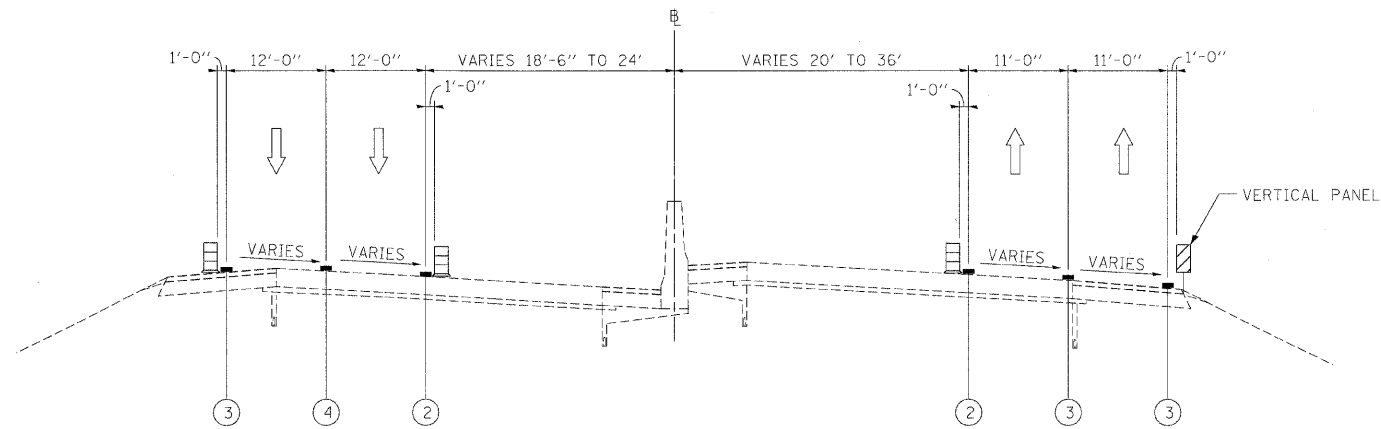


STAGE 3
MAINTENANCE OF TRAFFIC
TYPICAL SECTION

STA 331+10 TO STA 344+35 (WB)STA 331+10 TO STA 341+10 (EB)



STAGE 3
MAINTENANCE OF TRAFFIC
TYPICAL SECTION

STA 344+35 TO STA 346+10 (WB)STA 341+10 TO STA 346+70 (EB)

LEGEND

- ① EXISTING PAVEMENT MARKING
- ② WET REFLECTIVE TEMPORARY TAPE, - TYPE III, 4 INCH (YELLOW)
- ③ WET REFLECTIVE TEMPORARY TAPE, - TYPE III, 4 INCH (WHITE)
- ④ WET REFLECTIVE TEMPORARY TAPE, - TYPE III, 5 INCH (WHITE)
- ⑤ TEMPORARY PAVEMENT MARKING - LINE 6" (YELLOW) (ON BARRIER)
- ⑥ TEMPORARY PAVEMENT MARKING - LINE 6" (WHITE) (ON BARRIER)
- ⑦ WET REFLECTIVE TEMPORARY TAPE - TYPE III, 8 INCH (WHITE)
- TEMPORARY CONCRETE BARRIER
- TYPE II BARRIER, DRUM, OR VERTICAL BARRICADE WITH STEADY BURN MONODIRECTIONAL LIGHT
- WORK ZONE

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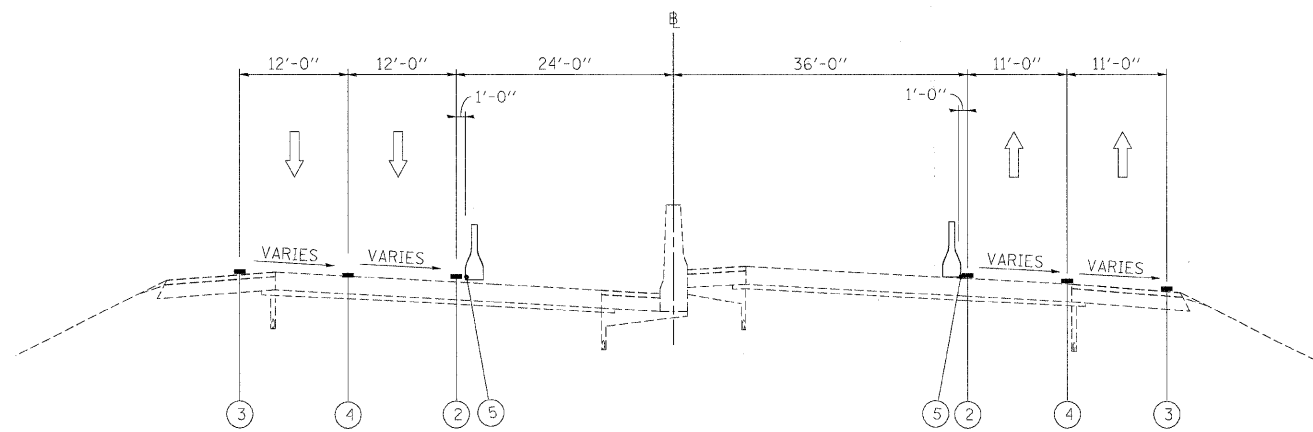
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STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

MAINTENANCE OF TRAFFIC
 TYPICAL SECTIONS - STAGE 3

SCALE: N.T.S. SHEET NO. 56 OF 69 SHEETS STA. TO STA.

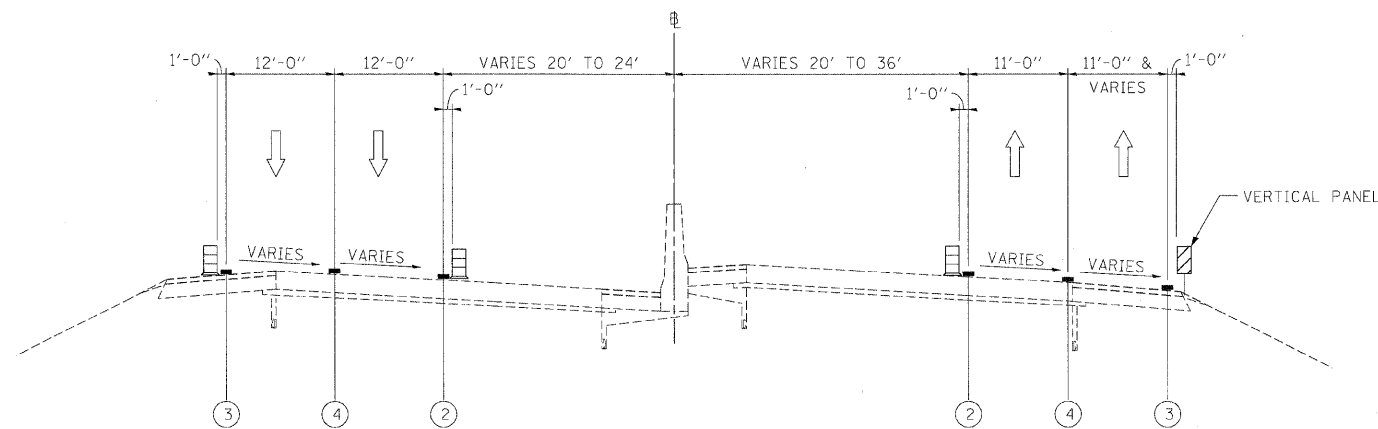
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	2009-0999R	COOK/DUPAGE	309	101
			CONTRACT NO. 60157	
FED. ROAD DIST. NO. [ILLINOIS] FED. AID PROJECT				



**STAGE 3
MAINTENANCE OF TRAFFIC
TYPICAL SECTION**

SEE STAGE CONSTRUCTION DETAILS FOR TYPICAL SECTION THROUGH BRIDGE
BRIDGE OMISSION
STA 349+84 TO STA 354+01

BRIDGE OMISSION
STA 348+80 TO STA 353+23



**STAGE 3
MAINTENANCE OF TRAFFIC
TYPICAL SECTION**

STA 357+80 TO STA 359+20 (WB)

STA 357+25 TO STA 362+85

LEGEND

- ① EXISTING PAVEMENT MARKING
- ② WET REFLECTIVE TEMPORARY TAPE, - TYPE III, 4 INCH (YELLOW)
- ③ WET REFLECTIVE TEMPORARY TAPE, - TYPE III, 4 INCH (WHITE)
- ④ WET REFLECTIVE TEMPORARY TAPE, - TYPE III, 5 INCH (WHITE)
- ⑤ TEMPORARY PAVEMENT MARKING - LINE 6" (YELLOW) (ON BARRIER)
- ⑥ TEMPORARY PAVEMENT MARKING - LINE 6" (WHITE) (ON BARRIER)
- ⑦ WET REFLECTIVE TEMPORARY TAPE - TYPE III, 8 INCH (WHITE)
- TEMPORARY CONCRETE BARRIER
- TYPE II BARRIER, DRUM, OR VERTICAL BARRICADE WITH STEADY BURN MONODIRECTIONAL LIGHT
- WORK ZONE

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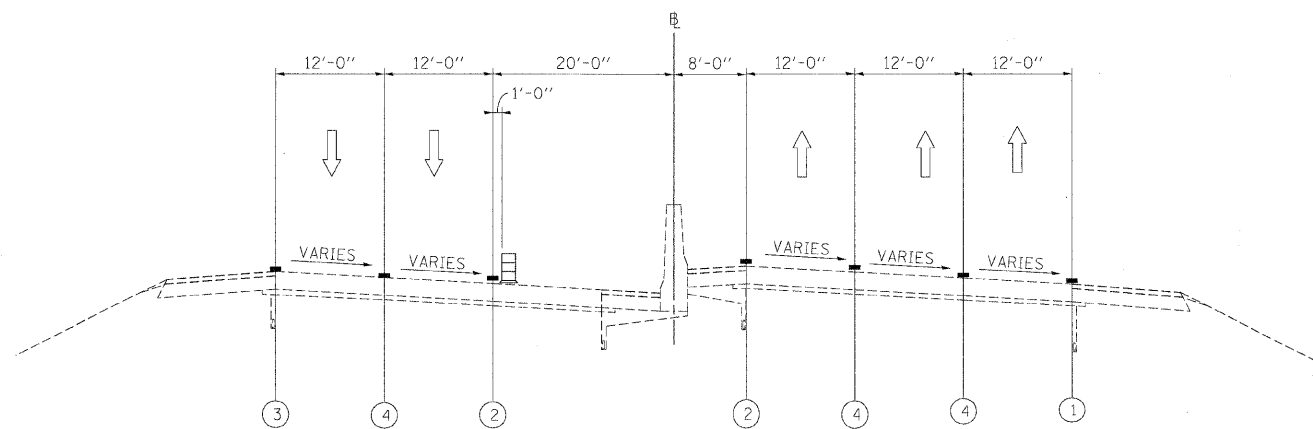
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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**MAINTENANCE OF TRAFFIC
TYPICAL SECTIONS - STAGE 3**

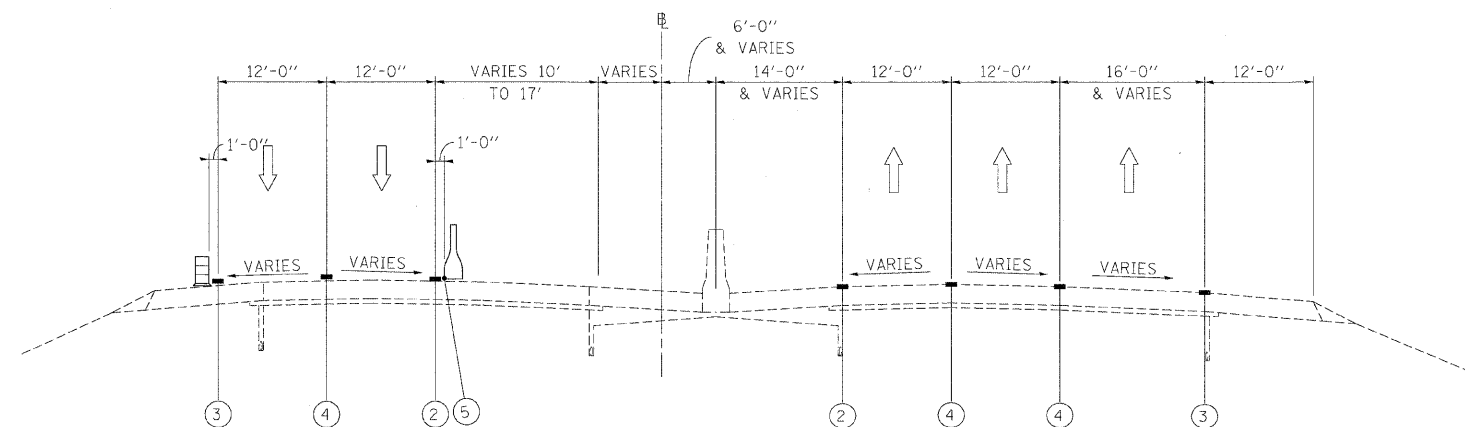
SCALE: N.T.S. SHEET NO. 57 OF 69 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	2009-0998R	COOK/DUPAGE	309	102
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT			CONTRACT NO. 60157	



**STAGE 3
MAINTENANCE OF TRAFFIC
TYPICAL SECTION**




STA 359+20 TO STA 369+20STA 362+85 TO STA 369+20



**STAGE 3
MAINTENANCE OF TRAFFIC
TYPICAL SECTION**

STA 472+95 TO STA 483+50
BRIDGE OMISSION
STA 476+03 TO STA 480+16

LEGEND

- ① EXISTING PAVEMENT MARKING
- ② WET REFLECTIVE TEMPORARY TAPE, - TYPE III, 4 INCH (YELLOW)
- ③ WET REFLECTIVE TEMPORARY TAPE, - TYPE III, 4 INCH (WHITE)
- ④ WET REFLECTIVE TEMPORARY TAPE, - TYPE III, 5 INCH (WHITE)
- ⑤ TEMPORARY PAVEMENT MARKING - LINE 6" (YELLOW) (ON BARRIER)
- ⑥ TEMPORARY PAVEMENT MARKING - LINE 6" (WHITE) (ON BARRIER)
- ⑦ WET REFLECTIVE TEMPORARY TAPE - TYPE III, 8 INCH (WHITE)
-  TEMPORARY CONCRETE BARRIER
-  TYPE II BARRIER, DRUM, OR VERTICAL BARRICADE WITH STEADY BURN MONODIRECTIONAL LIGHT
-  WORK ZONE

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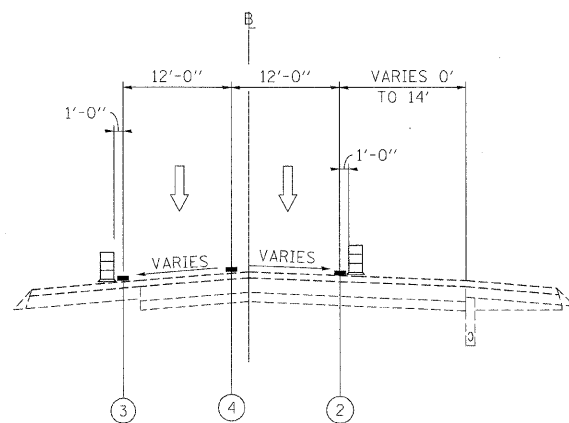
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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**MAINTENANCE OF TRAFFIC
TYPICAL SECTIONS - STAGE 3**




SCALE: N.T.S. SHEET NO. 58 OF 69 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	2009-0998R	COOK/DUPAGE	309	103
CONTRACT NO. 60157				
FED. ROAD DIST. NO. [ILLINOIS] FED. AID PROJECT				



STAGE 3
MAINTENANCE OF TRAFFIC
TYPICAL SECTION
 STA 483+50 TO STA 492+67

LEGEND

- ① EXISTING PAVEMENT MARKING
- ② WET REFLECTIVE TEMPORARY TAPE, - TYPE III, 4 INCH (YELLOW)
- ③ WET REFLECTIVE TEMPORARY TAPE, - TYPE III, 4 INCH (WHITE)
- ④ WET REFLECTIVE TEMPORARY TAPE, - TYPE III, 5 INCH (WHITE)
- ⑤ TEMPORARY PAVEMENT MARKING - LINE 6" (YELLOW) (ON BARRIER)
- ⑥ TEMPORARY PAVEMENT MARKING - LINE 6" (WHITE) (ON BARRIER)
- ⑦ WET REFLECTIVE TEMPORARY TAPE - TYPE III, 8 INCH (WHITE)
-  TEMPORARY CONCRETE BARRIER
-  TYPE II BARRIER, DRUM, OR VERTICAL BARRICADE WITH STEADY BURN MONODIRECTIONAL LIGHT
-  WORK ZONE

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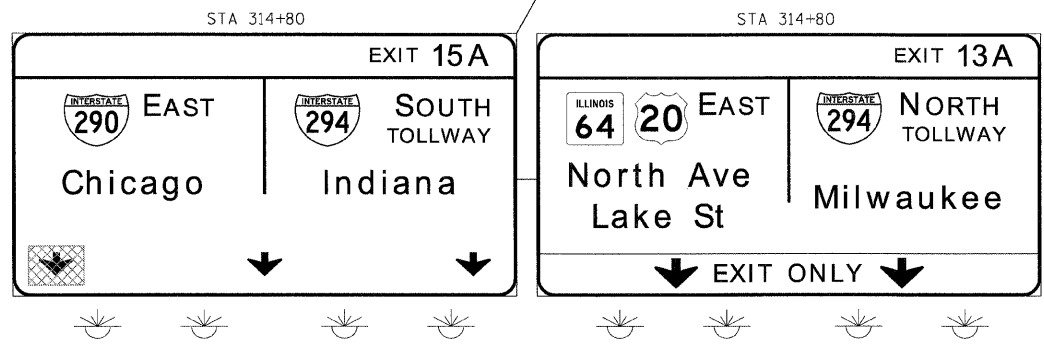
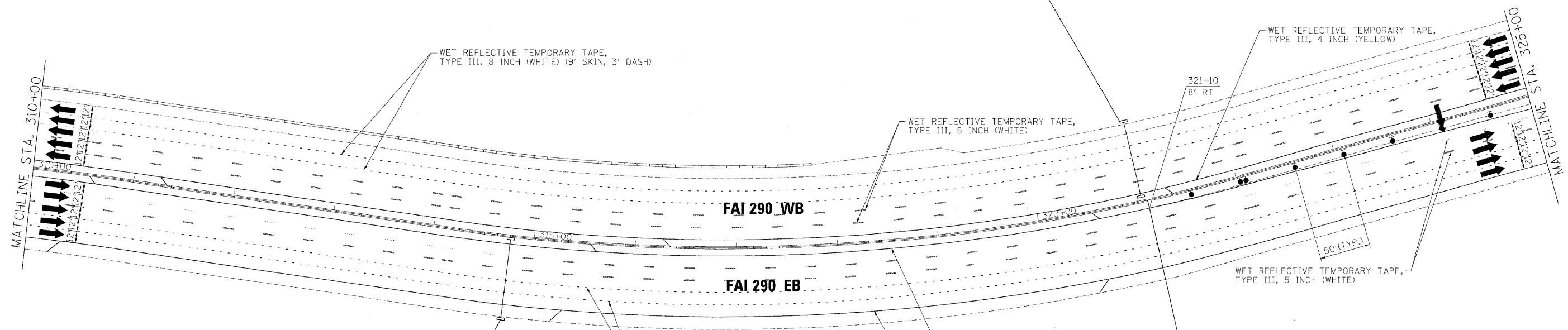
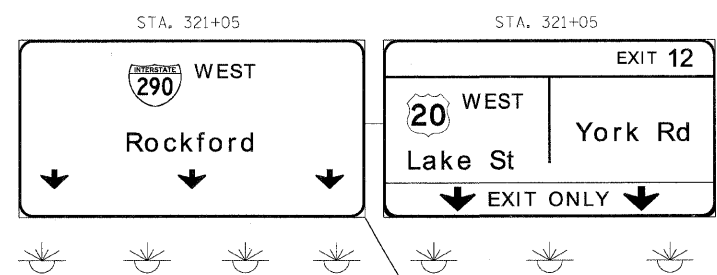
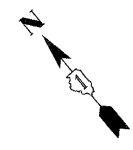
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

MAINTENANCE OF TRAFFIC
TYPICAL SECTIONS - STAGE 3

SCALE: N.T.S. SHEET NO. 59 OF 69 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	2009-0998R	COOK/DUPAGE	309	104
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT			CONTRACT NO. 60157	



ADVANCED SIGNING
PER STANDARD 701400
(COORDINATE WITH CONTRACT 60651)

- LEGEND:**
- TEMPORARY SIGN PANELS
 - WORK ZONE
 - TRAFFIC ARROW
 - FLASHING ARROW BOARD
 - TYPE II BARRICADES, DRUMS, OR VERTICAL PANEL W/ STEADY BURNING MONODIRECTIONAL LIGHT
 - TEMPORARY IMPACT ATTENUATORS
 - TEMPORARY CONCRETE BARRIER PLACEMENT OR RELOCATION

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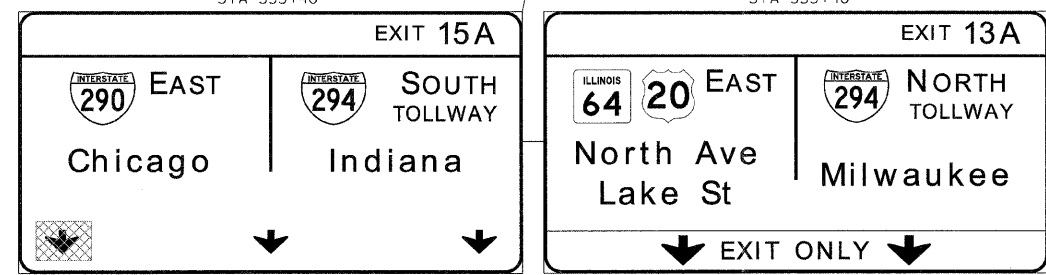
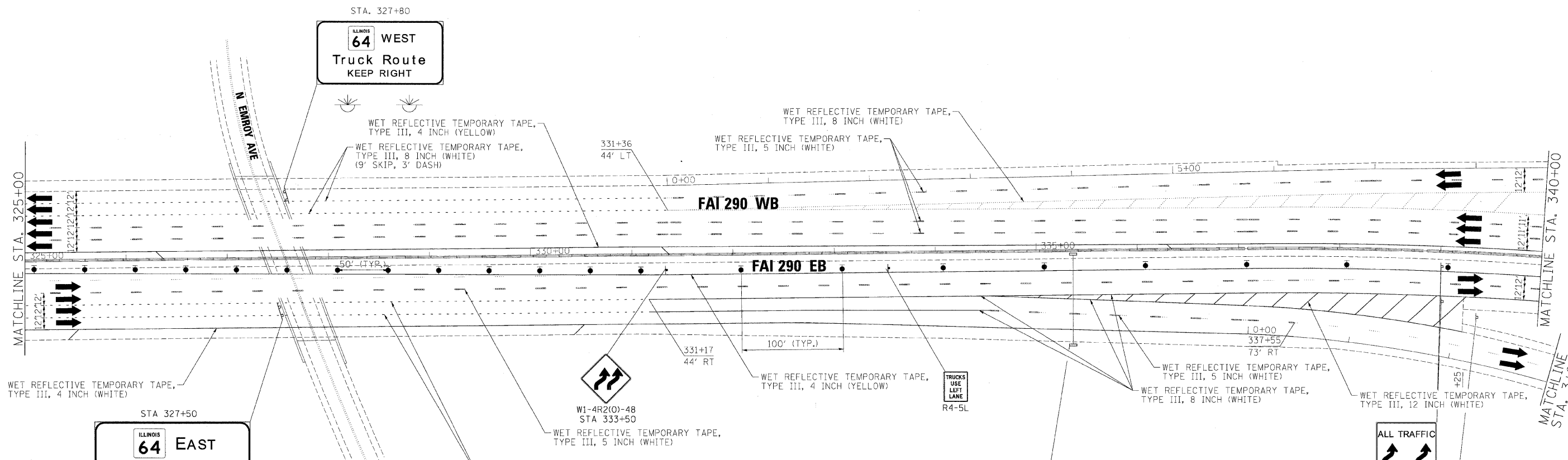
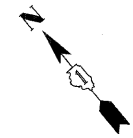
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**MAINTENANCE OF TRAFFIC
PLAN - STAGE 3**

SCALE: 1"=50' SHEET NO. 60 OF 69 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	2009-0998R	COOK/DUPAGE	309	105
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT	

CONTRACT NO. 60157



FILE NAME =	DESIGNED - AJP	REVISED -
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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**MAINTENANCE OF TRAFFIC
PLAN - STAGE 3**

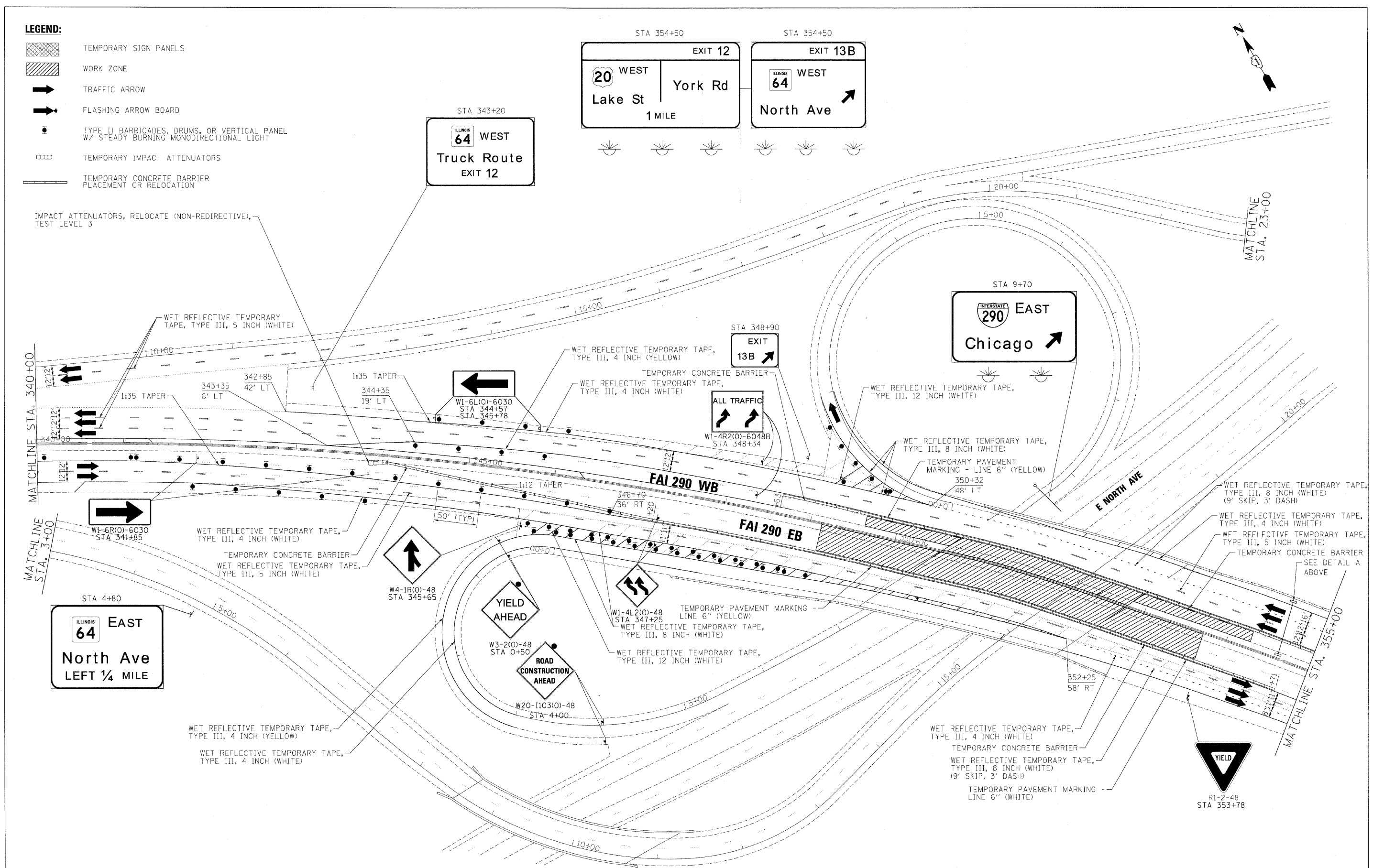
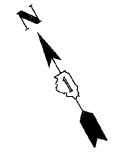
SCALE: 1"=50' SHEET NO. 61 OF 69 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	2009-0998R	COOK/DUPAGE	309	106
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT			CONTRACT NO. 60157	

LEGEND:

-  TEMPORARY SIGN PANELS
-  WORK ZONE
-  TRAFFIC ARROW
-  FLASHING ARROW BOARD
-  TYPE II BARRICADES, DRUMS, OR VERTICAL PANEL W/ STEADY BURNING MONODIRECTIONAL LIGHT
-  TEMPORARY IMPACT ATTENUATORS
-  TEMPORARY CONCRETE BARRIER PLACEMENT OR RELOCATION

IMPACT ATTENUATORS, RELOCATE (NON-REDIRECTIVE), TEST LEVEL 3



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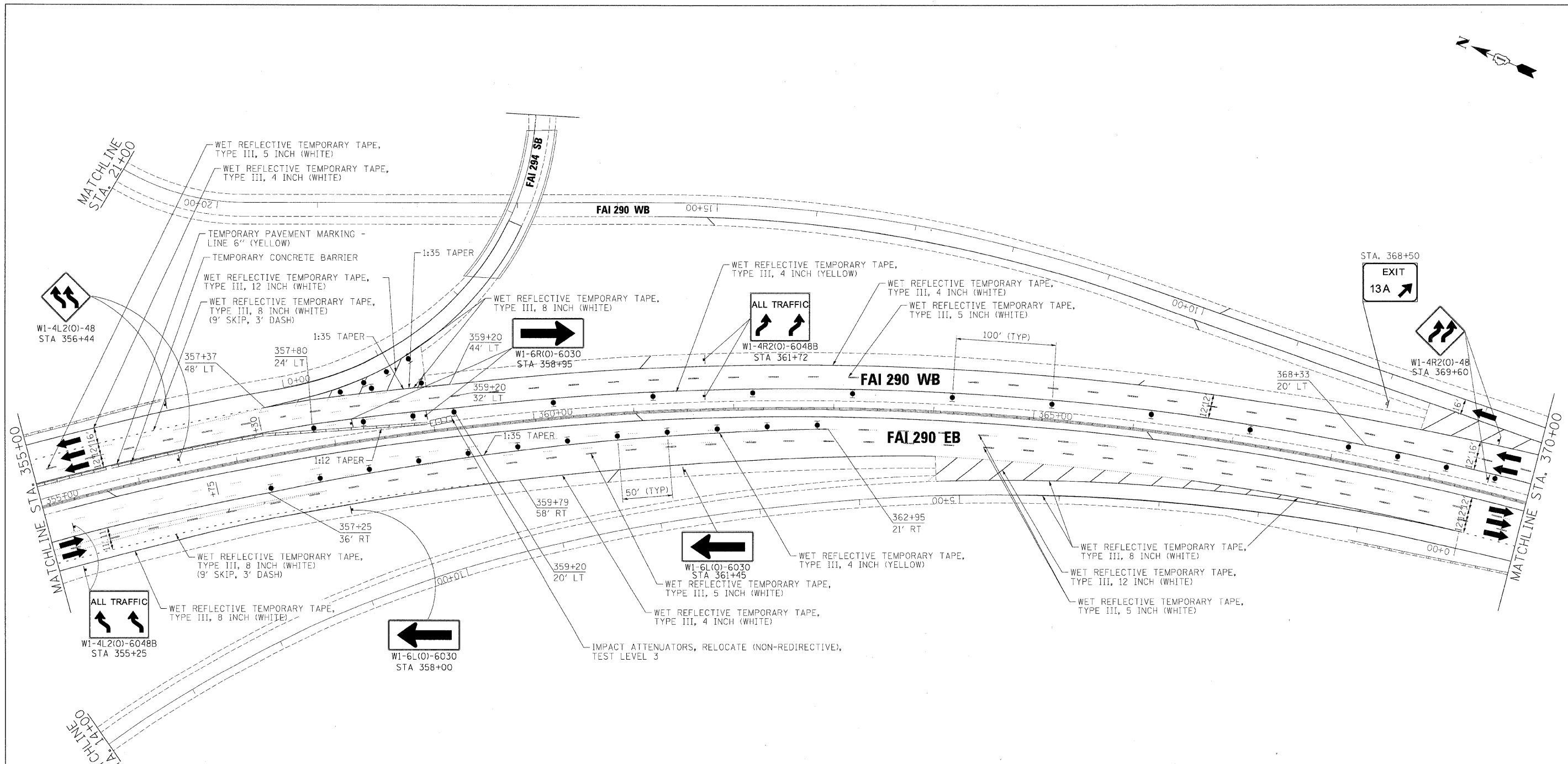
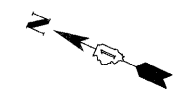
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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**MAINTENANCE OF TRAFFIC
PLAN - STAGE 3**

SCALE: 1"=50' SHEET NO. 62 OF 69 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	2009-0998R	COOK/DUPAGE	309	107
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT	CONTRACT NO. 60157		



LEGEND:

	TEMPORARY SIGN PANELS
	WORK ZONE
	TRAFFIC ARROW
	FLASHING ARROW BOARD
	TYPE II BARRICADES, DRUMS, OR VERTICAL PANEL W/ STEADY BURNING MONODIRECTIONAL LIGHT
	TEMPORARY IMPACT ATTENUATORS
	TEMPORARY CONCRETE BARRIER PLACEMENT OR RELOCATION

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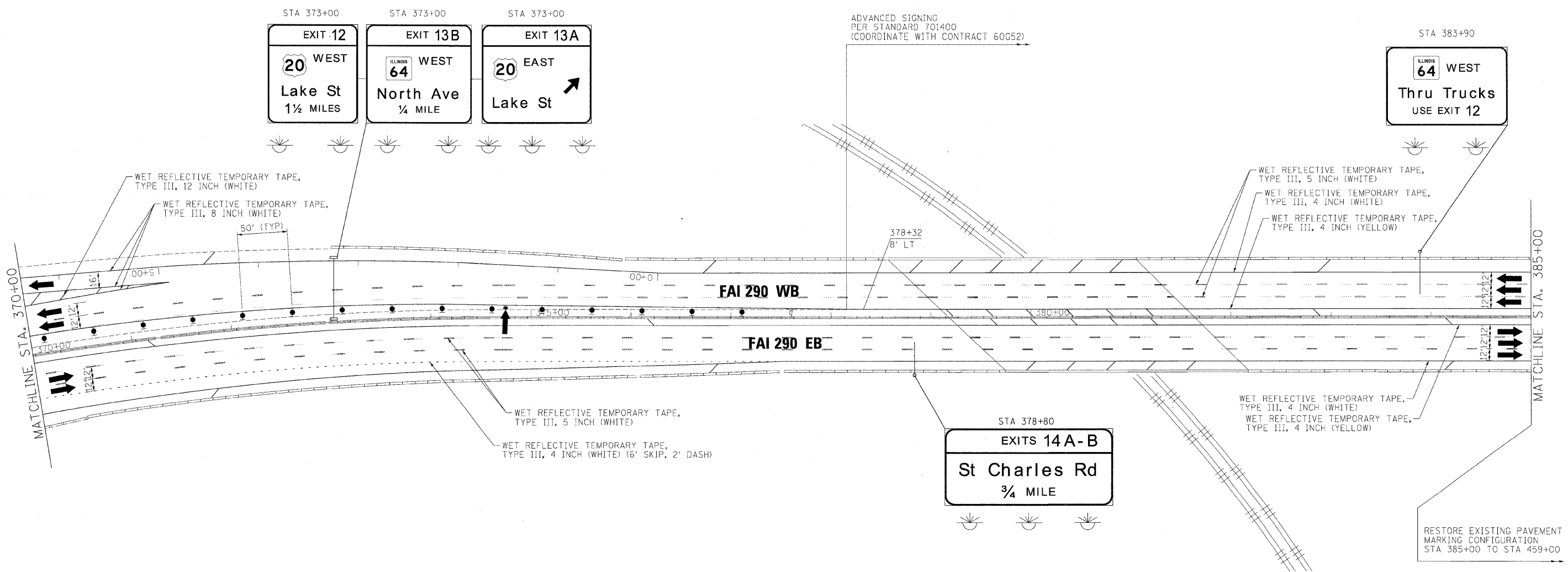
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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**








**MAINTENANCE OF TRAFFIC
PLAN - STAGE 3**

SCALE: 1"=50' SHEET NO. 63 OF 69 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	2009-0998R	COOK/DUPAGE	309	108
FED. ROAD DIST. NO. [ILLINOIS] FED. AID PROJECT			CONTRACT NO. 60157	



LEGEND:

-  TEMPORARY SIGN PANELS
-  WORK ZONE
-  TRAFFIC ARROW
-  FLASHING ARROW BOARD
-  TYPE II BARRICADES, DRUMS, OR VERTICAL PANEL W/ STEADY BURNING MONODIRECTIONAL LIGHT
-  TEMPORARY IMPACT ATTENUATORS
-  TEMPORARY CONCRETE BARRIER PLACEMENT OR RELOCATION

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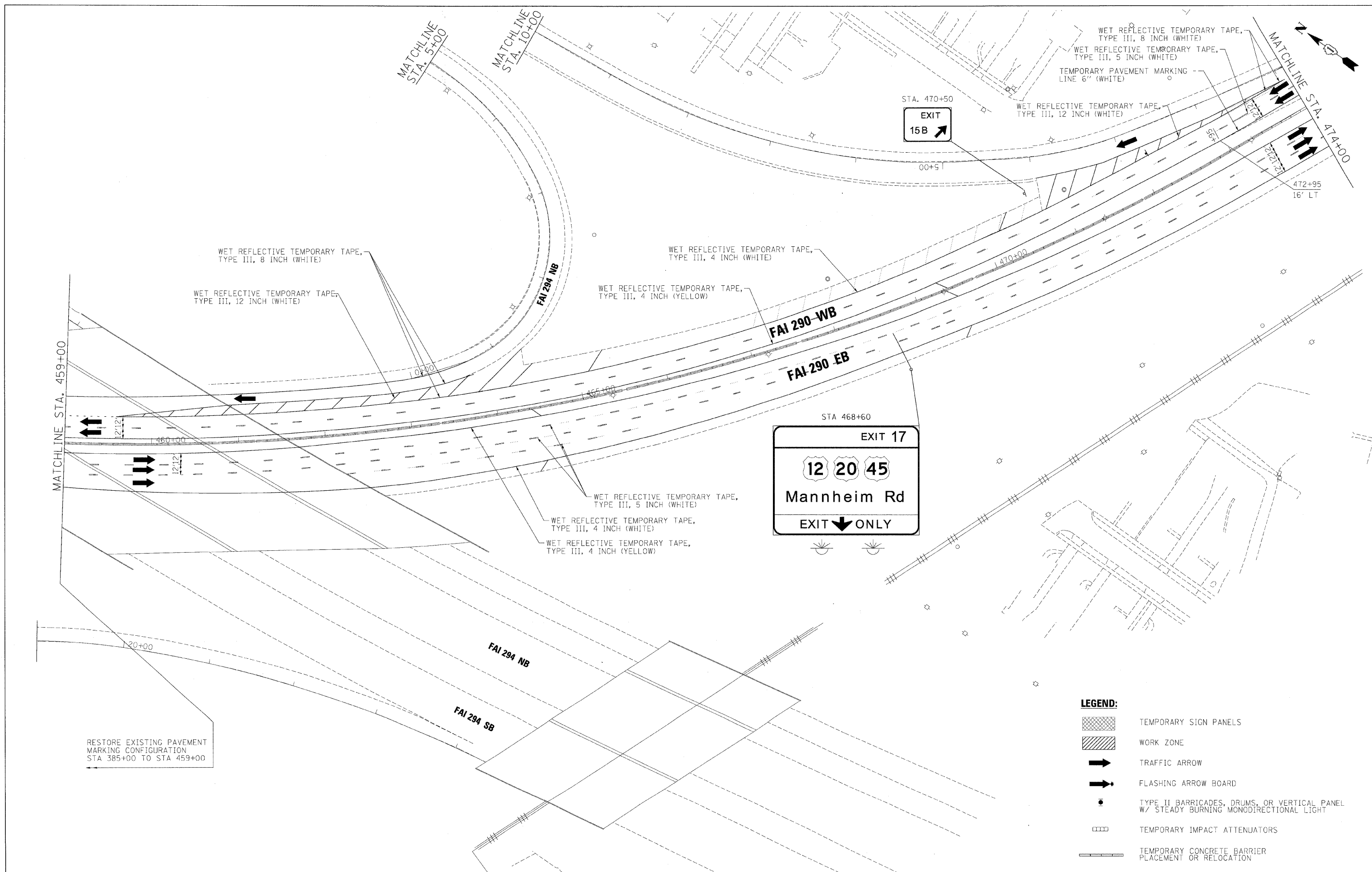
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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**








**MAINTENANCE OF TRAFFIC
PLAN - STAGE 3**

SCALE: 1"=50' SHEET NO. 64 OF 69 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	2009-0998R	COOK/DUPAGE	309	109
CONTRACT NO. 60157				



RESTORE EXISTING PAVEMENT MARKING CONFIGURATION STA 385+00 TO STA 459+00

- LEGEND:**
-  TEMPORARY SIGN PANELS
 -  WORK ZONE
 -  TRAFFIC ARROW
 -  FLASHING ARROW BOARD
 -  TYPE II BARRICADES, DRUMS, OR VERTICAL PANEL W/ STEADY BURNING MONODIRECTIONAL LIGHT
 -  TEMPORARY IMPACT ATTENUATORS
 -  TEMPORARY CONCRETE BARRIER PLACEMENT OR RELOCATION

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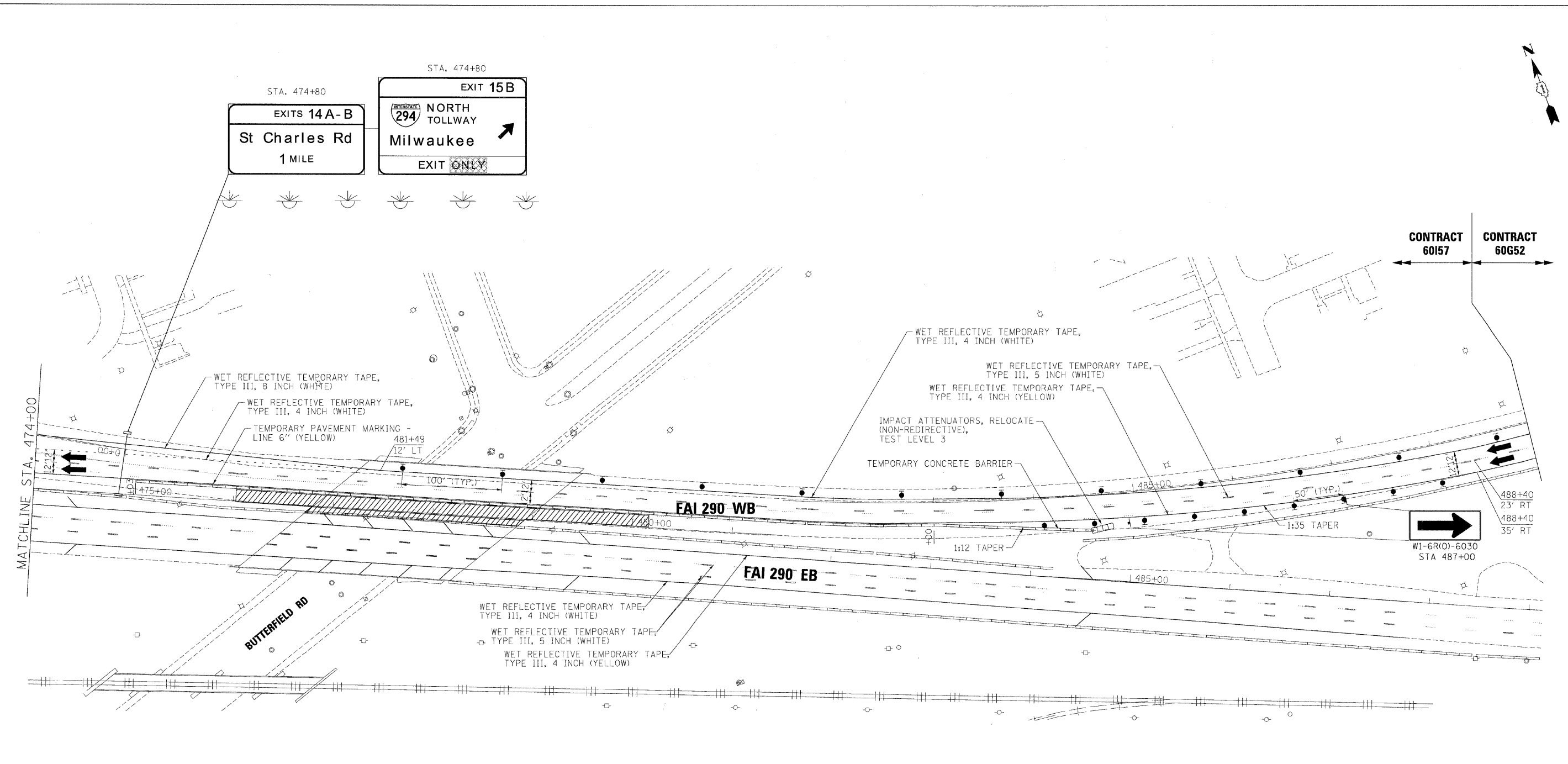
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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**MAINTENANCE OF TRAFFIC
PLAN - STAGE 3**

SCALE: 1"=50' SHEET NO. 65 OF 69 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	2009-0998R	COOK/DUPAGE	309	110
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT	
			CONTRACT NO. 60157	



LEGEND:

	TEMPORARY SIGN PANELS
	WORK ZONE
	TRAFFIC ARROW
	FLASHING ARROW BOARD
	TYPE II BARRICADES, DRUMS, OR VERTICAL PANEL W/ STEADY BURNING MONODIRECTIONAL LIGHT
	TEMPORARY IMPACT ATTENUATORS
	TEMPORARY CONCRETE BARRIER PLACEMENT OR RELOCATION

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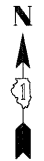
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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**MAINTENANCE OF TRAFFIC
PLAN - STAGE 3**

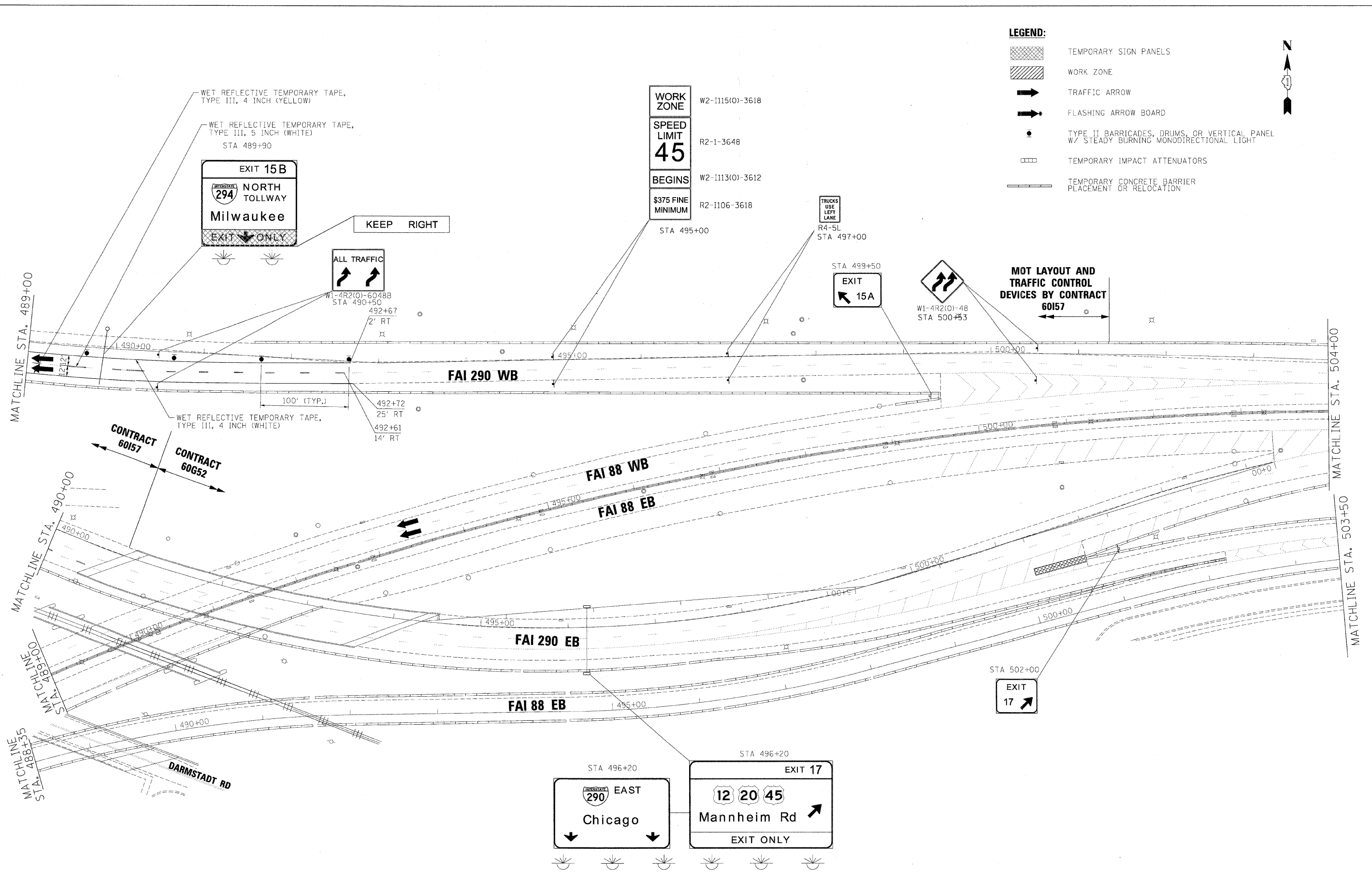
SCALE: 1"=50' SHEET NO. 66 OF 69 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	2009-0998R	COOK/DUPAGE	309	111
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT			CONTRACT NO. 60157	



LEGEND:

- TEMPORARY SIGN PANELS
- WORK ZONE
- TRAFFIC ARROW
- FLASHING ARROW BOARD
- TYPE II BARRICADES, DRUMS, OR VERTICAL PANEL W/ STEADY BURNING MONODIRECTIONAL LIGHT
- TEMPORARY IMPACT ATTENUATORS
- TEMPORARY CONCRETE BARRIER PLACEMENT OR RELOCATION



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PLOT DATE = 11/13/2009	DATE - 10/16/09	REVISED -

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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**MAINTENANCE OF TRAFFIC
PLAN - STAGE 3**

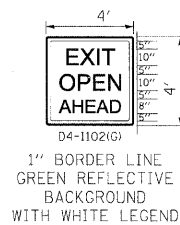
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	2009-0998R	COOK/DUPAGE	309	112
CONTRACT NO. 60157			FED. ROAD DIST. NO. [ILLINOIS] FED. AID PROJECT	

SCALE: 1"=50' SHEET NO. 67 OF 69 SHEETS STA. TO STA.

STAGE 4

STAGE 4 NOTES

- SEQUENCE OF CONSTRUCTION: PAVEMENT PATCHING, HMA SURFACE REMOVAL AND PROPOSED HMA COURSES AS DETAILED IN EACH OPERATION SECTION. WORK CAN OCCUR CONCURRENTLY, BUT SEQUENCE SHALL BE MAINTAINED AND NOT CONFLICT. RAMP WORK WILL BE COMPLETED USING DISTRICT DETAIL TC-8 - FREEWAY AND EXIT RAMP CLOSURE DETAILS.
- LANE AND RAMP CLOSURES ALLOWED AS STIPULATED IN THE SPECIAL PROVISIONS. CONTRACTOR MAY NOT CLOSE ADJACENT EXIT OR ENTRANCE RAMP AT THE SAME TIME.
- SURFACE REMOVAL AND RESURFACING OPERATIONS SHALL NOT BEGIN UNTIL STAGE 3 IS COMPLETED.
- LANE CLOSURES PER STANDARDS 701400, 701401 AND 701446.
- REDUCE LANE WIDTH USING 35:1 TAPER PER DISTRICT DETAIL TC-9 - TRAFFIC CONTROL DETAILS FOR FREEWAY SINGLE AND MULTI-LANE WEAVE, A W5-1 (48 X 48) ROAD NARROWS SIGN WILL BE ERRECTED 500' IN ADVANCE OF THE TAPER.
- THE CONTRACTOR SHALL ERECT ROAD CONSTRUCTION AHEAD SIGNS (W20-1103(0-48) WITH FLASHING BEACON ON ALL ARTERIAL ROADWAYS APPROACHING INTERCHANGE RAMP.
- GRADE DIFFERENTIAL BETWEEN LANES SHALL NOT EXCEED 2".
- PARTIAL MILLING OF PAVEMENT FOR AN OPERATION WILL NOT BE PAID FOR SEPARATELY, BUT WILL BE PAID FOR AT THE FINAL MILLING THICKNESS SHOWN ON THE TYPICAL SECTIONS.
- EPOXY PAVEMENT MARKING LINES SHALL BE USED FOR TEMPORARY PAVEMENT MARKINGS.
- REMOVAL OF EXISTING PAVEMENT MARKING, WHEN REQUIRED, SHALL BE PAID FOR AS "PAVEMENT MARKING REMOVAL."
- EXISTING OR TEMPORARY PAVEMENT MARKINGS REMOVED DURING MILLING OPERATIONS WILL NOT BE PAID FOR SEPARATELY.
- CASTINGS EXPOSED IN TRAVEL LANES SHALL BE PROTECTED PER APPLICABLE PORTIONS OF ARTICLE 603.07 OF THE STANDARD SPECIFICATIONS. THIS WORK WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE VARIOUS HMA/SMA BINDER AND SURFACE COURSES PLACED.
- OMIT STAGE 4 OPERATIONS THROUGH BRIDGE AND CONCRETE SECTIONS.
- SIGNS SHALL BE INSTALLED AS INSTRUCTED BELOW.



SIGN SHALL BE INSTALLED IN ADVANCE OF ALL OPEN/EXIT RAMP WHEN THE RIGHT LANES ARE CLOSED.

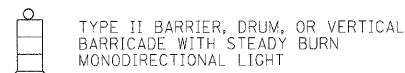


SIGN SHALL BE INSTALLED ON BOTH SIDES OF THE ROADWAY 500' IN ADVANCE OF AREAS WHERE THERE IS A GRADE DIFFERENTIAL BETWEEN LANES, AFTER EACH ENTRANCE RAMP AND A MINIMUM OF EVERY MILE.

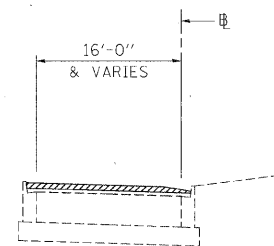
- THE CONTRACTOR SHALL COORDINATE THE ROADWAY AND STRUCTURAL WORK SO BITUMINOUS MATERIALS ARE NOT TRACKED ON THE BRIDGE DECKS BEFORE BEING SEALED.
- "EPOXY PAVEMENT MARKING - LETTERS AND SYMBOLS" SHALL BE INSTALLED ON MAINLINE ROADWAY DURING STAGE 4 OPERATIONS, IN LOCATIONS WHERE LETTERS/SYMBOLS PAVEMENT MARKINGS EXIST PRIOR TO SURFACE REMOVAL.
- WORK ZONE SPEED LIMIT SIGNS SHALL REMAIN IN PLACE UNTIL ALL BINDER IS PLACED.

LEGEND

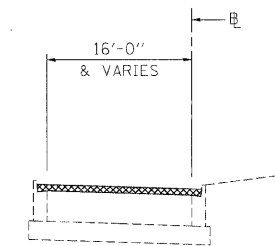
- ① EXISTING PAVEMENT MARKING
- ② EPOXY PAVEMENT MARKING - LINE 5" (WHITE 10' DASH, 30' SKIP)
- ③ EPOXY PAVEMENT MARKING - LINE 4" (YELLOW LEFT & WHITE RIGHT)
- ④ PROPOSED PAVEMENT MARKING. SEE PAVEMENT MARKING PLANS.



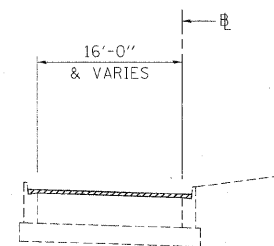
- BITUMINOUS SURFACE REMOVAL
- HMA/SMA BINDER AND SURFACE COURSES



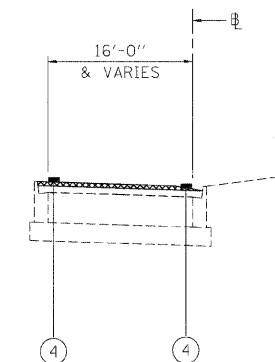
STAGE 4 - RAMP OPERATION ONE - I-290
BITUMINOUS SURFACE REMOVAL 2"



STAGE 4 - RAMP OPERATION THREE - I-290
BINDER COURSE 2-1/4"

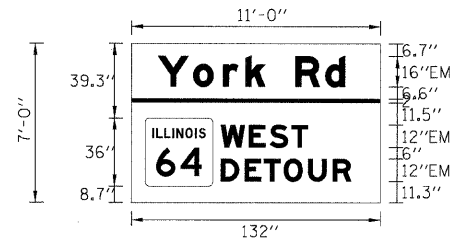


STAGE 4 - RAMP OPERATION TWO - I-290
BITUMINOUS SURFACE REMOVAL FINAL 1-1/4"

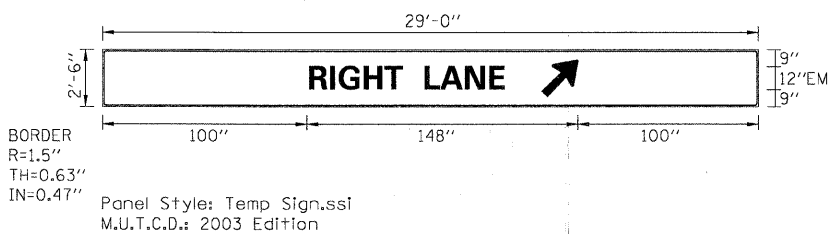


STAGE 4 - RAMP OPERATION FOUR - I-290
SURFACE COURSE 1-1/2"

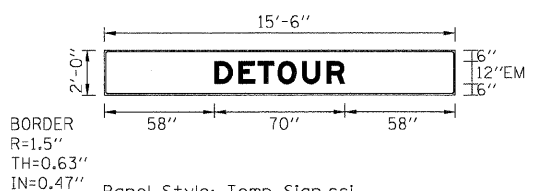
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USER NAME = tblank	CHECKED - JJT	REVISED -								CONTRACT NO. 60157				
PLOT DATE = 11/13/2009	DATE - 10/16/09	REVISED -								FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				
						SCALE: N.T.S.	SHEET NO. 68 OF 69 SHEETS	STA. TO STA.						



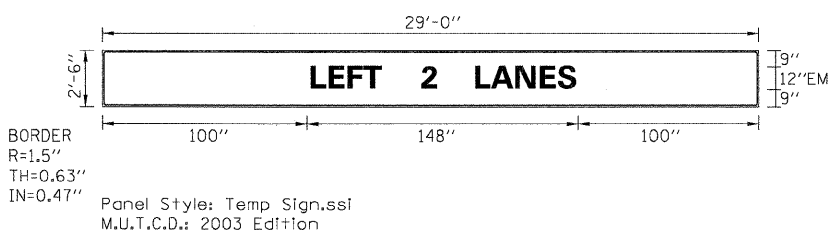
Panel Style: construction_guide.ssi
M.U.T.C.D.: 2003 Edition
WB-TR-29
WB-TR-31



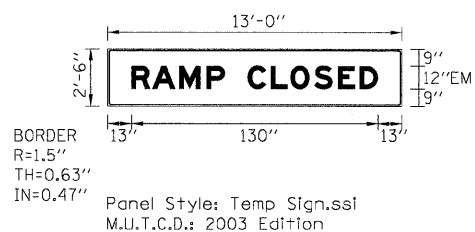
WB-TR-29



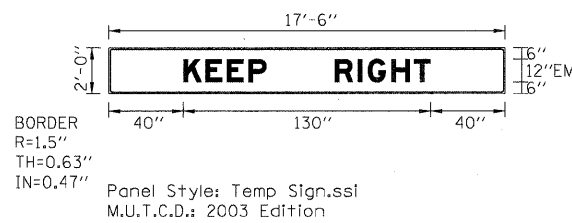
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M.U.T.C.D.: 2003 Edition
WB-BM-32
WB-CM-33
WB-CL-42



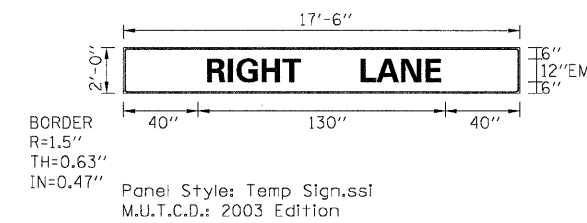
WB-TR-28



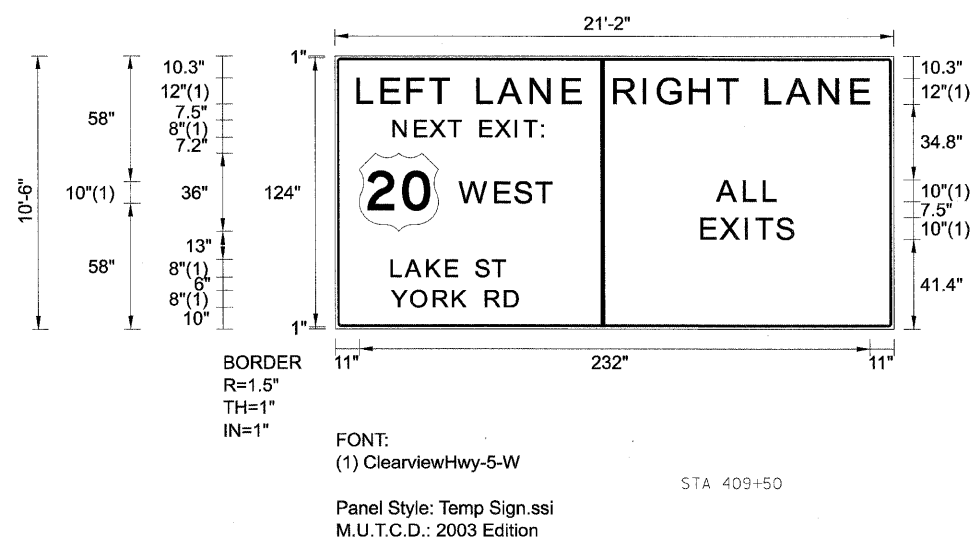
WB-TR-37
WB-TR-40
WB-TR-43



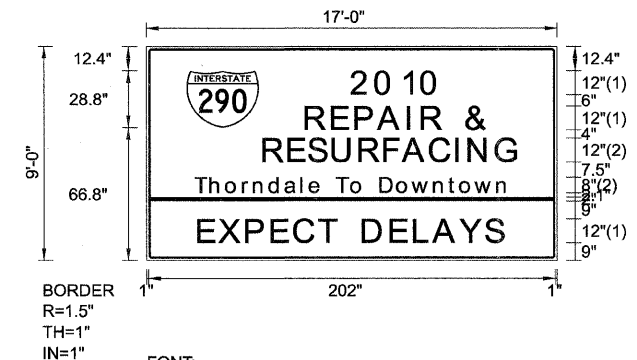
EB-TR-44
EB-CL-47



EB-TR-44
EB-CL-47



STA 409+50



PLACE PROJECT TEMPORARY INFORMATION SIGN PRIOR TO STAGE 1 AT THE FOLLOWING LOCATIONS AS DIRECTED BY THE ENGINEER:
NORTHBOUND I-294 NEAR CERMAK RD
SOUTHBOUND I-294 SOUTH OF GRAND AVE

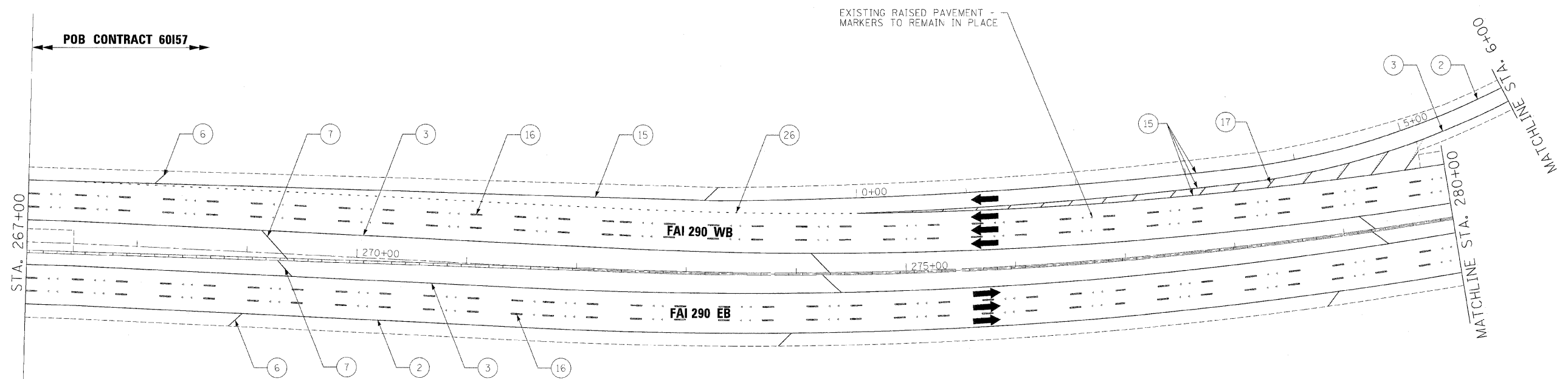
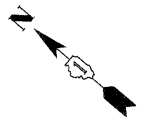
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...pmp1n_ABC_C4_TempSignDetour1s_01.dgn	DRAWN - TMB	REVISED -
USER NAME = tblank	CHECKED - JJT	REVISED -
PLOT DATE = 11/13/2009	DATE - 10/16/09	REVISED -

benesch

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

MAINTENANCE OF TRAFFIC
TEMPORARY INFORMATION SIGNING
SCALE: N.T.S. SHEET NO. 69 OF 69 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	2009-0998R	COOK/DUPAGE	309	114
CONTRACT NO. 60157			ILLINOIS FED. AID PROJECT	



LEGEND

- | | |
|--|--|
| <ul style="list-style-type: none"> ① THERMOPLASTIC PAVEMENT MARKING - LETTERS AND SYMBOLS (WHITE) ② THERMOPLASTIC PAVEMENT MARKING - LINE 4" (WHITE EDGE LINE) ③ THERMOPLASTIC PAVEMENT MARKING - LINE 4" (YELLOW EDGE LINE) ④ THERMOPLASTIC PAVEMENT MARKING - LINE 8" (WHITE EDGE LINE) ⑤ THERMOPLASTIC PAVEMENT MARKING - LINE 8" (WHITE DIAGONALS SPACED @ 10' CENTERS) ⑥ THERMOPLASTIC PAVEMENT MARKING - LINE 12" (WHITE DIAGONALS SPACED @ 500' CENTERS ON MAINLINE AND 150' CENTERS ON RAMP) ⑦ THERMOPLASTIC PAVEMENT MARKING - LINE 12" (YELLOW DIAGONALS SPACED @ 500' CENTERS ON MAINLINE AND 150' CENTERS ON RAMP) ⑧ THERMOPLASTIC PAVEMENT MARKING - LINE 12" (WHITE GORE DIAGONALS SPACED @ 30' CENTERS) ⑨ THERMOPLASTIC PAVEMENT MARKING - LINE 24" (WHITE) ⑩ PREFORMED PLASTIC PAVEMENT MARKING, TYPE B, INLAID, LINE 4" (WHITE 2' DASH, 6' SKIP) ⑪ PREFORMED PLASTIC PAVEMENT MARKING, TYPE B, INLAID, LINE 8" (WHITE 3' DASH, 9' SKIP) ⑫ PREFORMED PLASTIC PAVEMENT MARKING, TYPE B, INLAID, LINE 5" (WHITE 10' DASH, 30' SKIP) ⑬ POLYUREA PAVEMENT MARKING TYPE 1, LINE 4" (WHITE EDGE LINE) | <ul style="list-style-type: none"> ⑭ POLYUREA PAVEMENT MARKING TYPE 1, LINE 4" (YELLOW EDGE LINE) ⑮ POLYUREA PAVEMENT MARKING TYPE 1, LINE 8" (WHITE EDGE LINE) ⑯ POLYUREA PAVEMENT MARKING TYPE 1, LINE 5" (WHITE 10' DASH, 30' SKIP) ⑰ POLYUREA PAVEMENT MARKING TYPE 1, LINE 12" (WHITE GORE DIAGONALS SPACED @ 30' CENTERS) ⑱ RAISED REFLECTIVE PAVEMENT MARKER (1-WAY YELLOW / OPAQUE) ⑲ RAISED REFLECTIVE PAVEMENT MARKER (1-WAY CRYSTAL / OPAQUE) ⑳ THERMOPLASTIC PAVEMENT MARKING - LINE 12" (WHITE EDGE LINE) ㉑ THERMOPLASTIC PAVEMENT MARKING - LINE 6" (WHITE THRU LANE LINE) ㉒ POLYUREA PAVEMENT MARKING TYPE 1, LINE 12" (YELLOW DIAGONALS SPACED @ 500' CENTERS AND 40' CENTERS ON STRUCTURES) ㉓ POLYUREA PAVEMENT MARKING TYPE 1, LINE 12" (WHITE DIAGONALS SPACED @ 500' CENTERS AND 40' CENTERS ON STRUCTURES) ㉔ POLYUREA PAVEMENT MARKING TYPE 1, LETTERS AND SYMBOLS (WHITE) ㉕ POLYUREA PAVEMENT MARKING TYPE 1, LINE 8" (WHITE 3' DASH, 9' SKIP) ㉖ POLYUREA PAVEMENT MARKING TYPE 1, LINE 4" (WHITE 2' DASH, 6' SKIP) |
|--|--|

NOTE:

1. SEE IDOT DISTRICT 1 STANDARD TC-12 "MULTI-LANE FREEWAY PAVEMENT MARKING DETAILS" FOR PLACEMENT AND TYPE OF RAISED REFLECTIVE PAVEMENT MARKERS.
2. FOR PROPOSED PAVEMENT MARKINGS IN THE PCC SECTIONS USE POLYUREA PAVEMENT MARKINGS ACCORDING TO STANDARD TC-12.
3. REFER TO ROADWAY PLANS FOR LIMITS OF RESURFACING.

FILE NAME =	DESIGNED - AJP	REVISED -
...prp1n_ABC_C4_290_pvm.tnkg_46.dgn	DRAWN - TMB	REVISED -
USER NAME = jnojewski	CHECKED - JMM	REVISED -
PLOT DATE = 12/16/2009	DATE - 10/16/09	REVISED -

benesch

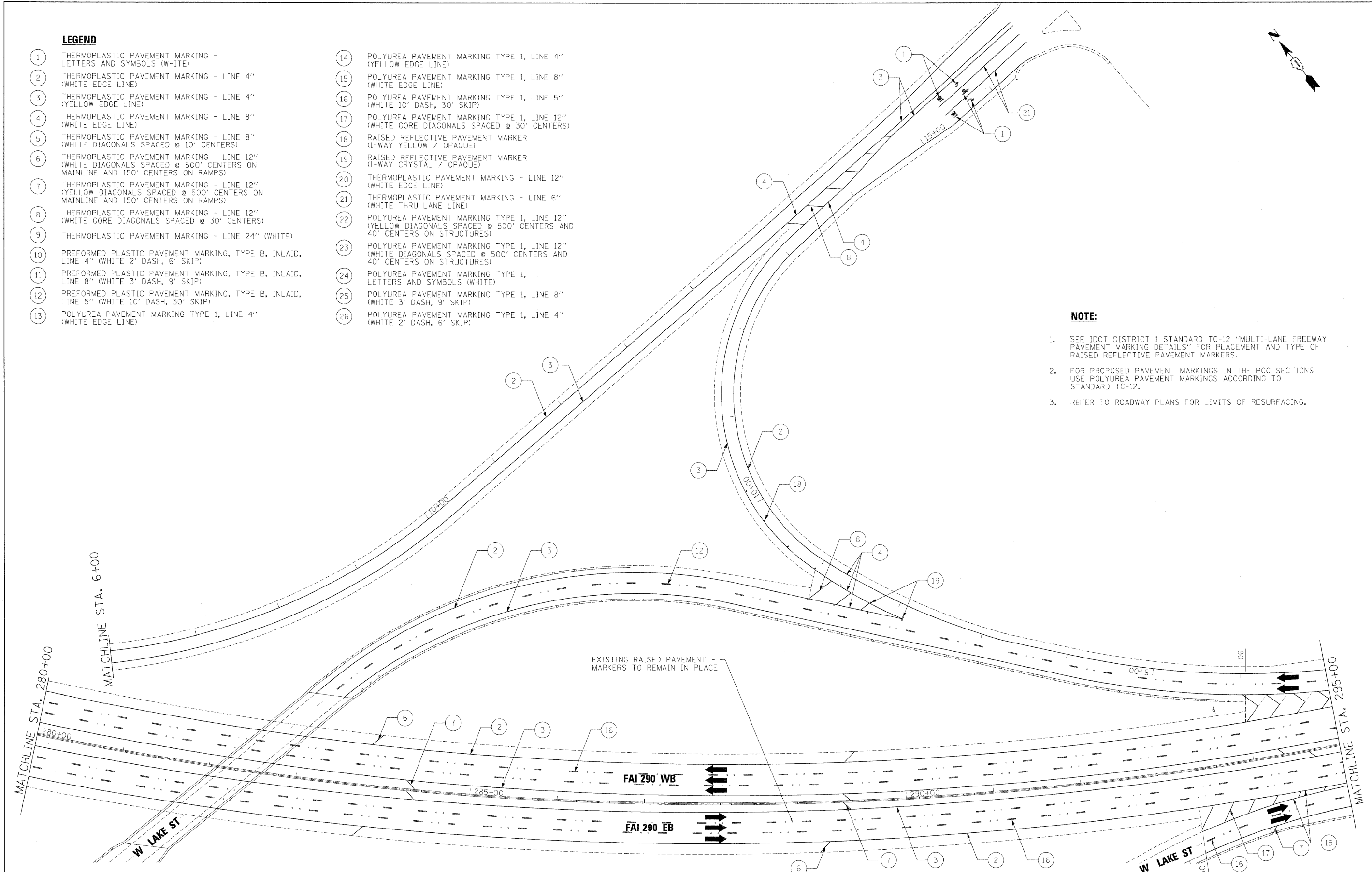
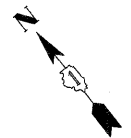
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

PAVEMENT MARKING PLANS			
I-290 STA 267+00 TO STA 280+00			
SCALE: 1"=50'	SHEET NO. 1 OF 16 SHEETS	STA.	TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	2009-099BR	COOK/DUPAGE	309	115
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT	
			CONTRACT NO. 60157	

LEGEND

- | | |
|---|--|
| 1 THERMOPLASTIC PAVEMENT MARKING - LETTERS AND SYMBOLS (WHITE) | 14 POLYUREA PAVEMENT MARKING TYPE 1, LINE 4" (YELLOW EDGE LINE) |
| 2 THERMOPLASTIC PAVEMENT MARKING - LINE 4" (WHITE EDGE LINE) | 15 POLYUREA PAVEMENT MARKING TYPE 1, LINE 8" (WHITE EDGE LINE) |
| 3 THERMOPLASTIC PAVEMENT MARKING - LINE 4" (YELLOW EDGE LINE) | 16 POLYUREA PAVEMENT MARKING TYPE 1, LINE 5" (WHITE 10' DASH, 30' SKIP) |
| 4 THERMOPLASTIC PAVEMENT MARKING - LINE 8" (WHITE EDGE LINE) | 17 POLYUREA PAVEMENT MARKING TYPE 1, LINE 12" (WHITE GORE DIAGONALS SPACED @ 30' CENTERS) |
| 5 THERMOPLASTIC PAVEMENT MARKING - LINE 8" (WHITE DIAGONALS SPACED @ 10' CENTERS) | 18 RAISED REFLECTIVE PAVEMENT MARKER (1-WAY YELLOW / OPAQUE) |
| 6 THERMOPLASTIC PAVEMENT MARKING - LINE 12" (WHITE DIAGONALS SPACED @ 500' CENTERS ON MAINLINE AND 150' CENTERS ON RAMP) | 19 RAISED REFLECTIVE PAVEMENT MARKER (1-WAY CRYSTAL / OPAQUE) |
| 7 THERMOPLASTIC PAVEMENT MARKING - LINE 12" (YELLOW DIAGONALS SPACED @ 500' CENTERS ON MAINLINE AND 150' CENTERS ON RAMP) | 20 THERMOPLASTIC PAVEMENT MARKING - LINE 12" (WHITE EDGE LINE) |
| 8 THERMOPLASTIC PAVEMENT MARKING - LINE 12" (WHITE GORE DIAGONALS SPACED @ 30' CENTERS) | 21 THERMOPLASTIC PAVEMENT MARKING - LINE 6" (WHITE THRU LANE LINE) |
| 9 THERMOPLASTIC PAVEMENT MARKING - LINE 24" (WHITE) | 22 POLYUREA PAVEMENT MARKING TYPE 1, LINE 12" (YELLOW DIAGONALS SPACED @ 500' CENTERS AND 40' CENTERS ON STRUCTURES) |
| 10 PREFORMED PLASTIC PAVEMENT MARKING, TYPE B, INLAID, LINE 4" (WHITE 2' DASH, 6' SKIP) | 23 POLYUREA PAVEMENT MARKING TYPE 1, LINE 12" (WHITE DIAGONALS SPACED @ 500' CENTERS AND 40' CENTERS ON STRUCTURES) |
| 11 PREFORMED PLASTIC PAVEMENT MARKING, TYPE B, INLAID, LINE 8" (WHITE 3' DASH, 9' SKIP) | 24 POLYUREA PAVEMENT MARKING TYPE 1, LETTERS AND SYMBOLS (WHITE) |
| 12 PREFORMED PLASTIC PAVEMENT MARKING, TYPE B, INLAID, LINE 5" (WHITE 10' DASH, 30' SKIP) | 25 POLYUREA PAVEMENT MARKING TYPE 1, LINE 8" (WHITE 3' DASH, 9' SKIP) |
| 13 POLYUREA PAVEMENT MARKING TYPE 1, LINE 4" (WHITE EDGE LINE) | 26 POLYUREA PAVEMENT MARKING TYPE 1, LINE 4" (WHITE 2' DASH, 6' SKIP) |



NOTE:

1. SEE IDOT DISTRICT 1 STANDARD TC-12 "MULTI-LANE FREEWAY PAVEMENT MARKING DETAILS" FOR PLACEMENT AND TYPE OF RAISED REFLECTIVE PAVEMENT MARKERS.
2. FOR PROPOSED PAVEMENT MARKINGS IN THE PCC SECTIONS USE POLYUREA PAVEMENT MARKINGS ACCORDING TO STANDARD TC-12.
3. REFER TO ROADWAY PLANS FOR LIMITS OF RESURFACING.

FILE NAME =	DESIGNED - AJP	REVISED -
...prp1n_abc_c4_290_pvmtrkg_47.dgn	DRAWN - TMB	REVISED -
USER NAME = jmajewski	CHECKED - JMM	REVISED -
PLOT DATE = 12/16/2009	DATE - 10/16/09	REVISED -

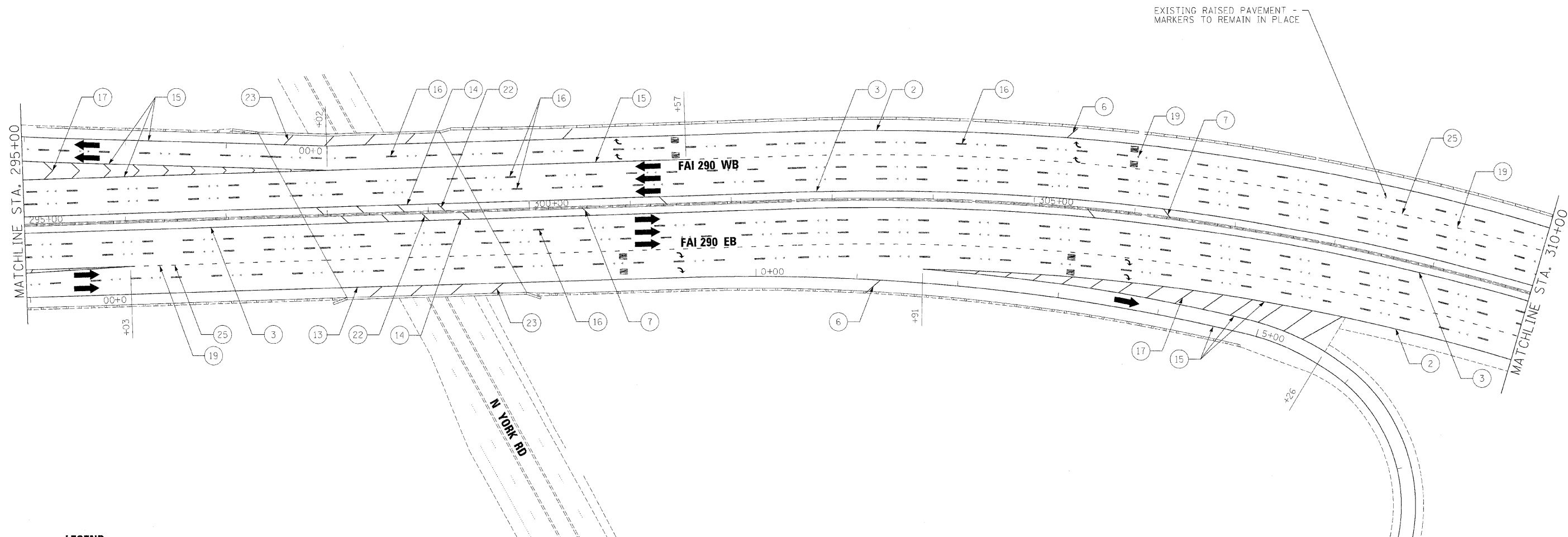
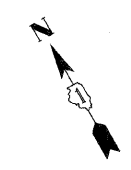
benesch

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**PAVEMENT MARKING PLANS
I-290 STA 280+00 TO STA 295+00**

SCALE: 1"=50' SHEET NO. 2 OF 16 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	2009-099BR	COOK/DUPAGE	309	116
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT			CONTRACT NO. 60157	



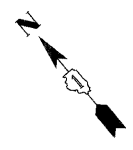
LEGEND

- | | |
|--|--|
| <ul style="list-style-type: none"> ① THERMOPLASTIC PAVEMENT MARKING - LETTERS AND SYMBOLS (WHITE) ② THERMOPLASTIC PAVEMENT MARKING - LINE 4" (WHITE EDGE LINE) ③ THERMOPLASTIC PAVEMENT MARKING - LINE 4" (YELLOW EDGE LINE) ④ THERMOPLASTIC PAVEMENT MARKING - LINE 8" (WHITE EDGE LINE) ⑤ THERMOPLASTIC PAVEMENT MARKING - LINE 8" (WHITE DIAGONALS SPACED @ 10' CENTERS) ⑥ THERMOPLASTIC PAVEMENT MARKING - LINE 12" (WHITE DIAGONALS SPACED @ 500' CENTERS ON MAINLINE AND 150' CENTERS ON RAMPS) ⑦ THERMOPLASTIC PAVEMENT MARKING - LINE 12" (YELLOW DIAGONALS SPACED @ 500' CENTERS ON MAINLINE AND 150' CENTERS ON RAMPS) ⑧ THERMOPLASTIC PAVEMENT MARKING - LINE 12" (WHITE GORE DIAGONALS SPACED @ 30' CENTERS) ⑨ THERMOPLASTIC PAVEMENT MARKING - LINE 24" (WHITE) ⑩ PREFORMED PLASTIC PAVEMENT MARKING, TYPE B, INLAID, LINE 4" (WHITE 2' DASH, 6' SKIP) ⑪ PREFORMED PLASTIC PAVEMENT MARKING, TYPE B, INLAID, LINE 8" (WHITE 3' DASH, 9' SKIP) ⑫ PREFORMED PLASTIC PAVEMENT MARKING, TYPE B, INLAID, LINE 5" (WHITE 10' DASH, 30' SKIP) ⑬ POLYUREA PAVEMENT MARKING TYPE 1, LINE 4" (WHITE EDGE LINE) | <ul style="list-style-type: none"> ⑭ POLYUREA PAVEMENT MARKING TYPE 1, LINE 4" (YELLOW EDGE LINE) ⑮ POLYUREA PAVEMENT MARKING TYPE 1, LINE 8" (WHITE EDGE LINE) ⑯ POLYUREA PAVEMENT MARKING TYPE 1, LINE 5" (WHITE 10' DASH, 30' SKIP) ⑰ POLYUREA PAVEMENT MARKING TYPE 1, LINE 12" (WHITE GORE DIAGONALS SPACED @ 30' CENTERS) ⑱ RAISED REFLECTIVE PAVEMENT MARKER (1-WAY YELLOW / OPAQUE) ⑲ RAISED REFLECTIVE PAVEMENT MARKER (1-WAY CRYSTAL / OPAQUE) ⑳ THERMOPLASTIC PAVEMENT MARKING - LINE 12" (WHITE EDGE LINE) ㉑ THERMOPLASTIC PAVEMENT MARKING - LINE 6" (WHITE THRU LANE LINE) ㉒ POLYUREA PAVEMENT MARKING TYPE 1, LINE 12" (YELLOW DIAGONALS SPACED @ 500' CENTERS AND 40' CENTERS ON STRUCTURES) ㉓ POLYUREA PAVEMENT MARKING TYPE 1, LINE 12" (WHITE DIAGONALS SPACED @ 500' CENTERS AND 40' CENTERS ON STRUCTURES) ㉔ POLYUREA PAVEMENT MARKING TYPE 1, LETTERS AND SYMBOLS (WHITE) ㉕ POLYUREA PAVEMENT MARKING TYPE 1, LINE 8" (WHITE 3' DASH, 9' SKIP) ㉖ POLYUREA PAVEMENT MARKING TYPE 1, LINE 4" (WHITE 2' DASH, 6' SKIP) |
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NOTE:

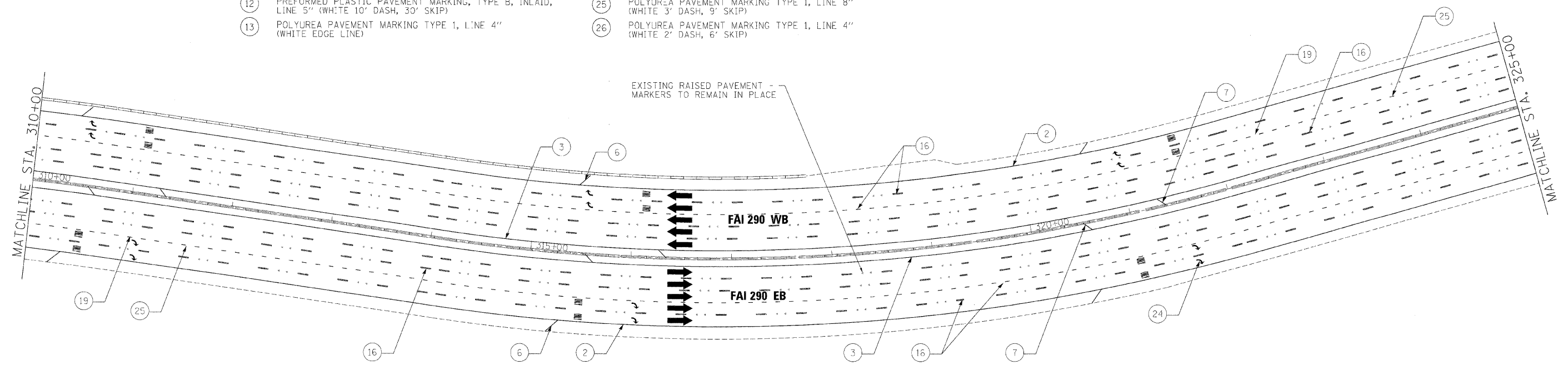
1. SEE IDOT DISTRICT 1 STANDARD TC-12 "MULTI-LANE FREEWAY PAVEMENT MARKING DETAILS" FOR PLACEMENT AND TYPE OF RAISED REFLECTIVE PAVEMENT MARKERS.
2. FOR PROPOSED PAVEMENT MARKINGS IN THE PCC SECTIONS USE POLYUREA PAVEMENT MARKINGS ACCORDING TO STANDARD TC-12.
3. REFER TO ROADWAY PLANS FOR LIMITS OF RESURFACING.

FILE NAME =	DESIGNED - AJP	REVISED -	benesch	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PAVEMENT MARKING PLANS			F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
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USER NAME = jma.jewski	CHECKED - JMM	REVISED -			SCALE: 1"=50'			SHEET NO. 3 OF 16 SHEETS			CONTRACT NO. 60157		
PLOT DATE = 12/16/2009	DATE = 10/16/09	REVISED -			STA. TO STA.			FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT					
					TO STA.								



LEGEND

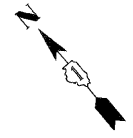
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|--|--|
| <ul style="list-style-type: none"> ① THERMOPLASTIC PAVEMENT MARKING - LETTERS AND SYMBOLS (WHITE) ② THERMOPLASTIC PAVEMENT MARKING - LINE 4" (WHITE EDGE LINE) ③ THERMOPLASTIC PAVEMENT MARKING - LINE 4" (YELLOW EDGE LINE) ④ THERMOPLASTIC PAVEMENT MARKING - LINE 8" (WHITE EDGE LINE) ⑤ THERMOPLASTIC PAVEMENT MARKING - LINE 8" (WHITE DIAGONALS SPACED @ 10' CENTERS) ⑥ THERMOPLASTIC PAVEMENT MARKING - LINE 12" (WHITE DIAGONALS SPACED @ 500' CENTERS ON MAINLINE AND 150' CENTERS ON RAMPS) ⑦ THERMOPLASTIC PAVEMENT MARKING - LINE 12" (YELLOW DIAGONALS SPACED @ 500' CENTERS ON MAINLINE AND 150' CENTERS ON RAMPS) ⑧ THERMOPLASTIC PAVEMENT MARKING - LINE 12" (WHITE GORE DIAGONALS SPACED @ 30' CENTERS) ⑨ THERMOPLASTIC PAVEMENT MARKING - LINE 24" (WHITE) ⑩ PREFORMED PLASTIC PAVEMENT MARKING, TYPE B, INLAID, LINE 4" (WHITE 2' DASH, 6' SKIP) ⑪ PREFORMED PLASTIC PAVEMENT MARKING, TYPE B, INLAID, LINE 8" (WHITE 3' DASH, 9' SKIP) ⑫ PREFORMED PLASTIC PAVEMENT MARKING, TYPE B, INLAID, LINE 5" (WHITE 10' DASH, 30' SKIP) ⑬ POLYUREA PAVEMENT MARKING TYPE 1, LINE 4" (WHITE EDGE LINE) | <ul style="list-style-type: none"> ⑭ POLYUREA PAVEMENT MARKING TYPE 1, LINE 4" (YELLOW EDGE LINE) ⑮ POLYUREA PAVEMENT MARKING TYPE 1, LINE 8" (WHITE EDGE LINE) ⑯ POLYUREA PAVEMENT MARKING TYPE 1, LINE 5" (WHITE 10' DASH, 30' SKIP) ⑰ POLYUREA PAVEMENT MARKING TYPE 1, LINE 12" (WHITE GORE DIAGONALS SPACED @ 30' CENTERS) ⑱ RAISED REFLECTIVE PAVEMENT MARKER (1-WAY YELLOW / OPAQUE) ⑲ RAISED REFLECTIVE PAVEMENT MARKER (1-WAY CRYSTAL / OPAQUE) ⑳ THERMOPLASTIC PAVEMENT MARKING - LINE 12" (WHITE EDGE LINE) ㉑ THERMOPLASTIC PAVEMENT MARKING - LINE 6" (WHITE THRU LANE LINE) ㉒ POLYUREA PAVEMENT MARKING TYPE 1, LINE 12" (YELLOW DIAGONALS SPACED @ 500' CENTERS AND 40' CENTERS ON STRUCTURES) ㉓ POLYUREA PAVEMENT MARKING TYPE 1, LINE 12" (WHITE DIAGONALS SPACED @ 500' CENTERS AND 40' CENTERS ON STRUCTURES) ㉔ POLYUREA PAVEMENT MARKING TYPE 1, LETTERS AND SYMBOLS (WHITE) ㉕ POLYUREA PAVEMENT MARKING TYPE 1, LINE 8" (WHITE 3' DASH, 9' SKIP) ㉖ POLYUREA PAVEMENT MARKING TYPE 1, LINE 4" (WHITE 2' DASH, 6' SKIP) |
|--|--|



NOTE:

1. SEE IDOT DISTRICT 1 STANDARD TC-12 "MULTI-LANE FREEWAY PAVEMENT MARKING DETAILS" FOR PLACEMENT AND TYPE OF RAISED REFLECTIVE PAVEMENT MARKERS.
2. FOR PROPOSED PAVEMENT MARKINGS IN THE PCC SECTIONS USE POLYUREA PAVEMENT MARKINGS ACCORDING TO STANDARD TC-12.
3. REFER TO ROADWAY PLANS FOR LIMITS OF RESURFACING.

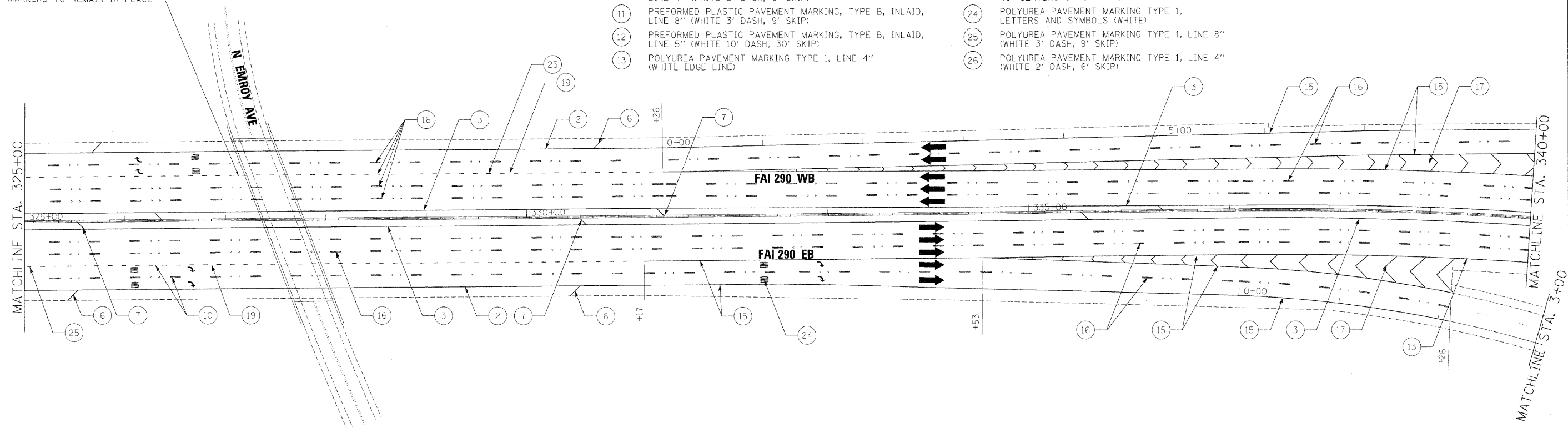
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USER NAME = jmajevski	CHECKED - JMM	REVISED -				CONTRACT NO. 60157				
PLOT DATE = 12/16/2009	DATE = 10/16/09	REVISED -				FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				
						SCALE: 1"=50'	SHEET NO. 4 OF 16 SHEETS		STA.	TO STA.



LEGEND

- ① THERMOPLASTIC PAVEMENT MARKING - LETTERS AND SYMBOLS (WHITE)
- ② THERMOPLASTIC PAVEMENT MARKING - LINE 4" (WHITE EDGE LINE)
- ③ THERMOPLASTIC PAVEMENT MARKING - LINE 4" (YELLOW EDGE LINE)
- ④ THERMOPLASTIC PAVEMENT MARKING - LINE 8" (WHITE EDGE LINE)
- ⑤ THERMOPLASTIC PAVEMENT MARKING - LINE 8" (WHITE DIAGONALS SPACED @ 10' CENTERS)
- ⑥ THERMOPLASTIC PAVEMENT MARKING - LINE 12" (WHITE DIAGONALS SPACED @ 500' CENTERS ON MAINLINE AND 150' CENTERS ON RAMP)
- ⑦ THERMOPLASTIC PAVEMENT MARKING - LINE 12" (YELLOW DIAGONALS SPACED @ 500' CENTERS ON MAINLINE AND 150' CENTERS ON RAMP)
- ⑧ THERMOPLASTIC PAVEMENT MARKING - LINE 12" (WHITE GORE DIAGONALS SPACED @ 30' CENTERS)
- ⑨ THERMOPLASTIC PAVEMENT MARKING - LINE 24" (WHITE)
- ⑩ PREFORMED PLASTIC PAVEMENT MARKING, TYPE B, INLAID, LINE 4" (WHITE 2' DASH, 6' SKIP)
- ⑪ PREFORMED PLASTIC PAVEMENT MARKING, TYPE B, INLAID, LINE 8" (WHITE 3' DASH, 9' SKIP)
- ⑫ PREFORMED PLASTIC PAVEMENT MARKING, TYPE B, INLAID, LINE 5" (WHITE 10' DASH, 30' SKIP)
- ⑬ POLYUREA PAVEMENT MARKING TYPE 1, LINE 4" (WHITE EDGE LINE)
- ⑭ POLYUREA PAVEMENT MARKING TYPE 1, LINE 4" (YELLOW EDGE LINE)
- ⑮ POLYUREA PAVEMENT MARKING TYPE 1, LINE 8" (WHITE EDGE LINE)
- ⑯ POLYUREA PAVEMENT MARKING TYPE 1, LINE 5" (WHITE 10' DASH, 30' SKIP)
- ⑰ POLYUREA PAVEMENT MARKING TYPE 1, LINE 12" (WHITE GORE DIAGONALS SPACED @ 30' CENTERS)
- ⑱ RAISED REFLECTIVE PAVEMENT MARKER (1-WAY YELLOW / OPAQUE)
- ⑲ RAISED REFLECTIVE PAVEMENT MARKER (1-WAY CRYSTAL / OPAQUE)
- ⑳ THERMOPLASTIC PAVEMENT MARKING - LINE 12" (WHITE EDGE LINE)
- ㉑ THERMOPLASTIC PAVEMENT MARKING - LINE 6" (WHITE THRU LANE LINE)
- ㉒ POLYUREA PAVEMENT MARKING TYPE 1, LINE 12" (YELLOW DIAGONALS SPACED @ 500' CENTERS AND 40' CENTERS ON STRUCTURES)
- ㉓ POLYUREA PAVEMENT MARKING TYPE 1, LINE 12" (WHITE DIAGONALS SPACED @ 500' CENTERS AND 40' CENTERS ON STRUCTURES)
- ㉔ POLYUREA PAVEMENT MARKING TYPE 1, LETTERS AND SYMBOLS (WHITE)
- ㉕ POLYUREA PAVEMENT MARKING TYPE 1, LINE 8" (WHITE 3' DASH, 9' SKIP)
- ㉖ POLYUREA PAVEMENT MARKING TYPE 1, LINE 4" (WHITE 2' DASH, 6' SKIP)

EXISTING RAISED PAVEMENT MARKERS TO REMAIN IN PLACE



NOTE:

1. SEE IDOT DISTRICT 1 STANDARD TC-12 "MULTI-LANE FREEWAY PAVEMENT MARKING DETAILS" FOR PLACEMENT AND TYPE OF RAISED REFLECTIVE PAVEMENT MARKERS.
2. FOR PROPOSED PAVEMENT MARKINGS IN THE PCC SECTIONS USE POLYUREA PAVEMENT MARKINGS ACCORDING TO STANDARD TC-12.
3. REFER TO ROADWAY PLANS FOR LIMITS OF RESURFACING.

FILE NAME =	DESIGNED - AJP	REVISED -
...prpln_abc_c4_290_pvmtrkg_51.dgn	DRAWN - TMB	REVISED -
USER NAME = jmojewski	CHECKED - JMM	REVISED -
PLOT DATE = 12/16/2009	DATE - 10/16/09	REVISED -

benesch

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**PAVEMENT MARKING PLANS
I-290 STA 325+00 TO STA 340+00**

SCALE: 1"=50' SHEET NO. 5 OF 16 SHEETS STA. TO STA.

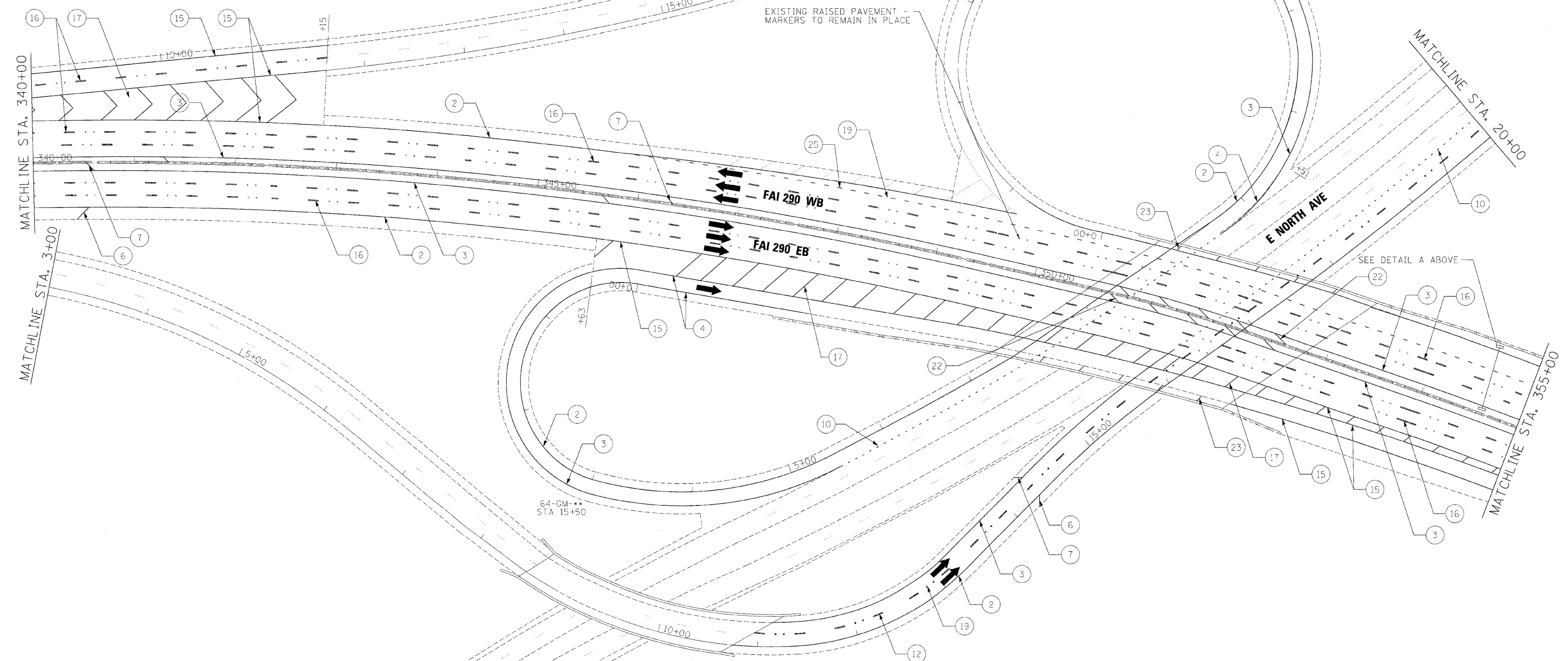
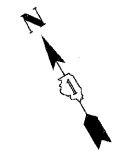
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	2009-099BR	COOK/DUPAGE	309	119
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT			CONTRACT NO. 60157	

LEGEND

- ① THERMOPLASTIC PAVEMENT MARKING - LETTERS AND SYMBOLS (WHITE)
- ② THERMOPLASTIC PAVEMENT MARKING - LINE 4" (WHITE EDGE LINE)
- ③ THERMOPLASTIC PAVEMENT MARKING - LINE 4" (YELLOW EDGE LINE)
- ④ THERMOPLASTIC PAVEMENT MARKING - LINE 8" (WHITE EDGE LINE)
- ⑤ THERMOPLASTIC PAVEMENT MARKING - LINE 8" (WHITE DIAGONALS SPACED @ 10' CENTERS)
- ⑥ THERMOPLASTIC PAVEMENT MARKING - LINE 12" (WHITE DIAGONALS SPACED @ 500' CENTERS ON MAINLINE AND 150' CENTERS ON RAMPS)
- ⑦ THERMOPLASTIC PAVEMENT MARKING - LINE 12" (YELLOW DIAGONALS SPACED @ 500' CENTERS ON MAINLINE AND 150' CENTERS ON RAMPS)
- ⑧ THERMOPLASTIC PAVEMENT MARKING - LINE 12" (WHITE GORE DIAGONALS SPACED @ 30' CENTERS)
- ⑨ THERMOPLASTIC PAVEMENT MARKING - LINE 24" (WHITE)
- ⑩ PREFORMED PLASTIC PAVEMENT MARKING, TYPE B, INLAID, LINE 4" (WHITE 2' DASH, 6' SKIP)
- ⑪ PREFORMED PLASTIC PAVEMENT MARKING, TYPE B, INLAID, LINE 8" (WHITE 3' DASH, 9' SKIP)
- ⑫ PREFORMED PLASTIC PAVEMENT MARKING, TYPE B, INLAID, LINE 5" (WHITE 10' DASH, 30' SKIP)
- ⑬ POLYUREA PAVEMENT MARKING TYPE 1, LINE 4" (WHITE EDGE LINE)
- ⑭ POLYUREA PAVEMENT MARKING TYPE 1, LINE 4" (YELLOW EDGE LINE)
- ⑮ POLYUREA PAVEMENT MARKING TYPE 1, LINE 8" (WHITE EDGE LINE)
- ⑯ POLYUREA PAVEMENT MARKING TYPE 1, LINE 5" (WHITE 10' DASH, 30' SKIP)
- ⑰ POLYUREA PAVEMENT MARKING TYPE 1, LINE 12" (WHITE GORE DIAGONALS SPACED @ 30' CENTERS)
- ⑱ RAISED REFLECTIVE PAVEMENT MARKER (1-WAY YELLOW / OPAQUE)
- ⑲ RAISED REFLECTIVE PAVEMENT MARKER (1-WAY CRYSTAL / OPAQUE)
- ⑳ THERMOPLASTIC PAVEMENT MARKING - LINE 12" (WHITE EDGE LINE)
- ㉑ THERMOPLASTIC PAVEMENT MARKING - LINE 6" (WHITE THRU LANE LINE)
- ㉒ POLYUREA PAVEMENT MARKING TYPE 1, LINE 12" (YELLOW DIAGONALS SPACED @ 500' CENTERS AND 40' CENTERS ON STRUCTURES)
- ㉓ POLYUREA PAVEMENT MARKING TYPE 1, LINE 12" (WHITE DIAGONALS SPACED @ 500' CENTERS AND 40' CENTERS ON STRUCTURES)
- ㉔ POLYUREA PAVEMENT MARKING TYPE 1, LETTERS AND SYMBOLS (WHITE)
- ㉕ POLYUREA PAVEMENT MARKING TYPE 1, LINE 8" (WHITE 3' DASH, 9' SKIP)
- ㉖ POLYUREA PAVEMENT MARKING TYPE 1, LINE 4" (WHITE 2' DASH, 6' SKIP)

NOTE:

1. SEE IDOT DISTRICT 1 STANDARD TC-12 "MULTI-LANE FREEWAY PAVEMENT MARKING DETAILS" FOR PLACEMENT AND TYPE OF RAISED REFLECTIVE PAVEMENT MARKERS.
2. FOR PROPOSED PAVEMENT MARKINGS IN THE PCC SECTIONS USE POLYUREA PAVEMENT MARKINGS ACCORDING TO STANDARD TC-12.
3. REFER TO ROADWAY PLANS FOR LIMITS OF RESURFACING.



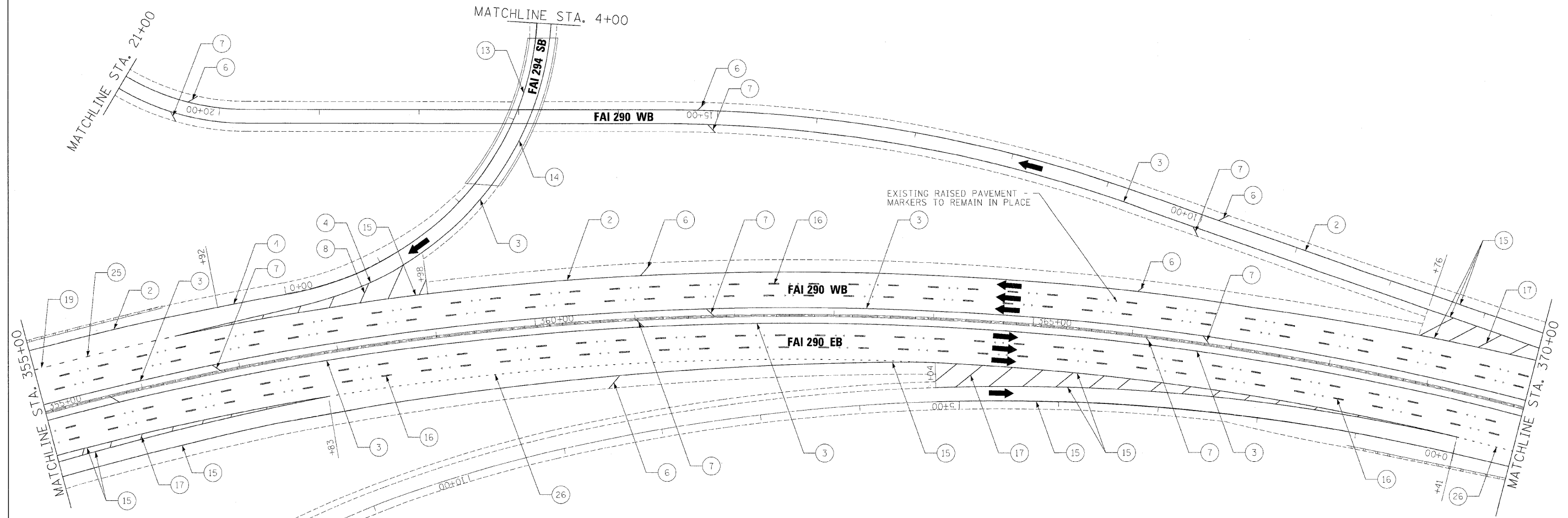
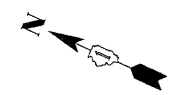
FILE NAME -	DESIGNED - AJP	REVISED -
...prop1n_ABC_C4_290_pvm_tmkg_52.dgn	DRAWN - TMB	REVISED -
USER NAME = jmajevski	CHECKED - JMM	REVISED -
PLOT DATE = 12/16/2009	DATE - 10/16/09	REVISED -

benesch

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

PAVEMENT MARKING PLANS
I-290 STA 340+00 TO STA 355+00
SCALE: 1"=50' SHEET NO. 6 OF 16 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	2009-099BR	COOK/DUPAGE	309	120
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT	
			CONTRACT NO. 60157	



LEGEND

- | | |
|--|--|
| <ul style="list-style-type: none"> ① THERMOPLASTIC PAVEMENT MARKING - LETTERS AND SYMBOLS (WHITE) ② THERMOPLASTIC PAVEMENT MARKING - LINE 4" (WHITE EDGE LINE) ③ THERMOPLASTIC PAVEMENT MARKING - LINE 4" (YELLOW EDGE LINE) ④ THERMOPLASTIC PAVEMENT MARKING - LINE 8" (WHITE EDGE LINE) ⑤ THERMOPLASTIC PAVEMENT MARKING - LINE 8" (WHITE DIAGONALS SPACED @ 10' CENTERS) ⑥ THERMOPLASTIC PAVEMENT MARKING - LINE 12" (WHITE DIAGONALS SPACED @ 500' CENTERS ON MAINLINE AND 150' CENTERS ON RAMP) ⑦ THERMOPLASTIC PAVEMENT MARKING - LINE 12" (YELLOW DIAGONALS SPACED @ 500' CENTERS ON MAINLINE AND 150' CENTERS ON RAMP) ⑧ THERMOPLASTIC PAVEMENT MARKING - LINE 12" (WHITE GORE DIAGONALS SPACED @ 30' CENTERS) ⑨ THERMOPLASTIC PAVEMENT MARKING - LINE 24" (WHITE) ⑩ PREFORMED PLASTIC PAVEMENT MARKING, TYPE B, INLAID, LINE 4" (WHITE 2' DASH, 6' SKIP) ⑪ PREFORMED PLASTIC PAVEMENT MARKING, TYPE B, INLAID, LINE 8" (WHITE 3' DASH, 9' SKIP) ⑫ PREFORMED PLASTIC PAVEMENT MARKING, TYPE B, INLAID, LINE 5" (WHITE 10' DASH, 30' SKIP) ⑬ POLYUREA PAVEMENT MARKING TYPE 1, LINE 4" (WHITE EDGE LINE) | <ul style="list-style-type: none"> ⑭ POLYUREA PAVEMENT MARKING TYPE 1, LINE 4" (YELLOW EDGE LINE) ⑮ POLYUREA PAVEMENT MARKING TYPE 1, LINE 8" (WHITE EDGE LINE) ⑯ POLYUREA PAVEMENT MARKING TYPE 1, LINE 5" (WHITE 10' DASH, 30' SKIP) ⑰ POLYUREA PAVEMENT MARKING TYPE 1, LINE 12" (WHITE GORE DIAGONALS SPACED @ 30' CENTERS) ⑱ RAISED REFLECTIVE PAVEMENT MARKER (1-WAY YELLOW / OPAQUE) ⑲ RAISED REFLECTIVE PAVEMENT MARKER (1-WAY CRYSTAL / OPAQUE) ⑳ THERMOPLASTIC PAVEMENT MARKING - LINE 12" (WHITE EDGE LINE) ㉑ THERMOPLASTIC PAVEMENT MARKING - LINE 6" (WHITE THRU LANE LINE) ㉒ POLYUREA PAVEMENT MARKING TYPE 1, LINE 12" (YELLOW DIAGONALS SPACED @ 500' CENTERS AND 40' CENTERS ON STRUCTURES) ㉓ POLYUREA PAVEMENT MARKING TYPE 1, LINE 12" (WHITE DIAGONALS SPACED @ 500' CENTERS AND 40' CENTERS ON STRUCTURES) ㉔ POLYUREA PAVEMENT MARKING TYPE 1, LETTERS AND SYMBOLS (WHITE) ㉕ POLYUREA PAVEMENT MARKING TYPE 1, LINE 8" (WHITE 3' DASH, 9' SKIP) ㉖ POLYUREA PAVEMENT MARKING TYPE 1, LINE 4" (WHITE 2' DASH, 6' SKIP) |
|--|--|

NOTE:

1. SEE IDOT DISTRICT 1 STANDARD TC-12 "MULTI-LANE FREEWAY PAVEMENT MARKING DETAILS" FOR PLACEMENT AND TYPE OF RAISED REFLECTIVE PAVEMENT MARKERS.
2. FOR PROPOSED PAVEMENT MARKINGS IN THE PCC SECTIONS USE POLYUREA PAVEMENT MARKINGS ACCORDING TO STANDARD TC-12.
3. REFER TO ROADWAY PLANS FOR LIMITS OF RESURFACING.

FILE NAME =	DESIGNED - AJP	REVISED -
...prp\in\ABC_C4_298_pvt\mkg_53.dgn	DRAWN - TMB	REVISED -
USER NAME = jmajewski	CHECKED - JMM	REVISED -
PLCT DATE = 12/16/2009	DATE - 10/16/09	REVISED -

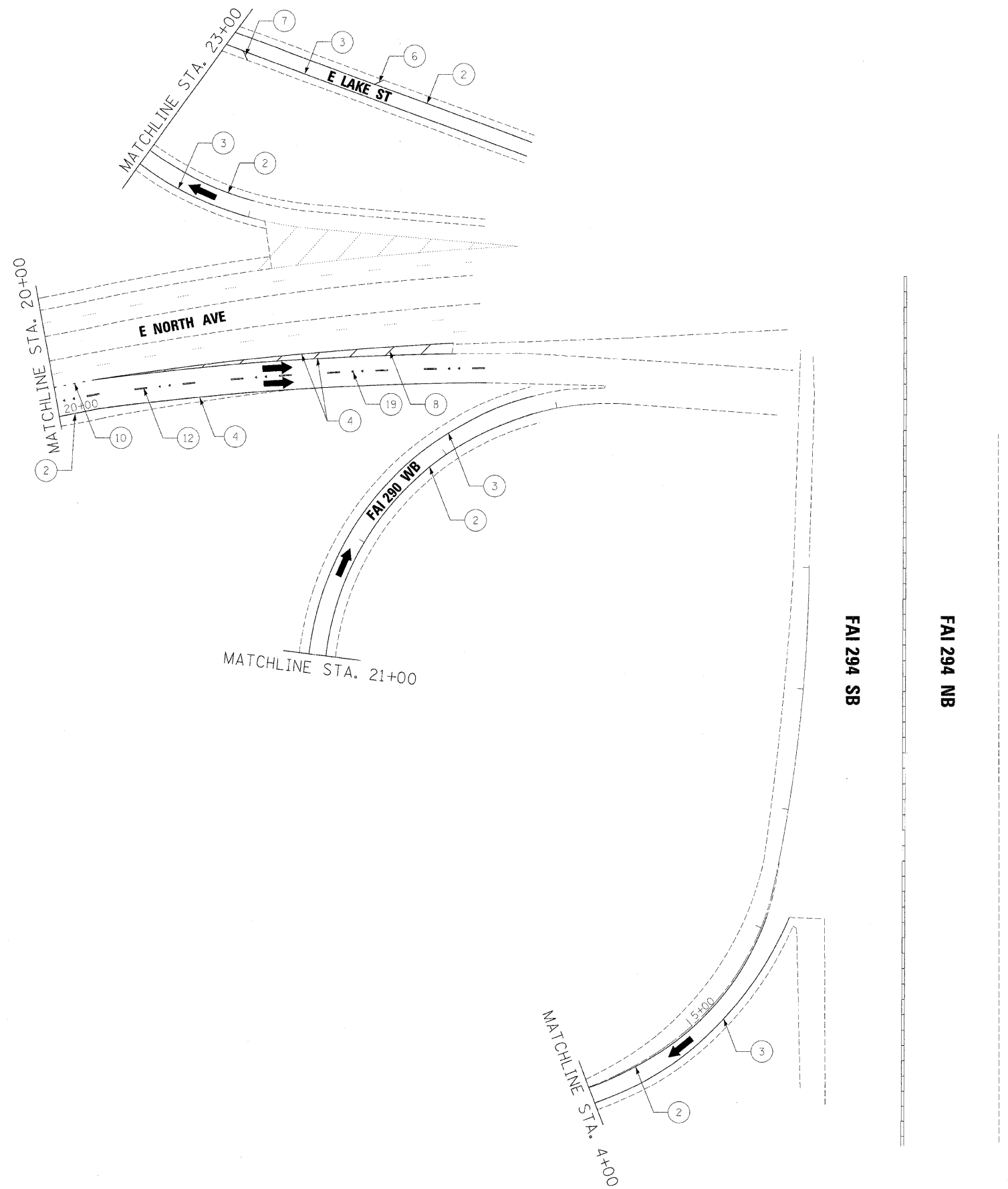
benesch

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**PAVEMENT MARKING PLANS
I-290 STA 355+00 TO STA 370+00**

SCALE: 1"=50' SHEET NO. 7 OF 16 SHEETS STA. TO STA.

F.A.:	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	2009-099BR	COOK/DUPAGE	309	121
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT	
			CONTRACT NO. 60157	



LEGEND

- ① THERMOPLASTIC PAVEMENT MARKING - LETTERS AND SYMBOLS (WHITE)
- ② THERMOPLASTIC PAVEMENT MARKING - LINE 4" (WHITE EDGE LINE)
- ③ THERMOPLASTIC PAVEMENT MARKING - LINE 4" (YELLOW EDGE LINE)
- ④ THERMOPLASTIC PAVEMENT MARKING - LINE 8" (WHITE EDGE LINE)
- ⑤ THERMOPLASTIC PAVEMENT MARKING - LINE 8" (WHITE DIAGONALS SPACED @ 10' CENTERS)
- ⑥ THERMOPLASTIC PAVEMENT MARKING - LINE 12" (WHITE DIAGONALS SPACED @ 500' CENTERS ON MAINLINE AND 150' CENTERS ON RAMP)
- ⑦ THERMOPLASTIC PAVEMENT MARKING - LINE 12" (YELLOW DIAGONALS SPACED @ 500' CENTERS ON MAINLINE AND 150' CENTERS ON RAMP)
- ⑧ THERMOPLASTIC PAVEMENT MARKING - LINE 12" (WHITE GORE DIAGONALS SPACED @ 30' CENTERS)
- ⑨ THERMOPLASTIC PAVEMENT MARKING - LINE 24" (WHITE)
- ⑩ PREFORMED PLASTIC PAVEMENT MARKING, TYPE B, INLAID, LINE 4" (WHITE 2' DASH, 6' SKIP)
- ⑪ PREFORMED PLASTIC PAVEMENT MARKING, TYPE B, INLAID, LINE 8" (WHITE 3' DASH, 9' SKIP)
- ⑫ PREFORMED PLASTIC PAVEMENT MARKING, TYPE B, INLAID, LINE 5" (WHITE 10' DASH, 30' SKIP)
- ⑬ POLYUREA PAVEMENT MARKING TYPE 1, LINE 4" (WHITE EDGE LINE)
- ⑭ POLYUREA PAVEMENT MARKING TYPE 1, LINE 4" (YELLOW EDGE LINE)
- ⑮ POLYUREA PAVEMENT MARKING TYPE 1, LINE 8" (WHITE EDGE LINE)
- ⑯ POLYUREA PAVEMENT MARKING TYPE 1, LINE 5" (WHITE 10' DASH, 30' SKIP)
- ⑰ POLYUREA PAVEMENT MARKING TYPE 1, LINE 12" (WHITE GORE DIAGONALS SPACED @ 30' CENTERS)
- ⑱ RAISED REFLECTIVE PAVEMENT MARKER (1-WAY YELLOW / OPAQUE)
- ⑲ RAISED REFLECTIVE PAVEMENT MARKER (1-WAY CRYSTAL / OPAQUE)
- ⑳ THERMOPLASTIC PAVEMENT MARKING - LINE 12" (WHITE EDGE LINE)
- ㉑ THERMOPLASTIC PAVEMENT MARKING - LINE 6" (WHITE THRU LANE LINE)
- ㉒ POLYUREA PAVEMENT MARKING TYPE 1, LINE 12" (YELLOW DIAGONALS SPACED @ 500' CENTERS AND 40' CENTERS ON STRUCTURES)
- ㉓ POLYUREA PAVEMENT MARKING TYPE 1, LINE 12" (WHITE DIAGONALS SPACED @ 500' CENTERS AND 40' CENTERS ON STRUCTURES)
- ㉔ POLYUREA PAVEMENT MARKING TYPE 1, LETTERS AND SYMBOLS (WHITE)
- ㉕ POLYUREA PAVEMENT MARKING TYPE 1, LINE 8" (WHITE 3' DASH, 9' SKIP)
- ㉖ POLYUREA PAVEMENT MARKING TYPE 1, LINE 4" (WHITE 2' DASH, 6' SKIP)

NOTE:

1. SEE IDOT DISTRICT 3 STANDARD TC-12 "MULTI-LANE FREEWAY PAVEMENT MARKING DETAILS" FOR PLACEMENT AND TYPE OF RAISED REFLECTIVE PAVEMENT MARKERS.
2. FOR PROPOSED PAVEMENT MARKINGS IN THE PCC SECTIONS USE POLYUREA PAVEMENT MARKINGS ACCORDING TO STANDARD TC-12.
3. REFER TO ROADWAY PLANS FOR LIMITS OF RESURFACING.



FILE NAME =	DESIGNED - AJP	REVISED -
...p\p\in_abc_c4_290_pvt\mkg_54.dgn	DRAWN - TMB	REVISED -
USER NAME = jmajowski	CHECKED - JMM	REVISED -
PLOT DATE = 12/16/2009	DATE PLOTTED = 10/16/09	REVISED -

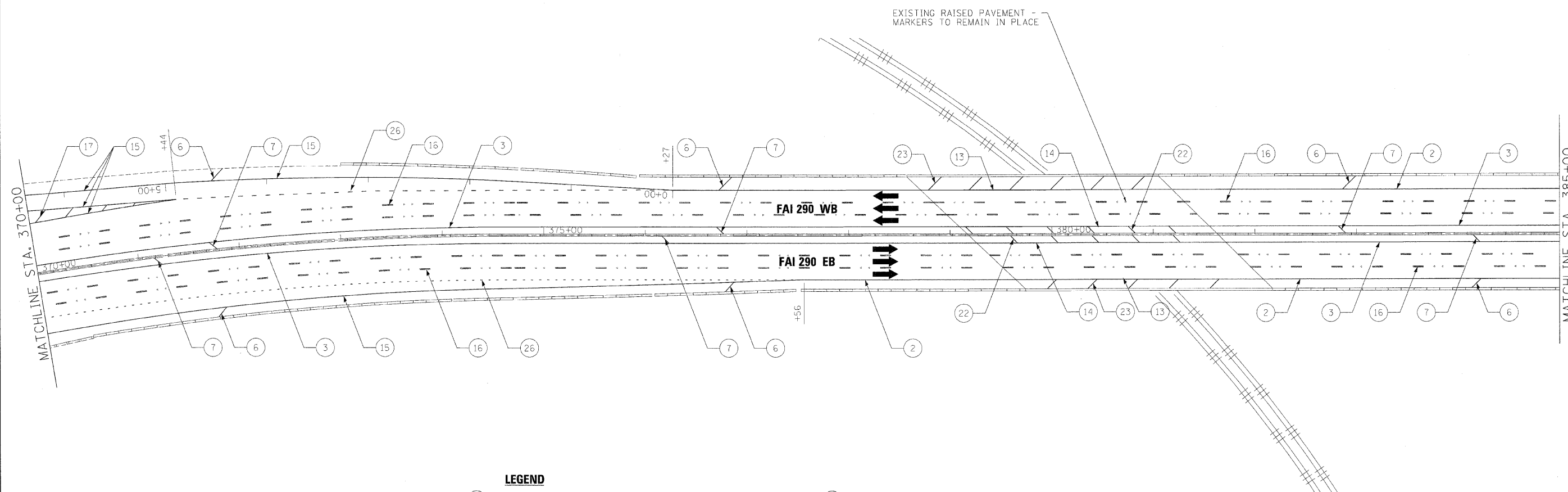
benesch

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**PAVEMENT MARKING PLANS
I-290 NORTH AVE RAMP**

SCALE: 1"=50' SHEET NO. 8 OF 16 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	2009-099BR	COOK/DUPAGE	309	122
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT	
			CONTRACT NO. 60157	



LEGEND

- | | |
|--|--|
| <ul style="list-style-type: none"> ① THERMOPLASTIC PAVEMENT MARKING - LETTERS AND SYMBOLS (WHITE) ② THERMOPLASTIC PAVEMENT MARKING - LINE 4" (WHITE EDGE LINE) ③ THERMOPLASTIC PAVEMENT MARKING - LINE 4" (YELLOW EDGE LINE) ④ THERMOPLASTIC PAVEMENT MARKING - LINE 8" (WHITE EDGE LINE) ⑤ THERMOPLASTIC PAVEMENT MARKING - LINE 8" (WHITE DIAGONALS SPACED @ 10' CENTERS) ⑥ THERMOPLASTIC PAVEMENT MARKING - LINE 12" (WHITE DIAGONALS SPACED @ 500' CENTERS ON MAINLINE AND 150' CENTERS ON RAMP) ⑦ THERMOPLASTIC PAVEMENT MARKING - LINE 12" (YELLOW DIAGONALS SPACED @ 500' CENTERS ON MAINLINE AND 150' CENTERS ON RAMP) ⑧ THERMOPLASTIC PAVEMENT MARKING - LINE 12" (WHITE GORE DIAGONALS SPACED @ 30' CENTERS) ⑨ THERMOPLASTIC PAVEMENT MARKING - LINE 24" (WHITE) ⑩ PREFORMED PLASTIC PAVEMENT MARKING, TYPE B, INLAID, LINE 4" (WHITE 2' DASH, 6' SKIP) ⑪ PREFORMED PLASTIC PAVEMENT MARKING, TYPE B, INLAID, LINE 8" (WHITE 3' DASH, 9' SKIP) ⑫ PREFORMED PLASTIC PAVEMENT MARKING, TYPE B, INLAID, LINE 5" (WHITE 10' DASH, 30' SKIP) ⑬ POLYUREA PAVEMENT MARKING TYPE 1, LINE 4" (WHITE EDGE LINE) | <ul style="list-style-type: none"> ⑭ POLYUREA PAVEMENT MARKING TYPE 1, LINE 4" (YELLOW EDGE LINE) ⑮ POLYUREA PAVEMENT MARKING TYPE 1, LINE 8" (WHITE EDGE LINE) ⑯ POLYUREA PAVEMENT MARKING TYPE 1, LINE 5" (WHITE 10' DASH, 30' SKIP) ⑰ POLYUREA PAVEMENT MARKING TYPE 1, LINE 12" (WHITE GORE DIAGONALS SPACED @ 30' CENTERS) ⑱ RAISED REFLECTIVE PAVEMENT MARKER (1-WAY YELLOW / OPAQUE) ⑲ RAISED REFLECTIVE PAVEMENT MARKER (1-WAY CRYSTAL / OPAQUE) ⑳ THERMOPLASTIC PAVEMENT MARKING - LINE 12" (WHITE EDGE LINE) ㉑ THERMOPLASTIC PAVEMENT MARKING - LINE 6" (WHITE THRU LANE LINE) ㉒ POLYUREA PAVEMENT MARKING TYPE 1, LINE 12" (YELLOW DIAGONALS SPACED @ 500' CENTERS AND 40' CENTERS ON STRUCTURES) ㉓ POLYUREA PAVEMENT MARKING TYPE 1, LINE 12" (WHITE DIAGONALS SPACED @ 500' CENTERS AND 40' CENTERS ON STRUCTURES) ㉔ POLYUREA PAVEMENT MARKING TYPE 1, LETTERS AND SYMBOLS (WHITE) ㉕ POLYUREA PAVEMENT MARKING TYPE 1, LINE 8" (WHITE 3' DASH, 9' SKIP) ㉖ POLYUREA PAVEMENT MARKING TYPE 1, LINE 4" (WHITE 2' DASH, 6' SKIP) |
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NOTE:

1. SEE IDOT DISTRICT 1 STANDARD TC-12 "MULTI-LANE FREEWAY PAVEMENT MARKING DETAILS" FOR PLACEMENT AND TYPE OF RAISED REFLECTIVE PAVEMENT MARKERS.
2. FOR PROPOSED PAVEMENT MARKINGS IN THE PCC SECTIONS USE POLYUREA PAVEMENT MARKINGS ACCORDING TO STANDARD TC-12.
3. REFER TO ROADWAY PLANS FOR LIMITS OF RESURFACING.

FILE NAME =	DESIGNED - AJP	REVISED -
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USER NAME = jnojewski	CHECKED - JMM	REVISED -
PLDT DATE = 12/16/2009	DATE - 10/16/09	REVISED -

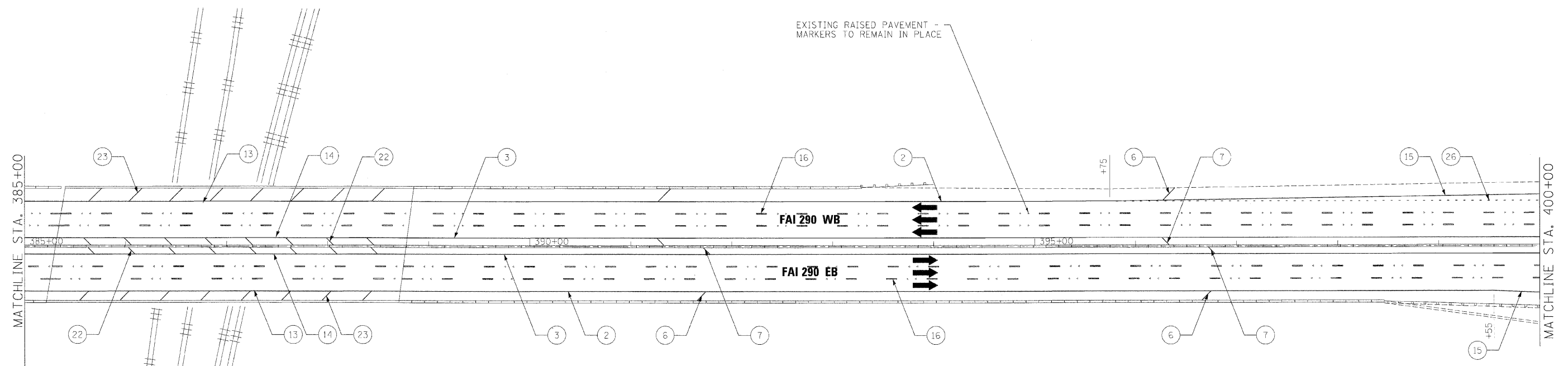
benesch

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**PAVEMENT MARKING PLANS
I-290 STA 370+00 TO STA 385+00**

SCALE: 1"=50' SHEET NO. 9 OF 16 SHEETS STA. TO STA.

F.A.I. R.T.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	2009-099BR	COOK/DUPAGE	309	123
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT			CONTRACT NO. 60157	



LEGEND

- | | | | |
|----|--|----|---|
| 1 | THERMOPLASTIC PAVEMENT MARKING - LETTERS AND SYMBOLS (WHITE) | 14 | POLYUREA PAVEMENT MARKING TYPE 1, LINE 4" (YELLOW EDGE LINE) |
| 2 | THERMOPLASTIC PAVEMENT MARKING - LINE 4" (WHITE EDGE LINE) | 15 | POLYUREA PAVEMENT MARKING TYPE 1, LINE 8" (WHITE EDGE LINE) |
| 3 | THERMOPLASTIC PAVEMENT MARKING - LINE 4" (YELLOW EDGE LINE) | 16 | POLYUREA PAVEMENT MARKING TYPE 1, LINE 5" (WHITE 10' DASH, 30' SKIP) |
| 4 | THERMOPLASTIC PAVEMENT MARKING - LINE 8" (WHITE EDGE LINE) | 17 | POLYUREA PAVEMENT MARKING TYPE 1, LINE 12" (WHITE GORE DIAGONALS SPACED @ 30' CENTERS) |
| 5 | THERMOPLASTIC PAVEMENT MARKING - LINE 8" (WHITE DIAGONALS SPACED @ 10' CENTERS) | 18 | RAISED REFLECTIVE PAVEMENT MARKER (1-WAY YELLOW / OPAQUE) |
| 6 | THERMOPLASTIC PAVEMENT MARKING - LINE 12" (WHITE DIAGONALS SPACED @ 500' CENTERS ON MAINLINE AND 150' CENTERS ON RAMPS) | 19 | RAISED REFLECTIVE PAVEMENT MARKER (1-WAY CRYSTAL / OPAQUE) |
| 7 | THERMOPLASTIC PAVEMENT MARKING - LINE 12" (YELLOW DIAGONALS SPACED @ 500' CENTERS ON MAINLINE AND 150' CENTERS ON RAMPS) | 20 | THERMOPLASTIC PAVEMENT MARKING - LINE 12" (WHITE EDGE LINE) |
| 8 | THERMOPLASTIC PAVEMENT MARKING - LINE 12" (WHITE GORE DIAGONALS SPACED @ 30' CENTERS) | 21 | THERMOPLASTIC PAVEMENT MARKING - LINE 6" (WHITE THRU LANE LINE) |
| 9 | THERMOPLASTIC PAVEMENT MARKING - LINE 24" (WHITE) | 22 | POLYUREA PAVEMENT MARKING TYPE 1, LINE 12" (YELLOW DIAGONALS SPACED @ 500' CENTERS AND 40' CENTERS ON STRUCTURES) |
| 10 | PREFORMED PLASTIC PAVEMENT MARKING, TYPE B, INLAID, LINE 4" (WHITE 2' DASH, 6' SKIP) | 23 | POLYUREA PAVEMENT MARKING TYPE 1, LINE 12" (WHITE DIAGONALS SPACED @ 500' CENTERS AND 40' CENTERS ON STRUCTURES) |
| 11 | PREFORMED PLASTIC PAVEMENT MARKING, TYPE B, INLAID, LINE 8" (WHITE 3' DASH, 9' SKIP) | 24 | POLYUREA PAVEMENT MARKING TYPE 1, LETTERS AND SYMBOLS (WHITE) |
| 12 | PREFORMED PLASTIC PAVEMENT MARKING, TYPE B, INLAID, LINE 5" (WHITE 10' DASH, 30' SKIP) | 25 | POLYUREA PAVEMENT MARKING TYPE 1, LINE 8" (WHITE 3' DASH, 9' SKIP) |
| 13 | POLYUREA PAVEMENT MARKING TYPE 1, LINE 4" (WHITE EDGE LINE) | 26 | POLYUREA PAVEMENT MARKING TYPE 1, LINE 4" (WHITE 2' DASH, 6' SKIP) |

NOTE:

- SEE IDOT DISTRICT 1 STANDARD TC-12 "MULTI-LANE FREEWAY PAVEMENT MARKING DETAILS" FOR PLACEMENT AND TYPE OF RAISED REFLECTIVE PAVEMENT MARKERS.
- FOR PROPOSED PAVEMENT MARKINGS IN THE PCC SECTIONS USE POLYUREA PAVEMENT MARKINGS ACCORDING TO STANDARD TC-12.
- REFER TO ROADWAY PLANS FOR LIMITS OF RESURFACING.

FILE NAME -	DESIGNED - AJP	REVISED -
...prp-n-abc_c4_290_pmntmkg_56.dgn	DRAWN - TMB	REVISED -
USER NAME = jmajewski	CHECKED - JMM	REVISED -
PLOT DATE = 12/16/2009	DATE - 10/16/09	REVISED -

benesch

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**PAVEMENT MARKING PLANS
I-290 STA 385+00 TO STA 400+00**

SCALE: 1"=50' SHEET NO. 10 OF 16 SHEETS STA. TO STA.

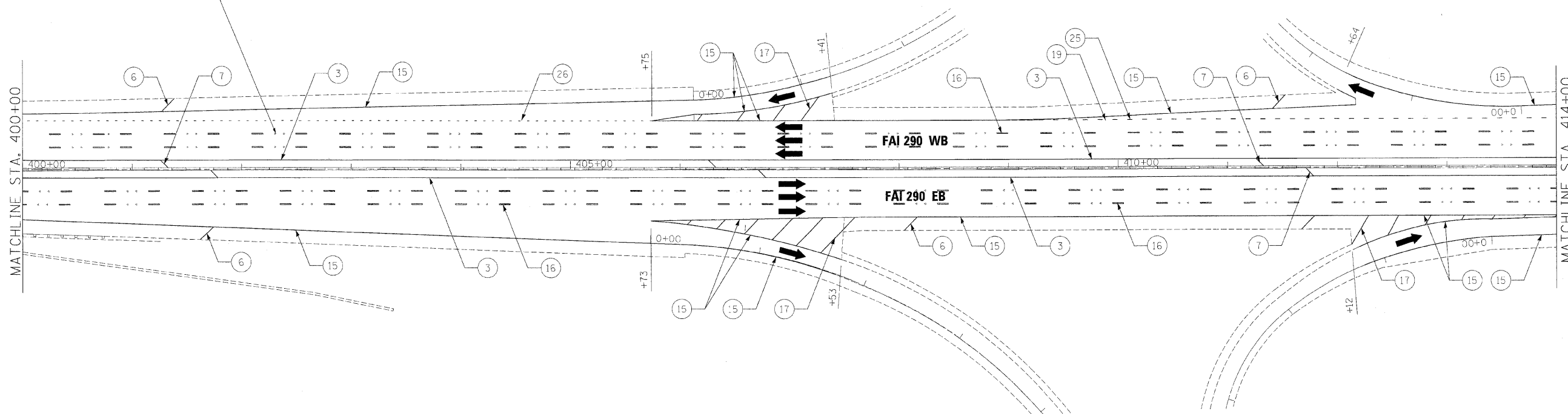
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	2009-099BR	COOK/DUPAGE	309	124
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT			CONTRACT NO. 60157	

LEGEND

- ① THERMOPLASTIC PAVEMENT MARKING - LETTERS AND SYMBOLS (WHITE)
- ② THERMOPLASTIC PAVEMENT MARKING - LINE 4" (WHITE EDGE LINE)
- ③ THERMOPLASTIC PAVEMENT MARKING - LINE 4" (YELLOW EDGE LINE)
- ④ THERMOPLASTIC PAVEMENT MARKING - LINE 8" (WHITE EDGE LINE)
- ⑤ THERMOPLASTIC PAVEMENT MARKING - LINE 8" (WHITE DIAGONALS SPACED @ 10' CENTERS)
- ⑥ THERMOPLASTIC PAVEMENT MARKING - LINE 12" (WHITE DIAGONALS SPACED @ 500' CENTERS ON MAINLINE AND 150' CENTERS ON RAMP)
- ⑦ THERMOPLASTIC PAVEMENT MARKING - LINE 12" (YELLOW DIAGONALS SPACED @ 500' CENTERS ON MAINLINE AND 150' CENTERS ON RAMP)
- ⑧ THERMOPLASTIC PAVEMENT MARKING - LINE 12" (WHITE GORE DIAGONALS SPACED @ 30' CENTERS)
- ⑨ THERMOPLASTIC PAVEMENT MARKING - LINE 24" (WHITE)
- ⑩ PREFORMED PLASTIC PAVEMENT MARKING, TYPE B, INLAID, LINE 4" (WHITE 2' DASH, 6' SKIP)
- ⑪ PREFORMED PLASTIC PAVEMENT MARKING, TYPE B, INLAID, LINE 8" (WHITE 3' DASH, 9' SKIP)
- ⑫ PREFORMED PLASTIC PAVEMENT MARKING, TYPE B, INLAID, LINE 5" (WHITE 10' DASH, 30' SKIP)
- ⑬ POLYUREA PAVEMENT MARKING TYPE 1, LINE 4" (WHITE EDGE LINE)
- ⑭ POLYUREA PAVEMENT MARKING TYPE 1, LINE 4" (YELLOW EDGE LINE)
- ⑮ POLYUREA PAVEMENT MARKING TYPE 1, LINE 8" (WHITE EDGE LINE)
- ⑯ POLYUREA PAVEMENT MARKING TYPE 1, LINE 5" (WHITE 10' DASH, 30' SKIP)
- ⑰ POLYUREA PAVEMENT MARKING TYPE 1, LINE 12" (WHITE GORE DIAGONALS SPACED @ 30' CENTERS)
- ⑱ RAISED REFLECTIVE PAVEMENT MARKER (1-WAY YELLOW / OPAQUE)
- ⑲ RAISED REFLECTIVE PAVEMENT MARKER (1-WAY CRYSTAL / OPAQUE)
- ⑳ THERMOPLASTIC PAVEMENT MARKING - LINE 12" (WHITE EDGE LINE)
- ㉑ THERMOPLASTIC PAVEMENT MARKING - LINE 6" (WHITE THRU LANE LINE)
- ㉒ POLYUREA PAVEMENT MARKING TYPE 1, LINE 12" (YELLOW DIAGONALS SPACED @ 500' CENTERS AND 40' CENTERS ON STRUCTURES)
- ㉓ POLYUREA PAVEMENT MARKING TYPE 1, LINE 12" (WHITE DIAGONALS SPACED @ 500' CENTERS AND 40' CENTERS ON STRUCTURES)
- ㉔ POLYUREA PAVEMENT MARKING TYPE 1, LETTERS AND SYMBOLS (WHITE)
- ㉕ POLYUREA PAVEMENT MARKING TYPE 1, LINE 8" (WHITE 3' DASH, 9' SKIP)
- ㉖ POLYUREA PAVEMENT MARKING TYPE 1, LINE 4" (WHITE 2' DASH, 6' SKIP)



EXISTING RAISED PAVEMENT MARKERS TO REMAIN IN PLACE



NOTE:

1. SEE IDOT DISTRICT 1 STANDARD TC-12 "MULTI-LANE FREEWAY PAVEMENT MARKING DETAILS" FOR PLACEMENT AND TYPE OF RAISED REFLECTIVE PAVEMENT MARKERS.
2. FOR PROPOSED PAVEMENT MARKINGS IN THE PCC SECTIONS USE POLYUREA PAVEMENT MARKINGS ACCORDING TO STANDARD TC-12.
3. REFER TO ROADWAY PLANS FOR LIMITS OF RESURFACING.

FILE NAME -	DESIGNED - AJP	REVISED -
...prpln_abc_c4_290_pvmnkg_57.dgn	DRAWN - TMB	REVISED -
USER NAME = jmajewski	CHECKED - JMM	REVISED -
PLOT DATE = 12/16/2009	DATE - 10/16/09	REVISED -

benesch

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

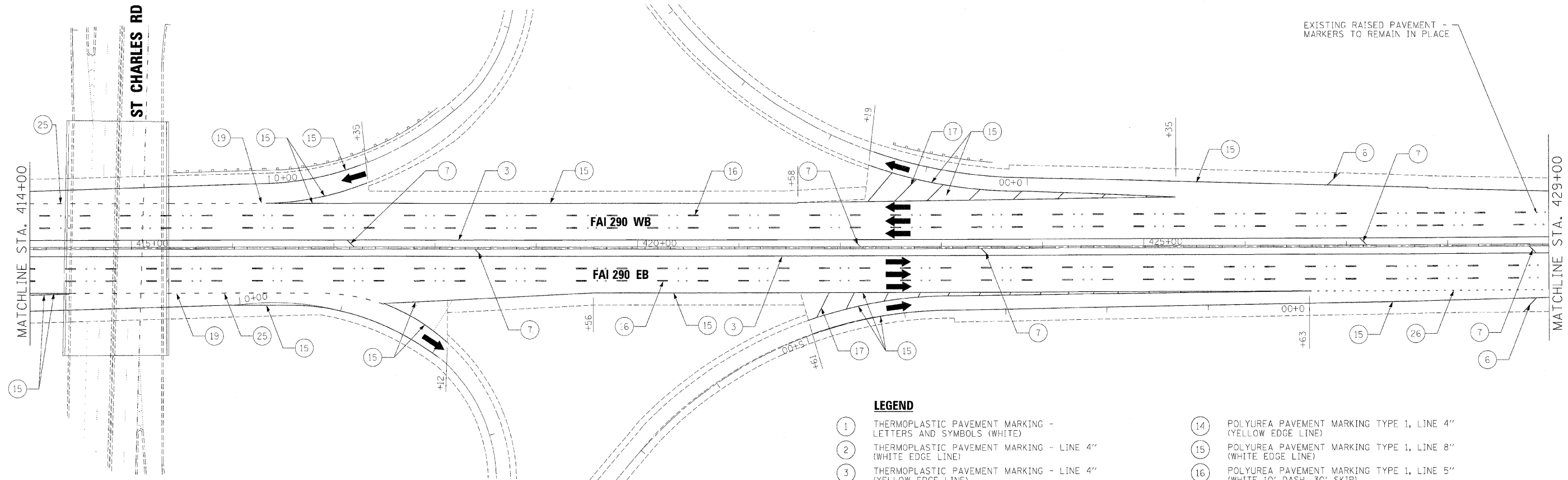
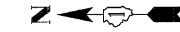
**PAVEMENT MARKING PLANS
I-290 STA 400+00 TO STA 414+00**

SCALE: 1"=50' SHEET NO. 11 OF 16 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	2009-099BR	COOK/DUPAGE	309	125
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT	
			CONTRACT NO. 60157	

NOTE:

1. SEE IDOT DISTRICT 1 STANDARD TC-12 "MULTI-LANE FREEWAY PAVEMENT MARKING DETAILS" FOR PLACEMENT AND TYPE OF RAISED REFLECTIVE PAVEMENT MARKERS.
2. FOR PROPOSED PAVEMENT MARKINGS IN THE PCC SECTIONS USE POLYUREA PAVEMENT MARKINGS ACCORDING TO STANDARD TC-12.
3. REFER TO ROADWAY PLANS FOR LIMITS OF RESURFACING.



LEGEND

- | | | | |
|----|---|----|---|
| 1 | THERMOPLASTIC PAVEMENT MARKING - LETTERS AND SYMBOLS (WHITE) | 14 | POLYUREA PAVEMENT MARKING TYPE 1, LINE 4" (YELLOW EDGE LINE) |
| 2 | THERMOPLASTIC PAVEMENT MARKING - LINE 4" (WHITE EDGE LINE) | 15 | POLYUREA PAVEMENT MARKING TYPE 1, LINE 8" (WHITE EDGE LINE) |
| 3 | THERMOPLASTIC PAVEMENT MARKING - LINE 4" (YELLOW EDGE LINE) | 16 | POLYUREA PAVEMENT MARKING TYPE 1, LINE 5" (WHITE 10' DASH, 30' SKIP) |
| 4 | THERMOPLASTIC PAVEMENT MARKING - LINE 8" (WHITE EDGE LINE) | 17 | POLYUREA PAVEMENT MARKING TYPE 1, LINE 12" (WHITE GORE DIAGONALS SPACED @ 30' CENTERS) |
| 5 | THERMOPLASTIC PAVEMENT MARKING - LINE 8" (WHITE DIAGONALS SPACED @ 10' CENTERS) | 18 | RAISED REFLECTIVE PAVEMENT MARKER (1-WAY YELLOW / OPAQUE) |
| 6 | THERMOPLASTIC PAVEMENT MARKING - LINE 12" (WHITE DIAGONALS SPACED @ 500' CENTERS ON MAINLINE AND 150' CENTERS ON RAMP) | 19 | RAISED REFLECTIVE PAVEMENT MARKER (1-WAY CRYSTAL / OPAQUE) |
| 7 | THERMOPLASTIC PAVEMENT MARKING - LINE 12" (YELLOW DIAGONALS SPACED @ 500' CENTERS ON MAINLINE AND 150' CENTERS ON RAMP) | 20 | THERMOPLASTIC PAVEMENT MARKING - LINE 12" (WHITE EDGE LINE) |
| 8 | THERMOPLASTIC PAVEMENT MARKING - LINE 12" (WHITE GORE DIAGONALS SPACED @ 30' CENTERS) | 21 | THERMOPLASTIC PAVEMENT MARKING - LINE 6" (WHITE THRU LANE LINE) |
| 9 | THERMOPLASTIC PAVEMENT MARKING - LINE 24" (WHITE) | 22 | POLYUREA PAVEMENT MARKING TYPE 1, LINE 12" (YELLOW DIAGONALS SPACED @ 500' CENTERS AND 40' CENTERS ON STRUCTURES) |
| 10 | PREFORMED PLASTIC PAVEMENT MARKING, TYPE B, INLAID, LINE 4" (WHITE 2' DASH, 6' SKIP) | 23 | POLYUREA PAVEMENT MARKING TYPE 1, LINE 12" (WHITE DIAGONALS SPACED @ 500' CENTERS AND 40' CENTERS ON STRUCTURES) |
| 11 | PREFORMED PLASTIC PAVEMENT MARKING, TYPE B, INLAID, LINE 8" (WHITE 3' DASH, 9' SKIP) | 24 | POLYUREA PAVEMENT MARKING TYPE 1, LETTERS AND SYMBOLS (WHITE) |
| 12 | PREFORMED PLASTIC PAVEMENT MARKING, TYPE B, INLAID, LINE 5" (WHITE 10' DASH, 30' SKIP) | 25 | POLYUREA PAVEMENT MARKING TYPE 1, LINE 8" (WHITE 3' DASH, 9' SKIP) |
| 13 | POLYUREA PAVEMENT MARKING TYPE 1, LINE 4" (WHITE EDGE LINE) | 26 | POLYUREA PAVEMENT MARKING TYPE 1, LINE 4" (WHITE 2' DASH, 6' SKIP) |

FILE NAME =	DESIGNED - AJP	REVISED -
...prp1n_ABC_C4_298_pvmtnkg_58.dgn	DRAWN - TMB	REVISED -
USER NAME = jmajewski	CHECKED - JMM	REVISED -
PLOT DATE = 12/16/2009	DATE - 10/16/09	REVISED -

benesch

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**PAVEMENT MARKING PLANS
I-290 STA 414+00 TO STA 429+00**

SCALE: 1"=50' SHEET NO. 12 OF 16 SHEETS STA. TO STA.

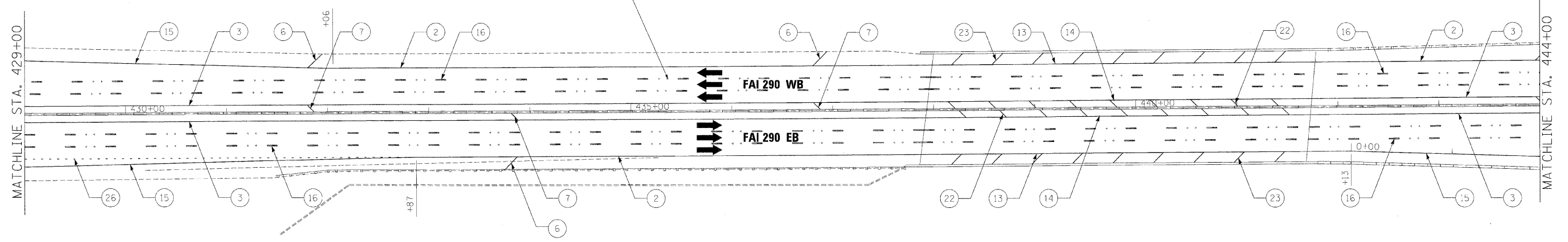
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	2009-099BR	COOK/DUPAGE	309	126
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT	
			CONTRACT NO. 60157	



LEGEND

- ① THERMOPLASTIC PAVEMENT MARKING - LETTERS AND SYMBOLS (WHITE)
- ② THERMOPLASTIC PAVEMENT MARKING - LINE 4" (WHITE EDGE LINE)
- ③ THERMOPLASTIC PAVEMENT MARKING - LINE 4" (YELLOW EDGE LINE)
- ④ THERMOPLASTIC PAVEMENT MARKING - LINE 8" (WHITE EDGE LINE)
- ⑤ THERMOPLASTIC PAVEMENT MARKING - LINE 8" (WHITE DIAGONALS SPACED @ 10' CENTERS)
- ⑥ THERMOPLASTIC PAVEMENT MARKING - LINE 12" (WHITE DIAGONALS SPACED @ 500' CENTERS ON MAINLINE AND 150' CENTERS ON RAMP)
- ⑦ THERMOPLASTIC PAVEMENT MARKING - LINE 12" (YELLOW DIAGONALS SPACED @ 500' CENTERS ON MAINLINE AND 150' CENTERS ON RAMP)
- ⑧ THERMOPLASTIC PAVEMENT MARKING - LINE 12" (WHITE GORE DIAGONALS SPACED @ 30' CENTERS)
- ⑨ THERMOPLASTIC PAVEMENT MARKING - LINE 24" (WHITE)
- ⑩ PREFORMED PLASTIC PAVEMENT MARKING, TYPE B, INLAID, LINE 4" (WHITE 2' DASH, 6' SKIP)
- ⑪ PREFORMED PLASTIC PAVEMENT MARKING, TYPE B, INLAID, LINE 8" (WHITE 3' DASH, 9' SKIP)
- ⑫ PREFORMED PLASTIC PAVEMENT MARKING, TYPE B, INLAID, LINE 5" (WHITE 10' DASH, 30' SKIP)
- ⑬ POLYUREA PAVEMENT MARKING TYPE 1, LINE 4" (WHITE EDGE LINE)
- ⑭ POLYUREA PAVEMENT MARKING TYPE 1, LINE 4" (YELLOW EDGE LINE)
- ⑮ POLYUREA PAVEMENT MARKING TYPE 1, LINE 8" (WHITE EDGE LINE)
- ⑯ POLYUREA PAVEMENT MARKING TYPE 1, LINE 5" (WHITE 10' DASH, 30' SKIP)
- ⑰ POLYUREA PAVEMENT MARKING TYPE 1, LINE 12" (WHITE GORE DIAGONALS SPACED @ 30' CENTERS)
- ⑱ RAISED REFLECTIVE PAVEMENT MARKER (1-WAY YELLOW / OPAQUE)
- ⑲ RAISED REFLECTIVE PAVEMENT MARKER (1-WAY CRYSTAL / OPAQUE)
- ⑳ THERMOPLASTIC PAVEMENT MARKING - LINE 12" (WHITE EDGE LINE)
- ㉑ THERMOPLASTIC PAVEMENT MARKING - LINE 6" (WHITE THRU LANE LINE)
- ㉒ POLYUREA PAVEMENT MARKING TYPE 1, LINE 12" (YELLOW DIAGONALS SPACED @ 500' CENTERS AND 40' CENTERS ON STRUCTURES)
- ㉓ POLYUREA PAVEMENT MARKING TYPE 1, LINE 12" (WHITE DIAGONALS SPACED @ 500' CENTERS AND 40' CENTERS ON STRUCTURES)
- ㉔ POLYUREA PAVEMENT MARKING TYPE 1, LETTERS AND SYMBOLS (WHITE)
- ㉕ POLYUREA PAVEMENT MARKING TYPE 1, LINE 8" (WHITE 3' DASH, 9' SKIP)
- ㉖ POLYUREA PAVEMENT MARKING TYPE 1, LINE 4" (WHITE 2' DASH, 6' SKIP)

EXISTING RAISED PAVEMENT - MARKERS TO REMAIN IN PLACE



NOTE:

1. SEE IDOT DISTRICT 1 STANDARD TC-12 "MULTI-LANE FREEWAY PAVEMENT MARKING DETAILS" FOR PLACEMENT AND TYPE OF RAISED REFLECTIVE PAVEMENT MARKERS.
2. FOR PROPOSED PAVEMENT MARKINGS IN THE PCC SECTIONS USE POLYUREA PAVEMENT MARKINGS ACCORDING TO STANDARD TC-12.
3. REFER TO ROADWAY PLANS FOR LIMITS OF RESURFACING.

FILE NAME =	DESIGNED - AJP	REVISED -
...prp1-ABC_C4_290_pvmzmkg.63.dgn	DRAWN - TMB	REVISED -
USER NAME = jma_ewski	CHECKED - JMM	REVISED -
PLOT DATE = 12/16/2009	DATE - 10/16/09	REVISED -

benesch

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

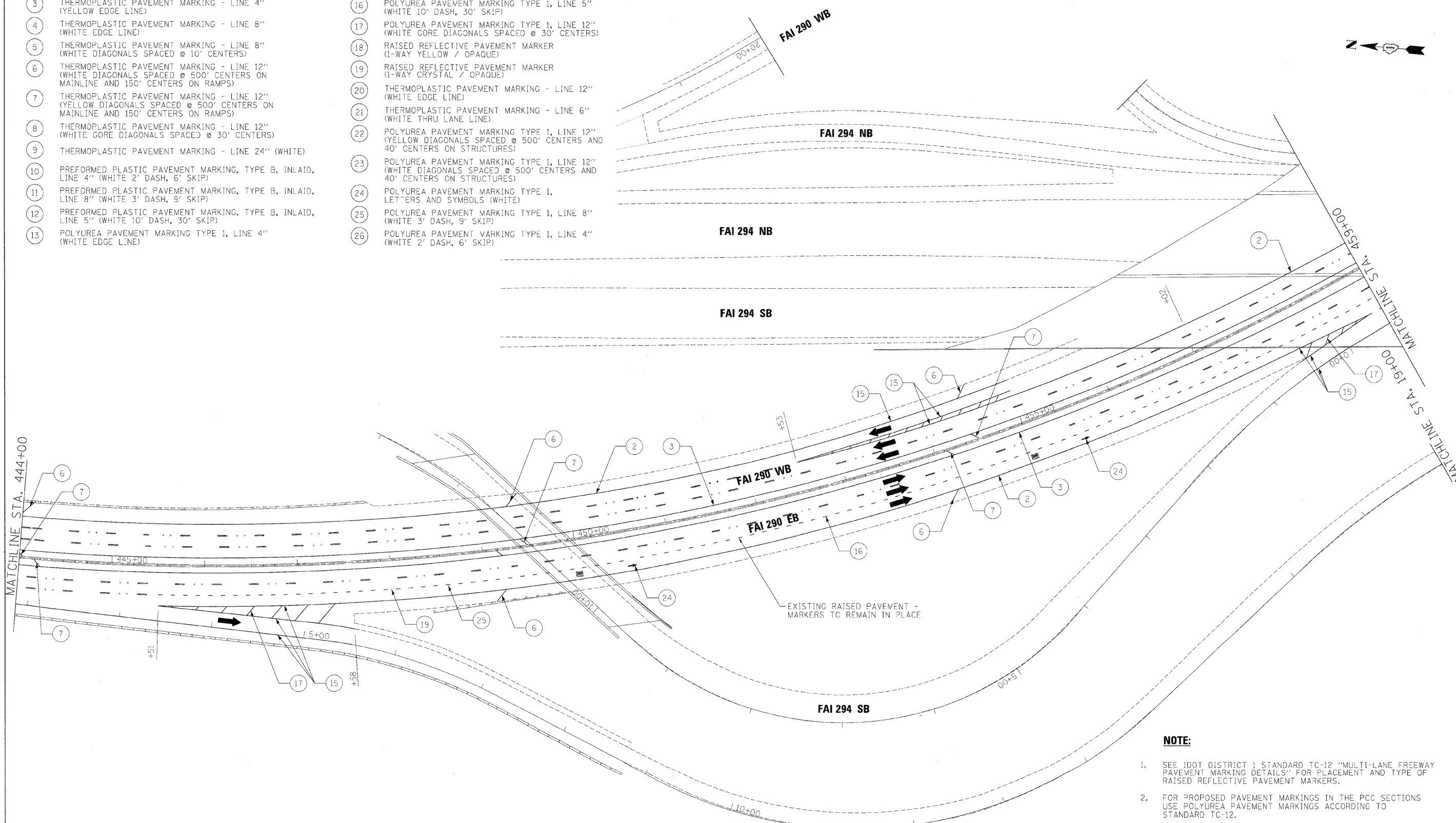
**PAVEMENT MARKING PLANS
I-290 STA 429+00 TO STA 444+00**

SCALE: 1"=50' SHEET NO. 13 OF 16 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	2009-099BR	COOK/DUPAGE	309	127
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT			CONTRACT NO. 60157	

LEGEND

- ① THERMOPLASTIC PAVEMENT MARKING - LETTERS AND SYMBOLS (WHITE)
- ② THERMOPLASTIC PAVEMENT MARKING - LINE 4" (WHITE EDGE LINE)
- ③ THERMOPLASTIC PAVEMENT MARKING - LINE 4" (YELLOW EDGE LINE)
- ④ THERMOPLASTIC PAVEMENT MARKING - LINE 8" (WHITE EDGE LINE)
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- ⑥ THERMOPLASTIC PAVEMENT MARKING - LINE 12" (WHITE DIAGONALS SPACED @ 10' CENTERS)
- ⑦ THERMOPLASTIC PAVEMENT MARKING - LINE 12" (YELLOW DIAGONALS SPACED @ 500' CENTERS ON MAINLINE AND 150' CENTERS ON RAMP)
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- ⑨ THERMOPLASTIC PAVEMENT MARKING - LINE 24" (WHITE)
- ⑩ PREFORMED PLASTIC PAVEMENT MARKING, TYPE B, INLAID, LINE 4" (WHITE 2' DASH, 6' SKIP)
- ⑪ PREFORMED PLASTIC PAVEMENT MARKING, TYPE B, INLAID, LINE 8" (WHITE 3' DASH, 9' SKIP)
- ⑫ PREFORMED PLASTIC PAVEMENT MARKING, TYPE B, INLAID, LINE 5" (WHITE 10' DASH, 30' SKIP)
- ⑬ POLYUREA PAVEMENT MARKING TYPE 1, LINE 4" (WHITE EDGE LINE)
- ⑭ POLYUREA PAVEMENT MARKING TYPE 1, LINE 4" (YELLOW EDGE LINE)
- ⑮ POLYUREA PAVEMENT MARKING TYPE 1, LINE 8" (WHITE EDGE LINE)
- ⑯ POLYUREA PAVEMENT MARKING TYPE 1, LINE 5" (WHITE 10' DASH, 30' SKIP)
- ⑰ POLYUREA PAVEMENT MARKING TYPE 1, LINE 12" (WHITE CORE DIAGONALS SPACED @ 30' CENTERS)
- ⑱ RAISED REFLECTIVE PAVEMENT MARKER (1-WAY YELLOW / OPAQUE)
- ⑲ RAISED REFLECTIVE PAVEMENT MARKER (1-WAY CRYSTAL / OPAQUE)
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- ㉔ POLYUREA PAVEMENT MARKING TYPE 1, LETTERS AND SYMBOLS (WHITE)
- ㉕ POLYUREA PAVEMENT MARKING TYPE 1, LINE 8" (WHITE 3' DASH, 9' SKIP)
- ㉖ POLYUREA PAVEMENT MARKING TYPE 1, LINE 4" (WHITE 2' DASH, 6' SKIP)



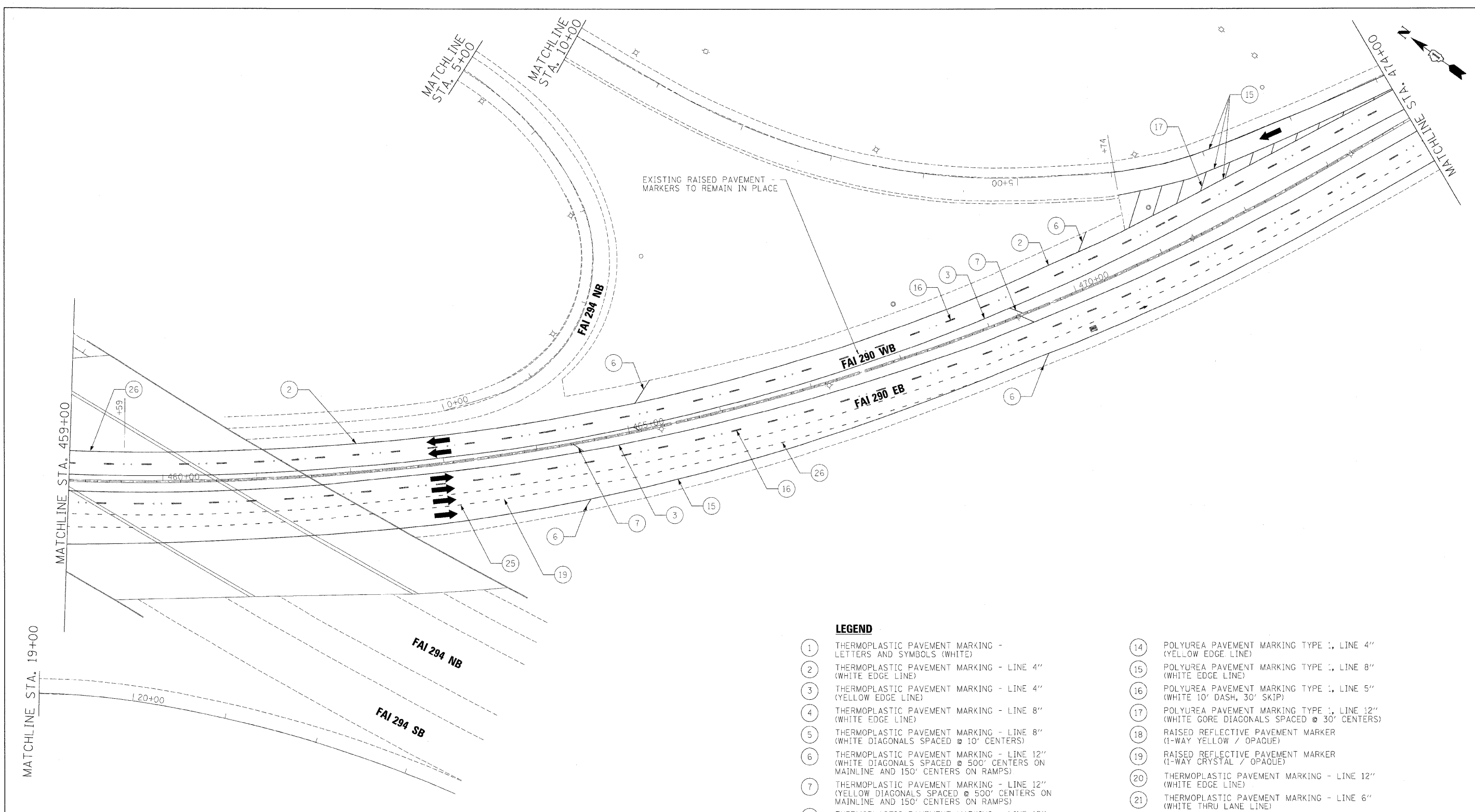
EXISTING RAISED PAVEMENT - MARKERS TO REMAIN IN PLACE

NOTE:

1. SEE IDOT DISTRICT 1 STANDARD TC-12 "MULTI-LANE FREEWAY PAVEMENT MARKING DETAILS" FOR PLACEMENT AND TYPE OF RAISED REFLECTIVE PAVEMENT MARKERS.
2. FOR PROPOSED PAVEMENT MARKINGS IN THE PCC SECTIONS USE POLYUREA PAVEMENT MARKINGS ACCORDING TO STANDARD TC-12.
3. REFER TO ROADWAY PLANS FOR LIMITS OF RESURFACING.

FILE NAME =	DESIGNED - AJP	REVISED -	benesch	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PAVEMENT MARKING PLANS I-290 STA 444+00 TO STA 459+00	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
USER NAME = jmojavak	DRAWN - TMB	REVISED -				290	2009-099BR	COOK/DUPAGE	309	128
PLDT DATE = 12/16/2009	CHECKED - JMM	REVISED -				CONTRACT NO. 60157				
DATE - 10/16/09	REVISED -	FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT								

SCALE: 1"=50' SHEET NO. 14 OF 16 SHEETS STA. TO STA.



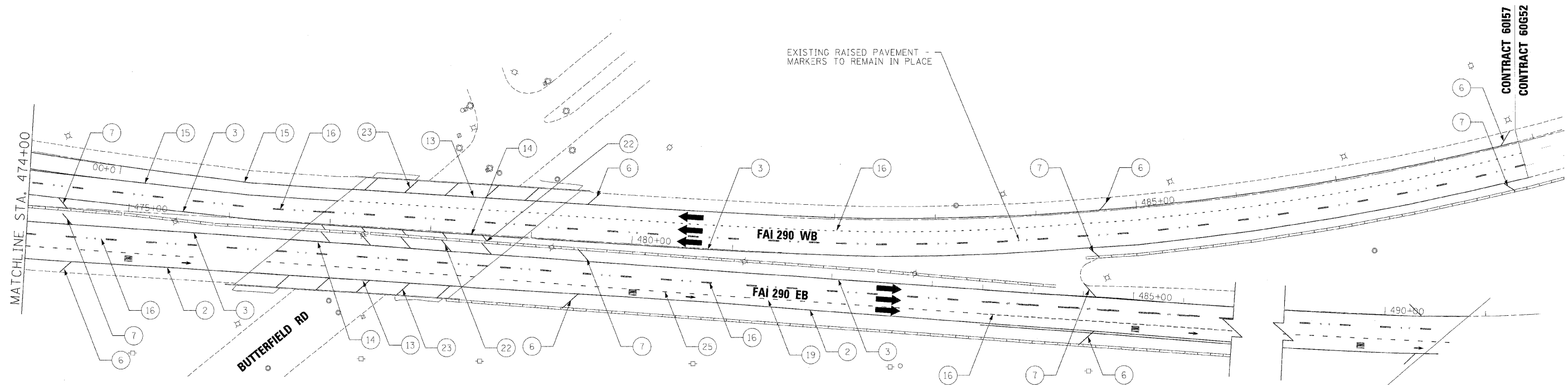
NOTE:

1. SEE IDOT DISTRICT 1 STANDARD TC-12 "MULTI-LANE FREEWAY PAVEMENT MARKING DETAILS" FOR PLACEMENT AND TYPE OF RAISED REFLECTIVE PAVEMENT MARKERS.
2. FOR PROPOSED PAVEMENT MARKINGS IN THE PCC SECTIONS USE POLYUREA PAVEMENT MARKINGS ACCORDING TO STANDARD TC-12.
3. REFER TO ROADWAY PLANS FOR LIMITS OF RESURFACING.

LEGEND

- | | |
|--|--|
| <ul style="list-style-type: none"> ① THERMOPLASTIC PAVEMENT MARKING - LETTERS AND SYMBOLS (WHITE) ② THERMOPLASTIC PAVEMENT MARKING - LINE 4" (WHITE EDGE LINE) ③ THERMOPLASTIC PAVEMENT MARKING - LINE 4" (YELLOW EDGE LINE) ④ THERMOPLASTIC PAVEMENT MARKING - LINE 8" (WHITE EDGE LINE) ⑤ THERMOPLASTIC PAVEMENT MARKING - LINE 8" (WHITE DIAGONALS SPACED @ 10' CENTERS) ⑥ THERMOPLASTIC PAVEMENT MARKING - LINE 12" (WHITE DIAGONALS SPACED @ 500' CENTERS ON MAINLINE AND 150' CENTERS ON RAMPS) ⑦ THERMOPLASTIC PAVEMENT MARKING - LINE 12" (YELLOW DIAGONALS SPACED @ 500' CENTERS ON MAINLINE AND 150' CENTERS ON RAMPS) ⑧ THERMOPLASTIC PAVEMENT MARKING - LINE 12" (WHITE GORE DIAGONALS SPACED @ 30' CENTERS) ⑨ THERMOPLASTIC PAVEMENT MARKING - LINE 24" (WHITE) ⑩ PREFORMED PLASTIC PAVEMENT MARKING, TYPE B, INLAID, LINE 4" (WHITE 2' DASH, 6' SKIP) ⑪ PREFORMED PLASTIC PAVEMENT MARKING, TYPE B, INLAID, LINE 6" (WHITE 3' DASH, 9' SKIP) ⑫ PREFORMED PLASTIC PAVEMENT MARKING, TYPE B, INLAID, LINE 5" (WHITE 10' DASH, 30' SKIP) ⑬ POLYUREA PAVEMENT MARKING TYPE 1, LINE 4" (WHITE EDGE LINE) | <ul style="list-style-type: none"> ⑭ POLYUREA PAVEMENT MARKING TYPE 1, LINE 4" (YELLOW EDGE LINE) ⑮ POLYUREA PAVEMENT MARKING TYPE 1, LINE 8" (WHITE EDGE LINE) ⑯ POLYUREA PAVEMENT MARKING TYPE 1, LINE 5" (WHITE 10' DASH, 30' SKIP) ⑰ POLYUREA PAVEMENT MARKING TYPE 1, LINE 12" (WHITE GORE DIAGONALS SPACED @ 30' CENTERS) ⑱ RAISED REFLECTIVE PAVEMENT MARKER (1-WAY YELLOW / OPAQUE) ⑲ RAISED REFLECTIVE PAVEMENT MARKER (1-WAY CRYSTAL / OPAQUE) ⑳ THERMOPLASTIC PAVEMENT MARKING - LINE 12" (WHITE EDGE LINE) ㉑ THERMOPLASTIC PAVEMENT MARKING - LINE 6" (WHITE THRU LANE LINE) ㉒ POLYUREA PAVEMENT MARKING TYPE 1, LINE 12" (YELLOW DIAGONALS SPACED @ 500' CENTERS AND 40' CENTERS ON STRUCTURES) ㉓ POLYUREA PAVEMENT MARKING TYPE 1, LINE 12" (WHITE DIAGONALS SPACED @ 500' CENTERS AND 40' CENTERS ON STRUCTURES) ㉔ POLYUREA PAVEMENT MARKING TYPE 1, LETTERS AND SYMBOLS (WHITE) ㉕ POLYUREA PAVEMENT MARKING TYPE 1, LINE 8" (WHITE 3' DASH, 9' SKIP) ㉖ POLYUREA PAVEMENT MARKING TYPE 1, LINE 4" (WHITE 2' DASH, 6' SKIP) |
|--|--|

FILE NAME =	DESIGNED - AJP	REVISED -	benesch	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PAVEMENT MARKING PLANS			F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
...proIn_ABC_C4_290.pvmtmkg.65.dgn	DRAWN - TMB	REVISED -			I-290	2009-099BR	COOK/DUPAGE	309	129			
USER NAME = jmajewski	CHECKED - JMM	REVISED -			CONTRACT NO. 60157							
PLOT DATE = 12/16/2009	DATE - 10/16/09	REVISED -			SCALE: 1"=50'			SHEET NO. 15 OF 16 SHEETS		STA. TO STA.		FED. ROAD DIST. NO. ILLINOIS/FED. AID PROJECT



LEGEND

- | | |
|--|--|
| <ul style="list-style-type: none"> ① THERMOPLASTIC PAVEMENT MARKING - LETTERS AND SYMBOLS (WHITE) ② THERMOPLASTIC PAVEMENT MARKING - LINE 4" (WHITE EDGE LINE) ③ THERMOPLASTIC PAVEMENT MARKING - LINE 4" (YELLOW EDGE LINE) ④ THERMOPLASTIC PAVEMENT MARKING - LINE 8" (WHITE EDGE LINE) ⑤ THERMOPLASTIC PAVEMENT MARKING - LINE 8" (WHITE DIAGONALS SPACED @ 10' CENTERS) ⑥ THERMOPLASTIC PAVEMENT MARKING - LINE 12" (WHITE DIAGONALS SPACED @ 500' CENTERS ON MAINLINE AND 150' CENTERS ON RAMP) ⑦ THERMOPLASTIC PAVEMENT MARKING - LINE 12" (YELLOW DIAGONALS SPACED @ 500' CENTERS ON MAINLINE AND 150' CENTERS ON RAMP) ⑧ THERMOPLASTIC PAVEMENT MARKING - LINE 12" (WHITE GORE DIAGONALS SPACED @ 30' CENTERS) ⑨ THERMOPLASTIC PAVEMENT MARKING - LINE 24" (WHITE) ⑩ PREFORMED PLASTIC PAVEMENT MARKING, TYPE B, INLAID, LINE 4" (WHITE 2' DASH, 6' SKIP) ⑪ PREFORMED PLASTIC PAVEMENT MARKING, TYPE B, INLAID, LINE 8" (WHITE 3' DASH, 9' SKIP) ⑫ PREFORMED PLASTIC PAVEMENT MARKING, TYPE 3, INLAID, LINE 5" (WHITE 10' DASH, 30' SKIP) ⑬ POLYUREA PAVEMENT MARKING TYPE 1, LINE 4" (WHITE EDGE LINE) | <ul style="list-style-type: none"> ⑭ POLYUREA PAVEMENT MARKING TYPE 1, LINE 4" (YELLOW EDGE LINE) ⑮ POLYUREA PAVEMENT MARKING TYPE 1, LINE 8" (WHITE EDGE LINE) ⑯ POLYUREA PAVEMENT MARKING TYPE 1, LINE 5" (WHITE 10' DASH, 30' SKIP) ⑰ POLYUREA PAVEMENT MARKING TYPE 1, LINE 12" (WHITE GORE DIAGONALS SPACED @ 30' CENTERS) ⑱ RAISED REFLECTIVE PAVEMENT MARKER (1-WAY YELLOW / OPAQUE) ⑲ RAISED REFLECTIVE PAVEMENT MARKER (1-WAY CRYSTAL / OPAQUE) ⑳ THERMOPLASTIC PAVEMENT MARKING - LINE 12" (WHITE EDGE LINE) ㉑ THERMOPLASTIC PAVEMENT MARKING - LINE 6" (WHITE THRU LANE LINE) ㉒ POLYUREA PAVEMENT MARKING TYPE 1, LINE 12" (YELLOW DIAGONALS SPACED @ 500' CENTERS AND 40' CENTERS ON STRUCTURES) ㉓ POLYUREA PAVEMENT MARKING TYPE 1, LINE 12" (WHITE DIAGONALS SPACED @ 500' CENTERS AND 40' CENTERS ON STRUCTURES) ㉔ POLYUREA PAVEMENT MARKING TYPE 1, LETTERS AND SYMBOLS (WHITE) ㉕ POLYUREA PAVEMENT MARKING TYPE 1, LINE 8" (WHITE 3' DASH, 9' SKIP) ㉖ POLYUREA PAVEMENT MARKING TYPE 1, LINE 4" (WHITE 2' DASH, 6' SKIP) |
|--|--|

- NOTE:**
1. SEE IDOT DISTRICT 1 STANDARD TC-12 "MULTI-LANE FREEWAY PAVEMENT MARKING DETAILS" FOR PLACEMENT AND TYPE OF RAISED REFLECTIVE PAVEMENT MARKERS.
 2. FOR PROPOSED PAVEMENT MARKINGS IN THE PCC SECTIONS USE POLYUREA PAVEMENT MARKINGS ACCORDING TO STANDARD TC-12.
 3. REFER TO ROADWAY PLANS FOR LIMITS OF RESURFACING.

FILE NAME -	DESIGNED - AJP	REVISED -
...prp1h_ABC_C4_290_pvt.tmkg.67.dgn	DRAWN - TMB	REVISED -
USER NAME - jmsajewski	CHECKED - JMM	REVISED -
PLOT DATE - 12/16/2009	DATE - 10/16/09	REVISED -

benesch

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

PAVEMENT MARKING PLANS	
I-290 STA 474+00 TO POE	
SCALE: 1"=50'	SHEET NO. 16 OF 16 SHEETS
STA. _____	TO STA. _____

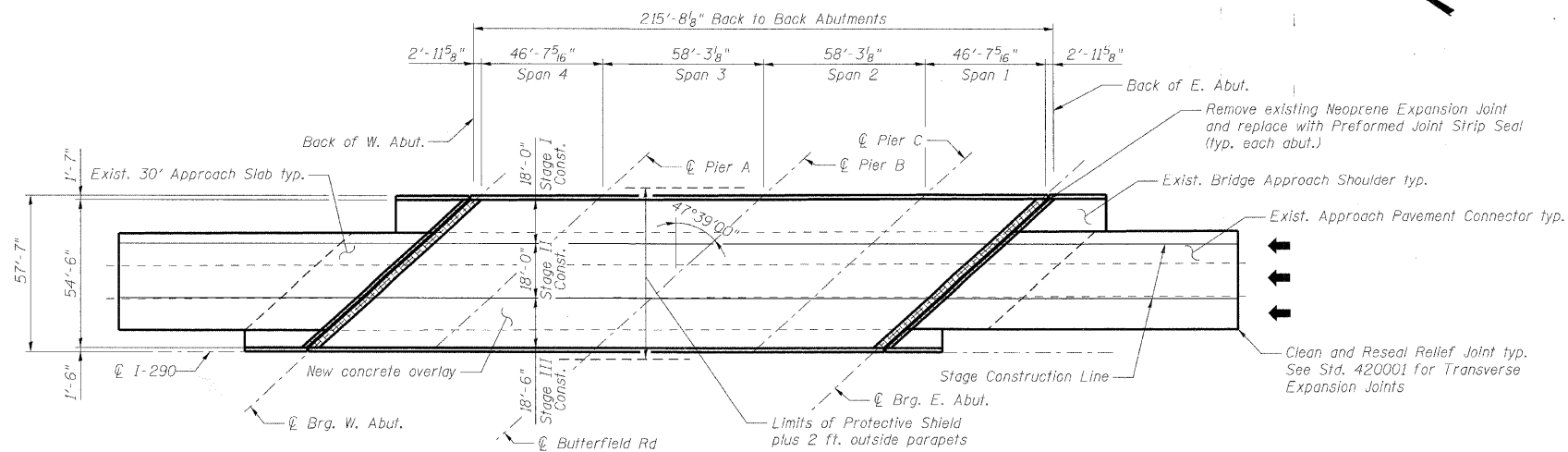
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	2009-099BR	COOK/DUPAGE	309	130
FED. ROAD DIST. NO. [ILLINOIS] FED. AID PROJECT			CONTRACT NO. 60157	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

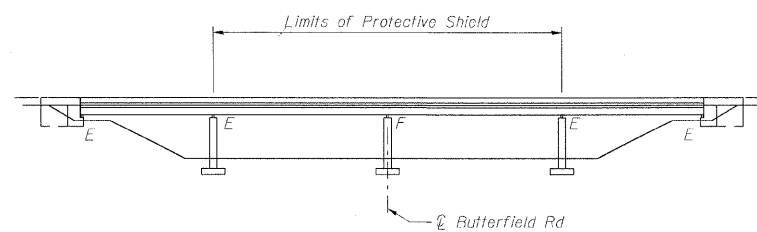
Existing Structure:
The structure is a four-span continuous wide flange steel structure with a 7.5-inch reinforced concrete deck with no overlay.
The original structure was built in 1959 as FAI-90 and is in Section 1984-082-R. In 1985, the bridge was widened and redecked, expansion joints were reconstructed, the substructure was repaired, and the superstructure was cleaned and painted. In 1996, the expansion joints were reconstructed and the deck and approach slabs were repaired.

Stage construction shall be utilized to maintain traffic during construction.

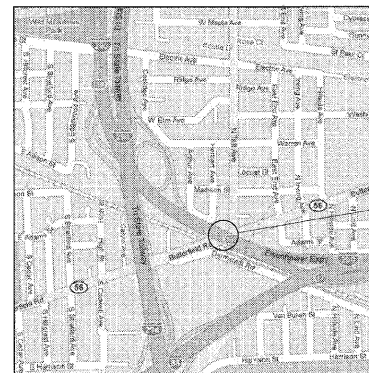
No salvage.



PLAN



ELEVATION



LOCATION SKETCH

DESIGN SPECIFICATIONS

2002 AASHTO Standard Specifications for Highway Bridges, 17th Edition

DESIGN STRESSES

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

SCOPE OF WORK

1. Bridge Deck Hydro-scarification.
2. Repair bridge deck.
3. Repair approach slab.
4. Reconstruct deck joints at each abutment with preformed joint strip seal.
5. Place new overlay.
6. Repair parapet with formed concrete repair.
7. Repair substructure.
8. Clean and reseal relief joints at the end of approach pavement connectors.
9. Apply concrete sealer to parapets, abutment seats and backwalls.



Expiration Date 11-30-10
DATE: 11/16/09

**GENERAL PLAN AND ELEVATION
I-290 WB OVER BUTTERFIELD RD.
COOK COUNTY
STATION 478+09
STRUCTURE NO. 016-0083**

DESIGNED -	TJJ
CHECKED -	AAV
DRAWN -	RMG
CHECKED -	AAV

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205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-565-0450 Job No. 10050

SHEET NO. 1 9 SHEETS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	2009-099 BR	COOK/DUPAGE	309	131
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT	CONTRACT NO. 60I57	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

1. Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60. See Special Provisions.
2. Reinforcement bars designated (E) shall be epoxy coated.
3. 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.
4. Plan dimensions and details relative to existing plans are subject to nominal 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.
5. Concrete Sealer shall be applied to the parapets, abutment seals and abutment backwalls. All surfaces to be sealed shall be cleaned thoroughly prior to sealer application. Cost included with Concrete Sealer.
6. The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.
7. Stage construction shall be utilized to maintain traffic during construction.
8. The Contractor shall exercise care during removal of existing joints to ensure that the slab, beams and diaphragms' integrity will not be detrimentally impacted. The Contractor shall repair any damage(s) to the slab, beams and diaphragms caused by his operation as directed by the Engineer at no additional cost to the Department.
9. Protective Coat shall be applied to the new Latex Concrete Overlay.
10. Joint openings shall be adjusted according to Article 520.04 of the Std. Specs. when the deck is poured at an ambient temperature other than 50°F.

INDEX OF SHEETS

1. General Plan and Elevation
2. General Notes, Bill of Material and Index of Sheets
3. Stage Construction Details
4. Bridge Deck and Approach Slab Repairs
5. Expansion Joint Repairs
6. Expansion Joint Details
7. Preformed Joint Strip Seal
8. Substructure Repairs
9. Bar Splicer Assembly Details

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Concrete Removal	Cu. Yd.	24.2		24.2
Protective Shield	Sq. Yd.	797		797
Concrete Superstructure	Cu. Yd.	26.2		26.2
Bridge Deck Grooving	Sq. Yd.	1,597		1,597
Protective Coat	Sq. Yd.	1,670		1,670
Reinforcement Bars, Epoxy Coated	Pound	2,640		2,640
Bar Splicers	Each	44		44
Preformed Joint Strip Seal	Foot	166.0		166.0
Concrete Sealer	Sq. Ft.	2,035	890	2,925
Bridge Deck Latex Concrete Overlay, 2 1/4"	Sq. Yd.	1,634		1,634
Structural Repair of Concrete (Depth Equal to or Less than 5 Inches)	Sq. Ft.	8	203	211
Bridge Deck Hydro-Scarification, 1/2"	Sq. Yd.	1,634		1,634
Temporary Shoring and Cribbing	Each		4	4
Clean and Reseal Relief Joint	Foot	72.0		72.0

DESIGNED -	TJJ
CHECKED -	AAY
DRAWN -	RMG
CHECKED -	AAY

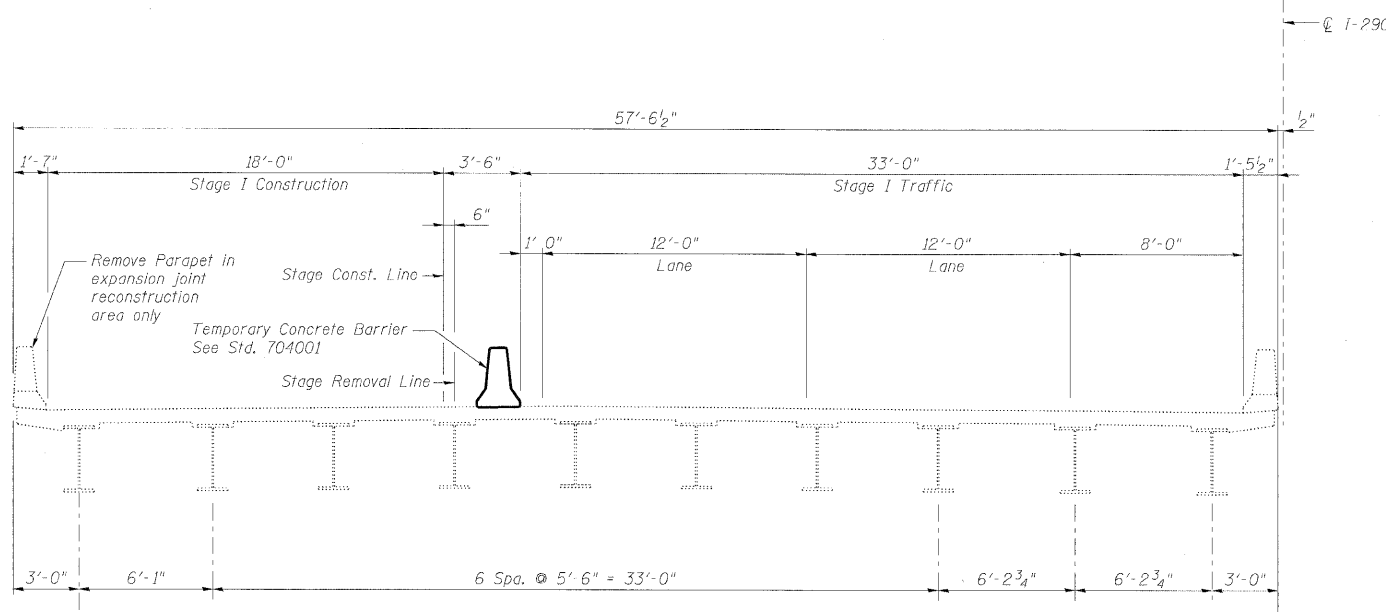
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Chicago, Illinois 60601
312-565-0450 Job No. 10050

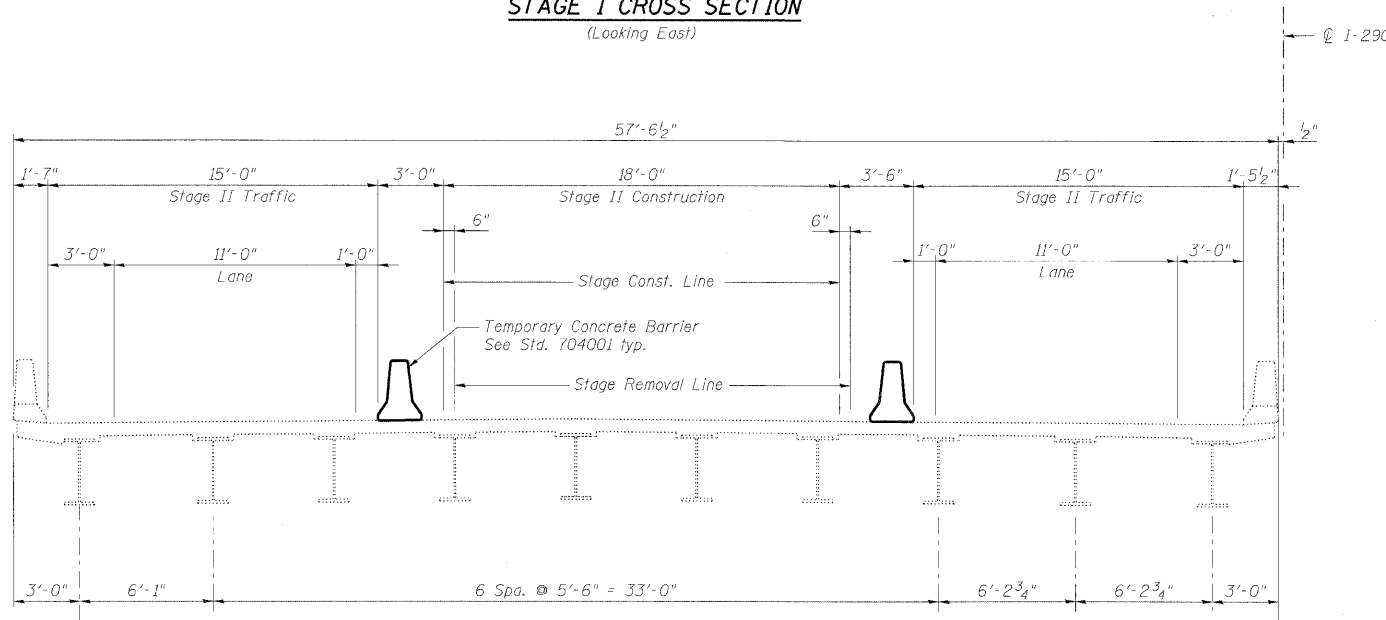
SHEET NO. 2	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	2009-099 BR	COOK/DUPAGE	309	132
9 SHEETS	CONTRACT NO. 60157				
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

**GENERAL NOTES, BILL OF MATERIAL
AND INDEX OF SHEETS
STRUCTURE NO. 016-0083**

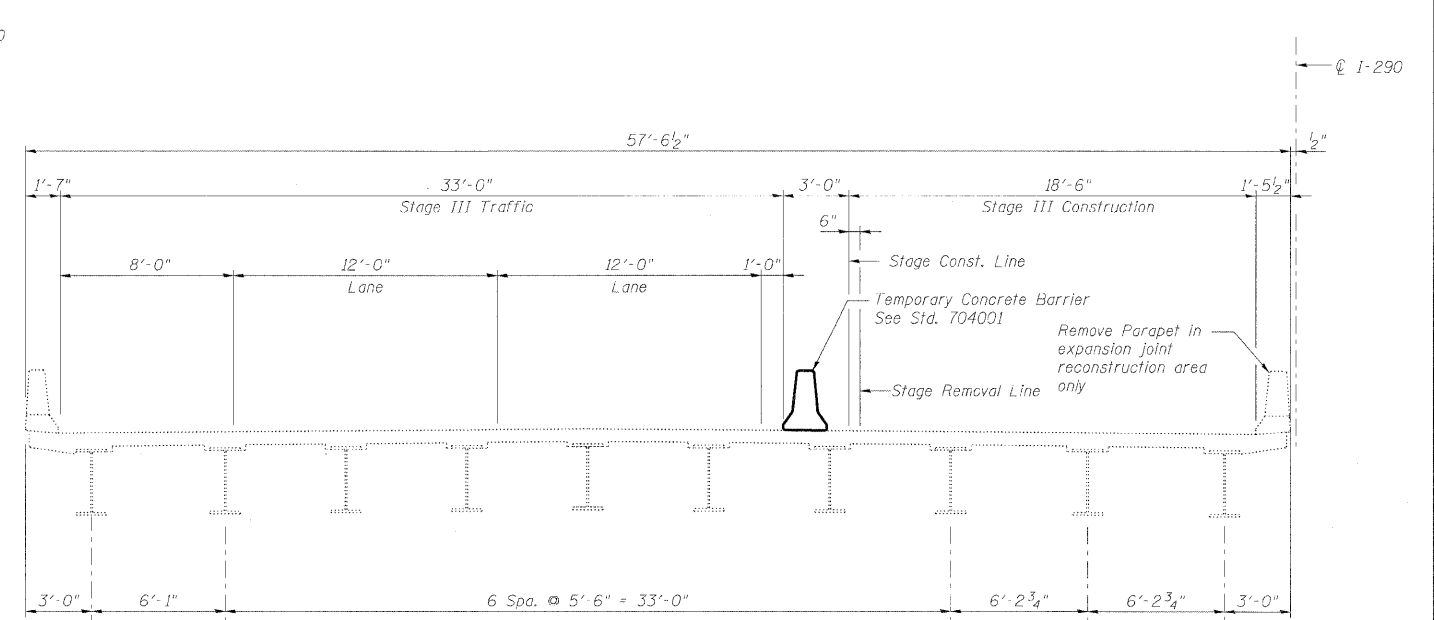
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



STAGE I CROSS SECTION
(Looking East)



STAGE II CROSS SECTION
(Looking East)



STAGE III CROSS SECTION
(Looking East)

DESIGNED -	MFB
CHECKED -	MAC
DRAWN -	VH
CHECKED -	AAY

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Chicago, Illinois 60601
312-555-0450 Job No. 10050

SHEET NO. 3 9 SHEETS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	2009-099 BR	COOK/DUPAGE	309	133
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT		
CONTRACT NO. 60157					

STAGE CONSTRUCTION DETAILS
STRUCTURE NO. 016-0083

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BILL OF MATERIAL

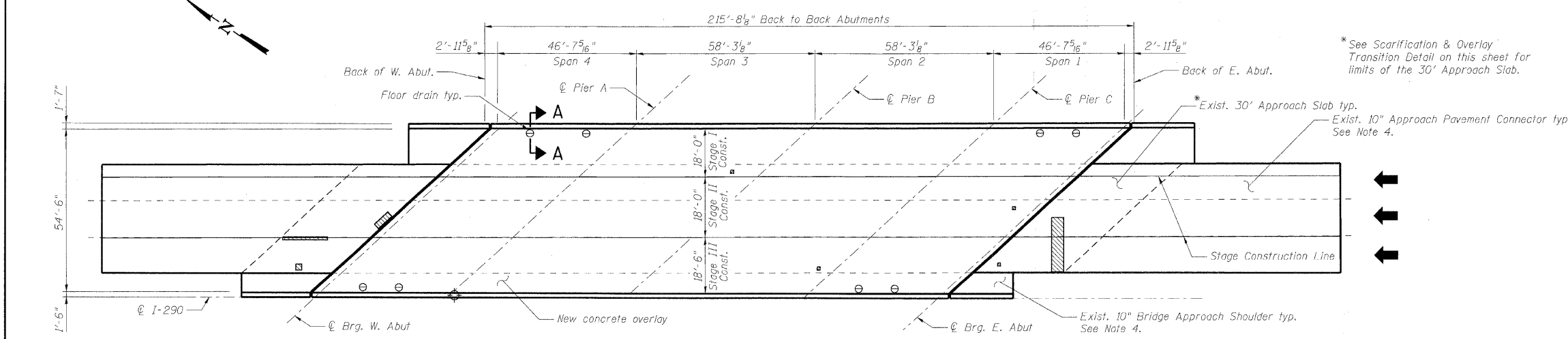
SYMBOL	ITEM	UNIT	QUANTITY
	Deck Slab Repair (Partial)	Sq. Yd.	5.0 ▲
	Approach Slab Repair (Partial Depth)	Sq. Yd.	23.2 ▲
	Structural Repair of Concrete (Depth Equal to or Less than 5 Inches)	Sq. Ft.	8
	Protective Shield	Sq. Yd.	797
	Bridge Deck Grooving	Sq. Yd.	1,597
	Protective Coat	Sq. Yd.	1,670
	Bridge Deck Latex Concrete Overlay, 2 1/4"	Sq. Yd.	1,634
	Bridge Deck Hydro-Scarification, 1/2"	Sq. Yd.	1,634

▲ For information only to assist the Contractor in bidding. See Special Provision for "Bridge Deck Latex Concrete Overlay".

Notes:

- Deck and approach slab repair areas are estimated based on visual inspection completed in June 2009. Actual repair areas and locations shall be determined by the Engineer and shown on As-Built plans.
- Protective Shield, required for deck slab and/or parapet repairs, shall be installed according to Article 501.03 of the Standard Specifications. For limits of Protective Shield, see General Plan and Elevation sheet.
- Deck drains (downspouts, floor drains, and scuppers) shall be cleaned prior to placement of the Latex Concrete Overlay. Cost of cleaning the deck drains is included in Bridge Deck Hydro-Scarification, 1/2".
- The Engineer shall determine the type and quantity of Class A patching and the quantity of Mixture for Cracks, Joints and Flangeways. Estimated quantities are included in the overall Summary of Quantities in Roadway Plans.
- Gaps caused by distress around floor drains shall be filled with epoxy as specified in the Special Provision "Epoxy Injection". Cost included with Bridge Deck Latex Concrete Overlay, 2 1/4".
- Cost of new overlay on approach slab transition is included with Bridge Deck Latex Concrete Overlay, 2 1/4".

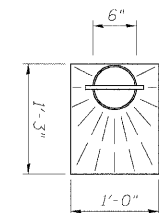
BRIDGE DECK AND APPROACH
SLAB REPAIRS
STRUCTURE NO. 016-0083



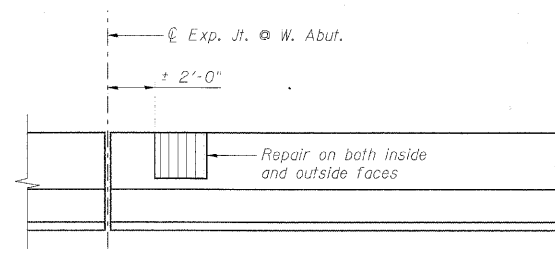
PLAN

* See Scarification & Overlay Transition Detail on this sheet for limits of the 30' Approach Slab.

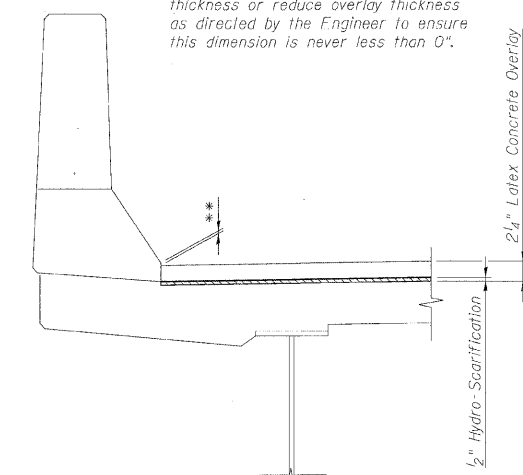
** Contractor shall increase scarification thickness or reduce overlay thickness as directed by the Engineer to ensure this dimension is never less than 0".



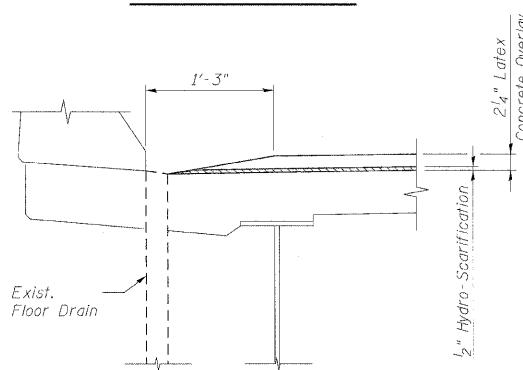
FLOOR DRAIN PLAN



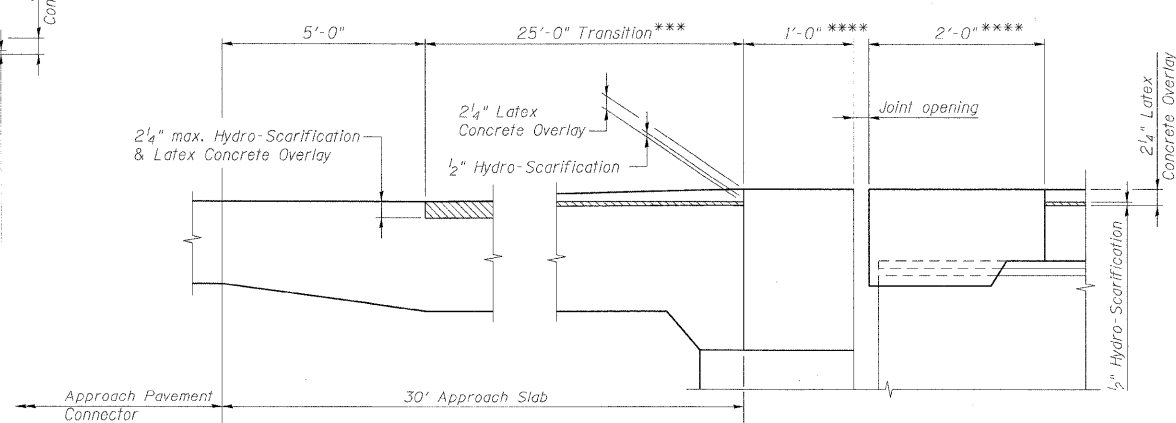
INSIDE ELEVATION - OUTSIDE PARAPET



SCARIFICATION & OVERLAY
DETAIL AT PARAPET



SECTION A-A
CONCRETE OVERLAY AT FLOOR DRAIN



SCARIFICATION & OVERLAY TRANSITION DETAIL

*** Cost of increased hydro-scarification depth over length of transition shall be included with Bridge Deck Hydro-Scarification, 1/2".

**** Construct new concrete at joints to same lines and grades as new concrete overlay at these locations.

DESIGNED -	TJJ
CHECKED -	AAY
DRAWN -	RMG
CHECKED -	AAY

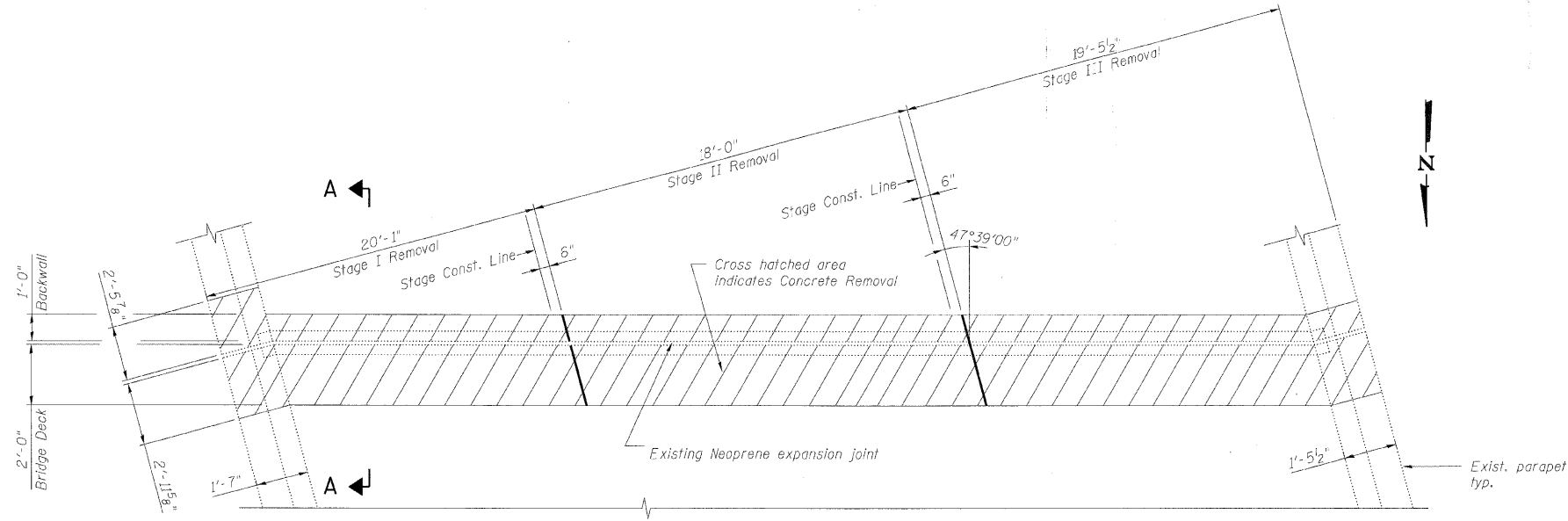
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312.565-0450 Job No. 10050

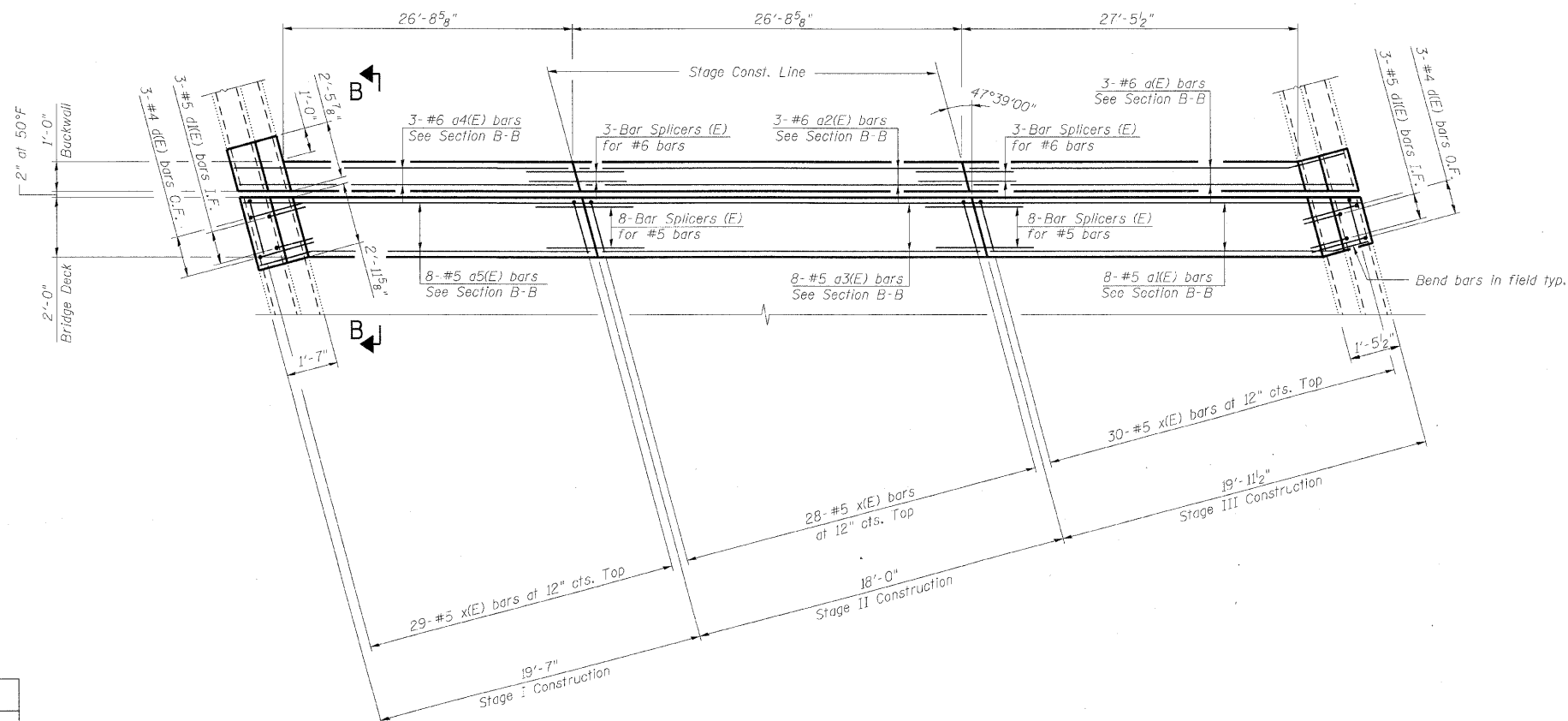
SHEET NO. 4 9 SHEETS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	2009-099 BR	COOK/DUPAGE	309	134
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT		
			CONTRACT NO. 60157		

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DEPARTMENT OF TRANSPORTATION



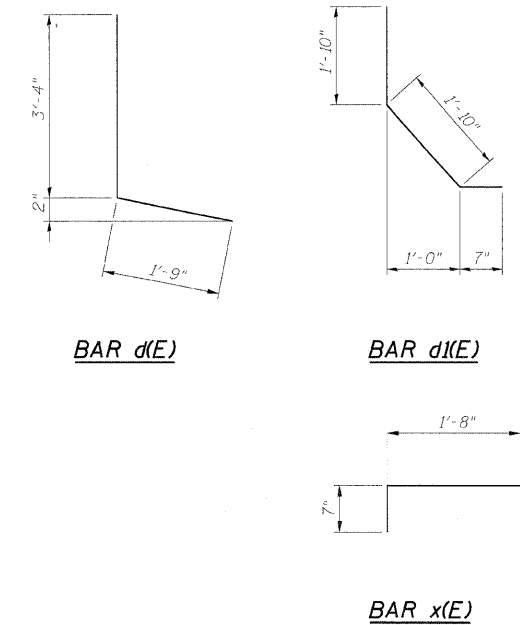
EXISTING PARTIAL PLAN AT EAST ABUTMENT
(Opposite Hand For West Abutment)



PROPOSED PARTIAL PLAN AT EAST ABUTMENT
(Opposite Hand For West Abutment)

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	6	#6	28'-7"	—
a1(E)	16	#5	28'-7"	—
a2(E)	6	#6	26'-4"	—
a3(E)	16	#5	26'-4"	—
a4(E)	6	#6	28'-0"	—
a5(E)	16	#5	28'-0"	—
d(E)	12	#4	5'-1"	┌
d1(E)	12	#5	4'-3"	└
x(E)	174	#5	2'-3"	└
Item	Unit	Total		
Concrete Removal	Cu. Yd.	24.2		
Concrete Superstructure	Cu. Yd.	26.2		
Reinforcement Bars, Epoxy Coated	Pound	2,640		



Notes:

- I.F. denotes Inside Face.
O.F. denotes Outside Face.
- Work this sheet with Expansion Joint Details sheet and Bar Splicer Assembly Details sheet.
- x(E) bar spacing measured along skew.

DESIGNED	JLS
CHECKED	AAY
DRAWN	VH
CHECKED	AAY

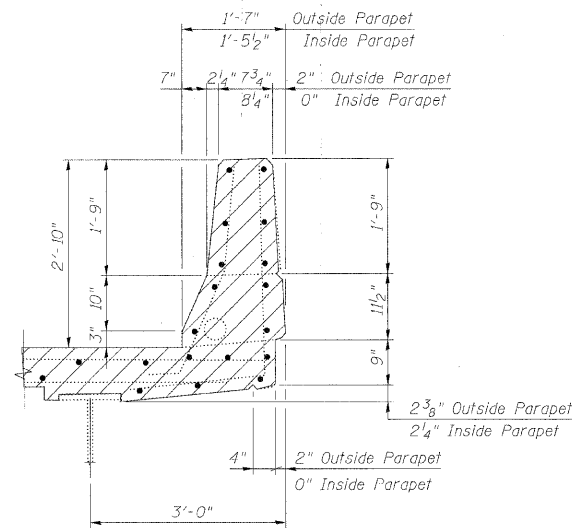
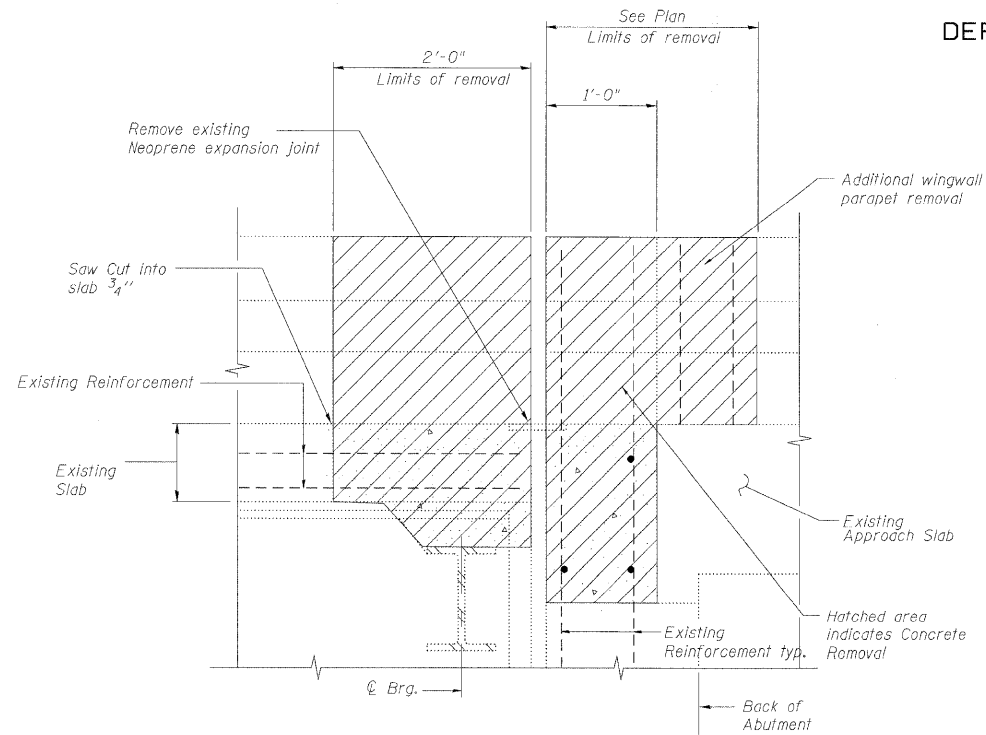
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312-565-0450 Job No. 10050

SHEET NO. 5 9 SHEETS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	2009-099 BR	COOK/DUPAGE	309	135
FED. ROAD DIST. NO.			ILLINOIS	FED. AID PROJECT	
			CONTRACT NO. 60157		

**EXPANSION JOINT REPAIRS
STRUCTURE NO. 016-0083**

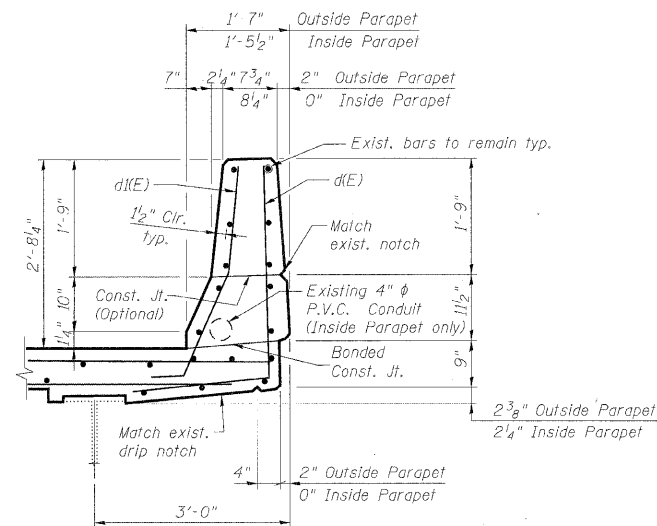
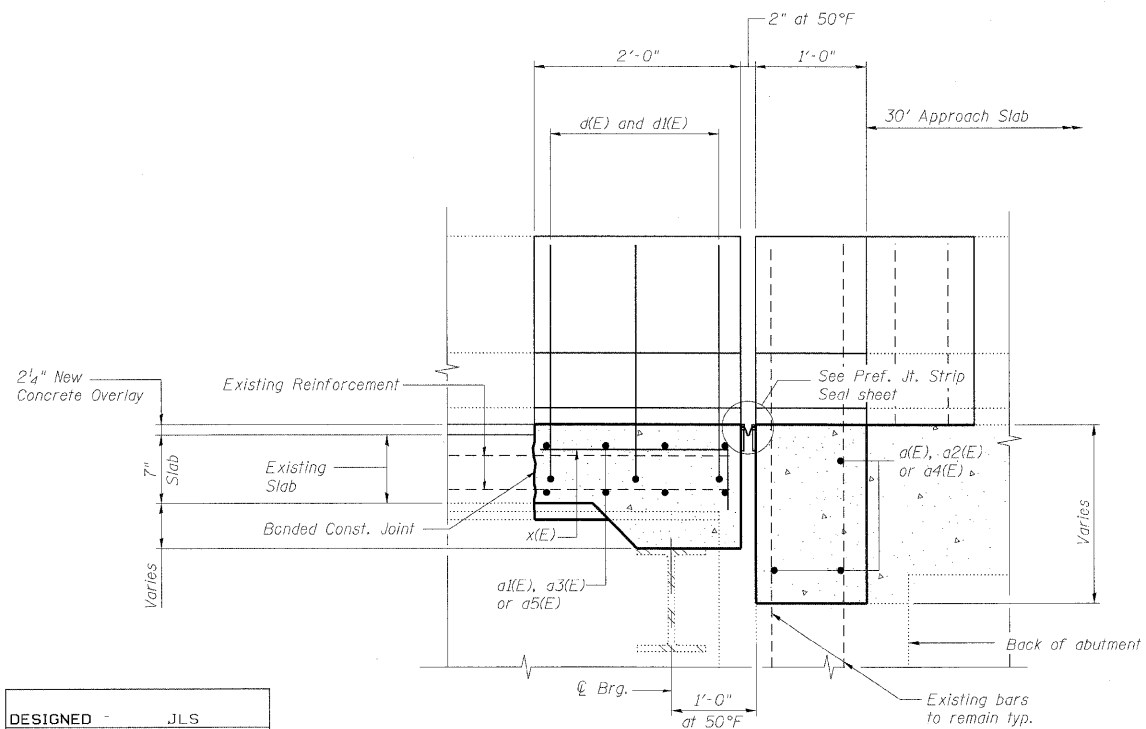
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



EXISTING PARAPET SECTION

Notes:

- Existing reinforcement bars extending into the concrete removal area shall be blast-cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be repaired or replaced with an approved bar splicer or anchorage system. Cost included with Concrete Removal.
- Existing reinforcement bars in the concrete removal area parallel to the expansion joints shall be removed.
- Removal and disposal of the existing expansion joints will not be paid for separately, but shall be included with the cost of Concrete Removal.
- If existing name plate falls within the limits of Concrete Removal, it shall be removed and reinstalled in its original location in accordance with IDOT Std. 515001. Cost included with Concrete Superstructure.
- If existing guardrail and/or end shoe fall within the limits of Concrete Removal, they shall be removed and reinstalled in their original location in accordance with District 1 Std. BM-21. Cost included with Concrete Superstructure.
- The Contractor shall exercise extreme care with the existing conduits in sections of the parapet to be removed and to protect and support the conduit. The Contractor will be required to repair any damage done to the conduit to the satisfaction of the Engineer, at no additional cost to the Department. No splicing will be allowed to any cable damage resulting from this work, instead the Contractor will be required to repair the entire span of any damaged cable at no additional cost to the Department.
- Work this sheet with Expansion Joint Repairs sheet.



PROPOSED PARAPET SECTION

DESIGNED	JLS
CHECKED	AAY
DRAWN	VH
CHECKED	AAY

EXPANSION JOINT DETAILS
STRUCTURE NO. 016-0083

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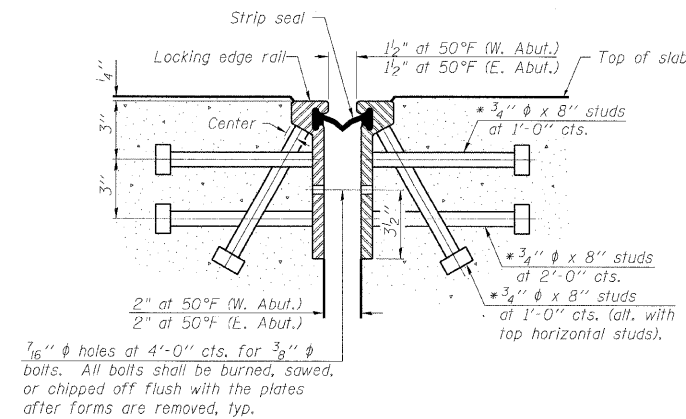
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312-565-0450 Job No. 10050

SHEET NO. 6 9 SHEETS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	2009-099 BR	COOK/DUPAGE	309	136
FED. ROAD DIST. NO.			ILLINOIS	FED. AID PROJECT	
				CONTRACT NO. 60157	

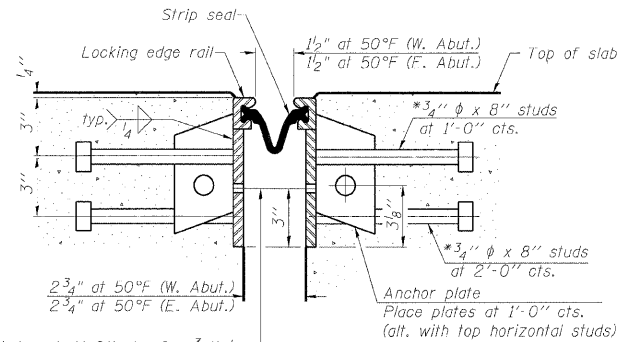
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

* Granular or solid flux filled headed studs conforming to Article 1006.32 of the Std. Specs., automatically end welded.



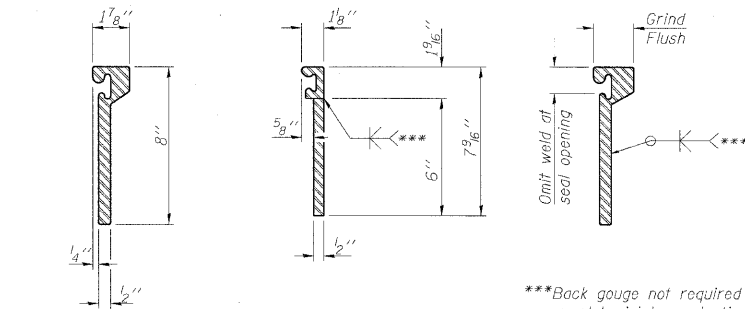
SECTION THRU
ROLLED RAIL JOINT



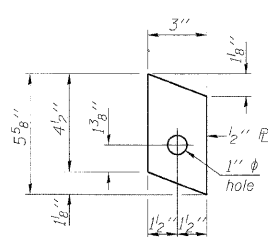
SECTION THRU
WELDED RAIL JOINT

Notes:

The strip seal shall be made continuous and shall have a minimum thickness of $\frac{1}{4}$ ". The configuration of the strip seal shall match the configuration of the Locking Edge Rails. Open or "webbed" strip seal gland configurations are not permitted. The gland shall be sized for a maximum rated movement of 4 inches. The height and thickness of the Locking Edge Rails shown are minimum dimensions. The actual configuration of the Locking Edge Rails and matching strip seal may vary from manufacturer to manufacturer. Flanged edge rails will not be allowed. Locking Edge Rails may be spliced at slope discontinuities and stage construction joints. The manufacturer's recommended installation methods shall be followed. The joint opening and deck dimensions detailed on the superstructure are based on a rolled rail expansion joint. If the Contractor elects to use the welded rail expansion joint, the opening and deck dimensions shall be modified according to the dimensions detailed on this sheet. Required modifications shall be made at no additional cost to the State. All steel components shall be galvanized after fabrication according to Article 520.03 of the Standard Specifications.



ROLLED
EXTRUDED RAIL WELDED RAIL

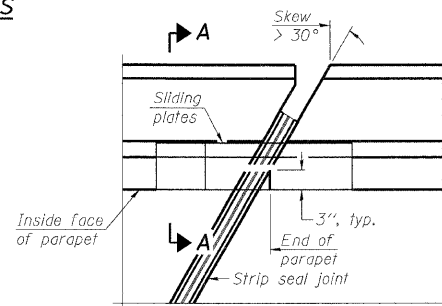


***Back gauge not required if complete joint penetration is verified by mock-up.

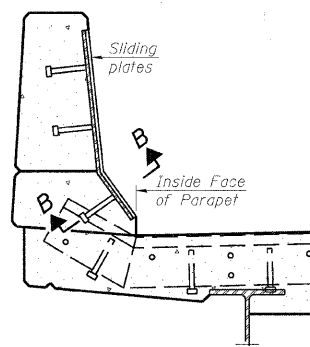
LOCKING EDGE
RAIL SPLICE

The inside of the locking edge rail groove shall be free of weld residuc.

LOCKING EDGE RAILS

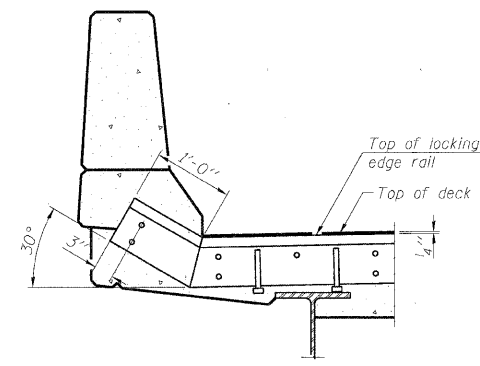


PLAN

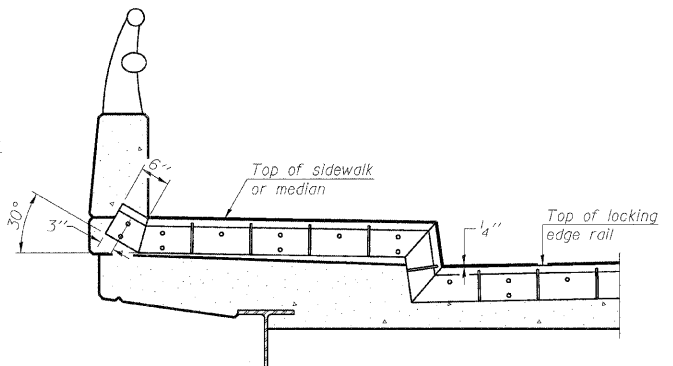


SECTION A-A

POINT BLOCK DETAILS
(for skews > 30°)



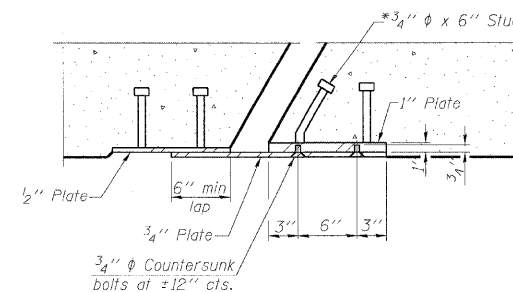
AT PARAPET



AT SIDEWALK OR MEDIAN

Shorter plates with a single row of studs at 12" cts. may be necessary on medians which are shallower than 9". See manufacturer's recommendation.

TYPICAL END TREATMENTS



SECTION B-B

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	166.0

DESIGNED	JLS
CHECKED	AAV
DRAWN	RMG
CHECKED	AAV

EJ-SSJ

10-1-08

benesch

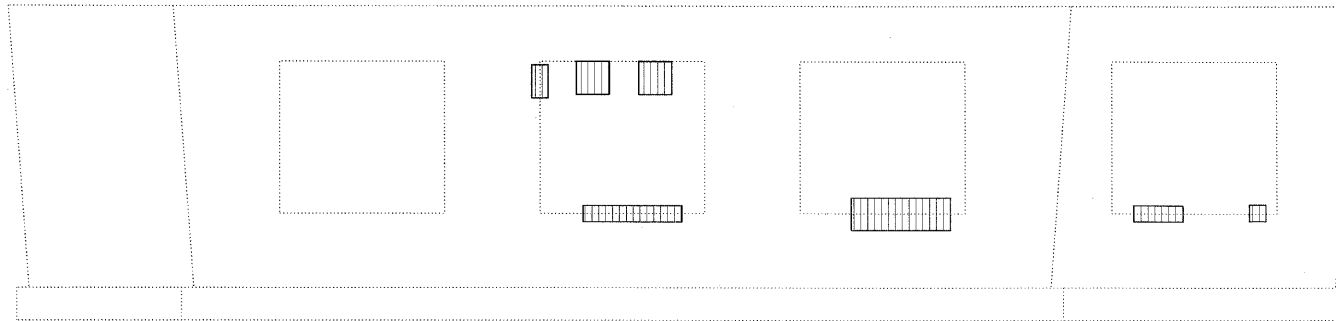
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Chicago, Illinois 60601
312.656.0450 Job No. 10050

SHEET NO. 7	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
				290	2009-099 BR
9 SHEETS			CONTRACT NO. 60157		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT			

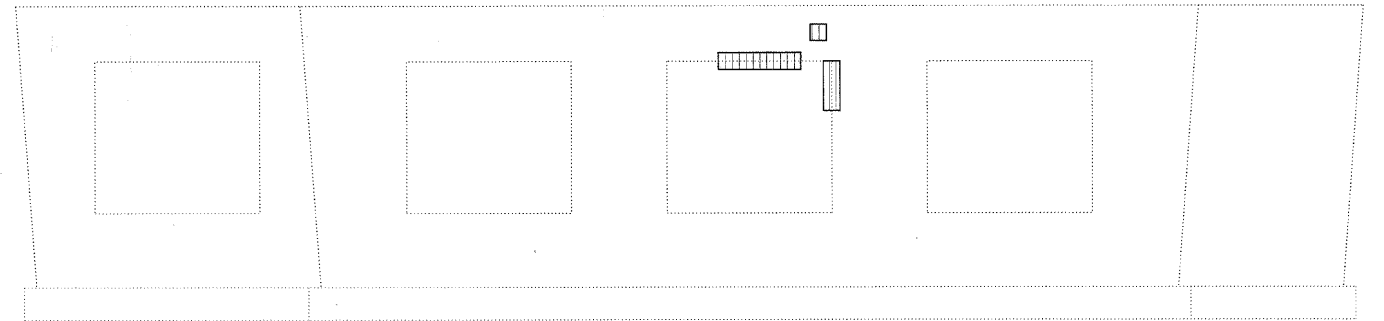
PREFORMED JOINT STRIP SEAL
STRUCTURE NO. 016-0083

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

← F.A.I. 290

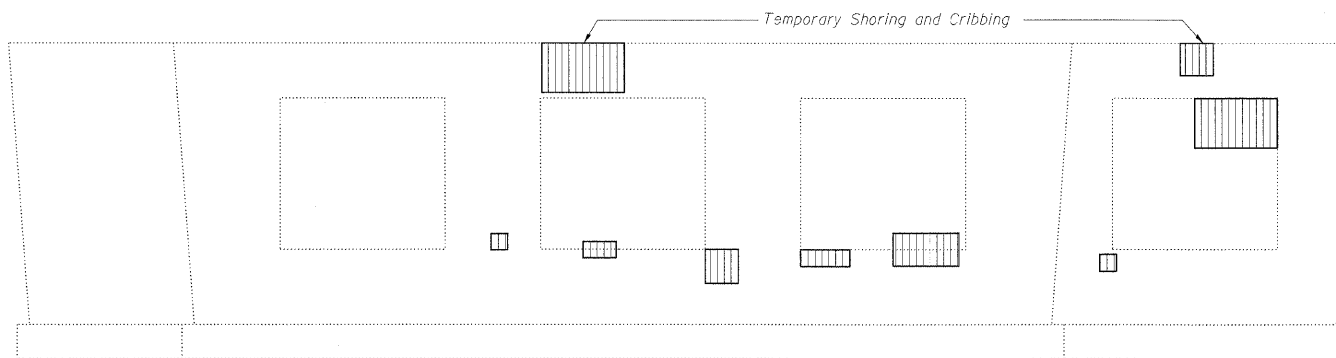


ELEVATION - PIER A, SOUTH FACE

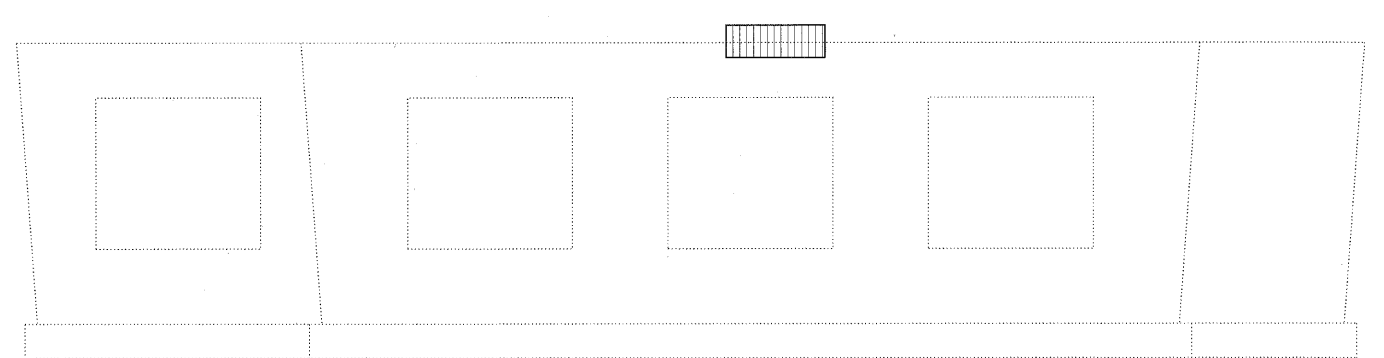


ELEVATION - PIER A, NORTH FACE

← F.A.I. 290

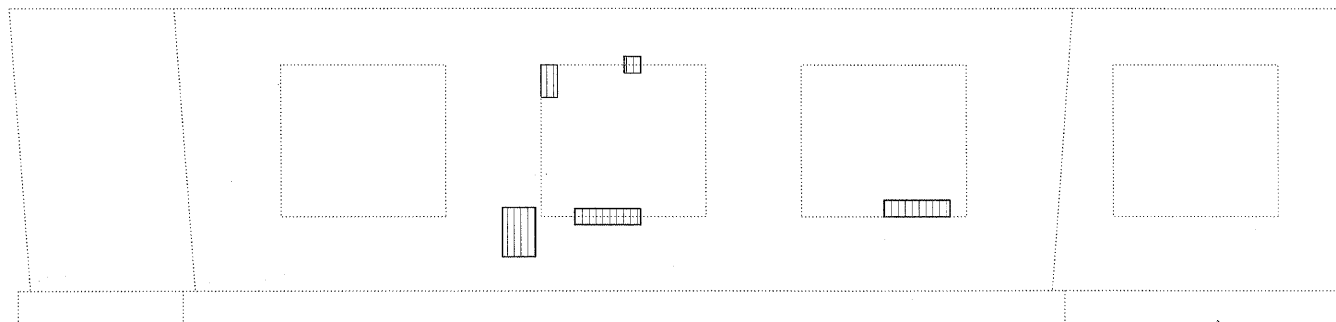


ELEVATION - PIER B, SOUTH FACE

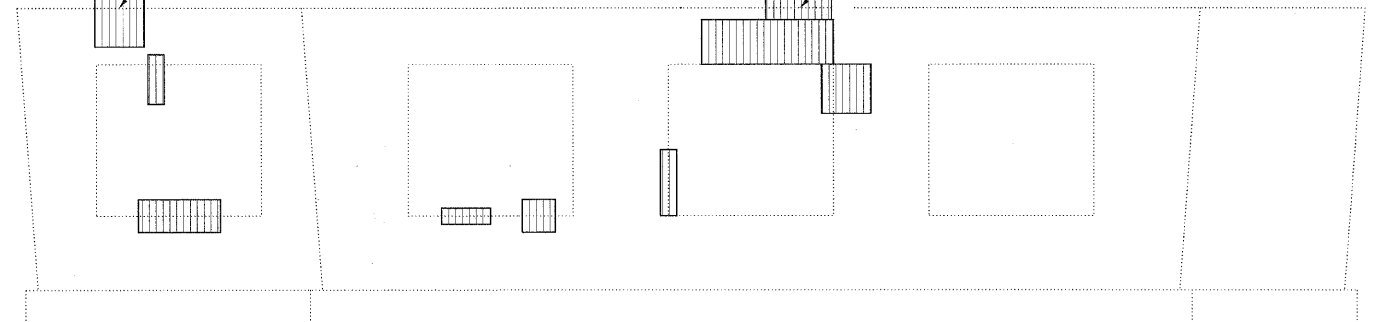


ELEVATION - PIER B, NORTH FACE

← F.A.I. 290



ELEVATION - PIER C, SOUTH FACE



ELEVATION - PIER C, NORTH FACE

BILL OF MATERIAL

SYMBOL	ITEM	UNIT	QUANTITY
	Structural Repair of Concrete (Depth Equal to or Less than 5 Inches)	Sq. Ft.	203
	Temporary Shoring & Cribbing	Each	4

BEAM REACTIONS (KIPS)

DEAD LOAD	LIVE LOAD	IMPACT LOAD	TOTAL
56.4	40.9	8.5	105.8

**SUBSTRUCTURE REPAIRS
STRUCTURE NO. 016-0083**

Notes:

- Substructure repair areas are estimated based on IDOT field notes from August 17, 2009.
- Temporary Shoring and Cribbing shall be provided per the Special Provisions for "Structural Repair of Concrete" and "Temporary Shoring and Cribbing".
- Interference is expected from existing conduits. The Contractor shall remove and reerect or temporarily support the existing conduits to complete the work as detailed. When the work is completed the conduits shall be reconnected to the reconstructed abutment or pier utilizing the existing mounting brackets or new mounting brackets. All labor, equipment, and materials necessary for removing and reinstalling or temporarily supporting the existing conduits shall be included in the cost for Structural Repair of Concrete (Depth Equal to or Less than 5 Inches).

Notes (cont'd):

- The tabulated beam reactions were taken from the existing construction plans. The Contractor shall verify that the equipment used to support the beams is sufficient to carry these loads in addition to any temporary construction loads.

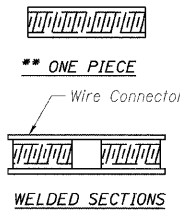
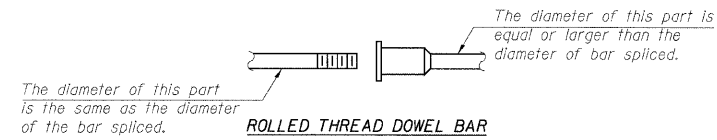
DESIGNED -	JJJ
CHECKED -	AAY
DRAWN -	RMG
CHECKED -	AAY

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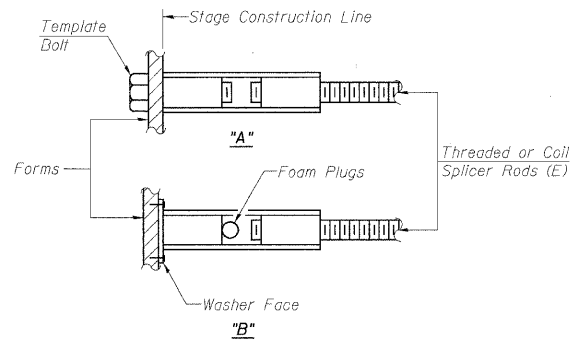
SHEET NO. 8 9 SHEETS	F.A.I. RTE. 290	SECTION 2009-099 BR	COUNTY COOK/DUPAGE	TOTAL SHEETS 309	SHEET NO. 138
	CONTRACT NO. 60157			ILLINOIS FED. AID PROJECT	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



BAR SPLICER ASSEMBLY ALTERNATIVES

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



INSTALLATION AND SETTING METHODS

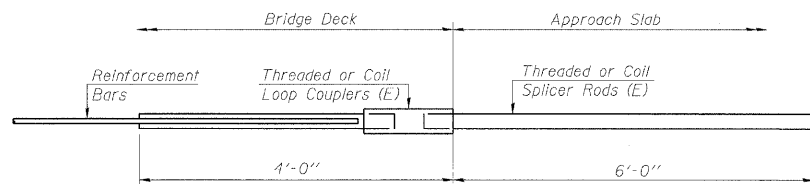
"A": Set bar splicer assembly by means of a template bolt.
"B": Set bar splicer assembly by nailing to wood forms or cementing to steel forms.
(E): Indicates epoxy coating.

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:

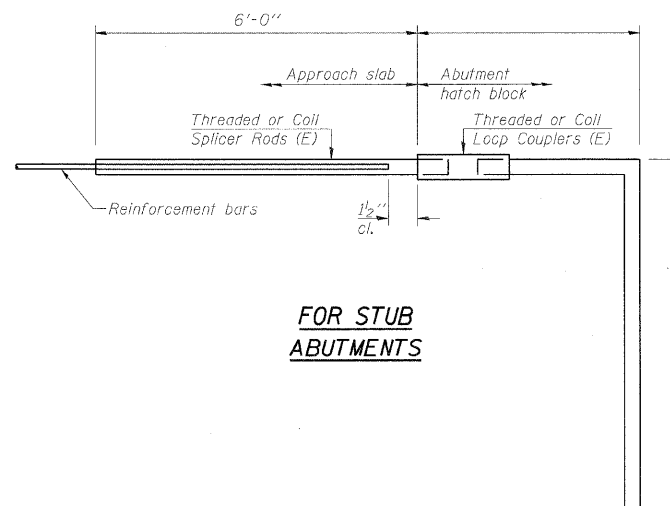
- ① Minimum Capacity = $1.25 \times f_y \times A_t$
(Tension in kips)
 - ② Minimum *Pull-out Strength = $0.66 \times f_y \times A_t$
(Tension in kips)
- Where f_y = Yield strength of lapped reinforcement bars in ksi.
 A_t = Tensile stress area of lapped reinforcement bars.
* = 28 day concrete

BAR SPLICER ASSEMBLYS			
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



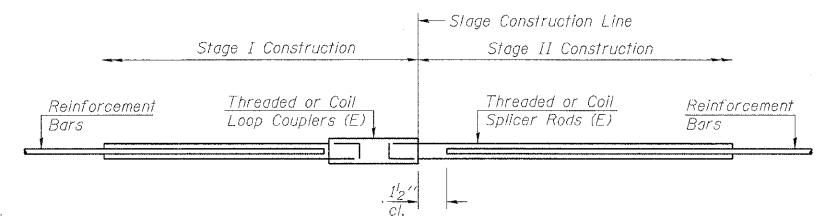
FOR INTEGRAL OR SEMI-INTEGRAL ABUTMENTS

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
#5	32	Deck
#6	12	Deck

**BAR SPLICER ASSEMBLY DETAILS
STRUCTURE NO. 016-0083**

DESIGNED -	JLS
CHECKED -	AAY
DRAWN -	RMG
CHECKED -	AAY

BSD-1

10-1-08

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312-565-0450 Job No. 10050

SHEET NO. 9	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	2009-099 BR	COOK/DUPAGE	309	139
9 SHEETS	FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	
				CONTRACT NO. 60157	

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16:32:55

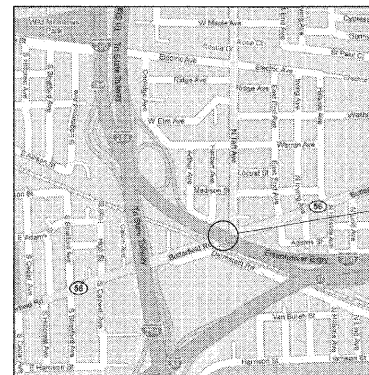
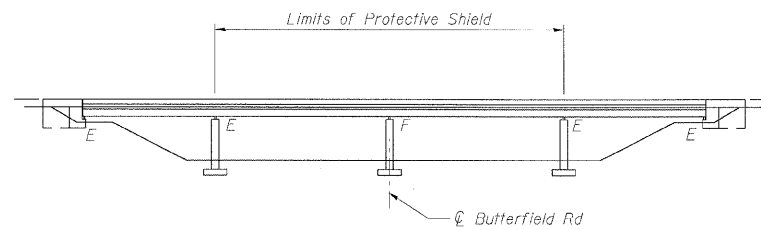
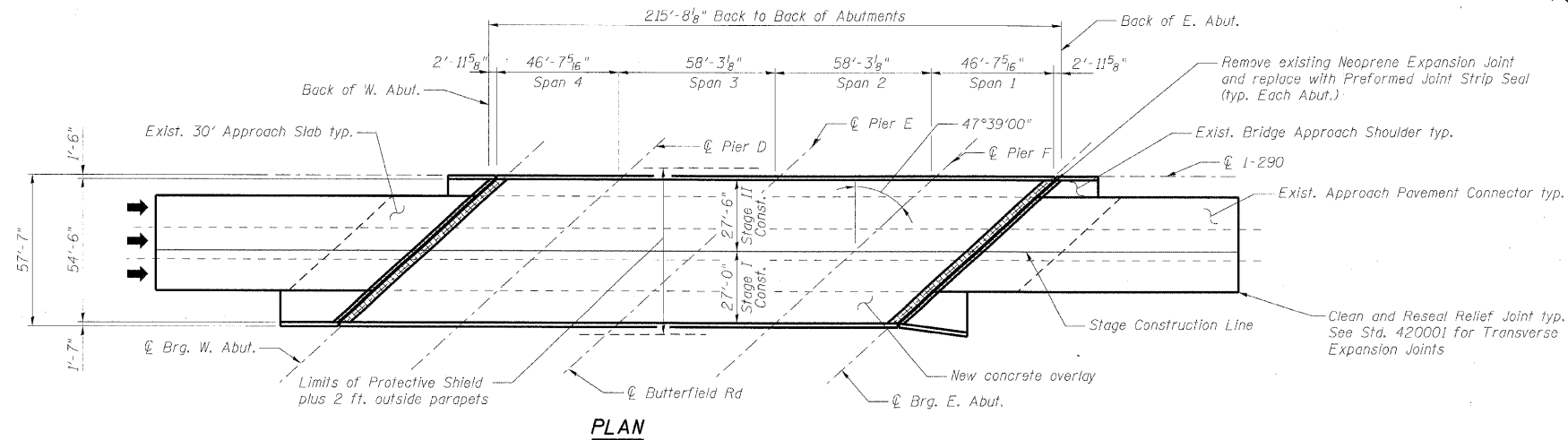
11/12/2009

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

Existing Structure:
The structure is a four-span continuous wide flange steel structure with a 7.5-inch reinforced concrete deck with no overlay.
The original structure was built in 1959 as FAI-90 and is in Section 1997-0321.
In 1985, the bridge was widened and redecked, expansion joints were reconstructed, the substructure was repaired, and the superstructure was cleaned and painted. In 1998, the expansion joints were reconstructed and the deck and approach slabs were repaired.

Stage construction shall be utilized to maintain traffic during construction.

No salvage.



LOCATION SKETCH

DESIGN SPECIFICATIONS

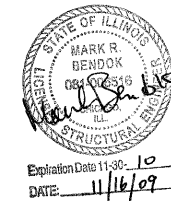
2002 AASHTO Standard Specifications for Highway Bridges, 17th Edition

DESIGN STRESSES

f'c = 3,500 psi
fy = 60,000 psi

SCOPE OF WORK

1. Bridge Deck Hydro-scarification.
2. Repair bridge deck.
3. Repair approach slab.
4. Reconstruct deck joints at each abutment with preformed joint strip seal.
5. Place new overlay.
6. Repair parapet with formed concrete repair.
7. Repair substructure.
8. Clean and reseal relief joints at the end of approach pavement connectors.
9. Apply concrete sealer to parapets, and abutment seals and backwalls.



GENERAL PLAN AND ELEVATION
I-290 EB OVER BUTTERFIELD RD.
COOK COUNTY
STATION 477+46
STRUCTURE NO. 016-0084

DESIGNED -	TJJ
CHECKED -	AAY
DRAWN -	RMG
CHECKED -	AAY

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SHEET NO. 1 9 SHEETS	F.A.I. RTE. 290	SECTION 2009-099 BR	COUNTY COOK/DUPAGE	TOTAL SHEETS 309	SHEET NO. 140
	FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT			CONTRACT NO. 60I57	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

1. Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60. See Special Provisions.
2. Reinforcement bars designated (E) shall be epoxy coated.
3. 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.
4. Plan dimensions and details relative to existing plans are subject to nominal 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.
5. Concrete Sealer shall be applied to the parapets, abutment seats and abutment backwalls. All surfaces to be sealed shall be cleaned thoroughly prior to sealer application. Cost included with Concrete Sealer.
6. The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.
7. Stage construction shall be utilized to maintain traffic during construction.
8. The Contractor shall exercise care during removal of existing joints to ensure that the slab, beams and diaphragms' integrity will not be detrimentally impacted. The Contractor shall repair any damage(s) to the slab, beams and diaphragms caused by his operation as directed by the Engineer at no additional cost to the Department.
9. Protective Coat shall be applied to the new Latex Concrete Overlay.
10. Joint openings shall be adjusted according to Article 520.04 of the Std. Specs. when the deck is poured at an ambient temperature other than 50°F.

INDEX OF SHEETS

1. General Plan and Elevation
2. General Notes, Bill of Material and Index of Sheets
3. Stage Construction Details
4. Bridge Deck and Approach Slab Repairs
5. Expansion Joint Repairs
6. Expansion Joint Details
7. Preformed Joint Strip Seal
8. Substructure Repairs
9. Bar Splicer Assembly Details

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Concrete Removal	Cu. Yd.	24.2		24.2
Protective Shield	Sq. Yd.	797		797
Concrete Superstructure	Cu. Yd.	26.2		26.2
Bridge Deck Grooving	Sq. Yd.	1,597		1,597
Protective Coat	Sq. Yd.	1,670		1,670
Reinforcement Bars, Epoxy Coated	Pound	2,800		2,800
Bar Splicers	Each	22		22
Preformed Joint Strip Seal	Foot	166.0		166.0
Concrete Sealer	Sq. Ft.	2,035	890	2,925
Bridge Deck Latex Concrete Overlay, 2 1/4"	Sq. Yd.	1,634		1,634
Structural Repair of Concrete (Depth Equal to or Less than 5 Inches)	Sq. Ft.	12	343	355
Bridge Deck Hydro-Scarification, 1/2"	Sq. Yd.	1,634		1,634
Temporary Shoring and Cribbing	Each		5	5
Clean and Reseal Relief Joint	Foot	72.0		72.0

DESIGNED -	TJJ
CHECKED -	AAV
DRAWN -	RMG
CHECKED -	AAV

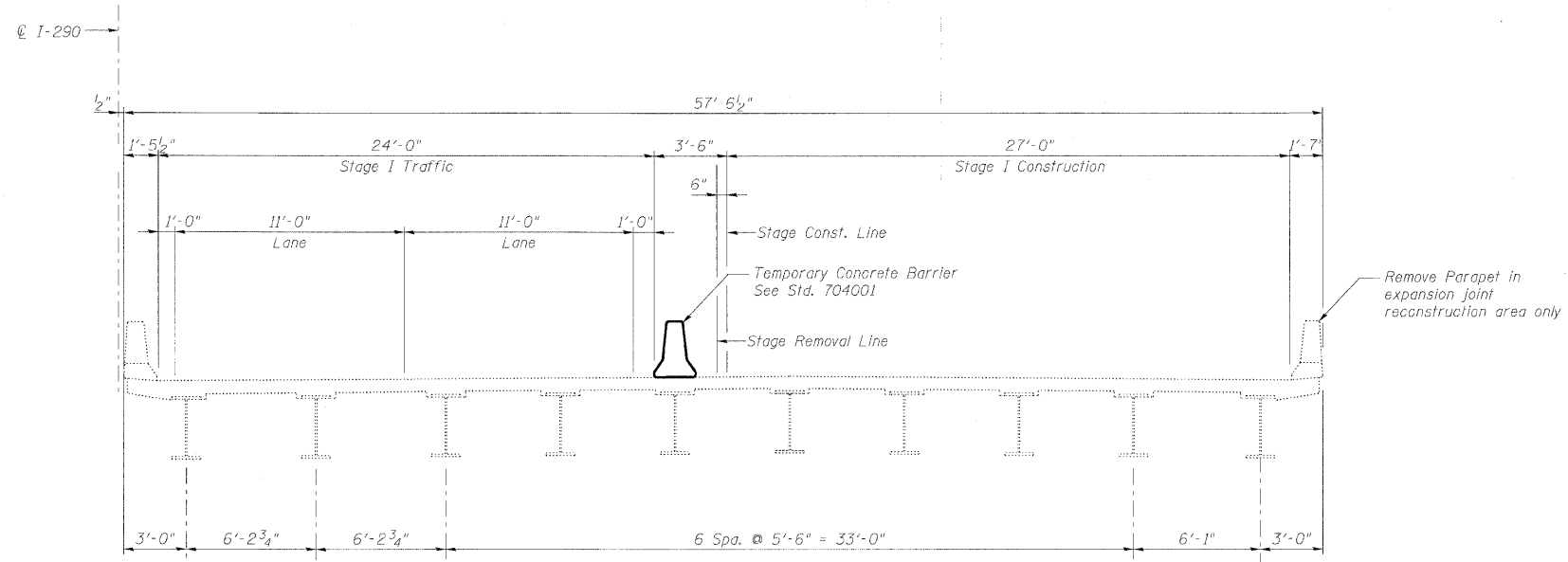
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Chicago, Illinois 60601
312-965-0450 Job No. 10050

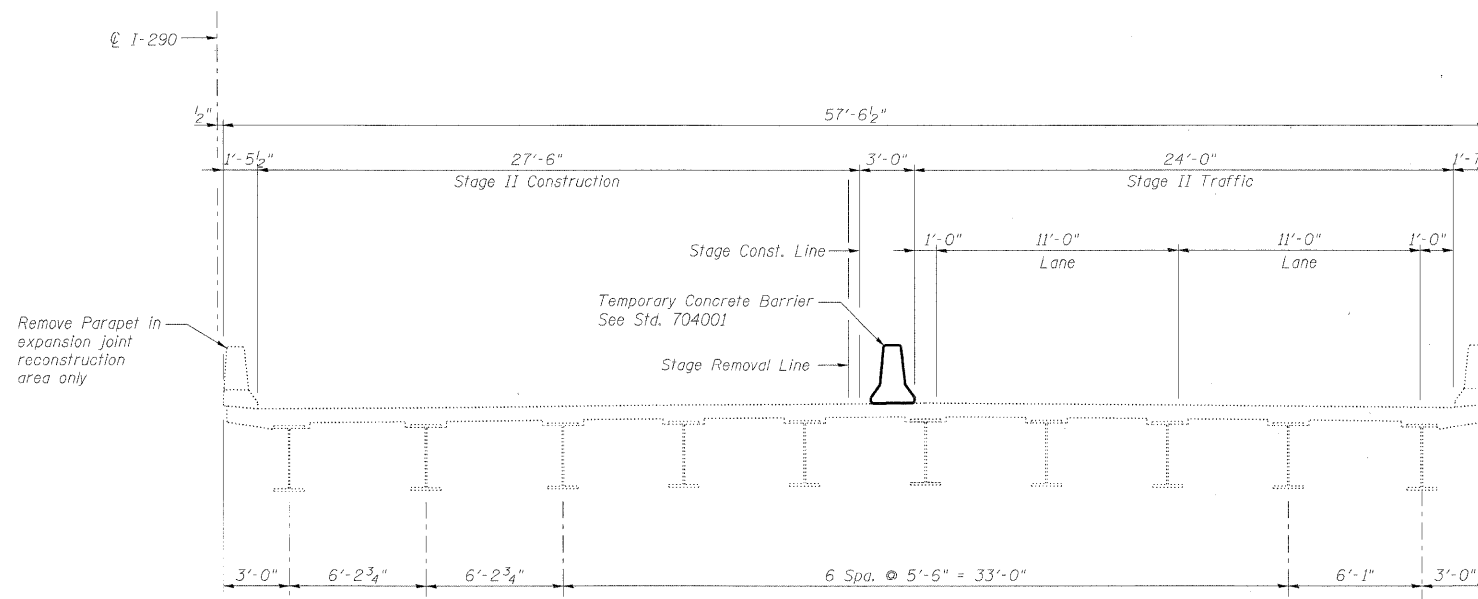
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	290	2009-099 BR	COOK/DUPAGE	309	141
9 SHEETS	CONTRACT NO. 60157				
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

**GENERAL NOTES, BILL OF MATERIAL
AND INDEX OF SHEETS
STRUCTURE NO. 016-0084**

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



STAGE I CROSS SECTION
(Looking East)



STAGE II CROSS SECTION
(Looking East)

Remove Parapet in expansion joint reconstruction area only

Remove Parapet in expansion joint reconstruction area only

Note:
For quantity of Temporary Barrier, see Roadway Plans.

DESIGNED	MFB
CHECKED	MAC
DRAWN	VH
CHECKED	AAV

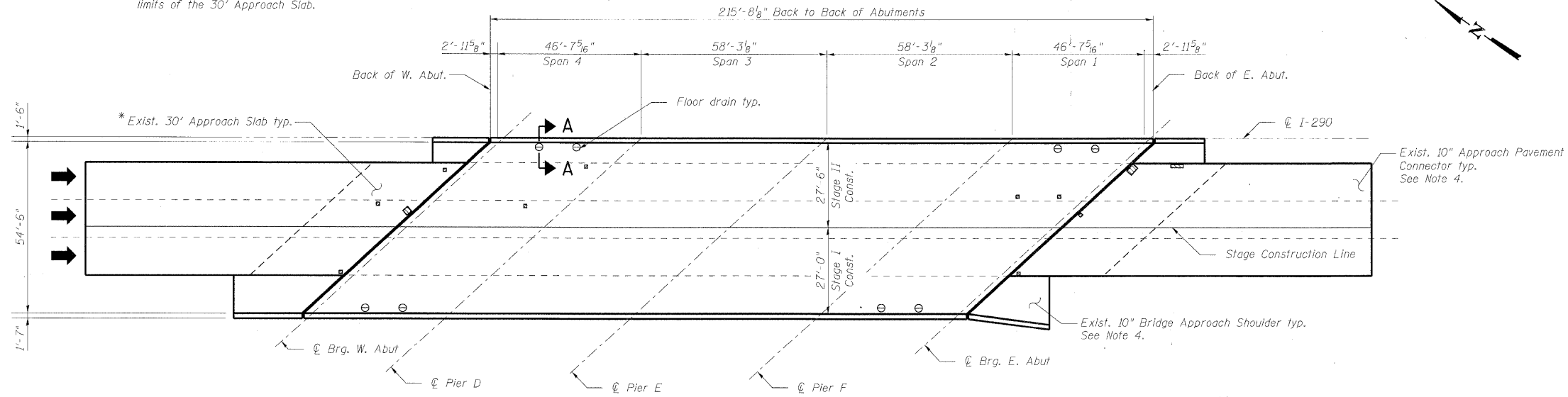
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312-565-0450 Job No. 10050

STAGE CONSTRUCTION DETAILS
STRUCTURE NO. 016-0084

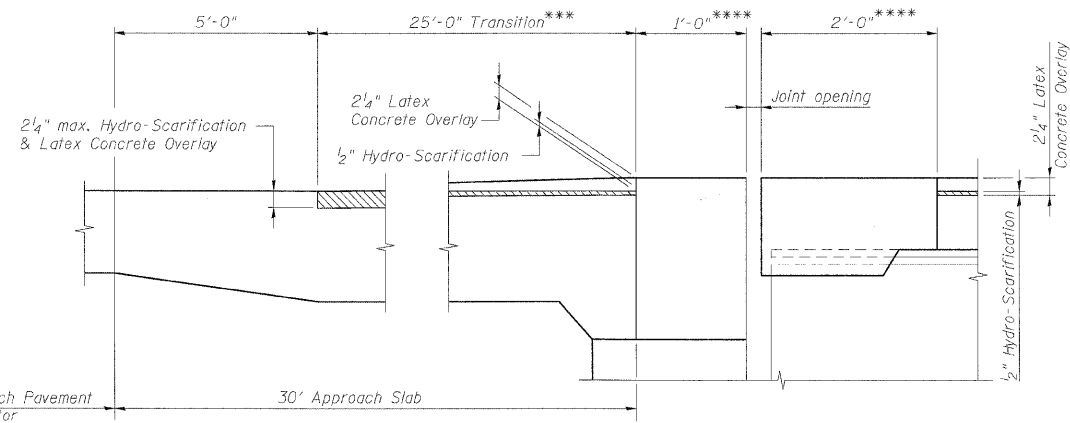
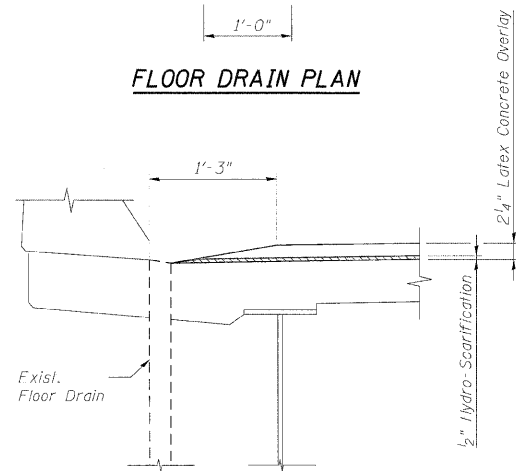
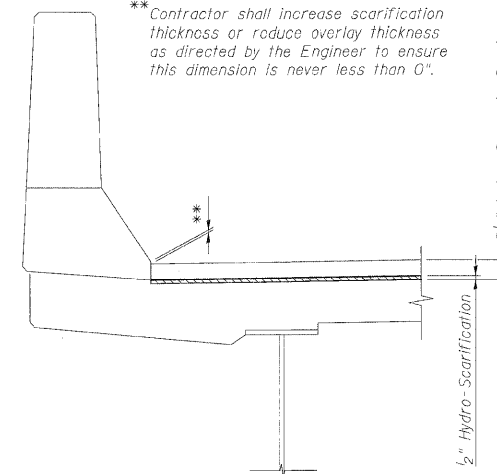
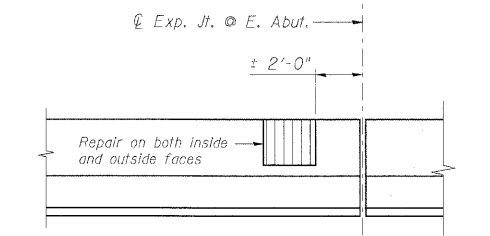
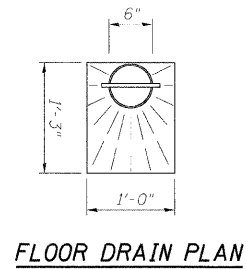
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	290	2009-099 BR	COOK/DUPAGE	309	142
9 SHEETS	CONTRACT NO. 60157				
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

*See Scarification & Overlay
Transition Detail on this sheet for
limits of the 30' Approach Slab.



PLAN



*** Cost of increased hydro-scarification depth over length of transition shall be included with Bridge Deck Hydro-Scarification, 1/2".

**** Construct new concrete at joints to same lines and grades as new concrete overlay at these locations.

BILL OF MATERIAL

SYMBOL	ITEM	UNIT	QUANTITY
	Deck Slab Repair (Partial)	Sq. Yd.	5.0 ▲
	Approach Slab Repair (Partial Depth)	Sq. Yd.	5.0 ▲
	Structural Repair of Concrete (Depth Equal to or Less than 5 Inches)	Sq. Ft.	12
	Protective Shield	Sq. Yd.	797
	Bridge Deck Grooving	Sq. Yd.	1,597
	Protective Coat	Sq. Yd.	1,670
	Bridge Deck Latex Concrete Overlay, 2 1/4"	Sq. Yd.	1,634
	Bridge Deck Hydro-Scarification, 1/2"	Sq. Yd.	1,634

▲ For information only to assist the Contractor in bidding. See Special Provisions for "Bridge Deck Latex Concrete Overlay".

Notes:

- Deck and approach slab repair areas are estimated based on visual inspection completed in June 2009. Actual repair areas and locations shall be determined by the Engineer and shown on As-Built plans.
- Protective Shield, required for deck slab and/or parapet repairs, shall be installed according to Article 501.03 of the Standard Specifications. For limits of Protective Shield, see General Plan and Elevation.
- Deck drains (downspouts, floor drains, and scuppers) shall be cleaned prior to placement of the Latex Concrete Overlay. Cost of cleaning the deck drains is included in "Bridge Deck Hydro-Scarification, 1/2".
- The Engineer shall determine the type and quantity of Class A patching and the quantity of Mixture for Cracks, Joints and Flangeways. Estimated quantities are included in the overall Summary of Quantities in Roadway Plans.
- Gaps caused by distress around floor drains shall be filled with epoxy as specified in the Special Provision "Epoxy Injection". Cost included with "Bridge Deck Latex Concrete Overlay, 2 1/4".
- Cost of new overlay on approach slab transition is included with Bridge Deck Latex Concrete Overlay, 2 1/4".

BRIDGE DECK AND APPROACH
SLAB REPAIRS
STRUCTURE NO. 016-0084

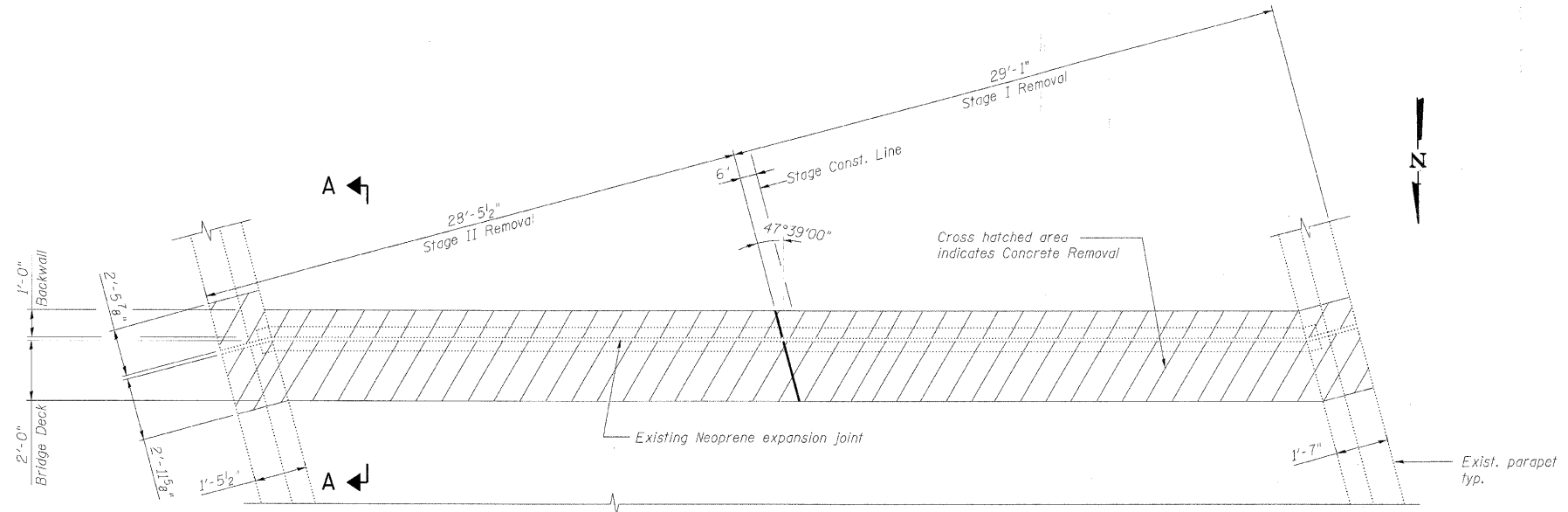
DESIGNED -	TJJ
CHECKED -	AAY
DRAWN -	RMG
CHECKED -	AAY

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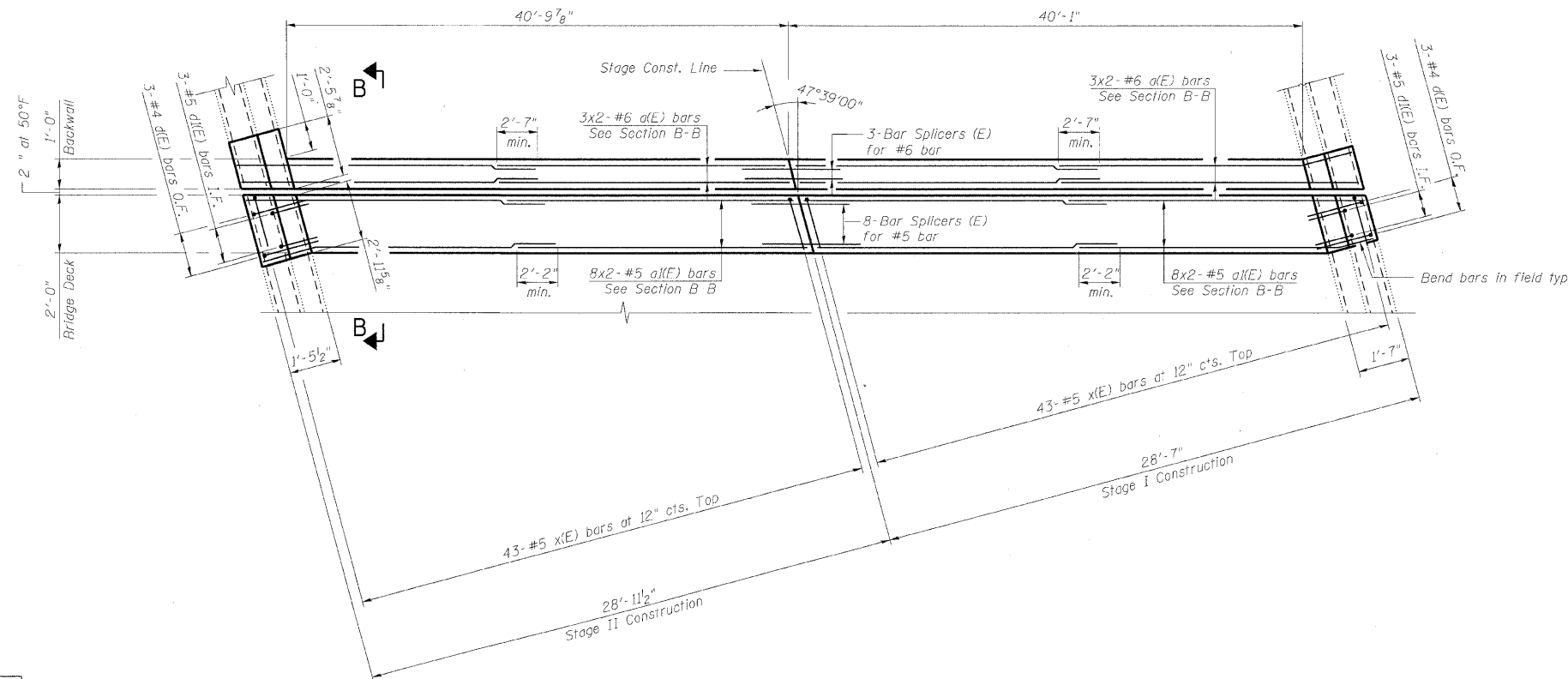
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SHEET NO. 4	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	2009-099 BR	COOK/DUPAGE	309	143
9 SHEETS	CONTRACT NO. 60157				
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



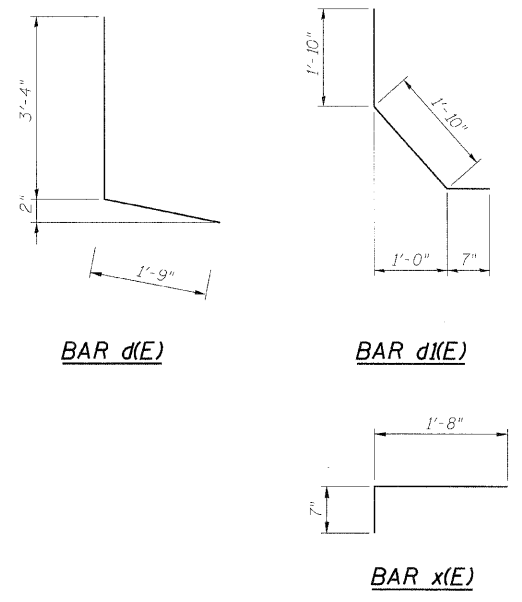
EXISTING PARTIAL PLAN AT EAST ABUTMENT
(Opposite Hand For West Abutment)



PROPOSED PARTIAL PLAN AT EAST ABUTMENT
(Opposite Hand For West Abutment)

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
d(F)	24	#6	22'-4"	—
d(E)	64	#5	22'-4"	—
d(E)	12	#4	5'-1"	┌
d(E)	12	#5	4'-3"	└
x(E)	172	#5	2'-3"	┌
Item	Unit	Total		
Concrete Removal	Cu. Yd.	24.2		
Concrete Superstructure	Cu. Yd.	26.2		
Reinforcement Bars, Epoxy Coated	Pound	2,800		



Notes:

1. Bars indicated thus 8x2-#5 etc. indicates 8 lines of bars with 2 lengths per line.
2. I.F. denotes Inside Face.
O.F. denotes Outside Face.
3. Work this sheet with Expansion Joint Details sheet and Bar Splicer Assembly Details sheet.
4. x(E) bar spacing measured along skew.

**EXPANSION JOINT REPAIRS
STRUCTURE NO. 016-0084**

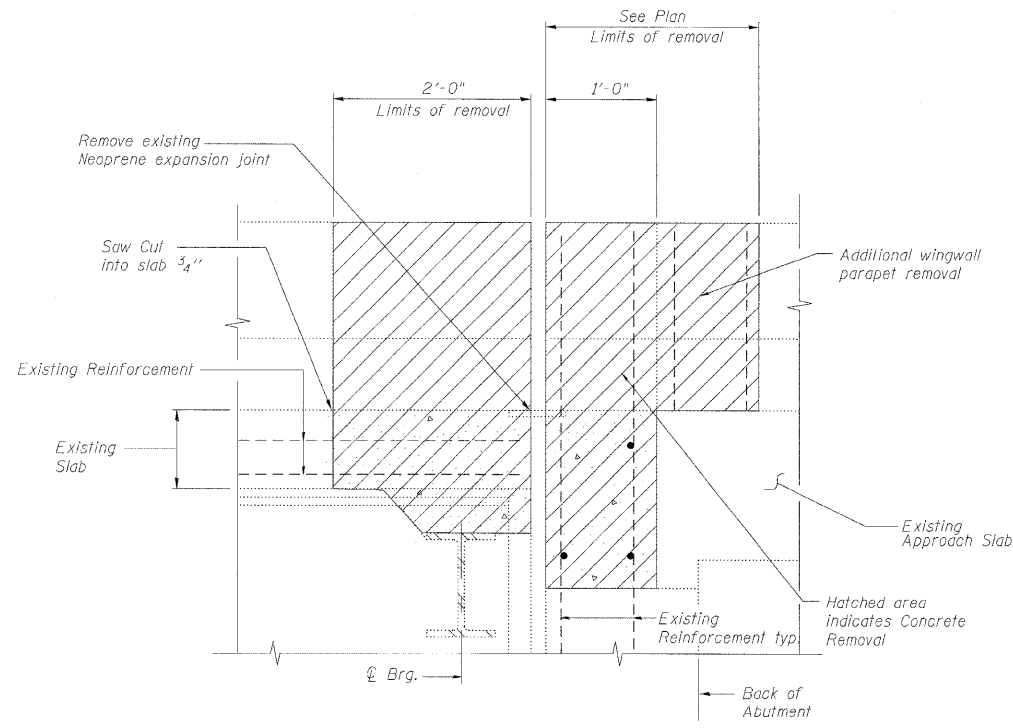
DESIGNED -	JLS
CHECKED -	AAY
DRAWN -	VH
CHECKED -	AAY

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312-665-0450 Job No. 10050

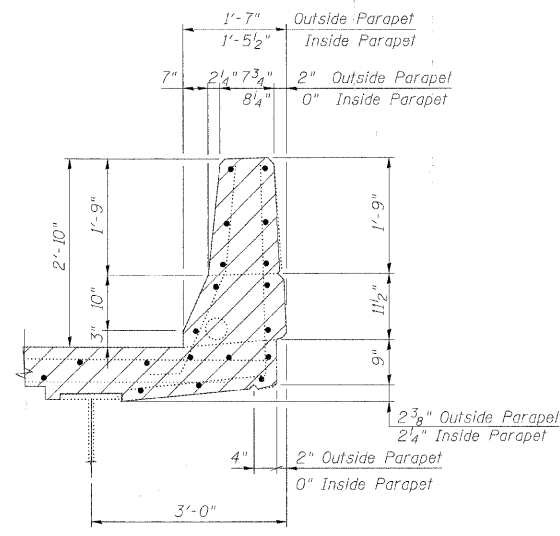
SHEET NO. 5 9 SHEETS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	2009-099 BR	COOK/DUPAGE	309	144
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT	CONTRACT NO. 60157	

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



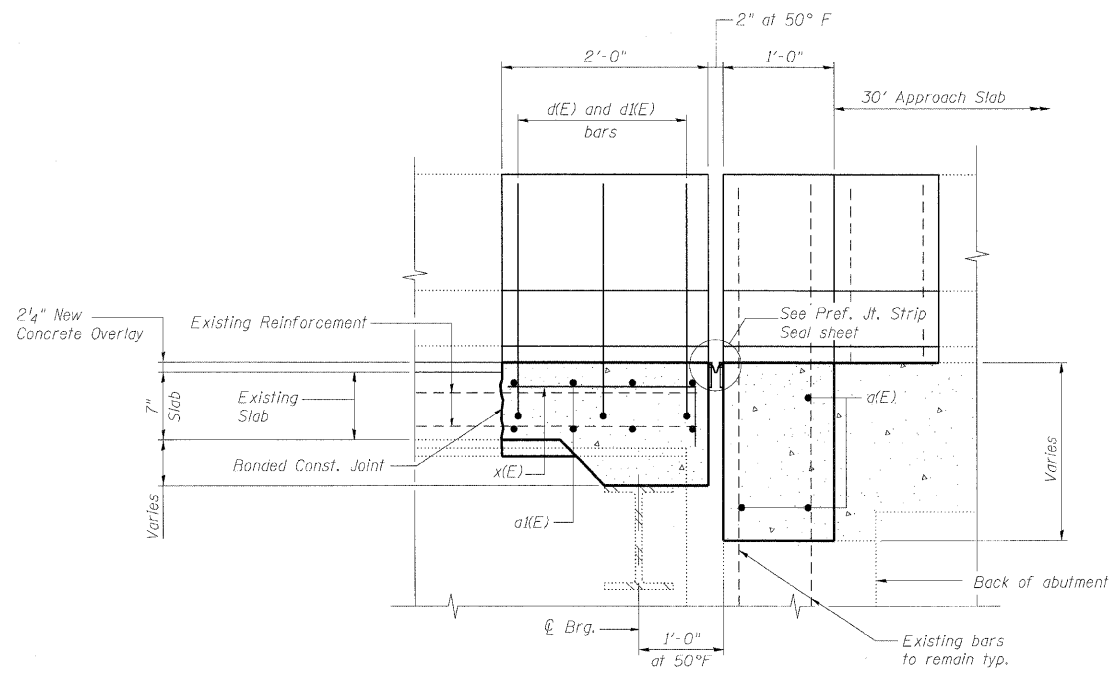
SECTION A-A



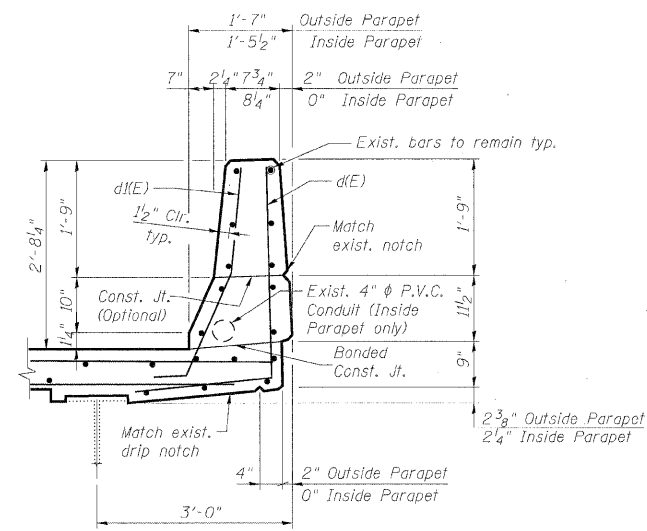
EXISTING PARAPET SECTION

Notes:

- Existing reinforcement bars extending into the concrete removal area shall be blast-cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be repaired or replaced with an approved bar splicer or anchorage system. Cost included with Concrete Removal.
- Existing reinforcement bars in the concrete removal area parallel to the expansion joints shall be removed.
- Removal and disposal of the existing expansion joints will not be paid for separately, but shall be included with the cost of Concrete Removal.
- If existing name plate falls within the limits of Concrete Removal, it shall be removed and reinstalled in its original location in accordance with IDOT Std. 515001. Cost included with Concrete Superstructure.
- If existing guardrail and/or end shoe fall within the limits of Concrete Removal, they shall be removed and reinstalled in their original location in accordance with District 1 Std. BM-21. Cost Included with Concrete Superstructure.
- The Contractor shall exercise extreme care with the existing conduits in sections of the parapet to be removed and to protect and support the conduit. The Contractor will be required to repair any damage done to the conduit to the satisfaction of the Engineer, at no additional cost to the Department. No splicing will be allowed to any cable damage resulting from this work, instead the Contractor will be required to repair the entire span of any damaged cable at no additional cost to the Department.
- Work this sheet with Expansion Joint Repairs sheet.



SECTION B-B



PROPOSED PARAPET SECTION

DESIGNED -	JLS
CHECKED -	AAY
DRAWN -	VH
CHECKED -	AAY

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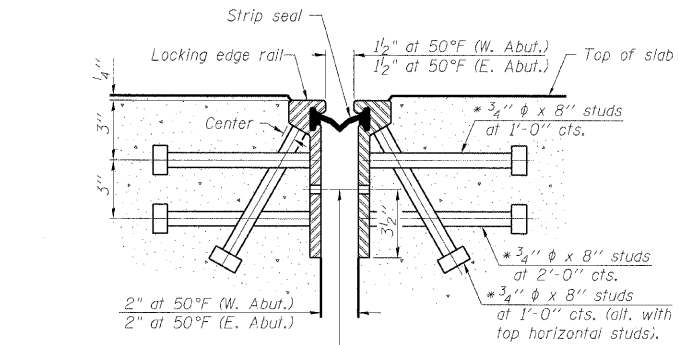
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205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-565-0450 Job No. 10050

**EXPANSION JOINT DETAILS
STRUCTURE NO. 016-0084**

SHEET NO. 6 9 SHEETS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	2009-099 BR	COOK/DUPAGE	309	145
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT	CONTRACT NO. 60157	

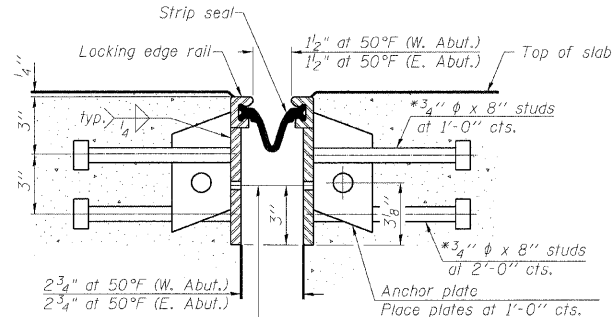
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

* Granular or solid flux filled headed studs conforming to Article 1006.32 of the Std. Specs., automatically end welded.



7/16" ϕ holes at 4'-0" cts. for 3/8" ϕ bolts. All bolts shall be burned, sawed, or chipped off flush with the plates after forms are removed, typ.

SECTION THRU
ROLLED RAIL JOINT

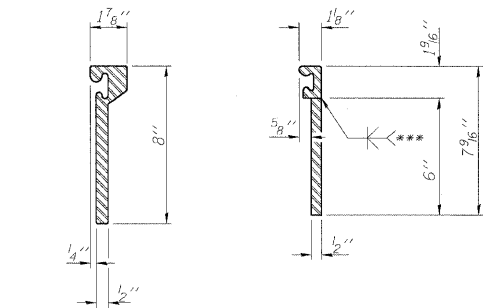


7/16" ϕ holes at 4'-0" cts. for 3/8" ϕ bolts. All bolts shall be burned, sawed, or chipped off flush with the plates after forms are removed, typ.

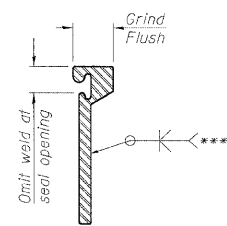
SECTION THRU
WELDED RAIL JOINT

Notes:

The strip seal shall be made continuous and shall have a minimum thickness of 1/4". The configuration of the strip seal shall match the configuration of the Locking Edge Rails. Open or "webbed" strip seal gland configurations are not permitted. The gland shall be sized for a maximum rated movement of 4 inches. The height and thickness of the Locking Edge Rails shown are minimum dimensions. The actual configuration of the Locking Edge Rails and matching strip seal may vary from manufacturer to manufacturer. Flanged edge rails will not be allowed. Locking Edge Rails may be spliced at slope discontinuities and stage construction joints. The manufacturer's recommended installation methods shall be followed. The joint opening and deck dimensions detailed on the superstructure are based on a rolled rail expansion joint. If the Contractor elects to use the welded rail expansion joint, the opening and deck dimensions shall be modified according to the dimensions detailed on this sheet. Required modifications shall be made at no additional cost to the State. All steel components shall be galvanized after fabrication according to Article 520.03 of the Standard Specifications.



ROLLED
EXTRUDED RAIL WELDED RAIL



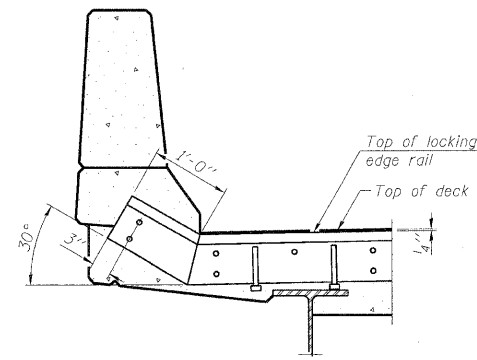
***Back gauge not required if complete joint penetration is verified by mock-up.

LOCKING EDGE
RAIL SPLICE

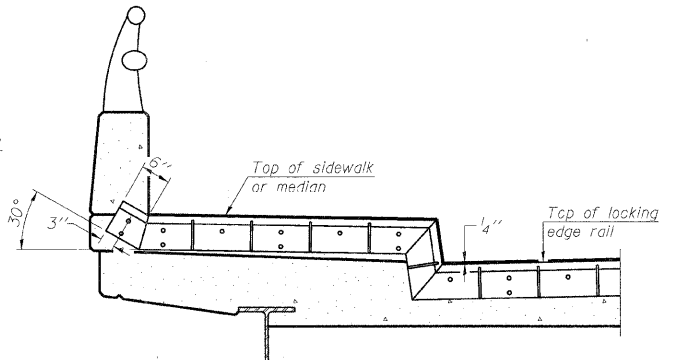
The inside of the locking edge rail groove shall be free of weld residue.

SECTION THRU
WELDED RAIL JOINT

ANCHOR PLATE
(for welded rail)



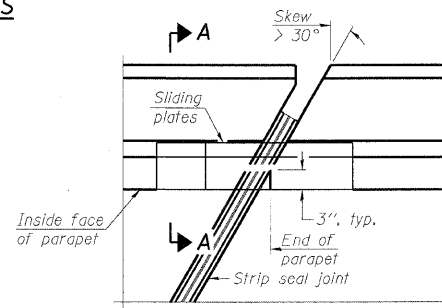
AT PARAPET



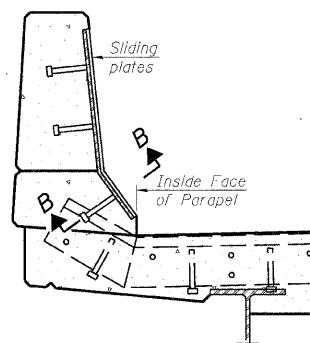
AT SIDEWALK OR MEDIAN

Shorter plates with a single row of studs at 12" cts. may be necessary on medians which are shallower than 9". See manufacturer's recommendation.

LOCKING EDGE RAILS



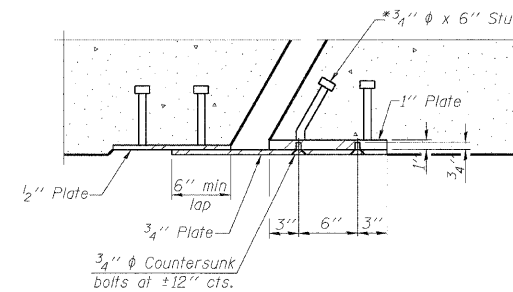
PLAN



SECTION A-A

POINT BLOCK DETAILS
(for skews > 30°)

TYPICAL END TREATMENTS



SECTION B-B

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	166.0

DESIGNED	JLS
CHECKED	AAY
DRAWN	RMG
CHECKED	AAY

EJ-SSJ

10-1-08

benesch

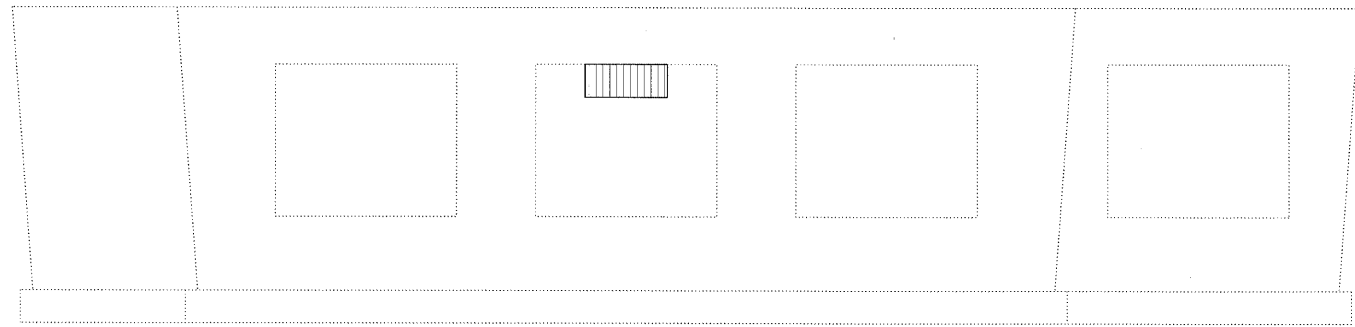
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Chicago, Illinois 60601
312-565-0450 Job No. 10050

SHEET NO. 7	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	2009-099 BR	COOK/DUPAGE	309	146
9 SHEETS			CONTRACT NO. 60157		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT			

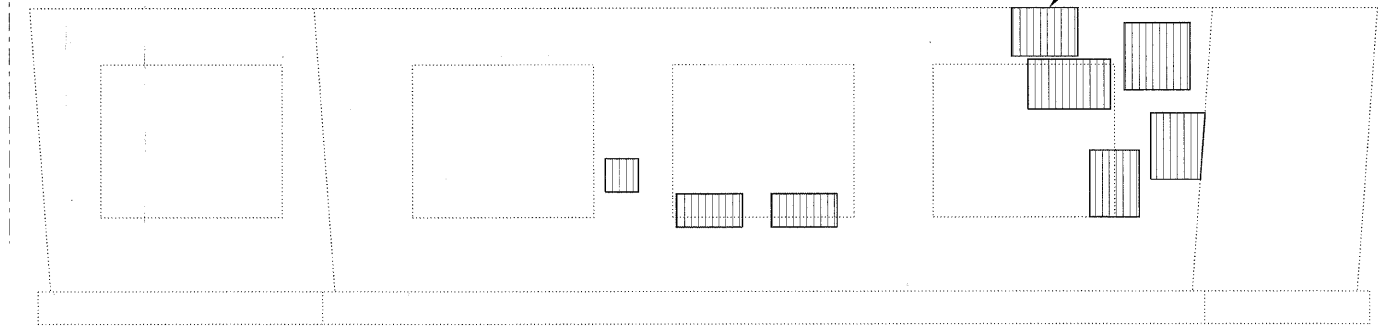
PREFORMED JOINT STRIP SEAL
STRUCTURE NO. 016-0084

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

← F.A.I. 290

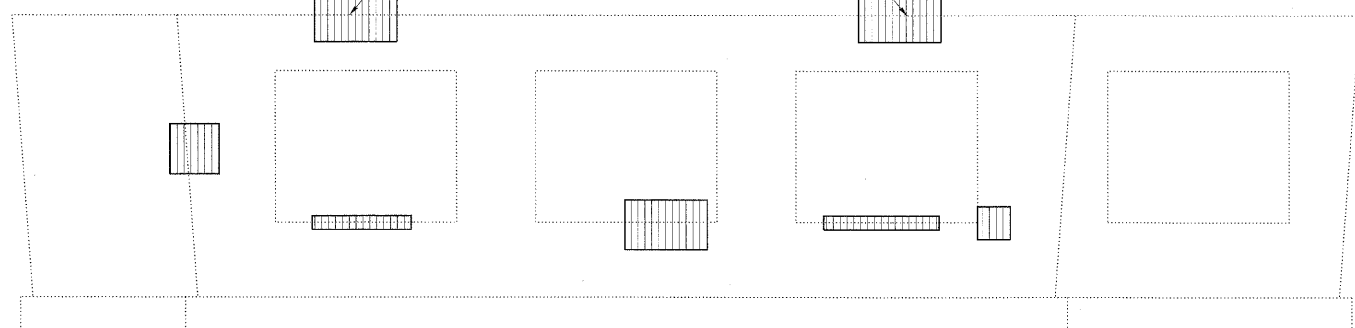


ELEVATION - PIER F, SOUTH FACE

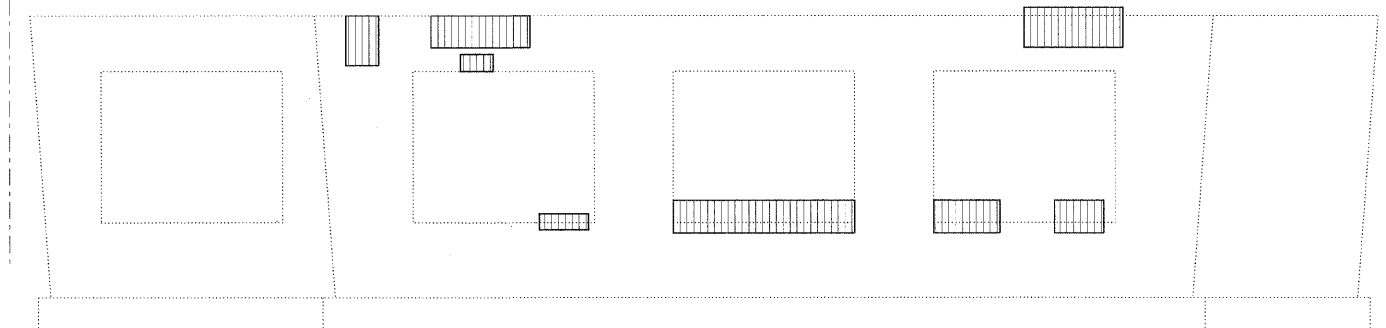


ELEVATION - PIER F, NORTH FACE

← F.A.I. 290

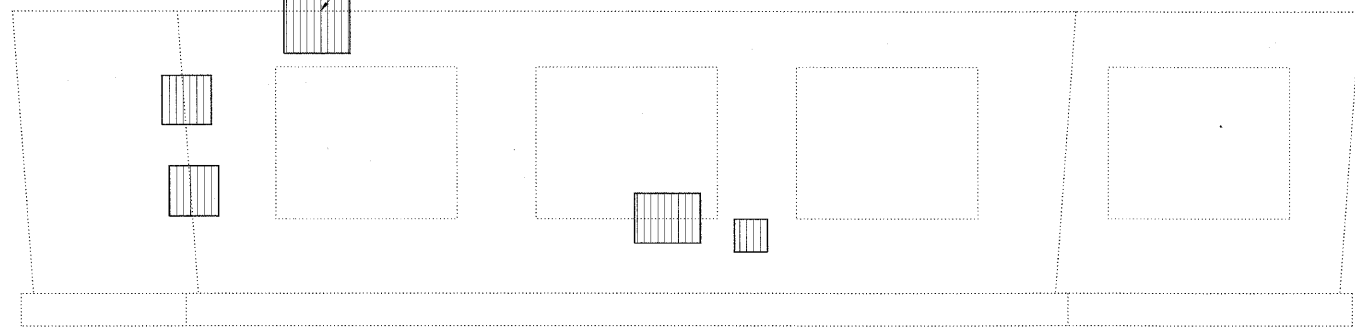


ELEVATION - PIER E, SOUTH FACE

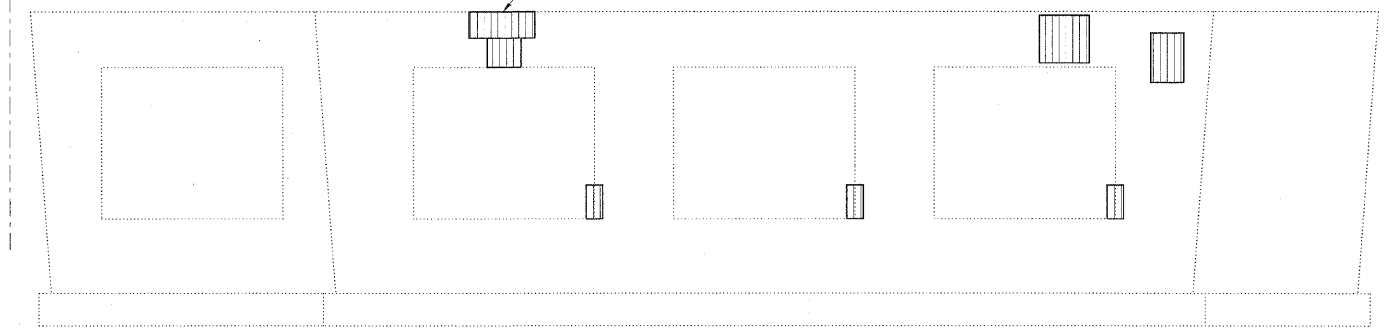


ELEVATION - PIER E, NORTH FACE

← F.A.I. 290



ELEVATION - PIER D, SOUTH FACE



ELEVATION - PIER D, NORTH FACE

BILL OF MATERIAL

SYMBOL	ITEM	UNIT	QUANTITY
	Structural Repair of Concrete (Depth Equal to or Less than 5 Inches)	Sq. Ft.	343
	Temporary Shoring & Cribbing	Each	5

BEAM REACTIONS (KIPS)

DEAD LOAD	LIVE LOAD	IMPACT LOAD	TOTAL
56.4	40.9	8.5	105.8

**SUBSTRUCTURE REPAIRS
STRUCTURE NO. 016-0084**

Notes:

- Substructure repair areas are estimated based on IDOT field notes from August 17, 2009.
- Temporary Shoring and Cribbing shall be provided per the Special Provisions for "Structural Repair of Concrete" and "Temporary Shoring and Cribbing".
- Interference is expected from existing conduits. The Contractor shall remove and reerect or temporarily support the existing conduits to complete the work as detailed. When the work is completed the conduits shall be reconnected to the reconstructed abutment or pier utilizing the existing mounting brackets or new mounting brackets. All labor, equipment, and materials necessary for removing and reinstalling or temporarily supporting the existing conduits shall be included in the cost for Structural Repair of Concrete (Depth Equal to or Less than 5 Inches).

Notes (cont'd):

- The tabulated beam reactions were taken from the existing construction plans. The Contractor shall verify that the equipment used to support the beams is sufficient to carry these loads in addition to any temporary construction loads.

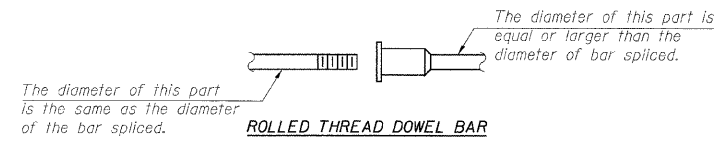
DESIGNED -	TJJ
CHECKED -	AAY
DRAWN -	RMG
CHECKED -	AAY

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SHEET NO. 8 9 SHEETS	F.A.I. RTE. 290	SECTION 2009-099 BR	COUNTY COOK/DUPAGE	TOTAL SHEETS 309	SHEET NO. 147
	FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT			CONTRACT NO. 60157	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



ROLLED THREAD DOWEL BAR



ONE PIECE

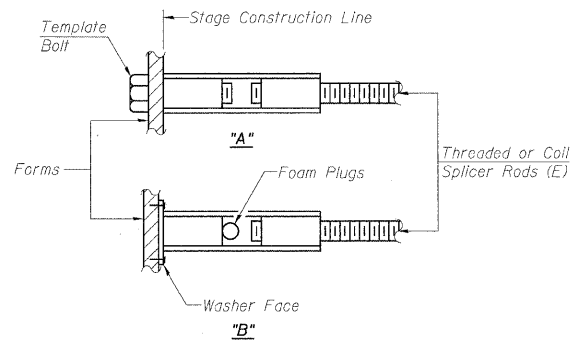
Wire Connector



WELDED SECTIONS

BAR SPLICER ASSEMBLY ALTERNATIVES

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



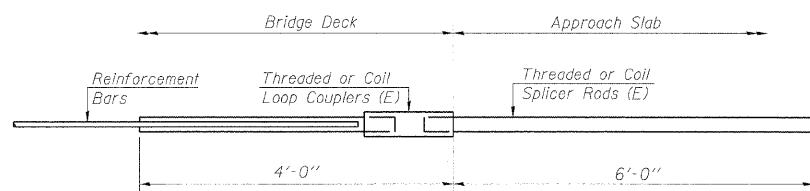
INSTALLATION AND SETTING METHODS

"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:

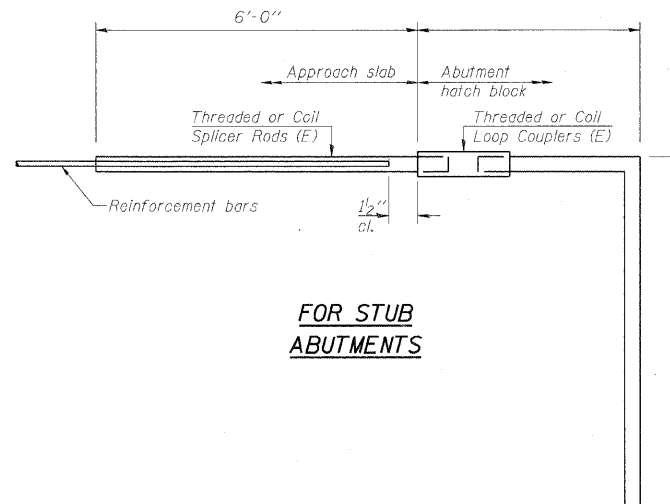
- ① Minimum Capacity (Tension in kips) = $1.25 \times f_y \times A_s$
 - ② Minimum Pull-out Strength (Tension in kips) = $0.66 \times f_y \times A_s$
- Where f_y = Yield strength of lapped reinforcement bars in ksi.
 A_s = Tensile stress area of lapped reinforcement bars.
* = 28 day concrete

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



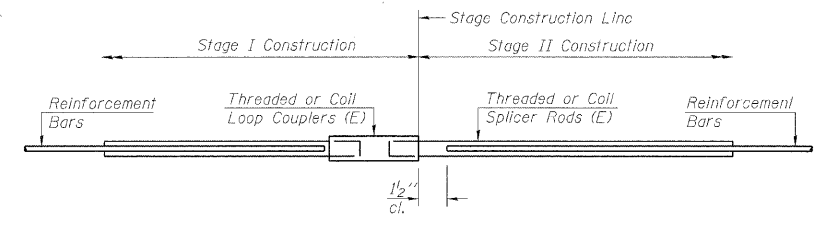
FOR INTEGRAL OR SEMI-INTEGRAL ABUTMENTS

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
#5	16	Deck
#6	6	Deck

DESIGNED -	JLS
CHECKED -	AAY
DRAWN -	RMG
CHECKED -	AAY

BSD-1

10-1-08

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Chicago, Illinois 60601
312-665-0450 Job No. 10050

SHEET NO. 9 9 SHEETS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	2009-099 BR	COOK/DUPAGE	309	148
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT		
			CONTRACT NO. 60157		

**BAR SPLICER ASSEMBLY DETAILS
STRUCTURE NO. 016-0084**

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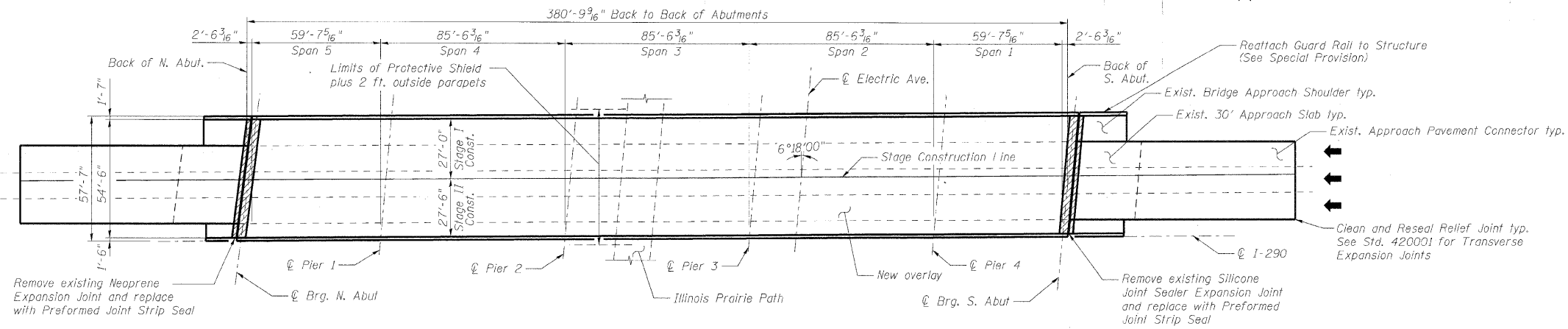
11/12/2009

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

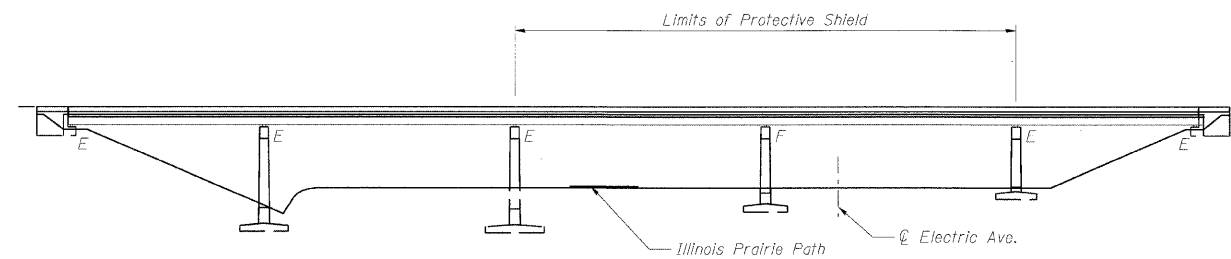
Existing Structure:
The structure is a five-span continuous non-composite wide flange steel structure with a 7.5-inch reinforced concrete deck with no overlay.
The original structure was built in 1952 as FAI-90 and is in Section 1984-082-R. In 1985, the bridge was widened and redecked, expansion joints were reconstructed, and the superstructure was cleaned and painted. In 1998, the expansion joints were reconstructed, the deck and approach slabs were repaired, and the substructure was repaired.

Stage construction shall be utilized to maintain traffic during construction.

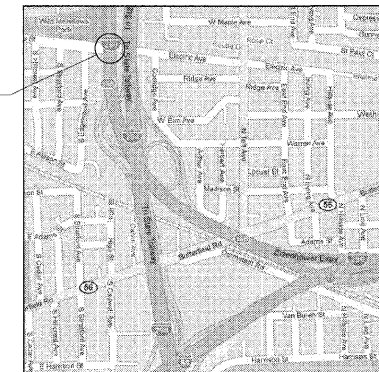
No salvage.



PLAN



ELEVATION



LOCATION SKETCH

DESIGN SPECIFICATIONS

2002 AASHTO Standard Specifications for Highway Bridges, 17th Edition

DESIGN STRESSES

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

SCOPE OF WORK

1. Bridge Deck Hydro-scarification.
2. Repair bridge deck.
3. Repair approach slab.
4. Reconstruct deck joints at each abutment with preformed joint strip seal.
5. Place new overlay.
6. Repair parapet with formed concrete repair.
7. Clean and reseal relief joints at the end of approach pavement connectors.
8. Apply concrete sealer to parapets, and abutment seats and backwalls.



Expiration Date 11-30-10
DATE: 4/16/09

**GENERAL PLAN AND ELEVATION
I-290 WB OVER ELECTRIC AVE.
AND PRAIRIE PATH
COOK COUNTY
STATION 439+86
STRUCTURE NO. 016-1135**

DESIGNED	TJJ
CHECKED	AAY
DRAWN	RMG
CHECKED	AAY

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312-566-0450 Job No. 10050

SHEET NO. 1 8 SHEETS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	2009-099 BR	COOK/DUPAGE	309	149
			CONTRACT NO. 60157		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT			

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

1. Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60. See Special Provisions.
2. Reinforcement bars designated (E) shall be epoxy coated.
3. 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.
4. Plan dimensions and details relative to existing plans are subject to nominal 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.
5. Concrete Sealer shall be applied to the parapets, abutment seats and abutment backwalls. All surfaces to be sealed shall be cleaned thoroughly prior to sealer application. Cost included with Concrete Sealer.
6. The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.
7. Stage construction shall be utilized to maintain traffic during construction.
8. The Contractor shall exercise care during removal of existing joints to ensure that the slab, beams and diaphragms' integrity will not be detrimentally impacted. The Contractor shall repair any damage(s) to the slab, beams and diaphragms caused by his operation as directed by the Engineer at no additional cost to the Department.
9. Protective Coat shall be applied to the new Latex Concrete Overlay.
10. Joint openings shall be adjusted according to Article 520.04 of the Std. Specs. when the deck is poured at an ambient temperature other than 50°F.

INDEX OF SHEETS

1. General Plan and Elevation
2. General Notes, Bill of Material and Index of Sheets
3. Stage Construction Details
4. Bridge Deck and Approach Slab Repairs
5. Expansion Joint Repairs
6. Expansion Joint Details
7. Preformed Joint Strip Seal
8. Bar Splicer Assembly Details

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Concrete Removal	Cu. Yd.	15.9		15.9
Protective Shield	Sq. Yd.	1,170		1,170
Concrete Superstructure	Cu. Yd.	17.2		17.2
Bridge Deck Grooving	Sq. Yd.	2,560		2,560
Protective Coat	Sq. Yd.	2,670		2,670
Reinforcement Bars, Epoxy Coated	Pound	1,850		1,850
Bar Splicers	Each	22		22
Preformed Joint Strip Seal	Foot	114.0		114.0
Concrete Sealer	Sq. Ft.	3,254	604	3,858
Bridge Deck Latex Concrete Overlay, 2 1/4"	Sq. Yd.	2,645		2,645
Structural Repair of Concrete (Depth Equal to or Less than 5 Inches)	Sq. Ft.	6		6
Bridge Deck Hydro-Scarification, 1/2"	Sq. Yd.	2,645		2,645
Clean and Reseal Relief Joint	Foot	72.0		72.0
Remove and Reinstall Light Pole	L Sum	1		1
Reattach Guard Rail to Structure	Each	1		1

DESIGNED	TJJ
CHECKED	AAY
DRAWN	RMG
CHECKED	AAY

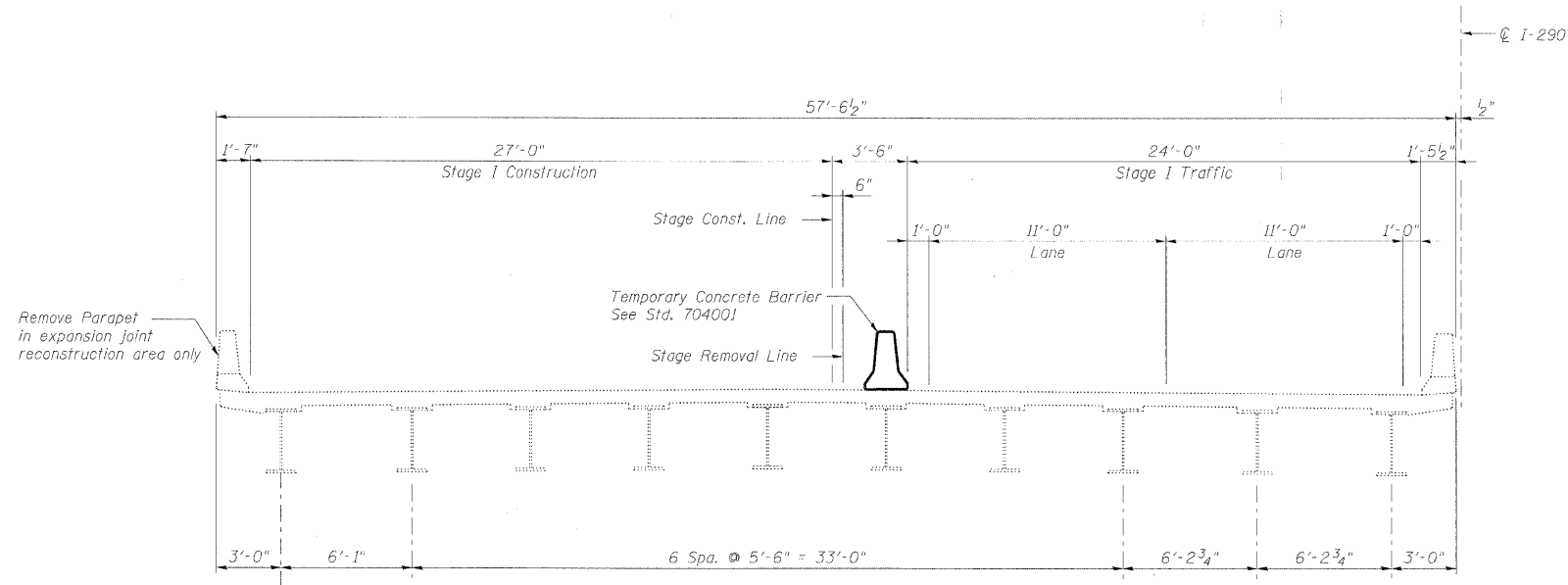
**GENERAL NOTES, BILL OF MATERIAL
AND INDEX OF SHEETS
STRUCTURE NO. 016-1135**

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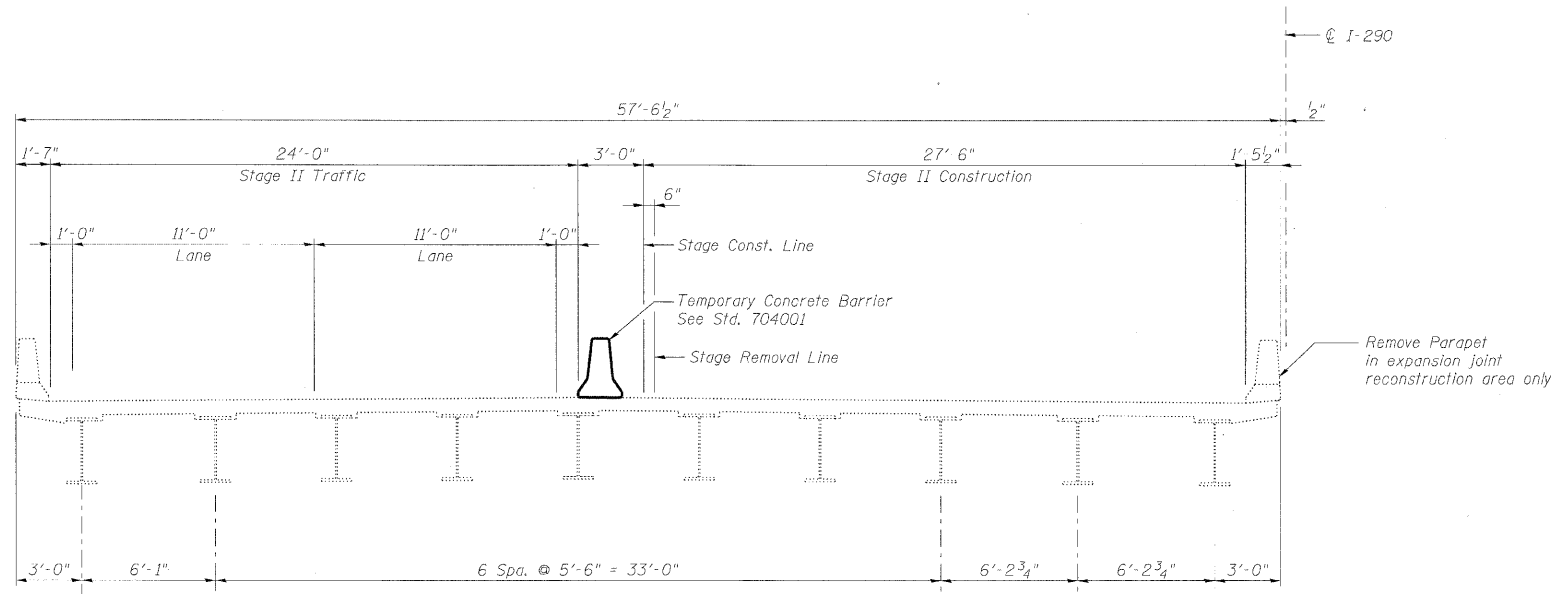
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SHEET NO. 2	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	2009-099 BR	COOK/DUPAGE	309	150
8 SHEETS	CONTRACT NO. 60157				
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



STAGE I CROSS SECTION
(Looking East)



STAGE II CROSS SECTION
(Looking East)

Note:

For quantity of Temporary Concrete Barrier, see Roadway Plans.

DESIGNED -	MFB
CHECKED -	MAC
DRAWN -	VH
CHECKED -	AAY

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STAGE CONSTRUCTION DETAILS
STRUCTURE NO. 016-1135

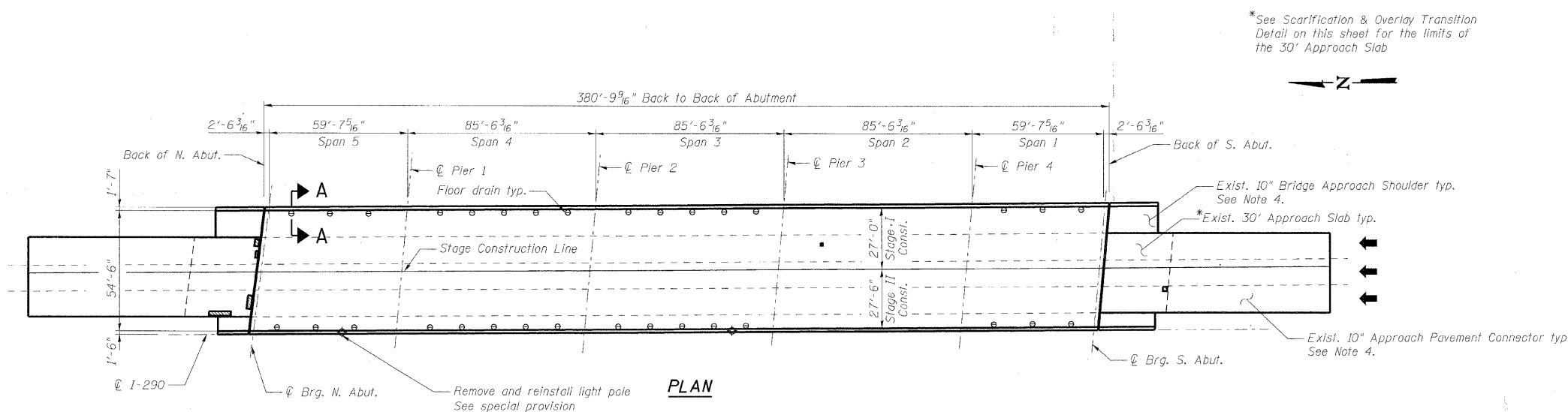
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	290	2009-099 BR	COOK/DUPAGE	309	151
FED. ROAD DIST. NO.			ILLINOIS	FED. AID PROJECT	
CONTRACT NO. 60157					

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

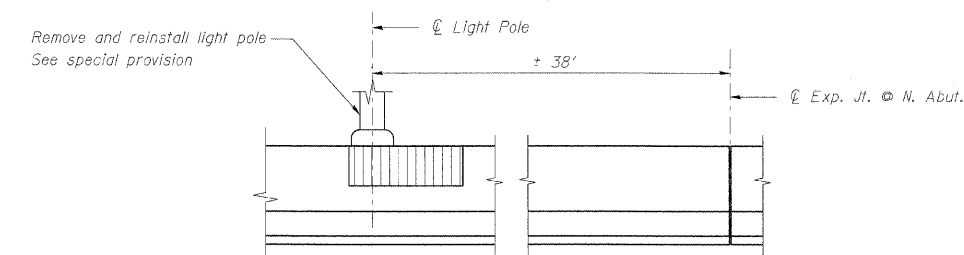
BILL OF MATERIAL

SYMBOL	ITEM	UNIT	QUANTITY
	Deck Slab Repair (Partial)	Sq. Yd.	5.0 ▲
	Approach Slab Repair (Partial Depth)	Sq. Yd.	10.0 ▲
	Structural Repair of Concrete (Depth Equal to or Less than 5 Inches)	Sq. Ft.	6
	Protective Shield	Sq. Yd.	1,170
	Bridge Deck Grooving	Sq. Yd.	2,560
	Protective Coat	Sq. Yd.	2,670
	Bridge Deck Latex Concrete Overlay, 2 1/4"	Sq. Yd.	2,645
	Bridge Deck Hydro Scarification, 1/2"	Sq. Yd.	2,645
	Remove and Reinstall Light Pole	L. Sum	1

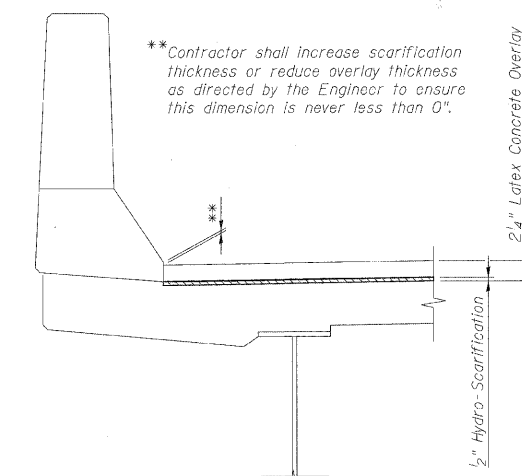
▲ For information only to assist the Contractor in bidding. See Special Provision for "Bridge Deck Latex Concrete Overlay".



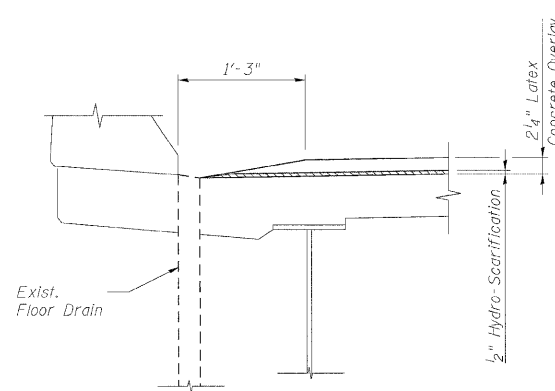
FLOOR DRAIN PLAN



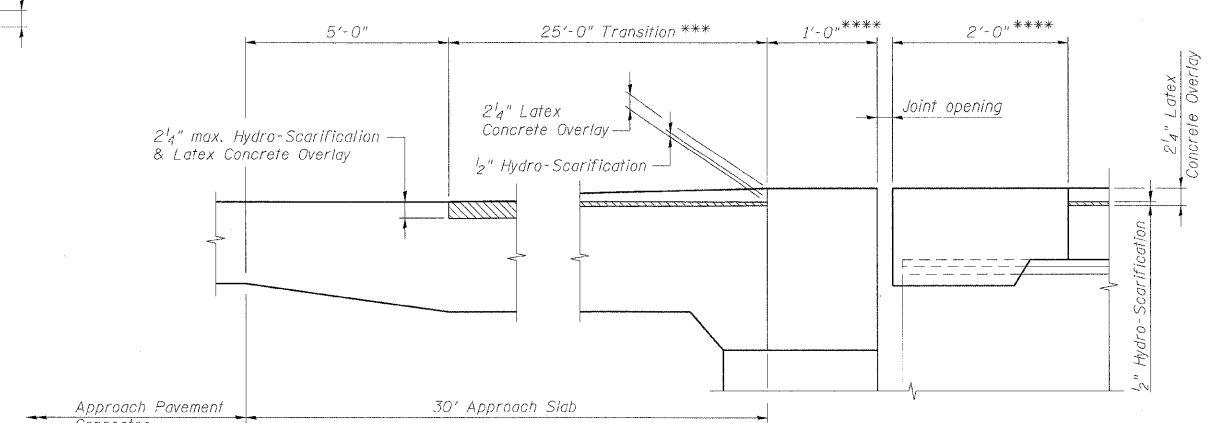
INSIDE ELEVATION - INSIDE PARAPET



SCARIFICATION & OVERLAY
DETAIL AT PARAPET



SECTION A-A
CONCRETE OVERLAY AT FLOOR DRAIN



SCARIFICATION & OVERLAY TRANSITION DETAIL

***Cost of increased hydro-scarification depth over length of transition shall be included with Bridge Deck Hydro-Scarification, 1/2".
****Construct new concrete at joints to same lines and grades as new concrete overlay at these locations.

DESIGNED -	TJJ
CHECKED -	AAY
DRAWN -	RMG
CHECKED -	AAY

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Chicago, Illinois 60601
312-565-0450 Job No. 10050

SHEET NO. 4 8 SHEETS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	2009-099 BR	COOK/DUPAGE	309	152
FED. ROAD DIST. NO.			ILLINOIS	FED. AID PROJECT	
			CONTRACT NO. 60157		

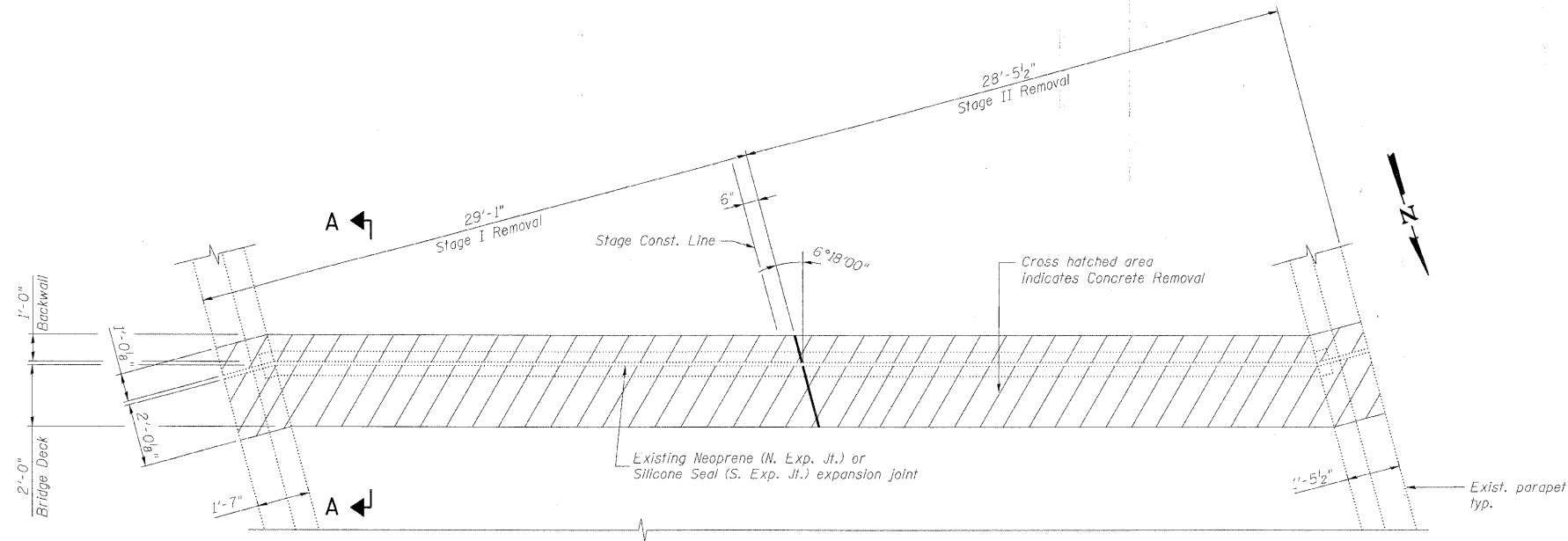
BRIDGE DECK AND APPROACH
SLAB REPAIRS
STRUCTURE NO. 016-1135

Notes:

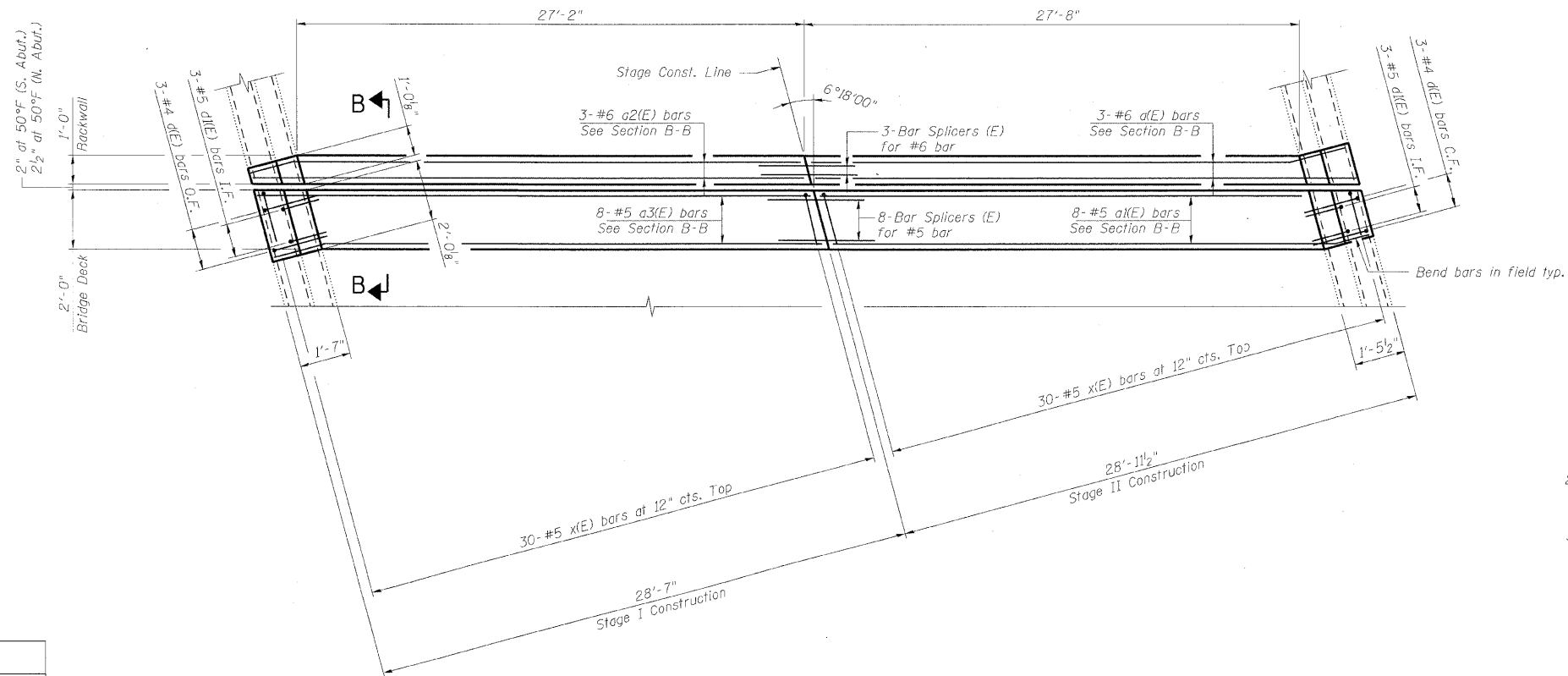
- Deck and approach slab repair areas are estimated based on visual inspection completed in June 2009. Actual repair areas and locations shall be determined by the Engineer and shown on As-Built plans.
- Protective Shield, required for deck slab and/or parapet repairs, shall be installed according to Article 501.03 of the Standard Specifications. For limits of Protective Shield, see General Plan and Elevation.
- Deck drains (downspouts, floor drains, and scuppers) shall be cleaned prior to placement of the Latex Concrete Overlay. Cost of cleaning the deck drains is included in Bridge Deck Hydro-Scarification, 1/2".
- The Engineer shall determine the type and quantity of Class A patching and the quantity of Mixture for Cracks, Joints and Flangeways. Estimated quantities are included in the overall Summary of Quantities in Roadway Plans.
- Gaps caused by distress around floor drains shall be filled with epoxy as specified in the Special Provision "Epoxy Injection". Cost included with Bridge Deck Latex Concrete Overlay, 2 1/4".
- Cost of new overlay on approach slab transition is included with Bridge Deck Latex Concrete Overlay, 2 1/4".

x:\100000a\10050\engineer\ng-documents-contract\1\SN-016-1135-1134-Electric-Ave\1135-60051-004-deckrepairs.dgn 18:34:03 11/12/2009

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DEPARTMENT OF TRANSPORTATION



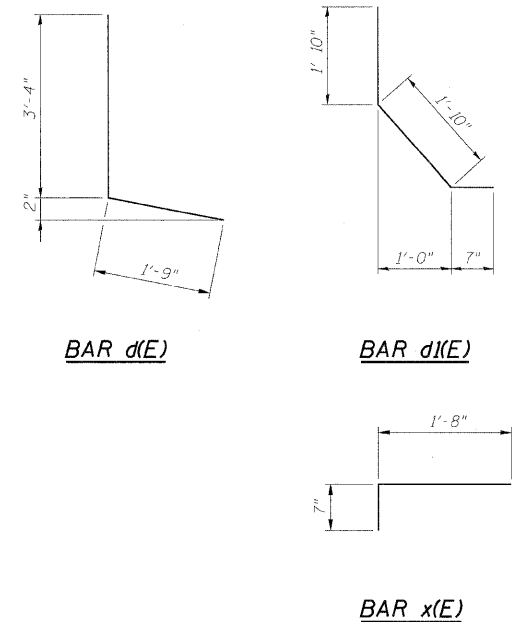
EXISTING PARTIAL PLAN AT SOUTH ABUTMENT
(Opposite Hand for North Abutment)



PROPOSED PARTIAL PLAN AT SOUTH ABUTMENT
(Opposite Hand for North Abutment)

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	6	#6	28'-10"	—
a2(E)	16	#5	28'-10"	—
a3(E)	6	#6	28'-5"	—
a3(E)	16	#5	28'-5"	—
d(E)	12	#4	5'-1"	┌
d(E)	12	#5	4'-3"	└
x(E)	120	#5	2'-3"	┌
<hr/>				
Item	Unit	Total		
Concrete Removal	Cu. Yd.	15.9		
Concrete Superstructure	Cu. Yd.	17.2		
Reinforcement Bars, Epoxy Coated	Pound	1,850		



Notes:

1. I.F. denotes Inside Face.
O.F. denotes Outside Face.
2. Work this sheet with Expansion Joint Details sheet and Bar Splicer Assembly Details sheet.
3. x(E) bar spacing measured along skew.

DESIGNED -	JLS
CHECKED -	AAV
DRAWN -	VH
CHECKED -	AAV

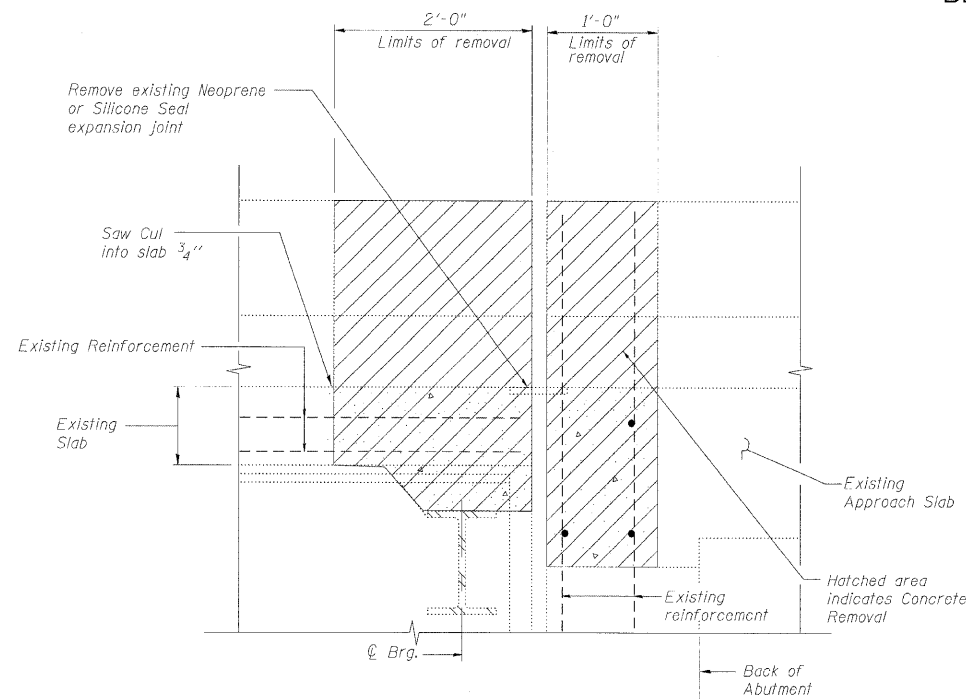
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312-666-0450 Job No. 10050

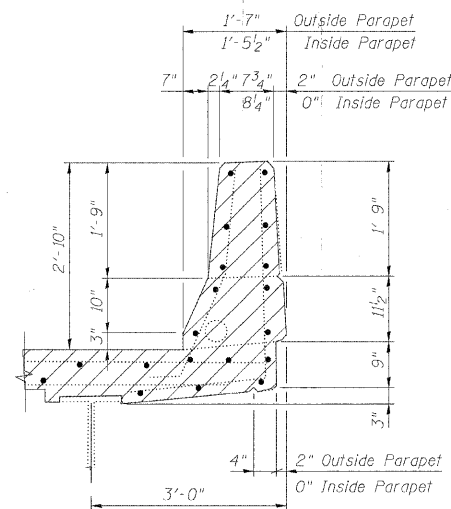
SHEET NO. 5 8 SHEETS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	2009-099 BR	COOK/DUPAGE	309	153
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT	CONTRACT NO. 60157	

**EXPANSION JOINT REPAIRS
STRUCTURE NO. 016-1135**

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



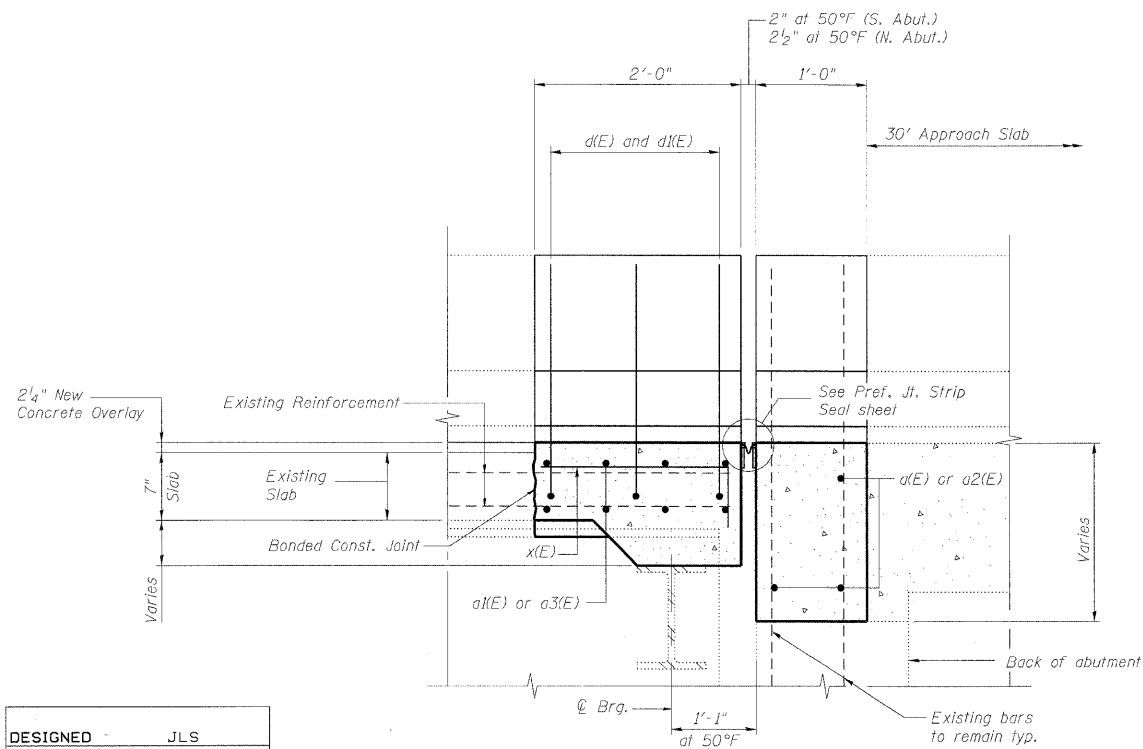
SECTION A-A



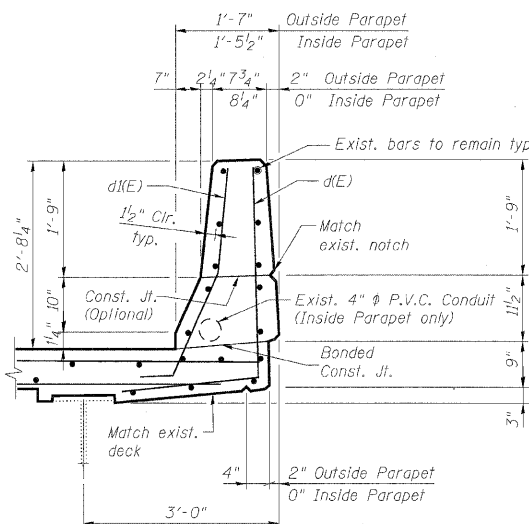
EXISTING PARAPET SECTION

Notes:

- Existing reinforcement bars extending into the concrete removal area shall be blast-cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be repaired or replaced with an approved bar splicer or anchorage system. Cost included with Concrete Removal.
- Existing reinforcement bars in the concrete removal area parallel to the expansion joints shall be removed.
- Removal and disposal of the existing expansion joints will not be paid for separately, but shall be included with the cost of Concrete Removal.
- If existing name plate falls within the limits of Concrete Removal, it shall be removed and reinstalled in its original location in accordance with IDOT Std. 515001. Cost included with Concrete Superstructure.
- If existing guardrail and/or end shoe fall within the limits of Concrete Removal, they shall be removed and reinstalled in their original location in accordance with District 1 Std. 5M-21. Cost included with Concrete Superstructure.
- The Contractor shall exercise extreme care with the existing conduits in sections of the parapet to be removed and to protect and support the conduit. The Contractor will be required to repair any damage done to the conduit to the satisfaction of the Engineer, at no additional cost to the Department. No splicing will be allowed to any cable damage resulting from this work, instead the Contractor will be required to repair the entire span of any damaged cable at no additional cost to the Department.
- Work this sheet with Expansion Joint Repairs sheet.



SECTION B-B



PROPOSED PARAPET SECTION

DESIGNED	JLS
CHECKED	AAY
DRAWN	VH
CHECKED	AAY

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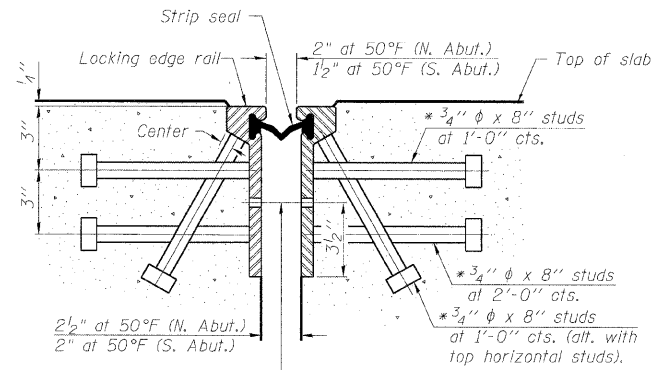
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EXPANSION JOINT DETAILS
STRUCTURE NO. 016-1135

SHEET NO. 6 8 SHEETS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	2009-099 BR	COOK/DUPAGE	309	154
FED. ROAD DIST. NO.			ILLINOIS	FED. AID PROJECT	
			CONTRACT NO. 60157		

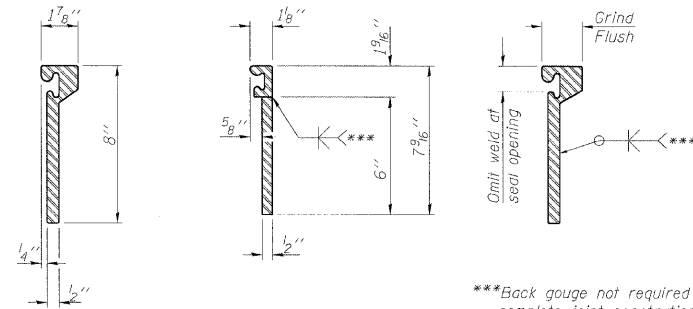
* Granular or solid flux filled headed studs conforming to Article 1006.32 of the Std. Specs., automatically end welded.

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DEPARTMENT OF TRANSPORTATION



7/16" ϕ holes at 4'-0" cts. for 3/8" ϕ bolts. All bolts shall be burned, sawed, or chipped off flush with the plates after forms are removed, typ.

SECTION THRU
ROLLED RAIL JOINT



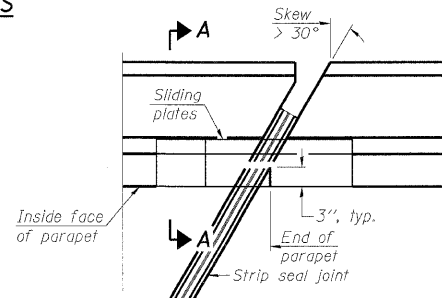
ROLLED
EXTRUDED RAIL WELDED RAIL

***Back gouge not required if complete joint penetration is verified by mock-up.

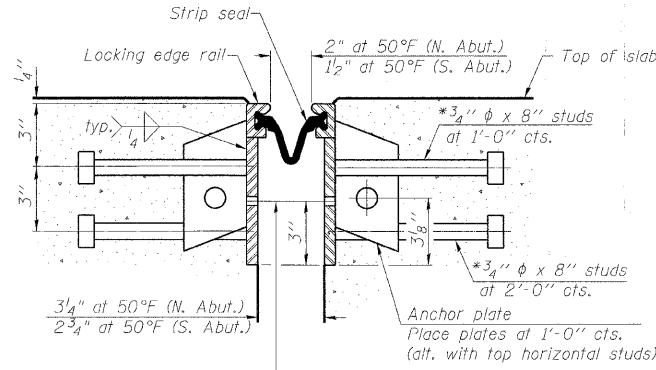
LOCKING EDGE
RAIL SPLICE

The inside of the locking edge rail groove shall be free of weld residue.

LOCKING EDGE RAILS

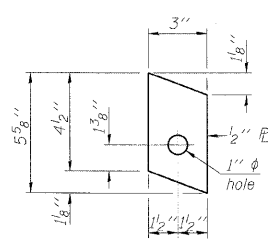


PLAN

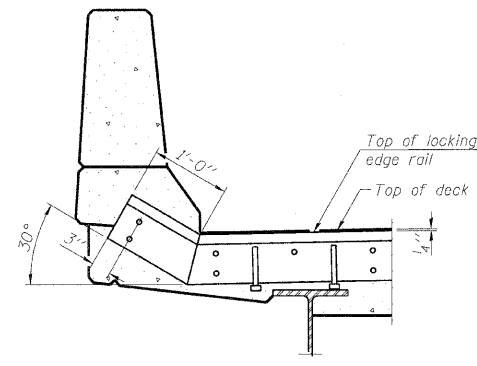


7/16" ϕ holes at 4'-0" cts. for 3/8" ϕ bolts. All bolts shall be burned, sawed, or chipped off flush with the plates after forms are removed, typ.

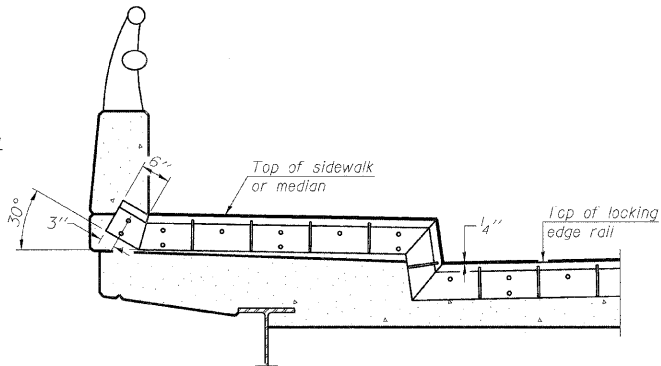
SECTION THRU
WELDED RAIL JOINT



ANCHOR PLATE
(for welded rail)



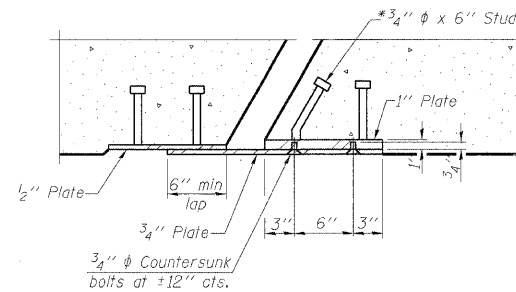
AT PARAPET



AT SIDEWALK OR MEDIAN

Shorter plates with a single row of studs at 12" cts. may be necessary on medians which are shallower than 9". See manufacturer's recommendation.

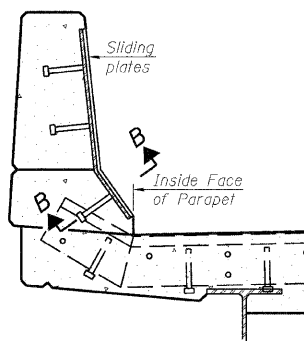
TYPICAL END TREATMENTS



SECTION B-B

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	114.0



SECTION A-A

POINT BLOCK DETAILS
(for skews > 30°)

DESIGNED -	TJJ
CHECKED -	AAY
DRAWN -	RMG
CHECKED -	AAY

EJ-SSJ

10-1-08

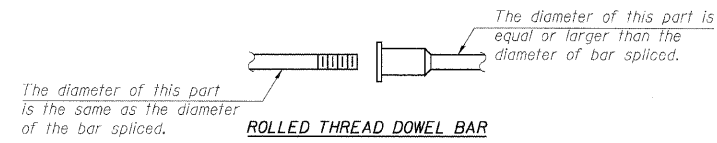
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312.565.0450 Job No. 10050

SHEET NO. 7 8 SHEETS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	2009-099 BR	COOK/DUPAGE	309	155
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT	CONTRACT NO. 60I57	

PREFORMED JOINT STRIP SEAL
STRUCTURE NO. 016-1135

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



ROLLED THREAD DOWEL BAR



** ONE PIECE

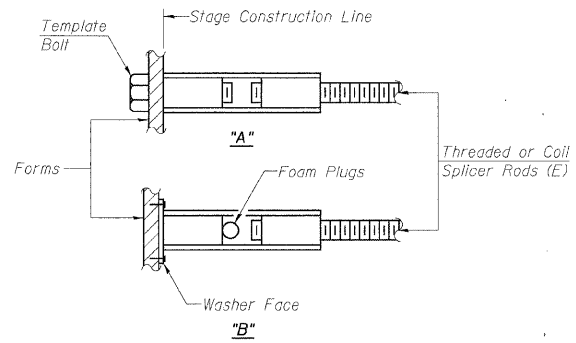
Wire Connector



WELDED SECTIONS

BAR SPLICER ASSEMBLY ALTERNATIVES

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



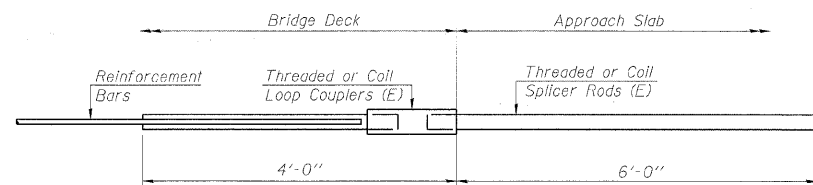
INSTALLATION AND SETTING METHODS

"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:

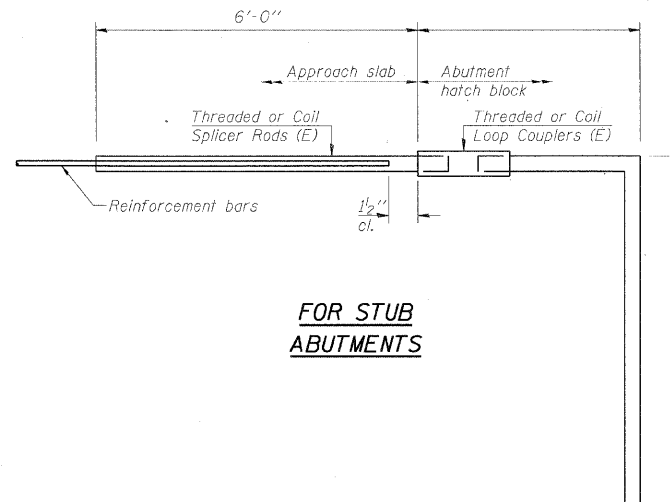
- ① Minimum Capacity (Tension in kips) = $1.25 \times f_y \times A_1$
 - ② Minimum *Pull-out Strength (Tension in kips) = $0.66 \times f_y \times A_1$
- Where f_y = Yield strength of lapped reinforcement bars in ksi.
 A_1 = Tensile stress area of lapped reinforcement bars.
* = 28 day concrete

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



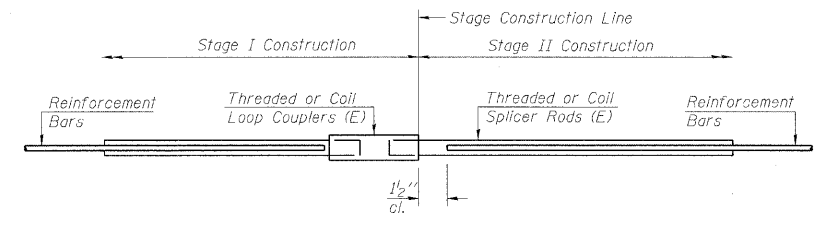
FOR INTEGRAL OR SEMI-INTEGRAL ABUTMENTS

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
#5	16	Deck
#6	6	Deck

DESIGNED -	JLS
CHECKED -	AAY
DRAWN -	RMG
CHECKED -	AAY

BSD-1

10-1-08

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SHEET NO. 8 8 SHEETS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	2009-099 BR	COOK/DUPAGE	309	156
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT	CONTRACT NO. 60I57	

**BAR SPLICER ASSEMBLY DETAILS
STRUCTURE NO. 016-1135**

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DEPARTMENT OF TRANSPORTATION

Existing Structure:
The structure is a five-span continuous non-composite wide flange steel structure with a 7.5-inch reinforced concrete deck with no overlay.
The original structure was built in 1952 as FAI-90 and is in Section 1984-082-R.
In 1985, the bridge was widened and redecked, expansion joints were reconstructed, and the superstructure was cleaned and painted. In 1998, the expansion joints were reconstructed, the deck and approach slabs were repaired, and the substructure was repaired.

Stage construction shall be utilized to maintain traffic during construction.

No salvage.

DESIGN SPECIFICATIONS

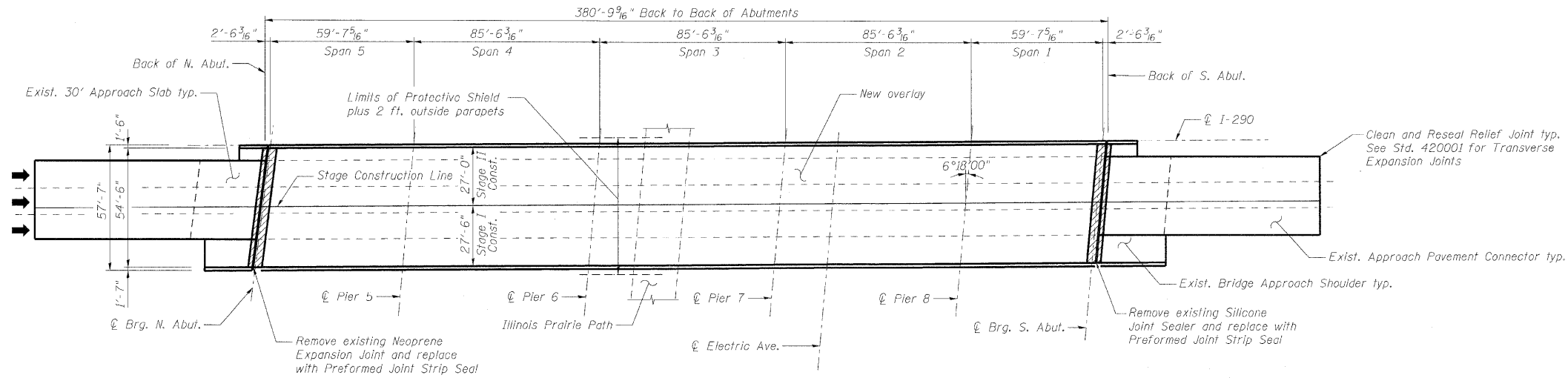
2002 AASHTO Standard Specifications
for Highway Bridges, 17th Edition

DESIGN STRESSES

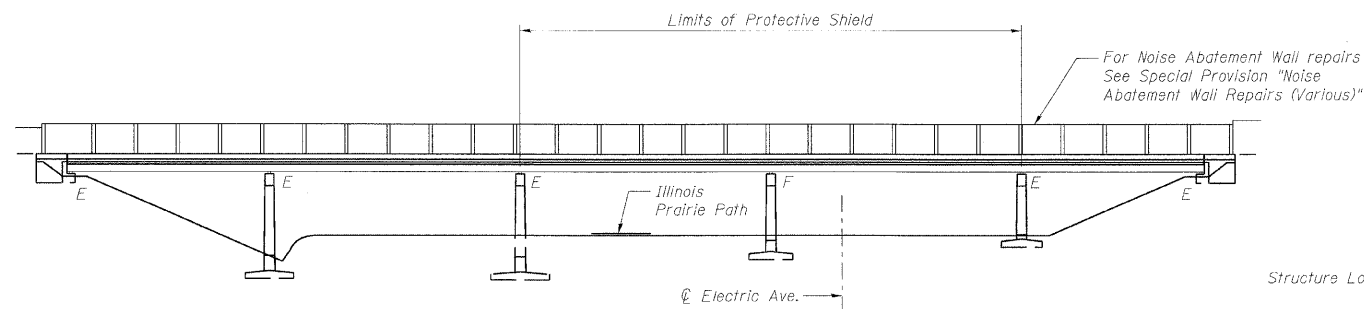
$f'_c = 3,500$ psi
 $f_y = 60,000$ psi

SCOPE OF WORK

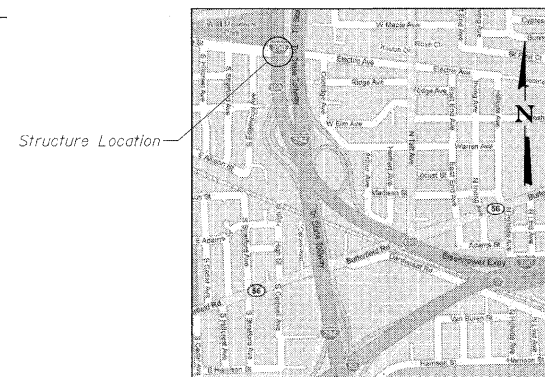
1. Bridge Deck Hydro-scarification.
2. Repair bridge deck.
3. Repair approach slab.
4. Reconstruct deck joints at each abutment with preformed joint strip seal.
5. Place new overlay.
6. Repair parapet with formed concrete repair.
7. Clean and reseal relief joints at the end of approach pavement connectors.
8. Apply concrete sealer to parapets, and abutment seats and backwalls.



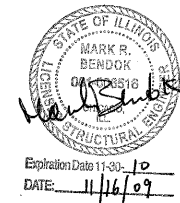
PLAN



ELEVATION



LOCATION SKETCH



**GENERAL PLAN AND ELEVATION
I-290 EB OVER ELECTRIC AVE.
AND PRAIRIE PATH
COOK COUNTY
STATION 439+80
STRUCTURE NO. 016-1134**

DESIGNED	TJJ
CHECKED	AAY
DRAWN	RMG
CHECKED	AAY

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SHEET NO. 1 8 SHEETS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	2009-099 BR	COOK/DUPAGE	309	157
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT	CONTRACT NO. 60I57	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

1. Reinforcement bars shall conform to the requirements of ASTM A 706 or 60. See Special Provisions.
2. Reinforcement bars designated (E) shall be epoxy coated.
3. 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.
4. Plan dimensions and details relative to existing plans are subject to nominal 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.
5. Concrete Sealer shall be applied to the parapets, abutment seats and abutment backwalls. All surfaces to be sealed shall be cleaned thoroughly prior to sealer application. Cost included with Concrete Sealer.
6. The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.
7. Stage construction shall be utilized to maintain traffic during construction.
8. The Contractor shall exercise care during removal of existing joints to ensure that the slab, beams and diaphragms' integrity will not be detrimentally impacted. The Contractor shall repair any damage(s) to the slab, beams and diaphragms caused by his operation as directed by the Engineer at no additional cost to the Department.
9. Protective Coat shall be applied to the new Latex Concrete Overlay.
10. Joint openings shall be adjusted according to Article 520.04 of the Std. Specs. when the deck is poured at an ambient temperature other than 50°F.

INDEX OF SHEETS

1. General Plan and Elevation
2. General Notes, Bill of Material and Index of Sheets
3. Stage Construction Details
4. Bridge Deck and Approach Slab Repairs
5. Expansion Joint Repairs
6. Expansion Joint Details
7. Preformed Joint Strip Seal
8. Bar Splicer Assembly Details

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Concrete Removal	Cu. Yd.	15.9		15.9
Protective Shield	Sq. Yd.	1,170		1,170
Concrete Superstructure	Cu. Yd.	17.2		17.2
Bridge Deck Grooving	Sq. Yd.	2,560		2,560
Protective Coat	Sq. Yd.	2,670		2,670
Reinforcement Bars, Epoxy Coated	Pound	1,850		1,850
Bar Splicers	Each	22		22
Preformed Joint Strip Seal	Foot	114.0		114.0
Concrete Sealer	Sq. Ft.	3,254	604	3,858
Bridge Deck Latex Concrete Overlay, 2 1/4"	Sq. Yd.	2,645		2,645
Structural Repair of Concrete (Depth Greater than 5 Inches)	Sq. Ft.	6		6
Structural Repair of Concrete (Depth Equal to or Less than 5 Inches)	Sq. Ft.	6		6
Bridge Deck Hydro-Scarification, 1/2"	Sq. Yd.	2,645		2,645
Cleaning and Painting Exposed Rebar (Special)	Sq. Ft.	60		60
Clean and Reseal Relief Joint	Foot	72.0		72.0

**GENERAL NOTES, BILL OF MATERIAL
AND INDEX OF SHEETS
STRUCTURE NO. 016-1134**

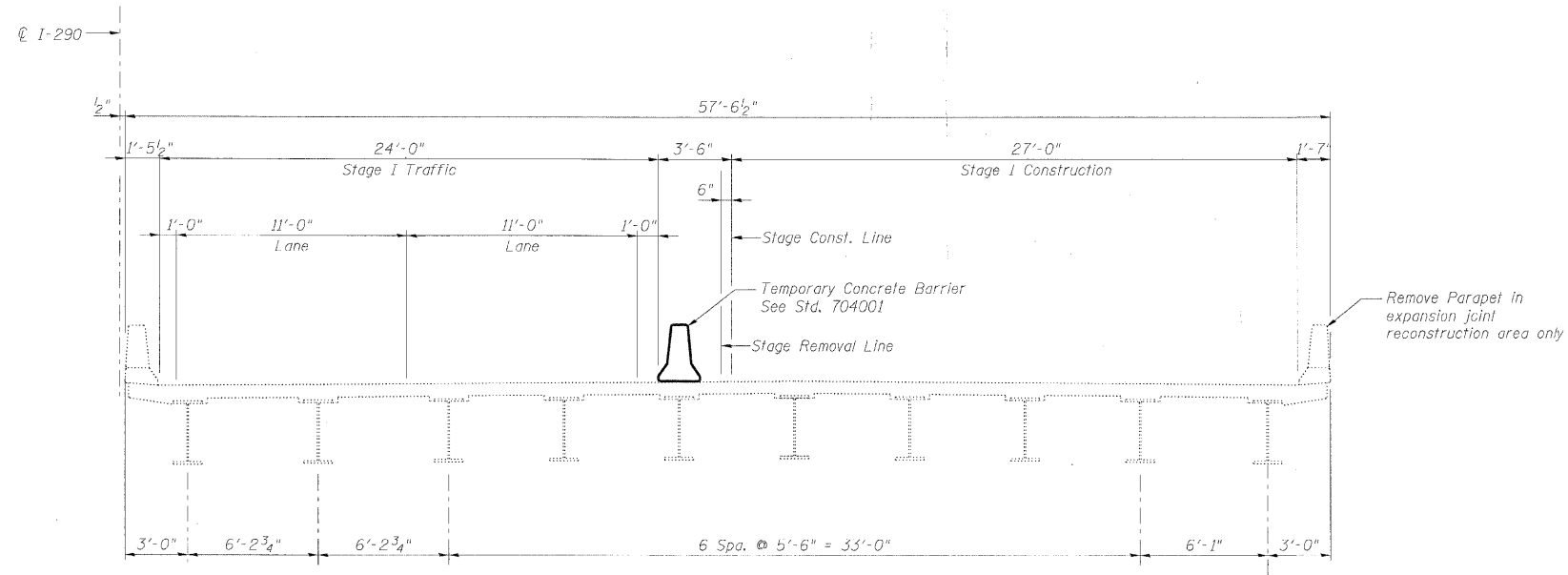
DESIGNED -	TJJ
CHECKED -	AAV
DRAWN -	RMG
CHECKED -	AAV

benesch

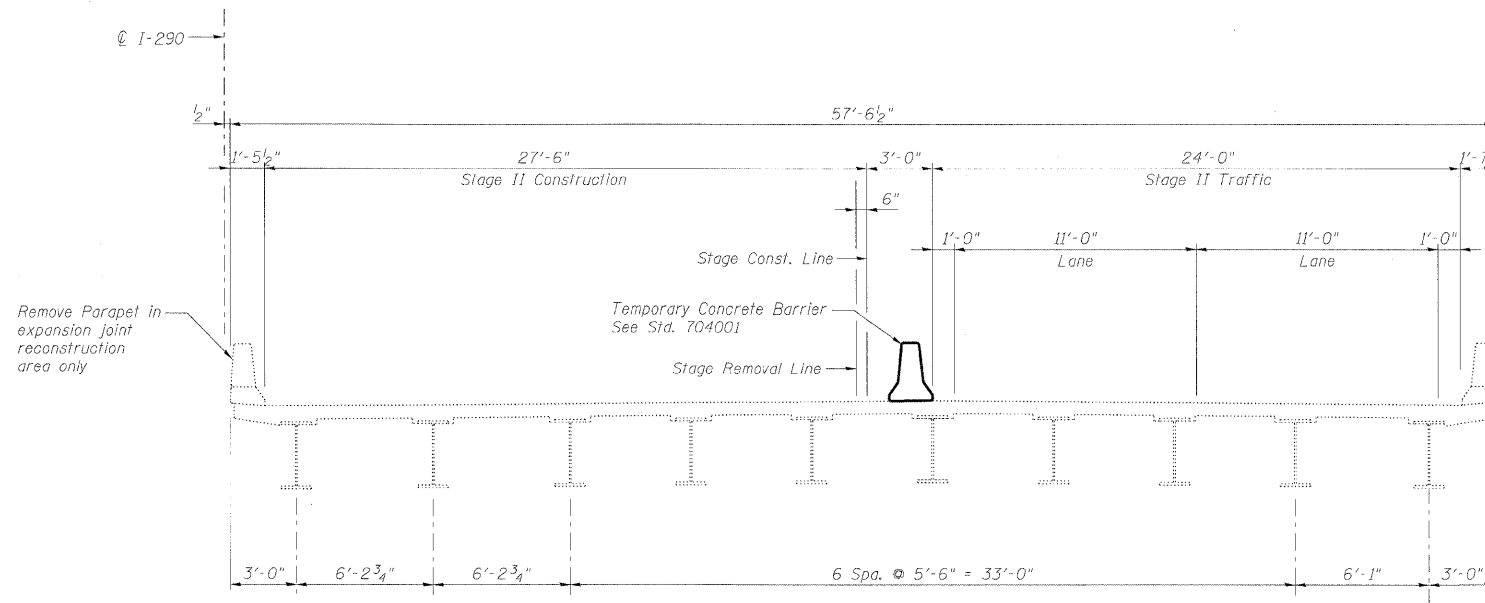
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312-565-0450 Job No. 10050

SHEET NO. 2	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	2009-099 BR	COOK/DUPAGE	309	158
8 SHEETS	CONTRACT NO. 60157				
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



STAGE I CROSS SECTION
(Looking East)



STAGE II CROSS SECTION
(Looking East)

Note:

For quantity of Temporary Concrete Barrier, see Roadway Plans.

DESIGNED -	MFB
CHECKED -	MAC
DRAWN -	VH
CHECKED -	AAY

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STAGE CONSTRUCTION DETAILS
STRUCTURE NO. 016-1134

SHEET NO. 3 8 SHEETS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	2009-099 BR	COOK/DUPAGE	309	159
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT		
CONTRACT NO. 60157					

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

*See Scarification & Overlay
Transition Detail on this sheet for
limits of the 30' Approach Slab.

BILL OF MATERIAL

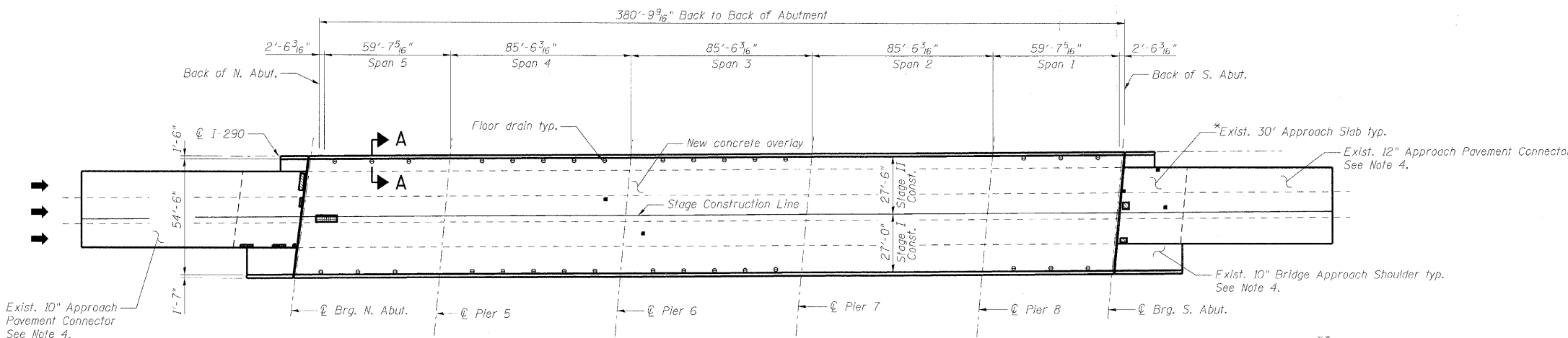
SYMBOL	ITEM	UNIT	QUANTITY
	Deck Slab Repair (Partial)	Sq. Yd.	5.0 ▲
	Cleaning & Painting Exposed Rebar (Special)	Sq. Ft.	60
	Approach Slab Repair (Partial Depth)	Sq. Yd.	11.4 ▲
	Structural Repair of Concrete (Depth Equal to or Less than 5 Inches)	Sq. Ft.	6
	Structural Repair of Concrete (Depth Greater than 5 Inches)	Sq. Ft.	6
	Protective Shield	Sq. Yd.	1,170
	Bridge Deck Grooving	Sq. Yd.	2,560
	Protective Coat	Sq. Yd.	2,670
	Bridge Deck Latex Concrete Overlay, 2 1/4"	Sq. Yd.	2,645
	Bridge Deck Hydro-Scarification, 1/2"	Sq. Yd.	2,645

▲ For information only to assist the Contractor in bidding.
See Special Provisions for "Bridge Deck Latex Concrete Overlay".

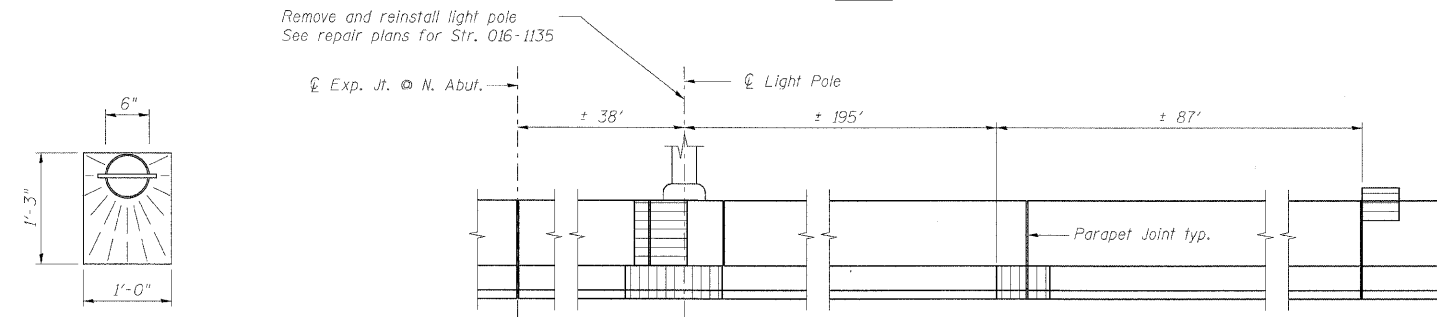
Notes:

- Deck and approach slab repair areas are estimated based on visual inspection completed in June 2009. Actual repair areas and locations shall be determined by the Engineer and shown on As-Built plans.
- Protective Shield, required for deck slab and/or parapet repairs, shall be installed according to Article 501.03 of the Standard Specifications. For limits of Protective Shield, see General Plan and Elevation.
- Deck drains (downspouts, floor drains, and scuppers) shall be cleaned prior to placement of the Latex Concrete Overlay. Cost of cleaning the deck drains is included in "Bridge Deck Hydro-Scarification, 1/2".
- The Engineer shall determine the type and quantity of Class A patching and the quantity of Mixture for Cracks, Joints and Flangeways. Estimated quantities are included in the overall Summary of Quantities in Roadway Plans.
- Caps caused by distress around floor drains shall be filled with epoxy as specified in the Special Provision "Epoxy Injection". Cost included with "Bridge Deck Latex Concrete Overlay, 2 1/4".
- Cost of new overlay on approach slab transition is included with Bridge Deck Latex Concrete Overlay, 2 1/4".

**BRIDGE DECK AND APPROACH
SLAB REPAIRS
STRUCTURE NO. 016-1134**

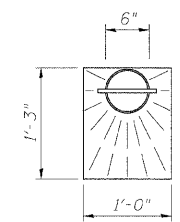


PLAN

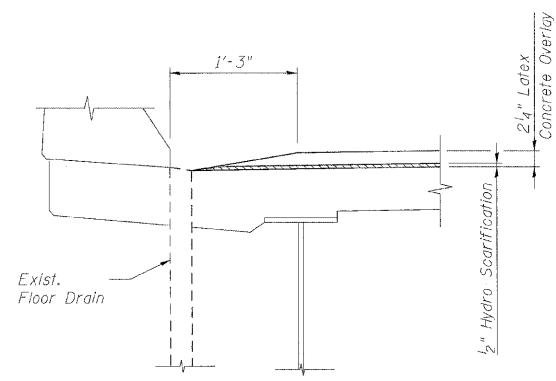


INSIDE ELEVATION - INSIDE PARAPET

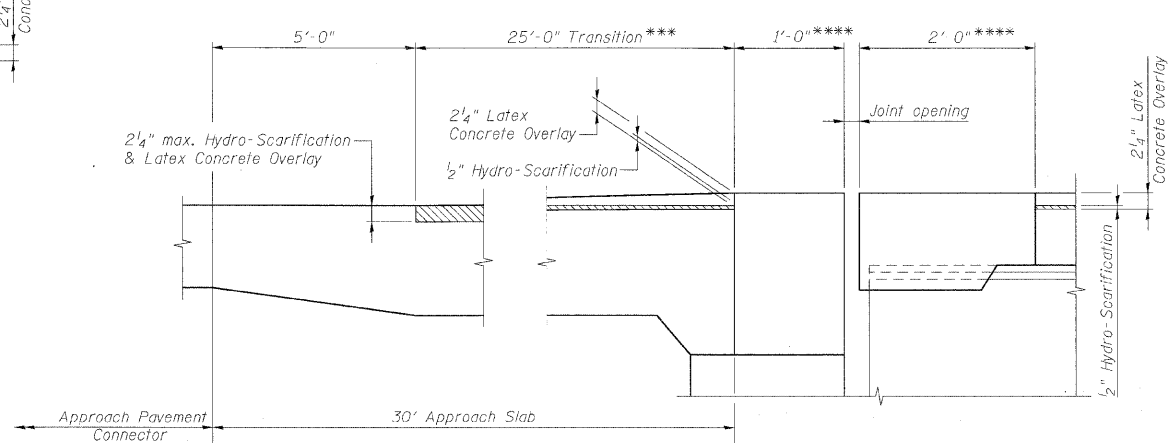
FLOOR DRAIN PLAN



SECTION A-A



CONCRETE OVERLAY AT FLOOR DRAIN

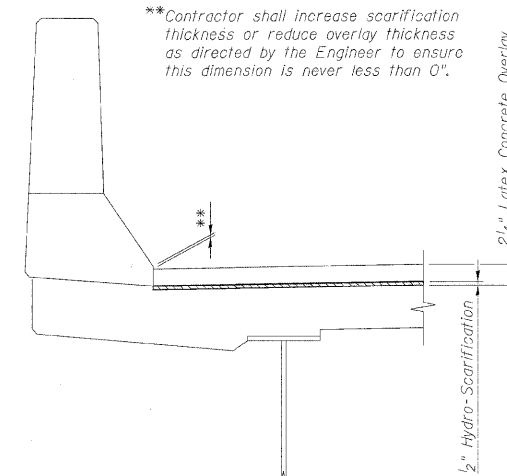


SCARIFICATION & OVERLAY TRANSITION DETAIL

***Cost of increased hydro-scarification depth over length of transition shall be included with Bridge Deck Hydro-Scarification, 1/2".

****Construct new concrete at joints to same lines and grades as new concrete overlay at these locations.

**SCARIFICATION & OVERLAY
DETAIL AT PARAPET**



DESIGNED -	TJJ
CHECKED -	AAV
DRAWN -	RMG
CHECKED -	AAV

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312-955-0450 Job No. 10050

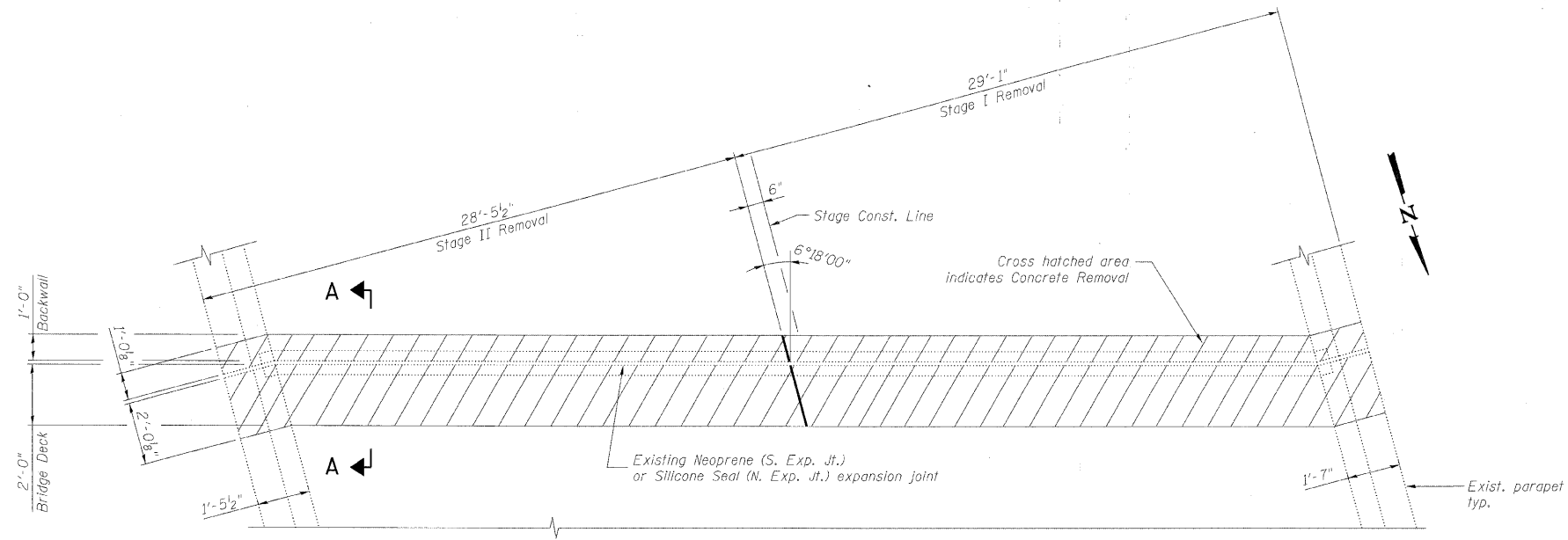
SHEET NO. 4 8 SHEETS	F.A.I. RTE. 290	SECTION 2009-099 BR	COUNTY COOK/DUPAGE	TOTAL SHEETS 309	SHEET NO. 160
	CONTRACT NO. 60157				
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT			

x:\100000s\10050\engineering\documents\contract\1\SN_016_1134_Electr-ic-Ave 1134-60051-004-deck-repair.dgn

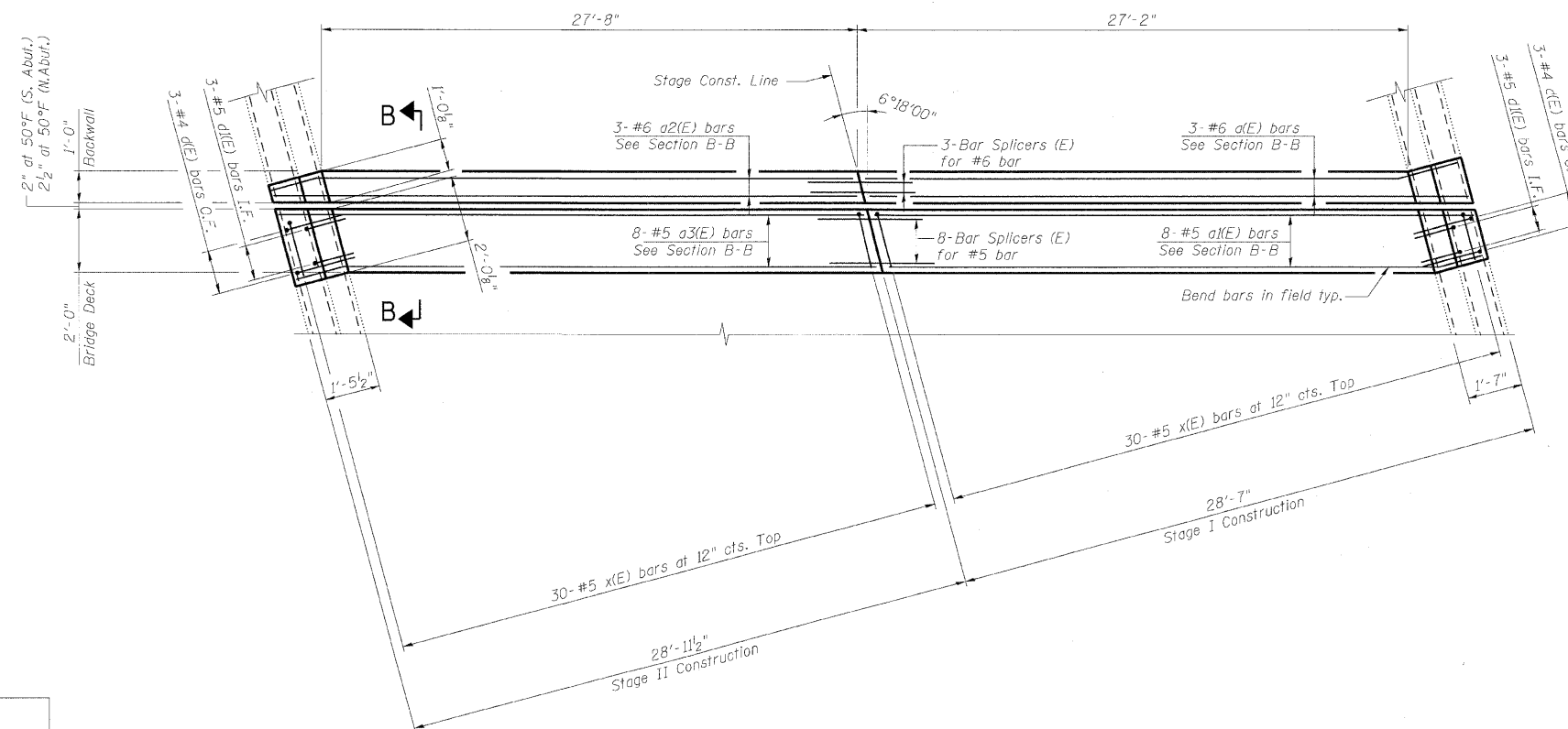
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11/12/2009

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DEPARTMENT OF TRANSPORTATION



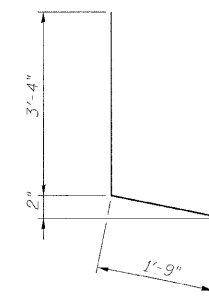
EXISTING PARTIAL PLAN AT SOUTH ABUTMENT
(Opposite Hand for North Abutment)



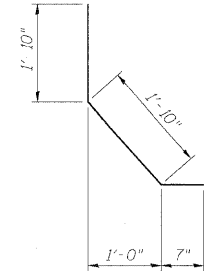
PROPOSED PARTIAL PLAN AT SOUTH ABUTMENT
(Opposite Hand for North Abutment)

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	6	#6	28'-5"	—
a1(E)	16	#5	28'-5"	—
a2(E)	6	#6	28'-10"	—
a3(E)	16	#5	28'-10"	—
d(E)	12	#4	5'-1"	┌
d1(E)	12	#5	1'-3"	└
x(E)	120	#5	2'-3"	┌
Item	Unit	Total		
Concrete Removal	Cu. Yd.	15.9		
Concrete Superstructure	Cu. Yd.	17.2		
Reinforcement Bars, Epoxy Coated	Pound	1,850		



BAR d(E)



BAR d1(E)



BAR x(E)

Notes:

1. I.F. denotes Inside Face.
O.F. denotes Outside Face.
2. Work this sheet with Expansion Joint Details sheet and Bar Splicer Assembly Details sheet.
3. x(E) bar spacing measured along skew.

DESIGNED -	JLS
CHECKED -	AAY
DRAWN -	VH
CHECKED -	AAY

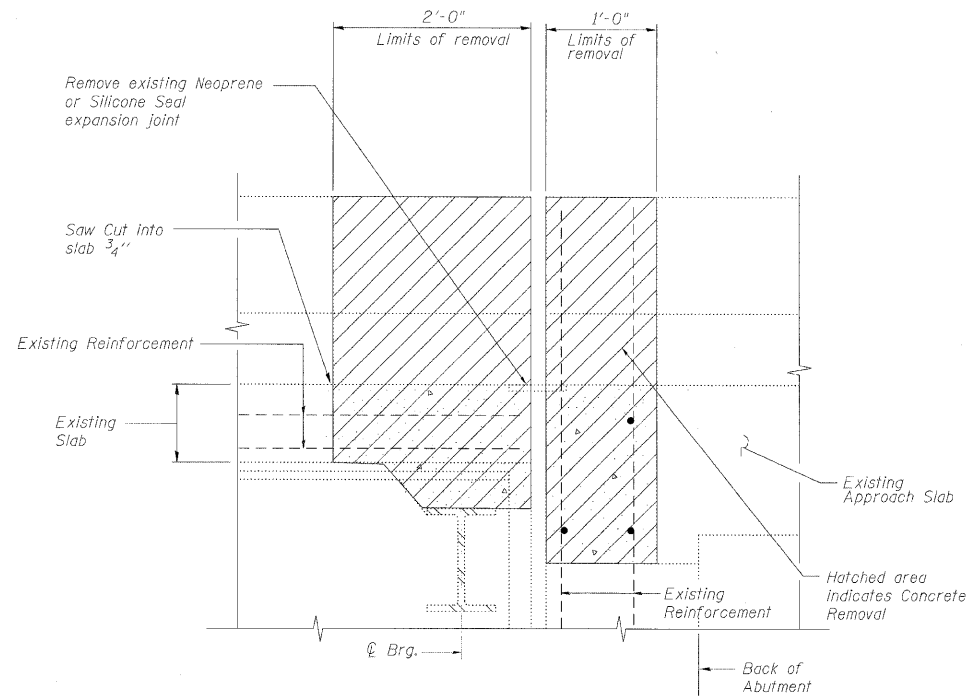
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Chicago, Illinois 60601
312-565-0450 Job No. 10050

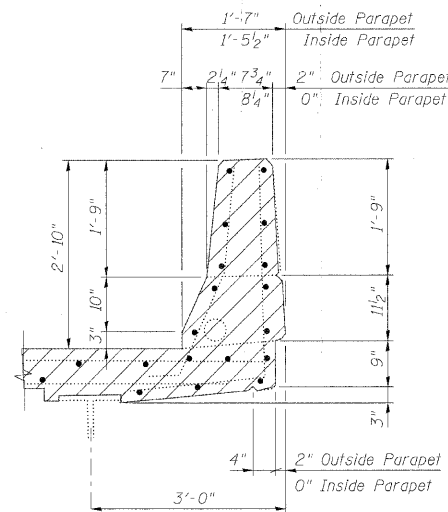
SHEET NO. 5 8 SHEETS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	2009-099 BR	COOK/DUPAGE	309	161
FED. ROAD DIST. NO.			ILLINOIS	CONTRACT NO. 60157	
FED. AID PROJECT					

**EXPANSION JOINT REPAIRS
STRUCTURE NO. 016-1134**

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



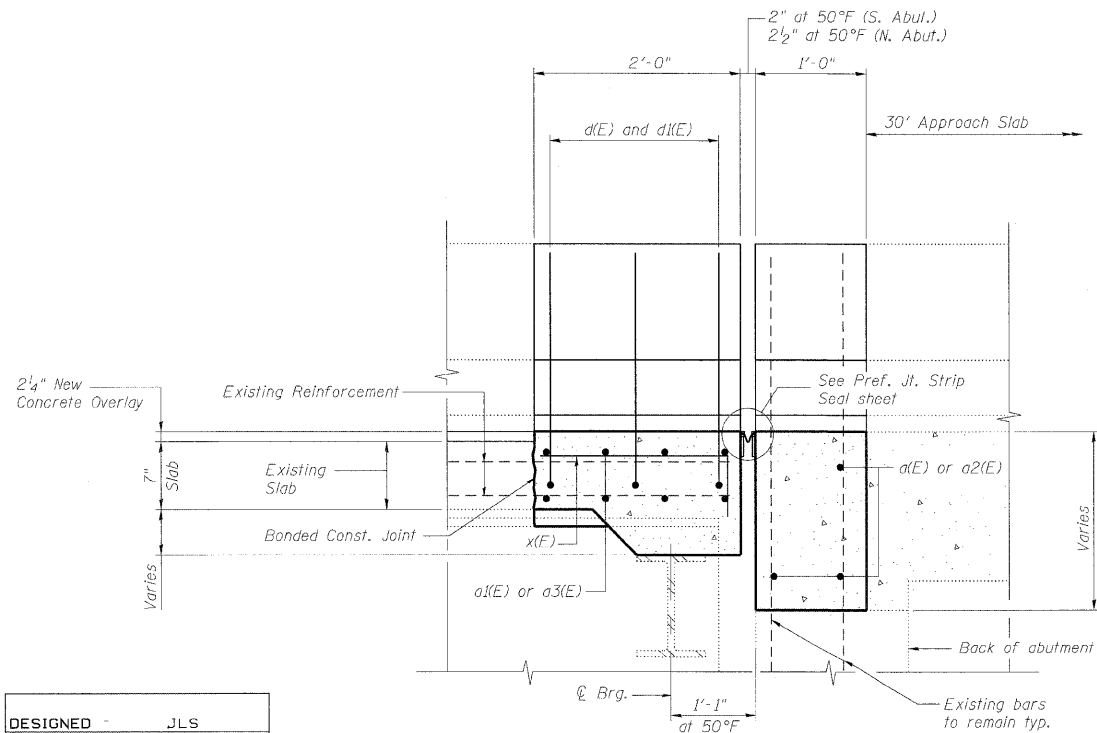
SECTION A-A



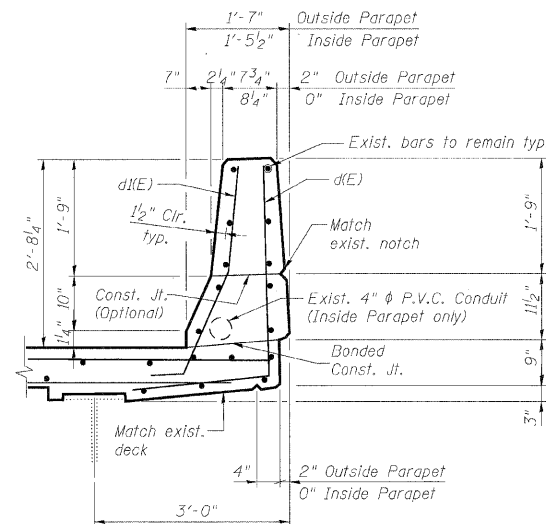
EXISTING PARAPET SECTION

Notes:

- Existing reinforcement bars extending into the concrete removal area shall be blast-cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be repaired or replaced with an approved bar splicer or anchorage system. Cost included with Concrete Removal.
- Existing reinforcement bars in the concrete removal area parallel to the expansion joints shall be removed.
- Removal and disposal of the existing expansion joints will not be paid for separately, but shall be included with the cost of Concrete Removal.
- If existing name plate falls within the limits of Concrete Removal, it shall be removed and reinstalled in its original location in accordance with IDOT Std. 515001. Cost included with Concrete Superstructure.
- If existing guardrail and/or end shoe fall within the limits of Concrete Removal, they shall be removed and reinstalled in their original location in accordance with District 1 Std. BM-21. Cost Included with Concrete Superstructure.
- The Contractor shall exercise extreme care with the existing conduits in sections of the parapet to be removed and to protect and support the conduit. The Contractor will be required to repair any damage done to the conduit to the satisfaction of the Engineer, at no additional cost to the Department. No splicing will be allowed to any cable damage resulting from this work, instead the Contractor will be required to repair the entire span of any damaged cable at no additional cost to the Department.
- Existing noise wall to remain. Care shall be taken not to damage the noise wall during parapet removal and reconstruction. Any damage to the noise walls shall be repaired at no additional cost to the Department. If a noise wall connection falls within the limits of concrete removal, then the connection shall be removed and reinstalled and noise wall temporarily supported to the satisfaction of the Engineer. Cost included in Concrete Removal.
- Work this sheet with Expansion Joint Repairs sheet.



SECTION B-B



PROPOSED PARAPET SECTION

DESIGNED	JLS
CHECKED	AAY
DRAWN	VH
CHECKED	AAY

EXPANSION JOINT DETAILS
STRUCTURE NO. 016-1134

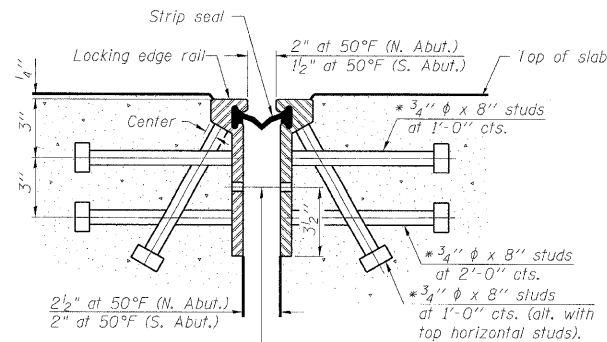
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Chicago, Illinois 60601
312-565-0450 Job No. 10050

SHEET NO. 6	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	2009-099 BR	COOK/DUPAGE	309	162
8 SHEETS	CONTRACT NO. 60157				
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

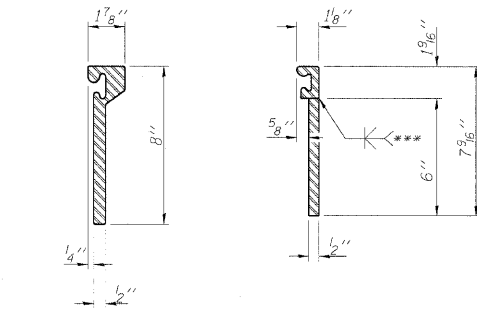
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

* Granular or solid flux filled headed studs conforming to Article 1005.32 of the Std. Specs., automatically end welded.

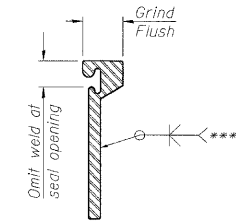


7/16" ϕ holes at 4'-0" cts. for 3/8" ϕ bolts. All bolts shall be burned, sawed, or chipped off flush with the plates after forms are removed, typ.

SECTION THRU
ROLLED RAIL JOINT



ROLLED
EXTRUDED RAIL WELDED RAIL

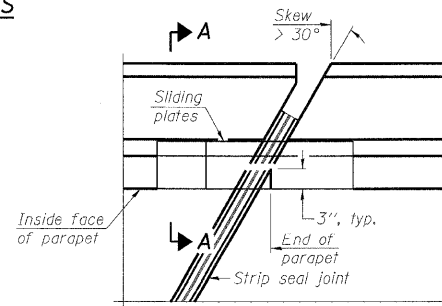


***Back gouge not required if complete joint penetration is verified by mock-up.

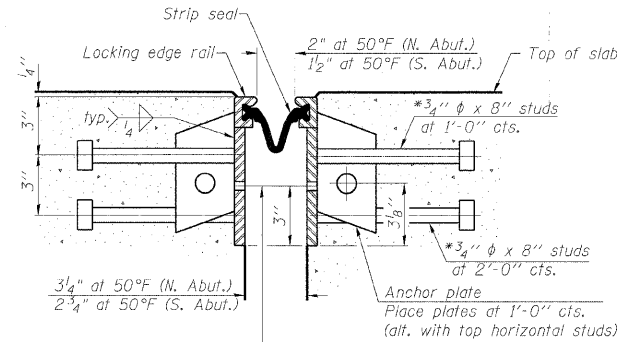
LOCKING EDGE
RAIL SPLICE

The inside of the locking edge rail groove shall be free of weld residue.

LOCKING EDGE RAILS

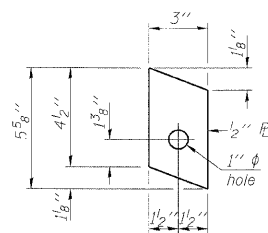


PLAN

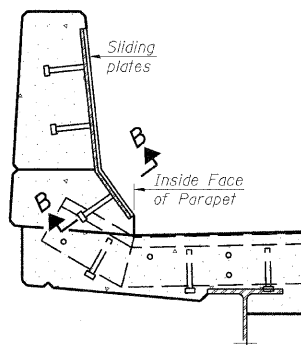


7/16" ϕ holes at 4'-0" cts. for 3/8" ϕ bolts. All bolts shall be burned, sawed, or chipped off flush with the plates after forms are removed, typ.

SECTION THRU
WELDED RAIL JOINT



ANCHOR PLATE
(for welded rail)



SECTION A-A

POINT BLOCK DETAILS
(for skews > 30°)

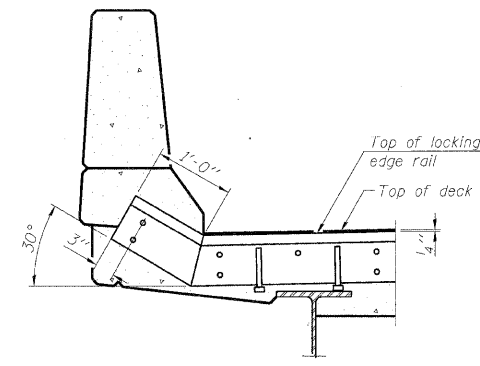
Notes:

The strip seal shall be made continuous and shall have a minimum thickness of 1/4". The configuration of the strip seal shall match the configuration of the Locking Edge Rails. Open or "webbed" strip seal gland configurations are not permitted. The gland shall be sized for a maximum rated movement of 4 inches.

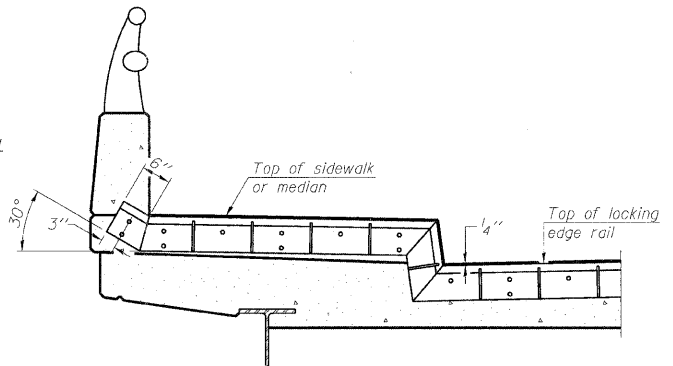
The height and thickness of the Locking Edge Rails shown are minimum dimensions. The actual configuration of the Locking Edge Rails and matching strip seal may vary from manufacturer to manufacturer. Flanged edge rails will not be allowed. Locking Edge Rails may be spliced at slope discontinuities and stage construction joints.

The manufacturer's recommended installation methods shall be followed. The joint opening and deck dimensions detailed on the superstructure are based on a rolled rail expansion joint. If the Contractor elects to use the welded rail expansion joint, the opening and deck dimensions shall be modified according to the dimensions detailed on this sheet. Required modifications shall be made at no additional cost to the State.

All steel components shall be galvanized after fabrication according to Article 520.03 of the Standard Specifications.



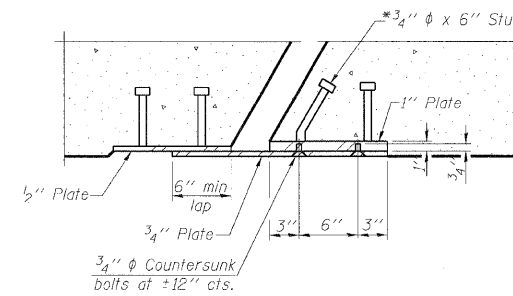
AT PARAPET



AT SIDEWALK OR MEDIAN

Shorter plates with a single row of studs at 12" cts. may be necessary on medians which are shallower than 9". See manufacturer's recommendation.

TYPICAL END TREATMENTS



SECTION B-B

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	114.0

DESIGNED	TJJ
CHECKED	AAY
DRAWN	RMG
CHECKED	AAY

EJ-SSJ

10-1-08

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SHEET NO. 7	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	2009-099 BR	COOK/DUPAGE	309	163
8 SHEETS		CONTRACT NO. 60157			
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT			

PREFORMED JOINT STRIP SEAL
STRUCTURE NO. 016-1134

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11/12/2009

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

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

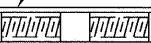
The diameter of this part is the same as the diameter of the bar spliced.

ROLLED THREAD DOWEL BAR



** ONE PIECE

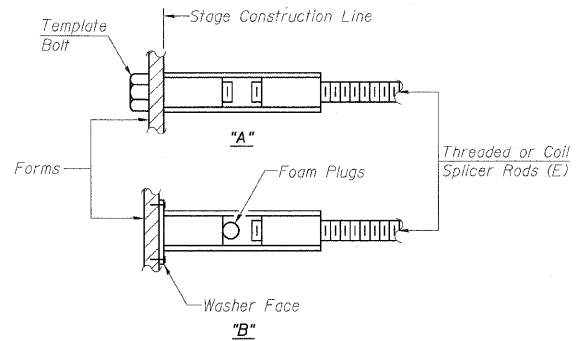
Wire Connector



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

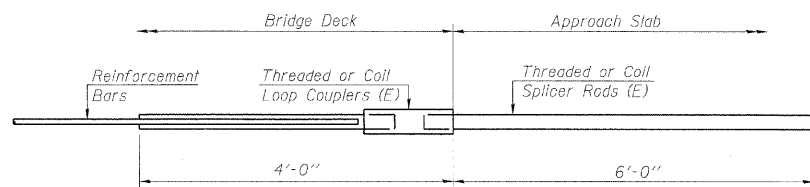
"A": Set bar splicer assembly by means of a template bolt.
"B": Set bar splicer assembly by nailing to wood forms or cementing to steel forms.
(E) : Indicates epoxy coating.

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:

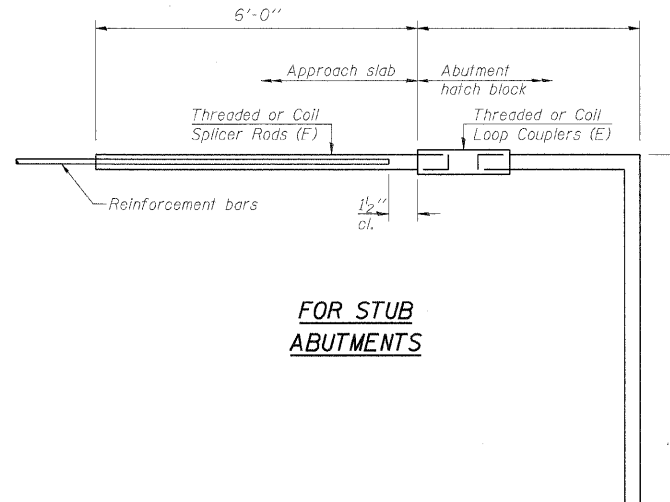
- ① Minimum Capacity = $1.25 \times f_y \times A_t$
(Tension in kips)
 - ② Minimum *Pull-out Strength = $0.66 \times f_y \times A_t$
(Tension in kips)
- Where f_y = Yield strength of lapped reinforcement bars in ksi.
 A_t = Tensile stress area of lapped reinforcement bars.
* = 28 day concrete

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



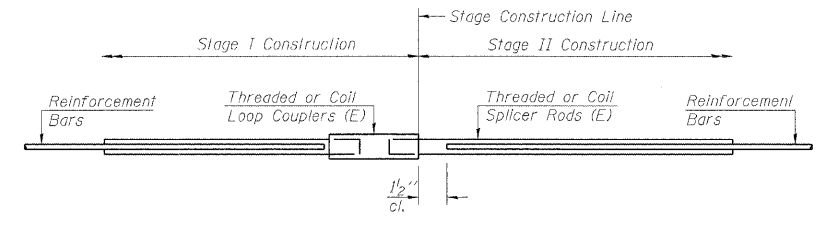
FOR INTEGRAL OR SEMI-INTEGRAL ABUTMENTS

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
#5	16	Deck
#6	6	Deck

DESIGNED -	JLS
CHECKED -	AAY
DRAWN -	RMG
CHECKED -	AAY

BSD-1

10-1-08

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SHEET NO. 8 8 SHEETS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	2009-099 BR	COOK/DUPAGE	309	164
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT	CONTRACT NO. 60157	

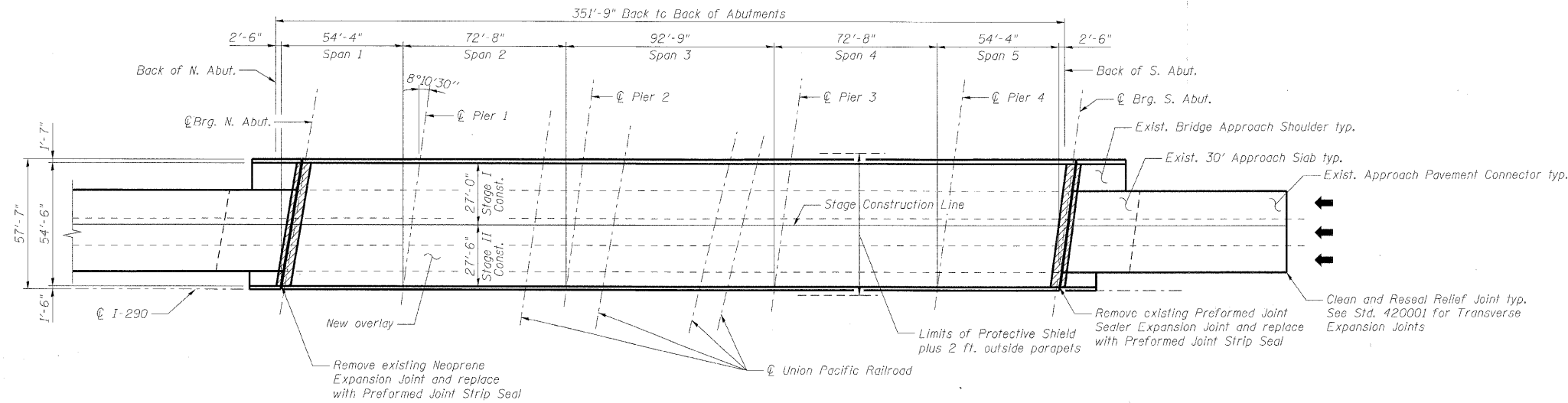
**BAR SPLICER ASSEMBLY DETAILS
STRUCTURE NO. 016-1134**

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

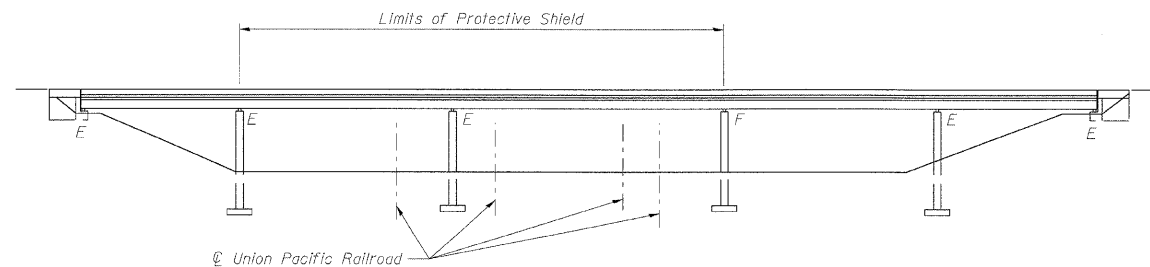
Existing Structure:
The structure is a five-span continuous steel structure with a 7.5-inch reinforced concrete deck with no overlay. The original structure was built in 1958 and is in Section (100 & 100-1) R-84. In 1985, the bridge was widened and redecked, expansion joints were reconstructed, bearings were replaced, and the superstructure was cleaned and painted. In 1998, the expansion joints were reconstructed and approach slabs were repaired. In 2002, the crashwall was modified.

Stage construction shall be utilized to maintain traffic during construction.

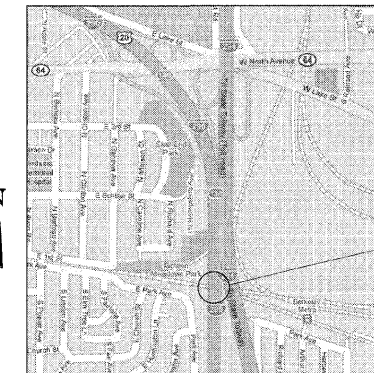
No salvage.



PLAN



ELEVATION



LOCATION SKETCH

DESIGN SPECIFICATIONS

2002 AASHTO Standard Specifications for Highway Bridges, 17th Edition

DESIGN STRESSES

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

SCOPE OF WORK

1. Bridge Deck Hydro-scarification.
2. Repair bridge deck.
3. Repair approach slab.
4. Reconstruct deck joints at each abutment with preformed joint strip seal.
5. Place new overlay.
6. Repair parapet with formed concrete repair.
7. Repair slope wall at north abutment.
8. Clean and reseal relief joints at the end of approach pavement connectors.
9. Apply concrete sealer to parapets, and abutment seats and backwalls.



Expiration Date 11-30-10
DATE: 11/16/09

GENERAL PLAN AND ELEVATION
I-290 WB OVER UNION PACIFIC
RAILROAD (SOUTH)
COOK COUNTY
STATION 387+09
STRUCTURE NO. 016-1132

DESIGNED -	TJJ
CHECKED -	AAY
DRAWN -	RMG
CHECKED -	AAY

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312-565-0450 Job No. 10050

SHEET NO. 1 8 SHEETS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	2009-099 BR	COOK/DUPAGE	309	165
FED. ROAD DIST. NO.			ILLINOIS	FED. AID PROJECT	
			CONTRACT NO. 60157		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

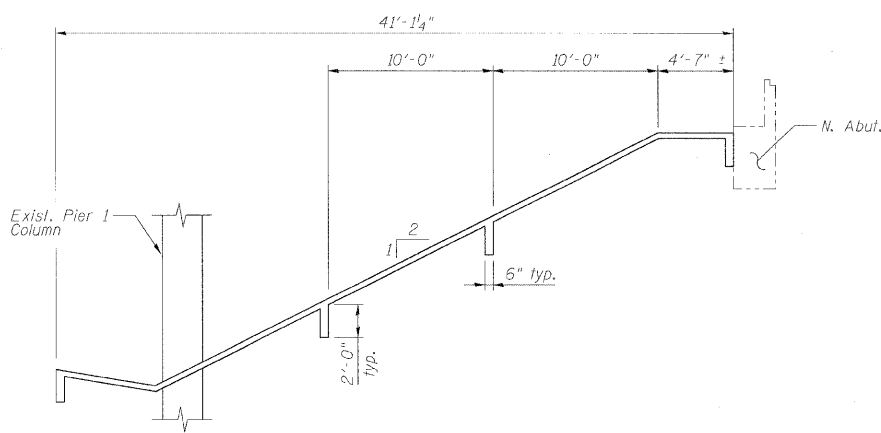
- Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60. See Special Provisions.
- Reinforcement bars designated (E) shall be epoxy coated.
- Prior to pouring the new concrete deck, all heavy or loose rust, loose mill scale, and other loose or potentially detrimental foreign material 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.
- Plan dimensions and details relative to existing plans are subject to nominal 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.
- Concrete Sealer shall be applied to the parapets, abutment seats and abutment backwalls. All surfaces to be sealed shall be cleaned thoroughly prior to sealer application. Cost included with Concrete Sealer.
- The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.
- Stage construction shall be utilized to maintain traffic during construction.
- The Contractor shall exercise care during removal of existing joints to ensure that the slab, beams and diaphragms' integrity will not be detrimentally impacted. The Contractor shall repair any damage(s) to the slab, beams and diaphragms caused by his operation as directed by the Engineer at no additional cost to the Department.
- Protective Coat shall be applied to the new Latex Concrete Overlay.
- Joint openings shall be adjusted according to Article 520.04 of the Std. Specs. when the deck is poured at an ambient temperature other than 50°F.

INDEX OF SHEETS

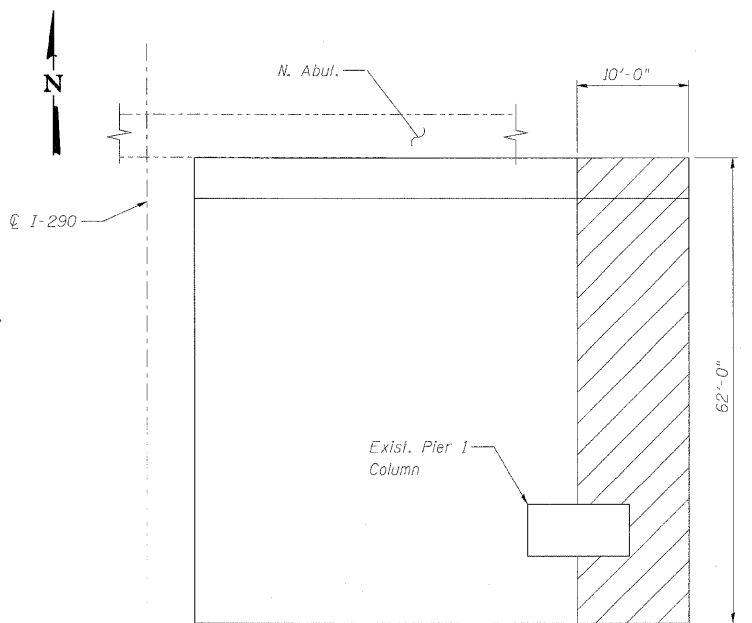
- General Plan and Elevation
- General Notes, Bill of Material and Index of Sheets
- Stage Construction Details
- Bridge Deck and Approach Slab Repairs
- Expansion Joint Repairs
- Expansion Joint Details
- Preformed Joint Strip Seal
- Bar Splicer Assembly Details

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Porous Granular Embankment	Cu. Yd.		23	23
Concrete Removal	Cu. Yd.	19.8		19.8
Slope Wall Removal	Sq. Yd.		69	69
Protective Shield	Sq. Yd.	1,132		1,132
Concrete Superstructure	Cu. Yd.	21.5		21.5
Bridge Deck Grooving	Sq. Yd.	2,391		2,391
Protective Coat	Sq. Yd.	2,494		2,494
Reinforcement Bars, Epoxy Coated	Pound	1,860		1,860
Bar Splicers	Each	22		22
Slope Wall 4 inch	Sq. Yd.		69	69
Preformed Joint Strip Seal	Foot	114.5		114.5
Concrete Sealer	Sq. Ft.	3,039	602	3,641
Bridge Deck Latex Concrete Overlay, 2 1/4"	Sq. Yd.	2,469		2,469
Structural Repair of Concrete (Depth Equal to or Less than 5 Inches)	Sq. Ft.	4		4
Bridge Deck Hydro-Scarification, 1/2"	Sq. Yd.	2,469		2,469
Clean and Reseal Relief Joint	Foot	72.0		72.0



SECTION THRU SLOPEWALL



PLAN - SLOPE WALL REPAIR

Slope wall shall be reinforced with welded wire fabric, 6 in. x 6 in. - W4.0 x W4.0, weighing 58 lbs. per 100 sq. ft.

Existing welded wire fabric to be cleaned by sandblasting to gray metal and incorporated into new construction.

Existing and new welded wire fabrics should overlap at least 5".

LEGEND



Remove and Replace Slopewall, 1' Deep Void under Slopewall to be filled with Porous Granular Embankment.

DESIGNED -	TJJ
CHECKED -	AAY
DRAWN -	RMG
CHECKED -	AAY

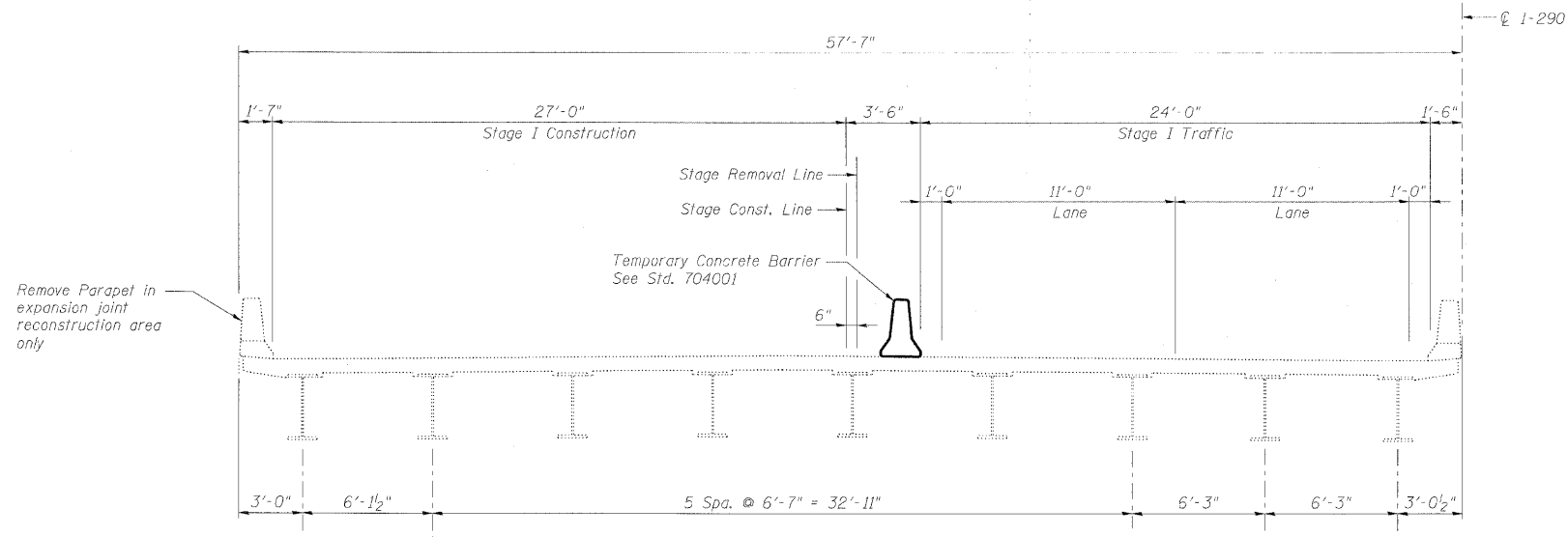
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Chicago, Illinois 60601
312-565-0450 Job No. 10050

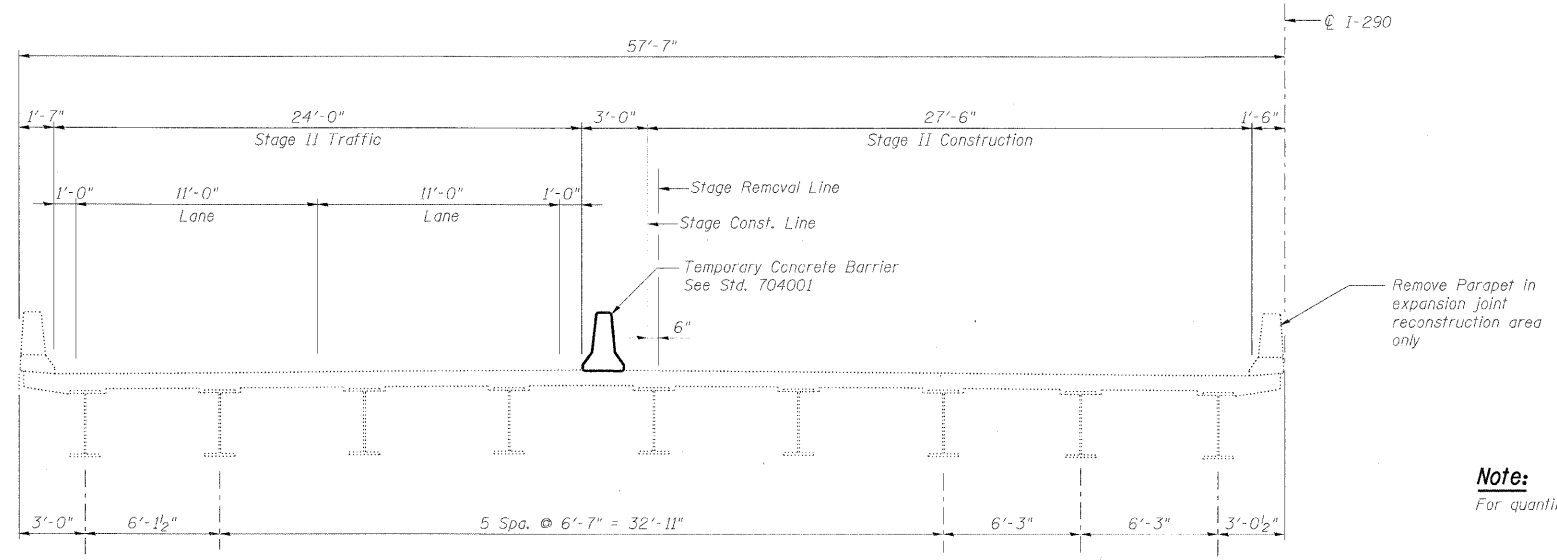
**GENERAL NOTES, BILL OF MATERIAL
AND INDEX OF SHEETS
STRUCTURE NO. 016-1132**

SHEET NO. 2 8 SHEETS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	2009-099 BR	COOK/DUPAGE	309	166
FED. ROAD DIST. NO.			ILLINOIS	FED. AID PROJECT	
			CONTRACT NO. 60157		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



STAGE I CROSS SECTION
(Looking South)



STAGE II CROSS SECTION
(Looking South)

Note:
For quantity of Temporary Concrete Barrier, see roadway plans.

DESIGNED	-
CHECKED	-
DRAWN	-
CHECKED	-

benesch

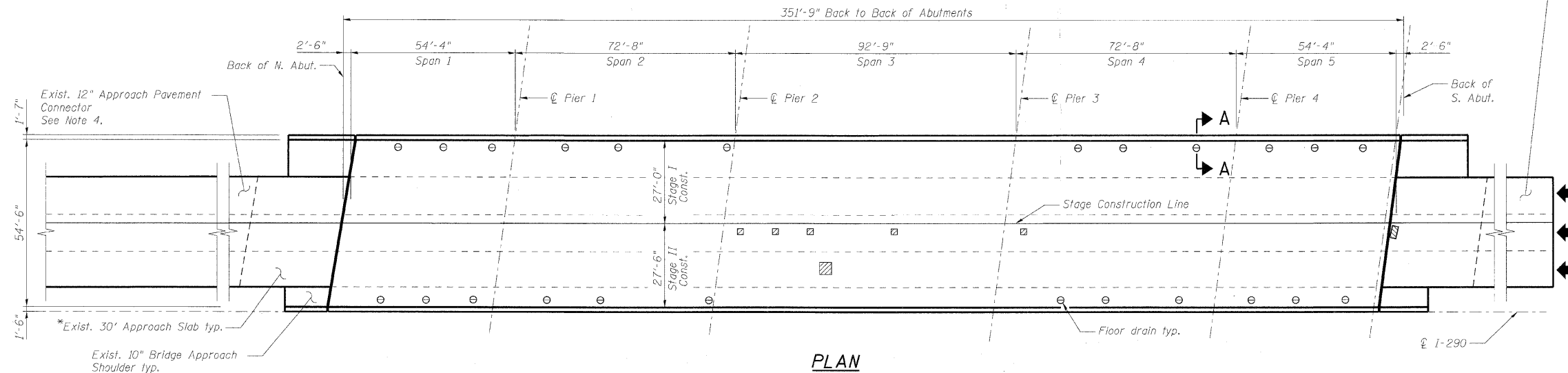
alfred benesch & company
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Chicago, Illinois 60601
312-565-0450 Job No. 10050

STAGE CONSTRUCTION DETAILS
STRUCTURE NO. 016-1132

SHEET NO. 3 8 SHEETS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	2009-099 BR	COOK/DUPAGE	309	167
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT		
			CONTRACT NO. 60157		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

* See Scarification & Overlay
Transition Detail on this sheet for
limits of the 30' Approach Slab.



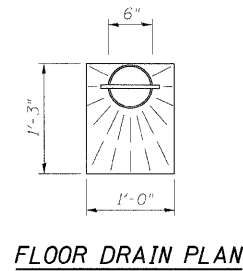
PLAN

Exist. 10" Approach Pavement
Connector
See Note 4.

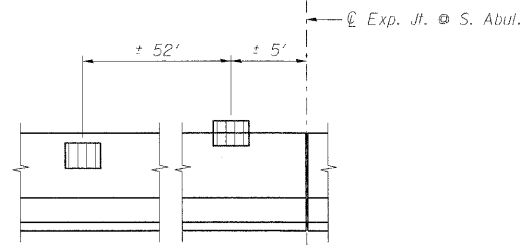
BILL OF MATERIAL

SYMBOL	ITEM	UNIT	QUANTITY
	Deck Slab Repair (Partial)	Sq. Yd.	8.0 ▲
	Approach Slab Repair (Partial Depth)	Sq. Yd.	5.0 ▲
	Structural Repair of Concrete (Depth Equal to or Less than 5 Inches)	Sq. Ft.	4
	Protective Shield	Sq. Yd.	1,132
	Bridge Deck Grooving	Sq. Yd.	2,391
	Protective Coat	Sq. Yd.	2,494
	Bridge Deck Latex Concrete Overlay, 2 1/4"	Sq. Yd.	2,469
	Bridge Deck Hydro-Scarification, 1/2"	Sq. Yd.	2,469

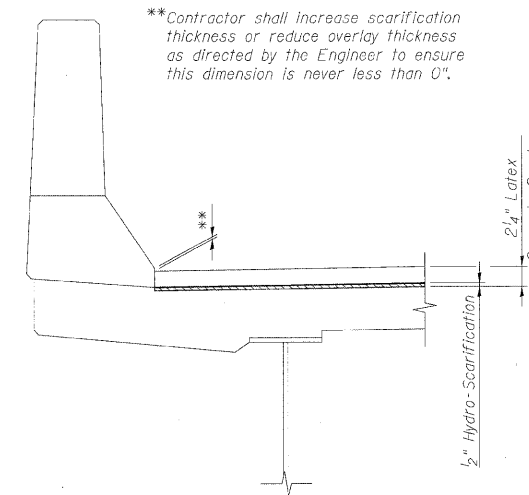
▲ For information only to assist the Contractor in bidding.
See Special Provisions for "Bridge Deck Latex Concrete Overlay".



FLOOR DRAIN PLAN



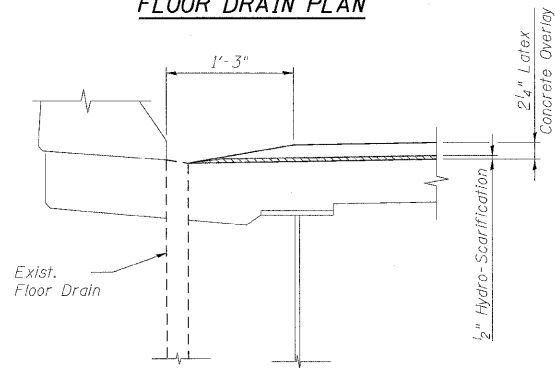
INSIDE ELEVATION - OUTSIDE PARAPET



SCARIFICATION & OVERLAY
DETAIL AT PARAPET

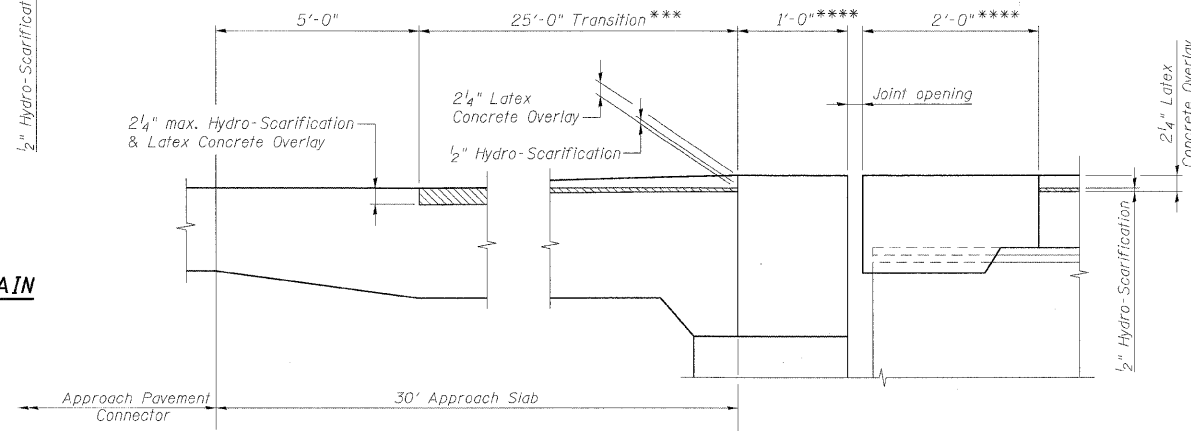
Notes:

- Deck and approach slab repair areas are estimated based on visual inspection completed in June 2009. Actual repair areas and locations shall be determined by the Engineer and shown on As-Built plans.
- Protective Shield, required for deck slab and/or parapet repairs, shall be installed according to Article 501.03 of the Standard Specifications. For limits of Protective Shield, see General Plan and Elevation.
- Deck drains (downspouts, floor drains, and scuppers) shall be cleaned prior to placement of the Latex Concrete Overlay. Cost of cleaning the deck drains is included in Bridge Deck Hydro-Scarification, 1/2".
- The Engineer shall determine the type and quantity of Class A patching and the quantity of Mixture for Cracks, Joints and Flangeways. Estimated quantities are included in the overall Summary of Quantities in Roadway Plans.
- Gaps caused by distress around floor drains shall be filled with epoxy as specified in the Special Provision "Epoxy Injection". Cost included with Bridge Deck Latex Concrete Overlay, 2 1/4".
- Cost of new overlay on approach slab transition is included with Bridge Deck Latex Concrete Overlay, 2 1/4".



SECTION A-A

CONCRETE OVERLAY AT FLOOR DRAIN



SCARIFICATION & OVERLAY TRANSITION DETAIL

***Cost of increased hydro-scarification depth over length of transition shall be included with Bridge Deck Hydro-Scarification, 1/2".

****Construct new concrete at joints to same lines and grades as new concrete overlay at these locations.

DESIGNED -	TJJ
CHECKED -	AAY
DRAWN -	RMG
CHECKED -	AAY

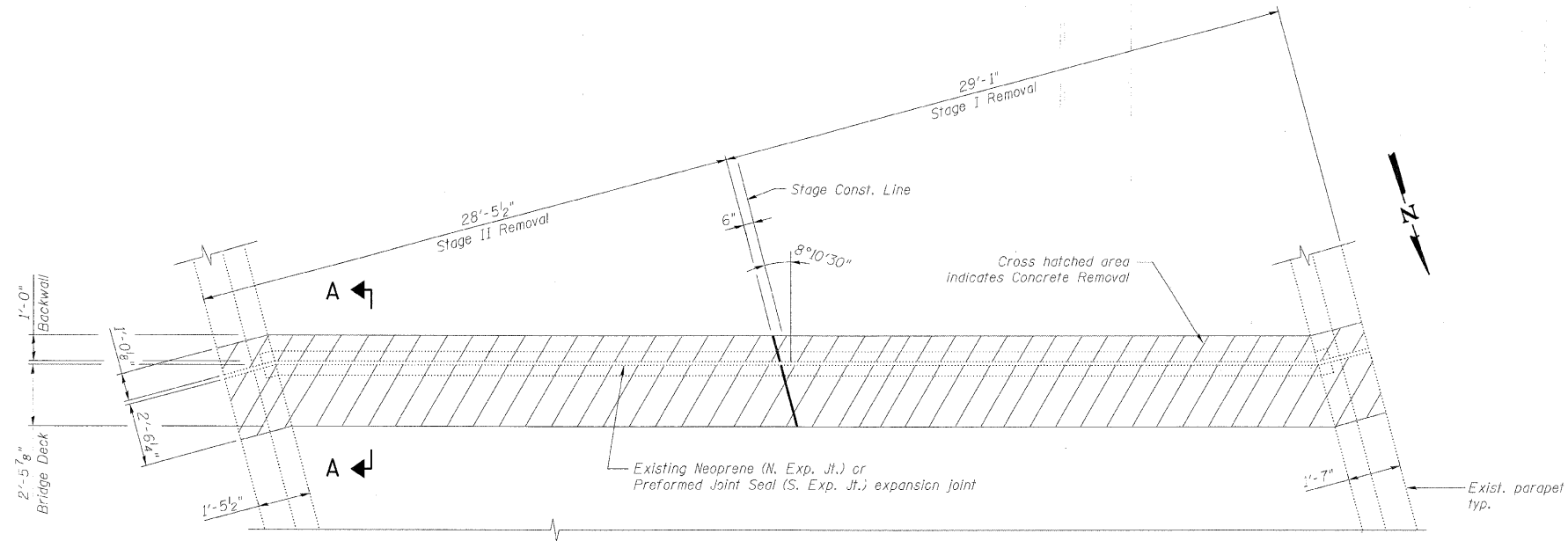
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Chicago, Illinois 60601
312-665-0450 Job No. 10050

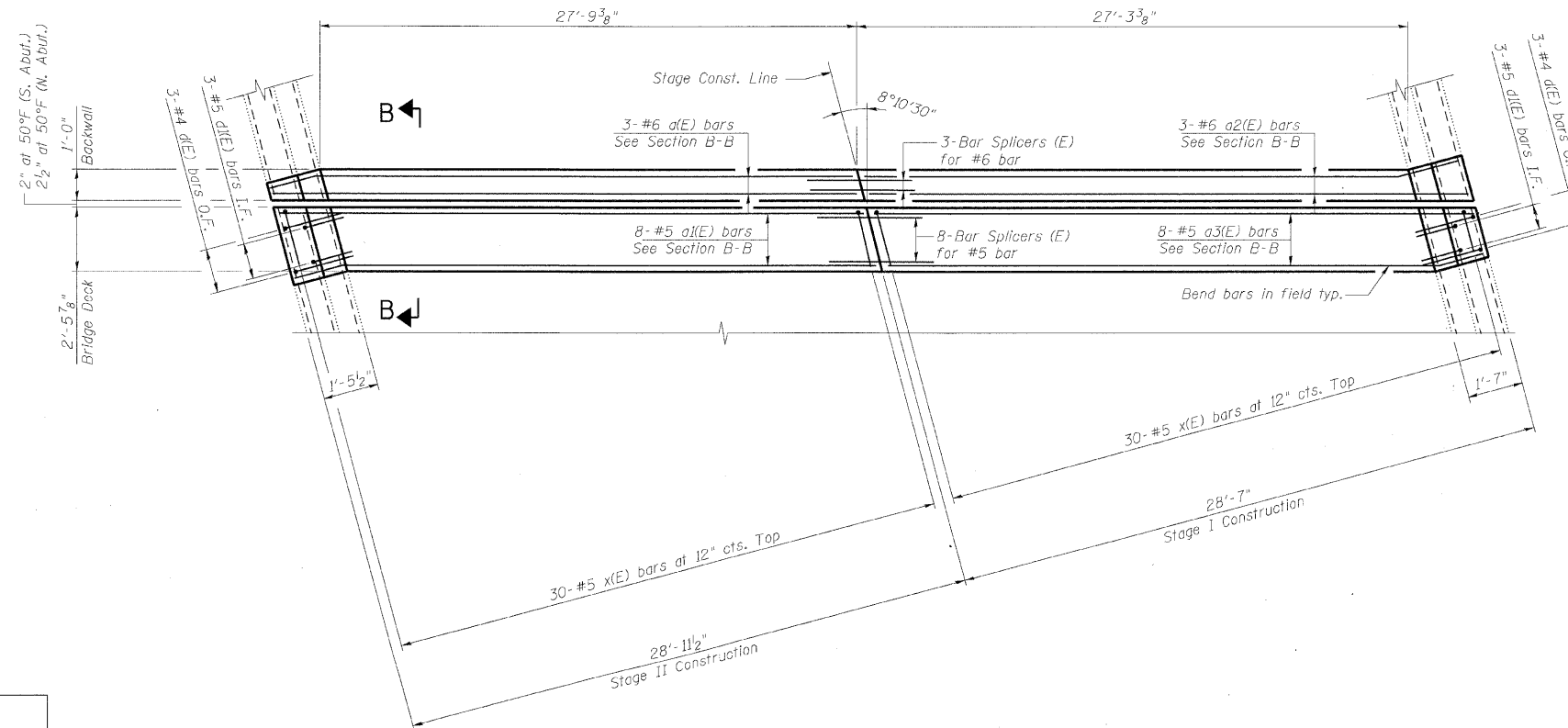
SHEET NO. 4 8 SHEETS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	2009-099 BR	COOK/DUPAGE	309	168
FED. ROAD DIST. NO.			ILLINOIS	FED. AID PROJECT	
CONTRACT NO. 60157					

**BRIDGE DECK AND APPROACH
SLAB REPAIRS
STRUCTURE NO. 016-1132**

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



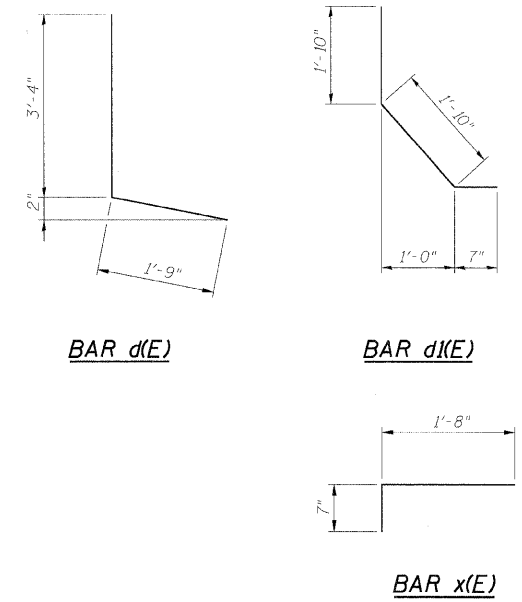
EXISTING PARTIAL PLAN AT SOUTH ABUTMENT
(Opposite Hand for North Abutment)



PROPOSED PARTIAL PLAN AT SOUTH ABUTMENT
(Opposite Hand for North Abutment)

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a1(E)	6	#6	28'-11"	—
a1(E)	16	#5	28'-11"	—
a2(E)	6	#6	28'-7"	—
a3(E)	16	#5	28'-7"	—
d(E)	12	#4	5'-1"	┌
d1(E)	12	#5	4'-3"	└
x(E)	120	#5	2'-3"	┌
Item	Unit	Total		
Concrete Removal	Cu. Yd.	19.8		
Concrete Superstructure	Cu. Yd.	21.5		
Reinforcement Bars, Epoxy Coated	Pound	1,860		



Notes:

1. I.F. denotes Inside Face.
O.F. denotes Outside Face.
2. Work this sheet with Expansion Joint Details sheet and Bar Splicer Assembly Details sheet.
3. x(E) bar spacing measured along skew.

DESIGNED -	JLS
CHECKED -	AAY
DRAWN -	VH
CHECKED -	AAY

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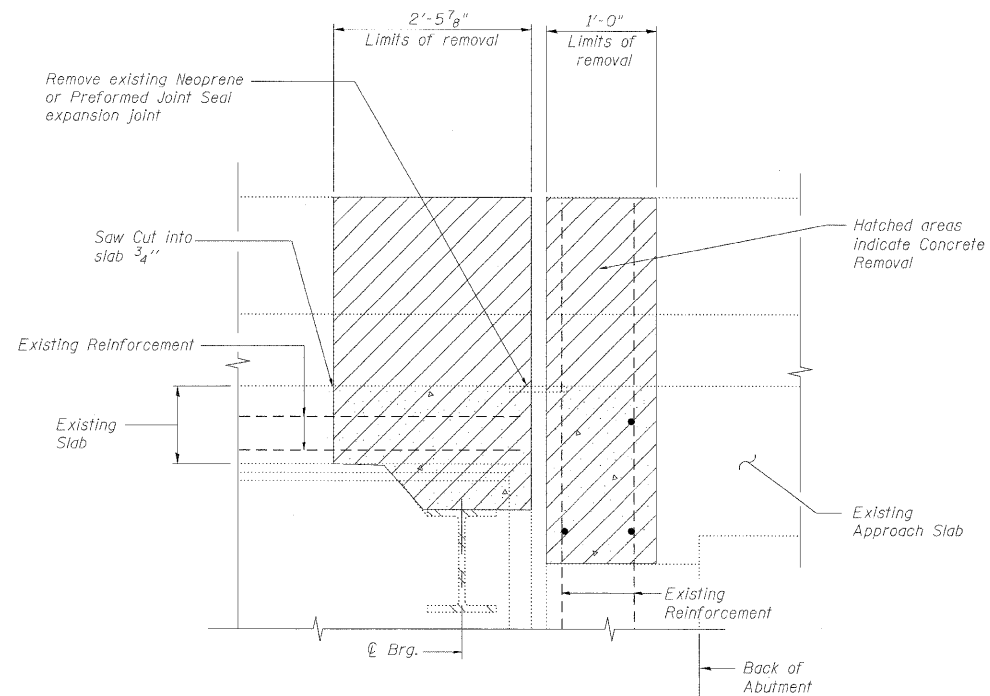
SHEET NO. 5 8 SHEETS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	2009-099 BR	COOK/DUPAGE	309	169
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT		
			CONTRACT NO. 60157		

**EXPANSION JOINT REPAIRS
STRUCTURE NO. 016-1132**

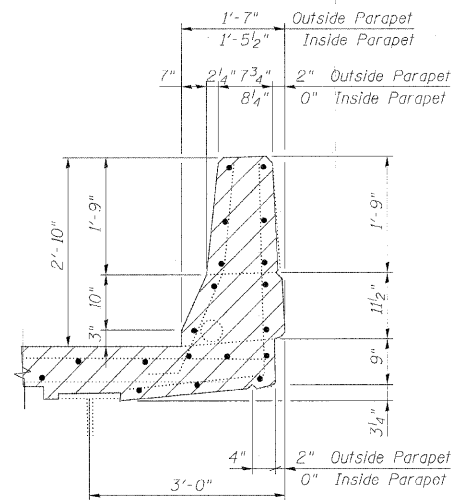
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18:35:34
11/12/2009

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



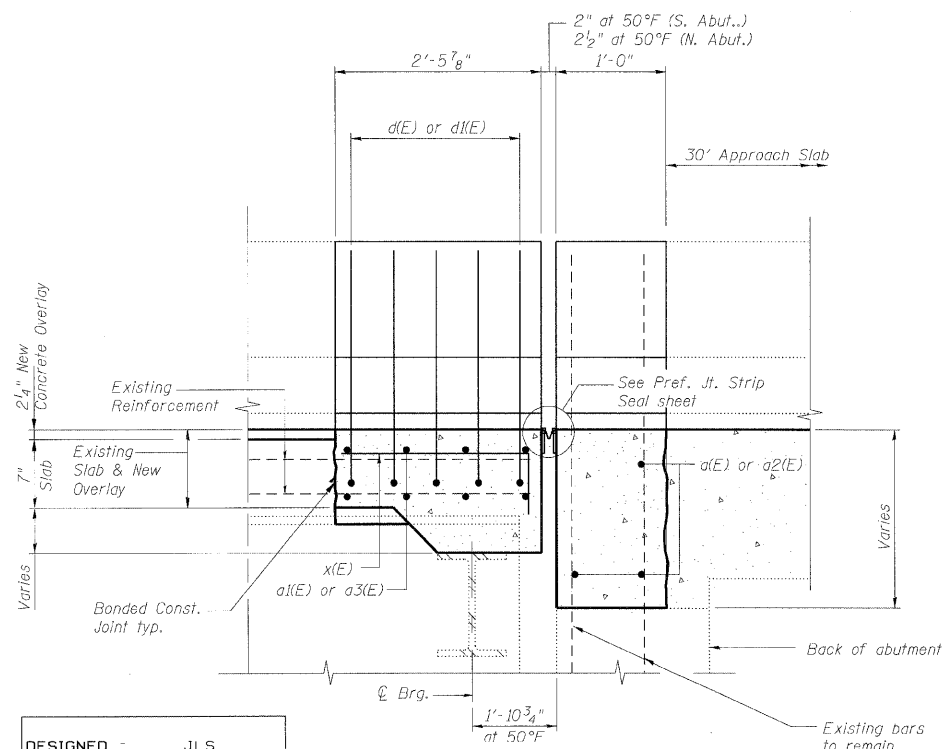
SECTION A-A



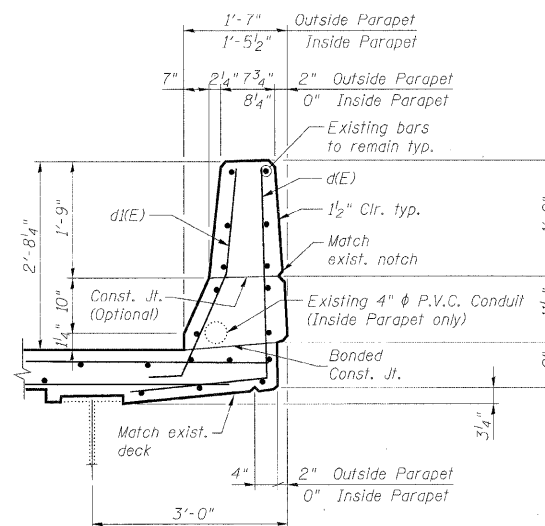
EXISTING PARAPET SECTION

Notes:

- Existing reinforcement bars extending into the concrete removal area shall be blast-cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be repaired or replaced with an approved bar splicer or anchorage system. Cost included with Concrete Removal.
- Existing reinforcement bars in the concrete removal area parallel to the expansion joints shall be removed.
- Removal and disposal of the existing expansion joints will not be paid for separately, but shall be included with the cost of Concrete Removal.
- If existing name plate falls within the limits of Concrete Removal, it shall be removed and reinstalled in its original location in accordance with IDOT Std. 51500L. Cost included with Concrete Superstructure.
- If existing guardrail and/or end shoe fall within the limits of Concrete Removal, they shall be removed and reinstalled in their original location in accordance with District 1 Std. BM-21. Cost included with Concrete Superstructure.
- The Contractor shall exercise extreme care with the existing conduits in sections of the parapet to be removed and to protect and support the conduit. The Contractor will be required to repair any damage done to the conduit to the satisfaction of the Engineer, at no additional cost to the Department. No splicing will be allowed to any cable damage resulting from this work, instead the Contractor will be required to repair the entire span of any damaged cable at no additional cost to the Department.
- Work this sheet with Expansion Joint Repairs sheet.



SECTION B-B



PROPOSED PARAPET SECTION

DESIGNED -	JLS
CHECKED -	AAV
DRAWN -	VH
CHECKED -	AAV

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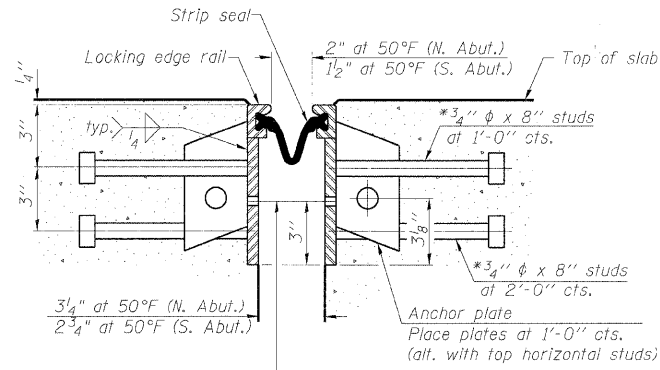
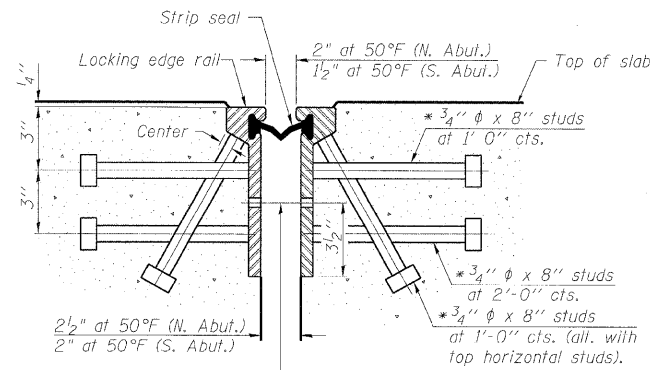
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312-565-0450 Job No. 10050

EXPANSION JOINT DETAILS
STRUCTURE NO. 016-1132

SHEET NO. 6	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	2009-099 BR	COOK/DUPAGE	309	170
8 SHEETS	CONTRACT NO. 60157				
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

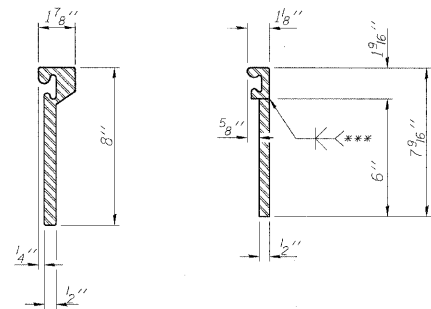
* Granular or solid flux filled headed studs conforming to Article 1006.32 of the Std. Specs., automatically end welded.



7/16" ϕ holes at 4'-0" cts. for 3/8" ϕ bolts. All bolts shall be burned, sawed, or chipped off flush with the plates after forms are removed, typ.

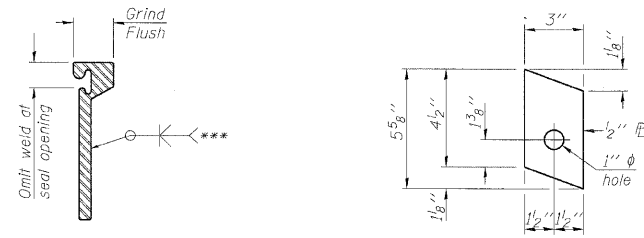
7/16" ϕ holes at 4'-0" cts. for 3/8" ϕ bolts. All bolts shall be burned, sawed, or chipped off flush with the plates after forms are removed, typ.

SECTION THRU
ROLLED RAIL JOINT



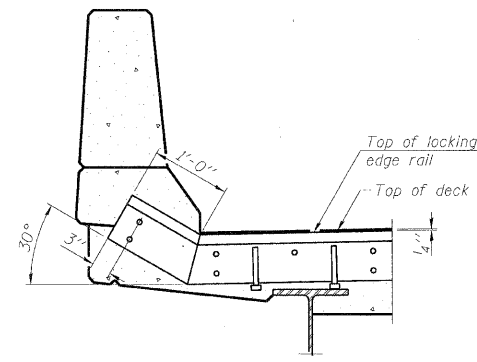
ROLLED
EXTRUDED RAIL WELDED RAIL

SECTION THRU
WELDED RAIL JOINT

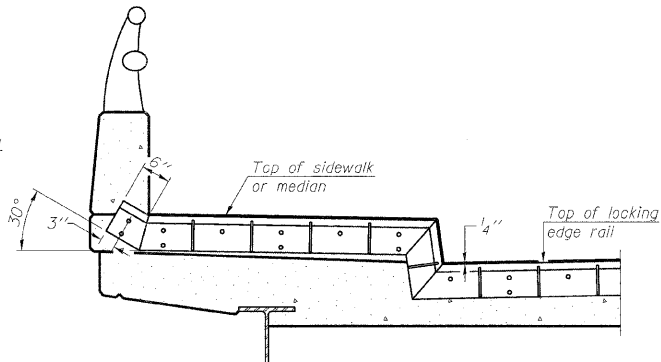


ANCHOR PLATE
(For welded rail)

***Back gouge not required if complete joint penetration is verified by mock-up.



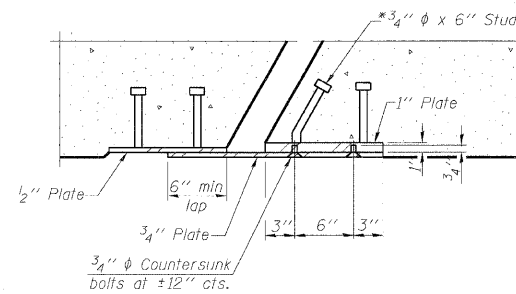
AT PARAPET



AT SIDEWALK OR MEDIAN

Shorter plates with a single row of studs at 12" cts. may be necessary on medians which are shallower than 9". See manufacturer's recommendation.

TYPICAL END TREATMENTS



SECTION B-B

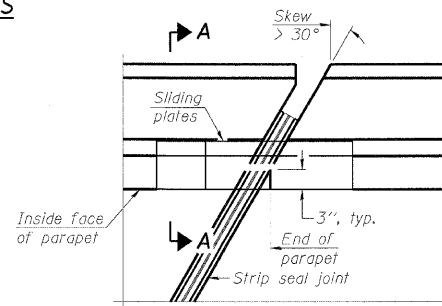
BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	114.5

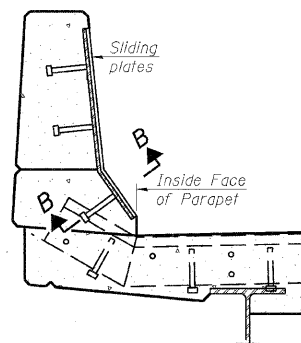
LOCKING EDGE RAILS

LOCKING EDGE
RAIL SPLICE

The inside of the locking edge rail groove shall be free of weld residue.



PLAN



SECTION A-A

POINT BLOCK DETAILS
(for skews > 30°)

DESIGNED -	TJJ
CHECKED -	AAY
DRAWN -	RMG
CHECKED -	AAY

EJ-SSJ

10-1-08

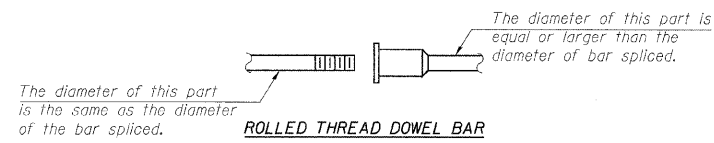
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312-555-0450 Job No. 10050

SHEET NO. 7 8 SHEETS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	2009-099 BR	COOK/DUPAGE	309	171
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT	CONTRACT NO. 60I57	

PREFORMED JOINT STRIP SEAL
STRUCTURE NO. 016-1132

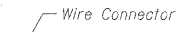
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



ROLLED THREAD DOWEL BAR



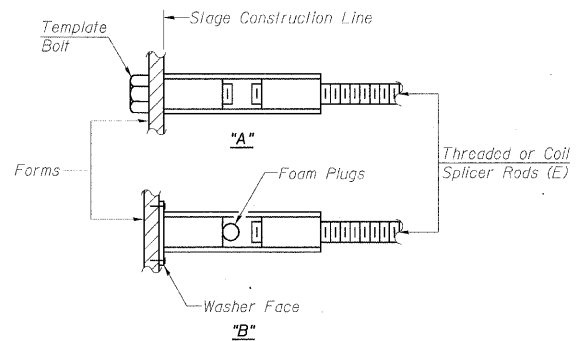
**** ONE PIECE**



WELDED SECTIONS

BAR SPLICER ASSEMBLY ALTERNATIVES

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



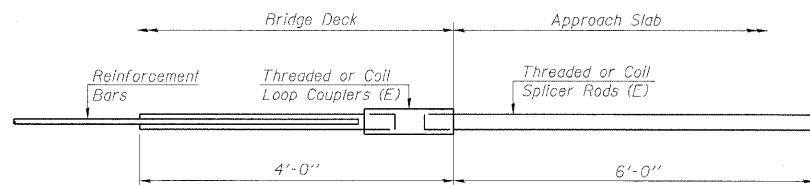
INSTALLATION AND SETTING METHODS

"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:

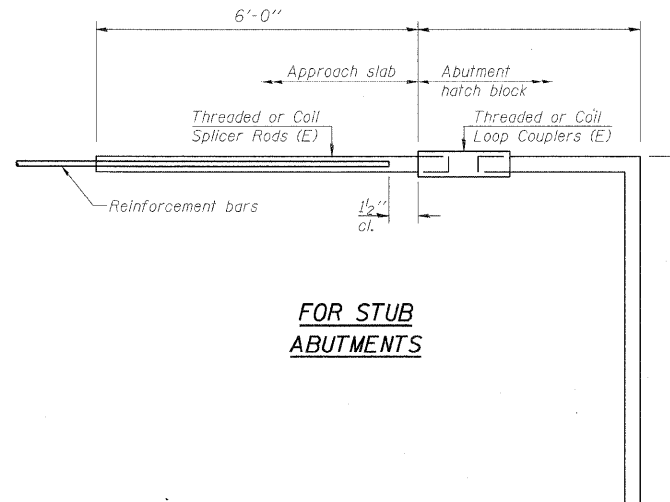
- ① Minimum Capacity = $1.25 \times f_y \times A_s$
(Tension in kips)
 - ② Minimum *Pull-out Strength = $0.66 \times f_y \times A_s$
(Tension in kips)
- where f_y = Yield strength of lapped reinforcement bars in ksi.
 A_s = Tensile stress area of lapped reinforcement bars.
* = 28 day concrete

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



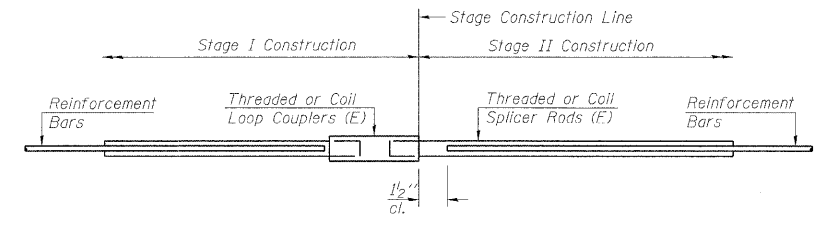
FOR INTEGRAL OR SEMI-INTEGRAL ABUTMENTS

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
#5	16	Deck
#6	6	Deck

DESIGNED -	IJJ
CHECKED -	AAY
DRAWN -	RMG
CHECKED -	AAY

BSD-1

10-1-08

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312-665-0450 Job No. 10050

SHEET NO. 8 8 SHEETS	F.A.I. RTE. 290	SECTION 2009-099 BR	COUNTY COOK/DUPAGE	TOTAL SHEETS 309	SHEET NO. 172
	FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT	CONTRACT NO. 60I57	

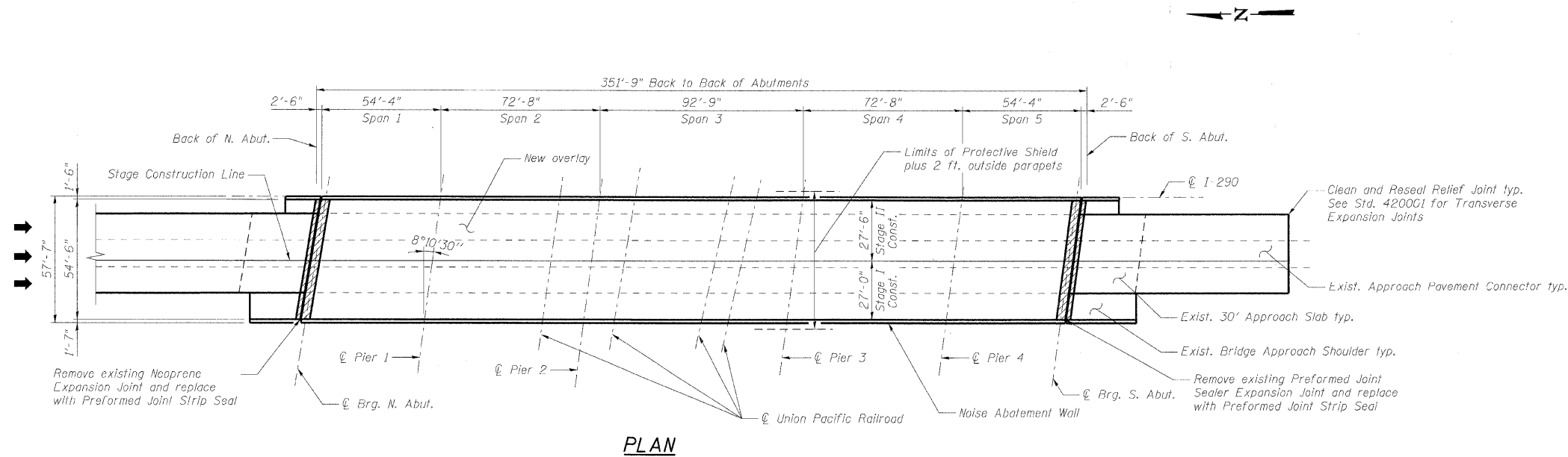
**BAR SPLICER ASSEMBLY DETAILS
STRUCTURE NO. 016-1132**

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

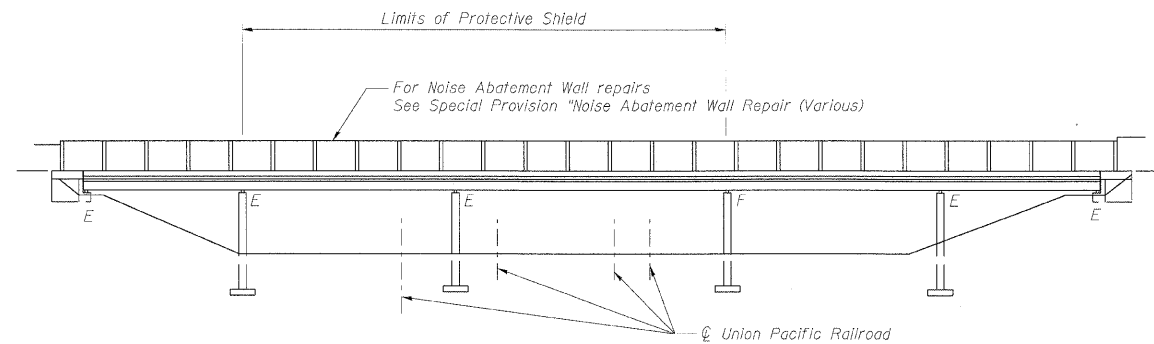
Existing Structure:
The structure is a five-span continuous steel structure with a 7.5-inch reinforced concrete deck with no overlay and carries a bridge-mounted noise wall.
The original structure was built in 1958 and is in Section (100 & 100-1) R-84. In 1985, the bridge was widened and redecked, expansion joints were reconstructed, bearings were replaced, and the superstructure was cleaned and painted. In 1998, the expansion joints were reconstructed and approach slabs were repaired. In 2002, the crashwall was modified.

Stage construction shall be utilized to maintain traffic during construction.

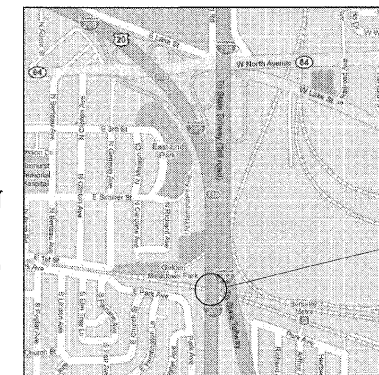
No salvage.



PLAN



ELEVATION



LOCATION SKETCH

DESIGN SPECIFICATIONS

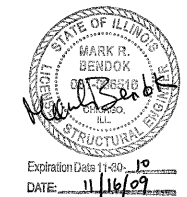
2002 AASHTO Standard Specifications
for Highway Bridges, 17th Edition

DESIGN STRESSES

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

SCOPE OF WORK

1. Bridge Deck Hydro-scarification.
2. Repair bridge deck.
3. Repair approach slab.
4. Reconstruct deck joints at each abutment with preformed joint strip seal.
5. Place new overlay.
6. Repair parapet with formed concrete repair.
7. Clean and reseal relief joints at the end of approach pavement connectors.
8. Apply concrete sealer to parapets, and abutment seats and backwalls.



**GENERAL PLAN AND ELEVATION
I-290 EB OVER UNION PACIFIC
RAILROAD (SOUTH)
COOK COUNTY
STATION 387+00
STRUCTURE NO. 016-1133**

DESIGNED	TJJ
CHECKED	AAY
DRAWN	RMG
CHECKED	AAY

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SHEET NO. 1 8 SHEETS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	2009-099 BR	COOK/DUPAGE	309	173
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT		
			CONTRACT NO. 60157		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

1. Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60. See Special Provisions.
2. Reinforcement bars designated (E) shall be epoxy coated.
3. 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.
4. Plan dimensions and details relative to existing plans are subject to nominal 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.
5. Concrete Sealer shall be applied to the parapets, abutment seats and abutment backwalls. All surfaces to be sealed shall be cleaned thoroughly prior to sealer application. Cost included with Concrete Sealer.
6. The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.
7. Stage construction shall be utilized to maintain traffic during construction.
8. The Contractor shall exercise care during removal of existing joints to ensure that the slab, beams and diaphragms' integrity will not be detrimentally impacted. The Contractor shall repair any damage(s) to the slab, beams and diaphragms caused by his operation as directed by the Engineer at no additional cost to the Department.
9. Protective Coat shall be applied to the new Latex Concrete Overlay.
10. Joint openings shall be adjusted according to Article 520.04 of the Std. Specs. when the deck is poured at an ambient temperature other than 50°F.

INDEX OF SHEETS

1. General Plan and Elevation
2. General Notes, Bill of Material and Index of Sheets
3. Stage Construction Details
4. Bridge Deck And Approach Slab Repairs
5. Expansion Joint Repairs
6. Expansion Joint Details
7. Preformed Joint Strip Seal
8. Bar Splicer Assembly Details

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Concrete Removal	Cu. Yd.	19.8		19.8
Protective Shield	Sq. Yd.	1,132		1,132
Concrete Superstructure	Cu. Yd.	21.5		21.5
Bridge Deck Grooving	Sq. Yd.	2,391		2,391
Protective Coat	Sq. Yd.	2,494		2,494
Reinforcement Bars, Epoxy Coated	Pound	1,860		1,860
Bar Splicers	Each	22		22
Preformed Joint Strip Seal	Foot	114.5		114.5
Concrete Sealer	Sq. Ft.	3,039	602	3,641
Bridge Deck Latex Concrete Overlay, 2 1/4"	Sq. Yd.	2,469		2,469
Structural Repair of Concrete (Depth Equal to or Less than 5 Inches)	Sq. Ft.	9		9
Bridge Deck Hydro-Scarification, 1/2"	Sq. Yd.	2,469		2,469
Cleaning and Painting Exposed Rebar (Special)	Sq. Ft.	33		33
Clean and Reseal Relief Joint	Foot	72.0		72.0

DESIGNED	TJJ
CHECKED	AAV
DRAWN	RMG
CHECKED	AAV

**GENERAL NOTES, BILL OF MATERIAL
AND INDEX OF SHEETS
STRUCTURE NO. 016-1133**

benesch

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312-565-0450 Job No. 10050

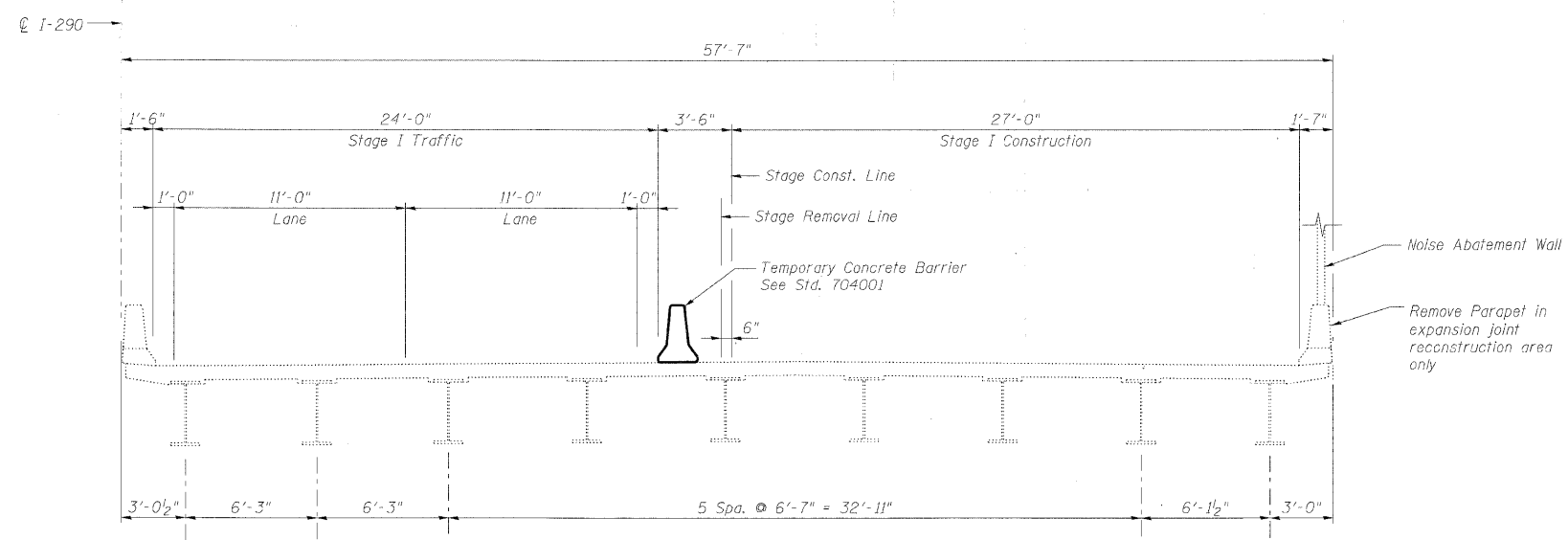
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	290	2009-099 BR	COOK/DUPAGE	309	174
8 SHEETS	CONTRACT NO. 60157				
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

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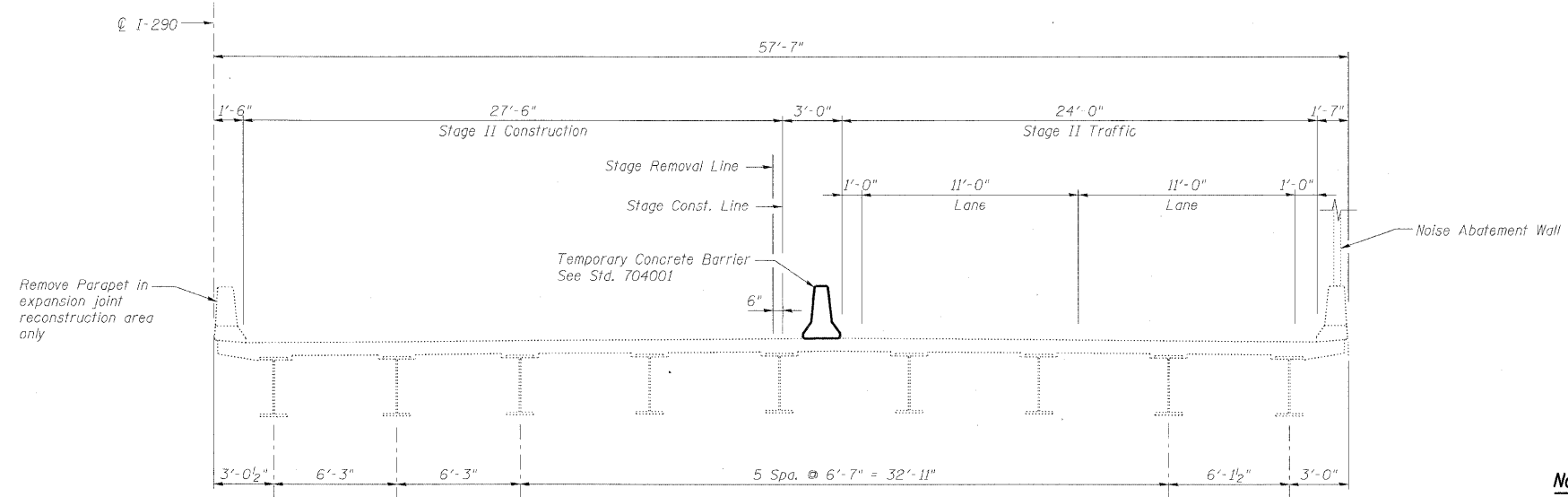
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11/12/2009

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



STAGE I CROSS SECTION
(Looking South)



STAGE II CROSS SECTION
(Looking South)

Note:
For quantity of Temporary Concrete Barrier, see roadway plans.

DESIGNED	TJJ
CHECKED	MAC
DRAWN	TMB/VH
CHECKED	AAY

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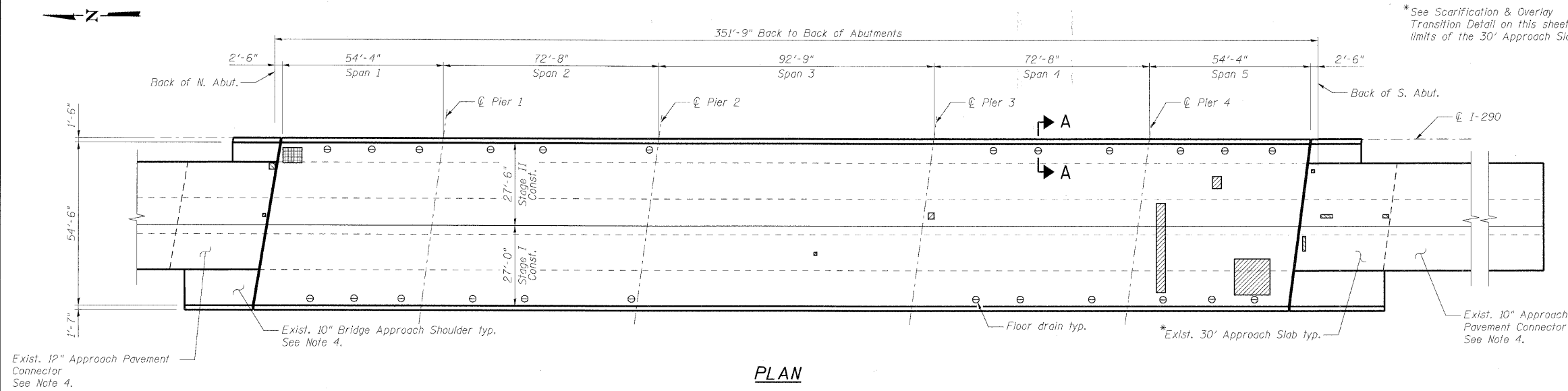
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SHEET NO. 3 8 SHEETS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	2009-099 BR	COOK/DUPAGE	309	175
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT		
CONTRACT NO. 60157					

STAGE CONSTRUCTION DETAILS
STRUCTURE NO. 016-1133

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

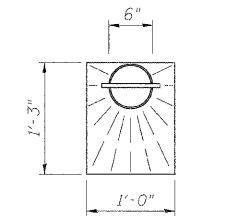
*See Scarification & Overlay
Transition Detail on this sheet for
limits of the 30' Approach Slab.



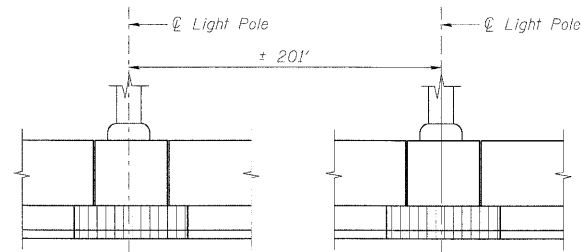
PLAN

BILL OF MATERIAL			
SYMBOL	ITEM	UNIT	QUANTITY
	Deck Slab Repair (Partial)	Sq. Yd.	55.8
	Cleaning & Painting Exposed Rebar (Special)	Sq. Ft.	33
	Approach Slab Repair (Partial Depth)	Sq. Yd.	5.0
	Structural Repair of Concrete (Depth Equal to or Less than 5 Inches)	Sq. Ft.	9
	Protective Shield	Sq. Yd.	1,132
	Bridge Deck Grooving	Sq. Yd.	2,391
	Protective Coat	Sq. Yd.	2,494
	Bridge Deck Latex Concrete Overlay, 2 1/4"	Sq. Yd.	2,469
	Bridge Deck Hydro-Scarification, 1/2"	Sq. Yd.	2,469

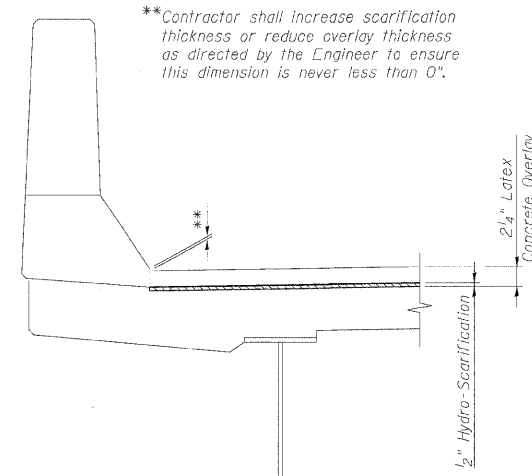
▲ For information only to assist the Contractor in bidding. See Special Provisions for "Bridge Deck Latex Concrete Overlay".



FLOOR DRAIN PLAN



INSIDE ELEVATION - INSIDE PARAPET

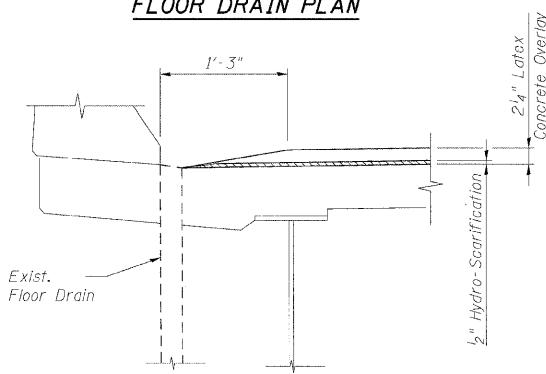


SCARIFICATION & OVERLAY
DETAIL AT PARAPET

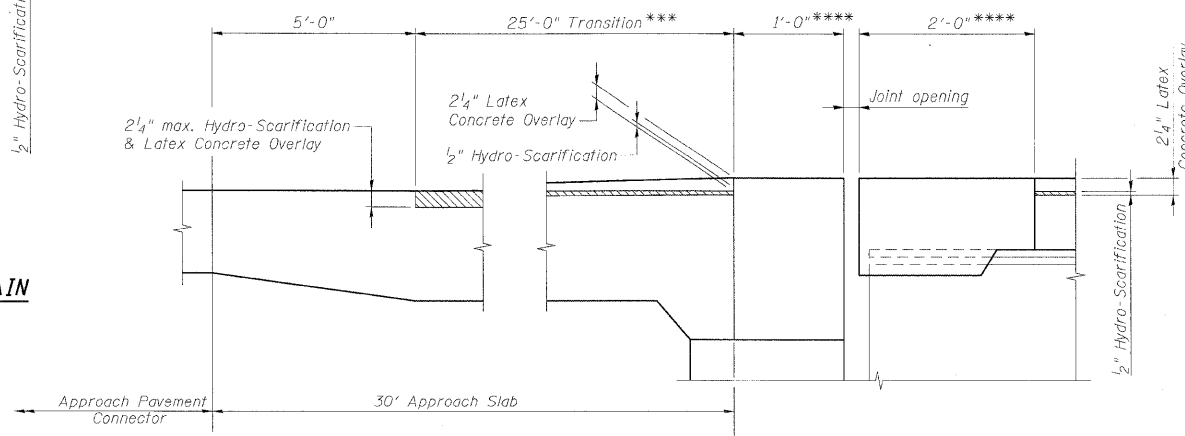
Notes:

- Deck and approach slab repair areas are estimated based on visual inspection completed in June 2009. Actual repair areas and locations shall be determined by the Engineer and shown on As-Built plans.
- Protective Shield, required for deck slab and/or parapet repairs, shall be installed according to Article 501.03 of the Standard Specifications. For limits of Protective Shield, see General Plan and Elevation.
- Deck drains (downspouts, floor drains, and scuppers) shall be cleaned prior to placement of the Latex Concrete Overlay. Cost of cleaning the deck drains is included in Bridge Deck Hydro-Scarification, 1/2".
- The Engineer shall determine the type and quantity of Class A patching and the quantity of Mixture for Cracks, Joints and Flangeways. Estimated quantities are included in the overall Summary of Quantities in Roadway Plans.
- Gaps caused by distress around floor drains shall be filled with epoxy as specified in the Special Provision "Epoxy Injection". Cost included with Bridge Deck Latex Concrete Overlay, 2 1/4".
- Cost of new overlay on approach slab transition is included with Bridge Deck Latex Concrete Overlay, 2 1/4".

BRIDGE DECK AND APPROACH
SLAB REPAIRS
STRUCTURE NO. 016-1133



SECTION A-A
CONCRETE OVERLAY AT FLOOR DRAIN



SCARIFICATION & OVERLAY TRANSITION DETAIL

***Cost of increased hydro-scarification depth over length of transition shall be included with Bridge Deck Hydro-Scarification, 1/2".

****Construct new concrete at joints to same lines and grades as new concrete overlay at these locations.

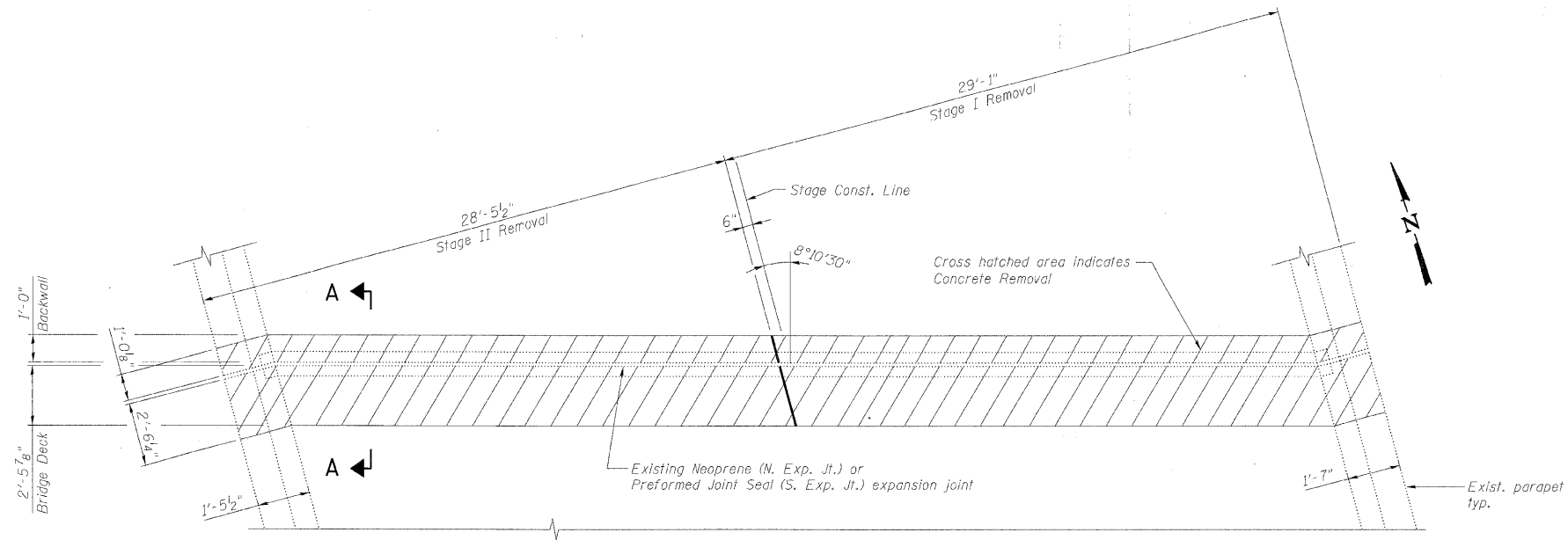
DESIGNED -	TJJ
CHECKED -	AAY
DRAWN -	RMG
CHECKED -	AAY

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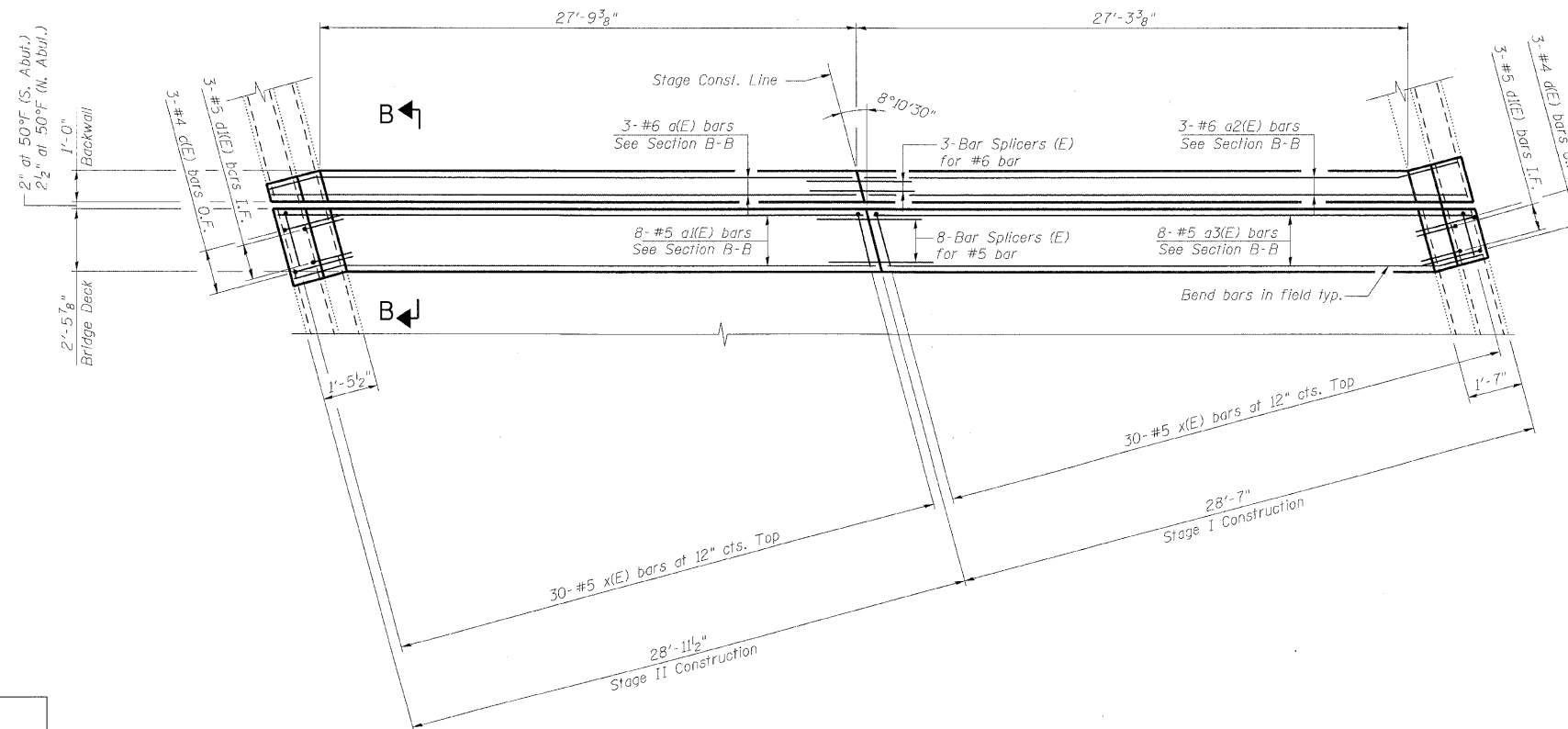
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SHEET NO. 4 8 SHEETS	F.A.I. RTE. 290	SECTION 2009-099 BR	COUNTY COOK/DUPAGE	TOTAL SHEETS 309	SHEET NO. 176
	CONTRACT NO. 60157			ILLINOIS FED. AID PROJECT	

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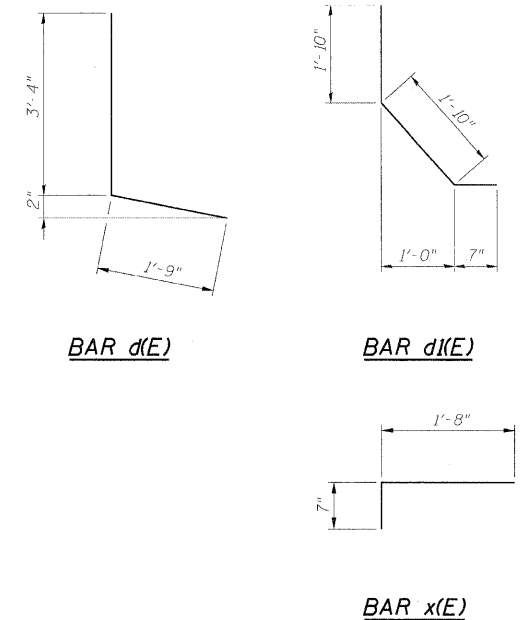
EXISTING PARTIAL PLAN AT NORTH ABUTMENT
(Opposite Hand for South Abutment)



PROPOSED PARTIAL PLAN AT NORTH ABUTMENT
(Opposite Hand for South Abutment)

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	6	#6	28'-11"	—
a1(E)	16	#5	28'-11"	—
a2(E)	6	#6	28'-7"	—
a3(E)	16	#5	28'-7"	—
d(E)	12	#4	5'-1"	┌
d1(E)	12	#5	4'-3"	└
x(E)	120	#5	2'-3"	┌
Item	Unit	Total		
Concrete Removal	Cu. Yd.	19.8		
Concrete Superstructure	Cu. Yd.	21.5		
Reinforcement Bars, Epoxy Coated	Pound	1,860		



Notes:

1. I.F. denotes Inside Face.
O.F. denotes Outside Face.
2. Work this sheet with Expansion Joint Details sheet and Bar Splicer Assembly Details sheet.
3. x(E) bar spacing measured along skew.

DESIGNED	JLS
CHECKED	AAV
DRAWN	VH
CHECKED	AAV

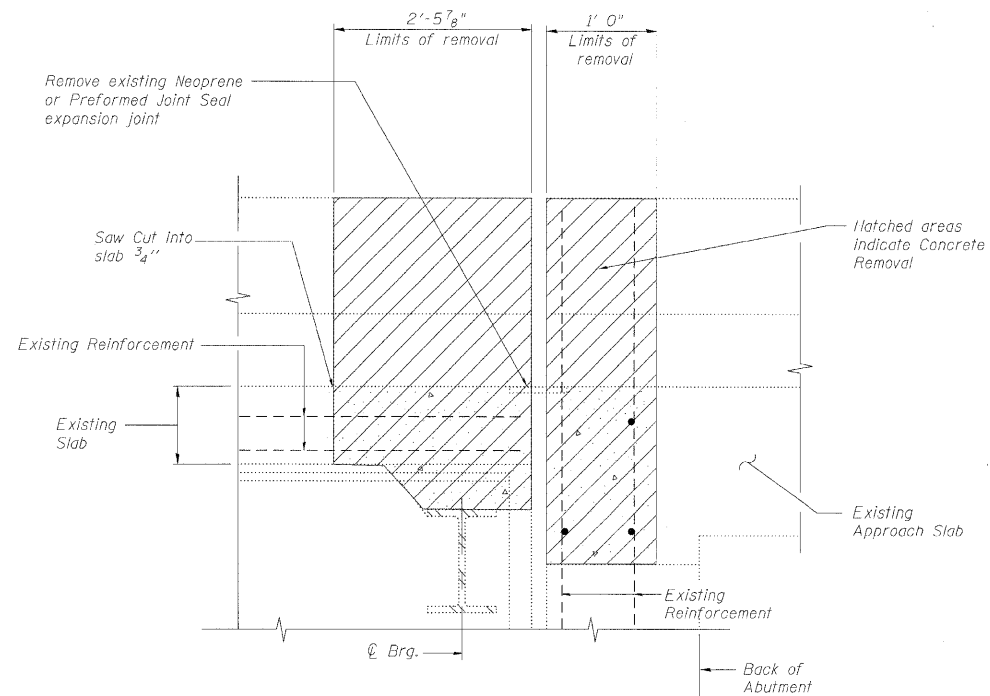
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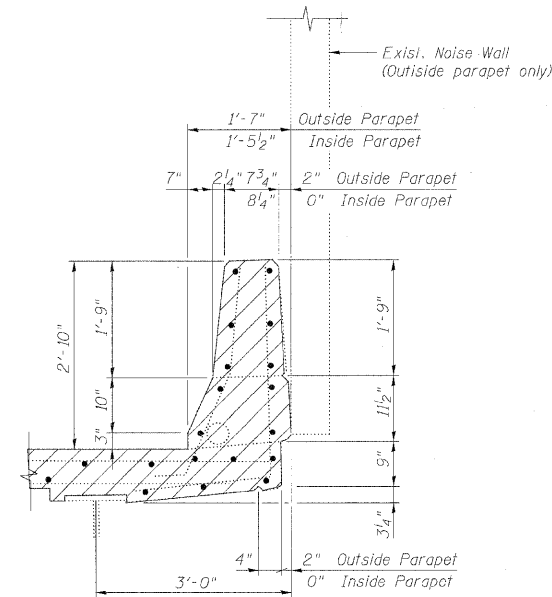
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FED. ROAD DIST. NO.			ILLINOIS	FED. AID PROJECT	
				CONTRACT NO. 60157	

**EXPANSION JOINT REPAIRS
STRUCTURE NO. 016-1133**

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



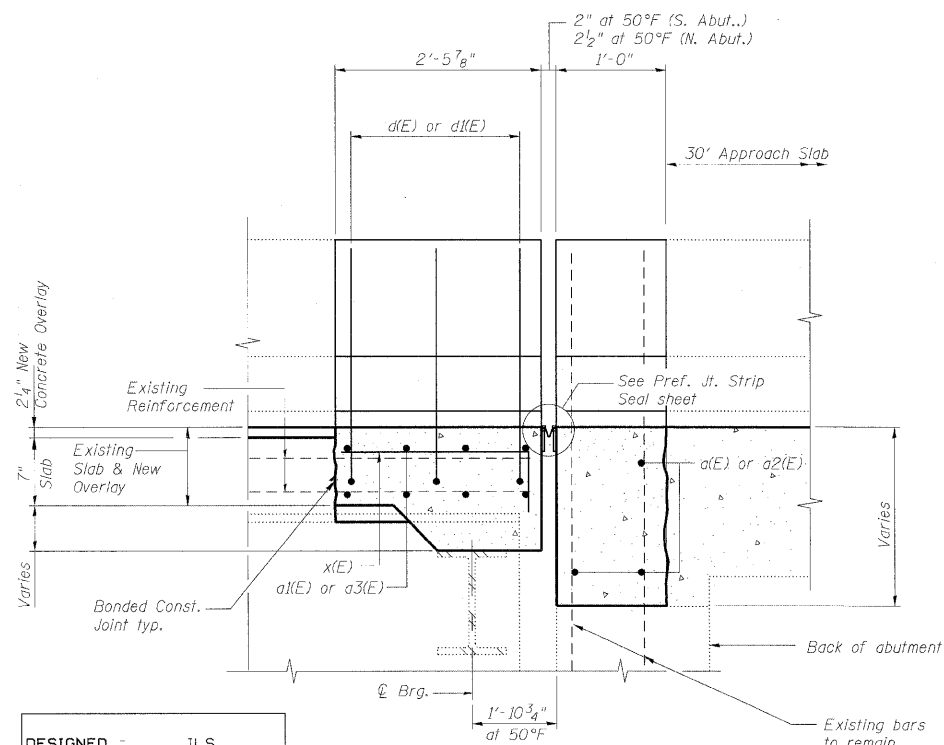
SECTION A-A



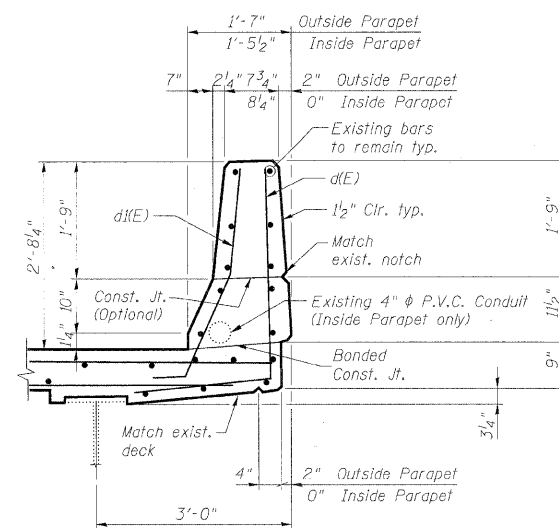
EXISTING PARAPET SECTION

Notes:

- Existing reinforcement bars extending into the concrete removal area shall be blast-cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be repaired or replaced with an approved bar splicer or anchorage system. Cost included with Concrete Removal.
- Existing reinforcement bars in the concrete removal area parallel to the expansion joints shall be removed.
- Removal and disposal of the existing expansion joints will not be paid for separately, but shall be included with the cost of Concrete Removal.
- If existing name plate falls within the limits of Concrete Removal, it shall be removed and reinstalled in its original location in accordance with IDOT Std. 515G01. Cost included with Concrete Superstructure.
- If existing guardrail and/or end shoe fall within the limits of Concrete Removal, they shall be removed and reinstalled in their original location in accordance with District 1 Std. BM-21. Cost included with Concrete Superstructure.
- The Contractor shall exercise extreme care with the existing conduits in sections of the parapet to be removed and to protect and support the conduit. The Contractor will be required to repair any damage done to the conduit to the satisfaction of the Engineer, at no additional cost to the Department. No splicing will be allowed to any cable damage resulting from this work, instead the Contractor will be required to repair the entire span of any damaged cable at no additional cost to the Department.
- Existing noise wall to remain. Care shall be taken not to damage the noise wall during parapet removal and reconstruction. Any damage to the noise walls shall be repaired at no additional cost to the Department. If a noise wall connection falls within the limits of concrete removal, then the connection shall be removed and reinstalled and noise wall temporarily supported to the satisfaction of the Engineer. Cost included in Concrete Removal.
- Work this sheet with Expansion Joint Repairs sheet.



SECTION B-B



PROPOSED PARAPET SECTION

DESIGNED	JLS
CHECKED	AAY
DRAWN	VH
CHECKED	AAY

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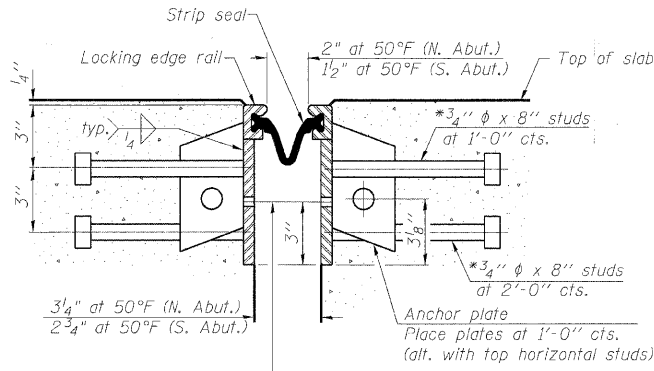
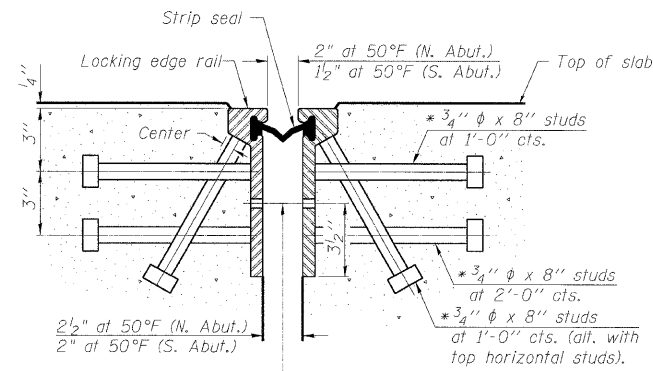
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EXPANSION JOINT DETAILS
STRUCTURE NO. 016-1133

SHEET NO. 6	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	2009-099 BR	COOK/DUPAGE	309	178
8 SHEETS	CONTRACT NO. 60157				
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

* Granular or solid flux filled headed studs conforming to Article 1006.32 of the Std. Specs., automatically end welded.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



Notes:

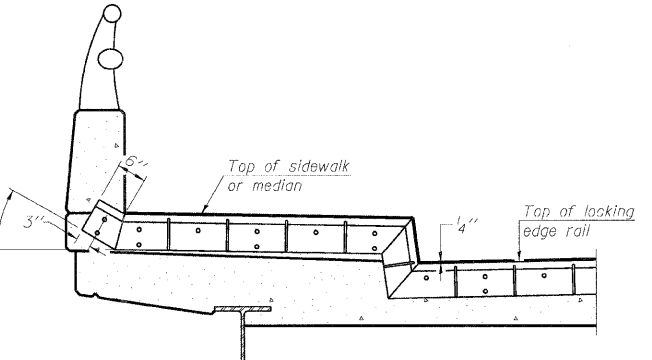
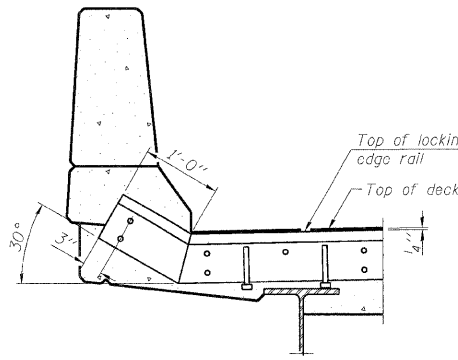
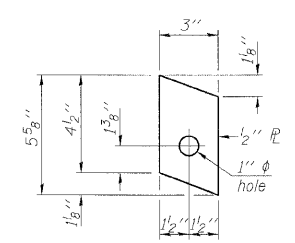
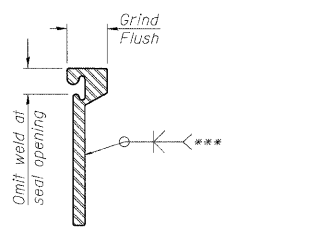
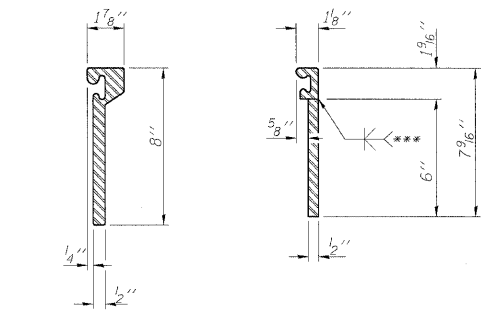
The strip seal shall be made continuous and shall have a minimum thickness of 1/4". The configuration of the strip seal shall match the configuration of the Locking Edge Rails. Open or "webbed" strip seal gland configurations are not permitted. The gland shall be sized for a maximum rated movement of 4 inches. The height and thickness of the Locking Edge Rails shown are minimum dimensions. The actual configuration of the Locking Edge Rails and matching strip seal may vary from manufacturer to manufacturer. Flanged edge rails will not be allowed. Locking Edge Rails may be spliced at slope discontinuities and stage construction joints. The manufacturer's recommended installation methods shall be followed. The joint opening and deck dimensions detailed on the superstructure are based on a rolled rail expansion joint. If the Contractor elects to use the welded rail expansion joint, the opening and deck dimensions shall be modified according to the dimensions detailed on this sheet. Required modifications shall be made at no additional cost to the State. All steel components shall be galvanized after fabrication according to Article 520.03 of the Standard Specifications.

7/16" diameter holes at 4'-0" centers for 3/8" diameter bolts. All bolts shall be burned, sawed, or chipped off flush with the plates after forms are removed, typ.

7/16" diameter holes at 4'-0" centers for 3/8" diameter bolts. All bolts shall be burned, sawed, or chipped off flush with the plates after forms are removed, typ.

SECTION THRU
ROLLED RAIL JOINT

SECTION THRU
WELDED RAIL JOINT



AT PARAPET

AT SIDEWALK OR MEDIAN

Shorter plates with a single row of studs at 12" centers may be necessary on medians which are shallower than 9". See manufacturer's recommendation.

ROLLED
EXTRUDED RAIL

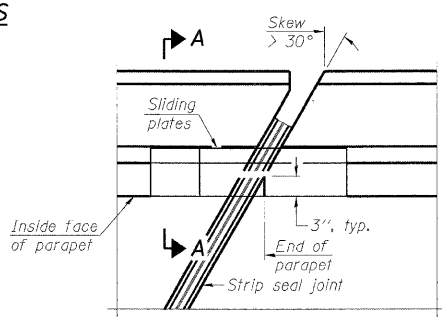
WELDED RAIL

LOCKING EDGE
RAIL SPLICE

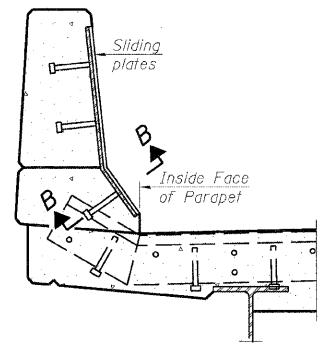
ANCHOR PLATE
(for welded rail)

TYPICAL END TREATMENTS

LOCKING EDGE RAILS

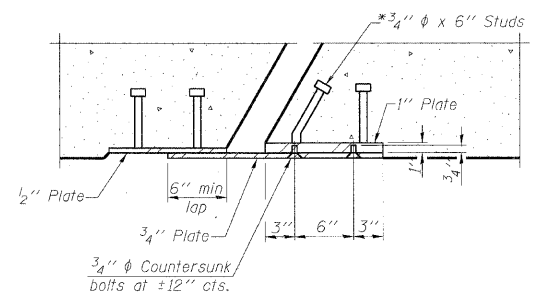


PLAN



SECTION A-A

POINT BLOCK DETAILS
(for skews > 30°)



SECTION B-B

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	114.5

DESIGNED	-	TJJ
CHECKED	-	AAY
DRAWN	-	RMG
CHECKED	-	AAY

EJ-SSJ

10-1-08

PREFORMED JOINT STRIP SEAL
STRUCTURE NO. 016-1133

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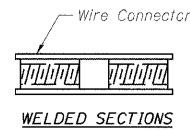
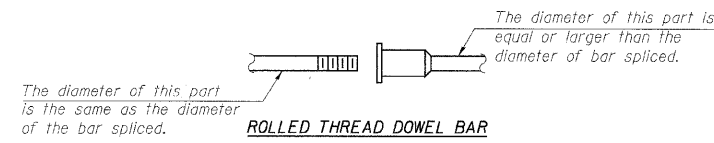
SHEET NO. 7	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			CONTRACT NO. 60157		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

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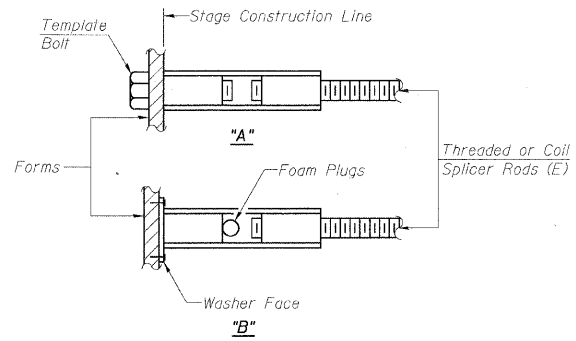
11/12/2009

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



BAR SPLICER ASSEMBLY ALTERNATIVES

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



INSTALLATION AND SETTING METHODS

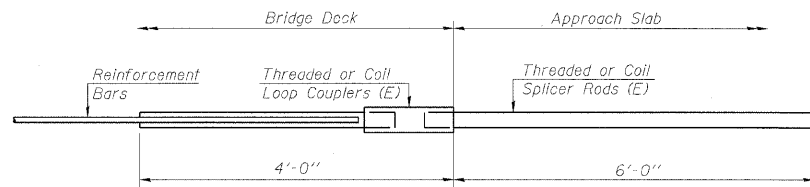
"A" : Set bar splicer assembly by means of a template bolt.
"B" : Set bar splicer assembly by nailing to wood forms or cementing to steel forms.
(E) : Indicates epoxy coating.

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:

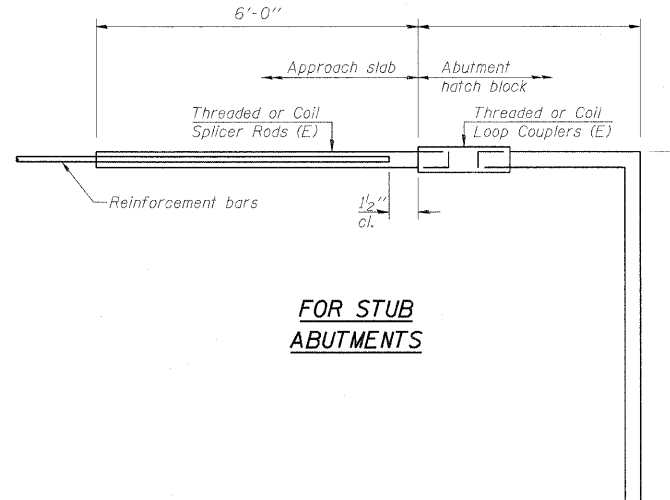
- ① Minimum Capacity = $1.25 \times f_y \times A_t$
(Tension in kips)
 - ② Minimum *Pull-out Strength = $0.66 \times f_y \times A_t$
(Tension in kips)
- Where f_y = Yield strength of lapped reinforcement bars in ksi.
 A_t = Tensile stress area of lapped reinforcement bars.
* = 28 day concrete

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



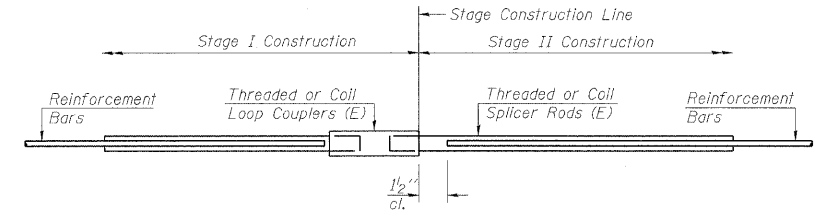
FOR INTEGRAL OR SEMI-INTEGRAL ABUTMENTS

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
#5	16	Deck
#6	6	Deck

DESIGNED -	IJJ
CHECKED -	AAY
DRAWN -	RMG
CHECKED -	AAY

BSD-1

10-1-08

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SHEET NO. 8	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	2009-099 BR	COOK/DUPAGE	309	180
8 SHEETS	FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT	CONTRACT NO. 60157	

BAR SPLICER ASSEMBLY DETAILS
STRUCTURE NO. 016-1133

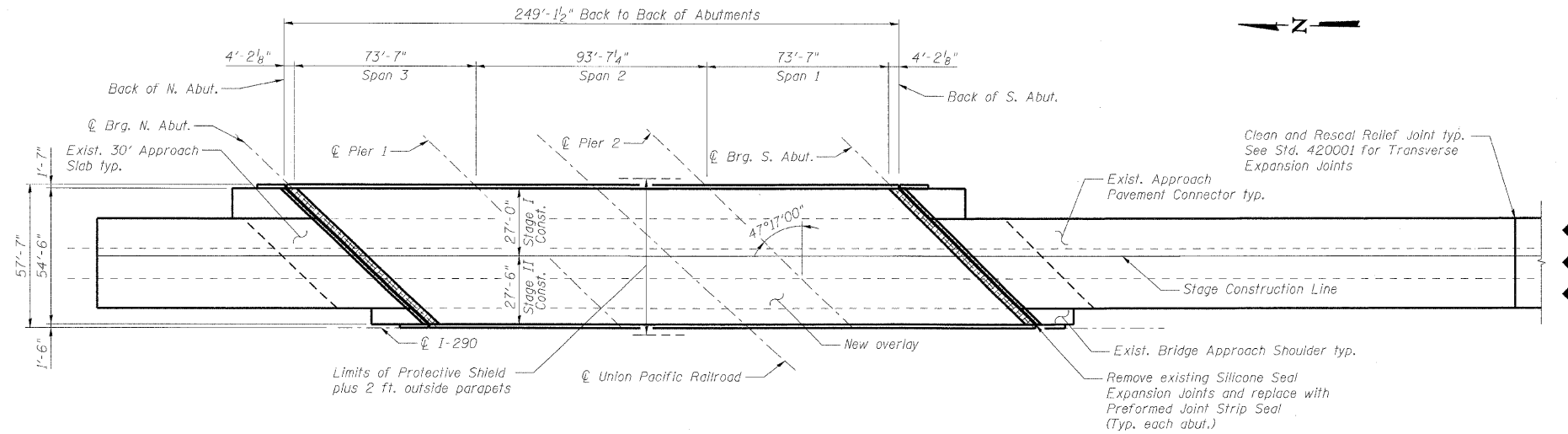
x:\100000\10050\engineer\ng-documents-contr-act\1\en-016-1132-1133.c&nw.s\1133-60051-008-BarSplicer.dgn 18:36:41 11/12/2009

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

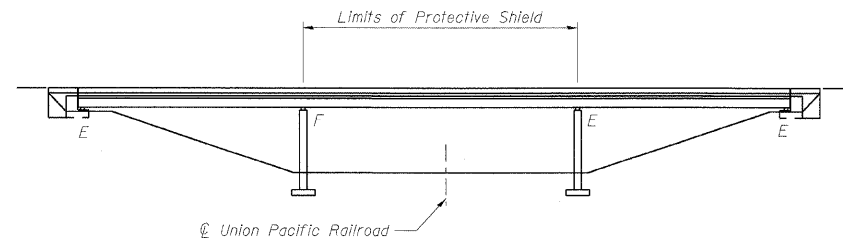
Existing Structure:
The structure is a three-span continuous steel structure with a 7.5-inch reinforced concrete deck with no overlay. The original structure was built in 1958 and is in Section (100 & 100-1) R-84. In 1985, the bridge was widened and redecked, expansion joints were reconstructed, and the superstructure was cleaned and painted. In 1998, the expansion joints were reconstructed and approach slabs were repaired.

Stage construction shall be utilized to maintain traffic during construction.

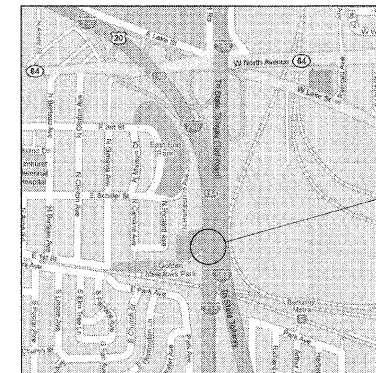
No salvage.



PLAN



ELEVATION



LOCATION SKETCH

DESIGN SPECIFICATIONS

2002 AASHTO Standard Specifications
for Highway Bridges, 17th Edition

DESIGN STRESSES

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

SCOPE OF WORK

1. Bridge Deck Hydro-scarification.
2. Repair bridge deck.
3. Repair approach slab.
4. Reconstruct deck joints at each abutment with preformed joint strip seal.
5. Place new overlay.
6. Repair parapet with formed concrete repair.
7. Replace diaphragms at north abutment.
8. Clean and reseal relief joints at the end of approach pavement connectors.
9. Apply concrete sealer to parapets, abutment seats and backwalls.



Expiration Date 11-30-10
DATE: 11/16/09

GENERAL PLAN AND ELEVATION
I-290 WB OVER UNION PACIFIC
RAILROAD (NORTH)
COOK COUNTY
STATION 380+09
STRUCTURE NO. 016-1131

DESIGNED -	TJJ
CHECKED -	AAY
DRAWN -	RMG
CHECKED -	AAY

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Chicago, Illinois 60601
312.565-0450 Job No. 10050

SHEET NO. 1 10 SHEETS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	2009-099 BR	COOK/DUPAGE	309	181
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT		
CONTRACT NO. 60I57					

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

1. Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60. See Special Provisions.
2. Reinforcement bars designated (E) shall be epoxy coated.
3. 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.
4. Plan dimensions and details relative to existing plans are subject to nominal 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.
5. Concrete Sealer shall be applied to the parapets, abutment seats and abutment backwalls. All surfaces to be sealed shall be cleaned thoroughly prior to sealer application. Cost Included with Concrete Sealer.
6. All structural steel shall conform to AASHTO Classification M-270 Gr. 36, unless otherwise noted.
7. The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.
8. Stage construction shall be utilized to maintain traffic during construction.
9. The Contractor shall exercise care during removal of existing joints to ensure that the slab, beams and diaphragms' integrity will not be detrimentally impacted. The Contractor shall repair any damage(s) to the slab, beams and diaphragms caused by his operation as directed by the Engineer at no additional cost to the Department.
10. Protective Coat shall be applied to the new Latex Concrete Overlay.
11. Joint openings shall be adjusted according to Article 520.04 of the Std. Specs. when the deck is poured at an ambient temperature other than 50°F.

INDEX OF SHEETS

1. General Plan and Elevation
2. General Notes, Bill of Material and Index of Sheets
3. Stage Construction Details
4. Bridge Deck and Approach Slab Repairs
5. Expansion Joint Repairs
6. Expansion Joint Details
7. Preformed Joint Strip Seal
8. Steel Repair Details
9. Bar Splicer Assembly Details
10. Existing Steel Details

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Concrete Removal	Cu. Yd.	28.2		28.2
Protective Shield	Sq. Yd.	640		640
Concrete Superstructure	Cu. Yd.	30.2		30.2
Bridge Deck Grooving	Sq. Yd.	1,792		1,792
Protective Coat	Sq. Yd.	1,872		1,872
Structural Steel Repair	Pound	777		777
Reinforcement Bars, Epoxy Coated	Pound	2,760		2,760
Bar Splicers	Each	22		22
Preformed Joint Strip Seal	Foot	165.0		165.0
Concrete Sealer	Sq. Ft.	2,282	904	3,186
Bridge Deck Latex Concrete Overlay, 2 1/4"	Sq. Yd.	1,837		1,837
Bridge Deck Hydro-Scarification, 1/2"	Sq. Yd.	1,837		1,837
Clean and Reseal Relief Joint	Foot	72.0		72.0

DESIGNED -	IJJ
CHECKED -	AAY
DRAWN -	RMG
CHECKED -	AAY

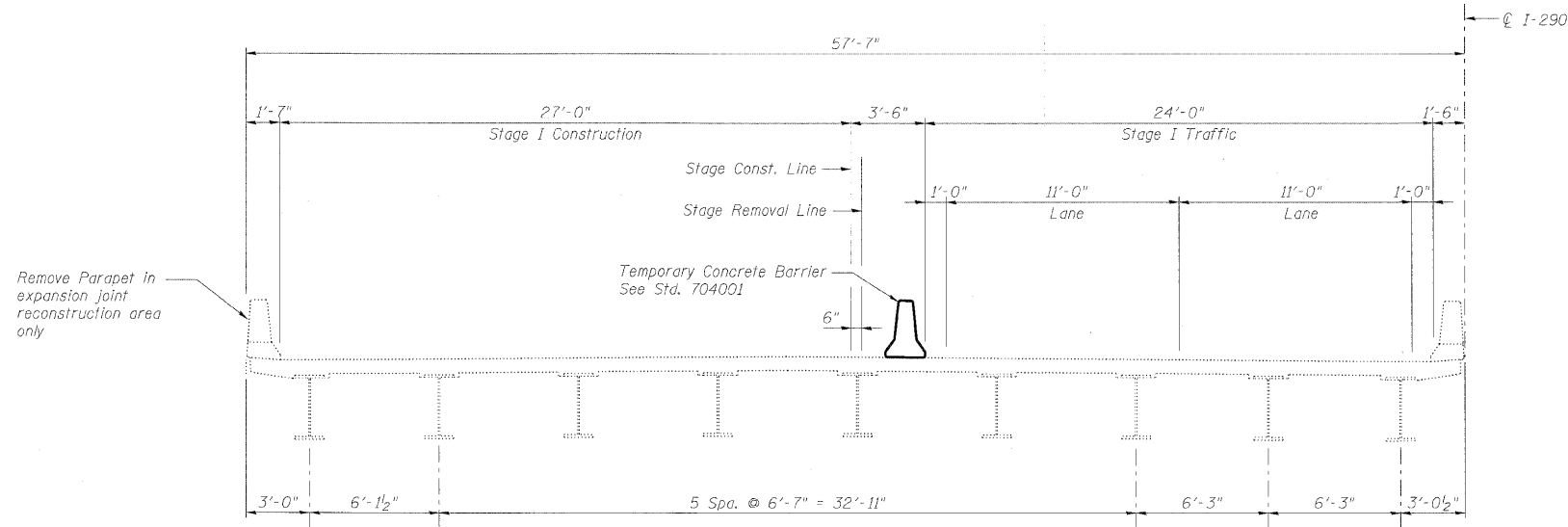
**GENERAL NOTES, BILL OF MATERIAL
AND INDEX OF SHEETS
STRUCTURE NO. 016-1131**

benesch

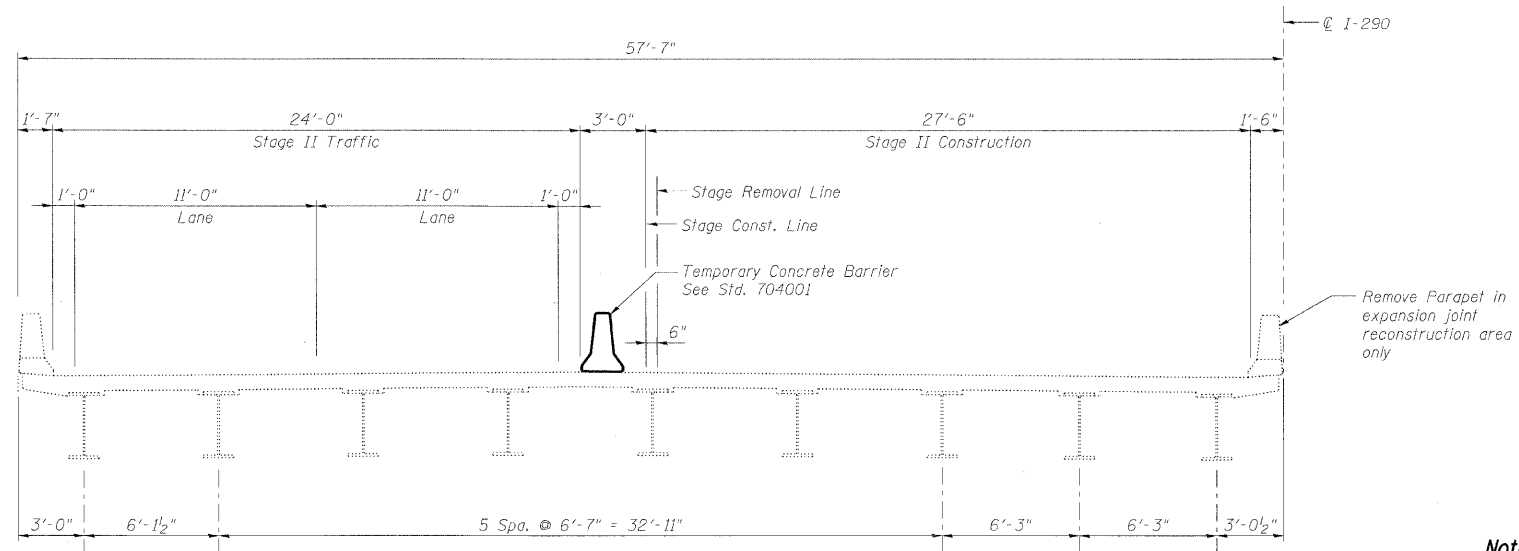
alfred benesch & company
Engineers • Surveyors • Planners
205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-565-0450 Job No. 10050

SHEET NO. 2 10 SHEETS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	2009-099 BR	COOK/DUPAGE	309	182
FED. ROAD DIST. NO.			ILLINOIS	FED. AID PROJECT	
CONTRACT NO. 60157					

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



STAGE I CROSS SECTION
(Looking South)



STAGE II CROSS SECTION
(Looking South)

Note:

For quantity of Temporary Concrete Barrier, see roadway plans.

DESIGNED	-
CHECKED	-
DRAWN	-
CHECKED	-

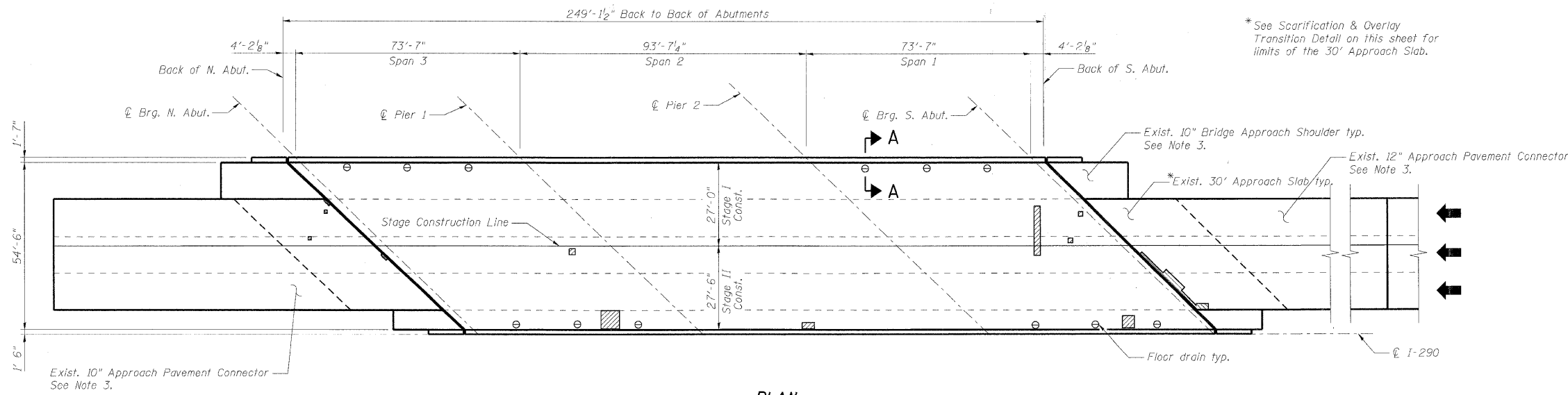
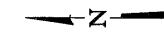
STAGE CONSTRUCTION DETAILS
STRUCTURE NO. 016-1131

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Chicago, Illinois 60601
312-565-0450 Job No. 10050

SHEET NO. 3 10 SHEETS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	2009-099 BR	COOK/DUPAGE	309	183
			CONTRACT NO. 60157		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

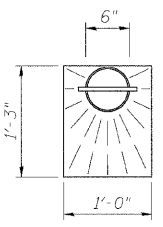


PLAN

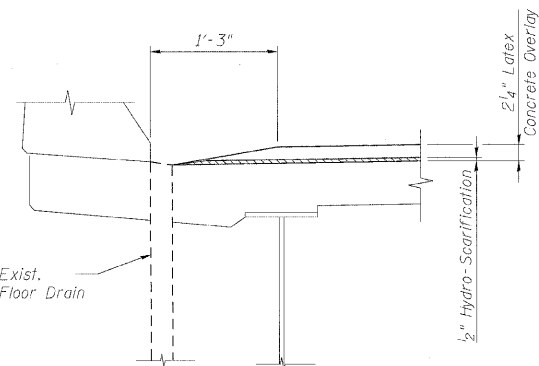
* See Scarification & Overlay Transition Detail on this sheet for limits of the 30' Approach Slab.

BILL OF MATERIAL			
SYMBOL	ITEM	UNIT	QUANTITY
	Deck Slab Repair (Partial)	Sq. Yd.	22.4 ▲
	Approach Slab Repair (Partial Depth)	Sq. Yd.	11.6 ▲
	Protective Shield	Sq. Yd.	640
	Bridge Deck Grooving	Sq. Yd.	1,792
	Protective Coat	Sq. Yd.	1,872
	Bridge Deck Latex Concrete Overlay, 2 1/4"	Sq. Yd.	1,837
	Bridge Deck Hydro-Scarification, 1/2"	Sq. Yd.	1,837

▲ For information only to assist the Contractor in bidding. See Special Provisions for "Bridge Deck Latex Concrete Overlay".

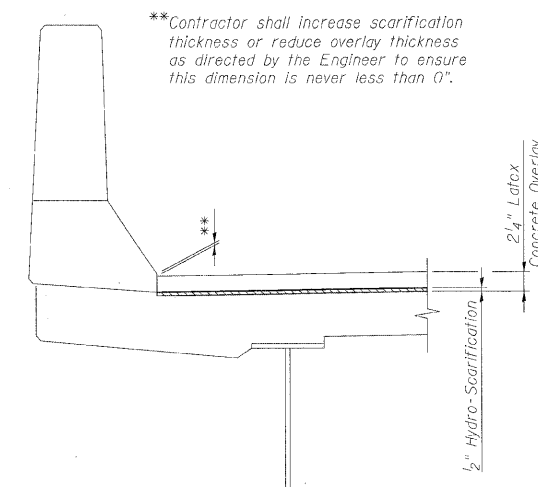


FLOOR DRAIN PLAN

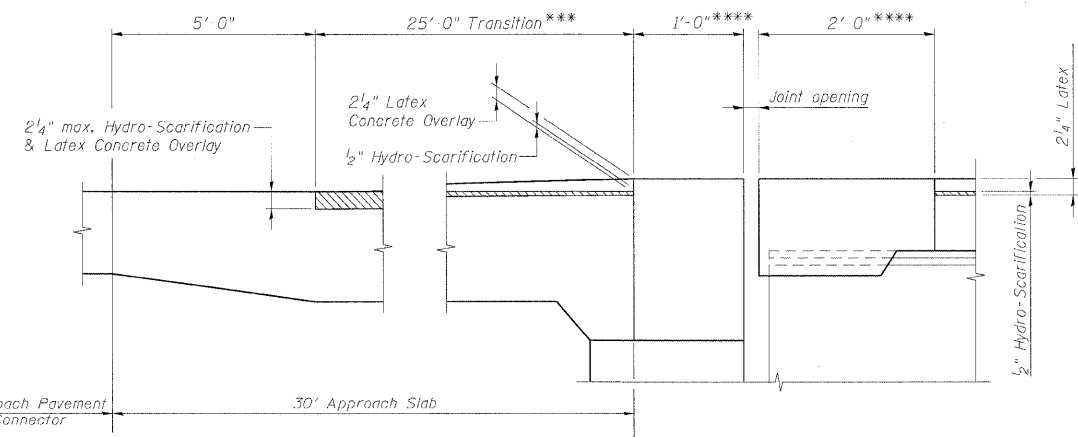


SECTION A-A

CONCRETE OVERLAY AT FLOOR DRAIN



SCARIFICATION & OVERLAY
DETAIL AT PARAPET



SCARIFICATION & OVERLAY TRANSITION DETAIL

***Cost of increased hydro-scarification depth over length of transition shall be included with Bridge Deck Hydro-Scarification, 1/2".

****Construct new concrete at joints to same lines and grades as new concrete overlay at these locations.

Notes:

- Deck and approach slab repair areas are estimated based on visual inspection completed in June 2009. Actual repair areas and locations shall be determined by the Engineer and shown on As-Built plans.
- Protective Shield, required for deck slab and/or parapet repairs, shall be installed according to Article 501.0.3 of the Standard Specifications. For limits of Protective Shield, see General Plan and Elevation.
- Deck drains (downspouts, floor drains, and scuppers) shall be cleaned prior to placement of the Latex Concrete Overlay. Cost of cleaning the deck drains is included in Bridge Deck Hydro-Scarification, 1/2".
- The Engineer shall determine the type and quantity of Class A patching and the quantity of Mixture for Cracks, Joints and Flangeways. Estimated quantities are included in the overall Summary of Quantities in Roadway Plans.
- Gaps caused by distress around floor drains shall be filled with epoxy as specified in the Special Provision "Epoxy Injection". Cost included with Bridge Deck Latex Concrete Overlay, 2 1/4".
- Cost of new overlay on approach slab transition is included with Bridge Deck Latex Concrete Overlay, 2 1/4".

BRIDGE DECK AND APPROACH
SLAB REPAIRS
STRUCTURE NO. 016-1131

DESIGNED	TJJ
CHECKED	AAY
DRAWN	RMG
CHECKED	AAY

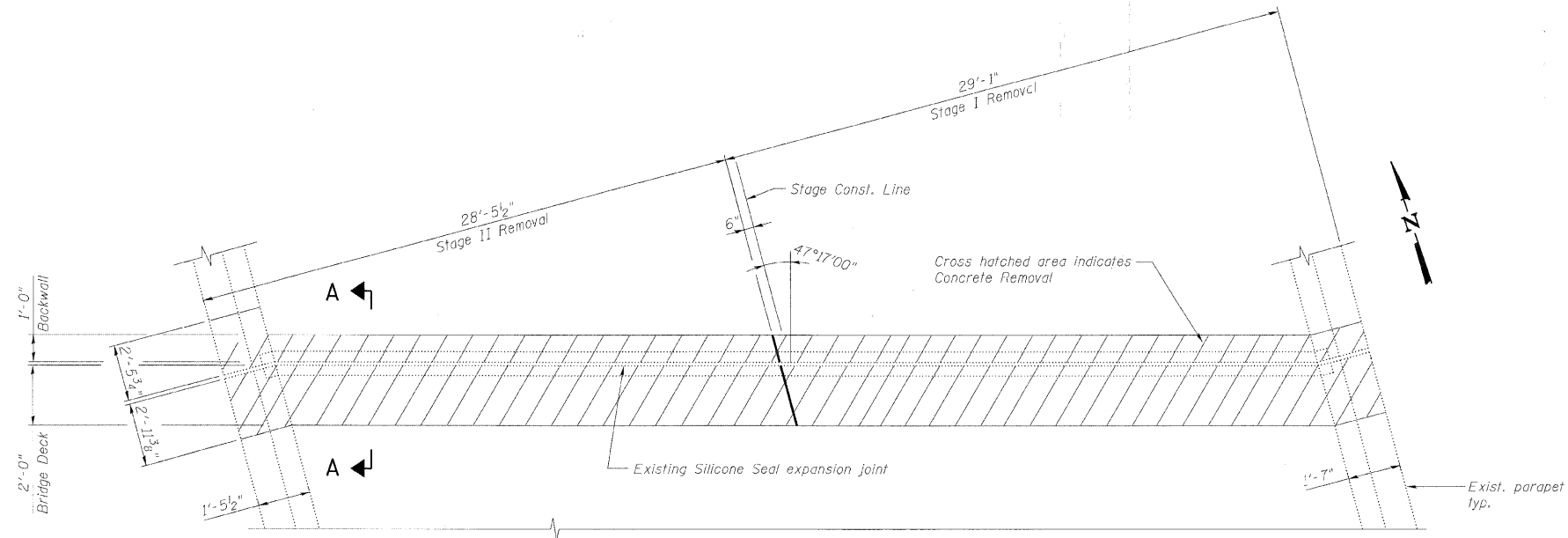
benesch

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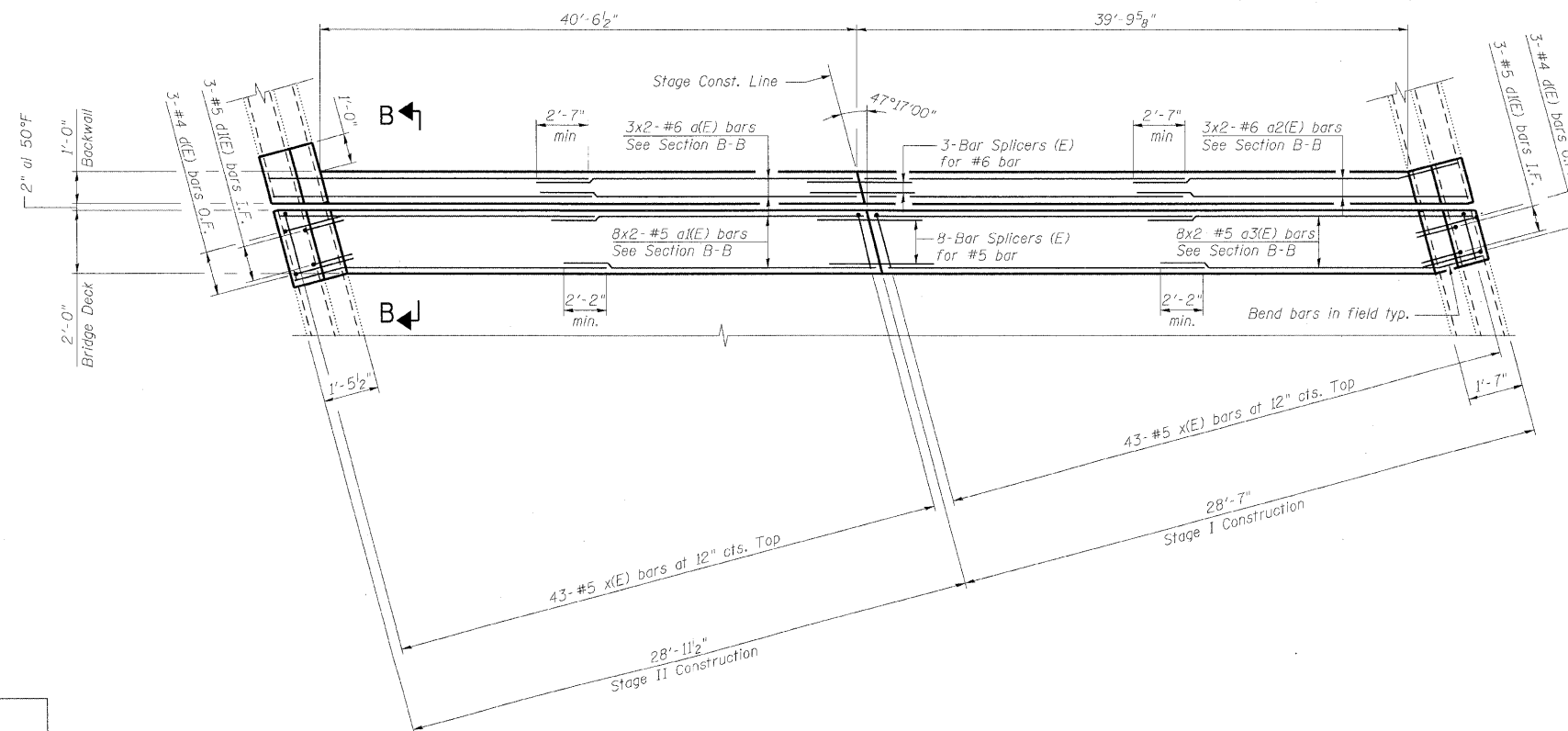
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	290	2009-099 BR	COOK/DUPAGE	309	184
FED. ROAD DIST. NO.			ILLINOIS	FED. AID PROJECT	
CONTRACT NO. 60157					

x:\10000s\10050\engineering\documents\contract\1\SN.016.1131.1130.C&NW.N\1131-60051-004-deck-repair.dgn 18:36:55 11/12/2009

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



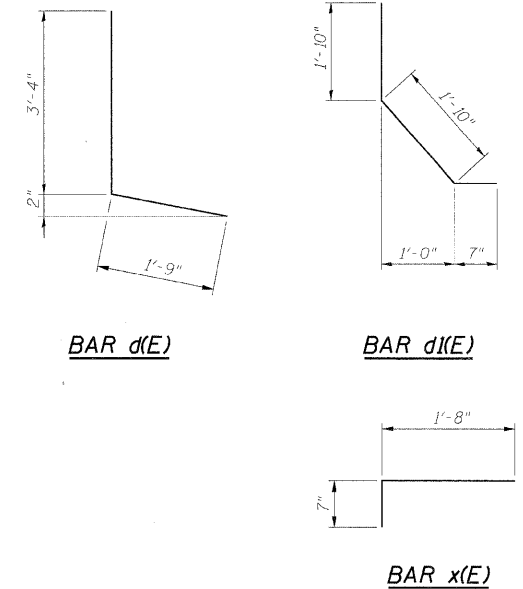
EXISTING PARTIAL PLAN AT NORTH ABUTMENT
(Opposite Hand for South Abutment)



PROPOSED PARTIAL PLAN AT NORTH ABUTMENT
(Opposite Hand for South Abutment)

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	12	#6	22'-2"	—
a1(E)	32	#5	22'-2"	—
a2(E)	12	#6	21'-10"	—
a3(E)	32	#5	21'-10"	—
d(E)	12	#4	5'-1"	┌
d1(E)	12	#5	4'-3"	┌
x(E)	1/2	#5	2'-3"	┌
Item	Unit	Total		
Concrete Removal	Cu. Yd.	28.2		
Concrete Superstructure	Cu. Yd.	30.2		
Reinforcement Bars, Epoxy Coated	Pound	2,760		



- Notes:**
- Bars indicated thus 8x2-#5 etc. indicates 8 lines of bars with 2 lengths per line.
 - I.F. denotes Inside Face.
O.F. denotes Outside Face.
 - Work this sheet with Expansion Joint Details sheet and Bar Splicer Assembly Details sheet.
 - x(E) bar spacing measured along skew.

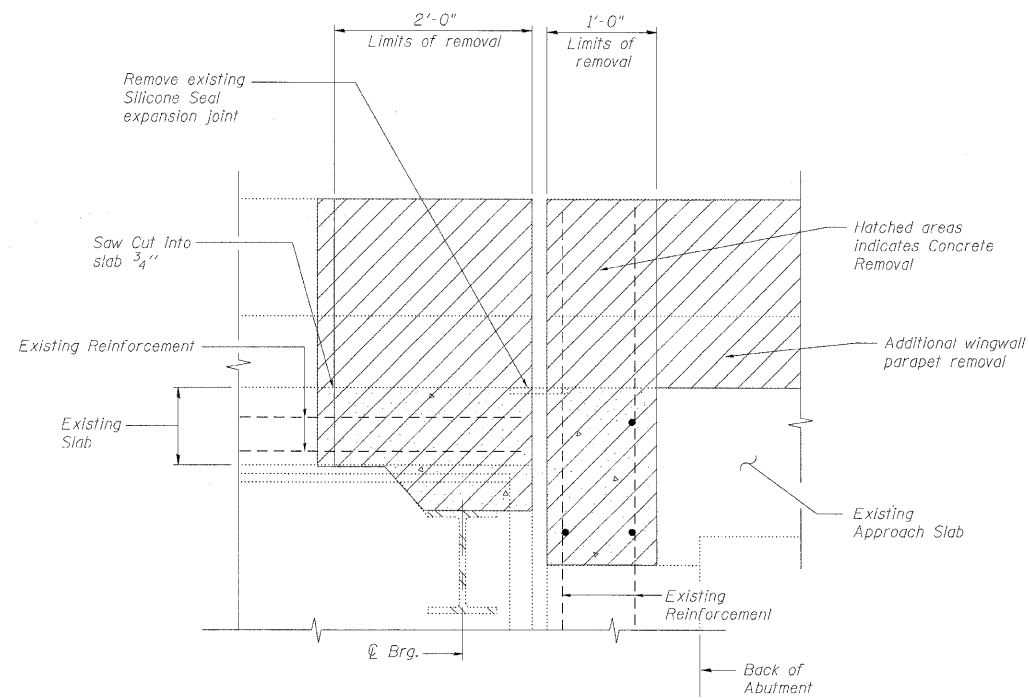
DESIGNED	JLS
CHECKED	AAY
DRAWN	VH
CHECKED	AAY

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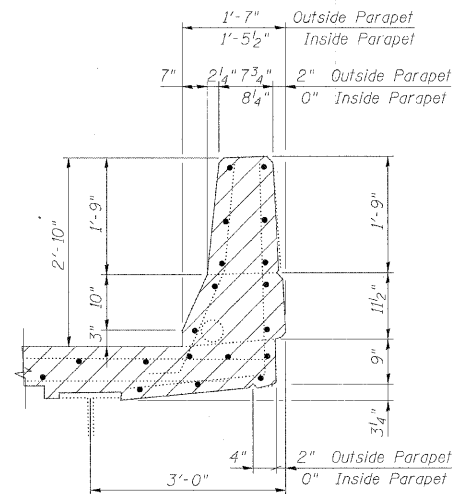
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312-565-0450 Job No. 10050

SHEET NO. 5 10 SHEETS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	2009-099 BR	COOK/DUPAGE	309	185
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT		
			CONTRACT NO. 60157		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



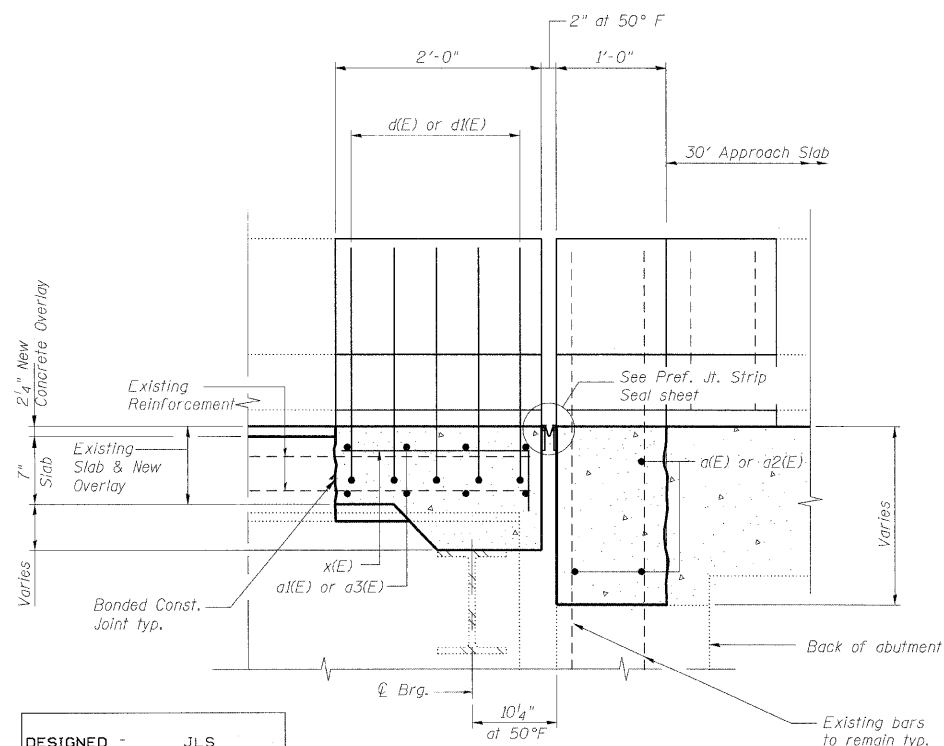
SECTION A-A



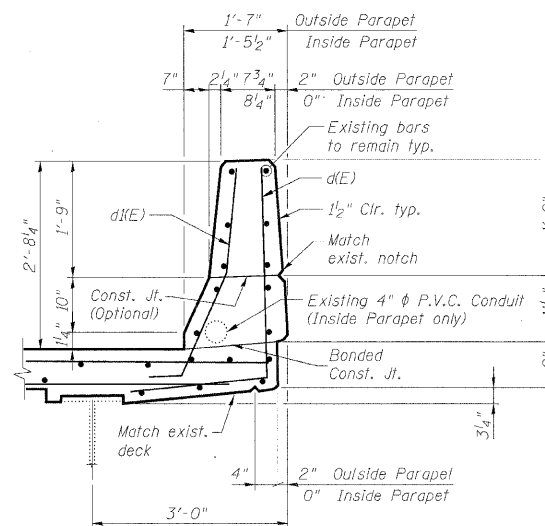
EXISTING PARAPET SECTION

Notes:

- Existing reinforcement bars extending into the concrete removal area shall be blast-cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be repaired or replaced with an approved bar splicer or anchorage system. Cost included with Concrete Removal.
- Existing reinforcement bars in the concrete removal area parallel to the expansion joints shall be removed.
- Removal and disposal of the existing expansion joints will not be paid for separately, but shall be included with the cost of Concrete Removal.
- If existing name plate falls within the limits of Concrete Removal, it shall be removed and reinstalled in its original location in accordance with IDOT Std. 515001. Cost Included with Concrete Superstructure.
- If existing guardrail and/or end shoe fall within the limits of Concrete Removal, they shall be removed and reinstalled in their original location in accordance with District 1 Std. BM-21. Cost included with Concrete Superstructure.
- The Contractor shall exercise extreme care with the existing conduits in sections of the parapet to be removed and to protect and support the conduit. The Contractor will be required to repair any damage done to the conduit to the satisfaction of the Engineer, at no additional cost to the Department. No splicing will be allowed to any cable damage resulting from this work, instead the Contractor will be required to repair the entire span of any damaged cable at no additional cost to the Department.
- Work this sheet with Expansion Joint Repairs sheet.



SECTION B-B



PROPOSED PARAPET SECTION

DESIGNED -	JLS
CHECKED -	AAV
DRAWN -	VH
CHECKED -	AAV

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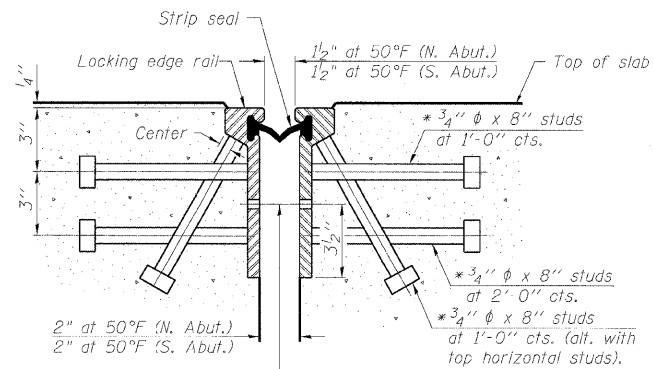
benesch

**EXPANSION JOINT DETAILS
STRUCTURE NO. 016-1131**

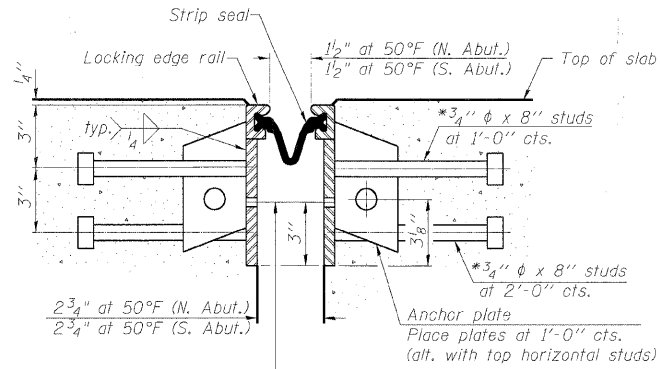
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	290	2009-099 BR	COOK/DUPAGE	309	186
FED. ROAD DIST. NO.			ILLINOIS	FED. AID PROJECT	
CONTRACT NO. 60157					

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

* Granular or solid flux filled headed studs conforming to Article 1006.32 of the Std. Specs., automatically end welded.

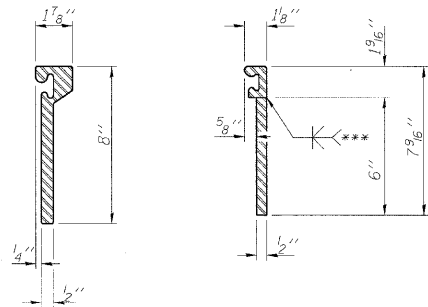


7/16" ϕ holes at 4'-0" cts. for 3/8" ϕ bolts. All bolts shall be burned, sawed, or chipped off flush with the plates after forms are removed, typ.



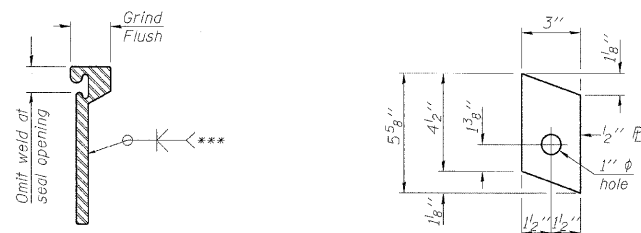
7/16" ϕ holes at 4'-0" cts. for 3/8" ϕ bolts. All bolts shall be burned, sawed, or chipped off flush with the plates after forms are removed, typ.

SECTION THRU
ROLLED RAIL JOINT



ROLLED
EXTRUDED RAIL WELDED RAIL

SECTION THRU
WELDED RAIL JOINT



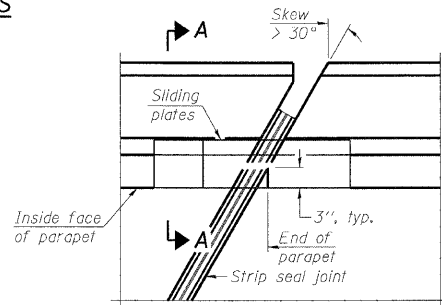
ANCHOR PLATE
(For welded rail)

***Back gouge not required if complete joint penetration is verified by mock-up.

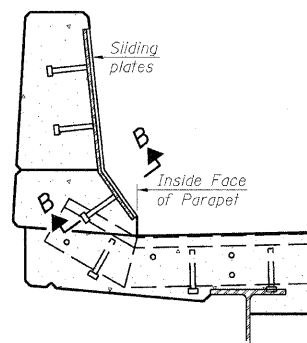
LOCKING EDGE
RAIL SPLICE

The inside of the locking edge rail groove shall be free of weld residue.

LOCKING EDGE RAILS

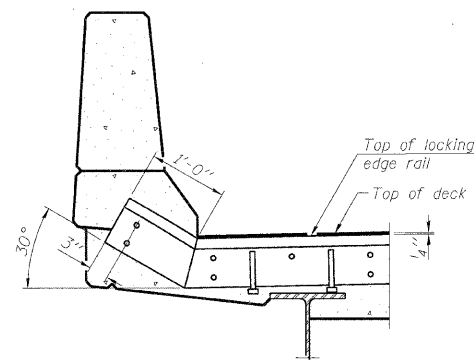


PLAN

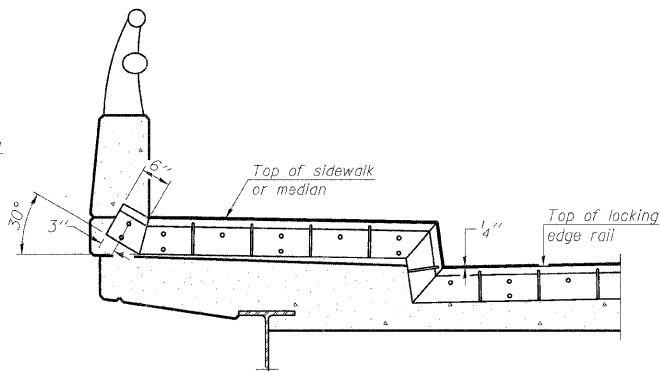


SECTION A-A

POINT BLOCK DETAILS
(for skews > 30°)



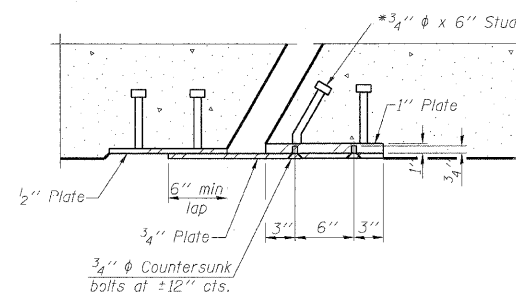
AT PARAPET



AT SIDEWALK OR MEDIAN

Shorter plates with a single row of studs at 12" cts. may be necessary on medians which are shallower than 9". See manufacturer's recommendation.

TYPICAL END TREATMENTS



SECTION B-B

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	165.0

DESIGNED -	TJJ
CHECKED -	AAV
DRAWN -	RMG
CHECKED -	AAV

EJ-SSJ

10-1-08

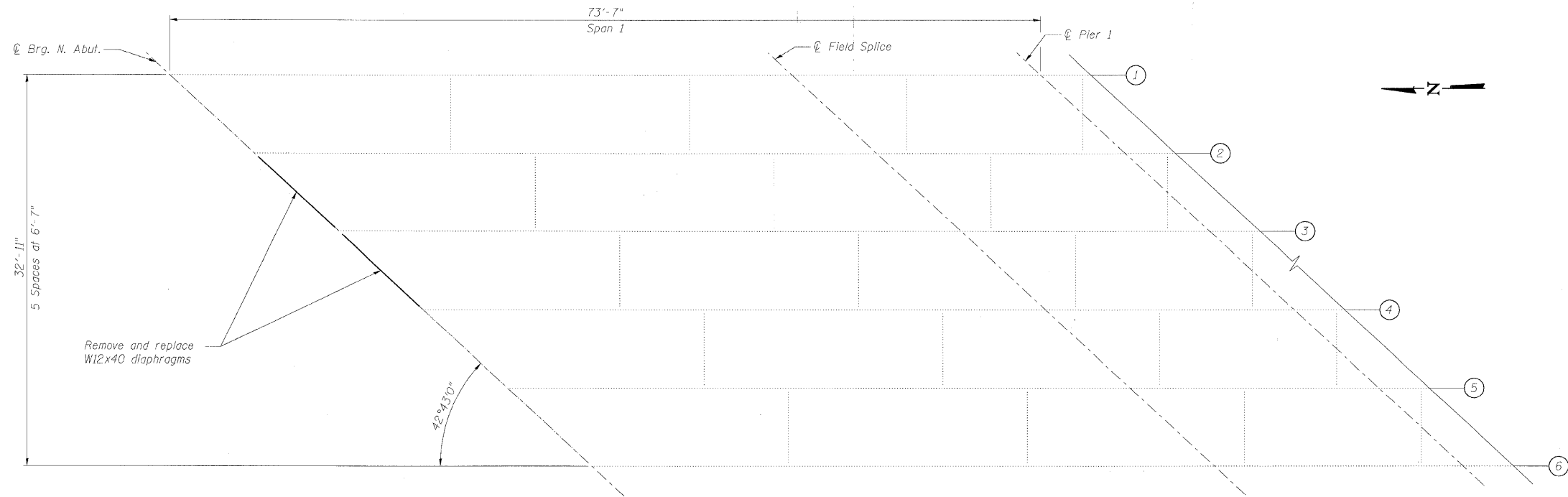
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312-665-0450 Job No. 10050

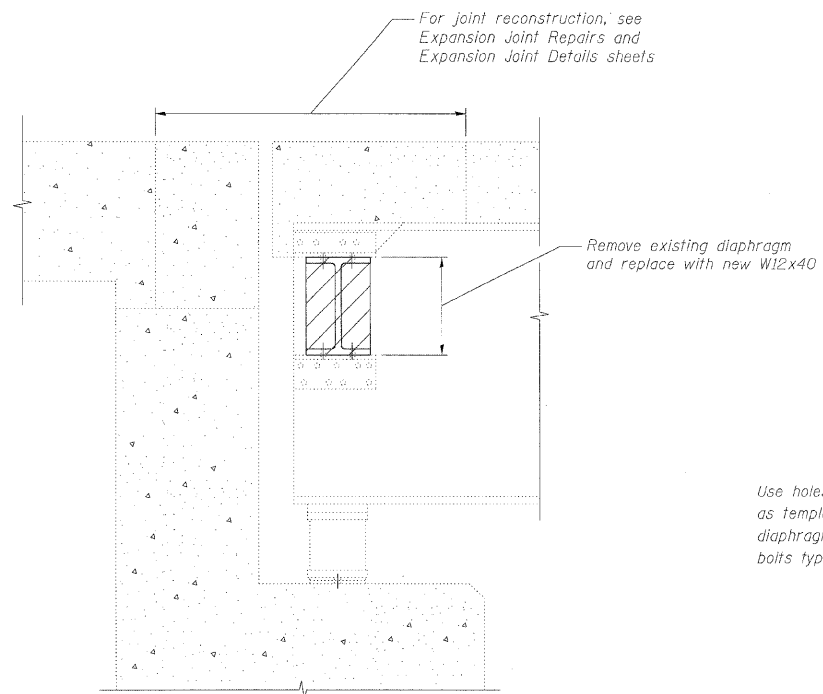
SHEET NO. 7	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	2009-099 BR	COOK/DUPAGE	309	187
10 SHEETS	CONTRACT NO. 60157				
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT			

PREFORMED JOINT STRIP SEAL
STRUCTURE NO. 016-1131

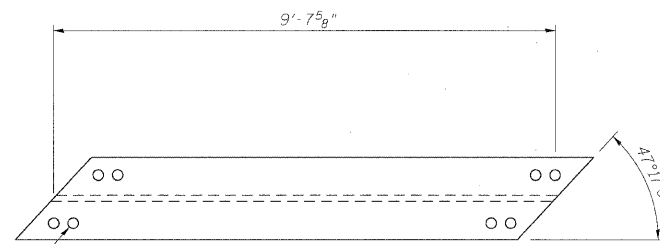
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



EXISTING STRUCTURAL STEEL PLAN



SECTION
AT NORTH ABUTMENT



Use holes on existing clip angles as template to drill holes in new diaphragm, $\frac{3}{4}$ " ϕ High strength bolts typ.

DIAPHRAGM PLAN

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Structural Steel Repair	Pound	111

Notes:

- Cost of removal and re-installation of all members necessary to complete the work as detailed on the plans and as specified in the Special Provisions shall be included with Structural Steel Repair.
- Existing structural steel that will be in contact with new structural steel shall be cleaned and painted prior to erection as required by the Special Provision "Cleaning and Painting Contact Surface Areas of Existing Steel Structures".
- Diaphragm connection holes shall be $\frac{15}{16}$ " ϕ for $\frac{3}{4}$ " ϕ bolts. Two hardened washers shall be required at diaphragm connections.
- Work this sheet with Existing Steel Details sheet.

DESIGNED -	TJJ
CHECKED -	AAY
DRAWN -	TJJ
CHECKED -	AAY

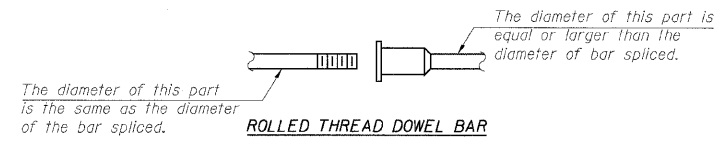
STEEL REPAIR DETAILS
STRUCTURE NO. 016-1131

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Chicago, Illinois 60601
312.565-0450 Job No. 10050

SHEET NO. 8 10 SHEETS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	2009-099 BR	COOK/DUPAGE	309	188
FED. ROAD DIST. NO.			ILLINOIS	FED. AID PROJECT	
				CONTRACT NO. 60157	

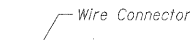
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



ROLLED THREAD DOWEL BAR



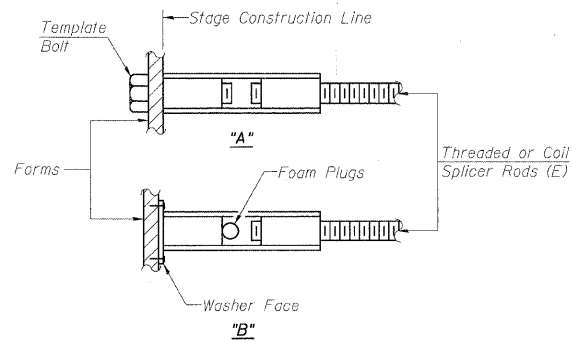
ONE PIECE



WELDED SECTIONS

BAR SPLICER ASSEMBLY ALTERNATIVES

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



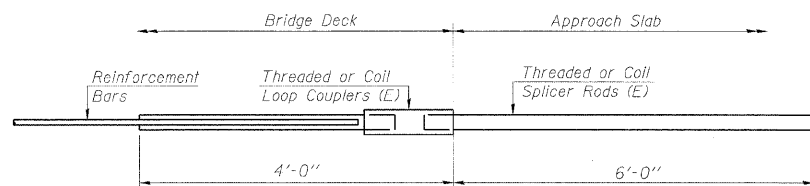
INSTALLATION AND SETTING METHODS

"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:

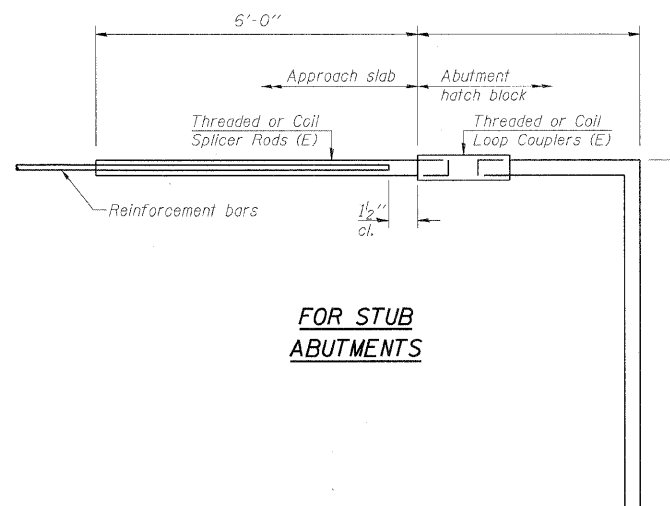
- ① Minimum Capacity = $1.25 \times f_y \times A_1$
(Tension in kips)
 - ② Minimum *Pull-out Strength = $0.66 \times f_y \times A_1$
(Tension in kips)
- Where f_y = Yield strength of lapped reinforcement bars in ksi.
 A_1 = Tensile stress area of lapped reinforcement bars.
* = 28 day concrete

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



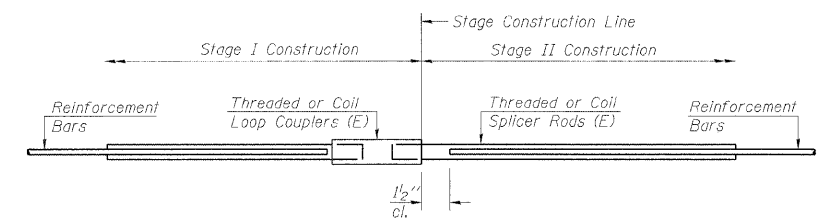
FOR INTEGRAL OR SEMI-INTEGRAL ABUTMENTS

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
#5	16	Deck
#6	6	Deck

DESIGNED -	TJJ
CHECKED -	AAY
DRAWN -	RMG
CHECKED -	AAY

BSD-1

10-1-08

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312-565-0450 Job No. 10050

SHEET NO. 9 10 SHEETS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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FED. ROAD DIST. NO.			ILLINOIS	FED. AID PROJECT	
CONTRACT NO. 60157					

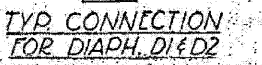
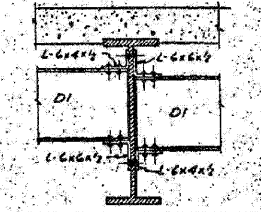
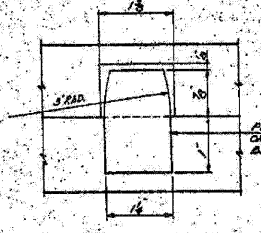
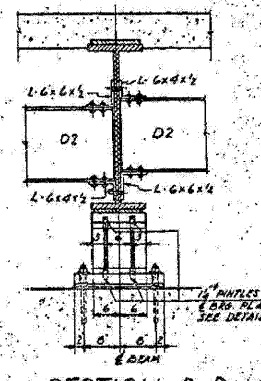
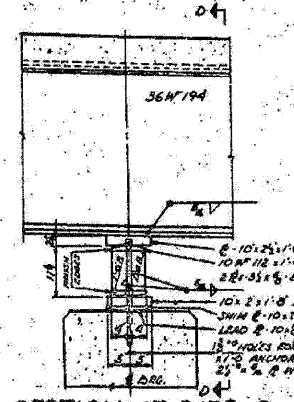
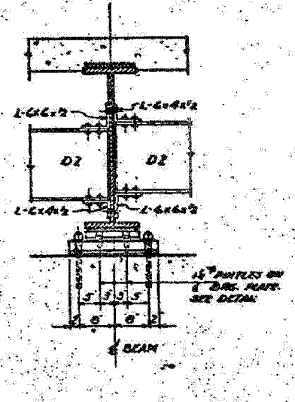
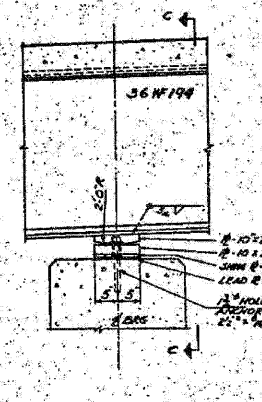
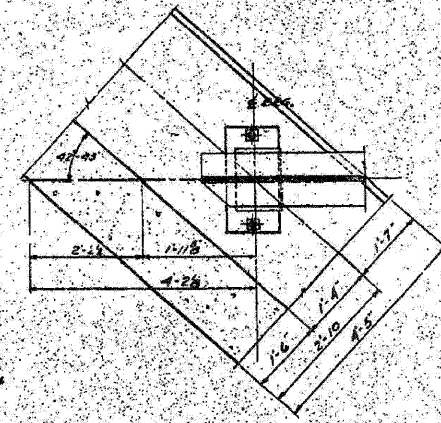
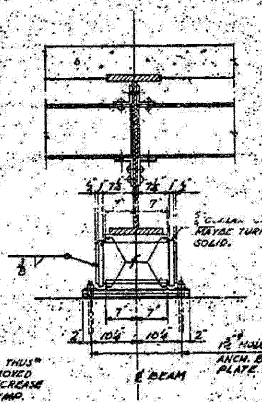
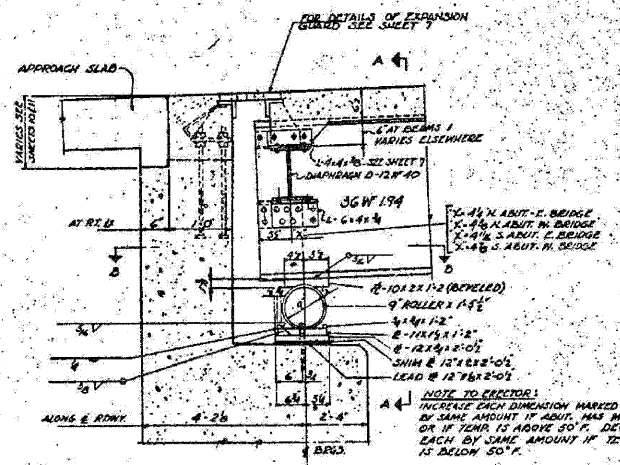
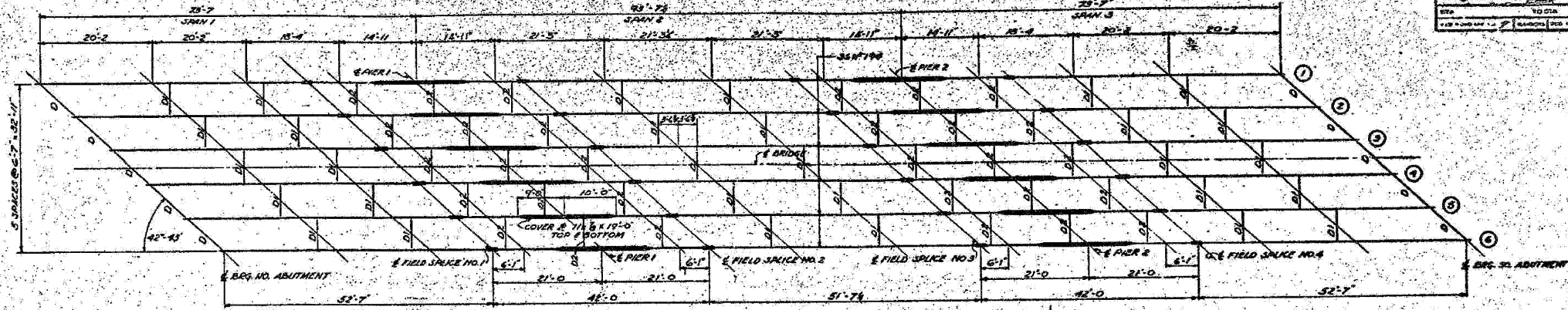
BAR SPLICER ASSEMBLY DETAILS
STRUCTURE NO. 016-1131

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11/2/2009

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



BEAM ELEVATIONS
ELEVATIONS ARE GIVEN TO TOPS OF BEAMS

LOCATION	1	2	3	4	5	6
BAR NORTH ABUT.	700.950	701.219	701.501	701.501	701.640	701.646
FIELD SPICE NO. 1	701.954	702.214	702.412	702.531	702.571	702.552
PIER 1	702.302	702.552	702.741	702.851	702.882	702.999
FIELD SPICE NO. 2	702.649	702.890	703.070	703.171	703.193	703.154
FIELD SPICE NO. 3	703.357	703.575	703.733	703.812	703.818	703.753
PIER 2	703.586	703.775	703.944	704.014	704.004	703.937
FIELD SPICE NO. 4	703.815	704.015	704.155	704.217	704.199	704.127
BAR SOUTH ABUT.	704.239	704.417	704.533	704.573	704.533	704.432
BAR NORTH ABUT.	702.244	702.492	702.657	702.798	702.832	702.805
FIELD SPICE NO. 1	703.044	703.272	703.441	703.530	703.541	703.497
PIER 1	703.304	703.523	703.682	703.763	703.764	703.706
FIELD SPICE NO. 2	703.543	703.774	703.924	703.996	703.983	703.921
FIELD SPICE NO. 3	704.036	704.245	704.373	704.422	704.393	704.303
PIER 2	704.198	704.379	704.496	704.531	704.496	704.400
FIELD SPICE NO. 4	704.339	704.510	704.620	704.652	704.601	704.497
BAR SOUTH ABUT.	704.545	704.693	704.761	704.790	704.720	704.590

E DIMENSIONS

BEAM NO.	1	2	3	4	5	6
NORTH ABUT.	-	-	-	-	-	-
PIER 1	-	-	-	-	-	-
PIER 2	-	-	-	-	-	-
SOUTH ABUT.	-	-	-	-	-	-
NORTH ABUT.	-	-	-	-	-	-
PIER 1	-	-	-	-	-	-
PIER 2	-	-	-	-	-	-
SOUTH ABUT.	-	-	-	-	-	-

NOTE:
TOTAL ESTIMATED WEIGHT OF BEAMS
AND ANCHOR BOLTS FOR 2 BRIDGES = 59,750 LBS.

STRUCTURAL STEEL PLAN & SECTIONS
GRADE SEPARATION
CONGRESS STREET EXPRESSWAY
LAKE STREET CONNECTION
OVER C&N.W. RAILWAY

F.A.I.R.T.E. SECTION 100VB-2
STATION 65+66.05

ALFRED BENESECH & ASSOCIATES CONSULTING ENGINEERS
30 EAST ADAMS STREET CHICAGO, ILLINOIS 60601-3204-5

FOR INFORMATION ONLY

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alfred benesch & company
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Chicago, Illinois 60601
312-965-0450 Job No. 10050

SHEET NO. 10	F.A.I. RTE. 290	SECTION 2009-099 BR	COUNTY COOK/DUPAGE	TOTAL SHEETS 309	SHEET NO. 190
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT			

EXISTING STEEL DETAILS
STRUCTURE NO. 016-1131

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

Existing Structure:
The structure is a three-span continuous steel structure with a 7.5-inch reinforced concrete deck with no overlay. The original structure was built in 1958 and is in Section (100 & 100-1) R-84. In 1985, the bridge was widened and redecked, expansion joints were reconstructed, and the superstructure was cleaned and painted. In 1998, the expansion joints were reconstructed and approach slabs were repaired.

Stage construction shall be utilized to maintain traffic during construction.

No salvage.

DESIGN SPECIFICATIONS

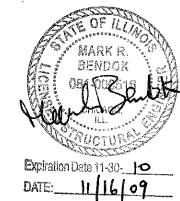
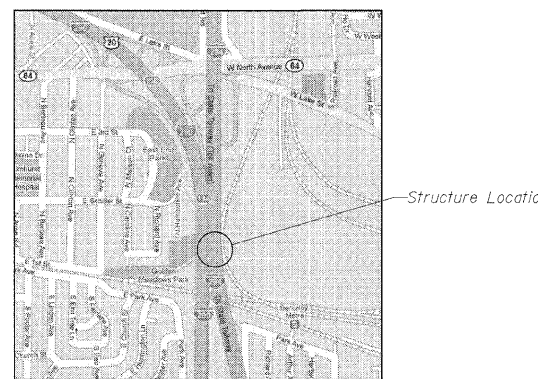
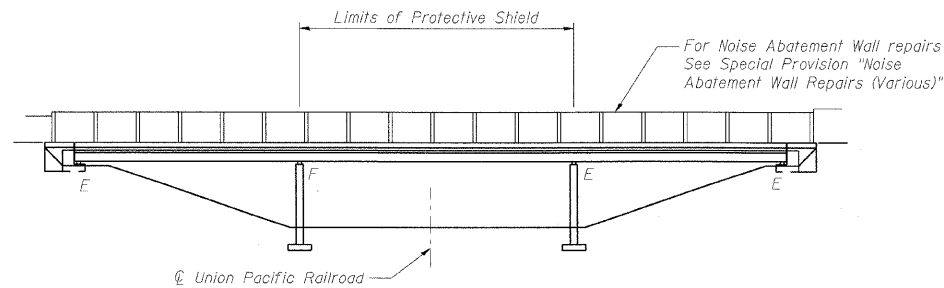
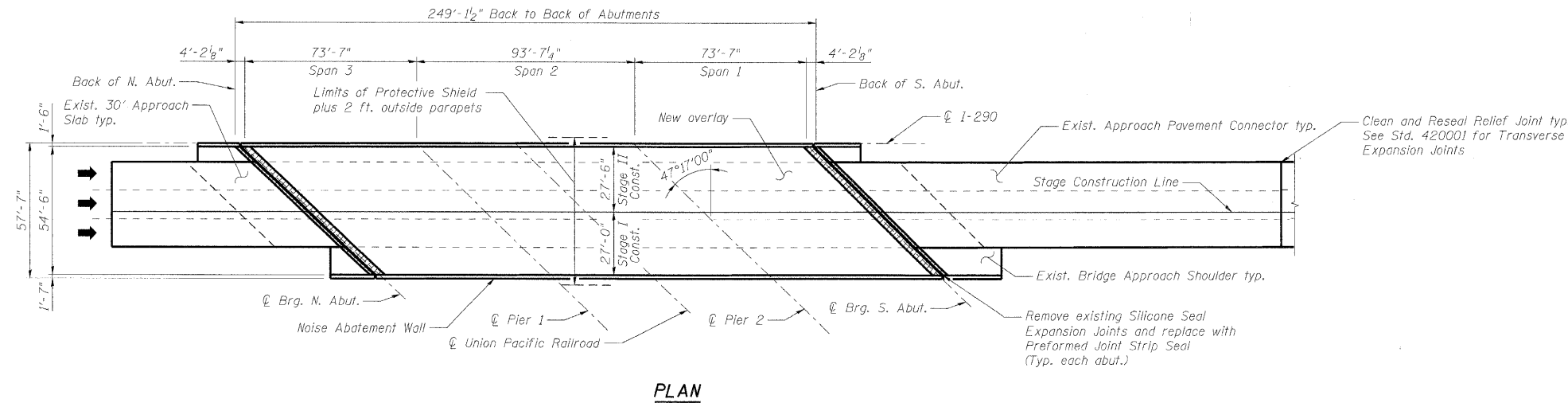
2002 AASHTO Standard Specifications
for Highway Bridges, 17th Edition

DESIGN STRESSES

$f'c = 3,500 \text{ psi}$
 $f_y = 60,000 \text{ psi}$

SCOPE OF WORK

1. Bridge Deck Hydro-scarification.
2. Repair bridge deck.
3. Repair approach slab.
4. Reconstruct deck joints at each abutment with preformed joint strip seal.
5. Place new overlay.
6. Repair north abutment backwall and beam seat.
7. Repair parapet with formed concrete repair.
8. Clean and reseal relief joints at the end of approach pavement connectors.
9. Apply concrete sealer to parapets, and abutment seats and backwalls.



**GENERAL PLAN AND ELEVATION
I-290 EB OVER UNION PACIFIC
RAILROAD (NORTH)
COOK COUNTY
STATION 380+68
STRUCTURE NO. 016-1130**

DESIGNED	-	TJJ
CHECKED	-	AAY
DRAWN	-	RMG
CHECKED	-	AAY

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312-666-0450 Job No. 10050

SHEET NO. 1 9 SHEETS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	2009-099 BR	COOK/DUPAGE	309	191
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT	CONTRACT NO. 60157	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

- Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60. See Special Provisions.
- Reinforcement bars designated (E) shall be epoxy coated.
- 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.
- Plan dimensions and details relative to existing plans are subject to nominal 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.
- Concrete Sealer shall be applied to the parapets, abutment seats and abutment backwalls. All surfaces to be sealed shall be cleaned thoroughly prior to sealer application. Cost included with Concrete Sealer.
- The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.
- Stage construction shall be utilized to maintain traffic during construction.
- The Contractor shall exercise care during removal of existing joints to ensure that the slab, beams and diaphragms' integrity will not be detrimentally impacted. The Contractor shall repair any damage(s) to the slab, beams and diaphragms caused by his operation as directed by the Engineer at no additional cost to the Department.
- Protective Coat shall be applied to the new Latex Concrete Overlay.
- Joint openings shall be adjusted according to Article 520.04 of the Std. Specs. when the deck is poured at an ambient temperature other than 50°F.

INDEX OF SHEETS

- General Plan and Elevation
- General Notes, Bill of Material and Index of Sheets
- Stage Construction Details
- Bridge Deck and Approach Slab Repairs
- Expansion Joint Repairs
- Expansion Joint Details
- Preformed Joint Strip Seal
- Substructure Repairs
- Bar Splicer Assembly Details

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Concrete Removal	Cu. Yd.	28.2		28.2
Protective Shield	Sq. Yd.	640		640
Concrete Superstructure	Cu. Yd.	30.2		30.2
Bridge Deck Grooving	Sq. Yd.	1,792		1,792
Protective Coat	Sq. Yd.	1,872		1,872
Reinforcement Bars, Epoxy Coated	Pound	2,760		2,760
Bar Splicers	Each	22		22
Preformed Joint Strip Seal	Foot	165.0		165.0
Concrete Sealer	Sq. Ft.	2,282	982	3,264
Bridge Deck Latex Concrete Overlay, 2 1/4"	Sq. Yd.	1,837		1,837
Structural Repair of Concrete (Depth Equal to or Less than 5 Inches)	Sq. Ft.	29	52	81
Bridge Deck Hydro-Scarification, 1/2"	Sq. Yd.	1,837		1,837
Temporary Shoring and Cribbing	Each		1	1
Clean and Reseal Relief Joint	Foot	72.0		72.0

DESIGNED -	TJJ
CHECKED -	AAV
DRAWN -	RMG
CHECKED -	AAV

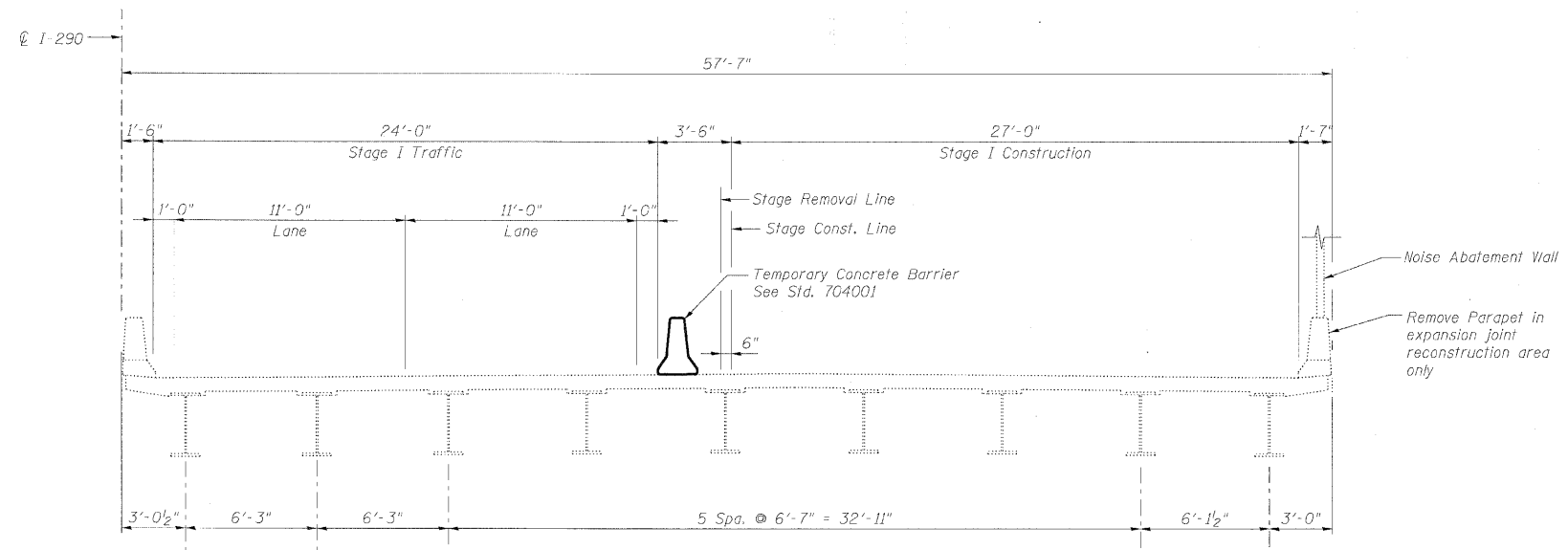
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Chicago, Illinois 60601
312-566-0450 Job No. 10050

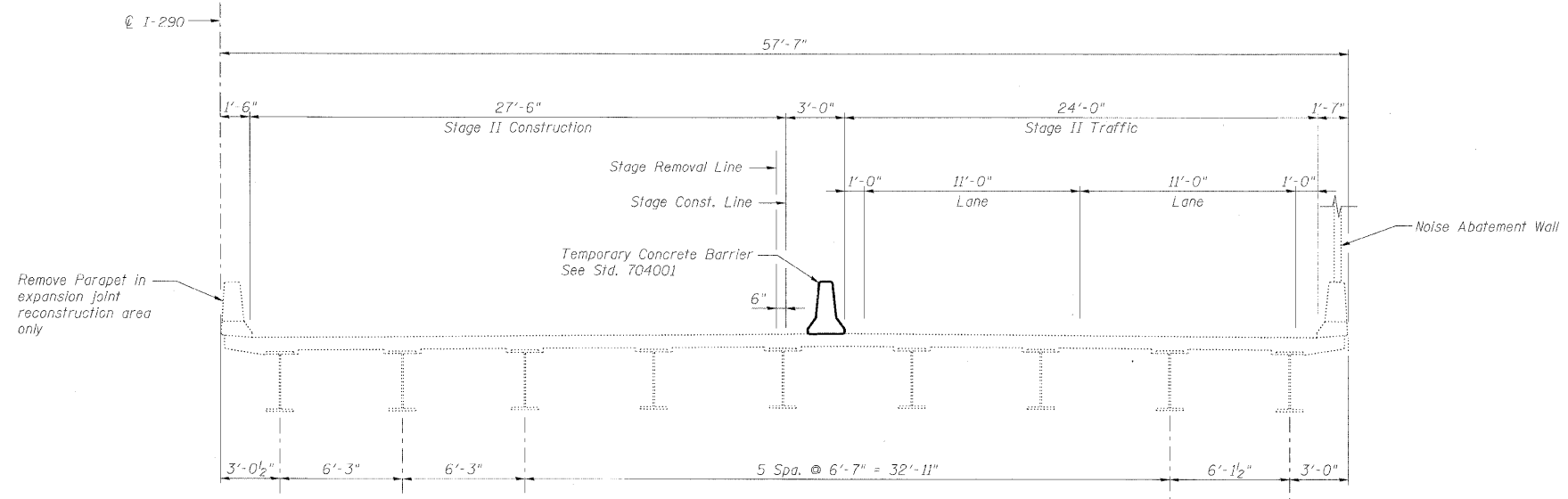
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	290	2009-099 BR	COOK/DUPAGE	309	192
			CONTRACT NO. 60157		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT			

**GENERAL NOTES, BILL OF MATERIAL
AND INDEX OF SHEETS
STRUCTURE NO. 016-1130**

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



STAGE I CROSS SECTION
(Looking South)



STAGE II CROSS SECTION
(Looking South)

Note:
For quantity of Temporary Concrete Barrier, see roadway plans.

DESIGNED -	MFB
CHECKED -	MAC
DRAWN -	TMB/VH
CHECKED -	AAV

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STAGE CONSTRUCTION DETAILS
STRUCTURE NO. 016-1130

SHEET NO. 3 9 SHEETS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	2009-099 BR	COOK/DUPAGE	309	193
FED. ROAD DIST. NO.			ILLINOIS	FED. AID PROJECT	
			CONTRACT NO. 60157		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BILL OF MATERIAL

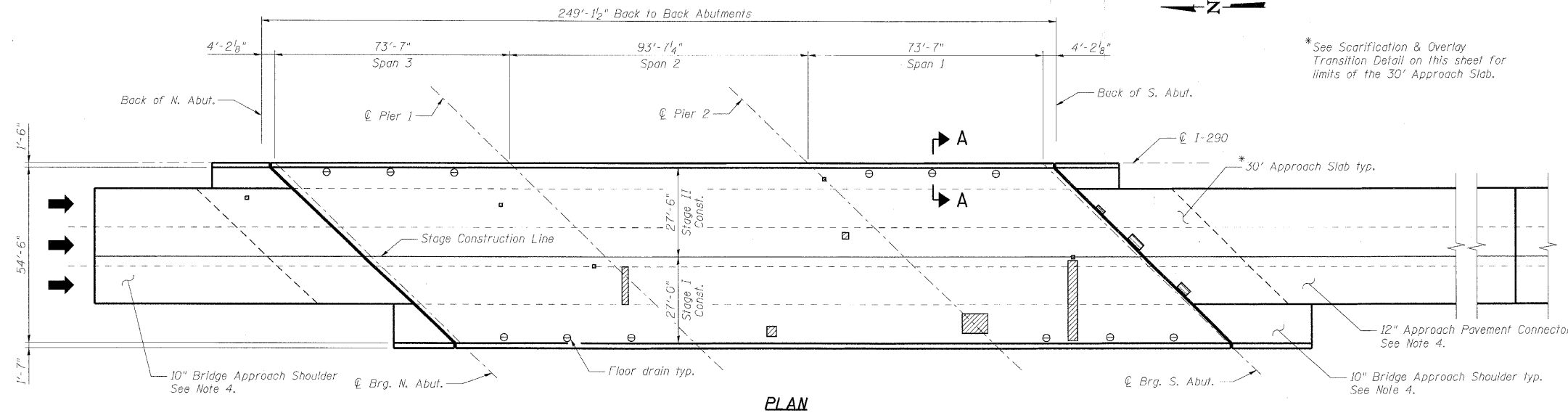
SYMBOL	ITEM	UNIT	QUANTITY
	Deck Slab Repair (Partial)	Sq. Yd.	39.2 ▲
	Approach Slab Repair (Partial Depth)	Sq. Yd.	5.0 ▲
	Structural Repair of Concrete (Depth Equal to or Less than 5 Inches)	Sq. Ft.	29
	Protective Shield	Sq. Yd.	640
	Bridge Deck Grooving	Sq. Yd.	1,792
	Protective Coat	Sq. Yd.	1,872
	Bridge Deck Latex Concrete Overlay, 2 1/4"	Sq. Yd.	1,837
	Bridge Deck Hydro-Scarification, 1/2"	Sq. Yd.	1,837

▲ For information only to assist the Contractor in bidding. See Special Provisions for "Bridge Deck Latex Concrete Overlay".

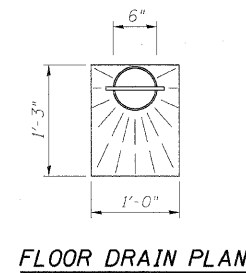
Notes:

- Deck and approach slab repair areas are estimated based on visual inspection completed in June 2009. Actual repair areas and locations shall be determined by the Engineer and shown on As-Built plans.
- Protective Shield, required for deck slab and/or parapet repairs, shall be installed according to Article 501.03 of the Standard Specifications. For limits of Protective Shield, see General Plan and Elevation.
- Deck drains (downspouts, floor drains, and scuppers) shall be cleaned prior to placement of the Latex Concrete Overlay. Cost of cleaning the deck drains is included in Bridge Deck Hydro-Scarification, 1/2".
- The Engineer shall determine the type and quantity of Class A patching and the quantity of Mixture for Cracks, Joints and Flangeways. Estimated quantities are included in the overall Summary of Quantities in Roadway Plans.
- Gaps caused by distress around floor drains shall be filled with epoxy as specified in the Special Provision "Epoxy Injection". Cost included with Bridge Deck Latex Concrete Overlay, 2 1/4".
- Cost of new overlay on approach slab transition is included with Bridge Deck Latex Concrete Overlay, 2 1/4".

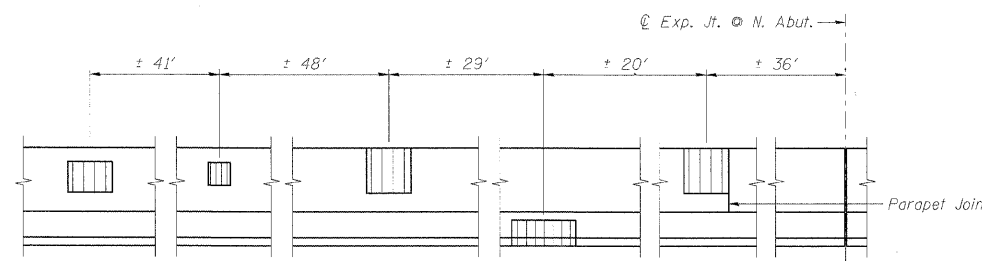
BRIDGE DECK AND APPROACH
SLAB REPAIRS
STRUCTURE NO. 016-1130



PLAN

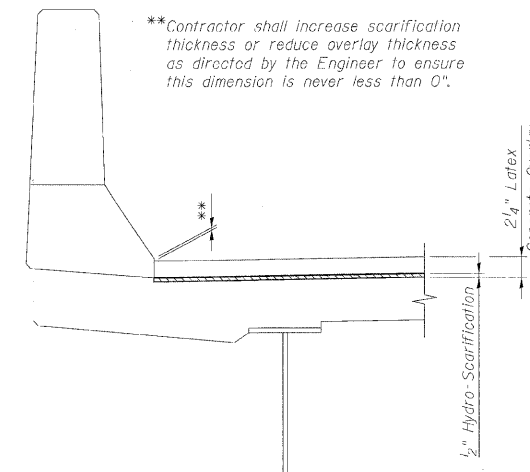


FLOOR DRAIN PLAN

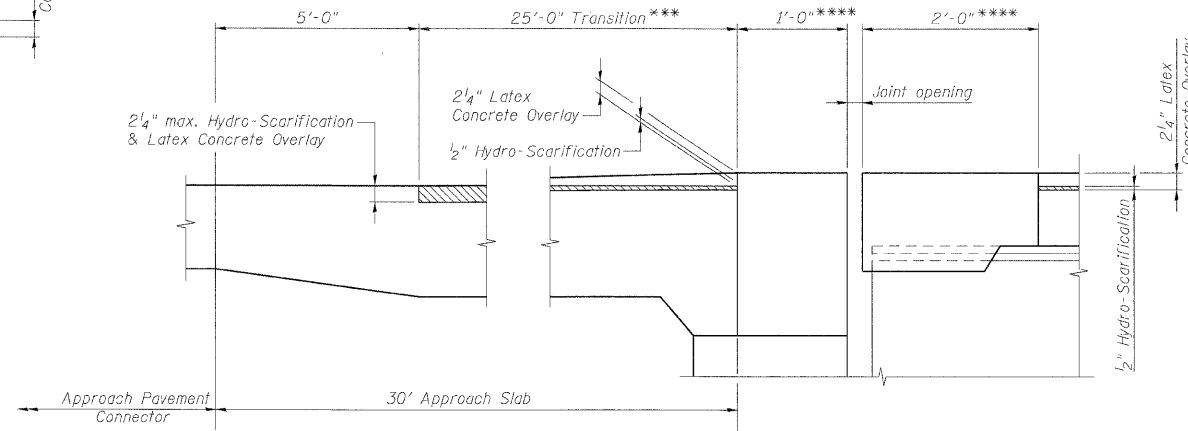


INSIDE ELEVATION - OUTSIDE PARAPET

Noise Abatement Wall not shown



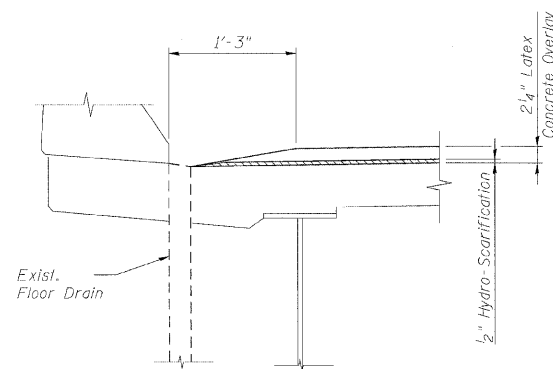
SCARIFICATION & OVERLAY
DETAIL AT PARAPET



SCARIFICATION & OVERLAY TRANSITION DETAIL

***Cost of increased hydro-scarification depth over length of transition shall be included with Bridge Deck Hydro-Scarification, 1/2".

****Construct new concrete at joints to same lines and grades as new concrete overlay at these locations.



SECTION A-A

CONCRETE OVERLAY AT FLOOR DRAIN

DESIGNED -	TJJ
CHECKED -	AAY
DRAWN -	RMG
CHECKED -	AAY

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Chicago, Illinois 60601
312-565-0450 Job No. 10050

SHEET NO. 4 9 SHEETS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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FED. ROAD DIST. NO. ILLINOIS			FED. AID PROJECT		

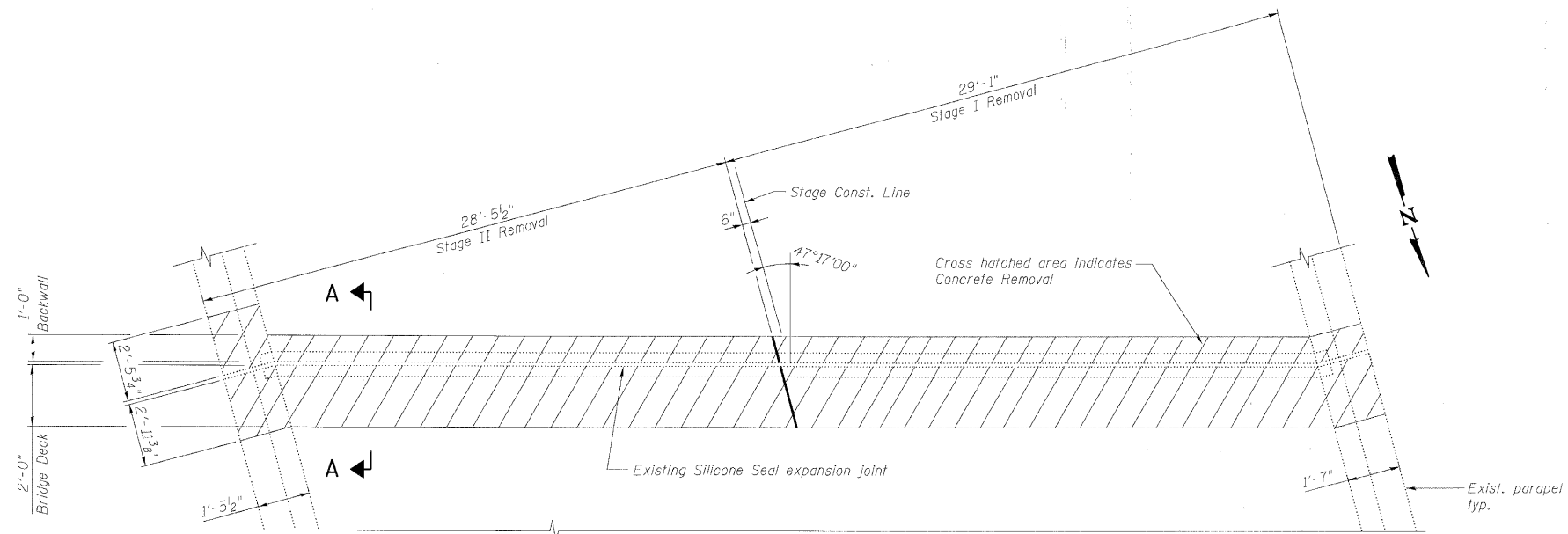
CONTRACT NO. 60I57

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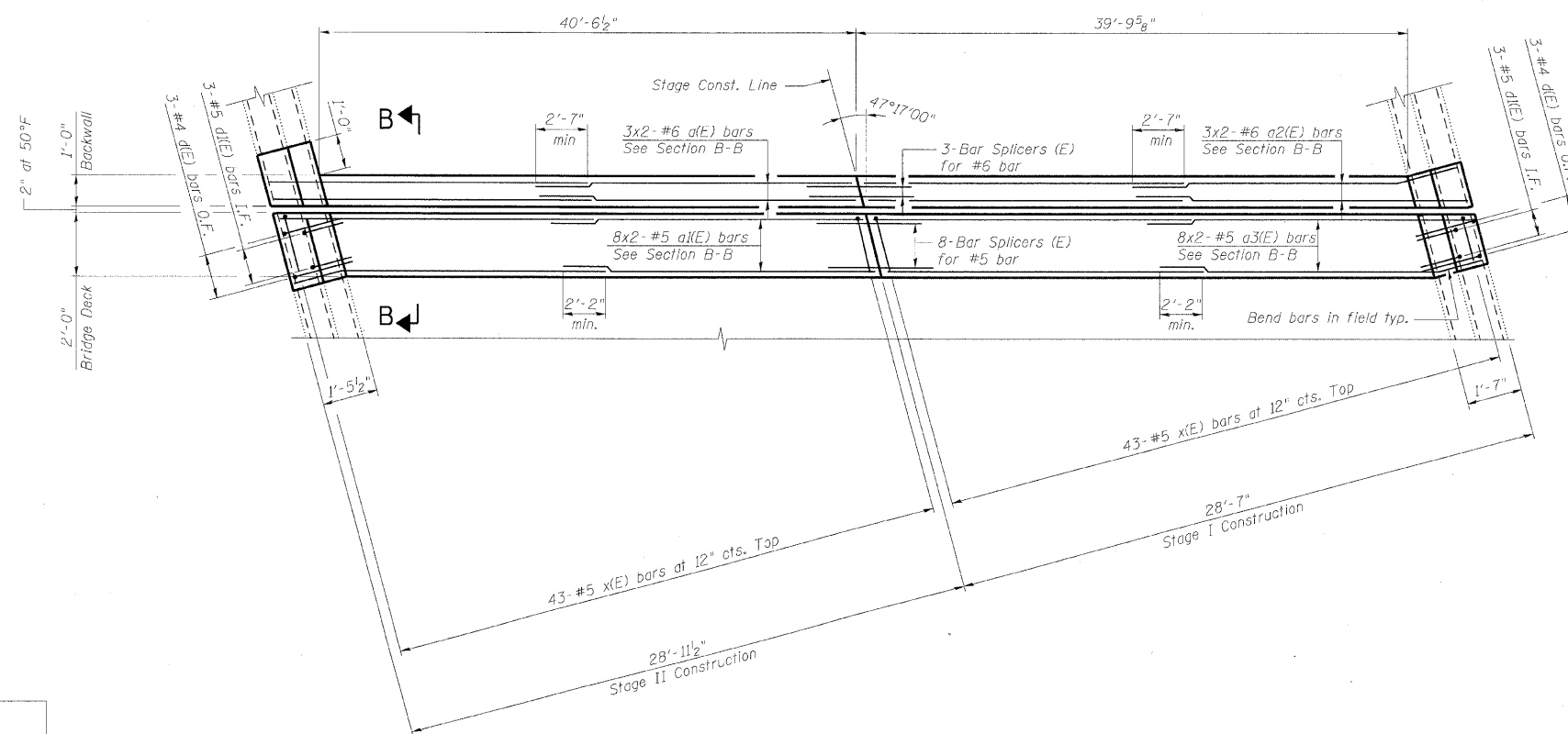
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11/12/2009

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



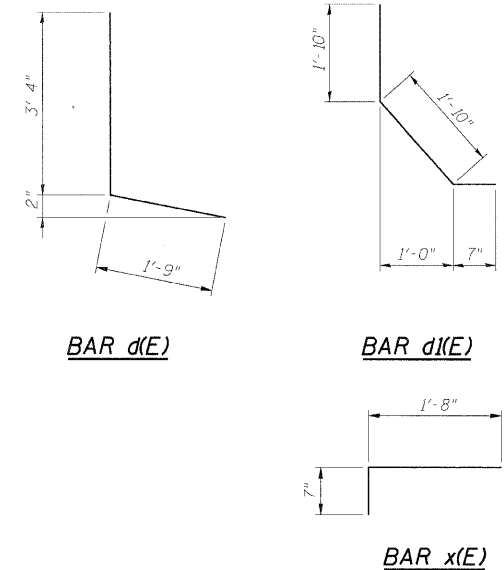
EXISTING PARTIAL PLAN AT SOUTH ABUTMENT
(Opposite Hand for North Abutment)



PROPOSED PARTIAL PLAN AT SOUTH ABUTMENT
(Opposite Hand for North Abutment)

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	12	#6	22'-2"	—
a1(E)	32	#5	22'-2"	—
a2(E)	12	#6	21'-10"	—
a3(E)	32	#5	21'-10"	—
d(E)	12	#4	5'-1"	┌
d1(E)	12	#5	4'-3"	└
x(E)	172	#5	2'-3"	┌
Item	Unit	Total		
Concrete Removal	Cu. Yd.	28.2		
Concrete Superstructure	Cu. Yd.	30.2		
Reinforcement Bars, Epoxy Coated	Pound	2,760		



Notes:

1. Bars indicated thus 8x2-#5 etc. indicates 8 lines of bars with 2 lengths per line.
2. I.F. denotes Inside Face.
O.F. denotes Outside Face.
3. Work this sheet with Expansion Joint Details sheet and Bar Splicer Assembly Details sheet.
4. x(E) bar spacing measured along skew.

DESIGNED -	JLS
CHECKED -	AAY
DRAWN -	VH
CHECKED -	AAY

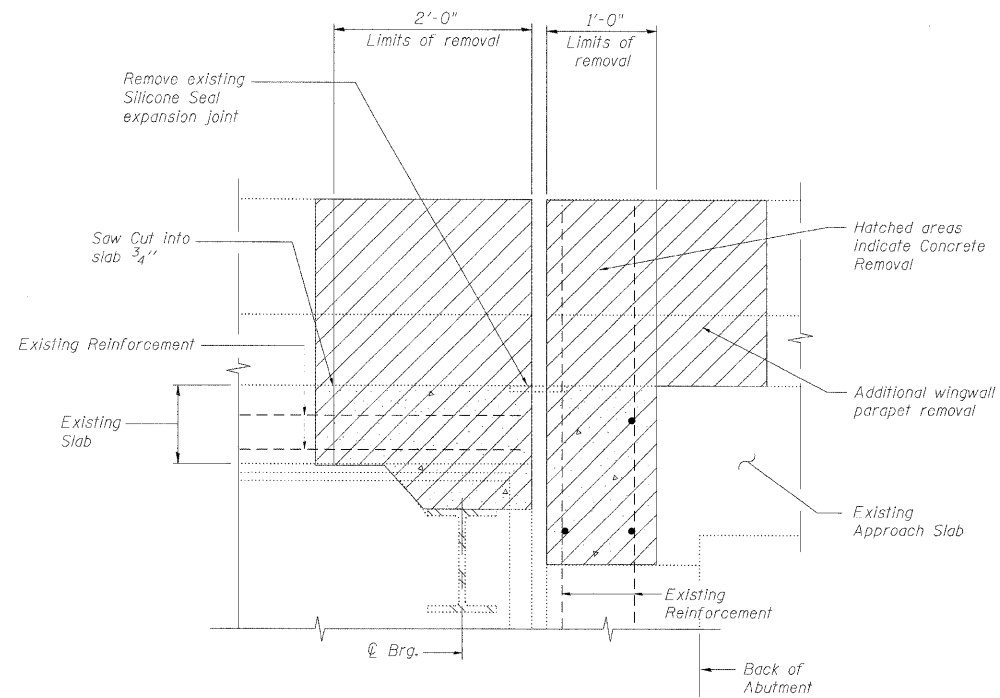
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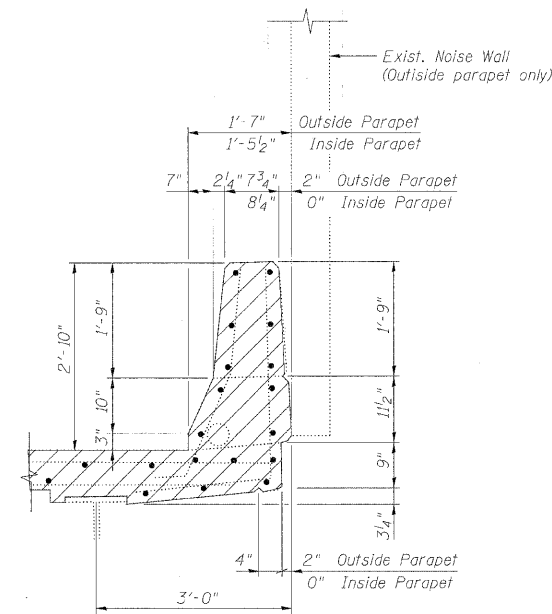
SHEET NO. 5 9 SHEETS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	2009-099 BR	COOK/DUPAGE	309	195
			CONTRACT NO. 60157		
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT					

**EXPANSION JOINT REPAIRS
STRUCTURE NO. 016-1130**

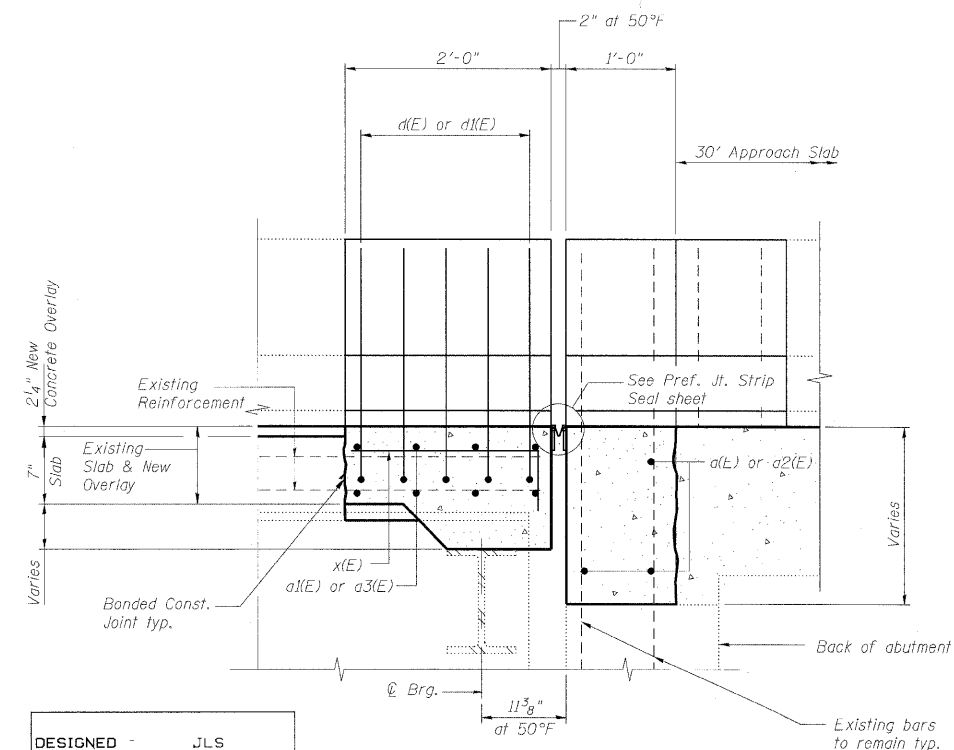
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



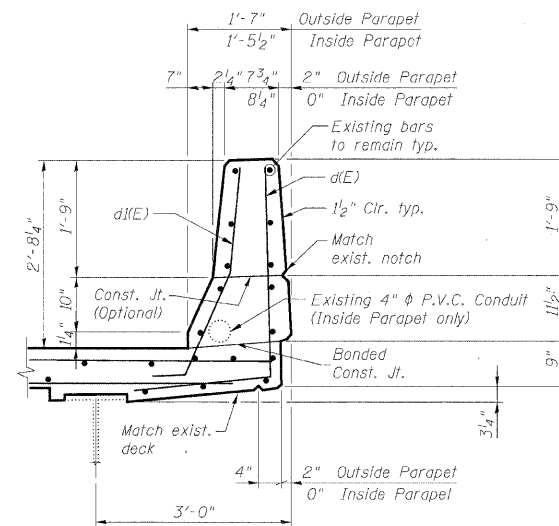
SECTION A-A



EXISTING PARAPET SECTION



SECTION B-B



PROPOSED PARAPET SECTION

Notes:

- Existing reinforcement bars extending into the concrete removal area shall be blast-cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be repaired or replaced with an approved bar splicer or anchorage system. Cost included with Concrete Removal.
- Existing reinforcement bars in the concrete removal area parallel to the expansion joints shall be removed.
- Removal and disposal of the existing expansion joints will not be paid for separately, but shall be included with the cost of Concrete Removal.
- If existing name plate falls within the limits of Concrete Removal, it shall be removed and reinstalled in its original location in accordance with IDOT Std. 515001. Cost included with Concrete Superstructure.
- If existing guardrail and/or end shoe fall within the limits of Concrete Removal, they shall be removed and reinstalled in their original location in accordance with District 1 Std. BM-21. Cost included with Concrete Superstructure.
- The Contractor shall exercise extreme care with the existing conduits in sections of the parapet to be removed and to protect and support the conduit. The Contractor will be required to repair any damage done to the conduit to the satisfaction of the Engineer, at no additional cost to the Department. No splicing will be allowed to any cable damage resulting from this work, instead the Contractor will be required to repair the entire span of any damaged cable at no additional cost to the Department.
- Existing noise wall to remain. Care shall be taken not to damage the noise wall during parapet removal and reconstruction. Any damage to the noise walls shall be repaired at no additional cost to the Department. If a noise wall connection falls within the limits of concrete removal, then the connection shall be removed and reinstalled and noise wall temporarily supported to the satisfaction of the Engineer. Cost included in Concrete Removal.
- Work this sheet with Expansion Joint Repairs sheet.

DESIGNED -	JLS
CHECKED -	AAY
DRAWN -	VH
CHECKED -	AAY

benesch

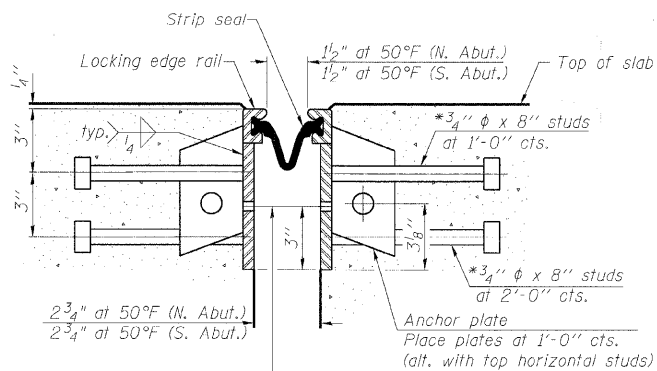
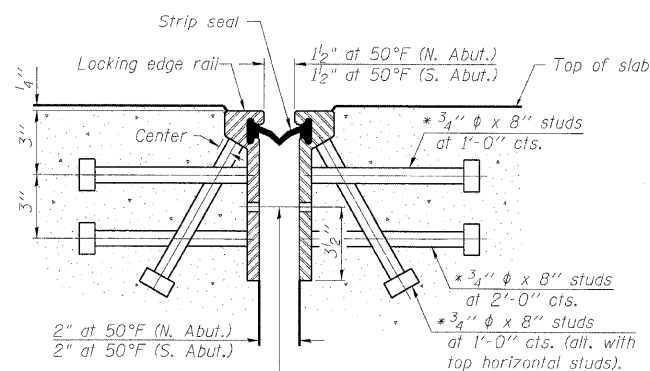
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Engineers • Surveyors • Planners
205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-565-0450 Job No. 10050

EXPANSION JOINT DETAILS
STRUCTURE NO. 016-1130

SHEET NO. 6	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	2009-099 BR	COOK/DUPAGE	309	196
9 SHEETS	CONTRACT NO. 60157				
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT			

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

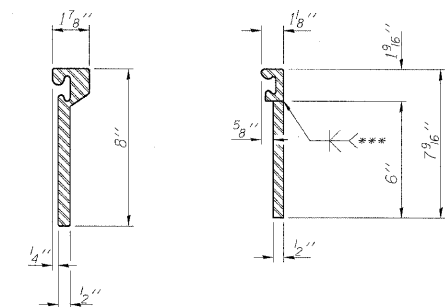
* Granular or solid flux filled headed studs conforming to Article 1006.32 of the Std. Specs., automatically end welded.



7/16" ϕ holes at 4'-0" cts. for 3/8" ϕ bolts. All bolts shall be burned, sawed, or chipped off flush with the plates after forms are removed, typ.

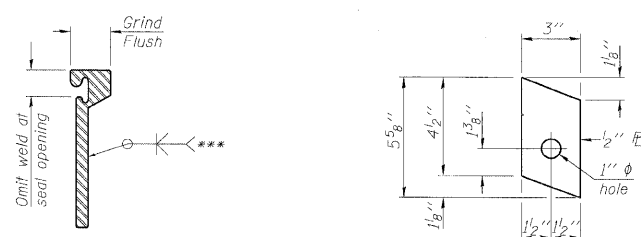
7/16" ϕ holes at 4'-0" cts. for 3/8" ϕ bolts. All bolts shall be burned, sawed, or chipped off flush with the plates after forms are removed, typ.

SECTION THRU
ROLLED RAIL JOINT



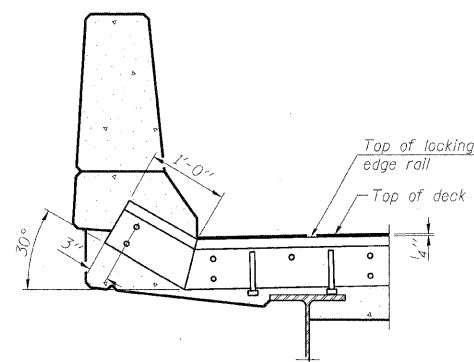
ROLLED
EXTRUDED RAIL WELDED RAIL

SECTION THRU
WELDED RAIL JOINT

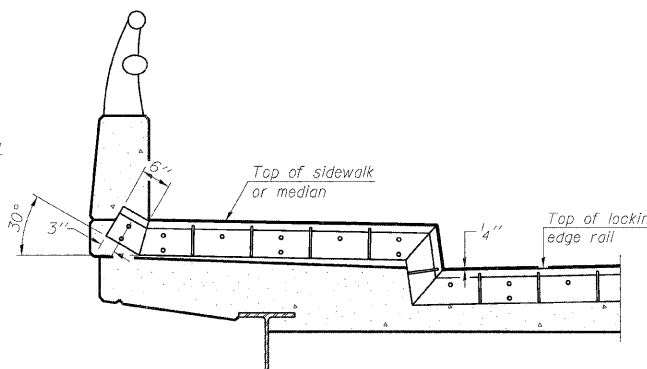


ANCHOR PLATE
(for welded rail)

***Back gouge not required if complete joint penetration is verified by mock-up.



AT PARAPET



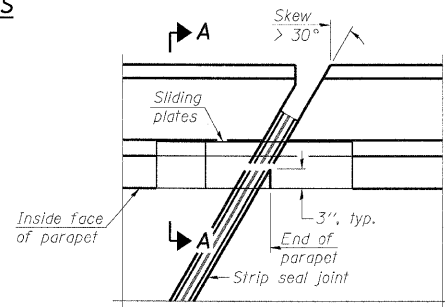
AT SIDEWALK OR MEDIAN

Shorter plates with a single row of studs at 12" cts. may be necessary on medians which are shallower than 9". See manufacturer's recommendation.

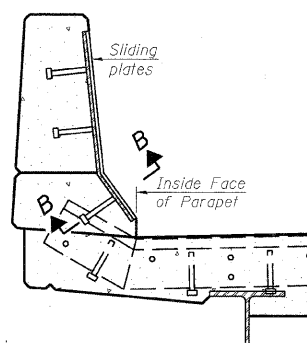
LOCKING EDGE
RAIL SPLICE

The inside of the locking edge rail groove shall be free of weld residue.

LOCKING EDGE RAILS



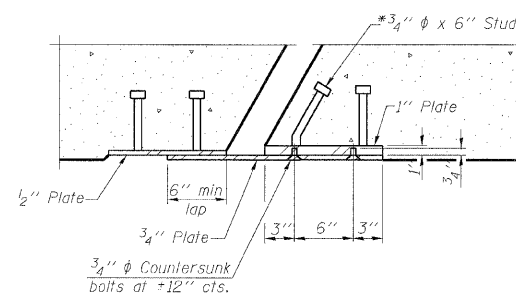
PLAN



SECTION A-A

POINT BLOCK DETAILS
(for skews > 30°)

TYPICAL END TREATMENTS



SECTION B-B

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	165.0

DESIGNED -	TJJ
CHECKED -	AAV
DRAWN -	RMG
CHECKED -	AAV

EJ-SSJ

10-1-08

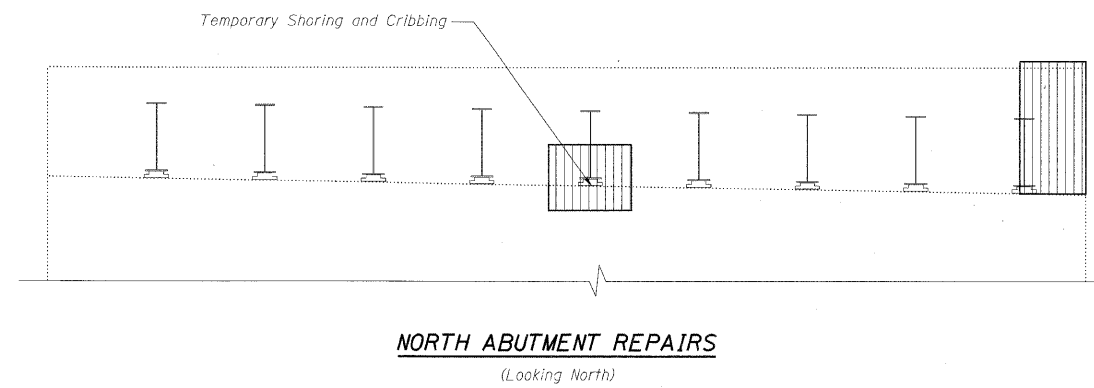
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Chicago, Illinois 60601
312-565-0450 Job No. 10050

SHEET NO. 7	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
				290	2009-099 BR
9 SHEETS				CONTRACT NO. 60157	
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT			

PREFORMED JOINT STRIP SEAL
STRUCTURE NO. 016-1130

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



BILL OF MATERIAL

SYMBOL	ITEM	UNIT	QUANTITY
	Structural Repair of Concrete (Depth Equal to or Less than 5 Inches)	Sq. Ft.	52
	Temporary Shoring and Cribbing	Each	1

BEAM REACTIONS (KIPS)

DEAD LOAD	LIVE LOAD	IMPACT LOAD	TOTAL
27.6	34.4	8.6	70.6

Notes:

- The abutment beam seat repair area is estimated based on IDOT field notes from August 20, 2009.
- The abutment backwall repair area is estimated based on visual inspections completed in June 2009.
- Temporary Shoring and Cribbing shall be provided per the Special Provisions for "Structural Repair of Concrete" and "Temporary Shoring and Cribbing".
- Interference is expected from existing conduits. The Contractor shall remove and reerect or temporarily support the existing conduits to complete the work as detailed. When the work is completed the conduits shall be reconnected to the reconstructed abutment or pier utilizing the existing mounting brackets or new mounting brackets. All labor, equipment, and materials necessary for removing and reinstalling or temporarily supporting the existing conduits shall be included in the cost for Structural Repair of Concrete (Depth Equal to or Less than 5 Inches).
- The tabulated beam reactions were taken from the existing construction plans. The Contractor shall verify that the equipment used to support the beams is sufficient to carry these loads in addition to any temporary construction loads.

DESIGNED -	TJJ
CHECKED -	AAY
DRAWN -	BDW
CHECKED -	AAY

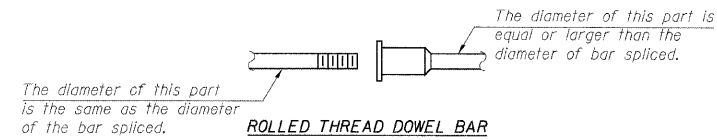
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Chicago, Illinois 60601
312-565-0450 Job No. 10050

SUBSTRUCTURE REPAIRS
STRUCTURE NO. 016-1130

SHEET NO. 8	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9 SHEETS	290	2009-099 BR	COOK/DUPAGE	309	198
			CONTRACT NO. 60I57		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

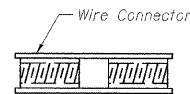
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



ROLLED THREAD DOWEL BAR



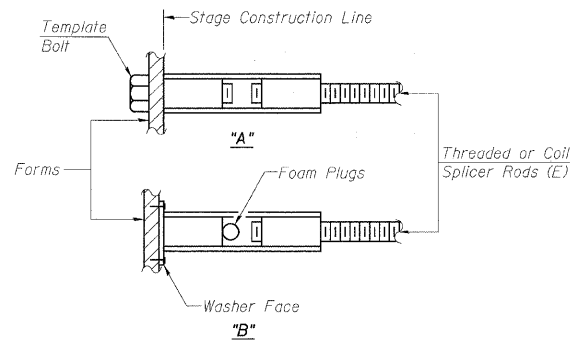
ONE PIECE



WELDED SECTIONS

BAR SPLICER ASSEMBLY ALTERNATIVES

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



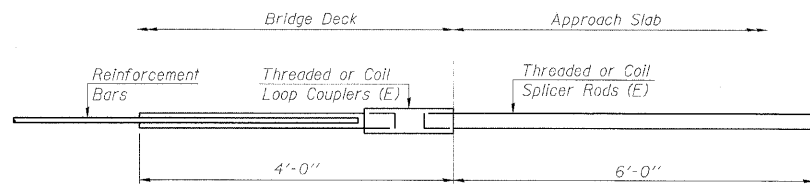
INSTALLATION AND SETTING METHODS

"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:

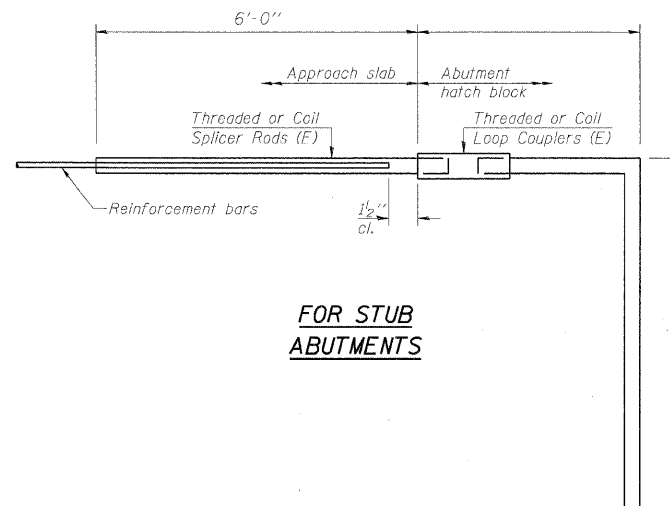
- ① Minimum Capacity = $1.25 \times f_y \times A_t$
(Tension in kips)
 - ② Minimum *Pull-out Strength = $0.66 \times f_y \times A_t$
(Tension in kips)
- Where f_y = Yield strength of lapped reinforcement bars in ksi.
 A_t = Tensile stress area of lapped reinforcement bars.
* = 28 day concrete

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



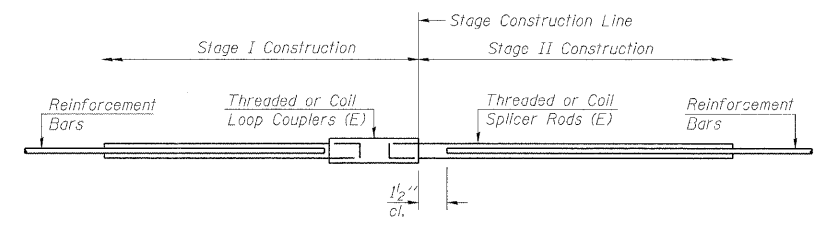
FOR INTEGRAL OR SEMI-INTEGRAL ABUTMENTS

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
#5	16	Deck
#6	6	Deck

DESIGNED -	TJJ
CHECKED -	AAV
DRAWN -	RMG
CHECKED -	AAV

BSD-1

10-1-08

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312-565-0450 Job No. 10050

SHEET NO. 9 9 SHEETS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	2009-099 BR	COOK/DUPAGE	309	199
FED. ROAD DIST. NO.			ILLINOIS	FED. AID PROJECT	
CONTRACT NO. 60157					

BAR SPLICER ASSEMBLY DETAILS
STRUCTURE NO. 016-1130

x:\100000s\100050\engineering\documents-contr\1130_016_1131_1130_C&NW_N\1130-60G51-009-Bar-Splicer.dgn

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11\12\2009

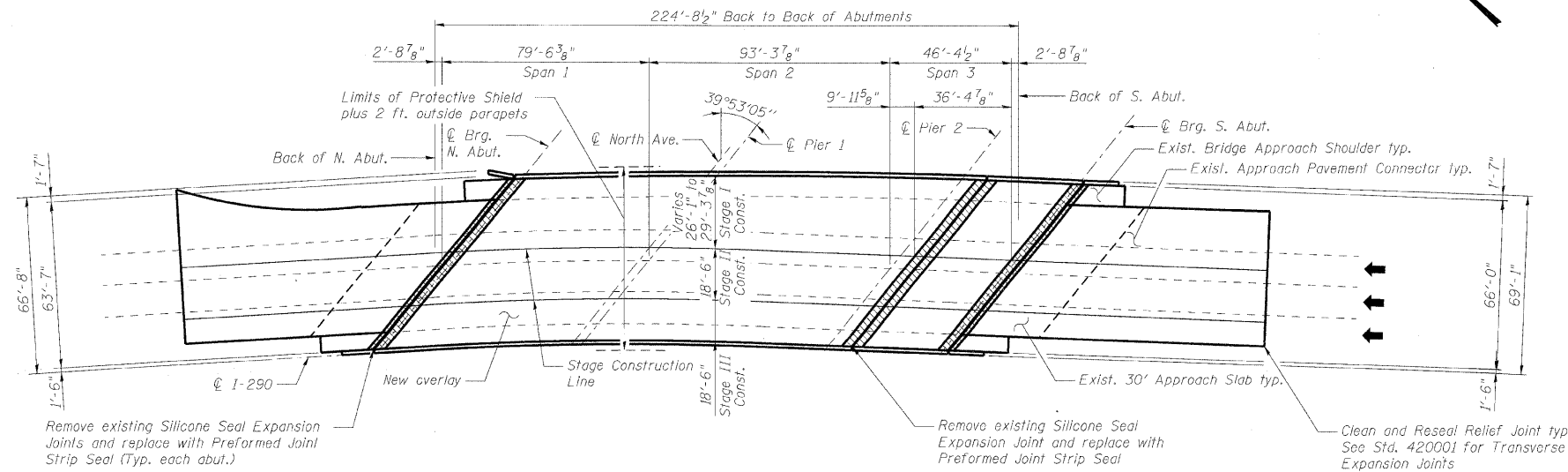
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

Existing Structure:

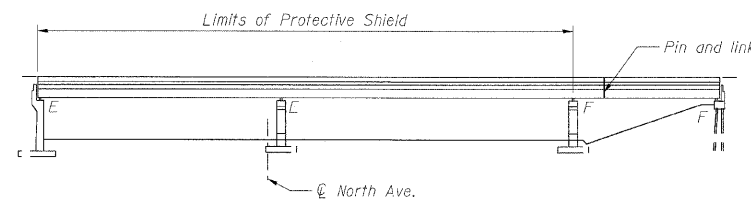
The structure is a three-span steel structure with a 7.5-inch reinforced concrete deck with no overlay.
The original structure was built in 1960 and is in Section (100 & 100-1) R-84. In 1985, the bridge was widened and redecked, expansion joints were reconstructed, north abutment bearings were replaced, pin and link connections were replaced in span 3 along with beam repositioning, and the superstructure was cleaned and painted. In 1996, pin and link connections were replaced in span 3. In 1998, the expansion joints were reconstructed, the deck and approach slabs were repaired, and a damaged beam was replaced.

Stage construction shall be utilized to maintain traffic during construction.

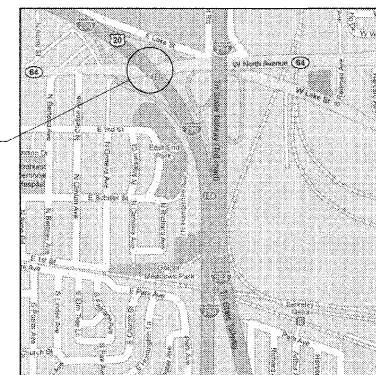
No salvage.



PLAN



ELEVATION



LOCATION SKETCH

DESIGN SPECIFICATIONS

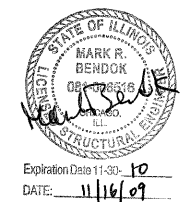
2002 AASHTO Standard Specifications
for Highway Bridges, 17th Edition

DESIGN STRESSES

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

SCOPE OF WORK

1. Bridge Deck Hydro-scarification.
2. Repair bridge deck.
3. Repair approach slab.
4. Reconstruct deck joints at each abutment and Pier 2 with preformed joint strip seal.
5. Place new overlay.
6. Repair substructure.
7. Repair parapet with Formed concrete repair.
8. Clean and reseal relief joints at the end of approach pavement connectors.
9. Apply concrete sealer to parapets, abutment seats and backwalls and Pier 2 seats.



GENERAL PLAN AND ELEVATION
I-290 WB OVER NORTH AVENUE
DuPAGE COUNTY
STATION 351+94
STRUCTURE NO. 022-0008

DESIGNED -	TJJ
CHECKED -	AAY
DRAWN -	RMG
CHECKED -	AAY

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205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-565-0450 Job No. 10050

SHEET NO. 1 10 SHEETS	F.A.I. RTE. 290	SECTION 2009-099 BR	COUNTY COOK/DUPAGE	TOTAL SHEETS 309	SHEET NO. 200
	CONTRACT NO. 60157				
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		