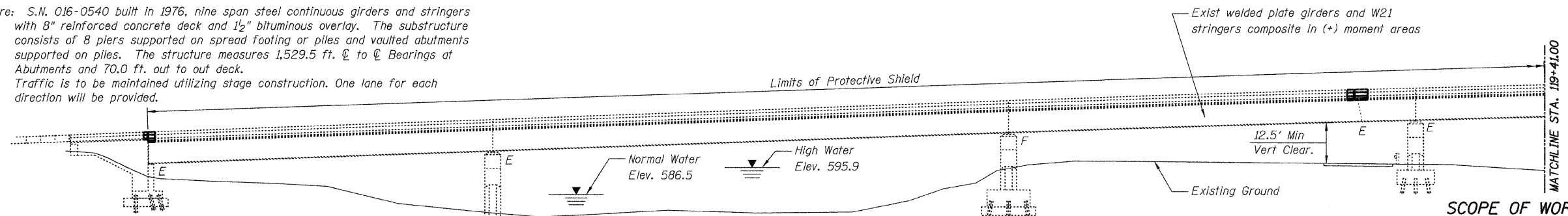
* TO APPEAR ONLY UPON PUSHBUTTON ACTUATION
 ** FLASHING "DON'T WALK" IS TO TERMINATE AT THE COMPLETION OF THE PEDESTRIAN CLEARANCE INTERVAL

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

Benchmark: Survey Monument (Bronze Disk) located on the concrete sidewalk NE side of bridge for the commuter parking lot on Old Willow Road. Sta. 125+91 offset 46 Rt Elev. 598.39

Existing Structure: S.N. 016-0540 built in 1976, nine span steel continuous girders and stringers with 8" reinforced concrete deck and 1/2" bituminous overlay. The substructure consists of 8 piers supported on spread footing or piles and vaulted abutments supported on piles. The structure measures 1,529.5 ft. ϕ to ϕ Bearings at Abutments and 70.0 ft. out to out deck. Traffic is to be maintained utilizing stage construction. One lane for each direction will be provided.

Salvage: None



DESIGN STRESSES

EXISTING CONSTRUCTION

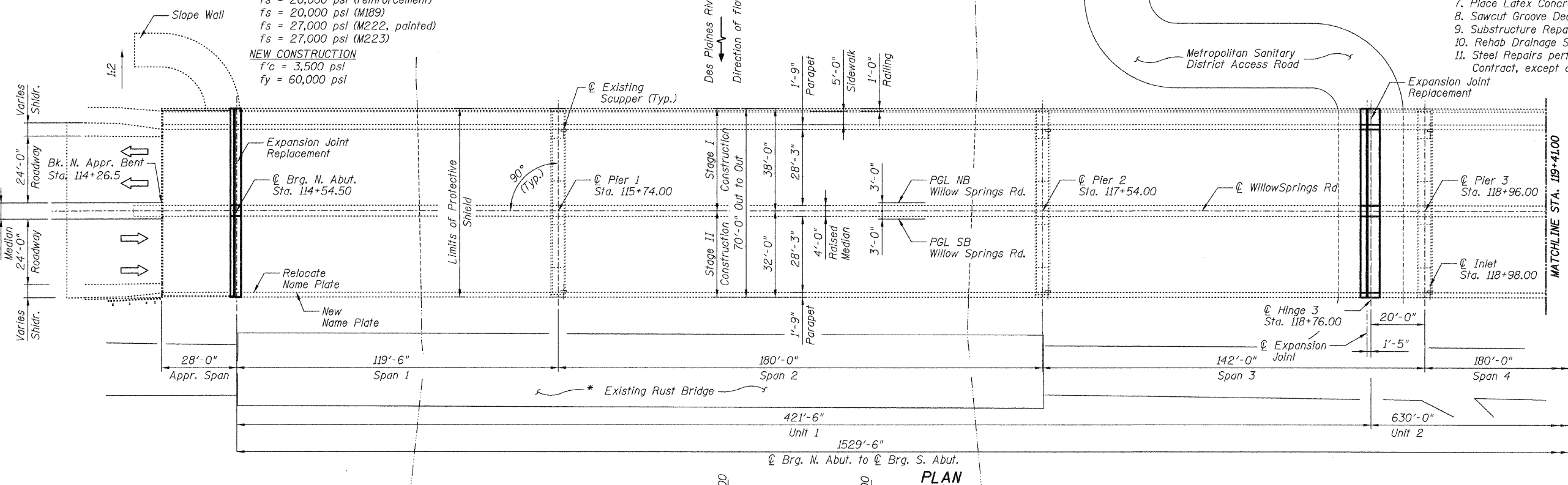
- $f_c = 1,000$ psi (abutment)
- $f_c = 1,200$ psi (deck)
- $f_c = 1,400$ psi (curb, parapet & appr. slab)
- $f_s = 20,000$ psi (reinforcement)
- $f_s = 20,000$ psi (M189)
- $f_s = 27,000$ psi (M222, painted)
- $f_s = 27,000$ psi (M223)

NEW CONSTRUCTION

- $f'_c = 3,500$ psi
- $f_y = 60,000$ psi

SCOPE OF WORK

1. Install Protective Shield
2. Remove HMA Surface
3. Hydroscarify Deck Surface and Approach Spans
4. Deck Full Depth Repairs and Concrete Parapets repairs
5. Reconstruct Transverse Joints
6. Replace Bearings at North Abutment
7. Place Latex Concrete Overlay
8. Sawcut Groove Deck Surface
9. Substructure Repairs
10. Rehab Drainage Systems at Scuppers
11. Steel Repairs performed under separate Contract, except as noted on the plans



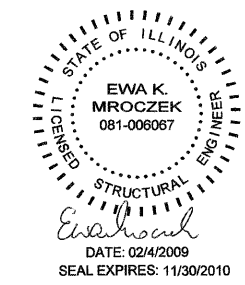
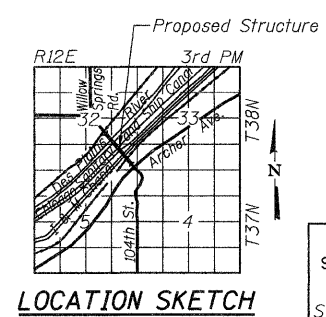
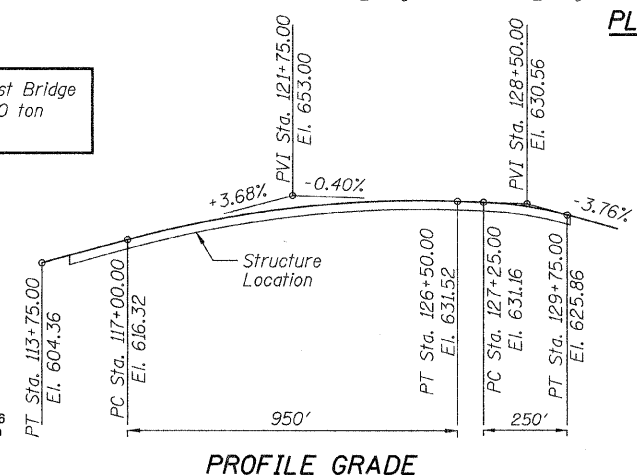
LOADING HS-20-44

No future wearing surface allowance

DESIGN SPECIFICATIONS

2002 AASHTO Standard Specifications

* Existing Rust Bridge is posted to 10 ton weight limit



GENERAL PLAN AND ELEVATION I
FAU 2697 WILLOW SPRINGS ROAD
OVER DES PLAINES RIVER,
CHICAGO SANITARY & SHIP CANAL,
ILLINOIS AND MICHIGAN CANAL,
AND ICG RAILROAD
COOK COUNTY
S.N. 016-0540

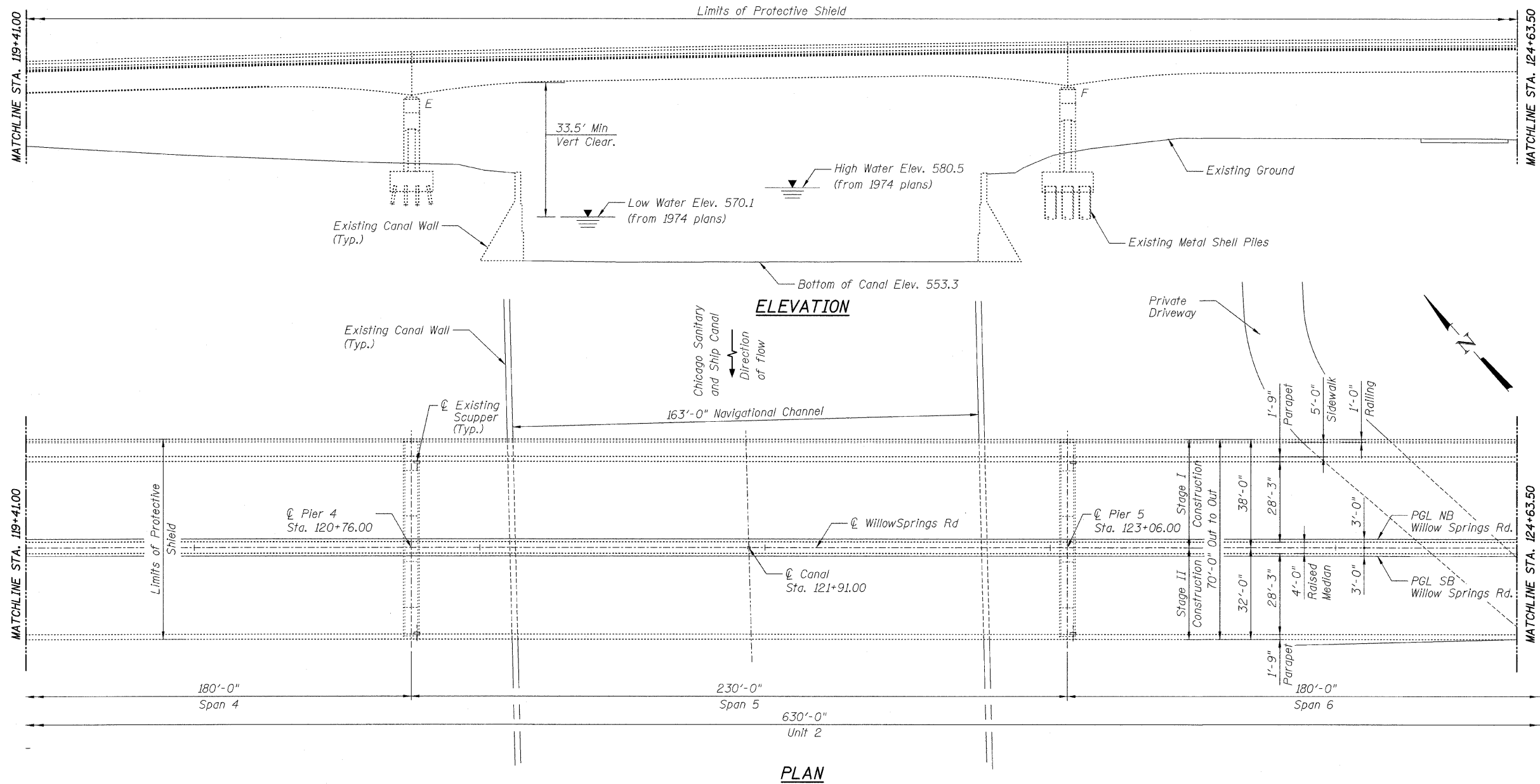
DESIGNED	B. Sauter
CHECKED	E. Mroczek
DRAWN	R. Danley
CHECKED	B. Sauter

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SHEET NO. S-1 S-27 SHEETS	F.A.U. RTE. 2697	SECTION 142 B-1-I	COUNTY COOK	TOTAL SHEETS 48	SHEET NO. 15
	CONTRACT NO. 60D89			FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT	

02/14/2009
 02/14/2009
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



GENERAL PLAN AND ELEVATION II
FAU 2697 WILLOW SPRINGS ROAD
OVER DES PLAINES RIVER,
CHICAGO SANITARY & SHIP CANAL,
ILLINOIS AND MICHIGAN CANAL,
AND ICG RAILROAD
COOK COUNTY
S.N. 016-0540

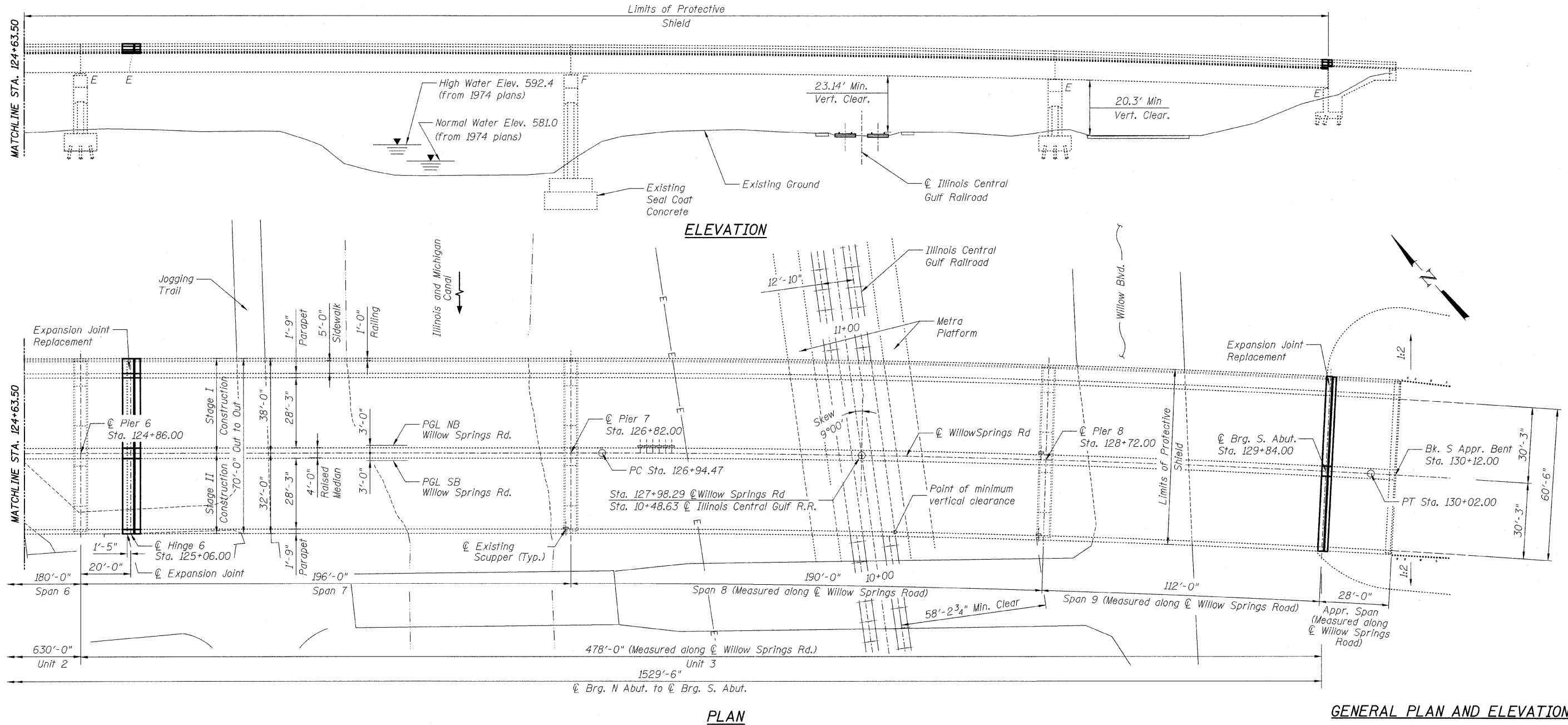
DESIGNED	B. Sauter
CHECKED	E. Mroczek
DRAWN	R. Danley
CHECKED	B. Sauter

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SHEET NO. S-2 S-27 SHEETS	F.A.U. RTE. 2697	SECTION 142 B-1-I	COUNTY COOK	TOTAL SHEETS 48	SHEET NO. 16
	CONTRACT NO. 60D89			ILLINOIS FED. AID PROJECT	

rdanley
 2/4/2009
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



ELEVATION

PLAN

HORIZONTAL CURVE

PC = Sta. 126+94.47
 PT = Sta. 130+02.00
 PI = Sta. 128+48.23
 $\Delta = 3^{\circ}04'31.0''$
 $\Delta = 1^{\circ}00'00''$
 T = 153.80
 L = 307.53'
 B = 2.06'
 R = 5,729.58'

LEGEND

—E— Electrical Overhead Line

GENERAL PLAN AND ELEVATION III
FAU 2697 WILLOW SPRINGS ROAD
OVER DES PLAINES RIVER,
CHICAGO SANITARY & SHIP CANAL,
ILLINOIS AND MICHIGAN CANAL,
AND ICG RAILROAD
COOK COUNTY
S.N. 016-0540

DESIGNED	B. Sauter
CHECKED	E. Mroczek
DRAWN	R. Danley
CHECKED	B. Sauter

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 CONSULTING ENGINEERS
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 Tel. 773.775.4009 Fax 773.775.4014 Email chicago@ciorba.com

SHEET NO. S-3 S-27 SHEETS	F.A.U. RTE. 2697	SECTION 142 B-1-I	COUNTY COOK	TOTAL SHEETS 48	SHEET NO. 17
	CONTRACT NO. 60D89				
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

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- S-27. Existing Structural Steel Details

GENERAL NOTES

1. Fasteners shall be AASHTO M164 Type 1, mechanically galvanized bolts. Bolts - 7/8 in. ϕ , holes - 1 1/16 in. ϕ , unless otherwise noted.
2. Calculated weight of Structural Steel = 5,870 lbs.
3. All structural steel shall be AASHTO M270 Grade 50.
4. No field welding is permitted except as specified in the contract documents.
5. Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60. See Special Provisions.
6. Reinforcement bars designated (E) shall be epoxy coated.
7. Prior to pouring the new concrete deck, all heavy or loose rust, loose mill scale, and other loose or potentially detrimental foreign material shall be removed from the surfaces in contact with concrete. Tightly adhered paint may remain unless otherwise noted. Removal shall be accomplished by methods that will not damage the steel and the cost will be included in the pay item covering removal of the existing concrete.
As directed by the Engineer, existing construction accessories welded to the top flange of beams and girders shall be removed. The weld areas shall be ground flush and inspected for cracks using magnetic particle testing (MT) or dye penetrant testing (PT) by qualified personnel approved by the Engineer. Any cracks that cannot be removed by grinding 1/4 inch deep shall be identified and reported to the Bureau of Bridges and Structures for further disposition. The cost of removing welded accessories, grinding and inspecting weld areas and grinding cracks will be paid for according to Article 109.04 of the Standard Specifications.
8. Plan dimensions and details relative to existing plans are subject to normal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.
9. The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.
10. Two 1/8 in. adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.
11. Existing structural steel shall only be cleaned and painted as required by Special Provision "Cleaning and Painting Contact Areas of Existing Steel Structures".
12. The Inorganic zinc rich primer/Acrylic/Acrylic Paint System shall be used for shop and field painting of new structural steel except where otherwise noted. The color of the Acrylic finish coat shall be Interstate Green, Munsell No.7.5G 4/8. See Special Provision for "Cleaning and Painting New Metal Structures".
13. Any reinforcement bars that are damaged during concrete removal operations shall be repaired or replaced using an approved bar splicer or anchorage system. Cost included with "Concrete Removal"

STATION 121+91
BUILT BY
STATE OF ILLINOIS
F.A. RT. 2697 SEC
2008-018 BR
LOADING HS20
STRUCTURE NO. 016-0540

NAME PLATE
See Std. 515001

Existing Name Plate shall be cleaned and relocated next to new Name Plate. Cost included with Name Plates.

TOTAL BILL OF MATERIAL

ITEM	UNIT	QUANTITY
* Hot-Mix Asphalt Surface Removal (Deck)	Sq. Yd.	9,611
Concrete Removal	Cu. Yd.	63.2
Protective Shield	Sq. Yd.	11,910
Concrete Superstructure	Cu. Yd.	70.0
Bridge Deck Grooving	Sq. Yd.	8,930
Protective Coat	Sq. Yd.	10,099
Furnishing and Erecting Structural Steel	Pound	5,870
* Structural Steel Removal	Pound	4,050
* Jack and Remove Existing Bearings	Each	5
Reinforcement Bars, Epoxy Coated	Pound	14,240
Bar Splicers	Each	106
Name Plates	Each	1
Elastomeric Bearing Assembly, Type II	Each	5
Anchor Bolts, 1 1/4"	Each	20
Concrete Sealer	Sq. Ft.	694
* Bridge Deck Latex Concrete Overlay, 2 1/2 inches	Sq. Yd.	9,491
* Structural Repair of Concrete (Depth Greater Than 5")	Sq. Ft.	478
* Structural Repair of Concrete (Depth Equal to or Less Than 5")	Sq. Ft.	4,888
* Bridge Deck Hydro-Scarification 1"	Sq. Yd.	9,611
* Deck Slab Repair (Full Depth, Type II)	Sq. Yd.	2,780
Drainage System	L. Sum	1
* Modular Expansion Joint 6"	Foot	205
* Modular Expansion Joint 9"	Foot	68

* Special Provision

GENERAL NOTES
AND BILL OF MATERIAL
S.N. 016-0540

DESIGNED	B. Sauter
CHECKED	E. Mroczek
DRAWN	R. Danley
CHECKED	B. Sauter



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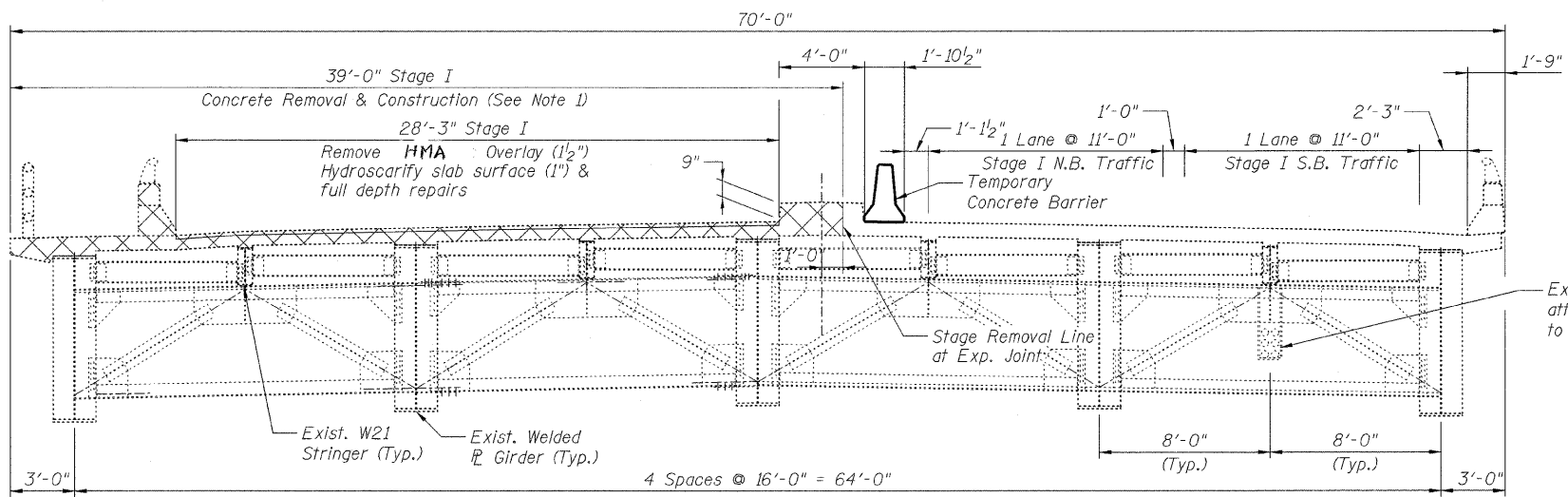
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	CONTRACT NO. 60			FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT	

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2/14/2009

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DEPARTMENT OF TRANSPORTATION

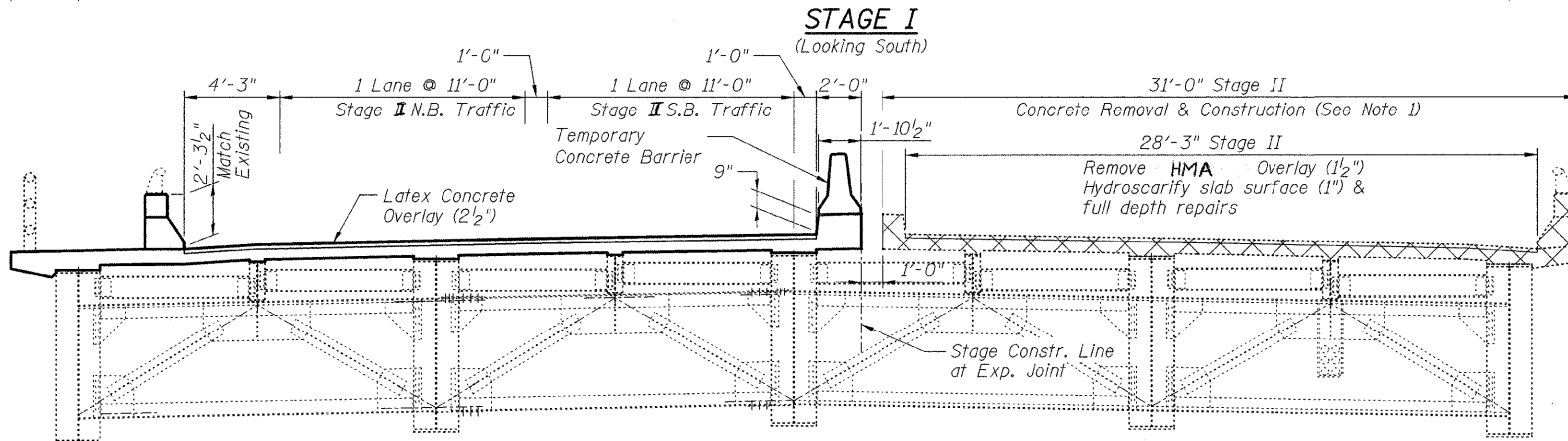


LEGEND



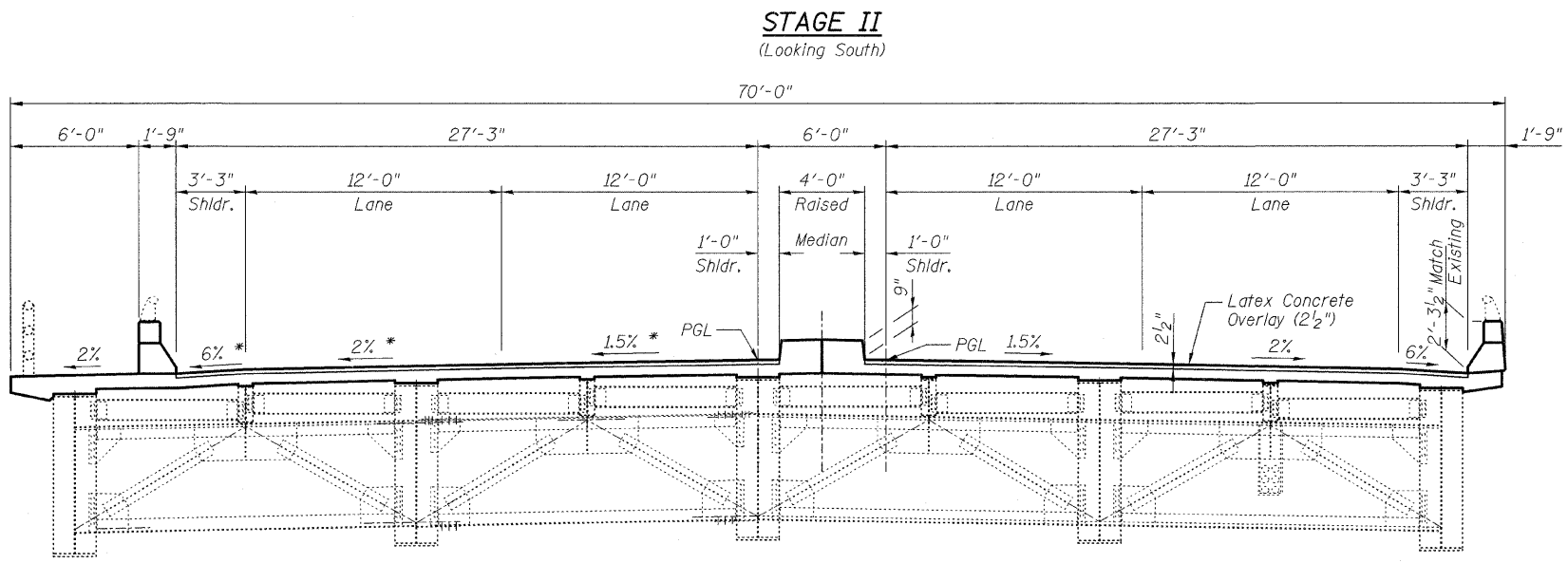
Concrete Removal for Exp. Joint Replacement. See Note 1

Existing utilities attached to stringer to remain



NOTES:

1. Concrete Deck and Parapet Removal as required for the expansion joint replacement in Spans 3 and 6 and at Abutments. See sheet S-13 through S-15.
2. See sheet S-6 for Temporary Concrete Barrier Details.
3. The Contractor is responsible for means and methods to ensure the complete stability of the structural members during construction.



FINAL CROSS SECTION
(Looking South)

* Cross slopes shown are valid between North Abutment and Sta. 125+00.00. Cross slopes vary beyond Sta. 125+00.00 (match exist.)

STAGE CONSTRUCTION DETAILS
S.N. 016-0540

DESIGNED	B. Sauter
CHECKED	E. Mroczek
DRAWN	R. Danley
CHECKED	B. Sauter

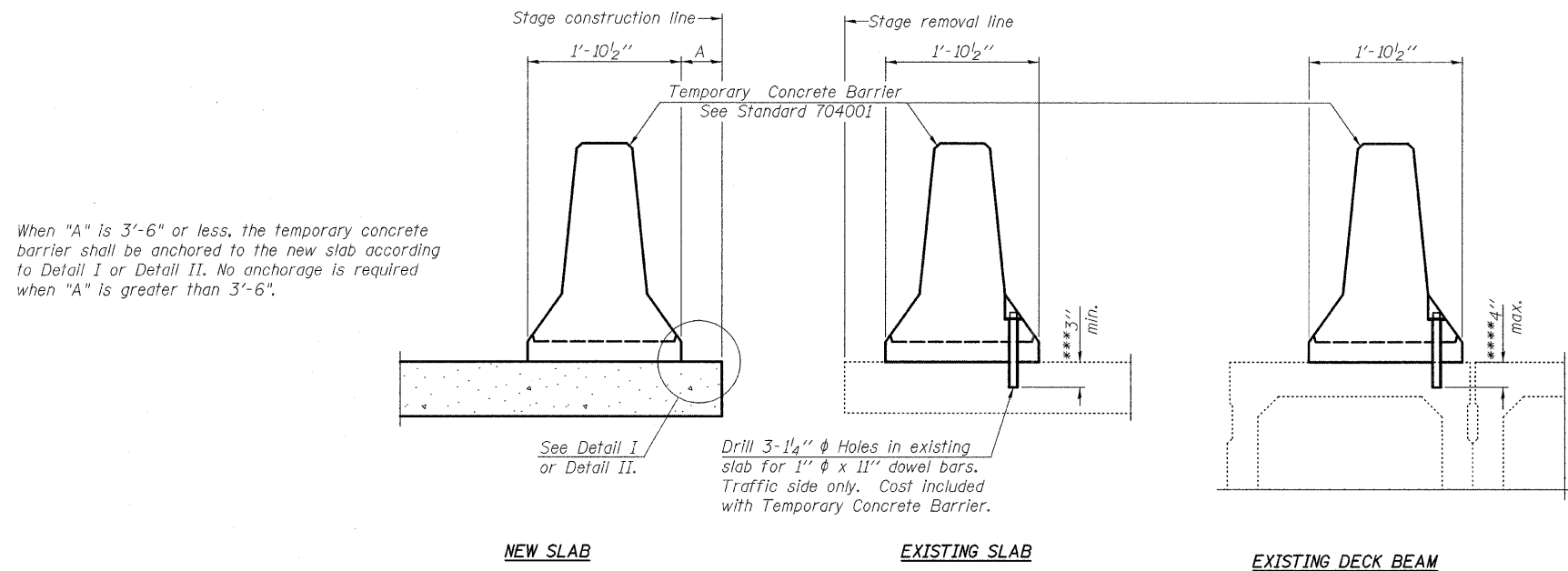


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SHEET NO. S-5 S-27 SHEETS	F.A.U. RTE. 2697	SECTION 142 B-1-I	COUNTY COOK	TOTAL SHEETS 48	SHEET NO. 19
	CONTRACT NO. 60D89				
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



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"x7"x10" steel \bar{L} to the top layer of couplers with 2-5/8" ϕ bolts screwed to coupler at approximate \bar{C} of each barrier panel.

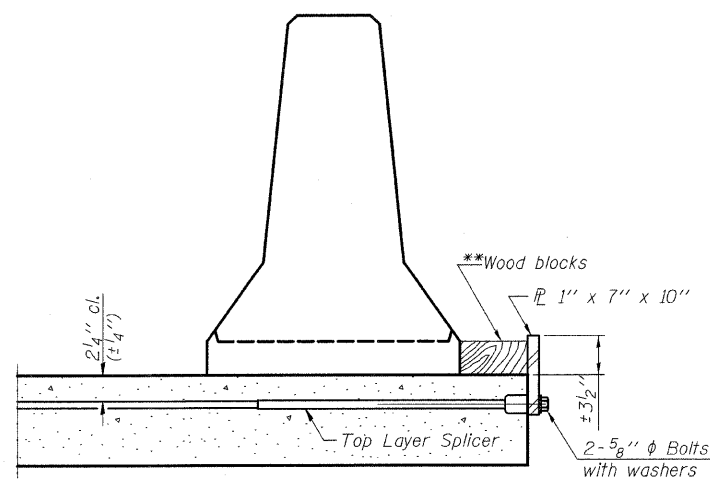
Detail II - With Extended Reinforcement Bars:
Connect one (1) 1"x7"x10" steel \bar{L} to the concrete slab or concrete wearing surface with 2-5/8" ϕ Expansion Anchors or cast in place inserts spaced between the top layer of reinforcement at approximate \bar{C} of each barrier panel.

Cost of anchorage is included with Temporary Concrete Barrier. The 1" x 7" 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.

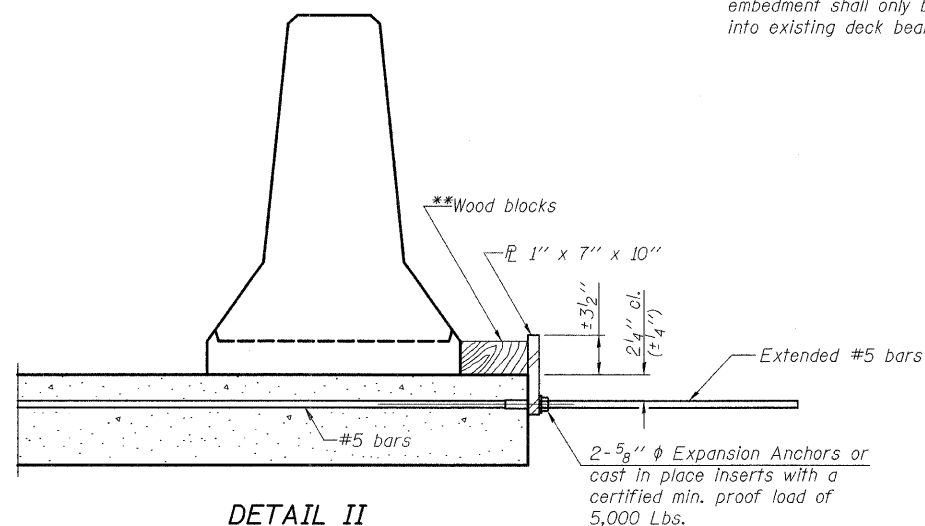
SECTIONS THRU SLAB OR DECK BEAM

*** 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.

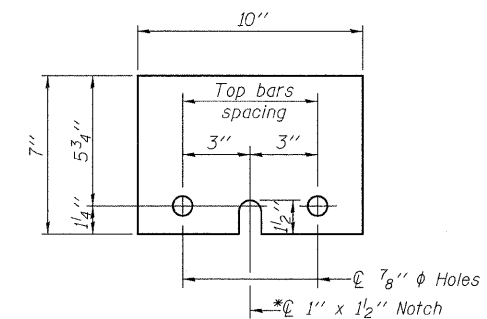
**** If existing deck beam is to remain in place after stage construction, embedment shall only be into wearing surface and not into existing deck beam concrete.



DETAIL I



DETAIL II



STEEL RETAINER \bar{L} 1" x 7" x 10"

* Required only with 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.

DESIGNED	B. Sauter
CHECKED	E. Mroczek
DRAWN	R. Danley
CHECKED	B. Sauter



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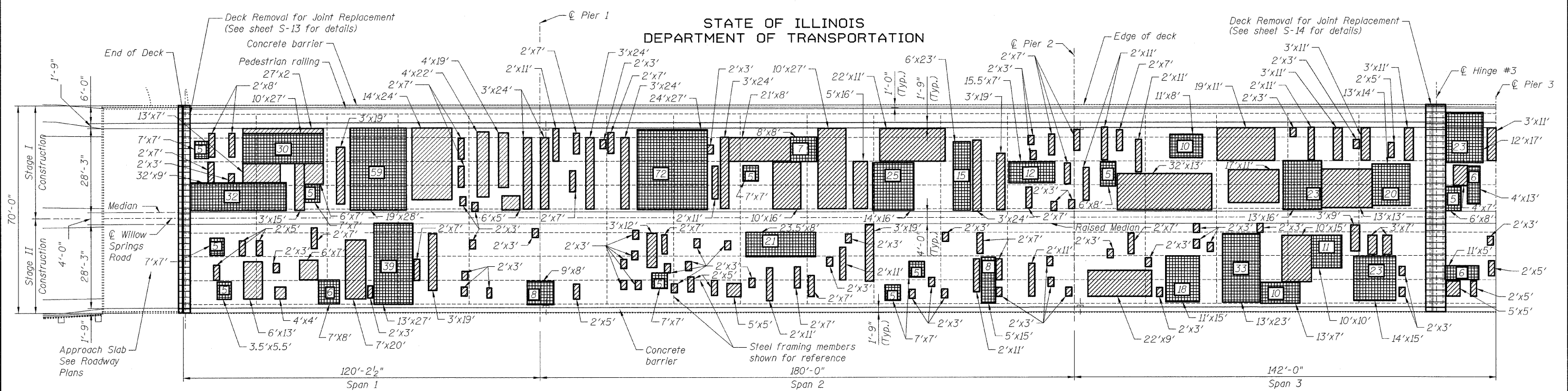
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TEMPORARY CONCRETE BARRIER
S.N. 016-0540

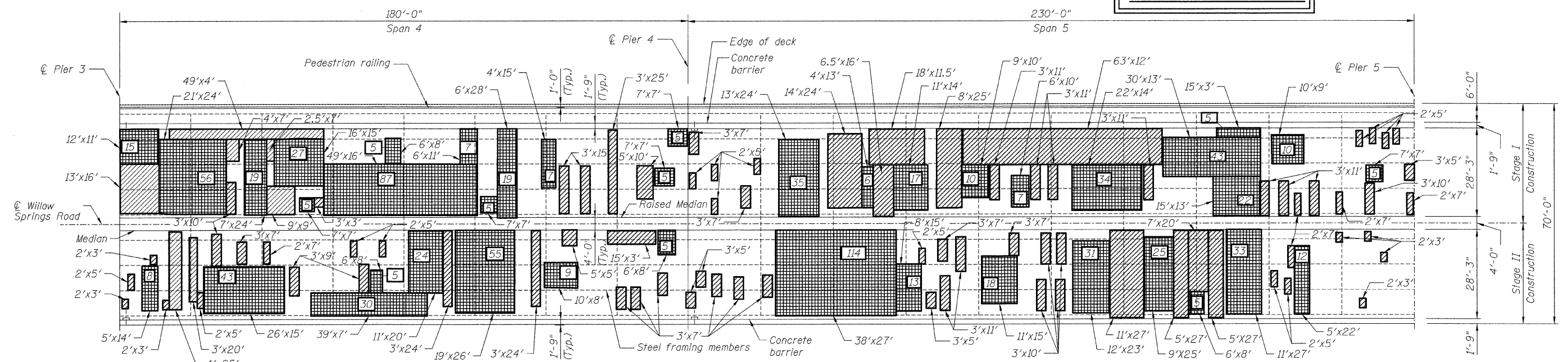
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	CONTRACT NO. 60D89			FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



DECK PLAN

Deck Slab Repair (Partial Depth)
Estimated Quantity 1,131 Sq. Yd.
FOR INFORMATION ONLY



DECK PLAN

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Hot-Mix Asphalt Surface Removal (Deck)	Sq. Yd.	5,350
Concrete Removal	Cu. Yd.	31.6
Bridge Deck Grooving	Sq. Yd.	4,971
Protective Coat	Sq. Yd.	5,362
Bridge Deck Latex Concrete Overlay, 2 1/2 inches	Sq. Yd.	5,290
Bridge Deck Hydro-Scarification 1"	Sq. Yd.	5,350
Deck Slab Repair (Full Depth, Type II)	Sq. Yd.	1,600

LAST DELAMINATION SURVEY:
November 27, 2007
(Typical for all superstructure repairs)

SUPERSTRUCTURE REPAIRS I
S.N. 016-0540

LEGEND:

- Deck Slab Repair (Full Depth), Type II
X denotes estimated quantity in Sq. Yd.
- Concrete removal for expansion joint replacement
- Deck Slab Repair (Partial Depth)
For information only. Quantity included with Bridge Deck Hydro-Scarification 1"

NOTES:

1. Repairs shall include but not be limited to the areas shown. The actual areas to be determined by the Engineer at the time of construction.
2. The Engineer shall record the actual deck repair areas in order to document as-built conditions for the future reference.
3. For parapet joint rehabilitation, see sheet S-13 thru S-15.
4. For parapet repairs see sheet S-9 thru S-12.
5. Concrete Removal includes deck and parapet removal.
6. Contractor shall use extreme care in the concrete removal operation. Any spalling, beam, shear stud or rebar damage caused by this operation shall be repaired by the Contractor to the satisfaction of the Engineer at no additional cost to the Department.
7. Quantities in the Bill of Material for Deck Slab Repairs Full Depth, Type II are 10% greater than areas shown on deck plan to accommodate for degradation since last delamination survey.
8. Protective coat shall be applied to N.B. & S.B. Lanes and to repaired areas of Concrete on Parapets and median.
9. Existing reinforcement in the deck shall be cleaned and incorporated into the repairs. Cost included with Deck Slab Repair (Full Depth, Type II).

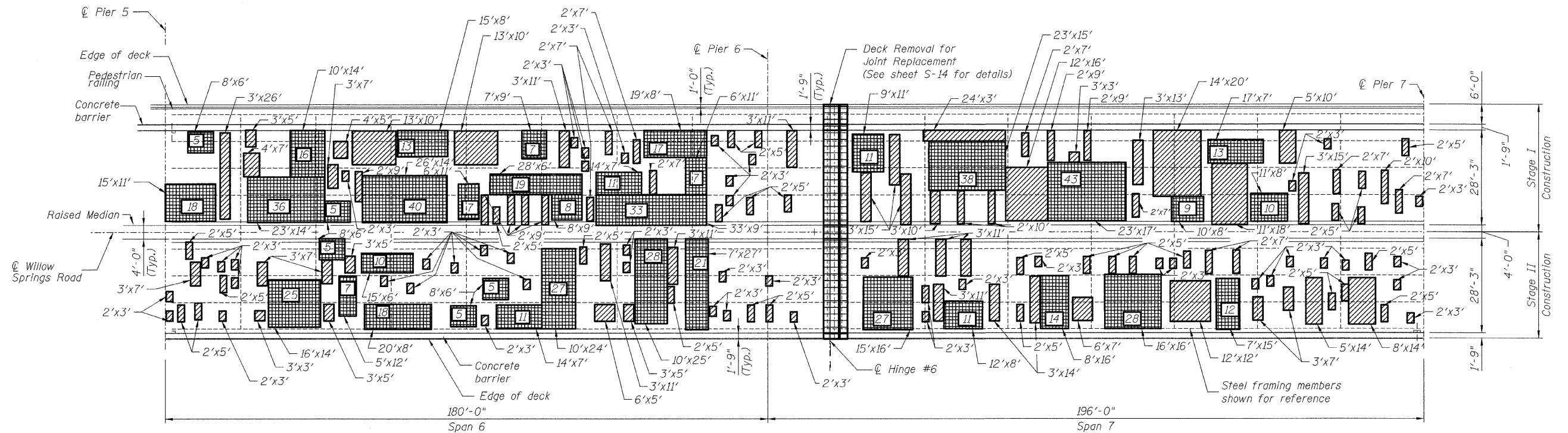
DESIGNED **B. Sauter**
CHECKED **E. Mroczek**
DRAWN **R. Danley**
CHECKED **B. Sauter**

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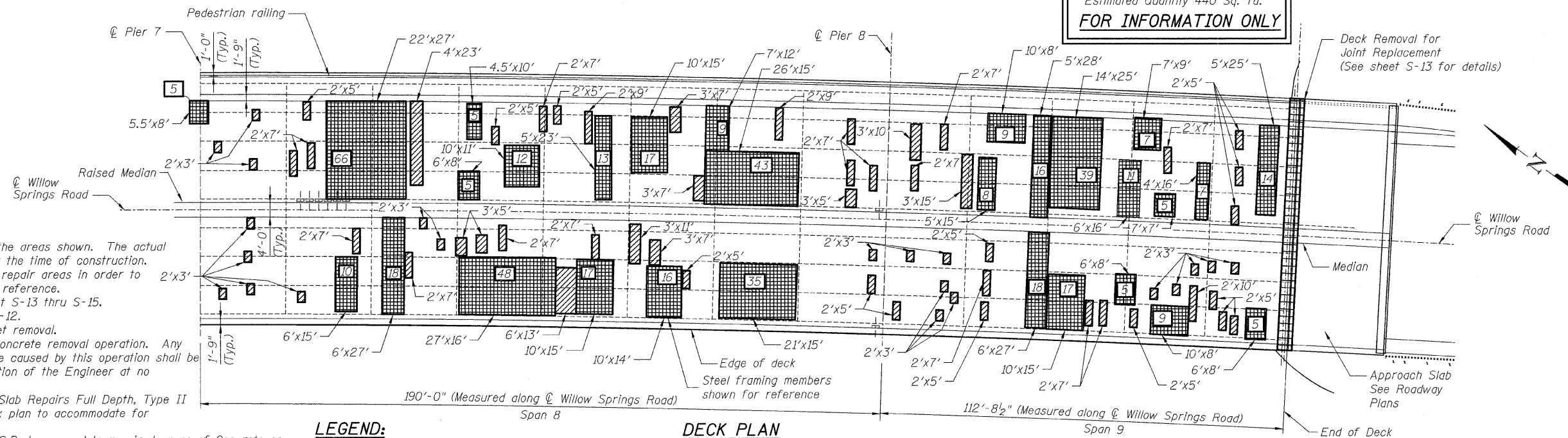
SHEET NO. S-7 S-27 SHEETS	F.A.U. RTE. 2697	SECTION 142 B-1-I	COUNTY COOK	TOTAL SHEETS 48	SHEET NO. 21
	CONTRACT NO. 60D89				
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT			

2/4/2009 rdanley

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



DECK PLAN



DECK PLAN

Deck Slab Repair (Partial Depth)
Estimated Quantity 440 Sq. Yd.
FOR INFORMATION ONLY

NOTES:

- Repairs shall include but not be limited to the areas shown. The actual areas to be determined by the Engineer at the time of construction.
- The Engineer shall record the actual deck repair areas in order to document as-built conditions for the future reference.
- For expansion joint rehabilitation, see sheet S-13 thru S-15.
- For parapet repairs see sheet S-9 thru S-12.
- Concrete Removal includes deck and parapet removal.
- Contractor shall use extreme care in the concrete removal operation. Any spalling, beam, shear stud or rebar damage caused by this operation shall be repaired by the Contractor to the satisfaction of the Engineer at no additional cost to the Department.
- Quantities in the Bill of Material for Deck Slab Repairs Full Depth, Type II are 10% greater than areas shown on deck plan to accommodate for degradation since last delamination survey.
- Protective coat shall be applied to N.B. & S.B. Lanes and to repaired areas of Concrete on Parapets and median.
- Existing reinforcement in the deck shall be cleaned and incorporated into the repairs. Cost included with Deck Slab Repair (Full Depth, Type II).

LEGEND:

- Deck Slab Repair (Full Depth), Type II
X denotes estimated quantity in Sq. Yd.
- Concrete removal for expansion joint replacement
- Deck Slab Repair (Partial Depth)
For information only. Quantity included with Bridge Deck Hydro-Scarification 1"

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Hot-Mix Asphalt Surface Removal (Deck)	Sq. Yd.	4,261
Concrete Removal	Cu. Yd.	31.6
Bridge Deck Grooving	Sq. Yd.	3,959
Protective Coat	Sq. Yd.	4,273
Bridge Deck Latex Concrete Overlay, 2 1/2 inches	Sq. Yd.	4,201
Bridge Deck Hydro-Scarification 1"	Sq. Yd.	4,261
Deck Slab Repair (Full Depth, Type II)	Sq. Yd.	1,180

SUPERSTRUCTURE REPAIRS II

S.N. 016-0540

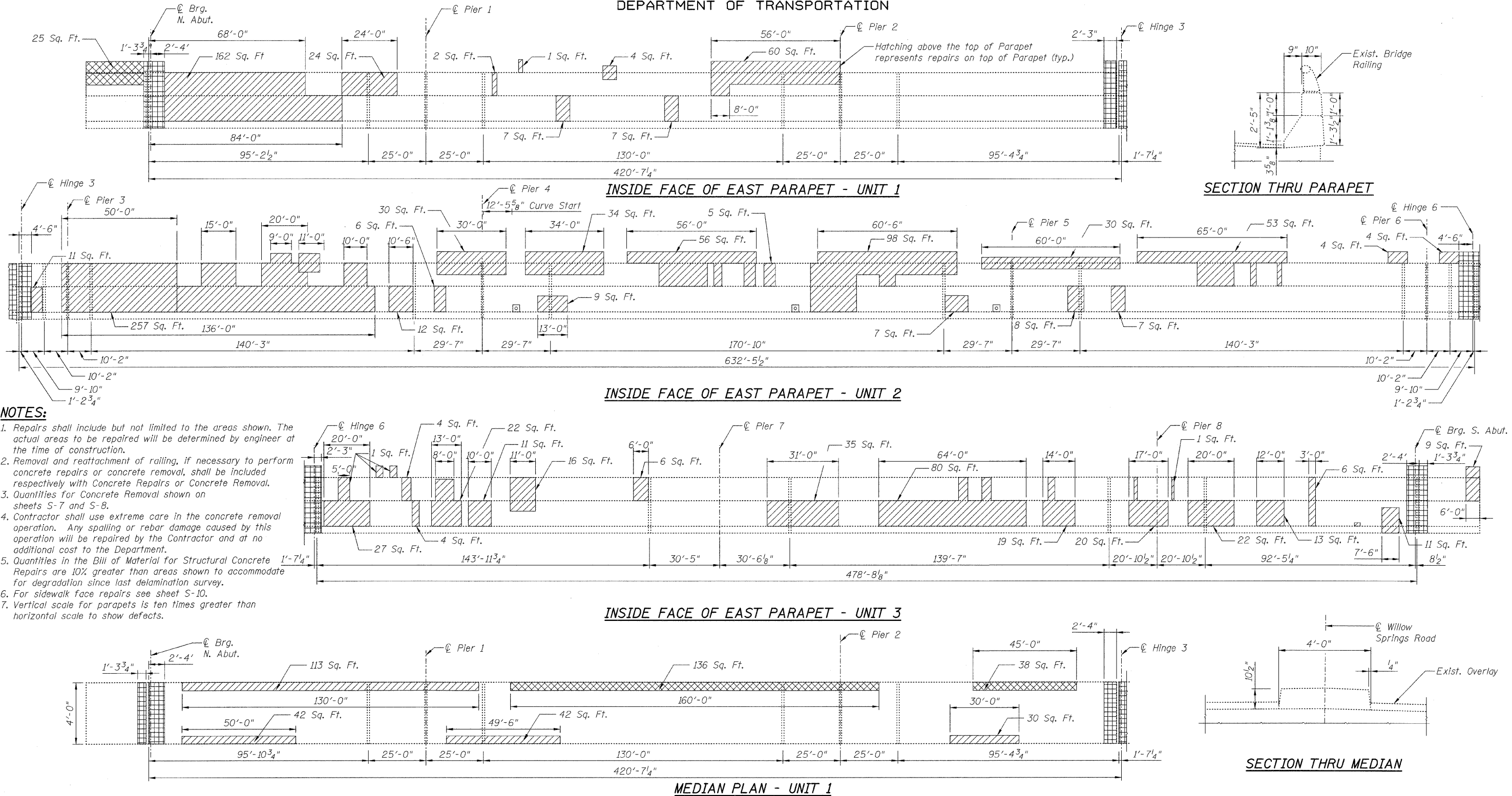
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FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT		
CONTRACT NO. 60D89					

DESIGNED	B. Sauter
CHECKED	E. Mroczek
DRAWN	R. Danley
CHECKED	B. Sauter



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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



NOTES:

- Repairs shall include but not limited to the areas shown. The actual areas to be repaired will be determined by engineer at the time of construction.
- Removal and reattachment of railing, if necessary to perform concrete repairs or concrete removal, shall be included respectively with Concrete Repairs or Concrete Removal.
- Quantities for Concrete Removal shown on sheets S-7 and S-8.
- Contractor shall use extreme care in the concrete removal operation. Any spalling or rebar damage caused by this operation will be repaired by the Contractor and at no additional cost to the Department.
- Quantities in the Bill of Material for Structural Concrete Repairs are 10% greater than areas shown to accommodate for degradation since last delamination survey.
- For sidewalk face repairs see sheet S-10.
- Vertical scale for parapets is ten times greater than horizontal scale to show defects.

LEGEND:

- Structural Repair of Concrete (Depth Equal to or Less than 5 inches)
- Structural Repair of Concrete (Depth Greater than 5 inches)
- Concrete Removal
- Electrical Box

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Structural Concrete Repairs (Depth Equal to or Less than 5 inches)	Sq. Ft.	1,433
Structural Concrete Repairs (Depth Greater than 5 inches)	Sq. Ft.	216
Protective Coat	Sq. Yd.	203

SUPERSTRUCTURE REPAIRS III
S.N. 016-0540

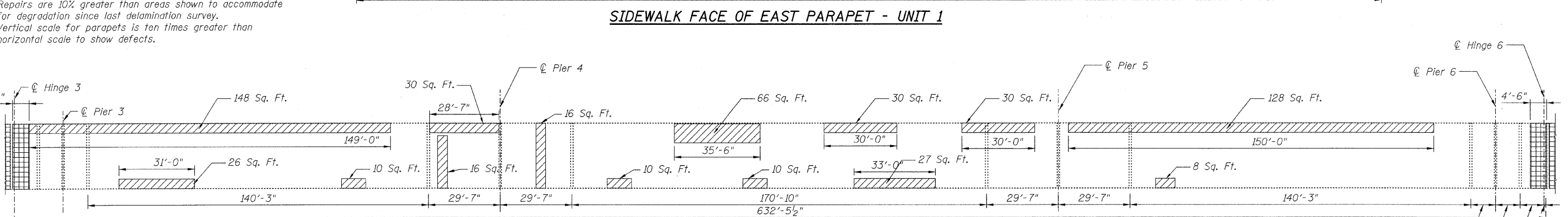
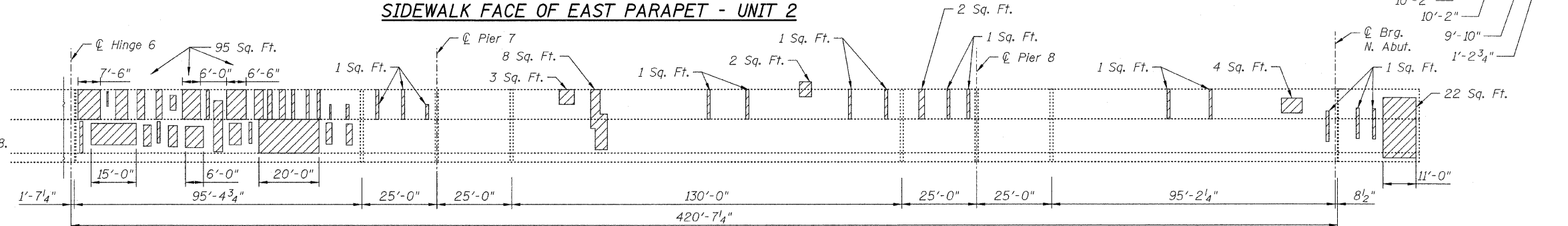
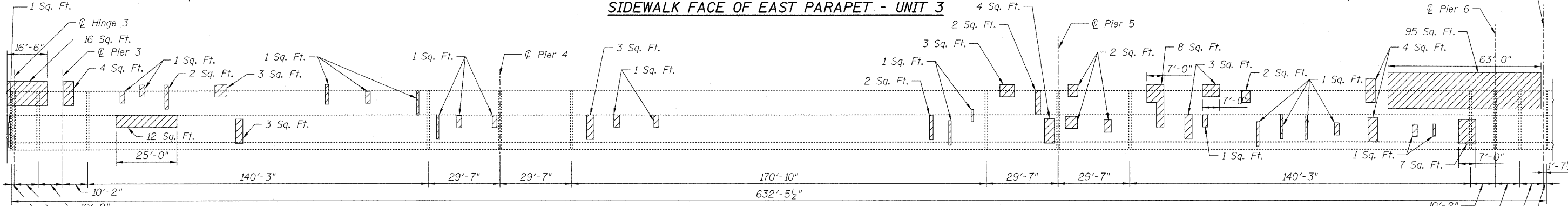
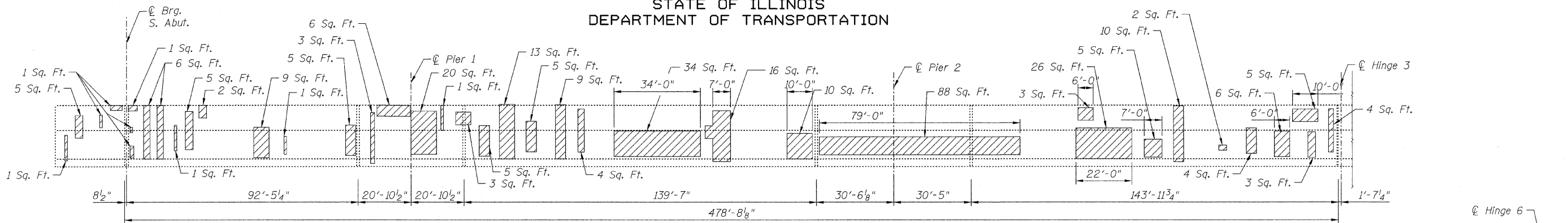
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	CONTRACT NO. 60D89			FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT	

DESIGNED	B. Sauter
CHECKED	E. Mroczek
DRAWN	R. Danley
CHECKED	B. Sauter



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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



- NOTES:**
- Repairs shall include but not limited to the areas shown. The actual areas to be repaired will be determined by engineer - at the time of construction.
 - Removal and reattachment of railing, if necessary to perform concrete repairs or concrete removal, shall be included respectively with Concrete Repairs or Concrete Removal.
 - Quantities for Concrete Removal shown on sheets S-7 and S-8.
 - Contractor shall use extreme care in the concrete removal operation. Any spalling or rebar damage caused by this operation will be repaired by the Contractor and at no additional cost to the Department.
 - Quantities in the Bill of Material for Structural Concrete Repairs are 10% greater than areas shown to accommodate for degradation since last delamination survey.
 - Vertical scale for parapets is ten times greater than horizontal scale to show defects.

LEGEND:

Structural Repair of Concrete (Depth Equal to or Less than 5 inches)

Concrete Removal

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Structural Repair of Concrete (Depth Equal to or Less than 5 inches)	Sq. Ft.	1,241
Protective Coat	Sq. Yd.	142

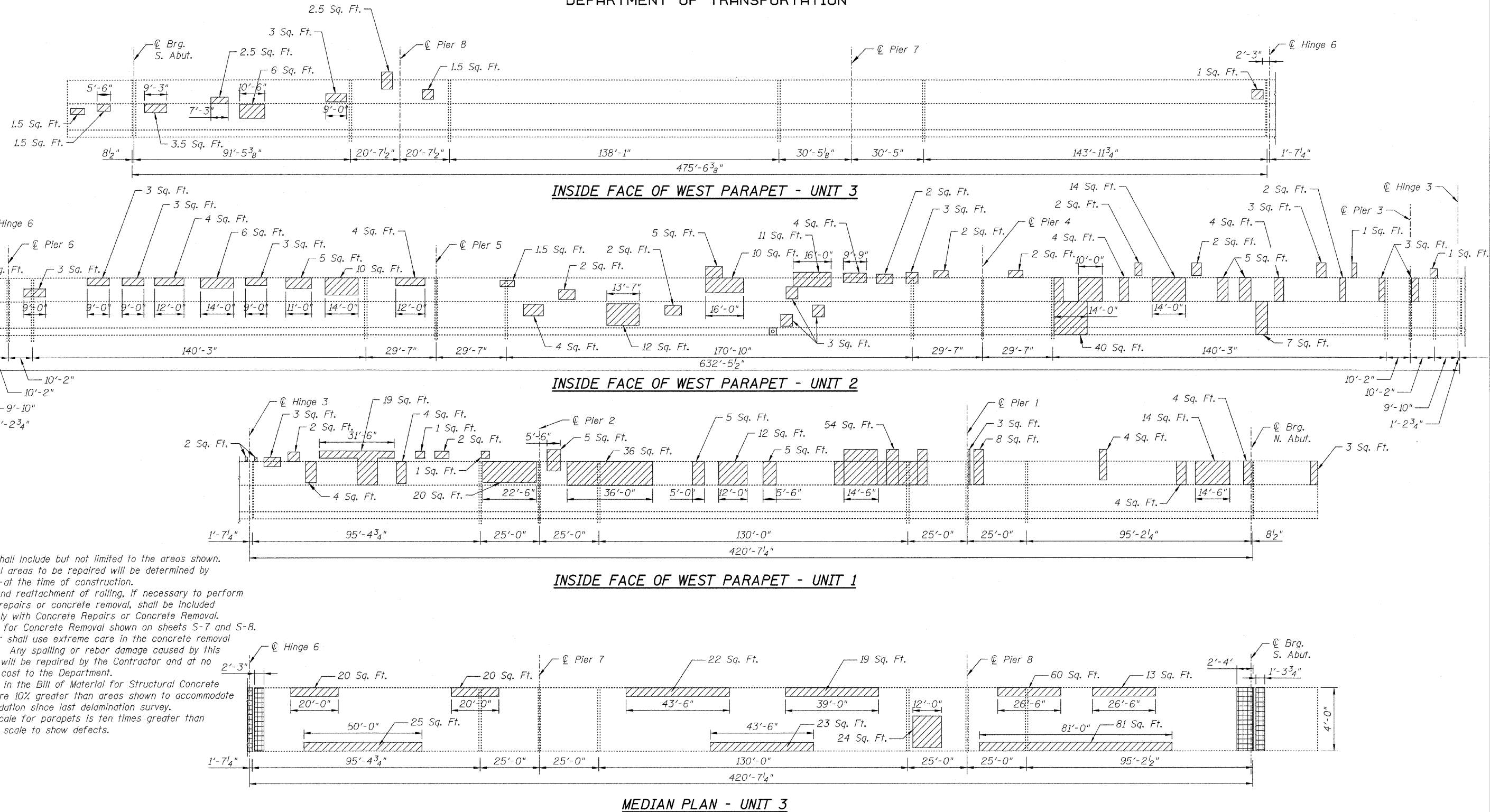
DESIGNED	B. Sauter
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DRAWN	R. Danley
CHECKED	B. Sauter

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SUPERSTRUCTURE REPAIRS IV
S.N. 016-0540

SHEET NO. S-10 S-27 SHEETS	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	2697	142 B-1-I	COOK	48	24
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT		
CONTRACT NO. 60D89					

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



NOTES:

- Repairs shall include but not limited to the areas shown. The actual areas to be repaired will be determined by engineer - at the time of construction.
- Removal and reattachment of railing, if necessary to perform concrete repairs or concrete removal, shall be included respectively with Concrete Repairs or Concrete Removal.
- Quantities for Concrete Removal shown on sheets S-7 and S-8.
- Contractor shall use extreme care in the concrete removal operation. Any spalling or rebar damage caused by this operation will be repaired by the Contractor and at no additional cost to the Department.
- Quantities in the Bill of Material for Structural Concrete Repairs are 10% greater than areas shown to accommodate for degradation since last delamination survey.
- Vertical scale for parapets is ten times greater than horizontal scale to show defects.

LEGEND:

- Structural Repair of Concrete (Depth Equal to or Less than 5 inches)
- Concrete Removal

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Structural Repair of Concrete (Depth Equal to or Less than 5 inches)	Sq. Ft.	755
Protective Coat	Sq. Yd.	86

**SUPERSTRUCTURE REPAIRS V
S.N. 016-0540**

DESIGNED	B. Sauter
CHECKED	E. Mroczek
DRAWN	R. Danley
CHECKED	B. Sauter

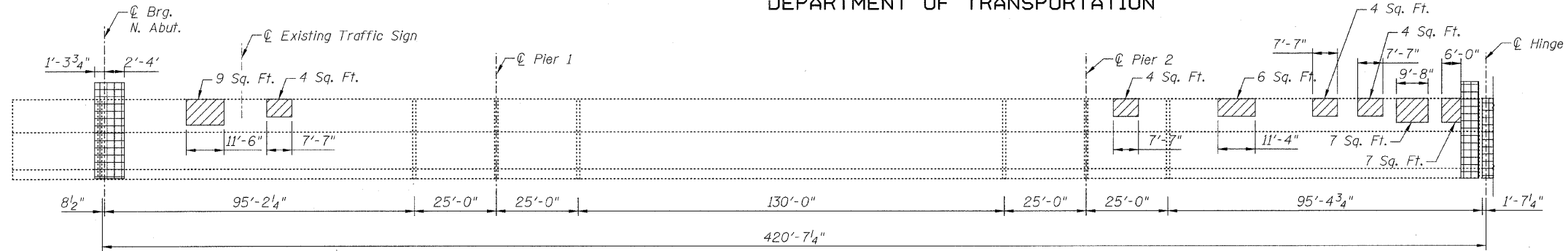


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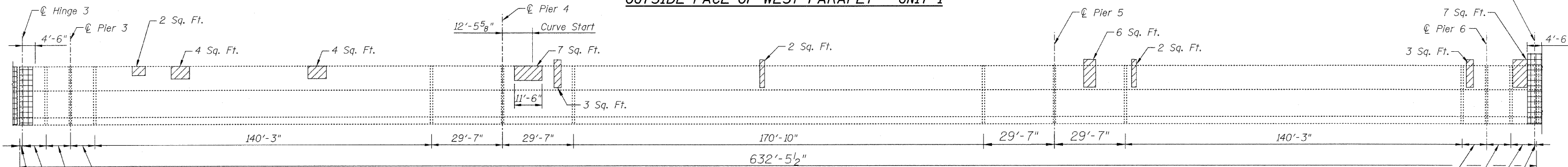
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	CONTRACT NO. 60D89			ILLINOIS FED. AID PROJECT	

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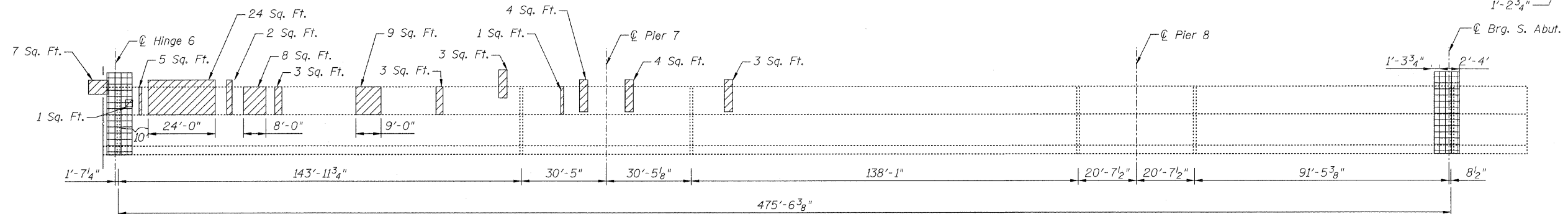
STATE OF ILLINOIS
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OUTSIDE FACE OF WEST PARAPET - UNIT 1



OUTSIDE FACE OF WEST PARAPET - UNIT 2



OUTSIDE FACE OF WEST PARAPET - UNIT 3

NOTES:

- Repairs shall include but not limited to the areas shown. The actual areas to be repaired will be determined by engineer - at the time of construction.
- Removal and reattachment of railing, if necessary to perform concrete repairs or concrete removal, shall be included respectively with Concrete Repairs or Concrete Removal.
- Quantities for Concrete Removal shown on sheets S-7 and S-8.
- Contractor shall use extreme care in the concrete removal operation. Any spalling or rebar damage caused by this operation will be repaired by the Contractor and at no additional cost to the Department.
- Quantities in the Bill of Material for Structural Concrete Repairs are 10% greater than areas shown to accommodate for degradation since last delamination survey.
- Vertical scale for parapets is ten times greater than horizontal scale to show defects.

LEGEND:

- Structural Repair of Concrete (Depth Equal to or Less than 5 Inches)
- Concrete Removal

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Structural Repair of Concrete (Depth Equal to or Less than 5 inches)	Sq. Ft.	162
Protective Coat	Sq. Yd.	32

**SUPERSTRUCTURE REPAIRS VI
S.N. 016-0540**

DESIGNED	B. Sauter
CHECKED	E. Mroczek
DRAWN	R. Danley
CHECKED	B. Sauter

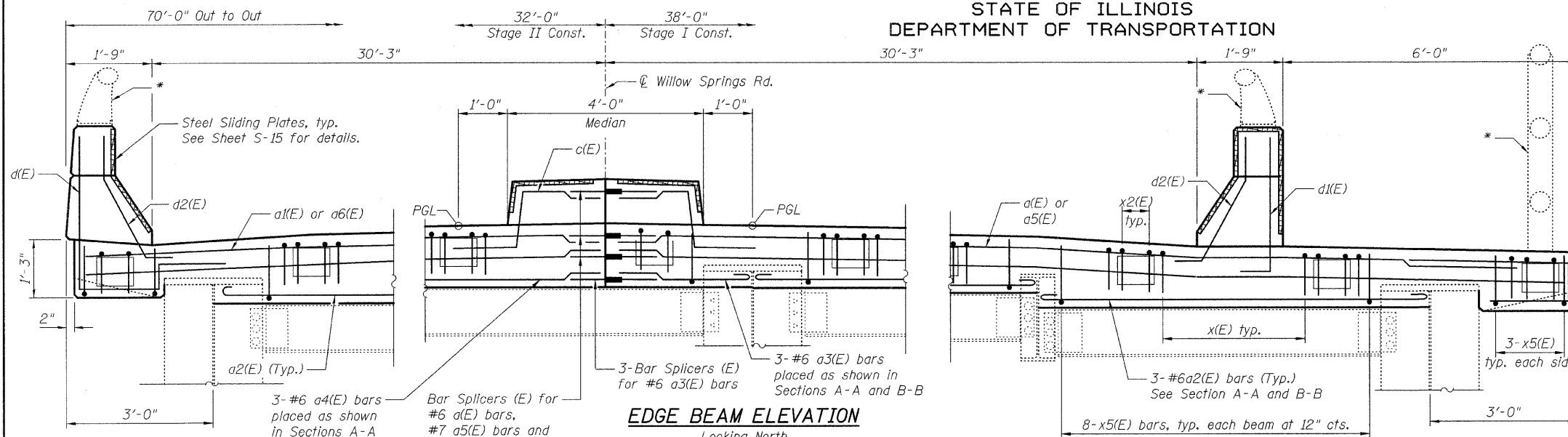


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SHEET NO. S-12 S-27 SHEETS	F.A.U. RTE. 2697	SECTION 142 B-1-I	COUNTY COOK	TOTAL SHEETS 48	SHEET NO. 26
	CONTRACT NO. 60D89				
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT					

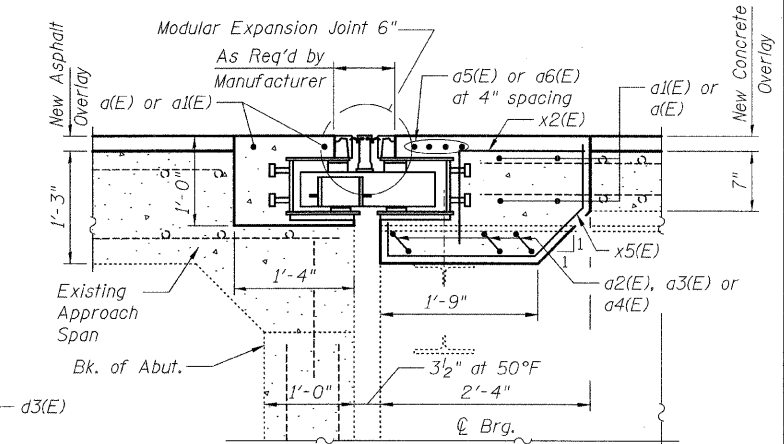
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



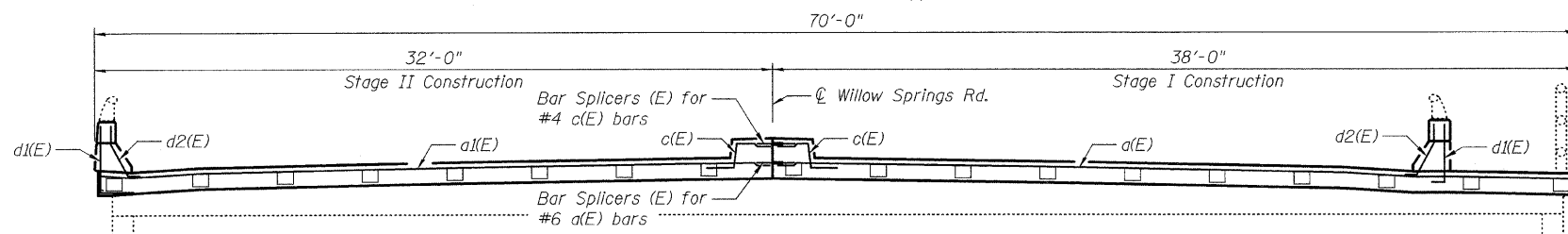
EDGE BEAM ELEVATION

Looking North
South Abutment Similar, opposite hand



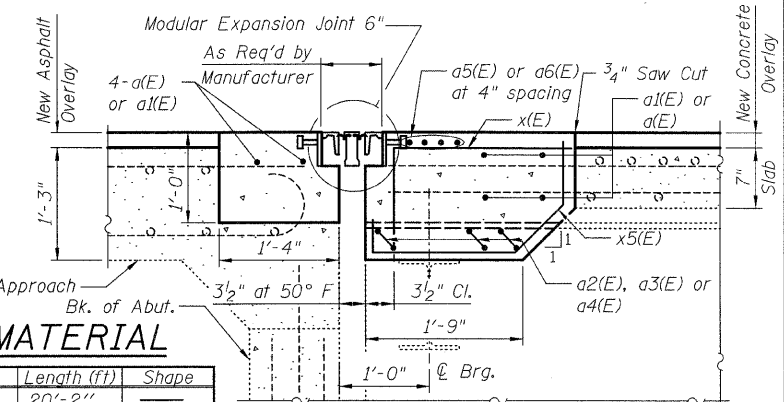
**SECTION A-A
THRU MODULAR JOINT SUPPORT BOX**

The Support Box must be rigidly attached to the abutment per the manufacturer's specifications. Space Support Box 2' from ϕ girders and stringers at 4" spacing.

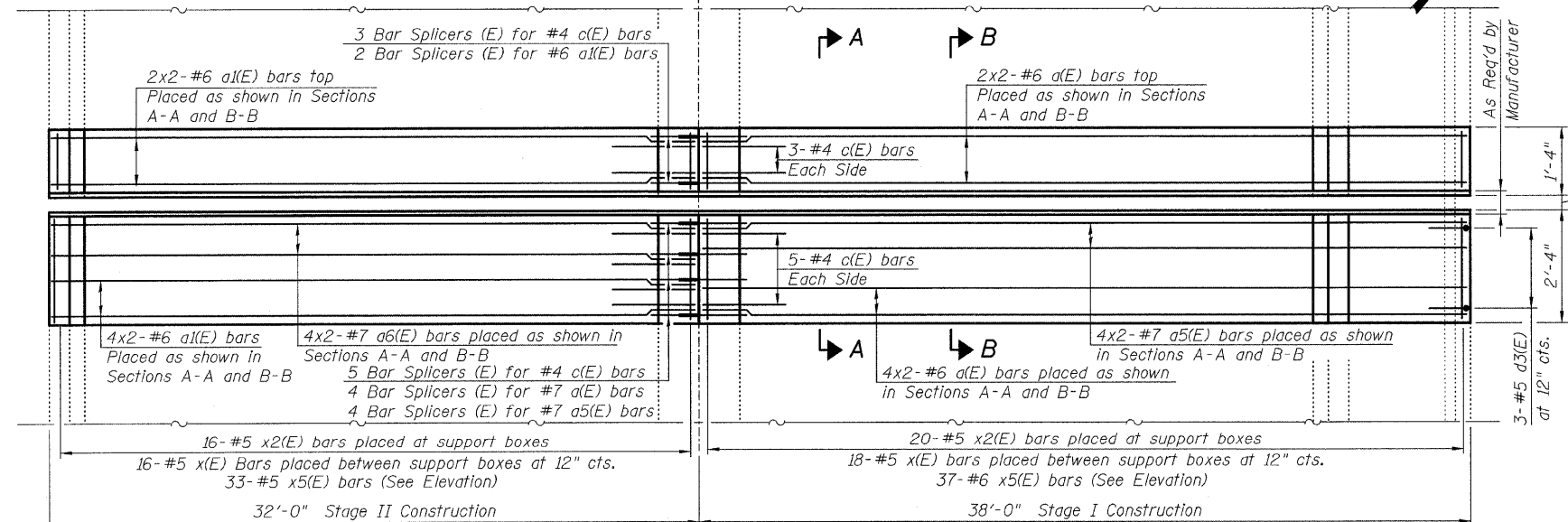


NORTH ABUTMENT ELEVATION

Looking North
South Abutment Similar, opposite hand



**SECTION B-B
THRU ABUTMENT**



NORTH ABUTMENT PLAN

South Abutment similar by rotation

BILL OF MATERIAL

Bar	No.	Size	Length (ft)	Shape
a(E)	112	# 6	20'-2"	
a1(E)	112	# 6	17'-2"	
a2(E)	42	# 6	9'-1"	
a3(E)	6	# 6	3'-0"	
a4(E)	6	# 6	5'-5"	
a5(E)	16	# 7	21'-3"	
a6(E)	16	# 7	18'-3"	
a7(E)	140	# 6	10'-5"	
a8(E)	20	# 6	5'-1"	
a9(E)	20	# 6	7'-1"	
c(E)	84	# 4	2'-10"	
d(E)	22	# 5	7'-0"	
d1(E)	30	# 5	3'-9"	
d2(E)	52	# 5	2'-5"	
d3(E)	44	# 5	7'-0"	
x(E)	136	# 5	2'-7"	
x1(E)	68	# 5	4'-11"	
x2(E)	144	# 5	1'-11"	
x3(E)	72	# 5	4'-1"	
x4(E)	140	# 5	4'-4"	
x5(E)	140	# 5	2'-4"	
x6(E)	140	# 5	1'-8"	
Concrete Superstructure	Cu. Yd.		70.0	
Reinforcement Bars, Epoxy Coated	Pound		14,240	
Modular Expansion Joint 6"	Foot		205	
Modular Expansion Joint 9"	Foot		68	

NOTES:

- Work this sheet with sheets S-14 & S-15.
- See sheet S-15 for existing and proposed parapet Elevations.
- Existing reinforcement shown should be blast cleaned, straightened and incorporated into new construction.
- Modular expansion joints shall be assembled in their final relative position with the ends in place for shop inspection and acceptance.
- Bars indicated thus 1 x 2 #5 etc. indicates 1 line of bars with 2 lengths per line.
- Bar bending detail shown on sheet S-14.
- No vehicular load will be allowed on the section of approach span under construction after concrete removal has begun for the block-out at the approach span and before the proposed concrete has attained the required strength.

**EXPANSION JOINT REPLACEMENT I
S.N. 016-0540**

DESIGNED B. Sauter
CHECKED E. Mroczek
DRAWN R. Danley
CHECKED B. Sauter



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MIN. LAP SPLICES

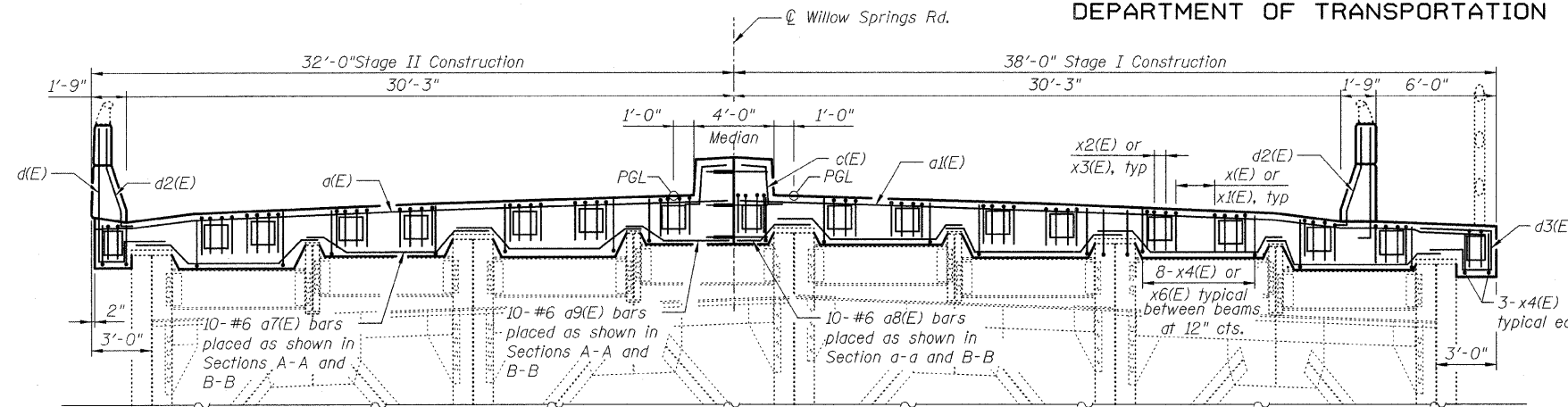
#6 bars- 2'-7"
#7 bars- 3'-5"

* Removal and reattachment of Railing
included in Concrete Removal

SHEET NO. S-13	F.A.U. RTE. 2697	SECTION 142 B-1-I	COUNTY COOK	TOTAL SHEETS 48	SHEET NO. 27
CONTRACT NO. 60D89					
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT					

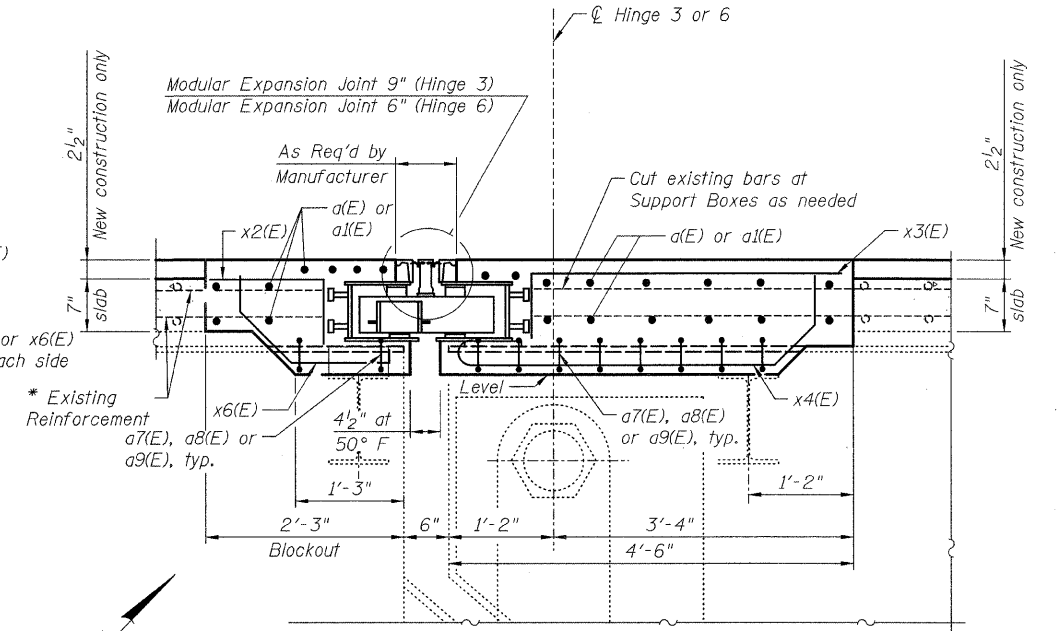
2/4/2009 rdanley
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 2/4/2009

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



HINGE 3 ELEVATION
Hinge 6 similar

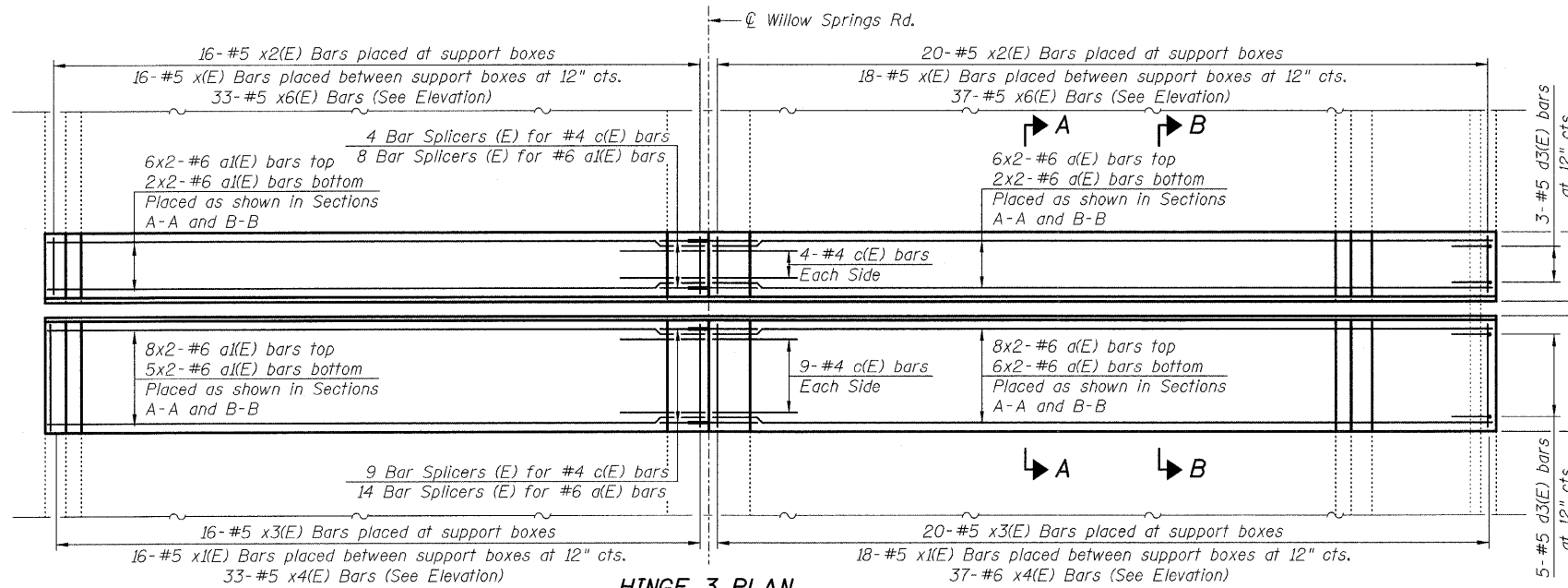
* Removal and replacement of Railing Included In Concrete Superstructure.



SECTION A-A
THRU MODULAR JOINT SUPPORT BOX

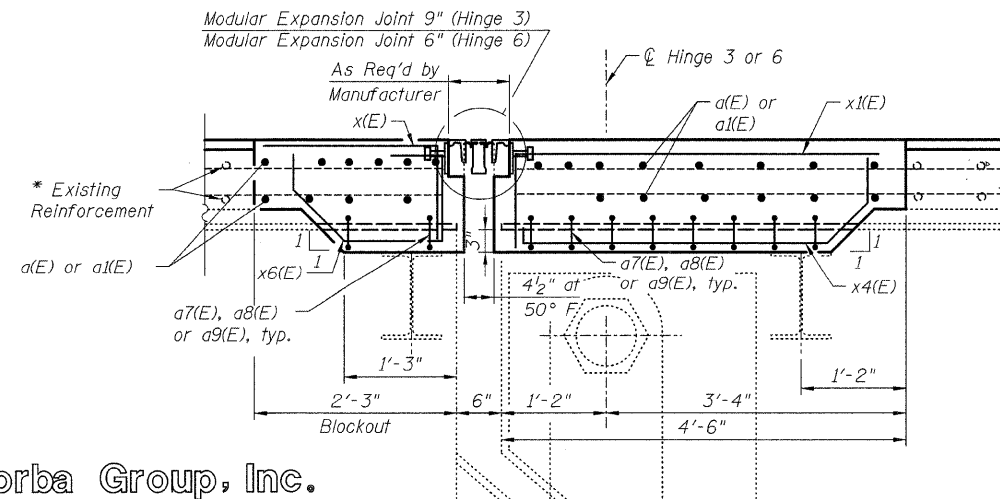
Space Support Boxes 2' from \varnothing Girder and stringers at 4' spacing.

* Existing reinforcement shown should be blast cleaned, straightened, and incorporated into new construction.

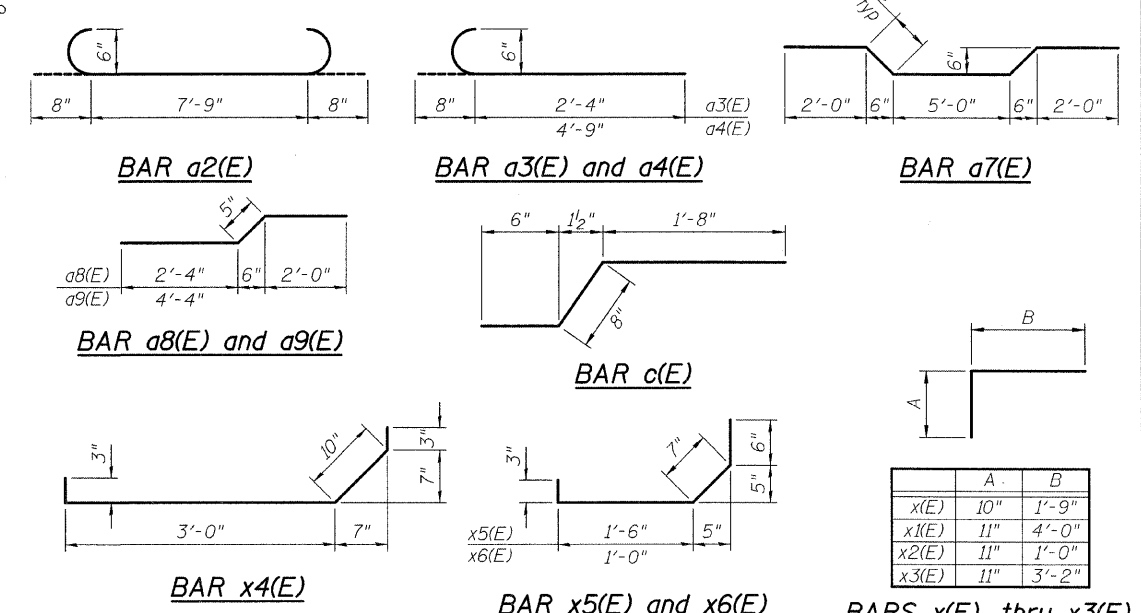


HINGE 3 PLAN

Hinge 6 similar by rotation



SECTION B-B



	A	B
x(E)	10"	1'-9"
x1(E)	11"	4'-0"
x2(E)	11"	1'-0"
x3(E)	11"	3'-2"

NOTES:

1. Reinforced bars designated (E) shall be epoxy coated.
2. Work this sheet with S-13 & S-15.
3. Bars indicated thus 1x2 #5 etc. indicates 1 line of bars with 2 lengths per line.
4. Modular expansion joints shall be assembled in their final relative position with the ends in place for shop inspection and acceptance.
5. Bill of Material shown on sheet S-13.
6. See sheet S-15 for existing and proposed parapet Elevations.

MIN. LAP SPLICES

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

EXPANSION JOINT REPLACEMENT II

S.N. 016-0540

SHEET NO. S-14 S-27 SHEETS	F.A.U. RTE. 2697	SECTION 142 B-1-I	COUNTY COOK	TOTAL SHEETS 48	SHEET NO. 28
	CONTRACT NO. 60D89			ILLINOIS FED. AID PROJECT	

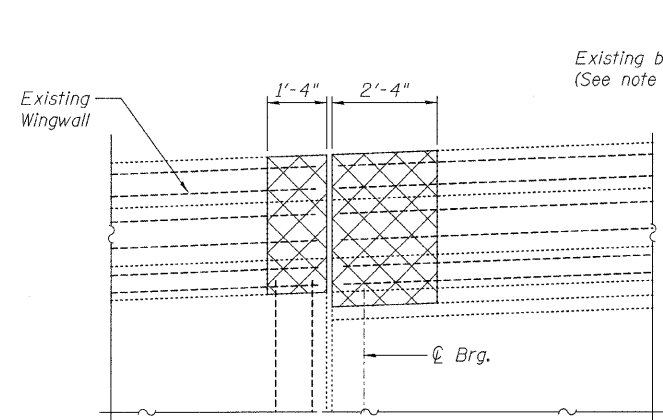
DESIGNED	B. Sauter
CHECKED	E. Mroczek
DRAWN	R. Danley
CHECKED	B. Sauter



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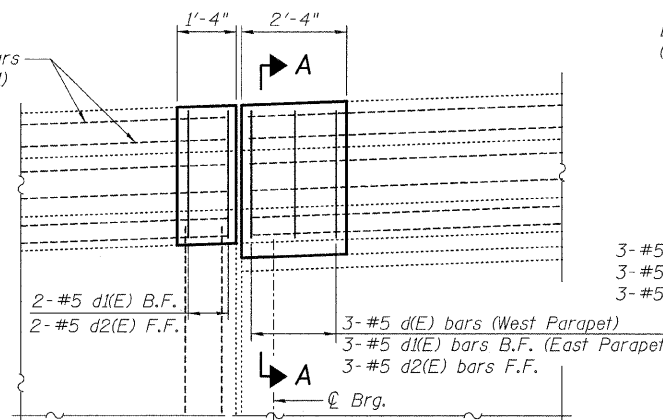
2/4/2009
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 2/4/2009
 rdanley

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



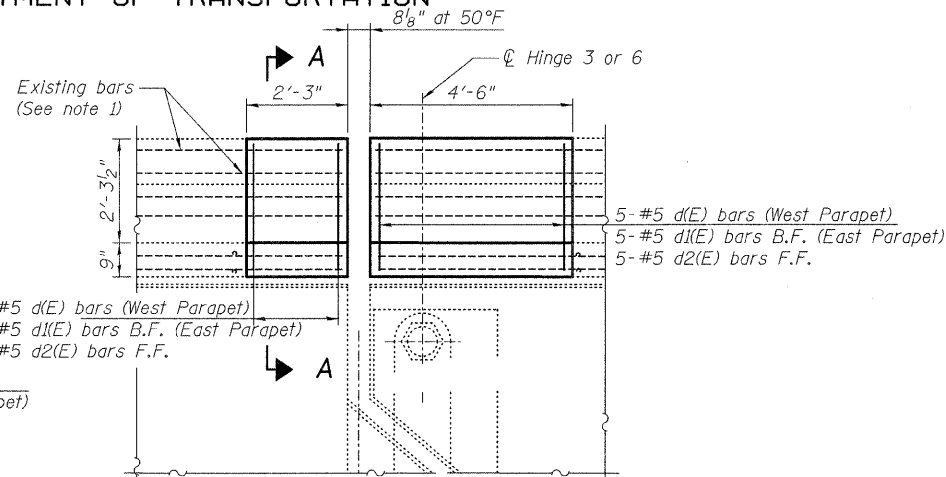
**PARAPET REMOVAL
AT ABUTMENTS**

Southwest Wingwall shown
(Three other locations similar)



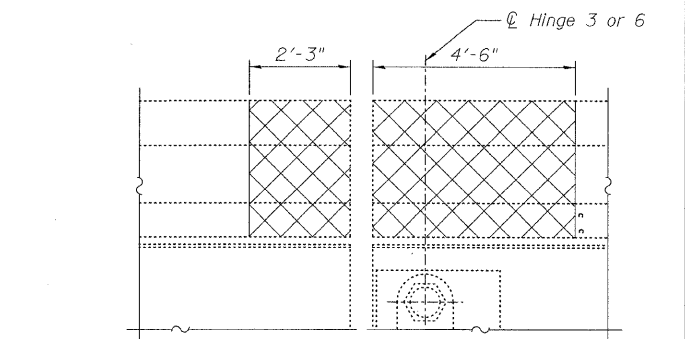
**PROPOSED PARAPET ELEVATION
AT ABUTMENTS**

Southwest Wingwall shown
(Three other locations similar)

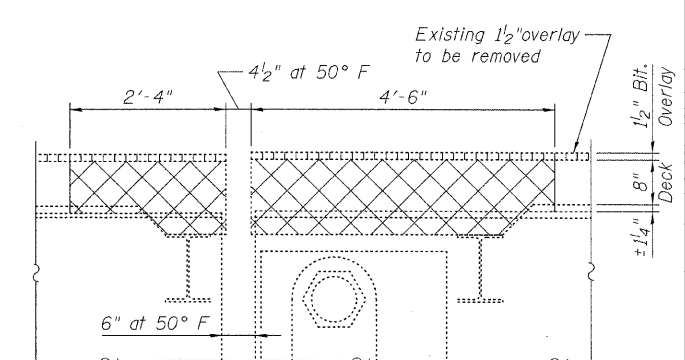


**PROPOSED PARAPET ELEVATION
AT HINGES**

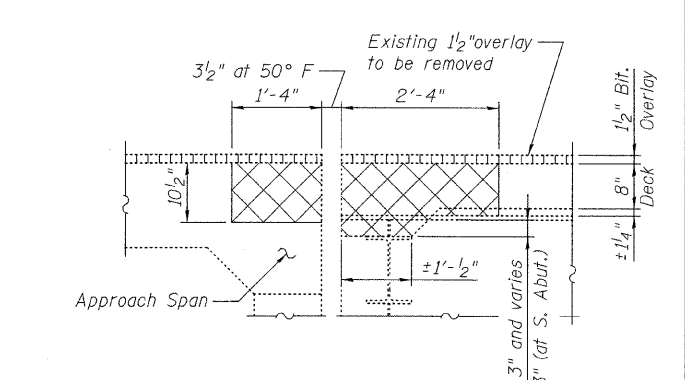
Hinge 3 Northside shown
(Three other locations similar)



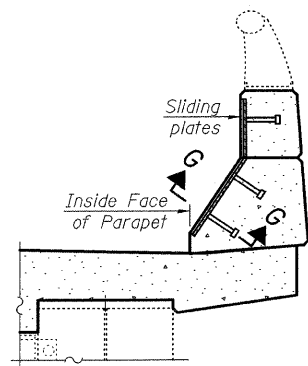
PARAPET REMOVAL AT HINGES



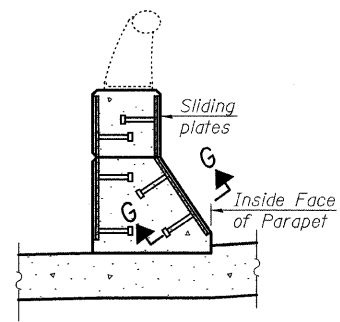
CONCRETE REMOVAL AT HINGES



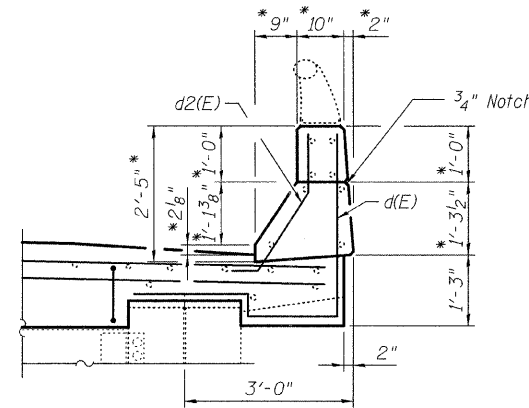
CONCRETE REMOVAL AT ABUTMENTS



SECTION THRU WEST PARAPET

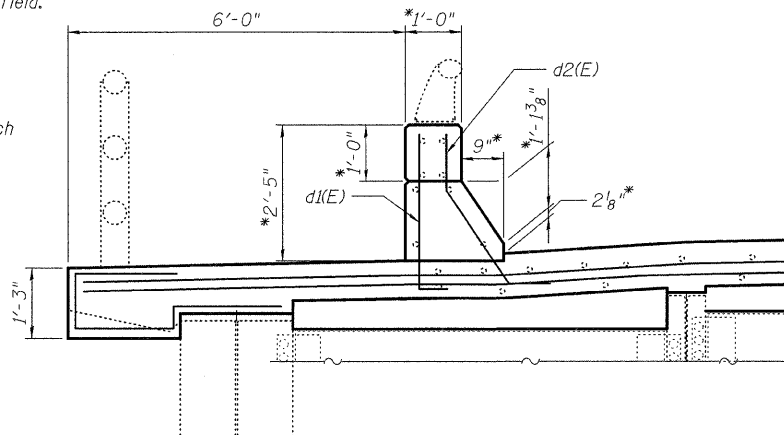


SECTION THRU EAST PARAPET



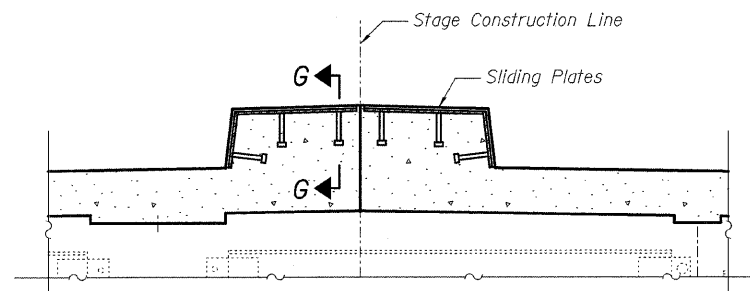
SECTION A-A

Typical East Parapet

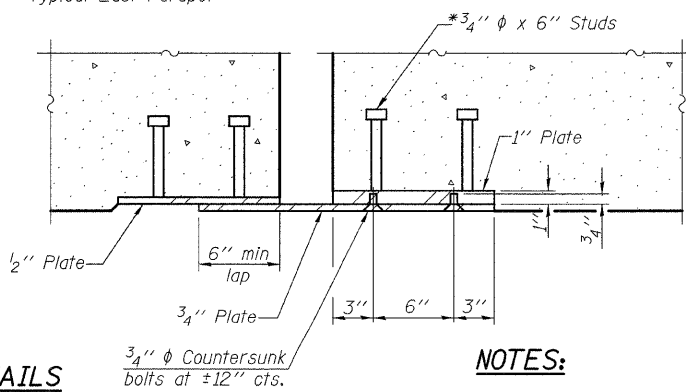


SECTION A-A

Typical West Parapet



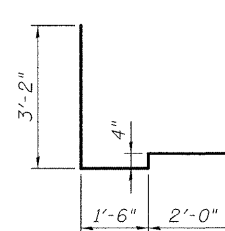
SECTION THRU MEDIAN



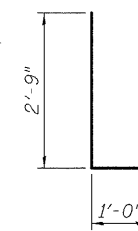
STEEL PLATE DETAILS

Included in the Modular Expansion Joint, 9"

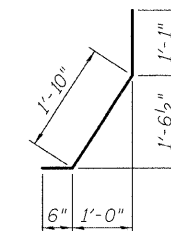
SECTION G-G



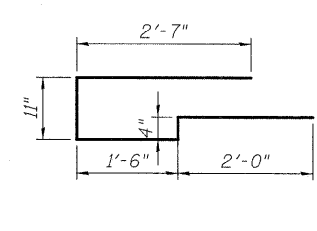
BAR d(E)



BAR d1(E)



BAR d2(E)



BAR d3(E)

NOTES:

- Existing vertical reinforcement protruding from the wingwall and horizontal reinforcement protruding from the existing parapet to remain in place. The existing reinforcement shall be sandblasted clean, straightened and incorporated into the new construction.
- Work this sheet with sheet S-13 and S-14.
- Quantities for concrete removal shown on sheet S-7 & S-8.
- Quantities for concrete superstructure and rebar shown on sheet S-13.

LEGEND:

Concrete Removal

DESIGNED	B. Sauter
CHECKED	E. Mroczek
DRAWN	R. Danley
CHECKED	B. Sauter



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**EXPANSION JOINT REPLACEMENT III
S.N. 016-0540**

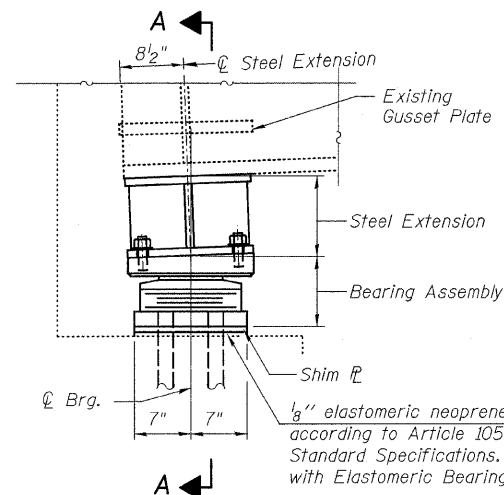
SHEET NO. S-15 S-27 SHEETS	F.A.U. RTE. 2697	SECTION 142 B-1-I	COUNTY COOK	TOTAL SHEETS 48	SHEET NO. 29
	CONTRACT NO. 60D89				
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

rdanley

2/4/2009

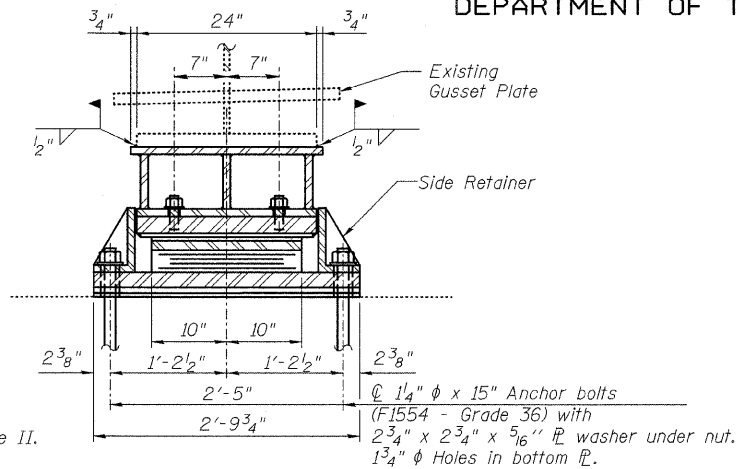
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

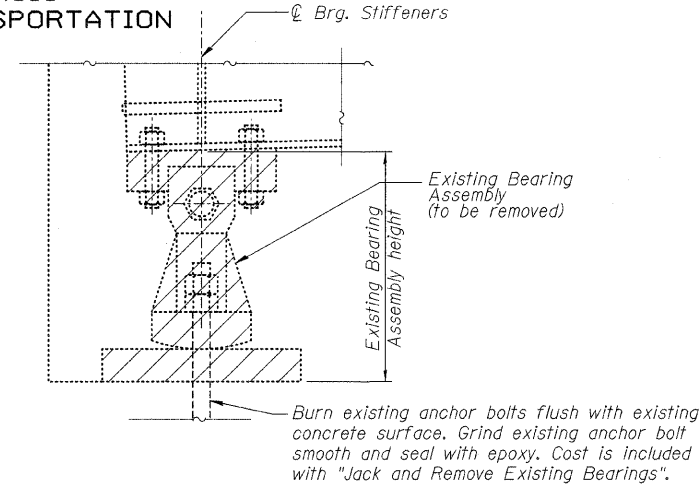


ELEVATION AT N. ABUT.

TYPE II ELASTOMERIC EXP. BRG.



SECTION A-A



EXISTING BEARING REMOVAL DETAIL

Girder	Exist. Brg. Assembly Height (survey) *	H**
A	21"	7 ³ / ₄ "
B	21 ⁵ / ₈ "	7 ³ / ₄ "
C	20 ⁵ / ₈ "	7 ¹ / ₈ "
D	20 ⁵ / ₈ "	7 ³ / ₄ "
E	20 ³ / ₈ "	7 ¹ / ₈ "

* Distances to be verified in the field prior to ordering any material.

** Adjust "H" accordingly if verified exist. bearing assembly height differs from the height in the table.

NOTES:

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

Anchor bolts for Type II bearings shall be placed in holes drilled in the concrete through holes in the bottom bearing plate after members are in place. Side retainers shall be placed after bolts are installed.

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

Side retainers and other steel members required for the bearing assembly shall be included in the cost of Elastomeric Bearing Assembly, Type II.

The 1/8" PTFE sheet shall be bonded directly to the top steel plate with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MMM-A-134, Type I. The bond agent shall be applied on the full area of the contact surfaces.

Bonding of 1/8" PTFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.

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

Prior to ordering any material the Contractor shall verify in the field all bearing height and shim thickness dimensions. Weight of steel extensions include in the cost of Furnishing and Erecting Structural Steel.

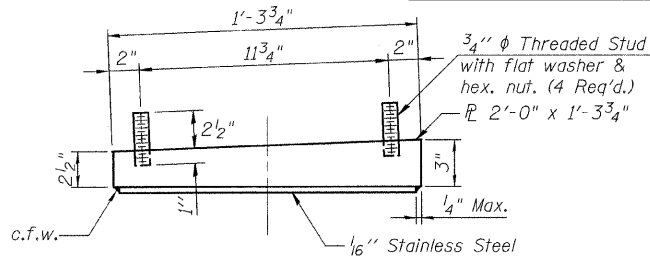
BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type II	Each	5
Jack and Remove Existing Bearings	Each	5
Anchor Bolts 1/4" φ	Each	20
Furnishing and Erecting Structural Steel	Pound	1,820

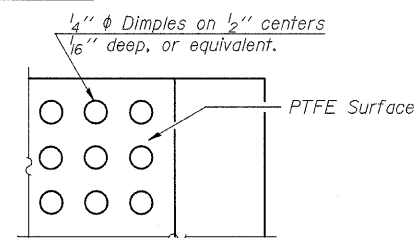
NORTH ABUTMENT BEARINGS
S.N. 016-0540

REACTION TABLE

North Abutment	
R _{DL} (k)	105.7
R _{LL} (k)	85.0
R _T (k)	23.0
R _{TOTAL} (k)	213.7



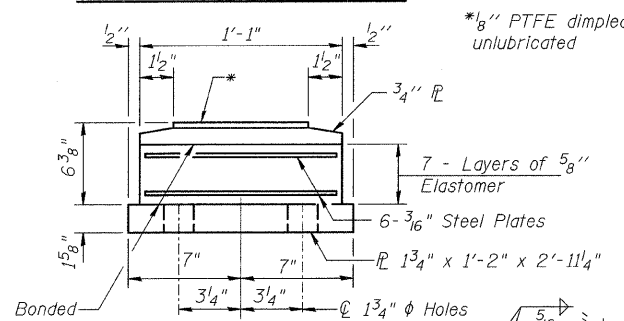
TOP BEARING ASSEMBLY



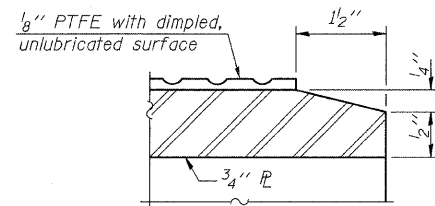
PLAN-PTFE SURFACE

JACKING AND CRIBBING NOTES:

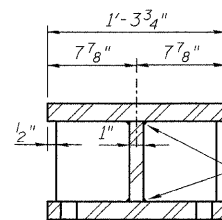
- The Contractor shall submit for approval by the Engineer, plans for jacking prior to commencing any work at the bearings.
- The maximum differential lift between beams at any one substructure unit shall be limited to 1/8".
- Traffic shall be removed from the portion of the structure to be jacked prior to commencing jacking operations. Traffic shall be kept off that portion of the structure during the entire bearing replacement operation. The maximum reaction per bearing is 150 K at the N. Abut. for stage constr. Minimum jack capacity is 150 tons.
- The new bearing shall be in place and the jacks lowered prior to allowing traffic back on that portion of the structure.



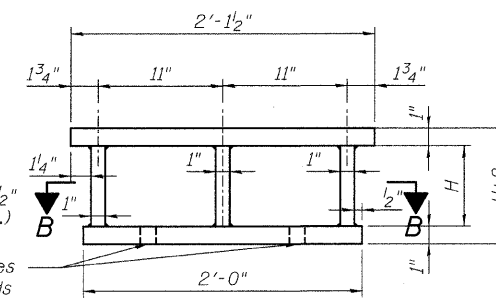
BOTTOM BEARING ASSEMBLY



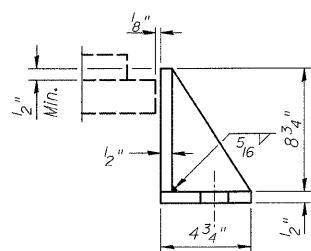
SECTION THRU PTFE



SECTION D-D

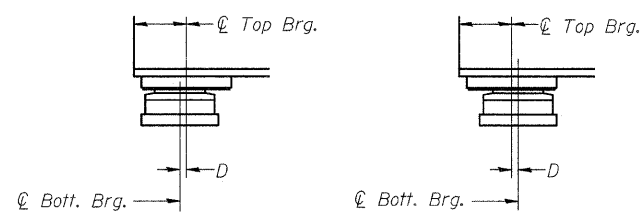


ELEVATION



SIDE RETAINER

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.



BELOW 50°F.

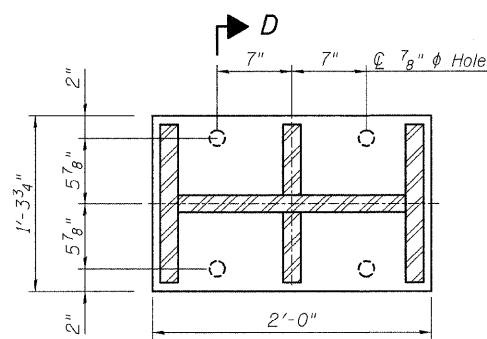
(Move bott. brg. away from fixed brg.)

ABOVE 50°F.

(Move bott. brg. toward fixed brg.)

SETTING ANCHOR BOLTS AT EXP. BRG.

D=1/8" per each 100' of expansion for every 15° temp. change from the normal temp. of 50°F.



SECTION B-B

DESIGNED	B. Sauter
CHECKED	E. Mroczek
DRAWN	R. Danley
CHECKED	B. Sauter

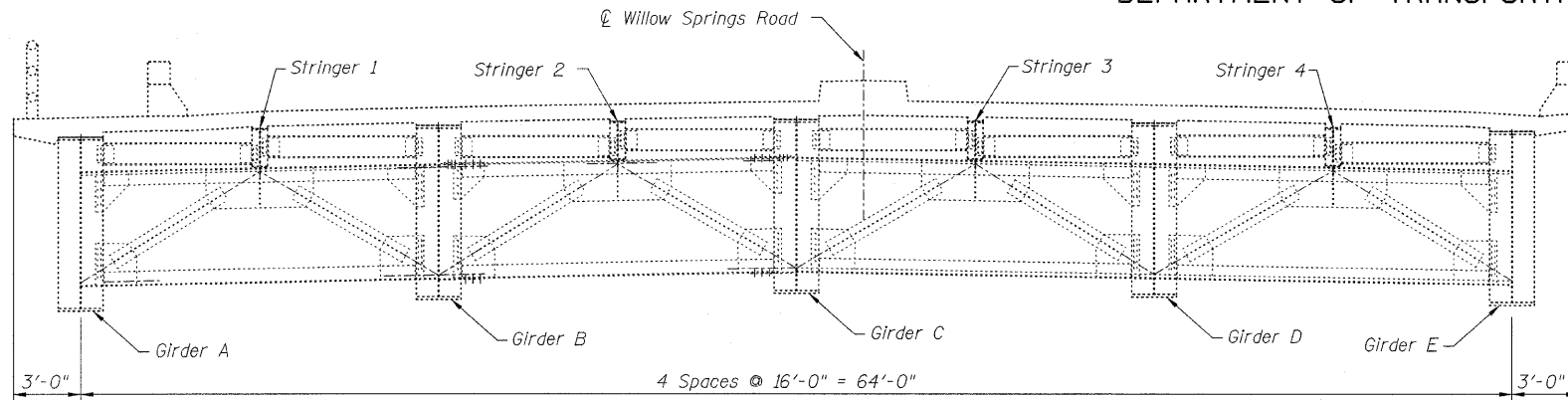


Giorba Group, Inc.

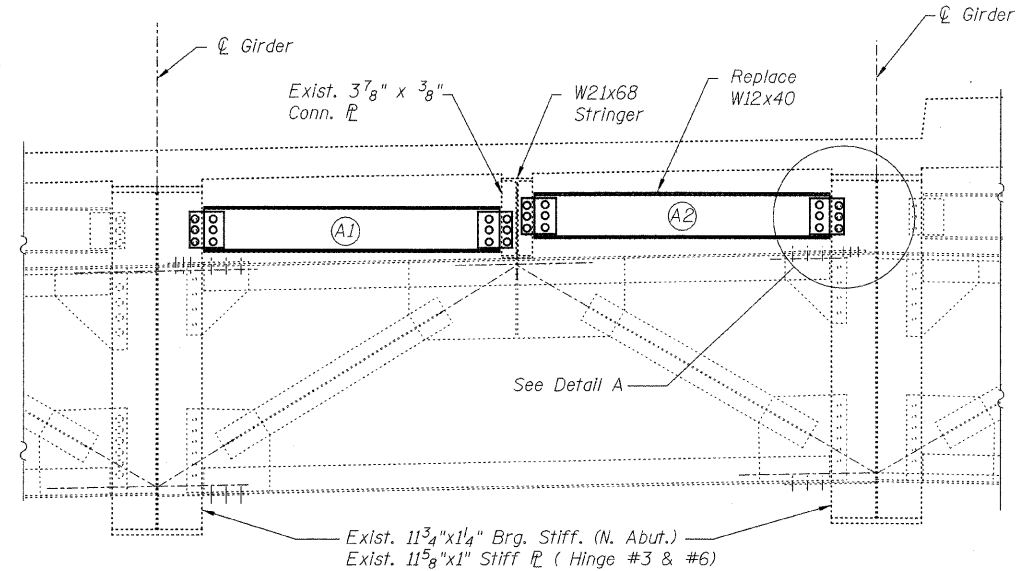
CONSULTING ENGINEERS
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SHEET NO. S-16	F.A.U. RTE. 2697	SECTION 142 B-1-I	COUNTY COOK	TOTAL SHEETS 48	SHEET NO. 30
S-27 SHEETS			CONTRACT NO. 60D89		
FED. ROAD DIST. NO.		ILLINOIS		FED. AID PROJECT	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

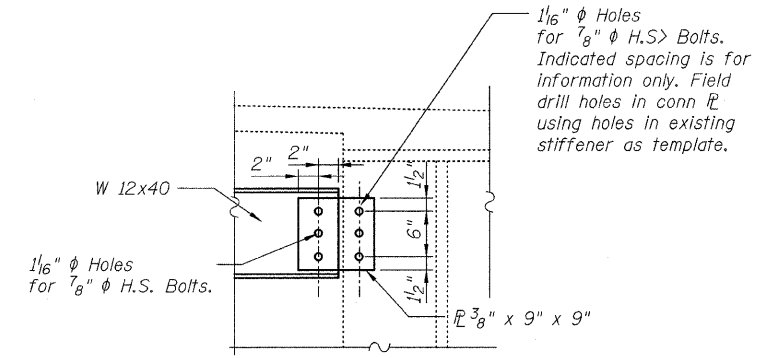


CROSS-FRAMES
(Looking South)



TYPICAL CROSS FRAME
Looking North at N. Abutment
Looking South at Hinge #3
Looking North at Hinge #6

		MEMBER	
		A1	A2
		Existing	Replace with
NORTH ABUTMENT	Girder A - Girder B	—	✓
	Girder B - Girder C	—	✓
	Girder C - Girder D	✓	✓
	Girder D - Girder E	✓	✓
NORTH SIDE OF HINGE #3	Girder A - Girder B	✓	✓
	Girder B - Girder C	✓	✓
	Girder C - Girder D	—	—
	Girder D - Girder E	—	—
SOUTH SIDE OF HINGE #6	Girder A - Girder B	✓	✓
	Girder B - Girder C	✓	✓
	Girder C - Girder D	—	—
	Girder D - Girder E	—	—



DETAIL A
Hardened washers are required on 1/16" diameter holes in 3/8" PL's.

NOTES:

- See Sheets S-25 thru S-27 for existing steel details.
- Existing welded connections to be removed using the air-arc method and grind smooth all weld material remaining. Cost included with Structural Steel Removal.
- Repairs shall include but not be limited to the members shown. The actual repairs to be determined by the Engineer at the time of construction.
- The Contractor is responsible for means and methods to ensure the complete stability of the structural members during construction.
- Steel repairs to be coordinated with Expansion Joint Replacement.

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Furnishing & Erecting Structural Steel	Pound	4,050
Structural Steel Removal	Pound	4,050

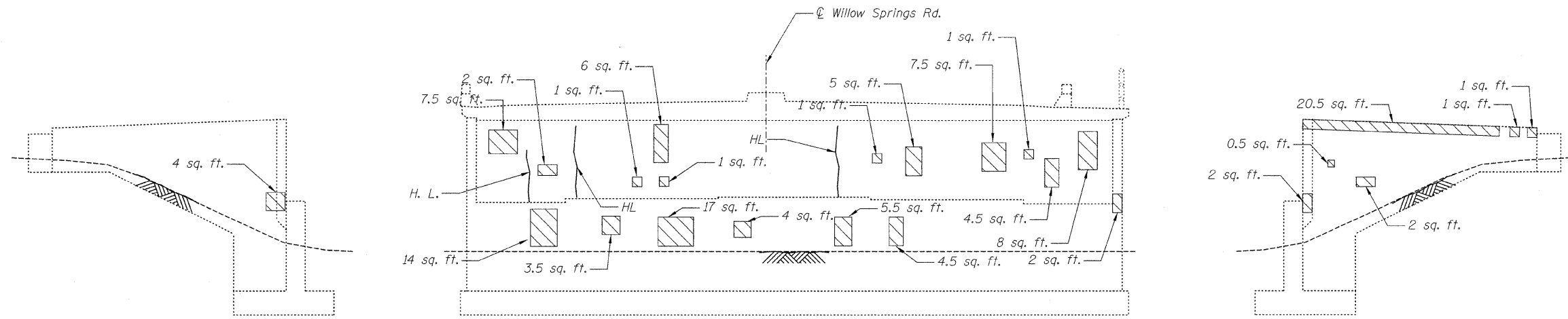
DESIGNED	B. Sauter
CHECKED	E. Mroozek
DRAWN	R. Danley
CHECKED	B. Sauter

Giorba Group, Inc.
CONSULTING ENGINEERS
5507 North Cumberland Avenue, Suite 402 Chicago, Illinois 60656
Tel. 773.775.4009 Fax 773.775.4014 Email chicago@giorba.com

STEEL REPAIRS
S.N. 016-0540

SHEET NO. S-17 S-27 SHEETS	F.A.U. RTE. 2697	SECTION 142 B-1-I	COUNTY COOK	TOTAL SHEETS 48	SHEET NO. 31
	CONTRACT NO. 60D89			FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



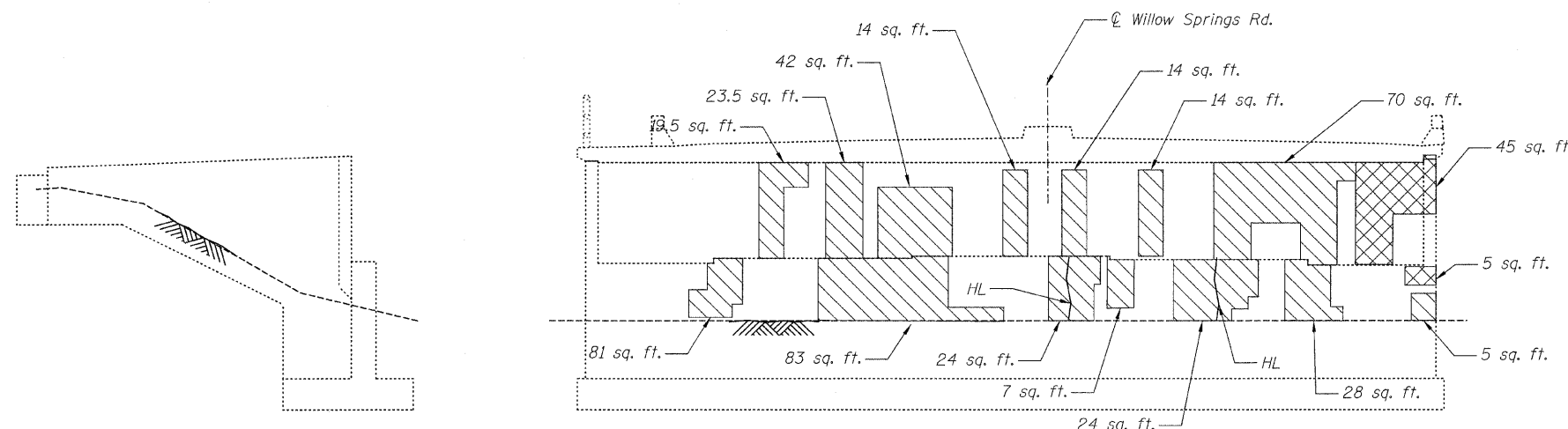
WEST WINGWALL

NORTH ABUTMENT

EAST WINGWALL

LAST SUBSTRUCTURE SURVEY

November 7, 2007
(Typical for all substructure repairs)



EAST WINGWALL

SOUTH ABUTMENT

WEST WINGWALL

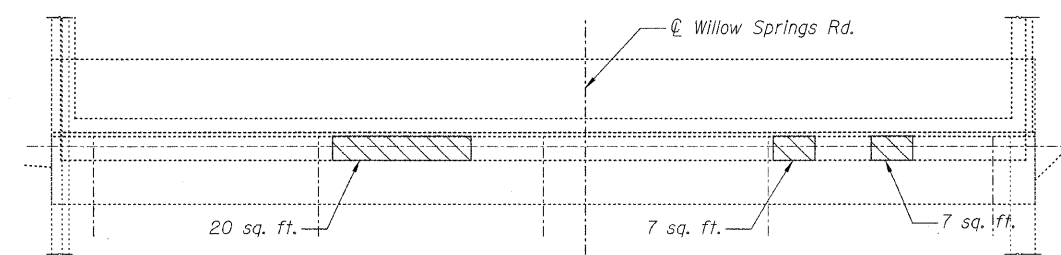
BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Structural Repair of Concrete (Depth Equal to or Less than 5 inches)	Sq. Ft.	670
Structural Repair of Concrete (Depth Greater than 5 inches)	Sq. Ft.	55
Concrete Sealer	Sq. Ft.	694

NOTES:

- Repairs shall include but not be limited to the areas shown. The actual areas to be repaired will be determined by engineer at the time of construction.
- The contractor is ultimately responsible for the means and methods to assure the complete stability of the structural members during construction.
- Structural Repair of Concrete Quantities are 10% greater than areas shown to accommodate for degradation since last substructure survey.
- Concrete sealer shall be applied to all structural repair of concrete on backwalls, bridge seats and front faces of abutments.

ABUTMENTS-CONCRETE REPAIRS
S.N. 016-0540



PLAN - SOUTH ABUTMENT

LEGEND

- HL Hairline Crack (No Repairs)
- Structural Repair of Concrete (Depth Equal to or Less than 5 Inches)
- Structural Repair of Concrete (Depth Greater than 5 Inches)

DESIGNED	B. Sauter
CHECKED	E. Mroczek
DRAWN	R. Danley
CHECKED	B. Sauter

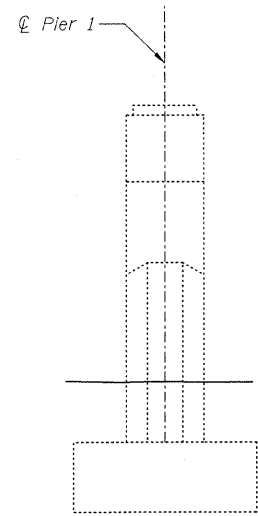


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CONSULTING ENGINEERS
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Tel. 773.775.4009 Fax 773.775.4014 Email chicago@giorba.com

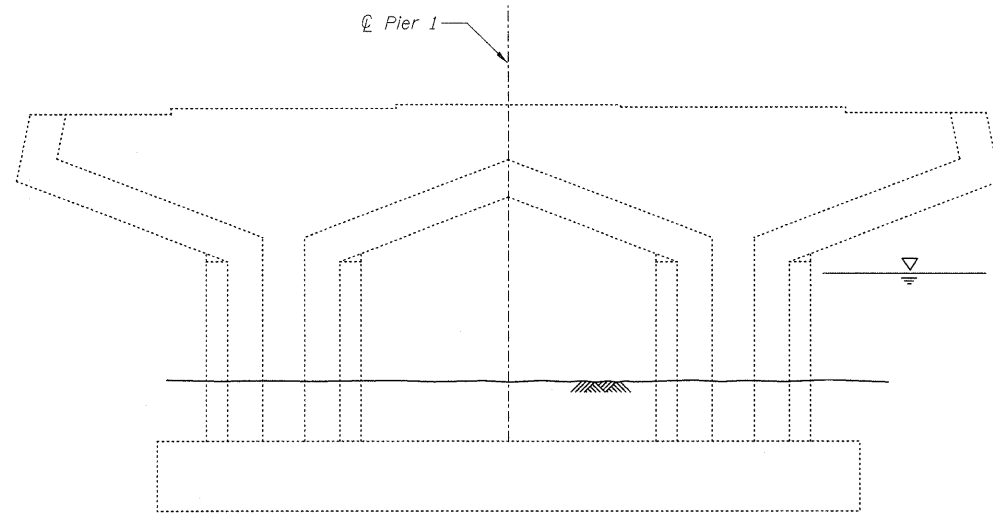
SHEET NO. S-18	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	2697	142 B-1-I	COOK	48	32
S-27 SHEETS			CONTRACT NO. 60D89		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

rdanley 2/14/2009 c:\proj\3329\3329_30\design\structural\concrete_repair\3329_30_18_Abutments-Concrete_Repairs.sht

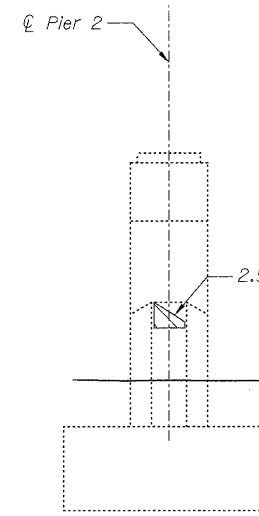
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



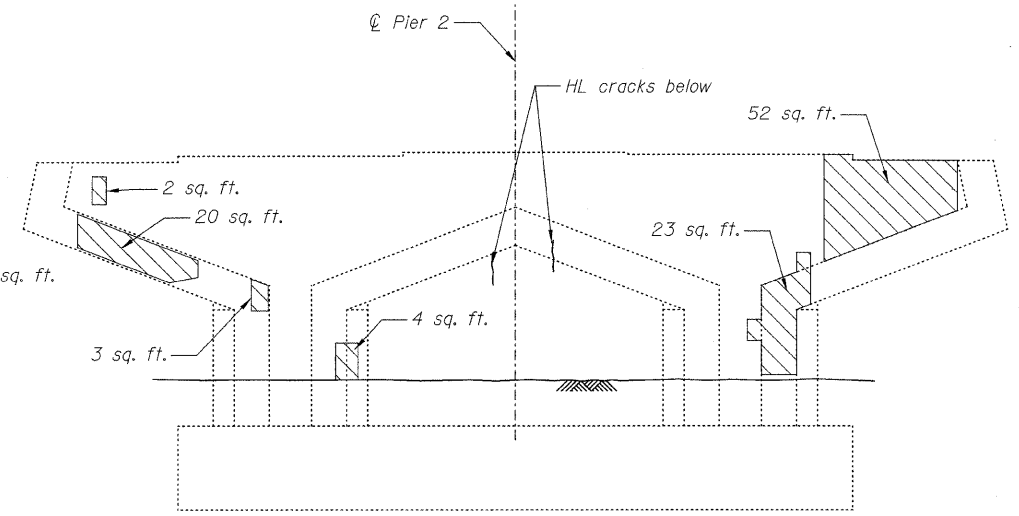
PIER 1
West Face



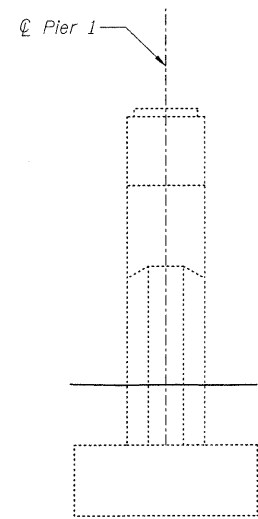
PIER 1
South Face



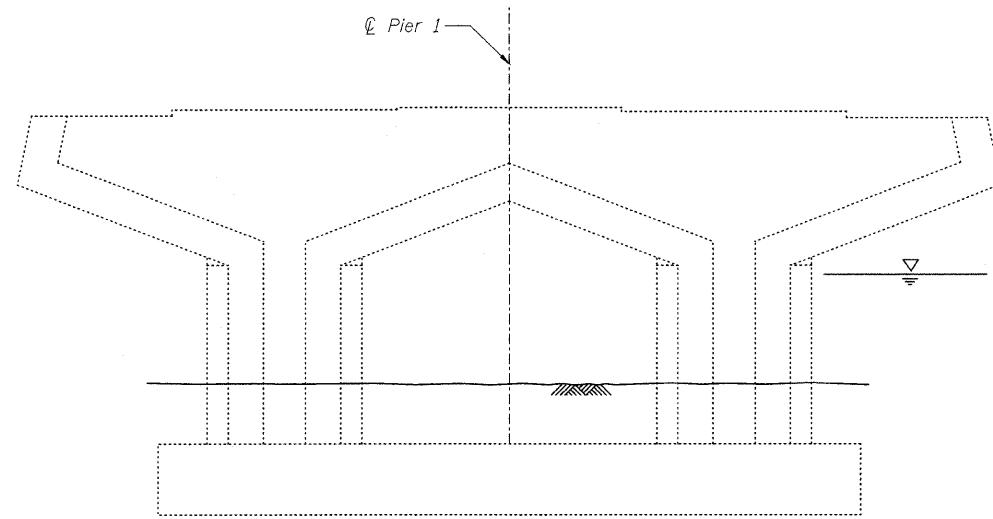
PIER 2
West Face



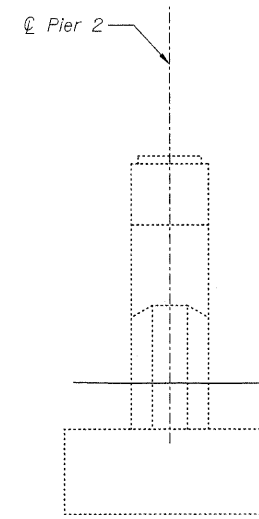
PIER 2
South Face



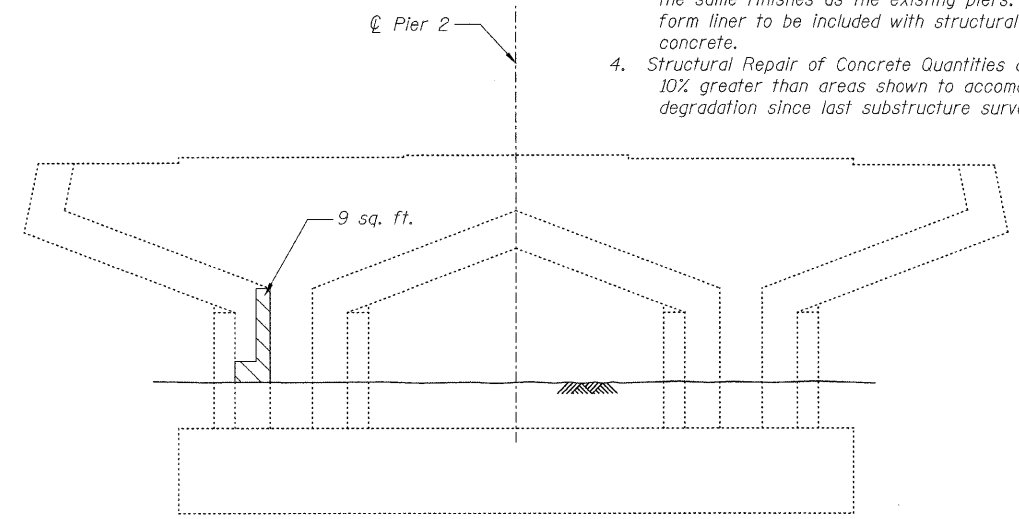
PIER 1
East Face



PIER 1
North Face



PIER 2
East Face



PIER 2
North Face

NOTES:

- Repairs shall include but not be limited to the areas shown. The actual areas to be repaired will be determined by engineer at the time of construction.
- The contractor is ultimately responsible for the means and methods to assure the complete stability of the structural members during construction.
- Concrete repairs on the piers should match the same finishes as the existing piers. Cost of form liner to be included with structural repair of concrete.
- Structural Repair of Concrete Quantities are 10% greater than areas shown to accommodate for degradation since last substructure survey.

LEGEND

- HL Hairline Crack (No Repairs)
 Structural Repair of Concrete (Depth Equal to or Less than 5 inches)

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Structural Repair of Concrete (Depth Equal to or Less than 5 inches)	Sq. Ft.	127

PIERS 1 & 2
S.N. 016-0540

DESIGNED	B. Sauter
CHECKED	E. Mroczek
DRAWN	R. Danley
CHECKED	B. Sauter

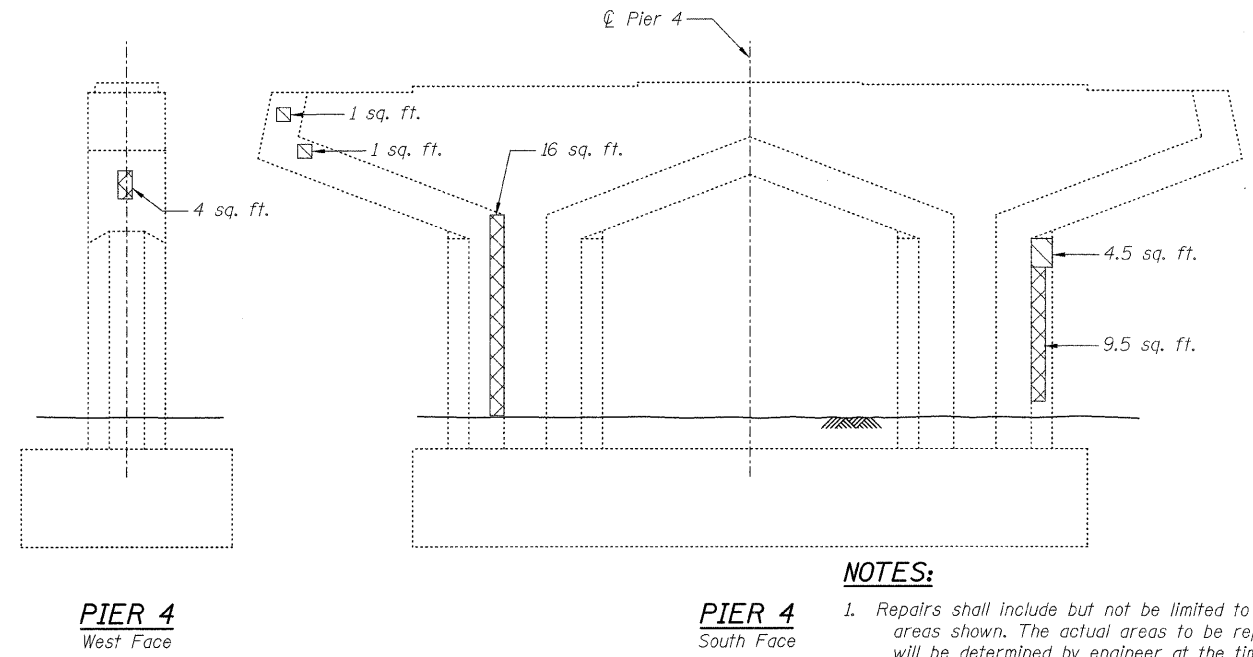
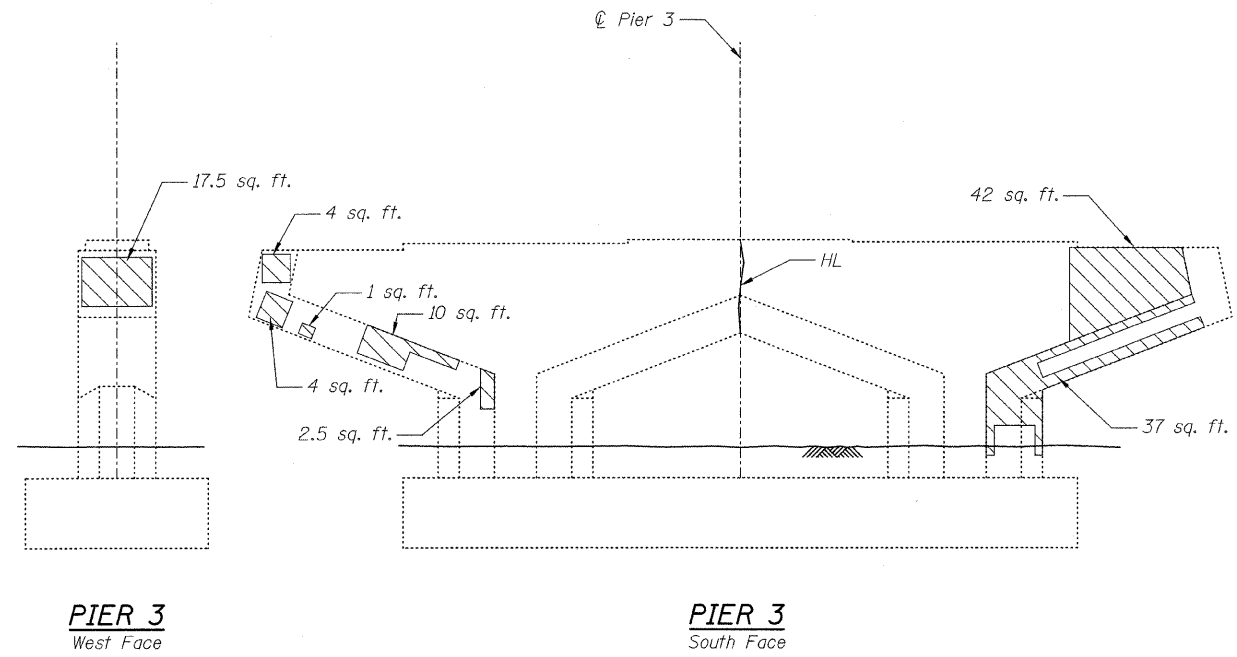


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CONSULTING ENGINEERS
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Tel. 773.775.4009 Fax 773.775.4014 Email chicago@ciorba.com

SHEET NO. S-19 S-27 SHEETS	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	2697	142 B-1-I	COOK	48	33
FED. ROAD DIST. NO.			ILLINOIS	FED. AID PROJECT	
CONTRACT NO. 60D89					

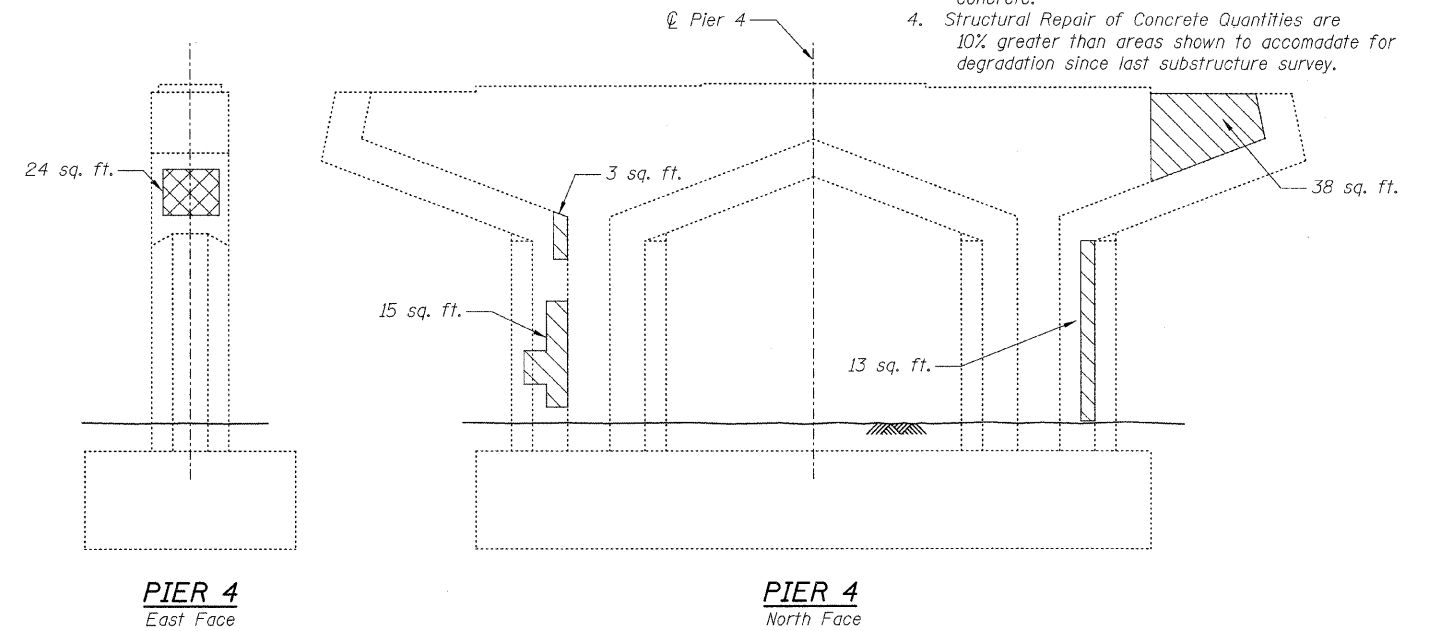
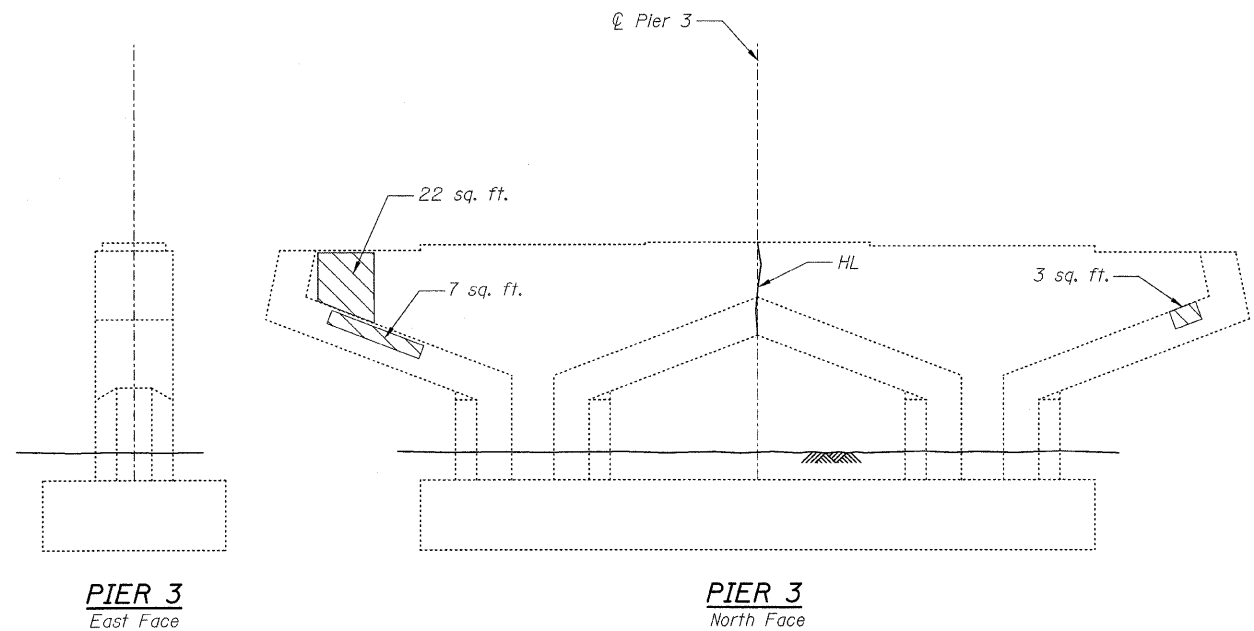
rdanley 2/4/2009
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



NOTES:

1. Repairs shall include but not be limited to the areas shown. The actual areas to be repaired will be determined by engineer at the time of construction.
2. The contractor is ultimately responsible for the means and methods to assure the complete stability of the structural members during construction.
3. Concrete repairs on the piers should match the same finishes as the existing piers. Cost of form liner to be included with structural repair of concrete.
4. Structural Repair of Concrete Quantities are 10% greater than areas shown to accommodate for degradation since last substructure survey.



LEGEND

- HL Hairline Crack (No Repairs)
- Structural Repair of Concrete (Depth Equal to or Less than 5 inches)
- Structural Repair of Concrete (Depth Greater than 5 inches)

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Structural Repair of Concrete (Depth Equal to or Less than 5 inches)	Sq. Ft.	248
Structural Repair of Concrete (Depth Greater than 5 inches)	Sq. Ft.	59

PIERS 3 & 4

S.N. 016-0540

DESIGNED	B. Sauter
CHECKED	E. Mroczek
DRAWN	R. Danley
CHECKED	B. Sauter

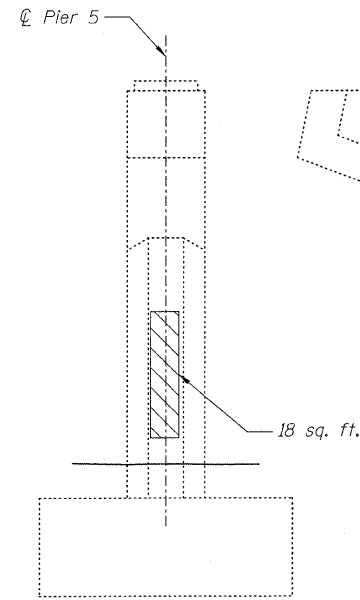


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Tel. 773.775.4009 Fax 773.775.4014 Email chicago@ciorba.com

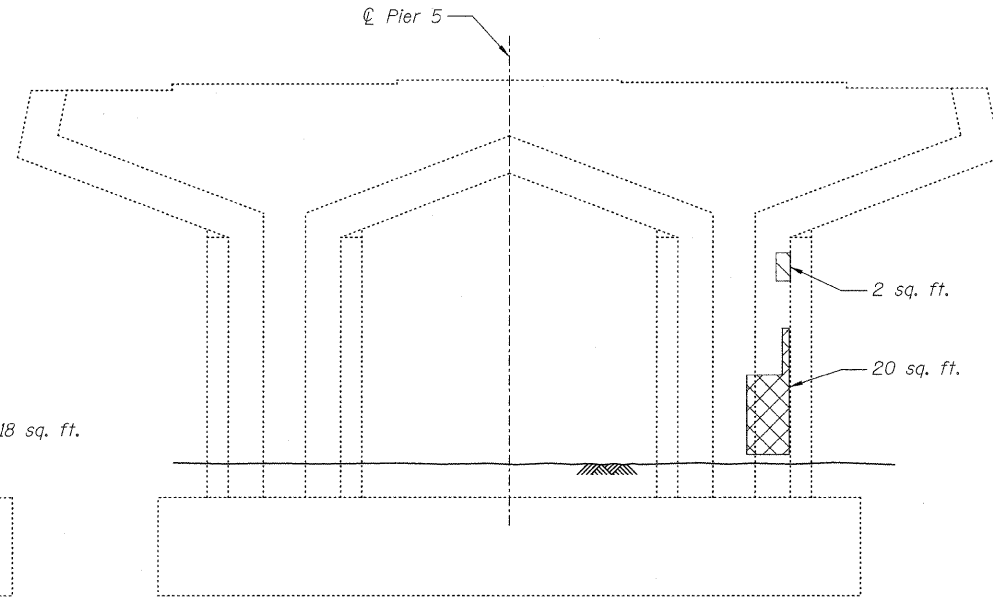
SHEET NO. S-20 S-27 SHEETS	F.A.U. RTE. 2697	SECTION 142 B-1-I	COUNTY COOK	TOTAL SHEETS 48	SHEET NO. 34
	CONTRACT NO. 60D89				
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

rdanley 2/4/2009 c:\proj\3329\3329_30\design\structural\concrete_repair\3329_30_20 Piers 3 & 4.dwg

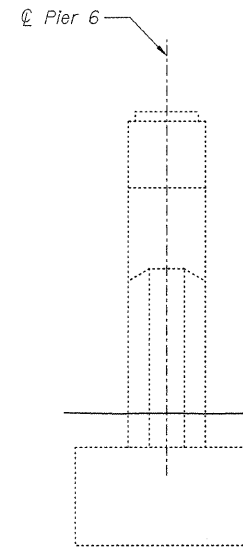
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



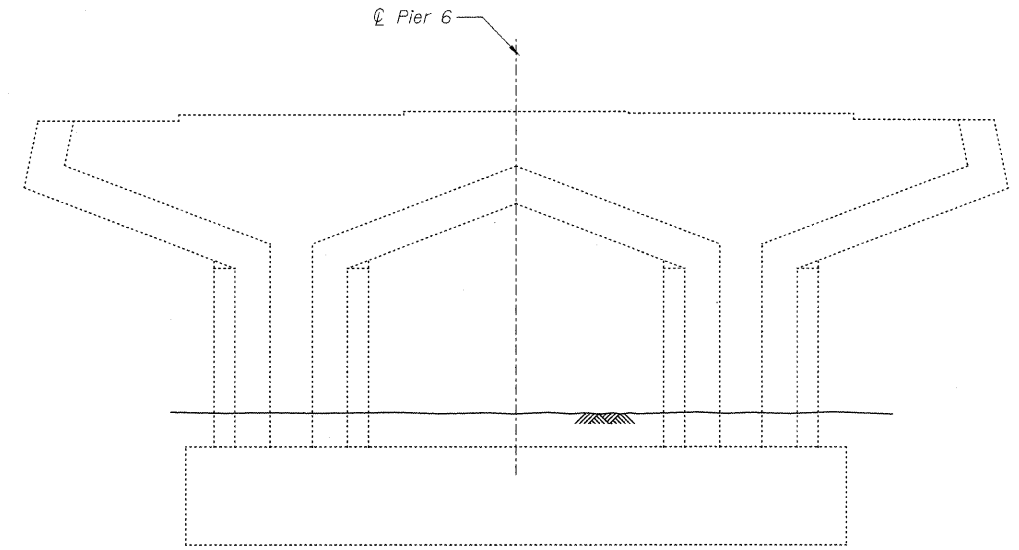
PIER 5
West Face



PIER 5
South Face



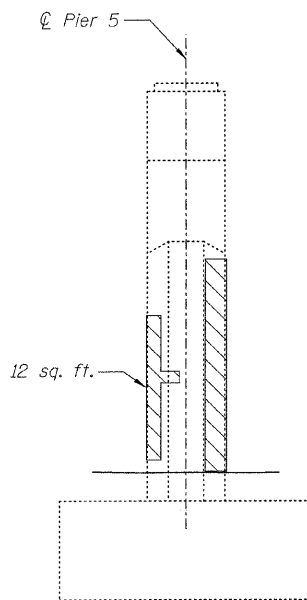
PIER 6
West Face



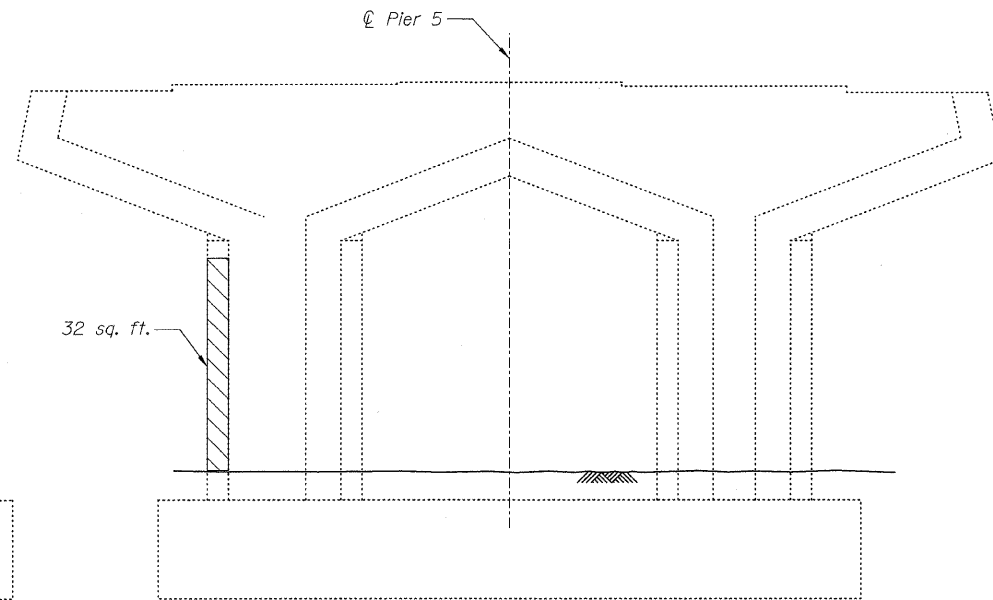
PIER 6
South Face

NOTES:

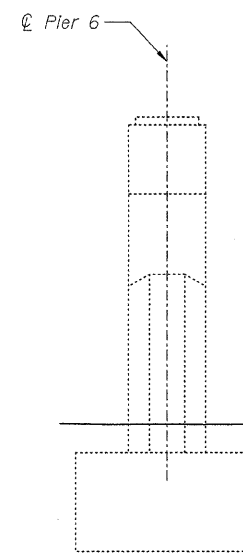
- Repairs shall include but not be limited to the areas shown. The actual areas to be repaired will be determined by engineer at the time of construction.
- The contractor is ultimately responsible for the means and methods to assure the complete stability of the structural members during construction.
- Concrete repairs on the piers should match the same finishes as the existing piers. Cost of form liner to be included with structural repair of concrete.
- Structural Repair of Concrete Quantities are 10% greater than areas shown to accommodate for degradation since last substructure survey.



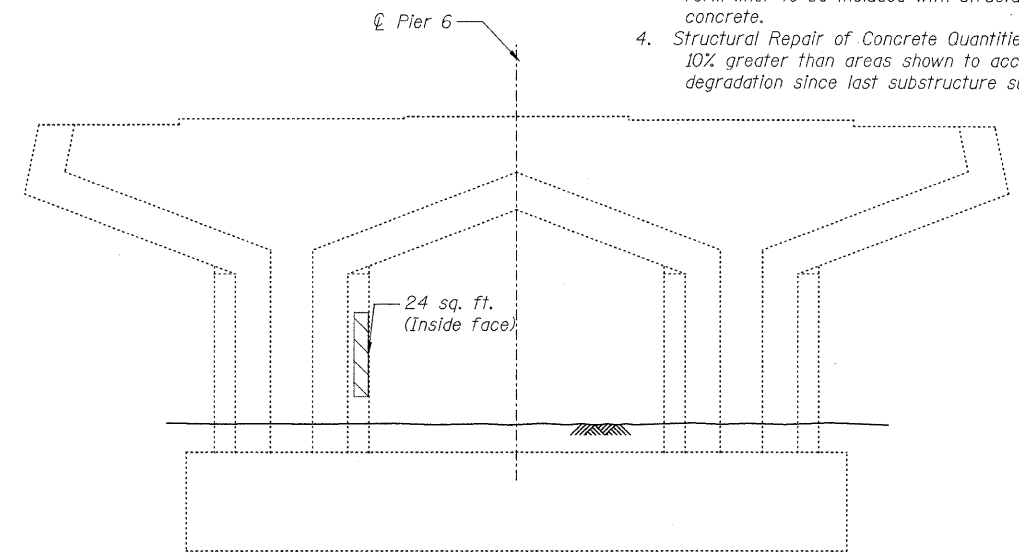
PIER 5
East Face



PIER 5
North Face



PIER 6
East Face



PIER 6
North Face

LEGEND

- HL Hairline Crack (No Repairs)
- Structural Repair of Concrete (Depth Equal to or Less than 5 inches)
- Structural Repair of Concrete (Depth Greater than 5 inches)

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Structural Repair of Concrete (Depth Equal to or Less than 5 inches)	Sq. Ft.	96
Structural Repair of Concrete (Depth Greater than 5 inches)	Sq. Ft.	22

PIERS 5 & 6
S.N. 016-0540

DESIGNED	B. Sauter
CHECKED	E. Mroozek
DRAWN	R. Danley
CHECKED	B. Sauter

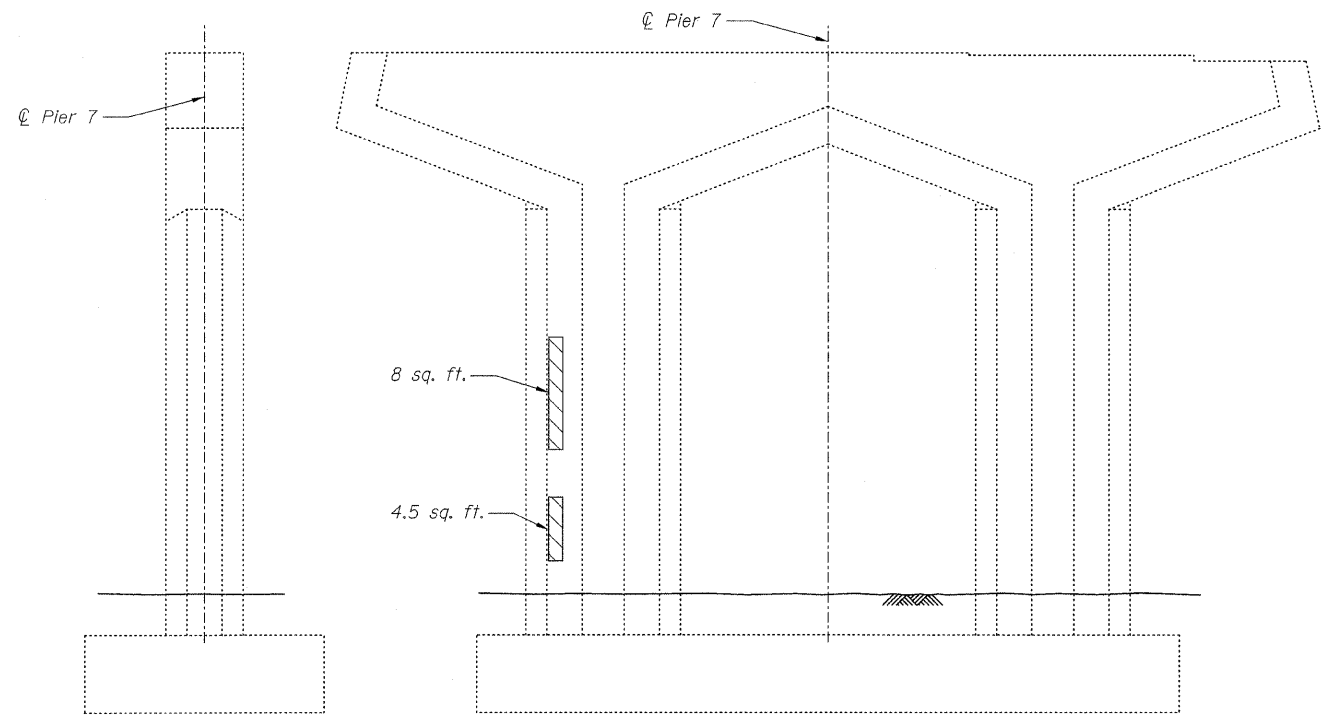


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SHEET NO. S-27 S-27 SHEETS	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	2697	142 B-1-I	COOK	48	35
FED. ROAD DIST. NO.			ILLINOIS	FED. AID PROJECT	
CONTRACT NO. 60D89					

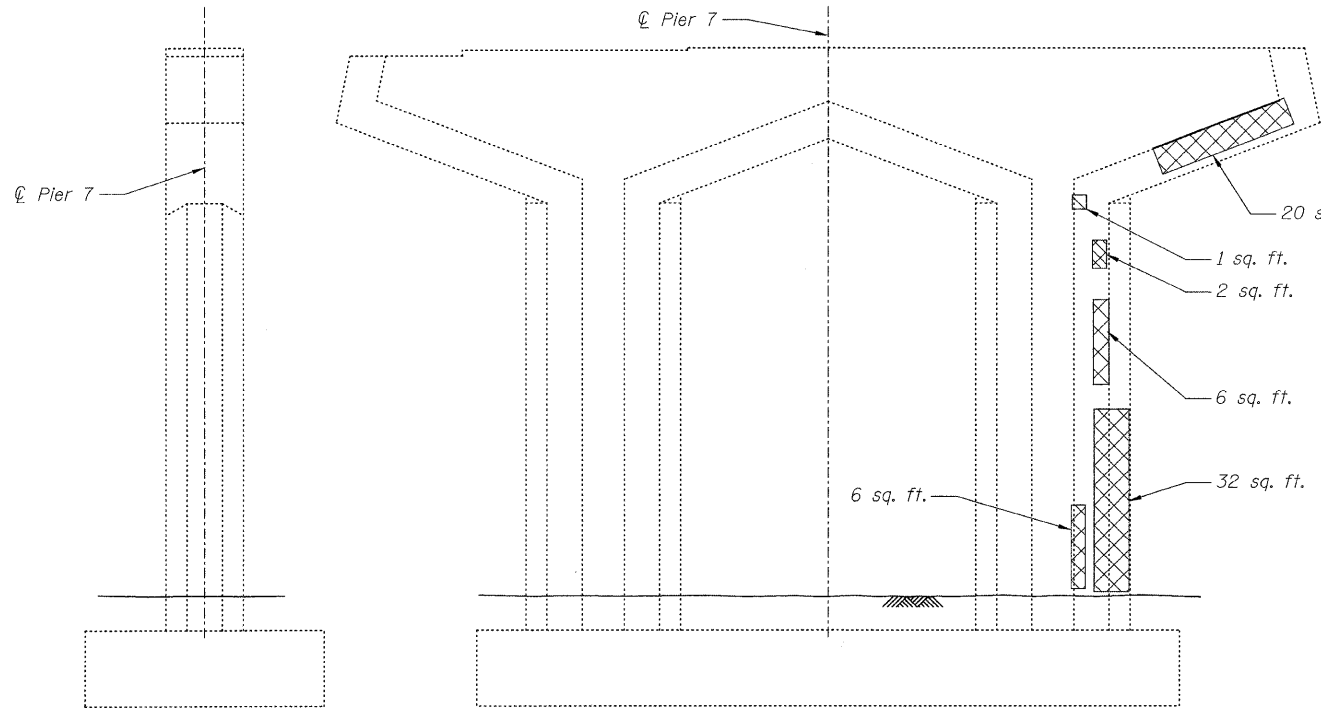
rdanley
 2/4/2009
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



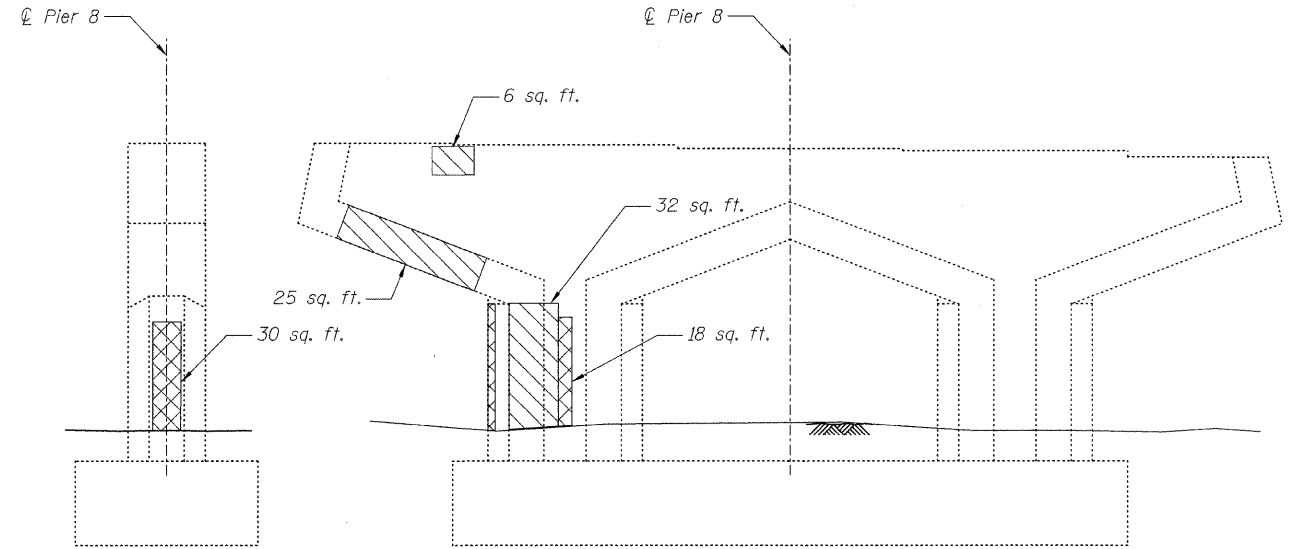
PIER 7
West Face

PIER 7
South Face



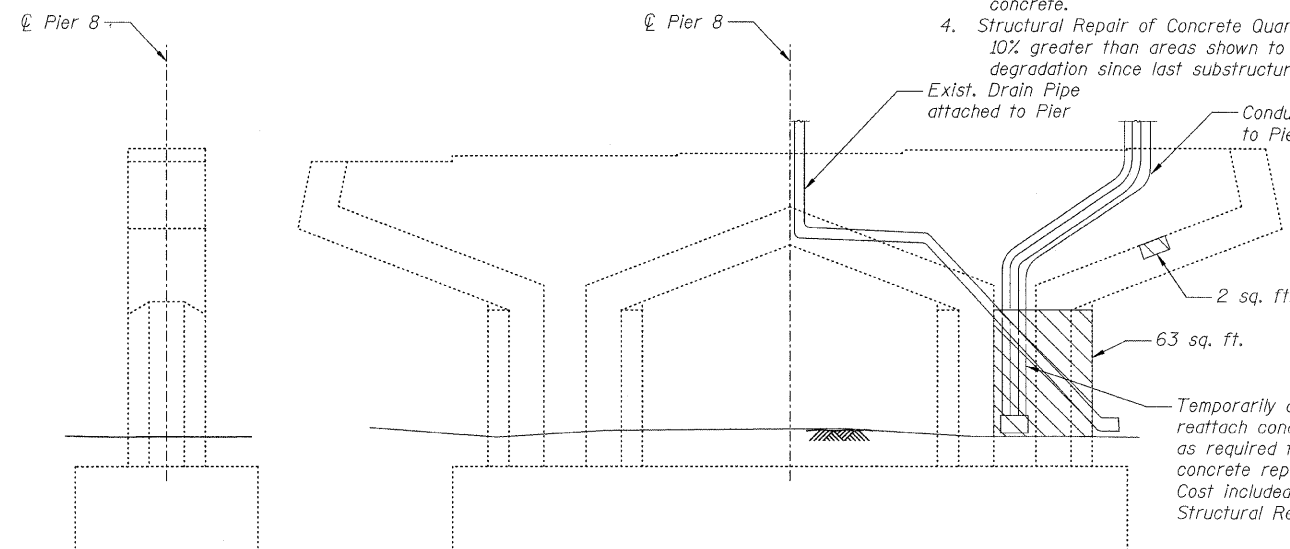
PIER 7
East Face

PIER 7
North Face



PIER 8
West Face

PIER 8
South Face



PIER 8
East Face

PIER 8
North Face

NOTES:

- Repairs shall include but not be limited to the areas shown. The actual areas to be repaired will be determined by engineer at the time of construction.
- The contractor is ultimately responsible for the means and methods to assure the complete stability of the structural members during construction.
- Concrete repairs on the piers should match the same finishes as the existing piers. Cost of form liner to be included with structural repair of concrete.
- Structural Repair of Concrete Quantities are 10% greater than areas shown to accommodate for degradation since last substructure survey.

Exist. Drain Pipe attached to Pier
Conduit attached to Pier
2 sq. ft.
63 sq. ft.
Temporarily detach and reattach conduits and drain pipe as required to perform concrete repairs. Cost included with Structural Repair of Concrete

LEGEND

- HL Hairline Crack (No Repairs)
- Structural Repair of Concrete (Depth Equal to or Less than 5 inches)
- Structural Repair of Concrete (Depth Greater than 5 inches)

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Structural Repair of Concrete (Depth Equal to or Less than 5 inches)	Sq. Ft.	156
Structural Repair of Concrete (Depth Greater than 5 inches)	Sq. Ft.	126

DESIGNED	B. Sauter
CHECKED	E. Mroczek
DRAWN	R. Danley
CHECKED	B. Sauter

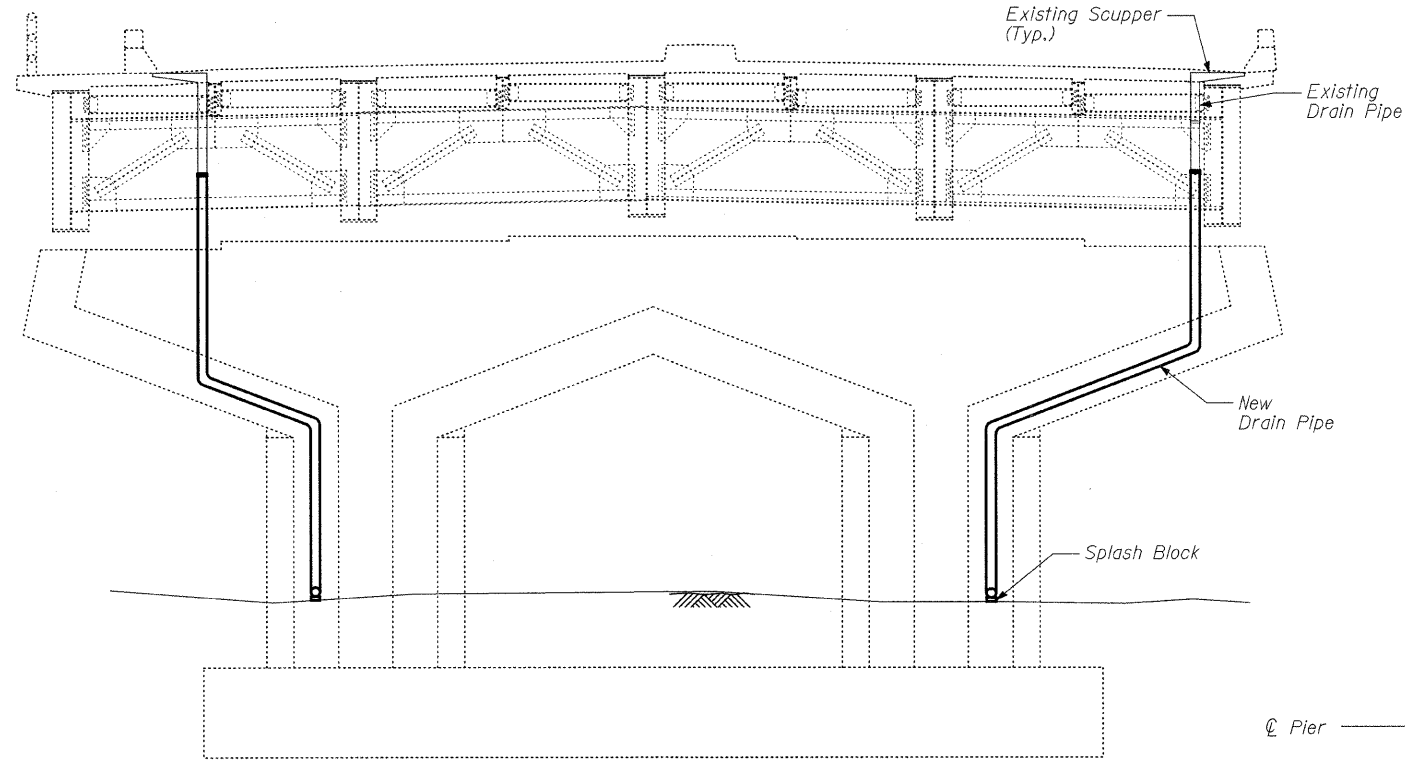
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CONSULTING ENGINEERS
5507 North Cumberland Avenue, Suite 402 Chicago, Illinois 60656
Tel. 773.775.4009 Fax 773.775.4014 Email chicago@ciorba.com

PIERS 7 & 8
S.N. 016-0540

SHEET NO. S-22 S-27 SHEETS	F.A.U. RTE. 2697	SECTION 142 B-1-I	COUNTY COOK	TOTAL SHEETS 48	SHEET NO. 36
	CONTRACT NO. 60D89			ILLINOIS FED. AID PROJECT	

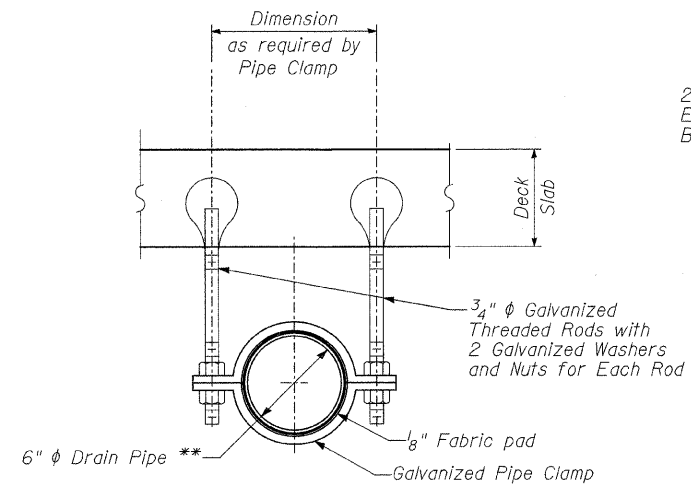
2/4/2009 rdanley m:\pneu\329\329_30\design\structural\ced\h\h\concrete_repairs\329_30_22_Piers 7 & 8.sht

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

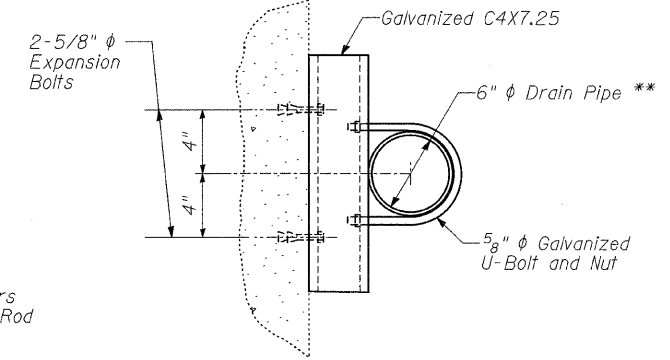


DRAINAGE SYSTEM AT A TYPICAL PIER

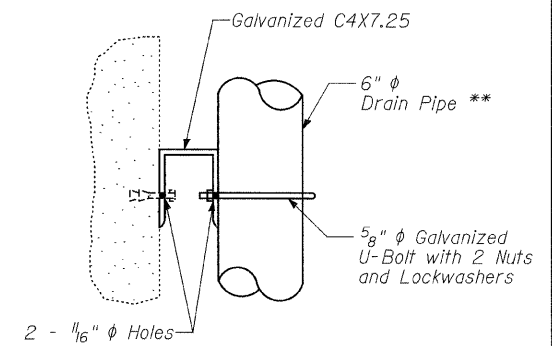
5 - Piers with 2 scuppers
2 - Piers with 1 scupper



PIPE HANGER DETAILS



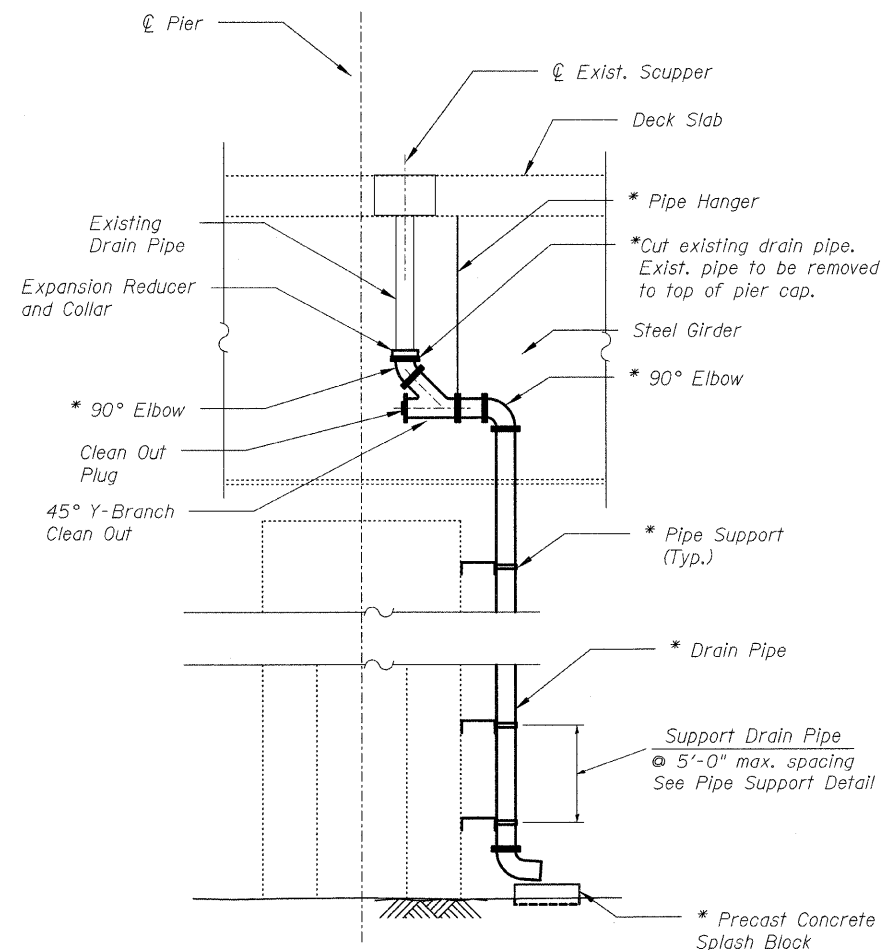
PLAN



ELEVATION

DRAIN PIPE SUPPORT DETAIL

** Match existing drain pipe.



SIDE VIEW

*Cost included with Drainage System

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Drainage System	L. Sum	1

DRAINAGE SYSTEM

S.N. 016-0540

DESIGNED	B. Sauter
CHECKED	E. Mroczek
DRAWN	R. Danley
CHECKED	B. Sauter



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Tel. 773.775.4009 Fax 773.775.4014 Email chicago@giorba.com

SHEET NO. S-23 S-27 SHEETS	F.A.U. RTE. 2697	SECTION 142 B-1-I	COUNTY COOK	TOTAL SHEETS 48	SHEET NO. 37
	CONTRACT NO. 60D89			ILLINOIS FED. AID PROJECT	

rdanley

2/4/2009

m:\p\0329\3329\30\design\structural\ced\sh\concrete_repairs\3329_30_23 New Drainage system.dwg

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

The diameter of this part is equal or larger than the diameter of bar spliced.

The diameter of this part is the same as the diameter of the bar spliced.

ROLLED THREAD DOWEL BAR



** ONE PIECE

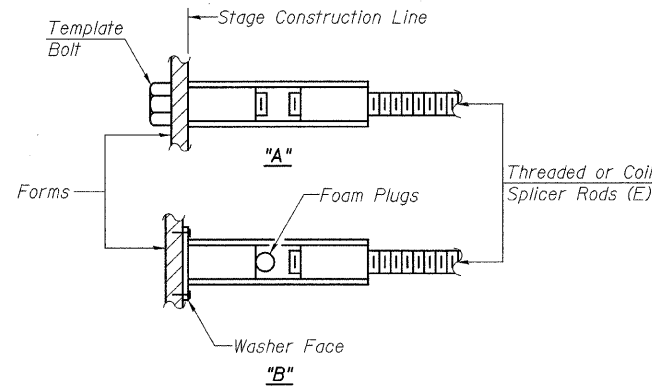
Wire Connector



WELDED SECTIONS

BAR SPLICER ASSEMBLY ALTERNATIVES

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



INSTALLATION AND SETTING METHODS

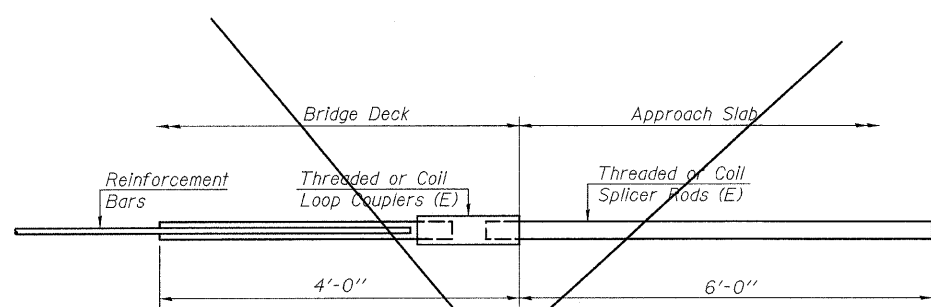
"A" : Set bar splicer assembly by means of a template bolt.
"B" : Set bar splicer assembly by nailing to wood forms or cementing to steel forms.
(E) : Indicates epoxy coating.

NOTES

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

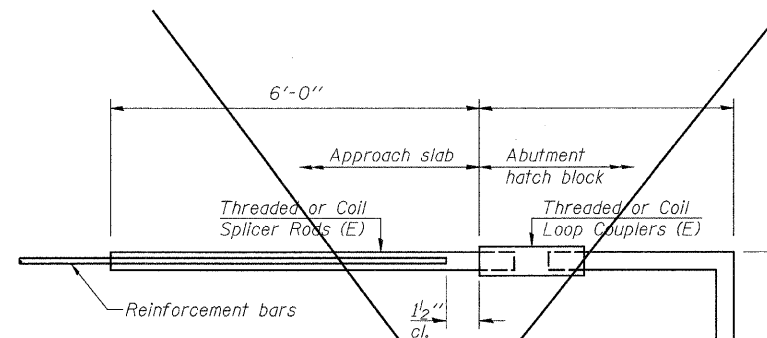
- ① Minimum Capacity (Tension in kips) = $1.25 \times f_y \times A_t$
 - ② Minimum *Pull-out Strength (Tension in kips) = $0.66 \times f_y \times A_t$
- Where f_y = Yield strength of lapped reinforcement bars in ksi.
 A_t = Tensile stress area of lapped reinforcement bars.
* = 28 day concrete

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



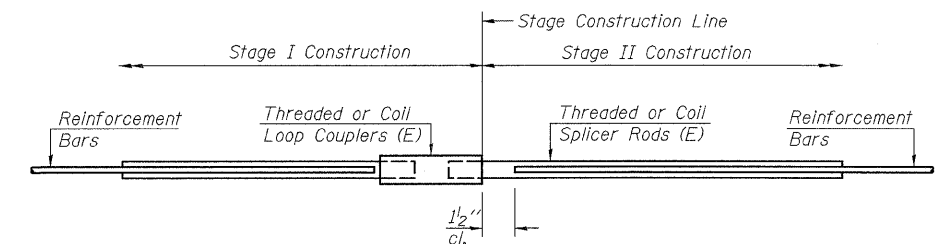
FOR INTEGRAL OR SEMI-INTEGRAL ABUTMENTS

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



FOR STUB ABUTMENTS

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



STANDARD

Bar Size	No. Assemblies Required	Location
#6	56	Deck
#7	8	Deck
#4	42	Median

**BAR SPLICER DETAILS
S.N. 016-0540**

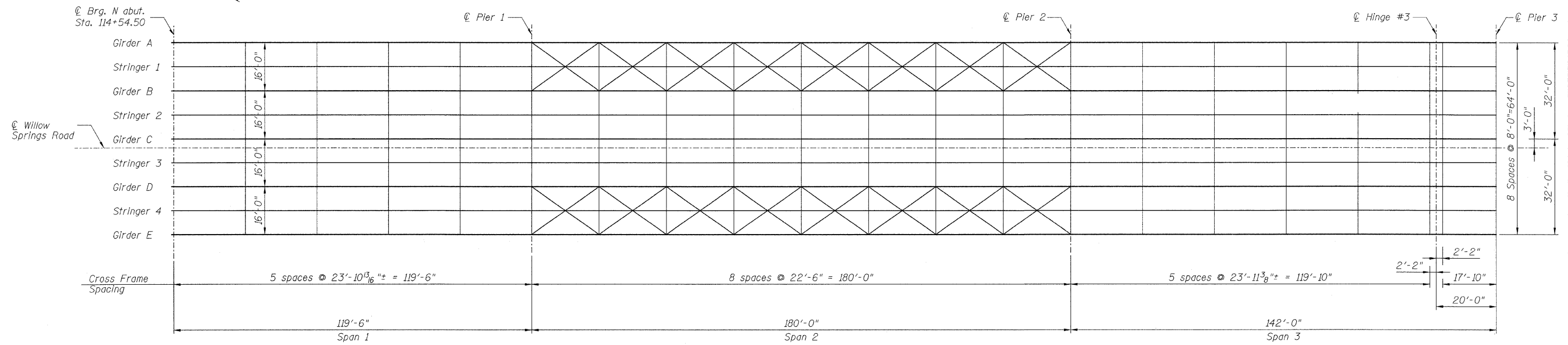
SHEET NO. S-24 S-27 SHEETS	F.A.U. RTE. 2697	SECTION 142 B-1-I	COUNTY COOK	TOTAL SHEETS 48	SHEET NO. 38
	CONTRACT NO. 60D89			ILLINOIS FED. AID PROJECT	

DESIGNED	B. Sauter
CHECKED	E. Mroczek
DRAWN	R. Danley
CHECKED	B. Sauter

CG **Giorba Group, Inc.**
CONSULTING ENGINEERS
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Tel. 773.775.4009 Fax 773.775.4014 Email chicago@giorba.com

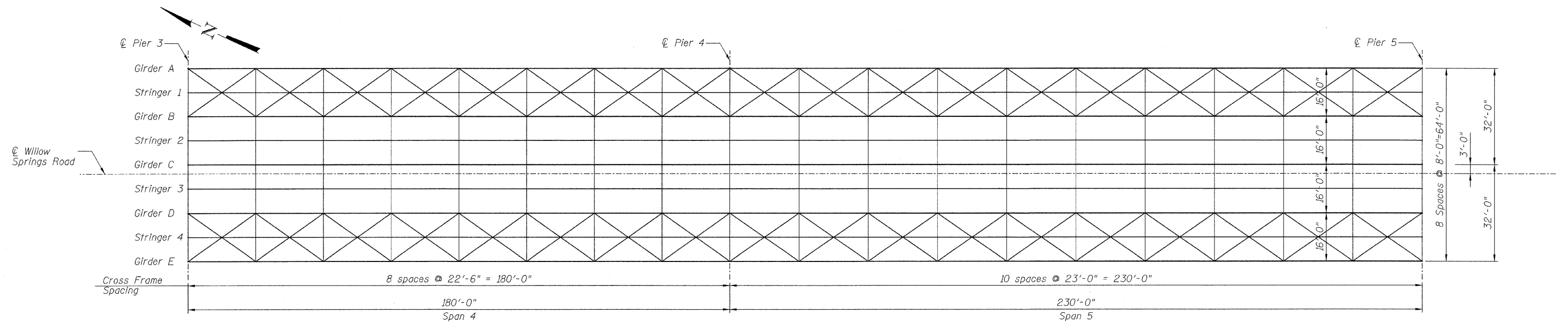
2/4/2009 rdanley m:\proj\3329\3329_30\design\structural\load\vt\concrete_repair\3329_30_24 Bar Splicer Details.sht

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



FRAMING PLAN

Area not to be loaded with construction equipment during repair. (See note 2)



FRAMING PLAN

FOR INFORMATION ONLY

EXISTING FRAMING PLAN I
S.N. 016-0540

DESIGNED	B. Sauter
CHECKED	E. Mroczek
DRAWN	R. Danley
CHECKED	B. Sauter



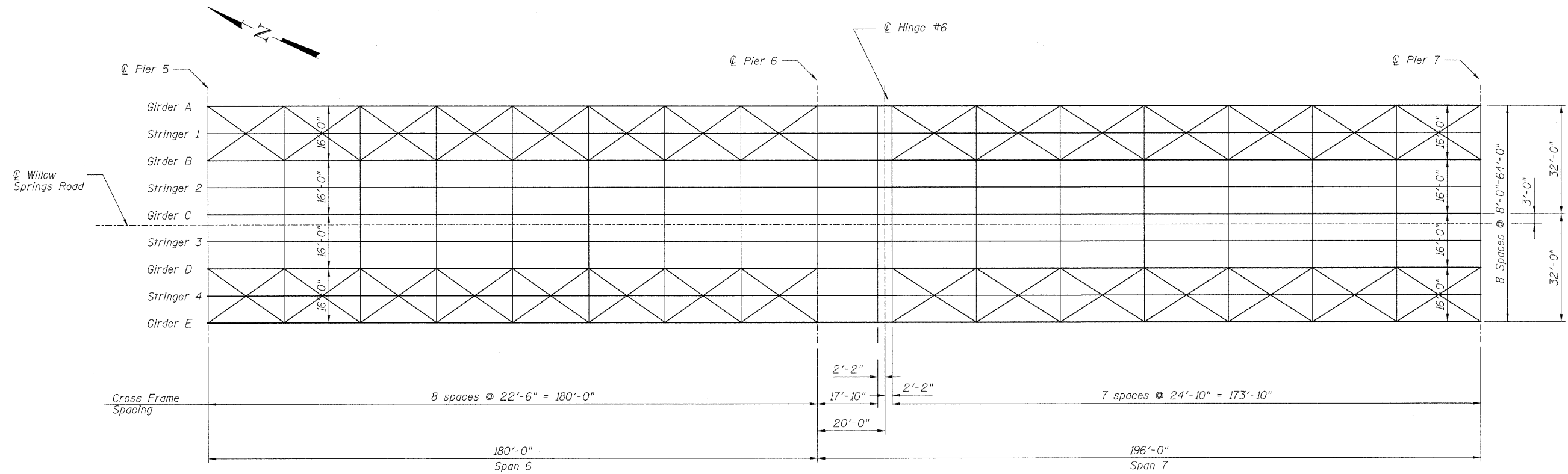
Giorba Group, Inc.
CONSULTING ENGINEERS

5507 North Cumberland Avenue, Suite 402 Chicago, Illinois 60656
Tel. 773.775.4009 Fax 773.775.4014 Email chicago@giorba.com

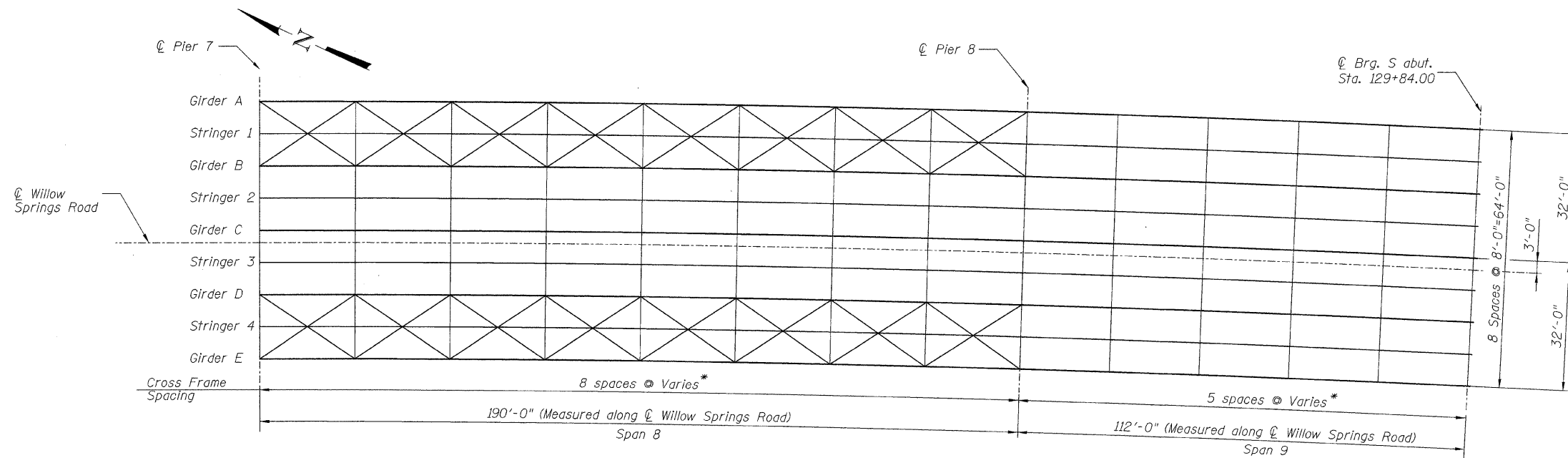
SHEET NO. S-25 S-27 SHEETS	F.A.U. RTE. 2697	SECTION 142 B-1-I	COUNTY COOK	TOTAL SHEETS 48	SHEET NO. 39
	CONTRACT NO. 60D89				
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT			

rdanley
 2/4/2009
 n:\pro\3329\3329_30\design\structural\cad\sh\concrete_repairs\3329_30_25 Framing Plan.laht

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



FRAMING PLAN



FRAMING PLAN

* Cross Frame Spacing varies
from 23'-7⁵/₈" to 23'-10⁵/₈" in Span 8
from 22'-3¹/₁₆" to 22'-6⁷/₁₆" in Span 9

FOR INFORMATION ONLY

EXISTING FRAMING PLAN II
S.N. 016-0540

DESIGNED	B. Sauter
CHECKED	E. Mroczek
DRAWN	R. Danley
CHECKED	B. Sauter



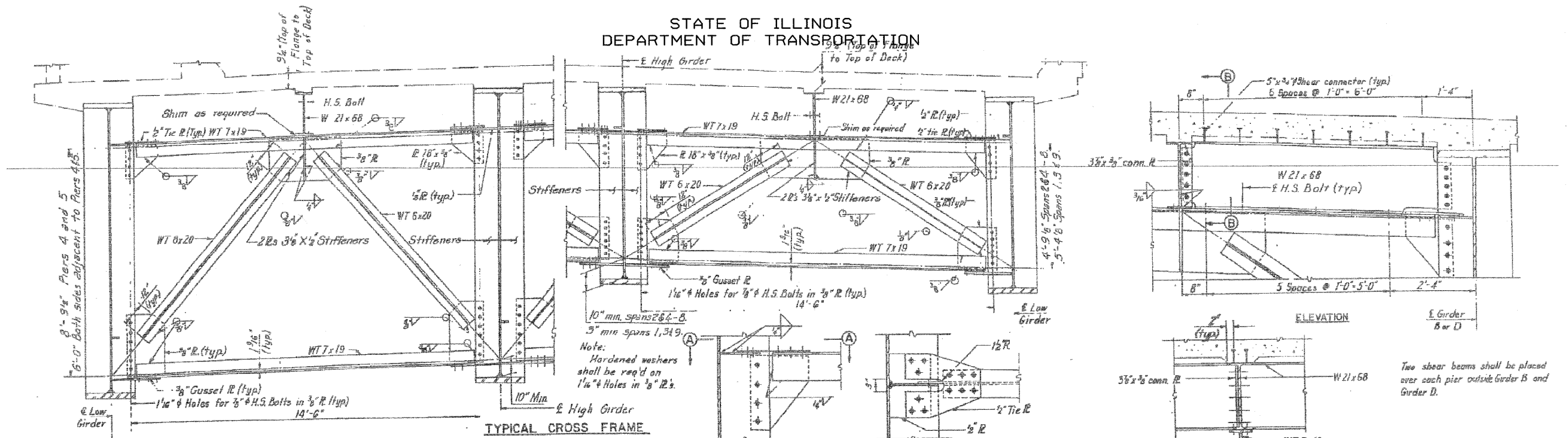
Giorba Group, Inc.
CONSULTING ENGINEERS

5507 North Cumberland Avenue, Suite 402 Chicago, Illinois 60656
Tel. 773.775.4009 Fax 773.775.4014 Email chicago@giorba.com

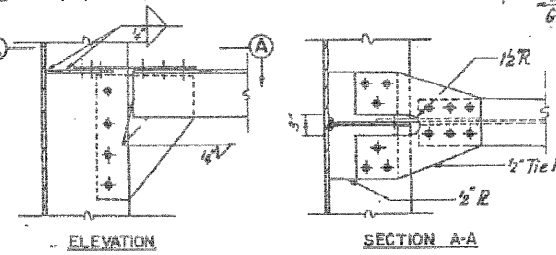
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	CONTRACT NO. 60D89			ILLINOIS FED. AID PROJECT	

rdanley 2/4/2009 n:\proj\3329\3329_30\design\structural\concrete_repairs\3329_30_26 Framing Plan_2.sht

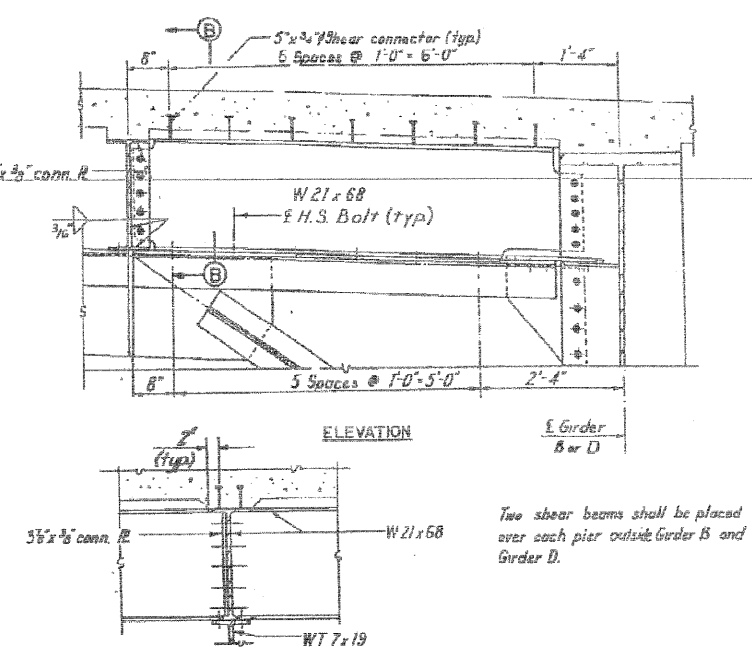
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



TYPICAL CROSS FRAME

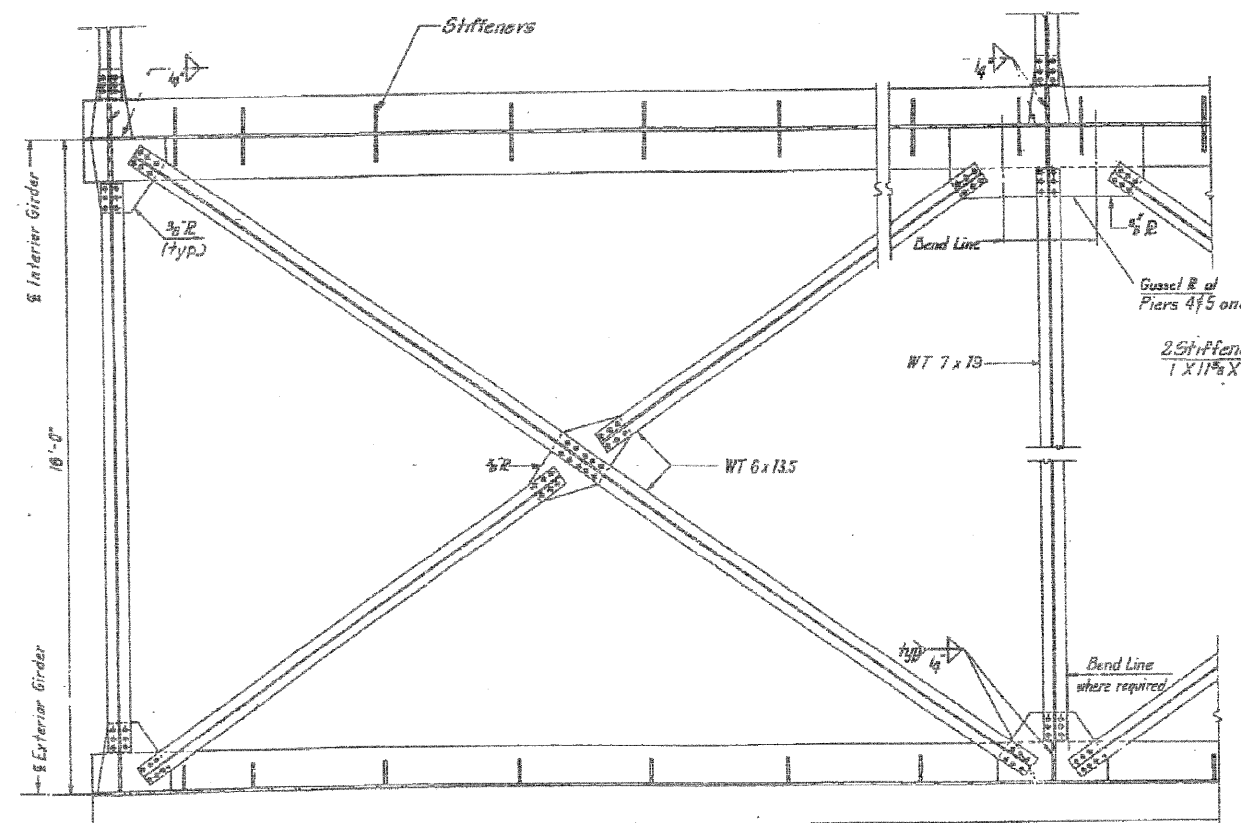


CROSS FRAME CONNECTION

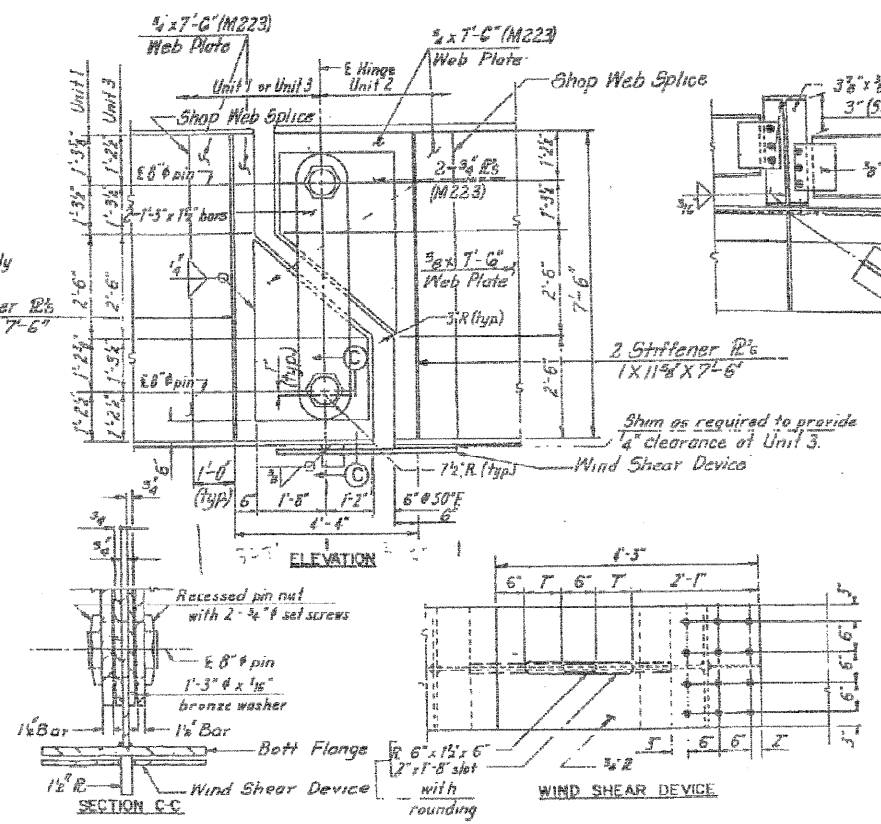


SHEAR BEAM

END DIAPHRAGM



LATERAL BRACING



HINGE DETAILS

Notes:
8" pin shall be Alloy Steel Forging ASTM A-237, Class C, normalized and tempered Web plates and hanger bars shall be AASHTO M223 structural steel. Pin nuts shall be AASHTO M183 structural steel. The bronze washers shall be ASTM B22-61 alloy E.
The diameter of the pin hole shall not exceed that of the pin by more than 1/32" and the finish of the pin and pin hole contact surfaces shall conform to A.S.A. 125. The pin nuts shall be adjusted to allow free movement of the links before the set screws are placed.

FOR INFORMATION ONLY

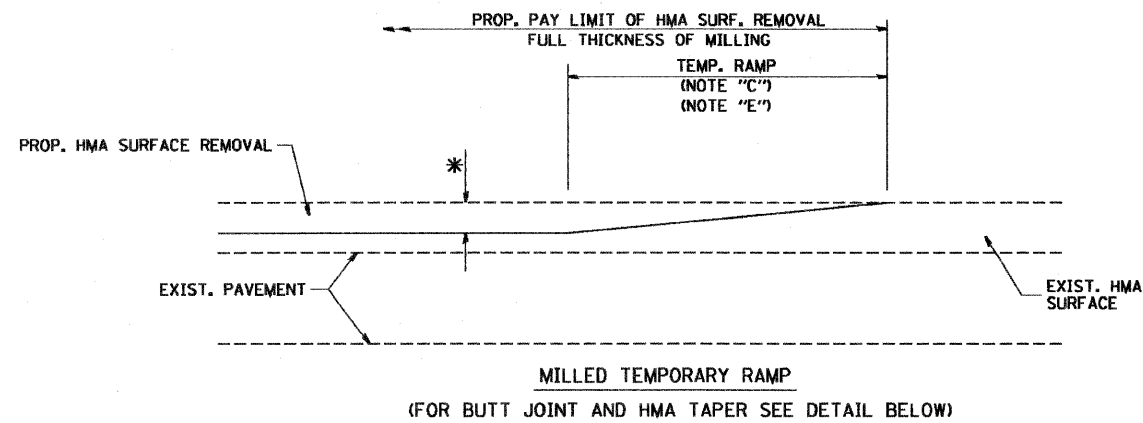
EXISTING STRUCTURAL STEEL DETAILS
S.N. 016-0540

DESIGNED	B. Sauter
CHECKED	E. Mroczek
DRAWN	R. Danley
CHECKED	B. Sauter

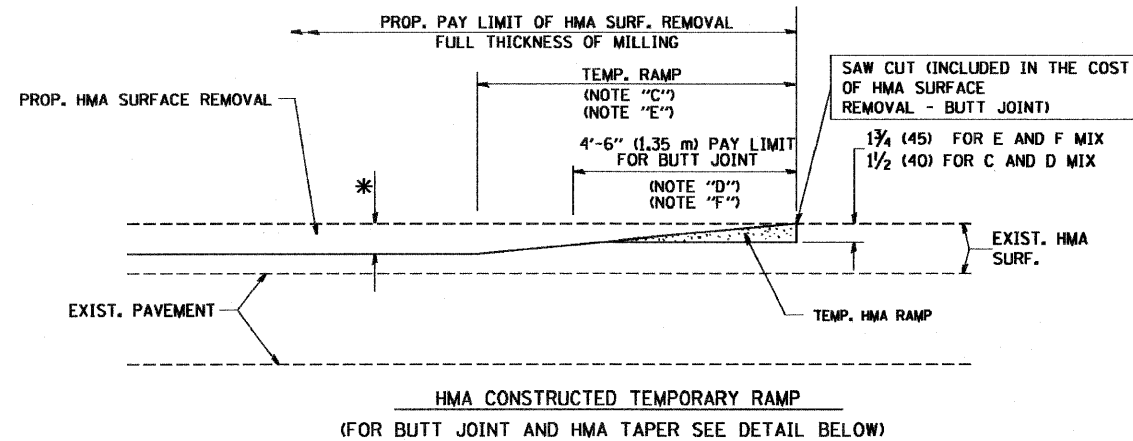
Ciorba Group, Inc.
CONSULTING ENGINEERS
5507 North Cumberland Avenue, Suite 402 Chicago, Illinois 60656
Tel. 773.775.4009 Fax 773.775.4014 Email chicago@ciorba.com

SHEET NO. S-27	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	2697	142 B-1-I	COOK	48	41
S-27 SHEETS			CONTRACT NO. 60D89		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT			

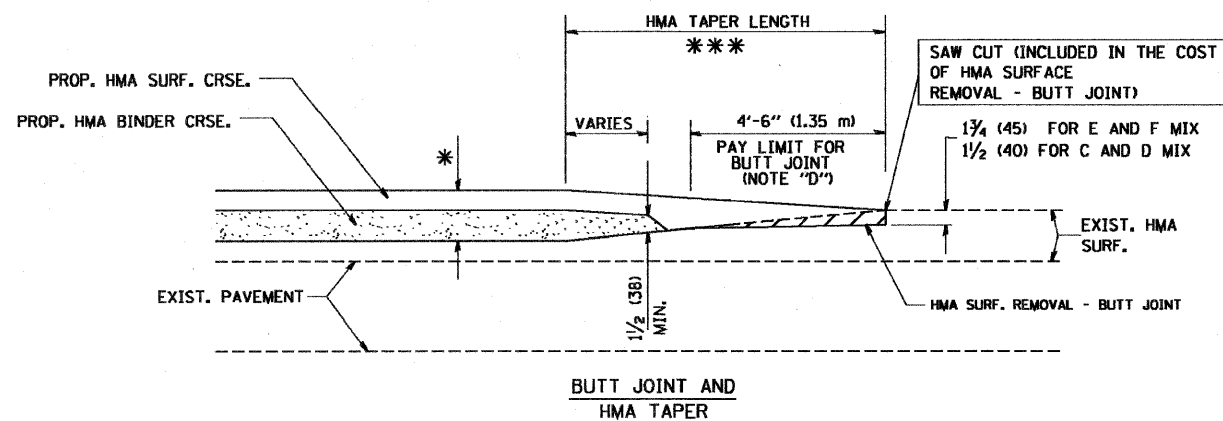
r:\proj\3329\3329_30\design\structural\wood\sh\concrete_repair\3329_30_27 Existing Structural Steel Details.sht 2/4/2009 rdnley



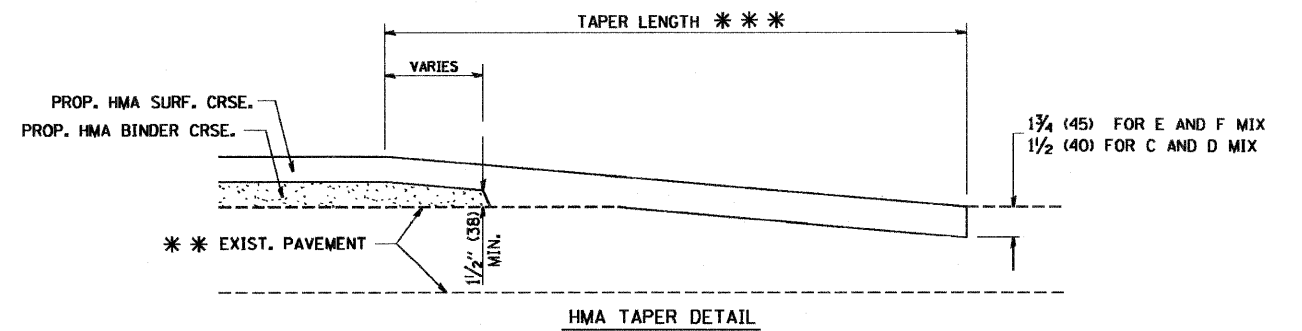
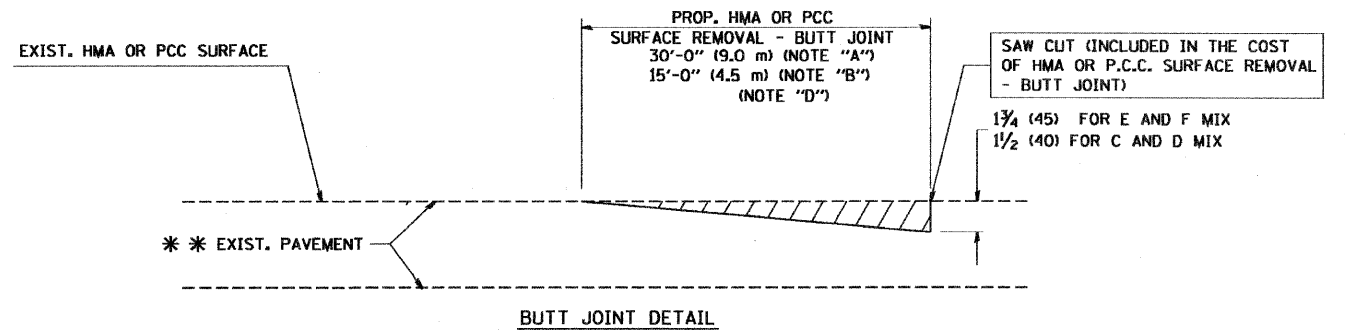
OPTION 1



**OPTION 2
TYPICAL TEMPORARY RAMP**



**TYPICAL BUTT JOINT AND HMA TAPER
FOR MILLING AND RESURFACING**



**TYPICAL BUTT JOINT AND HMA TAPER
FOR RESURFACING ONLY**

*** PC CONCRETE, HMA OR HMA RESURFACED PAVEMENT.

NOTES

- A: MAINLINE ROADWAYS AND MAJOR SIDE ROADS.
 - B: MINOR SIDE ROADS.
 - C: THE TEMP. RAMP SHALL BE CONSTRUCTED IMMEDIATELY UPON REMOVAL OF THE EXISTING HMA SURFACE.
 - D: THE BUTT JOINT SHALL BE CONSTRUCTED IMMEDIATELY PRIOR TO PLACING THE PROPOSED HMA COURSES.
 - E: TAPER THE TEMP. RAMP AT A RATE OF 3'-0" (900 mm) PER 1 INCH (25 mm) OF MILLING THICKNESS.
 - F: INSTALLATION AND REMOVAL OF THE 4'-6" (1.35 m) TEMP. RAMP IS INCLUDED IN COST OF HMA SURFACE REMOVAL - BUTT JOINT
 - G: SEE ARTICLE 406.08 AND 406.14 OF THE STANDARD SPECIFICATIONS FOR "HMA AND/OR PCC SURFACE REMOVAL, BUTT JOINT".
- * SEE TYPICAL SECTIONS FOR MILLING THICKNESS.
- *** 20'-0" (6.1 m) PER 1 (25) RESURFACING (NOTE "A")
10'-0" (3.0 m) PER 1 (25) RESURFACING (NOTE "B")

BASIS OF PAYMENT:

THE BUTT JOINT WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER SQUARE YARD (SQUARE METER) FOR "HOT-MIX ASPHALT SURFACE REMOVAL - BUTT JOINT" OR FOR "PORTLAND CEMENT CONCRETE SURFACE REMOVAL - BUTT JOINT".

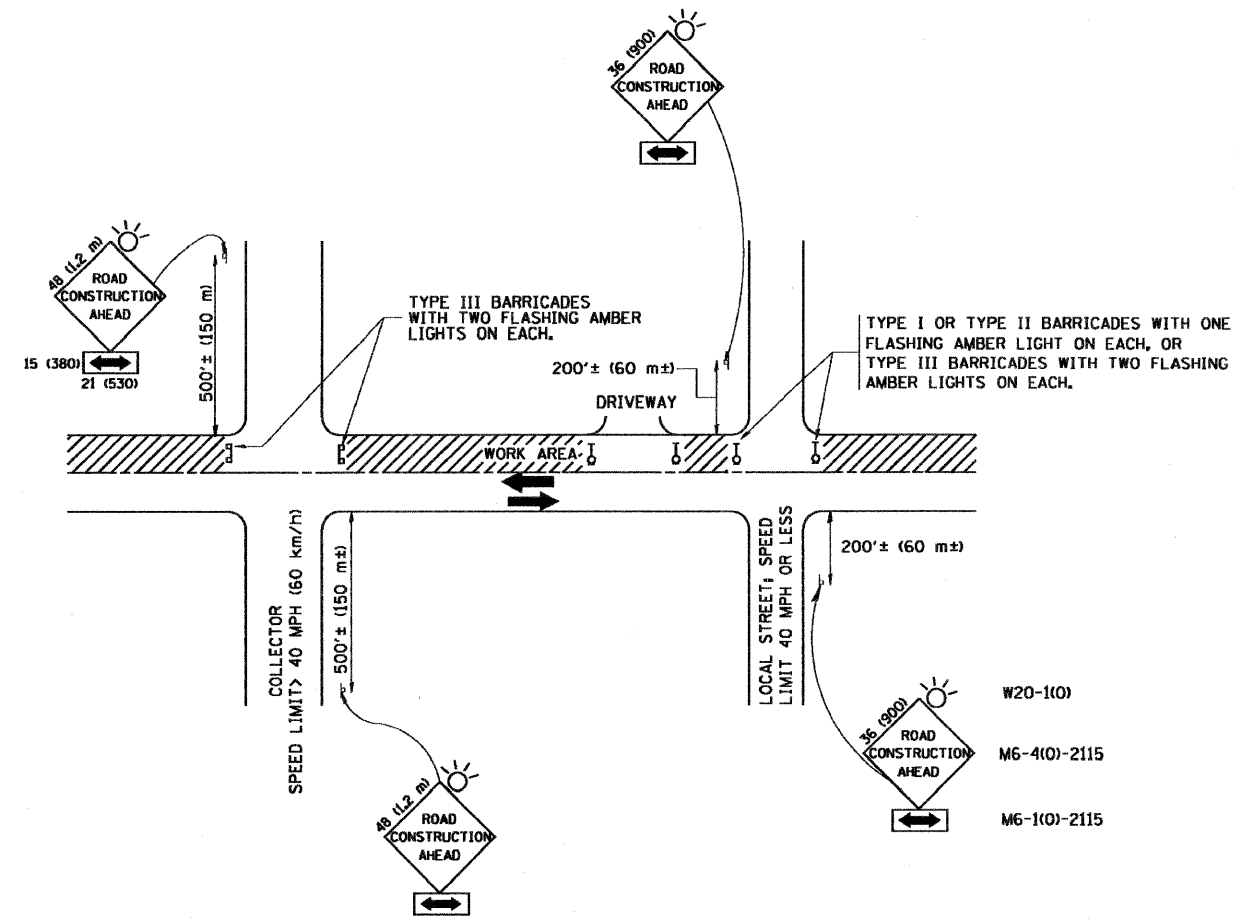
ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.

FILE NAME = M:\distr\td\22x34\bd32.dgn	USER NAME = goglianobt	DESIGNED - M. DE YONG	REVISED - R. SHAH 10-25-94
		DRAWN -	REVISED - A. ABBAS 03-21-97
	PLOT SCALE = 50.0000' / IN.	CHECKED -	REVISED - M. GOMEZ 04-06-01
	PLOT DATE = 1/4/2008	DATE - 06-13-90	REVISED - R. BORO 01-01-07

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

BUTT JOINT AND HMA TAPER DETAILS	
SCALE: NONE	SHEET NO. 1 OF 1 SHEETS STA. TO STA.

F.A.U. RTE. 2697	SECTION 142 B-1-I	COUNTY COOK	TOTAL SHEETS 48	SHEET NO. 42
BD400-05 BD32		CONTRACT NO. 60D89		
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				



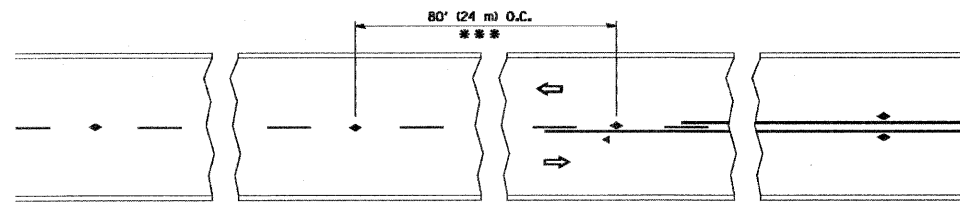
TRAFFIC CONTROL AND PROTECTION FOR SIDE ROADS, INTERSECTIONS, AND DRIVEWAYS

NOTES:

- A. FOR NO LANE RESTRICTION ON THE SIDE ROAD OR DRIVEWAYS
 - 1. SIDE ROAD WITH A SPEED LIMIT OF 40 MPH (60 km/h) OR LESS AS SHOWN ON THE DRAWING AND AS DIRECTED BY THE ENGINEER:
 - a) ONE ROAD CONSTRUCTION AHEAD SIGN 36 x 36 (900x900) WITH A FLASHER AND FLAG MOUNTED ON IT APPROXIMATELY 200' (60 m) IN ADVANCE OF THE MAIN ROUTE.
 - b) THE CLOSED PORTION OF THE MAIN ROUTE SHALL BE PROTECTED BY BLOCKING WITH TYPE I, TYPE II OR TYPE III BARRICADES, 1/3 OF THE CROSS SECTION OF THE CLOSED PORTION.
 - 2. SIDE ROAD WITH A SPEED LIMIT GREATER THAN 40 MPH (60 km/h) AS SHOWN ON THE DRAWING AND AS DIRECTED BY THE ENGINEER:
 - a) ONE ROAD CONSTRUCTION AHEAD SIGN 48 x 48 (1.2 m x 1.2 m) WITH A FLASHER MOUNTED ON IT APPROXIMATELY 500' (150 m) IN ADVANCE OF THE MAIN ROUTE.
 - b) THE CLOSED PORTION OF THE MAIN ROUTE SHALL BE PROTECTED BY BLOCKING WITH TYPE III BARRICADES, 1/2 OF THE CROSS SECTION OF THE CLOSED PORTION.
 - 3. WHEN THE SIDE ROAD LIES BETWEEN THE BEGINNING OF THE MAINLINE SIGNING AND THE WORK ZONE, A SINGLE HEADED ARROW (M6-1) SHALL BE USED IN LIEU OF THE DOUBLE HEADED ARROW (M6-4).
- B. FOR A LANE CLOSURE ON A SIDE ROAD OR DRIVEWAY:
 - USE APPLICABLE PORTIONS OF THE TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES (STD. 701501, STD. 701606 OR THE APPROPRIATE STANDARD). THE SPACING OF SIGNS AND BARRICADES SHALL BE ADJUSTED FOR FIELD CONDITIONS AS DIRECTED BY THE ENGINEER. THE DIRECTIONAL ARROW SHALL BE COVERED OR REMOVED WHEN NO LONGER CONSISTENT WITH THE SIDE ROAD LANE CLOSURE.
 - C. ADVANCE WARNING SIGNS ARE TO BE OMITTED ON DRIVEWAY UNLESS OTHERWISE NOTED.
 - D. THE TRAFFIC CONTROL AND PROTECTION FOR SIDE ROADS, INTERSECTIONS, AND DRIVEWAYS SHALL BE INCIDENTAL TO THE COST OF SPECIFIED TRAFFIC CONTROL STANDARDS OR ITEMS.

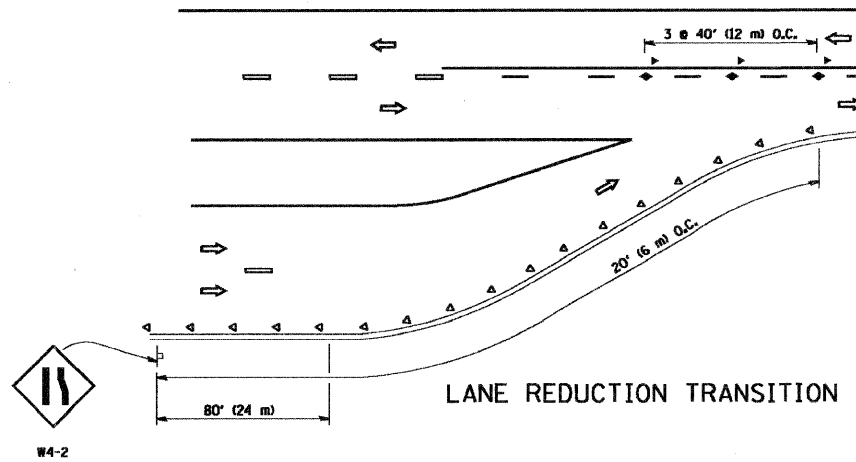
All dimensions are in millimeters (inches) unless otherwise shown.

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PLOT SCALE = 50,000 % IN.	CHECKED -	DATE - 06-89	REVISED - A. HOUSEH 03-06-96		SCALE: NONE	SHEET NO. 1 OF 1 SHEETS	STA.	TO STA.	CONTRACT NO. 60D89			
PLOT DATE = 1/4/2008	CHECKED -	DATE - 06-89	REVISED - A. HOUSEH 10-15-96		FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT							
			REVISED - T. RAMMACHER 01-06-00									

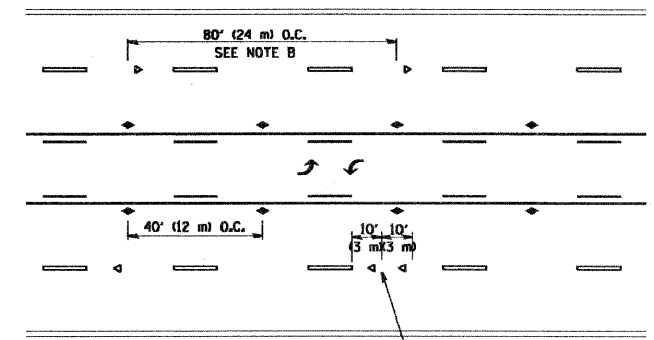


*** REDUCE TO 40' (12 m) O.C. ON CURVES WITH POSTED OR ADVISORY SPEED 45 M.P.H. (70 km/h) OR LESS.

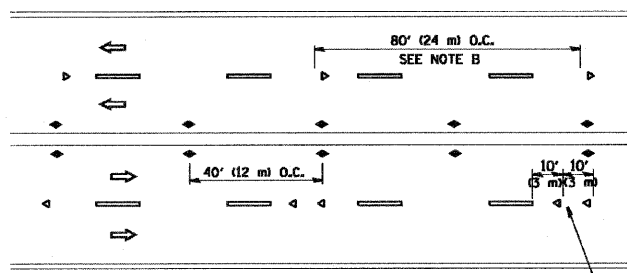
TWO-LANE/TWO-WAY



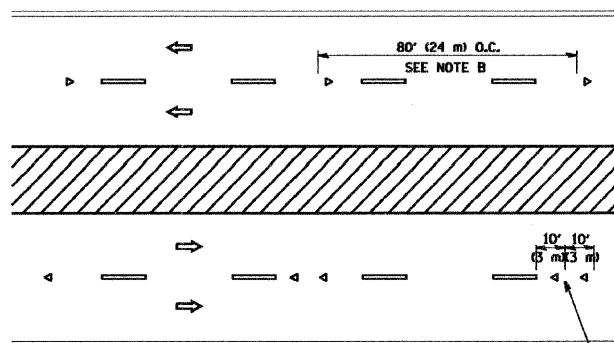
LANE REDUCTION TRANSITION



TWO-WAY LEFT TURN



MULTI-LANE/UNDIVIDED



MULTI-LANE/DIVIDED

GENERAL NOTES

1. MARKERS USED WITH DASHED LINES SHALL BE CENTERED IN THE GAP BETWEEN SEGMENTS.
2. MARKERS USED ADJACENT TO SOLID LINES SHALL BE OFFSET 2 TO 3 (50 TO 75) TOWARD TRAFFIC AS SHOWN.
3. MARKERS THROUGH TANGENTS LESS THAN 500' (150 m) IN LENGTH BETWEEN CURVES SHALL BE INSTALLED AT THE LESSER OF THE TWO CURVE SPACINGS.

SYMBOLS

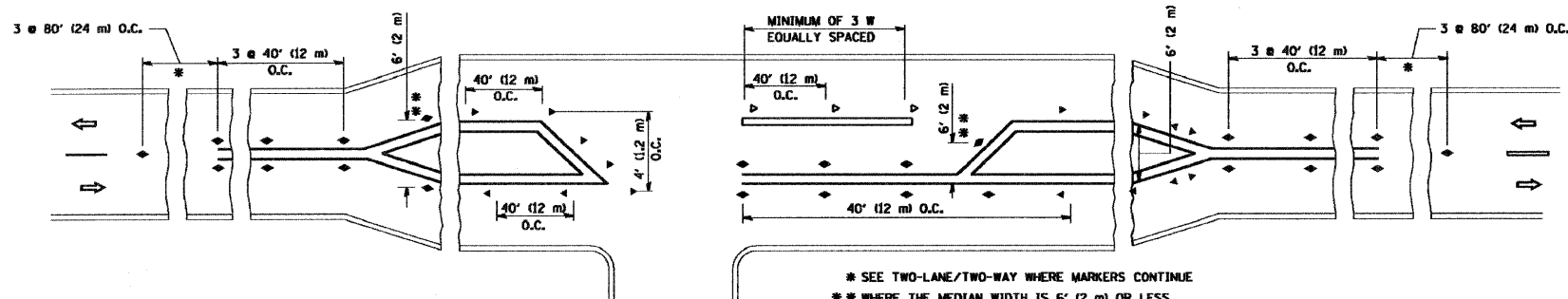
- YELLOW STRIPE
- WHITE STRIPE
- ◀ ONE-WAY AMBER MARKER
- ◀ ONE-WAY CRYSTAL MARKER (W/O)
- ◀ TWO-WAY AMBER MARKER

LANE MARKER NOTES

- B. REDUCE TO 40' (12 m) O.C. ON CURVES WHERE ADVISORY SPEEDS ARE 10 M.P.H. (20 km/h) LOWER THAN POSTED SPEEDS.
- A. USE DOUBLE LANE LINE MARKERS SPACED AS SHOWN.

DESIGN NOTES

1. DOUBLE LANE LINE MARKERS SHALL BE USED UNLESS SPECIFIED OTHERWISE.
2. EXCEPT AS SHOWN ON THE LANE REDUCTION TRANSITION AND FREEWAY EXIT RAMP DETAIL, MARKERS ARE NOT TO BE SPECIFIED ON RIGHT EDGE LINES.
3. THE EXACT MARKER LIMITS, SPACING, AND COLOR SHOULD BE INCLUDED IN THE PLANS.
4. MARKERS SHOULD NOT BE USED ALONGSIDE CURBS EXCEPT FOR EXTREMELY SHORT SECTIONS OF CURBS WHERE NOT MORE THAN TWO MARKERS WOULD BE INVOLVED.

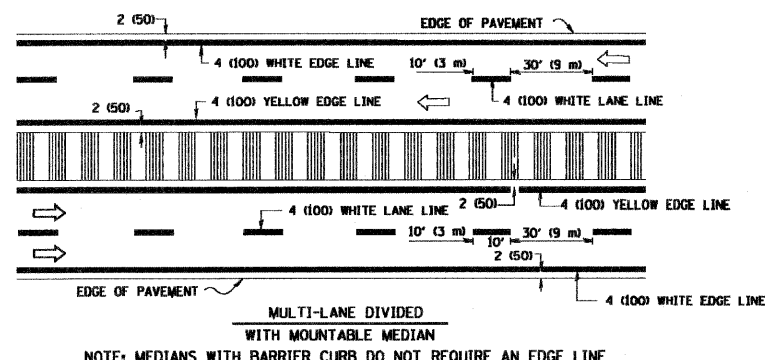
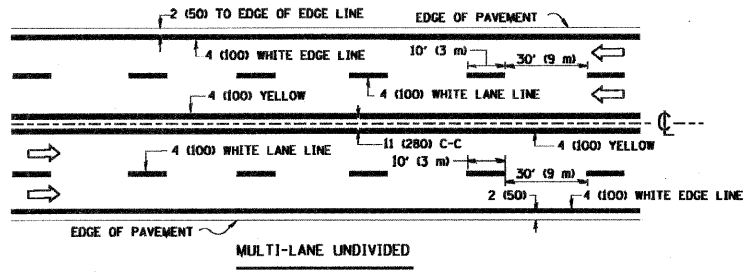
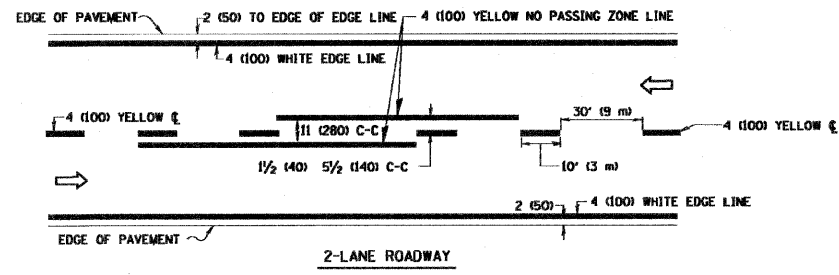


LEFT TURN

* SEE TWO-LANE/TWO-WAY WHERE MARKERS CONTINUE
 ** WHERE THE MEDIAN WIDTH IS 6' (2 m) OR LESS USE TWO-WAY MARKERS.

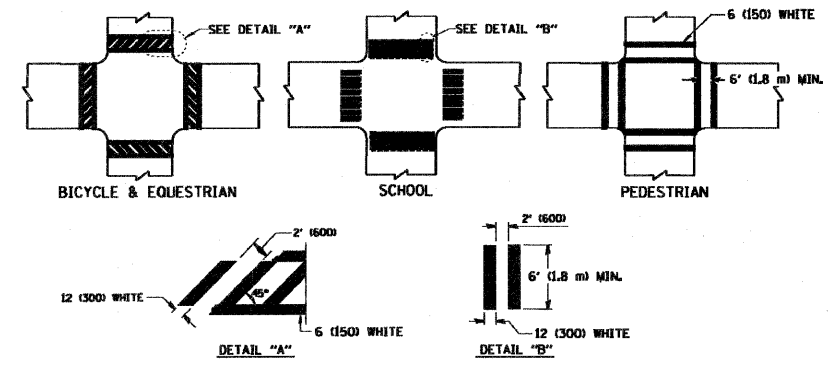
All dimensions are in inches (millimeters) unless otherwise shown.

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PLOT SCALE = 50.000' / IN.	PLOT DATE = 1/4/2008	DRAWN -	REVISED - T. RAMMACHER 03-12-99		SCALE: NONE	SHEET NO. 1 OF 1 SHEETS	STA.	TO STA.	TC-11		CONTRACT NO. 60D89	
		CHECKED -	REVISED - T. RAMMACHER 01-06-00		FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT							
		DATE -	REVISED -									

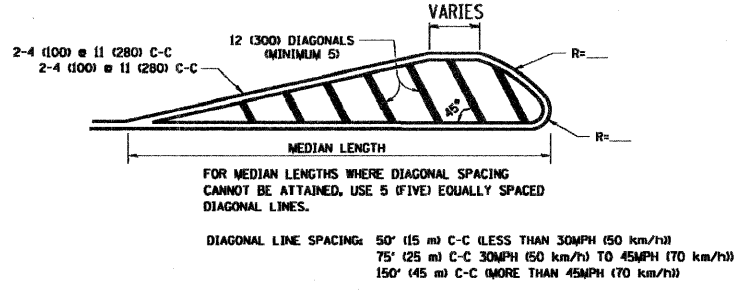
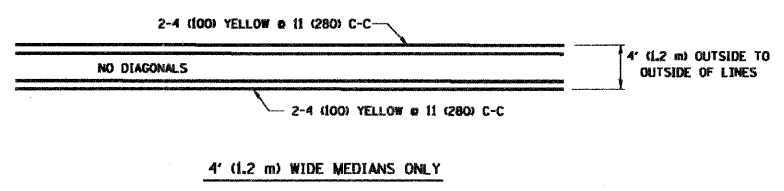


NOTE: MEDIANS WITH BARRIER CURB DO NOT REQUIRE AN EDGE LINE

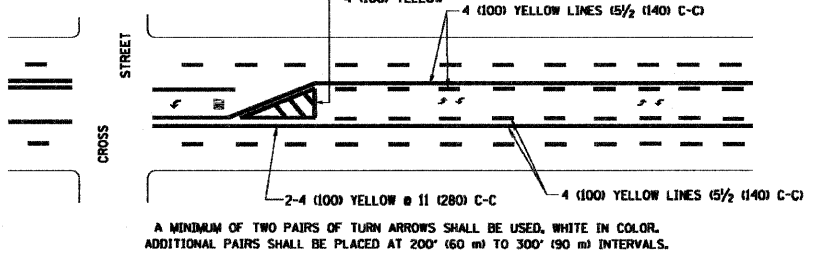
TYPICAL LANE AND EDGE LINE MARKING



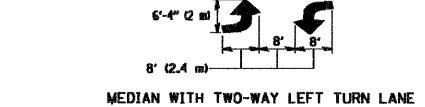
TYPICAL CROSSWALK MARKING



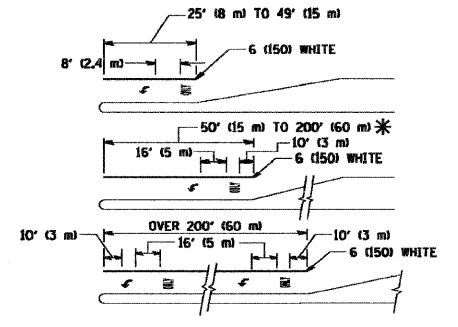
MEDIANS OVER 4' (1.2 m) WIDE



TYPICAL PAINTED MEDIAN MARKING



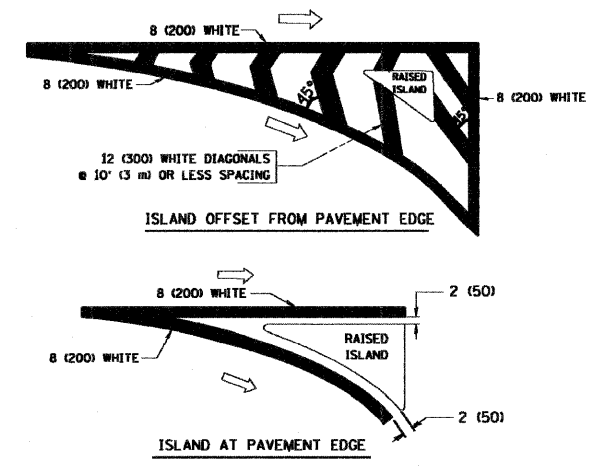
MEDIAN WITH TWO-WAY LEFT TURN LANE



FULL SIZE LETTERS 8' (2.4 m) AND ARROWS SHALL BE USED. AREA = 15.6 SQ. FT. (1.5 m²) AREA = 20.8 SQ. FT. (1.9 m²) * TURN LANES IN EXCESS OF 400' (120 m) IN LENGTH MAY HAVE AN ADDITIONAL SET OF ARROW - "ONLY" INSTALLED MIDWAY BETWEEN THE OTHER TWO SETS OF ARROW - "ONLY".

TYPICAL LEFT (OR RIGHT) TURN LANE

TYPICAL TURN LANE MARKING

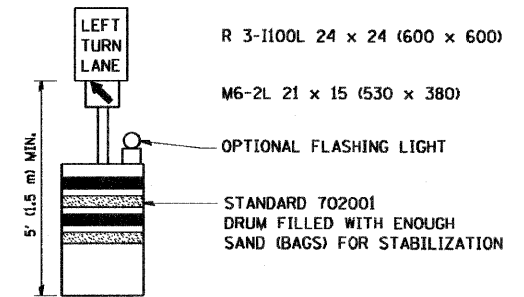
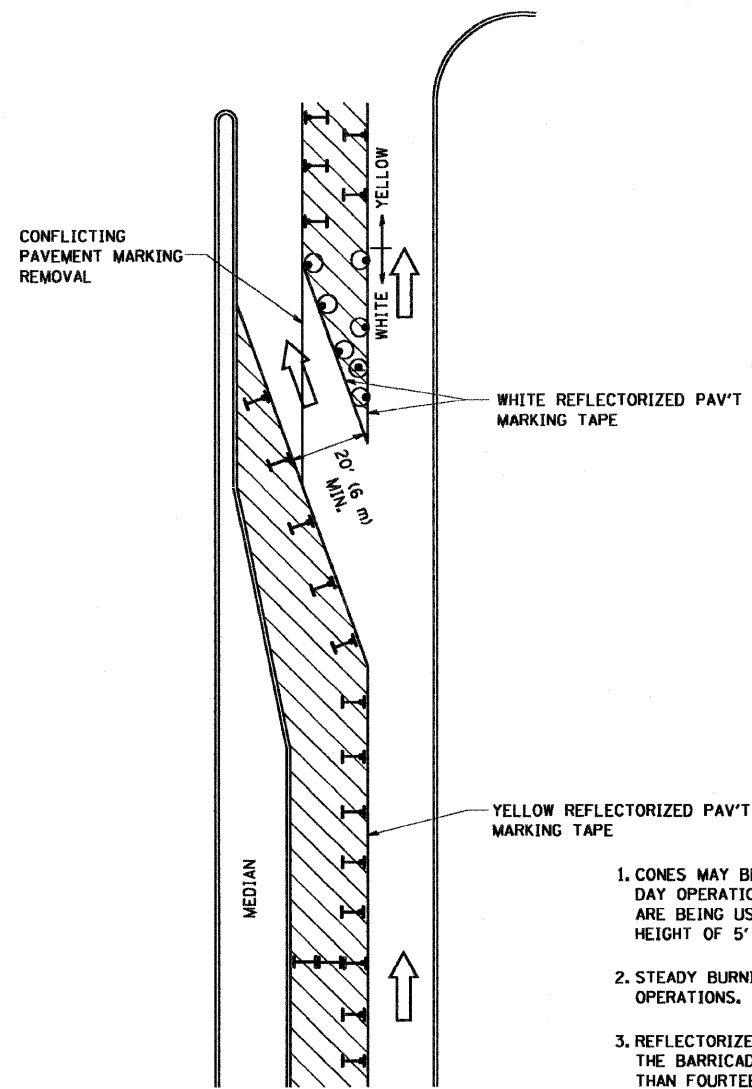


TYPICAL ISLAND MARKING

TYPE OF MARKING	WIDTH OF LINE	PATTERN	COLOR	SPACING / REMARKS
CENTERLINE ON 2 LANE PAVEMENT	4 (100)	SKIP-DASH	YELLOW	10' (3 m) LINE WITH 30' (9 m) SPACE
CENTERLINE ON MULTI-LANE UNDIVIDED PAVEMENT	2 @ 4 (100)	SOLID	YELLOW	11 (280) C-C
NO PASSING ZONE LINES FOR ONE DIRECTION FOR BOTH DIRECTIONS	4 (100) 2 @ 4 (100)	SOLID SOLID	YELLOW YELLOW	5/2 (140) C-C FROM SKIP-DASH CENTERLINE 11 (280) C-C OMIT SKIP-DASH CENTERLINE BETWEEN
LANE LINES	4 (100) 5 (125) ON FREEWAYS	SKIP-DASH SKIP-DASH	WHITE WHITE	10' (3 m) LINE WITH 30' (9 m) SPACE
DOTTED LINES (EXTENSIONS OF CENTER, LANE OR TURN LANE MARKINGS)	SAME AS LINE BEING EXTENDED	SKIP-DASH	SAME AS LINE BEING EXTENDED	2' (600) LINE WITH 6' (1.8 m) SPACE
EDGE LINES	4 (100)	SOLID	YELLOW-LEFT WHITE-RIGHT	OUTLINE MOUNTABLE MEDIANS IN YELLOW; EDGE LINES ARE NOT USED NEXT TO BARRIER CURB
TURN LANE MARKINGS	6 (150) LINE; FULL SIZE LETTERS & SYMBOLS (8' (2.4m))	SOLID	WHITE	SEE TYPICAL TURN LANE MARKING DETAIL
TWO WAY LEFT TURN MARKING	2 @ 4 (100) EACH DIRECTION 8' (2.4m) LEFT ARROW	SKIP-DASH AND SOLID IN PAIRS	YELLOW WHITE	10' (3 m) LINE WITH 30' (9 m) SPACE FOR SKIP-DASH; 5/2 (140) C-C BETWEEN SOLID LINE AND SKIP-DASH LINE SEE TYPICAL TWO-WAY LEFT TURN MARKING DETAIL
CROSSWALK LINES (PEDESTRIAN A. DIAGONALS (BIKE & EQUESTRIAN) B. LONGITUDINAL BARS (SCHOOL))	2 @ 6 (150) 12 (300) @ 45° 12 (300) @ 90°	SOLID SOLID SOLID	WHITE WHITE WHITE	NOT LESS THAN 6' (1.8 m) APART 2' (600) APART SEE TYPICAL CROSSWALK MARKING DETAILS.
STOP LINES	24 (600)	SOLID	WHITE	PLACE 4' (1.2 m) IN ADVANCE OF AND PARALLEL TO CROSSWALK, IF PRESENT. OTHERWISE, PLACE AT DESIRED STOPPING POINT. PARALLEL TO CROSSROAD CENTERLINE, WHERE POSSIBLE
PAINTED MEDIANS	2 @ 4 (100) WITH 12 (300) DIAGONALS @ 45° NO DIAGONALS USED FOR 4' (1.2 m) WIDE MEDIANS	SOLID	YELLOW; TWO WAY TRAFFIC WHITE; ONE WAY TRAFFIC	11 (280) C-C FOR THE DOUBLE LINE SEE TYPICAL PAINTED MEDIAN MARKING.
GORE MARKING AND CHANNELIZING LINES	8 (200) WITH 12 (300) DIAGONALS @ 45°	SOLID	WHITE	DIAGONALS: 15' (4.5 m) C-C (LESS THAN 30MPH (50 km/h)) 20' (6 m) C-C (30MPH (50 km/h) TO 45MPH (70 km/h)) 30' (9 m) C-C (OVER 45MPH (70 km/h))
RAILROAD CROSSING	24 (600) TRANSVERSE LINES; "RR" IS 6' (1.8 m) LETTERS; 16 (400) LINE FOR "X"	SOLID	WHITE	SEE STATE STANDARD 780001 AREA OF: "RR" = 3.6 SQ. FT. (0.33 m ²) EACH "X" = 54.0 SQ. FT. (5.0 m ²)
SHOULDER DIAGONALS	12 (300) @ 45°	SOLID	WHITE - RIGHT YELLOW - LEFT	50' (15 m) C-C (LESS THAN 30MPH (50 km/h)) 75' (25 m) C-C (30 MPH (50 km/h) TO 45MPH (70 km/h)) 150' (45 m) C-C (OVER 45MPH (70 km/h))

FOR FURTHER DETAILS ON PAVEMENT MARKING REFER TO STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AND STATE STANDARD 780001.

All dimensions are in inches (millimeters) unless otherwise shown.



GENERAL NOTES

1. CONES MAY BE SUBSTITUTED FOR BARRICADES OR DRUMS AT HALF THE SPACING DURING DAY OPERATIONS. CONES SHALL BE A MINIMUM OF 28 (710) IN HEIGHT. WHEN CONES ARE BEING USED, THE "LEFT TURN LANE" SIGN MAY BE SKID MOUNTED AT A MINIMUM HEIGHT OF 5' (1.5 m).
2. STEADY BURNING LIGHTS WILL NOT BE REQUIRED ON BARRICADES OR DRUMS FOR DAY OPERATIONS. ALL LIGHTS SHALL BE MONODIRECTIONAL.
3. REFLECTORIZED TEMPORARY PAVEMENT MARKING TAPE SHALL BE PLACED THROUGHOUT THE BARRICADED AREA OF EACH TURN BAY WHERE THE CLOSURE TIME IS GREATER THAN FOURTEEN DAYS.
4. THIS APPLICATION ALSO APPLIES WHEN WORK IS BEING PERFORMED IN THE RIGHT LANE(S) AND THE RIGHT TURN BAY IS TO REMAIN OPEN. UNDER THIS CONDITION, "RIGHT TURN LANE" R3-100 24 x 24 (600 x 600) AND M6-2R 21 x 15 (530 x 380) SHALL BE USED.
5. THESE CONTROLS SHALL SUPPLEMENT MAINLINE TRAFFIC CONTROL FOR LANE CLOSURES.
6. LONGITUDINAL DIMENSIONS MAY BE ADJUSTED TO FIT FIELD CONDITIONS.
7. FORM BT 725 IS REQUIRED.
8. TRAFFIC CONTROL AND PROTECTION AT TURN BAYS (TO REMAIN OPEN TO TRAFFIC) SHALL BE INCLUDED IN THE COST SPECIFIED TRAFFIC CONTROL STANDARDS OR ITEMS.

LEGEND

- WORK AREA
- LANE OPEN TO TRAFFIC
- TYPE I OR II BARRICADE WITH STEADY BURN LIGHT
- DRUM WITH STEADY BURN LIGHT
- DRUM WITH SIGN (WITH OPTIONAL FLASHING LIGHT) SEE DETAIL
- TYPE I OR II CHECK BARRICADE WITH FLASHING LIGHT

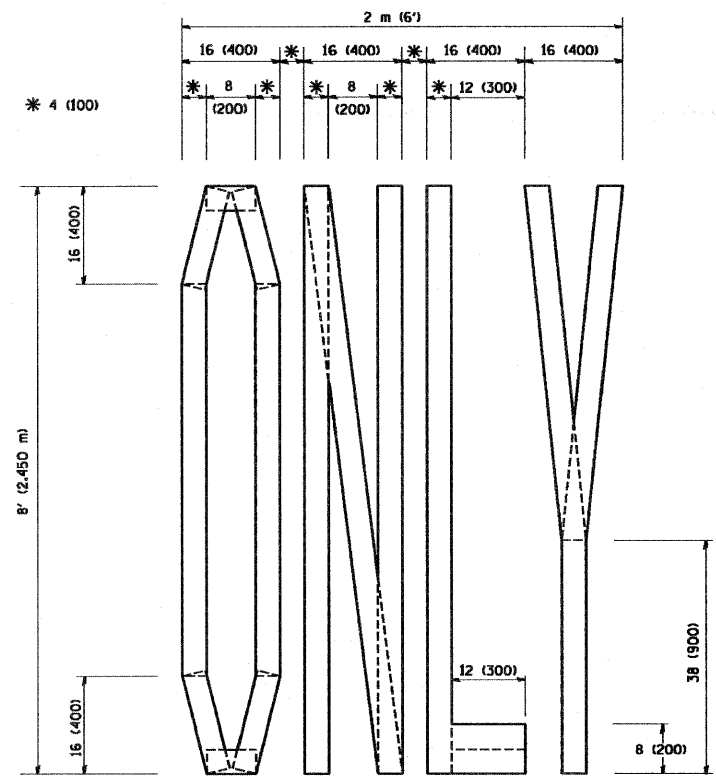
All dimensions are in inches (millimeters) unless otherwise shown.

FILE NAME =	USER NAME = goglianobt	DESIGNED -	REVISED - T. RAMMACHER 09-08-94
W:\distr\td\22x34\td14.dgn		DRAWN -	REVISED - A. HOUSEH 11-07-95
	PLOT SCALE = 60,0000 ' / IN.	CHECKED -	REVISED - A. HOUSEH 10-12-96
	PLOT DATE = 1/4/2008	DATE -	REVISED - T. RAMMACHER 01-06-00

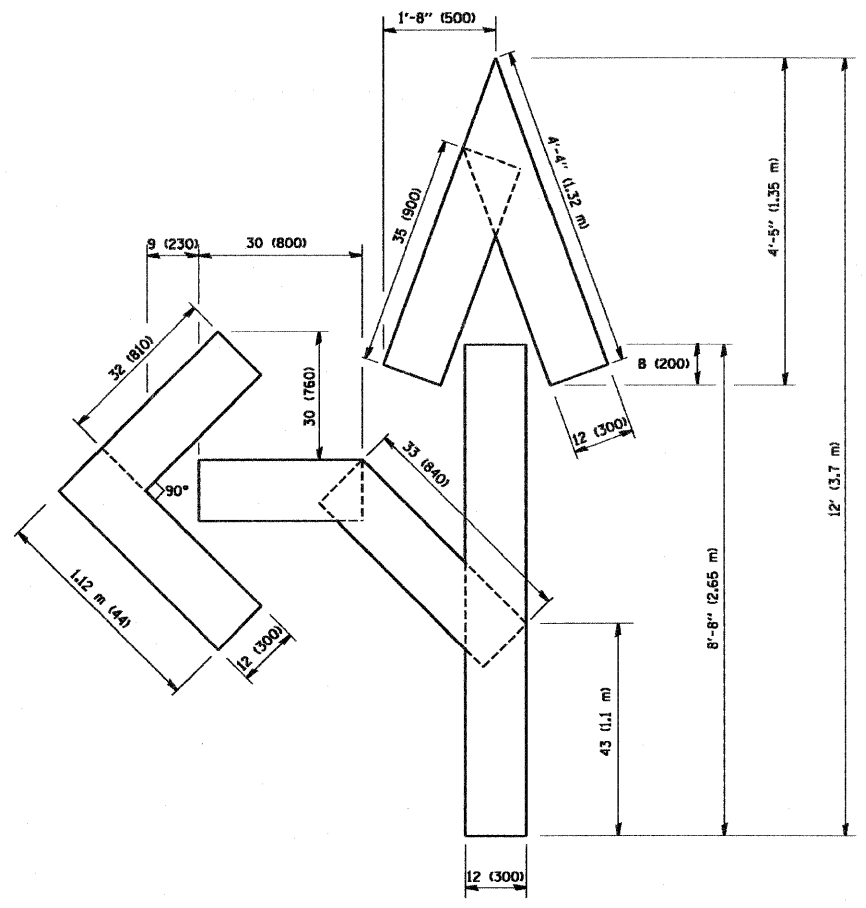
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

TRAFFIC CONTROL AND PROTECTION AT TURN BAYS (TO REMAIN OPEN TO TRAFFIC)			
SCALE: NONE	SHEET NO. 1 OF 1 SHEETS	STA.	TO STA.

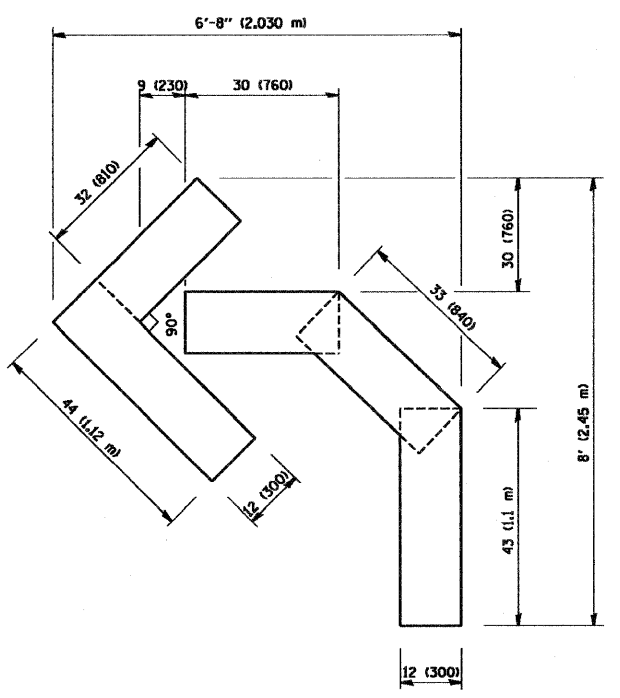
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2697	142 B-1-I	COOK	48	46
TC-14			CONTRACT NO. 60D89	
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				



QUANTITY
 4 (100) LINE = 64.1 ft. (19.7 m)
 21.1 sq. ft. (1.97 sq. m)



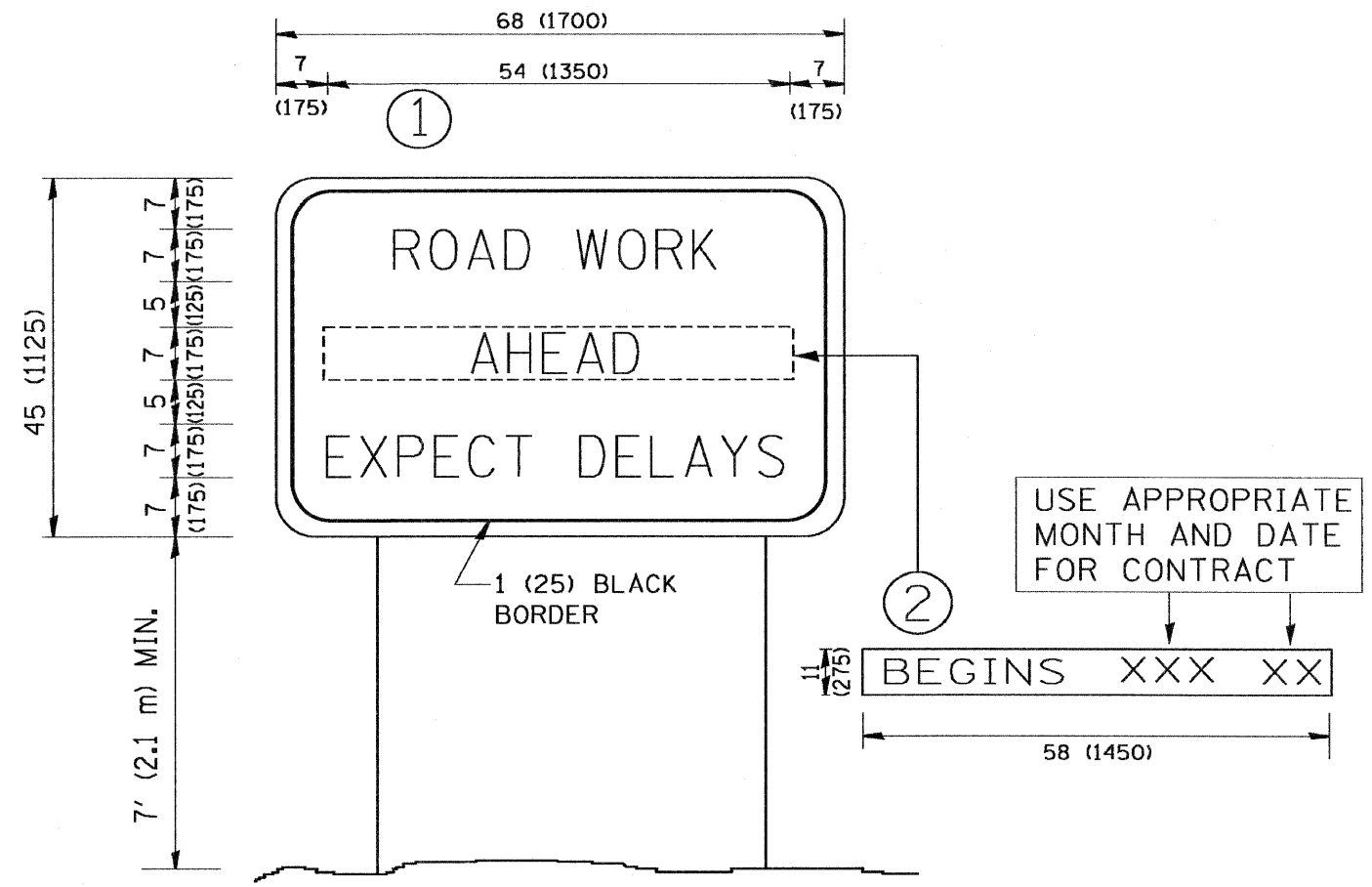
QUANTITY
 4 (100) LINE = 82.5 ft. (25.3 m)
 27.5 sq. ft. (2.53 sq. m)



QUANTITY
 4 (100) LINE = 45.5 ft. (13.9 m)
 15.2 sq. ft. (1.39 sq. m)

All dimensions are in inches (millimeters) unless otherwise shown.

FILE NAME =	USER NAME = goglianob	DESIGNED -	REVISED - T. RAMMACHER 06-05-96	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PAVEMENT MARKING LETTERS AND SYMBOLS FOR TRAFFIC STAGING			F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
W:\dvs\td\22x34\td16.dgn		DRAWN -	REVISED - T. RAMMACHER 11-04-97		2697	142 B-1-I	COOK	48	47			
PLOT SCALE = 5/8" = 1' IN.		CHECKED -	REVISED - T. RAMMACHER 03-02-98		TC-16			CONTRACT NO. 60D89				
PLOT DATE = 1/4/2008		DATE - 09-18-94	REVISED - E. GOMEZ 08-28-00		SCALE: NONE	SHEET NO. 1 OF 1 SHEETS	STA.	TO STA.	FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT			



NOTES:

1. USE BLACK LETTERING ON ORANGE BACKGROUND.
2. ERECT SIGNS IN ADVANCE OF THE LOCATION FOR THE "ROAD CONSTRUCTION AHEAD" SIGN AT LOCATIONS AS DIRECTED BY THE ENGINEER.
3. ERECT SIGN ① WITH INSTALLED PANEL ② ONE WEEK PRIOR TO THE START OF CONSTRUCTION.
4. REMOVE PANEL ② SOON AFTER THE START OF CONSTRUCTION.
5. SEE SPECIAL PROVISION FOR "TEMPORARY INFORMATION SIGNING" FOR ADDITIONAL INFORMATION.
6. ONE SIGN ASSEMBLY EQUALS 25.70 SQ. FT. (2.3 SQ. M.)
7. SHALL BE PAID FOR AS TEMPORARY INFORMATION SIGNING.

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.

FILE NAME =	USER NAME = goglianobt	DESIGNED -	REVISED - R. MIRS 09-15-97	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	ARTERIAL ROAD INFORMATION SIGN			F.A.U. RTE. 2697	SECTION 142 B-1-I	COUNTY COOK	TOTAL SHEETS 48	SHEET NO. 48
W:\dist\td\22x34\to22.dgn	PLOT SCALE = 50.000 1 / IN.	DRAWN -	REVISED - R. MIRS 12-11-97		SCALE: NONE	SHEET NO. 1 OF 1	SHEETS	STA.	TO STA.	TC-22	CONTRACT NO. 60D89	
	PLOT DATE = 1/4/2008	CHECKED -	REVISED - T. RAMMACHER 02-02-99		FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT							
		DATE -	REVISED - C. JUJUS 01-31-07									