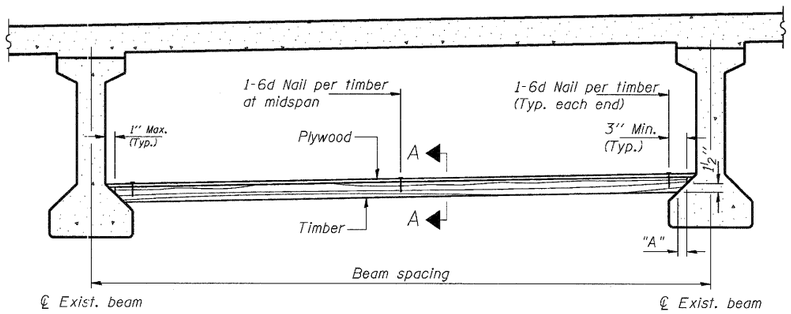
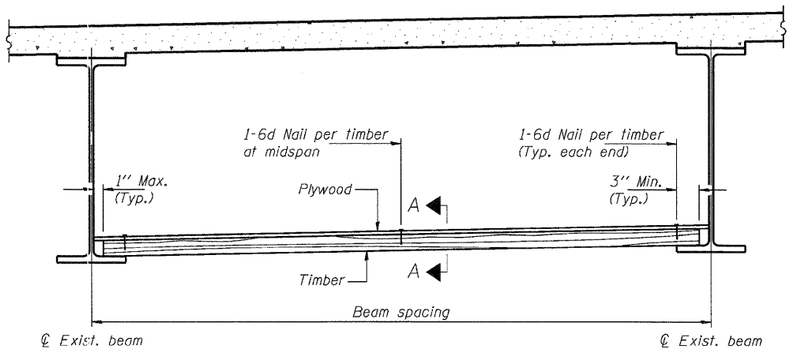
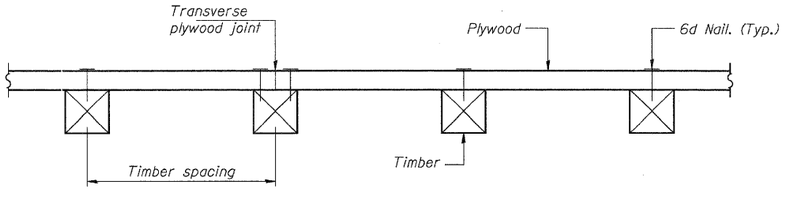


PPC I-BEAMS AND BULB-T's



STEEL BEAMS



SECTION A-A

TIMBER SPACING

Beam Spacing (ft.)	Timber Sizes (in.) 4" x 4" with min. Fb=775 psi Fv=135 psi	4" x 6" with min. Fb=775 psi Fv=135 psi	6" x 6" with min. Fb=575 psi Fv=125 psi
	Maximum Timber Spacing (in.)		
4.5	16	16	16
4.75	16	16	16
5.0	16	16	16
5.25	16	16	16
5.5	16	16	16
5.75	16	16	16
6.0	16	16	16
6.25	12	16	16
6.5	12	16	16
6.75	12	16	16
7.0	8	16	16
7.25	8	16	16
7.5	8	16	16
7.75	8	16	16
8.0	8	12	16
8.25	8	12	16
8.5	6	12	12
8.75	6	12	12
9.0	6	8	12

PPC I-BEAMS AND BULB-T's

BEAM	"A"
36" I-Beam	$1\frac{1}{2}$"
42" I-Beam	$1\frac{1}{2}$"
48" I-Beam	$1\frac{1}{2}$"
54" I-Beam	$1\frac{5}{8}$"
63" Bulb-T	$3\frac{3}{8}$"
72" Bulb-T	$3\frac{3}{8}$"

Notes: See special provision for Protective Shield, Special.

Timber sizes shown are nominal sizes. Rough sawn timber of the dimensions shown will also be considered acceptable.

The minimum Fb and Fv values shown are the tabulated design values given in the National Design Specification for Wood Construction for No. 2 Spruce-Pine-Fir without adjustment factors applied. Better grades or other species with equal or higher allowable stresses will also be considered acceptable.

The timber spacings shown have been determined using allowable stresses with all adjustment factors necessary for the anticipated service conditions.

All timber shall be treated.

Plywood shall be $\frac{5}{8}$" Exterior type plywood per APA.

Plywood shall be placed such that the face grain is perpendicular to the timber supports. When less than a full sheet (4' width) of plywood is used, the width of the strip used shall not be less than 2'.

Transverse plywood joints shall be supported by timbers.

When 4" x 6" timbers are used, they shall be placed such that the wide face is horizontal and the narrow face is vertical.

Design load = 200 psf.

BILL OF MATERIAL

Item	Unit	Total
Protective Shield,(Permanent)	Sq. Yd.	223

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PLOT SCALE = NTS	DRAWN - LAM	REVISED -	
PLOT DATE = 1/20/2011 12:33:51 PM	CHECKED - BLU	REVISED -	
	DATE - 01/21/2011	REVISED -	

HBP Illinois Partners

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PROTECTIVE SHIELD, SPECIAL
EASTBOUND FAI-80 OVER CENTER STREET RAMP AA
STRUCTURE NO. 099-0052
SHEET NO. S-5 OF S-6 SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99(2&3)RS-3	WILL	200	101
		CONTRACT NO. 60M64		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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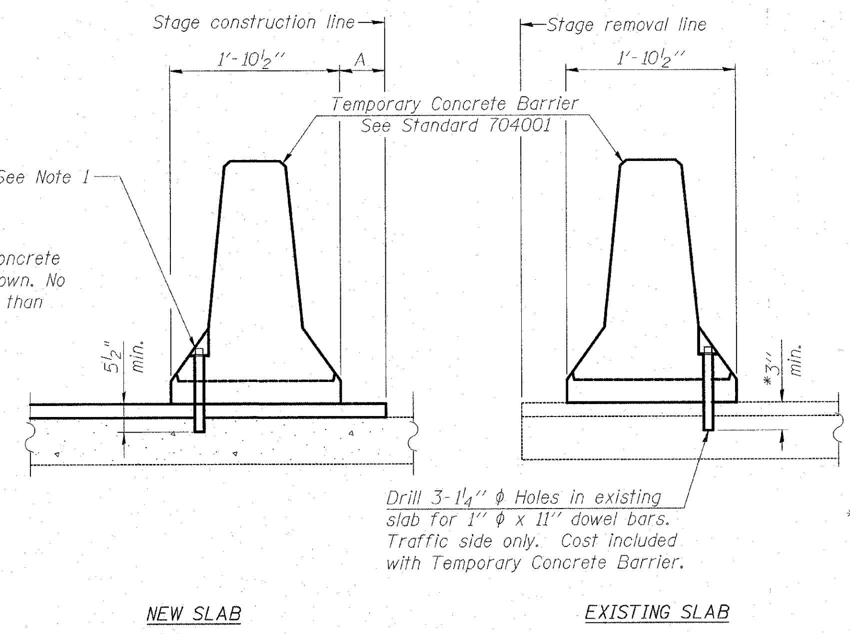

When "A" is 3'-6" or less, the temporary concrete barrier shall be anchored to the slab as shown. No anchorage is required when "A" is greater than 3'-6".

* 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.

SECTIONS THRU SLAB

NOTES

1. Drill 1¼" ϕ Holes through new overlay into slab for 1" ϕ x 13" dowel bars. Traffic side only as directed by Engineer. Repair hole with non-shrink epoxy grout as directed by Engineer. Cost of anchorage and repair included with Temporary Concrete Barrier.

	DESIGNED - DF	REVISED -
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PLOT DATE = 2/8/2011 6:30:25 PM	DATE - 01/21/2011	REVISED -

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HBP Illinois Partners

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TEMPORARY CONCRETE BARRIER FOR STAGE CONSTRUCTION
EASTBOUND FAI-80 OVER CENTER STREET RAMP AA
STRUCTURE NO. 099-0052

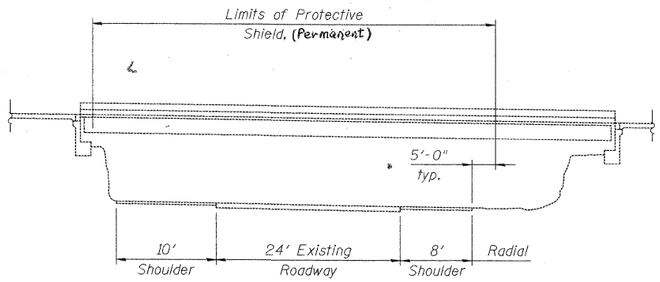
SHEET NO. S-6 OF S-6 SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99(2&3)RS-3	WILL	200	102
		CONTRACT NO. 60M64		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

Existing Structure: S.N. 099-0055 carrying I-80 Eastbound over Southbound Center Street to Eastbound I-80 Ramp was originally constructed in 1964 as FAI Route 80, Section 99-3HB-2. The structure consists of a single span wide flange beam and reinforced concrete deck superstructure supported by stub abutments. The skew is 49°26'38" forward right tangent to ℄ I-80 at Sta. 590+22.78. The deck was repaired in 1992 and 2001.

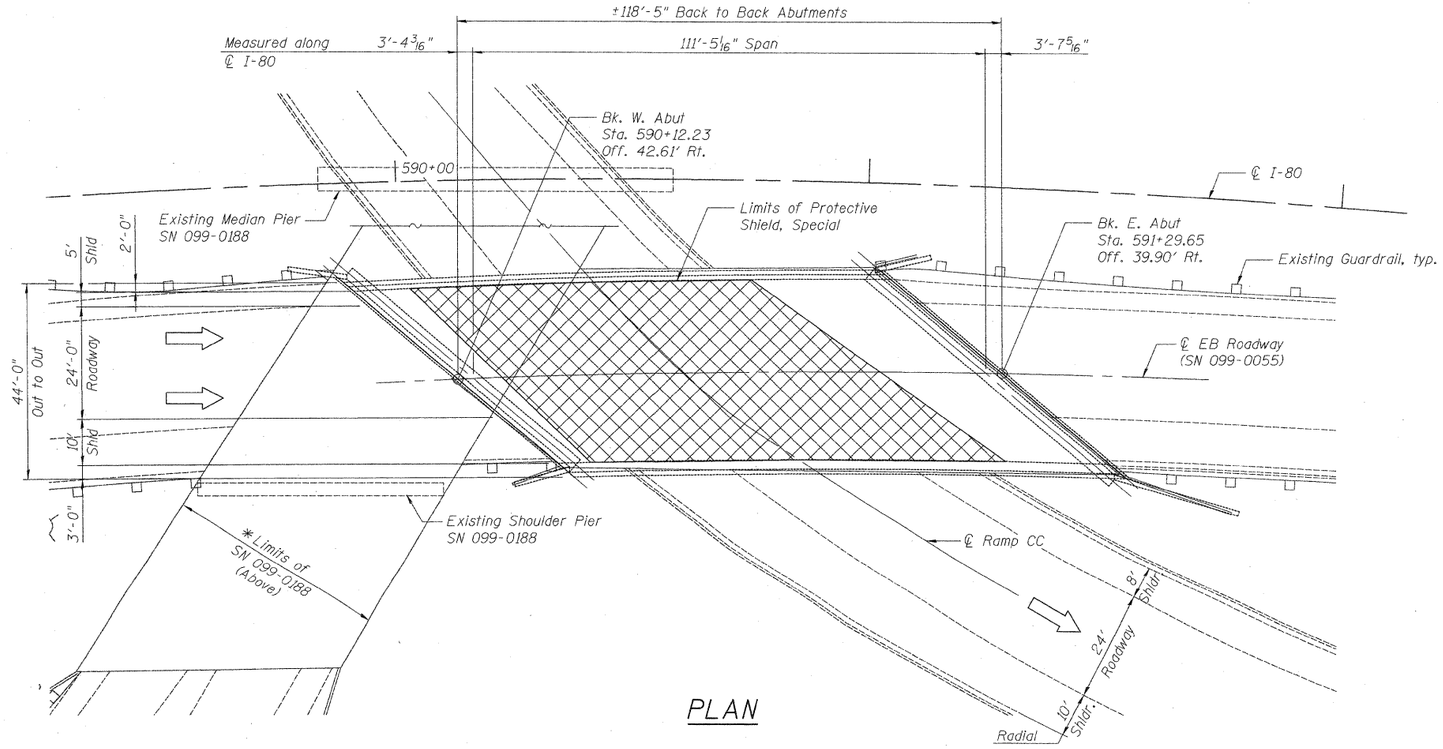
Stage construction shall be utilized to maintain traffic during construction.

No salvage.



ELEVATION

* Note:
Structure No. 099-0188 not shown. The minimum vertical clearance above SN 099-0055 is 16'-3".



PLAN

INDEX OF SHEETS

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Polymerized Hot-Mix Asphalt Surface Course, Stone Matrix Asphalt, N80	Ton	56	-	56
Protective Shield, (Permanent)	Sq. Yd.	360	-	360
Hot-Mix Asphalt Surface Removal (Deck)	Sq. Yd.	492	-	492
Structural Repair of Concrete (Equal to or Less Than 5")	Sq. Ft.	-	190	190
Deck Slab Repair (Full Depth, Type 11)	Sq. Yd.	13	-	13
Deck Slab Repair (Partial)	Sq. Yd.	63	-	63
Silicone Joint Sealer, 2"	Foot	138	-	138
Temporary Shoring and Cribbing	Each	-	1	1
Polymer Concrete	Cu. Ft.	5	-	5

SCOPE OF WORK

1. Install Protective Shield, (Permanent)
2. Remove existing HMA overlay.
3. Deck slab repair (full and partial depth).
4. Remove and replace silicone joint seals.
5. Repair structural concrete at abutments.
6. Apply HMA overlay.

DESIGN SPECIFICATIONS

2002 AASHTO Standard Specifications for Highway Bridges.
17th Edition

DESIGN STRESSES

f'c = 3,500 psi

GENERAL NOTES

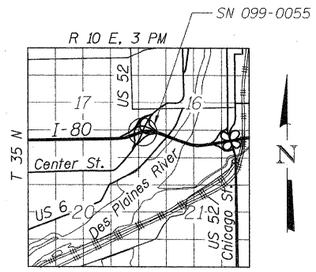
1. Reinforcement bars shall conform to the requirements of ASTM A 706 Grade 60. See Special Provisions.

2. Protective Shield, Special shall be installed as shown in the plans and shall be installed prior to start of deck slab repair work. See Special Provision for installation requirements of protective shield adjacent to existing underpass luminaires.

3. Plan dimensions and details relative to existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.

4. Areas of proposed deck repairs are estimated. Actual type, location and dimension of deck repairs are to be determined by the Engineer during construction.

5. See Roadway Plans for Ramp CC maintenance of traffic details.



LOCATION SKETCH

STATE OF ILLINOIS
BRIAN L. UMBRIGHT
081-005584
CHICAGO, IL
LICENSED STRUCTURAL ENGINEER

SIGNED: Brian L Umbright
DATE: JAN. 19, 2011
EXPIRES: November 30, 2012

	DESIGNED - DF	REVISED -	HBP Illinois Partners	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	GENERAL PLAN, NOTES & TOTAL BILL OF MATERIAL EASTBOUND FAI-80 OVER CENTER STREET RAMP CC STRUCTURE NO. 099-0055	F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
USER NAME = lmueller	DRAWN - LAM	REVISED -				80	99(2&3)RS-3	WILL	200	103
PLOT SCALE = NTS	CHECKED - BLU	REVISED -						CONTRACT NO. 60M64		
PLOT DATE = 1/19/2011 3:42:25 PM	DATE - 01/21/2011	REVISED -			SHEET NO. S-1 OF S-5 SHEETS		FED. ROAD DIST. NO. ILLINOIS	FED. AID PROJECT		

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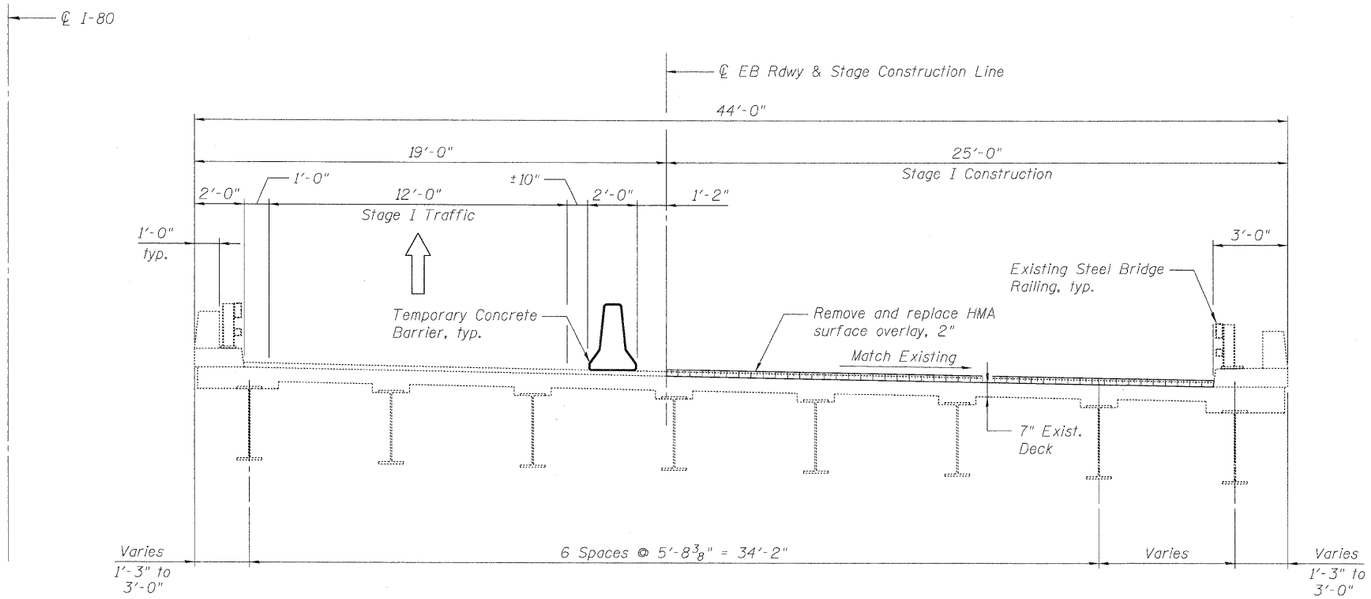
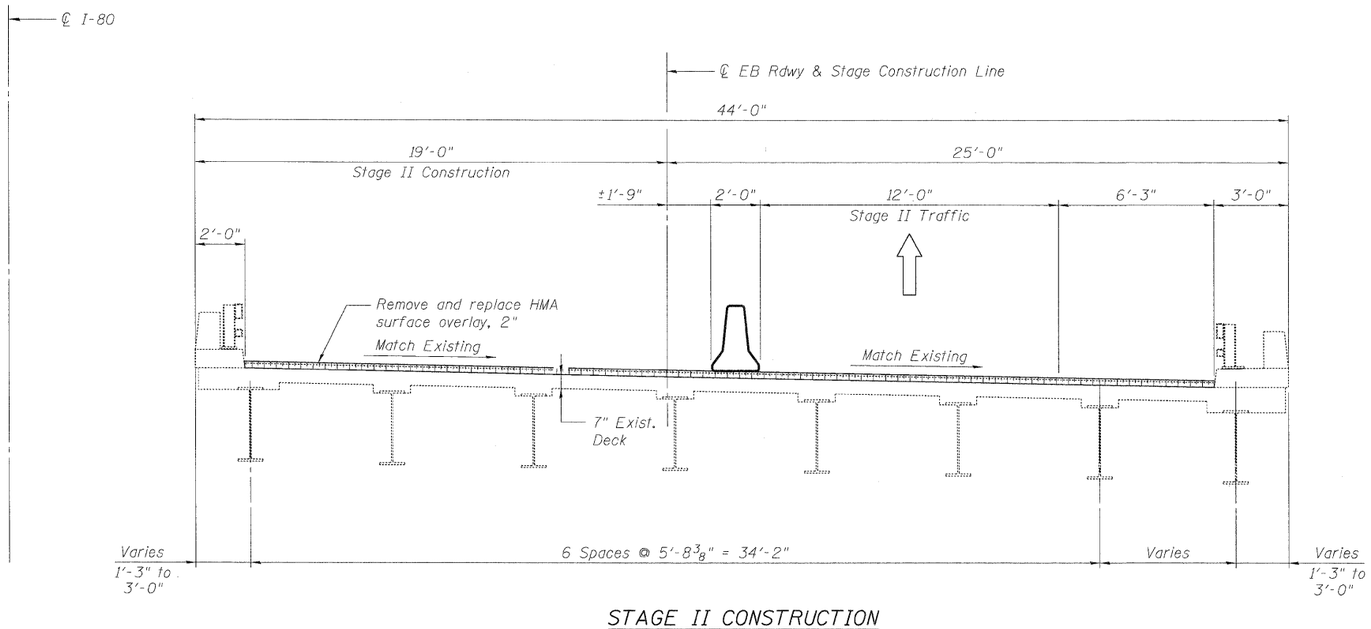


STAGE I CONSTRUCTION



STAGE II CONSTRUCTION

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HBP Illinois Partners

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

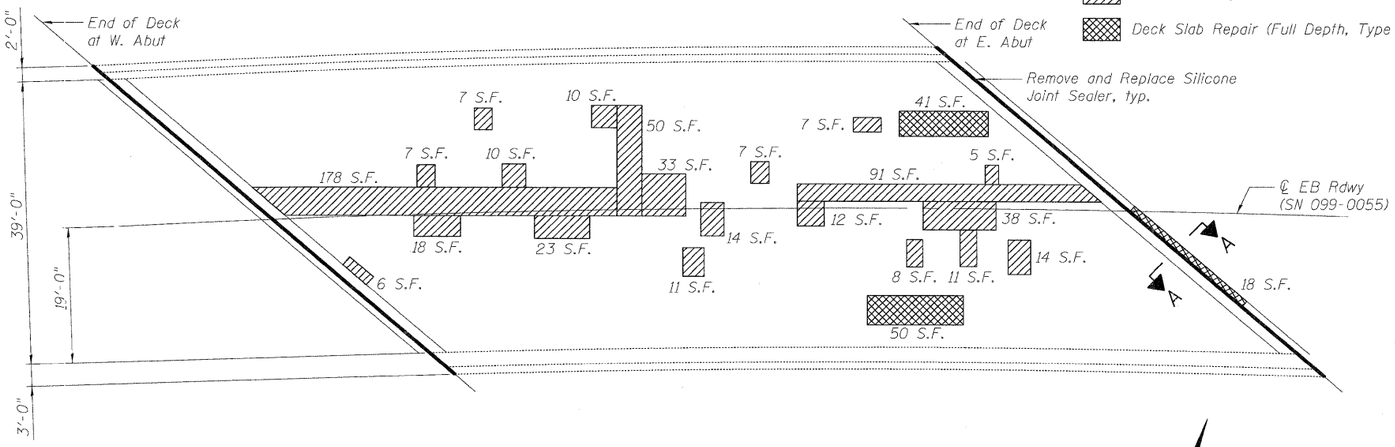
CONSTRUCTION STAGING
EASTBOUND FAI-80 OVER CENTER STREET RAMP CC
STRUCTURE NO. 099-0055
SHEET NO. S-2 OF S-5 SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99(2&3)RS-3	WILL	200	104
		CONTRACT NO. 60M64		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

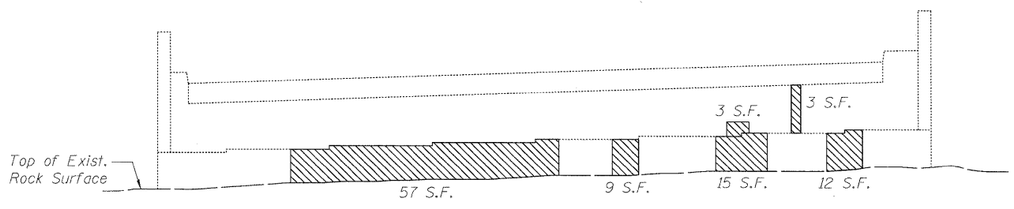
LEGEND (DECK PLAN)

Deck Slab Repair (Partial)

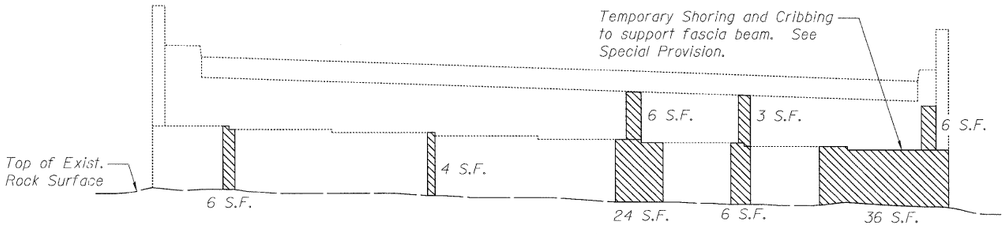
Deck Slab Repair (Full Depth, Type II)



DECK SLAB REPAIR PLAN



WEST ABUTMENT



EAST ABUTMENT

LEGEND (ABUTMENTS)

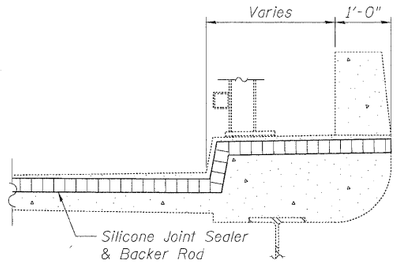
Structural Repair of Concrete (Depth Less Than or Equal to 5")

TEMPORARY SHORING AND CRIBBING LOADS

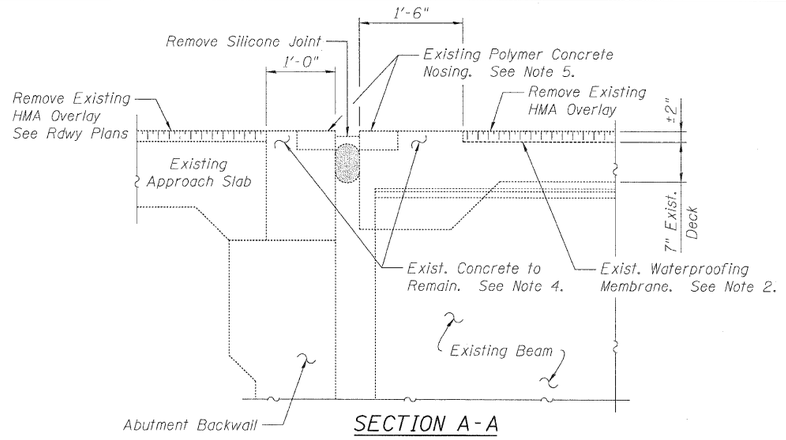
	DL	LL+IMP
East Abutment (one bearing)	62k	39k

Note: Work shall be performed during stage construction, without LL directly above shored beam. See Special Provision.

If the work is performed with LL directly above shored beam, the shoring system shall be designed per the requirements of Temporary Shoring and Cribbing, Special at no additional cost to the Department.



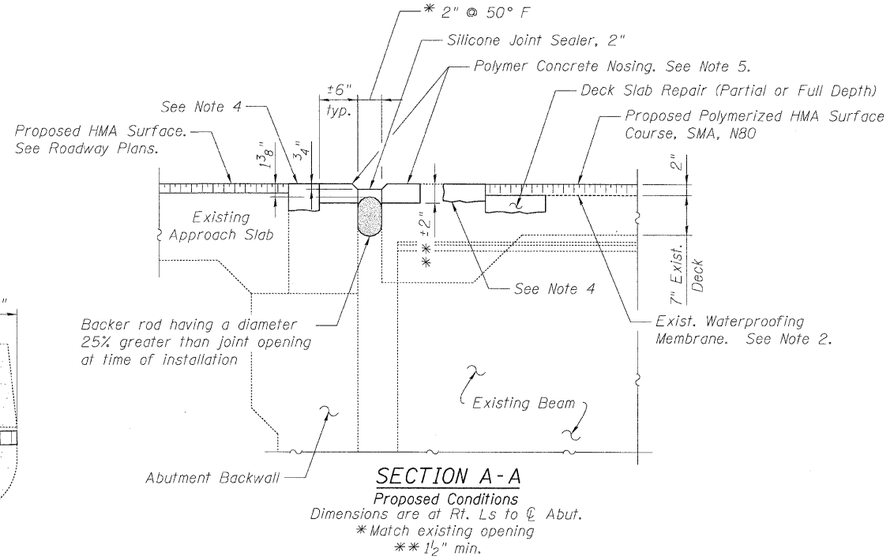
DETAIL FOR CURB TREATMENT



SECTION A-A

Existing Conditions

Dimensions are at Rt. Ls to ℄ Abut.



SECTION A-A

Proposed Conditions

Dimensions are at Rt. Ls to ℄ Abut.

*Match existing opening

**$1\frac{1}{2}$" min.

NOTES

1. Removal of the existing silicone joint shall be included in the cost of Silicone Joint Sealer, 2".
2. Contractor shall remove the existing asphalt overlay, and as necessary, adjust the milling depth to prevent damage to the existing waterproofing membrane. See Special Provision Hot-Mix Asphalt Surface Removal (Deck).
3. For existing concrete patches throughout the deck or approach slabs, the Contractor shall grind off the existing concrete patch flush with the existing top of deck/approach slab. This work shall be included in the cost of Hot-Mix Asphalt Surface Removal (Deck).
4. Existing concrete surface to remain. Areas that require repair will be paid for as Deck Slab Repair (Full Depth, Type II). Sawcut edge to provide a uniform width in addition to a clean edge for HMA surface and/or polymer concrete. Cost of sawcut and concrete removal shall be included in the cost of Hot-Mix Asphalt Surface Removal (Deck).
5. Existing polymer concrete to remain. Areas that require repair will be paid for as polymer concrete. Saw cut to provide a clean edge prior to removal. Cost of saw cut and existing polymer concrete removal shall be included in the cost of Polymer Concrete. A quantity of 5 cu. ft. of Polymer Concrete has been estimated for repair.
6. Contractor may remove and replace guardrail components to facilitate joint replacement work. Cost included with Silicone Joint Sealer, 2".
7. The deck slab repair concrete shall be placed to match the top of the existing waterproofing system adjacent to the repair area.
8. After completion of the deck slab repair work, the HMA surface course shall be placed in sufficient thickness in order to match the original surface elevation.

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	DATE - 01/21/2011	REVISED -

HBP Illinois Partners

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DECK, JOINT AND ABUTMENT REPAIR DETAILS
EASTBOUND FAI-80 OVER CENTER STREET RAMP CC
STRUCTURE NO. 099-0055
SHEET NO. S-3 OF S-5 SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99(2&3)RS-3	WILL	200	105
		CONTRACT NO. 60M64		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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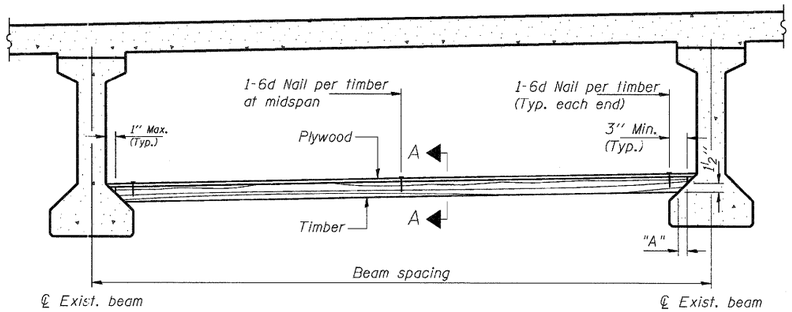
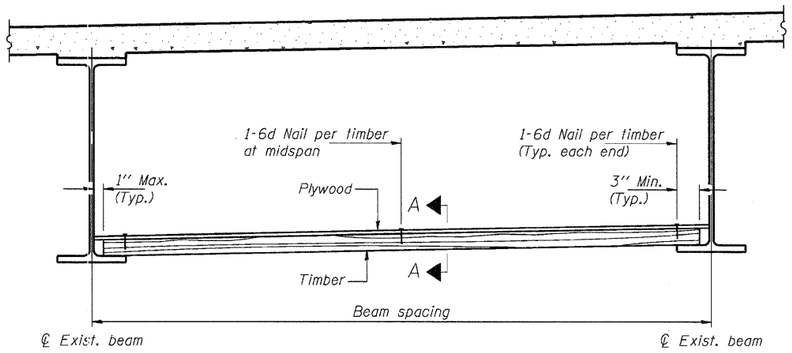
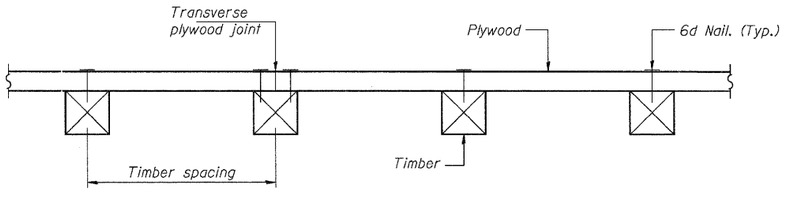


PPC I-BEAMS AND BULB-T's



STEEL BEAMS



SECTION A-A

TIMBER SPACING

Beam Spacing (ft.)	Timber Sizes (in.) 4" x 4" with min. Fb=775 psi Fv=135 psi	4" x 6" with min. Fb=775 psi Fv=135 psi	6" x 6" with min. Fb=575 psi Fv=125 psi
	Maximum Timber Spacing (in.)		
4.5	16	16	16
4.75	16	16	16
5.0	16	16	16
5.25	16	16	16
5.5	16	16	16
5.75	16	16	16
6.0	16	16	16
6.25	12	16	16
6.5	12	16	16
6.75	12	16	16
7.0	8	16	16
7.25	8	16	16
7.5	8	16	16
7.75	8	16	16
8.0	8	12	16
8.25	8	12	16
8.5	6	12	12
8.75	6	12	12
9.0	6	8	12

Notes: See special provision for Protective Shield, Special.

Timber sizes shown are nominal sizes. Rough sawn timber of the dimensions shown will also be considered acceptable.

The minimum Fb and Fv values shown are the tabulated design values given in the National Design Specification for Wood Construction for No. 2 Spruce-Pine-Fir without adjustment factors applied. Better grades or other species with equal or higher allowable stresses will also be considered acceptable.

The timber spacings shown have been determined using allowable stresses with all adjustment factors necessary for the anticipated service conditions.

All timber shall be treated.

Plywood shall be $\frac{5}{8}$" Exterior type plywood per APA.

Plywood shall be placed such that the face grain is perpendicular to the timber supports. When less than a full sheet (4' width) of plywood is used, the width of the strip used shall not be less than 2'.

Transverse plywood joints shall be supported by timbers.

When 4" x 6" timbers are used, they shall be placed such that the wide face is horizontal and the narrow face is vertical.

Design load = 200 psf.

PPC I-BEAMS AND BULB-T's

BEAM	"A"
36" I-Beam	$1\frac{1}{2}$"
42" I-Beam	$1\frac{1}{2}$"
48" I-Beam	$1\frac{1}{2}$"
54" I-Beam	$1\frac{5}{8}$"
63" Bulb-T	$3\frac{3}{8}$"
72" Bulb-T	$3\frac{3}{8}$"

BILL OF MATERIAL

Item	Unit	Total
Protective Shield, (Permanent)	Sq. Yd.	360

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	DATE - 01/21/2011	REVISED -

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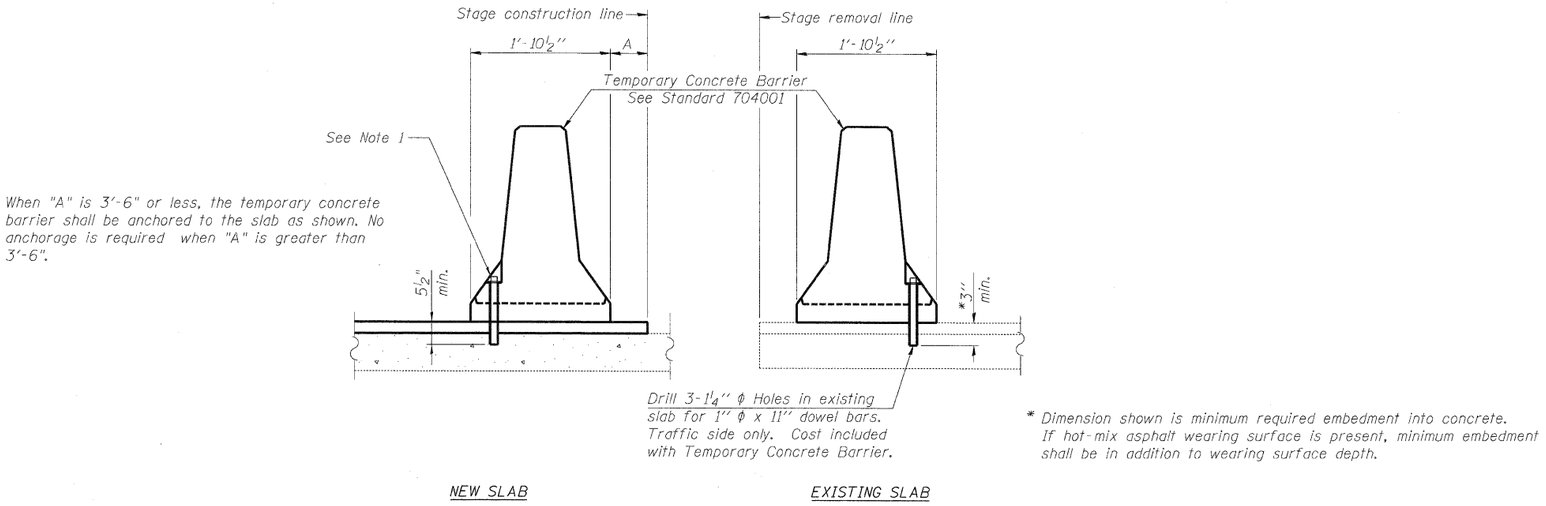
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PROTECTIVE SHIELD, SPECIAL
EASTBOUND FAI-80 OVER CENTER STREET RAMP CC
STRUCTURE NO. 099-0055
SHEET NO. S-4 OF S-5 SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99(2&3)RS-3	WILL	200	106
		CONTRACT NO. 60M64		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



* 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.

NOTES

1. Drill 1¼" ϕ Holes through new overlay into slab for 1" ϕ x 13" dowel bars. Traffic side only as directed by Engineer. Repair hole with non-shrink epoxy grout as directed by Engineer. Cost of anchorage and repair included with Temporary Concrete Barrier.

SECTIONS THRU SLAB

USER NAME = lmjeller	DESIGNED - DF	REVISED -	HBP Illinois Partners	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	TEMPORARY CONCRETE BARRIER FOR STAGE CONSTRUCTION EASTBOUND FAI-80 OVER CENTER STREET RAMP CC STRUCTURE NO. 099-0055
PLOT SCALE = NTS	CHECKED - BLU	REVISED -			SHEET NO. S-5 OF S-5 SHEETS
PLOT DATE = 1/20/2011 12:34:08 PM	DATE - 01/21/2011	REVISED -			

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99(2&3)RS-3	WILL	200	107
		CONTRACT NO. 60M64		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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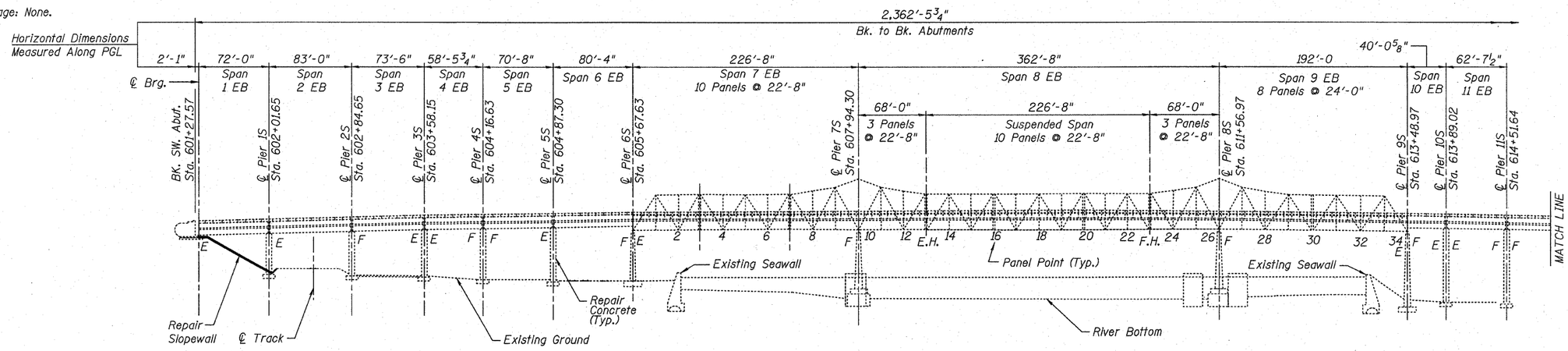
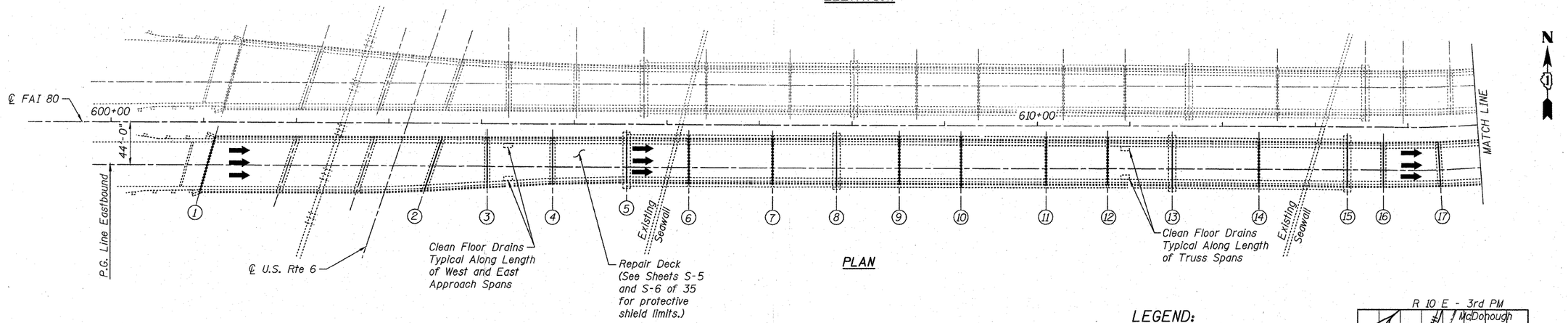
Existing Structure: SN 099-0056. The existing structure was originally constructed in 1962 as FAI Route 80, Section 99-3D-E&F-P. The existing structure is a 27-span bridge consisting of a 3-span truss over the river and a 6-span west approach and 18-span east approach. The approach spans are composite and non-composite wide flange steel beams. The truss over the river is a Warren truss with verticals. The beams for the approach spans and the floor system for the truss spans support a 7" thick slab. The west approach spans and the truss spans have a $2\frac{3}{4}$" latex concrete overlay. The east approach spans have a Class BD concrete wearing surface with welded wire fabric. The approach slabs have a variable depth polymerized bituminous concrete binder course and surface course. The substructure consists of reinforced concrete stub abutments founded on steel piles and multi-column piers founded on spread footings. The structure was rehabilitated in 1998, 1999, and 2001.

Staging: Traffic shall be maintained using staged construction.

Salvage: None.



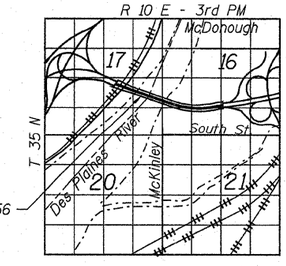
ELEVATION



PLAN

LEGEND:

(X) Joint Repair Type Designation (See Sheet S-7 of 35)



STATE OF ILLINOIS — PHILIP C. AZZARELLO 081-004245 CHICAGO, ILLINOIS — LICENSED STRUCTURAL ENGINEER

Signed: Philip C. Azzarello
Date: 2-8-11
Exp: 11/30/2012
Sheets: S-1 thru S-4, S-7 thru S-18, S-20, S-21

STATE OF ILLINOIS — BRIAN L. UMBRIGHT 081-005584 CHICAGO, IL — LICENSED STRUCTURAL ENGINEER

Signed: Brian L. Umbright
Date: Feb. 8, 2011
Expires: 11/30/2012
Sheets: S-19, S-22 thru S-35

STATE OF ILLINOIS — GHULAM M. KAMAL 061-006522 BLOOMINGDALE ILLINOIS — LICENSED STRUCTURAL ENGINEER

Signed:
Date: 02/08/2011
Expires: 11/30/2012
Sheets: S-5, S-6

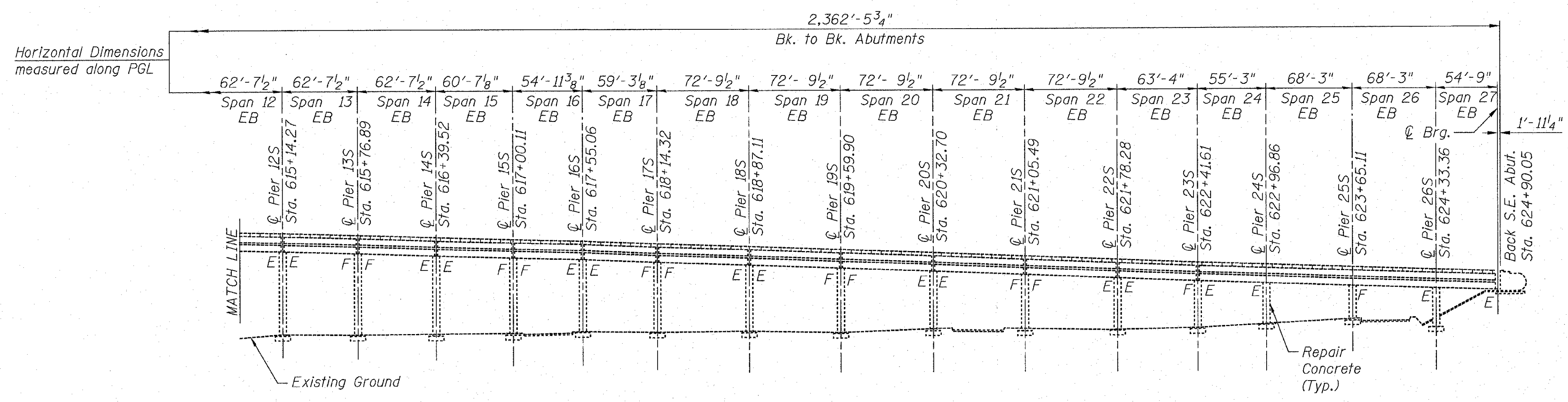
	DESIGNED - PCA	REVISED -
USER NAME = lkalita	DRAWN - CFB	REVISED -
PLOT SCALE = 1:1	CHECKED - MEA/ACF/PCA	REVISED -
PLOT DATE = 08-FEB-2011	DATE - 2/8/2011	REVISED -

HBP Illinois Partners

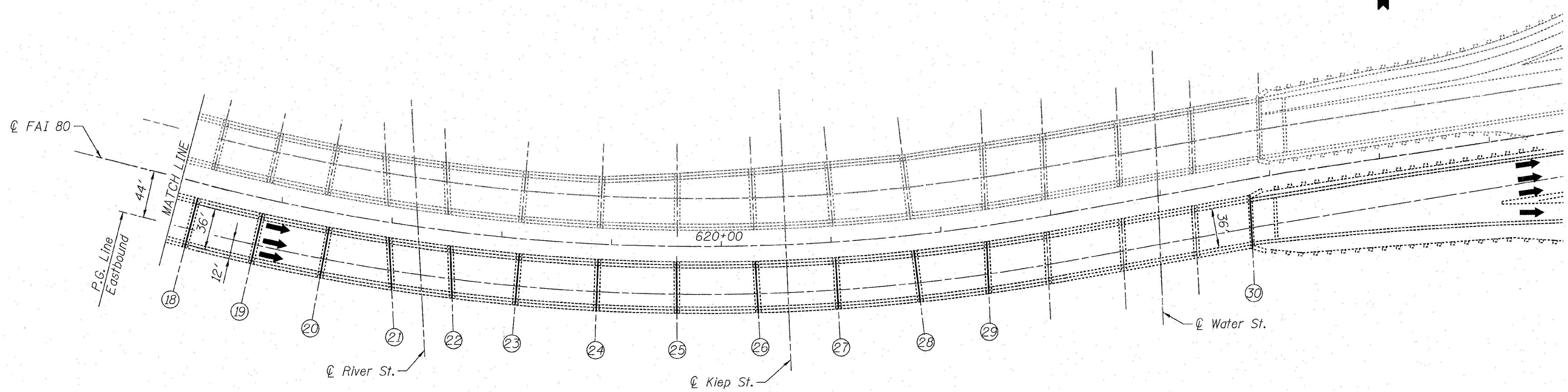
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN & ELEVATION
EASTBOUND FAI-80 OVER DES PLAINES RIVER
STRUCTURE NO. 099-0056
SHEET NO. S-1 OF 35 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99 (2&3) RS-3	WILL	200	108
		CONTRACT NO. 60M64		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



ELEVATION



PLAN

LEGEND:

(X) Joint Repair Type Designation (See Sheet S-7 of 35)

	DESIGNED - PCA	REVISED -
USER NAME = lkalita	DRAWN - CFB	REVISED -
PLOT SCALE = 1:1	CHECKED - MEA/ACF/PCA	REVISED -
PLOT DATE = 08-FEB-2011	DATE - 2/8/2011	REVISED -

FILE NAME = IP_PWP:dms34575\0990056-60M64-002-GPE.dgn

HBP Illinois Partners

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN & ELEVATION
EASTBOUND FAI-80 OVER DES PLAINES RIVER
STRUCTURE NO. 099-0056

SHEET NO. S-2 OF 35 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99 (2&3) RS-3	WILL	200	109
		CONTRACT NO. 60M64		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

SCOPE OF WORK

1. Perform partial depth repairs to the bridge deck.
2. Perform structural repairs on the abutments and the piers.
3. Temporarily shore beams at designated pier cap repair locations.
4. Remove and replace existing joint material with new silicone joint sealers at designated locations.
5. Repair bearings as detailed and at the designated locations.
6. Perform structural repairs of the slope walls.
7. Clean floor drains.
8. Repair damaged and deteriorated structural steel as detailed and at designated locations.
9. Clean lower truss chord.

DESIGN SPECIFICATIONS

2002 AASHTO Standard Specifications for Highway Bridges, 17th Edition.

DESIGN STRESSES

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

GENERAL NOTES:

1. 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.
2. Reinforcement bars shall conform to the requirements of ASTM A706 Grade 60. See Special Provisions.
3. Areas of proposed repairs are estimated. Actual type, location and dimensions are to be determined by the Engineer during construction.
4. Fasteners shall be high strength bolts. Bolts $^{3}/_{4}$" diameter, open holes $^{13}/_{16}$" diameter, bolts $^{7}/_{8}$" diameter, open holes $^{15}/_{16}$" diameter, unless otherwise noted.
5. Existing structural steel shall only be cleaned and painted as required by the Special Provision "Cleaning and Painting Contact Surface Areas of Existing Steel Structures".
6. The Inorganic Rich Zinc Primer /Acrylic / Acrylic Paint System shall be used for shop and field painting of new structural steel except where otherwise noted. The color of the Acrylic finish coat shall be Reddish Brown, Munsell No. 2.5YR3/4. See Special Provision for "Cleaning and Painting New Metal Structures".
7. The existing structural steel coating may contain lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Slope Wall Removal	Sq.Yd.	-	134	134
Slope Wall 4 Inch	Sq.Yd.	-	134	134
Porous Granular Embankment	Cu.Yd.	-	222	222
Epoxy Crack Injection	Foot	-	17	17
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq.Ft.	-	12,782	12,782
Structural Repair of Concrete (Depth Greater Than 5 Inches)	Sq.Ft.	-	2,006	2,006
Deck Slab Repair (Partial)	Sq.Yd.	221	-	221
Deck Slab Repair (Full Depth, Type II)	Sq.Yd.	2	-	2
Silicone Joint Sealer, 1"	Foot	353	-	353
Silicone Joint Sealer, 1.75"	Foot	289	-	289
Silicone Joint Sealer, 2.5"	Foot	325	-	325
Silicone Joint Sealer, 2.75"	Foot	388	-	388
Silicone Joint Sealer, 3"	Foot	50	-	50
Polymer Concrete	Cu.Ft.	50	-	50
Temporary Shoring and Cribbing, Special	Each	-	118	118
Containment and Disposal of Lead Paint Cleaning Residues No. 1	L.Sum	1	-	1
Jack and Clean Bearings	Each	-	58	58
Cleaning Drainage System *	L.Sum	1	-	1
Structural Steel Repair	Pound	8,560	-	8,560
Cleaning Lower Truss Chord	L. Sum	1	-	1
Protective Shield	Sq.Yd.	120	-	120
Jack and Reposition Bearings	Each	1	-	1
Furnishing and Erecting Structural Steel	Pound	40	-	40

* Total number of drains = 578

INDEX OF SHEETS

	DESIGNED - PCA/MEA	REVISED -
USER NAME = default	DRAWN - CFB/RCW	REVISED -
PLOT SCALE = $SCALE$	CHECKED - MEA/PCA	REVISED -
PLOT DATE = 2/8/2011	DATE - 2/8/2011	REVISED -

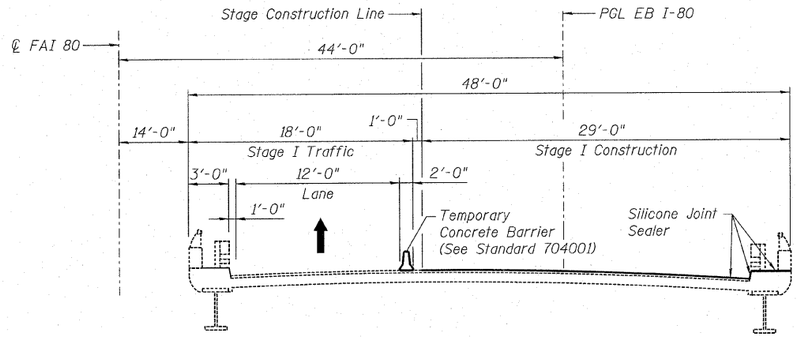
FILE NAME = c:\caddlib\pw\lmueller\pwgreat_lakes\dms34575\D990056-60M64-003-quantity.dgn

HBP Illinois Partners

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

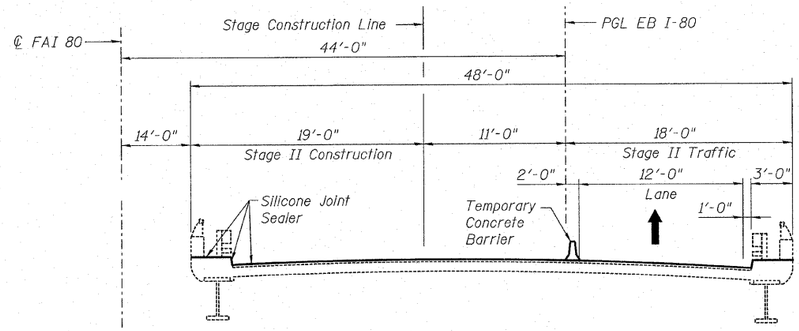
NOTES & TOTAL BILL OF MATERIAL
EASTBOUND FAI-80 OVER DES PLAINES RIVER
STRUCTURE NO. 099-0056
SHEET NO. S-3 OF 35 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99 (2&3) RS-3	WILL	200	110
		CONTRACT NO. 60M64		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



STAGE I CONSTRUCTION & TRAFFIC APPROACH SPANS SHOWN

Fascia Beams Shown
Interior Beams Not Shown
(Looking East)



STAGE II CONSTRUCTION & TRAFFIC APPROACH SPANS SHOWN

Fascia Beams Shown
Interior Beams Not Shown
(Looking East)

NOTES:

1. *Sections shown are typical except at beginning and ending of bridge where widths vary to accommodate the ramps. See roadway plans for details.*
2. *Cost of Temporary Concrete Barrier included in Roadway Plans.*

	DESIGNED - PCA	REVISED -
USER NAME = lkalita	DRAWN - MN	REVISED -
PLOT SCALE = 1:1	CHECKED - JFA	REVISED -
PLOT DATE = 08-FEB-2011	DATE - 2/8/2011	REVISED -

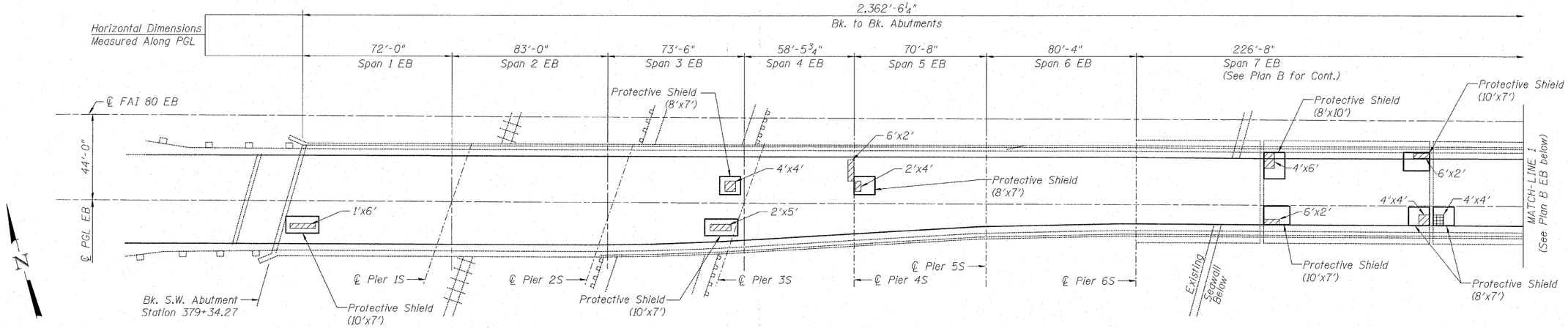
FILE NAME = IP_PWPdms34575\0990056-60M64-004-STAGING.dgn

HBP Illinois Partners

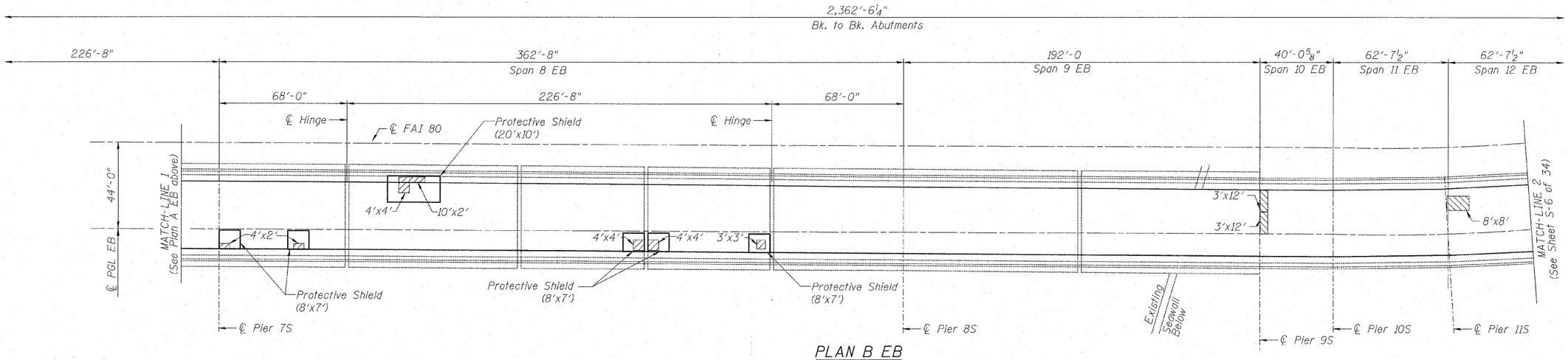
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CONSTRUCTION STAGING
EASTBOUND FAI-80 OVER DES PLAINES RIVER
STRUCTURE NO. 099-0056
SHEET NO. S-4 OF 35 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99 (2&3) RS-3	WILL	200	111
		CONTRACT NO. 60M64		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



PLAN A EB



PLAN B EB

LEGEND:

- Deck Slab Repair (Partial)
- Deck Slab Repair (Partial) w/ Welded Wire Fabric *
- Deck Slab Repair (Full Depth, Type II)
- Protective Shield

* Existing wearing surface contains welded wire fabric (WWF 3x3-D8xD8 (E)) in east approach spans (Span 10EB through Span 27EB). Remove and replace welded wire fabric when performing deck slab repair. Cost of removing and replacing WWF is incidental to Deck Slab Repair (Partial).

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Deck Slab Repair (Partial)	Sq.Yd.	40
Deck Slab Repair (Full Depth, Type II)	Sq.Yd.	2
Protective Shield	Sq.Yd.	120

NOTES:

1. Areas of proposed deck repairs are estimated. Actual type, location and dimensions of deck repairs are to be determined by the Engineer during construction.
2. Reuse existing drain if drain falls within a full depth repair.

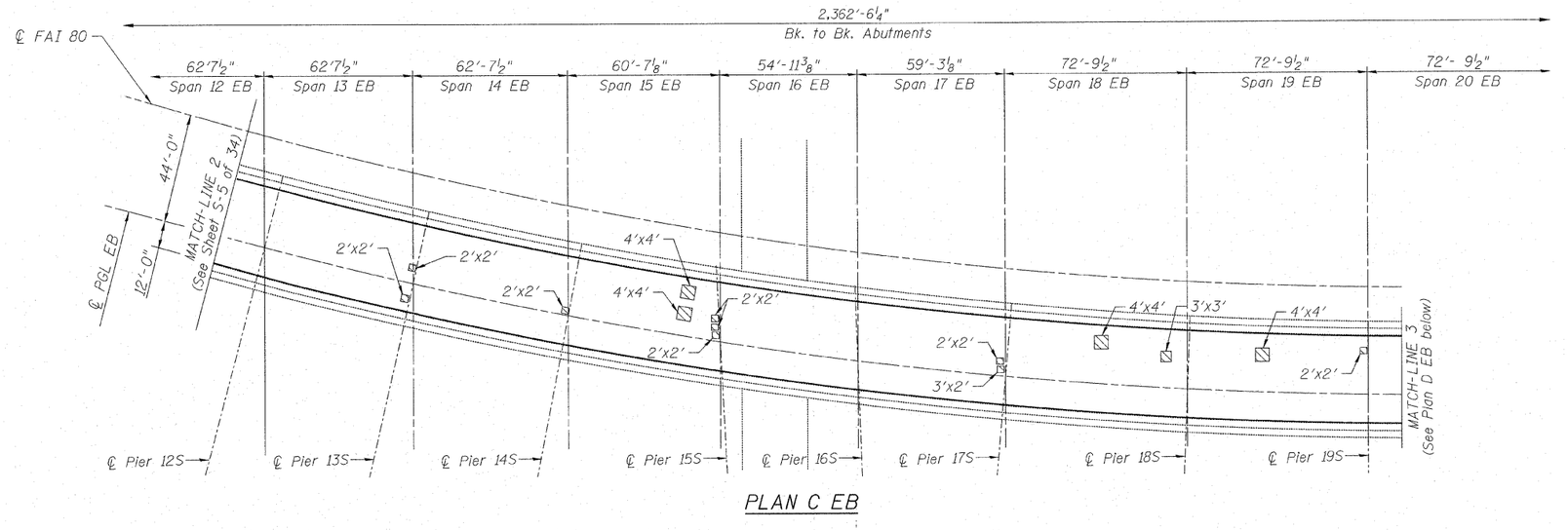
USER NAME = CMF	DESIGNED - GMK	REVISED -
PLOT SCALE = 2:1	DRAWN - GFP	REVISED -
PLOT DATE = 08-FEB-2011	CHECKED - WPK/MWS/GMK	REVISED -
FILE NAME = 0990056-60M64-001-DECK-EB.DGN	DATE - 02/08/2011	REVISED -

DB STERLIN CONSULTANTS, INC.
123 N. WACKER DRIVE SUITE 2000
CHICAGO, ILLINOIS 60606
TEL. (312)857-1006 FAX (312)857-1256

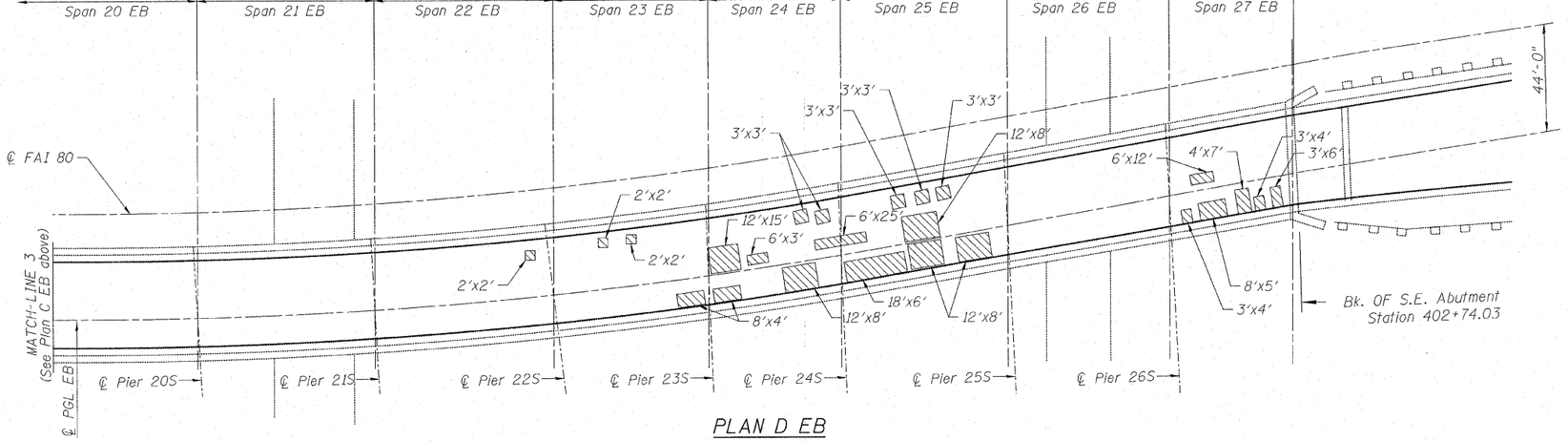
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DECK SLAB REPAIR PLAN
I-80 OVER DES PLAINES RIVER
STRUCTURE NO. 099-0056
SHEET NO. S-5 OF S-35 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99 (2 & 3) RS-3	WILL	200	112
		CONTRACT NO. 60M64		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



PLAN C EB



PLAN D EB

LEGEND:

Deck Slab Repair (Partial)

Deck Slab Repair (Partial) w/ Welded Wire Fabric*

* Existing wearing surface contains welded wire fabric (WWF 3x3-D8xD8 (E)) in east approach spans (Span 10EB through Span 27EB). Remove and replace welded wire fabric when performing deck slab repair. Cost of removing and replacing WWF is incidental to Deck Slab Repair (Partial).

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Deck Slab Repair (Partial)	Sq.Yd.	140

NOTES:

1. Areas of proposed deck repairs are estimated. Actual type, location and dimensions of deck repairs are to be determined by the Engineer during construction.
2. Reuse existing drain if drain falls within a full depth repair.

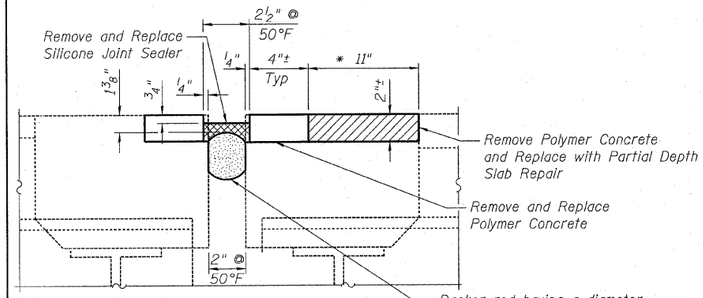
USER NAME = CMF	DESIGNED - GMK	REVISED -
PLOT SCALE = 2:1	DRAWN - GFP	REVISED -
PLOT DATE = 08-FEB-2011	CHECKED - WPK/MWS/GMK	REVISED -
FILE NAME = 0990056-60M64-002-DECK-EB.DGN	DATE - 02/08/2011	REVISED -

DB STERLIN CONSULTANTS, INC.
123 N. WACKER DRIVE SUITE 2000
CHICAGO, ILLINOIS 60606
TEL. (312)857-1000 FAX. (312)857-1056

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DECK SLAB REPAIR PLAN
I-80 OVER DES PLAINES RIVER
STRUCTURE NO. 099-0056
SHEET NO. S-6 OF S-35 SHEETS

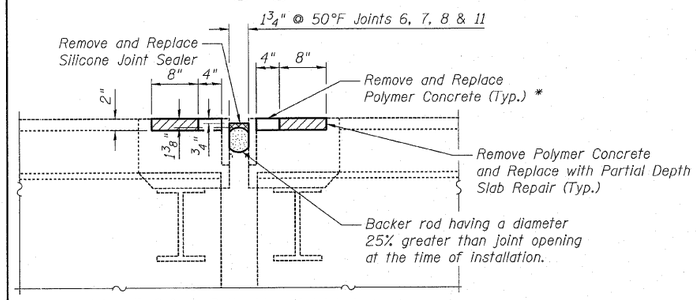
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99 (2 & 3) RS-3	WILL	200	113
		CONTRACT NO. 60M64		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



* East side of joint 2 only.

PROPOSED TRANSVERSE JOINT

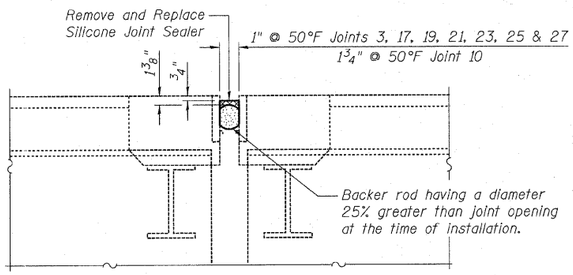
Joints (2) & (28)



* Joints 7, 8 & 11: Both sides of joint, inside lane only
Joint 6: Both sides, entire joint length

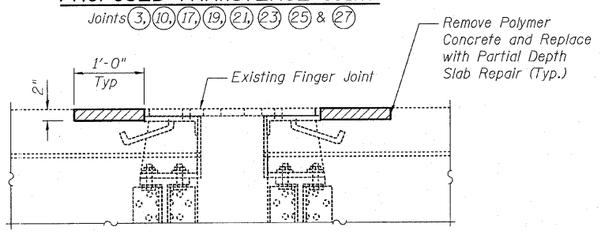
PROPOSED TRANSVERSE JOINT

Joints (6) (7) (8) & (11)



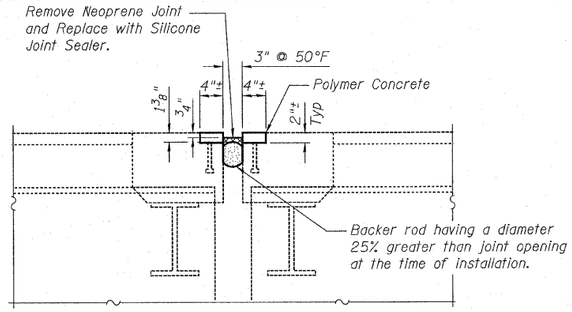
PROPOSED TRANSVERSE JOINT

Joints (3) (10) (17) (19) (21) (23) (25) & (27)



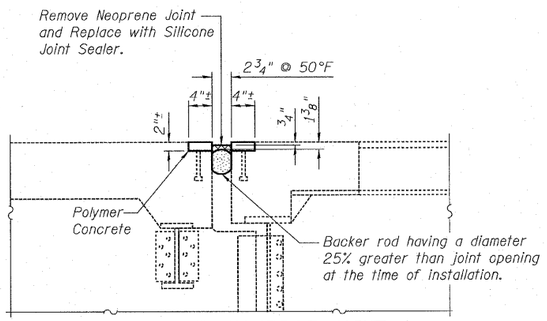
PROPOSED TRANSVERSE JOINT

Joints (4) & (16)



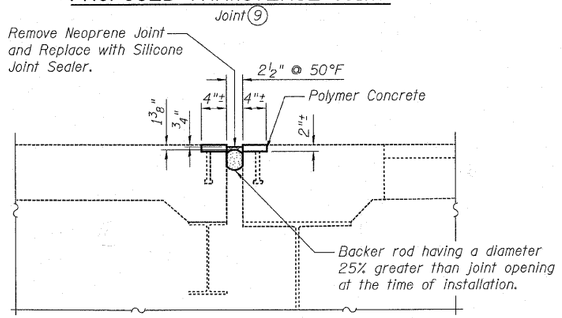
PROPOSED TRANSVERSE JOINT

Joint (5)



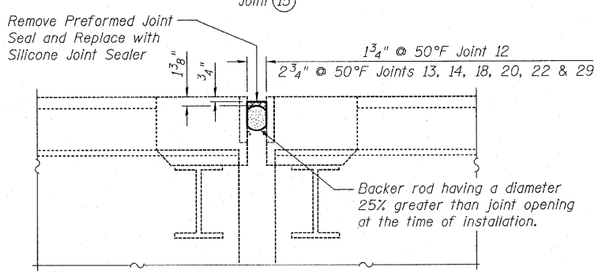
PROPOSED TRANSVERSE JOINT

Joint (9)



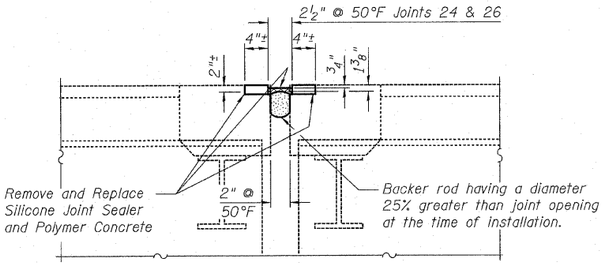
PROPOSED TRANSVERSE JOINT

Joint (15)



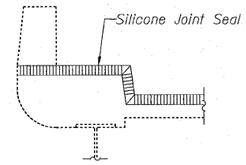
PROPOSED TRANSVERSE JOINT

Joints (12) (13) (14) (18) (20) (22) & (29)



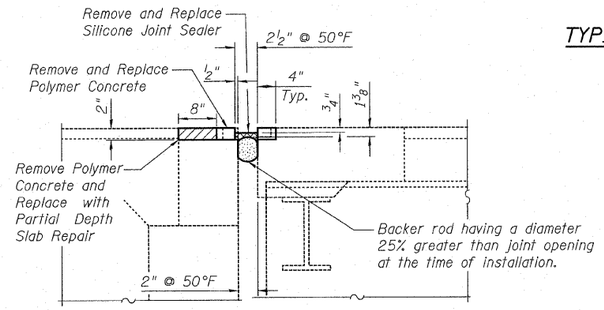
PROPOSED TRANSVERSE JOINT

Joints (24) & (26)



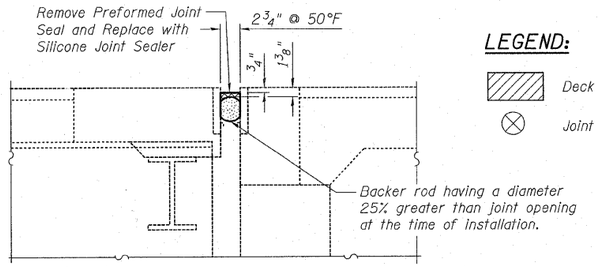
TYPICAL END OF SEAL TREATMENT

(Silicone Joint Seal)
Approach Spans Shown,
Truss Spans Similar.



PROPOSED TRANSVERSE JOINT - WEST ABUTMENT

Joint (1)



PROPOSED TRANSVERSE JOINT - EAST ABUTMENT

Joint (30)

LEGEND:

- Deck Slab Repair (Partial)
- ⊗ Joint repair type designation

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Silicone Joint Sealer, 1"	Foot	353
Silicone Joint Sealer, 1.75"	Foot	289
Silicone Joint Sealer, 2.5"	Foot	325
Silicone Joint Sealer, 2.75"	Foot	388
Silicone Joint Sealer, 3"	Foot	50
Polymer Concrete	Cu. Ft.	50
Deck Slab Repair (Partial)	Sq. Yd	41

NOTES:

1. Removal of existing joint material shall be included in the cost of Silicone Joint Sealer.
2. Provide ¼" chamfer at top corner of polymer concrete adjacent to opening.
3. Removal of existing concrete and polymer concrete is included in the cost of Polymer Concrete.
4. For location of joints, see Sheets S-1 and S-2 of 35.
5. Limit of removal and replacement of polymer concrete is curb to curb.

	DESIGNED - RCW	REVISED -
USER NAME = lkalita	DRAWN - RCW	REVISED -
PLOT SCALE = 1:1	CHECKED - PCA	REVISED -
PLOT DATE = 08-FEB-2011	DATE - 2/8/2011	REVISED -

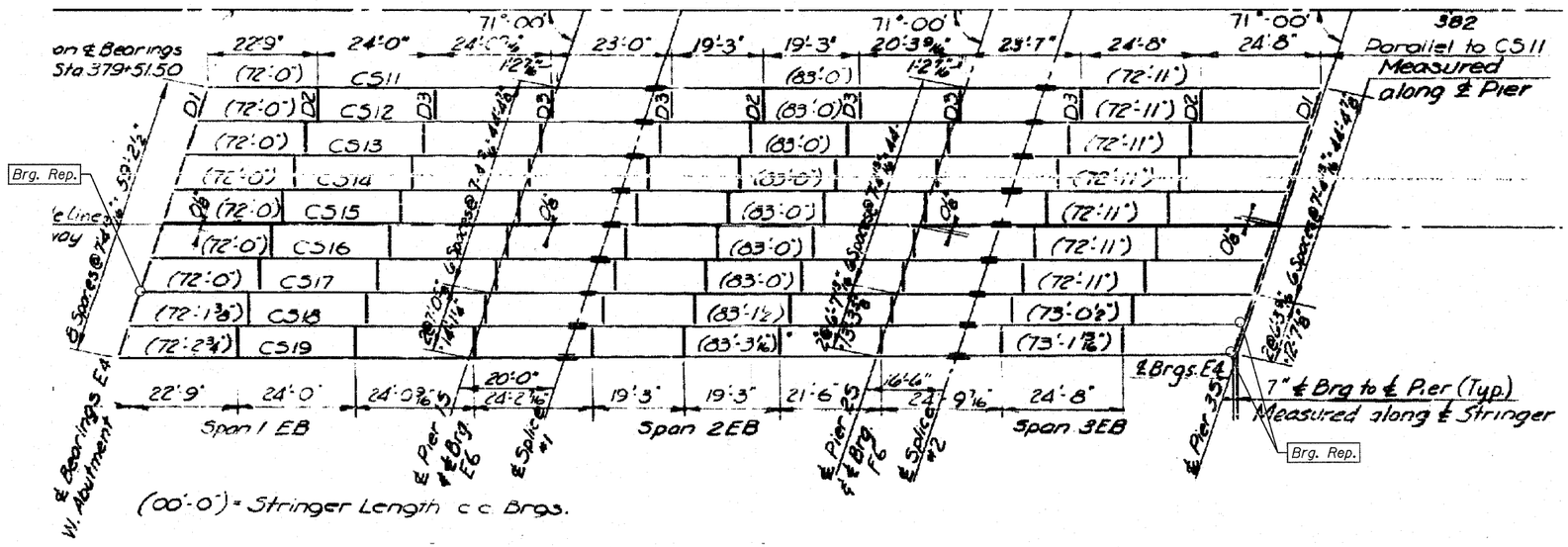
FILE NAME = I:_PWP\dms34575\0990056-60M64-007-joints.dgn

HBP Illinois Partners

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DECK JOINT REPAIRS
EASTBOUND FAI-80 OVER DES PLAINES RIVER
STRUCTURE NO. 099-0056
SHEET NO. S-7 OF 35 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99 (2&3) RS-3	WILL	200	114
		CONTRACT NO. 60M64		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



NOTES:

1. Work this sheet with Sheets S-9 to S-14 of 35.
2. Drawing shows plan of stringers, diaphragms. All labels and numbering of the framing members are according to the 1960 design plans.
3. For schedule of repairs, see Sheet S-14 of 35.

	DESIGNED - MEA	REVISED -
USER NAME = lkalita	DRAWN - LK	REVISED -
PLOT SCALE = 1:1	CHECKED - MRI	REVISED -
PLOT DATE = 08-FEB-2011	DATE - 2/8/2011	REVISED -

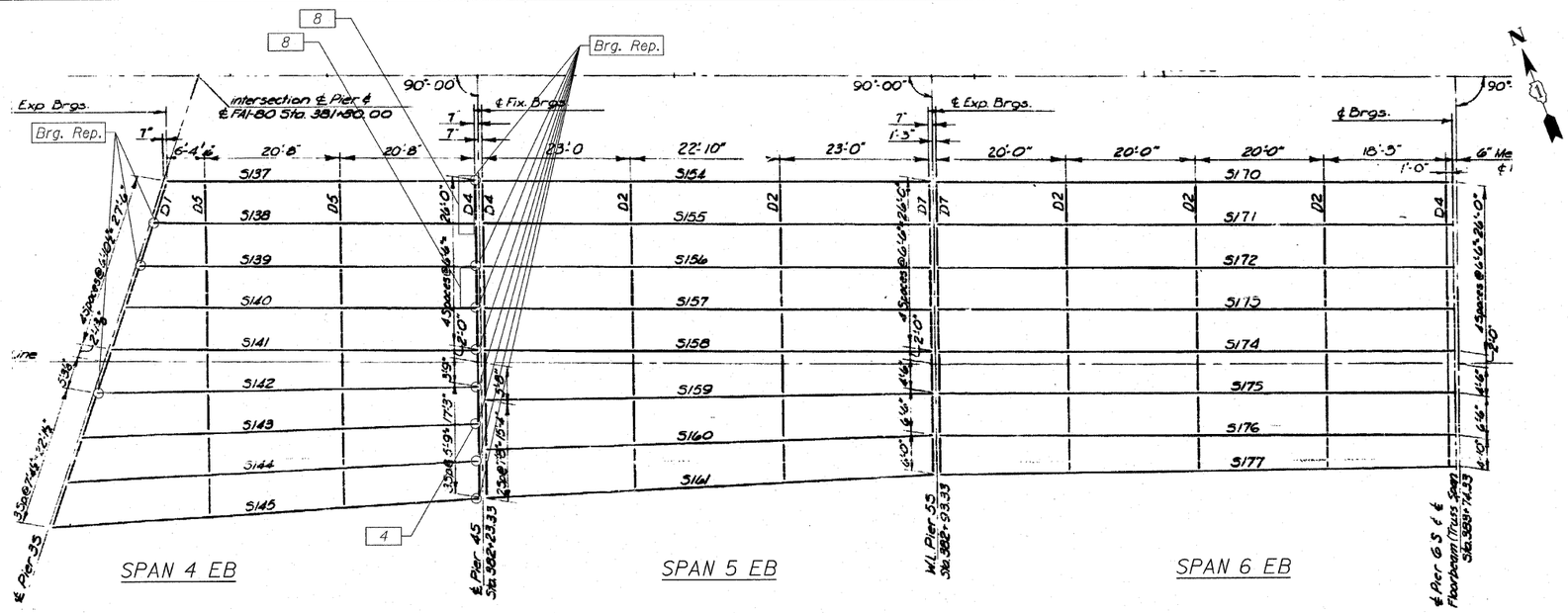
FILE NAME = IP_PWPrdms34575\0990056-60M64-000-FP1.dgn

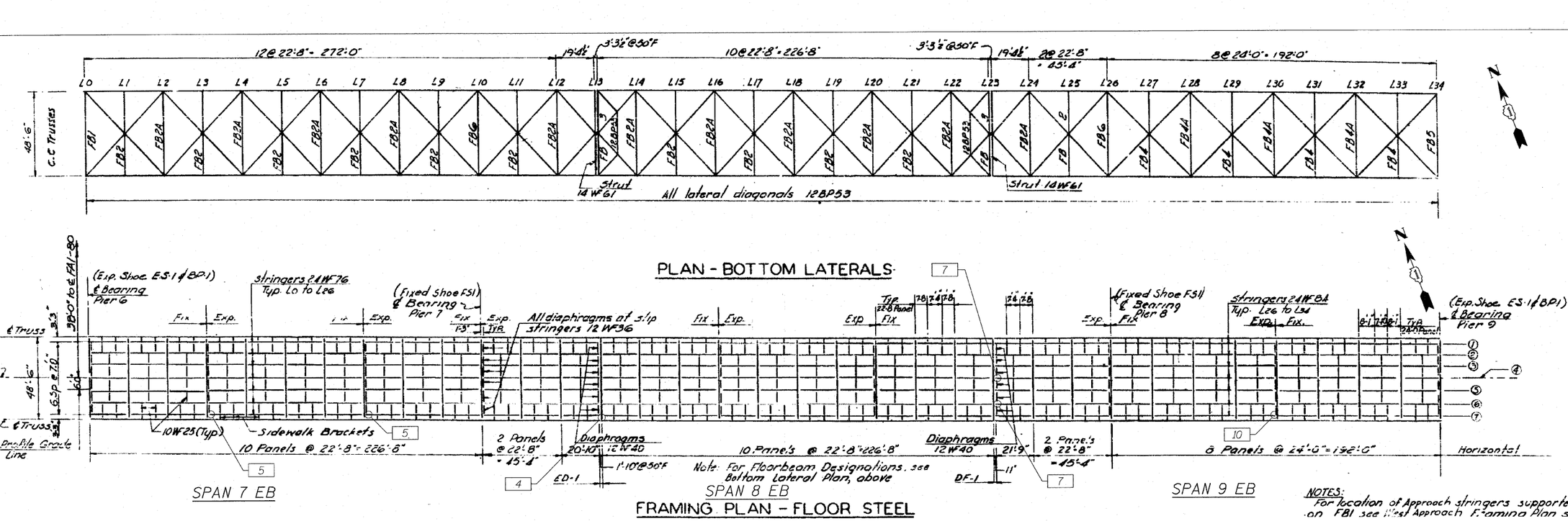
HBP Illinois Partners

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FRAMING PLAN SPANS 1-3
EASTBOUND FAI-80 OVER DES PLAINES RIVER
STRUCTURE NO. 099-0056
SHEET NO. S-8 OF 35 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99 (2&3) RS-3	WILL	200	115
		CONTRACT NO. 60M64		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		





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PLOT DATE = 2/8/2011	DATE - 2/8/2011	REVISED -

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FRAMING PLAN SPANS 4–9
EASTBOUND FAI–80 OVER DES PLAINES RIVER
STRUCTURE NO. 099–0056
SHEET NO. S-9 OF 35 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99 (2&3) RS-3	WILL	200	116
		CONTRACT NO. 60M64		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

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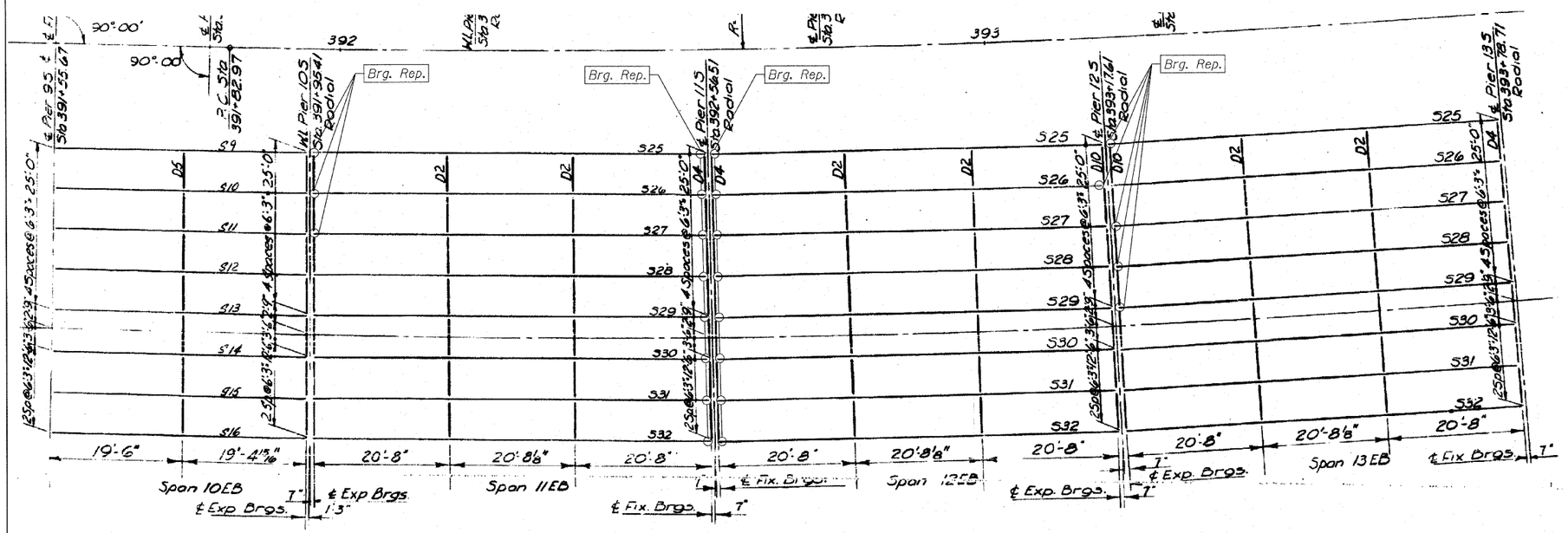

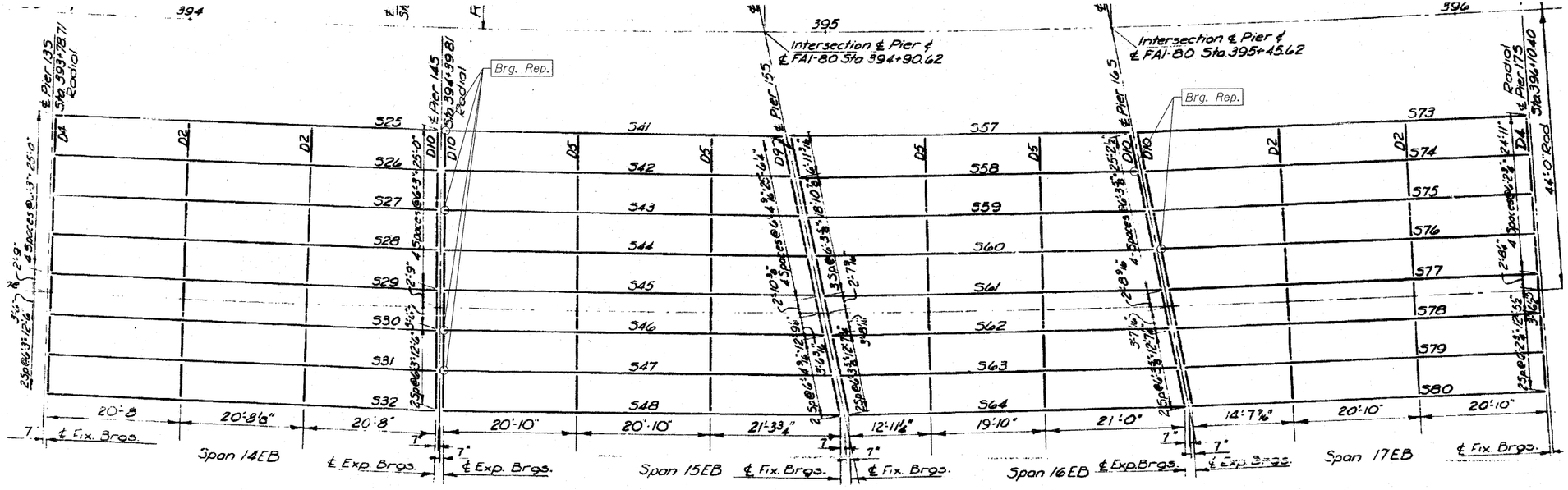

LEGEND:

[1] Detail 1

NOTES:

1. Work this sheet with Sheets S-8, S-9 and S-11 to S-14 of 35.
2. Drawing shows plan of floor beams, stringers, and diaphragms. All labels and numbering of the framing members are according to the 1960 design plans.
3. For schedule of repairs, see Sheet S-14 of 35.

	DESIGNED - MEA	REVISED -
USER NAME = default	DRAWN - LK	REVISED -
PLOT SCALE = #SCALE#	CHECKED - MRI	REVISED -
PLOT DATE = 2/8/2011	DATE - 2/8/2011	REVISED -

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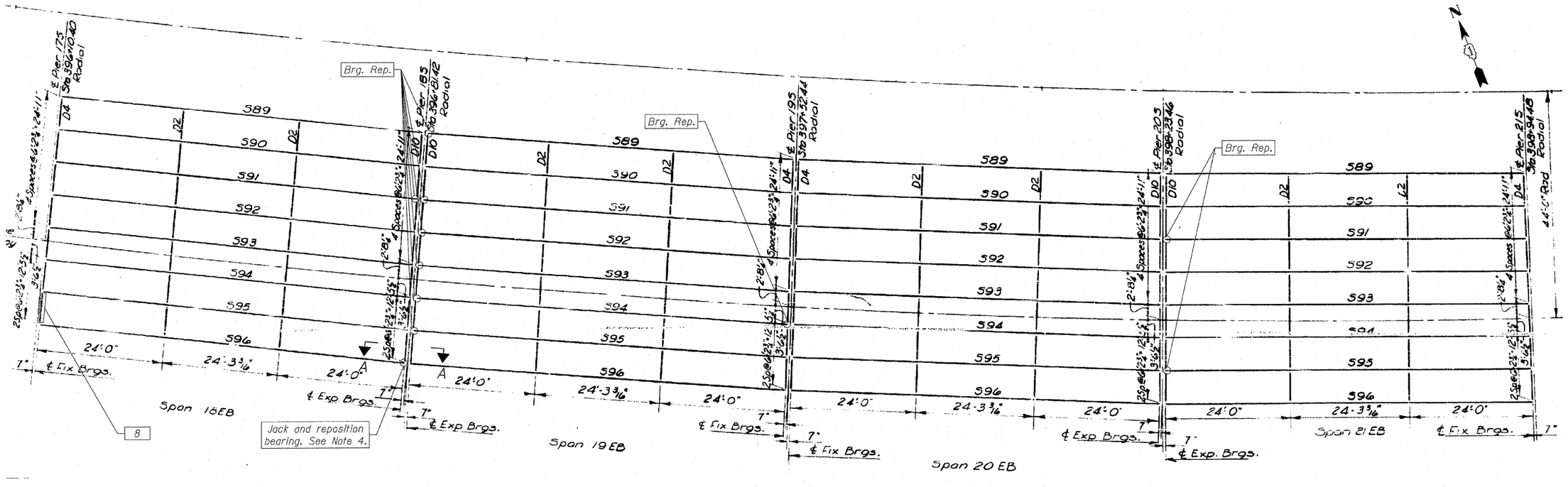
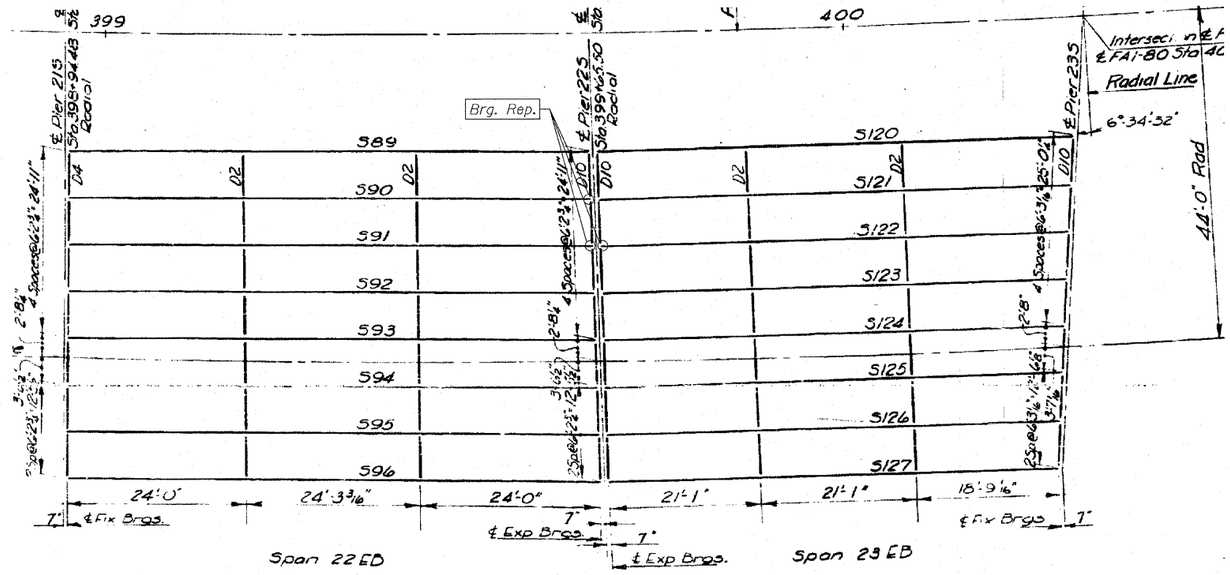
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FRAMING PLAN SPANS 10–17
EASTBOUND FAI–80 OVER DES PLAINES RIVER
STRUCTURE NO. 099–0056
SHEET NO. S-10 OF 35 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99 (2&3) RS-3	WILL	200	117
		CONTRACT NO. 60M64		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		





LEGEND:

1 Detail 1

NOTES:

1. Work this sheet with Sheets S-8 to S-10 and S-12 to S-14 of 35.
2. Drawing shows plan of floor beams, stringers and diaphragms. All labels and numbering of the framing members are according to the 1960 design plans.
3. For schedule of repairs, see Sheet S-14 of 35.
4. See Sheet 19A for View A & Bearing Replacement Details.

	DESIGNED - MEA	REVISED -
USER NAME = default	DRAWN - LK	REVISED -
PLOT SCALE = $SCALE$	CHECKED - MRI	REVISED -
PLOT DATE = 2/8/2011	DATE - 2/8/2011	REVISED -

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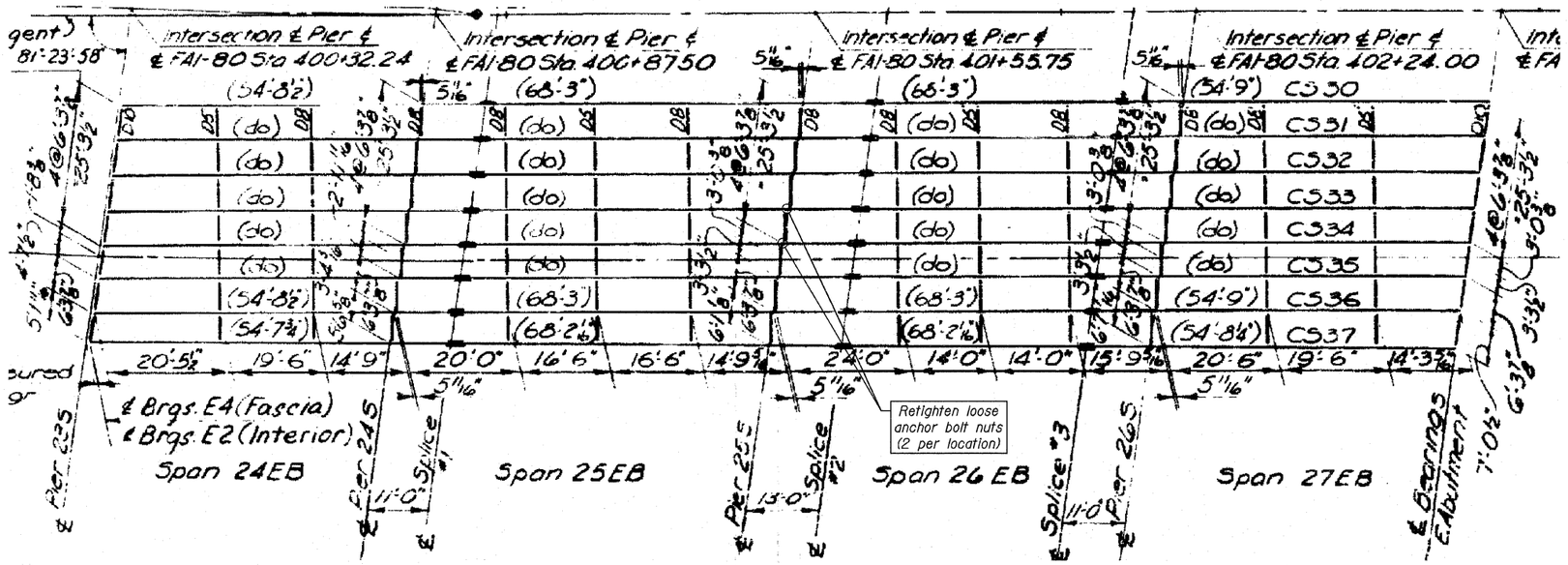
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FRAMING PLAN SPANS 18–23
EASTBOUND FAI–80 OVER DES PLAINES RIVER
STRUCTURE NO. 099–0056
SHEET NO. S-11 OF 35 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99 (2&3) RS-3	WILL	200	118
		CONTRACT NO. 60M64		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



NOTES:

1. Work this sheet with Sheets S-8 to S-11, S-13 and S-14 of 35.
2. Drawing shows plan of stringers, diaphragms. All labels and numbering of the framing members are according to the 1960 design plans.
3. For schedule of repairs, see Sheet S-14 of 35.

	DESIGNED - MEA	REVISED -
USER NAME = lkalita	DRAWN - LK	REVISED -
PLOT SCALE = 1:1	CHECKED - MRI	REVISED -
PLOT DATE = 08-FEB-2011	DATE - 2/8/2011	REVISED -

FILE NAME = IP_PWP:dms34575\099D056-60M64-012-FPS.dgn

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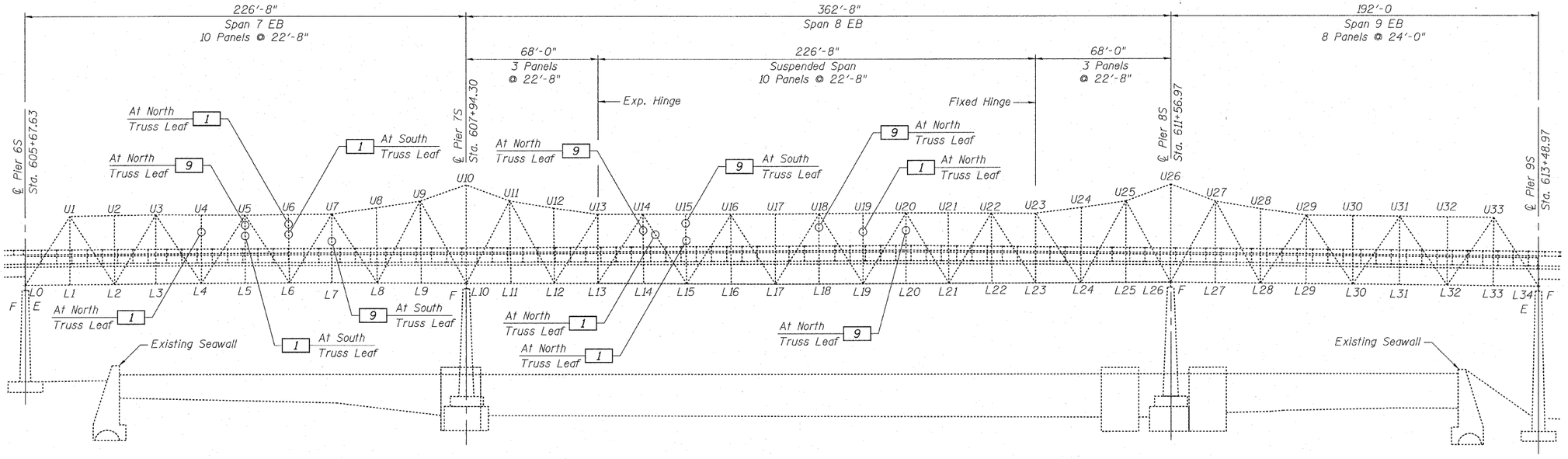
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FRAMING PLAN SPANS 24-27
EASTBOUND FAI-80 OVER DES PLAINES RIVER
STRUCTURE NO. 099-0056
SHEET NO. S-12 OF 35 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99 (2&3) RS-3	WILL	200	119
		CONTRACT NO. 60M64		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



TRUSS ELEVATION

LEGEND:

[1] Detail 1

NOTES:

1. Work this sheet with Sheets S-8, S-9 to S-12 and S-14 of 35.
2. Drawing shows elevation of truss members.
   All labels and numbering of the truss members
   are according to the 1960 design plans.
3. For schedule of repairs, see Sheet S-14 of 35.

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USER NAME = lkalita	DRAWN - LK	REVISED -
PLOT SCALE = 1:1	CHECKED - MRI	REVISED -
PLOT DATE = 08-FEB-2011	DATE - 2/8/2011	REVISED -

FILE NAME = IP_PWP:dms34575\0990056-60M64-013-TrussEl.dgn

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TRUSS ELEVATION
EASTBOUND FAI-80 OVER DES PLAINES RIVER
STRUCTURE NO. 099-0056
SHEET NO. S-13 OF 35 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99 (2&3) RS-3	WILL	200	120
		CONTRACT NO. 60M64		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

SCHEDULE OF REPAIRS

Detail Number	Repair Type	Repair Detail Sheet No.	Number of Locations	Struct. Steel Repair (Lbs)	Jack and Clean Bearings (Each)
1	Truss Hanger/Post/Diagonal Web and Flange Repair	S-15	7	5,510	-
4	Missing Bolt Replacement	-	2	10	-
5	Stringer Web Repair	S-17	2	210	-
7	Stringer Web and Flange Repair 4	S-17	2	470	-
8	Diaphragm Replacement	S-18	3	950	-
9	Truss Hanger/Post Web Repair	S-16	6	1,250	-
10	Stringer Web Repair	S-19	1	160	-
-	Bearing Repair (See Note 1)	S-21	58	-	58
-	Tighten Loose Bearing Anchor Bolt	-	2	-	-
Total				8,560	58

NOTES:

1. For locations of repairs see Sheets S-8 to S-13 of 35.
2. Plan dimensions and details for repair details relative to the existing structure have been taken from 1960 design plans and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field 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 the scope of the work. However, the Contractor will be paid for the quantity of steel actually furnished at the unit price bid for the work.
3. Structural steel for repair shall conform to the requirements of AASHTO M270 Gr 36 except as noted.
4. Fasteners shall be high strength bolts (AASHTO M164). Bolts shall be $\frac{7}{8}$" dia., open holes shall be $\frac{15}{16}$" dia unless otherwise noted.
5. All existing steel surfaces that will be in contact with new steel shall be cleaned in accordance with Special Provision Cleaning and Painting Contact Surface Areas of Existing Steel Structures.
6. The existing structural steel coating may contain lead. The contractor shall take appropriate precautions to deal with the presence of lead in this project.
7. The cost of field drilling of existing members shall be included with "Structural Steel Repair".
8. Detail [4] consists of the replacement of a missing bolt with a H.S. bolt of the same diameter. Contractor to verify diameter. Cost included with "Structural Steel Repair".
9. Cost of removal and replacement of existing steel plates and members shall be included in the cost of "Structural Steel Repair".
10. Cost of item "Tighten Loose Bearing Anchor Bolt" included in the cost of "Structural Steel Repair".

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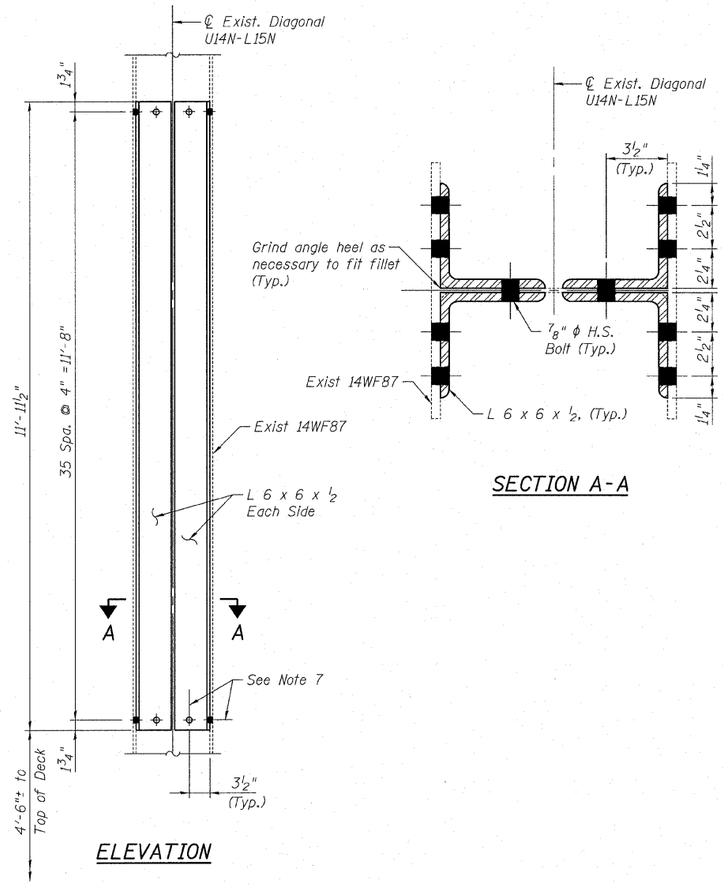
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STEEL REPAIR SCHEDULE & NOTES
EASTBOUND FAI-80 OVER DES PLAINES RIVER
STRUCTURE NO. 099-0056
SHEET NO. S-14 OF 35 SHEETS

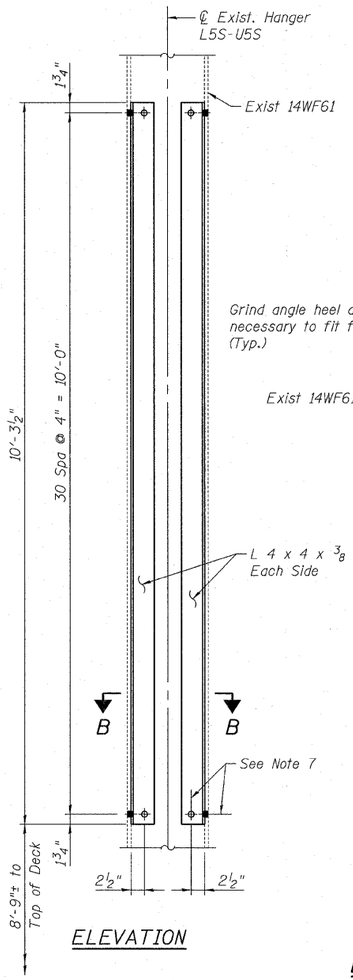
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99 (2&3) RS-3	WILL	200	121
		CONTRACT NO. 60M64		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



ELEVATION

SECTION A-A

DETAIL 1
TRUSS HANGER/POST/DIAGONAL
WEB AND FLANGE REPAIR



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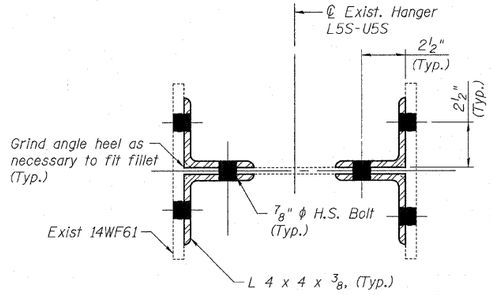
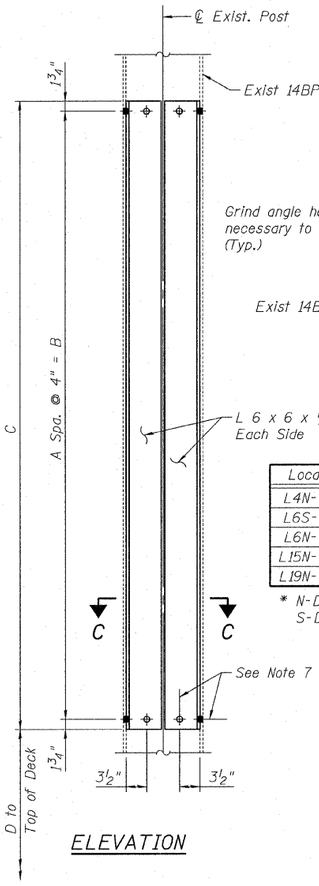


SECTION B-B

DETAIL 1
TRUSS HANGER/POST/DIAGONAL
WEB AND FLANGE REPAIR



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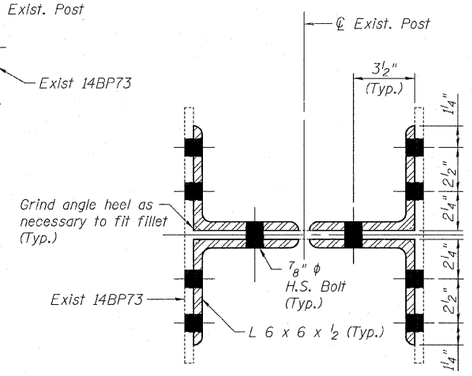

SECTION C-C

Location *	A	B	C	D
L4N-U4N	26	8'-8"	8'-11½"	6'-2"±
L6S-U6S	19	6'-4"	6'-7½"	6'-2"±
L6N-U6N	23	7'-8"	7'-11½"	6'-2"±
L15N-U15N	28	9'-4"	9'-7½"	6'-2"±
L19N-U19N	17	5'-8"	5'-11½"	7'-2"±

* N-Denotes North Truss Leaf
S-Denotes South Truss Leaf

DETAIL 1
TRUSS HANGER/POST/DIAGONAL
WEB AND FLANGE REPAIR

NOTES:

1. See Sheets S-8 to S-14 of 35 for locations of proposed repair details and notes.
2. All structural steel plates and shapes used in proposed repair details shall be AASHTO M270 Gr 36 (ASTM A36).
3. All fastener shall be ⅞" dia. AASHTO M164 (ASTM A325) high strength bolts in $^{15}/_{16}$" dia. standard size holes.
4. Contact surfaces at bolted parts shall have Class B coating as specified in AASHTO Standard Specifications for Highway Bridges.
5. Field drilling of existing members is required. The drilling cost shall be included with "Structural Steel Repair".
6. The repair plate and angle lengths shown are anticipated based on the latest field notes. Longer repair plates, angles may be required based upon field conditions.
7. $^{15}/_{16}$" ϕ standard size holes in the truss member are to be field drilled using the repair plates and shapes as a template unless otherwise noted.

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STEEL REPAIR DETAILS 1
EASTBOUND FAI-80 OVER DES PLAINES RIVER
STRUCTURE NO. 099-0056
SHEET NO. S-15 OF 35 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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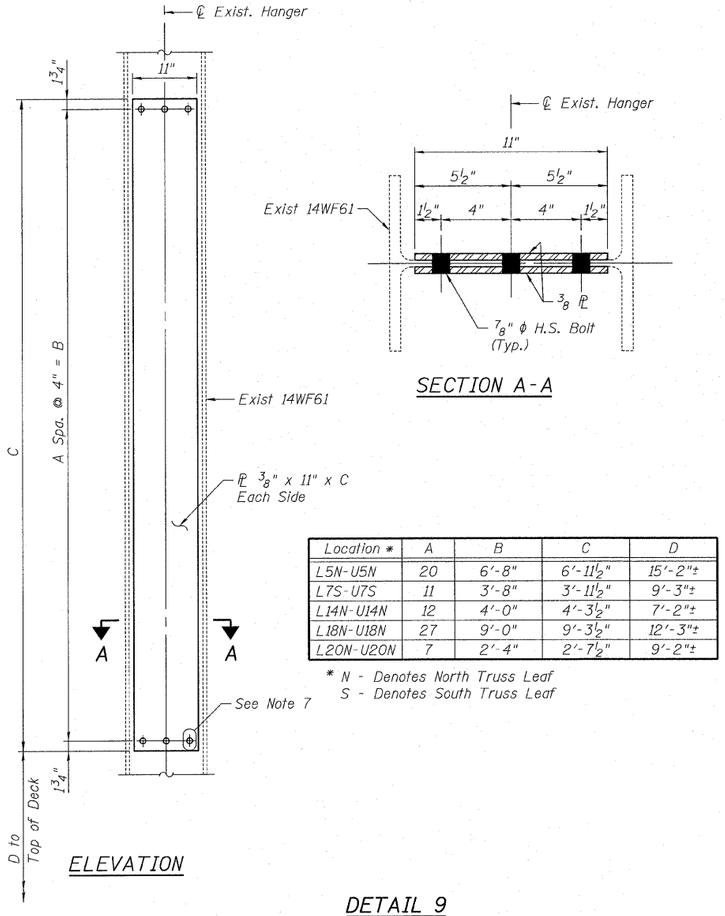
		CONTRACT NO. 60M64		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



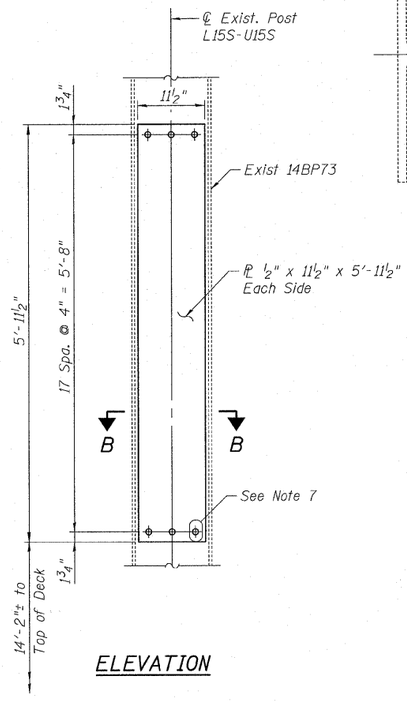
ELEVATION

SECTION A-A

Location *	A	B	C	D
L5N-U5N	20	6'-8"	6'-11½"	15'-2"±
L7S-U7S	11	3'-8"	3'-11½"	9'-3"±
L14N-U14N	12	4'-0"	4'-3½"	7'-2"±
L18N-U18N	27	9'-0"	9'-3½"	12'-3"±
L20N-U20N	7	2'-4"	2'-7½"	9'-2"±

* N - Denotes North Truss Leaf
S - Denotes South Truss Leaf

DETAIL 9
TRUSS HANGER/POST WEB REPAIR



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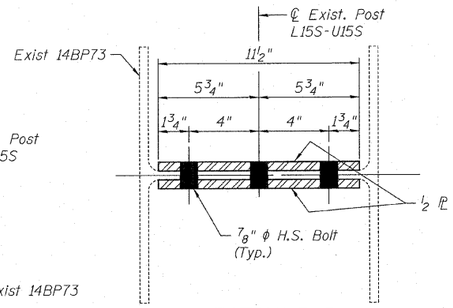

SECTION B-B

DETAIL 9
TRUSS HANGER/POST WEB REPAIR

NOTES:

1. See Sheets S-8 to S-14 of 35 for locations of proposed repair details and notes.
2. All structural steel plates and shapes used in proposed repair details shall be AASHTO M270 Gr 36 (ASTM A36).
3. All fasteners shall be ⅞" dia. AASHTO M164 (ASTM A325) high strength bolts in 15/16" dia. standard size holes.
4. Contact surfaces at bolted parts shall have Class B coating as specified in AASHTO Standard Specifications for Highway Bridges.
5. Field drilling of existing members is required. The drilling cost shall be included with "Structural Steel Repair".
6. The repair plate and angle lengths shown are anticipated based on the latest field notes. Longer repair plates, angles may be required based upon field conditions.
7. 15/16" ϕ standard size holes in the truss member are to be field drilled using the repair plates and shapes as a template unless otherwise noted.

	DESIGNED - MEA	REVISED -
USER NAME = lkelita	DRAWN - LK	REVISED -
PLOT SCALE = 1:1	CHECKED - MRI	REVISED -
PLOT DATE = 08-FEB-2011	DATE - 2/8/2011	REVISED -

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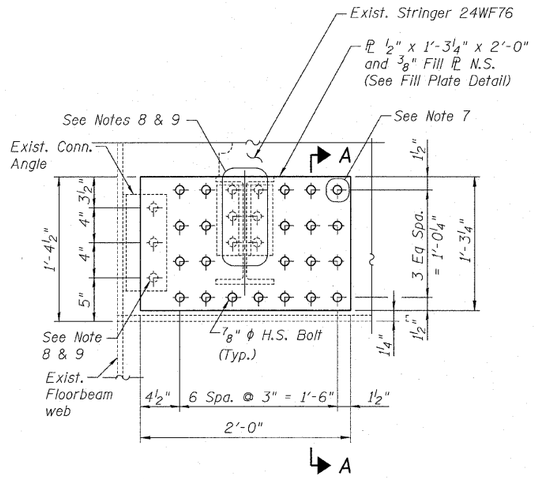
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STEEL REPAIR DETAILS 2
EASTBOUND FAI-80 OVER DES PLAINES RIVER
STRUCTURE NO. 099-0056
SHEET NO. S-16 OF 35 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99 (2&3) RS-3	WILL	200	123
		CONTRACT NO. 60M64		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



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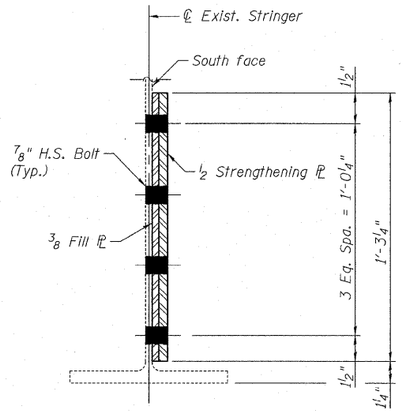
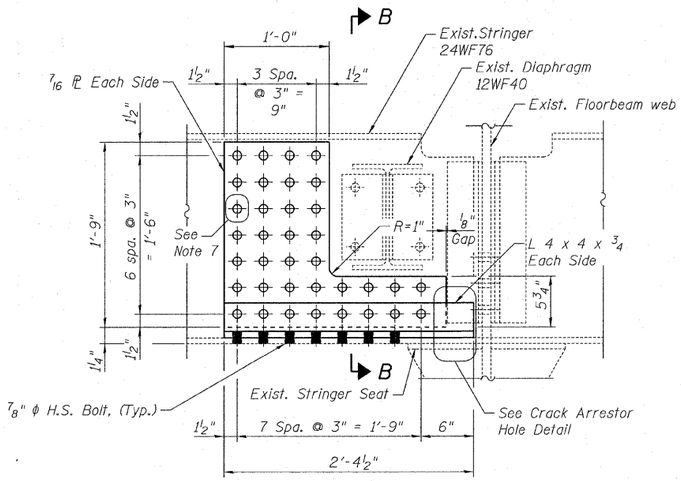


SECTION A-A



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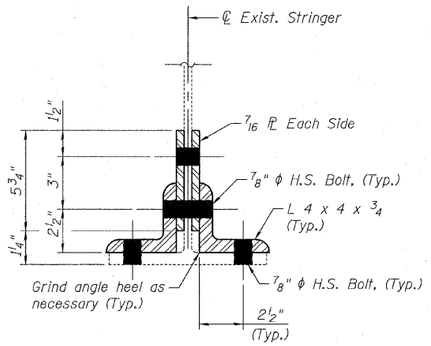
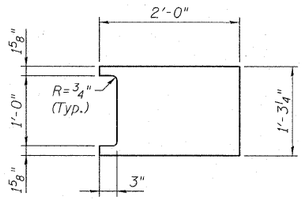


SECTION B-B

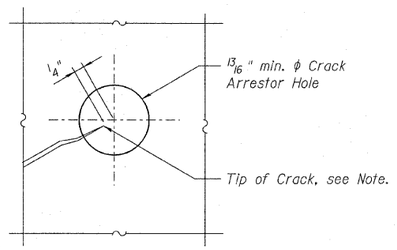
Adjacent diaphragms, connections not shown for clarity

DETAIL 7
STRINGER WEB AND FLANGE REPAIR 4



FILL PLATE

DETAIL 5
STRINGER WEB REPAIR



CRACK ARRESTOR HOLE DETAIL

Note: Locate crack tip using liquid dye penetrant or magnetic particle testing. Drill 13/16" min. dia. Crack Arrestor hole at the crack tip. After crack arrestor hole has been drilled, dye penetrant or magnetic particle testing shall be used for verify that the drilled hole has captured the crack tip. Cost shall be included in the cost of "Structural Steel Repair". Provide crack arrestor hole at all cracks without one prior to installation of strengthening plates.

NOTES:

1. See Sheets S-8 to S-14 of 35 for locations of proposed repair details and notes.
2. All structural steel plates and shapes used in proposed repair details shall be AASHTO M270 Gr 36 (ASTM A36).
3. All fasteners shall be 7/8" dia. AASHTO M164 (ASTM A325) high strength bolts in 15/16" dia. standard size holes unless othewise noted.
4. Contact surfaces at bolted parts shall have Class B coating as specified in AASHTO Standard Specifications for Highway Bridges.
5. Field drilling of existing members is required. The drilling cost shall be included with "Structural Steel Repair".
6. The repair plate and shape lengths shown are anticipated based on the latest field notes. Longer repair plates, shapes may be required based upon field conditions.
7. 15/16" ϕ standard size holes in the stringer web are to be field drilled using the repair plates and shapes as template except as noted.
8. Use existing connection angle to drill holes in the repair plate. Remove and replace existing bolts/rivets with 7/8" ϕ H.S. bolts.
9. Suggested repair installation procedure:
   - A. Remove existing bolts/rivets and install construction pins in their place. No more than one hole shall be kept without a bolt/rivet or pin during this process.
   - B. Position the repair plates over the area to be repaired.
   - C. Remove the construction pins. As each construction pin is removed, install a 7/8" ϕ H.S. bolt and tighten it to snug fit.
   - D. When the repair is properly positioned and existing rivets/bolts have been replaced with H.S. bolts, field drill 15/16" ϕ holes through undersized 13/16" ϕ holes in the repair plates and the existing web plate/angle, as shown, and install 7/8" ϕ H.S. bolts.
   - E. After all of the H.S. bolts have been installed in the repair, begin tightening of the bolts. Start at the top of the repair plates and proceed across and down until all H.S. bolts are tightened as specified.

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PLOT DATE = 08-FEB-2011	DATE - 2/8/2011	REVISED -

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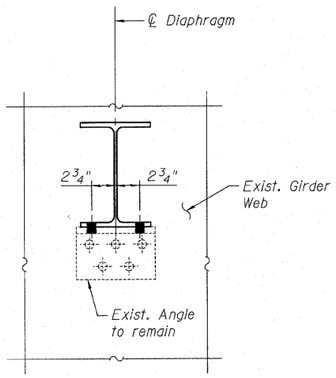
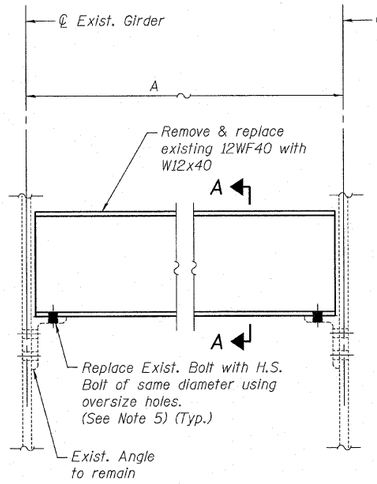
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STEEL REPAIR DETAILS 3
EASTBOUND FAI-80 OVER DES PLAINES RIVER
STRUCTURE NO. 099-0056
SHEET NO. S-17 OF 35 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99 (2&3) RS-3	WILL	200	124
		CONTRACT NO. 60M64		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



SECTION A-A



Location	Dimension A
Pier 4	6'-6"
Pier 17	6'-2 3/4"

ELEVATION

DETAIL 8
DIAPHRAGM REPLACEMENT

NOTES:

1. See Sheets S-8 to S-14 of 35 for locations of proposed repair details and notes.
2. All structural steel plates and shapes used in proposed repair details shall be AASHTO M270 Gr 36 (ASTM A36).
3. Contact surfaces at bolted parts shall have Class B coating as specified in AASHTO Standard Specifications for Highway Bridges.
4. Field drilling of members is required. The drilling cost shall be included in the unit price of the items.
5. Field drill holes in the new diaphragms to match holes in the existing angles.
6. Dimension A is anticipated based on existing plan data, Contractor shall verify Dimension A in field.

	DESIGNED - MEA	REVISED -
USER NAME = lkalita	DRAWN - LK	REVISED -
PLOT SCALE = 1:1	CHECKED - MRI	REVISED -
PLOT DATE = 08-FEB-2011	DATE - 2/8/2011	REVISED -

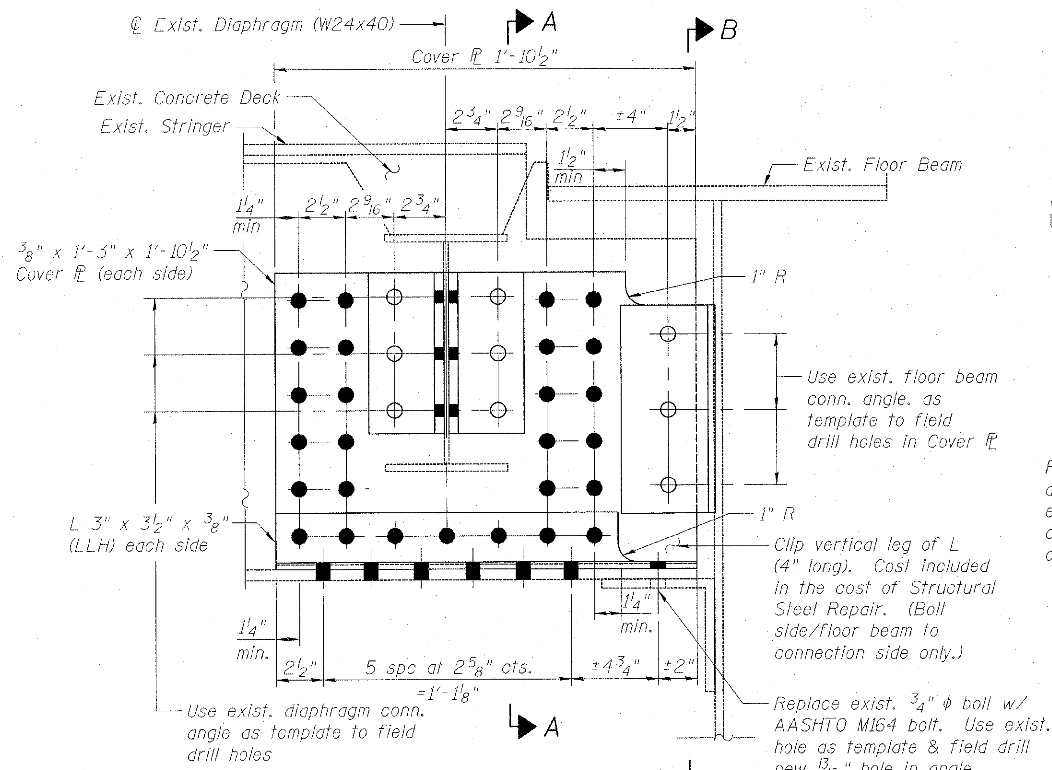
FILE NAME = IP_PWPdms34575\@9980056-60M64-018-STEEL_DET05.dgn

HBP Illinois Partners

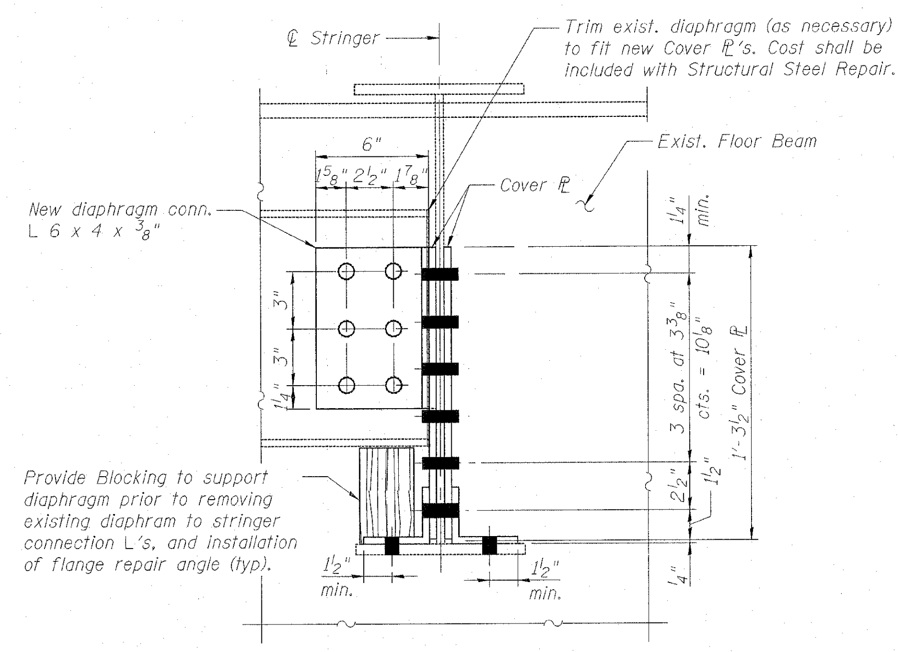
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STEEL REPAIR DETAILS 4
EASTBOUND FAI-80 OVER DES PLAINES RIVER
STRUCTURE NO. 099-0056
SHEET NO. S-18 OF 35 SHEETS

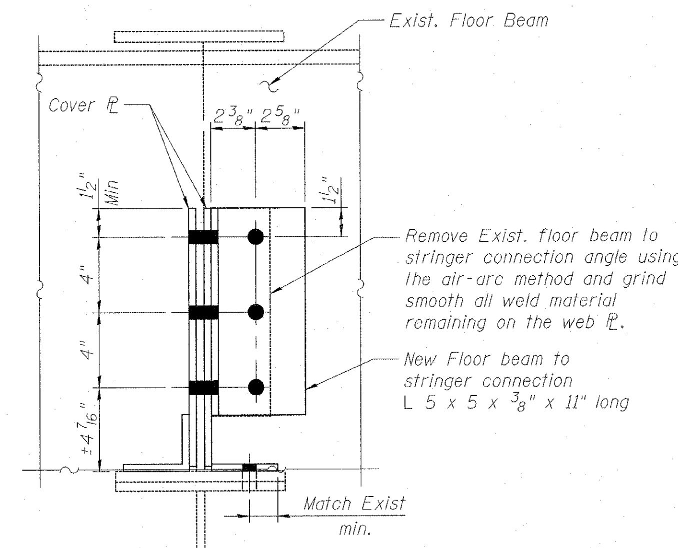
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99 (2&3) RS-3	WILL	200	125
		CONTRACT NO. 60M64		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



DETAIL 10



SECTION A-A



SECTION B-B

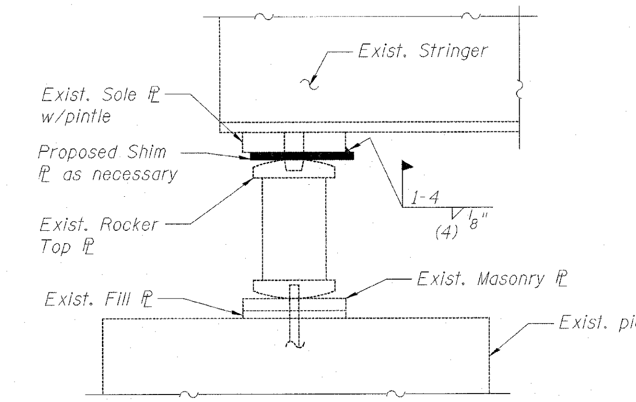
LEGEND

○ New bolt. Use exist. holes in Stringer as template for field drilling new holes.

● New bolt (field drill)

NOTES

1. Fasteners shall be high strength bolts AASHTO M164/ASTM A325. Holes shall be 13/16" ϕ for ¾" ϕ bolts.
2. See Sheet S-3 and S-12 of S-35 for additional notes.
3. All cover ℘ and fill ℘ shall be ⅜" thick unless noted otherwise.
4. The repair plate and shape lengths shown are anticipated based on existing plan data. Longer repair plates and shapes may be required based on field conditions.
5. For additional requirements, See Special Provision for Structural Steel Repair and Structural Steel Removal



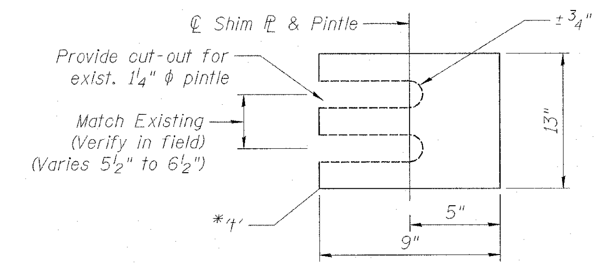
BEARING ELEVATION

REPAIR PROCEDURE

1. Jack existing superstructure.
2. Clean existing bearing between top of rocker and bottom of sole ℘, removing pack rust accumulation.
3. Lower Beams
4. Provide shim between sole ℘ and rocker as necessary to ensure full bearing contact between sole ℘ and rocker.

NOTES

1. See Special Provision Jack and Clean Bearings.
2. Cleaning existing bearings and shim plates shall be included in the cost of Jack and Clean Bearings.
3. Shim plates shall be AASHTO M270 Gr 36 (ASTM A36).



SHIM ℘ DETAIL

JACK & CLEAN BEARINGS SCHEDULE

Pier	Span	Stringer	Locations	*'t'
W. Abut.	1	7	1	¼"
3	3	8-9	2	⅜"
3	4	2, 3, 6	3	1/16"
4	4	1-3	3	1/16"-3/16"
4	4	4-9	6	⅜"
10	11	1-3	3	1/32"
11	11	1-8	8	¼"
11	12	1-8	8	¼"
12	12	2	1	1/16"
12	13	1, 3-5	4	¼"
14	15	1, 3, 6, 7	4	1/32"-1/16"
16	16	2	1	1/16"
16	17	4	1	1/16"
18	18	3	1	1/32"
18	19	1, 3-7	6	1/32"
19	19	6	1	⅛"
20	21	3, 7	2	1/16"
22	22	2-3	2	1/16"-⅛"
22	23	3	1	1/32"

*Thickness shown is the measured gap between top of rocker ℘ and bottom of sole ℘. Contractor shall verify actual shim ℘ thickness (if required) after cleaning and lowering beams in place.

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PLOT DATE = 2/8/2011 5:43:27 PM	CHECKED - BLU	REVISED -	
	DATE - 01/21/2011	REVISED -	

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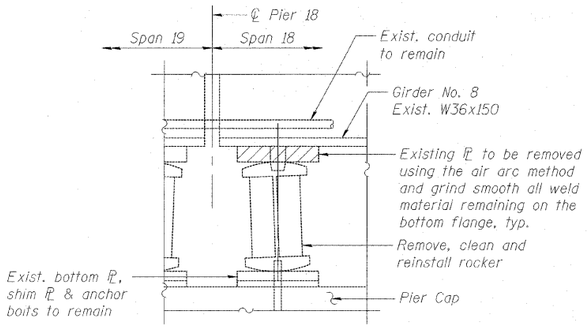
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STEEL REPAIR DETAILS 5
EASTBOUND FAI-80 OVER DES PLAINES RIVER
STRUCTURE NO. 099-0056

SHEET NO. S-19 OF S-35 SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99(2&3)RS-3	WILL	200	126
		CONTRACT NO. 60M64		
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			

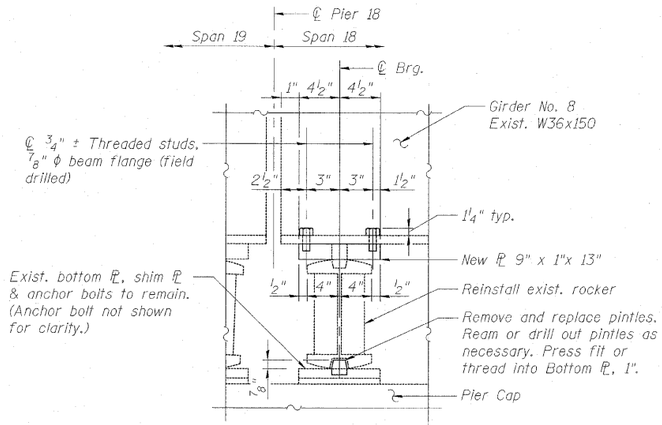
n:\0056\05_cadd\cadd sheets\0990056-60M64-019-DET.dgn



VIEW A

EXISTING BEARING REMOVAL DETAIL

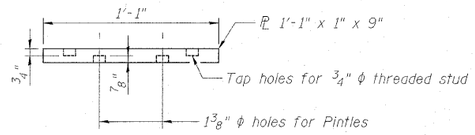
Pier 18, Span 18, Girder 8
(Looking South)



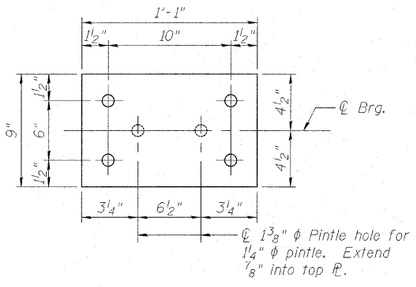
VIEW A

PROPOSED BEARING DETAIL

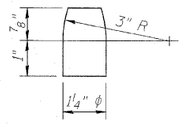
Pier 18, Span 18, Girder 8
(Looking South)



TOP PLATE DETAIL



TOP PLATE PLAN VIEW



PINTLE

TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
Jack and Reposition Bearings	Each	1
Furnishing and Erecting Structural Steel	Pound	40

BEAM REACTIONS

Load	Reaction
DL	39.6
LL+Imp	47.6
Total	87.2

Total load provided is for the service condition and no load factors have been applied. Jack capacily shall be a minimum of 150% greater than total supported load. See Special Provision Jack and Reposition Bearing.

NOTES

1. See Sheet S-11 of S-35 for plan view.
2. Work shall be performed per Special Provision Jack and Reposition Bearing.
3. Rocker portion of bearing assembly shall be cleaned prior to reinstallation. Cleaning shall be in accordance with applicable portion of the Special Provision for Jack and Clean Bearings. Cost shall be included with Jack and Reposition Bearings.
4. Cost of removing pintles, field drilling or reaming, field drilling holes, new pintles, top ℙ and studs shall be included in the cost of Furnishing and Erecting Structural Steel.
5. The repair plate length shown are based on existing plan data. All dimensions shall be field verified prior to ordering materials.
6. Structural steel shall conform to the requirements of AASHTO M270 Gr. 36.

USER NAME = mueller	DESIGNED - DF	REVISED -
PLOT SCALE = NTS	DRAWN - LAM	REVISED -
PLOT DATE = 2/8/2011 5:43:20 PM	CHECKED - BLU	REVISED -
	DATE - 01/21/2011	REVISED -

HBP Illinois Partners

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BEARING REPAIR DETAILS
EASTBOUND FAI-80 OVER DES PLAINES RIVER
STRUCTURE NO. 099-0056
SHEET NO. S-19A OF S-35 SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99(2&3)RS-3	WILL	200	126A
		CONTRACT NO. 60M64		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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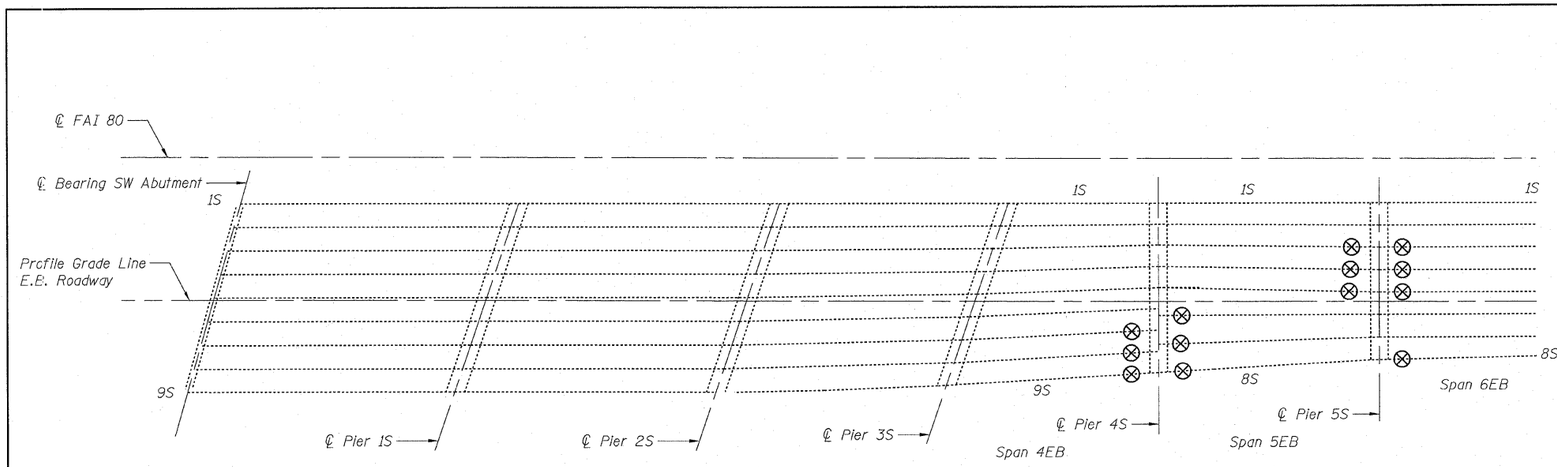
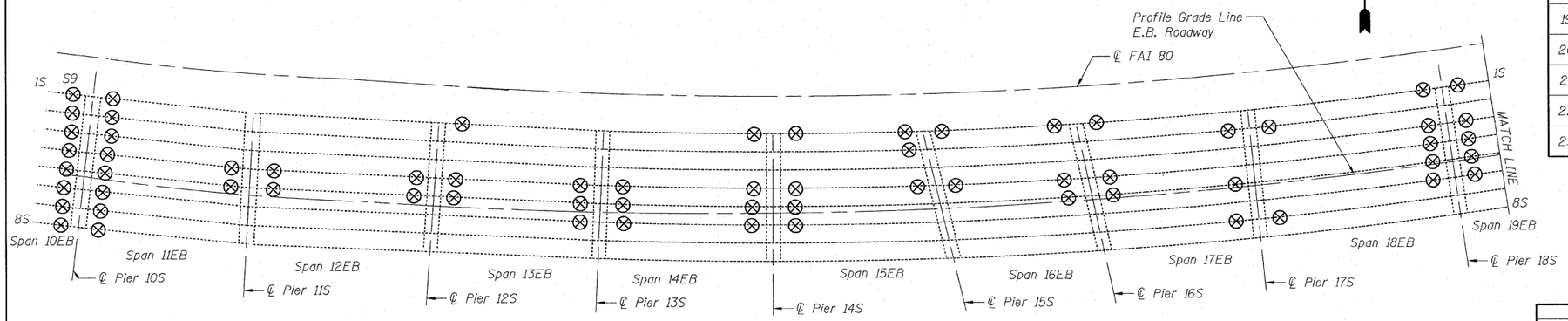


PLAN



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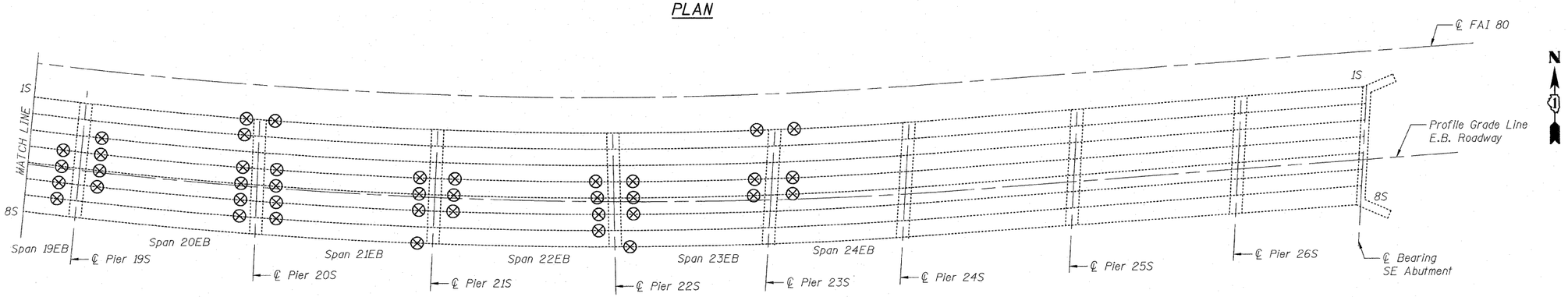


PLAN

DEAD LOAD & LIVE LOAD REACTIONS

Pier	Face	Dead Load		Live Load + Impact		TOTAL (Kips)	
		Fascia	Interior	Fascia	Interior	Fascia	Interior
4	West	38	40	49	49	87	90
	East	42	48	55	55	96	102
5	West	40	46	55	55	95	101
	East	50	53	47	47	97	100
10	West	26	29	41	41	67	69
	East	40	45	44	44	84	89
11	West	40	45	44	44	84	89
	East	40	45	44	44	84	89
12	West	40	45	44	44	84	89
	East	41	46	44	44	85	90
13	West	40	45	44	44	84	89
	East	40	45	44	44	84	89
14	West	40	45	44	44	84	89
	East	37	41	44	44	80	85
15	West	37	41	44	44	80	85
	East	35	38	43	43	78	81
16	West	35	38	43	43	78	81
	East	41	45	44	44	85	89
17	West	40	45	44	44	84	88
	East	48	54	45	45	92	98
18	West	49	54	45	45	94	99
	East	49	54	45	45	94	99
19	West	49	54	45	45	94	99
	East	49	54	45	45	94	99
20	West	49	54	45	45	94	99
	East	48	54	45	45	92	98
21	West	49	54	45	45	94	99
	East	48	54	45	45	92	98
22	West	49	54	45	45	94	99
	East	43	46	44	44	87	90
23	West	43	46	44	44	87	90
	East	37	40	43	43	80	83

LEGEND:

⊗ Temporary Shoring and Cribbing, Special

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Temporary Shoring and Cribbing, Special	Each	118

NOTES:

1. Temporary shoring and cribbing is required for pier repairs.
2. Contractor to design shoring system for dead load plus live load plus impact. See Special Provisions for Temporary Shoring and Cribbing, Special.

	DESIGNED - RCW/MRI	REVISED -
USER NAME = lkalita	DRAWN - RCW	REVISED -
PLOT SCALE = 1:1	CHECKED - PCA	REVISED -
PLOT DATE = 08-FEB-2011	DATE - 2/8/2011	REVISED -

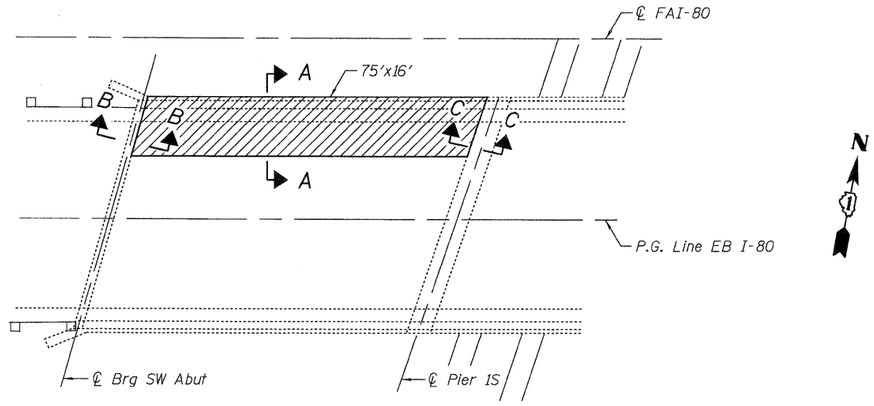
FILE NAME = IP_PWPdms34575\0990056-60M64-020-jacking.dgn

HBP Illinois Partners

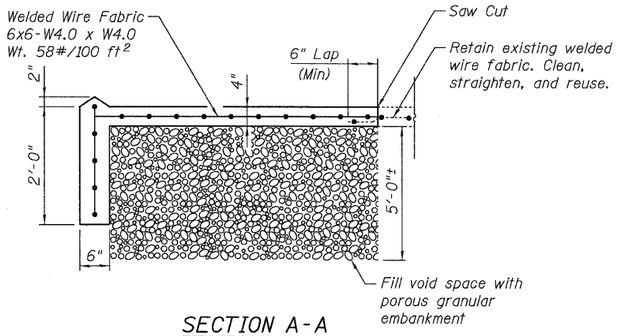
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TEMPORARY SHORING & CRIBBING LOCATIONS – SUBSTRUCTURE
EASTBOUND FAI–80 OVER DES PLAINES RIVER
STRUCTURE NO. 099–0056
SHEET NO. S-20 OF 35 SHEETS

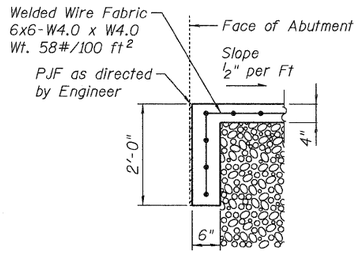
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99 (2&3) RS-3	WILL	200	127
		CONTRACT NO. 60M64		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



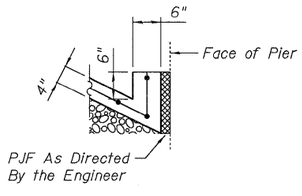
PLAN - WEST SLOPEWALL



SECTION A-A



SECTION B-B



SECTION C-C

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Porous Granular Embankment	Cu.Yd.	222
Slope Wall Removal	Sq.Yd.	134
Slope Wall 4 Inch	Sq.Yd.	134

LEGEND:

Remove and Replace

NOTES:

1. Areas of proposed slopewall removal and replacement are estimated. Actual location and dimensions are to be determined by the Engineer during construction.
2. Cost of saw cuts and PJF included in the cost of Slope Wall 4 Inch.
3. Contractor to verify 4" slopewall thickness and make necessary approved changes if slopewall is 6".

	DESIGNED - PCA	REVISED -
USER NAME = lsupancheck	DRAWN - MN	REVISED -
PLOT SCALE = 1:1	CHECKED - MEA	REVISED -
PLOT DATE = 20-JAN-2011	DATE - 1/21/2011	REVISED -

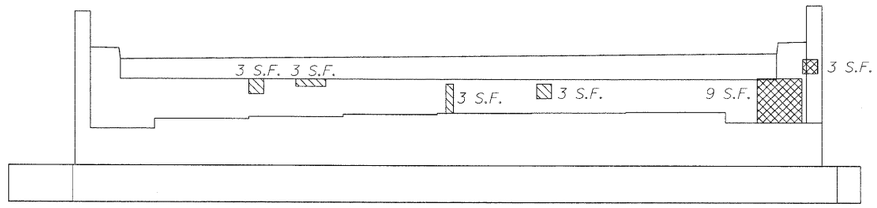
FILE NAME = IP_PWP:dms34575\0990056-60M64-021-SLOPEW.DGN

HBP Illinois Partners

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SLOPEWALL REPAIR DETAILS
EASTBOUND FAI-80 OVER DES PLAINES RIVER
STRUCTURE NO. 099-0056
SHEET NO. S-21 OF 35 SHEETS

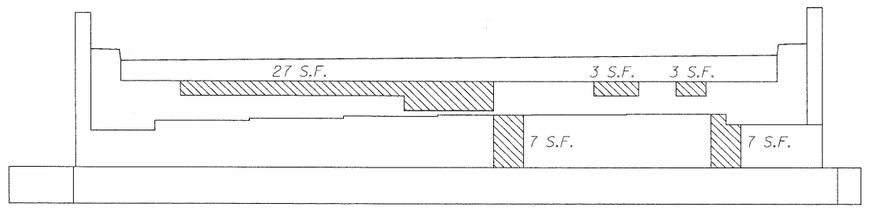
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99 (2&3) RS-3	WILL	200	128
		CONTRACT NO. 60M64		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



WEST ABUTMENT

Structural Repair of Concrete (Depth ≤ 5") = 12 Sq. Ft.

Structural Repair of Concrete (Depth > 5") = 12 Sq. Ft.



EAST ABUTMENT

Structural Repair of Concrete (Depth ≤ 5") = 47 Sq. Ft.

Structural Repair of Concrete (Depth > 5") = 0 Sq. Ft.

	DESIGNED - DF	REVISED -
USER NAME = mjeller	DRAWN - LAM	REVISED -
PLOT SCALE = NTS	CHECKED - BLU	REVISED -
PLOT DATE = 1/20/201 12:58:3 PM	DATE - 01/21/2011	REVISED -

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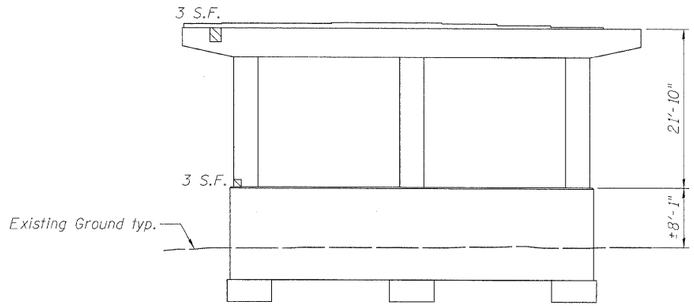
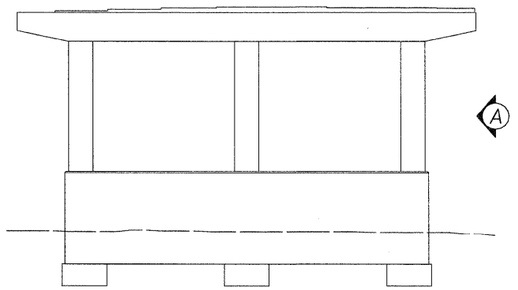
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ABUTMENT REPAIR DETAILS
EASTBOUND FAI-80 OVER DES PLAINES RIVER
STRUCTURE NO. 099-0056
SHEET NO. S-22 OF S-35 SHEETS

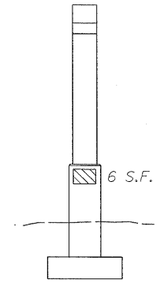
F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99(2&3)RS-3	WILL	200	179
		CONTRACT NO. 60M64		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



WEST ELEVATION
(Looking East)



EAST ELEVATION
(Looking West)

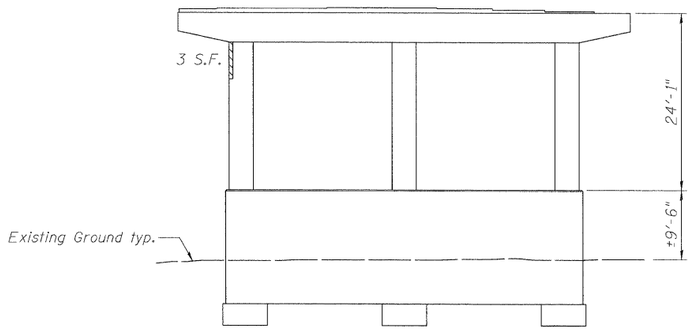


VIEW A

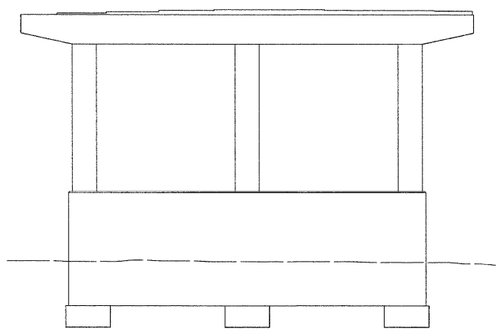
PIER 1

Structural Repair of Concrete (Depth < 5") = 12 Sq. Ft.

Structural Repair of Concrete (Depth > 5") = 0 Sq. Ft.



WEST ELEVATION
(Looking East)



EAST ELEVATION
(Looking West)

PIER 2

Structural Repair of Concrete (Depth < 5") = 3 Sq. Ft.

Structural Repair of Concrete (Depth > 5") = 0 Sq. Ft.

USER NAME = lmueller	DESIGNED - JC	REVISED -
PLOT SCALE = N'S	DRAWN - JC	REVISED -
PLOT DATE = 1/20/201 12:58:4 PM	CHECKED - DF	REVISED -
	DATE - 01/21/2011	REVISED -

HBP Illinois Partners

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER REPAIR DETAILS
EASTBOUND FAI-80 OVER DES PLAINES RIVER
STRUCTURE NO. 099-0056
SHEET NO. S-23 OF S-35 SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99(2&3)RS-3	WILL	200	130
		CONTRACT NO. 60M64		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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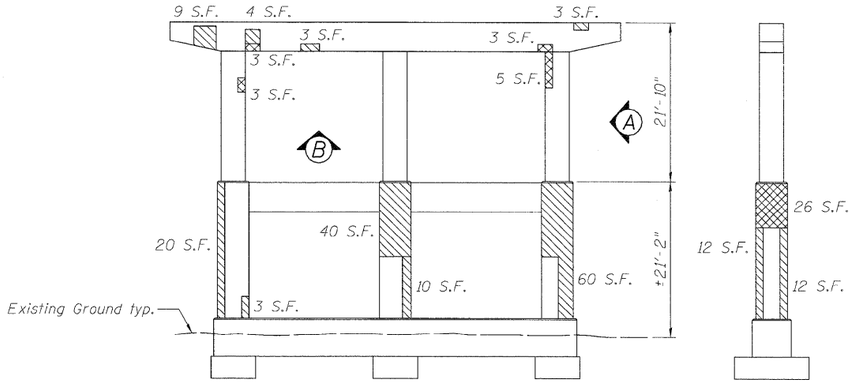
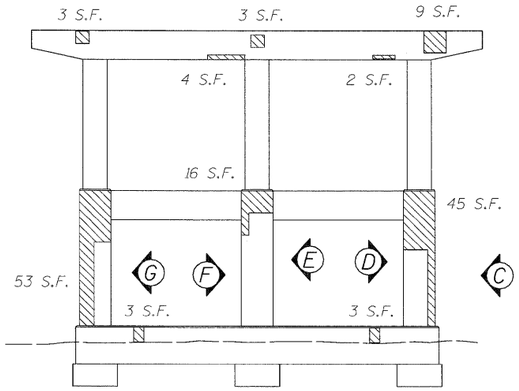
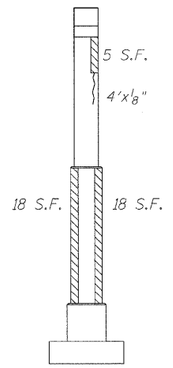


WEST ELEVATION
(Looking East)

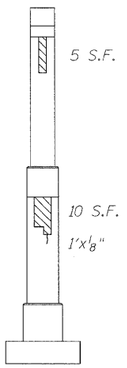
VIEW A



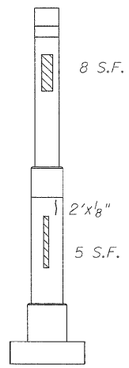
EAST ELEVATION
(Looking West)



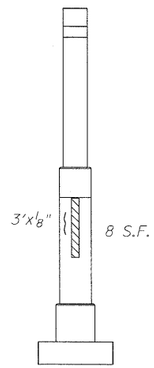
VIEW C



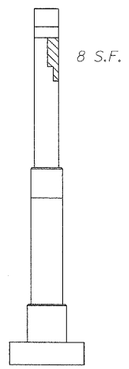
VIEW D



VIEW E



VIEW F



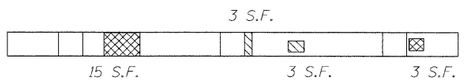
VIEW G

PIER 3

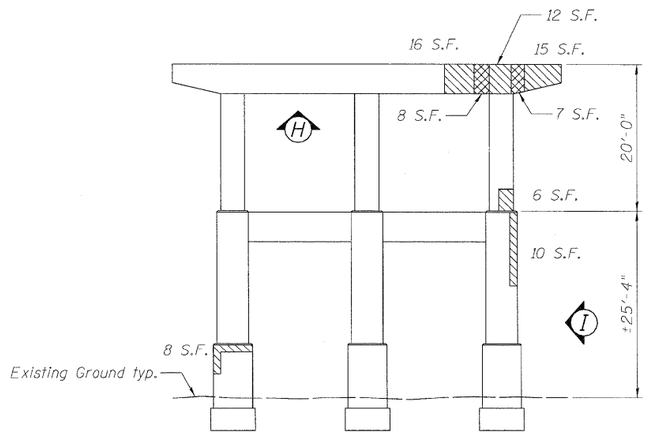
Structural Repair of Concrete (Depth ≤ 5") = 408 Sq. Ft.

Structural Repair of Concrete (Depth > 5") = 58 Sq. Ft.

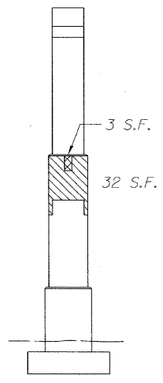
Epoxy Crack Injection



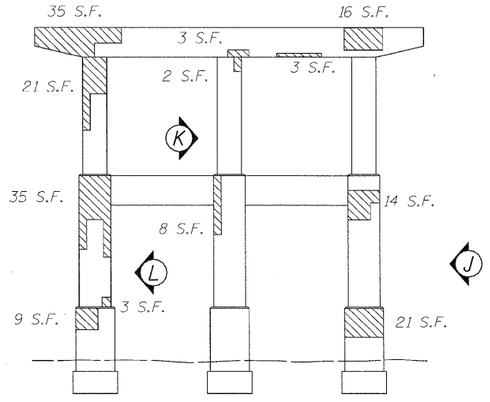
VIEW B



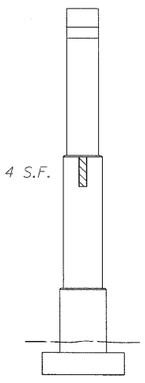
WEST ELEVATION
(Looking East)



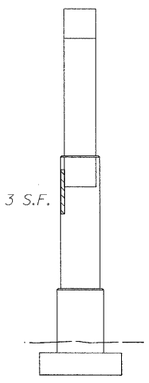
VIEW I



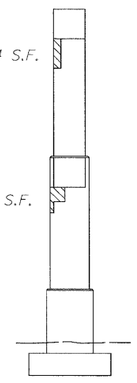
EAST ELEVATION
(Looking West)



VIEW J

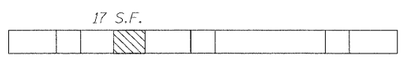


VIEW K



VIEW L

PIER 4



VIEW H

Structural Repair of Concrete (Depth ≤ 5") = 302 Sq. Ft.

Structural Repair of Concrete (Depth > 5") = 18 Sq. Ft.

NOTES: See Sheet S-18 for Temporary Shoring and Cribbing, Special locations.

USER NAME = trueller	DESIGNED - JC	REVISED -
PLOT SCALE = NTS	DRAWN - JC	REVISED -
PLOT DATE = 1/20/2011 12:58:16 PM	CHECKED - DF	REVISED -
	DATE - 01/21/2011	REVISED -

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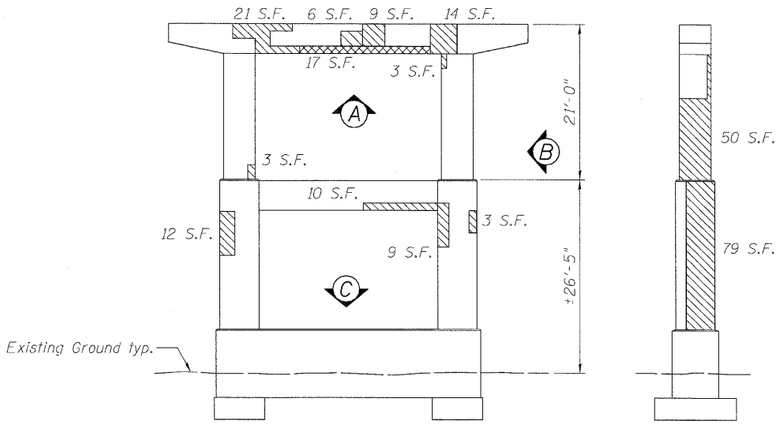
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER REPAIR DETAILS
EASTBOUND FAI-80 OVER DES PLAINES RIVER
STRUCTURE NO. 099-0056
SHEET NO. S-24 OF S-35 SHEETS

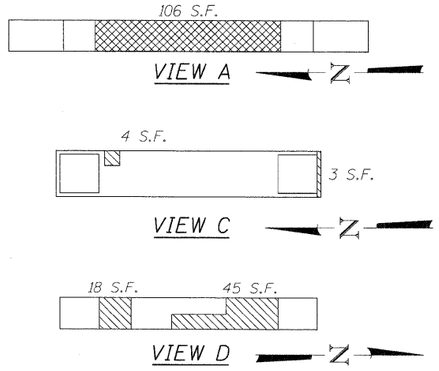
F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99(2&3)RS-3	WILL	200	131
		CONTRACT NO. 60M64		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

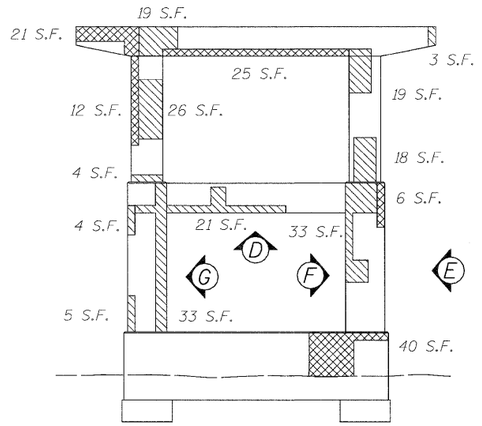
s:\1056b\05_cadd\cadd sheets\0990056-60M64-024-PR3-4.dgn



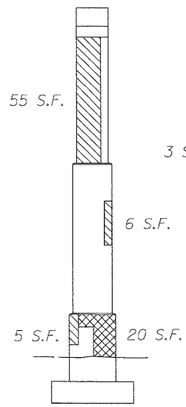
WEST ELEVATION
(Looking East)

VIEW B

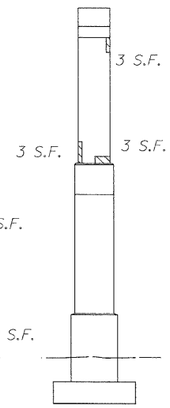




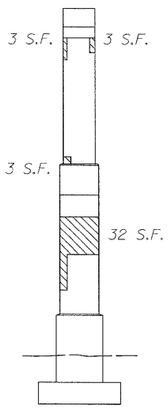
EAST ELEVATION
(Looking West)



VIEW E



VIEW F

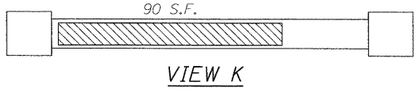


VIEW G

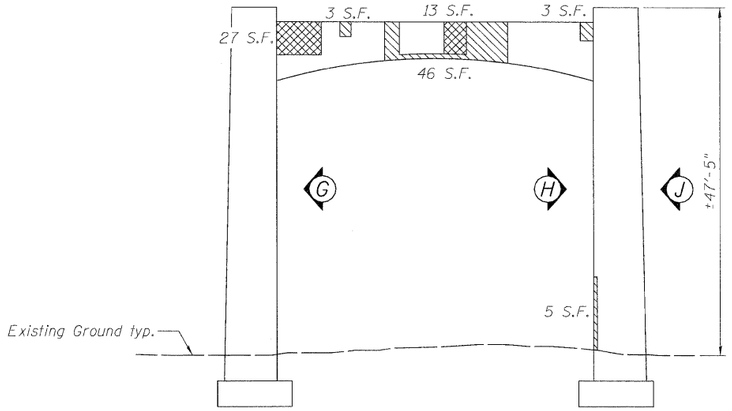
PIER 5

Structural Repair of Concrete (Depth ≤ 5") = 590 Sq. Ft.

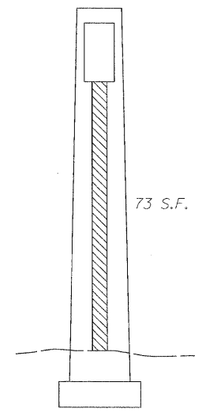
Structural Repair of Concrete (Depth > 5") = 247 Sq. Ft.



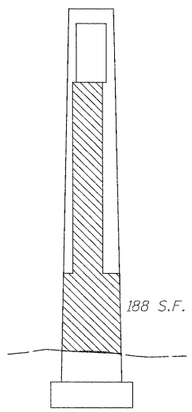
VIEW K



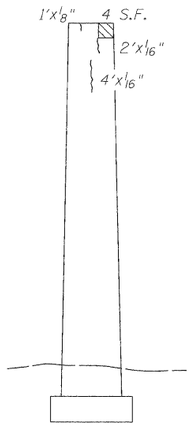
WEST ELEVATION
(Looking East)



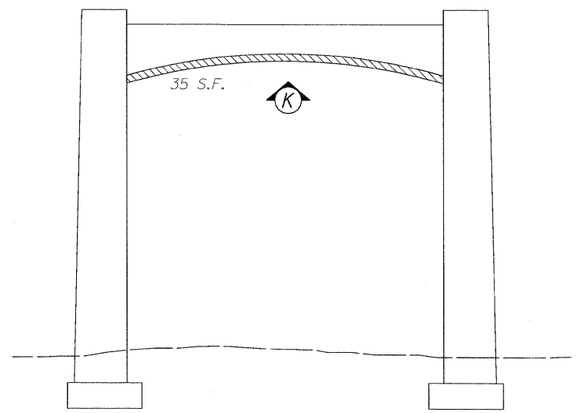
VIEW G



VIEW H



VIEW J



EAST ELEVATION
(Looking West)

PIER 6

Structural Repair of Concrete (Depth ≤ 5") = 447 Sq. Ft.

Structural Repair of Concrete (Depth > 5") = 40 Sq. Ft.

Epoxy Crack Injection

	DESIGNED - JC	REVISED -
USER NAME = tmueller	DRAWN - JC	REVISED -
PLOT SCALE = N'S	CHECKED - DF	REVISED -
PLOT DATE = 1/20/201 12:58:17 PM	DATE - 01/21/2011	REVISED -

HBP Illinois Partners

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER REPAIR DETAILS
EASTBOUND FAI-80 OVER DES PLAINES RIVER
STRUCTURE NO. 099-0056
SHEET NO. S-25 OF S-35 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99(2&3)RS-3	WILL	200	132
		CONTRACT NO. 60M64		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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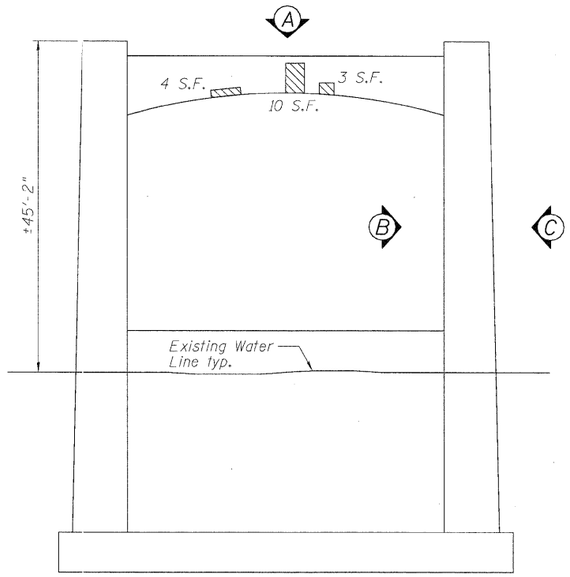
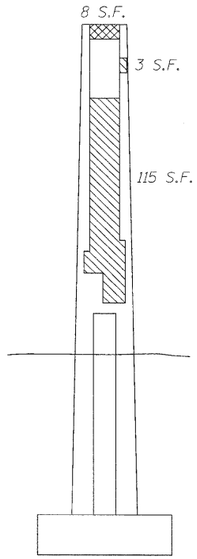
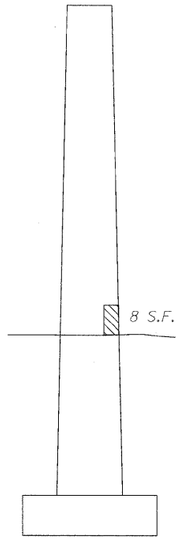


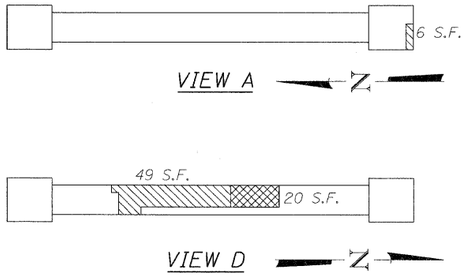
WEST ELEVATION
(Looking East)



VIEW B



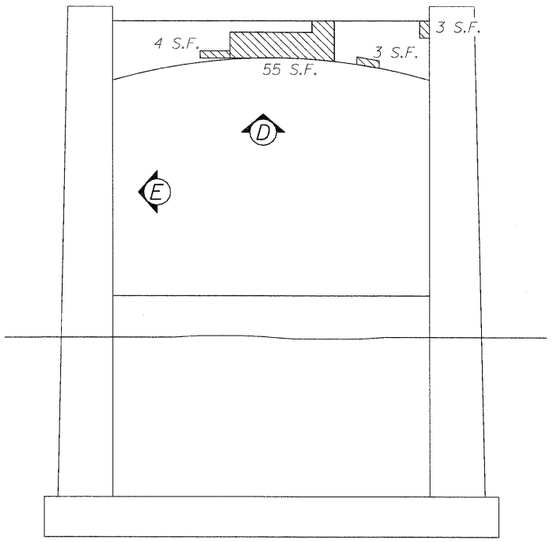
VIEW C



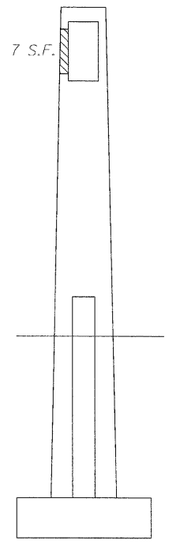
PIER 7

Structural Repair of Concrete (Depth ≤ 5") = 270 Sq. Ft.

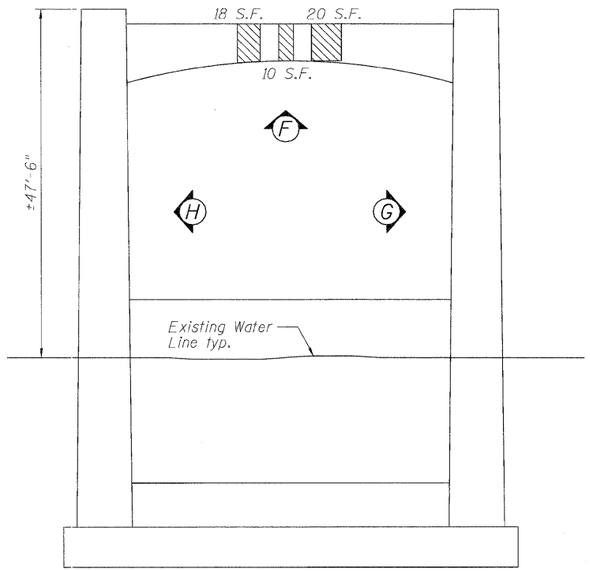
Structural Repair of Concrete (Depth > 5") = 28 Sq. Ft.



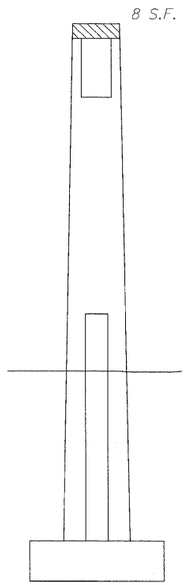
EAST ELEVATION
(Looking West)



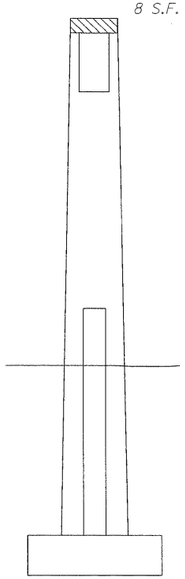
VIEW E



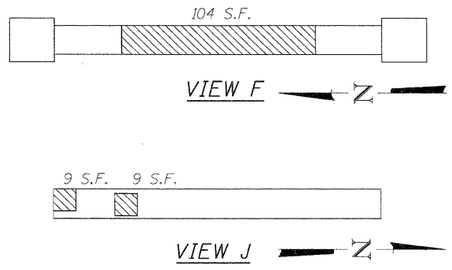
WEST ELEVATION
(Looking East)



VIEW G



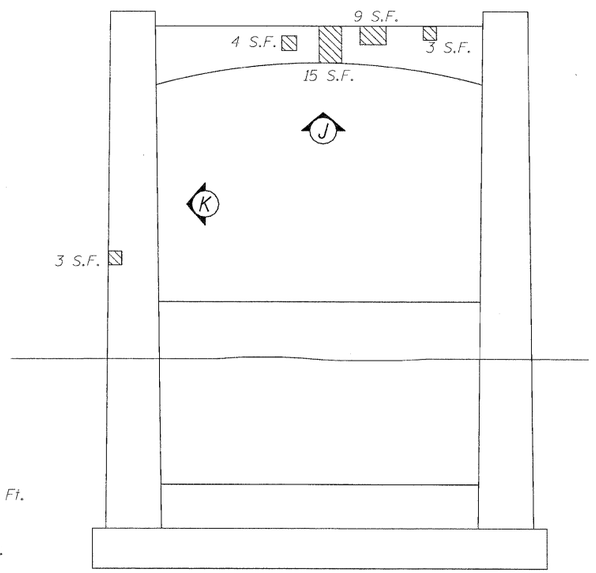
VIEW H



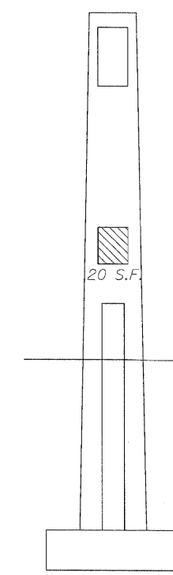
PIER 8

Structural Repair of Concrete (Depth ≤ 5") = 240 Sq. Ft.

Structural Repair of Concrete (Depth > 5") = 0 Sq. Ft.



EAST ELEVATION
(Looking West)



VIEW K

USER NAME = lmueller	DESIGNED - JC	REVISED -
PLOT SCALE = N'S	DRAWN - JC	REVISED -
PLOT DATE = 1/20/201 12:58:9 PM	CHECKED - DF	REVISED -
	DATE - 01/21/2011	REVISED -

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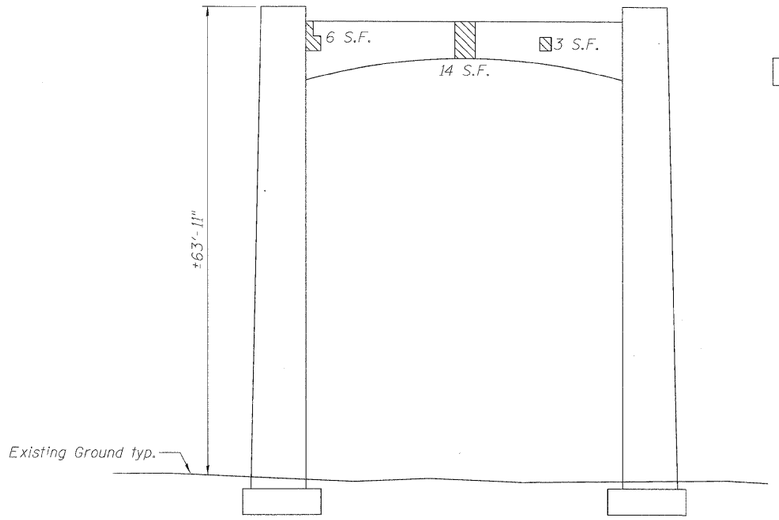
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

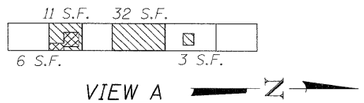
PIER REPAIR DETAILS
EASTBOUND FAI-80 OVER DES PLAINES RIVER
STRUCTURE NO. 099-0056
SHEET NO. S-26 OF S-35 SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99(2&3)RS-3	WILL	200	133
		CONTRACT NO. 60M64		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

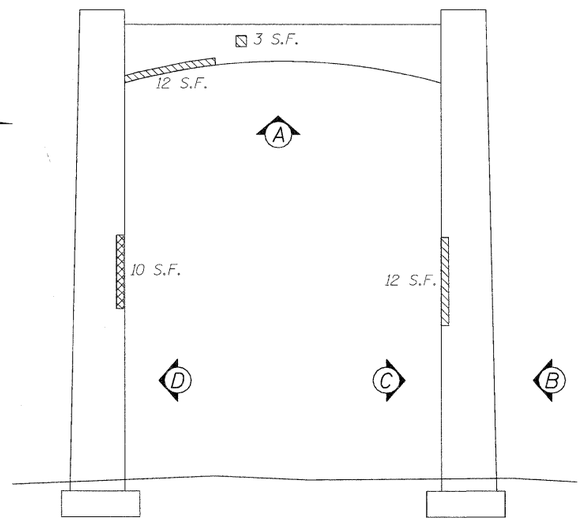
s:\056b\05..cadd\cadd sheets\0990056-60M64-026-PR7-8.dgn



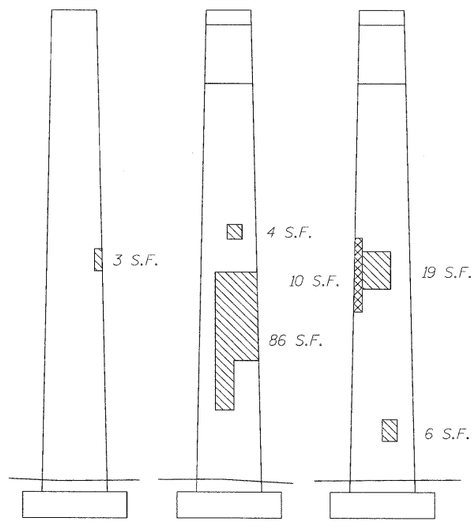
WEST ELEVATION
(Looking East)



VIEW A



EAST ELEVATION
(Looking West)

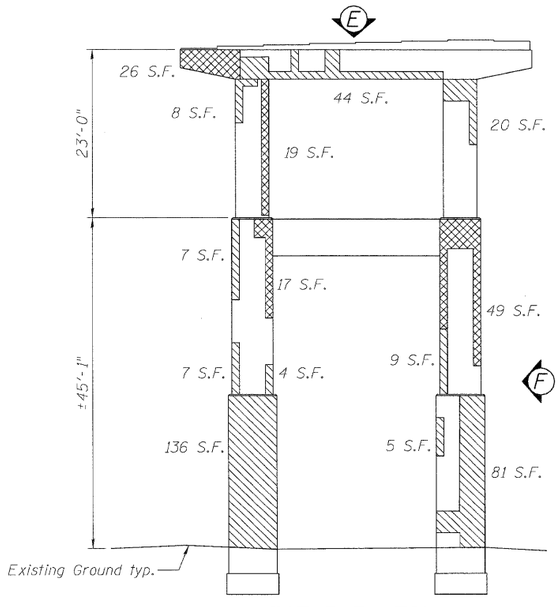


VIEW B VIEW C VIEW D

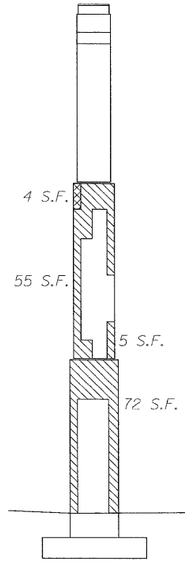
PIER 9

Structural Repair of Concrete (Depth ≤ 5") = 214 Sq. Ft.

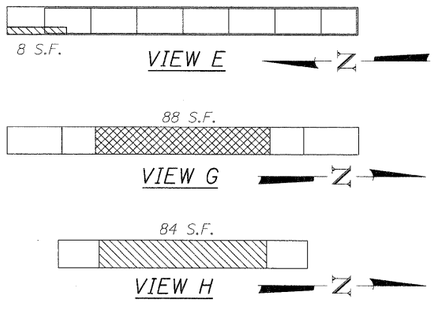
Structural Repair of Concrete (Depth > 5") = 26 Sq. Ft.



WEST ELEVATION
(Looking East)



VIEW F

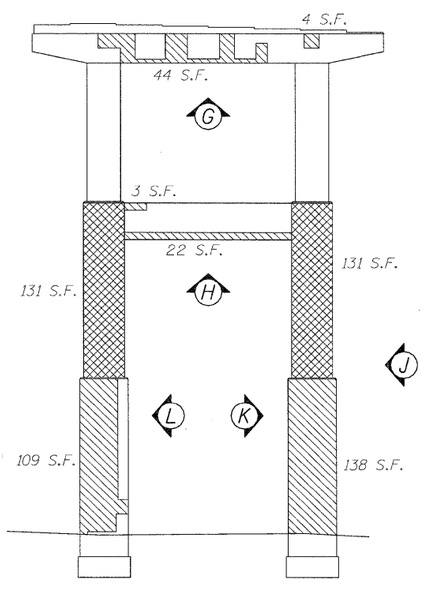


VIEW E

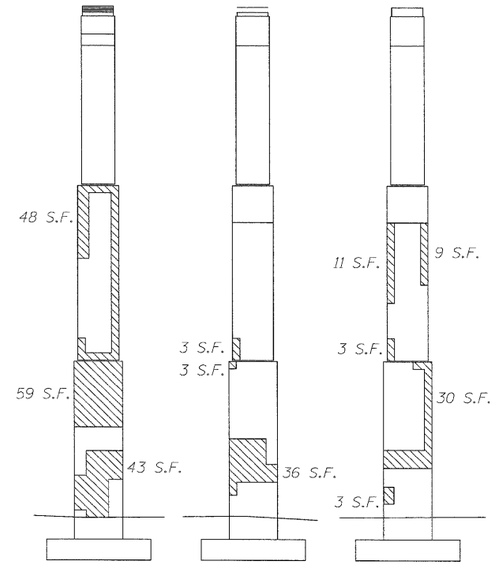
VIEW G

VIEW H

PIER 10



EAST ELEVATION
(Looking West)



VIEW J VIEW K VIEW L

Structural Repair of Concrete (Depth ≤ 5") = 1113 Sq. Ft.

Structural Repair of Concrete (Depth > 5") = 465 Sq. Ft.

NOTES: See Sheet S-18 for Temporary Shoring and Cribbing, Special locations.

	DESIGNED - JC	REVISED -
USER NAME = lmueller	DRAWN - JC	REVISED -
PLOT SCALE = N'S	CHECKED - DF	REVISED -
PLOT DATE = 1/20/201 12:58:20 PM	DATE - 01/21/2011	REVISED -

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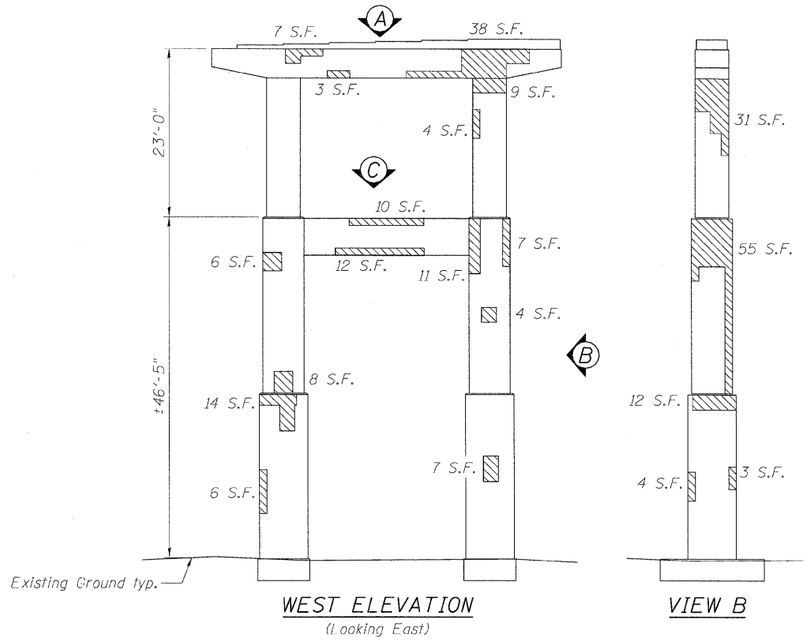
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

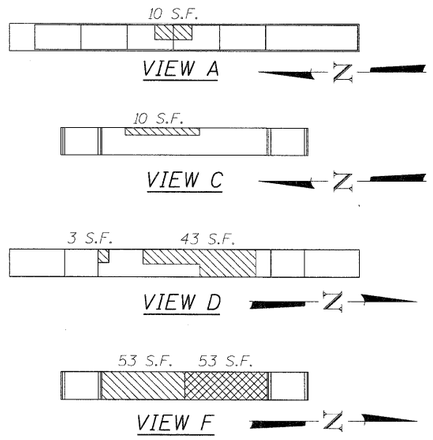
PIER REPAIR DETAILS
EASTBOUND FAI-80 OVER DES PLAINES RIVER
STRUCTURE NO. 099-0056
SHEET NO. S-27 OF S-35 SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99(2&3)RS-3	WILL	200	134
		CONTRACT NO. 60M64		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

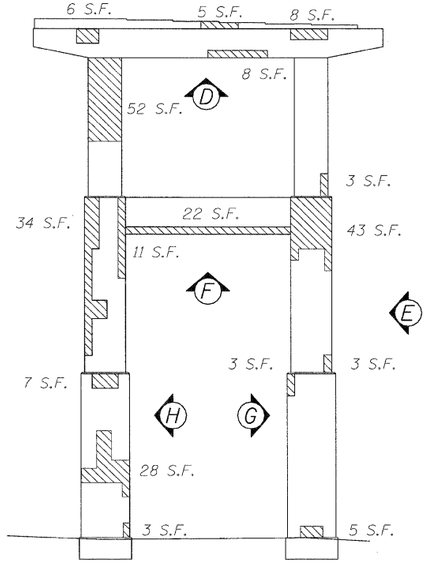


WEST ELEVATION
(Looking East)

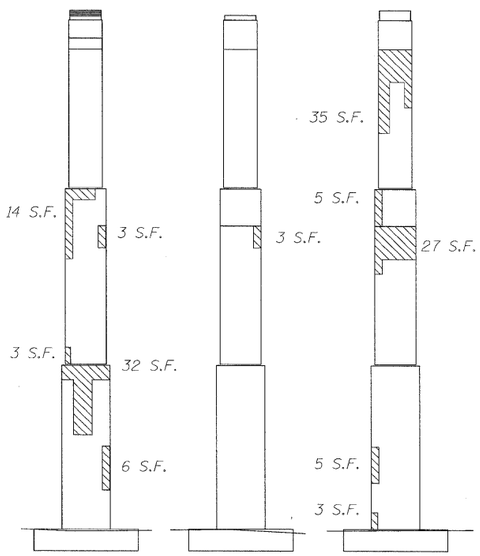
VIEW B



PIER 11



EAST ELEVATION
(Looking West)

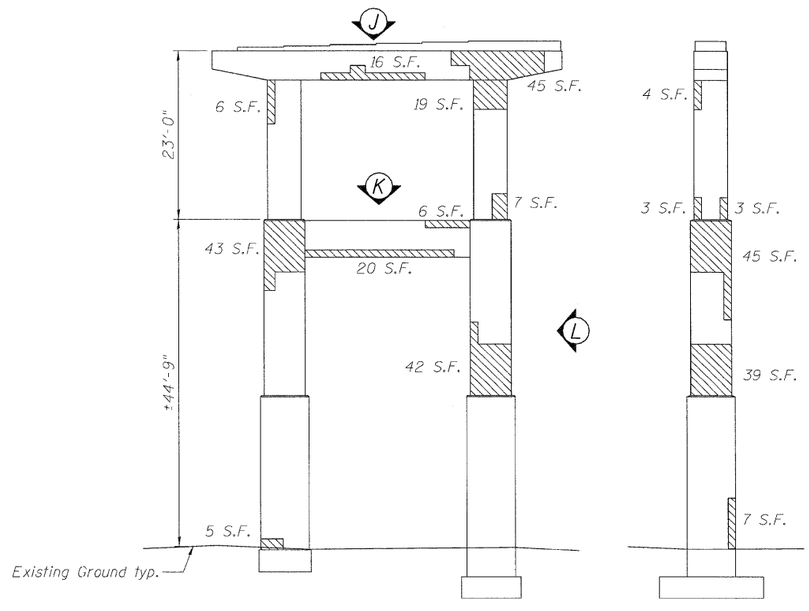


VIEW E VIEW G VIEW H

Structural Repair of Concrete (Depth ≤ 5") = 747 Sq. Ft.

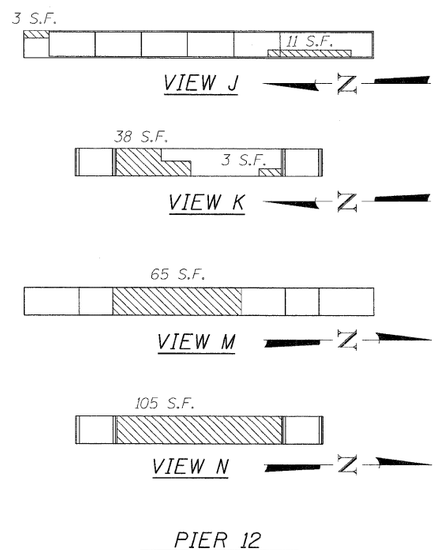
Structural Repair of Concrete (Depth > 5") = 53 Sq. Ft.

NOTES: See Sheet S-18 for Temporary Shoring and Cribbing, Special locations.

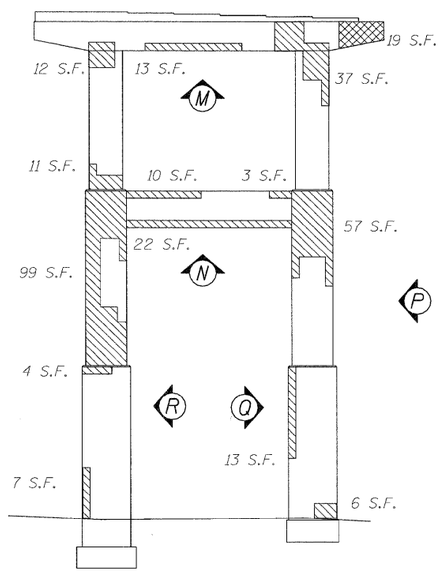


WEST ELEVATION
(Looking East)

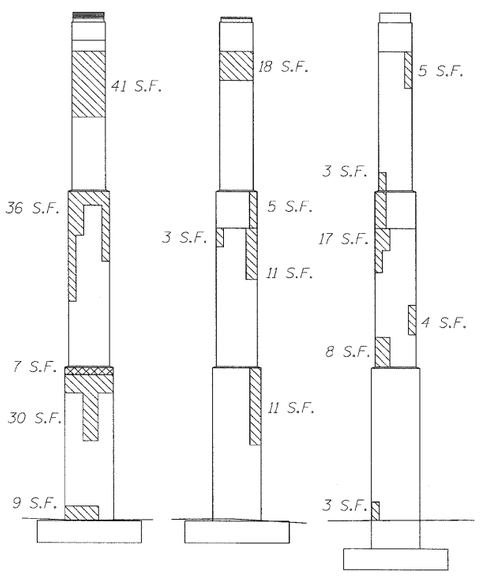
VIEW L



PIER 12



EAST ELEVATION
(Looking West)



VIEW P VIEW Q VIEW R

Structural Repair of Concrete (Depth ≤ 5") = 1033 Sq. Ft.

Structural Repair of Concrete (Depth > 5") = 26 Sq. Ft.

NOTES: See Sheet S-18 for Temporary Shoring and Cribbing, Special locations.

USER NAME = lmueller	DESIGNED - JC	REVISED -
PLOT SCALE = NTS	DRAWN - JC	REVISED -
PLOT DATE = 1/10/2011 12:58:22 PM	CHECKED - DF	REVISED -
	DATE - 01/21/2011	REVISED -

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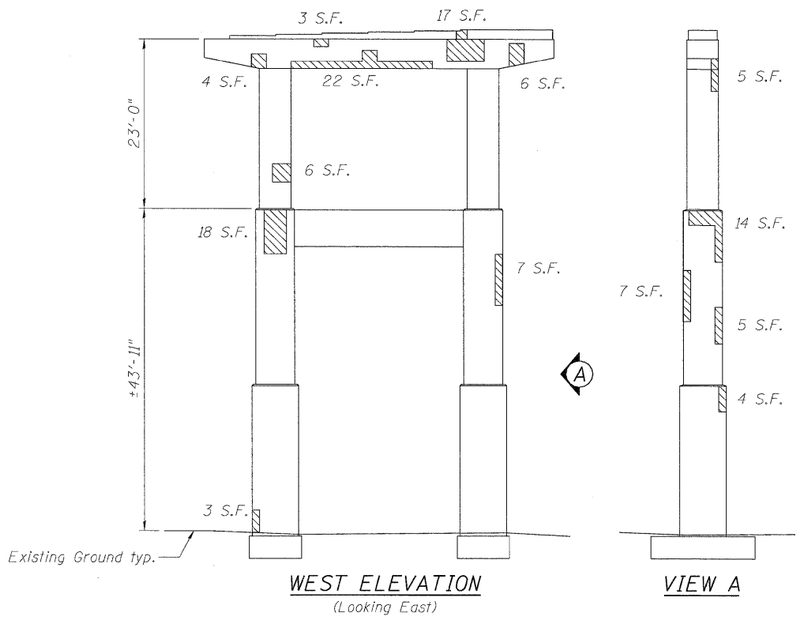
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER REPAIR DETAILS
EASTBOUND FAI-80 OVER DES PLAINES RIVER
STRUCTURE NO. 099-0056
SHEET NO. S-28 OF S-35 SHEETS

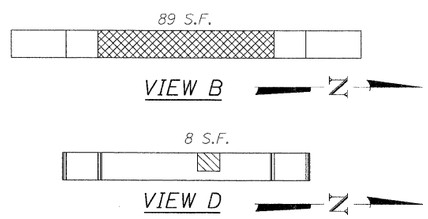
F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99(2&3)RS-3	WILL	200	135
		CONTRACT NO. 60M64		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

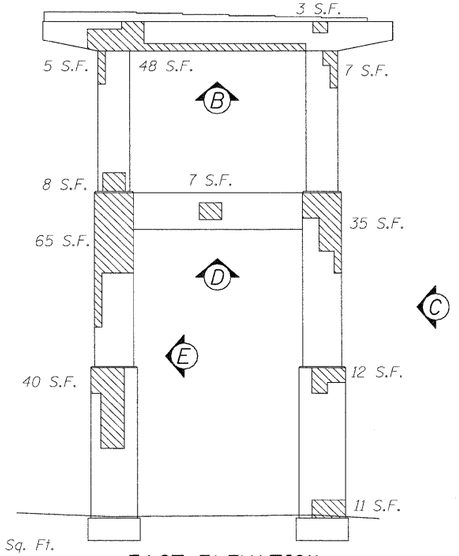
s:\1056b\05_cadd\cadd sheets\0990056-60M64-028-PRR-12.dgn



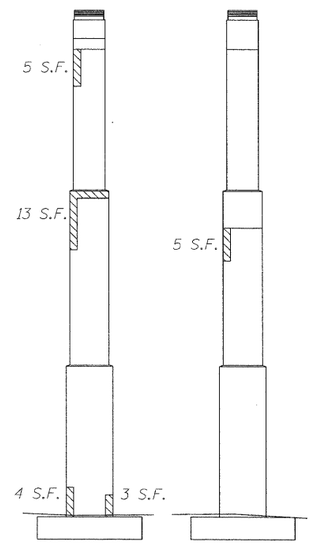
WEST ELEVATION
(Looking East)

VIEW A





EAST ELEVATION
(Looking West)



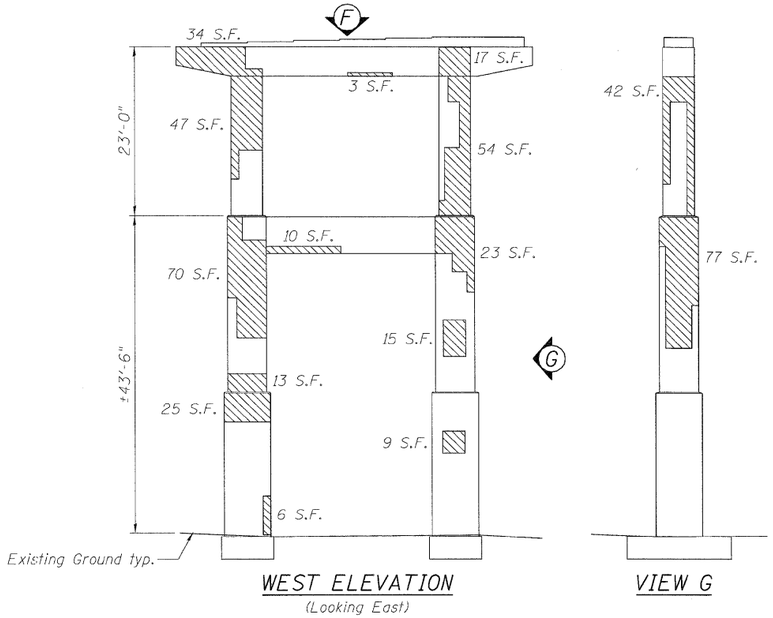
VIEW C VIEW E

PIER 13

Structural Repair of Concrete (Depth ≤ 5") = 400 Sq. Ft.

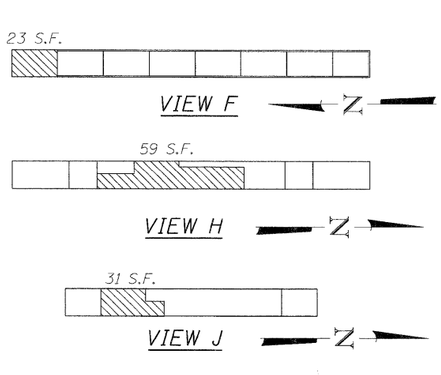
Structural Repair of Concrete (Depth > 5") = 89 Sq. Ft.

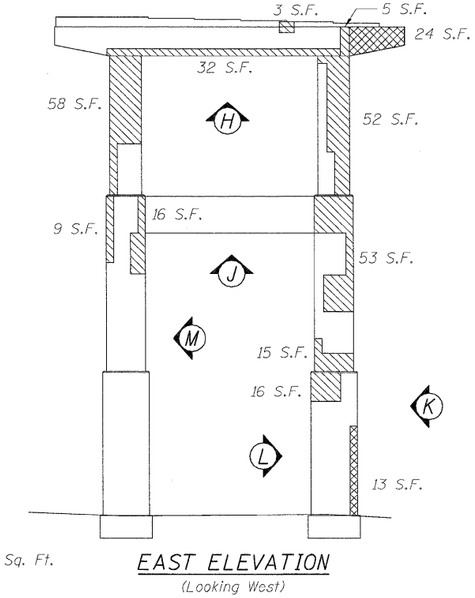
NOTES: See Sheet S-18 for Temporary Shoring and Cribbing, Special locations.



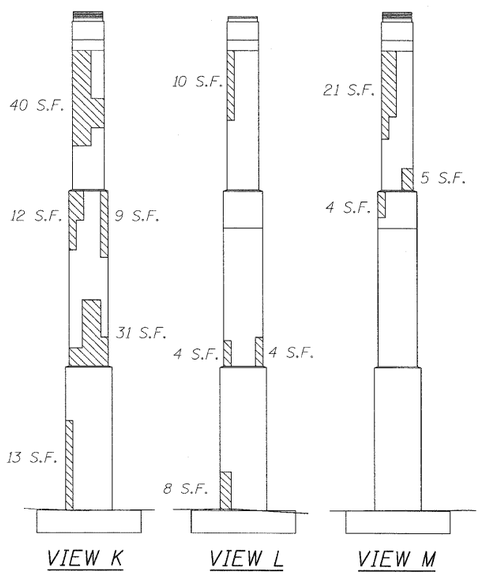
WEST ELEVATION
(Looking East)

VIEW G





EAST ELEVATION
(Looking West)



VIEW K VIEW L VIEW M

PIER 14

Structural Repair of Concrete (Depth ≤ 5") = 978 Sq. Ft.

Structural Repair of Concrete (Depth > 5") = 37 Sq. Ft.

NOTES: See Sheet S-18 for Temporary Shoring and Cribbing, Special locations.

USER NAME = mueller	DESIGNED - JC	REVISED -
PLOT SCALE = N'S	DRAWN - JC	REVISED -
PLOT DATE = 1/20/2011 12:58:24 PM	CHECKED - DF	REVISED -
	DATE - 01/21/2011	REVISED -

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER REPAIR DETAILS
EASTBOUND FAI-80 OVER DES PLAINES RIVER
STRUCTURE NO. 099-0056
SHEET NO. S-29 OF S-35 SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99(2&3)RS-3	WILL	200	136
		CONTRACT NO. 60M64		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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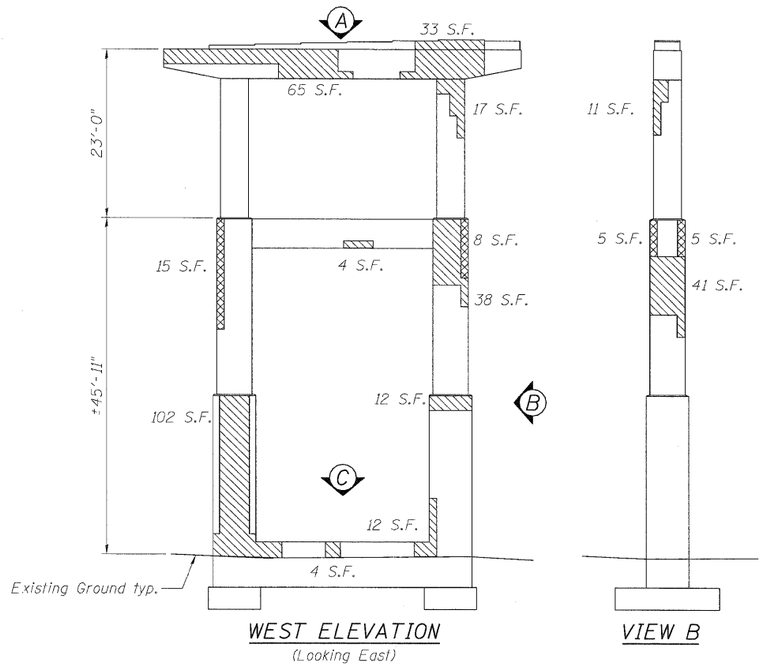
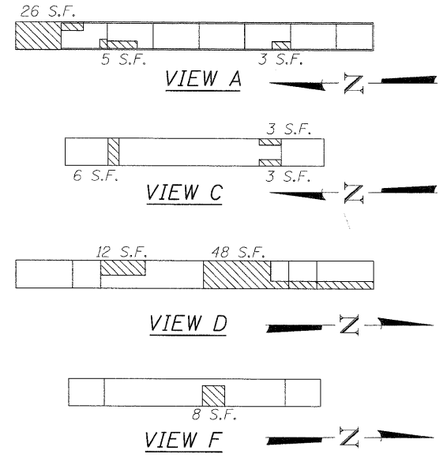
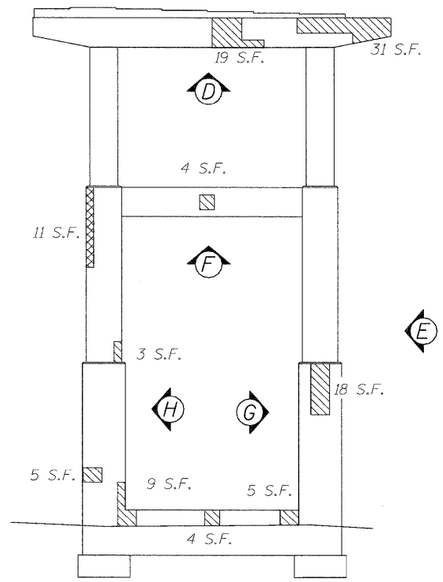


WEST ELEVATION
(Looking East)

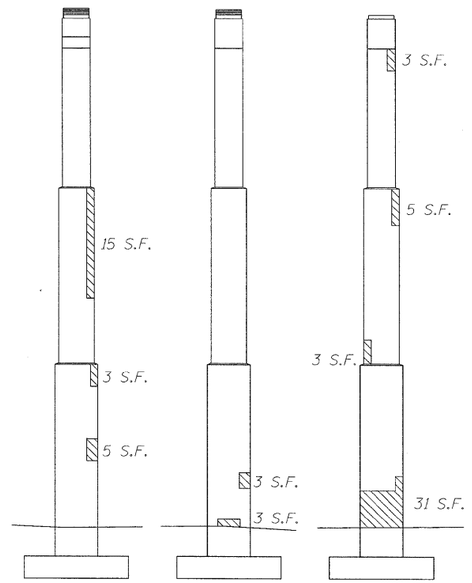
VIEW B



PIER 15



EAST ELEVATION
(Looking West)

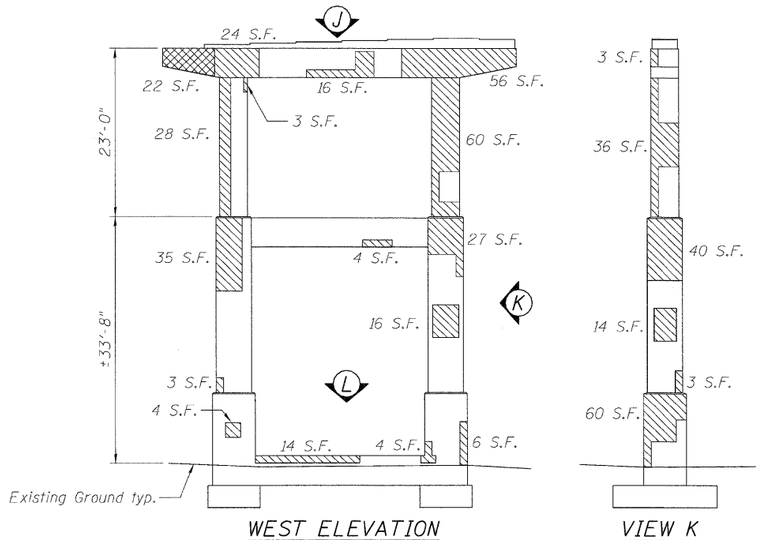


VIEW E VIEW G VIEW H

Structural Repair of Concrete (Depth ≤ 5") = 622 Sq. Ft.

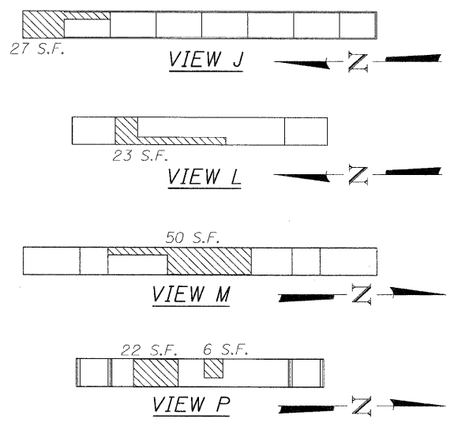
Structural Repair of Concrete (Depth > 5") = 44 Sq. Ft.

NOTES: See Sheet S-18 for Temporary Shoring and Cribbing, Special locations.

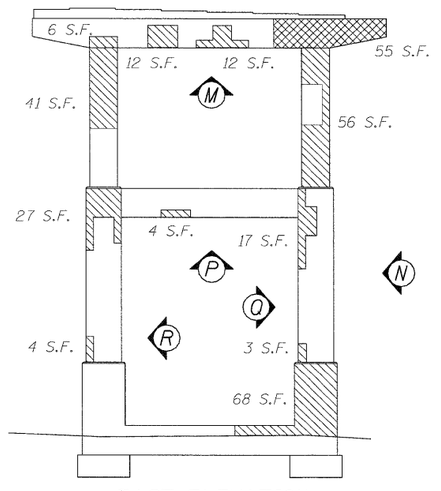


WEST ELEVATION
(Looking East)

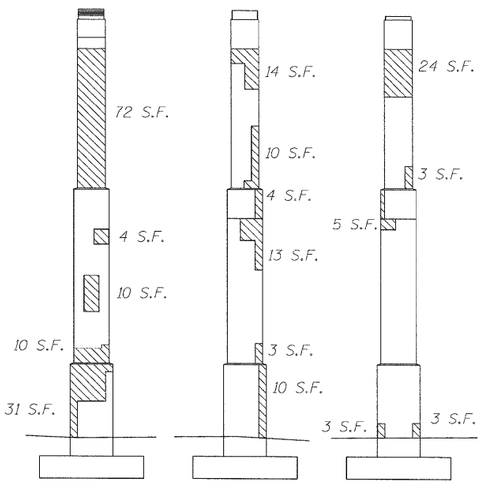
VIEW K



PIER 16



EAST ELEVATION
(Looking West)



VIEW N VIEW Q VIEW R

Structural Repair of Concrete (Depth ≤ 5") = 1053 Sq. Ft.

Structural Repair of Concrete (Depth > 5") = 77 Sq. Ft.

NOTES: See Sheet S-18 for Temporary Shoring and Cribbing, Special locations.

USER NAME = lm.jeller	DESIGNED - JC	REVISED -
PLOT SCALE = N'S	DRAWN - JC	REVISED -
PLOT DATE = 1/20/2011 12:58:25 PM	CHECKED - DF	REVISED -
	DATE - 01/21/2011	REVISED -

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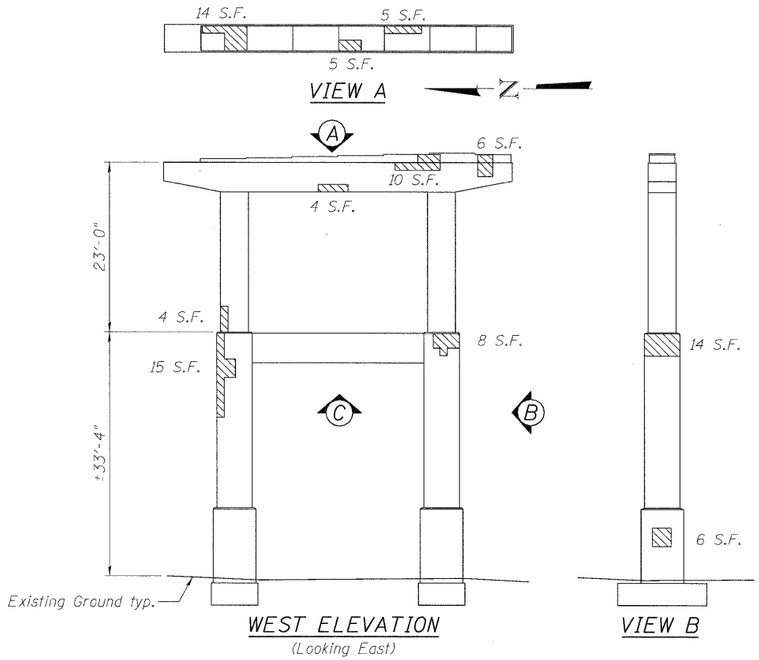
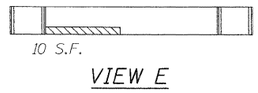
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

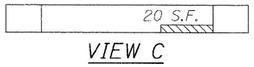
PIER REPAIR DETAILS
EASTBOUND FAI-80 OVER DES PLAINES RIVER
STRUCTURE NO. 099-0056
SHEET NO. S-30 OF S-35 SHEETS

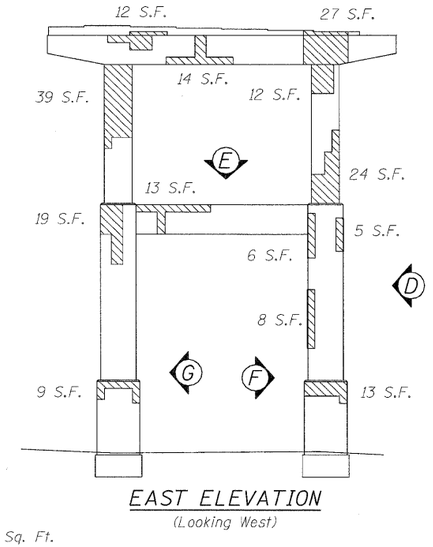
F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99(2&3)RS-3	WILL	200	137
		CONTRACT NO. 60M64		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

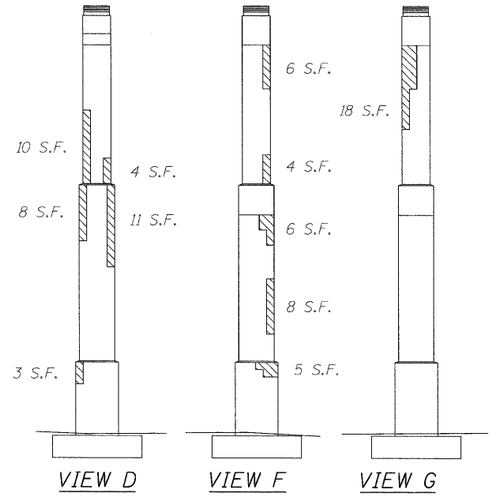
s:\0056b\05_cadd\cadd sheets\0990056-60M64-030-PRS-16.dgn









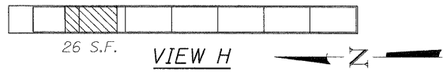


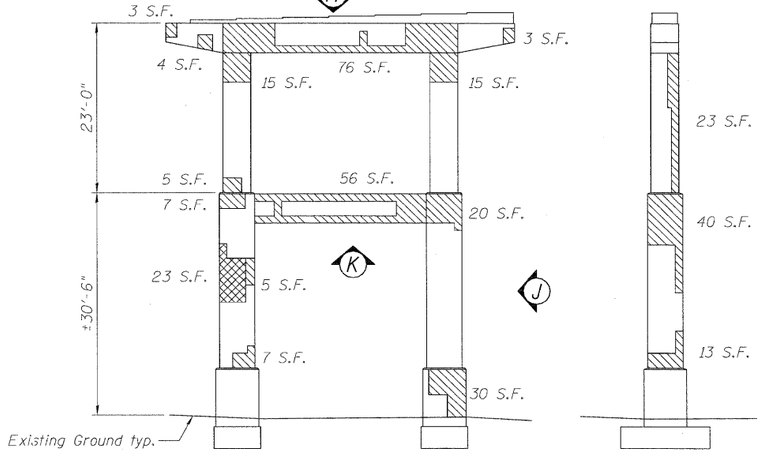
PIER 17

Structural Repair of Concrete (Depth ≤ 5") = 405 Sq. Ft.

Structural Repair of Concrete (Depth > 5") = 0 Sq. Ft.

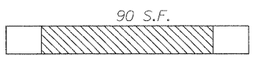
NOTES: See Sheet S-18 for Temporary Shoring and Cribbing, Special locations.

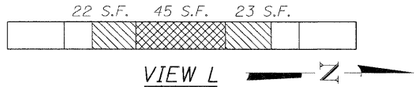


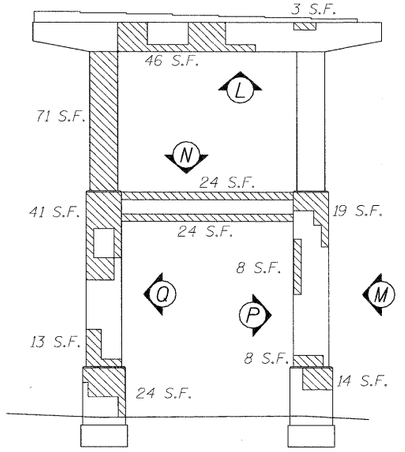


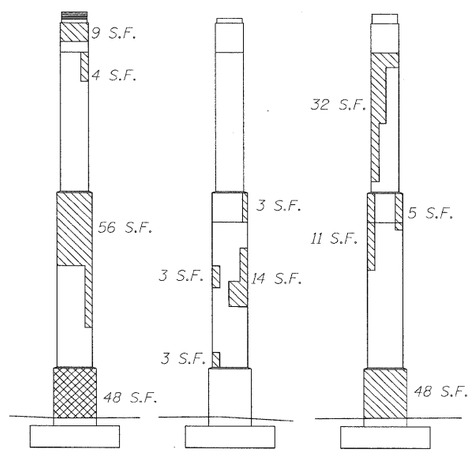
NOTES: See Sheet S-18 for Temporary Shoring and Cribbing, Special locations.

PIER 18



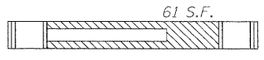






Structural Repair of Concrete (Depth ≤ 5") = 1027 Sq. Ft.

Structural Repair of Concrete (Depth > 5") = 116 Sq. Ft.



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PLOT DATE = 1/20/2011 12:58:27 PM	CHECKED - DF	REVISED -
	DATE - 01/21/2011	REVISED -

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER REPAIR DETAILS
EASTBOUND FAI-80 OVER DES PLAINES RIVER
STRUCTURE NO. 099-0056
SHEET NO. S-31 OF S-35 SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99(2&3)RS-3	WILL	200	138
		CONTRACT NO. 60M64		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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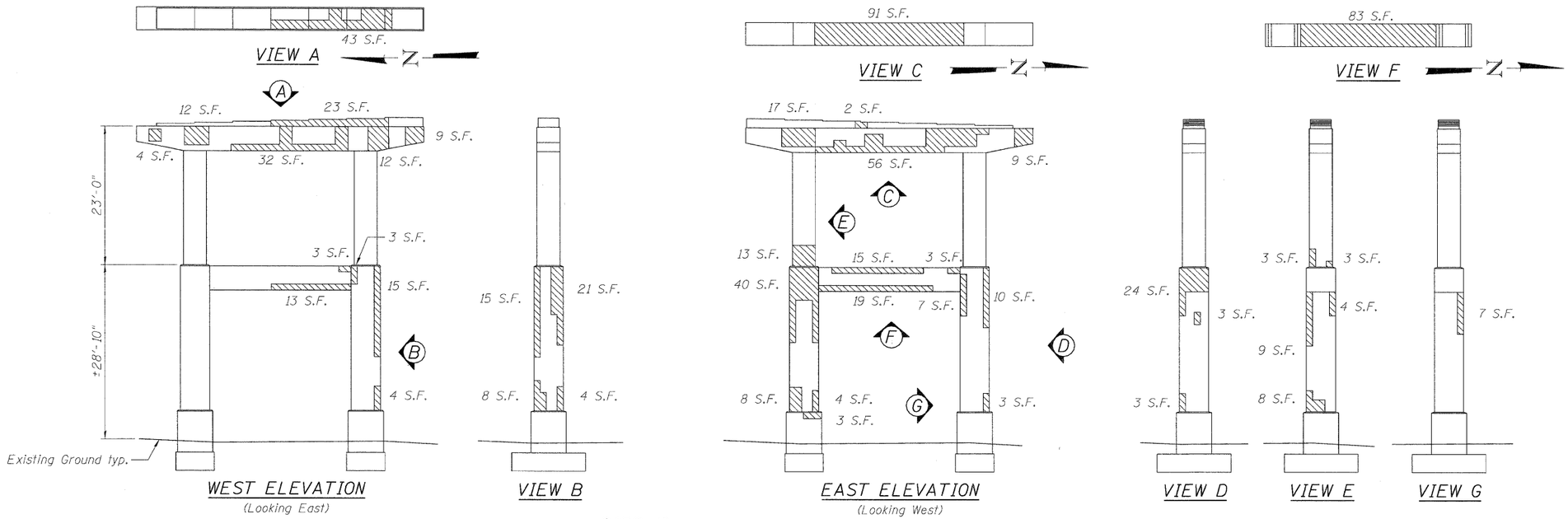

	DESIGNED - JC	REVISED -
USER NAME = lmjeller	DRAWN - JC	REVISED -
PLOT SCALE = N1S	CHECKED - DF	REVISED -
PLOT DATE = 1/20/2011 12:58:29 PM	DATE - 01/21/2011	REVISED -

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER REPAIR DETAILS
EASTBOUND FAI-80 OVER DES PLAINES RIVER
STRUCTURE NO. 099-0056
SHEET NO. S-32 OF S-35 SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99(2&3)RS-3	WILL	200	139
		CONTRACT NO. 60M64		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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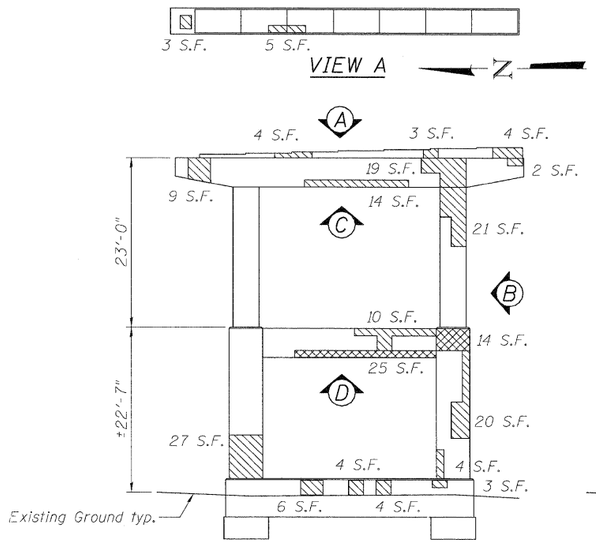
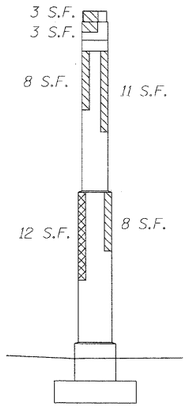
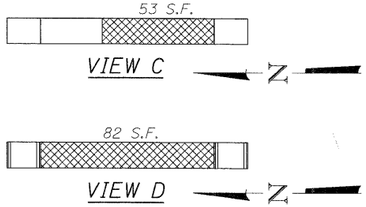


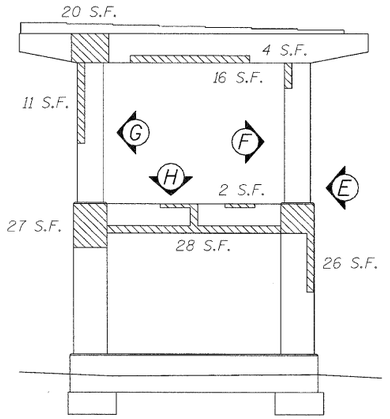
WEST ELEVATION
(Looking East)



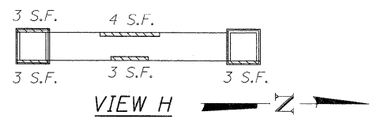
VIEW B

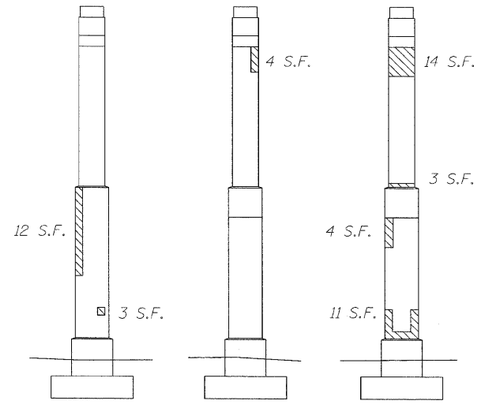


PIER 21



EAST ELEVATION
(Looking West)



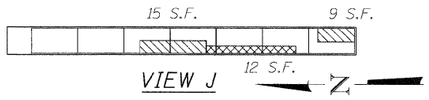


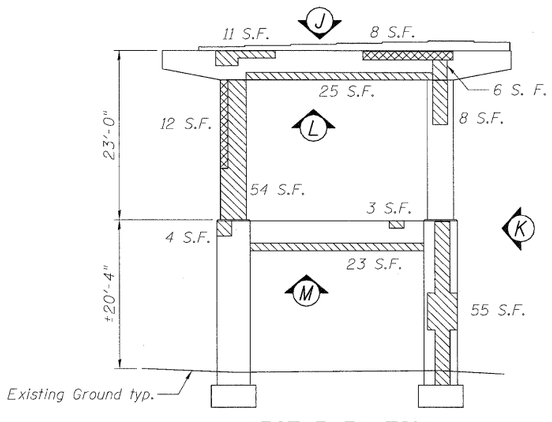
VIEW E VIEW F VIEW G

Structural Repair of Concrete (Depth ≤ 5") = 396 Sq. Ft.

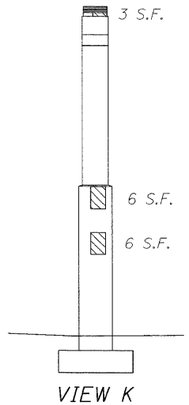
Structural Repair of Concrete (Depth > 5") = 186 Sq. Ft.

NOTES: See Sheet S-18 for Temporary Shoring and Cribbing, Special locations.

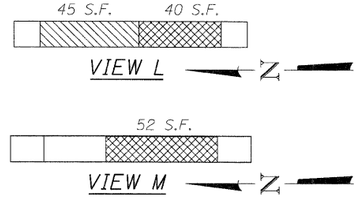




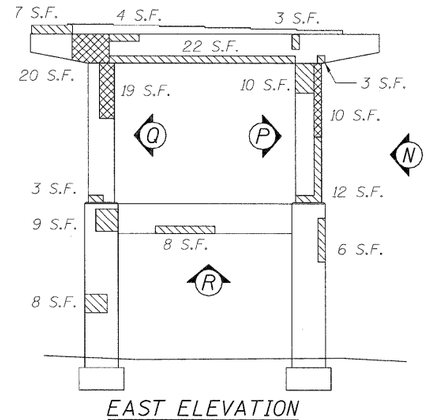
WEST ELEVATION
(Looking East)



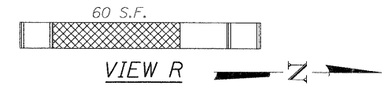
VIEW K

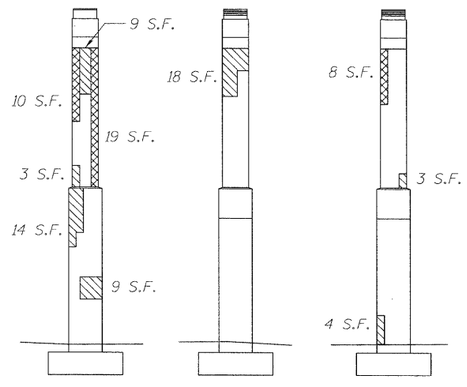


PIER 22



EAST ELEVATION
(Looking West)





VIEW N VIEW P VIEW Q

Structural Repair of Concrete (Depth ≤ 5") = 428 Sq. Ft.

Structural Repair of Concrete (Depth > 5") = 270 Sq. Ft.

NOTES: See Sheet S-18 for Temporary Shoring and Cribbing, Special locations.

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PLOT DATE = 1/20/2011 12:58:31 PM	CHECKED - DF	REVISED -
	DATE - 01/21/2011	REVISED -

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER REPAIR DETAILS
EASTBOUND FAI-80 OVER DES PLAINES RIVER
STRUCTURE NO. 099-0056
SHEET NO. S-33 OF S-35 SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99(2&3)RS-3	WILL	200	140
		CONTRACT NO. 60M64		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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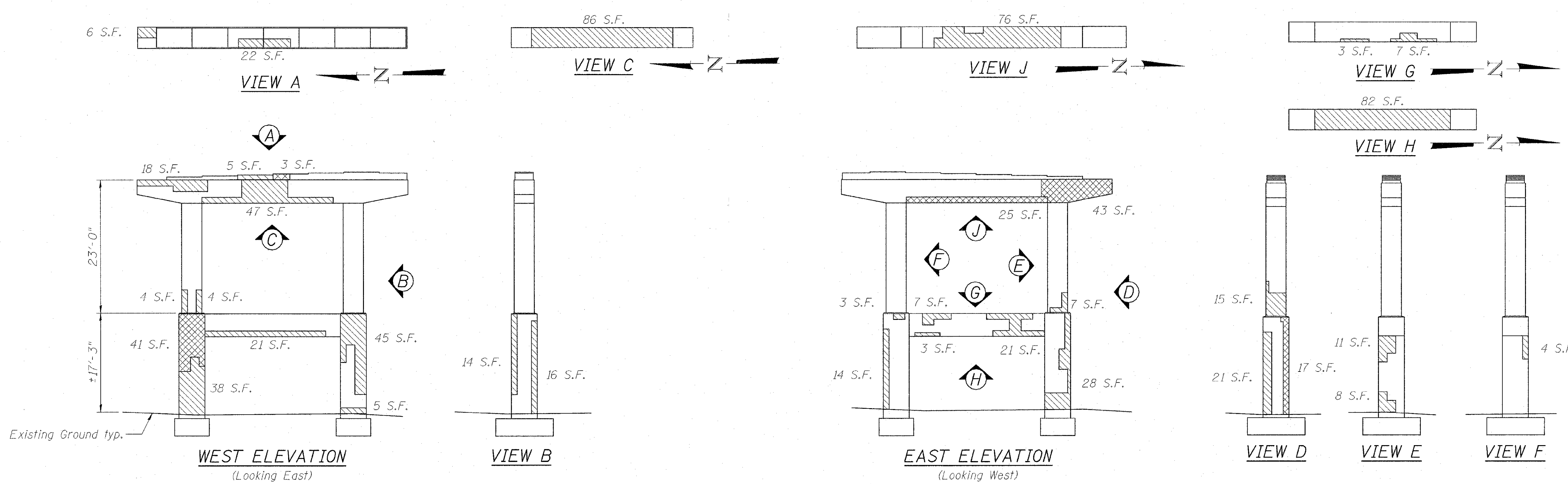
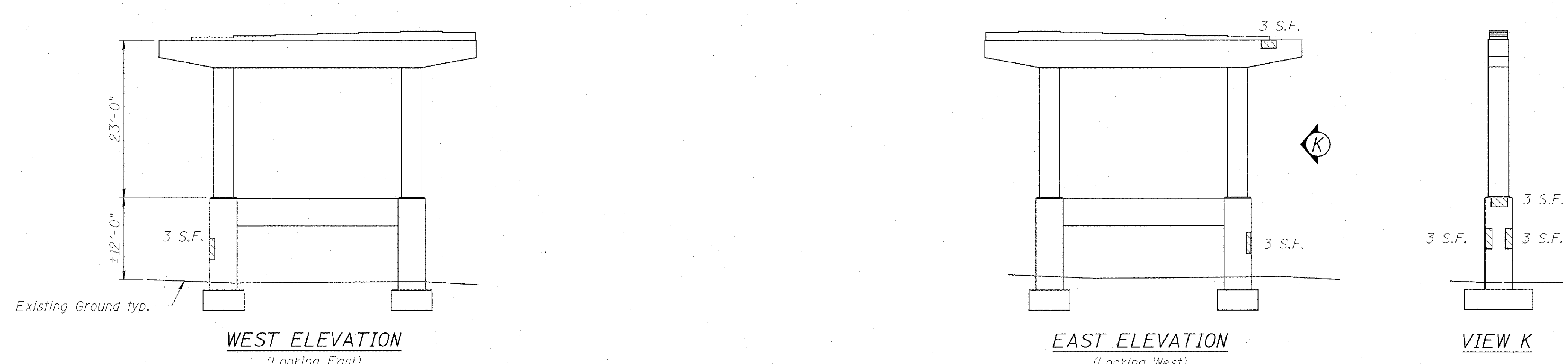


PIER 23

Structural Repair of Concrete (Depth ≤ 5") = 641 Sq. Ft.

Structural Repair of Concrete (Depth > 5") = 129 Sq. Ft.

NOTES: See Sheet S-18 for Temporary Shoring and Cribbing, Special locations.



PIER 24

Structural Repair of Concrete (Depth ≤ 5") = 18 Sq. Ft.

Structural Repair of Concrete (Depth > 5") = 0 Sq. Ft.

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	DATE - 01/21/2011	REVISED -	

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER REPAIR DETAILS 12
EASTBOUND FAI-80 OVER DES PLAINES RIVER
STRUCTURE NO. 099-0056
SHEET NO. S-34 OF S-35 SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99(2&3)RS-3	WILL	200	141
		CONTRACT NO. 60M64		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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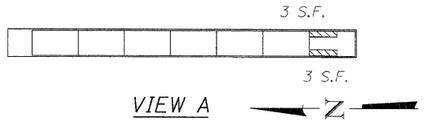
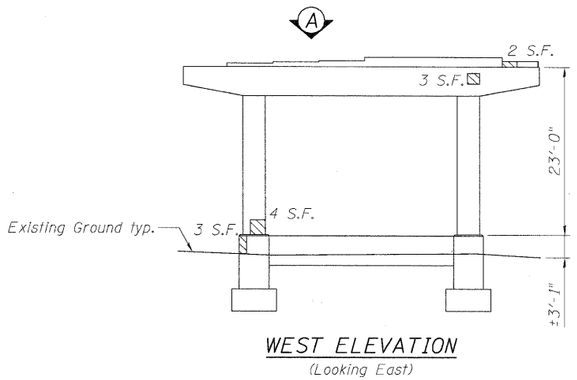
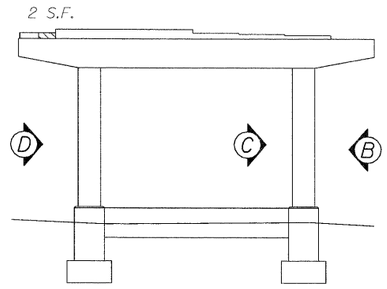
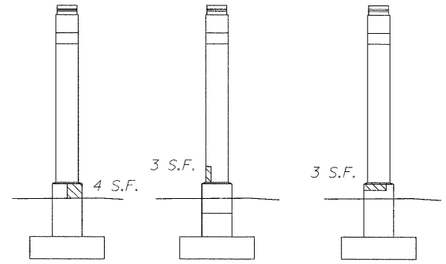




WEST ELEVATION
(Looking East)



EAST ELEVATION
(Looking West)

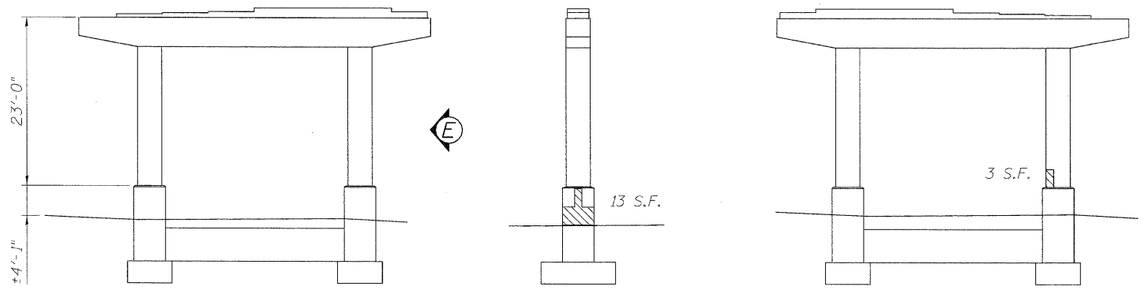


VIEW B VIEW C VIEW D

PIER 25

Structural Repair of Concrete (Depth ≤ 5") = 30 Sq. Ft.

Structural Repair of Concrete (Depth > 5") = 0 Sq. Ft.



WEST ELEVATION
(Looking East)

VIEW E

EAST ELEVATION
(Looking West)

PIER 26

Structural Repair of Concrete (Depth ≤ 5") = 16 Sq. Ft.

Structural Repair of Concrete (Depth > 5") = 0 Sq. Ft.

	DESIGNED - JC	REVISED -
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PLOT SCALE = NTS	CHECKED - DF	REVISED -
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

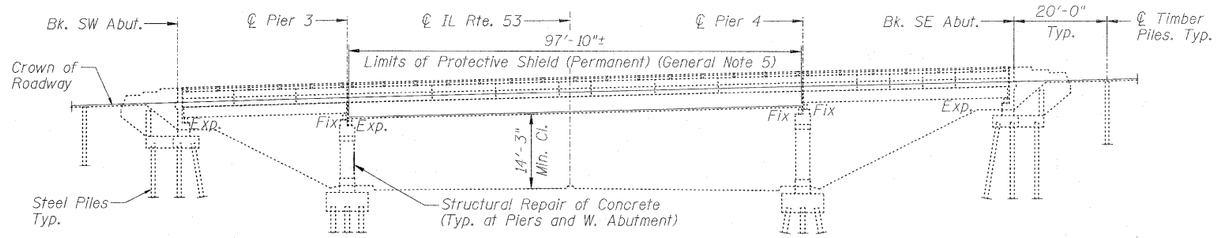
PIER REPAIR DETAILS
EASTBOUND FAI-80 OVER DES PLAINES RIVER
STRUCTURE NO. 099-0056
SHEET NO. S-35 OF S-35 SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99(2&3)RS-3	WILL	200	142
		CONTRACT NO. 60M64		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

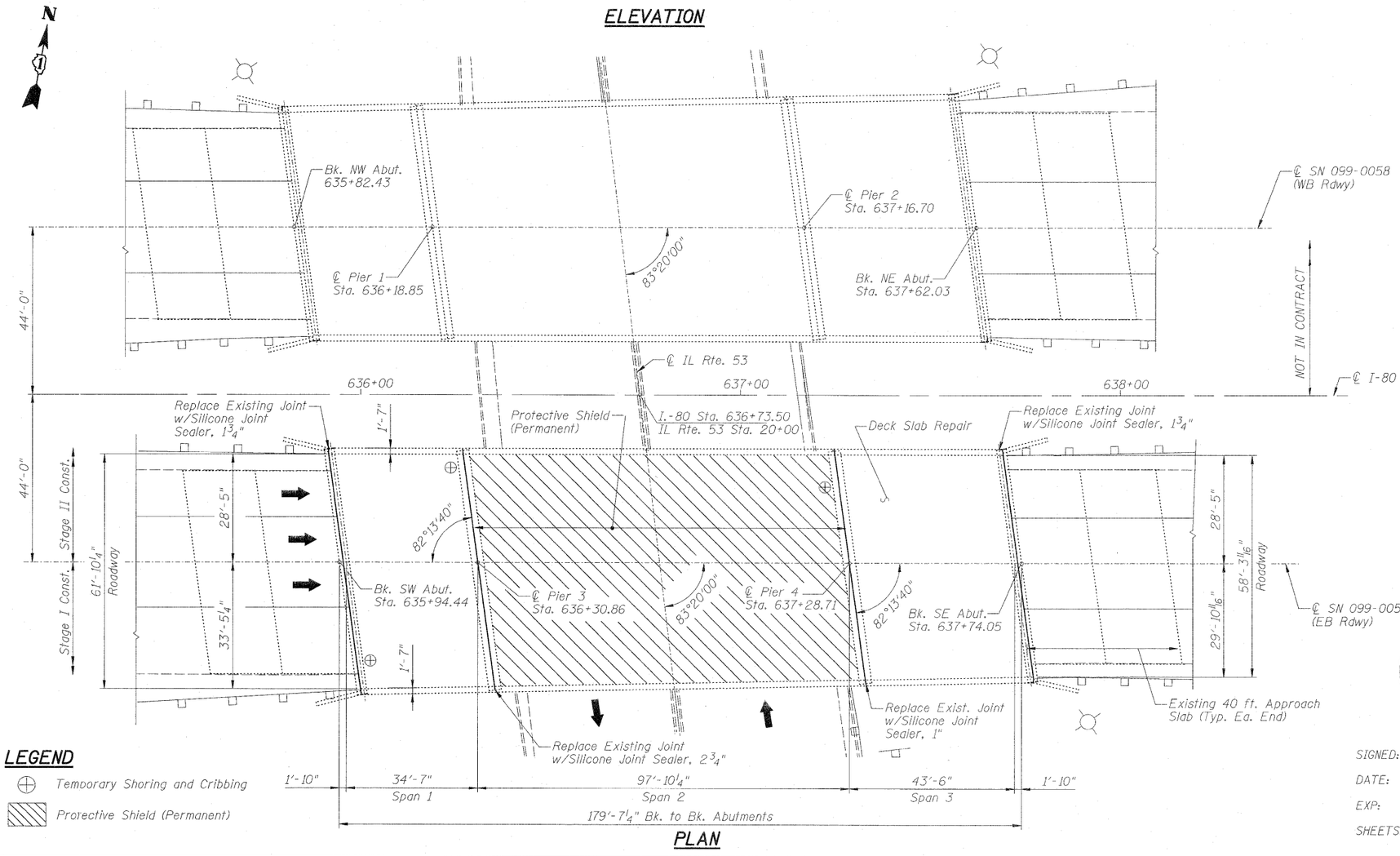
Existing Structures:
Dual bridges over IL Rte 53 Chicago Street, SN 099-0059 carrying I-80 Eastbound and SN 099-0058 carrying I-80 Westbound, were originally constructed in 1962 as a part of F.A.I. 80 Project, I-80-4(31)134, Section 99-4,99-4(B,HB). The superstructures consist of 3 simple span steel multi-girder units supported on concrete abutments and piers. The existing bridge decks consist of 7-inch reinforced concrete composite slab with 2" bituminous overlay and waterproofing membrane. The transverse deck joints are PJS type with vertical armor plates. In 1971 the longitudinal deck joint was eliminated. In 1990 and 1998 repairs were made to the decks, abutments, piers, deck joints, rail and drainage system. In 2001, the bituminous overlay and waterproofing membrane was replaced. The structure was fully painted in 1985; the facias and beam ends under joints were re-painted in 2003.

Traffic shall be maintained utilizing stage construction.

No salvage.



ELEVATION



PLAN

LEGEND

⊕ Temporary Shoring and Cribbing

▨ Protective Shield (Permanent)

INDEX OF SHEETS

SCOPE OF WORK:

1. Remove existing Hot-Mix Asphalt Overlay.
2. Install Protective Shield.
3. Full and partial depth deck slab repair.
4. Remove and replace deck joints with silicone joint sealer.
5. Install temporary beam shoring.
6. Structural concrete repair at abutments and piers.
7. Construct Hot-Mix Asphalt Overlay.

DESIGN SPECIFICATIONS

2002 AASHTO Standard Specifications for Highway Bridges. 17th Edition

DESIGN STRESSES

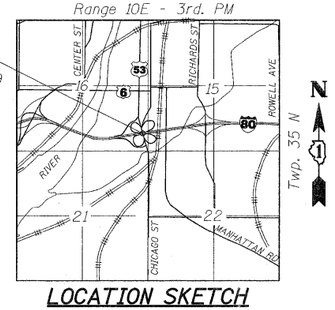
FIELD UNITS:
f'c = 3,500 psi
fy = 60,000 psi (Reinforcement)

GENERAL NOTES:

1. Reinforcement bars shall conform to the requirements of ASTM A 706 Grade 60. See Special Provisions.
2. Plan dimensions and details relative to existing structure have been taken from existing plans and are subject to nominal construction variations. Contractor should verify dimensions and make necessary approved adjustments prior to starting construction. Such variations shall not be cause for additional compensation for a change in scope of work, however, the Contractor will be paid for actual quantity furnished and approved by Engineer at unit price bid for the work.
3. Areas of proposed deck repairs are estimated. Actual type, location and dimension of deck repairs are to be determined by the Engineer during construction.
4. Contractor shall remove the existing asphalt wearing surface and, as necessary, adjust the milling depth to prevent damage to the existing waterproofing membrane. After satisfactory completion of the deck repair work, an asphalt surface course shall be placed in sufficient thickness as to match the elevation of the original surface.
5. Protective shield shall be installed prior to start of Deck Slab Repair work.

STATE OF ILLINOIS
ATALAY YARGICOGLU
081-005358
CHICAGO, IL
LICENSED STRUCTURAL ENGINEER

SIGNED:
DATE: 02/08/2011
EXP: 11/30/2012
SHEETS: S1 THRU S6



LOCATION SKETCH

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PLOT DATE = 2/8/2011	DATE - 01/21/2011	REVISED -	

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN AND ELEVATION
EASTBOUND I-80 OVER IL ROUTE 53 (CHICAGO STREET)
SN 099-0059

SCALE: | SHEET S1 OF S6 | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99 (2&3) RS-3	WILL	200	143
		CONTRACT NO. 60M64		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

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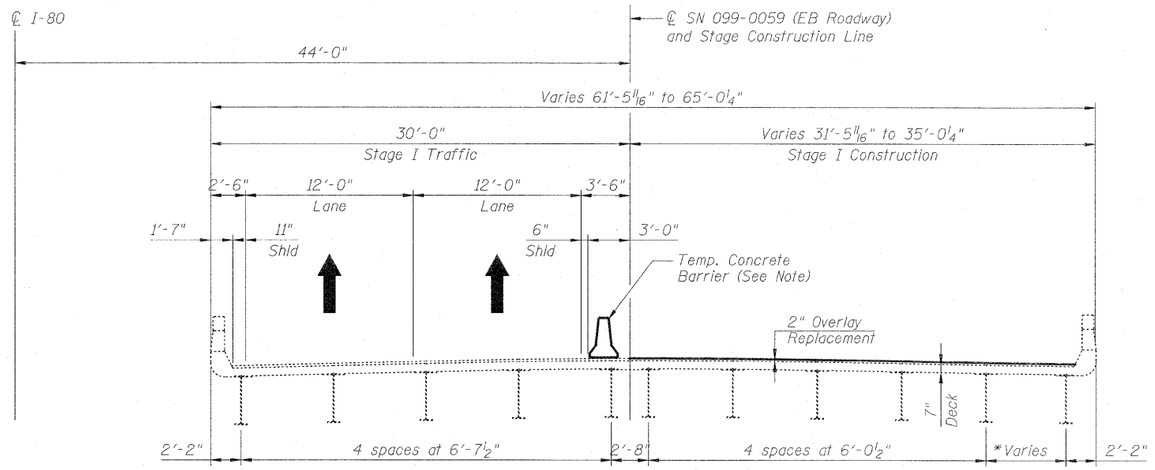


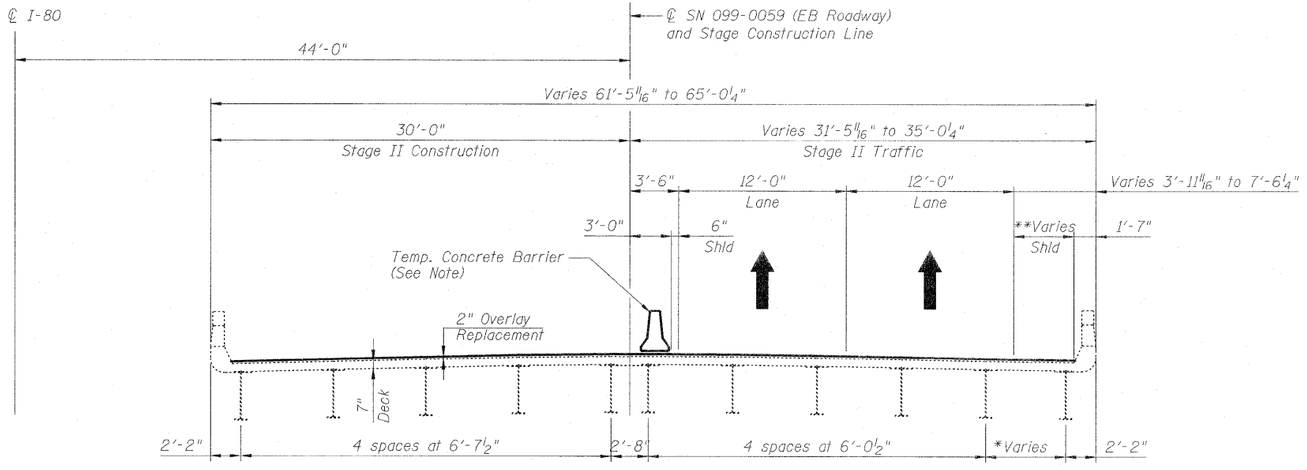
STAGE I CONSTRUCTION & TRAFFIC

(Looking East)

* Varies 3'-9 11/16" to 7'-4 1/4"

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Polymerized Hot-Mix Asphalt Surface Course, Stone Matrix Asphalt, N80	Ton	137	-	137
Protective Shield (Permanent)	Sq. Yd.	641	-	641
Hot-Mix Asphalt Surface Removal (Deck)	Sq. Yd.	1,218	-	1,218
Structural Repair of Concrete (Depth =< 5")	Sq. Ft.	-	87	87
Structural Repair of Concrete (Depth > 5")	Sq. Ft.	-	214	214
Deck Slab Repair (Full Depth, Type II)	Sq. Yd.	38	-	38
Deck Slab Repair (Partial)	Sq. Yd.	193	-	193
Silicone Joint Sealer, 1"	Foot	63	-	63
Silicone Joint Sealer, 1 3/4"	Foot	126	-	126
Silicone Joint Sealer, 2 3/4"	Foot	63	-	63
Temporary Shoring and Cribbing	Each	3	-	3



STAGE II CONSTRUCTION & TRAFFIC

(Looking East)

* Varies 3'-9 11/16" to 7'-4 1/4"
** Varies 2'-4 11/16" to 5'-11 1/4"

Note:

After removal of temporary concrete barrier, repair dowel holes with non-shrink epoxy grout as directed by the Engineer. Cost of anchorage and repair is included with Temporary Concrete Barrier.

USER NAME = oyargicoglu(Rdwy_Lisle)	DESIGNED - A.Y./L.C.	REVISED -	
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PLOT DATE = 2/8/2011	DATE - 01/21/2011	REVISED -	

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CONSTRUCTION STAGING AND TOTAL BILL OF MATERIAL
EASTBOUND I-80 OVER IL ROUTE 53 (CHICAGO STREET)
SN 099-0059

SCALE: | SHEET S2 OF S6 | STA. | TO STA.

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99 (2&3) RS-3	WILL	200	144
		CONTRACT NO. 60M64		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

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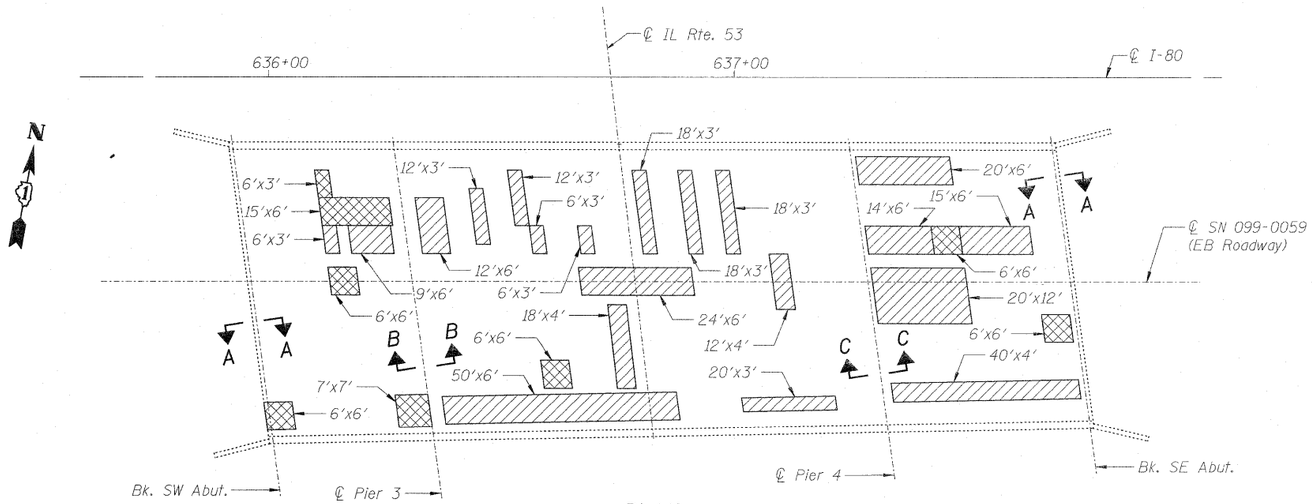


PLAN

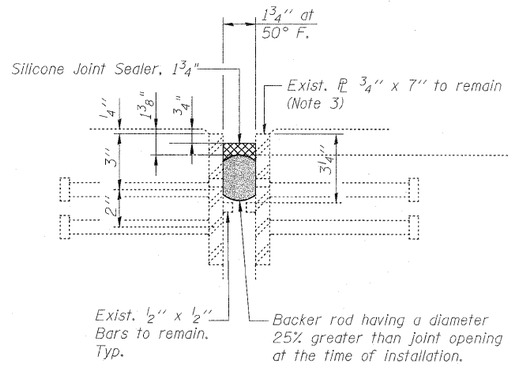
BILL OF MATERIAL

ITEM	UNIT	TOTAL
Deck Slab Repair (Full Depth, Type II)	Sq. Yd.	38
Deck Slab Repair (Partial)	Sq. Yd.	193
Silicone Joint Sealer, 1"	Foot	63
Silicone Joint Sealer, 1 3/4"	Foot	126
Silicone Joint Sealer, 2 3/4"	Foot	63

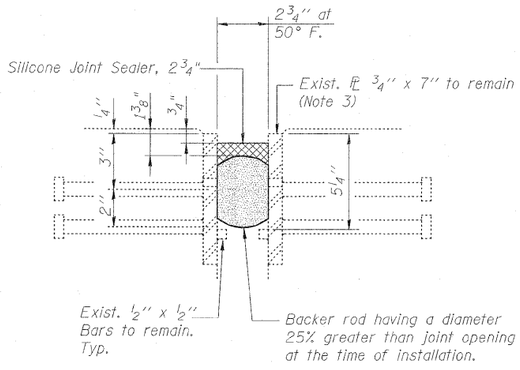
LEGEND:

Deck Slab Repair (Partial)

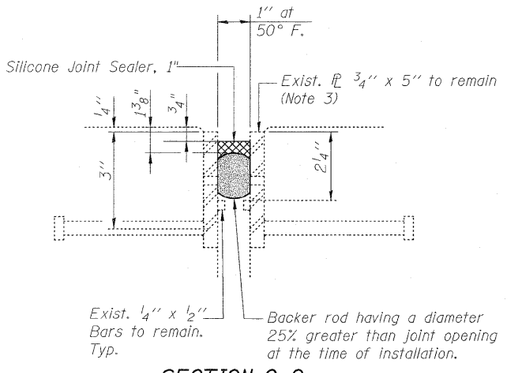
Deck Slab Repair (Full Depth, Type II)



SECTION A-A
(At Abutments)

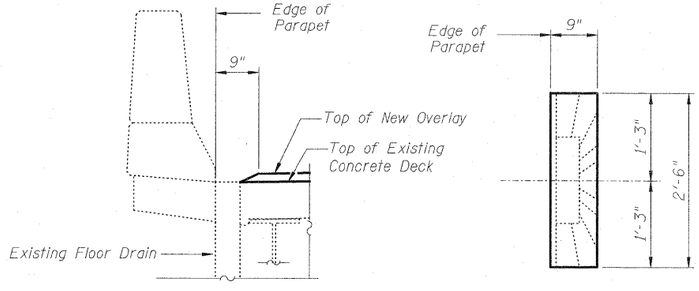


SECTION B-B
(At Pier 3)



SECTION C-C
(At Pier 4)

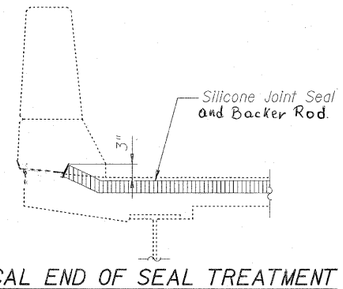
DECK EXPANSION JOINT DETAILS



SECTION AT FLOOR DRAIN

TOP PLAN

OVERLAY TREATMENT AT FLOOR DRAIN



TYPICAL END OF SEAL TREATMENT

Notes:

1. *See General Note 3 on Sheet S1 of S6.*
2. *Removal and disposal of the existing joint fillers and neoprene seals will be included with the cost of Silicone Joint Sealer, of the size specified.*
3. *Existing plates to be cleaned prior to installation of backer rod. Cost included with Silicone Joint Sealer, of the size specified.*
4. *Deck Slab Repair concrete shall be placed up to top of existing waterproofing membrane system. Cost included with Deck Slab Repair, of the type specified.*
5. *The Contractor shall grind off any existing concrete patches flush with the existing waterproofing membrane system. Cost included with Hot-Mix Asphalt Surface Removal (Deck).*

USER NAME = aygarcioglu(Rdwy_Lisle)	DESIGNED - A.Y./L.C.	REVISED -	
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PLOT DATE = 2/8/2011	DATE - 01/21/2011	REVISED -	

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DECK AND EXPANSION JOINT REPAIRS
EASTBOUND I-80 OVER IL ROUTE 53 (CHICAGO STREET)
SN 099-0059

SCALE: | SHEET S3 OF S6 | STA. | TO STA.

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99 (2&3) RS-3	WILL	200	145
		CONTRACT NO. 60M64		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

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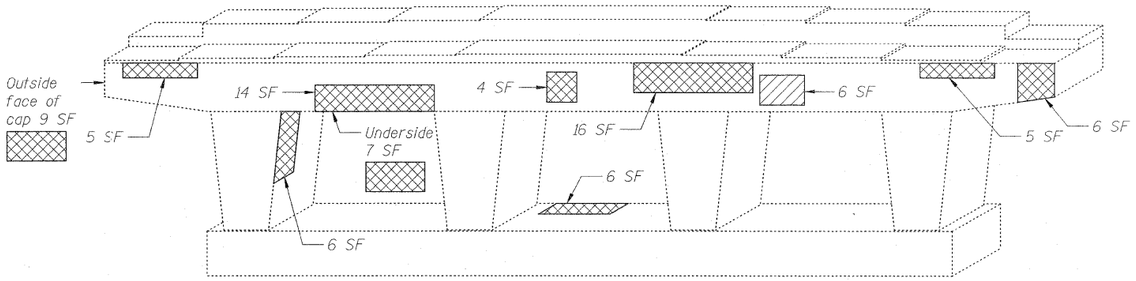
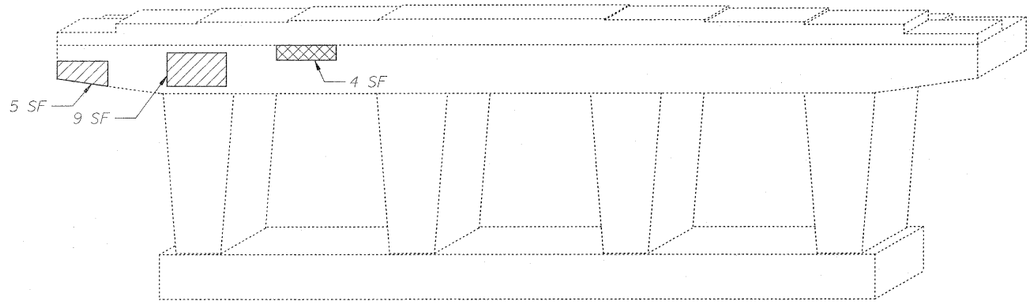
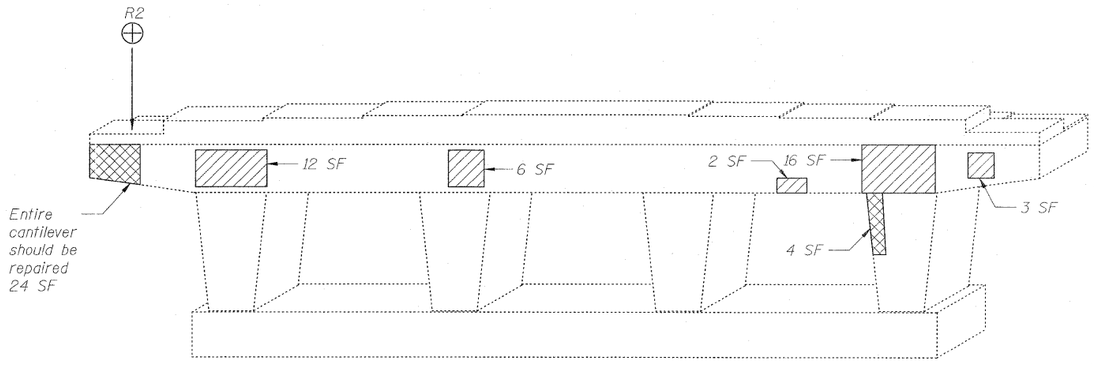


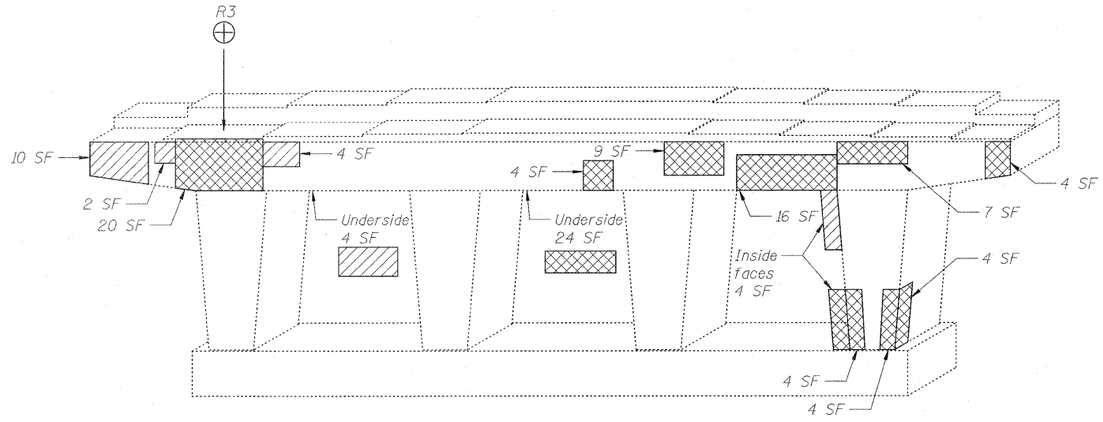
PIER 3
EAST FACE



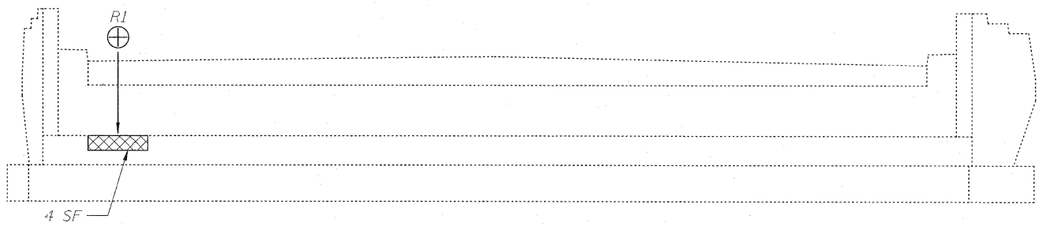
PIER 4
EAST FACE



PIER 3
WEST FACE



PIER 4
WEST FACE



SOUTHWEST ABUTMENT
Looking West

INTERIOR GIRDER REACTION TABLE				
		R1	R2	R3
$R_{\text{℄}}$	(k)	21.9	20.7	51.3
$R_{\text{℄}}$	(k)	38.0	33.1	39.2
Imp.	(k)	11.4	9.9	8.8
R_{Total}	(k)	71.3	63.7	99.3

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Structural Repair of Concrete (Depth =< 5")	Sq. Ft.	87
Structural Repair of Concrete (Depth > 5")	Sq. Ft.	214
Temporary Shoring and Cribbing	Each	3

LEGEND:

Structural Repair of Concrete (Depth =< 5")

Structural Repair of Concrete (Depth > 5")

Temporary Shoring and Cribbing

Note:
See the Special Provision "Temporary Shoring and Cribbing" for design, installation, and removal of the temporary shoring and cribbing system. Approximate beam reactions are given in Interior Girder Reaction Table at the locations shown.

USER NAME = myargicoglu\Rdwy_Lisle	DESIGNED - A.Y./L.C.	REVISED -	
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PLOT DATE = 2/8/2011	DATE - 01/21/2011	REVISED -	

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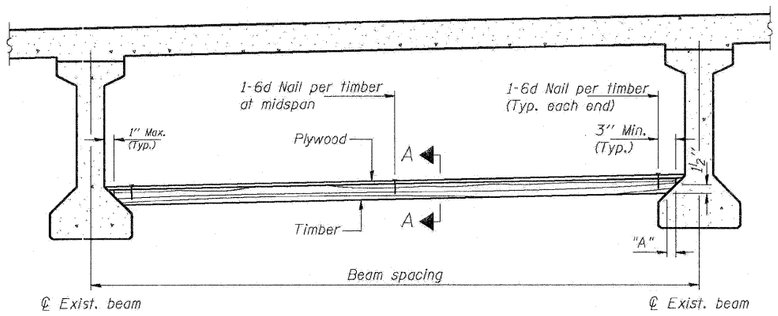
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ABUTMENT AND PIER REPAIRS
EASTBOUND I-80 OVER IL ROUTE 53 (CHICAGO STREET)
SN 099-0059

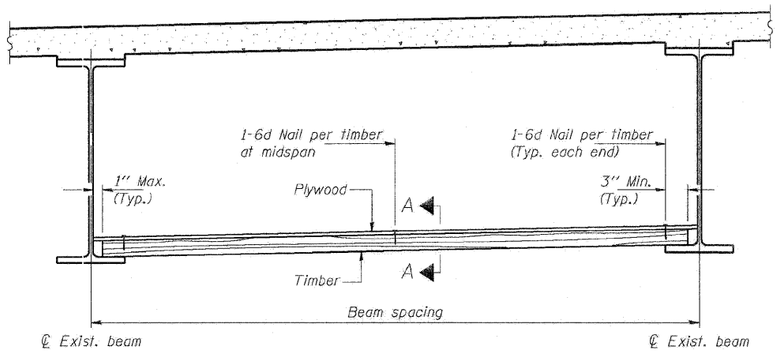
SCALE: | SHEET S4 OF S6 | STA. | TO STA.

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99 (2&3) RS-3	WILL	200	146
		CONTRACT NO. 60M64		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

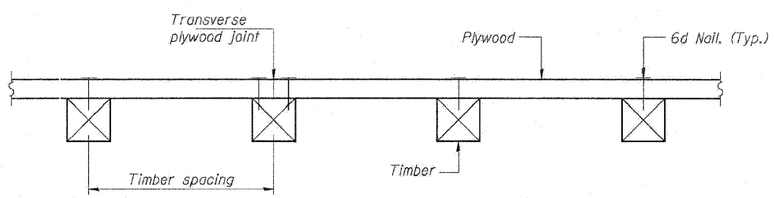
\\fs1\tranprojects\idot\21050.005 (i-80 phase ii)\drawings\cadd sheets\bridge p&e\il 53\eb\099-0059-D160M64-Piers-IL53-EB.dgn



PPC I-BEAMS AND BULB-T's



STEEL BEAMS



SECTION A-A

TIMBER SPACING

Beam Spacing (ft.)	Timber Sizes (in.) 4" x 4" with min. Fb=775 psi Fv=135 psi	4" x 6" with min. Fb=775 psi Fv=135 psi	6" x 6" with min. Fb=575 psi Fv=125 psi
	Maximum Timber Spacing (in.)		
4.5	16	16	16
4.75	16	16	16
5.0	16	16	16
5.25	16	16	16
5.5	16	16	16
5.75	16	16	16
6.0	16	16	16
6.25	12	16	16
6.5	12	16	16
6.75	12	16	16
7.0	8	16	16
7.25	8	16	16
7.5	8	16	16
7.75	8	16	16
8.0	8	12	16
8.25	8	12	16
8.5	6	12	12
8.75	6	12	12
9.0	6	8	12

PPC I-BEAMS AND BULB-T's

BEAM	"A"
36" I-Beam	$1\frac{1}{2}$"
42" I-Beam	$1\frac{1}{2}$"
48" I-Beam	$1\frac{1}{2}$"
54" I-Beam	$1\frac{5}{8}$"
63" Bulb-T	$3\frac{3}{8}$"
72" Bulb-T	$3\frac{3}{8}$"

Notes:
See special provision for Permanent Protective Shield System.
Timber sizes shown are nominal sizes. Rough sawn timber of the dimensions shown will also be considered acceptable.
The minimum Fb and Fv values shown are the tabulated design values given in the National Design Specification for Wood Construction for No. 2 Spruce-Pine-Fir without adjustment factors applied. Better grades or other species with equal or higher allowable stresses will also be considered acceptable.
The timber spacings shown have been determined using allowable stresses with all adjustment factors necessary for the anticipated service conditions.
All timber shall be treated.
Plywood shall be $\frac{5}{8}$" Exterior type plywood (per American Plywood Association).
Plywood shall be placed such that the face grain is perpendicular to the timber supports. When less than a full sheet (4' width) of plywood is used, the width of the strip used shall not be less than 2'.
Transverse plywood joints shall be supported by timbers.
When 4" x 6" timbers are used, they shall be placed such that the wide face is horizontal and the narrow face is vertical.
Design load = 200 psf.

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Protective Shield (Permanent)	Sq. Yd.	641

USER NAME = aygarcioglu(Rdwy_Lisle)	DESIGNED - A.Y./L.C.	REVISED -
PLOT CONFIG= PDF(I-80_TopoGrey_Large).plt	DRAWN - L.C./A.Y.	REVISED -
PLOT SCALE = 1:16	CHECKED - A.Y./R.L.D.	REVISED -
PLOT DATE = 2/8/2012	DATE - 01/21/2011	REVISED -

HBP Illinois Partners

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

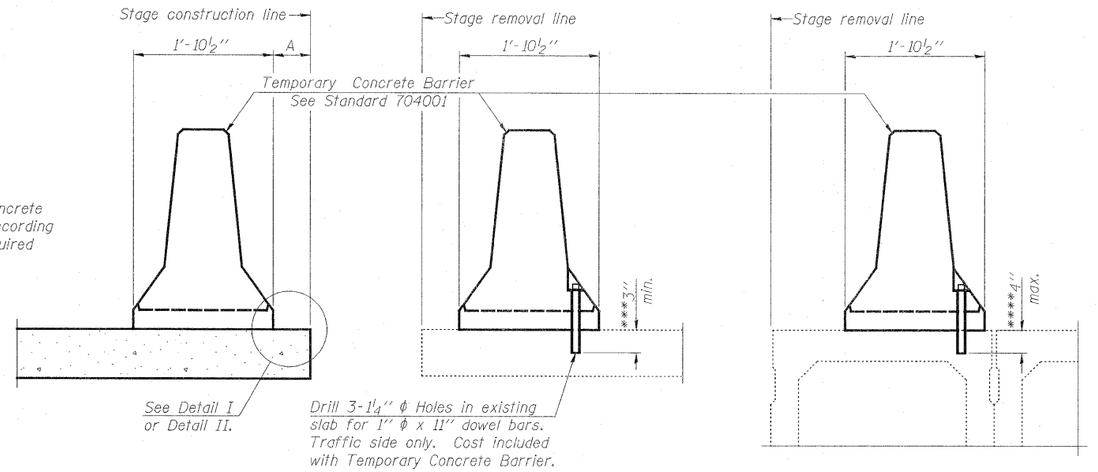
PERMANENT PROTECTIVE SHIELD
EASTBOUND I-80 OVER IL ROUTE 53 (CHICAGO STREET)
SN 099-0059

SCALE: | SHEET S5 of S6 | STA. | TO STA.

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99 (2&3) RS-3	WILL	200	147
		CONTRACT NO. 60M64		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

\\fsl\tranprojects\idot\21050.005 (i-80 phase 1)\drawings\cadd sheets\bridge p&e\il 53\EB\099-0059-D16DM66-PermanentProtectiveShield.dgn

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



NOTES

Detail I - With Bar Splicer or Couplers:
Connect one (1) 1" x 7" x "W" 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" x 7" x "W" 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.

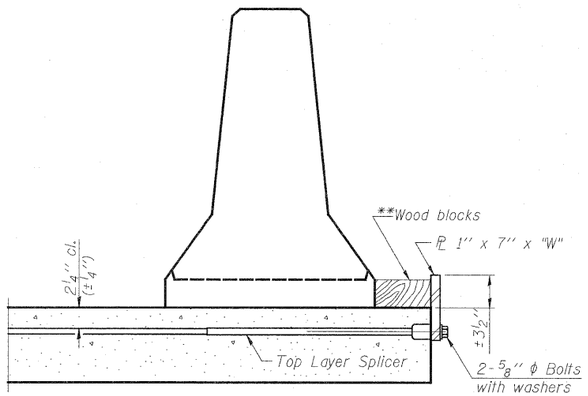
Cost of anchorage is included with Temporary Concrete Barrier.

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

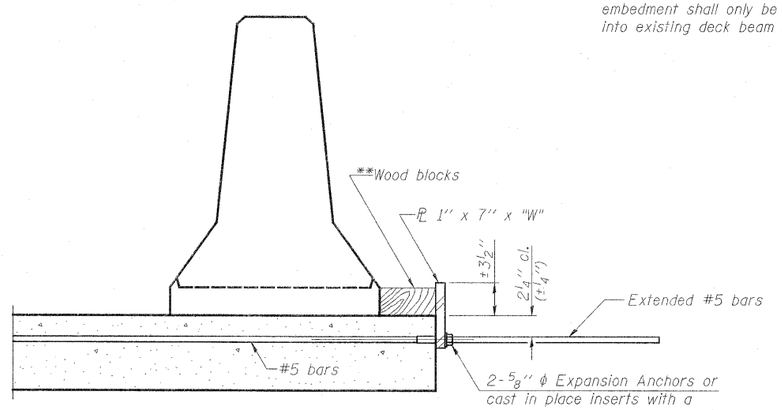
SECTIONS THRU SLAB OR DECK BEAM

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

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



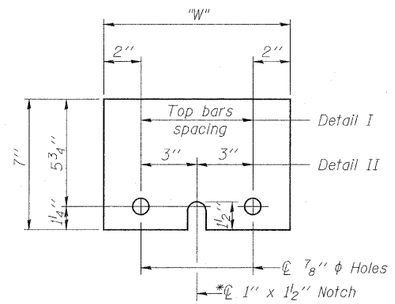
DETAIL I



DETAIL II

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

"W" = Top bars spacing + 4"



STEEL RETAINER ℙ 1" x 7" x "W"

* Required only with Detail II

R-27

7-1-10

USER NAME = ayargicoglu(Rdwy_Lisle)	DESIGNED - A.Y./L.C.	REVISED -	
PLOT CONFIG= PDF(I-80_TopoGrey_Large).plt	DRAWN - L.C./A.Y.	REVISED -	
PLOT SCALE = 1i16	CHECKED - A.Y./R.L.D.	REVISED -	
PLOT DATE = 2/8/2011	DATE - 01/21/2011	REVISED -	

HBP Illinois Partners

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TEMPORARY CONCRETE BARRIER FOR STAGE CONSTRUCTION
EASTBOUND I-80 OVER IL ROUTE 53 (CHICAGO STREET)
SN 099-0059

SCALE: | SHEET S6 of S6 | STA. | TO STA.

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99 (2&3) RS-3	WILL	200	148
		CONTRACT NO. 60M64		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

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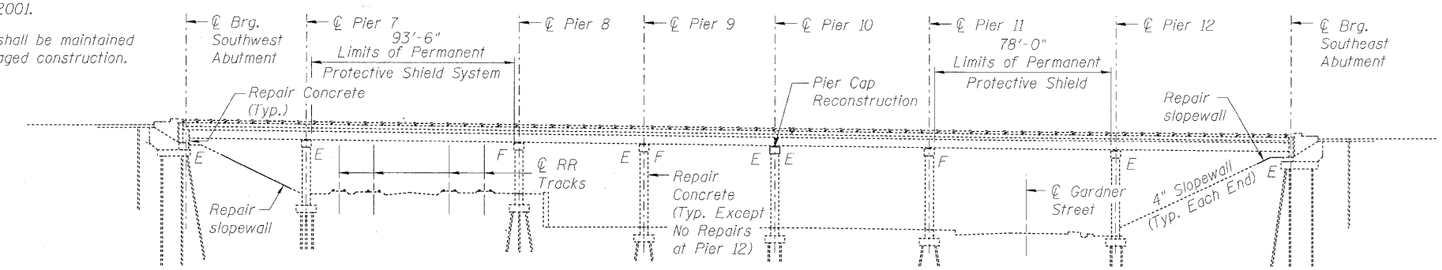
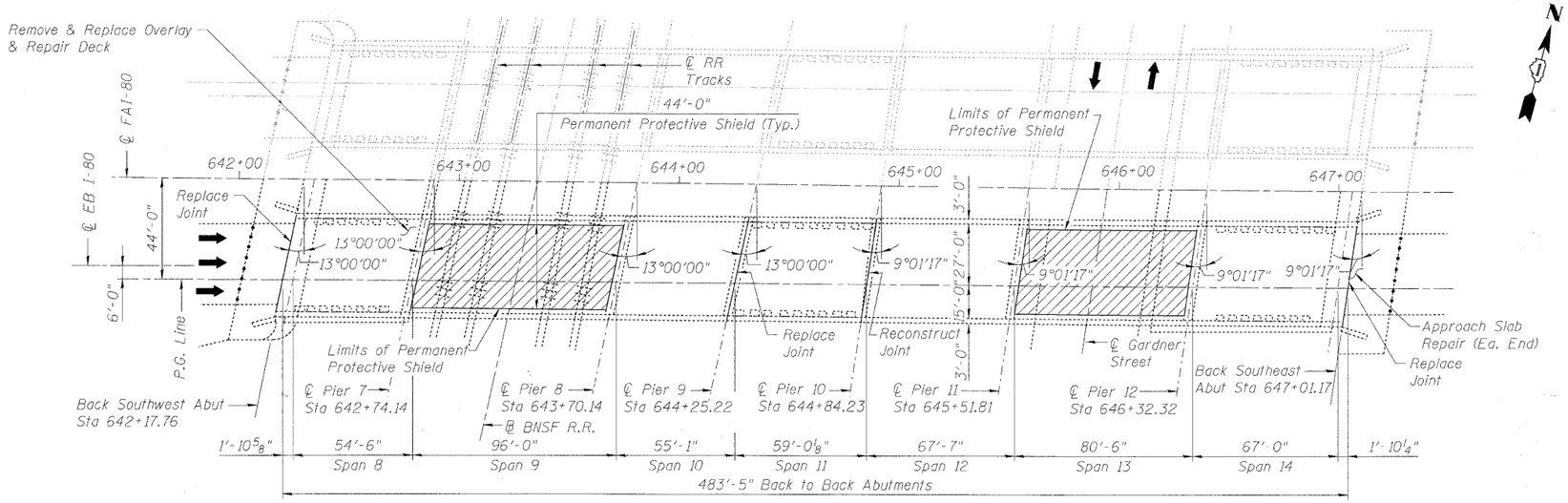
Existing Structure: SN 099-0060
The existing structure is a seven span, three-unit bridge. Spans 8 thru 10 and 12 thru 14 are three span continuous non-composite units and Span 11 is a single span composite unit. All units are steel wide flange beams. The beams support a 7" reinforced concrete slab and a 2" thick waterproof membrane system and polymerized bituminous concrete surface course. The substructure consists of reinforced concrete stub abutments and multi-column piers all founded on steel piles. The structure was originally constructed in 1964 as FAI Route 80 Section 99-4VB and rehabilitated in 1990, 1998, and 2001.

Staging: Traffic shall be maintained using staged construction.

Salvage: None



ELEVATION



PLAN

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Hot-Mix Asphalt Surface Removal (Deck)	Sq.Yd.	2,211	-	2,211
Deck Slab Repair (Partial)	Sq.Yd.	383	-	383
Deck Slab Repair (Full Depth, Type I)	Sq.Yd.	10	-	10
Deck Slab Repair (Full Depth, Type II)	Sq.Yd.	104	-	104
Polymerized Hot-Mix Asphalt Surface Course, Stone Matrix Asphalt, N80	Ton	249	-	249
Silicone Joint Sealer, 1.75"	Foot	51	-	51
Silicone Joint Sealer, 2.5"	Foot	151	-	151
Structural Repair Of Concrete (Depth Equal To Or Less Than 5 inches)	Sq.Ft.	-	379	379
Structural Repair Of Concrete (Depth Greater Than 5 inches)	Sq.Ft.	-	410	410
Protective Shield, Special	Sq.Yd.	838	-	838
Approach Slab Repair (Partial Depth)	Sq.Yd.	20	-	20
Jack And Reposition Bearings	Each	-	19	19
Temporary Shoring and Cribbing	Each	28	-	28
Slope Wall Removal	Sq.Yd.	-	78	78
Slope Wall 4 Inch	Sq.Yd.	-	78	78
Polymer Concrete	Cu.Ft.	4.1	8.9	13.0
Porous Granular Embankment	Cu.Yd.	-	39	39
Reinforcement Bars, Epoxy Coated	Pound	1,280	142	1,422
Bar Splicers	Each	14	-	14
Furnishing and Erecting Structural Steel	Pound	-	697	697
Remove and Replace Bearings	Each	-	2	2
Concrete Removal	Cu.Yd.	6.1	1.0	7.1
Concrete Superstructure	Cu.Yd.	5.7	-	5.7
Concrete Structures	Cu.Yd.	-	1.0	1.0
Anchor Bolts, 1"	Each	-	4	4

STATE OF ILLINOIS
PHILIP C. AZZARELLO
081-004245
CHICAGO, ILLINOIS
LICENSED STRUCTURAL ENGINEER

Signed: Philip C. Azzarello
Date: 1-19-11
Exp: 11/30/2012
Sheets: S1 thru 15

INDEX OF SHEETS

SCOPE OF WORK

1. Remove the existing 2"± polymerized bituminous concrete surface course and replace it with a 2"± thick polymerized hot-mix asphalt surface course.
2. Perform partial and full depth repairs of the bridge deck.
3. Perform structural repairs on the abutments and the piers.
4. Replace the existing silicone sealers at the abutments and Pier 9 and existing preformed joint seal at Pier 10. Remove steel hardware at Pier 10 and replace with polymer concrete nosing.
5. Perform structural repairs to the slope walls.
6. Jack and reposition expansion bearings at Piers 9 and 10.
7. Remove and replace bearings at Pier 10 at locations noted for pier cap removal and replacement.
8. Provide temporary shoring at Piers 9 and 10 for pier repairs.
9. Repair polymer concrete nosing at East Abutment joint.
10. Place permanent protective shield at Span 9 and Span 13.
11. Repair approach slab at abutments.

DESIGN SPECIFICATIONS

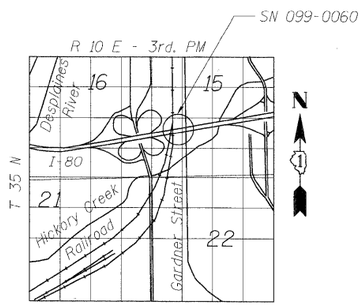
2002 AASHTO Standard Specifications for Highway Bridges, 17th Edition.

DESIGN STRESSES

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

GENERAL NOTES

1. 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.
2. Reinforcement bars shall conform to the requirements of ASTM A706 Grade 60. See Special Provisions.
3. Areas of proposed repairs are estimated. Actual type, location and dimensions are to be determined by the Engineer during construction.
4. Reinforcement bars designated (E) shall be epoxy coated.
5. The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.
6. The Inorganic Zinc Rich Primer / Acrylic / Acrylic Paint System shall be used for shop and field painting of new structural steel bearing plates. The color of the final finish coat shall be Reddish Brown, Munsell No. 2.5YR 3/4. See Special Provision for "Cleaning and Painting New Metal Structures."
7. Contractor to coordinate with Railroad the installation of the protective shield. Cost included with Protective Shield, Special.
8. Protective shield shall be installed prior to any deck slab repair work.
9. Substructure repairs shall be done under staging where no live load is present over the repair area.



LOCATION SKETCH

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PLOT SCALE = 1:1	DRAWN - CFB	REVISED -	
PLOT DATE = 19-JAN-2011	CHECKED - ACF	REVISED -	
	DATE - 01/21/2011	REVISED -	

HBP Illinois Partners

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN & ELEVATION, NOTES, & TOTAL BILL OF MATERIAL
EASTBOUND FAI-80 OVER RAILROAD/GARDNER STREET
STRUCTURE NO. 099-0060
SHEET NO. S-1 OF 15 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99 (2&3) RS-3	WILL	200	149
		CONTRACT NO. 60M64		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

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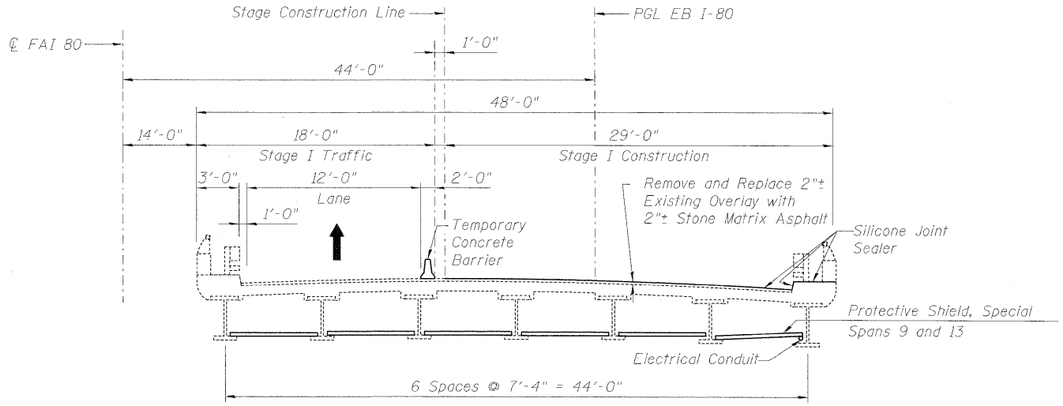
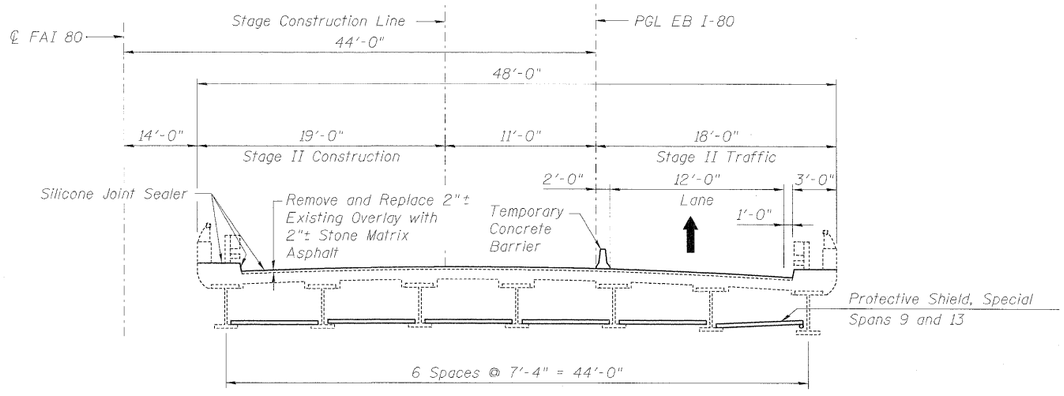


STAGE I CONSTRUCTION & TRAFFIC

(Looking East)



STAGE II CONSTRUCTION & TRAFFIC

(Looking East)

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Polymerized Hot-Mix Asphalt Surface Course, Stone Matrix Asphalt, N80	Ton	249
Hot-Mix Asphalt Surface Removal (Deck)	Sq. Yd.	2,211

NOTES:

1. For temporary Concrete Barrier details, see Standard 704001. Cost included in Roadway Plans. For anchoring to bridge deck, see Sheet S-15 of 15.
2. Placement of protective shield shall not interfere with the operation and maintenance of the electrical conduit.

	DESIGNED - PCA	REVISED -
USER NAME = lsupencheck	DRAWN - RCW	REVISED -
PLOT SCALE = 1:1	CHECKED - ACF	REVISED -
PLOT DATE = 20-JAN-2011	DATE - 01/21/2011	REVISED -

HBP Illinois Partners

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CONSTRUCTION STAGING
EASTBOUND FAI-80 OVER RAILROAD/GARDNER STREET
STRUCTURE NO. 099-0060

SHEET NO. S-2 OF 15 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99 (2&3) RS-3	WILL	200	150
		CONTRACT NO. 60M64		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

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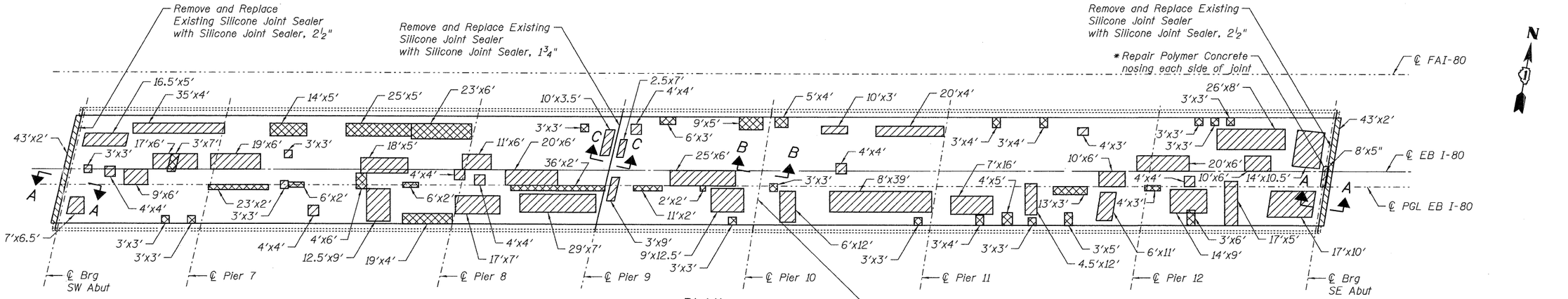
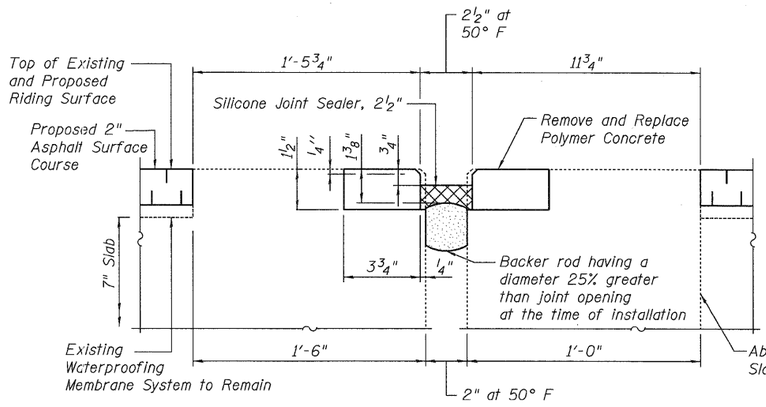


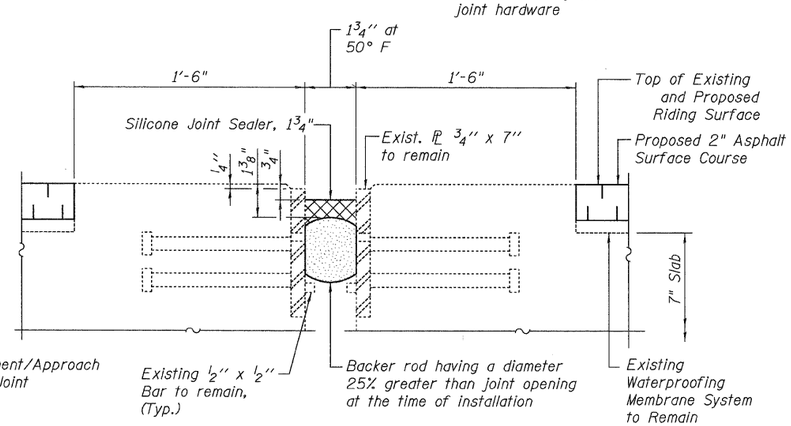
PLAN

* Removal is included for payment in Deck Slab Repair (Partial). New concrete is included for payment in Polymer Concrete.



SECTION A-A

Removal quantity is included for payment with Deck Slab Repair (Partial).



SECTION C-C

LEGEND:

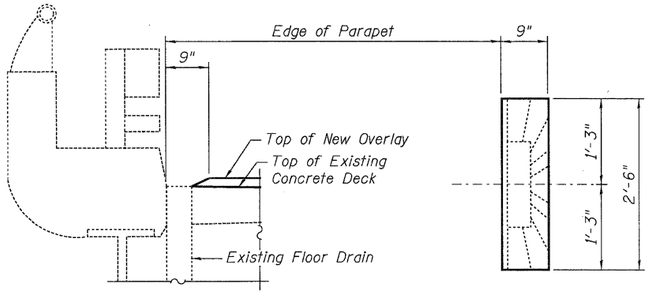
- Deck Slab Repair (Partial)
- Deck Slab Repair (Full Depth, Type I)
- Deck Slab Repair (Full Depth, Type II)
- Approach Slab Repair (Partial Depth)

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Deck Slab Repair (Partial)	Sq.Yd.	383
Deck Slab Repair (Full Depth, Type I)	Sq.Yd.	10 **
Deck Slab Repair (Full Depth, Type II)	Sq.Yd.	104
Polymer Concrete	Cu. Ft.	8.9
Silicone Joint Sealer, 1.75"	Foot	51
Silicone Joint Sealer, 2.5"	Foot	151
Approach Slab Repair (Partial Depth)	Sq.Yd.	20

**A nominal quantity has been provided to establish a unit price if Type I repairs are required.

DECK EXPANSION JOINT DETAILS



SECTION AT FLOOR DRAIN

TOP PLAN

OVERLAY TREATMENT AT FLOOR DRAIN

NOTES:

1. Remove and replace silicone joint sealer as detailed in Sections A-A and C-C.
2. Areas of proposed deck repairs are estimated. Actual type, location and dimensions of deck repairs are to be determined by the Engineer during construction.
3. Reuse existing drain if drain falls within a full depth repair.
4. For Section B-B, see Sheet No. S-4 of 15.
5. Removal of the existing silicone joint shall be included in the cost of Silicone Joint Sealer, 1.75" or 2.5".
6. Contractor shall remove the existing asphalt wearing surface and, as necesary, adjust the milling depth to prevent damage to the existing waterproofing membrane system. After satisfactory completion of the deck repair work, an asphalt surface course shall be placed in sufficient thickness as to match the elevation of the original surface.
7. The Contractor shall grind off any existing concrete patches flush with the existing top of deck. This shall be included in the cost of Hot-Mix Asphalt Surface Removal (Deck).
8. Deck Slab Repair concrete shall be used up to top of existing waterproofing membrane system. Cost included in Deck Slab Repair pay item.
9. For Typical End of Seal Treatment, see Sheet S-4 of 15.

	DESIGNED - PCA	REVISED -
USER NAME = lsupencheck	DRAWN - LK	REVISED -
PLOT SCALE = 1:1	CHECKED - ACF	REVISED -
PLOT DATE = 20-JAN-2011	DATE - 01/21/2011	REVISED -

HBP Illinois Partners

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DECK AND EXPANSION JOINT REPAIRS
EASTBOUND FAI-80 OVER RAILROAD/GARDNER STREET
STRUCTURE NO. 099-0060
SHEET NO. S-3 OF 15 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99 (2&3) RS-3	WILL	200	151
		CONTRACT NO. 60M64		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

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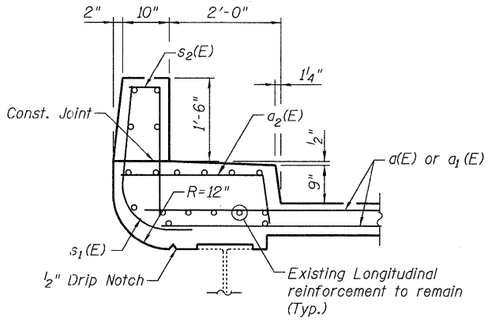
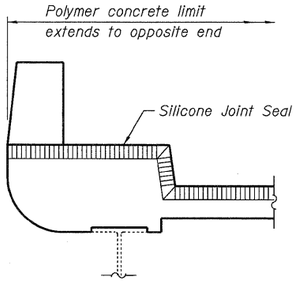
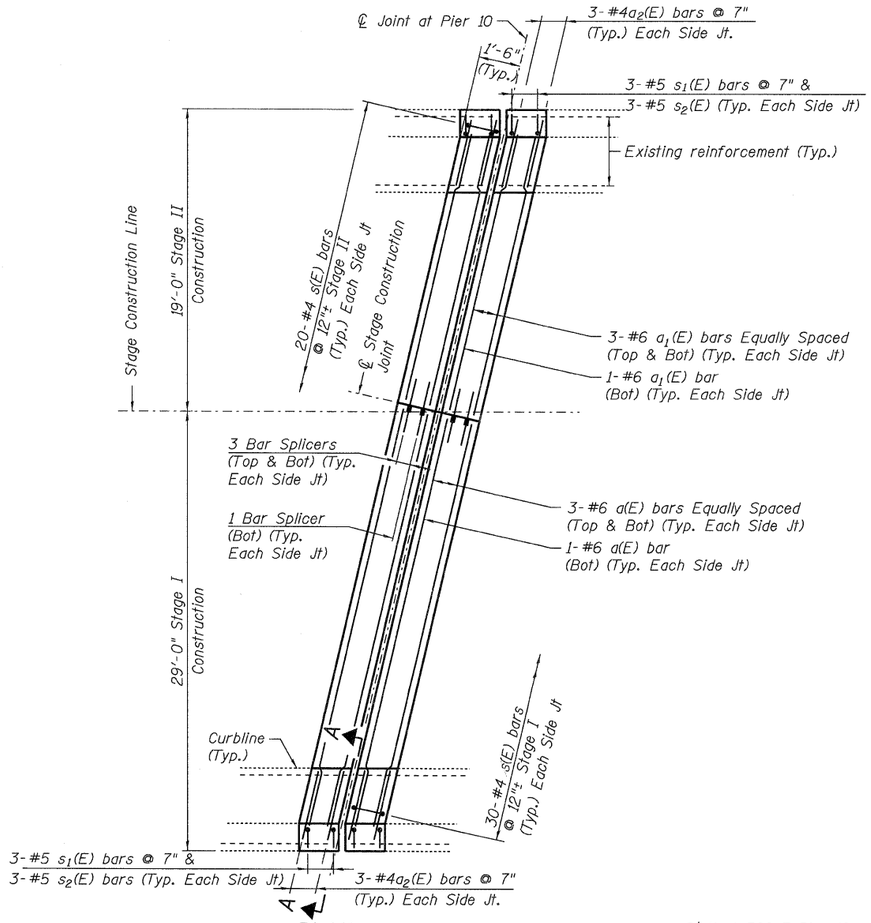


SECTION A-A

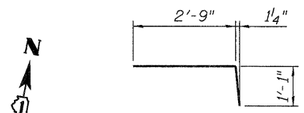


TYPICAL END OF SEAL TREATMENT

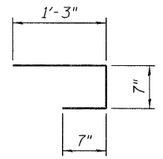
(Silicone Joint Seal)



PLAN



BAR a_2(E)



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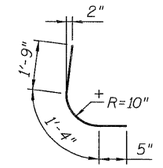
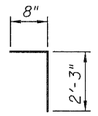


BAR s_1(E)

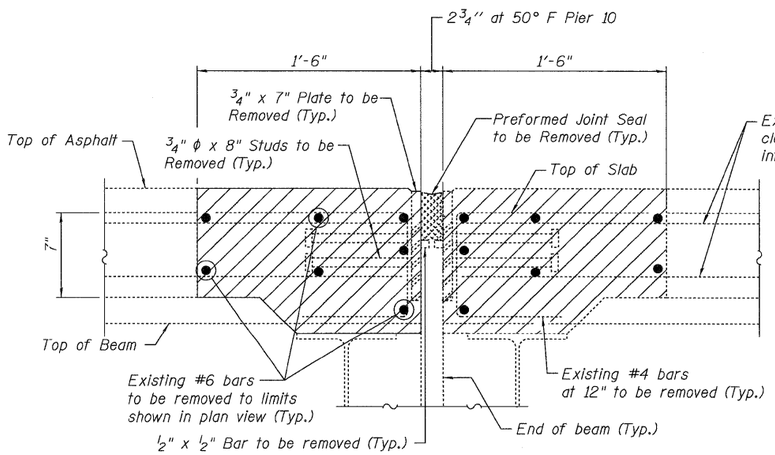


BAR s_2(E)

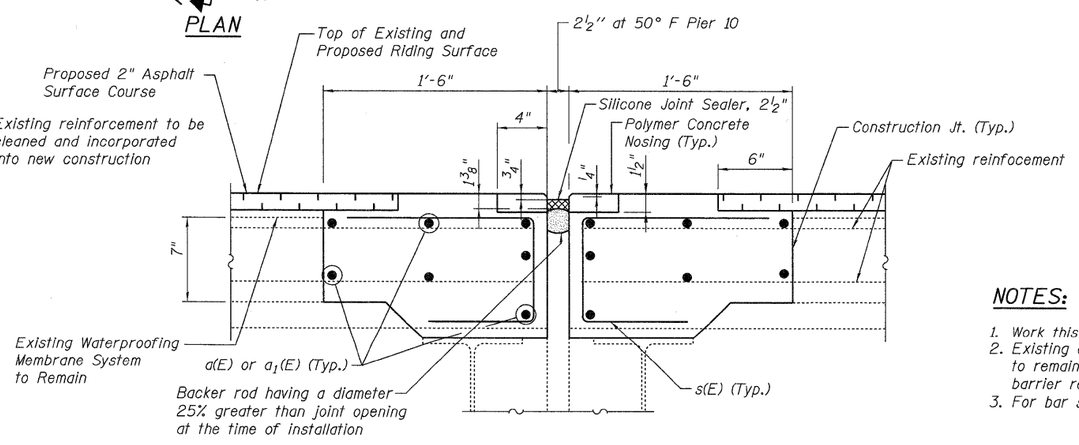
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	14	#6	29'-0"	
a_1(E)	14	#6	18'-11"	
a_2(E)	12	#4	3'-10"	
s(E)	100	#4	2'-5"	
s_1(E)	12	#5	3'-6"	
s_2(E)	12	#5	2'-11"	

ITEM	UNIT	QUAN
Reinforcement Bars, Epoxy Coated	Pound	1,280
Polymer Concrete	Cu. Ft.	4.1
Concrete Superstructure	Cu. Yd.	5.7
Concrete Removal	Cu. Yd.	6.1



EXISTING



PROPOSED

SECTION B-B

NOTES:

1. Work this sheet with Sheet No. S-3 of 15.
2. Existing curb and barrier longitudinal reinforcement to remain in place. Existing transverse curb and vertical barrier reinforcement to be removed.
3. For bar splicer details, see Sheet No. S-13 of 15.

	DESIGNED - PCA/ML	REVISED -
USER NAME = lsupancheck	DRAWN - LK	REVISED -
PLOT SCALE = 1:1	CHECKED - ACF	REVISED -
PLOT DATE = 20-JAN-2011	DATE - 01/21/2011	REVISED -

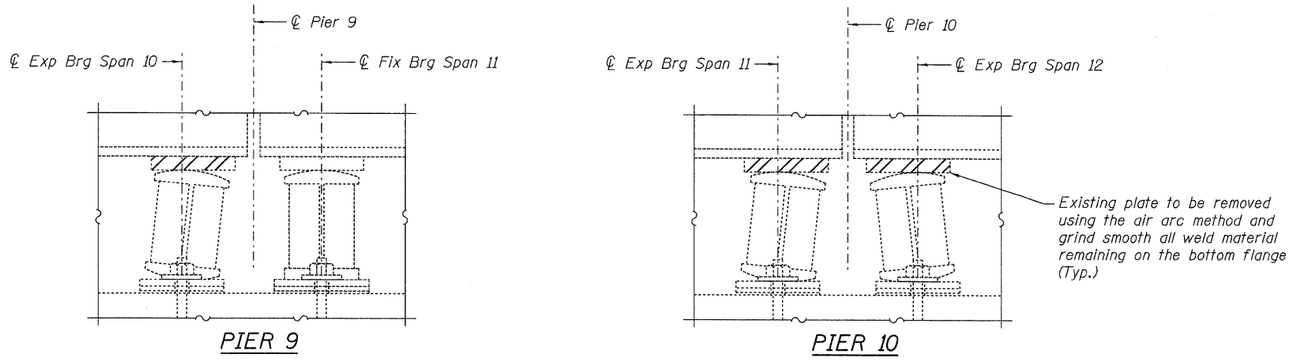
FILE NAME = IP_P:\Pzdms34575\0990060-60M64-004-DECK_EB.DGN

HBP Illinois Partners

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

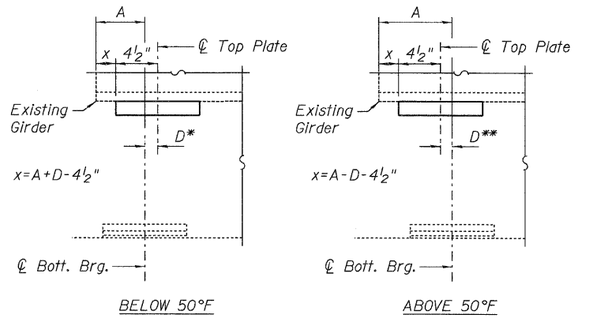
DECK & EXPANSION JOINT REPAIRS
EASTBOUND FAI-80 OVER RAILROAD/GARDNER STREET
STRUCTURE NO. 099-0060
SHEET NO. S-4 OF 15 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99 (2&3) RS-3	WILL	200	152
		CONTRACT NO. 60M64		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



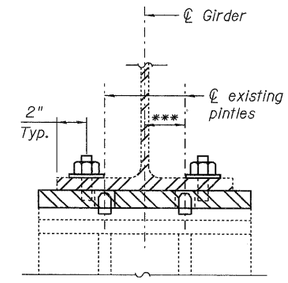
EXISTING BEARING REMOVAL DETAIL

(Looking North)



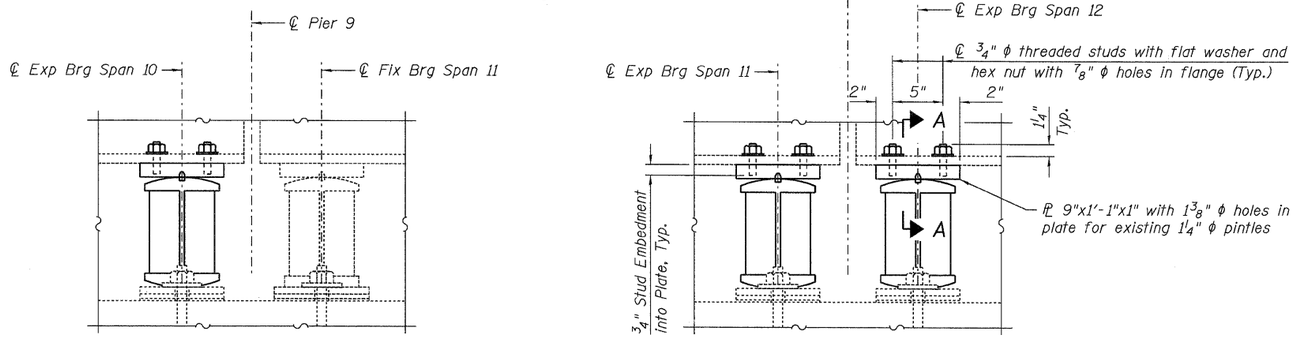
TOP PLATE AT BRG. REPOSITIONING

(Rocker not shown for clarity)
A=field measured



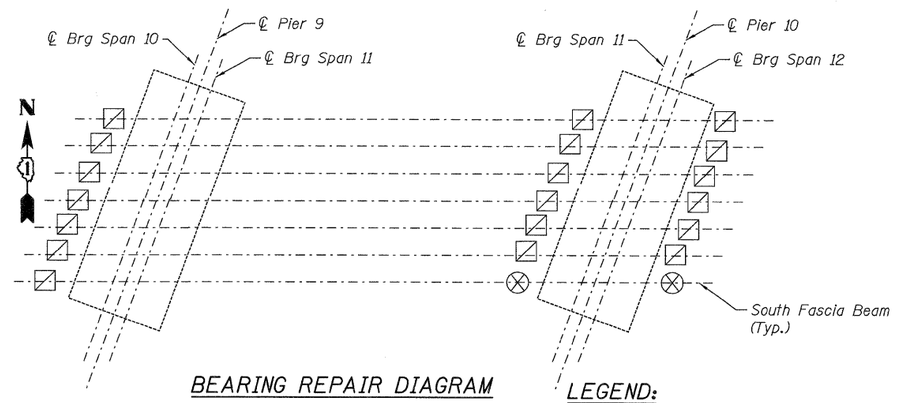
SECTION A-A

*** 3¼"± Contractor to field verify before drilling holes in plate



PROPOSED BEARING CONDITION @ 50° F

(Looking North)

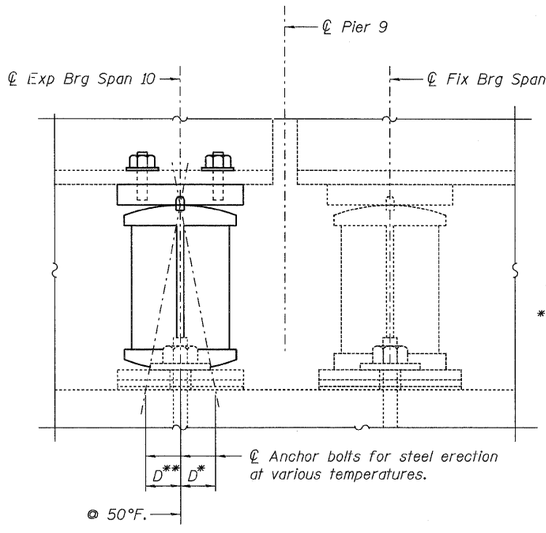


BEARING REPAIR DIAGRAM

LEGEND:

⊗ Remove and Replace (Reinstall) Bearing

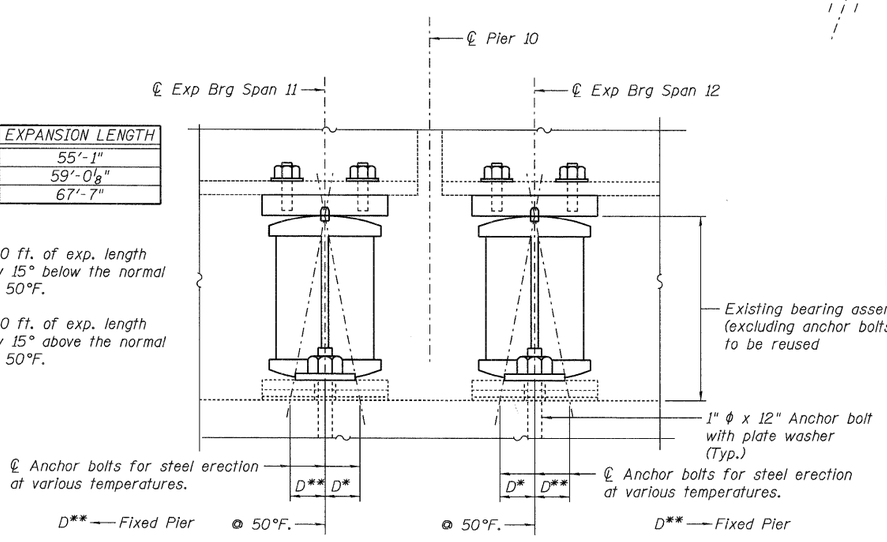
☒ Jack and Reposition Bearings



SPAN	EXPANSION LENGTH
10	55'-1"
11	59'-0⅛"
12	67'-7"

* D=⅛"/100 ft. of exp. length for every 15° below the normal temp. of 50°F.

** D=⅛"/100 ft. of exp. length for every 15° above the normal temp. of 50°F.



EXPANSION BEARING POSITIONING FOR BEARING REPLACEMENT

(Looking North) (At ⊗ Locations)

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Jack and Reposition Bearings	Each	19
Remove and Replace Bearings	Each	2
Furnishing and Erecting Structural Steel	Pound	697
Anchor Bolts, 1"	Each	4

NOTES:

1. The cost to remove the existing top plate is paid as "Jack and Reposition Bearings" or "Remove and Replace Bearings".
2. If Contractor uses the same shoring system to repair the pier as he/she uses to jack and reposition the bearings and/or remove and replace the bearings, he/she will only be paid for the shoring system under "Temporary Shoring and Cribbing" and not under "Jack and Reposition Bearings" and/or "Remove and Replace Bearings."
3. For beam reactions, see Sheet No. S-9 and S-10 of 15.
4. "Remove and Replace Bearings" is the work required to remove the existing bearings for the pier cap reconstruction and reinstall the original bearings with new top plate, see Special Provisions.

USER NAME = lsupancheck	DESIGNED - PCA	REVISED -
PLOT SCALE = 1:1	DRAWN - RCW	REVISED -
PLOT DATE = 20-JAN-2011	CHECKED - ACF	REVISED -
	DATE - 01/21/2011	REVISED -

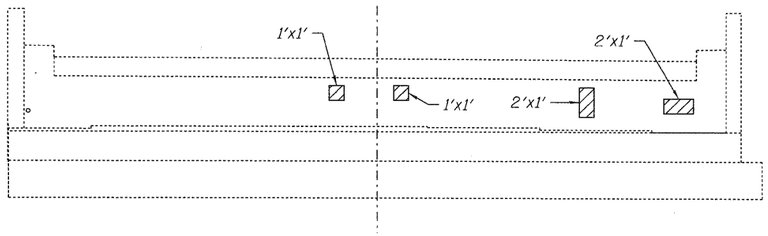
FILE NAME = IP_P:\Pidms34575\2990060-60M64-005-BRG.DGN

HBP Illinois Partners

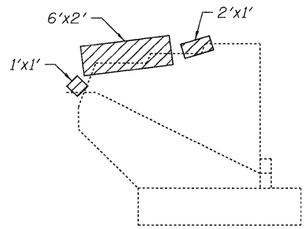
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BEARING REPAIRS
EASTBOUND FAI-80 OVER RAILROAD/GARDNER STREET
STRUCTURE NO. 099-0060
SHEET NO. S-5 OF 15 SHEETS

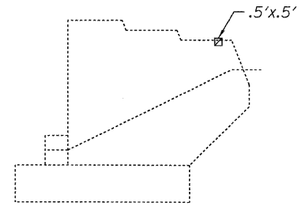
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99 (2&3) RS-3	WILL	200	153
		CONTRACT NO. 60M64		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



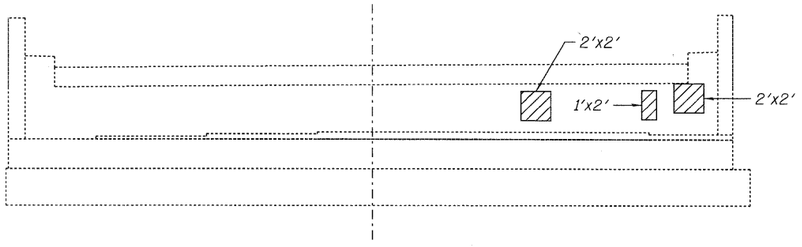
ELEVATION - SW ABUTMENT
Looking West



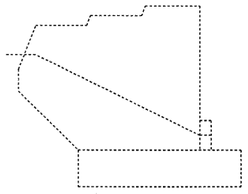
ELEVATION - SW ABUTMENT
SOUTH WINGWALL
Outside Face



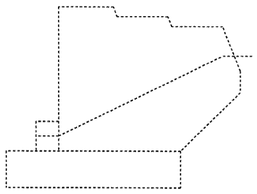
ELEVATION - SW ABUTMENT
NORTH WINGWALL
Outside Face



ELEVATION - SE ABUTMENT
Looking East



ELEVATION - SE ABUTMENT
SOUTH WINGWALL
Outside Face



ELEVATION - SE ABUTMENT
NORTH WINGWALL
Outside Face

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Structural Repair Of Concrete (Depth Equal To Or Less Than 5 Inches)	Sq.Ft.	31

LEGEND:

Spalled or unsound concrete

NOTES:

1. Areas of proposed abutment repairs are estimated. Actual type, location and dimensions of abutment repairs are to be determined by the Engineer during construction.

	DESIGNED - PCA	REVISED -
USER NAME = lsuppencheck	DRAWN - LK	REVISED -
PLOT SCALE = 1:1	CHECKED - MEA	REVISED -
PLOT DATE = 20-JAN-2011	DATE - 01/21/2011	REVISED -

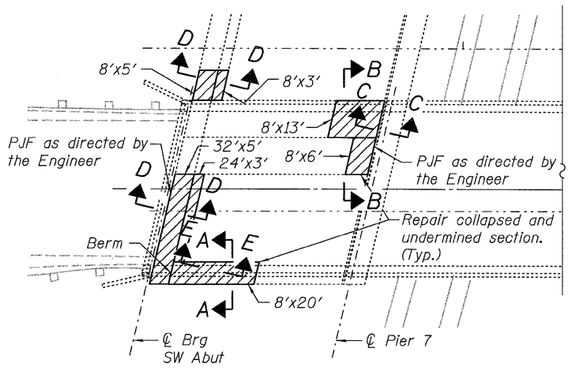
FILE NAME = IP_PWP:dms34575\8990060-60M64-006-ABUT.DGN

HBP Illinois Partners

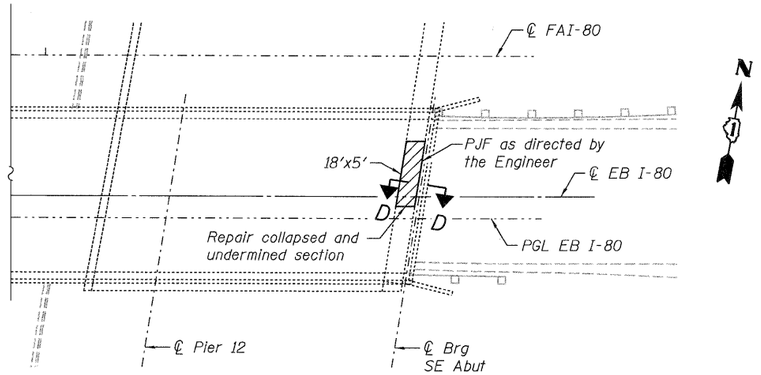
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ABUTMENT REPAIRS
EASTBOUND FAI-80 OVER RAILROAD/GARDNER STREET
STRUCTURE NO. 099-0060
SHEET NO. S-6 OF 15 SHEETS

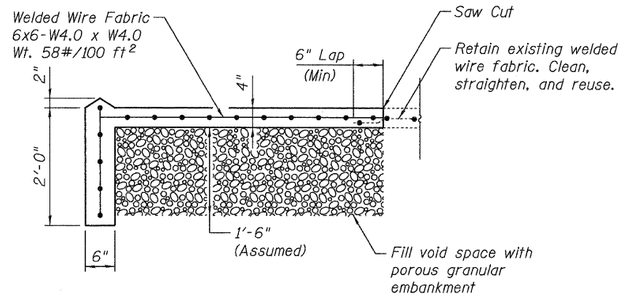
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99 (2&3) RS-3	WILL	200	154
		CONTRACT NO. 60M64		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



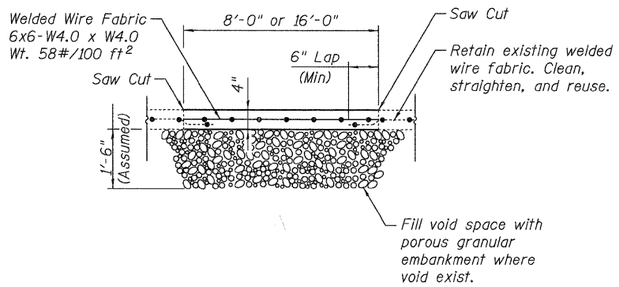
PLAN - WEST SLOPEWALL



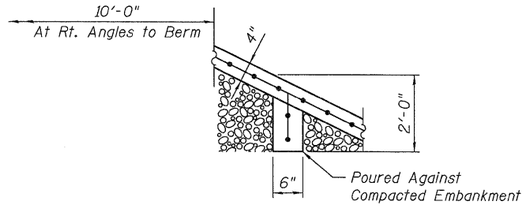
PLAN - EAST SLOPEWALL



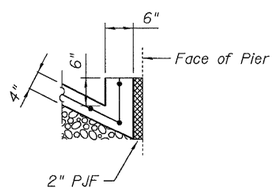
SECTION A-A



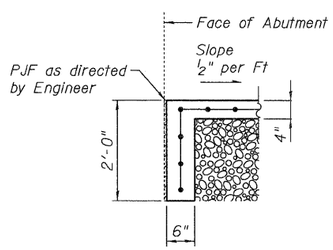
SECTION B-B



SECTION E-E



SECTION C-C



SECTION D-D

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Porous Granular Embankment	Cu.Yd.	39
Slope Wall Removal	Sq.Yd.	78
Slope Wall 4 Inch	Sq.Yd.	78

LEGEND:

Slopewall Remove and Replace

NOTES:

1. Areas of proposed slopewall removal and replacement are estimated. Actual location and dimensions are to be determined by the Engineer during construction.
2. Cost of saw cuts and PJF included in the cost of Slope Wall 4 Inch.

	DESIGNED - PCA	REVISED -
USER NAME = lsupanchek	DRAWN - LK	REVISED -
PLOT SCALE = 1:1	CHECKED - MEA	REVISED -
PLOT DATE = 20-JAN-2011	DATE - 01/21/2011	REVISED -

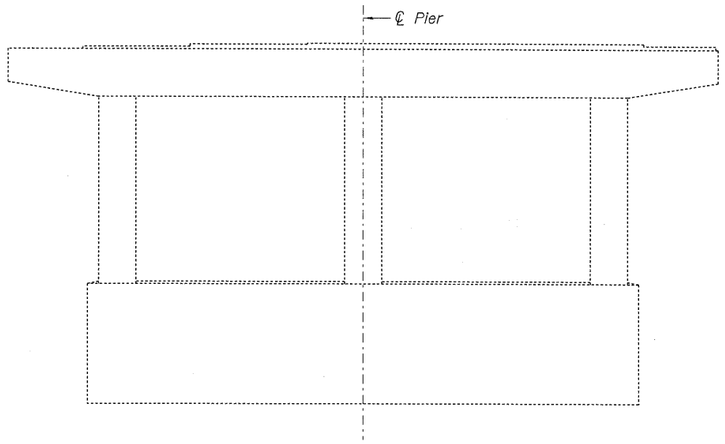
FILE NAME = IP_Pw:Pdms34575\8990060-60M64-007-SLOPEW.DGN

HBP Illinois Partners

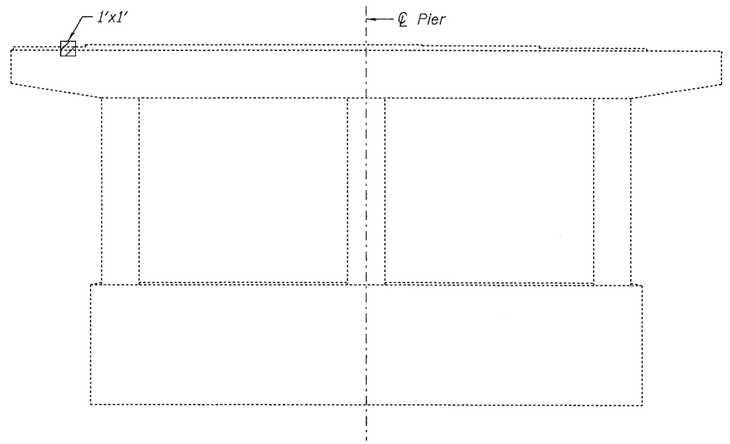
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SLOPEWALL REPAIRS
EASTBOUND FAI-80 OVER RAILROAD/GARDNER STREET
STRUCTURE NO. 099-0060
SHEET NO. S-7 OF 15 SHEETS

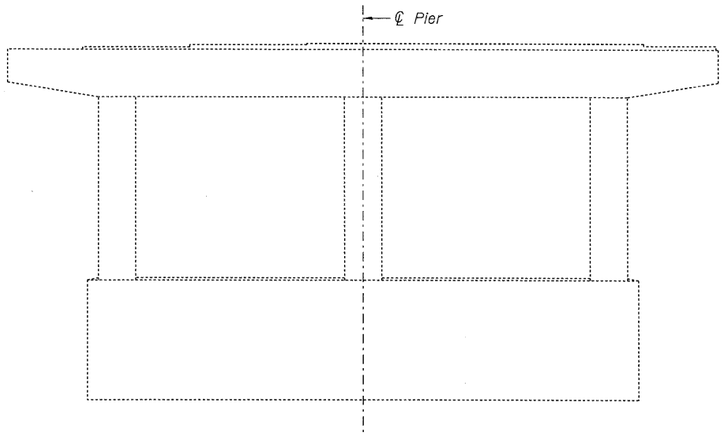
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99 (2&3) RS-3	WILL	200	155
		CONTRACT NO. 60M64		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



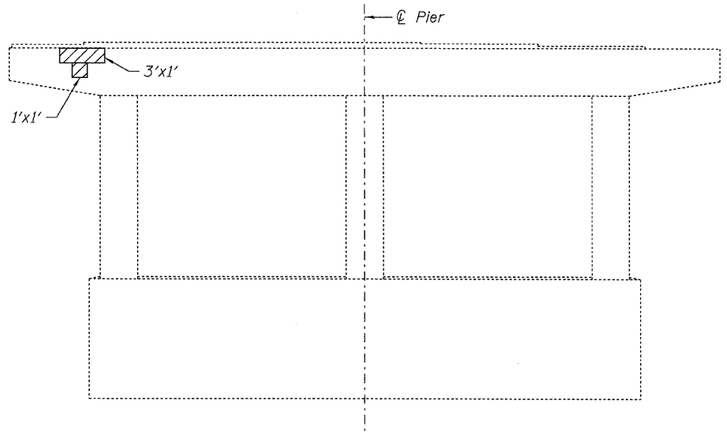
PIER 7 - WEST ELEVATION
Looking East



PIER 7 - EAST ELEVATION
Looking West



PIER 8 - WEST ELEVATION
Looking East



PIER 8 - EAST ELEVATION
Looking West

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Structural Repair Of Concrete (Depth Equal To Or Less Than 5 Inches)	Sq.Ft.	5

LEGEND:

Spalled or unsound concrete

NOTES:

1. Areas of proposed pier repairs are estimated. Actual type, location and dimensions of pier repairs are to be determined by the Engineer during construction.

	DESIGNED - PCA	REVISED -
USER NAME = lsupancheck	DRAWN - LK	REVISED -
PLOT SCALE = 1:1	CHECKED - MEA	REVISED -
PLOT DATE = 20-JAN-2011	DATE - 01/21/2011	REVISED -

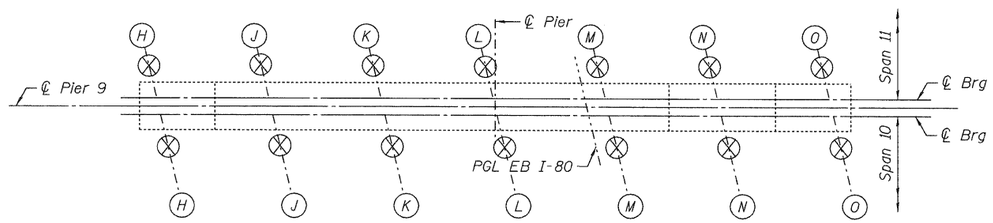
FILE NAME = IP_PkPrdms34575\0990060-60M64-008-PIER.DGN

HBP Illinois Partners

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 7 & 8 REPAIRS
EASTBOUND FAI-80 OVER RAILROAD/GARDNER STREET
STRUCTURE NO. 099-0060
SHEET NO. S-8 OF 15 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99 (2&3) RS-3	WILL	200	156
		CONTRACT NO. 60M64		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



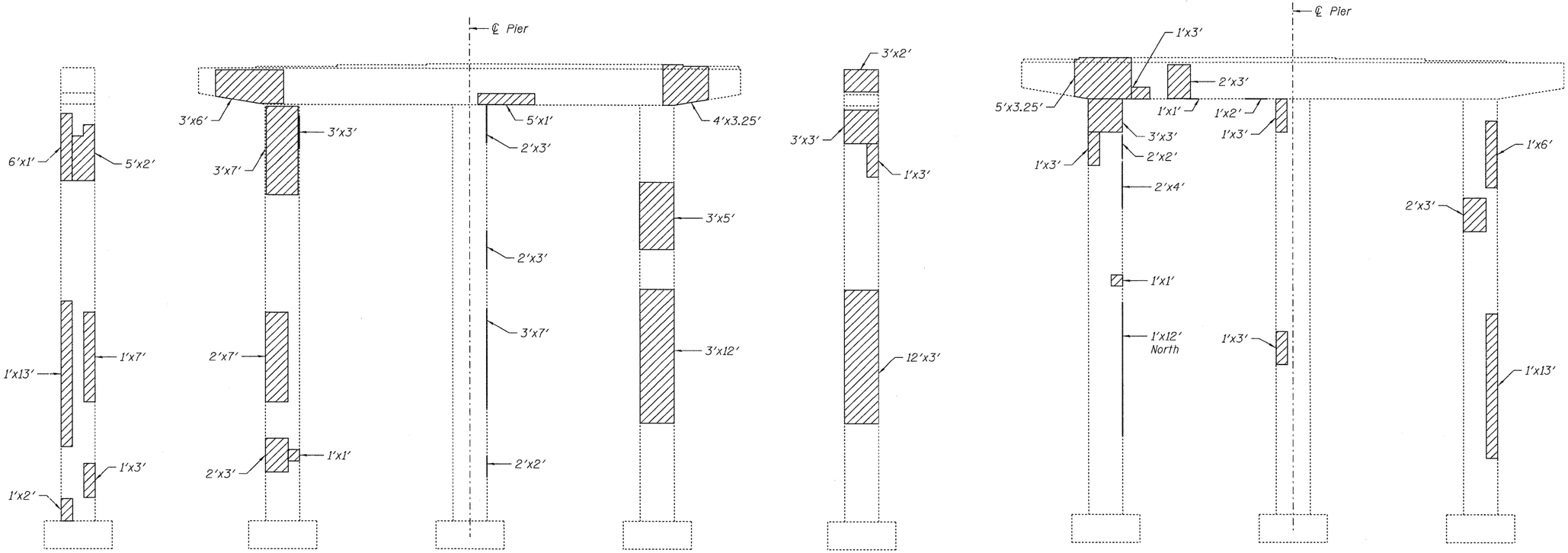
TEMPORARY SHORING PLAN
PIER 9

⊗ Temporary Support

TEMPORARY SUPPORT
INTERIOR BEAM REACTIONS

REACTION	SPAN 10	SPAN 11
Dead Load	26	48
Live Load + Impact	50	52
Total	76	100

Contractor to design shoring system for dead load plus live load plus impact. See Special Provision for Temporary Shoring and Cribbing.



NORTH ELEVATION
Looking South

WEST ELEVATION
Looking East

SOUTH ELEVATION
Looking North

EAST ELEVATION
Looking West

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Structural Repair Of Concrete (Depth Greater Than 5 Inches)	Sq.Ft.	214
Structural Repair Of Concrete (Depth Equal To Or Less Than 5 Inches)	Sq.Ft.	152
Temporary Shoring and Cribbing	Each	14

LEGEND:

Spalled or unsound concrete

NOTES:

1. Areas of proposed pier repairs are estimated. Actual type, location and dimensions of pier repairs are to be determined by the Engineer during construction.
2. Temporary Shoring and Cribbing is required for pier repairs.

USER NAME = lsupancheck	DESIGNED - PCA	REVISED -
PLOT SCALE = 1:1	DRAWN - LK	REVISED -
PLOT DATE = 28-JAN-2011	CHECKED - MEA	REVISED -
	DATE - 01/21/2011	REVISED -

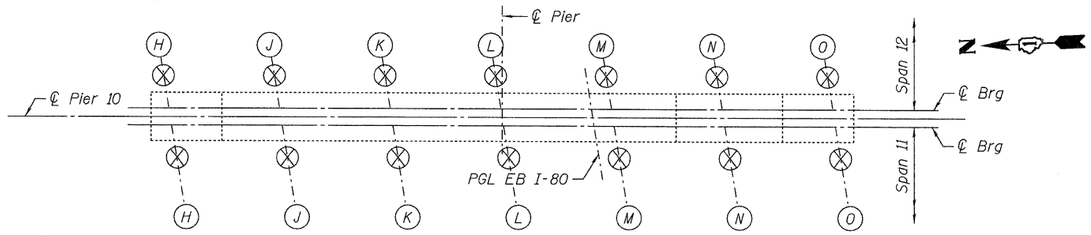
HBP Illinois Partners

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 9 REPAIRS
EASTBOUND FAI-80 OVER RAILROAD/GARDNER STREET
STRUCTURE NO. 099-0060
SHEET NO. S-9 OF 15 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99 (2&3) RS-3	WILL	200	157
		CONTRACT NO. 60M64		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

FILE NAME = IP_PWP:dms34575\8990060-60M64-009-PIER.DGN



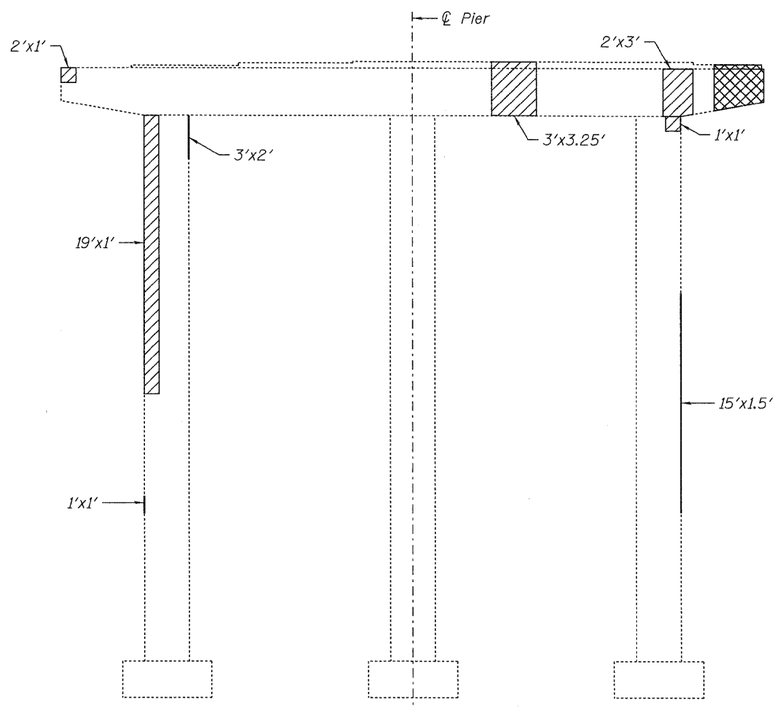
TEMPORARY SHORING PLAN
PIER 10

⊗ Temporary Support

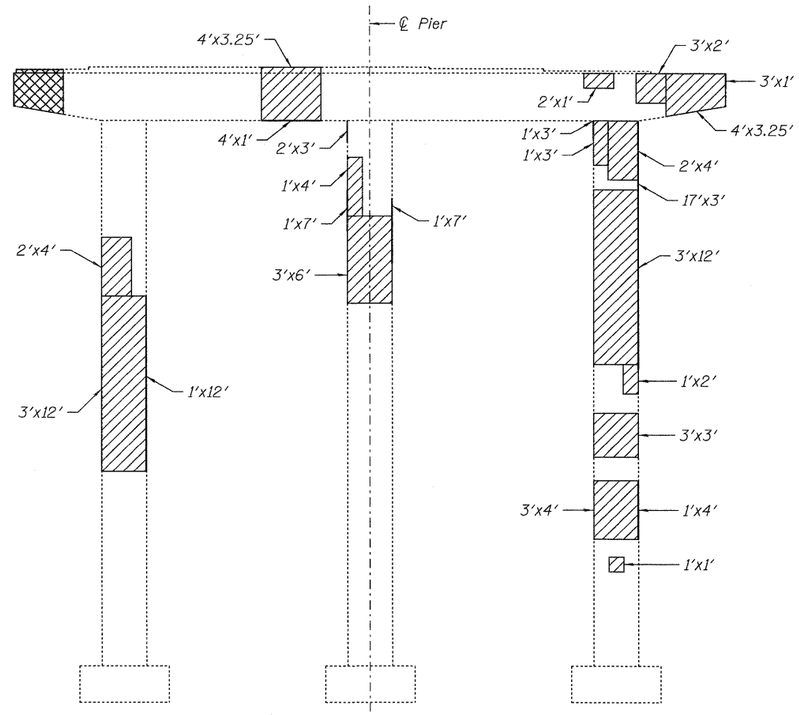
TEMPORARY SUPPORT
INTERIOR BEAM REACTIONS

REACTION	SPAN 11	SPAN 12
Dead Load	48	41
Live Load + Impact	52	50
Total	100	91

Contractor to design shoring system for dead load plus live load plus impact.



WEST ELEVATION
Looking East



EAST ELEVATION
Looking West

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Structural Repair Of Concrete (Depth Greater Than 5 Inches)	Sq.Ft.	196
Structural Repair Of Concrete (Depth Equal To Or Less Than 5 Inches)	Sq.Ft.	139
Temporary Shoring and Cribbing	Each	14

NOTES:

1. Areas of proposed pier repairs are estimated. Actual type, location and dimensions of pier repairs are to be determined by the Engineer during construction.
2. Temporary Shoring and Cribbing is required for pier repairs.

LEGEND:

Spalled or unsound concrete

Remove and replace
See Sheet S-12 of 15 for details.

	DESIGNED - PCA	REVISED -
USER NAME = lsupancheck	DRAWN - LK	REVISED -
PLOT SCALE = 1:1	CHECKED - MEA	REVISED -
PLOT DATE = 20-JAN-2011	DATE - 01/21/2011	REVISED -

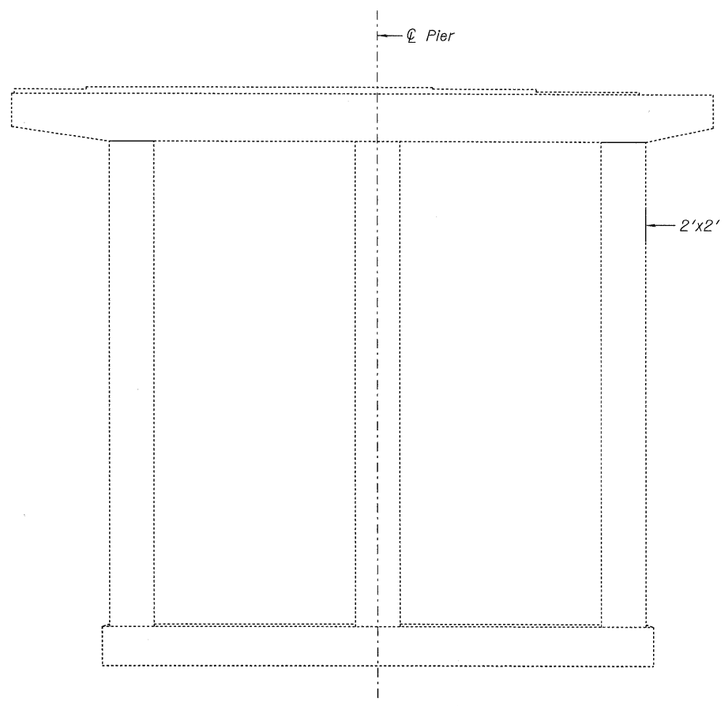
FILE NAME = IP_PW:pdms34575\0990060-60M64-010-PIER.DGN

HBP Illinois Partners

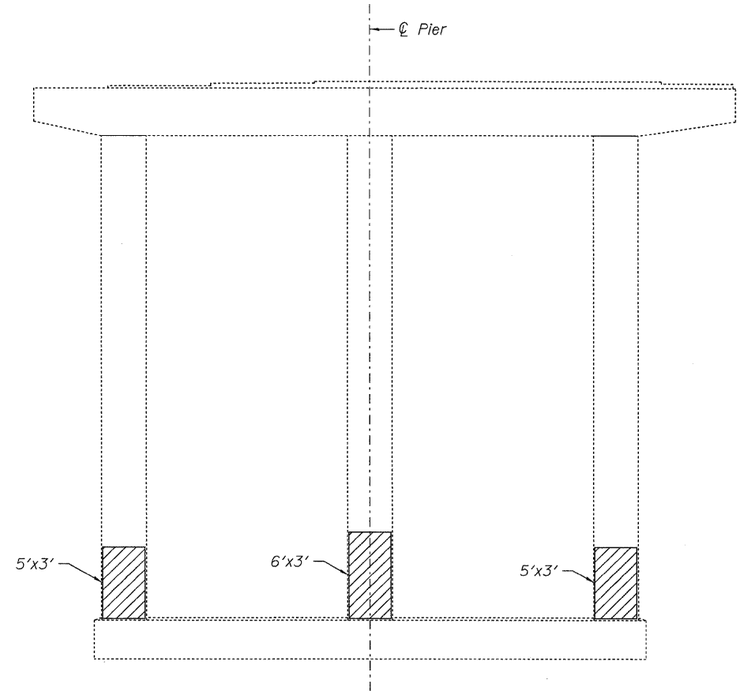
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 10 REPAIRS
EASTBOUND FAI-80 OVER RAILROAD/GARDNER STREET
STRUCTURE NO. 099-0060
SHEET NO. S-10 OF 15 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99 (2&3) RS-3	WILL	200	158
		CONTRACT NO. 60M64		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



WEST ELEVATION
Looking East



EAST ELEVATION
Looking West

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Structural Repair Of Concrete (Depth Equal To Or Less Than 5 Inches)	Sq.Ft.	52

LEGEND:

Spalled or unsound concrete

NOTES:

1. Areas of proposed pier repairs are estimated. Actual type, location and dimensions of pier repairs are to be determined by the Engineer during construction.

	DESIGNED - PCA	REVISED -
USER NAME = lsuponcheck	DRAWN - LK	REVISED -
PLOT SCALE = 1:1	CHECKED - MEA	REVISED -
PLOT DATE = 20-JAN-2011	DATE - 01/21/2011	REVISED -

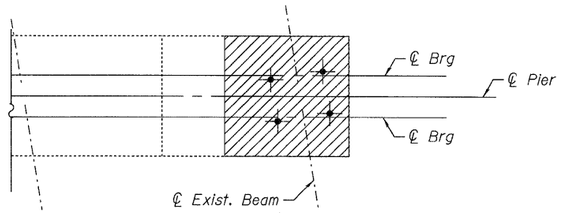
FILE NAME = IP_PWP:dms34575\0990060-60M64-011-PIER.DGN

HBP Illinois Partners

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 11 REPAIRS
EASTBOUND FAI-80 OVER RAILROAD/GARDNER STREET
STRUCTURE NO. 099-0060
SHEET NO. S-11 OF 15 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99 (2&3) RS-3	WILL	200	159
		CONTRACT NO. 60M64		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



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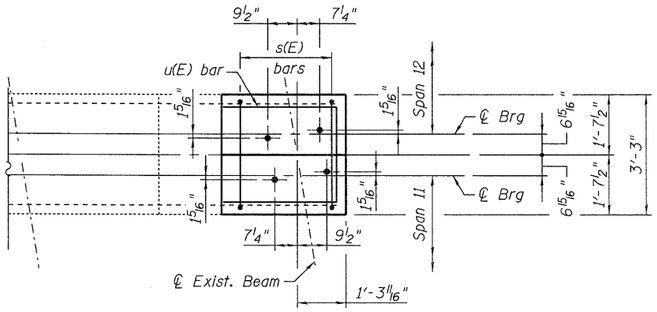

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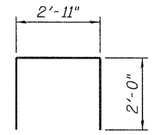
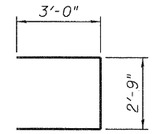


BAR s(E)

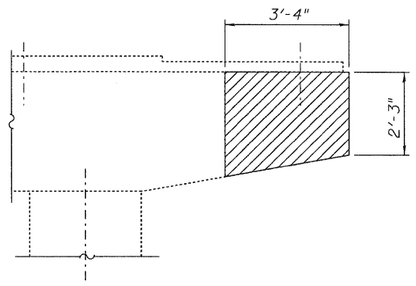


BAR u(E)

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
s(E)	14	#5	6'-11"	
u(E)	3	#6	8'-9"	
Reinforcement Bars, Epoxy Coated			Pound	142
Concrete Structures			Cu. Yd.	1.0
Concrete Removal			Cu. Yd.	1.0

PLAN



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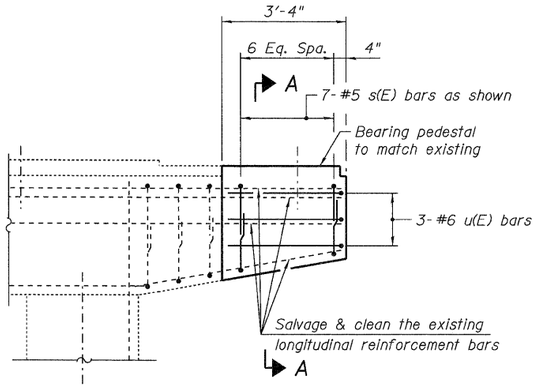

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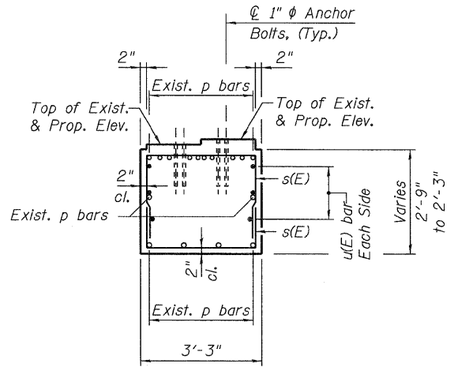


SECTION A-A

ELEVATION

LEGEND:

Concrete Removal

NOTES:

1. Space reinforcement in cap to miss anchor bolts.
2. Drill holes in cap for anchor bolts and install bolts per the Standard Specifications.

	DESIGNED - PCA	REVISED -
USER NAME = lsupancheck	DRAWN - LK	REVISED -
PLOT SCALE = 1:1	CHECKED - ML	REVISED -
PLOT DATE = 20-JAN-2011	DATE - 01/21/2011	REVISED -

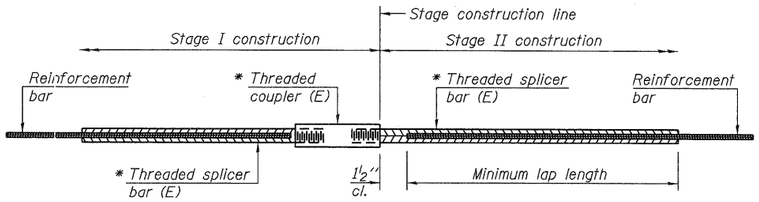
FILE NAME = IP_PWP:dms34575\8990060-60M64-012-PIER_Det.DGN

HBP Illinois Partners

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PARTIAL PIER CAP 10 REMOVAL & REPLACEMENT
EASTBOUND FAI-80 OVER RAILROAD/GARDNER STREET
STRUCTURE NO. 099-0060
SHEET NO. S-12 OF 15 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99 (2&3) RS-3	WILL	200	160
		CONTRACT NO. 60M64		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



STANDARD BAR SPLICER ASSEMBLY

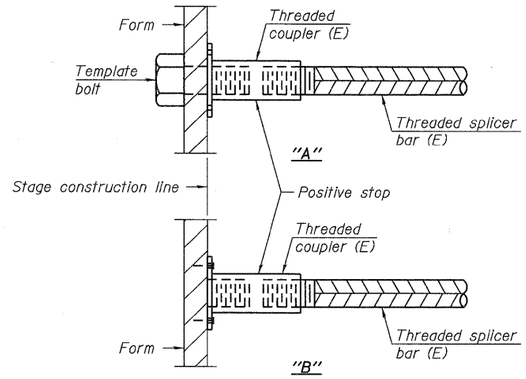
Minimum Lap Lengths					
Bar size to be spliced	Table 1	Table 2	Table 3	Table 4	Table 5
3, 4	1'-5"	1'-11"	2'-1"	2'-4"	2'-3"
5	1'-9"	2'-5"	2'-7"	2'-11"	2'-10"
6	2'-1"	2'-11"	3'-1"	3'-6"	3'-4"
7	2'-9"	3'-10"	4'-2"	4'-8"	4'-6"
8	3'-8"	5'-1"	5'-5"	6'-2"	5'-10"
9	4'-7"	6'-5"	6'-10"	7'-9"	7'-5"

Table 1: Black bar, 0.8 Class C
Table 2: Black bar, Top bar lap, 0.8 Class C
Table 3: Epoxy bar, 0.8 Class C
Table 4: Epoxy bar, Top bar lap, 0.8 Class C
Table 5: Epoxy bar, Top bar lap, Class B

Threaded splicer bar length = min. lap length + 1½" + thread length

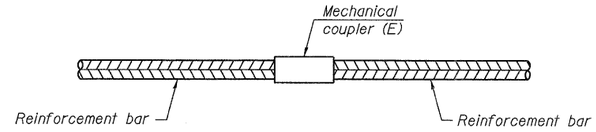
* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Table for minimum lap length
Deck	#6	14	Table 3



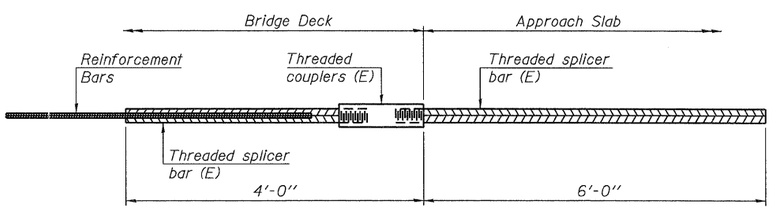
INSTALLATION AND SETTING METHODS

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



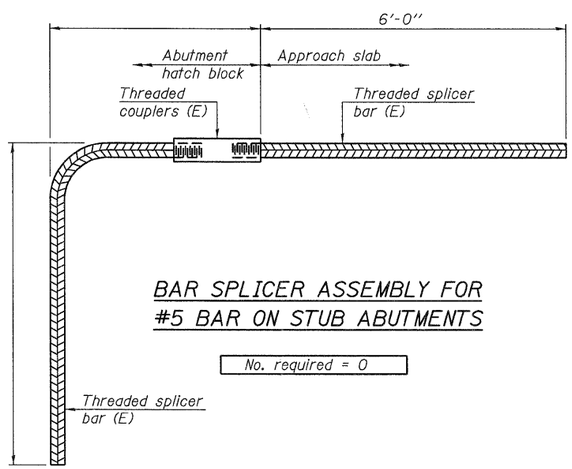
STANDARD MECHANICAL SPLICER

Location	Bar size	No. assemblies required
---	---	---



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

No. required = 0



BAR SPLICER ASSEMBLY FOR #5 BAR ON STUB ABUTMENTS

No. required = 0

NOTES:

Splicer bars shall be deformed with threaded ends and have a minimum 60 ksi yield strength.

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

Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars. See Section 508 of the Standard Specifications.

See special provision for Mechanical Splicers.

See approved list of bar splicer assemblies and mechanical splicers for alternatives.

BSD-1 7-1-10

	DESIGNED - PCA	REVISED -
USER NAME = lsupencheck	DRAWN - LK	REVISED -
PLOT SCALE = 1:1	CHECKED - ACF	REVISED -
PLOT DATE = 28-JAN-2011	DATE - 01/21/2011	REVISED -

FILE NAME = IP_PW_P:dms34575\d990060-60M64-013-SPLICE.DGN

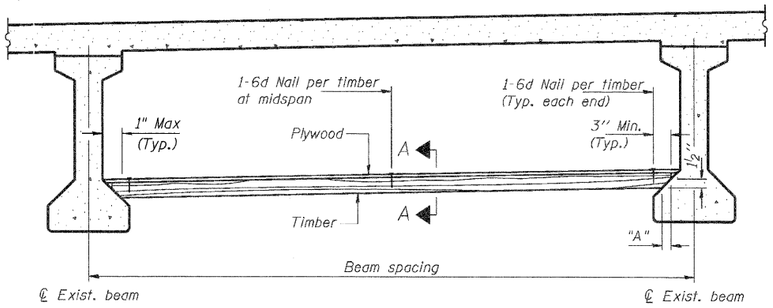
HBP Illinois Partners

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

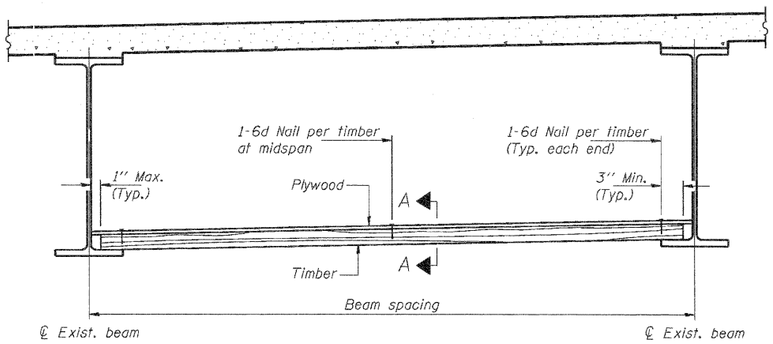
BAR SPLICER ASSEMBLY & MECHANICAL SPLICER DETAILS
EASTBOUND FAI-80 OVER RAILROAD/GARDNER STREET
STRUCTURE NO. 099-0060
SHEET NO. S-13 OF 15 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99 (2&3) RS-3	WILL	200	161
		CONTRACT NO. 60M64		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

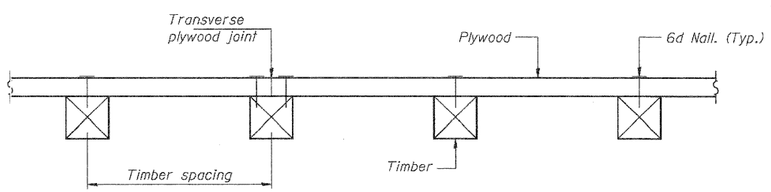
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



PPC I-BEAMS AND BULB-T's



STEEL BEAMS



SECTION A-A

TIMBER SPACING

Beam Spacing (ft.)	Timber Sizes (in.) 4" x 4" with min. Fb=775 psi Fv=135 psi	4" x 6" with min. Fb=775 psi Fv=135 psi	6" x 6" with min. Fb=575 psi Fv=125 psi
	Maximum Timber Spacing (in.)		
4.5	16	16	16
4.75	16	16	16
5.0	16	16	16
5.25	16	16	16
5.5	16	16	16
5.75	16	16	16
6.0	16	16	16
6.25	12	16	16
6.5	12	16	16
6.75	12	16	16
7.0	8	16	16
7.25	8	16	16
7.5	8	16	16
7.75	8	16	16
8.0	8	12	16
8.25	8	12	16
8.5	6	12	12
8.75	6	12	12
9.0	6	8	12

PPC I-BEAMS AND BULB-T's

BEAM	"A"
36" I-Beam	1½"
42" I-Beam	1½"
48" I-Beam	1½"
54" I-Beam	1⅝"
63" Bulb-T	3⅜"
72" Bulb-T	3⅜"

Notes: See special provision for Protective Shield, Special.

Timber sizes shown are nominal sizes. Rough sawn timber of the dimensions shown will also be considered acceptable.

The minimum Fb and Fv values shown are the tabulated design values given in the National Design Specification for Wood Construction for No. 2 Spruce-Pine-Fir without adjustment factors applied. Better grades or other species with equal or higher allowable stresses will also be considered acceptable.

The timber spacings shown have been determined using allowable stresses with all adjustment factors necessary for the anticipated service conditions.

All timber shall be treated.

Plywood shall be ⅝" Exterior type plywood. (Per APA)

Plywood shall be placed such that the face grain is perpendicular to the timber supports. When less than a full sheet (4' width) of plywood is used, the width of the strip used shall not be less than 2'.

Transverse plywood joints shall be supported by timbers.

When 4" x 6" timbers are used, they shall be placed such that the wide face is horizontal and the narrow face is vertical.

Design load = 200 psf.

BILL OF MATERIAL

Item	Unit	Total
Protective Shield, Special	Sq. Yd.	838

	DESIGNED - PCA	REVISED -
USER NAME = lsupencheck	DRAWN - RCW	REVISED -
PLOT SCALE = 1:1	CHECKED - MEA	REVISED -
PLOT DATE = 28-JAN-2011	DATE - 01/21/2011	REVISED -

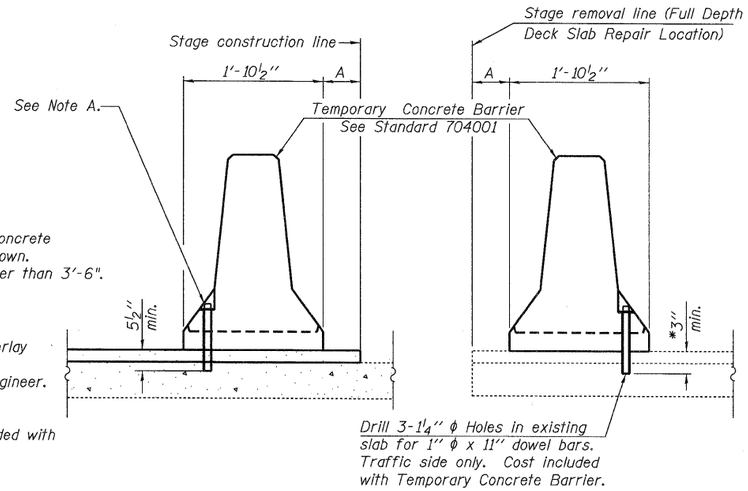
FILE NAME = IP_PWP:dms34575\2990060-62M64-014-PRTSHLD.DGN

HBP Illinois Partners

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PERMANENT PROTECTIVE SHIELD
EASTBOUND FAI-80 OVER RAILROAD/GARDNER STREET
STRUCTURE NO. 099-0060
SHEET NO. S-14 OF 15 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99 (2&3) RS-3	WILL	200	162
		CONTRACT NO. 60M64		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



When "A" is 3'-6" or less, the temporary concrete barrier shall be anchored to the slab as shown. No anchorage is required when "A" is greater than 3'-6".

Note A: Drill 3-1¼" ϕ holes through new overlay into slab for 1"ϕx13" dowel bars. Traffic side only as directed by Engineer. Repair hole with non-shrink epoxy grout as directed by Engineer. Cost of anchorage and repair included with Temporary Concrete Barrier.

SECTIONS THRU SLAB

* 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.

NOTES:

1. Anchorage of concrete barrier to deck is required at locations of full depth deck slab repair and at new overlay section thru slab shown.

	DESIGNED - PCA	REVISED -
USER NAME = lsupancheck	DRAWN - LK	REVISED -
PLOT SCALE = 1:1	CHECKED - ML	REVISED -
PLOT DATE = 28-JAN-2011	DATE - 01/21/2011	REVISED -

FILE NAME = IP_PWPtdms34575\0990060-60M64-015-BARRIER.DGN

HBP Illinois Partners

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

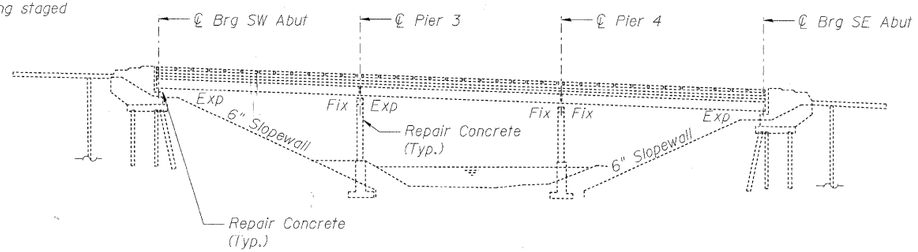
TEMPORARY CONCRETE BARRIER FOR STAGE CONSTRUCTION
EASTBOUND FAI-80 OVER RAILROAD/GARDNER STREET
STRUCTURE NO. 099-0060
SHEET NO. S-15 OF 15 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99 (2&3) RS-3	WILL	200	163
		CONTRACT NO. 60M64		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

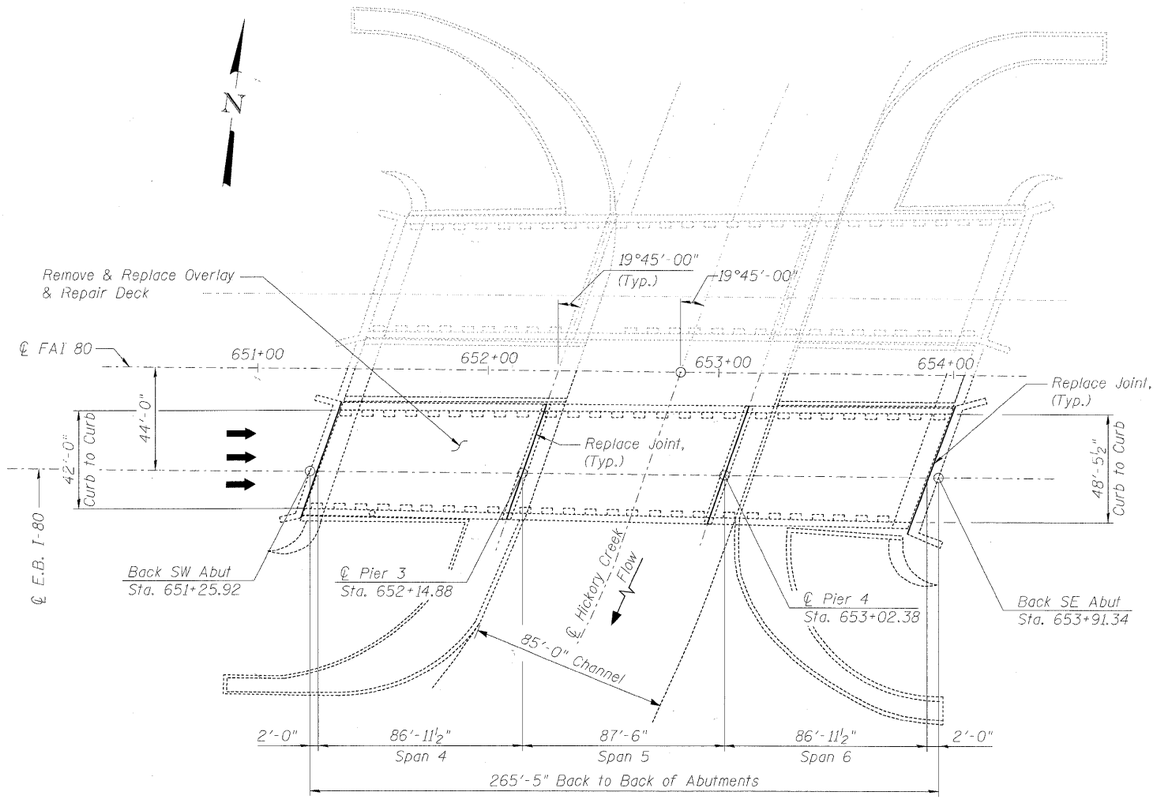
Existing Structure: SN 099-0062
The existing structure is a three span composite steel wide flange beam bridge. The beams support a 7" reinforced concrete slab and a 2" thick waterproof membrane system and polymerized bituminous concrete surface course. The substructure consists of reinforced concrete stub abutments founded on steel piles and multi-column piers founded on spread footings. The structure was originally constructed in 1964 as FAI Route 80, Section 99-4B-1 and rehabilitated in 1990, 1998, and 2001.

Staging:
Traffic shall be maintained using staged construction.

Salvage:
None



ELEVATION



PLAN

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Hot-Mix Asphalt Surface Removal (Deck)	Sq. Yd.	1,240	—	1,240
Deck Slab Repair (Partial)	Sq. Yd.	359	—	359
Deck Slab Repair (Full Depth, Type I)	Sq. Yd.	10	—	10
Deck Slab Repair (Full Depth, Type II)	Sq. Yd.	128	—	128
Polymerized Hot-Mix Asphalt Surface Course, Stone Matrix Asphalt, N80	Ton	140	—	140
Silicone Joint Sealer, 1"	Foot	54	—	54
Silicone Joint Sealer, 2.75"	Foot	163	—	163
Structural Repair Of Concrete (Depth Equal To Or Less Than 5 Inches)	Sq. Ft.	—	1,020	1,020
Structural Repair Of Concrete (Depth Greater Than 5 Inches)	Sq. Ft.	—	230	230
Temporary Shoring and Cribbing	Each	—	4	4
Protective Shield	Sq. Yd.	1,461	—	1,461

SCOPE OF WORK

1. Remove the existing 2"± thick polymerized bituminous concrete surface course and replace it with a 2"± thick polymerized hot-mix asphalt surface course.
2. Perform partial and full depth repairs of the bridge deck.
3. Perform structural repairs on the abutments and the piers.
4. Replace the existing preformed joint sealers at the abutments and piers with silicone joint sealers.
5. Provide temporary shoring of existing fascia beams for repairs at Pier 4.

DESIGN SPECIFICATIONS

2002 AASHTO Standard Specifications for Highway Bridges, 17th Edition.

DESIGN STRESSES

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

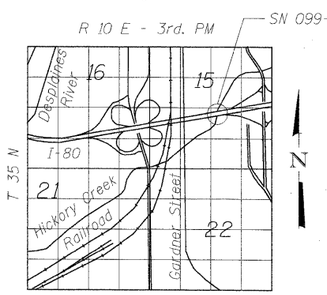
GENERAL NOTES

1. Reinforcement bars shall conform to the requirements of ASTM A706 Grade 60. See Special Provisions.
2. Plan dimensions and details relative to existing structure have been taken from existing plans and are subject to nominal construction variations. Contractor should verify dimensions and make necessary approved adjustments prior to starting construction. Such variations shall not be cause for additional compensation for a change in scope of work, however, the Contractor will be paid for actual quantity furnished and approved by Engineer at unit price bid for the work.
3. Areas of proposed repairs are estimated. Actual type, location and dimensions are to be determined by the Engineer during construction.
4. Contractor shall remove the existing asphalt wearing surface and, as necessary, adjust the milling depth to prevent damage to the existing waterproofing membrane system. After satisfactory completion of the deck repair work, an asphalt surface course shall be placed in sufficient thickness as to match the elevation of the original surface.
5. Protective shield shall be installed prior to any deck slab repair work. Protective shield required for environmentally sensitive creek.
6. Substructure repairs shall be done under staging when no live load is present over repair area.

INDEX OF SHEETS

STATE OF ILLINOIS
PHILIP C. AZZARELLO
081-004245
CHICAGO, ILLINOIS
LICENSED STRUCTURAL ENGINEER

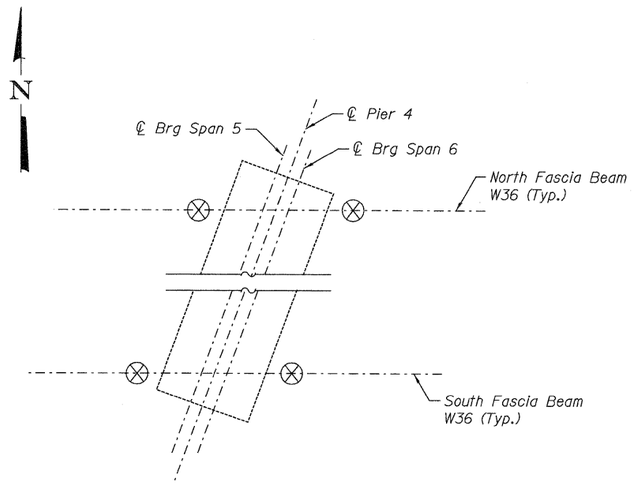
Signed: Philip C. Azzarello
Date: 1-19-11
Exp: 11/30/2012
Sheets: S-1 thru 7



LOCATION SKETCH

	DESIGNED - PCA	REVISED -	HBP Illinois Partners	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	GENERAL PLAN & ELEVATION, NOTES & TOTAL BILL OF MATERIAL EASTBOUND FAI-80 OVER HICKORY CREEK STRUCTURE NO. 099-0062	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
USER NAME = lsupencheck	DRAWN - RCW	REVISED -				80	99 (2&3) RS-3	WILL	200	164
PLOT SCALE = 10:1	CHECKED - ACF / PCA	REVISED -			SHEET NO. S-1 OF 7 SHEETS			CONTRACT NO. 60M64		
PLOT DATE = 19-JAN-2011	DATE - 01/21/2011	REVISED -				FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

FILE NAME = IP_PWP:dms34575\0990062-60M64-001-GPE.DGN

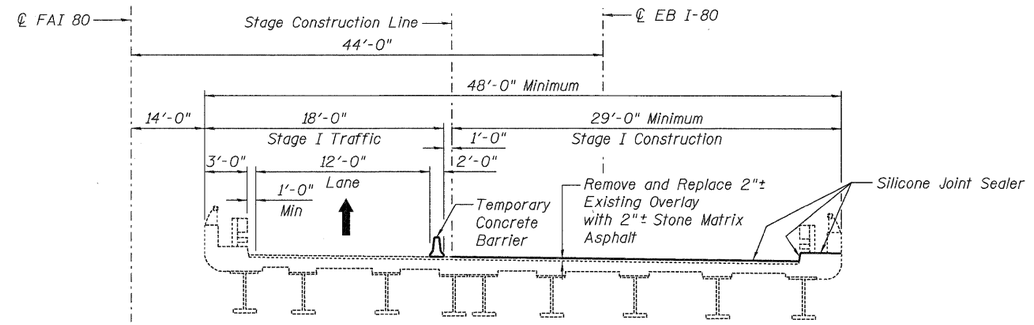


TEMPORARY SHORING PLAN FOR PIER 4 REPAIRS

For location of repairs, see Sheet S-6 of 7.

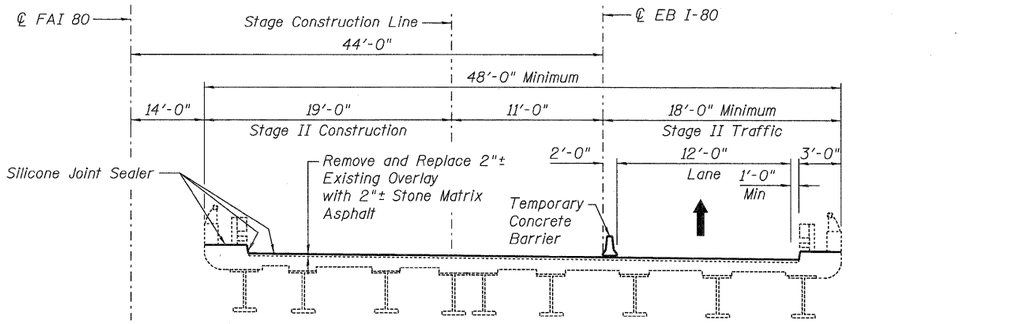
⊗ Temporary Support Reactions:
Dead Load = 93 Kips
Live Load plus Impact = 51 Kips
Total = 144 Kips

Contractor to design shoring system for dead load plus live load plus impact. See Special Provision for Temporary Shoring and Cribbing.



STAGE I CONSTRUCTION & TRAFFIC

(Looking East)



STAGE II CONSTRUCTION & TRAFFIC

(Looking East)

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Polymerized Hot-Mix Asphalt Surface Course, Stone Matrix Asphalt. N80	Ton	140
Hot-Mix Asphalt Surface Removal (Deck)	Sq. Yd.	1,240
Protective Shield	Sq. Yd.	1,461

NOTES:

1. Limits of protective shield extend from abutment to abutment and from out to out of parapet.

2. For temporary concrete barrier details, see Standard 704001. Cost included in Roadway Plans. For anchoring to bridge deck, see Sheet S-7 of 7.

	DESIGNED - PCA	REVISED -
USER NAME = lsupancheck	DRAWN - RCW	REVISED -
PLOT SCALE = 10:1	CHECKED - MEA	REVISED -
PLOT DATE = 20-JAN-2011	DATE - 01/21/2011	REVISED -

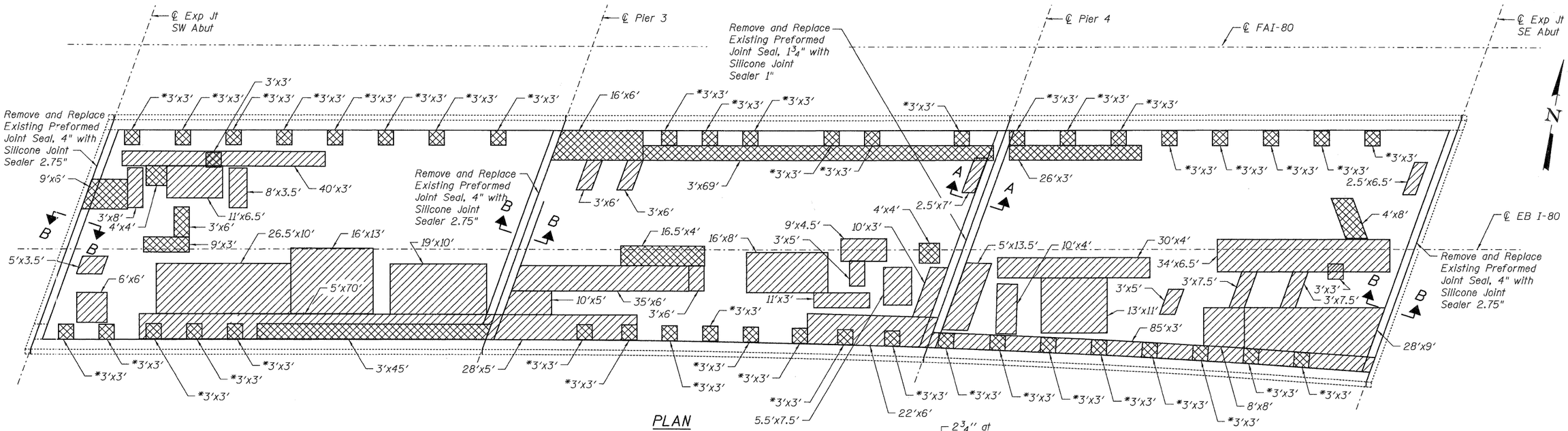
FILE NAME = IP_PWPrdms34575\2090062-60M64-002-STAGING.DGN

HBP Illinois Partners

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

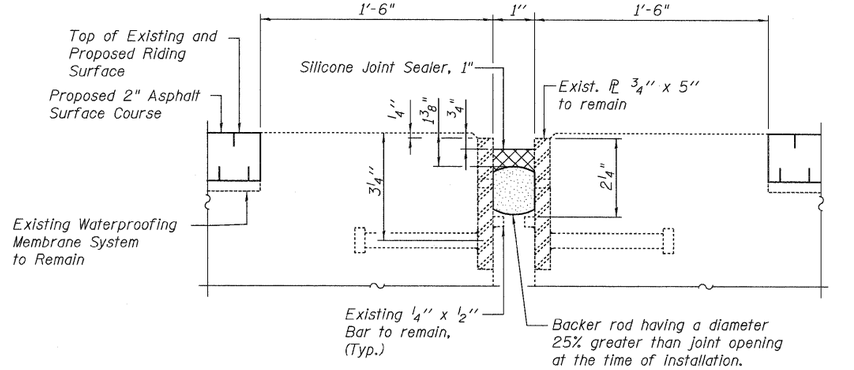
CONSTRUCTION STAGING
EASTBOUND FAI-80 OVER HICKORY CREEK
STRUCTURE NO. 099-0062
SHEET NO. S-2 OF 7 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99 (2&3) RS-3	WILL	200	165
		CONTRACT NO. 60M64		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

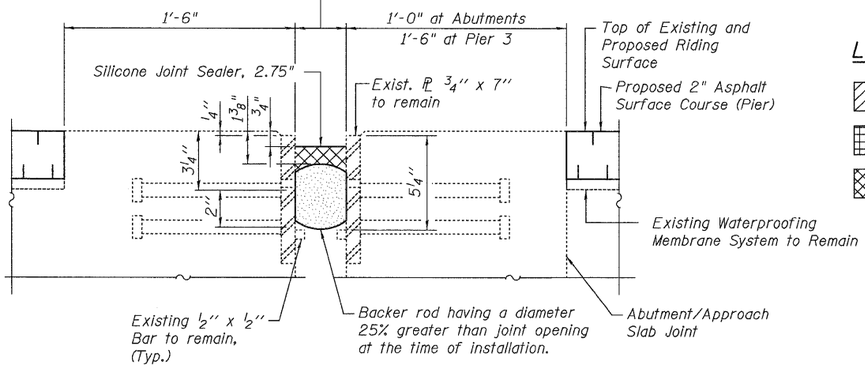


PLAN

*At drain holes



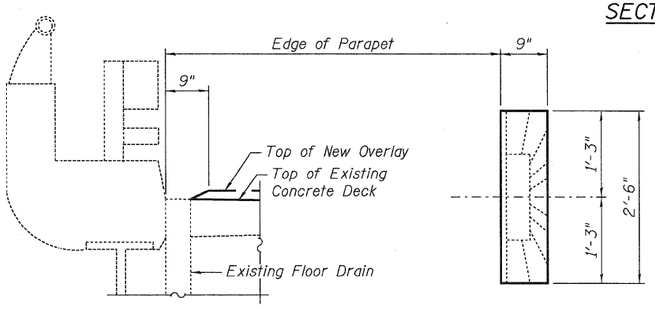
SECTION A-A



SECTION B-B

LEGEND:

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

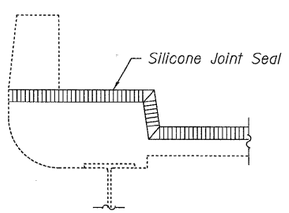


SECTION AT FLOOR DRAIN

TOP PLAN

OVERLAY TREATMENT AT FLOOR DRAIN

DECK EXPANSION JOINT DETAILS



TYPICAL END OF SEAL TREATMENT

(Silicone Joint Seal)

NOTES:

1. Remove the existing preformed joint seals and replace with silicone joint sealer as detailed in Sections A-A and B-B. Removal included in cost of Silicone Joint Sealer.
2. Areas of proposed deck repairs are estimated. Actual type, location and dimensions of deck repairs are to be determined by the Engineer during construction.
3. Deck Slab Repair concrete shall be used up to top of existing waterproofing membrane system. Cost included in Deck Slab Repair pay item.
4. The Contractor shall grind off any existing concrete patches flush with the existing top of deck. This shall be included in the cost of Hot-Mix Asphalt Surface Removal (Deck).

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Deck Slab Repair (Partial)	Sq.Yd.	359
Deck Slab Repair (Full Depth, Type I)	Sq.Yd.	10 **
Deck Slab Repair (Full Depth, Type II)	Sq.Yd.	128
Silicone Joint Sealer, 1"	Foot	54
Silicone Joint Sealer, 2.75"	Foot	163

**A nominal quantity has been provided to establish a unit price if Type I repairs are required.

	DESIGNED - PCA	REVISED -
USER NAME = lsupancheck	DRAWN - LK	REVISED -
PLOT SCALE = 1:1	CHECKED - MEA	REVISED -
PLOT DATE = 20-JAN-2011	DATE - 01/21/2011	REVISED -

FILE NAME = IP_PWP:dms34575\2990262-60M64-203-DECK_EB.DGN

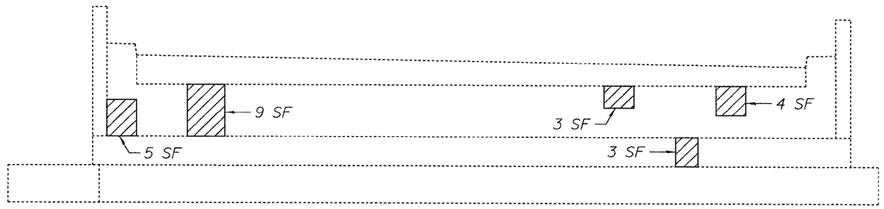
HBP Illinois Partners

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DECK & EXPANSION JOINT REPAIRS
EASTBOUND FAI-80 OVER HICKORY CREEK
STRUCTURE NO. 099-0062

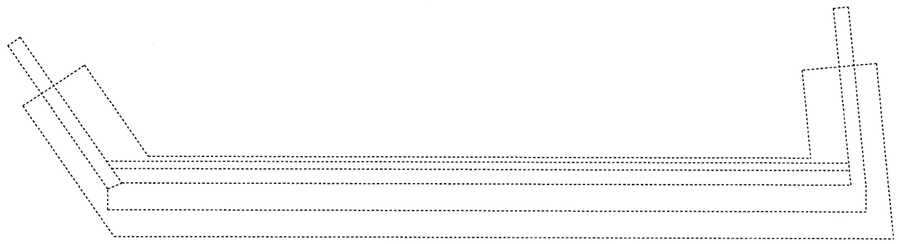
SHEET NO. S-3 OF 7 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99 (2&3) RS-3	WILL	200	166
		CONTRACT NO. 60M64		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

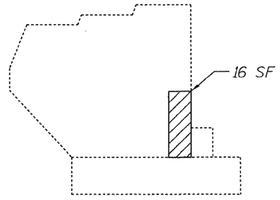


ELEVATION - SW ABUTMENT

Looking West

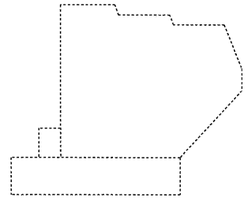


PLAN - SW ABUTMENT



ELEVATION - SOUTH WINGWALL

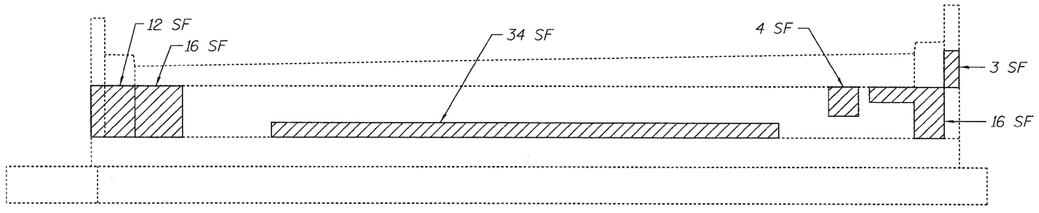
Outside Face



ELEVATION - NORTH WINGWALL

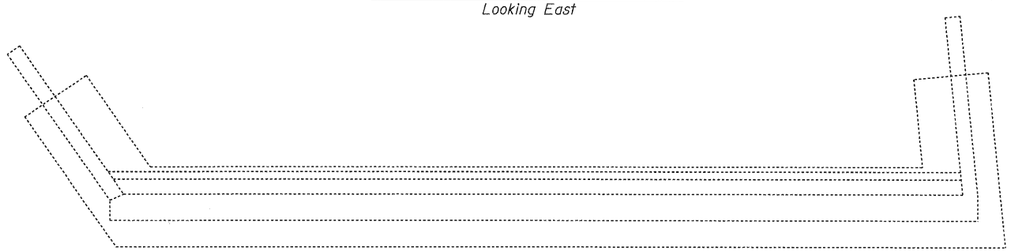
Outside Face

SW ABUTMENT

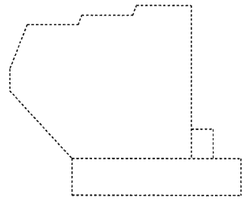


ELEVATION - SE ABUTMENT

Looking East

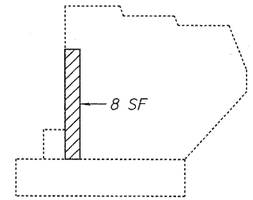


PLAN - SE ABUTMENT



ELEVATION - NORTH WINGWALL

Outside Face



ELEVATION - SOUTH WINGWALL

Outside Face

SE ABUTMENT

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Structural Repair Of Concrete (Depth Greater Than 5 Inches)	Sq.Ft.	22
Structural Repair Of Concrete (Depth Equal To Or Less Than 5 Inches)	Sq.Ft.	111

LEGEND:

Spalled or unsound concrete - SF indicates Square Feet.

NOTES:

1. Areas of proposed abutment repairs are estimated. Actual type, location and dimensions of abutment repairs are to be determined by the Engineer during construction.

	DESIGNED - PCA	REVISED -
USER NAME = lsupencheck	DRAWN - LK	REVISED -
PLOT SCALE = 1:1	CHECKED - MEA	REVISED -
PLOT DATE = 20-JAN-2011	DATE - 01/21/2011	REVISED -

FILE NAME = IP_PW:Pdms34575\0990062-60M64-004-ABUT.DGN

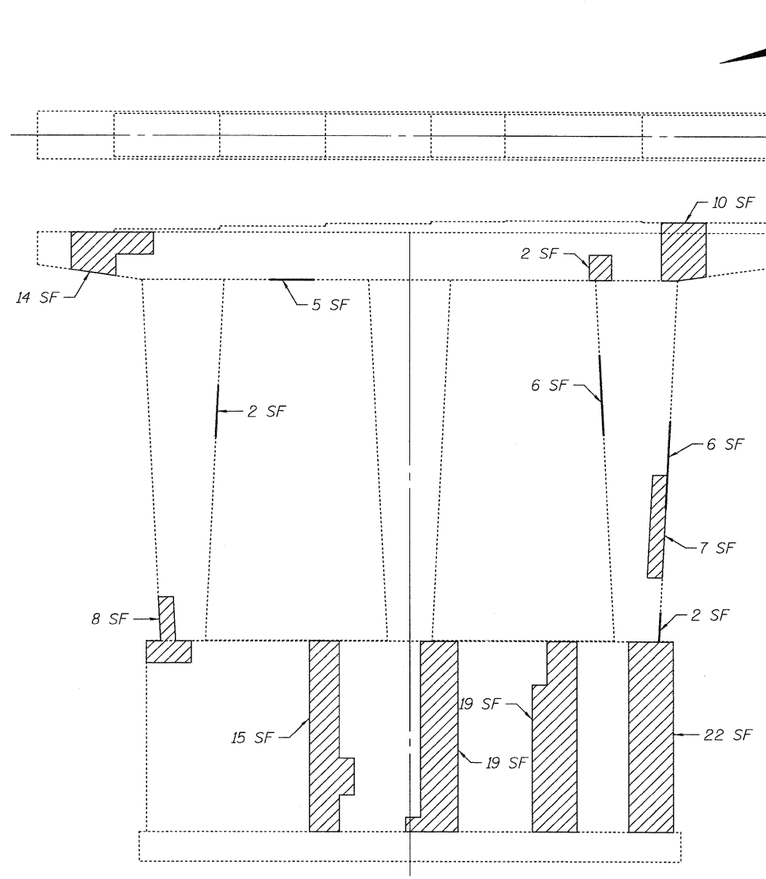
HBP Illinois Partners

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

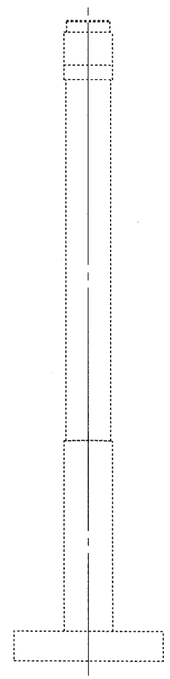
ABUTMENT REPAIRS
EASTBOUND FAI-80 OVER HICKORY CREEK
STRUCTURE NO. 099-0062

SHEET NO. S-4 OF 7 SHEETS

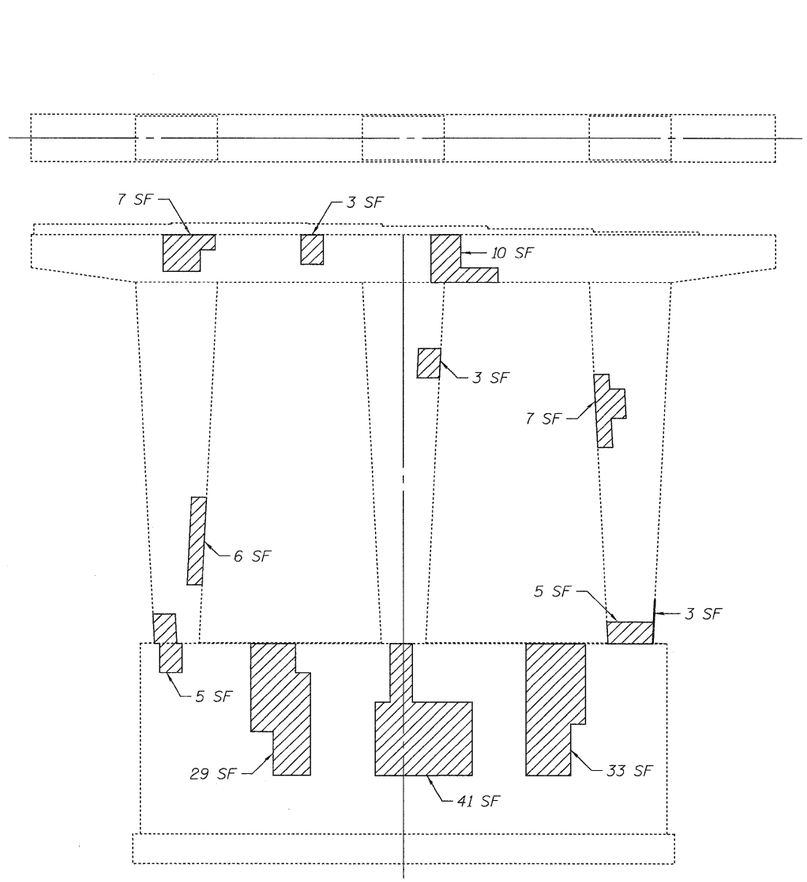
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99 (2&3) RS-3	WILL	200	167
		CONTRACT NO. 60M64		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



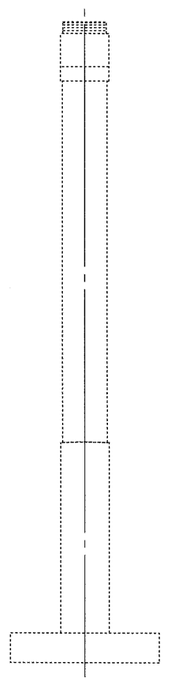
WEST ELEVATION
Looking East



SOUTH ELEVATION
Looking North



EAST ELEVATION
Looking West



NORTH ELEVATION
Looking South

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Structural Repair Of Concrete (Depth Greater Than 5 Inches)	Sq.Ft.	14
Structural Repair Of Concrete (Depth Equal To Or Less Than 5 Inches)	Sq.Ft.	275

LEGEND:

Spalled or unsound concrete - SF indicates Square Feet.

NOTES:

1. Areas of proposed pier repairs are estimated. Actual type, location and dimensions of pier repairs are to be determined by the Engineer during construction.

	DESIGNED - PCA	REVISED -
USER NAME = lsupancheck	DRAWN - LK	REVISED -
PLOT SCALE = 1:1	CHECKED - MEA	REVISED -
PLOT DATE = 20-JAN-2011	DATE - 01/21/2011	REVISED -

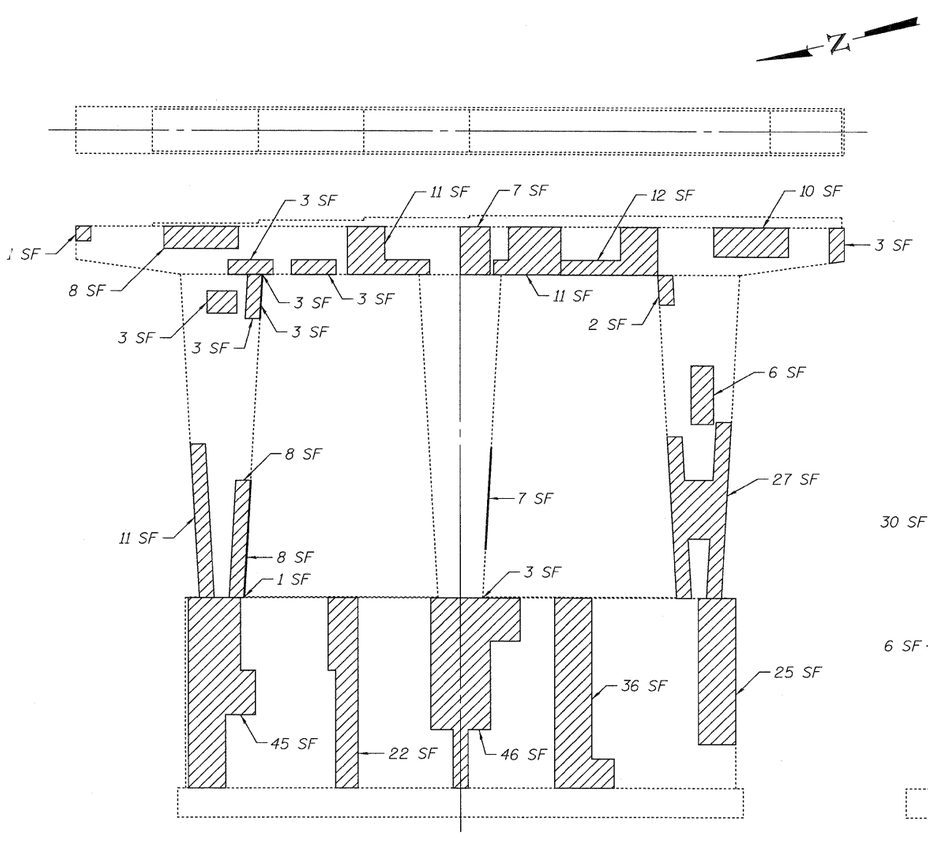
FILE NAME = IP_PW:P:dms34575\0990062-60M64-005-PIER.dgn

HBP Illinois Partners

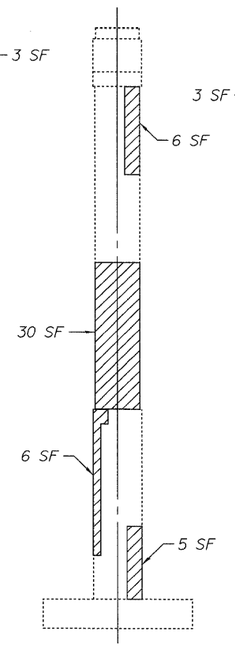
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 3 REPAIRS
EASTBOUND FAI-80 OVER HICKORY CREEK
STRUCTURE NO. 099-0062
SHEET NO. S-5 OF 7 SHEETS

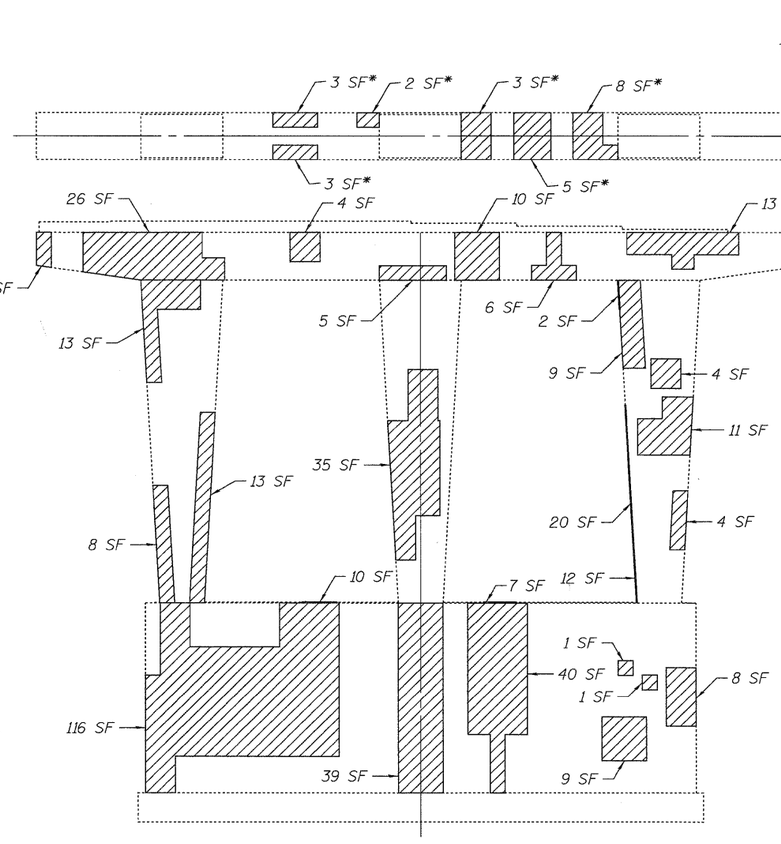
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99 (2&3) RS-3	WILL	200	168
		CONTRACT NO. 60M64		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



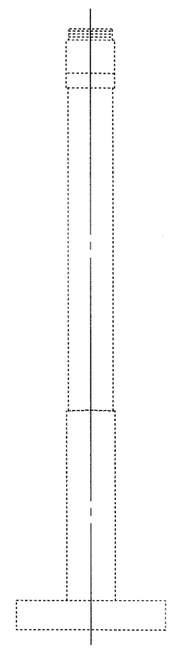
WEST ELEVATION
Looking East



SOUTH ELEVATION
Looking North



EAST ELEVATION
Looking West



NORTH ELEVATION
Looking South

* BOTTOM OF CAP

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Structural Repair Of Concrete (Depth Greater Than 5 Inches)	Sq.Ft.	194
Structural Repair Of Concrete (Depth Equal To Or Less Than 5 Inches)	Sq.Ft.	634
Temporary Shoring and Cribbing	Each	4

LEGEND:

Spalled or unsound concrete - SF indicates Square Feet.

NOTES:

1. Areas of proposed pier repairs are estimated. Actual type, location and dimensions of pier repairs are to be determined by the Engineer during construction.
2. For location of temporary shoring and cribbing for pier cap repairs, see Sheet S-2 of 7.

	DESIGNED - PCA	REVISED -
USER NAME = lsupenocheck	DRAWN - LK	REVISED -
PLOT SCALE = 1:1	CHECKED - MEA	REVISED -
PLOT DATE = 20-JAN-2011	DATE - 01/21/2011	REVISED -

FILE NAME = IP_PV\Prdms34575\0990062-60M64-006-PIER.dgn

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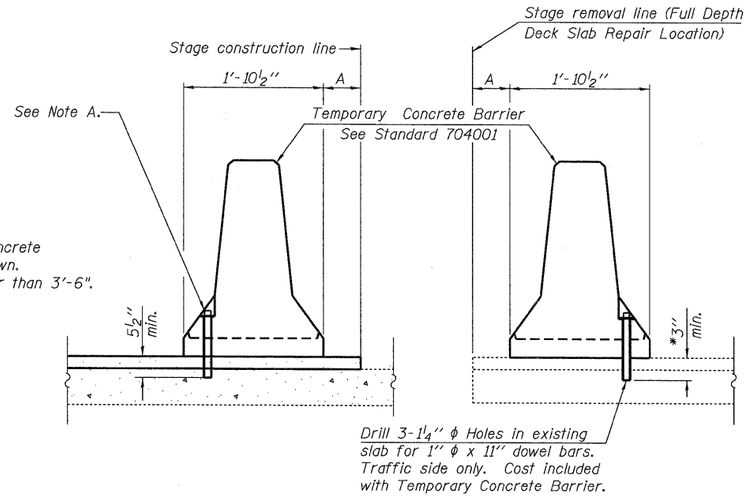
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 4 REPAIRS
EASTBOUND FAI-80 OVER HICKORY CREEK
STRUCTURE NO. 099-0062
SHEET NO. S-6 OF 7 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99 (2&3) RS-3	WILL	200	169
		CONTRACT NO. 60M64		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



When "A" is 3'-6" or less, the temporary concrete barrier shall be anchored to the slab as shown. No anchorage is required when "A" is greater than 3'-6".

Note A:
Drill 3-1¼" ϕ holes through new overlay into slab for 1"ϕx13" dowel bars. Traffic side only as directed by Engineer. Repair hole with non-shrink epoxy grout as directed by Engineer. Cost of anchorage and repair included with Temporary Concrete Barrier.

SECTIONS THRU SLAB

* 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.

NOTES:

1. Anchorage of concrete barrier to deck is required at locations of full depth deck slab repair and at new overlay section thru slab shown.

	DESIGNED - PCA	REVISED -
USER NAME = lsupancheck	DRAWN - LK	REVISED -
PLOT SCALE = 1:1	CHECKED - ML	REVISED -
PLOT DATE = 20-JAN-2011	DATE - 01/21/2011	REVISED -

FILE NAME = IP_PWPdms34575\0990062-60M64-007-BARRIER.DGN

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

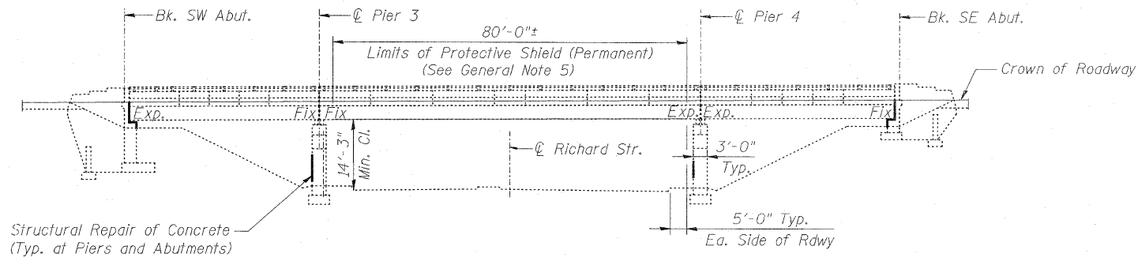
TEMPORARY CONCRETE BARRIER FOR STAGE CONSTRUCTION
EASTBOUND FAI-80 OVER HICKORY CREEK
STRUCTURE NO. 099-0062
SHEET NO. S-7 OF 7 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99 (2&3) RS-3	WILL	200	170
		CONTRACT NO. 60M64		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

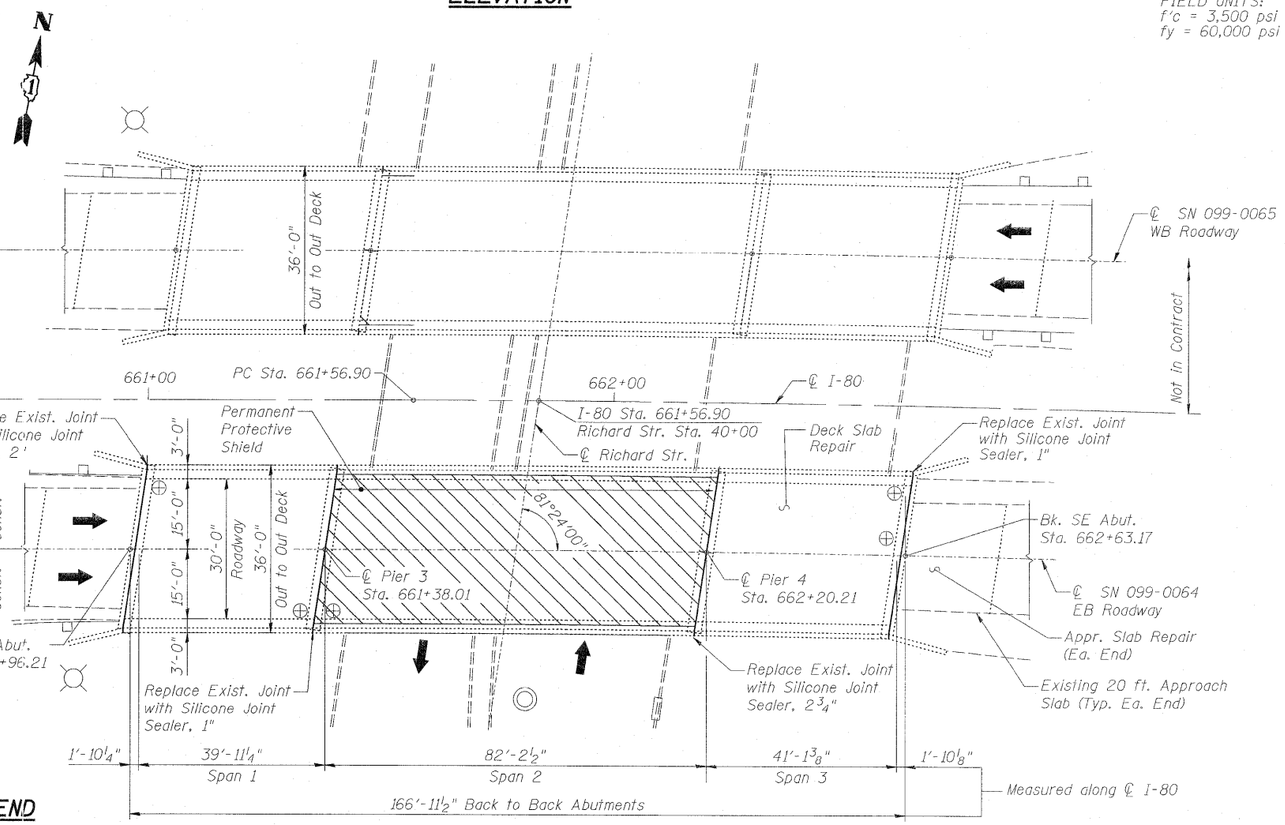
Existing Structures:
Dual bridges over Richards Street, S/N 099-0064 carrying I-80 Eastbound and S/N 099-0065 carrying I-80 Westbound, were originally constructed in 1961 as a part of F.A.I. 80 Project, I-80-4(38)134, Section 99-4HB-1. The superstructures consist of 3 simple spans of steel wide flange beam units. The 7-inch thick deck is supported on reinforced concrete piers and abutments with footings that extend a minimum of one foot into solid rock. In 1990 and 1998 repairs were made to the decks, abutments, piers, deck joints, rail and drainage system. In 2001, repairs were made to deck and expansion joints; a new 2" polymerized bituminous concrete overlay with waterproofing membrane was installed.

Traffic shall be maintained utilizing stage construction.

No salvage.



ELEVATION



PLAN

LEGEND

⊕ Temporary Shoring and Cribbing

▨ Protective Shield (Permanent)

INDEX OF SHEETS

DESIGN SPECIFICATIONS

2002 AASHTO Standard Specifications for Highway Bridges. 17th Edition

DESIGN STRESSES

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

SCOPE OF WORK:

1. Remove existing Hot-Mix Asphalt Overlay.
2. Install Protective Shield.
3. Repair Deck Slab.
4. Repair Approach Slab.
5. Remove and replace deck joints with Silicone Joint Sealer.
6. Install Temporary Beam Shoring.
7. Repair structural concrete at Abutments and Piers.
8. Construct Hot-Mix Asphalt Overlay.

GENERAL NOTES:

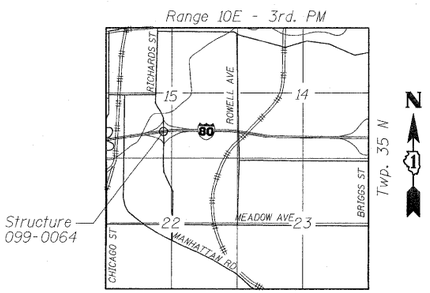
1. Reinforcement bars shall conform to the requirements of ASTM A 706 Grade 60. See Special Provisions.
2. Plan dimensions and details relative to existing structure have been taken from existing plans and are subject to nominal construction variations. Contractor should verify dimensions and make necessary approved adjustments prior to starting construction. Such variations shall not be cause for additional compensation for a change in scope of work, however, the Contractor will be paid for actual quantity furnished and approved by Engineer at unit price bid for the work.
3. Areas of proposed deck repairs are estimated. Actual type, location and dimension of deck repairs are to be determined by the Engineer during construction.
4. Contractor shall remove the existing asphalt wearing surface and, as necessary, adjust the milling depth to prevent damage to the existing waterproofing membrane. After satisfactory completion of the deck repair work, an asphalt surface course shall be placed in sufficient thickness as to match the elevation of the original surface.
5. Protective shield shall be installed prior to start of Deck Slab Repair work.

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Polymerized Hot-Mix Asphalt Surface Course, Stone Matrix Asphalt, N80	Ton	62	-	62
Protective Shield (Permanent)	Sq. Yd.	284	-	284
Approach Slab Repair (Partial Depth)	Sq. Yd.	14	-	14
Hot-Mix Asphalt Surface Removal (Deck)	Sq. Yd.	548	-	548
Structural Repair of Concrete (Depth =< 5")	Sq. Ft.	-	193	193
Structural Repair of Concrete (Depth > 5")	Sq. Ft.	-	188	188
Deck Slab Repair (Full Depth, Type II)	Sq. Yd.	35	-	35
Deck Slab Repair (Partial)	Sq. Yd.	103	-	103
Silicone Joint Sealer, 1"	Foot	75	-	75
Silicone Joint Sealer, 2"	Foot	38	-	38
Silicone Joint Sealer, 2 3/4"	Foot	38	-	38
Temporary Shoring and Cribbing	Each	5	-	5

STATE OF ILLINOIS
ATALAY YARGICOGLU
081-005358
LICENSED STRUCTURAL ENGINEER
CHICAGO, IL

SIGNED:
DATE: 02/08/2011
EXP: 11/30/2012
SHEETS: S1 THRU S6



LOCATION SKETCH

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PLOT SCALE = 1x16	CHECKED - A.Y./R.L.D.	REVISED -	
PLOT DATE = 2/8/2011	DATE - 01/21/2011	REVISED -	

HBP Illinois Partners

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN, NOTES, AND TOTAL BILL OF MATERIAL
EASTBOUND I-80 OVER RICHARDS STREET
SN 099-0064

SCALE: | SHEET S1 OF S6 | STA. | TO STA.

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99 (2&3) RS-3	WILL	200	171
		CONTRACT NO. 60M64		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

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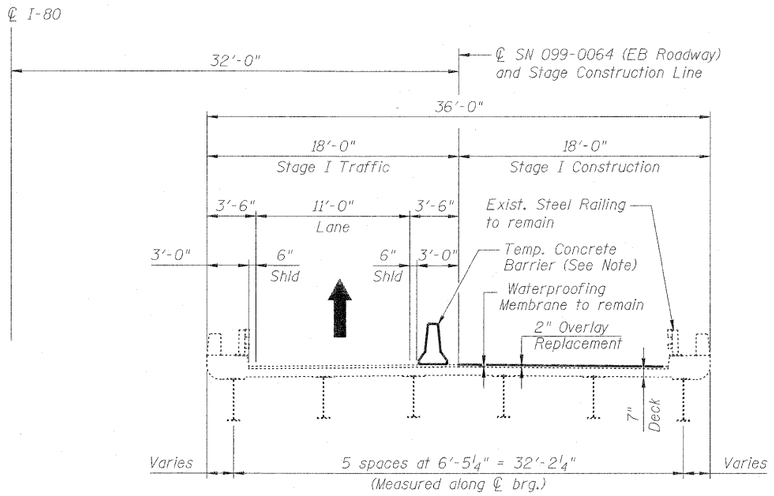
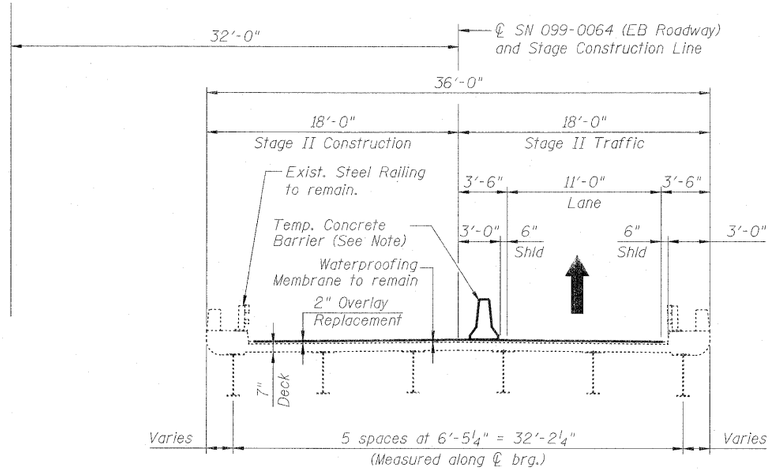


STAGE I CONSTRUCTION & TRAFFIC

(Looking East)



STAGE II CONSTRUCTION & TRAFFIC

(Looking East)

Note:

After removal of temporary concrete barrier, repair dowel holes with non-shrink epoxy grout as directed by the Engineer. Cost of anchorage and repair is included with Temporary Concrete Barrier.

USER NAME = ayargicoglu(Rdwy_Lisle)	DESIGNED - A.Y./L.C.	REVISED -	
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PLOT DATE = 2/8/2011	DATE - 01/21/2012	REVISED -	

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CONSTRUCTION STAGING
EASTBOUND I-80 OVER RICHARDS STREET
SN 099-0064

SCALE: | SHEET S2 OF S6 | STA. | TO STA.

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99 (2&3) RS-3	WILL	200	172
		CONTRACT NO. 60M64		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

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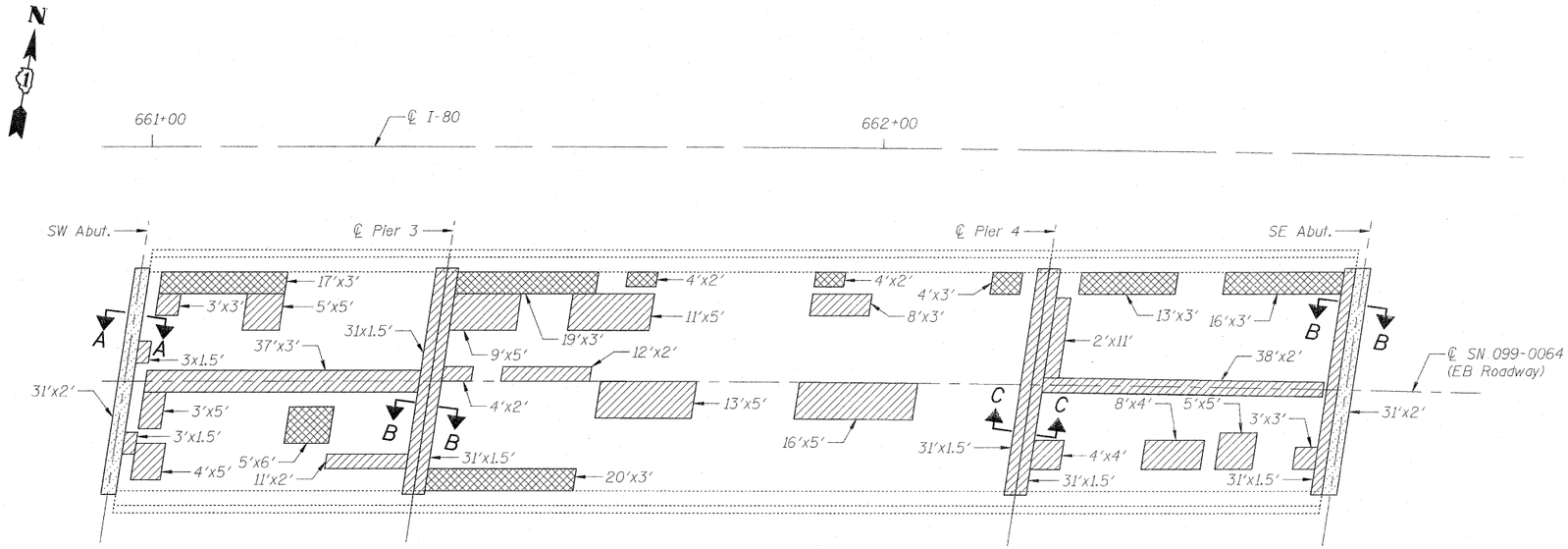


DECK PLAN

BILL OF MATERIAL

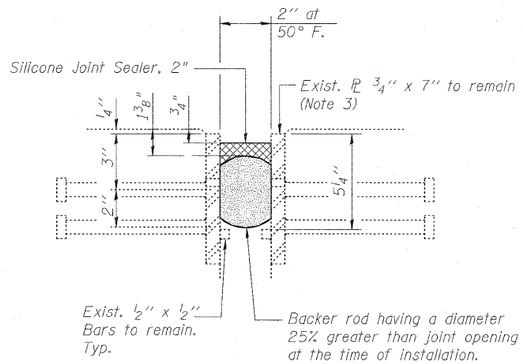
ITEM	UNIT	TOTAL
Approach Slab Repair (Partial Depth)	Sq. Yd.	14
Deck Slab Repair (Full Depth, Type II)	Sq. Yd.	35
Deck Slab Repair (Partial)	Sq. Yd.	103
Silicone Joint Sealer, 1"	Foot	75
Silicone Joint Sealer, 2"	Foot	38
Silicone Joint Sealer, 2 3/4"	Foot	38

LEGEND:

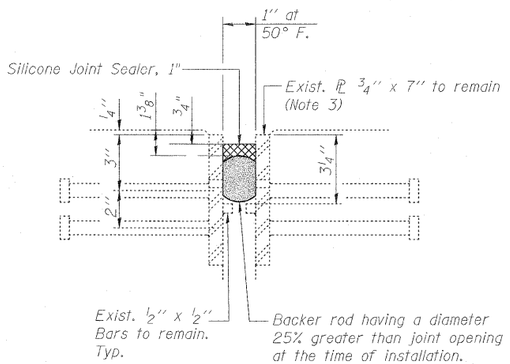
Deck Slab Repair (Partial)

Deck Slab Repair (Full Depth, Type II)

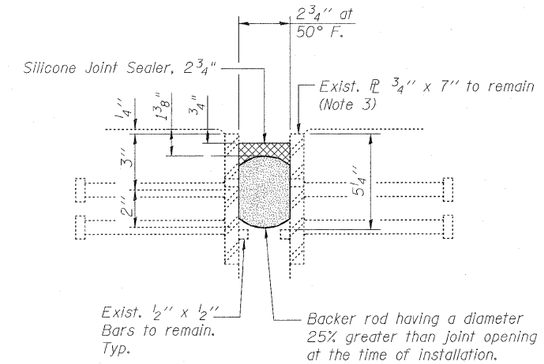
Approach Slab Repair (Partial Depth)



SECTION A-A
(At SW Abutment)

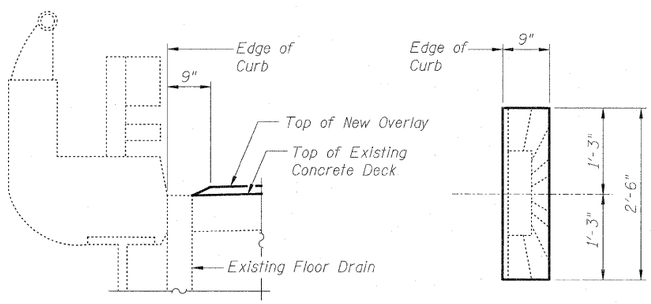


SECTION B-B
(At Pier 3, and SE Abutment)



SECTION C-C
(At Pier 4)

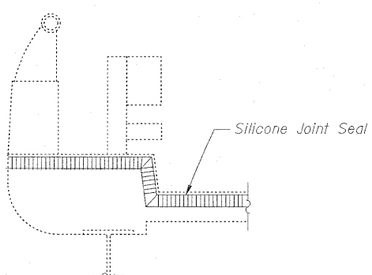
DECK EXPANSION JOINT DETAILS



SECTION AT FLOOR DRAIN

TOP PLAN

OVERLAY TREATMENT AT FLOOR DRAIN



TYPICAL END OF SEAL TREATMENT

Notes:

1. *See General Note 3 on Sheet S1 of S6.*
2. *Removal and disposal of the existing joint fillers and neoprene seals will be included with the cost of Silicone Joint Sealer, of the size specified.*
3. *Existing plates to be cleaned prior to installation of backer rod. Cost included with Silicone Joint Sealer, of the size specified.*
4. *Deck Slab Repair concrete shall be placed up to top of existing waterproofing membrane system. Cost included with Deck Slab Repair, of the type specified.*
5. *The Contractor shall grind off any existing concrete patches flush with the existing waterproofing membrane system. Cost included with Hot-Mix Asphalt Surface Removal (Deck).*

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DECK, APPROACH SLAB, AND EXPANSION JOINT REPAIRS
EASTBOUND I-80 OVER RICHARDS STREET
SN 099-0064

SCALE: | SHEET S3 OF S6 | STA. | TO STA.

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99 (2&3) RS-3	WILL	200	173
		CONTRACT NO. 60M64		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

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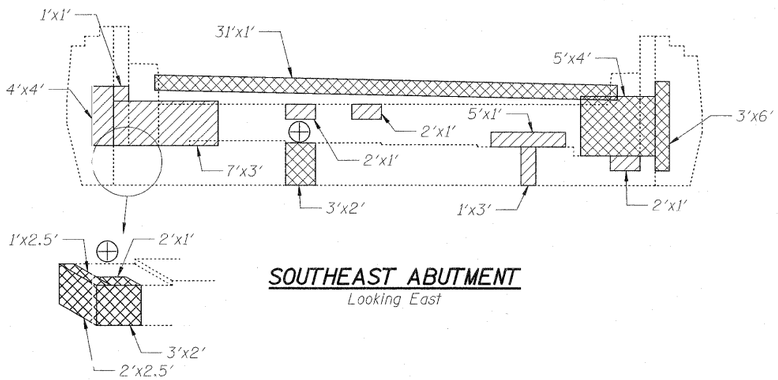
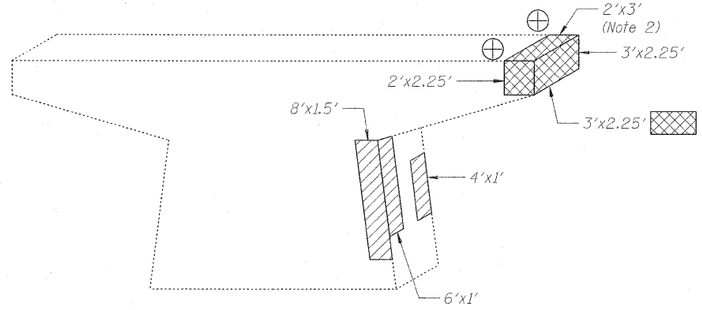
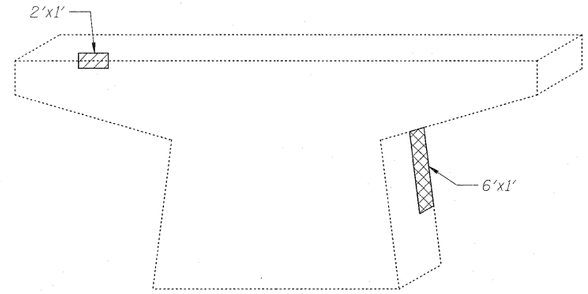


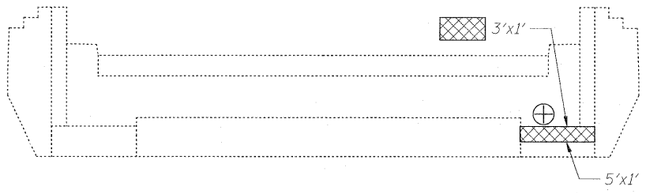
SOUTHEAST ABUTMENT
Looking East



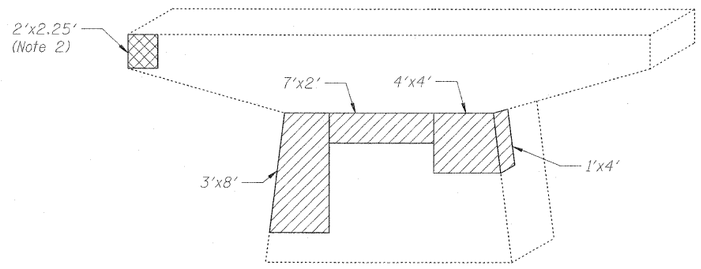
PIER 3
West Face



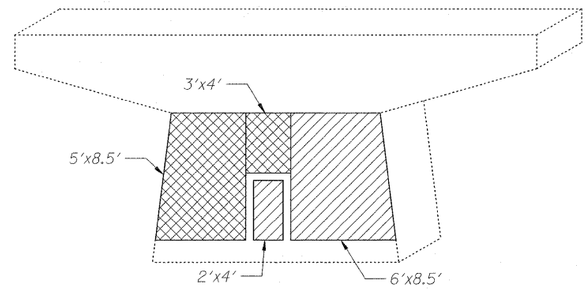
PIER 4
West Face



SOUTHWEST ABUTMENT
Looking West



PIER 3
East Face



PIER 4
East Face

LEGEND:

- Structural Repair of Concrete (Depth =< 5")
- Structural Repair of Concrete (Depth > 5")
- ⊕ Temporary Shoring and Cribbing

INTERIOR GIRDER REACTION TABLE				
		SPAN-1	SPAN-2	SPAN-3
$R_{①}$	(k)	22.9	50.7	23.5
$R_{④}$	(k)	31.9	36.9	32.2
Imp.	(k)	9.6	8.9	9.7
R_{Total}	(k)	64.4	96.5	65.4

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Structural Repair of Concrete (Depth =< 5")	Sq. Ft.	193
Structural Repair of Concrete (Depth > 5")	Sq. Ft.	188
Temporary Shoring and Cribbing	Each	5

Notes:
1. See the Special Provision "Temporary Shoring and Cribbing" for design, installation, and removal of the temporary shoring and cribbing support system. Approximate beam reactions are given in Interior Girder Reaction Table at the locations shown.
2. Repairs to the south side of Pier 3 shall be completed during Stage I Construction prior to switching traffic to the south side of the roadway.

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PLOT DATE = 2/8/2011	DATE - 01/21/2011	REVISED -

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ABUTMENT AND PIER REPAIRS
EASTBOUND I-80 OVER RICHARDS STREET
SN 099-0064

SCALE: | SHEET S4 OF S6 | STA. | TO STA.

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99 (2&3) RS-3	WILL	200	174
		CONTRACT NO. 60M64		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

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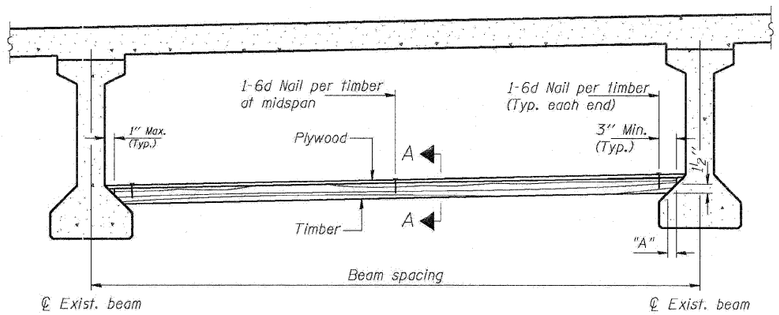
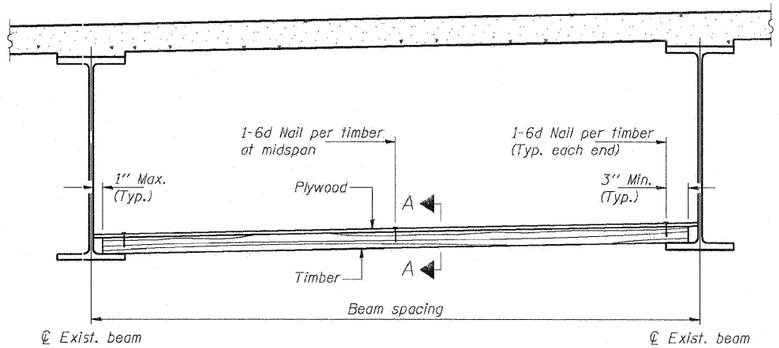
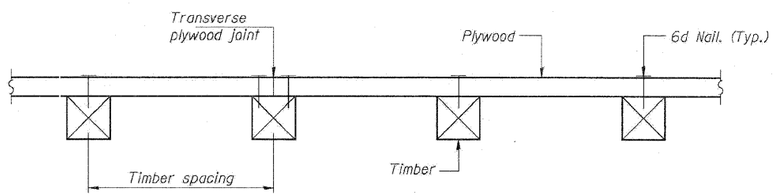


PPC I-BEAMS AND BULB-T's



STEEL BEAMS



SECTION A-A

TIMBER SPACING

Beam Spacing (ft.)	Timber Sizes (in.) 4" x 4" with min. Fb=775 psi Fv=135 psi	4" x 6" with min. Fb=775 psi Fv=135 psi	6" x 6" with min. Fb=575 psi Fv=125 psi
	Maximum Timber Spacing (in.)		
4.5	16	16	16
4.75	16	16	16
5.0	16	16	16
5.25	16	16	16
5.5	16	16	16
5.75	16	16	16
6.0	16	16	16
6.25	12	16	16
6.5	12	16	16
6.75	12	16	16
7.0	8	16	16
7.25	8	16	16
7.5	8	16	16
7.75	8	16	16
8.0	8	12	16
8.25	8	12	16
8.5	6	12	12
8.75	6	12	12
9.0	6	8	12

PPC I-BEAMS AND BULB-T's

BEAM	"A"
36" I-Beam	1½"
42" I-Beam	1½"
48" I-Beam	1½"
54" I-Beam	1⅝"
63" Bulb-T	3⅜"
72" Bulb-T	3⅜"

Notes:
See special provision for Permanent Protective Shield System.
Timber sizes shown are nominal sizes. Rough sawn timber of the dimensions shown will also be considered acceptable.
The minimum Fb and Fv values shown are the tabulated design values given in the National Design Specification for Wood Construction for No. 2 Spruce-Pine-Fir without adjustment factors applied. Better grades or other species with equal or higher allowable stresses will also be considered acceptable.
The timber spacings shown have been determined using allowable stresses with all adjustment factors necessary for the anticipated service conditions.
All timber shall be treated.
Plywood shall be ⅝" Exterior type plywood (per American Plywood Association).
Plywood shall be placed such that the face grain is perpendicular to the timber supports. When less than a full sheet (4' width) of plywood is used, the width of the strip used shall not be less than 2'.
Transverse plywood joints shall be supported by timbers.
When 4" x 6" timbers are used, they shall be placed such that the wide face is horizontal and the narrow face is vertical.
Design load = 200 psf.

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Protective Shield (Permanent)	Sq. Yd.	284

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PERMANENT PROTECTIVE SHIELD
EASTBOUND I-80 OVER RICHARDS STREET
SN 099-0064

SCALE: | SHEET S5 OF S6 | STA. | TO STA.

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99 (2&3) RS-3	WILL	200	175
		CONTRACT NO. 60M64		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

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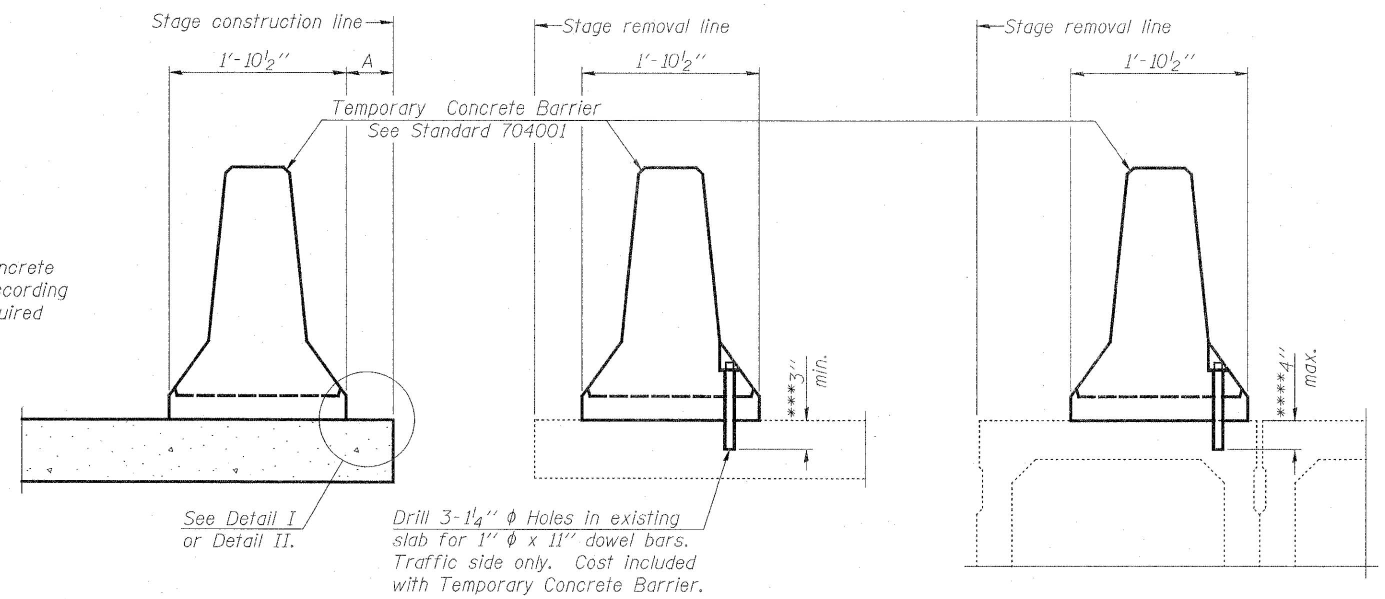
When "A" is 3'-6" or less, the temporary concrete barrier shall be anchored to the new slab according to Detail I or Detail II. No anchorage is required when "A" is greater than 3'-6".



NEW SLAB

EXISTING SLAB

EXISTING DECK BEAM

SECTIONS THRU SLAB OR DECK BEAM

NOTES

Detail I - With Bar Splicer or Couplers:
Connect one (1) 1" x 7' 'x "W" steel PL to the top layer of couplers with 2-⅝" ϕ bolts screwed to coupler at approximate ℄ of each barrier panel.

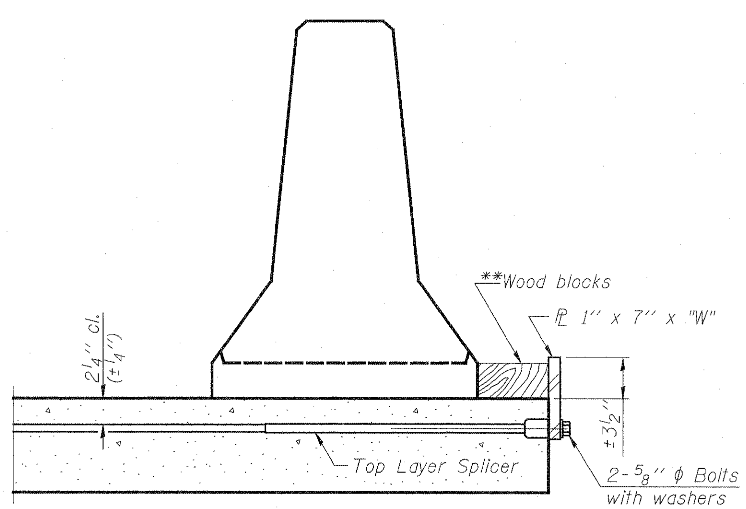
Detail II - With Extended Reinforcement Bars:
Connect one (1) 1" x 7" x "W" steel PL to the concrete slab or concrete wearing surface with 2-⅝" ϕ Expansion Anchors or cast in place inserts spaced between the top layer of reinforcement at approximate ℄ of each barrier panel.

Cost of anchorage is included with Temporary Concrete Barrier.

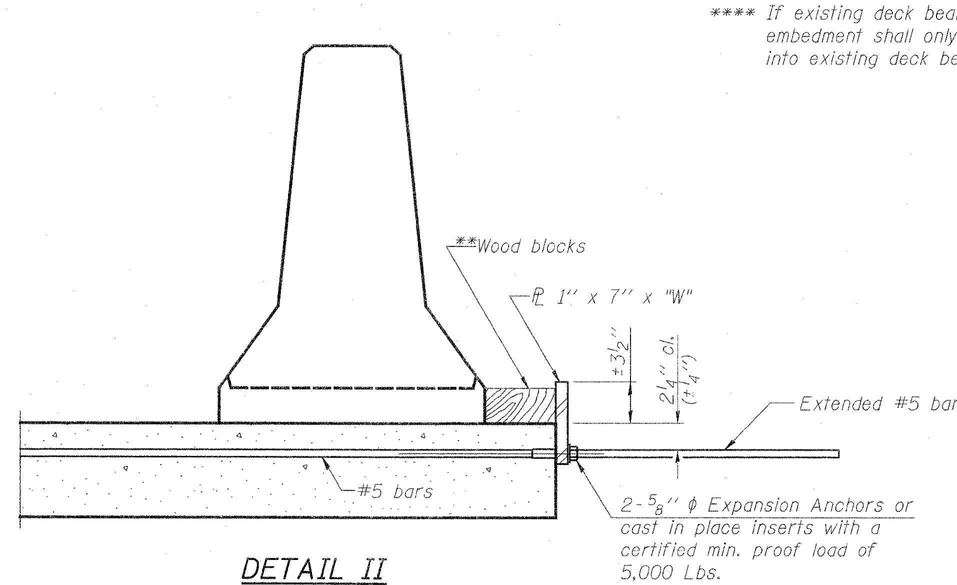
The 1" x 7" x "W" plate shall not be removed until stage II construction forms and all reinforcement bars are in place and the concrete is ready to be placed.

*** 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.

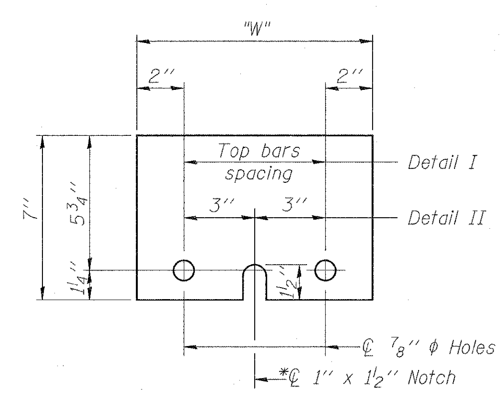
**** If existing deck beam is to remain in place after stage construction, embedment shall only be into wearing surface and not into existing deck beam concrete.



DETAIL I



DETAIL II



STEEL RETAINER PL 1" x 7" x "W"

* Required only with Detail II

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

"W" = Top bars spacing + 4"

R-27 7-1-10

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TEMPORARY CONCRETE BARRIER FOR STAGE CONSTRUCTION
EASTBOUND I-80 OVER RICHARDS STREET
SN 099-0064

SCALE: | SHEET S6 of S6 | STA. | TO STA.

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99 (2&3) RS-3	WILL	200	176
		CONTRACT NO. 60M64		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

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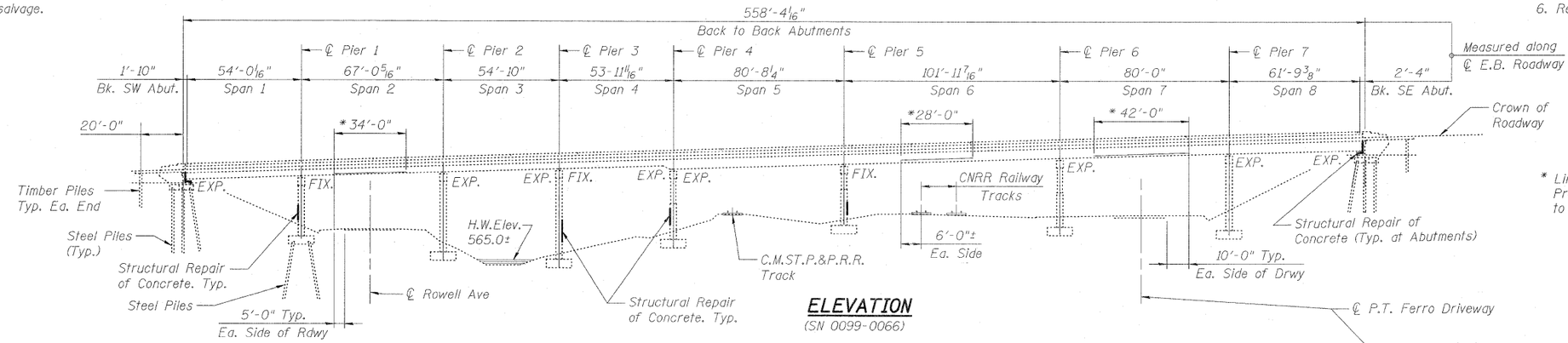
Existing Structures:
Dual bridges over CNRR and Rowell Avenue, SN 099-0066 carrying I-80 Eastbound and SN 099-0067 carrying I-80 Westbound, were originally constructed in 1962 as a part of F.A.I. 80 Project, I-IG-80-4(41)135, Section 99-4-IVB. The EB and WB superstructures consist of 8 and 9 continuous span steel multi-girder units supported on concrete abutments and piers, respectively. The existing bridge decks consist of 6 1/4" reinforced concrete composite slab with 2 3/4" latex concrete overlay. The transverse deck joints are either PJS type with vertical armor plates or neoprene type expansion joints. In 1998 repairs were made to decks, abutments, piers, slopewalls, deck joints, and drainage system. In addition, the expansion bearings were replaced and the latex concrete overlay, and steel bridge rails were constructed.

Traffic shall be maintained utilizing stage construction.

No salvage.

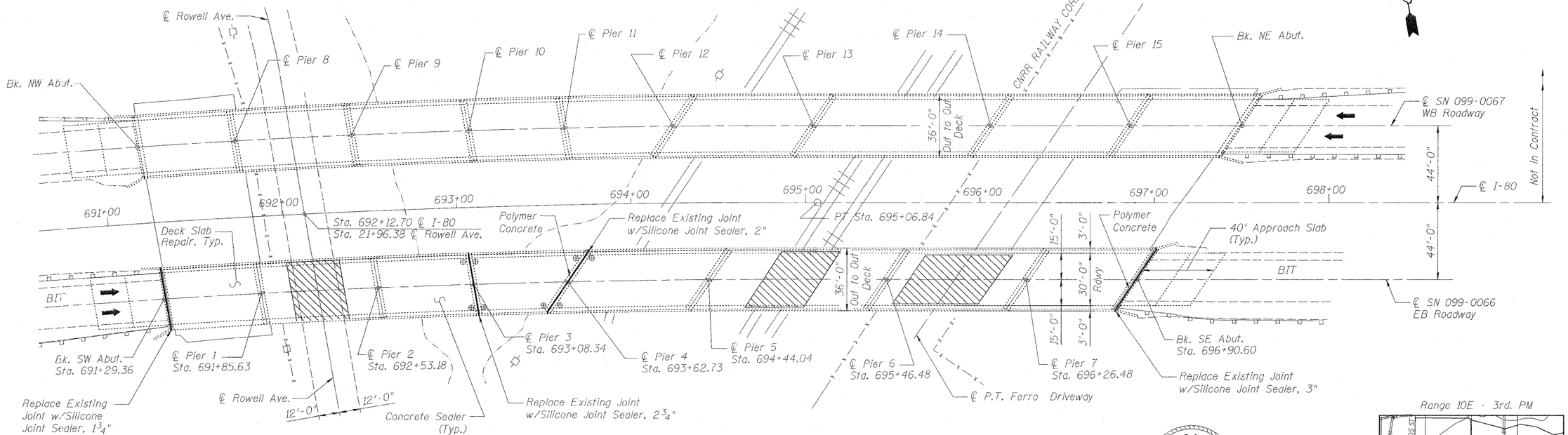
SCOPE OF WORK:

1. Install protective shield.
2. Partial depth deck slab repair.
3. Seal concrete bridge deck.
4. Remove and replace deck joints with silicone joint sealer.
5. Install temporary beam shoring.
6. Repair structural concrete of abutments and piers.



ELEVATION
(SN 0099-0066)

* Limits of Protective Shield (Permanent). Protective shield shall be installed prior to start of Deck Slab Repair work.



PLAN

INDEX OF SHEETS

DESIGN SPECIFICATIONS

2002 AASHTO Standard Specifications for Highway Bridges. 17th Edition

DESIGN STRESSES

FIELD UNITS:
f'c = 3,500 psi
fy = 60,000 psi

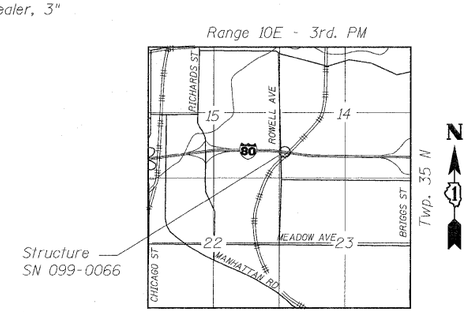
LEGEND

⊕ Temporary Shoring and Cribbing

Protective Shield (Permanent)

STATE OF ILLINOIS
ATALAY YARGICOGLU
081-005358
CHICAGO, IL
LICENSED STRUCTURAL ENGINEER

SIGNED:
DATE: 02/08/2011
EXP: 11/30/2012
SHEETS: S1 THRU S8



LOCATION SKETCH

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PLOT DATE = 2/8/2011	DATE - 01/21/2011	REVISED -	

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN AND ELEVATION
EASTBOUND I-80 OVER CNRR AND ROWELL AVENUE
SN 099-0066

SCALE: | SHEET S1 of S8 | STA. | TO STA.

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99 (2&3) RS-3	WILL	200	177
		CONTRACT NO. 60M64		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

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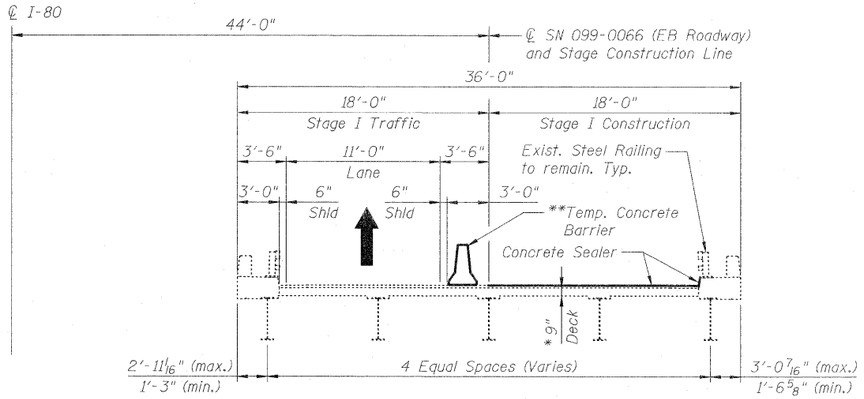
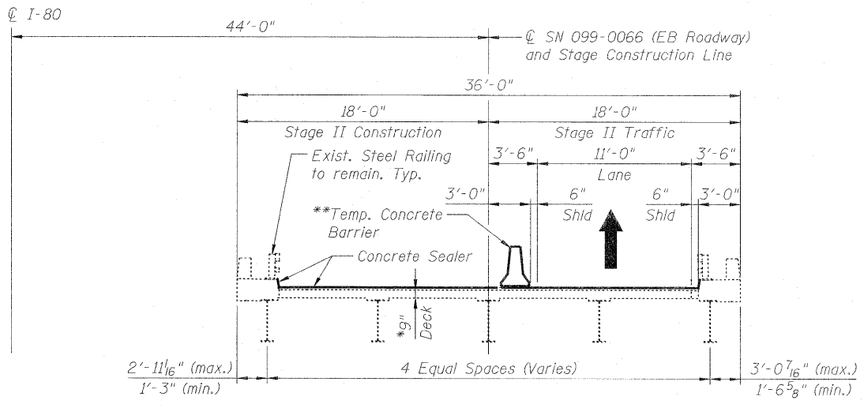


* $6\frac{1}{4}$" reinforced concrete slab with $2\frac{3}{4}$" Latex Concrete Overlay

STAGE I CONSTRUCTION & TRAFFIC

(Looking East)



* $6\frac{1}{4}$" reinforced concrete slab with $2\frac{3}{4}$" Latex Concrete Overlay

STAGE II CONSTRUCTION & TRAFFIC

(Looking East)

** After removal of temporary concrete barrier, repair dowel holes with non-shrink epoxy grout as directed by the Engineer. Cost of anchorage and repair is included with Temporary Concrete Barrier.

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Concrete Sealer	Sq. Ft.	17,648	-	17,648
Protective Shield (Permanent)	Sq. Yd.	370	-	370
Structural Repair of Concrete (Depth =< 5")	Sq. Ft.	-	396	396
Structural Repair of Concrete (Depth > 5")	Sq. Ft.	-	125	125
Deck Slab Repair (Partial)	Sq. Yd.	206	-	206
Silicone Joint Sealer, $1\frac{3}{4}$"	Foot	37	-	37
Silicone Joint Sealer, 2"	Foot	44	-	44
Silicone Joint Sealer, $2\frac{3}{4}$"	Foot	37	-	37
Silicone Joint Sealer, 3"	Foot	44	-	44
Polymer Concrete	Cu. Ft.	13	-	13
Temporary Shoring and Cribbing	Each	8	-	8

GENERAL NOTES:

1. Reinforcement bars shall conform to the requirements of ASTM A 706 Grade 60. See Special Provisions.
2. Concrete Sealer shall be applied to the entire top surface of bridge deck and inside vertical face of curbs. All work shall be performed in accordance with the provisions of Section 587 of the Standard Specification. When directed by the Engineer, all surfaces to be coated shall be thoroughly cleaned by power washing or other appropriate means prior to the application of Concrete Sealer. Cleaning is included with the cost of "Concrete Sealer". Existing pavement markings shall be temporarily covered prior to application of the deck surface treatment, to prevent the material from being applied to the markings. The temporary covering shall be removed after application of the deck surface treatment and prior to opening to traffic. Cost included with "Concrete Sealer".
3. Plan dimensions and details relative to existing structure have been taken from existing plans and are subject to nominal construction variations. Contractor should verify dimensions and make necessary approved adjustments prior to starting construction. Such variations shall not be cause for additional compensation for a change in scope of work, however, the Contractor will be paid for actual quantity furnished and approved by Engineer at unit price bid for the work.
4. Areas of proposed deck repairs are estimated. Actual type, location and dimension of deck repairs are to be determined by the Engineer during construction.

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CONSTRUCTION STAGING, NOTES, AND TOTAL BILL OF MATERIALS
EASTBOUND I-80 OVER CNRR AND ROWELL AVENUE
SN 099-0066

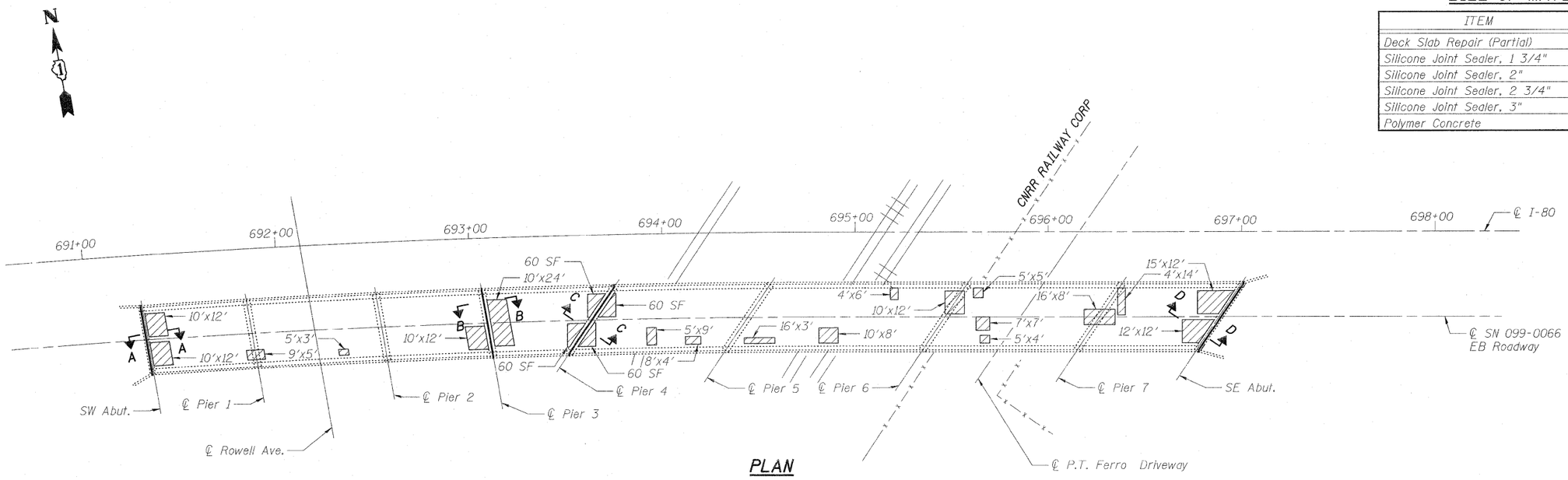
SCALE: | SHEET S2 of S8 | STA. | TO STA.

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99 (2&3) RS-3	WILL	200	178
		CONTRACT NO. 60M64		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

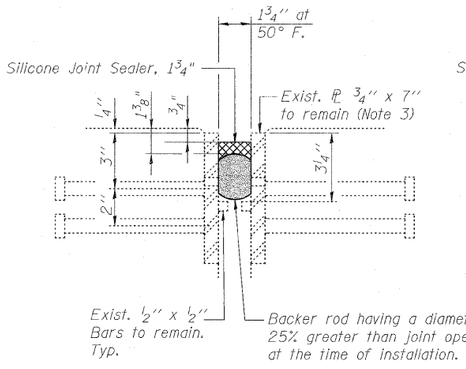
\\fsi\tranprojects\idot\21050.005 (i-80 phase ii)\drawings\cadd sheets\bridge p&e\rowell\EB\099-0066-D160M64-Staging-Rowell.dgn

BILL OF MATERIAL

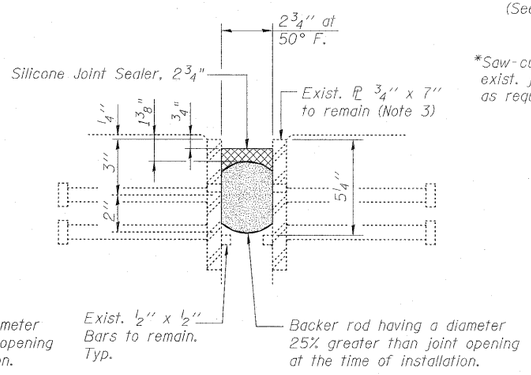
ITEM	UNIT	TOTAL
Deck Slab Repair (Partial)	Sq. Yd.	206
Silicone Joint Sealer, 1 3/4"	Foot	37
Silicone Joint Sealer, 2"	Foot	44
Silicone Joint Sealer, 2 3/4"	Foot	37
Silicone Joint Sealer, 3"	Foot	44
Polymer Concrete	Cu. Ft.	13



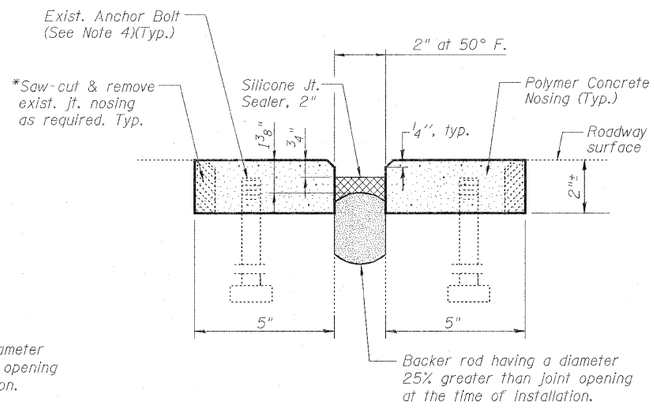
PLAN



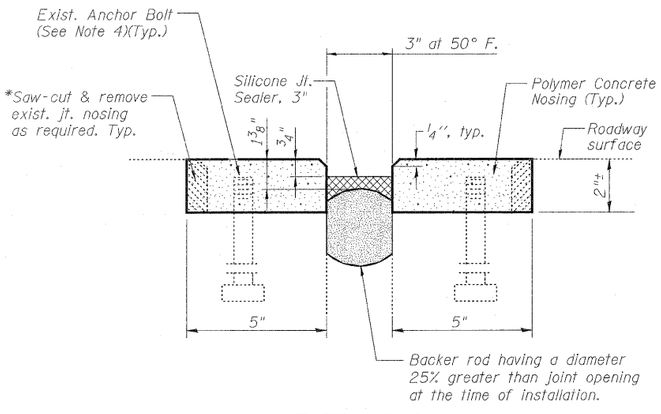
SECTION A-A
(At Southwest Abutment)



SECTION B-B
(At Pier 3)



SECTION C-C
(At Pier 4)



SECTION D-D
(At Southeast Abut.)

* Cost included with Polymer Concrete.

DECK EXPANSION JOINT DETAILS

Notes:
1. See General Note 4 on Sheet S2 of S8.
2. Removal and disposal of the existing joint fillers and neoprene seals will be included with the cost of Silicone Joint Sealer, of the size specified.
3. Existing plates to be cleaned prior to installation of backer rod. Cost included with Silicone Joint Sealer, of the size specified.
4. Existing anchor bolts to remain and to be incorporated into the Polymer Concrete. Cost included with Polymer Concrete.

LEGEND:

Deck Slab Repair (Partial)

USER NAME = aygarcioglu(Rdwy_Lisle)	DESIGNED - A.Y./L.C.	REVISED -	
PLOT CONFIG= PDF(1-80_TopoGrey_Large).plt	DRAWN - L.C./A.Y.	REVISED -	
PLOT SCALE = 1:30	CHECKED - A.Y./R.L.D.	REVISED -	
PLOT DATE = 2/8/2011	DATE - 01/21/2011	REVISED -	

HBP Illinois Partners

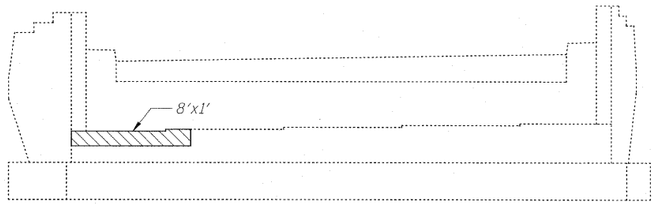
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DECK AND EXPANSION JOINT REPAIRS
EASTBOUND I-80 OVER CNRR AND ROWELL AVENUE
SN 099-0066

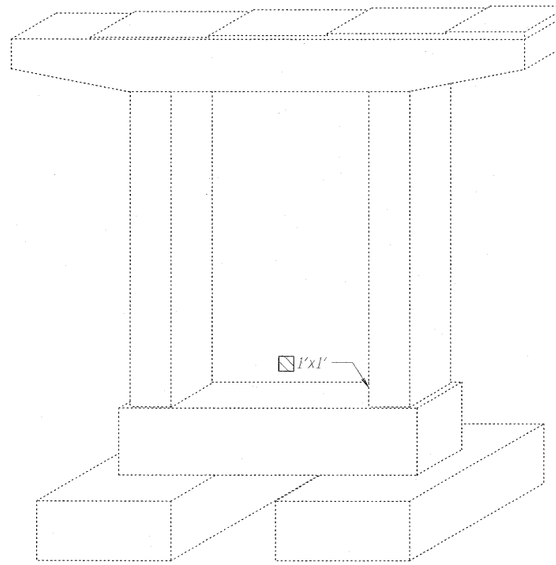
SCALE: | SHEET S3 of S8 | STA. | TO STA.

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99 (2&3) RS-3	WILL	200	179
		CONTRACT NO. 60M64		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

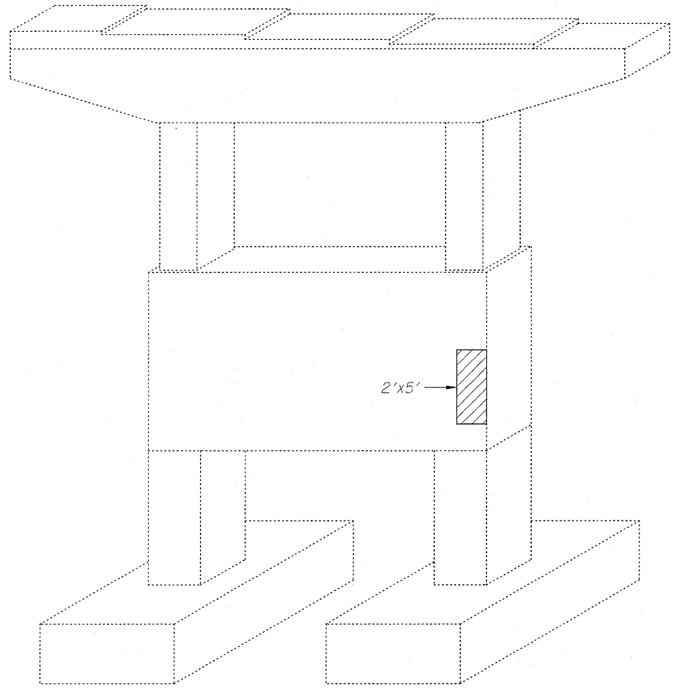
\\fsl\tranprojects\idot\21050.005 (I-80 phase II)\drawings\cadd sheets\bridge p&e\rowell\EB\099-0066-D160M64-Deck-Rowell.dgn



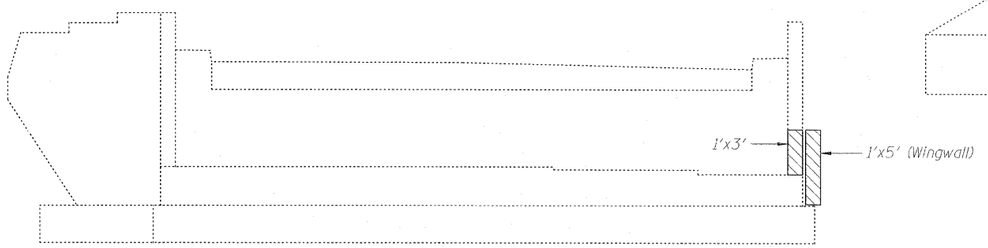
SOUTHWEST ABUTMENT



PIER 1
EAST FACE



PIER 5
WEST FACE



SOUTHEAST ABUTMENT

LEGEND:

Structural Repair of Concrete (Depth > 5")

Structural Repair of Concrete (Depth < 5")

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Structural Repair of Concrete (Depth =< 5")	Sq. Ft.	27

USER NAME = aygrgcoglu\Rdwy_Lisle)	DESIGNED - A.Y./L.C.	REVISED -	
PLOT CONFIG= PDF(1-81_TopoGrey_Large).pl	DRAWN - L.C./A.Y.	REVISED -	
PLOT SCALE = 1:5	CHECKED - A.Y./R.L.D.	REVISED -	
PLOT DATE = 2/8/2011	DATE - 01/21/2011	REVISED -	

HBP Illinois Partners

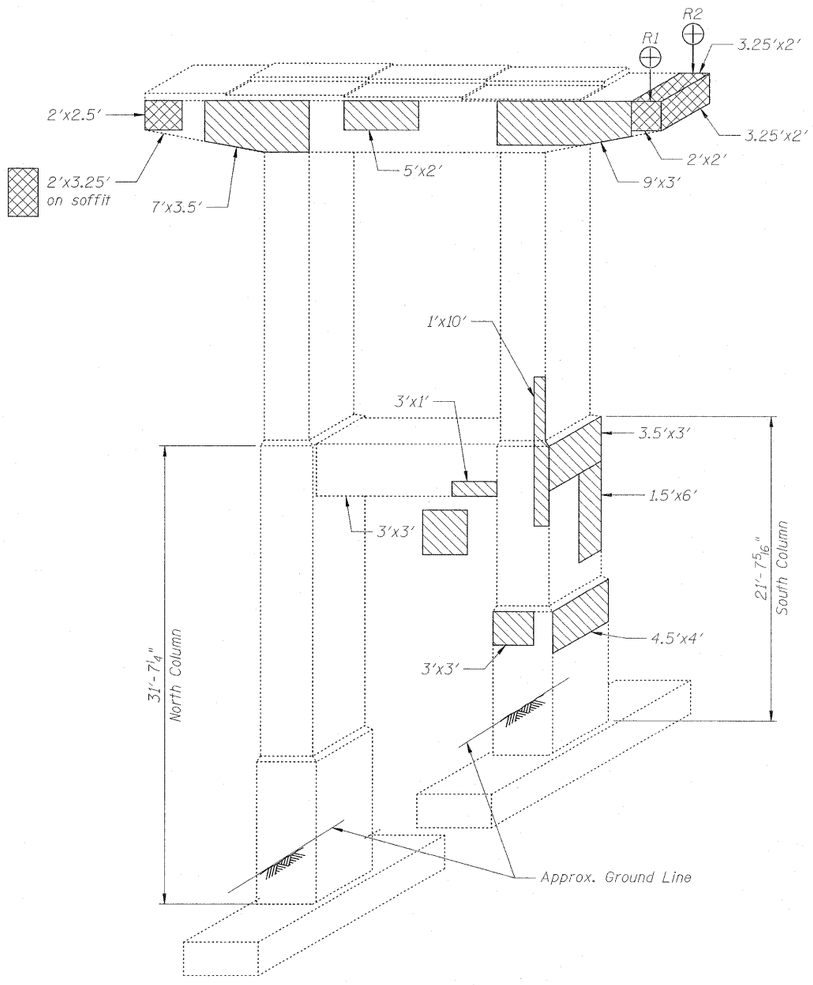
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ABUTMENT AND PIER REPAIRS
EASTBOUND I-80 OVER CNRR AND ROWELL AVENUE
SN 099-0066

SCALE: | SHEET S4 of S8 | STA. | TO STA.

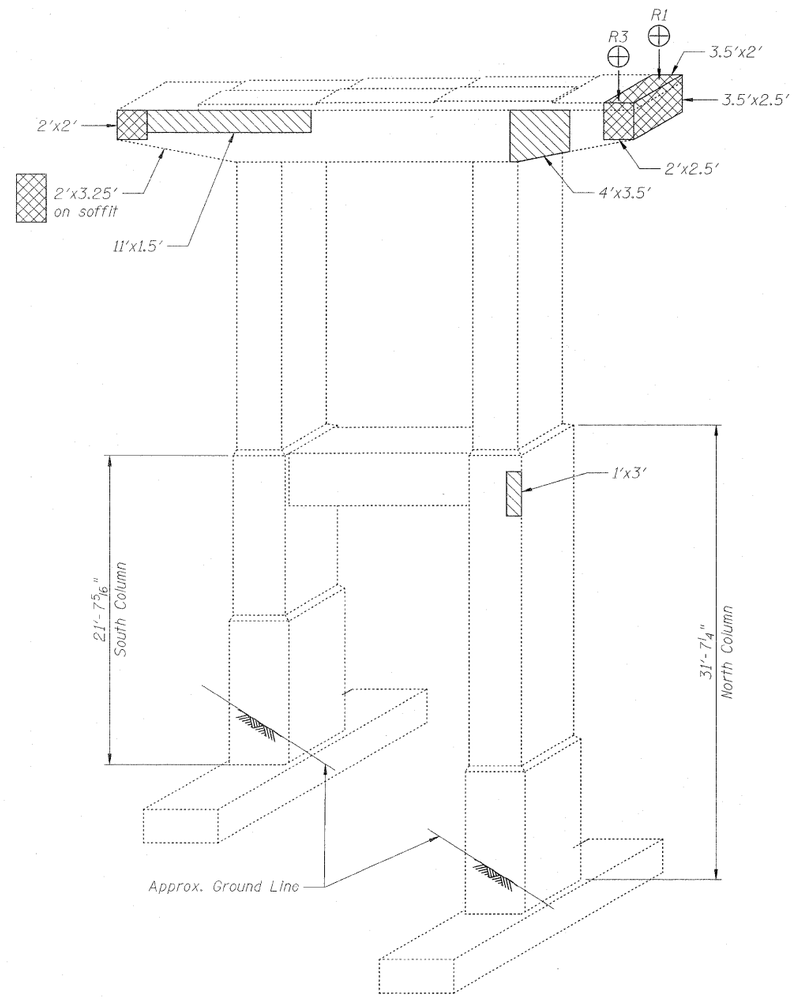
F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99 (2&3) RS-3	WILL	200	180
		CONTRACT NO. 60M64		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

\\fsl\tranprojects\idot\21050.005 (i-80 phase 1)\drawings\caadd sheets\bridge p&e\rowell\EB\099-0066-D160M64-Abutment-Rowell.dgn



PIER 3

WEST FACE



PIER 3

EAST FACE

LEGEND:

- Structural Repair of Concrete (Depth > 5")
- Structural Repair of Concrete (Depth < 5")
- ⊕ Temporary Shoring and Cribbing

INTERIOR GIRDER REACTION TABLE				
		R1	R2	R3
R℄	(k)	30.6	27.2	49.4
R4	(k)	43.2	41.9	47.3
Imp.	(k)	12.8	12.6	12.2
R_{Total}	(k)	86.5	81.6	109.0

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Structural Repair of Concrete (Depth =< 5")	Sq. Ft.	164
Structural Repair of Concrete (Depth > 5")	Sq. Ft.	60
Temporary Shoring and Cribbing	Each	4

Note:
See the Special Provision "Temporary Shoring and Cribbing" for design, installation, and removal of the temporary shoring and cribbing support system. Approximate beam reactions are given in Interior Girder Reaction Table at the locations shown.

USER NAME = ayargicoglu/Rdwy_Lisle)	DESIGNED - A.Y./L.C.	REVISED -	
PLOT CONFIG= PDF(I-80_TopoGrey_Large).plt	DRAWN - L.C./A.Y.	REVISED -	
PLOT SCALE = 1:5	CHECKED - A.Y./R.L.D.	REVISED -	
PLOT DATE = 2/8/2011	DATE - 01/21/2011	REVISED -	

HBP Illinois Partners

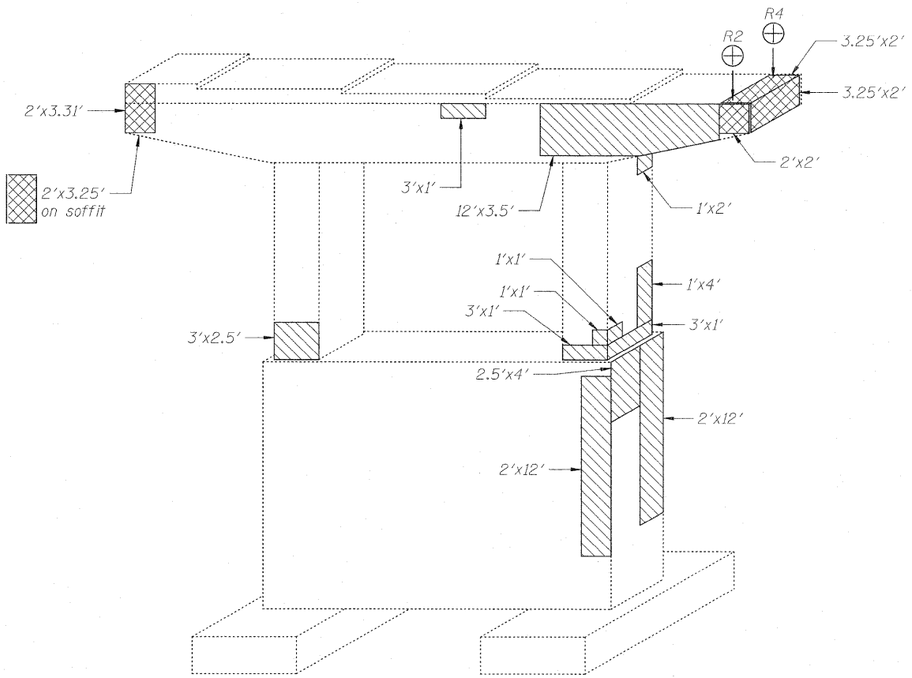
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 3 REPAIRS
EASTBOUND I-80 OVER CNRR AND ROWELL AVENUE
SN 099-0066

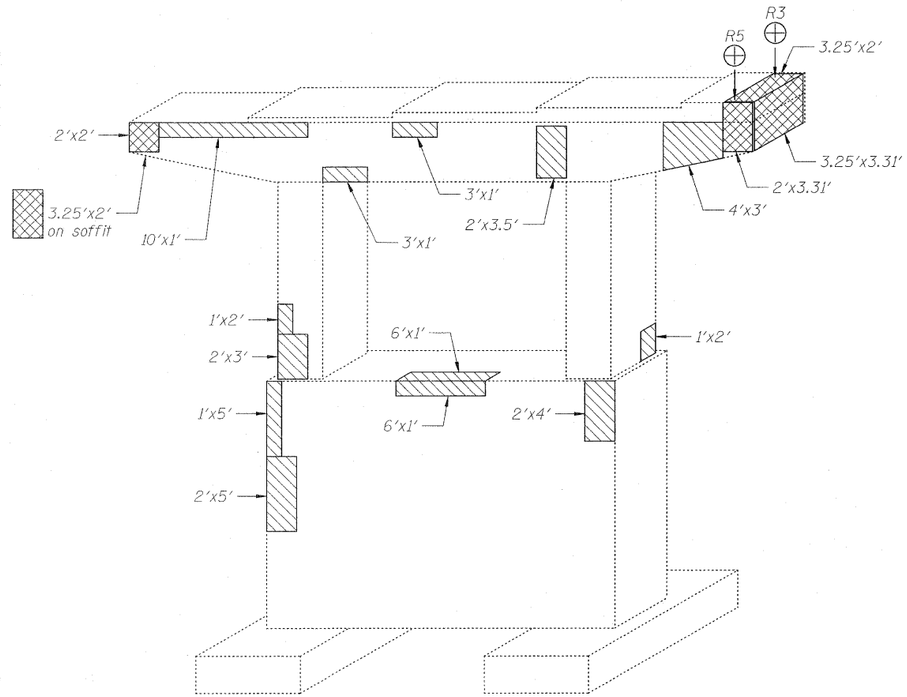
SCALE: | SHEET S5 of S8 | STA. | TO STA.

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99 (2&3) RS-3	WILL	200	181
		CONTRACT NO. 60M64		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

\\fs1\tranprojects\idot\21050.005 (i-80 phase ii)\drawings\cadd sheets\bridge p&e\rowell\EB\099-0066-D160M64-Piers-Rowell.dgn



PIER 4
WEST FACE



PIER 4
EAST FACE

LEGEND:

- Structural Repair of Concrete (Depth > 5")
- Structural Repair of Concrete (Depth < 5")
- ⊕ Temporary Shoring and Cribbing

INTERIOR GIRDER REACTION TABLE					
		R2	R3	R4	*R5
$R_{\frac{1}{2}}$	(k)	27.2	49.4	44.5	60.1
$R_{\frac{1}{4}}$	(k)	41.9	47.3	46.9	63.3
Imp.	(k)	12.6	12.2	12.4	16.7
R_{Total}	(k)	81.6	109.0	103.8	140.1

*Reaction increased by a factor of 1.35 to account for skew effects.

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Structural Repair of Concrete (Depth =< 5")	Sq. Ft.	205
Structural Repair of Concrete (Depth > 5")	Sq. Ft.	65
Temporary Shoring and Cribbing	Each	4

Note:
See the Special Provision "Temporary Shoring and Cribbing" for design, installation, and removal of the temporary shoring and cribbing support system. Approximate beam reactions are given in Interior Girder Reaction Table at the locations shown.

USER NAME = oyargicoglu(Rdwy_Lisle)	DESIGNED - A.Y./L.C.	REVISED -
PLOT CONFIG= PDF(1-80_TopoGrey_Large).plt	DRAWN - L.C./A.Y.	REVISED -
PLOT SCALE = 1:5	CHECKED - A.Y./R.L.D.	REVISED -
PLOT DATE = 2/8/2011	DATE - 01/21/2011	REVISED -

HBP Illinois Partners

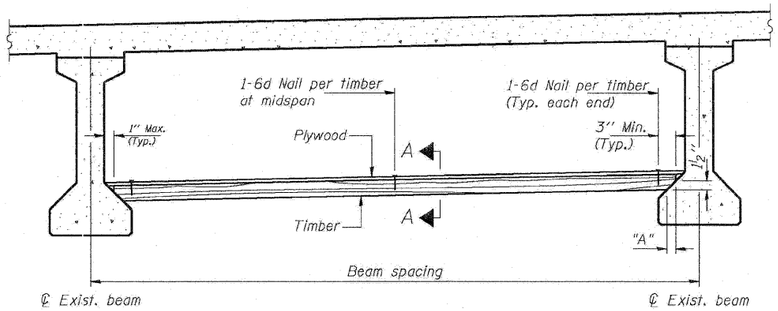
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 4 REPAIRS
EASTBOUND I-80 OVER CNRR AND ROWELL AVENUE
SN 099-0066

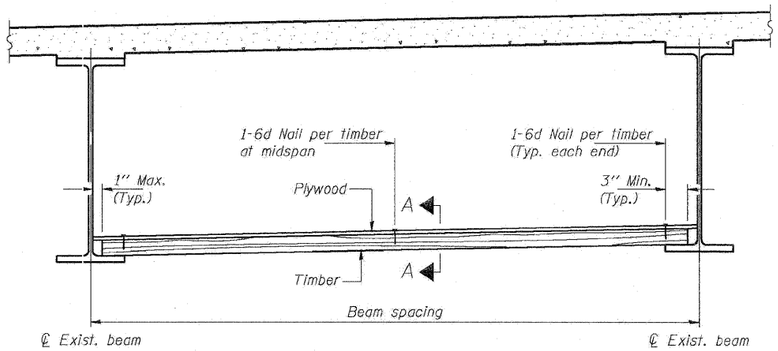
SCALE: | SHEET S6 of S8 | STA. | TO STA.

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99 (2&3) RS-3	WILL	200	182
		CONTRACT NO. 60M64		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

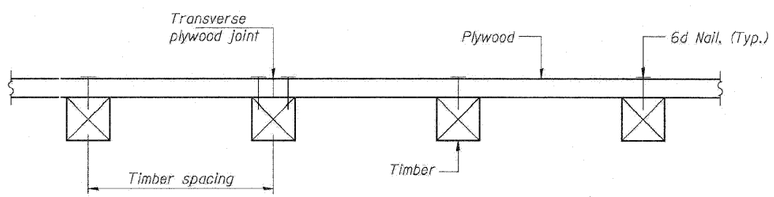
\\fsl\tranprojects\idot\21050.205 (i-80 phase 1)\drawings\cadd sheets\bridge p&e\rowell\EB\099-0066-D160M64-Piers2-Rowell.dgn



PPC I-BEAMS AND BULB-T's



STEEL BEAMS



SECTION A-A

TIMBER SPACING

Beam Spacing (ft.)	Timber Sizes (in.) 4" x 4" with min. Fb=775 psi Fv=135 psi	4" x 6" with min. Fb=775 psi Fv=135 psi	6" x 6" with min. Fb=575 psi Fv=125 psi
	Maximum Timber Spacing (in.)		
4.5	16	16	16
4.75	16	16	16
5.0	16	16	16
5.25	16	16	16
5.5	16	16	16
5.75	16	16	16
6.0	16	16	16
6.25	12	16	16
6.5	12	16	16
6.75	12	16	16
7.0	8	16	16
7.25	8	16	16
7.5	8	16	16
7.75	8	16	16
8.0	8	12	16
8.25	8	12	16
8.5	6	12	12
8.75	6	12	12
9.0	6	8	12

PPC I-BEAMS AND BULB-T's

BEAM	"A"
36" I-Beam	1½"
42" I-Beam	1½"
48" I-Beam	1½"
54" I-Beam	1⅝"
63" Bulb-T	3⅜"
72" Bulb-T	3⅜"

Notes: See special provision for Permanent Protective Shield System.

Timber sizes shown are nominal sizes. Rough sawn timber of the dimensions shown will also be considered acceptable.

The minimum Fb and Fv values shown are the tabulated design values given in the National Design Specification for Wood Construction for No. 2 Spruce-Pine-Fir without adjustment factors applied. Better grades or other species with equal or higher allowable stresses will also be considered acceptable.

The timber spacings shown have been determined using allowable stresses with all adjustment factors necessary for the anticipated service conditions.

All timber shall be treated.

Plywood shall be ⅝" Exterior type plywood(per American Plywood Association).

Plywood shall be placed such that the face grain is perpendicular to the timber supports. When less than a full sheet (4' width) of plywood is used, the width of the strip used shall not be less than 2'.

Transverse plywood joints shall be supported by timbers.

When 4" x 6" timbers are used, they shall be placed such that the wide face is horizontal and the narrow face is vertical.

Design load = 200 psf.

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Protective Shield (Permanent)	Sq. Yd.	370

USER NAME = ayargicoglu(Rdwy_Lisle)	DESIGNED - A.Y./L.C.	REVISED -	
PLOT CONFIG= PDF(1-80_TopoGrey_Large).plt	DRAWN - L.C./A.Y.	REVISED -	
PLOT SCALE = 1:1.6	CHECKED - A.Y./R.L.D.	REVISED -	
PLOT DATE = 2/8/2011	DATE - 01/21/2011	REVISED -	

HBP Illinois Partners

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

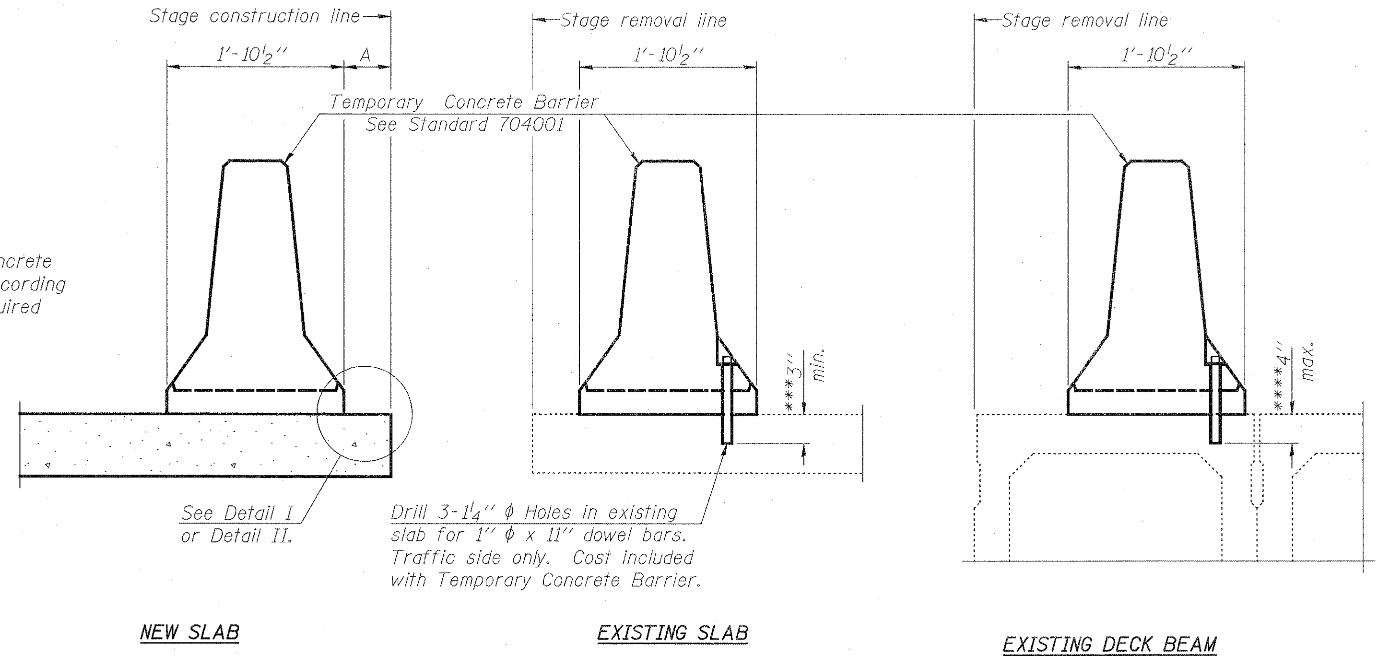
PERMANENT PROTECTIVE SHIELD
EASTBOUND I-80 OVER CNRR AND ROWELL AVENUE
SN 099-0066

SCALE: | SHEET S7 of S8 | STA. | TO STA.

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99 (2&3) RS-3	WILL	200	183
		CONTRACT NO. 60M64		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

\\fsl\tranprojects\ickt\21050.025 (i-80 phase ii)\drawings\cadd sheets\bridge p&e\rowell\EB\099-0066-D160M64-PermanentProtectiveShield.dgn

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" x 7' 'x "W" steel PL to the top layer of couplers with 2-⅝" ϕ bolts screwed to coupler at approximate ℄ of each barrier panel.

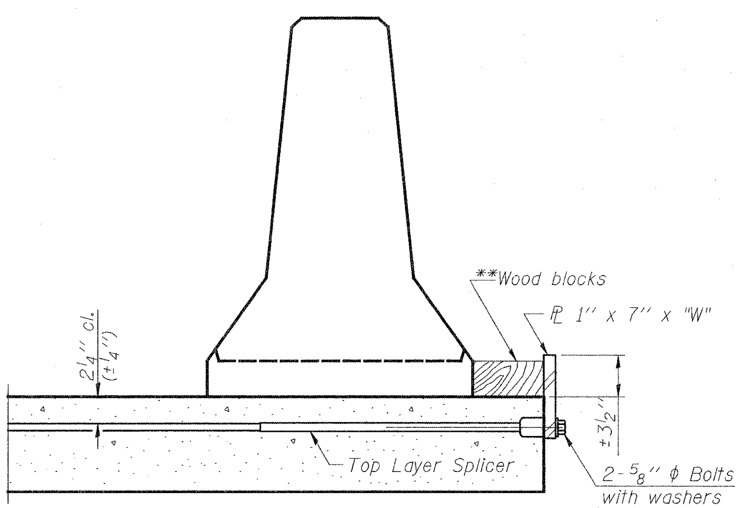
Detail II - With Extended Reinforcement Bars:
Connect one (1) 1" x 7" x "W" steel PL to the concrete slab or concrete wearing surface with 2-⅝" ϕ Expansion Anchors or cast in place inserts spaced between the top layer of reinforcement at approximate ℄ of each barrier panel.

Cost of anchorage is included with Temporary Concrete Barrier.

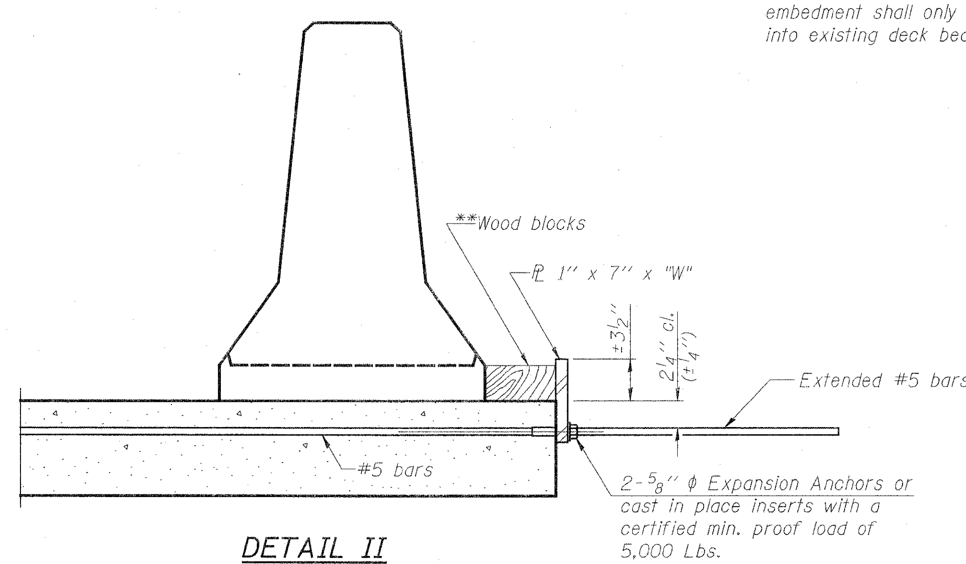
The 1" x 7" x "W" plate shall not be removed until stage II construction forms and all reinforcement bars are in place and the concrete is ready to be placed.

*** 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.

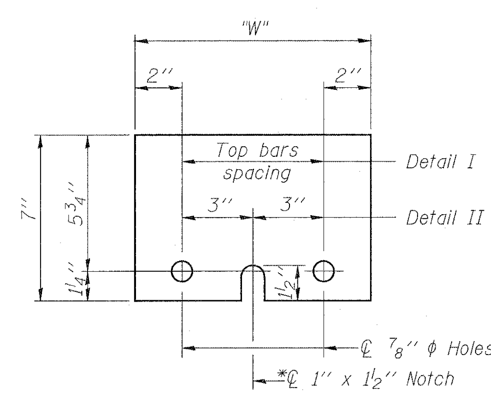
**** If existing deck beam is to remain in place after stage construction, embedment shall only be into wearing surface and not into existing deck beam concrete.



DETAIL I



DETAIL II



STEEL RETAINER PL 1" x 7" x "W"

* Required only with Detail II

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

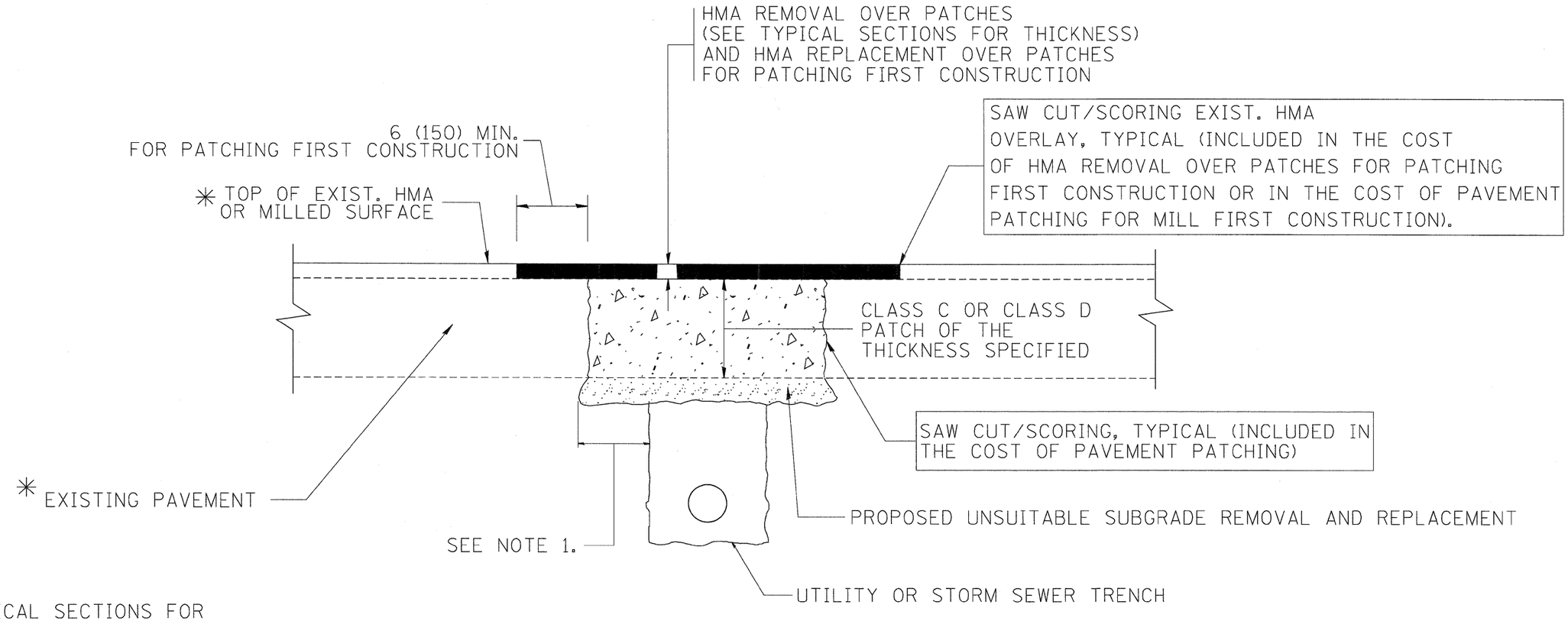
"W" = Top bars spacing + 4"

R-27 7-1-10

USER NAME = ayargıcoglu(Rdwy_Lısle)	DESIGNED - A.Y./L.C.	REVISED -	HBP Illinois Partners	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	TEMPORARY CONCRETE BARRIER FOR STAGE CONSTRUCTION EASTBOUND I-80 OVER CNRR AND ROWELL AVENUE SN 099-0066
PLOT CONFIG= PDF(I-80_TopoGrey_Large).plt	DRAWN - L.C./A.Y.	REVISED -			
PLOT SCALE = 1:16	CHECKED - A.Y./R.L.D.	REVISED -			
PLOT DATE = 2/8/2011	DATE - 01/21/2011	REVISED -			SCALE: SHEET S8 of S8 STA. TO STA.

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99 (2&3) RS-3	WILL	200	184
		CONTRACT NO. 60M64		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

q:\ıdot\21050.005 (ı-80 phase ıı)\drawıngs\cadd sheets\brıdge p&e\rowell\eb\099-0066-D160M64-Temporary Concrete Barrıer.dgn



* 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)

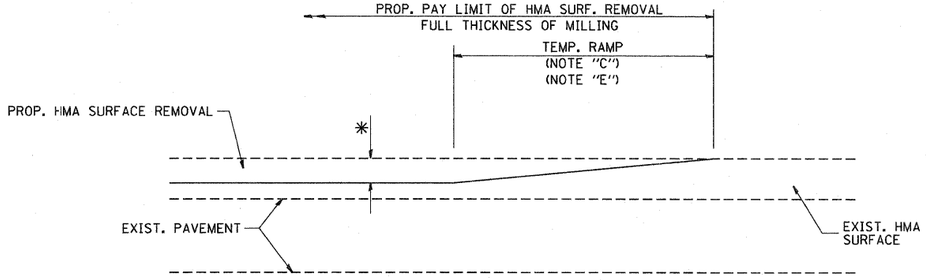
1. REMOVE THE EXISTING HMA MATERIAL OVER THE AREA TO BE PATCHED.
2. REMOVE AND REPLACE WITH CLASS C OR D PATCH.
3. REPLACE HMA MATERIAL OVER THE AREA TO BE PATCHED.

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.

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

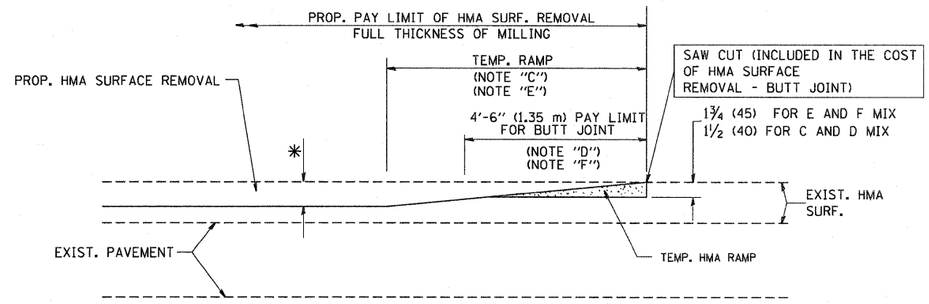
FILE NAME = c:\projects\distatd22x34\bd22.dgn	USER NAME = bauerdl	DESIGNED - R. SHAH	REVISED - A. ABBAS 04-27-98	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PAVEMENT PATCHING FOR HMA SURFACED PAVEMENT			F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN -	REVISED - R. BORO 01-01-07					80	2010-150-DTR	80	200	185
	PLOT SCALE = 50.000 ' / IN.	CHECKED -	REVISED - R. BORO 09-04-07						BD400-04 (BD-22)	CONTRACT NO.		60M64
	PLOT DATE = 10/27/2008	DATE - 10-25-94	REVISED - K. ENG 10-27-08		SCALE: NONE	SHEET NO. 1 OF 1 SHEETS	STA. TO STA.	FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



MILLED TEMPORARY RAMP

(FOR BUTT JOINT AND HMA TAPER SEE DETAIL BELOW)

OPTION 1

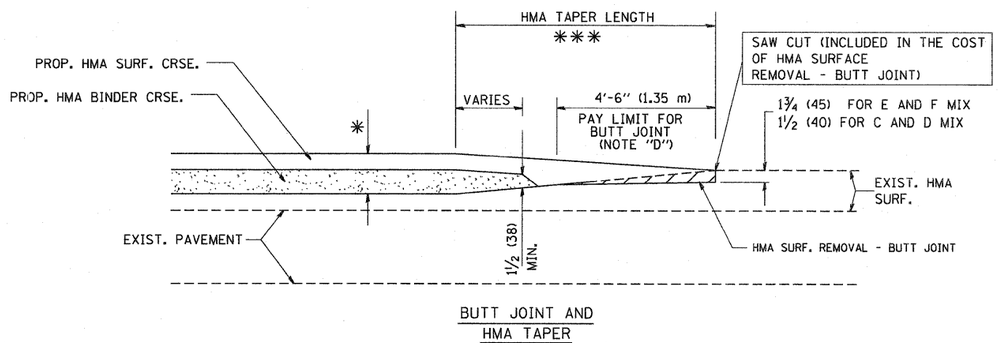


HMA CONSTRUCTED TEMPORARY RAMP

(FOR BUTT JOINT AND HMA TAPER SEE DETAIL BELOW)

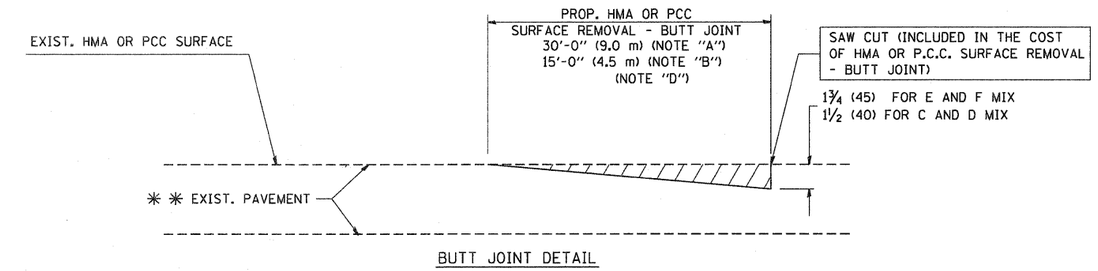
OPTION 2

TYPICAL TEMPORARY RAMP

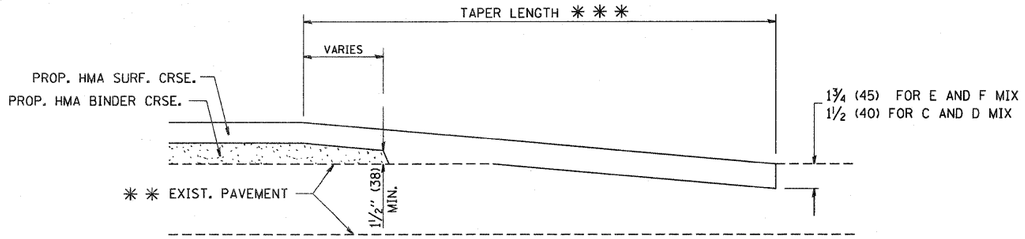


BUTT JOINT AND HMA TAPER

TYPICAL BUTT JOINT AND HMA TAPER FOR MILLING AND RESURFACING



BUTT JOINT DETAIL



HMA TAPER DETAIL

TYPICAL BUTT JOINT AND HMA TAPER FOR RESURFACING ONLY

* * PC CONCRETE, HMA OR HMA RESURFACED PAVEMENT.

NOTES

A: MAINLINE ROADWAYS AND MAJOR SIDE ROADS.

B: MINOR SIDE ROADS.

C: THE TEMP. RAMP SHALL BE CONSTRUCTED IMMEDIATELY UPON REMOVAL OF THE EXISTING HMA SURFACE.

D: THE BUTT JOINT SHALL BE CONSTRUCTED IMMEDIATELY PRIOR TO PLACING THE PROPOSED HMA COURSES.

E: TAPER THE TEMP. RAMP AT A RATE OF 3'-0" (900 mm) PER 1 INCH (25 mm) OF MILLING THICKNESS.

F: INSTALLATION AND REMOVAL OF THE 4'-6" (1.35 m) TEMP. RAMP IS INCLUDED IN COST OF HMA SURFACE REMOVAL - BUTT JOINT

G: SEE ARTICLE 406.08 AND 406.14 OF THE STANDARD SPECIFICATIONS FOR "HMA AND/OR PCC SURFACE REMOVAL, BUTT JOINT".

* SEE TYPICAL SECTIONS FOR MILLING THICKNESS.

* * * 20'-0" (6.1 m) PER 1 (25) RESURFACING (NOTE "A")
10'-0" (3.0 m) PER 1 (25) RESURFACING (NOTE "B")

BASIS OF PAYMENT:

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

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

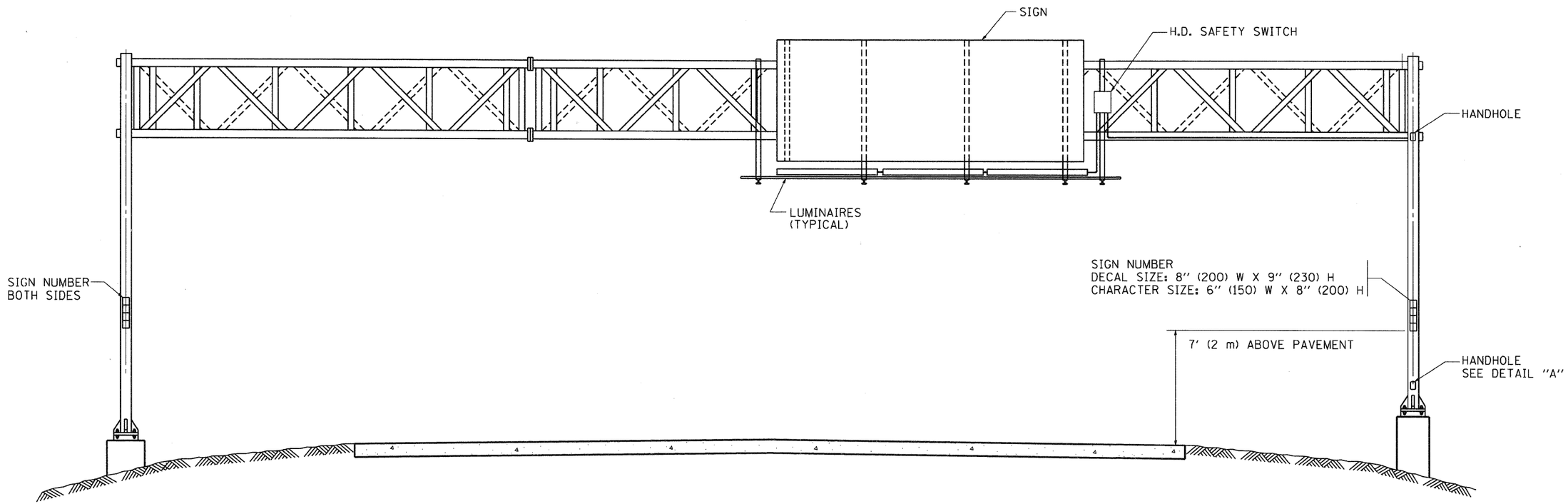
FILE NAME = W:\d:\stdt\22x34\bc32.dgn	USER NAME = gaglianobt	DESIGNED - M. DE YONG	REVISED - R. SHAH 10-25-94
		DRAWN -	REVISED - A. ABBAS 03-21-97
	PLOT SCALE = 50.0000 ' / IN.	CHECKED -	REVISED - M. GOMEZ 04-06-01
	PLOT DATE = 1/4/2008	DATE - 06-13-90	REVISED - R. BORO 01-01-07

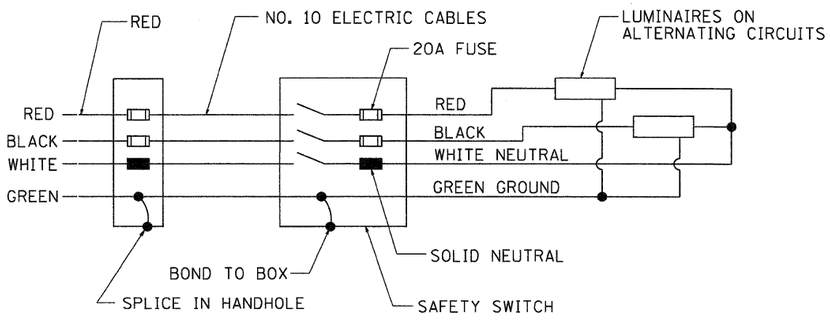
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BUTT JOINT AND HMA TAPER DETAILS

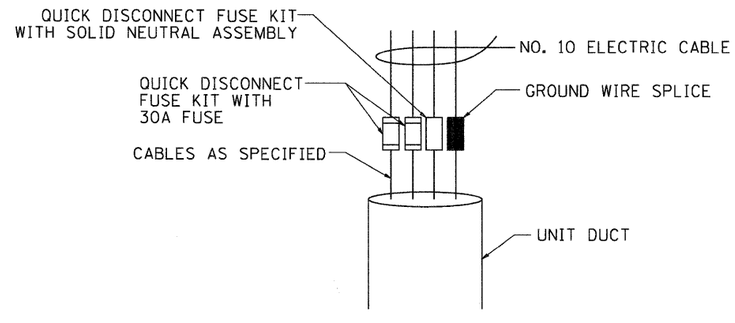
SCALE: NONE | SHEET NO. 1 OF 1 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99 (2 & 3) RS-3	80	200	186
	BD400-05 BD32	CONTRACT NO. 60M64		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		





WIRING DIAGRAM



DETAIL A

NOTES:

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

INFORMATION ONLY

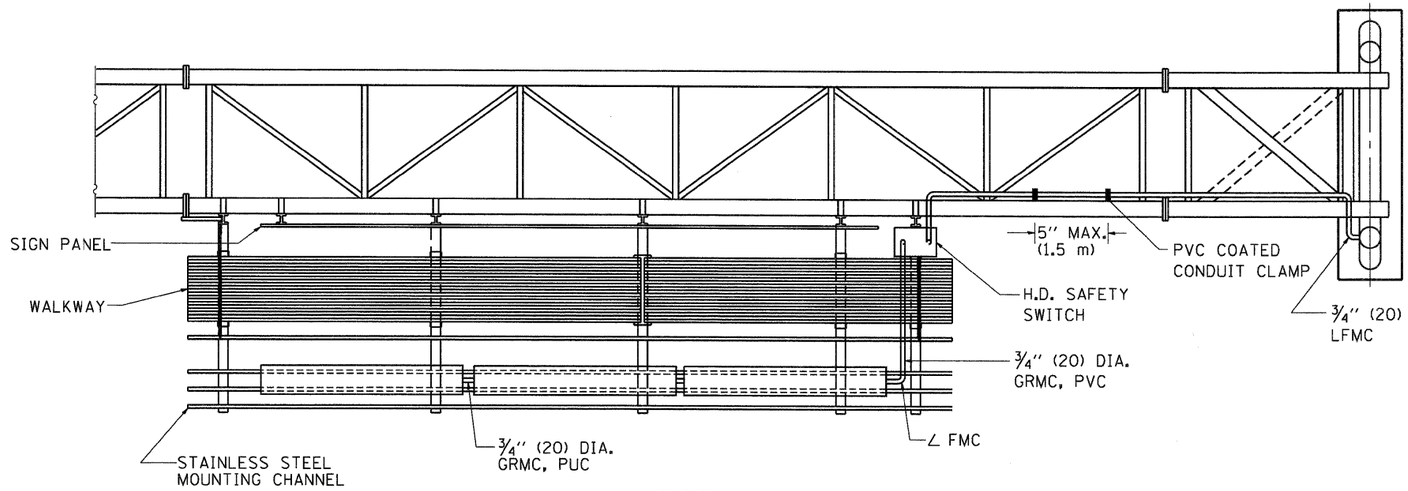
FILE NAME = W:\diststd\22x34\be600.dgn	USER NAME = gaglionobt	DESIGNED -	REVISED - 09-19-04
		DRAWN -	REVISED -
	PLOT SCALE = 50.0000 ' / IN.	CHECKED -	REVISED -
	PLOT DATE = 1/4/2008	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

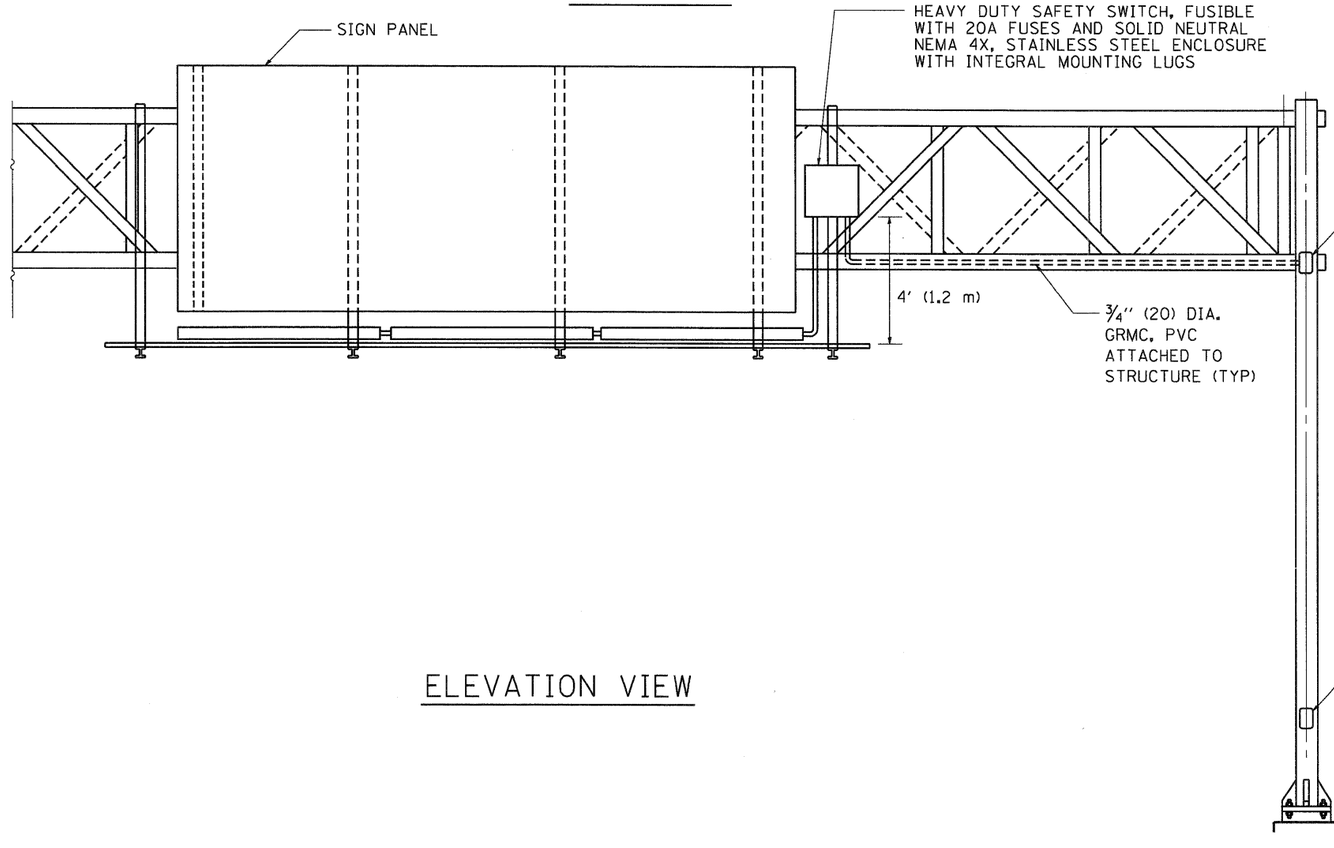
ELECTRIC CONNECTION TO SIGN STRUCTURE
SPAN TYPE

SCALE: NONE | SHEET NO. 1 OF 2 SHEETS | STA. | TO STA.

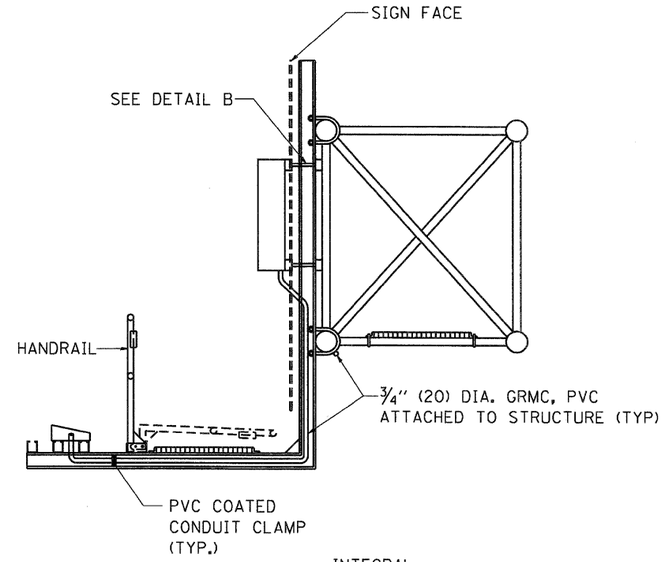
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	2010-150-DTR	80	200	187
	BE-600	CONTRACT NO. 60M64		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

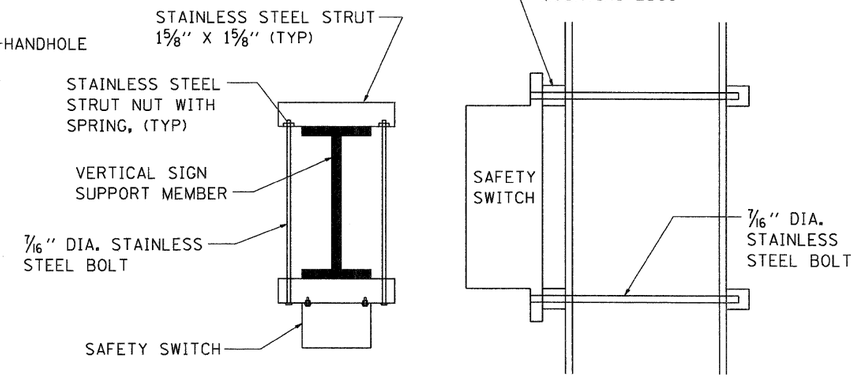


TOP VIEW



ELEVATION VIEW





TOP VIEW SIDE VIEW

DETAIL B

INFORMATION ONLY

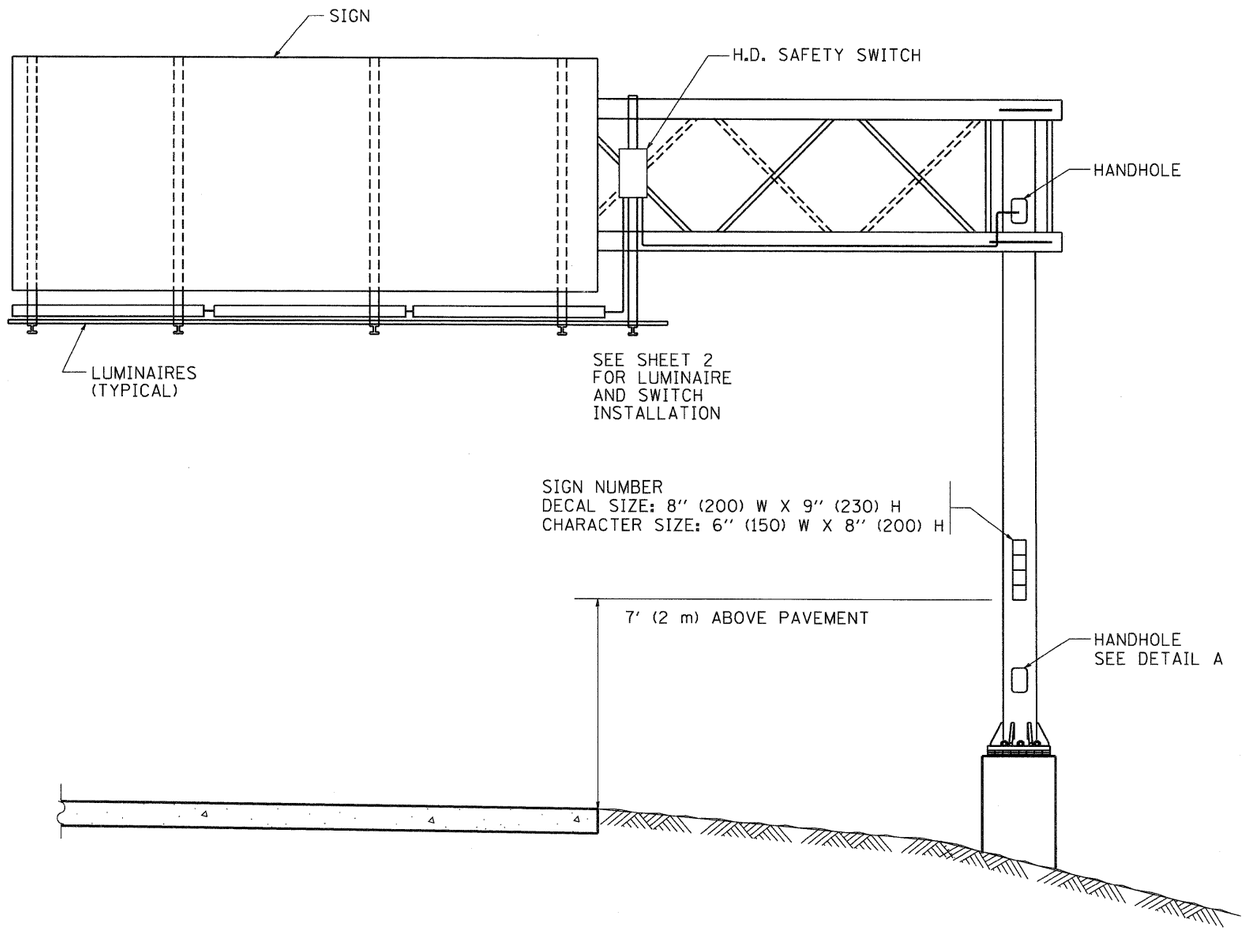
FILE NAME = W:\diststd\22x34\be600.dgn	USER NAME = gaglianobt	DESIGNED -	REVISED - 09-19-04
		DRAWN -	REVISED -
	PLOT SCALE = 50.0000 ' / IN.	CHECKED -	REVISED -
	PLOT DATE = 1/4/2008	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ELECTRIC CONNECTION TO SIGN STRUCTURE
SPAN TYPE

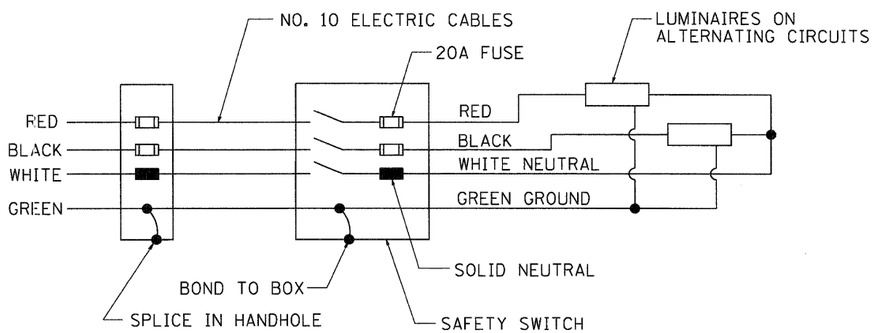
SCALE: NONE | SHEET NO. 2 OF 2 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	2010-150-DTR	80	200	188
	BE-600	CONTRACT NO.	60M64	
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

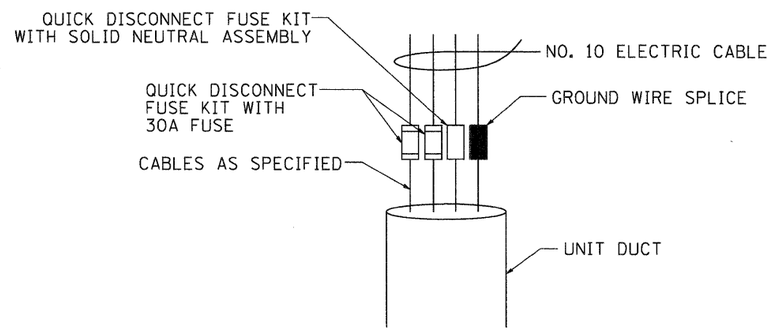


NOTES:

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



WIRING DIAGRAM



DETAIL A

INFORMATION ONLY

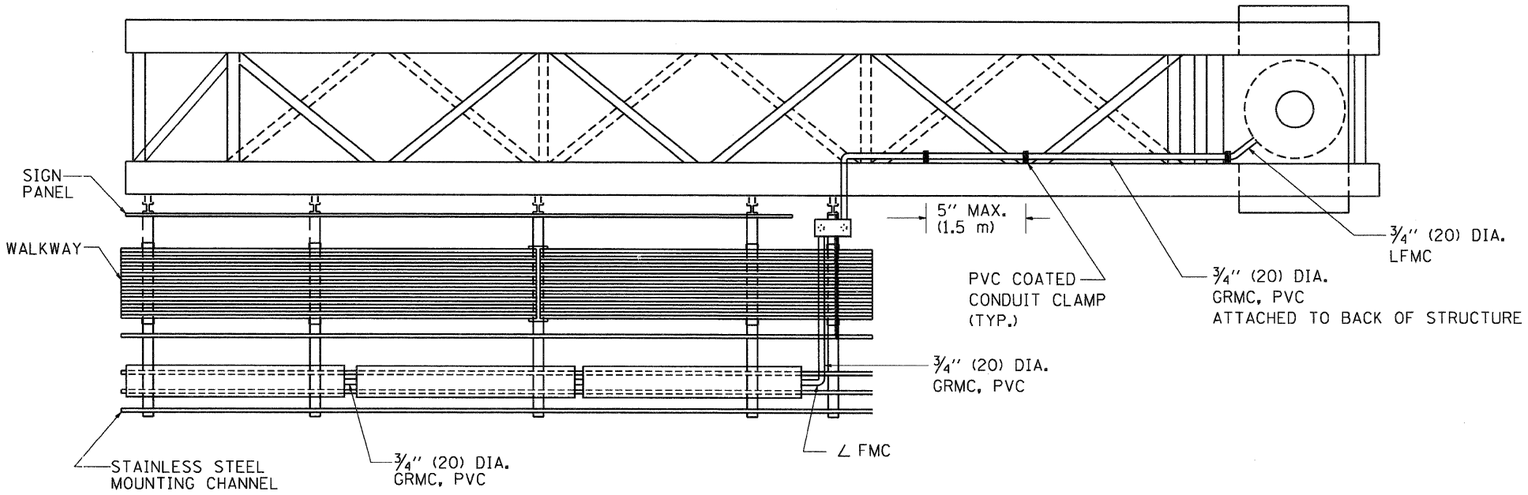
FILE NAME = W:\diststd\22x34\be601.dgn	USER NAME = gaglianobt	DESIGNED -	REVISED - 08-19-04
		DRAWN -	REVISED -
	PLOT SCALE = 50.0000 ' / IN.	CHECKED -	REVISED -
	PLOT DATE = 1/4/2008	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

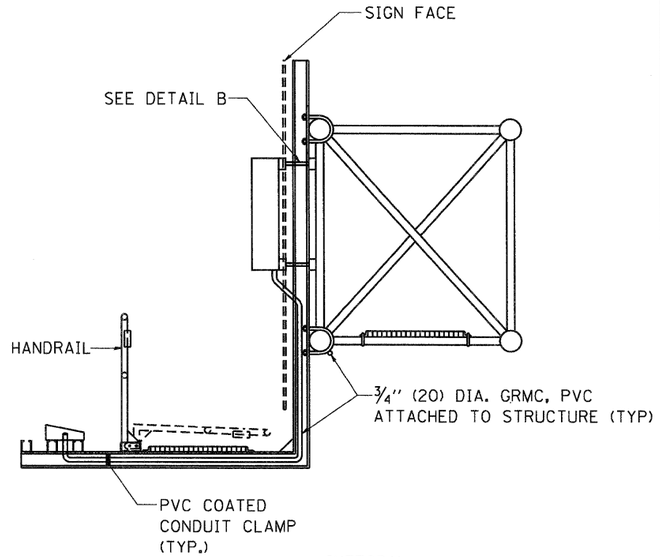
ELECTRIC CONNECTION TO SIGN STRUCTURE
CANTILEVER TYPE

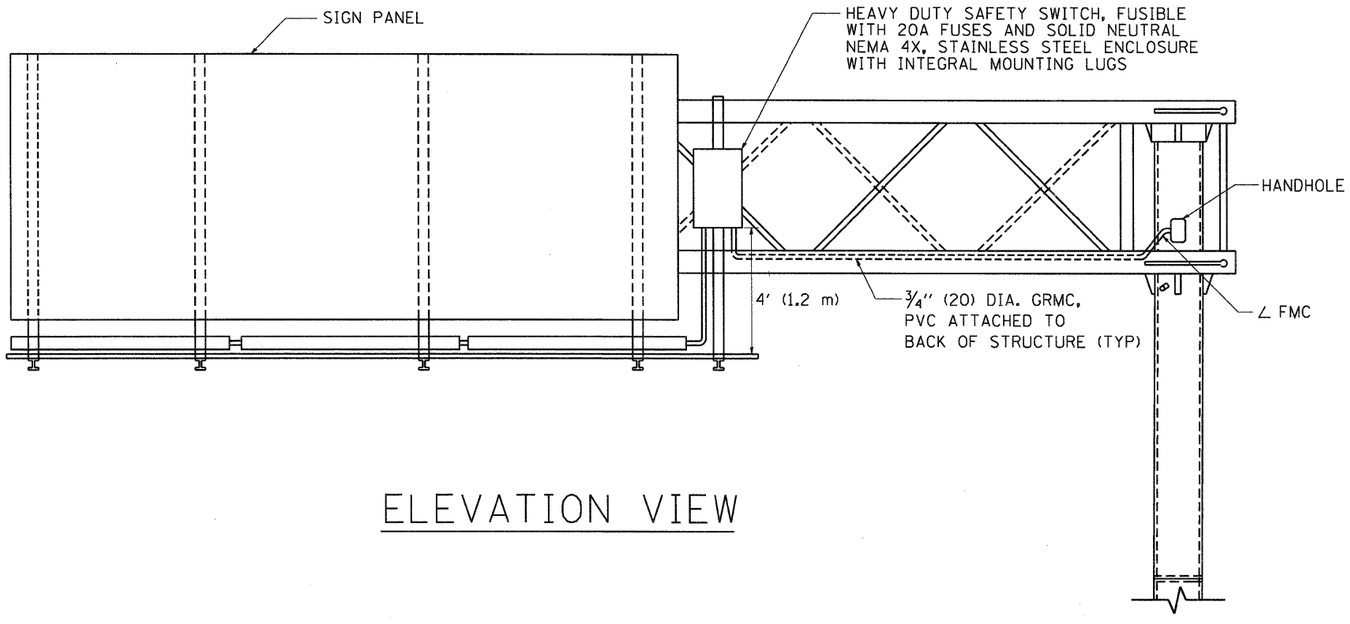
SCALE: NONE | SHEET NO. 1 OF 2 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	2010-150-DTR	80	200	189
	BE-601	CONTRACT NO. 60M64		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

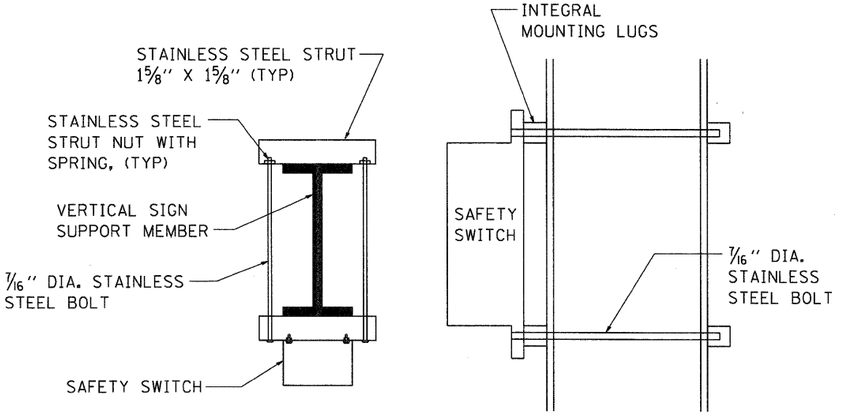


TOP VIEW





ELEVATION VIEW

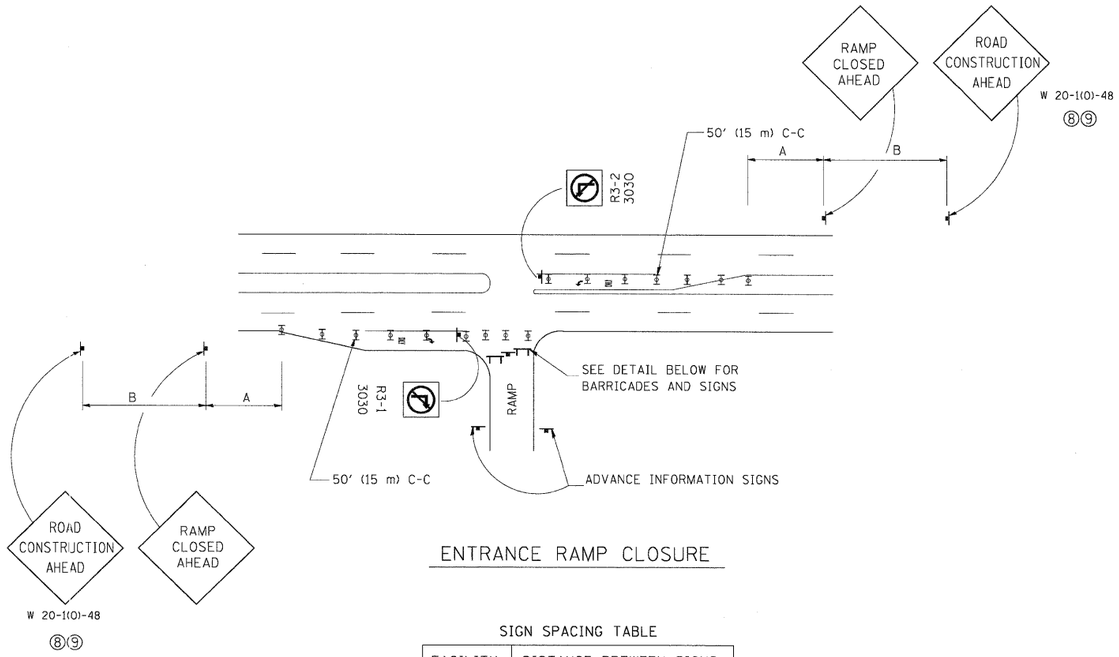


TOP VIEW SIDE VIEW

DETAIL B

INFORMATION ONLY

FILE NAME = W:\diststd\22x34\be601.dgn	USER NAME = gaglianobt	DESIGNED -	REVISED - 08-19-04	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	ELECTRIC CONNECTION TO SIGN STRUCTURE CANTILEVER TYPE	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN -	REVISED -			80	2010-150-DTR	80	200	190
	PLOT SCALE = 50.0000 ' / IN.	CHECKED -	REVISED -				BE-601	CONTRACT NO. 60M64		
	PLOT DATE = 1/4/2008	DATE -	REVISED -		SCALE: NONE / SHEET NO. 2 OF 2 SHEETS / STA. / TO STA.	FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

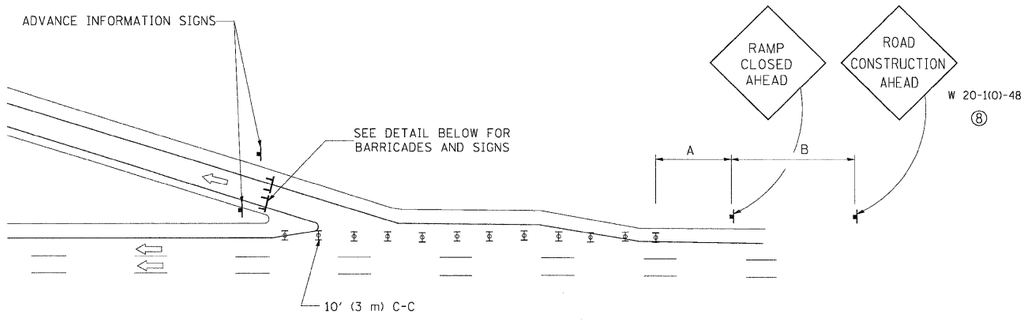


ENTRANCE RAMP CLOSURE

SIGN SPACING TABLE

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

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

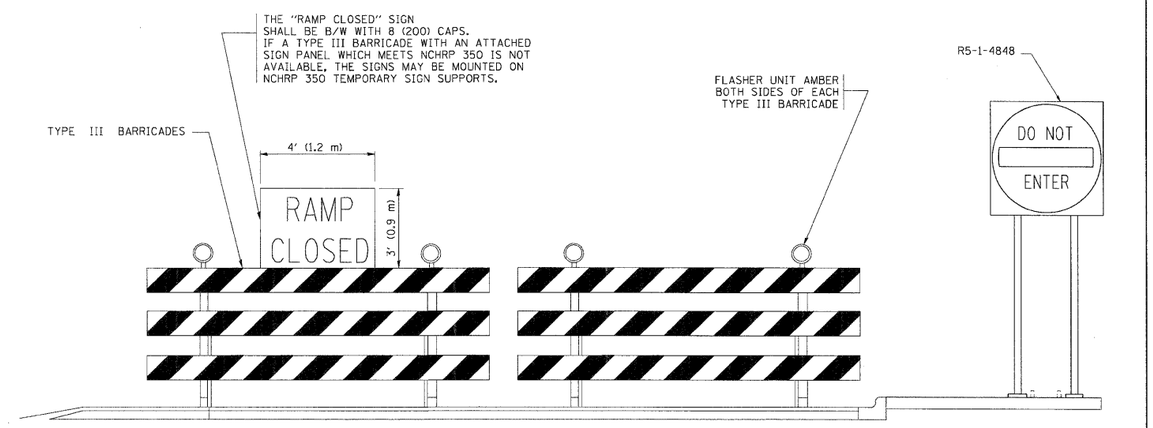


EXIT RAMP CLOSURE

SYMBOLS

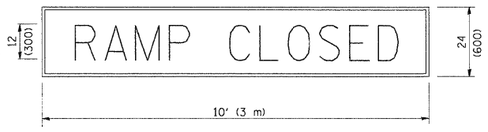
TYPE II BARRICADE, DRUM OR VERTICAL BARRICADE WITH STEADY BURN MONO-DIRECTIONAL LIGHT

TYPE III BARRICADE WITH FLASHING LIGHT



DETAIL FOR REQUIRED BARRICADES & SIGNS

RAMP CLOSURE ADVANCE WARNING SIGN

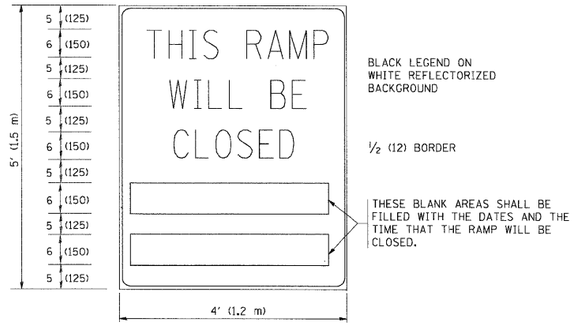


BLACK LEGEND ON ORANGE REFLECTORIZED BACKGROUND

1 (25) BORDER

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

RAMP CLOSURE ADVANCE INFORMATION SIGN



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

GENERAL NOTES:

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

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

FILE NAME = W:\diststd\22x34\tc08.dgn	USER NAME = leyse	DESIGNED - DWS	REVISED - DWS/JAF 12-02
		DRAWN -	REVISED - JAF 02-06
	PLOT SCALE = 50.000 ' / IN.	CHECKED -	REVISED - SPB 01-07
	PLOT DATE = 1/26/2010	DATE - 02-83	REVISED - SPB 12-09

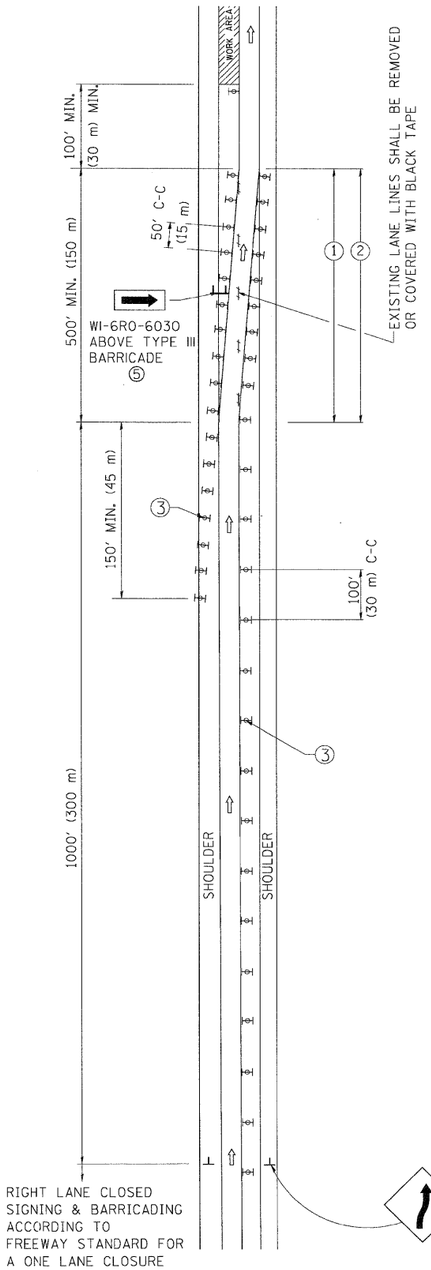
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FREEWAY ENTRANCE AND EXIST RAMP
CLOSURE DETAILS

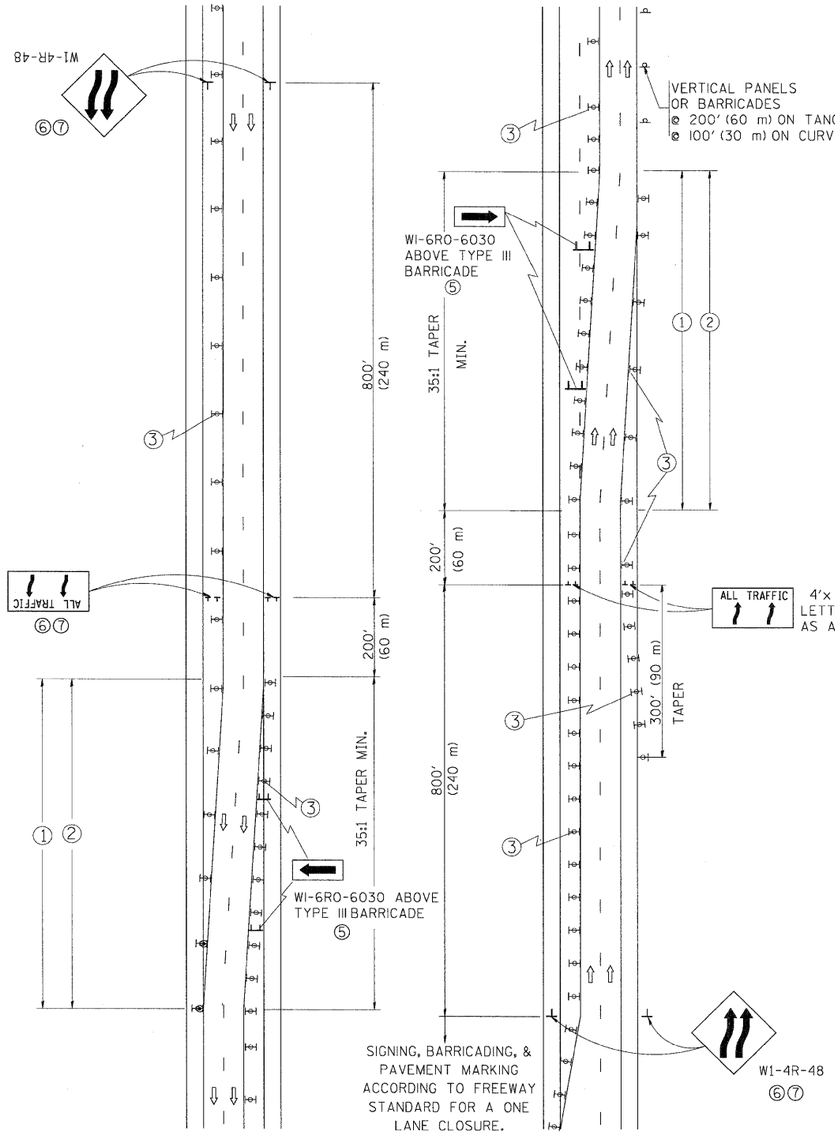
SCALE: NONE | SHEET NO. 1 OF 1 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	2010-150-DTR	80	200	191
	TC-08	CONTRACT NO.	60M64	
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

SINGLE LANE WEAVE



MULTI-LANE WEAVE



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

GENERAL NOTES

① EXISTING CONFLICTING PAVEMENT MARKING LINES SHALL BE REMOVED. PAVEMENT MARKING REMOVAL SHALL NOT BE REQUIRED FOR SINGLE LANE WEAVES UNDER 24 HOURS IN DURATION.

② CONTINOUS REFLECTIVE TEMPORARY PAVEMENT MARKING TAPE SHALL BE PLACED THROUGHOUT THE TAPER AND FOR 300' (90 m) ALONG SIDE THE WORK AREA WHERE THE CLOSURE TIME IS GREATER THAN FOURTEEN DAYS. THE LEFT EDGE LINE SHALL BE YELLOW AND THE RIGHT EDGE LINE SHALL BE WHITE. FOR MULTI-LANE WEAVES LANE LINES SHALL BE 5 INCH, 10'-30' (3 m-9 m) SKIP DASH, WHITE.

③ PLASTIC DRUMS WITH STEADY BURN LIGHTS AT 50' (15 m) C-C SPACING IN TAPERS AND 100' (30 m) C-C SPACING IN TANGENTS.

④ ALL SIGNS SHALL BE POST MOUNTED IF THE CLOSURE TIME EXCEEDS FOUR DAYS.

⑤ IF A TYPE III BARRICADE WITH AN ATTACHED SIGN PANEL WHICH MEETS NCHRP 350 IS NOT AVAILABLE, THE SIGNS MAY BE MOUNTED ON NCHRP 350 TEMPORARY SIGN SUPPORTS. TYPE III BARRICADES MAY BE OMMITTED FOR SINGLE-LANE WEAVES UNDER 24-HOURS IN DURATION. W1-6 SIGNS WILL STILL BE REQUIRED. IF THE WIDTH OF OFFSET IS LESS THAN 6' THEN THE TYPE III BARRICADE WITH ATTACHED ARROW SIGN PANEL CAN BE ELIMINATED IN THE TAPER AREAS.

⑥ WHEN THE LENGTH OF THE SHIFTED SEGMENT (DISTANCE BETWEEN WEAVE POINTS) IS LESS THAN 1500', DOUBLE REVERSE CURVE SIGNS (W24-1) SHOULD BE USED INSTEAD OF THE REVERSE CURVE (W1-4) SIGNS. ARROWS ON THE 4'X8' "ALL TRAFFIC" SIGNS SHALL BE THE SAME SHAPE.

⑦ THE NUMBER OF ARROWS ON THESE SIGNS SHALL MATCH THE NUMBER OF LANES OPEN TO TRAFFIC.

SYMBOLS

- DIRECTION OF TRAFFIC
- WORK AREA
- SIGN ON PORTABLE OR PERMANENT SUPPORT
- TYPE II BARRICADE OR DRUM WITH MONO-DIRECTIONAL STEADY BURNING LIGHT

W24-1-48 ⑦

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN

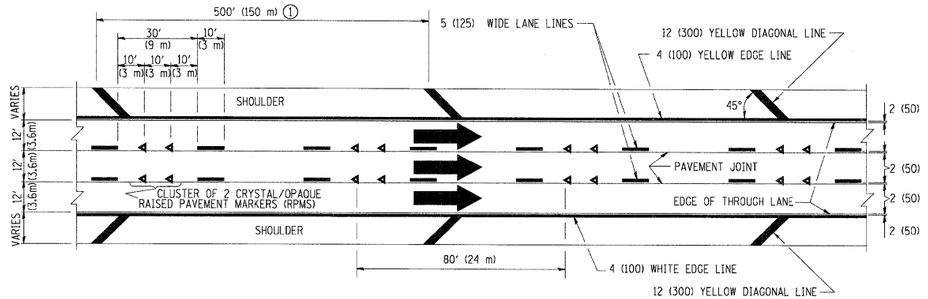
FILE NAME = Wi\diststd\22x34\tc09.dgn	USER NAME = leyse	DESIGNED - DWS	REVISED - JAF 01-03
		DRAWN -	REVISED - JAF 02-06
	PLOT SCALE = 50.000 ' / IN.	CHECKED -	REVISED - SPB 01-07
	PLOT DATE = 1/26/2010	DATE - 02-87	REVISED - SPB 12-09

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL DETAILS FOR FREEWAY SINGLE & MULTI-LANE WEAVE

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

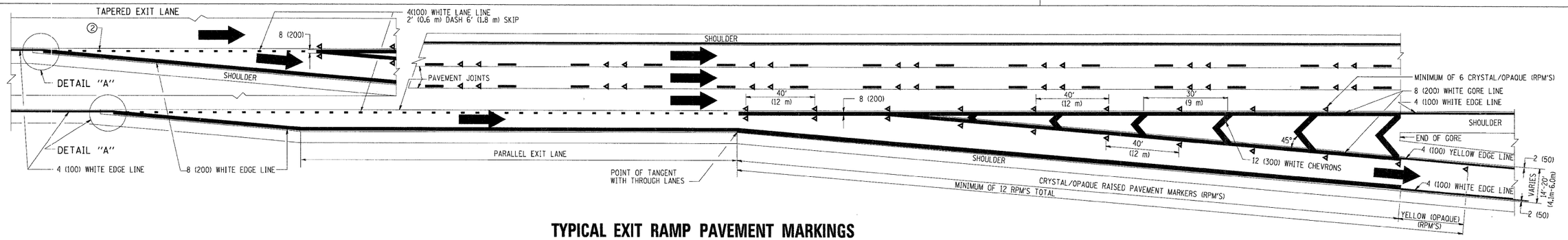
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	2010-150-DTR	80	200	192
	TC-09	CONTRACT NO. 60M64		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



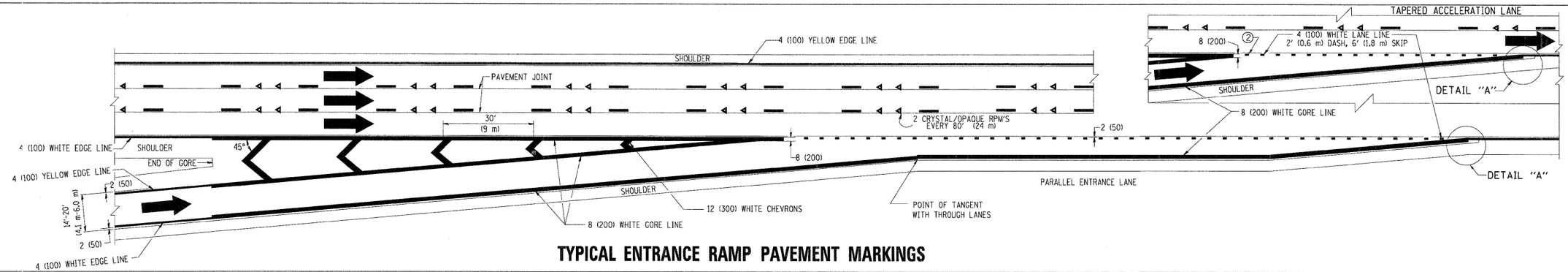
TYPICAL EDGE LINES & LANE LINES

PAVEMENT MARKING MATERIALS

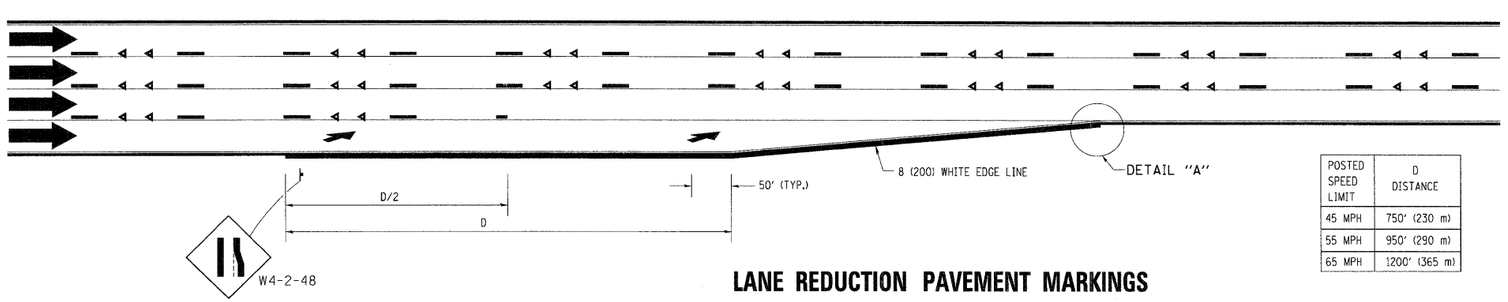
1. THERMO PLASTIC PAVEMENT MARKING LINE SHALL BE USED FOR THE EDGE LINES, GORE LINES, AND DIAGONAL LINES ON BITUMINOUS PAVEMENT ONLY.
2. PREFORMED PLASTIC TYPE B PAVEMENT MARKING LINE SHALL BE USED FOR ALL LANE LINES ON BITUMINOUS PAVEMENT.
3. POLYUREA PAVEMENT MARKING SHALL BE USED FOR ALL MARKINGS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



TYPICAL EXIT RAMP PAVEMENT MARKINGS

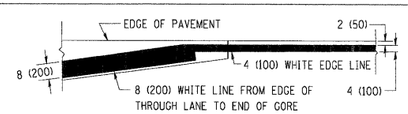


TYPICAL ENTRANCE RAMP PAVEMENT MARKINGS



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

LANE REDUCTION PAVEMENT MARKINGS



DETAIL "A"

NOTES:

① THE DIAGONAL LINES SHALL BE SPACED AT 40' (12 m) C-C ACROSS ALL STRUCTURES WHICH ARE 500' (150 m) OR LESS IN LENGTH. THE DIAGONAL LINES ARE NOT REQUIRED ON SHOULDERS WHICH ARE 6' (1.8 m) OR LESS IN WIDTH.

② 4" (2' DASH, 6' SKIP) MARKING ON TAPERED ENTRANCE AND EXIT RAMP SHALL BE OMITTED ON TANGENT SECTIONS.

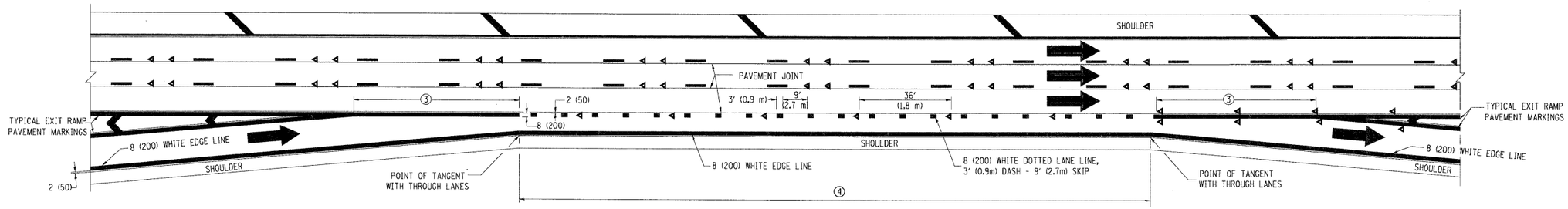
FILE NAME = c:\pw_work\PWIDOT\LEYSA\d0106315\tc12.dgn	USER NAME = leysa	DESIGNED - D.W.S.	REVISED - D.W.S. 07-96
		DRAWN -	REVISED - J.A.F. 02-06
	PLOT SCALE = 50.000 ' / IN.	CHECKED -	REVISED - S.P.B. 01-07
	PLOT DATE = 1/22/2010	DATE - 01-90	REVISED - S.P.B. 01-10

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

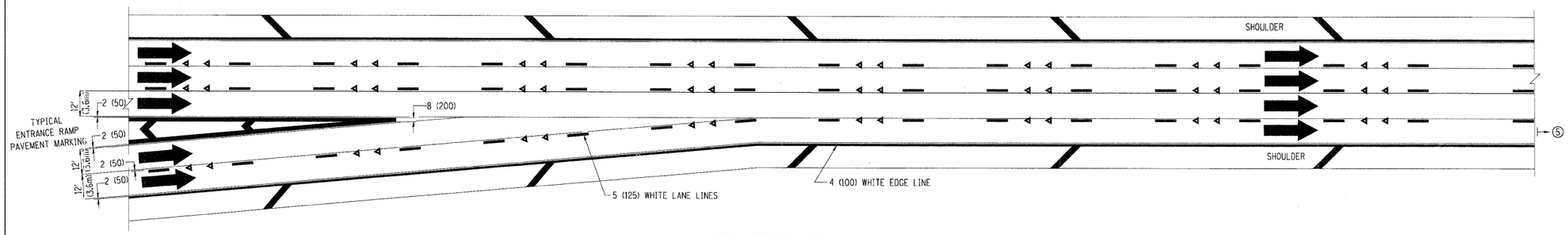
MULTI-LANE FREEWAY
PAVEMENT MARKING DETAILS

SCALE: NONE | SHEET NO. 1 OF 2 SHEETS | STA. | TO STA.

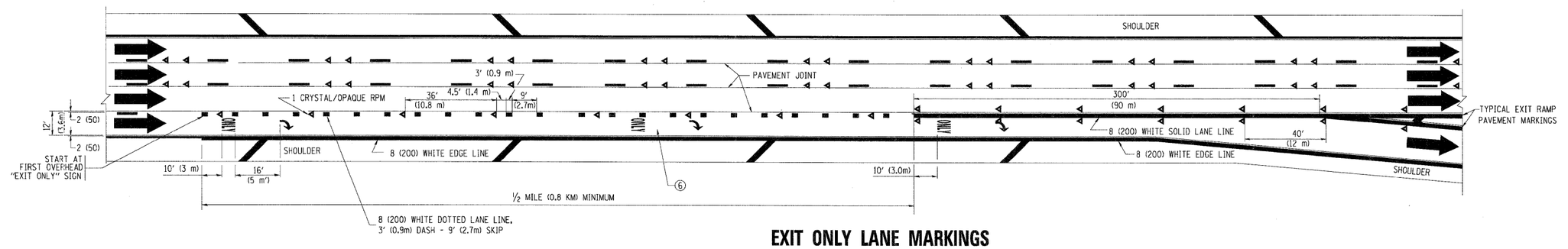
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	2010-150-DTR	80	200	193
	TC-12	CONTRACT NO. 60M64		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



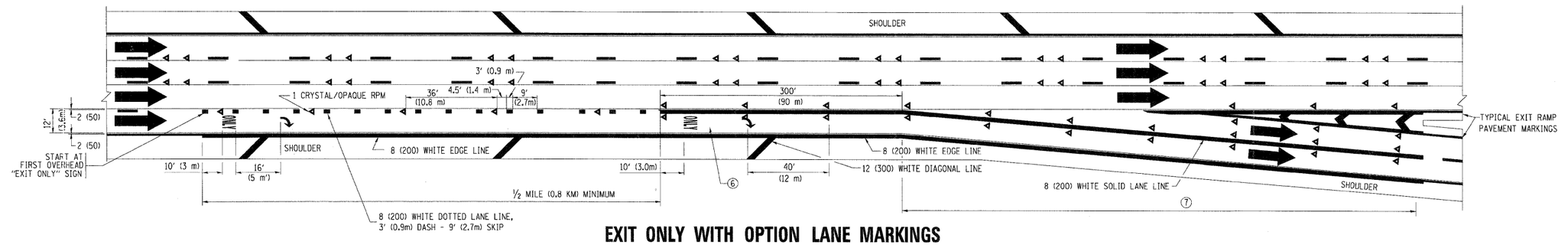
AUXILIARY LANE MARKINGS



TWO LANE ENTRANCE RAMP WITH MERGE MARKINGS



EXIT ONLY LANE MARKINGS



EXIT ONLY WITH OPTION LANE MARKINGS

NOTES

③ OMIT WHEN LENGTH OF AUXILIARY LANE IS LESS THAN 500' (150 m).

④ 8-INCH WIDE DOTTED LANE LINE MARKINGS SHALL BE USED WHEN THE LENGTH OF THE AUXILIARY LANE IS 2 MILES OR LESS.

⑤ FOR TWO-LANE ENTRANCE RAMP, IF RIGHT LANE ENDS, USE TYPICAL ENTRANCE RAMP PAVEMENT MARKINGS.

⑥ ONLY AND ARROWS EQUALLY SPACED, 500' (150 m) MAXIMUM SPACING. FULL SIZE LETTERS AND ARROW SHALL BE USED.

⑦ CONTINUE 8" SOLID LANE LINE THROUGH EXIT TO END OF PAVED GORE.

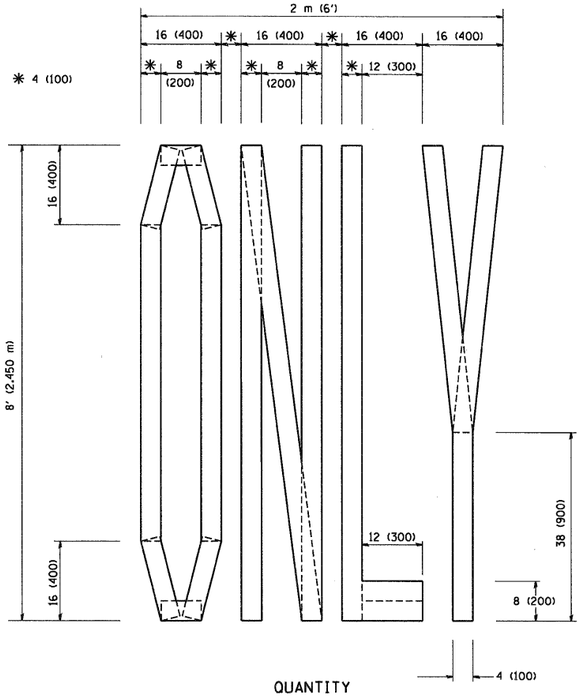
FILE NAME = c:\pw_work\PWIDOT\LEYSA\d0108315\tc12.dgn	USER NAME = leysa	DESIGNED - D.W.S.	REVISED - D.W.S. 07-96
		DRAWN -	REVISED - J.A.F. 02-06
	PLOT SCALE = 50.000 ' / IN.	CHECKED -	REVISED - S.P.B. 01-07
	PLOT DATE = 1/22/2010	DATE - 01-90	REVISED - S.P.B. 01-10

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

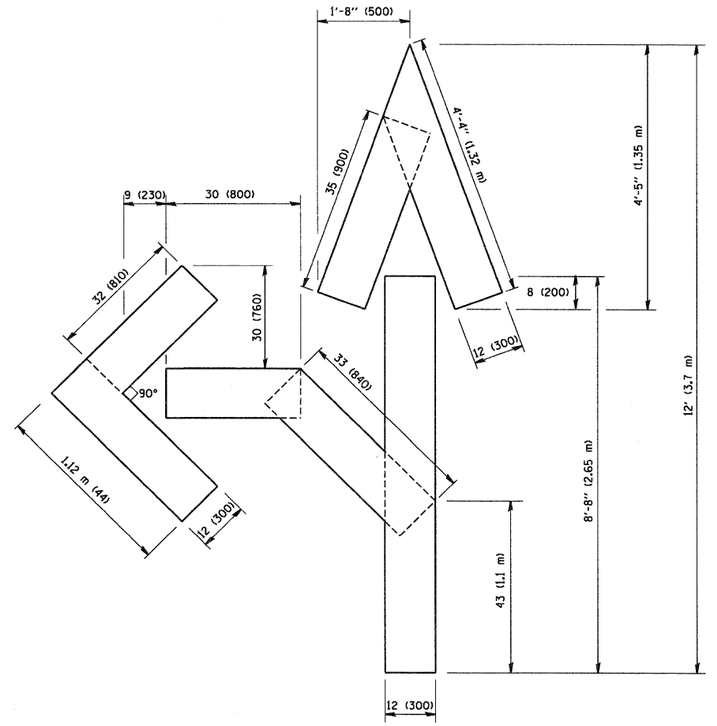
MULTI-LANE FREEWAY
PAVEMENT MARKING DETAILS

SCALE: NONE | SHEET NO. 2 OF 2 SHEETS | STA. | TO STA.

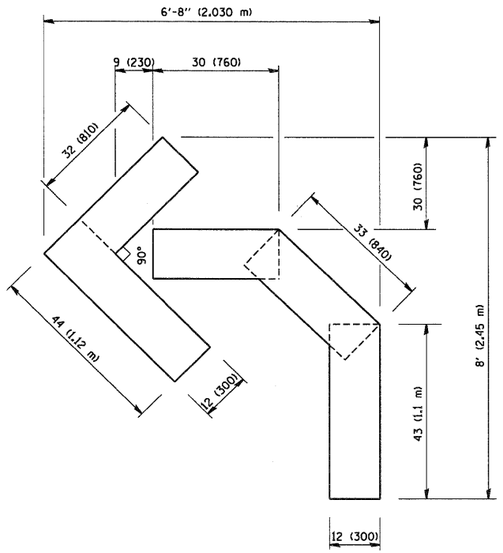
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	2010-150-DTR	80	200	194
	TC-12	CONTRACT NO. 60M64		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



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



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



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

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

FILE NAME = W:\diststd\22x34\tc16.dgn	USER NAME = gaglionobt	DESIGNED -	REVISED -T. RAMMACHER 06-05-96
		DRAWN -	REVISED -T. RAMMACHER 11-04-97
	PLOT SCALE = 50.0000 ' / IN.	CHECKED -	REVISED -T. RAMMACHER 03-02-98
	PLOT DATE = 1/4/2008	DATE - 09-18-94	REVISED -E. GOMEZ 08-28-00

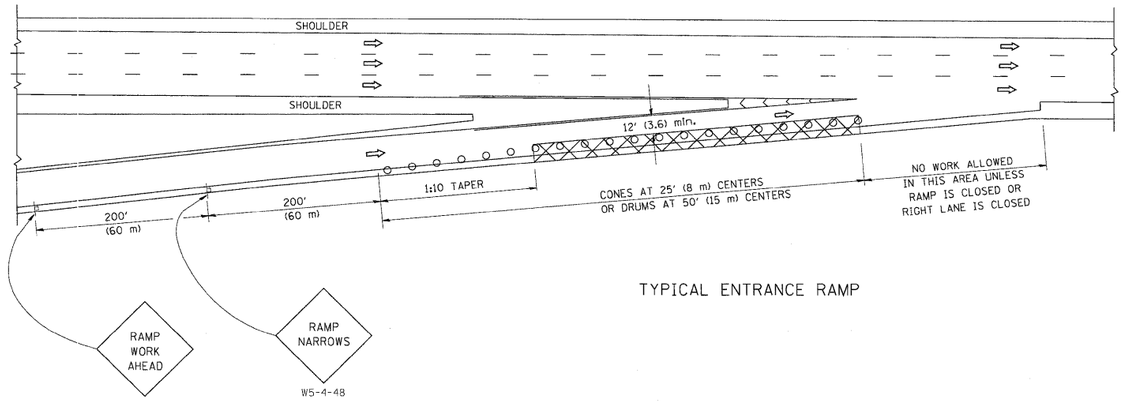
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKING LETTERS AND SYMBOLS FOR TRAFFIC STAGING

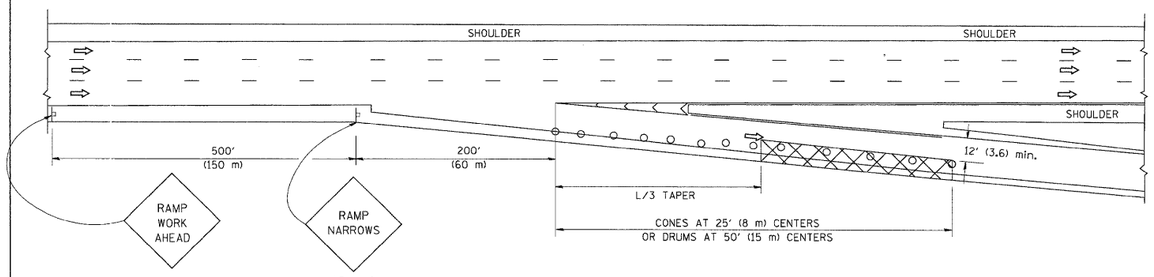
SCALE: NONE | SHEET NO. 1 OF 1 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	2010-150-DTR	80	200	195
	TC-16	CONTRACT NO. 60M64		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

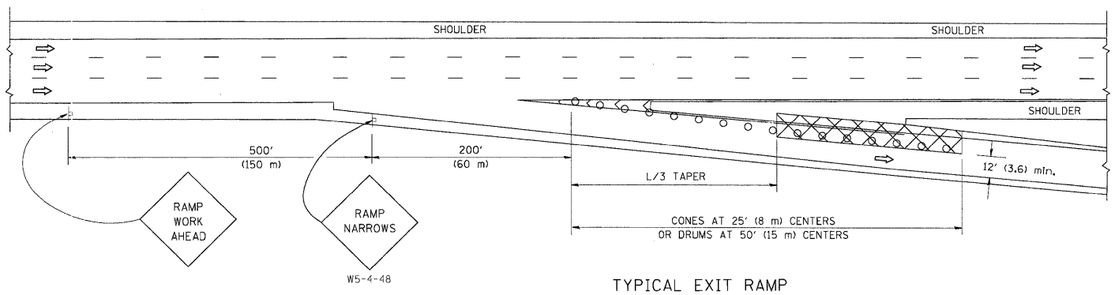
PARTIAL RAMP CLOSURE DETAILS



TYPICAL ENTRANCE RAMP

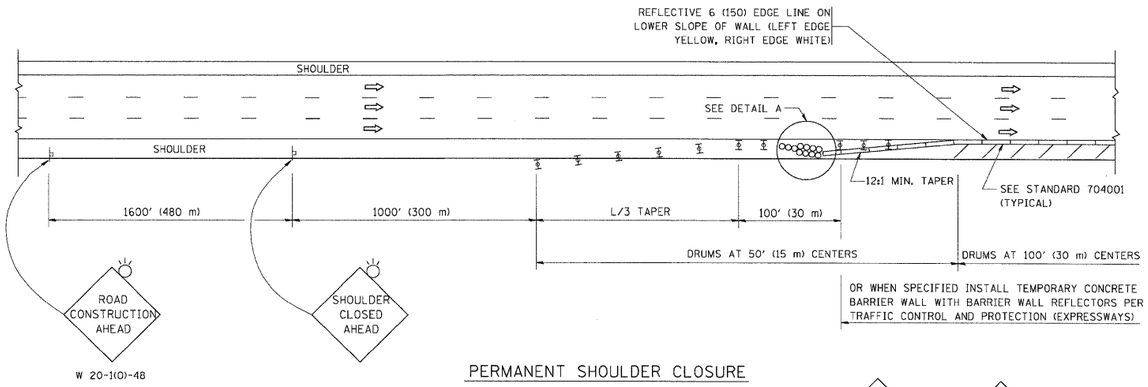


TYPICAL EXIT RAMP

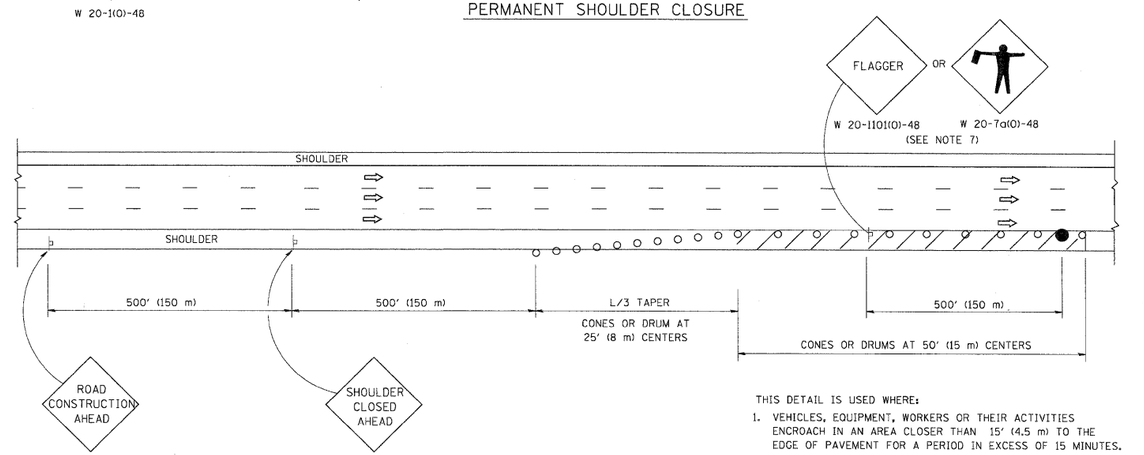


TYPICAL EXIT RAMP

SHOULDER CLOSURE DETAILS



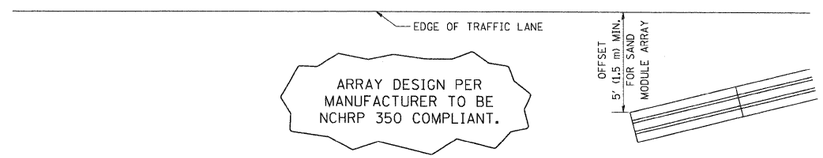
PERMANENT SHOULDER CLOSURE



DAYTIME SHOULDER CLOSURE

THIS DETAIL IS USED WHERE:

1. VEHICLES, EQUIPMENT, WORKERS OR THEIR ACTIVITIES ENCROACH IN AN AREA CLOSER THAN 15' (4.5 m) TO THE EDGE OF PAVEMENT FOR A PERIOD IN EXCESS OF 15 MINUTES.



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

SYMBOLS

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

GENERAL NOTES

1. THE "L" DISTANCE EQUALS:

SPEED LIMIT	FORMULAS	
	METRIC	ENGLISH
45 mph (80 km/h) OR GREATER:	L=0.65(W)(S)	L=(W)(S)

W = WIDTH OF OFFSET IN FEET (METERS)
S = NORMAL POSTED SPEED MPH (KM/H)

2. PLASTIC DRUMS WITH HIGH PERFORMANCE REFLECTIVE SHEETING AND STEADY BURNING LIGHTS ARE REQUIRED FOR ALL NIGHTIME CLOSURES.
3. ALL SIGNS SHALL BE POST MOUNTED IF THE CLOSURE TIME EXCEEDS FOUR DAYS.
4. FLASHING LIGHTS SHALL BE USED DURING THE HOURS OF DARKNESS AND SHALL BE INSTALLED ABOVE THE FIRST TWO SETS OF SIGNS.
5. THE IMPACT ATTENTUATOR, TEMPORARY IS NOT REQUIRED WHEN THE TEMPORARY CONCRETE BARRIER WALL IS PROTECTED BY OR IS TIED INTO THE EXISTING GUARDRAIL. IF OFFSET IS LESS THAN 5 FEET USE NARROW USE TYPE DEVICE TO MEET NCHRP350.
6. AUTHORIZATION FROM THE DISTRICT'S BUREAU OF TRAFFIC IS REQUIRED FOR ALL FREEWAY CLOSURES.
7. THE FLAGGER AND FLAGGER SIGN ARE REQUIRED AT THE ABOVE WORK SITES WHEN:
   a. FOUR OR MORE WORK VEHICLES ENTER THE TRAFFIC LANES IN A ONE HOUR PERIOD.
   b. THE WORK AVTIVITY REQUIRES FREQUENT ENCROACHMENT INTO THE LANE OPEN TO TRAFFIC.

   THE FLAGGER SHALL BE STATIONED APPROXIMATELY 100' (30 m) TO 200' (60 m) IN ADVANCE OF THE WORKERS.

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

FILE NAME = W:\diststd\22x34\tc17.dgn	USER NAME = leyso	DESIGNED -	REVISED - 04-03
		DRAWN - D.W.S.	REVISED - J.A.F. 12-06
	PLOT SCALE = 50.0000 ' / IN.	CHECKED -	REVISED - S.P.B. 01-07
	PLOT DATE = 1/26/2010	DATE - 11-96	REVISED - S.P.B. 12-09

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

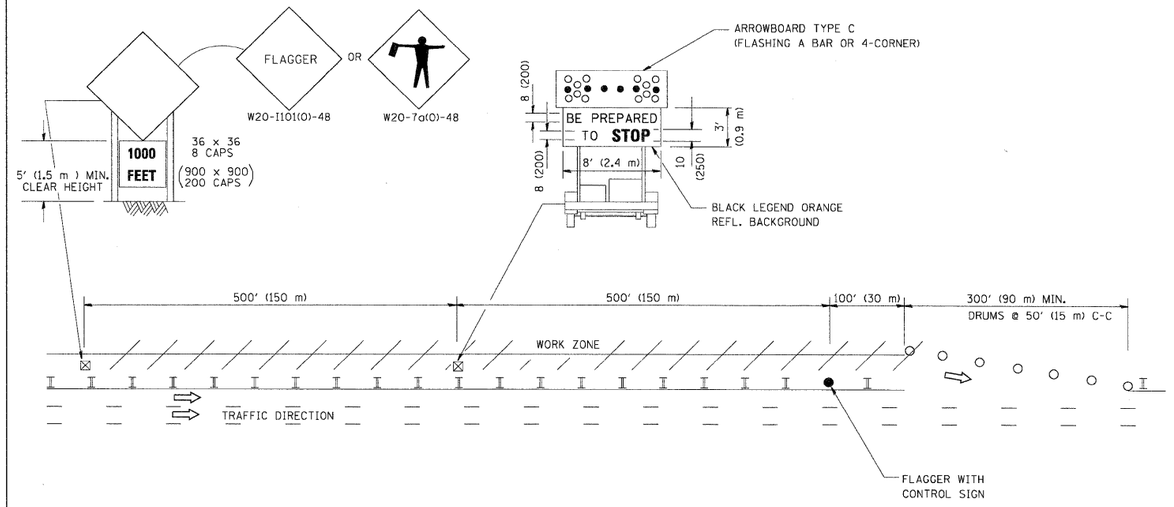
TRAFFIC CONTROL DETAILS FOR FREEWAY
SHOULDER CLOSURES AND PARTIAL RAMP CLOSURES

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

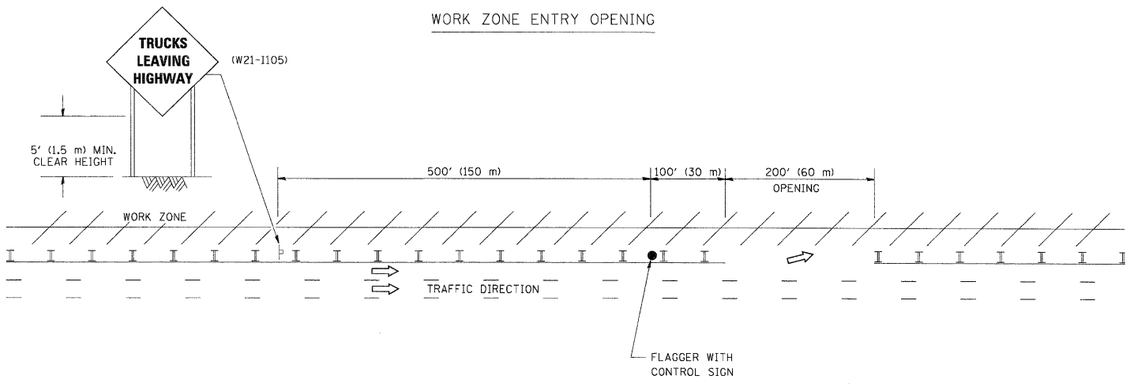
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	2010-150-DTR	80	200	196
	TC-17	CONTRACT NO. 60M64		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

SIGNING FOR FLAGGING OPERATIONS AT WORK ZONE OPENINGS

WORK ZONE EXIT OPENING



WORK ZONE ENTRY OPENING



NOTES:

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

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN

FILE NAME = W:\diststd\22x34\tc18.dgn	USER NAME = leysa	DESIGNED -	REVISED - J.A.F. 04-03
		DRAWN -	REVISED - J.A.F. 02-06
	PLOT SCALE = 50.000 ' / IN.	CHECKED -	REVISED - S.P.B. 01-07
	PLOT DATE = 1/26/2010	DATE -	REVISED - S.P.B. 12-09

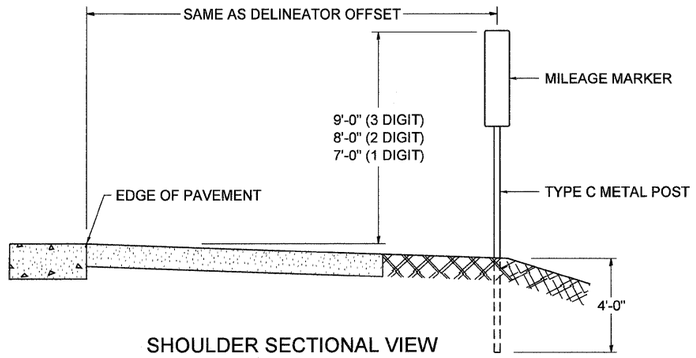
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SIGNING FOR FLAGGING OPERATIONS AT WORK ZONE OPENINGS

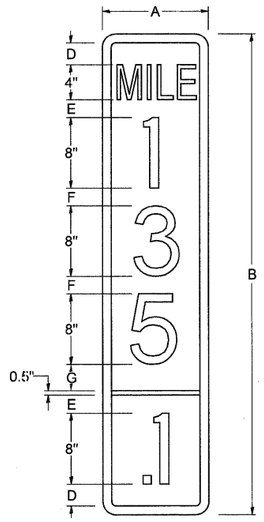
SCALE: NONE | SHEET NO. 1 OF 1 SHEETS | STA. | TO STA.

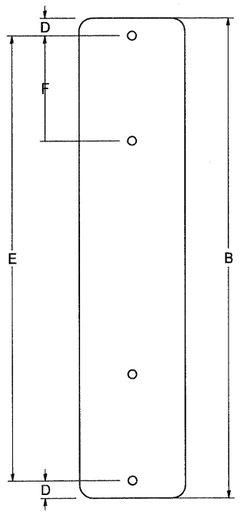
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	2010-150-DTR	80	200	197
	TC-18	CONTRACT NO. 60M64		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

STANDARD DESIGN FOR MILE POST



SHOULDER SECTIONAL VIEW



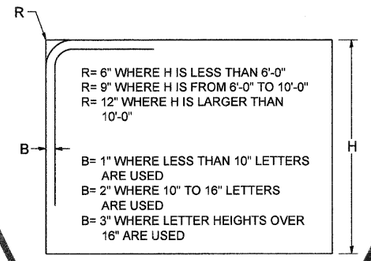


SIGN SIZE	DIMENSIONS							
	A	B	C	D	E	F	G	DIGIT
12 x 24	12.0	24.0	1.5	1.5	1.5	N/A	1.5	1
12 x 36	12.0	36.0	1.5	2.0	2.0	2.0	1.5	2
12 x 48	12.0	48.0	1.5	2.5	2.0	2.0	2.5	3

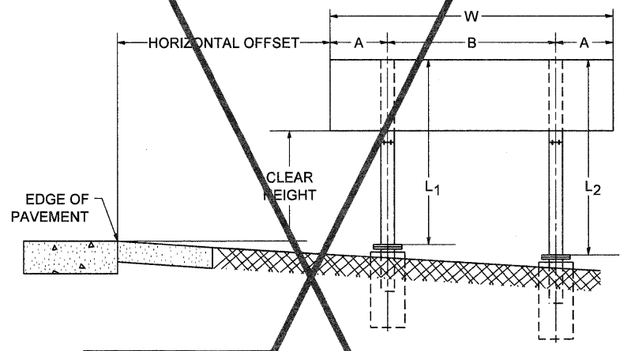
SIGN SIZE	SERIES LINES					BORDER	BLANK STD.
	1	2	3	4	5		
12 x 24	4C	8D	4C	N/A	N/A	0.5	B9-1224
12 x 36	4C	8D	8D	4C	N/A	0.5	B9-1236
12 x 48	4C	8D	8D	8D	4C	0.5	B9-1248

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

BORDER AND RADIUS LAYOUT



MAJOR GUIDE SIGN LAYOUT

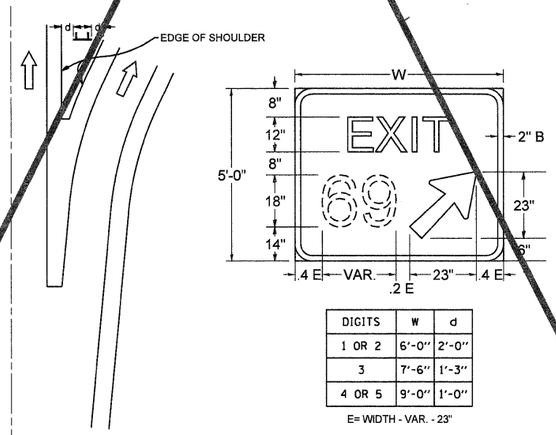


NUMBER OF STEEL SUPPORTS	A	B
2	.2 W	.6 W
3	.15 W	.35 W
4	.125 W	.25 W
5	.1 W	.2 W

"L_1" IS THE LENGTH OF SUPPORT, NOT INCLUDING THE STUB PROJECTION, CLOSEST TO THE EDGE OF THE PAVEMENT.

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

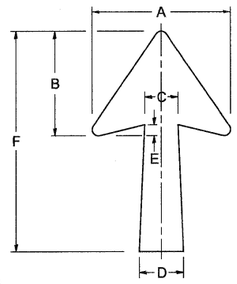
GORE SIGNS



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

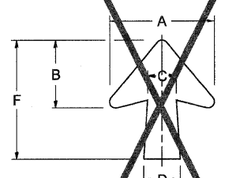
E= WIDTH - VAR. - 23"

STANDARD ARROWS FOR INTERSTATE GUIDE SIGNS



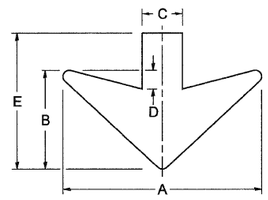
ARROW SYMBOL	A	B	C	D	E	F	R
24¼ x 15⅛	15⅛	11⅜	3¾	5	1⅝	24¼	⅝
29¼ x 18¼	18¼	14	4½	6	1½	29¼	¾
35⅝ x 22¼	22¼	17	5⅜	7⅛	1¾	35⅝	1
18¼ x 11¼	11¼	8¾	3⅛	3⅝		18¼	

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



ARROW SYMBOL	A	B	C	D	E	F	R
17¼ x 14¼	14¼	9⅛	3⅜	4½	⅝	17¼	¾
20¼ x 17¼	17¼	11¾	4⅜	5⅝	1	20¼	
25 x 21⅛	21⅛	14¼	5	6¾	1¾	25	1
9⅜ x 8⅛	8⅛	5⅛	2⅛	2⅝		9⅜	½

DOWN ARROWS



ARROW SYMBOL	A	B	C	D	E	R
16½ x 24	24	12	5	1½	16½	¾
22 x 32	32	16	6½	3	22	1

FILE NAME = tc27.dgn	USER NAME = gaglianobt	DESIGNED -	REVISED - 02-04-2009	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	MILE POST MARKERS – GORE SIGNS MAJOR GUIDE SIGN LAYOUT – ARROWS
		DRAWN -	REVISED 02/15/11		
	PLOT SCALE = 50.0000 ' / IN.	CHECKED -	REVISED -		
	PLOT DATE = 2/4/2009	DATE - 03-08-1984	REVISED -		SCALE: NONE | SHEET NO. 1 OF 1 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99 (2 & 3) RS-3	WILL	200	198
	TC-27 (TS-2341-1)	CONTRACT NO. 60M64		
FED. ROAD DIST. NO. 1 | ILLINOIS | FED. AID PROJECT				

LOOP DETECTOR NOTES

1. EACH PAIR OF LOOP WIRES SHALL BE PLACED IN A SEPARATE EMPTY COILABLE NONMETALLIC CONDUIT FROM THE EDGE OF PAVEMENT TO THE HANDHOLE. SPACING BETWEEN THE HOLES DRILLED IN THE PAVEMENT SHALL NOT BE LESS THAN 6" (150 mm). EMPTY COILABLE NONMETALLIC CONDUIT SHALL BE INCLUDED IN THE COST OF THE LOOP WIRE.

2. THE NUMBER OF LOOP TURNS SHALL BE AS RECOMMENDED BY THE AMPLIFIER MANUFACTURER. ALL ADJACENT SIDES OF THE LOOPS SHALL BE INSTALLED IN SUCH A WAY THAT THE CURRENT FLOW IS IN THE SAME DIRECTION TO REINFORCE ITS MAGNETIC FIELDS FOR SMALL VEHICLE DETECTION.

3. EACH LOOP LEAD-IN SHALL BE IDENTIFIED AND PERMANENTLY TAGGED IN THE HANDHOLE. EACH LEAD-IN CABLE TAG SHALL INDICATE THE LOCATION OF THE LOOP, LOOP ROTATION (CLOCKWISE/COUNTERCLOCKWISE), LOOP LEAD-IN DIRECTION (IN OR OUT), LOOP CABLE NUMBER AND LOCATION IN CABINET, AND NUMBER OF TURNS IN THE DETECTOR LOOPS IN WATER PROOF INK AS INDICATED ON THE DISTRICT 1 STANDARD TRAFFIC SIGNAL DESIGN DETAIL. THE CONTRACTOR SHALL MARK LOOP LOCATIONS ON RECORD DRAWINGS AND PRESENT TO THE ENGINEER AFTER FINAL INSPECTION. LOOPS SHALL BE MARKED BY LANE AND LOOP NUMBER. SEE DETAIL BELOW.

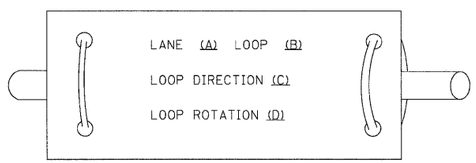
4. ALL LOOP CABLE SHALL BE FASTENED WITH PLASTIC TIE WRAP TO THE HANDHOLE HOOKS.

5. IN ASPHALT PAVEMENT, LOOPS SHOULD BE PLACED IN THE BINDER AND DIVEHOLES MARKED AT THE CURB WITH A SAW-CUT. THE SAW-CUT SHALL BE CUT IN ACCORDANCE WITH LOCAL AND E.P.A. DUST CONTROL REQUIREMENTS. DETECTOR LOOP(S) SHALL NOT BE INSTALLED IN WET CONDITIONS AND THE SAW-CUTS MUST BE FREE OF DEBRIS AND RESIDUE SUCH AS DUST AND WATER WHICH IS TO BE ACHIEVED BY THE USE OF COMPRESSED AIR, WIRE BRUSHING AND HEAT DRYING ACCORDING TO SEALANT MANUFACTURER REQUIREMENTS. THE DETECTOR WIRE SHALL BE HELD IN PLACE BY THE USE OF FORM WEDGES. WEDGES SHALL BE SPACED NO MORE THAN 18" (450 mm) APART.

6. LOOP SPLICES SHALL BE SOLDERED USING A SOLDERING IRON. BLOW TORCHES OR OTHER DEVICES WHICH OXIDIZE COPPER CABLE SHALL NOT BE ALLOWED FOR SOLDERING OPERATIONS. SEE DETAIL BELOW RIGHT.

7. PREFORMED DETECTOR LOOPS SHALL BE USED, AS SHOWN ON THE PLANS, WHERE NEW CONCRETE PAVEMENT IS PROPOSED. THE INSTALLATION OF PREFORMED LOOPS SHALL BE IN ACCORDANCE WITH THE DISTRICT 1 SPECIFICATIONS OR AS DIRECTED BY THE ENGINEER.

LOOP LEAD-IN CABLE TAG

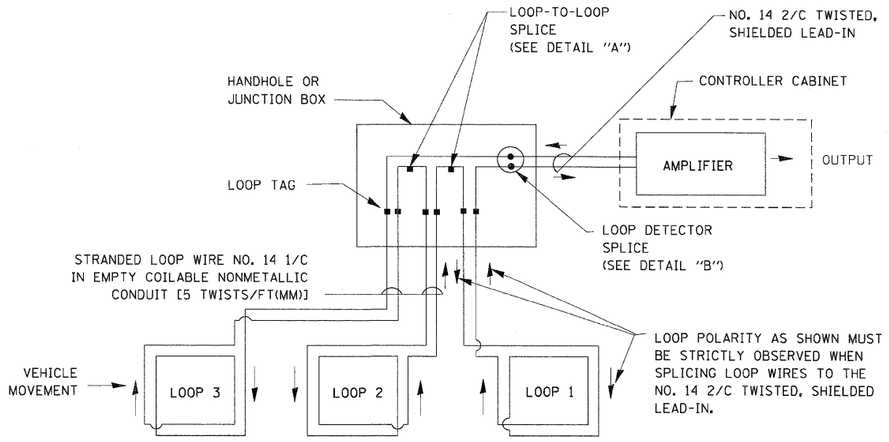


A. LANE 1 IS THE LANE CLOSEST TO THE CENTERLINE OF THE ROADWAY

B. LOOP #1 IS THE LOOP IN THE LANE CLOSEST TO THE INTERSECTION.

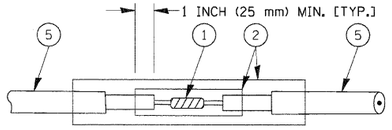
C. LABEL LOOP CABLE "IN" OR LOOP CABLE "OUT".

D. LABEL LOOP CABLE CLOCKWISE OR LOOP CABLE COUNTERCLOCKWISE.

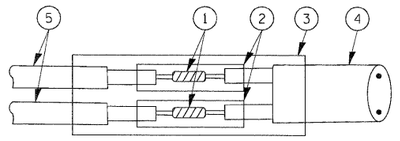


DETECTOR LOOP WIRING SCHEMATIC

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

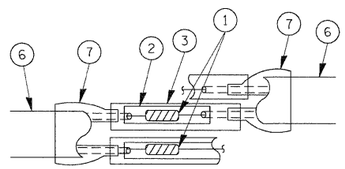


DETAIL "A"
LOOP-TO-LOOP SPLICE



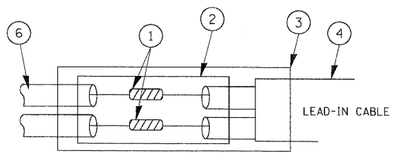
DETAIL "B"
LOOP-TO-CONTROLLER SPLICE

TYPE I LOOP



DETAIL "A"
LOOP-TO-LOOP SPLICE

PRE-FORMED LOOP



DETAIL "B"
LOOP-TO-CONTROLLER SPLICE

LOOP DETECTOR SPLICE

(1) WESTERN UNION SPLICE SOLDERED WITH ROSIN CORE FLUX. ALL EXPOSED SURFACES OF THE SOLDER SHALL BE SMOOTH.

(2) WCSMW 30/100 HEAT SHRINK TUBE, MINIMUM LENGTH 3" (75 mm), UNDERWATER GRADE.

(3) WCS 200/750 HEAT SHRINK TUBE, MINIMUM LENGHT 6" (150 mm), UNDERWATER GRADE.

(4) NO. 14 2/C TWISTED, SHIELDED CABLE.

(5) LOOP CONDUCTOR WITH FLEXIBLE PLASTIC TUBE.

(6) PRE-FORMED LOOP

(7) XL POLYOLEFIN 2 CONDUCTOR BREAKOUT SEALS. TYCO CBR-2 OR APPROVED EQUAL

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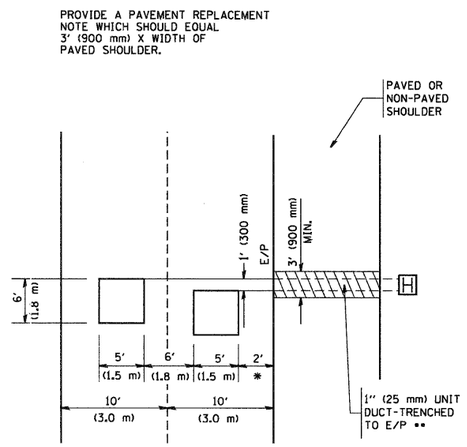
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DISTRICT ONE
STANDARD TRAFFIC SIGNAL DESIGN DETAILS

SCALE: NONE | SHEET NO. 1 OF 6 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	2010-150-DTR	80	200	199
	TS-05	CONTRACT NO. 60M64		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

LOOPS NEXT TO SHOULDERS

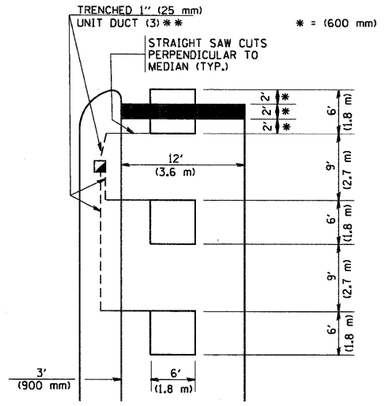


* = (600 mm)

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

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

(PROTECTED / PERMITTED LEFT TURN PHASING)

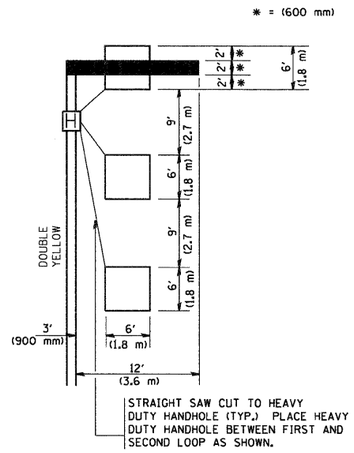


** UNIT DUCT IS TO BE SHOWN ON PLAN SHEETS BUT SHALL NOT BE INCLUDED IN THE PAY ITEMS.

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

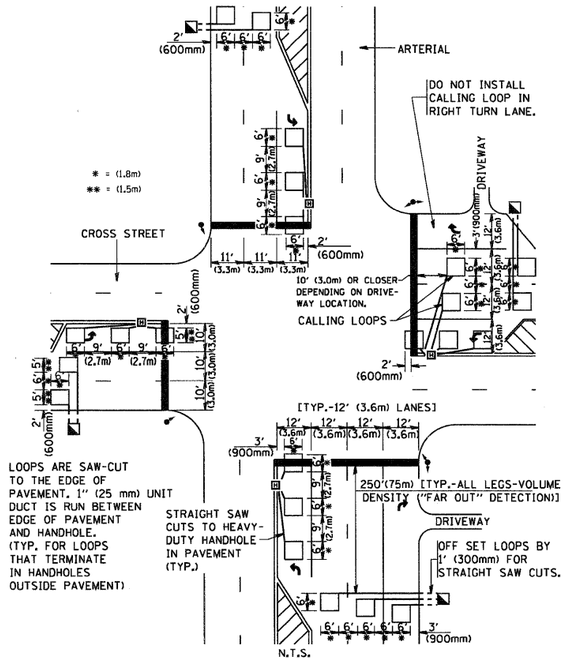
LEFT TURN LANES WITHOUT MEDIANS
VOLUME DENSITY ("FAR OUT" DETECTION)
ON SAME APPROACH

(PROTECTED / PERMITTED LEFT TURN PHASING)



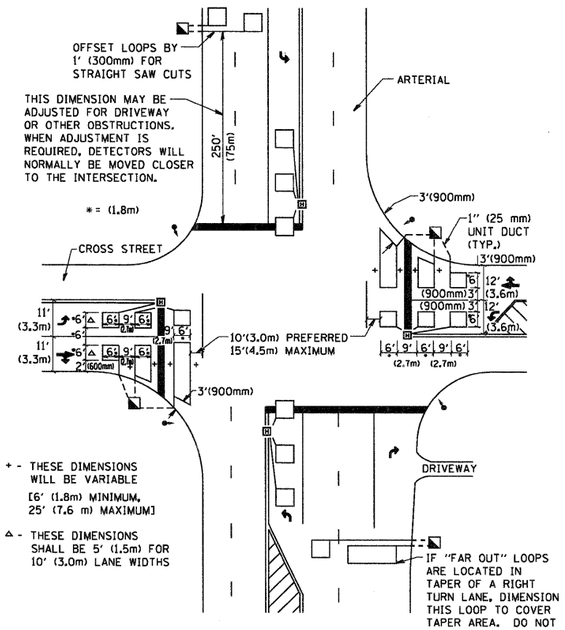
NOTE: DUAL LEFT TURNS NOT SHOWN REFER TO PLAN SHEET FOR DETECTOR LOOP REPLACEMENT

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



DETAIL 1
N.T.S.

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



DETAIL 2
N.T.S.

NOTES:

VEHICLES LOOP DETECTORS

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

PLACEMENT OF DETECTORS

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

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

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

NOTE:

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

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

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	PLOT DATE = 1/4/2008	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DISTRICT 1 – DETECTOR LOOP INSTALLATION DETAILS FOR ROADWAY RESURFACING

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

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	2010-150-DTR	80	200	200
	TS-07	CONTRACT NO. 60M64		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		