

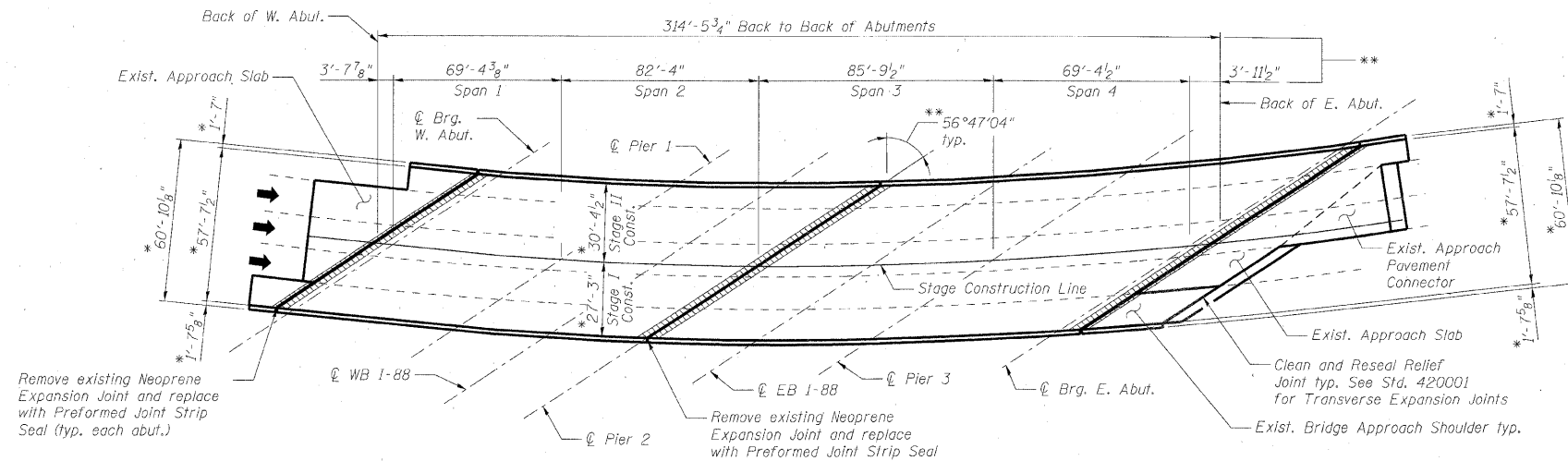
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

Existing Structure:  
The structure is a four-span continuous steel structure (composite) with a 7.5-inch reinforced concrete deck and no overlay.  
The original structure was built in 1953 and is in Section (373B & 383B) R-1. In 1984, the bridge was widened and redecked, expansion joints were reconstructed, substructure was repaired, and the superstructure was cleaned and painted. In 1997, the expansion joints were reconstructed and approach slabs were repaired. In 2001, the deck was widened and the substructure was repaired.

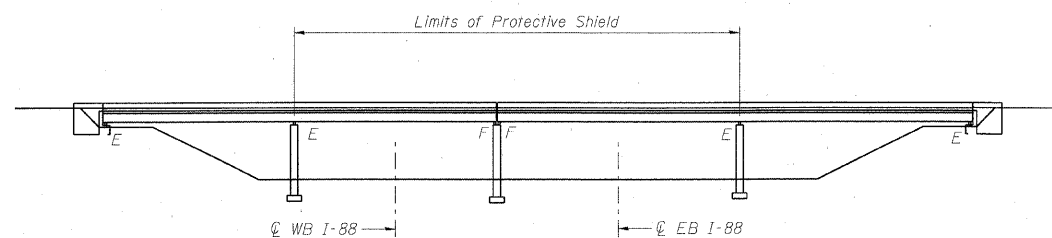
Stage construction shall be utilized to maintain traffic during construction.

No salvage.

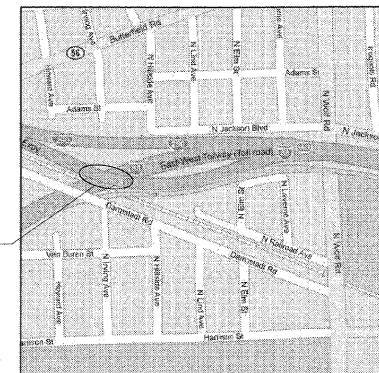
\* Measured Radial  
\*\* Measured along Local Tangent at Sta. 459+00



PLAN



ELEVATION



LOCATION SKETCH

DESIGN SPECIFICATIONS

2002 AASHTO Standard Specifications for Highway Bridges, 17th Edition

DESIGN STRESSES

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

SCOPE OF WORK

1. Repair bridge deck.
2. Repair approach slab.
3. Reconstruct deck joints at each abutment and Pier 2 with preformed joint strip seal.
4. Clean and reseal relief joints at the end of approach pavement connectors.
5. Apply concrete sealer to parapets, abutment seats and backwalls, and Pier 2 seats.



Expiration Date 11-30-10  
DATE: 01-25-10

GENERAL PLAN AND ELEVATION  
I-290 EB OVER I-88  
COOK COUNTY  
STATION 459+00  
STRUCTURE NO. 016-0085

DESIGNED -	DMS/TJJ
CHECKED -	EFS/AAY
DRAWN -	RMG
CHECKED -	AAY

benesch

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

SHEET NO. 1 9 SHEETS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	(3435, ETC., 3838)RS-5	COOK	264	201
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT		
			CONTRACT NO. 60G52		

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

**GENERAL NOTES**

1. Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60. See Special Provisions.
2. Reinforcement bars designated (E) shall be epoxy coated.
3. Prior to pouring the new concrete deck, all heavy or loose rust, loose mill scale, and other loose or potentially detrimental foreign material shall be removed from the surfaces in contact with concrete. Tightly adhered paint may remain unless otherwise noted. Removal shall be accomplished by methods that will not damage the steel and the cost will be included in the pay item covering removal of the existing concrete.  
As directed by the Engineer, existing construction accessories welded to the top flange of beams and girders shall be removed. The weld areas shall be ground flush and inspected for cracks using magnetic particle testing (MT) or dye penetrant testing (PT) by qualified personnel approved by the Engineer. Any cracks that cannot be removed by grinding 1/4 inch deep shall be identified and reported to the Bureau of Bridges and Structures for further disposition. The cost of removing welded accessories, grinding and inspecting weld areas and grinding cracks will be paid for according to Article 109.04 of the Standard Specifications.
4. Plan dimensions and details relative to existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.
5. Concrete Sealer shall be applied to the parapets, abutment and Pier 2 seats, and abutment backwalls. All surfaces to be sealed shall be cleaned thoroughly prior to sealer application. Cost included with Concrete Sealer.
6. The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.
7. Stage construction shall be utilized to maintain traffic during construction.
8. The Contractor shall exercise care during removal of existing joints to ensure that the slab, beams and diaphragms' integrity will not be detrimentally impacted. The Contractor shall repair any damage(s) to the slab, beams and diaphragms caused by his operation as directed by the Engineer at no additional cost to the Department.
9. Joint openings shall be adjusted according to Article 520.04 of the Standard Specifications when the deck is poured at an ambient temperature other than 50°F.

**INDEX OF SHEETS**

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

**TOTAL BILL OF MATERIAL**

ITEM	UNIT	SUPER	SUB	TOTAL
Concrete Removal	Cu. Yd.	46.7		46.7
Protective Shield	Sq. Yd.	130		130
Concrete Superstructure	Cu. Yd.	46.7		46.7
Reinforcement Bars, Epoxy Coated	Pound	6,180		6,180
Bar Splicers	Each	38		38
Preformed Joint Strip Seal	Foot	328.0		328.0
Concrete Sealer	Sq. Ft.	26,310	1,592	27,902
Approach Slab Repair (Partial Depth)	Sq. Yd.	10.0		10.0
Deck Slab Repair (Partial)	Sq. Yd.	5.6		5.6
Clean & Reseal Relief Joint	Foot	104.0		104.0

DESIGNED	DMS/TJJ
CHECKED	EFS/AAV
DRAWN	RMG
CHECKED	AAV

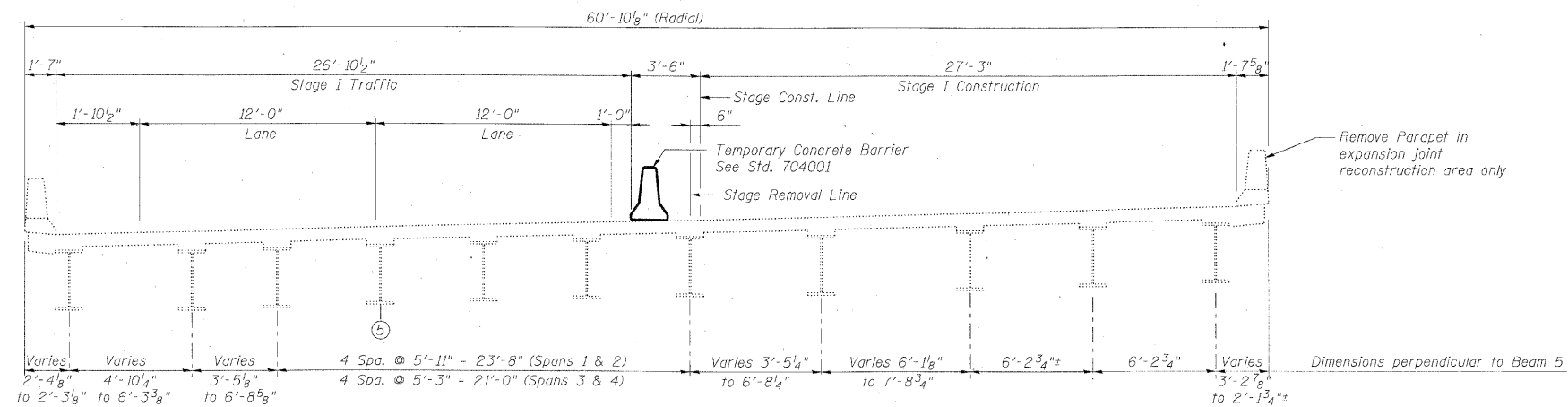
**GENERAL NOTES, BILL OF MATERIAL  
AND INDEX OF SHEETS  
STRUCTURE NO. 016-0085**

**benesch**

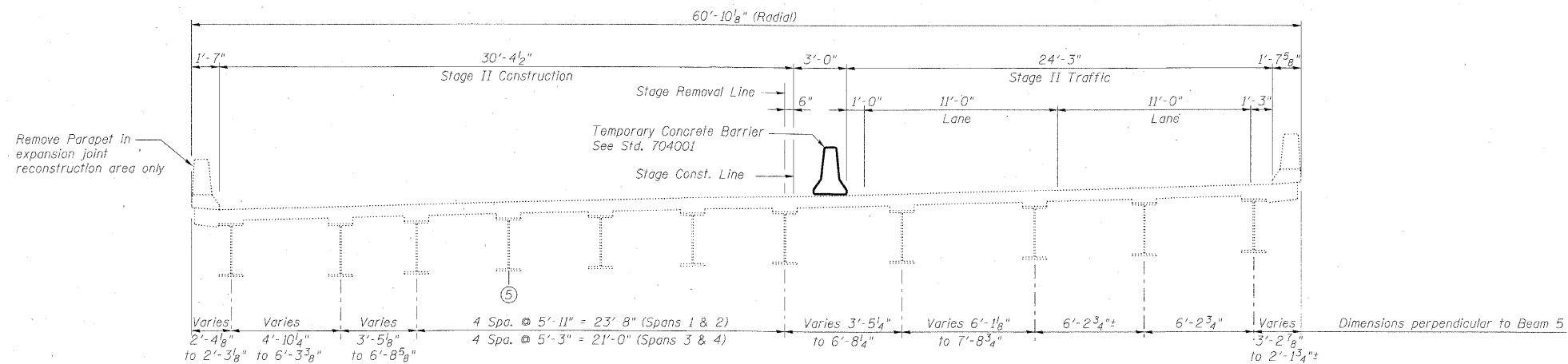
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Chicago, Illinois 60601  
312-565-0450 Job No. 10050

SHEET NO. 2	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	(3435, ETC., 3838)RS-5	COOK	264	202
9 SHEETS	CONTRACT NO. 60G52				
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



**STAGE I CROSS SECTION**  
(Looking East)



**STAGE II CROSS SECTION**  
(Looking East)

**Note:**

For quantity of Temporary Concrete Barrier, see roadway plans.

DESIGNED	MFB
CHECKED	MAC
DRAWN	VH
CHECKED	AAY

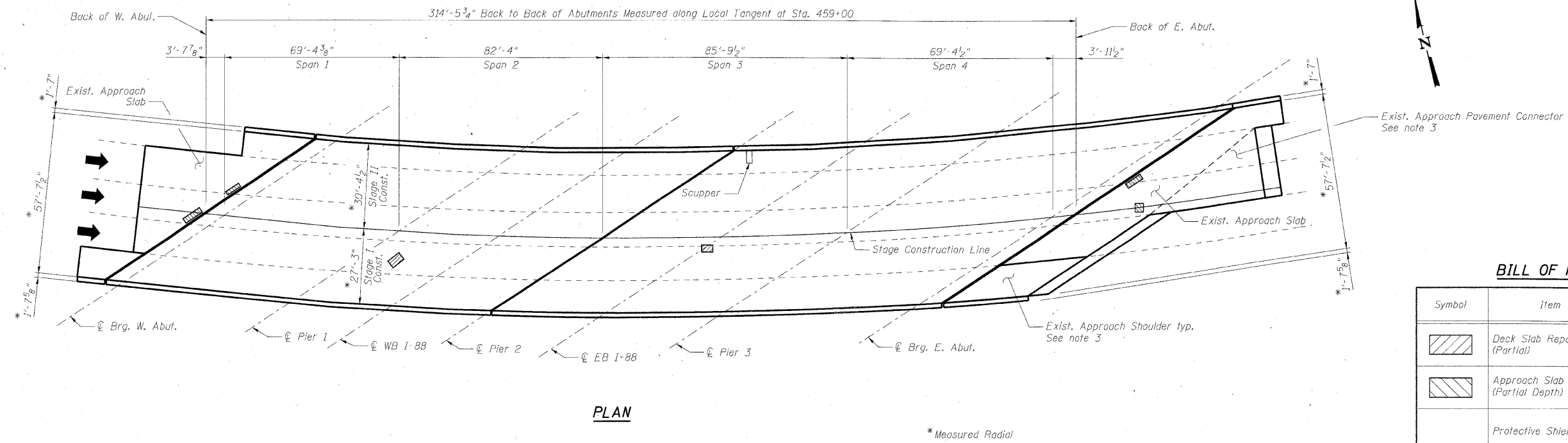
**STAGE CONSTRUCTION DETAILS**  
**STRUCTURE NO. 016-0085**

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312-566-0450 Job No. 10050

SHEET NO. 3	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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9 SHEETS	CONTRACT NO. 60G52				
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

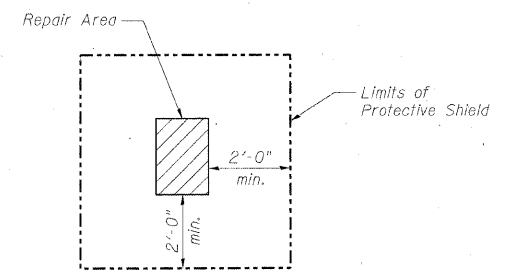


PLAN

\* Measured Radial

BILL OF MATERIAL

Symbol	Item	Unit	Quantity
	Deck Slab Repair (Partial)	Sq. Yd.	5.6
	Approach Slab Repair (Partial Depth)	Sq. Yd.	10.0
	Protective Shield	Sq. Yd.	130



PROTECTIVE SHIELD DETAIL

Notes:

- Deck and approach slab repair areas are estimated based on visual inspection completed in June 2009. Actual repair areas and locations shall be determined by the Engineer and shown on As-Built plans.
- Protective Shield, required for deck slab and/or parapet repairs, shall be installed according to Article 501.03 of the Standard Specifications. For limits of Protective Shield, see Protective Shield Detail on this sheet and Elevation on General Plan and Elevation sheet.
- The Engineer shall determine the type and quantity of Class A patching and the quantity of Mixture for Cracks, Joints and Flangeways. Estimated quantities are included in the overall Summary of Quantities in Roadway Plans.

DESIGNED	DMS/TJJ
CHECKED	EFS/AAV
DRAWN	RMG
CHECKED	AAV

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312-865-0450 Job No. 10050

BRIDGE DECK AND APPROACH  
SLAB REPAIRS  
STRUCTURE NO. 016-0085

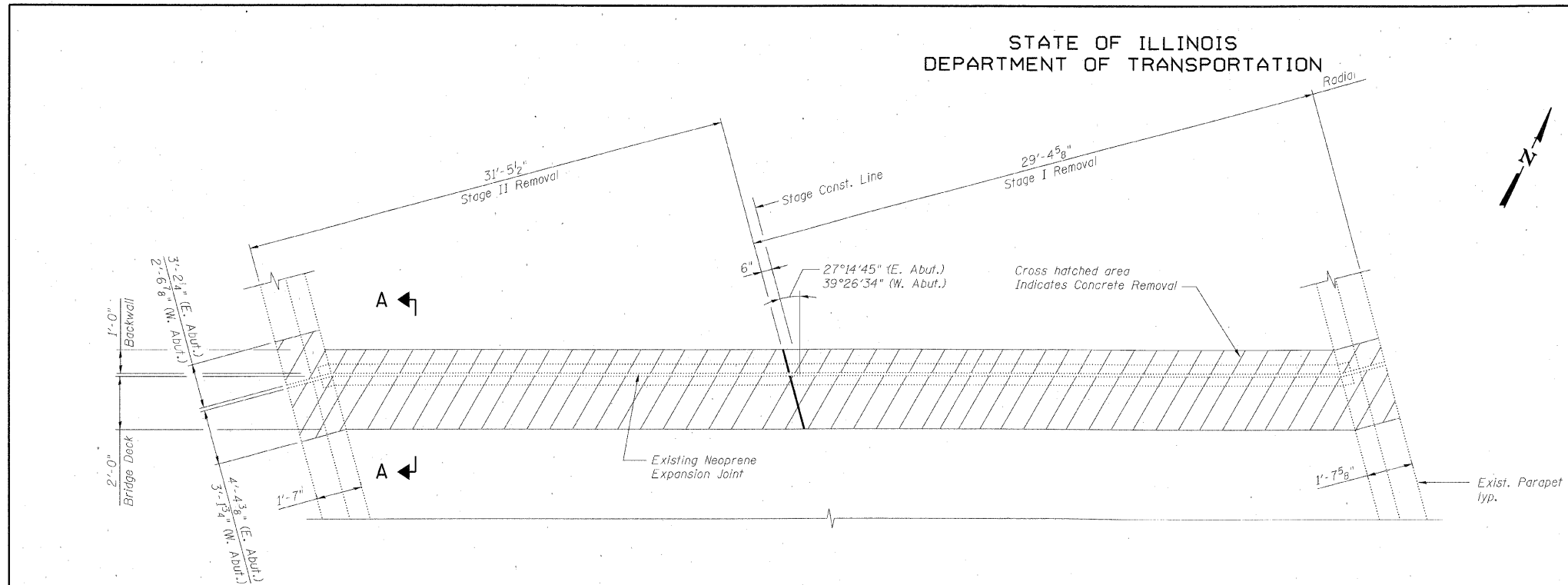
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9 SHEETS	290	(3435, ETC., 3838)RS-5	COOK	264	204
			CONTRACT NO. 60G52		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

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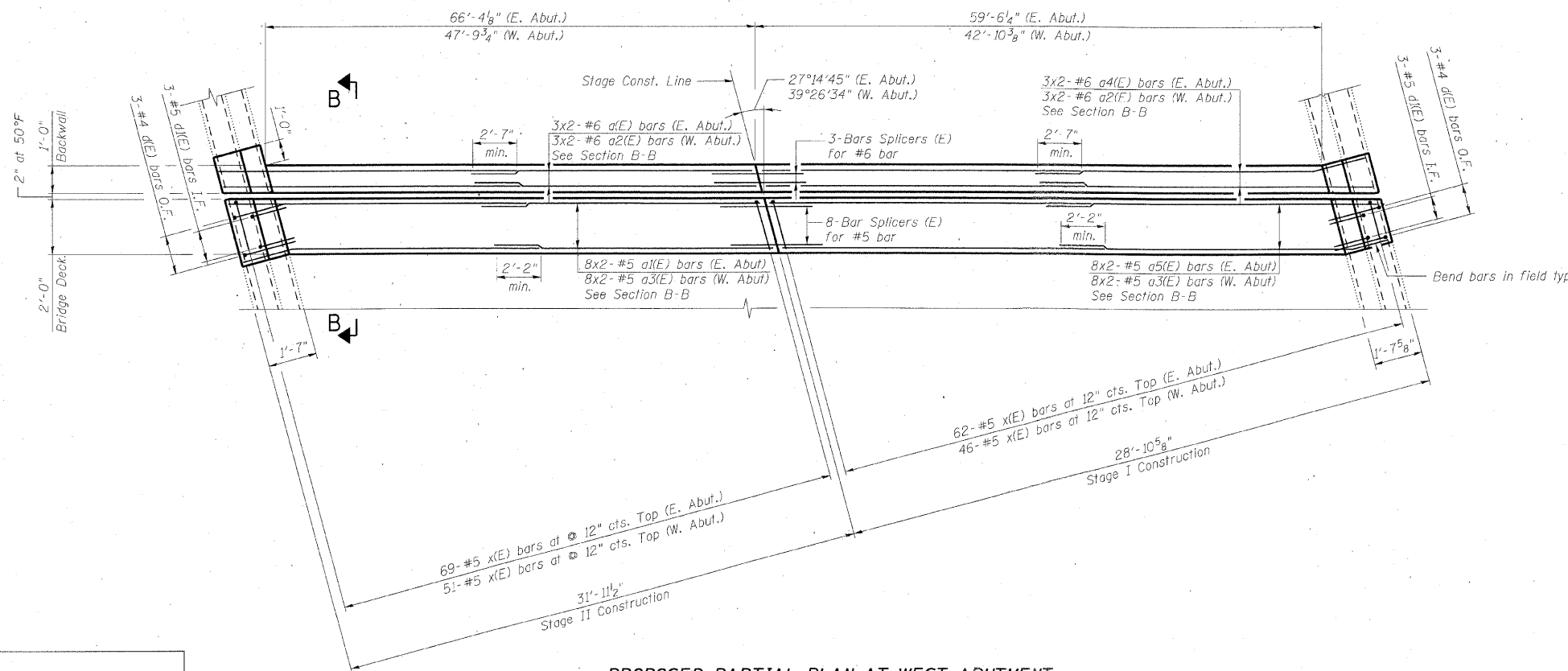
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

**BILL OF MATERIAL**

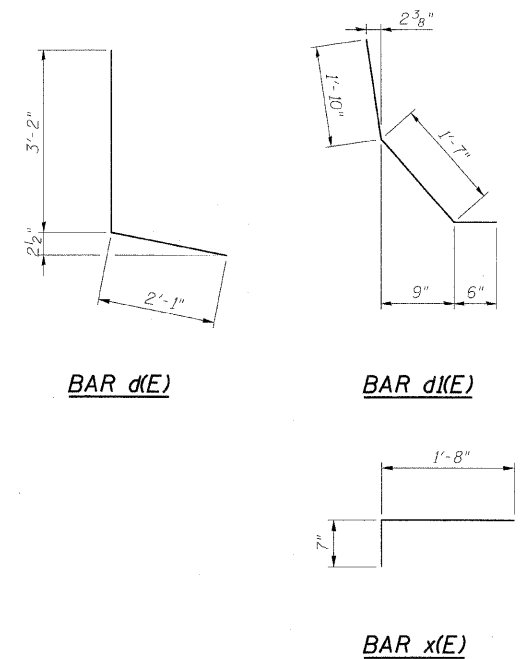
Bar	No.	Size	Length	Shape
a(E)	6	#6	35'-9"	—
a1(E)	16	#5	35'-9"	—
a2(E)	12	#6	26'-3"	—
a3(E)	32	#5	26'-3"	—
a4(E)	6	#6	32'-5"	—
a5(E)	16	#5	32'-5"	—
d(E)	12	#4	5'-3"	┌
d1(E)	12	#5	3'-11"	└
x(E)	228	#5	2'-3"	┌
Item	Unit	Total		
Concrete Removal	Cu. Yd.	30.7		
Concrete Superstructure	Cu. Yd.	30.7		
Reinforcement Bars, Epoxy Coated	Pound	3,730		



**EXISTING PARTIAL PLAN AT WEST ABUTMENT**  
(Opposite Hand For East Abutment)



**PROPOSED PARTIAL PLAN AT WEST ABUTMENT**  
(Opposite Hand For East Abutment)



**Notes:**

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

DESIGNED	TJJ
CHECKED	AAV
DRAWN	VH
CHECKED	AAV

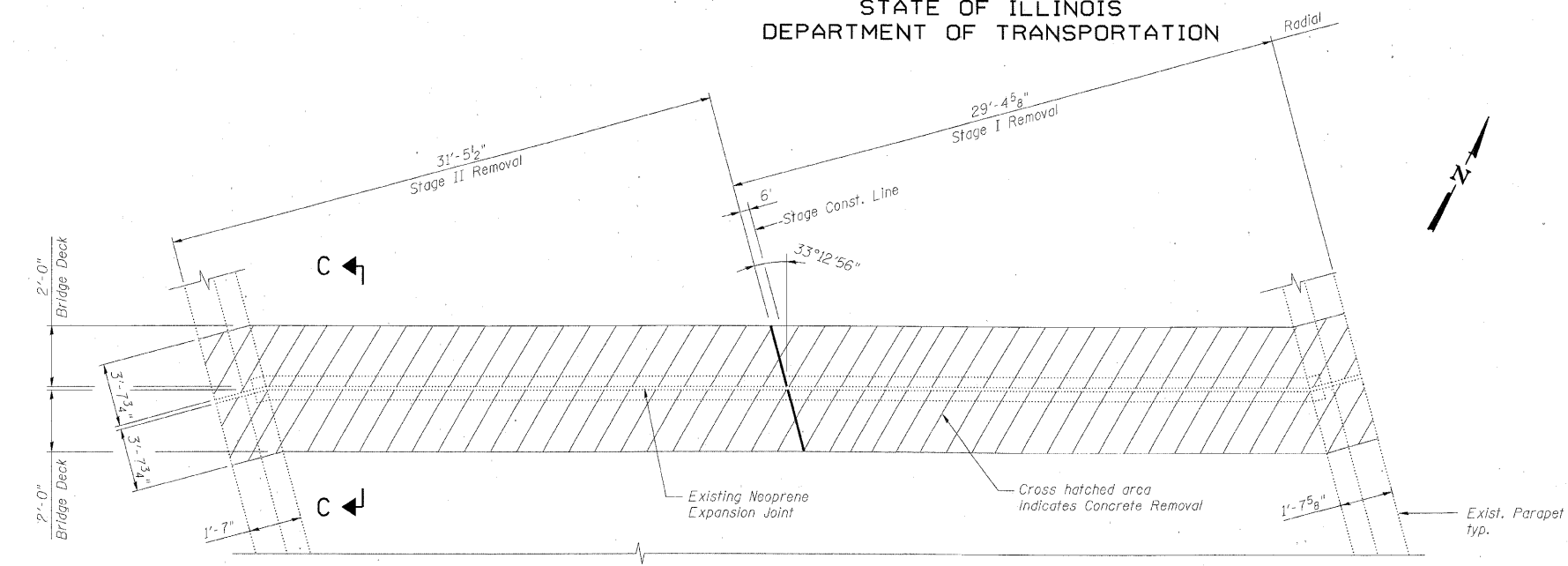
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Chicago, Illinois 60601  
312-565-0450 Job No. 10050

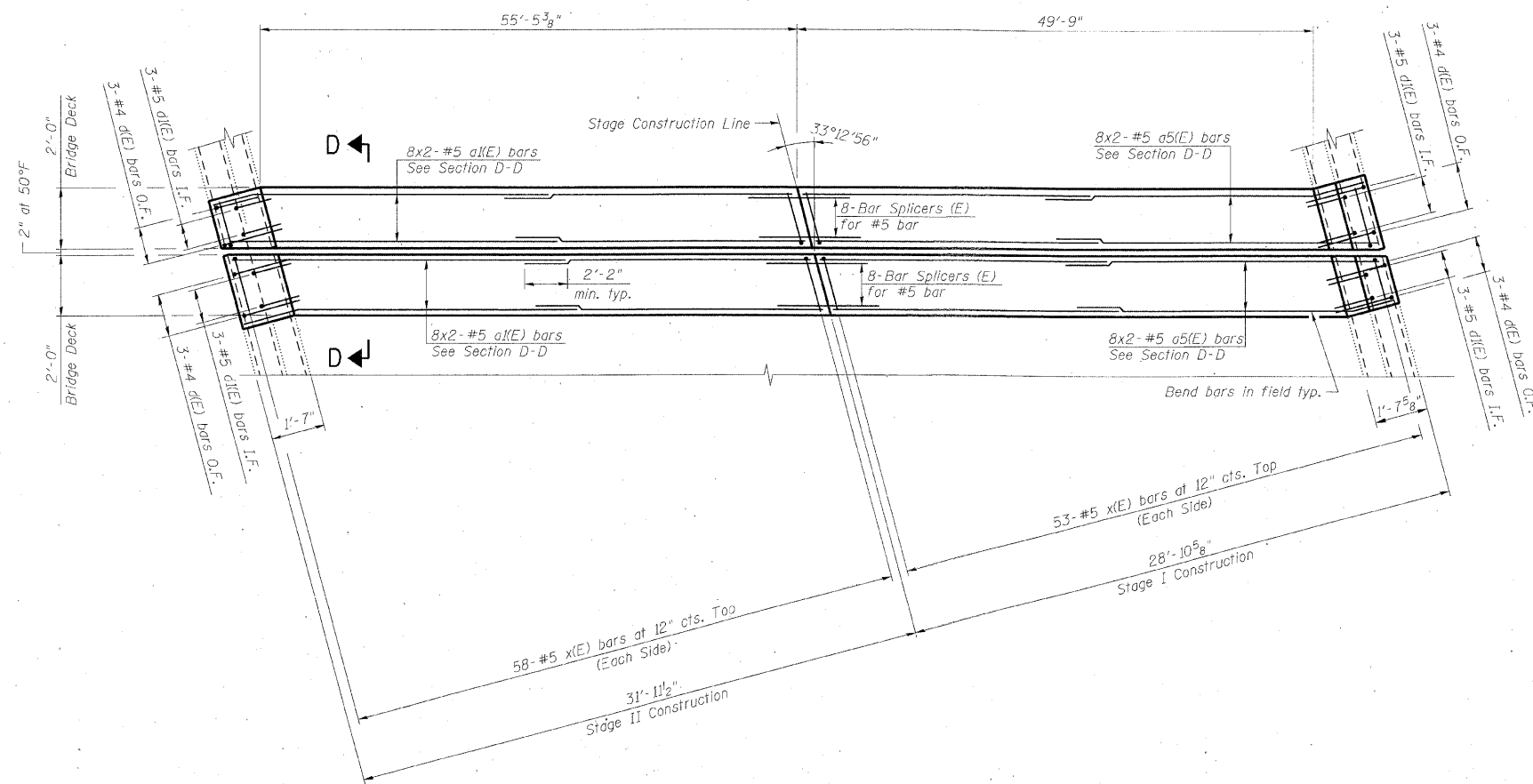
**EXPANSION JOINT REPAIRS 1 of 2**  
**STRUCTURE NO. 016-0085**

SHEET NO. 5 9 SHEETS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	(3435, ETC., 3838)RS-5	COOK	264	205
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT	CONTRACT NO. 60G52	

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



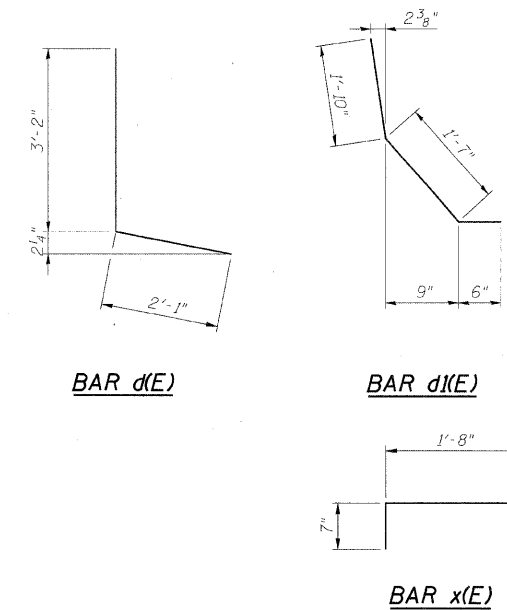
EXISTING PARTIAL PLAN AT PIER 2



PROPOSED PARTIAL PLAN AT PIER 2

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	32	#5	29'-11"	—
a5(E)	32	#5	26'-7"	—
d(E)	12	#4	5'-3"	⌋
d(E)	12	#5	3'-11"	⌋
x(E)	222	#5	2'-3"	⌋
Item		Unit	Total	
Concrete Removal		Cu. Yd.	16.0	
Concrete Superstructure		Cu. Yd.	16.0	
Reinforcement Bars, Epoxy Coated		Pound	2,450	



Notes:

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

DESIGNED	TJJ
CHECKED	AAV
DRAWN	VH
CHECKED	AAV

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312-665-0460 Job No. 10050

SHEET NO. 6 9 SHEETS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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FED. ROAD DIST. NO.			ILLINOIS	FED. AID PROJECT	
			CONTRACT NO. 60G52		

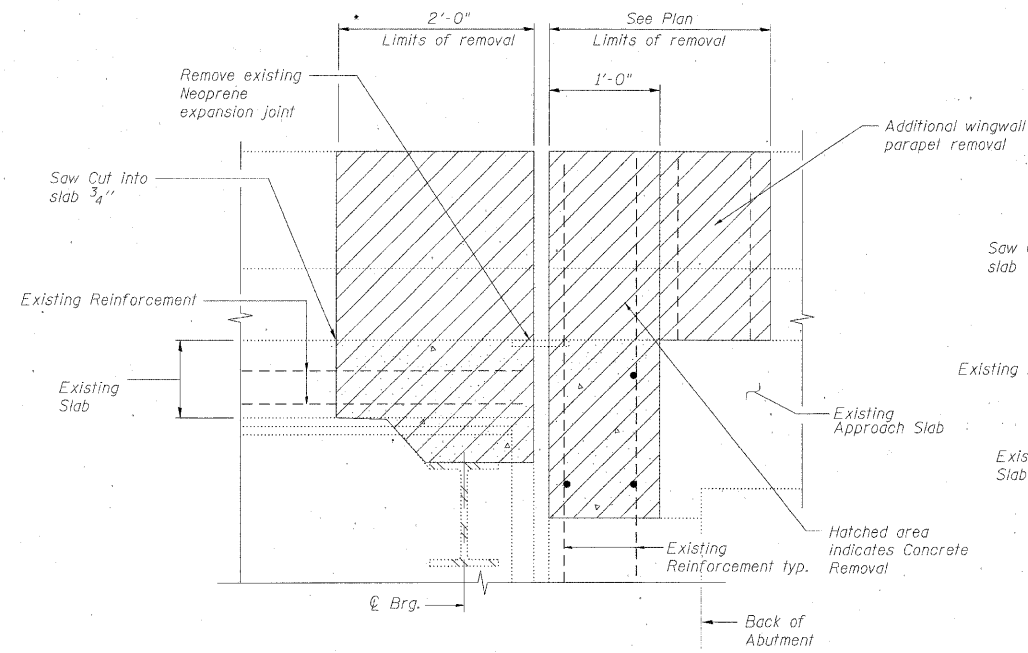
EXPANSION JOINT REPAIRS 2 of 2  
STRUCTURE NO. 016-0085

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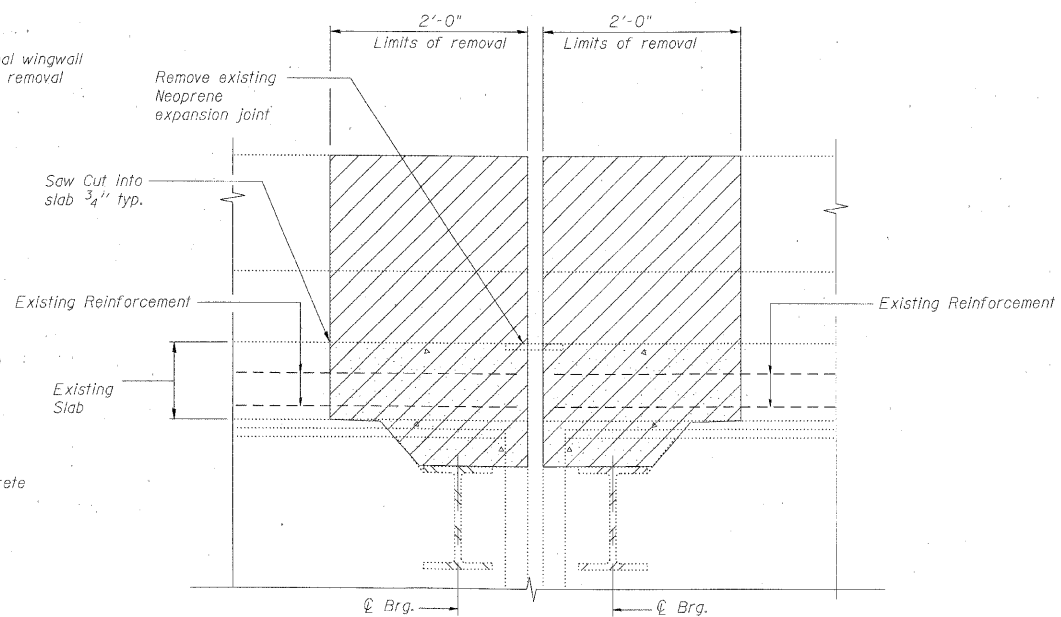
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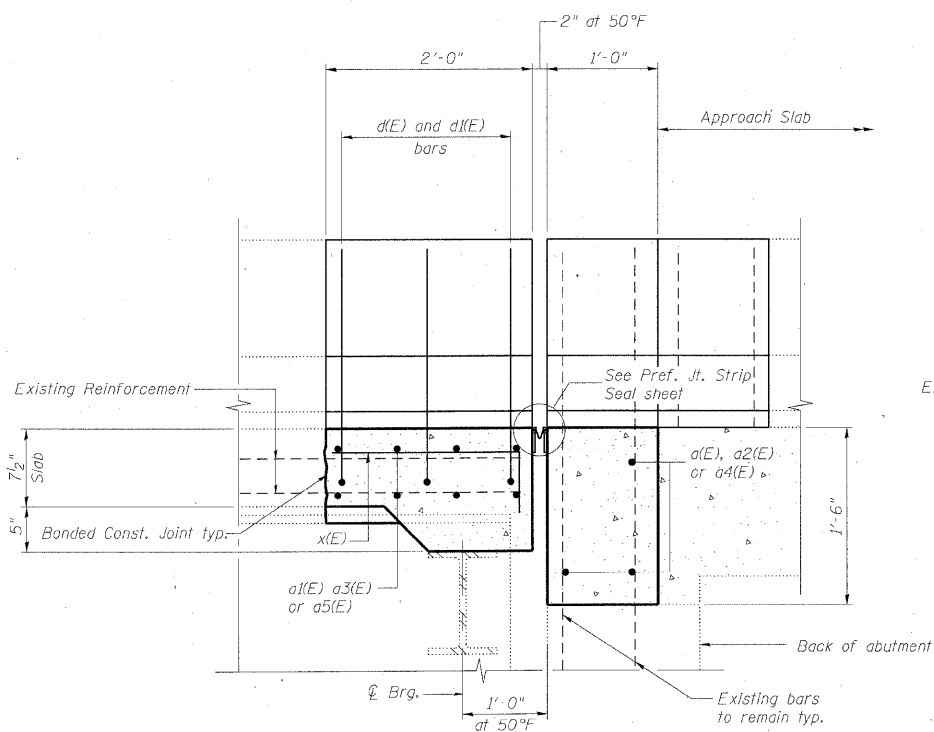
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



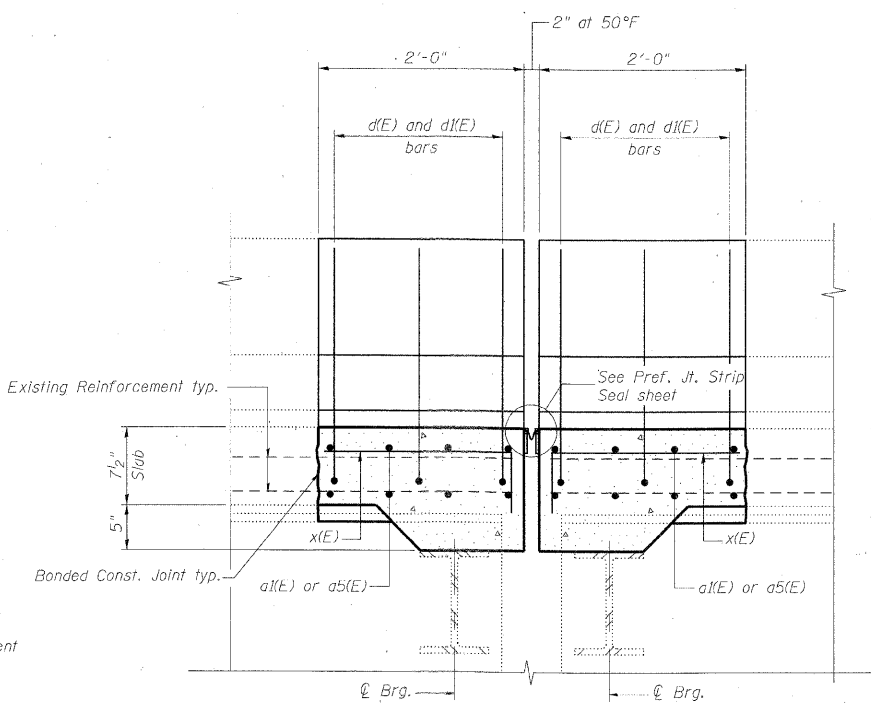
SECTION A-A



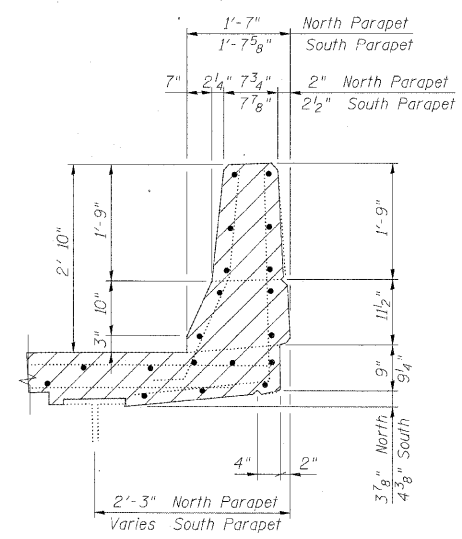
SECTION C-C



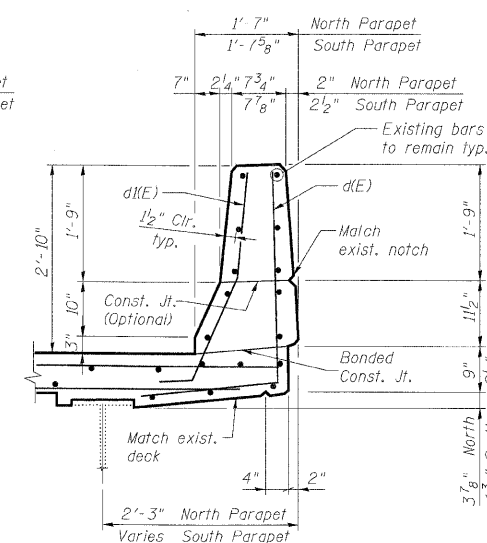
SECTION B-B



SECTION D-D



EXISTING PARAPET SECTION



PROPOSED PARAPET SECTION

Notes:

- Existing reinforcement bars extending into the concrete removal area shall be blast-cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be repaired or replaced with an approved bar splicer or anchorage system. Cost included with Concrete Removal.
- Existing reinforcement bars in the concrete removal area parallel to the expansion joints shall be removed.
- Removal and disposal of the existing expansion joints will not be paid for separately, but shall be included with the cost of Concrete Removal.
- If existing name plate falls within the limits of Concrete Removal, it shall be removed and reinstalled in its original location in accordance with IDOT Std. 515001. Cost included with Concrete Superstructure.
- If existing guardrail and/or end shoe fall within the limits of Concrete Removal, they shall be removed and reinstalled in their original location in accordance with District 1 Std. BM-21. Cost included with Concrete Superstructure.
- Work this sheet with Expansion Joint Repairs sheet.

DESIGNED	TJJ
CHECKED	AAV
DRAWN	VH
CHECKED	AAV

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SHEET NO. 7 9 SHEETS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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FED. ROAD DIST. NO.			ILLINOIS	CONTRACT NO. 60652	
			FED. AID PROJECT		

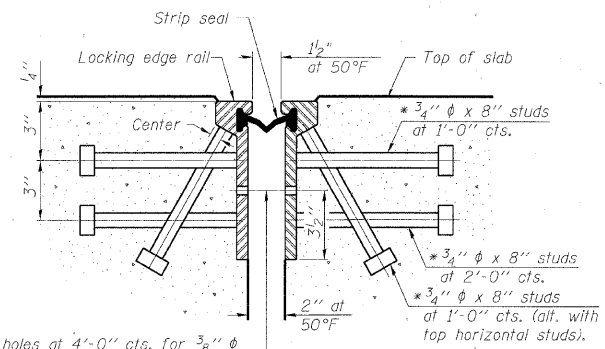
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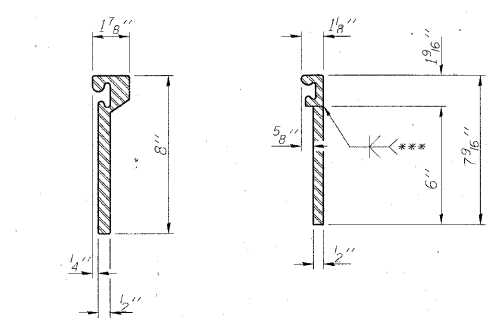
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

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

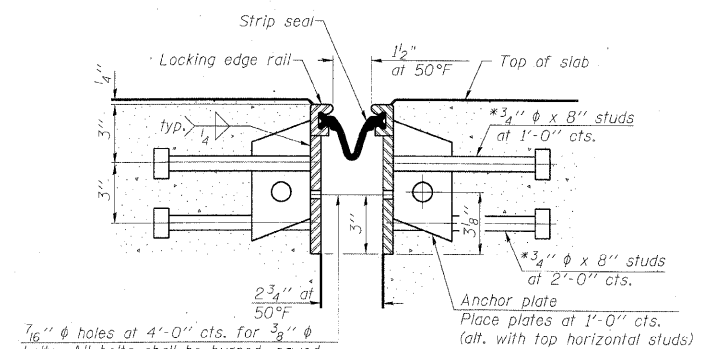


7/16"  $\phi$  holes at 4'-0" cts. for 3/8"  $\phi$  bolts. All bolts shall be burned, sawed, or chipped off flush with the plates after forms are removed, typ.

SECTION THRU  
ROLLED RAIL JOINT

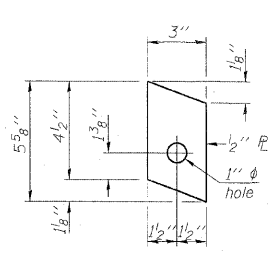


ROLLED  
EXTRUDED RAIL      WELDED RAIL



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

SECTION THRU  
WELDED RAIL JOINT



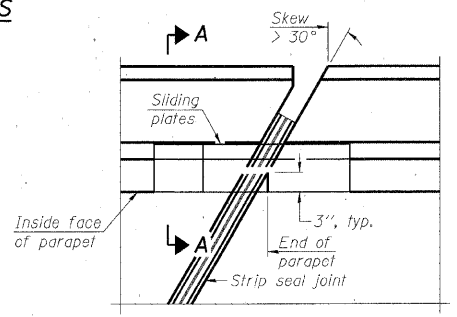
ANCHOR PLATE  
(for welded rail)

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

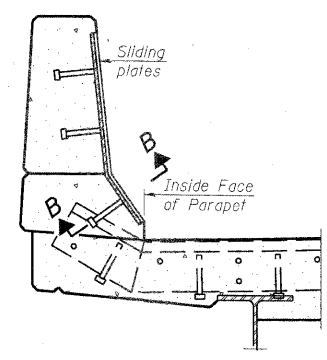
LOCKING EDGE  
RAIL SPLICE

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

LOCKING EDGE RAILS

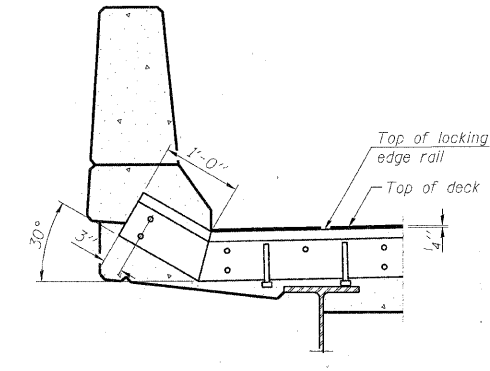


PLAN

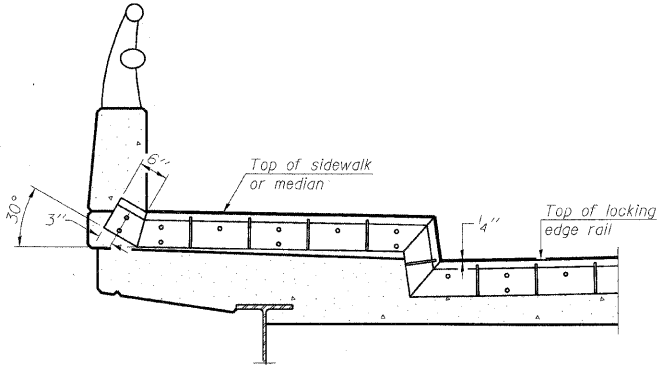


SECTION A-A

POINT BLOCK DETAILS  
(for skews > 30°)



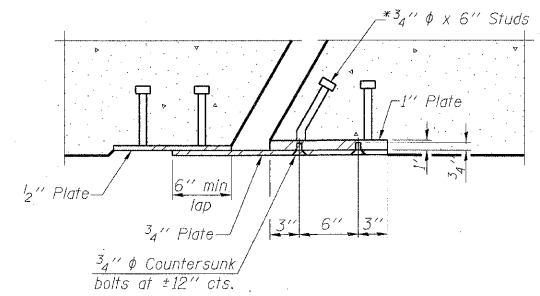
AT PARAPET



AT SIDEWALK OR MEDIAN

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

TYPICAL END TREATMENTS



SECTION B-B

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	328.0

DESIGNED	TJJ
CHECKED	AAV
DRAWN	RMG
CHECKED	AAV

EJ-SSJ

10-1-08

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312-665-0450      Job No. 10050

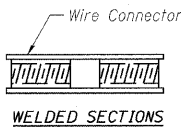
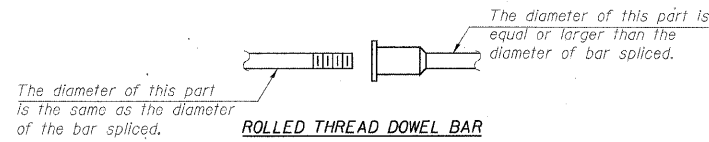
SHEET NO. 8	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9 SHEETS					
CONTRACT NO. 60G52					
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT					

PREFORMED JOINT STRIP SEAL  
STRUCTURE NO. 016-0085

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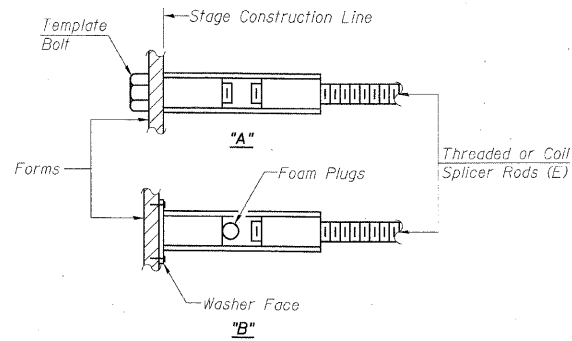


STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



BAR SPLICER ASSEMBLY ALTERNATIVES

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



INSTALLATION AND SETTING METHODS

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

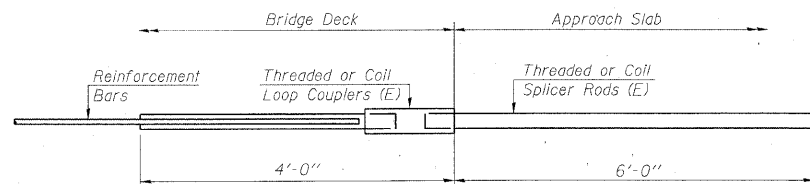
Notes:

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

- ① Minimum Capacity (Tension in kips) =  $1.25 \times f_y \times A_s$
- ② Minimum \*Pull-out Strength (Tension in kips) =  $0.66 \times f_y \times A_s$

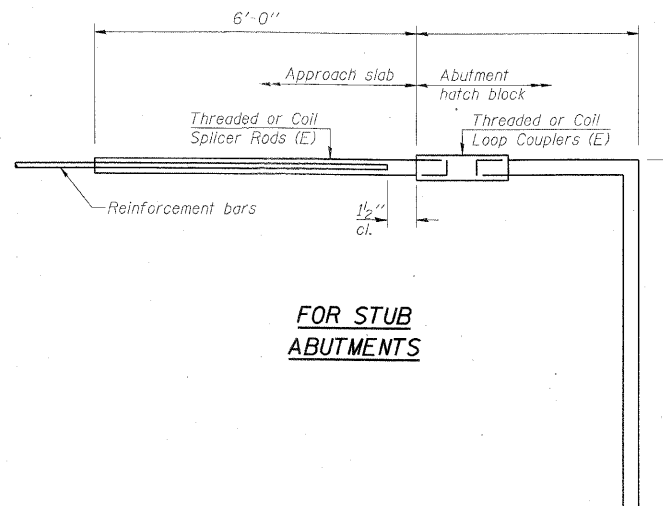
Where  $f_y$  = Yield strength of lapped reinforcement bars in ksi.  
 $A_s$  = Tensile stress area of lapped reinforcement bars.  
\* = 28 day concrete

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



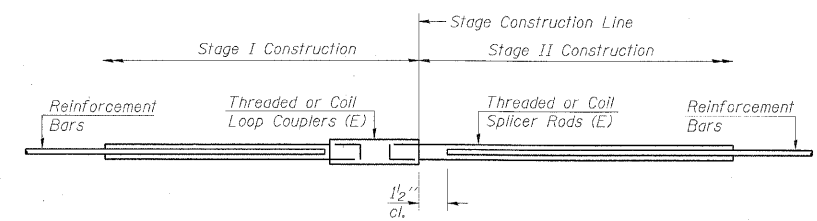
FOR INTEGRAL OR SEMI-INTEGRAL ABUTMENTS

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



FOR STUB ABUTMENTS

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



STANDARD

Bar Size	No. Assemblies Required	Location
#5	32	Deck
#6	6	Deck

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

BSD-1

10-1-08

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SHEET NO. 9	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	(3435, ETC., 3838)RS-5	COOK	264	209
9 SHEETS	CONTRACT NO. 60G52				
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

x:\10000s\10050\Engineering\Documents\_Contract\West\SN\_016\_0085\_188\_TOLLWAY\0085-60G52-009-Bar-Splicer.dgn

10/1/04

01/25/2010

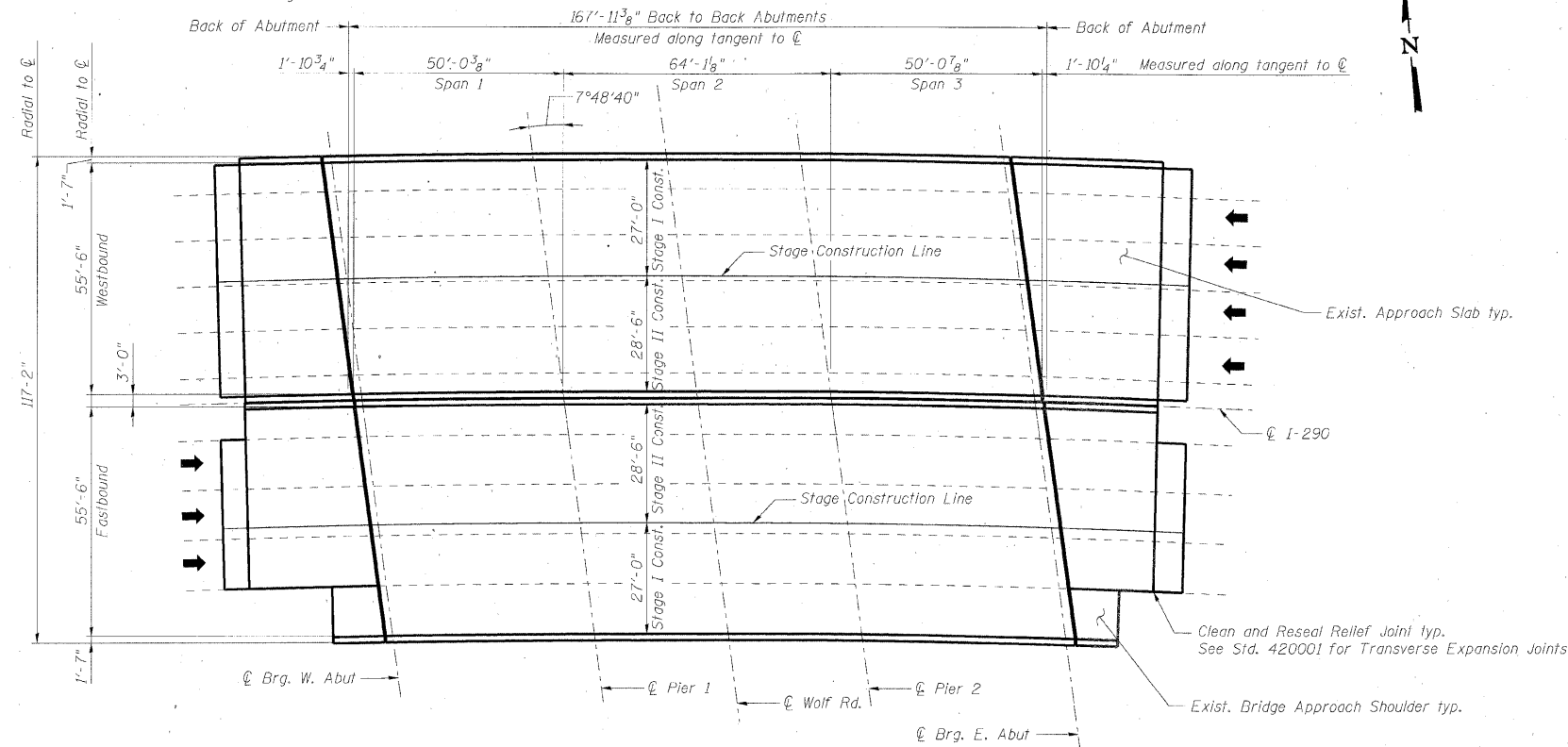
BAR SPLICER ASSEMBLY DETAILS  
STRUCTURE NO. 016-0085

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

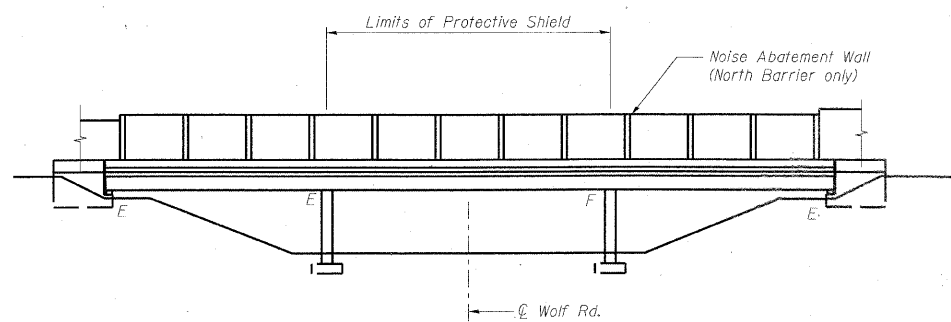
Existing Structure:  
Existing bridge No. 016-0086 at Sta. 62+21.85 was built in 1952  
as F.A. Route 131 - project U.I. 261 (21), section 062-3738.1.  
The Structure is a three-span continuous W beam bridge with a 7" concrete deck.  
It was widened with a new 7 1/2" concrete deck.

Stage construction shall be utilized to maintain traffic during construction.

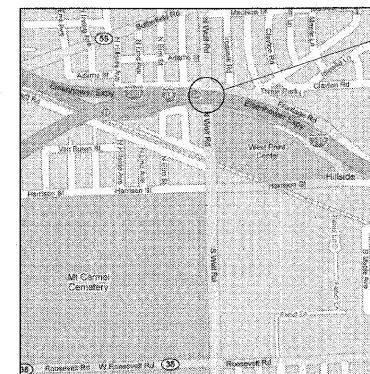
No salvage.



PLAN



ELEVATION



LOCATION SKETCH

**DESIGN SPECIFICATIONS**

2002 AASHTO Standard Specifications  
for Highway Bridges, 17th Edition

**DESIGN STRESSES**

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

**SCOPE OF WORK**

1. Repair bridge deck.
2. Repair approach slab.
3. Repair parapet with formed concrete repair.
4. Clean and reseal relief joints at the end of the approach slabs.
5. Replace preformed joint seal with silicone joint seal.
6. Apply concrete sealer to bridge deck, parapets, approach slabs, abutments seats and backwalls.



EXPIRATION DATE 11-30-10  
DATE 1-25-10

GENERAL PLAN AND ELEVATION  
I-290 OVER WOLF ROAD  
COOK COUNTY  
STATION 508+12  
STRUCTURE NO. 016-0086

DESIGNED	DMS
CHECKED	EFS
DRAWN	RMG
CHECKED	KWS

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312-565-0450 Job No. 10050

SHEET NO. 1 4 SHEETS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	(3435, ETC., 3838)RS-5	COOK	264	210
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT		
CONTRACT NO. 60G52					

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

**GENERAL NOTES**

1. Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60. See Special Provisions.
2. Reinforcement bars designated (E) shall be epoxy coated.
3. 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.
4. Concrete Sealer shall be applied to the bridge deck, parapets, approach slabs, abutment seats and abutment backwalls. All surfaces to be sealed shall be cleaned thoroughly prior to sealer application. Cost included in Concrete Sealer.
5. The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.
6. Stage construction shall be utilized to maintain traffic during construction.

**INDEX OF SHEETS**

1. General Plan and Elevation
2. General Notes, Bill of Material and Index of Sheets
3. Stage Construction Details
4. Bridge Deck, Approach Slab and Parapet Repairs

**TOTAL BILL OF MATERIAL**

ITEM	UNIT	SUPER	SUB	TOTAL
Protective Shield	Sq. Yd.	127		127
Concrete Sealer	Sq. Ft.	26,094	1,280	27,374
Silicone Joint Sealer	Foot	237.0		237.0
Structural Repair of Concrete (Depth Greater Than 5 Inches)	Sq. Ft.	10		10
Approach Slab Repair (Partial Depth)	Sq. Yd.	20.6		20.6
Deck Slab Repair (Partial)	Sq. Yd.	38.3		38.3
Cleaning and Painting Exposed Rebar (Special)	Sq. Ft.	10		10
Clean & Reseal Relief Joint	Foot	144.0		144.0

DESIGNED -	DMS
CHECKED -	EFS
DRAWN -	RMG
CHECKED -	KWS

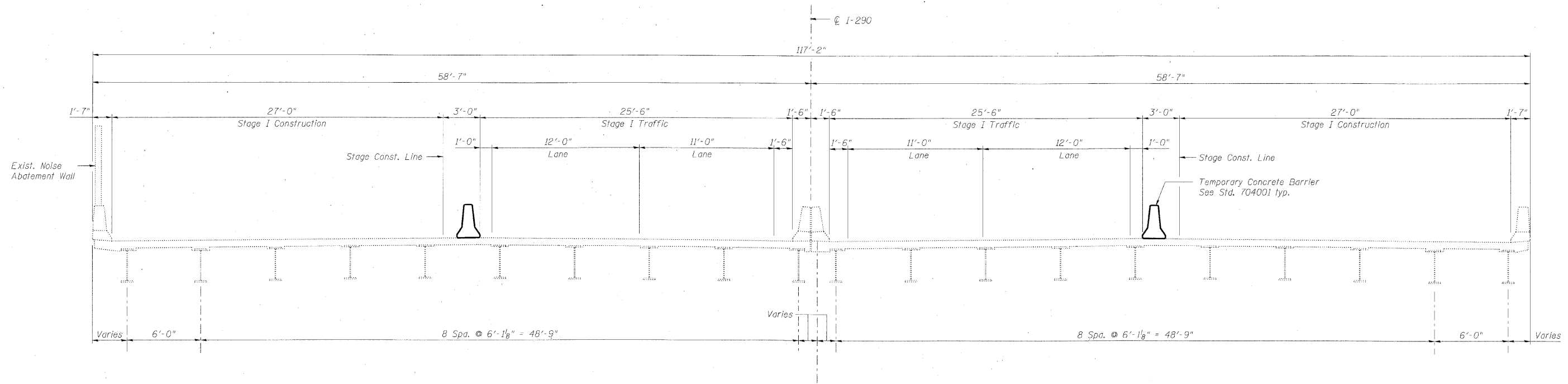
**GENERAL NOTES, BILL OF MATERIAL  
AND INDEX OF SHEETS  
STRUCTURE NO. 016-0086**

**benesch**

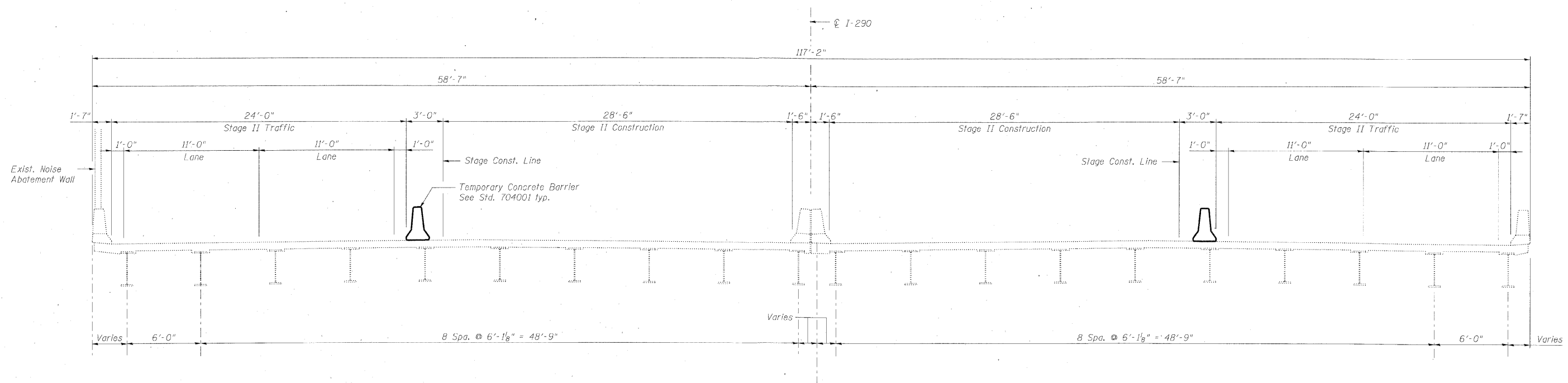
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Chicago, Illinois 60601  
312-565-0450 Job No. 10050

SHEET NO. 2  4 SHEETS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	(3435, ETC., 3838)RS-5	COOK	264	211
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT		
				CONTRACT NO. 60G52	

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



**STAGE I CROSS SECTION**  
(Looking East)



**STAGE II CROSS SECTION**  
(Looking East)

**Note:**

For quantity of Temporary Concrete Barrier, see roadway plans.

DESIGNED -	DMS
CHECKED -	MFB
DRAWN -	VH
CHECKED -	MFB

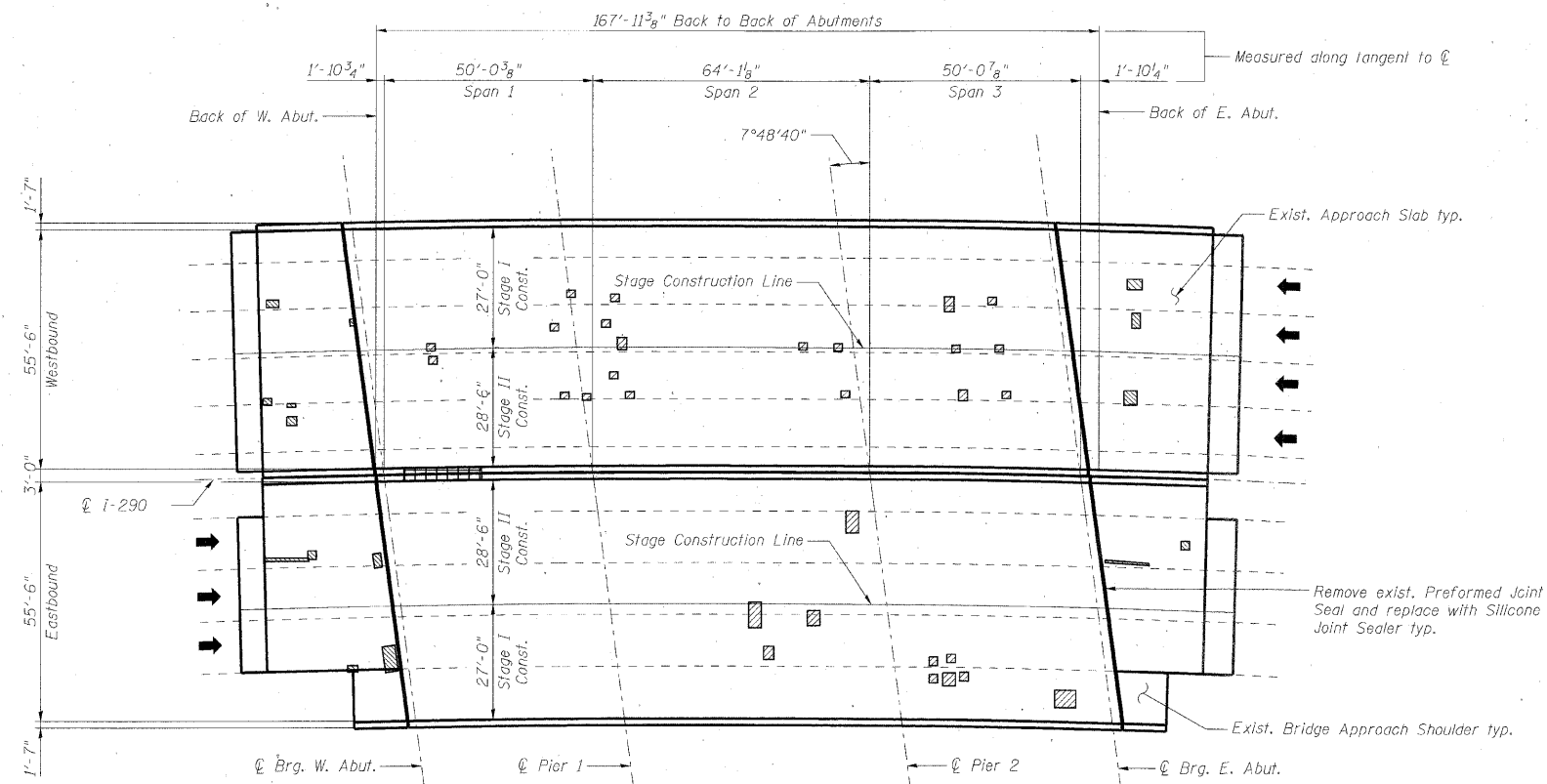
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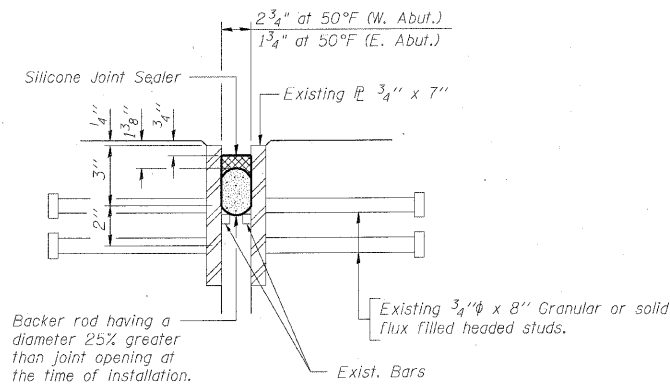
**STAGE CONSTRUCTION DETAILS**  
**STRUCTURE NO. 016-0086**

SHEET NO. 3	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	(3435, ETC., 3838)RS-5	COOK	264	212
4 SHEETS	CONTRACT NO. 60652				
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

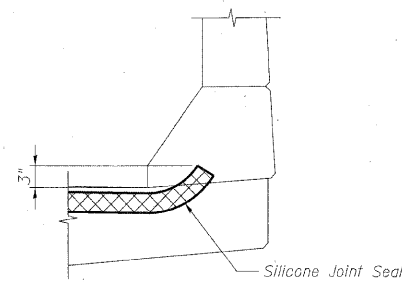
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



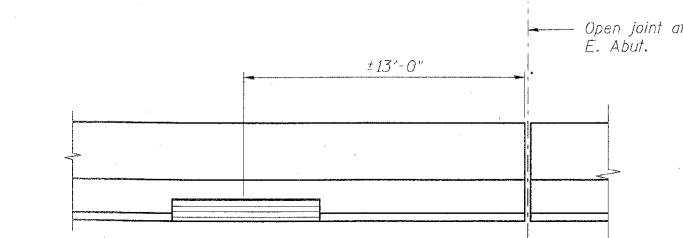
**PLAN**



**SILICONE JOINT SEALER DETAIL**

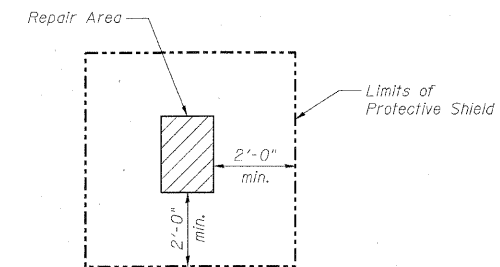


**SILICONE JOINT SEAL TREATMENT AT PARAPET**



**INSIDE ELEVATION - EASTBOUND MEDIAN PARAPET**

**PROTECTIVE SHIELD DETAIL**



**BILL OF MATERIAL**

Symbol	Item	Unit	Quantity
	Deck Slab Repair (Partial)	Sq. Yd.	38.3
	Approach Slab Repair (Partial Depth)	Sq. Yd.	20.6
	Structural Repair of Concrete (Depth Greater Than 5 Inches)	Sq. Ft.	10
	Cleaning & Painting Exposed Rebar (Special)	Sq. Ft.	10
	Protective Shield	Sq. Yd.	127
	Silicone Joint Sealer	Foot	237.0

**Notes:**

- Deck and approach slab repair areas are estimated based on visual inspection completed in June 2009. Actual repair areas and locations shall be determined by the Engineer and shown on As-Built plans.
- Protective Shield, required for deck slab and/or parapet repairs, shall be installed according to Article 501.03 of the Standard Specifications. For limits of Protective Shield, see Protective Shield Detail on this sheet and Elevation on General Plan and Elevation sheet.
- The Engineer shall determine extent, location & type of parapet repairs in the field. Actual repair areas and locations shall be determined by the Engineer and shown on As-Built plans.
- Existing Preformed Joint Seal shall be removed and all surfaces cleaned prior to installation of Silicone Joint Sealer. Cost included in Silicone Joint Sealer.
- The Contractor shall exercise extreme care with the existing conduit in sections of the parapet to be repaired and to protect and support the conduit. The Contractor will be required to repair any damage done to the conduit to the satisfaction of the Engineer. No splicing will be allowed to any cable damage resulting from this work, instead the Contractor will be required to repair the entire span of any damaged cable at no additional cost to the Department.

**BRIDGE DECK,  
APPROACH SLAB AND PARAPET REPAIRS  
STRUCTURE NO. 016-0086**

DESIGNED	DMS
CHECKED	EFS
DRAWN	RMG
CHECKED	KWS

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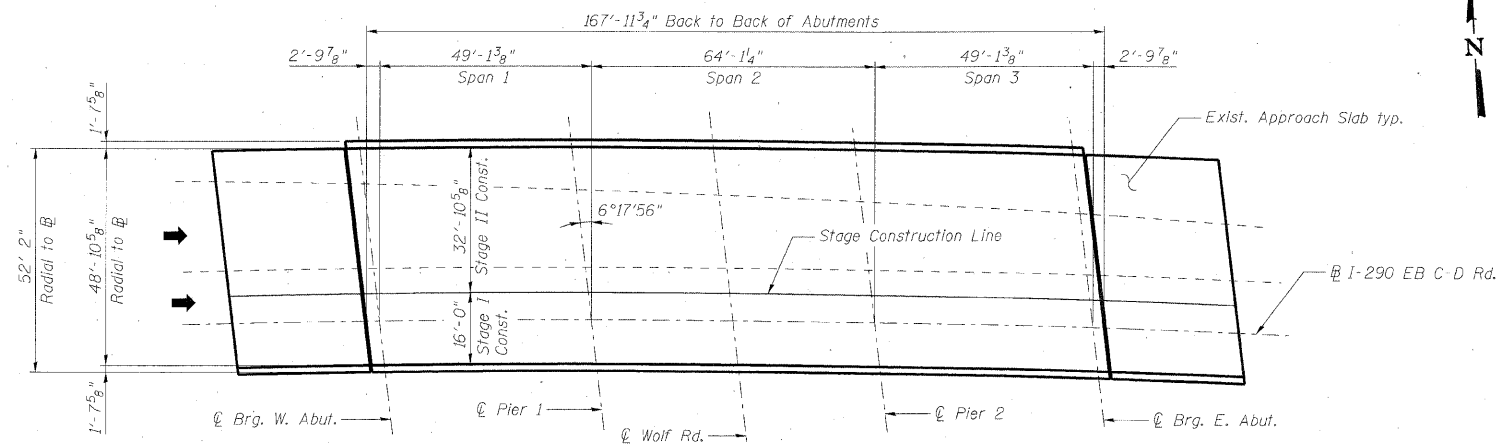
SHEET NO. 4 4 SHEETS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	(3435, ETC., 3838)RS-5	COOK	264	213
FED. ROAD DIST. NO.			ILLINOIS	FED. AID PROJECT	
CONTRACT NO. 60G52					

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

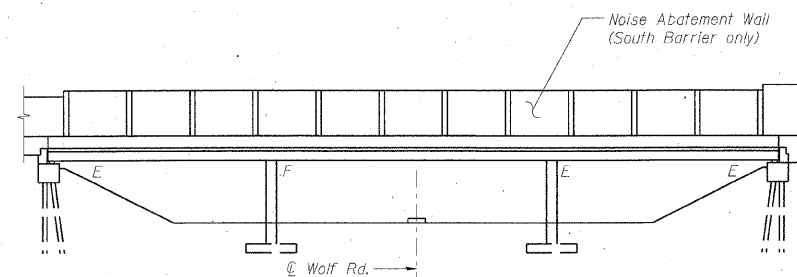
Existing Structure:  
Existing Bridge No. 016-2758 was built in 2001. The structure is a three-span continuous, composite steel bridge with a 7 1/2" concrete deck.

Stage construction shall be utilized to maintain traffic during construction.

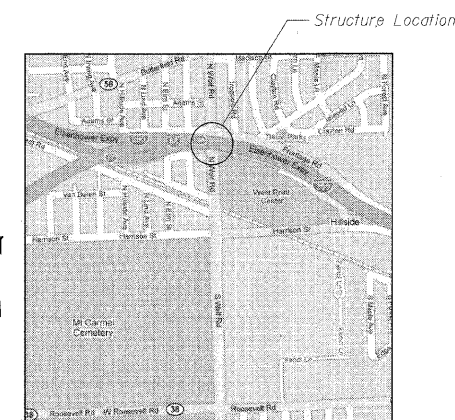
No salvage.



PLAN



ELEVATION



LOCATION SKETCH



TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Concrete Sealer	Sq. Ft.	12,524		12,524

DESIGN SPECIFICATIONS

2002 AASHTO Standard Specifications  
for Highway Bridges, 17th Edition

DESIGN STRESSES

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

SCOPE OF WORK

Apply concrete sealer to bridge deck, parapets and approach slabs.

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.
- Concrete Sealer shall be applied to the bridge deck, parapets, and approach slabs. All surfaces to be sealed shall be cleaned thoroughly prior to sealer application. Cost included in Concrete Sealer.
- Stage construction shall be utilized to maintain traffic during construction.

GENERAL PLAN AND ELEVATION  
I-290 EB C-D ROAD OVER WOLF ROAD  
COOK COUNTY  
STATION 507+54  
STRUCTURE NO. 016-2758

DESIGNED	DMS
CHECKED	EFS
DRAWN	RMG
CHECKED	KWS

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

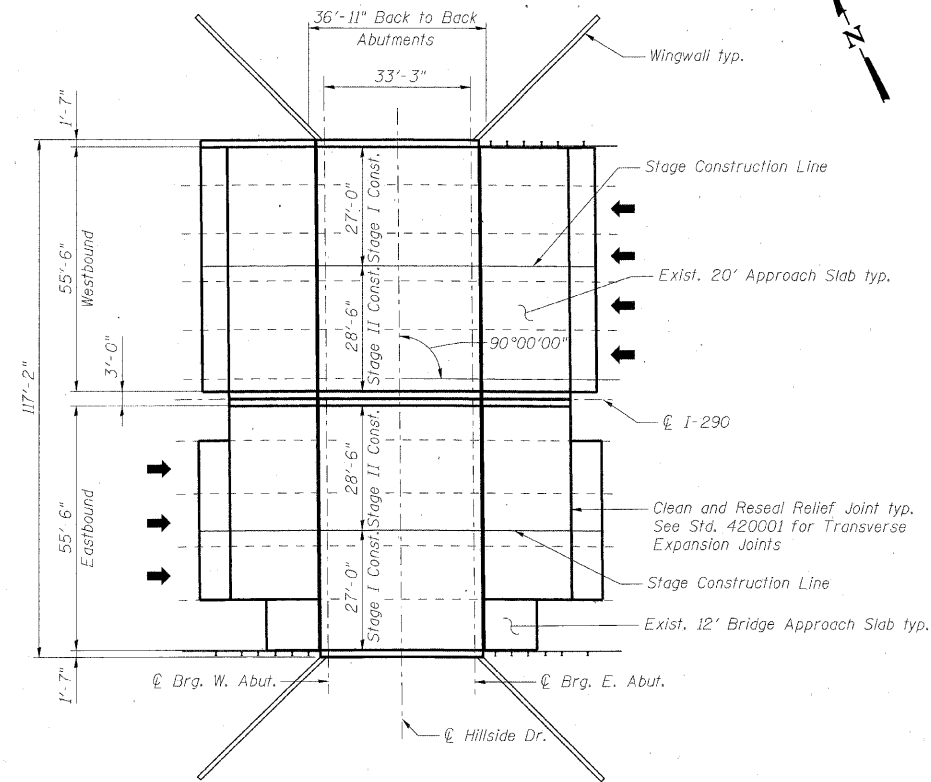
SHEET NO. 1	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1 SHEETS	290	(3435, ETC., 3838)RS-5	COOK	264	214
FED. ROAD DIST. NO.			ILLINOIS	FED. AID PROJECT	
CONTRACT NO. 60G52					

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

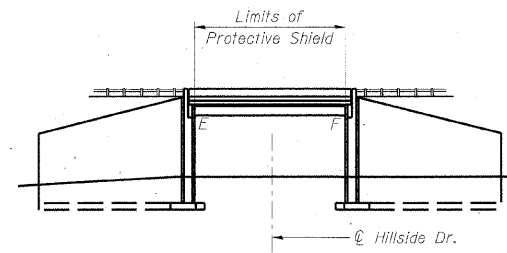
Existing Structure:  
Single span WF beam bridge, with closed abutments-cantilever type on spread footing 114'-0" wide by 36'-11" long, built as F.A. Route 131, Section 062-3737.3 M.F.T. Sta. 79+51.60 in 1955. The bridge was widened to 117'-2" in 1984.

Stage construction shall be utilized to maintain traffic during construction.

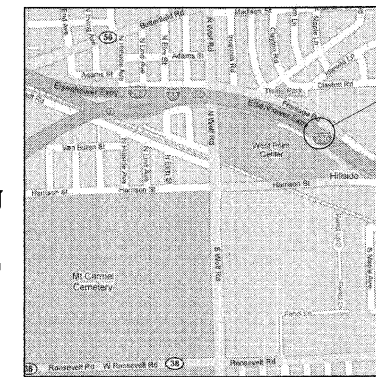
No salvage.



PLAN



ELEVATION



LOCATION SKETCH

**DESIGN SPECIFICATIONS**

2002 AASHTO Standard Specifications for Highway Bridges, 17th Edition

**DESIGN STRESSES**

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

**SCOPE OF WORK**

1. Repair bridge deck.
2. Repair approach slab.
3. Repair of abutments.
4. Clean and reseal relief joints at end of approach slabs.
5. Replace preformed joint seal with silicone joint seal.
6. Apply concrete sealer to bridge decks, parapets, approach slabs, abutment seats and backwalls.



GENERAL PLAN AND ELEVATION  
I-290 OVER HILLSIDE DRIVE  
COOK COUNTY  
STATION 525+44  
STRUCTURE NO. 016-0986

DESIGNED	DMS
CHECKED	EF5
DRAWN	RMG
CHECKED	KJN

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312-565-0450 Job No. 10050

SHEET NO. 1 5 SHEETS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	(3435, ETC., 3838)RS-5	COOK	264	215
FED. ROAD DIST. NO.			ILLINOIS	FED. AID PROJECT	
CONTRACT NO. 60G52					

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

**GENERAL NOTES**

1. Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60. See Special Provisions.
2. 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.
3. Concrete Sealer shall be applied to the bridge deck, parapets, approach slabs, abutment seats and abutment backwalls. All surfaces to be sealed shall be cleaned thoroughly prior to sealer application. Cost included in Concrete Sealer.
4. The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.
5. Stage construction shall be utilized to maintain traffic during construction.
6. The Contractor shall exercise care during removal of existing joints to ensure that the slab, beams and diaphragms integrity will not be detrimentally impacted. The Contractor shall repair any damage(s) to the slab, beams and diaphragms caused by his operation as directed by the Engineer at no additional cost to the Department.

**INDEX OF SHEETS**

- 1 General Plan and Elevation
- 2 General Notes, Bill of Material and Index of Sheets
- 3 Stage Construction Details
- 4 Bridge Deck and Approach Slab Repairs
- 5 Abutment Repair Details

**TOTAL BILL OF MATERIAL**

ITEM	UNIT	SUPER	SUB	TOTAL
Protective Shield	Sq. Yd.	85		85
Concrete Sealer	Sq. Ft.	8,588	790	9,378
Silicone Joint Sealer	Foot	222.0		222.0
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq. Ft.		50	50
Approach Slab Repair (Partial Depth)	Sq. Yd.	20.0		20.0
Deck Slab Repair (Partial)	Sq. Yd.	10.0		10.0
Temporary Shoring & Cribbing	Each		6	6
Clean & Reseal Relief Joint	Foot	144.0		144.0

DESIGNED -	DMS
CHECKED -	EFS
DRAWN -	RMG
CHECKED -	KJN

**GENERAL NOTES, BILL OF MATERIAL  
AND INDEX OF SHEETS  
STRUCTURE NO. 016-0986**

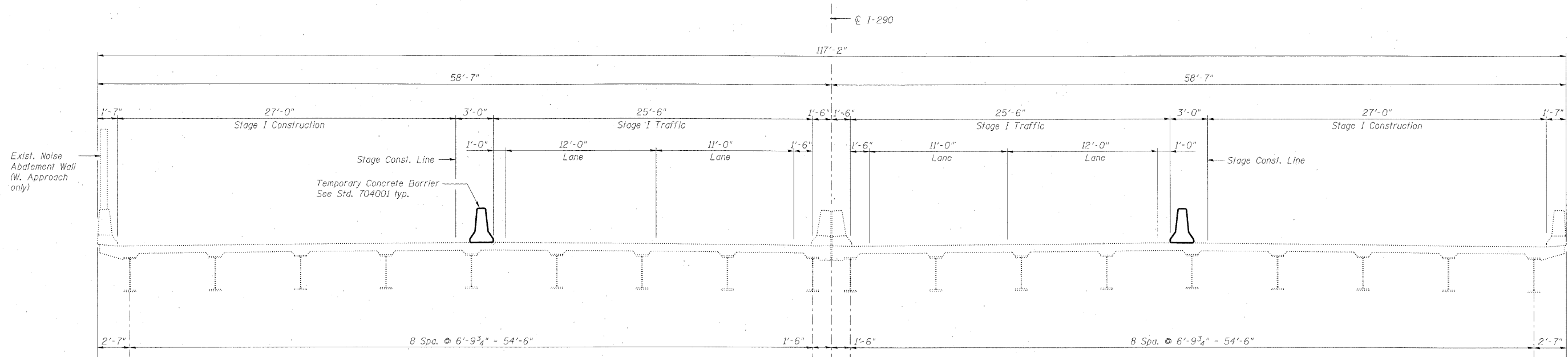
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Chicago, Illinois 60601  
312-565-0450 Job No. 10050

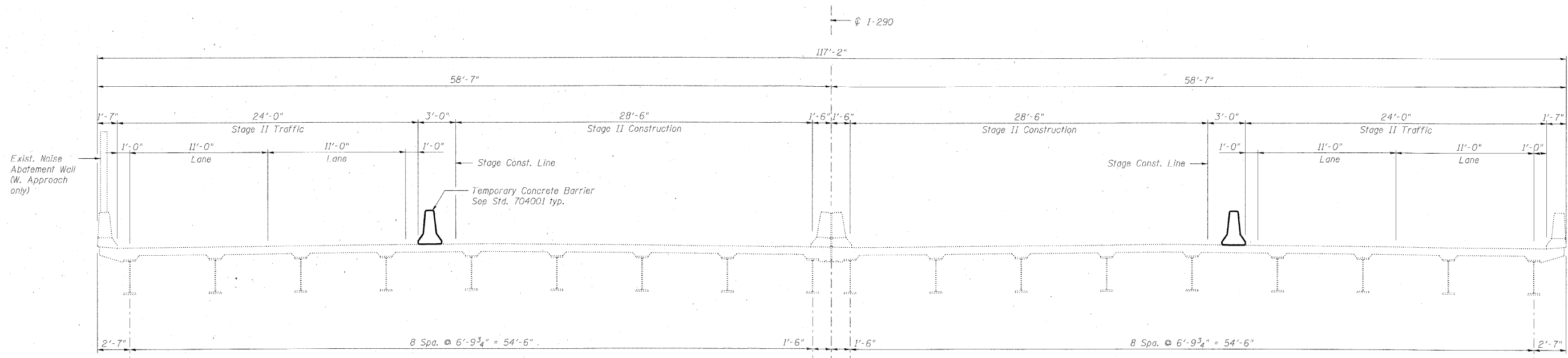
SHEET NO. 2	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	(3435, ETC., 3838)RS-5	COOK	264	216
5 SHEETS	CONTRACT NO. 60G52				
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		



STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



**STAGE I CROSS SECTION**  
(Looking East)



**STAGE II CROSS SECTION**  
(Looking East)

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

DESIGNED	DMS
CHECKED	MFB
DRAWN	VH
CHECKED	KJN

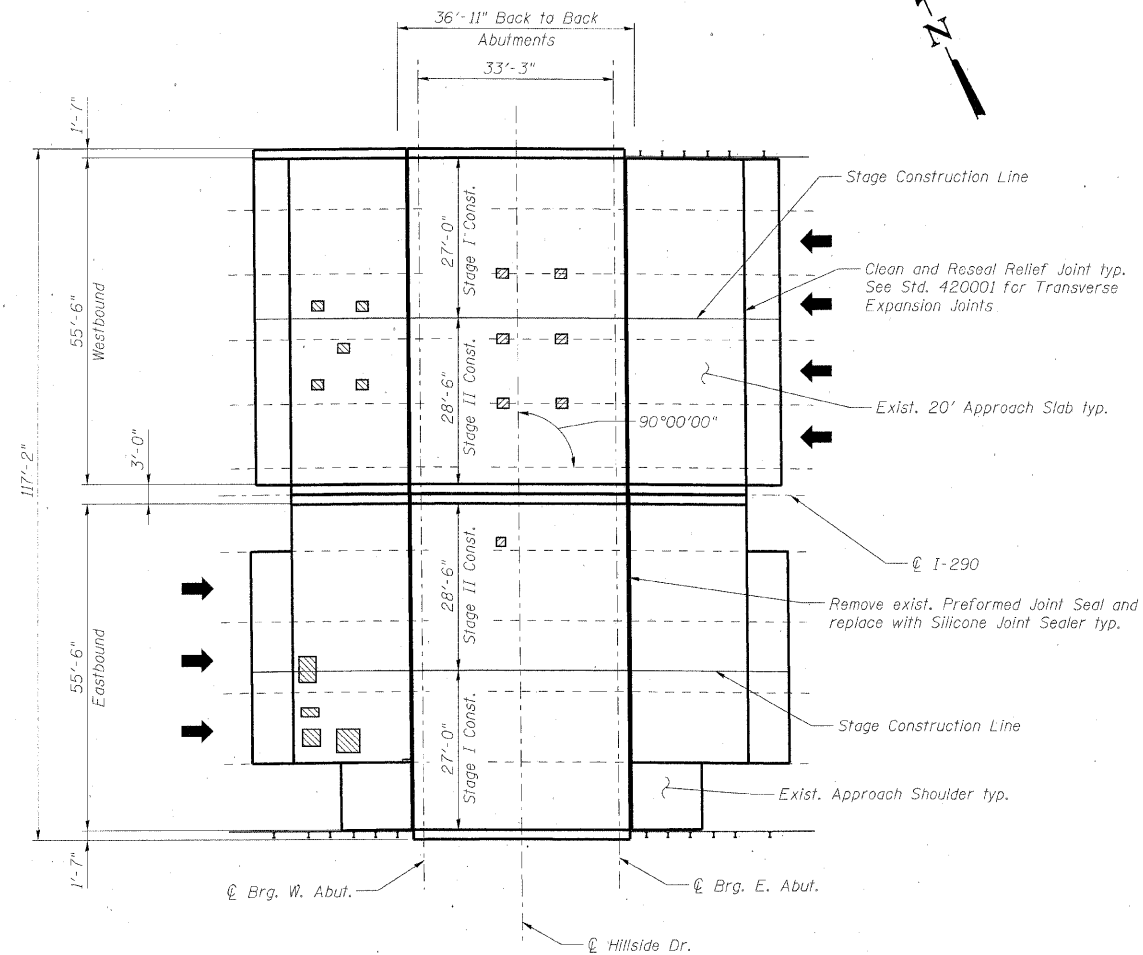
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312-955-0450 Job No. 10050

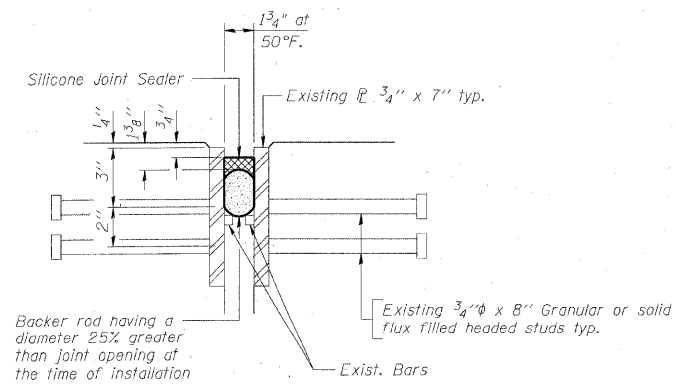
SHEET NO. 3 5 SHEETS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	(3435, ETC., 3838)RS-5	COOK	264	217
FED. ROAD DIST. NO.			ILLINOIS	FED. AID PROJECT	
CONTRACT NO. 60G52					

**STAGE CONSTRUCTION DETAILS**  
**STRUCTURE NO. 016-0986**

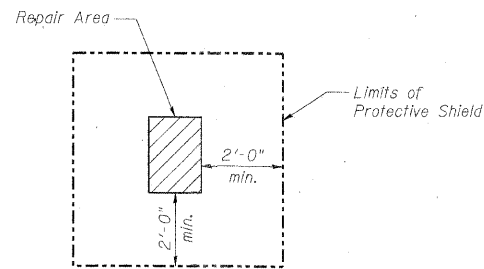
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



PLAN



SILICONE JOINT SEALER DETAIL



PROTECTIVE SHIELD DETAIL

DESIGNED	DMS
CHECKED	EPS
DRAWN	RMG
CHECKED	KJN

BILL OF MATERIAL

Symbol	Item	Unit	Quantity
	Deck Slab Repair (Partial)	Sq. Yd.	10.0
	Approach Slab Repair (Partial Depth)	Sq. Yd.	20.0
	Protective Shield	Sq. Yd.	85
	Silicone Joint Sealer	Foot	222.0

Notes:

1. Deck and approach slab repair areas are estimated based on visual inspection completed in June 2009. Actual repair areas and locations shall be determined by the Engineer in the field and shown on the As-Built plans.
2. Protective Shield, required for deck slab and/or parapet repairs, shall be installed according to Article 501.03 of the Standard Specifications. For limits of Protective Shield, see Protective Shield Detail on this sheet and Elevation on General Plan and Elevation detail.
3. Existing Preformed Joint Seal shall be removed and all surfaces cleaned prior to installation of Silicone Joint Sealer. Cost included in Silicone Joint Sealer.

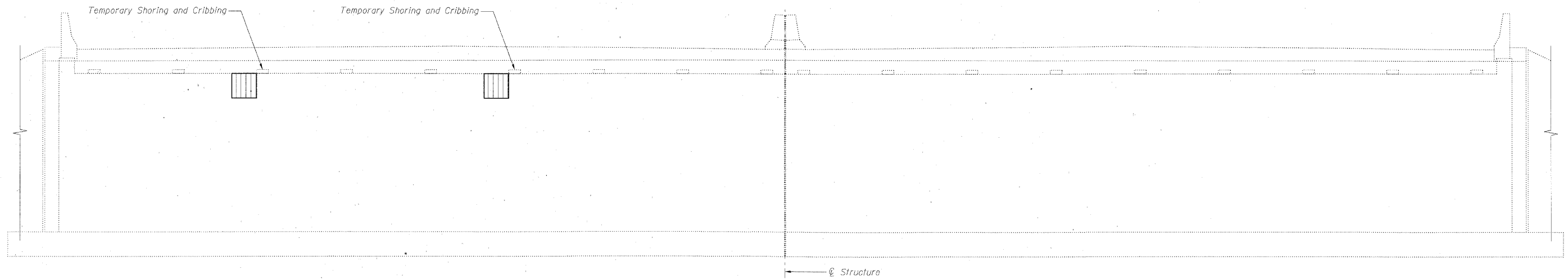
BRIDGE DECK  
AND APPROACH SLAB REPAIRS  
STRUCTURE NO. 016-0986

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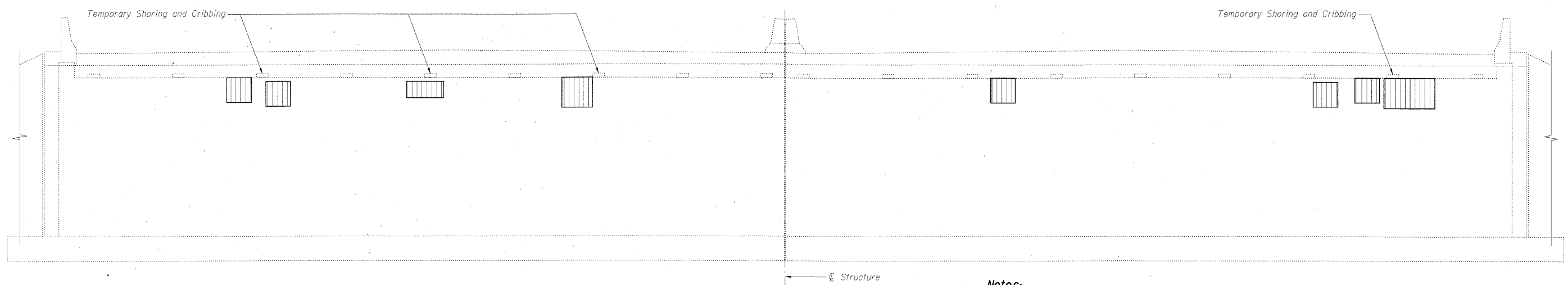
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312-565-0450 Job No. 10050

SHEET NO. 4	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
5 SHEETS	290	(3435, ETC., 3838)RS-5	COOK	264	218
			CONTRACT NO. 60G52		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



**EAST ABUTMENT ELEVATION**  
(Looking East)



**WEST ABUTMENT ELEVATION**  
(Looking West)

**BILL OF MATERIAL**

Symbol	Item	Unit	Quantity
	Structural Repair of Concrete (Depth Equal to or Less than 5 Inches)	Sq. Ft.	50
	Temporary Shoring and Cribbing	Each	6

**BEAM REACTIONS (KIPS)**

DEAD LOAD	LIVE LOAD	IMPACT LOAD	TOTAL
17.5	32.0	9.6	59.1

**Notes:**

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

DESIGNED	-	DMS
CHECKED	-	EFS
DRAWN	-	RMG
CHECKED	-	KJN

**ABUTMENT REPAIR DETAILS**  
**STRUCTURE NO. 016-0986**

**benesch**

alfred benesch & company  
Engineers • Surveyors • Planners  
205 North Michigan Avenue, Suite 2400  
Chicago, Illinois 60601  
312-665-0460 Job No. 10050

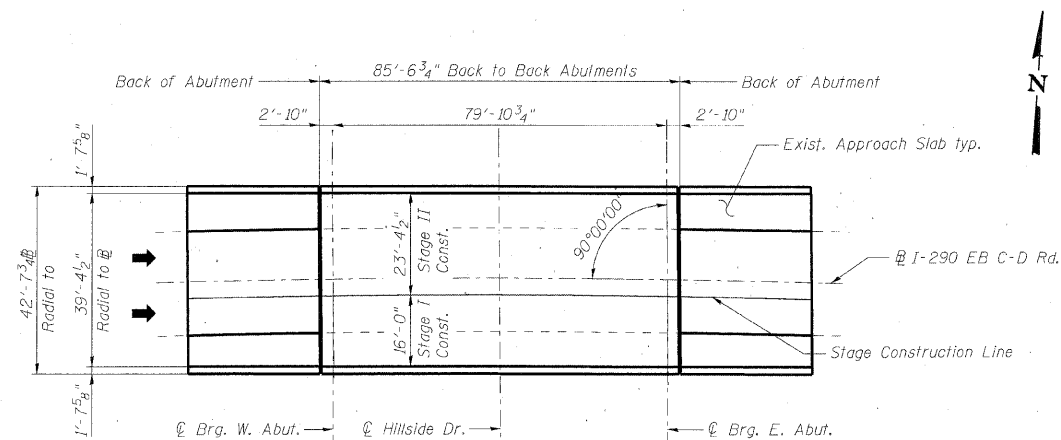
SHEET NO. 5 5 SHEETS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	(3435, ETC., 3838)RS-5	COOK	264	219
FED. ROAD DIST. NO.			ILLINOIS	FED. AID PROJECT	
				CONTRACT NO. 60G52	

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

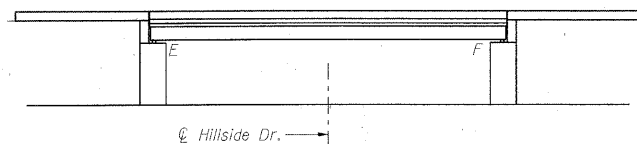
Existing Structure:  
Existing Bridge No. 016-2759 was built in 2002. The structure is a simple span composite steel bridge with a 7½" concrete deck.

Stage construction shall be utilized to maintain traffic during construction.

No salvage.



PLAN



ELEVATION

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Concrete Sealer	Sq. Ft.	5,442		5,442

DESIGN SPECIFICATIONS

2002 AASHTO Standard Specifications  
for Highway Bridges, 17th Edition

DESIGN STRESSES

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

SCOPE OF WORK

Apply concrete sealer to bridge deck, parapets and approach slabs.

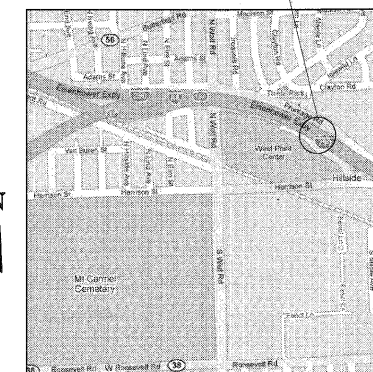
GENERAL NOTES

- 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.
- Concrete Sealer shall be applied to the bridge deck, parapets, and approach slabs. All surfaces to be sealed shall be cleaned thoroughly prior to sealer application. Cost included in Concrete Sealer.
- Stage construction shall be utilized to maintain traffic during construction.



EXPIRATION DATE 11-30-10  
DATE 1-25-10

Structure Location



LOCATION SKETCH

GENERAL PLAN AND ELEVATION  
I-290 EB C-D ROAD OVER HILLSIDE DRIVE  
COOK COUNTY  
STATION 524+16  
STRUCTURE NO. 016-2759

DESIGNED	DMS
CHECKED	EFS
DRAWN	RMG
CHECKED	KWS

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

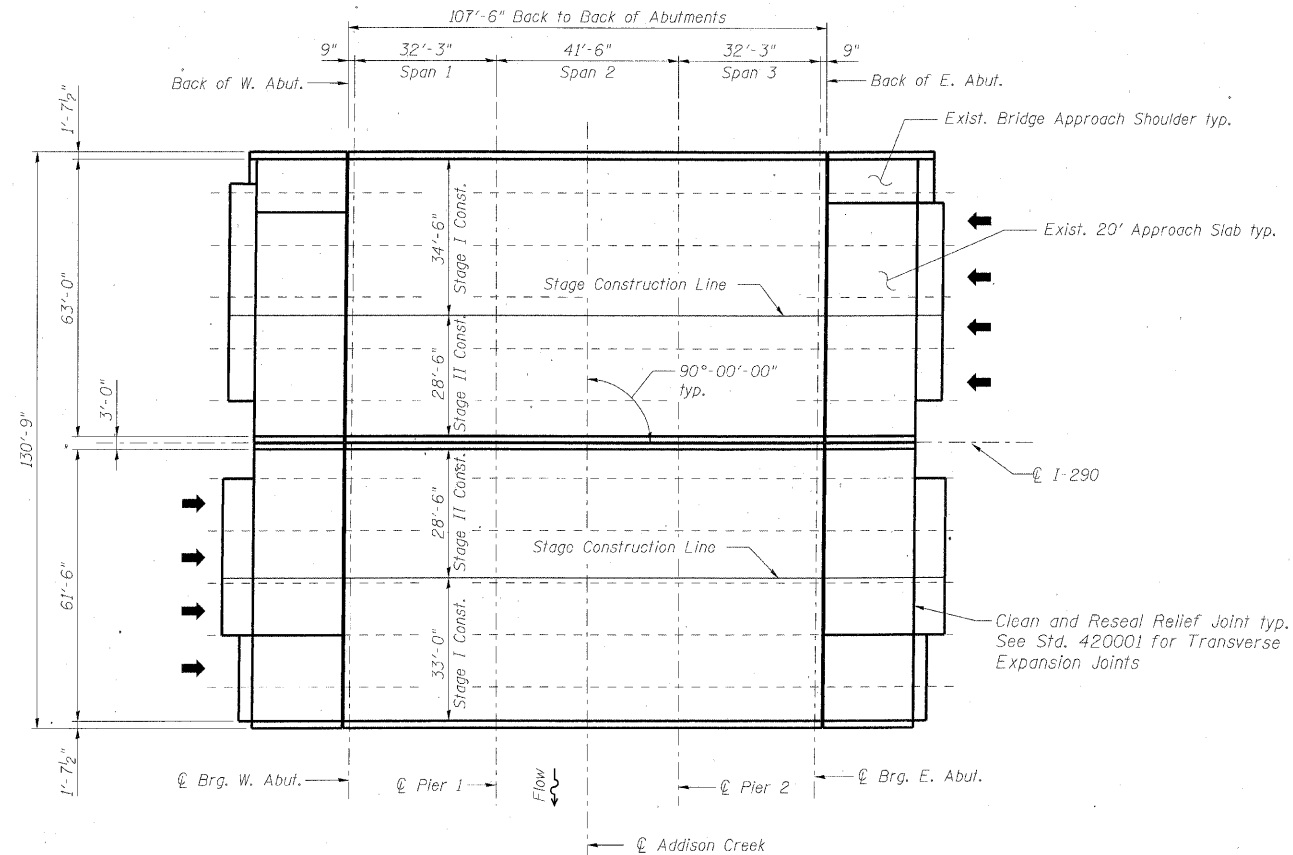
SHEET NO. 1	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1 SHEETS	290	(3435, ETC., 3838)RS-5	COOK	264	220
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT		
CONTRACT NO. 60G52					

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

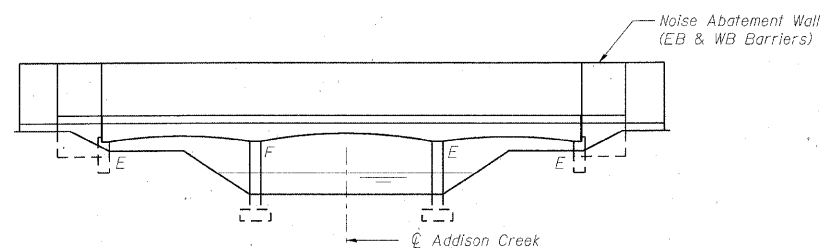
Existing Structure:  
Existing Bridge No. 016-0088 at Sta. 138+88.93 was built in 1952 as  
F.A. Rte. 131-Project U.I. 26.1(17) Section 062-3636.2 M.F.T. It is a  
three span continuous reinforced concrete slab Bridge, 107'-6" bk. to bk.  
abutments. The Bridge was widened to 130'-9" O. to O. in 2001.

Stage Construction shall be utilized to maintain traffic during construction.

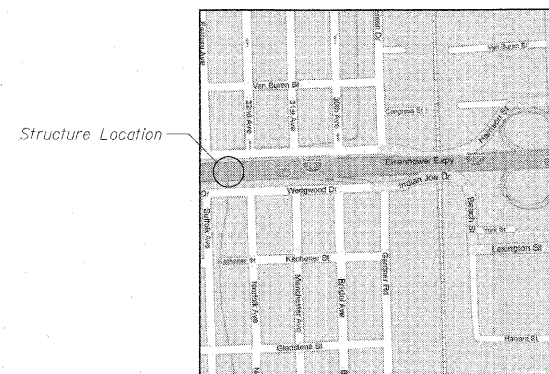
No salvage.



PLAN



ELEVATION



LOCATION SKETCH

**DESIGN SPECIFICATIONS**

2002 AASHTO Standard Specifications  
for Highway Bridges, 17th Edition

**DESIGN STRESSES**

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

**SCOPE OF WORK**

1. Repair bridge decks.
2. Repair approach slabs.
3. Repair median parapets with formed concrete repair.
4. Clean and reseal relief joints at end of approach slabs.
5. Replace preformed joint seals with silicone joint seals.
6. Apply concrete sealer to bridge decks, parapets, approach slabs, abutment seats and backwalls.



EXPIRATION DATE 11-30-10  
DATE 1-25-10

**GENERAL PLAN AND ELEVATION  
I-290 OVER ADDISON CREEK  
COOK COUNTY  
STATION 594+10  
STRUCTURE NO. 016-0088**

DESIGNED	DMS
CHECKED	EFS
DRAWN	RMG
CHECKED	KJN

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

SHEET NO. 1 4 SHEETS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	(3435, ETC., 3838)RS-5	COOK	264	221
FED. ROAD DIST. NO.			ILLINOIS	FED. AID PROJECT	
CONTRACT NO. 60G52					

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

**GENERAL NOTES**

1. Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60. See Special Provisions.
2. 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.
3. Concrete Sealer shall be applied to the bridge deck, top and inside faces of parapets, approach slabs, abutment seats and abutment backwalls. All surfaces to be sealed shall be cleaned thoroughly prior to sealer application. Cost included in Concrete Sealer.
4. Stage construction shall be utilized to maintain traffic during construction.

**INDEX OF SHEETS**

- 1 General Plan and Elevation
- 2 General Notes, Bill of Material and Index of Sheets
- 3 Stage Construction Details
- 4 Bridge Deck and Approach Slab Repairs

**TOTAL BILL OF MATERIAL**

ITEM	UNIT	SUPER	SUB	TOTAL
Concrete Sealer	Sq. Ft.	18,001	600	18,601
Silicone Joint Sealer	Foot	228.0		228.0
Structural Repair of Concrete (Depth Greater Than 5 Inches)	Sq. Ft.	32		32
Approach Slab Repair (Partial Depth)	Sq. Yd.	24.4		24.4
Deck Slab Repair (Partial)	Sq. Yd.	18.6		18.6
Clean & Reseal Relief Joint	Foot	189.0		189.0

DESIGNED	DMS
CHECKED	EFS
DRAWN	RMG
CHECKED	KJN

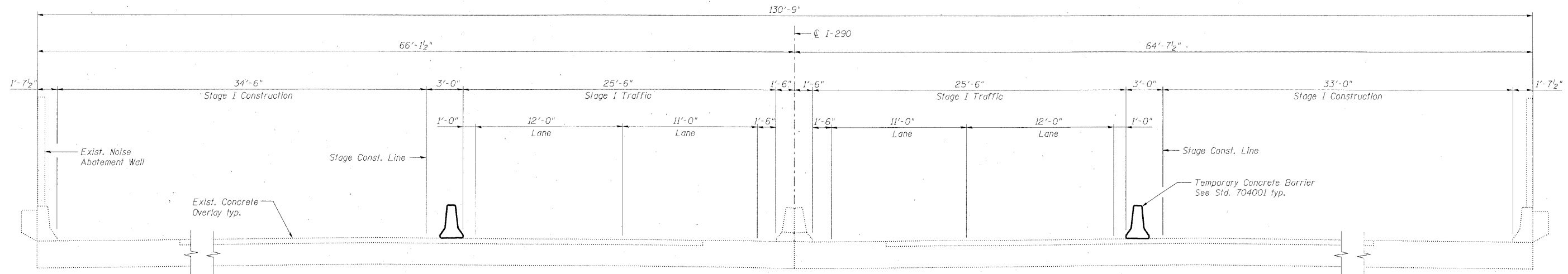
**GENERAL NOTES, BILL OF MATERIAL  
AND INDEX OF SHEETS  
STRUCTURE NO. 016-0088**

**benesch**

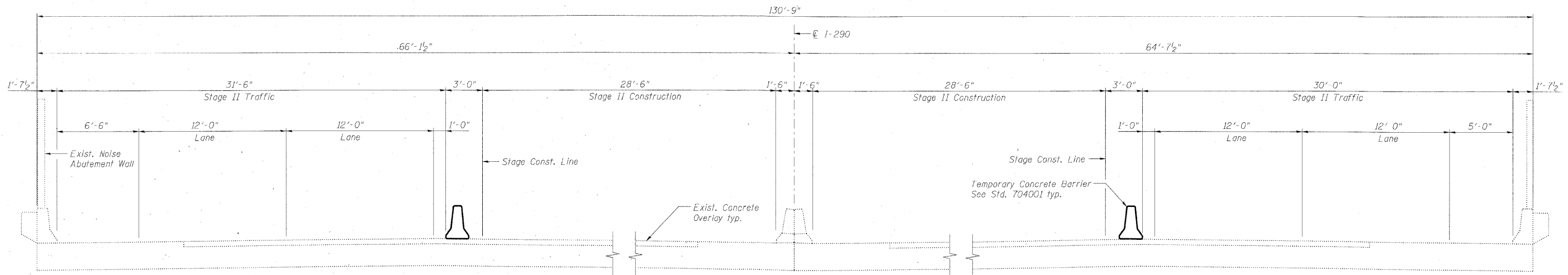
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205 North Michigan Avenue, Suite 2400  
Chicago, Illinois 60601  
312-565-0450 Job No. 10050

SHEET NO. 2  4 SHEETS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	(3435, ETC., 3838)RS-5	COOK	264	222
FED. ROAD DIST. NO.			ILLINOIS	FED. AID PROJECT	
CONTRACT NO. 60G52					

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



**STAGE I CROSS SECTION**  
(Looking East)



**STAGE II CROSS SECTION**  
(Looking East)

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

DESIGNED	MFB
CHECKED	MAC
DRAWN	VH
CHECKED	KJN

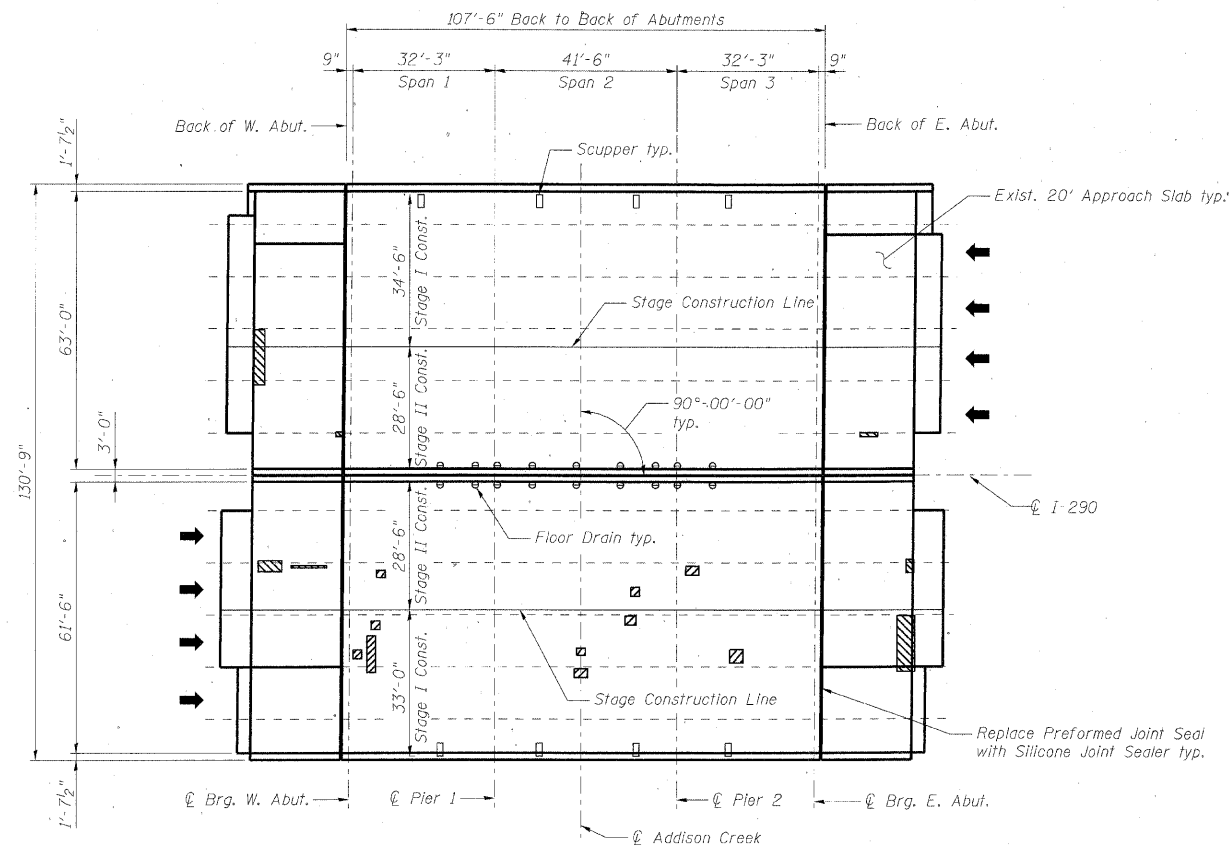
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Chicago, Illinois 60601  
312-565-0450 Job No. 10050

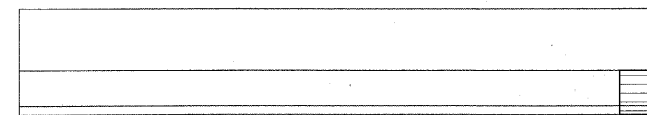
SHEET NO. 3 4 SHEETS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	(3435, ETC., 3838)RS-5	COOK	264	223
FED. ROAD DIST. NO.			ILLINOIS	CONTRACT NO. 60652	
			FED. AID PROJECT		

**STAGE CONSTRUCTION DETAILS**  
**STRUCTURE NO. 016-0088**

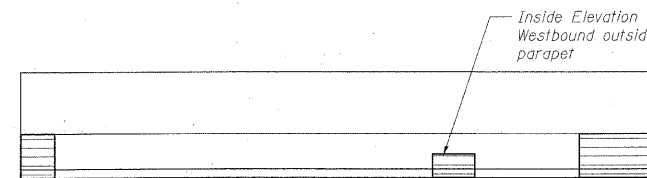
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



PLAN



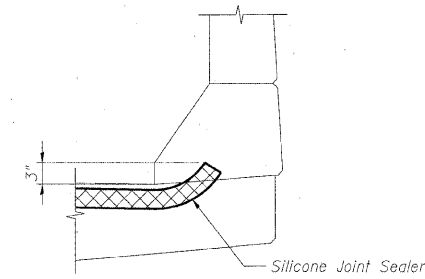
INSIDE ELEVATION - EASTBOUND MEDIAN PARAPET



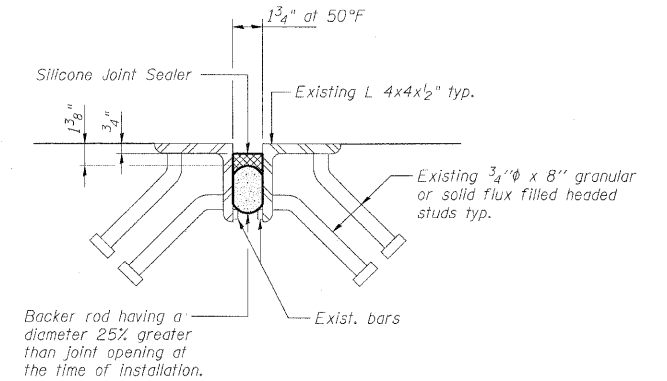
INSIDE ELEVATION - WESTBOUND MEDIAN PARAPET

(Unless Noted Otherwise)

DESIGNED	DMS
CHECKED	EFS
DRAWN	RMG
CHECKED	KJN



SILICONE JOINT SEALER  
TREATMENT AT PARAPET



SILICONE JOINT SEALER DETAIL

BILL OF MATERIAL

Symbol	Item	Unit	Quantity
	Deck Slab Repair (Partial)	Sq. Yd.	18.6
	Structural Repair of Concrete (Depth Greater than 5 Inches)	Sq. Ft.	32
	Approach Slab Repair (Partial Depth)	Sq. Yd.	24.4
	Silicone Joint Sealer	Foot	228.0

Notes:

- Deck and approach slab repair areas are estimated based on visual inspection completed in June 2009. Actual repair areas and locations shall be determined by the Engineer and shown on As-Built plans.
- Deck drains (downspouts, floor drains and scuppers) shall be cleaned with the bridge deck prior to application of the Concrete Sealer. Cost of cleaning the deck drains is included with Concrete Sealer.
- Cost of Removal of existing preformed joint seal is included with Silicone Joint Sealer.

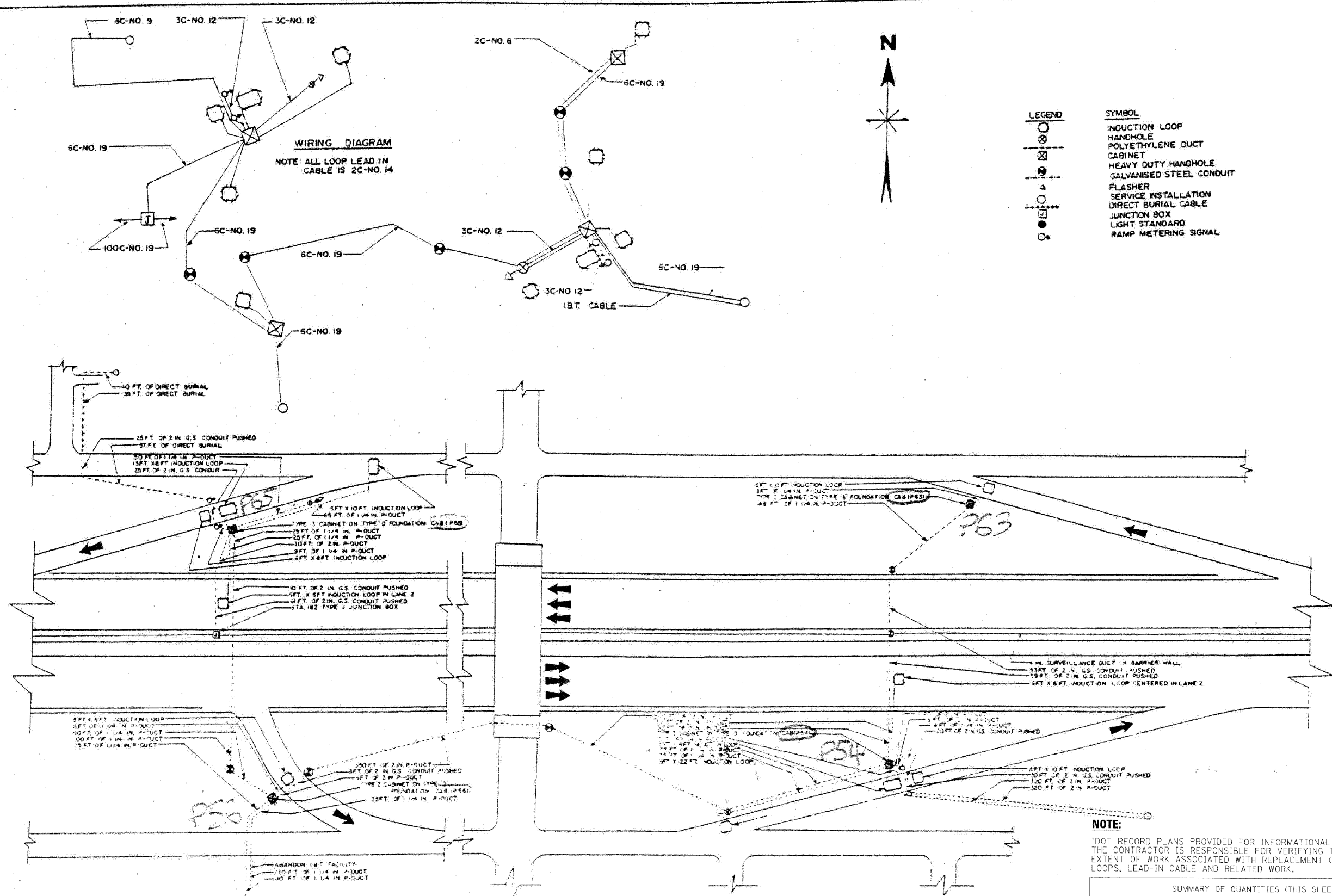
BRIDGE DECK AND APPROACH SLAB REPAIRS  
STRUCTURE NO. 016-0088

SHEET NO. 4	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	(3435, ETC., 3838)RS-5	COOK	264	224
4 SHEETS	CONTRACT NO. 60G52				
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

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LEGEND	SYMBOL
○	INDUCTION LOOP
⊗	HANDHOLE
—	POLYETHYLENE DUCT
⊠	CABINET
⊕	HEAVY DUTY HANDHOLE
△	GALVANISED STEEL CONDUIT
▲	FLASHER
○	SERVICE INSTALLATION
—	DIRECT BURIAL CABLE
□	JUNCTION BOX
●	LIGHT STANDARD
○	RAMP METERING SIGNAL

**NOTE:**  
 IDOT RECORD PLANS PROVIDED FOR INFORMATIONAL PURPOSES ONLY. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE LOCATION AND EXTENT OF WORK ASSOCIATED WITH REPLACEMENT OF INDUCTION LOOPS, LEAD-IN CABLE AND RELATED WORK.

SUMMARY OF QUANTITIES (THIS SHEET)		
DESCRIPTION	UNIT	QUANTITY
ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 18 4/C, TWISTED, SHIELDED	LF	302
INDUCTION LOOP	LF	399

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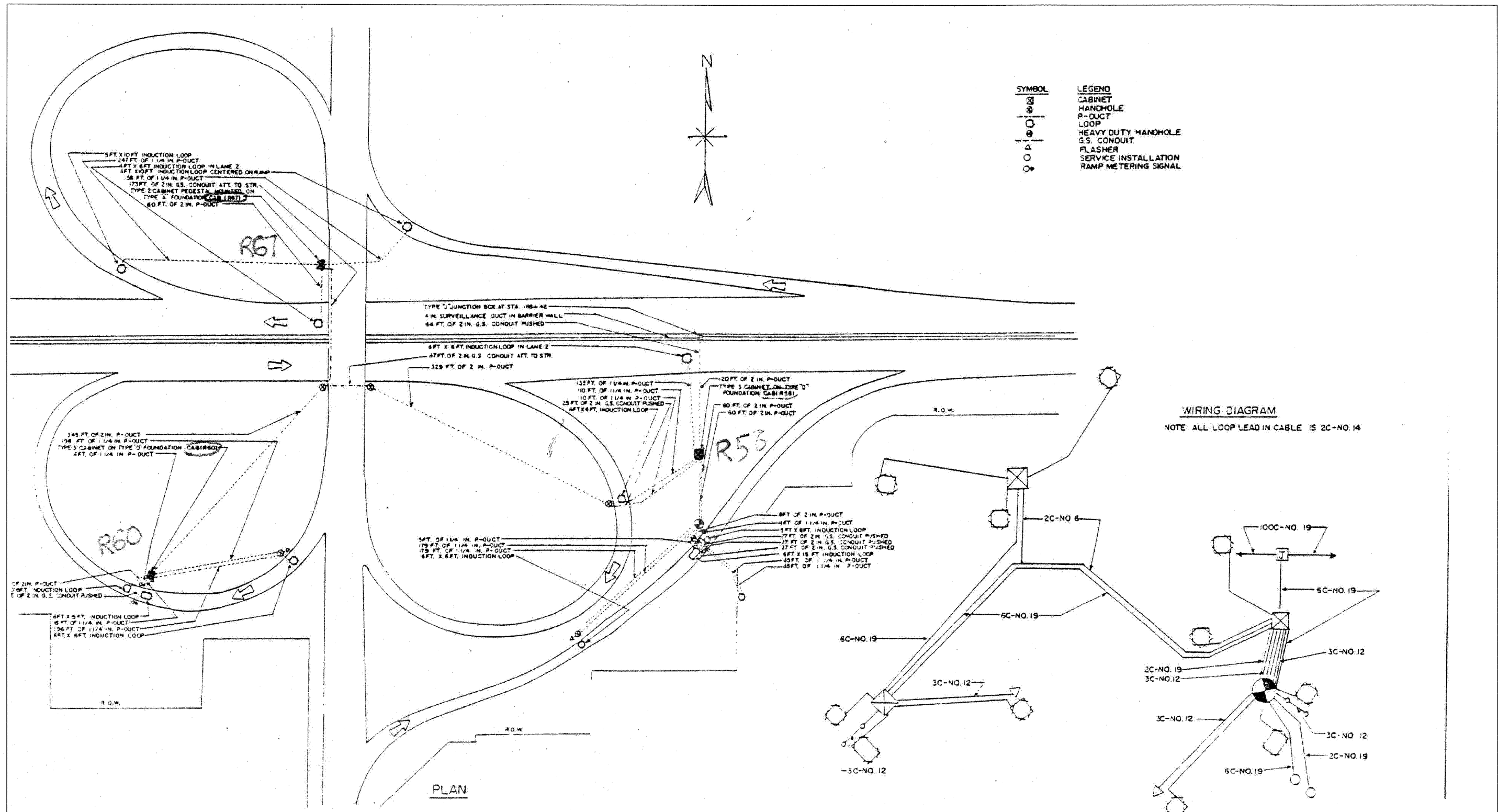
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**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

**TRAFFIC SURVEILLANCE  
 17TH AVE INSTALLATION**  
 SCALE: N.T.S. SHEET NO. 1 OF 8 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	(3435, ETC., 3838RS-5	COOK	264	225
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		

CONTRACT NO. 60G52



**WIRING DIAGRAM**  
NOTE: ALL LOOP LEAD IN CABLE IS 2C-NO. 14

**NOTE:**  
IDOT RECORD PLANS PROVIDED FOR INFORMATIONAL PURPOSES ONLY. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE LOCATION AND EXTENT OF WORK ASSOCIATED WITH REPLACEMENT OF INDUCTION LOOPS, LEAD-IN CABLE AND RELATED WORK.

SUMMARY OF QUANTITIES (THIS SHEET)		
DESCRIPTION	UNIT	QUANTITY
ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 18 4/C, TWISTED, SHIELDED	LF	1503
INDUCTION LOOP	LF	369

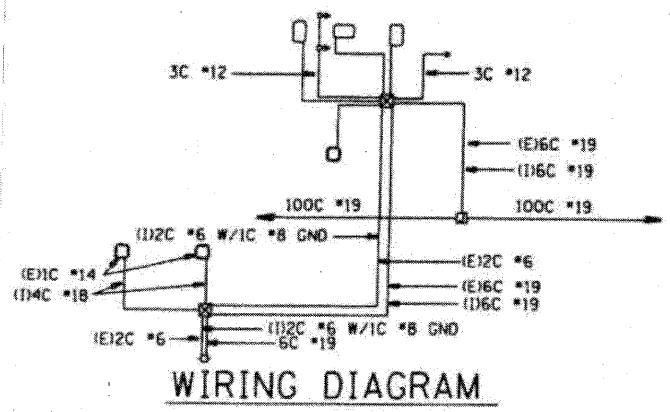
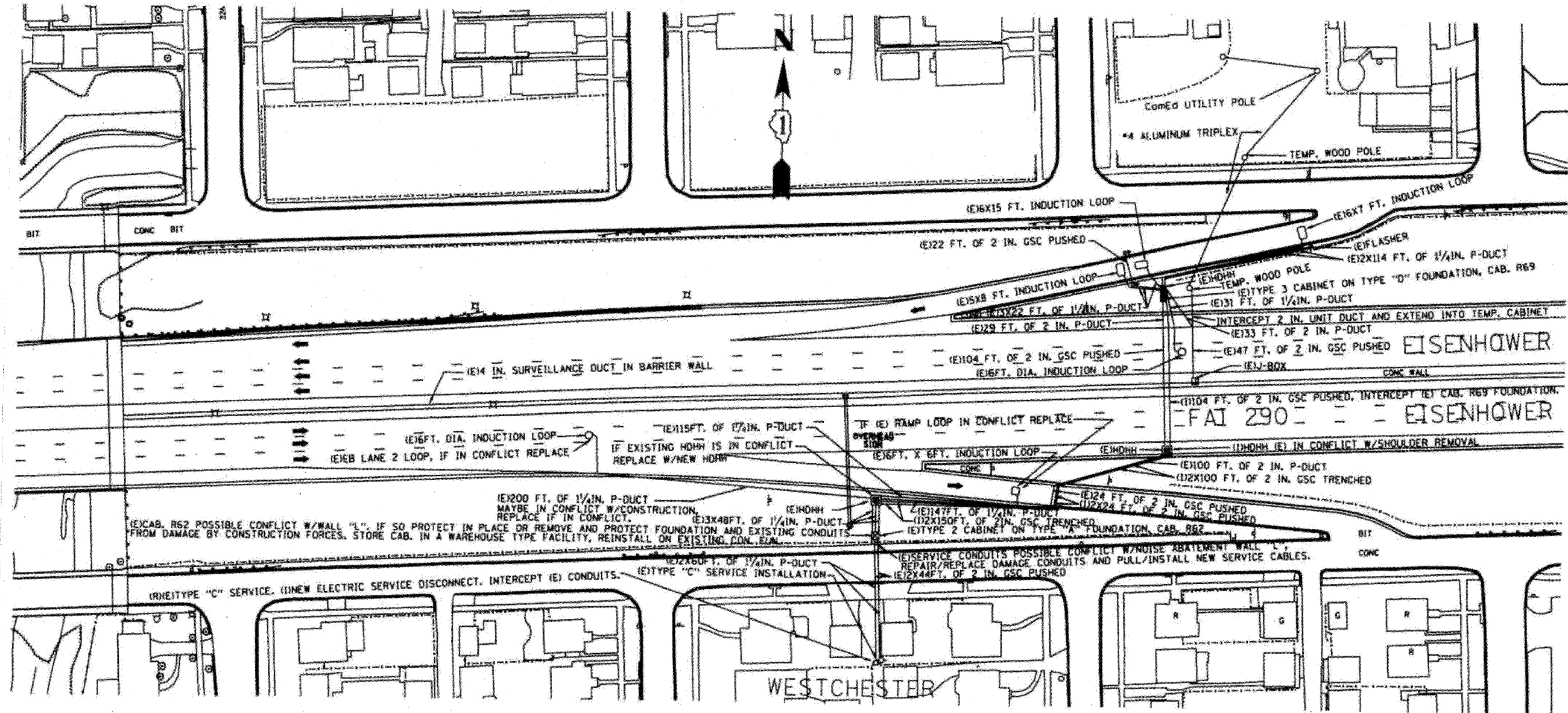
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**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**TRAFFIC SURVEILLANCE  
25TH AVE INSTALLATION**  
SCALE: N.T.S. SHEET NO. 2 OF 8 SHEETS STA. TO STA.

F.A.I. RTE:	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	13435, ETC., 3838RS-5	COOK	264	226
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT			CONTRACT NO. 60G52	



SYMBOL	LEGEND
□	INDUCTION LOOP
○	ROUND INDUCTION LOOP
■	TSC CABINET
○	TELEPHONE SERVICE
□	SERVICE INSTALLATION
□	JUNCTION BOX
■	HEAVY DUTY HAND HOLE
---	POLYETHYLENE DUCT
---	GALVANIZED STEEL CONDUIT
(E)	EXISTING
(P)	PROPOSED
(I)	INSTALL
▶	FLASHER

**NOTE:**  
 IDOT RECORD PLANS PROVIDED FOR INFORMATIONAL PURPOSES ONLY. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE LOCATION AND EXTENT OF WORK ASSOCIATED WITH REPLACEMENT OF INDUCTION LOOPS, LEAD-IN CABLE AND RELATED WORK.

SUMMARY OF QUANTITIES (THIS SHEET)		
DESCRIPTION	UNIT	QUANTITY
ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 18 4/C, TWISTED, SHIELDED	LF	656
INDUCTION LOOP	LF	217

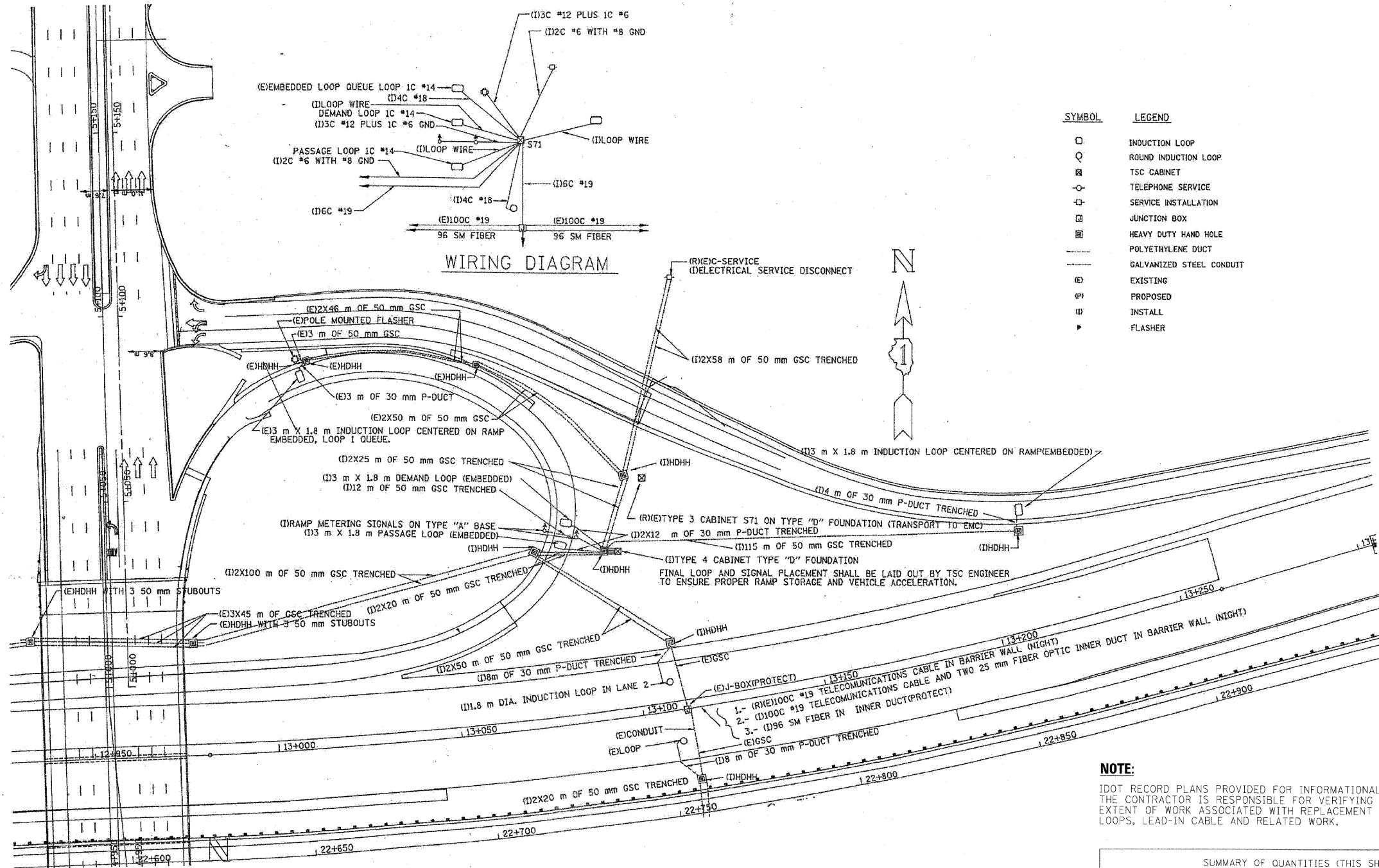
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 STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

TRAFFIC SURVEILLANCE  
 ADDISON CREEK INSTALLATION  
 SCALE: N.T.S. SHEET NO. 3 OF 8 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	13435, ETC., 3838RS-5	COOK	264	227
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		

CONTRACT NO. 60G52



SUMMARY OF QUANTITIES (THIS SHEET)		
DESCRIPTION	UNIT	QUANTITY
ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 18 4/C, TWISTED, SHIELDED	LF	448
INDUCTION LOOP	LF	72

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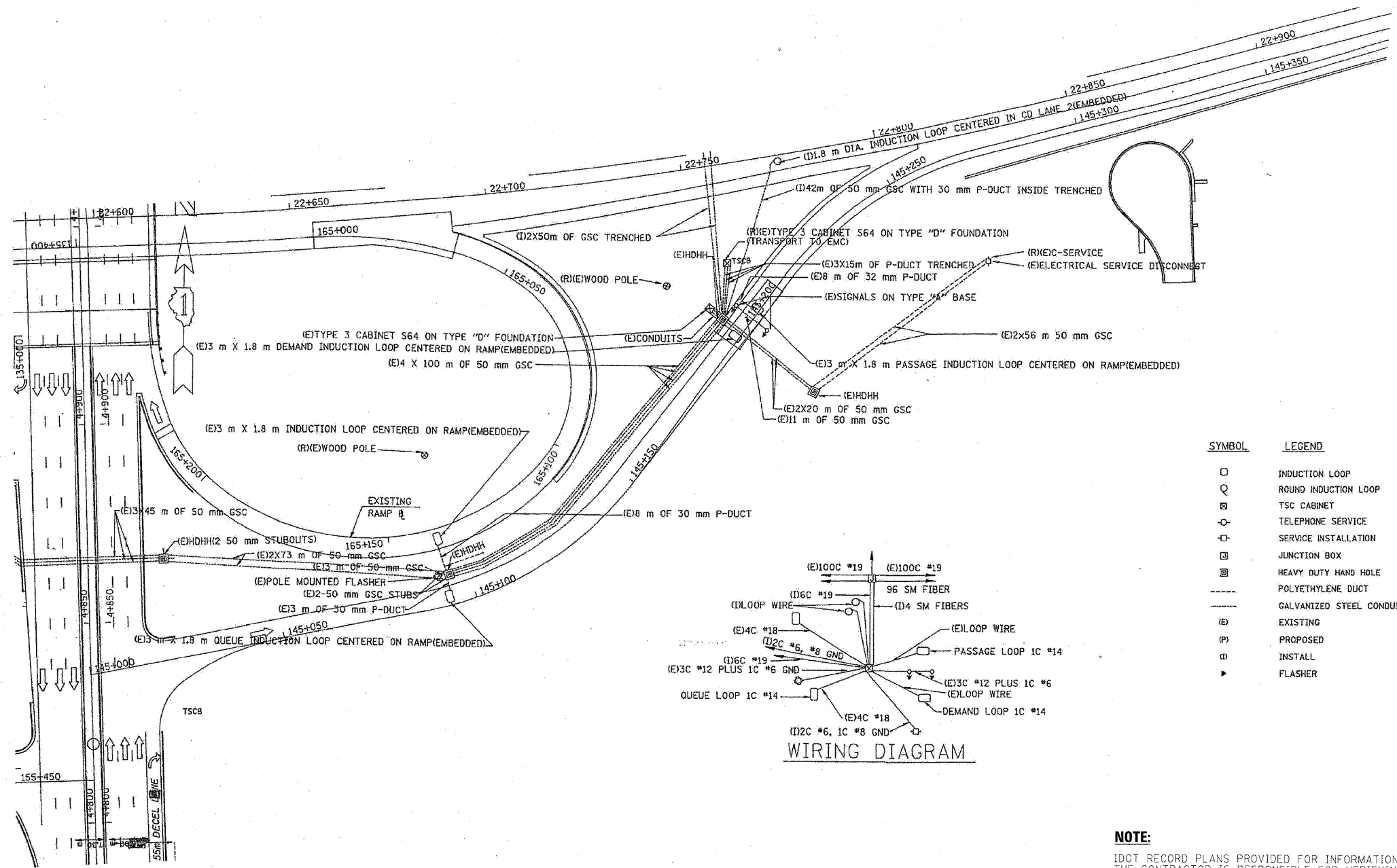
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**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

**TRAFFIC SURVEILLANCE  
 MANHEIM RD INSTALLATION (1 OF 3)**

SCALE: N.T.S. SHEET NO. 4 OF 8 SHEETS STA. TO STA.

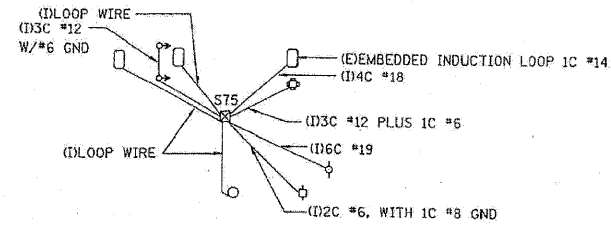
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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FED. ROAD DIST. NO. [ILLINOIS] FED. AID PROJECT			CONTRACT NO. 60G52	



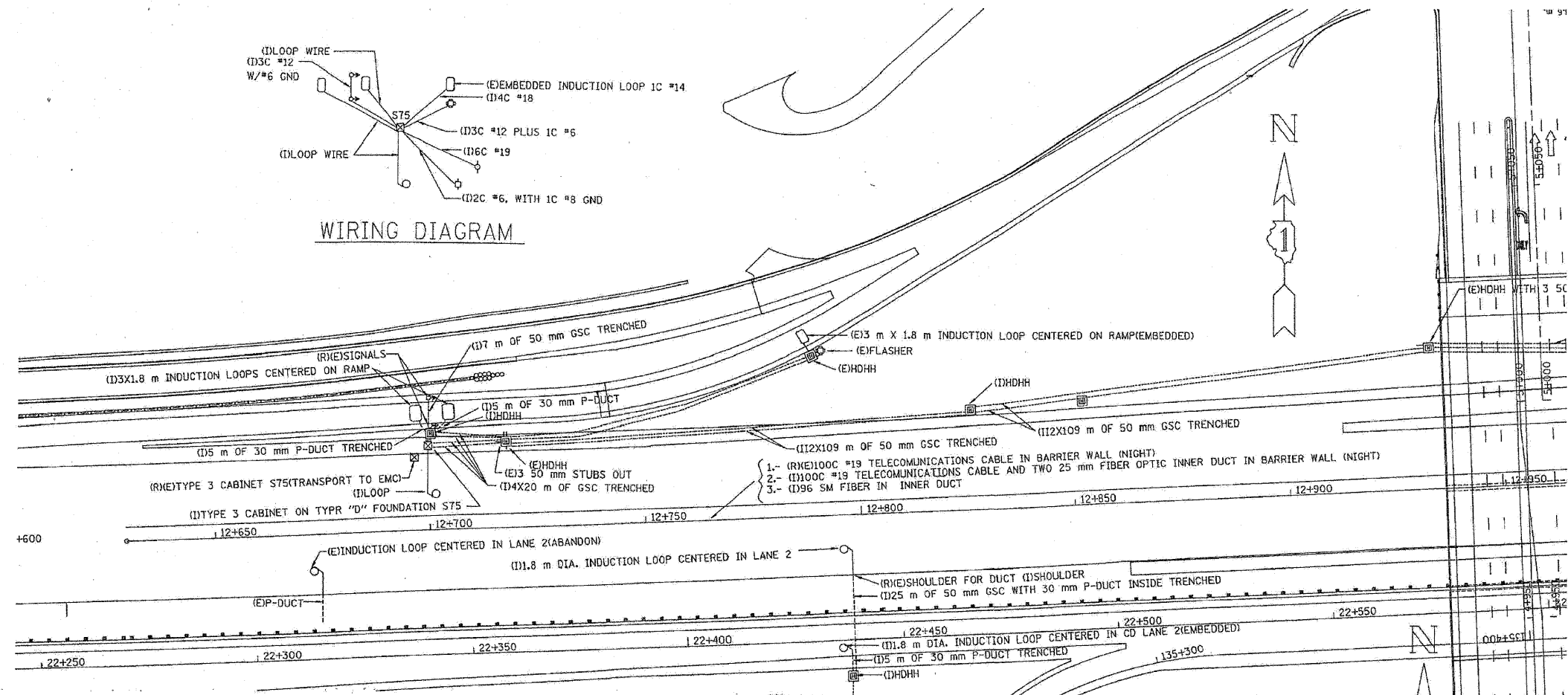
SYMBOL	LEGEND
□	INDUCTION LOOP
○	ROUND INDUCTION LOOP
⊠	TSC CABINET
⊙	TELEPHONE SERVICE
⊞	SERVICE INSTALLATION
⊞	JUNCTION BOX
⊞	HEAVY DUTY HAND HOLE
---	POLYETHYLENE DUCT
---	GALVANIZED STEEL CONDUIT
(E)	EXISTING
(P)	PROPOSED
(I)	INSTALL
▶	FLASHER

**NOTE:**  
 IDOT RECORD PLANS PROVIDED FOR INFORMATIONAL PURPOSES ONLY. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE LOCATION AND EXTENT OF WORK ASSOCIATED WITH REPLACEMENT OF INDUCTION LOOPS, LEAD-IN CABLE AND RELATED WORK.

SUMMARY OF QUANTITIES (THIS SHEET)		
DESCRIPTION	UNIT	QUANTITY
ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 18 4/C, TWISTED, SHIELDED	LF	198
INDUCTION LOOP	LF	21



WIRING DIAGRAM



SYMBOL	LEGEND
□	INDUCTION LOOP
○	ROUND INDUCTION LOOP
⊗	TSC CABINET
○	TELEPHONE SERVICE
□	SERVICE INSTALLATION
□	JUNCTION BOX
⊗	HEAVY DUTY HAND HOLE
---	POLYETHYLENE DUCT
---	GALVANIZED STEEL CONDUIT
(E)	EXISTING
(P)	PROPOSED
(D)	INSTALL
▶	FLASHER

**NOTE:**  
 IDOT RECORD PLANS PROVIDED FOR INFORMATIONAL PURPOSES ONLY. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE LOCATION AND EXTENT OF WORK ASSOCIATED WITH REPLACEMENT OF INDUCTION LOOPS, LEAD-IN CABLE AND RELATED WORK.

SUMMARY OF QUANTITIES (THIS SHEET)		
DESCRIPTION	UNIT	QUANTITY
ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 18 4/C, TWISTED, SHIELDED	LF	96
INDUCTION LOOP	LF	84

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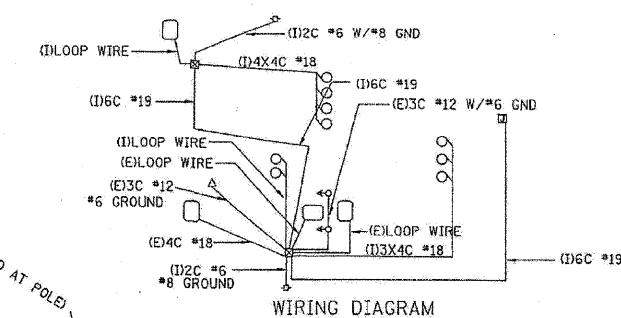
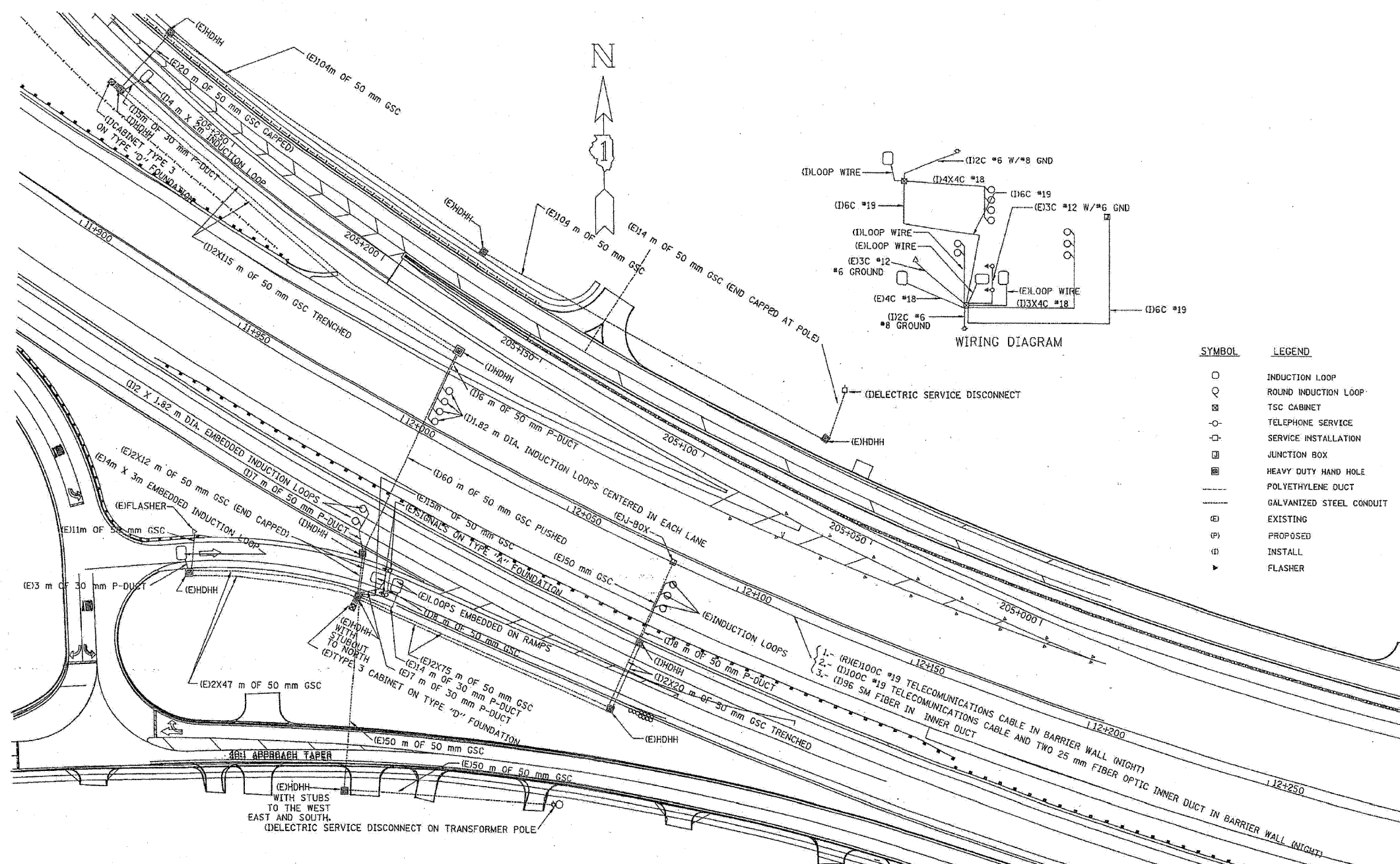
**benesch**

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

TRAFFIC SURVEILLANCE  
 MANHEIM RD INSTALLATION (3 OF 3)

SCALE: N.T.S. SHEET NO. 6 OF 8 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	13435, ETC., 3838IRS-5	COOK	264	230
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT	
			CONTRACT NO. 60G52	



SYMBOL	LEGEND
○	INDUCTION LOOP
○	ROUND INDUCTION LOOP
⊠	TSC CABINET
○	TELEPHONE SERVICE
○	SERVICE INSTALLATION
⊠	JUNCTION BOX
⊠	HEAVY DUTY HAND HOLE
---	POLYETHYLENE DUCT
---	GALVANIZED STEEL CONDUIT
(E)	EXISTING
(P)	PROPOSED
(I)	INSTALL
▶	FLASHER

**NOTE:**  
 IDOT RECORD PLANS PROVIDED FOR INFORMATIONAL PURPOSES ONLY. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE LOCATION AND EXTENT OF WORK ASSOCIATED WITH REPLACEMENT OF INDUCTION LOOPS, LEAD-IN CABLE AND RELATED WORK.

SUMMARY OF QUANTITIES (THIS SHEET)		
DESCRIPTION	UNIT	QUANTITY
ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 18 4/C, TWISTED, SHIELDED	LF	2687
INDUCTION LOOP	LF	276

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**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

**TRAFFIC SURVEILLANCE  
 W. OF MANHEIM RD HILLSIDE INSTALLATION**

SCALE: N.T.S. SHEET NO. 7 OF 8 SHEETS STA. TO STA.

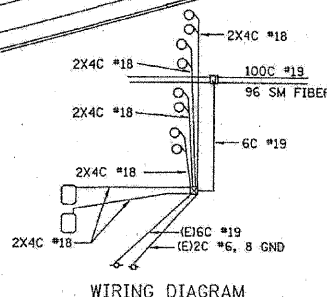
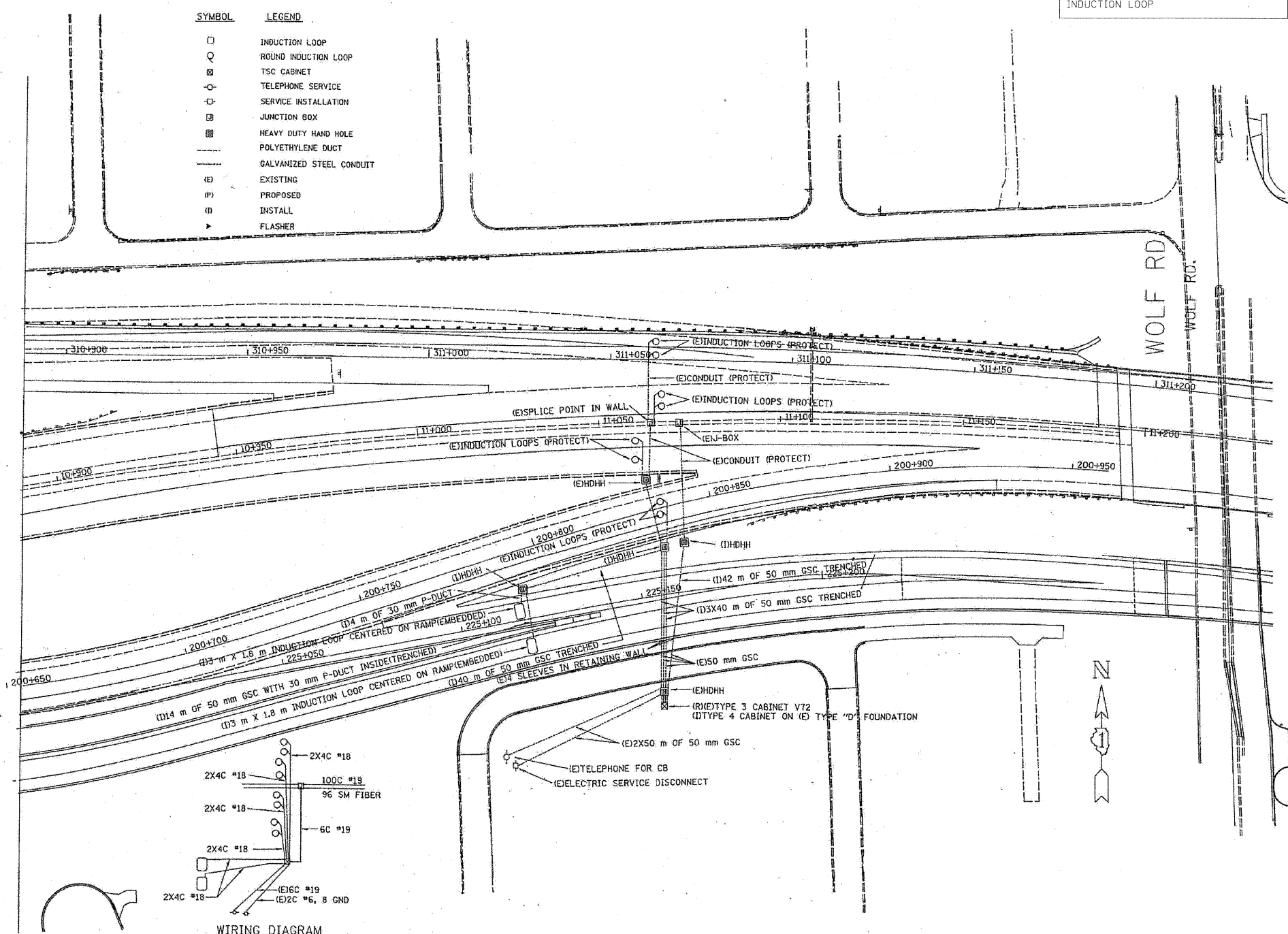
F.A.I. RITE:	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	13435, ETC., 3838RS-5	COOK	264	231
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT	CONTRACT NO. 60G52	

**NOTE:**

IDOT RECORD PLANS PROVIDED FOR INFORMATIONAL PURPOSES ONLY. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE LOCATION AND EXTENT OF WORK ASSOCIATED WITH REPLACEMENT OF INDUCTION LOOPS, LEAD-IN CABLE AND RELATED WORK.

SUMMARY OF QUANTITIES (THIS SHEET)		
DESCRIPTION	UNIT	QUANTITY
ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 18 4/C, TWISTED, SHIELDED	LF	2383
INDUCTION LOOP	LF	330

SYMBOL	LEGEND
□	INDUCTION LOOP
○	ROUND INDUCTION LOOP
⊠	TSC CABINET
⊙	TELEPHONE SERVICE
⊕	SERVICE INSTALLATION
⊞	JUNCTION BOX
⊟	HEAVY DUTY HAND HOLE
---	POLYETHYLENE DUCT
---	GALVANIZED STEEL CONDUIT
(E)	EXISTING
(P)	PROPOSED
(I)	INSTALL
▶	FLASHER



FILE NAME =	DESIGNED - GHT	REVISED -
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PLOT DATE = 1/25/2010	DATE - 1/25/10	REVISED -

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STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

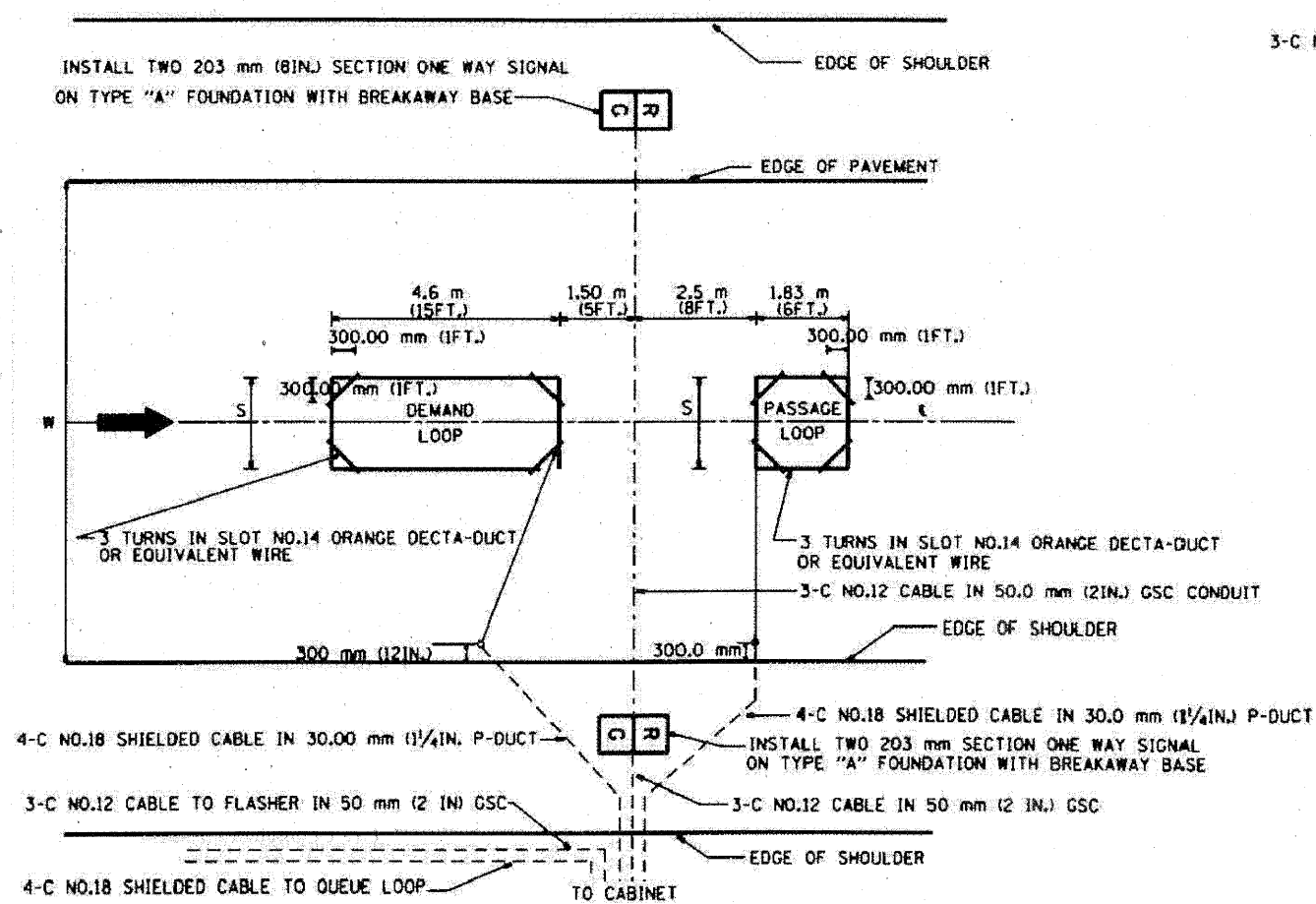
TRAFFIC SURVEILLANCE  
WOLF RD INSTALLATION

SCALE: N.T.S. SHEET NO. 8 OF 8 SHEETS STA. TO STA.

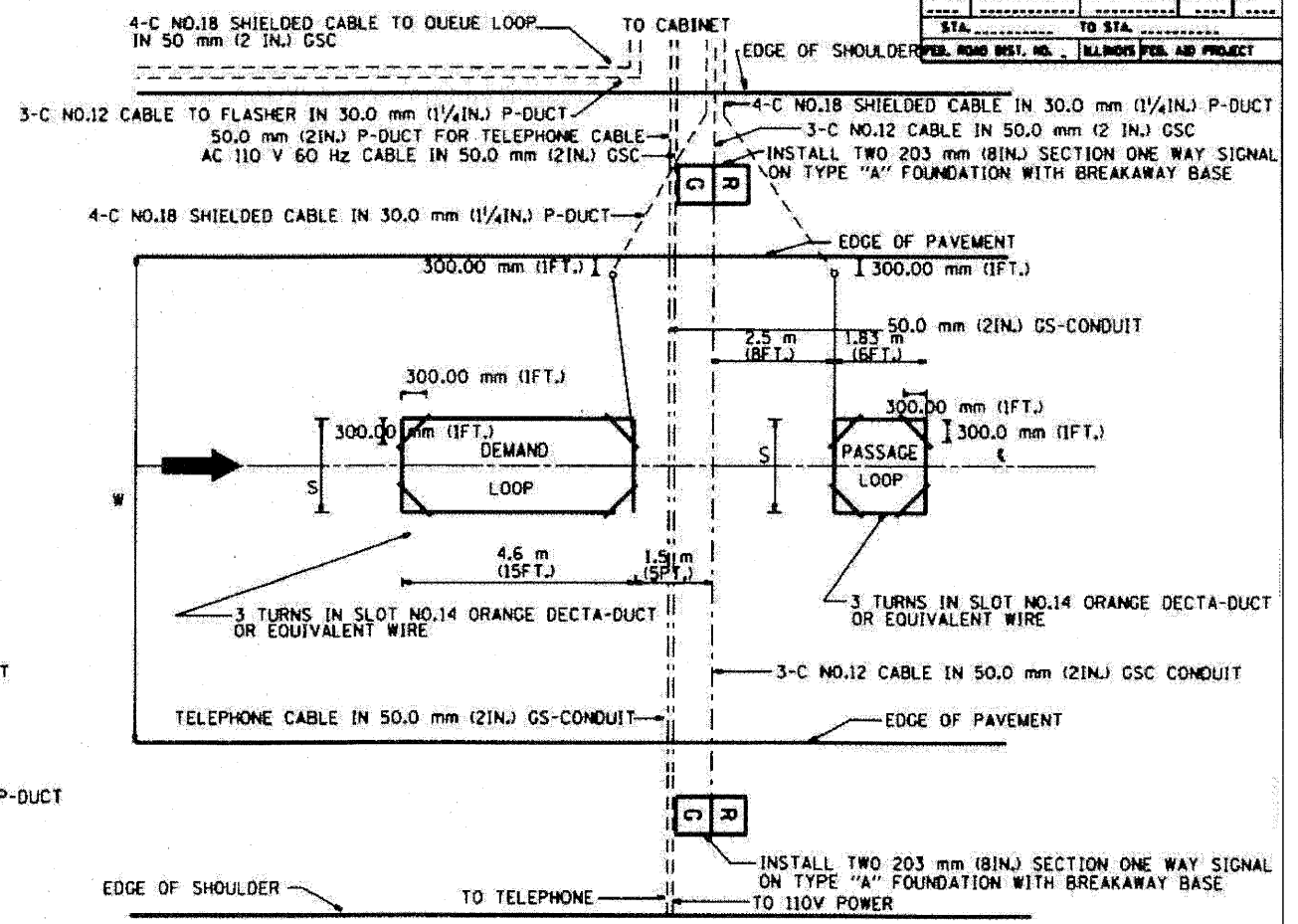
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	13435, ETC., 3838)RS-5	COOK	264	232
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT	
			CONTRACT NO. 60G52	



P.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
STA.	TO STA.	FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT	

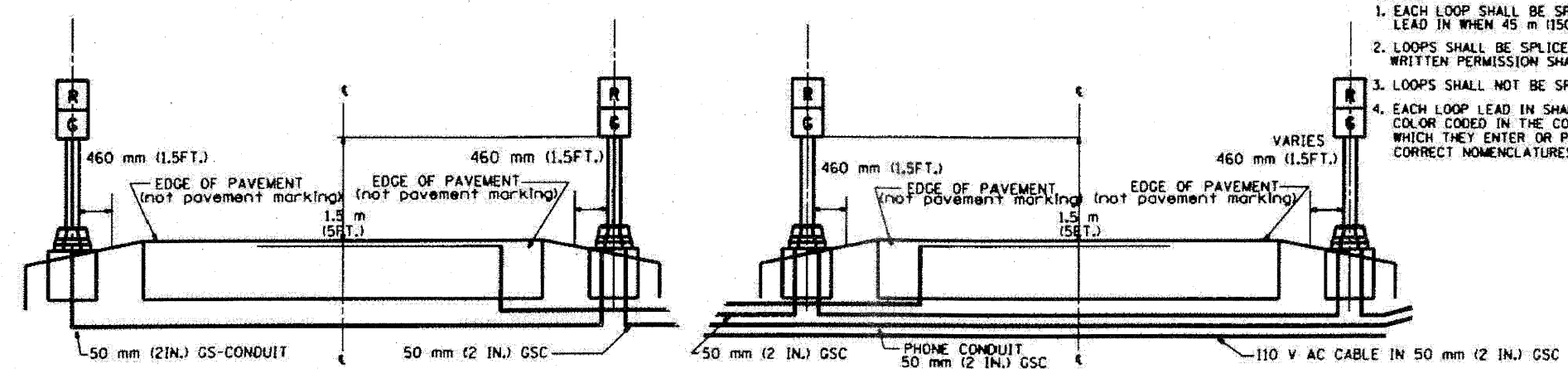


TYPICAL SIGNAL AND LOOP LAYOUT (TYPE I)



TYPICAL SIGNAL AND LOOP LAYOUT (TYPE II)

NOTE: ALL SIGNALS & FOUNDATIONS SHALL BE FIELD LOCATED FOR ACTUAL SITE AND TRAFFIC CONDITIONS.



SECTION

SECTION

- 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.

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')

REVISION	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
TRAFFIC SYSTEMS CENTER

**TYPICAL RAMP METERING  
INSTALLATION TYPE I & II**  
(FOR RAMP WITHOUT CURBS & GUTTERS)

SCALE: NONE  
DATE: 6-22-94

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

TRAFFIC SYSTEMS CENTER (TY-ITSC-400#1)

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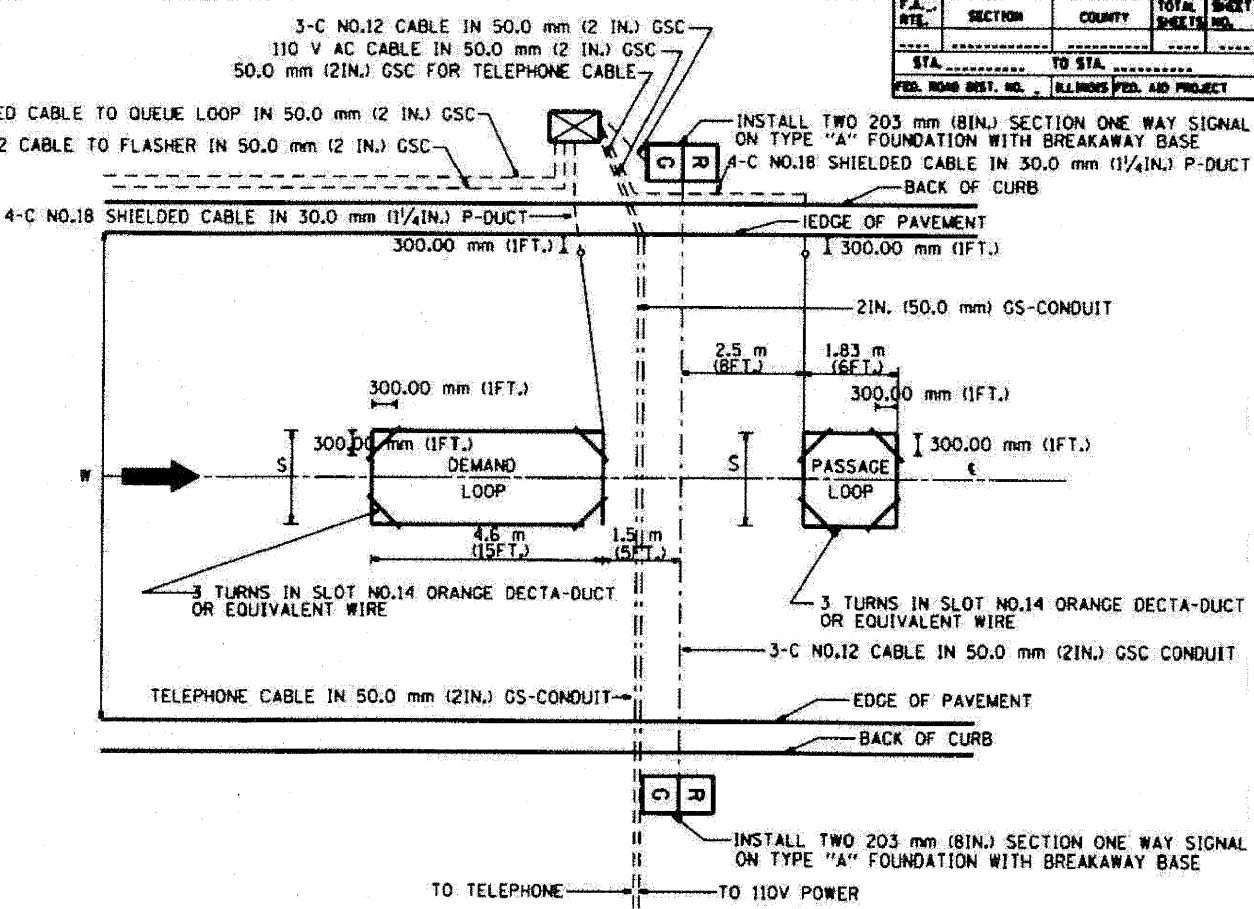
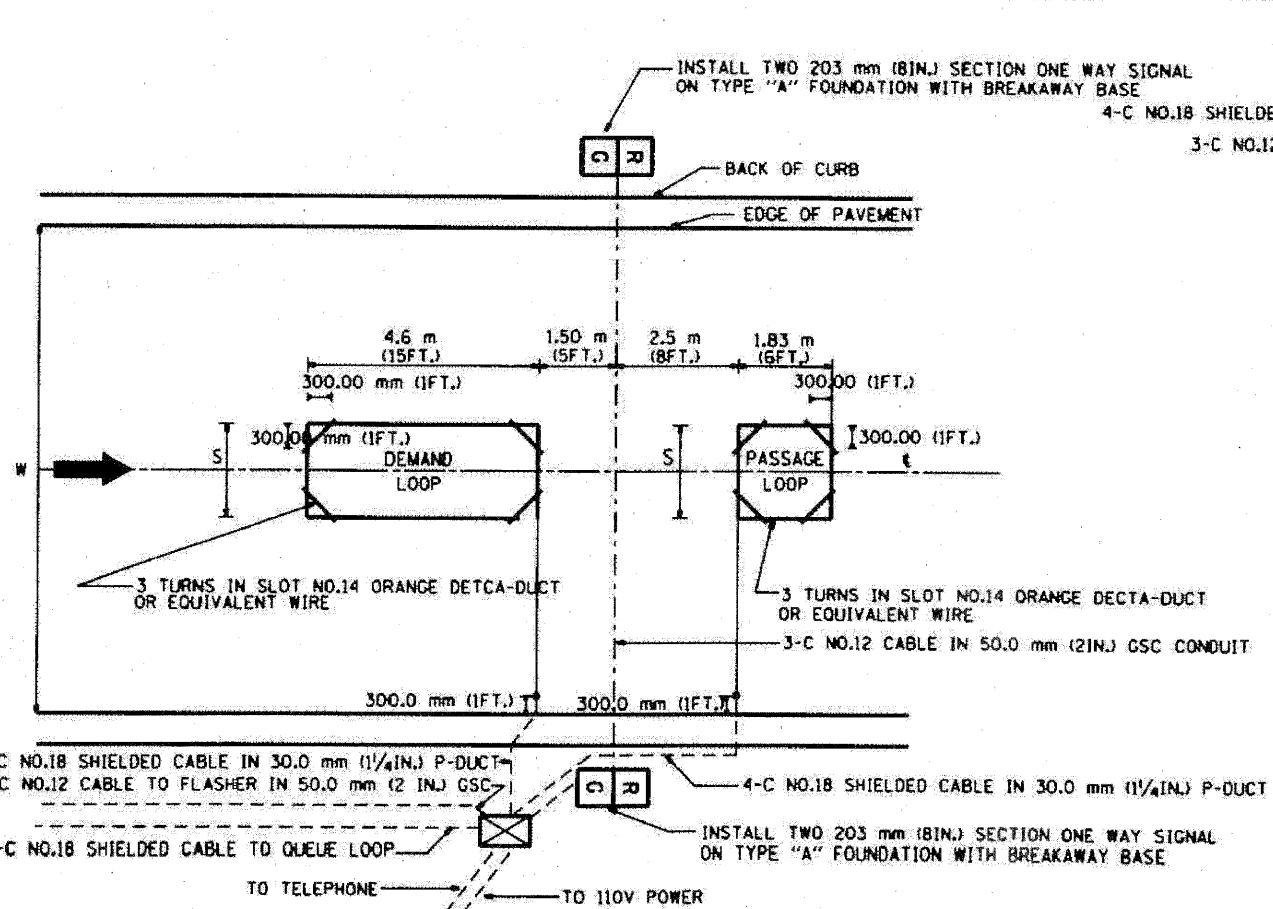
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

TRAFFIC SYSTEMS CENTER  
DETAIL SHEETS

SCALE: N.T.S. SHEET NO. 1 OF 16 SHEETS STA. TO STA.

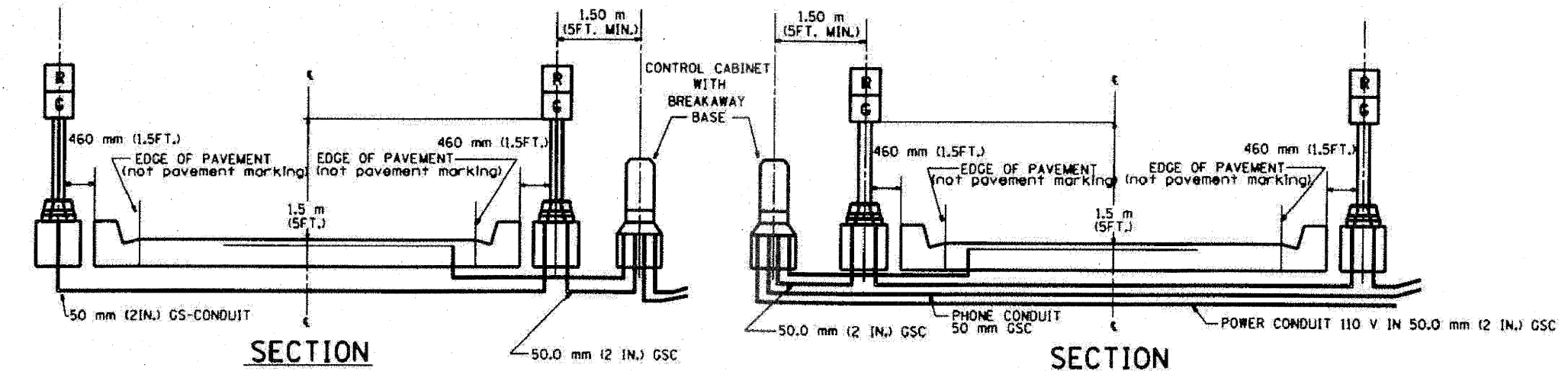
P.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	13435, ETC., 3838IRS-5	COOK	264	233
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT		CONTRACT NO. 60652	

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	13435, ETC., 3838RS-5	COOK	264	234



TYPICAL SIGNAL AND LOOP LAYOUT (TYPE I)

TYPICAL SIGNAL AND LOOP LAYOUT (TYPE II)



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')

- NOTES
1. EACH LOOP SHALL BE SPLICED TO A 4-C NO.18 TWISTED SHIELDED LEAD IN WHEN 150 FT. (45 M) 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	
NO.	DATE
1.	6/94
2.	8/98
3.	2/98

ILLINOIS DEPARTMENT OF TRANSPORTATION  
TRAFFIC SYSTEMS CENTER  
**TYPICAL RAMP METERING  
INSTALLATION TYPE I & II  
(WITH CURB & GUTTER)**

SCALE: NONE  
DATE: 6-22-94  
DRAWN BY: G.M.  
CHECKED BY: R.L.

TRAFFIC SYSTEMS CENTER (TY-1TSC-400\*2)

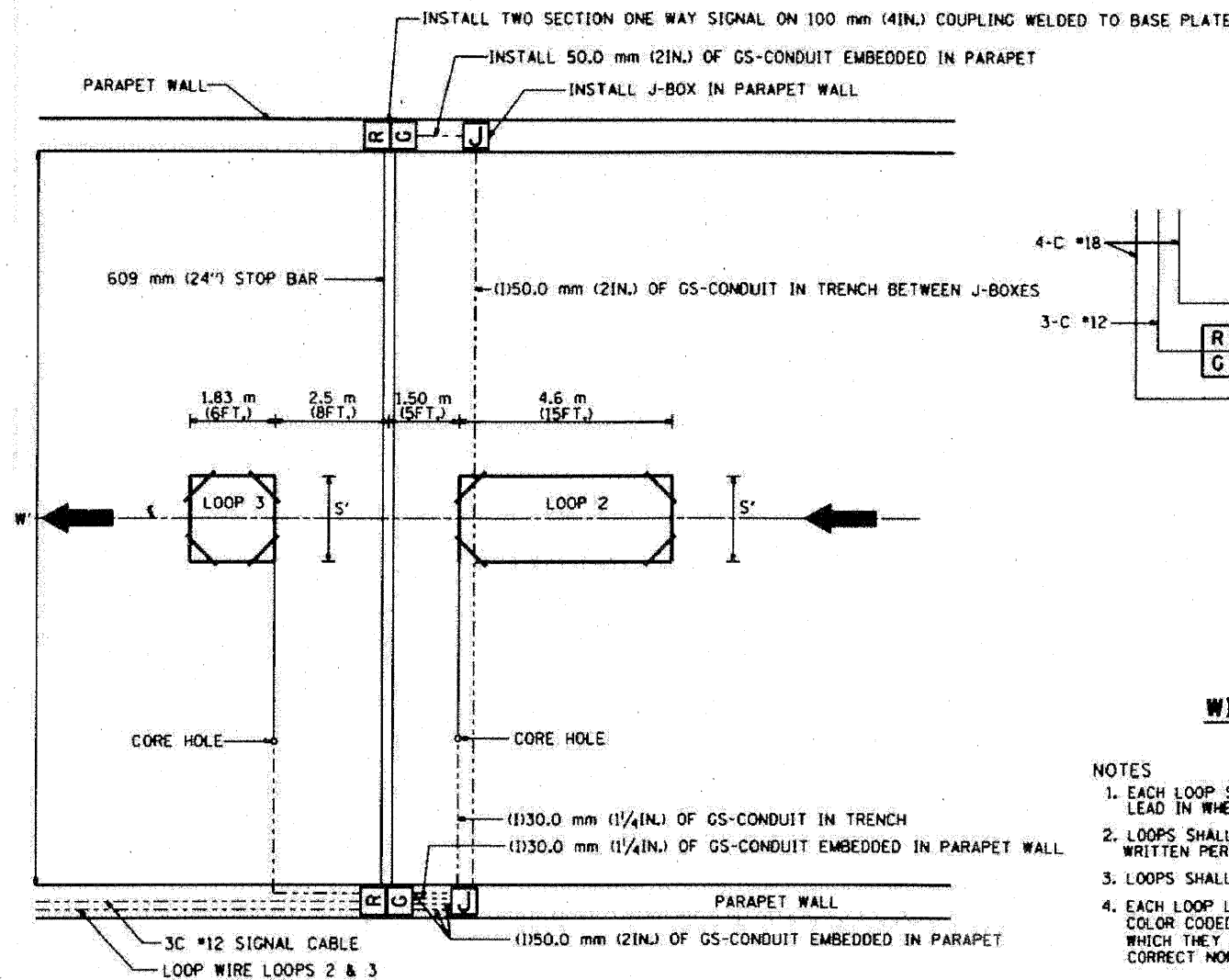
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PLOT DATE = 1/25/2010	DATE - 1/25/10	REVISED -

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STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

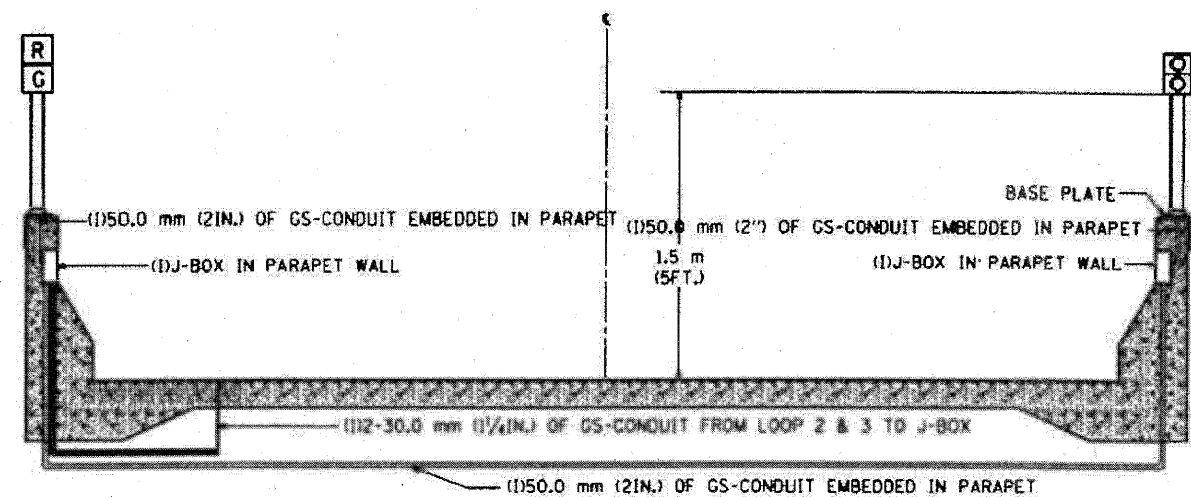
TRAFFIC SYSTEMS CENTER DETAIL SHEETS	
SCALE: N.T.S.	SHEET NO. 2 OF 16 SHEETS
STA.	TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	13435, ETC., 3838RS-5	COOK	264	234
CONTRACT NO. 60G52				

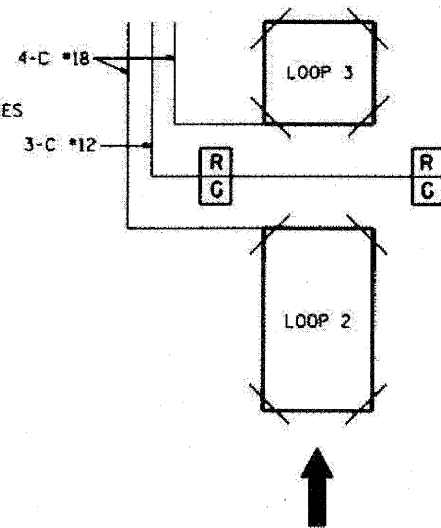
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			



**TYPICAL LOOP LAYOUT**



**SECTION**

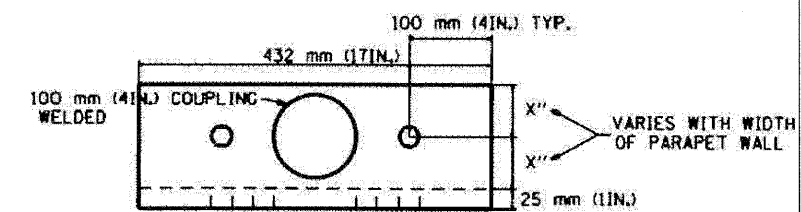


**WIRING DIAGRAM**

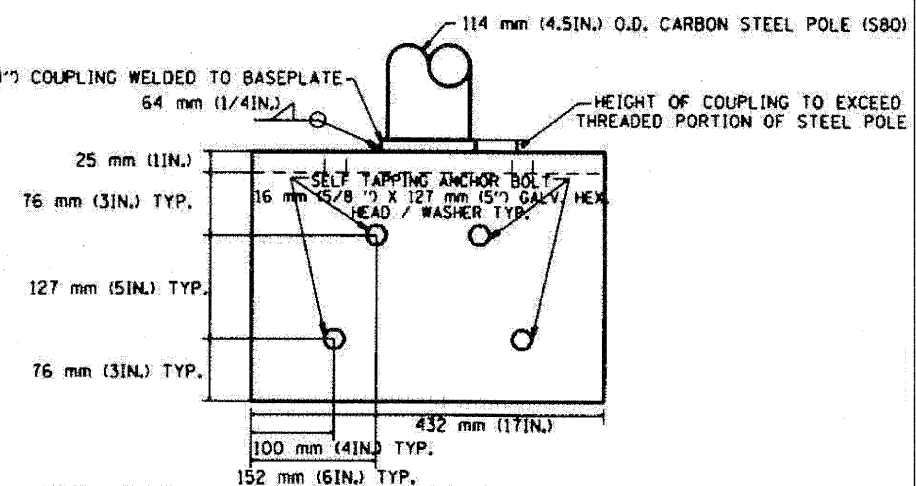
- NOTES**
1. EACH LOOP SHALL BE SPLICED TO A 4-C NO.18 TWISTED SHIELDED LEAD IN WHEN 45 m (150FT.) OR MORE FROM CABINET.
  2. LOOPS SHALL BE SPLICED IN HANDHOLES OR J-BOX ONLY, OTHERWISE WRITTEN PERMISSION SHALL BE OBTAINED FROM TSC ENGINEER.
  3. LOOPS SHALL NOT BE SPLICED IN SERIES.
  4. EACH LOOP 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.

**TABLE 1**

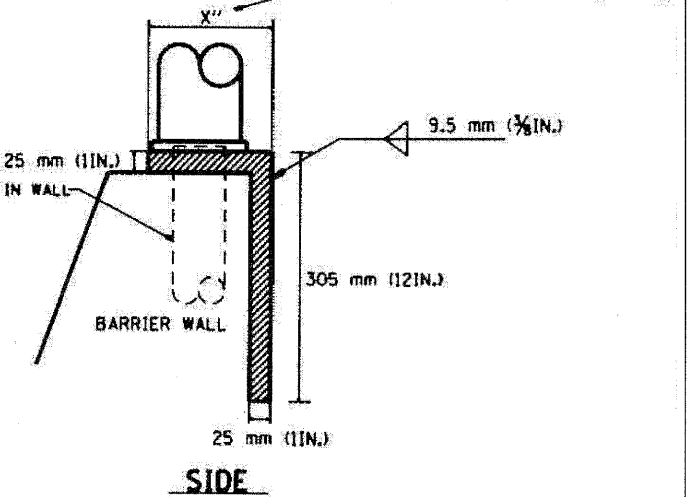
WIDTH (W)	WIDTH (S)
3.7 m (12')	2.5 m (8')
4.0 m (13')	2.8 m (9')
4.3 m (14')	3.1 m (10')
4.6 m (15')	3.4 m (11')
4.9 m (16')	3.7 m (12')
5.2 m (17')	4.0 m (13')
5.5 m (18')	4.3 m (14')
5.8 m (19')	4.6 m (15')
6.1 m (20')	4.9 m (16')
6.4 m (21')	5.2 m (17')
6.7 m (22')	5.5 m (18')
7.0 m (23')	5.8 m (19')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



**TOP**



**FRONT**



**SIDE**

**REVISIONS**

NO.	DATE	DESCRIPTION
1.	6/94	
2.	2/96	
3.	9/96	
4.	2/98	

**ILLINOIS DEPARTMENT OF TRANSPORTATION**  
**TRAFFIC SYSTEMS CENTER**  
**TYPICAL RAMP METERING**  
**TYPE 3 BARRIER WALL**  
**INSTALLATION**

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

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

**TRAFFIC SYSTEMS CENTER (TY-1TSC-400\*3)**

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PLOT DATE = 1/25/2010	DATE - 1/25/10	REVISED -

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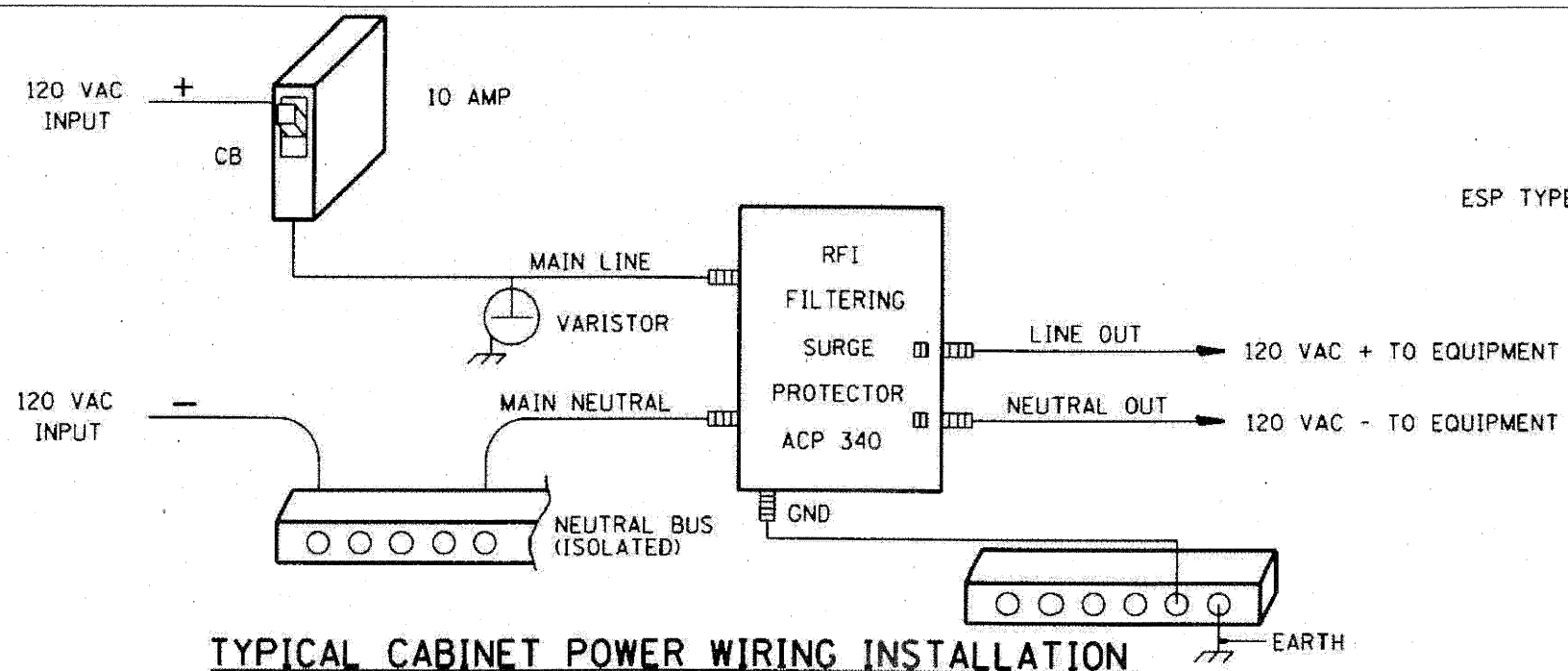
**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**TRAFFIC SYSTEMS CENTER**  
**DETAIL SHEETS**

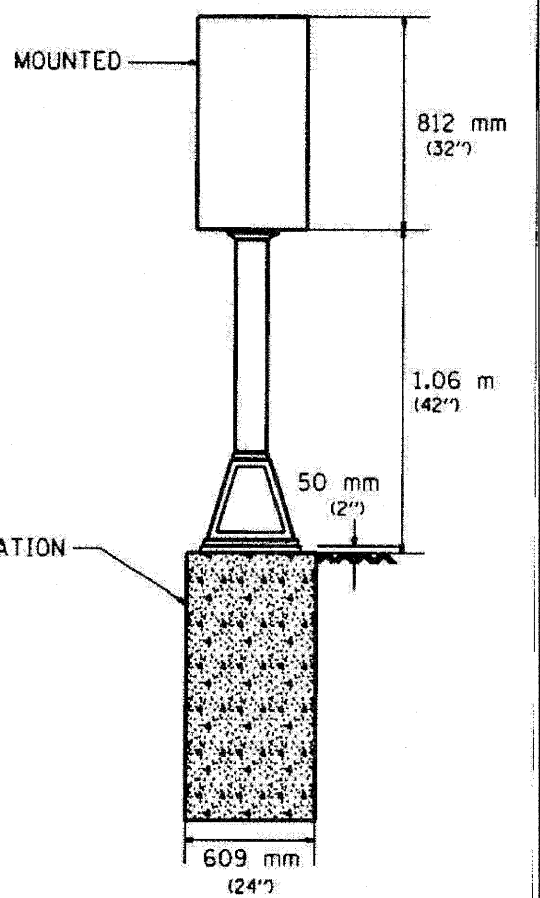
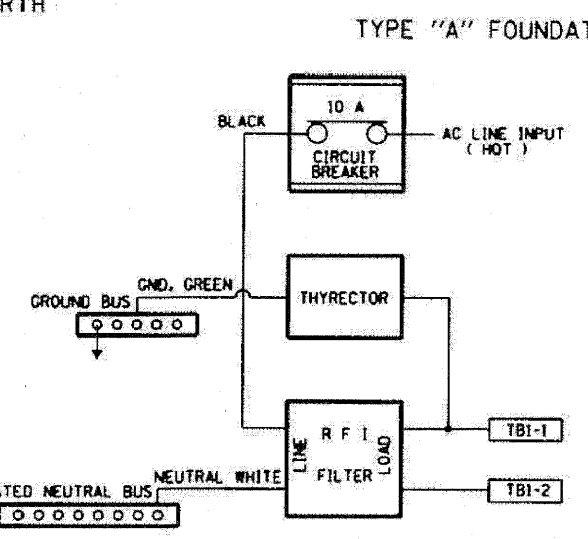
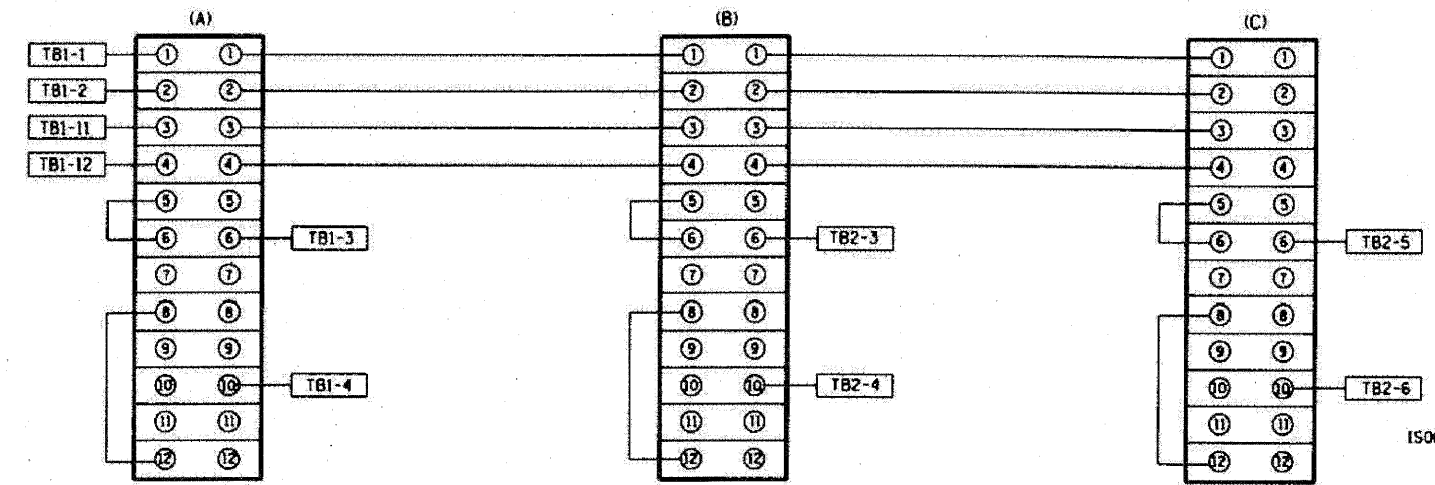
SCALE: N.T.S. SHEET NO. 3 OF 16 SHEETS STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	(3435, ETC., 3838)RS-5	COOK	264	235
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			
			CONTRACT NO. 60G52	

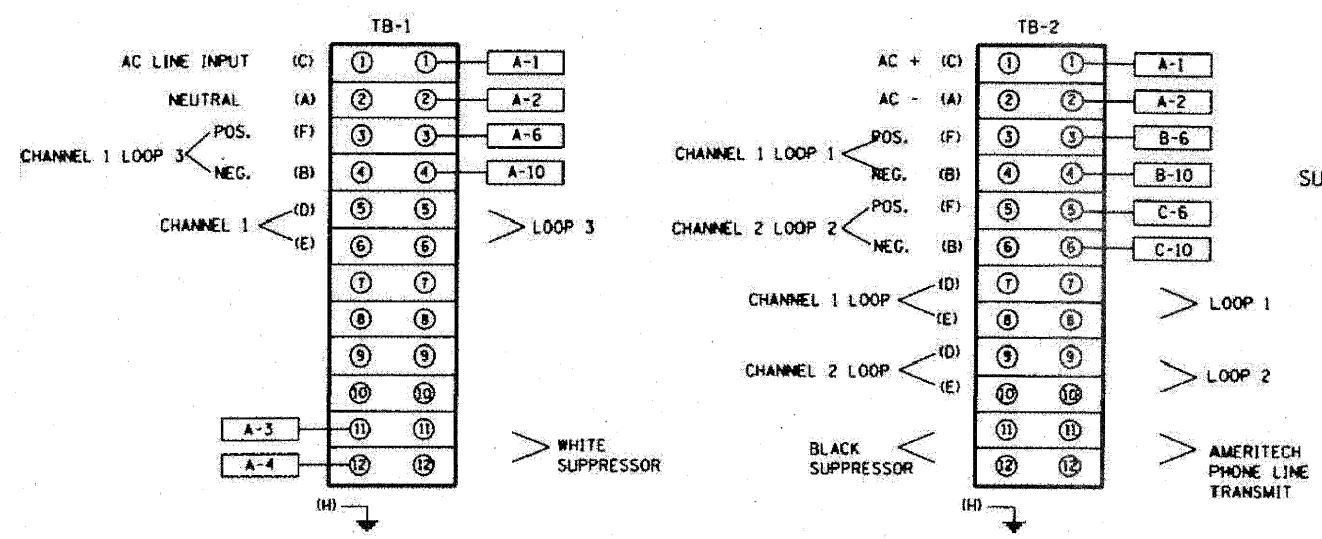
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
STA. _____ TO STA. _____				
FED. ROAD DIST. NO. _____		ILLINOIS FED. AID PROJECT _____		



**TYPICAL CABINET POWER WIRING INSTALLATION**



**TYPE 2 CABINET INSTALLATION**



REVISIONS	
NO.	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
TRAFFIC SYSTEMS CENTER  
**TYPE II CABINET WIRING**

SCALE: NONE  
DATE: 6-21-94  
DRAWN BY: G.M.  
CHECKED BY: T.C.

**TRAFFIC SYSTEMS CENTER (TY-1TSC-400#5)**

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PLOT DATE = 1/25/2010	DATE - 1/25/10	REVISED -

**benesch**

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

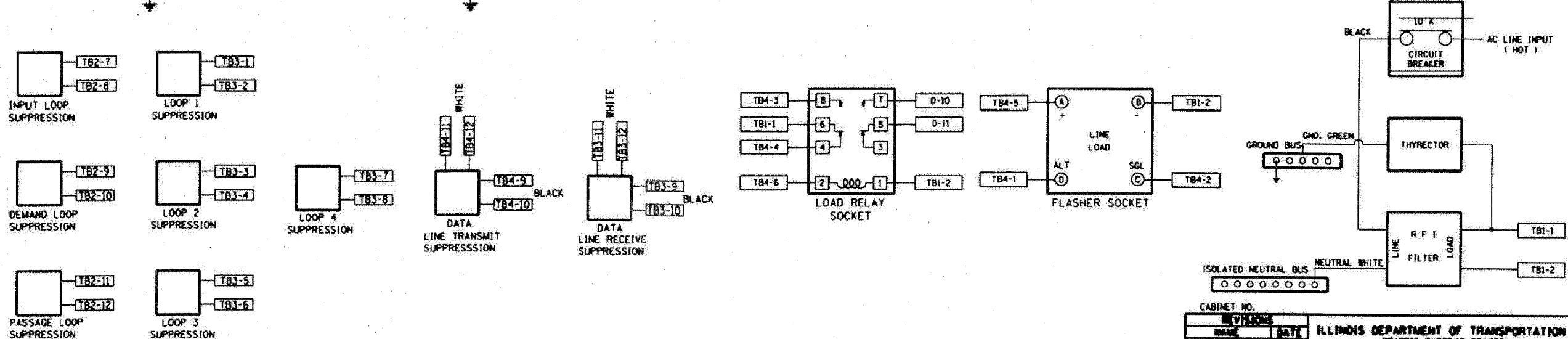
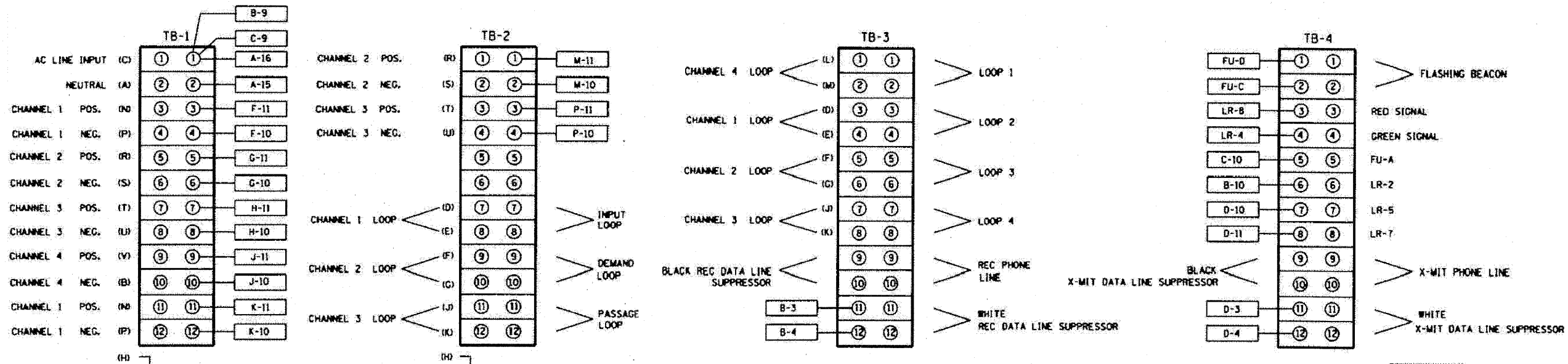
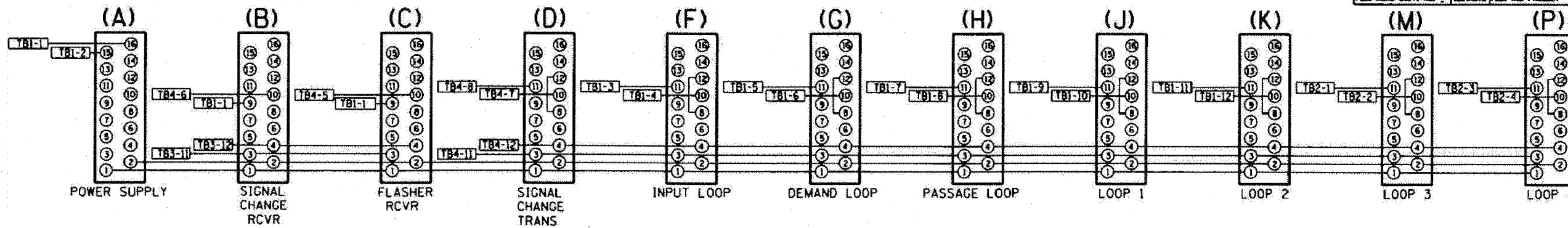
TRAFFIC SYSTEMS CENTER  
DETAIL SHEETS

SCALE: N.T.S.	SHEET NO. 4 OF 16 SHEETS	STA. _____ TO STA. _____
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F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	13435, ETC., 3838RS-5	COOK	264	236
FED. ROAD DIST. NO. _____		ILLINOIS FED. AID PROJECT _____		

# BACK VIEW OF TONE RACK

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
STA. ....	TO STA. ....		264	237
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			



CABINET NO.		REVISIONS	
DATE	BY	DATE	BY
6/94	T.C.	6/94	T.C.
3/99	R.L.	8/99	R.L.

ILLINOIS DEPARTMENT OF TRANSPORTATION  
TRAFFIC SYSTEMS CENTER  
**METERING CABINET  
WIRING DIAGRAM**

SCALE: NOT NONE  
DATE: 6/21/94  
DRAWN BY: G.J.  
CHECKED BY: T.C.

## TRAFFIC SYSTEMS CENTER (TY-ITSC-400#8)

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**benesch**

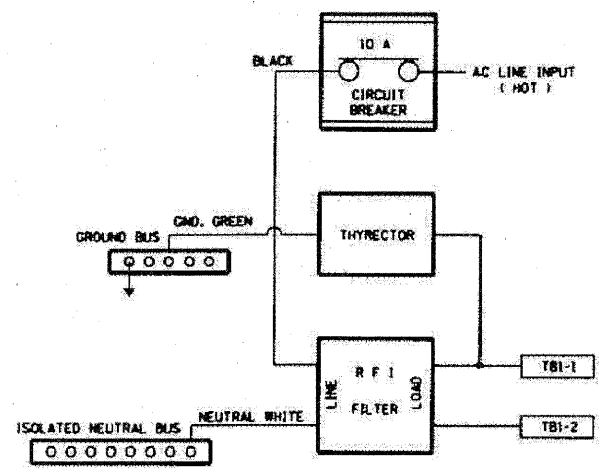
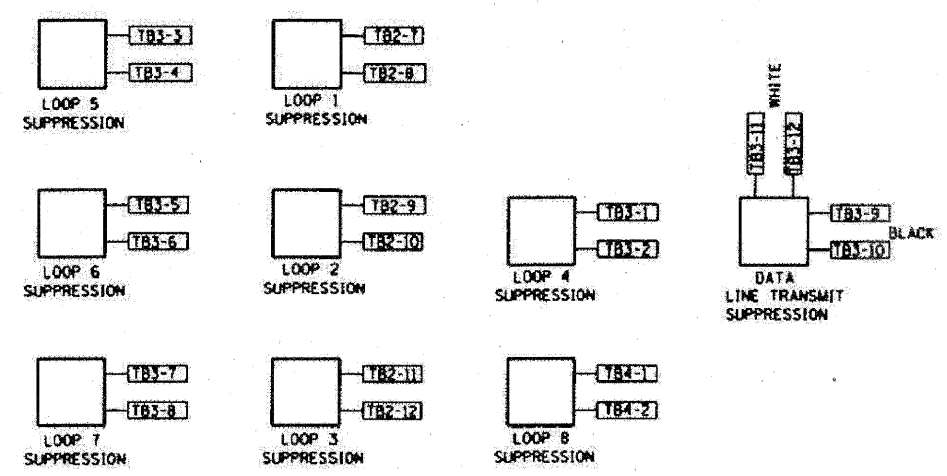
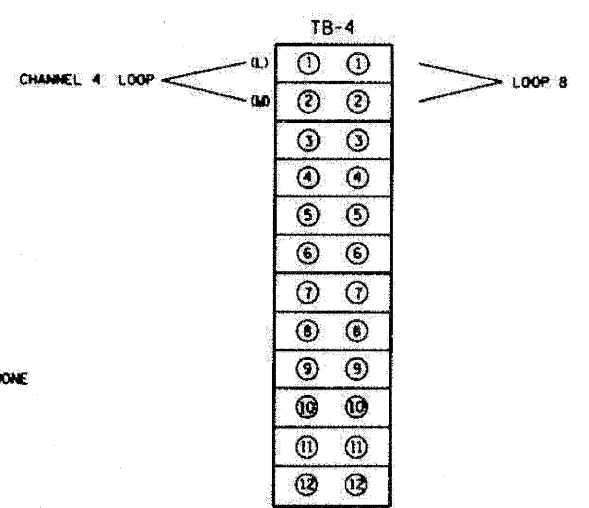
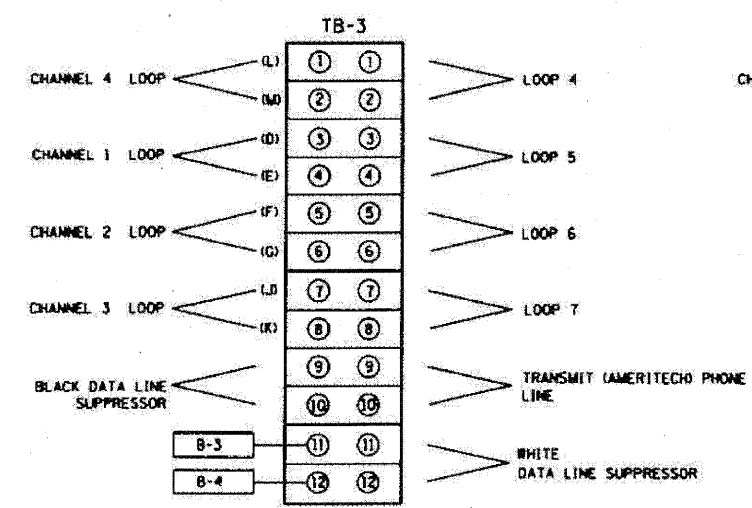
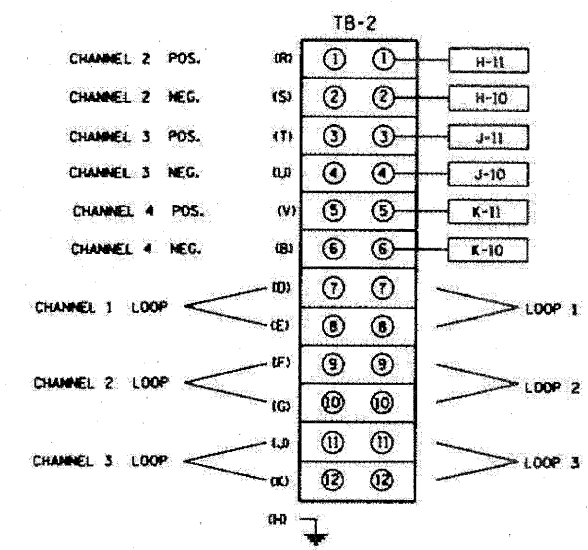
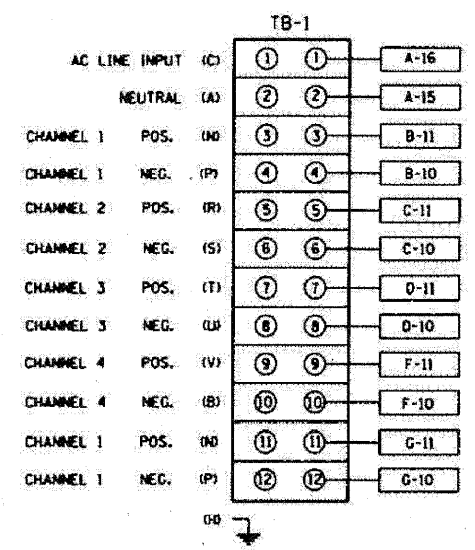
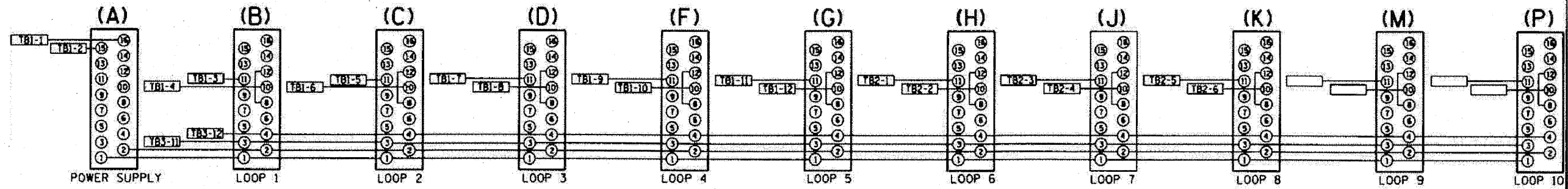
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

TRAFFIC SYSTEMS CENTER DETAIL SHEETS	
SCALE: N.T.S.	SHEET NO. 5 OF 16 SHEETS
STA. ....	TO STA. ....

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	(3435, ETC., 3838)RS-5	COOK	264	237
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			
	CONTRACT NO. 60G52			

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

BACK VIEW OF TONE RACK



CABINET NO.	
REVISIONS	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
TRAFFIC SYSTEMS CENTER  
**TYPE 3 CABINET WIRING DIAGRAM**  
SCALE: NONE  
DATE 10/17/85  
DRAWN BY G.A.  
CHECKED BY R.L.

TRAFFIC SYSTEMS CENTER (TY-1TSC-400\*13)

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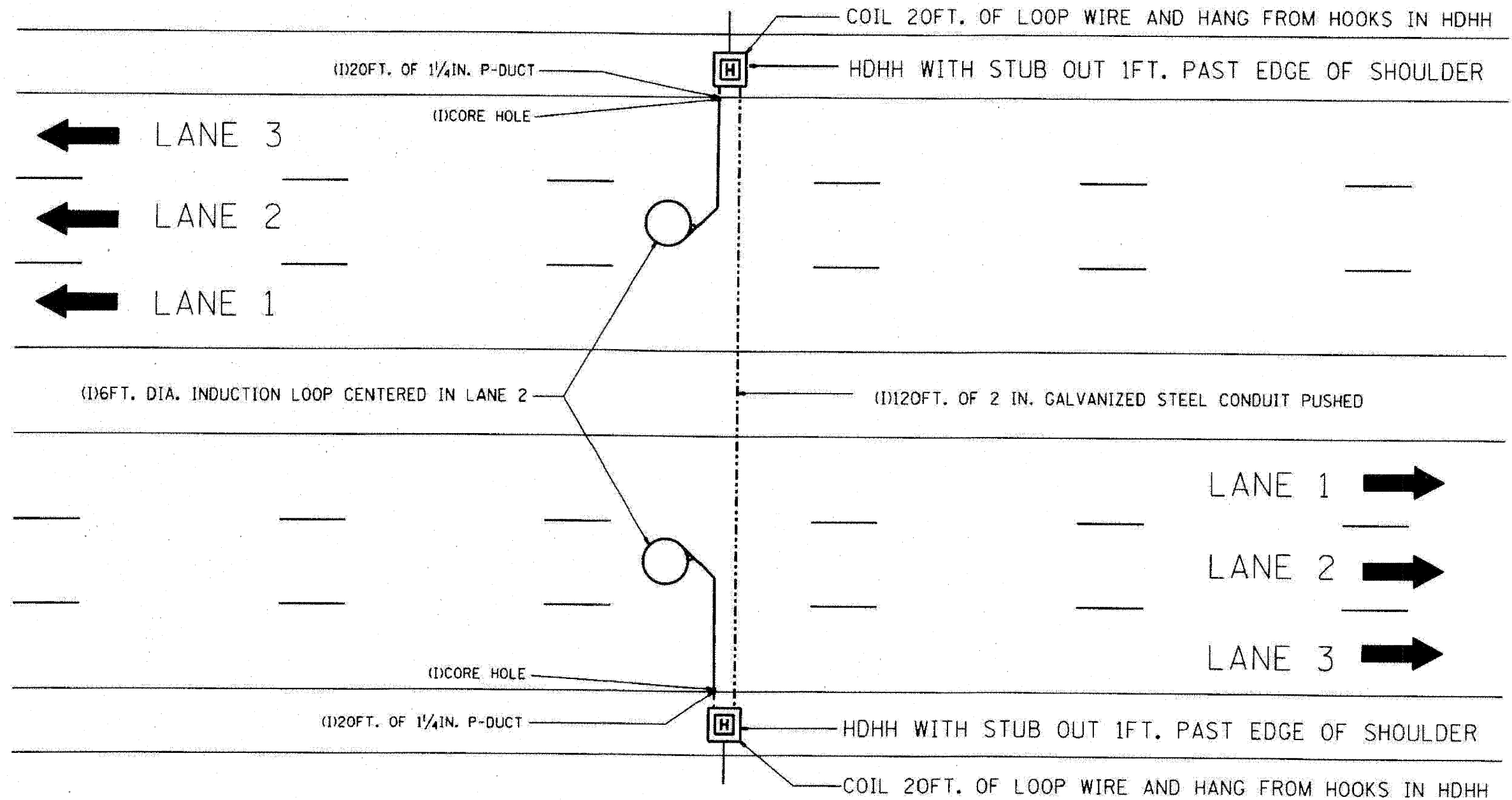
**benesch**

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

TRAFFIC SYSTEMS CENTER DETAIL SHEETS	
SCALE: N.T.S.	SHEET NO. 6 OF 16 SHEETS
STA.	TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	(3435, ETC., 3838)RS-5	COOK	264	238
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		
		CONTRACT NO. 60G52		

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



**NOTE:**  
THE COST OF LOOP WIRE IN HDHH IS INCIDENTAL TO THE INDUCTION LOOP.  
IT SHALL NOT BE MEASURE FOR PAYMENT.

INSTALL AT STATIONS.

REVISIONS		ILLINOIS DEPARTMENT OF TRANSPORTATION	
NO.	DATE	ONE LANE COUNT STATION	

SCALE: VERT. NONE  
DATE 01-31-07  
DRAWN BY G.M.  
CHECKED BY J.G.

**TRAFFIC SYSTEMS CENTER (TY-1TSC-400\*31)**

FILE NAME -	DESIGNED - GHT	REVISED -
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PLOT DATE - 1/25/2010	DATE - 1/25/10	REVISED -

**benesch**

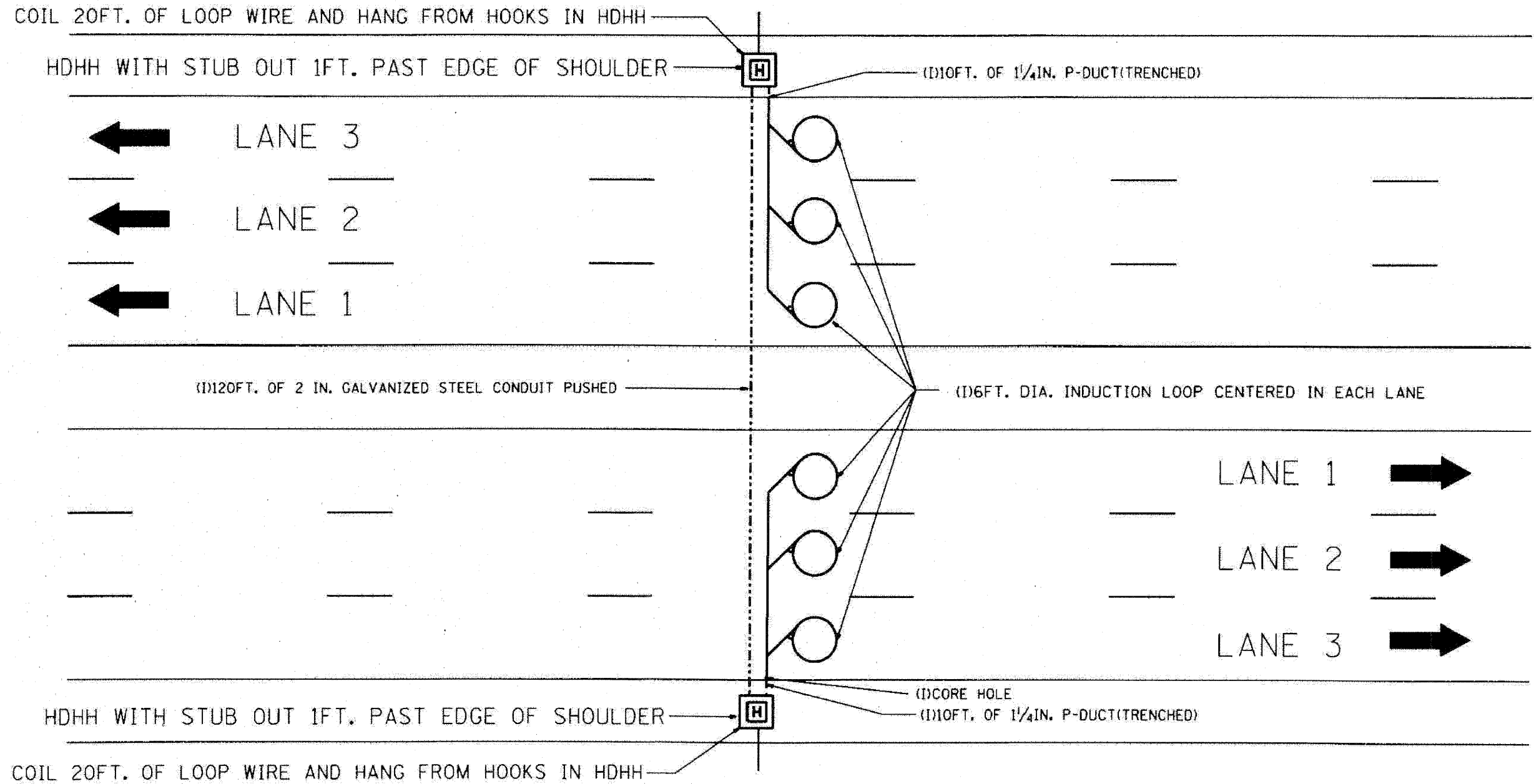
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**TRAFFIC SYSTEMS CENTER  
DETAIL SHEETS**

SCALE: N.T.S. SHEET NO. 7 OF 16 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	(3435, ETC., 3838RS-5	COOK	264	239
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.



**NOTE:**  
 THE COST OF LOOP WIRE IN HDHH IS INCIDENTAL TO THE INDUCTION LOOP.  
 IT SHALL NOT BE MEASURE FOR PAYMENT.

INSTALL AT STATIONS.

REVISIONS		ILLINOIS DEPARTMENT OF TRANSPORTATION	
NO.	DATE		

3 LANE COUNT STATION

SCALE: VERT. NONE  
 HORIZ. NONE  
 DATE 01-31-07

DRAWN BY G.M.  
 CHECKED BY J.G.

**TRAFFIC SYSTEMS CENTER (TY-1TSC-400\*32)**

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PLOT DATE = 1/25/2010	DATE - 1/25/10	REVISED -

**benesch**

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

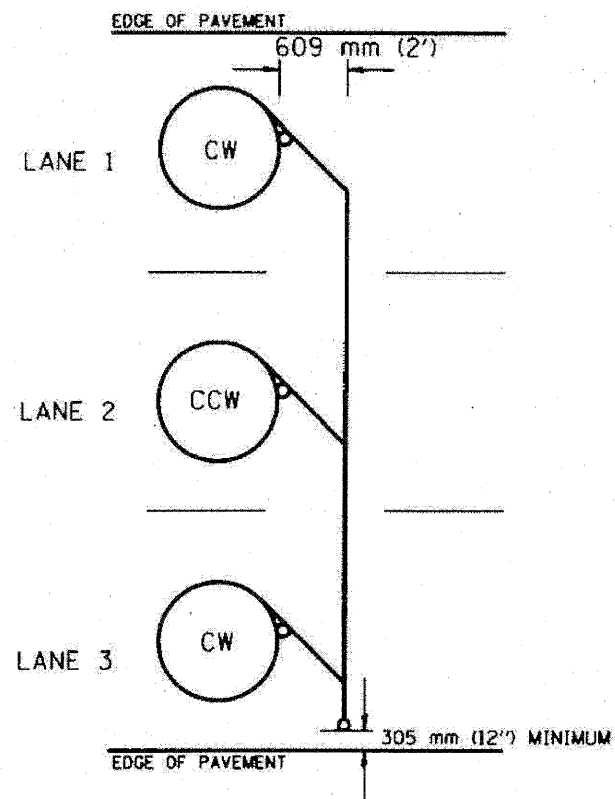
TRAFFIC SYSTEMS CENTER  
 DETAIL SHEETS

SCALE: N.T.S. SHEET NO. 8 OF 16 SHEETS STA. TO STA.

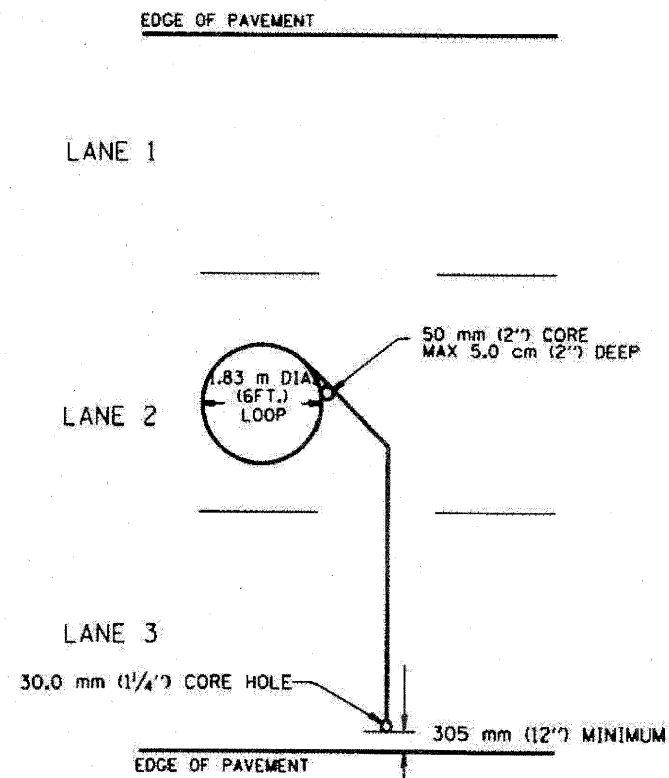
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	(3435, ETC., 3838)RS-5	COOK	264	240
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT	
			CONTRACT NO. 60G52	



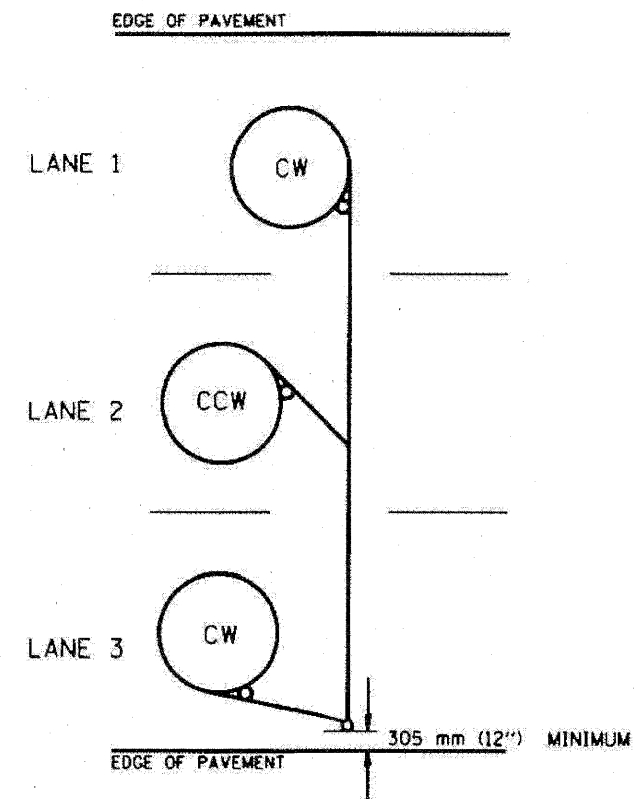
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
STA.	TO STA.			
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		



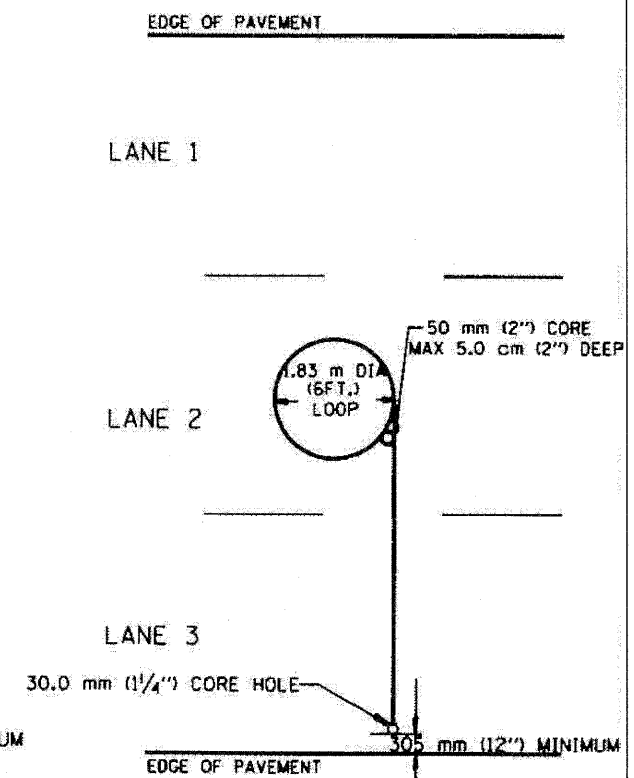
**TYPICAL 1.83 m (6FT.) DIA. INDUCTION LOOP CORE DRILL  
LAYOUT FOR MULTIPLE LANE ROADWAY**



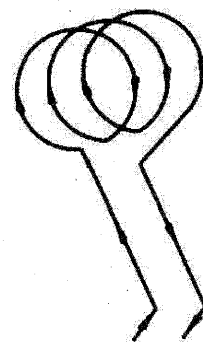
**TYPICAL 1.83 m (6') DIA. INDUCTION LOOP  
LAYOUT FOR LANE 2**



**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		ILLINOIS DEPARTMENT OF TRANSPORTATION TRAFFIC SYSTEMS CENTER EXISTING ROUND LOOP INSTALLATION	
NO.	DATE	SCALE	DATE
R.L.	5/94	VERT. NONE	6-22-94
T.E.	8/96	HORIZ.	

**TRAFFIC SYSTEMS CENTER (TY-1TSC-418\*1)**

TRAFFIC SYSTEMS CENTER  
DETAIL SHEETS

FILE NAME =	DESIGNED - GHT	REVISED -
...VppIn_ABC_C2_TS_DET_09.dgn	DRAWN - TMB	REVISED -
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PLOT DATE = 1/25/2010	DATE - 1/25/10	REVISED -

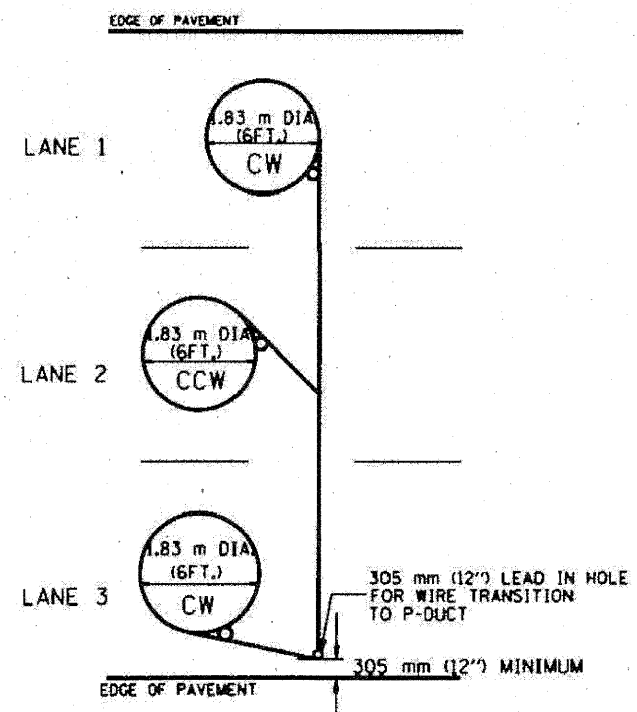
**benesch**

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

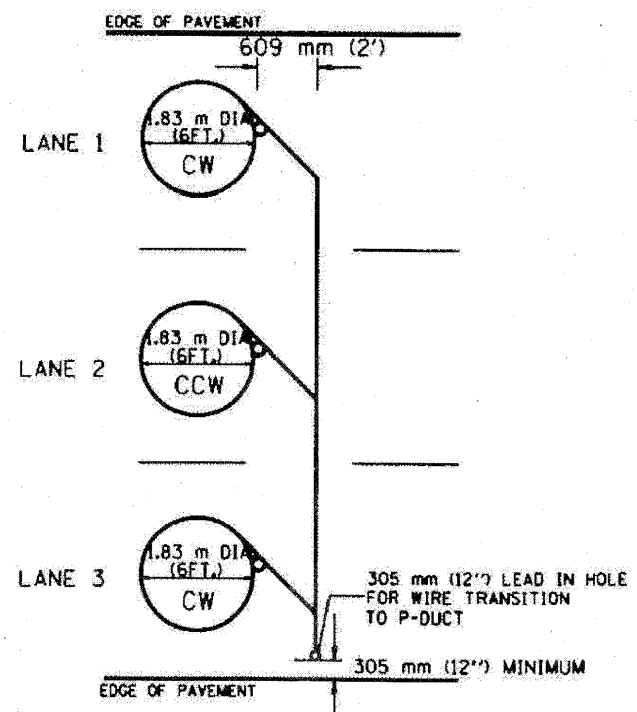
SCALE: N.T.S. SHEET NO. 9 OF 16 SHEETS STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	13435, ETC., 3838RS-5	COOK	264	241
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		
CONTRACT NO. 60G52				

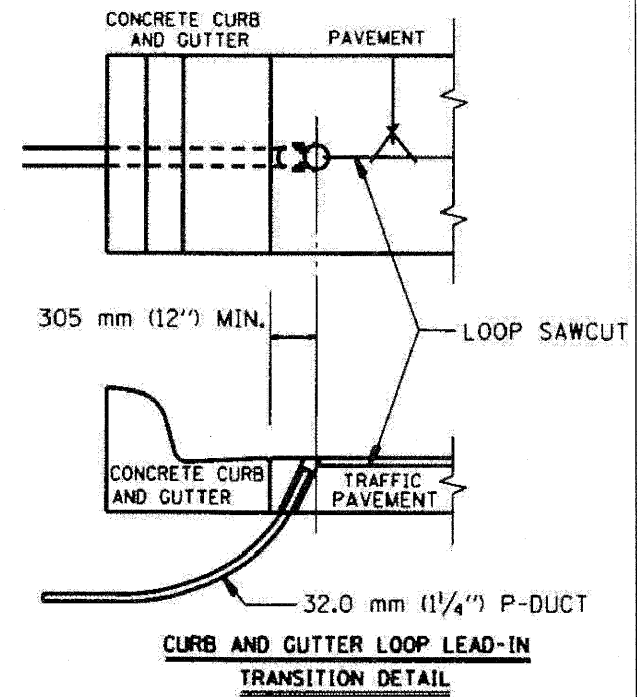
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			



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



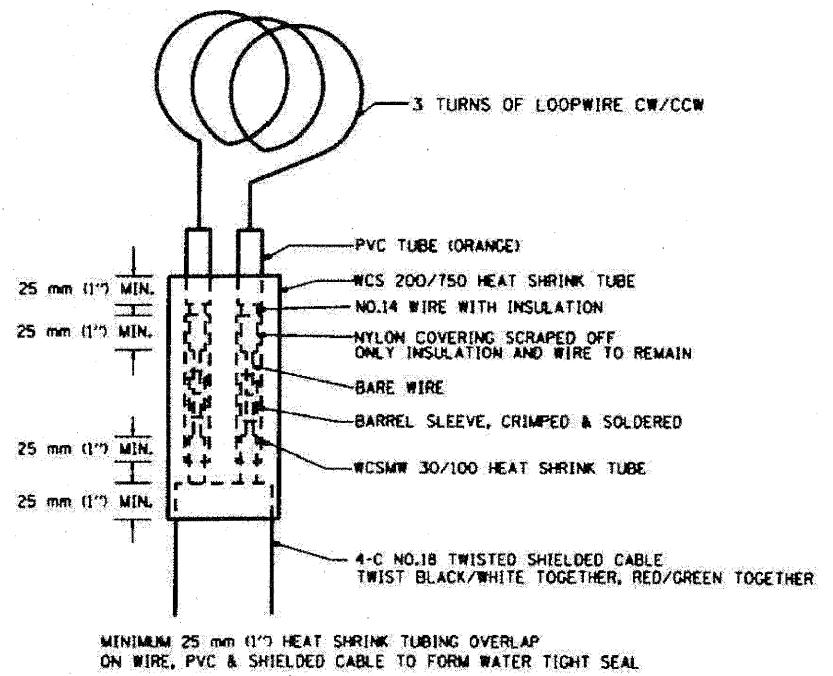
TYPICAL 1.83 m (6') DIA. INDUCTION LOOP CORE DRILL LAYOUT FOR MULTIPLE LANE ROADWAY



CURB AND GUTTER LOOP LEAD-IN TRANSITION DETAIL

NOTES

1. EACH LOOP SHALL BE SPICED TO A 4-C NO.18 TWISTED SHIELDED LEAD IN WHEN 45 m (150FT.) OR MORE FROM CABINET.
2. LOOPS SHALL BE SPICED IN HANDHOLES ONLY, OTHERWISE WRITTEN PERMISSION SHALL BE OBTAINED FROM TSC ENGINEER.
3. LOOPS SHALL NOT BE SPICED 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.



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

LOOP SPICING REQUIREMENTS

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

TRAFFIC SYSTEMS CENTER (TY-1TSC-418#2)

FILE NAME =	DESIGNED - GHT.	REVISED -
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PLOT DATE = 1/25/2010	DATE - 1/25/10	REVISED -

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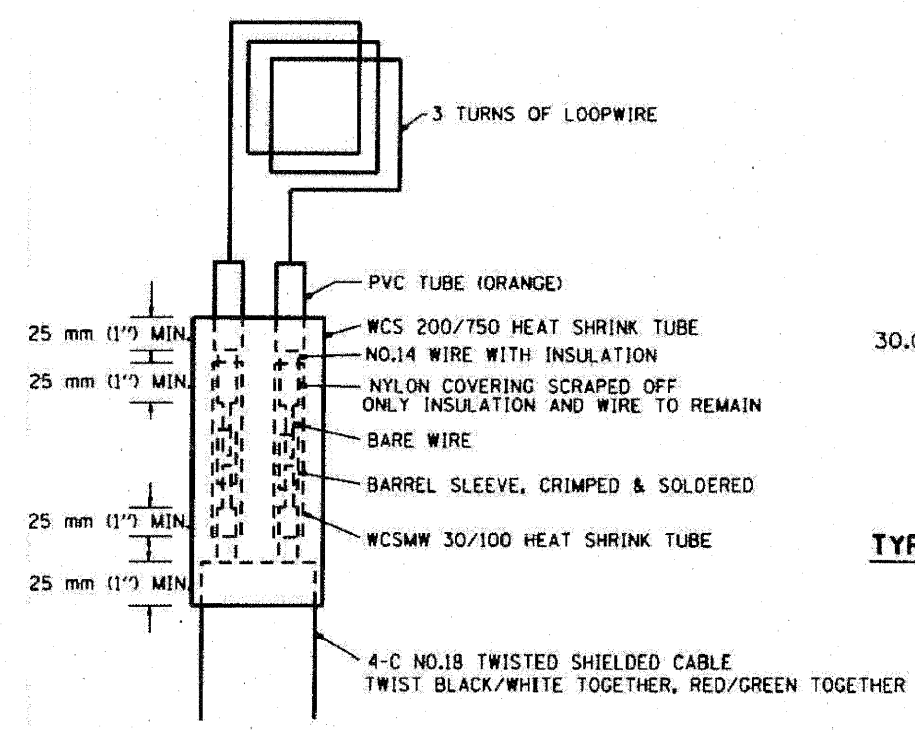
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

TRAFFIC SYSTEMS CENTER  
DETAIL SHEETS

SCALE: N.T.S. SHEET NO. 10 OF 16 SHEETS STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	(3435, ETC., 3830RS-5	COOK	264	242
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			

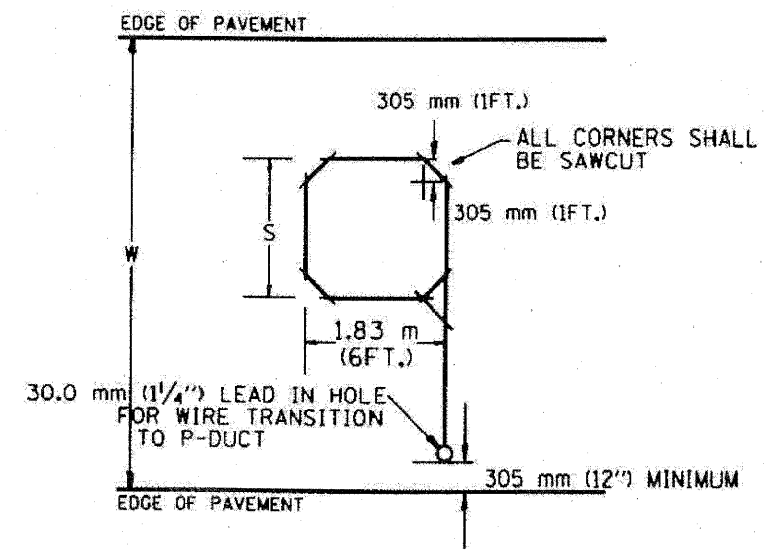
F.A. RTE.	SECTION	COUNTY	TOTAL SHEET NO.
STA.	TO STA.		
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT		



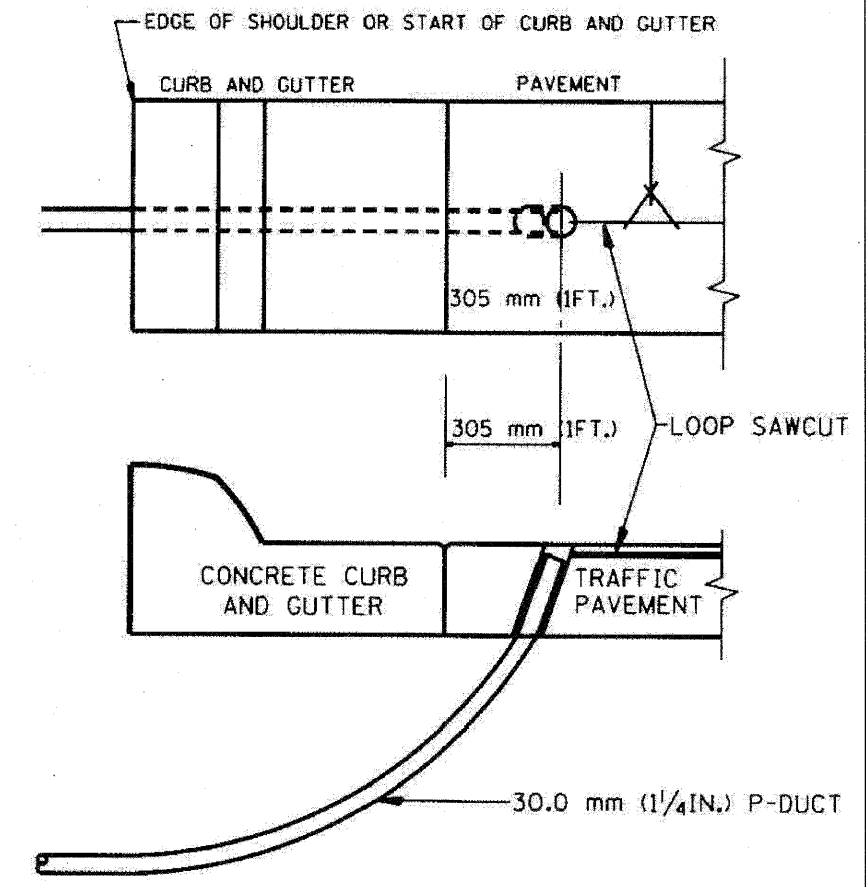
MINIMUM 25 mm (1") HEAT SHRINK TUBING OVERLAP ON WIRE, PVC & SHIELDED CABLE TO FORM WATER TIGHT SEAL

**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 (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	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  
DATE 6-22-94  
DRAWN BY: C.A.  
CHECKED BY: R.L.

**TRAFFIC SYSTEMS CENTER (TY-1TSC-418\*3)**

FILE NAME =	DESIGNED - GHT	REVISED -
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PLOT DATE = 1/25/2010	DATE - 1/25/10	REVISED -

**benesch**

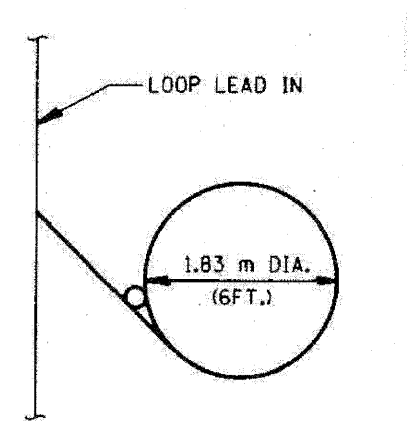
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

TRAFFIC SYSTEMS CENTER  
DETAIL SHEETS

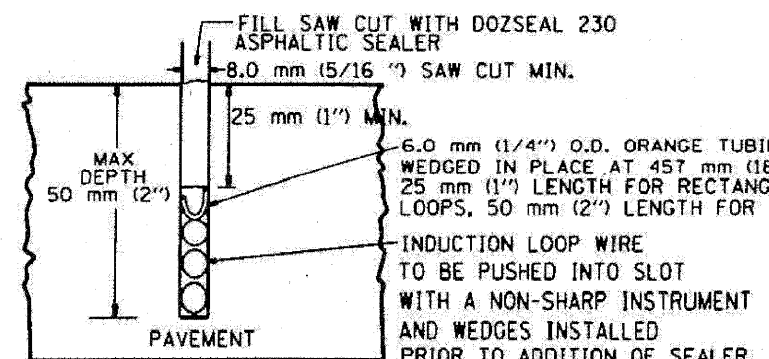
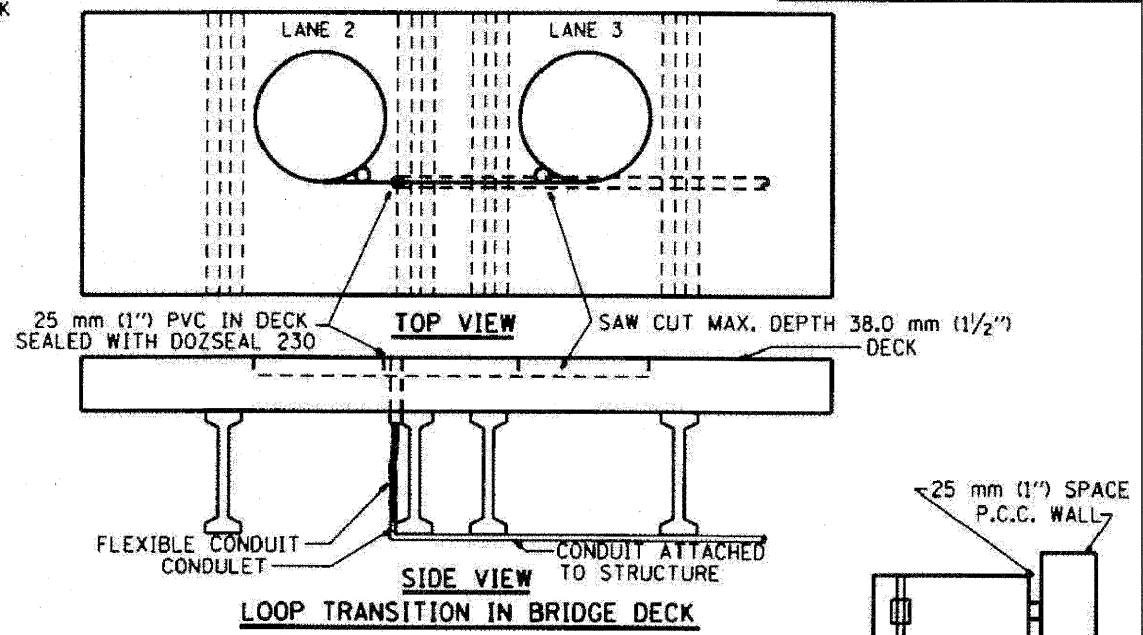
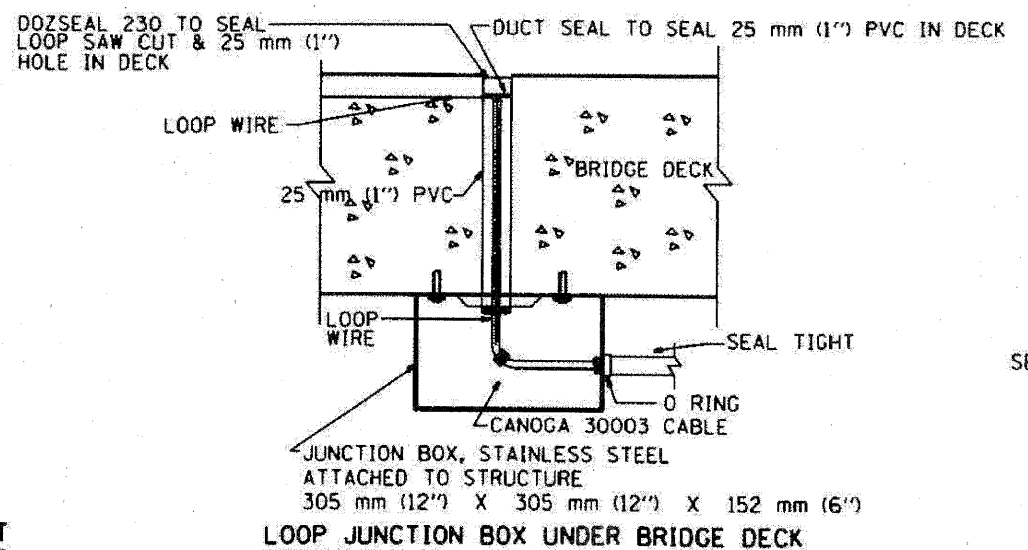
SCALE: N.T.S. SHEET NO. 11 OF 16 SHEETS STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEET NO.
290	13435, ETC., 383BRS-5	COOK	264 243
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT		

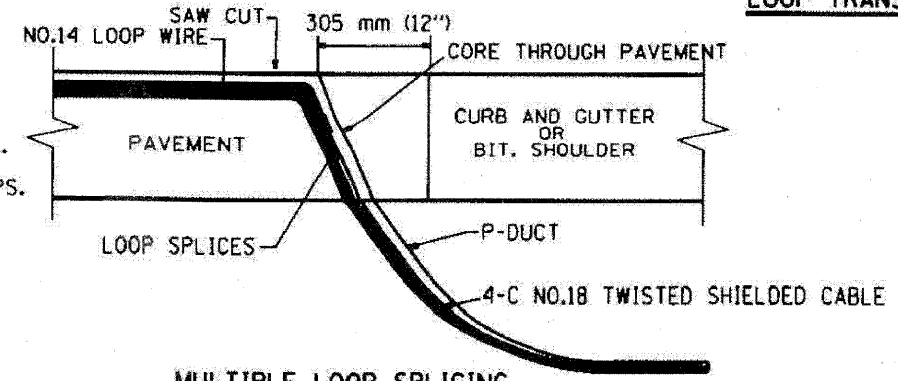
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
STA. _____	TO STA. _____			
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				



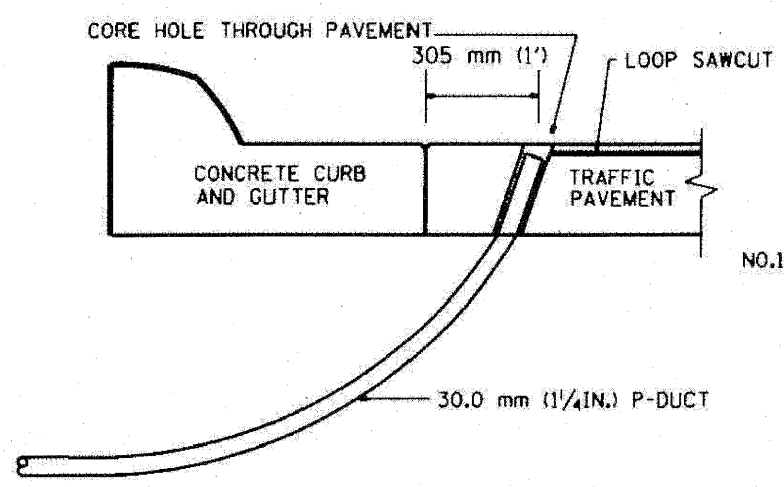
TYPICAL LOOP SAWCUT LAYOUT



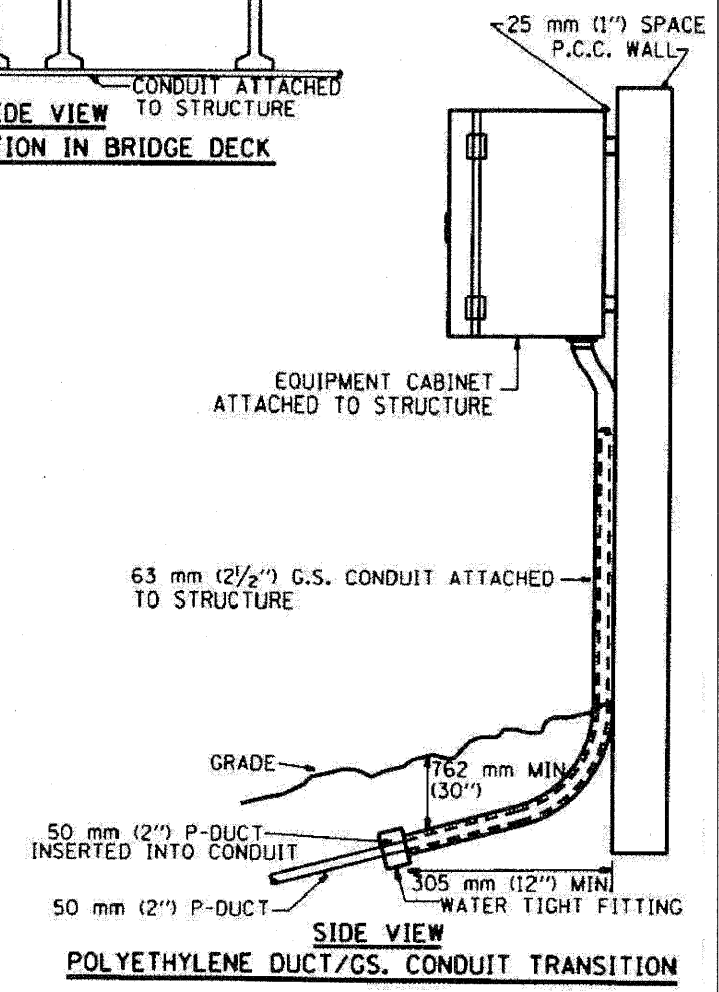
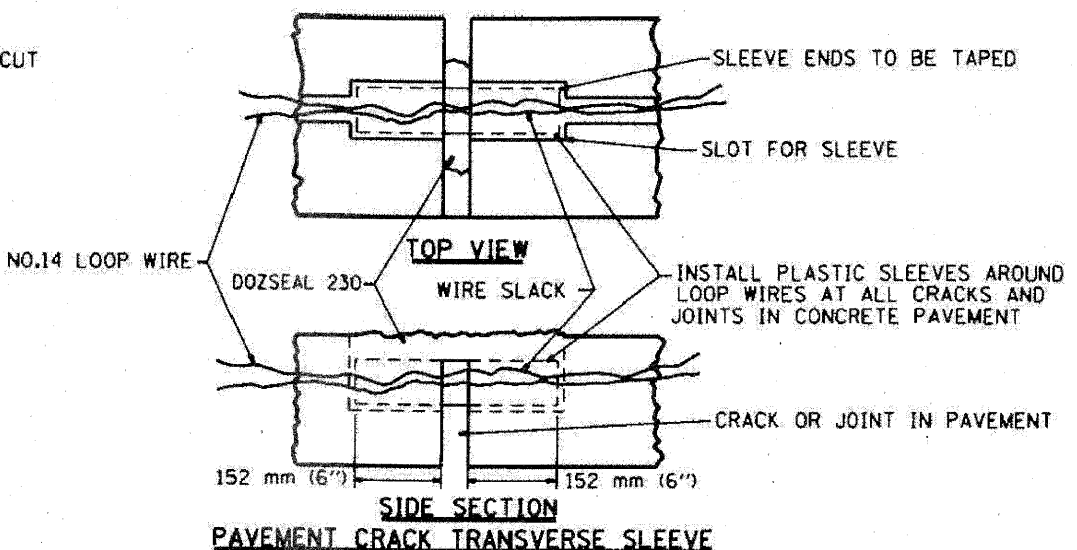
LOOP CROSS SECTION IN PAVEMENT



MULTIPLE LOOP SPLICING



SIDE SECTION LOOP LEAD-IN TRANSITION DETAIL



REVISION	DATE
R.L.	5/79
R.L.	5/79
T.C.	11/79
R.L.	08/79
T.C.	10/79

ILLINOIS DEPARTMENT OF TRANSPORTATION  
TRAFFIC SYSTEMS CENTER

**LOOP, CONDUIT & DUCT INSTALLATION DETAILS**

SCALE: VERT. NONE HORIZ. \_\_\_\_\_

DATE 6-22-94

DRAWN BY: C.A.  
CHECKED BY: R.J.

TRAFFIC SYSTEMS CENTER (TY-1TSC-418\*4)

FILE NAME =	DESIGNED - GHT	REVISED -
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PLOT DATE = 1/25/2018	DATE - 1/25/10	REVISED -

**benesch**

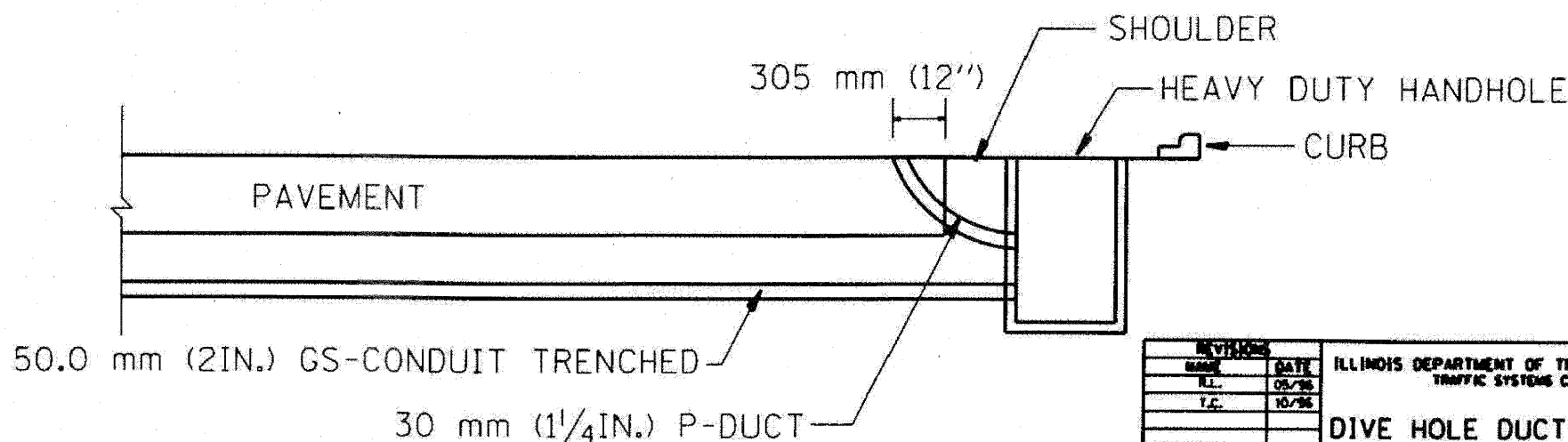
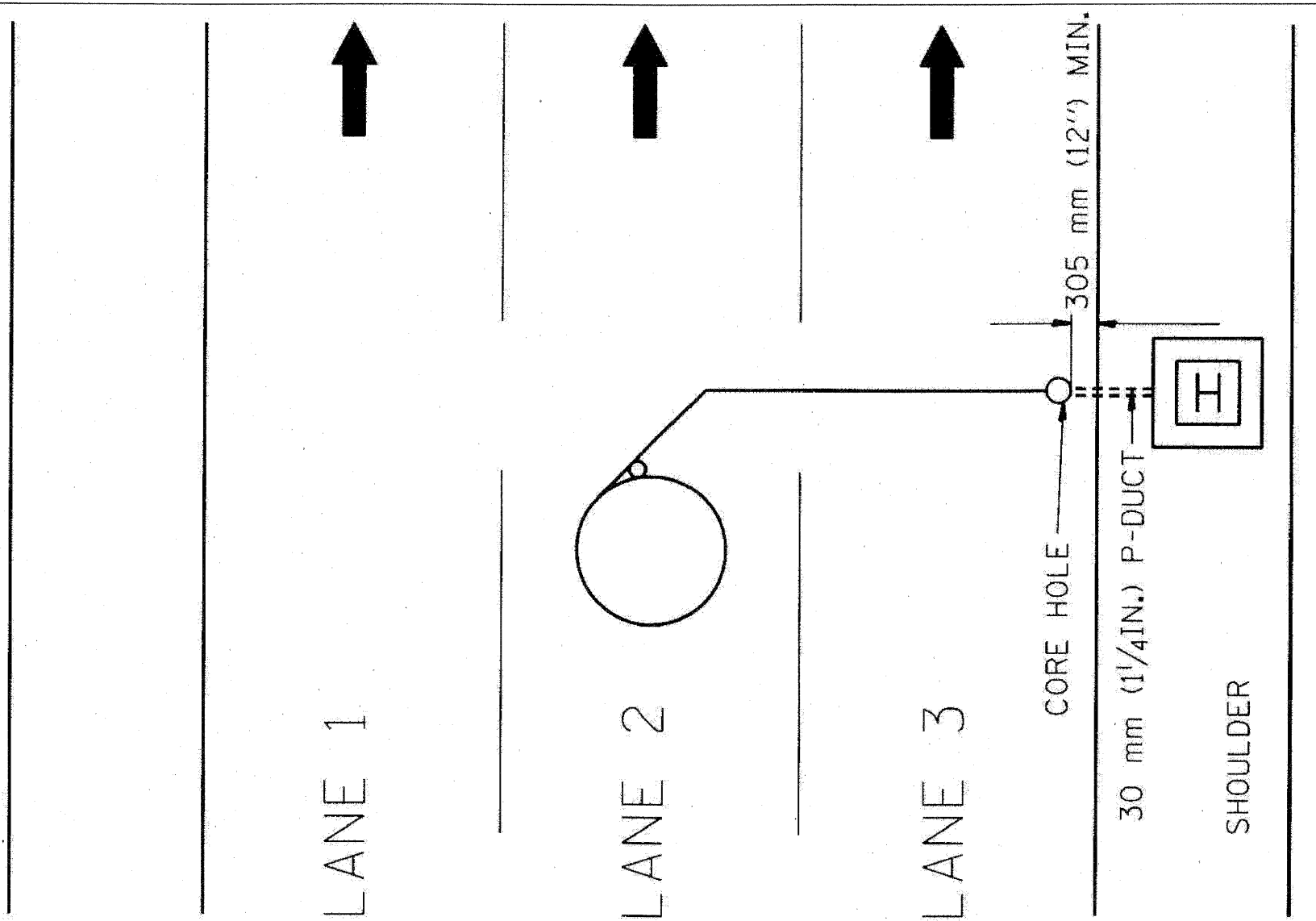
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

TRAFFIC SYSTEMS CENTER  
DETAIL SHEETS

SCALE: N.T.S. SHEET NO. 12 OF 16 SHEETS STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	(3435, ETC., 3838RS-5)	COOK	264	244
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT			CONTRACT NO. 60G52	

F.A.J. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
STA. _____ TO STA. _____				
FED. ROAD DIST. NO. _____		ILLINOIS FED. AID PROJECT _____		



REVISED	
NAME	DATE
R.L.	05/98
T.C.	10/98

ILLINOIS DEPARTMENT OF TRANSPORTATION  
TRAFFIC SYSTEMS CENTER

**DIVE HOLE DUCT SYSTEM**

SCALE: VERT. NONE  
HORIZ. \_\_\_\_\_

DATE 11/7/98

DRAWN BY G.A.L.  
CHECKED BY R.L.

**TRAFFIC SYSTEMS CENTER (TY-1TSC-418\*8)**

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**benesch**

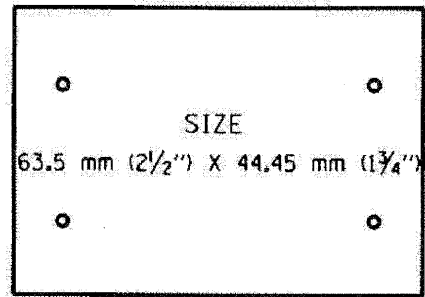
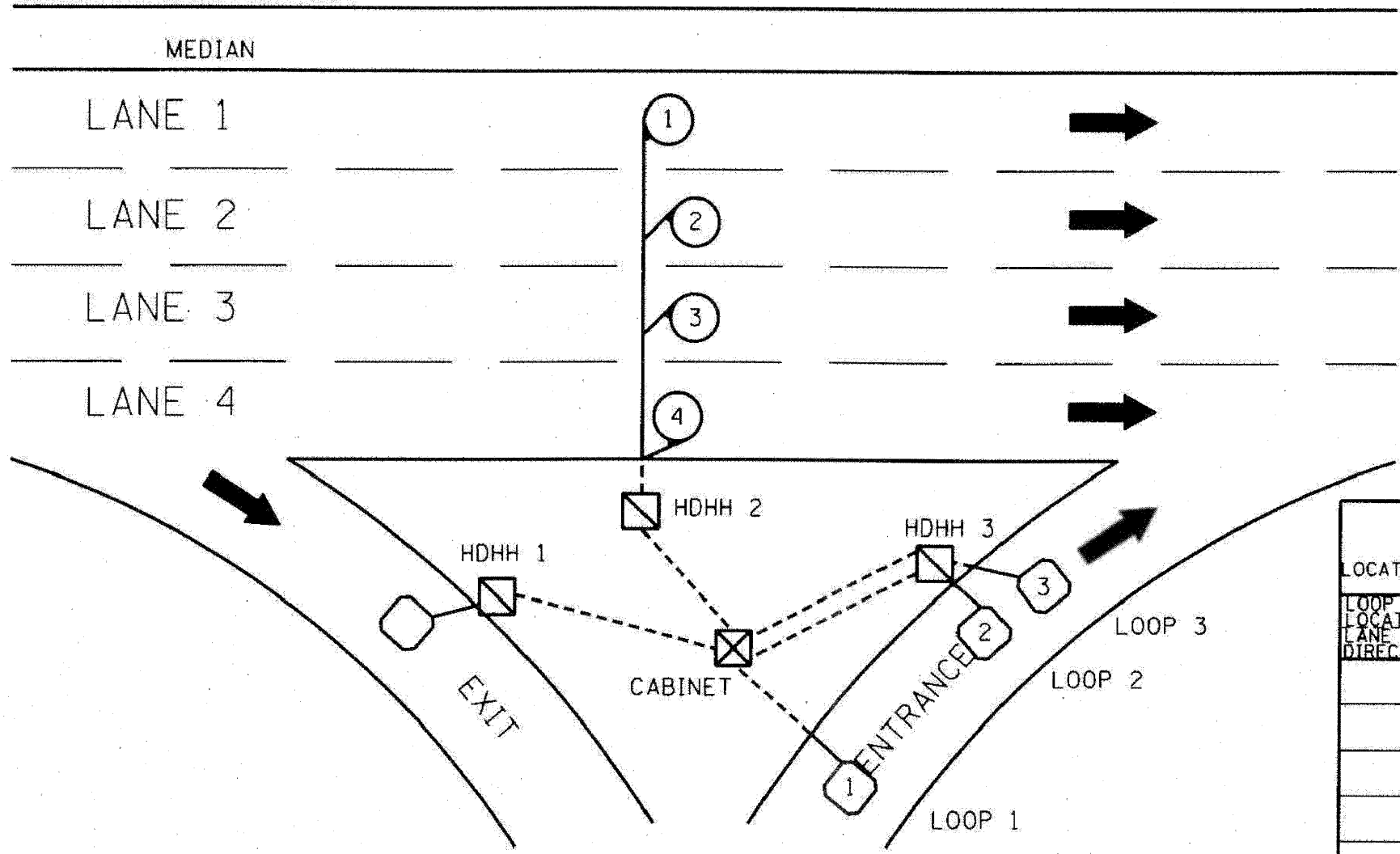
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

TRAFFIC SYSTEMS CENTER  
DETAIL SHEETS

SCALE: N.T.S. SHEET NO. 13 OF 16 SHEETS STA. \_\_\_\_\_ TO STA. \_\_\_\_\_

F.A.J. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	(3435, ETC., 3838)RS-5	COOK	264	245
FED. ROAD DIST. NO. _____		ILLINOIS FED. AID PROJECT _____		

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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.	5/94
T.C.	10/98

ILLINOIS DEPARTMENT OF TRANSPORTATION  
TRAFFIC SYSTEMS CENTER  
**LOOP STATUS REPORT**  
SCALE: NONE  
DATE 6-27-94  
DRAWN BY G.M.  
CHECKED BY R.L.

FILE NAME =	DESIGNED - GHT	REVISED -
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PLOT DATE = 1/25/2010	DATE - 1/25/10	REVISED -

**benesch**

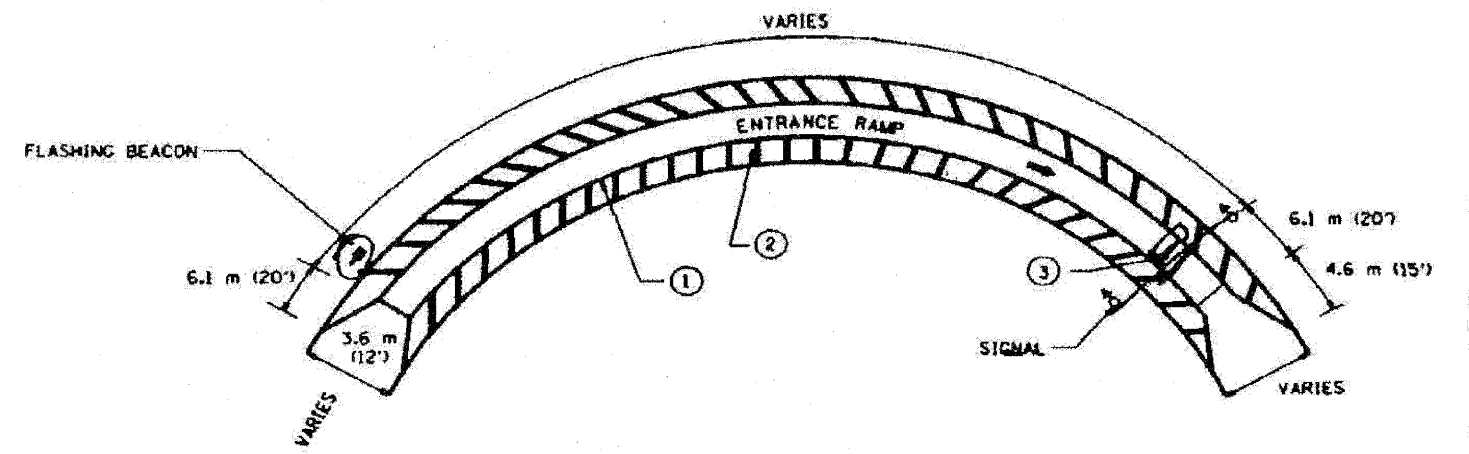
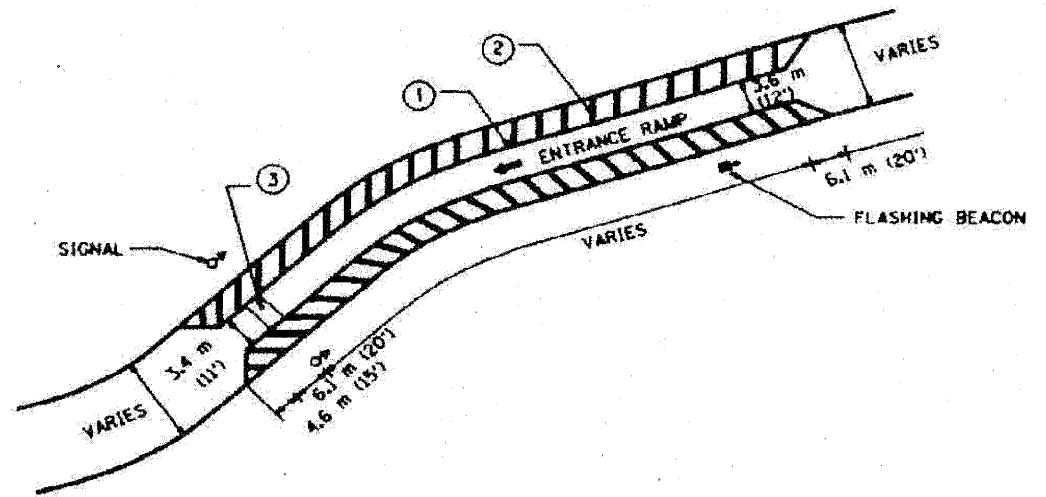
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

TRAFFIC SYSTEMS CENTER DETAIL SHEETS		
SCALE: N.T.S.	SHEET NO. 14 OF 16 SHEETS	STA. TO STA.

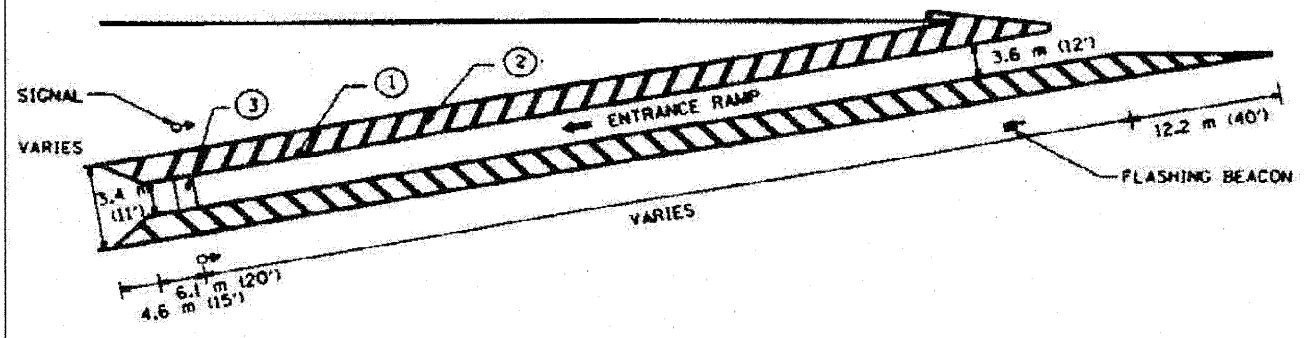
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	(3435, ETC., 3838IRS-5	COOK	264	246
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT	
			CONTRACT NO. 60G52	

**TRAFFIC SYSTEMS CENTER (TY-1TSC-418\*7)**

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



FRONTAGE ROAD



PAVIMENT MARKING

- ① 305 mm (12") WHITE CHANNEL MARKINGS
- ② 203 mm (8") WHITE CROSS-HATCHING AT 3.05 m (10') INTERVALS
- ③ 609 mm (24") WHITE STOP BAR CENTERED BETWEEN SIGNALS

REVISION	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
TRAFFIC SYSTEMS CENTER  
**TYPICAL RAMP  
METERING STRIPING**  
SCALE: NOT SHOWN  
DATE: 8-22-94  
DRAWN BY: C.M.  
CHECKED BY: R.L.

TRAFFIC SYSTEMS CENTER (TY-1TSC-500#1)

FILE NAME =	DESIGNED - GHT	REVISED -
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STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

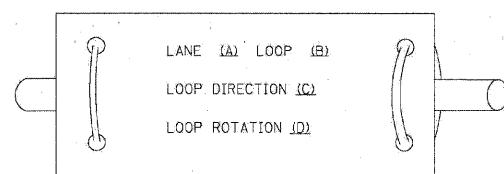
TRAFFIC SYSTEMS CENTER DETAIL SHEETS	
SCALE: N.T.S.	SHEET NO. 15 OF 16 SHEETS
STA.	TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	(3435, ETC., 3838IRS-5)	COOK	264	247
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT	CONTRACT NO. 60652	

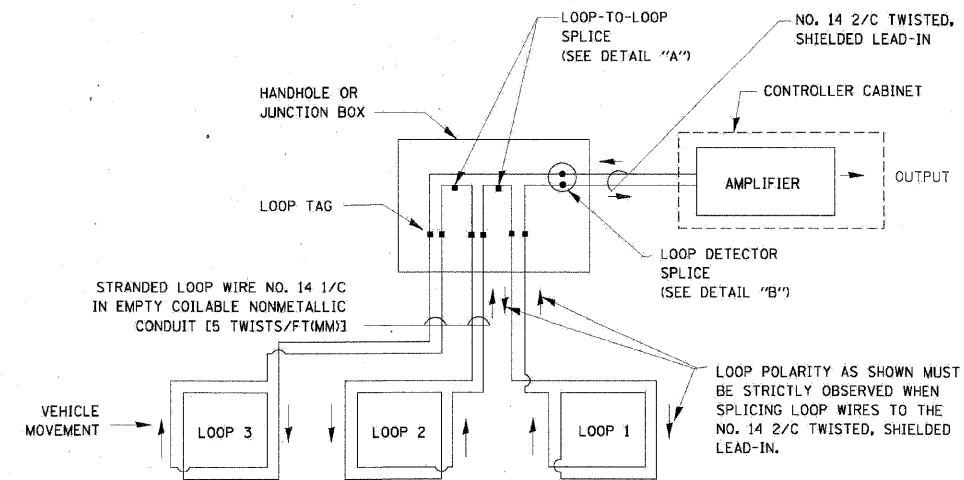
**LOOP DETECTOR NOTES**

- EACH PAIR OF LOOP WIRES SHALL BE PLACED IN A SEPARATE EMPTY COILABLE NONMETALLIC CONDUIT FROM THE EDGE OF PAVEMENT TO THE HANDHOLE. SPACING BETWEEN THE HOLES DRILLED IN THE PAVEMENT SHALL NOT BE LESS THAN 6" (150 mm). EMPTY COILABLE NONMETALLIC CONDUIT SHALL BE INCLUDED IN THE COST OF THE LOOP WIRE.
- THE NUMBER OF LOOP TURNS SHALL BE AS RECOMMENDED BY THE AMPLIFIER MANUFACTURER. ALL ADJACENT SIDES OF THE LOOPS SHALL BE INSTALLED IN SUCH A WAY THAT THE CURRENT FLOW IS IN THE SAME DIRECTION TO REINFORCE ITS MAGNETIC FIELDS FOR SMALL VEHICLE DETECTION.
- EACH LOOP LEAD-IN SHALL BE IDENTIFIED AND PERMANENTLY TAGGED IN THE HANDHOLE. EACH LEAD-IN CABLE TAG SHALL INDICATE THE LOCATION OF THE LOOP, LOOP ROTATION (CLOCKWISE/COUNTERCLOCKWISE), LOOP LEAD-IN DIRECTION (IN OR OUT), LOOP CABLE NUMBER AND LOCATION IN CABINET, AND NUMBER OF TURNS IN THE DETECTOR LOOPS IN WATER PROOF INK AS INDICATED ON THE DISTRICT 1 STANDARD TRAFFIC SIGNAL DESIGN DETAIL. THE CONTRACTOR SHALL MARK LOOP LOCATIONS ON RECORD DRAWINGS AND PRESENT TO THE ENGINEER AFTER FINAL INSPECTION. LOOPS SHALL BE MARKED BY LANE AND LOOP NUMBER. SEE DETAIL BELOW.
- ALL LOOP CABLE SHALL BE FASTENED WITH PLASTIC TIE WRAP TO THE HANDHOLE HOOKS.
- IN ASPHALT PAVEMENT, LOOPS SHOULD BE PLACED IN THE BINDER AND DIVEHOLES MARKED AT THE CURB WITH A SAW-CUT. THE SAW-CUT SHALL BE CUT IN ACCORDANCE WITH LOCAL AND E.P.A. DUST CONTROL REQUIREMENTS. DETECTOR LOOP(S) SHALL NOT BE INSTALLED IN WET CONDITIONS AND THE SAW-CUTS MUST BE FREE OF DEBRIS AND RESIDUE SUCH AS DUST AND WATER WHICH IS TO BE ACHIEVED BY THE USE OF COMPRESSED AIR, WIRE BRUSHING AND HEAT DRYING ACCORDING TO SEALANT MANUFACTURER REQUIREMENTS. THE DETECTOR WIRE SHALL BE HELD IN PLACE BY THE USE OF FORM WEDGES. WEDGES SHALL BE SPACED NO MORE THAN 18" (450 mm) APART.
- LOOP SPLICES SHALL BE SOLDERED USING A SOLDERING IRON. BLOW TORCHES OR OTHER DEVICES WHICH OXIDIZE COPPER CABLE SHALL NOT BE ALLOWED FOR SOLDERING OPERATIONS. SEE DETAIL BELOW RIGHT.
- PREFORMED DETECTOR LOOPS SHALL BE USED, AS SHOWN ON THE PLANS, WHERE NEW CONCRETE PAVEMENT IS PROPOSED. THE INSTALLATION OF PREFORMED LOOPS SHALL BE IN ACCORDANCE WITH THE DISTRICT 1 SPECIFICATIONS OR AS DIRECTED BY THE ENGINEER.

**LOOP LEAD-IN CABLE TAG**

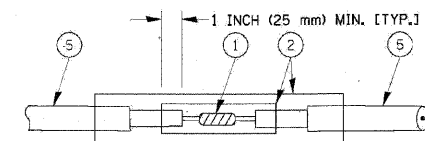


- LANE 1 IS THE LANE CLOSEST TO THE CENTERLINE OF THE ROADWAY
- LOOP #1 IS THE LOOP IN THE LANE CLOSEST TO THE INTERSECTION.
- LABEL LOOP CABLE "IN" OR LOOP CABLE "OUT".
- LABEL LOOP CABLE CLOCKWISE OR LOOP CABLE COUNTERCLOCKWISE.

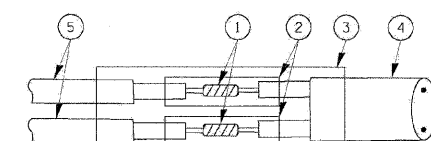


**DETECTOR LOOP WIRING SCHEMATIC**

- LOOPS SHALL BE SPLICED IN SERIES.
- SAW-CUTS SHALL BE A MINIMUM WIDTH OF 5/16" (8 mm).
- SAW-CUT DEPTHS SHALL BE 3" (75 mm). IF IN CONCRETE, THE SAW-CUT DEPTH SHALL BE TO THE TOP OF THE REINFORCEMENT.
- LOOP CORNERS SHALL BE DRILLED WITH A 2" (50 mm) DIAMETER CORE.

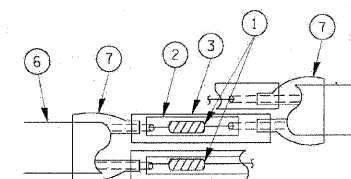


**DETAIL "A"  
LOOP-TO-LOOP SPLICE**

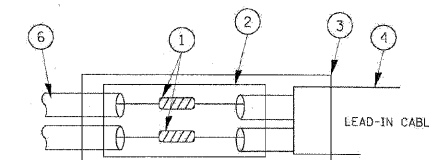


**DETAIL "B"  
LOOP-TO-CONTROLLER SPLICE**

**TYPE I LOOP**



**DETAIL "A"  
LOOP-TO-LOOP SPLICE**



**PRE-FORMED LOOP**

**DETAIL "B"  
LOOP-TO-CONTROLLER SPLICE**

**LOOP DETECTOR SPLICE**

- WESTERN UNION SPLICE SOLDERED WITH ROSIN CORE FLUX. ALL EXPOSED SURFACES OF THE SOLDER SHALL BE SMOOTH.
- WCSMW 30/100 HEAT SHRINK TUBE, MINIMUM LENGTH 3" (75 mm), UNDERWATER GRADE.
- WCS 200/750 HEAT SHRINK TUBE, MINIMUM LENGTH 6" (150 mm), UNDERWATER GRADE.
- NO. 14 2/C TWISTED, SHIELDED CABLE.
- LOOP CONDUCTOR WITH FLEXIBLE PLASTIC TUBE.
- PRE-FORMED LOOP
- XL POLYOLEFIN 2 CONDUCTOR BREAKOUT SEALS, TYCO CBR-2 OR APPROVED EQUAL

FILE NAME =	USER NAME = kenthphragbia	DESIGNED - DAD	REVISED -
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USER NAME = tsjank	PLOT SCALE = 200.0000 * 1/ IN	CHECKED - DAD	REVISED -
PLOT DATE = 10/25/2009	PLOT DATE = 10/25/2009	DATE - 10/28/09	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**DISTRICT ONE  
STANDARD TRAFFIC SIGNAL DESIGN DETAILS**

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

FILE NAME =	DESIGNED - GHT	REVISED -
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USER NAME = tsjank	CHECKED - MPM	REVISED -
PLOT DATE = 1/25/2010	DATE - 1/25/10	REVISED -

**benesch**

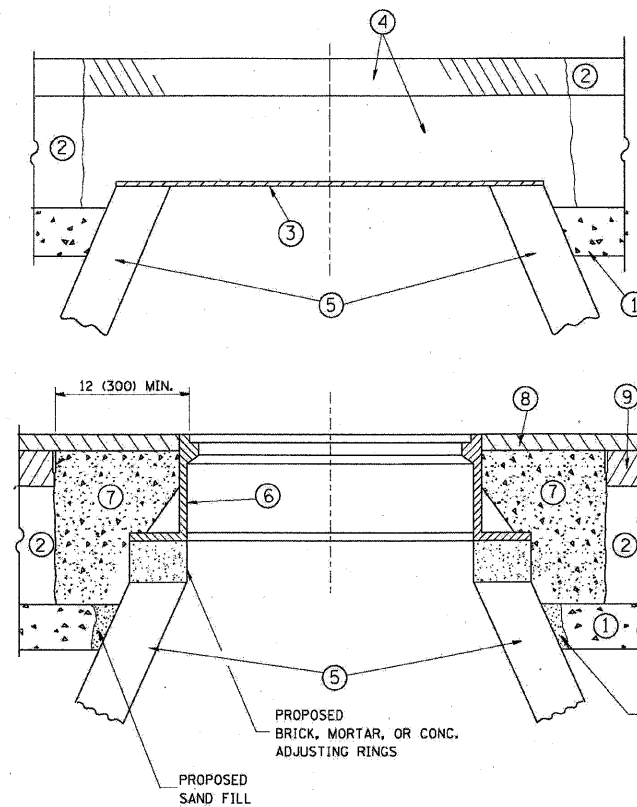
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**DISTRICT ONE - DETECTOR LOOP REPLACEMENT  
I-290 (CENTER RAMPS) @ ILL RTE 43**

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

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	13435, ETC., 3838/RS-5	COOK	264	248
CONTRACT NO. 60G52				
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				





**CONSTRUCTION PROCEDURES**

**STAGE 1 (BEFORE PAVEMENT MILLING)**

- A) REMOVE A MINIMUM OF 12 (300) OF THE PAVEMENT FROM AROUND THE STRUCTURE.
- B) REMOVE THE EXISTING FRAME AND LID FROM THE STRUCTURE.
- C) COVER THE STRUCTURE OPENING WITH A 36 (900) DIAMETER METAL PLATE.
- D) BACKFILL WITH CRUSHED STONE AND A MINIMUM 1 1/2 (40) THICK HMA SURFACE MIX APPROVED BY THE ENGINEER.

**STAGE 2 (AFTER PAVEMENT MILLING)**

- A) REMOVE THE HMA SURFACE MIX AND CRUSHED STONE.
- B) INSTALL THE FRAME AND LID; ADJUST THE FRAME TO ITS FINAL SURFACE ELEVATION.
- C) THE SURROUNDING SPACE SHALL BE FILLED WITH CLASS SI CONCRETE, OR HMA SURFACE COURSE OR HMA BINDER COURSE TO THE ELEVATION OF THE SURFACE OF THE EXISTING BASE COURSE OR THE BINDER COURSE.

THE PROCEDURE EXPLAINED ABOVE SHALL CONFORM TO THE APPLICABLE PORTIONS OF SECTIONS 353, 406, 602, AND 603 OF THE STANDARD SPECIFICATIONS.

**LEGEND**

- ① SUB-BASE GRANULAR MATERIAL
- ② EXISTING PAVEMENT
- ③ 36 (900) DIAMETER METAL PLATE
- ④ PROPOSED CRUSHED STONE AND HMA SURFACE MIX
- ⑤ EXISTING STRUCTURE
- ⑥ FRAME AND LID (SEE NOTES)
- ⑦ CLASS SI CONCRETE, HMA SURFACE COURSE OR HMA BINDER COURSE
- ⑧ PROPOSED HMA SURFACE COURSE
- ⑨ PROPOSED HMA BINDER COURSE

**NOTES:**

EXISTING BROKEN FRAMES AND LIDS SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR AND SHALL BE REPLACED AS DIRECTED BY THE ENGINEER. REPLACEMENT FRAMES AND LIDS WILL BE PAID FOR IN ACCORDANCE WITH ARTICLE 109.04 OF THE STANDARD SPECIFICATIONS UNLESS A SEPARATE PAY ITEM HAS BEEN PROVIDED.

IF THE EXISTING LIDS ARE OPEN, THE FRAME WILL BE ADJUSTED TO THE ELEVATION OF THE MILLED PAVEMENT SURFACE PRIOR TO THE MILLING OPERATION. THE FRAME WILL NOT BE REMOVED AND COVERED BY THE METAL PLATE.

CITY OF CHICAGO CASTINGS ARE THE PROPERTY OF THE CITY AND THE CONTRACTOR SHALL NOTIFY THE CITY FOR REMOVAL AND DISPOSITION OF THE CASTINGS.

THE METAL PLATE USED TO COVER THE STRUCTURE SHALL REMAIN THE PROPERTY OF THE CONTRACTOR.

WHEN STRUCTURES ARE TO BE ADJUSTED OR RECONSTRUCTED, THE LOWERING AND RAISING OF THE FRAMES AND LIDS WILL NOT BE PAID FOR SEPARATELY BUT WILL BE INCLUDED IN THE COST OF THE CORRESPONDING PAY ITEM.

**LOCATION OF STRUCTURES:**

THE CONTRACTOR WILL BE REQUIRED TO KEEP A RECORD OF THE LOCATIONS OF THE BURIED STRUCTURES ACCORDING TO THE STATION AND DISTANCE LEFT OR RIGHT OF THE CENTERLINE OF PAVEMENT. UPON COMPLETION OF THE WORK, THE CONTRACTOR WILL DELIVER THE RECORD TO THE ENGINEER.

**BASIS OF PAYMENT:** THIS WORK WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER EACH FOR "FRAMES AND LIDS TO BE ADJUSTED, SPECIAL" NEW FRAMES AND LIDS, WHEN SPECIFIED, WILL BE PAID FOR SEPARATELY.

**DETAILS FOR FRAMES AND LIDS ADJUSTMENT WITH MILLING**

**BD-08**

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN

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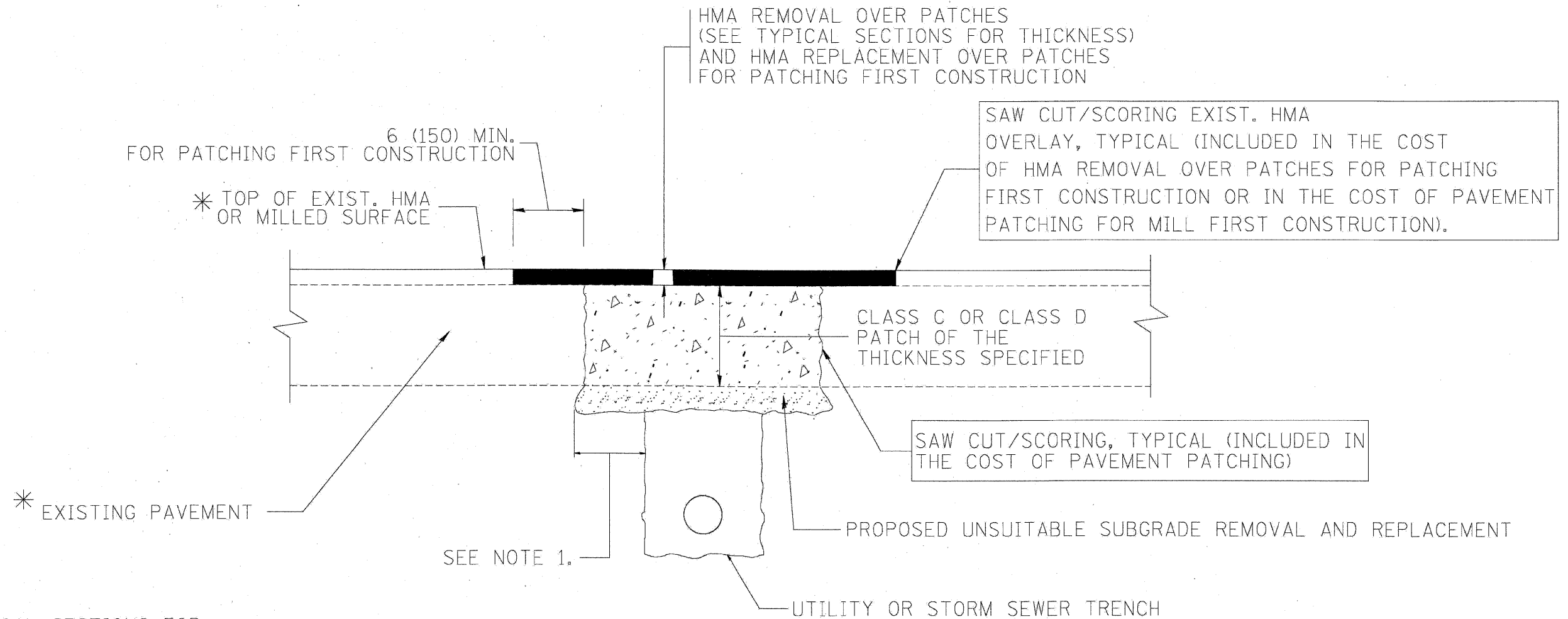
**benesch**

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**FRAMES AND LIDS WITH MILLING**

SCALE: N.T.S. SHEET NO. 1 OF 16 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	(3435, ETC., 3838)RS-5	COOK	264	249
FED. ROAD DIST. NO. [ILLINOIS] FED. AID PROJECT			CONTRACT NO. 60G52	



\* 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.

BD-22  
ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.

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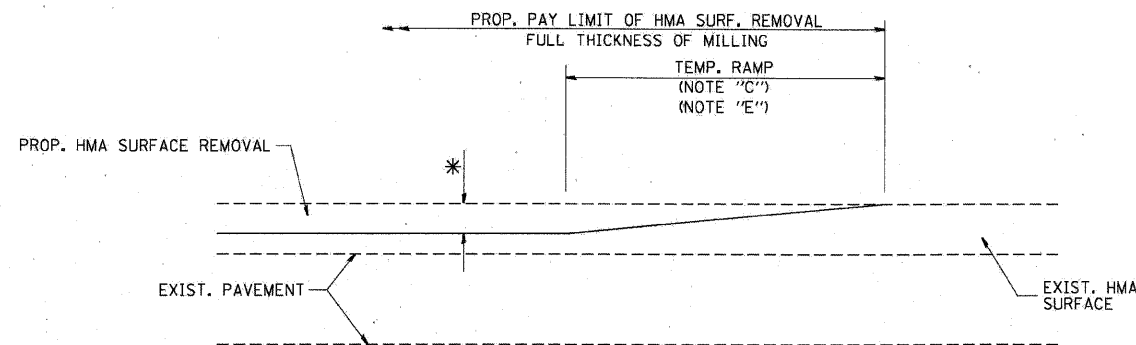
**benesch**

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**PAVEMENT PATCHING FOR HMA SURFACED PAVEMENT**

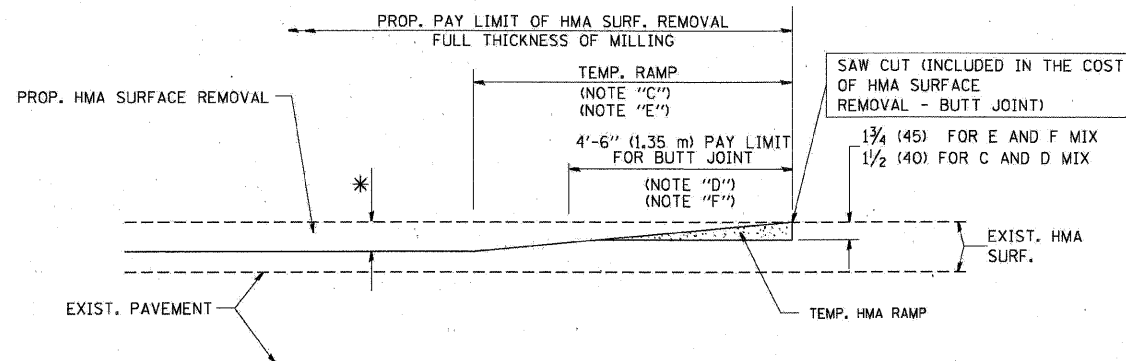
SCALE: N.T.S. SHEET NO. 2 OF 16 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	13435, ETC., 3838RS-5	COOK	264	250
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT	
			CONTRACT NO. 60G52	



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

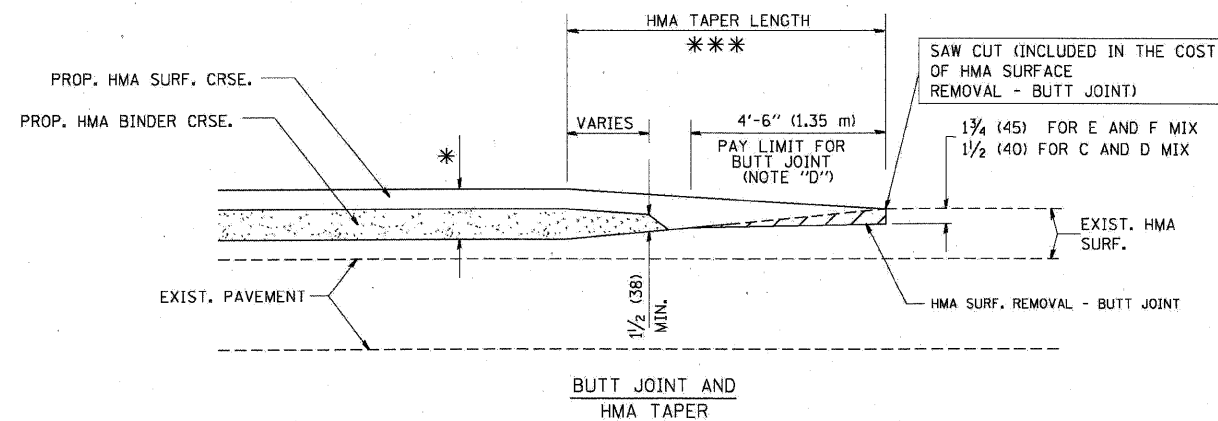
OPTION 1



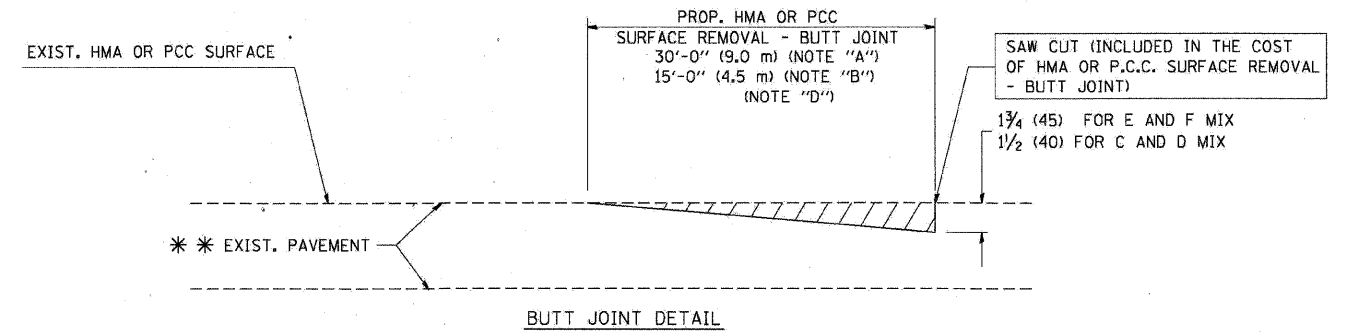
HMA CONSTRUCTED TEMPORARY RAMP  
(FOR BUTT JOINT AND HMA TAPER SEE DETAIL BELOW)

OPTION 2

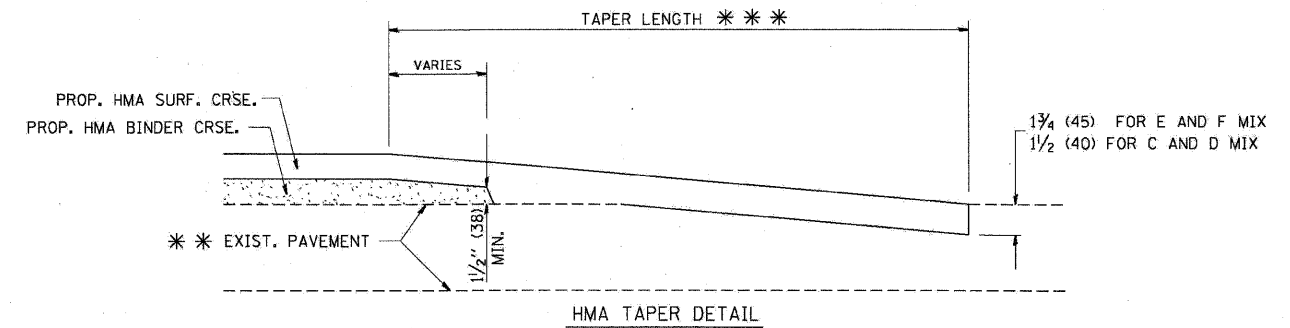
TYPICAL TEMPORARY RAMP



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".

BD-32

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

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**benesch**

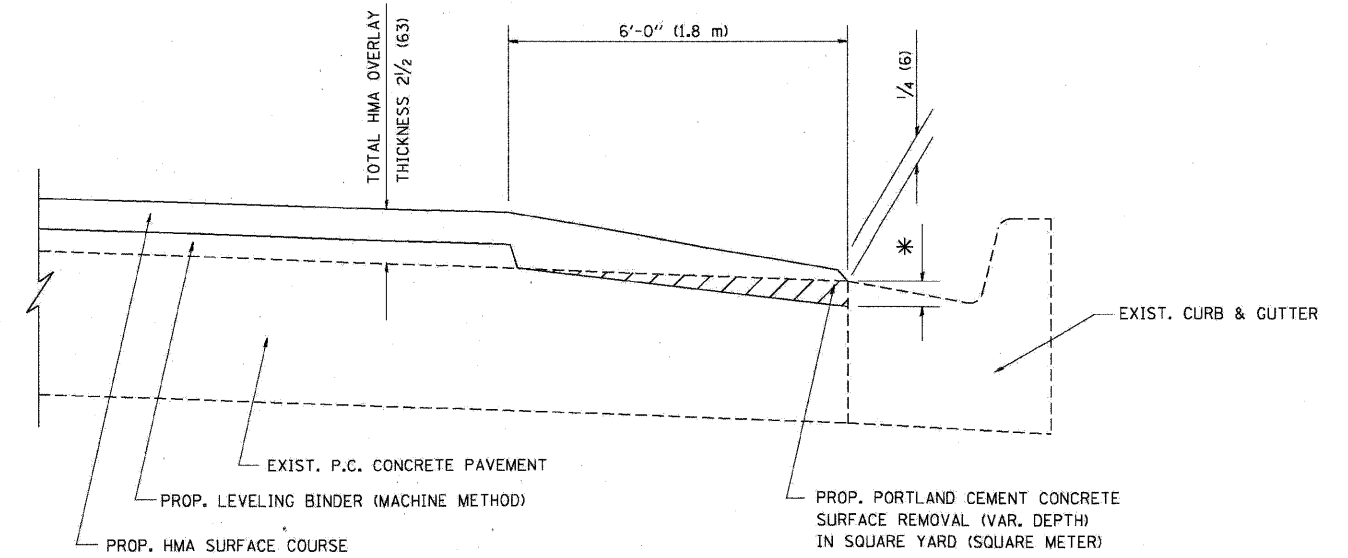
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

BUTT JOINTS AND HMA TAPER

SCALE: N.T.S. SHEET NO. 3 OF 16 SHEETS STA. TO STA.

F.A.J. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	(3435, ETC., 3838)RS-5	COOK	264	251
FED. ROAD DIST. NO.				ILLINOIS FED. AID PROJECT

CONTRACT NO. 60G52



HMA TAPER AT  
EDGE OF P.C.C. PAVEMENT

HMA SURFACE	THICKNESS	LEVELING BINDER	THICKNESS	* MILLING AT GUTTER FLAG
C OR D	1 1/2 (38)	1 (25)		1/4 (33)
F	1 3/4 (44)	3/4 (19)		1/2 (38)

BD-33

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

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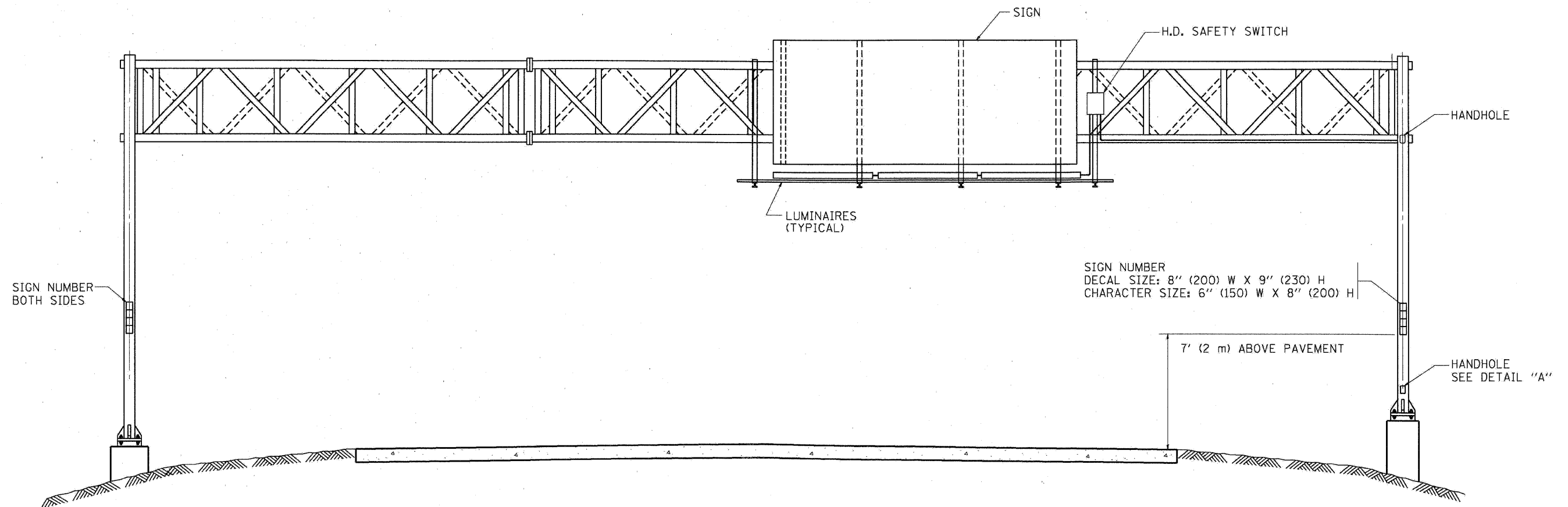
**benesch**

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

HMA TAPER AT EDGE OF PCC PAVEMENT

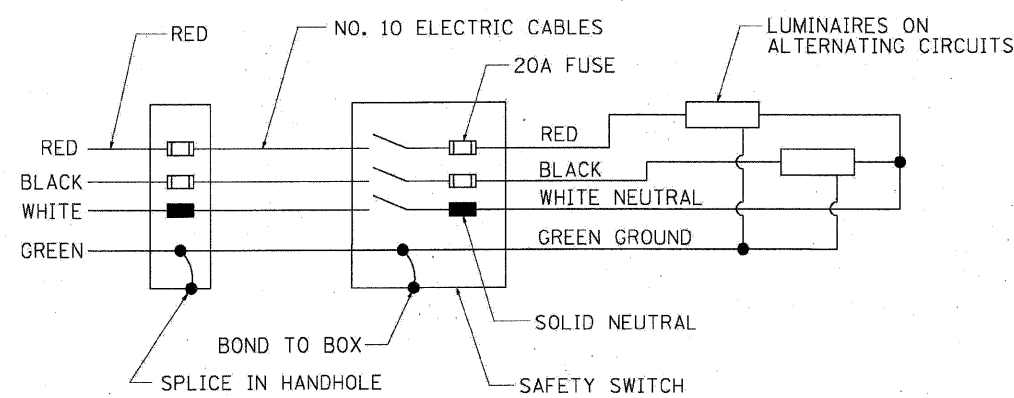
SCALE: N.T.S. SHEET NO. 4 OF 16 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	13435, ETC., 383BRS-5	COOK	264	252
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT	
			CONTRACT NO. 60G52	

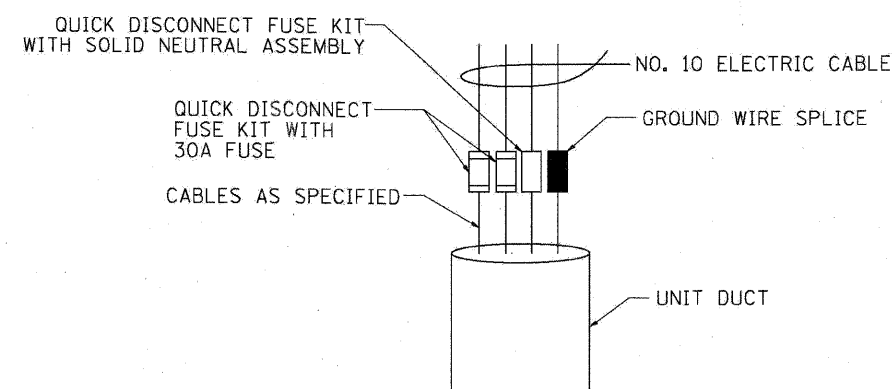


SIGN NUMBER  
 DECAL SIZE: 8" (200) W X 9" (230) H  
 CHARACTER SIZE: 6" (150) W X 8" (200) H

7' (2 m) ABOVE PAVEMENT



WIRING DIAGRAM



DETAIL A

NOTES:

1. ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN
2. ALL CONDUIT ATTACHED TO STRUCTURE SHALL BE GALVANIZED RIGID METALIC CONDUIT, PVC COATED (GRMC, PVC)
3. THE USE OF LIQUID TIGHT METAL CONDUIT (TYPE LFMC) SHALL BE LIMITED TO LOCATIONS WHERE MOVEMENT IS ANTICIPATED AND SHALL NOT EXCEED 5' (1.5 m) IN LENGTH
4. ALL WORK INDICATED SHALL BE INCLUDED IN THE PAY ITEM FOR ELECTRIC CONNECTION TO SIGN STRUCTURE
5. THE SAFETY SWITCH SHALL BE LOCATED ON THE SIDE OF THE SIGN STRUCTURE WHICH IS CLOSEST TO THE SHOULDER, OR EDGE OF PAVEMENT.

BE-600

FILE NAME =	DESIGNED - AJP	REVISED -
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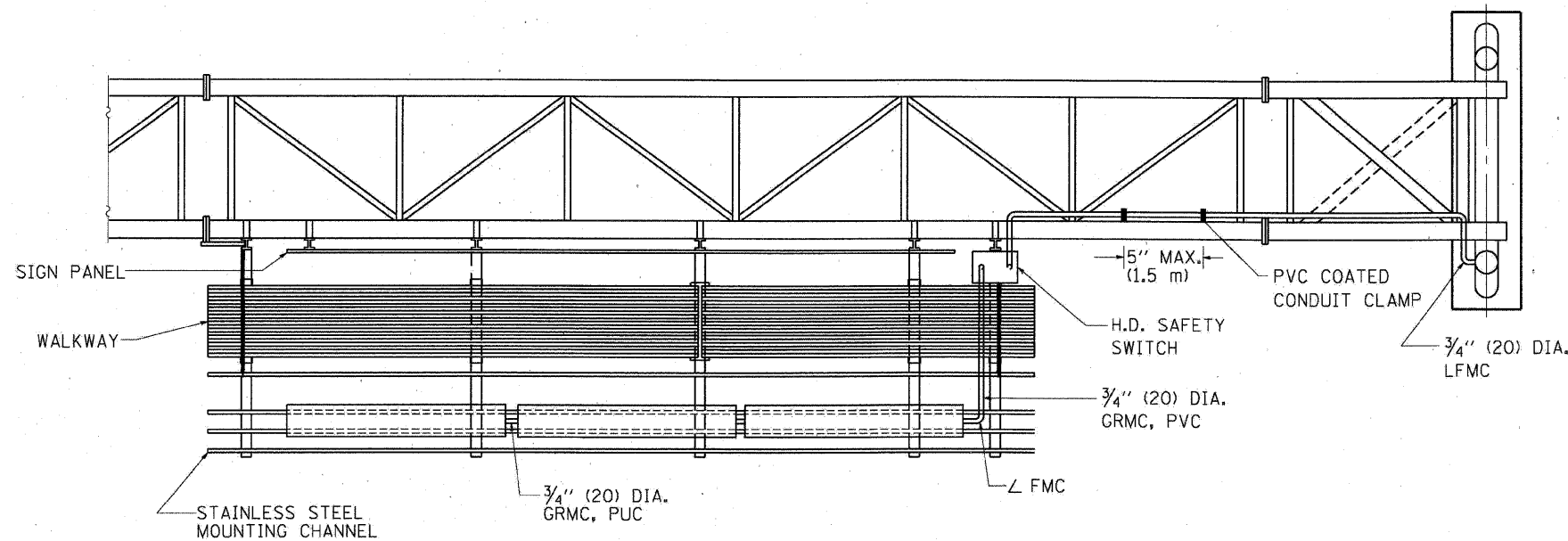
**benesch**

**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

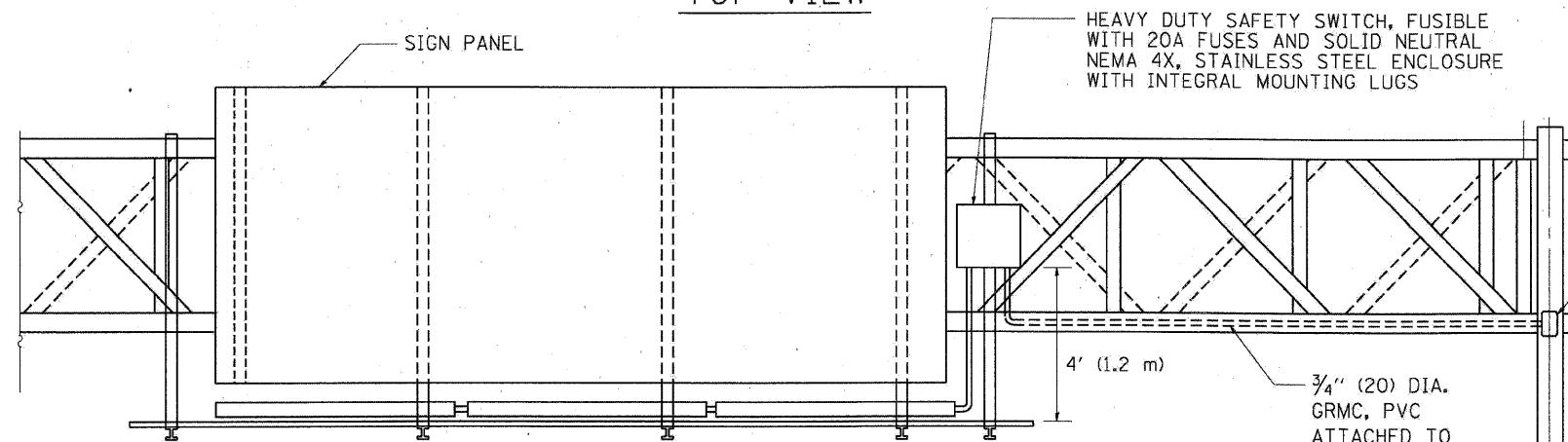
**ELECTRIC CONNECTION TO SIGN STRUCTURE SPAN TYPE**

SCALE: N.T.S. SHEET NO. 5 OF 16 SHEETS STA. TO STA.

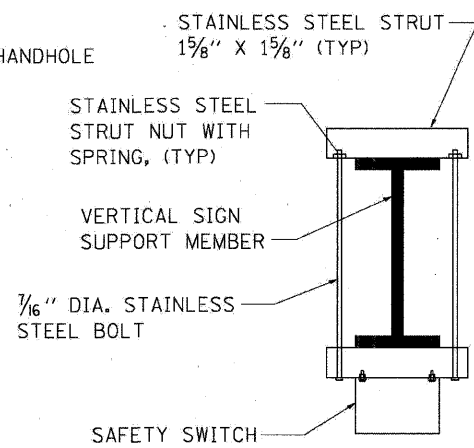
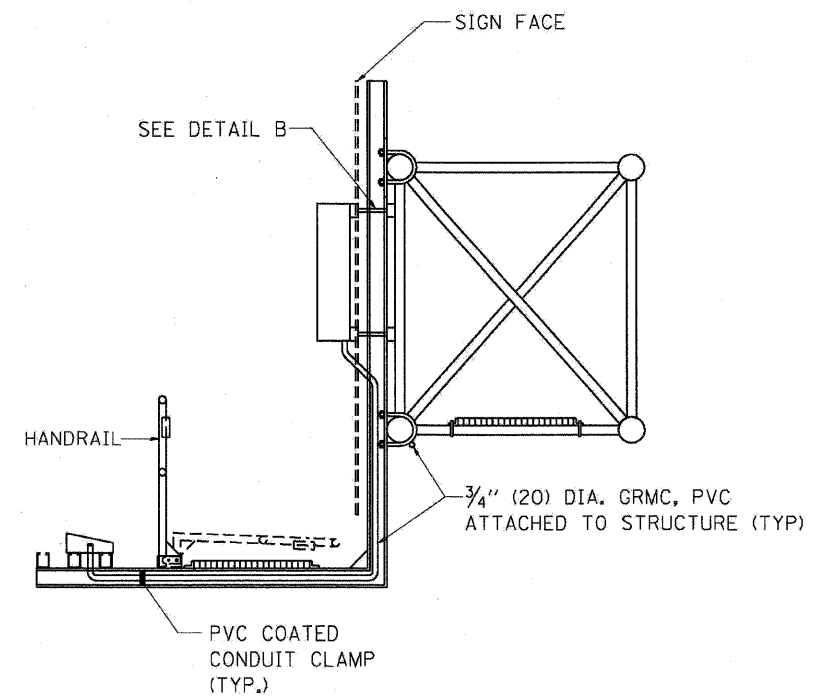
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	(3435, ETC., 3838RS-5)	COOK	264	253
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT			CONTRACT NO. 60G52	



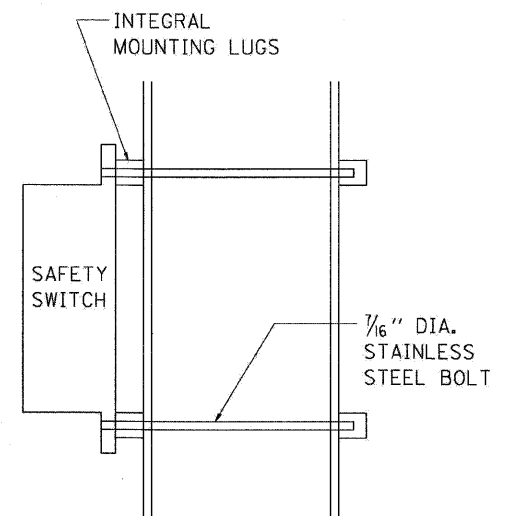
TOP VIEW



ELEVATION VIEW



TOP VIEW



SIDE VIEW

DETAIL B

BE-600

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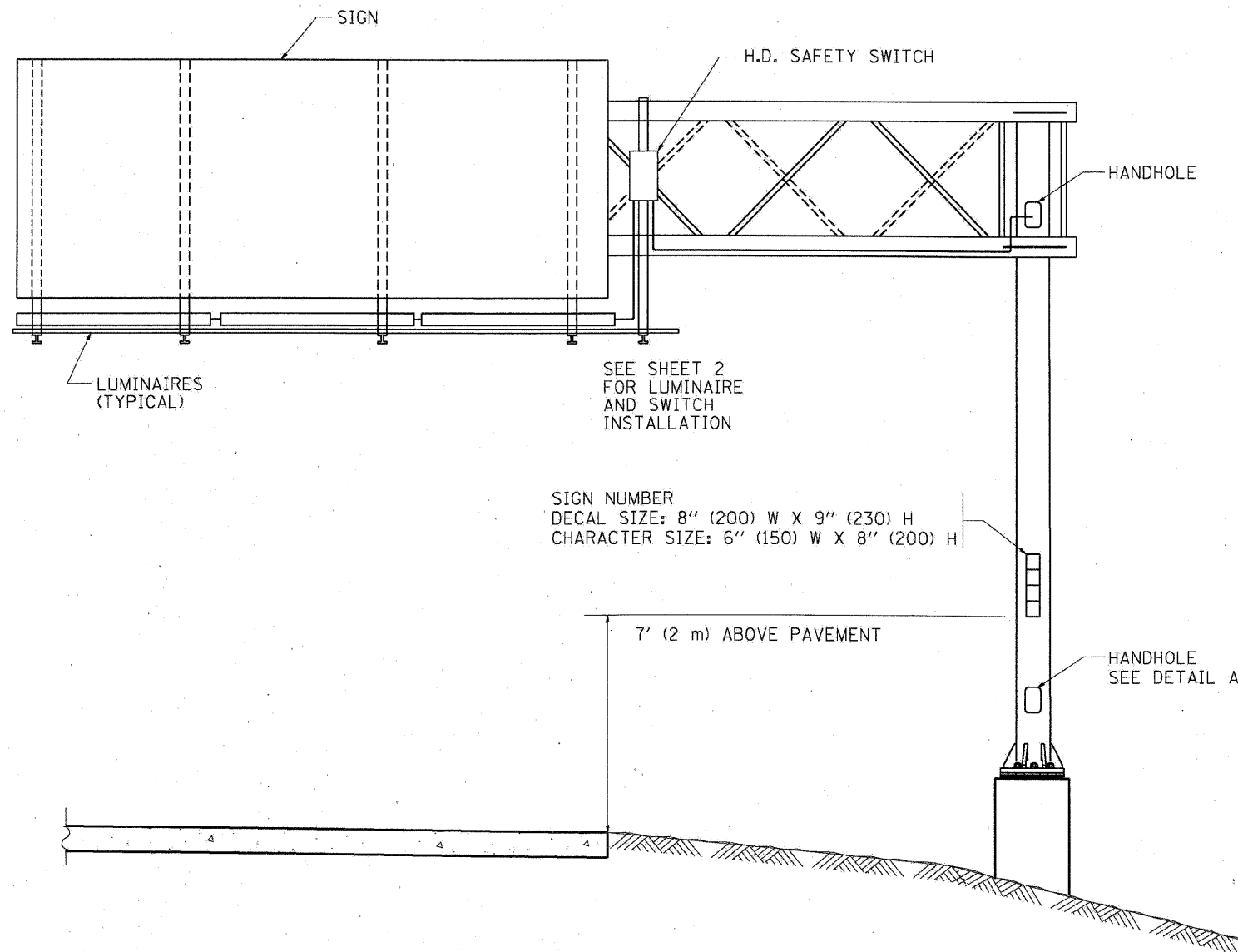
**benesch**

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**ELECTRIC CONNECTION TO SIGN STRUCTURE SPAN TYPE**

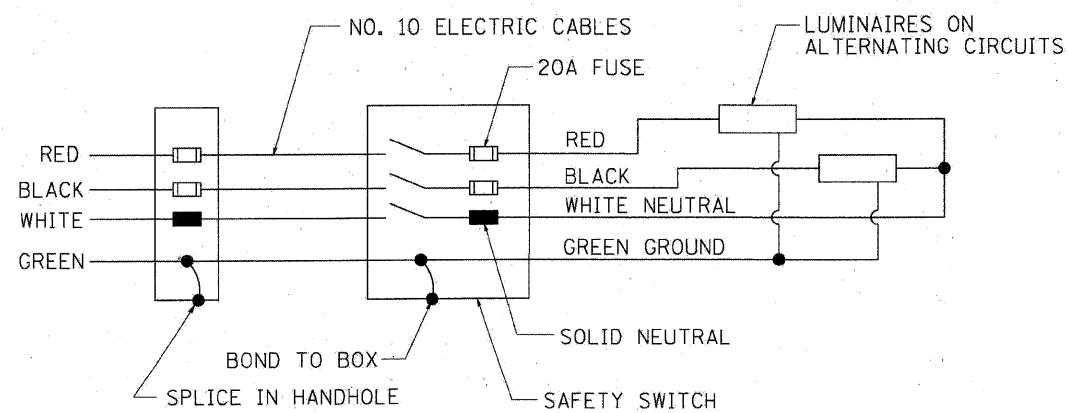
SCALE: N.T.S. SHEET NO. 6 OF 16 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	13435, ETC., 3838RS-5	COOK	264	254
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT			CONTRACT NO. 60G52	

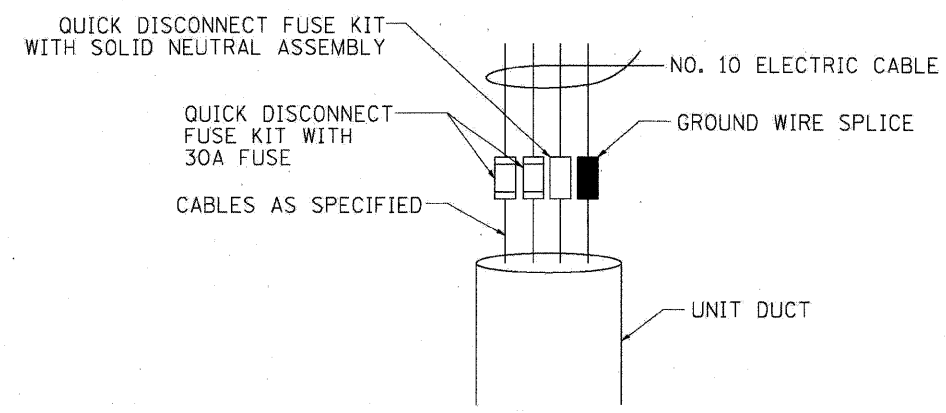


**NOTES:**

1. ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN
2. ALL CONDUIT ATTACHED TO STRUCTURE SHALL BE GALVANIZED RIGID METALIC CONDUIT, PVC COATED (GRMC, PVC)
3. THE USE OF LIQUID TIGHT METAL CONDUIT (TYPE LFMC) SHALL BE LIMITED TO LOCATIONS WHERE MOVEMENT IS ANTICIPATED AND SHALL NOT EXCEED 5' (1.5M) IN LENGTH
4. ALL WORK INDICATED SHALL BE INCLUDED IN THE PAY ITEM FOR ELECTRIC CONNECTION TO SIGN STRUCTURE
5. THE SAFETY SWITCH SHALL BE LOCATED ON THE SIDE OF THE SIGN STRUCTURE WHICH IS CLOSEST TO THE SHOULDER, OR EDGE OF PAVEMENT.



**WIRING DIAGRAM**



**DETAIL A**

**BE-601**

FILE NAME =	DESIGNED - AJP	REVISED -
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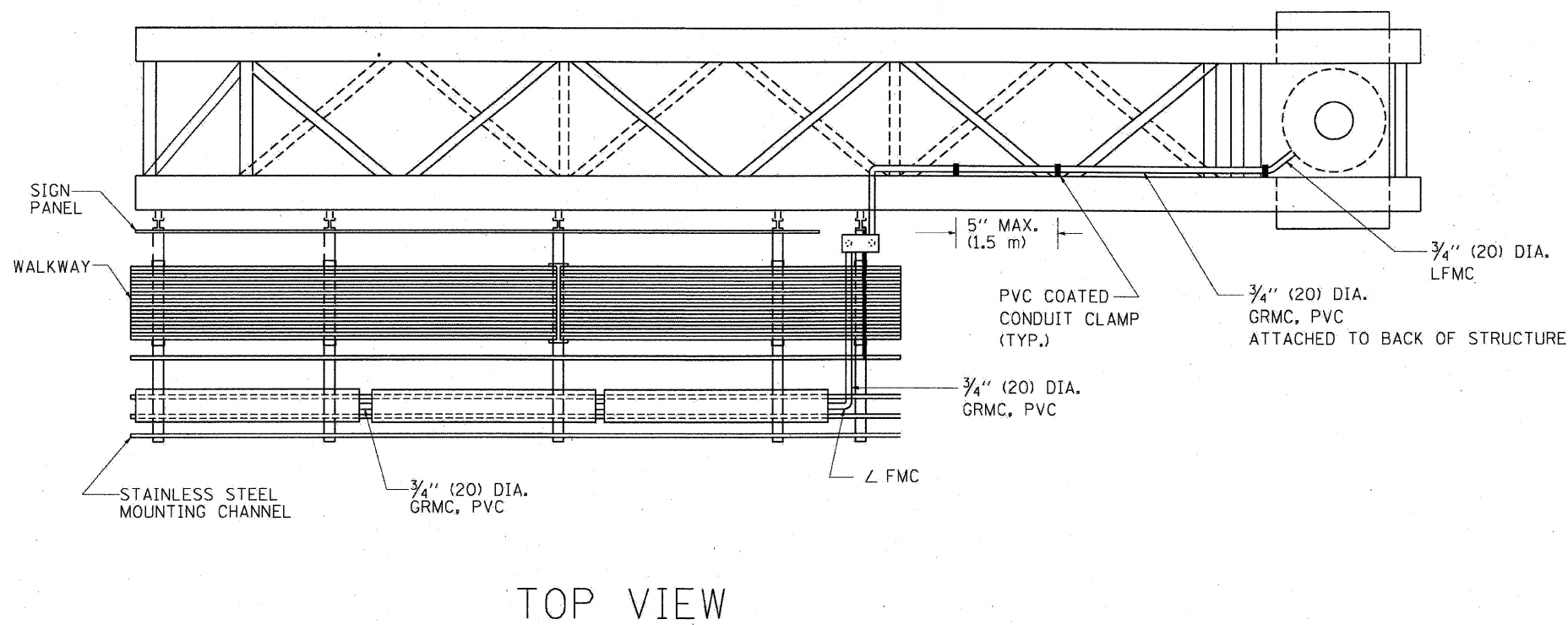
**benesch**

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

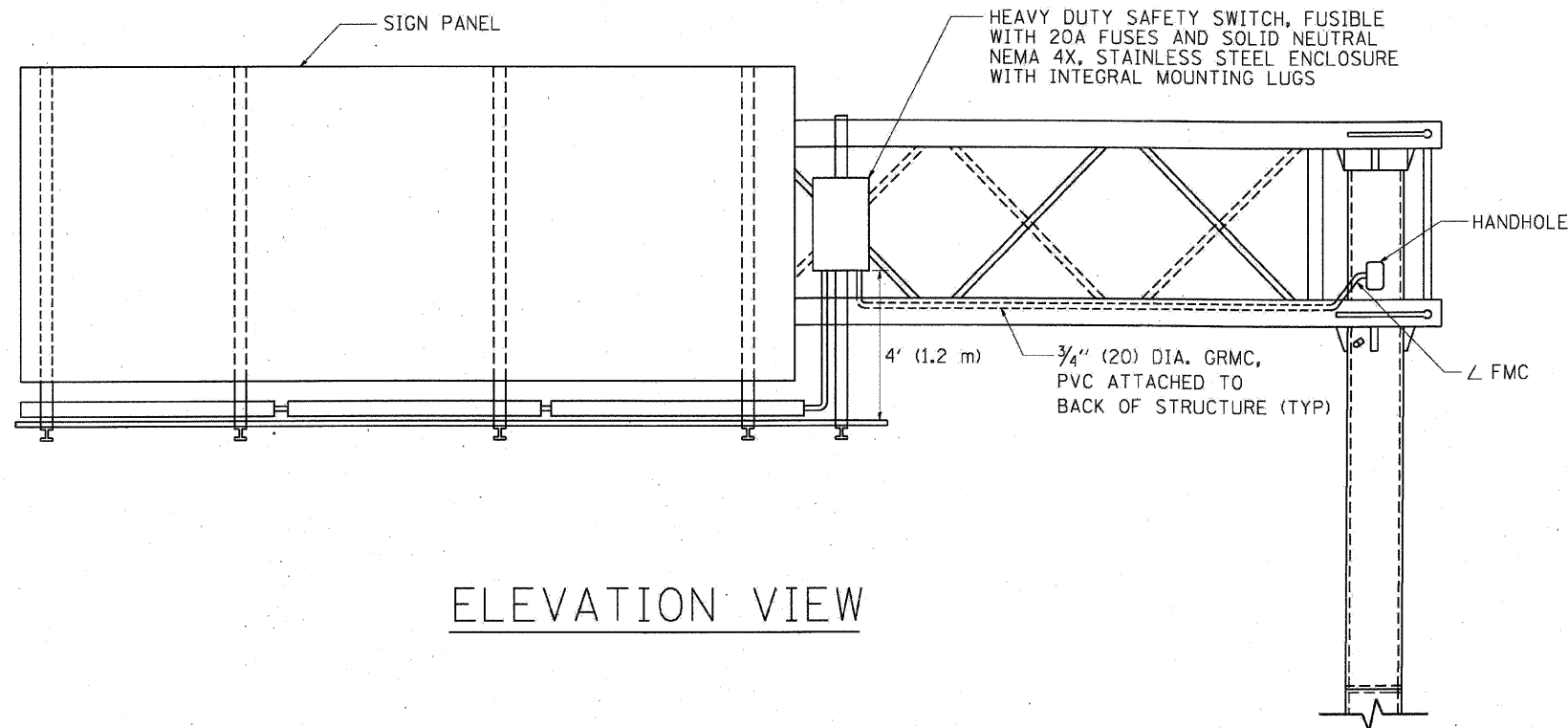
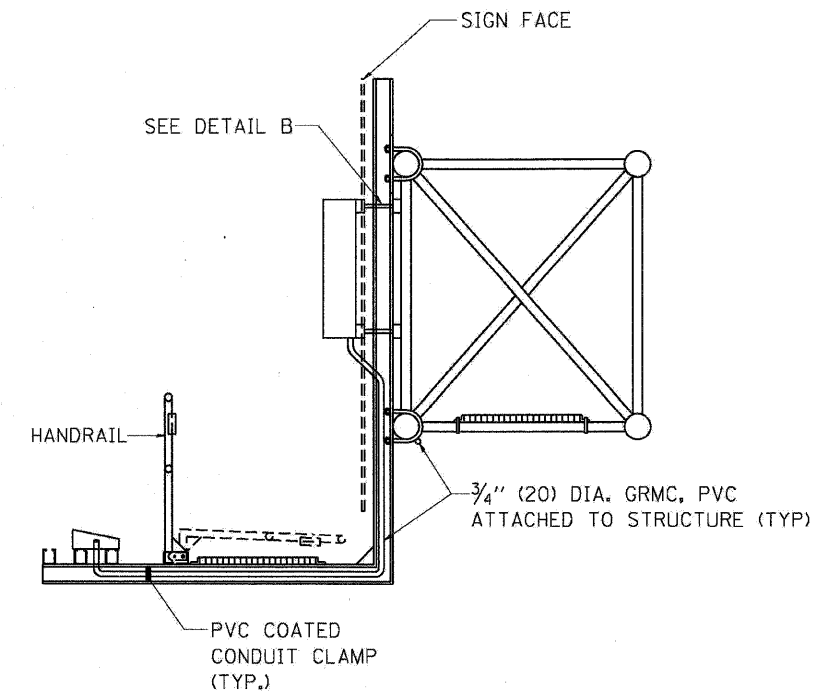
**ELECTRIC CONNECTION TO SIGN STRUCTURE CANTILEVER TYPE**

SCALE: N.T.S. SHEET NO. 7 OF 16 SHEETS STA. TO STA.

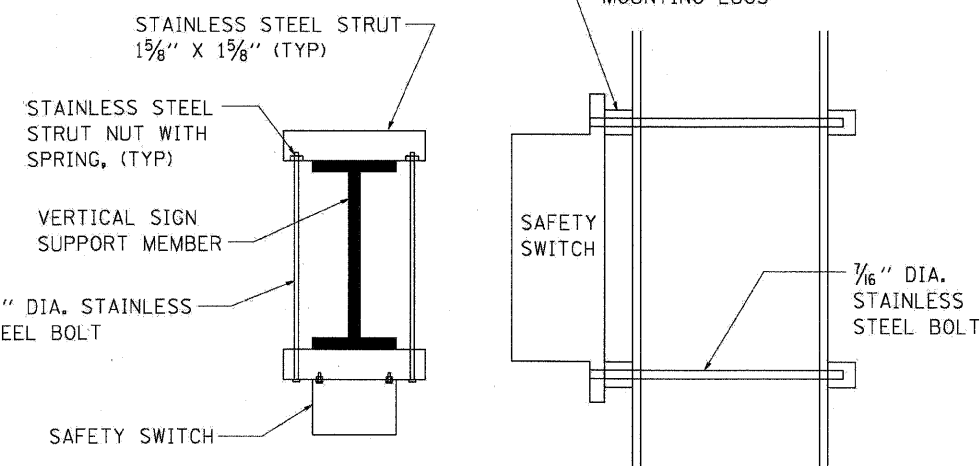
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	(3435, ETC., 3838)RS-5	COOK	264	255
FED. ROAD DIST. NO. [ILLINOIS] FED. AID PROJECT			CONTRACT NO. 60G52	



TOP VIEW



ELEVATION VIEW



TOP VIEW

SIDE VIEW

DETAIL B

BE-601

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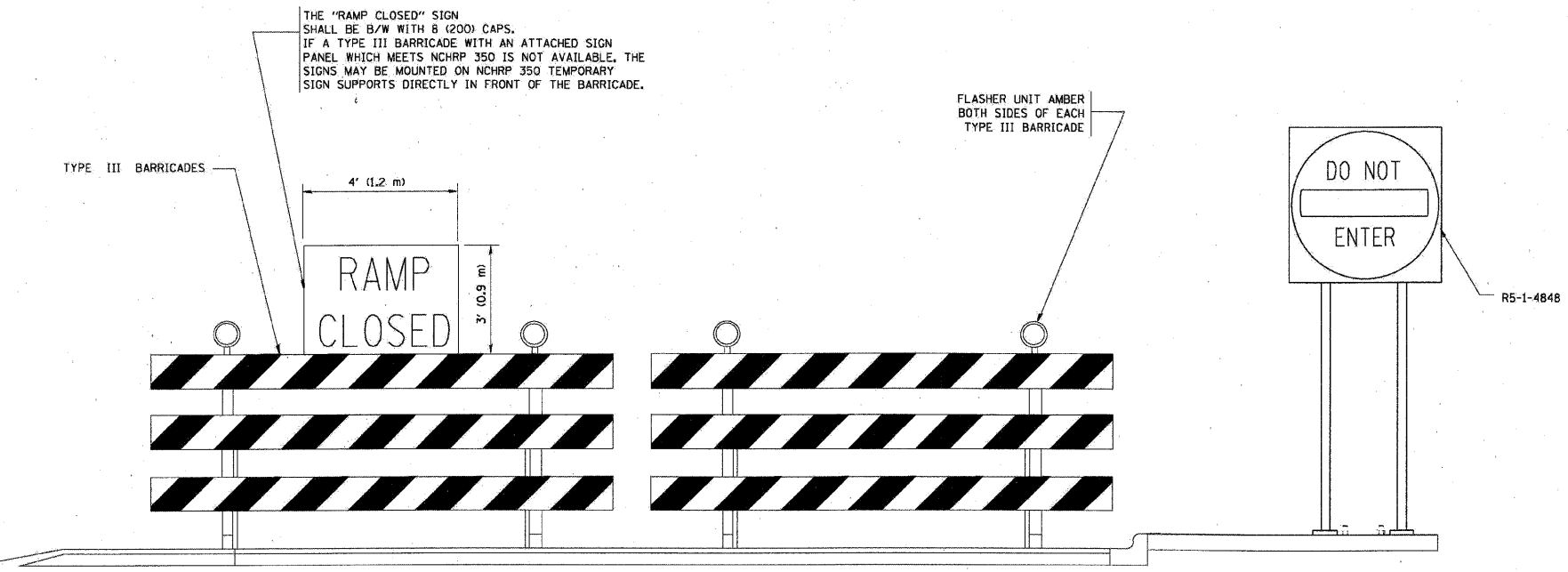
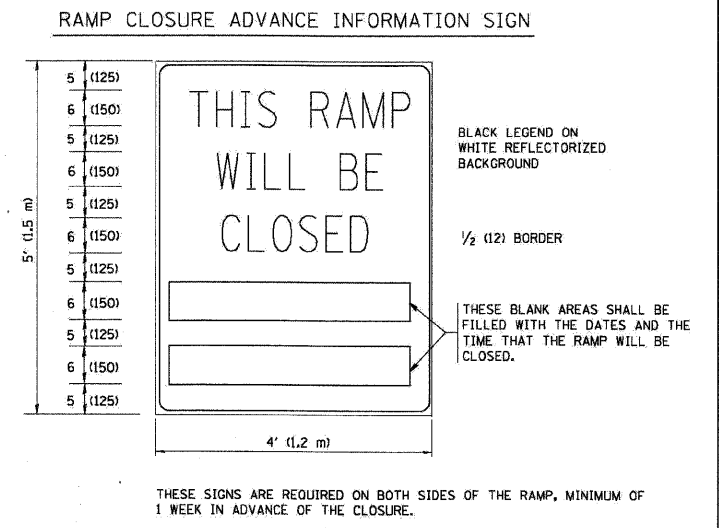
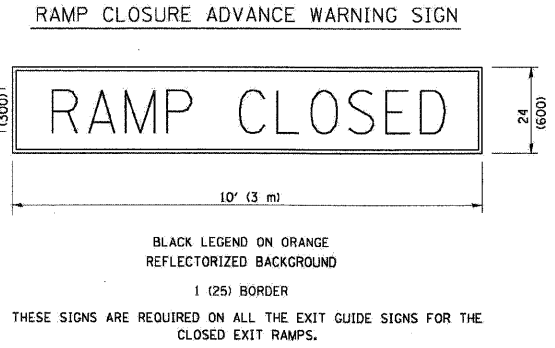
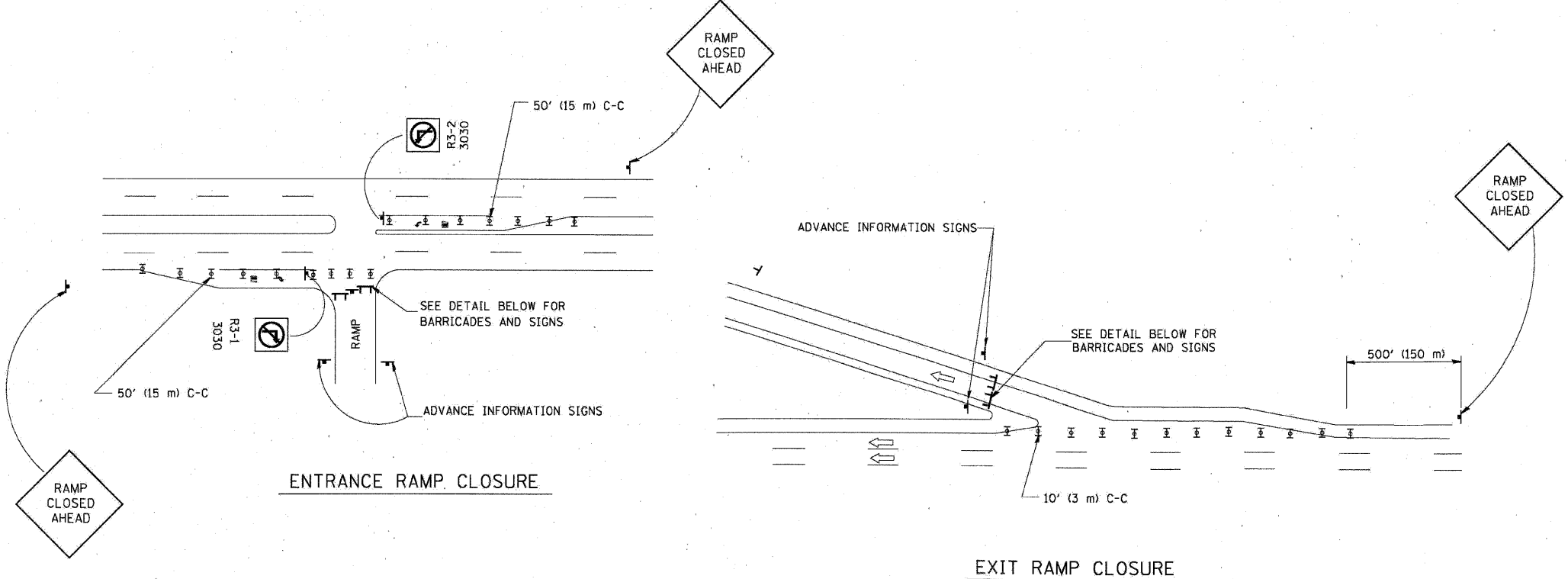
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**ELECTRIC CONNECTION TO SIGN STRUCTURE CANTILEVER TYPE**

SCALE: N.T.S. SHEET NO. 8 OF 16 SHEETS STA. TO STA.

F.A.I. RTEL.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	(3435, ETC., 3838)RS-5	COOK	264	256
CONTRACT NO. 60G52				
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				





THE "RAMP CLOSED" SIGN SHALL BE B/W WITH 8 (200) CAPS. 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 DIRECTLY IN FRONT OF THE BARRICADE.

DETAIL FOR REQUIRED BARRICADES & SIGNS

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

- 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.

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

TC-08

FILE NAME =	DESIGNED - AJP	REVISED -
...NepLn_ABC_C2_D1_TC-8.dgn	DRAWN - TMB	REVISED -
USER NAME = tblank	CHECKED - JMM	REVISED -
PLOT DATE = 1/25/2018	DATE - 1/25/10	REVISED -

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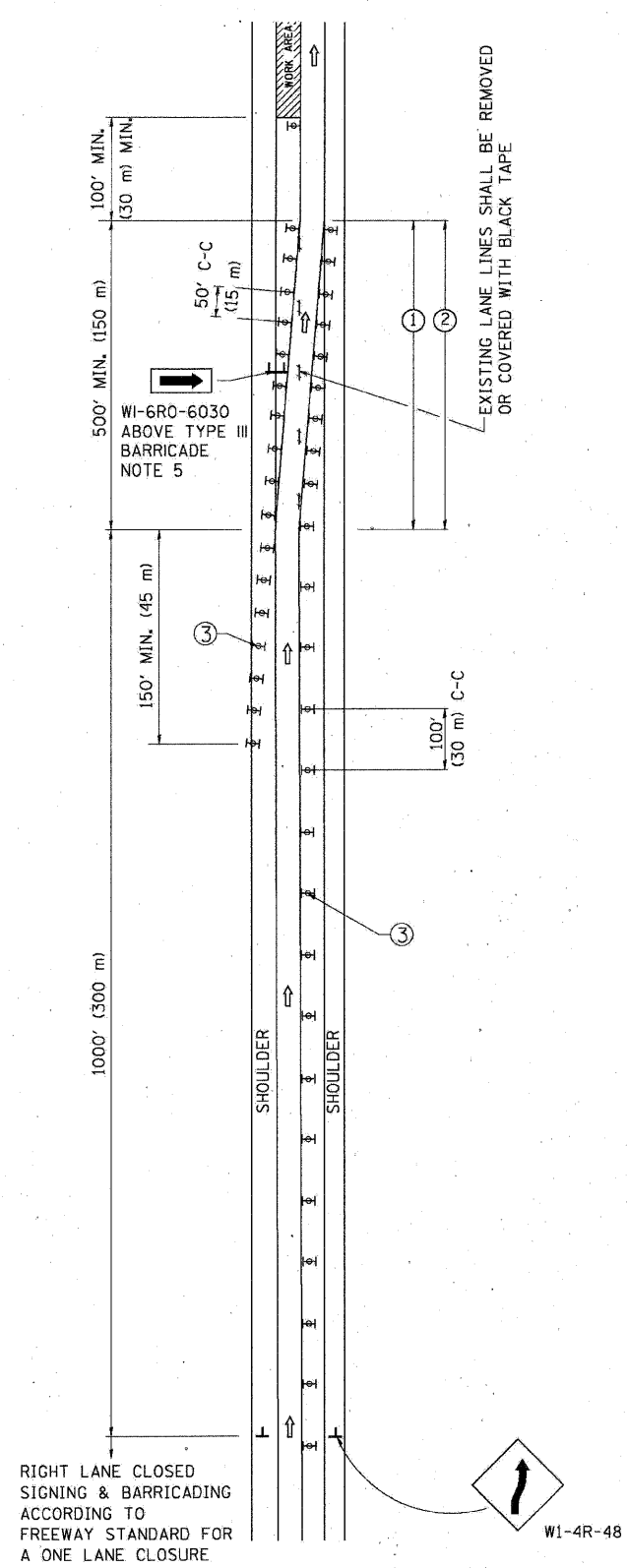
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**ENTRANCE AND EXIT RAMP CLOSURE DETAILS**

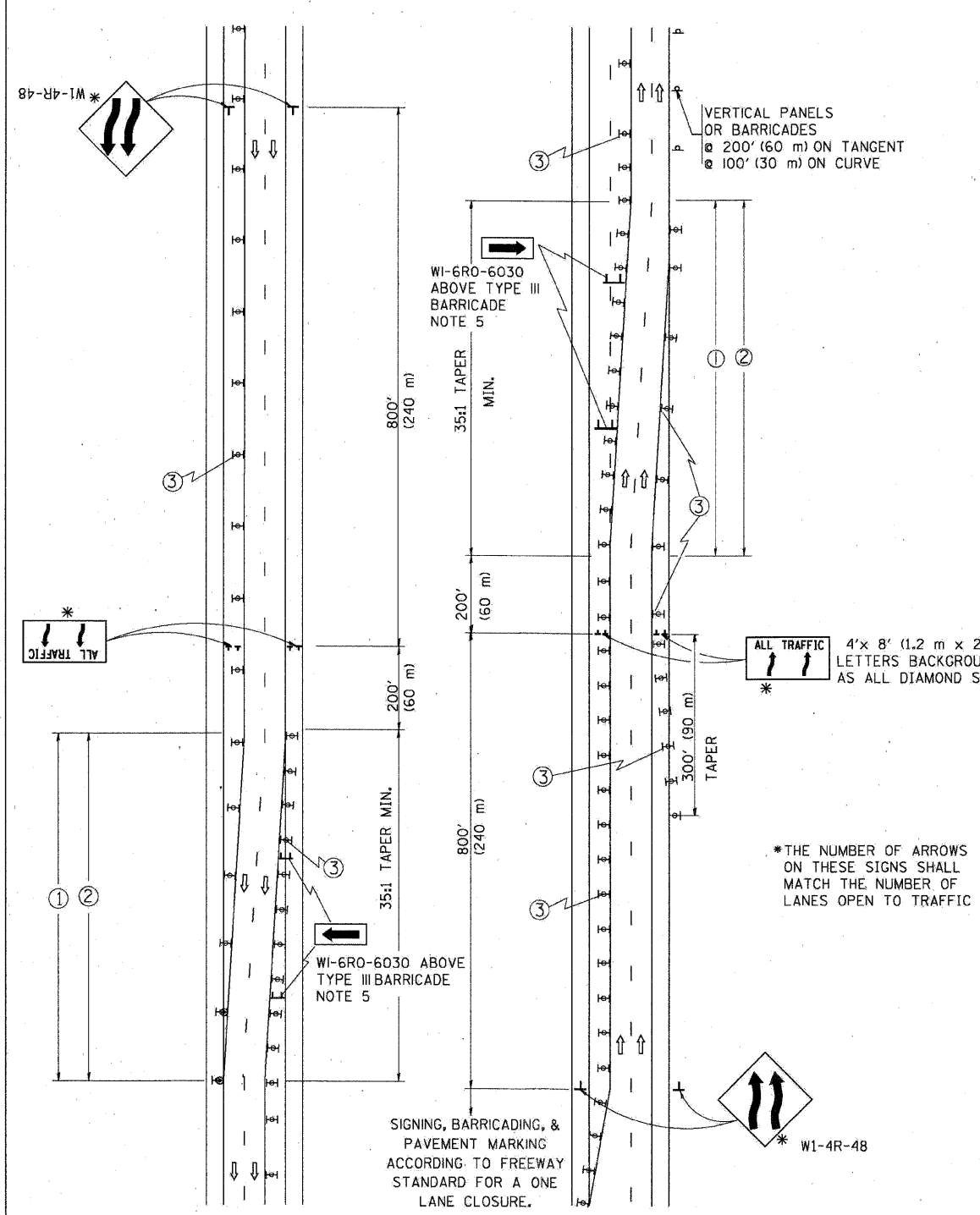
SCALE: N.T.S. SHEET NO. 9 OF 16 SHEETS STA. TO STA.

P.A.I. R.T.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	(3435, ETC., 3838)RS-5	COOK	264	257
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT			CONTRACT NO. 60G52	

# SINGLE LANE WEAVE



# MULTI-LANE WEAVE



### GENERAL NOTES

- ① EXISTING CONFLICTING PAVEMENT MARKING LINES SHALL BE REMOVED OR COVERED WITH BLACK TAPE. PAVEMENT MARKING REMOVAL OR BLACK TAPE SHALL NOT BE REQUIRED FOR LANE CLOSURES 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 WEAVE LANE LINES SHALL BE 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 DIRECTLY IN FRONT OF THE BARRICADE.
- ⑥ 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.

### SYMBOLS

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

TC-09

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN

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...Yrpln_49C_C2.D1.TC-9.dgn	DRAWN - TMB	REVISED -
USER NAME = tblank	CHECKED - JMM	REVISED -
PLOT DATE = 1/25/2010	DATE - 1/25/10	REVISED -

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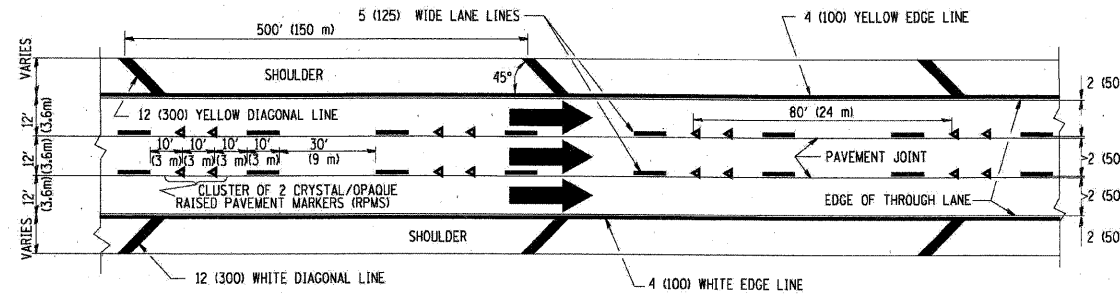
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**FREEWAY SINGLE AND MULTI-LANE WEAVE**

SCALE: N.T.S. SHEET NO. 10 OF 16 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEET NO.
290	(3435, ETC., 3838)RS-5	COOK	264 258
FED. ROAD DIST. NO. [ILLINOIS] FED. AID PROJECT			CONTRACT NO. 60G52

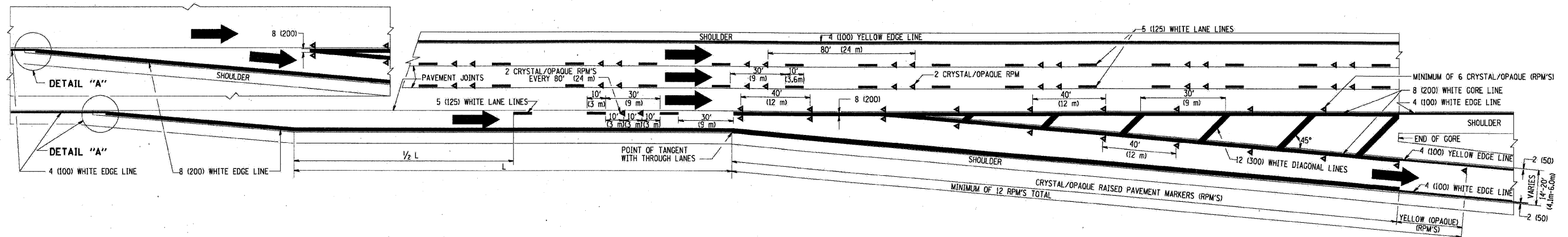
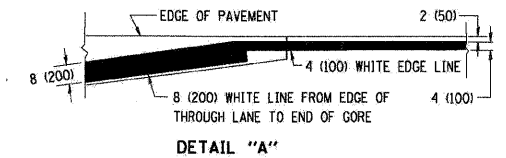
THE DIAGONAL LINES SHALL BE SPACED AT 40' (12 m) C-C ACROSS ALL STRUCTURES WHICH ARE 500' (150 m) OR LESS IN LENGTH  
 THE DIAGONAL LINES ARE NOT REQUIRED ON SHOULDERS WHICH ARE 6' (1.8 m) OR LESS IN WIDTH



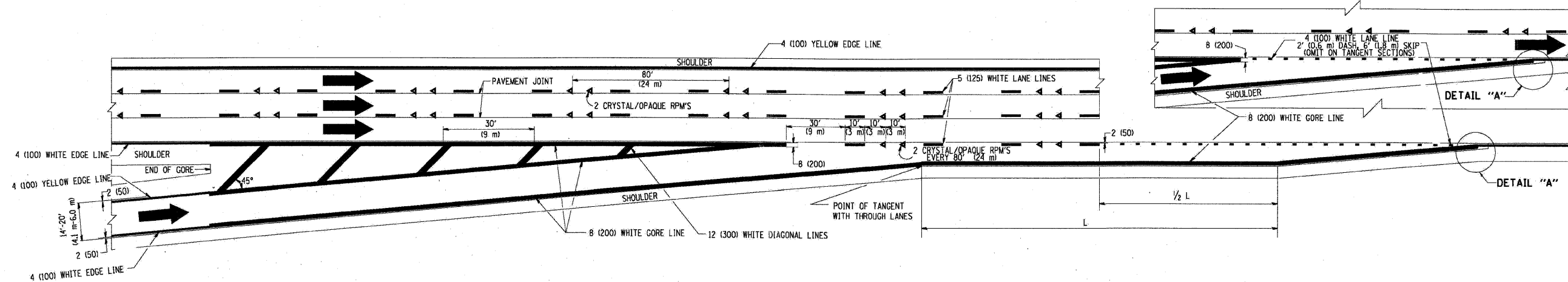
TYPICAL EDGE LINES & LANE LINES

NOTES:

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

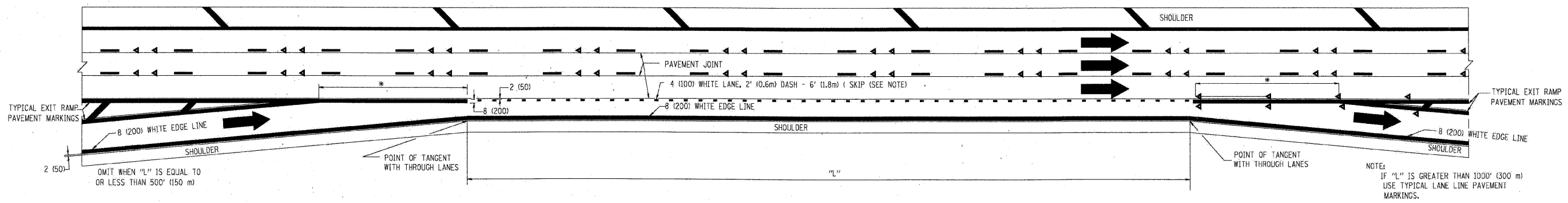


TYPICAL EXIT RAMP PAVEMENT MARKINGS

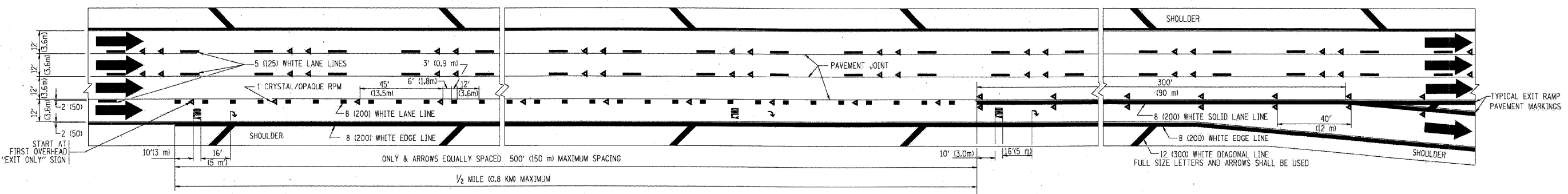


TYPICAL ENTRANCE RAMP PAVEMENT MARKINGS

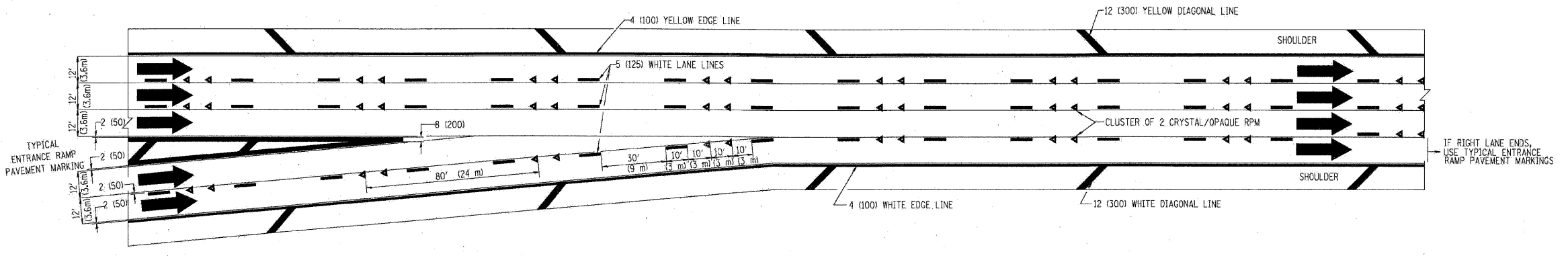
FILE NAME =	DESIGNED - AJP	REVISED -	<b>benesch</b>	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>MULTI-LANE FREEWAY PAVEMENT MARKING</b>			F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
...\\prpln_abc_c2_01_TC-12A.dgn	DRAWN - TMB	REVISED -						290	13435, ETC., 3838IRS-5	COOK	264	259
USER NAME = tblank	CHECKED - JMM	REVISED -						SCALE: N.T.S. SHEET NO. 11 OF 16 SHEETS STA. TO STA.			CONTRACT NO. 60G52	
PLOT DATE = 1/25/2018	DATE - 1/25/10	REVISED -						FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		



**TYPICAL ENTRANCE/EXIT RAMP COMBINATION PAVEMENT MARKINGS**



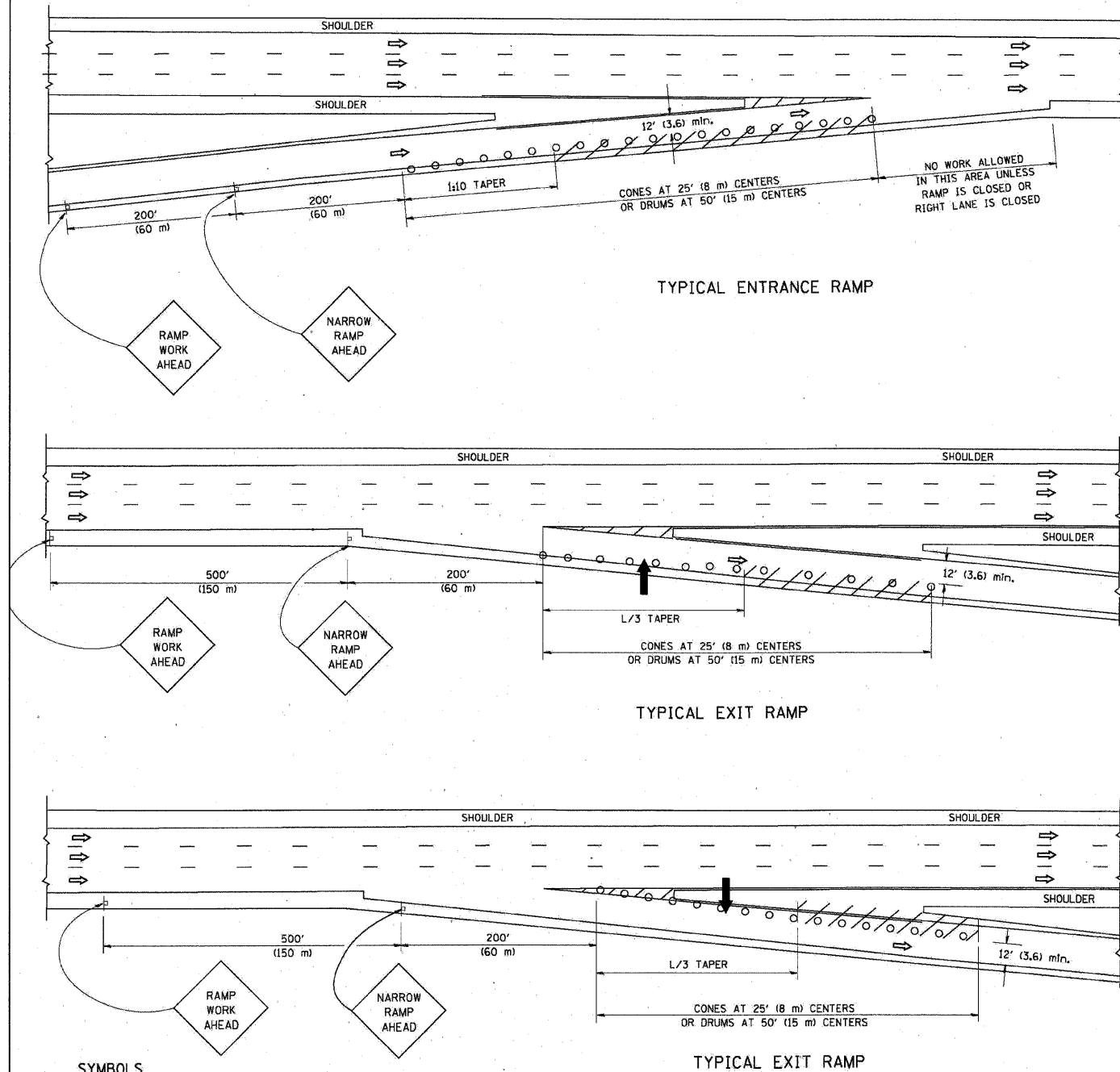
**TYPICAL EXIT ONLY LANE PAVEMENT MARKINGS**



**TYPICAL TWO LANE ENTRANCE RAMP PAVEMENT MARKINGS**

FILE NAME =	DESIGNED - AJP	REVISED -	<b>benesch</b>	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>MULTI-LANE FREEWAY PAVEMENT MARKING</b>			F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
...\\prpln_abc_c2.d1.tc-12b.dgn	DRAWN - TMB	REVISED -						290	(3435, ETC., 3838)RS-5	COOK	264	260
USER NAME = tjb)ank	CHECKED - JMM	REVISED -						CONTRACT NO. 60652				
PLOT DATE = 1/25/2010	DATE - 1/25/10	REVISED -						ILLINOIS FED. AID PROJECT				
								SCALE: N.T.S.	SHEET NO. 12 OF 16 SHEETS	STA. _____	TO STA. _____	

PARTIAL RAMP CLOSURE DETAILS



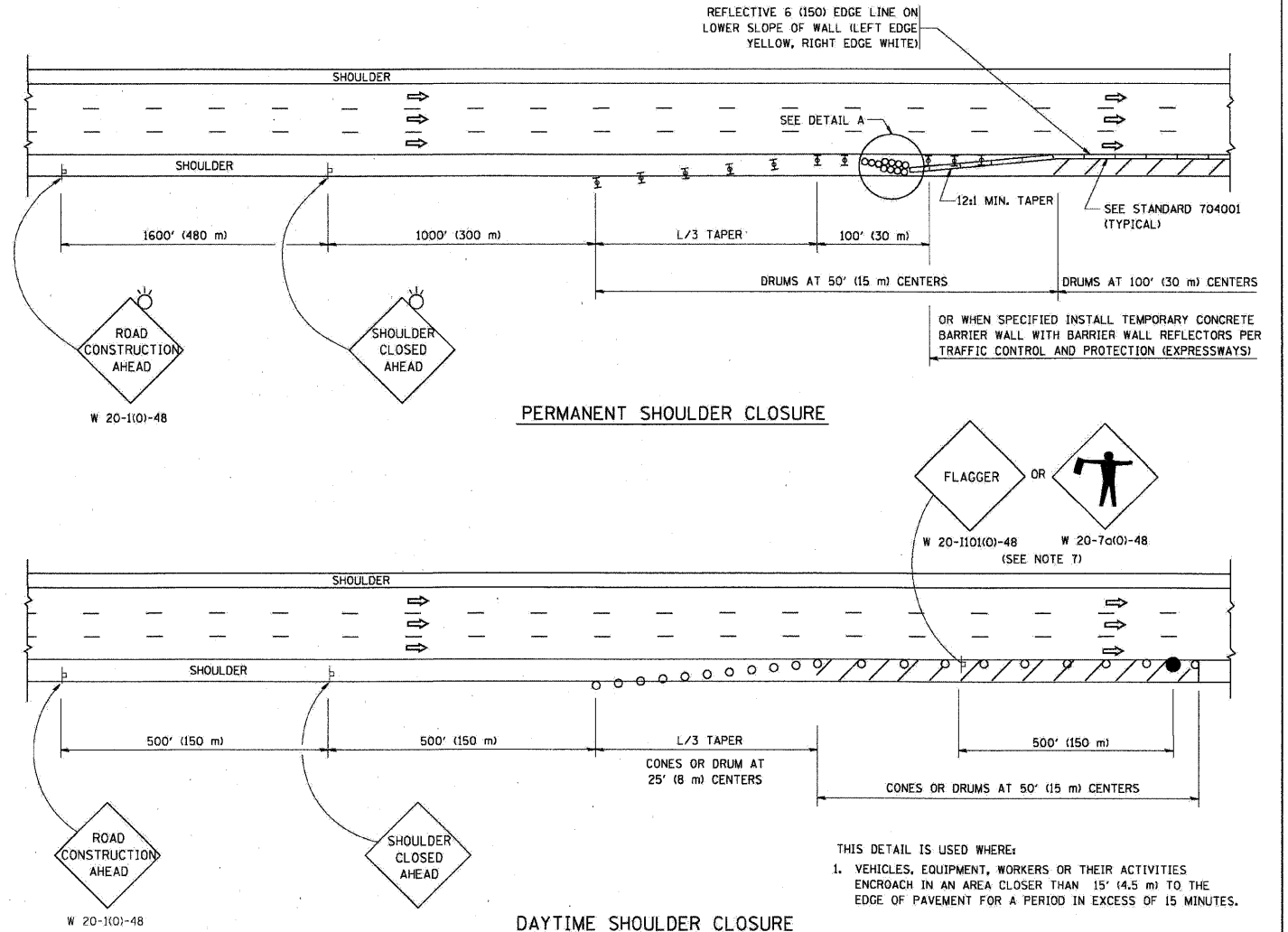
SYMBOLS

- ARROWBOARD
- 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

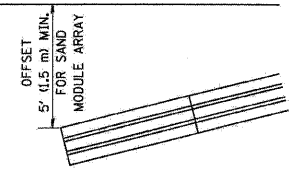
GENERAL NOTES

1. THE "L" DISTANCE EQUALS:  
 SPEED LIMIT                      FORMULAS  
 45 mph (80 km/h)                  METRIC    ENGLISH  
 OR GREATER:                      L=0.65(W/S)    L=(W/S)  
 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.

SHOULDER CLOSURE DETAILS



ARRAY DESIGN PER MANUFACTURER TO BE NCHRP 350 COMPLIANT FOR POSTED SPEED.



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

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

FILE NAME -	DESIGNED - AJP	REVISED -
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PLOT DATE = 1/25/2010	DATE - 1/25/10	REVISED -

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STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

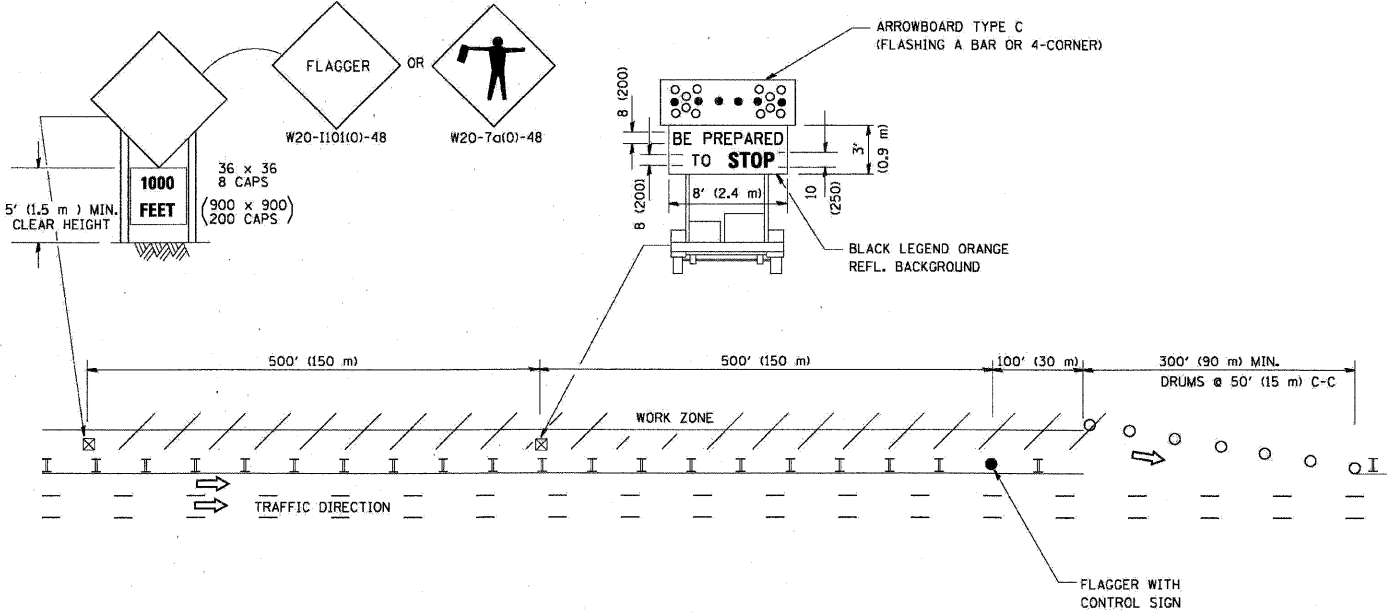
TRAFFIC CONTROL FOR SHOULDER CLOSURES  
AND PARTIAL RAMP CLOSURES

SCALE: N.T.S. SHEET NO. 13 OF 16 SHEETS STA. TO STA.

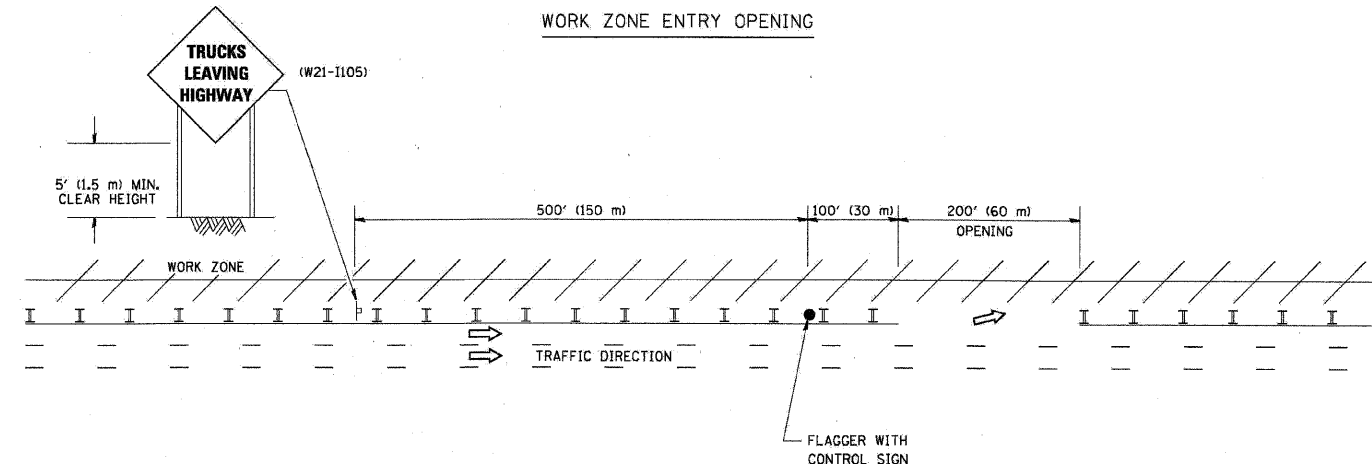
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	(3435, ETC., 3838)RS-5	COOK	264	261
FED. ROAD DIST. NO. [ILLINOIS] FED. AID PROJECT			CONTRACT NO. 60G52	

SIGNING FOR FLAGGING OPERATIONS AT WORK ZONE OPENINGS

WORK ZONE EXIT OPENING



WORK ZONE ENTRY OPENING



- NOTES:
1. The Arrowboard, the Flagger Ahead trailer mounted 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.
  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

TC-18

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN

FILE NAME =	DESIGNED - AJP	REVISED -
...prpln_ABC_C2_01_TC-18.dgn	DRAWN - TMB	REVISED -
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STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

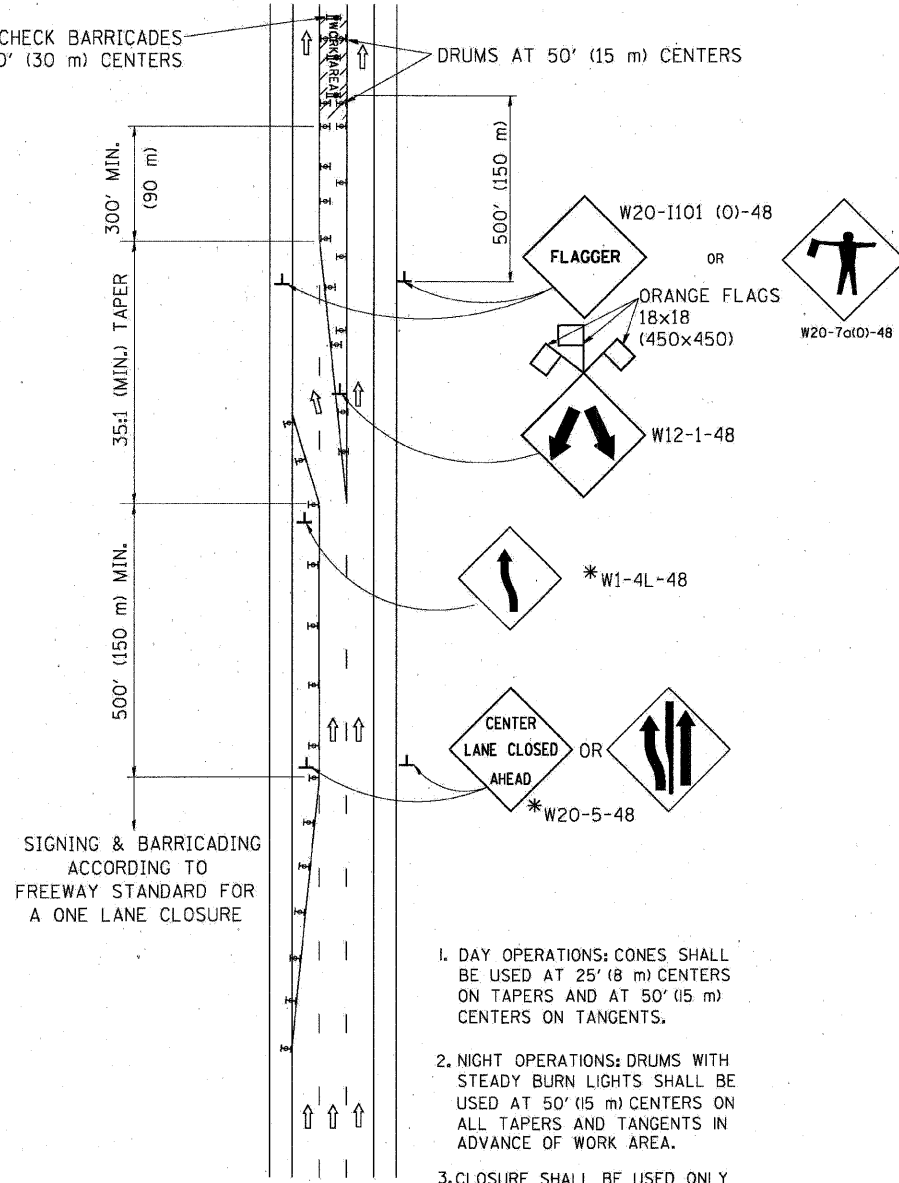
SIGNING FOR FLAGGING OPERATIONS AT  
WORK ZONE OPENINGS

SCALE: N.T.S. SHEET NO. 14 OF 16 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	(3435, ETC., 3838)RS-5	COOK	264	262
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT	
			CONTRACT NO. 60G52	

# CENTER LANE CLOSURE

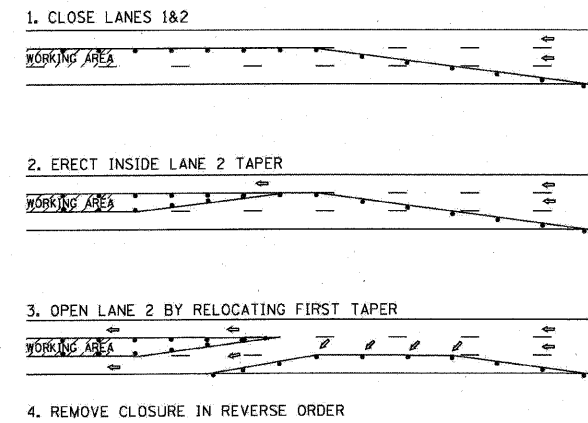
TYPE I CHECK BARRICADES AT 100' (30 m) CENTERS



SIGNING & BARRICADING ACCORDING TO FREEWAY STANDARD FOR A ONE LANE CLOSURE

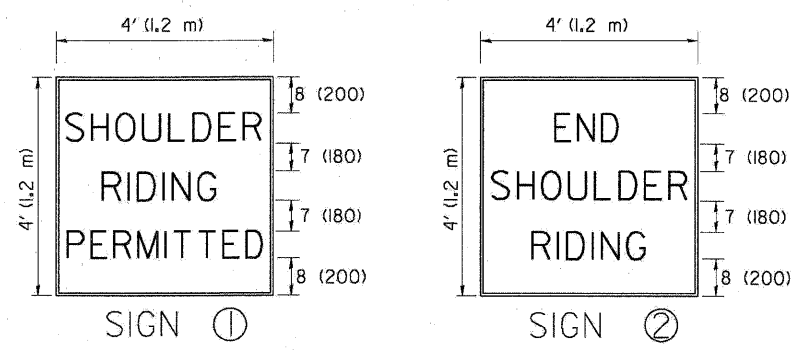
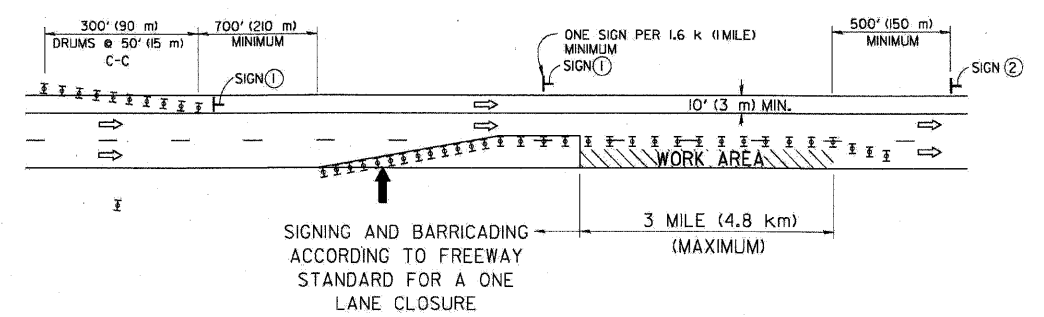
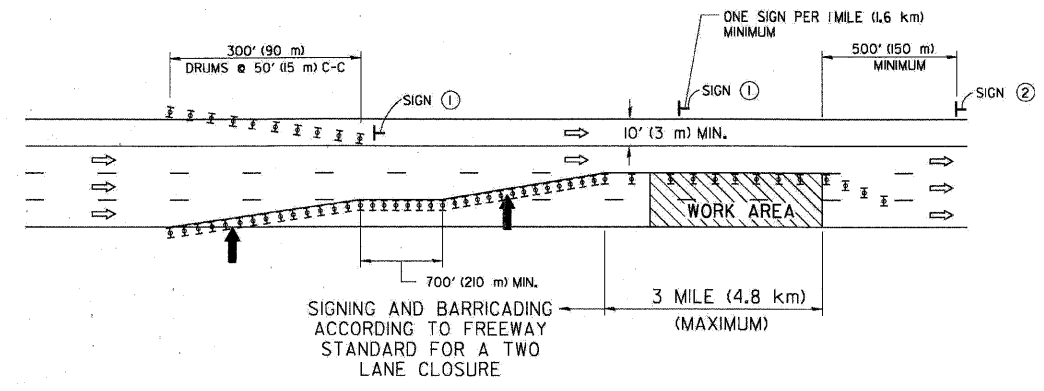
1. DAY OPERATIONS: CONES SHALL BE USED AT 25' (8 m) CENTERS ON TAPERS AND AT 50' (15 m) CENTERS ON TANGENTS.
2. NIGHT OPERATIONS: DRUMS WITH STEADY BURN LIGHTS SHALL BE USED AT 50' (15 m) CENTERS ON ALL TAPERS AND TANGENTS IN ADVANCE OF WORK AREA.
3. CLOSURE SHALL BE USED ONLY FOR OPERATIONS LASTING 72 HOURS OR LESS.

### INSTALLATION SEQUENCE



# 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
  - ▨ WORK AREA
  - ⬢ SIGN WITH 18x18 (450x450) ORANGE FLAGS ATTACHED \*
  - ┌ SIGN ON PORTABLE OR PERMANENT SUPPORT \*
  - ⊥ TYPE II BARRICADE, DRUM OR VERTICAL BARRICADE WITH MONO-DIRECTIONAL STEADY BURN LIGHT

TC-25

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 =	DESIGNED - AJP	REVISED -
...NrpIn_ABC_C2_D1_TC-25.dgn	DRAWN - TMB	REVISED -
USER NAME = tblank	CHECKED - JMM	REVISED -
PLOT DATE = 1/25/2010	DATE - 1/25/10	REVISED -

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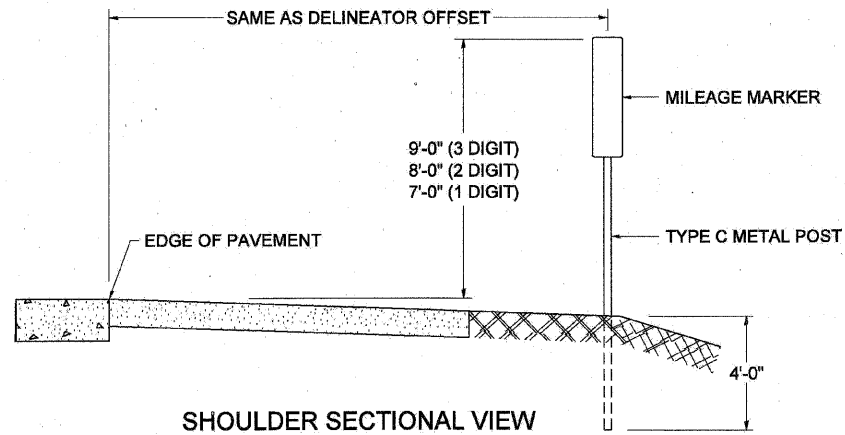
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**TRAFFIC CONTROL DETAILS FOR FREEWAY  
CENTER LANE CLOSURE SHOULDER LANE**

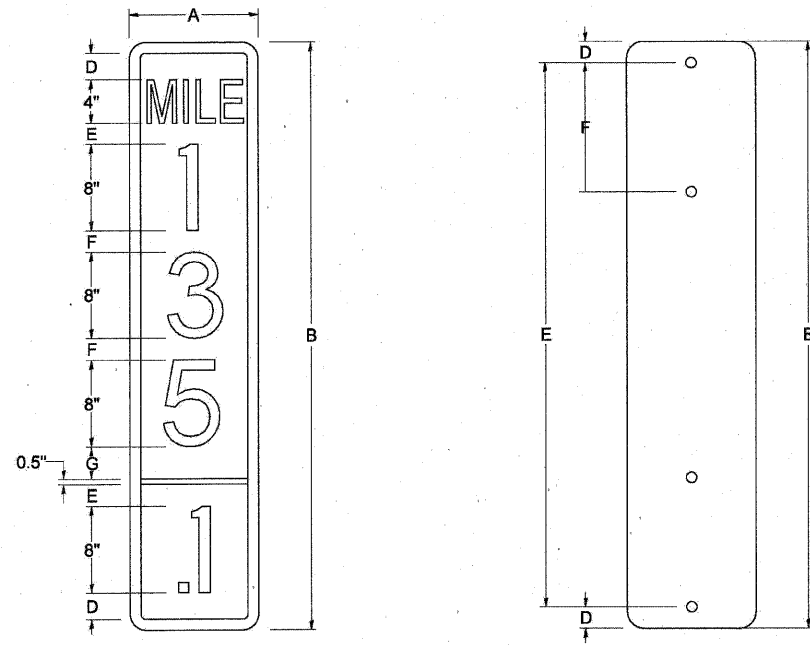
SCALE: N.T.S. SHEET NO. 15 OF 16 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	(3435, ETC., 3838)RS-5	COOK	264	263
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT	
			CONTRACT NO. 60G52	

### STANDARD DESIGN FOR MILE POST



SHOULDER SECTIONAL VIEW

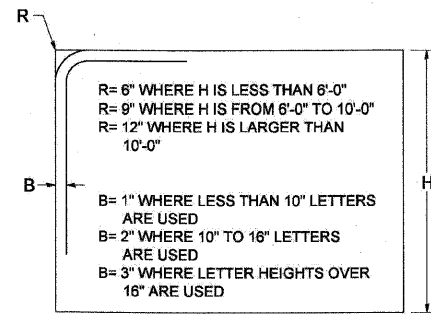


SIGN SIZE	DIMENSIONS							
	A	B	C	D	E	F	G	DIGIT
12 x 24	12.0	24.0	1.5	1.5	1.5	N/A	1.5	1
12 x 36	12.0	36.0	1.5	2.0	2.0	2.0	1.5	2
12 x 48	12.0	48.0	1.5	2.5	2.0	2.0	2.5	3

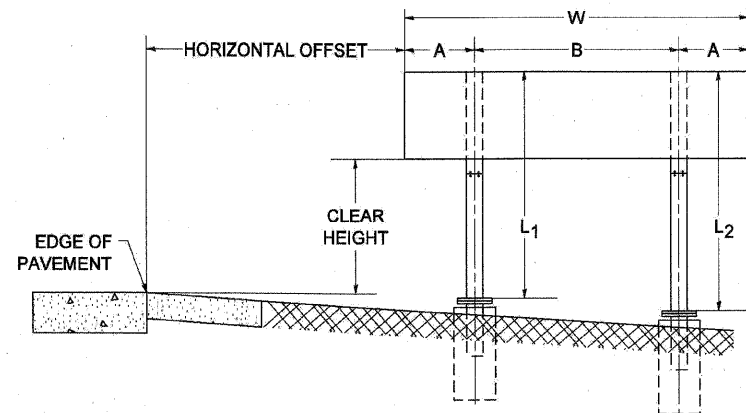
BLANK	A	B	C	D	E	F
B9-1224	12.0	24.0	1.5	2.0	20.0	N/A
B9-1236	12.0	36.0	1.5	2.0	32.0	12.0
B9-1248	12.0	48.0	1.5	2.0	44.0	12.0

SIGN SIZE	SERIES					BORDER	BLANK STD.
	LINES						
	1	2	3	4	5		
12 x 24	4C	8D	4C	N/A	N/A	0.5	B9-1224
12 x 36	4C	8D	8D	4C	N/A	0.5	B9-1236
12 x 48	4C	8D	8D	8D	4C	0.5	B9-1248

### BORDER AND RADIUS LAYOUT



### MAJOR GUIDE SIGN LAYOUT

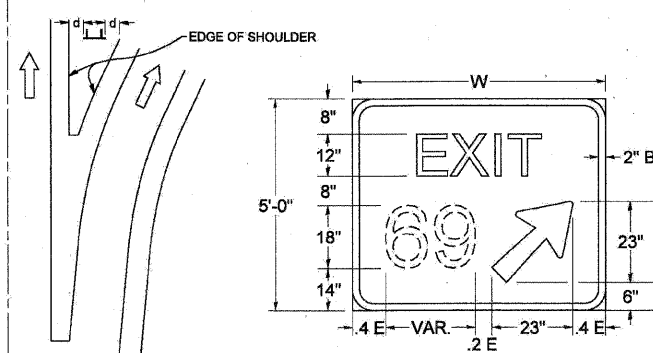


NUMBER OF STEEL SUPPORTS	A	B
2	.2 W	.6 W
3	.15 W	.35 W
4	.125 W	.25 W
5	.1 W	.2 W

L<sub>1</sub> IS THE LENGTH OF SUPPORT, NOT INCLUDING THE STUB PROJECTION, CLOSEST TO THE EDGE OF THE PAVEMENT.

'A' IS THE DISTANCE FROM THE SIGN EDGE TO THE CENTERLINE OF THE NEAREST SUPPORT. 'B' IS THE DISTANCE BETWEEN CENTERLINES OF SUPPORTS.

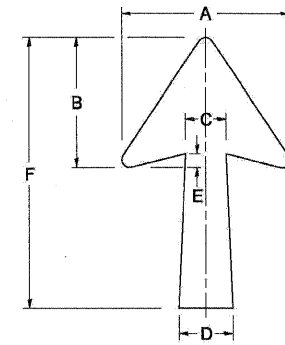
### GORE SIGNS



DIGITS	W	d
1 OR 2	6'-0"	2'-0"
3	7'-6"	1'-3"
4 OR 5	9'-0"	1'-0"

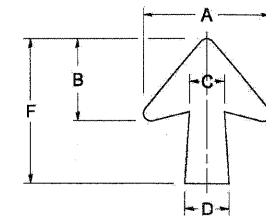
E = WIDTH - VAR. - 23"

### STANDARD ARROWS FOR INTERSTATE GUIDE SIGNS



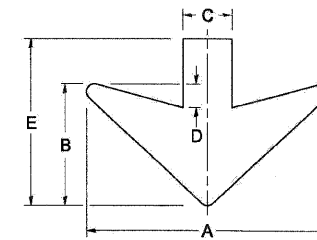
ARROW SYMBOL	A	B	C	D	E	F	R
24 1/4 x 15 1/8	15 1/8	11 3/8	3 3/4	5	1 1/8	24 1/4	5/8
29 1/4 x 18 1/4	18 1/4	14	4 1/2	6	1 1/2	29 1/4	3/4
35 5/8 x 22 1/4	22 1/4	17	5 3/8	7 1/8	1 3/4	35 5/8	1
18 1/4 x 11 1/4	11 1/4	8 3/4	3 3/8	3 3/8		18 1/4	

NOTE: D & F ARE RECOMMENDED DIMENSIONS. TAPER SHOULD BE HELD CONSTANT FOR LONGER OR SHORTER SHAFT LENGTHS.



ARROW SYMBOL	A	B	C	D	E	F	R
17 1/4 x 14 1/4	14 1/4	9 1/8	3 3/8	4 1/2	1 1/8	17 1/4	3/4
20 1/4 x 17 1/4	17 1/4	11 3/4	4 3/8	5 3/8	1 1/2	20 1/4	
25 x 21 1/8	21 1/8	14 1/4	5	6 3/4	1 3/4	25	1
9 3/8 x 8 1/8	8 1/8	5 1/8	2 3/8	2 3/8		9 3/8	1/2

### DOWN ARROWS



ARROW SYMBOL	A	B	C	D	E	R
16 1/2 x 24	24	12	5	1 1/2	16 1/2	3/4
22 x 32	32	16	6 1/2	3	22	1

FILE NAME =	DESIGNED - AJP	REVISED -
...N:\p1n_abc_c2.d1 TC-27.dgn	DRAWN - TMB	REVISED -
USER NAME = tblank	CHECKED - JMM	REVISED -
PLOT DATE = 1/25/2010	DATE - 1/25/2010	REVISED -

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	(3435, ETC., 3838)RS-5	COOK	264	264
FED. ROAD DIST. NO. (ILLINOIS) FED. AID PROJECT			CONTRACT NO. 60G52	