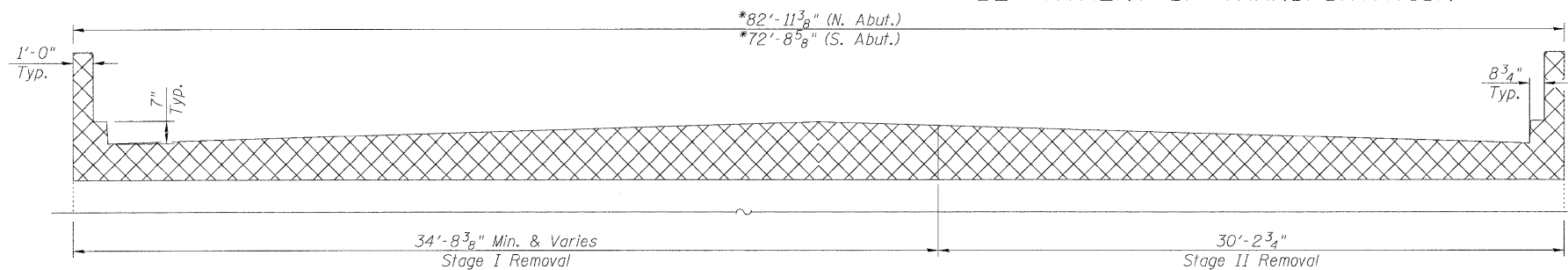
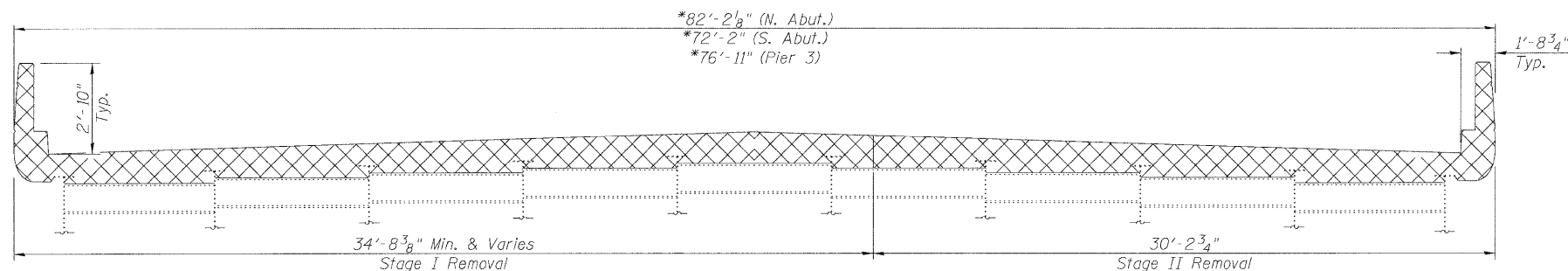


STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

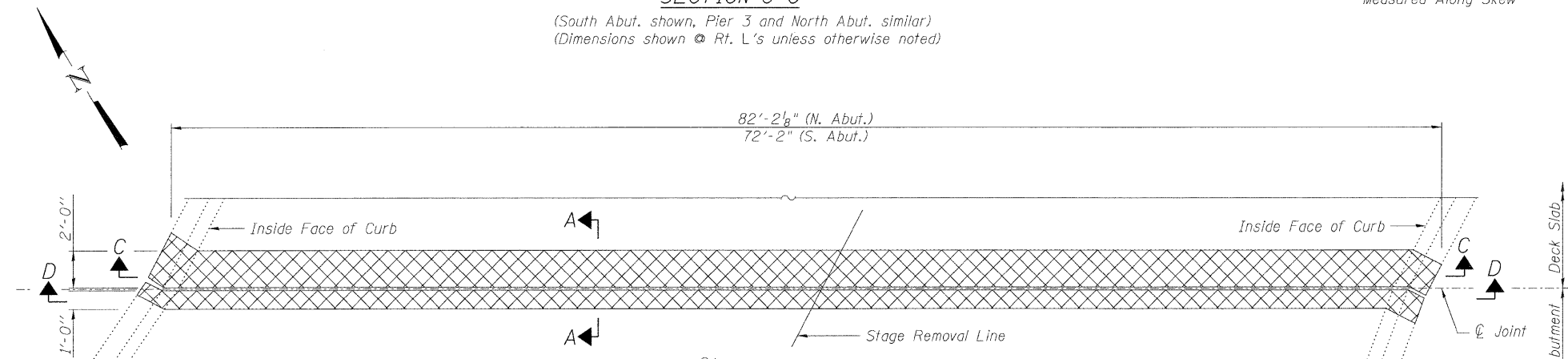


SECTION D-D
(South Abut. shown, North Abut. similar)
(Dimensions shown @ Rt. L's unless otherwise noted)

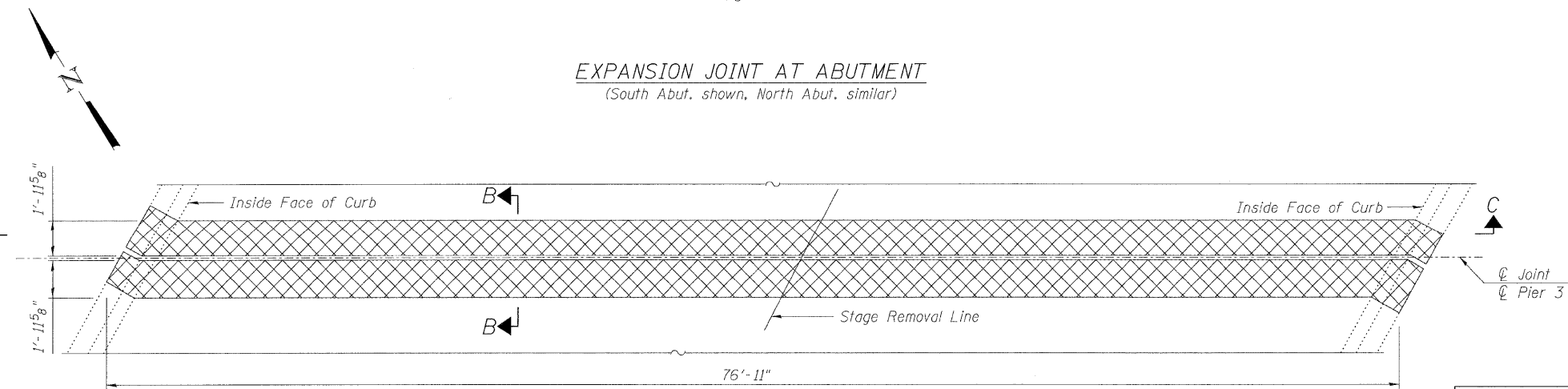


SECTION C-C
(South Abut. shown, Pier 3 and North Abut. similar)
(Dimensions shown @ Rt. L's unless otherwise noted)

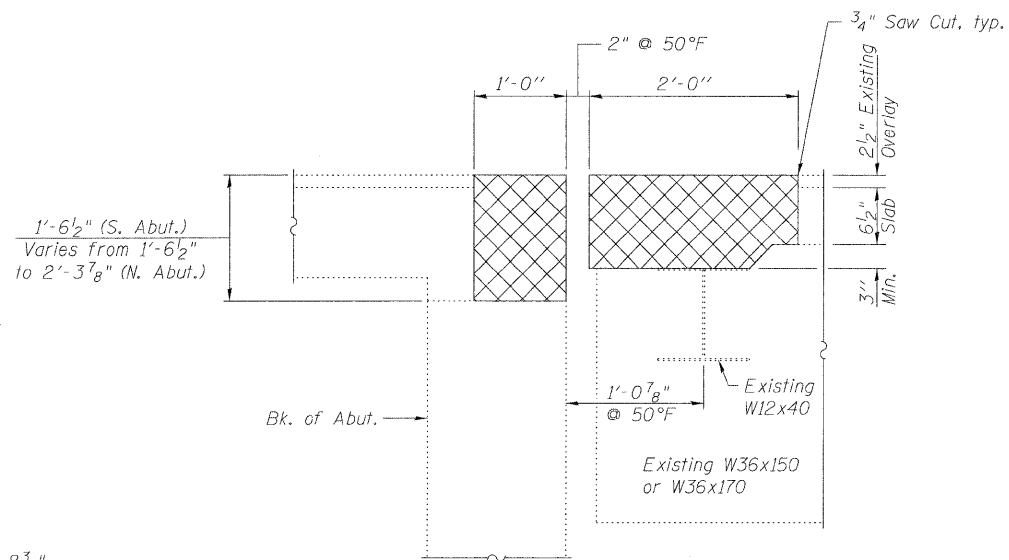
*Measured Along Skew



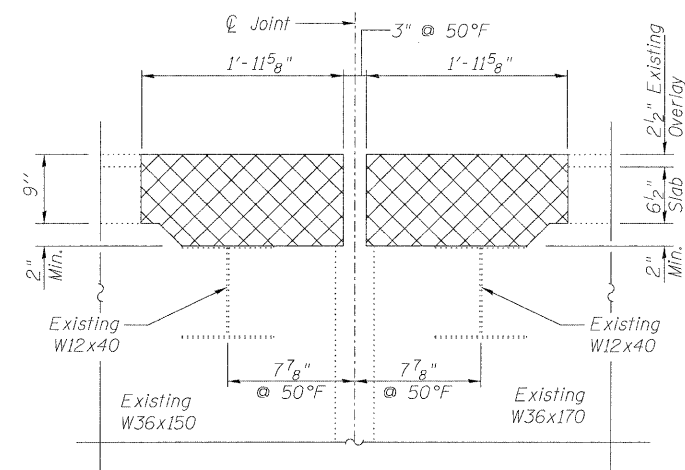
EXPANSION JOINT AT ABUTMENT
(South Abut. shown, North Abut. similar)



EXPANSION JOINT AT PIER 3



SECTION A-A
(Dimensions @ Rt. L's)



SECTION B-B
(Dimensions @ Rt. L's)

Notes:

1. Cross hatched area indicates concrete removal.
2. Existing reinforcement bars in the concrete removal area extending in new construction shall be cleaned and incorporated into the new construction. Cost included with Concrete Removal.
3. Any reinforcement bars that are damaged during concrete removal operations shall be repaired or replaced using an approved bar splicer or anchorage system, in accordance with IDOT Standard Specifications Article 501.03. Cost included in "Concrete Removal"
4. Overlay removal is included in pay item Concrete Removal.

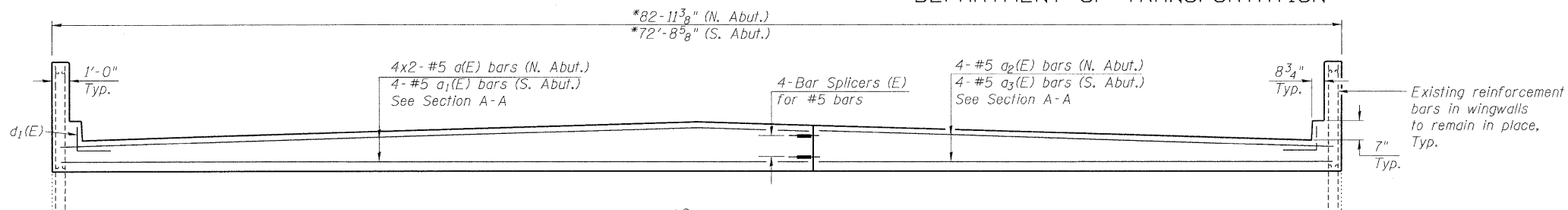
BILL OF MATERIAL

Item	Unit	Total
Concrete Removal	Cu. Yd.	34.7

**CONCRETE REMOVAL
STRUCTURE NO. 016-1119**

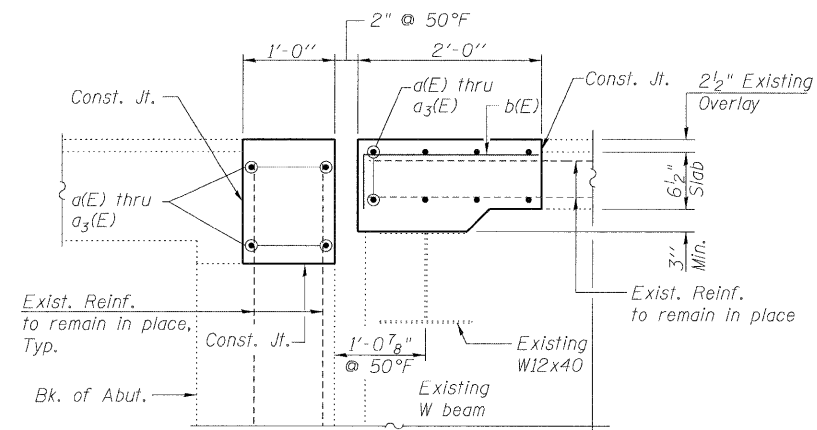
<p>LIN ENGINEERING, LTD. Consulting Engineers Chatham, Illinois</p>	SHEET NO. 6	F.A.I. RTE. 290	SECTION (531-3.1,0305-302)RS-5	COUNTY COOK	TOTAL SHEETS 314	SHEET NO. 201
	12 SHEETS	FED. ROAD DIST. NO. _ ILLINOIS		CONTRACT NO. 60138		
<small>Designed By: RRT Checked By: MTH Drawn By: RRT Date: 12/2009 File: 016-1119.dgn</small>		FED. AID PROJECT				

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



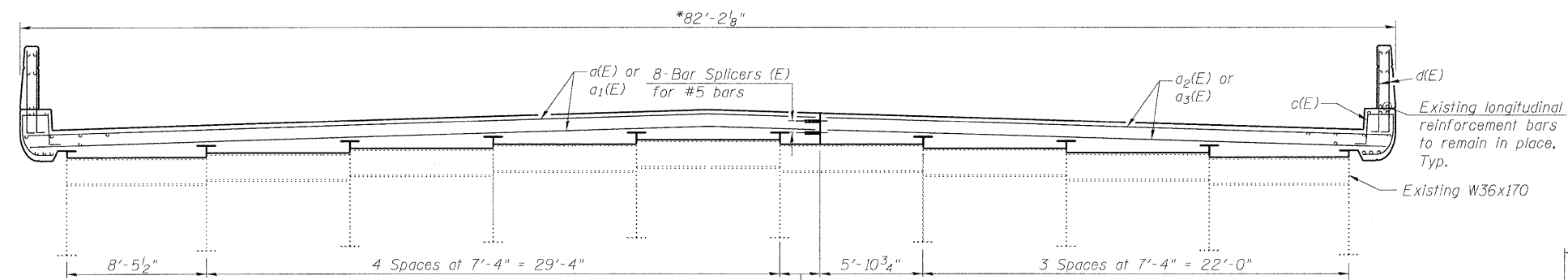
SECTION C-C

(Dimensions @ Rt. L's unless otherwise noted)
(South Abut. shown, North Abut. similar)



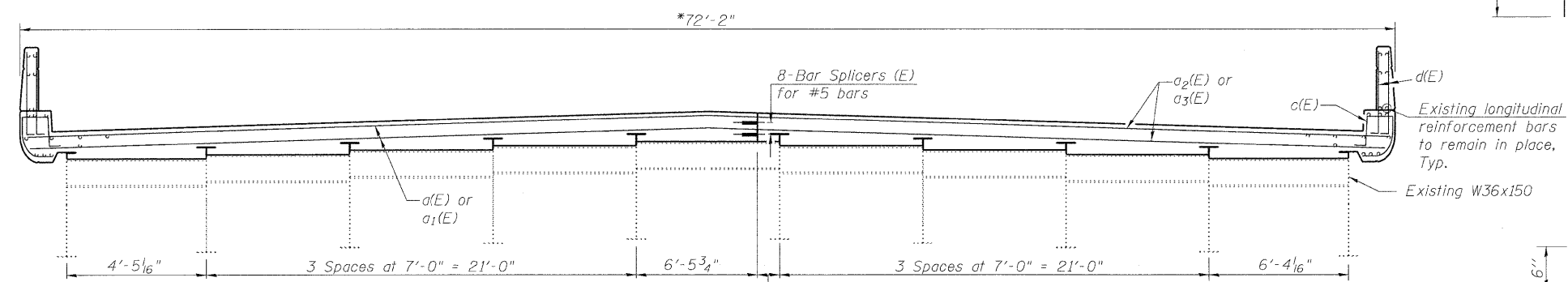
SECTION A-A

(Dimension @ Rt. L's)



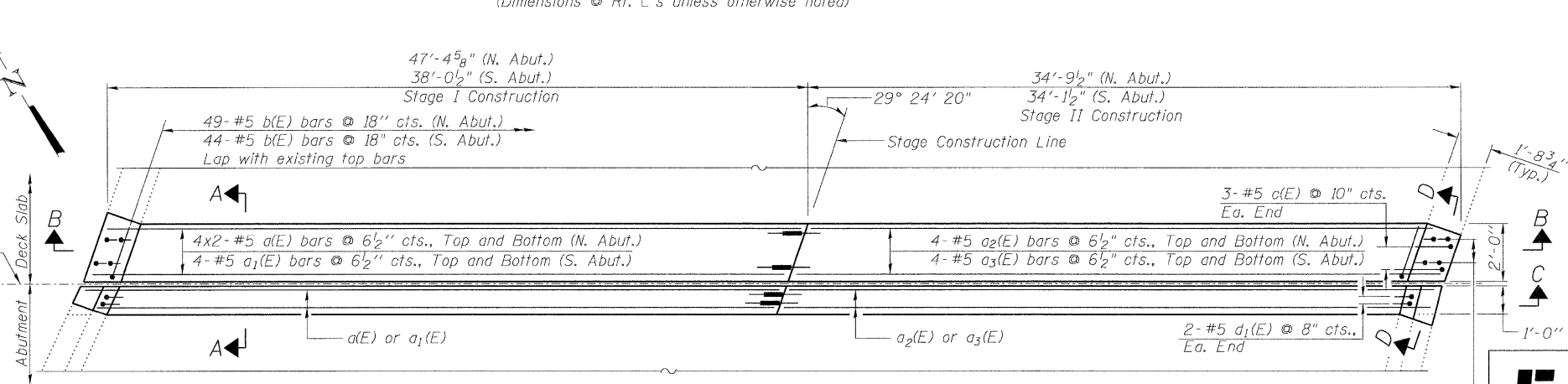
SECTION B-B (N. ABUT.)

(Dimensions @ Rt. L's unless otherwise noted)



SECTION B-B (S. ABUT.)

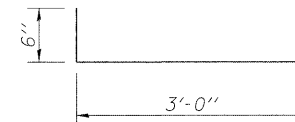
(Dimensions @ Rt. L's unless otherwise noted)



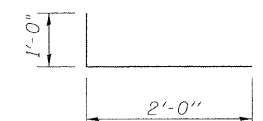
EXPANSION JOINT AT ABUTMENT

(South Abut. Shown, North Abut. Similar)

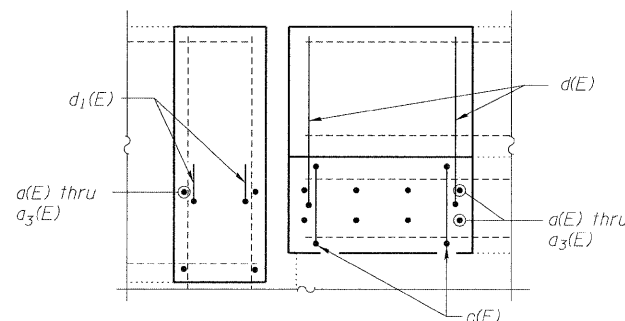
BAR b(E)



BAR d(E)

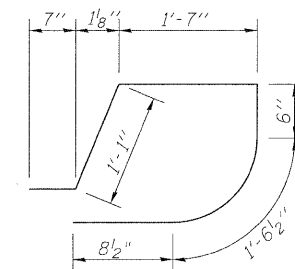


BAR d1(E)



SECTION D-D

BAR c(E)



BILL OF MATERIAL

(Both Abutments)

Bar	No.	Size	Length	Shape
a(E)	24	#5	25'-1"	—
a1(E)	12	#5	38'-1"	—
a2(E)	12	#5	35'-1"	—
a3(E)	12	#5	34'-3"	—
b(E)	93	#5	2'-6"	U
c(E)	12	#5	6'-0"	J
d(E)	24	#5	3'-6"	L
d1(E)	8	#5	3'-0"	L
Reinforcement Bars, Epoxy Coated		Pound	2410	
Concrete Superstructure		Cu. Yd.	22.4	

MINIMUM BAR LAP

#5 bar = 2'-7"

ABUTMENT CONCRETE DETAILS
STRUCTURE NO. 016-1119

LE LIN ENGINEERING, LTD.
Consulting Engineers
Chatham, Illinois

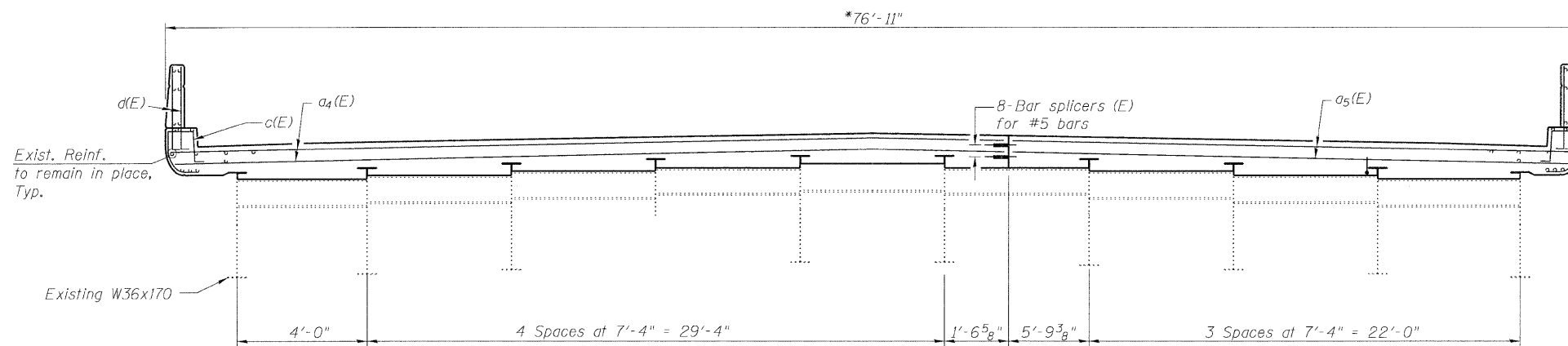
SHEET NO. 7
12 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	(531-3.1,0305-302)RS-5	COOK	314	202
CONTRACT NO. 60138				
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				

Designed By: RH
Checked By: MTH
Date: 12/2009
File: 016-1119.dwg

Drawn By: RH

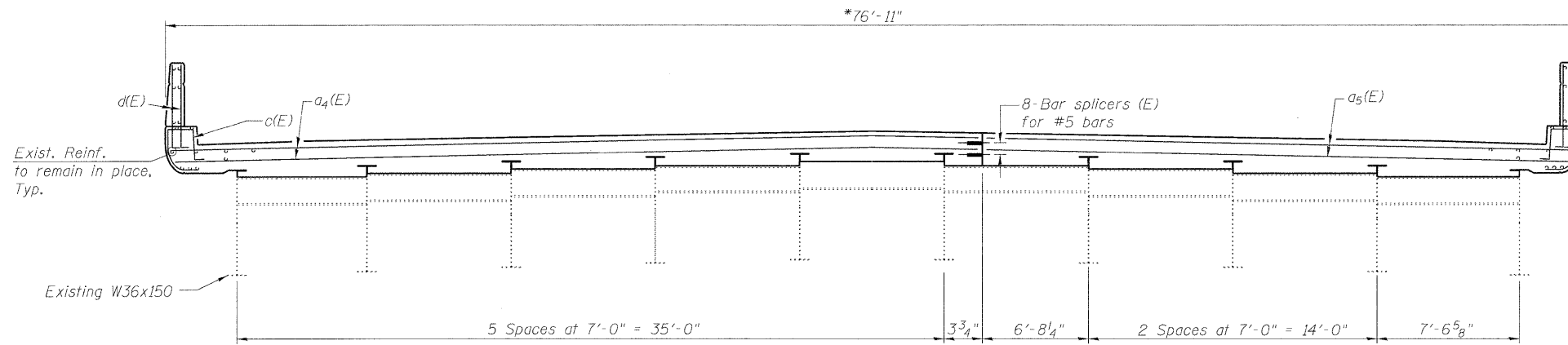
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



SECTION B-B

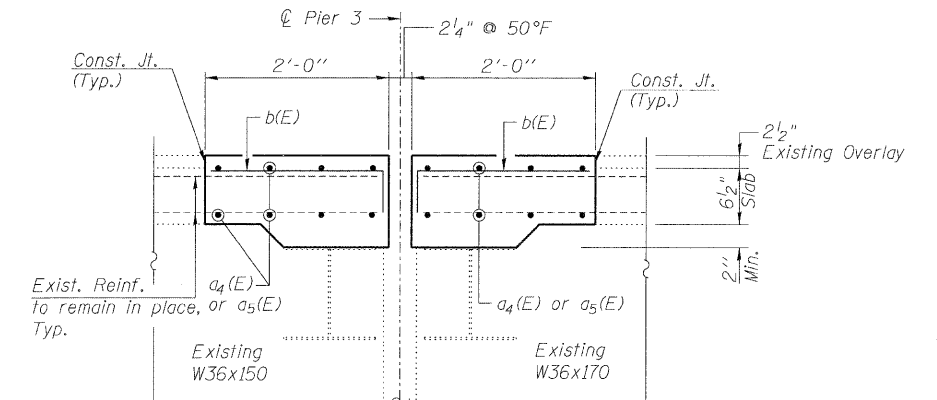
(Dimension @ Rt. L's unless otherwise noted)

* Measured along skew

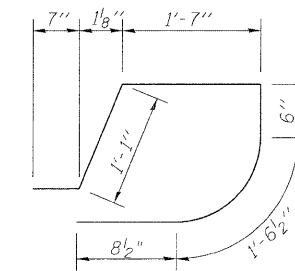


SECTION C-C

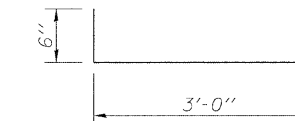
(Dimension @ Rt. L's unless otherwise noted)



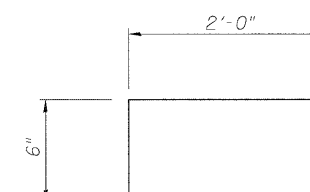
SECTION A-A
(Dimension @ Rt. L's)



BAR c(E)



BAR d(E)

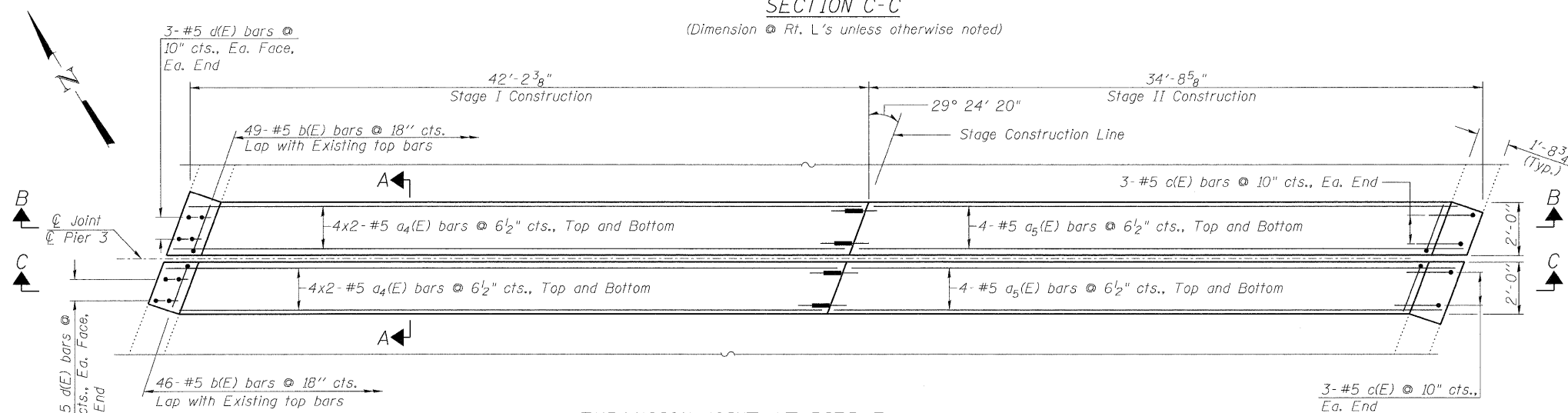


BAR b(E)

BILL OF MATERIAL

(Pier 3)

Bar	No.	Size	Length	Shape
a4(E)	32	#5	22'-5"	—
a5(E)	16	#5	34'-11"	—
b(E)	95	#5	2'-6"	┌
c(E)	12	#5	6'-0"	J
d(E)	24	#5	3'-6"	L
Reinforcement Bars, Epoxy Coated		Pound	1700	
Concrete Superstructure		Cu. Yds.	12.3	



EXPANSION JOINT AT PIER 3

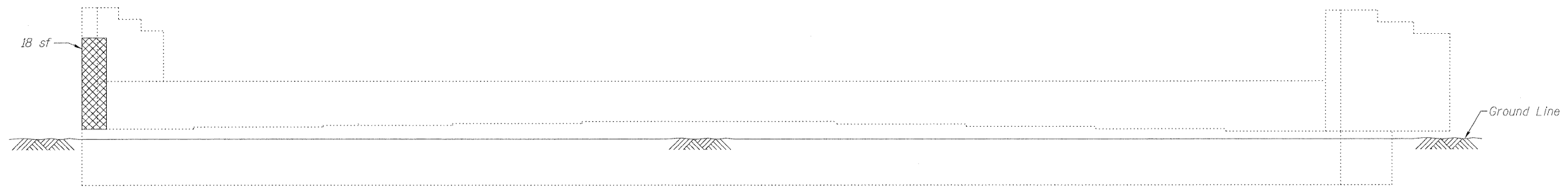
MINIMUM BAR LAP

#5 bar = 2'-7"

PIER 3 CONCRETE DETAILS
STRUCTURE NO. 016-1119

<p>LIN ENGINEERING, LTD. Consulting Engineers Chatham, Illinois</p>	SHEET NO. 8	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	12 SHEETS	290	(531-3.1,0305-302K)RS-5	COOK	314	203
		FED. ROAD DIST. NO. _		ILLINOIS	FED. AID PROJECT	
				CONTRACT NO. 60I38		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



NORTH ABUTMENT
(Looking North)

BILL OF MATERIAL

Item	Unit	Total
Structural Repair of Concrete (Depth Greater Than 5 in.)	Sq. Ft.	21


Repair of the existing abutments shall include but may not be limited to the areas shown. The actual areas to be repaired will be determined by the Engineer at the time of construction.

LEGEND

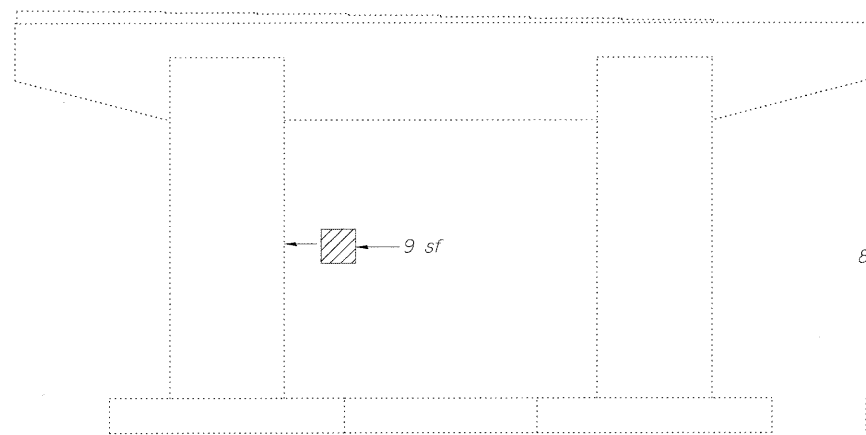
 Structural Repair of Concrete
(Depth greater than 5")

sf. Square Feet

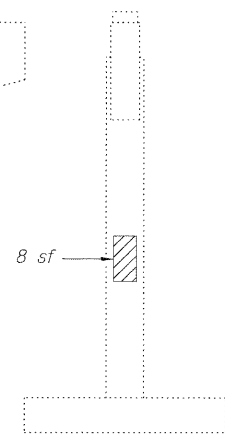
ABUTMENT REPAIR
STRUCTURE NO. 016-1119

 LIN ENGINEERING, LTD. Consulting Engineers Chatham, Illinois	SHEET NO. 9	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	12 SHEETS	290	(531-3.1,0305-302K)RS-5	COOK	34	207
<small>Designed By: RH Date: 12/25/09</small>	<small>Checked By: MTH File: 016-1119.dgn</small>	<small>FED. ROAD DIST. NO. _</small>		<small>ILLINOIS FED. AID PROJECT</small>		
		CONTRACT NO. 60138				

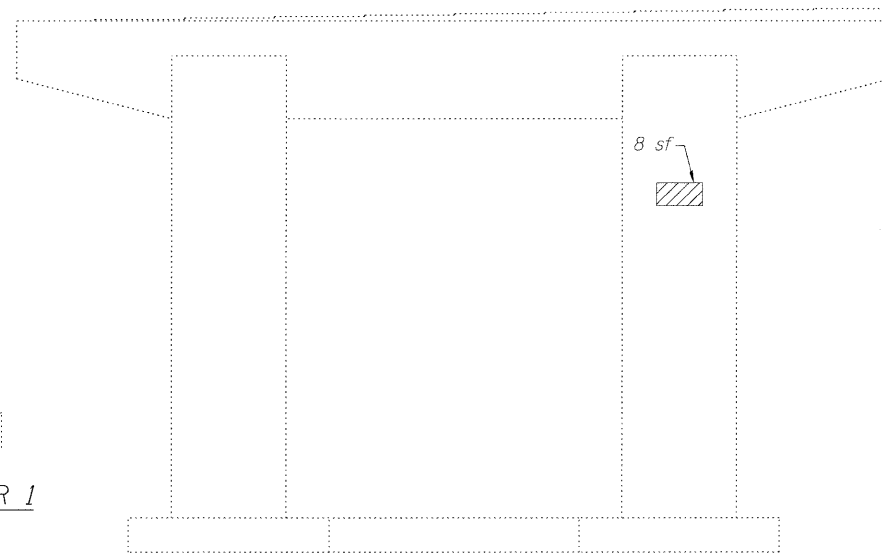
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



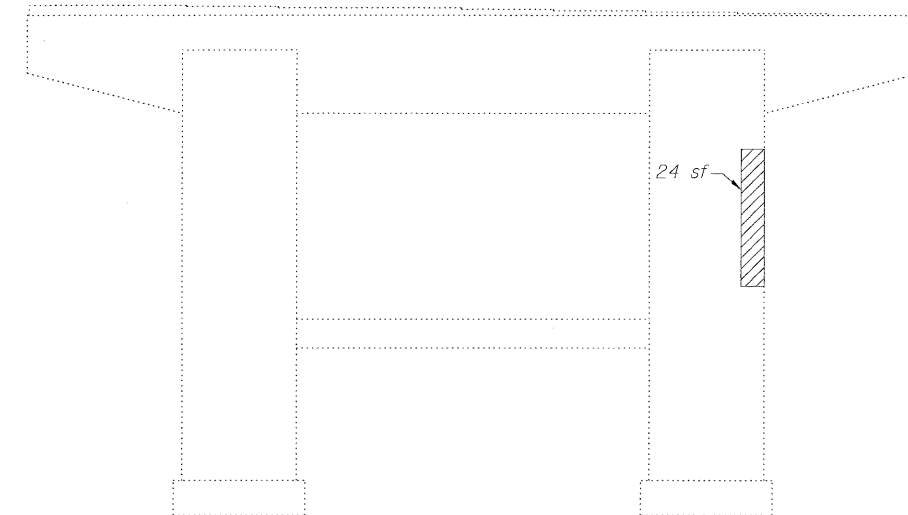
PIER 1
(Looking North)



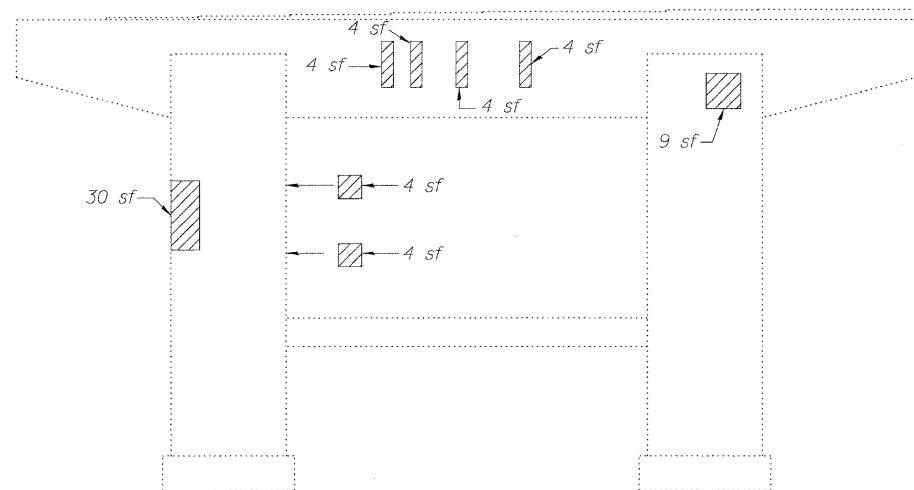
END VIEW - PIER 1
(Looking West)



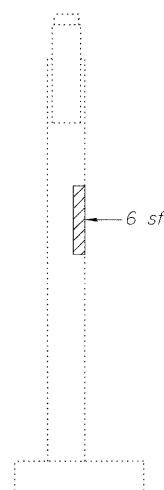
PIER 2
(Looking South)



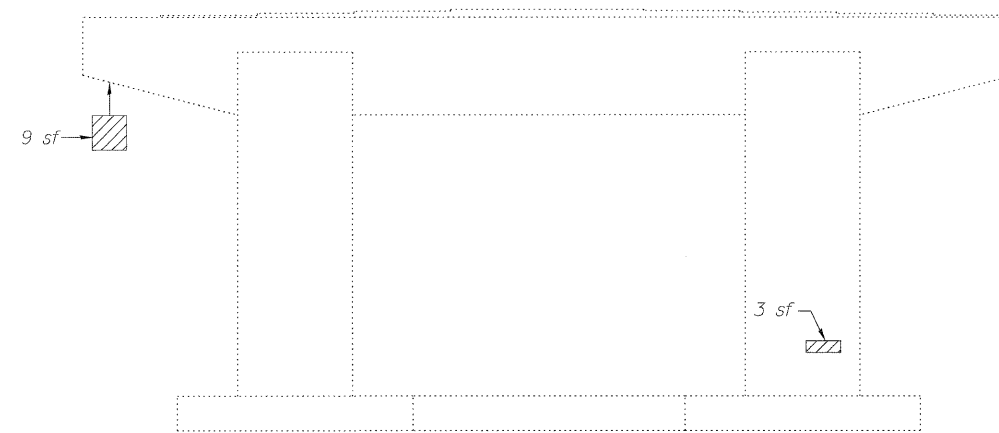
PIER 3
(Looking North)



PIER 4
(Looking South)



END VIEW - PIER 4
(Looking West)



PIER 6
(Looking South)

LEGEND

Structural Repair of Concrete
(Depth equal to or less than 5")

sf Square Feet

BILL OF MATERIAL

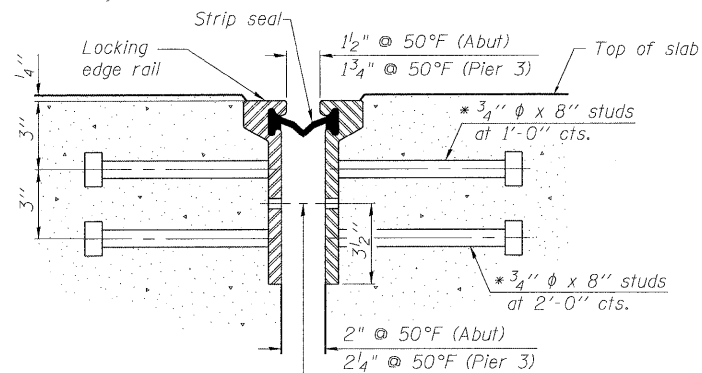
Item	Unit	Total
Structural Repair of Concrete (Depth equal to or less than 5 in.)	Sq. Ft.	150

PIER REPAIR
STRUCTURE NO. 016-1119

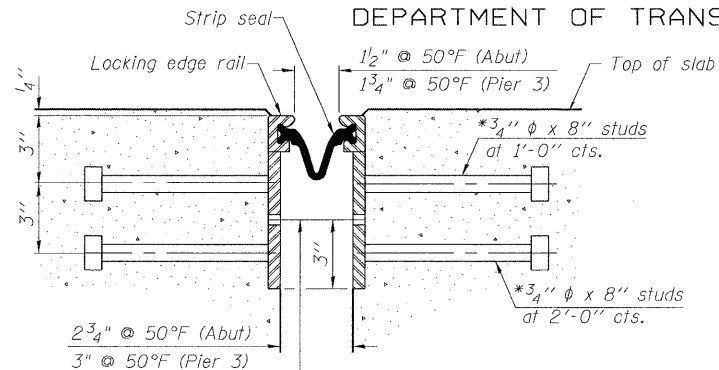
E LIN ENGINEERING, LTD. Consulting Engineers Chatham, Illinois	SHEET NO. 10	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	12 SHEETS	290	(531-3.1,0305-302K)RS-5	COOK	314	205
Designed By: RH Date: 12/2009		Checked By: MTH File: 016-1119.dwg		FED. ROAD DIST. NO. _		ILLINOIS FED. AID PROJECT
				CONTRACT NO. 60138		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

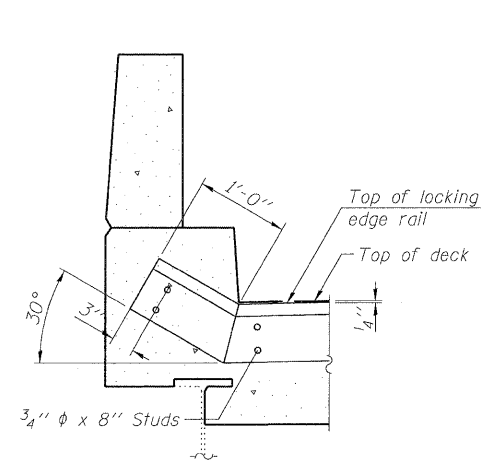
* Granular or solid flux filled headed studs conforming to Article 1006.32 of the Std. Specs., automatically end welded.



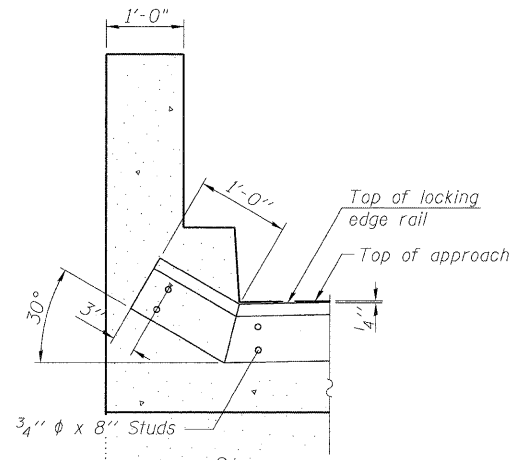
SECTION THRU
ROLLED RAIL JOINT



SECTION THRU
WELDED RAIL JOINT



AT PARAPET

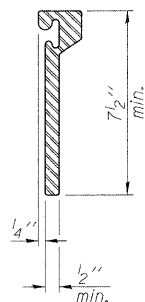


AT WING WALL

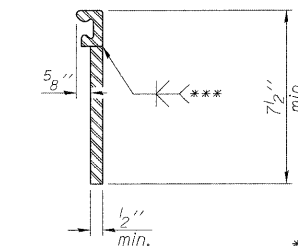
7/16 inch diameter holes at 4 foot 0 inch centers for 3/8 inch diameter bolts. All bolts shall be burned, sawed, or chipped off flush with the plates after forms are removed, typ.

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

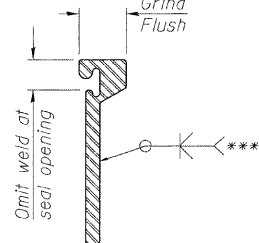
TYPICAL END TREATMENTS



ROLLED
EXTRUDED RAIL



WELDED RAIL

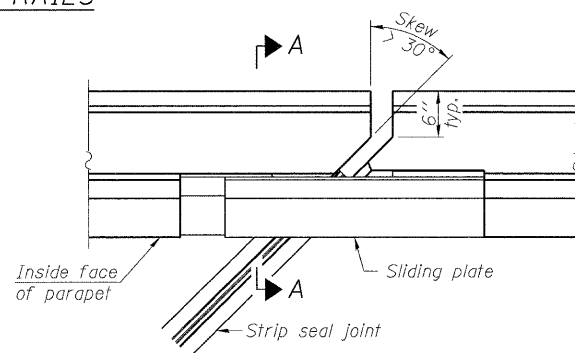


*** Back gauge not required if complete joint penetration is verified by mock-up.

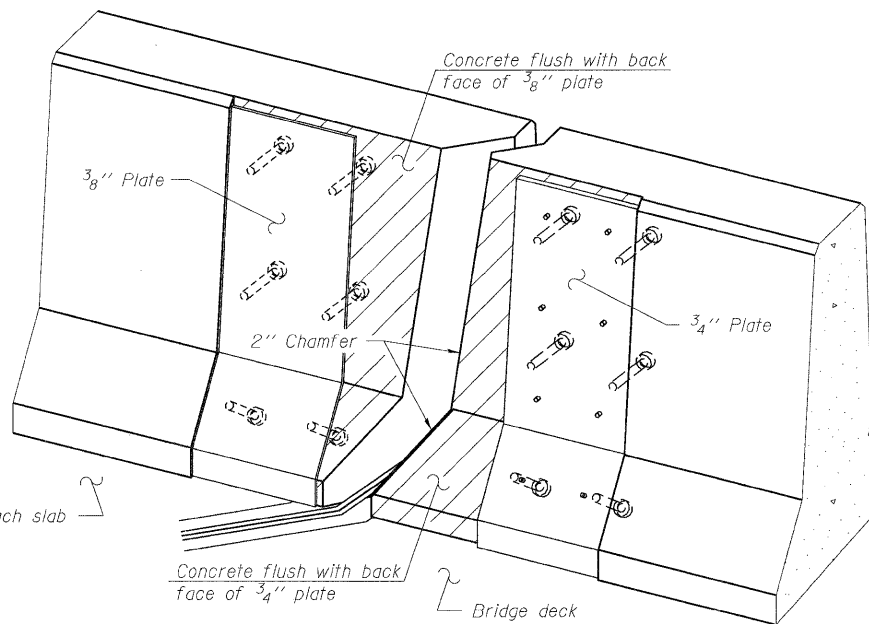
LOCKING EDGE
RAIL SPLICE

The inside of the locking edge rail groove shall be free of weld residue.
Rolled rail shown, welded rail similar.

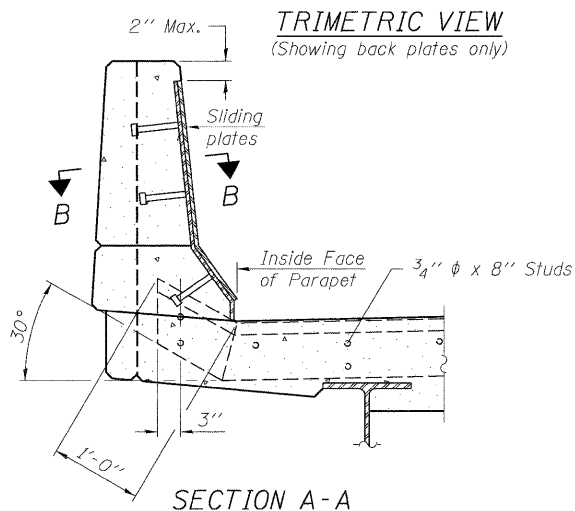
LOCKING EDGE RAILS



PLAN

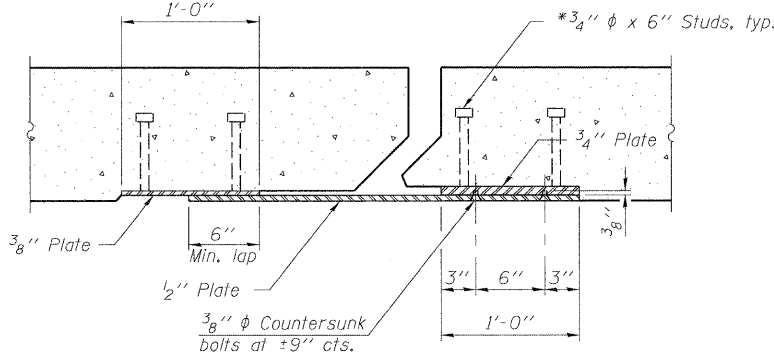


TRIMETRIC VIEW
(Showing back plates only)



SECTION A-A

POINT BLOCK DETAILS
(for skews > 30°)



SECTION B-B

Notes:
The strip seal shall be made continuous and shall have a minimum thickness of 1/4 inch. 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 Locking Edge Rails depicted are conceptual only, except for the minimum dimensions shown. 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.
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.
Maximum space between rail segments at stage lines shall be 3/16 inch, sealed with a suitable sealant.

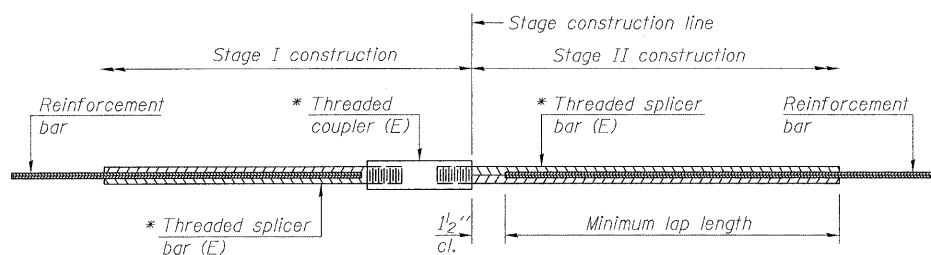
BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	228

PREFORMED JOINT STRIP SEAL
STRUCTURE NO. 016-1119

<p>LIN ENGINEERING, LTD. Consulting Engineers Chatham, Illinois</p>	SHEET NO. 11	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	12 SHEETS	290	(531-3.1,0305-302K)RS-5	COOK	314	204
Designed By: RH Date: 12/25/08		Checked By: MTH File: 08-115.dgn		CONTRACT NO. 60138		FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



STANDARD BAR SPLICER ASSEMBLY

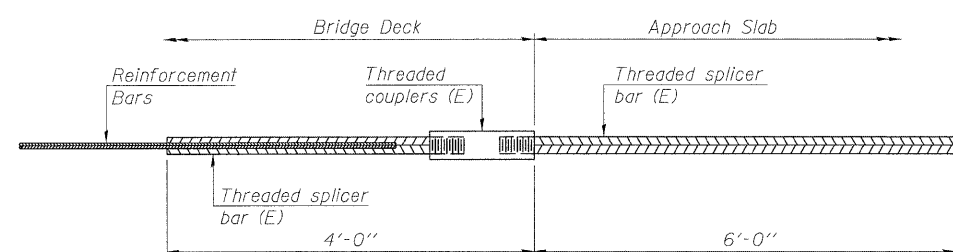
Bar size to be spliced	Minimum Lap Lengths			
	Table 1	Table 2	Table 3	Table 4
3, 4	1'-5"	1'-11"	2'-1"	2'-4"
5	1'-9"	2'-5"	2'-7"	2'-11"
6	2'-1"	2'-11"	3'-1"	3'-6"
7	2'-9"	3'-10"	4'-2"	4'-8"
8	3'-8"	5'-1"	5'-5"	6'-2"
9	4'-7"	6'-5"	6'-10"	7'-9"

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

Threaded splicer bar length = min. lap length + 1 1/2" + thread length

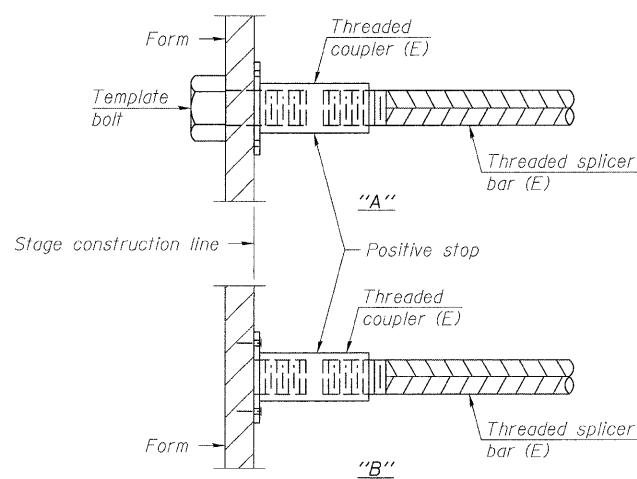
* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Table for minimum lap length
Deck	#5	32	Table 3
Abutment	#5	8	Table 3



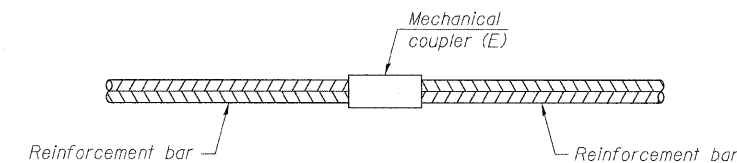
BAR SPLICER ASSEMBLY FOR #5 BAR ON INTEGRAL OR SEMI-INTEGRAL ABUTMENTS

No. required =



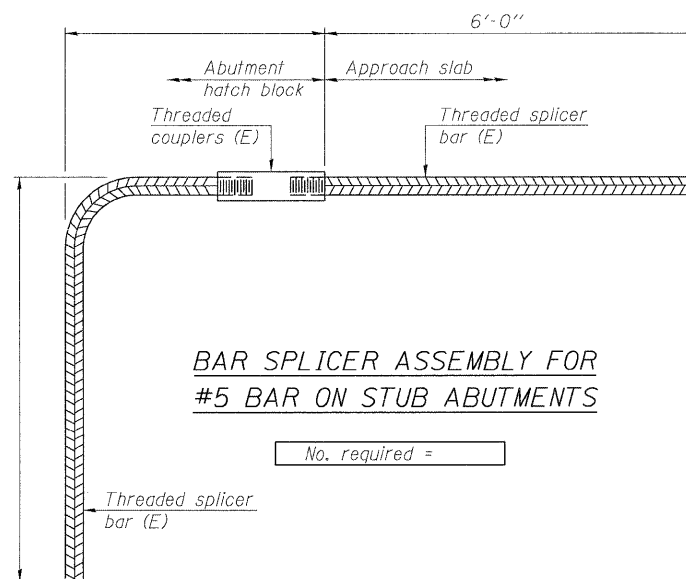
INSTALLATION AND SETTING METHODS

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



STANDARD MECHANICAL SPLICER

Location	Bar size	No. assemblies required



BAR SPLICER ASSEMBLY FOR #5 BAR ON STUB ABUTMENTS

No. required =

NOTES

Splicer bars shall be deformed with threaded ends and have a minimum 60 ksi yield strength.
All reinforcement shall be lapped and tied to the splicer bars.
Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars. See Section 508 of the Standard Specifications.
See special provision for Mechanical Splicers.
See approved list of bar splicer assemblies and mechanical splicers for alternatives.

BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS
STRUCTURE NO. 016-1119

<p>LIN ENGINEERING, LTD. Consulting Engineers Chatham, Illinois</p>	SHEET NO. 12	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	12 SHEETS	290	(531-3.1,0305-302K)RS-5	COOK	314	207
DESIGNED BY: RH		CHECKED BY: MTH		DRAWN BY: RH		CONTRACT NO. 60138
DATE: 12/20/09		FILE: 05-1124.dgn		FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

Existing Structure:
S.N. 016-0375 built in 1963 as F.A. Route 61, Section 531-2HB-1 at Station 243+49.94. Structure consists of three span continuous steel beam bridge with a 34°55' right ahead skew, 155'-6" back-to-back abutments along bridge chord, out to out deck width of 58'-11", multi-column piers, and pile bent abutments. In 1971, the deck was patched and a bituminous overlay was placed on the structure. In 1991, the expansion joints and parapets were reconstructed, along with deck patching and overlay replacement with microsilica concrete. In 2000, the abutment bearings were replaced with elastomeric bearings. Traffic is to be maintained utilizing stage construction.

Plan dimension 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.

INDEX OF SHEETS

1. General Plan and Elevation
2. Deck Repair & Stage Construction Details
3. Temporary Concrete Barrier for Stage Construction
4. Concrete Removal
5. Concrete Details
6. Abutment Repair
7. Bar Splicer Assembly and Mechanical Splicer Details
8. Preformed Joint Strip Seal

SCOPE OF WORK

1. Remove and replace concrete deck adjacent to abutment expansion joints.
2. Provide preformed joint strip seal expansion joints at abutments.
3. Apply concrete sealer to top of concrete deck and top and inside vertical face of parapets.
4. Repair deck slab.
5. Clean and Reseal Relief Joints.
6. Repair deteriorated concrete on abutments.

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 can not be removed by grinding 1/4 in. 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.

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.

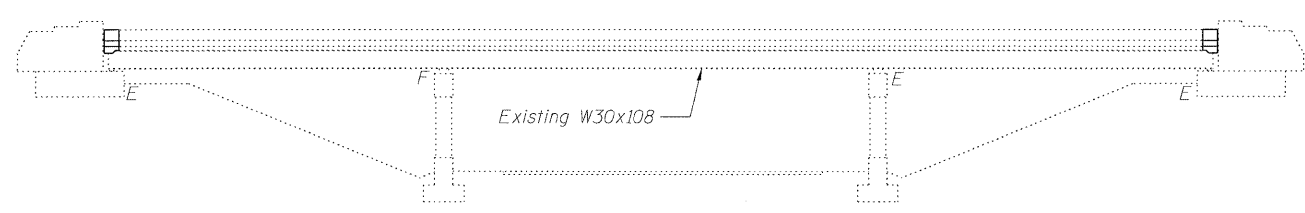
Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60. See Special Provisions.

Reinforcement bars designated (E) shall be epoxy coated.

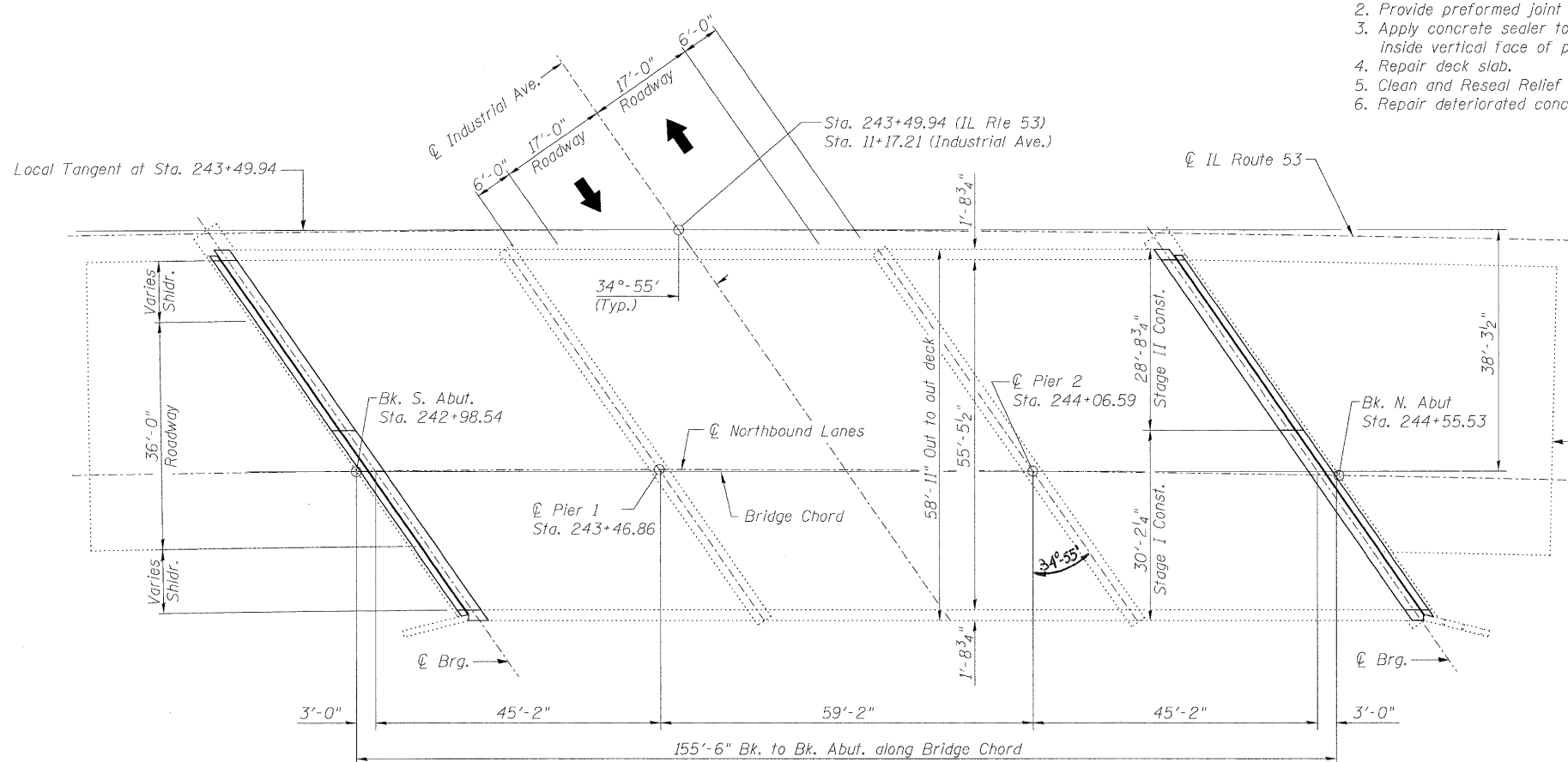
The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Concrete Removal	Cu. Yd.	19.8	-	19.8
Protective Shield	Sq. Yd.	359	-	359
Concrete Superstructure	Cu. Yd.	19.8	-	19.8
Reinforcement Bars, Epoxy Coated	Pound	2090	-	2090
Bar Splicers	Each	24	-	24
Preformed Joint Strip Seal	Foot	138	-	138
Concrete Sealer	Sq. Ft.	9894	-	9894
Structural Repair of Concrete (Depth Greater Than 5 in.)	Sq. Ft.	-	28	28
Structural Repair of Concrete (Depth Equal To or Less Than 5 in.)	Sq. Ft.	-	60	60
Deck Slab Repair (Full Depth, Type I)	Sq. Yd.	1.2	-	1.2
Deck Slab Repair (Full Depth, Type II)	Sq. Yd.	65.7	-	65.7
Deck Slab Repair (Partial)	Sq. Yd.	20.4	-	20.4
Clean and Reseal Relief Joint	Foot	72	-	72



ELEVATION



PLAN

DESIGN STRESSES

FIELD UNITS (New Const.)

f'c = 3,500 psi
fy = 60,000 psi (Reinforcement)

FIELD UNITS (Existing)

fc = 1,400 psi (Superstructure and Substructure)
fs = 20,000 psi (Reinforcement and Structural Steel)

DESIGN SPECIFICATIONS

(New Construction)
2002 AASHTO "Standard Specifications for Highway Bridges", 17th Edition

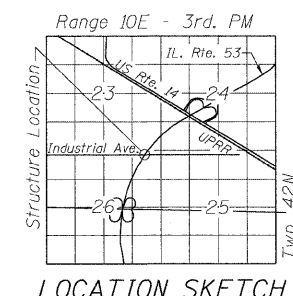
LOADING HS 20-44

(Original Construction)



Michael J. Haley 2/8/10
Date

Michael T. Haley
Licensed Structural Engineer
State of Illinois No. 81-5991
Expires 11/30/2010

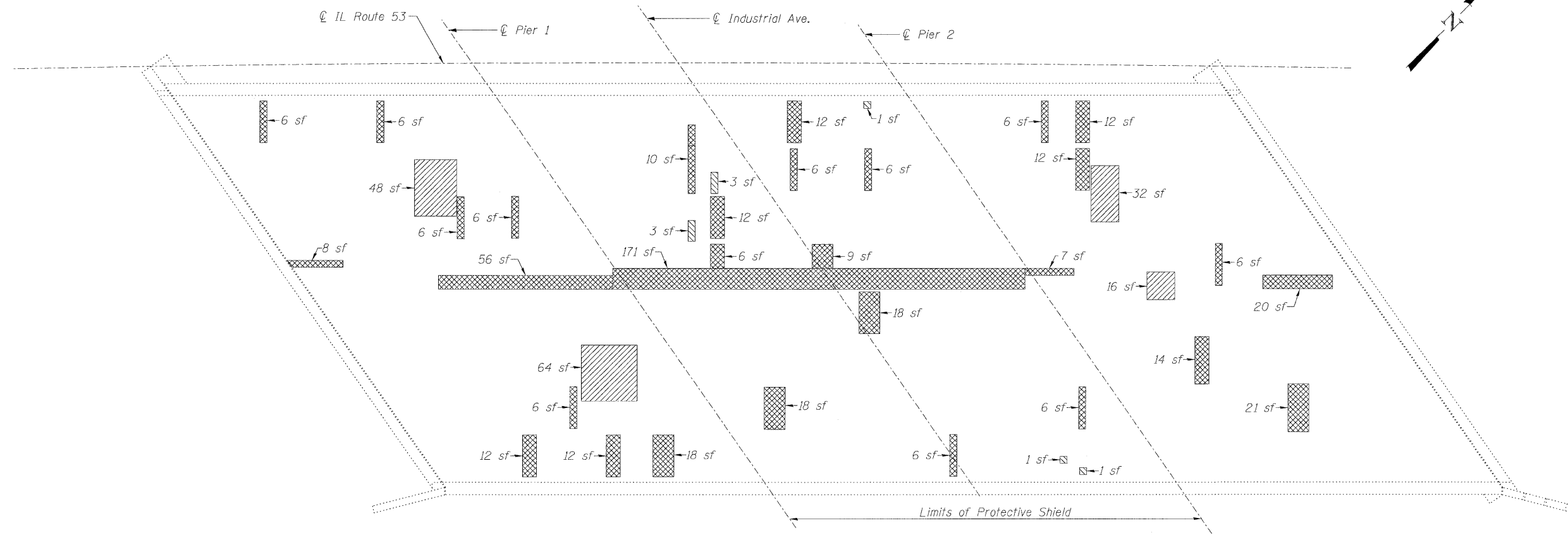


LOCATION SKETCH

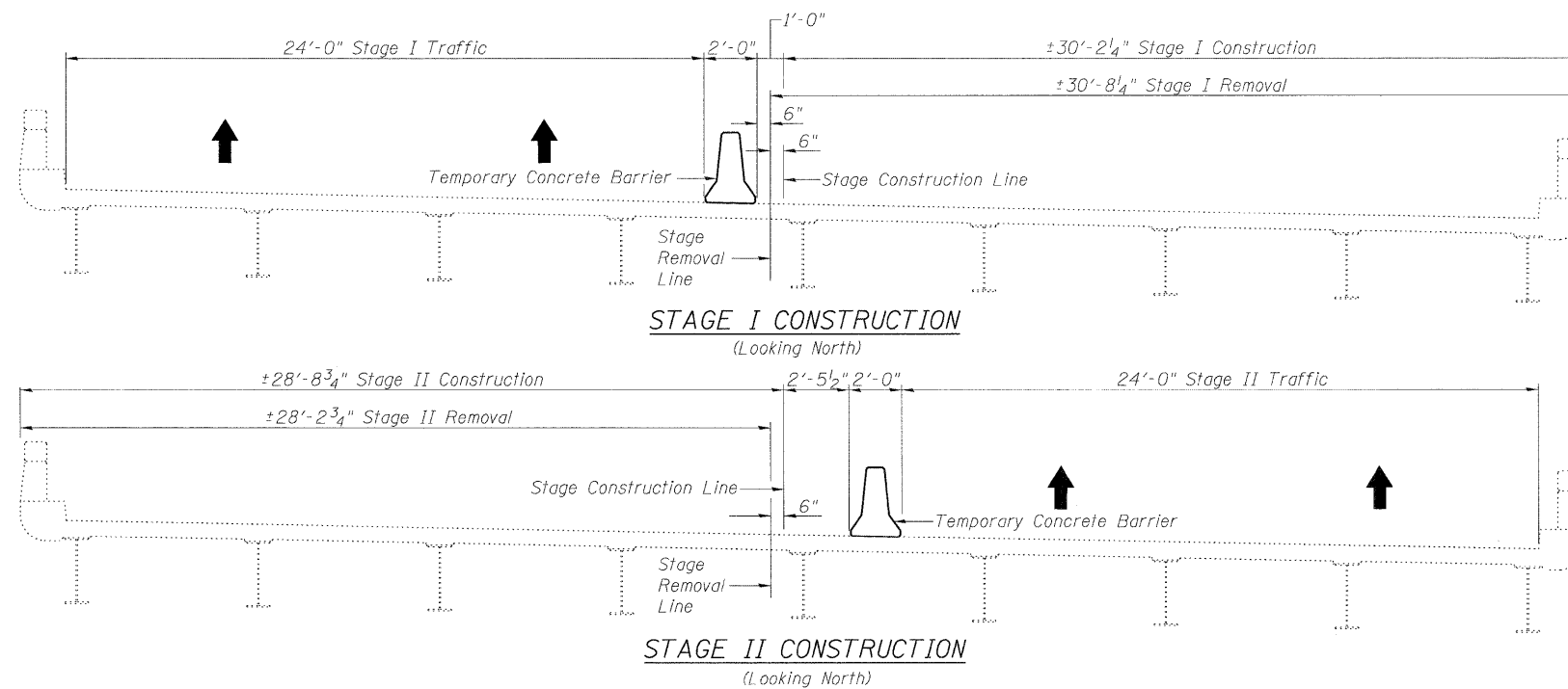
GENERAL PLAN AND ELEVATION
NB IL RTE 53 OVER INDUSTRIAL AVE.
F.A.I. RTE 290
SEC (531-3.1,0305-302K)RS-5
COOK COUNTY
STATION 243+49.94
STRUCTURE NO. 016-0375

 LIN ENGINEERING, LTD. Consulting Engineers Chatham, Illinois	SHEET NO. 1	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	8 SHEETS	290	(531-3.1,0305-302K)RS-5	COOK	34	208
Designed By: KTH Date: 12/2009		Checked By: MTH File: 016-0375.dwg		CONTRACT NO. 60138		
FED. ROAD DIST. NO. _ ILLINOIS FED. AID PROJECT						

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



PLAN



STAGE I CONSTRUCTION
(Looking North)

STAGE II CONSTRUCTION
(Looking North)

LEGEND

- Deck Slab Repair (Full Depth, Type I)
- Deck Slab Repair (Full Depth, Type II)
- Deck Slab Repair (Partial)
- sf Square Feet

BILL OF MATERIAL

Item	Unit	Total
Protective Shield	Sq. Yd.	359
Deck Slab Repair (Full Depth, Type I)	Sq. Yd.	1.2
Deck Slab Repair (Full Depth, Type II)	Sq. Yd.	65.7
Deck Slab Repair (Partial)	Sq. Yd.	20.4

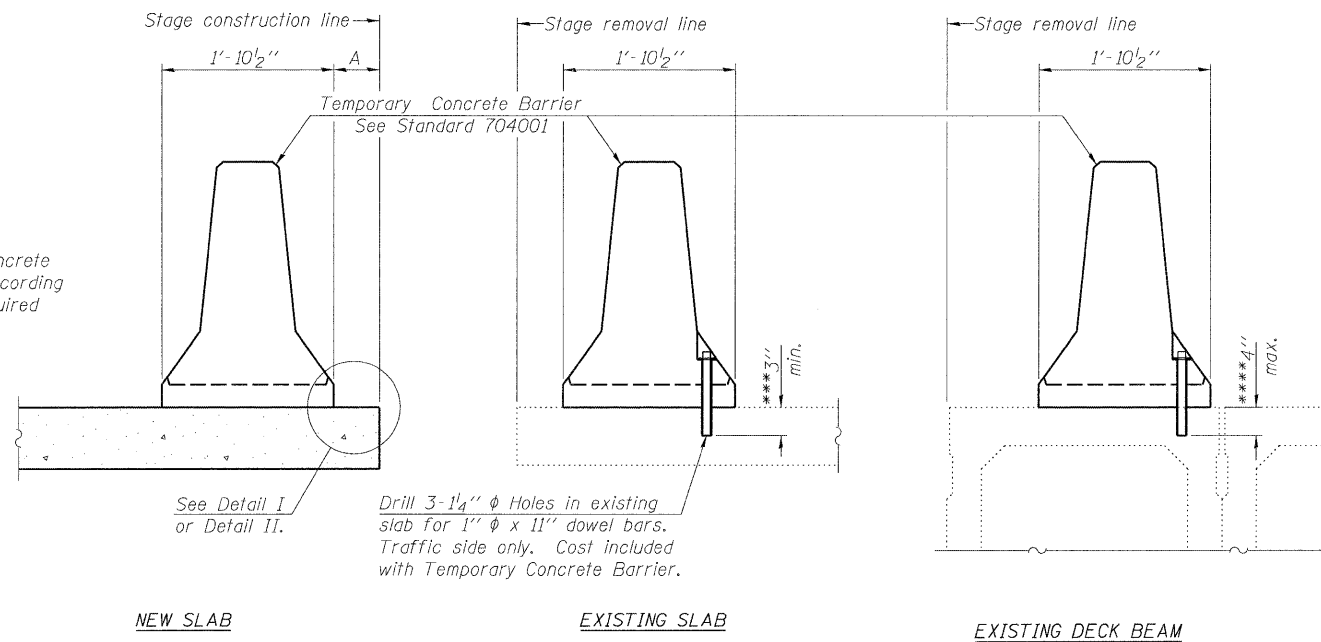
Repair of the existing deck slab shall include but may not be limited to the areas shown. The actual areas to be repaired will be determined by the Engineer at the time of construction.

DECK REPAIR AND
STAGE CONSTRUCTION DETAILS
STRUCTURE NO. 016-0375

 LIN ENGINEERING, LTD. Consulting Engineers Chatham, Illinois	SHEET NO. 2	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
	8 SHEETS	290	(531-3.1,0305-302K)RS-5	COOK	314	209	
Designed By: KWH Checked By: KWH Drawn By: KWH Date: 12/2009 File: 016-0375.dgn		CONTRACT NO. 60138				FED. ROAD DIST. NO. _ ILLINOIS FED. AID PROJECT	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

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



Drill 3-1/4" ϕ Holes in existing slab for 1" ϕ x 11" dowel bars. Traffic side only. Cost included with Temporary Concrete Barrier.

NOTES

Detail I - With Bar Splicer or Couplers:
Connect one (1) 1"x7"x10" steel \bar{r} to the top layer of couplers with 2-5/8" ϕ bolts screwed to coupler at approximate \bar{c} of each barrier panel.

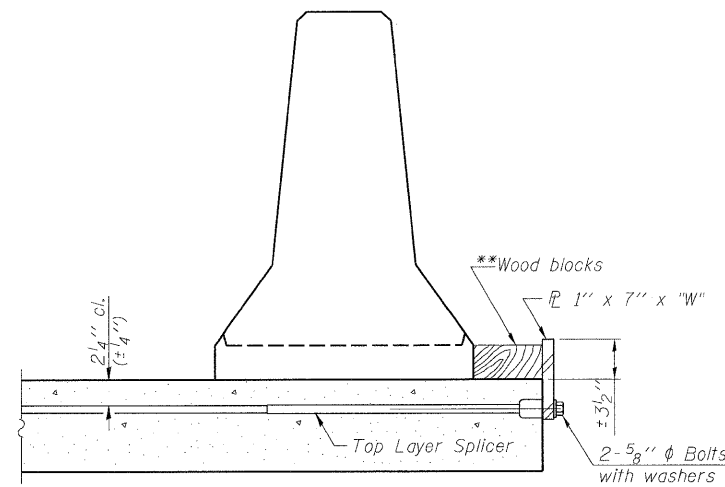
Detail II - With Extended Reinforcement Bars:
Connect one (1) 1"x7"x10" steel \bar{r} to the concrete slab or concrete wearing surface with 2-5/8" ϕ Expansion Anchors or cast in place inserts spaced between the top layer of reinforcement at approximate \bar{c} of each barrier panel.

Cost of anchorage is included with Temporary Concrete Barrier. The 1" x 7" x 10" plate shall not be removed until stage II construction forms and all reinforcement bars are in place and the concrete is ready to be placed.

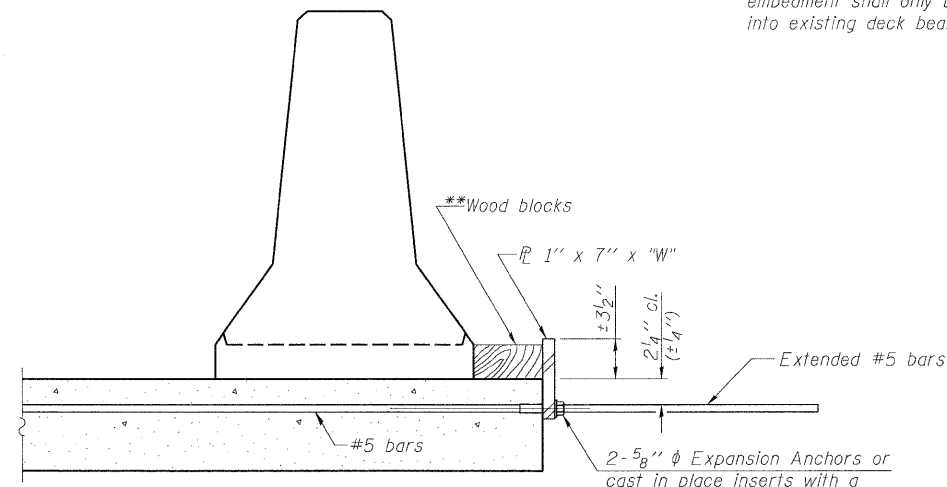
SECTIONS THRU SLAB OR DECK BEAM

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

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



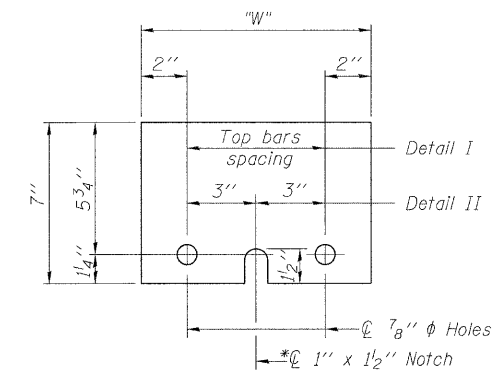
DETAIL I



DETAIL II

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

"W" = Top bars spacing + 4"



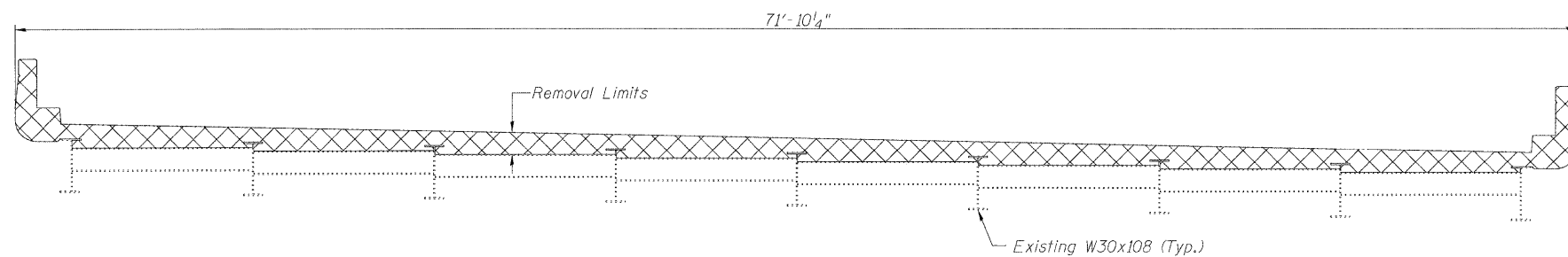
STEEL RETAINER 1" x 7" x 10"

* Required only with Detail II

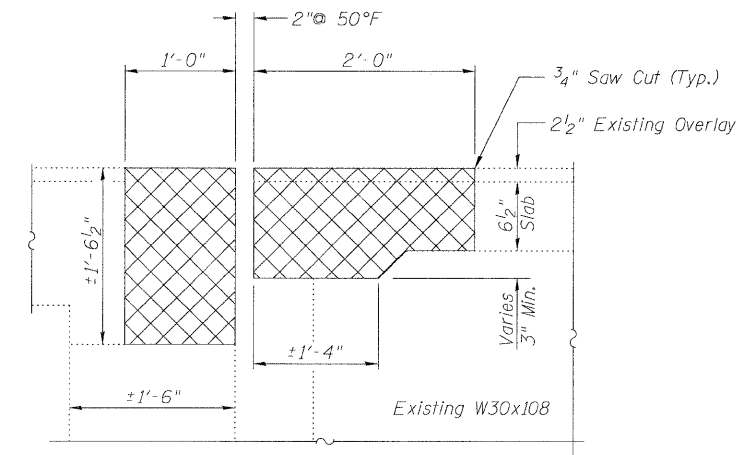
**TEMPORARY CONCRETE BARRIER
FOR STAGE CONSTRUCTION
STRUCTURE NO. 016-0375**

<p>LIN ENGINEERING, LTD. Consulting Engineers Chatham, Illinois</p>	SHEET NO. 3	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	8 SHEETS	290	(531-3.1,0305-302K)RS-5	COOK	314	210
<p>Designed By: KRH Checked By: MTH Date: 10/2009</p>	<p>Drawn By: KRH File: 016-0375.dgn</p>	FED. ROAD DIST. NO. _ ILLINOIS		CONTRACT NO. 60138		
				FED. AID PROJECT		

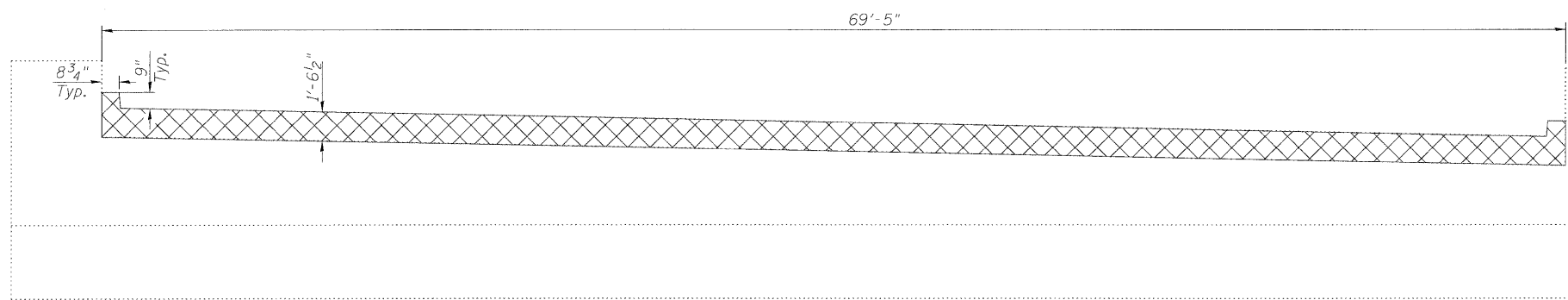
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



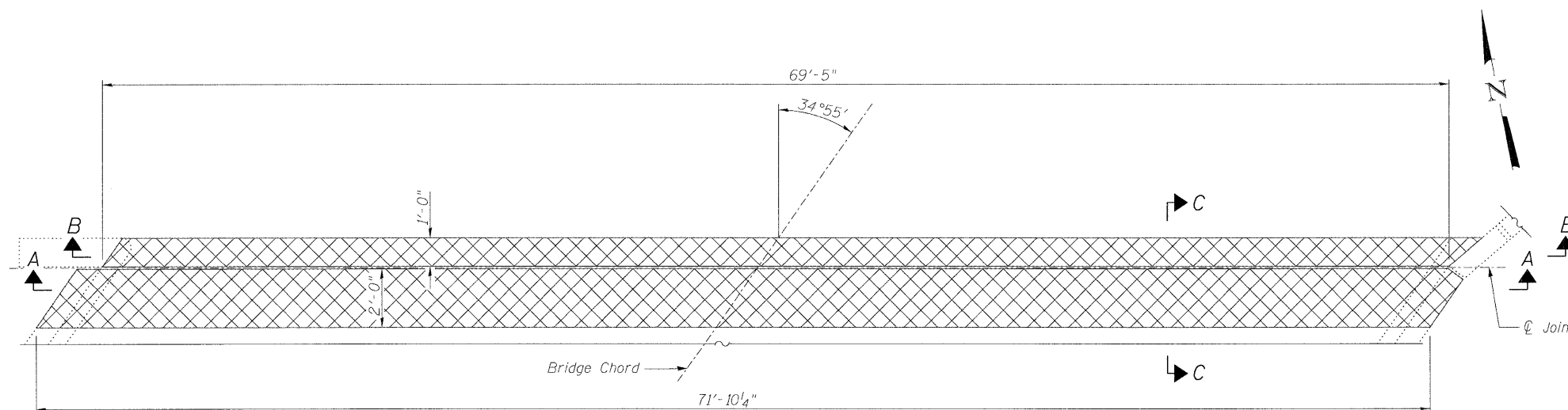
SECTION A-A



SECTION C-C
(Dimensions at Rt. L's)



SECTION B-B



PLAN

(North abutment shown, south abutment mirrored about Bridge Chord)

Notes:

1. Cross hatched area indicates concrete removal.
2. Existing reinforcement bars in the concrete removal are extending in new construction shall be cleaned and incorporated into the new construction. Cost included in Concrete Removal.
3. Any reinforcement bars that are damaged during concrete removal operations shall be repaired or replaced using an approved bar splicer or anchorage system, in accordance with IDOT Standard Specifications Article 501.03. Cost included in Concrete Removal.
4. See Sheet 2 of 8 for Stage Construction Details.
5. Overlay removal is included in cost of Concrete Removal.

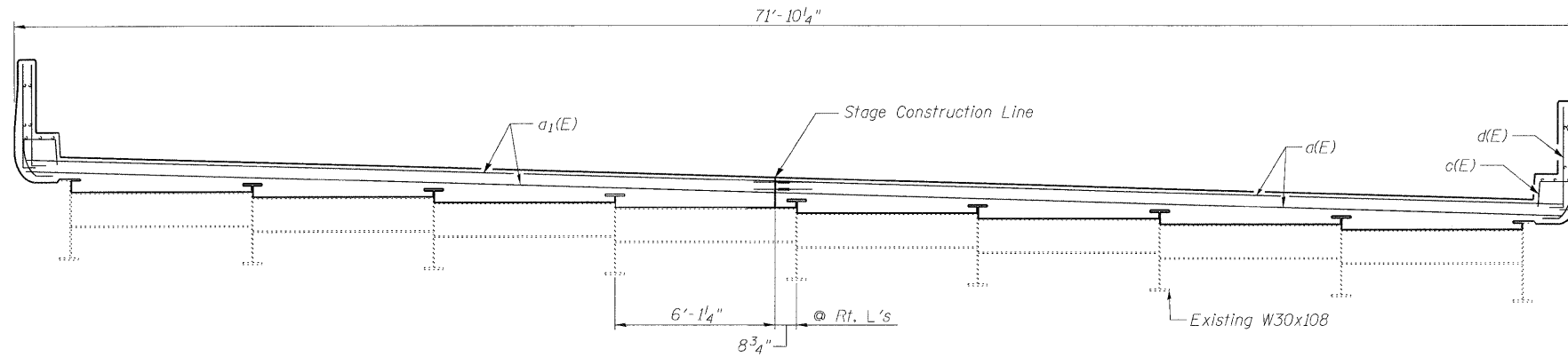
BILL OF MATERIAL

Item	Unit	Total
Concrete Removal	Cu. Yd.	19.8

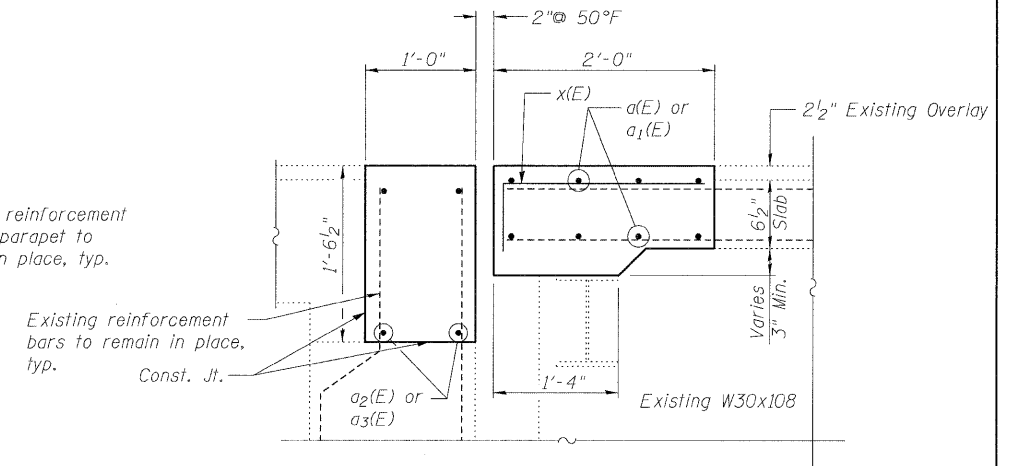
CONCRETE REMOVAL
STRUCTURE NO. 016-0375

<p>LIN ENGINEERING, LTD. Consulting Engineers Chatham, Illinois</p>	SHEET NO. 4	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	8 SHEETS	290	(531-3.1,0305-302K)RS-5	COOK	314	211
Designed By: KHH Checked By: MTH Date: 12/2009		Drawn By: KHH File: 016-0375.dgn		CONTRACT NO. 60138		
FED. ROAD DIST. NO. _ ILLINOIS FED. AID PROJECT						

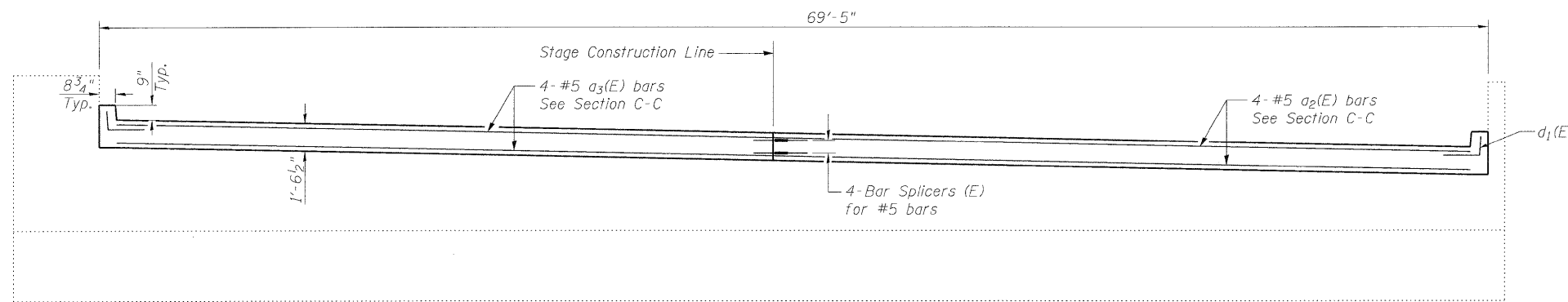
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



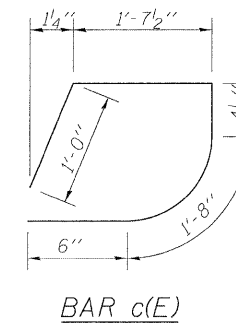
SECTION A-A



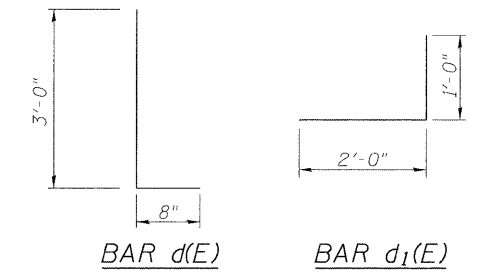
SECTION C-C
(Dimensions at Rt. L's)



SECTION B-B

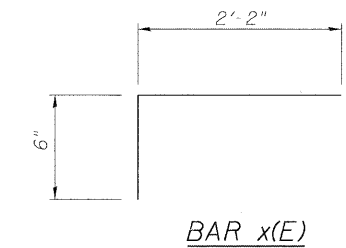


BAR c(E)



BAR d(E)

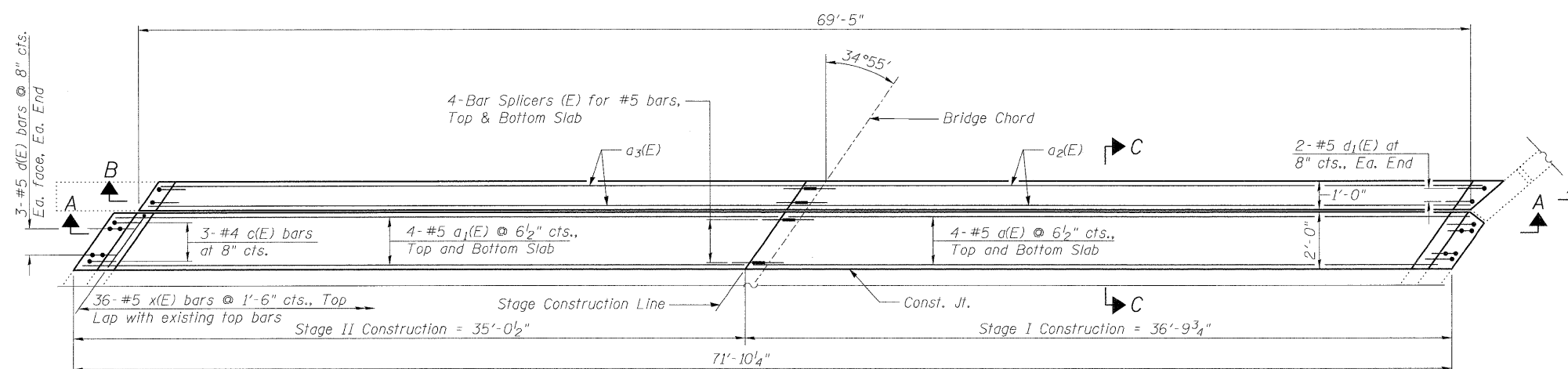
BAR d1(E)



BAR x(E)

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
d(E)	16	#5	35'-11"	—
a1(E)	16	#5	34'-2"	—
a2(E)	8	#5	35'-4"	—
a3(E)	8	#5	33'-6"	—
c(E)	12	#4	5'-2"	D
d1(E)	8	#5	3'-0"	┘
x(E)	72	#5	2'-8"	┘
Concrete Superstructure			Cu. Yd.	19.8
Reinforcement Bars, Epoxy Coated			Pound	2090



PLAN

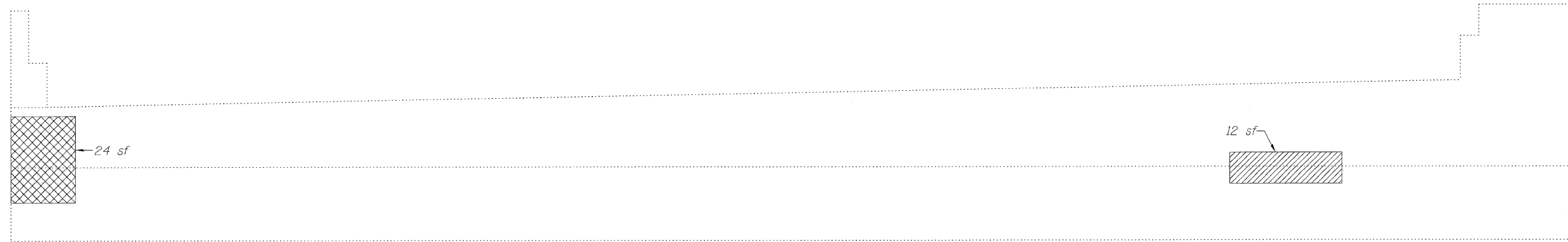
(North abutment shown, south abutment mirrored about Bridge Chord)

<p>LIN ENGINEERING, LTD. Consulting Engineers Chatham, Illinois</p>	SHEET NO. 5	F.A.I. RTE. 290	SECTION (531-3.1,0305-302K)RS-5	COUNTY COOK	TOTAL SHEETS 314	SHEET NO. 212
	8 SHEETS	FED. ROAD DIST. NO. _ ILLINOIS		CONTRACT NO. 60138		
FED. AID PROJECT						

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION





NORTH ABUTMENT
(Looking North)



SOUTH ABUTMENT
(Looking South)

LEGEND

 Structural Repair of Concrete (Depth equal to or less than 5")

 Structural Repair of Concrete (Depth greater than 5")


sf Square Feet

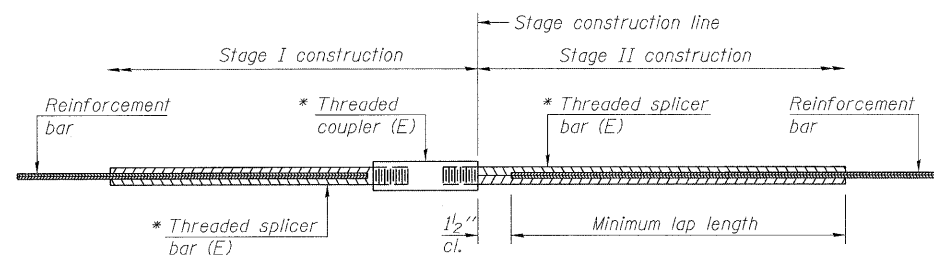
Note:
Repair of the existing abutments shall include but may not be limited to the areas shown. The actual areas to be repaired will be determined by the Engineer at the time of construction.

BILL OF MATERIAL

Item	Unit	Total
Structural Repair of Concrete (Depth Equal To or Less Than 5 in.)	Sq. Ft.	60
Structural Repair of Concrete (Depth Greater Than 5 in.)	Sq. Ft.	28

ABUTMENT REPAIR
STRUCTURE NO. 016-0375

 LIN ENGINEERING, LTD. Consulting Engineers Chatham, Illinois	SHEET NO. 6	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	8 SHEETS	290	(531-3.1,0305-302K)RS-5	COOK	34	23
Designed By: KHH Checked By: MTH Date: 12/2/09		Drawn By: KHH File: 016-0375.dgn		CONTRACT NO. 60138		
FED. ROAD DIST. NO. _ ILLINOIS FED. AID PROJECT						



STANDARD BAR SPLICER ASSEMBLY

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

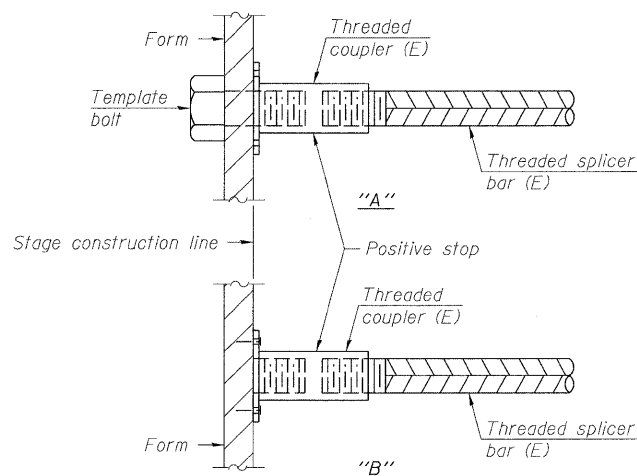
Table 1: Black bar, 0.8 Class C
 Table 2: Black bar, Top bar lap, 0.8 Class C
 Table 3: Epoxy bar, 0.8 Class C
 Table 4: Epoxy bar, Top bar lap, 0.8 Class C

Threaded splicer bar length = min. lap length + 1 1/2" + thread length

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

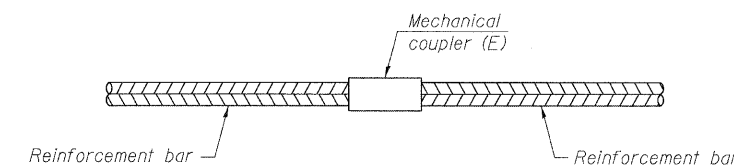
Location	Bar size	No. assemblies required	Table for minimum lap length
Deck	#5	16	Table 3
Abutment	#5	8	Table 3

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



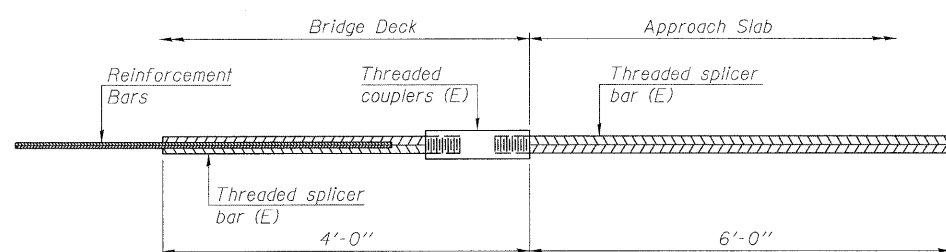
INSTALLATION AND SETTING METHODS

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



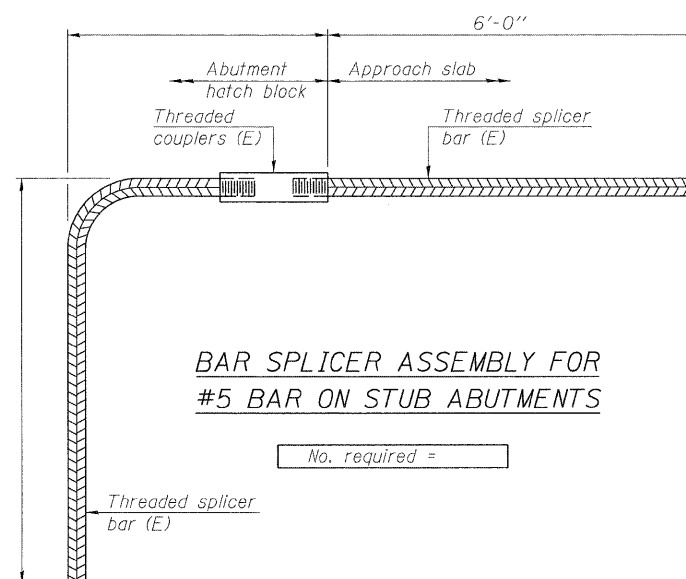
STANDARD MECHANICAL SPLICER

Location	Bar size	No. assemblies required



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

No. required =



BAR SPLICER ASSEMBLY FOR #5 BAR ON STUB ABUTMENTS

No. required =

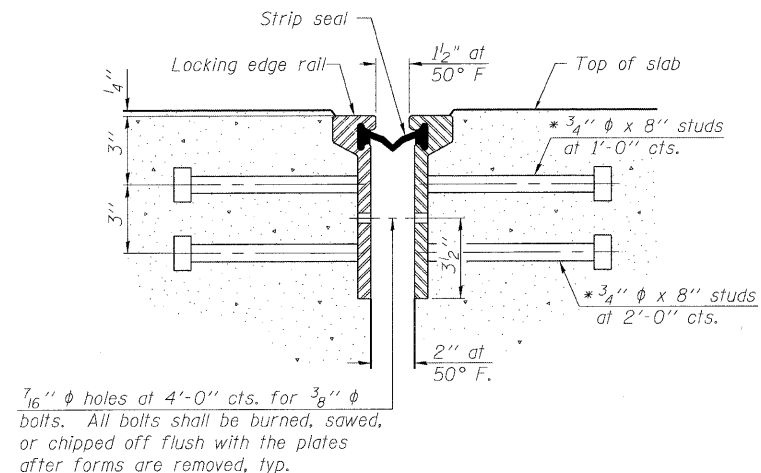
NOTES
 Splicer bars shall be deformed with threaded ends and have a minimum 60 ksi yield strength.
 All reinforcement shall be lapped and tied to the splicer bars.
 Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars. See Section 508 of the Standard Specifications.
 See special provision for Mechanical Splicers.
 See approved list of bar splicer assemblies and mechanical splicers for alternatives.

**BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS
STRUCTURE NO. 016-0375**

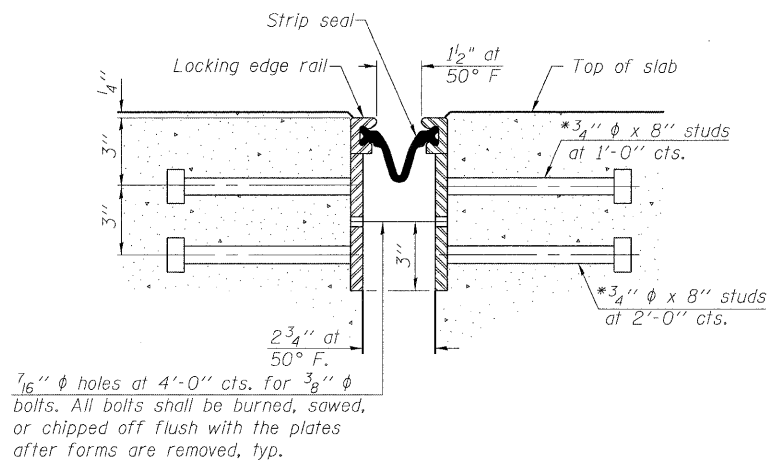
LIN ENGINEERING, LTD. Consulting Engineers Chatham, Illinois <small>Designed By: KKH Checked By: MTH Drawn By: KKH Date: 12/2009 File: 016-0375.dgn</small>	SHEET NO. 7 8 SHEETS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		290	(531-3.1,0305-302)RS-5	COOK	314	214
FED. ROAD DIST. NO. _ ILLINOIS FED. AID PROJECT					CONTRACT NO. 60138	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

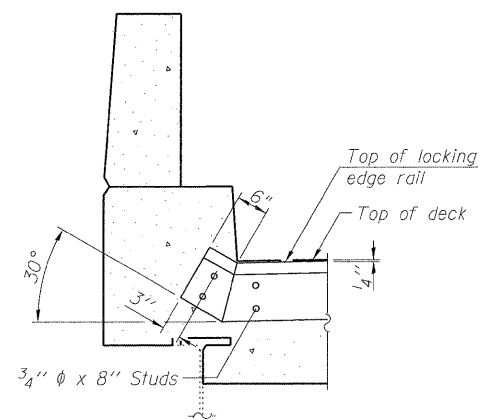
* Granular or solid flux filled headed studs conforming to Article 1006.32 of the Std. Specs., automatically end welded.



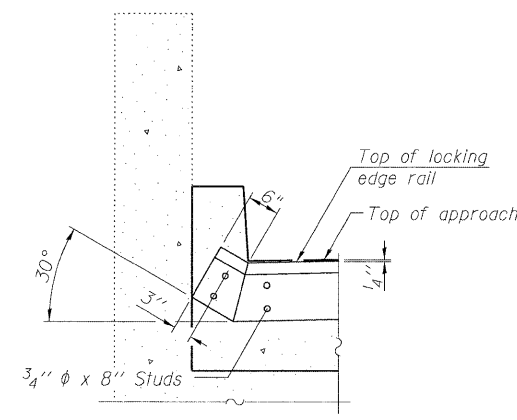
SECTION THRU
ROLLED RAIL JOINT



SECTION THRU
WELDED RAIL JOINT

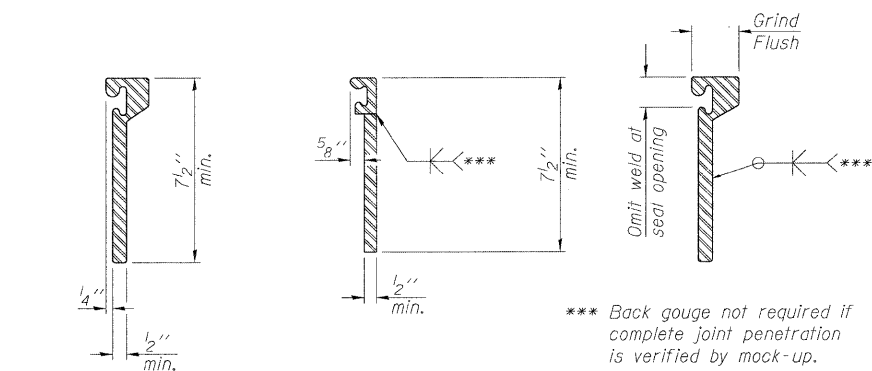


AT PARAPET



AT WING WALL

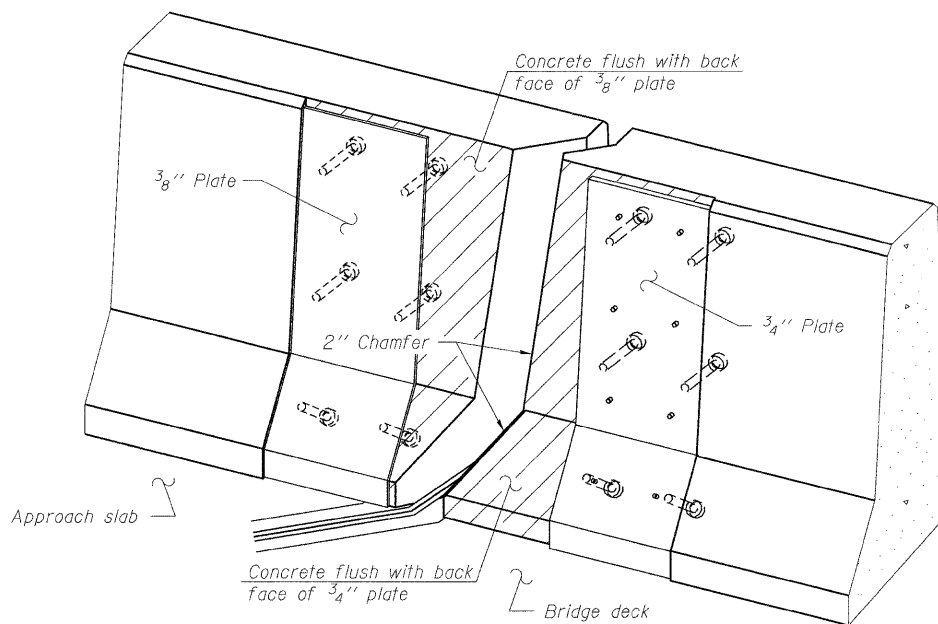
TYPICAL END TREATMENTS



ROLLED
EXTRUDED RAIL

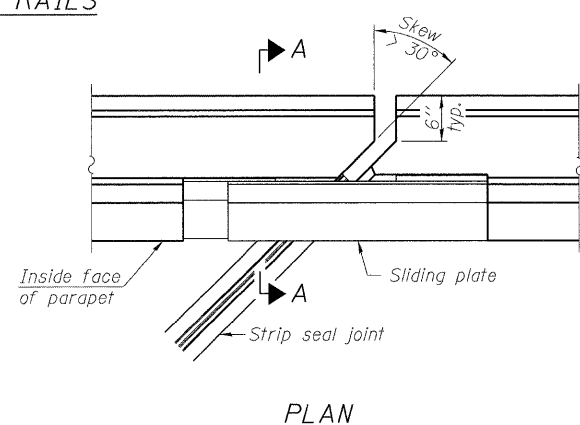
WELDED RAIL

LOCKING EDGE
RAIL SPLICE
The inside of the locking edge rail groove shall be free of weld residue.
Rolled rail shown, welded rail similar.

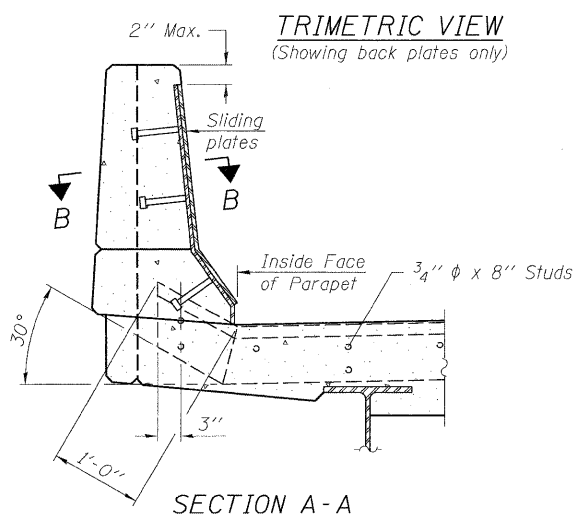


Notes:
The strip seal shall be made continuous and shall have a minimum thickness of 1/4". The configuration of the strip seal shall match the configuration of the Locking Edge Rails. Open or "webbed" strip seal gland configurations are not permitted. The gland shall be sized for a maximum rated movement of 4 inches.
The Locking Edge Rails depicted are conceptual only, except for the minimum dimensions shown. 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.
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.
Maximum space between rail segments at stage lines shall be 3/16", sealed with a suitable sealant.

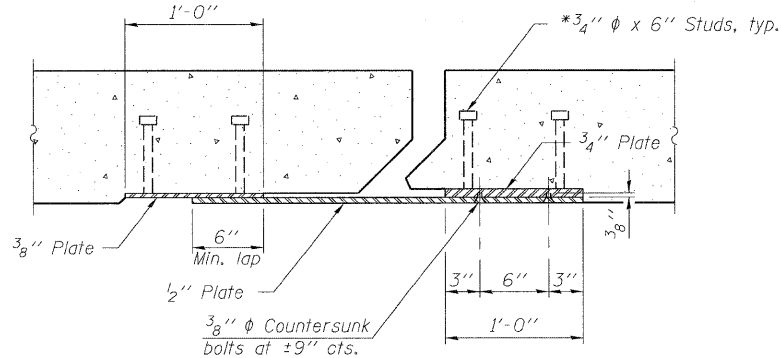
LOCKING EDGE RAILS



PLAN



POINT BLOCK DETAILS
(for skews > 30°)



SECTION B-B

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	138

PREFORMED JOINT STRIP SEAL
STRUCTURE NO. 016-0375

<p>LIN ENGINEERING, LTD. Consulting Engineers Chatham, Illinois</p>	SHEET NO. 8	F.A.I. RTE. 290	SECTION (531-3.1,0305-302)RS-5	COUNTY COOK	TOTAL SHEETS 714	SHEET NO. 215
	8 SHEETS	FED. ROAD DIST. NO. ILLINOIS		CONTRACT NO. 60138		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

Existing Structure:
S.N. 016-1120 built in 1963 as F.A. Route 61, Section 531-2HB-1 at Station 243+49.94. Structure consists of three span continuous steel beam bridge with a 34°55' right ahead skew, 155'-6" back-to-back abutments along bridge chord, out to out deck width of 58'-11", multi-column piers, and pile bent abutments. In 1971, the deck was patched and a bituminous overlay was placed on the structure. In 1991, the expansion joints and parapets were reconstructed, along with deck patching and overlay replacement with microsilica concrete. In 2000, the abutment bearings were replaced with elastomeric bearings. Traffic is to be maintained utilizing stage construction.

GENERAL NOTES

Plan dimension 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.

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 can not be removed by grinding ¼ in. 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.

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.

Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60. See Special Provisions.

Reinforcement bars designated (E) shall be epoxy coated.

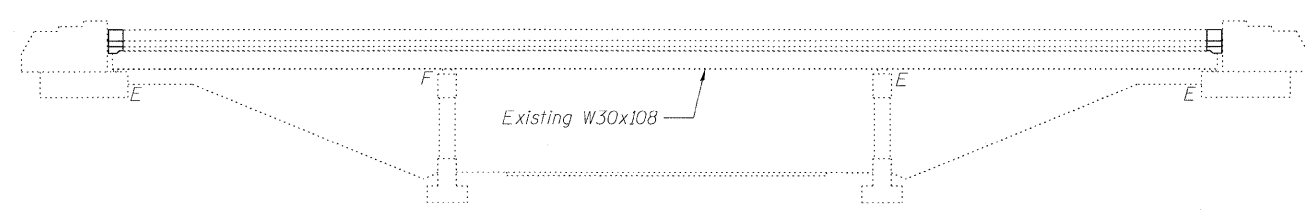
The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.

INDEX OF SHEETS

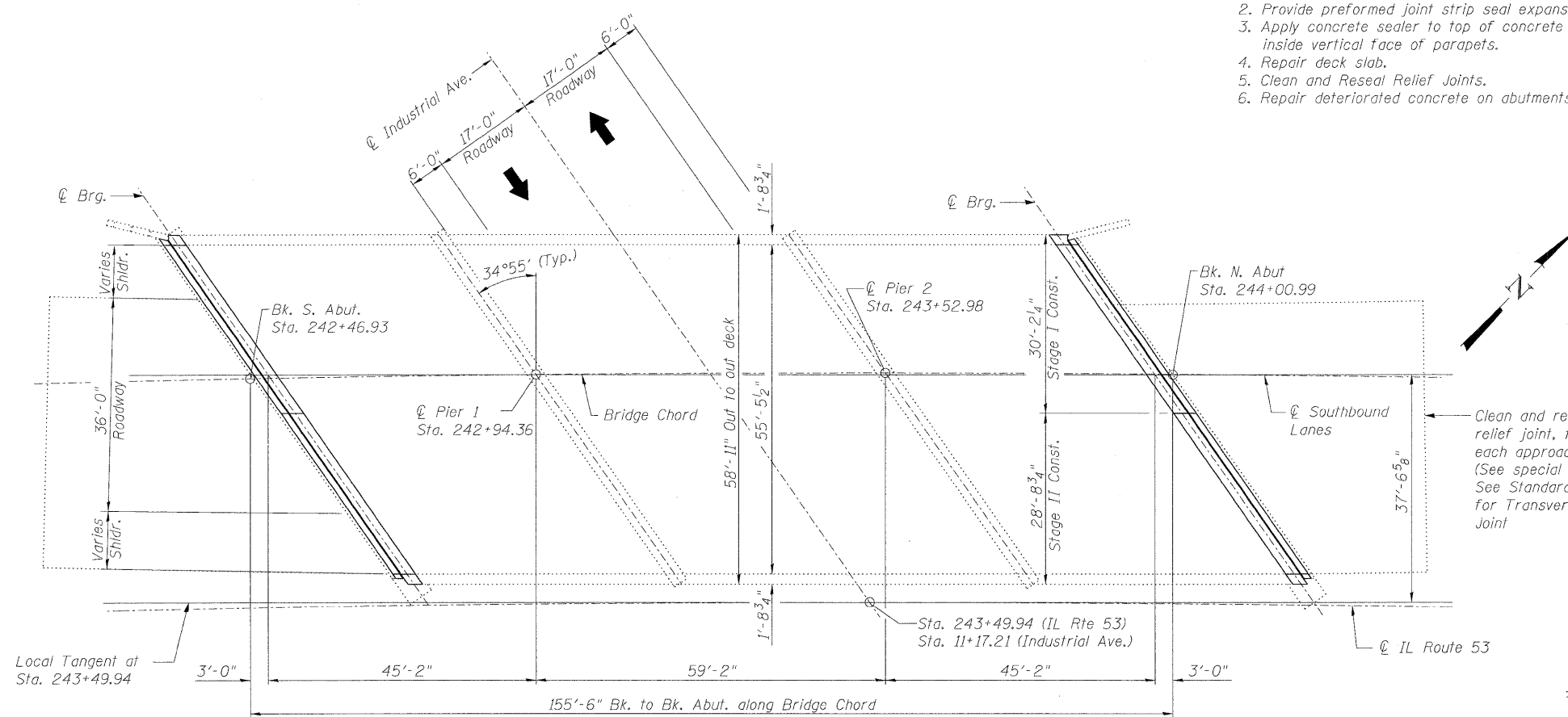
1. General Plan and Elevation
2. Deck Repair & Stage Construction Details
3. Temporary Concrete Barrier for Stage Construction
4. Concrete Removal
5. Concrete Details
6. Substructure Repair
7. Bar Splicer Assembly and Mechanical Splicer Details
8. Preformed Joint Strip Seal

SCOPE OF WORK

1. Remove and replace concrete deck adjacent to abutment expansion joints.
2. Provide preformed joint strip seal expansion joints at abutments.
3. Apply concrete sealer to top of concrete deck and top and inside vertical face of parapets.
4. Repair deck slab.
5. Clean and Reseal Relief Joints.
6. Repair deteriorated concrete on abutments.



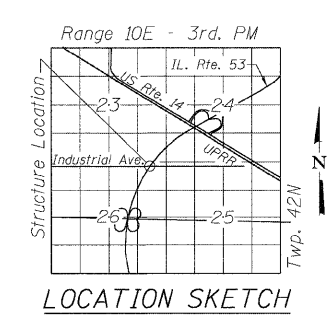
ELEVATION



PLAN

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Concrete Removal	Cu. Yd.	19.8	-	19.8
Protective Shield	Sq. Yd.	359	-	359
Concrete Superstructure	Cu. Yd.	19.8	-	19.8
Reinforcement Bars, Epoxy Coated	Pound	2090	-	2090
Bar Splicers	Each	24	-	24
Preformed Joint Strip Seal	Foot	138	-	138
Concrete Sealer	Sq. Ft.	9894	-	9894
Structural Repair of Concrete (Depth Greater Than 5 in.)	Sq. Ft.	-	21	21
Structural Repair of Concrete (Depth Equal To or Less Than 5 in.)	Sq. Ft.	-	69	69
Deck Slab Repair (Full Depth, Type I)	Sq. Yd.	0.6	-	0.6
Deck Slab Repair (Full Depth, Type II)	Sq. Yd.	45.6	-	45.6
Deck Slab Repair (Partial)	Sq. Yd.	28.0	-	28.0
Cleaning and Painting Exposed Rebar	Sq. Ft.	177	-	177
Clean and Reseal Relief Joint	Foot	72	-	72



LOCATION SKETCH

DESIGN STRESSES

FIELD UNITS (New Const.)

f'c = 3,500 psi
fy = 60,000 psi (Reinforcement)

FIELD UNITS (Existing)

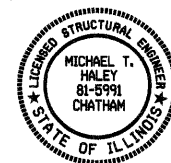
fc = 1,400 psi (Superstructure and Substructure)
fs = 20,000 psi (Reinforcement and Structural Steel)

DESIGN SPECIFICATIONS

(New Construction)
2002 AASHTO "Standard Specifications for Highway Bridges", 17th Edition

LOADING HS 20-44

(Original Construction)

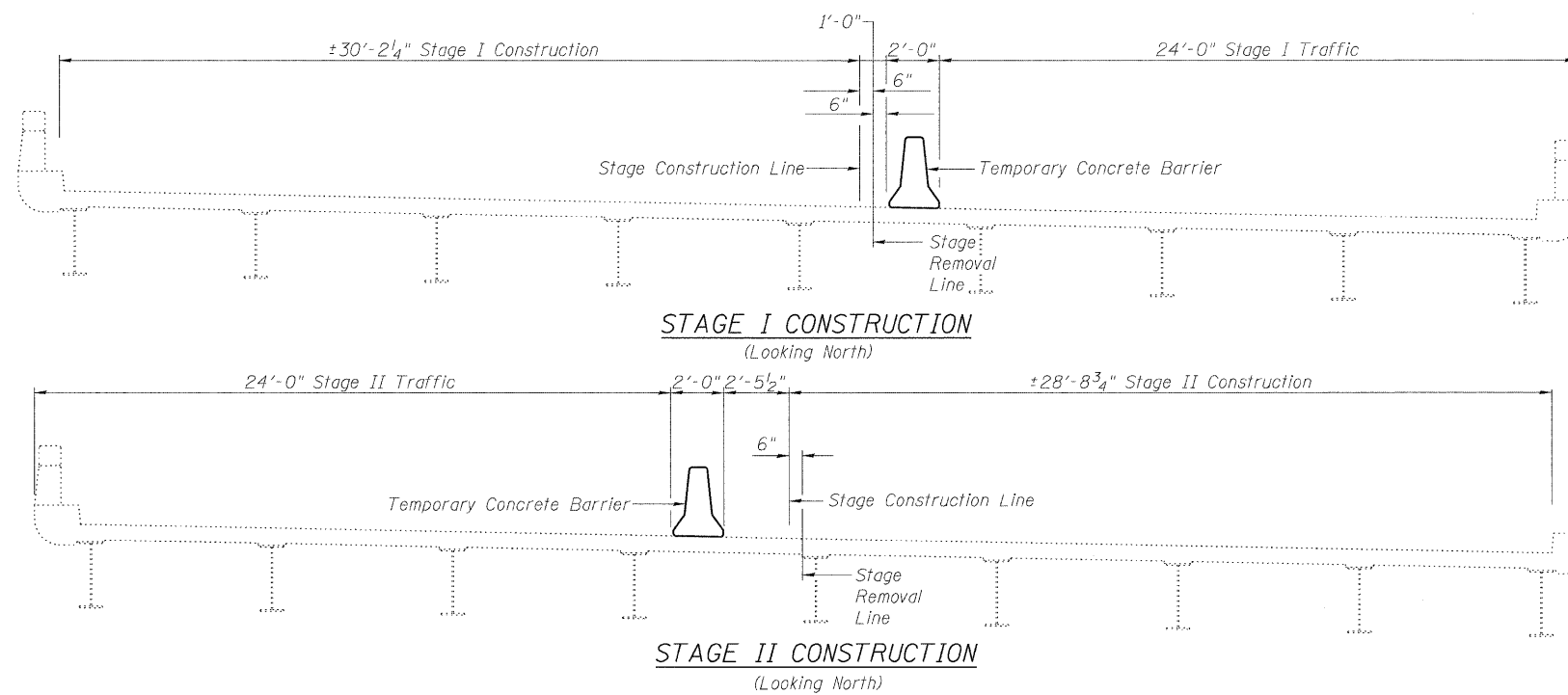
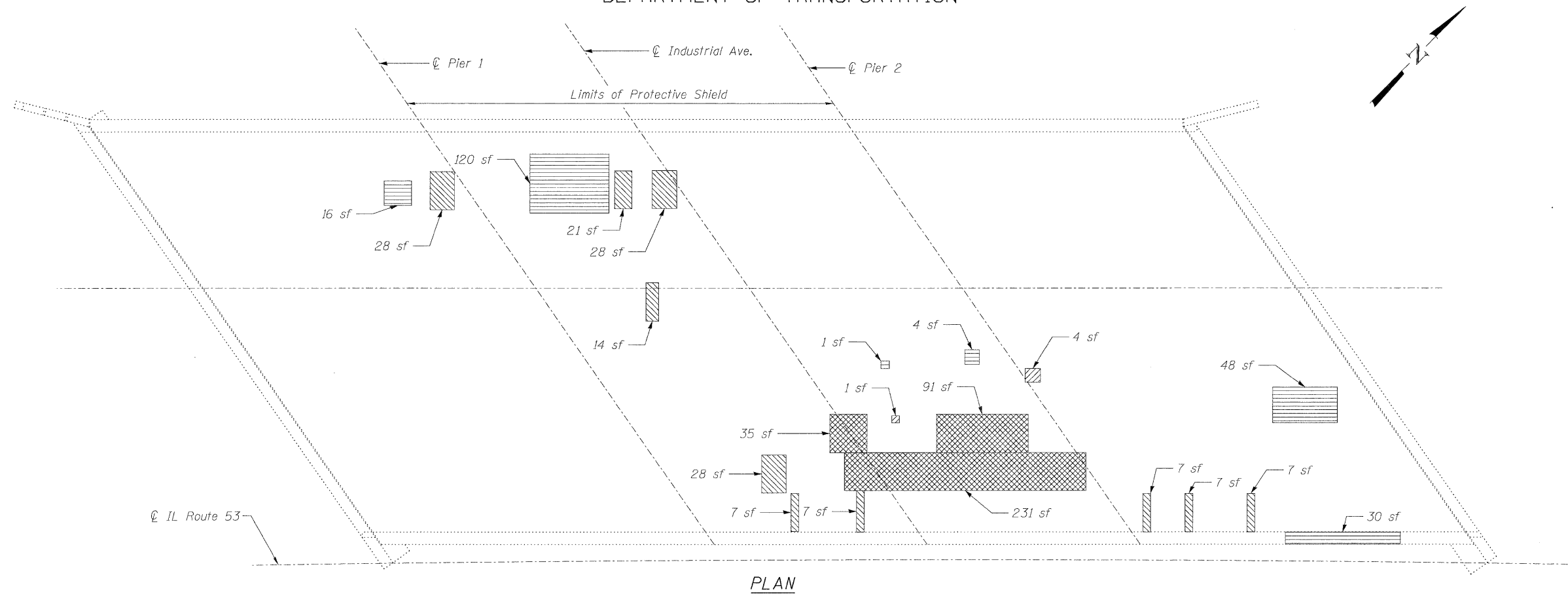


Michael J. Haley 2/8/10
Date
Michael T. Haley
Licensed Structural Engineer
State of Illinois No. 81-5991
Expires 11/30/2010

GENERAL PLAN AND ELEVATION
SB IL RTE 53 OVER INDUSTRIAL AVE.
F.A.I. RTE 290
SEC (531-3.1,0305-302K)RS-5
COOK COUNTY
STATION 243+49.94
STRUCTURE NO. 016-1120

 LIN ENGINEERING, LTD. Consulting Engineers Chatham, Illinois	SHEET NO. 1	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	8 SHEETS	290	(531-3.1,0305-302K)RS-5	COOK	314	216
Designed By: KHH Checked By: MTH Date: 12/2009		Drawn By: KHH File: 016-1120.dgn		CONTRACT NO. 60138		
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT						

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



BILL OF MATERIAL

Item	Unit	Total
Protective Shield	Sq. Yd.	359
Deck Slab Repair (Full Depth, Type I)	Sq. Yd.	0.6
Deck Slab Repair (Full Depth, Type II)	Sq. Yd.	45.6
Deck Slab Repair (Partial)	Sq. Yd.	28.0
Cleaning and Painting Exposed Rebar	Sq. Ft.	177

Repair of the existing deck slab and parapet shall include but may not be limited to the areas shown. The actual areas to be repaired will be determined by the Engineer at the time of construction.

**DECK REPAIR AND
STAGE CONSTRUCTION DETAILS
STRUCTURE NO. 016-1120**

LEGEND

- Deck Slab Repair (Full Depth, Type I)
- Deck Slab Repair (Full Depth, Type II)
- Cleaning and Painting Exposed Rebar on Deck Slab Underside
- Deck Slab Repair (Partial)
- sf Square Feet

LIN ENGINEERING, LTD.
Consulting Engineers
Chatham, Illinois

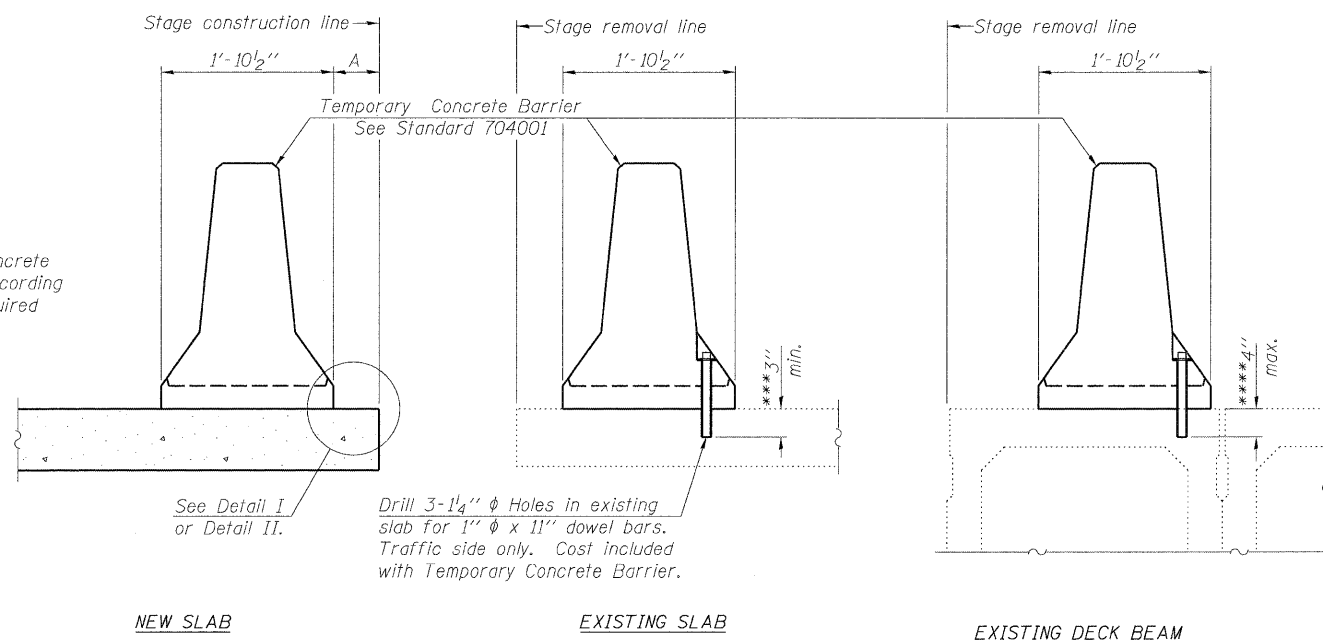
Designed By: KWH Checked By: WTH Drawn By: KWH
Date: 12/2009 File: 016-1120.dgn

SHEET NO. 2
8 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	(531-3.1,0305-302K)RS-5	COOK	314	217
CONTRACT NO. 60138				
FED. ROAD DIST. NO. _ ILLINOIS FED. AID PROJECT				

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

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



SECTIONS THRU SLAB OR DECK BEAM

NOTES

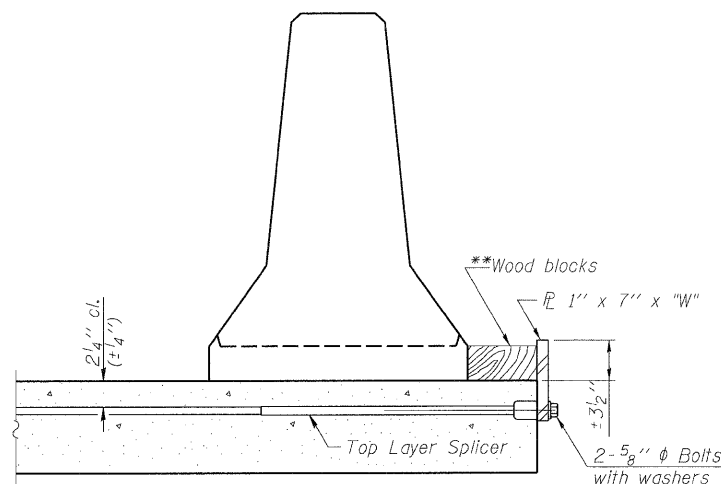
Detail I - With Bar Splicer or Couplers:
Connect one (1) 1"x7"x10" steel \bar{L} to the top layer of couplers with 2-5/8" ϕ bolts screwed to coupler at approximate \bar{C} of each barrier panel.

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

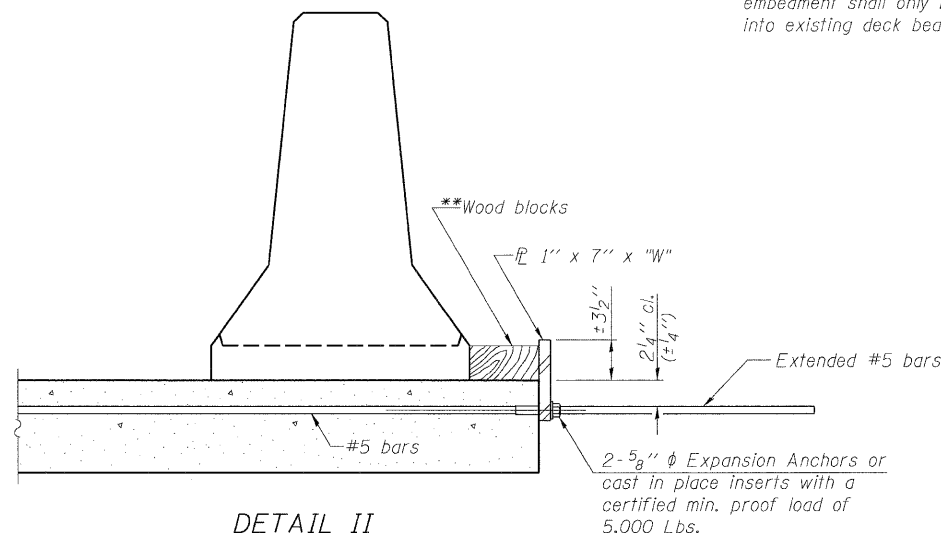
Cost of anchorage is included with Temporary Concrete Barrier. The 1" x 7" x 10" plate shall not be removed until stage II construction forms and all reinforcement bars are in place and the concrete is ready to be placed.

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

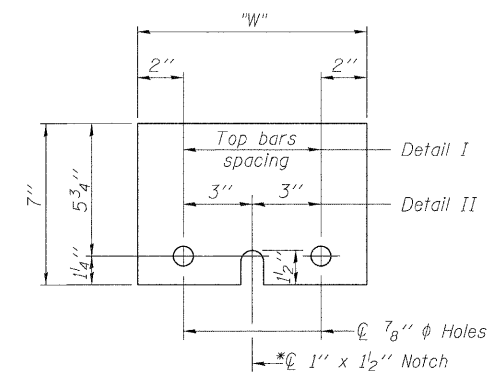
**** If existing deck beam is to remain in place after stage construction, embedment shall only be into wearing surface and not into existing deck beam concrete.



DETAIL I



DETAIL II



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

* Required only with Detail II

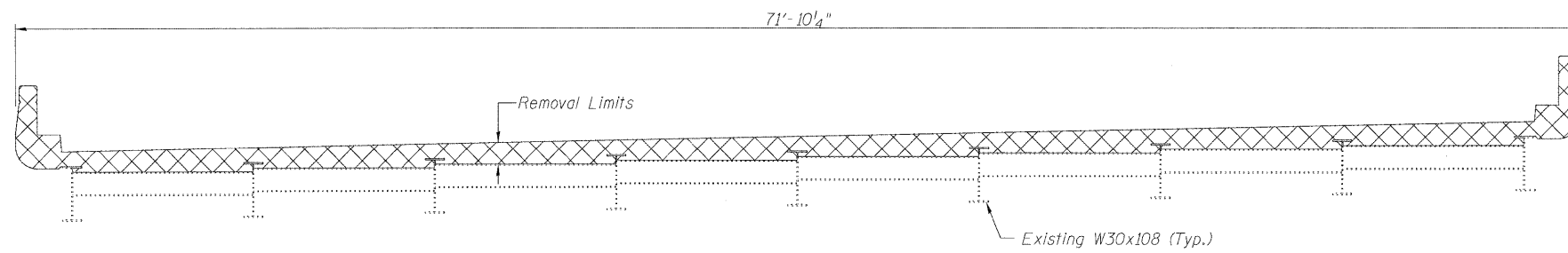
** Wood blocks may be omitted when required to provide minimum stage traffic lane width. When the wood blocks are omitted, the concrete barrier shall be in direct contact with the steel retainer plate.

"W" = Top bars spacing + 4"

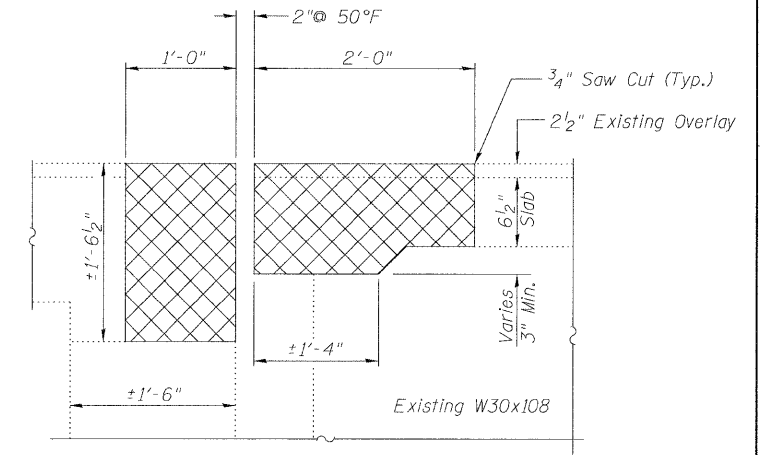
TEMPORARY CONCRETE BARRIER
FOR STAGE CONSTRUCTION
STRUCTURE NO. 016-1120

<p>LIN ENGINEERING, LTD. Consulting Engineers Chatham, Illinois</p>	SHEET NO. 3	F.A.I. RTE. 290	SECTION (531-3.1,0305-302)RS-5	COUNTY COOK	TOTAL SHEETS 314	SHEET NO. 218
	8 SHEETS	CONTRACT NO. 60138			FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT	

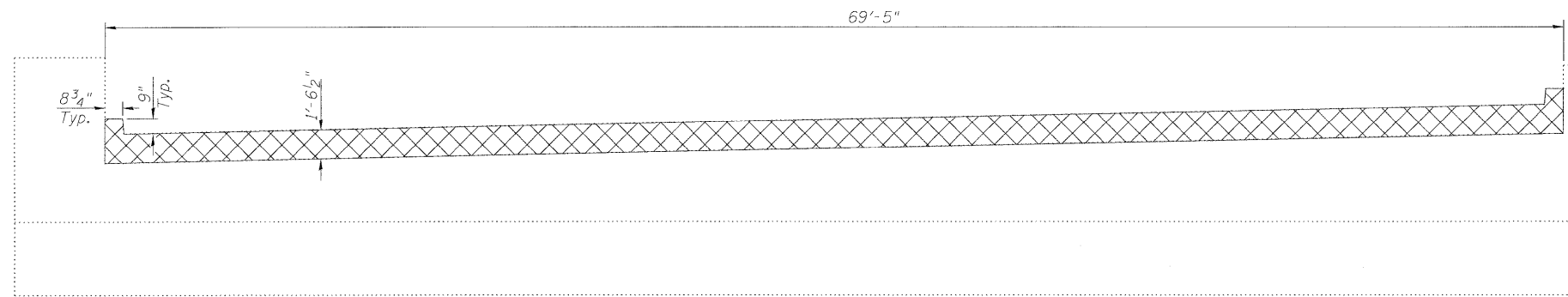
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



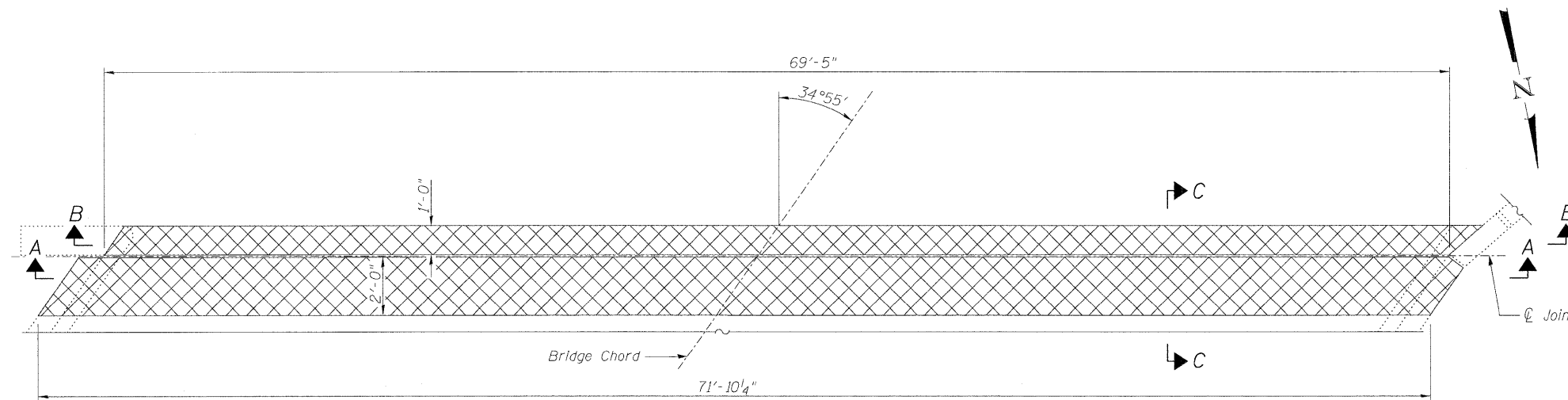
SECTION A-A



SECTION C-C
(Dimensions at Rt. L's)



SECTION B-B



PLAN

(South abutment shown, north abutment mirrored about Bridge Chord)

Notes:

1. Cross hatched area indicates concrete removal.
2. Existing reinforcement bars in the concrete removal are extending in new construction shall be cleaned and incorporated into the new construction. Cost included in Concrete Removal.
3. Any reinforcement bars that are damaged during concrete removal operations shall be repaired or replaced using an approved bar splicer or anchorage system, in accordance with IDOT Standard Specifications Article 501.03. Cost included in Concrete Removal.
4. See Sheet 2 of 8 for Stage Construction Details.
5. Overlay removal is included in cost of Concrete Removal.

BILL OF MATERIAL

Item	Unit	Total
Concrete Removal	Cu. Yd.	19.8

CONCRETE REMOVAL
STRUCTURE NO. 016-1120

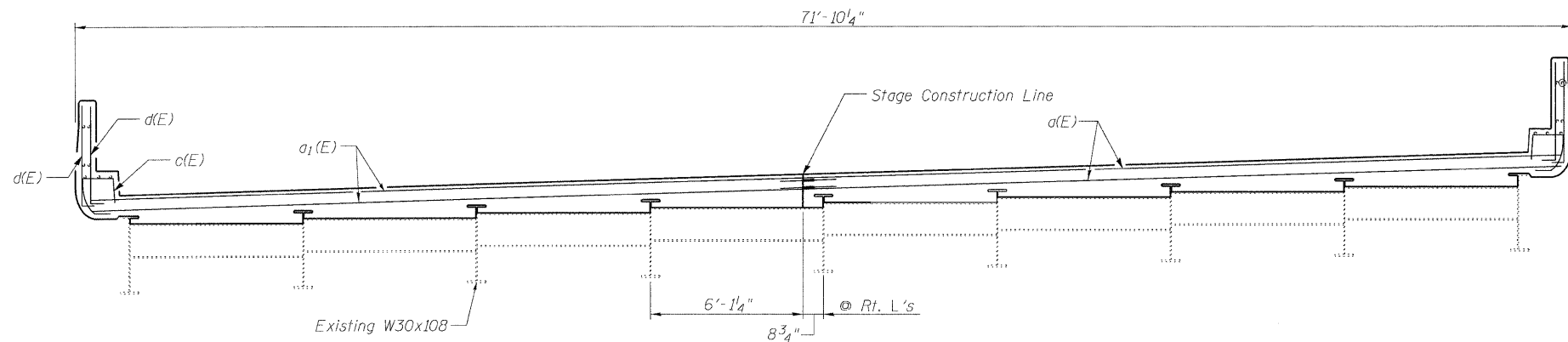
<p>LIN ENGINEERING, LTD. Consulting Engineers Chatham, Illinois</p>	SHEET NO. 4	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	8 SHEETS	290	(531-3.1,0305-302K)RS-5	COOK	314	219
		FED. ROAD DIST. NO. _ ILLINOIS		CONTRACT NO. 60138		
		FED. AID PROJECT				

Designed By: K181
Date: 12/2002

Checked By: M111
File: 016-1120.dgn

Drawn By: K181

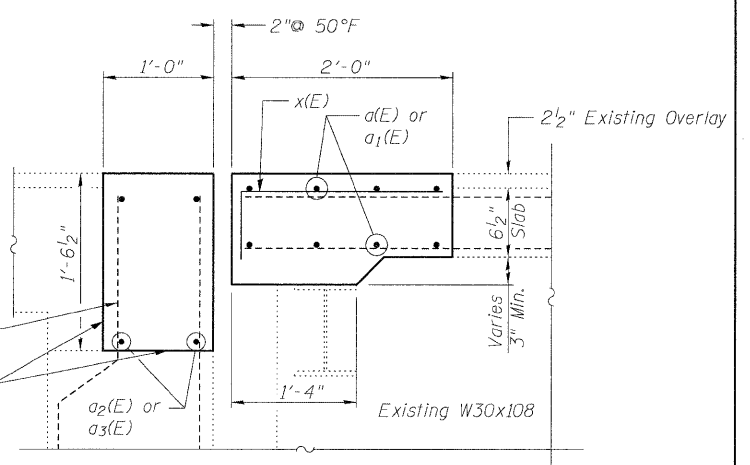
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



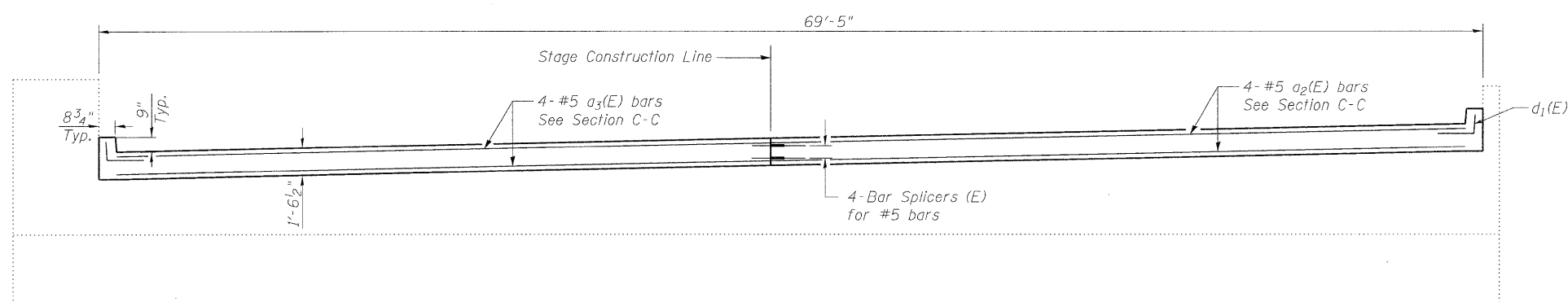
SECTION A-A

Existing reinforcement bars in parapet to remain in place, typ.

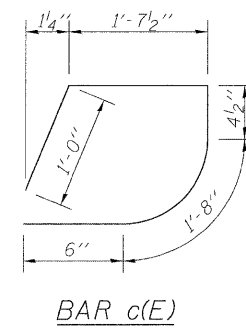
Existing reinforcement bars to remain in place, typ.



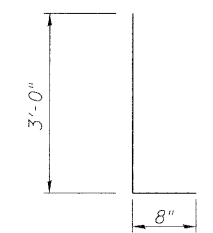
SECTION C-C
(Dimensions at Rt. L's)



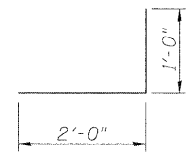
SECTION B-B



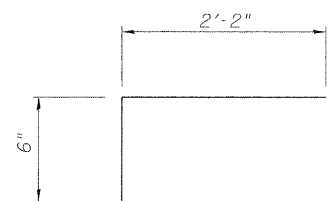
BAR c(E)



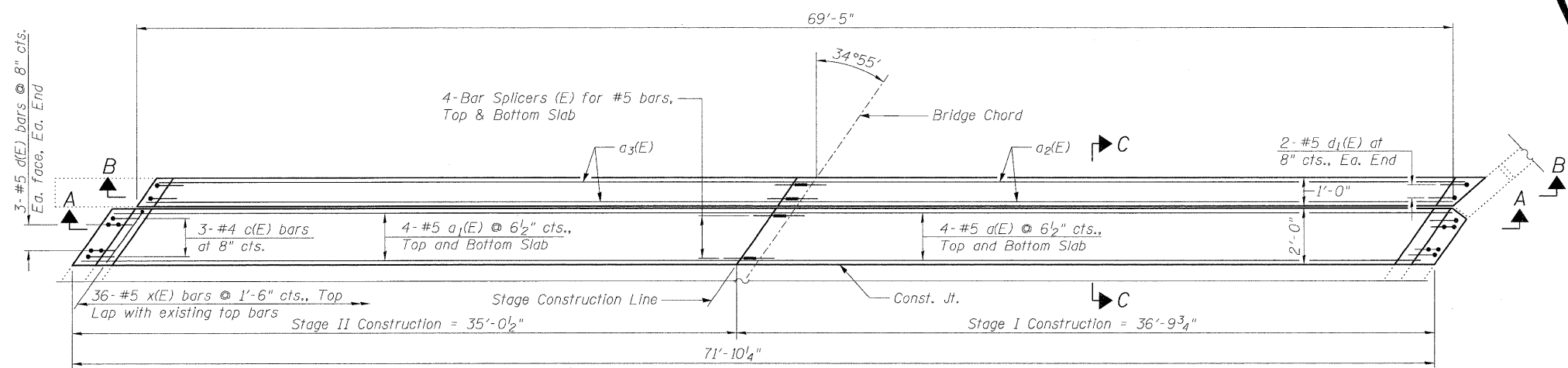
BAR d(E)



BAR d1(E)



BAR x(E)



PLAN

(South abutment shown, north abutment mirrored about Bridge Chord)

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	16	#5	35'-11"	—
a1(E)	16	#5	34'-2"	—
a2(E)	8	#5	35'-4"	—
a3(E)	8	#5	33'-6"	—
c(E)	12	#4	5'-2"	D
d(E)	24	#5	3'-8"	J
d1(E)	8	#5	3'-0"	J
x(E)	72	#5	2'-8"	L
Concrete Superstructure			Cu. Yd.	19.8
Reinforcement Bars, Epoxy Coated			Pound	2090

CONCRETE DETAILS
STRUCTURE NO. 016-1120

Lin Engineering, Ltd.
Consulting Engineers
Chatham, Illinois

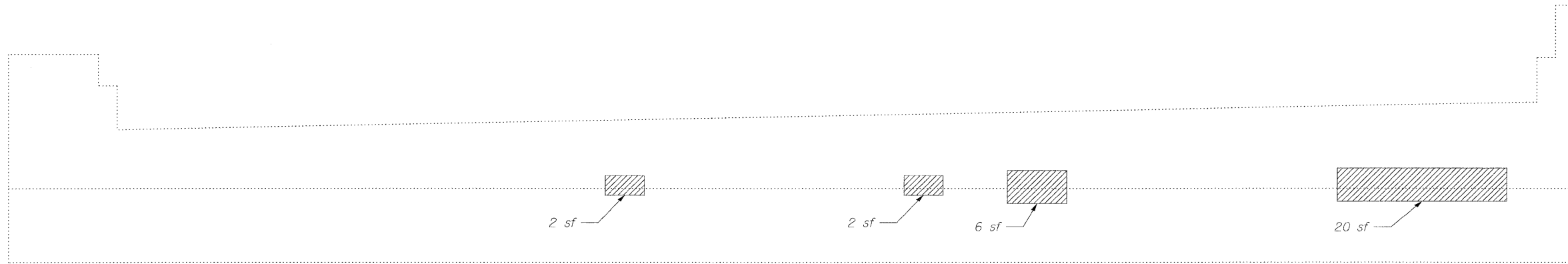
Designed By: KMH
Checked By: MTH
Date: 12/2009

Drawn By: KMH
File: 016-1120.dgn

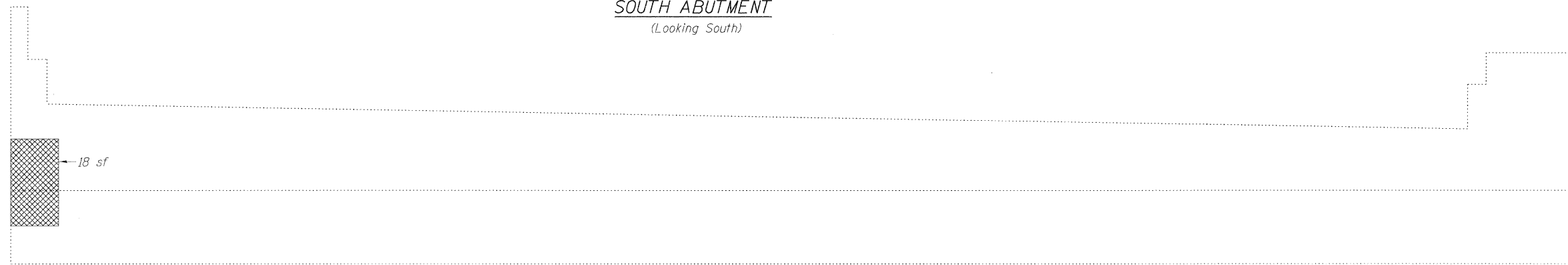
SHEET NO. 5
8 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	(531-3.1,0305-302K)RS-5	COOK	314	220
CONTRACT NO. 60138				
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



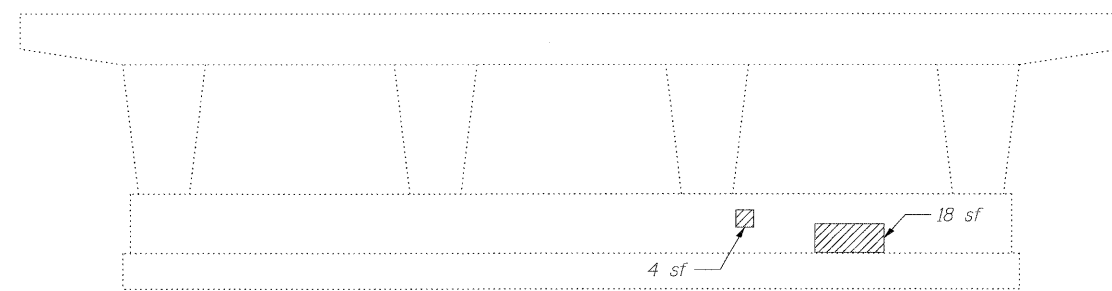
SOUTH ABUTMENT
(Looking South)



NORTH ABUTMENT
(Looking North)



PIER 1
(Looking North)




PIER 2
(Looking North)


BILL OF MATERIAL

Item	Unit	Total
Structural Repair of Concrete (Depth Equal To or Less Than 5 in.)	Sq. Ft.	69
Structural Repair of Concrete (Depth Greater Than 5 in.)	Sq. Ft.	21

Note:
Repair of the existing abutments and piers shall include but may not be limited to the areas shown. The actual areas to be repaired will be determined by the Engineer at the time of construction.


LEGEND

 Structural Repair of Concrete (Depth equal to or less than 5")

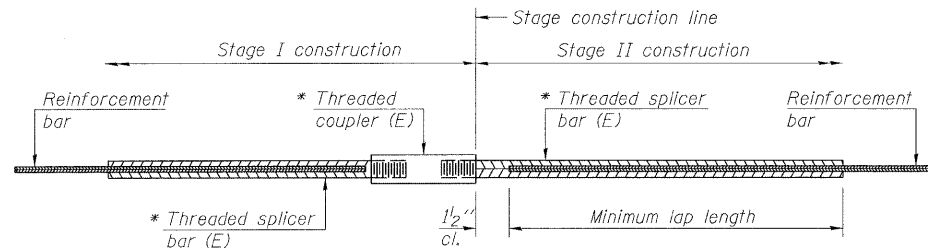
 Structural Repair of Concrete (Depth greater than 5")

sf Square Feet

SUBSTRUCTURE REPAIR
STRUCTURE NO. 016-1120

 LIN ENGINEERING, LTD. Consulting Engineers Chatham, Illinois	SHEET NO. 6	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	8 SHEETS	290	(531-3.1,0305-302K)RS-5	COOK	314	221
Designed By: KHH Date: 12/2009	Checked By: MTH File: 016-1120.dgn	Drawn By: KHH	CONTRACT NO. 60138			
		FED. ROAD DIST. NO. _ ILLINOIS FED. AID PROJECT				

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



STANDARD BAR SPLICER ASSEMBLY

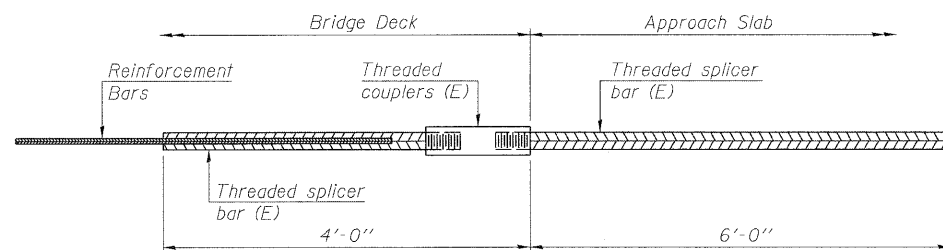
Bar size to be spliced	Minimum Lap Lengths			
	Table 1	Table 2	Table 3	Table 4
3, 4	1'-5"	1'-11"	2'-1"	2'-4"
5	1'-9"	2'-5"	2'-7"	2'-11"
6	2'-1"	2'-11"	3'-1"	3'-6"
7	2'-9"	3'-10"	4'-2"	4'-8"
8	3'-8"	5'-1"	5'-5"	6'-2"
9	4'-7"	6'-5"	6'-10"	7'-9"

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

Threaded splicer bar length = min. lap length + 1 1/2" + thread length

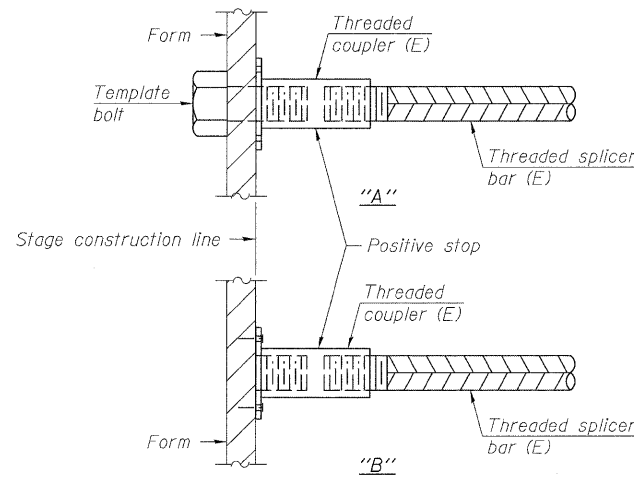
* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Table for minimum lap length
Deck	#5	16	Table 3
Abutment	#5	8	Table 3



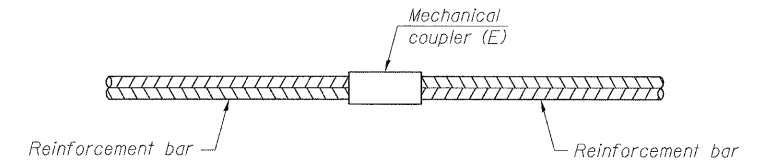
BAR SPLICER ASSEMBLY FOR #5 BAR ON INTEGRAL OR SEMI-INTEGRAL ABUTMENTS

No. required =



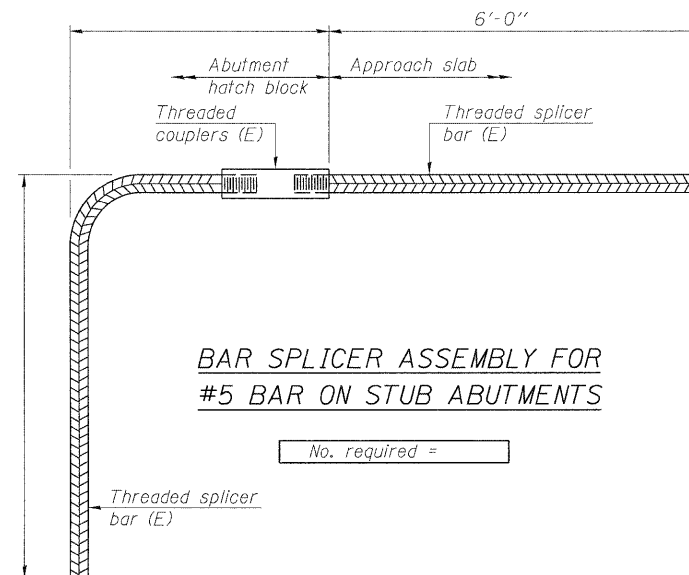
INSTALLATION AND SETTING METHODS

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



STANDARD MECHANICAL SPLICER

Location	Bar size	No. assemblies required



BAR SPLICER ASSEMBLY FOR #5 BAR ON STUB ABUTMENTS

No. required =

NOTES

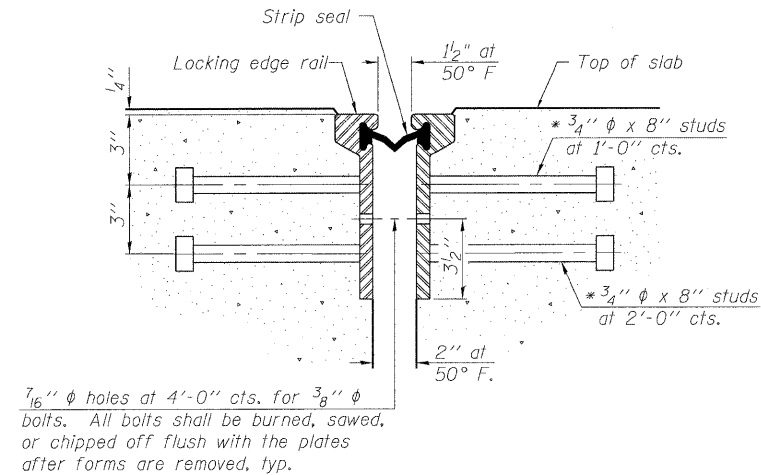
Splicer bars shall be deformed with threaded ends and have a minimum 60 ksi yield strength.
All reinforcement shall be lapped and tied to the splicer bars.
Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars. See Section 508 of the Standard Specifications.
See special provision for Mechanical Splicers.
See approved list of bar splicer assemblies and mechanical splicers for alternatives.

BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS
STRUCTURE NO. 016-1120

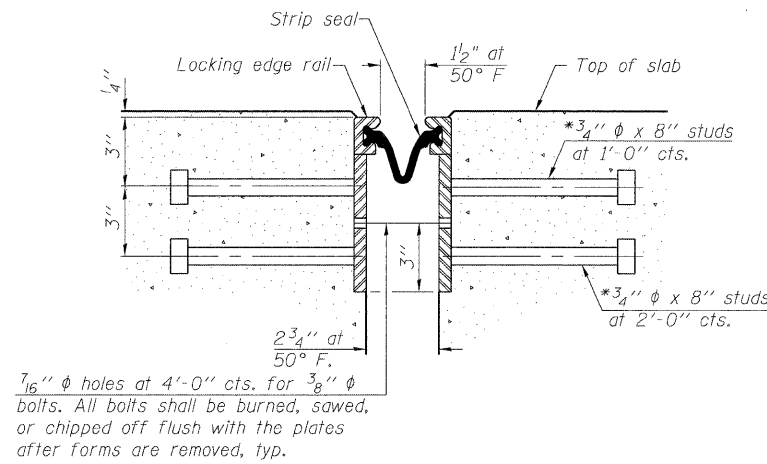
LIN ENGINEERING LTD. Consulting Engineers Chattam, Illinois	SHEET NO. 7	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	8 SHEETS	290	(531-3.1,0305-302K)RS-5	COOK	314	222
Designed By: KHH Checked By: MTH Date: 12/2009	Drawn By: KHH File: 016-1120.dgn	FED. ROAD DIST. NO. _ ILLINOIS		FED. AID PROJECT		
				CONTRACT NO. 60138		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

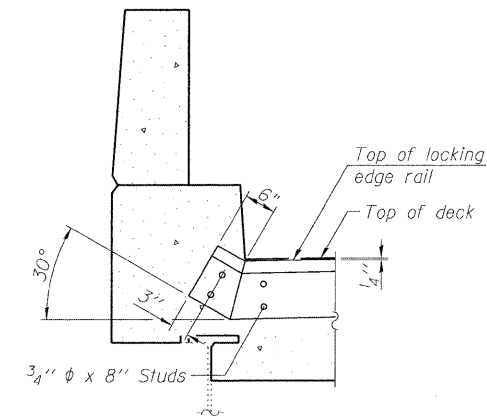
* Granular or solid flux filled headed studs conforming to Article 1006.32 of the Std. Specs., automatically end welded.



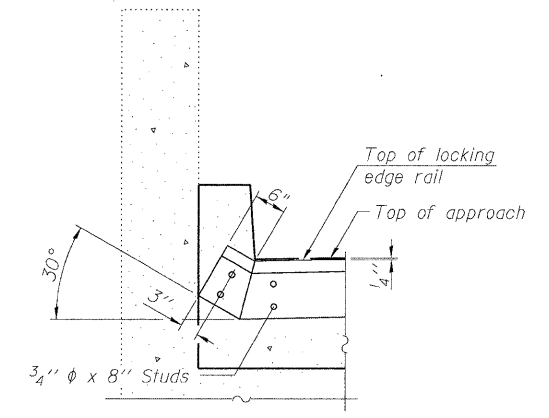
SECTION THRU
ROLLED RAIL JOINT



SECTION THRU
WELDED RAIL JOINT

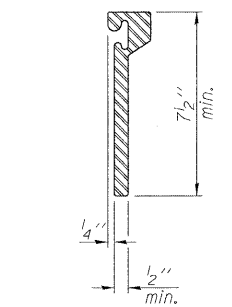


AT PARAPET

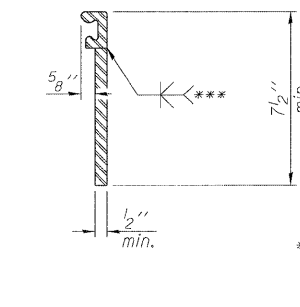


AT WING WALL

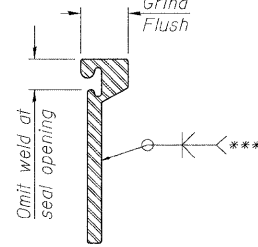
TYPICAL END TREATMENTS



ROLLED
EXTRUDED RAIL



WELDED RAIL

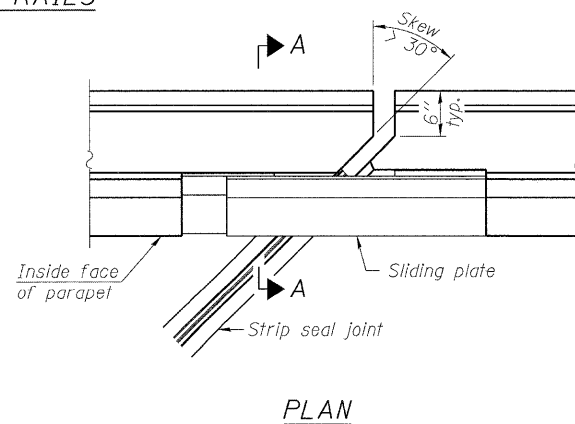


*** Back gouge not required if complete joint penetration is verified by mock-up.

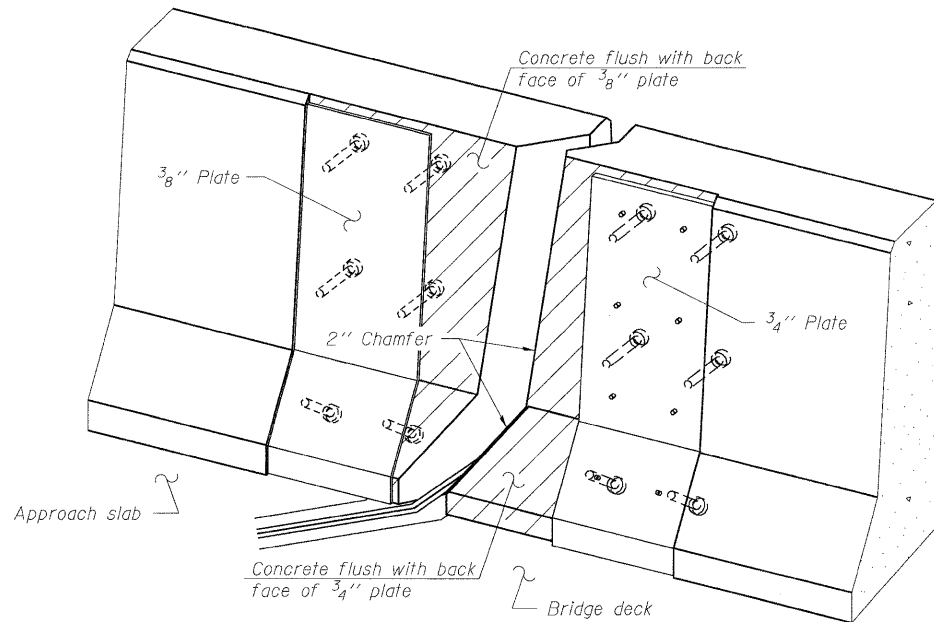
LOCKING EDGE
RAIL SPLICE

The inside of the locking edge rail groove shall be free of weld residue.
Rolled rail shown, welded rail similar.

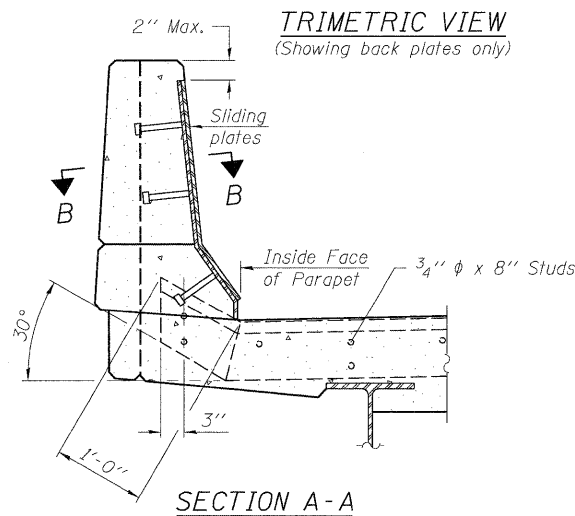
LOCKING EDGE RAILS



PLAN

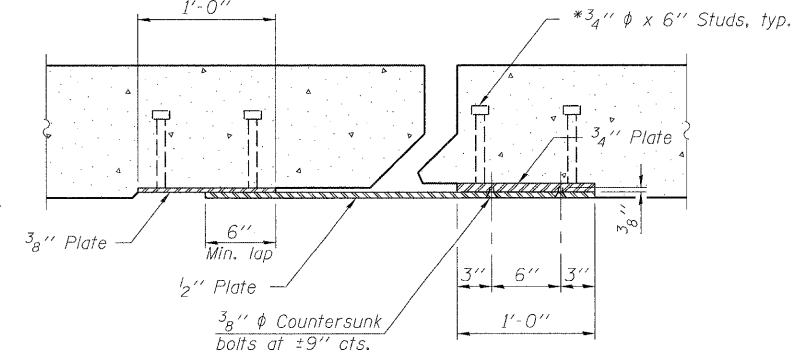


TRIMETRIC VIEW
(Showing back plates only)



SECTION A-A

POINT BLOCK DETAILS
(for skews > 30°)



SECTION B-B

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 Locking Edge Rails depicted are conceptual only, except for the minimum dimensions shown. 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.

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.

Maximum space between rail segments at stage lines shall be 3/16", sealed with a suitable sealant.

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	138

PREFORMED JOINT STRIP SEAL
STRUCTURE NO. 016-1120

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

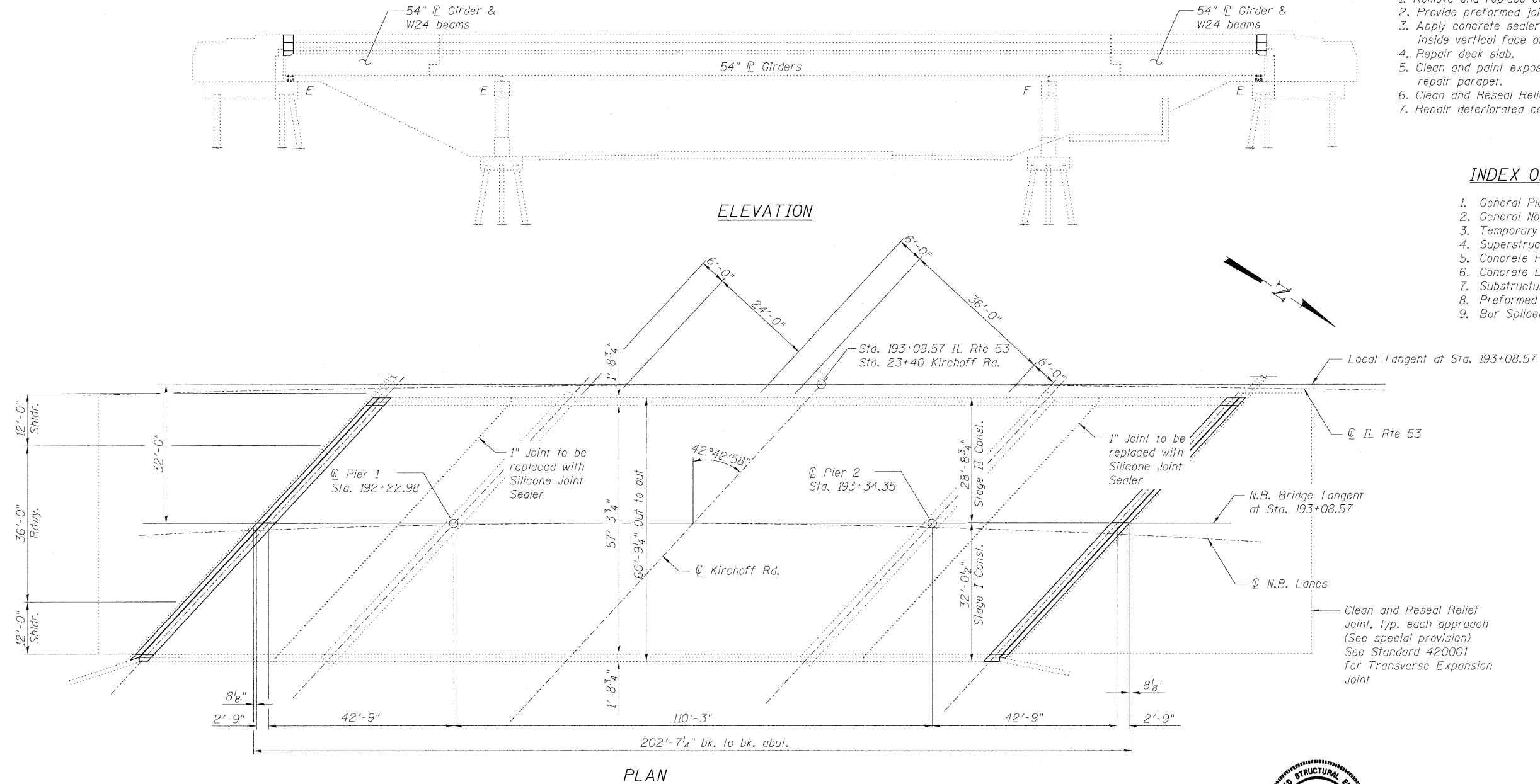
Existing Structure:
Structure No. 016-0376, constructed in 1963 as FA 61, Section 531-1-HB-8, is a three span hinged continuous steel superstructure with a 7" reinforced concrete deck supported by multi-column piers and stub abutments. In 1971, the deck was patched and overlay was placed. In 1981, longitudinal joint was closed and expansion joint was reconstructed. In 1991, joint and parapet were reconstructed, overlay was replaced and deck was patched. In 2001, the expansion bearings were replaced. The structure is 202'-7 1/4" bk. to bk. abutments measured along north bound bridge tangent at Sta. 193+08.57, 60'-9 1/4" out to out and has a left ahead skew angle of 42°42'58". Stage Construction shall be utilized to maintain traffic during construction.

SCOPE OF WORK

1. Remove and replace concrete deck adjacent to abutment expansion joints.
2. Provide preformed joint strip seal expansion joints at abutments.
3. Apply concrete sealer to top of concrete deck and top and inside vertical face of parapets.
4. Repair deck slab.
5. Clean and paint exposed reinforcement bars on underside deck, and repair parapet.
6. Clean and Reseal Relief Joints.
7. Repair deteriorated concrete on abutments and slope wall.

INDEX OF SHEETS

1. General Plan and Elevation
2. General Notes and Details
3. Temporary Concrete Barrier for Stage Construction
4. Superstructure Repair
5. Concrete Removal
6. Concrete Details
7. Substructure Repair
8. Preformed Joint Strip Seal
9. Bar Splicer Assembly and Mechanical Splicer Details



DESIGN STRESSES
FIELD UNITS

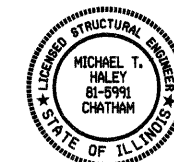
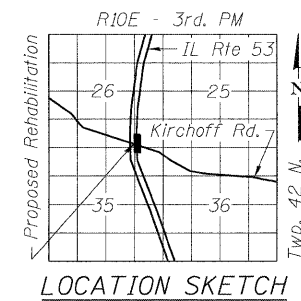
Existing Construction
 $f_c = 1,400$ psi (Substructure & Superstructure)
 $f_s = 20,000$ psi (Reinforcement)
 $f_s = 20,000$ psi (Structural Steel)
 New Construction
 $f'_c = 3,500$ psi
 $f_y = 60,000$ psi (Reinforcement)
 $f_y = 36,000$ psi (Structural Steel) (M270 Gr. 36)

DESIGN SPECIFICATIONS

(New Construction)
 2002 AASHTO "Standard
 Specifications for Highway Bridges"

LOADING HS 20-44

(Original Construction)



Michael J. Haley 2/8/10
 Michael T. Haley Date
 Licensed Structural Engineer
 State of Illinois No. 81-5991
 Expires 11/30/2010

GENERAL PLAN AND ELEVATION
 NB IL RTE 53 OVER KIRCHOFF ROAD
 FAI RTE 290
 SECTION (531-3.1,0305-302K)RS-5
 COOK COUNTY
 STATION 193+08.57
 STRUCTURE NO. 016-0376

LIN ENGINEERING, LTD. Consulting Engineers Chatham, Illinois	SHEET NO. 1	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	9 SHEETS	290	(531-3.1,0305-302K)RS-5	COOK	314	224
Designed By: ESH Date: 12/2009		Checked By: MTH Date: 016-0376.dgn		Drawn By: ESH		CONTRACT NO. 60138
FED. ROAD DIST. NO. _ ILLINOIS FED. AID PROJECT						

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 can not be removed by grinding 1/4 in. 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.

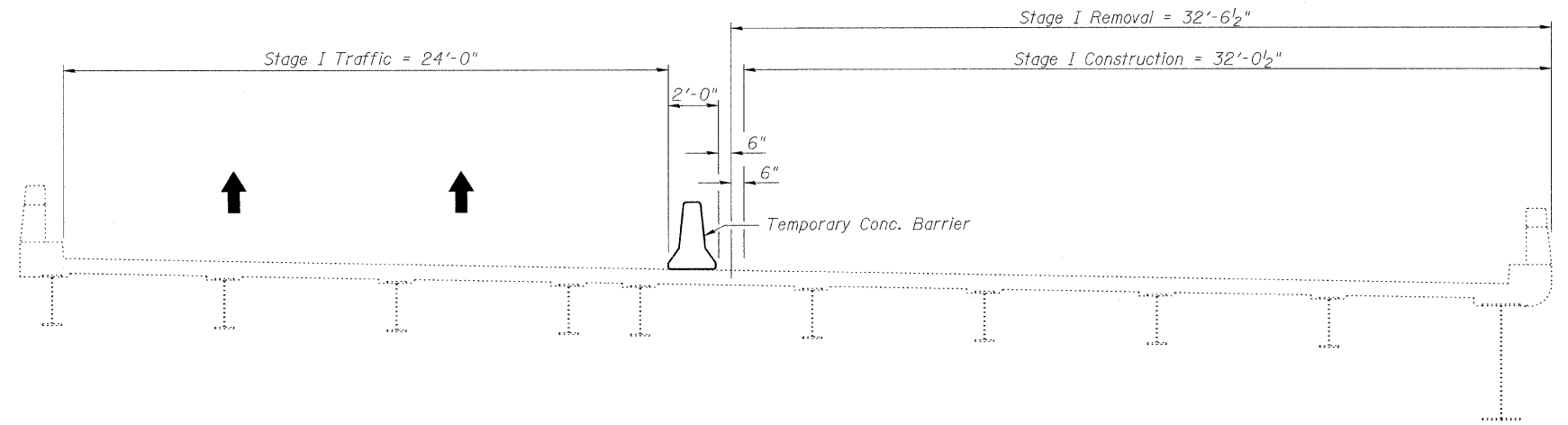
The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.

All structural steel shall conform to AASHTO Classification M-270 Gr. 36, unless otherwise noted.

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.

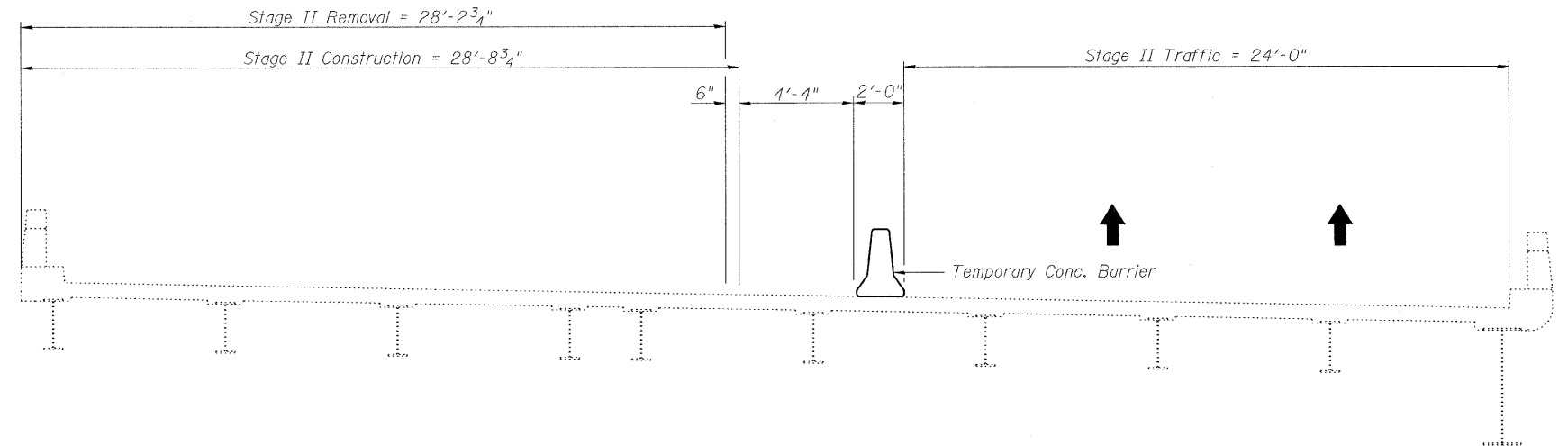
TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Concrete Removal	Cu. Yd.	24.9	-	24.9
Slope Wall Removal	Sq. Yd.	-	116	116
Protective Shield	Sq. Yd.	934	-	934
Concrete Superstructure	Cu. Yd.	24.9	-	24.9
Reinforcement Bars, Epoxy Coated	Pound	2,580	-	2,580
Bar Splicers	Each	24	-	24
Slope Wall 4 Inch	Sq. Yd.	-	116	116
Preformed Joint Strip Seal	Foot	158	-	158
Concrete Sealer	Sq. Ft.	13,240	-	13,240
Silicone Joint Sealer, 1"	Foot	158	-	158
Structural Repair of Concrete (Depth Equal To or Less Than 5 in.)	Sq. Ft.	12	24	36
Deck Slab Repair (Full Depth, Type I)	Sq. Yd.	1.0	-	1.0
Deck Slab Repair (Full Depth, Type II)	Sq. Yd.	66.7	-	66.7
Deck Slab Repair (Partial)	Sq. Yd.	35.9	-	35.9
Clean and Reseal Relief Joint	Foot	120	-	120
Cleaning and Painting Exposed Rebar	Sq. Ft.	1,102	-	1,102



STAGE I REMOVAL & CONSTRUCTION

(Looking North)



STAGE II REMOVAL & CONSTRUCTION

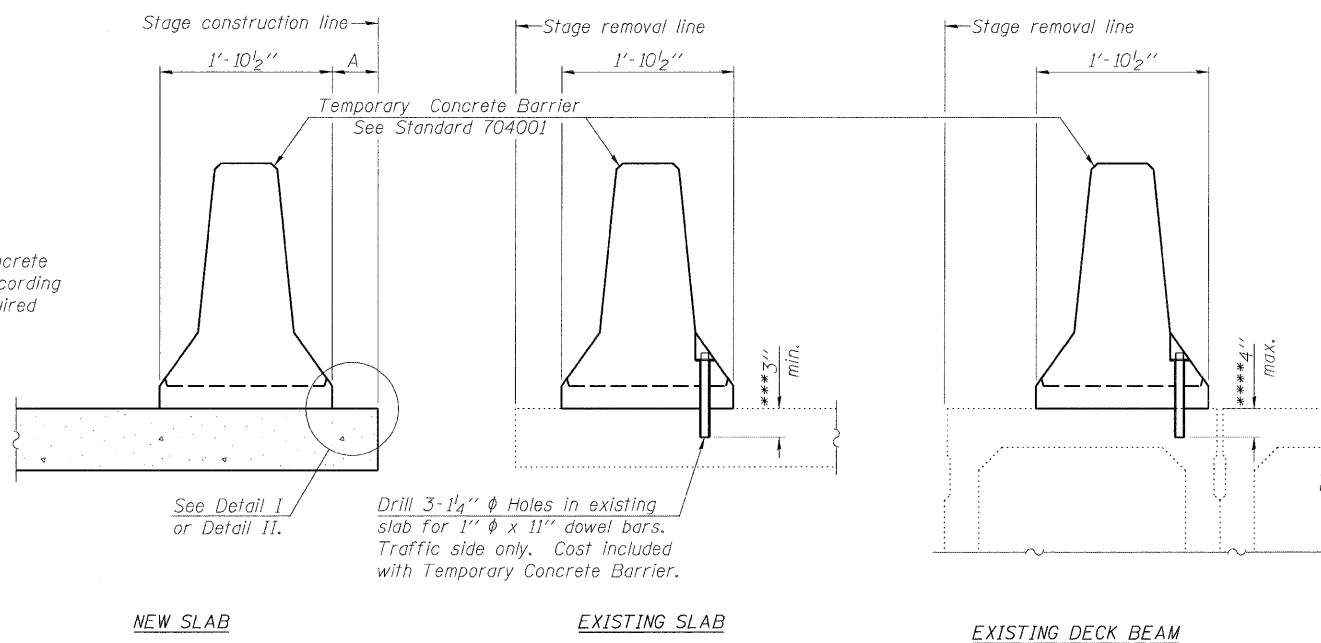
(Looking North)

GENERAL NOTES & DETAILS
STRUCTURE NO. 016-0376

<p>LIN ENGINEERING, LTD. Consulting Engineers Chatham, Illinois</p>	SHEET NO. 2 9 SHEETS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		290	(531-3.1,0305-302)RS-5	COOK	314	225
Designed By: ESH Checked By: MTH Drawn By: ESH Date: 12/2009 File: 016-0376.dgn		CONTRACT NO. 60138				
		FED. ROAD DIST. NO. _ ILLINOIS FED. AID PROJECT				

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

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



SECTIONS THRU SLAB OR DECK BEAM

NOTES

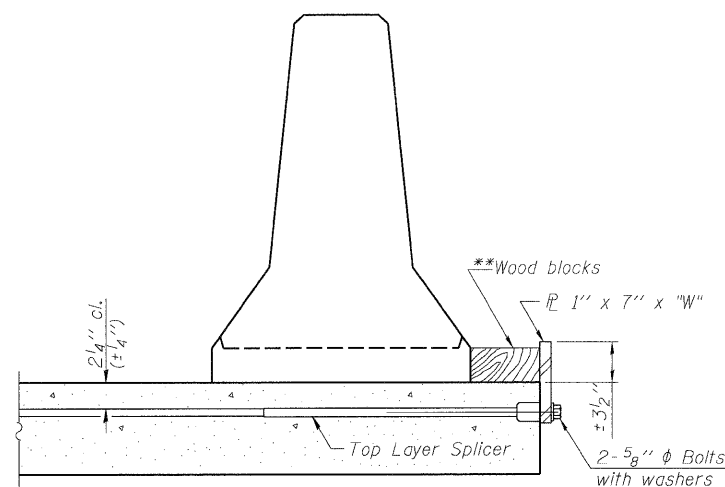
Detail I - With Bar Splicer or Couplers:
Connect one (1) 1"x7"x10" steel \bar{L} to the top layer of couplers with 2-5/8" ϕ bolts screwed to coupler at approximate \bar{C} of each barrier panel.

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

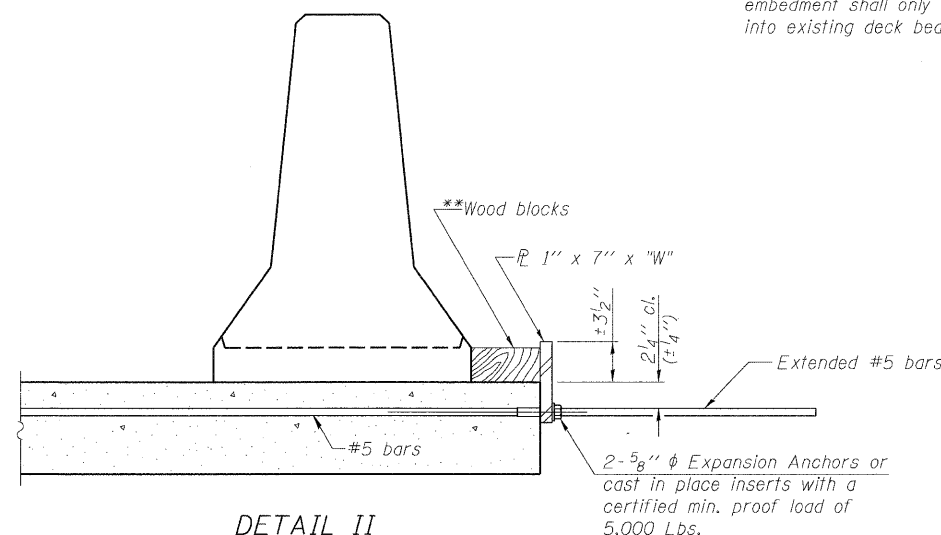
Cost of anchorage is included with Temporary Concrete Barrier. The 1" x 7" x 10" plate shall not be removed until stage II construction forms and all reinforcement bars are in place and the concrete is ready to be placed.

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

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



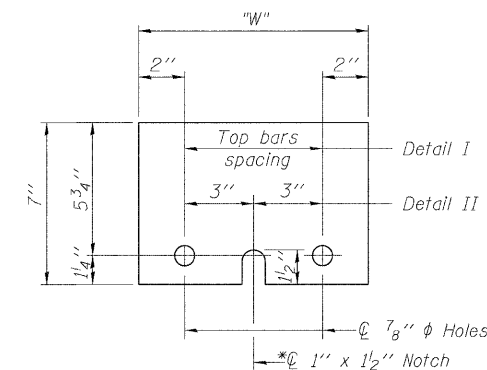
DETAIL I



DETAIL II

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

"W" = Top bars spacing + 4"



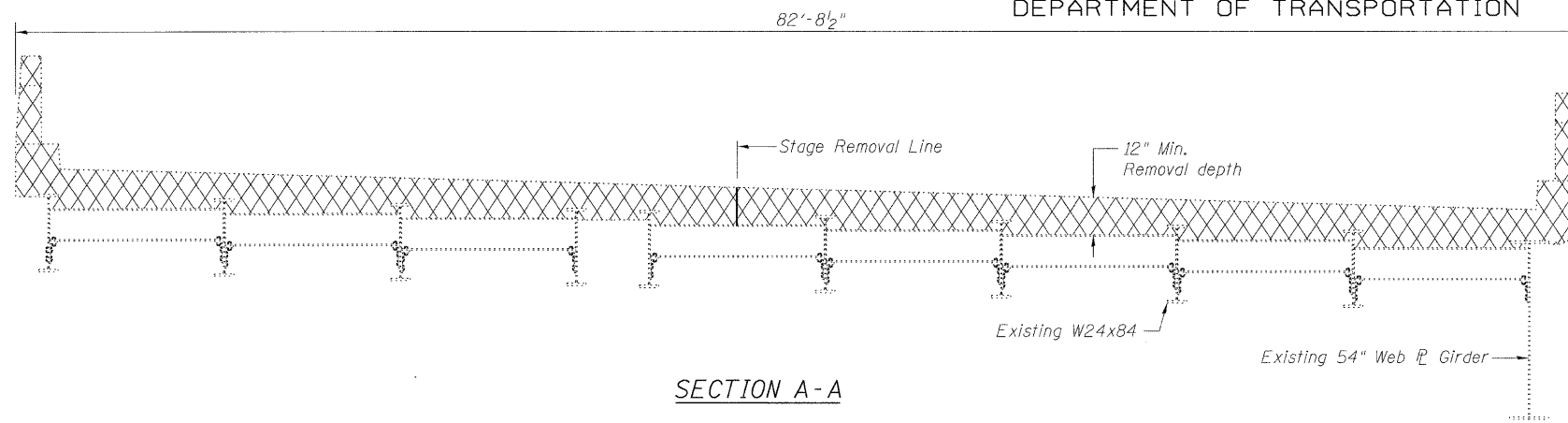
STEEL RETAINER \bar{L} 1" x 7" x 10"

* Required only with Detail II

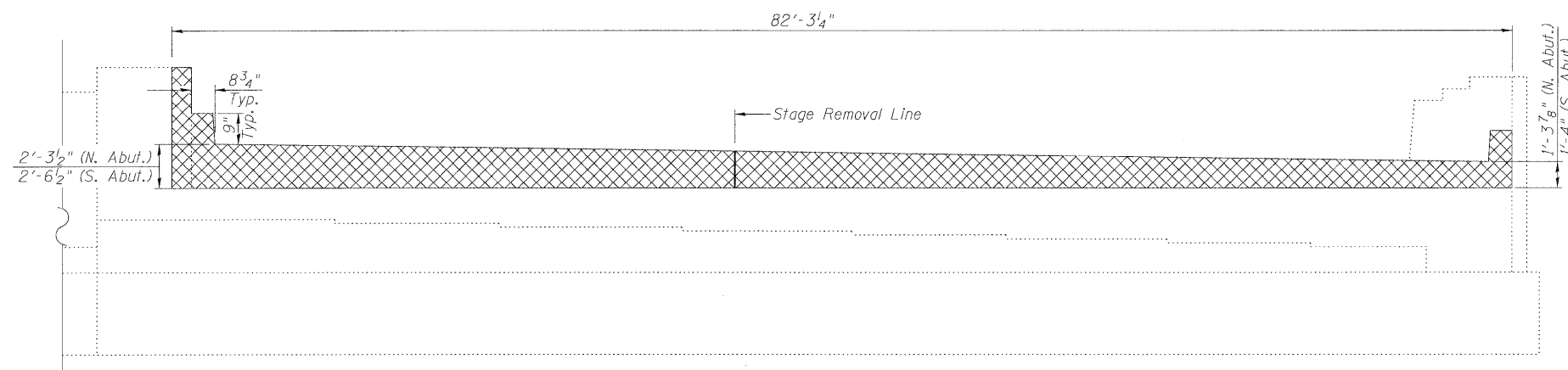
TEMPORARY CONCRETE BARRIER
FOR STAGE CONSTRUCTION
STRUCTURE NO. 016-0376

<p>LIN ENGINEERING LTD. Consulting Engineers Chatham, Illinois</p>	SHEET NO. 3	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	9 SHEETS	290	(531-3.1,0305-302K)RS-5	COOK	314	224
<p>Designed By: ESH Checked By: WTH Drawn By: ESH Date: 12/2009 File: 016-0376.dgn</p>		<p>FED. ROAD DIST. NO. - ILLINOIS</p>		<p>FED. AID PROJECT</p>		
<p>CONTRACT NO. 60I38</p>						

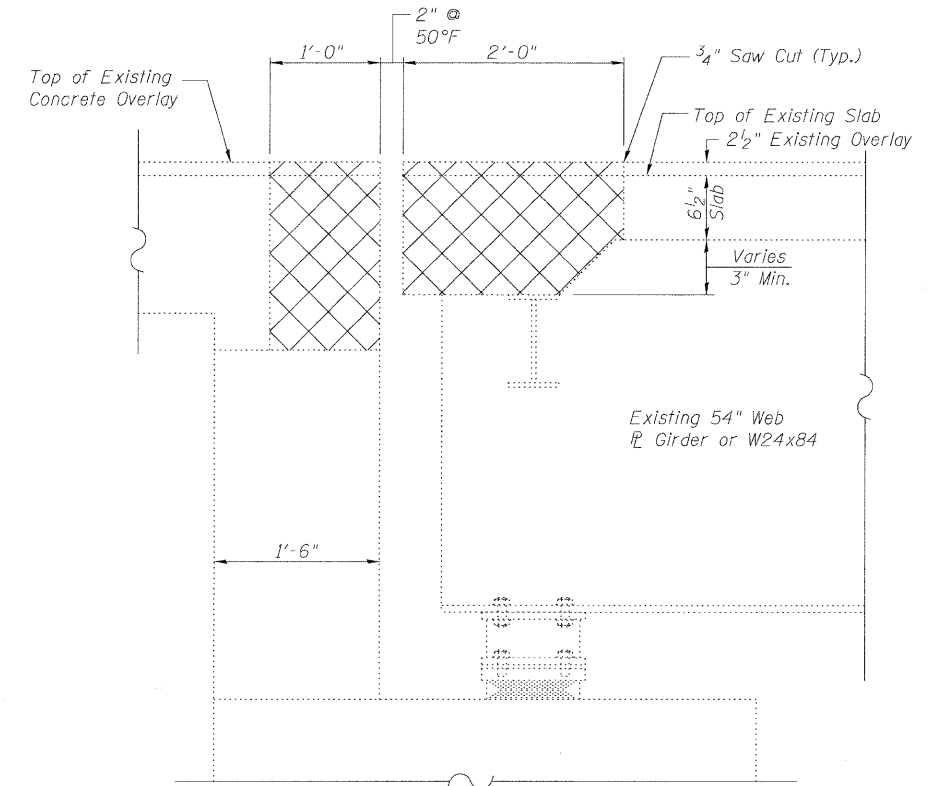
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



SECTION A-A



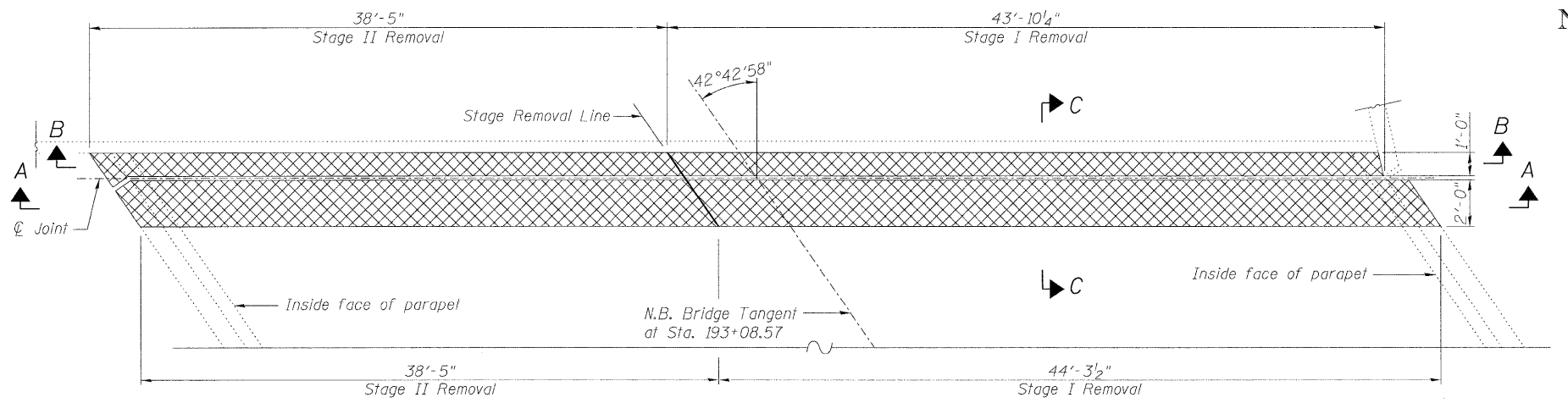
SECTION B-B



SECTION C-C
(Dimensions at Rt. L's)

Notes:

1. Cross hatched area indicates concrete removal.
2. Existing reinforcement bars in the concrete removal area extending in new construction shall be cleaned and incorporated into the new construction. Cost included with Concrete Removal.
3. Any reinforcement bars that are damaged during concrete removal operations shall be repaired or replaced using an approved bar splicer or anchorage system, in accordance with IDOT Standard Specifications Article 501.03. Cost included in "Concrete Removal"
4. Overlay removal is included in pay item Concrete Removal.



PLAN

(North abutment shown, south abutment mirrored about N.B. bridge tangent)

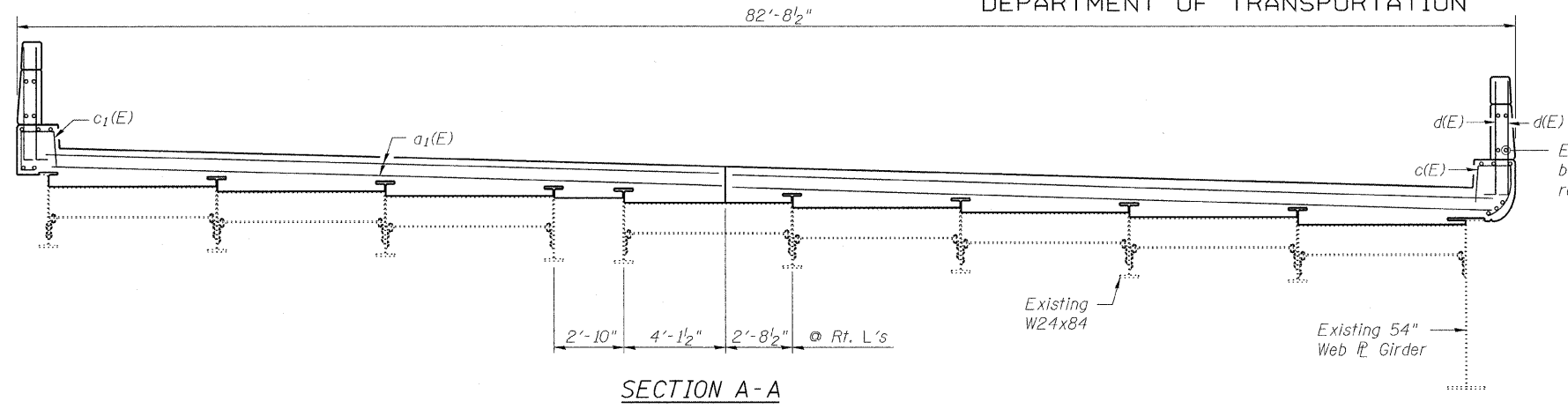
BILL OF MATERIAL

Item	Unit	Total
Concrete Removal	Cu. Yd.	24.9

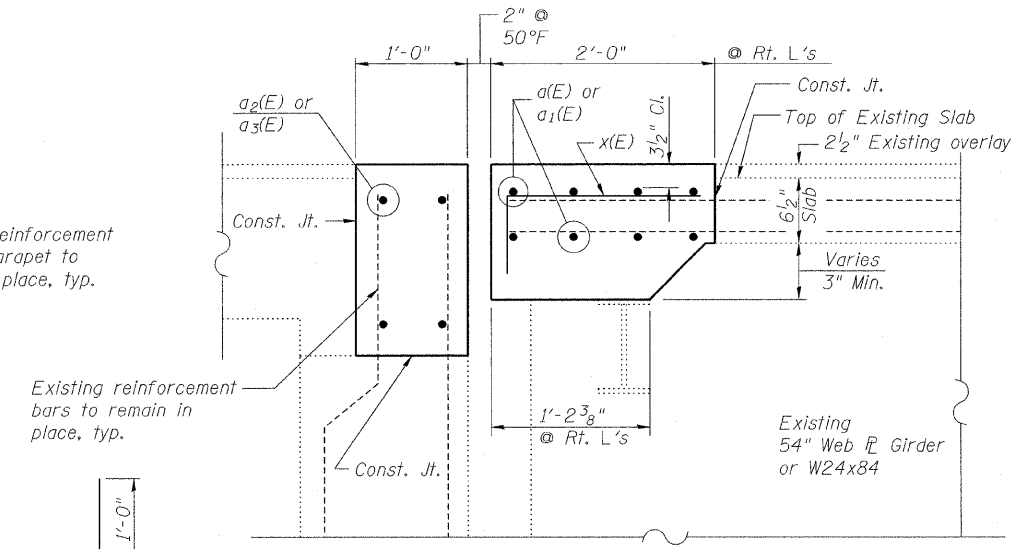
CONCRETE REMOVAL
STRUCTURE NO. 016-0376

<p>LIN ENGINEERING, LTD. Consulting Engineers Chatham, Illinois</p>	SHEET NO. 5	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
	9 SHEETS	290	(531-3.1,0305-302)RS-5	COOK	314	228	
<small>Designed By: ESH Checked By: MTH Drawn By: ESH Date: 12/29/09 File: 016-0376.dgn</small>		FED. ROAD DIST. NO. _ ILLINOIS FED. AID PROJECT				CONTRACT NO. 60138	

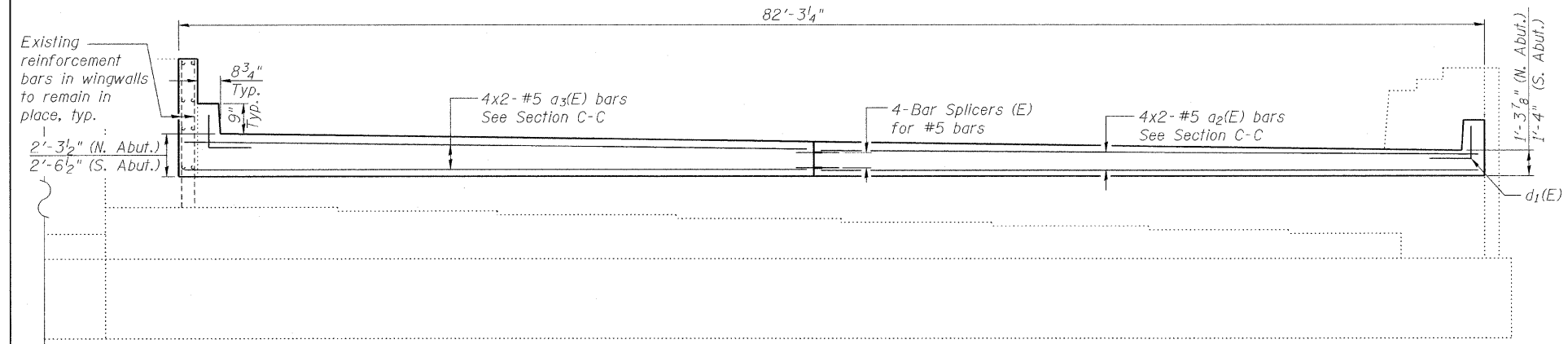
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



SECTION A-A

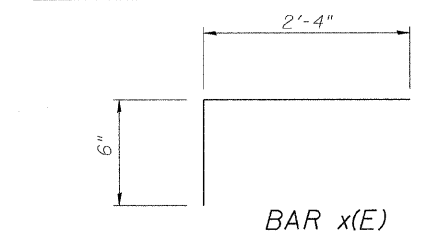


SECTION C-C



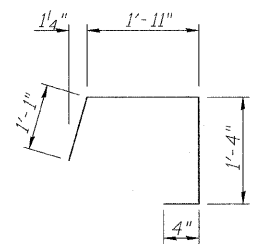
SECTION B-B

BAR d1(E)

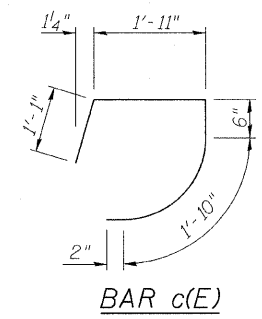


BAR x(E)

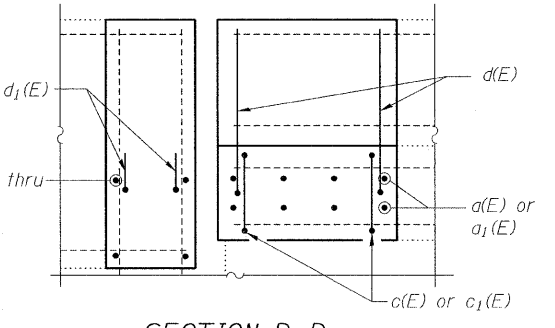
BAR d(E)



BAR c1(E)



BAR c(E)

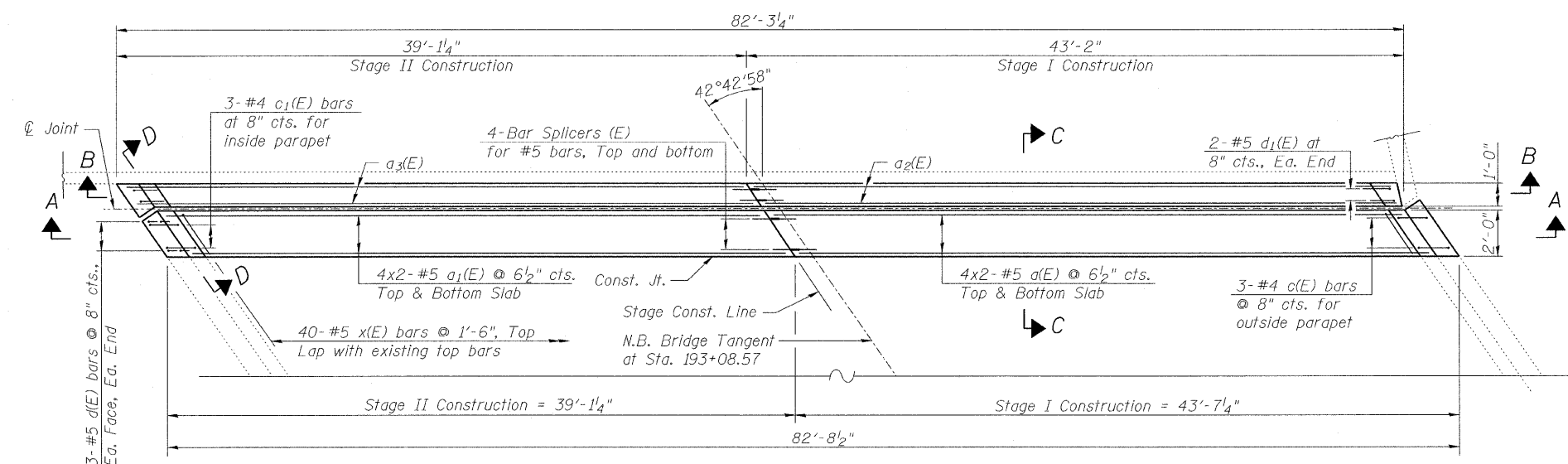


SECTION D-D

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	32	#5	23'-0"	—
a1(E)	32	#5	20'-8"	—
a2(E)	16	#5	22'-6"	—
a3(E)	16	#5	20'-10"	—
c(E)	6	#4	5'-6"	□
c1(E)	6	#4	4'-8"	□
d(E)	24	#5	3'-8"	L
d1(E)	8	#5	3'-0"	J
x(E)	80	#5	2'-10"	┌
Reinforcement Bars, Epoxy Coated			Pound	2580
Concrete Superstructure			Cu. Yd.	24.9

Bars indicated thus 4x2-#5 etc. indicates 4 lines of bars with 2 lengths per line.



PLAN

(North abutment shown, south abutment mirrored about N.B. bridge tangent)

MINIMUM BAR LAP
#5 bar = 2'-7"

E LIN ENGINEERING, LTD.
Consulting Engineers
Chatham, Illinois

SHEET NO. 6
9 SHEETS

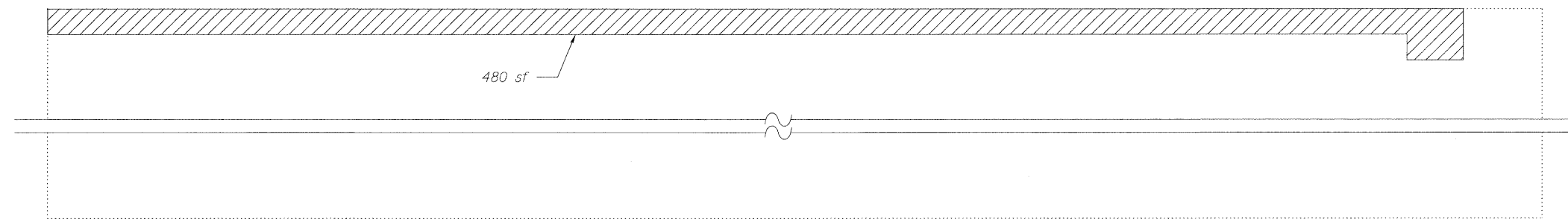
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	(531-3.1,0305-302)RS-5	COOK	314	219
CONTRACT NO. 60138				
FED. ROAD DIST. NO. _ ILLINOIS FED. AID PROJECT				

Designed By: ESH
Date: 12/2009
Checked By: MTH
File: 016-0376.dgn
Drawn By: ESH

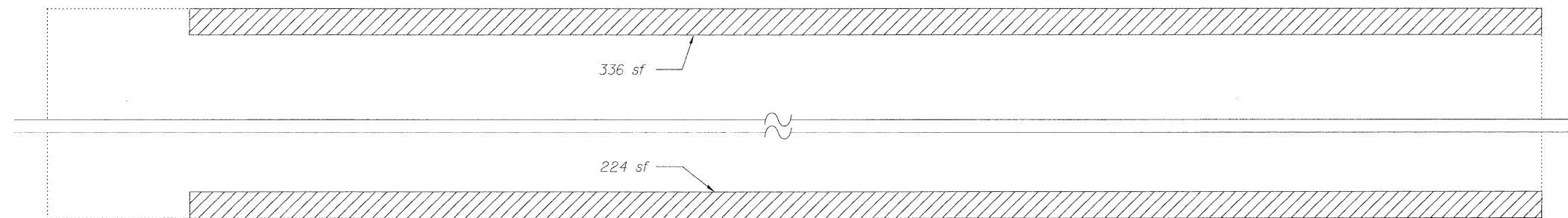
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



NORTH ABUTMENT ELEVATION
(Looking North)



NORTH SLOPE WALL PLAN



SOUTH SLOPE WALL PLAN



LEGEND

- Indicates Slope Wall Removal and Slope Wall 4 Inch
- Indicates Structural Repair of Concrete (Depth Equal To or Less Than 5 in.)
- sf Square Feet

BILL OF MATERIAL

Item	Unit	Total
Slope Wall Removal	Sq. Yd.	116
Slope Wall 4 Inch	Sq. Yd.	116
Structural Repair of Concrete (Depth Equal To or Less Than 5 in.)	Sq. Ft.	24

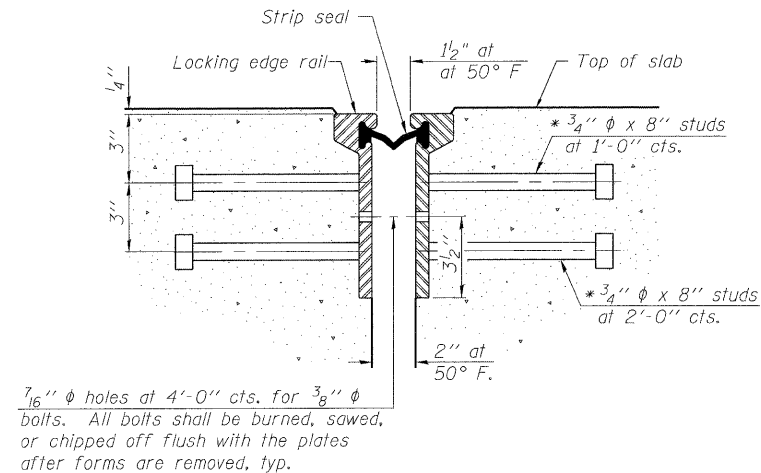
Note:
Slopedwall shall be reinforced with welded wire fabric, 6"x 6" - W4.0 x W4.0, weighing 58 lbs. per 100 sq. ft.
Existing reinforcement shall be cleaned and incorporated into the new construction. Cost included with Slope Wall Removal.
Existing and new welded wire fabric must be lapped at least 6".
Repair of the existing abutment and slope walls shall include but may not be limited to the areas shown. The actual areas to be repaired will be determined by the Engineer at the time of construction.

SUBSTRUCTURE REPAIR
STRUCTURE NO. 016-0376

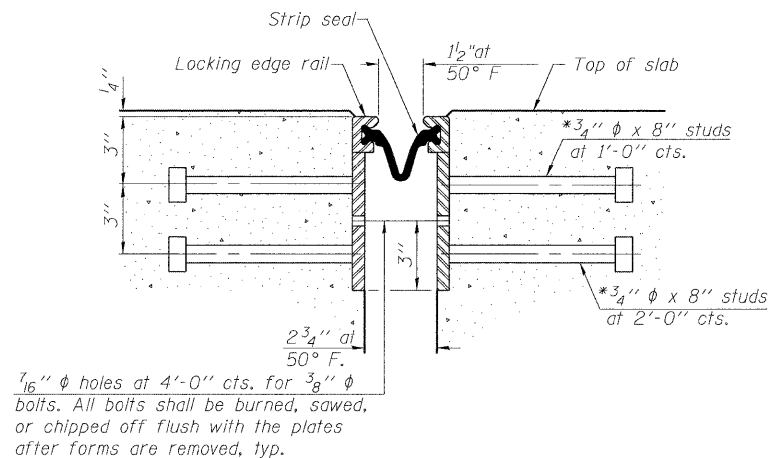
 LIN ENGINEERING, LTD. Consulting Engineers Chatham, Illinois	SHEET NO. 7	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	9 SHEETS	290	(531-3.1,0305-302K)RS-5	COOK	314	230
Designed By: ESH Date: 12/2009		Checked By: MTH File: 016-0376.dgn		Drewn By: ESH		FED. ROAD DIST. NO. _ ILLINOIS FED. AID PROJECT
CONTRACT NO. 60138						

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

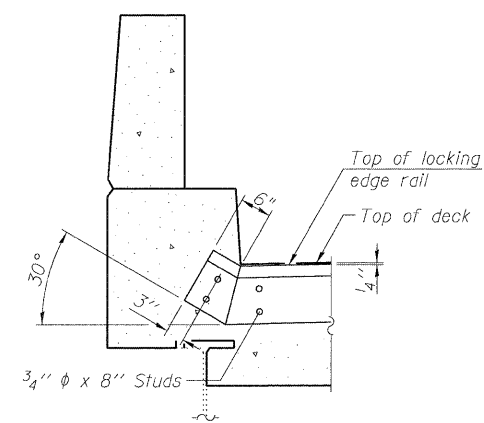
* Granular or solid flux filled headed studs conforming to Article 1006.32 of the Std. Specs., automatically end welded.



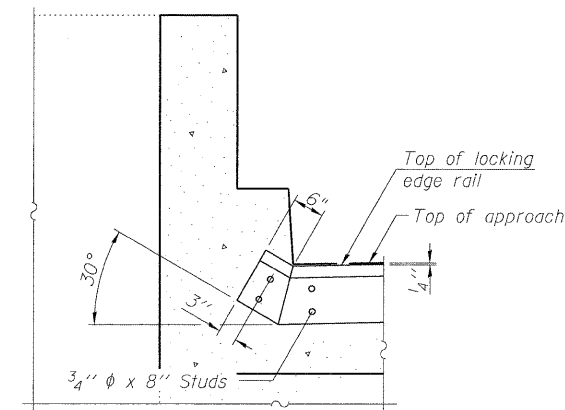
SECTION THRU
ROLLED RAIL JOINT



SECTION THRU
WELDED RAIL JOINT

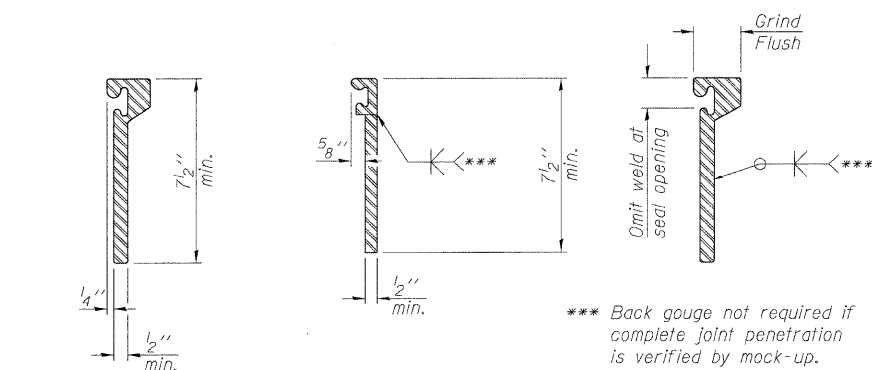


AT PARAPET



AT MEDIAN WALL

TYPICAL END TREATMENTS



ROLLED
EXTRUDED RAIL

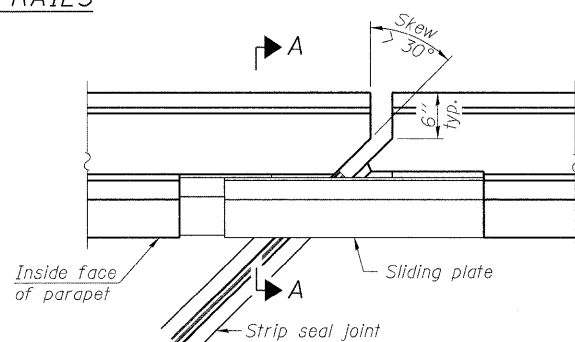
WELDED RAIL

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

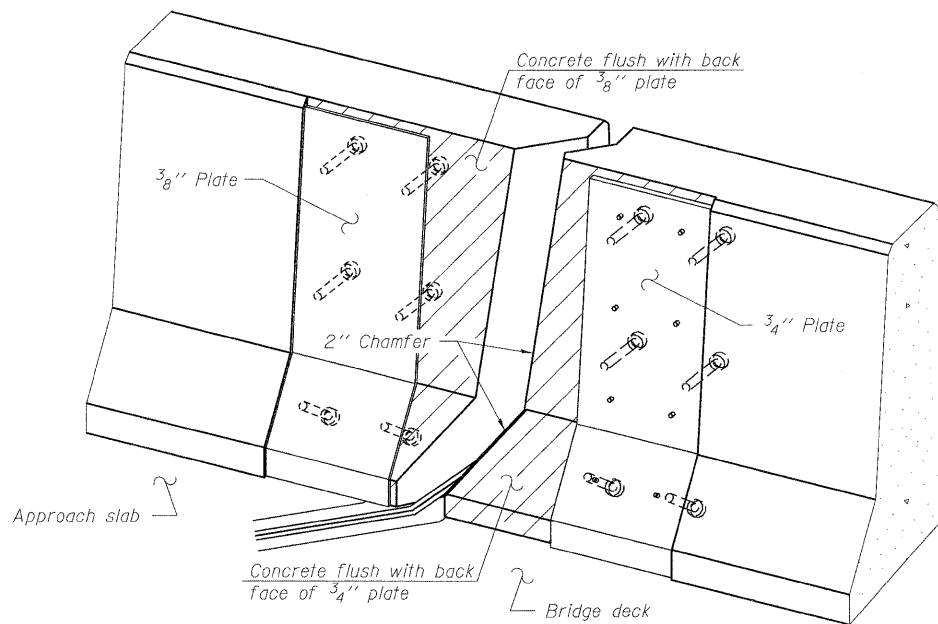
LOCKING EDGE
RAIL SPLICE

The inside of the locking edge rail groove shall be free of weld residue.
Rolled rail shown, welded rail similar.

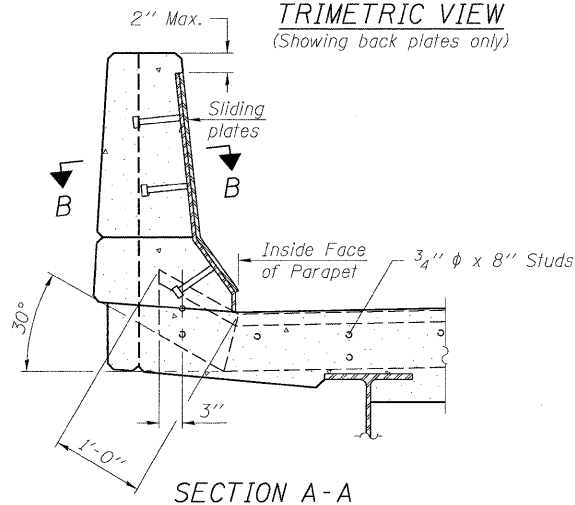
LOCKING EDGE RAILS



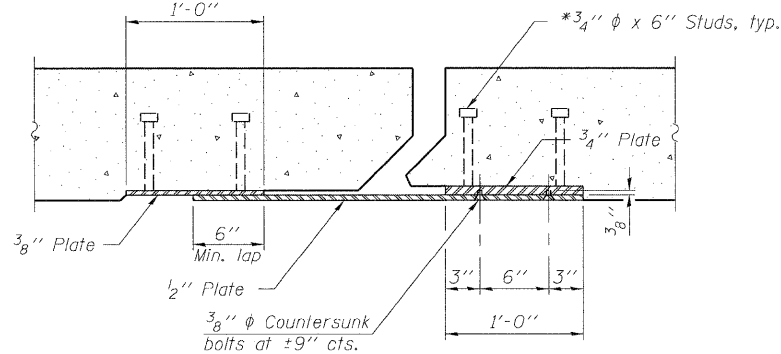
PLAN



TRIMETRIC VIEW
(Showing back plates only)



SECTION A-A



SECTION B-B

Notes:

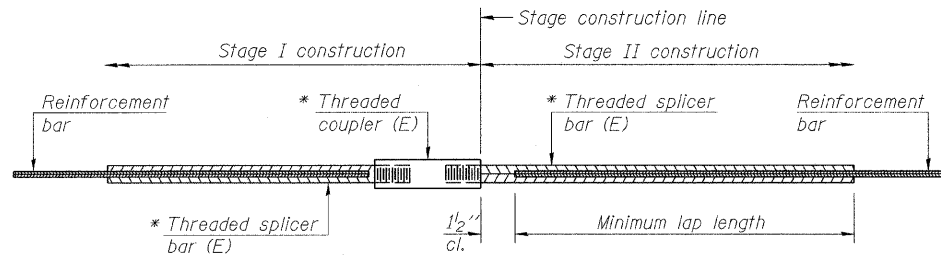
The strip seal shall be made continuous and shall have a minimum thickness of 1/4". The configuration of the strip seal shall match the configuration of the Locking Edge Rails. Open or "webbed" strip seal gland configurations are not permitted. The gland shall be sized for a maximum rated movement of 4 inches.
The Locking Edge Rails depicted are conceptual only, except for the minimum dimensions shown. 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.
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.
Maximum space between rail segments at stage lines shall be 3/16", sealed with a suitable sealant.

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	158

PREFORMED JOINT STRIP SEAL
STRUCTURE NO. 016-0376

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



STANDARD BAR SPLICER ASSEMBLY

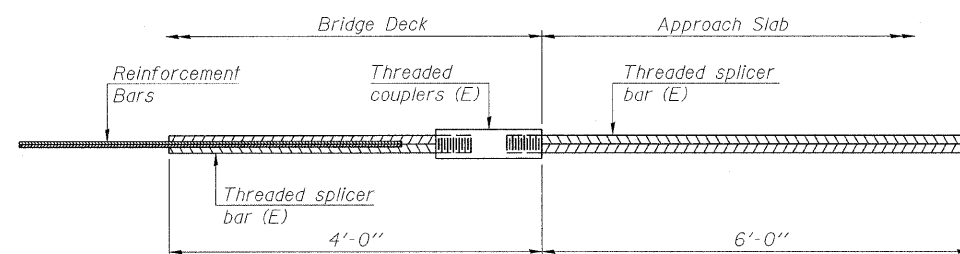
Bar size to be spliced	Minimum Lap Lengths			
	Table 1	Table 2	Table 3	Table 4
3, 4	1'-5"	1'-11"	2'-1"	2'-4"
5	1'-9"	2'-5"	2'-7"	2'-11"
6	2'-1"	2'-11"	3'-1"	3'-6"
7	2'-9"	3'-10"	4'-2"	4'-8"
8	3'-8"	5'-1"	5'-5"	6'-2"
9	4'-7"	6'-5"	6'-10"	7'-9"

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

Threaded splicer bar length = min. lap length + 1 1/2" + thread length

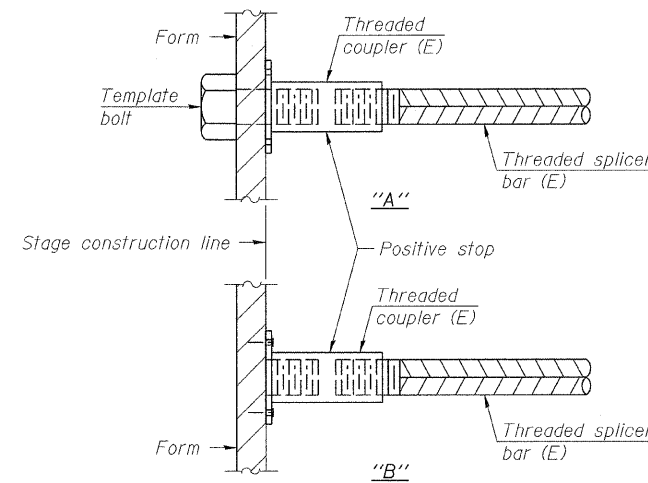
* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Table for minimum lap length
Deck	#5	16	Table 3
Abutment	#5	8	Table 3



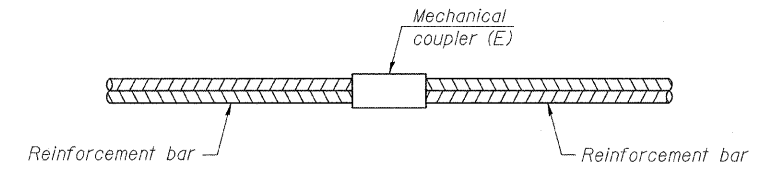
BAR SPLICER ASSEMBLY FOR #5 BAR ON INTEGRAL OR SEMI-INTEGRAL ABUTMENTS

No. required =



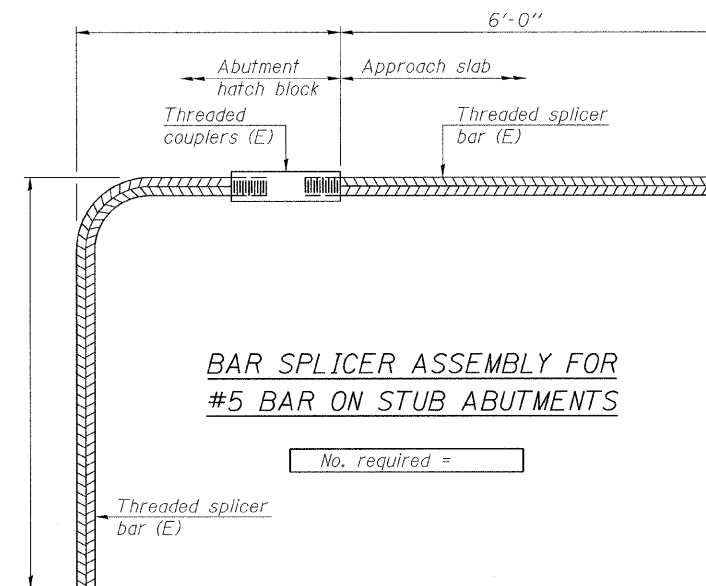
INSTALLATION AND SETTING METHODS

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



STANDARD MECHANICAL SPLICER

Location	Bar size	No. assemblies required



BAR SPLICER ASSEMBLY FOR #5 BAR ON STUB ABUTMENTS

No. required =

NOTES

Splicer bars shall be deformed with threaded ends and have a minimum 60 ksi yield strength.
All reinforcement shall be lapped and tied to the splicer bars.
Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars. See Section 508 of the Standard Specifications.
See special provision for Mechanical Splicers.
See approved list of bar splicer assemblies and mechanical splicers for alternatives.

BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS
STRUCTURE NO. 016-0376

Existing Structure:
 Structure No. 016-1121, constructed in 1963 as FA 61, Section 531-1-HB-8, is a three span hinged continuous steel superstructure with a 7" reinforced concrete deck supported by multi-column piers and stub abutments. In 1971, the deck was patched and overlay was placed. In 1981, longitudinal joint was closed and expansion joint was reconstructed. In 1991, joint and parapet were reconstructed, overlay was replaced and deck was patched. In 2001, the expansion bearings were replaced. The structure is 202'-7 1/4" bk. to bk. abutments measured along north bound bridge tangent at Sta. 193+08.57, 60'-9 1/4" out to out and has a left ahead skew angle of 42°42'58". Stage Construction shall be utilized to maintain traffic during construction.

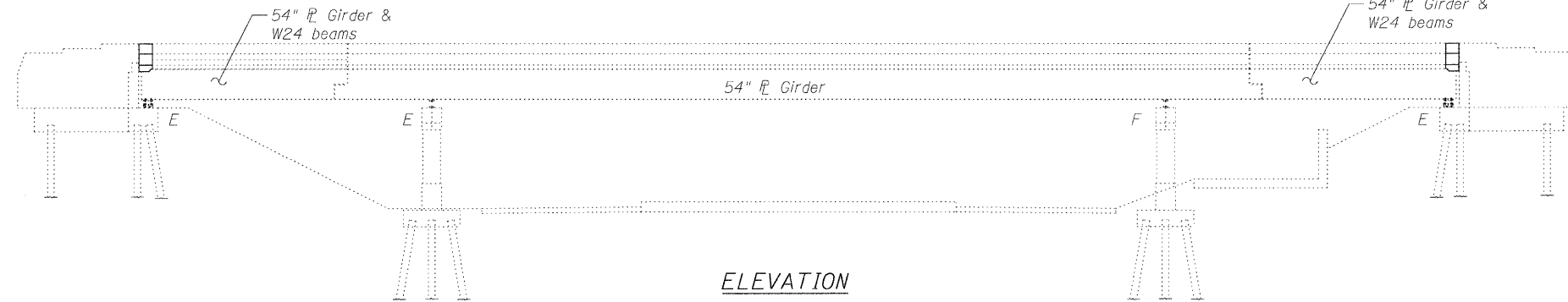
STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

SCOPE OF WORK

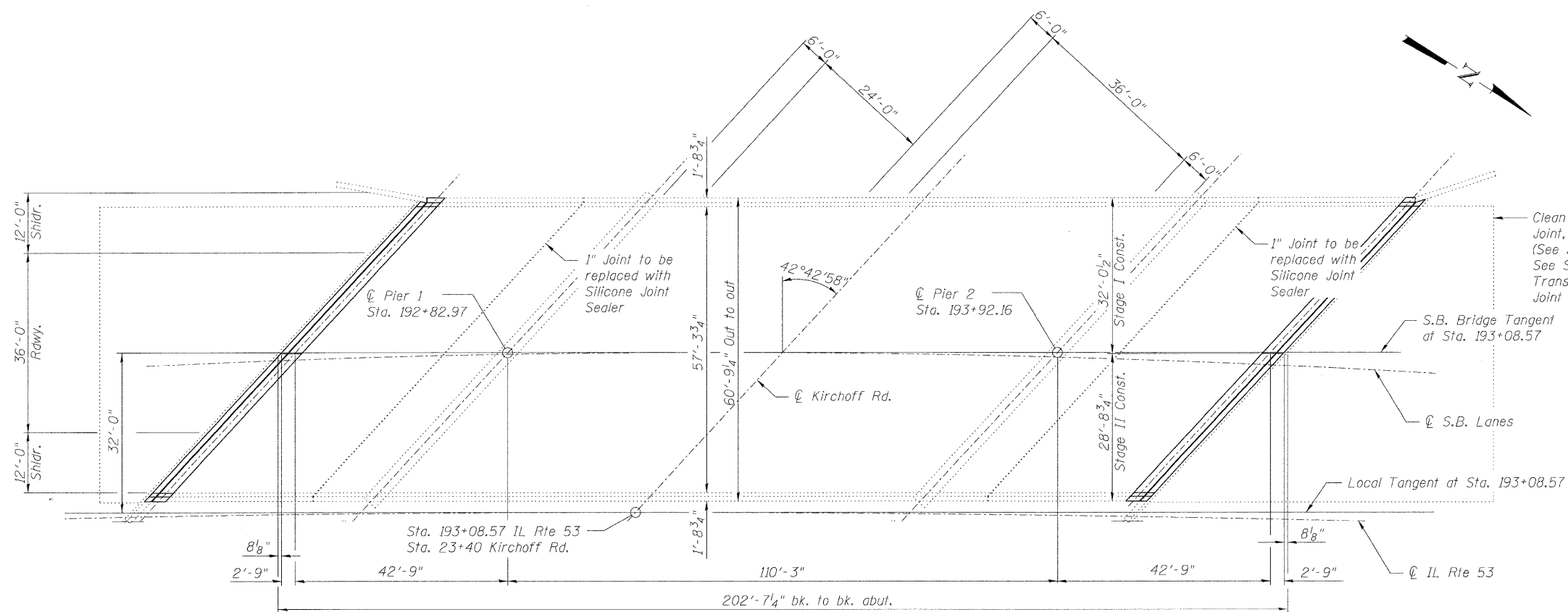
1. Remove and replace concrete deck adjacent to abutment expansion joints.
2. Provide preformed joint strip seal expansion joints at abutments.
3. Apply concrete sealer to top of concrete deck and top and inside vertical face of parapets.
4. Repair deck slab.
5. Clean and paint exposed reinforcement bars on underside deck, and repair parapet.
6. Clean and Reseal Relief Joints.
7. Repair deteriorated concrete on slope wall.

INDEX OF SHEETS

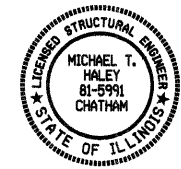
1. General Plan and Elevation
2. General Notes and Details
3. Temporary Concrete Barrier for Stage Construction
4. Superstructure Repair
5. Concrete Removal
6. Concrete Details
7. Slope Wall Repair
8. Preformed Joint Strip Seal
9. Bar Splicer Assembly and Mechanical Splicer Details



ELEVATION



PLAN



Michael J. Haley 2/8/10
 Michael T. Haley Date
 Licensed Structural Engineer
 State of Illinois No. 81-5991
 Expires 11/30/2010

DESIGN STRESSES

FIELD UNITS

Existing Construction
 $f_c = 1,400$ psi (Substructure & Superstructure)
 $f_s = 20,000$ psi (Reinforcement)
 $f_s = 20,000$ psi (Structural Steel)

New Construction

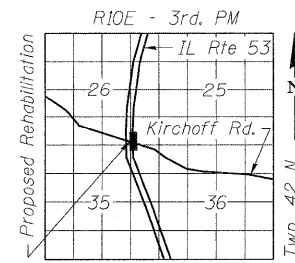
$f_c = 3,500$ psi
 $f_y = 60,000$ psi (Reinforcement)
 $f_y = 36,000$ psi (Structural Steel) (M270 Gr. 36)

DESIGN SPECIFICATIONS

(New Construction)
 2002 AASHTO "Standard
 Specifications for Highway Bridges"

LOADING HS 20-44

(Original Construction)



LOCATION SKETCH

GENERAL PLAN AND ELEVATION
 SB IL RTE 53 OVER KIRCHOFF ROAD
 FAI RTE 290
 SECTION (531-3.1,0305-302K)RS-5
 COOK COUNTY
 STATION 193+08.57
 STRUCTURE NO. 016-1121

 LIN ENGINEERING, LTD. Consulting Engineers Chatham, Illinois <small>Designed By: ESH Checked By: MTH Drawn By: ESH Date: 12/2009 File: 016-1121.dgn</small>	SHEET NO. 1	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	9 SHEETS	290	(531-3.1,0305-302K)RS-5	COOK	314	233
				CONTRACT NO. 60138		
		FED. ROAD DIST. NO. _ ILLINOIS FED. AID PROJECT				

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 can not be removed by grinding 1/4 in. 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.

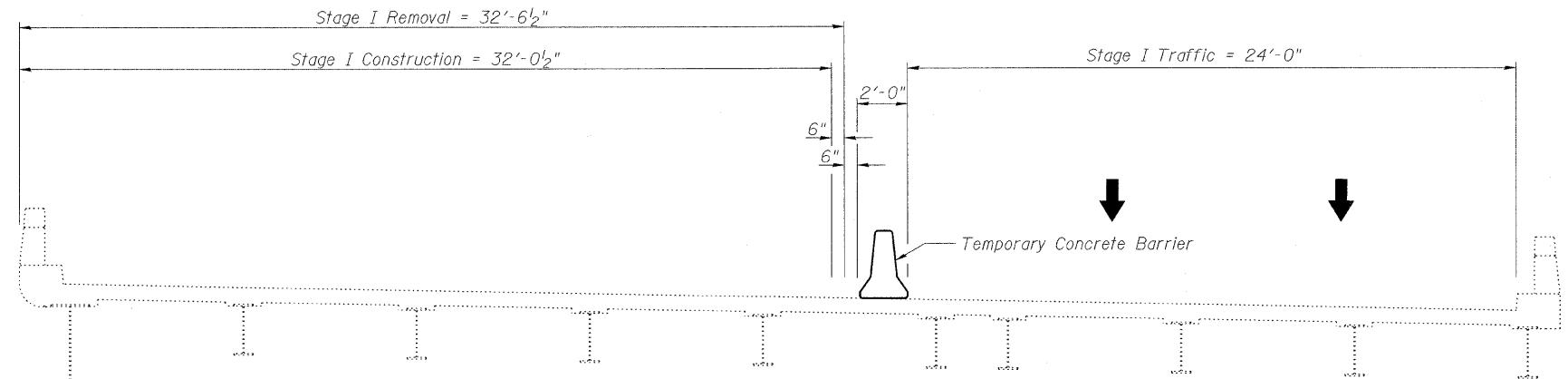
The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.

All structural steel shall conform to AASHTO Classification M-270 Gr. 36, unless otherwise noted.

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.

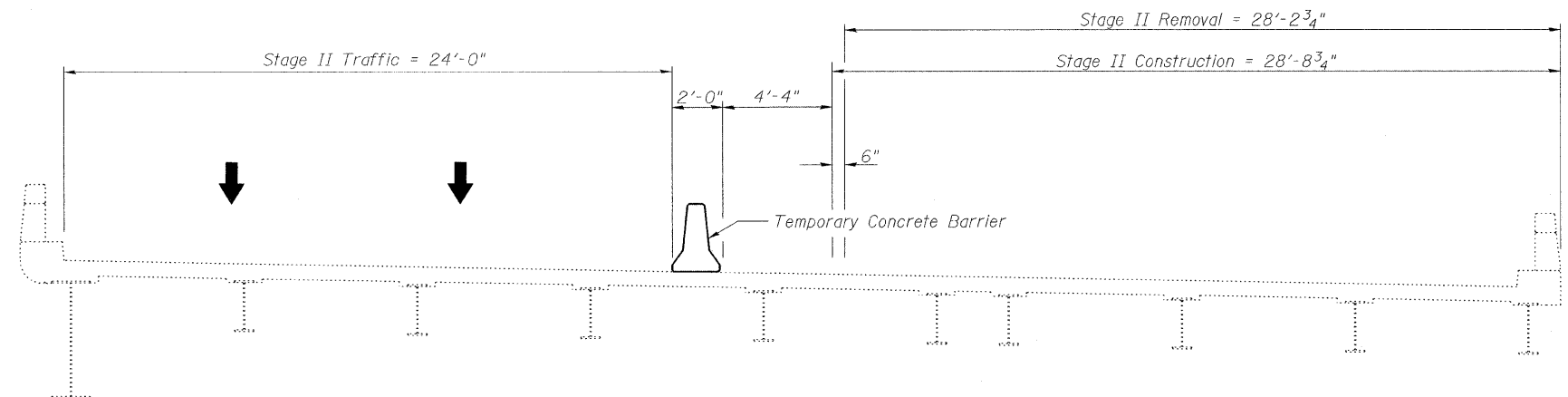
TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Concrete Removal	Cu. Yd.	24.9	-	24.9
Slope Wall Removal	Sq. Yd.	-	60	60
Protective Shield	Sq. Yd.	934	-	934
Concrete Superstructure	Cu. Yd.	24.9	-	24.9
Reinforcement Bars, Epoxy Coated	Pound	2,580	-	2,580
Bar Splicers	Each	24	-	24
Slope Wall 4 Inch	Sq. Yd.	-	60	60
Preformed Joint Strip Seal	Foot	158	-	158
Concrete Sealer	Sq. Ft.	13240	-	13240
Silicone Joint Sealer, 1"	Foot	158	-	158
Structural Repair of Concrete (Depth Equal To or Less Than 5 in.)	Sq. Ft.	32	-	32
Deck Slab Repair (Full Depth, Type I)	Sq. Yd.	0.5	-	0.5
Deck Slab Repair (Full Depth, Type II)	Sq. Yd.	81.3	-	81.3
Deck Slab Repair (Partial)	Sq. Yd.	28.1	-	28.1
Clean and Reseal Relief Joint	Foot	120	-	120
Cleaning and Painting Exposed Rebar	Sq. Ft.	1,803	-	1,803



STAGE I REMOVAL & CONSTRUCTION


(Looking North)



STAGE II REMOVAL & CONSTRUCTION

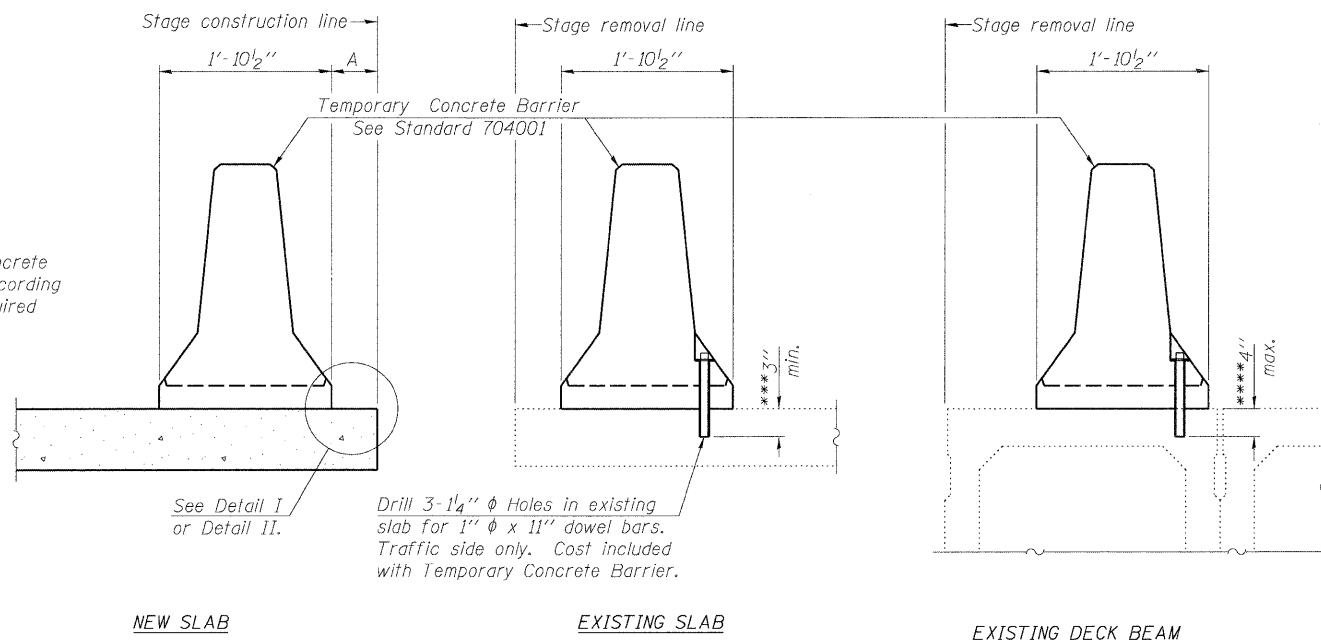
(Looking North)

GENERAL NOTES & DETAILS
STRUCTURE NO. 016-1121

 LIN ENGINEERING, LTD. Consulting Engineers Chatham, Illinois <small>Designed By: ESH Checked By: MTH Date: 12/2009</small>	SHEET NO. 2 9 SHEETS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		290	(531-3.1,0305-302)RS-5	COOK	3/4	234
CONTRACT NO. 60138					FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

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



NEW SLAB

EXISTING SLAB

EXISTING DECK BEAM

Drill 3-1/4" ϕ Holes in existing slab for 1" ϕ x 11" dowel bars. Traffic side only. Cost included with Temporary Concrete Barrier.

See Detail I or Detail II.

NOTES

Detail I - With Bar Splicer or Couplers:
Connect one (1) 1"x7"x10" steel \bar{P} to the top layer of couplers with 2-5/8" ϕ bolts screwed to coupler at approximate \bar{C} of each barrier panel.

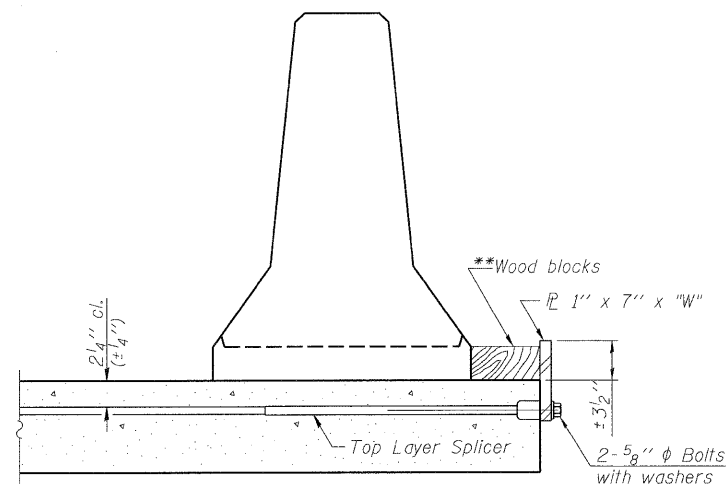
Detail II - With Extended Reinforcement Bars:
Connect one (1) 1"x7"x10" steel \bar{P} to the concrete slab or concrete wearing surface with 2-5/8" ϕ Expansion Anchors or cast in place inserts spaced between the top layer of reinforcement at approximate \bar{C} of each barrier panel.

Cost of anchorage is included with Temporary Concrete Barrier. The 1" x 7" x 10" plate shall not be removed until stage II construction forms and all reinforcement bars are in place and the concrete is ready to be placed.

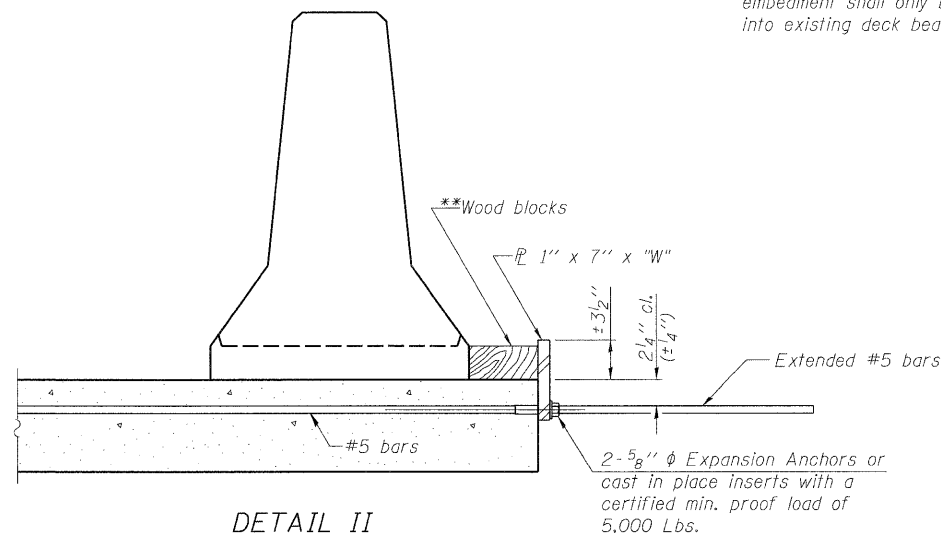
SECTIONS THRU SLAB OR DECK BEAM

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

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



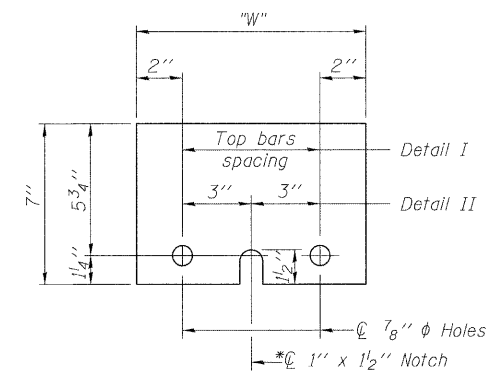
DETAIL I



DETAIL II

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

"W" = Top bars spacing + 4"



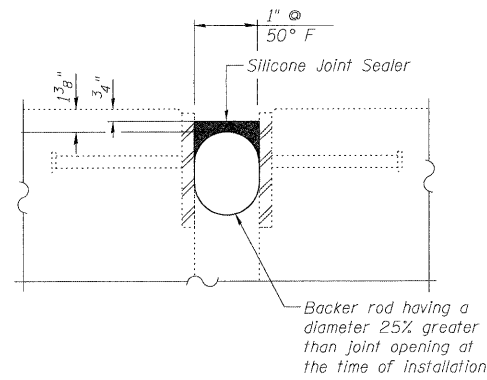
STEEL RETAINER \bar{P} 1" x 7" x 10"

* Required only with Detail II

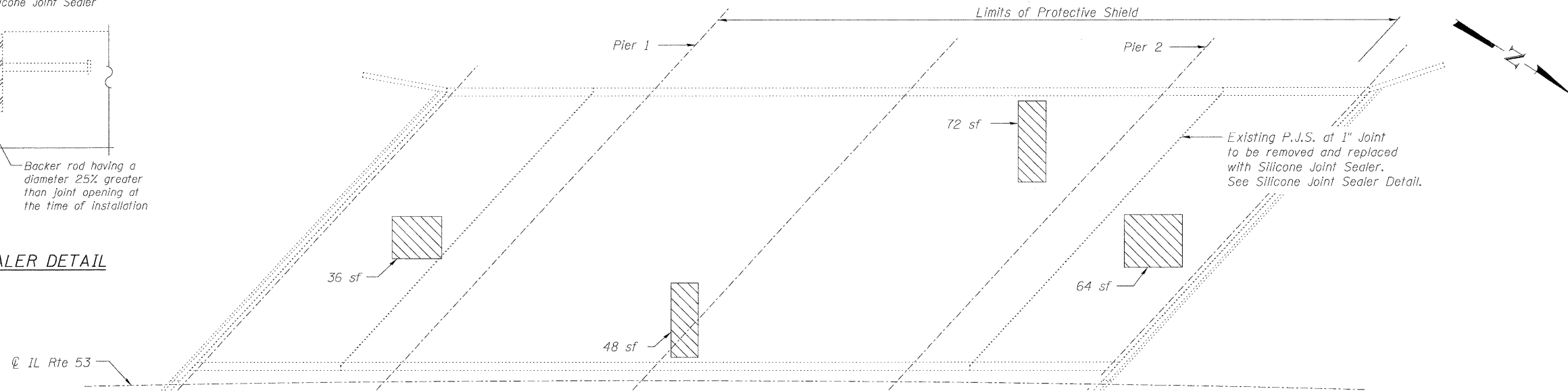
TEMPORARY CONCRETE BARRIER
FOR STAGE CONSTRUCTION
STRUCTURE NO. 016-1121

	SHEET NO. 3	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	9 SHEETS	290	(531-3.1,0305-302)RS-5	COOK	314	235
Designed By: ESH Checked By: MTH Date: 12/2009	Drawn By: ESH File: 016-1121.dgn	FED. ROAD DIST. NO. _		ILLINOIS		FED. AID PROJECT
				CONTRACT NO. 60138		

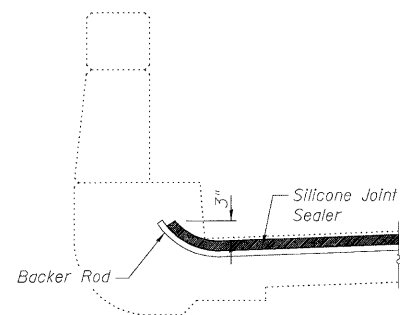
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



SILICONE JOINT SEALER DETAIL

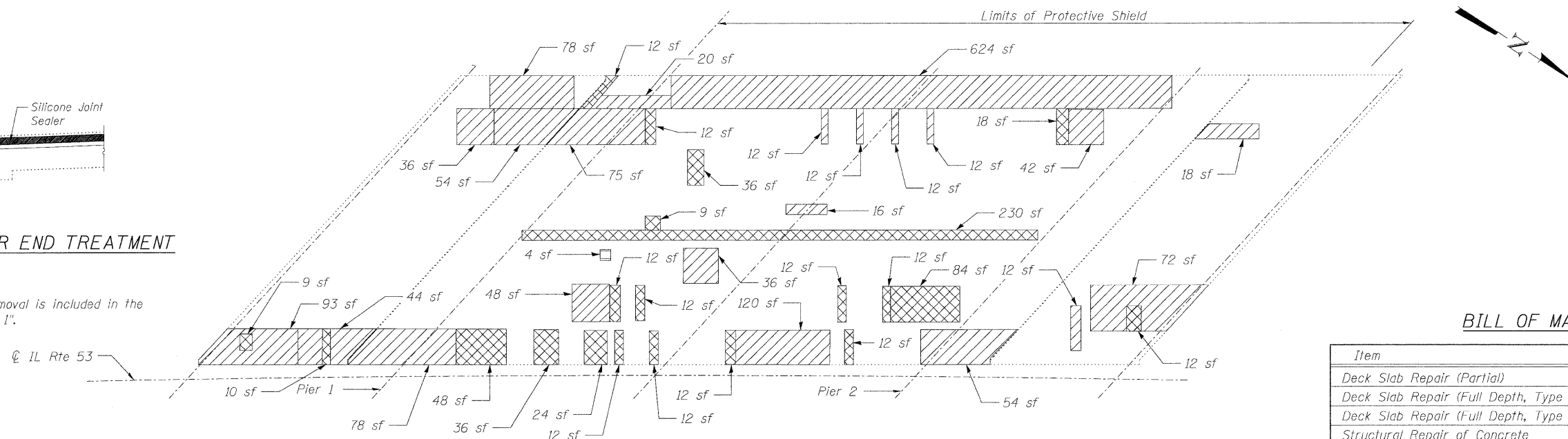


TOP OF DECK PLAN



SILICONE JOINT SEALER END TREATMENT

Note:
Cost of existing P.J.S. removal is included in the cost of Silicone Joint Sealer, 1".

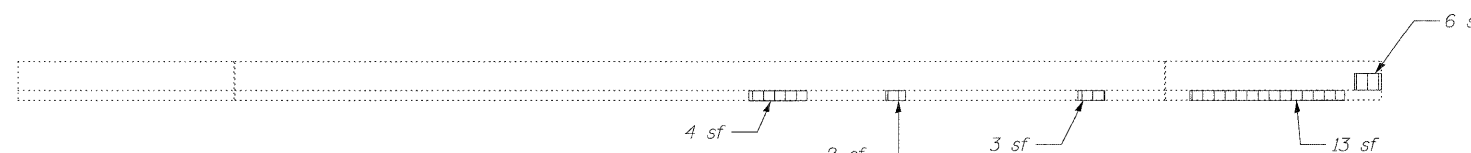


BOTTOM OF DECK PLAN

LEGEND

- Cleaning and Painting Exposed Rebar on Deck Slab Underside
- Indicates Deck Slab Repair (Full Depth, Type I)
- Indicates Deck Slab Repair (Full Depth, Type II)
- Indicates Deck Slab Repair (Partial)
- Indicates Structural Repair of Concrete (Depth Equal to or Less Than 5 in.)

sf Square Feet



EAST PARAPET ELEVATION
(Looking East)

BILL OF MATERIAL

Item	Unit	Total
Deck Slab Repair (Partial)	Sq. Yd.	28.1
Deck Slab Repair (Full Depth, Type I)	Sq. Yd.	0.5
Deck Slab Repair (Full Depth, Type II)	Sq. Yd.	81.3
Structural Repair of Concrete (Depth Equal To or Less Than 5 in.)	Sq. Ft.	32
Cleaning and Painting Exposed Rebar	Sq. Ft.	1,803
Protective Shield	Sq. Yd.	934
Silicone Joint Sealer, 1"	Foot	158

Repair of the existing deck slab and parapets shall include but may not be limited to the areas shown. The actual areas to be repaired will be determined by the Engineer at the time of construction.

SUPERSTRUCTURE REPAIR
STRUCTURE NO. 016-1121

LIN ENGINEERING, LTD.
Consulting Engineers
Chatham, Illinois

Designed By: ESH
Checked By: MTH
Date: 12/2009

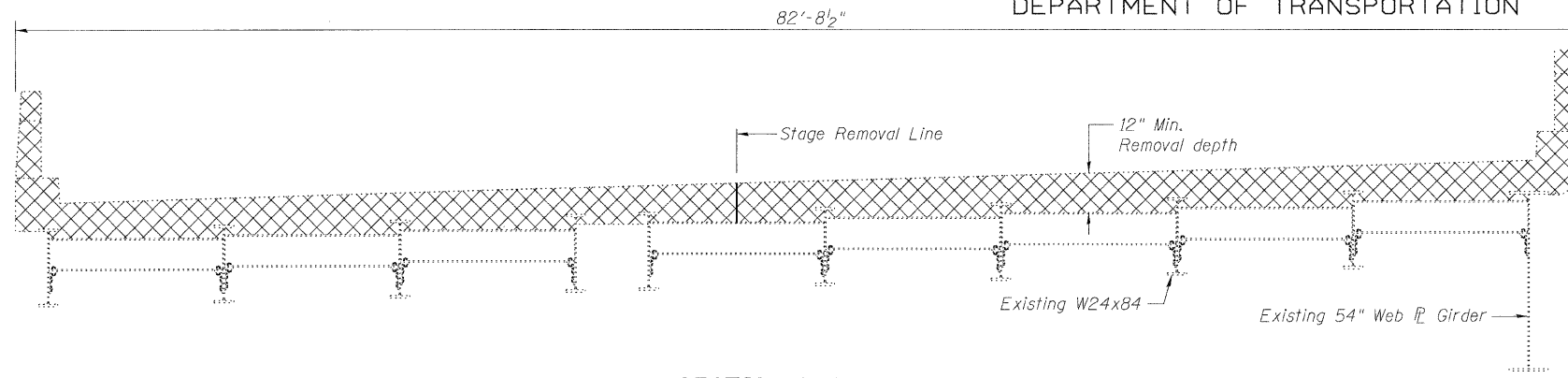
Drawn By: ESH
File: 016-1121.dgn

SHEET NO. 4

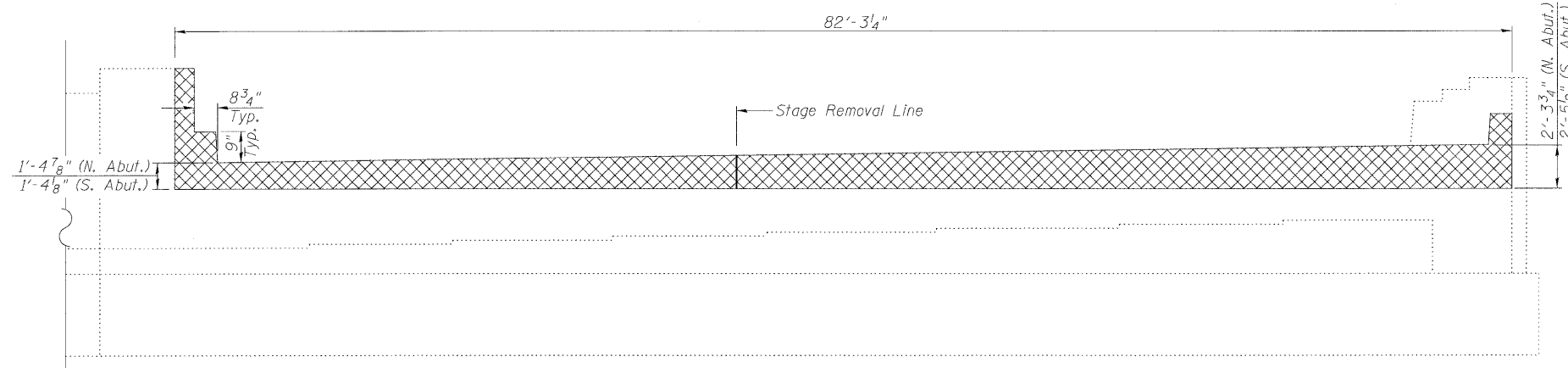
9 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	(531-3.1,0305-302K)RS-5	COOK	314	236
CONTRACT NO. 60I38				
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				

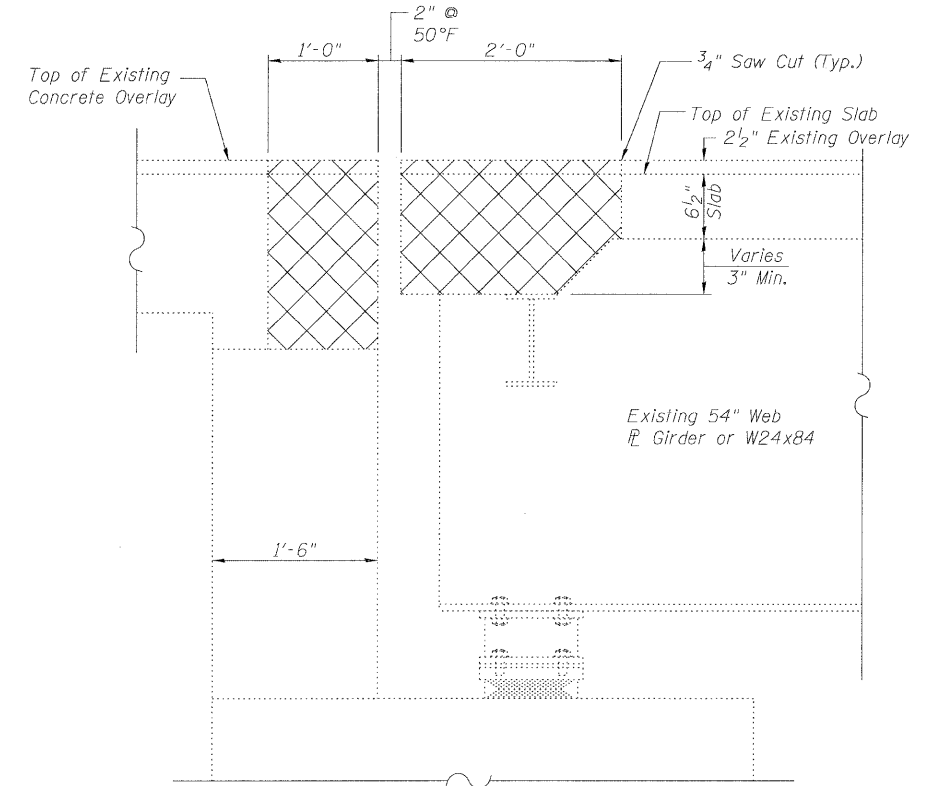
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



SECTION A-A



SECTION B-B

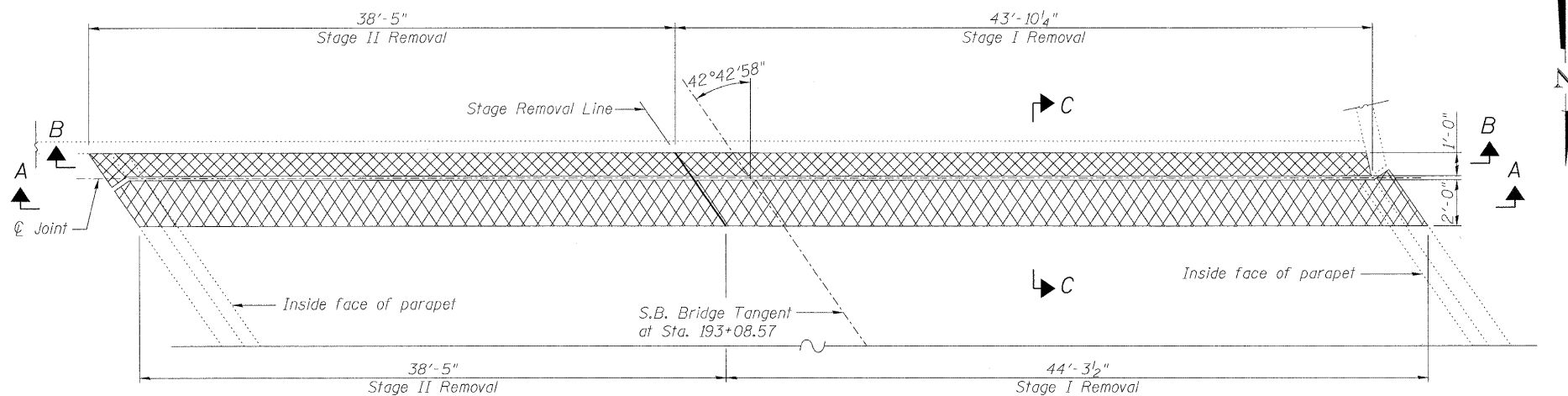


SECTION C-C

(Dimensions at Rt. L's)

Notes:

1. Cross hatched area indicates concrete removal.
2. Existing reinforcement bars in the concrete removal area extending in new construction shall be cleaned and incorporated into the new construction. Cost included with Concrete Removal.
3. Any reinforcement bars that are damaged during concrete removal operations shall be repaired or replaced using an approved bar splicer or anchorage system, in accordance with IDOT Standard Specifications Article 501.03. Cost included in "Concrete Removal"
4. Overlay removal is included in pay item Concrete Removal.



PLAN

(South abutment shown, north abutment mirrored about S.B. bridge tangent)

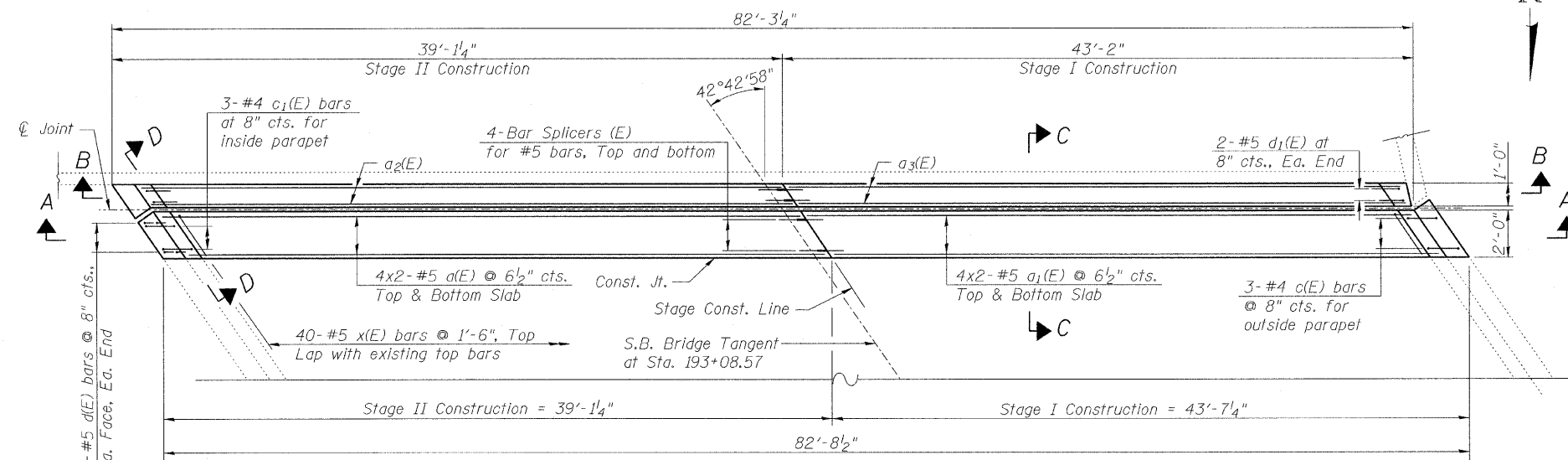
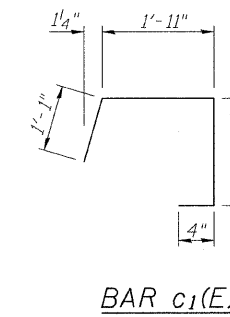
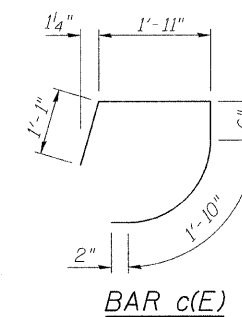
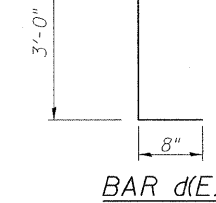
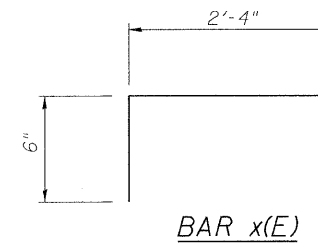
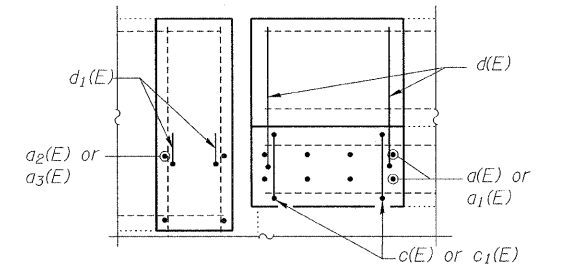
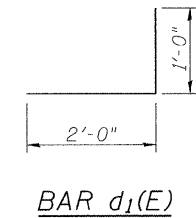
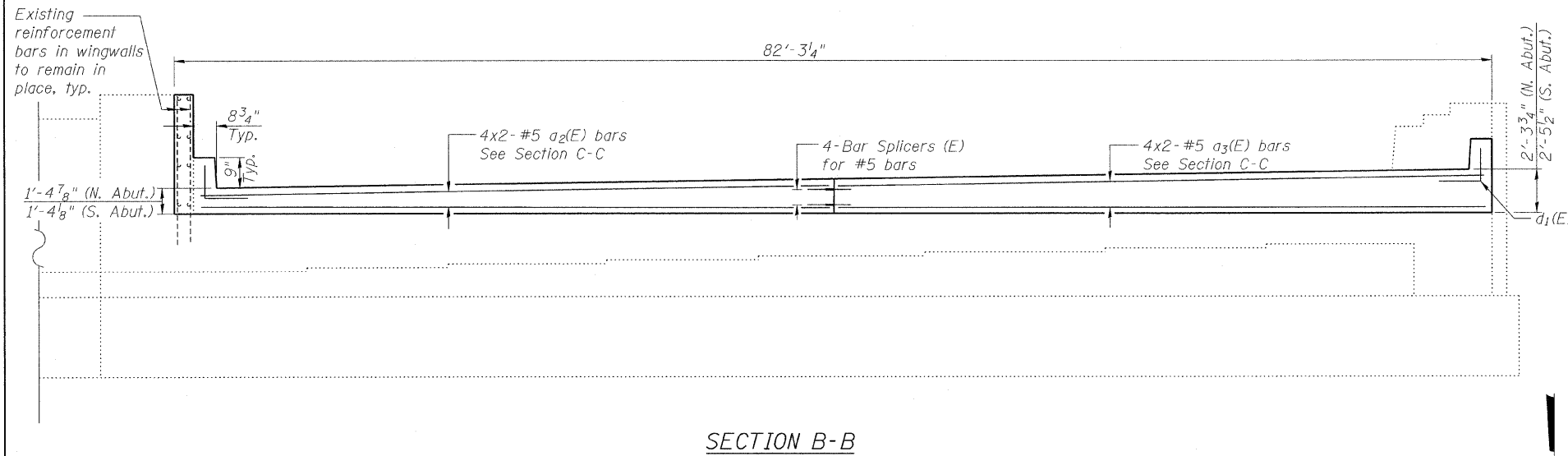
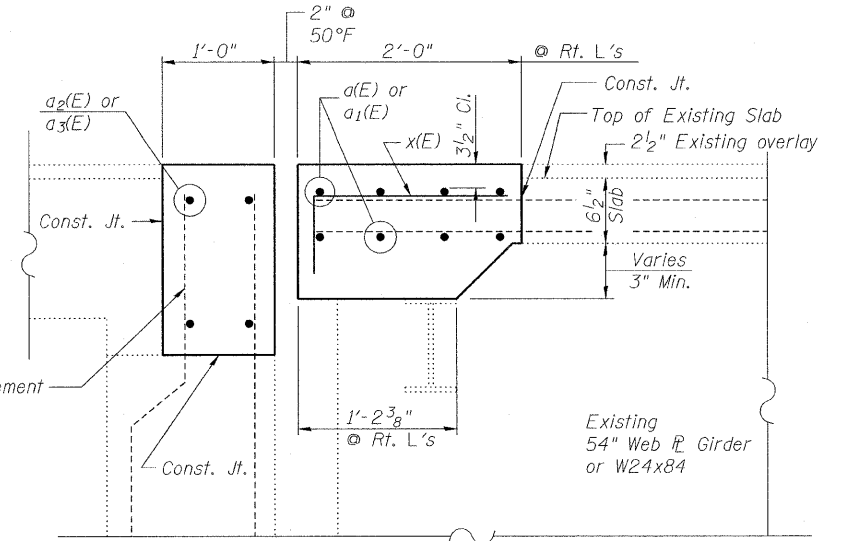
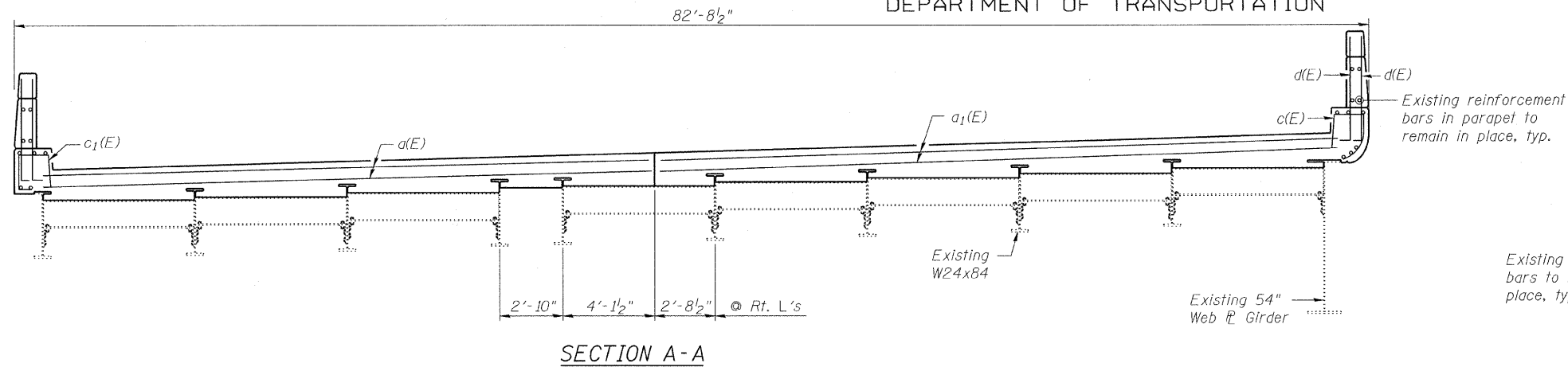
BILL OF MATERIAL

Item	Unit	Total
Concrete Removal	Cu. Yd.	24.9

CONCRETE REMOVAL
STRUCTURE NO. 016-1121

<p>LIN ENGINEERING, LTD. Consulting Engineers Chatham, Illinois</p>	SHEET NO. 5	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	9 SHEETS	290	(531-3.1,0305-302K)RS-5	COOK	31	237
Designed By: ESH Checked By: MTH Date: 12/2/09		Drawn By: ESH File: 016-1121.dgn		CONTRACT NO. 60I38		
FED. ROAD DIST. NO. _ ILLINOIS FED. AID PROJECT						

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



(South abutment shown, north abutment mirrored about S.B. bridge tangent)

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	32	#5	20'-8"	—
a ₁ (E)	32	#5	23'-0"	—
a ₂ (E)	16	#5	20'-10"	—
a ₃ (E)	16	#5	22'-6"	—
c(E)	6	#4	5'-6"	□
c ₁ (E)	6	#4	4'-8"	□
d(E)	24	#5	3'-8"	L
d ₁ (E)	8	#5	3'-0"	L
x(E)	80	#5	2'-10"	┌
Reinforcement Bars, Epoxy Coated			Pound	2580
Concrete Superstructure			Cu. Yd.	24.9

Bars indicated thus 4x2-#5 etc. indicates 4 lines of bars with 2 lengths per line.

CONCRETE DETAILS
STRUCTURE NO. 016-1121

MINIMUM BAR LAP

#5 bar = 2'-7"

E LIN ENGINEERING, LTD.
Consulting Engineers
Chatham, Illinois

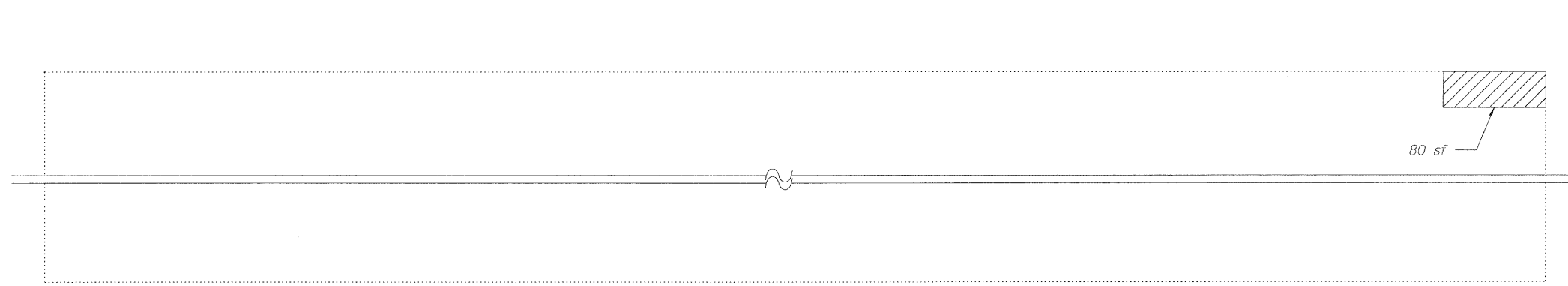
Designed By: ESH
Checked By: MTH
Date: 12/2009

Drawn By: ESH
File: 016-1121.dgn

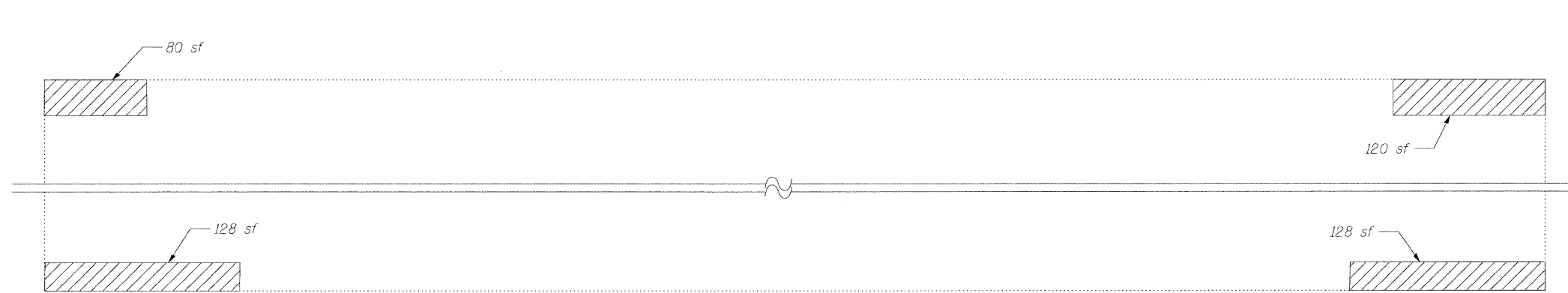
SHEET NO. 6
9 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	(531-3.1,0305-302)RS-5	COOK	3/4	238
CONTRACT NO. 60138				
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION




NORTH SLOPE WALL PLAN



SOUTH SLOPE WALL PLAN

LEGEND

 Indicates Slope Wall Removal and Slope Wall 4 Inch


sf Square Feet

BILL OF MATERIAL

Item	Unit	Total
Slope Wall Removal	Sq. Yd.	60
Slope Wall 4 Inch	Sq. Yd.	60

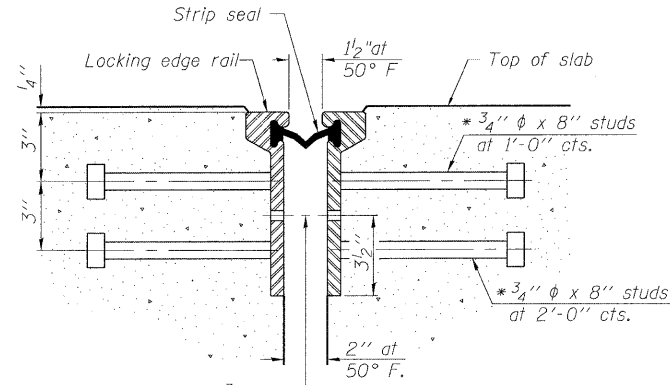
Note:
Sloped wall shall be reinforced with welded wire fabric, 6"x 6" - W4.0 x W4.0, weighing 58 lbs. per 100 sq. ft.
Existing reinforcement shall be cleaned and incorporated into the new construction. Cost included with Slope Wall Removal.
Existing and new welded wire fabric must be lapped at least 6".
Repair of the existing slope walls shall include but may not be limited to the areas shown. The actual areas to be repaired will be determined by the Engineer at the time of construction.

SLOPE WALL REPAIR
STRUCTURE NO. 016-1121

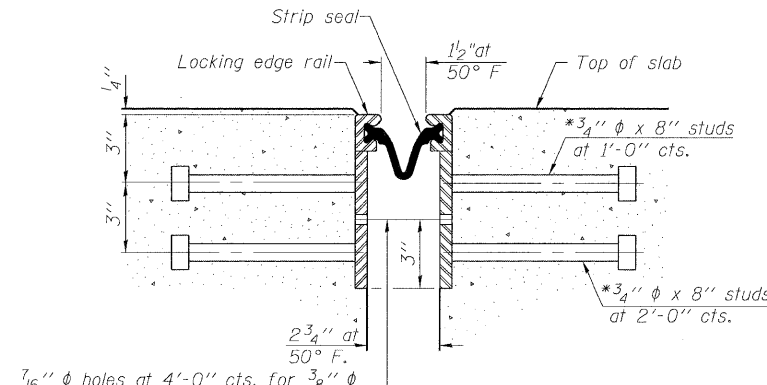
 LIN ENGINEERING, LTD. Consulting Engineers Chatham, Illinois	SHEET NO. 7	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	9 SHEETS	290	(531-3.1,0305-302K)RS-5	COOK	314	239
Designed By: ESH Checked By: MTH Drawn By: ESH Date: 12/25/09 File: 08-1021.dgn		FED. ROAD DIST. NO. _ ILLINOIS FED. AID PROJECT				
CONTRACT NO. 60138						

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

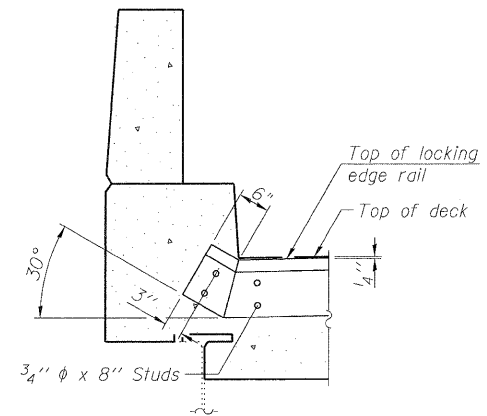
* Granular or solid flux filled headed studs conforming to Article 1006.32 of the Std. Specs., automatically end welded.



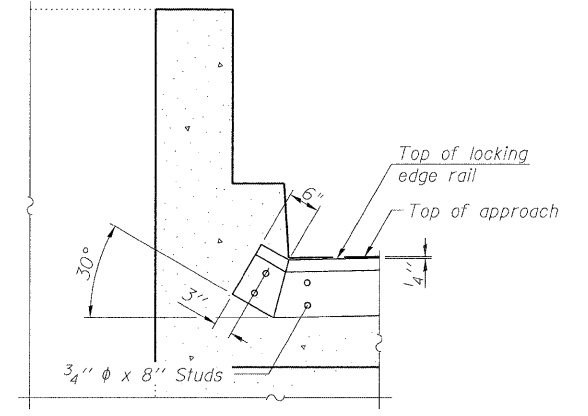
SECTION THRU
ROLLED RAIL JOINT



SECTION THRU
WELDED RAIL JOINT



AT PARAPET



AT MEDIAN WALL

TYPICAL END TREATMENTS

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.

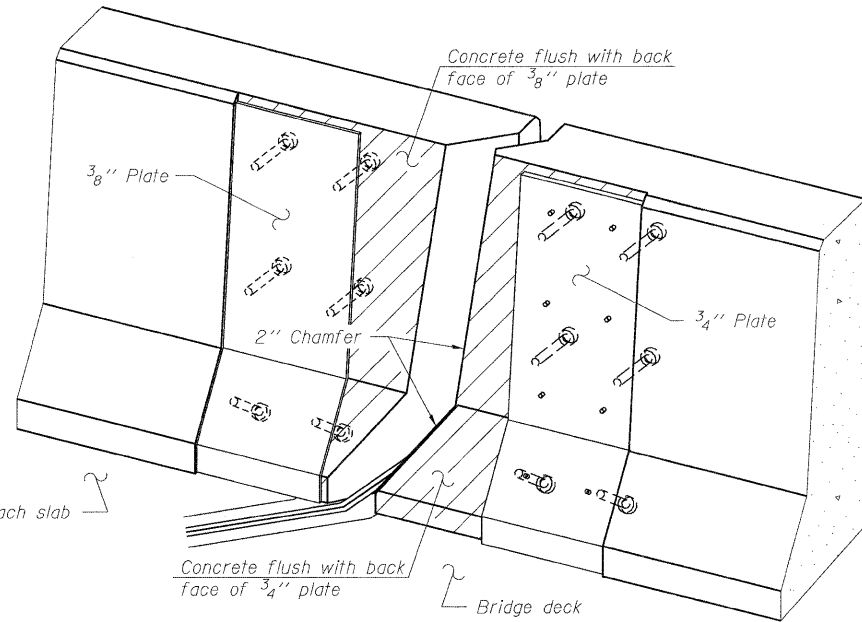
Notes:

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 Locking Edge Rails depicted are conceptual only, except for the minimum dimensions shown. 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.

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. Maximum space between rail segments at stage lines shall be 3/16", sealed with a suitable sealant.



TRIMETRIC VIEW
(Showing back plates only)

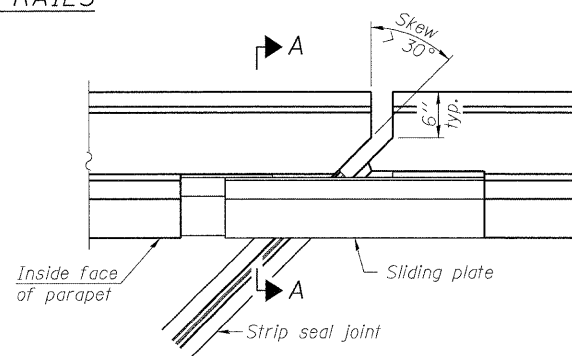
ROLLED
EXTRUDED RAIL

WELDED RAIL

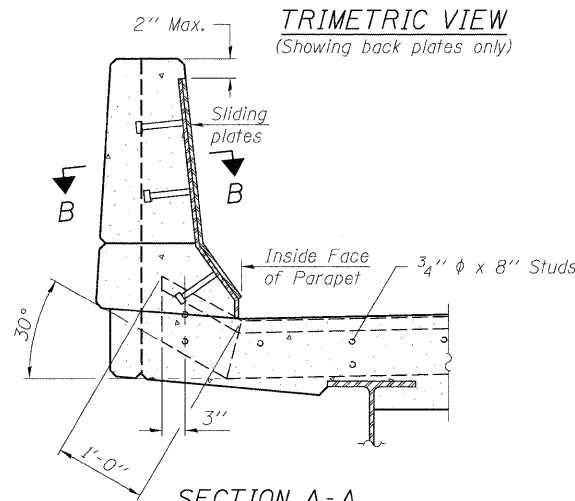
LOCKING EDGE
RAIL SPLICE

The inside of the locking edge rail groove shall be free of weld residue. Rolled rail shown, welded rail similar.

LOCKING EDGE RAILS

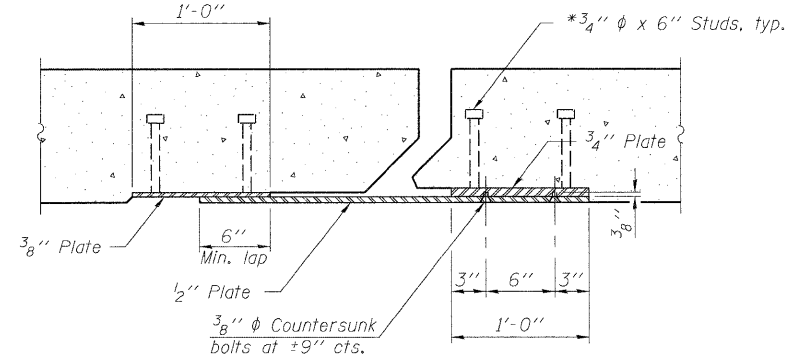


PLAN



SECTION A-A

POINT BLOCK DETAILS
(for skews > 30°)



SECTION B-B

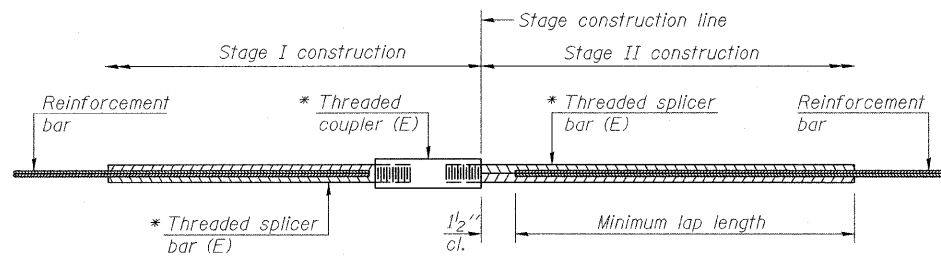
BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	158

PREFORMED JOINT STRIP SEAL
STRUCTURE NO. 016-1121

<p>LIN ENGINEERING, LTD. Consulting Engineers Chatham, Illinois</p>	SHEET NO. 8	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	9 SHEETS	290	(531-3.1,0305-302)RS-5	COOK	314	240
		FED. ROAD DIST. NO. _		ILLINOIS		FED. AID PROJECT
				CONTRACT NO. 60138		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



STANDARD BAR SPLICER ASSEMBLY

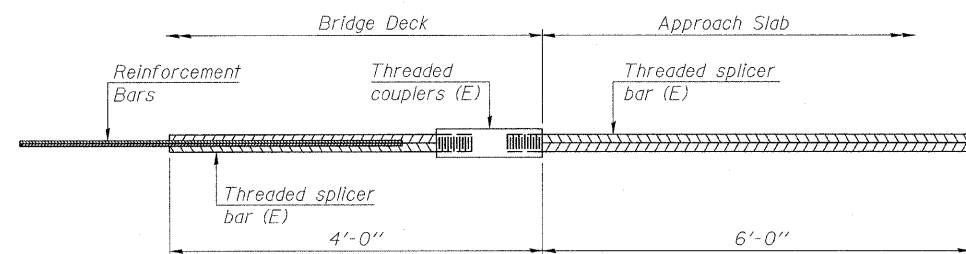
Minimum Lap Lengths				
Bar size to be spliced	Table 1	Table 2	Table 3	Table 4
3, 4	1'-5"	1'-11"	2'-1"	2'-4"
5	1'-9"	2'-5"	2'-7"	2'-11"
6	2'-1"	2'-11"	3'-1"	3'-6"
7	2'-9"	3'-10"	4'-2"	4'-8"
8	3'-8"	5'-1"	5'-5"	6'-2"
9	4'-7"	6'-5"	6'-10"	7'-9"

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

Threaded splicer bar length = min. lap length + 1/2" + thread length

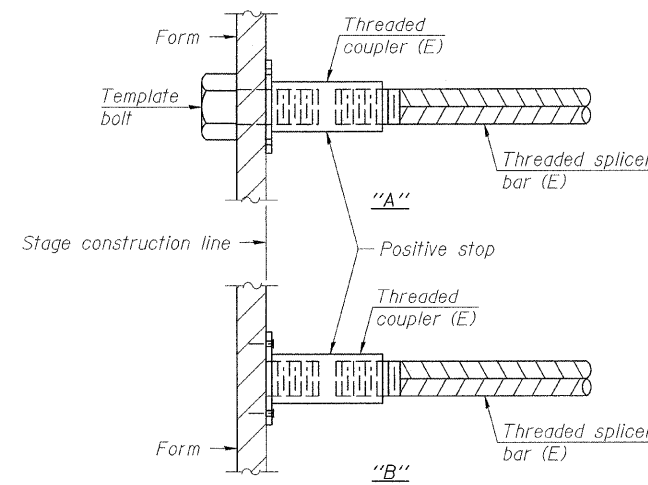
* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Table for minimum lap length
Deck	#5	16	Table 3
Abutment	#5	8	Table 3



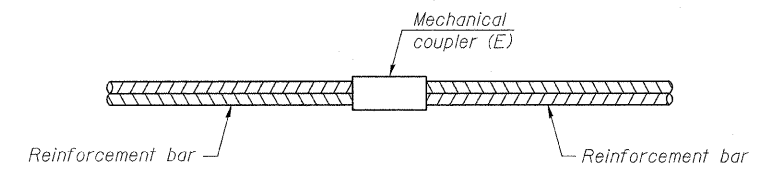
BAR SPLICER ASSEMBLY FOR #5 BAR ON INTEGRAL OR SEMI-INTEGRAL ABUTMENTS

No. required =



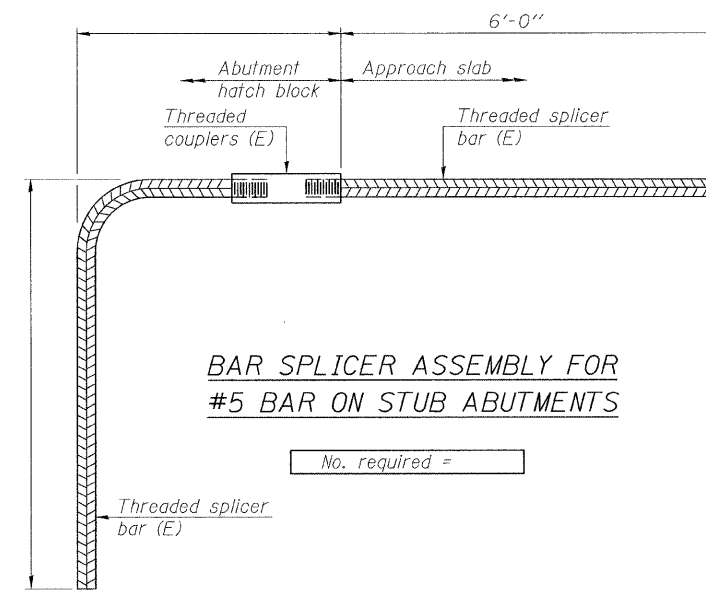
INSTALLATION AND SETTING METHODS

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



STANDARD MECHANICAL SPLICER

Location	Bar size	No. assemblies required



BAR SPLICER ASSEMBLY FOR #5 BAR ON STUB ABUTMENTS

No. required =

NOTES

Splicer bars shall be deformed with threaded ends and have a minimum 60 ksi yield strength.
All reinforcement shall be lapped and tied to the splicer bars.
Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars. See Section 508 of the Standard Specifications.
See special provision for Mechanical Splicers.
See approved list of bar splicer assemblies and mechanical splicers for alternatives.

**BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS
STRUCTURE NO. 016-1121**

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

Existing Structure: S.N. 016-0377 built in 1962 as F.A. Route 61, Section 531-1-B-7 at Station 142+20.00. Structure consists of single span precast prestressed concrete beam bridge with 63'-3" back-to-back abutments span, 210'-0" out-to-out deck width, and closed abutments. In 1971, deck repairs, and overlay placement. In 1991, overlay replacement, deck slab repair, expansion joint replacement, longitudinal joint closures, and parapet retrofit. In 1999, overlay replacement, and substructure repairs were performed. In 2003, substructure repairs were performed.

GENERAL NOTES

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.

Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60. See Special Provisions.

See Roadway plans for maintenance of traffic details.

SCOPE OF WORK

1. Replace P.J.S. with Silicone Joint Sealer at abutment expansion joints.
2. Repair Deck Slab.
3. Repair substructure concrete.
4. Extend deck drains.
5. Apply Concrete Sealer to top of deck surface and top and inside vertical face of parapets.
6. Clean and reseal approach pavement relief joints.

INDEX OF SHEETS

1. General Plan and Elevation
2. Deck Slab Repair
3. Abutment Repair
4. Joint and Deck Drain Details

TOTAL BILL OF MATERIAL

Item	Unit	Super	Sub	Total
Concrete Sealer	Sq. Ft.	14156	-	14156
Silicone Joint Sealer, 1"	Foot	209	-	209
Silicone Joint Sealer, 1 3/4"	Foot	209	-	209
Structural Repair of Concrete (Depth equal to or less than 5 in.)	Sq. Ft.	-	7	7
Deck Slab Repair (Partial)	Sq. Yd.	3.9	-	3.9
Deck Slab Repair (Full Depth, Type II)	Sq. Yd.	4.9	-	4.9
Cleaning and Painting Exposed Rebar	Sq. Ft.	92	-	92
Epoxy Crack Injection	Foot	-	194	194
Floor Drain Extension	Each	18	-	18
Clean and Reseal Relief Joint	Foot	394	-	394

DESIGN STRESSES

FIELD UNITS (New Const.)

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

FIELD UNITS (Existing)

$f_c = 1,400$ psi (Superstructure)
 $f_c = 1,000$ psi (Substructure)
 $f_s = 20,000$ psi (Reinforcement)
 $f_s = 20,000$ psi (Structural Steel)

PRECAST PRESTRESSED UNITS (Existing)

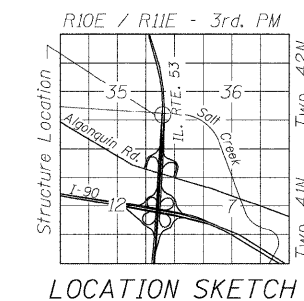
$f'_c = 5,000$ psi
 $f'_{ci} = 4,000$ psi
 $f'_s = 248,000$ psi (Strands)
 $f_{si} = 173,600$ psi (Strands)

DESIGN SPECIFICATIONS

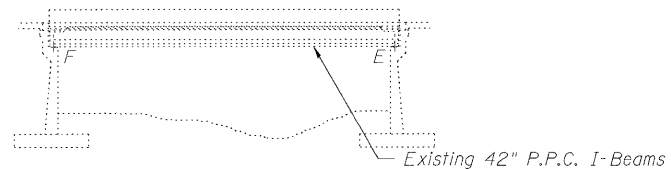
(New Construction)
2002 AASHTO "Standard Specifications for Highway Bridges"

LOADING HS-20 & ALT.

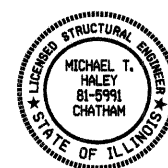
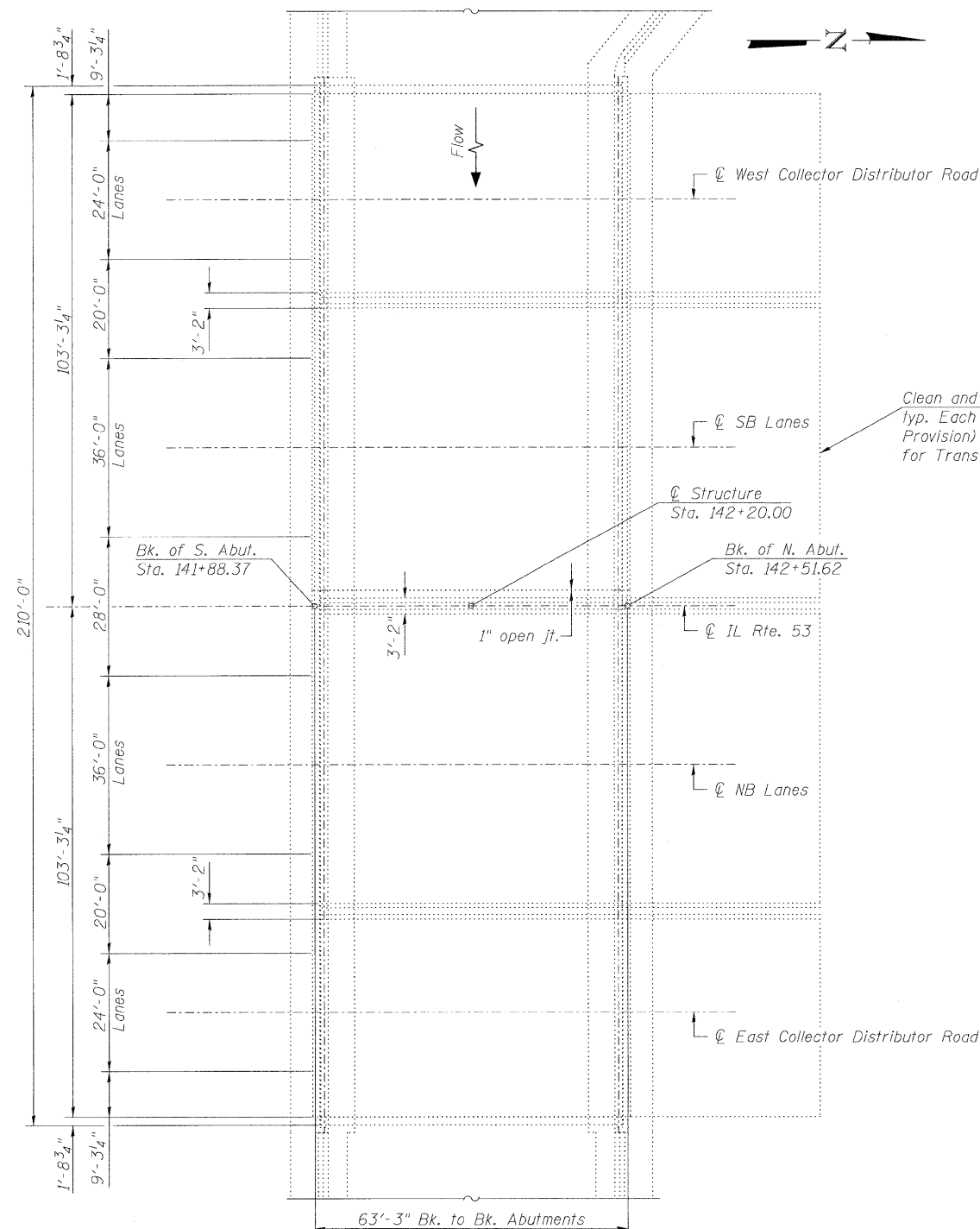
(Original Construction)



ELEVATION



PLAN

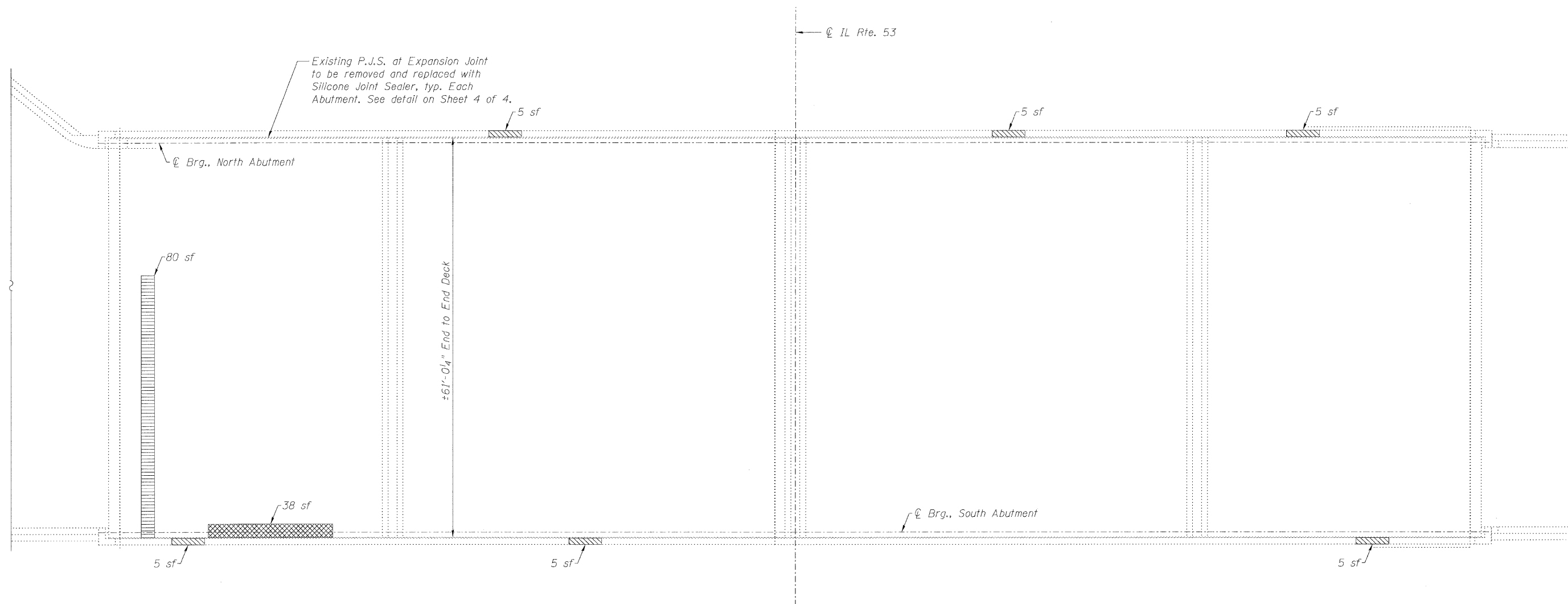


Michael J. Haley 2/8/10
Michael T. Haley
Licensed Structural Engineer
State of Illinois No. 81-5991
Expires 11/30/2010

GENERAL PLAN AND ELEVATION
IL ROUTE 53 OVER SALT CREEK
F.A.I. 290-SEC (531-3.1,0305-302K)RS-5
COOK COUNTY
STATION 142+20.00
STRUCTURE NO. 016-0377

	SHEET NO. 1	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
	4 SHEETS	290	(531-3.1,0305-302K)RS-5	COOK	314	292	
		CONTRACT NO. 60138					
		FED. ROAD DIST. NO. _		ILLINOIS		FED. AID PROJECT	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



PLAN

Note:

Contractor shall verify that the type of concrete selected shall achieve required strength within the time allotted for construction. See Special Provisions, Deck Slab Repair (Special).

BILL OF MATERIAL

Item	Unit	Total
Deck Slab Repair (Partial)	Sq. Yd.	3.9
Deck Slab Repair (Full Depth, Type II)	Sq. Yd.	4.9
Cleaning and Painting Exposed Rebar	Sq. Ft.	92

LEGEND

- Deck Slab Repair (Full Depth, Type II)
- Deck Slab Repair (Partial)
- Cleaning and Painting Exposed Rebar on Deck Slab underside
- sf Square Feet

Note:

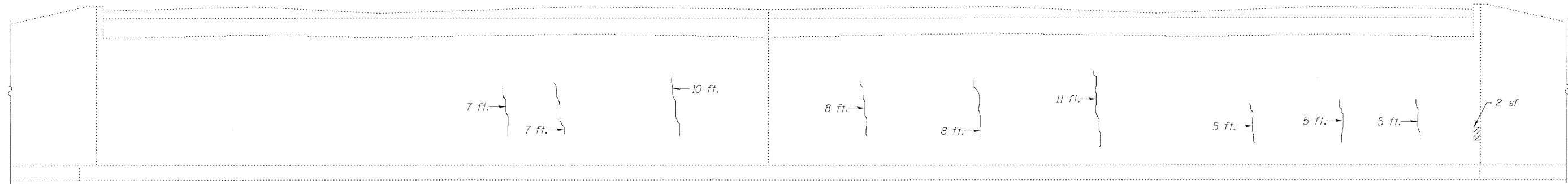
Repair of the existing deck shall include but may not be limited to the areas shown. The actual areas to be repaired will be determined by the Engineer at the time of construction.

DECK SLAB REPAIR
STRUCTURE NO. 016-0377

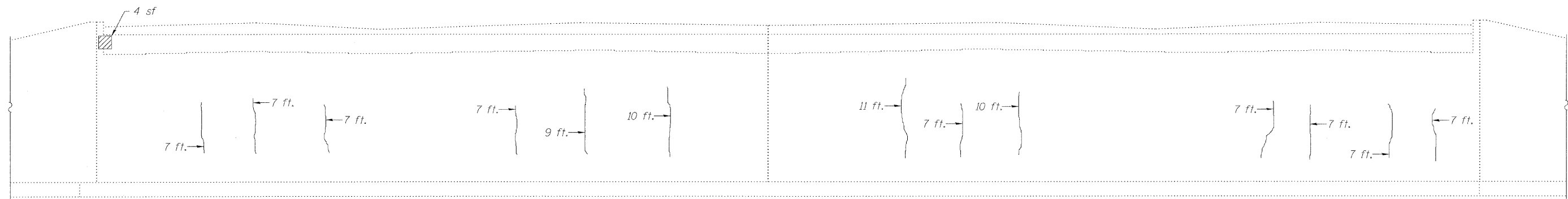
LIN ENGINEERING, LTD. Consulting Engineers Chatham, Illinois	SHEET NO. 2		F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	4 SHEETS		290	(531-3.1,0305-302K)RS-5	COOK	317	243
			CONTRACT NO. 60138				
			FED. ROAD DIST. NO. _ ILLINOIS FED. AID PROJECT				

Designed By: ADB
Checked By: MTH
Drawn By: ADB
Date: 12/2009
File: 016-0377.dgn

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



SOUTH ABUTMENT ELEVATION
(Looking South)



NORTH ABUTMENT ELEVATION
(Looking North)

BILL OF MATERIAL

Item	Unit	Total
Epoxy Crack Injection	Foot	194
Structural Repair of Concrete (Depth equal to or less than 5 in.)	Sq. Ft.	7

Note:

Repair of the existing abutments shall include but may not be limited to the areas shown. The actual areas to be repaired will be determined by the Engineer at the time of construction.

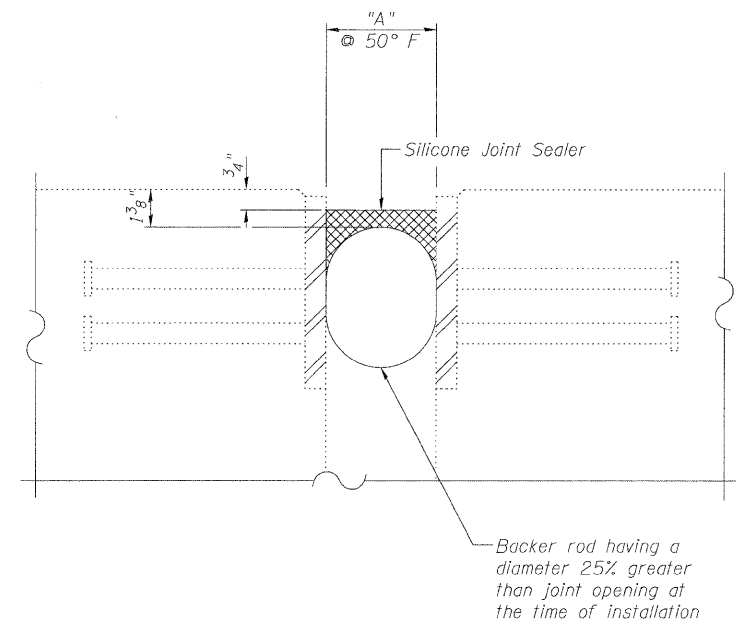
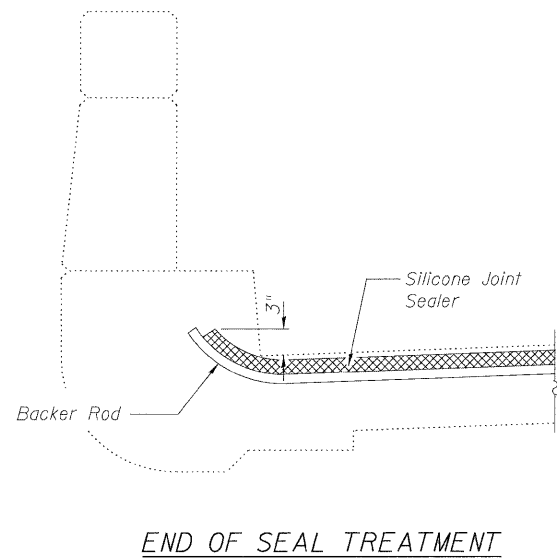
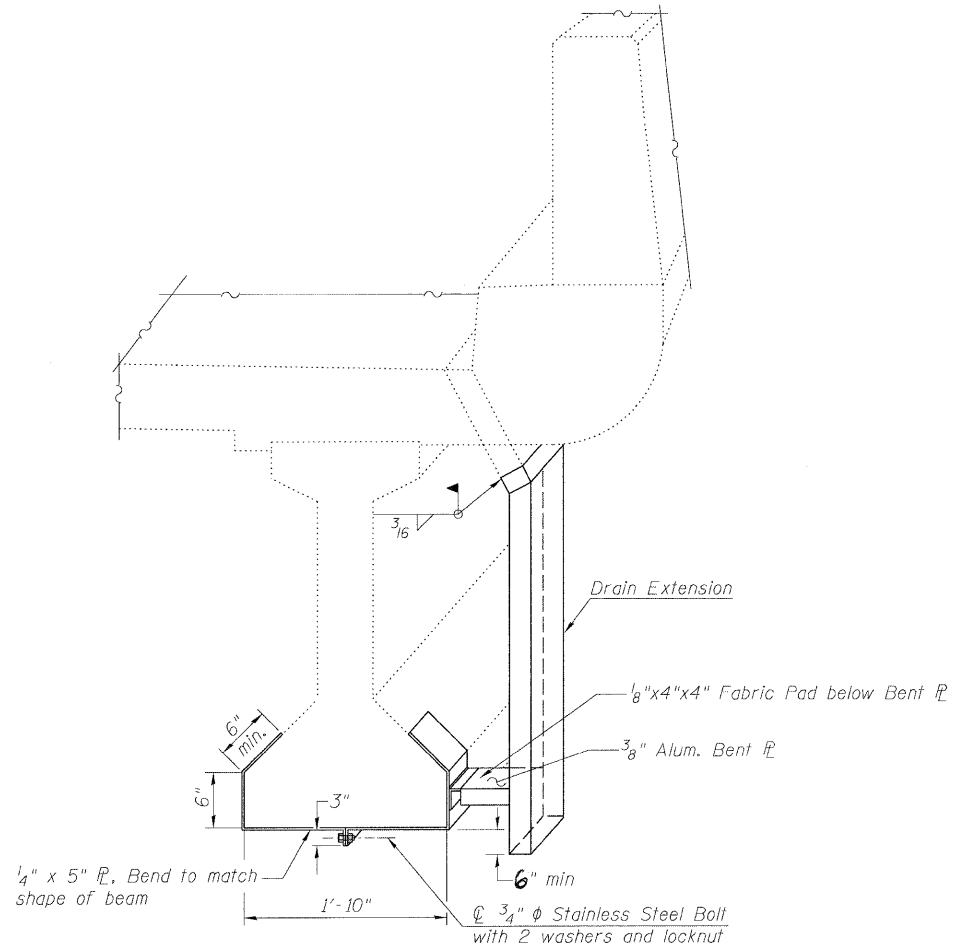
LEGEND

- Epoxy Crack Injection
- Structural Repair of Concrete
(Depth equal to or less than 5")

ABUTMENT REPAIR
STRUCTURE NO. 016-0377

E LIN ENGINEERING, LTD. Consulting Engineers Chatham, Illinois	SHEET NO. 3 4 SHEETS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		290	(531-3.1,0305-302K)RS-5	COOK	314	244
<small>Designed By: ADB Checked By: MTH Drawn By: ADB</small> <small>Date: 12/2009 File: 016-0377.dgn</small>		CONTRACT NO. 60138				
		FED. ROAD DIST. NO. _ ILLINOIS FED. AID PROJECT				

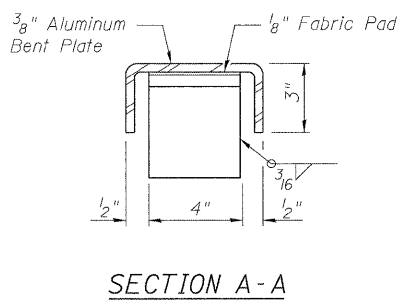
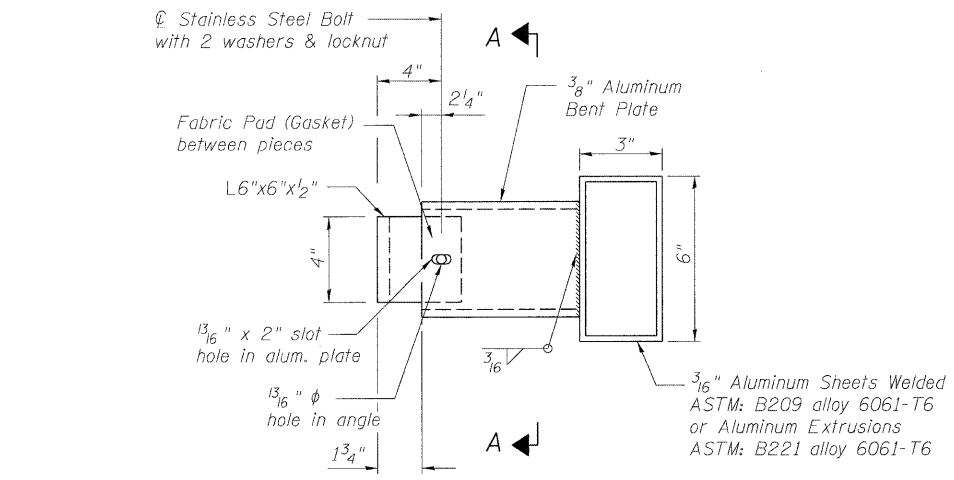
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



SILICONE JOINT SEALER DETAIL

Location	"A"	Length (ft.)
North Abutment	1 3/4"	209
South Abutment	1"	209

Note:
Cost of existing P.J.S. removal is included in the cost of Silicone Joint Sealer.



SECTION A-A

BILL OF MATERIAL

Item	Unit	Total
Floor Drain Extension	Each	18

Notes:
1. All plates, angles, nuts, and washers, unless otherwise shown, shall be galvanized according to AASHTO M111 or M232 as applicable.

DRAIN EXTENSION DETAILS
(18 required)

JOINT AND DECK DRAIN DETAILS
STRUCTURE NO. 016-0377

LIN ENGINEERING, LTD. Consulting Engineers Chatham, Illinois	SHEET NO. 4 4 SHEETS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		290	(531-3.1,0305-302K)RS-5	COOK	314	245
		CONTRACT NO. 60138				
		FED. ROAD DIST. NO. _ ILLINOIS FED. AID PROJECT				

Designed By: ADB
Checked By: MTN
Date: 12/2025

Drawn By: ADB
File: 016-0377.dgn

Existing Structure: S.N. 016-0378 built in 1962 as F.A. Route 61, Section 531-1-HB-5 at Station 119+77.27. Structure consists of four span continuous wide flange beam bridge with a 12°34'38" left ahead skew, 162'-0" back-to-back abutments, varying deck width of 127'-10⁷/₈" to 126'-7³/₄", multi-column piers, and pile bent abutments. In 1971, the deck was patched and a bituminous overlay was placed on the structure. In 1991, the expansion joints and parapets were reconstructed, along with deck patching and overlay replacement with microsilica concrete. The guardrail was also replaced with a concrete barrier. In 2000, the abutment bearings were replaced with elastomeric.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DESIGN STRESSES

FIELD UNITS (New Const.)

f'c = 3,500 psi
fy = 60,000 psi (Reinforcement)

FIELD UNITS (Existing)

f'c = 1,400 psi (Superstructure & Substructure)
fs = 20,000 psi (Reinforcement & Structural Steel)

LOADING HS 20-44 & ALT.

(Original Construction)

DESIGN SPECIFICATIONS

(New Construction)
2002 AASHTO "Standard Specifications for Highway Bridges"

SCOPE OF WORK

1. Repair Deck Slab
2. Apply Concrete Sealer to top of deck surface and top and inside vertical face of parapets
3. Replace P.J.S. at Expansion Joint with Silicone Joint Sealer
4. Clean and Reseal Relief Joints
5. Extend Floor Drains
6. Repair Parapet Concrete
7. Repair Substructure Concrete

GENERAL NOTES

Plan dimension 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.

Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60. See Special Provisions.

See Roadway plans for maintenance of traffic details.

When existing lighting fixtures, conduits and/or other existing utilities are present that will interfere with installation of the protective shield, the contractor shall submit, for approval by the Engineer, details of how he/she proposes to adjust the protective shield to clear the existing lighting fixtures, conduits and utilities. The protective shield shall not diminish the existing level of lighting of the roadway beneath. The Contractor shall coordinate the installation with municipalities and/or utilities to insure protection of their facilities.

The protective shield shall not rest upon existing lighting fixtures, conduits or utilities. Any lighting fixtures, conduits or utilities damaged by the contractor's operations shall be replaced or repaired by the contractor at his/her expense.

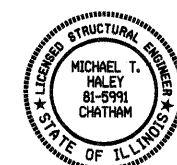
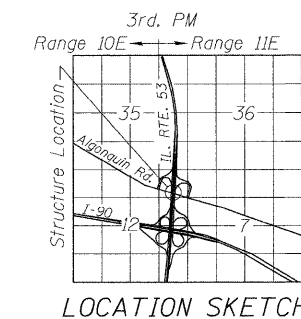
TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Protective Shield	Sq. Yd.	1135		1135
Floor Drain Extension	Each	24		24
Concrete Sealer	Sq. Ft.	21951		21951
Silicone Joint Sealer, 2"	Foot	256		256
Structural Repair of Concrete (Depth equal to or less than 5 in.)	Sq. Ft.	113	21	134
Approach Slab Repair (Partial Depth)	Sq. Yd.	2.3		2.3
Deck Slab Repair (Partial)	Sq. Yd.	47.5		47.5
Deck Slab Repair (Full Depth, Type II)	Sq. Yd.	321.9		321.9
Clean and Reseal Relief Joint	Foot	273		273

INDEX OF SHEETS

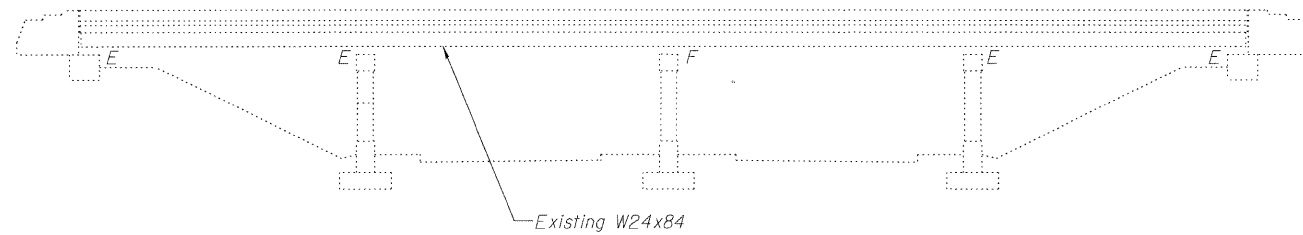
1. General Plan and Elevation
2. Stage Construction Details
3. Temporary Concrete Barrier for Stage Construction
4. Deck Slab Repair
5. Parapet Repair and Floor Drain Extension Details
6. Abutment Repair

Clean and Reseal Relief Joint.
Typ. Each Approach
(See Special Provisions)
See Standard 420001 for Transverse Expansion Joint

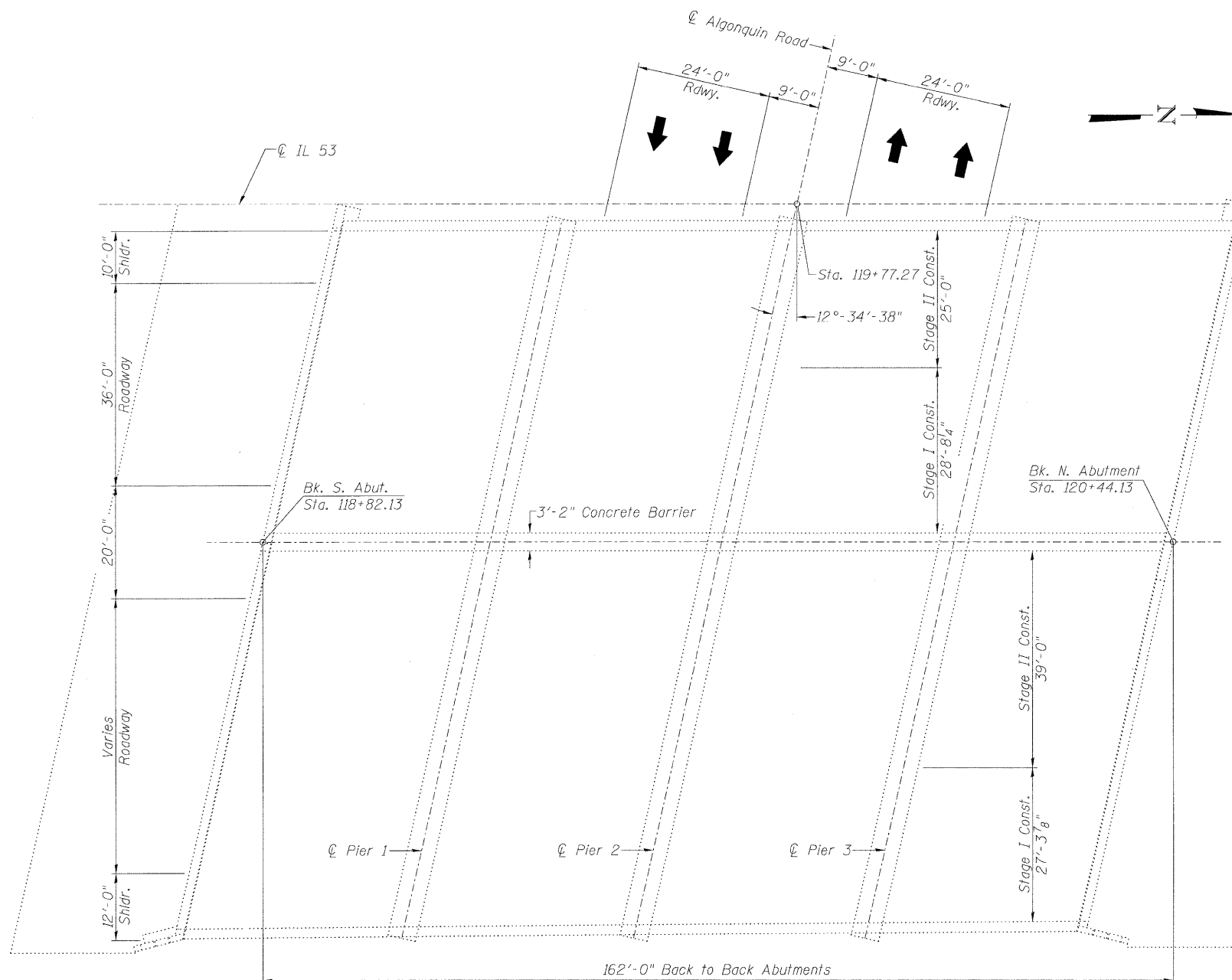


Michael J. Haley 2/8/10
Michael T. Haley Date
Licensed Structural Engineer
State of Illinois No. 81-5991
Expires 11/30/2010

GENERAL PLAN AND ELEVATION
NB IL ROUTE 53 OVER ALGONQUIN ROAD
F.A.I. 290 SEC (531-3.1,0305-302K)RS-5
COOK COUNTY
STATION 119+77.27
STRUCTURE NO. 016-0378



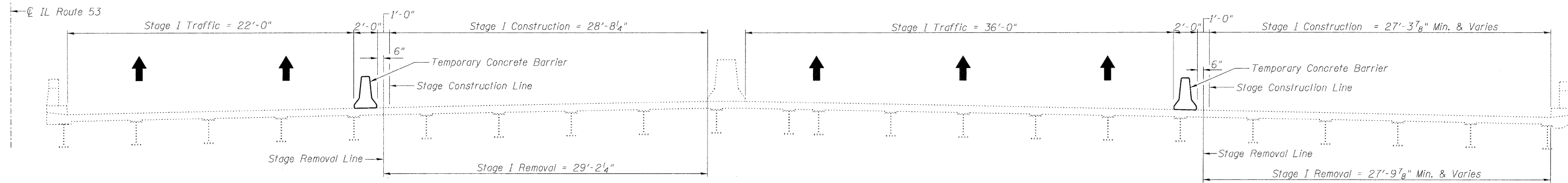
ELEVATION



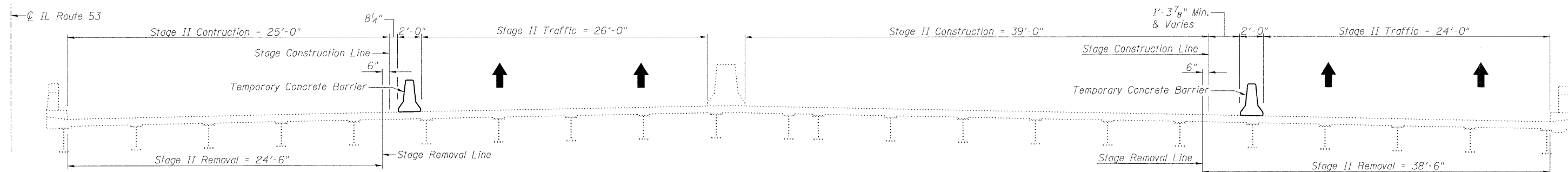
PLAN

	SHEET NO. 1	F.A.I. RTE. 290	SECTION (531-3.1,0305-302K)RS-5	COUNTY COOK	TOTAL SHEETS 314	SHEET NO. 246
	6 SHEETS	CONTRACT NO. 60138		FED. ROAD DIST. NO. _ ILLINOIS FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



STAGE I REMOVAL & CONSTRUCTION
(Looking North)



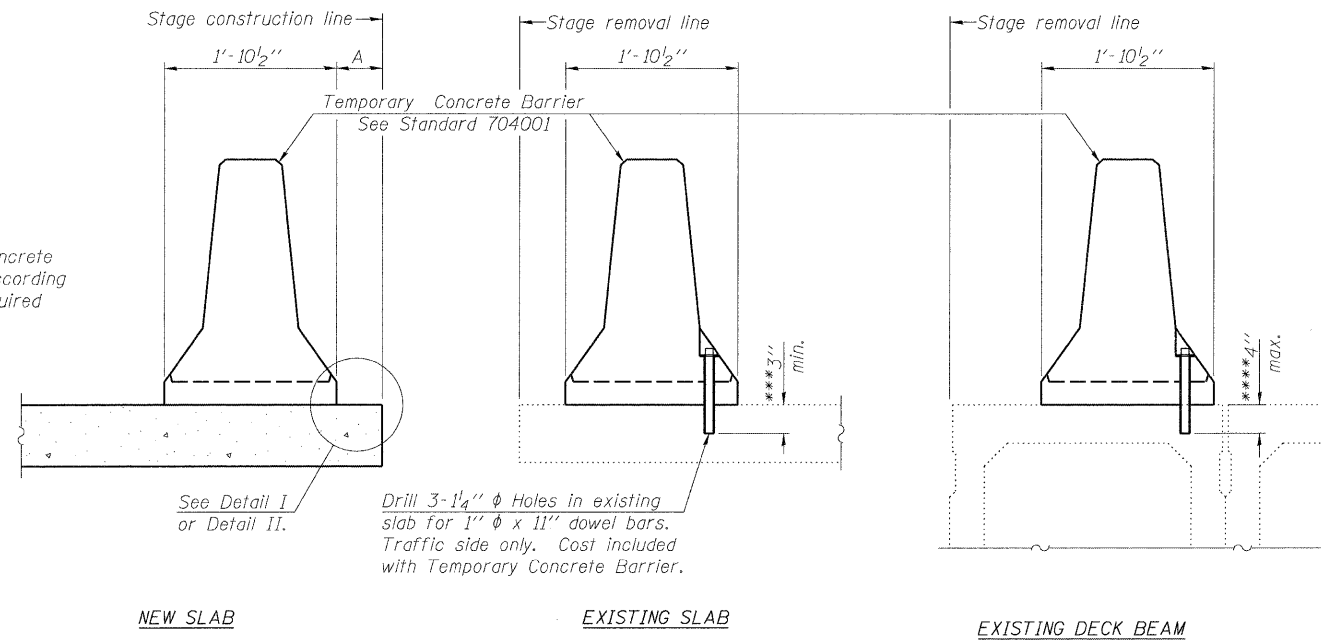
STAGE II REMOVAL & CONSTRUCTION
(Looking North)

STAGE CONSTRUCTION DETAILS
STRUCTURE NO. 016-0378

<p>LIN ENGINEERING, LTD. Consulting Engineers Chatham, Illinois</p>	SHEET NO. 2	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
	6 SHEETS	290	(531-3.1,0305-302K)RS-5	COOK	314	247	
<small>Designed By: KKH Checked By: MTH Drawn By: KKH Date: 12/2009 File: 016-0378.dgn</small>		FED. ROAD DIST. NO. _ ILLINOIS FED. AID PROJECT				CONTRACT NO. 60138	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

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



Drill 3-1/4" ϕ Holes in existing slab for 1" ϕ x 11" dowel bars. Traffic side only. Cost included with Temporary Concrete Barrier.

NOTES

Detail I - With Bar Splicer or Couplers:
Connect one (1) 1"x7"x10" steel \bar{P} to the top layer of couplers with 2-5/8" ϕ bolts screwed to coupler at approximate \bar{C} of each barrier panel.

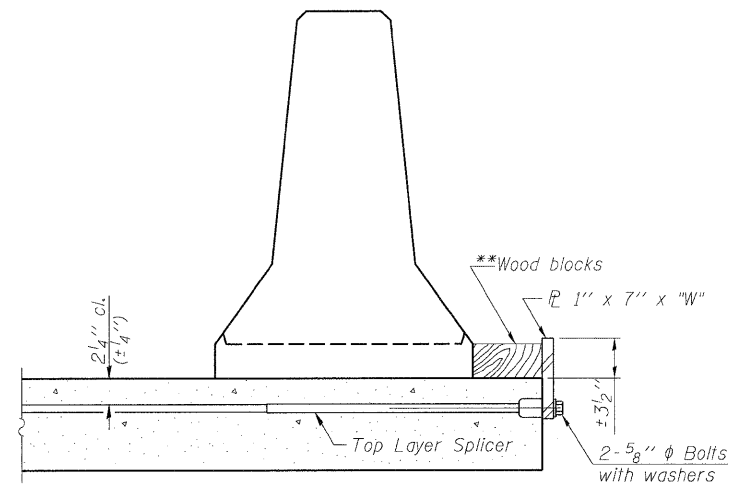
Detail II - With Extended Reinforcement Bars:
Connect one (1) 1"x7"x10" steel \bar{P} to the concrete slab or concrete wearing surface with 2-5/8" ϕ Expansion Anchors or cast in place inserts spaced between the top layer of reinforcement at approximate \bar{C} of each barrier panel.

Cost of anchorage is included with Temporary Concrete Barrier. The 1" x 7" x 10" plate shall not be removed until stage II construction. Forms and all reinforcement bars are in place and the concrete is ready to be placed.

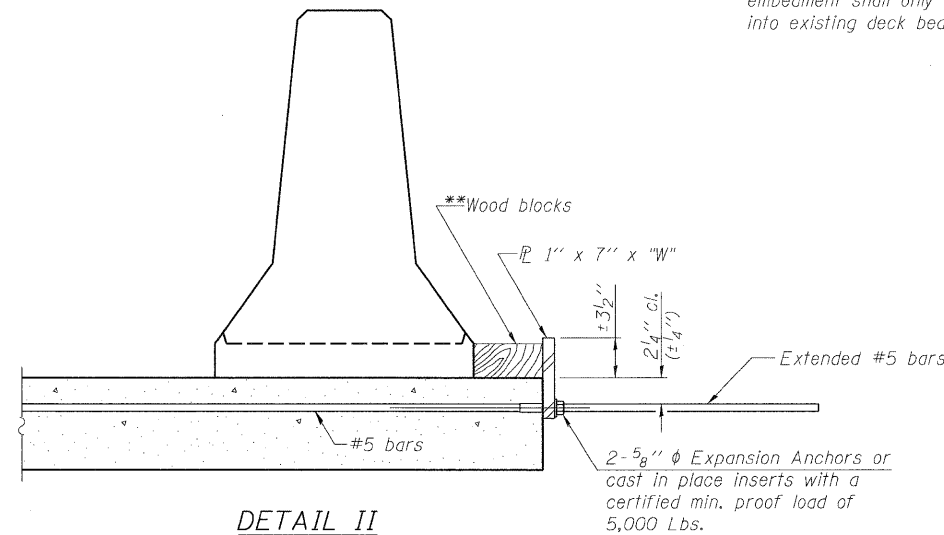
SECTIONS THRU SLAB OR DECK BEAM

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

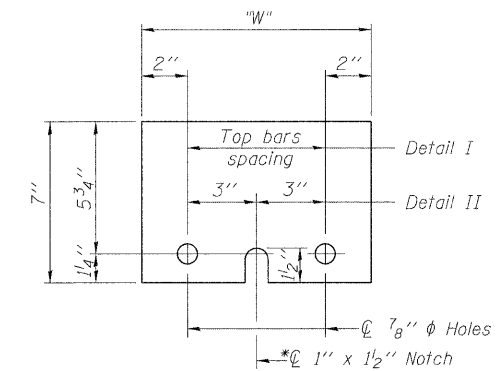
**** If existing deck beam is to remain in place after stage construction, embedment shall only be into wearing surface and not into existing deck beam concrete.



DETAIL I



DETAIL II



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

* Required only with Detail II

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

"W" = Top bars spacing + 4"

TEMPORARY CONCRETE BARRIER
FOR STAGE CONSTRUCTION
STRUCTURE NO. 016-0378

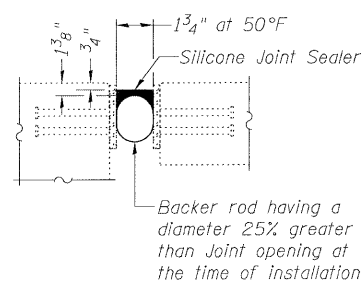
<p>LIN ENGINEERING, LTD. Consulting Engineers Chatham, Illinois</p>	SHEET NO. 3	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	6 SHEETS	290	(531-3.1,0305-302K)RS-5	COOK	314	248
		FED. ROAD DIST. NO. _		ILLINOIS		FED. AID PROJECT
					CONTRACT NO. 60138	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



BILL OF MATERIAL

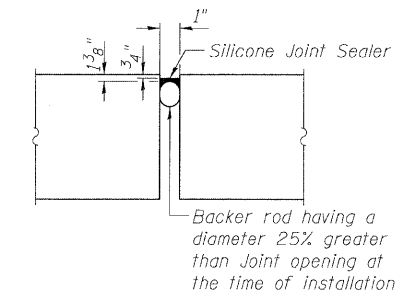
Item	Unit	Total
Protective Shield	Sq. Yd.	1135
Approach Slab Repair (Partial Depth)	Sq. Yd.	2.3
Deck Slab Repair (Full Depth, Type II)	Sq. Yd.	321.9
Deck Slab Repair (Partial)	Sq. Yd.	47.5
Silicone Joint Sealer, 2"	Foot	256



JOINT REPLACEMENT DETAIL

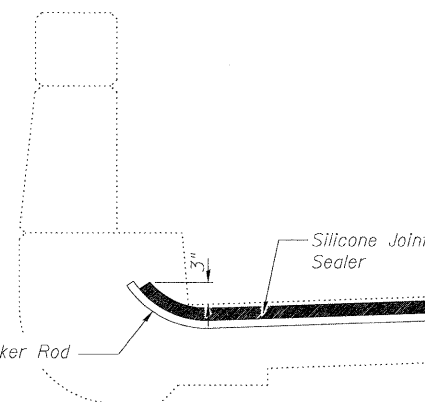
Dimensions at Rt. L's to Joint

Longitudinal Joint to be resealed. See Longitudinal Joint Detail.

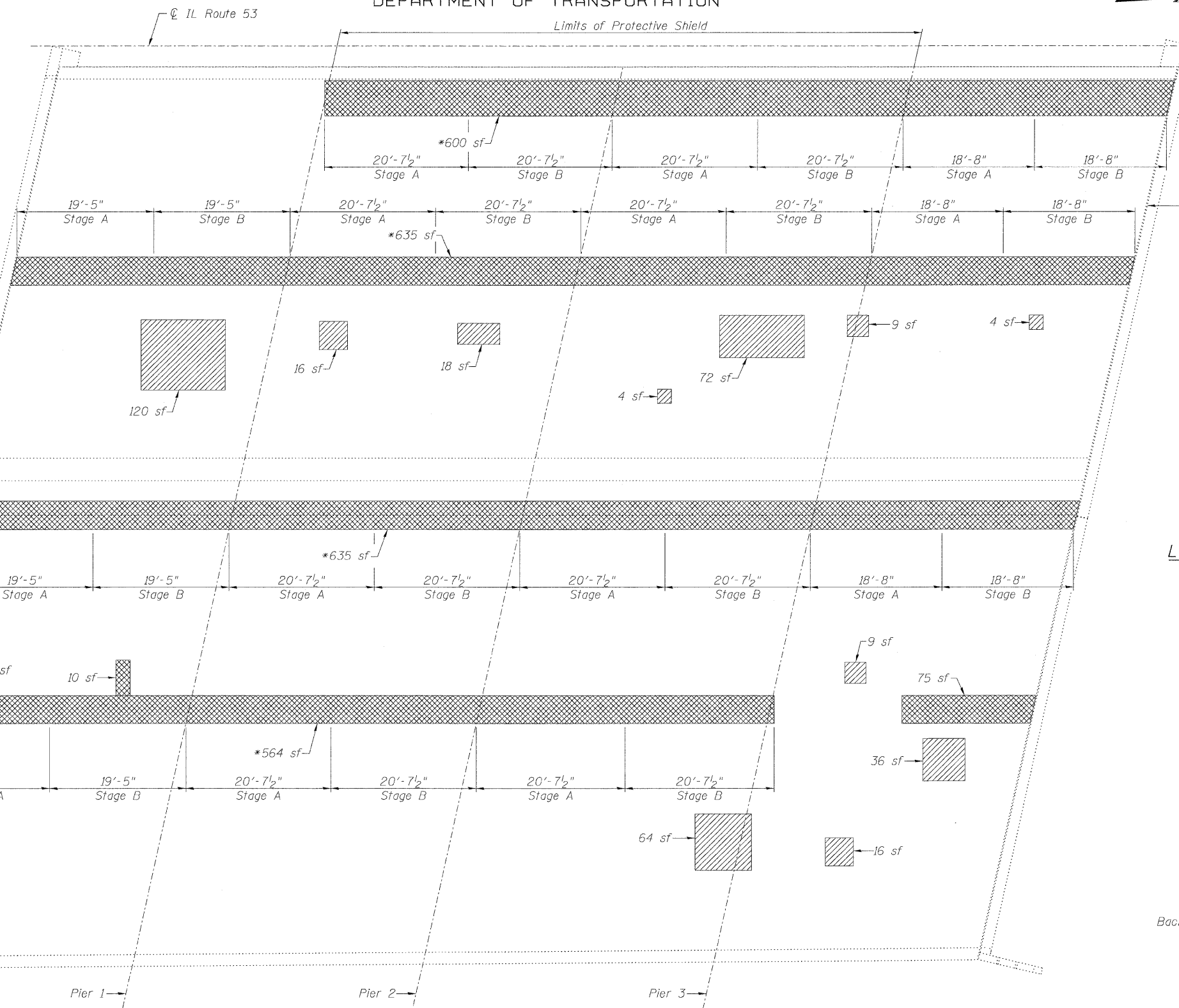


LONGITUDINAL JOINT DETAIL

Dimensions at Rt. L's to Joint



END OF SEAL TREATMENT



PLAN

LEGEND

- Deck Slab Repair (Full Depth, Type II)
- Deck Slab Repair (Partial)
- Approach Slab Repair (Partial Depth)
- sf Square Feet

*Perform Full depth repair in stages as shown in plan. Fast curing concrete mixes shall not be used for these patches. After new concrete is poured, work cannot begin in an adjacent section until both of the following requirements are met:
 1. At least 72 hours shall have elapsed from the end of the previous pour on either end.
 2. The new concrete on either end shall have obtained a modulus of rupture of 650 psi or a minimum compressive strength of 3,500 psi.

Lin Engineering, Ltd.
Consulting Engineers
Chatham, Illinois

Designed By: KMH
Checked By: MTH
Date: 12/2009

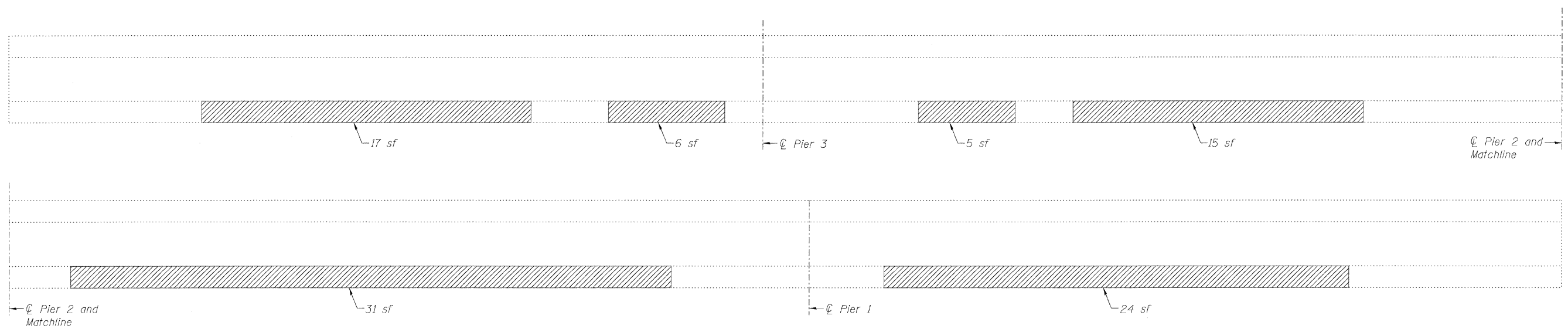
Drawn By: KMH
File: 016-0378.dgn

SHEET NO. 4
6 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	(531-3.1,0305-302)RS-5	COOK	314	249
FED. ROAD DIST. NO. _ ILLINOIS FED. AID PROJECT			CONTRACT NO. 60138	

**DECK SLAB REPAIR
STRUCTURE NO. 016-0378**

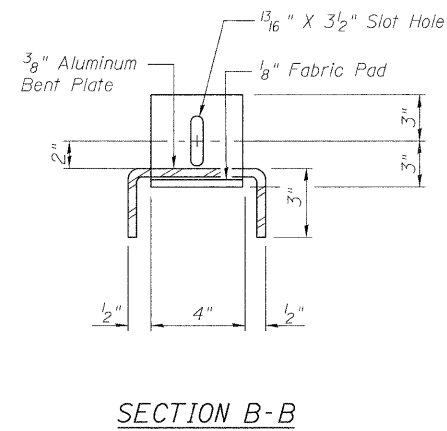
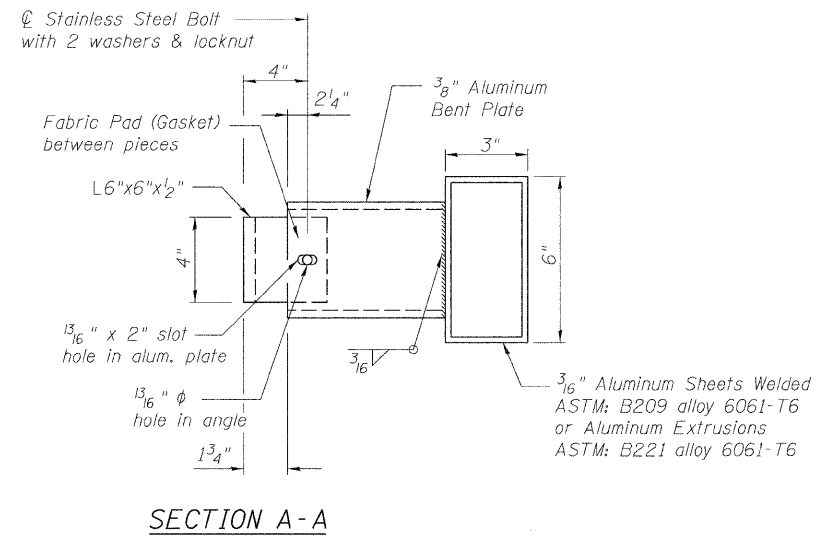
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



EAST PARAPET
(Inside Face Looking East)

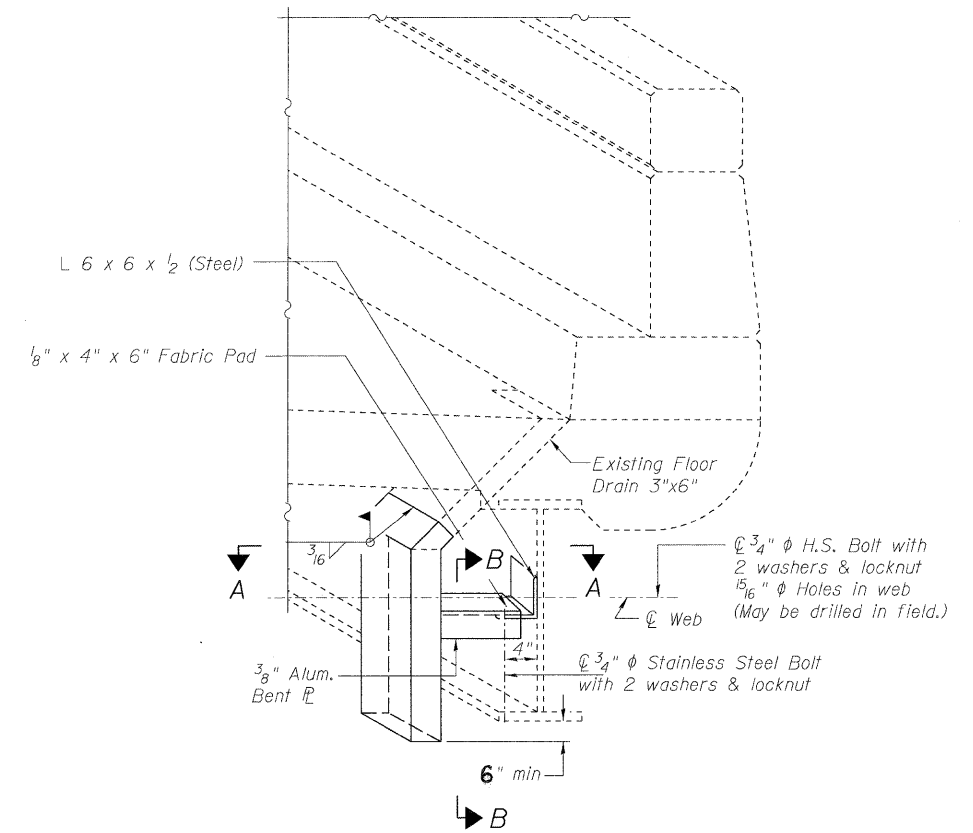
LEGEND

- Structural Repair of Concrete (Depth equal to or less than 5")
- sf Square Feet



DRAIN EXTENSION DETAILS
(24 required)

- Notes:
- All plates, angles, nuts, and washers, unless otherwise shown, shall be galvanized according to AASHTO M111 or M232 as applicable.



**PARAPET REPAIR AND
FLOOR DRAIN EXTENSION DETAILS**
STRUCTURE NO. 016-0378

BILL OF MATERIAL

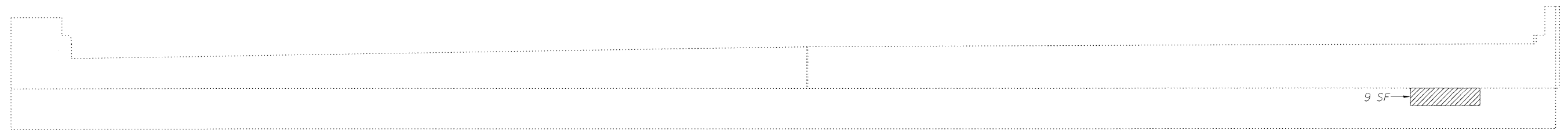
Item	Unit	Total
Floor Drain Extension	Each	24
Structural Repair of Concrete (Depth equal to or less than 5 in.)	Sq. Ft.	113

LIN ENGINEERING, LTD. Consulting Engineers Chattanooga, Illinois	SHEET NO. 5	F.A.I. RTE. 290	SECTION (531-3.1,0305-302K)RS-5	COUNTY COOK	TOTAL SHEETS 314	SHEET NO. 250
	6 SHEETS	FED. ROAD DIST. NO. _ ILLINOIS		CONTRACT NO. 60138		
Designed By: KHH Date: 12/2009	Checked By: MTH File: 016-0378.dgn	FED. AID PROJECT				

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



NORTH ABUTMENT PLAN




NORTH ABUTMENT ELEVATION
(Looking North)

Note:
Repair of the existing abutments shall include but may not be limited to the areas shown. The actual areas to be repaired will be determined by the Engineer at the time of construction.

BILL OF MATERIAL


Item	Unit	Total
Structural Repair of Concrete (Depth equal to or less than 5 in.)	Sq. Ft.	21

LEGEND

 Structural Repair of Concrete (Depth equal to or less than 5")

sf Square Feet

ABUTMENT REPAIR
STRUCTURE NO. 016-0378

 LIN ENGINEERING, LTD. Consulting Engineers Chatham, Illinois	SHEET NO. 6	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	6 SHEETS	290	(531-3.1,0305-302K)RS-5	COOK	314	251
Designed By: KHH Date: 12/2009		Checked By: MTH File: 016-0378.dgn		Drawn By: KHH		CONTRACT NO. 60138
FED. ROAD DIST. NO. _ ILLINOIS FED. AID PROJECT						

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

Existing Structure: S.N. 016-2133 built in 1962 as F.A. Route 61, Section 531-1-HB-5 at Station 119+77.27. Structure consists of four span continuous wide flange beam bridge with a 12°34'38" left ahead skew, 162'-0" back-to-back abutments, varying deck width of 130'-3⁷/₈" to 131'-4³/₈", multi-column piers, and pile bent abutments. In 1971, the deck was patched and a bituminous overlay was placed on the structure. In 1991, the expansion joints and parapets were reconstructed, along with deck patching and overlay replacement with microsilica concrete. The guardrail was also replaced with a concrete barrier. In 2000, the abutment bearings were replaced with elastomeric.

GENERAL NOTES

Plan dimension 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.

Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60. See Special Provisions.

See Roadway plans for maintenance of traffic details.

When existing lighting fixtures, conduits and/or other existing utilities are present that will interfere with installation of the protective shield, the contractor shall submit, for approval by the Engineer, details of how he/she proposes to adjust the protective shield to clear the existing lighting fixtures, conduits and utilities. The protective shield shall not diminish the existing level of lighting of the roadway beneath. The Contractor shall coordinate the installation with municipalities and/or utilities to insure protection of their facilities.

The protective shield shall not rest upon existing lighting fixtures, conduits or utilities. Any lighting fixtures, conduits or utilities damaged by the contractor's operations shall be replaced and repaired by the contractor at his/her expense.

INDEX OF SHEETS

1. General Plan and Elevation
2. Stage Construction Details
3. Temporary Concrete Barrier for Stage Construction
4. Deck Slab Repair
5. Parapet Repair and Floor Drain Extension Details
6. Abutment Repair
7. Pier 1 and 2 Repair
8. Pier 3 Repair

SCOPE OF WORK

1. Repair Deck Slab
2. Apply Concrete Sealer to top of deck surface and top and inside vertical face of parapets
3. Replace P.J.S. at Expansion Joint with Silicone Joint Sealer
4. Clean and Reseal Relief Joints
5. Extend Floor Drains
6. Repair Parapet Concrete
7. Repair Substructure Concrete

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Protective Shield	Sq. Yd.	1168		1168
Floor Drain Extension	Each	24		24
Concrete Sealer	Sq. Ft.	22533		22533
Silicone Joint Sealer, 2"	Foot	263		263
Structural Repair of Concrete (Depth equal to or less than 5 in.)	Sq. Ft.	33	114	147
Approach Slab Repair (Partial Depth)	Sq. Yd.	1.0		1.0
Deck Slab Repair (Partial)	Sq. Yd.	42.4		42.4
Deck Slab Repair (Full Depth, Type II)	Sq. Yd.	100.3		100.3
Clean and Reseal Relief Joint	Foot	280		280
Cleaning and Painting Exposed Rebar	Sq. Ft.	74		74

DESIGN SPECIFICATIONS

(New Construction)
2002 AASHTO "Standard Specifications for Highway Bridges"

DESIGN STRESSES

FIELD UNITS (New Const.)

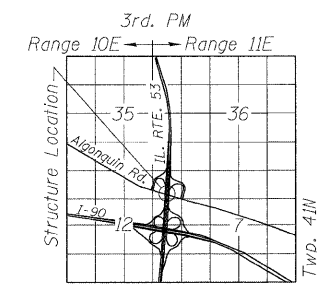
$f'_c = 3,500$ psi
 $f_y = 60,000$ psi (Reinforcement)

FIELD UNITS (Existing)

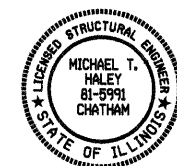
$f_c = 1,400$ psi (Superstructure & Substructure)
 $f_s = 20,000$ psi (Reinforcement & Structural Steel)

LOADING HS 20-44 & ALT.

(Original Construction)

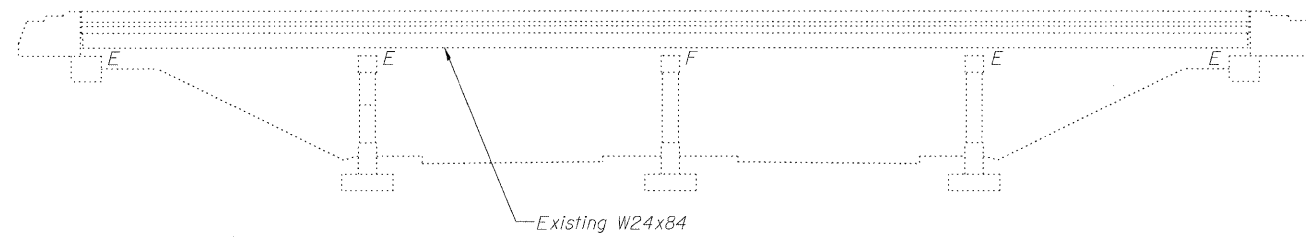


LOCATION SKETCH

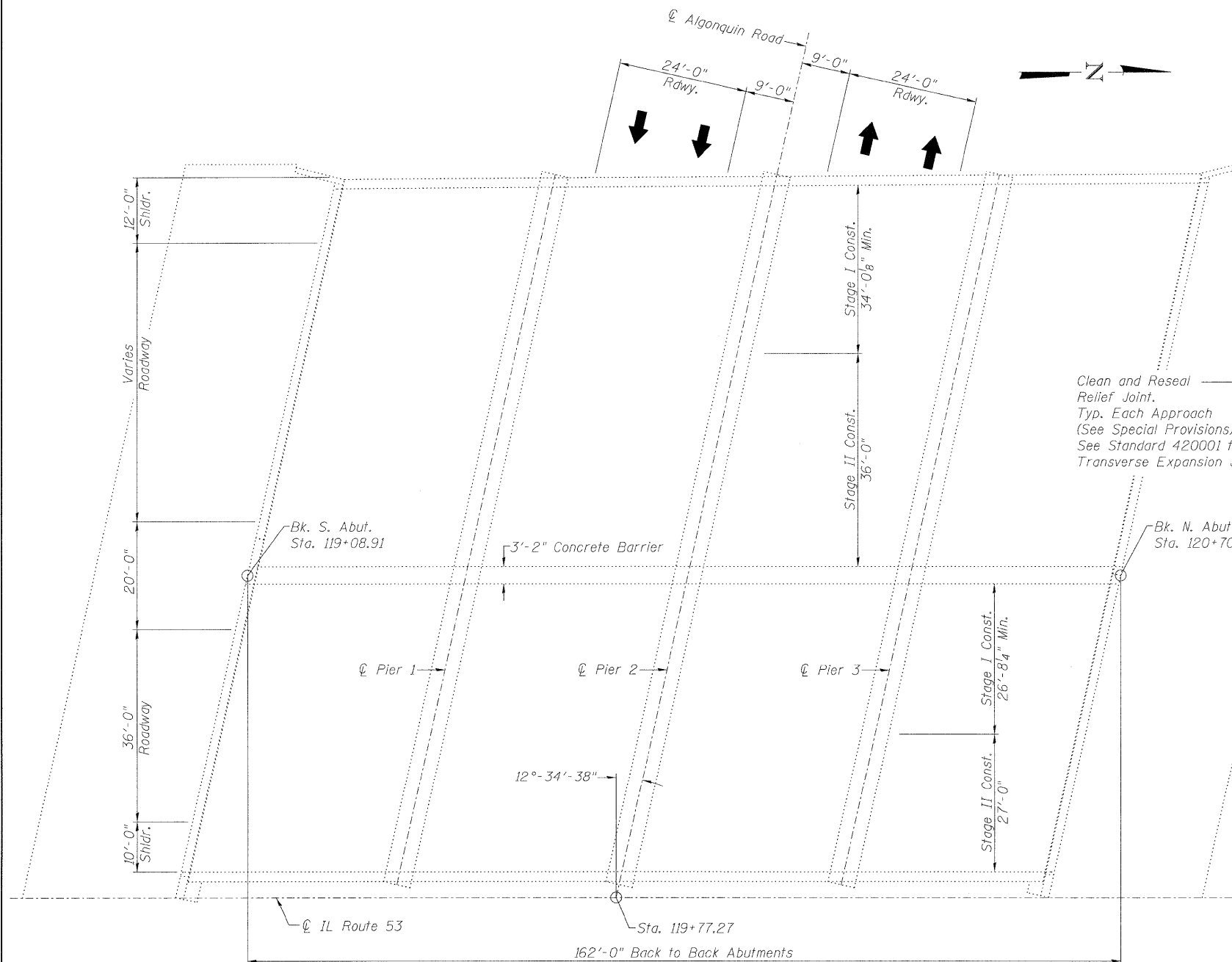


Michael J. Haley 2/8/10
Date
Michael T. Haley
Licensed Structural Engineer
State of Illinois No. 81-5991
Expires 11/30/2010

GENERAL PLAN AND ELEVATION
SB IL ROUTE 53 OVER ALGONQUIN ROAD
F.A.I. 290 SEC (531-3.1,0305-302K)RS-5
COOK COUNTY
STATION 119+77.27
STRUCTURE NO. 016-2133



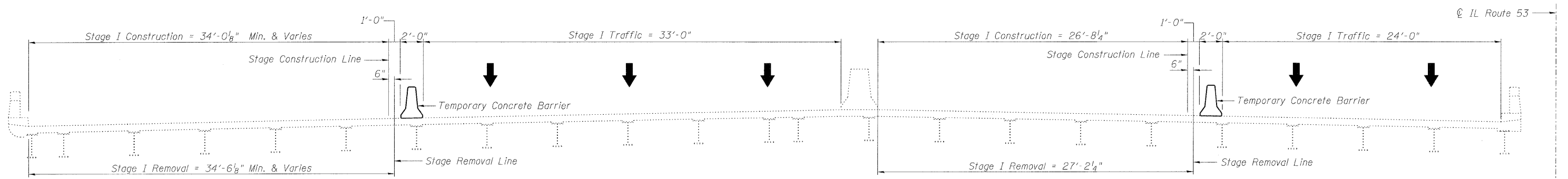
ELEVATION



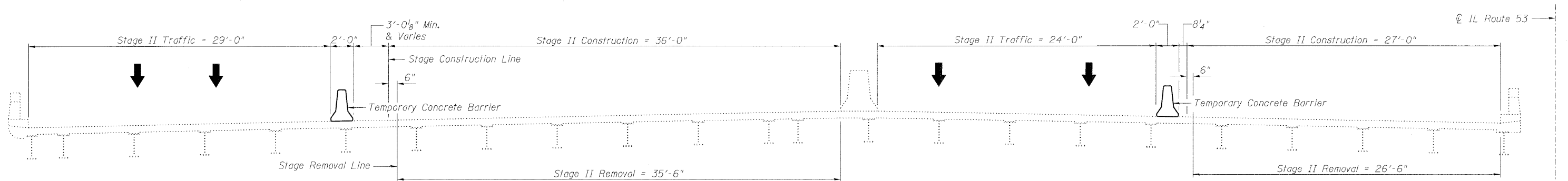
PLAN

<p>LIN ENGINEERING, LTD. Consulting Engineers Chatham, Illinois</p> <p>Designed By: KHH Checked By: MTH Drawn By: KHH Date: 12/2009 File: 016-2133.dgn</p>	SHEET NO. 1	F.A.I. RTE. 290	SECTION (531-3.1,0305-302K)RS-5	COUNTY COOK	TOTAL SHEETS 314	SHEET NO. 252
	8 SHEETS	CONTRACT NO. 60138		FED. ROAD DIST. NO. _ ILLINOIS FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION




STAGE I REMOVAL & CONSTRUCTION
(Looking North)



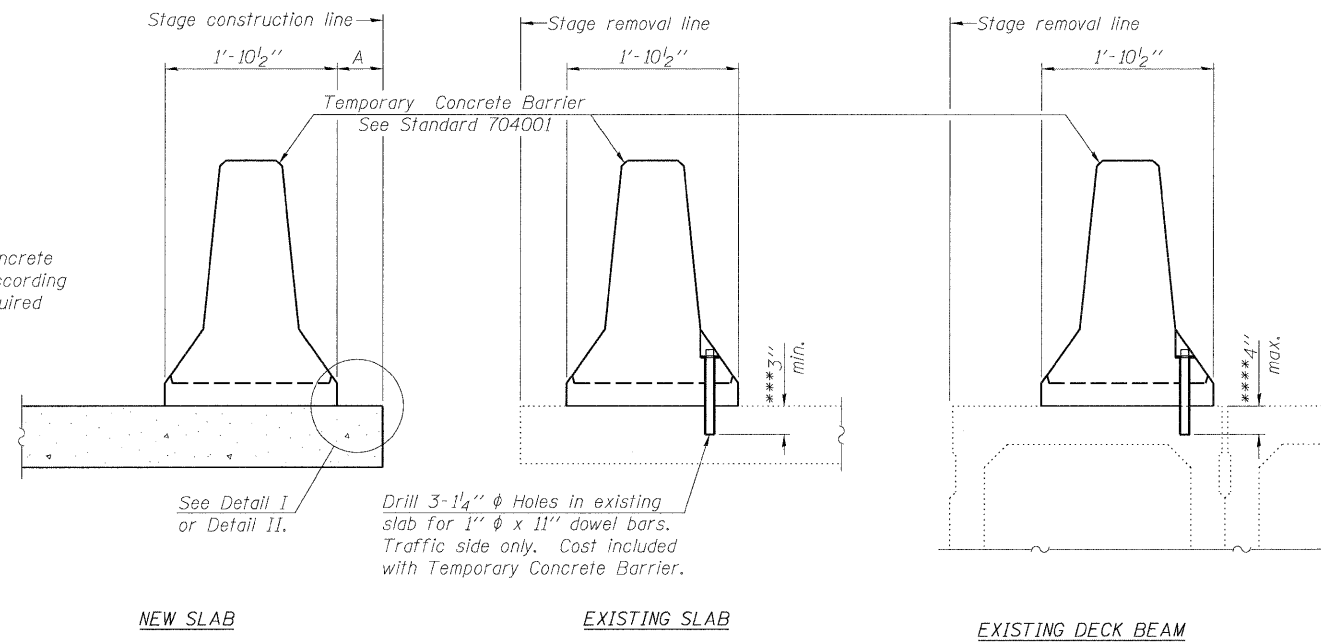
STAGE II REMOVAL & CONSTRUCTION
(Looking North)

STAGE CONSTRUCTION DETAILS
STRUCTURE NO. 016-2133

 LIN ENGINEERING, LTD. Consulting Engineers Chatham, Illinois	SHEET NO. 2 8 SHEETS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		290	(531-3.1,0305-302K)RS-5	COOK	314	253
Designed By: K181 Date: 12/2009		Checked By: W111 File: 016-2133.dgn		Drawn By: K181		CONTRACT NO. 60138
FED. ROAD DIST. NO. _ ILLINOIS FED. AID PROJECT						

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

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



Drill 3-3/4" ϕ Holes in existing slab for 1" ϕ x 11" dowel bars. Traffic side only. Cost included with Temporary Concrete Barrier.

NOTES

Detail I - With Bar Splicer or Couplers:
Connect one (1) 1"x7"x10" steel \bar{L} to the top layer of couplers with 2-5/8" ϕ bolts screwed to coupler at approximate \bar{C} of each barrier panel.

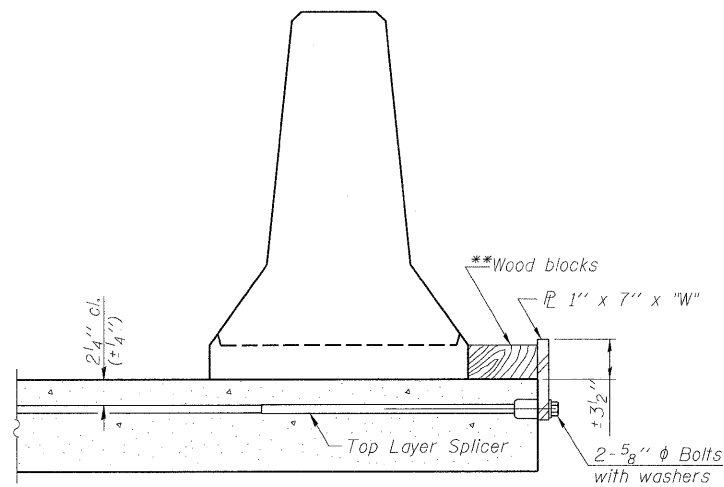
Detail II - With Extended Reinforcement Bars:
Connect one (1) 1"x7"x10" steel \bar{L} to the concrete slab or concrete wearing surface with 2-5/8" ϕ Expansion Anchors or cast in place inserts spaced between the top layer of reinforcement at approximate \bar{C} of each barrier panel.

Cost of anchorage is included with Temporary Concrete Barrier. The 1" x 7" x 10" plate shall not be removed until stage II construction forms and all reinforcement bars are in place and the concrete is ready to be placed.

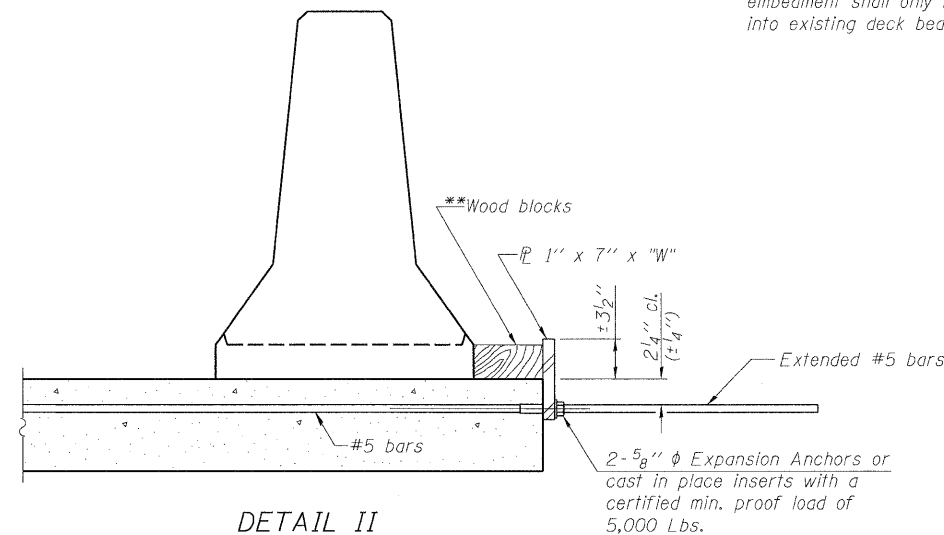
SECTIONS THRU SLAB OR DECK BEAM

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

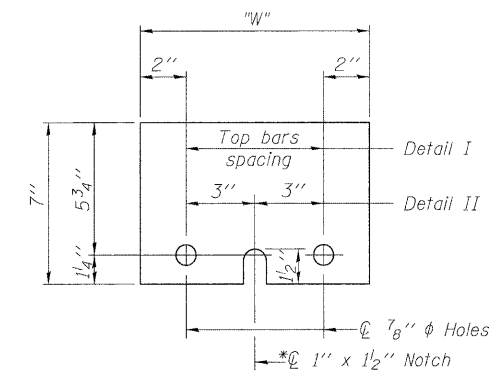
**** If existing deck beam is to remain in place after stage construction, embedment shall only be into wearing surface and not into existing deck beam concrete.



DETAIL I



DETAIL II



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

* Required only with Detail II

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

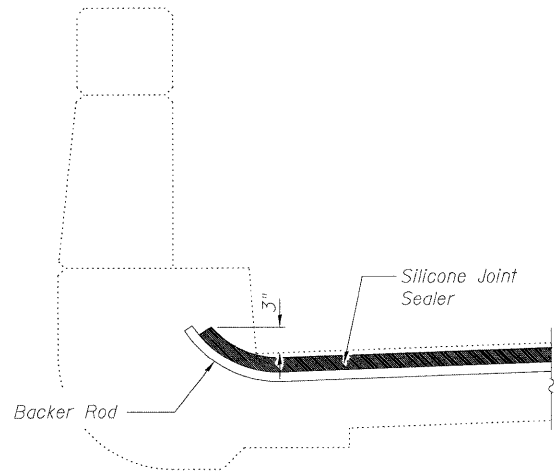
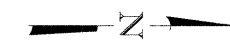
"W" = Top bars spacing + 4"

TEMPORARY CONCRETE BARRIER
FOR STAGE CONSTRUCTION
STRUCTURE NO. 016-2133

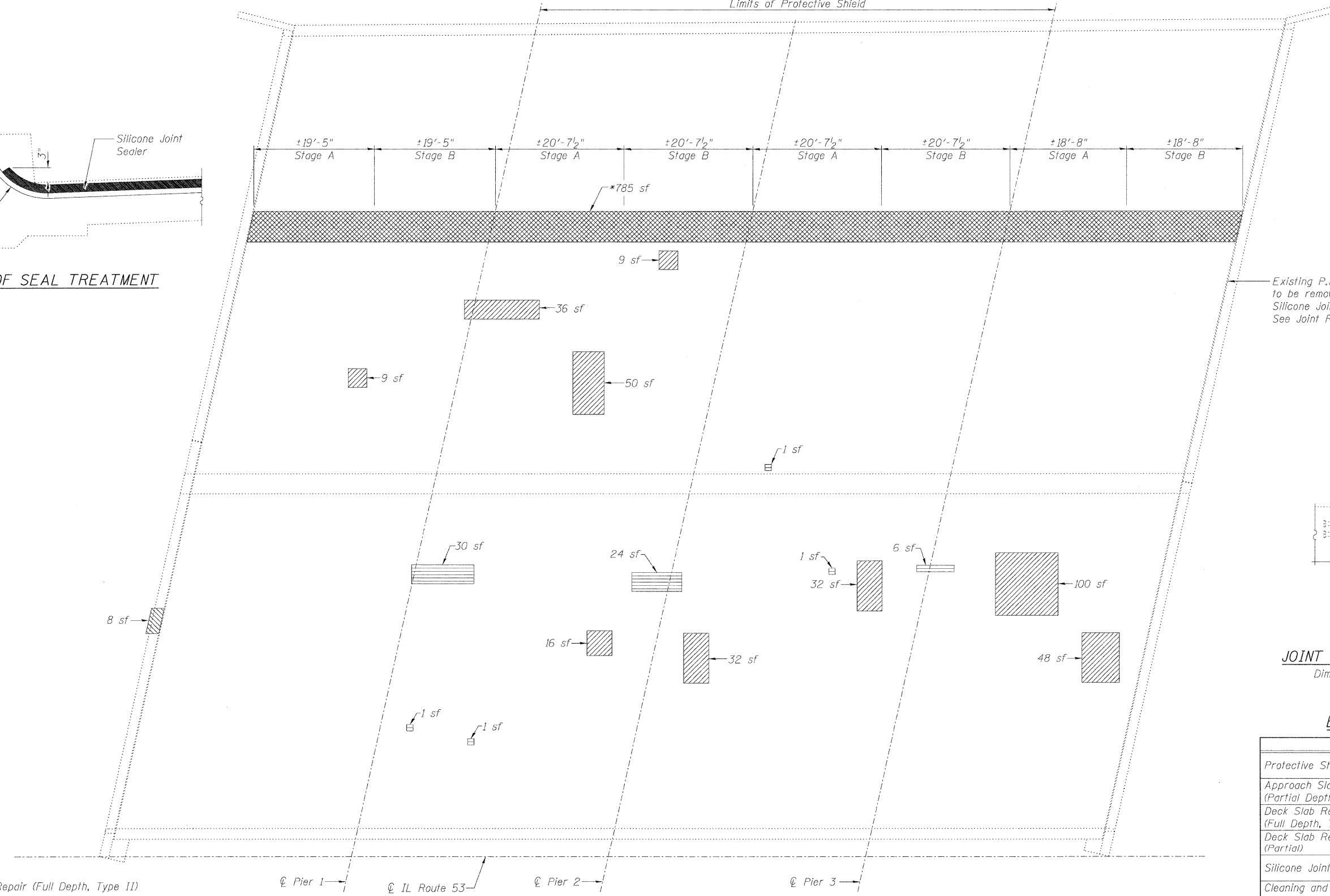
	SHEET NO. 3	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
	8 SHEETS	290	(531-3.1,0305-302K)RS-5	COOK	314	254	
Designed By: KHH Checked By: MTH Drawn By: KHH Date: 12/2009 File: 016-2133.dgn		CONTRACT NO. 60138				FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

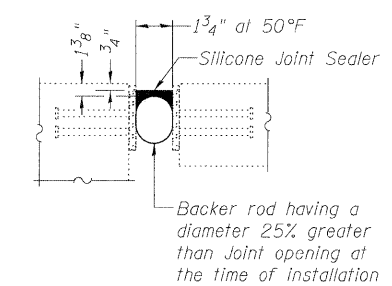
Limits of Protective Shield



END OF SEAL TREATMENT



Existing P.J.S. at Expansion Joint to be removed and replaced with Silicone Joint Sealer, Each End. See Joint Replacement Detail.



JOINT REPLACEMENT DETAIL

Dimensions at Rt. L's to Joint

LEGEND

- Deck Slab Repair (Full Depth, Type II)
- Deck Slab Repair (Partial)
- Approach Slab Repair (Partial Depth)
- Cleaning and Painting Exposed Rebar
- sf Square Feet

PLAN

*Perform Full depth repair in stages as shown in plan. Fast curing concrete mixes shall not be used for these patches. After new concrete is poured, work cannot begin in an adjacent section until both of the following requirements are met:

1. At least 72 hours shall have elapsed from the end of the previous pour on either end.
2. The new concrete on either end shall have obtained a modulus of rupture of 650 psi or a minimum compressive strength of 3,500 psi.

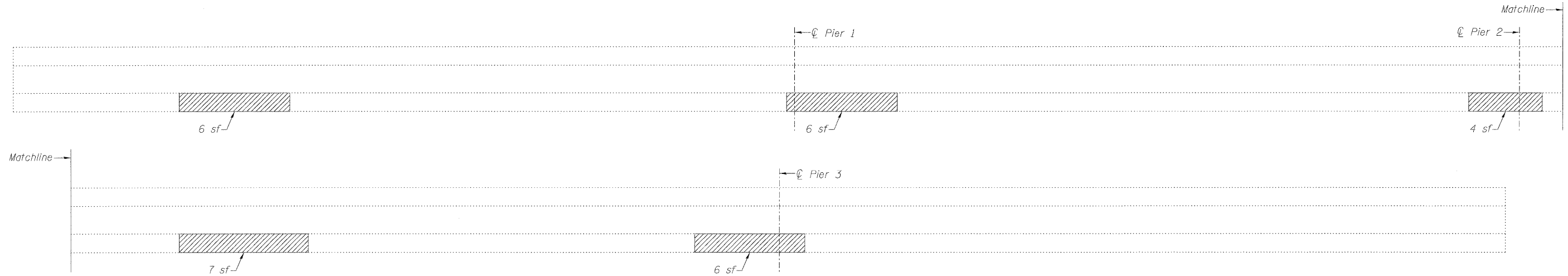
BILL OF MATERIAL

Item	Unit	Total
Protective Shield	Sq. Yd.	1168
Approach Slab Repair (Partial Depth)	Sq. Yd.	1.0
Deck Slab Repair (Full Depth, Type II)	Sq. Yd.	100.3
Deck Slab Repair (Partial)	Sq. Yd.	42.4
Silicone Joint Sealer, 2"	Foot	263
Cleaning and Painting Exposed Rebar	Sq. Ft.	74

DECK SLAB REPAIR
STRUCTURE NO. 016-2133

<p>LIN ENGINEERING, LTD. Consulting Engineers Chatham, Illinois</p>	SHEET NO. 4	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
	8 SHEETS	290	(531-3.1,0305-302K)RS-5	COOK	314	255	
		CONTRACT NO. 60138					
		FED. ROAD DIST. NO. - ILLINOIS					FED. AID PROJECT

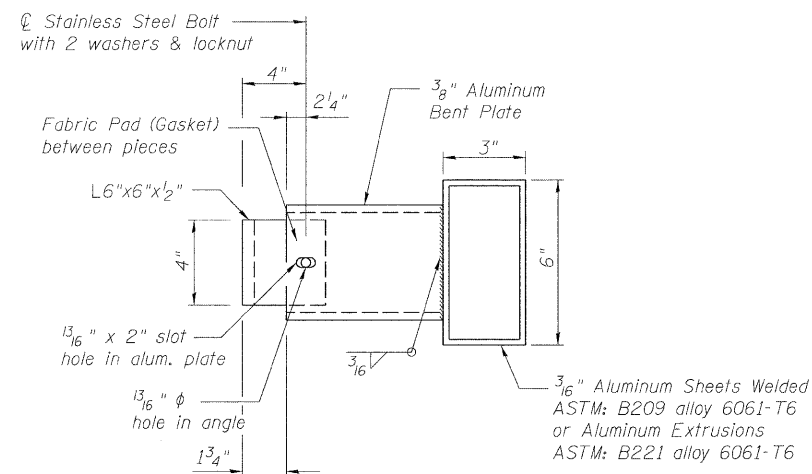
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



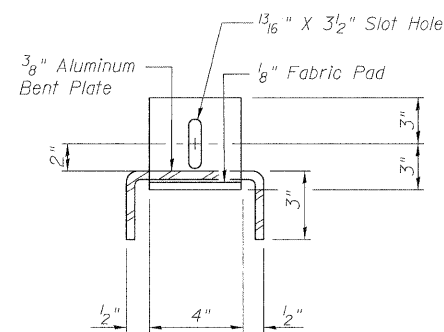
WEST PARAPET
(Inside Face Looking West)

LEGEND

- Structural Repair of Concrete (Depth equal to or less than 5")
- sf Square Feet



SECTION A-A



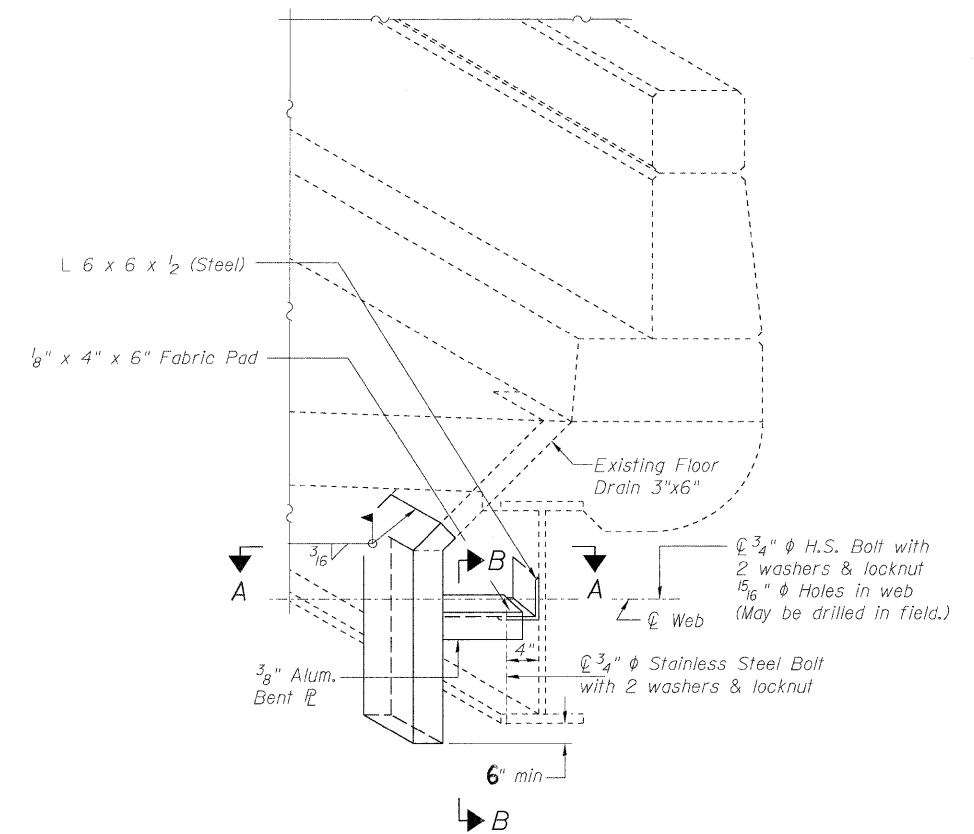
SECTION B-B

Notes:

1. All plates, angles, nuts, and washers, unless otherwise shown, shall be galvanized according to AASHTO M111 or M232 as applicable.

DRAIN EXTENSION DETAILS

(24 required)



DRAIN EXTENSION

(24 Required)

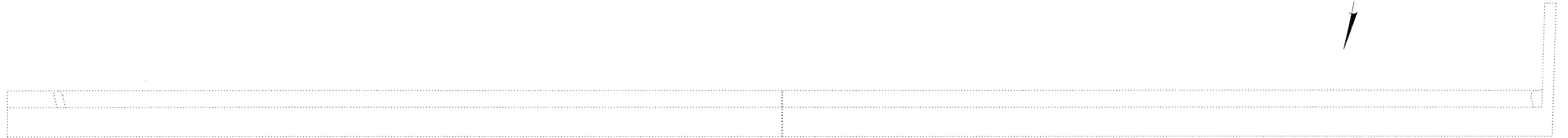
BILL OF MATERIAL

Item	Unit	Total
Floor Drain Extension	Each	24
Structural Repair of Concrete (Depth less than or equal to 5 in.)	Sq. Ft.	33

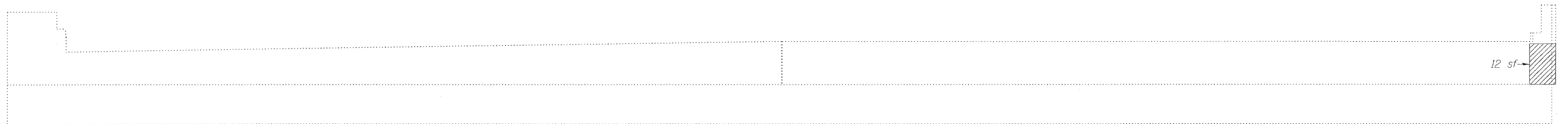
**PARAPET REPAIR AND
FLOOR DRAIN EXTENSION DETAILS
STRUCTURE NO. 016-2133**

LIN ENGINEERING, LTD. Consulting Engineers Chatham, Illinois	SHEET NO. 5	F.A.I. RTE. 290	SECTION (531-3.1,0305-302K)RS-5	COUNTY COOK	TOTAL SHEETS 314	SHEET NO. 254
	8 SHEETS	FED. ROAD DIST. NO. _ ILLINOIS		CONTRACT NO. 60I38		
Designed By: KWH Date: 12/2/09		Checked By: MTH File: 016-2133.dgn		FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



SOUTH ABUTMENT PLAN



SOUTH ABUTMENT ELEVATION
(Looking South)

Note:
Repair of the existing abutment shall include but may not be limited to the areas shown. The actual areas to be repaired will be determined by the Engineer at the time of construction.

BILL OF MATERIAL

Item	Unit	Total
Structural Repair of Concrete (Depth equal to or less than 5 in.)	Sq. Ft.	14

LEGEND

- Structural Repair of Concrete (Depth equal to or less than 5")
- sf Square Feet

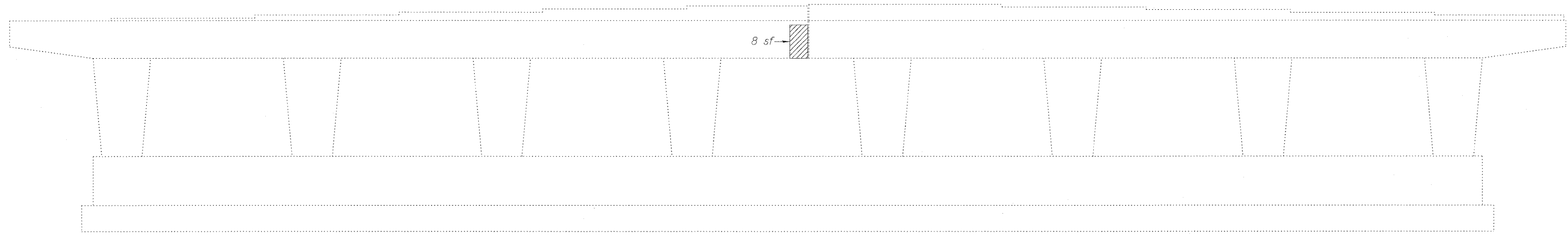
ABUTMENT REPAIR
STRUCTURE NO. 016-2133

 LIN ENGINEERING, LTD. Consulting Engineers Chatham, Illinois	SHEET NO. 6	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
	8 SHEETS	290	(531-3.1,0305-302K)RS-5	COOK	314	257	
<small>Designed By: KHH Checked By: MTH Drawn By: KHH</small> <small>Date: 12/29/98 File: 06-2133.dgn</small>		FED. ROAD DIST. NO. _ ILLINOIS FED. AID PROJECT				CONTRACT NO. 60138	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



PIER 1
(Looking North)



PIER 2
(Looking North)

Note:
Repair of the existing piers shall include but may not be limited to the areas shown. The actual areas to be repaired will be determined by the Engineer at the time of construction.

BILL OF MATERIAL

Item	Unit	Total
Structural Repair of Concrete (Depth equal to or less than 5 in.)	Sq. Ft.	58

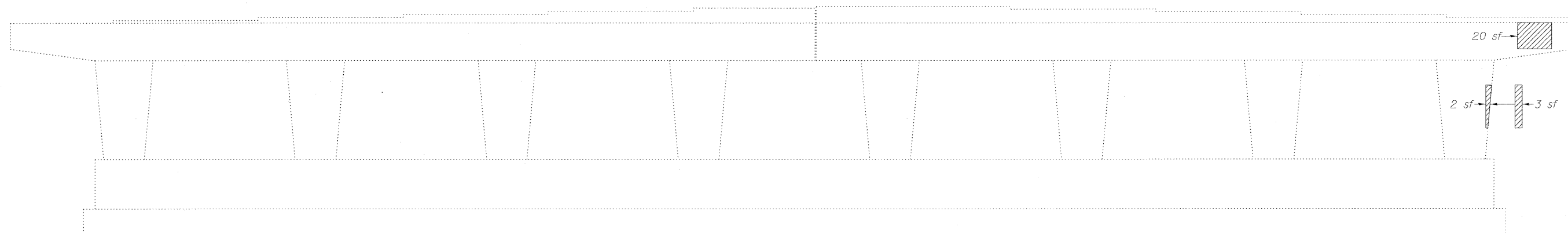
LEGEND

- Structural Repair of Concrete (Depth equal to or less than 5")
- sf Square Feet

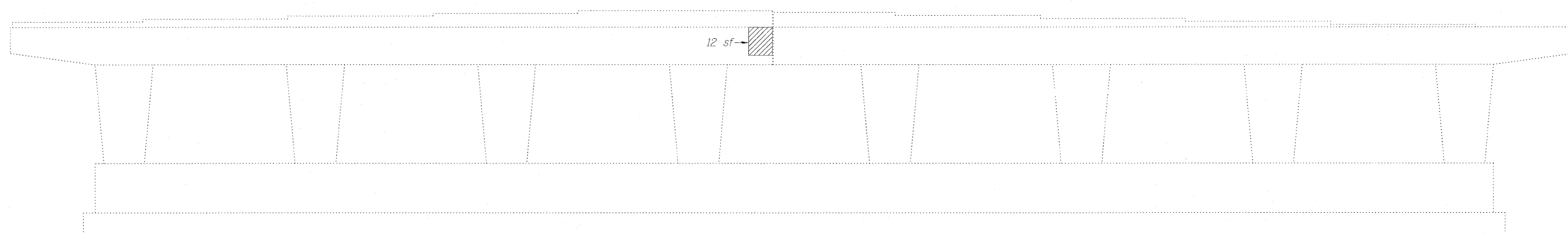
PIER 1 AND 2 REPAIR
STRUCTURE NO. 016-2133

 LIN ENGINEERING, LTD. Consulting Engineers Chatham, Illinois	SHEET NO. 7	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
	8 SHEETS	290	(531-3.1,0305-302K)RS-5	COOK	314	258	
Designed By: KHH Checked By: MTH Drawn By: KHH Date: 12/2/09 File: 06-2133.dgn		FED. ROAD DIST. NO. _ ILLINOIS FED. AID PROJECT				CONTRACT NO. 60138	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



PIER 3
(Looking South)



PIER 3
(Looking North)

Note:
Repair of the existing pier shall include but may not be limited to the areas shown. The actual areas to be repaired will be determined by the Engineer at the time of construction.

BILL OF MATERIAL

Item	Unit	Total
Structural Repair of Concrete (Depth equal to or less than 5 in.)	Sq. Ft.	42

LEGEND

- Structural Repair of Concrete (Depth equal to or less than 5")
- sf Square Feet

PIER 3 REPAIR
STRUCTURE NO. 016-2133

 LIN ENGINEERING, LTD. Consulting Engineers Chatham, Illinois	SHEET NO. 8		F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	8 SHEETS		290	(531-3.1,0305-302K)RS-5	COOK	314	259
Designed By: K191 Date: 12/2/09		Checked By: WTH File: 016-2133.dgn	FED. ROAD DIST. NO. _		ILLINOIS	FED. AID PROJECT	
						CONTRACT NO. 60138	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

Existing Structure: S.N. 016-0982 built in 1969 as F.A.I. Route 90, Section 0404-313-HB at Station 561+70.00. Structure consists of a three span steel plate girder bridge with 238'-4" back-to-back abutments, 74'-13/4" out-to-out deck width, multi-column piers and stub abutments. In 1989, expansion joints replaced, backwall repairs, and approaches rebuilt. In 1995, overlay replacement, expansion joints replaced, deck slab repairs, pin and connection replacement, and substructure repairs. In 2002, expansion joints replaced, pin and connection replacement, superstructure and substructure widening. In 2003, expansion joints replaced, superstructure replacement, substructure widening, slopewall replacement, and substructure repairs.

GENERAL NOTES

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.

See Roadway plans for maintenance of traffic.

INDEX OF SHEETS

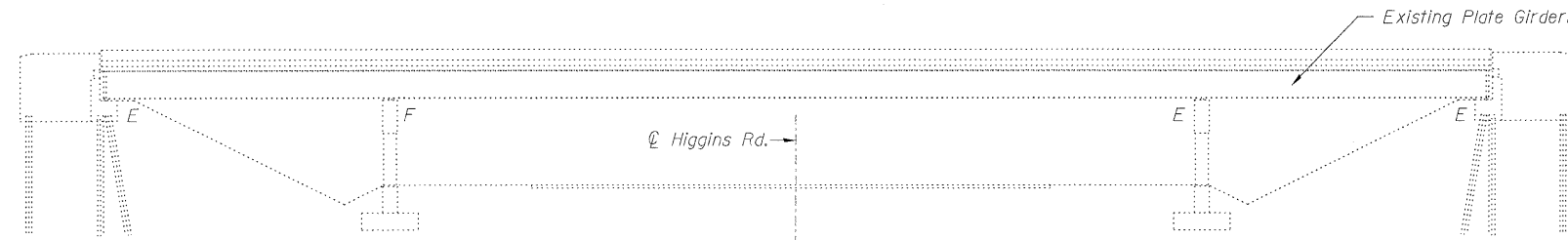
1. General Plan and Elevation
2. Repair Details

SCOPE OF WORK

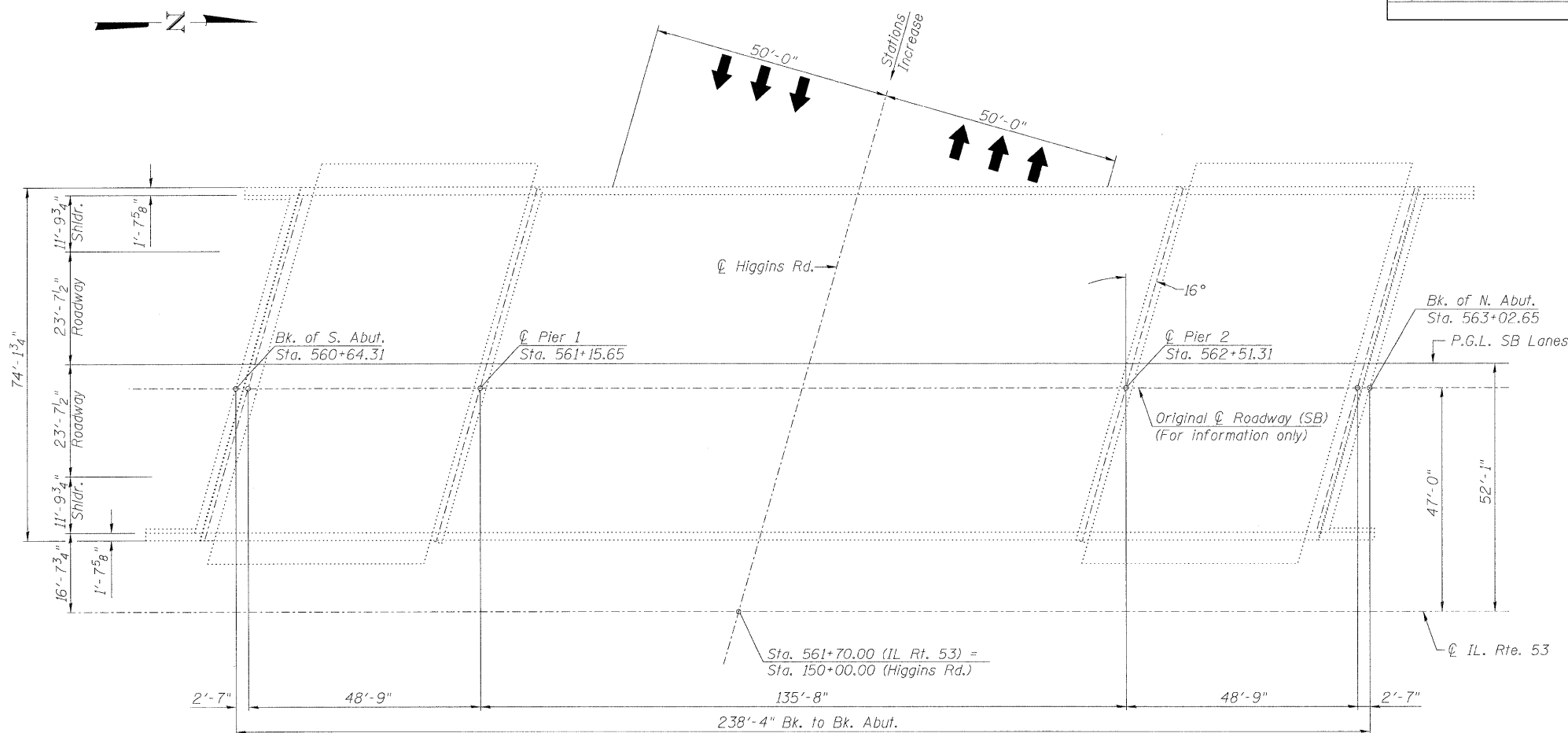
1. Replace portion of expansion joint seal at north abutment.
2. Apply Concrete Sealer to top of deck surface and top and inside vertical face of parapets.

TOTAL BILL OF MATERIAL

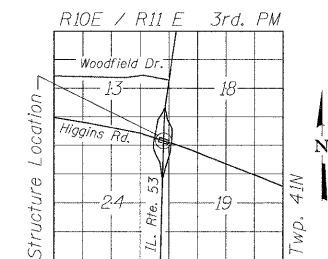
Item	Unit	Total
Concrete Sealer	Sq. Ft.	18364
Silicone Joint Sealer, 2 1/2"	Foot	40
Polymer Concrete	Cu. Ft.	2.2



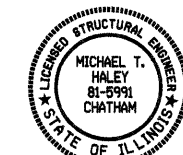
ELEVATION



PLAN



LOCATION SKETCH

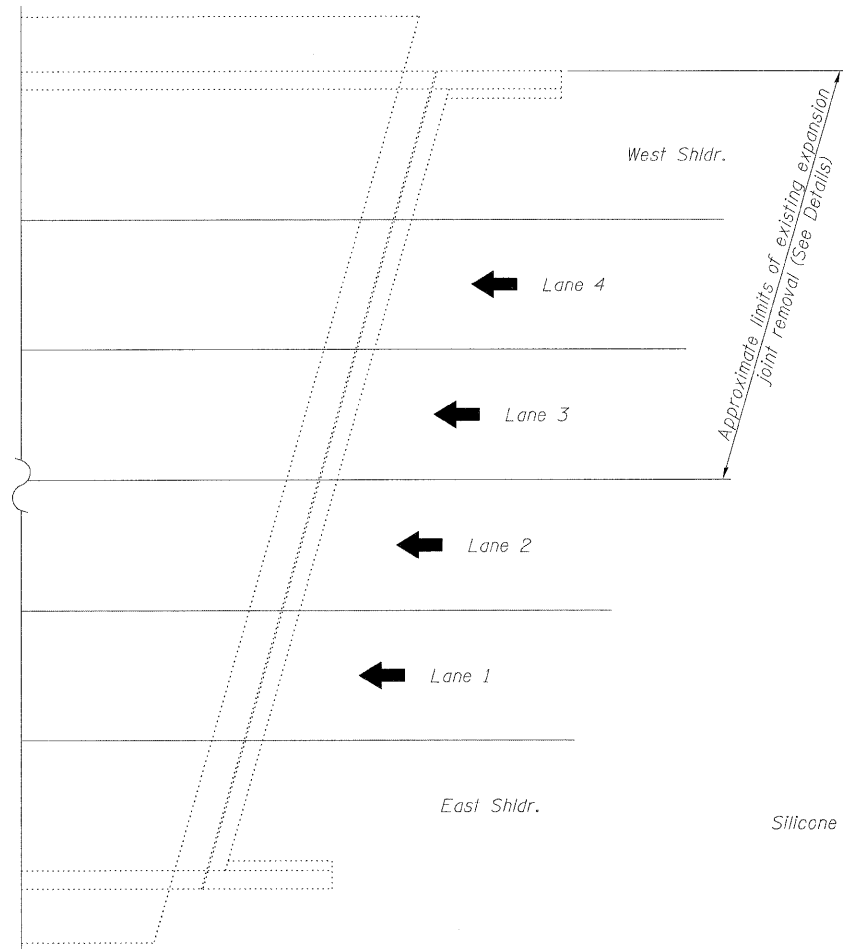
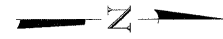


Michael J. Haley 2/8/10
 Michael T. Haley Date
 Licensed Structural Engineer
 State of Illinois No. 81-5991
 Expires 11/30/2010

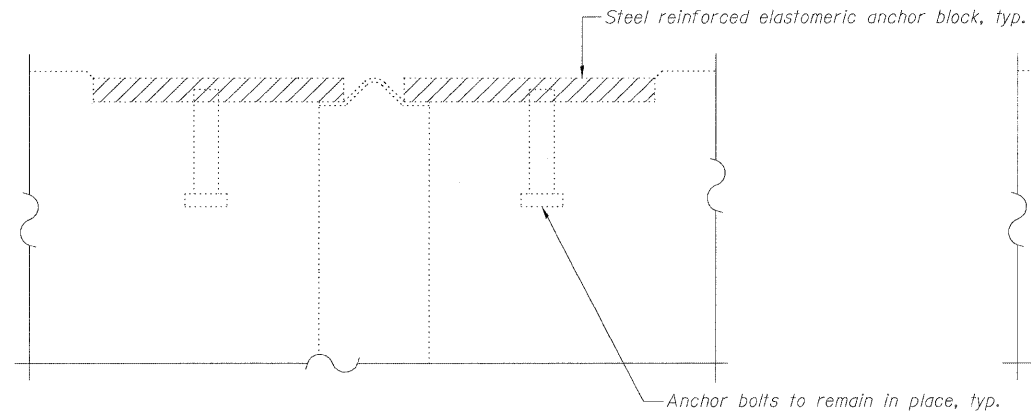
GENERAL PLAN AND ELEVATION
 SB IL ROUTE 53 OVER HIGGINS RD.
 F.A.I. 290 SEC (531-3.1,0305-302K)RS-5
 COOK COUNTY
 STATION 561+70.00
 STRUCTURE NO. 016-0982

LIN ENGINEERING, LTD. Consulting Engineers Chatham, Illinois	SHEET NO. 1	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
	2 SHEETS	290	(531-3.1,0305-302K)RS-5	COOK	314	261	
		CONTRACT NO. 60138					
Designed By: ADB Date: 12/2009		Checked By: MTH File: 016-0982.dgn		FED. ROAD DIST. NO. _ ILLINOIS		FED. AID PROJECT	

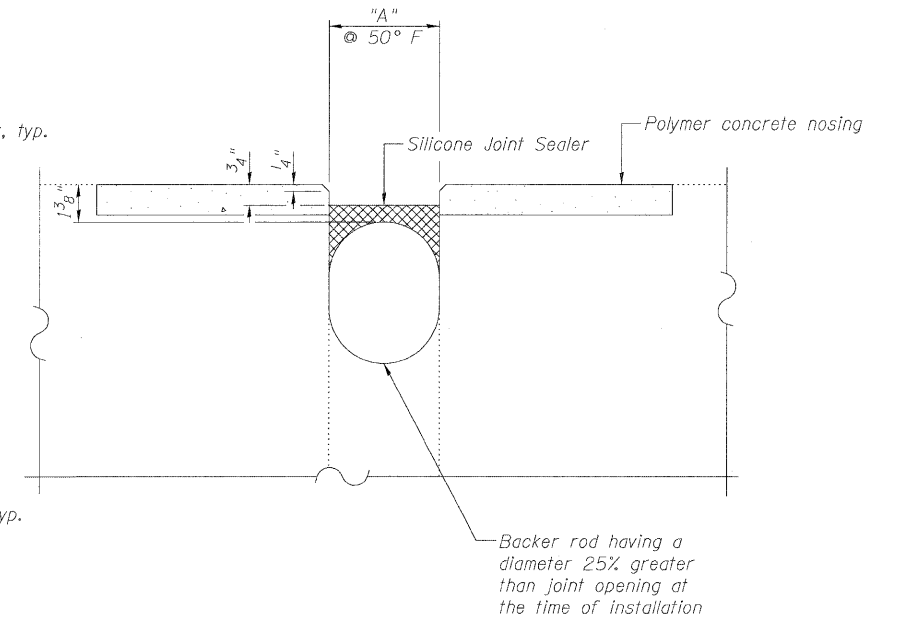
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



NORTH ABUTMENT PLAN



EXISTING JOINT
Hatched areas to be removed (See Plan).

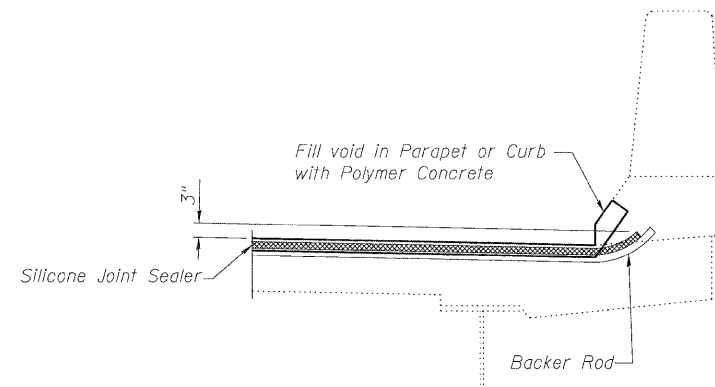


SILICONE JOINT SEALER DETAIL
(Horizontal dimensions at right angles)

Location	"A"	Length (ft.)
North Abutment	2 1/2"	40

Notes:

Cost of existing joint removal is included in the cost of Silicone Joint Sealer.



TYPICAL END OF SEAL TREATMENT

REPAIR DETAILS
STRUCTURE NO. 016-0982

<p>LIN ENGINEERING, LTD. Consulting Engineers Chatham, Illinois</p>	SHEET NO. 2	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	2 SHEETS	290	(531-3.1,0305-302K)RS-5	COOK	314	262
		CONTRACT NO. 60138				
		FED. ROAD DIST. NO. _ ILLINOIS FED. AID PROJECT				

Designed By: ADB
Checked By: MTH
Date: 12/2009

Drawn By: ADB
File: 016-0982.dgn

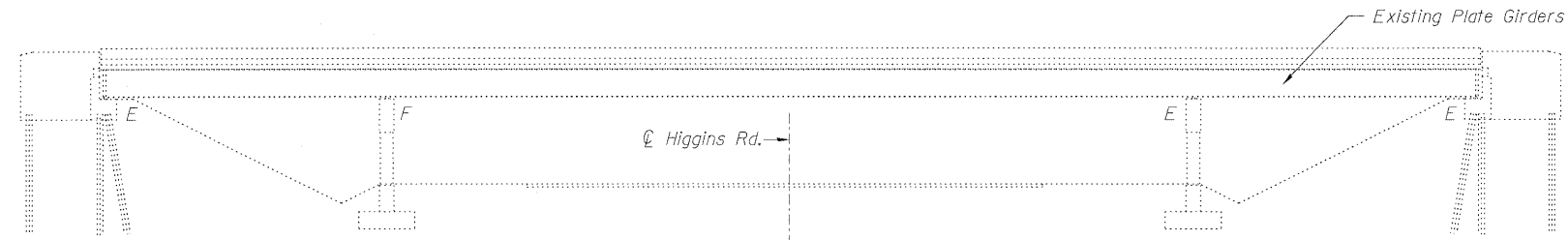
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

Existing Structure: S.N. 016-0983 built in 1969 as F.A.I. Route 90, Section 0404-313-HB at Station 561+70.00. Structure consists of a three span steel plate girder bridge with 238'-4" back-to-back abutments, 74'-1 3/4" out-to-out deck width, multi-column piers and stub abutments. In 1989, expansion joints replaced, backwall repairs, and approaches rebuilt. In 1995, overlay replacement, expansion joints replaced, deck slab repairs, pin and connection replacement, and substructure repairs. In 2003, superstructure replacement, substructure widening, slopewall replacement, and substructure repairs.

GENERAL NOTES

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.

See Roadway plans for maintenance of traffic.



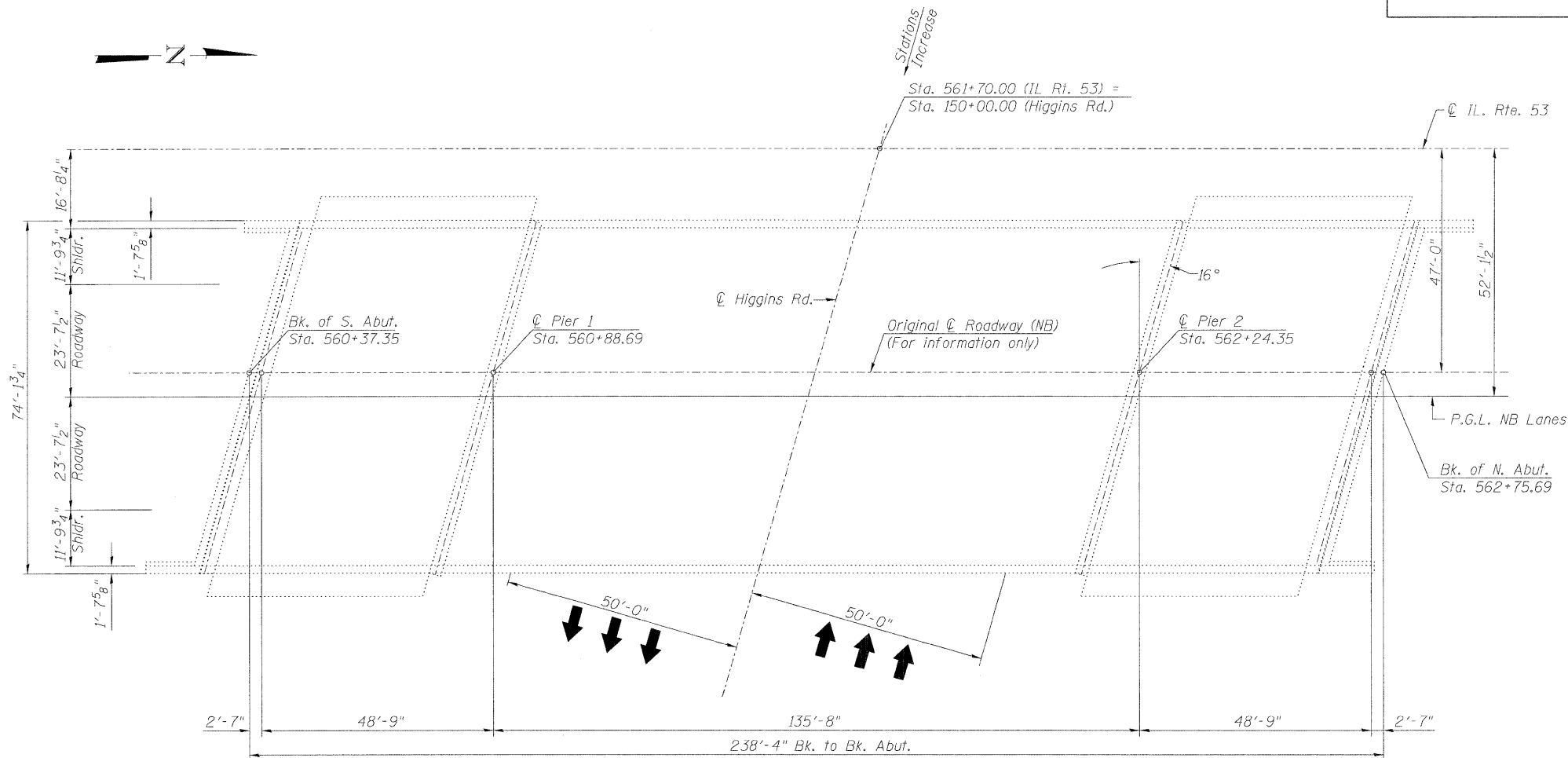
ELEVATION

SCOPE OF WORK

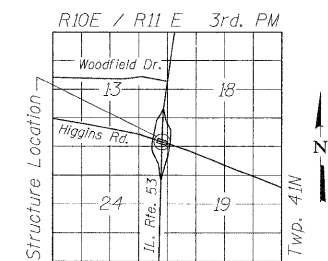
Apply Concrete Sealer to top of deck surface and top and inside vertical face of parapets.

TOTAL BILL OF MATERIAL

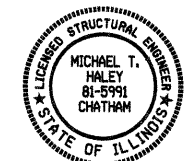
Item	Unit	Total
Concrete Sealer	Sq. Ft.	18364



PLAN



LOCATION SKETCH



Michael J. Haley 2/8/10
Date
Michael T. Haley
Licensed Structural Engineer
State of Illinois No. 81-5991
Expires 11/30/2010

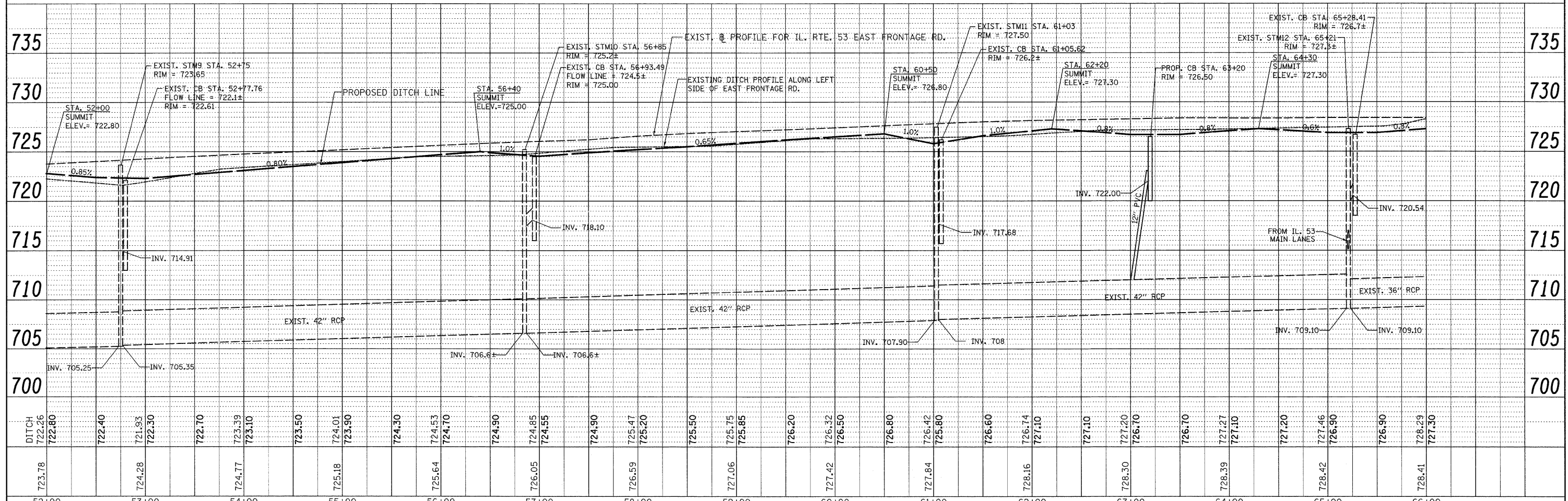
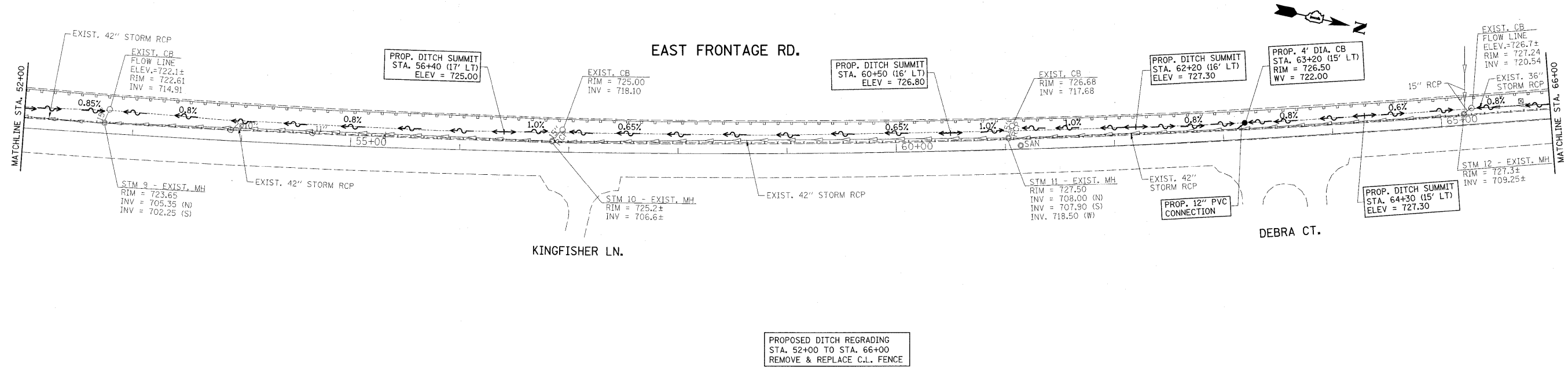
GENERAL PLAN AND ELEVATION
NB IL ROUTE 53 OVER HIGGINS RD.
F.A.I. 290 SEC (531-3.1,0305-302K)RS-5
COOK COUNTY
STATION 561+70.00
STRUCTURE NO. 016-0983

<p>LIN ENGINEERING, LTD. Consulting Engineers Chatham, Illinois</p>	SHEET NO. 1	F.A.I. RTE. 290	SECTION (531-3.1,0305-302K)RS-5	COUNTY COOK	TOTAL SHEETS 314	SHEET NO. 263
	1 SHEETS	CONTRACT NO. 60138		FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT		

Designed By: ADB
Checked By: MTH
Date: 12/2009
File: 016-0983.dgn

PLAN	SURVEYED	DATE
	PLOTTED	
	CHECKED	
	BY	
	NO.	
	FILE NAME	

PROFILE	SURVEYED	DATE
	PLOTTED	
	CHECKED	
	BY	
	NO.	
	FILE NAME	

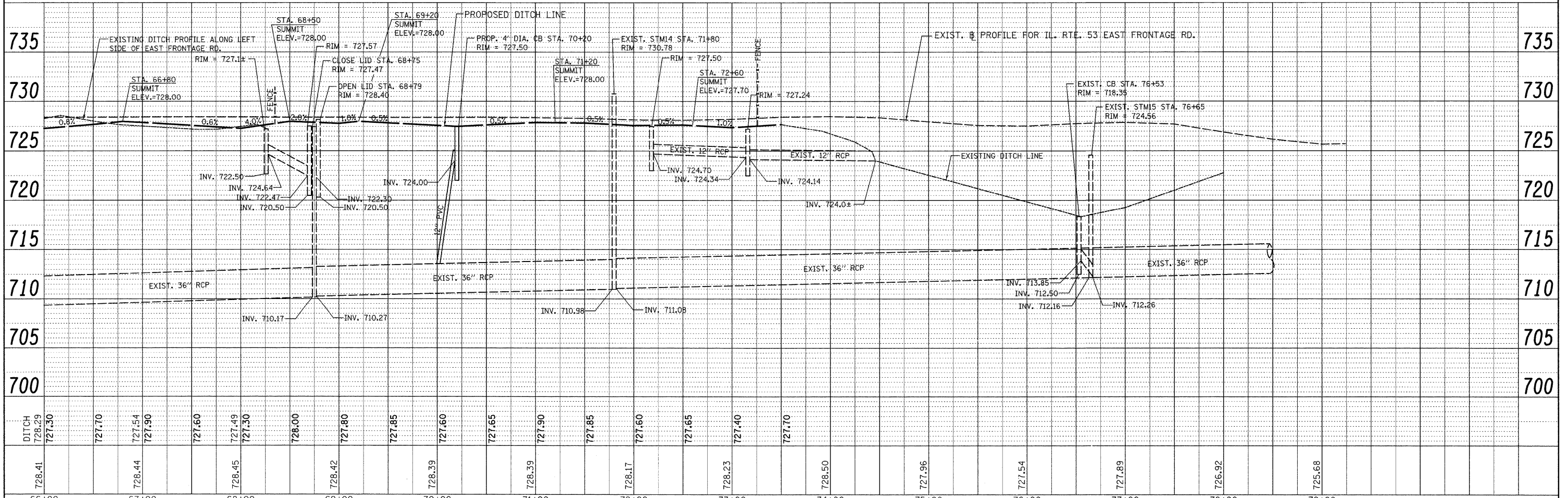
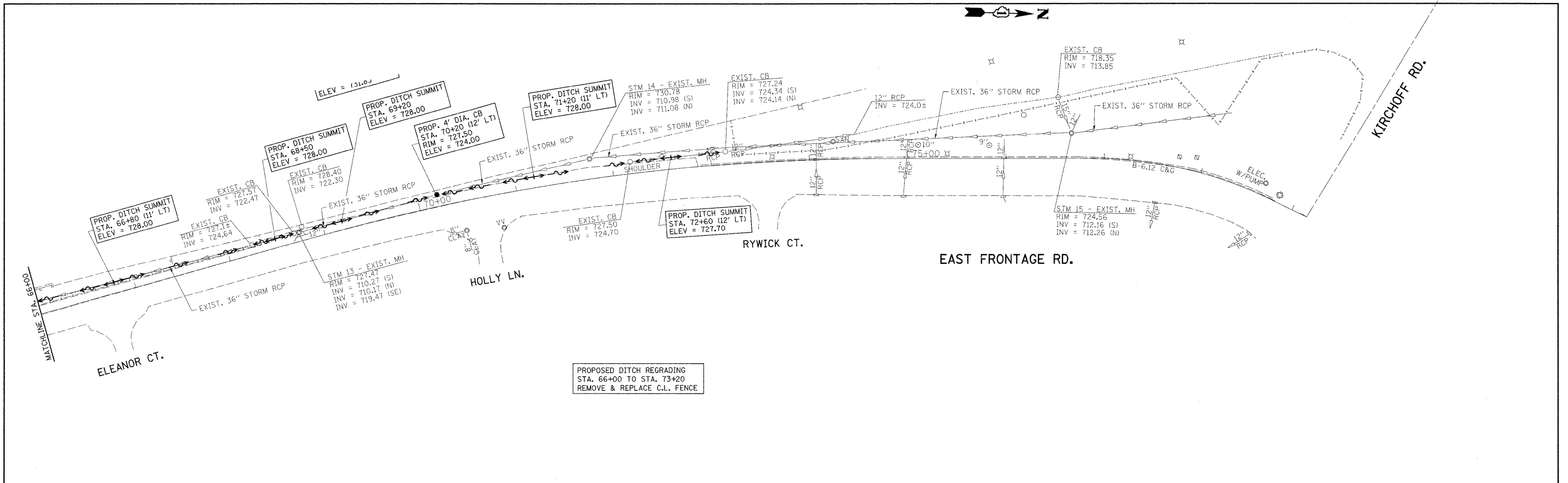


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	PLOT SCALE = 50.0000' / IN.	CHECKED -	REVISED -												
	PLOT DATE = 2/9/2018	DATE -	REVISED -												

ILLINOIS FED. AID PROJECT

PLAN	SURVEYED	DATE
NOTE BOOK	PLANNED	
NO.	BY	
	CHECKED	
	BY	
	DATE	

PROFILE	SURVEYED	DATE
NOTE BOOK	PLANNED	
NO.	BY	
	CHECKED	
	BY	
	DATE	



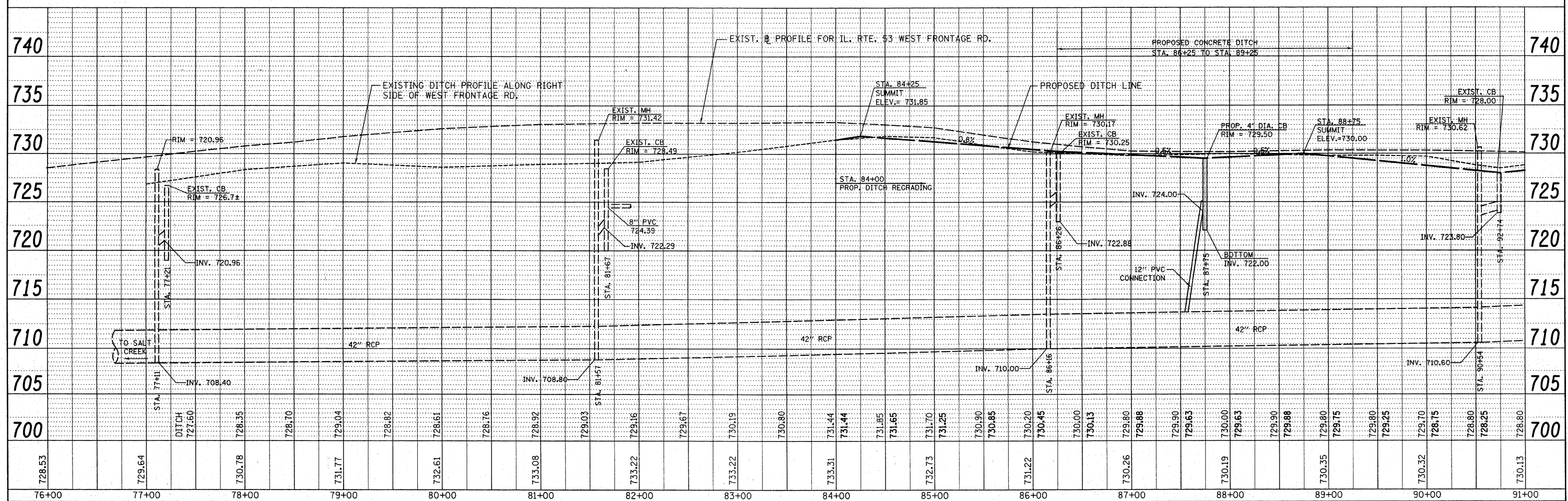
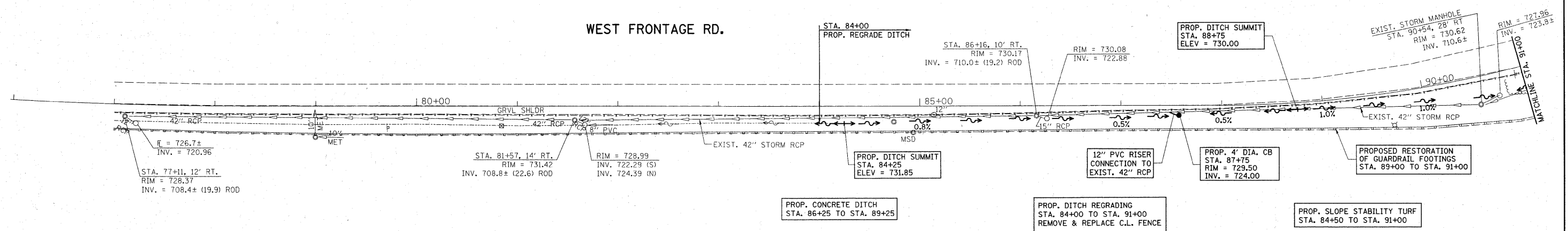
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PLOT SCALE = 50.0000' / IN.		CHECKED -	REVISED -			CONTRACT NO. 60138				
PLOT DATE = 2/9/2018		DATE -	REVISED -			ILLINOIS FED. AID PROJECT				

PLAN	SURVEYED	BY	DATE
	PLOTTED		
	NOTE BOOK		
	FILE NAME		
	NO.		

PROFILE	SURVEYED	BY	DATE
	PLOTTED		
	NOTE BOOK		
	FILE NAME		
	NO.		

NOTE:
PROPOSED GRADING AND SHAPING DITCHES BETWEEN
STA. 88+75 TO STA. 97+00 TO BE PERFORMED BY OTHERS
(ROLLING MEADOWS).

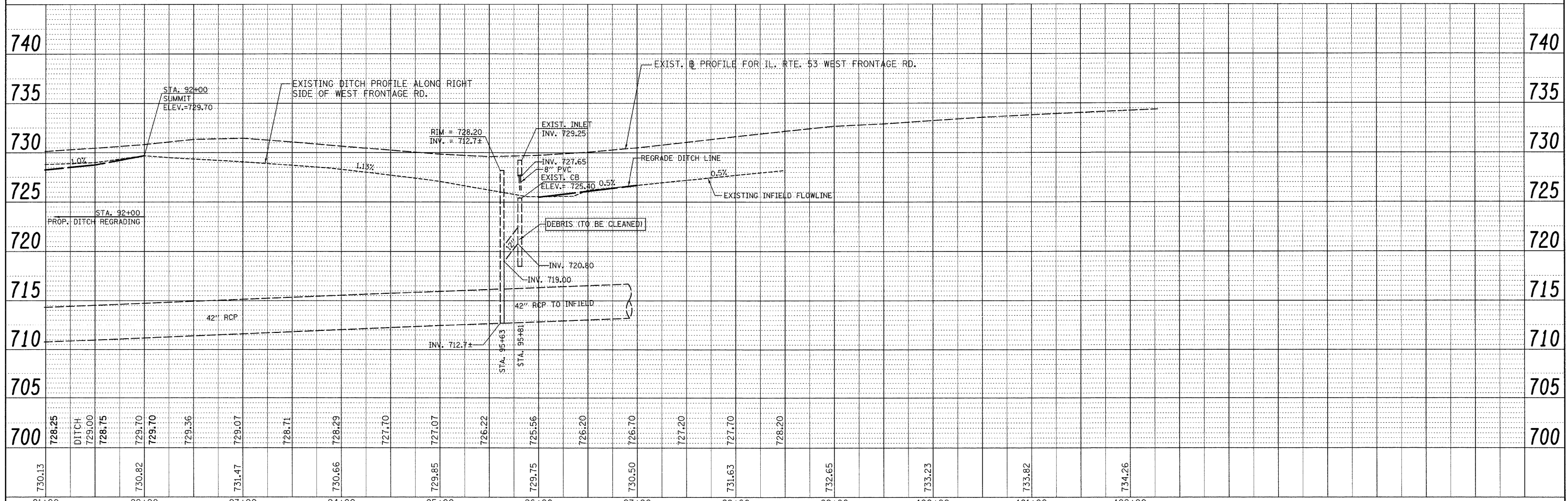
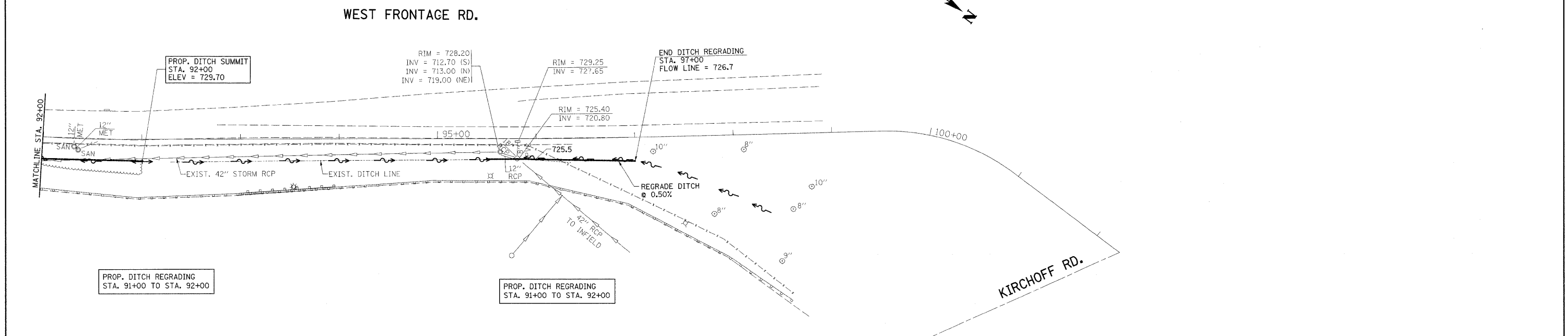
PROPOSED 4' DIA. CATCH BASIN AT STA. 87+75
SHALL BE CENTERED IN PROPOSED CONCRETE DITCH.



FILE NAME =	USER NAME = bauerdl	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	DRAINAGE PLAN IL. RTE. 53 WEST FRONTAGE RD.	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
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PLOT SCALE = 50.0000' / IN.		CHECKED -	REVISED -			SCALE: 1"=50'		SHEET NO. OF SHEETS STA. TO STA.		CONTRACT NO. 60138	
PLOT DATE = 2/9/2010		DATE -	REVISED -			ILLINOIS FED. AID PROJECT					

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	ALIGNED	
	CHECKED	
	BY	
	NO. OF WAY CHECKED	
	PAID FILE NAME	
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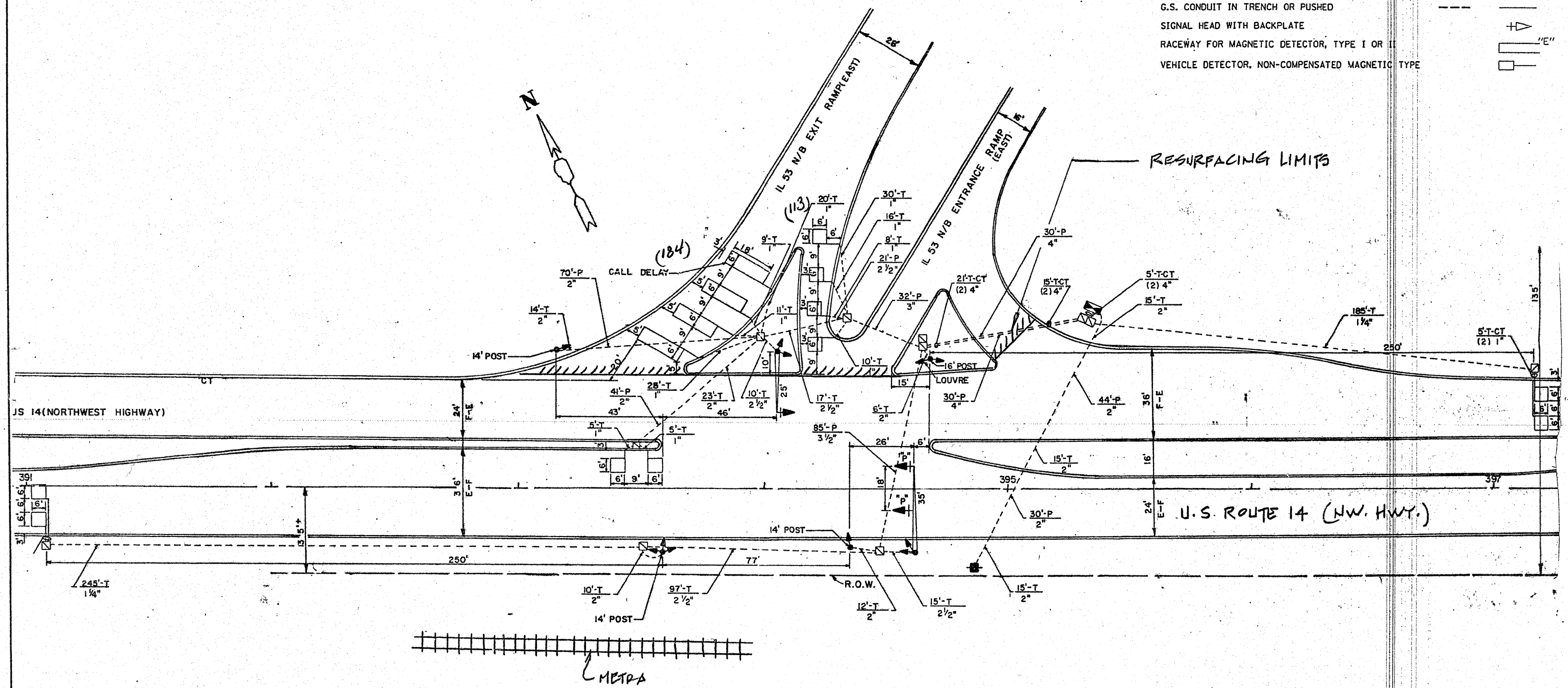
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	VERTICAL	
	CHECKED	
	BY	
	NO. OF WAY CHECKED	
	STRUCTURE NOTATIONS CHECKED	
	NO.	



FILE NAME =	USER NAME = bauerd	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	DRAINAGE PLAN IL. RTE. 53 WEST FRONTAGE RD.	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
ct:\pw\work\pww\d\baueard\1\08144688\191910	IL53-shr-drain.dgn	DRAWN -	REVISED -			290	(531-3.1, 0305-302K) RS-5	COOK	314	269	
	PLOT SCALE = 50.0000' / IN.	CHECKED -	REVISED -			CONTRACT NO. 60138					
	PLOT DATE = 2/9/2018	DATE -	REVISED -			ILLINOIS FED. AID PROJECT					

TRAFFIC SIGNAL LEGEND

PROPOSED	EXISTING
□	□
—	—
—	—
—	—
—	—
—	—



THIS PLAN IS FOR THE SOLE PURPOSE OF DETECTOR LOOP REPLACEMENTS ONLY

REPLACE ALL DETECTOR LOOPS AS SHOWN (WITHIN THE RESURFACING LIMITS)

CODE	QUANTITY	UNIT	ITEM
88600600	297	FOOT	DETECTOR LOOP, REPLACEMENT

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USER NAME = kanthaphixatbc
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PLOT DATE = 4/3/2009

DESIGNED - BCK	REVISED -
DRAWN - BCK	REVISED -
CHECKED - DAD	REVISED -
DATE -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

DISTRICT ONE - DETECTOR LOOP REPLACEMENT
ILL. ROUTE 53 (E. RAMP) @ U.S. RTE. 14

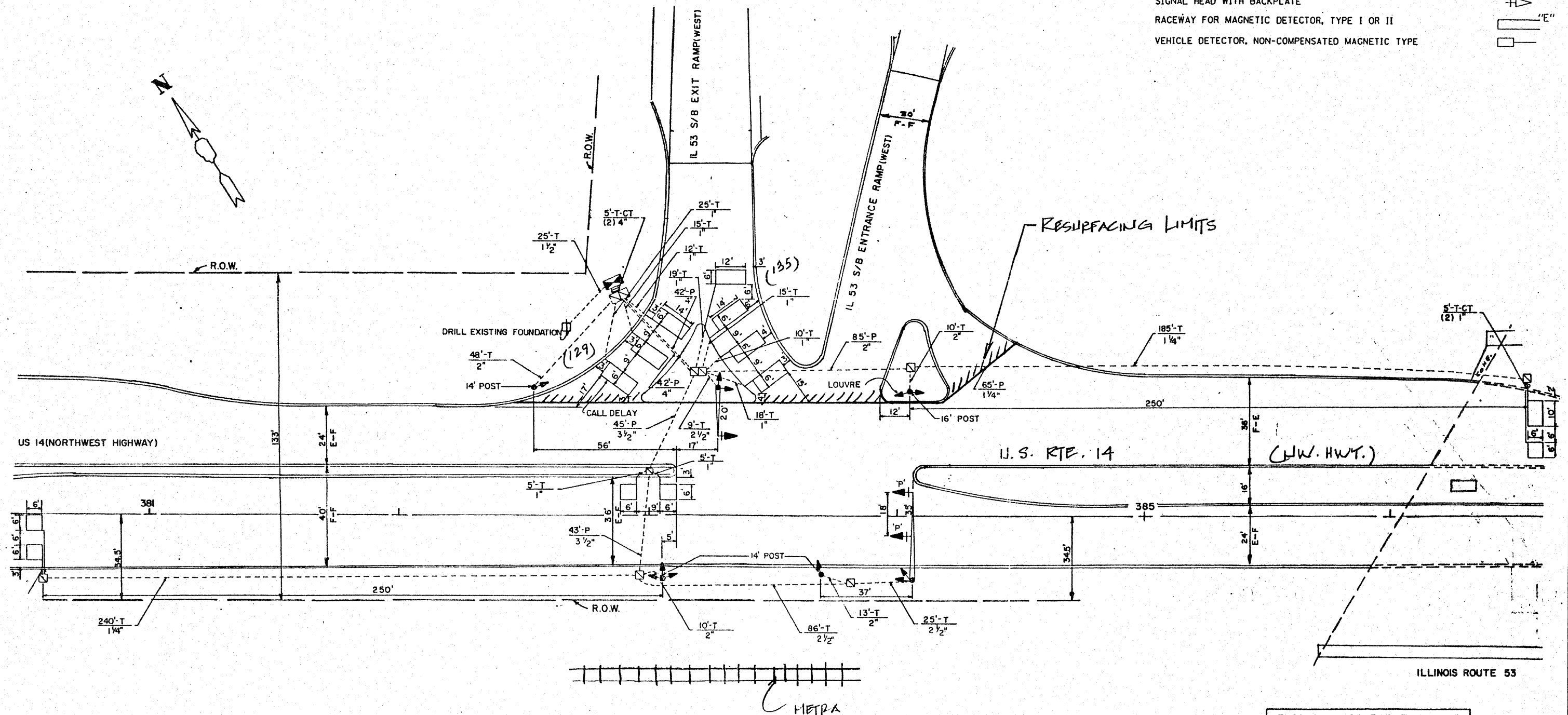
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F.A.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290/531-3.1/9303-302R/RS5	LOOK	COOK	314	270
CONTRACT NO.				

60138

TRAFFIC SIGNAL LEGEND

	PROPOSED	EXISTING
DETECTOR LOOP		
SIGNAL HEAD		
G.S. CONDUIT IN TRENCH OR PUSHED		
SIGNAL HEAD WITH BACKPLATE		
RACEWAY FOR MAGNETIC DETECTOR, TYPE I OR II		
VEHICLE DETECTOR, NON-COMPENSATED MAGNETIC TYPE		



THIS PLAN IS FOR THE SOLE PURPOSE OF DETECTOR LOOP REPLACEMENTS ONLY

REPLACE ALL DETECTOR LOOPS AS SHOWN (WITHIN THE RESURFACING LIMITS)

CODE	QUANTITY	UNIT	ITEM
88600600	264	FOOT	DETECTOR LOOP, REPLACEMENT

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

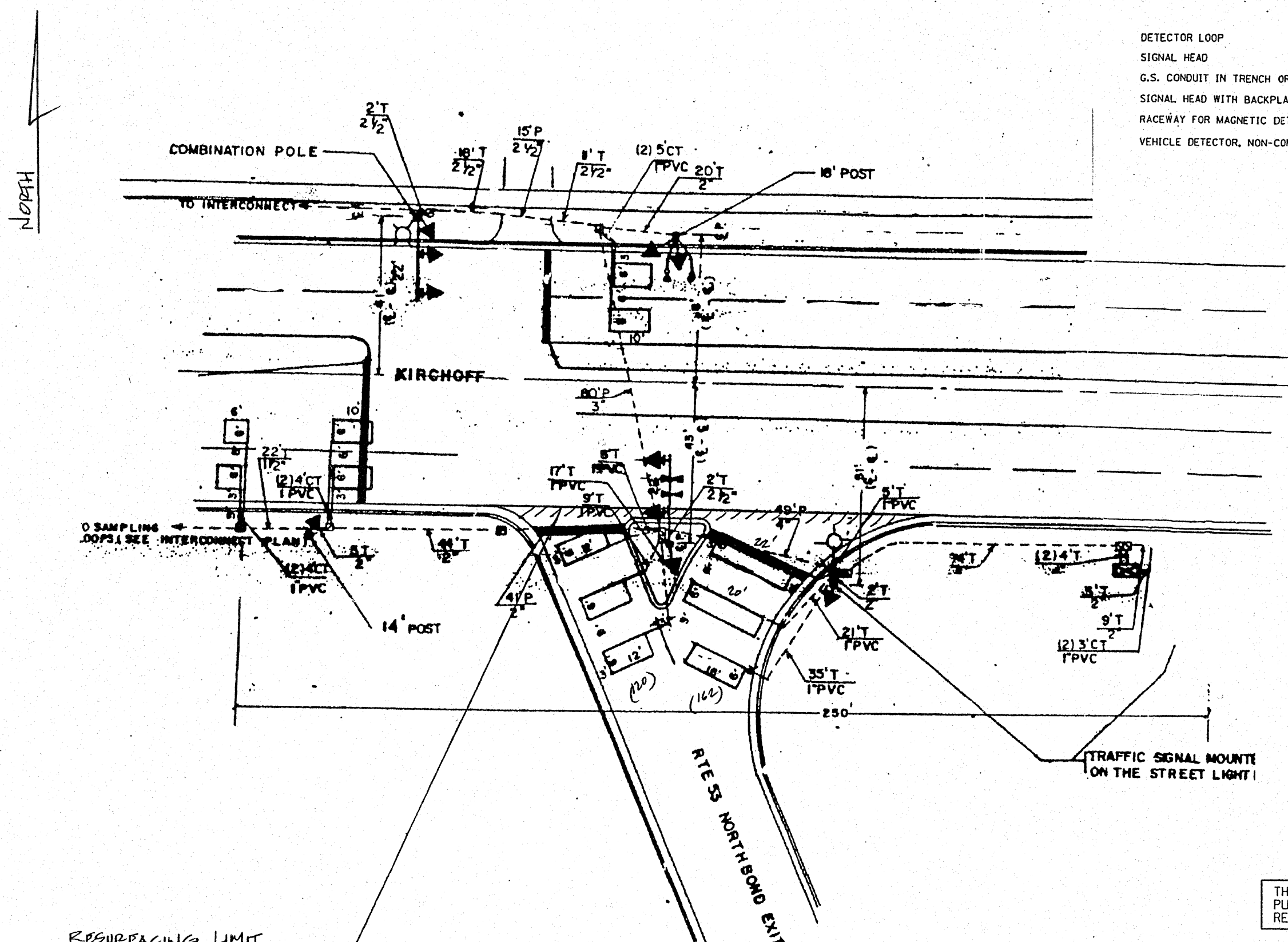
DISTRICT ONE - DETECTOR LOOP REPLACEMENT
ILL. ROUTE 53 (W. RAMP) @ U.S. RTE. 14

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	1531-3, 1,0305-302(R)S-5	COOK	314	277
CONTRACT NO.			60138	

SCALE: NONE | SHEET NO. OF SHEETS | STA. TO STA. | FOR ROAD DIST. NO. ILLINOIS DEPT. OF TRANSPORTATION

TRAFFIC SIGNAL LEGEND

	PROPOSED	EXISTING
DETECTOR LOOP		
SIGNAL HEAD		
G.S. CONDUIT IN TRENCH OR PUSHED		
SIGNAL HEAD WITH BACKPLATE		
RACEWAY FOR MAGNETIC DETECTOR, TYPE I OR II		
VEHICLE DETECTOR, NON-COMPENSATED MAGNETIC TYPE		



THIS PLAN IS FOR THE SOLE PURPOSE OF DETECTOR LOOP REPLACEMENTS ONLY

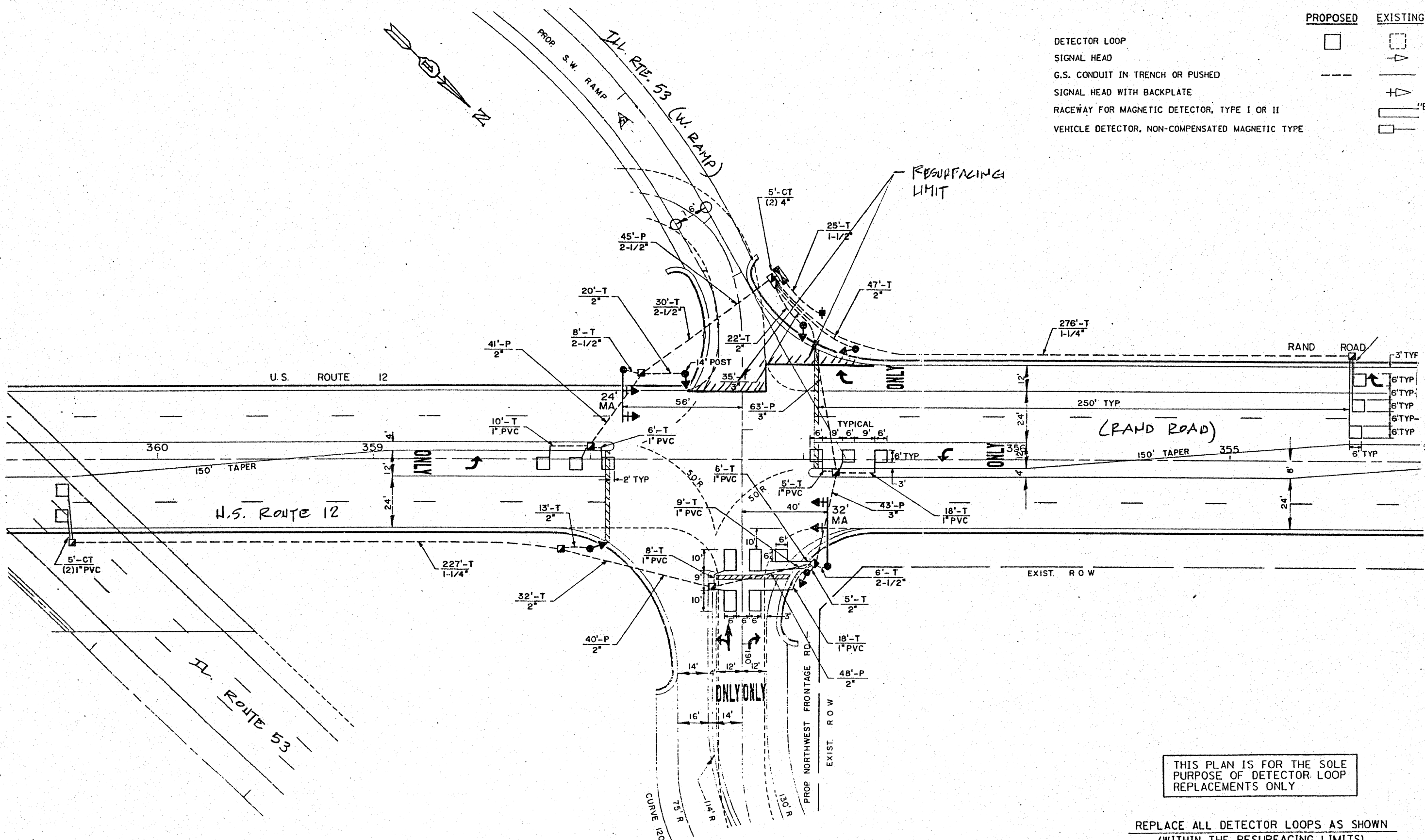
REPLACE ALL DETECTOR LOOPS AS SHOWN (WITHIN THE RESURFACING LIMITS)

CODE	QUANTITY	UNIT	ITEM
88600600	282	FOOT	DETECTOR LOOP, REPLACEMENT

FILE NAME * c:\p\work\PM1001\KANTHAPHIXAYBC\081126	USER NAME * konthaphixaybc	DESIGNED - BCK	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	DISTRICT ONE - DETECTOR LOOP REPLACEMENT ILL. ROUTE 53 (E. RAMP) @ KIRCHOFF RD.	F.A.Z. RTE. 270	SECTION V531-3,1,0305-302k)78-5	COUNTY Cook	TOTAL SHEETS 314	SHEET NO. 272	
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	PLOT SCALE * 3/8" = 1' IN.	CHECKED - DAD	REVISED -								
	PLOT DATE * 4/3/2009	DATE	REVISED -								

TRAFFIC SIGNAL LEGEND

	PROPOSED	EXISTING
DETECTOR LOOP		
SIGNAL HEAD		
G.S. CONDUIT IN TRENCH OR PUSHED		
SIGNAL HEAD WITH BACKPLATE		
RACEWAY FOR MAGNETIC DETECTOR, TYPE I OR II		
VEHICLE DETECTOR, NON-COMPENSATED MAGNETIC TYPE		



THIS PLAN IS FOR THE SOLE PURPOSE OF DETECTOR LOOP REPLACEMENTS ONLY

REPLACE ALL DETECTOR LOOPS AS SHOWN (WITHIN THE RESURFACING LIMITS)

CODE	QUANTITY	UNIT	ITEM
88600600	-0-	FOOT	DETECTOR LOOP, REPLACEMENT

FILE NAME *	USER NAME * konthaphixybc	DESIGNED - BCK	REVISED -
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	PLOT SCALE * 3/4" = 1' IN.	CHECKED - DAD	REVISED -
	PLOT DATE * 4/2/2009	DATE	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

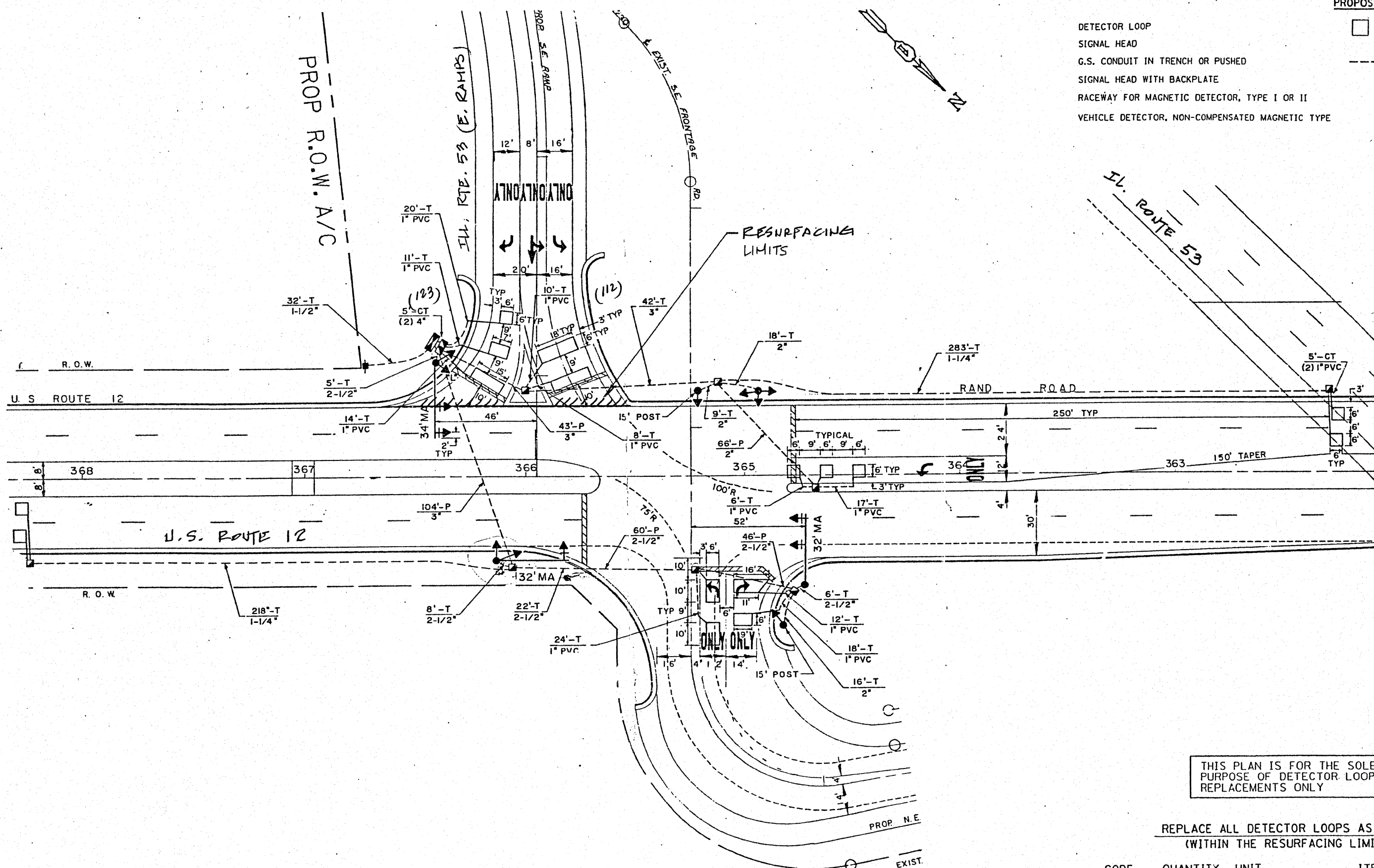
**DISTRICT ONE - DETECTOR LOOP REPLACEMENT
ILL. ROUTE 53 (W. RAMP) @ U.S. ROUTE 12**

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
270	(531-3,1,0305-2024)RS-5	COOK	314	273
CONTRACT NO.				

SCALE: NONE SHEET NO. OF SHEETS STA. TO STA. FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT

TRAFFIC SIGNAL LEGEND

	PROPOSED	EXISTING
DETECTOR LOOP		
SIGNAL HEAD		
G.S. CONDUIT IN TRENCH OR PUSHED		
SIGNAL HEAD WITH BACKPLATE		
RACEWAY FOR MAGNETIC DETECTOR, TYPE I OR II		
VEHICLE DETECTOR, NON-COMPENSATED MAGNETIC TYPE		



THIS PLAN IS FOR THE SOLE PURPOSE OF DETECTOR LOOP REPLACEMENTS ONLY

REPLACE ALL DETECTOR LOOPS AS SHOWN (WITHIN THE RESURFACING LIMITS)

CODE	QUANTITY	UNIT	ITEM
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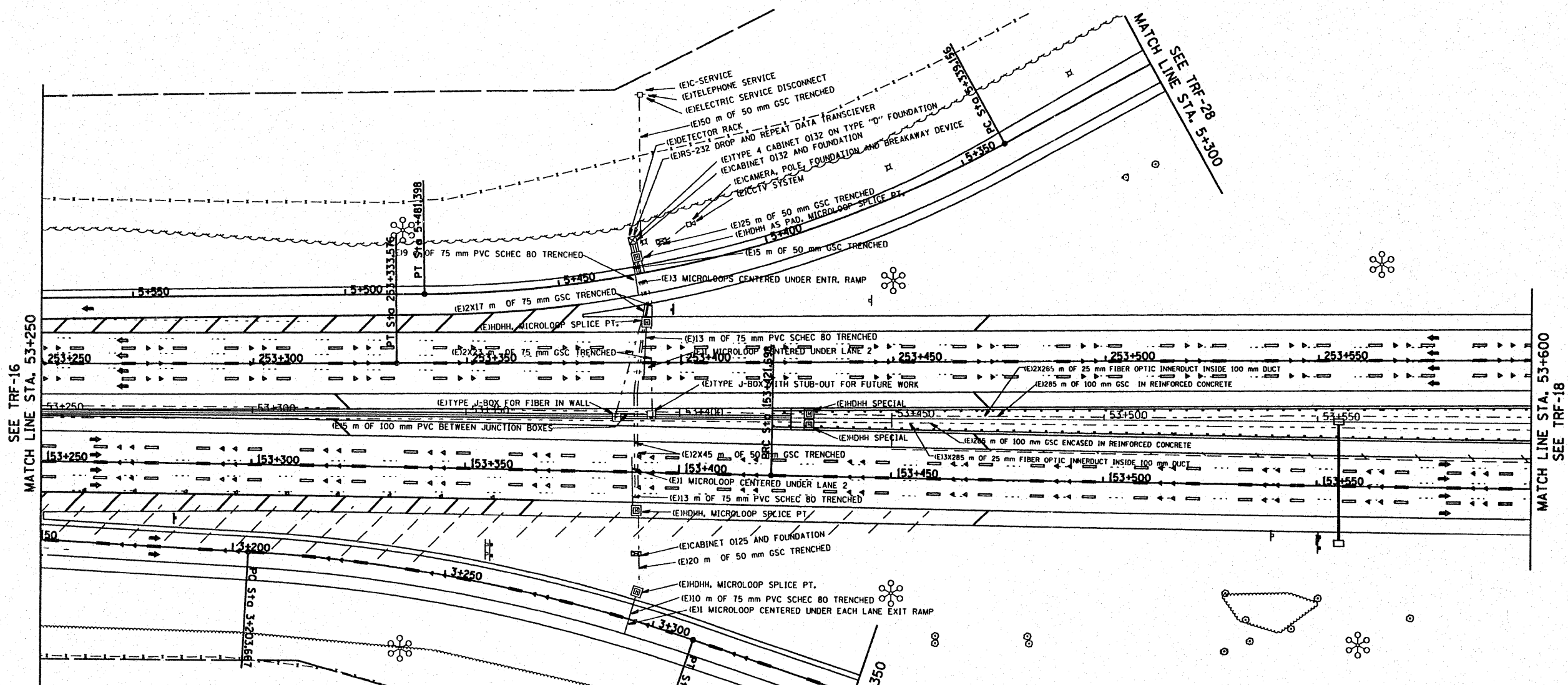
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		DATE: -	REVISED: -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

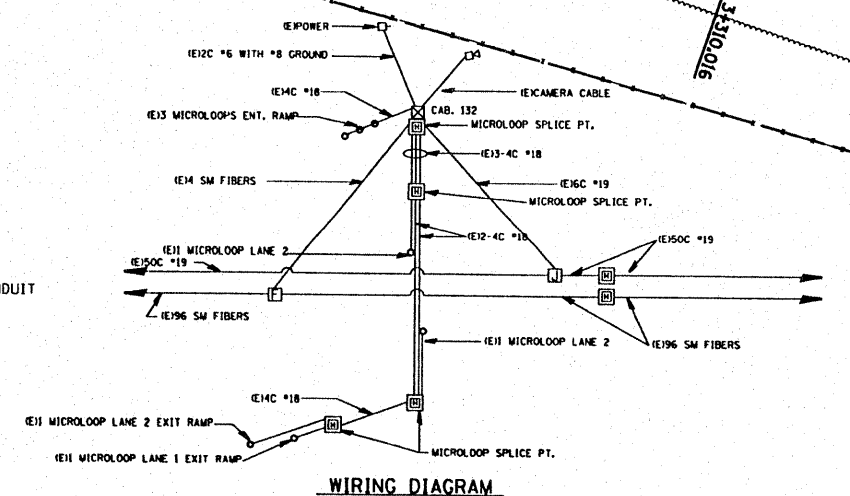
**DISTRICT ONE - DETECTOR LOOP REPLACEMENT
ILL. ROUTE 53 (E. RAMP) @ U.S. ROUTE 12**

F.A.Z. RTE. 290	SECTION 15.31-3.1.0305-10(K)B-5	COUNTY COOK	TOTAL SHEETS 314	SHEET NO. 274
SCALE: NONE		SHEET NO. OF SHEETS STA. TO STA.		FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	53+250	COOK	314	276
STA. 53+250	TO STA. 53+600			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
	TRF-17 of 30			



SYMBOL	LEGEND
•	MICROLOOP
⊠	TSC CABINET
○	TELEPHONE SERVICE
□	SERVICE INSTALLATION
⊞	JUNCTION BOX
⊞	HEAVY DUTY HAND HOLE
---	POLYETHYLENE DUCT
---	GALVANIZED STEEL CONDUIT
(E)	EXISTING
(P)	PROPOSED
(I)	INSTALL
(R)	REMOVE
(C)	CCTV



WIRING DIAGRAM

FOR INFORMATION ONLY

REVISIONS	
NAME	DATE
J.G.	05-02
F.J.	06-02
R.L.	04-03
R.L.	05-03
R.L.	05-15-03

ILLINOIS DEPARTMENT OF TRANSPORTATION
 F.A.I. 290 (IL. 53)
 DEVON AVE. TO IL. 72 (HIGGINS RD.)
 S. OF HIGGINS
 INSTALLATION

DRAWN BY JTS
 CHECKED BY DVS

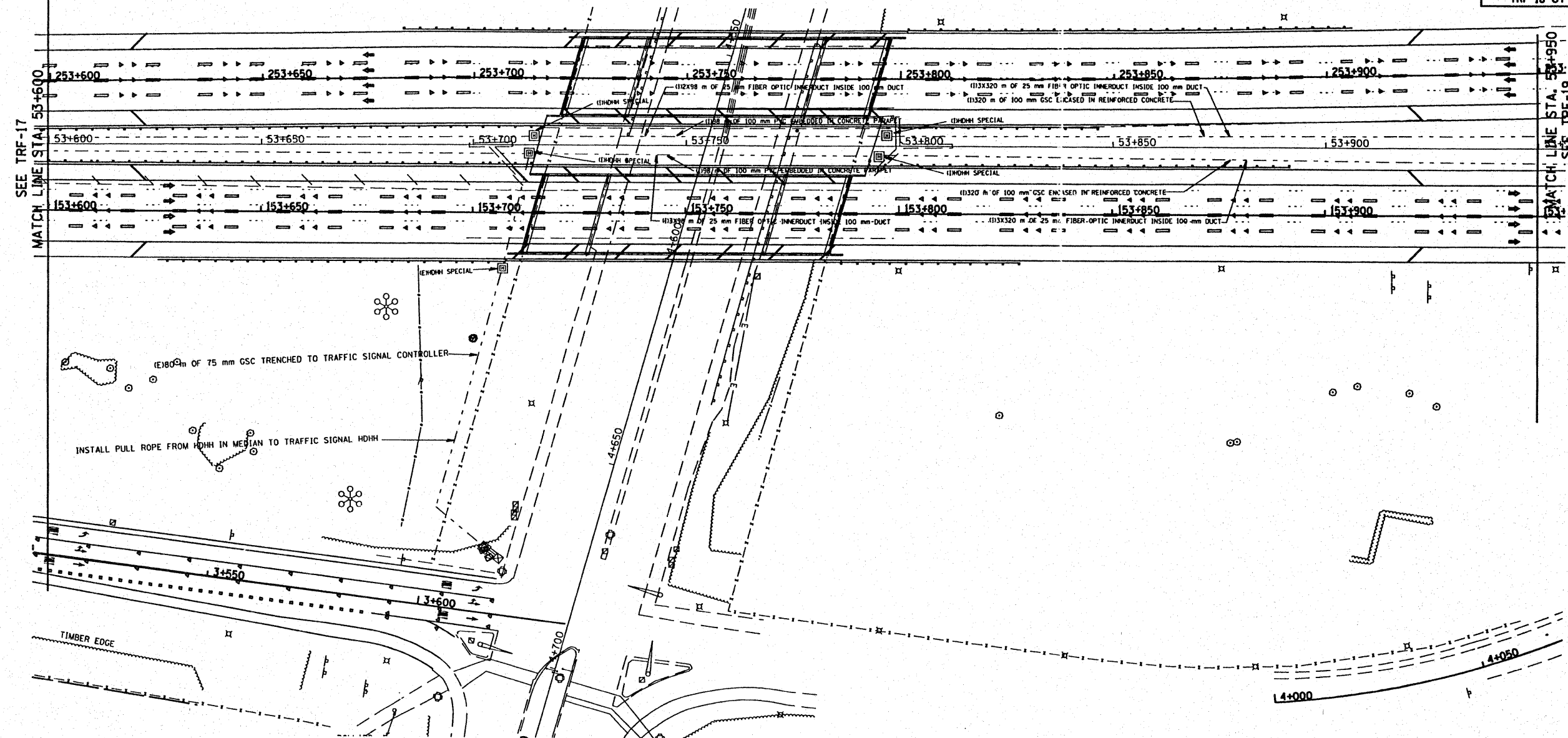
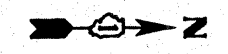
DATE 02-15-02



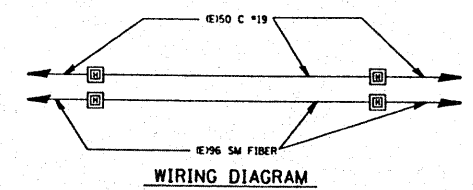
TRAFFIC SYSTEMS CENTER

60138

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEET NO.
290		COOK	314
STA. 53+600		TO STA. 53+950	
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT	
TRF-18 of 30			



SYMBOL	LEGEND
•	MICROLOOP
⊠	TSC CABINET
○	TELEPHONE SERVICE
□	SERVICE INSTALLATION
⊞	JUNCTION BOX
⊞	HEAVY DUTY HAND HOLE
---	POLYETHYLENE DUCT
---	GALVANIZED STEEL CONDUIT
(E)	EXISTING
(P)	PROPOSED
(I)	INSTALL
(R)	REMOVE
(C)	CCTV



FOR INFORMATION ONLY

REVISIONS	
NAME	DATE
J.G.	05-02
R.L.	06-02
R.L.	04-03

ILLINOIS DEPARTMENT OF TRANSPORTATION
 F.A.I. 290 (IL. 53)
 DEVON AVE. TO IL. 72 (HIGGINS RD.)

TRAFFIC SYSTEMS PLAN

DRAWN BY JTS
 CHECKED BY DYS

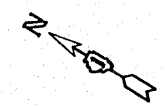
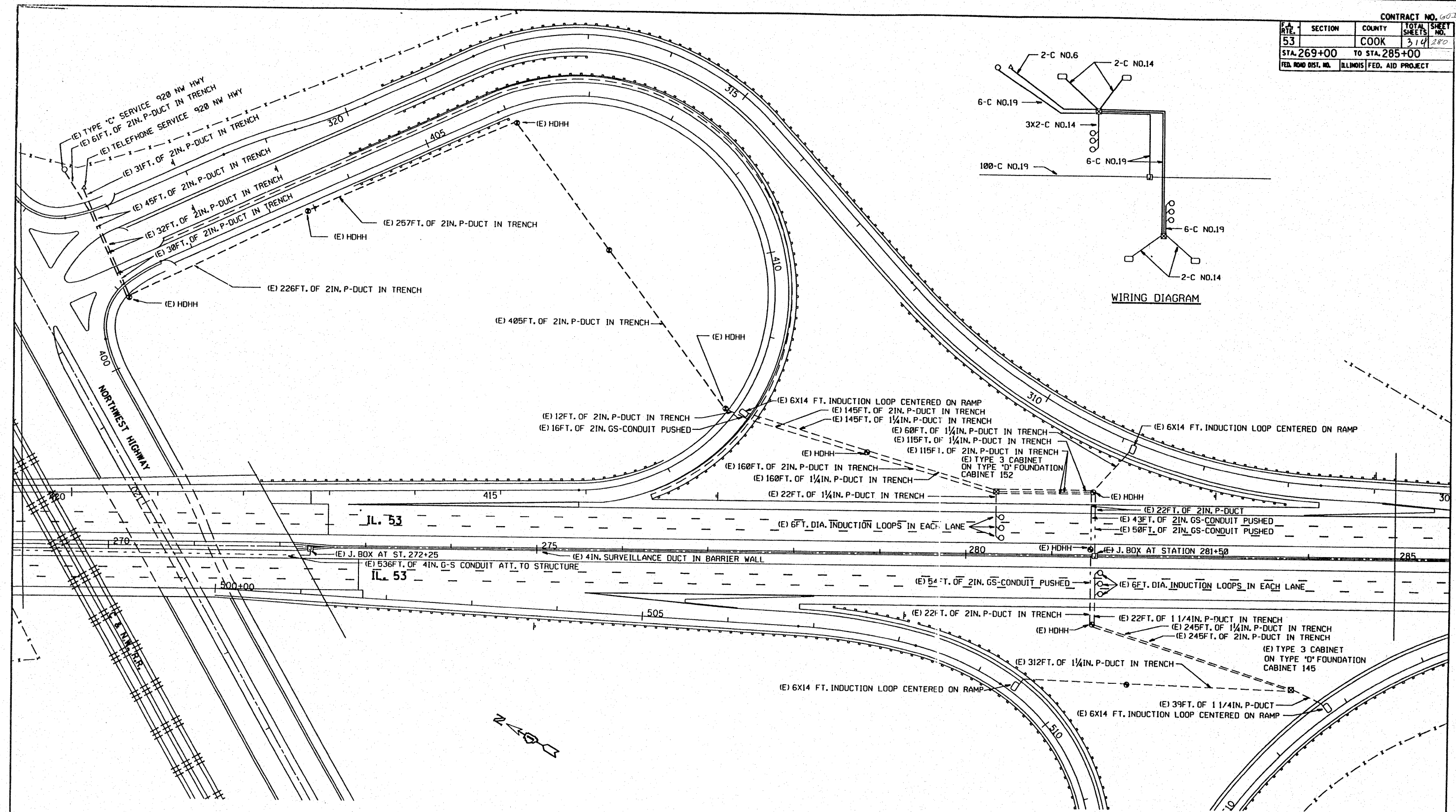
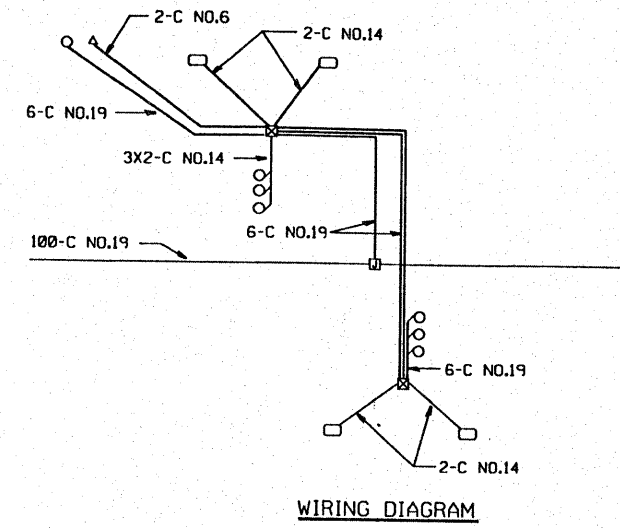
DATE 02-15-02



\$\$\$DGN\$\$ 53TRAF18.DGN
 \$\$\$PRF\$\$\$

TRAFFIC SYSTEMS CENTER

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
53		COOK	314	280
STA. 269+00		TO STA. 285+00		
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			



FOR INFORMATION ONLY

REVISIONS	
NAME	DATE

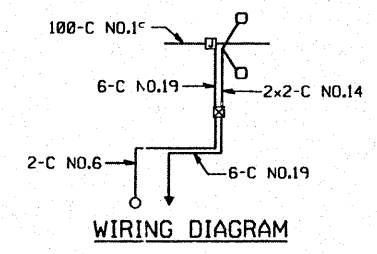
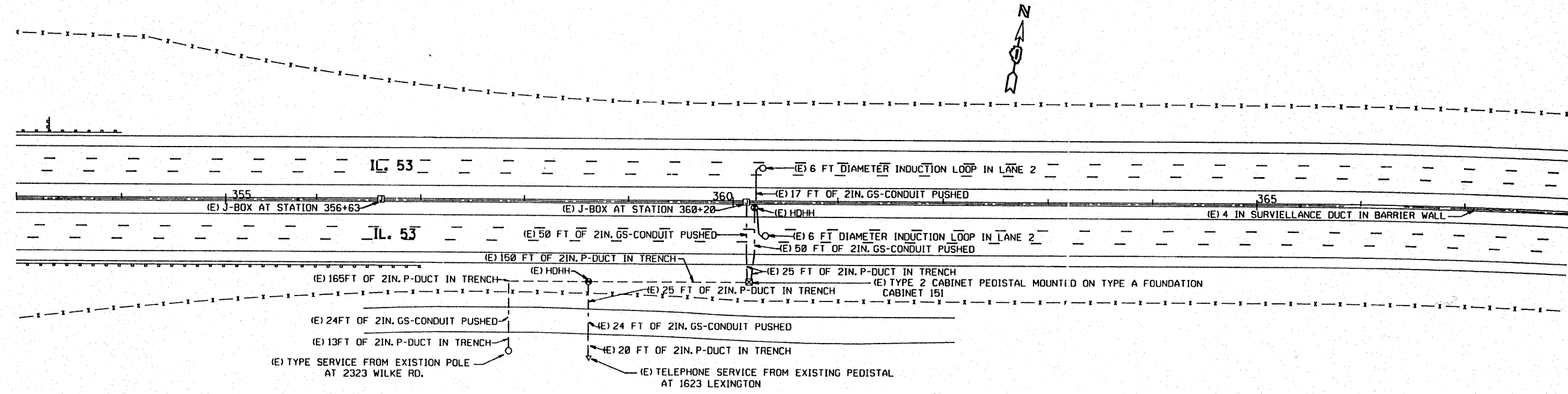
ILLINOIS DEPARTMENT OF TRANSPORTATION
TRAFFIC SYSTEMS CENTER
I-53
**NORTHWEST HIGHWAY
INSTALLATION**
SCALE: VERT. 50ft
HORIZ. 50ft
DATE 12/21/90
DRAWN BY DS
CHECKED BY

TRAFFIC SYSTEMS CENTER

FILE NAME: C:\Users\user\Documents\I-53\I-53.dwg
 PLOT DATE: 12/21/90
 PLOT TIME: 10:00 AM
 PLOT BY: DS
 PLOT DEVICE: HP-GL/2

VI-NHWY

CONTRACT NO. 60I38			
F.A. RTE.	SECTION	COUNTY	TOTAL SHEET NO.
53		COOK	31 of 285
STA. 353+00		TO STA. 368+00	
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT	



FOR INFORMATION ONLY

REVISIONS	
NAME	DATE

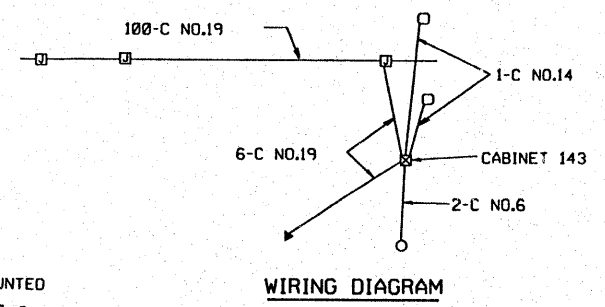
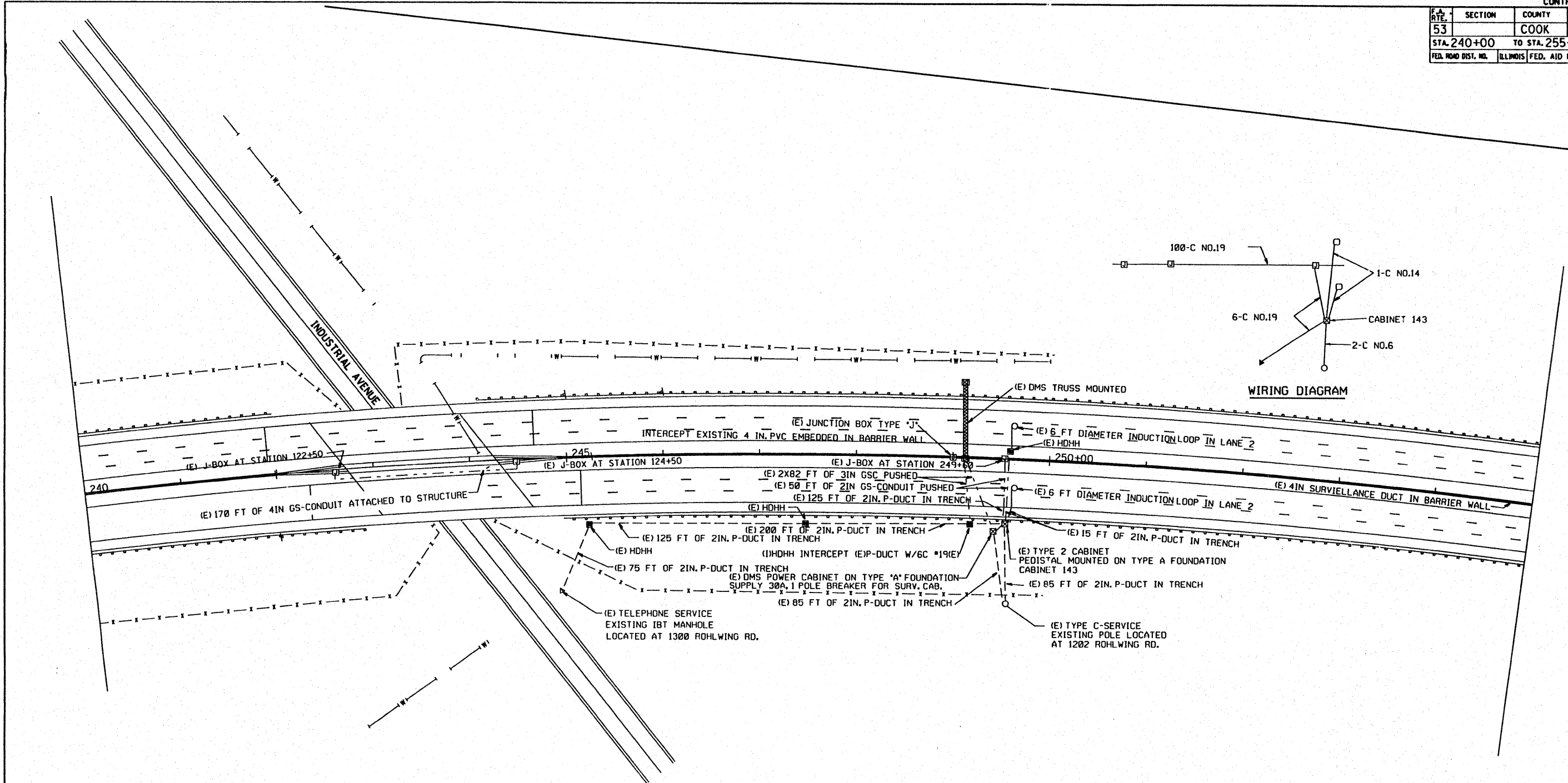
ILLINOIS DEPARTMENT OF TRANSPORTATION
 TRAFFIC SYSTEMS CENTER
I-53
ANDERSON ROAD
INSTALLATION
 SCALE: VERT. 50:1
 HORIZ. 50:1
 DATE 12/21/90
 DRAWN BY CM
 CHECKED BY

TRAFFIC SYSTEMS CENTER

PLT: JAMES J. ...
 ...
 ...

VI-SCAND

CONTRACT NO. 60138				
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
53		COOK	314	286
STA. 240+00		TO STA. 255+00		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



FOR INFORMATION ONLY

REVISIONS	
NAME	DATE

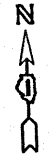
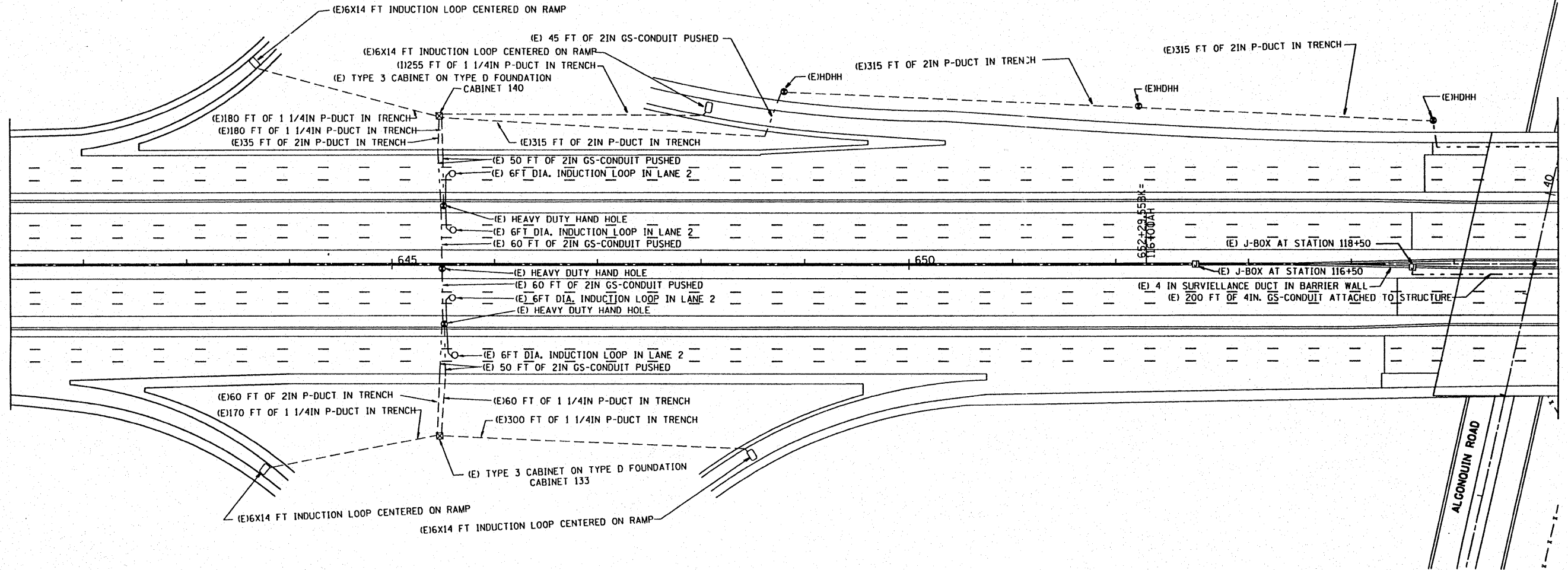
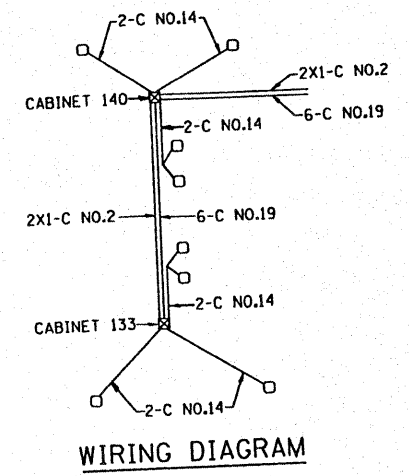
ILLINOIS DEPARTMENT OF TRANSPORTATION
TRAFFIC SYSTEMS CENTER
I-53
INDUSTRIAL AVE.
INSTALLATION

SCALE: VERT. 50:1
HORIZ. 50:1
DATE 12/21/90

DRAWN BY DS
CHECKED BY

PLT: 001289011/01/2000
 FILE: I-53_CAD/INDUSTRIAL_AVE_INSTALLATION
 PLOT: 12/21/90 10:00 AM
 REFERENCE: 1 SHEET

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
53		COOK	314	288
STA. XXX+XX		TO STA. 120+00		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		



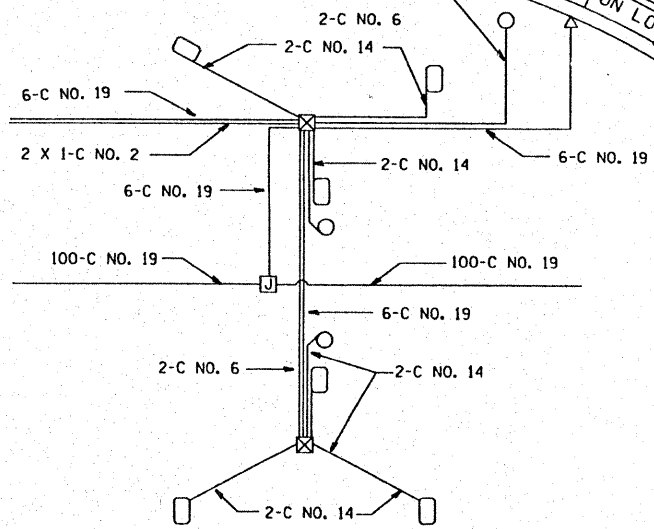
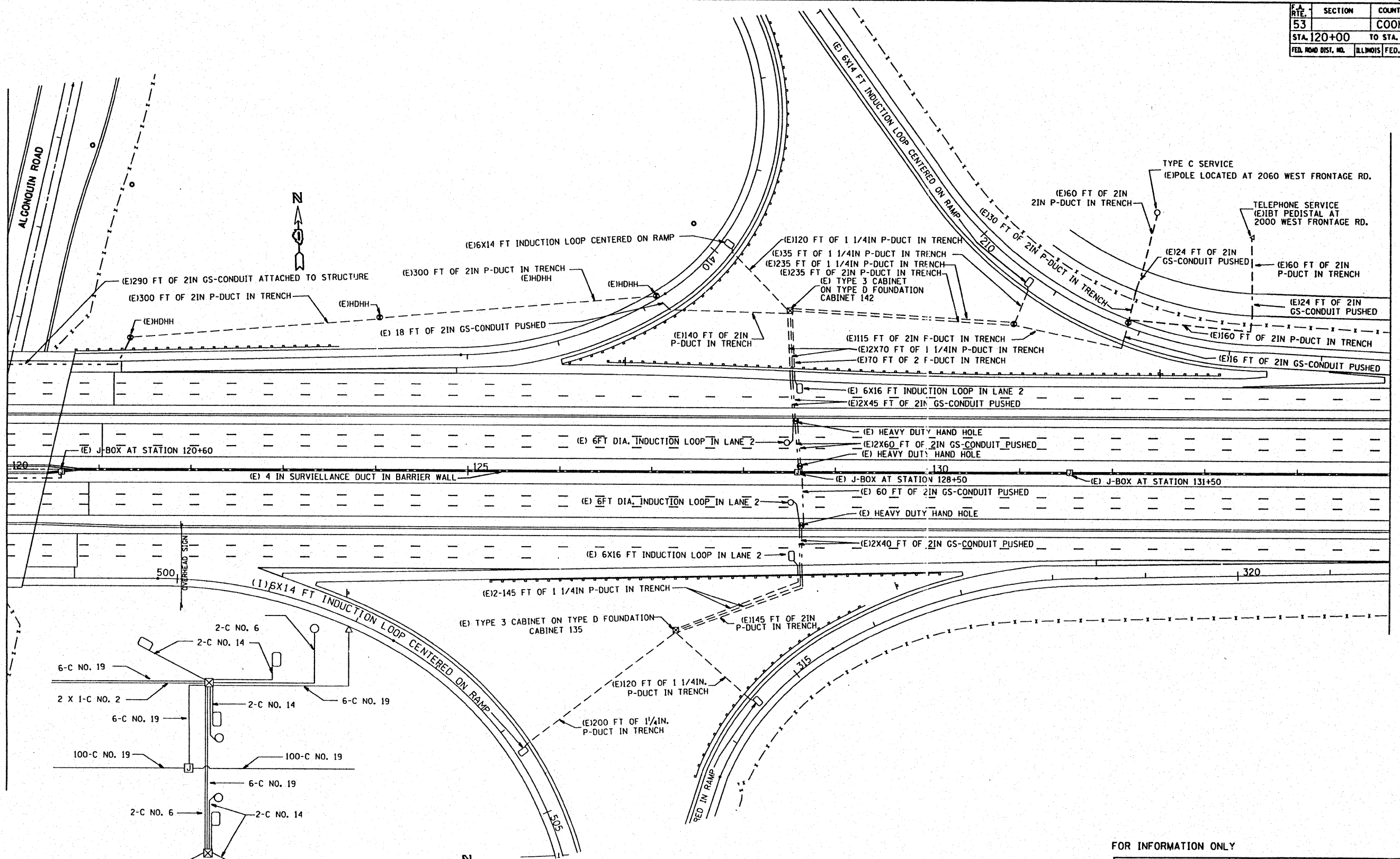
FOR INFORMATION ONLY

REVISIONS	NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
 TRAFFIC SYSTEMS CENTER
 I-53
 NORTH OF
 NORTHWEST TOLLWAY
 INSTALLATION
 SCALE: VERT. 50:1
 HORIZ. 50:1
 DATE 12/21/90
 DRAWN BY DS
 CHECKED BY

PLANS: DATE 03/11/92 BY DS
 FILE: I-53-TSC-001-TR-001-001
 PLOT: 03/11/92 11:00 AM
 REFERENCE: 1000

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
53		COOK	314	289
STA. 120+00		TO STA. 135+00		
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			



FOR INFORMATION ONLY

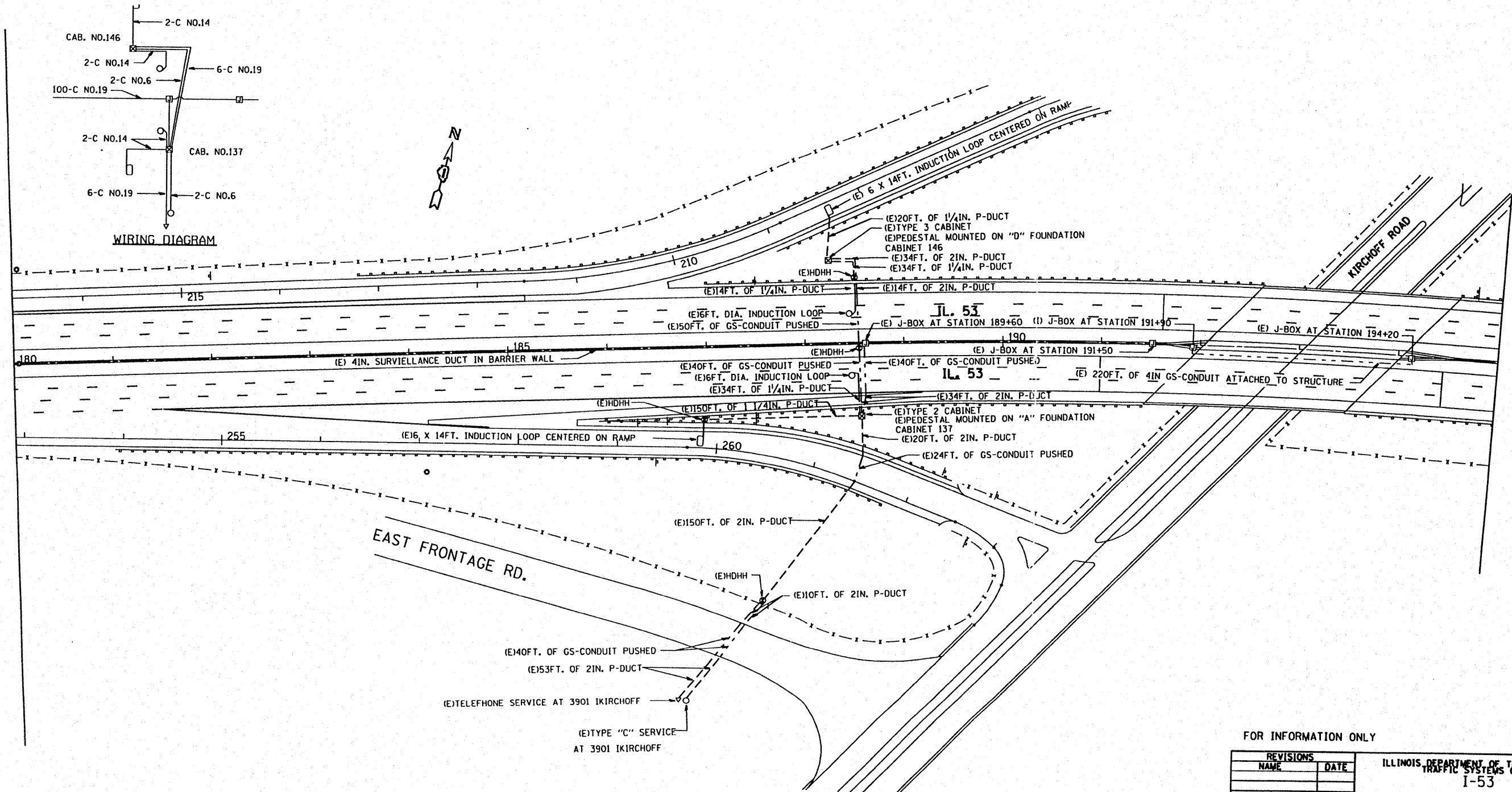
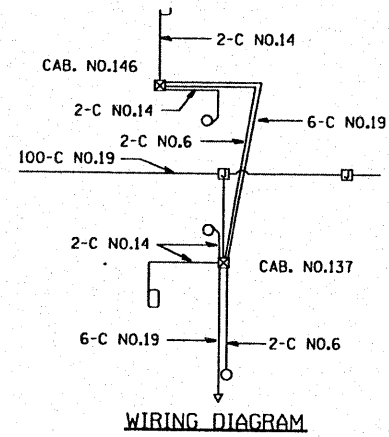
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
TRAFFIC SYSTEMS CENTER
I-53
**ALGONQUIN ROAD
INSTALLATION**

SCALE: VERT. 50ft
HORIZ. 50ft
DATE 12/21/90
DRAWN BY DS
CHECKED BY

PLF-DAT/SP14/2/90
P. 11/12/90
REFERENCE: 11/2/90

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
53		COOK	314	290
STA. 180+00		TO STA. 195+00		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



FOR INFORMATION ONLY

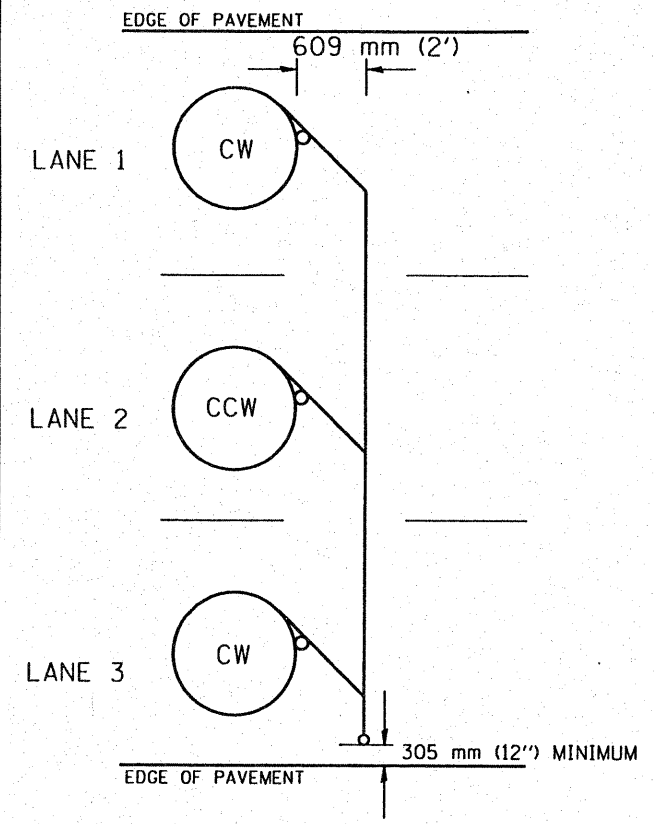
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
 TRAFFIC SYSTEMS CENTER
 I-53
**KIRCHOFF ROAD
 INSTALLATION**
 SCALE: VERT. 50:1
 HORIZ. 50:1
 DATE 12/21/90
 DRAWN BY DS
 CHECKED BY

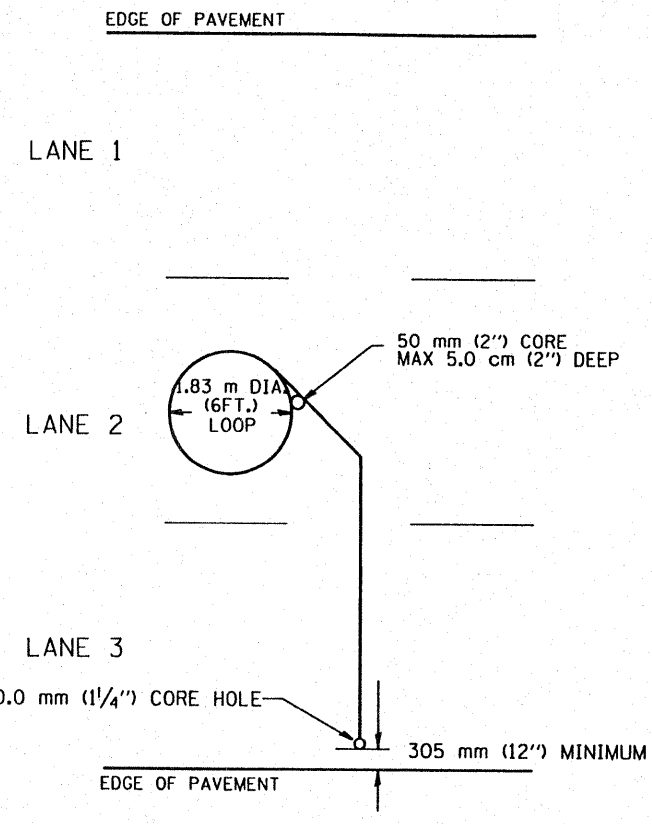
FILE UNDER 60138
 FILE NAME: I-53-KIRCHOFF
 PLOT DATE: 12/21/90
 REFERENCE: SHEET

60138

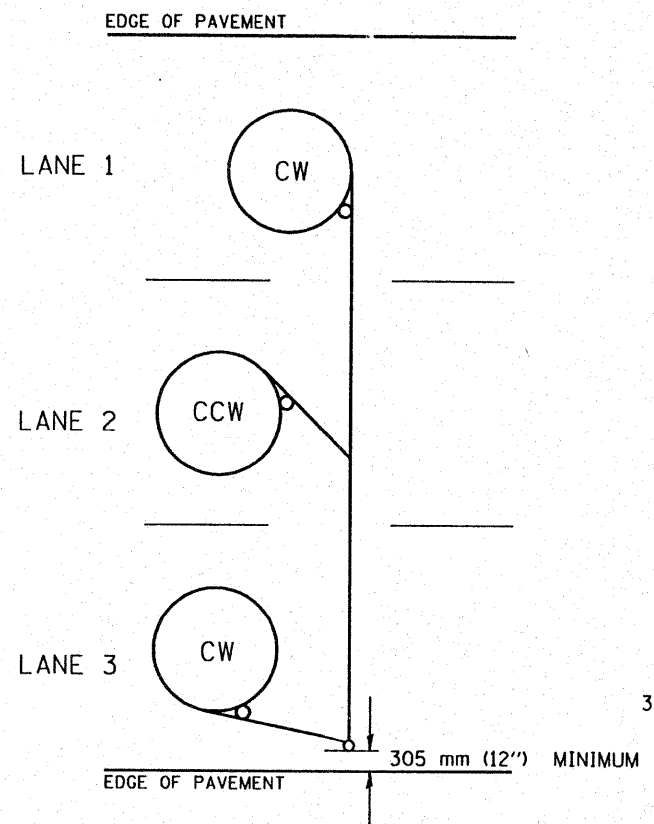
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290		COOK	314	291
STA.		TO STA.		
FED. ROAD DIST. NO. 1		ILLINOIS FED. AID PROJECT		



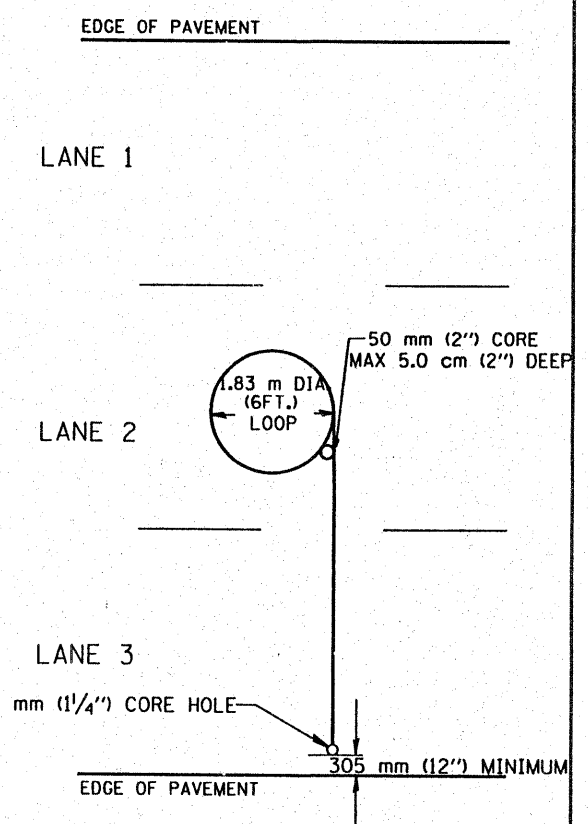
TYPICAL 1.83 m (6FT.) DIA. INDUCTION LOOP CORE DRILL
LAYOUT FOR MULTIPLE LANE ROADWAY



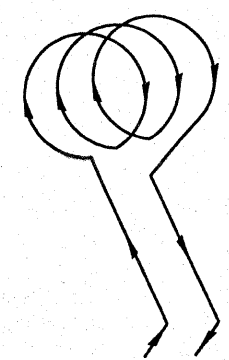
TYPICAL 1.83 m (6') DIA. INDUCTION LOOP
LAYOUT FOR LANE 2



TYPICAL 1.83 m (6') DIA. INDUCTION LOOP CORE DRILL
LAYOUT FOR MULTIPLE LANE ROADWAY



TYPICAL 1.83 m (6') DIA. INDUCTION LOOP
LAYOUT FOR LANE 2



WIRING DETAILS

NOTES

1. EACH LOOP SHALL BE SPLICED TO A 4-C NO.18 TWISTED SHIELDED LEAD IN WHEN 45 m (150FT.) OR MORE FROM CABINET.
2. LOOPS SHALL BE SPLICED IN HANDHOLES ONLY, OTHERWISE WRITTEN PERMISSION SHALL BE OBTAINED FROM TSC ENGINEER.
3. LOOPS SHALL NOT BE SPLICED IN SERIES.
4. EACH LOOP LEAD IN SHALL BE IDENTIFIED AND PERMANENTLY COLOR CODED IN THE COREHOLE, HANDHOLE & CABINETS THRU WHICH THEY ENTER OR PASS AND TAGGED WITH THE CORRECT NOMENCLATURES.

REVISIONS	
NAME	DATE
R.L.	6/94
T.C.	9/96

ILLINOIS DEPARTMENT OF TRANSPORTATION
TRAFFIC SYSTEMS CENTER
**EXISTING ROUND LOOP
INSTALLATION**

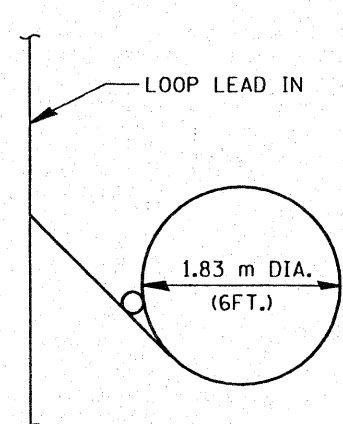
SCALE: VERT. NONE
HORIZ. DATE 6-22-94

DRAWN BY C.V.
CHECKED BY R.L.

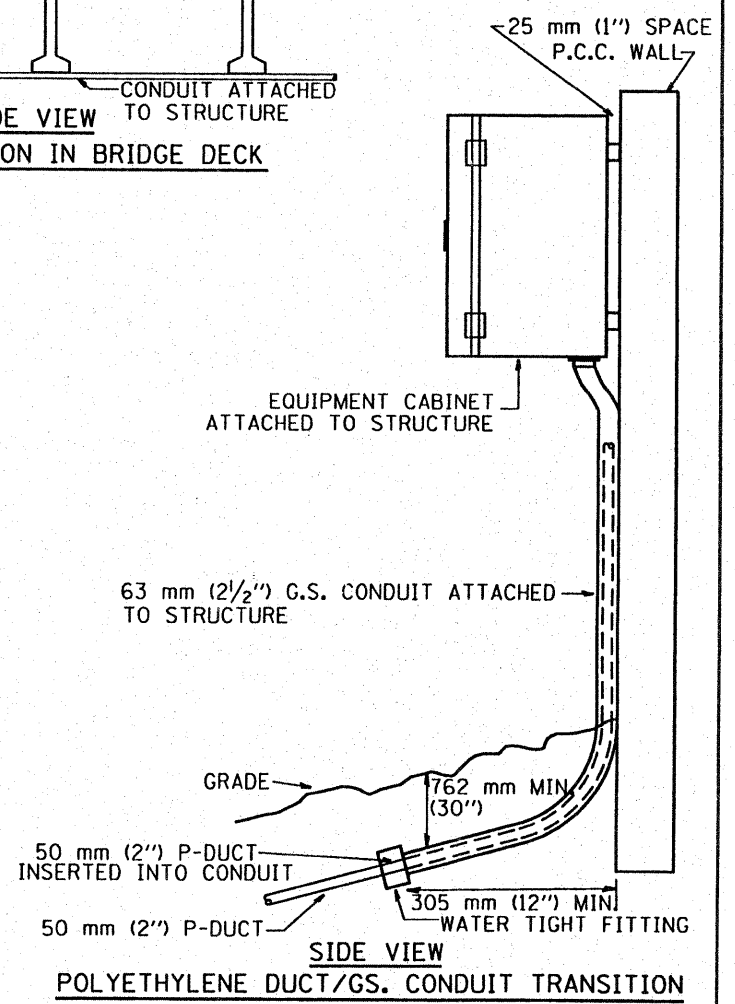
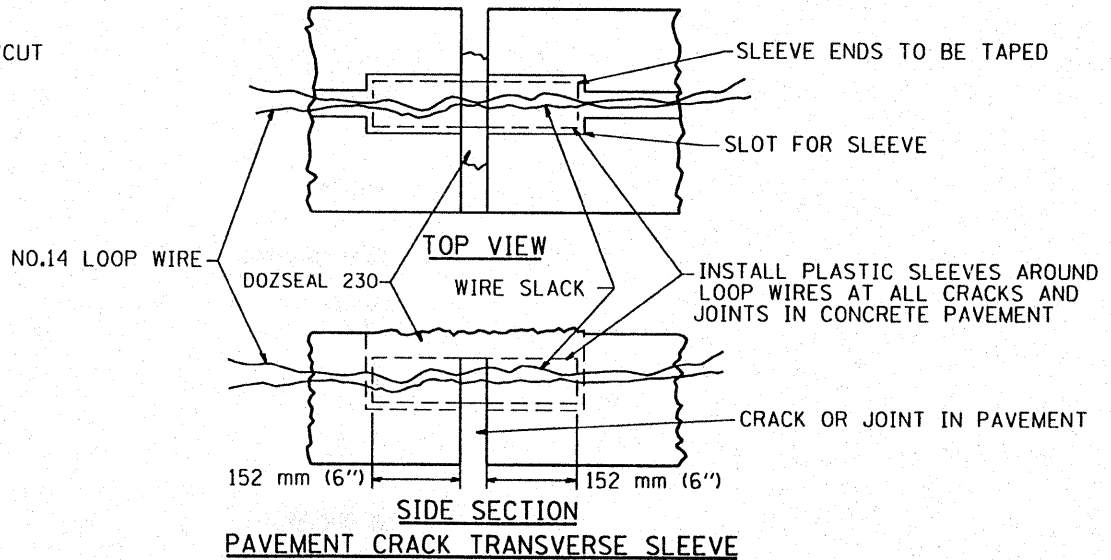
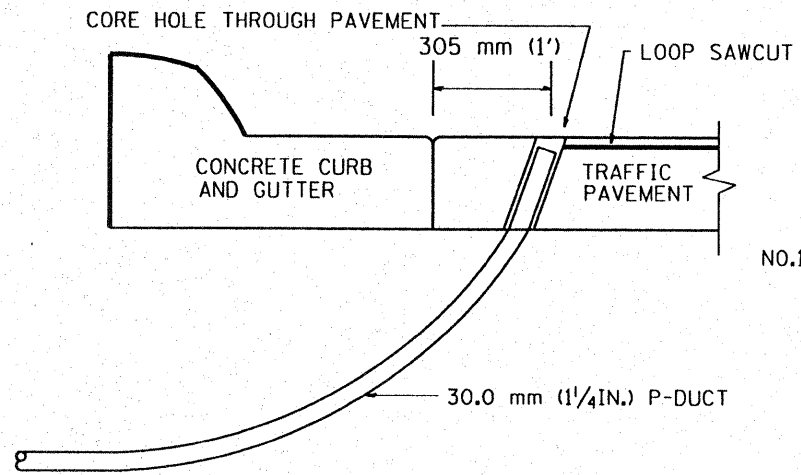
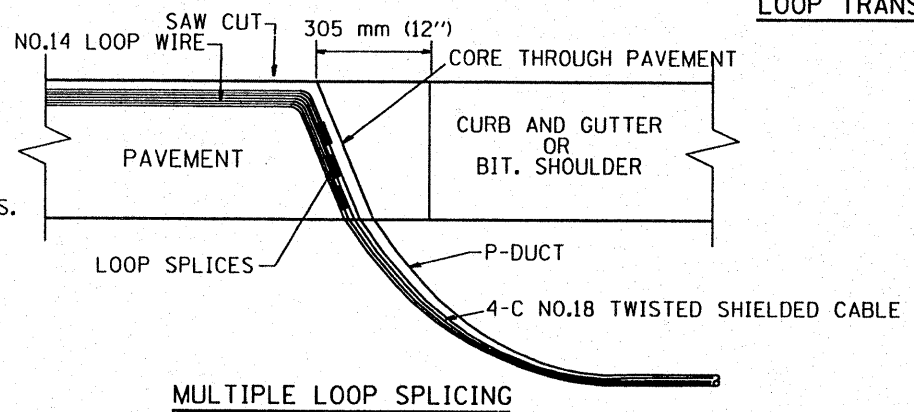
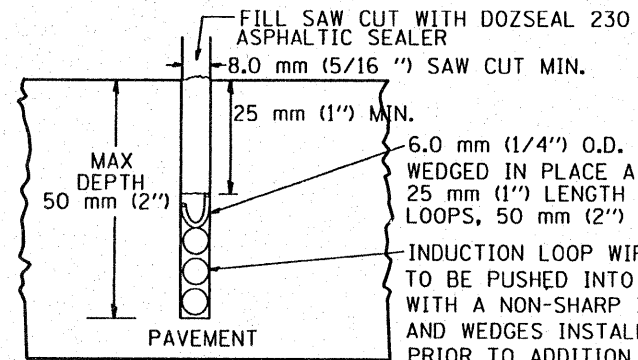
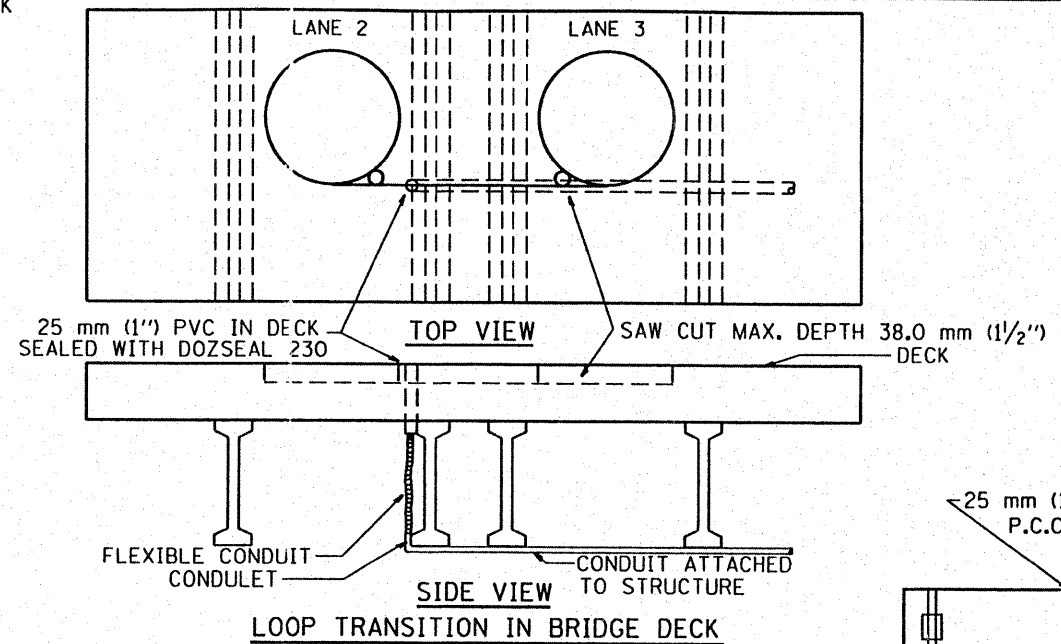
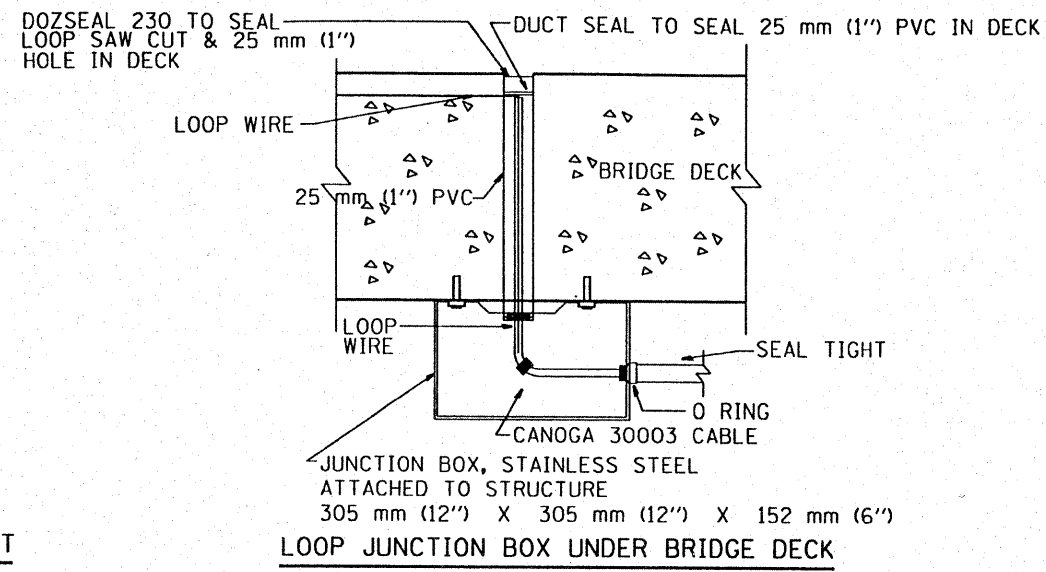
RD: TYPMET.DGN
RF:

VI-4181

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
220		COOK	214	292
STA.		TO STA.		
FED. ROAD DIST. NO. 1		ILLINOIS FED. AID PROJECT		



TYPICAL LOOP SAWCUT LAYOUT



REVISIONS	
NAME	DATE
R.L.	6/94
R.L.	3/95
T.C.	11/95
R.L.	05/96
T.C.	10/96

ILLINOIS DEPARTMENT OF TRANSPORTATION
TRAFFIC SYSTEMS CENTER

**LOOP, CONDUIT & DUCT
INSTALLATION DETAILS**

SCALE: VERT. NONE
HORIZ.

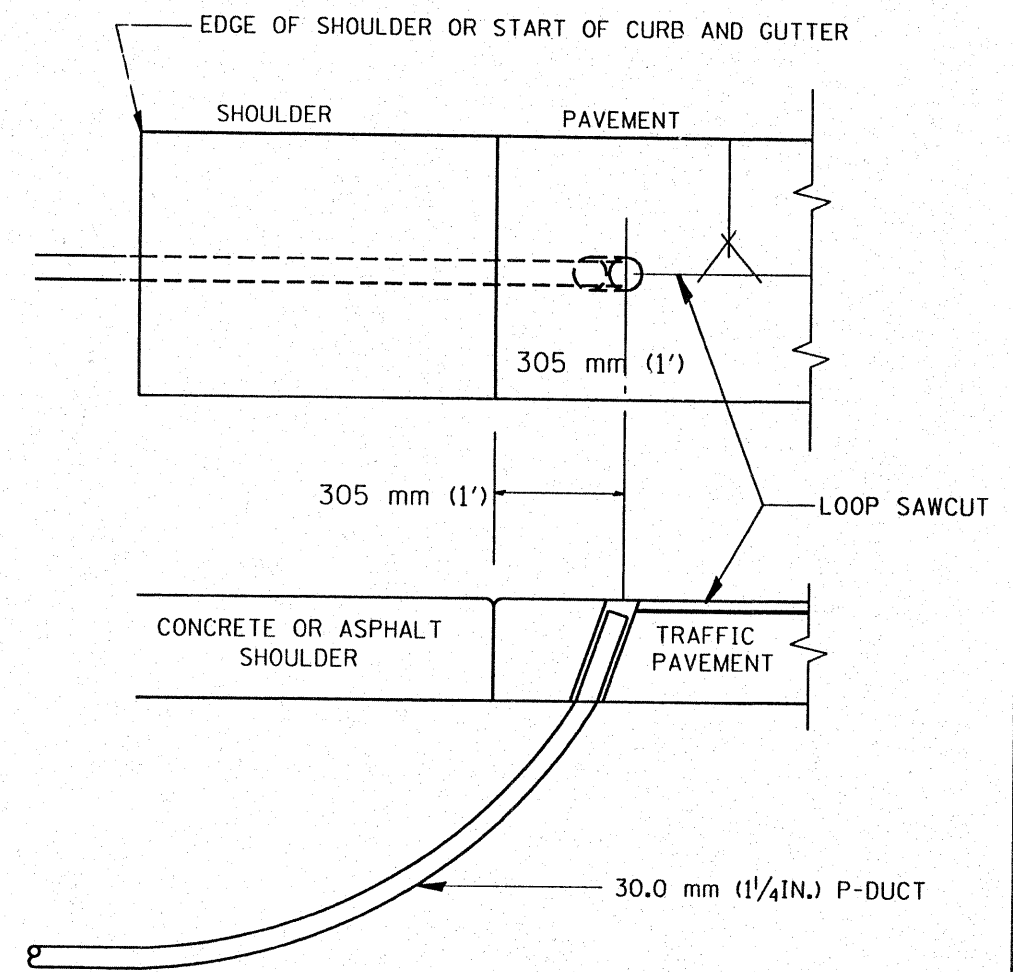
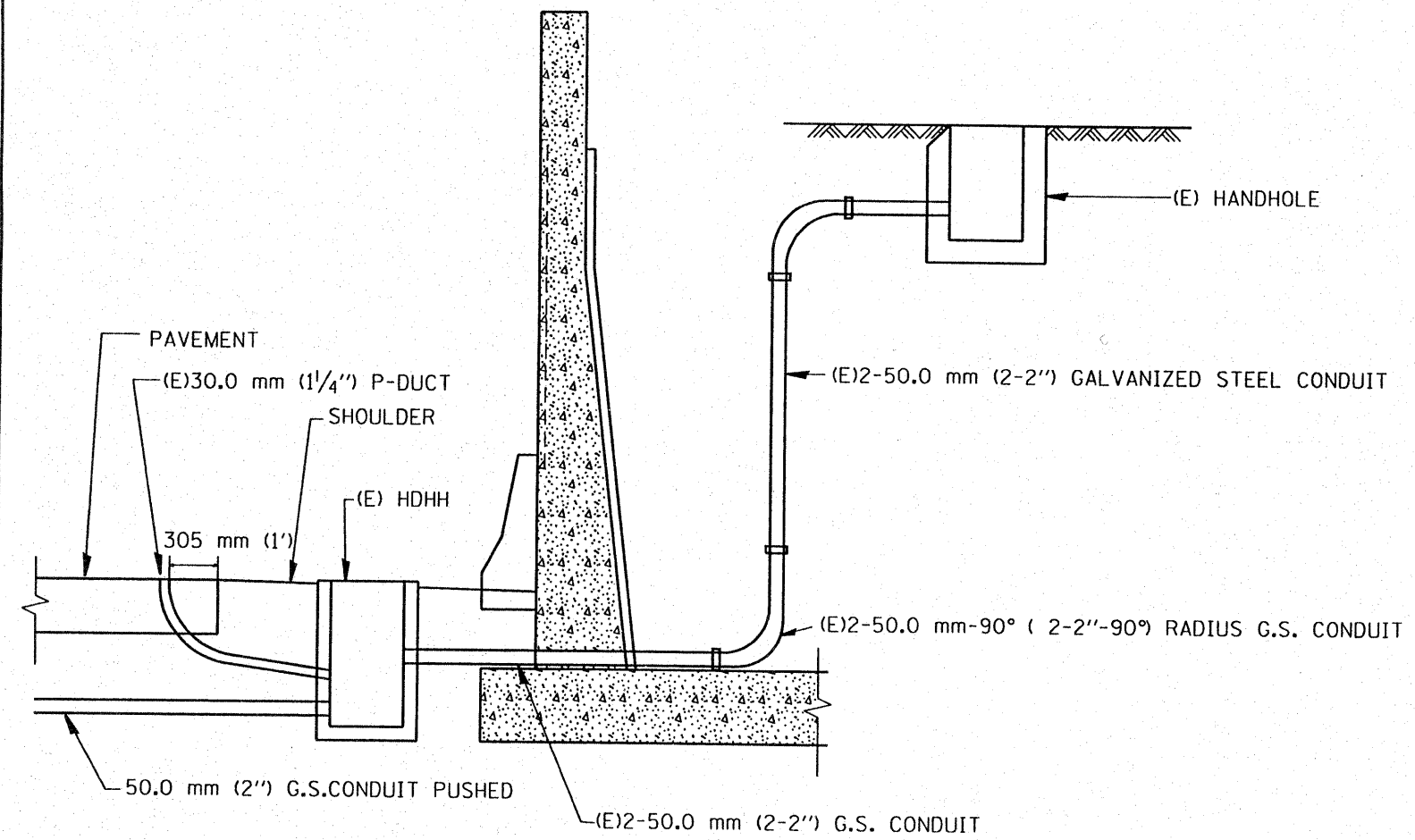
DATE 6-22-94

DRAWN BY G.M.
CHECKED BY R.L.

RD-TYPMET.DGN
RF

VI-4184

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
280		COOK	314	293
STA.		TO STA.		
FED. ROAD DIST. NO. 1		ILLINOIS FED. AID PROJECT		



SHOULDER LOOP LEAD-IN
TRANSITION DETAIL

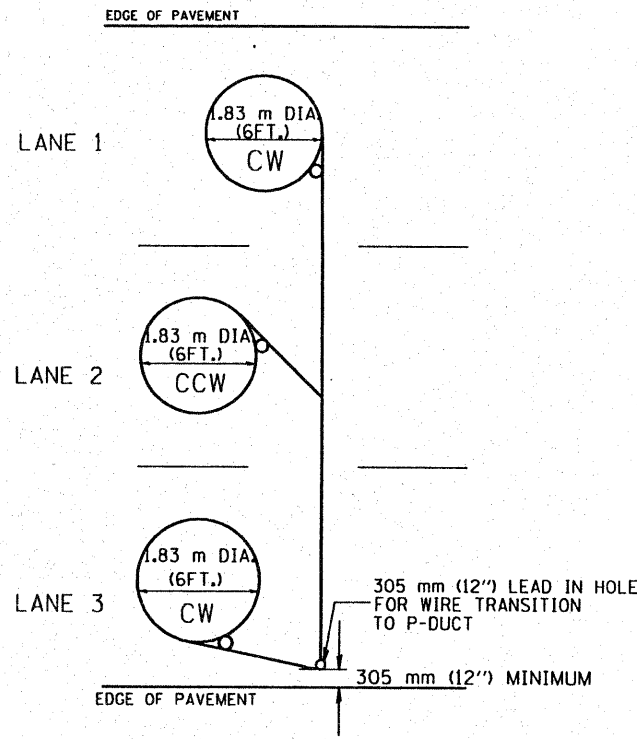
RD-TYPMET.DGN
RF*

VI-4185

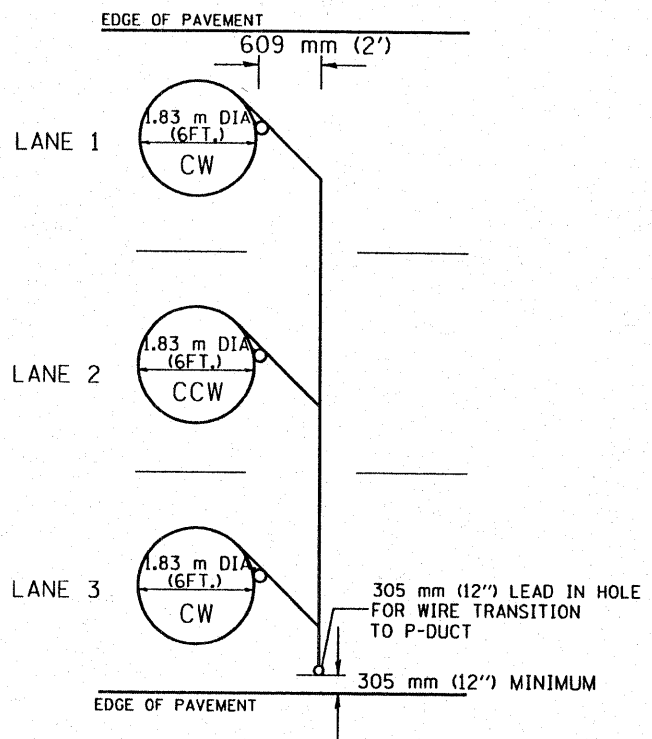
REVISIONS	
NAME	DATE
R.L.	6/94
T.C.	11/95
R.L.	05/96
T.C.	10/96

ILLINOIS DEPARTMENT OF TRANSPORTATION
TRAFFIC SYSTEMS CENTER
TYPICAL INDUCTION LOOP LEAD-IN
TRANSITION DIAGRAMS
SCALE: VERT. NONE
DATE 6-22-94
DRAWN BY G.M.
CHECKED BY R.L.

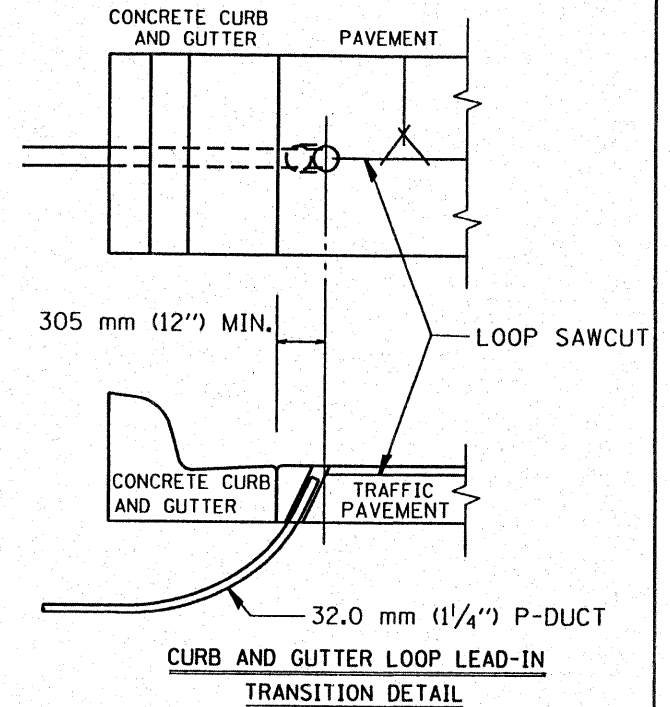
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	020K		214	294
STA.		TO STA.		
FED. ROAD DIST. NO. 1		ILLINOIS FED. AID PROJECT		



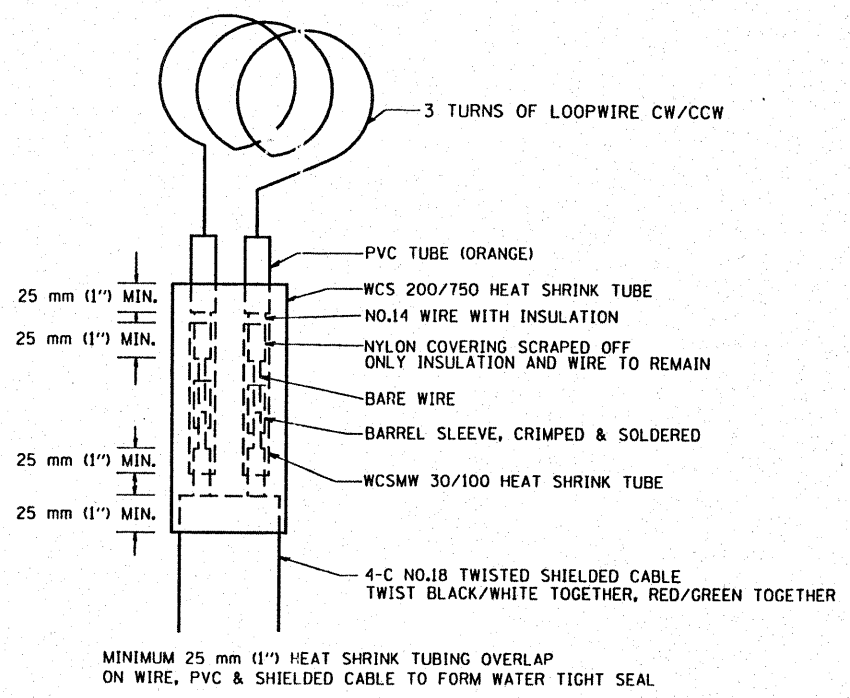
TYPICAL 1.83 m (6FT.) DIA. INDUCTION LOOP CORE DRILL
LAYOUT FOR MULTIPLE LANE ROADWAY



TYPICAL 1.83 m (6') DIA. INDUCTION LOOP CORE DRILL
LAYOUT FOR MULTIPLE LANE ROADWAY



CURB AND GUTTER LOOP LEAD-IN
TRANSITION DETAIL



LOOP SPLICING REQUIREMENTS

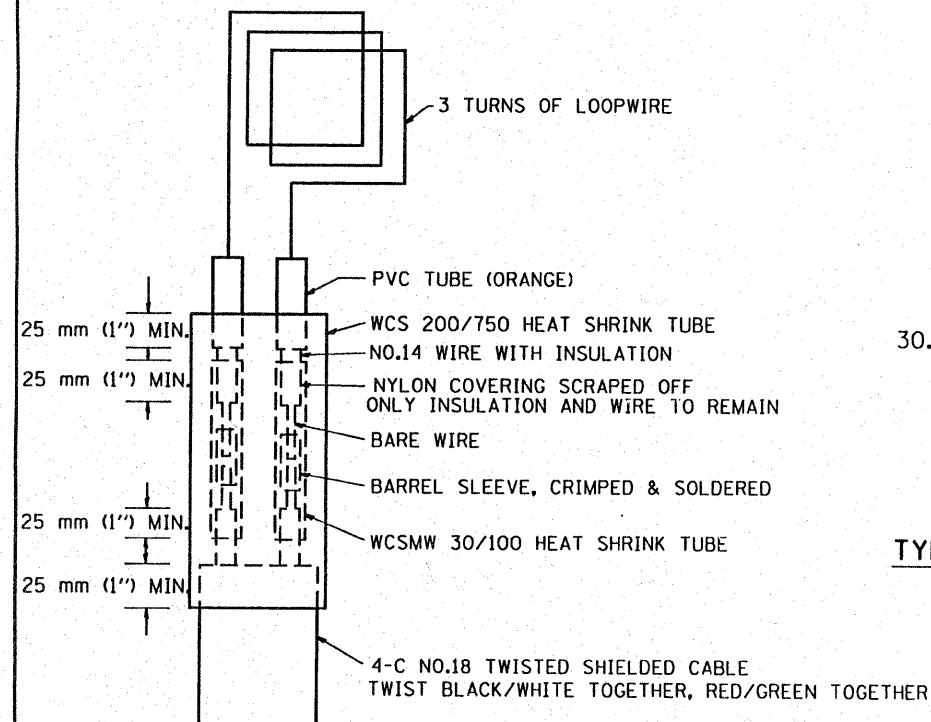
- NOTES
1. EACH LOOP SHALL BE SPLICED TO A 4-C NO.18 TWISTED SHIELDED LEAD IN WHEN 45 m (150FT.) OR MORE FROM CABINET.
 2. LOOPS SHALL BE SPLICED IN HANDHOLES ONLY, OTHERWISE WRITTEN PERMISSION SHALL BE OBTAINED FROM TSC ENGINEER.
 3. LOOPS SHALL NOT BE SPLICED IN SERIES.
 4. EACH LOOP LEAD IN SHALL BE IDENTIFIED AND PERMANENTLY COLOR CODED IN THE COREHOLE, HANDHOLE & CABINETS THRU WHICH THEY ENTER OR PASS AND TAGGED WITH THE CORRECT NOMENCLATURES.

REVISIONS		ILLINOIS DEPARTMENT OF TRANSPORTATION TRAFFIC SYSTEMS CENTER EXISTING ROUND INDUCTION LOOP TYPICALS
NAME	DATE	
R.L.	6/94	SCALE: VERT: NONE HORIZ: NONE DATE 6-22-94
T.C.	10/96	
		DRAWN BY G.M. CHECKED BY R.L.

RD-TYPNET.DGN
RF

VI-4182

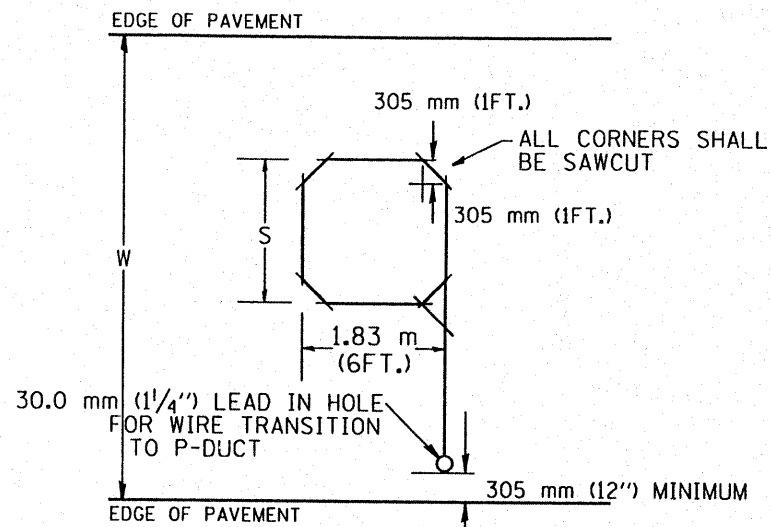
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290		COOK	214	295
STA.		TO STA.		
FED. ROAD DIST. NO. 4		ILLINOIS FED. AID PROJECT		



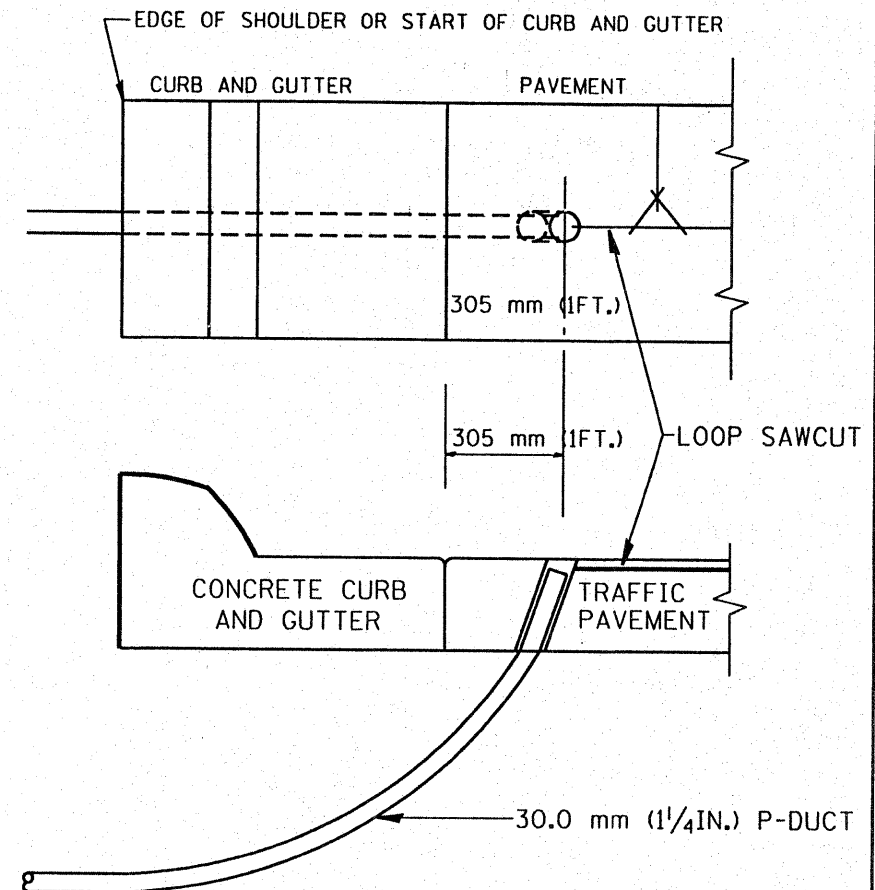
MINIMUM 25 mm (1") HEAT SHRINK TUBING OVERLAP ON WIRE, PVC & SHIELDED CABLE TO FORM WATER TIGHT SEAL

LOOP SPLICING REQUIREMENTS

WIDTH (W)	WIDTH (S)
3.7 m (12')	2.5 m (8')
4.0 m (13')	2.8 m (9')
4.3 m (14')	3.1 m (10')
4.6 m (15')	3.4 m (11')
4.9 m (16')	3.7 m (12')
5.2 m (17')	4.0 m (13')
5.5 m (18')	4.3 m (14')
5.8 m (19')	4.6 m (15')
6.1 m (20')	4.9 m (16')
6.4 m (21')	5.2 m (17')
6.7 m (22')	5.5 m (18')
7.0 m (23')	5.8 m (19')
7.3 m (24')	6.1 m (20')
7.6 m (25')	6.4 m (21')



TYPICAL "S" FT. BY 1.83 m (6 FT.) INDUCTION LOOP SAWCUT LAYOUT FOR RAMPS



CURB AND GUTTER LOOP LEAD-IN TRANSITION DETAIL

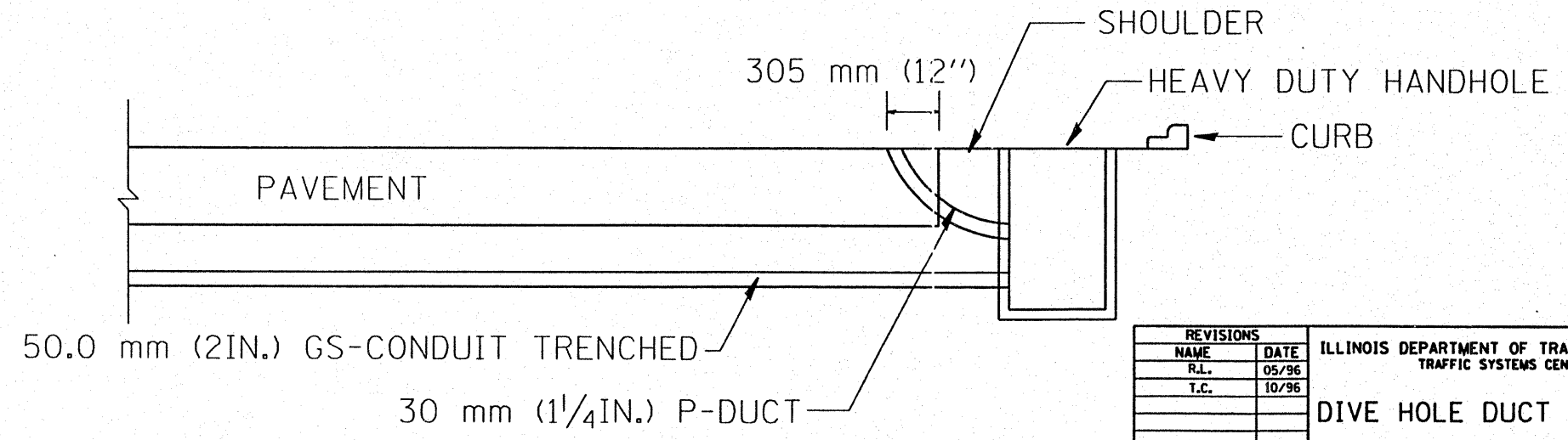
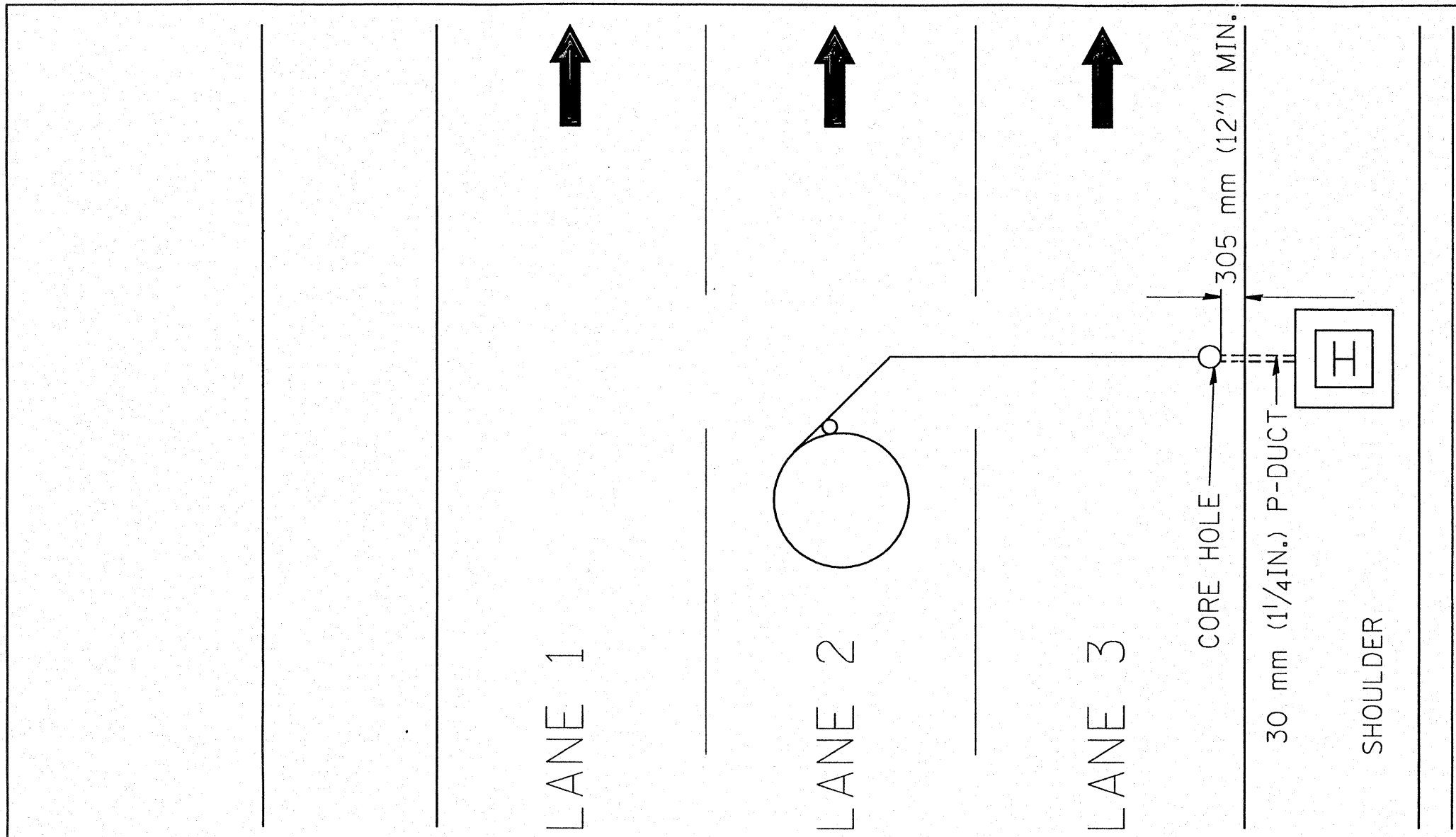
NOTES

1. EACH LOOP SHALL BE SPLICED TO A 4-C NO.18 TWISTED SHIELDED LEAD IN WHEN 45 m (150 FT.) OR MORE FROM CABINET.
2. LOOPS SHALL BE SPLICED IN HANDHOLES ONLY, OTHERWISE WRITTEN PERMISSION SHALL BE OBTAINED FROM TSC ENGINEER.
3. LOOPS SHALL NOT BE SPLICED IN SERIES.
4. EACH LOOP LEAD IN SHALL BE IDENTIFIED AND PERMANENTLY COLOR CODED IN THE COREHOLE, HANDHOLE & CABINETS THRU WHICH THEY ENTER OR PASS AND TAGGED WITH THE CORRECT NOMENCLATURES.

NAME	DATE
R.L.	6/94
T.C.	11/95
R.L.	05/96
T.C.	10/96

ILLINOIS DEPARTMENT OF TRANSPORTATION
TRAFFIC SYSTEMS CENTER
RECTANGULAR INDUCTION LOOP TYPICAL
SCALE: VERT. NONE
HORIZ. DATE 6-22-94
DRAWN BY G.M.
CHECKED BY R.L.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
230		COOK	214	296
STA.		TO STA.		
FED. ROAD DIST. NO. 1		ILLINOIS FED. AID PROJECT		



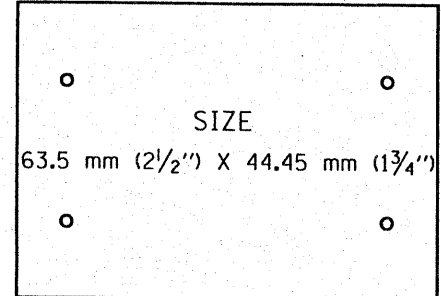
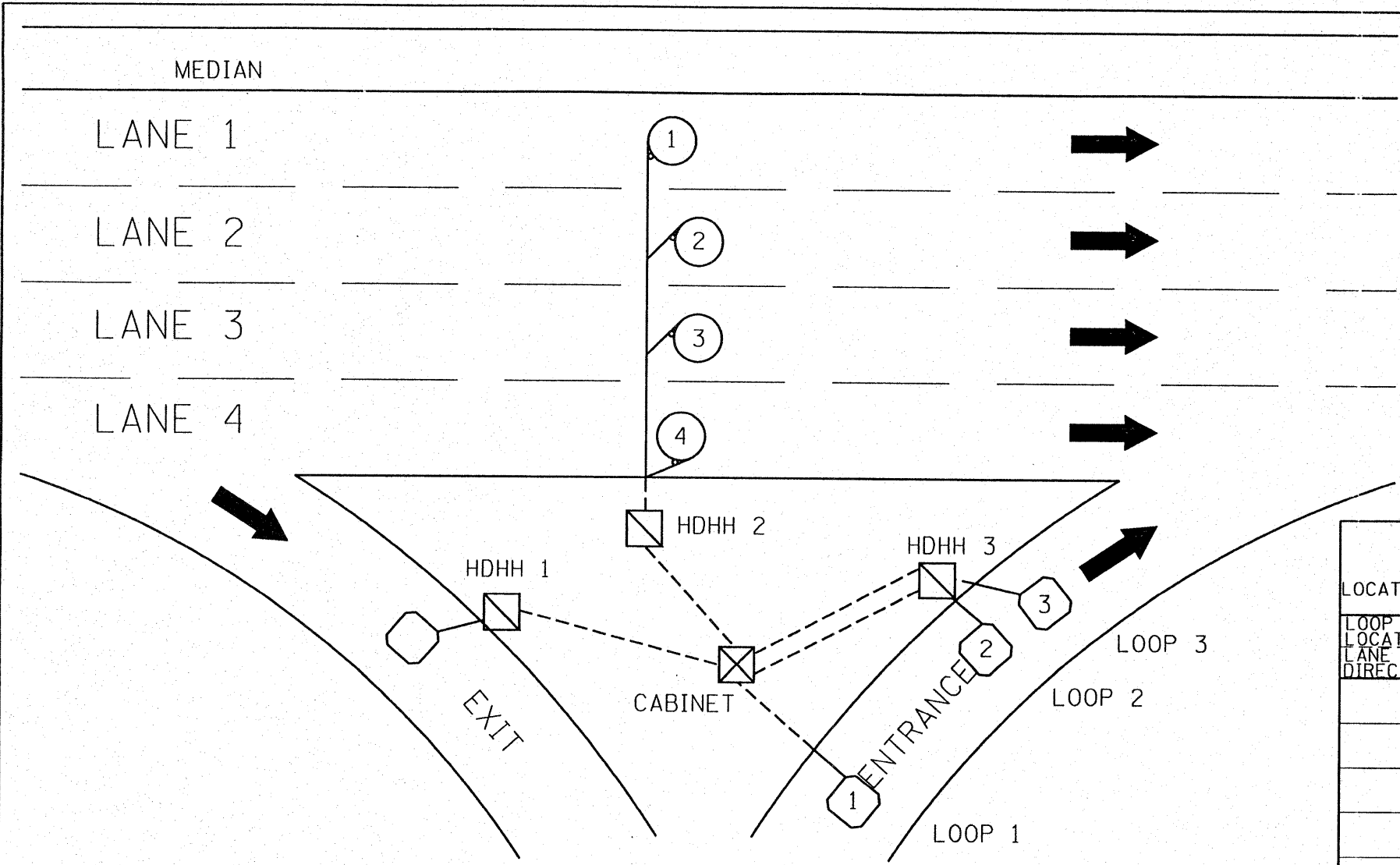
REVISIONS	
NAME	DATE
R.L.	05/96
T.C.	10/96

ILLINOIS DEPARTMENT OF TRANSPORTATION
 TRAFFIC SYSTEMS CENTER
DIVE HOLE DUCT SYSTEM
 SCALE: VERT. NONE
 DATE 11/7/95
 DRAWN BY G.M.
 CHECKED BY R.L.

RD-TYPMET.DGN
 RF=

VI-4188

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290		COOK	314	297
STA. _____		TO STA. _____		
FED. ROAD DIST. NO. /		ILLINOIS FED. AID PROJECT		



SUGGESTED TAG
PANDUIT
#MP250W175-C
OR EQUIVALENT

LOOP ANALYZER					
LOCATION _____				DATE _____	
LOOP LOCATION LANE DIRECTION	LOOP WIRE MARKED AND CODED	LOOP SIZE	FREQ. INDUCTANCE	INSULATION	LOOP RESISTANCE

HDHH 1 EXAMPLE

IB-EB EXIT
 CCW IN/
 TO CABINET # _____

HDHH 2 EXAMPLE

IB (OB) LANE # ____
 CCW /OUT
 TO CABINET # _____

HDHH 3 EXAMPLE

IB-EB ENT.
 LOOP #2
 CW IN/

NOTE:
EACH LOOP WIRE SHALL BE TAGGED AS "IN" OR "OUT" AND "CW" OR "CCW". SHIELDED CABLE WILL BE TAGGED IN EACH HANDHOLE AND CABINET TO MATCH THE CABLE LOG.

REVISIONS	
NAME	DATE
R.L.	6/94
T.C.	10/96

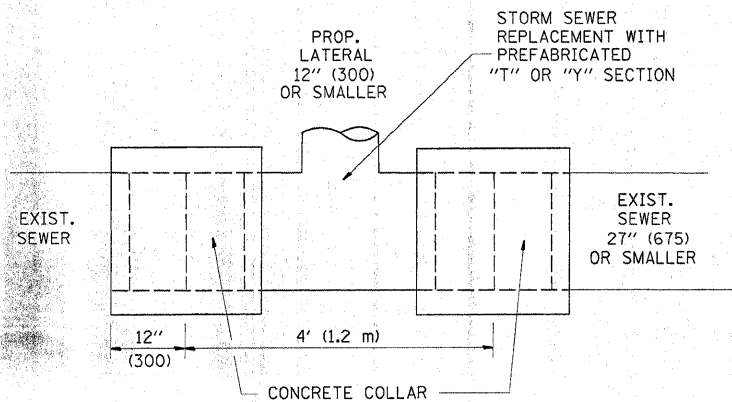
ILLINOIS DEPARTMENT OF TRANSPORTATION
TRAFFIC SYSTEMS CENTER

LOOP STATUS REPORT

SCALE: VERT. NONE
HORIZ. _____

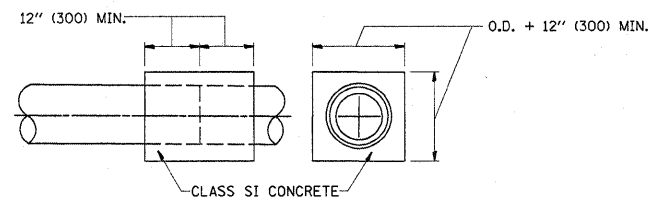
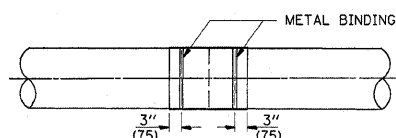
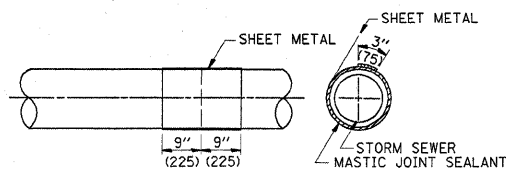
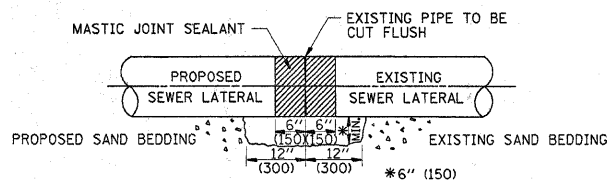
DATE 6-27-94

DRAWN BY G.M.
CHECKED BY R.L.



DETAIL "A"

LATERAL CONNECTION TO EXISTING SEWER OF 27" (675) OR SMALLER

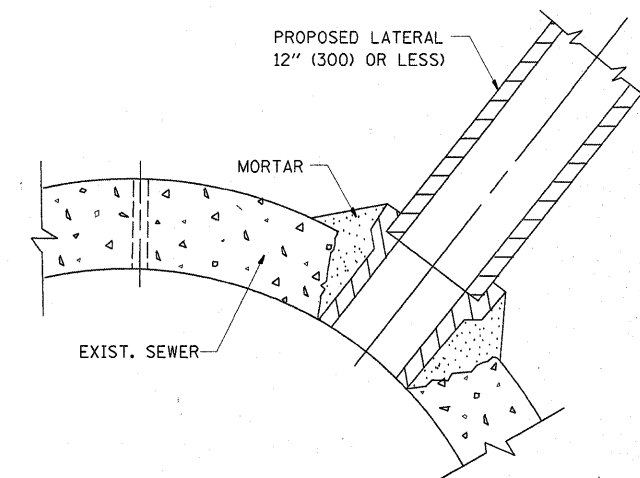


DETAIL "B"

CLASS SI CONCRETE COLLAR

CONSTRUCTION SEQUENCE

1. CUT THE EXISTING END OF THE PIPE SO AS TO PRESENT A FLUSH BUTT JOINT. BRUSH AND CLEAN ALL PIPES.
2. APPLY THE MASTIC JOINT SEALANT TO THE FIRST 6" (150) OF EACH PIPE.
3. BUTT THE PIPES TOGETHER LEAVING A MINIMUM OF 12' x 6" (300 x 150) DEEP EXCAVATION UNDER AND AROUND EACH PIPE END.
4. CUT A PIECE OF SHEET METAL GAGE NO. 19 1.1 (0.0418) 18" (450) WIDE BY THE OUTSIDE CIRCUMFERENCE OF THE PIPE PLUS 3" (75) LONG.
5. WRAP THE SHEET METAL AROUND THE PIPES, 9" (225) ON EACH SIDE OF THE JOINT, STARTING AT THE TOP OF THE PIPE.
6. LAP THE SHEET METAL AT LEAST 3" (75) AT THE TOP OF THE PIPE AND PLACE THE MASTIC JOINT SEALANT BETWEEN THE LAP.
7. PLACE TWO METAL BANDS AROUND THE SHEET METAL AND TIGHTEN.
8. WIPE OFF ANY EXCESS MASTIC JOINT SEALANT THAT OZZES OUT FROM BETWEEN THE SHEET METAL AND THE PIPES.
9. PLACE CLASS SI CONCRETE AROUND THE JOINT.



DETAIL "C"

PROPOSED LATERAL CONNECTION TO EXISTING SEWER OF 30" (750) OR LARGER

NOTES

MATERIAL

MATERIAL USED FOR THE TEE OR WYE SECTION SHALL BE COMPATIBLE WITH THE EXISTING STORM SEWER OR THE PROPOSED STORM SEWER.

CONSTRUCTION METHODS

- THIS WORK SHALL BE CONSTRUCTED IN CONFORMANCE WITH THE APPLICABLE PORTIONS OF SECTION 550 OF THE STANDARD SPECIFICATIONS.
- CONNECTION TO AN EXISTING STORM SEWER SHALL BE BY EITHER OF THE FOLLOWING METHODS:
 - PROPOSED STORM SEWER CONNECTION TO EXISTING SEWER OF 27" (675) OR SMALLER SEE DETAIL "A" AND "B".
 - PROPOSED STORM SEWER CONNECTION TO EXISTING SEWER OF 30" (750) OR LARGER SEE DETAIL "C".

IF THE EXISTING SEWER PIPE IS CRACKED, BROKEN OR OTHERWISE DAMAGED BY THE CONTRACTOR IN MAKING THE CIRCULAR OPENING, THE CONTRACTOR SHALL REPLACE THAT SECTION OF PIPE WITH PIPE EQUAL AND SIMILAR IN ALL RESPECTS TO THE PIPE IN THE EXISTING SEWER, IN A CAREFUL WORKMANLIKE MANNER, WITHOUT EXTRA COMPENSATION.

GENERAL

CARE MUST BE TAKEN TO PREVENT DEBRIS FROM ENTERING THE SEWER. ALL DEBRIS WHICH ENTERS THE SEWER MUST BE REMOVED. THE SEWER MUST BE LEFT CLEAN AND UNOBSTRUCTED UPON COMPLETION OF THE CONTRACT.

CARE MUST BE TAKEN TO PREVENT ANY PART OF THE NEW PIPE CONNECTION FROM PROJECTING INTO THE EXISTING SEWER.

BASIS OF PAYMENT

TEE OR WYE CONNECTIONS SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE EACH FOR STORM SEWER TEE OR WYE OF THE TYPE AND SIZE SPECIFIED IN THE PLANS, THIS PRICE SHALL INCLUDE ALL EXCAVATION OF THE TRENCH, REMOVAL OF THE EXISTING STORM SEWER, FURNISHING AND INSTALLING THE SPECIFIED TEE OR WYE SECTION, FURNISHING AND INSTALLING THE REQUIRED CONCRETE COLLAR, AND ALL OTHER MATERIAL NECESSARY TO COMPLETE THIS WORK AS SHOWN AND SPECIFIED.

REMOVAL AND REINSTALLATION OF EXISTING STORM SEWER ADJACENT TO THE PROPOSED TEE OR WYE SECTION, FOR THE PURPOSE OF FACILITATING THE INSTALLATION OF THE TEE OR WYE SECTION, WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE WORK.

TRENCH BACKFILL, EXCAVATION IN ROCK AND REMOVAL AND REPLACEMENT OF UNSUITABLE MATERIAL BELOW PLAN BEDDING GRADE WILL BE PAID FOR SEPARATELY.

CONCRETE COLLAR FOR CONNECTING A PROPOSED STORM SEWER TO AN EXISTING STORM SEWER WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE COST OF THE PROPOSED STORM SEWER.

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

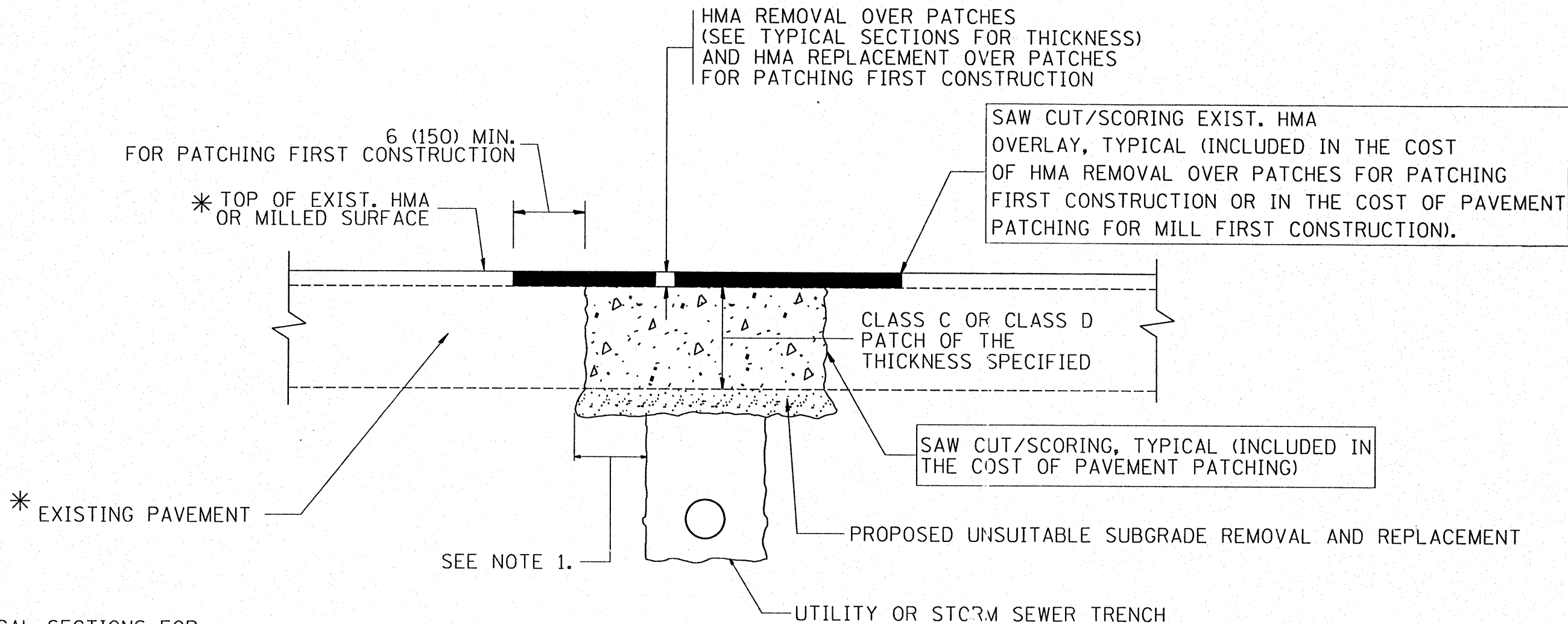
FILE NAME =	USER NAME = abreuah	DESIGNED - M. DE YONG	REVISED - M. DE YONG 05-08-92
c:\pwork\pwork\ABREUAH\d0166668\Dist\std.dgn		DRAWN -	REVISED - R. SHAH 09-09-94
PLOT SCALE = 50.0000' / IN.		CHECKED -	REVISED - R. SHAH 10-25-94
PLOT DATE = 2/18/2010		DATE - 07-25-90	REVISED - R. SHAH 06-12-96

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DETAIL OF STORM SEWER
CONNECTION TO EXISTING SEWER

SCALE: NONE SHEET NO. 1 OF 1 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	(531-3.1, 0305-302 K) RS-5	COOK	314	298
BD500-01 (BD-7)			CONTRACT NO. 60138	
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				



* SEE TYPICAL SECTIONS FOR THICKNESS AND MATERIALS

NOTES:

1. THE WIDTH OF THE FULL DEPTH PATCH OVER A TRENCH SHALL BE 12 (300) WIDER ON EACH SIDE OF THE TRENCH.
2. FOR METHOD OF MEASUREMENT AND BASIS OF PAYMENT, SEE RECURRING SPECIAL PROVISION "PATCHING WITH HOT-MIX ASPHALT OVERLAY REMOVAL".

SEQUENCE OF CONSTRUCTION (PATCHING FIRST)

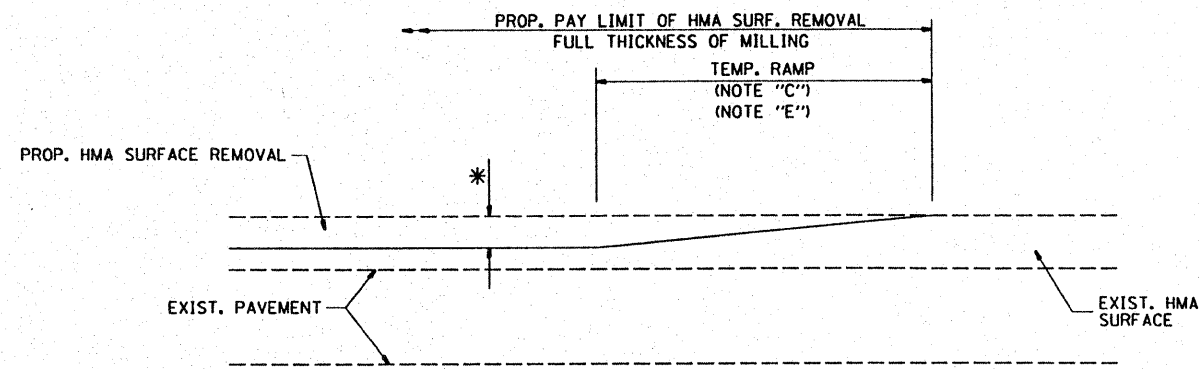
1. REMOVE THE EXISTING HMA MATERIAL OVER THE AREA TO BE PATCHED.
2. REMOVE AND REPLACE WITH CLASS C OR D PATCH.
3. REPLACE HMA MATERIAL OVER THE AREA TO BE PATCHED.

SEQUENCE OF CONSTRUCTION (MILLING FIRST)

1. MILL HMA FIRST IF THERE IS AT LEAST 4 1/2 INCHES OR MORE OF HMA MATERIAL ON TOP OF THE EXISTING PAVEMENT OR IF THE PAVEMENT IS FULL DEPTH HMA. A MINIMUM OF 2 INCHES OF HMA MATERIAL SHALL BE IN PLACE AFTER MILLING.
2. REMOVE AND REPLACE WITH FULL DEPTH CLASS D PATCHES TO TOP OF MILLED SURFACE.

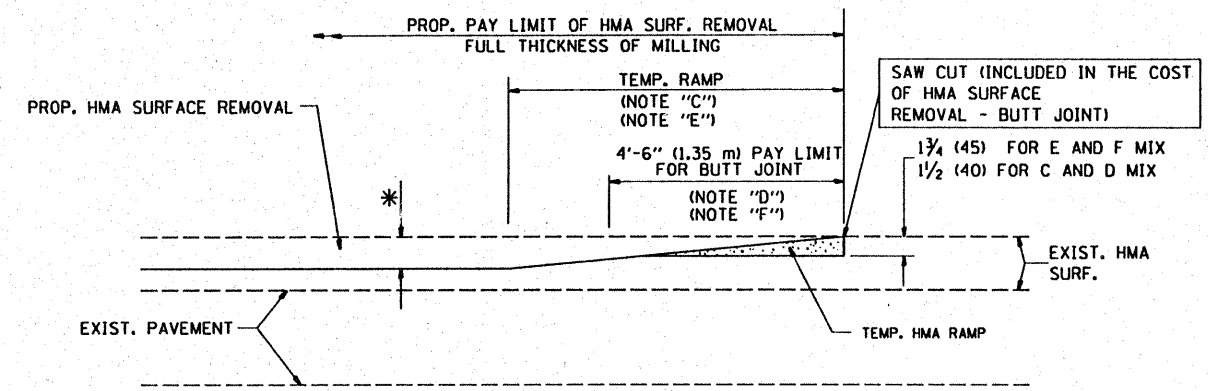
ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.

FILE NAME :	USER NAME : abrahah	DESIGNED - R. SHAH	REVISED - A. ABBAS 04-27-98	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PAVEMENT PATCHING FOR HMA SURFACED PAVEMENT			F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
ct:\pwork\PIWIDOT\ABREUAH\0166688\01.td.dgn		DRAWN -	REVISED - R. BORO 01-01-07		SCALE: NONE	SHEET NO. 1 OF 1 SHEETS	STA.	TO STA.	290	(531-3.1, 0305-302 KI RS-5)	COOK	314	299
PLOT SCALE : 100.0000 "/td> <td></td> <td>CHECKED -</td> <td>REVISED - R. BORO 09-04-07</td> <td colspan="3"></td> <td colspan="2">BD400-04 (BD-22)</td> <td colspan="3">CONTRACT NO. 60138</td>		CHECKED -	REVISED - R. BORO 09-04-07					BD400-04 (BD-22)		CONTRACT NO. 60138			
PLOT DATE : 1/23/2018		DATE - 10-25-94	REVISED - K. ENG 10-27-08					FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					



MILLED TEMPORARY RAMP
(FOR BUTT JOINT AND HMA TAPER SEE DETAIL BELOW)

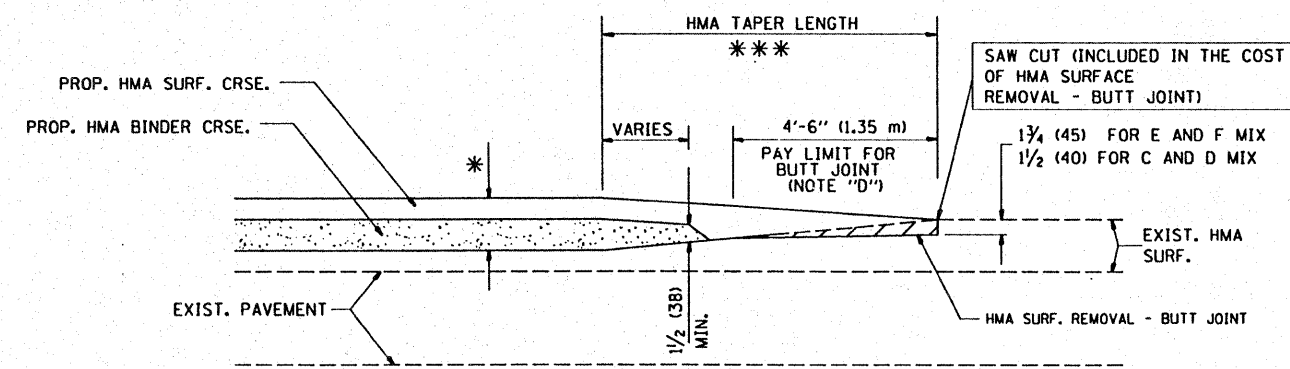
OPTION 1



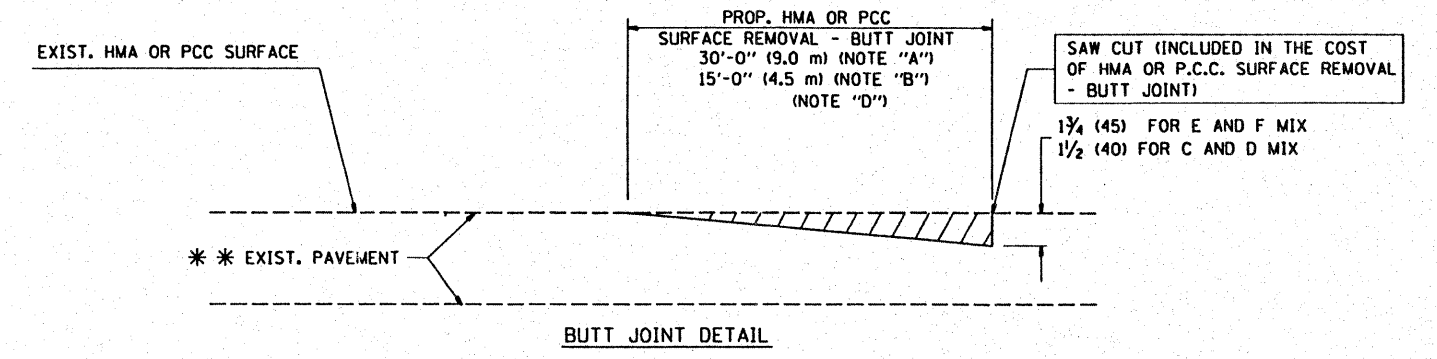
HMA CONSTRUCTED TEMPORARY RAMP
(FOR BUTT JOINT AND HMA TAPER SEE DETAIL BELOW)

OPTION 2

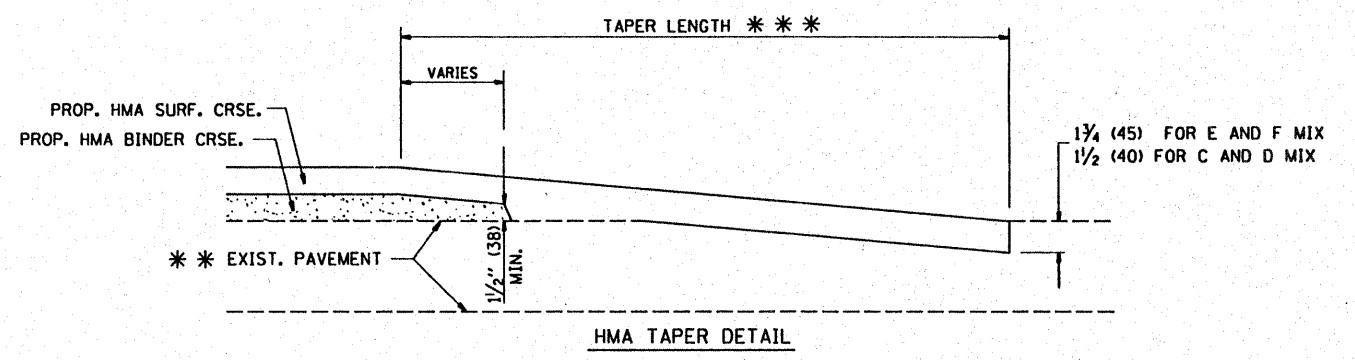
TYPICAL TEMPORARY RAMP



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



BUTT JOINT DETAIL



HMA TAPER DETAIL

TYPICAL BUTT JOINT AND HMA TAPER FOR RESURFACING ONLY

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

NOTES

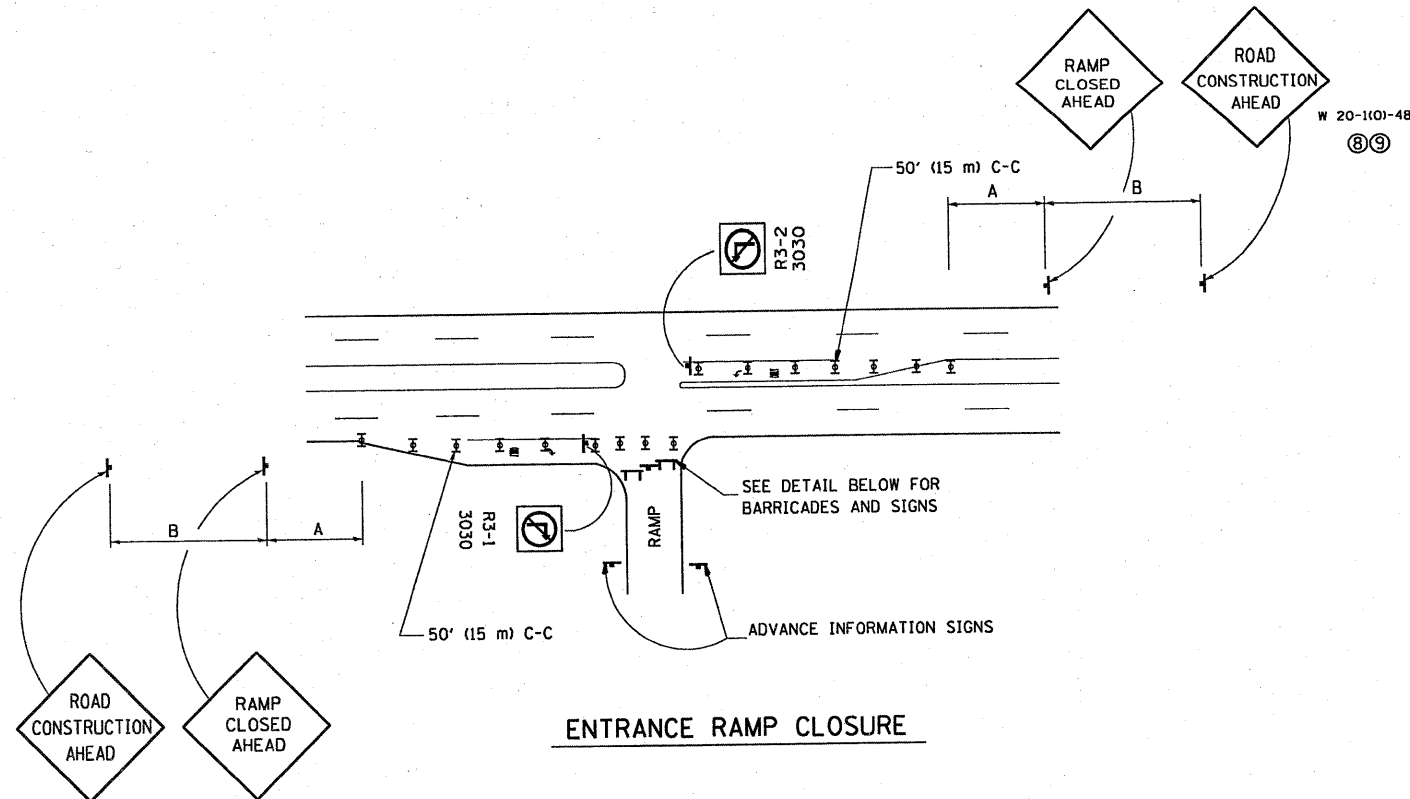
- A: MAINLINE ROADWAYS AND MAJOR SIDE ROADS.
 - B: MINOR SIDE ROADS.
 - C: THE TEMP. RAMP SHALL BE CONSTRUCTED IMMEDIATELY UPON REMOVAL OF THE EXISTING HMA SURFACE.
 - D: THE BUTT JOINT SHALL BE CONSTRUCTED IMMEDIATELY PRIOR TO PLACING THE PROPOSED HMA COURSES.
 - E: TAPER THE TEMP. RAMP AT A RATE OF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

BASIS OF PAYMENT:

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

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

FILE NAME -	USER NAME - abrauh	DESIGNED - M. DE YONG	REVISED - R. SHAH 10-25-94	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	BUTT JOINT AND HMA TAPER DETAILS			F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
ci:\pw\work\PIWIDOT\ABREUAH\0166688\0166688.dgn		DRAWN -	REVISED - A. ABBAS 03-21-97		290	(531-3.1, 0305-302 K) RS-5	COOK	314	300			
PLOT SCALE = 100.0000 "/> <td></td> <td>CHECKED -</td> <td>REVISED - M. GOMEZ 04-06-01</td> <td colspan="3" style="text-align: center;">SCALE: NONE</td> <td>SHEET NO. 1 OF 1 SHEETS</td> <td>STA.</td> <td>TO STA.</td> <td colspan="2" style="text-align: center;">CONTRACT NO. 60138</td>		CHECKED -	REVISED - M. GOMEZ 04-06-01		SCALE: NONE			SHEET NO. 1 OF 1 SHEETS	STA.	TO STA.	CONTRACT NO. 60138	
PLOT DATE = 1/23/2018		DATE - 06-13-90	REVISED - R. BORO 01-01-07		FED. ROAD DIST. NO. 1 (ILLINOIS) FED. AID PROJECT							



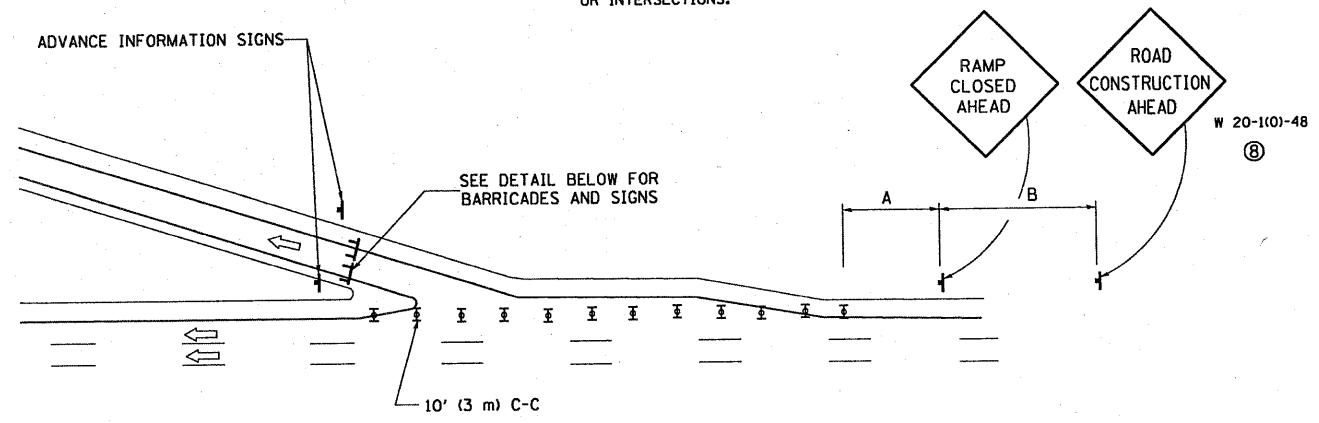
ENTRANCE RAMP CLOSURE

SIGN SPACING TABLE

FACILITY	DISTANCE BETWEEN SIGNS	
	A	B
EXPRESSWAY >24 HOURS	1000' (300 m)	1500' (450 m)
EXPRESSWAY ≤24 HOURS	500' (150 m)	500' (150 m)
ARTERIAL ≥45 MPH	350' (100 m)	350' (100 m)
ARTERIAL <45 MPH	150' (45 m)	150' (45 m)

DISTANCES MAY BE SHORTENED DEPENDING UPON THE PROXIMITY OF ADJACENT RAMPS OR INTERSECTIONS.

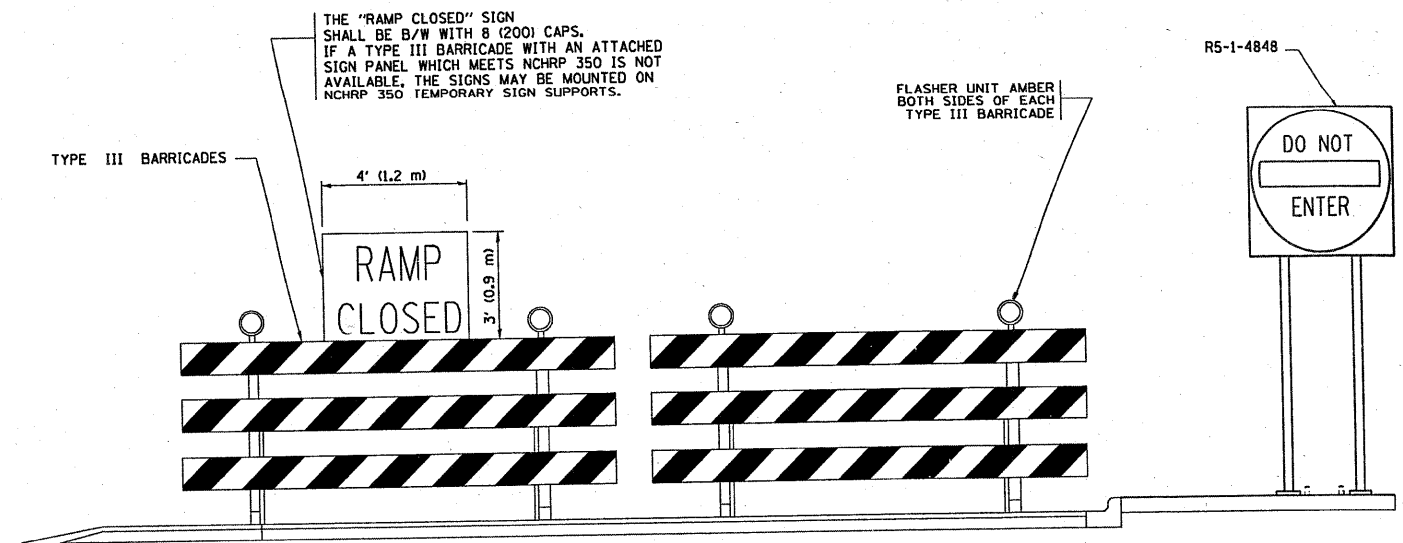
W 20-1101-48
⑧⑨



EXIT RAMP CLOSURE

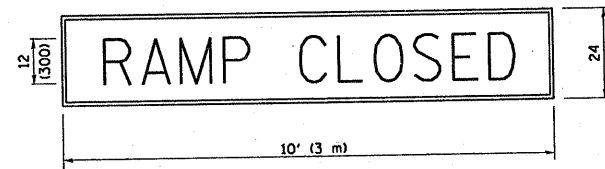
SYMBOLS

- ⊥ TYPE II BARRICADE, DRUM OR VERTICAL BARRICADE WITH STEADY BURN MONO-DIRECTIONAL LIGHT
- ⊥ TYPE III BARRICADE WITH FLASHING LIGHT



DETAIL FOR REQUIRED BARRICADES & SIGNS

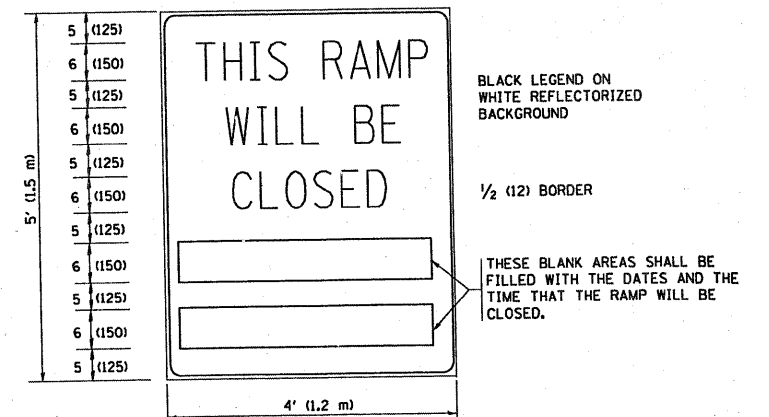
RAMP CLOSURE ADVANCE WARNING SIGN



BLACK LEGEND ON ORANGE REFLECTORIZED BACKGROUND
1 (25) BORDER

THESE SIGNS ARE REQUIRED ON ALL THE EXIT GUIDE SIGNS FOR THE CLOSED EXIT RAMPS.

RAMP CLOSURE ADVANCE INFORMATION SIGN



BLACK LEGEND ON WHITE REFLECTORIZED BACKGROUND

1/2 (12) BORDER

THESE BLANK AREAS SHALL BE FILLED WITH THE DATES AND THE TIME THAT THE RAMP WILL BE CLOSED.

THESE SIGNS ARE REQUIRED ON BOTH SIDES OF THE RAMP, MINIMUM OF 1 WEEK IN ADVANCE OF THE CLOSURE.

GENERAL NOTES:

- ① CONES MAY BE SUBSTITUTED FOR DRUMS OR TYPE II BARRICADES DURING DAY OPERATIONS. CONES SHALL BE A MINIMUM OF 28 (700) HIGH.
- ② STEADY BURN LIGHTS WILL NOT BE REQUIRED FOR DAY OPERATIONS.
- ③ A FLAGGER SHALL BE POSITIONED AT EACH CLOSED RAMP THAT IS OPEN TO CONSTRUCTION VEHICLES.
- ④ ALL ROUTE MARKERS AND TRAILBLAZER ASSEMBLIES WHICH DIRECT MOTORISTS TO A CLOSED ENTRANCE RAMP SHALL BE COVERED.
- ⑤ THE SIGNING AND BARRICADING WHICH IS REQUIRED BY THIS DETAIL SHALL BE INCLUDED IN THE COST OF TRAFFIC CONTROL AND PROTECTION (EXPRESSWAYS).
- ⑥ AUTHORIZATION FROM THE DISTRICT'S BUREAU OF TRAFFIC IS REQUIRED FOR ALL RAMP CLOSURES.
- ⑦ THE RAMP CLOSURE ADVANCE INFORMATION SIGNS SHALL BE ERECTED IF THE CLOSURE TIME EXCEEDS TWENTY-FOUR (24) HOURS. ADDITIONAL ADVANCE WARNING SIGNS ON EXIT GUIDE SIGNING WILL BE REQUIRED FOR EXIT RAMP CLOSURES THAT EXCEED TWENTY FOUR (24) HOURS IN LENGTH.
- ⑧ ROAD CONSTRUCTION AHEAD SIGNS MAY BE OMITTED WHEN THIS DETAIL IS USED IN CONJUNCTION WITH OTHER TRAFFIC CONTROL THAT ALREADY INCLUDES A ROAD CONSTRUCTION AHEAD SIGN.
- ⑨ ARTERIAL ROAD CONSTRUCTION AHEAD SIGNS MAY BE OMITTED ON CLOSURES LESS THAN 24 HOURS IN DURATION.

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

FILE NAME =	USER NAME = abreuh	DESIGNED - DWS	REVISED - DWS/JAF 12-02
ca:\pwork\p\dot\breuh\d0166688\Dist\d.dgn		DRAWN -	REVISED - JAF 02-06
	PLOT SCALE = 100.0000' / IN.	CHECKED -	REVISED - SPB 01-07
	PLOT DATE = 2/4/2010	DATE - 02-83	REVISED - SPB 12-09

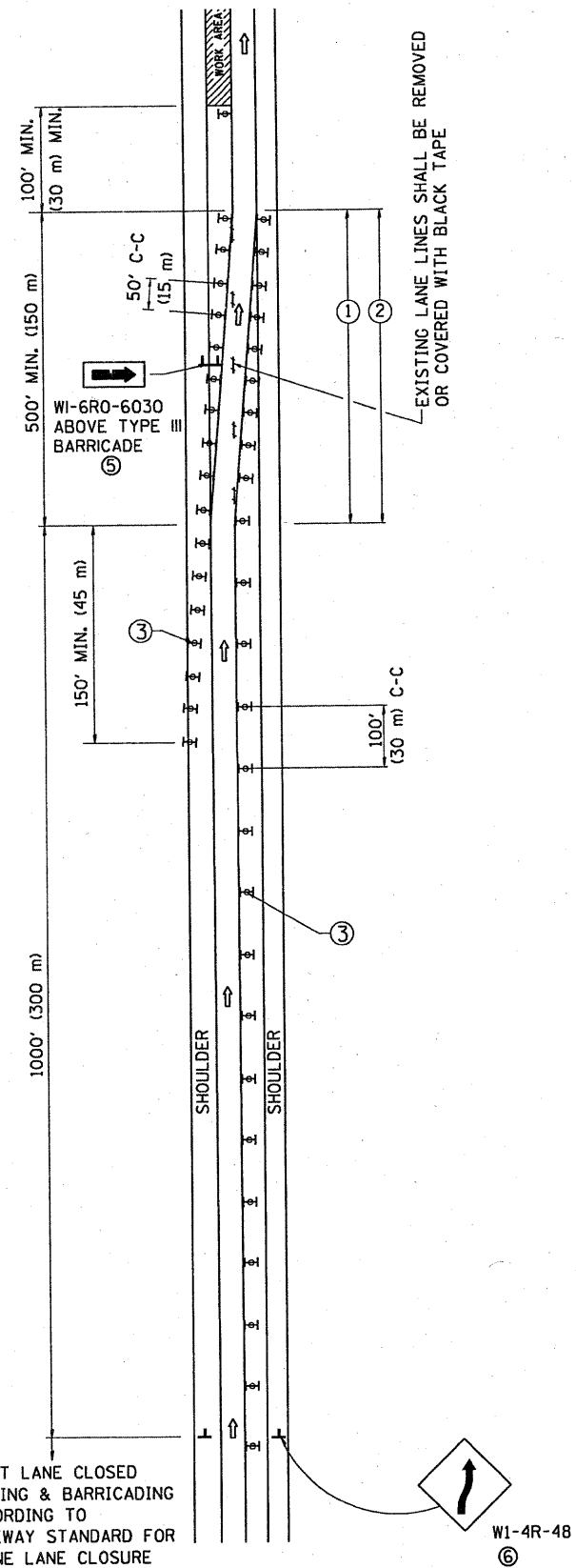
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**FREWAY ENTRANCE AND EXIST RAMP
CLOSURE DETAILS**

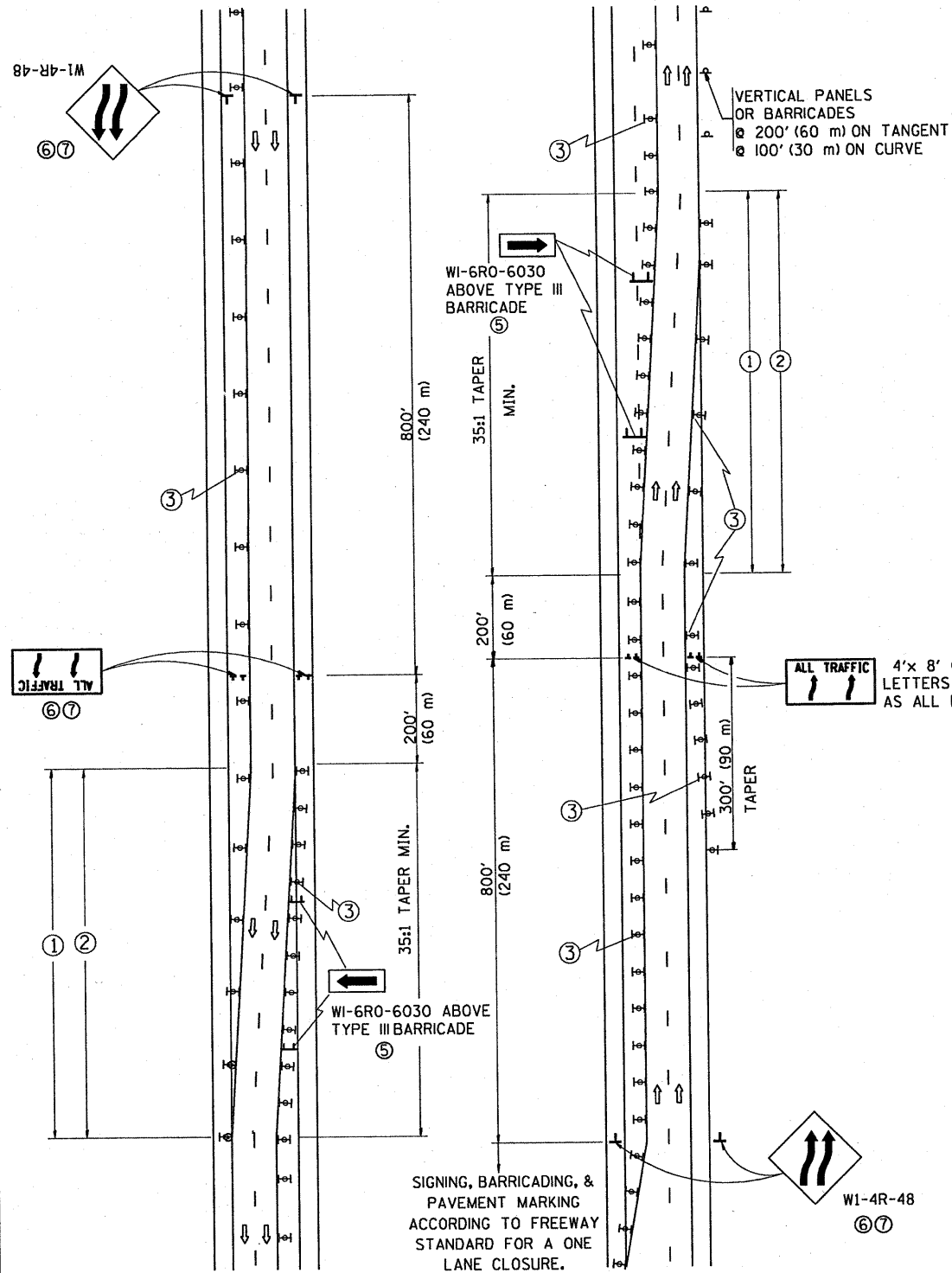
SCALE: NONE SHEET NO. 1 OF 1 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	(S31-3.1, 0305-302 K) RS-5	COOK	314	301
TC-08		CONTRACT NO. 60138		
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				

SINGLE LANE WEAVE



MULTI-LANE WEAVE



GENERAL NOTES

- ① EXISTING CONFLICTING PAVEMENT MARKING LINES SHALL BE REMOVED. PAVEMENT MARKING REMOVAL SHALL NOT BE REQUIRED FOR SINGLE LANE WEAVES UNDER 24 HOURS IN DURATION.
- ② CONTINUOUS REFLECTIVE TEMPORARY PAVEMENT MARKING TAPE SHALL BE PLACED THROUGHOUT THE TAPER AND FOR 300' (90 m) ALONG SIDE THE WORK AREA WHERE THE CLOSURE TIME IS GREATER THAN FOURTEEN DAYS. THE LEFT EDGE LINE SHALL BE YELLOW AND THE RIGHT EDGE LINE SHALL BE WHITE. FOR MULTI-LANE WEAVES LANE LINES SHALL BE 5 INCH, 10'-30' (3 m-9 m) SKIP DASH, WHITE.
- ③ PLASTIC DRUMS WITH STEADY BURN LIGHTS AT 50' (15 m) C-C SPACING IN TAPERS AND 100' (30 m) C-C SPACING IN TANGENTS.
- ④ ALL SIGNS SHALL BE POST MOUNTED IF THE CLOSURE TIME EXCEEDS FOUR DAYS.
- ⑤ IF A TYPE III BARRICADE WITH AN ATTACHED SIGN PANEL WHICH MEETS NCHRP 350 IS NOT AVAILABLE, THE SIGNS MAY BE MOUNTED ON NCHRP 350 TEMPORARY SIGN SUPPORTS. TYPE III BARRICADES MAY BE OMITTED FOR SINGLE-LANE WEAVES UNDER 24-HOURS IN DURATION. W1-6 SIGNS WILL STILL BE REQUIRED. IF THE WIDTH OF OFFSET IS LESS THAN 6' THEN THE TYPE III BARRICADE WITH ATTACHED ARROW SIGN PANEL CAN BE ELIMINATED IN THE TAPER AREAS.
- ⑥ WHEN THE LENGTH OF THE SHIFTED SEGMENT (DISTANCE BETWEEN WEAVE POINTS) IS LESS THAN 1500', DOUBLE REVERSE CURVE SIGNS (W24-1) SHOULD BE USED INSTEAD OF THE REVERSE CURVE (W1-4) SIGNS. ARROWS ON THE 4'X8' "ALL TRAFFIC" SIGNS SHALL BE THE SAME SHAPE.
- ⑦ THE NUMBER OF ARROWS ON THESE SIGNS SHALL MATCH THE NUMBER OF LANES OPEN TO TRAFFIC.

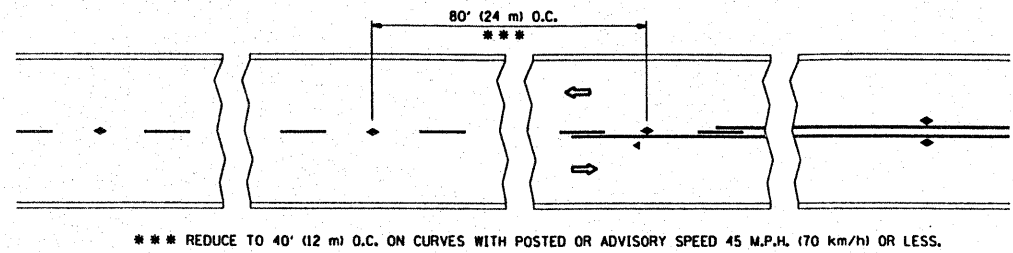
ALL TRAFFIC 4'x 8' (1.2 m x 2.4 m); 1 (25) BORDER; 10 (250) CAPITAL LETTERS BACKGROUND SHEETING SHALL BE THE SAME AS ALL DIAMOND SHAPED CONSTRUCTION SIGNS.

SYMBOLS

- ↑ DIRECTION OF TRAFFIC
 - ▨ WORK AREA
 - ┆ SIGN ON PORTABLE OR PERMANENT SUPPORT
 - ⊞ TYPE II BARRICADE OR DRUM WITH MONO-DIRECTIONAL STEADY BURNING LIGHT
- W24-1-48
⑦

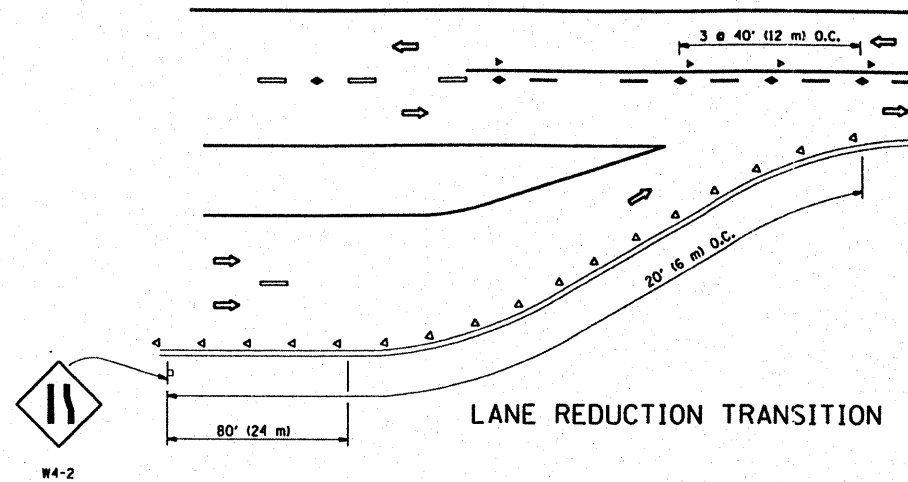
ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN

FILE NAME =	USER NAME = abreuh	DESIGNED - DWS	REVISED - JAF 01-03	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	TRAFFIC CONTROL DETAILS FOR FREEWAY SINGLE & MULTI-LANE WEAVE			F.A.I. RTE. 290	SECTION (531-3.1, 0305-302 K) RS-5	COUNTY COOK	TOTAL SHEETS 302	SHEET NO. 302
DRAWN -	CHECKED -	DATE - 02-87	REVISED - JAF 02-06		SCALE: NONE	SHEET NO. 1 OF 1 SHEETS	STA. TO STA.	TC-09		CONTRACT NO. 60138		
PLOT SCALE = 1/8" = 1' IN.			REVISED - SPB 01-07		FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT							
PLOT DATE = 2/4/2010			REVISED - SPB 12-09									

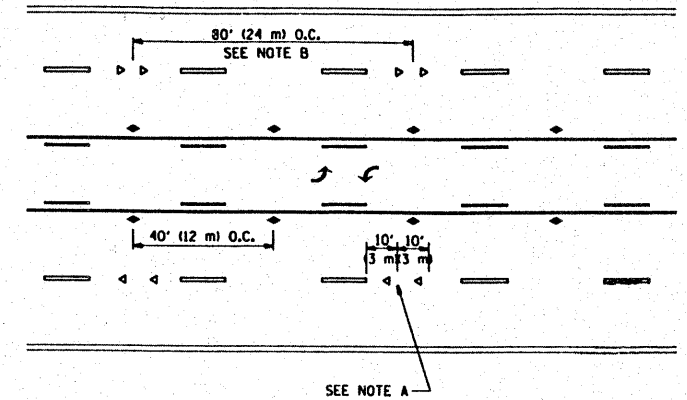


*** REDUCE TO 40' (12 m) O.C. ON CURVES WITH POSTED OR ADVISORY SPEED 45 M.P.H. (70 km/h) OR LESS.

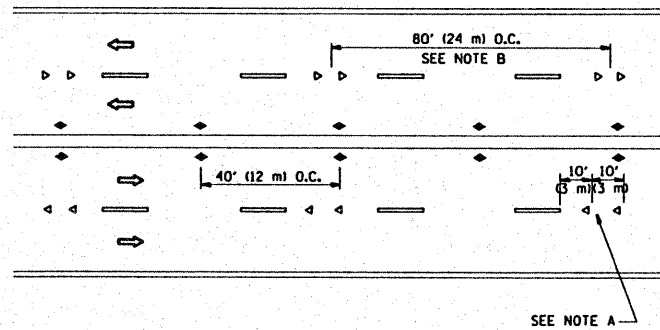
TWO-LANE/TWO-WAY



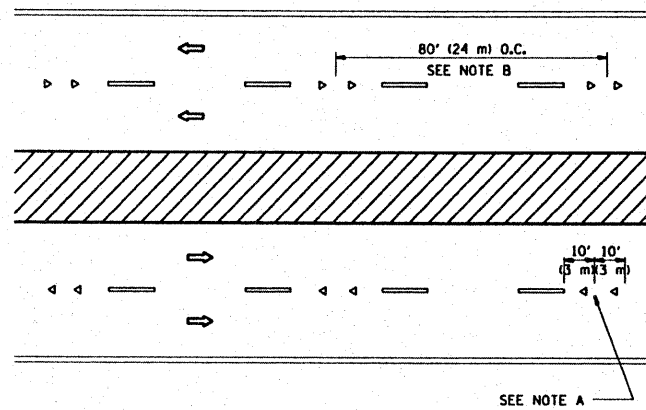
LANE REDUCTION TRANSITION



TWO-WAY LEFT TURN



MULTI-LANE/UNDIVIDED



MULTI-LANE/DIVIDED

GENERAL NOTES

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

SYMBOLS

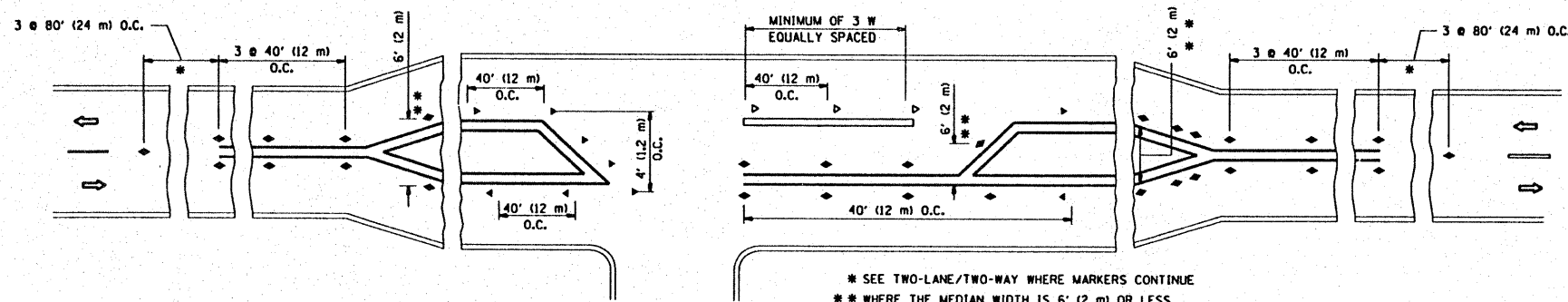
- YELLOW STRIPE
- WHITE STRIPE
- ◄ ONE-WAY AMBER MARKER
- ◄ ONE-WAY CRYSTAL MARKER (W/O)
- ◆ TWO-WAY AMBER MARKER

LANE MARKER NOTES

- A. USE DOUBLE LANE LINE MARKERS SPACED AS SHOWN.
- B. REDUCE TO 40' (12 m) O.C. ON CURVES WHERE ADVISORY SPEEDS ARE 10 M.P.H. (16 km/h) LOWER THAN POSTED SPEEDS.

DESIGN NOTES

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



LEFT TURN

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

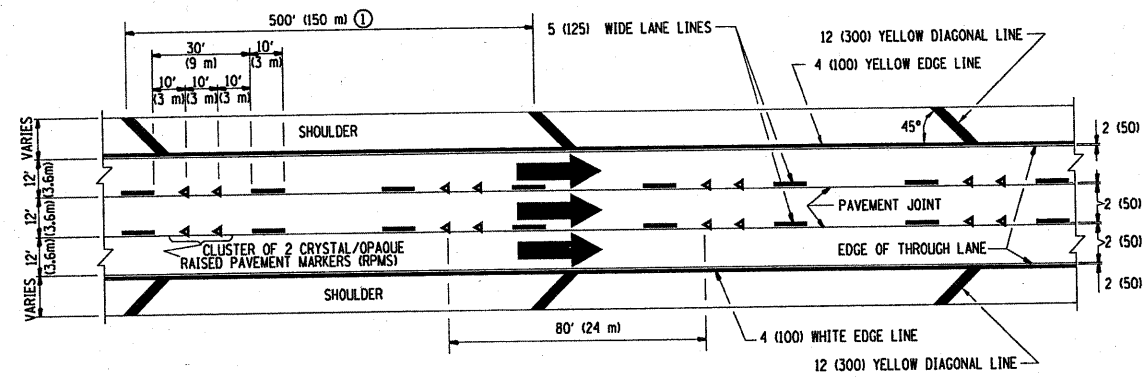
All dimensions are in Inches (millimeters) unless otherwise shown.

FILE NAME =	USER NAME = abreuah	DESIGNED -	REVISED - T. RAMMACHER 09-19-94
c:\pwork\p\1001\ABREUAH\d166688\d166688.dgn		DRAWN -	REVISED - T. RAMMACHER 03-12-99
		CHECKED -	REVISED - T. RAMMACHER 01-06-00
		DATE -	REVISED - C. JUCIUS 09-09-09

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

TYPICAL APPLICATIONS	
RAISED REFLECTIVE PAVEMENT MARKERS (SNOW-PLOW RESISTANT)	
SCALE: NONE	SHEET NO. 1 OF 1 SHEETS STA. TO STA.

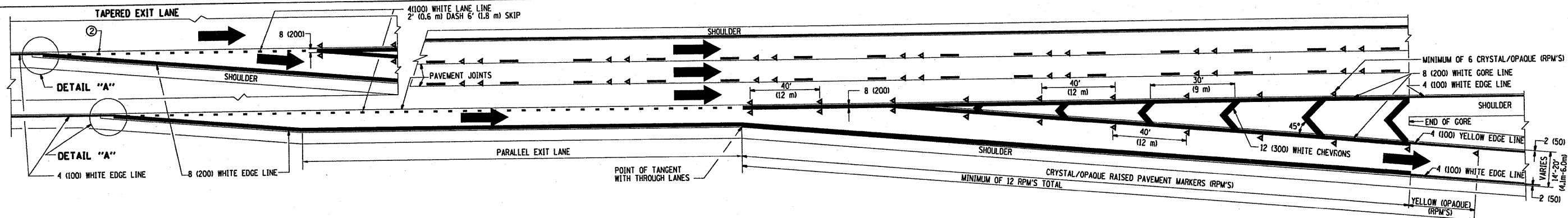
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290	531-3.1, 0305-302 KI RS-5	COOK	314	303
TC-11			CONTRACT NO. 60138	



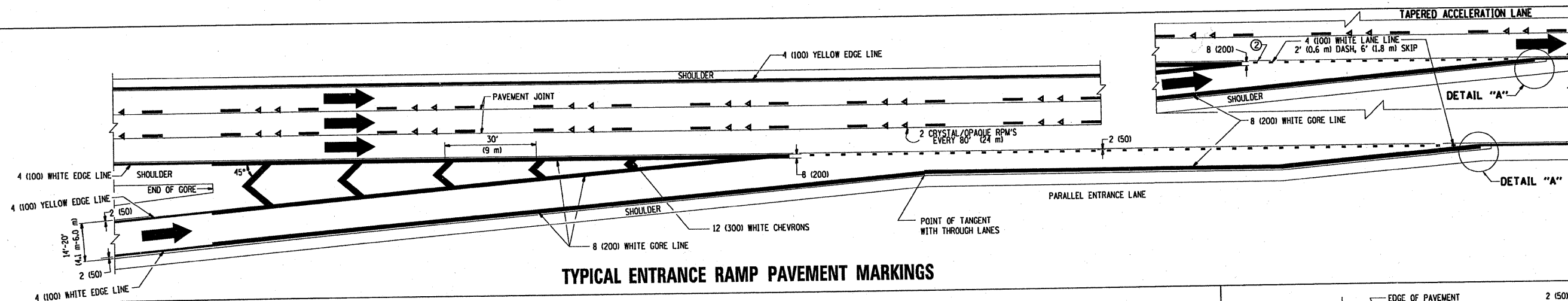
TYPICAL EDGE LINES & LANE LINES

PAVEMENT MARKING MATERIALS

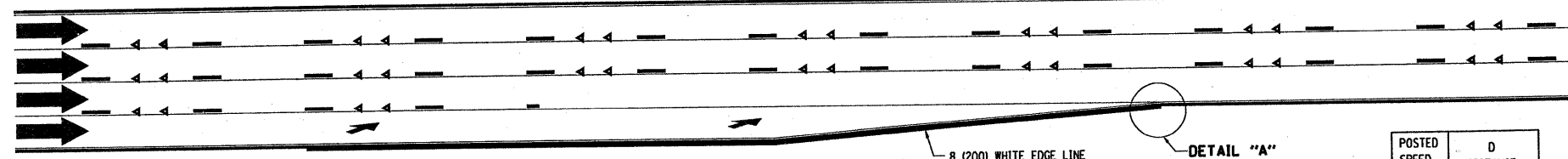
1. THERMO PLASTIC PAVEMENT MARKING LINE SHALL BE USED FOR THE EDGE LINES, GORE LINES, AND DIAGONAL LINES ON BITUMINOUS PAVEMENT ONLY.
2. PREFORMED PLASTIC TYPE B PAVEMENT MARKING LINE SHALL BE USED FOR ALL LANE LINES ON BITUMINOUS PAVEMENT.
3. POLYUREA PAVEMENT MARKING SHALL BE USED FOR ALL MARKINGS ON PCC.



TYPICAL EXIT RAMP PAVEMENT MARKINGS

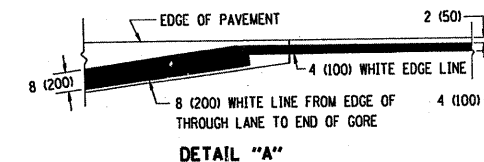


TYPICAL ENTRANCE RAMP PAVEMENT MARKINGS



LANE REDUCTION PAVEMENT MARKINGS

POSTED SPEED LIMIT	D DISTANCE
45 MPH	750' (230 m)
55 MPH	950' (290 m)
65 MPH	1200' (365 m)



NOTES:

- ① THE DIAGONAL LINES SHALL BE SPACED AT 40' (12 m) C-C ACROSS ALL STRUCTURES WHICH ARE 500' (150 m) OR LESS IN LENGTH. THE DIAGONAL LINES ARE NOT REQUIRED ON SHOULDERS WHICH ARE 6' (1.8 m) OR LESS IN WIDTH.
- ② 4" (2' DASH, 6' SKIP) MARKING ON TAPERED ENTRANCE AND EXIT RAMP SHALL BE OMITTED ON TANGENT SECTIONS.

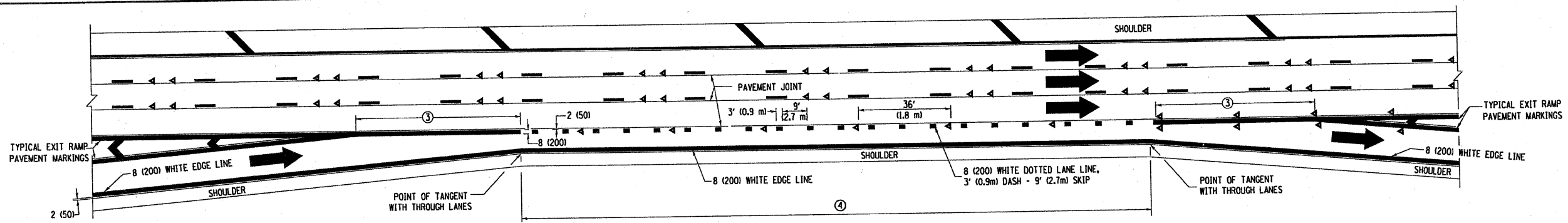
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 USER NAME = abrauh
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 DRAWN -
 CHECKED -
 DATE - 01-90
 PLOT SCALE = 1/8" = 1' IN.
 PLOT DATE = 2/3/2010

DESIGNED - D.W.S.
 DRAWN -
 CHECKED -
 DATE - 01-90
 REVISED - D.W.S. 07-96
 REVISED - J.A.F. 02-06
 REVISED - S.P.B. 01-07
 REVISED - S.P.B. 01-10

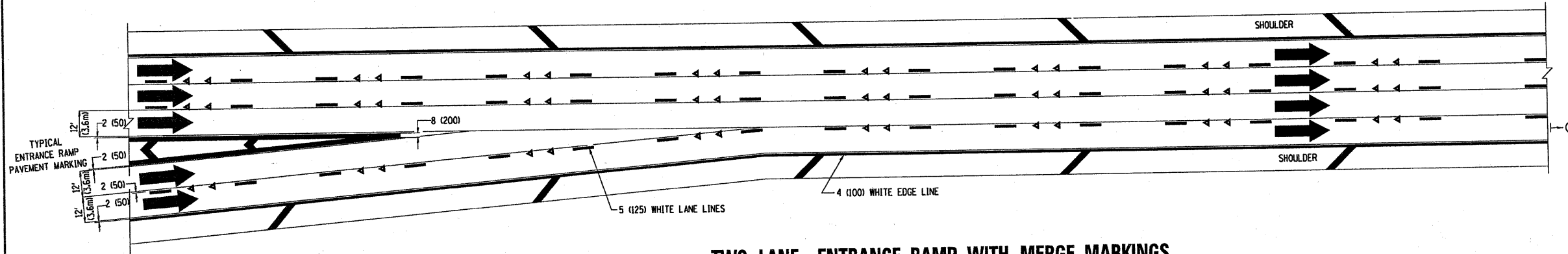
STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

SCALE: NONE
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 MULTI-LANE FREEWAY
 PAVEMENT MARKING DETAILS
 STA. TO STA.

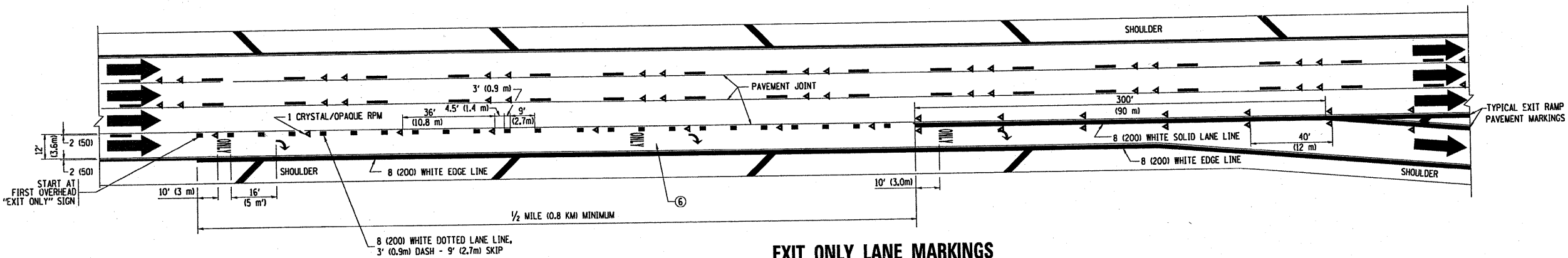
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290	(531-3.1, 0305-302 KI RS-5)	COOK	314	304
TC-12			CONTRACT NO. 60138	
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				



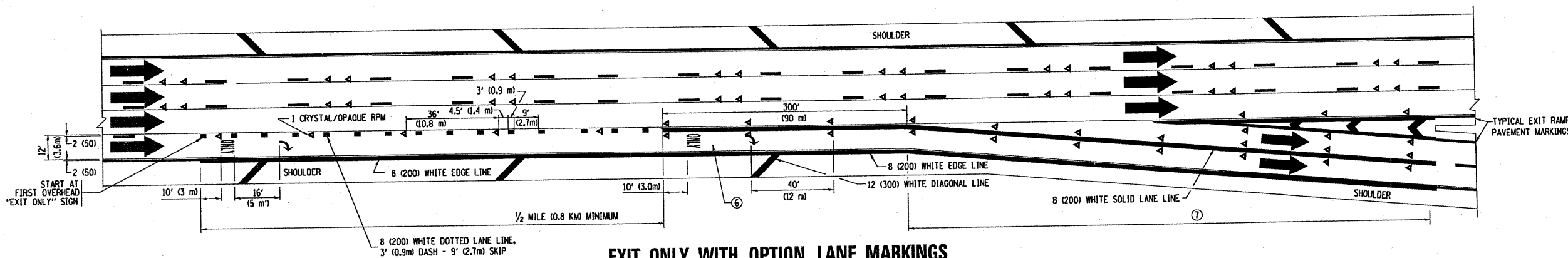
AUXILIARY LANE MARKINGS



TWO LANE ENTRANCE RAMP WITH MERGE MARKINGS



EXIT ONLY LANE MARKINGS



EXIT ONLY WITH OPTION LANE MARKINGS

- NOTES**
- ③ OMIT WHEN LENGTH OF AUXILIARY LANE IS LESS THAN 500' (150 m).
 - ④ 8-INCH WIDE DOTTED LANE LINE MARKINGS SHALL BE USED WHEN THE LENGTH OF THE AUXILIARY LANE IS 2 MILES OR LESS.
 - ⑤ FOR TWO-LANE ENTRANCE RAMP, IF RIGHT LANE ENDS, USE TYPICAL ENTRANCE RAMP PAVEMENT MARKINGS.
 - ⑥ ONLY AND ARROWS EQUALLY SPACED, 500' (150 m) MAXIMUM SPACING. FULL SIZE LETTERS AND ARROW SHALL BE USED.
 - ⑦ CONTINUE 8" SOLID LANE LINE THROUGH EXIT TO END OF PAVED GORE.

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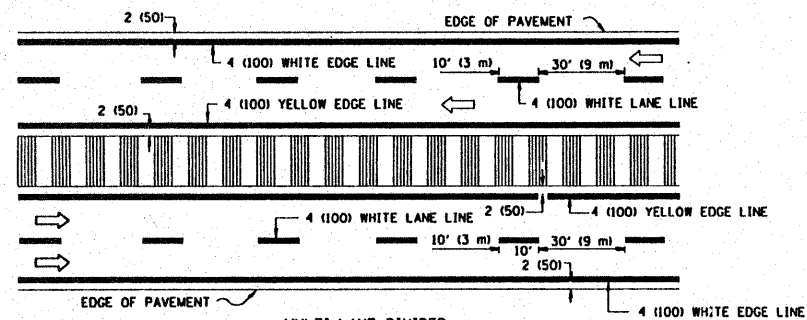
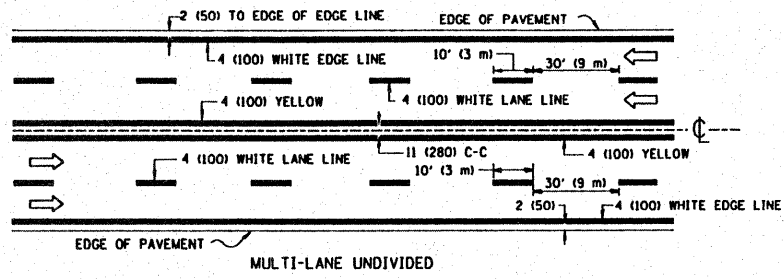
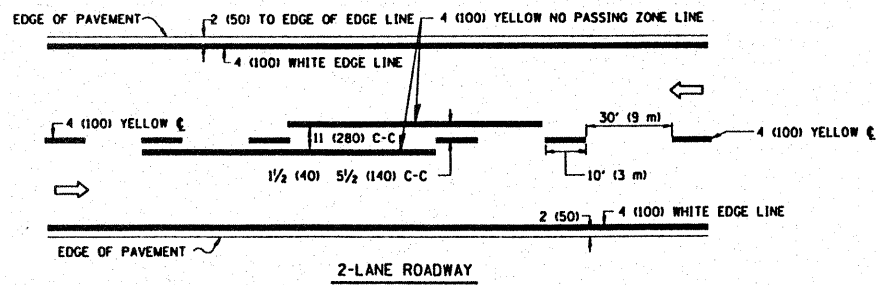
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DRAWN -
CHECKED -
DATE - 01-90

REVISED - D.W.S. 07-96
REVISED - J.A.F. 02-06
REVISED - S.P.B. 01-07
REVISED - S.P.B. 01-10

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

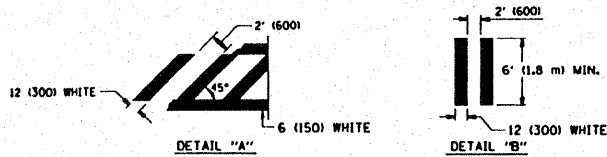
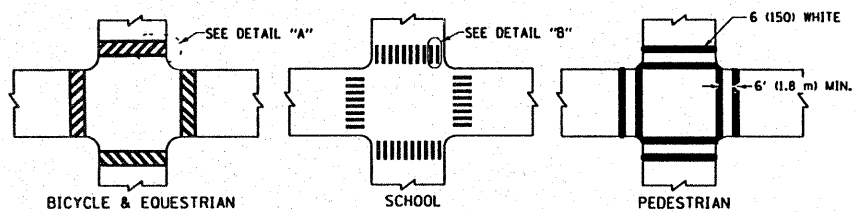
**MULTI-LANE FREEWAY
PAVEMENT MARKING DETAILS**
SCALE: NONE SHEET NO. 2 OF 2 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	(531-3.1, 0305-302) KI RS-5	COOK	314	305
TC-12		CONTRACT NO. 60T38		
FED. ROAD DIST. NO. 1 [ILLINOIS] FED. AID PROJECT				

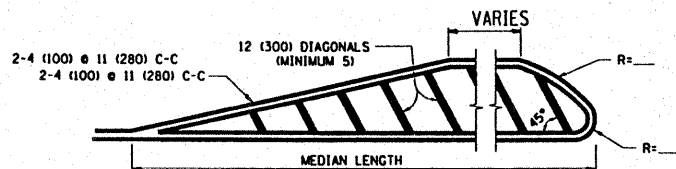
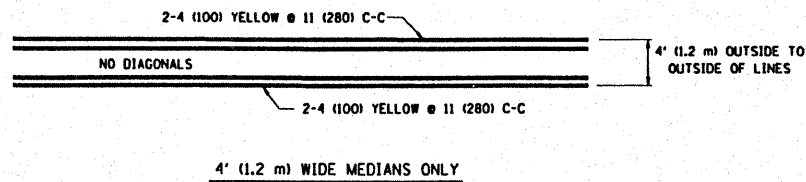


NOTE: MEDIANS WITH BARRIER CURB DO NOT REQUIRE AN EDGE LINE

TYPICAL LANE AND EDGE LINE MARKING

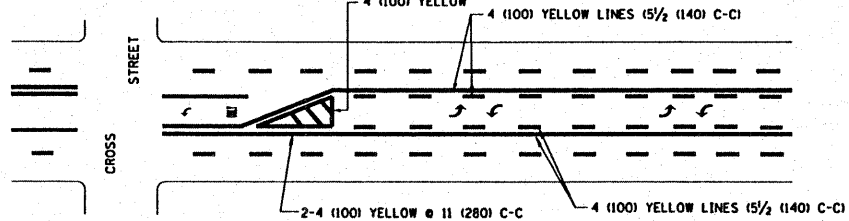


TYPICAL CROSSWALK MARKING

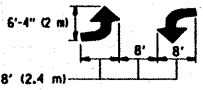


FOR MEDIAN LENGTHS WHERE DIAGONAL SPACING CANNOT BE ATTAINED, USE 5 (FIVE) EQUALLY SPACED DIAGONAL LINES.
DIAGONAL LINE SPACING: 50' (15 m) C-C (LESS THAN 30MPH (50 km/h))
75' (25 m) C-C 30MPH (50 km/h) TO 45MPH (70 km/h)
150' (45 m) C-C (MORE THAN 45MPH (70 km/h))

MEDIANS OVER 4' (1.2 m) WIDE

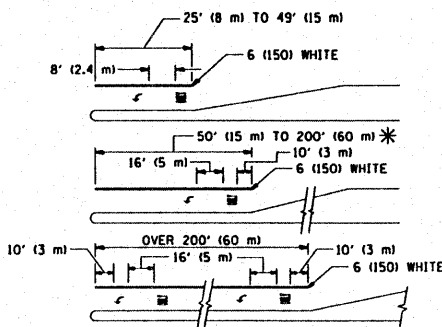


A MINIMUM OF TWO PAIRS OF TURN ARROWS SHALL BE USED, WHITE IN COLOR. ADDITIONAL PAIRS SHALL BE PLACED AT 200' (60 m) TO 300' (90 m) INTERVALS.



MEDIAN WITH TWO-WAY LEFT TURN LANE

TYPICAL PAINTED MEDIAN MARKING

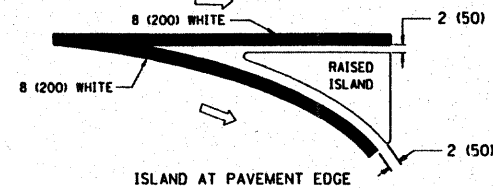
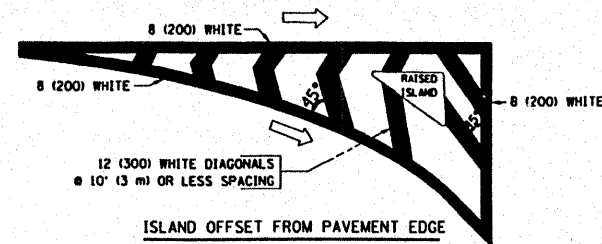


FULL SIZE LETTERS 8' (2.4 m) AND ARROWS SHALL BE USED.
AREA = 15.6 SQ. FT. (1.5 m²) ONLY AREA = 20.8 SQ. FT. (1.9 m²)

* TURN LANES IN EXCESS OF 400' (120 m) IN LENGTH MAY HAVE AN ADDITIONAL SET OF ARROW - "ONLY" INSTALLED MIDWAY BETWEEN THE OTHER TWO SETS OF ARROW - "ONLY".

TYPICAL LEFT (OR RIGHT) TURN LANE

TYPICAL TURN LANE MARKING



TYPICAL ISLAND MARKING

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

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

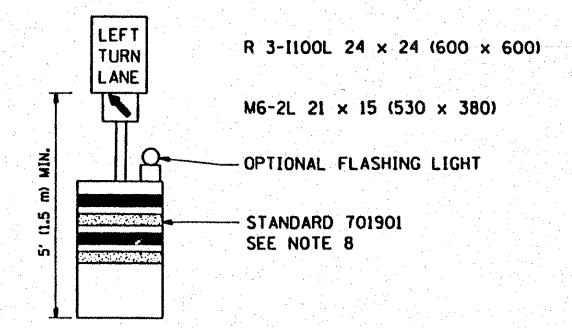
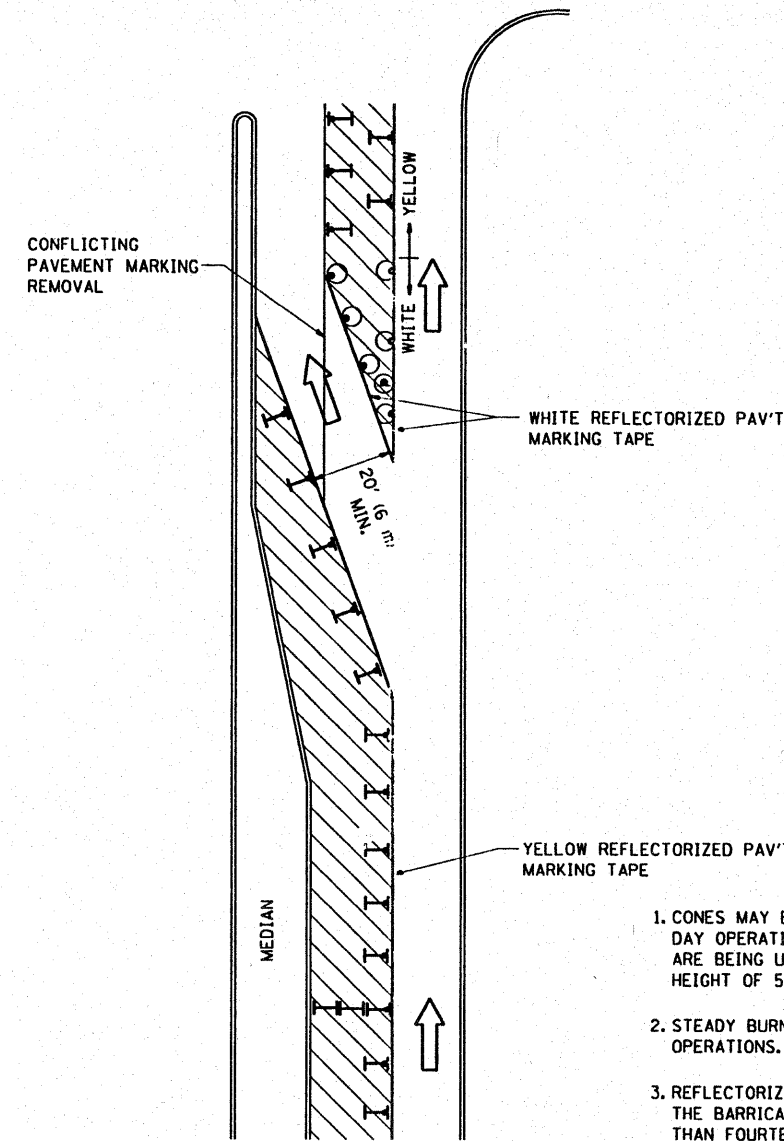
All dimensions are in inches (millimeters) unless otherwise shown.

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PLOT SCALE = 100.0000 / IN.	CHECKED -	DATE - 03-19-90	REVISED -
PLOT DATE = 1/23/2018			

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DISTRICT ONE			
TYPICAL PAVEMENT MARKINGS			
SCALE: NONE	SHEET NO. 1 OF 1 SHEETS	STA.	TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290 (531-3.1, 0305-302 KI) RS-5	TC-13	COOK	314	306
CONTRACT NO. 60138			FED. ROAD DIST. NO. 1 ILLINOIS/FFD. AID PROJECT	

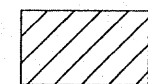







GENERAL NOTES

1. CONES MAY BE SUBSTITUTED FOR BARRICADES OR DRUMS AT HALF THE SPACING DURING DAY OPERATIONS. CONES SHALL BE A MINIMUM OF 28 (710) IN HEIGHT. WHEN CONES ARE BEING USED, THE "LEFT TURN LANE" SIGN MAY BE SKID MOUNTED AT A MINIMUM HEIGHT OF 5' (1.5 m).
2. STEADY BURNING LIGHTS WILL NOT BE REQUIRED ON BARRICADES OR DRUMS FOR DAY OPERATIONS. ALL LIGHTS SHALL BE MONODIRECTIONAL.
3. REFLECTORIZED TEMPORARY PAVEMENT MARKING TAPE SHALL BE PLACED THROUGHOUT THE BARRICADED AREA OF EACH TURN BAY WHERE THE CLOSURE TIME IS GREATER THAN FOURTEEN DAYS.
4. THIS APPLICATION ALSO APPLIES WHEN WORK IS BEING PERFORMED IN THE RIGHT LANE(S) AND THE RIGHT TURN BAY IS TO REMAIN OPEN. UNDER THIS CONDITION, "RIGHT TURN LANE" R3-100 24 x 24 (600 x 600) AND M6-2R 21 x 15 (530 x 380) SHALL BE USED.
5. THESE CONTROLS SHALL SUPPLEMENT MAINLINE TRAFFIC CONTROL FOR LANE CLOSURES.
6. LONGITUDINAL DIMENSIONS MAY BE ADJUSTED TO FIT FIELD CONDITIONS.
7. FORM OPER 725 IS REQUIRED.
8. IF A DRUM OR TYPE II BARRICADE WITH AN ATTACHED SIGN PANEL WHICH MEETS NCHRP 350 REQUIREMENTS IS NOT AVAILABLE, THE SIGNS SHALL BE MOUNTED, ABOVE THE BARRICADES, ON SEPARATE SIGNS SUPPORTS THAT MEET NCHR 350 PREQUIREMENTS.
9. TRAFFIC CONTROL AND PROTECTION AT TURN BAYS (TO REMAIN OPEN TO TRAFFIC) SHALL BE INCLUDED IN THE COST SPECIFIED TRAFFIC CONTROL STANDARDS OR ITEMS.

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

LEGEND

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

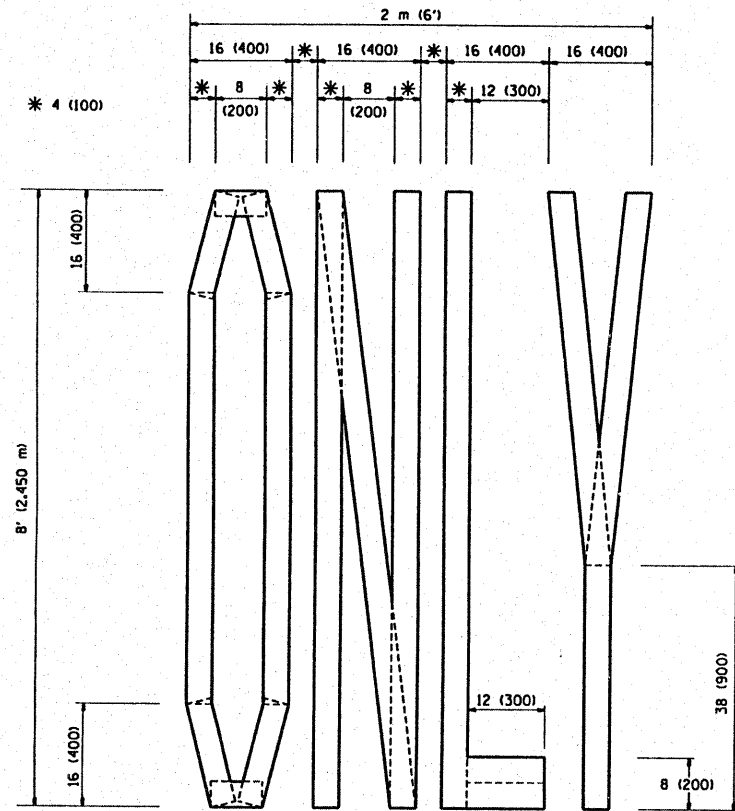
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PLOT SCALE = 100.0000 / IN.		REVISED - A. HOUSEH 10-12-96	REVISED -
PLOT DATE = 1/23/2010		REVISED - T. RAMMACHER 01-06-00	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

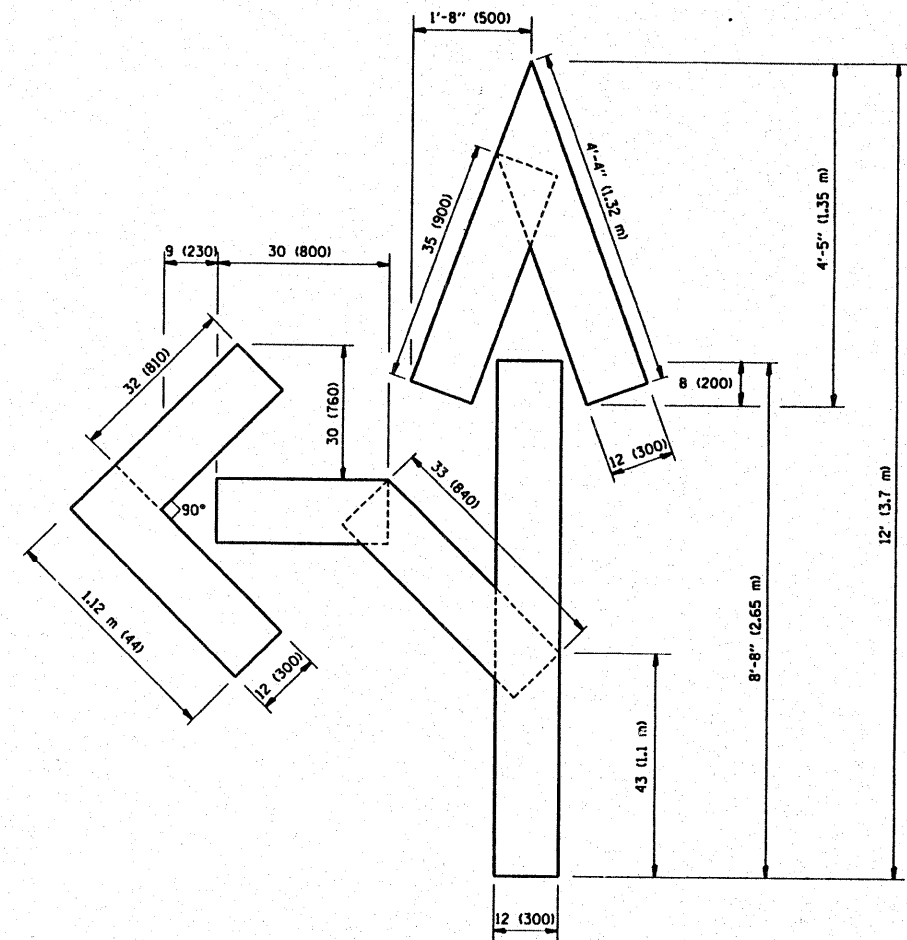
**TRAFFIC CONTROL AND PROTECTION AT TURN BAYS
(TO REMAIN OPEN TO TRAFFIC)**

SCALE: NONE SHEET NO. 1 OF 1 SHEETS STA. TO STA.

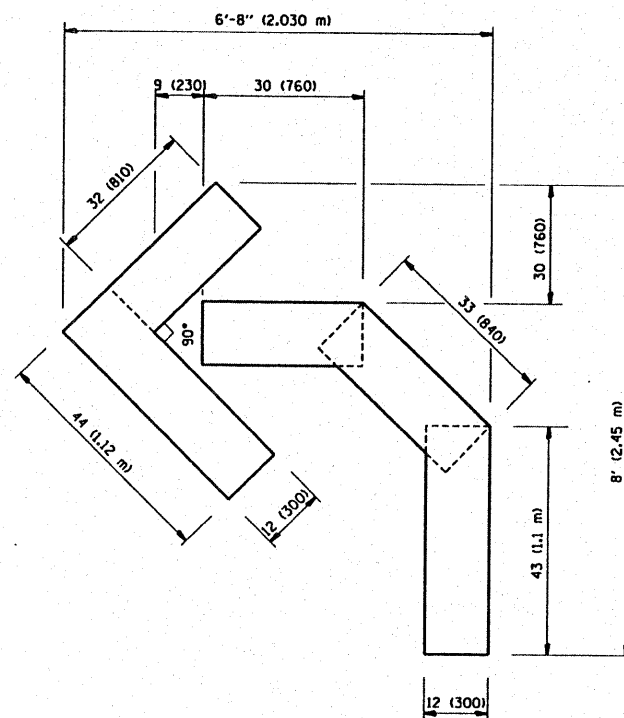
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	(531-3.1, 0305-302 KI RS-5)	COOK	314	307
TC-14			CONTRACT NO. 60138	
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				



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



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



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

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

FILE NAME =	USER NAME = abreuah	DESIGNED -	REVISED -T. RAMMACHER 06-05-96
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	PLOT DATE = 1/23/2018	DATE - 09-18-94	REVISED -E. GOMEZ 08-28-00

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

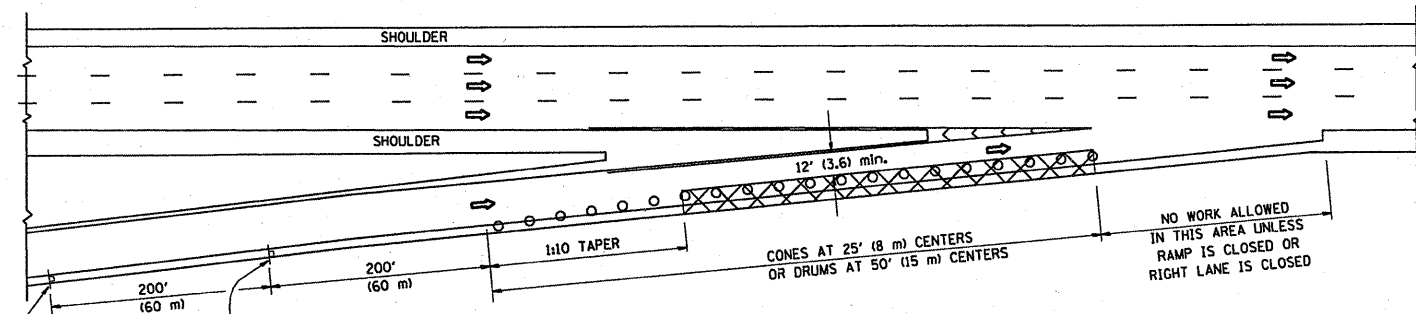
PAVEMENT MARKING LETTERS AND SYMBOLS
 FOR TRAFFIC STAGING

SCALE: NONE SHEET NO. 1 OF 1 SHEETS STA. TO STA.

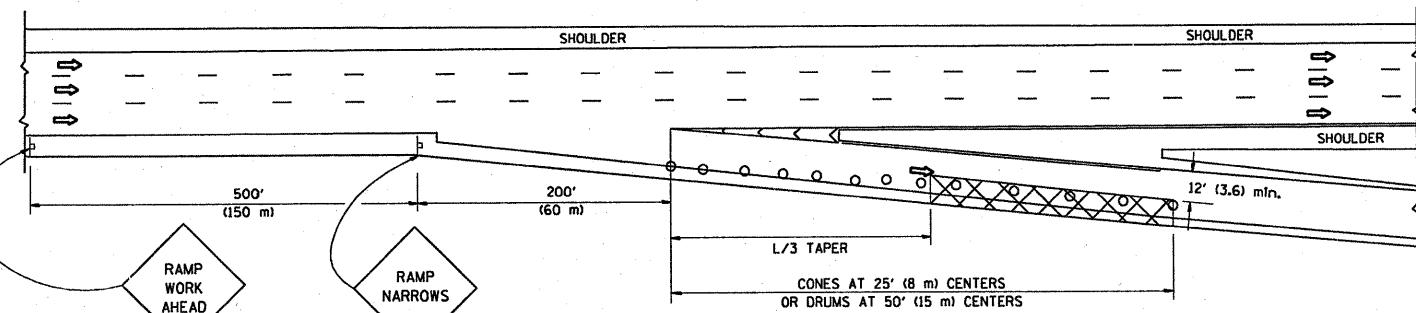
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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TC-16			CONTRACT NO. 60138	
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				

PARTIAL RAMP CLOSURE DETAILS

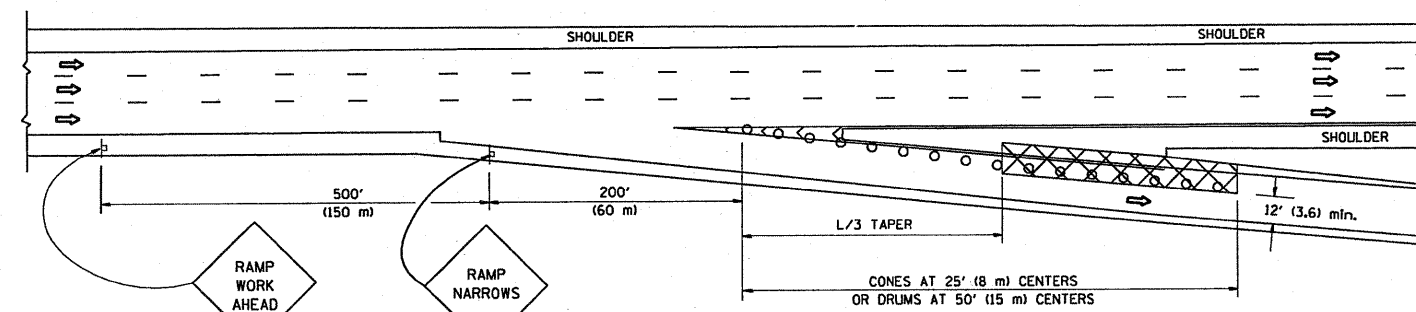
SHOULDER CLOSURE DETAILS



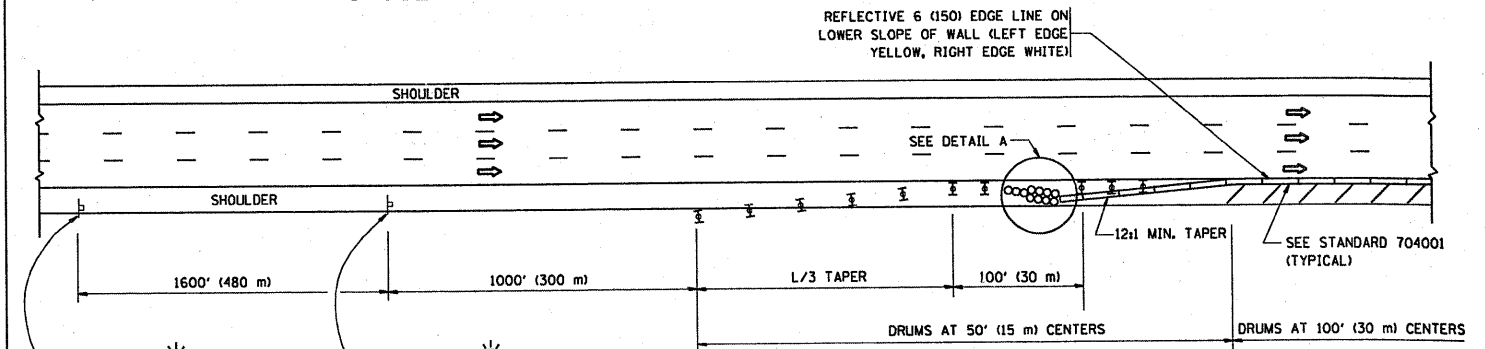
TYPICAL ENTRANCE RAMP



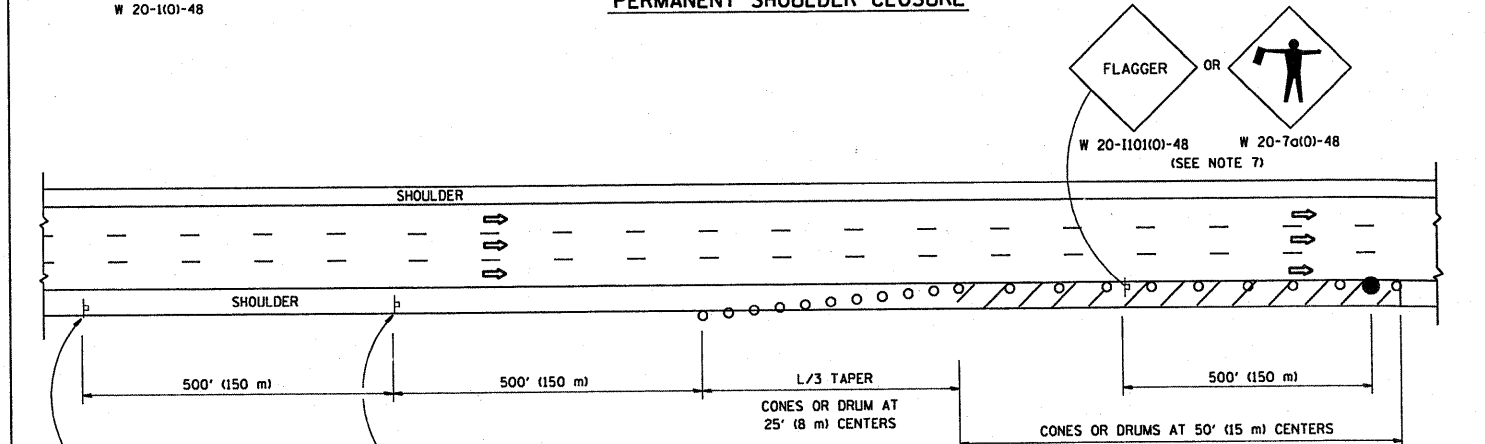
TYPICAL EXIT RAMP



TYPICAL EXIT RAMP



PERMANENT SHOULDER CLOSURE



DAYTIME SHOULDER CLOSURE

SYMBOLS

- ACTIVE WORK AREA
- SIGN ON PORTABLE OR PERMANENT SUPPORT
- FLAGGER WITH CONTROL SIGN
- TYPE II BARRICADE, DRUM OR VERTICAL BARRICADE WITH STEADY BURN MONO-DIRECTIONAL LIGHT
- CONE, DRUM OR BARRICADE

GENERAL NOTES

1. THE "L" DISTANCE EQUALS:

SPEED LIMIT	FORMULAS
45 mph (80 km/h) OR GREATER	METRIC ENGLISH L=0.65(WKS) L=(W)KS
W = WIDTH OF OFFSET IN FEET (METERS)	
S = NORMAL POSTED SPEED MPH (KM/H)	
2. PLASTIC DRUMS WITH HIGH PERFORMANCE REFLECTIVE SHEETING AND STEADY BURNING LIGHTS ARE REQUIRED FOR ALL NIGHTTIME CLOSURES.
3. ALL SIGNS SHALL BE POST MOUNTED IF THE CLOSURE TIME EXCEEDS FOUR DAYS.
4. FLASHING LIGHTS SHALL BE USED DURING THE HOURS OF DARKNESS AND SHALL BE INSTALLED ABOVE THE FIRST TWO SETS OF SIGNS.
5. THE IMPACT ATTENUATOR, TEMPORARY IS NOT REQUIRED WHEN THE TEMPORARY CONCRETE BARRIER WALL IS PROTECTED BY OR IS TIED INTO THE EXISTING GUARDRAIL. IF OFFSET IS LESS THAN 5 FEET USE NARROW USE TYPE DEVICE TO MEET NCHRP350.
6. AUTHORIZATION FROM THE DISTRICT'S BUREAU OF TRAFFIC IS REQUIRED FOR ALL FREEWAY CLOSURES.
7. THE FLAGGER AND FLAGGER SIGN ARE REQUIRED AT THE ABOVE WORK SITES WHEN:
 - a. FOUR OR MORE WORK VEHICLES ENTER THE TRAFFIC LANES IN A ONE HOUR PERIOD.
 - b. THE WORK AVTIVITY REQUIRES FREQUENT ENCROACHMENT INTO THE LANE OPEN TO TRAFFIC.
 THE FLAGGER SHALL BE STATIONED APPROXIMATELY 100' (30 m) TO 200' (60 m) IN ADVANCE OF THE WORKERS.

ARRAY DESIGN PER MANUFACTURER TO BE NCHRP 350 COMPLIANT.

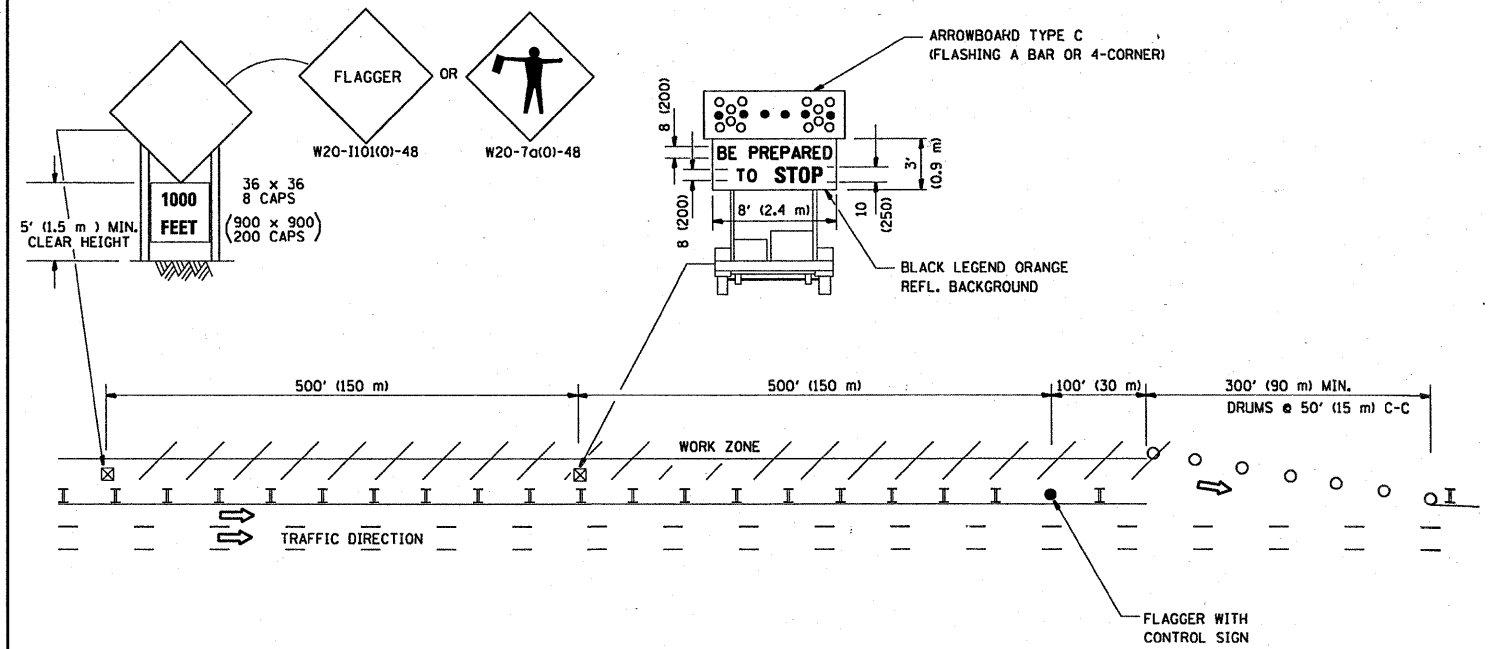
DETAIL "A"
IMPACT ATTENUATOR, TEMPORARY
(SEE NOTE 5)

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

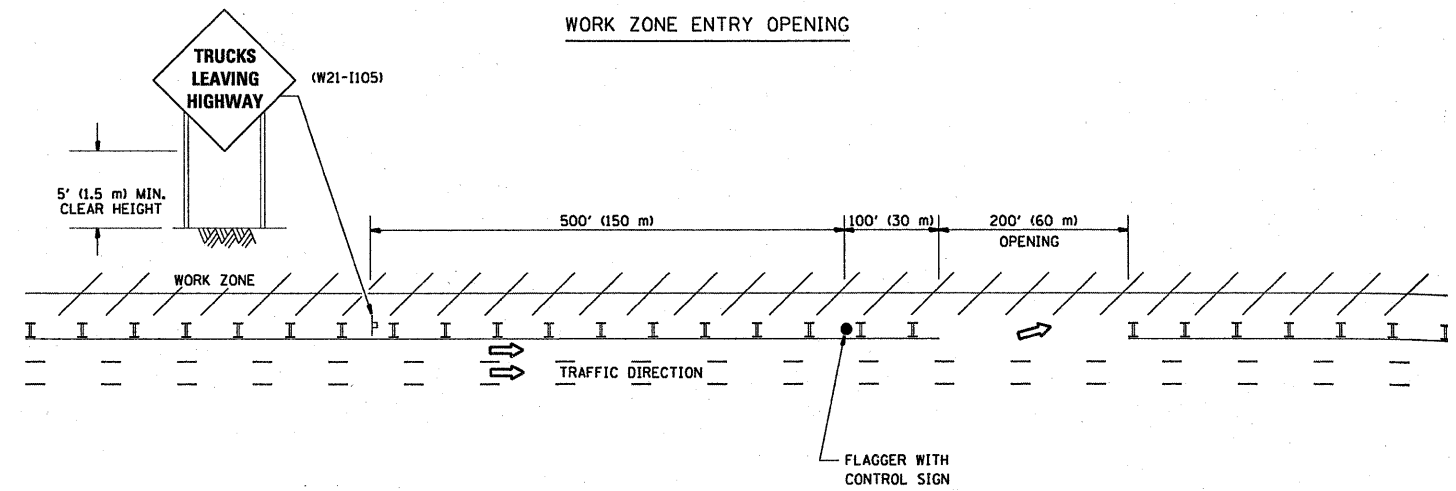
FILE NAME =	USER NAME = abreueh	DESIGNED -	REVISED - 04-03	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	TRAFFIC CONTROL DETAILS FOR FREEWAY SHOULDER CLOSURES AND PARTIAL RAMP CLOSURES	F.A.I. RTE. 290	SECTION (531-3.1, 0305-302 KI RS-5)	COUNTY COOK	TOTAL SHEETS 314	SHEET NO. 209
es:\p\work\p\dot\abreueh\d0166688\Dist\d.dgn		DRAWN - D.W.S.	REVISED - J.A.F. 12-06		SCALE: NONE	SHEET NO. 1 OF 1 SHEETS	TC-17		CONTRACT NO. 60138	
		CHECKED -	REVISED - S.P.B. 01-07		STA. TO STA.	FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				
		DATE - 11-96	REVISED - S.P.B. 12-09							

SIGNING FOR FLAGGING OPERATIONS AT WORK ZONE OPENINGS

WORK ZONE EXIT OPENING



WORK ZONE ENTRY OPENING



NOTES:

1. THE ARROWBOARD, THE FLAGGER AHEAD SIGN AND THE TRUCKS LEAVING HIGHWAY SIGN SHALL BE REMOVED OR TURNED AWAY FROM TRAFFIC AND THE EXIT AND ENTRY OPENINGS SHALL BE CLOSED WHEN THE FLAGGING OPERATION CEASES. NON OPERATING EQUIPMENT SHALL COMPLY WITH ARTICLE 701.11
2. WORK ZONE EXIT OPENINGS SHOULD BE A MINIMUM OF ONE HALF MILE APART.
3. EXITING THE WORK ZONE AT ANY PLACE OTHER THAN AT A WORK ZONE EXIT OPENING WILL BE PROHIBITED.
4. ALL VEHICLES SHALL ENTER THE WORK ZONE AT ENTRY OPENINGS, USING THEIR TURN SIGNALS TO WARN MOTORISTS

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN

FILE NAME =	USER NAME = abreuah	DESIGNED -	REVISED - J.A.F. 04-03
ct:\pw\work\paxidot\abreuah\d0166688\01std.dgn		DRAWN -	REVISED - J.A.F. 02-06
	PLOT SCALE = 100.0000 "/ IN.	CHECKED -	REVISED - S.P.B. 01-07
	PLOT DATE = 2/4/2010	DATE -	REVISED - S.P.B. 12-09

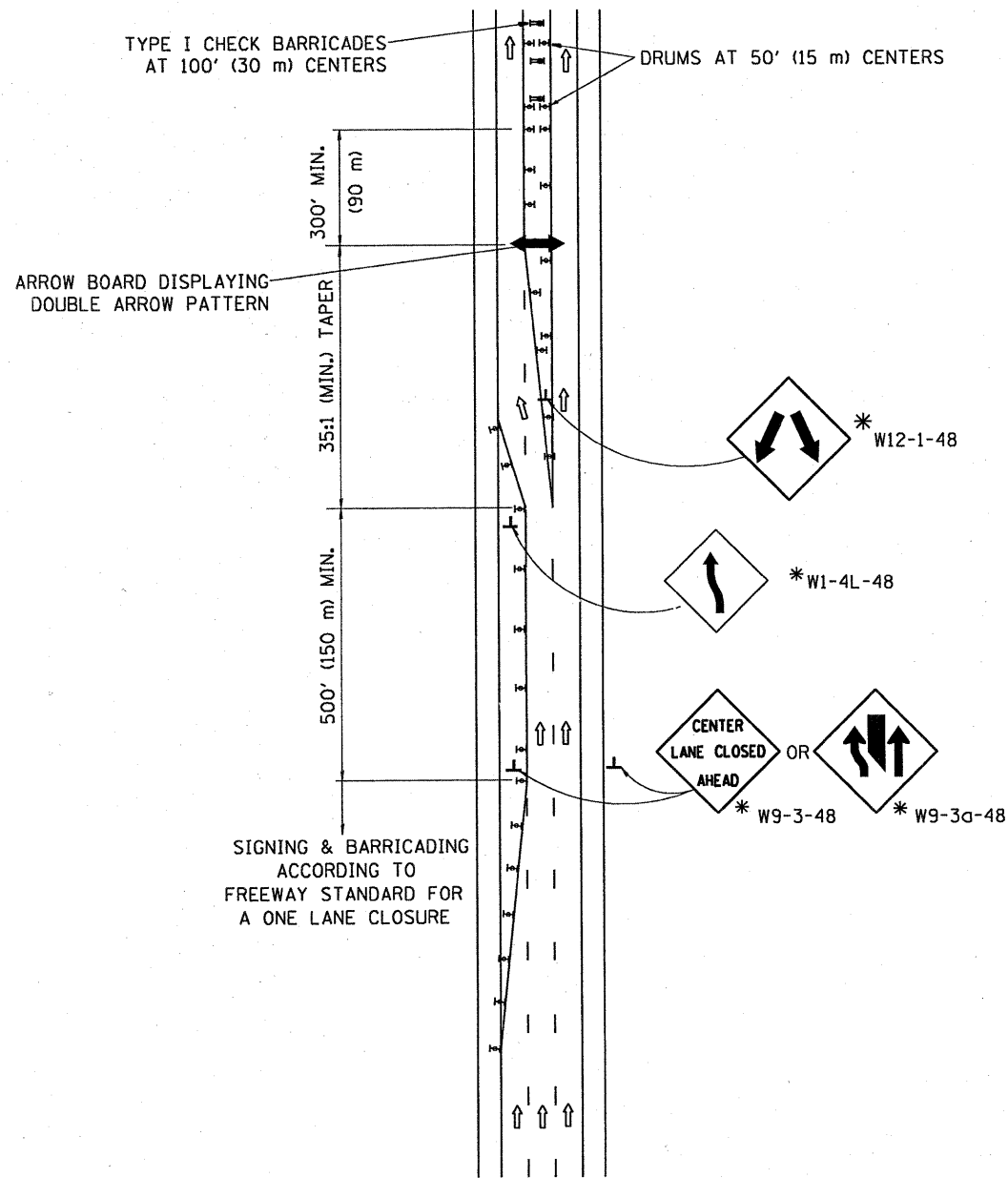
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SIGNING FOR FLAGGING OPERATIONS
AT WORK ZONE OPENINGS

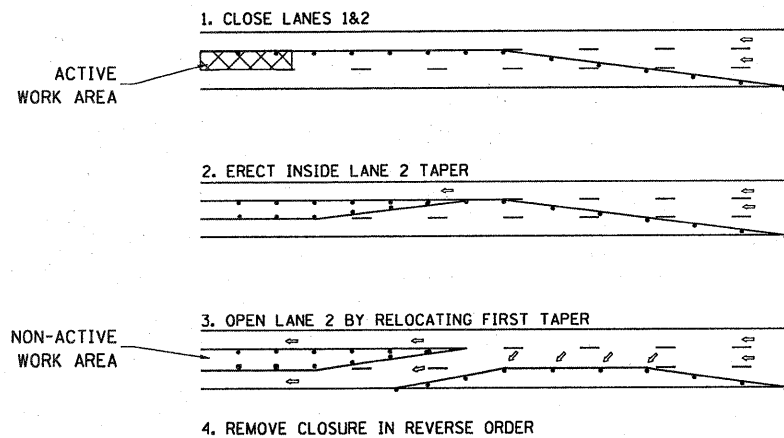
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	(531-3.1, 0305-302 K) RS-5	COOK	314	310
TC-18			CONTRACT NO. 60138	
FED. ROAD DIST. NO. 1 (ILLINOIS) FED. AID PROJECT				

SCALE: NONE SHEET NO. 1 OF 1 SHEETS STA. TO STA.

CENTER LANE CLOSURE



INSTALLATION SEQUENCE

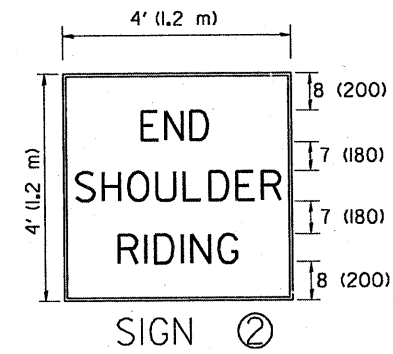
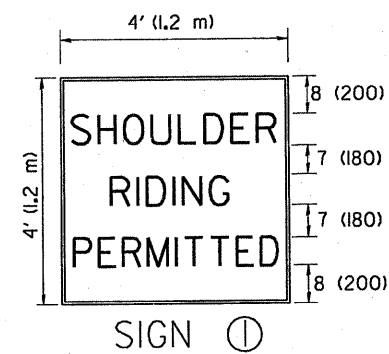
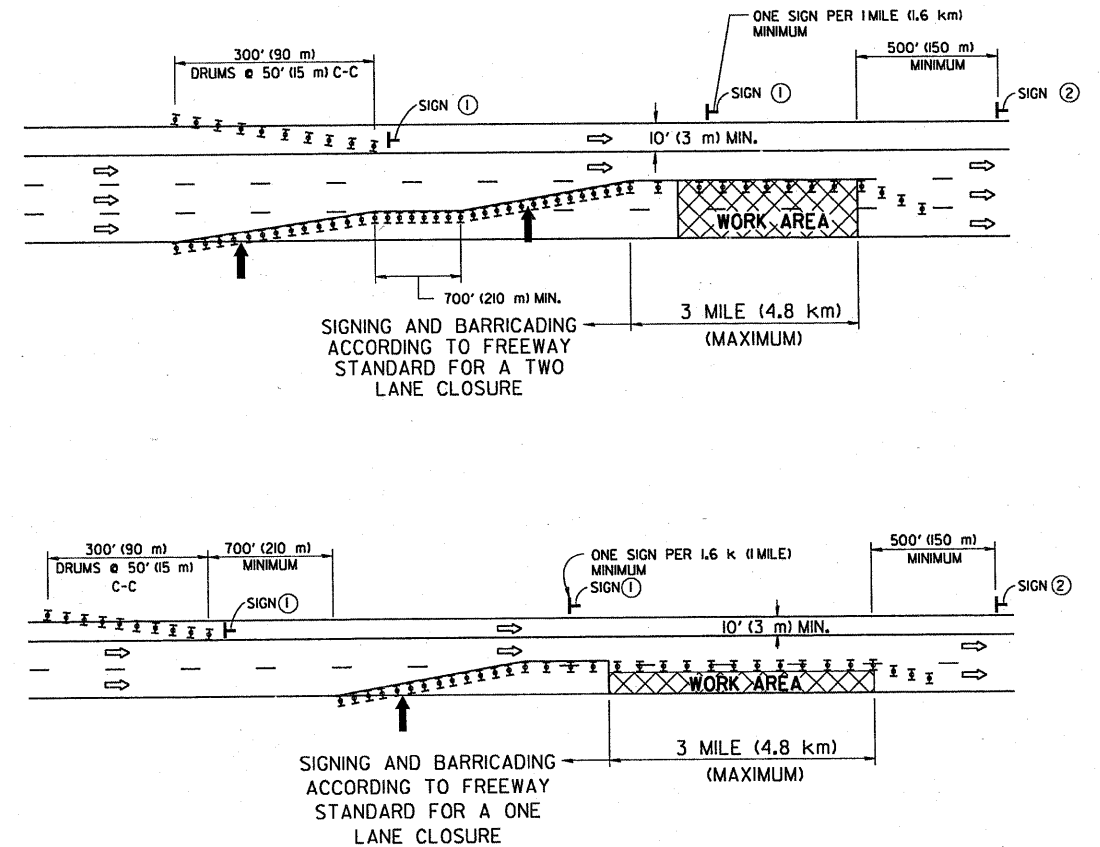


NOTES

1. DRUMS WITH STEADY BURN LIGHTS SHALL BE USED AT 50' (15 m) CENTERS ON ALL TAPERS AND TANGENTS IN ADVANCE OF WORK AREA.
2. CLOSURE SHALL BE USED ONLY FOR OPERATIONS LASTING 72 HOURS OR LESS.
3. CENTER LANE CLOSURE CONFIGURATION IS NOT TO BE USED WITH WORKERS PRESENT.

SHOULDER LANE

NOTE: CLOSURE SHALL BE USED ONLY FOR OPERATIONS LASTING 72 HOURS OR LESS.



6 (150) SERIES "C" LEGEND
BLACK LEGEND
WHITE REFLECT. BACKGROUND
1(25) BORDER

SYMBOLS

- ↑ DIRECTION OF TRAFFIC
- ➔ ARROWBOARD
- ⊠ ACTIVE WORK AREA
- ⊠ SIGN ON PORTABLE OR PERMANENT SUPPORT *
- ⊠ TYPE II BARRICADE, OR DRUM WITH MONO-DIRECTIONAL STEADY BURN LIGHT

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN

* ALL SIGNS SHALL BE MOUNTED AT A MINIMUM HEIGHT OF 5' (1.5 m).

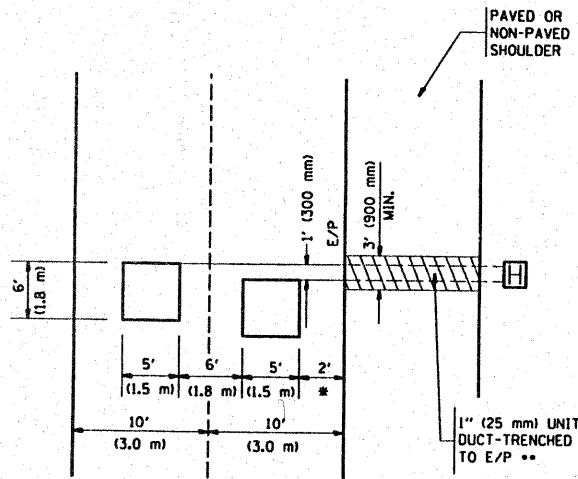
FILE NAME =	USER NAME = abreuah	DESIGNED -	REVISED - J.A.F. 04-03
ca:\pw-work\pwwdot\abreuah\08166688\DistStd.dgn		DRAWN -	REVISED - S.P.B. 01-07
		CHECKED -	REVISED - S.P.B. 12-09
		DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL DETAILS FOR FREEWAY		F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CENTER LANE CLOSURE SHOULDER LANE		290	(531-3.1, 0305-302 K) RS-5	COOK	314	311
SCALE: NONE		SHEET NO. 1 OF 1 SHEETS		STA.	TO STA.	
		FED. ROAD DIST. NO. 1 (ILLINOIS) FED. AID PROJECT		CONTRACT NO. 60138		

LOOPS NEXT TO SHOULDERS

PROVIDE A PAVEMENT REPLACEMENT NOTE WHICH SHOULD EQUAL 3' (900 mm) X WIDTH OF PAVED SHOULDER.



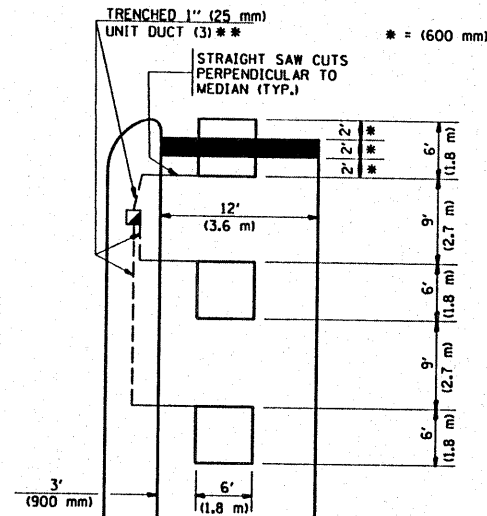
* = (600 mm)

** UNIT DUCT IS TO BE SHOWN ON PLAN SHEETS BUT SHALL NOT BE INCLUDED IN THE PAY ITEMS.

**LEFT TURN LANES WITH MEDIANS
VOLUME DENSITY ("FAR OUT" DETECTION)
ON SAME APPROACH**

(PROTECTED / PERMITTED LEFT TURN PHASING)

HANDHOLE LOCATION MAY VARY DEPENDING ON GEOMETRICS AND DESIGN OF TRAFFIC SIGNALS. HEAVY-DUTY HANDHOLES TO BE USED WHEN THE MEDIAN IS MOUNTABLE. REFER TO STANDARD 814001 TO ENSURE THAT HANDHOLE FITS IN MEDIAN.

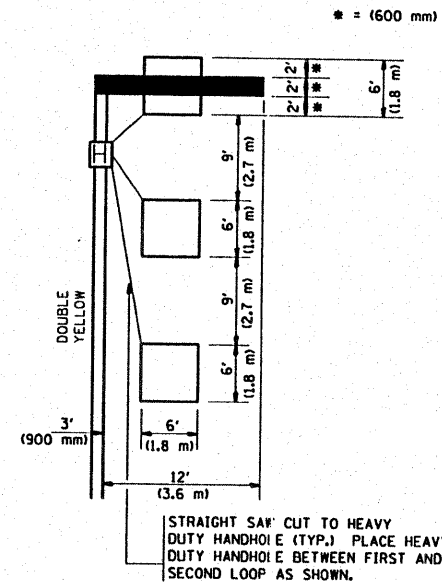


** UNIT DUCT IS TO BE SHOWN ON PLAN SHEETS BUT SHALL NOT BE INCLUDED IN THE PAY ITEMS.

NOTE: DUAL LEFT TURNS NOT SHOWN REFER TO PLAN SHEET FOR DETECTOR LOOP REPLACEMENT

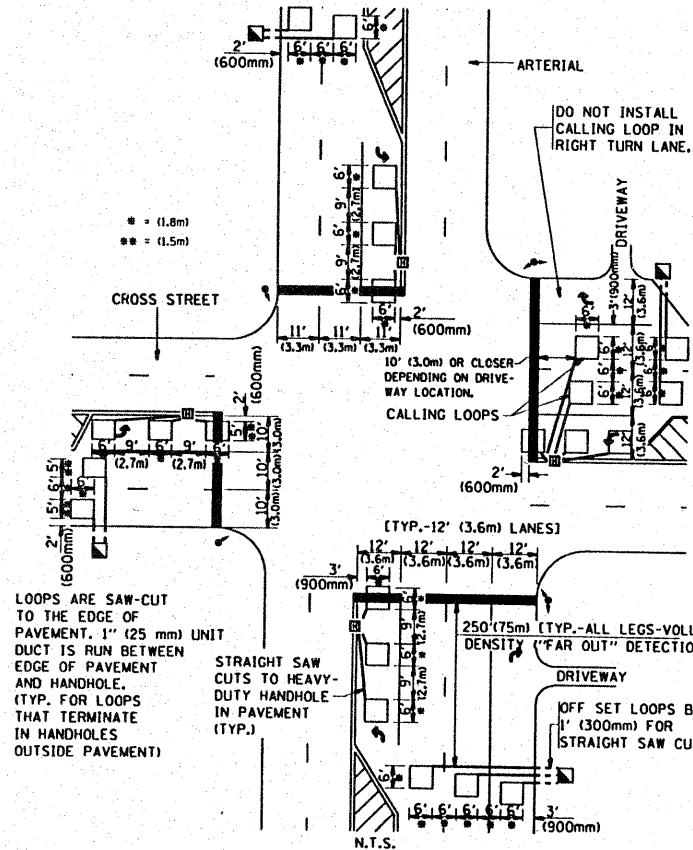
**LEFT TURN LANES WITHOUT MEDIANS
VOLUME DENSITY ("FAR OUT" DETECTION)
ON SAME APPROACH**

(PROTECTED / PERMITTED LEFT TURN PHASING)



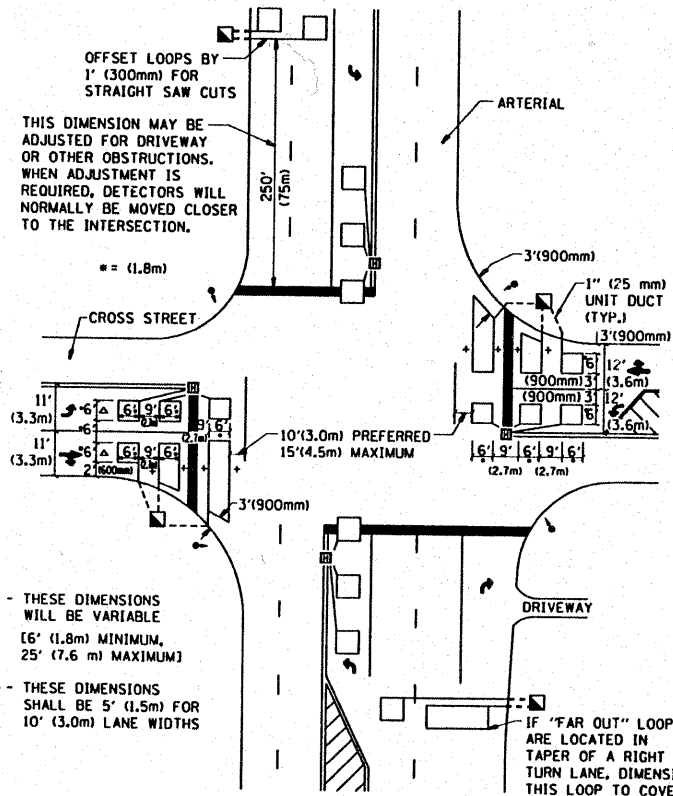
NOTE: DUAL LEFT TURNS NOT SHOWN REFER TO PLAN SHEET FOR DETECTOR LOOP REPLACEMENT

**ARTERIAL-VOLUME DENSITY ("FAR OUT" DETECTION)
CROSS STREET-VOLUME DENSITY ("FAR OUT" DETECTION)**



**DETAIL 1
N.T.S.**

**ARTERIAL-VOLUME DENSITY ("FAR OUT" DETECTION)
CROSS STREET-NON VOLUME DENSITY ("UPTIGHT" PRESENCE DETECTION)**



**DETAIL 2
N.T.S.**

NOTES:

VEHICLES LOOP DETECTORS

- * ALL LEAD IN CABLE SHALL BE TWO CONDUCTOR NO. 14 TWISTED, SHIELDED.
- * EACH DETECTOR LOOP SHALL HAVE ITS OWN SAW CUT FROM THE LOOP TO THE EDGE OF PAVEMENT OR TO A HANDHOLE IN THE PAVEMENT.
- * EACH DETECTOR LOOP SHALL HAVE ITS OWN ONE INCH (25 mm) UNIT DUCT BETWEEN THE EDGE OF PAVEMENT AND THE FIRST HANDHOLE OR JUNCTION BOX. EACH UNIT DUCT RUN SHALL BE SHOWN ON THE PLANS BY THE DESIGNER, BUT SHALL NOT BE PAID FOR SEPARATELY. THIS ITEM IS INCIDENTAL TO THE PAY ITEM FOR DETECTOR LOOPS.
- * ONE DIMENSION OF ALL DETECTOR LOOPS SHALL BE SIX FEET (1.8 m)
- * EACH LANE OF NON-LOCKING, PRESENCE DETECTION AND EACH LANE OF A DOUBLE LEFT TURN LANE REQUIRES A SEPARATE INDUCTIVE LOOP DETECTOR AND LEAD IN CABLE.
- * WHEN NON-LOCKING, PRESENCE DETECTION IS USED, MORE THAN ONE LOOP PER LANE IS REQUIRED BEHIND THE STOP BAR (i.e. 1-1/2, 1-3/4, 2).
- * WHEN SYSTEM LOOPS ARE REQUIRED ON AN APPROACH OF AN INTERSECTION, THE LOOPS USED FOR VOLUME DENSITY AND INTERSECTION TIMING SHALL ALSO BE USED AS SYSTEM DETECTORS. EACH ONE OF THESE TYPE OF LOOPS REQUIRES A SEPARATE TWO CONDUCTOR NO. 14 TWISTED SHIELDED CABLE AND A SEPARATE INDUCTIVE LOOP DETECTOR WHEN NEW CONTROLLERS ARE UTILIZED. THE DESIGNER SHALL LABEL THESE TYPES OF LOOPS AS "INTERSECTION AND SAMPLING (SYSTEM) DETECTORS" ON THE SIGNAL LAYOUT, THE INTERCONNECT PLAN AND THE SYSTEM CABLE PLAN. WHEN AN EXISTING CONTROLLER IS UTILIZED FOR THIS TYPE OF DETECTION, THE PAY ITEM "INDUCTIVE LOOP DETECTOR WITH SYSTEM OUTPUT" SHOULD BE USED.

PLACEMENT OF DETECTORS

THE FOLLOWING FIGURES REPRESENT THE MOST COMMON DETECTOR LOOP LOCATIONS AND SIZES. ADJUSTMENTS WILL BE NECESSARY FOR SPECIFIC GEOMETRIC CONSIDERATIONS.

LOCATIONS AND DEMENSIONS OF DETECTOR LOOPS ARE REQUIRED ON ALL SIGNAL LAYOUT PLAN SHEETS.

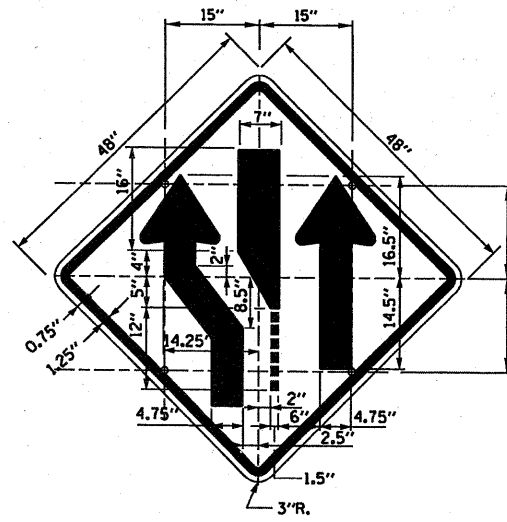
"FAR OUT" DETECTION REFERS TO LOCKING, PRESENCE TYPE DETECTION LOCATED IN THRU LANES, RIGHT TURN LANES, AND RIGHT TURN LANE TAPER AREAS (IF APPLICABLE), USUALLY 250' (75 m) IN ADVANCE OF STOP BARS. "UPTIGHT" DETECTION REFERS TO NON-LOCKING PRESENCE TYPE DETECTION LOCATED IN ALL LANES AND 10'-15' (3.0 m-4.5 m) BEHIND THE CROSSING STREET'S EDGE OF PAVEMENT EXTENDED.

NOTE:

ALL DETAILS AND NOTES SHOWN ARE FROM THE I.D.O.T. DISTRICT 1 TRAFFIC SIGNAL DESIGN GUIDELINES DATED JANUARY 1995

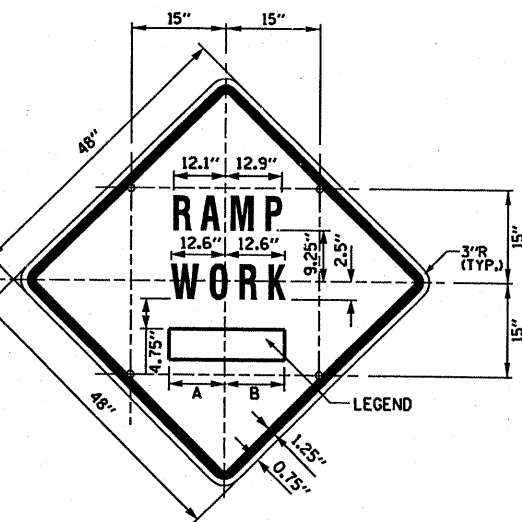
THIS DRAWING HAS BEEN PREPARED TO ASSIST THE RESIDENT ENGINEER FOR ALL ROADWAY RESURFACING OR S.M.A.R.T. PROJECTS WHERE THE DIMENSIONS ARE NOT SHOWN ON THE PLANS AND THE FINAL LOCATIONS FOR CROSSWALKS OR STOP BARS ARE NOT DETERMINED.

FILE NAME : c:\pwwork\p1\DOT\ABRE\UHV\d816688\101std.dgn	USER NAME : abr@uah	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	DISTRICT 1 - DETECTOR LOOP INSTALLATION DETAILS FOR ROADWAY RESURFACING	F.A.I. RTE. 290	SECTION (531-3.1, 0305-302 KI RS-5)	COUNTY COOK	TOTAL SHEETS 314	SHEET NO. 312	CONTRACT NO. 60138
PLOT SCALE : 100.0000' / IN.	CHECKED - R.J.F.	DRAWN -	REVISED -			SCALE: NONE	SHEET NO. 1 OF 1 SHEETS	TS-07			
PLOT DATE : 11/23/2010	DATE -										



SIGN TS-1

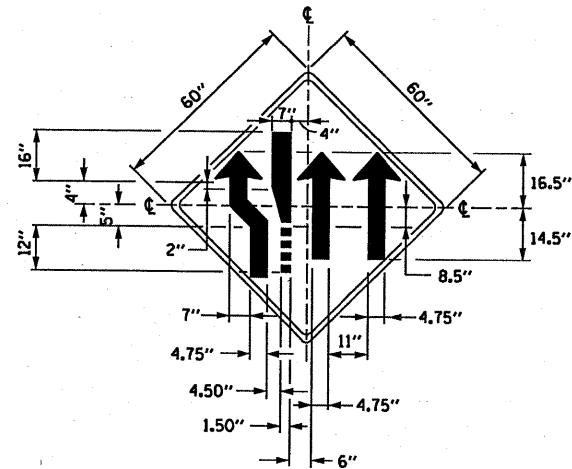
COLOR: BACKGROUND - FLUORESCENT ORANGE (*)
 BORDER AND SYMBOL - BLACK
 SIZE: 48"x48"
 MOUNTING HOLES: 7/16" DIA., 4 HOLES SPACED AS SHOWN
 NOTE: SIGN TS-1L IS SHOWN; REVERSE SYMBOL FOR SIGN TS-1R



SIGN TS-2

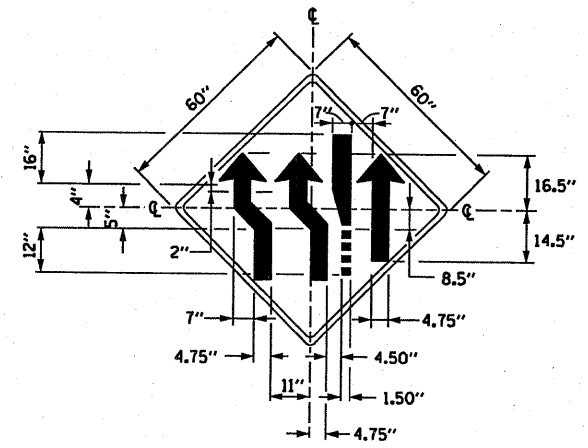
COLOR: BACKGROUND - FLUORESCENT ORANGE (*)
 BORDER AND SYMBOL - BLACK
 SIZE: 48"x48"
 LETTERING: 7" FEDERAL SERIES D
 MOUNTING HOLES: 7/16" DIA., 4 HOLES SPACED AS SHOWN

SIGN NO.	LEGEND	A	B
TS-2A	AHEAD	15.50"	15.50"
TS-2B	500 FT	14.25"	15.13"
TS-2C	1000 FT	14.88" L2	15.75" L2
TS-2D	1500 FT	14.88" L2	15.75" L2
TS-2E	1/2 MILE	15.75" L3	15.75" L3
TS-2F	1 MILE	13.06"	13.06"



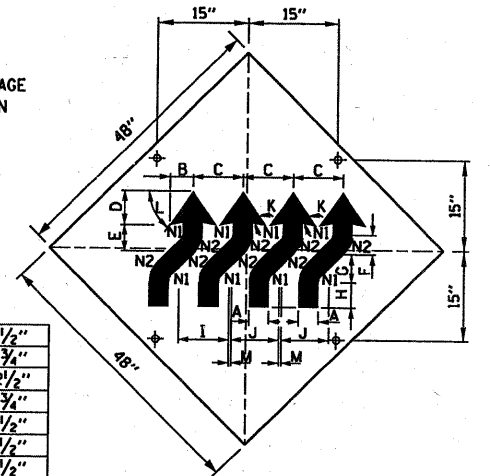
SIGN TS-1CL

COLOR: BACKGROUND
 COLOR: BLACK (NON - REFLECTORIZED)
 YELLOW (REFLECTORIZED) PERMANENT USAGE
 FLUORESCENT ORANGE (*) CONSTRUCTION USAGE



SIGN TS-1CR

COLOR: BACKGROUND
 COLOR: BLACK (NON - REFLECTORIZED)
 YELLOW (REFLECTORIZED) PERMANENT USAGE
 FLUORESCENT ORANGE (*) CONSTRUCTION USAGE



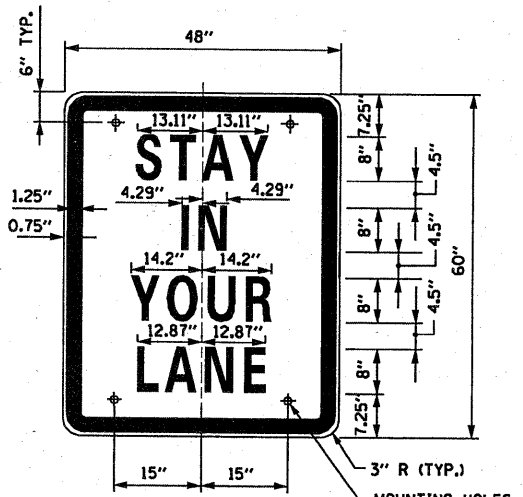
SIGN WI-4dR

A	4 1/2"
B	5 3/4"
C	12 1/2"
D	7 3/4"
E	6 1/2"
F	4 1/2"
G	6 1/2"
H	6"
I	12 3/4"
J	12"
K	45°
L	55°
M	0 3/4"
N1	2"
N2	6 1/2"

COLOR: BACKGROUND, FLUORESCENT ORANGE (*)
 TYPE A REFLECTIVE SHEETING PER STANDARD SPECIFICATIONS (*)
 BORDER AND LETTERS-BLACK
 SIZE: 48"x48"
 MOUNTING HOLES: 7/16" DIA., 4 HOLES SPREAD SHOWN.

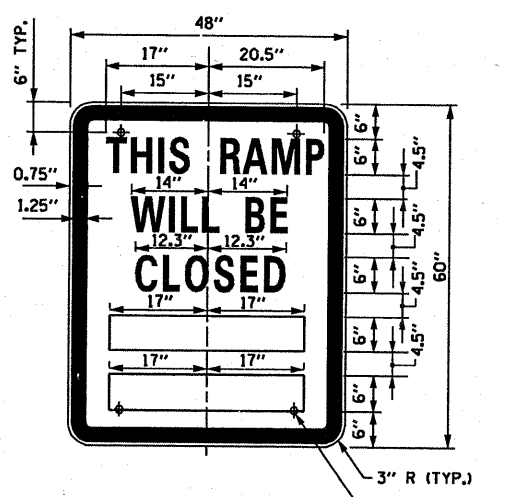
NOTES:

- ALL LETTERING IS DESIGNATED BY SIZE AND SERIES IN ACCORDANCE WITH THE LATEST EDITION OF "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS" AS PUBLISHED BY THE U.S. DEPARTMENT OF TRANSPORTATION. LETTERING SPACING SHALL BE IN ACCORDANCE WITH THIS GUIDE EXCEPT WHERE NOTED.
- SYMBOLS AND ARROWS SHALL CONFORM TO THE DETAILS SHOWN IN THE LATEST EDITION OF "STANDARD HIGHWAY SIGNS" AS PUBLISHED BY THE U.S. DEPARTMENT OF TRANSPORTATION.
- SEE THE CONTRACT REQUIREMENTS FOR ADDITIONAL NOTES AND SPECIFICATIONS.
 (*) FLUORESCENT ORANGE REFLECTIVE SHEETING PER THE STANDARD SPECIFICATIONS.
 (*) A - REFLECTIVE SHEETING PER THE STANDARD SPECIFICATIONS.
- DIMENSIONS INDICATED THUS L ARE BASED ON A REDUCTION IN STANDARD LETTERING SPACING AS SHOWN BELOW:
 L1 SPACING REDUCED BY 25%
 L2 SPACING REDUCED BY 40%
 L3 SPACING REDUCED BY 50%



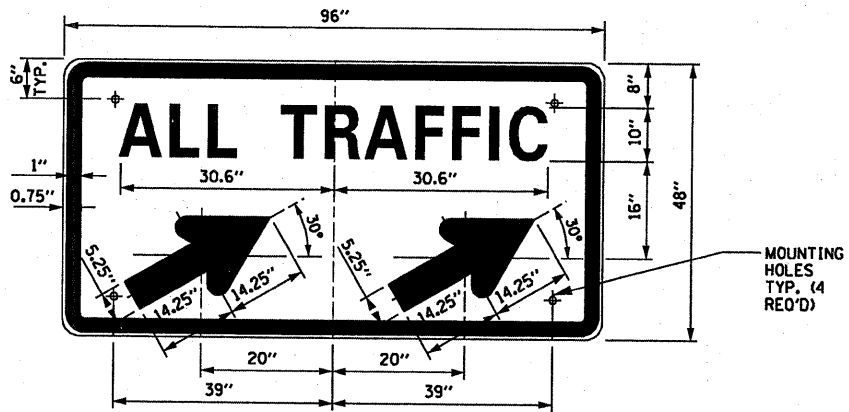
SIGN TS-3

COLOR: BACKGROUND - WHITE (REFLECTORIZED)(*)
 BORDER AND LETTERS - BLACK
 SIZE: 48"x60"
 LETTERING: LEGEND - 8" FEDERAL SERIES D
 MOUNTING HOLES: 7/16" DIA., 4 HOLES, SPACED AS SHOWN



SIGN TS-4

COLOR: BACKGROUND - WHITE (REFLECTORIZED)(*)
 BORDER AND LETTERS - BLACK
 SIZE: 48"x60"
 LETTERING: LEGEND - 6" FEDERAL SERIES C
 MOUNTING HOLES: 7/16" DIA., 4 HOLES, SPACED AS SHOWN



SIGN TS-5a & TS-5b

COLOR: BACKGROUND - WHITE (REFLECTORIZED)(*)
 BORDER AND LETTERS - BLACK
 ARROW - BLACK
 SIZE: 96"x48"
 LETTERING: 10" FEDERAL SERIES D
 MOUNTING HOLES: 7/16" DIA., 4 HOLES, SPACED AS SHOWN
 NOTE: SIGN TS-5a IS SHOWN, SUBSTITUTE LEGEND "A" FOR "B" FOR SIGN TS-5b

RAMP CLOSURE ADVANCE INFORMATION SIGN

THE VARIABLE MESSAGE WITH DATES FOR THE BOTTOM TWO LINES SHALL BE DETERMINED BY THE ENGINEER AND GIVEN TO THE CONTRACTOR BEFORE THE REQUIRED FIELD ERECTION DATE.

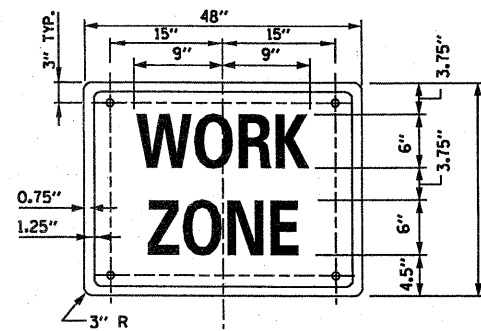
APPROVED *Paul Kovacs* CHIEF ENGINEER DATE 5-1-2009

DATE	REVISIONS
5-1-2009	DELETED FLASHING ARROW BOARDS

Illinois Tollway
Open Roads for a Faster Future

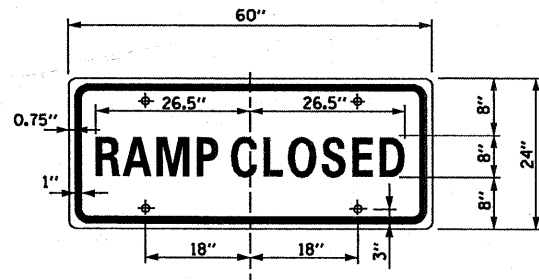
CONSTRUCTION SIGNS

STANDARD E1-01



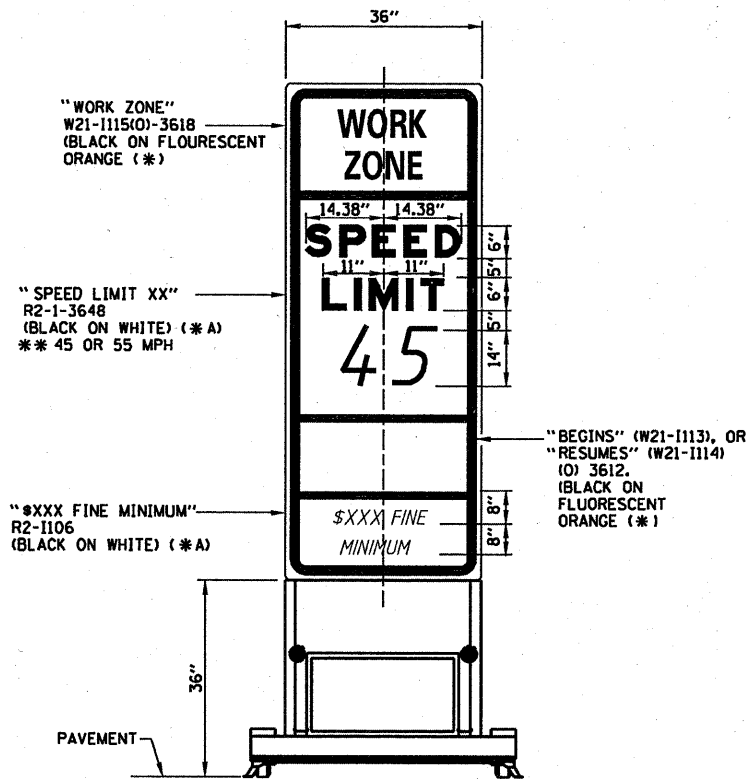
SIGN G20-I102

COLOR: BACKGROUND - FLOURESCENT ORANGE (*)
 BORDER AND LETTERS - BLACK
 SIZE: 48"x24"
 LETTERING: 6" FEDERAL SERIES C,
 MOUNTING HOLES: 7/16" DIA., 4 HOLES SPACED AS SHOWN
 ON SIGN G20-2A



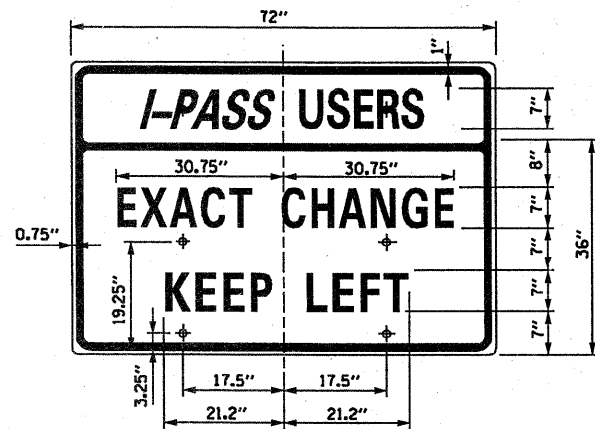
SIGN TS-6

COLOR: BACKGROUND - WHITE (REFLECTORIZED)
 BORDER AND LETTERS - BLACK
 SIZE: 60"x24"
 LETTERING: 8" FEDERAL SERIES C
 MOUNTING HOLES: 7/16" DIA., 4 HOLES SPACED AS SHOWN



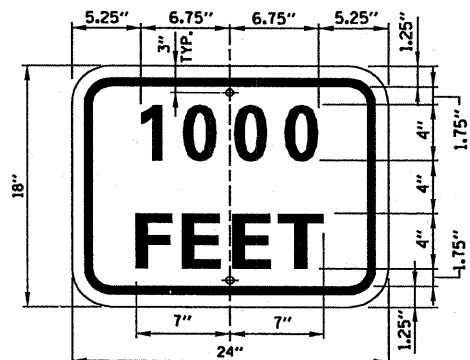
**WORK ZONE SPEED LIMIT
SIGN ASSEMBLY**

"WORK ZONE"
 W21-I115(O)-3618
 (BLACK ON FLOURESCENT
 ORANGE (*)
 "SPEED LIMIT XX"
 R2-1-3648
 (BLACK ON WHITE) (*) A
 ** 45 OR 55 MPH
 "BEGINS" (W21-I113), OR
 "RESUMES" (W21-I114)
 (O) 3612,
 (BLACK ON
 FLOURESCENT
 ORANGE (*)
 "XXX FINE MINIMUM"
 R2-I106
 (BLACK ON WHITE) (*) A



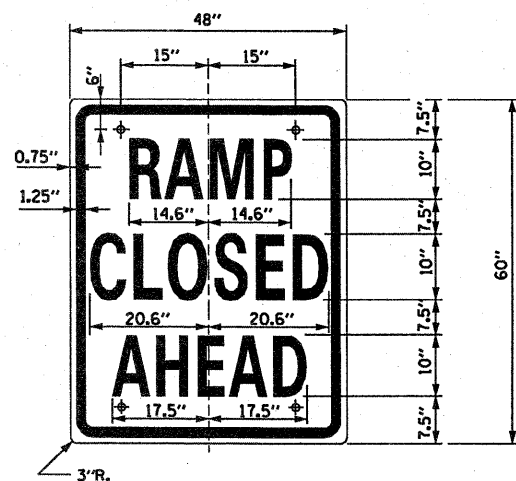
SIGN TS-7

COLOR: BACKGROUND - WHITE (REFLECTORIZED) (*) A
 BORDER AND LETTERS - BLACK
 SIZE: 72"x36"
 LETTERING: 7" FEDERAL SERIES C
 MOUNTING HOLES: 7/16" DIA., 4 HOLES SPACED AS SHOWN



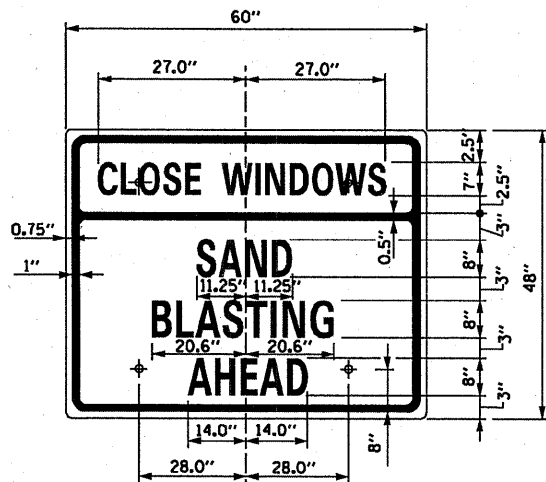
SUPPLEMENTAL PLATE

COLOR: BACKGROUND - FLUORESCENT ORANGE (*)
 BORDER AND LETTERS - BLACK
 SIZE: 24"x18"
 LETTERING: 4" FEDERAL SERIES D
 MOUNTING HOLES: 7/16" DIA.



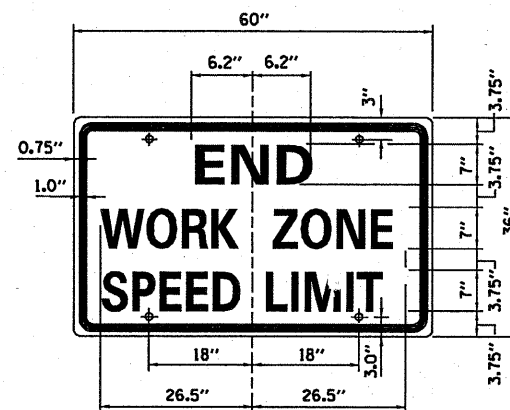
SIGN TS-9

COLOR: BACKGROUND - WHITE (REFLECTORIZED)
 BORDER AND LETTERS - BLACK
 SIZE: 48"x60"
 LETTERING: 10" FEDERAL SERIES C
 MOUNTING HOLES: 7/16" DIA., 4 HOLES SPACED AS SHOWN



SIGN TS-10

COLOR: BACKGROUND - FLUORESCENT ORANGE (*)
 BORDER AND LETTERS - BLACK
 SIZE: 60"x48"
 LETTERING: 8" FEDERAL SERIES C, 7" FEDERAL SERIES B
 MOUNTING HOLES: 7/16" DIA., 4 HOLES SPACED AS SHOWN



SIGN G20-I103

COLOR: BACKGROUND - FLUORESCENT ORANGE (*)
 BORDER AND LETTERS - BLACK
 SIZE: 60"x36"
 LETTERING: 6" FEDERAL SERIES C,
 MOUNTING HOLES: 7/16" DIA., 4 HOLES SPACED AS SHOWN

GENERAL NOTES:

- ALL LETTERING IS DESIGNATED BY SIZE AND SERIES IN ACCORDANCE WITH THE LATEST EDITION OF "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS" AS PUBLISHED BY THE U.S. DEPARTMENT OF TRANSPORTATION. LETTERING SPACING SHALL BE IN ACCORDANCE WITH THE GUIDE EXCEPT WHERE NOTED.
 - SYMBOLS AND ARROWS SHALL CONFORM TO THE DETAILS SHOWN IN THE LATEST EDITION OF "STANDARD HIGHWAY SIGNS" AS PUBLISHED BY THE U.S. DEPARTMENT OF TRANSPORTATION.
 - SEE THE CONTRACT REQUIREMENTS FOR ADDITIONAL NOTES AND SPECIFICATIONS.
- (*) FLUORESCENT ORANGE REFLECTIVE SHEETING PER THE STANDARD SPECIFICATIONS.
 (*) A) REFLECTIVE SHEETING PER THE STANDARD SPECIFICATIONS.

