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 $\frac{1}{4}$ 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. Protective Coat shall be applied to the new Latex Concrete Overlay.

10. Joint openings shall be adjusted according to Article 520.04 of the Std. Specs. when the deck is poured at an ambient temperature other than 50°F.

INDEX OF SHEETS

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Concrete Removal	Cu. Yd.	40.6		40.6
Protective Shield	Sq. Yd.	1,321		1,321
Concrete Superstructure	Cu. Yd.	44.5		44.5
Bridge Deck Grooving	Sq. Yd.	1,824		1,824
Protective Coat	Sq. Yd.	1,958		1,958
Reinforcement Bars, Epoxy Coated	Pound	5,260		5,260
Bar Splicers	Each	76		76
Preformed Joint Strip Seal	Foot	249.5		249.5
Concrete Sealer	Sq. Ft.	2,090	684	2,774
Bridge Deck Latex Concrete Overlay, $2\frac{1}{4}$"	Sq. Yd.	1,885		1,885
Structural Repair of Concrete (Depth Equal to or Less than 5 Inches)	Sq. Ft.		100	100
Bridge Deck Hydro-Scarification, $\frac{1}{2}$"	Sq. Yd.	1,885		1,885
Deck Slab Repair (Full Depth, Type I)	Sq. Yd.	5.0		5.0
Deck Slab Repair (Full Depth, Type II)	Sq. Yd.	14.0		14.0
Clean and Reseal Relief Joint	Foot	118.0		118.0

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

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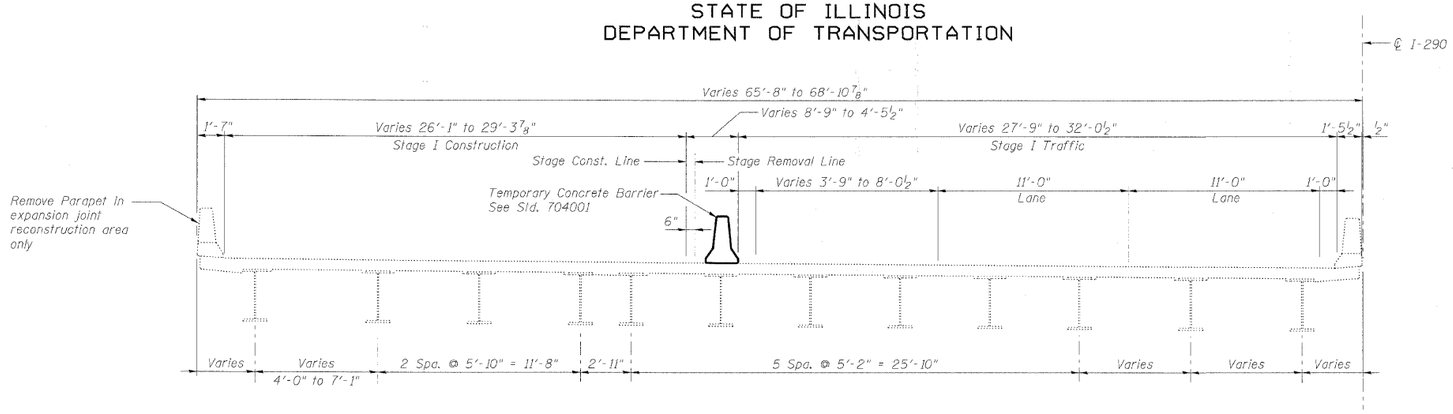
Chicago, Illinois 60601
312-565-0450 Job No. 10050

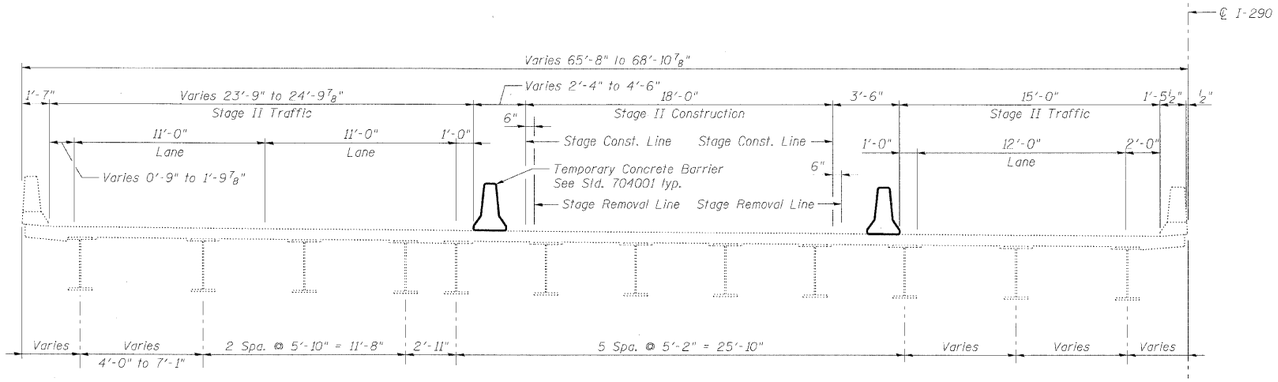
GENERAL NOTES, BILL OF MATERIAL
AND INDEX OF SHEETS
STRUCTURE NO. 022-0008

SHEET NO. 2	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
10 SHEETS	290	2009-099 BR	COOK/DUPAGE	309	201
			CONTRACT NO. 60157		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

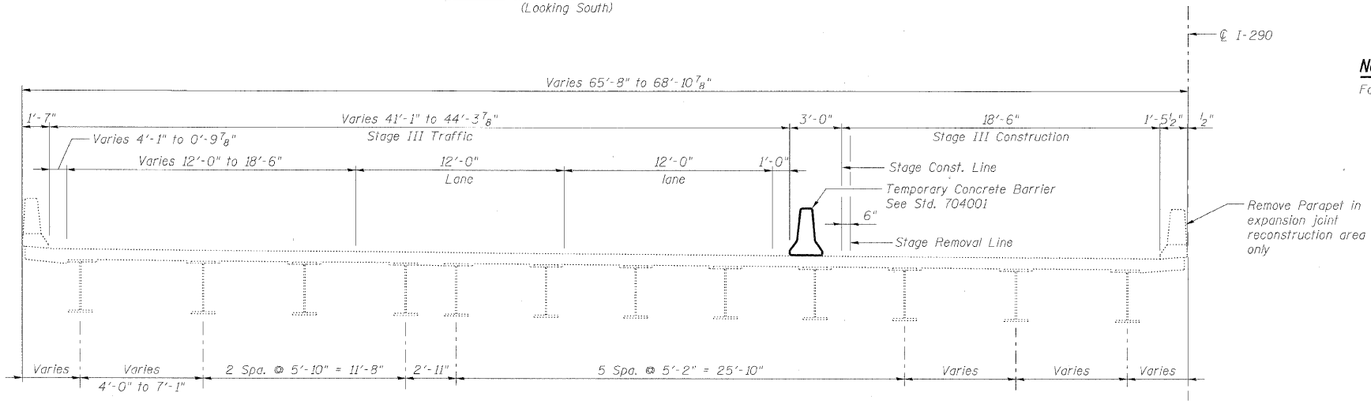
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



STAGE I CROSS SECTION
(Looking South)



STAGE II CROSS SECTION
(Looking South)



STAGE III CROSS SECTION
(Looking South)

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

DESIGNED	-	AAY
CHECKED	-	MAC
DRAWN	-	TMB/VH
CHECKED	-	AAY

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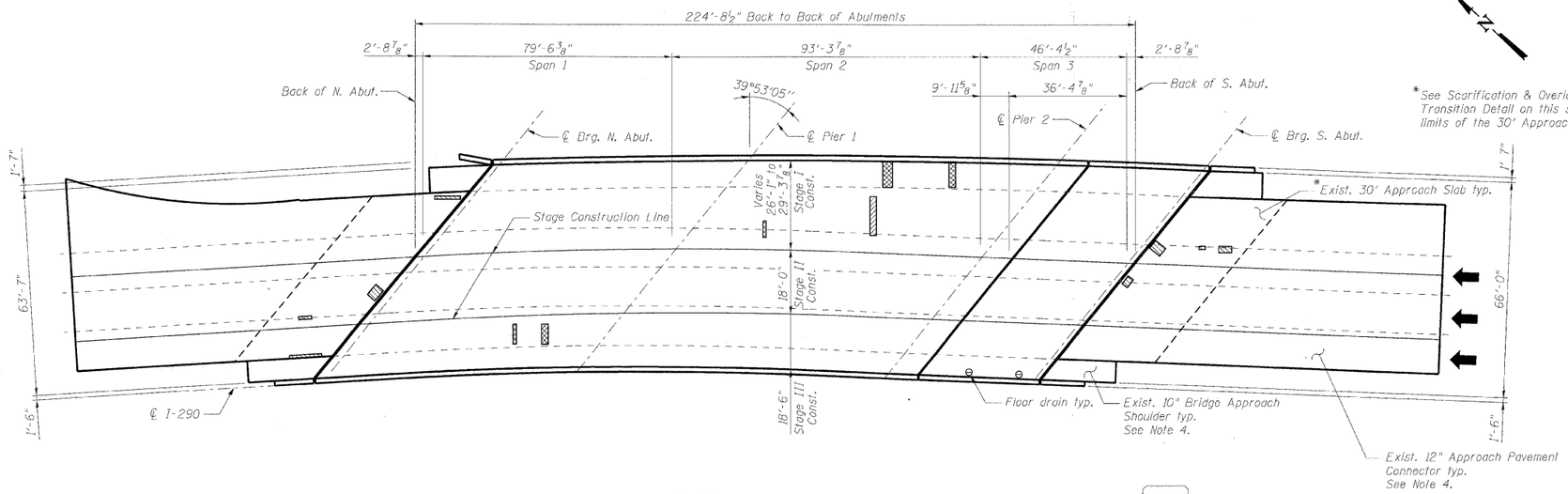
312-565-0450 Job No. 10050

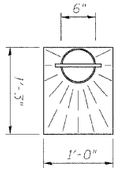
STAGE CONSTRUCTION DETAILS
STRUCTURE NO. 022-0008

SHEET NO. 3	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
10 SHEETS	290	2009-099 BR	COOK/DUPAGE	309	202
			CONTRACT NO. 60157		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

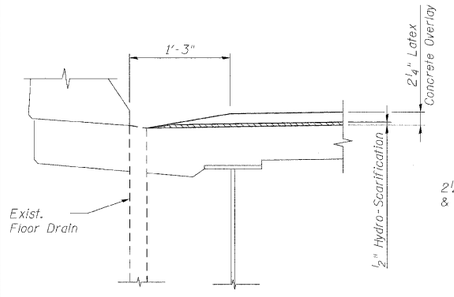
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



PLAN

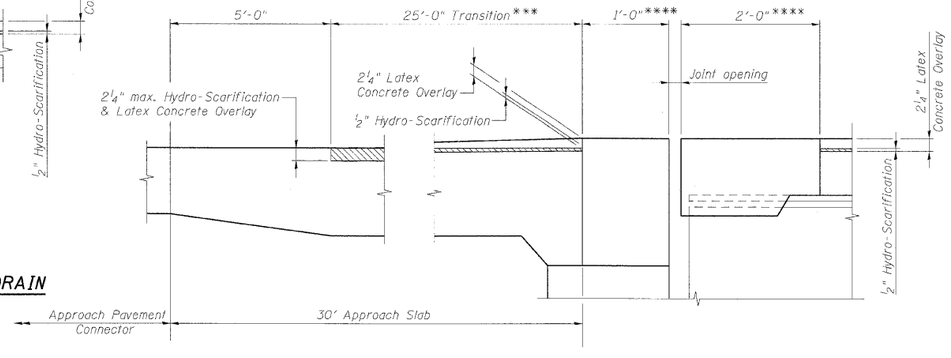


FLOOR DRAIN PLAN



SECTION A-A

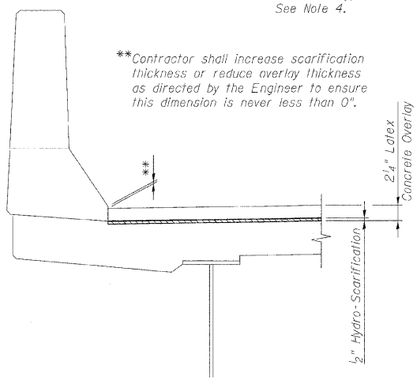
CONCRETE OVERLAY AT FLOOR DRAIN



SCARIFICATION & OVERLAY TRANSITION DETAIL

***Cost of increased hydro-scarification depth over length of transition shall be included with Bridge Deck Hydro-Scarification, ½".

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



SCARIFICATION & OVERLAY DETAIL AT PARAPET

BILL OF MATERIAL

SYMBOL	ITEM	UNIT	QUANTITY
	Deck Slab Repair (Partial)	Sq. Yd.	5.4 ▲
	Deck Slab Repair (Full Depth - Type I)	Sq. Yd.	5.0
	Deck Slab Repair (Full Depth - Type II)	Sq. Yd.	14.0
	Approach Slab Repair (Partial Depth)	Sq. Yd.	13.8 ▲
	Protective Shield	Sq. Yd.	1,321
	Bridge Deck Grooving	Sq. Yd.	1,824
	Protective Coat	Sq. Yd.	1,958
	Bridge Deck Latex Concrete Overlay, 2¼"	Sq. Yd.	1,885
	Bridge Deck Hydro-Scarification, ½"	Sq. Yd.	1,885

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

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 and shown on 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 General Plan and Elevation.
3. Deck drains (downspouts, floor drains, and scuppers) shall be cleaned prior to placement of the Latex Concrete Overlay. Cost of cleaning the deck drains is included in Bridge Deck Hydro-Scarification, ½".
4. 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.
5. Gaps caused by distress around floor drains shall be filled with epoxy as specified in the Special Provision "Epoxy Injection". Cost included with Bridge Deck Latex Concrete Overlay, 2¼".
6. Cost of new overlay on approach slab transition in included with Bridge Deck Latex Concrete Overlay, 2¼".

BRIDGE DECK AND APPROACH SLAB REPAIRS STRUCTURE NO. 022-0008

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

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312-565-0450 Job No. 10050

SHEET NO. 4	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
10 SHEETS	290	2009-099 BR	COOK/DUPAGE	309	203
			CONTRACT NO. 60157		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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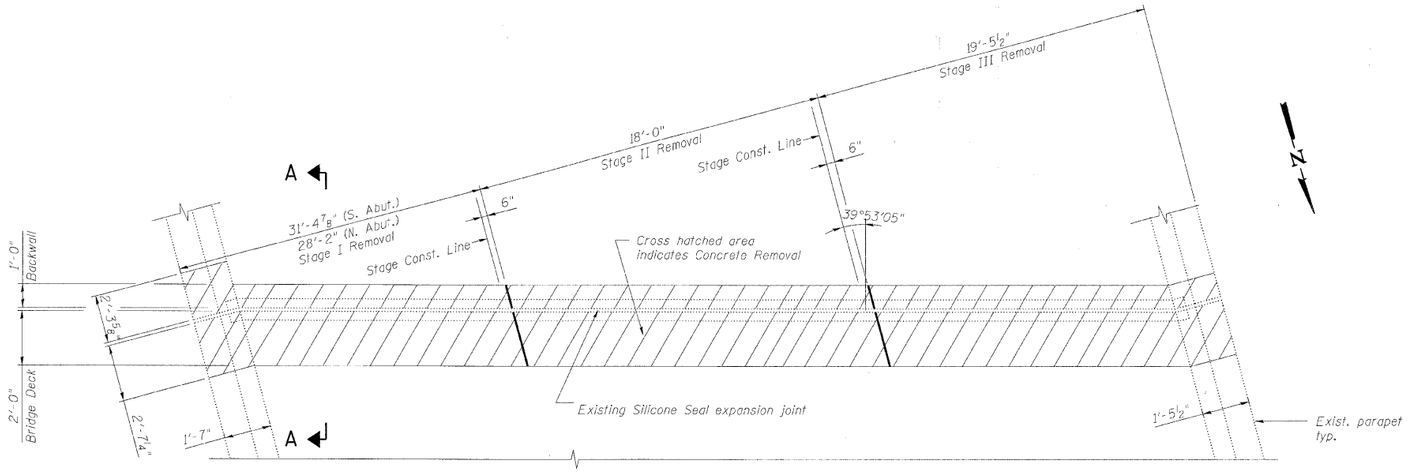
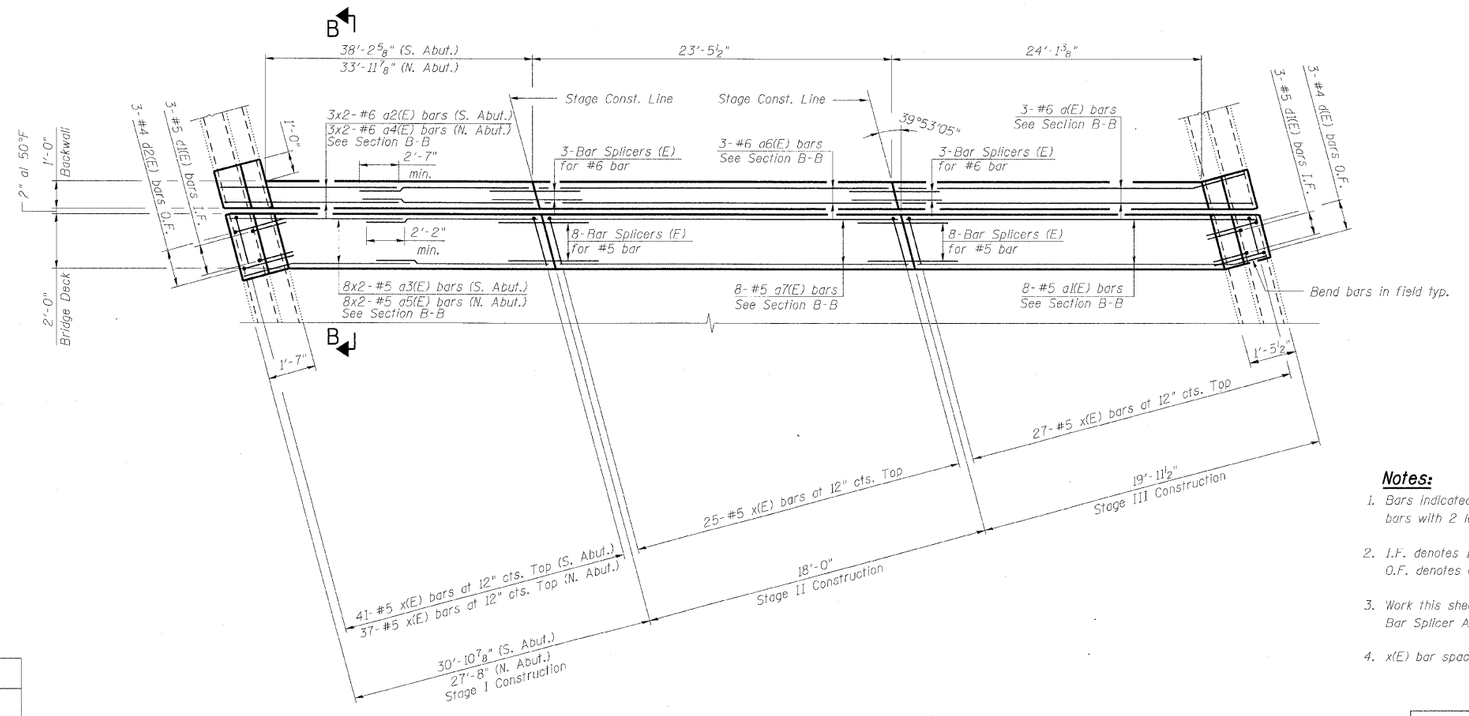
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



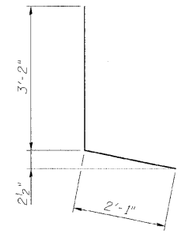
EXISTING PARTIAL PLAN AT SOUTH ABUTMENT
(Opposite Hand for North Abutment)



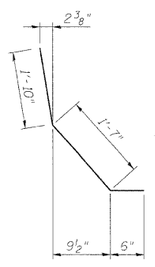
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	6	#6	25'-3"	
a1(E)	16	#5	25'-3"	
a2(E)	6	#6	21'-1"	
a3(E)	16	#5	21'-1"	
a4(E)	6	#6	18'-11"	
a5(E)	16	#5	18'-11"	
a6(E)	6	#6	23'-2"	
a7(E)	16	#5	23'-2"	
d(E)	6	#4	5'-3"	
d1(E)	12	#5	3'-11"	
d2(E)	6	#4	5'-11"	
x(E)	182	#5	2'-3"	

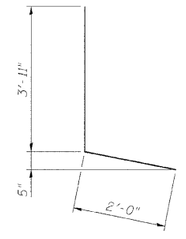
Item	Unit	Total
Concrete Removal	Cu. Yd.	28.6
Concrete Superstructure	Cu. Yd.	30.6
Reinforcement Bars, Epoxy Coated	Pound	2,770



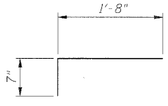
BAR d(E)



BAR d1(E)



BAR d2(E)



BAR x(E)

Notes:

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

EXPANSION JOINT REPAIRS 1 of 2
STRUCTURE NO. 022-0008

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

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

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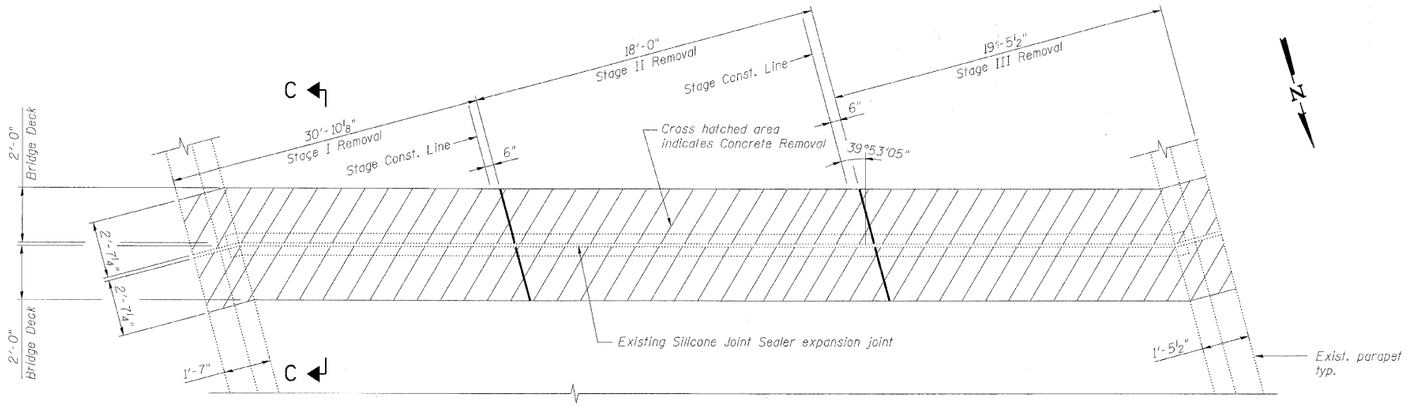
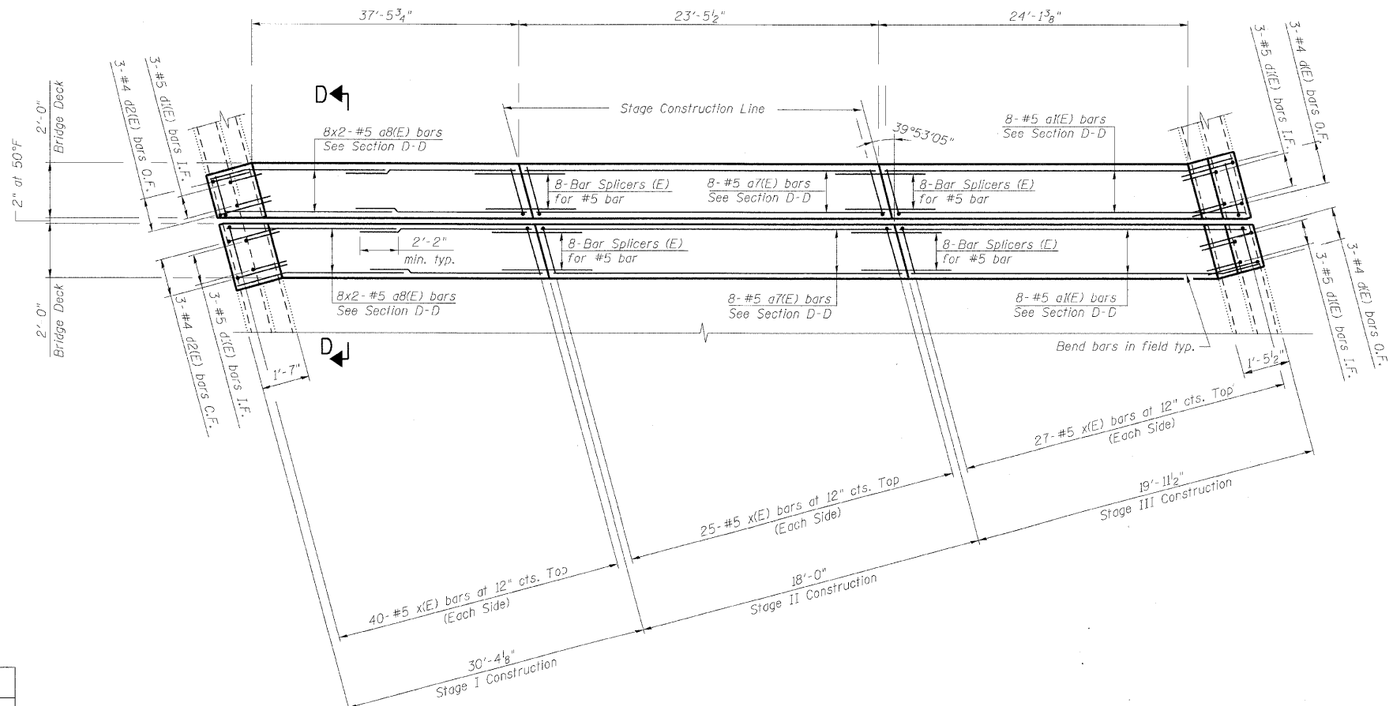
Chicago, Illinois 60601
312-565-0450 Job No. 10050

SHEET NO. 5	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
10 SHEETS	290	2009-099 BR	COOK/DUPAGE	309	204
			CONTRACT NO. 60157		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



EXISTING PARTIAL PLAN AT LINK NEAR PIER 2

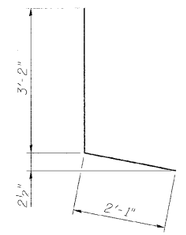


PROPOSED PARTIAL PLAN AT LINK NEAR PIER 2

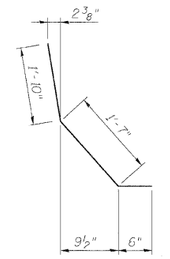
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a1(E)	16	#6	25'-3"	
a7(E)	16	#5	23'-2"	
a8(E)	32	#6	20'-6"	
d(E)	6	#4	5'-3"	
d1(E)	12	#5	3'-11"	
d2(E)	6	#4	5'-11"	
x(E)	184	#5	2'-3"	

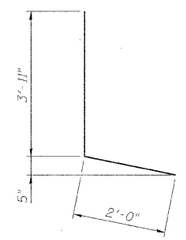
Item	Unit	Total
Concrete Removal	Cu. Yd.	12.0
Concrete Superstructure	Cu. Yd.	13.9
Reinforcement Bars, Epoxy Coated	Pound	2,490



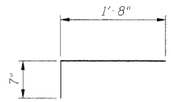
BAR d(E)



BAR d1(E)



BAR d2(E)



BAR x(E)

Notes:

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

EXPANSION JOINT REPAIRS 2 of 2
STRUCTURE NO. 022-0008

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

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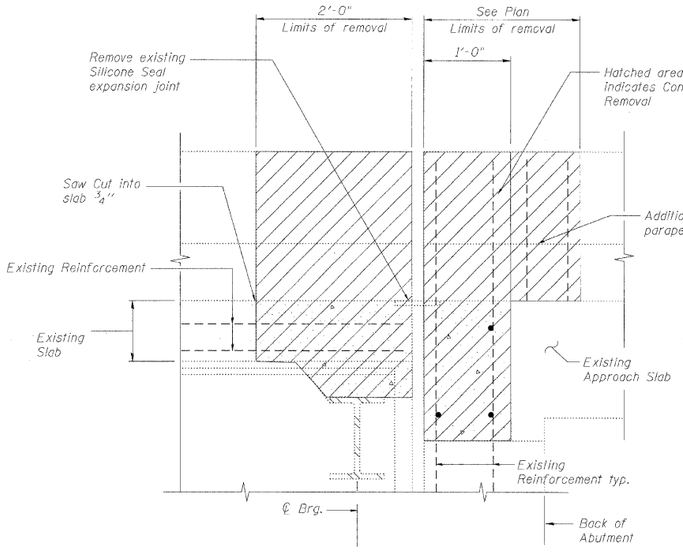
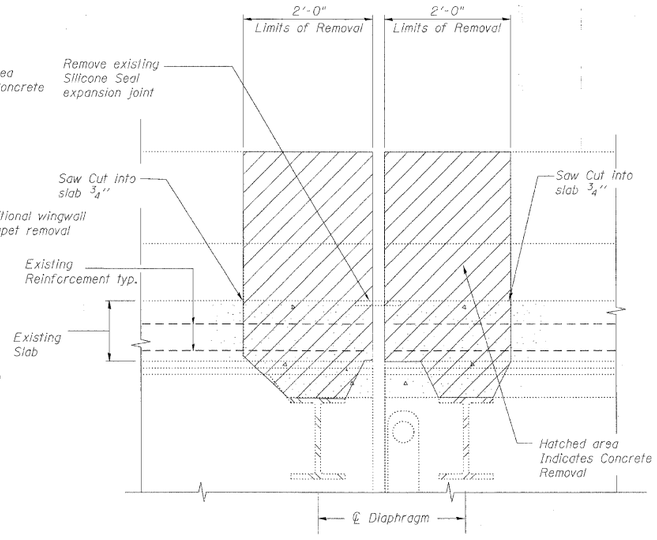
Chicago, Illinois 60601
312-565-0450 Job No. 10050

SHEET NO. 6	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
10 SHEETS	290	2009-099 BR	COOK/DUPAGE	309	205
			CONTRACT NO. 60157		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

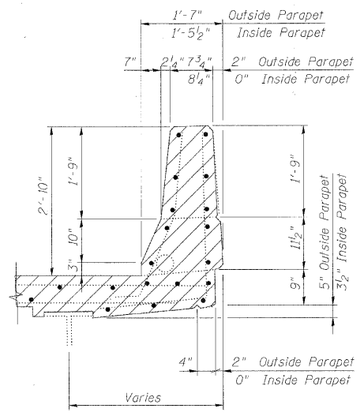
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



SECTION A-A



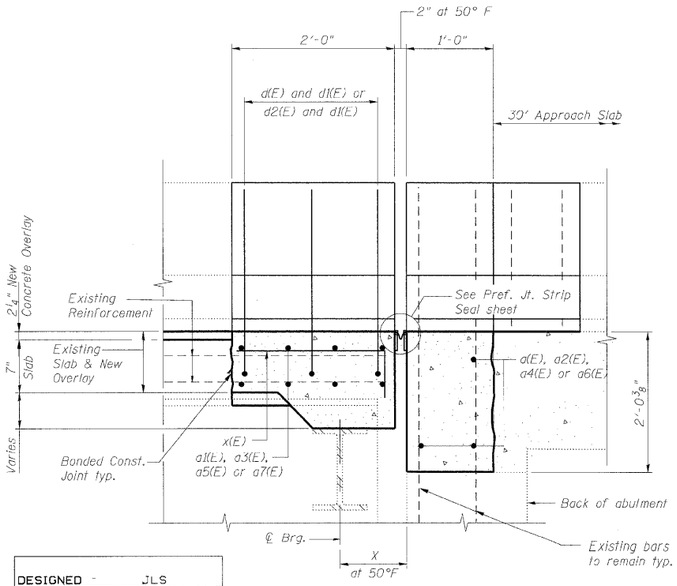
SECTION C-C



EXISTING PARAPET SECTION

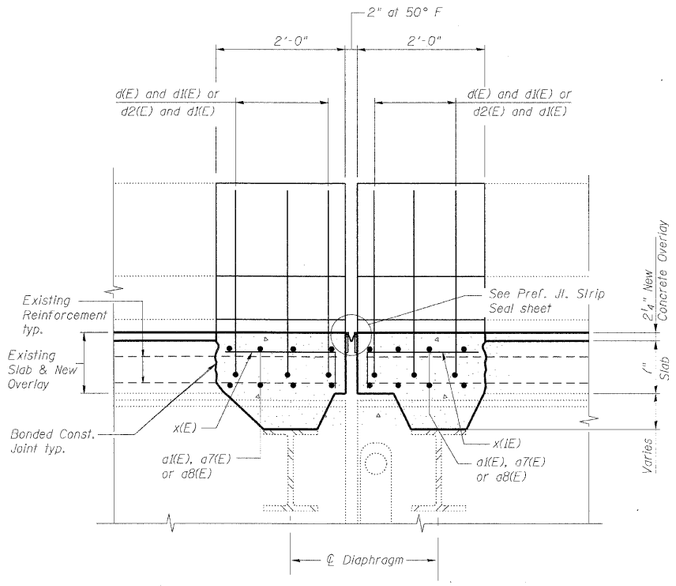
Notes:

1. 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.
2. Existing reinforcement bars in the concrete removal area parallel to the expansion joints shall be removed.
3. Removal and disposal of the existing expansion joints will not be paid for separately, but shall be included with the cost of Concrete Removal.
4. 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.
5. 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.
6. The Contractor shall exercise extreme care with the existing conduits in sections of the parapet to be removed and to protect and support the conduit. The Contractor will be required to repair any damage done to the conduit to the satisfaction of the Engineer, at no additonal cost to the Department. No splicing will be allowed to any cable damage resulting from this work. Instead the Contractor will be required to repair the entire span of any damaged cable at no additional cost to the Department.
7. Work this sheet with Expansion Joint Repair sheets.

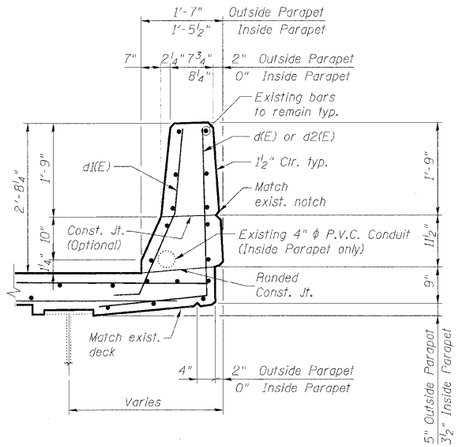


DESIGNED -	JLS
CHECKED -	AAY
DRAWN -	VH
CHECKED -	AAY

SECTION B-B



SECTION D-D



PROPOSED PARAPET SECTION

EXPANSION JOINT DETAILS
STRUCTURE NO. 022-0008

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

SHEET NO. 7	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
10 SHEETS	290	2009-099 BR	COOK/DUPAGE	309	206
			CONTRACT NO. 60157		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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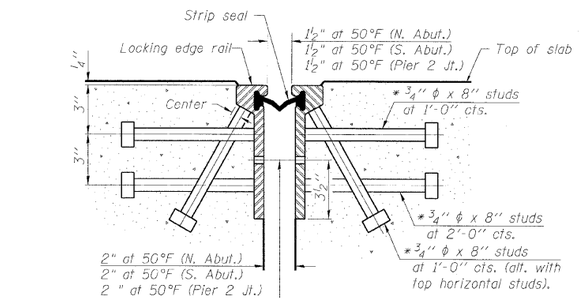
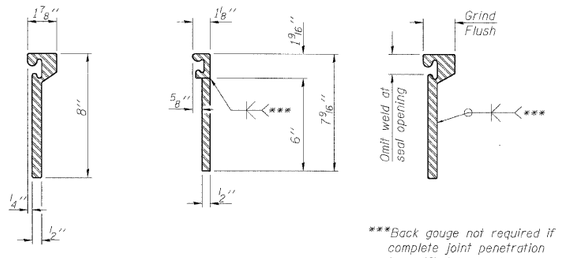
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

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



SECTION THRU ROLLED RAIL JOINT



ROLLED EXTRUDED RAIL

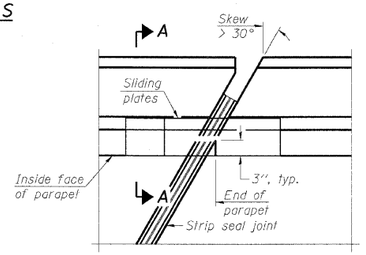
WELDED RAIL

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

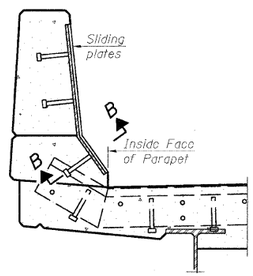
LOCKING EDGE RAIL SPLICE

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

LOCKING EDGE RAILS

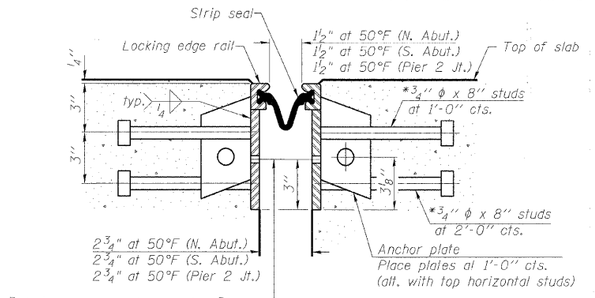


PLAN

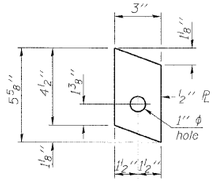


SECTION A-A

POINT BLOCK DETAILS
(for skews > 30°)



SECTION THRU WELDED RAIL JOINT



ANCHOR ℄
(for welded rail)

Notes:

The strip seal shall be made continuous and shall have a minimum thickness of ¼". The configuration of the strip seal shall match the configuration of the Locking Edge Rails. Open or "webbed" strip seal gland configurations are not permitted. The gland shall be sized for a maximum rated movement of 4 inches.

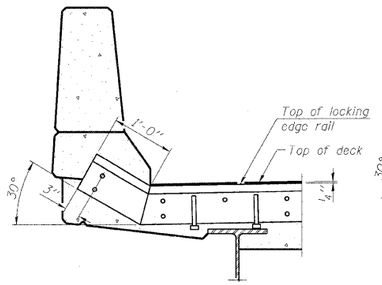
The height and thickness of the Locking Edge Rails shown are minimum dimensions. The actual configuration of the Locking Edge Rails and matching strip seal may vary from manufacturer to manufacturer. Flanged edge rails will not be allowed. Locking Edge Rails may be spliced at slope discontinuities and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

The manufacturer's recommended installation methods shall be followed.

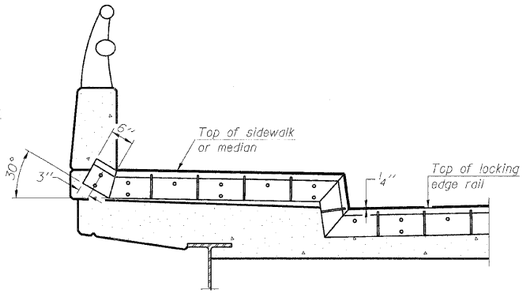
The joint opening and deck dimensions detailed on the superstructure are based on a rolled rail expansion joint. If the Contractor elects to use the welded rail expansion joint, the opening and deck dimensions shall be modified according to the dimensions detailed on this sheet. Required modifications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

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

TYPICAL END TREATMENTS

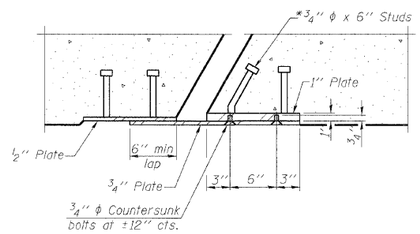


AT PARAPET



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.



SECTION B-B

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	249.5

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

EJ-SSJ

10-1-08

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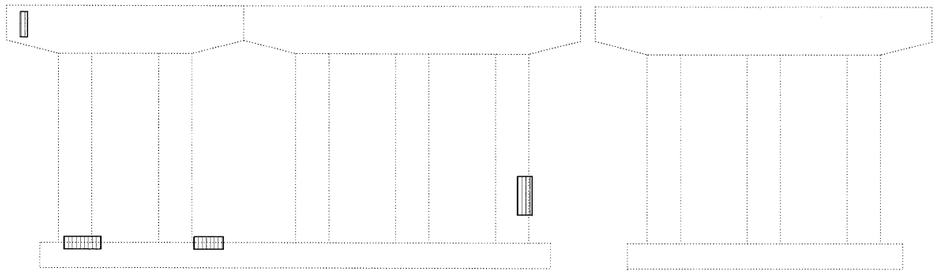
Chicago, Illinois 60601
312-565-0450 Job No. 10050

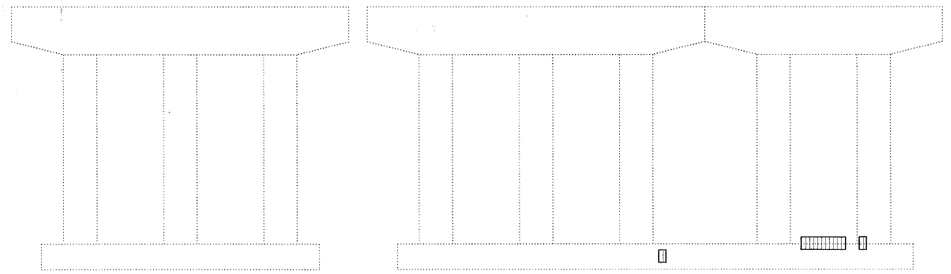
PREFORMED JOINT STRIP SEAL
STRUCTURE NO. 022-0008

SHEET NO. 8	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
10 SHEETS	290	2009-099 BR	COOK/DUPAGE	309	207
			CONTRACT NO. 60157		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

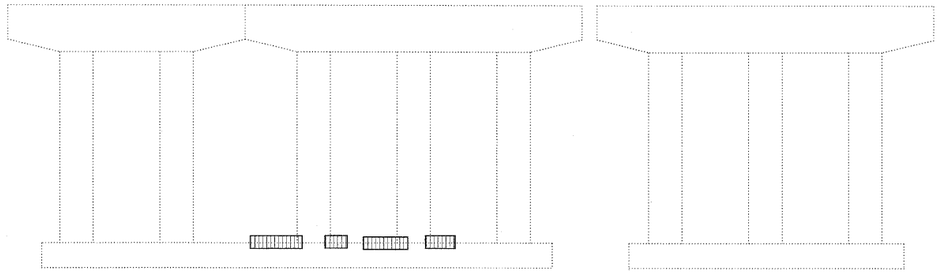
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



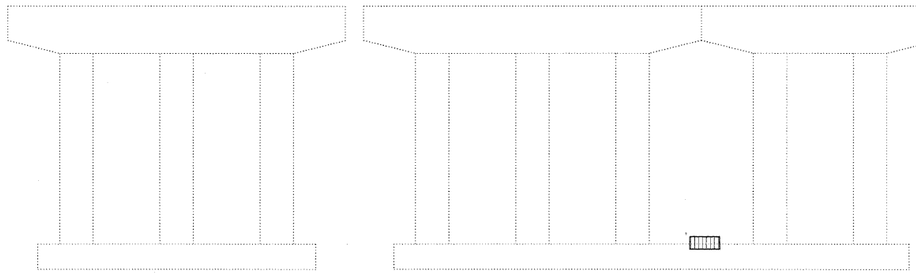
PIER 1 REPAIRS - NORTH FACE



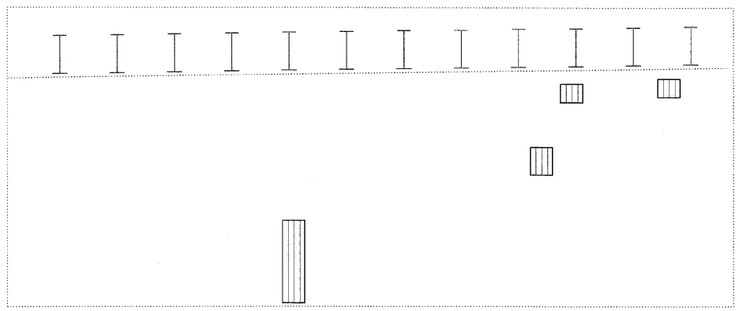
PIER 1 REPAIRS - SOUTH FACE



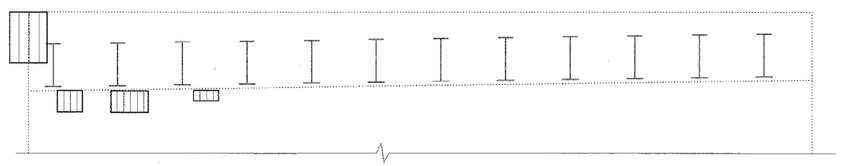
PIER 2 REPAIRS - NORTH FACE



PIER 2 REPAIRS - SOUTH FACE



NORTH ABUTMENT REPAIRS



SOUTH ABUTMENT REPAIRS

BILL OF MATERIAL

SYMBOL	ITEM	UNIT	QUANTITY
	Structural Repair of Concrete (Depth Equal to or Less than 5 Inches)	Sq. Ft.	100

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

Notes:

1. Substructure repair areas are estimated based on IDOT field notes from August 24, 2009.
2. 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 coundults shall be included in the cost for Structural Repair of Concrete (Depth equal to or less than 5").

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312-565-0450 Job No. 10050

SUBSTRUCTURE REPAIRS
STRUCTURE NO. 022-0008

SHEET NO. 9	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
10 SHEETS	290	2009-099 BR	COOK/DUPAGE	309	208
			CONTRACT NO. 60157		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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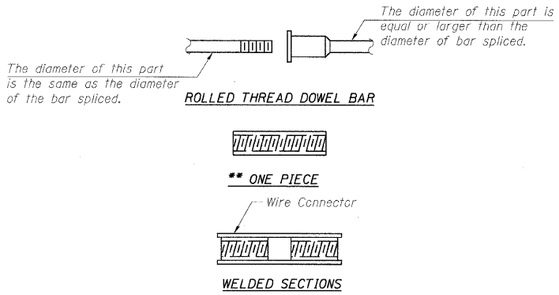
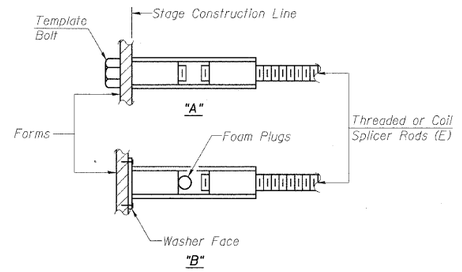
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



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.

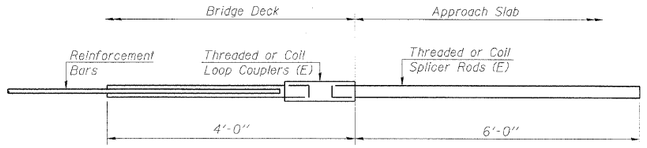
Other systems of similar design may be submitted to the Engineer for approval. Approval shall be based on certified test results from an approved testing laboratory that the proposed bar splicer assembly satisfies the following requirements:

① Minimum Capacity (Tension in kips) = $1.25 \times f_y \times A_t$

② Minimum *Pull-out Strength (Tension in kips) = $0.66 \times f_y \times A_t$

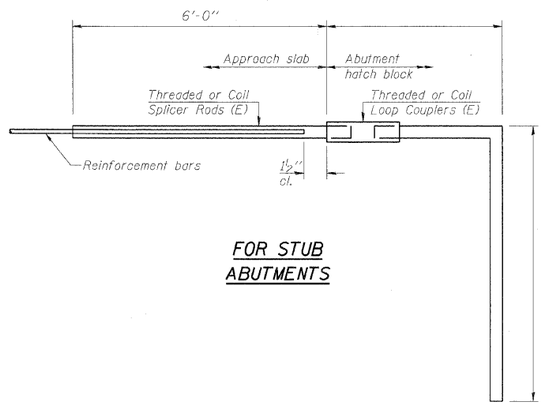
Where f_y = Yield strength of lapped reinforcement bars in ksi.
A_t = Tensile stress area of lapped reinforcement bars.
* = 28 day concrete

BAR SPLICER ASSEMBLIES			
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



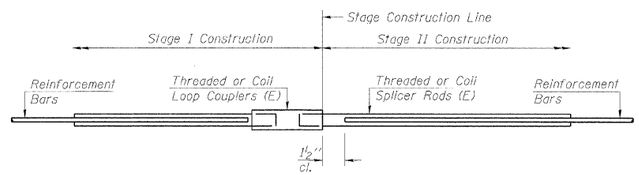
FOR INTEGRAL OR SEMI-INTEGRAL ABUTMENTS

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	64	Deck
#6	12	Deck

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

BSD-1 10-1-08

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BAR SPLICER ASSEMBLY DETAILS
STRUCTURE NO. 022-0008

SHEET NO. 10	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
10 SHEETS	290	2009-099 BR	COOK/DUPAGE	309	209
			CONTRACT NO. 60157		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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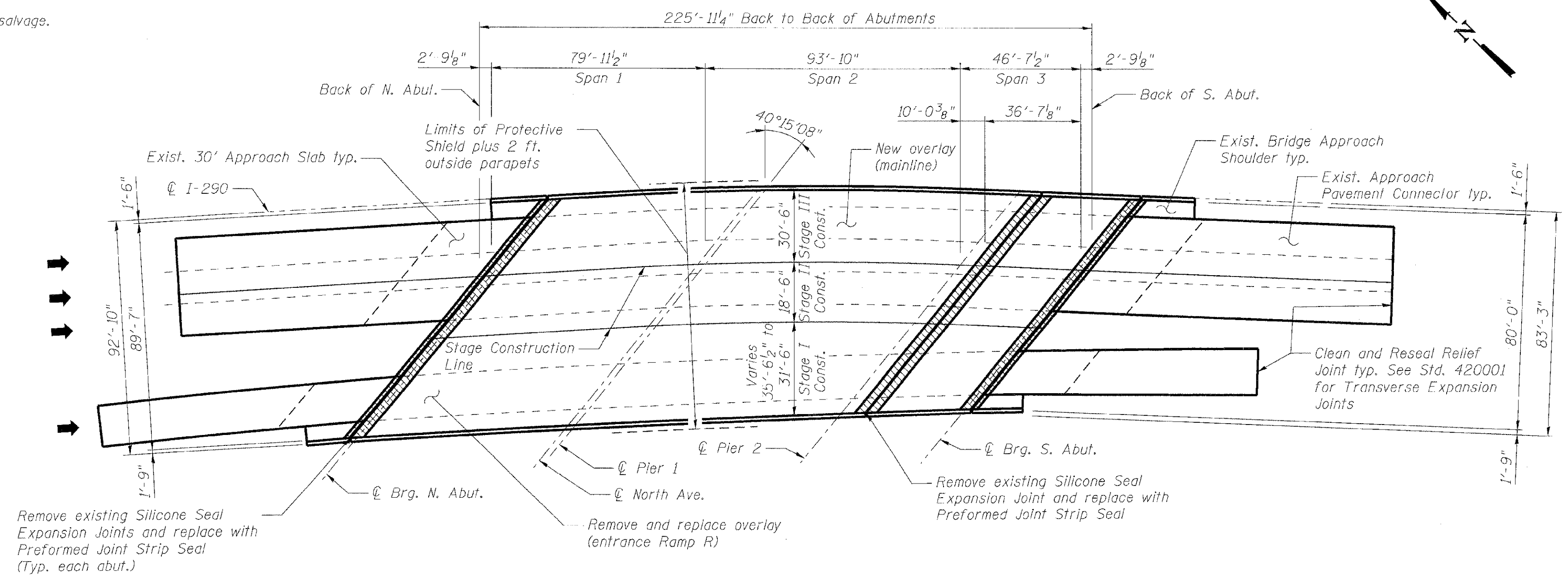
Existing Structure:
The structure is a three-span steel structure with a 7.5-inch reinforced concrete deck with no overlay on the mainline and a 7.25-inch thick reinforced concrete deck with a 2-inch overlay on the entrance ramp.
The original structure was built in 1960 and is in Section (100 & 100-1) R-84. In 1985, the bridge was widened and redecked, expansion joints were reconstructed, north abutment bearings were replaced, pin and link connections were replaced in span 3 along with beam repositioning, and the superstructure was cleaned and painted. In 1996, pin and link connections were replaced in span 3. In 1998, the expansion joints were reconstructed, the deck and approach slabs were repaired, and damaged beams were replaced.

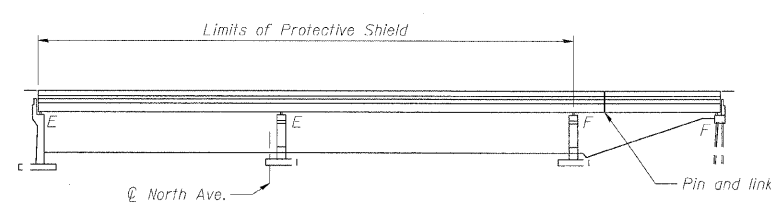
Stage construction shall be utilized to maintain traffic during construction.

No salvage.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



PLAN



ELEVATION

DESIGN SPECIFICATIONS

2002 AASHTO Standard Specifications for Highway Bridges, 17th Edition

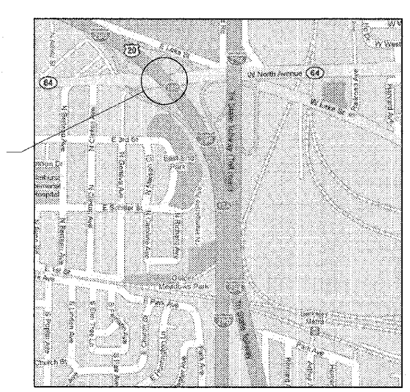
DESIGN STRESSES

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

SCOPE OF WORK

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

Structure Location



LOCATION SKETCH

N

STATE OF ILLINOIS
MARK R. BENDOK
LICENSED STRUCTURAL ENGINEER
Expiration Date 11-30-10
DATE: 11/16/09

GENERAL PLAN AND ELEVATION
I-290 EB OVER NORTH AVENUE
DuPAGE COUNTY
STATION 351+32
STRUCTURE NO. 022-0007

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

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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.
10 SHEETS	290	2009-099 BR	COOK/DUPAGE	309	210
			CONTRACT NO. 60I57		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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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 $\frac{1}{4}$ 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, abutment backwalls, and approach slab on Ramp R. All surfaces to be sealed shall be cleaned thoroughly prior to sealer application. Cost included with Concrete Sealer.

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

7. Stage construction shall be utilized to maintain traffic during construction.

8. The Contractor shall exercise care during removal of existing joints to ensure that the slab, beams and diaphragms' integrity will not be detrimentally impacted. The Contractor shall repair any damage(s) to the slab, beams and diaphragms caused by his operation as directed by the Engineer at no additional cost to the Department.

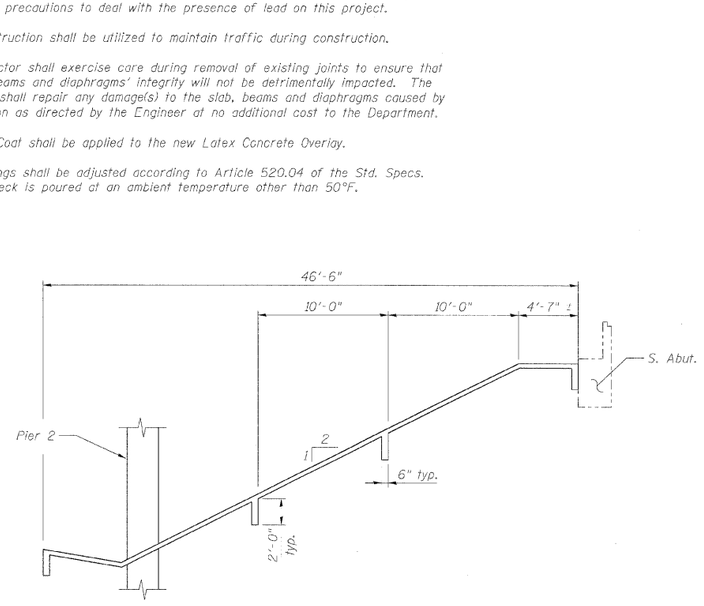
9. Protective Coat shall be applied to the new Latex Concrete Overlay.

10. Joint openings shall be adjusted according to Article 520.04 of the Std. Specs. when the deck is poured at an ambient temperature other than 50°F.

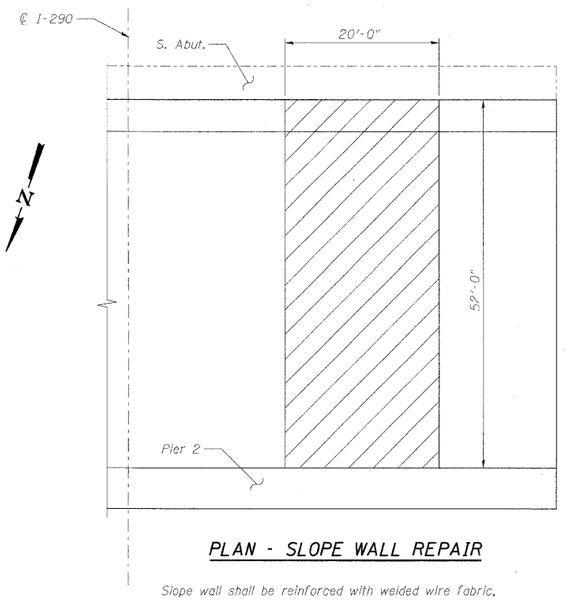
INDEX OF SHEETS

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Porous Granular Embankment	Cu. Yd.		39	39
Concrete Removal	Cu. Yd.	50.7		50.7
Protective Shield	Sq. Yd.	1,777		1,777
Slope Wall Removal	Sq. Yd.		116	116
Concrete Superstructure	Cu. Yd.	54.2		54.2
Bridge Deck Grooving	Sq. Yd.	2,358		2,358
Protective Coat	Sq. Yd.	2,624		2,624
Reinforcement Bars, Epoxy Coated	Pound	6,170		6,170
Bar Splicers	Each	76		76
Slope Wall 4 inch	Sq. Yd.		116	116
Preformed Joint Strip Seal	Foot	325.5		325.5
Concrete Sealer	Sq. Ft.	3,727	839	4,566
Bridge Deck Latex Concrete Overlay, $2\frac{1}{4}$"	Sq. Yd.	2,338		2,338
Structural Repair of Concrete (Depth Equal to or Less than 5 Inches)	Sq. Ft.	15	274	289
Approach Slab Repair (Partial Depth)	Sq. Yd.	5.0		5.0
Bridge Deck Hydro-Scarification, $\frac{1}{2}$"	Sq. Yd.	1,761		1,761
Bridge Deck Hydro-Scarification, $2\frac{1}{4}$"	Sq. Yd.	578		578
Deck Slab Repair (Full Depth, Type I)	Sq. Yd.	5.0		5.0
Deck Slab Repair (Full Depth, Type II)	Sq. Yd.	5.0		5.0
Cleaning and Painting Exposed Rebar (Special)	Sq. Ft.	366		366
Clean and Reseal Relief Joint	Foot	104.0		104.0



SECTION THRU SLOPEWALL



PLAN - SLOPE WALL REPAIR

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

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

Existing and new welded wire fabrics should overlap at least 6".

LEGEND

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

GENERAL NOTES, BILL OF MATERIAL AND INDEX OF SHEETS STRUCTURE NO. 022-0007

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

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SHEET NO. 2	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
10 SHEETS	290	2009-099 BR	COOK/DUPAGE	309	211
			CONTRACT NO. 60157		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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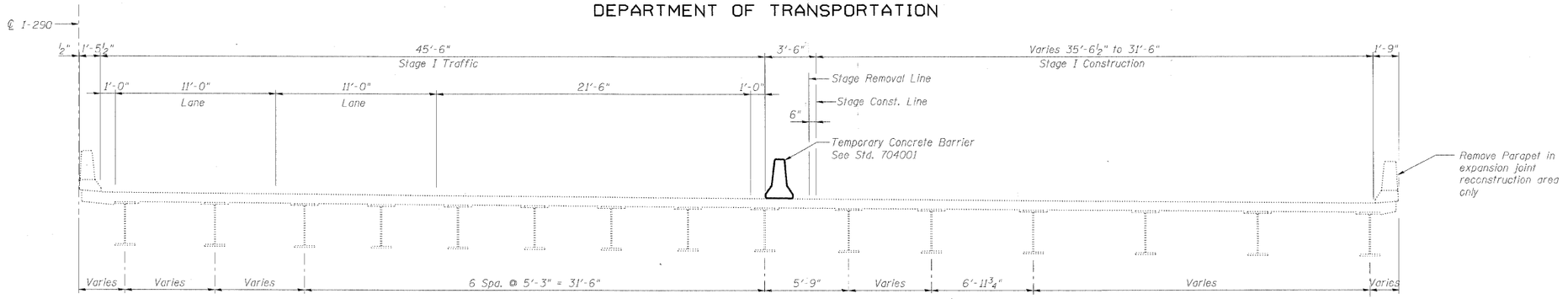
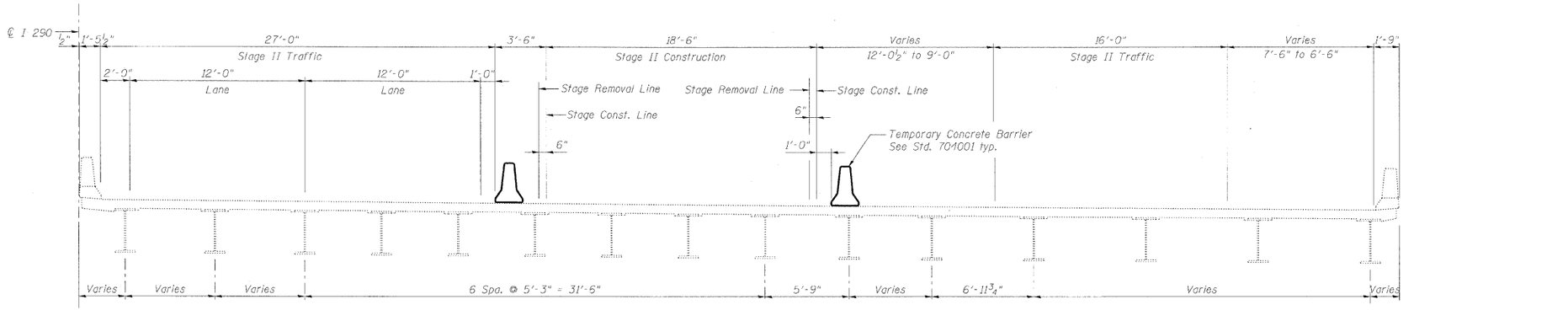
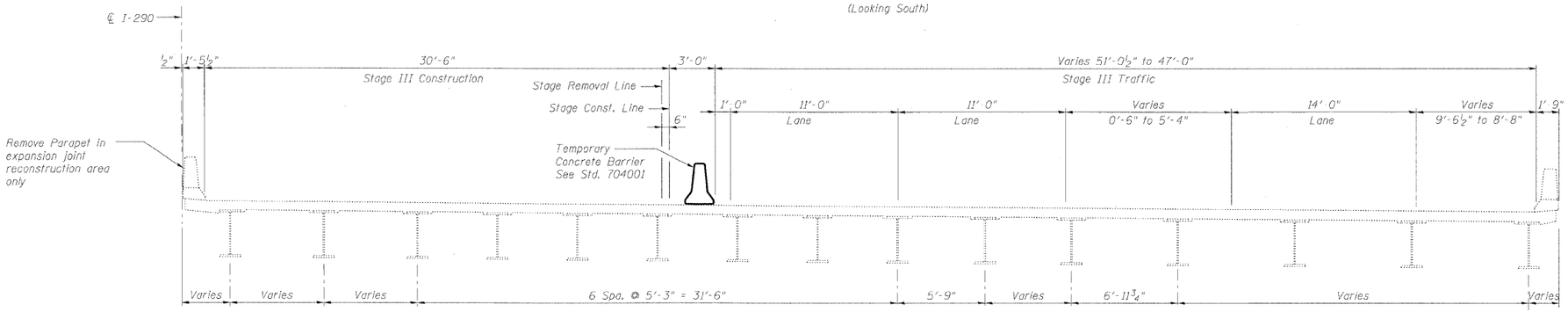
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



STAGE I CROSS SECTION
(Looking South)



STAGE II CROSS SECTION
(Looking South)



STAGE III CROSS SECTION
(Looking South)

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

STAGE CONSTRUCTION DETAILS
STRUCTURE NO. 022-0007

DESIGNED -	AAY
CHECKED -	MAC
DRAWN -	TMB/VH
CHECKED -	AAY

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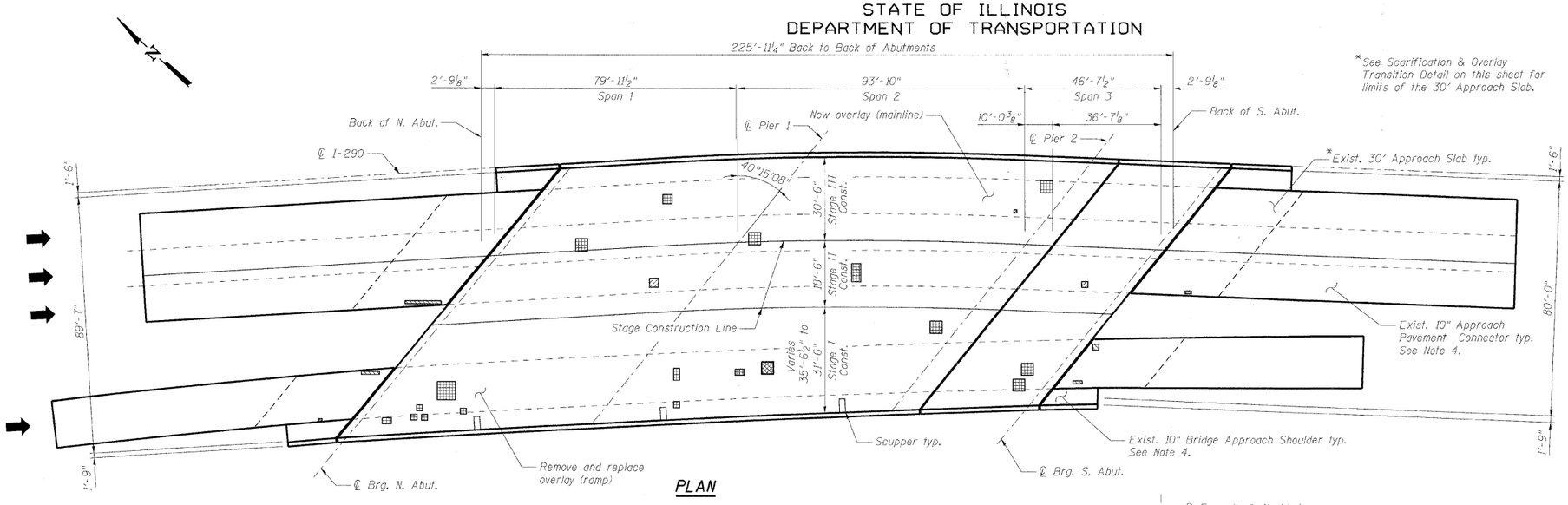
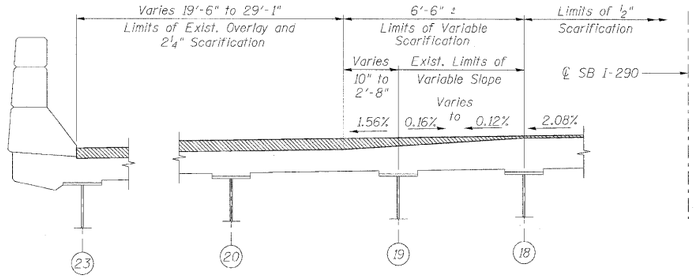
Chicago, Illinois 60601
312-565-0450 Job No. 10050

SHEET NO. 3	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
10 SHEETS	290	2009-099 BR	COOK/DUPAGE	309	212
			CONTRACT NO. 60157		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

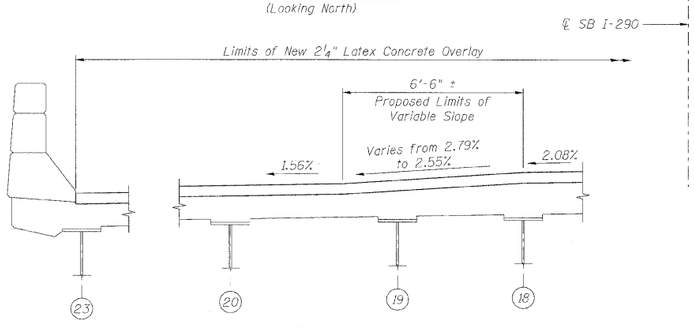
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



PLAN

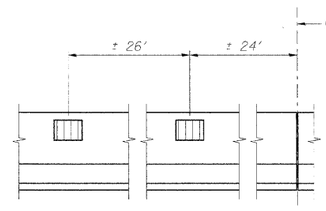


EXISTING SECTION
(Looking North)

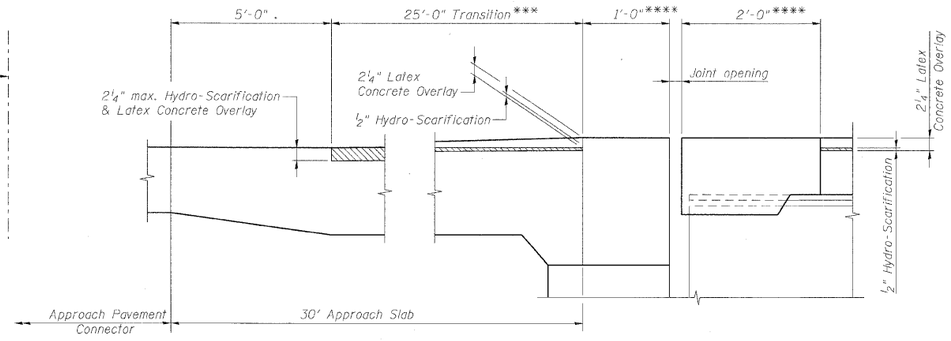


PROPOSED SECTION
(Looking North)

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



INSIDE ELEVATION - OUTSIDE PARAPET



SCARIFICATION & OVERLAY TRANSITION DETAIL (MAINLINE ONLY)

***Cost of increased hydro-scarification depth over length of transition shall be included with Bridge Deck Hydro-Scarification, ½".

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

BILL OF MATERIAL

SYMBOL	ITEM	UNIT	QUANTITY
	Deck Slab Repair (Partial)	Sq. Yd.	6.7 ▲
	Deck Slab Repair (Full Depth - Type I)	Sq. Yd.	5.0
	Deck Slab Repair (Full Depth - Type II)	Sq. Yd.	5.0
	Cleaning & Painting Exposed Rebar (Special)	Sq. Ft.	366
	Approach Slab Repair (Partial Depth) (Mainline)	Sq. Yd.	5.0 ▲
	Approach Slab Repair (Partial Depth)	Sq. Yd.	5.0
	Structural Repair of Concrete (Depth Equal to or Less than 5 Inches)	Sq. Ft.	15
	Protective Shield	Sq. Yd.	1,777
	Bridge Deck Grooving	Sq. Yd.	2,358
	Protective Coat	Sq. Yd.	2,624
	Bridge Deck Latex Concrete Overlay, 2¼"	Sq. Yd.	2,338
	Bridge Deck Hydro-Scarification, ½"	Sq. Yd.	1,761
	Bridge Deck Hydro-Scarification, 2¼"	Sq. Yd.	578

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

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 and shown on 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 General Plan and Elevation.
3. Deck drains (downspouts, floor drains, and scuppers) shall be cleaned prior to placement of the Latex Concrete Overlay. Cost of cleaning the deck drains is included in Bridge Deck Hydro-Scarification, ½".
4. 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.
5. Gaps caused by distress around floor drains shall be filled with epoxy as specified in the Special Provision "Epoxy Injection". Cost included with Bridge Deck Latex Concrete Overlay, 2¼".
6. Cost of new overlay on approach slab transition in included with Bridge Deck Latex Concrete Overlay, 2¼".

BRIDGE DECK AND APPROACH SLAB REPAIRS
STRUCTURE NO. 022-0007

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

SHEET NO. 4	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
10 SHEETS	290	2009-099 BR	COOK/DUPAGE	309	213
			CONTRACT NO. 60157		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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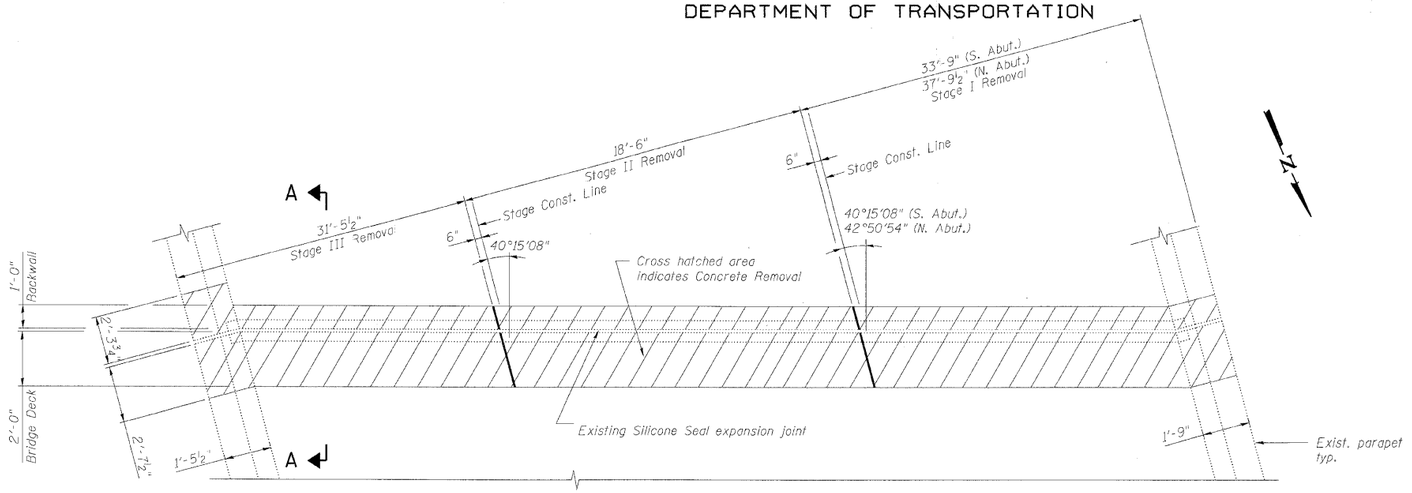
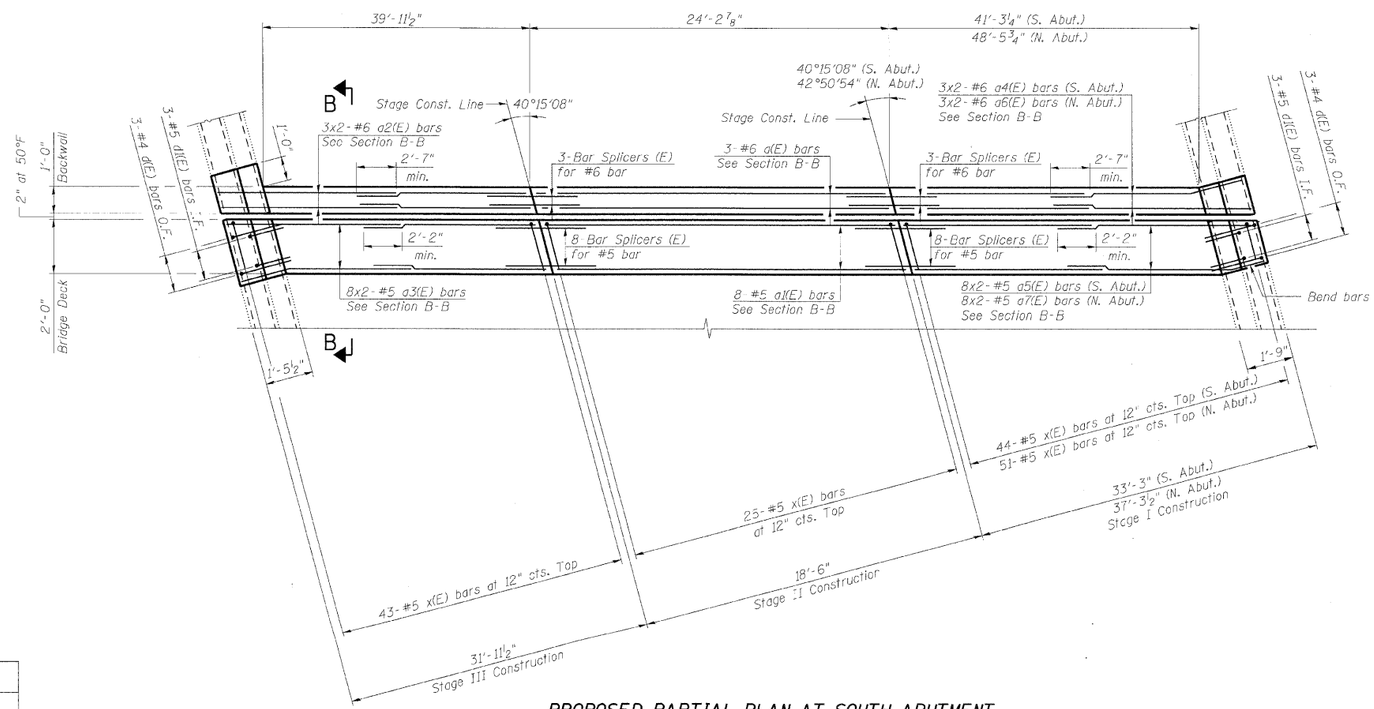
11\12\2009 18:39:30

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



EXISTING PARTIAL PLAN AT SOUTH ABUTMENT

(Opposite Hand for North Abutment)



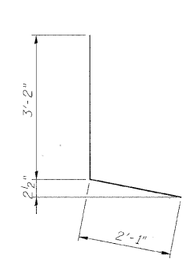
PROPOSED PARTIAL PLAN AT SOUTH ABUTMENT

(Opposite Hand for North Abutment)

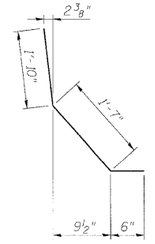
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	6	#6	24'-0"	
a1(E)	16	#5	24'-0"	
a2(E)	12	#6	21'-11"	
a3(E)	32	#5	21' 11"	
a4(E)	6	#6	22'-8"	
a5(E)	16	#5	22'-8"	
a6(E)	6	#6	26'-3"	
a7(E)	16	#5	26'-3"	
d(E)	12	#4	5'-3"	
d1(E)	12	#5	3'-11"	
x(E)	231	#5	2'-3"	

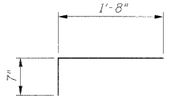
Item	Unit	Total
Concrete Removal	Cu. Yd.	35.3
Concrete Superstructure	Cu. Yd.	37.0
Reinforcement Bars, Epoxy Coated	Pound	3,640



BAR d(E)



BAR d1(E)



BAR x(E)

Notes:

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

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

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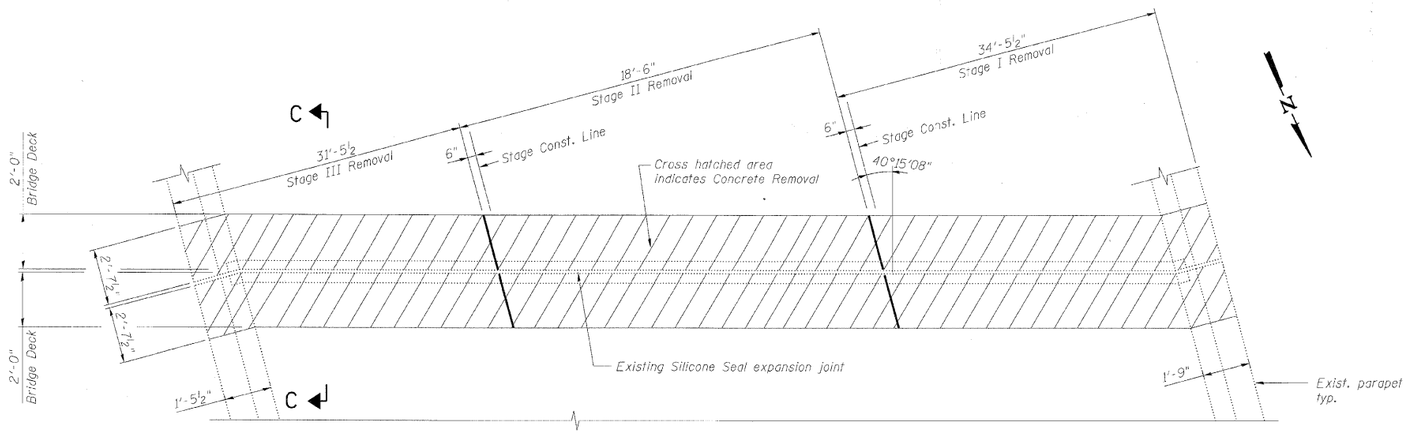
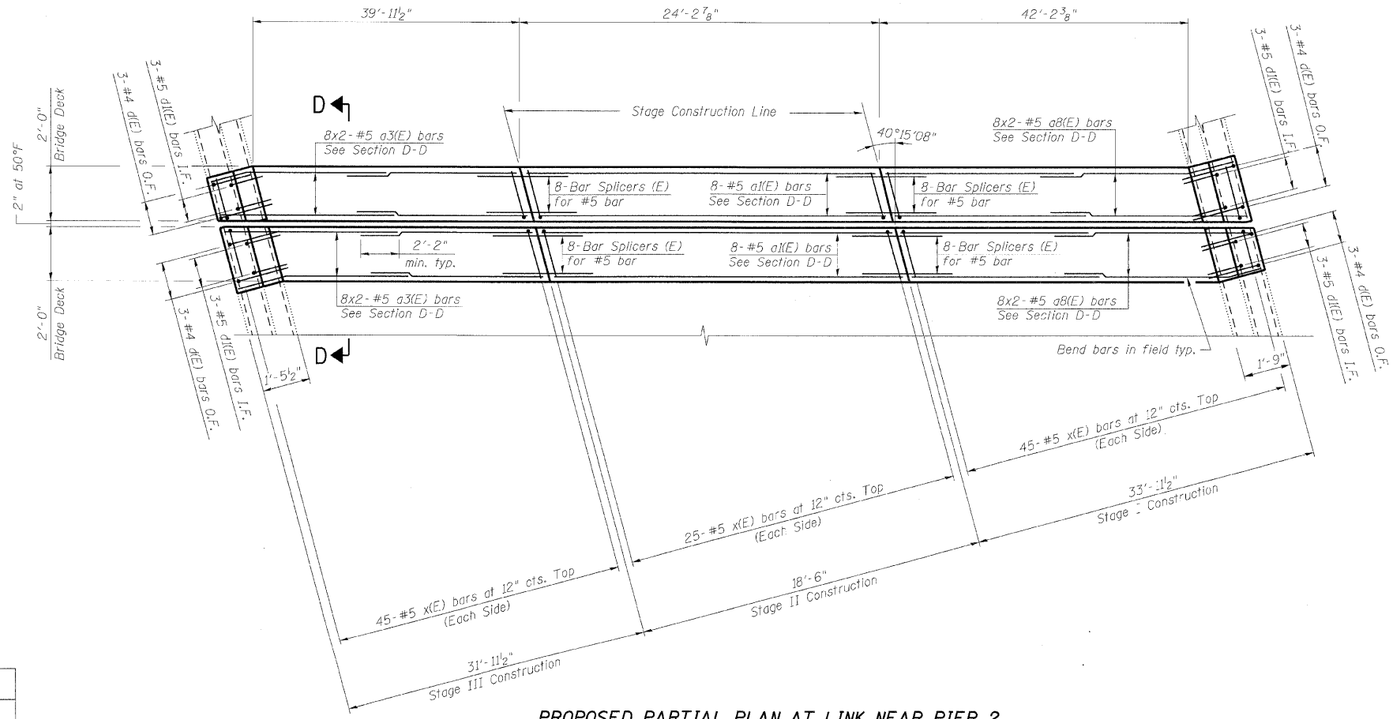
EXPANSION JOINT REPAIRS 1 of 2
STRUCTURE NO. 022-0007

SHEET NO. 5	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
10 SHEETS	290	2009-099 BR	COOK/DUPAGE	309	214
			CONTRACT NO. 60157		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



EXISTING PARTIAL PLAN AT LINK NEAR PIER 2

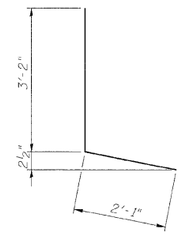


PROPOSED PARTIAL PLAN AT LINK NEAR PIER 2

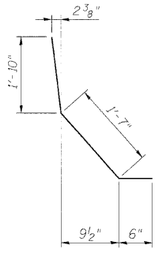
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a1(E.)	16	#5	24'-0"	
a3(E)	32	#5	21'-11"	
a8(E)	32	#5	23'-2"	
d(E)	12	#4	5'-3"	
d1(E)	12	#5	3'-11"	
x(E)	226	#5	2'-3"	

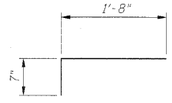
Item	Unit	Total
Concrete Removal	Cu. Yd.	15.4
Concrete Superstructure	Cu. Yd.	17.2
Reinforcement Bars, Epoxy Coated	Pound	2,530



BAR d(E)



BAR d1(E)



BAR x(E)

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.
5. Cut 2'-1" leg of d(E) bars to fit for 2'-5" overhang.

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

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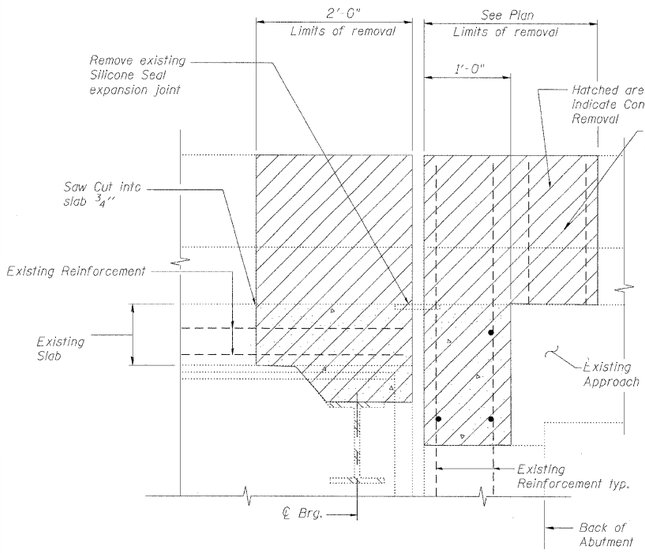
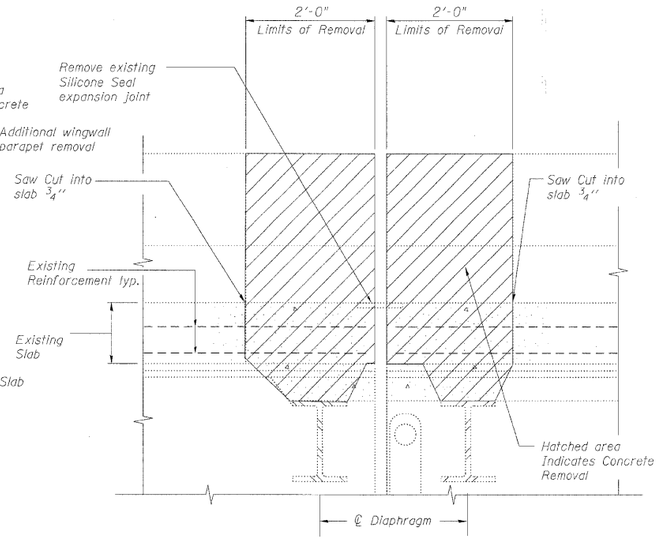
EXPANSION JOINT REPAIRS 2 of 2
STRUCTURE NO. 022-0007

SHEET NO. 6	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
10 SHEETS	290	2009-099 BR	COOK/DUPAGE	309	215
			CONTRACT NO. 60157		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

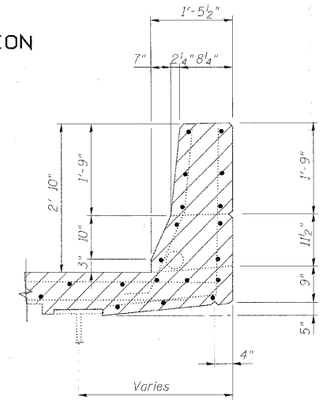
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



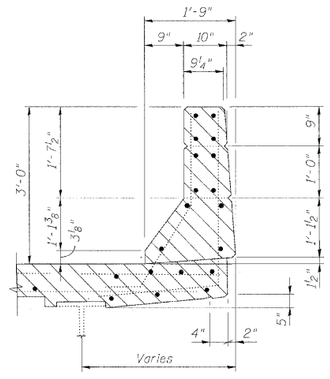
SECTION A-A



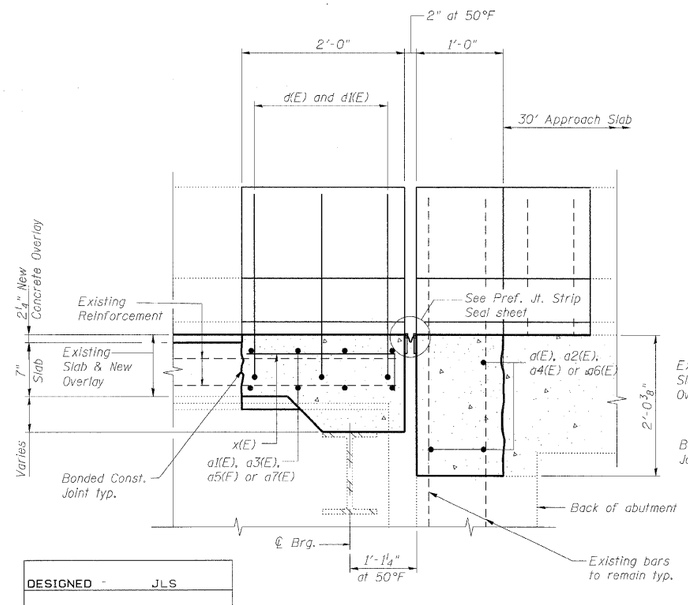
SECTION C-C



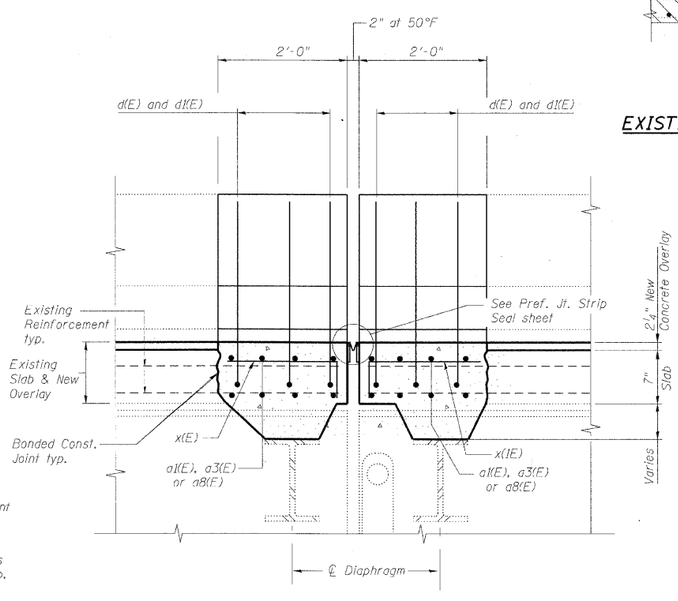
EXISTING INSIDE PARAPET SECTION



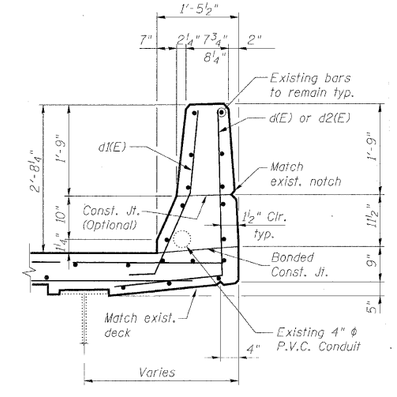
EXISTING OUTSIDE PARAPET SECTION



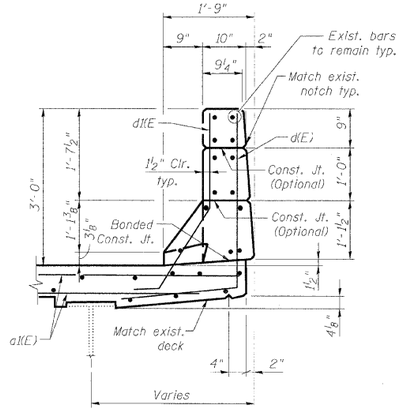
SECTION B-B



SECTION D-D



PROPOSED INSIDE PARAPET SECTION



PROPOSED OUTSIDE PARAPET SECTION

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

Notes:

1. 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.
2. Existing reinforcement bars in the concrete removal area parallel to the expansion joints shall be removed.
3. Removal and disposal of the existing expansion joints will not be paid for separately, but shall be included with the cost of Concrete Removal.
4. 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.
5. 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.
6. The Contractor shall exercise extreme care with the existing conduits in sections of the parapet to be removed and to protect and support the conduit. The Contractor will be required to repair any damage done to the conduit to the satisfaction of the Engineer, at no additonal cost to the Department. No splicing will be allowed to any cable damage resulting from this work, instead the Contractor will be required to repair the entire span of any damaged cable at no additional cost to the Department.
7. Work this sheet with Expansion Joint Repair sheets.

EXPANSION JOINT DETAILS
STRUCTURE NO. 022-0007

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

SHEET NO. 7	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
10 SHEETS	290	2009-099 BR	COOK/DUPAGE	309	216
			CONTRACT NO. 60157		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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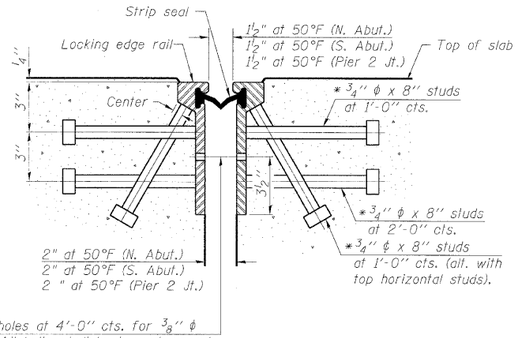
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

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



SECTION THRU ROLLED RAIL JOINT

SECTION THRU WELDED RAIL JOINT

Notes:

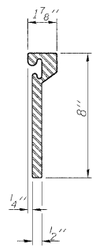
The strip seal shall be made continuous and shall have a minimum thickness of ¼". The configuration of the strip seal shall match the configuration of the Locking Edge Rails. Open or "webbed" strip seal gland configurations are not permitted. The gland shall be sized for a maximum rated movement of 4 inches.

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

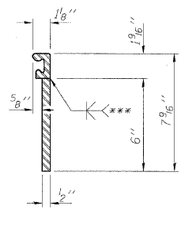
The manufacturer's recommended installation methods shall be followed.

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

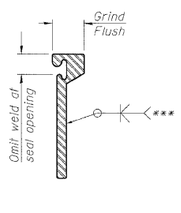
All steel components shall be galvanized after fabrication according to Article 520.03 of the Standard Specifications.



ROLLED EXTRUDED RAIL



WELDED RAIL

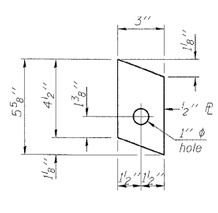


***Back gouge not required if complete joint penetration is verified by mock-up.

LOCKING EDGE RAIL SPLICE

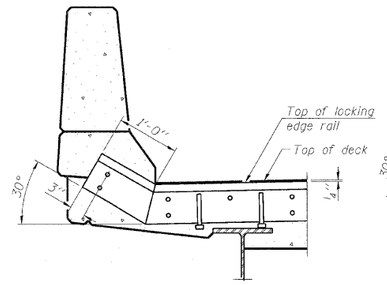
The inside of the locking edge rail groove shall be free of weld residue.

LOCKING EDGE RAILS

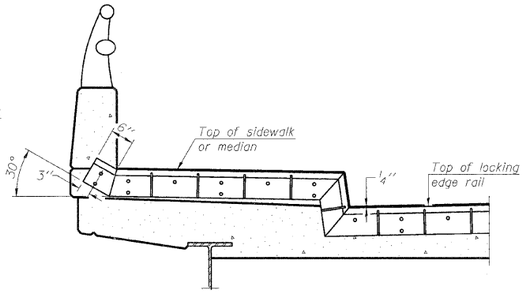


ANCHOR ℄

(for welded rail)



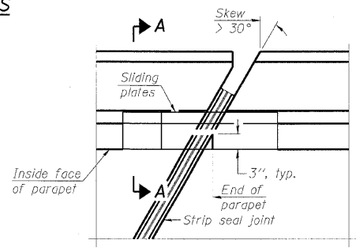
AT PARAPET



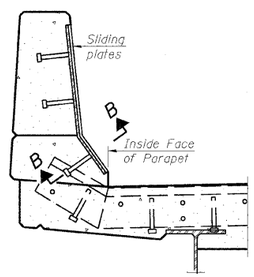
AT SIDEWALK OR MEDIAN

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

TYPICAL END TREATMENTS



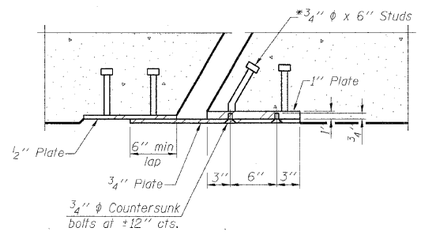
PLAN



SECTION A-A

POINT BLOCK DETAILS

(for skews > 30°)



SECTION B-B

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	325.5

PREFORMED JOINT STRIP SEAL
STRUCTURE NO. 022-0007

DESIGNED -	TJJ
CHECKED	AAY
DRAWN -	RMG
CHECKED -	AAY

EJ-SSJ 10-1-08

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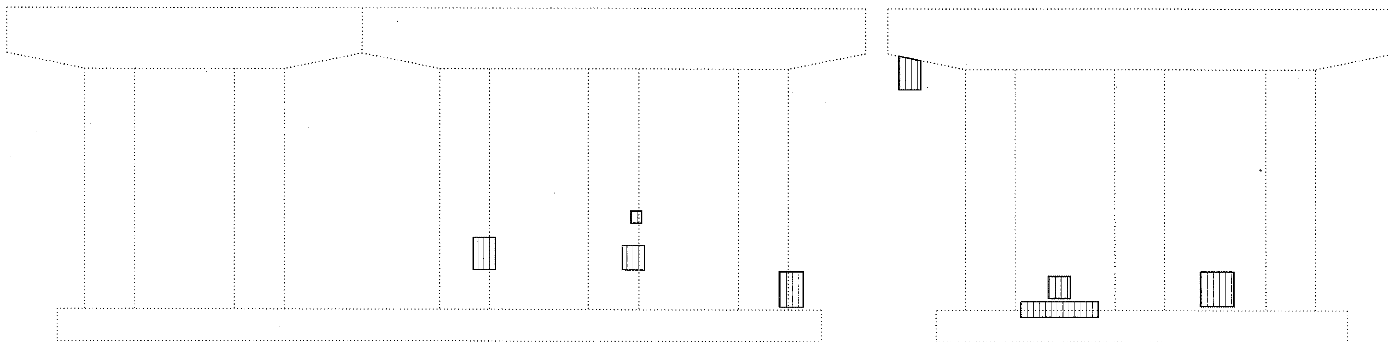
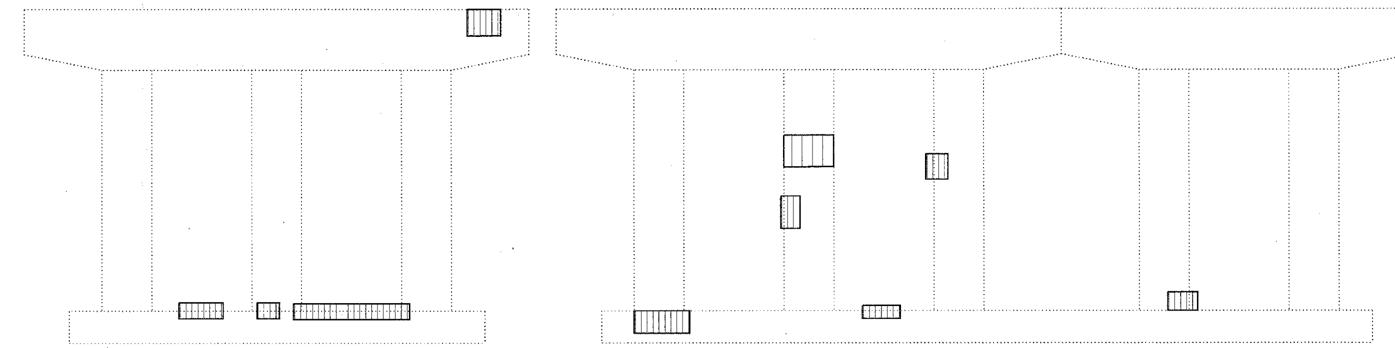
Chicago, Illinois 60601
312-565-0450 Job No. 10050

SHEET NO. 8	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
10 SHEETS	290	2009-099 BR	COOK/DUPAGE	309	217
			CONTRACT NO. 60157		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

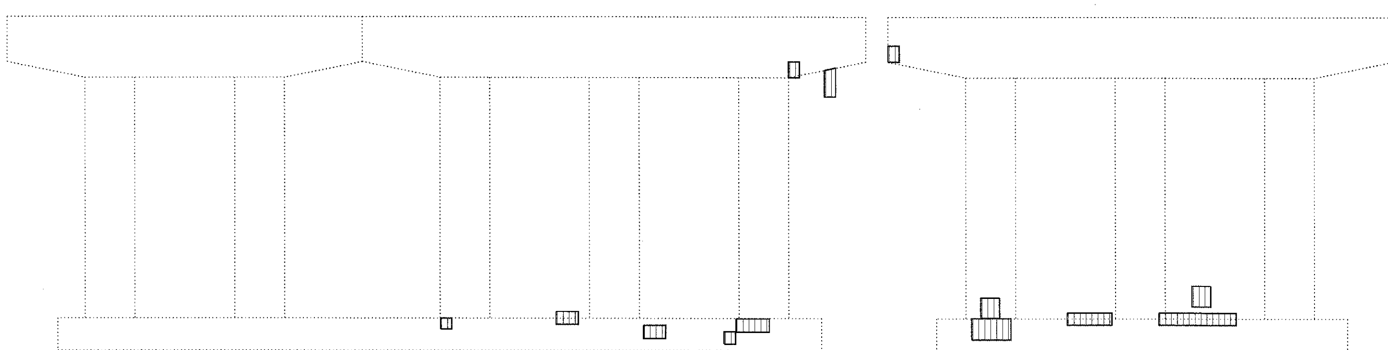
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



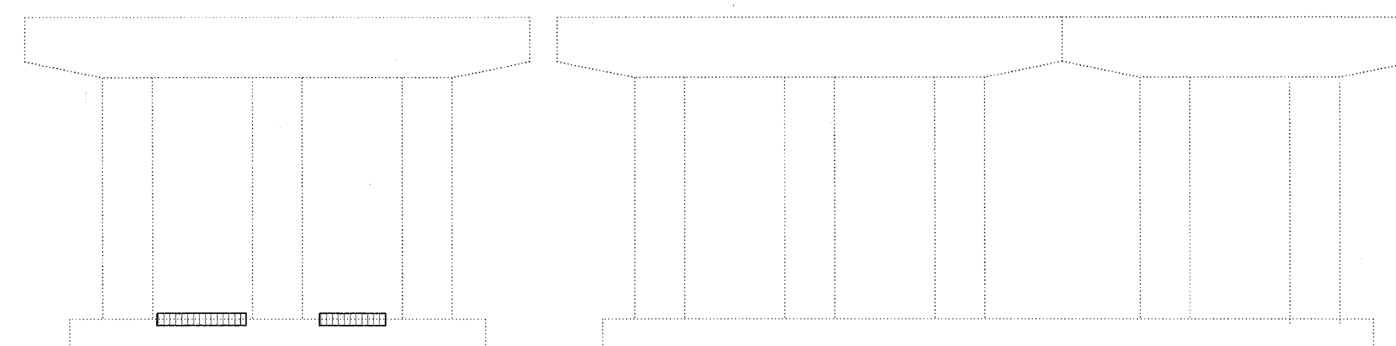
PIER 1 REPAIRS - NORTH FACE



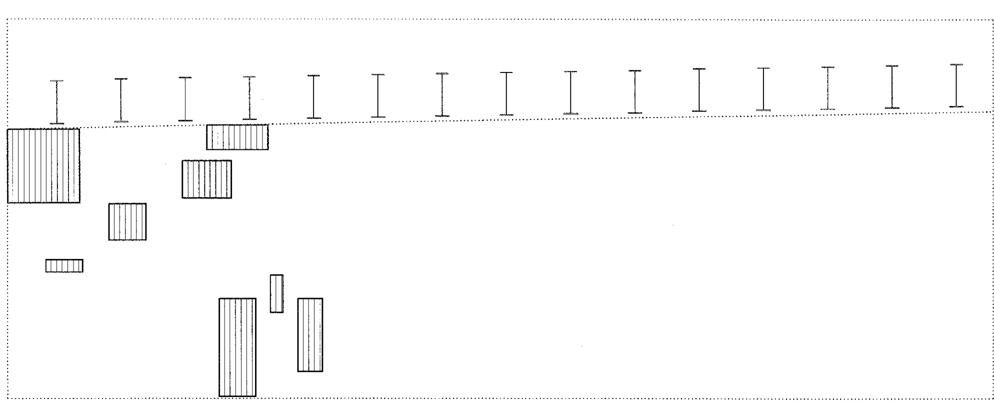
PIER 1 REPAIRS - SOUTH FACE



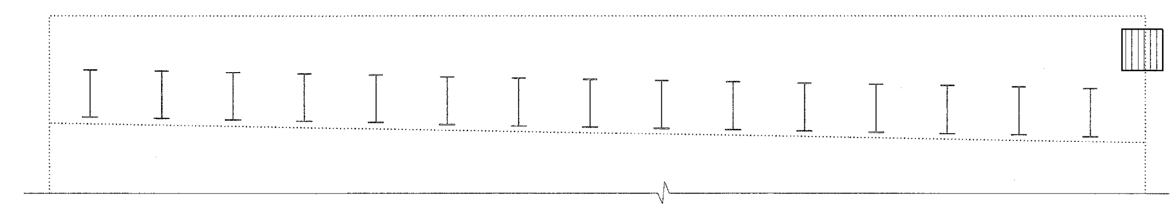
PIER 2 REPAIRS - NORTH FACE



PIER 2 REPAIRS - SOUTH FACE



NORTH ABUTMENT REPAIRS



SOUTH ABUTMENT REPAIRS

BILL OF MATERIALS

SYMBOL	ITEM	UNIT	QUANTITY
(hatched box)	Structural Repair of Concrete (Depth Equal to or Less than 5 Inches)	Sq. Ft.	274

Notes:

1. Substructure repair areas are estimated based on IDOT field notes from August 24, 2009.
2. 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 counduits shall be included in the cost for Structural Repair of Concrete (Depth equal to or less than 5").

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

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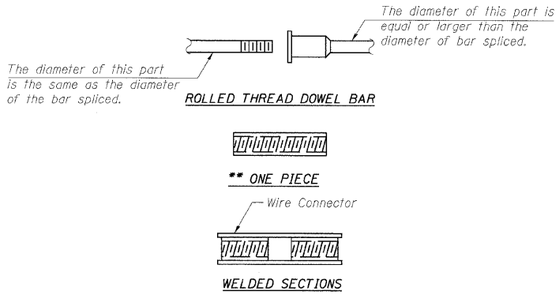
312-565-0450 Job No. 10050

SUBSTRUCTURE REPAIRS
STRUCTURE NO. 022-0007

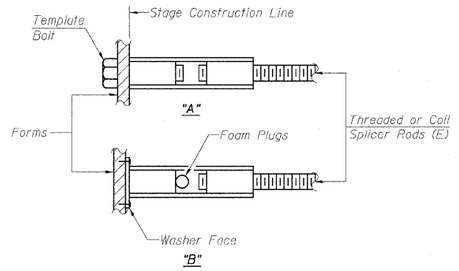
SHEET NO. 9	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
10 SHEETS	290	2009-099 BR	COOK/DUPAGE	309	218
			CONTRACT NO. 60I57		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



BAR SPLICER ASSEMBLY ALTERNATIVES

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



INSTALLATION AND SETTING METHODS

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

NOTES

Bar splicer assemblies shall be of an approved type and shall develop in tension at least 125 percent of the yield strength of the lapped reinforcement bars.

Splicer rods shall be of minimum 60 ksi yield strength, threaded or coiled full length.

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

Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars.

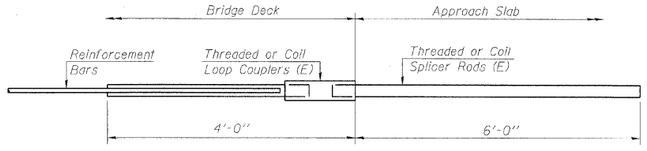
Other systems of similar design may be submitted to the Engineer for approval. Approval shall be based on certified test results from an approved testing laboratory that the proposed bar splicer assembly satisfies the following requirements:

① Minimum Capacity (Tension in kips) = $1.25 \times f_y \times A_t$

② Minimum *Pull-out Strength (Tension in kips) = $0.66 \times f_y \times A_t$

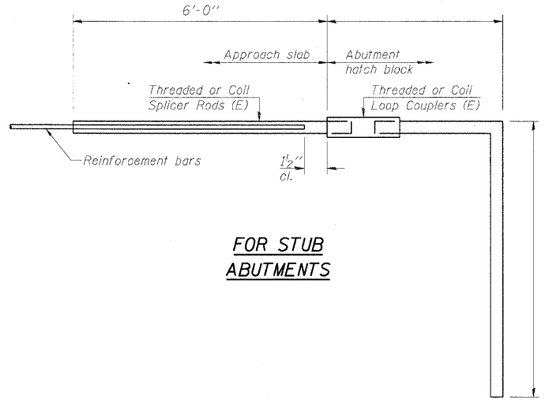
Where f_y = Yield strength of lapped reinforcement bars in ksi.
A_t = Tensile stress area of lapped reinforcement bars.
* = 28 day concrete

BAR SPLICER ASSEMBLIES			
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



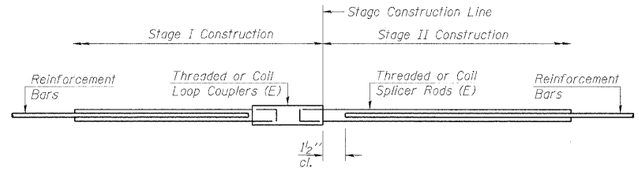
FOR INTEGRAL OR SEMI-INTEGRAL ABUTMENTS

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	64	Deck
#6	12	Deck

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

BSD-1

10-1-08

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

BAR SPLICER ASSEMBLY DETAILS
STRUCTURE NO. 022-0007

SHEET NO. 10	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
10 SHEETS	290	2009-099 BR	COOK/DUPAGE	309	219
			CONTRACT NO. 60157		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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Existing Structure:
The bridge is a four-span continuous, non-composite plate girder bridge with a 7-inch reinforced concrete deck and a 2-inch concrete overlay. The original structure was built in 1962. In 1985, the structure was widened, patched and overlaid; the approaches were constructed; and the abutment bearings and expansion joints were reconstructed. In 1998, diaphragms were replaced at the abutments, the expansion joints were reconstructed and patching was completed on the approaches. In 2002, the bridge was cleaned and painted.

Stage construction shall be utilized to maintain traffic during construction.

No salvage

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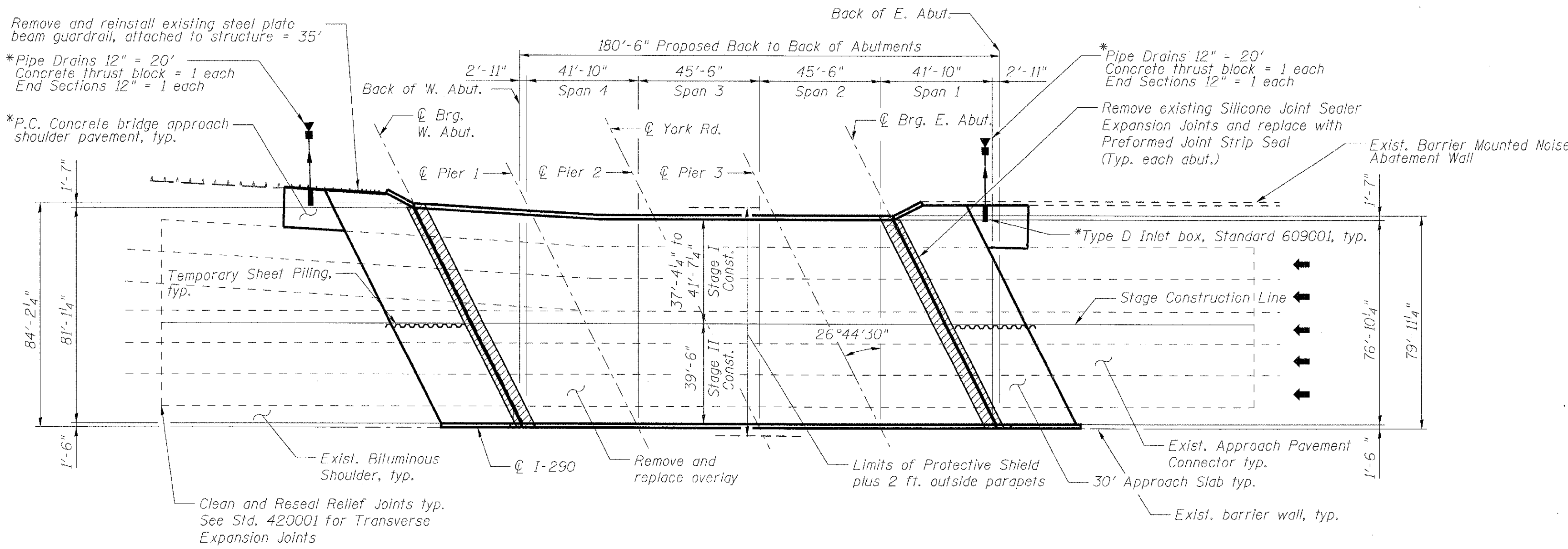
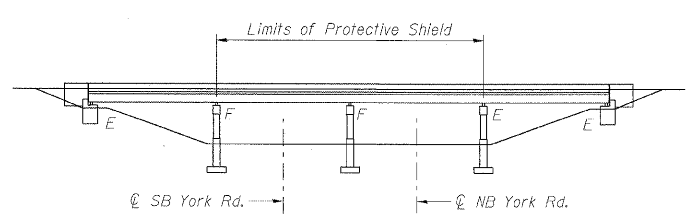
DEPARTMENT OF TRANSPORTATION



PLAN

*See highway standard 609001



ELEVATION

DESIGN SPECIFICATIONS

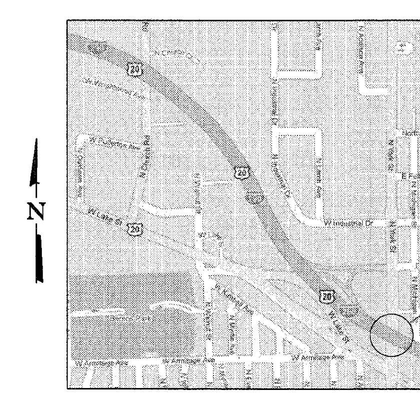
2002 AASHTO Standard Specifications for Highway Bridges, 17th Edition

DESIGN STRESSES

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

SCOPE OF WORK

1. Remove bridge approach slabs
2. Bridge Deck Hydro-scarification.
3. Jack and reposition bearings
4. Reconstruct deck joints at each abutment with preformed joint strip seal.
5. Repair substructure.
6. Place new overlay.
7. Stabilize abutments
8. Replace bridge approach slabs
9. Repair parapet with formed concrete repair.
10. Clean and reseal relief joints at the end of approach pavement connectors.
11. Apply concrete sealer.
12. Apply protective coat.



LOCATION SKETCH

EXPIRATION DATE: 11-30-10
DATE: 11/16/09

GENERAL PLAN AND ELEVATION
I-290 WB OVER YORK ROAD
DUPAGE COUNTY
STATION 298+64
STRUCTURE NO. 022-0006

DESIGNED -	MFB
CHECKED -	KWS
DRAWN -	RMG/KH
CHECKED -	KWS

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

SHEET NO. 1	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
25 SHEETS	290	2009-099 BR	COOK/DUPAGE	309	220
			CONTRACT NO. 60I57		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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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 $\frac{1}{4}$ 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 existing bridge parapets, abutment seats and abutment backwalls. All surfaces to be sealed shall be cleaned thoroughly prior to sealer application. Cost included with Concrete Sealer.
6. The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.
7. If the contractor chooses to alter the temporary cantilivered sheet piling design requirements shown on the plans, a design submittal including plan details and calculations will be required for review and acceptance by the Engineer.
8. The Contractor shall connect the first sheet to the existing abutment wall to ensure stability of sheets driven to the top of the existing footing. This connection shall be reviewed and accepted by the Engineer and included in the cost of Temporary Sheet Piling.
9. Stage construction shall be utilized to maintain traffic during construction.
10. 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.
11. Protective Coat shall be applied to the new Latex Concrete Overlay and Concrete Superstructures.
12. During visual inspection in June 2009, a gap was noted between the girder and non-composite deck at one isolated location. After reconstruction of the expansion joints, completion of all bridge deck patching, and placement of the Latex Concrete Overlay, the Engineer in the field shall check to see that the top flange of all beams are tight against the slab. If not, the Contractor shall inject epoxy between the concrete deck and the top flange of the beam. See Special Provision "Epoxy Injection". Cost included in Bridge Deck Latex Concrete Overlay, $2\frac{1}{4}$".
13. Joint openings shall be adjusted according to Article 520.04 of the Std. Specs. when the deck is poured at an ambient temperature other than 50°F.

* Remove exist. welds and grind smooth. Reposition top bearing plate as shown and field weld in place.

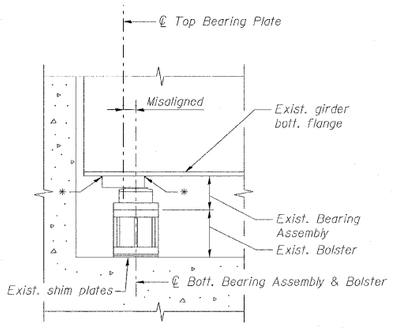
** Remove nuts, washers and $\frac{3}{4}$" dia. threaded studs and reposition top bearing plate as shown below. Weld $\frac{1}{2}$" x $1\frac{1}{2}$" x $1\frac{1}{2}$" PL over holes in bottom flange and grind surfaces smooth.

*** D = $\frac{1}{8}$" per each 100 ft. of expansion for every 15° temp. change from normal temp. of 50°F. Orientation for temp. greater than 50°F is shown. "D" is on opposite side of ℄ Bott. Bearing Assembly for temp. less than 50°F.

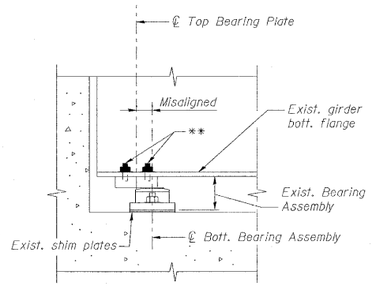
DESIGNED -	MFB
CHECKED -	KWS
DRAWN -	RMG
CHECKED -	KWS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

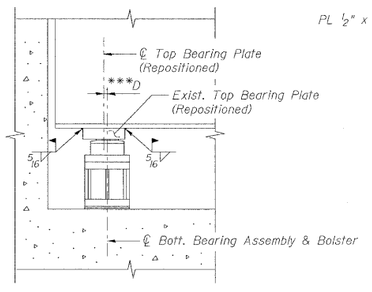
INDEX OF SHEETS



EXISTING ELEVATION
(Side retainers not shown for clarity)



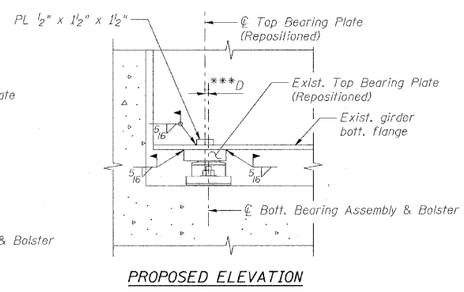
EXISTING ELEVATION



PROPOSED ELEVATION

BEARING REPAIR BEAMS 12-22

(Jack and Reposition Bearings - 11 thus)



PROPOSED ELEVATION

BEARING REPAIR BEAMS 25-26

(Jack and Reposition Bearings - 2 thus)

ABUTMENT BEAM REACTIONS (KIPS)

DEAD LOAD	LIVE LOAD	IMPACT LOAD	TOTAL
14.6	34.3	10.3	59.2

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
P.C. Concrete Bridge Approach Shoulder Pavement	Sq. Yd.	54		54
Approach Slab Removal	Sq. Yd.	578		578
Concrete Barrier Removal	Foot	56		56
Concrete Removal	Cu. Yd.	28.3	21.9	50.2
Protective Shield	Sq. Yd.	870		870
▲ Structure Excavation	Cu. Yd.		534	534
Concrete Structures	Cu. Yd.		33.5	33.5
Concrete Superstructure	Cu. Yd.	261.8		261.8
Bridge Deck Grooving	Sq. Yd.	2,064		2,064
Protective Coat	Sq. Yd.	2,157		2,157
Jack and Reposition Bearings	Each	13		13
Reinforcement Bars, Epoxy Coated	Pound	60,800	4,870	65,670
Bar Splicers	Each	164	179	343
Temporary Sheet Piling	Sq. Ft.		313	313
Preformed Joint Strip Seal	Foot	181.0		181.0
End Sections 12"	Each	2		2
Concrete Sealer	Sq. Ft.	5,164	1,011	6,175
Geocomposite Wall Drain	Sq. Yd.		93	93
Pipe Drains 12"	Foot	40		40
Pipe Underdrains for Structures 4"	Foot		184	184
Removing Inlets	Each	2		2
Type D Inlet Box, Standard 609001	Each	2		2
Concrete Thrust Blocks	Each	2		2
Removal & Reinstallation of Existing Steel Plate Beam Guard Rail, Attached to Structures	Foot	35		35
Bridge Deck Latex Concrete Overlay, 2 1/4"	Sq. Yd.	1,510		1,510
Structural Repair of Concrete (Depth Equal to or Less than 5 Inches)	Sq. Ft.		164	164
Expanded Polystyrene Fill	Cu. Yd.		338	338
Bridge Deck Hydro-Scarification, 2 1/4"	Sq. Yd.	1,510		1,510
Deck Slab Repair (Full Depth, Type I)	Sq. Yd.	131.2		131.2
Deck Slab Repair (Full Depth, Type II)	Sq. Yd.	164.0		164.0
Temporary Shoring and Cribbing	Each		2	2
Cleaning and Painting Exposed Rebar (Special)	Sq. Ft.	41		41
Clean and Reseal Relief Joint	Foot	128.5		128.5

▲ All excavated materials shall be disposed of within IDOT right-of-way and within the project limits. See the General Notes sheet from the roadway plans for more information.

BEARING REPAIR NOTES

1. Existing welds shall be ground smooth and prepared as necessary to perform field welding according to Article 505.04(q) of the Standard Specifications.
2. Cost to jack bearings, disconnect the bearing plate from the bottom flange, prepare surfaces, position bearings, field weld and clean, seal and/or paint shall be included with Jack and Reposition Bearings. See Special Provision for "Jack and Reposition Bearings".
3. The Contractor shall exercise extreme care not to damage the existing bearing assemblies, bolsters and beams. All damage to existing members that are to remain shall be repaired or the member replaced to the satisfaction of the Engineer. Repair or replacement of damaged members shall be at no additional cost to the Department.
4. Prior to reinstallation of the top bearing plates, a primer coat shall be applied to the top (contact) surface of the bearing plates and the portions of the bottom flanges that will either be in contact with the bearing plates or was previously in contact with the bearing plates. Surface preparation and primer coat application shall be according to the special provision Cleaning and Painting Existing Steel Structures. Upon completion of welding operations, the affected areas shall be painted with an aluminum epoxy mastic primer followed by a finish coat to match the color of the existing beam or top bearing plate. Paint shall be applied per the requirements of Paint System 2, according to the Special Provision "Cleaning and Painting Existing Steel Structures".
5. See existing plans for girder numbering.
6. 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.

GENERAL NOTES, BILL OF MATERIAL AND INDEX OF SHEETS STRUCTURE NO. 022-0006

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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.
25 SHEETS	290	2009-099 BR	COOK/DUPAGE	309	221
			CONTRACT NO. 60I57		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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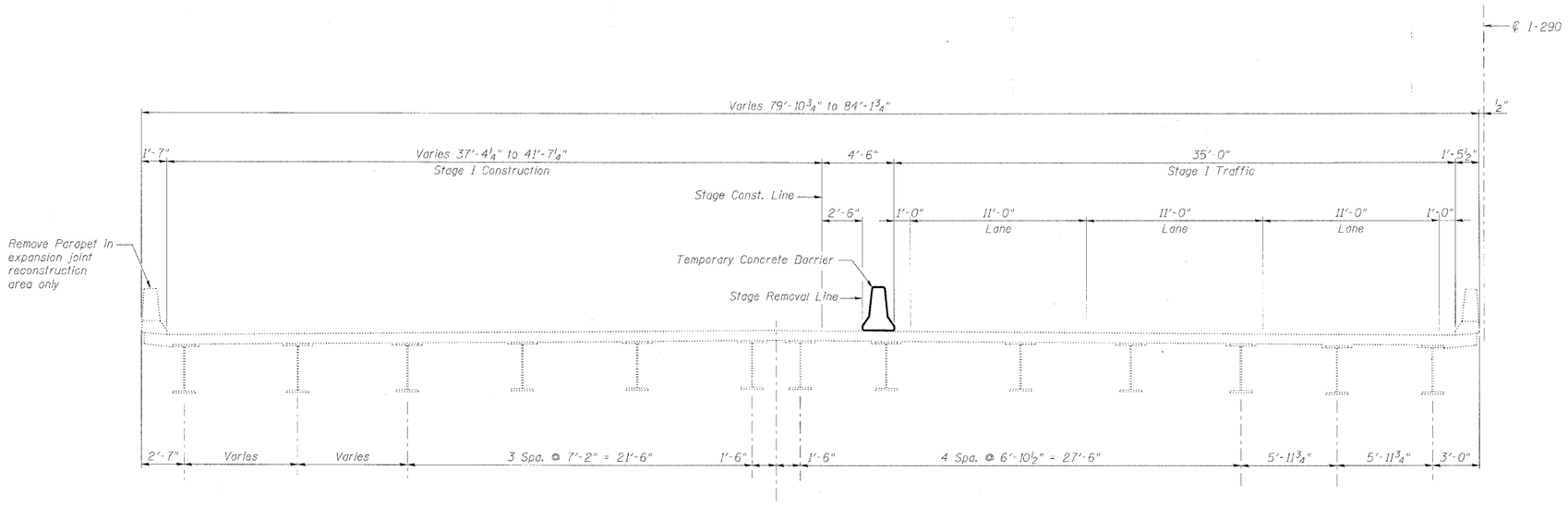
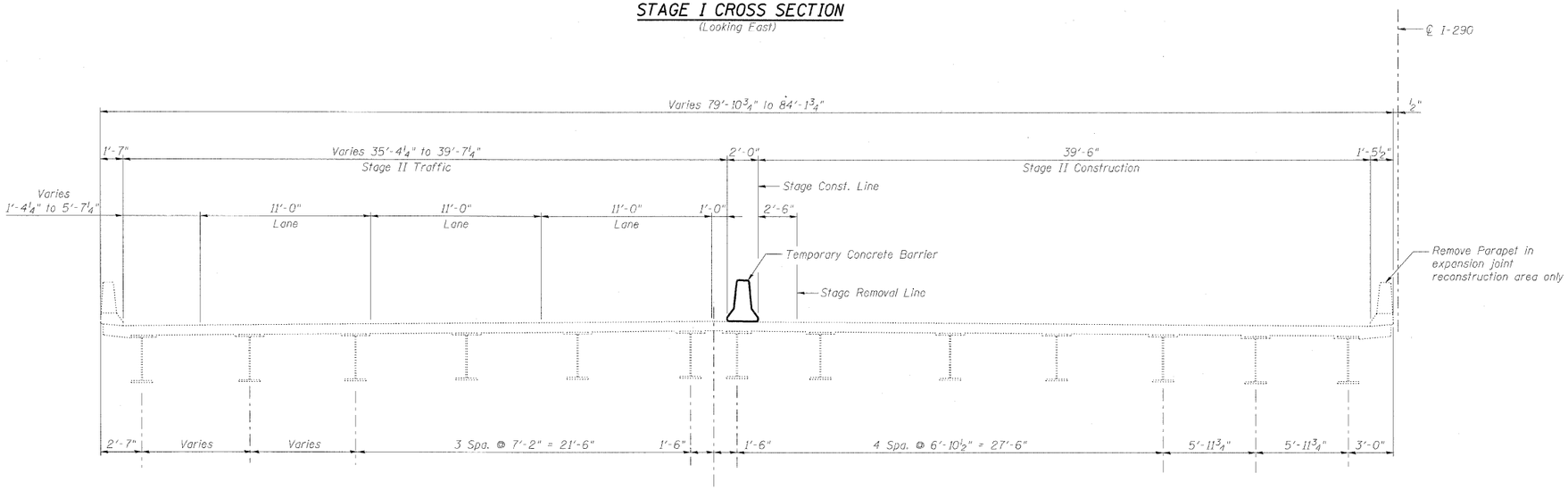
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



STAGE I CROSS SECTION
(Looking East)



STAGE II CROSS SECTION
(Looking East)

Notes:

1. For quantity of Temporary Concrete Barrier, see roadway plans.
2. Temporary Concrete Barrier to be anchored to the approach slabs adjacent to locations of Structure Excavation. For Temporary Concrete Barrier Details, see Temporary Concrete Barrier for Stage Construction sheet.

DESIGNED	MFB
CHECKED	MAC
DRAWN	VH
CHECKED	KWS

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STAGE CONSTRUCTION DETAILS
STRUCTURE NO. 022-0006

SHEET NO. 3	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
25 SHEETS	290	2009-099 BR	COOK/DUPAGE	309	222
			CONTRACT NO. 60157		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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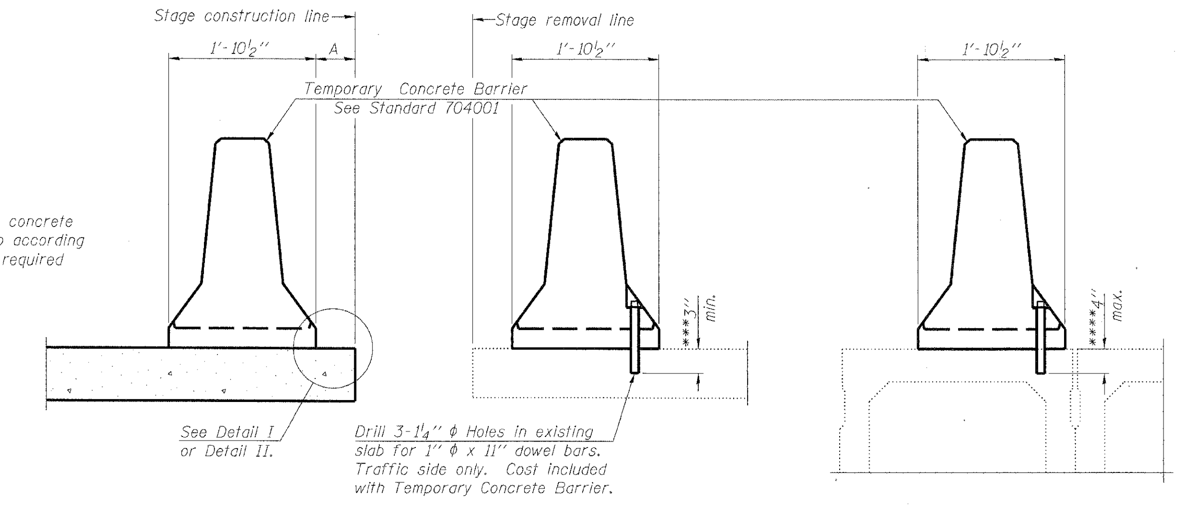
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

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



SECTIONS THRU SLAB OR DECK BEAM

NOTES

Detail I - With Bar Splicer or Couplers:
Connect one (1) 1"x7"x10" steel ℙ to the top layer of couplers with 2-⅝" ϕ bolts screwed to coupler at approximate ℄ of each barrier panel.

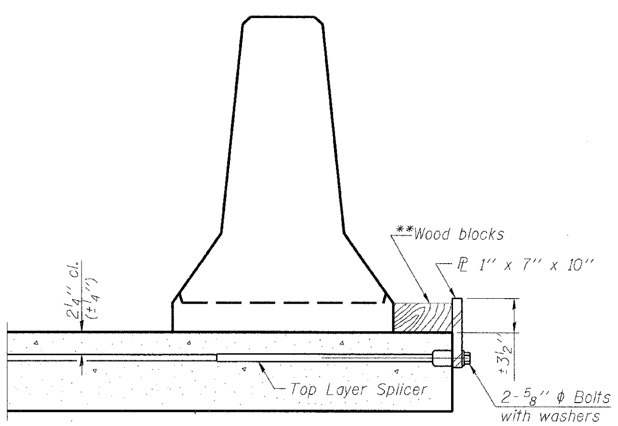
Detail II - With Extended Reinforcement Bars:
Connect one (1) 1"x7"x 10" steel ℙ to the concrete slab or concrete wearing surface with 2-⅝" ϕ Expansion Anchors or cast in place inserts spaced between the top layer of reinforcement at approximate ℄ of each barrier panel.

Cost of anchorage is included with Temporary Concrete Barrier.

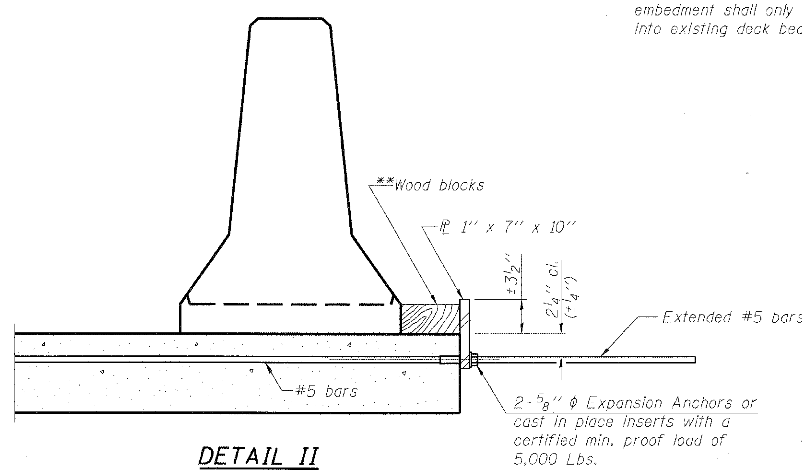
The 1" x 7" x 10" plate shall not be removed until stage II construction forms and all reinforcement bars are in place and the concrete is ready to be placed.

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

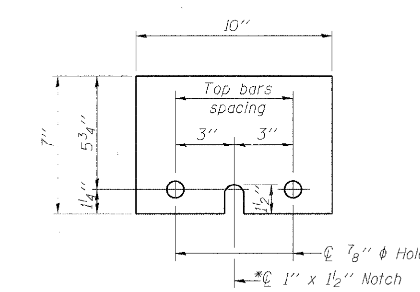
**** If existing deck beam is to remain in place after stage construction, embedment shall only be into wearing surface and not into existing deck beam concrete.



DETAIL I



DETAIL II



STEEL RETAINER ℙ 1" x 7" x 10"

* Required only with Detail II

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

DESIGNED -	MFB
CHECKED -	KWS
DRAWN -	RMG
CHECKED -	KWS

R-27

10-1-08

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

TEMPORARY CONCRETE BARRIER
FOR STAGE CONSTRUCTION
STRUCTURE NO. 022-0006

SHEET NO. 4	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
25 SHEETS	290	2009-099 BR	COOK/DUPAGE	309	223
			CONTRACT NO. 60I57		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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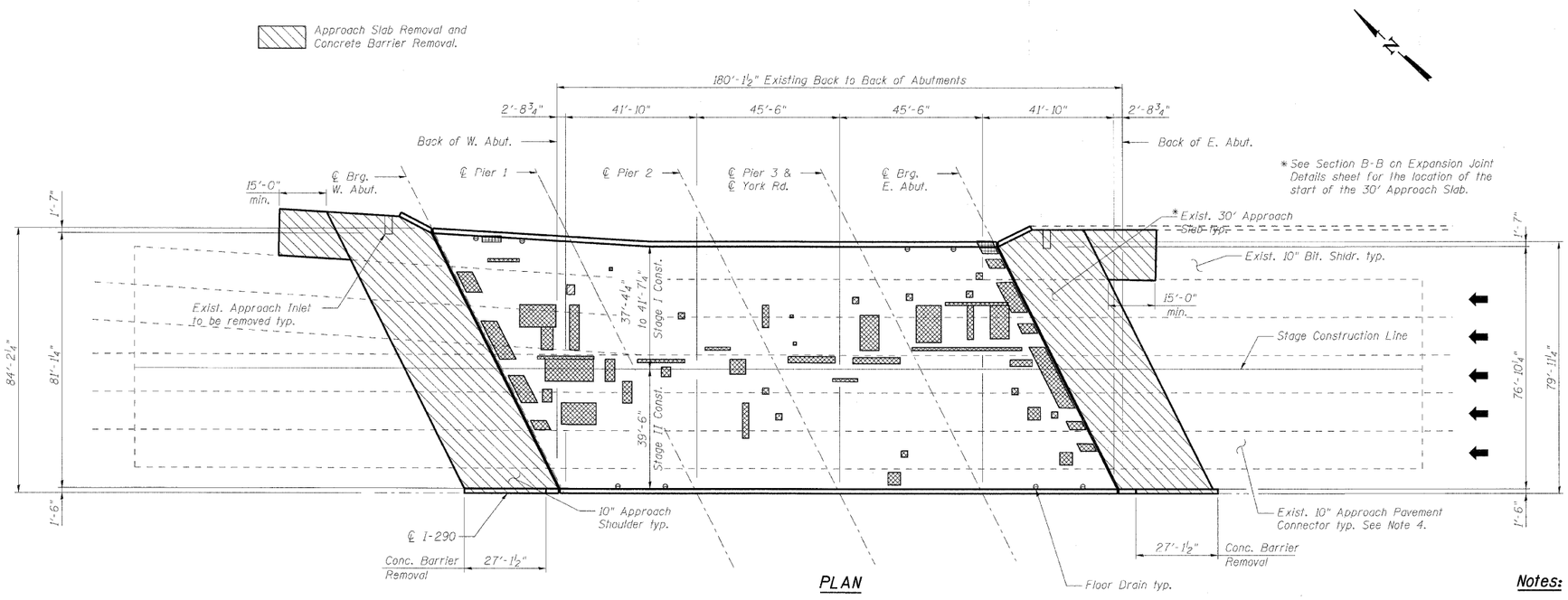
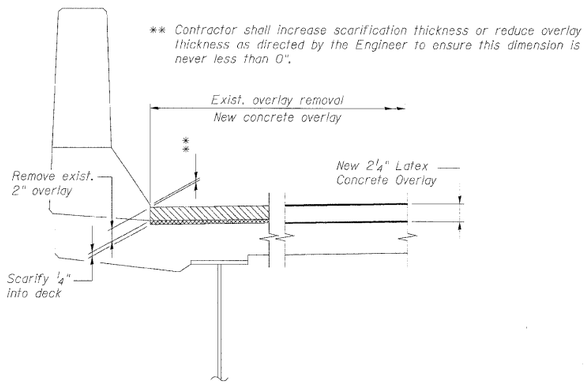
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



PLAN



SCARIFICATION & OVERLAY DETAIL AT PARAPET

BILL OF MATERIAL

SYMBOL	ITEM	UNIT	QUANTITY
	Deck Slab Repair (Partial)	Sq. Yd.	16.6 ▲
	Deck Slab Repair (Full Depth - Type I)	Sq. Yd.	131.2
	Deck Slab Repair (Full Depth - Type II)	Sq. Yd.	164.0
	Cleaning & Painting Exposed Rebar (Special)	Sq. Ft.	41
	Protective Shield	Sq. Yd.	870
	Protective Coat	Sq. Yd.	1,571
	Bridge Deck Grooving	Sq. Yd.	1,532
	Bridge Deck Latex Concrete Overlay, 2¼"	Sq. Yd.	1510
	Bridge Deck Hydro-Scarification, 2¼"	Sq. Yd.	1,510

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

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 and shown on 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 General Plan and Elevation sheet.
3. Deck drains (downspouts, floor drains, and scuppers) shall be cleaned prior to placement of the Latex Concrete Overlay. Cost of cleaning the deck drains is included in Bridge Deck Hydro-Scarification, 2¼".
4. 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.
5. See Approach Slab Details sheets for Approach Slab removal and replacement details and quantities. See the Special Provisions for "Approach Slab Removal" and "Concrete Barrier Removal".
6. Upon completion of all repairs, the Engineer shall inspect the underside of the deck for gaps between the girders and non-composite deck. See General Note 12.
7. Gaps caused by distress around floor drains shall be filled with epoxy as specified in the Special Provision "Epoxy Injection". Cost included with Bridge Deck Latex Concrete Overlay, 2¼".

DESIGNED -	MFB
CHECKED -	KWS
DRAWN -	RMG
CHECKED -	KWS

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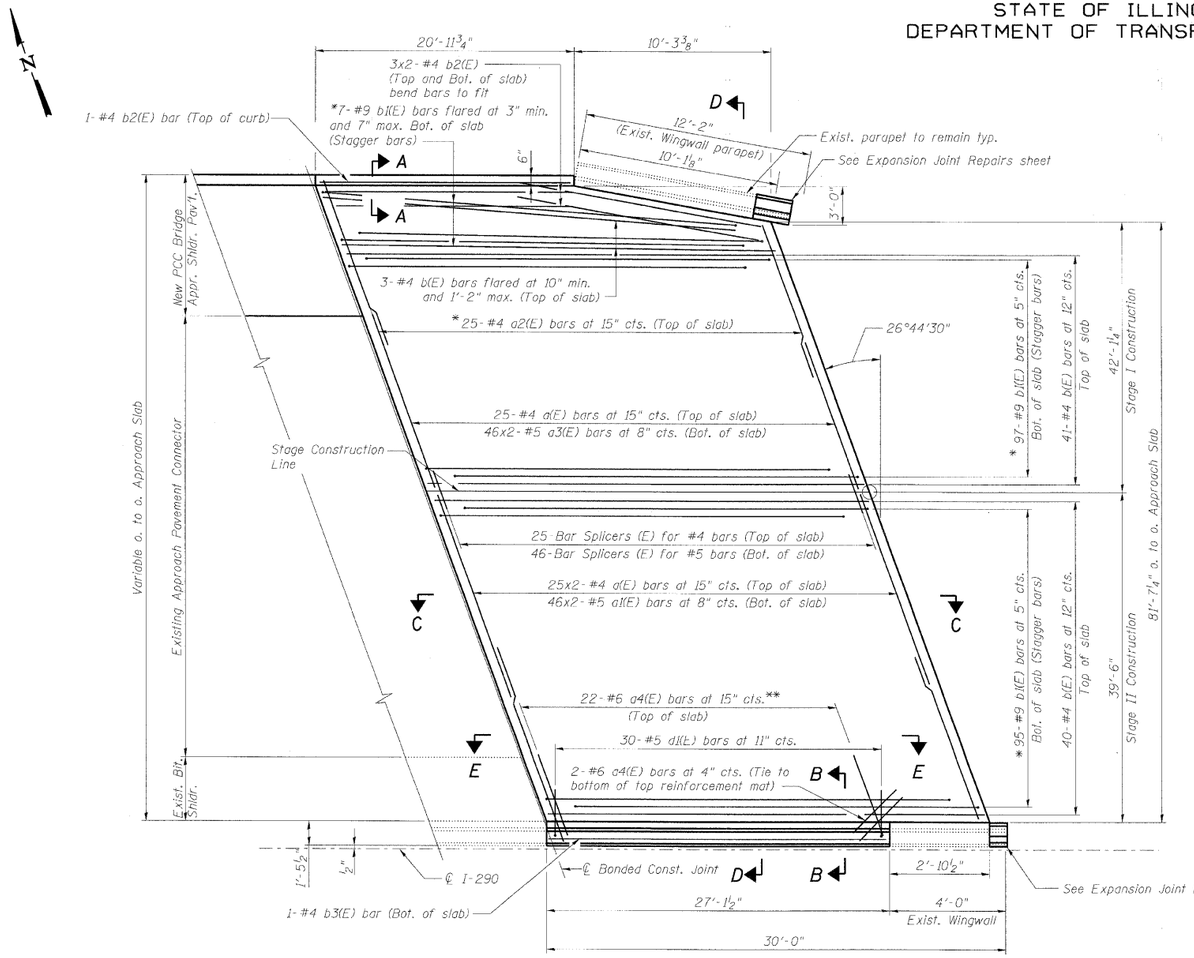
312-565-0450 Job No. 10050

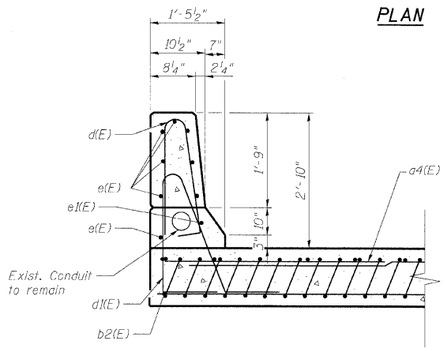
BRIDGE DECK
AND APPROACH SLAB REPAIRS
STRUCTURE NO. 022-0006

SHEET NO. 5	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
25 SHEETS	290	2009-099 BR	COOK/DUPAGE	309	224
			CONTRACT NO. 60157		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

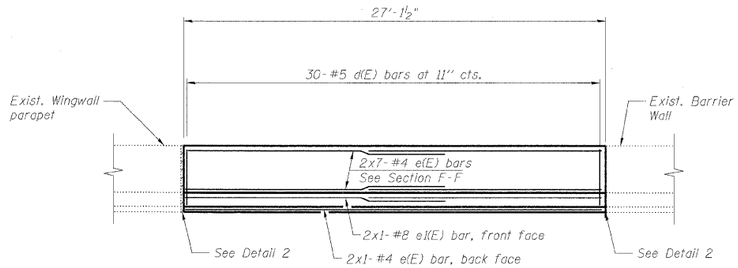
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



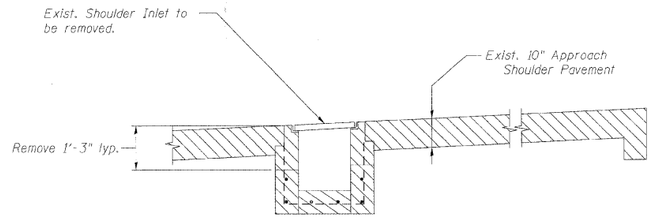
PLAN



SECTION B-B



VIEW E-E



APPROACH SLAB REMOVAL DETAIL AT INLET

* Tilt bars as required to maintain clearance.

** Alternate with a(E) bars.

*** Cost included with Concrete Superstructure.

Note:

Work this sheet with West Bridge Approach Slab Details (2 of 2).

DESIGNED	MFB
CHECKED	KWS
DRAWN	RMG
CHECKED	KWS

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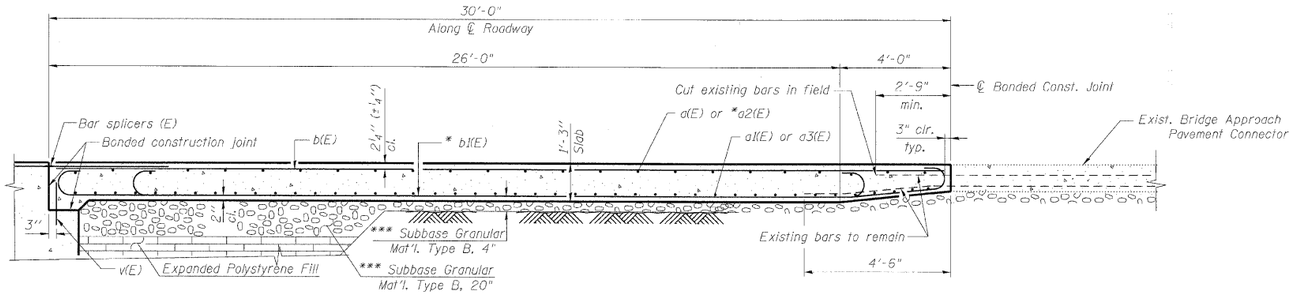
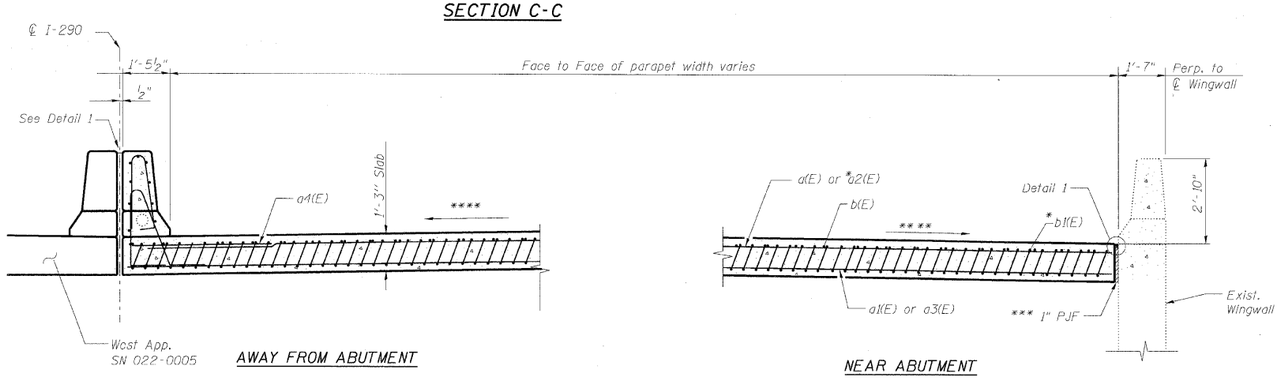
WEST BRIDGE APPROACH SLAB DETAILS (1 OF 2)
STRUCTURE NO. 022-0006

SHEET NO. 6	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
25 SHEETS	290	2009-099 BR	COOK/DUPAGE	309	225
			CONTRACT NO. 60157		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



SECTION C-C

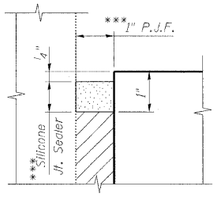


SECTION D-D
(See Plan for dimensions not shown)

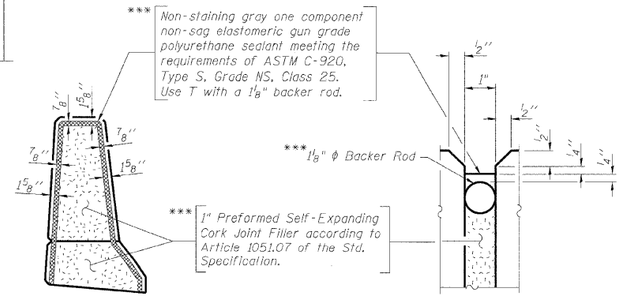
*Tilt bars as required to maintain clearance.

***Cost included with Concrete Superstructure.

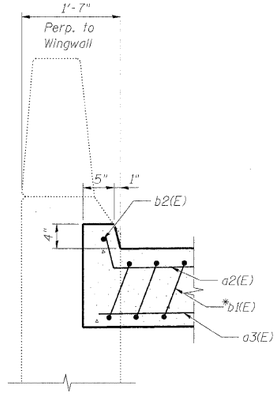
****Match existing grades and cross slopes.



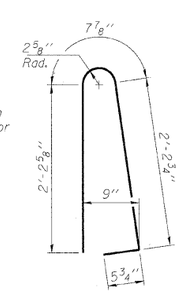
DETAIL 1



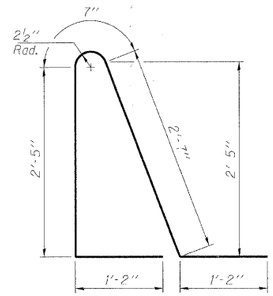
DETAIL 2



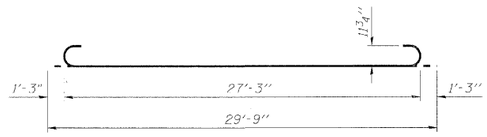
SECTION A-A



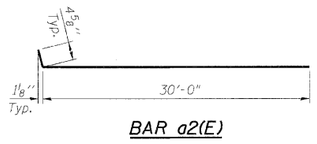
BAR d(E)



BAR d1(E)



BAR b1(E)



BAR a2(E)

BILL OF MATERIAL

BAR	NO.	SIZE	LENGTH	SHAPE
a(E)	75	#4	24'-0"	
a1(E)	92	#5	24'-3"	
a2(E)	25	#4	30'-5"	
a3(E)	92	#5	30'-3"	
a4(E)	24	#6	6'-0"	
b(E)	84	#4	29'-8"	
b1(E)	199	#9	29'-9"	
b2(E)	13	#4	20'-7"	
b3(E)	1	#4	26'-9"	
d(E)	30	#5	5'-7"	
d1(E)	30	#5	7'-11"	
e(E)	16	#4	14'-3"	
e1(E)	2	#8	15'-9"	

ITEM	UNIT	TOTAL
Approach Slab Removal	Sq. Yd.	299
Concrete Barrier Removal	Foot	28
Concrete Superstructure	Cu. Yd.	121.2
Bridge Deck Grooving	Sq. Yd.	276
Protective Coat	Sq. Yd.	303
Reinforcement Bars, Epoxy Coated	Pound	29,810

Notes:

1. a(E), a1(E), a2(E) and a3(E) bar spacings measured parallel to ℄ Roadway. b(E) and b1(E) bars spacings measured perpendicular to ℄ Roadway.
2. For existing approach slab and shoulder pavement details, see existing plans.
3. 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 approach slab removal shall be repaired or replaced with an approved bar splicer or anchorage system. Cost included with Approach Slab Removal.
4. Approach slab and parapet concrete shall be paid for as Concrete Superstructure.
5. Reinforcement shall be paid for as Reinforcement Bars, Epoxy Coated.
6. For bar splicer details, see Bar Splicers Assembly Details sheet.
7. For Expanded Polystyrene Fill and drainage treatment details, see sheet 16.
8. The Contractor shall excercise extreme care with the existing conduits in sections of the parapet to be removed and to protect and support the conduit. The Contractor will be required to repair any damage done to the conduit to the satisfaction of the Engineer. 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.
9. Bars indicated thus 8x2-#4 etc. indicates 8 lines of bars with 2 lengths per line.
10. Minimum bar lap length: #4 = 1'-8"
    #5 = 2'-2"
    #8 = 4'-6"
11. Work this sheet with West Bridge Approach Slab Details (1 of 2) sheet.

DESIGNED -	MFB
CHECKED -	KWS
DRAWN -	RMG
CHECKED -	KWS

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

WEST BRIDGE APPROACH SLAB DETAILS (2 OF 2)
STRUCTURE NO. 022-0006

SHEET NO. 7	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
25 SHEETS	290	2009-099 BR	COOK/DUPAGE	309	226
			CONTRACT NO. 60157		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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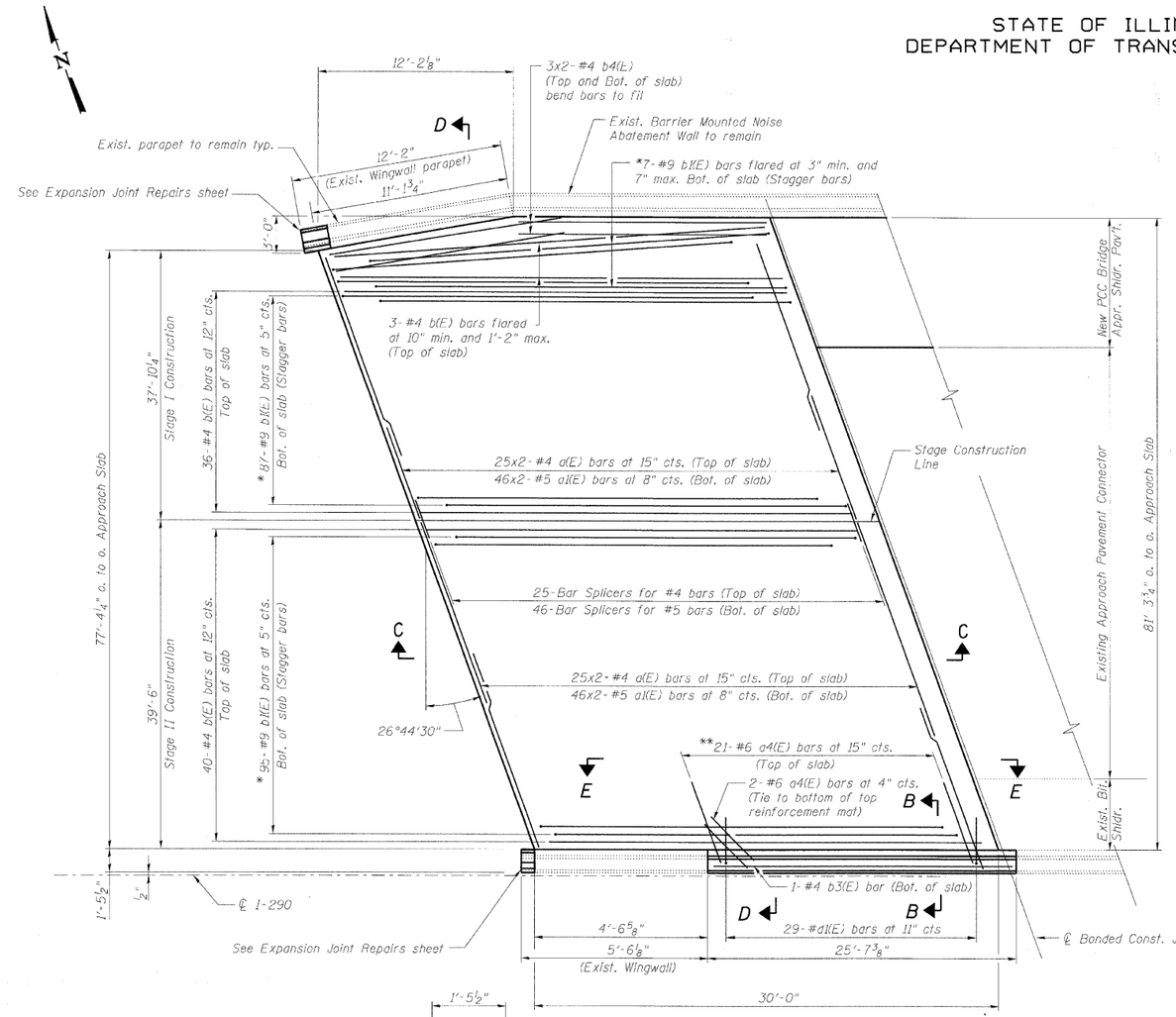
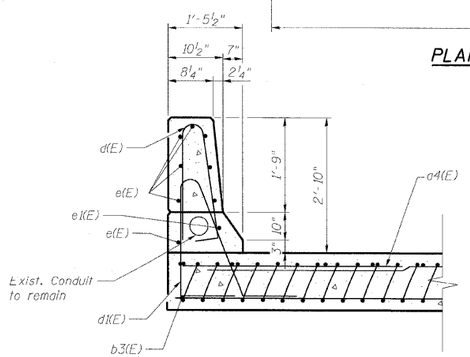
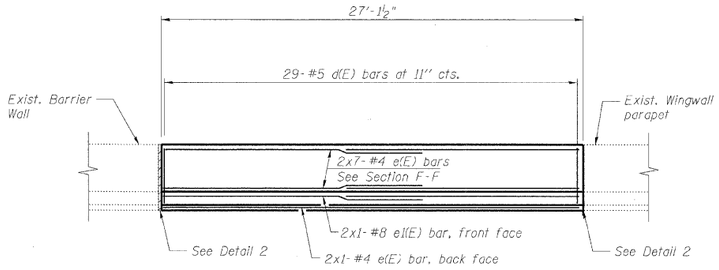
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



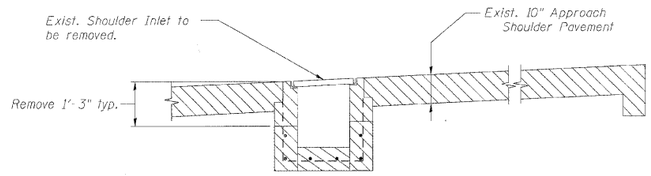
PLAN



SECTION B-B



VIEW E-E



APPROACH SLAB REMOVAL DETAIL AT INLET

* Tilt bars as required to maintain clearance.

** Alternate with a(E) bars.

*** Cost included with Concrete Superstructure.

Note:
Work this sheet with East Bridge Approach Slab Details (2 of 2) sheet.

DESIGNED	MFB
CHECKED	KWS
DRAWN	RMG
CHECKED	KWS

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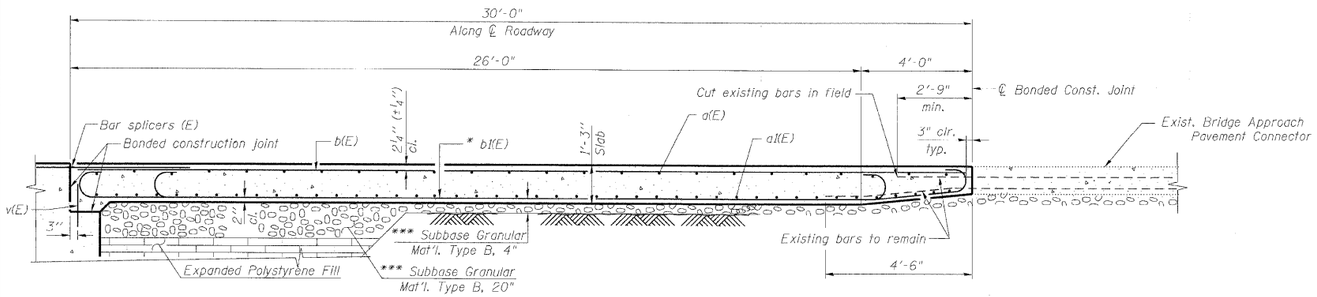
Chicago, Illinois 60601
312-565-0450 Job No. 10050

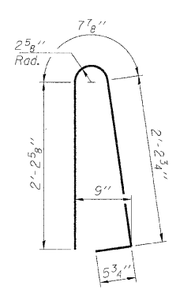
EAST BRIDGE APPROACH SLAB DETAILS
(1 OF 2)
STRUCTURE NO. 022-0006

SHEET NO. 8	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
25 SHEETS	290	2009-099 BR	COOK/DUPAGE	309	227
			CONTRACT NO. 60I57		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

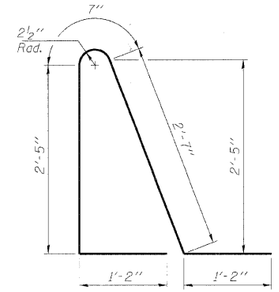
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



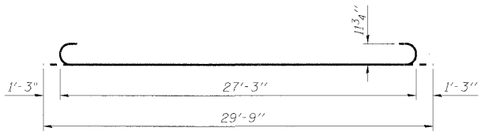
SECTION C-C



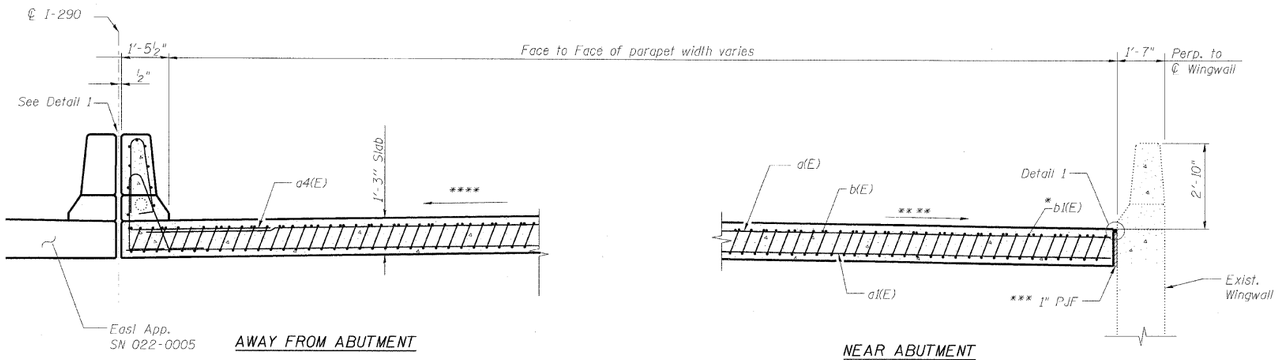
BAR d(E)



BAR d1(E)



BAR b1(E)



AWAY FROM ABUTMENT

NEAR ABUTMENT

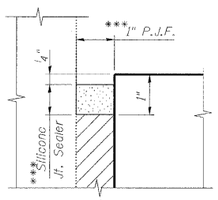
SECTION D-D

(See Plan for dimensions not shown)

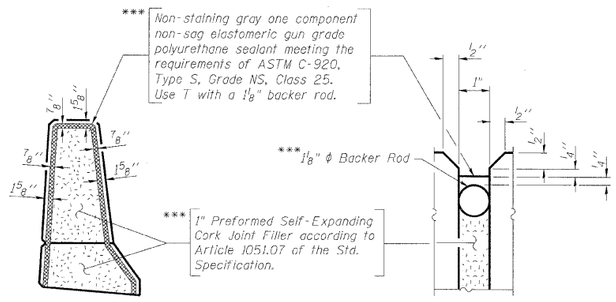
*Tilt bars as required to maintain clearance.

***Cost included with Concrete Superstructure.

****Match existing grades and cross slopes.



DETAIL 1



DETAIL 2

BILL OF MATERIAL

BAR	NO.	SIZE	LENGTH	SHAPE
a(E)	100	#4	24'-0"	
a1(E)	184	#5	24'-3"	
a4(E)	23	#6	6'-0"	
b(E)	79	#4	29'-8"	
b1(E)	189	#9	23'-9"	
b3(E)	1	#4	25'-3"	
b4(E)	12	#4	16'-2"	
d(E)	29	#5	5'-7"	
d1(E)	29	#5	7'-11"	
e(E)	16	#4	14'-3"	
e1(E)	2	#8	15'-9"	

ITEM	UNIT	TOTAL
Approach Slab Removal	Sq. Yd.	279
Concrete Barrier Removal	Foot	28
Concrete Superstructure	Cu. Yd.	112.3
Bridge Deck Grooving	Sq. Yd.	256
Protective Coat	Sq. Yd.	283
Reinforcement Bars, Epoxy Coated	Pound	27,940

Notes:

1. d(E) and a1(E) bar spacings measured parallel to ℄ Roadway. b(E) and b1(E) bar spacings measured perpendicular to ℄ Roadway.
2. For existing approach slab and shoulder pavement details, see existing plans.
3. 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 approach slab removal shall be repaired or replaced with an approved bar splicer or anchorage system. Cost included with Approach Slab Removal.
4. Approach slab and parapet concrete shall be paid for as Concrete Superstructure.
5. Reinforcement shall be paid for as Reinforcement Bars, Epoxy Coated.
6. For bar splicer details, see Bar Splicers Assembly Details sheet.
7. For Expanded Polystyrene Fill and drainage treatment details, see sheet 16.
8. The Contractor shall excercise extreme care with the existing conduits in sections of the parapet to be removed and to protect and support the conduit. The Contractor will be required to repair any damage done to the conduit to the satisfaction of the Engineer. 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.
9. Bars indicated thus 8x2-#4 etc. indicates 8 lines of bars with 2 lengths per line.
10. Minimum bar lap length: #4 = 1'-8"
    #5 = 2'-2"
    #8 = 4'-6"
11. Work this sheet with West Bridge Approach Slab Details (1 of 2) sheet.

DESIGNED -	MFB
CHECKED -	KWS
DRAWN -	RMG
CHECKED -	KWS

EAST BRIDGE APPROACH SLAB DETAILS (2 OF 2)
STRUCTURE NO. 022-0006

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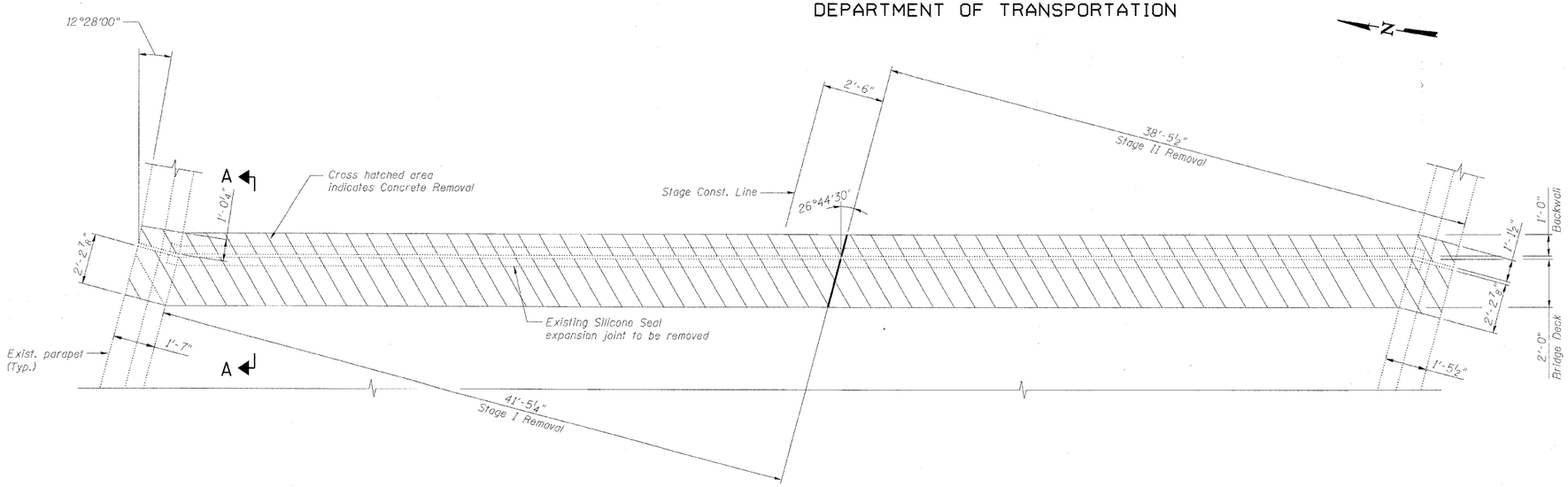
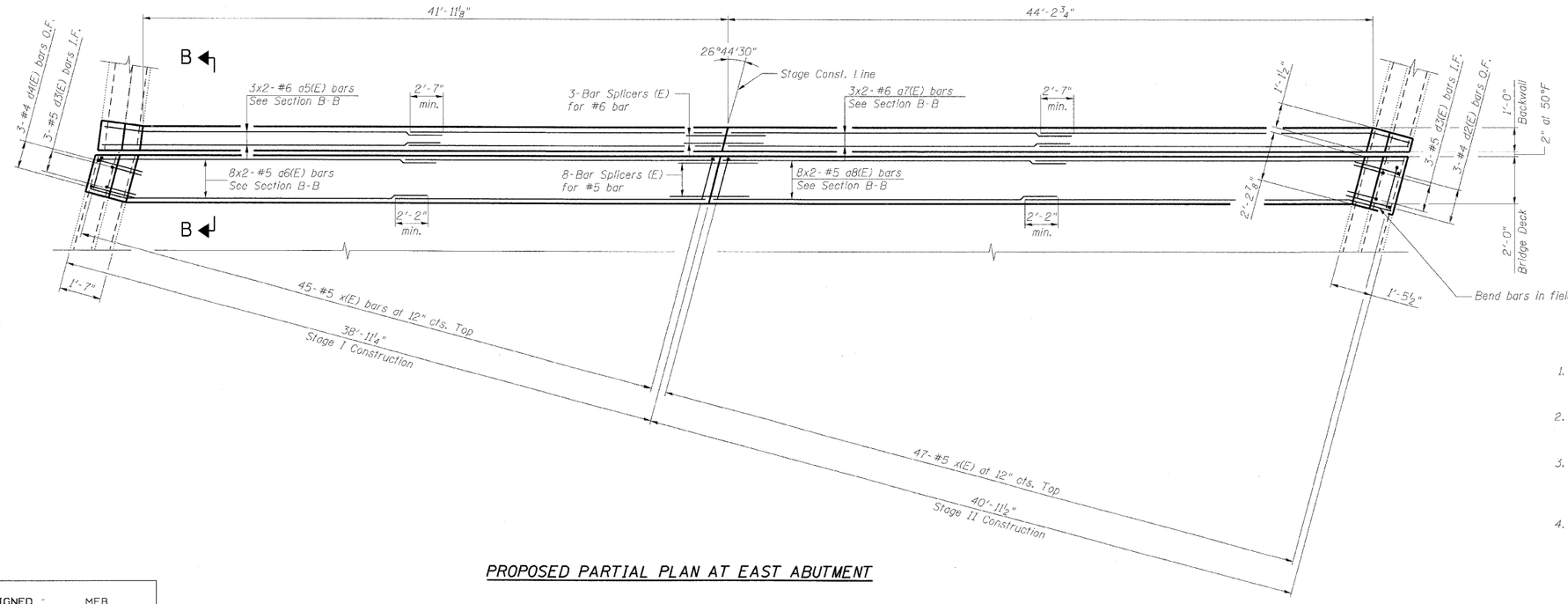
Chicago, Illinois 60601
312-565-0450 Job No. 10050

SHEET NO. 9	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
25 SHEETS	290	2009-099 BR	COOK/DUPAGE	309	228
			CONTRACT NO. 60157		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



EXISTING PARTIAL PLAN AT EAST ABUTMENT

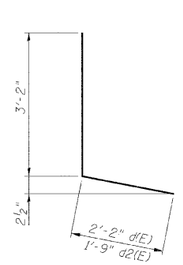


PROPOSED PARTIAL PLAN AT EAST ABUTMENT

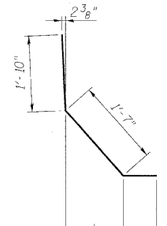
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a5'(E)	12	#6	25'-3"	
a6(E)	32	#5	25'-0"	
a7'(E)	12	#6	24'-0"	
a8(E)	32	#5	23'-9"	
d2(E)	6	#4	5'-4"	
d3(E)	12	#5	3'-11"	
d4(E)	6	#4	4'-11"	
x(E)	188	#5	2'-3"	

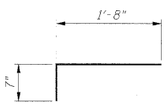
Item	Unit	Total
Concrete Removal	Cu. Yd.	28.3
Concrete Superstructures	Cu. Yd.	28.3
Reinforcement Bars, Epoxy Coated	Pound	3,050



BAR d2(E) & d4(E)



BAR d3(E)



BAR x(E)

Note:

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 Repairs Sheet 2 of 2, Expansion Joint Details sheet and Bar Splicer Assembly Details sheet.
4. x(E) bar spacing measured along skew.

EXPANSION JOINT REPAIRS (1 OF 2) STRUCTURE NO. 022-0006

DESIGNED -	MFB
CHECKED -	KWS
DRAWN -	VH/KH/RMG
CHECKED -	KWS

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

SHEET NO. 10	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
25 SHEETS	290	2009-099 BR	DuPage	309	229
			CONTRACT NO. 60157		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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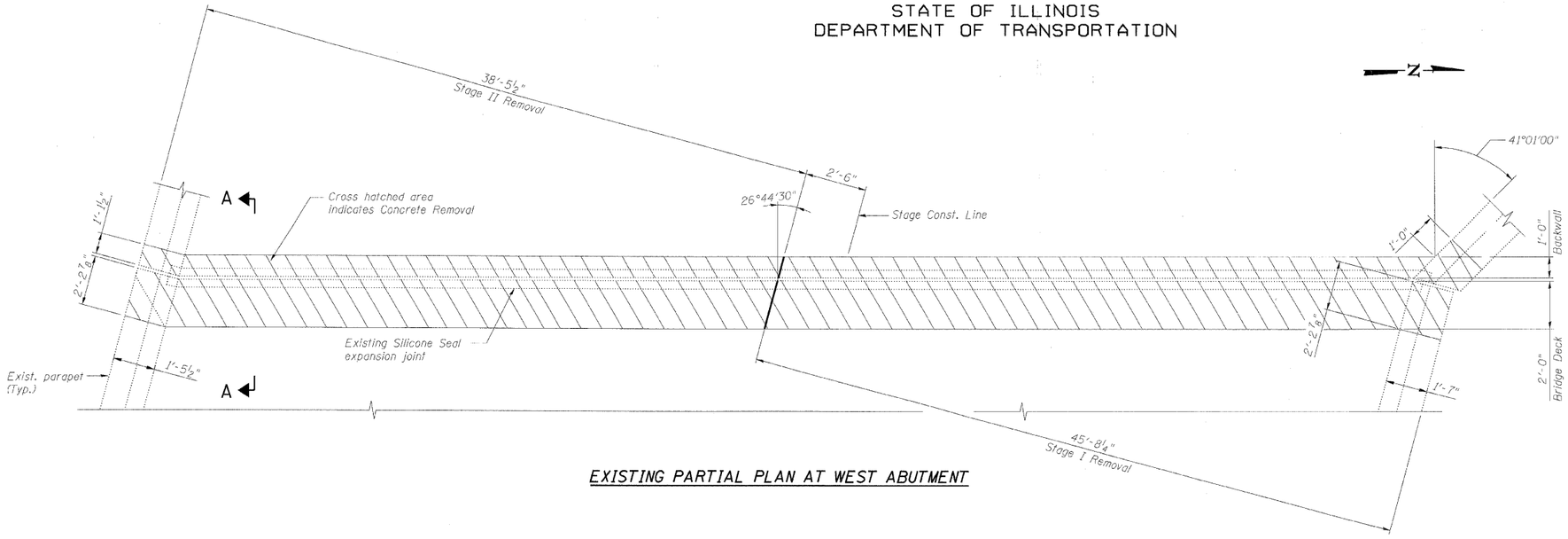
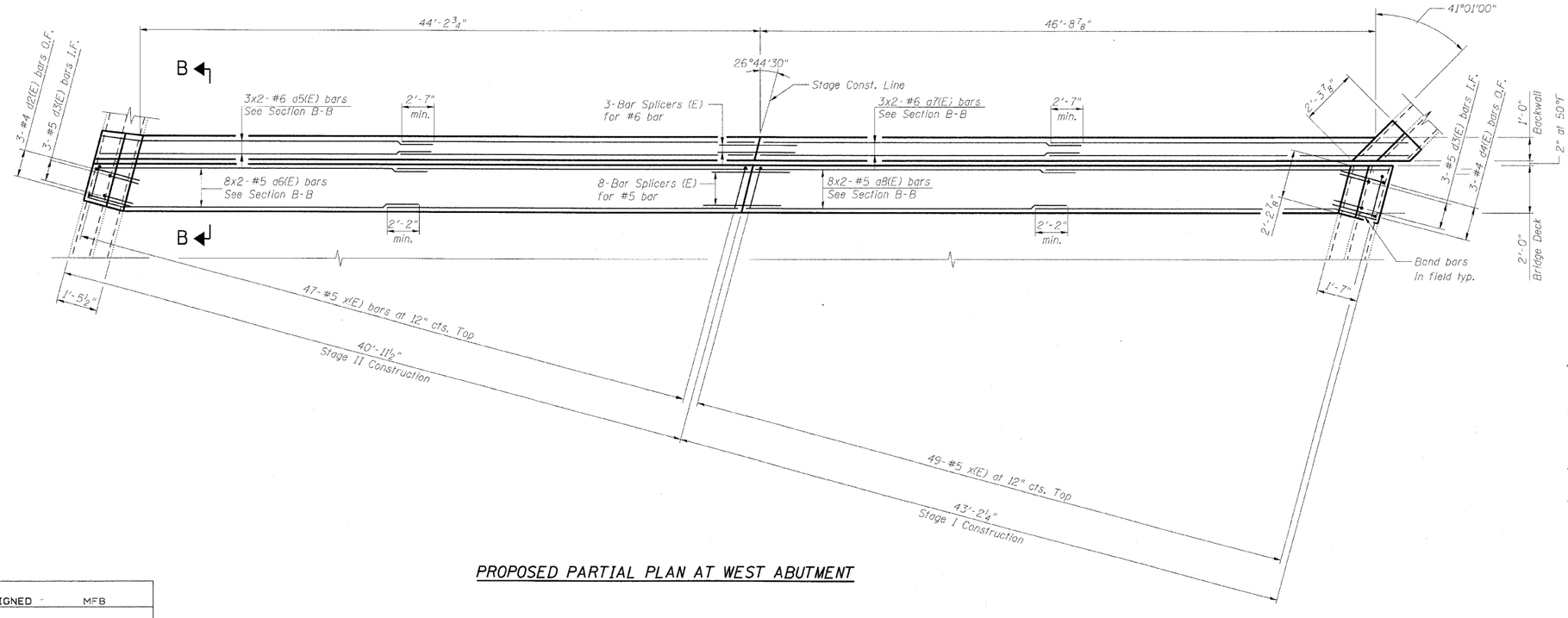
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



EXISTING PARTIAL PLAN AT WEST ABUTMENT



PROPOSED PARTIAL PLAN AT WEST ABUTMENT

Note:

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 Repairs Sheet 1 of 2, Expansion Joint Details sheet and Bar Splicer Assembly Details sheet.
4. x(E) bar spacing measured along skew.
5. See Expansion Joint Repairs Sheet 1 of 2 for Bill of Materials and Bar Bend details.

DESIGNED -	MFB
CHECKED -	KWS
DRAWN -	VH/KH/RMG
CHECKED -	KWS

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Chicago, Illinois 60601
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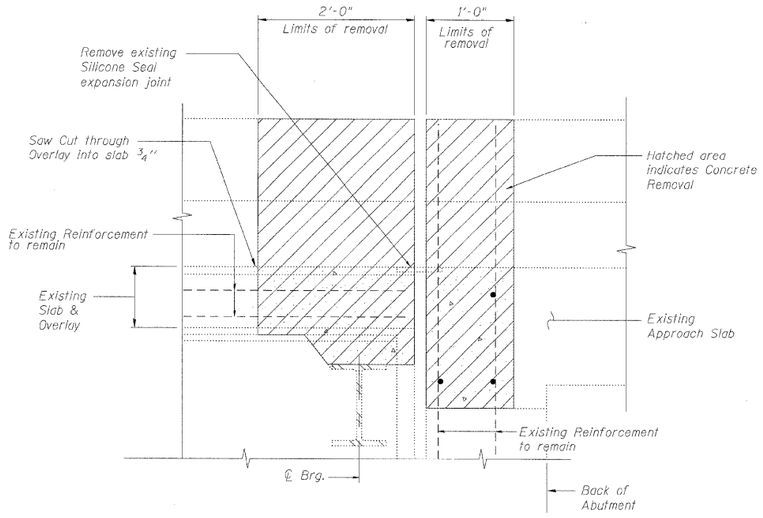
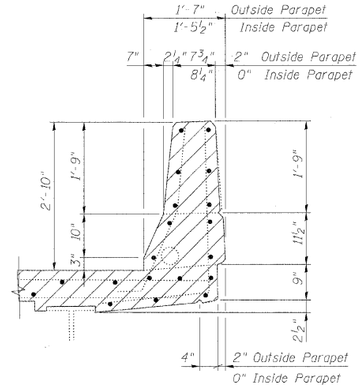
EXPANSION JOINT REPAIRS (2 OF 2) STRUCTURE NO. 022-0006

SHEET NO. 10A	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
25 SHEETS	290	2009-099 BR	DuPage	309	229A
			CONTRACT NO. 60157		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



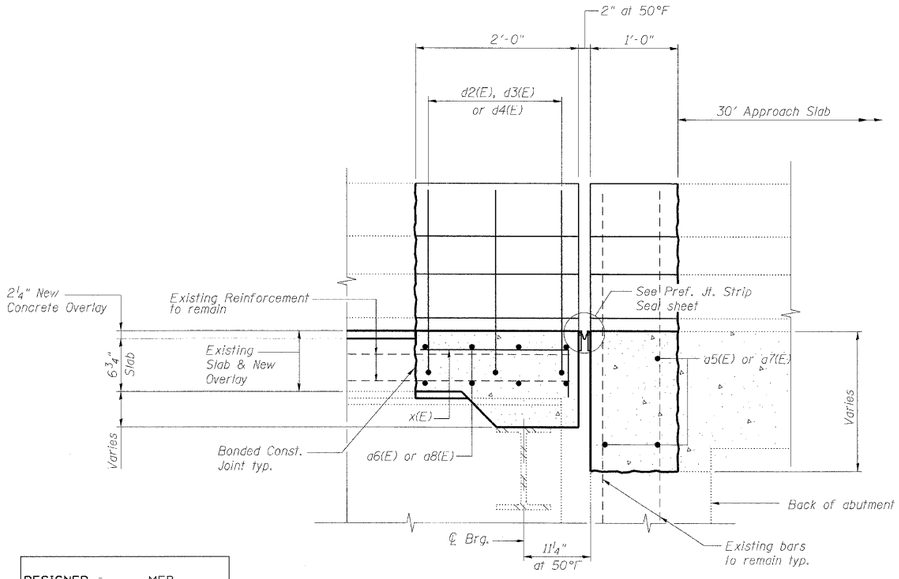
SECTION A-A



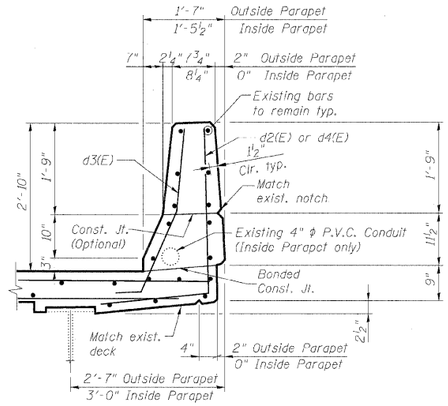
EXISTING PARAPET SECTION

Notes:

1. 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.
2. Existing reinforcement bars in the concrete removal area parallel to the expansion joints shall be removed.
3. Removal and disposal of the existing expansion joints will not be paid for separately, but shall be included with the cost of Concrete Removal.
4. 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.
5. 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.
6. The Contractor shall exercise extreme care with the existing conduits in sections of the parapet to be removed and to protect and support the conduit. The Contractor will be required to repair any damage done to the conduit to the satisfaction of the Engineer at no additional cost to the Department. No splicing will be allowed to any cable damage resulting from this work, instead the Contractor will be required to repair the entire span of any damaged cable at no additional cost to the Department.
7. Work this sheet with Expansion Joint Repairs sheets (1 of 2) and (2 of 2).



SECTION B-B



PROPOSED PARAPET SECTION

DESIGNED	-	MFB
CHECKED	-	KWS
DRAWN	-	VH
CHECKED	-	KWS

EXPANSION JOINT DETAILS
STRUCTURE NO. 022-0006

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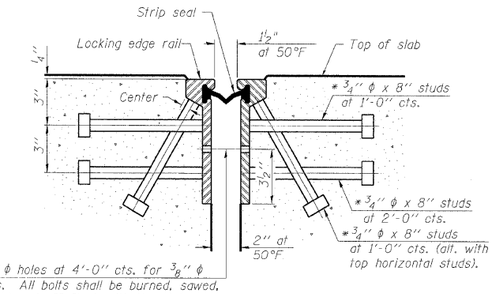
Chicago, Illinois 60601
312-565-0450 Job No. 10050

SHEET NO. 11	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
25 SHEETS	290	2009-099 BR	COOK/DUPAGE	309	230
			CONTRACT NO. 60I57		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

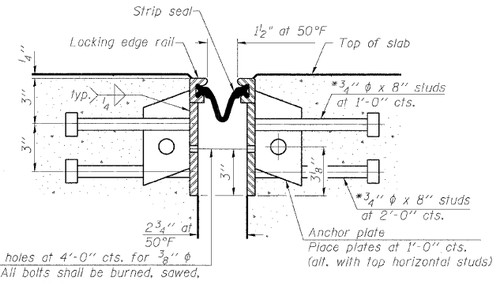
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

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



7/16" ϕ holes at 4'-0" cts. for ⅜" ϕ bolts. All bolts shall be burned, sawed, or chipped off flush with the plates after forms are removed, typ.

SECTION THRU ROLLED RAIL JOINT



7/16" ϕ holes at 4'-0" cts. for ⅜" ϕ bolts. All bolts shall be burned, sawed, or chipped off flush with the plates after forms are removed, typ.

SECTION THRU WELDED RAIL JOINT

Notes:

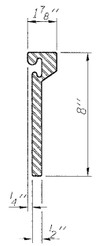
The strip seal shall be made continuous and shall have a minimum thickness of ¼". The configuration of the strip seal shall match the configuration of the Locking Edge Rails. Open or "webbed" strip seal gland configurations are not permitted. The gland shall be sized for a maximum rated movement of 4 inches.

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

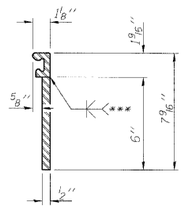
The manufacturer's recommended installation methods shall be followed.

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

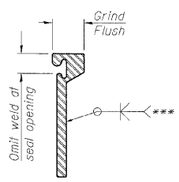
All steel components shall be galvanized after fabrication according to Article 520.03 of the Standard Specifications.



ROLLED EXTRUDED RAIL



WELDED RAIL

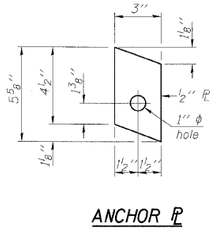


***Back gouge not required if complete joint penetration is verified by mock-up.

LOCKING EDGE RAIL SPLICE

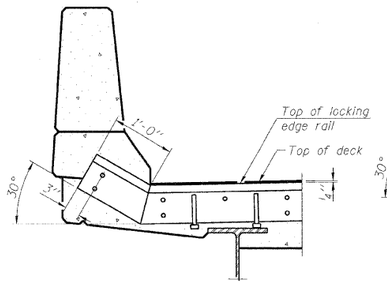
The inside of the locking edge rail groove shall be free of weld residue.

LOCKING EDGE RAILS

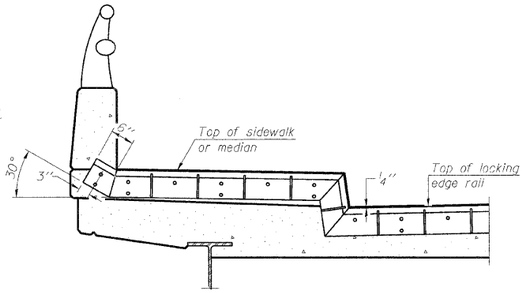


ANCHOR ℄

(for welded rail)



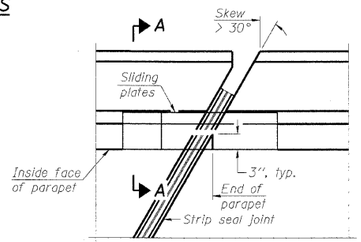
AT PARAPET



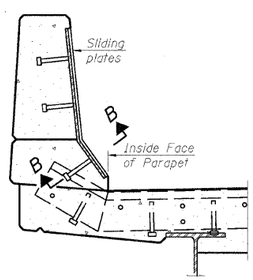
AT SIDEWALK OR MEDIAN

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

TYPICAL END TREATMENTS



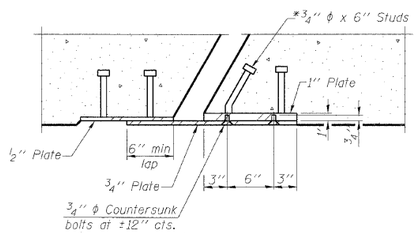
PLAN



SECTION A-A

POINT BLOCK DETAILS

(for skews > 30°)



SECTION B-B

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	181.0

DESIGNED -	MFB
CHECKED -	KWS
DRAWN -	RMG
CHECKED -	KWS

EJ-SSJ

10-1-08

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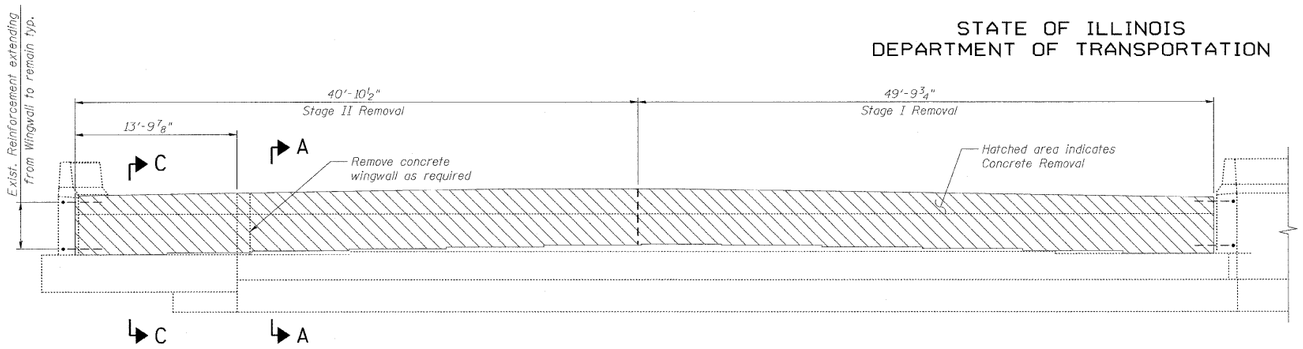
Chicago, Illinois 60601
312-565-0450 Job No. 10050

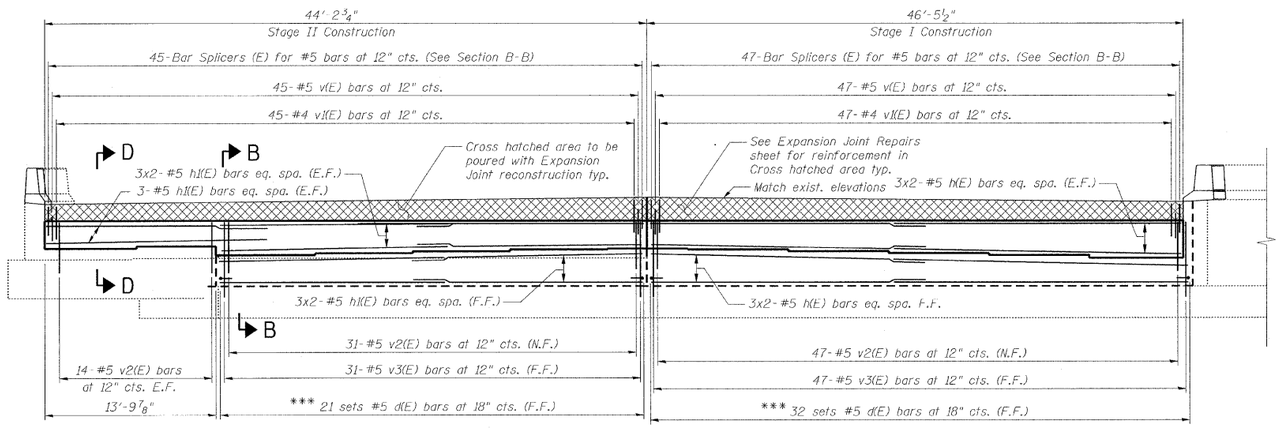
PREFORMED JOINT STRIP SEAL
STRUCTURE NO. 022-0006

SHEET NO. 12	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
25 SHEETS	290	2009-099 BR	COOK/DUPAGE	309	231
			CONTRACT NO. 60157		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

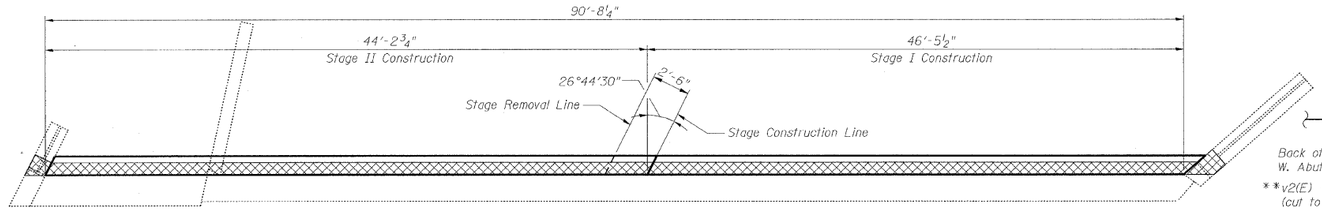


ELEVATION - BACKWALL REMOVAL
(Looking West)

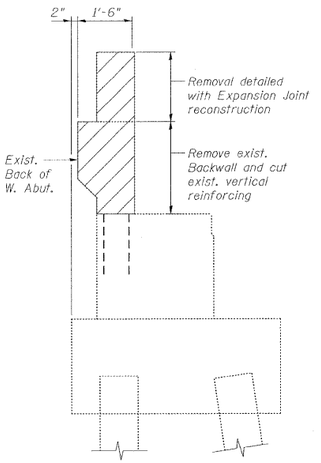


ELEVATION - PROPOSED BACKWALL
(Looking West)

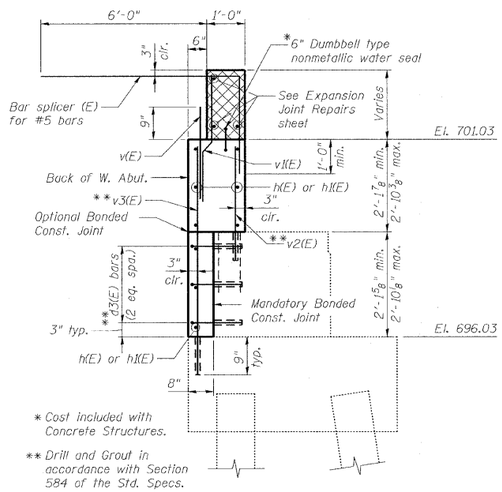
*** Three d3(E) bars per set. See Section B-B for placement.



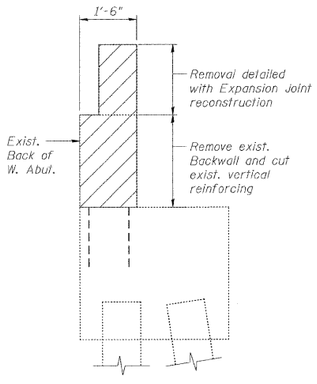
PLAN



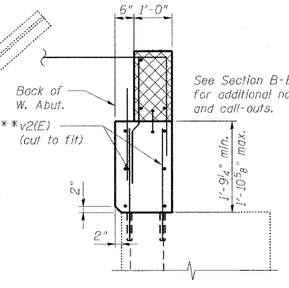
SECTION A-A



SECTION B-B



SECTION C-C

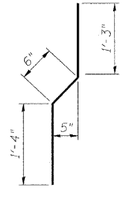


SECTION D-D

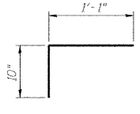
BILL OF MATERIAL

BAR	NO.	SIZE	LENGTH	SHAPE
h(E)	18	#5	24'-6"	
h1(E)	24	#5	18'-3"	
v(E)	92	#5	2'-11"	
v1(E)	92	#4	3'-1"	
v2(E)	106	#5	3'-5"	
v3(E)	78	#5	5'-5"	
d3(E)	159	#5	1'-11"	

ITEM	UNIT	TOTAL
Concrete Removal	Cu. Yd.	11.0
Concrete Structures	Cu. Yd.	16.8
Reinforcement Bars, Epoxy Coated	Pound	2,530



BAR v1(E)



BAR d3(E)

Notes:

1. Cross hatched area to be poured with Expansion Joint reconstruction. Quantity of concrete included with Concrete Superstructure.
2. Bars indicated thus 5x2-#5 etc. indicates 5 lines of bars with 2 lengths per line.
3. E.F. denotes Each Face; F.F. denotes Far Face; N.F. denotes Near Face.
4. Existing reinforcement bars extending into the concrete removal area that are designated to remain shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system. Cost included with Concrete Removal.
5. For details of Bar Splicers, see Bar Splicer Assembly Details sheet.
6. Cost of drilling and grouting is included with Reinforcement Bars, Epoxy Coated.
7. Space d3(E) bars to miss v2(E) bars.

DESIGNED -	MFB
CHECKED -	KWS
DRAWN -	RMG
CHECKED -	KWS

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

WEST ABUTMENT BACKWALL REPAIRS
STRUCTURE NO. 022-0006

SHEET NO. 13	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
25 SHEETS	290	2009-099 BR	COOK/DUPAGE	309	232
			CONTRACT NO. 60157		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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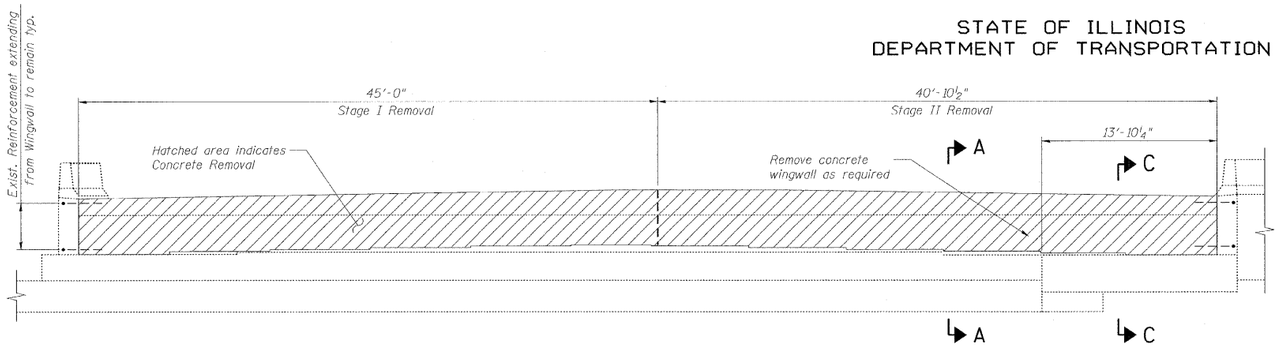
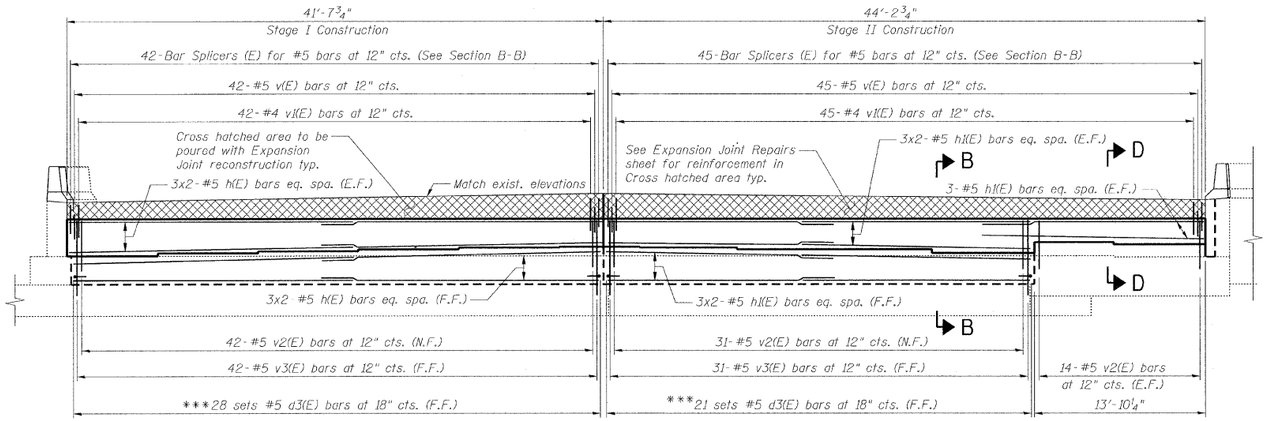
12\01\2009

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

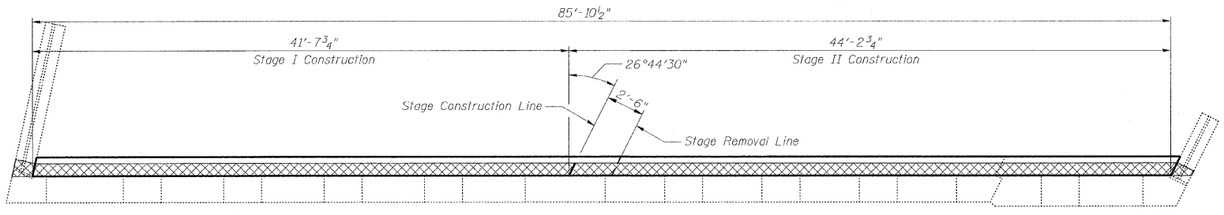


ELEVATION - BACKWALL REMOVAL
(Looking East)

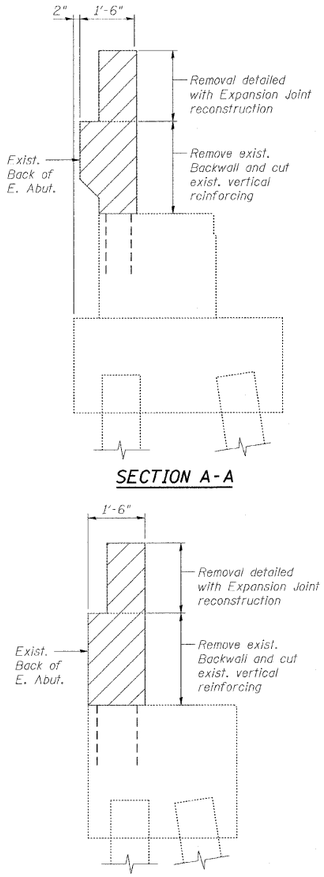


ELEVATION - PROPOSED BACKWALL
(Looking East)

*** Three d3(E) bars per set. See Section B-B for placement.

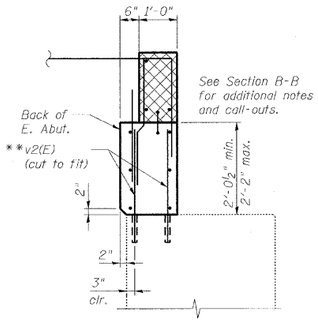


PLAN

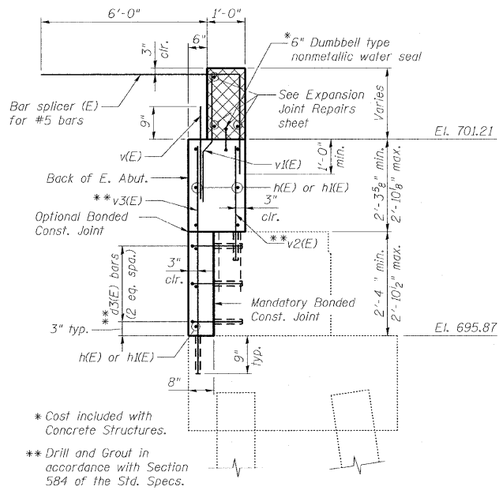


SECTION A-A

SECTION C-C



SECTION D-D



SECTION B-B

BILL OF MATERIAL

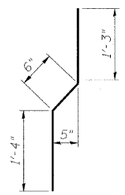
BAR	NO.	SIZE	LENGTH	SHAPE
h(E)	18	#5	22'-0"	
h1(E)	24	#5	16'-6"	
v(E)	87	#5	2'-11"	
v1(E)	87	#4	3'-1"	
v2(E)	101	#5	3'-5"	
v3(E)	73	#5	5'-5"	
d3(E)	147	#5	1'-11"	

ITEM	UNIT	TOTAL
Concrete Removal	Cu. Yd.	10.9
Concrete Structures	Cu. Yd.	16.7
Reinforcement Bars, Epoxy Coated	Pound	2,340

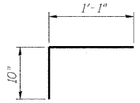
Notes:

1. Cross hatched area to be poured with Expansion Joint reconstruction. Quantity of concrete included with Concrete Superstructure.
2. Bars indicated thus 5x2-#5 etc. indicates 5 lines of bars with 2 lengths per line.
3. E.F. denotes Each Face; F.F. denotes Far Face; N.F. denotes Near Face.
4. Existing reinforcement bars extending into the concrete removal area that are designated to remain shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system. Cost included with Concrete Removal.
5. For details of Bar Splicers, see Bar Splicer Assembly Details sheet.
6. Cost of drilling and grouting is included with Reinforcement Bars, Epoxy Coated.
7. Space d3(E) bars to miss v2(E) bars.

EAST ABUTMENT BACKWALL REPAIRS
STRUCTURE NO. 022-0006



BAR v1(E)



BAR d3(E)

DESIGNED -	MFB
CHECKED -	KWS
DRAWN -	RMG
CHECKED -	KWS

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

SHEET NO. 14	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
25 SHEETS	290	2009-099 BR	COOK/DUPAGE	309	233
			CONTRACT NO. 60I57		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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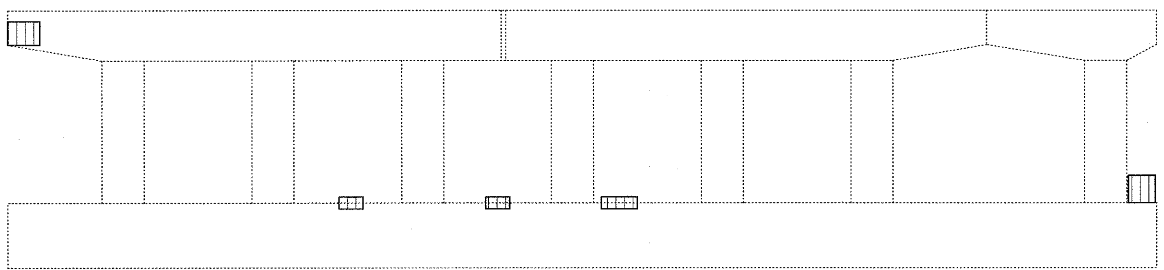
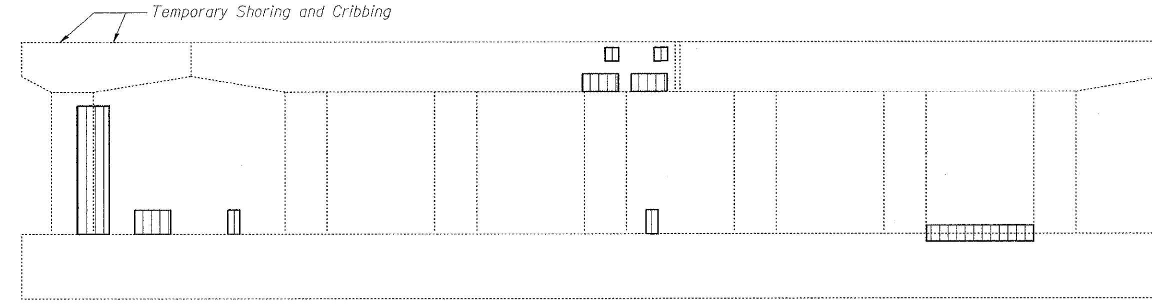
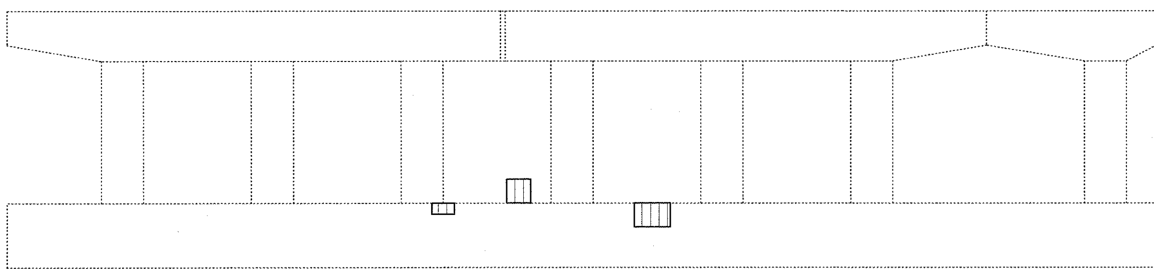
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



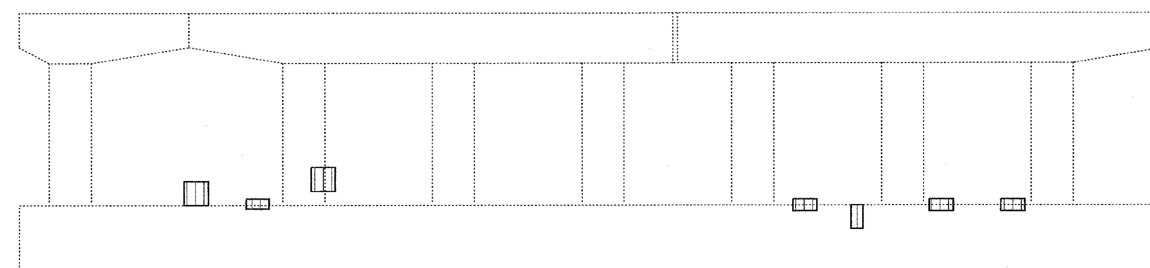
PIER 1 REPAIRS - WEST FACE



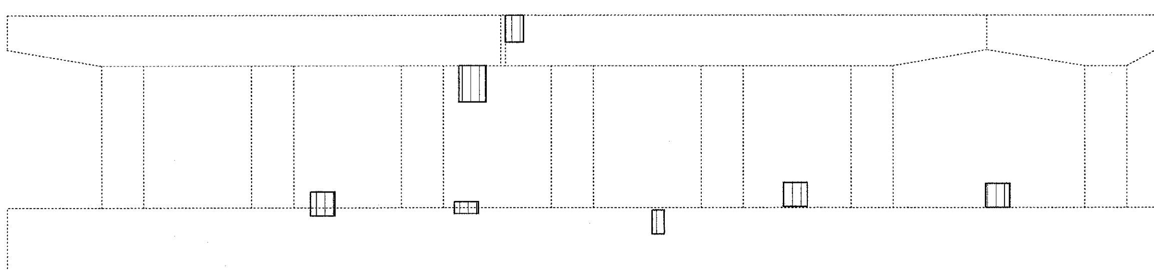
PIER 1 REPAIRS - EAST FACE



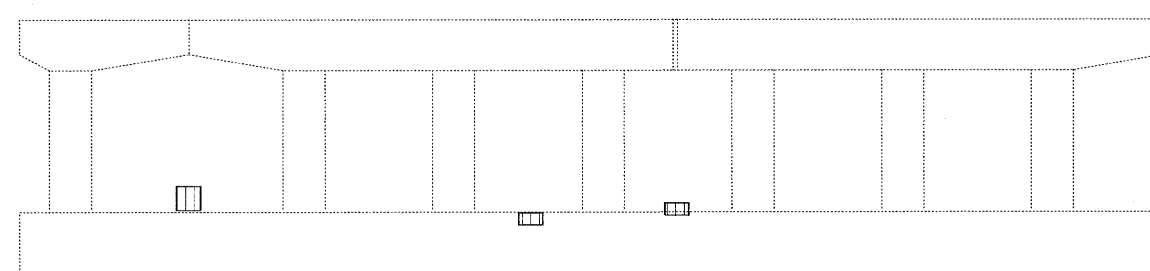
PIER 2 REPAIRS - WEST FACE



PIER 2 REPAIRS - EAST FACE



PIER 3 REPAIRS - WEST FACE



PIER 3 REPAIRS - EAST FACE

BILL OF MATERIAL

SYMBOL	ITEM	UNIT	QUANTITY
[hatched box]	Structural Repair of Concrete (Depth equal to or less than 5")	Sq. Ft.	164
	Temporary Shoring and Cribbing	Each	2

BEAM REACTIONS (KIPS)

DEAD LOAD	LIVE LOAD	IMPACT LOAD	TOTAL
44.7	43.6	12.8	101.1

Notes:

1. Pier substructure repair type and areas are estimated based on IDOT field notes from August 2009. Actual repair areas and locations shall be determined by the Engineer and shown on As-Built plans.
2. Temporary Shoring and Cribbing shall be provided per the Special Provisions for "Structural Repair of Concrete" and "Temporary Shoring and Cribbing".
3. 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	MFB
CHECKED	KWS
DRAWN	RMG
CHECKED	KWS

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SUBSTRUCTURE REPAIRS
STRUCTURE NO. 022-0006

SHEET NO. 15
25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	2009-099 BR	COOK/DUPAGE	309	234
		CONTRACT NO. 60I57		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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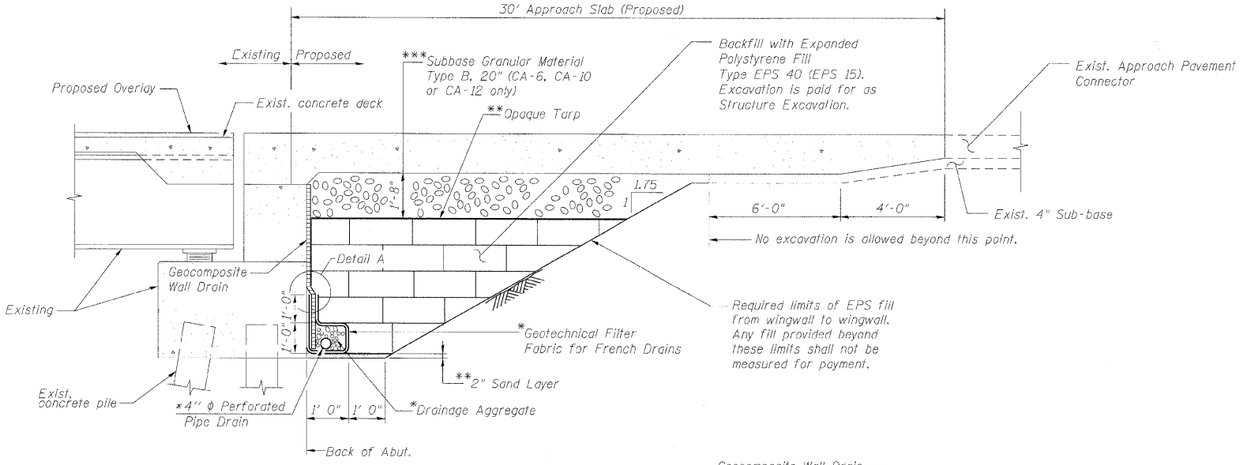
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



ABUTMENT STABILIZATION DETAIL

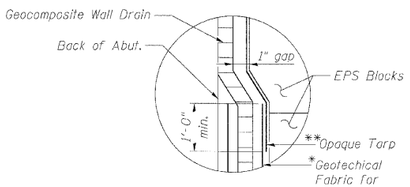
(Horiz. dim. @ Rt. L's)

* Included in the cost of Pipe Underdrains for Structures.

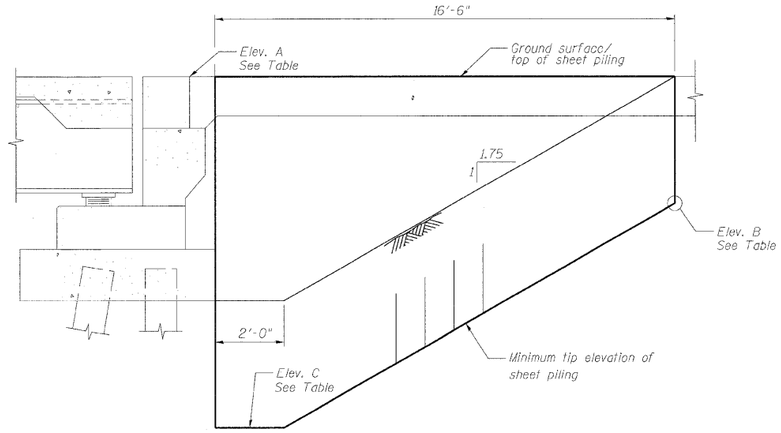
** Included in the cost of Expanded Polystyrene Fill.

*** Included in the cost of Concrete Superstructure. See Approach Slab Details.

All drainage system components shall extend parallel to the abutment back wall until they intersect the wingwalls or 2'-0" from the end of the wingwalls when the wings are parallel to the abutment. The pipe shall extend under the wingwall, if necessary, until intersecting the side slopes. The pipes shall drain into concrete headwalls. (See Article 601.05 of the Standard Specifications and Highway Standard 601101).



DETAIL A



TEMPORARY SHEET PILING

(Horiz. dim. @ Rt. L's)

Due to the shape of the abutment, the temporary sheet piling will not be able to be installed against the back the abutment for the full height of the cut. Extreme care shall be taken not to damage the footing during installation of the sheet piling. Soil at the inset portion of the abutment shall be retained. Cost included with Temporary Sheet Piling.

SHEET PILING ELEVATION TABLE

Abutment	Elev. A	Elev. B	Elev. C	Min. Section Modulus Req'd. (in.³/ft.)	Min. Embedment (ft.)
North	703.26	693.36	683.46	7.5	9.9
South	703.11	693.21	683.31	7.5	9.9

BILL OF MATERIAL

Item	Unit	Total
Structure Excavation	Cu. Yd.	534
Temporary Sheet Piling	Sq. Ft.	313
Geocomposite Wall Drain	Sq. Yd.	93
Pipe Underdrains for Structures 4"	Foot	184
Expanded Polystyrene Fill	Cu. Yd.	338

DESIGNED -	MFB
CHECKED -	KWS
DRAWN -	RMG
CHECKED -	KWS

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ABUTMENT STABILIZATION DETAILS
STRUCTURE NO. 022-0006

SHEET NO. 16	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
25 SHEETS	290	2009-099 BR	COOK/DUPAGE	309	235
			CONTRACT NO. 60157		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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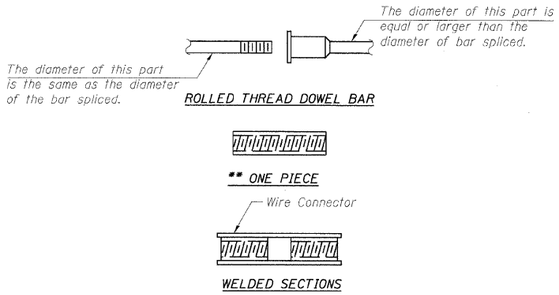
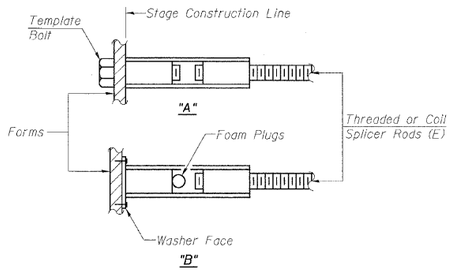
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



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.

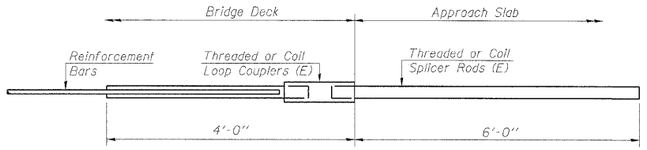
Other systems of similar design may be submitted to the Engineer for approval. Approval shall be based on certified test results from an approved testing laboratory that the proposed bar splicer assembly satisfies the following requirements:

① Minimum Capacity (Tension in kips) = 1.25 x fy x A_t

② Minimum *Pull-out Strength (Tension in kips) = 0.66 x fy x A_t

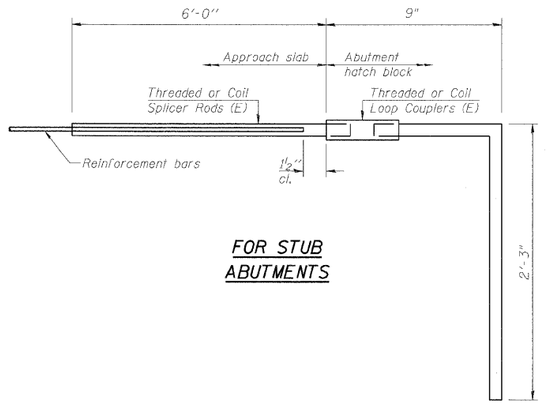
Where fy = Yield strength of lapped reinforcement bars in ksi.
A_t = Tensile stress area of lapped reinforcement bars.
* = 28 day concrete

BAR SPLICER ASSEMBLIES			
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



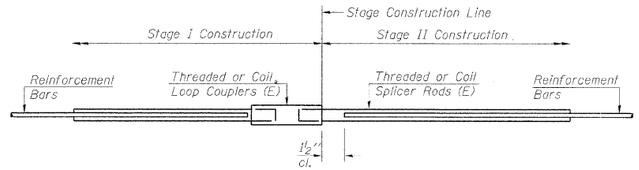
FOR INTEGRAL OR SEMI-INTEGRAL ABUTMENTS

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 = 179



STANDARD

Bar Size	No. Assemblies Required	Location
#5	16	Deck
#6	6	Deck
#4	50	App. Slab
#5	92	App. Slab

DESIGNED -	MFB
CHECKED -	KWS
DRAWN -	RMG
CHECKED -	KWS

BSD-1

10-1-08

BAR SPLICER ASSEMBLY DETAILS
STRUCTURE NO. 022-0006

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312-565-0450 Job No. 10050

SHEET NO. 17	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
25 SHEETS	290	2009-099 BR	COOK/DUPAGE	309	236
			CONTRACT NO. 60157		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

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EXISTING STRUCTURE DATA

The existing structures are two similar bridges carrying Northbound and Southbound I-290 traffic over York Rd. Each structure is a four span continuous non-composite beam bridge and carries two mainline and two ramp lanes of traffic. Each structure is 180'-1 1/2" back to back of abutment.

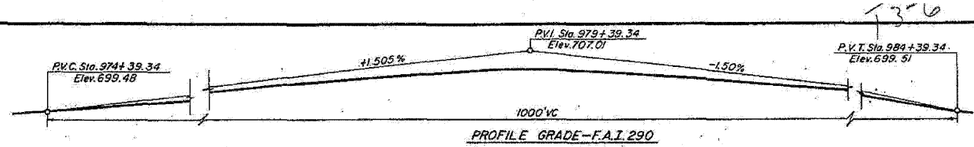
The original structures were built in 1962 and 1963. In 1985, the substructures were rehabilitated and widened, and new steel beams were erected along the median to carry one additional lane of traffic. Its present condition has the exposed steel beams without the deck.

CONSTRUCTION CONTRACT

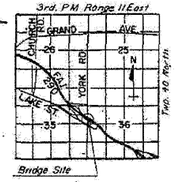
This construction contract is the second and last one required for the widening and rehabilitation for this bridge project.

In the first contract, the sub-structures were widened and repaired, and new steel beams were erected along the median.

In this contract, a new deck is added for the new traffic lane, part of the deck at the outside shoulder and the open joint in the deck are replaced, and the remainder of the original deck is patched and overlaid. The original structure will also have its bearings and expansion joints at the abutments replaced.



PROFILE GRADE - F.A.I. 290



LOCATION MAP

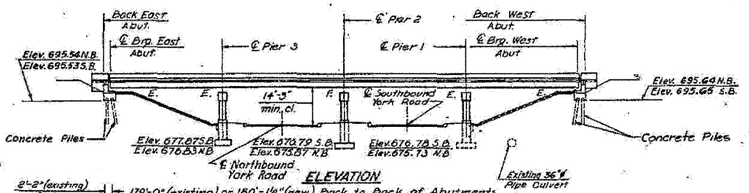
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FA 1290	1984 -083R	DUPAGE	276	196
FED. ROAD DIST. NO. 7	ILLINOIS	FEDERAL AID PROJECT NO.		

SHEET NO. 1 OF 14 SHEETS

STATION 979+19.39
REBUILT 19 .. BY
STATE OF ILLINOIS
F.A.I. RT. 290 SEC. 1984-083R
F.A. PROJ. ACIX(290-3(34)
LOADING HS20 & ALT.
STR. NO. ...-....

Notes:
Structure Number is 022-0005 for the southbound bridge, and 022-0006 for the northbound bridge. See Standard 2113.

NEW NAME PLATE

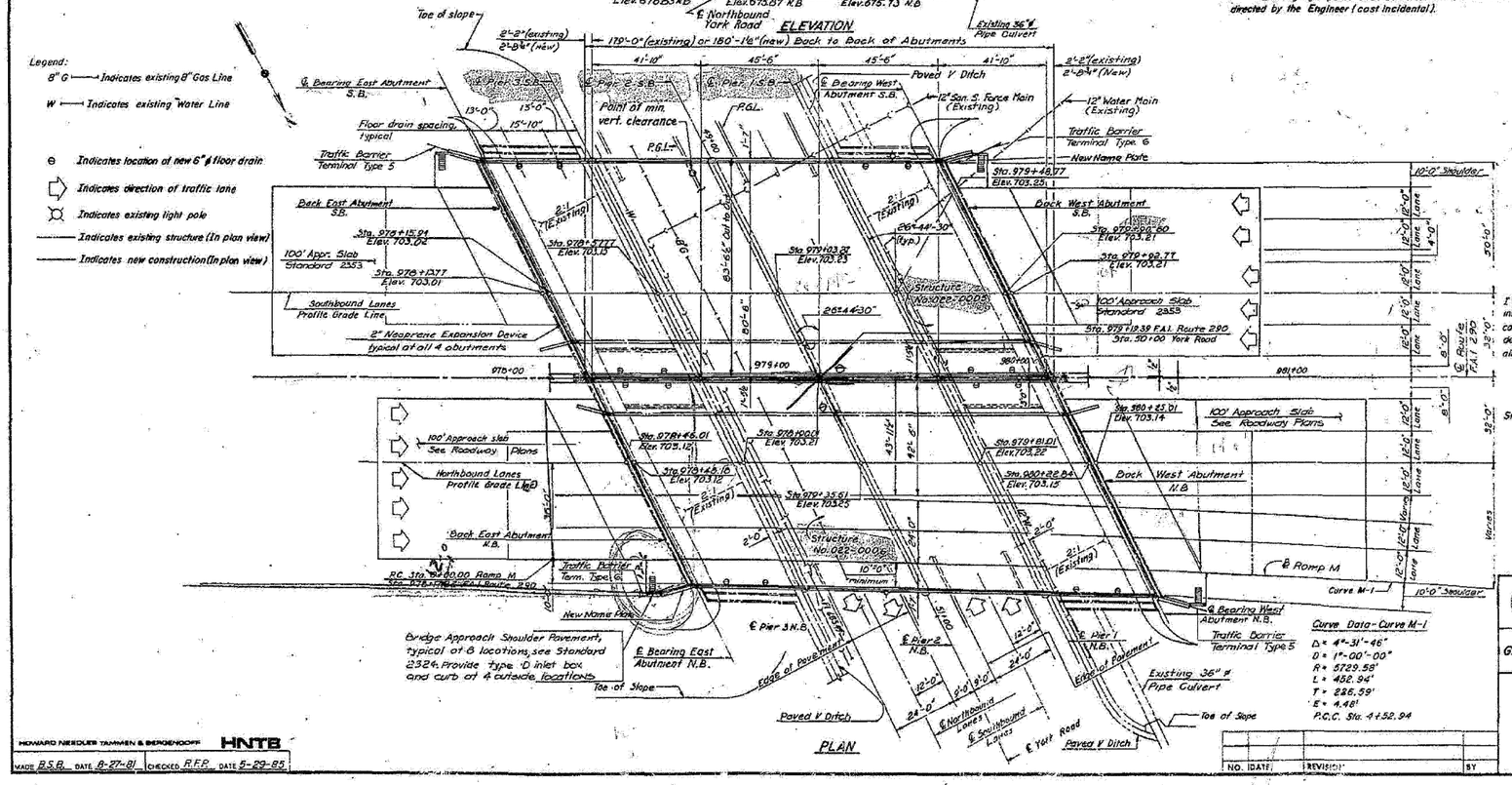


ELEVATION

NOTES:

The information shown on this sheet concerning type and location of utilities is not guaranteed to be accurate or all inclusive. The contractor is responsible for making his own determinations as to the type and location of underground and other utilities as may be necessary to avoid damage there to.

Existing light poles shall be removed from the existing edge of deck and be disposed of as directed by the Engineer (cost incidental).



PLAN

HOWARD NEEDLES TAMMEN & BERGENDOFF HNTB

MADE B.S.B. DATE 8-27-81 CHECKED R.F.P. DATE 5-29-85

NO.	DATE	REVISION	BY

APPROVED
FOR STRUCTURAL ADEQUACY ONLY
James T. Kaufmann
Engineer of Bridges and Structures

I hereby certify that to the best of my knowledge, information and belief that these plans and specifications are correct and structurally adequate for the design loading shown on the plans and complies with all the current requirements.

Signed: Raymond F. Pusczan Date: 5-30-85
Raymond F. Pusczan
S.E. Ill. Reg. No. 2495

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN AND ELEVATION

F.A.I. ROUTE 290, DUPAGE COUNTY
SECTION 1984-083R
STA. 979+19.39
INTERSTATE ROUTE 290 OVER
YORK ROAD

SHEET 166 OF 276

FOR INFORMATION ONLY

EXISTING PLAN INFORMATION 1 OF 10
STRUCTURE NO. 022-0006

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

SHEET NO. 18	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
25 SHEETS	290	2009-099 BR	COOK/DUPAGE	309	237
			CONTRACT NO. 60157		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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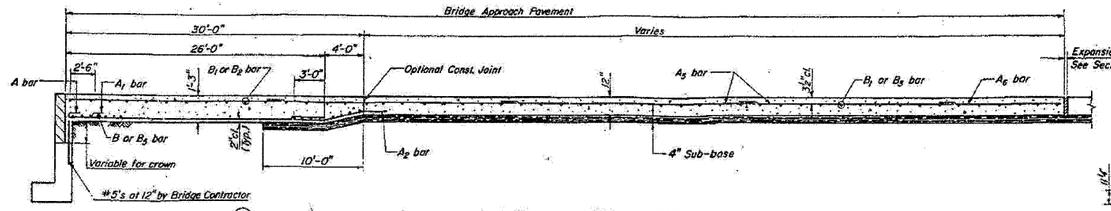
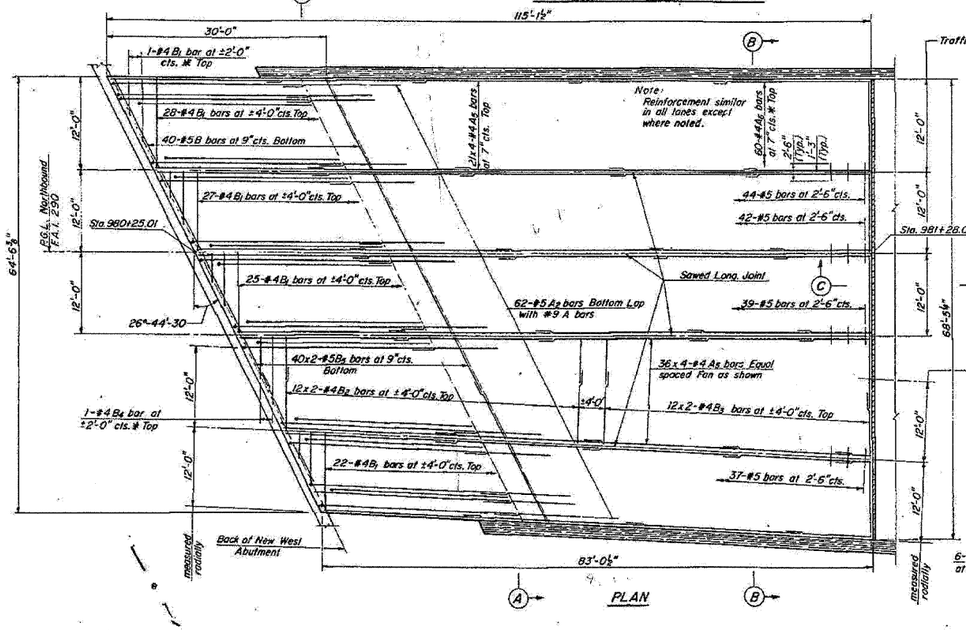
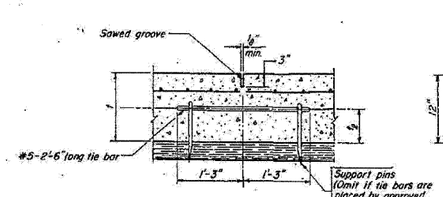
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I.290	1984-083R	DUPAGE	276	181
FED. ROAD DIST. NO. 7	ILLINOIS	FEDERAL AID PROJECT NO.		

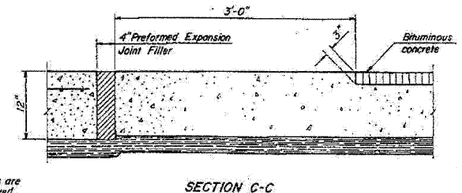


LONGITUDINAL CROSS SECTION

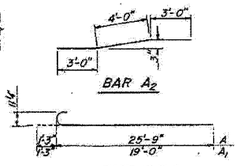




SAWED LONG. JOINT



SECTION C-C
Reinforced Jointed P.C.C. Pavement



BARS A & A1

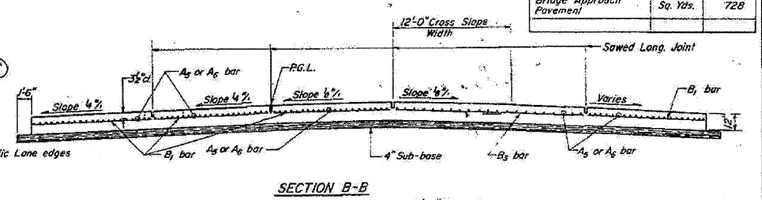
Notes:
Tilt hook of #9 bars for min. 2" cl. Use 1'-4" min. lap for #4 bars. Use 1'-8" min. lap for #5 bars.
The 4" Sub-base shall be of the same material as under the adjacent pavement.
* Cut reinforcement in the field to fit the skew and use the remainder in adjacent area.
The cost of tie bars, expansion joints and sub-base shall be included in the cost of Bridge Approach Pavement.
Bars indicated thus M x N - #4 ect. indicates 'M' lines of bars with 'N' lengths per line.

BILL OF MATERIALS

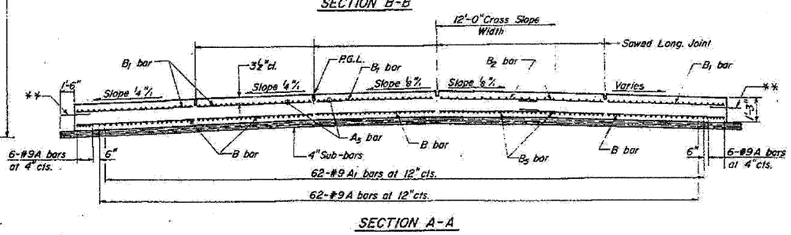
BAR	NO.	SIZE	LENGTH	SHAPE
A	74	#9	27'-0"	
A1	62	#9	20'-3"	
A2	74	#5	10'-0"	
A3	480	#4	21'-9"	
A6	60	#4	35'-9"	
B	160	#5	13'-0"	
B1	106	#4	11'-6"	
B2	24	#4	10'-0"	
B3	24	#4	11'-0"	
B4	1	#4	16'-0"	
B5	80	#5	10'-6"	

ITEM	UNIT	QUANTITY
Reinforcement Bars	Lbs.	24,450
Bridge Approach Pavement	Sq. Yds.	728

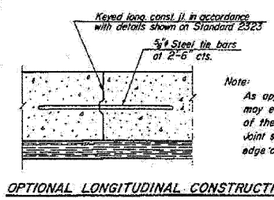
** Note:
At bridge approach shoulder pavement adjacent to approach slabs, place ½"ø steel tie bars at 2'-6" centers in accordance with the details for Bulkhead Longitudinal Construction Joint shown on Standard 2323. Cost of the tie bars will be included in the contract unit price for the adjacent item. Trasitions for curb and gutter shall be as shown on the plans.



SECTION B-B



SECTION A-A



Note:
As approved by the Engineer, the contractor may elect to reduce the widths by the use of the Optional Longitudinal Construction Joint shown. Joint shall be located at the edge of Traffic Lane.

OPTIONAL LONGITUDINAL CONSTRUCTION JOINT

HOWARD NEEDLES TAMMEN & BERGENDOFF HNTB
MADE GWH DATE 7/7/82 CHECKED BAM DATE 5/29/85

NO.	DATE	REVISION	BY

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BRIDGE APPROACH PAVEMENT (NORTHWEST QUADRANT)

F.A.I. ROUTE 290, DUPAGE COUNTY
SECTION 1984-083R
INTERSTATE ROUTE 290 OVER YORK ROAD

SHEET 181 OF 276

EXISTING PLAN INFORMATION 2 OF 10
STRUCTURE NO. 022-0006

FOR INFORMATION ONLY

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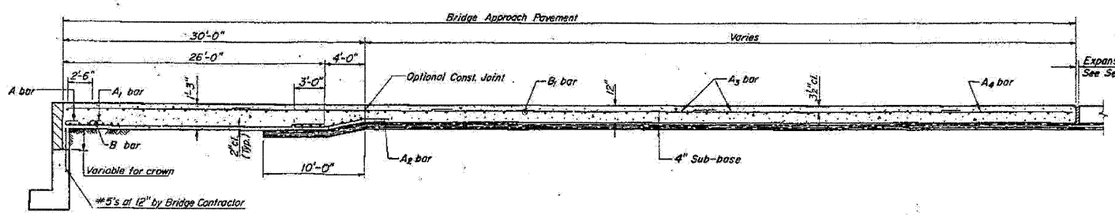
Chicago, Illinois 60601
312-565-0450 Job No. 10050

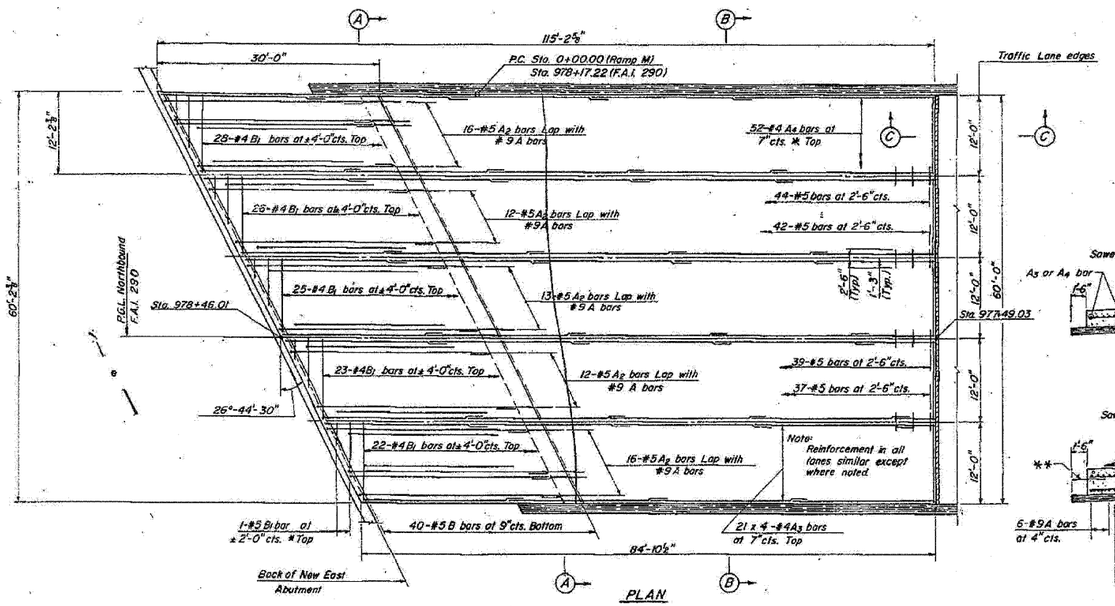
SHEET NO. 19	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
25 SHEETS	290	2009-099 BR	COOK/DUPAGE	309	238
			CONTRACT NO. 60157		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

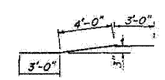
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FA1290	1984-083R	DUPAGE	276	180
FED. ROAD DIST. NO. 7	ILLINOIS	FEDERAL AID PROJECT NO.		

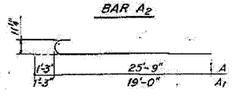


LONGITUDINAL CROSS SECTION





BAR A_2



BAR A & A_1

Notes:

Tilt hook of #9 bars for min. 2" cl.. Use 1'-4" min. lap for #4 bars. Use 1'-8" min. lap for #5 bars.

The 4" Sub-base shall be of the same material as under the adjacent pavement.

* Cut reinforcement in the field to fit the skew and use the remainder in adjacent area.

The cost of tie bars, expansion joints and sub-base shall be included in the cost of Bridge Approach Pavement.

Bars indicated thus M x N-#4 ect. indicates 'M' lines of bars with 'N' lengths per line.

BILL OF MATERIAL

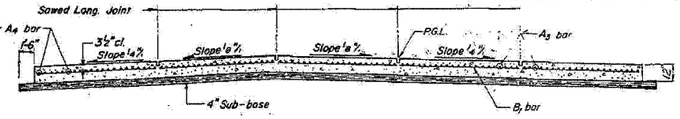
BAR	NO.	SIZE	LENGTH	SHAPE
A	69	#9	27'-0"	
A_1	56	#9	20'-3"	
A_2	69	#5	10'-0"	
A_3	420	#4	22'-3"	
A_4	52	#4	31'-6"	
B	200	#5	13'-0"	
B_1	129	#4	11'-6"	

ITEM	UNIT	QUANTITY
Reinforcement Bars	Lbs.	21,950
Bridge Approach Pavement	Sq. Yds.	667

** Note:

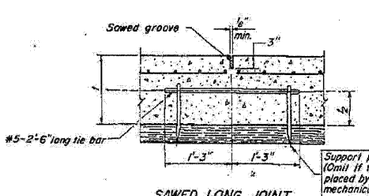
At bridge approach shoulder pavement adjacent to approach slabs, place ½" ø steel tie bars at 2'-6" centers in accordance with the details for Bulkhead Longitudinal Construction Joint shown on Standard 2323. Cost of the tie bars will be included in the contract unit price for the adjacent item.

Transitions for curb and gutter shall be as shown on the plans.

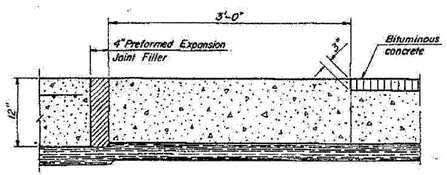


SECTION B-B

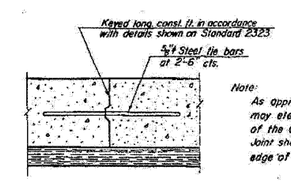
SECTION A-A



SAWED LONG. JOINT



SECTION C-C
Reinforced Jointed P.C.C. Pavement



Note:
As approved by the Engineer, the contractor may elect to reduce the widths by the use of the Optional Longitudinal Construction Joint shown. Joint shall be located at the edge of Traffic Lane.

OPTIONAL LONGITUDINAL CONSTRUCTION JOINT

NO.	DATE	REVISION	BY

HOWARD NEEDLES TAMMEN & BERGENDOFF HNTB
MADE GWH DATE 7-6-82 CHECKED RAM DATE 5-29-85

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BRIDGE APPROACH PAVEMENT
(NORTHEAST QUADRANT)

F.A.I. ROUTE 290, DUPAGE COUNTY
SECTION 1984-083 R
INTERSTATE ROUTE 290 OVER
YORK ROAD

SHEET 180 OF 276

EXISTING PLAN INFORMATION 3 OF 10
STRUCTURE NO. 022-0006

FOR INFORMATION ONLY

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

SHEET NO. 20	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
25 SHEETS	290	2009-099 BR	COOK/DUPAGE	309	239
			CONTRACT NO. 60157		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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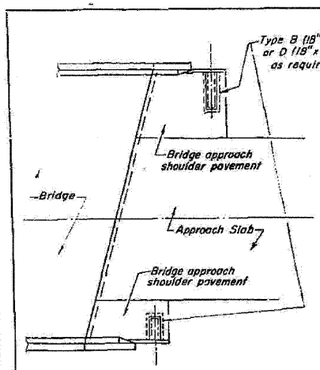
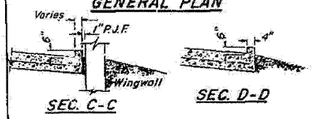
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

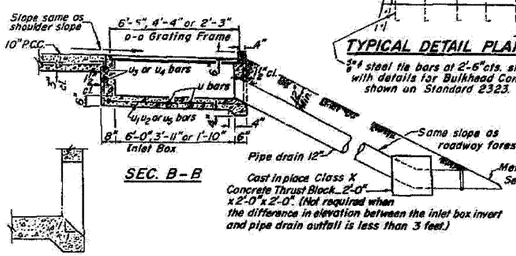


GENERAL PLAN



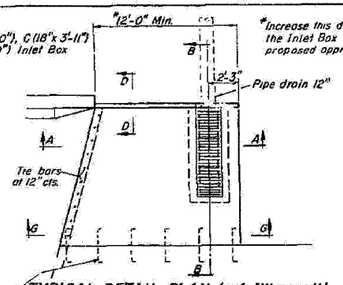
SEC. C-C

SEC. D-D



SEC. B-B

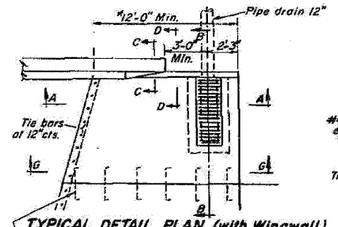
BOX OUTLET WHEN PRECAST



*Increase this dimension as needed to position the Inlet Box and Pipe Drain between the proposed approach guardrail posts.

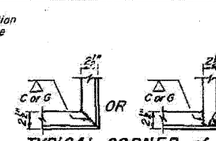
TYPICAL DETAIL PLAN (w/o Wingwall)

⅝"ϕ steel tie bars at 2'-6" cts. shall be in accordance with details for Bulkhead Construction Joint shown on Standard 2323.

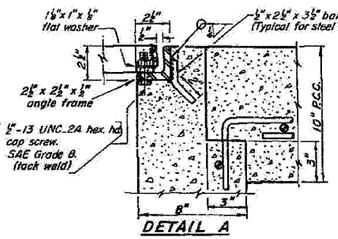


TYPICAL DETAIL PLAN (with Wingwall)

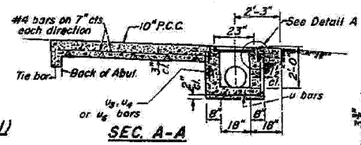
⅝"ϕ steel tie bars at 2'-6" cts. shall be in accordance with details for Bulkhead Construction Joint shown on Standard 2323.



TYPICAL CORNER of STEEL GRATING FRAME

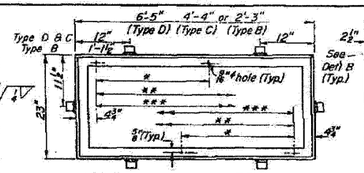


DETAIL A



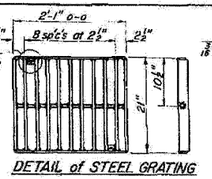
SEC. A-A

SEC. G-G



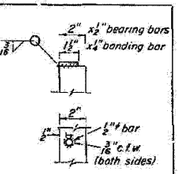
DETAIL of STEEL FRAME

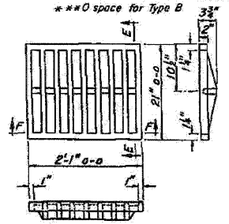
Cast frame to have same basic dimensions.
* 1 space at 2'-1" for Type C
** 2 spaces at 2'-1" for Type D
***0 space for Type B



DETAIL of STEEL GRATING

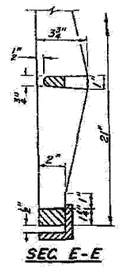
Type B requires 1 grate
Type C requires 2 grates
Type D requires 3 grates



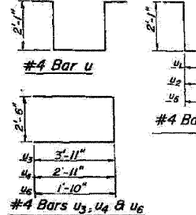


DETAIL of CAST GRATING

Type B requires 1 grate
Type C requires 2 grates
Type D requires 3 grates



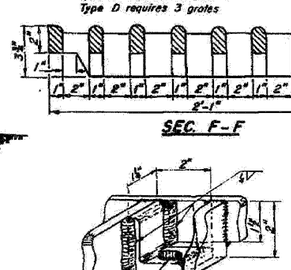
SEC. E-E



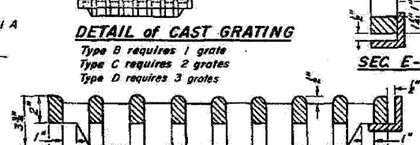
#4 Bar u

#4 Bars u1, u2 & u5

#4 Bars u3, u4 & u6



DETAIL B



SEC. F-F

Material Required for One Type B Inlet Box

Bar	No.	Size	Length
u	4	#4	8'-5"
u5	3	#4	8'-0"
u6	4	#4	6'-2"
Concrete-Class X or Precast	Cu. Yds.		0.4
Reinf. Bars	Lbs.		60
Grating	Sq. Ft.		3.7

Material Required for One Type C Inlet Box

Bar	No.	Size	Length
u	6	#4	8'-5"
u5	3	#4	10'-1"
u4	4	#4	8'-4"
Concrete-Class X or Precast	Cu. Yds.		0.9
Reinf. Bars	Lbs.		80
Grating	Sq. Ft.		7.3

Material Required for One Type D Inlet Box

Bar	No.	Size	Length
u	8	#4	8'-5"
u1	3	#4	12'-2"
u3	4	#4	10'-4"
Concrete-Class X or Precast	Cu. Yds.		1.2
Reinf. Bars	Lbs.		100
Grating	Sq. Ft.		110

GENERAL NOTES

When Inlet Box or Boxes are not required, surface of the shoulder pavement shall be finished to provide a smooth transition from back of the abutment to normal approach roadway shoulder.

See plans for location of bridge approach shoulder pavement.

Use Type C Inlet Box for 5' and 6' shoulder widths, use Type D Inlet Box for 7' and wider shoulder widths, use Type B Inlet Box for shoulders less than 5' wide.

For placement of approach shoulder pavement on existing construction substitute expansion anchor ties for tie bars. For non-rigid approaches, shoulder pavement will be as shown except omit tie bars in approach pavement.

The material for 12"ϕ Pipe Drains shall be either corrugated steel, aluminum alloy or polyethlene (P.E.) pipe with UV protection.

Corrugated steel and aluminum alloy pipe shall have 2' coupling bands. All pipe connections shall be water tight.

The P.C. Concrete used in the shoulder slab shall meet the requirements of Section 408 of the Standard Specifications.

The lengths of #4 bars used in the approach shoulder pavement shall be as required to accommodate the length, width and skew of the slab.

Class X concrete or precast concrete shall be used for the inlet.

Precast concrete shall be in accordance with Sections 503.01 thru 505.05 of the Standard Specifications except that the concrete strength shall be 4000 p.s.i. after 28 days.

All exposed edges of the inlet, except the upper perimeter, shall be beveled ¾".

Shop drawings will not be required for precast Inlet Boxes.

A 3" deep CA-12 bedding conforming to Article 704.01, D Quality or better shall be provided under full length and width of precast units, and all voids around the pipe drain entrance, both inside and outside, shall be sealed with mortar.

The grating shall seat firmly in the frame and steel grates shall be secured to the frame with a locking device as shown. Cast grates will not require the locking device.

Steel grating and frames shall conform to Article 710.04 of the Standard Specifications and shall be galvanized to AASHTO Specification M 111 after fabrication.

Cast grating and frames shall conform to Article 710.17 of the Standard Specifications. Cast grating and frames shall not be galvanized.

Pipe drains shall be installed, measured and paid for in accordance with Section 607 of the Standard Specifications, except sand bedding will not be required.

Metal End Sections shall be installed, measured and paid for in accordance with Section 511 of the Standard Specifications.

Bridge approach shoulder pavement will be measured in place and paid for in square yards as P.C. CONCRETE BRIDGE APPROACH SHOULDER PAVEMENT which shall include the cost of subgrade preparation, expansion anchor ties, reinforcement and joint fillers. In computing the area for payment, a deduction will be made for the area displaced by the Inlet. (1.2 Sq. Yds. Type C; 1.7 Sq. Yds. Type D, 0.6 Sq. Yds. Type B)

The contract unit price "Each" for TYPE (B, C or D) INLET BOX STANDARD 2324, in place, shall include the frame and grating, class X or precast concrete, reinforcement bars, excavation, bedding when required, and compacted backfill.

The contract unit price "Each" for CONCRETE THRUST BLOCKS, in place, shall include excavation and compacted backfilling.

Illinois Department of Transportation
PASSED July 18, 1984
Engineer of Bridge and Traffic Structures
APPROVED July 18, 1984
Engineer of Design
ISSUED 04-84

BRIDGE APPROACH SHOULDER PAVEMENT

STANDARD 2324-6
(Full Size)

H-1.25

FOR INFORMATION ONLY

EXISTING PLAN INFORMATION 4 OF 10
STRUCTURE NO. 022-0006

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

SHEET NO. 21	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
25 SHEETS	290	2009-099 BR	COOK/DUPAGE	309	240
			CONTRACT NO. 60157		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI.290	1984 -083R	DUPAGE	276	176
FED. ROAD DIST. NO. 7	ILLINOIS	FEDERAL AID PROJECT NO.		

SHEET NO. 11 OF 14 SHEETS

NOTES:

Existing bearings are to be removed and new elastomeric bearings are to be installed.

This contract includes only the work necessary to replace the bearings. New bearings will be furnished by the State.

The information relating to the fabrication of the bearings is being provided for information only.

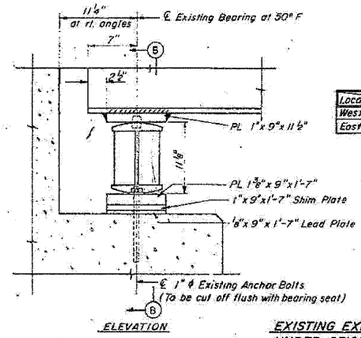
For anchor bolt installation details, see Sheet No. 12

Jacking shall be done without live load present.

FABRICATION NOTES:

Contractor shall verify dimensions of existing bearings before removing and ordering new bearings.

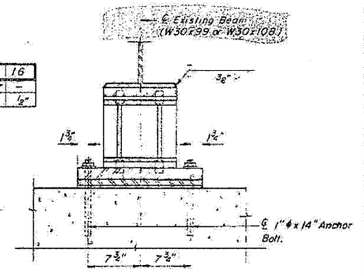
All structural steel shall be A.A.S.H.T.O. M-183.



ELEVATION

"I" DIMENSIONS

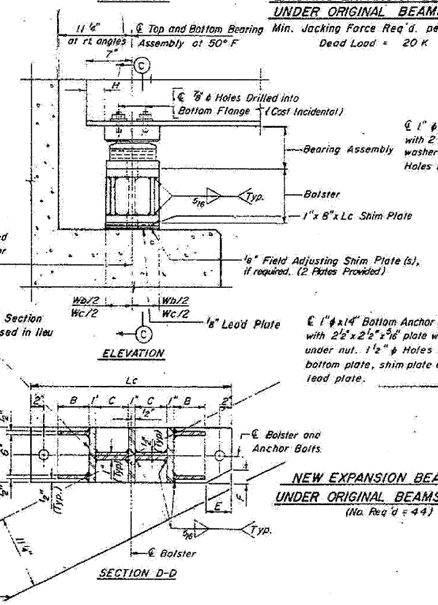
Location / Beam	6	7	16
West Abutment	—	5/8"	—
East Abutment	5/8"	—	1/4"



SECTION B-B

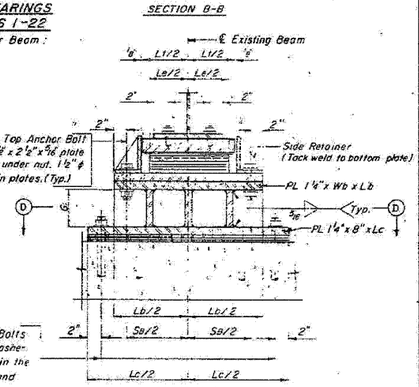
EXISTING EXPANSION BEARINGS UNDER ORIGINAL BEAMS 1-22

Min. Jacking Force Req'd. per Beam : Dead Load = 20 K



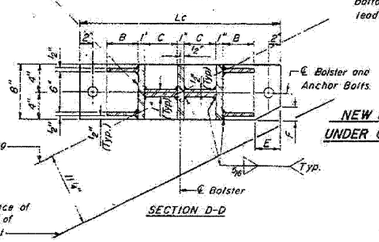
ELEVATION

Note : An equivalent WF Section with stiffeners may be used in lieu of welded plates.



SECTION C-C

℄ 1" ϕ x 14" Bottom Anchor Bolts with 2½"x 2½"x 5/16" plate washer under nut. 1½" ϕ Holes in the bottom plate, shim plate and lead plate.

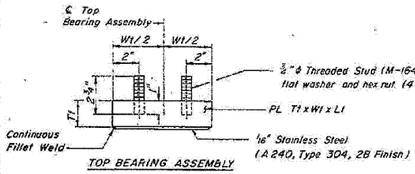


SECTION D-D

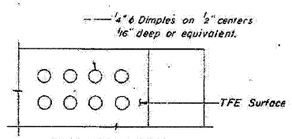
NEW EXPANSION BEARINGS UNDER ORIGINAL BEAMS 1-22
(No. Req'd = 44)

BILL OF MATERIALS

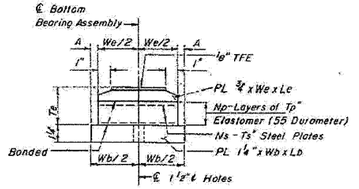
ITEM	UNIT	QUANTITY
Jacking and Removing Existing Bearings	Each	44
Install Elastomeric Bearings Assembly, Type II	Each	44



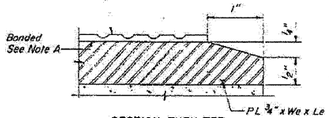
TOP BEARING ASSEMBLY



PLAN-TFE SURFACE



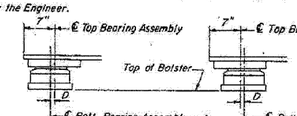
BOTTOM BEARING ASSEMBLY



SECTION THRU TFE

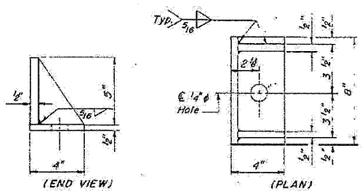
NOTE A: The ⅛" TFE Sheet shall be bonded directly to the top steel plate with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MMM-A-134 Type I. The bond agent shall be applied on the full area of the contact surface.

Bonding of ⅛" TFE sheet during the vulconizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.



SETTING ANCHOR BOLTS AT EXP. BEARING

D = ⅛" per each 100' of expansion for every 15° temp. change from the normal temp. of 50° F.



SIDE RETAINER

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

BEARING DETAILS
(Beams 1-22)

TABLE OF VARIABLES FOR EXPANSION BEARINGS

BEAM (East and West Abutment)	VARIABLE																		
	Tb	Wb	Le	Np	Tp	Ns	Ts	T1	W1	L1	Wb	Lb	Lc	Sb	A	B	C	E	F	G	H
6,7,16,17	2⅜"	6"	10"	5	5/16"	4	14 Ga.	1⅛"	7½"	12"	6"	1'-8⅝"	2'-4½"	1'-4½"	1"	4¾"	4"	2"	1"	3 5/16"	3¼"
1-5, 8-15, 18-22	2⅜"	7"	12"	4	⅝"	3	3/16"	2"	8⅝"	1'-2"	8"	1'-10⅝"	2'-6⅛"	1'-6½"	½"	4¾"	5"	3"	1½"	5 1/16"	2¾"

NO	DATE	REVISIONS	BY

HOWARD NEEDLES TAMMEN & BERGENDOFF HNTB
MADE J.R.B. DATE 9-7-84 CHECKED P.C.A. DATE 5-23-85

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BEARING INSTALLATION DETAILS AT ABUTMENTS

F.A.I. ROUTE 290, DUPAGE COUNTY
SECTION 1984-083R
STA. 979+19.39
INTERSTATE ROUTE 290 OVER
YORK ROAD

SHEET 176 OF 276

EXISTING PLAN INFORMATION 5 OF 10
STRUCTURE NO. 022-0006

FOR INFORMATION ONLY

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

SHEET NO. 22	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
25 SHEETS	290	2009-099 BR	COOK/DUPAGE	309	241
			CONTRACT NO. 60157		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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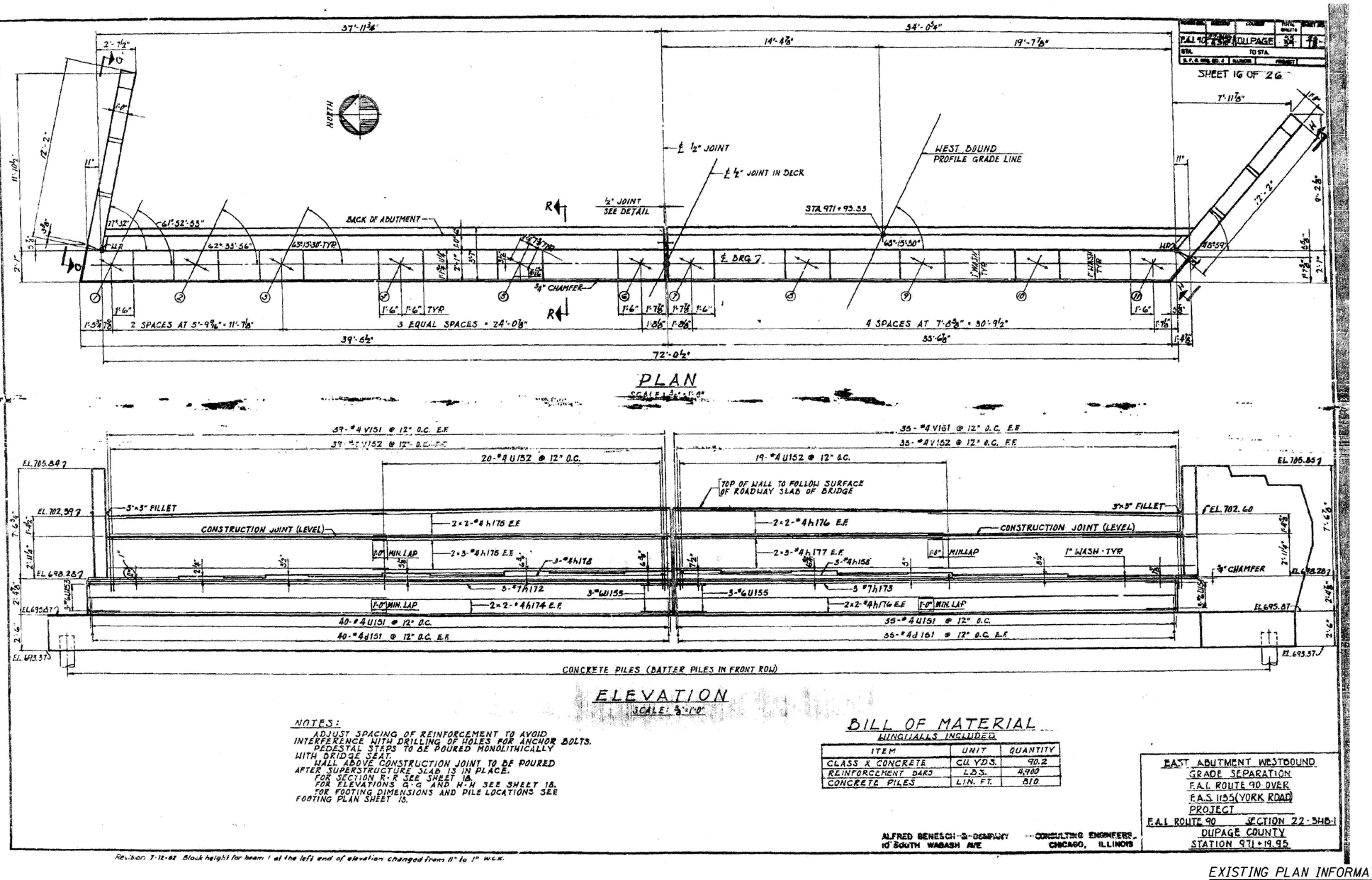
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



NOTES:
ADJUST SPACING OF REINFORCEMENT TO AVOID INTERFERENCE WITH DRILLING OF HOLES FOR ANCHOR BOLTS.
PEDESTAL STEPS TO BE POURED MONOLITHICALLY WITH BRIDGE SEAT.
WALL ABOVE CONSTRUCTION JOINT TO BE POURED AFTER SUPERSTRUCTURE SLAB IS IN PLACE.
FOR SECTION R-R SEE SHEET 18.
FOR ELEVATIONS G-G AND H-H SEE SHEET 18.
FOR FOOTING DIMENSIONS AND PILE LOCATIONS SEE FOOTING PLAN SHEET 15.

BILL OF MATERIAL
WINGWALLS INCLUDED

ITEM	UNIT	QUANTITY
CLASS X CONCRETE	CU. YDS.	90.2
REINFORCEMENT BARS	LBS.	4,900
CONCRETE PILES	LIN. FT.	810

ALFRED BENESCH & COMPANY — CONSULTING ENGINEERS
10 SOUTH WABASH AVE — CHICAGO, ILLINOIS

EAST ABUTMENT WESTBOUND
GRADE SEPARATION
F.A.I. ROUTE 90 OVER
F.A.S. 1135 (YORK ROAD)
PROJECT
F.A.I. ROUTE 90 SECTION 22-3HB-1
DUPAGE COUNTY
STATION 971+19.95

Revision 7-12-68 Block height for beam 1 at the left end of elevation changed from 11" to 1" W.C.K.

EXISTING PLAN INFORMATION 6 OF 10
STRUCTURE NO. 022-0006

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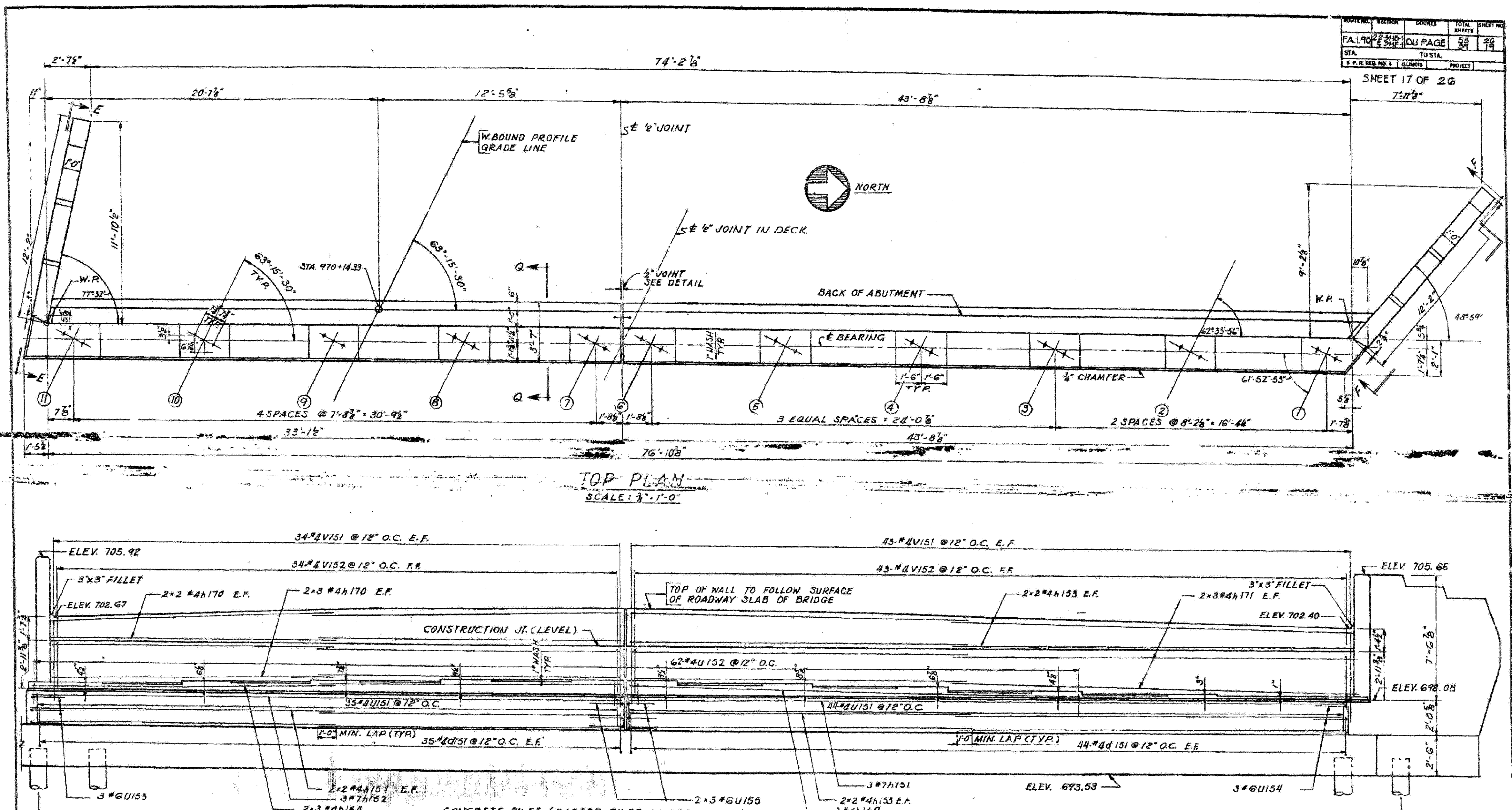
312-565-0450 Job No. 10050

SHEET NO. 23	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
25 SHEETS	290	2009-099 BR	COOK/DUPAGE	309	242
			CONTRACT NO. 60157		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



NOTES:

ADJUST SPACING OF REINFORCEMENT TO AVOID INTERFERENCE WITH DRILLING OF HOLES FOR ANCHOR BOLTS.

PEDESTAL STEPS TO BE POURED MONOLITHICALLY WITH BRIDGE SEAT.

WALL ABOVE CONSTRUCTION JOINT TO BE POURED AFTER SUPERSTRUCTURE SLAB IS IN PLACE.

FOR SECTION Q-Q SEE SHEET 18.
FOR ELEVATIONS E-E AND F-F SEE SHEET 18.
FOR FOOTING DIMENSIONS AND PILE LOCATIONS SEE FOOTING PLAN SHEET 13.

ELEVATION
SCALE: 3/8" = 1'-0"

BILL OF MATERIAL
WINGWALLS INCLUDED

ITEM	UNIT	QUANTITY
CLASS X CONCRETE	CU. YDS.	935
REINFORCEMENT BARS	LBS.	5,210
CONCRETE PILES	LIN. FT.	840

ALFRED BENESCH & COMPANY CONSULTING ENGINEERS

WEST ABUTMENT WESTBOUND
GRADE SEPARATION
F.A.I. ROUTE 90 OVER
F.A.S. 1135 (YORK ROAD)
PROJECT
F.A.I. ROUTE 90 SECTION 2[illegible] 3HB-1
DUPAGE COUNTY

EXISTING PLAN INFORMATION 7 OF 10
STRUCTURE NO. 022-0006

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312-565-0450 Job No. 10050

SHEET NO. 24	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
25 SHEETS	290	2009-099 BR	COOK/DUPAGE	309	243
			CONTRACT NO. 60I57		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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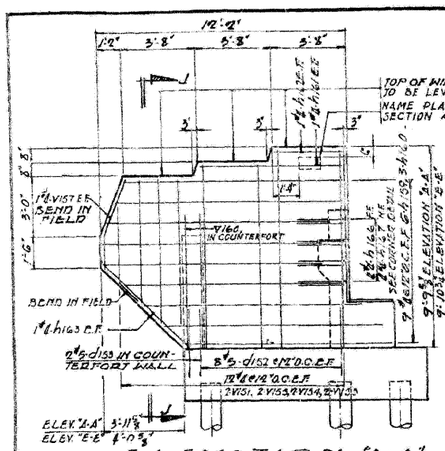
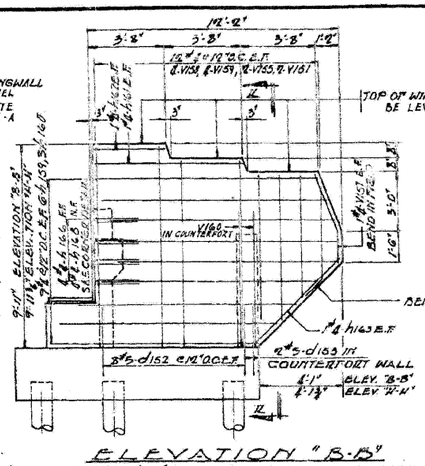
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 90	2009-099 BR	DUPAGE	309	244
STA.	TO STA.			
B.P.R. REG. NO. 4	ILLINOIS	PROJECT		

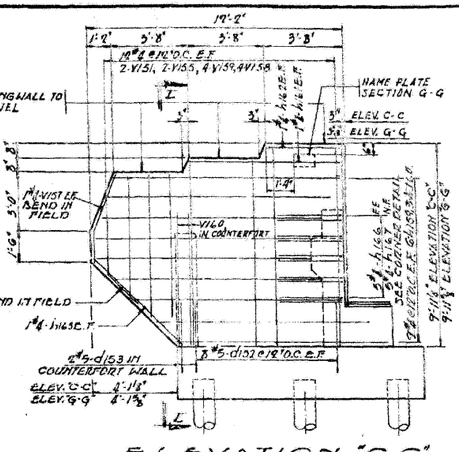
SHEET 18 OF 26



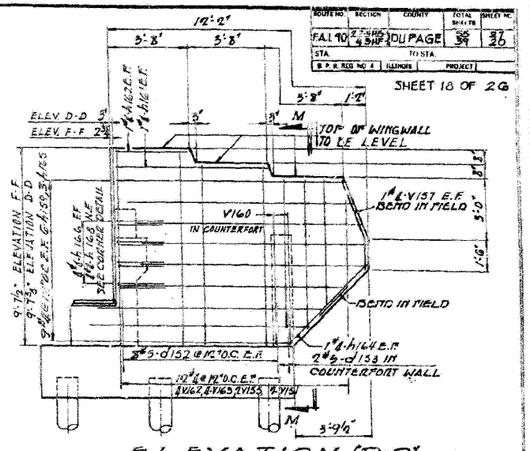
ELEVATION "A-A"
ELEVATION "E-E" SIMILAR EXCEPT AS SHOWN OR NOTED



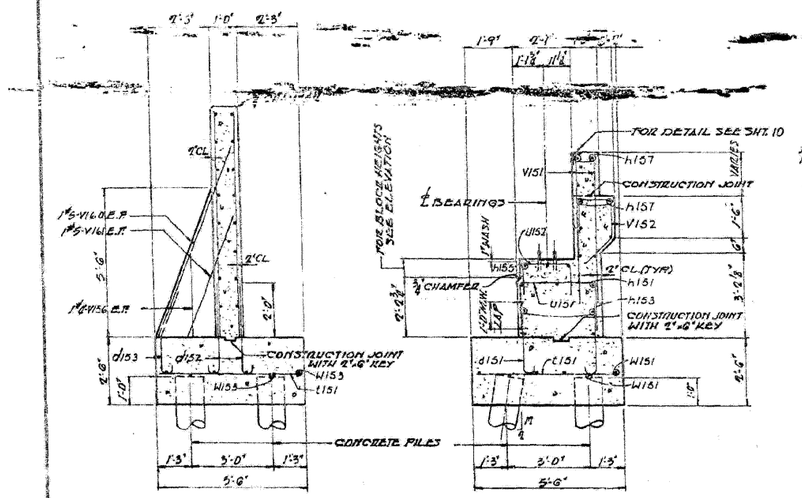
ELEVATION "B-B"
ELEVATION "H-H" SIMILAR EXCEPT AS SHOWN OR NOTED



ELEVATION "C-C"
ELEVATION "G-G" SIMILAR EXCEPT AS SHOWN OR NOTED



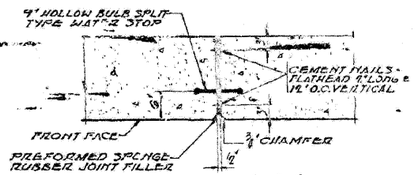
ELEVATION "D-D"
ELEVATION "F-F" SIMILAR EXCEPT AS SHOWN OR NOTED



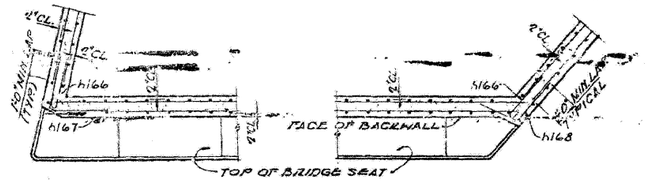
SECTION "J-J"
SECTIONS "K-K", "L-L" AND "M-M" SIMILAR
SCALE: ½"=1'-0"

SECTION "N-N"
SECTIONS "P-P", "Q-Q" AND "R-R" SIMILAR
SCALE: ½"=1'-0"

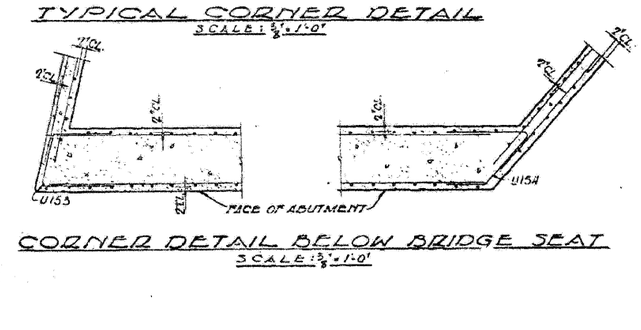
NOTE:
BAR MARKS AND DIMENSIONS SHOWN FOR SECTIONS J-J AND N-N ONLY.



DETAIL OF ½" JOINT
SCALE: 1"=1'-0"



TYPICAL CORNER DETAIL
SCALE: ⅜"=1'-0"



CORNER DETAIL BELOW BRIDGE SEAT
SCALE: ⅜"=1'-0"

NOTES:
FOR FOOTING PLAN SEE SHEETS 12 AND 13.
FOR ELEVATION OF ABUTMENTS AND LOCATION OF WINGWALLS SEE SHEETS 14, 15, 16 AND 17.

ALFRED BENESCH & COMPANY
10 SOUTH WACKER DRIVE CHICAGO, ILLINOIS
CONSULTING ENGINEERS

ABUTMENT DETAILS
GRADE SEPARATION
F.A.I. ROUTE 90 OVER
F.A.S. 1135 (YORK ROAD)
PROJECT
F.A.I. ROUTE 90 SECTION 22-3HB-1
DUPAGE COUNTY
STATION 971+19.95

EXISTING PLAN INFORMATION 8 OF 10
STRUCTURE NO. 022-0006

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312-565-0450 Job No. 10050

SHEET NO. 25	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
25 SHEETS	290	2009-099 BR	COOK/DUPAGE	309	244
			CONTRACT NO. 60157		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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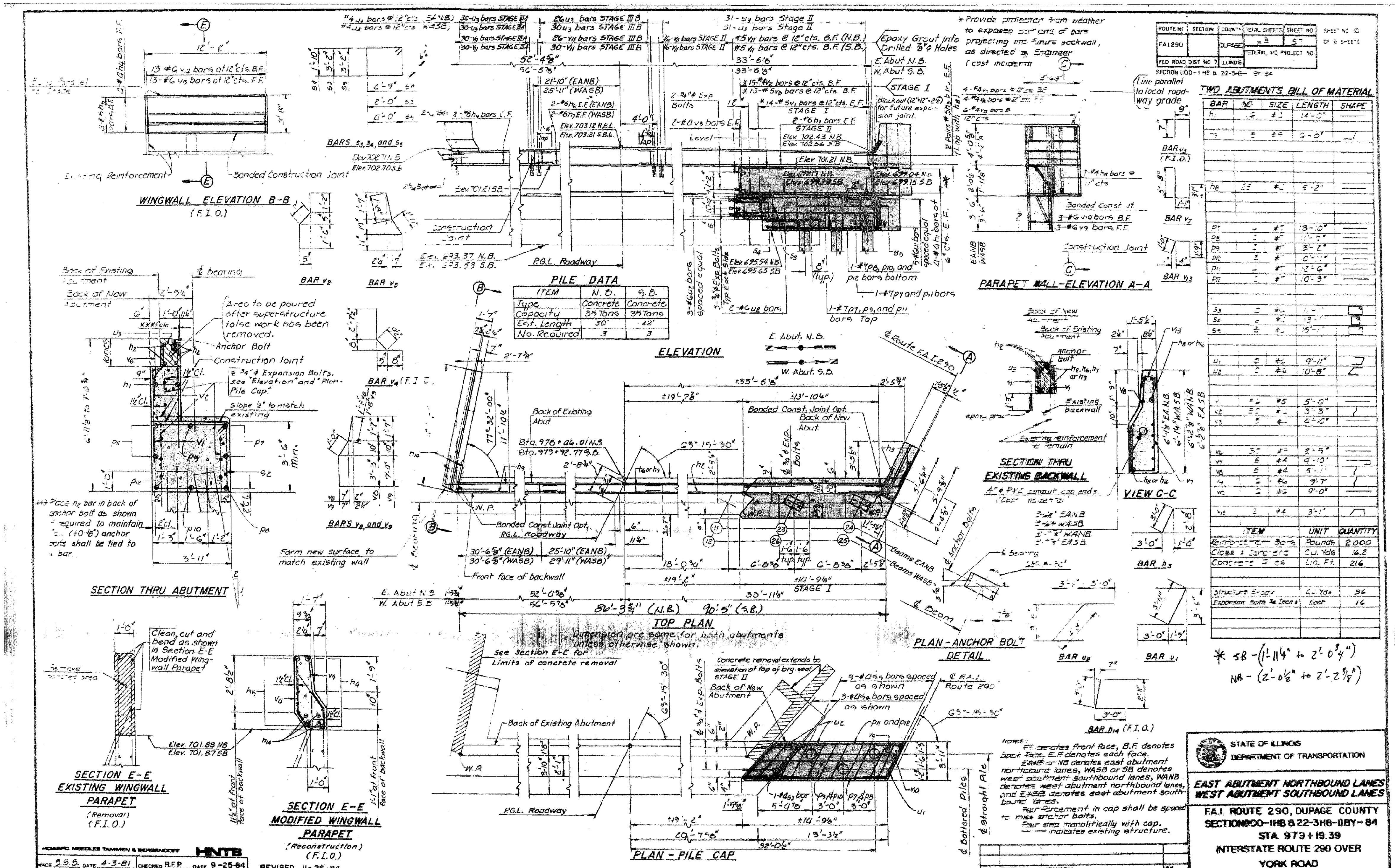
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



EXISTING PLAN INFORMATION 9 OF 10

STRUCTURE NO. 022-0006

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SHEET NO. 25A	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	2009-099 BR	COOK/DUPAGE	309	244A
25 SHEETS			CONTRACT NO. 60I57		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PARAPET WALL - ELEVATION A-A

SECTION THRU ABUTMENT

SECTION THRU EXISTING BACKWALL (F.I.O.)

ELEVATION

PLAN - PILE CAP

TOP PLAN

PILE DATA

ITEM	N.B	S.B
Type	Concrete	Concrete
Capacity	35	35
Est. Length	25	35
No. Reqd	* 3	* 3

* Includes 1 test pile

SECTION E-E EXISTING WINGWALL PARAPET (Removal) STAGE (F.I.O.)

SECTION E-E MODIFIED WINGWALL PARAPET (Reconstruction) STAGE (F.I.O.)

WINGWALL ELEVATION B-B

TWO ABUTMENTS - BILL OF MATERIAL

BAR	NO.	SIZE	LENGTH	SHAPE
h12	8	#5	5'-	
h15, h16	16, 28	#4	1'	
P1	4	#7	42'-	
P2	2	#7	7'-	
P3	2	#7	42'-	
P4	2	#7	5'-	
P5	4	#7	5'-	
P6	2	#7	5'-	
S1	4	#4	12'-	
S2	24	#4	42'-	
S3	2	#4	1'-	
U1	10	#6	5'-	
V1	60	#5	3'-	
V2	30	#4	3'-	
V3	8	#4	2'-	
V6	30	#5	3'-	
V7	4	#4	2'-	
V8	4	#4	2'-	
V9	6	#6	4'-	
V10	4	#6	3'-	
V13	10	#4	3'-	

ITEM	UNIT	QUANTITY
Structure Excavation	Cu. Yds.	12
Class X Concrete	Cu. Yds.	3
Reinforcement Bars	Lbs.	810
Concrete Piles	Lin. Ft.	80
Test Pile Concrete	Each	1
Expansion Bolts 3/4 Inch ø	Each	4

Notes:
For anchor bolt details, see Plan - Anchor Bolt Detail on sheet 10.
For View C-C, see sheet 3.
F.F. denotes front face, B.F. denotes back face, and E.F. denotes each face.
WANB or NB denotes west abutment northbound lanes, and EASB or SB denotes east abutment southbound lanes.
Reinforcement in concrete piles to be spaced to miss anchor bolts.
Four step monolithic wingwall.
——— indicates existing structure.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EAST ABUTMENT SOUTH BOUND LANES
WEST ABUTMENT NORTH BOUND LANES

F.A.I. ROUTE 290, DUPAGE COUNTY
SECTION(100-1HB & 22-3HB-1) BY-84
STA. 979+19.35
INTERSTATE ROUTE 290 OVER
YORK ROAD

HOWARD NEEDLES TAMMEN & BERGENDOFF HNTB
MADE L.S.Z. DATE 3-12-81 CHECKED R.F.P. DATE 9-25-84 REVISED 11-26-84

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EXISTING PLAN INFORMATION 10 OF 10
STRUCTURE NO. 022-0006

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312-565-0450 Job No. 10050

SHEET NO. 25B	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
25 SHEETS	290	2009-099 BR	COOK/DUPAGE	309	244B
			CONTRACT NO. 60157		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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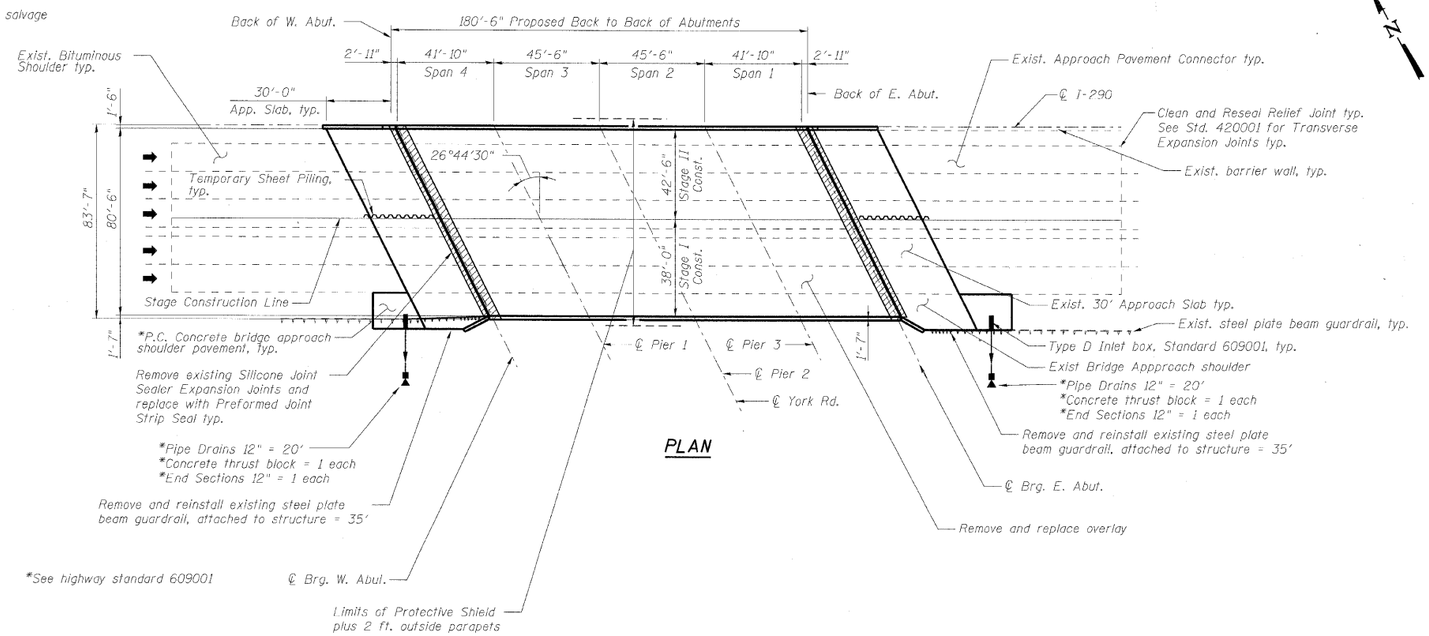
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

Existing Structure:
The structure is a four-span continuous, non-composite plate girder bridge with a 7-inch reinforced concrete deck and a 2-inch concrete overlay. The original structure was built in 1962. In 1985, the structure was widened, patched and overlaid; the approaches were constructed; the abutment bearings were replaced; and the expansion joints were reconstructed. In 1998, diaphragms were replaced at the abutments, the expansion joints were reconstructed, and patching was performed on the approaches and abutments. In 2002, the bridge was painted.

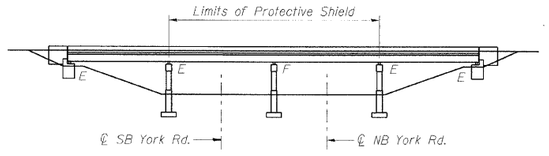
Bench Mark:
Chiseled square on top of west headwall of 24" concrete culvert, El. 671.53.

Stage construction shall be utilized to maintain traffic during construction.

No salvage



PLAN



ELEVATION

DESIGN SPECIFICATIONS

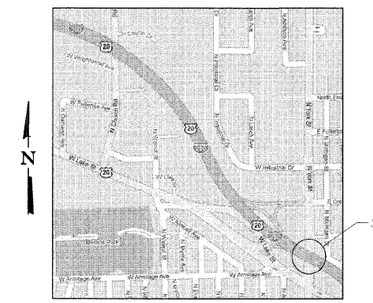
2002 AASHTO Standard Specifications for Highway Bridges, 17th Edition

DESIGN STRESSES

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

SCOPE OF WORK

1. Remove bridge approach slabs.
2. Bridge Deck Hydro-scarification.
3. Jack and reposition bearings.
4. Reconstruct deck joints at each abutment with preformed joint strip seal.
5. Repair substructure & reconstruct abutment backwalls.
6. Place new overlay.
7. Stabilize abutments.
8. Replace bridge approach slabs.
9. Repair parapet with formed concrete repair.
10. Clean and reseal relief joints at the end of approach pavement connectors.
11. Apply concrete sealer.
12. Apply protective coat.



LOCATION SKETCH

STATE OF ILLINOIS
KYLE W. SMITH
81-6582
CHICAGO, ILLINOIS
STRUCTURAL ENGINEER
EXPIRATION DATE: 11-30-10
DATE: 11/16/09

DESIGNED -	MFB
CHECKED -	KWS
DRAWN -	RMG/KH
CHECKED -	KWS

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

GENERAL PLAN AND ELEVATION
I-290 EB OVER YORK ROAD
DUPAGE COUNTY
STATION 298+64
STRUCTURE NO. 022-0005

SHEET NO. 1	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
25 SHEETS	290	2009-099 BR	COOK/DUPAGE	309	245
			CONTRACT NO. 60157		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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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 ¼ 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 existing bridge parapets, abutment seats and abutment backwalls. All surfaces to be sealed shall be cleaned thoroughly prior to sealer application. Cost included with Concrete Sealer.

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

7. If the contractor chooses to alter the temporary cantilivered sheet piling design requirements shown on the plans, a design submittal including plan details and calculations will be required for review and acceptance by the Engineer.

8. The Contractor shall connect the first sheet to the existing abutment wall to ensure stability of sheets driven to the top of the existing footing. This connection shall be reviewed and accepted by the Engineer and included in the cost of Temporary Sheet Piling.

9. Stage construction shall be utilized to maintain traffic during construction.

10. 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.

11. Protective Coat shall be applied to the new Latex Concrete Overlay and Concrete Superstructures..

12. During visual inspection in June 2009, a gap was noted between the girder and non-composite deck at one isolated location. After reconstruction of the expansion joints, completion of all bridge deck patching, and placement of the Latex Concrete Overlay, the Engineer in the field shall check to see that the top flange of all beams are tight against the slab. If not, the Contractor shall inject epoxy between the concrete deck and the top flange of the beam. See Special Provision "Epoxy Injection". Cost included in Bridge Deck Latex Concrete Overlay, 2¼".

13. Joint openings shall be adjusted according to Article 520.04 of the Std. Specs. when the deck is poured at an ambient temperature other than 50°F.

*Remove exist. welds and grind smooth. Reposition top bearing plate as shown and field weld in place.

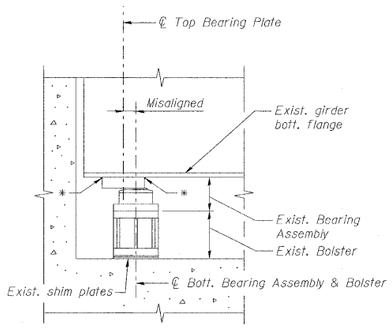
**Remove nuts, washers and ¾" dia. threaded studs and reposition top bearing plate as shown below. Weld ½" x 1½" x 1½" PL over holes in bottom flange and grind surfaces smooth.

***D = ⅛" per each 100 ft. of expansion for every 15° temp. change from normal temp. of 50°F. Orientation for temp. greater than 50°F is shown. "D" is on opposite side of ℄ Bott. Bearing Assembly for temp. less than 50°F.

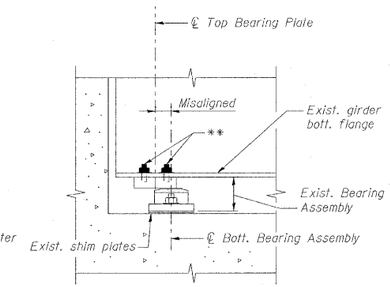
DESIGNED	-	MFB
CHECKED	-	KWS
DRAWN	-	RMG
CHECKED	-	KWS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

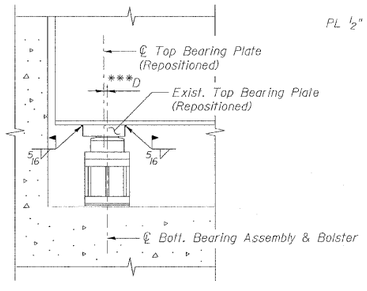
INDEX OF SHEETS



EXISTING ELEVATION
(Side retainers not shown for clarity)

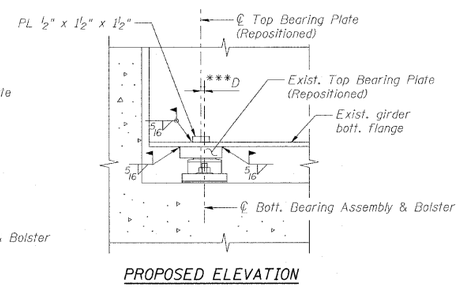


EXISTING ELEVATION



PROPOSED ELEVATION

BEARING REPAIR BEAMS 12-22
(Jack and Reposition Bearings - 11 thus)



PROPOSED ELEVATION

BEARING REPAIR BEAMS 25-26
(Jack and Reposition Bearings - 2 thus)

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
P.C. Concrete Bridge Approach Shoulder Pavement	Sq. Yd.	54		54
Approach Slab Removal	Sq. Yd.	584		584
Concrete Barrier Removal	Foot	56		56
Concrete Removal	Cu. Yd.	28.9	22.2	51.1
Protective Shield	Sq. Yd.	886		886
▲ Structure Excavation	Cu. Yd.		530	530
Concrete Structures	Cu. Yd.		33.8	33.8
Concrete Superstructure	Cu. Yd.	265.4		265.4
Bridge Deck Grooving	Sq. Yd.	2,100		2,100
Protective Coat	Sq. Yd.	2,192		2,192
Jack and Reposition Bearings	Each	13		13
Reinforcement Bars, Epoxy Coated	Pound	61,250	4,940	66,190
Bar Splicers	Each	164	182	346
Temporary Sheet Piling	Sq. Ft.		312	312
Preformed Joint Strip Seal	Foot	184.5		184.5
End Sections 12"	Each	2		2
Concrete Sealer	Sq. Ft.	5,246	1,030	6,276
Geocomposite Wall Drain	Sq. Yd.		94	94
Pipe Drains 12"	Foot	40		40
Pipe Underdrains for Structures 4"	Foot		187	187
Removing Inlets	Each	2		2
Type D Inlet Box, Standard 609001	Each	2		2
Concrete Thrust Blocks	Each	2		2
Removal & Reinstallation of Existing Steel Plate Beam Guard Rail, Attached to Structures	Foot	70		70
Bridge Deck Latex Concrete Overlay, 2 1/4"	Sq. Yd.	1,540		1,540
Structural Repair of Concrete (Depth Equal to or Less than 5 Inches)	Sq. Ft.	9	221	230
Expanded Polystyrene Fill	Cu. Yd.		336	336
Bridge Deck Hydro-Scarification, 2 1/4"	Sq. Yd.	1,540		1,540
Deck Slab Repair (Full Depth, Type I)	Sq. Yd.	78.2		78.2
Deck Slab Repair (Full Depth, Type II)	Sq. Yd.	180.8		180.8
Temporary Shoring and Cribbing	Each		4	4
Clean and Reseal Relief Joint	Foot	128.0		128.0

▲ All excavated materials shall be disposed of within IDOT right-of-way and within the project limits. See the General Notes sheet from the roadway plans for more information.

BEARING REPAIR NOTES

1. Existing welds shall be ground smooth and prepared as necessary to perform field welding according to Article 505.04(q) of the Standard Specifications.

2. Cost to jack bearings, disconnect the bearing plate from the bottom flange, prepare surfaces, position bearings, field weld and clean, seal and/or paint shall be included with Jack and Reposition Bearings. See Special Provision for "Jack and Reposition Bearings".

3. The Contractor shall exercise extreme care not to damage the existing bearing assemblies, bolsters and beams. All damage to existing members that are to remain shall be repaired or the member replaced to the satisfaction of the Engineer. Repair or replacement of damaged members shall be at no additional cost to the Department.

4. Prior to reinstallation of the top bearing plates, a primer coat shall be applied to the top (contact) surface of the bearing plates and the portions of the bottom flanges that will either be in contact with the bearing plates or was previously in contact with the bearing plates. Surface preparation and primer coat application shall be according to the special provision Cleaning and Painting Existing Steel Structures. Upon completion of welding operations, the affected areas shall be painted with an aluminum epoxy mastic primer followed by a finish coat to match the color of the existing beam or top bearing plate. Paint shall be applied per the requirements of Paint System 2, according to the Special Provision "Cleaning and Painting Existing Steel Structures".

5. See existing plans for girder numbering.

6. 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.

ABUTMENT BEAM REACTIONS (KIPS)

DEAD LOAD	LIVE LOAD	IMPACT LOAD	TOTAL
14.6	34.3	10.3	59.2

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GENERAL NOTES, BILL OF MATERIAL AND INDEX OF SHEETS
STRUCTURE NO. 022-0005

SHEET NO. 2	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
25 SHEETS	290	2009-099 BR	COOK/DUPAGE	309	246
			CONTRACT NO. 60I57		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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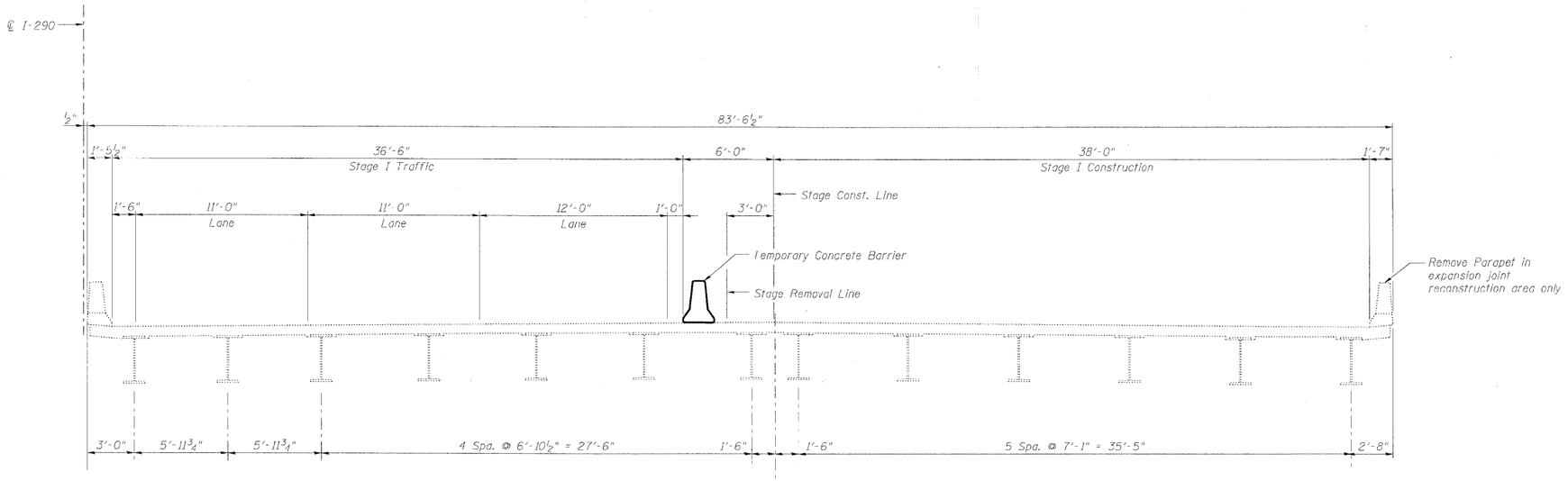
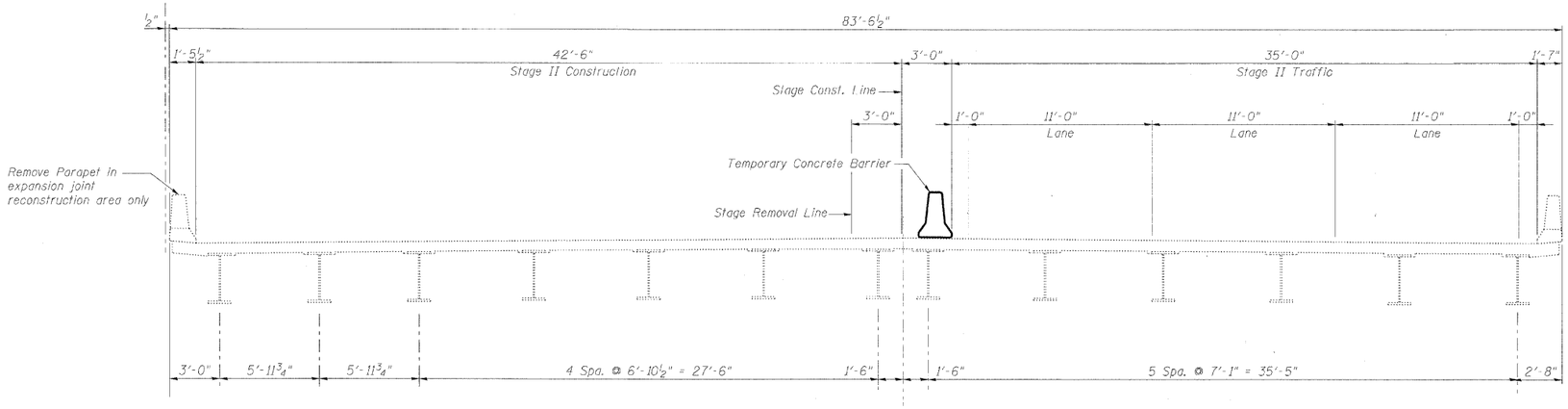
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



STAGE I CROSS SECTION
(Looking East)



STAGE II CROSS SECTION
(Looking East)

Notes:

1. For quantity of Temporary Concrete Barrier, see roadway plans.
2. Temporary Concrete Barrier to be anchored to the approach slabs adjacent to locations of Structure Excavation. For Temporary Concrete Barrier Details, see Temporary Concrete Barrier for Stage Construction sheet.

DESIGNED -	MFB
CHECKED -	MAC
DRAWN -	VH
CHECKED -	KWS

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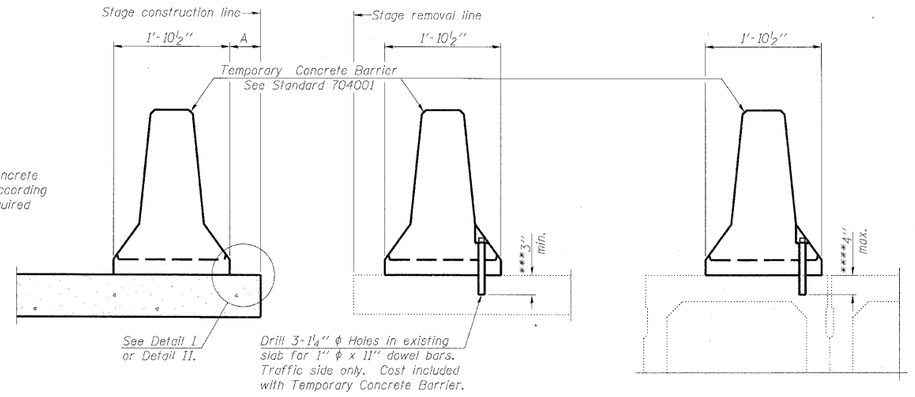
STAGE CONSTRUCTION DETAILS
STRUCTURE NO. 022-0005

SHEET NO. 3	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
25 SHEETS	290	2009-099 BR	COOK/DUPAGE	309	247
			CONTRACT NO. 60157		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

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



NEW SLAB | EXISTING SLAB | EXISTING DECK BEAM

NOTES

Detail I - With Bar Splicer or Couplers:
Connect one (1) 1"x7"x10" steel ℄ to the top layer of couplers with 2-⅝" ϕ bolts screwed to coupler at approximate ℄ of each barrier panel.

Detail II - With Extended Reinforcement Bars:
Connect one (1) 1"x7"x 10" steel ℄ to the concrete slab or concrete wearing surface with 2-⅝" ϕ Expansion Anchors or cast in place inserts spaced between the top layer of reinforcement at approximate ℄ of each barrier panel.

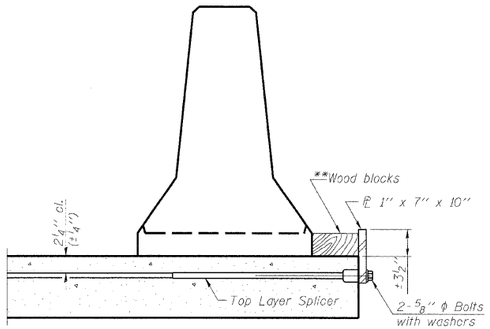
Cost of anchorage is included with Temporary Concrete Barrier.

The 1" x 7" x 10" plate shall not be removed until stage II construction forms and all reinforcement bars are in place and the concrete is ready to be placed.

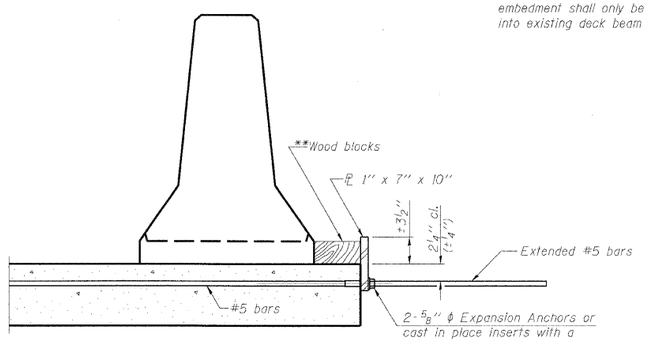
SECTIONS THRU SLAB OR DECK BEAM

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

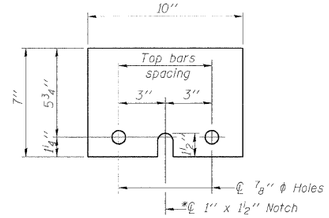
**** If existing deck beam is to remain in place after stage construction, embedment shall only be into wearing surface and not into existing deck beam concrete.



DETAIL I



DETAIL II



STEEL RETAINER ℄ 1" x 7" x 10"

* Required only with Detail II

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

DESIGNED -	MFB
CHECKED -	KWS
DRAWN -	RMG
CHECKED -	KWS

R-27

10-1-08

TEMPORARY CONCRETE BARRIER
FOR STAGE CONSTRUCTION
STRUCTURE NO. 022-0005

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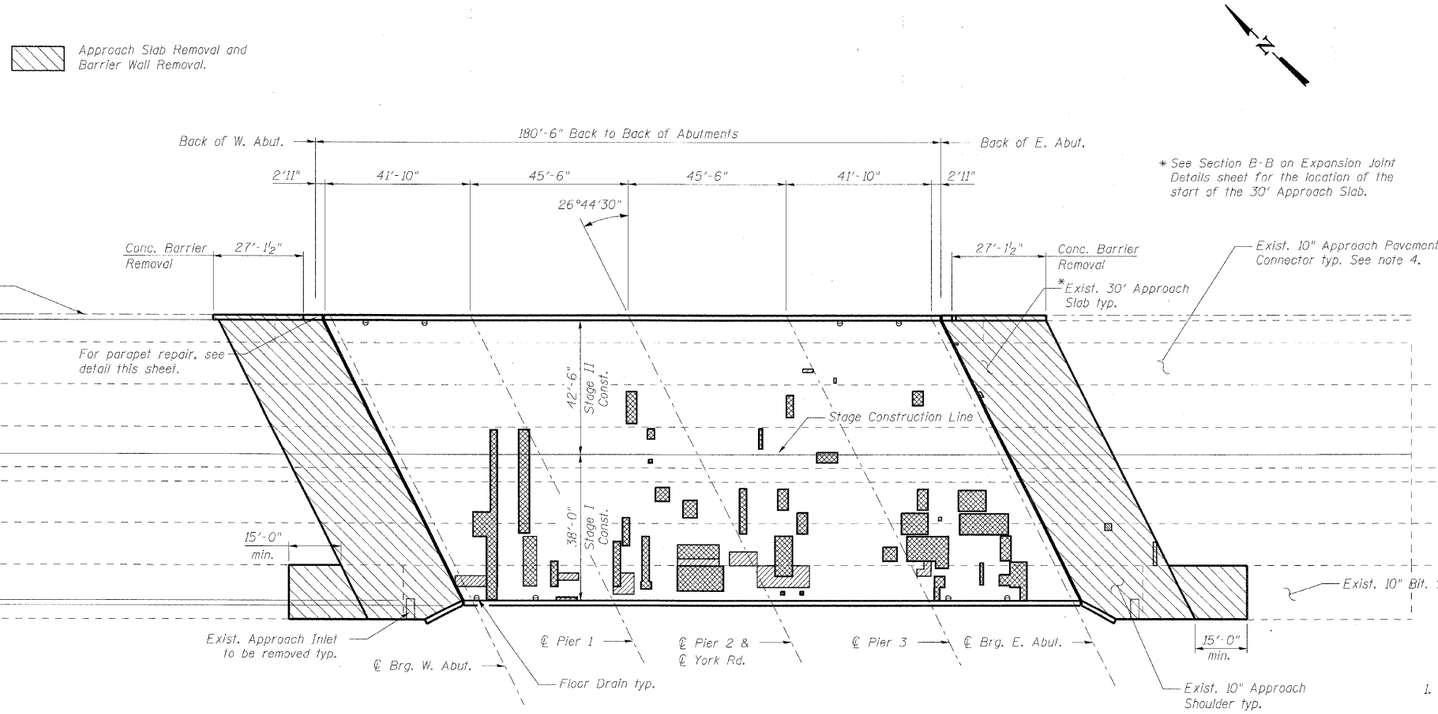
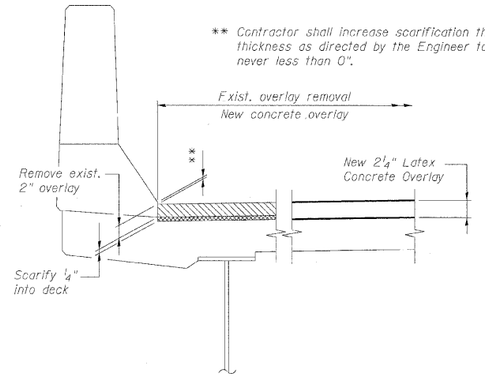
SHEET NO. 4	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
25 SHEETS	290	2009-099 BR	COOK/DUPAGE	309	248
			CONTRACT NO. 60157		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

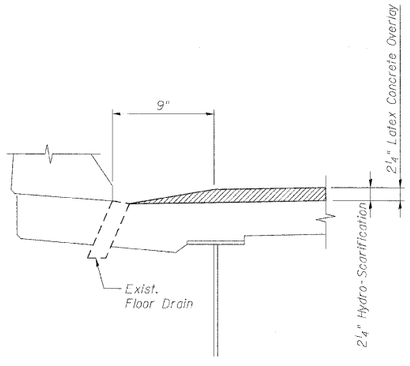
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



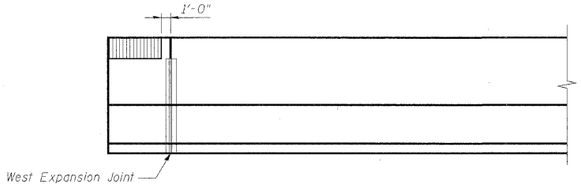
PLAN



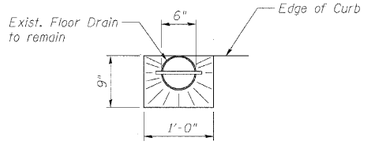
SCARIFICATION & OVERLAY DETAIL AT PARAPET



SECTION A-A



INSIDE ELEVATION - INSIDE PARAPET



PLAN

CONCRETE OVERLAY AT FLOOR DRAIN

BILL OF MATERIAL

SYMBOL	ITEM	UNIT	QUANTITY
	Deck Slab Repair (Partial)	Sq. Yd.	72.4▲
	Deck Slab Repair (Full Depth - Type I)	Sq. Yd.	78.2
	Deck Slab Repair (Full Depth - Type II)	Sq. Yd.	180.8
	Structural Repair of Concrete (Depth Equal to or Less than 5 Inches)	Sq. Ft.	9
	Protective Shield	Sq. Yd.	886
	Protective Coat	Sq. Yd.	1,602
	Bridge Deck Grooving	Sq. Yd.	1,562
	Bridge Deck Latex Concrete Overlay, 2¼"	Sq. Yd.	1,540
	Bridge Deck Hydro-Scarification, 2¼"	Sq. Yd.	1540

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

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 and shown on 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 General Plan and Elevation sheet.
3. Deck drains (downspouts, floor drains, and scuppers) shall be cleaned prior to placement of the Latex Concrete Overlay. Cost of cleaning the deck drains is included in Bridge Deck Hydro-Scarification, 2¼".
4. 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.
5. See Approach Slab Details sheets for Approach Slab removal and replacement details and quantities. See the Special Provisions for "Approach Slab Removal" and "Concrete Barrier Removal".
6. Upon completion of all repairs, the Engineer shall inspect the underside of the deck for gaps between the girders and non-composite deck. See General Note 12.
7. Gaps caused by distress around floor drains shall be filled with epoxy as specified in the Special Provision "Epoxy Injection". Cost included with Bridge Deck Latex Concrete Overlay, 2¼".

BRIDGE DECK, APPROACH SLAB AND PARAPET REPAIRS
STRUCTURE NO. 022-0005

DESIGNED -	MFB
CHECKED -	KWS
DRAWN -	RMG
CHECKED -	KWS

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312-565-0450 Job No. 10050

SHEET NO. 5	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
25 SHEETS	290	2009-099 BR	COOK/DUPAGE	309	249
			CONTRACT NO. 60157		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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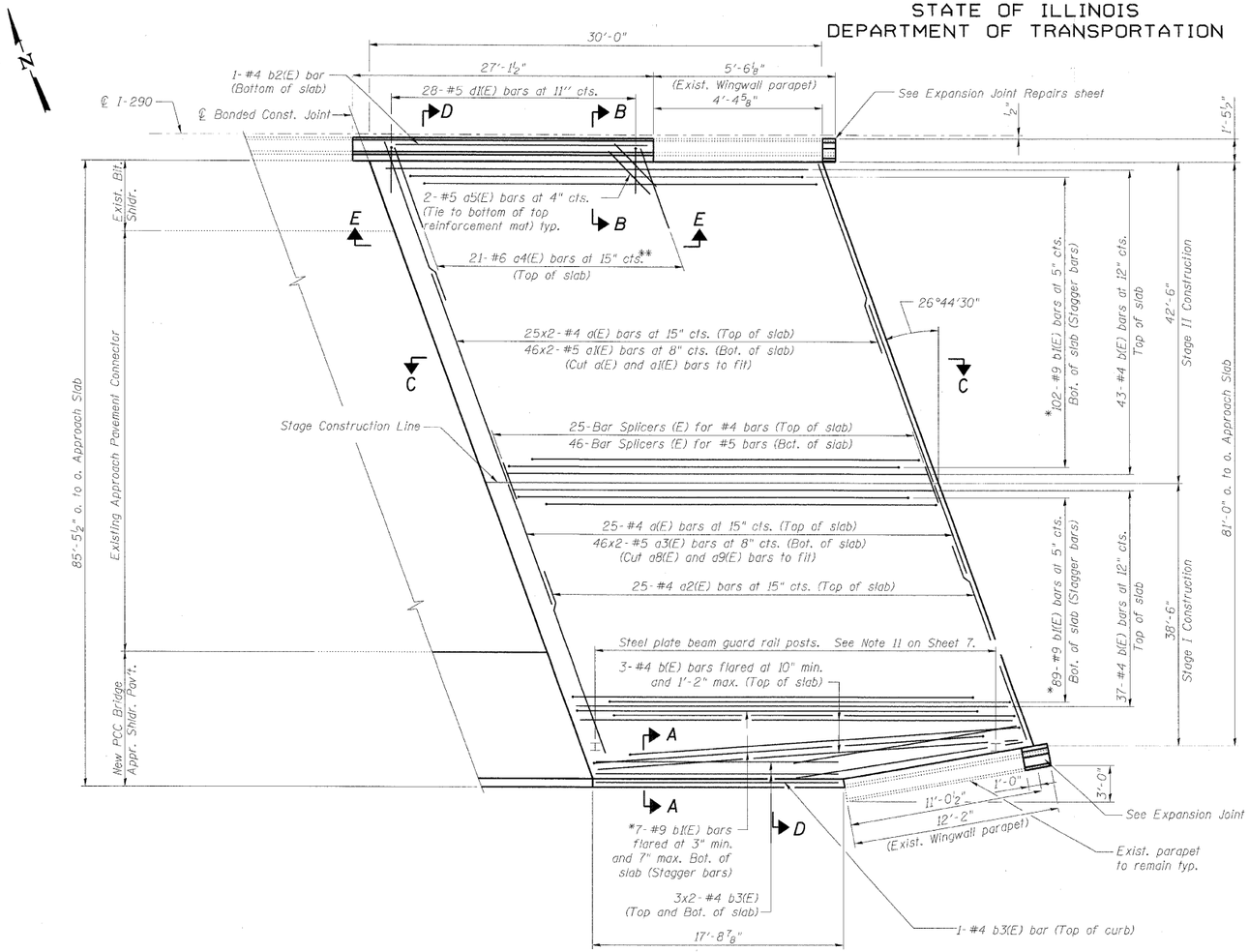
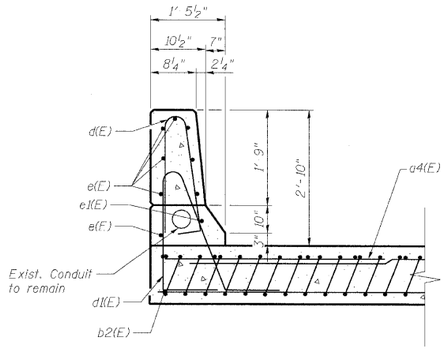
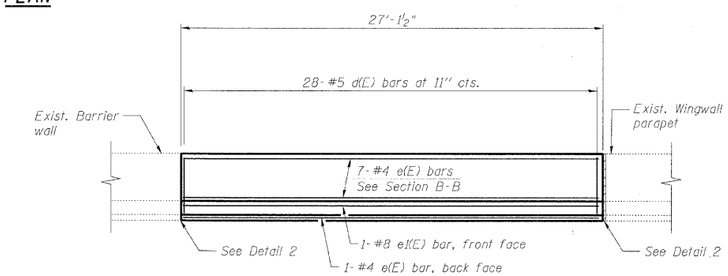
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



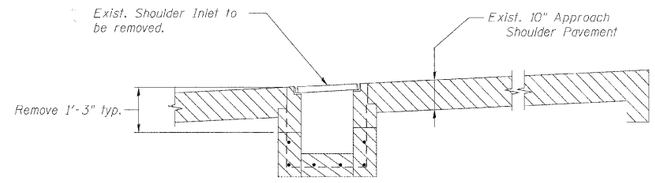
PLAN



SECTION B-B



VIEW E-E



APPROACH SLAB REMOVAL DETAIL AT INLET

* Tilt bars as required to maintain clearance.

** Alternate with a(E) bars.

*** Cost included with Concrete Superstructure.

Note:

Work this sheet with West Bridge Approach Slab Details (2 of 2) sheet.

DESIGNED	MFB
CHECKED	KWS
DRAWN	RMG
CHECKED	KWS

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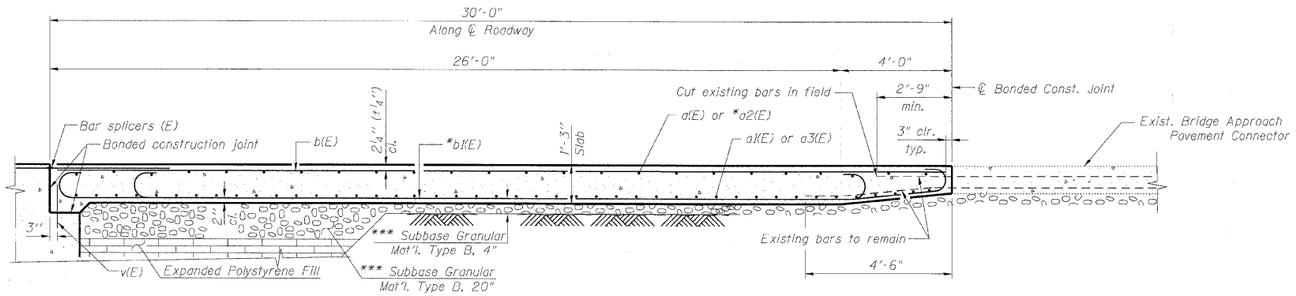
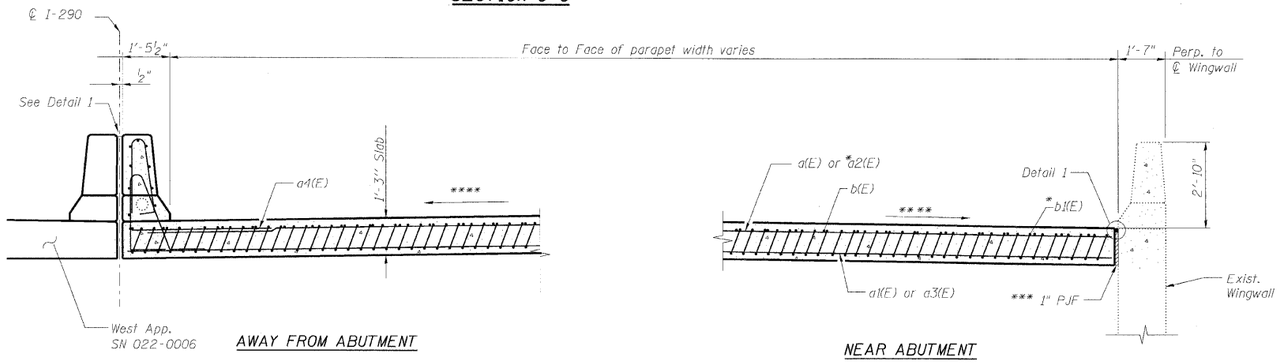
WEST BRIDGE APPROACH SLAB DETAILS (1 OF 2) STRUCTURE NO. 022-0005

SHEET NO. 6	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
25 SHEETS	290	2009-099 BR	COOK/DUPAGE	309	250
			CONTRACT NO. 60157		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



SECTION C-C

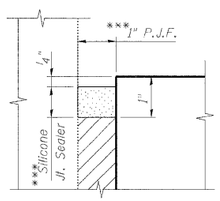


SECTION D-D
(See Plan for dimensions not shown)

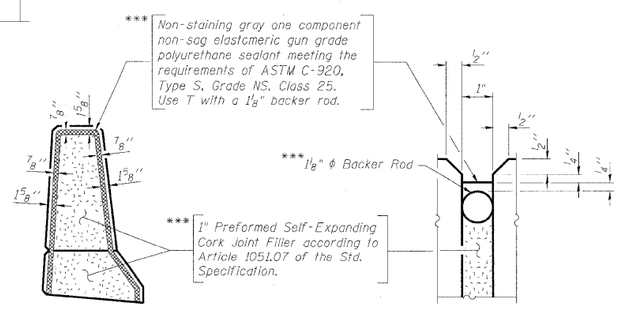
*Tilt bars as required to maintain clearance.

***Cost included with Concrete Superstructure.

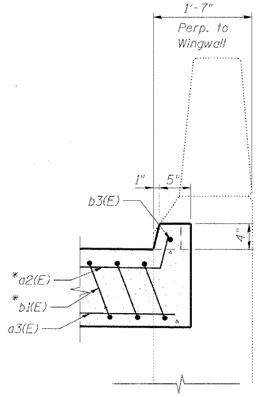
****Match existing grades and cross slopes.



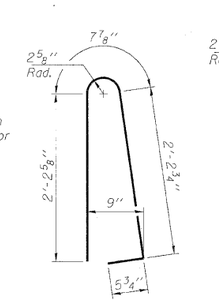
DETAIL 1



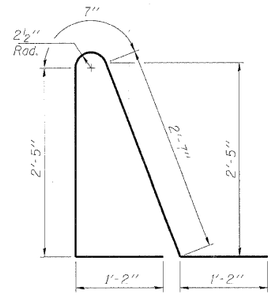
DETAIL 2



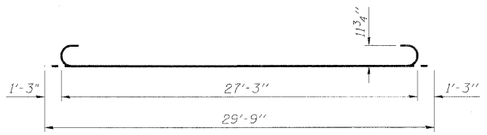
SECTION A-A



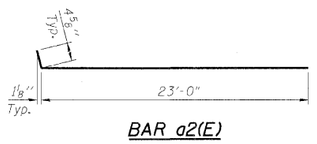
BAR d(E)



BAR d1(E)



BAR b1(E)



BAR a2(E)

BILL OF MATERIAL

BAR	NO.	SIZE	LENGTH	SHAPE
a(E)	75	#4	25'-6"	
a1(E)	92	#5	25'-9"	
a2(E)	25	#4	23'-5"	
a3(E)	92	#5	24'-6"	
a4(E)	21	#6	6'-0"	
a5(E)	2	#5	4'-0"	
b(E)	83	#4	29'-8"	
b1(E)	198	#9	29'-9"	
b2(E)	1	#4	25'-3"	
b3(E)	7	#4	17'-5"	
d(E)	28	#5	5'-7"	
d1(E)	28	#5	7'-11"	
e(E)	8	#4	26'-9"	
e1(E)	1	#8	26'-9"	

ITEM	UNIT	TOTAL
Approach Slab Removal	Sq. Yd.	292
Concrete Barrier Removal	Foot	28
Concrete Superstructure	Cu. Yd.	118.2
Bridge Deck Grooving	Sq. Yd.	269
Protective Coat	Sq. Yd.	295
Reinforcement Bars, Epoxy Coated	Pound	29,070

Notes:

1. d(E), d1(E), a2(E) and a3(E) bar spacings measured parallel to ℄ Roadway. b(E) and b1(E) bars spacings measured perpendicular to ℄ Roadway.
2. For existing approach slab and shoulder pavement details, see existing plans.
3. 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 approach slab removal shall be repaired or replaced with an approved bar splicer or anchorage system. Cost included with Approach Slab Removal.
4. Approach slab and parapet concrete shall be paid for as Concrete Superstructure.
5. Reinforcement shall be paid for as Reinforcement Bars, Epoxy Coated.
6. For bar splicer details, see Bar Splicers Assembly Details sheet.
7. For Expanded Polystyrene Fill and drainage treatment details, see sheet 16.
8. The Contractor shall excercise extreme care with the existing conduits in sections of the parapet to be removed and to protect and support the conduit. The Contractor will be required to repair any damage done to the conduit to the satisfaction of the Engineer. 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.
9. Bars indicated thus 8x2-#4 etc. indicates 8 lines of bars with 2 lengths per line.
10. Minimum bar lap length: #4 = 1'-8"
    #5 = 2'-2"
11. The steel plate beam guardrail is scheduled to be removed and reinstalled. The guard rail posts located within the proposed approach slab shall be installed prior to placement of the approach slab concrete. The approach slab reinforcement shall not be cut but should be spaced around the reinstalled guard rail posts.
12. Work this sheet with West Bridge Approach Slab Details (1 of 2) sheet.

DESIGNED -	MFB
CHECKED -	KWS
DRAWN -	RMG
CHECKED -	KWS

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WEST BRIDGE APPROACH SLAB DETAILS (2 OF 2)
STRUCTURE NO. 022-0005

SHEET NO. 7	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
25 SHEETS	290	2009-099 BR	COOK/DUPAGE	309	251
			CONTRACT NO. 60157		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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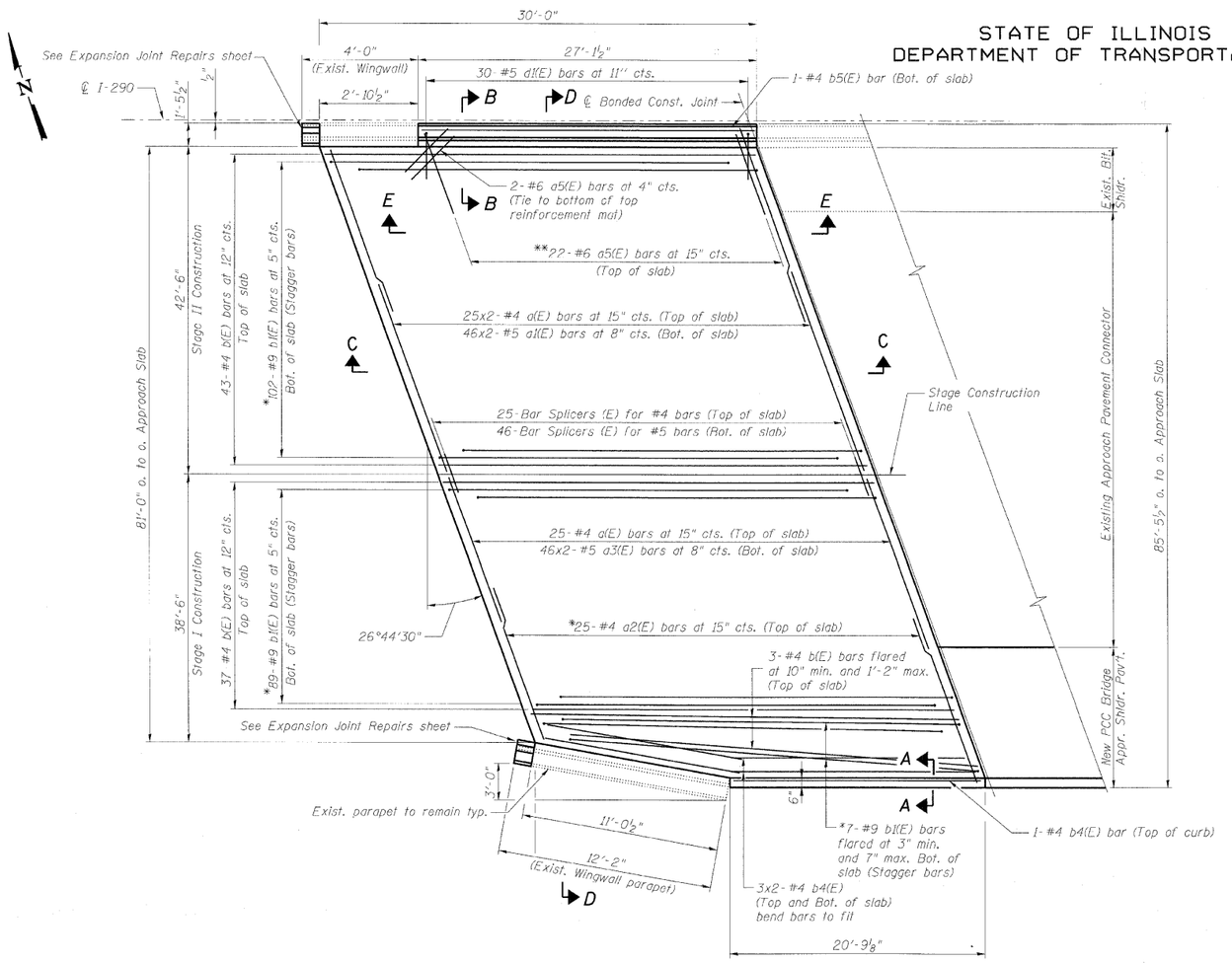
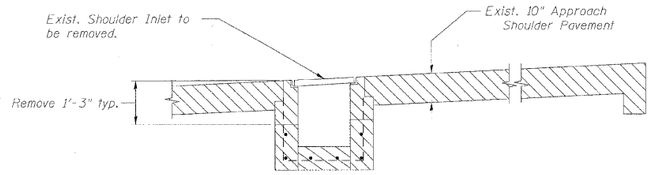
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



PLAN

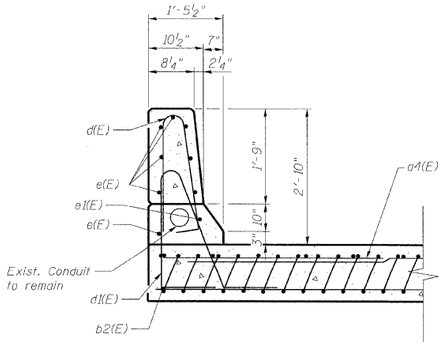


APPROACH SLAB REMOVAL DETAIL AT INLET

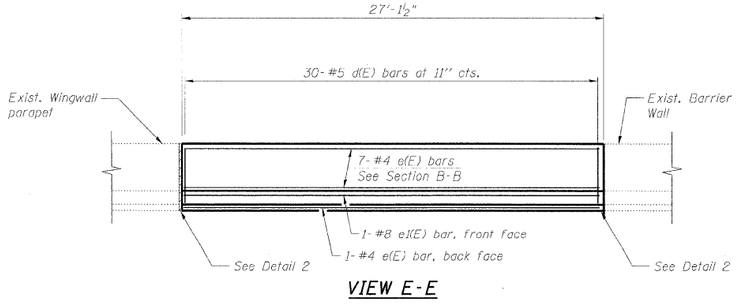
* Tilt bars as required to maintain clearance.

** Alternate with a(E) bars.

*** Cost included with Concrete Superstructure.



SECTION B-B



VIEW E-E

Note:
Work this sheet with East Bridge Approach Slab Details (2 of 2) sheet.

EAST BRIDGE APPROACH SLAB DETAILS
(1 OF 2)
STRUCTURE NO. 022-0005

DESIGNED -	MFB
CHECKED -	KWS
DRAWN -	RMG
CHECKED -	KWS

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

SHEET NO. 8	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
25 SHEETS	290	2009-099 BR	COOK/DUPAGE	309	252
			CONTRACT NO. 60157		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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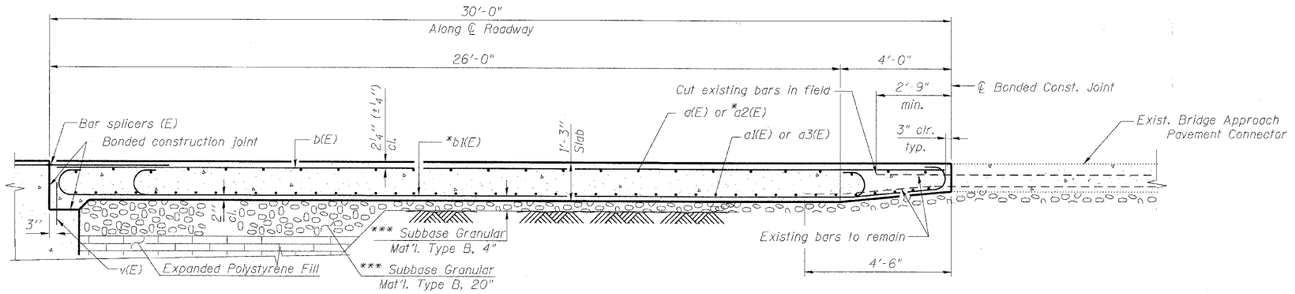
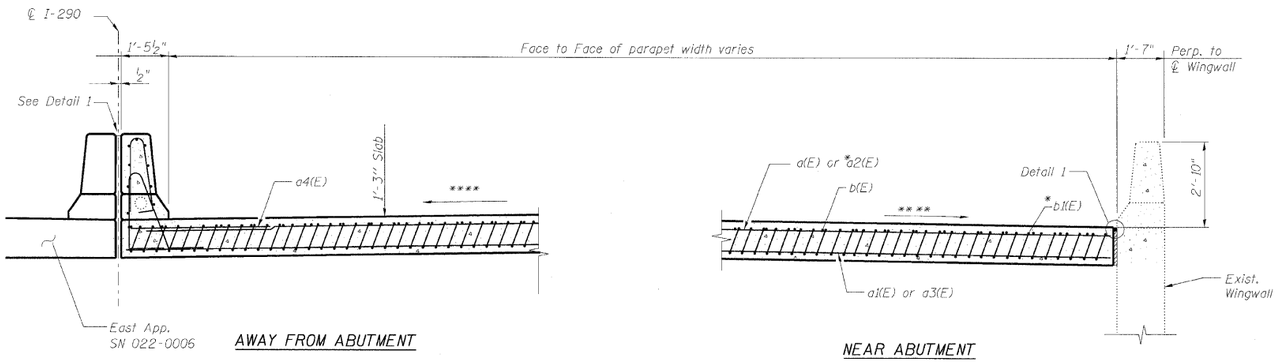
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



SECTION C-C

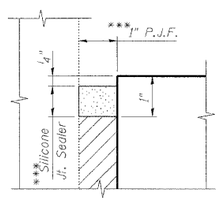


SECTION D-D
(See Plan for dimensions not shown)

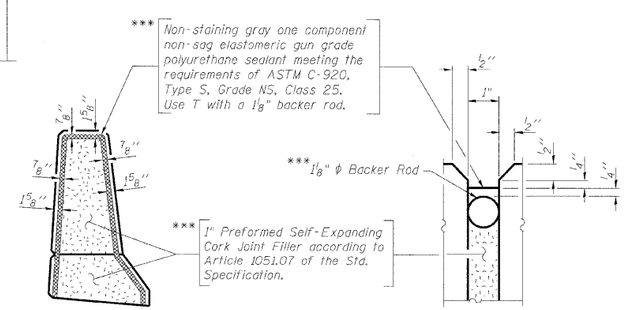
* Tilt bars as required to maintain clearance.

*** Cost included with Concrete Superstructure.

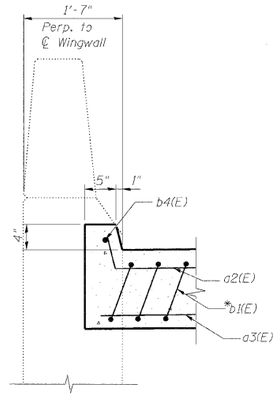
**** Match existing grades and cross slopes.



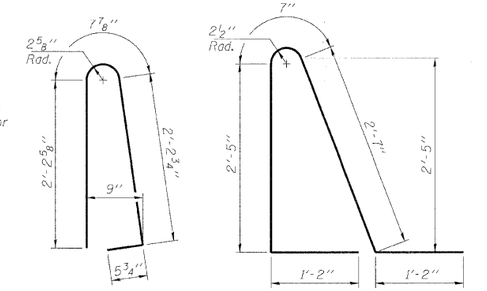
DETAIL 1



DETAIL 2

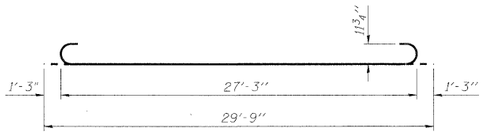


SECTION A-A

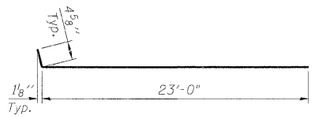


BAR d(E)

BAR d1(E)



BAR b1(E)



BAR a7(E)

BILL OF MATERIAL

BAR	NO.	SIZE	LENGTH	SHAPE
a(E)	75	#4	25'-6"	
a1(E)	92	#5	25'-9"	
a2(E)	25	#4	23'-5"	
a3(E)	92	#5	24'-6"	
a4(E)	24	#6	6'-0"	
b(E)	83	#4	29'-8"	
b1(E)	198	#9	29'-9"	
b4(E)	7	#4	20'-5"	
b5(E)	1	#4	26'-9"	
d(E)	30	#5	5'-7"	
d1(E)	30	#5	7'-11"	
e(E)	8	#4	26'-9"	
e1(E)	1	#8	26'-9"	

ITEM	UNIT	TOTAL
Approach Slab Removal	Sq. Yd.	292
Concrete Barrier Removal	Foot	28
Concrete Superstructure	Cu. Yd.	118.3
Bridge Deck Grooving	Sq. Yd.	269
Protective Coat	Sq. Yd.	295
Reinforcement Bars, Epoxy Coated	Pound	29,130

Notes:

1. a(E), a1(E), a2(E) and a3(E) bar spacings measured parallel to ℄ Roadway. b(E) and b1(E) bars spacings measured perpendicular to ℄ Roadway.
2. For existing approach slab and shoulder pavement details, see existing plans.
3. 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 approach slab removal shall be repaired or replaced with an approved bar splicer or anchorage system. Cost included with Approach Slab Removal.
4. Approach slab and parapet concrete shall be paid for as Concrete Superstructure.
5. Reinforcement shall be paid for as Reinforcement Bars, Epoxy Coated.
6. For bar splicer details, see Bar Splicers Assembly Details sheet.
7. For Expanded Polystyrene Fill and drainage treatment details, see sheet 16.
8. The Contractor shall excercise extreme care with the existing conduits in sections of the parapet to be removed and to protect and support the conduit. The Contractor will be required to repair any damage done to the conduit to the satisfaction of the Engineer. 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.
9. Bars indicated thus 8x2-#4 etc. indicates 8 lines of bars with 2 lengths per line.
10. Minimum bar lap length: #4 = 1'-8"
    #5 = 2'-2"
11. Work this sheet with East Bridge Approach Slab Details (1 of 2) sheet.

DESIGNED -	MFB
CHECKED -	KWS
DRAWN -	RMG
CHECKED -	KWS

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312-565-0450 Job No. 10050

EAST BRIDGE APPROACH SLAB DETAILS
(2 OF 2)
STRUCTURE NO. 022-0005

SHEET NO. 9	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
25 SHEETS	290	2009-099 BR	COOK/DUPAGE	309	253
			CONTRACT NO. 60157		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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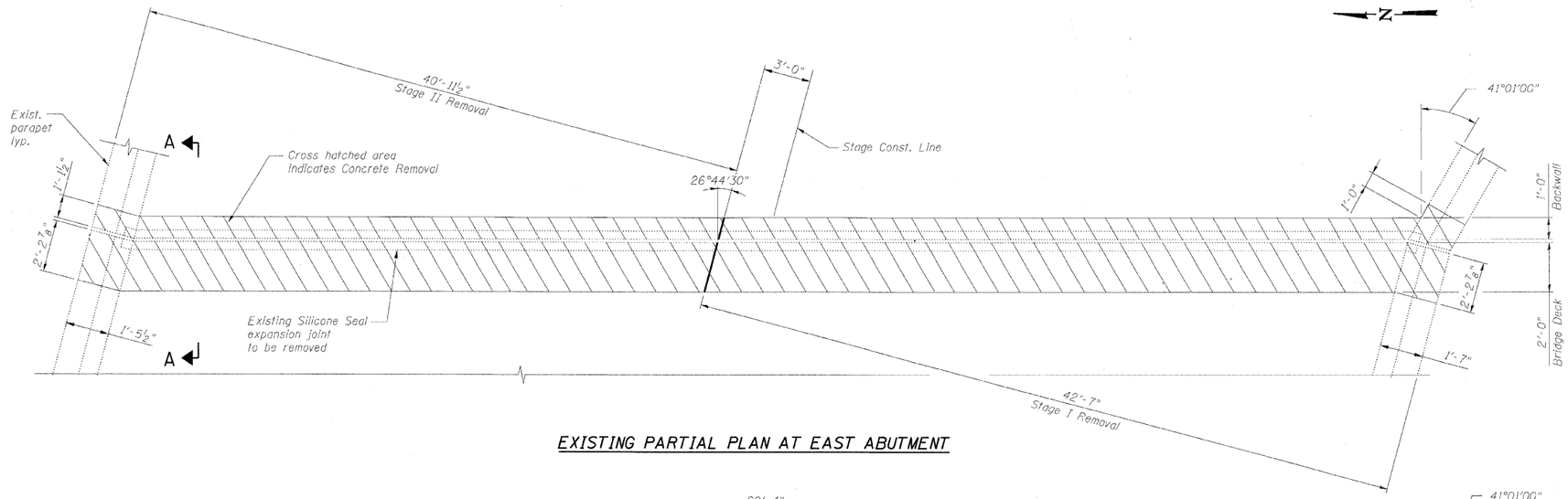
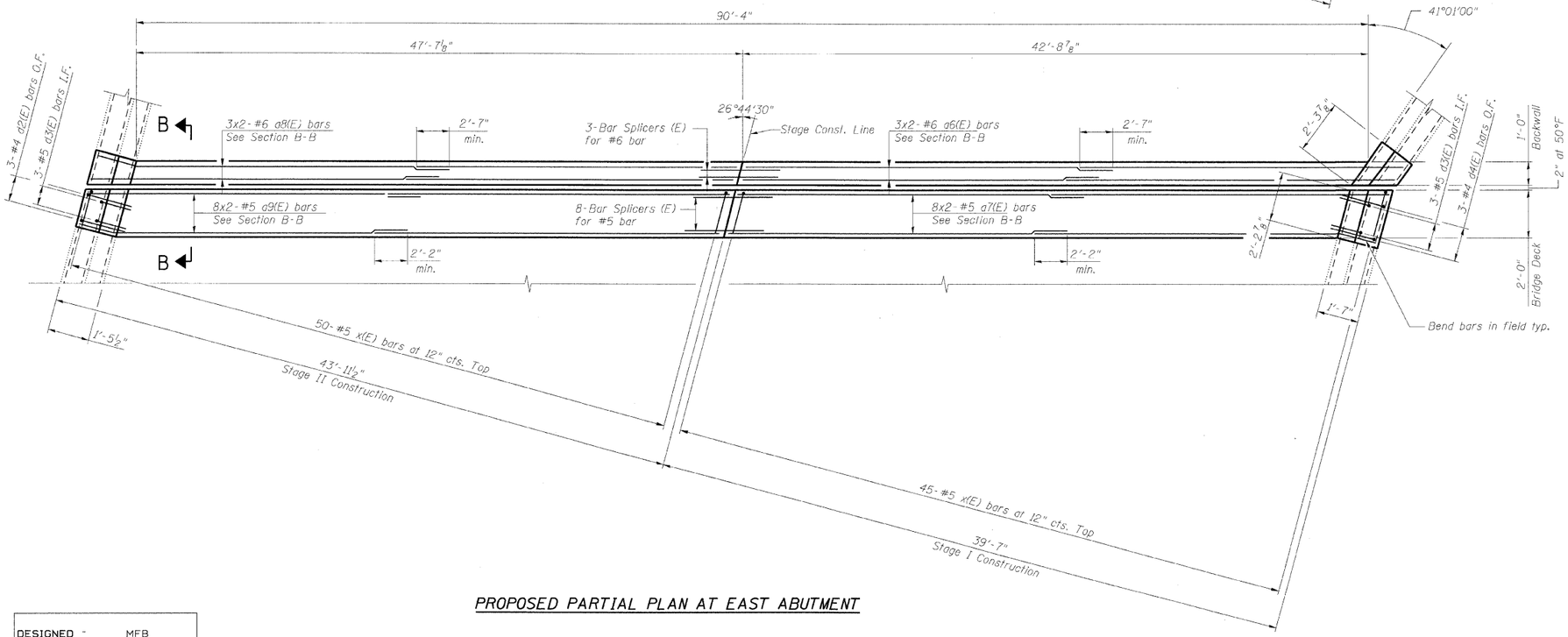
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



EXISTING PARTIAL PLAN AT EAST ABUTMENT

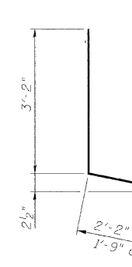


PROPOSED PARTIAL PLAN AT EAST ABUTMENT

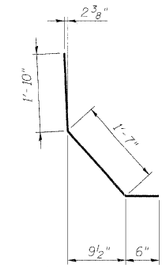
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a6(E)	12	#6	23'-6"	——
a7(E)	32	#5	23'-2"	——
a8(E)	12	#6	25'-9"	——
a9(E)	32	#5	25'-6"	——
d2(E)	6	#4	5'-4"	⌟
d3(E)	12	#5	3'-11"	⌣
d4(E)	6	#4	4'-11"	⌟
x(E)	190	#5	2'-3"	⌐

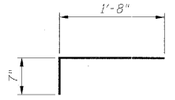
Item	Unit	Total
Concrete Removal	Cu. Yd.	28.9
Concrete Superstructure	Cu. Yd.	28.9
Reinforcement Bars, Epoxy Coated	Pound	3,050



BAR d2(E) & d4(E)



BAR d3(E)



BAR x(E)

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 Repairs Sheet 2 of 2, Expansion Joint Details sheet and Bar Splicer Assembly Details sheet.
4. x(E) bar spacing measured along skew.

EXPANSION JOINT REPAIRS (1 OF 2) STRUCTURE NO. 022-0005

DESIGNED -	MFB
CHECKED -	KWS
DRAWN -	VH/RMG
CHECKED -	KWS

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SHEET NO. 10	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
25 SHEETS	290	2009-099 BR	COOK/DUPAGE	309	254
			CONTRACT NO. 60157		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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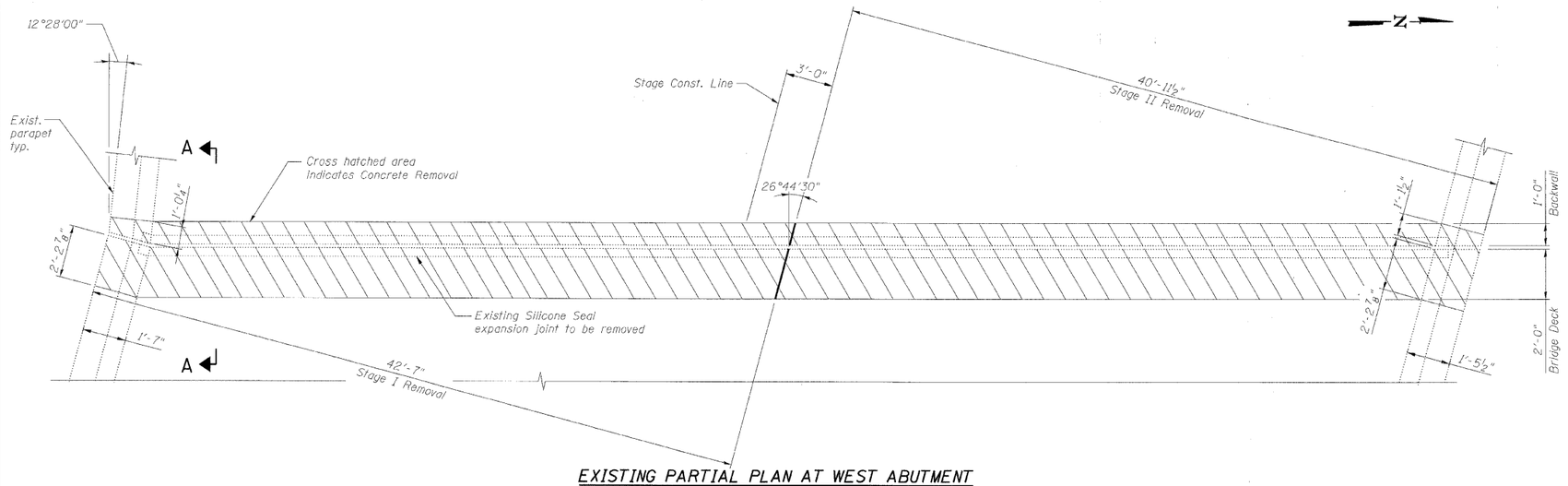
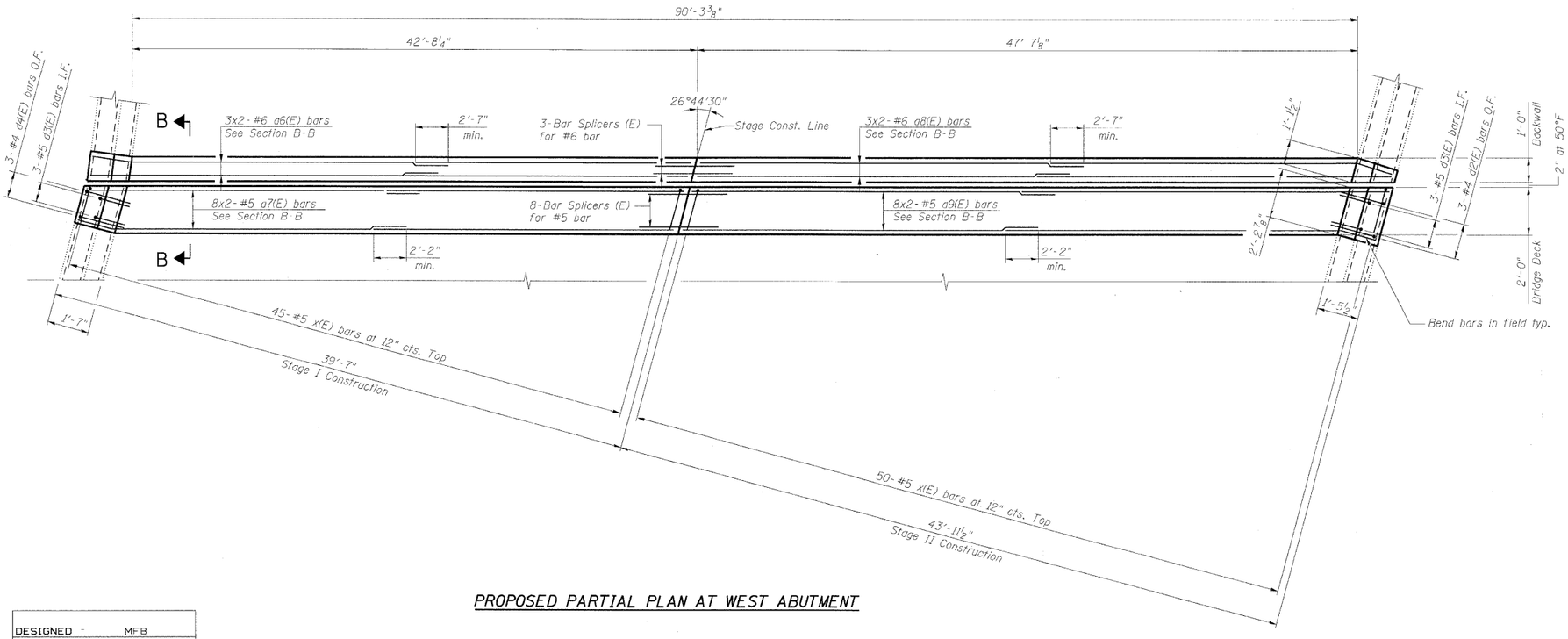
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



EXISTING PARTIAL PLAN AT WEST ABUTMENT



PROPOSED PARTIAL PLAN AT WEST 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 Repairs Sheet 1 of 2, Expansion Joint Details sheet and Bar Splicer Assembly Details sheet.
4. x(E) bar spacing measured along skew.
5. See Expansion Joint Repairs Sheet 1 of 2 for Bill of Materials and Bar Bend details.

DESIGNED -	MFB
CHECKED -	KWS
DRAWN -	VH/RMG
CHECKED -	KWS

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EXPANSION JOINT REPAIRS (2 OF 2) STRUCTURE NO. 022-0005

SHEET NO. 10A	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
25 SHEETS	290	2009-099 BR	COOK/DUPAGE	309	254A
			CONTRACT NO. 60157		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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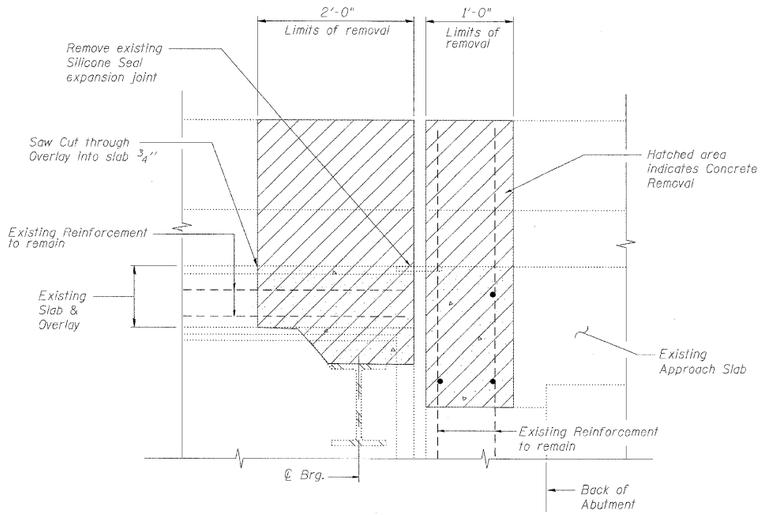
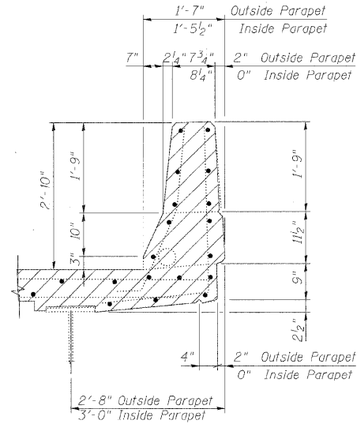
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



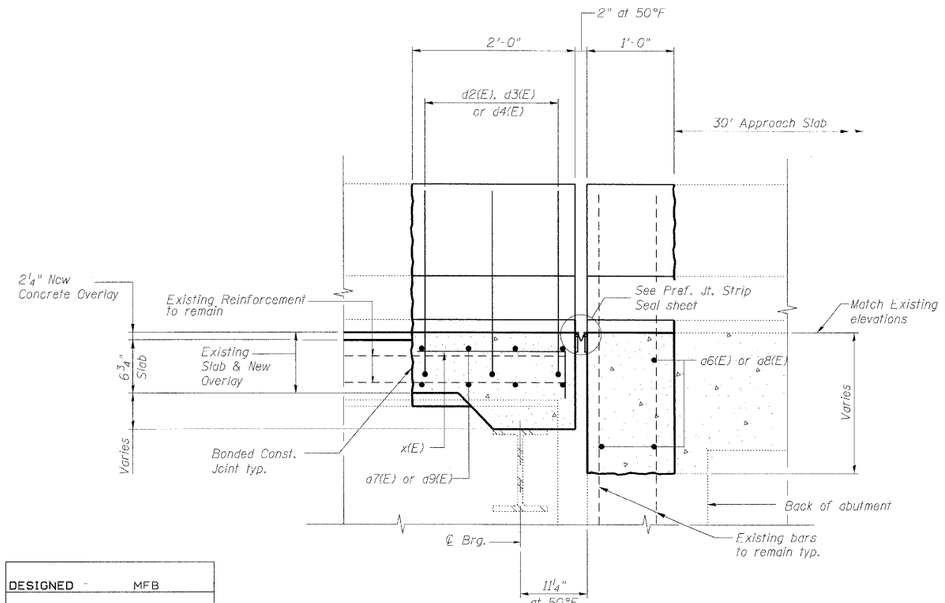
SECTION A-A



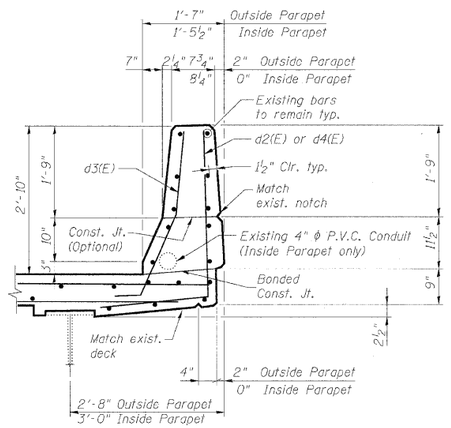
EXISTING PARAPET SECTION

Notes:

1. 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.
2. Existing reinforcement bars in the concrete removal area parallel to the expansion joints shall be removed.
3. Removal and disposal of the existing expansion joints will not be paid for separately, but shall be included with the cost of Concrete Removal.
4. 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.
5. 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.
6. The Contractor shall exercise extreme care with the existing conduits in sections of the parapet to be removed and to protect and support the conduit. The Contractor will be required to repair any damage done to the conduit to the satisfaction of the Engineer, at no additonal cost to the Department. No splicing will be allowed to any cable damage resulting from this work, instead the Contractor will be required to repair the entire span of any damaged cable at no additional cost to the Department.
7. Work this sheet with Expansion Joint Repairs sheets (1 of 2) and (2 of 2).



SECTION B-B



PROPOSED PARAPET SECTION

DESIGNED	-	MFB
CHECKED	-	KWS
DRAWN	-	VH
CHECKED	-	KWS

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EXPANSION JOINT DETAILS
STRUCTURE NO. 022-0005

SHEET NO. 11	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
25 SHEETS	290	2009-099 BR	COOK/DUPAGE	309	255
			CONTRACT NO. 60157		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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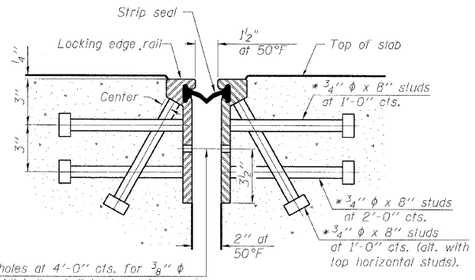
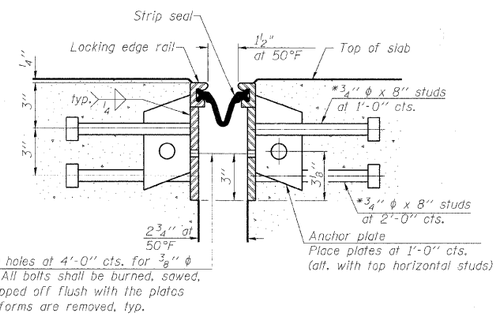
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

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



SECTION THRU ROLLED RAIL JOINT



SECTION THRU WELDED RAIL JOINT

Notes:

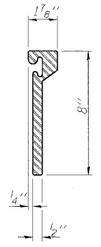
The strip seal shall be made continuous and shall have a minimum thickness of ¼". The configuration of the strip seal shall match the configuration of the Locking Edge Rails. Open or "webbed" strip seal gland configurations are not permitted. The gland shall be sized for a maximum rated movement of 4 inches.

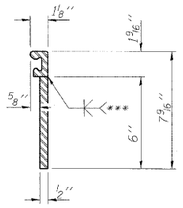
The height and thickness of the Locking Edge Rails shown are minimum dimensions. The actual configuration of the Locking Edge Rails and matching strip seal may vary from manufacturer to manufacturer. Flanged edge rails will not be allowed. Locking Edge Rails may be spliced at slope discontinuities and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

The manufacturer's recommended installation methods shall be followed.

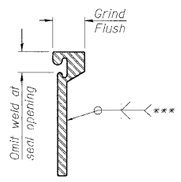
The joint opening and deck dimensions detailed on the superstructure are based on a rolled rail expansion joint. If the Contractor elects to use the welded rail expansion joint, the opening and deck dimensions shall be modified according to the dimensions detailed on this sheet. Required modifications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

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



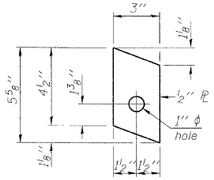


ROLLED EXTRUDED RAIL



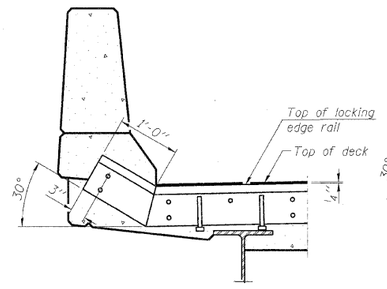
***Back gouge not required if complete joint penetration is verified by mock-up.

WELDED RAIL

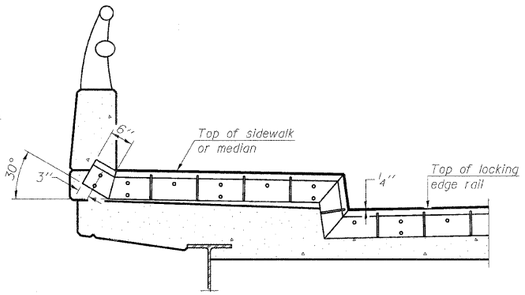


ANCHOR ℄

(for welded rail)



AT PARAPET



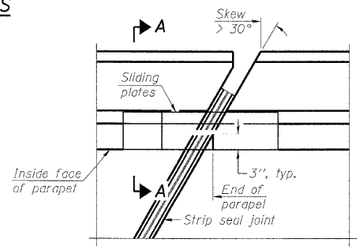
AT SIDEWALK OR MEDIAN

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

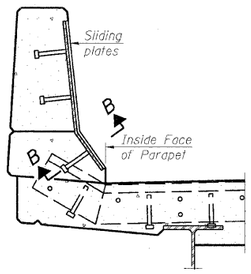
LOCKING EDGE RAIL SPLICE

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

LOCKING EDGE RAILS



PLAN

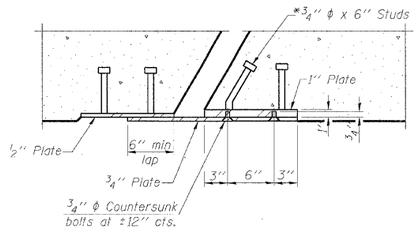


SECTION A-A

POINT BLOCK DETAILS

(for skews > 30°)

TYPICAL END TREATMENTS



SECTION B-B

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	184.5

DESIGNED -	MFB
CHECKED -	KWS
DRAWN -	RMG
CHECKED -	KWS

EJ-SSJ 10-1-08

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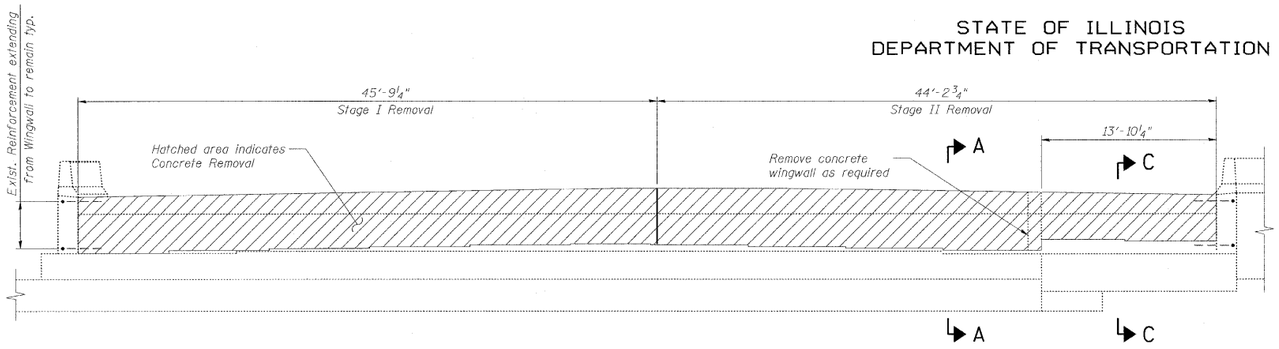
Chicago, Illinois 60601
312-565-0450 Job No. 10050

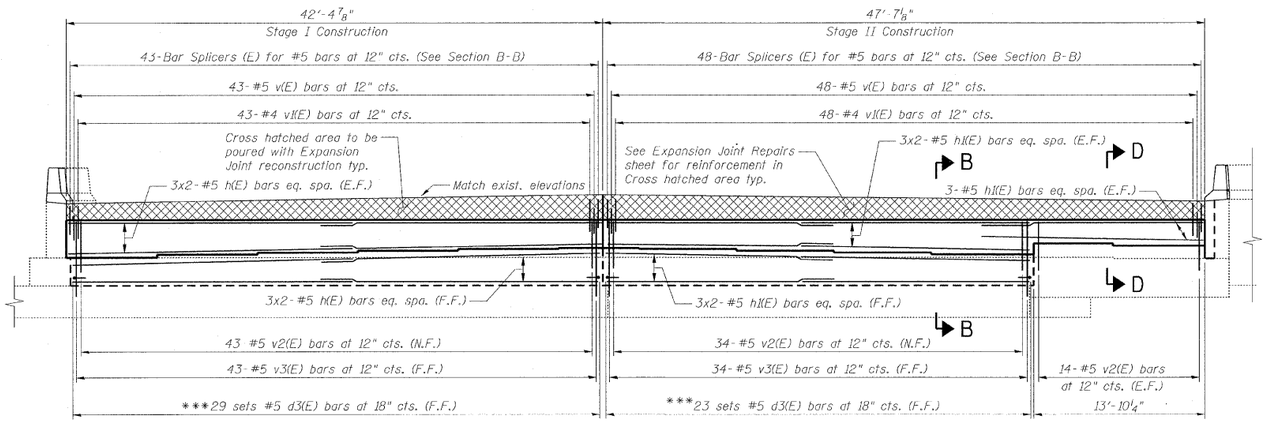
PREFORMED JOINT STRIP SEAL
STRUCTURE NO. 022-0005

SHEET NO. 12	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
25 SHEETS	290	2009-099 BR	COOK/DUPAGE	309	256
			CONTRACT NO. 60157		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

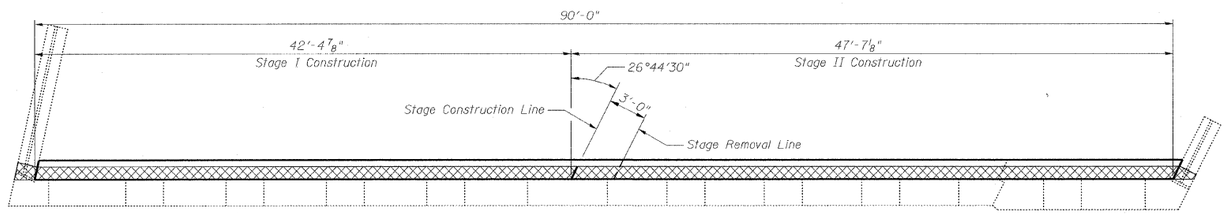


ELEVATION - BACKWALL REMOVAL
(Looking West)

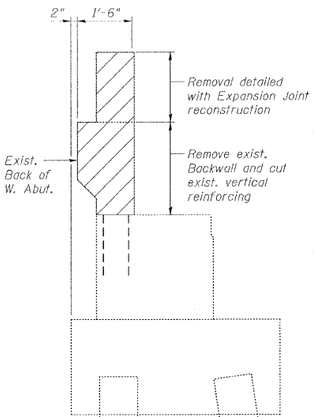


ELEVATION - PROPOSED BACKWALL
(Looking West)

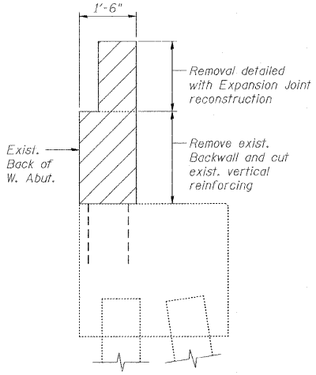
*** Three d3(E) bars per set. See Section B-B for placement.



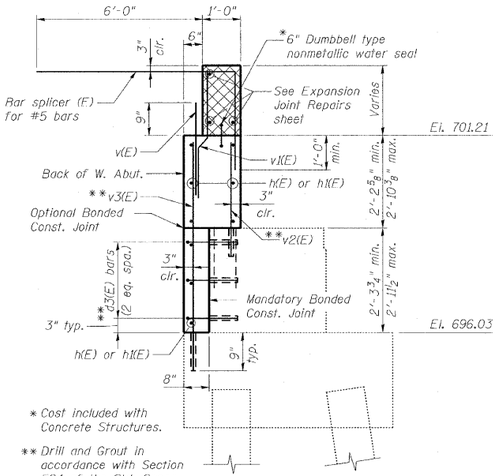
PLAN



SECTION A-A



SECTION C-C

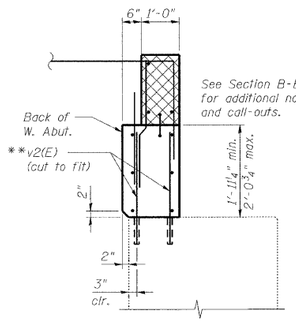


SECTION B-B

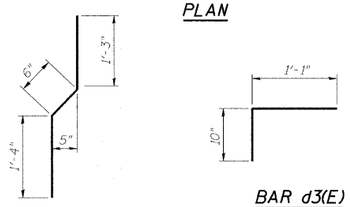
BILL OF MATERIAL

BAR	NO.	SIZE	LENGTH	SHAPE
h(E)	18	#5	22'-6"	
h1(E)	24	#5	18'-3"	
v(E)	91	#5	2'-11"	
v1(E)	91	#4	3'-1"	
v2(E)	105	#5	3'-5"	
v3(E)	77	#5	5'-5"	
d3(E)	156	#5	1'-11"	

ITEM	UNIT	TOTAL
Concrete Removal	Cu. Yd.	11.2
Concrete Structures	Cu. Yd.	17.3
Reinforcement Bars, Epoxy Coated	Pound	2,470



SECTION D-D



BAR v1(E)

BAR d3(E)

Notes:

1. Cross hatched area to be poured with Expansion Joint reconstruction. Quantity of concrete included with Concrete Superstructure.
2. Bars indicated thus 5x2-#5 etc. indicates 5 lines of bars with 2 lengths per line.
3. E.F. denotes Each Face; F.F. denotes Far Face; N.F. denotes Near Face.
4. Existing reinforcement bars extending into the concrete removal area that are designated to remain shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system. Cost included with Concrete Removal.
5. For details of Bar Splicers, see Bar Splicer Assembly Details sheet.
6. Cost of drilling and grouting is included with Reinforcement Bars, Epoxy Coated.
7. Space d3(E) bars to miss v2(E) bars.

WEST ABUTMENT BACKWALL REPAIRS
STRUCTURE NO. 022-0005

DESIGNED -	MFB
CHECKED -	KWS
DRAWN -	RMG
CHECKED -	KWS

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

SHEET NO. 13	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
25 SHEETS	290	2009-099 BR	COOK/DUPAGE	309	257
			CONTRACT NO. 60157		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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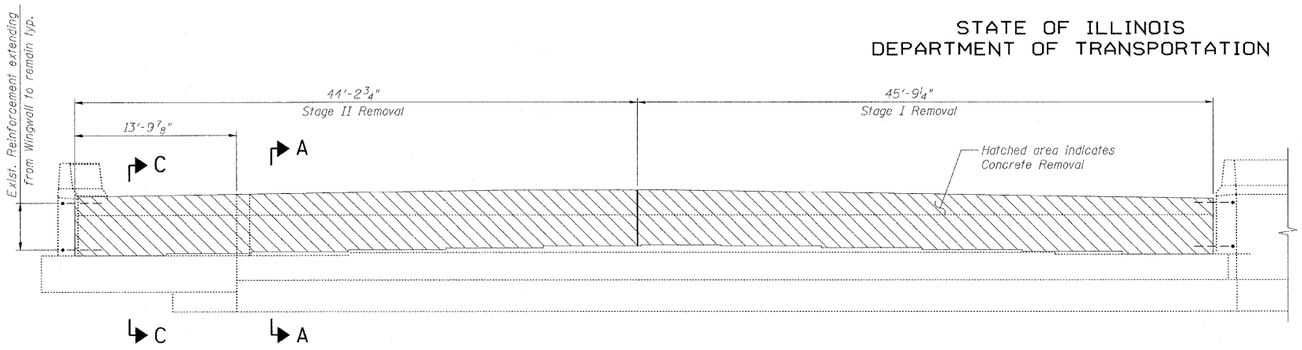
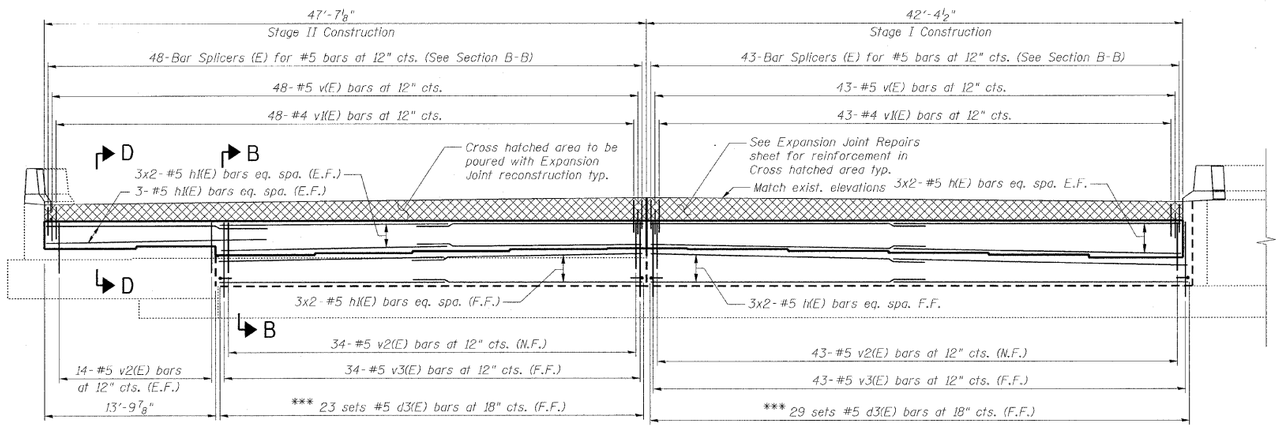
12/01/2009

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

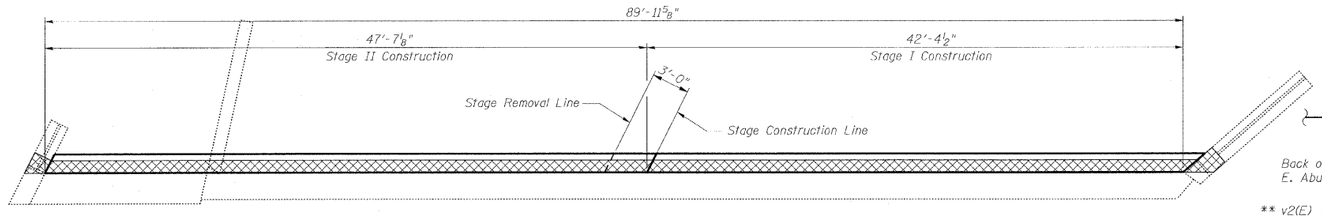


ELEVATION - BACKWALL REMOVAL
(Looking East)

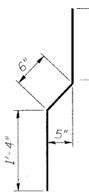


ELEVATION - PROPOSED BACKWALL
(Looking East)

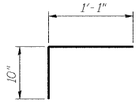
*** Three d3(E) bars per set. See Section B-B for placement.



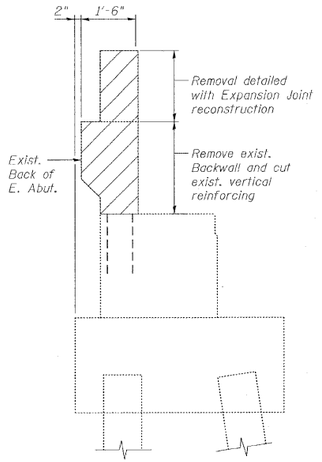
PLAN



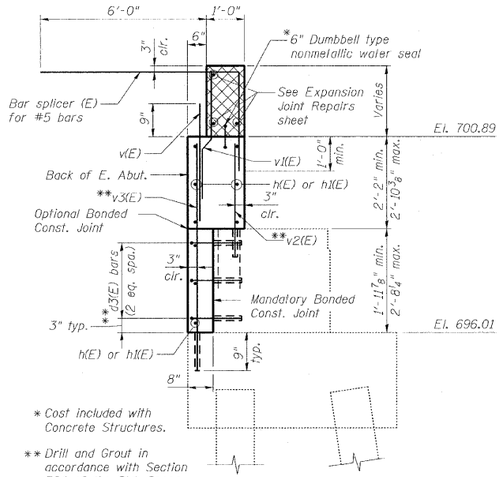
BAR v1(E)



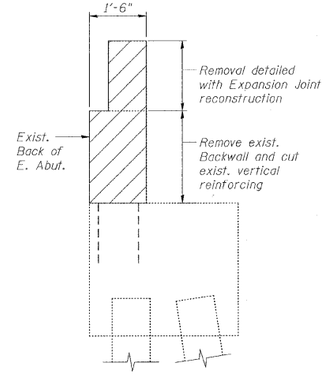
BAR d3(E)



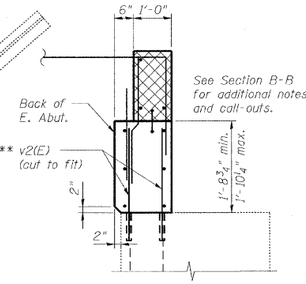
SECTION A-A



SECTION B-B



SECTION C-C



SECTION D-D

BILL OF MATERIAL

BAR	NO.	SIZE	LENGTH	SHAPE
h(E)	18	#5	22'-6"	
h1(E)	24	#5	18'-3"	
v(E)	91	#5	2'-11"	
v1(E)	91	#4	3'-1"	
v2(E)	105	#5	3'-5"	
v3(E)	77	#5	5'-5"	
d3(E)	156	#5	1'-11"	

ITEM	UNIT	TOTAL
Concrete Removal	Cu. Yd.	11.0
Concrete Structures	Cu. Yd.	16.5
Reinforcement Bars, Epoxy Coated	Pound	2,470

Notes:

1. Cross hatched area to be poured with Expansion Joint reconstruction. Quantity of concrete included with Concrete Superstructure.
2. Bars indicated thus 5x2-#5 etc. indicates 5 lines of bars with 2 lengths per line.
3. E.F. denotes Each Face; F.F. denotes Far Face; N.F. denotes Near Face.
4. Existing reinforcement bars extending into the concrete removal area that are designated to remain shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system. Cost included with Concrete Removal.
5. For details of Bar Splicers, see Bar Splicer Assembly Details sheet.
6. Cost of drilling and grouting is included with Reinforcement Bars, Epoxy Coated.
7. Space d3(E) bars to miss v2(E) bars.

EAST ABUTMENT BACKWALL REPAIRS
STRUCTURE NO. 022-0005

DESIGNED -	MFB
CHECKED -	KWS
DRAWN -	RMG
CHECKED -	KWS

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SHEET NO. 14	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
25 SHEETS	290	2009-099 BR	COOK/DUPAGE	309	258
			CONTRACT NO. 60157		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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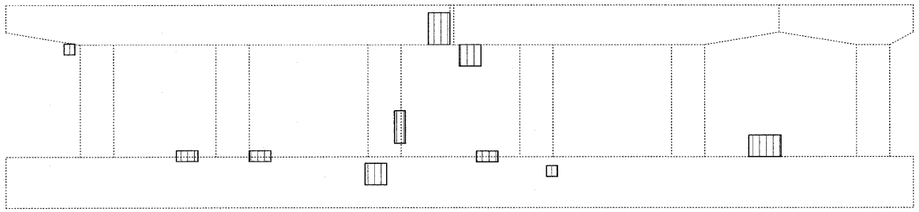
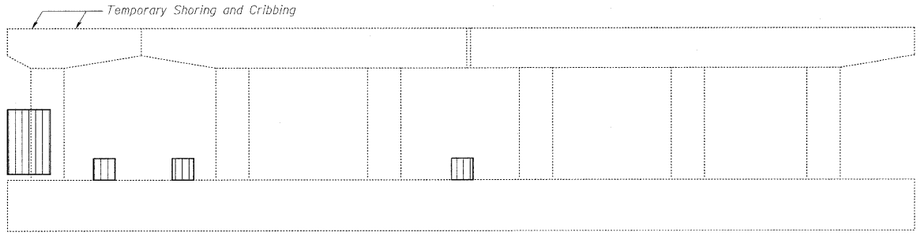
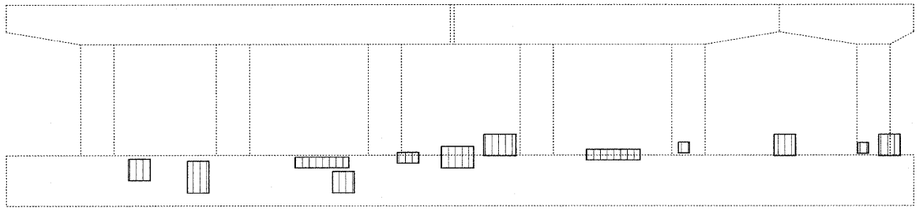
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



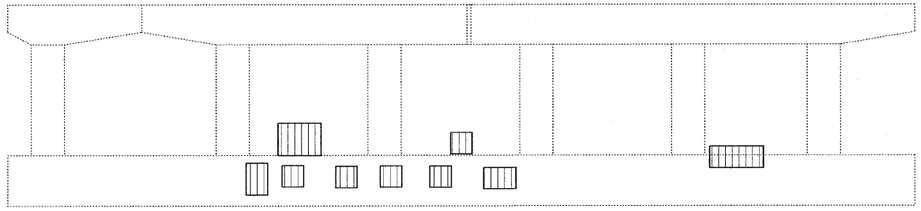
PIER 1 REPAIRS - EAST FACE



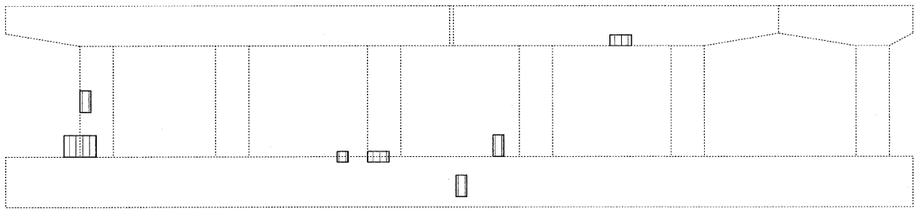
PIER 1 REPAIRS - WEST FACE



PIER 2 REPAIRS - EAST FACE



PIER 2 REPAIRS - WEST FACE



PIER 3 REPAIRS - EAST FACE

PIER 3 REPAIRS - WEST FACE

Notes:

1. Pier substructure repair type and areas are estimated based on IDOT field notes from August 2009. Actual repair areas and locations shall be determined by the Engineer and shown on As-Built plans.
2. Temporary Shoring and Cribbing shall be provided per the Special Provisions for "Structural Repair of Concrete" and "Temporary Shoring and Cribbing".
3. 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 -	MFB
CHECKED -	KWS
DRAWN -	RMG
CHECKED -	KWS

BILL OF MATERIAL

SYMBOL	ITEM	UNIT	QUANTITY
	Structural Repair of Concrete (Depth Equal to or Less than 5 Inches)	Sq. Ft.	221
	Temporary Shoring and Cribbing	Each	4

BEAM REACTIONS (KIPS)

DEAD LOAD	LIVE LOAD	IMPACT LOAD	TOTAL
44.7	43.6	12.8	101.1

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SUBSTRUCTURE REPAIR
STRUCTURE NO. 022-0005

SHEET NO. 15	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
25 SHEETS	290	2009-099 BR	COOK/DUPAGE	309	259
			CONTRACT NO. 60I57		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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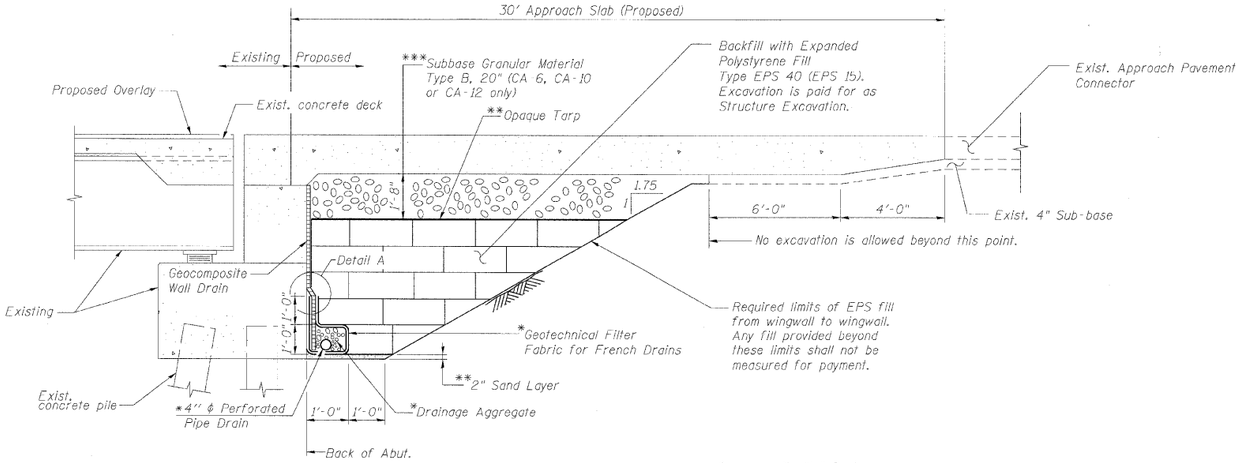
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



ABUTMENT STABILIZATION DETAIL

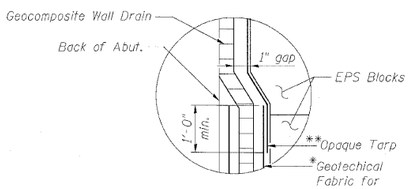
(Horiz. dim. @ Rt. L's)

* Included in the cost of Pipe Underdrains for Structures.

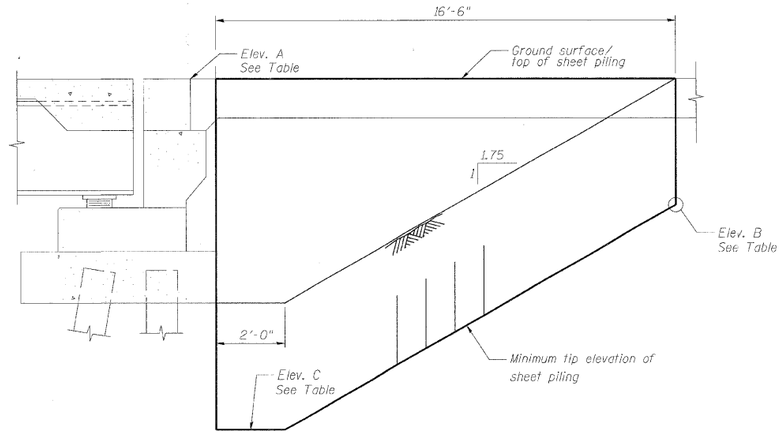
** Included in the cost of Expanded Polystyrene Fill.

*** Included in the cost of Concrete Superstructure. See Approach Slab Details.

All drainage system components shall extend parallel to the abutment back wall until they intersect the wingwalls or 2'-0" from the end of the wingwalls when the wings are parallel to the abutment. The pipe shall extend under the wingwall, if necessary, until intersecting the side slopes. The pipes shall drain into concrete headwalls. (See Article 601.05 of the Standard Specifications and Highway Standard 601101).



DETAIL A



TEMPORARY SHEET PILING

(Horiz. dim. @ Rt. L's)

Due to the shape of the abutment; the temporary sheet piling will not be able to be installed against the back the abutment for the full height of the cut. Extreme care shall be taken not to damage the footing during installation of the sheet piling. Soil at the inset portion of the abutment shall be retained. Cost included with Temporary Sheet Piling.

SHEET PILING ELEVATION TABLE

Abutment	Elev. A	Elev. B	Elev. C	Min. Section Modulus Req'd. (in³/ft.)	Min. Embedment (ft.)
North	703.26	693.36	683.46	7.5	9.9
South	703.11	693.21	683.31	7.5	9.9

BILL OF MATERIAL

Item	Unit	Total
Structure Excavation	Cu. Yd.	530
Temporary Sheet Piling	Sq. Ft.	312
Geocomposite Wall Drain	Sq. Yd.	94
Pipe Underdrains for Structures 4"	Foot	187
Expanded Polystyrene Fill	Cu. Yd.	336

DESIGNED -	MFB
CHECKED -	KWS
DRAWN -	RMG
CHECKED -	KWS

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

ABUTMENT STABILIZATION DETAILS
STRUCTURE NO. 022-0005

SHEET NO. 16	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
25 SHEETS	290	2009-099 BR	COOK/DUPAGE	309	260
			CONTRACT NO. 60157		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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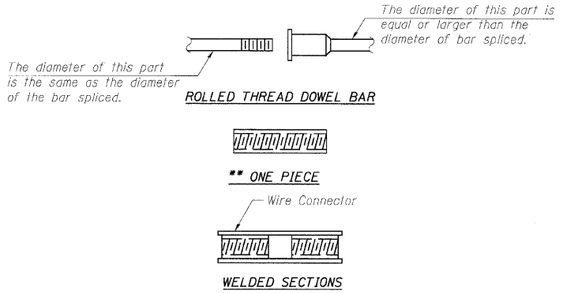
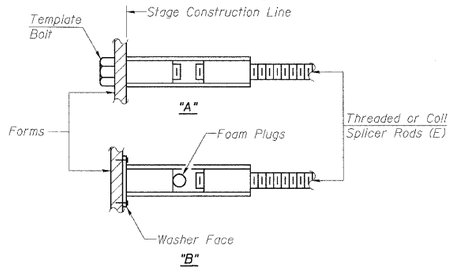
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



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.

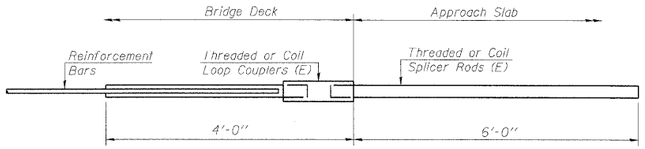
Other systems of similar design may be submitted to the Engineer for approval. Approval shall be based on certified test results from an approved testing laboratory that the proposed bar splicer assembly satisfies the following requirements:

① Minimum Capacity (Tension in kips) = $1.25 \times f_y \times A_t$

② Minimum *Pull-out Strength (Tension in kips) = $0.65 \times f_y \times A_t$

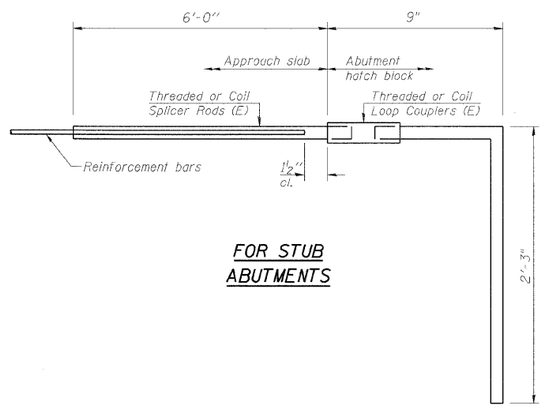
Where f_y = Yield strength of lapped reinforcement bars in ksi.
A_t = Tensile stress area of lapped reinforcement bars.
* = 28 day concrete

BAR SPLICER ASSEMBLIES			
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



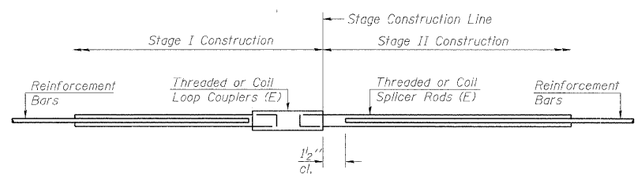
FOR INTEGRAL OR SEMI-INTEGRAL ABUTMENTS

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 = 182



STANDARD

Bar Size	No. Assemblies Required	Location
#5	16	Deck
#6	6	Deck
#4	50	App. Slab
#5	92	App. Slab

DESIGNED -	MFB
CHECKED -	KWS
DRAWN -	RMG
CHECKED -	KWS

BSD-1 10-1-08

BAR SPLICER ASSEMBLY DETAILS
STRUCTURE NO. 022-0005

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SHEET NO. 17	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
25 SHEETS	290	2009-099 BR	COOK/DUPAGE	309	261
			CONTRACT NO. 60157		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 290	1984-083R	DUPAGE	276	166
FED. ROAD DIST. NO. 7	ILLINOIS		FEDERAL AID PROJECT NO.	

SHEET NO. 1 OF 14 SHEETS

EXISTING STRUCTURE DATA

The existing structures are two similar bridges carrying Northbound and Southbound I-290 traffic over York Rd. Each structure is a four span continuous non-composite beam bridge and carries two mainline and two ramp lanes of traffic. Each structure is 180'-1 2" back to back of abutment.

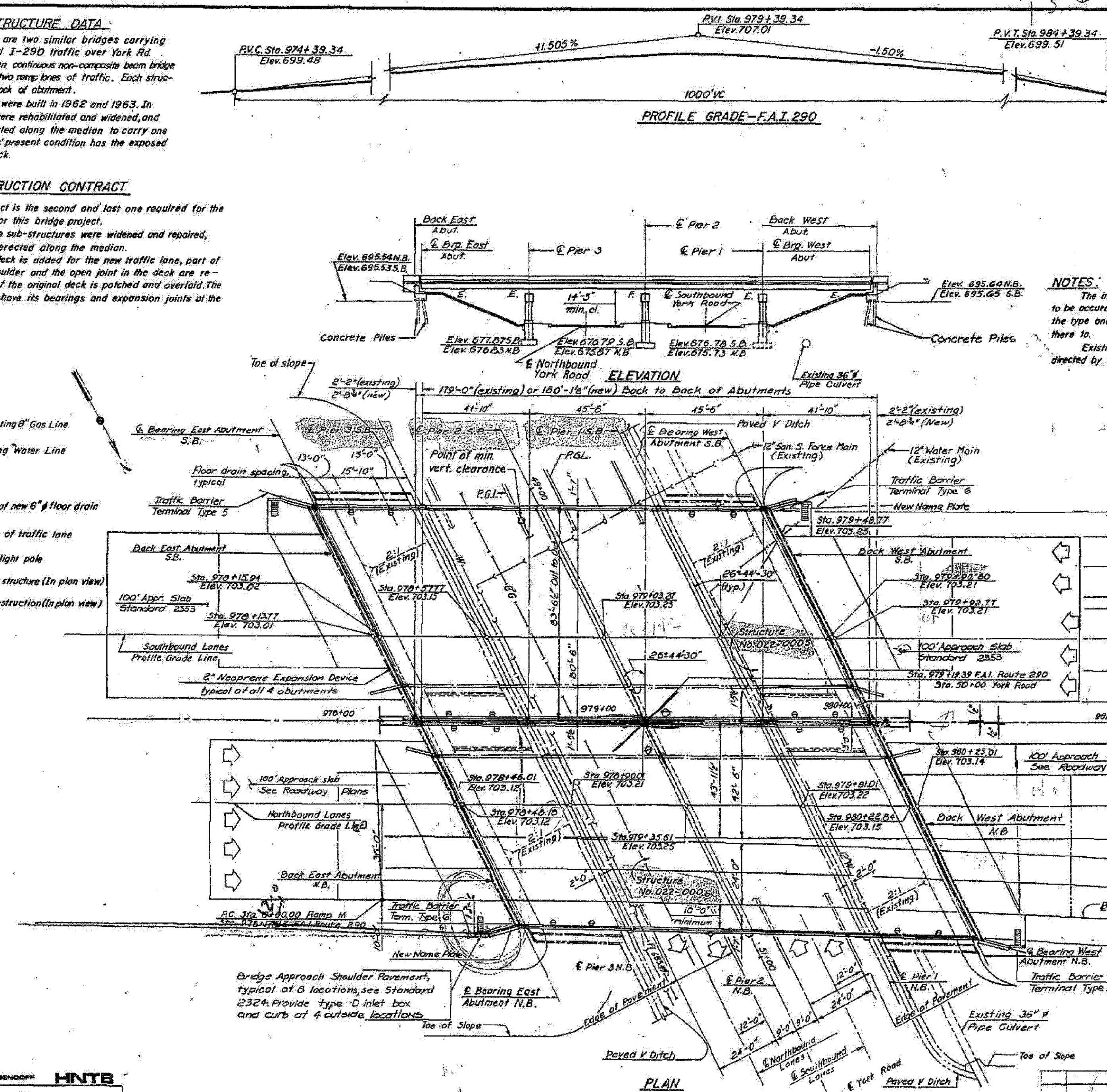
The original structures were built in 1962 and 1963. In 1985, the substructures were rehabilitated and widened, and new steel beams were erected along the median to carry one additional lane of traffic. Its present condition has the exposed steel beams without the deck.

CONSTRUCTION CONTRACT

This construction contract is the second and last one required for the widening and rehabilitation for this bridge project.

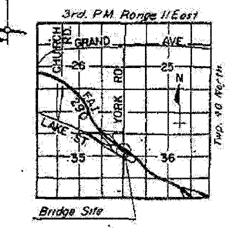
In the first contract, the sub-structures were widened and repaired, and new steel beams were erected along the median.

In this contract, a new deck is added for the new traffic lane, part of the deck at the outside shoulder and the open joint in the deck are replaced, and the remainder of the original deck is patched and overlaid. The original structure will also have its bearings and expansion joints at the abutments replaced.



Legend:

- 8" G —— Indicates existing 8" Gas Line
- W —— Indicates existing Water Line
- Indicates location of new 6" ϕ floor drain
- Indicates direction of traffic lane
- Indicates existing light pole
- Indicates existing structure (In plan view)
- Indicates new construction (In plan view)



LOCATION MAP

STATION 979+19.39
REBUILT 19.. BY
STATE OF ILLINOIS
F.A.I. RT. 290 SEC. 1984-083R
F.A. PROJ. ACI-ACIX-290-3(34)
LOADING HS20 & ALT.
STR. NO. ....–....

Notes:
Structure Number is 022-0005 for the southbound bridge, and 022-0006 for the northbound bridge.
See Standard 2113.

NEW NAME PLATE

NOTES:

The information shown on this sheet concerning type and location of utilities is not guaranteed to be accurate or all inclusive. The contractor is responsible for making his own determinations as to the type and location of underground and other utilities as may be necessary to avoid damage there to.

Existing light poles shall be removed from the existing edge of deck and be disposed of as directed by the Engineer (cost incidental).

APPROVED
FOR STRUCTURAL ADEQUACY ONLY
Engineer of Bridges and Structures

I hereby certify that to the best of my knowledge, information and belief that these plans and specifications are correct and structurally adequate for the design loading shown on the plans and complies with all the current requirements.

Signed: Raymond F. Pusczan Date: 5-30-85
Raymond F. Pusczan
S.E. Ill. Reg. No. 2495

STATE OF ILLINOIS · RAYMOND F. PUSCZAN · 2495 · CHICAGO, IL · REGISTERED STRUCTURAL ENGINEER

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN AND ELEVATION

F.A.I. ROUTE 290, DUPAGE COUNTY
SECTION 1984-083R
STA. 979+19.39
INTERSTATE ROUTE 290 OVER
YORK ROAD

SHEET 166 OF 276

HOWARD NEEDLES TAMMEN & BERGENDOFF — HNTB
MADE B.S.B. DATE 8-27-81 CHECKED R.F.P. DATE 5-29-85

NO.	DATE	REVISION	BY

EXISTING PLAN INFORMATION 1 OF 10
STRUCTURE NO. 022-0005

FOR INFORMATION ONLY

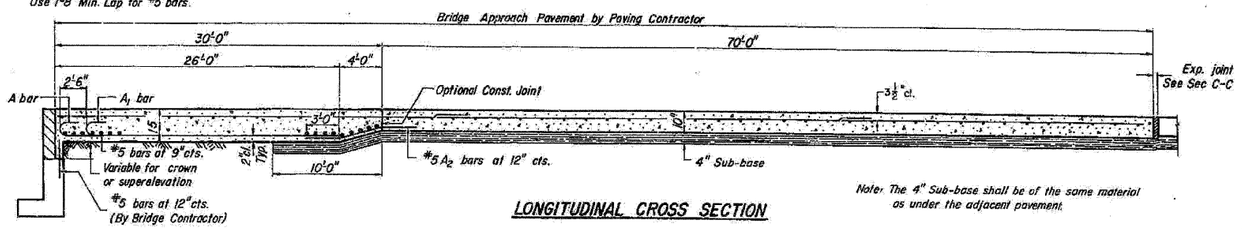
benesch
alfred benesch & company
Engineers · Surveyors · Planners
205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-565-0450 Job No. 10050

SHEET NO. 18	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
25 SHEETS	290	2009-099 BR	COOK/DUPAGE	309	262
			CONTRACT NO. 60157		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

x:\10000s\10050\engineering.documents.contract.1\SN_022_0006_0005_York_Rd\0005-60G51-018-Existplan_01.dgn 18:44:04 11\12\2009

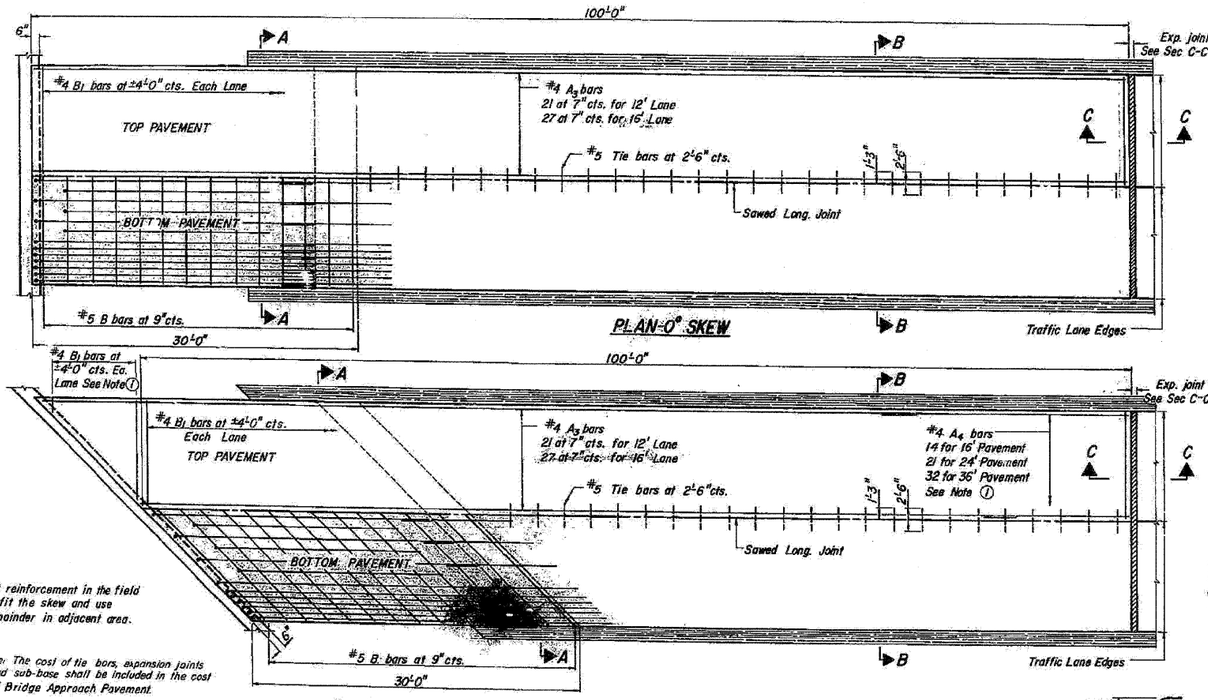
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

Note: Tilt hook of #9 bars for min. 3½"cl. Use 1'-4" Min. Lap for #4 bars. Use 1'-8" Min. Lap for #5 bars.



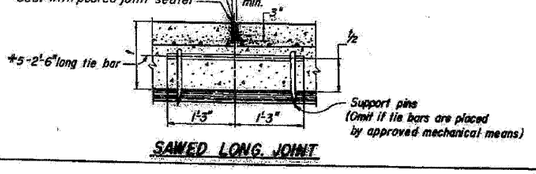
LONGITUDINAL CROSS SECTION

Note: The 4" Sub-base shall be of the same material as under the adjacent pavement.

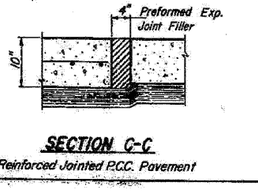


PLAN-0° SKEW

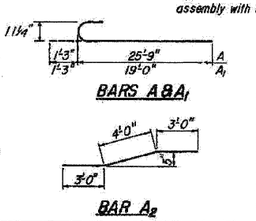
PLAN-SKEW



SAWED LONG. JOINT

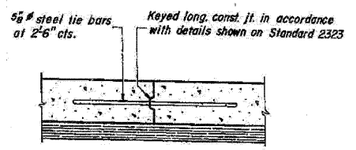


SECTION C-C
Reinforced Jointed P.C.C. Pavement



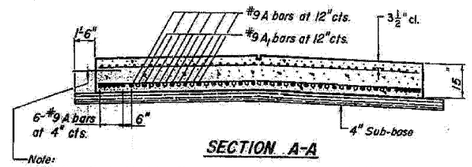
BARS A & A1

BAR A2



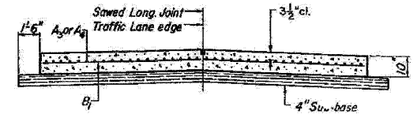
OPTIONAL LONG. CONST. JOINT

As approved by the Engineer; the contractor may elect to reduce the widths by use of the Optional Longitudinal Construction Joint shown. Joint shall be located at the edge of Traffic Lane.

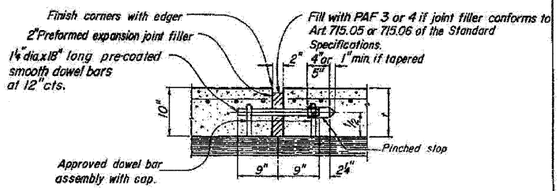


SECTION A-A

Note:
When the road plans show curb and gutter, gutter or bridge approach shoulder pavement adjacent to approach slabs, place 5/8" # steel tie bars at 2'-6" centers in accordance with the details for Bulkhead Longitudinal Construction Joint shown on Standard 2323. Cost of the tie bars will be included in the contract unit price for the adjacent item.
Transitions for curb and gutter shall be as shown on the plans.



SECTION B-B



SECTION C-C
Continuous Reinforced P.C.C. Pavement

BRIDGE APPROACH PAVEMENT

(Sheet 1 of 2)
STANDARD 2353-5

H 5.20 e

Illinois Department of Transportation
PASSED May 20, 1981
Engineer of Bridges and Retaining Structures
APPROVED May 20, 19 81
Engineer of Design
ISSUED 10-23-74

EXISTING PLAN INFORMATION 2 OF 10
STRUCTURE NO. 022-0005

FOR INFORMATION ONLY

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

SHEET NO. 19	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
25 SHEETS	290	2009-099 BR	COOK/DUPAGE	309	263
			CONTRACT NO. 60157		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

QUANTITIES FOR 100-FOOT APPROACH SLAB

16-FOOT WIDTH PAVEMENT

Skew Angle	Bottom Reinforcement #5 B bars No.	Bottom Reinforcement #5 B bars Length	Bottom Reinforcement A, A_1, A_2	B_1	Top Reinforcement #4 A_3 bars No.	Top Reinforcement #4 A_3 bars Length	Top Reinforcement #4 A_4 bars No.	Top Reinforcement #4 A_4 bars Length	Total Weight bars - lbs.
0°	40	15'-6"	27'-0" 20'-3" 10'-0"	81	34'-3"	—	—		5980
5°	40	15'-7"		81	34'-0"	14	3'-11"		6010
10°	40	15'-9"		81	33'-10"	14	5'-2"		6020
15°	40	16'-1"		81	33'-7"	14	6'-5"		6030
20°	40	16'-6"		81	33'-5"	14	7'-9"		6050
25°	40	17'-1"		81	33'-2"	14	9'-2"		6070
30°	40	17'-11"		81	32'-11"	14	10'-9"		6110
35°	40	18'-11"		81	32'-7"	14	12'-6"		6150
40°	40	20'-3"		81	32'-3"	14	14'-5"		6200
45°	40	21'-11"		81	31'-11"	14	16'-8"		6280
50°	40	24'-1"		81	31'-5"	14	19'-4"		6370
55°	40	27'-0"		81	30'-11"	14	22'-8"		6490
60°	40	31'-0"		81	30'-2"	14	26'-11"		6660

24-#9 A bars; 11-#9 A_1 bars; 24-#5 A_2 bars; 26-#4 B_1 bars; Bridge Approach Pavement 178 Sq. Yds.

24-FOOT WIDTH PAVEMENT

Skew Angle	Bottom Reinforcement #5 B bars No.	Bottom Reinforcement #5 B bars Length	Bottom Reinforcement A, A_1, A_2	B_1	Top Reinforcement #4 A_3 bars No.	Top Reinforcement #4 A_3 bars Length	Top Reinforcement #4 A_4 bars No.	Top Reinforcement #4 A_4 bars Length	Total Weight bars - lbs.
0°	40	23'-5"	27'-0" 20'-3" 10'-0"	11'-6"	126	34'-3"	—	—	8840
5°	40	23'-7"			126	33'-10"	21	4'-9"	8880
10°	40	23'-10"			126	33'-6"	21	6'-11"	8890
15°	40	24'-4"			126	33'-2"	21	9'-1"	8910
20°	40	25'-0"			126	32'-9"	21	11'-5"	8940
25°	40	25'-11"			126	32'-4"	21	13'-10"	8980
30°	40	27'-2"			126	31'-11"	21	16'-6"	9030
35°	40	28'-8"			126	31'-5"	21	19'-6"	9090
40°	40	30'-8"			126	30'-10"	21	22'-10"	9170
45°	40	33'-3"			126	30'-3"	21	26'-8"	9290
50°	80	19'-1"			126	29'-5"	21	31'-3"	9490
55°	80	21'-4"			126	28'-6"	21	36'-11"	9680
60°	80	24'-4"			126	27'-3"	42	22'-9"	9940

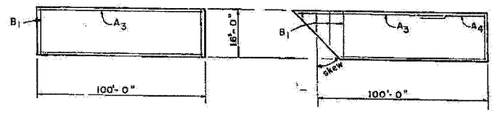
32-#9 A bars; 19-#9 A_1 bars; 32-#5 A_2 bars; 52-#4 B_1 bars; Bridge Approach Pavement 287 Sq. Yds.

36-FOOT WIDTH PAVEMENT

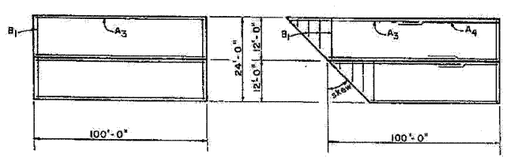
Skew Angle	Bottom Reinforcement #5 B bars No.	Bottom Reinforcement #5 B bars Length	Bottom Reinforcement A, A_1, A_2	B_1	Top Reinforcement #4 A_3 bars No.	Top Reinforcement #4 A_3 bars Length	Top Reinforcement #4 A_4 bars No.	Top Reinforcement #4 A_4 bars Length	Total Weight bars - lbs
0°	40	35'-6"	27'-0" 20'-3" 10'-0"	11'-6"	189	34'-3"	—	—	13040
5°	40	35'-8"			189	33'-8"	32	5'-10"	13090
10°	40	36'-0"			189	33'-2"	32	9'-0"	13110
15°	80	19'-4"			189	32'-8"	32	12'-4"	13230
20°	80	19'-10"			189	32'-0"	32	15'-9"	13260
25°	80	20'-7"			189	31'-5"	32	19'-6"	13330
30°	80	21'-6"			189	30'-9"	32	23'-6"	13410
35°	80	22'-8"			189	30'-0"	32	27'-10"	13510
40°	80	24'-2"			189	29'-2"	32	32'-10"	13630
45°	80	26'-2"			189	28'-3"	64	20'-0"	13840
50°	80	28'-8"			189	27'-1"	64	23'-6"	14050
55°	80	32'-0"			189	25'-8"	64	27'-9"	14330
60°	80	36'-7"			189	23'-10"	64	33'-2"	14710

44-#9 A bars; 31-#9 A_1 bars; 44-#5 A_2 bars; 78-#4 B_1 bars; Bridge Approach Pavement 400 Sq. Yds.

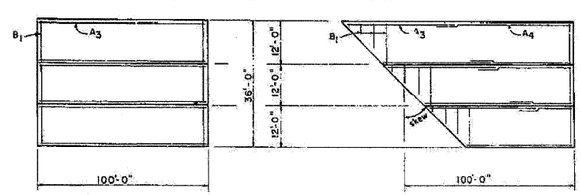
TOP OF SLAB BAR ARRANGEMENT



TOP OF SLAB BAR ARRANGEMENT



TOP OF SLAB BAR ARRANGEMENT



Illinois Department of Transportation
PASSED May 20, 1981
Bridge and Traffic Structures
APPROVED May 20, 1981
Engineer of Design
ISSUED 01-01-75

BRIDGE APPROACH PAVEMENT

(Sheet 2 of 2)

STANDARD 2353-5

Full Size D.W.W.Sr.

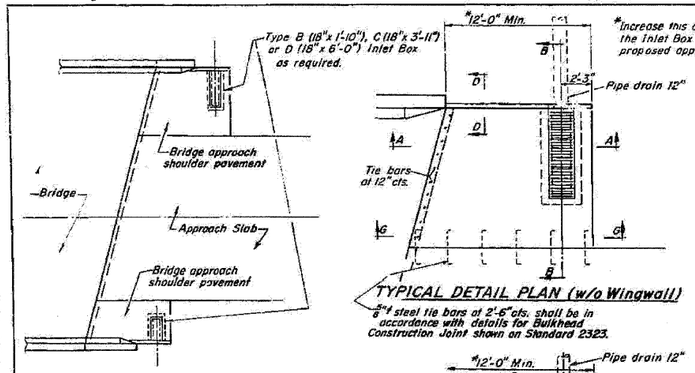
EXISTING PLAN INFORMATION 3 OF 10
STRUCTURE NO. 022-0005

FOR INFORMATION ONLY

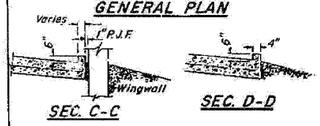
benesch
alfred benesch & company
Engineers • Surveyors • Planners
205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-565-0450 Job No. 10050

SHEET NO. 20	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
25 SHEETS	290	2009-099 BR	COOK/DUPAGE	309	264
			CONTRACT NO. 60157		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



GENERAL PLAN

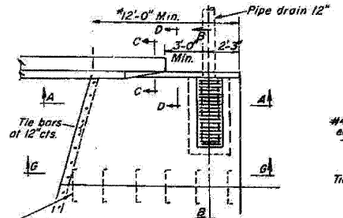


SEC. C-C

SEC. D-D

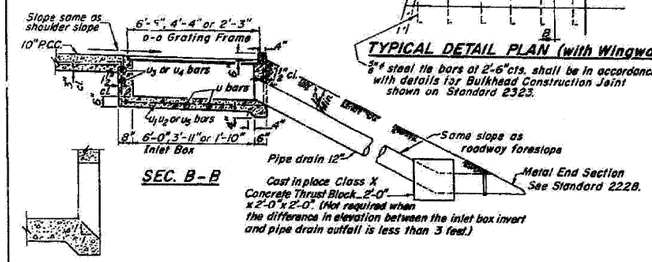
TYPICAL DETAIL PLAN (w/o Wingwall)

#4 steel tie bars at 2'-6" cts. shall be in accordance with details for Bulkhead Construction Joint shown on Standard 2323.



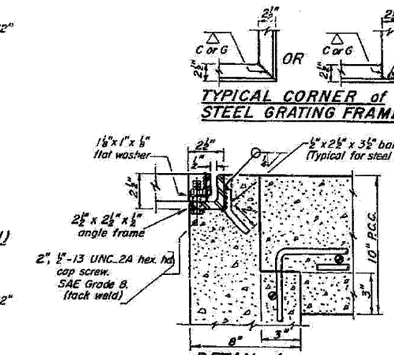
TYPICAL DETAIL PLAN (with Wingwall)

#4 steel tie bars at 2'-6" cts. shall be in accordance with details for Bulkhead Construction Joint shown on Standard 2323.

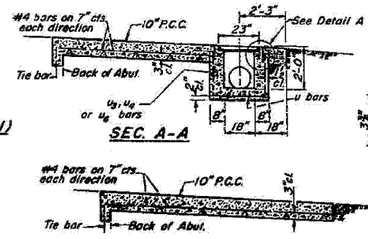


SEC. B-B

BOX OUTLET WHEN PRECAST

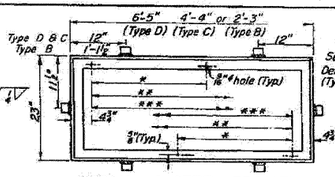


DETAIL A



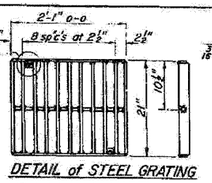
SEC. A-A

SEC G-G



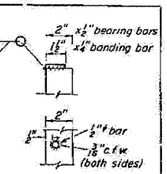
DETAIL of STEEL FRAME

Cast frame to have same basic dimensions.
* 1 space at 2'-1" for Type C
** 2 spaces at 2'-1" for Type D
*** 0 space for Type B

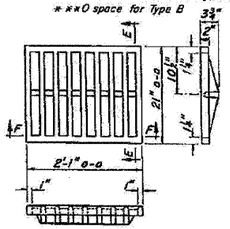


DETAIL of STEEL GRATING

Type B requires 1 grate
Type C requires 2 grates
Type D requires 3 grates

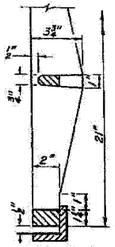


TYPICAL CORNER of STEEL GRATING FRAME

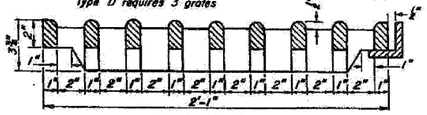


DETAIL of CAST GRATING

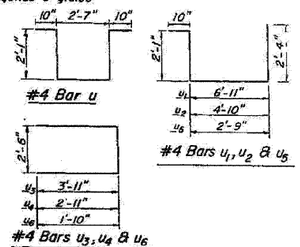
Type B requires 1 grate
Type C requires 2 grates
Type D requires 3 grates

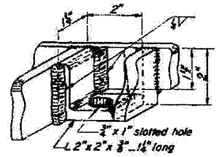


SEC. E-E



SEC F-F





DETAIL B

Material Required for One Type B Inlet Box

Bar	No.	Size	Length
u	4	#4	8'-5"
u5	3	#4	8'-0"
u6	4	#4	6'-2"
Concrete-Class X or Precast		Cu. Yds.	0.4
Reinf. Bars		Lbs.	60
Grating		Sq. Ft.	3.7

Material Required for One Type C Inlet Box

Bar	No.	Size	Length
u	6	#4	8'-5"
u3	3	#4	10'-1"
u4	4	#4	8'-4"
Concrete-Class X or Precast		Cu. Yds.	0.9
Reinf. Bars		Lbs.	80
Grating		Sq. Ft.	7.3

Material Required for One Type D Inlet Box

Bar	No.	Size	Length
u	8	#4	8'-5"
u1	3	#4	12'-2"
u5	4	#4	10'-4"
Concrete-Class X or Precast		Cu. Yds.	1.2
Reinf. Bars		Lbs.	100
Grating		Sq. Ft.	11.0

GENERAL NOTES

When Inlet Box or Boxes are not required, surface of the shoulder pavement shall be finished to provide a smooth transition from back of the abutment to normal approach roadway shoulder.

See plans for location of bridge approach shoulder pavement.

Use Type C Inlet Box for 5' and 6' shoulder widths, use Type D Inlet Box for 7' and wider shoulder widths, use Type B Inlet Box for shoulders less than 5' wide.

For placement of approach shoulder pavement on existing construction substitute expansion anchor ties for tie bars. For non-rigid approaches, shoulder pavement will be as shown except omit tie bars in approach pavement.

The material for 12"ø Pipe Drains shall be either corrugated steel, aluminum alloy or polyethlene (PE) pipe with UV protection.

Corrugated steel and aluminum alloy pipe shall have 2' coupling bands. All pipe connections shall be water tight.

The P.C. Concrete used in the shoulder slab shall meet the requirements of Section 408 of the Standard Specifications.

The lengths of #4 bars used in the approach shoulder pavement shall be as required to accommodate the length, width and skew of the slab.

Class X concrete or precast concrete shall be used for the inlet.

Precast concrete shall be in accordance with Sections 505.01 thru 505.05 of the Standard Specifications except that the concrete strength shall be 4000 p.s.i after 28 days.

All exposed edges of the inlet, except the upper perimeter, shall be beveled ¾".

Shop drawings will not be required for precast Inlet Boxes.

A 3" deep CA-12 bedding conforming to Article 704.01, D Quality or better shall be provided under full length and width of precast units, and all voids around the pipe drain entrance, both inside and outside, shall be sealed with mortar.

The grating shall seat firmly in the frame and steel grates shall be secured to the frame with a locking device as shown. Cast grates will not require the locking device.

Steel grating and frames shall conform to Article 710.04 of the Standard Specifications and shall be galvanized to AASHTO Specification M111 after fabrication.

Cast grating and frames shall conform to Article 710.17 of the Standard Specifications. Cast grating and frames shall not be galvanized.

Pipe drains shall be installed, measured and paid for in accordance with Section 607 of the Standard Specifications, except sand bedding will not be required.

Metal End Sections shall be installed, measured and paid for in accordance with Section 511 of the Standard Specifications.

Bridge approach shoulder pavement will be measured in place and paid for in square yards as P.C. CONCRETE BRIDGE APPROACH SHOULDER PAVEMENT which shall include the cost of subgrade preparation, expansion anchor ties, reinforcement and joint fillers. In computing the area for payment, a deduction will be made for the area displaced by the inlet. (1.2 Sq. Yds. Type C; 1.7 Sq. Yds. Type D, 0.6 Sq. Yds. Type B.)

The contract unit price "Each" for TYPE (B, C or D) INLET BOX STANDARD 2324, in place, shall include the frame and grating, class X or precast concrete, reinforcement bars, excavation, bedding when required, and compacted backfill.

The contract unit price "Each" for CONCRETE THRUST BLOCKS, in place, shall include excavation and compacted backfilling.

Illinois Department of Transportation
PASSED July 18, 1984
Engineer of Bridge and Traffic Structures
APPROVED July 18, 1984
Engineer of Design
ISSUED 12-15-83

BRIDGE APPROACH SHOULDER PAVEMENT

STANDARD 2324-6
(Full Size)

H-125

FOR INFORMATION ONLY

EXISTING PLAN INFORMATION 4 OF 10
STRUCTURE NO. 022-0005

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

SHEET NO. 21	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
25 SHEETS	290	2009-099 BR	COOK/DUPAGE	309	265
			CONTRACT NO. 60157		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI 290	1984 -083R	DUPAGE	276	176
FED. ROAD DIST. NO. 7	ILLINOIS	FEDERAL AID PROJECT NO.		

SHEET NO. 11 OF 44 SHEETS

NOTES:

Existing bearings are to be removed and new elastomeric bearings are to be installed.

This contract includes only the work necessary to replace the bearings. New bearings will be furnished by the State.

The information relating to the fabrication of the bearings is being provided for information only.

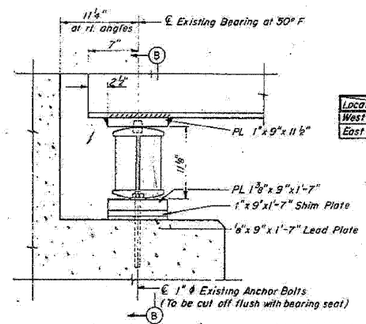
For anchor bolt installation details, see Sheet No. 12.

Jacking shall be done without live load present.

FABRICATION NOTES:

Contractor shall verify dimensions of existing bearings before removing and ordering new bearings.

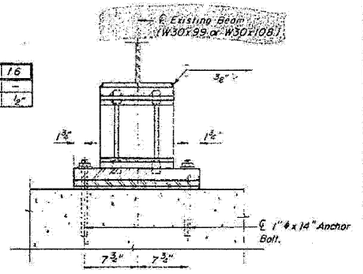
All structural steel shall be A.A.S.H.T.O. M-183.



ELEVATION

"L" DIMENSIONS

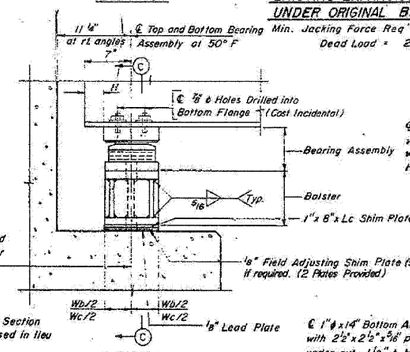
Location / Beam	6	7	16
West Abutment	—	9⅝"	—
East Abutment	5⅛"	—	8"



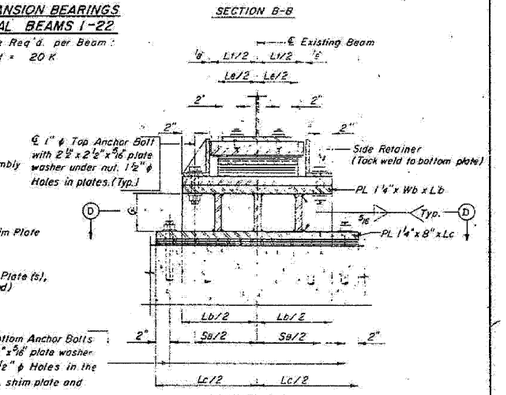
SECTION B-B

EXISTING EXPANSION BEARINGS UNDER ORIGINAL BEAMS 1-22

Min. Jacking Force Req'd. per Beam: Dead Load + 20 K

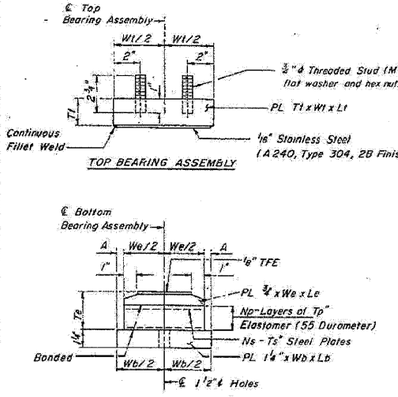


ELEVATION

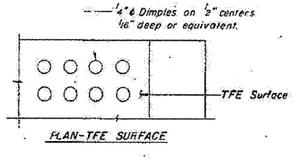


SECTION C-C

℄ 1" ϕ x 14" Bottom Anchor Bolts with 2½"x 2½"x ⅝" plate washer under nut. 1½" ϕ Holes in the bottom plate, shim plate and lead plate.

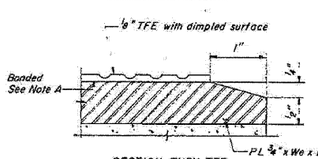


TOP BEARING ASSEMBLY



PLAN-TFE SURFACE

BOTTOM BEARING ASSEMBLY

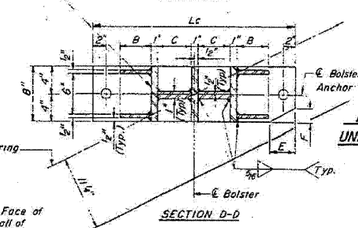


SECTION THRU TFE

NOTE A: The ⅛" TFE Sheet shall be bonded directly to the top steel plate with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MMM-A-134 Type I. The bond agent shall be applied on the full area of the contact surface.

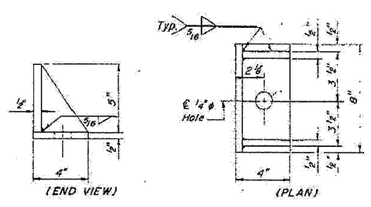
Bonding of ⅛" TFE sheet during the vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.

Note: An equivalent WF Section with stiffeners may be used in lieu of welded plates.



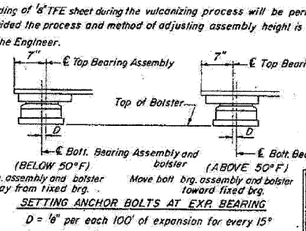
SECTION D-D

NEW EXPANSION BEARINGS UNDER ORIGINAL BEAMS 1-22 (No. Req'd = 44)



SIDE RETAINER

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



SETTING ANCHOR BOLTS AT EXP. BEARING

D = ⅛" per each 100' of expansion for every 15° temp. change from the normal temp. of 50°F.

BEARING DETAILS (Beams 1-22)

TABLE OF VARIABLES FOR EXPANSION BEARINGS

BEAM (East and West Abutment)	VARIABLE																			
	Te	We	Le	Np	Tp	Ns	Ts	Tt	Wt	Lt	Wb	Lb	Lc	Se	A	B	C	E	F	G	H
6,7,16,17	2¾"	6"	10"	5	5/16"	4	14 Ga.	1⅛"	7½"	12"	8"	1'-8½"	2'-4½"	1'-4½"	1"	4¾"	4"	2"	1"	5 3/16"	3¼"
1-5, 8-15, 18-22	2¾"	7"	12"	4	⅜"	3	3/32"	2"	8½"	1'-2"	8"	1'-10½"	2'-6½"	1'-6½"	1½"	4¾"	5"	3"	1½"	5 1/16"	2 3/16"

NO	DATE	REVISIONS	BY

HOWARD NEEDLES TAMMEN & BERGENDOFF HNTB

MADE J.R.B. DATE 9-7-84 CHECKED P.C.A. DATE 5-29-85

BILL OF MATERIALS

ITEM	UNIT	QUANTITY
Jacking and Removing Existing Bearings	Each	44
Install Elastomeric Bearings Assembly, Type II	Each	44

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BEARING INSTALLATION DETAILS AT ABUTMENTS

F.A.I. ROUTE 290, DUPAGE COUNTY
SECTION 1984-083R
STA. 979+19.39
INTERSTATE ROUTE 290 OVER
YORK ROAD

SHEET 176 OF 276

EXISTING PLAN INFORMATION 5 OF 10
STRUCTURE NO. 022-0005

FOR INFORMATION ONLY

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

SHEET NO. 22	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
25 SHEETS	290	2009-099 BR	COOK/DUPAGE	309	266
			CONTRACT NO. 60157		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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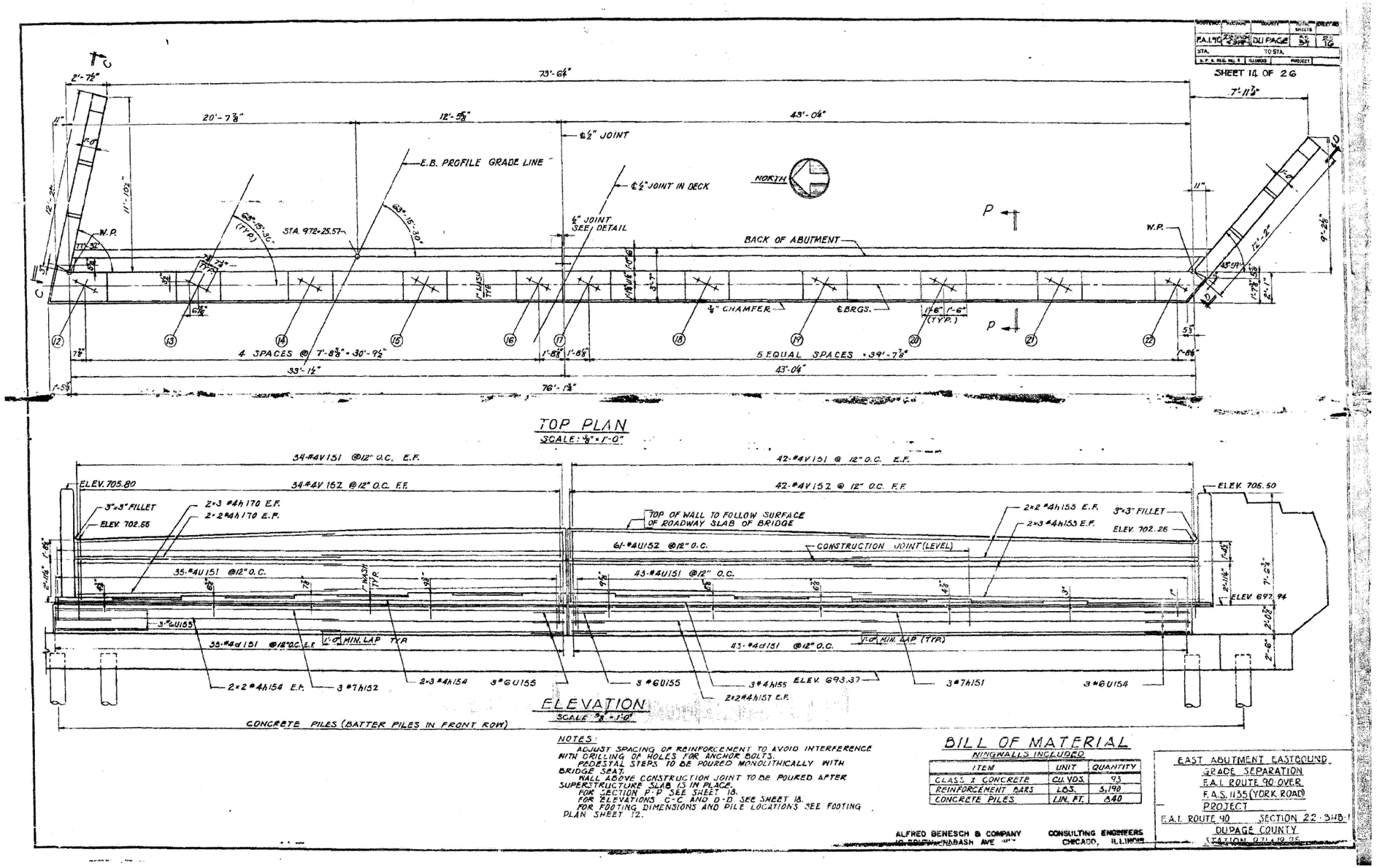
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



NOTES:
ADJUST SPACING OF REINFORCEMENT TO AVOID INTERFERENCE WITH DRILLING OF HOLES FOR ANCHOR BOLTS.
PEDESTAL STEPS TO BE POURED MONOLITHICALLY WITH BRIDGE SEAT.
WALL ABOVE CONSTRUCTION JOINT TO BE POURED AFTER SUPERSTRUCTURE SLAB IS IN PLACE.
FOR SECTION P-P SEE SHEET 18.
FOR ELEVATIONS C-C AND D-D SEE SHEET 18.
FOR FOOTING DIMENSIONS AND PILE LOCATIONS SEE FOOTING PLAN SHEET 12.

BILL OF MATERIAL
WINGWALLS INCLUDED

ITEM	UNIT	QUANTITY
CLASS X CONCRETE	CU. YDS.	93
REINFORCEMENT BARS	LBS.	5,190
CONCRETE PILES	LIN. FT.	640

EAST ABUTMENT EASTBOUND
GRADE SEPARATION
F.A.I. ROUTE 90 OVER
F.A.S. 1135 (YORK ROAD)
PROJECT
F.A.I. ROUTE 90 SECTION 22-3HB-1
DUPAGE COUNTY
STATION 971+19.25

ALFRED BENESCH & COMPANY CONSULTING ENGINEERS
CHICAGO, ILLINOIS

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EXISTING PLAN INFORMATION 6 OF 10
STRUCTURE NO. 022-0005

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312-565-0450 Job No. 10050

SHEET NO. 23	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
25 SHEETS	290	2009-099 BR	COOK/DUPAGE	309	267
			CONTRACT NO. 60157		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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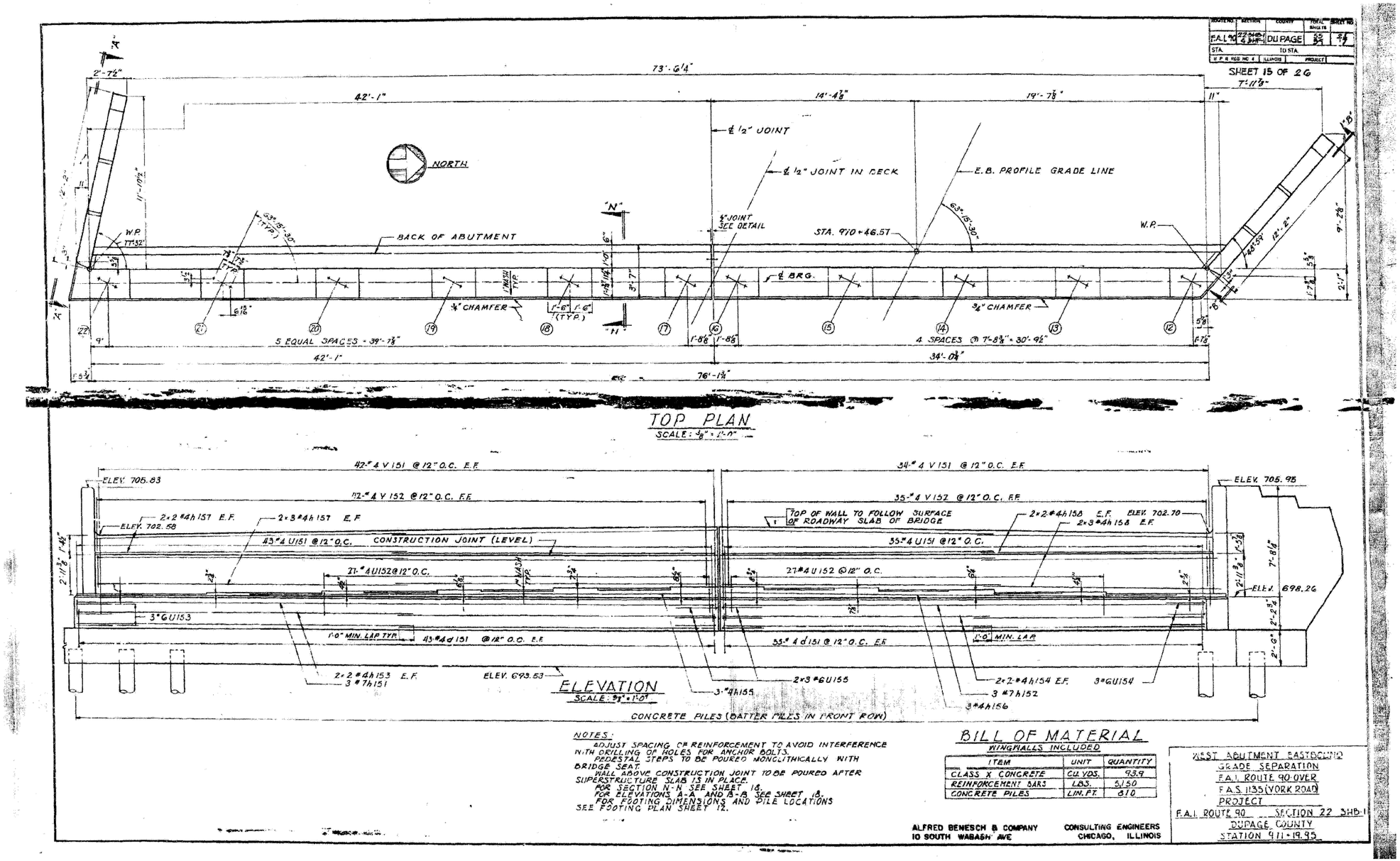
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 90	2009-099 BR	DU PAGE	25	24
STA.		TO STA.		
U. P. R. REG. NO. 4	ILLINOIS	PROJECT		

SHEET 15 OF 26



NOTES:
ADJUST SPACING OF REINFORCEMENT TO AVOID INTERFERENCE WITH DRILLING OF HOLES FOR ANCHOR BOLTS.
PEDESTAL STEPS TO BE POURED MONOLITHICALLY WITH BRIDGE SEAT.
WALL ABOVE CONSTRUCTION JOINT TO BE POURED AFTER SUPERSTRUCTURE SLAB IS IN PLACE.
FOR SECTION N-N SEE SHEET 18.
FOR ELEVATIONS A-A AND B-B SEE SHEET 18.
FOR FOOTING DIMENSIONS AND PILE LOCATIONS SEE FOOTING PLAN SHEET 12.

BILL OF MATERIAL
WINGWALLS INCLUDED

ITEM	UNIT	QUANTITY
CLASS X CONCRETE	CU YDS.	93.9
REINFORCEMENT BARS	LBS.	5150
CONCRETE PILES	LIN. FT.	810

ALFRED BENESCH & COMPANY
10 SOUTH WABASH AVE
CONSULTING ENGINEERS
CHICAGO, ILLINOIS

WEST ABUTMENT EASTBOUND
GRADE SEPARATION
F.A.I. ROUTE 90 OVER
F.A.S. 1135 (YORK ROAD)
PROJECT
F.A.I. ROUTE 90 SECTION 22 SMB-1
DUPAGE COUNTY
STATION 911+19.95

EXISTING PLAN INFORMATION 7 OF 10
STRUCTURE NO. 022-0005

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

SHEET NO. 24	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
25 SHEETS	290	2009-099 BR	COOK/DUPAGE	309	268
			CONTRACT NO. 60157		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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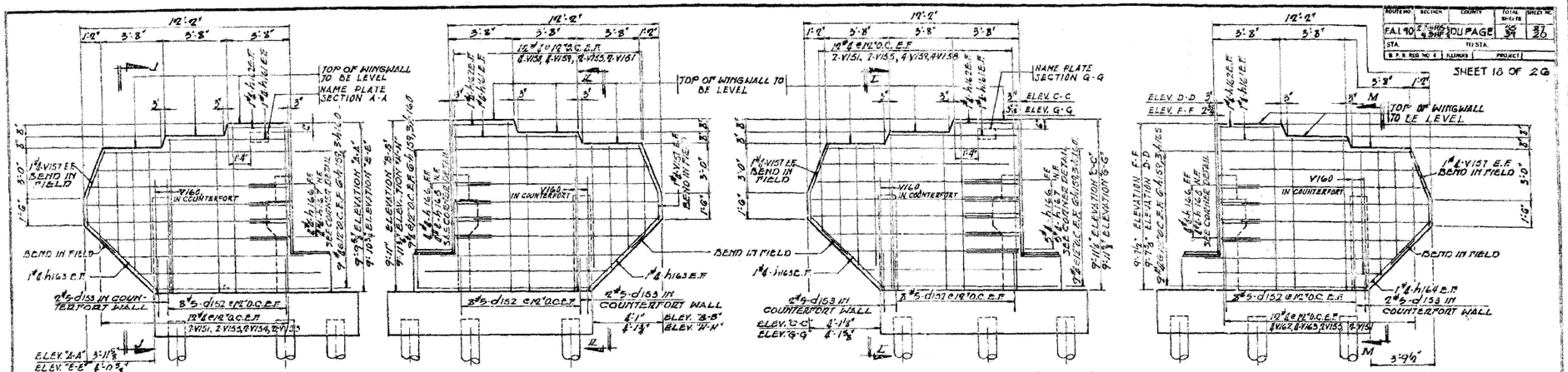
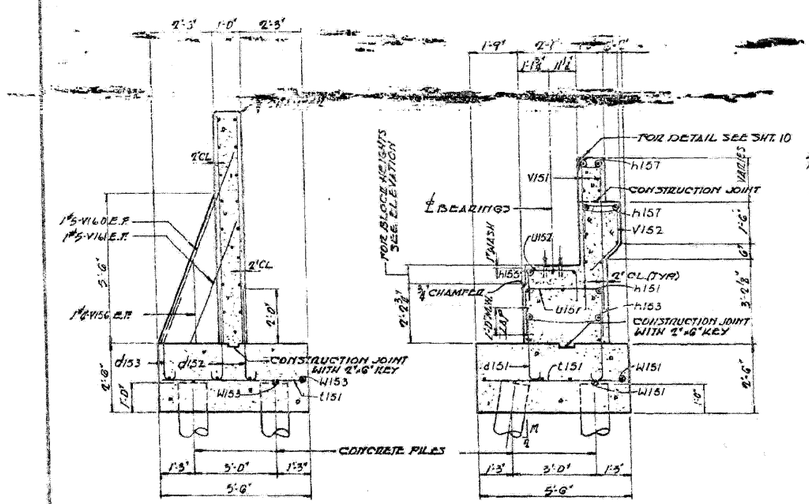
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

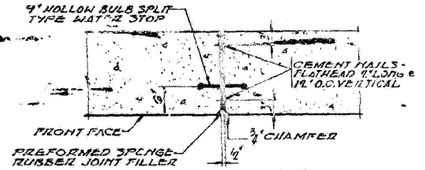
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 90	2009-099 BR	DU PAGE	309	37
STA.	STA.			26
F. A. R. RTE. NO. 4	ILLINOIS	PROJECT		

SHEET 18 OF 26

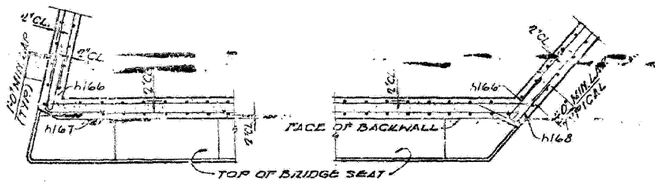




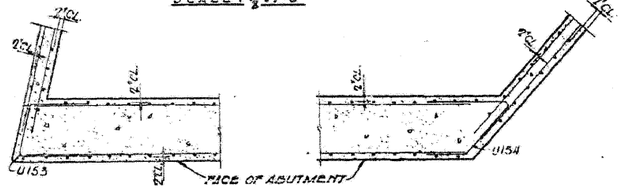
NOTE:
BAR MARKS AND DIMENSIONS SHOWN FOR SECTIONS J-J AND N-N ONLY.



DETAIL OF ½" JOINT
SCALE: 1" = 1'-0"



TYPICAL CORNER DETAIL
SCALE: ⅜" = 1'-0"



CORNER DETAIL BELOW BRIDGE SEAT
SCALE: ⅜" = 1'-0"

Notes:
FOR FOOTING PLAN SEE SHEETS 12 AND 13.
FOR ELEVATION OF ABUTMENTS AND LOCATION OF WINGWALLS SEE SHEETS 14, 15, 16 AND 17.

ALFRED BENESCH & COMPANY
10 SOUTH WACKER DRIVE
CONSULTING ENGINEERS
CHICAGO, ILLINOIS

ABUTMENT DETAILS
GRADE SEPARATION
F.A.I. ROUTE 90 OVER
F.A.S. 1135 (YORK ROAD)
PROJECT
F.A.I. ROUTE 90 SECTION 22-3HB-1
DUPAGE COUNTY
STATION 971+19.95

EXISTING PLAN INFORMATION 8 OF 10
STRUCTURE NO. 022-0005

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312-565-0450 Job No. 10050

SHEET NO. 25	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
25 SHEETS	290	2009-099 BR	COOK/DUPAGE	309	269
			CONTRACT NO. 60157		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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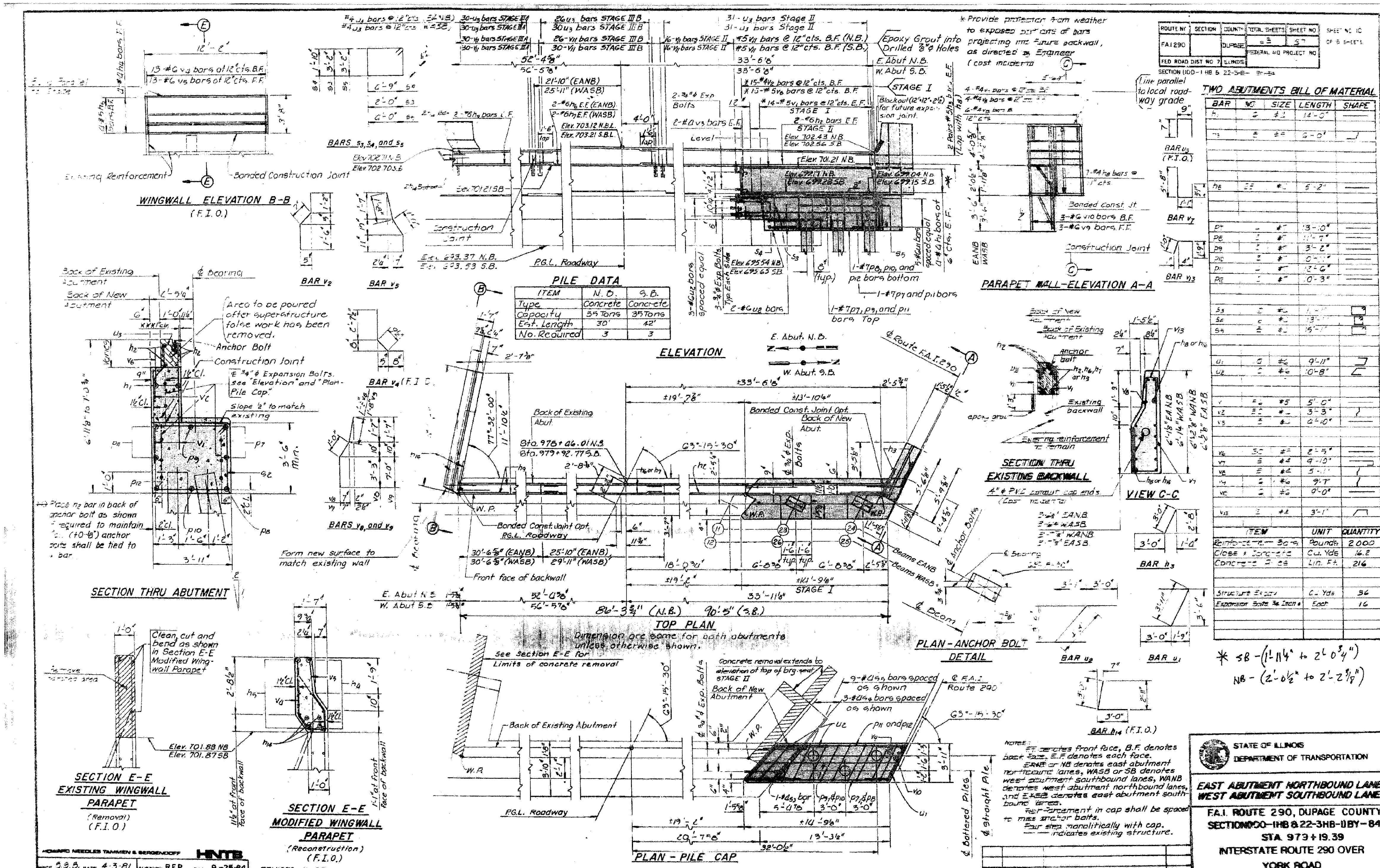
WINGWALL ELEVATION B-B
(F.I.O.)
SECTION THRU ABUTMENT
SECTION E-E
EXISTING WINGWALL
PARAPET
(Removal)
(F.I.O)
SECTION E-E
MODIFIED WINGWALL
PARAPET
(Reconstruction)
(F.I.O.)
ELEVATION
PILE DATA
ITEM
N.B.
S.B.
Type
Concrete
Concrete
Capacity
35 Tons
35 Tons
Est. Length
30'
42'
No. Required
3
3
TOP PLAN
Dimensions are same for both abutments unless otherwise shown.
PLAN - PILE CAP
PLAN - ANCHOR BOLT DETAIL
PARAPET WALL-ELEVATION A-A
SECTION THRU EXISTING BACKWALL
VIEW C-C
TWO ABUTMENTS BILL OF MATERIAL
BAR
NO.
SIZE
LENGTH
SHAPE
ITEM
UNIT
QUANTITY
Reinforcement Bars
Pounds
2000
Class X Concrete
Cu. Yds
16.2
Concrete Piles
Lin. Ft.
216
Structure Excav.
Cu. Yds
36
Expansion Bolts 3/4 Inch
Each
16
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
EAST ABUTMENT NORTHBOUND LANES
WEST ABUTMENT SOUTHBOUND LANES
F.A.I. ROUTE 290, DUPAGE COUNTY
SECTION(100-1HB & 22-3HB-1)BY-84
STA. 973+19.39
INTERSTATE ROUTE 290 OVER
YORK ROAD
HOWARD NEEDLES TAMMEN & BERGENDOFF
HNTB
REVISED 11-26-84

EXISTING PLAN INFORMATION 9 OF 10
STRUCTURE NO. 022-0005

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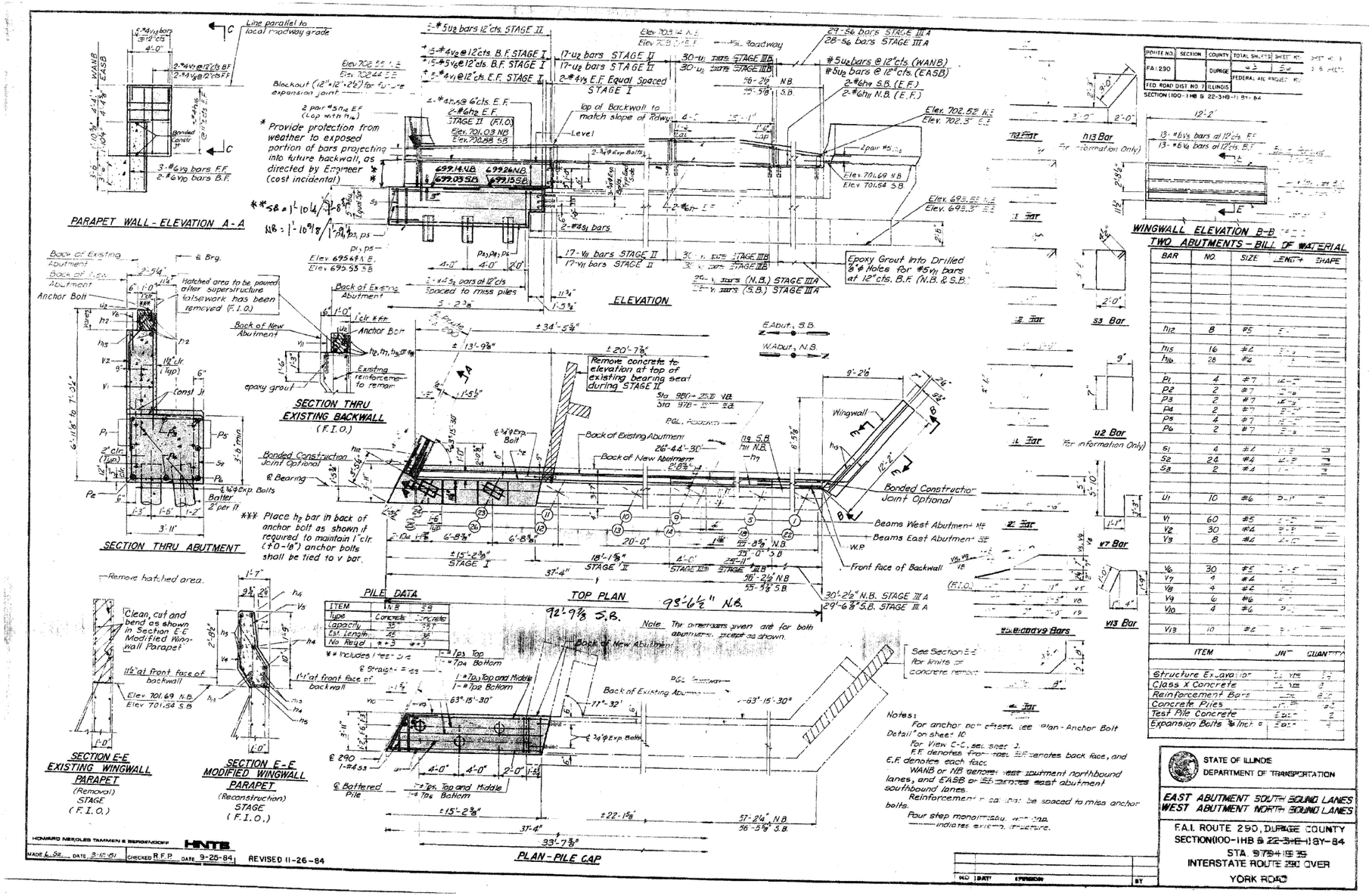
312-565-0450 Job No. 10050

SHEET NO.25A	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
25 SHEETS	290	2009-099 BR	COOK/DUPAGE	309	269A
			CONTRACT NO. 60I57		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



TWO ABUTMENTS - BILL OF MATERIAL

BAR	NO.	SIZE	LENGTH	SHAPE
h12	8	#5	[illegible]	
h15	16	#4	[illegible]	
h16	28	#4	[illegible]	
P1	4	#7	[illegible]	
P2	2	#7	[illegible]	
P3	2	#7	[illegible]	
P4	2	#7	[illegible]	
P5	4	#7	[illegible]	
P6	2	#7	[illegible]	
S1	4	#4	[illegible]	
S2	24	#4	[illegible]	
S3	2	#4	[illegible]	
U1	10	#6	[illegible]	
V1	60	#5	[illegible]	
V2	30	#4	[illegible]	
V3	8	#4	[illegible]	
V6	30	#5	[illegible]	
V7	4	#4	[illegible]	
V8	4	#4	[illegible]	
V9	6	#6	[illegible]	
V10	4	#6	[illegible]	
V13	10	#6	[illegible]	

ITEM	UNIT	QUANTITY
Structure Excavation	Cu. Yds.	[illegible]
Class X Concrete	Cu. Yds.	[illegible]
Reinforcement Bars	Lbs.	[illegible]
Concrete Piles	Lin. Ft.	[illegible]
Test Pile Concrete	Each	2
Expansion Bolts 3/4 Inch ⌀	Each	[illegible]

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EAST ABUTMENT SOUTH BOUND LANES
WEST ABUTMENT NORTH BOUND LANES

F.A.I. ROUTE 290, DUPAGE COUNTY
SECTION (100-1HB & ~~22-3HB-1~~) BY-84
STA. 979+19.35
INTERSTATE ROUTE 290 OVER
YORK ROAD

EXISTING PLAN INFORMATION 10 OF 10
STRUCTURE NO. 022-0005

FOR INFORMATION ONLY

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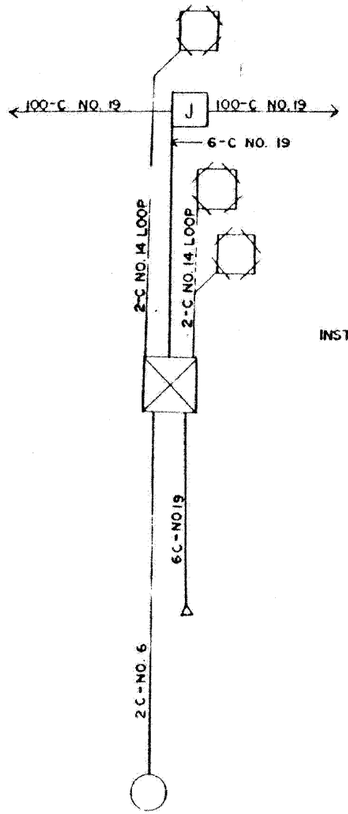
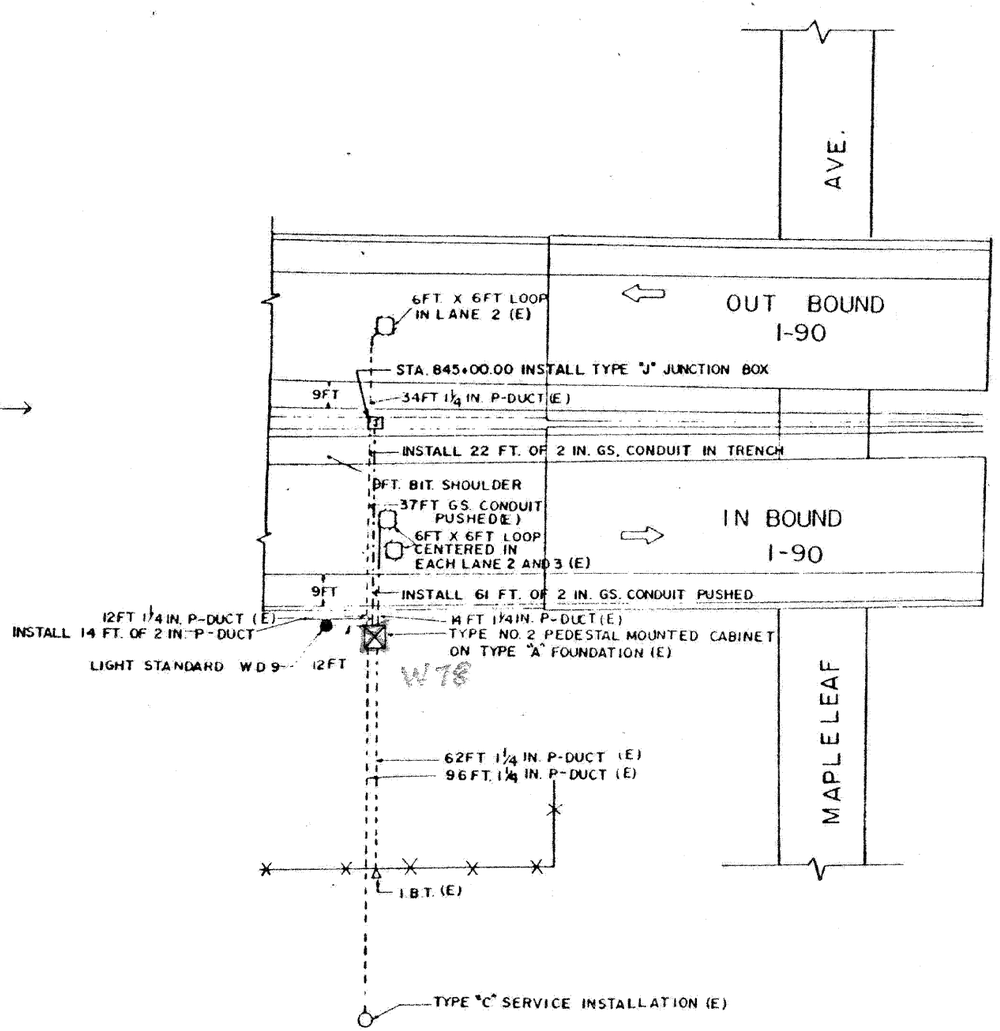
Chicago, Illinois 60601
312-565-0450 Job No. 10050

SHEET NO.25B 25 SHEETS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	2009-099 BR	COOK/DUPAGE	309	269B
			CONTRACT NO. 60I57		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT			



WIRING DIAGRAM



PLAN

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. LOOP AND LEAD-IN CABLE QUANTITIES BASED ON INTERCHANGE RAMP RESURFACING. EXISTING MAINLINE SURVEILLANCE LOOPS TO REMAIN UNLESS IMPACTED BY PATCHING OPERATIONS.

SUMARRY OF QUANTITIES (THIS SHEET)		
DESCRIPTION	UNIT	QUANTITY
ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 18 4/C, TWISTED, SHIELDED	LF	0
INDUCTION LOOP	LF	0

FILE NAME =	DESIGNED - GHT	REVISED -
...\Signals\prp\n_ABC_C4_ts_03.dgn	DRAWN - TMB	REVISED -
USER NAME = jmejewski	CHECKED - MPM	REVISED -
PLOT DATE = 11/13/2009	DATE - 10/16/09	REVISED -

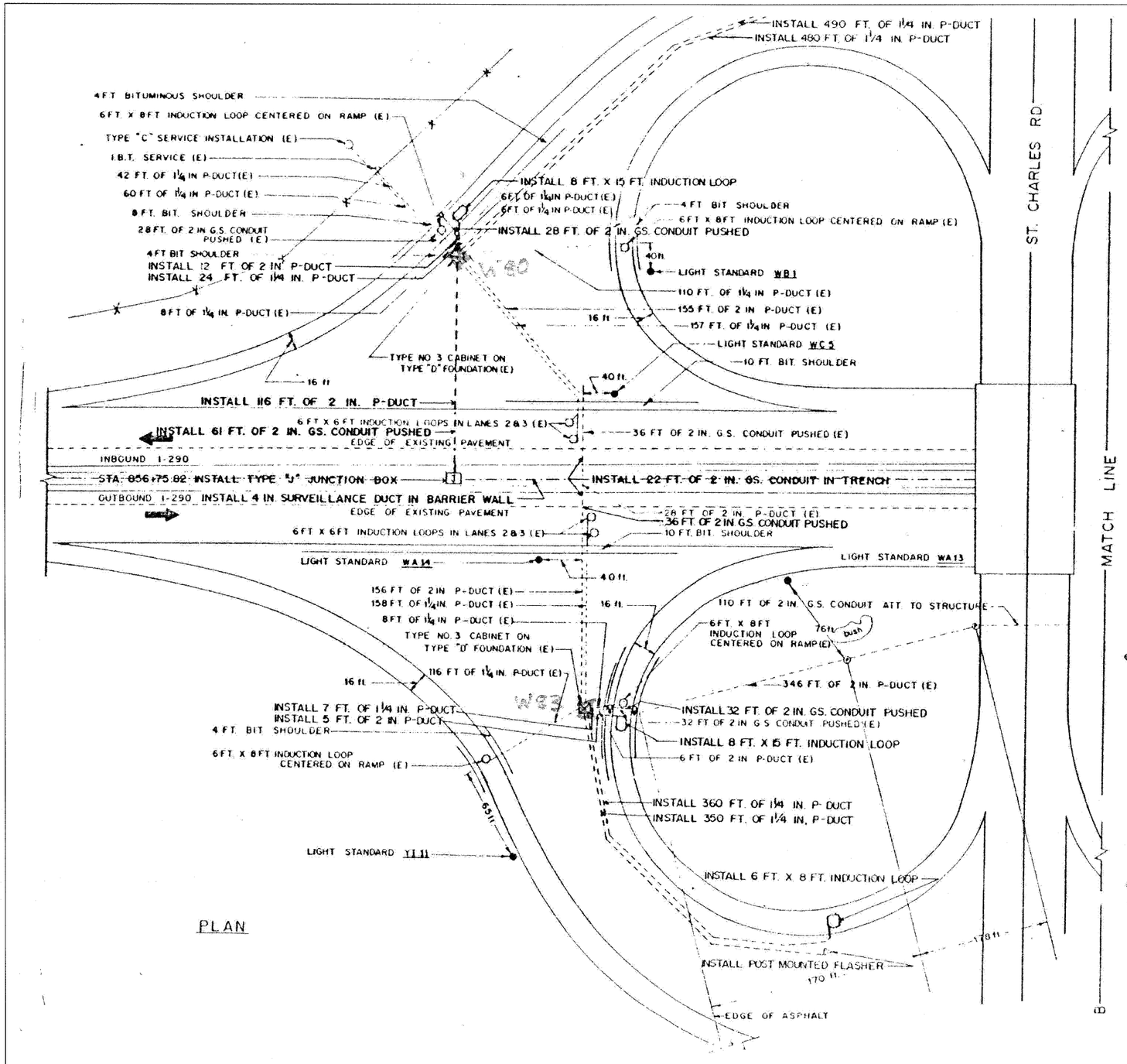
benesch

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TRAFFIC SURVEILLANCE LOOP
MAPLELEAF AVE INSTALLATION

SCALE: N.T.S. | SHEET NO. 1 OF 10 SHEETS | STA. | TO STA.

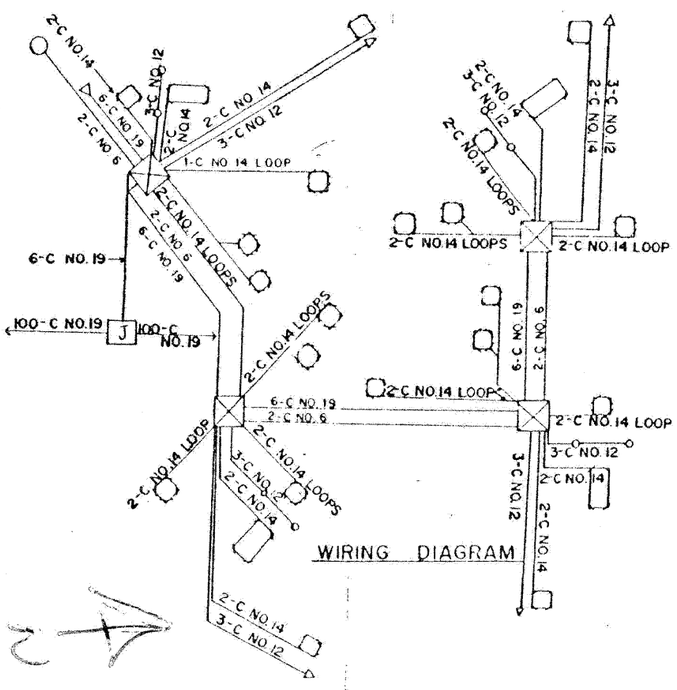
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	2009-099BR	COOK/DUPAGE	309	270
		CONTRACT NO. 60157		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



SUMMARY OF QUANTITIES (THIS SHEET)		
DESCRIPTION	UNIT	QUANTITY
ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 18 4/C, TWISTED, SHIELDED	LF	682
INDUCTION LOOP	LF	170

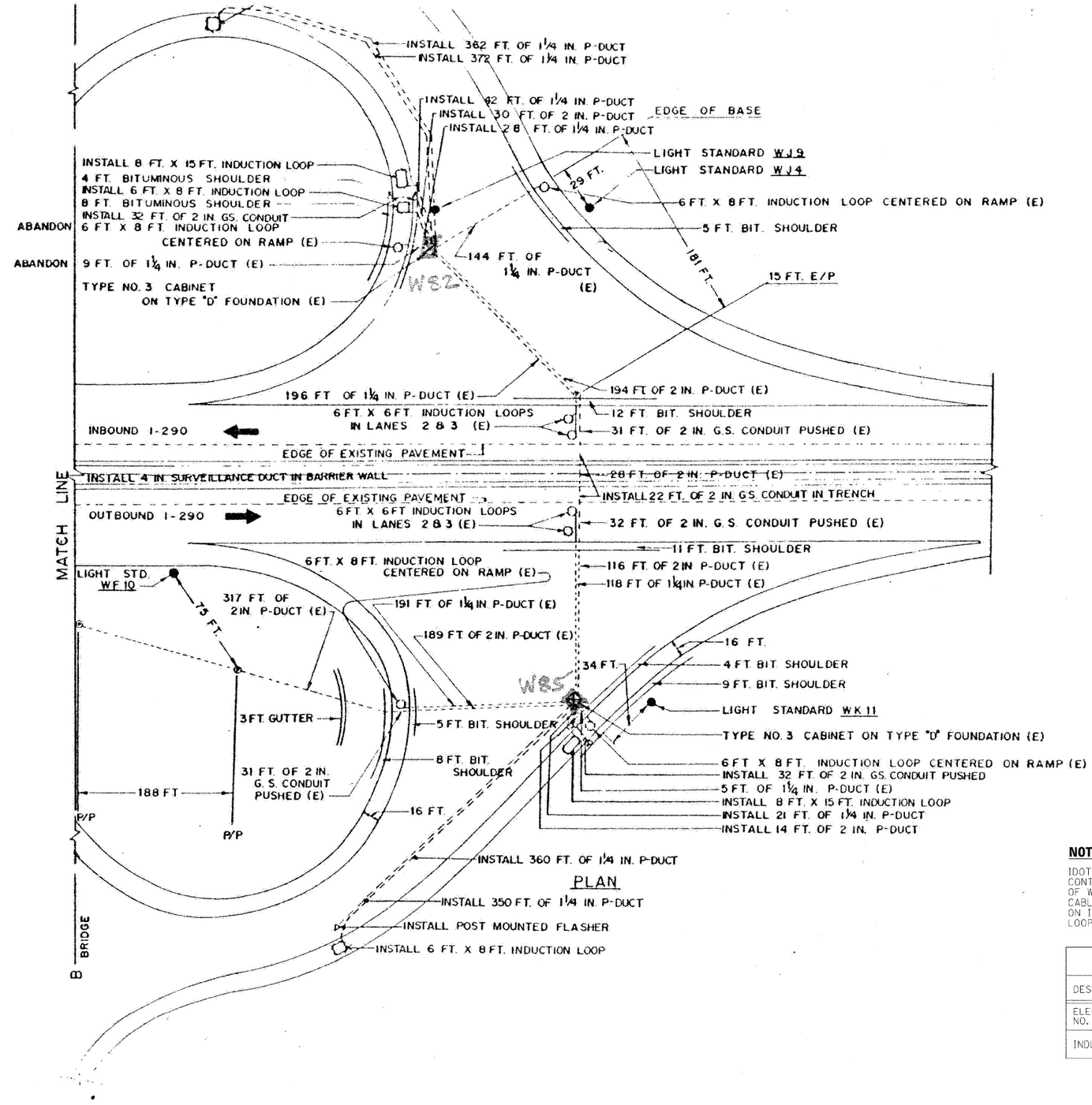
NOTE:

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. LOOP AND LEAD-IN CABLE QUANTITIES BASED ON INTERCHANGE RAMP RESURFACING. EXISTING MAINLINE SURVEILLANCE LOOPS TO REMAIN UNLESS IMPACTED BY PATCHING OPERATIONS.



FILE NAME = ...\Signals\prpln_ABC_C4_ts_24.dgn	DESIGNED - GHT	REVISED -	benesch	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	TRAFFIC SURVEILLANCE LOOP ST CHARLES RD INSTALLATION (1 OF 2)
USER NAME = jmajewski	DRAWN - TMB	REVISED -			SCALE: N.T.S. SHEET NO. 2 OF 10 SHEETS STA. TO STA.
PLOT DATE = 11/13/2009	CHECKED - MPM	REVISED -			
	DATE - 10/16/09	REVISED -			

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	2009-099BR	COOK/DUPAGE	309	271
		CONTRACT NO. 60157		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



NOTE:

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SUMMARY OF QUANTITIES (THIS SHEET)

DESCRIPTION	UNIT	QUANTITY
ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 18 4/C, TWISTED, SHIELDED	LF	1231
INDUCTION LOOP	LF	288

FILE NAME = ...\Signals\erain_ABC_C4_to_25.dgn	DESIGNED - GHT	REVISED -
	DRAWN - TMB	REVISED -
USER NAME = jmajewski	CHECKED - MPM	REVISED -
PLOT DATE = 11/13/2009	DATE - 10/16/09	REVISED -

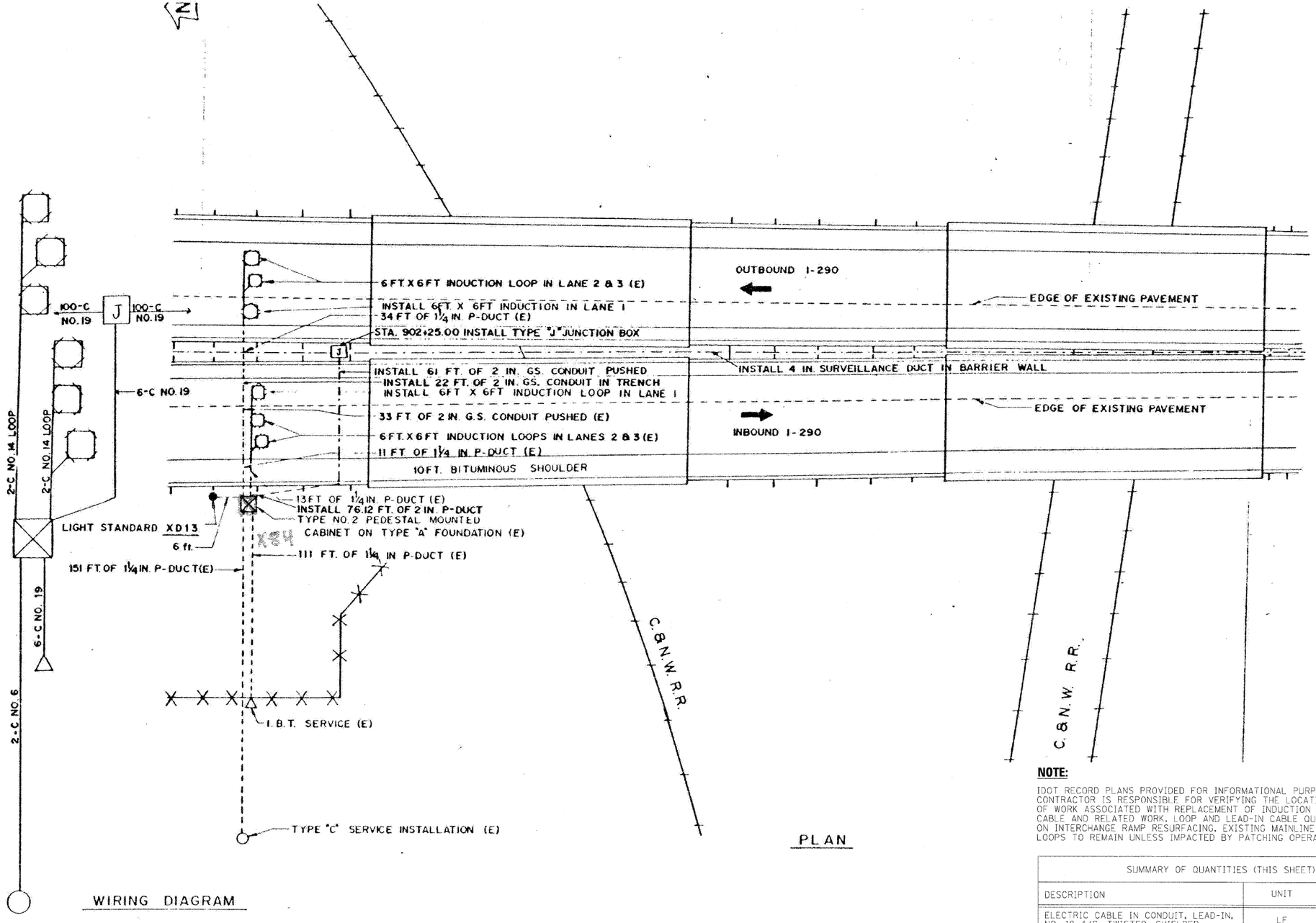
benesch

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TRAFFIC SURVEILLANCE LOOP
ST CHARLES RD INSTALLATION (2 OF 2)

SCALE: N.T.S. | SHEET NO. 3 OF 10 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	2009-099BR	COOK/DUPAGE	309	272
		CONTRACT NO. 60157		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



WIRING DIAGRAM

PLAN

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. LOOP AND LEAD-IN CABLE QUANTITIES BASED ON INTERCHANGE RAMP RESURFACING. EXISTING MAINLINE SURVEILLANCE LOOPS TO REMAIN UNLESS IMPACTED BY PATCHING OPERATIONS.

SUMMARY OF QUANTITIES (THIS SHEET)		
DESCRIPTION	UNIT	QUANTITY
ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 18 4/C, TWISTED, SHIELDED	LF	0
INDUCTION LOOP	LF	0

FILE NAME =	DESIGNED - GHT	REVISED -
...\Signals\prpln_ABC_C4_ts_26.dgn	DRAWN - TMB	REVISED -
USER NAME = jmajewski	CHECKED - MPM	REVISED -
PLOT DATE = 1/13/2009	DATE - 10/16/09	REVISED -

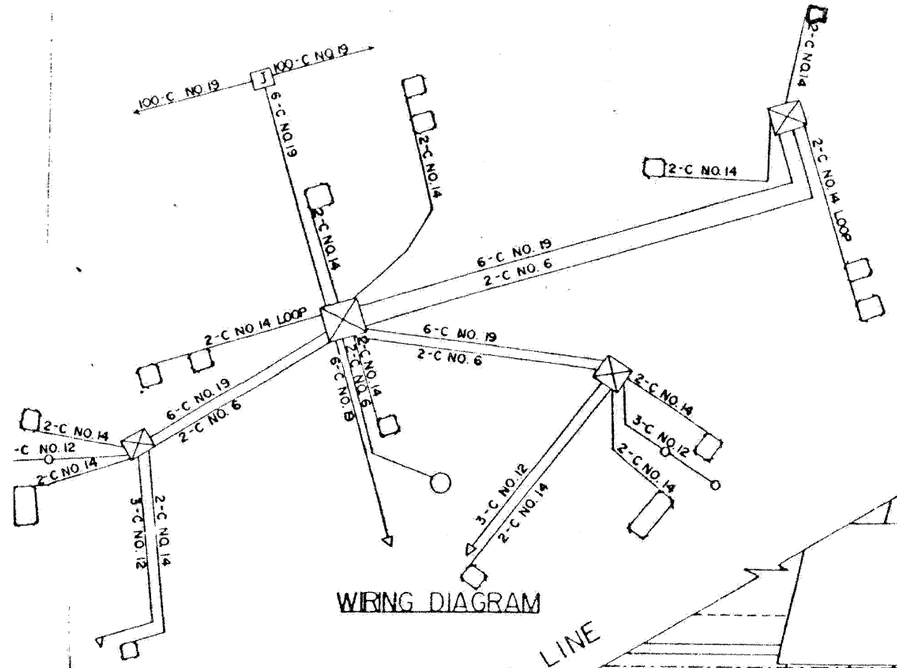
benesch

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TRAFFIC SURVEILLANCE LOOP
C&NW RAILROAD INSTALLATION

SCALE: N.T.S. | SHEET NO. 4 OF 10 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	2009-099BR	COOK/DUPAGE	309	273
		CONTRACT NO. 60157		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



SEE NORTH AVE. INSTALLATION SHEET 2 OF 2

MATCH LINE

OUT BOUND I-290

INBOUND I-290

EDGE OF EXISTING PAVEMENT

STA. 925+40.00 INSTALL TYPE "J" JUNCTION BOX

300 FT

49 FT

INSTALL 61 FT. OF 2 IN. GS. CONDUIT PUSHED

INSTALL 4 IN. SURVEILLANCE DUCT IN BARRIER WALL

EDGE OF EXISTING PAVEMENT

6FT X 6FT INDUCTION LOOP IN LANES 2&3 (E)

6FT X 8FT INDUCTION LOOP (E)

INSTALL 8 FT. OF 2 IN. P-DUCT

50FT OF 1¼ IN. P-DUCT (E)

9FT BITUMINOUS SHOULDER

20FT. FROM LIGHT STANDARD XC8

83FT FROM LIGHT STANDARD XC4

694FT OF 2 IN. P-DUCT (E)

TYPE NO. 3 ON TYPE "D" FOUNDATION (E)

218 FT OF 1¼ IN. P-DUCT (E)

216 FT OF 1¼ IN. P-DUCT (E)

216 FT OF 1¼ IN. P-DUCT (E)

129 FT OF 1¼ IN. P-DUCT (E) IN EACH LANE (E)

6FT X 6FT INDUCTION LOOP

INSTALL 283 FT. OF 2 IN. GS. CONDUIT ATTACHED TO STRUCTURE

INSTALL 30 FT. OF 1¼ IN. P-DUCT

INSTALL 465 FT. OF 2 IN. P-DUCT

INSTALL 23 FT. OF 2 IN. P-DUCT

INSTALL 6 FT. X 8 FT. INDUCTION LOOP

ALL TYPE 3 CABINET ON TYPE "D" FOUNDATION

INSTALL 30 FT. OF 2 IN. GS. CONDUIT PUSHED

INSTALL 25 FT. OF 1¼ IN. P-DUCT

INSTALL 8 FT. X 15 FT. INDUCTION LOOP

INSTALL 282 FT. OF 1¼ IN. P-DUCT

INSTALL 290 FT. OF 1¼ IN. P-DUCT

INSTALL POST MOUNTED FLASHER

INSTALL 6 FT. X 8 FT. INDUCTION LOOP

NORTH AVE.

INSTALL TYPE 3 CABINET ON TYPE "D" FOUNDATION

INSTALL 8 FT. X 15 FT. INDUCTION LOOP

INSTALL 28 FT. OF 2 IN. GS. CONDUIT PUSHED

INSTALL 303 FT. OF 1¼ IN. P-DUCT

INSTALL 293 FT. OF 1¼ IN. P-DUCT

INSTALL POST MOUNTED FLASHER

INSTALL 6 FT. X 8 FT. INDUCTION LOOP

CITY PUMP

TYPE "C" SERVICE INSTALLATION (E)

6FT X 8FT INDUCTION LOOP (E)

60FT

LT. STD. (X06)

16FT

74FT OF 1¼ IN. P-DUCT (E)

4FT BIT. SHOULDER

8FT FROM LS XA7

6FT X 8FT INDUCTION LOOP (E)

100FT OF 2 IN P-DUCT (E)

102FT OF 1¼ IN P-DUCT (E)

TYPE NO. 3 CABINET ON TYPE "D" FOUNDATION (E)

16FT

53FT OF 1¼ IN. P-DUCT (E)

8FT FROM LIGHT STD. XA9

10FT BITUMINOUS SHOULDER

6FT X 6FT INDUCTION LOOPS IN LANES 2&3

33FT OF 2 IN GS CONDUIT PUSHED (E)

27FT OF 2IN. P-DUCT (E)

INSTALL 22 FT. OF 2 IN. GS. CONDUIT IN TRENCH

55FT OF 2 IN GS CONDUIT PUSHED (E)

HEAVY DUTY HANDHOLE (E)

5FT. BITUMINOUS SHOULDER

16FT

4FT BIT. SHOULDER

6FT X 8FT INDUCTION LOOP (E)

28FT OF 2 IN. G.S. CONDUIT PUSHED (E)

28FT OF 1¼ IN P-DUCT (E)

74FT OF 2 IN G.S. CONDUIT PUSHED (E)

135FT OF 1¼ IN. P-DUCT (E)

NOTE:

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SUMMARY OF QUANTITIES (THIS SHEET)		
DESCRIPTION	UNIT	QUANTITY
ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 18 4/C, TWISTED, SHIELDED	LF	1147
INDUCTION LOOP	LF	362

FILE NAME =	DESIGNED - GHT	REVISED -
...\Signals\prpln_ABC_C4_ts_07.dgn	DRAWN - TMB	REVISED -
USER NAME = jmejewski	CHECKED - MPM	REVISED -
PLOT DATE = 11/13/2009	DATE - 10/16/09	REVISED -

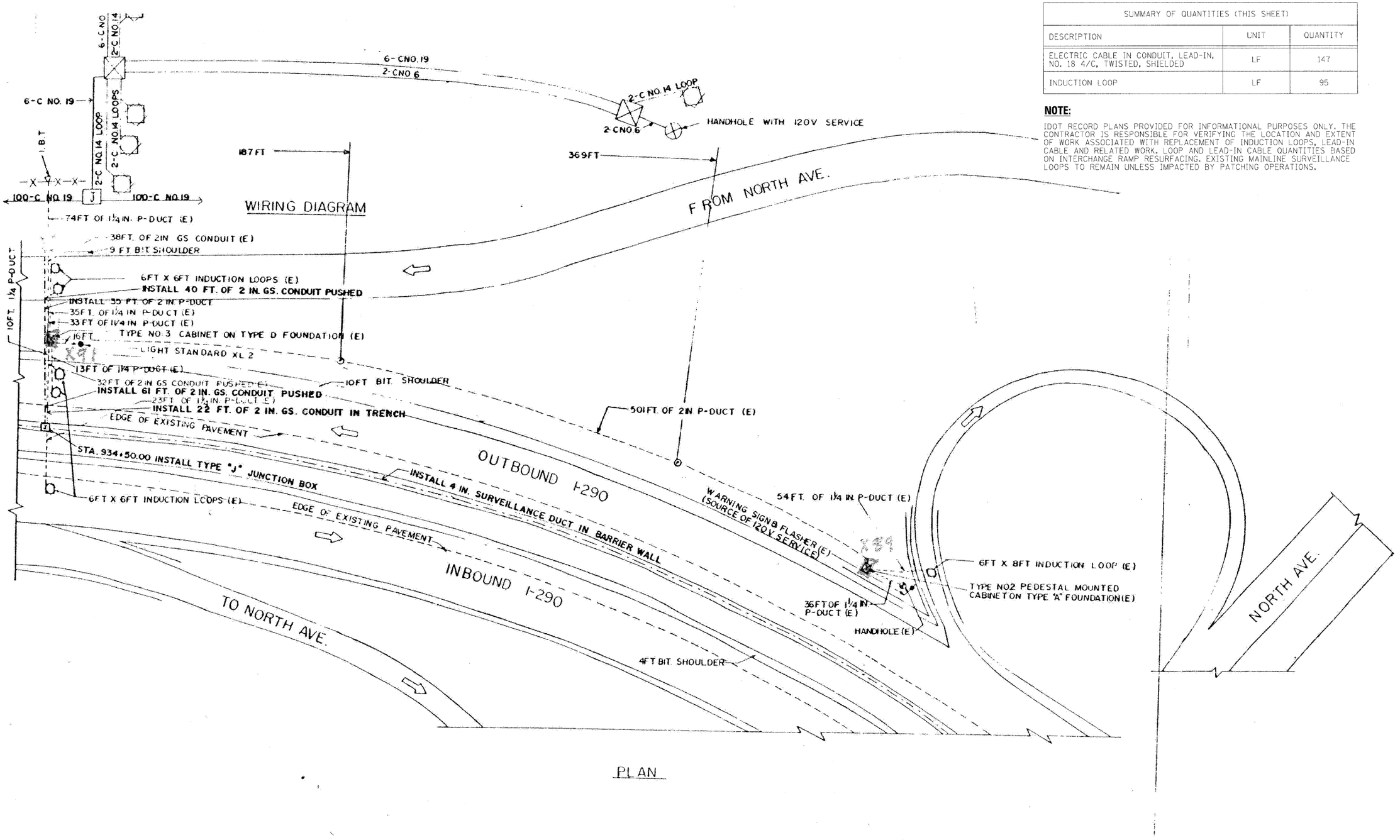
benesch

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TRAFFIC SURVEILLANCE LOOP
NORTH AVE INSTALLATION (1 OF 2)

SCALE: N.T.S. | SHEET NO. 5 OF 10 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	2009-099BR	COOK/DUPAGE	309	274
		CONTRACT NO. 60157		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



PLAN

SUMMARY OF QUANTITIES (THIS SHEET)		
DESCRIPTION	UNIT	QUANTITY
ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 18 4/C, TWISTED, SHIELDED	LF	147
INDUCTION LOOP	LF	95

NOTE:

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FILE NAME = ...\Signals\prp\n_ABC_C4_ts_38.dgn	DESIGNED - CHT	REVISED -
	DRAWN - TMB	REVISED -
USER NAME = jmajewski	CHECKED - MPM	REVISED -
PLOT DATE = 11/13/2009	DATE - 10/16/09	REVISED -

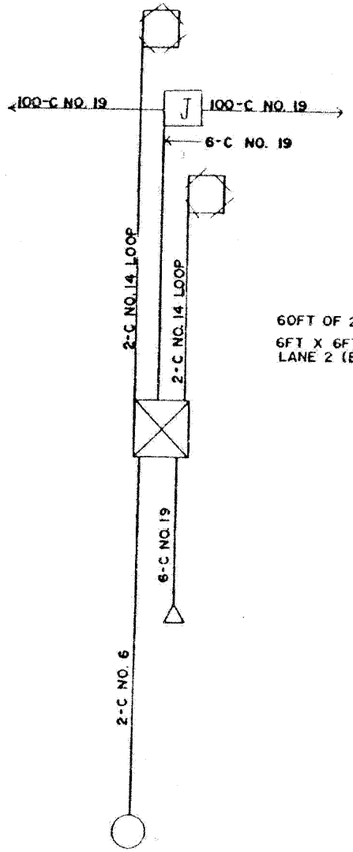
benesch

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

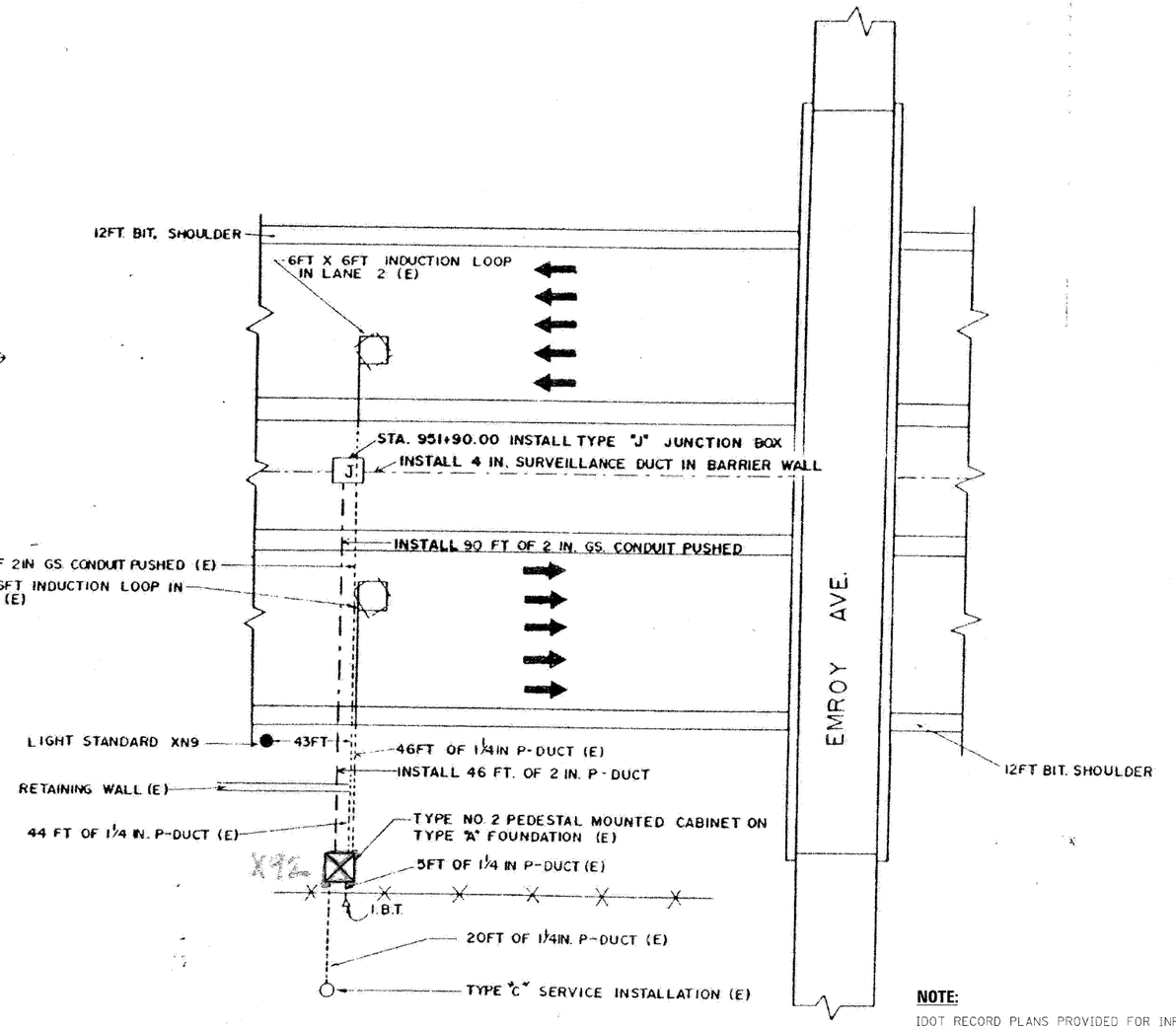
TRAFFIC SURVEILLANCE LOOP
NORTH AVE INSTALLATION (2 OF 2)

SCALE: N.T.S. | SHEET NO. 6 OF 10 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	2009-099BR	COOK/DUPAGE	309	275
		CONTRACT NO. 60157		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



WIRING DIAGRAM



PLAN

NOTE:

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SUMMARY OF QUANTITIES (THIS SHEET)		
DESCRIPTION	UNIT	QUANTITY
ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 18 4/C, TWISTED, SHIELDED	LF	0
INDUCTION LOOP	LF	0

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	DRAWN - TMB	REVISED -
USER NAME = jmajewski	CHECKED - MPM	REVISED -
PLOT DATE = 1/13/2009	DATE - 10/16/09	REVISED -

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TRAFFIC SURVEILLANCE LOOP
EMROY AVE INSTALLATION

SCALE: N.T.S. | SHEET NO. 7 OF 10 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	2009-099BR	COOK/DUPAGE	309	276
		CONTRACT NO. 60157		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

SUMMARY OF QUANTITIES (THIS SHEET)		
DESCRIPTION	UNIT	QUANTITY
ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 18 4/C, TWISTED, SHIELDED	LF	144
INDUCTION LOOP	LF	30

NOTE:

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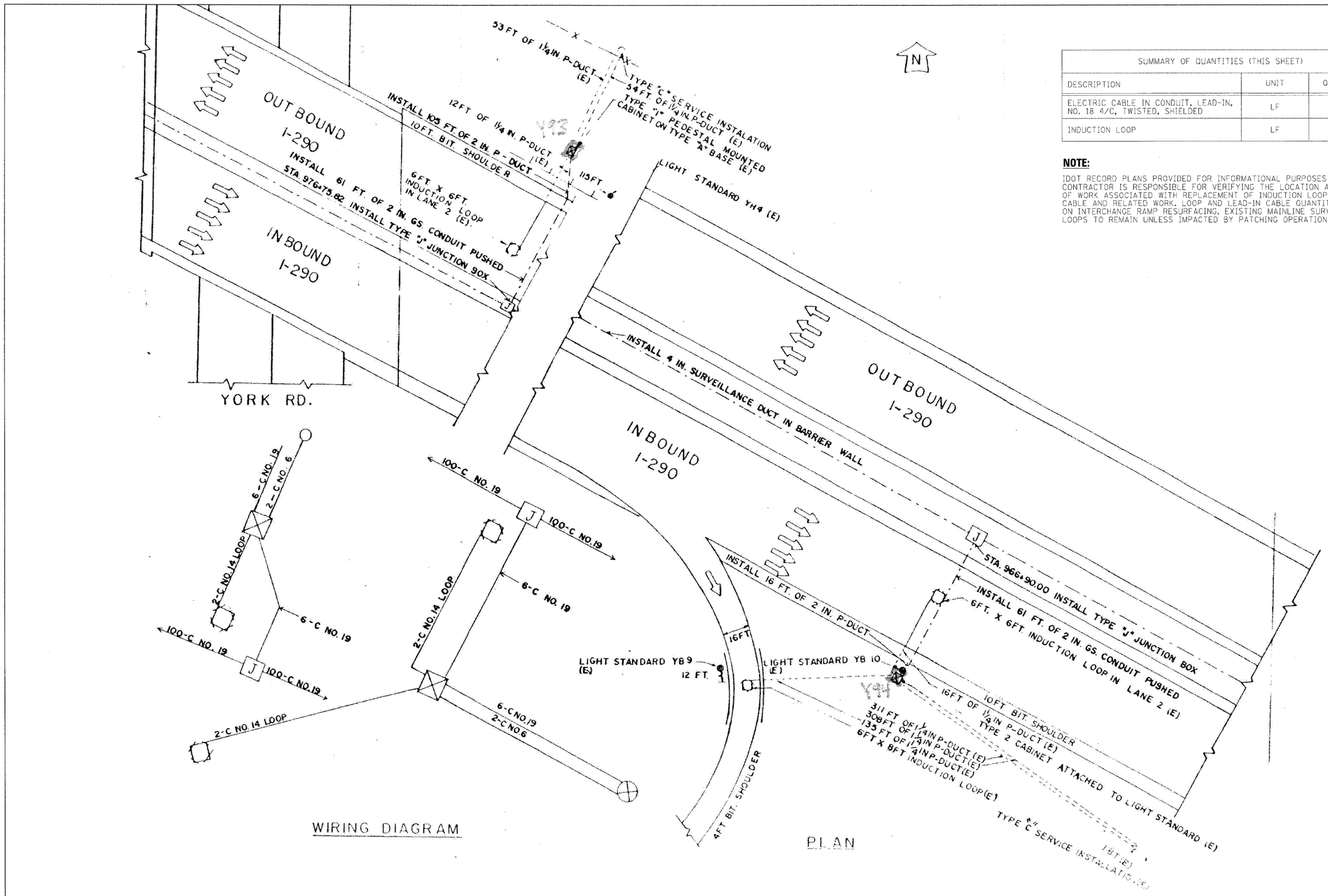

WIRING DIAGRAM

PLAN

FILE NAME = ...\Signals\prelm_ABC_C4_ts_10.dgn	DESIGNED - GHT	REVISED -
	DRAWN - TMB	REVISED -
USER NAME = jmajewski	CHECKED - MPM	REVISED -
PLOT DATE = 11/3/2009	DATE - 10/16/09	REVISED -

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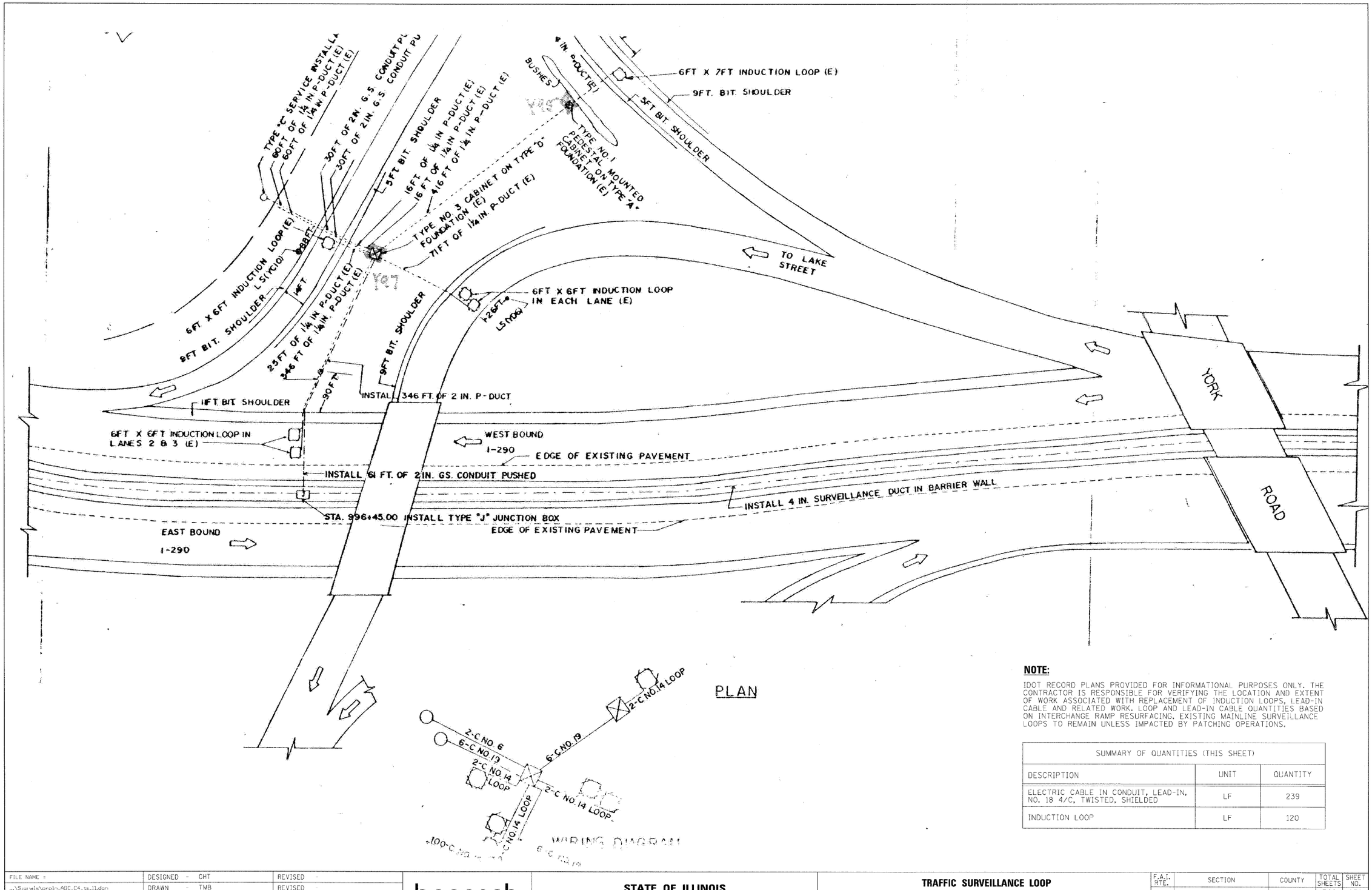
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TRAFFIC SURVEILLANCE LOOP
LAKE ST INSTALLATION

SCALE: N.T.S. | SHEET NO. 8 OF 10 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	2009-099BR	COOK/DUPAGE	309	277
		CONTRACT NO. 60157		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



PLAN

NOTE:

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SUMMARY OF QUANTITIES (THIS SHEET)		
DESCRIPTION	UNIT	QUANTITY
ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 18 4/C, TWISTED, SHIELDED	LF	239
INDUCTION LOOP	LF	120

FILE NAME = ...\Signals\prpln_ABC_C4_ts_11.dgn	DESIGNED - GHT	REVISED -
	DRAWN - TMB	REVISED -
USER NAME = jmajewski	CHECKED - MPM	REVISED -
PLOT DATE = 11/13/2009	DATE - 10/16/09	REVISED -

benesch

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TRAFFIC SURVEILLANCE LOOP
YORK RD INSTALLATION (1 OF 2)

SCALE: N.T.S. | SHEET NO. 9 OF 10 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	2009-099BR	COOK/DUPAGE	309	278
		CONTRACT NO. 60157		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

NOTE:

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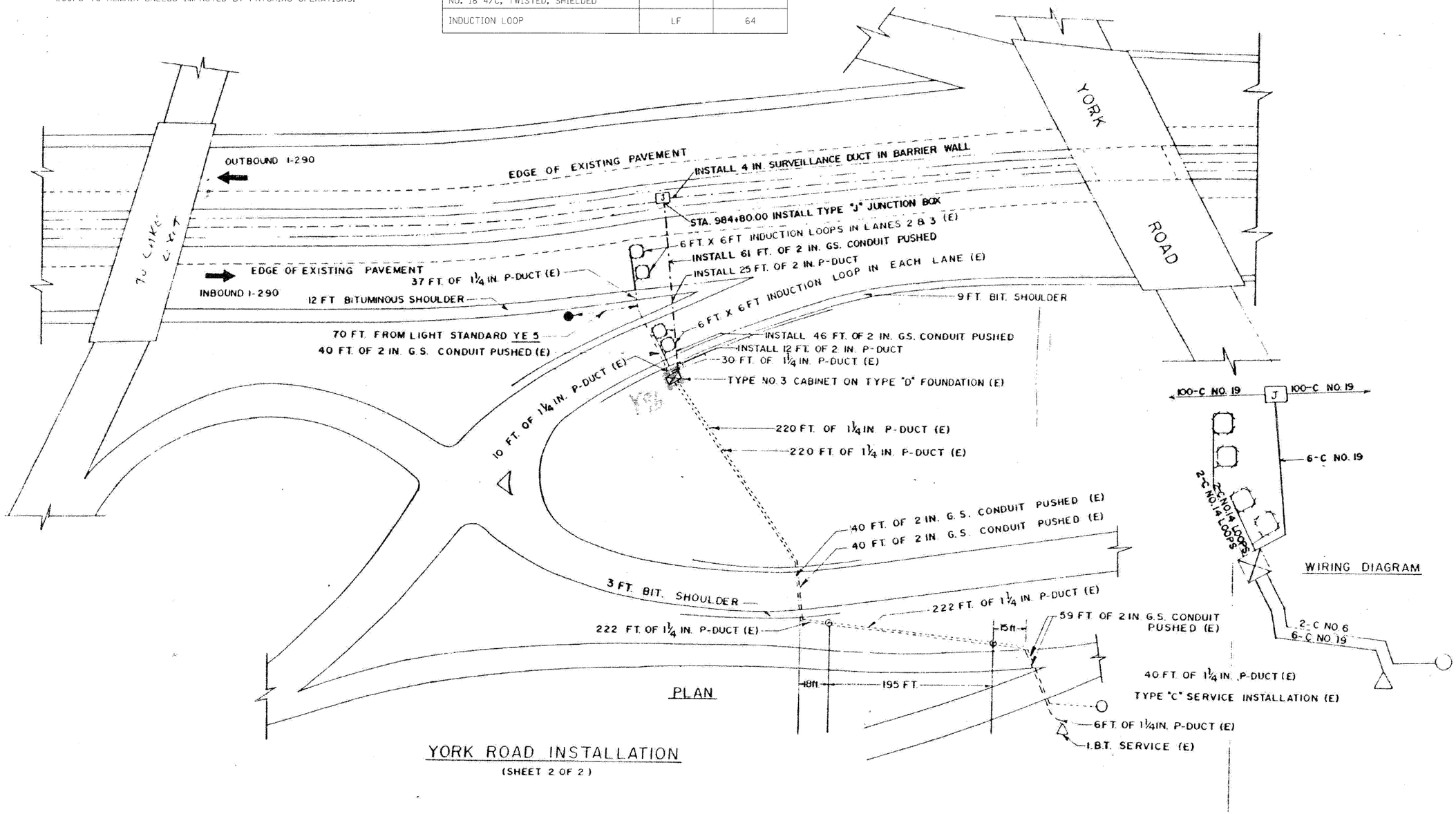
SUMMARY OF QUANTITIES (THIS SHEET)		
DESCRIPTION	UNIT	QUANTITY
ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 18 4/C, TWISTED, SHIELDED	LF	78
INDUCTION LOOP	LF	64

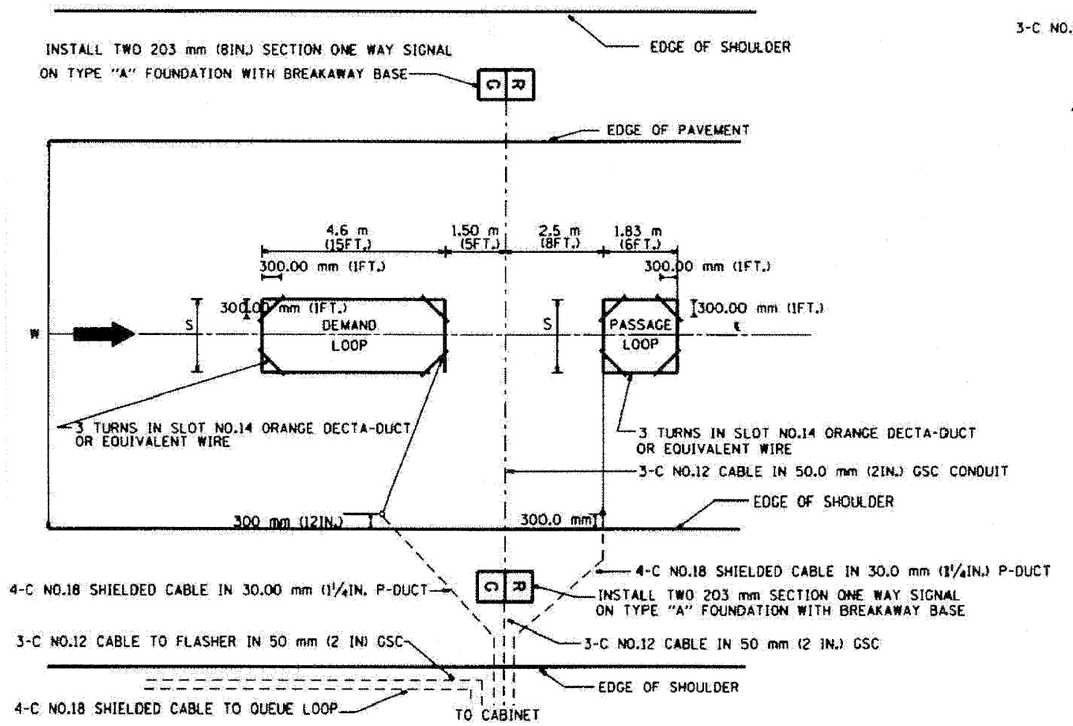


YORK ROAD INSTALLATION

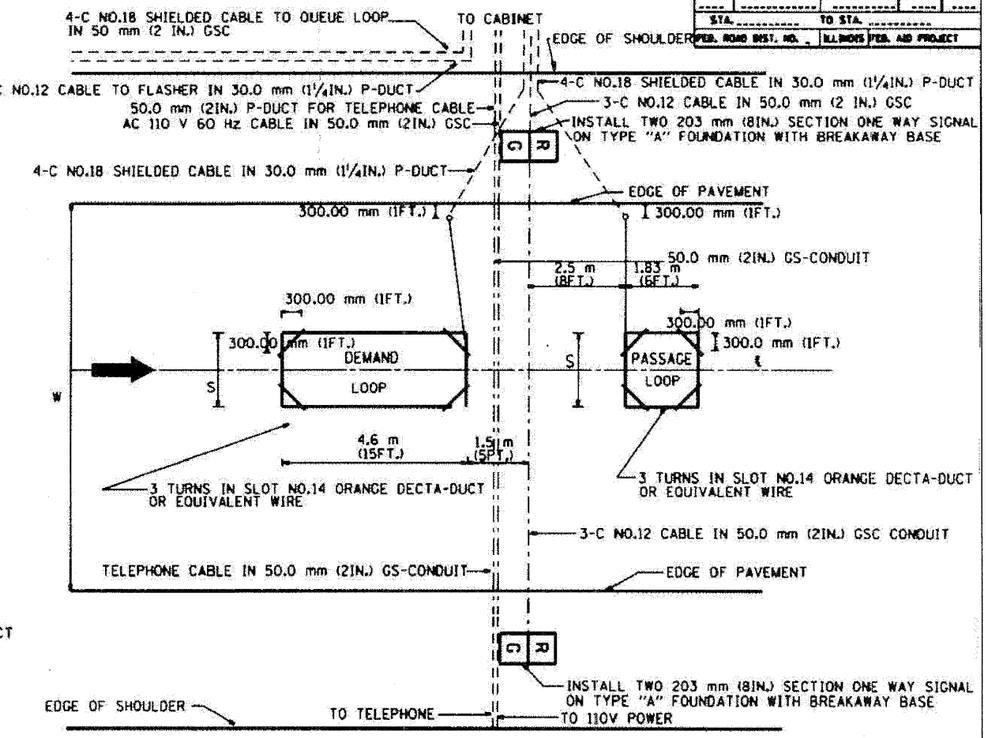
(SHEET 2 OF 2)

FILE NAME = ...\Signals\proln_ABC_C4_ts_12.dgn	DESIGNED - GHT	REVISED -	benesch	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	TRAFFIC SURVEILLANCE LOOP YORK RD INSTALLATION (2 OF 2)
USER NAME = jmajewski	DRAWN - TMB	REVISED -			SCALE: N.T.S. SHEET NO. 10 OF 10 SHEETS STA. TO STA.
PLOT DATE = 11/13/2009	CHECKED - MPM	REVISED -			
	DATE - 10/16/09	REVISED -			

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	2009-099BR	COOK/DUPAGE	309	279
		CONTRACT NO. 60157		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

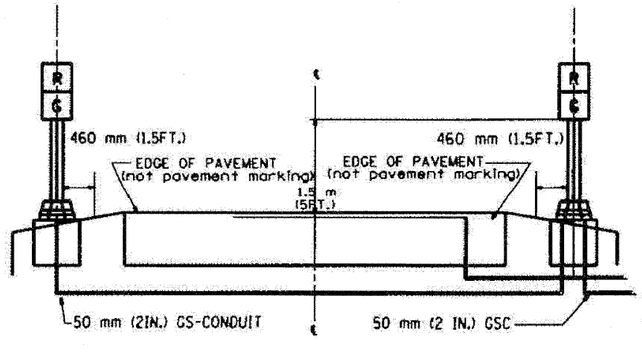


TYPICAL SIGNAL AND LOOP LAYOUT (TYPE I)

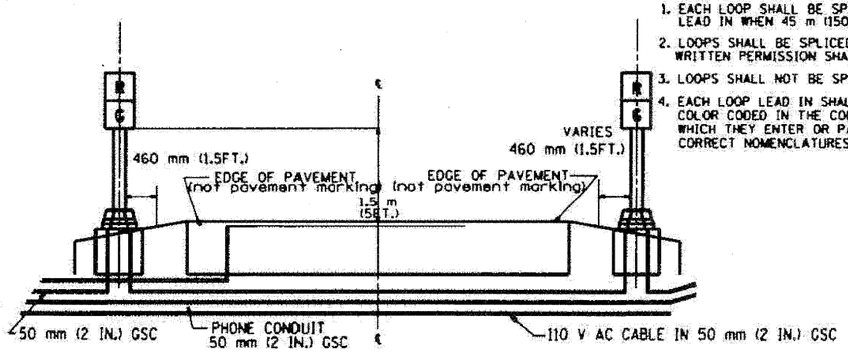


TYPICAL SIGNAL AND LOOP LAYOUT (TYPE II)

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.

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')

REVISIONS	
NAME	DATE
R.L.	6/94
T.C.	3/94
R.L.	2/94

ILLINOIS DEPARTMENT OF TRANSPORTATION
TRAFFIC SYSTEMS CENTER

TYPICAL RAMP METERING INSTALLATION TYPE I & II

(FOR RAMPS WITHOUT CURBS & GUTTERS)

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

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

FILE NAME =	DESIGNED - GHT	REVISED -
...\prpln_ABC_C4_TS_DET_01.dgn	DRAWN - TMB	REVISED -
USER NAME = jmajewski	CHECKED - MPM	REVISED -
PLOT DATE = 11/13/2009	DATE - 10/16/09	REVISED -

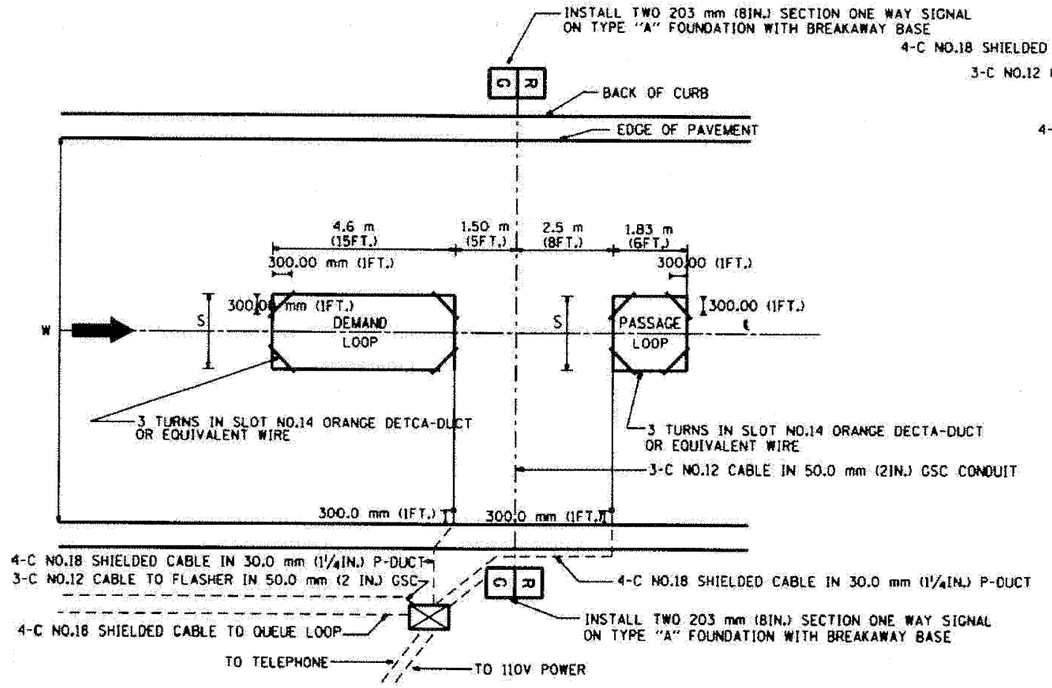
benesch

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

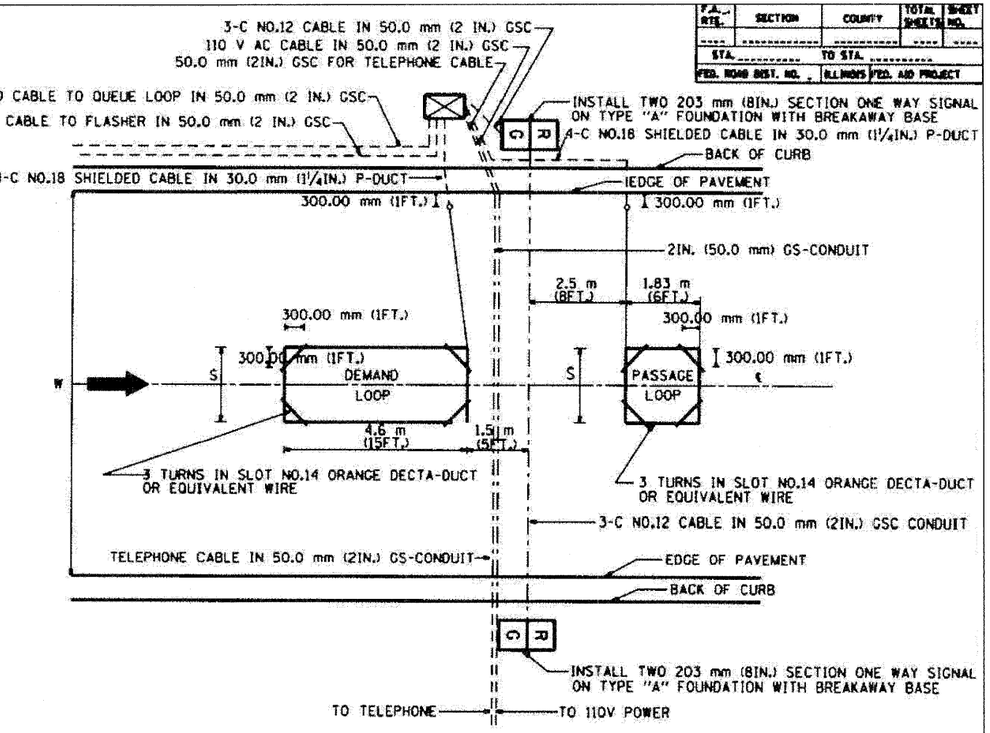
TRAFFIC SYSTEMS CENTER
DETAIL SHEETS

SCALE: N.T.S. | SHEET NO. 1 OF 14 SHEETS | STA. | TO STA.

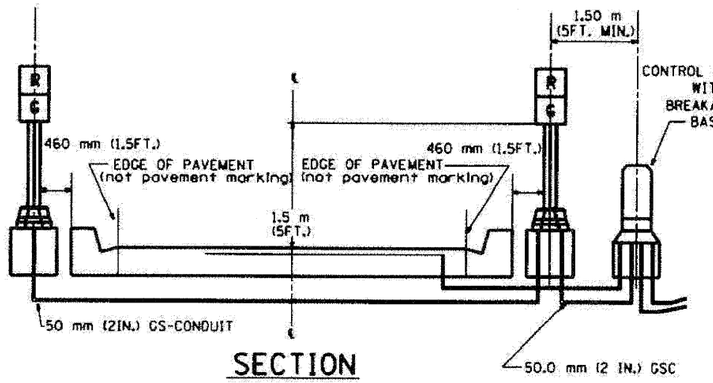
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	2009-099BR	COOK/DUPAGE	309	280
		CONTRACT NO. 60157		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



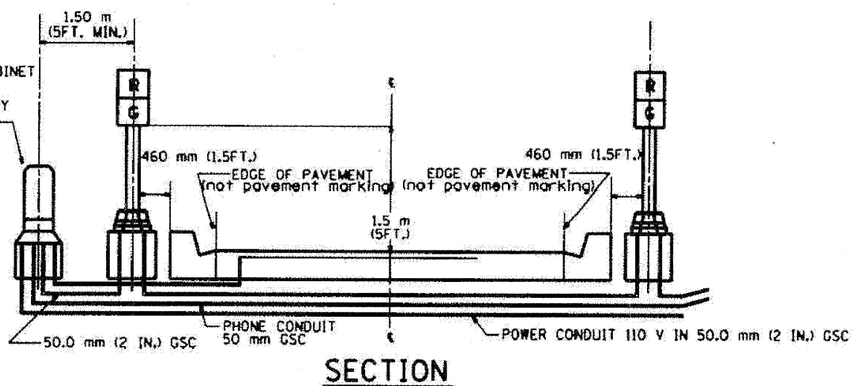
TYPICAL SIGNAL AND LOOP LAYOUT (TYPE I)



TYPICAL SIGNAL AND LOOP LAYOUT (TYPE II)



SECTION



SECTION

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')

NOTES

1. EACH LOOP SHALL BE SPLICED TO A 4-C NO.18 TWISTED SHIELDED LEAD IN WHEN 150FT. (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	
NAME	DATE
R.L.	6/94
T.C.	9/98
R.L.	2/99

ILLINOIS DEPARTMENT OF TRANSPORTATION
TRAFFIC SYSTEMS CENTER

TYPICAL RAMP METERING INSTALLATION TYPE I & II (WITH CURB & GUTTER)

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

TRAFFIC SYSTEMS CENTER (TY-ITSC-400#2)

FILE NAME = ...\prpln_ABC_C4_TS_DET_02.dgn	DESIGNED - GHT	REVISED -
USER NAME = jmajewski	DRAWN - TMB	REVISED -
PLOT DATE = 11/13/2009	CHECKED - MPM	REVISED -
	DATE - 10/16/09	REVISED -

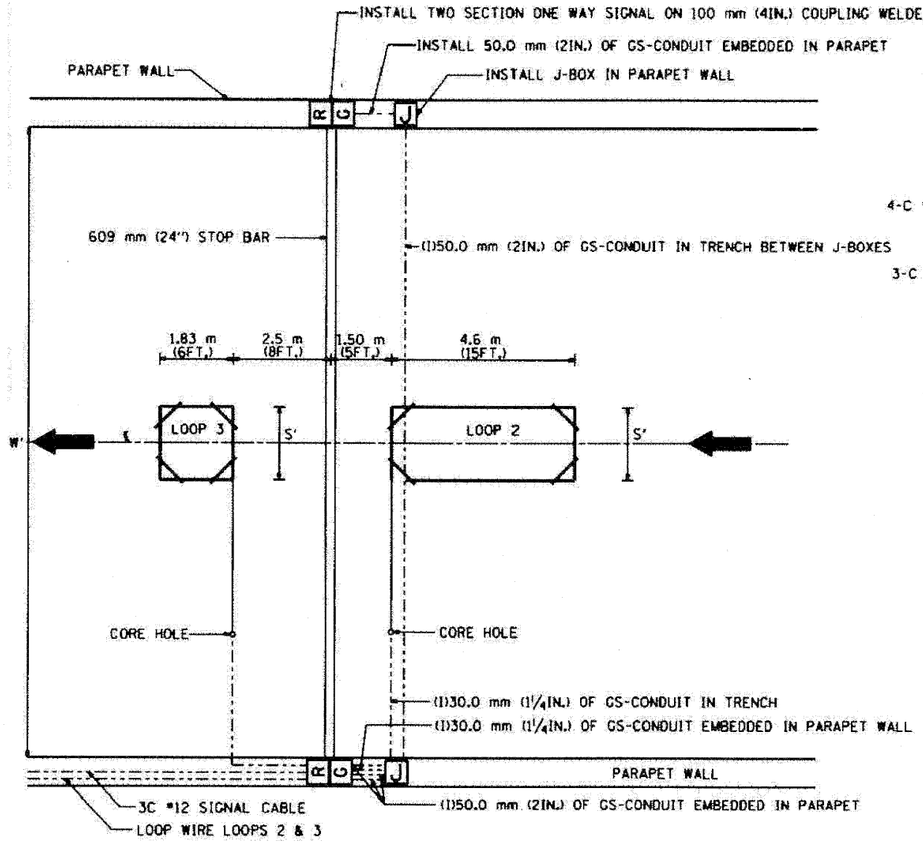
benesch

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

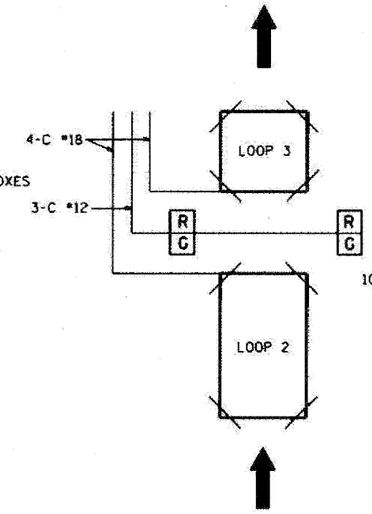
TRAFFIC SYSTEMS CENTER
DETAIL SHEETS

SCALE: N.T.S. | SHEET NO. 2 OF 14 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	2009-099BR	COOK/DUPAGE	309	281
		CONTRACT NO. 60157		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



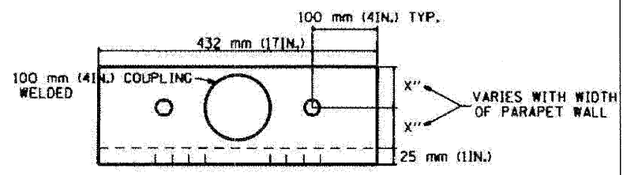
TYPICAL LOOP LAYOUT



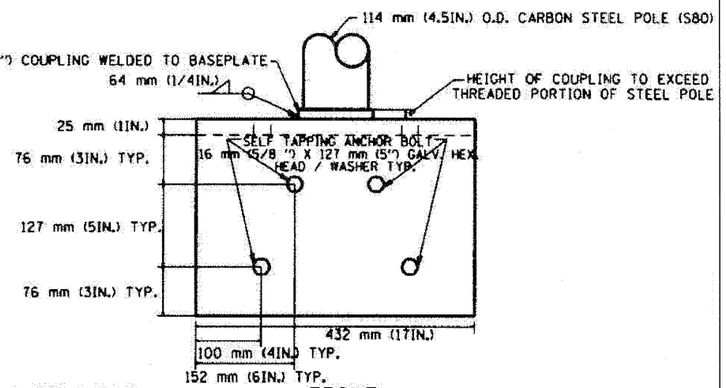
WIRING DIAGRAM

NOTES

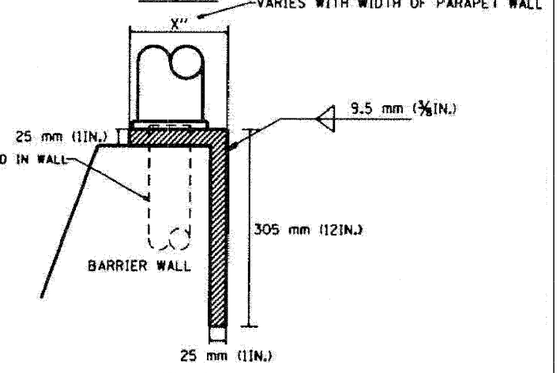
1. EACH LOOP SHALL BE SPLICED TO A 4-C NO.18 TWISTED SHIELDED LEAD IN WHEN 45 m (150FT.) OR MORE FROM CABINET.
2. LOOPS SHALL BE SPLICED IN HANDHOLES OR J-BOX ONLY, OTHERWISE WRITTEN PERMISSION SHALL BE OBTAINED FROM TSC ENGINEER.
3. LOOPS SHALL NOT BE SPLICED IN SERIES.
4. EACH LOOP LEAD IN SHALL BE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



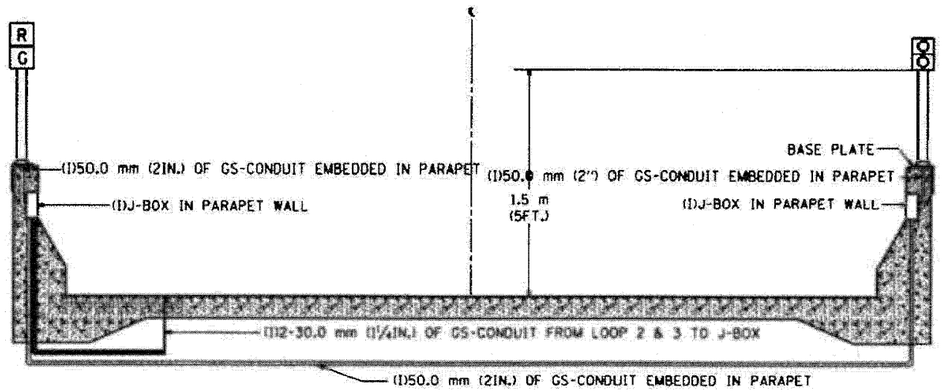
TOP



FRONT



SIDE



SECTION

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')

REVISIONS	
NAME	DATE
R.L.	8/94
R.L.	2/96
T.C.	9/96
R.L.	2/98

ILLINOIS DEPARTMENT OF TRANSPORTATION
TRAFFIC SYSTEMS CENTER

TYPICAL RAMP METERING TYPE 3 BARRIER WALL INSTALLATION

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

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

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

FILE NAME = ...\prpln_ABC_C4_TS_DET_03.dgn	DESIGNED - GHT	REVISED -
USER NAME = jmajewski	DRAWN - TMB	REVISED -
PLOT DATE = 11/13/2009	CHECKED - MPM	REVISED -
	DATE - 10/16/09	REVISED -

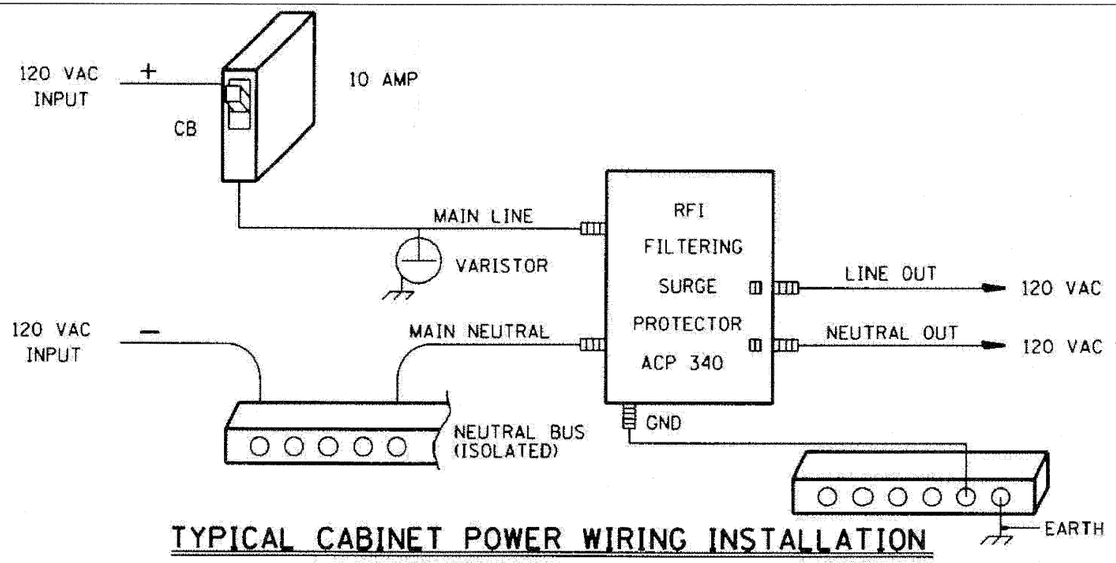
benesch

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

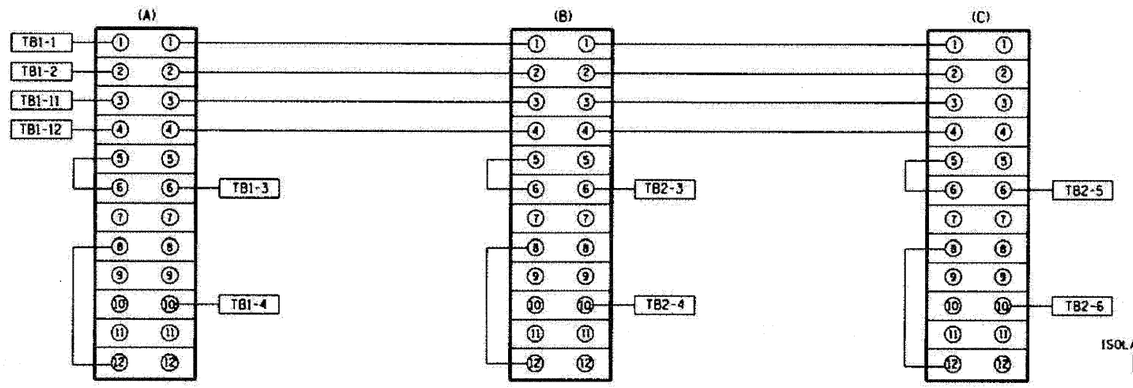
TRAFFIC SYSTEMS CENTER
DETAIL SHEETS

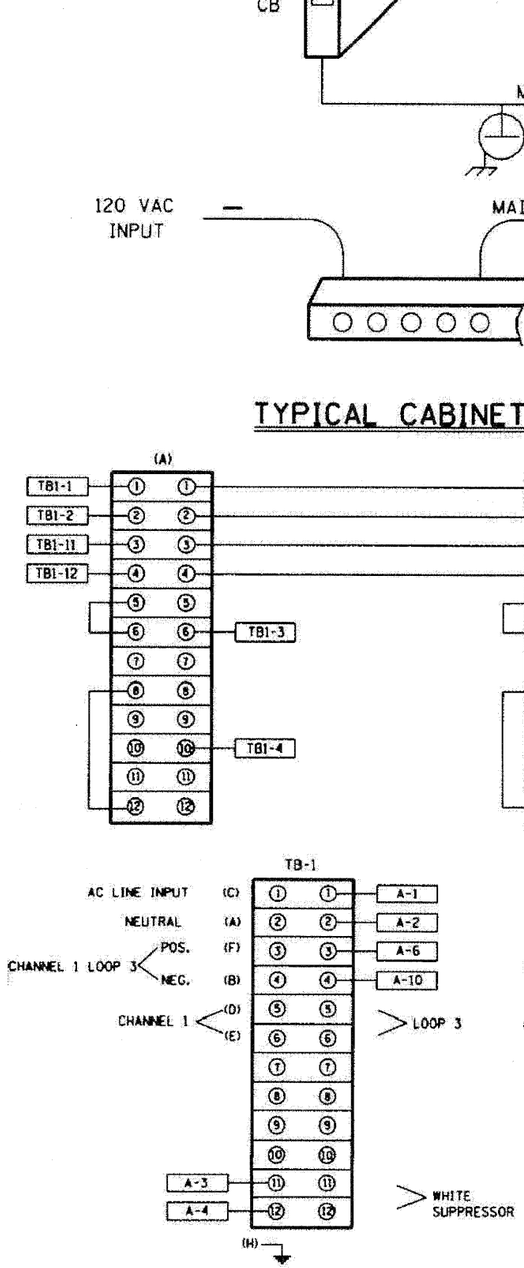
SCALE: N.T.S. | SHEET NO. 3 OF 14 SHEETS | STA. | TO STA.

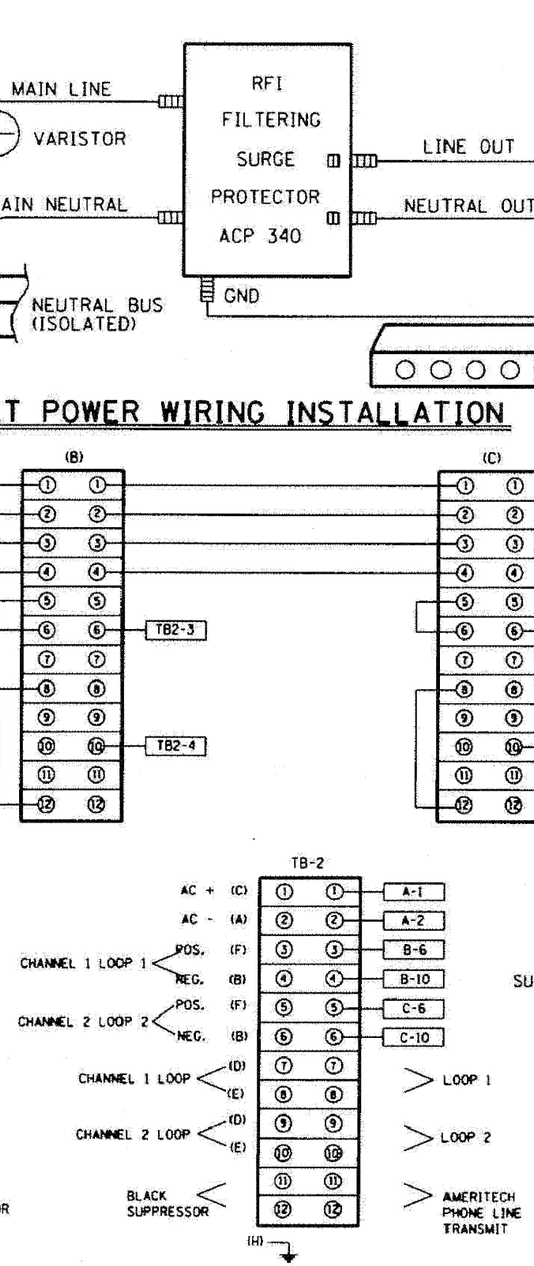
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	2009-099BR	COOK/DUPAGE	309	282
		CONTRACT NO. 60157		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

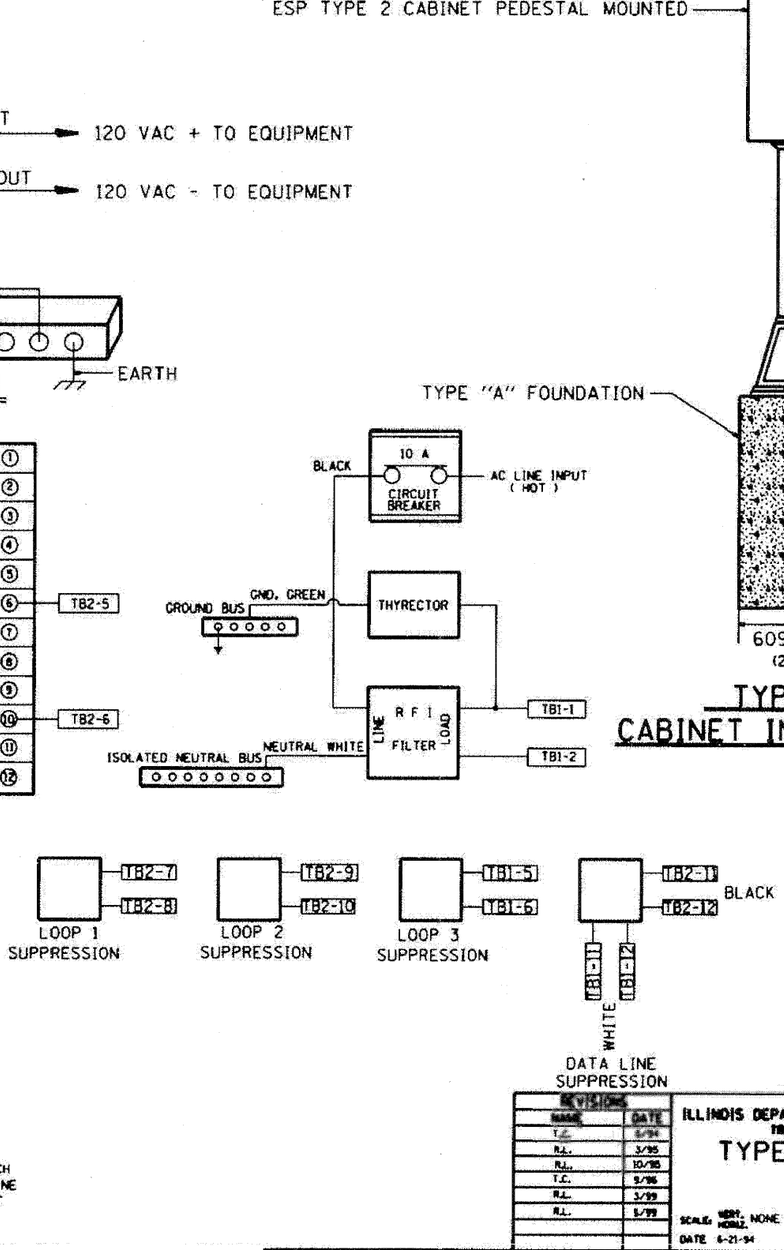


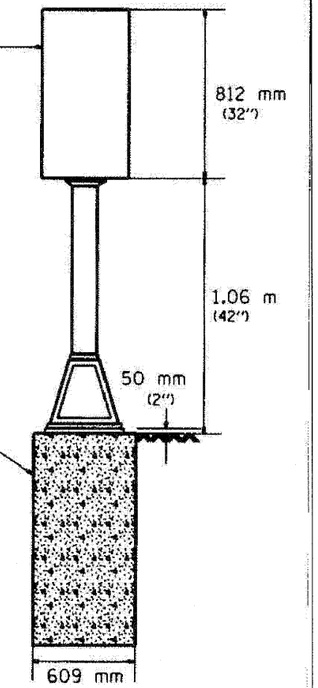
TYPICAL CABINET POWER WIRING INSTALLATION











TYPE 2 CABINET INSTALLATION

REVISIONS	
NAME	DATE
T.C.	5/94
R.L.	3/95
R.L.	10/95
T.C.	9/96
R.L.	3/99
R.L.	5/99

ILLINOIS DEPARTMENT OF TRANSPORTATION
TRAFFIC SYSTEMS CENTER

TYPE II CABINET WIRING

SCALE: VERT. NONE HORIZ. | DRAWN BY C.M.
DATE 6-21-94 | CHECKED BY T.C.

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

FILE NAME =	DESIGNED - GHT	REVISED -
...\p-pln_ABC_C4_TS_DET_04.dgn	DRAWN - TMB	REVISED -
USER NAME = jmajews<	CHECKED - MPM	REVISED -
PLOT DATE = 11/13/2009	DATE - 10/16/09	REVISED -

benesch

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

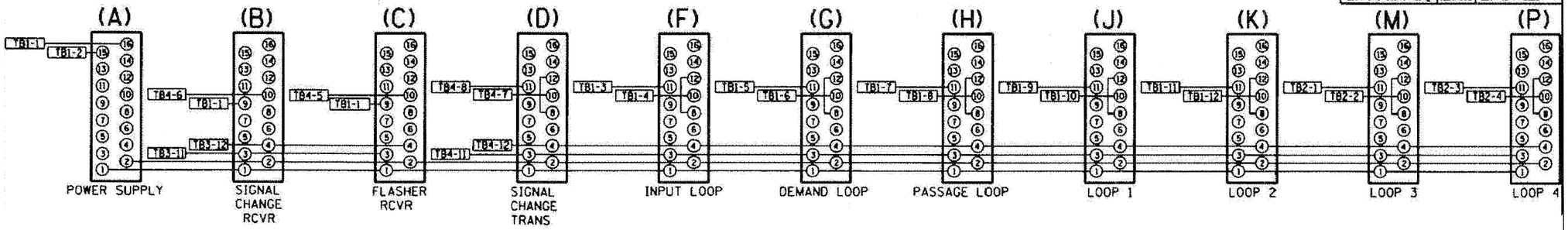
TRAFFIC SYSTEMS CENTER
DETAIL SHEETS

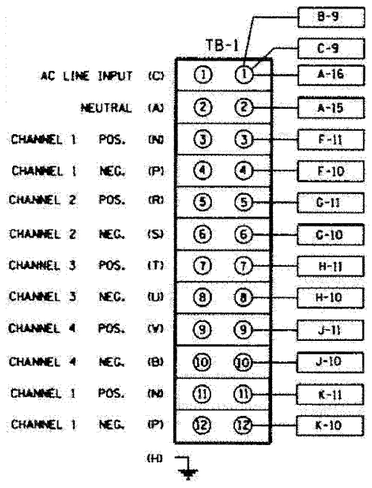
SCALE: N.T.S. | SHEET NO. 4 OF 14 SHEETS | STA. | TO STA.

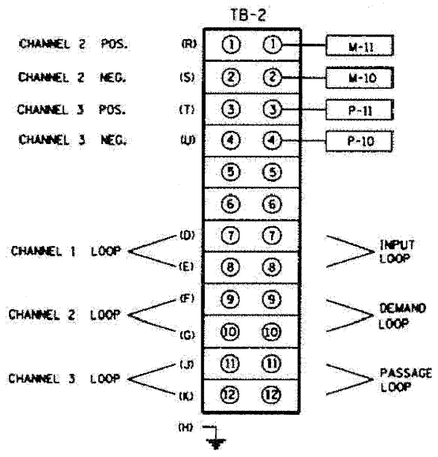
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	2009-099BR	COOK/DUPAGE	309	283
		CONTRACT NO. 60157		
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			

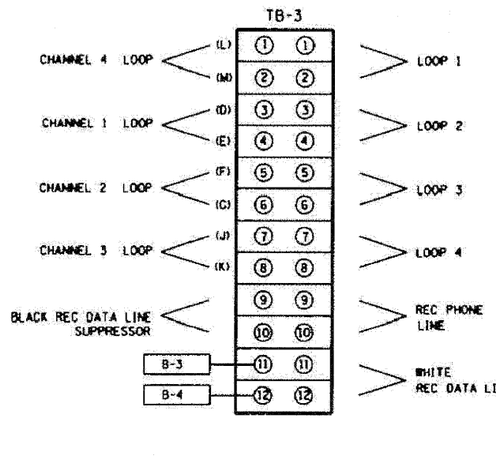
BACK VIEW OF TONE RACK

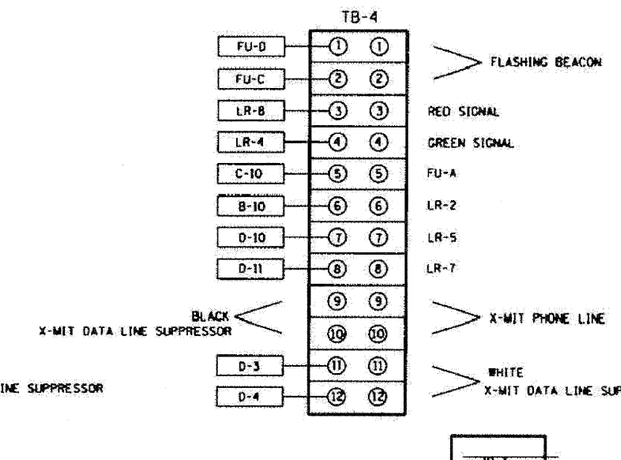
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
STA.		TO STA.		
FED. ROAD DIST. NO.	ALL MODES FED. AID PROJECT			

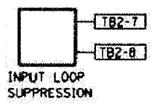


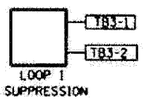


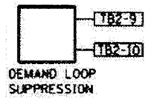


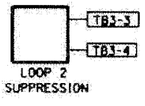


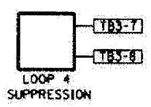


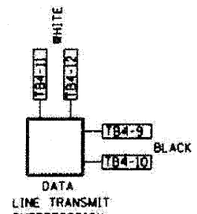


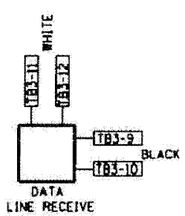


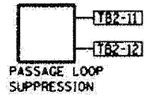


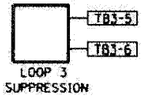


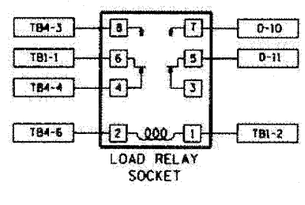


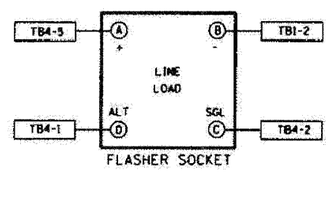


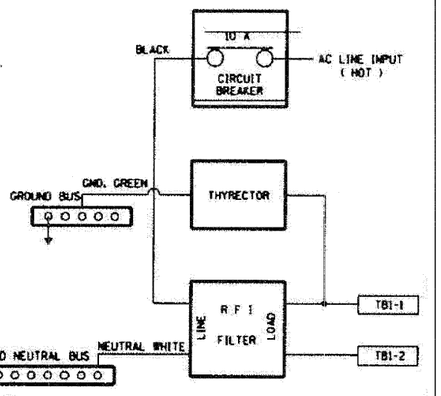












CABINET NO.

REVISIONS	
BY	DATE
T.C.	6/94
R.L.	5/95
R.L.	5/99

ILLINOIS DEPARTMENT OF TRANSPORTATION
TRAFFIC SYSTEMS CENTER

METERING CABINET WIRING DIAGRAM

SCALE: VERT. NONE HORIZ.
DRAWN BY C.M.
DATE 6/21/94
CHECKED BY T.C.

TRAFFIC SYSTEMS CENTER (TY-1TSC-400*8)

FILE NAME =	DESIGNED - GHT	REVISED -
...\proj\n_ABC_C4_TS_DE~.05.dgn	DRAWN - TMB	REVISED -
USER NAME = jmajewski	CHECKED - MPM	REVISED -
PLOT DATE = 10/13/2009	DATE - 10/16/09	REVISED -

benesch

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

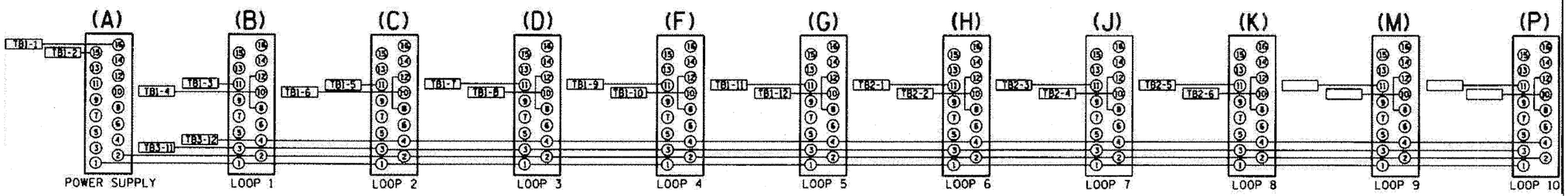
TRAFFIC SYSTEMS CENTER
DETAIL SHEETS

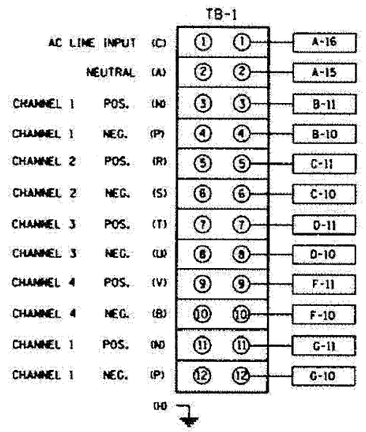
SCALE: N.T.S. | SHEET NO. 5 OF 14 SHEETS | STA. | TO STA.

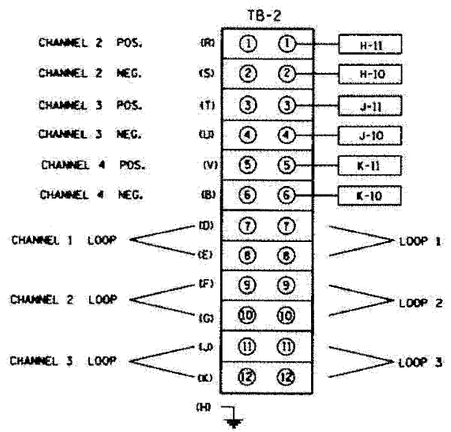
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	2009-099BR	COOK/DUPAGE	309	284
		CONTRACT NO. 60157		
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			

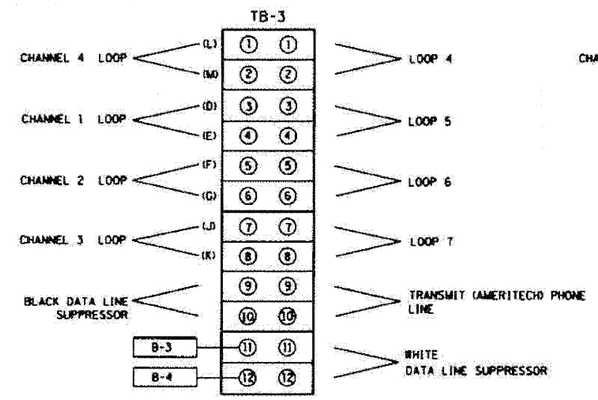
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
----	----------	----------	----	----
STA. ----------		TO STA. ----------		
FED. ROAD DIST. NO. -	ILLINOIS	FED. AID PROJECT		

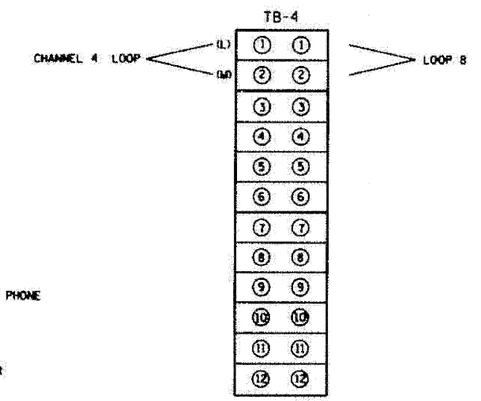
BACK VIEW OF TONE RACK

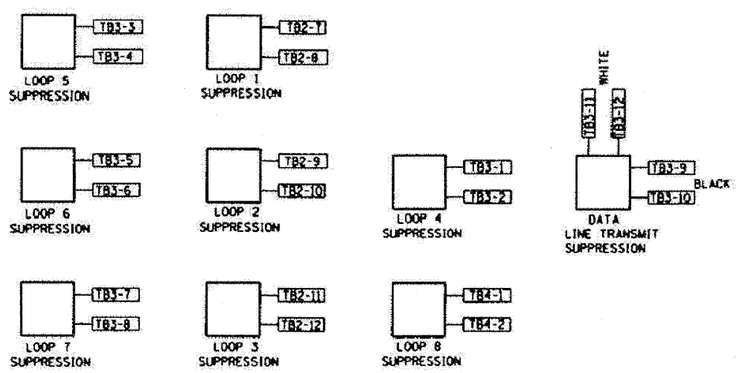


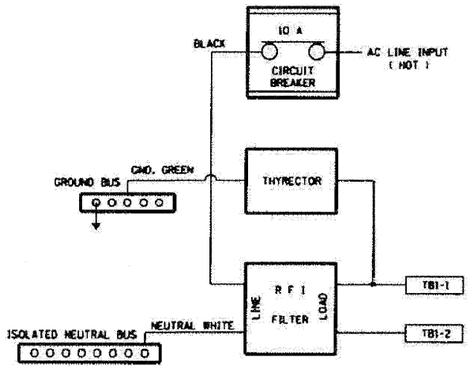












CABINET NO.

REVISIONS	
NAME	DATE
R.L.	2/98
R.L.	6/98

ILLINOIS DEPARTMENT OF TRANSPORTATION
TRAFFIC SYSTEMS CENTER

TYPE 3 CABINET WIRING DIAGRAM

SCALE: VERT. NONE HORIZ. — DRAWN BY C.M.
DATE 10/17/95 — CHECKED BY R.L.

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

FILE NAME = ...\proln.ABC_C4_TS_DET_26.dgn	DESIGNED - CHT	REVISED -
	DRAWN - TMB	REVISED -
USER NAME = jmajewski	CHECKED - MPM	REVISED -
PLOT DATE = 11/13/2009	DATE - 10/16/09	REVISED -

benesch

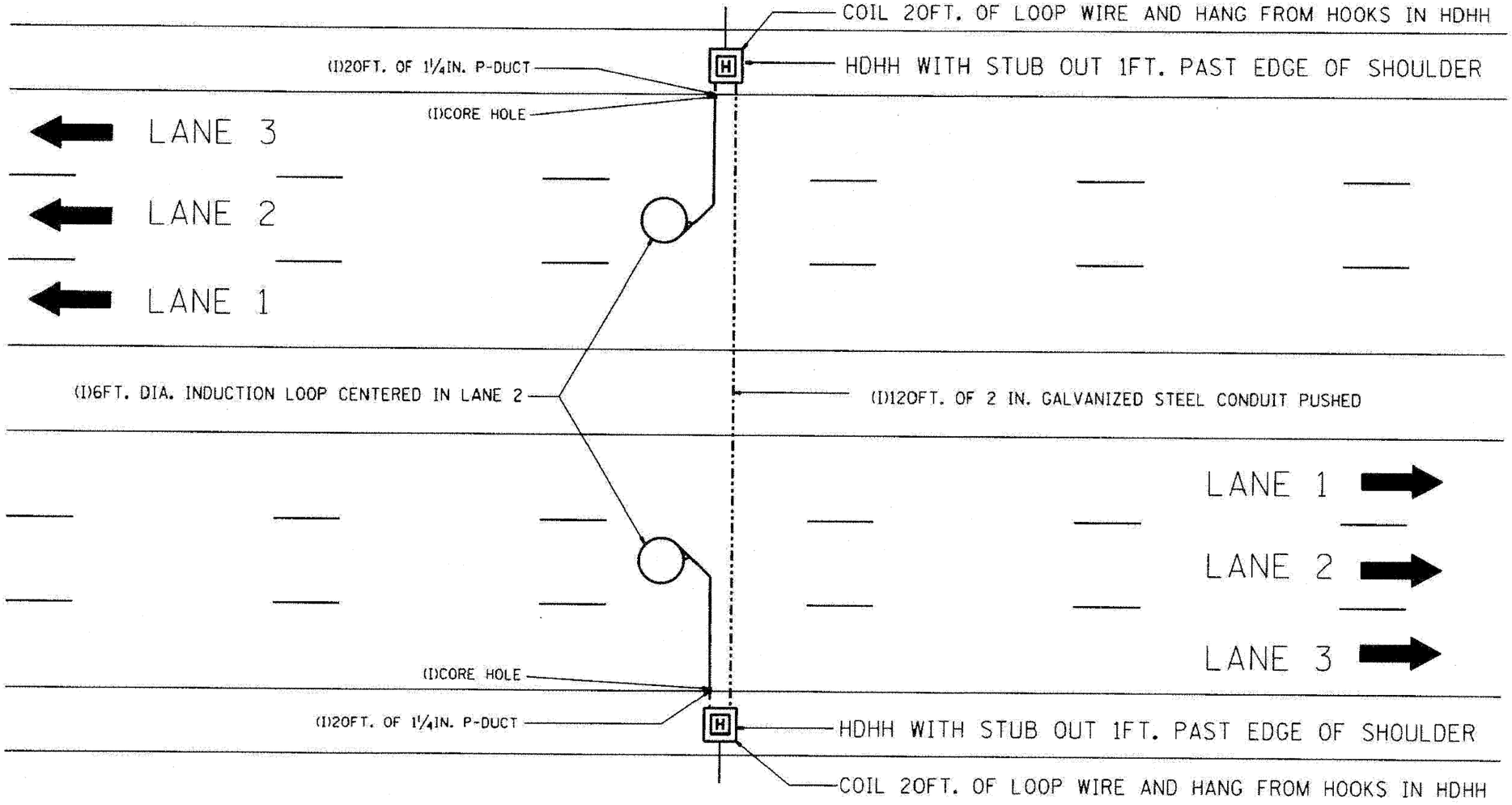
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TRAFFIC SYSTEMS CENTER
DETAIL SHEETS

SCALE: N.T.S. | SHEET NO. 6 OF 14 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	2009-099BR	COOK/DUPAGE	309	285
		CONTRACT NO. 60157		
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		



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	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

ONE LANE COUNT STATION

SCALE: VERT. NONE HORIZ. | DRAWN BY G.M.

DATE 01-31-07 | CHECKED BY J.G.

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

FILE NAME =	DESIGNED - GHT	REVISED -
...\prpln_ABC_C4_TS_DET_07.dgn	DRAWN - TMB	REVISED -
USER NAME = jmajewski	CHECKED - MPM	REVISED -
PLOT DATE = 11/13/2009	DATE - 10/16/09	REVISED -

benesch

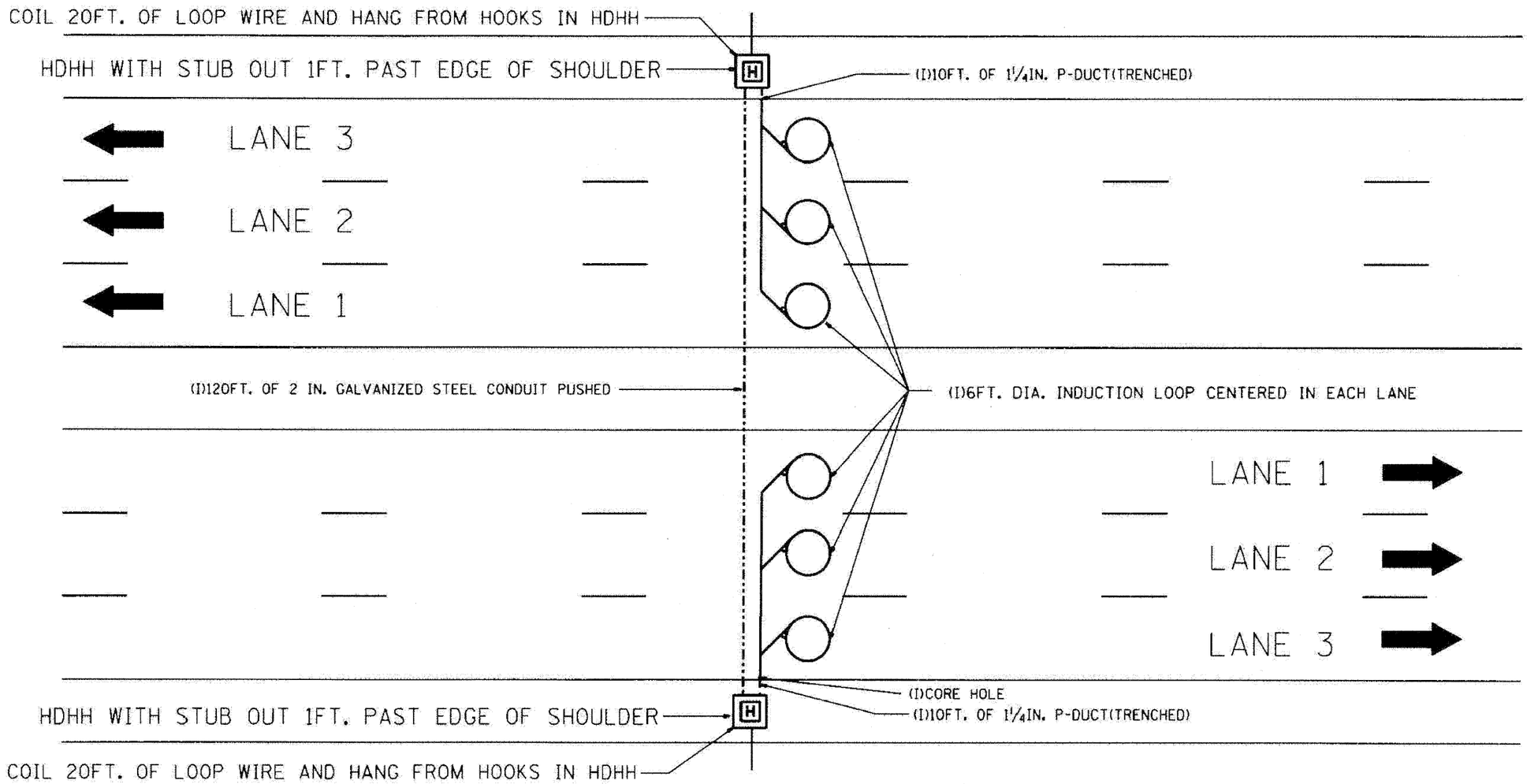
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TRAFFIC SYSTEMS CENTER
DETAIL SHEETS

SCALE: N.T.S. | SHEET NO. 7 OF 14 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	2009-099BR	COOK/DUPAGE	309	286
		CONTRACT NO. 60157		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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 NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

3 LANE COUNT STATION

SCALE: VERT. NONE HORIZ. | DRAWN BY C.M.

DATE 01-31-07 | CHECKED BY J.C.

TRAFFIC SYSTEMS CENTER (TY-ITSC-400*32)

FILE NAME =	DESIGNED - GHT	REVISED -
...\prpln_ABC_C4_TS_DET_08.dgn	DRAWN - TMB	REVISED -
USER NAME = jmajewski	CHECKED - MPM	REVISED -
PLOT DATE = 1/13/2009	DATE - 10/16/09	REVISED -

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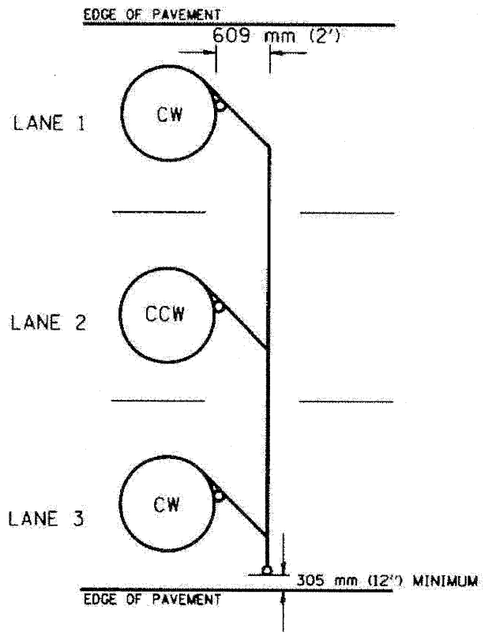
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TRAFFIC SYSTEMS CENTER
DETAIL SHEETS

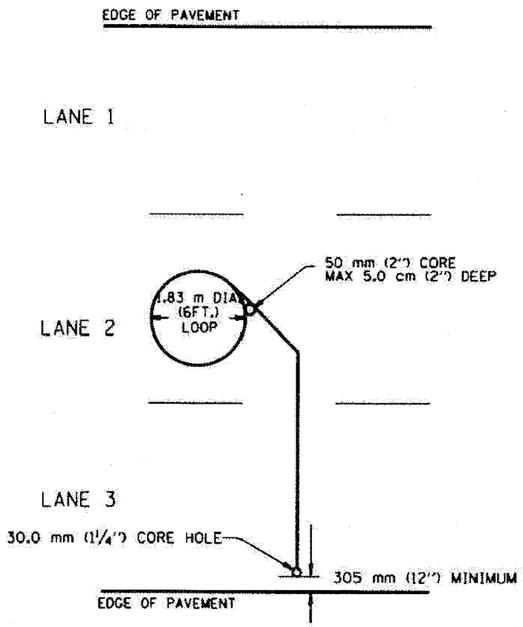
SCALE: N.T.S. | SHEET NO. 8 OF 14 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	2009-099BR	COOK/DUPAGE	309	287
		CONTRACT NO. 60157		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	

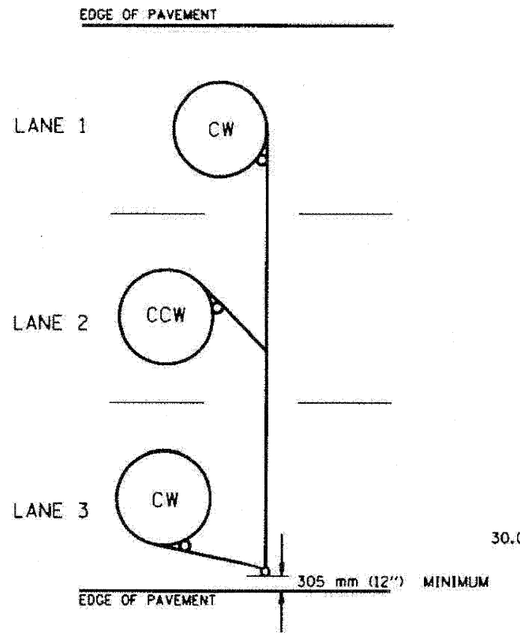
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
----	----------	----------	----	----
STA. ----------		TO STA. ----------		
FED. ROAD DIST. NO. _		ILLINOIS	FED. AID PROJECT	



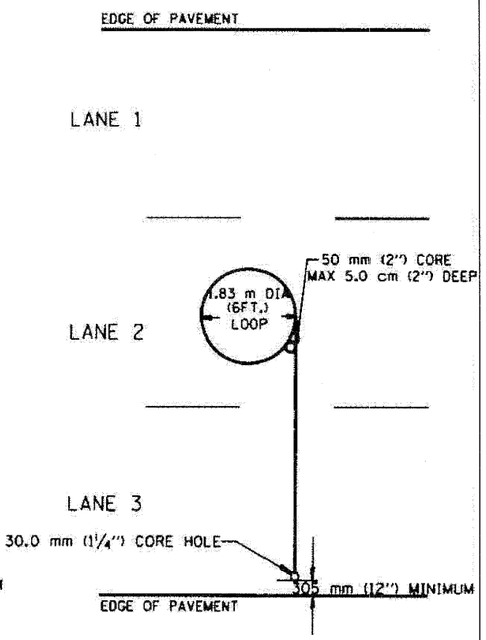
TYPICAL 1.83 m (6FT.) DIA. INDUCTION LOOP CORE DRILL LAYOUT FOR MULTIPLE LANE ROADWAY



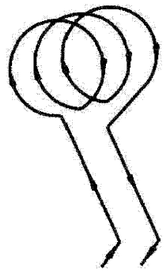
TYPICAL 1.83 m (6') DIA. INDUCTION LOOP LAYOUT FOR LANE 2



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

ILLINOIS DEPARTMENT OF TRANSPORTATION
TRAFFIC SYSTEMS CENTER

EXISTING ROUND LOOP INSTALLATION

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

TRAFFIC SYSTEMS CENTER (TY-ITSC-418*1)

FILE NAME =	DESIGNED - GHT	REVISED -
...\prpln_ABC_C4_TS_DET_09.dgn	DRAWN - TMB	REVISED -
USER NAME = jmajewski	CHECKED - MPM	REVISED -
PLOT DATE = 11/13/2009	DATE - 10/16/09	REVISED -

benesch

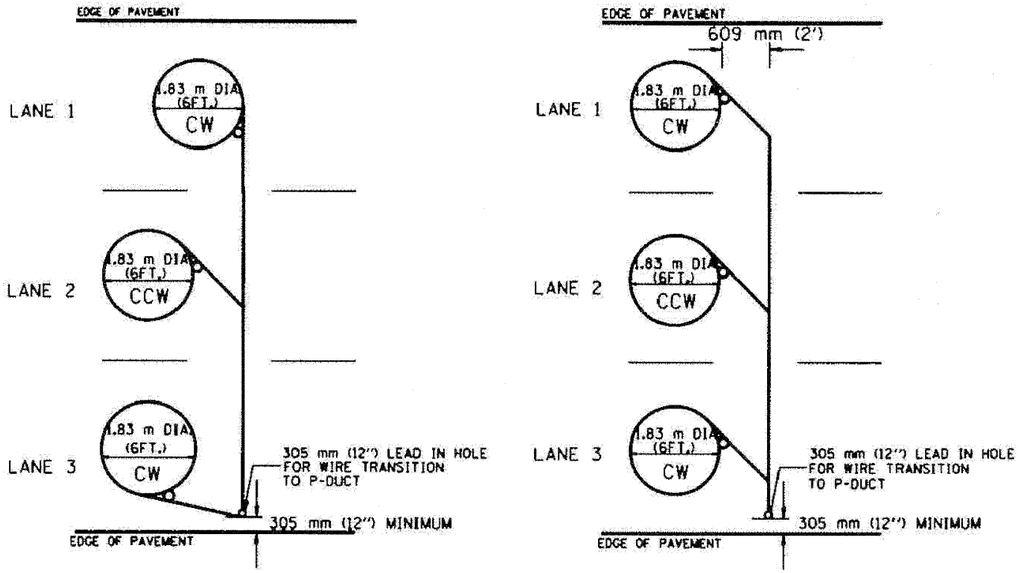
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TRAFFIC SYSTEMS CENTER
DETAIL SHEETS

SCALE: N.T.S. | SHEET NO. 9 OF 14 SHEETS | STA. | TO STA.

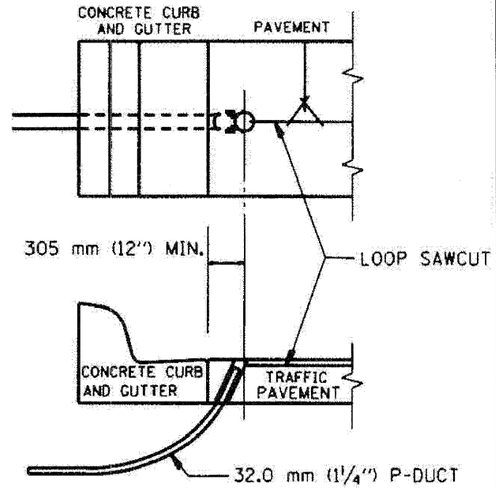
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	2009-099BR	COOK/DUPAGE	309	288
		CONTRACT NO. 60157		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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

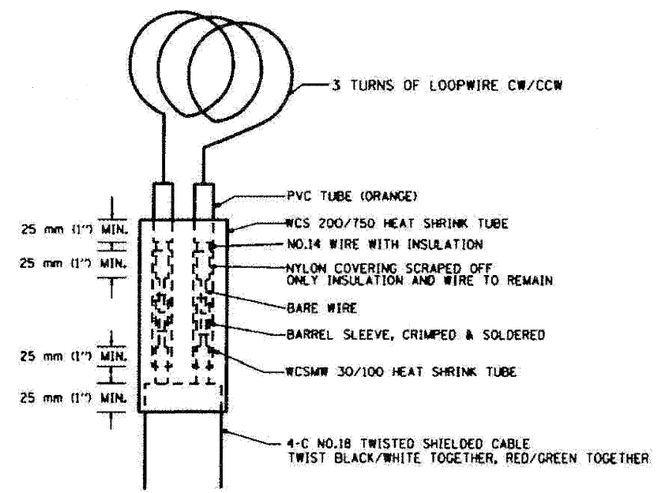


TYPICAL 1.83 m (6FT.) DIA. INDUCTION LOOP CORE DRILL
LAYOUT FOR MULTIPLE LANE ROADWAY

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



CURB AND GUTTER LOOP LEAD-IN
TRANSITION DETAIL



LOOP SPLICING REQUIREMENTS

NOTES

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

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

ILLINOIS DEPARTMENT OF TRANSPORTATION
TRAFFIC SYSTEMS CENTER

EXISTING ROUND INDUCTION LOOP TYPICALS

SCALE: HORZ. NONE — DRAWN BY G.W.
DATE 5-22-94 — CHECKED BY R.L.

TRAFFIC SYSTEMS CENTER (TY-ITSC-418#2)

FILE NAME =	DESIGNED - GHT	REVISED -
...\prpln_ABC_C4_TS_DET_10.dgn	DRAWN - TMB	REVISED -
USER NAME = jmajewski	CHECKED - MPM	REVISED -
PLOT DATE = 11/13/2009	DATE - 10/16/09	REVISED -

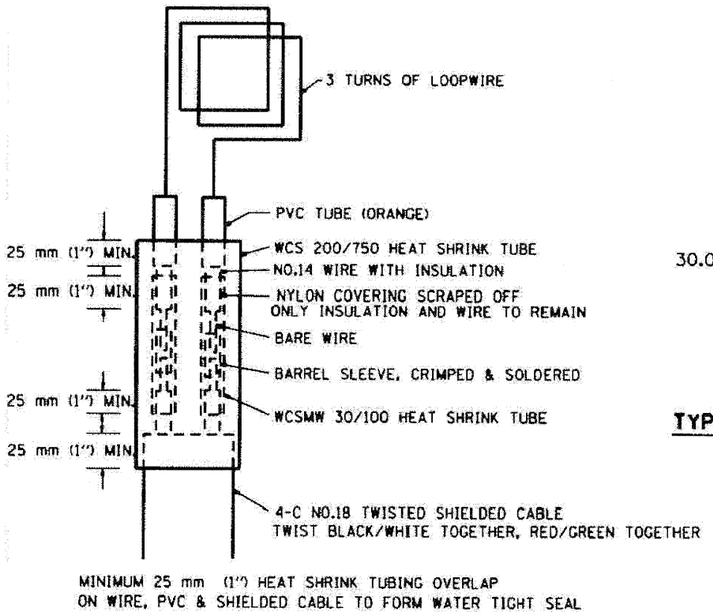
benesch

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TRAFFIC SYSTEMS CENTER
DETAIL SHEETS

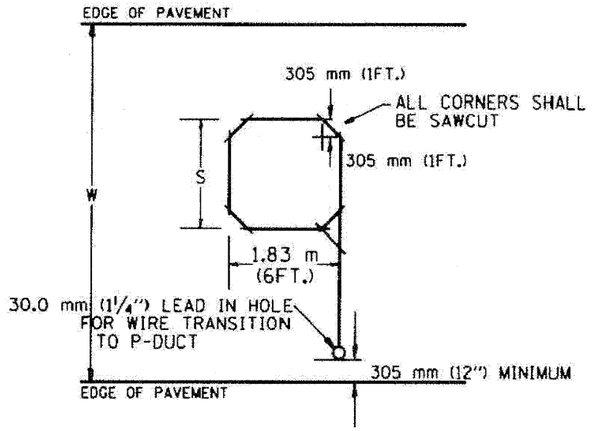
SCALE: N.T.S. | SHEET NO. 10 OF 14 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	2009-099BR	COOK/DUPAGE	309	289
		CONTRACT NO. 60157		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

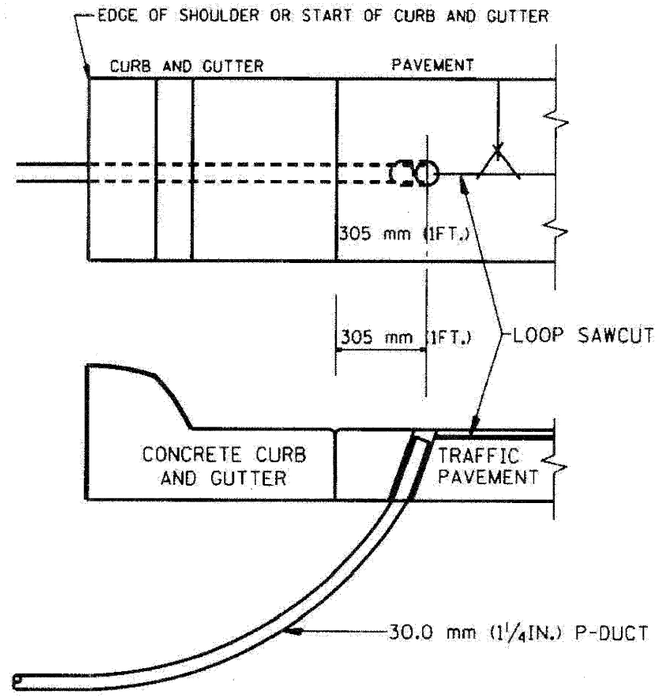


LOOP SPLICING REQUIREMENTS

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')



TYPICAL "S" FT. BY 1.83 m (6FT.) 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.
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REVISIONS	
NAME	DATE
R.L.	6/94
T.C.	11/95
R.L.	05/96
T.C.	10/96

ILLINOIS DEPARTMENT OF TRANSPORTATION
TRAFFIC SYSTEMS CENTER

RECTANGULAR INDUCTION LOOP TYPICAL

SCALE: VERT. NONE, HORIZ. NONE — DRAWN BY C.M.
DATE 6-22-94 — CHECKED BY R.L.

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

FILE NAME =	DESIGNED - GHT	REVISED -
...\erpln_ABC_C4_TS_DET_11.dgn	DRAWN - TMB	REVISED -
USER NAME = jmajewski	CHECKED - MPM	REVISED -
PLOT DATE = 11/13/2009	DATE - 10/16/09	REVISED -

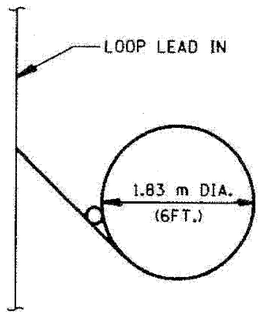
benesch

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

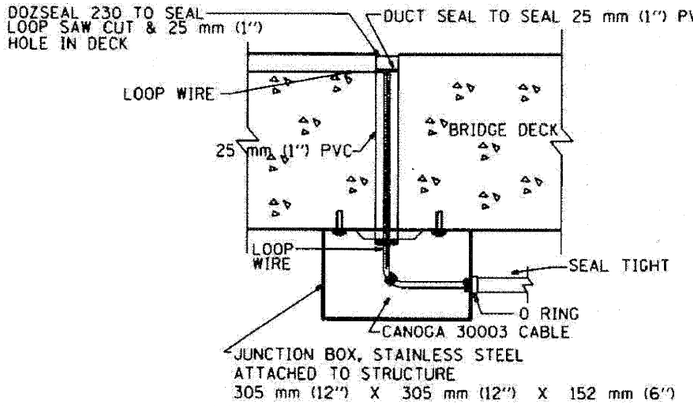
TRAFFIC SYSTEMS CENTER
DETAIL SHEETS

SCALE: N.T.S. | SHEET NO. 11 OF 14 SHEETS | STA. | TO STA.

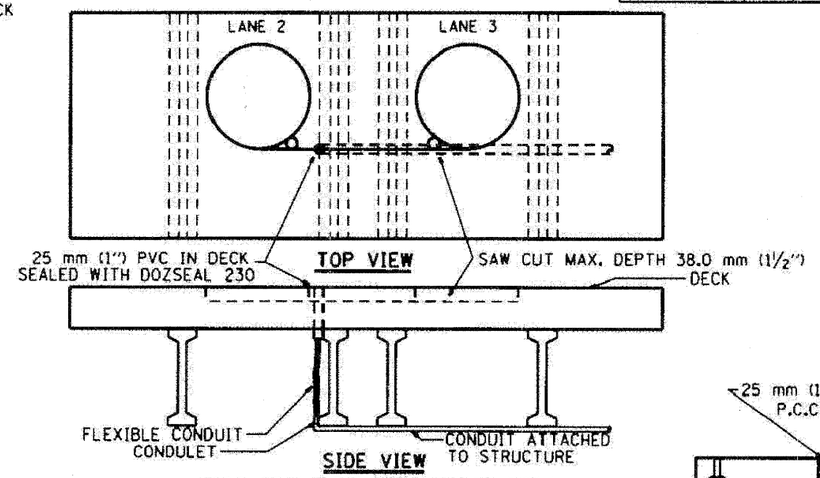
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	2009-099BR	COOK/DUPAGE	309	290
		CONTRACT NO. 60157		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



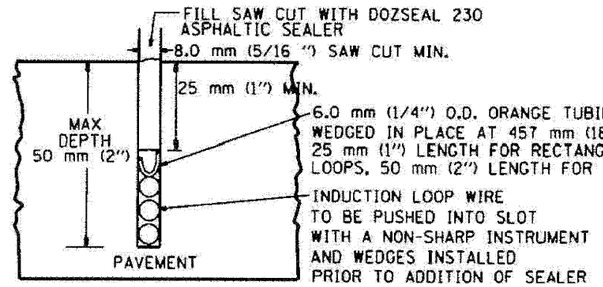
TYPICAL LOOP SAWCUT LAYOUT



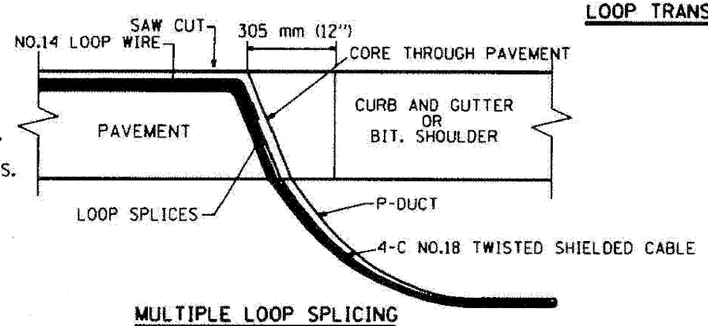
LOOP JUNCTION BOX UNDER BRIDGE DECK



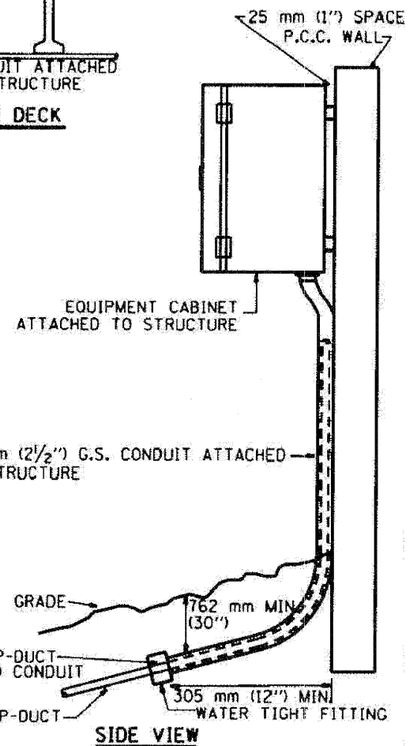
LOOP TRANSITION IN BRIDGE DECK



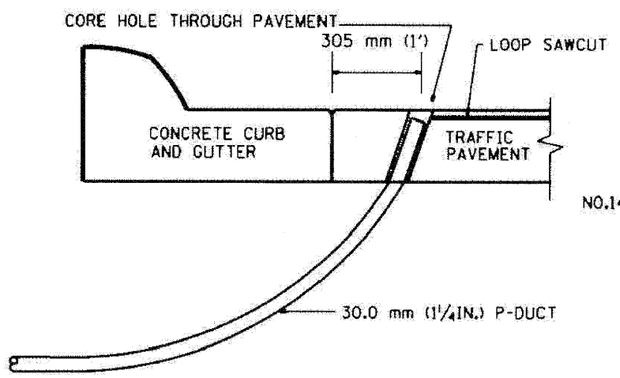
LOOP CROSS SECTION IN PAVEMENT



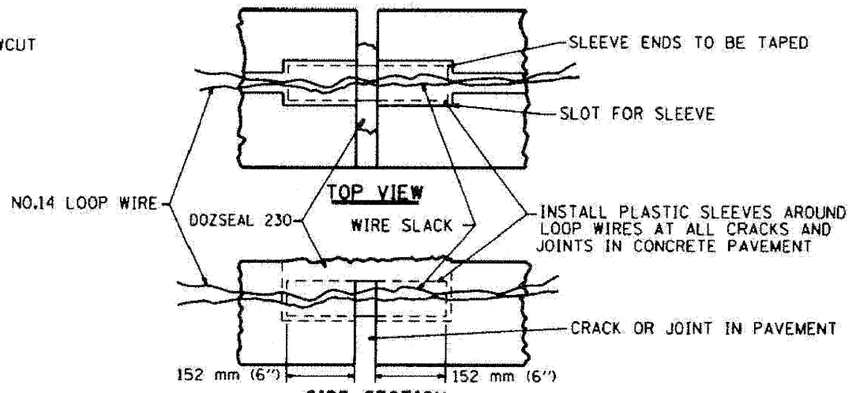
MULTIPLE LOOP SPLICING



POLYETHYLENE DUCT/GS. CONDUIT TRANSITION



SIDE SECTION LOOP LEAD-IN TRANSITION DETAIL



SIDE SECTION
PAVEMENT CRACK TRANSVERSE SLEEVE

REVISIONS	
NAME	DATE
R.L.	4/94
R.L.	5/95
T.C.	11/95
R.L.	08/96
T.C.	10/96

ILLINOIS DEPARTMENT OF TRANSPORTATION
TRAFFIC SYSTEMS CENTER

LOOP, CONDUIT & DUCT INSTALLATION DETAILS

SCALE: VERT. NONE HORIZ. | DRAWN BY C.M.
DATE 6-22-94 | CHECKED BY R.L.

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

FILE NAME =	DESIGNED - GHT	REVISED -
...\prpln_ABC_C4_TS_DET_12.dgn	DRAWN - TMB	REVISED -
USER NAME = jmejewski	CHECKED - MPM	REVISED -
PLOT DATE = 11/13/2009	DATE - 10/16/09	REVISED -

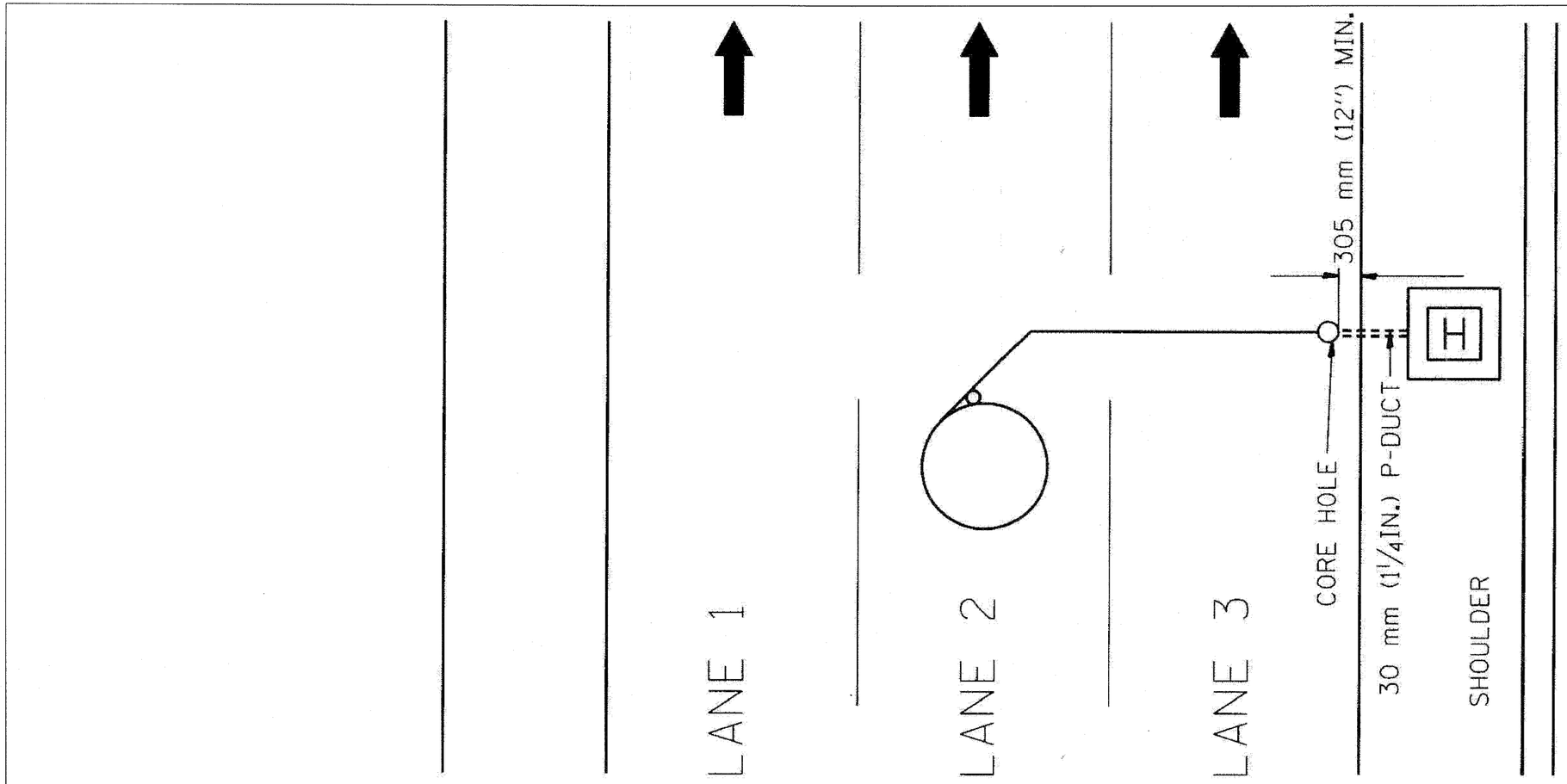
benesch

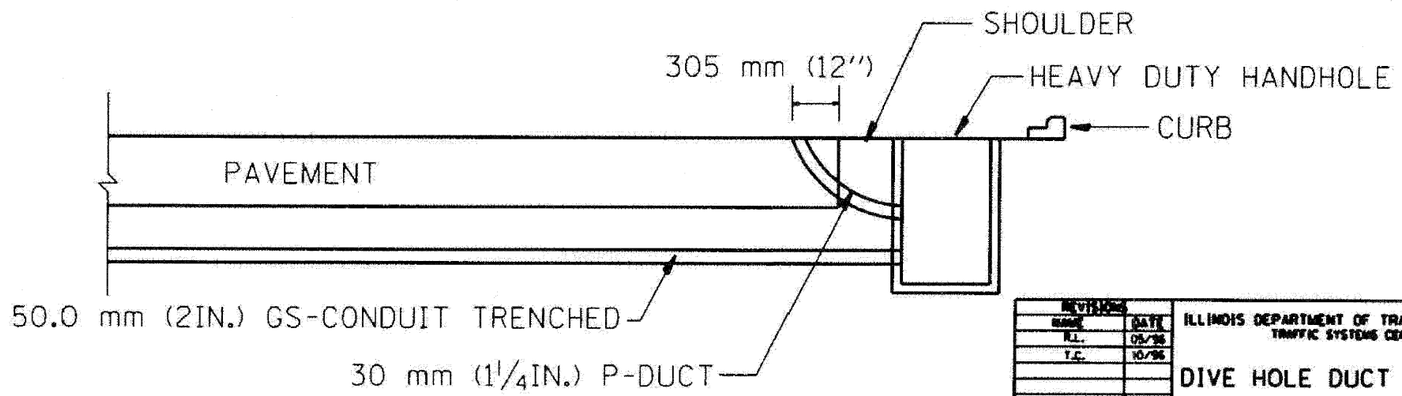
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TRAFFIC SYSTEMS CENTER
DETAIL SHEETS

SCALE: N.T.S. | SHEET NO. 12 OF 14 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	2009-099BR	COOK/DUPAGE	309	291
		CONTRACT NO. 60157		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		





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

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

ILLINOIS DEPARTMENT OF TRANSPORTATION
TRAFFIC SYSTEMS CENTER

DIVE HOLE DUCT SYSTEM

SCALE: HORZ. NONE
DATE 11/7/95
DRAWN BY G.M.
CHECKED BY R.L.

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

FILE NAME = ...\prpln_ABC_C4_TS_DET_13.dgn	DESIGNED - GHT	REVISED -
USER NAME = jmajewski	DRAWN - TMB	REVISED -
PLOT DATE = 11/13/2009	CHECKED - MPM	REVISED -
	DATE - 10/16/09	REVISED -

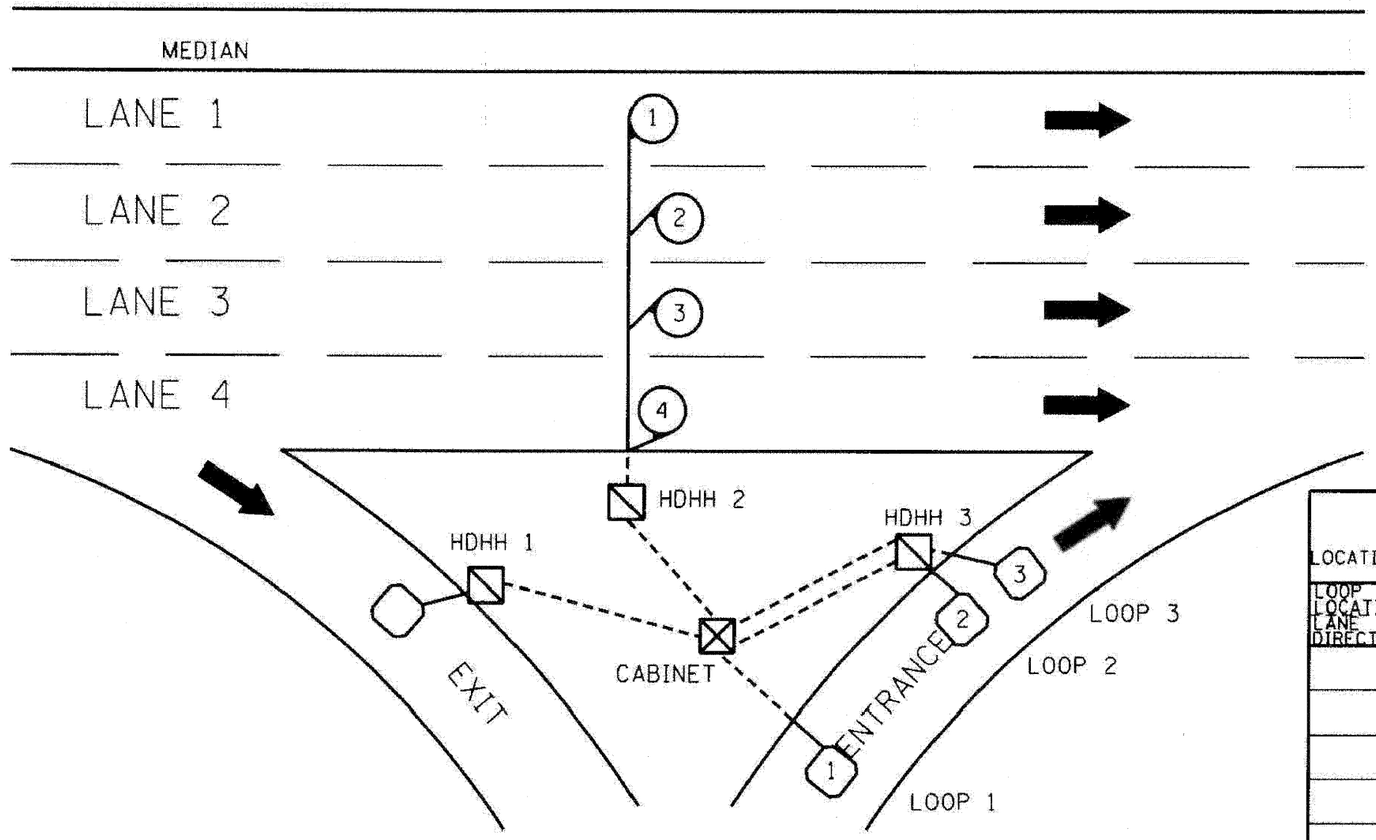
benesch

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TRAFFIC SYSTEMS CENTER
DETAIL SHEETS

SCALE: N.T.S. | SHEET NO. 13 OF 14 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	2009-099BR	COOK/DUPAGE	309	292
		CONTRACT NO. 60157		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



SIZE
63.5 mm (2½") X 44.45 mm (1¾")

SUGGESTED TAG
PANDUIT
#MP250W175-C
OR EQUIVALENT

LOOP ANALYZER

LOCATION _____ DATE _____

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

HDHH 1 EXAMPLE

IB-EB EXIT
CCW IN/
TO CABINET #____

HDHH 2 EXAMPLE

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

HDHH 3 EXAMPLE

IB-EB ENT.
LOOP #2
CW IN/

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

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

ILLINOIS DEPARTMENT OF TRANSPORTATION
TRAFFIC SYSTEMS CENTER

LOOP STATUS REPORT

SCALE: VERT. NONE HORIZ. | DRAWN BY G.M.
DATE 6-27-94 | CHECKED BY R.L.

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		

FILE NAME =	DESIGNED - GHT	REVISED -
...\prptn_ABC_C4_TS_DET_14.dgn	DRAWN - TMB	REVISED -
USER NAME = jmajewski	CHECKED - MPM	REVISED -
PLOT DATE = 11/13/2009	DATE - 10/16/09	REVISED -

benesch

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TRAFFIC SYSTEMS CENTER
DETAIL SHEETS

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

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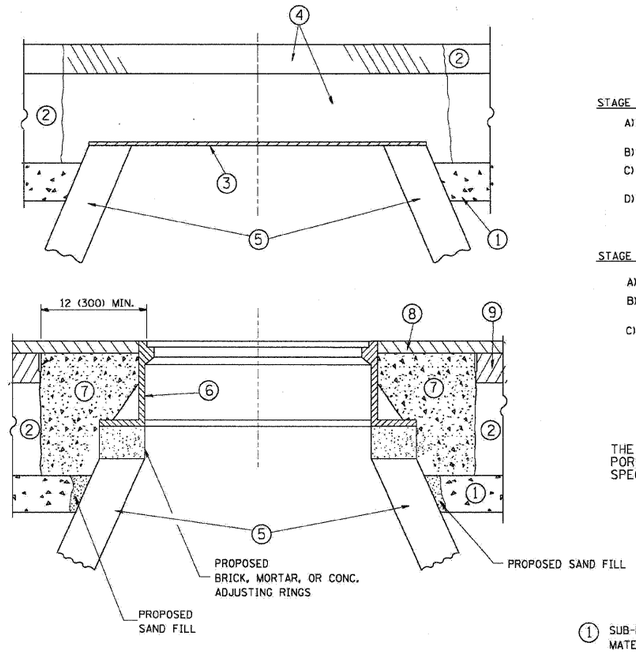
		CONTRACT NO. 60157		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



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 1½ (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

FILE NAME =	DESIGNED - AJP	REVISED -
...\prpln_ABC_C4_01_BD-8.dgn	DRAWN - TMB	REVISED -
USER NAME = jmejewski	CHECKED - JMM	REVISED -
PLOT DATE = 11/13/2009	DATE - 10/16/09	REVISED -

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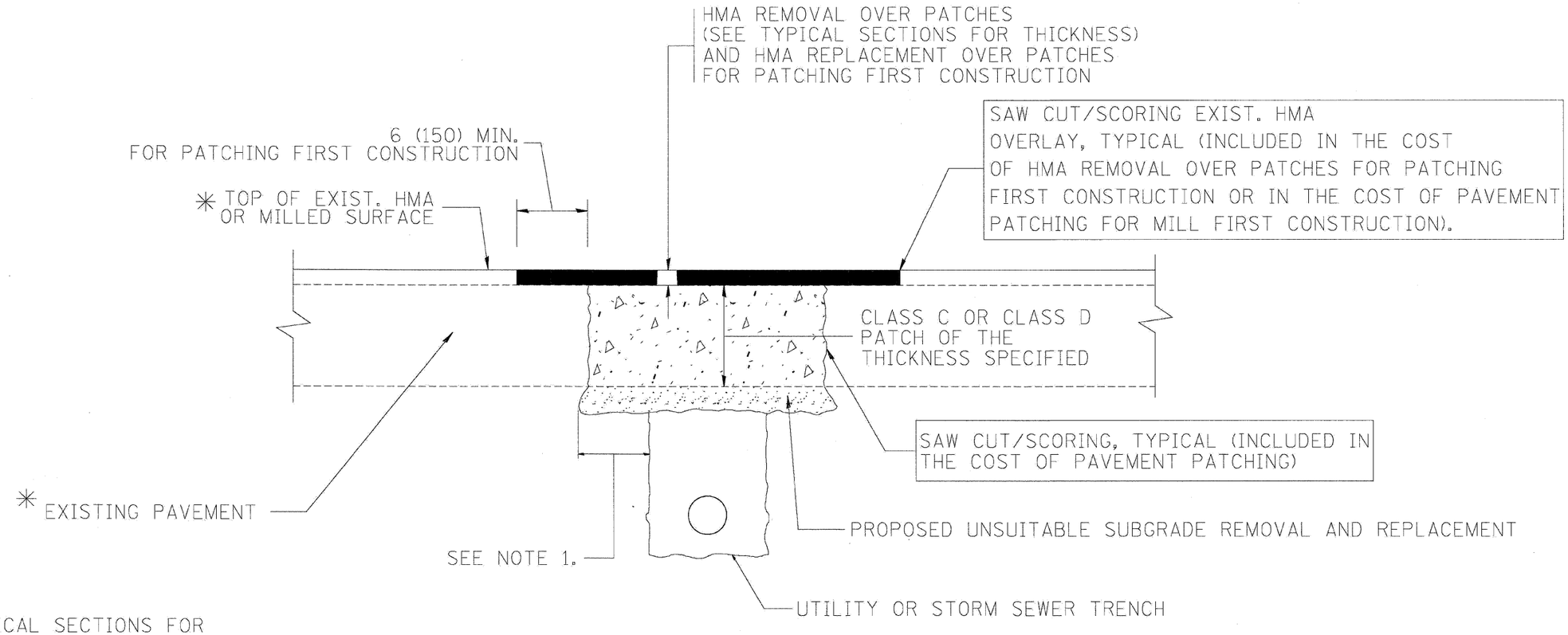
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FRAMES AND LIDS ADJUSTMENT 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	2009-099BR	COOK/DUPAGE	309	294
		CONTRACT NO. 60157		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



* SEE TYPICAL SECTIONS FOR THICKNESS AND MATERIALS

NOTES:

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

SEQUENCE OF CONSTRUCTION (PATCHING FIRST)

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

SEQUENCE OF CONSTRUCTION (MILLING FIRST)

1. MILL HMA FIRST IF THERE IS AT LEAST $4\frac{1}{2}$ 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.

FILE NAME = ...\prpln_ABC_C4_DL_BD-22.dgn	DESIGNED - AJP	REVISED -
	DRAWN - TMB	REVISED -
USER NAME = jmajewski	CHECKED - JMM	REVISED -
PLOT DATE = 11/13/2009	DATE - 10/16/09	REVISED -

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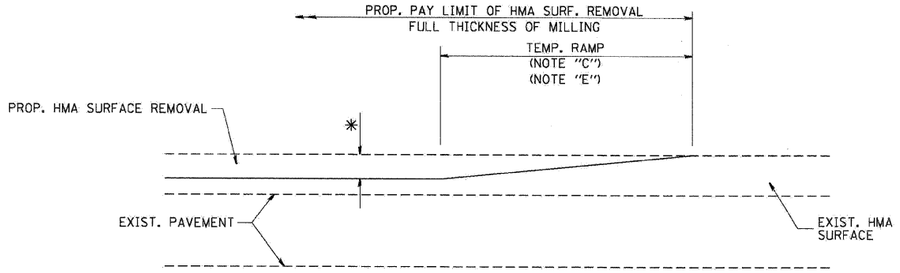
DEPARTMENT OF TRANSPORTATION

PAVEMENT PATCHING FOR HMA SURFACED PAVEMENT

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

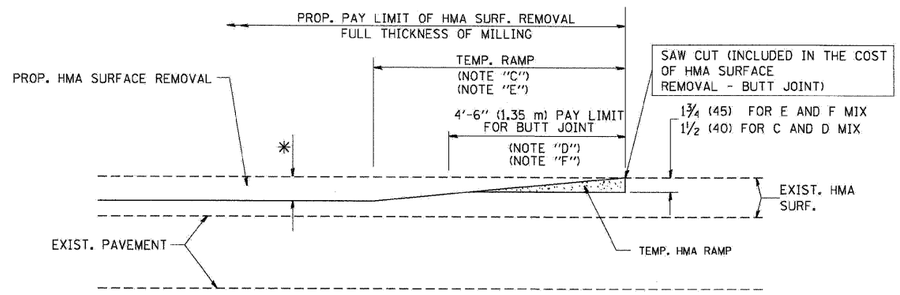
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	2009-099BR	COOK/DUPAGE	309	295
		CONTRACT NO. 60157		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



MILLED TEMPORARY RAMP

(FOR BUTT JOINT AND HMA TAPER SEE DETAIL BELOW)

OPTION 1

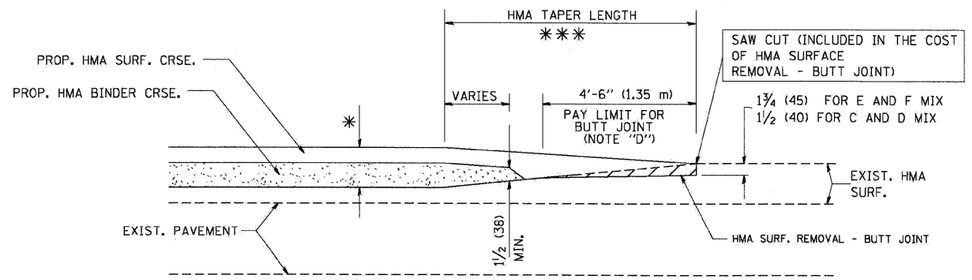


HMA CONSTRUCTED TEMPORARY RAMP

(FOR BUTT JOINT AND HMA TAPER SEE DETAIL BELOW)

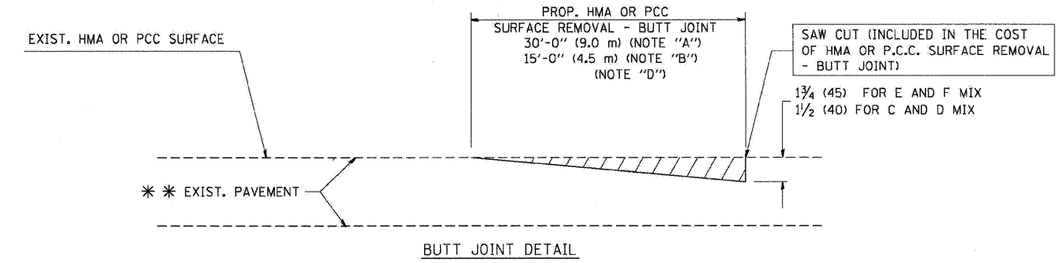
OPTION 2

TYPICAL TEMPORARY RAMP

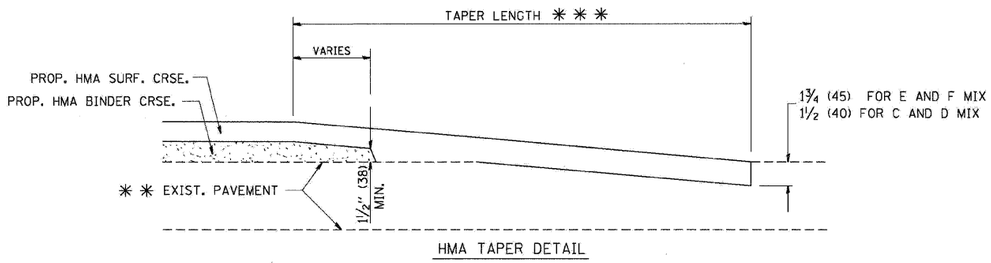


BUTT JOINT AND HMA TAPER

TYPICAL BUTT JOINT AND HMA TAPER FOR MILLING AND RESURFACING



BUTT JOINT DETAIL



HMA TAPER DETAIL

TYPICAL BUTT JOINT AND HMA TAPER FOR RESURFACING ONLY

** PC CONCRETE, HMA OR HMA RESURFACED PAVEMENT.

NOTES

A: MAINLINE ROADWAYS AND MAJOR SIDE ROADS.

B: MINOR SIDE ROADS.

C: THE TEMP. RAMP SHALL BE CONSTRUCTED IMMEDIATELY UPON REMOVAL OF THE EXISTING HMA SURFACE.

D: THE BUTT JOINT SHALL BE CONSTRUCTED IMMEDIATELY PRIOR TO PLACING THE PROPOSED HMA COURSES.

E: TAPER THE TEMP. RAMP AT A RATE OF 3'-0" (900 mm) PER 1 INCH (25 mm) OF MILLING THICKNESS.

F: INSTALLATION AND REMOVAL OF THE 4'-6" (1.35 m) TEMP. RAMP IS INCLUDED IN COST OF HMA SURFACE REMOVAL - BUTT JOINT

G: SEE ARTICLE 406.08 AND 406.14 OF THE STANDARD SPECIFICATIONS FOR "HMA AND/OR PCC SURFACE REMOVAL, BUTT JOINT".

* SEE TYPICAL SECTIONS FOR MILLING THICKNESS.

*** 20'-0" (6.1 m) PER 1 (25) RESURFACING (NOTE "A")
10'-0" (3.0 m) PER 1 (25) RESURFACING (NOTE "B")

BASIS OF PAYMENT:

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

BD-32

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

FILE NAME = ...\prpln_ABC_C4_IL_BD-32.dgn	DESIGNED - AJP	REVISED -
	DRAWN - TMB	REVISED -
USER NAME = jmmjewski	CHECKED - JMM	REVISED -
PLOT DATE = 11/13/2009	DATE - 10/16/09	REVISED -

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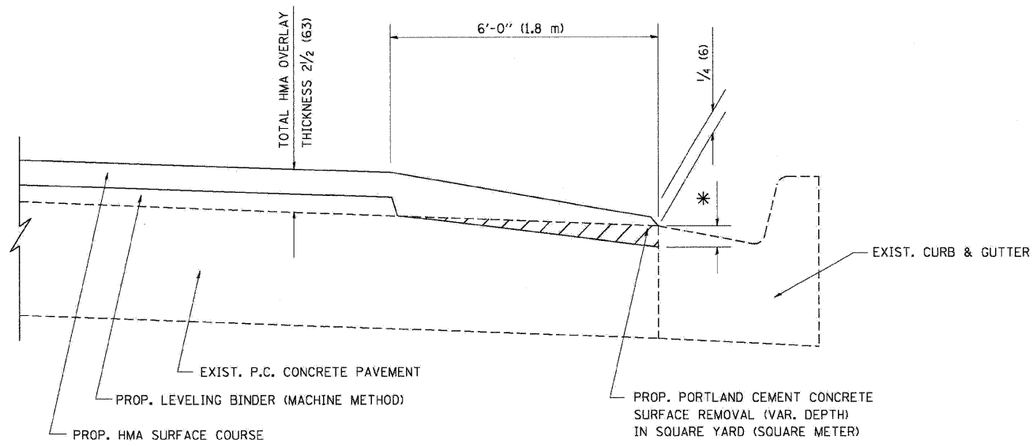
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BUTT JOINTS AND HMA TAPER

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

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	2009-099BR	COOK/DUPAGE	309	296
		CONTRACT NO. 60157		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



HMA TAPER AT EDGE OF P.C.C PAVEMENT

HMA SURFACE		LEVELING BINDER	
MIX	THICKNESS	THICKNESS	* MILLING AT GUTTER FLAG
C OR D	1½ (38)	1 (25)	1¼ (33)
F	1¾ (44)	¾ (19)	1½ (38)

BD-33

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

FILE NAME = ...\prpln_ABC_C4_01_BD-33.dgn	DESIGNED - AJP	REVISED -
	DRAWN - TMB	REVISED -
USER NAME = jmajewski	CHECKED - JMM	REVISED -
PLOT DATE = 11/13/2009	DATE - 10/16/09	REVISED -

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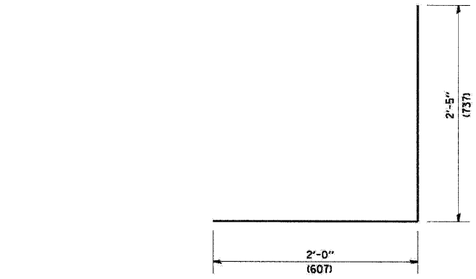
DEPARTMENT OF TRANSPORTATION

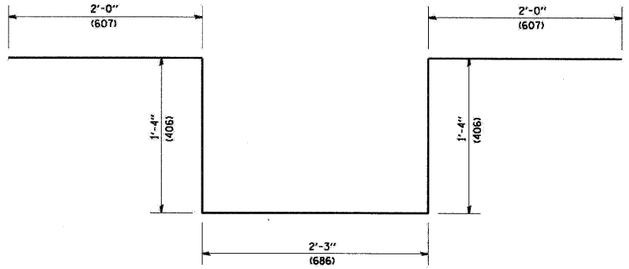
HMA TAPER AT EDGE OF PCC PAVEMENT

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

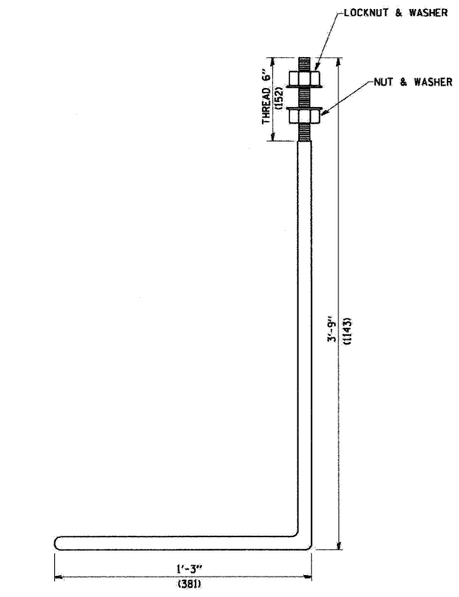
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	2009-099BR	COOK/DUPAGE	309	297
		CONTRACT NO. 60157		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



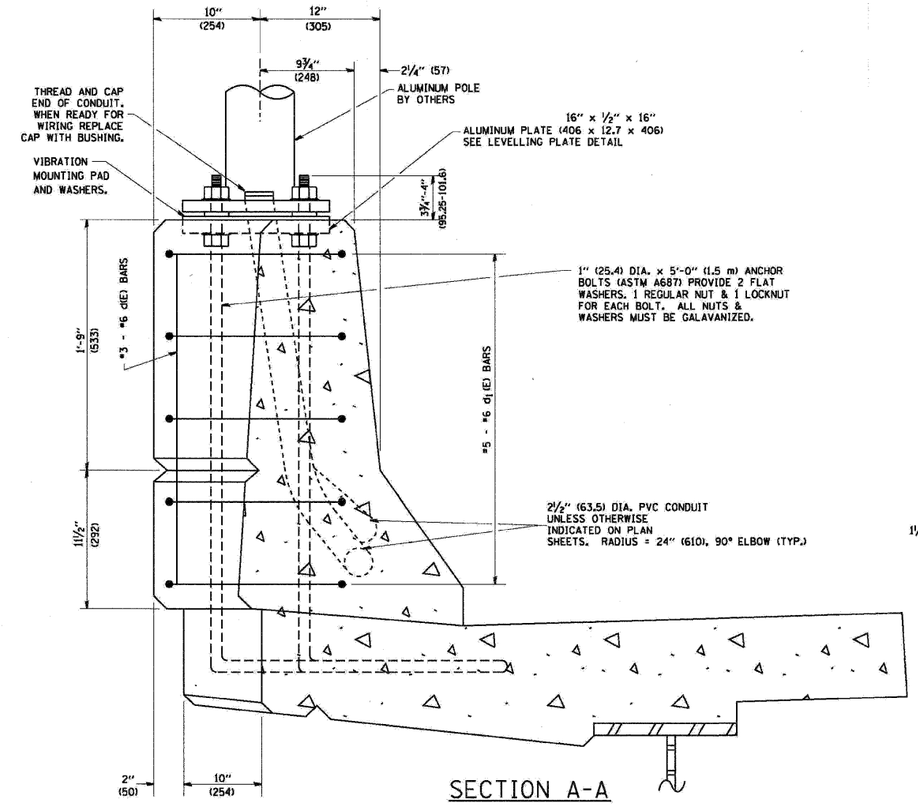
BAR d (E)



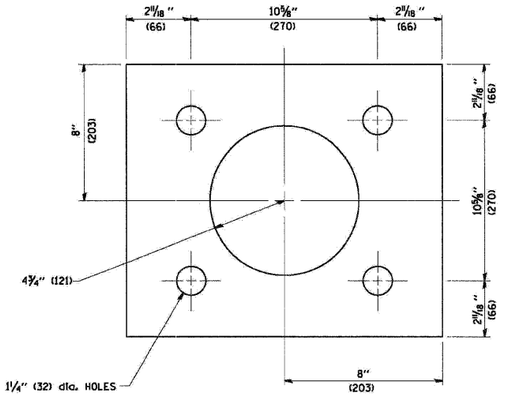
BAR d_1 (E)



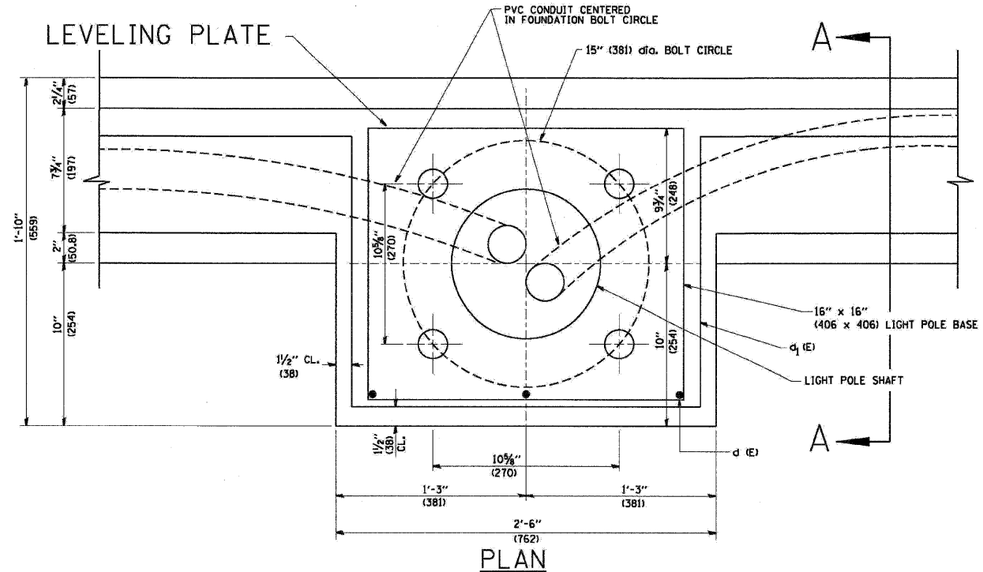
1" (25.4) dia. ANCHOR BOLT



SECTION A-A



LEVELING PLATE DETAIL



PLAN

NOTES

1. ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.
2. LEVEL LIGHT POLE PLATES, USING THE FLANGE NUTS, PRIOR TO POURING THE PARAPET WALL. THE TOP OF THE PLATE SHALL BE AT THE SAME ELEVATION AS THE FINISHED CONCRETE PARAPET.
3. THE COST OF ANCHOR BOLTS, CONDUIT, LEVELLING PLATE AND FOUNDATION IS INCLUDED IN THE COST OF THE BRIDGE STRUCTURE.

BE-330

FILE NAME = ...\prpln_ABC_C4_01_BE-330.dgn	DESIGNED - AJP	REVISED -
	DRAWN - TMB	REVISED -
USER NAME = jmajewski	CHECKED - JMM	REVISED -
PLOT DATE = 11/13/2009	DATE - 10/16/09	REVISED -

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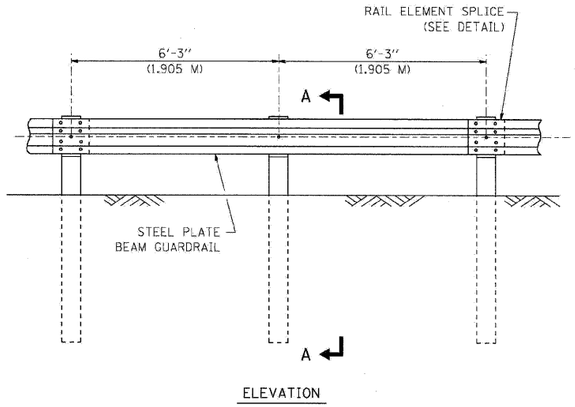
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LIGHT POLE FOUNDATION ON CONCRETE PARAPET WALL 15" (381 MM) BOLT CIRCLE

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

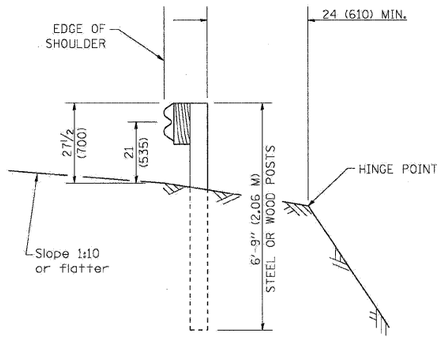
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	2009-099BR	COOK/DUPAGE	309	298
		CONTRACT NO. 60157		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



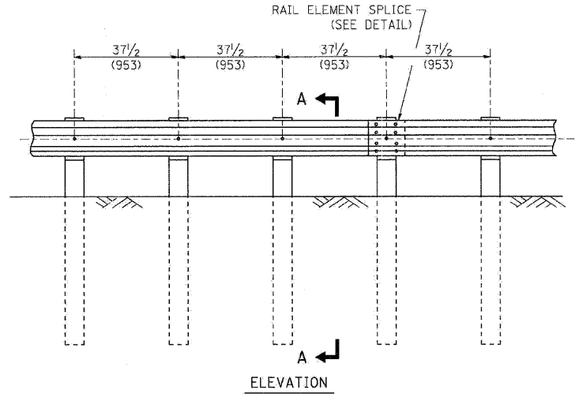
ELEVATION

TYPE A

6'-3" (1.905 M) TYPICAL POST SPACING



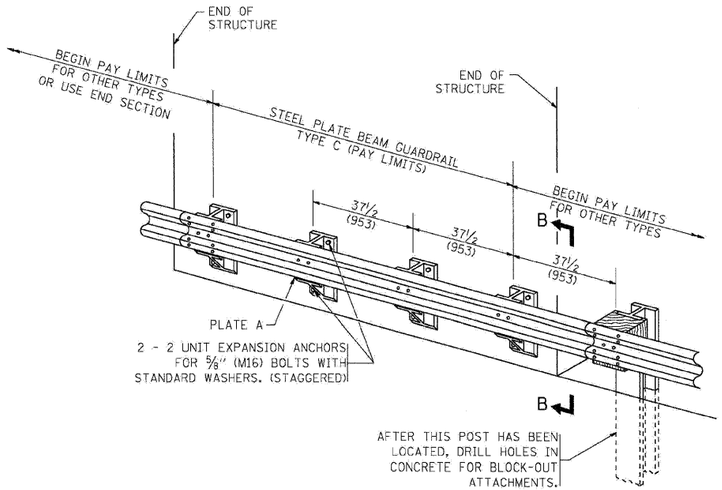
SECTION A-A



ELEVATION

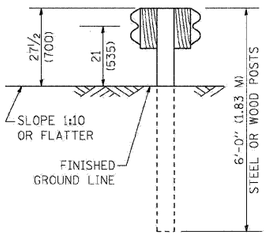
TYPE A

37½ (953) CLOSED POST SPACING

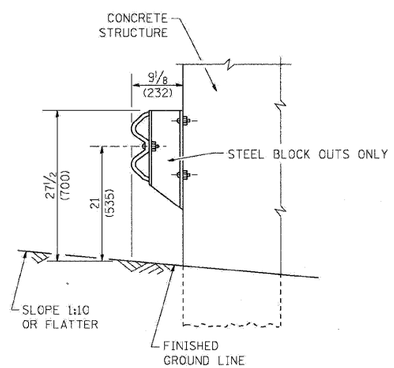


TYPE C

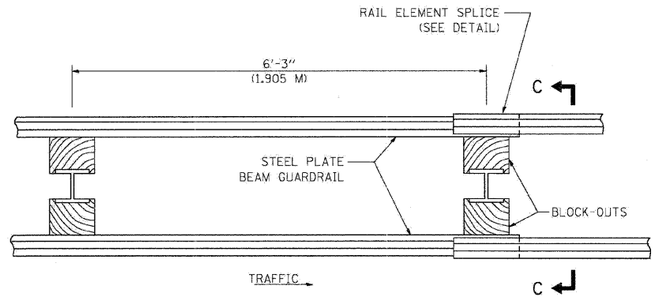
37½ (953) BLOCK-OUT SPACING



SECTION C-C



SECTION B-B



PLAN

TYPE D

DOUBLE STEEL PLATE BEAM GUARDRAIL
6'-3" (1.905 M) TYPICAL POST SPACING

GENERAL NOTES

ALL SLOPE RATIOS ARE EXPRESSED AS UNITS OF VERTICAL DISPLACEMENT TO UNITS OF HORIZONTAL DISPLACEMENT (V:H).

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

THE EXISTING STEEL POSTS MAY BE DRILLED TO MATCH THE BOLT PATTERN SHOWN HEREIN FOR THE WOOD BLOCK-OUT, OR A NEW STEEL POST SHALL BE PROVIDED.

THIS DETAIL IS APPLICABLE TO THE GUARDRAIL SYSTEM USED PRIOR TO JANUARY 1, 2007. FOR DETAILS ON THE MIDWEST GUARDRAIL SYSTEM, SEE STANDARD 630001.

BM-21

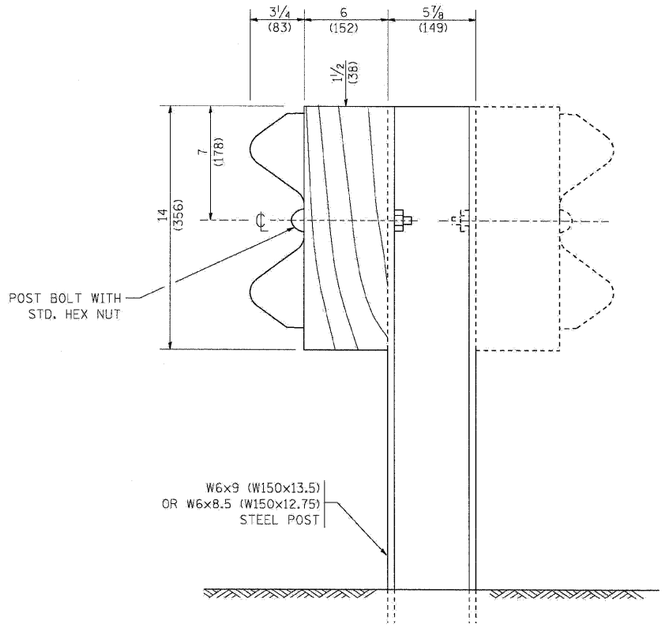
FILE NAME = ...\prpln-ABC_C4_01_BM-21A.dgn	DESIGNED - AJP	REVISED -	benesch
USER NAME = jmajewski	DRAWN - TMB	REVISED -	
PLOT DATE = 1/13/2009	CHECKED - JMM	REVISED -	
	DATE - 10/16/09	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

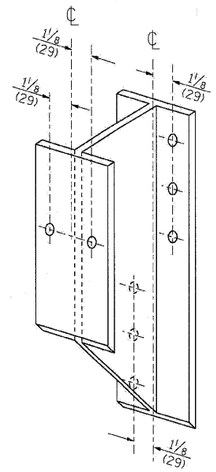
REMOVE AND REERECT GUARDRAIL

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

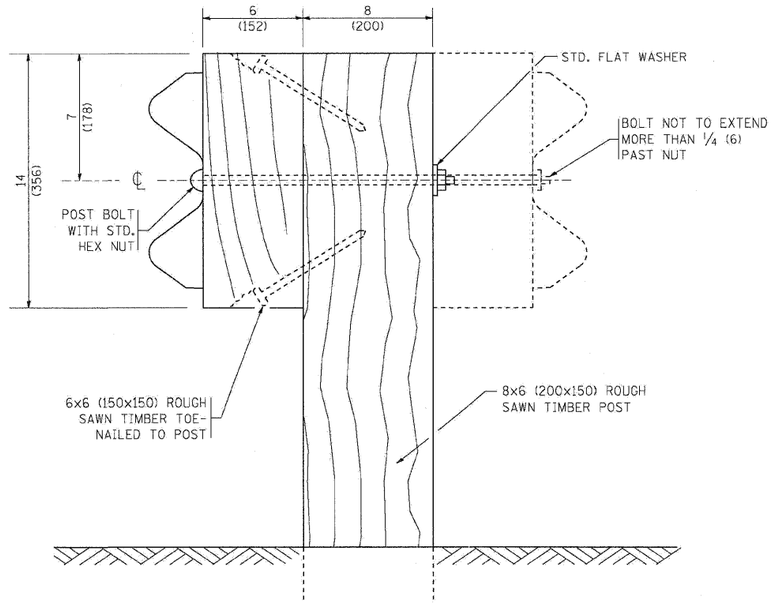
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	2009-099BR	COOK/DUPAGE	309	299
		CONTRACT NO. 60157		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



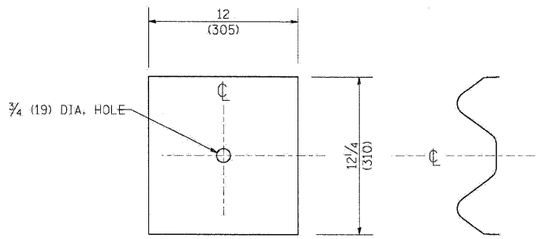
STEEL POST CONSTRUCTION



STEEL BLOCK-OUT DETAIL



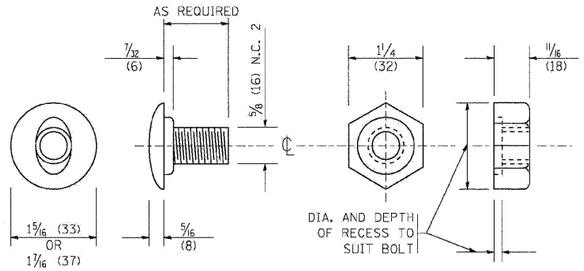
WOOD POST CONSTRUCTION



NOTE:

PLATE A SHALL BE PLACED BETWEEN RAIL ELEMENT AND BLOCK-OUT AT NON-SPLICE MOUNTING POINTS ONLY WHEN STEEL BLOCK-OUTS ARE USED.

PLATE A



POST OR SPLICE BOLT & NUT

BM-21

FILE NAME = ...\prpln_ABC_C4_DL_BM-21B.dgn	DESIGNED - AJP	REVISED -	benesch	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	REMOVE AND REERECT GUARDRAIL		F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
USER NAME = jmajewski	DRAWN - TMB	REVISED -					290	2009-099BR	COOK/DUPAGE	309	300
PLOT DATE = 11/13/2009	CHECKED - JMM	REVISED -							CONTRACT NO. 60157		
	DATE - 10/16/09	REVISED -			SCALE: N.T.S.	SHEET NO. 7 OF 16 SHEETS STA. TO STA.	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		