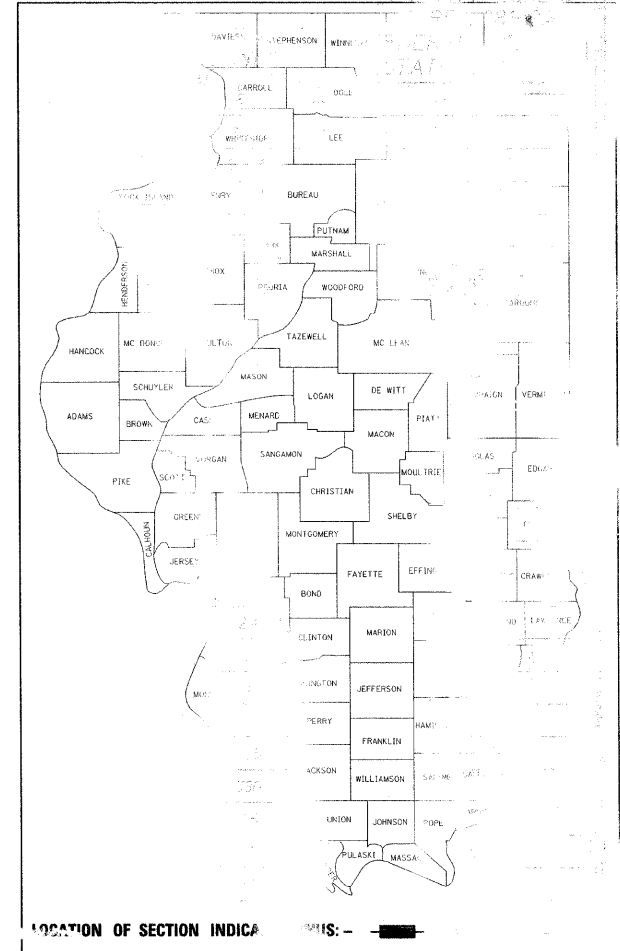


STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

D-91-253-10

PROPOSED
HIGHWAY PLANS

FAU 2711 / IL ROUTE 131 (GREEN BAY ROAD)
SECTION K-VB-I
OVER EJ&E RAILROAD (1.1 MI. S. OF IL 137)
BRIDGE DECK OVERLAY, BRIDGE JOINT
REPAIR AND SUPERSTRUCTURE REPAIR
PROJECT NUMBER: M-2711(019)
LAKE COUNTY



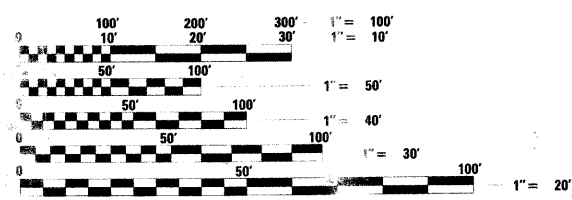
FOR INDEX OF SHEETS, SEE SHEET NO. 2

DESIGN DESIGNATION
MINOR ARTERIAL (URBAN)
ADT 11,800 (2007)
SPEED LIMIT 40 MPH

IMPROVEMENT LOCATED IN
THE CITY OF NORTH CHICAGO

C-91-253-10
SHIELDS TOWNSHIP R 12 E - 3rd PM

IMPROVEMENT LOCATION
IL ROUTE 131 (GREEN BAY ROAD)
OVER EJ&E RAILROAD
STRUCTURE NO: 049-0012



FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

L.I.E.
 POINT UTILITY LOCATION INFORMATION FOR EXCAVATION
 800-892-0123
 811

PROJECT MANAGER: MR SAAC KWARTENG (847) 705-4230
PROJECT ENGINEER: MR ALIX BRICE (847) 705-4552

CONTRACT NO. 60J63

LOCATION MAP
 GROSS AND NET LENGTH OF IMPROVEMENT = 212.00 FT. = 0.040 MILE



COLLINS ENGINEERS, INC.
 JAMES M. HAMELKA
 NO. 052-056236
 EXPIRES 11-30-2011

COLLINS ENGINEERS, INC.
 123 N. WASHINGTON ST., SUITE 200
 CHICAGO, IL 60604
 (312) 467-5300
 ILLINOIS PROFESSIONAL DESIGN FIRM
 LICENSE NO. 04-000993

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

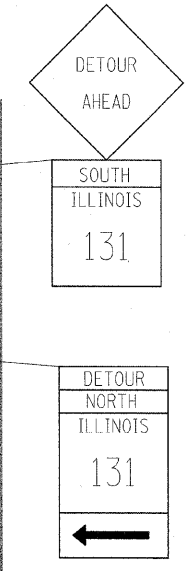
SUBMITTED FEBRUARY 11, 2010
Diane M. O'Keefe
 DEPUTY DIRECTOR OF HIGHWAYS, REGION ONE ENGINEER

March 19, 2010
Scott E. Stiel, P.E.
 ACTING ENGINEER OF DESIGN AND ENVIRONMENT

March 19, 2010
Christine M. Reed
 DIRECTOR OF HIGHWAYS CHIEF ENGINEER

PRINTED BY THE STATE OF ILLINOIS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



Project Location

Legend:
 Detour Route
Note:
 For additional requirements and signage, refer to District One Standard TC-21-Detour Signing for Closing State Highways. Additional signage may be required by the Resident Engineer. All work and materials shall be included in the pay item for "Traffic Control and Protection for Temporary Detour."

FILE NAME =
D:\60\63\sh\detour.dgn

USER NAME = JD011(eng)
 PLLOT SCALE = 1:10000' / IN.
 PLOT DATE = 2/24/2010

DESIGNED - J. HAMELKA
 DRAWN - B. VOGRIC
 CHECKED - J. HAMELKA
 DATE - JANUARY, 2010

REVISED -
 REVISED -
 REVISED -
 REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DETOUR MAP
FAU 2711/ILL ROUTE 131 (GREEN BAY ROAD) OVER EJ&E RAILROAD
 SCALE: SHEET NO. OF SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2711	K-VB-1	LAKE	21	3
CONTRACT NO. 60J63				
ILLINOIS FED. AID PROJECT				

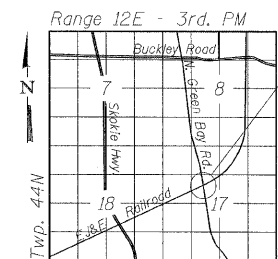
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

Existing Structure:

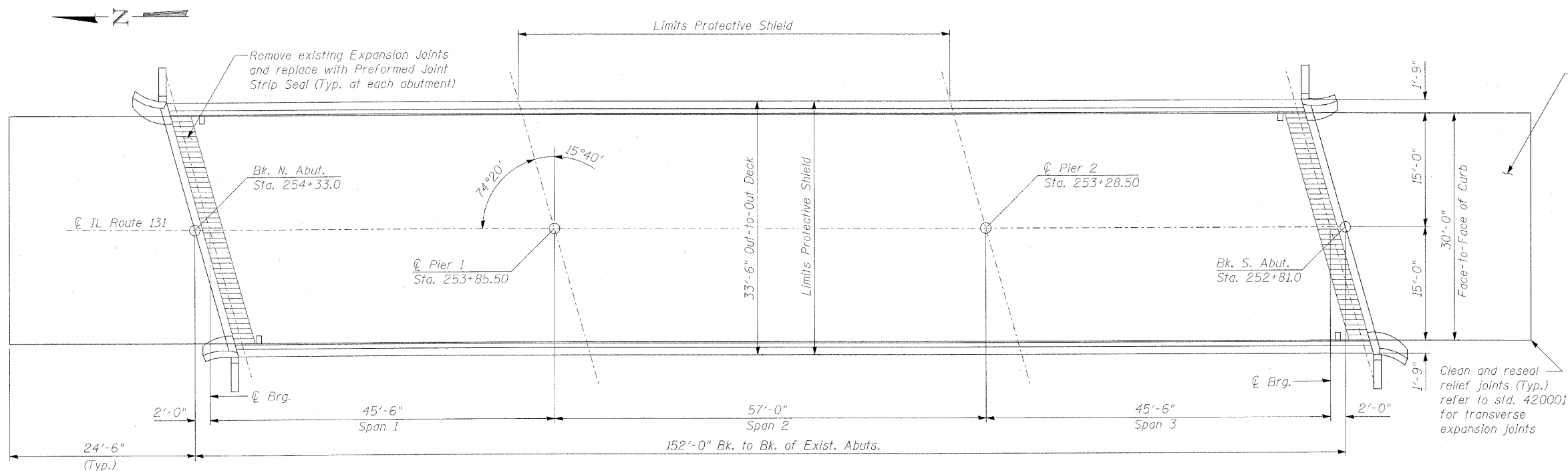
The existing structure is a three span steel beam bridge with a 7 inch reinforced concrete deck and a 1.75 inch bituminous overlay. The original structure was built in 1954 as Section K-VB. In 1984 the structure was widened with transverse joint replacement, scupper replacement, and deck and substructure repairs.

A detour will be utilized to redirect traffic around the structure.

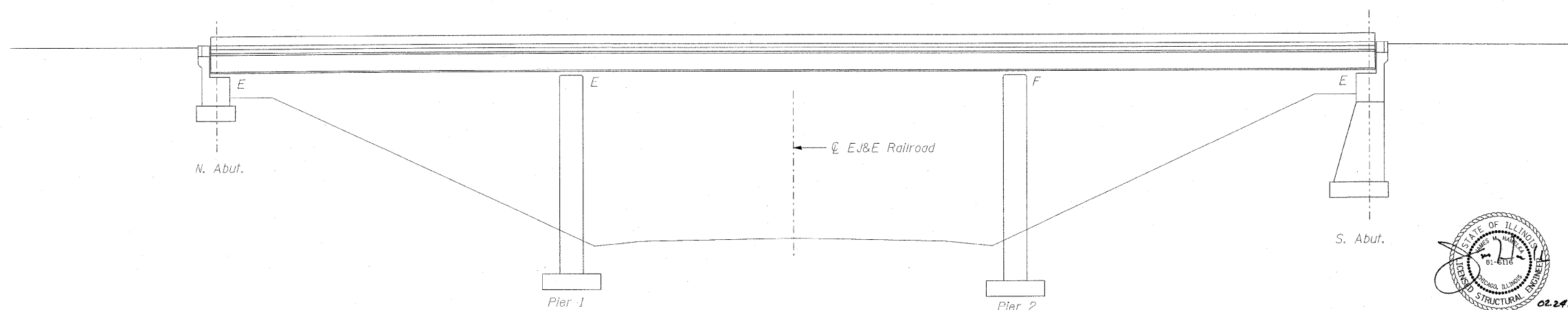
No salvage.



LOCATION SKETCH



PLAN



ELEVATION

SCOPE OF WORK

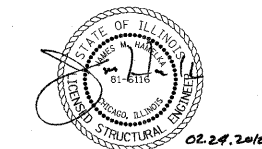
1. Remove and replace existing expansion bearings with elastomeric bearings.
2. Bridge deck and approach overlay removal.
3. Bridge deck hydro-scarification.
4. Repair bridge deck and approaches.
5. Reconstruct deck joints at each abutment with preformed strip seal.
6. Place new latex concrete overlay on bridge deck
7. Place new HMA overlay on approaches.
8. Repair substructures.
9. Clean and reseal pavement relief joints.
10. Place rip-rap at eroded slopes.
11. Remove and replace existing drains. Install drainage system.
12. Repair ends of 30WF116 beams. Replace end diaphragms.

DESIGN SPECIFICATIONS

2002 AASHTO Standard Specifications for Highway Bridges, 17th Edition

DESIGN STRESSES

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



COLLINS ENGINEERS, INC.
JAMES M. HAMELKA
NO. 81-6116
EXPIRES 11-30-2010

GENERAL PLAN & ELEVATION
F.A.U. ROUTE 2711 SEC. K-VB-I
LAKE COUNTY
STATION 253+57
STRUCTURE NO. 049-0012

DESIGNED JWK	2010
CHECKED JMH	EXAMINED
DRAWN DR	PASSED
CHECKED JWK	ENGINEER OF STRUCTURAL SERVICES
	ENGINEER OF BRIDGES AND STRUCTURES

SHEET NO. S1 OF S15 SHEETS	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	2711	K-VB-I	LAKE	21	4
CONTRACT NO. 60J63					
ILLINOIS FED. AID PROJECT					

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

INDEX OF SHEETS

- S1. General Plan and Elevation
- S2. General Notes, Bill of Materials and Index of Sheets
- S3. Bridge Deck and Approach Slab Repairs
- S4. North Abutment and Pier 2 Repairs
- S5. Structural Steel Plan
- S6. Repair Detail A and B
- S7. Repair Detail C and D
- S8. Expansion Joint Repairs
- S9. Expansion Joint Details
- S10. Preformed Joint Strip Seal
- S11. Drainage System
- S12. Drainage Scupper, DS-12
- S13. Bearing Details-South Abutment
- S14. Bearing Details-North Abutment
- S15. Stone Riprap Placement

GENERAL NOTES:

1. Reinforcement bars shall conform to the requirements of ASTM A 706 Grade 60. See Special Provisions.
2. Reinforcement bars designated (E) shall be epoxy coated.
3. Plan dimensions and details relative to existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.
4. The Contractor shall exercise care during removal of existing joints to ensure that the slab, and beams, diaphragms' integrity will not be detrimentally impacted. The Contractor shall repair any damage(s) to the slab, beams, diaphragms caused by his operation as directed by the Engineer at no additional cost to the Department.
5. Cost for removal and disposal of Existing Expansion Joints is included in the Cost of Concrete Removal.
6. The removal and reattachment of guardrail, hand rail, steel railings, traffic barrier terminal, and etcetera required for repair work (e.g. transverse joint replacement or structural repair of concrete) shall be included in the contract unit price of the work item being performed.
7. Work to be completed under a road closure.
8. All structural steel shall conform to AASHTO Classification M-270 Gr. 36, unless otherwise noted.
9. Fasteners shall be high strength bolts. Bolts $\frac{3}{4}$ " ϕ , open holes $\frac{13}{16}$ " ϕ , unless otherwise noted.
10. The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead in this project.
11. Existing structural steel that will be in contact with new structural steel shall be cleaned and painted prior to erection as required by the Special Provision "Cleaning and Painting Contact Surface Areas of Existing Steel Structures".
12. All structural steel shall be shop painted with the inorganic zinc rich primer per AASHTO M300, Type 1. Cost included with Furnishing and Erecting Structural Steel or **Structural Steel Repair as appropriate.**
13. Joint openings shall be adjusted according to Article 520.04 of the Std. Specs. when the deck is poured at an ambient temperature other than 50° F.

TOTAL BILL OF MATERIAL

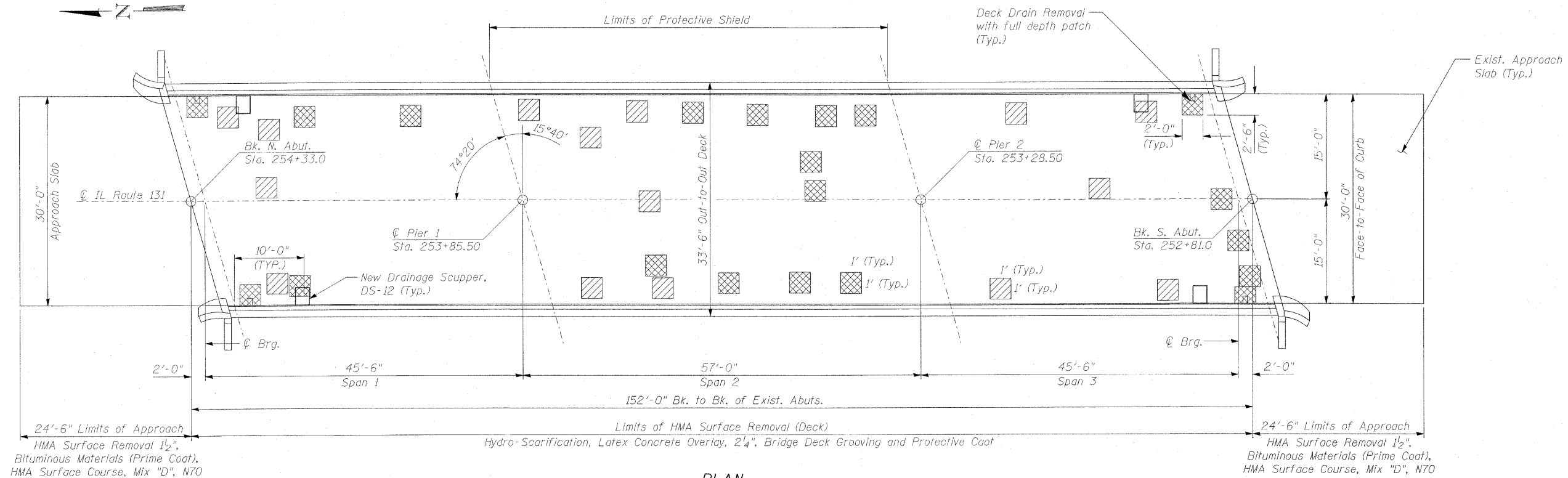
ITEM DESCRIPTION	UNIT	SUPER	SUB	TOTAL
Stone Riprap, Class A3	Ton		60	60
Hot-Mix Asphalt Surface Course, Mix "D", N70	Ton	14		14
Protective Coat	Sq.Yd.	642		642
Hot-Mix Asphalt Surface Removal, 1 1/2"	Sq.Yd.	81.7		81.7
Hot-Mix Asphalt Surface Removal (Deck)	Sq.Yd.	506.7		506.7
Concrete Removal	Cu.Yd.	8.4		8.4
Protective Shield	Sq.Yd.	212.2		212.2
Concrete Superstructure	Cu.Yd.	8.4		8.4
Bridge Deck Grooving	Sq.Yd.	472.9		472.9
Jack and Remove Existing Bearings	Each	12		12
Structural Steel Repair	Pound	4780		4780
Reinforcement Bars, Epoxy Coated	Pound	1,110		1,110
Preformed Joint Strip Seal	Foot	70		70
Elastomeric Bearing Assembly, Type I	Each	6		6
Bridge Deck Latex Concrete Overlay, 2 1/4 Inches	Sq.Yd.	506.7		506.7
Drainage Scupper, DS-12	Each	4		4
Structural Repair of Concrete (Depth Equal To or Less Than 5 Inches)	Sq.Ft.		35	35
Bridge Deck Hydro-Scarification 1/2"	Sq.Yd.	506.7		506.7
Deck Slab Repair (Full Depth, Type I)	Sq.Yd.	4		4
Drainage System	LumpSum	1		1
Clean and Reseal Relief Joints	Foot	60		60
Elastomeric Bearing Assembly, Type II	Each	6		6
Furnishing and Erecting Structural Steel	Pound	1040		1040
Anchor Bolts, 1"	Each	24		24
Bituminous Materials (Prime Coat)	Gallon	16		16

GENERAL NOTES, BILL OF MATERIALS
AND INDEX OF SHEETS
STRUCTURE NO. 049-0012

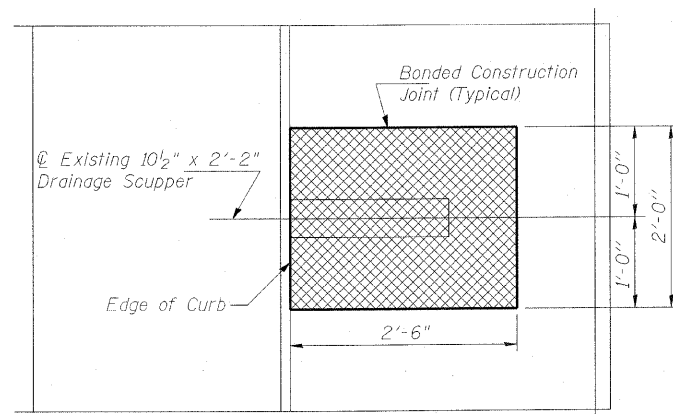
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CHECKED <i>JMH</i>	EXAMINED
DRAWN <i>DR</i>	ENGINEER OF STRUCTURAL SERVICES
CHECKED <i>JWK</i>	PASSED
	ENGINEER OF BRIDGES AND STRUCTURES

SHEET NO. S2 OF S15 SHEETS	F.A.U. RTE. 2711	SECTION K-VB-I	COUNTY LAKE	TOTAL SHEETS 21	SHEET NO. 5
CONTRACT NO. 60J63					
ILLINOIS FED. AID PROJECT					

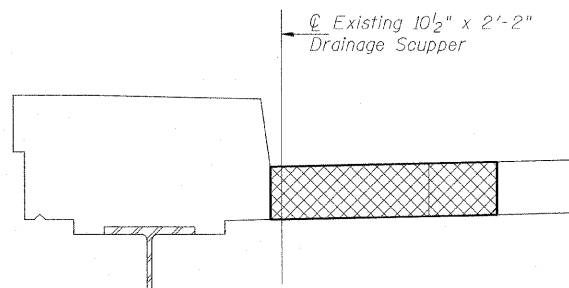
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



PLAN



PARTIAL PLAN AT DRAIN



SECTION AT DRAIN

Hatched areas indicate concrete sections to be removed and replaced. Perimeters of concrete removal areas shall be saw cut $\frac{3}{4}$ " prior to the removal of concrete.

BILL OF MATERIAL

SYMBOL	ITEM	UNIT	QUANTITY
	Deck Slab Repair (Partial) Δ	Sq. Yd.	2
	Deck Slab Repair (Full Depth, Type I)	Sq. Yd.	4
	Protective Coat	Sq. Yd.	642
	Protective Shield	Sq. Yd.	212.2
	Bridge Deck Grooving	Sq. Yd.	472.9
	Bridge Deck Latex Concrete Overlay $2\frac{1}{4}$ "	Sq. Yd.	506.7
	Bridge Deck Hydro-Scarification $\frac{1}{2}$ "	Sq. Yd.	506.7
	Hot-Mix Asphalt Surface Course, Mix "D", N70	Ton	14
	Hot-Mix Asphalt Surface Removal, $\frac{1}{2}$ "	Sq. Yd.	81.7
	Hot-Mix Asphalt Surface Removal (Deck)	Sq. Yd.	506.7
	Bituminous Materials (Prime Coat)	Gallon	16

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

Notes:
Deck repair areas are estimated based on visual inspection completed in October 2009. Actual repair areas and locations shall be determined by the engineer and shown on as-built plans.
Deck drain removal and disposal shall not be paid for separately, and shall be included in the pay item for Deck Slab Repair (Full Depth, Type I).
Protective coat shall be applied to the entire deck surface and the inside face of the parapets.


BRIDGE DECK AND
APPROACH SLAB REPAIRS
STRUCTURE NO. 049-0012

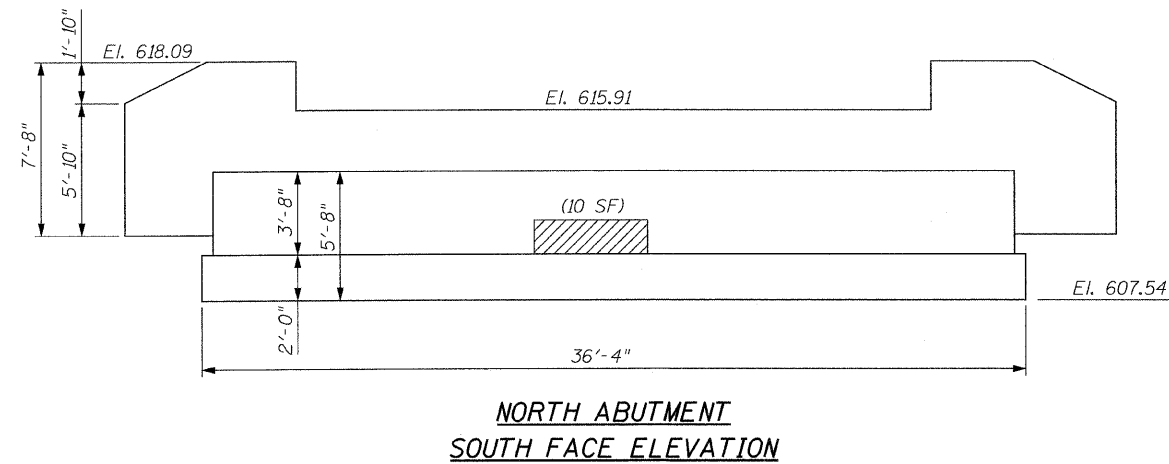
DESIGNED JWK	2010
CHECKED JMH	EXAMINED
DRAWN DR	PASSED
CHECKED JWK	

SHEET NO. S3 OF S15 SHEETS	F.A.U. RTE. 2711	SECTION K-VB-I	COUNTY LAKE	TOTAL SHEETS 21	SHEET NO. 6
	CONTRACT NO. 60J63				
ILLINOIS FED. AID PROJECT					

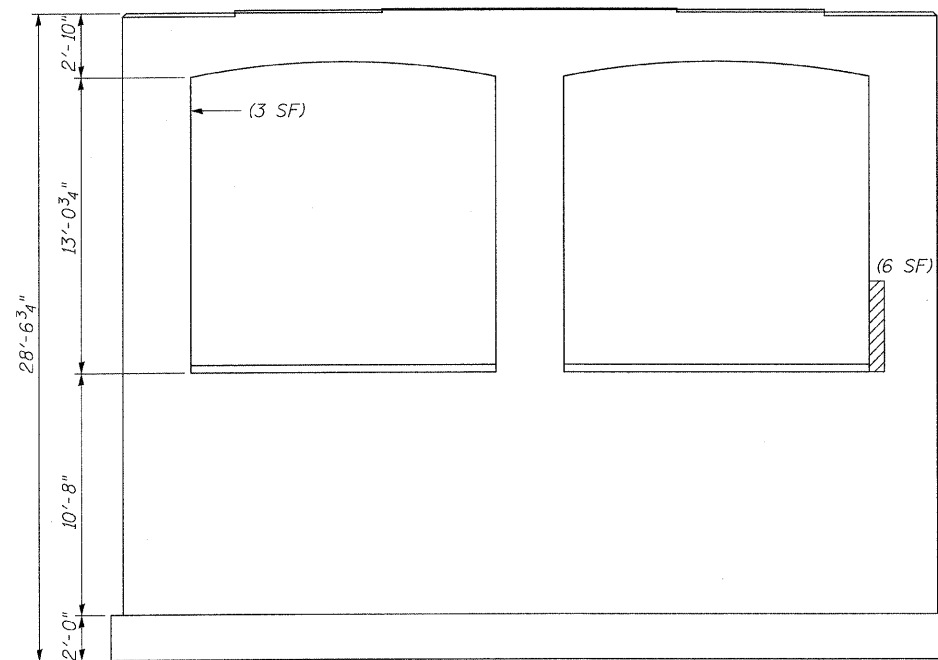
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BILL OF MATERIAL

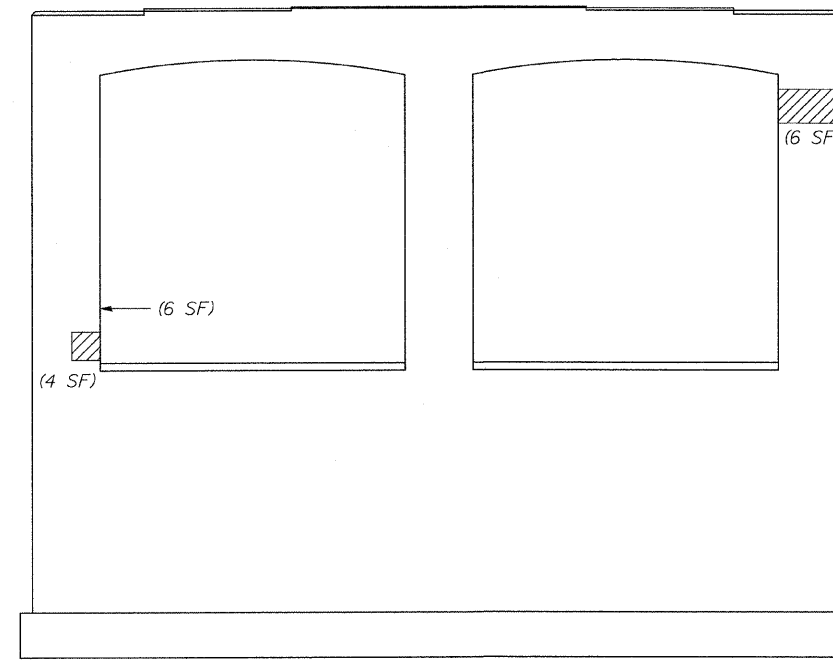
SYMBOL	ITEM	UNIT	QUANTITY
	Structural Repair of Concrete (Depth equal to or less than 5 inches)	Sq. Ft.	35



NORTH ABUTMENT
SOUTH FACE ELEVATION



PIER 2
NORTH FACE ELEVATION



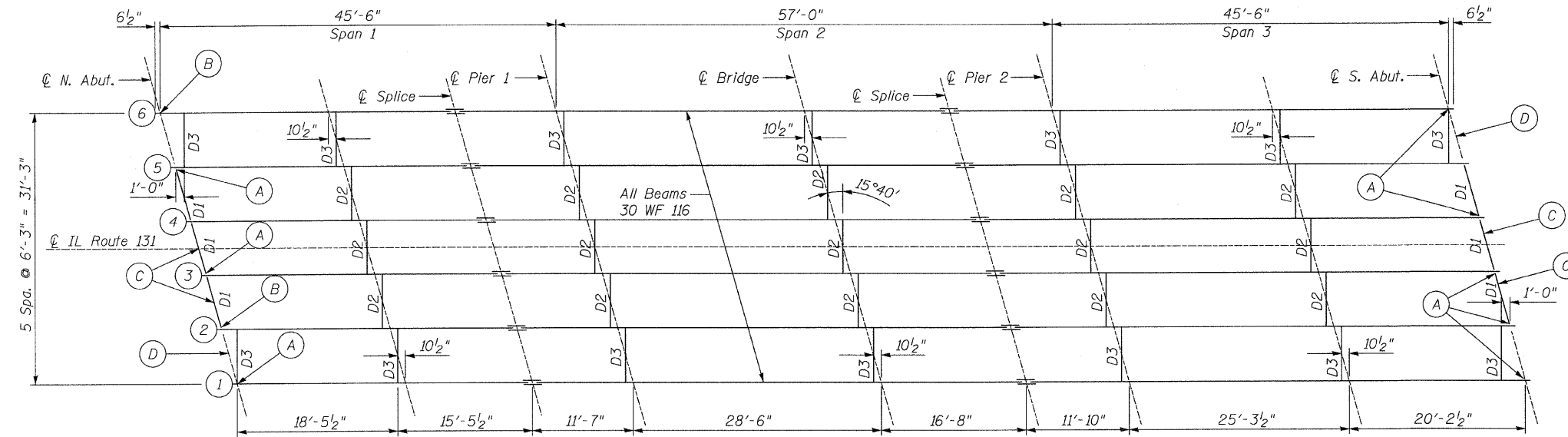
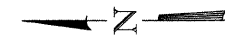
PIER 2
SOUTH FACE ELEVATION

NORTH ABUTMENT AND
PIER 2 REPAIRS
STRUCTURE NO. 049-0012

DESIGNED <i>JWK</i>	January, 2010
CHECKED <i>JMH</i>	EXAMINED
DRAWN <i>DR</i>	ENGINEER OF STRUCTURAL SERVICES
CHECKED <i>JWK</i>	PASSED
	ENGINEER OF BRIDGES AND STRUCTURES

SHEET NO. S4 OF S15 SHEETS	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	2711	K-VB-I	LAKE	21	7
			CONTRACT NO. 60J63		
ILLINOIS FED. AID PROJECT					

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



PLAN

Repair Notes:

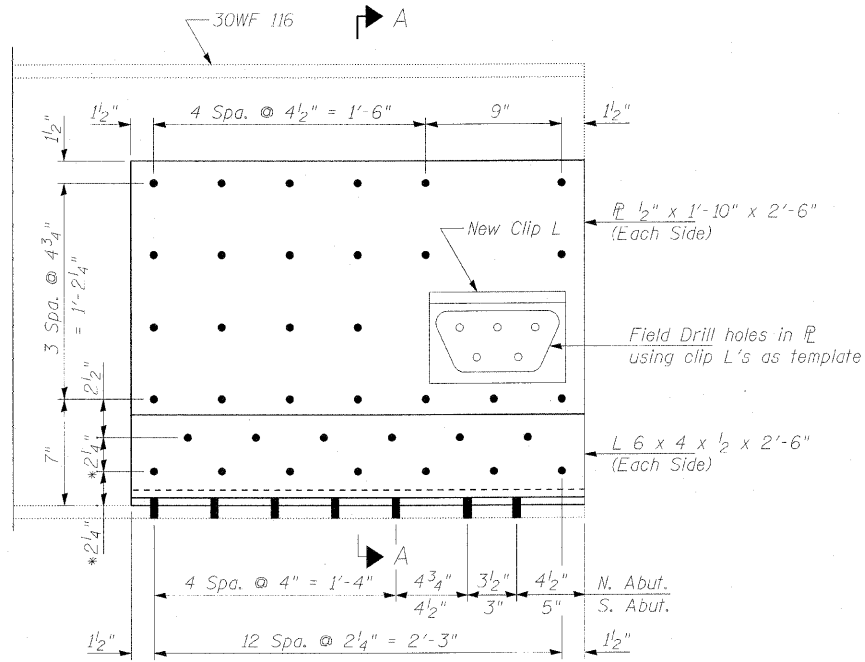
- (A) (B) Refer to Repair Detail "A and B" Sheet.
- (C) (D) Refer to Repair Detail "C and D" Sheet.

STRUCTURAL STEEL PLAN
STRUCTURE NO. 049-0012

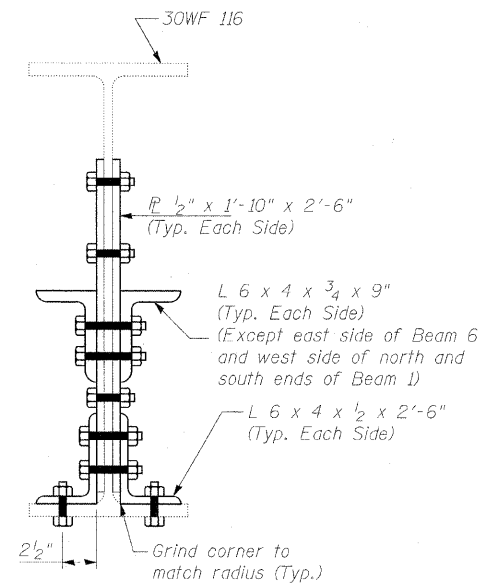
DESIGNED JWK	January, 2010
CHECKED JMH	EXAMINED
DRAWN DR	ENGINEER OF STRUCTURAL SERVICES
CHECKED JWK	PASSED
	ENGINEER OF BRIDGES AND STRUCTURES

SHEET NO. S5 OF S15 SHEETS	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	2711	K-VB-I	LAKE	21	8
CONTRACT NO. 60J63					
ILLINOIS FED. AID PROJECT					

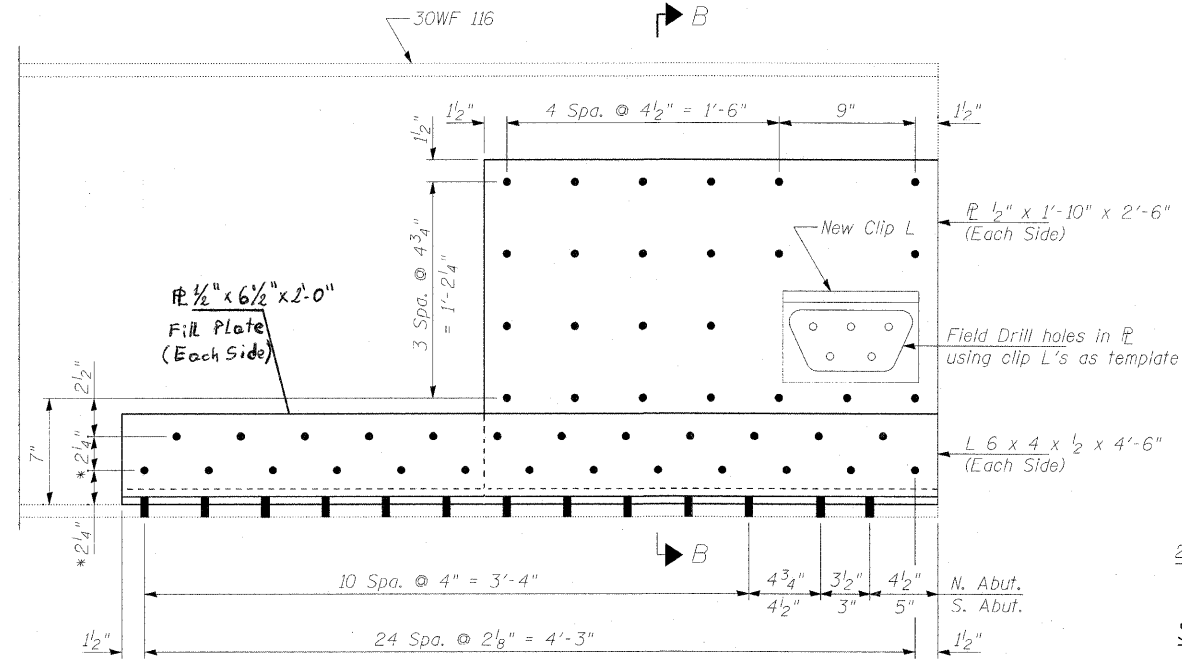
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



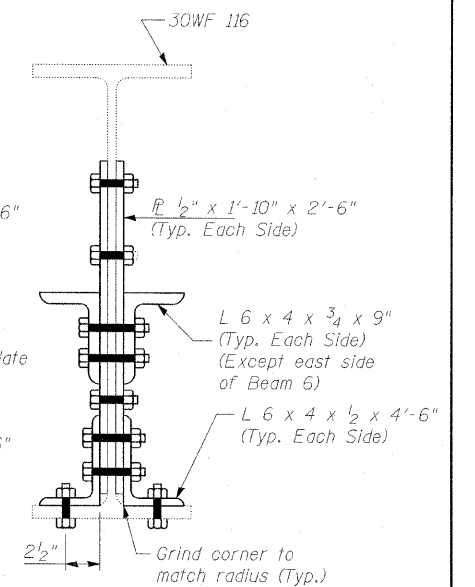
REPAIR DETAIL A



SECTION A-A



REPAIR DETAIL B



SECTION B-B

* Shop drill holes in L 6 x 4 x 1/2". Field drill holes in R and bottom flange using holes in L as template.

BILL OF MATERIAL

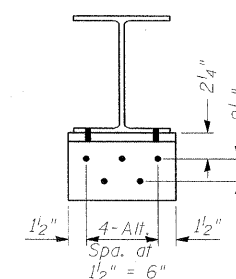
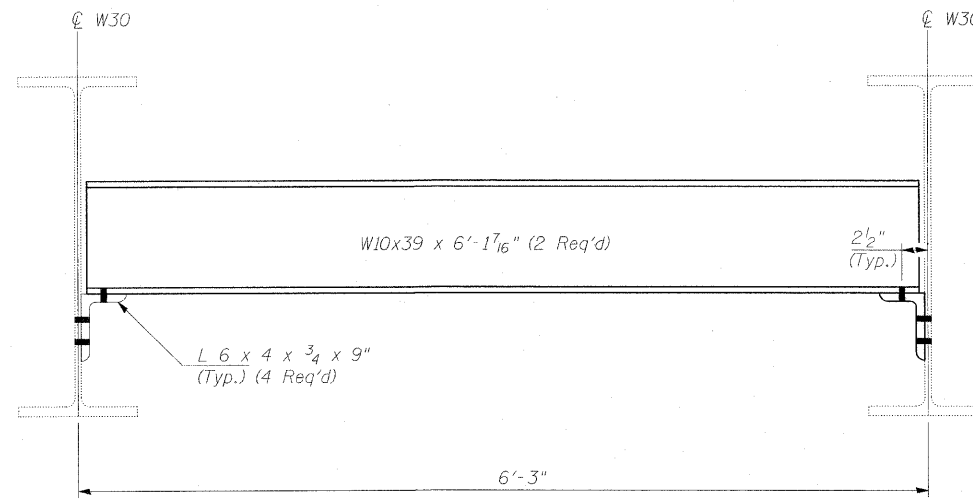
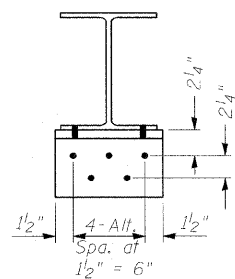
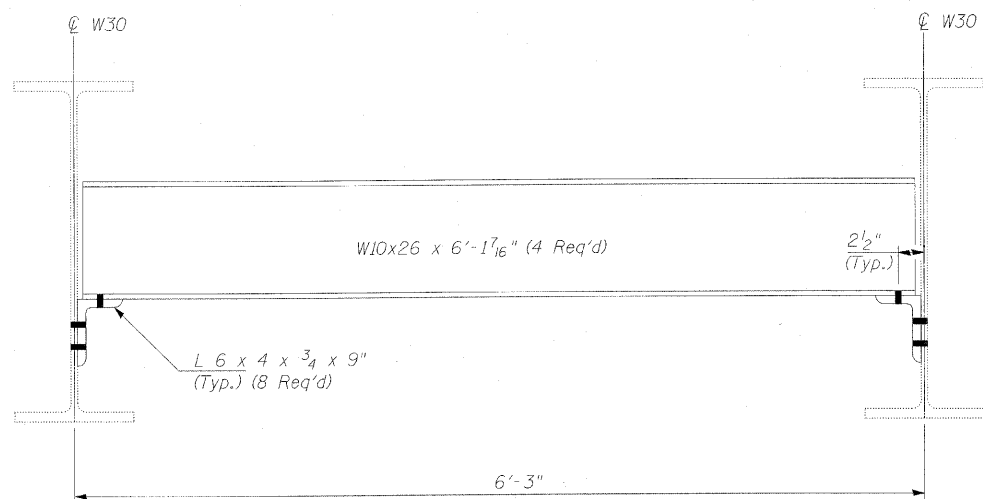
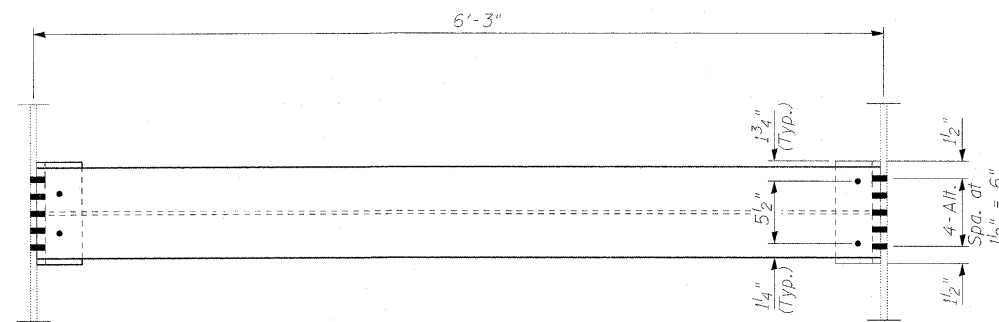
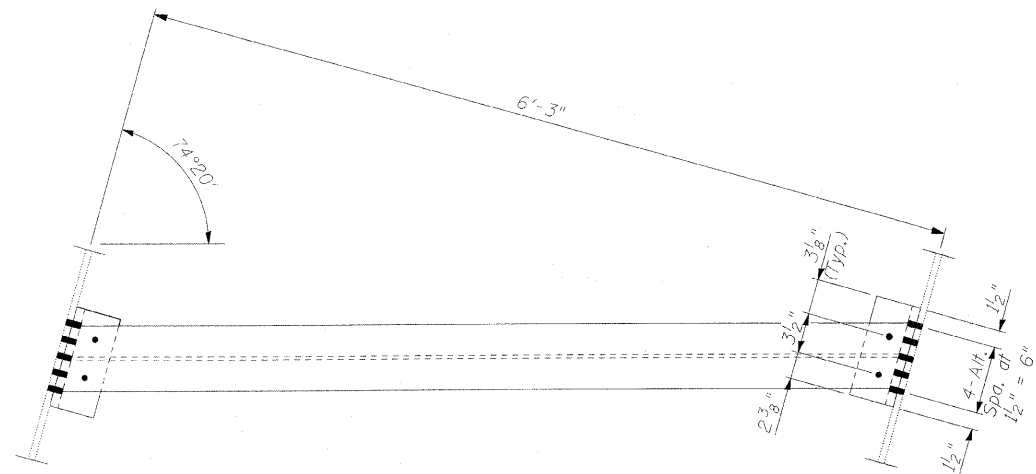
ITEM	UNIT	QUANTITY
Structural Steel Repair	Pound	3470

REPAIR DETAIL A AND B
STRUCTURE NO. 049-0012

DESIGNED JWK	2010
CHECKED JMH	EXAMINED
DRAWN DR	PASSED
CHECKED JWK	ENGINEER OF BRIDGES AND STRUCTURES

SHEET NO. S6 OF S15 SHEETS	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	2711	K-VB-I	LAKE	21	9
			CONTRACT NO. 60J63		
ILLINOIS FED. AID PROJECT					

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



REPAIR DETAIL C

REPAIR DETAIL D

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Structural Steel Repair	Pound	1,310

DESIGNED <u>JWK</u>	2010
CHECKED <u>JMH</u>	EXAMINED
DRAWN <u>DR</u>	ENGINEER OF STRUCTURAL SERVICES
CHECKED <u>JWK</u>	PASSED
	ENGINEER OF BRIDGES AND STRUCTURES

Notes:
Natural camber of new beam shall be placed upward for fabrication.
Field drill holes in new diaphragms using existing Clip L's as template.
Strengthening Web Plates not shown.
Cost of removal and disposal of existing diaphragms is included with Structural Steel Repair.

For beam end strengthening plates details see sheet S6

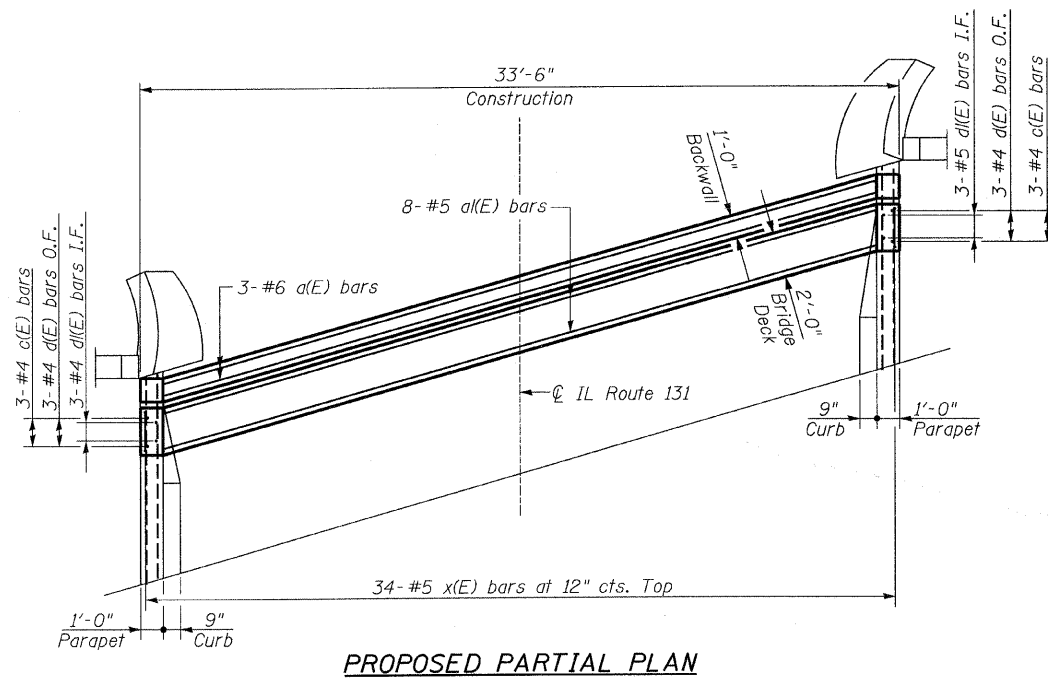
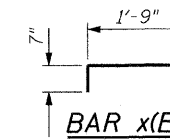
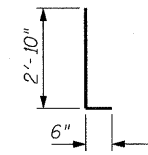
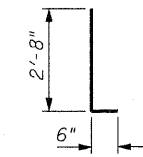
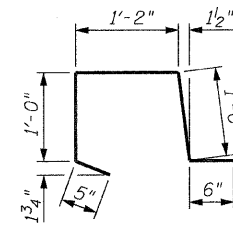
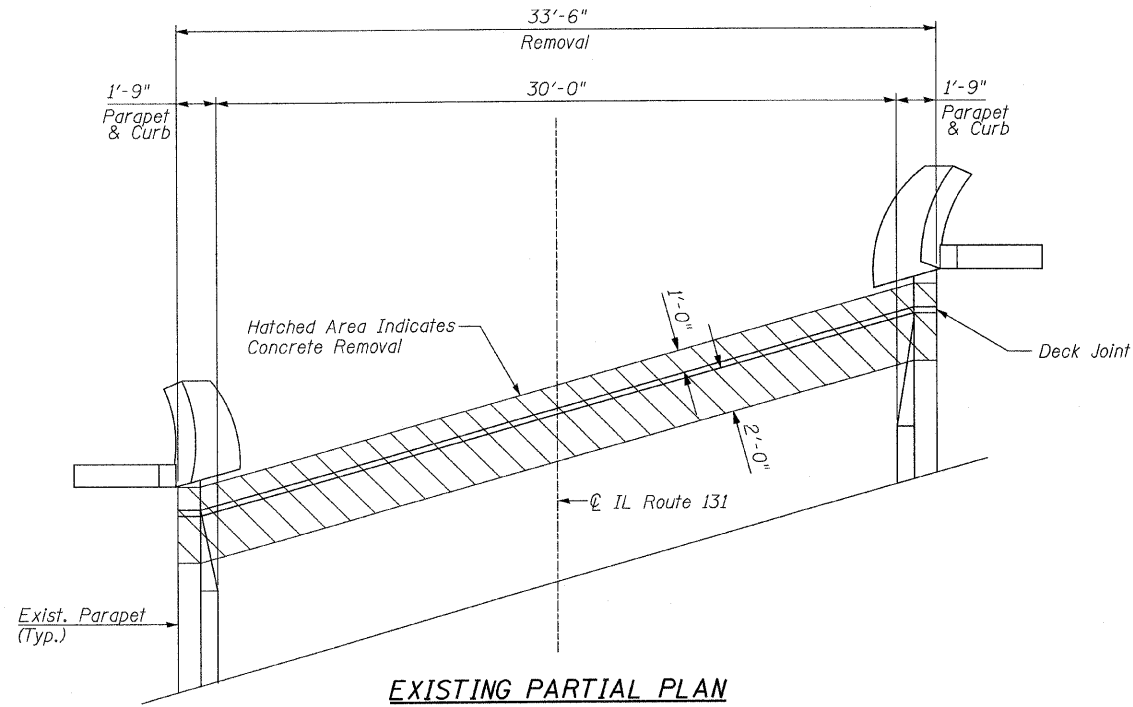
REPAIR DETAIL C AND D
STRUCTURE NO. 049-0012

SHEET NO. S7 OF S15 SHEETS	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	2711	K-VB-I	LAKE	21	10
			CONTRACT NO. 60J63		
ILLINOIS FED. AID PROJECT					

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BILL OF MATERIAL

BAR	NO.	SIZE	LENGTH	SHAPE
a(E)	6	#6	33'-2"	—
a1(E)	16	#5	33'-2"	—
d(E)	12	#4	3'-2"	L
d1(E)	12	#4	3'-4"	L
c(E)	12	#4	4'-1"	U
x(E)	68	#5	2'-4"	U



Notes:

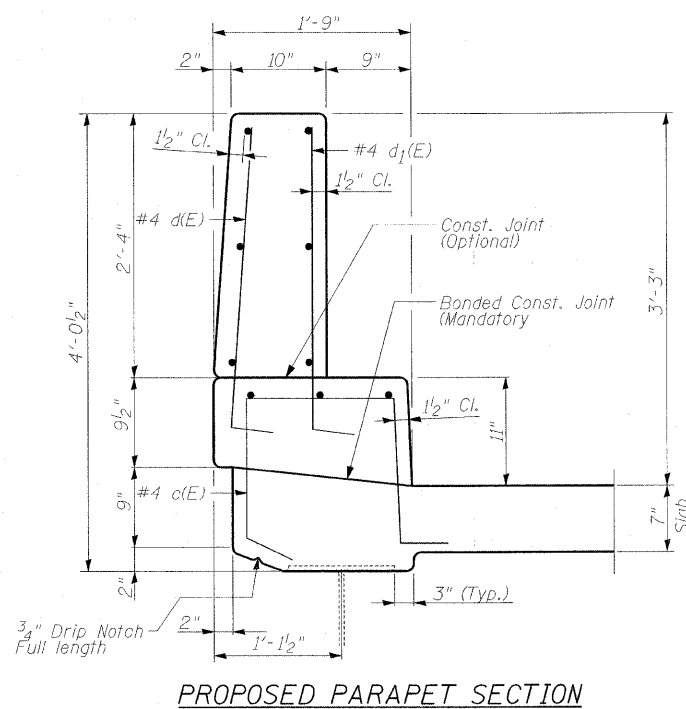
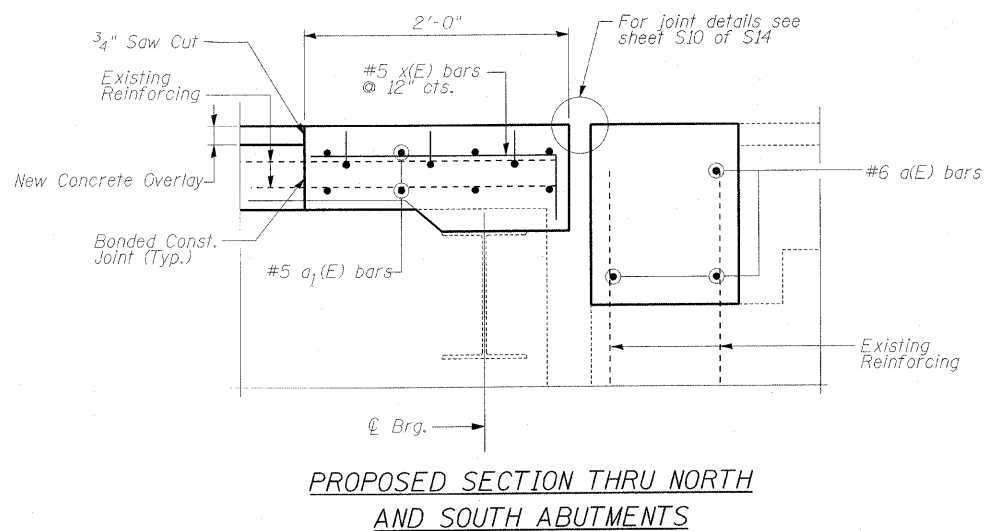
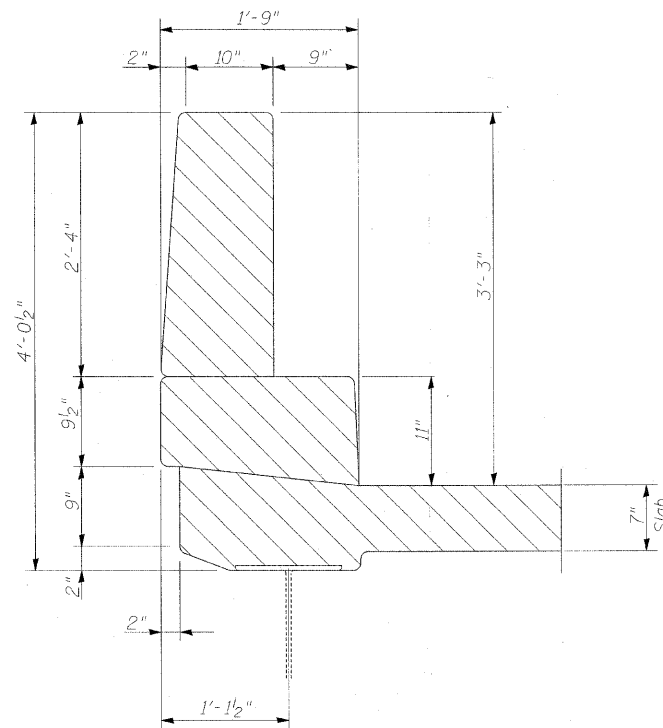
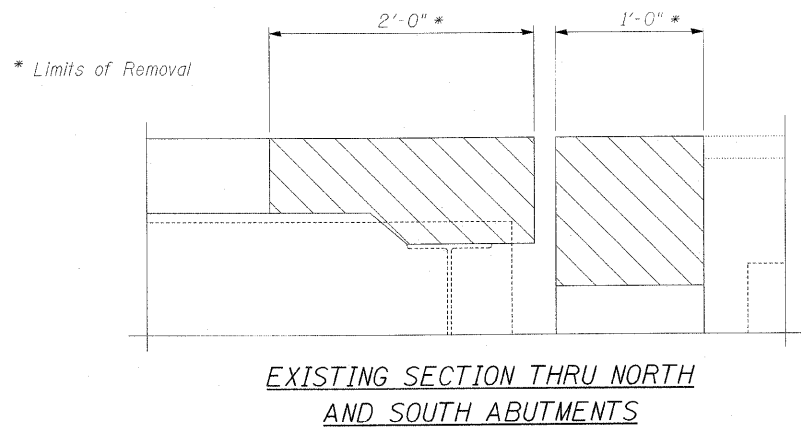
- I.F. denotes inside face.
O.F. denotes outside face
- x(E) bar spacing measured along skew.

DESIGNED JWK	January, 2018
CHECKED JMH	EXAMINED
DRAWN DR	PASSED
CHECKED JWK	ENGINEER OF BRIDGES AND STRUCTURES

**EXPANSION JOINT REPAIRS
STRUCTURE NO. 049-0012**

SHEET NO. S8 OF S15 SHEETS	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	2711	K-VB-I	LAKE	21	11
CONTRACT NO. 60J63					
ILLINOIS FED. AID PROJECT					

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



Notes:

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

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Concrete Removal	Cu. Yd.	8.4
Concrete Superstructure	Cu. Yd.	8.4
Reinforcement Bars (Epoxy Coated)	Pound	1,110

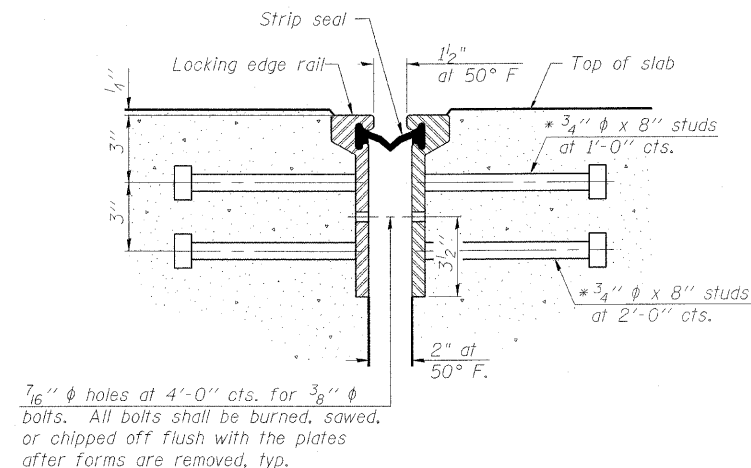
DESIGNED <i>JWK</i>	2010
CHECKED <i>JMH</i>	EXAMINED
DRAWN <i>DR</i>	ENGINEER OF STRUCTURAL SERVICES
CHECKED <i>JWK</i>	PASSED
	ENGINEER OF BRIDGES AND STRUCTURES

**EXPANSION JOINT DETAILS
STRUCTURE NO. 049-0012**

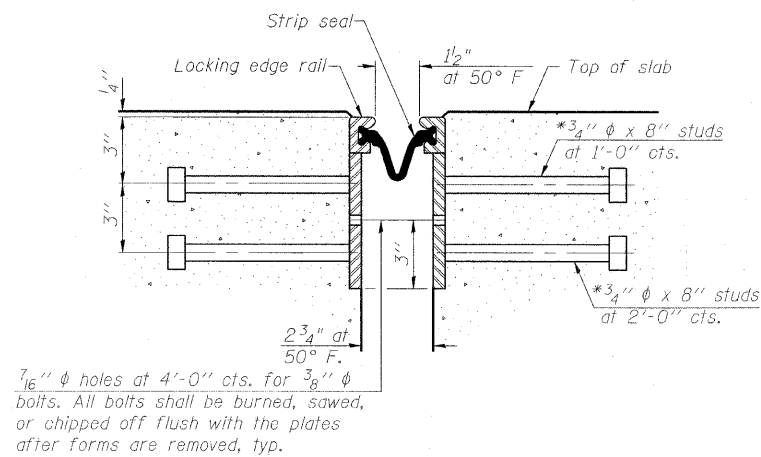
SHEET NO. S9 OF S15 SHEETS	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	2711	K-VB-I	LAKE	21	12
CONTRACT NO. 60J63					
ILLINOIS FED. AID PROJECT					

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

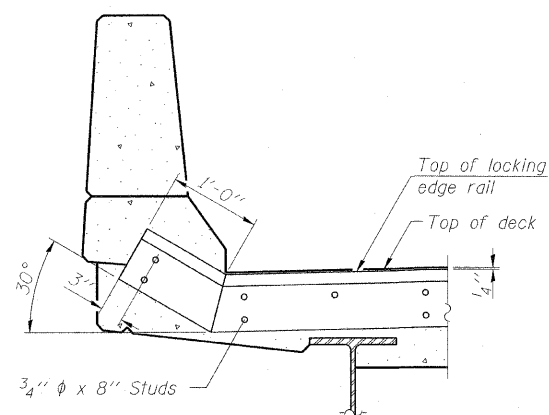
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



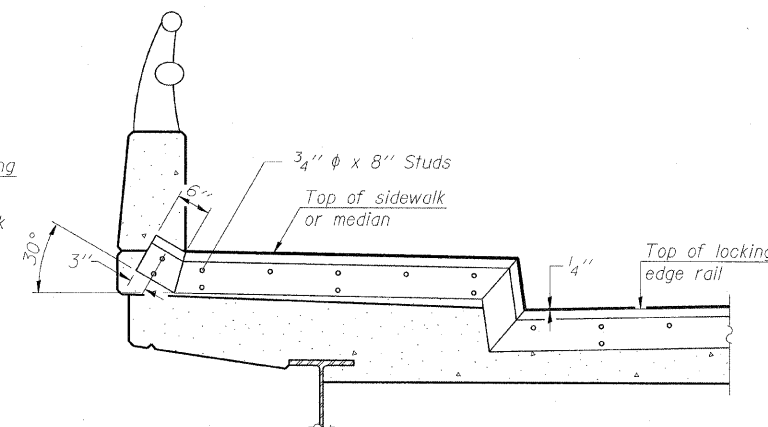
SECTION THRU
ROLLED RAIL JOINT



SECTION THRU
WELDED RAIL JOINT



AT PARAPET
See Section A-A for end treatment of skews > 30°.

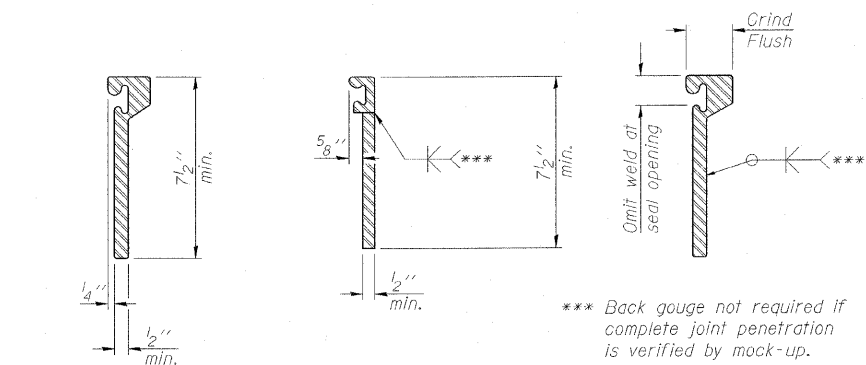


AT SIDEWALK OR MEDIAN
Shorter plates with a single row of studs at 12" cts. may be necessary on medians which are shallower than 9". See manufacturer's recommendation.

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

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

TYPICAL END TREATMENTS



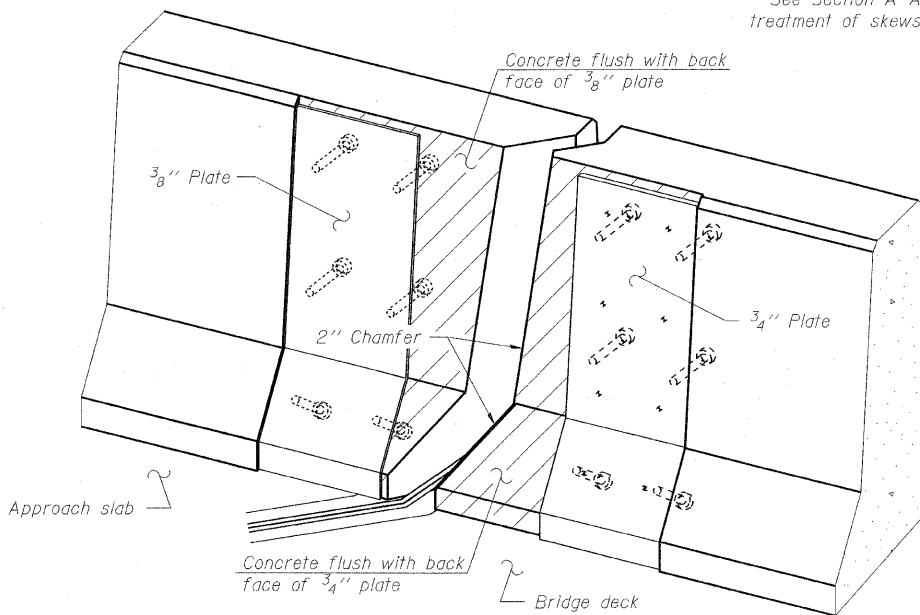
ROLLED
EXTRUDED RAIL

WELDED RAIL

LOCKING EDGE
RAIL SPLICE

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

LOCKING EDGE RAILS



TRIMETRIC VIEW
(Showing back plates only)

Notes:

The strip seal shall be made continuous and shall have a minimum thickness of 1/4". The configuration of the strip seal shall match the configuration of the Locking Edge Rails. Open or "webbed" strip seal gland configurations are not permitted. The gland shall be sized for a maximum rated movement of 4 inches. The Locking Edge Rails depicted are conceptual only, except for the minimum dimensions shown. The actual configuration of the Locking Edge Rails and matching strip seal may vary from manufacturer to manufacturer. Flanged edge rails will not be allowed. Locking Edge Rails may be spliced at slope discontinuities. The manufacturer's recommended installation methods shall be followed. The joint opening and deck dimensions detailed on the superstructure are based on a rolled rail expansion joint. If the Contractor elects to use the welded rail expansion joint, the opening and deck dimensions shall be modified according to the dimensions detailed on this sheet. Required modifications shall be made at no additional cost to the State. All steel components shall be galvanized after fabrication according to Article 520.03 of the Standard Specifications. Maximum space between rail segments at stage lines shall be 3/16", sealed with a suitable sealant.

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	70

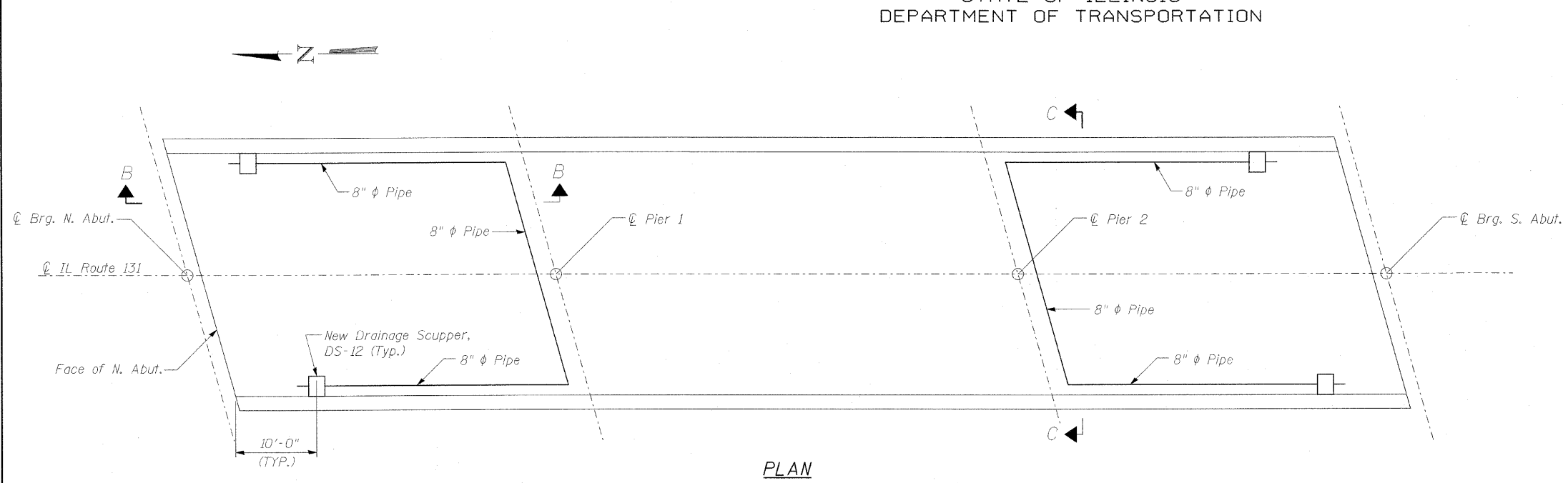
DESIGNED JWK	2010
CHECKED JMH	EXAMINED
DRAWN DR	ENGINEER OF STRUCTURAL SERVICES
CHECKED JWK	PASSED
	ENGINEER OF BRIDGES AND STRUCTURES

EJ-SSJ 11-1-09

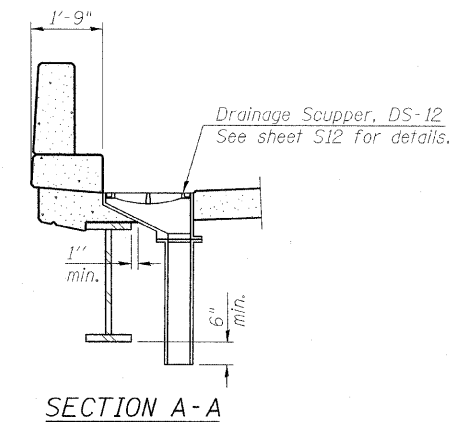
PREFORMED JOINT STRIP SEAL
STRUCTURE NO. 049-0012

SHEET NO. S10 OF S15 SHEETS	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	2711	K-VB-I	LAKE	21	13
CONTRACT NO. 60J63					
ILLINOIS FED. AID PROJECT					

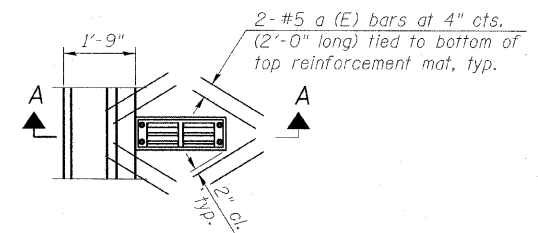
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



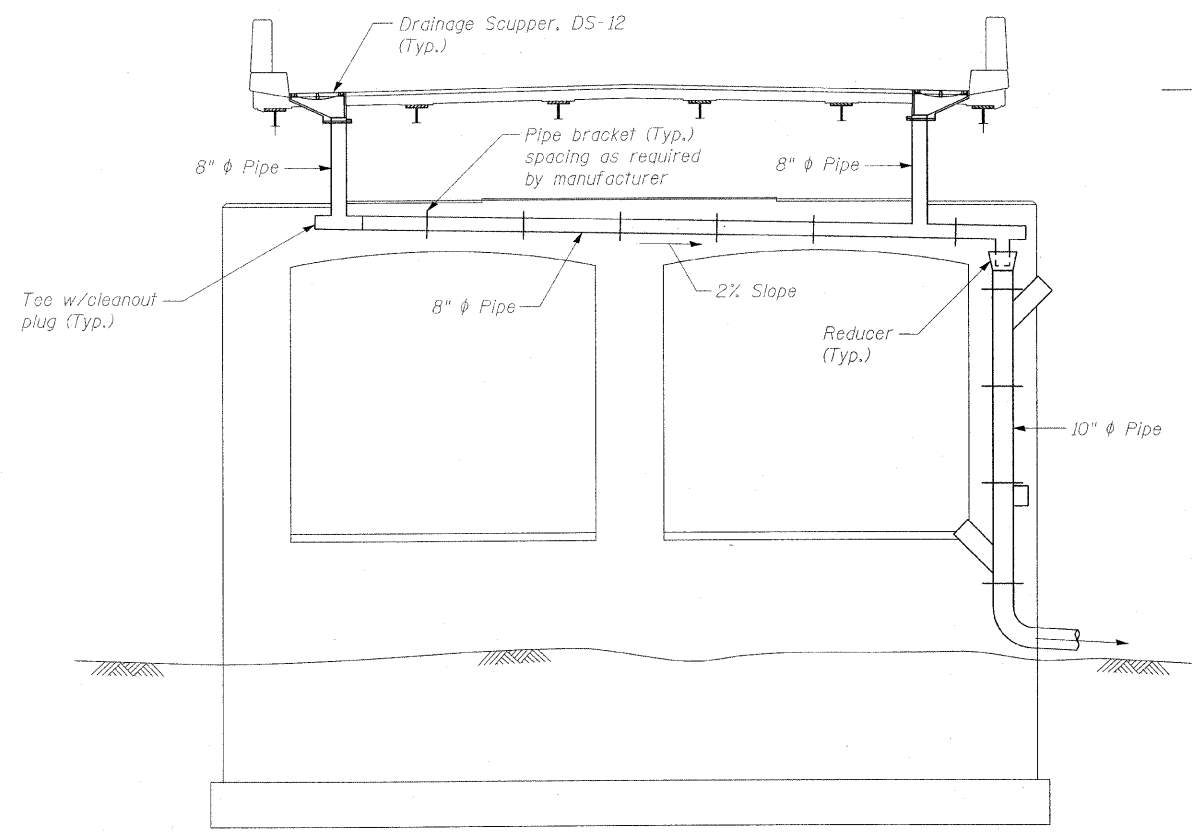
PLAN



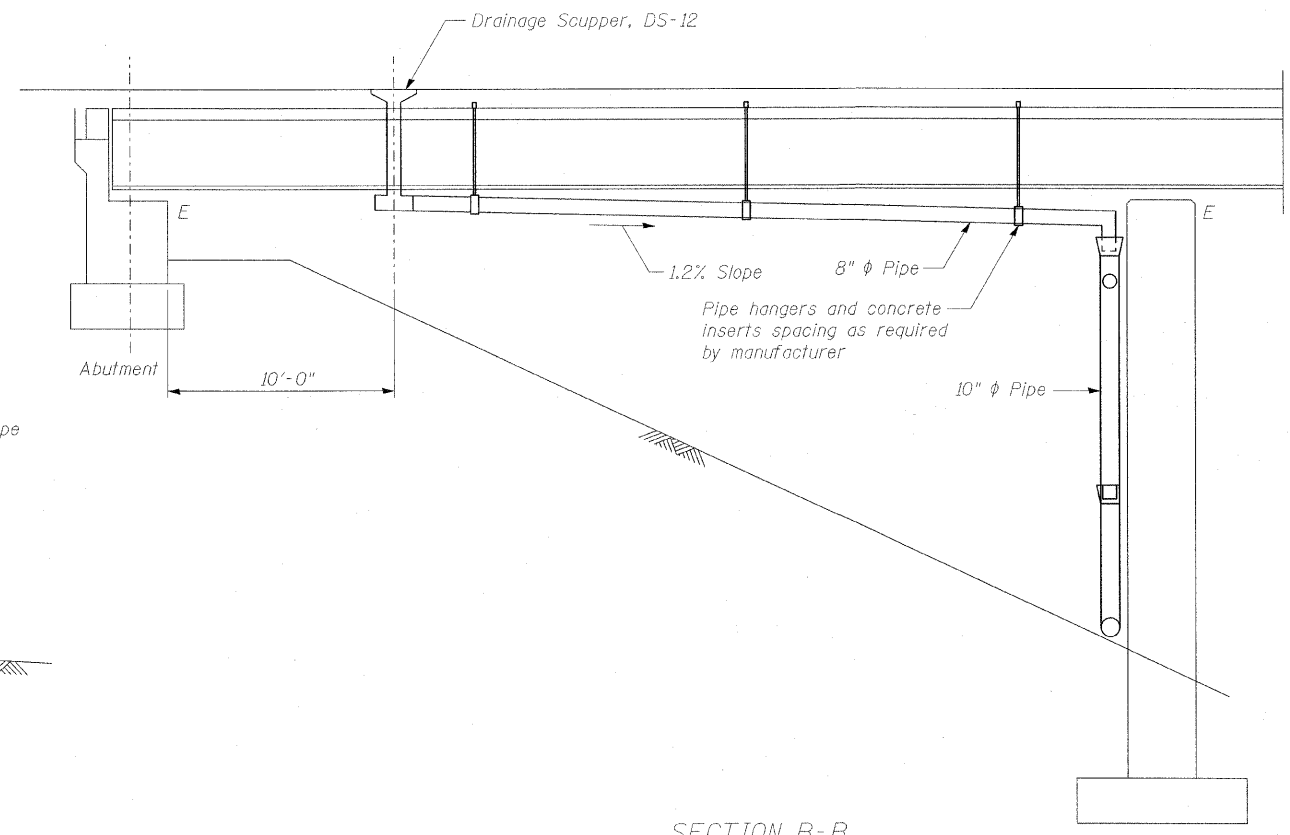
SECTION A-A



PLAN



SECTION C-C



SECTION B-B

Notes:
Reinforcement bars designated (E) shall be epoxy coated.
Cut longitudinal reinforcement to clear drainage scuppers.
Contractor shall verify configuration and direction of sloping drain pipe and outlet with Engineer (based on site conditions) prior to ordering materials.
Concrete removal required for the installation of the drainage scuppers shall be included in cost for Drainage Scuppers, DS-12.

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Drainage System	Lump Sum	1

DRAINAGE SYSTEM
STRUCTURE NO. 049-0012

DESIGNED JWK	2010
CHECKED JMH	EXAMINED
DRAWN DR	PASSED
CHECKED JWK	ENGINEER OF BRIDGES AND STRUCTURES

SHEET NO. S11 OF S15 SHEETS	F.A.U. RTE. 2711	SECTION K-VB-I	COUNTY LAKE	TOTAL SHEETS 21	SHEET NO. 14
	CONTRACT NO. 60J63				
ILLINOIS FED. AID PROJECT					

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

Notes:

All cast iron parts shall be gray iron conforming to the requirements of AASHTO M 105, Class 35B.
Bolts, anchor studs, washers and nuts shall conform to the requirements of ASTM A 307 and shall be galvanized according to AASHTO M 232.

Downspouts located on the exterior side of a painted steel fascia beam shall be painted with the finish coat specified for the exterior side of the fascia beam.

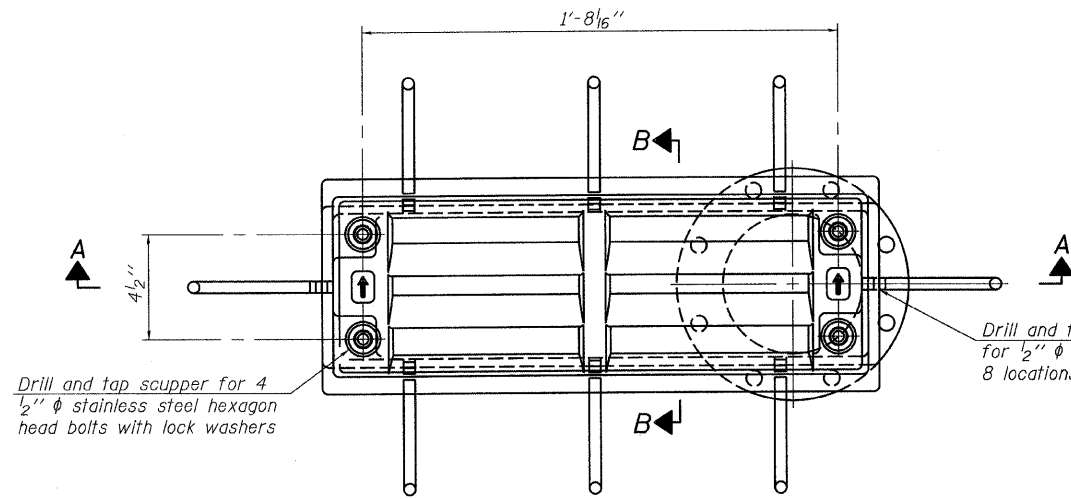
As an alternate, bolts, anchor studs, washers and nuts may be stainless steel according to Article 1006.29(d) of the Standard Specifications.

Structural steel weldments of equal sections and of the same configuration may be substituted for the cast iron scupper frame. Fillet or full penetration welds shall be used for the weldments. Details shall be submitted to the Engineer for approval. Structural steel weldments shall not be substituted for the cast iron scupper grate. Structural steel frames and downspouts shall be galvanized according to AASHTO M111.

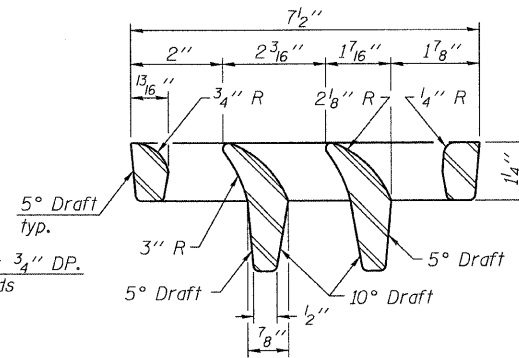
The Contractor shall take appropriate measures to assure that Protective Coat is not applied to the scupper.

Cost of the Grate, Frame, Downspout, Anchor Studs, Bolts, Washers and Nuts including complete installation of the scupper shall be paid for at the contract unit price each for Drainage Scupper, DS-12.

Alternate fiberglass downspout conforming to ASTM D 2996 with a short-time rupture strength hoop tensile stress of 30,000 psi min. may be used in lieu of the cast iron or steel equivalent.

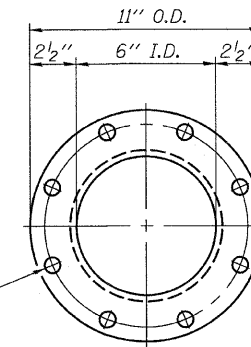


PLAN

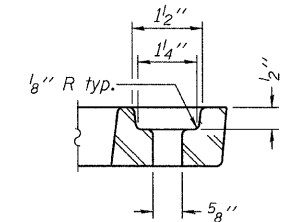


VANE GRATE DETAIL

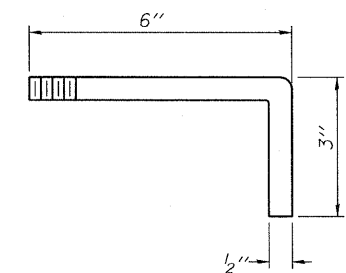
8- 9/16" ϕ holes on an 9 1/2" ϕ bolt circle



DOWNSPOUT



BOLT HOLE DETAIL

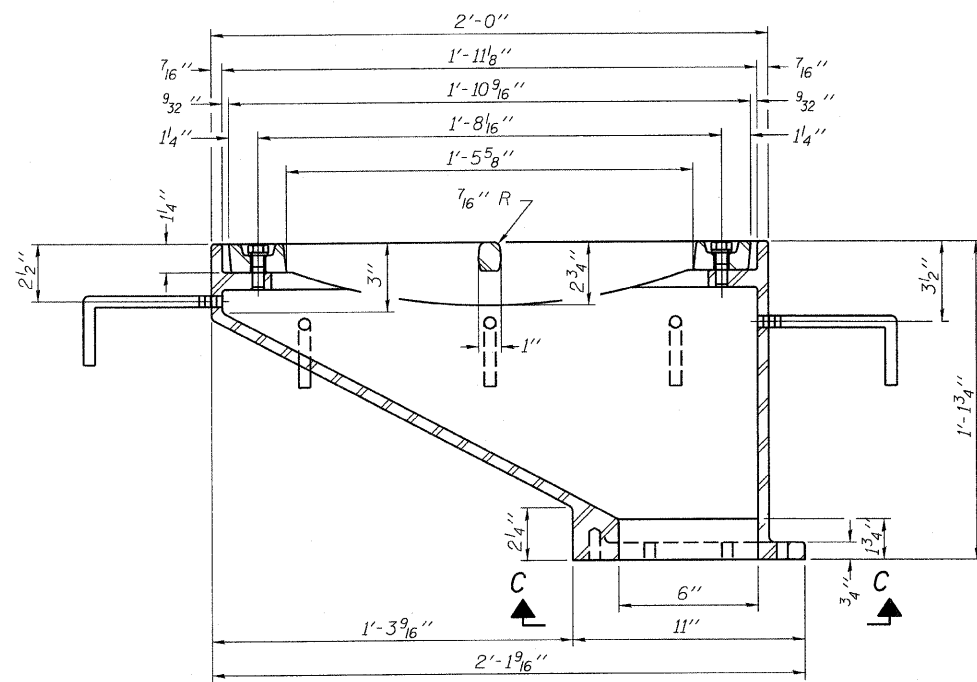


ANCHOR STUD DETAIL

BILL OF MATERIAL

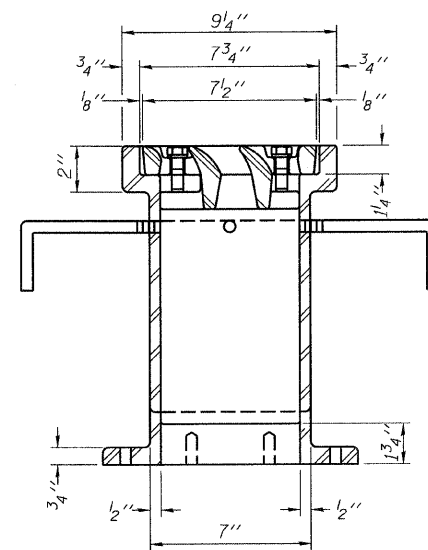
ITEM	UNIT	QUANTITY
Drainage Scupper, DS-12	Each	4

DRAINAGE SCUPPER, DS-12
STRUCTURE NO. 049-0012



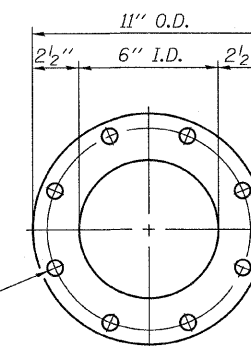
SECTION A-A

See sheet of for scupper location relative to parapet.



SECTION B-B

Drill and tap 8 holes for 1/2"-13 bolts on a 9 1/2" ϕ bolt circle. (2 blind holes are 1 1/4" deep, 6 thru holes)



VIEW C-C

DESIGNED	JWK
CHECKED	JMH
DRAWN	DR
CHECKED	JWK

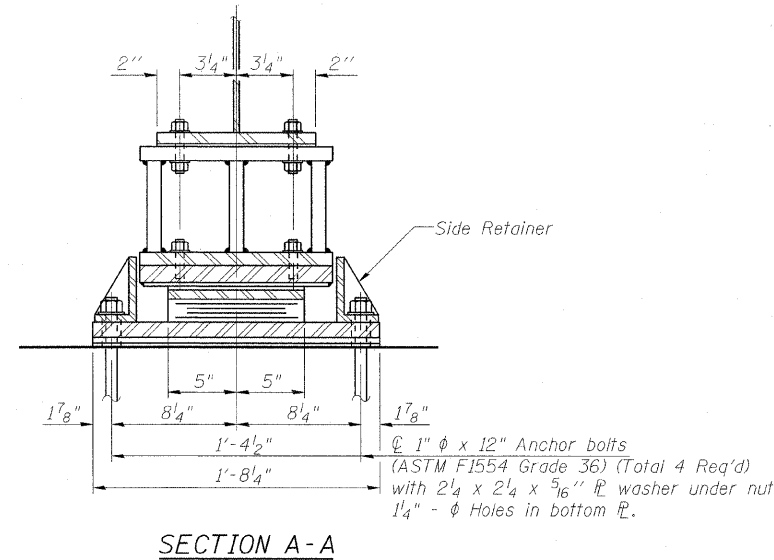
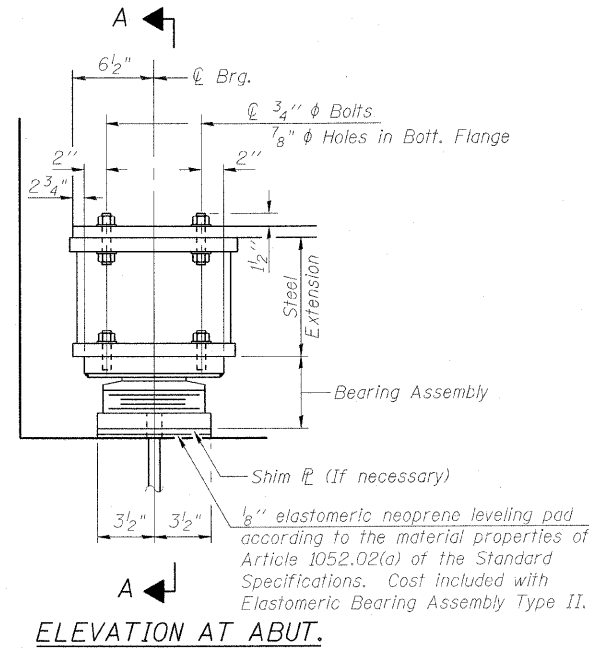
January, 2010
EXAMINED
PASSED
ENGINEER OF STRUCTURAL SERVICES
ENGINEER OF BRIDGES AND STRUCTURES

DS-12

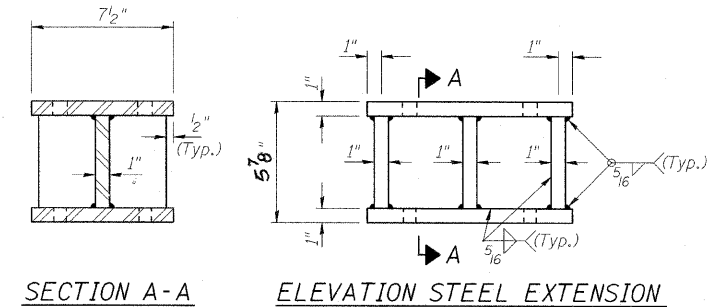
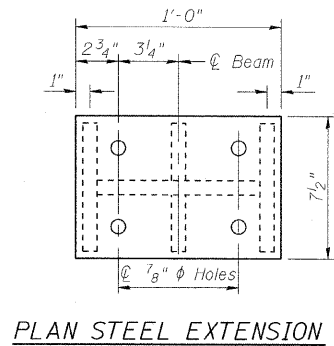
11-1-09

SHEET NO. S12 OF S15 SHEETS	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	2711	K-VB-I	LAKE	21	15
CONTRACT NO. 60J63					
ILLINOIS FED. AID PROJECT					

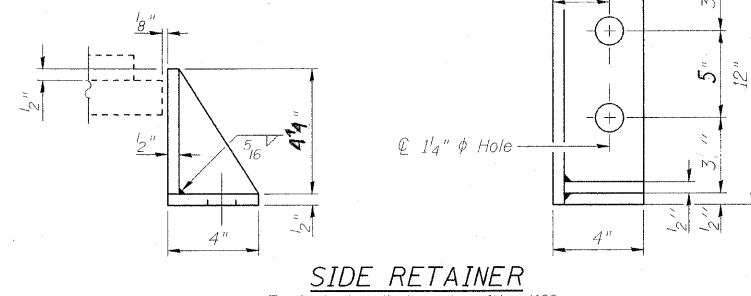
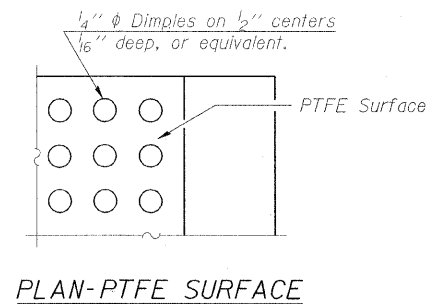
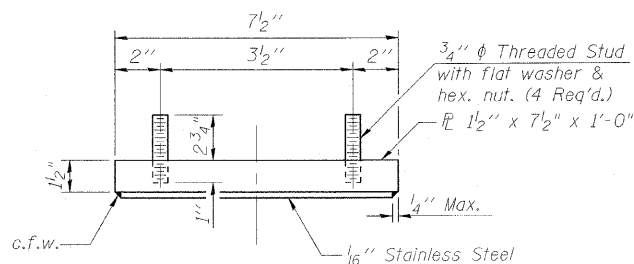
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



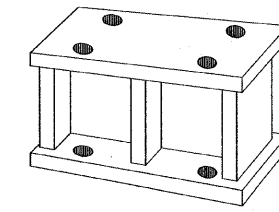
Notes:
Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. ASTM A307 Grade C anchor bolts may be used in lieu of ASTM F1554 Grade 36 (Fy=36ksi). The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.
Anchor bolts for Type II bearings shall be placed in holes drilled in the concrete through holes in the bottom bearing plate after members are in place. Side retainers shall be placed after bolts are installed.
Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.
Side retainers and other steel members required for the bearing assembly shall be included in the cost of Elastomeric Bearing Assembly, Type II.
The 1/8" PTFE sheet shall be bonded directly to the top steel plate with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MMM-A-134, Type I. The bond agent shall be applied on the full area of the contact surfaces.
Bonding of 1/8" PTFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.



TYPE II ELASTOMERIC EXP. BRG.

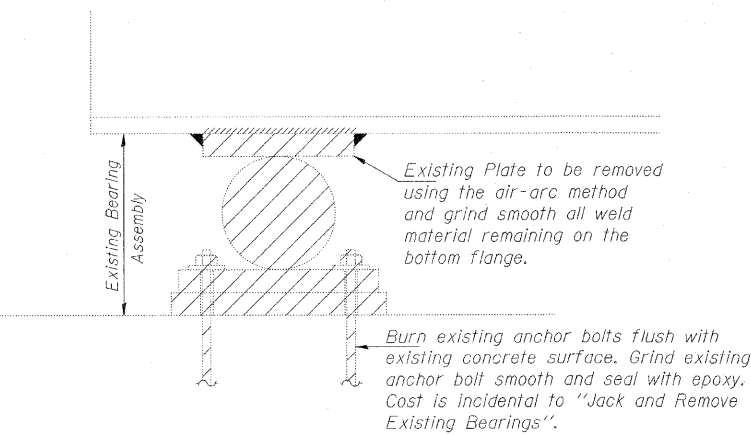
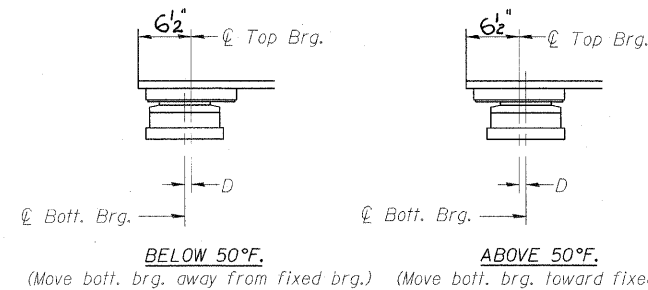
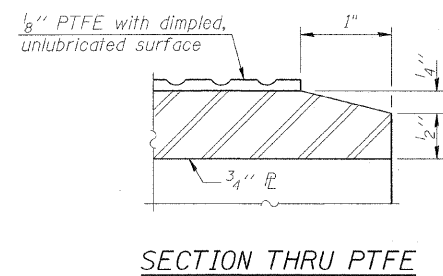
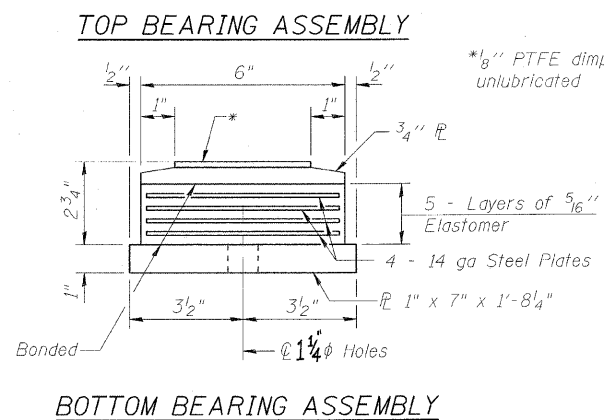


FABRICATED STEEL EXTENSION



Note: Prior to ordering any material, the Contractor shall verify in the field all bearing height and shim thickness dimensions.

FABRICATED STEEL EXTENSION



INTERIOR GIRDER REACTION TABLE	
Abutment	
R _{DL} (k)	11.7
R _{SDL} (k)	4.7
R _{LL} (k)	30.9
R _{Imp} (k)	9.1
R _{TOTAL} (k)	56.4

Minimum Jack Size = **22 TONS**

BILL OF MATERIAL

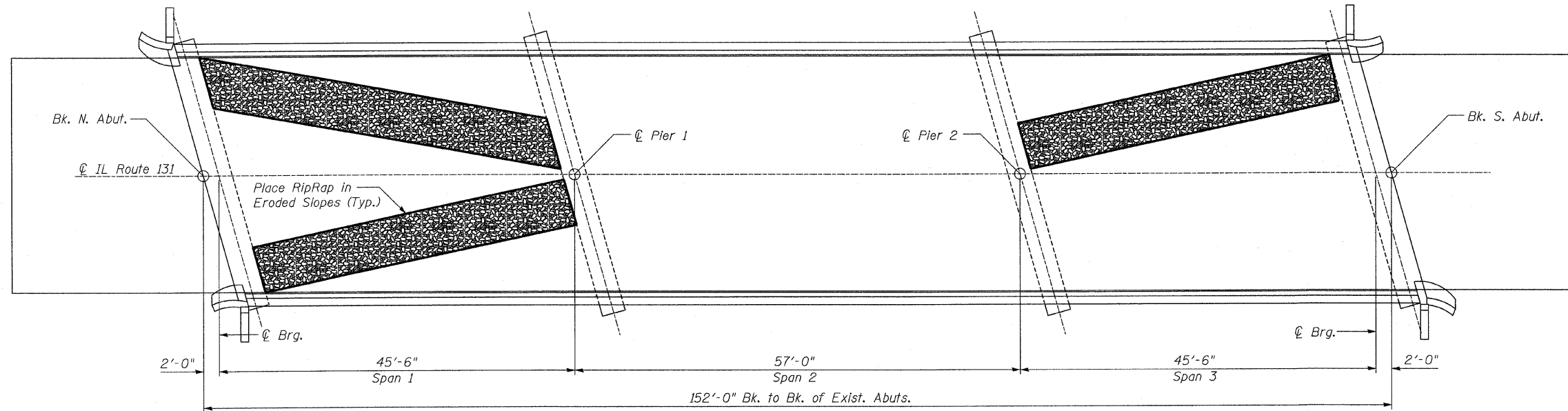
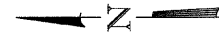
Item	Unit	Total
Elastomeric Bearing Assembly Type II	Each	6
Jack and Remove Existing Bearings	Each	6
Anchor Bolts, 1" phi	Each	12
Furnishing and Erecting Structural Steel	Pound	530

**BEARING DETAILS - NORTH ABUTMENT
STRUCTURE NO. 049-0012**

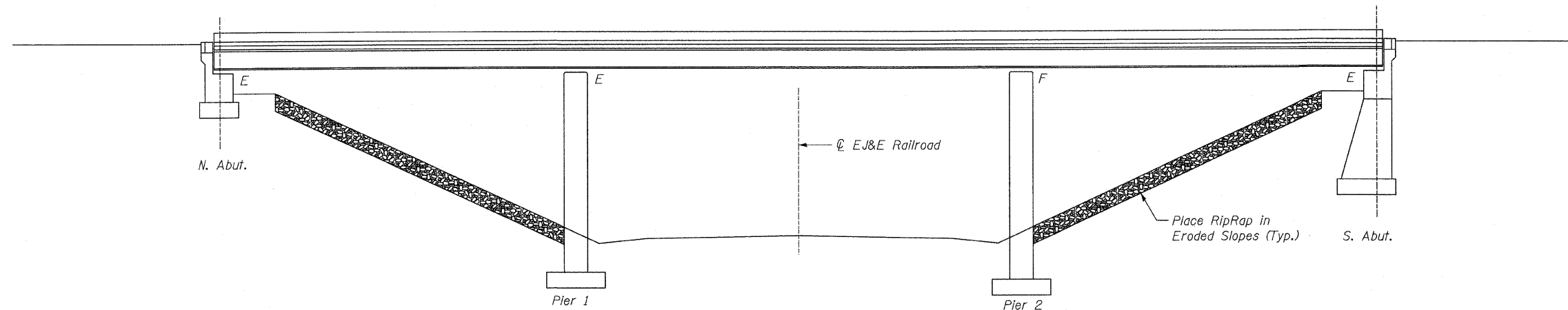
DESIGNED JWK	2010
CHECKED JMH	EXAMINED
DRAWN DR	PASSED
CHECKED JWK	ENGINEER OF STRUCTURAL SERVICES
	ENGINEER OF BRIDGES AND STRUCTURES

SHEET NO. S14 OF S15 SHEETS	F.A.U. RTE. 2711	SECTION K-VB-I	COUNTY LAKE	TOTAL SHEETS 21	SHEET NO. 17
	CONTRACT NO. 60J63				
ILLINOIS FED. AID PROJECT					

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



PLAN



ELEVATION

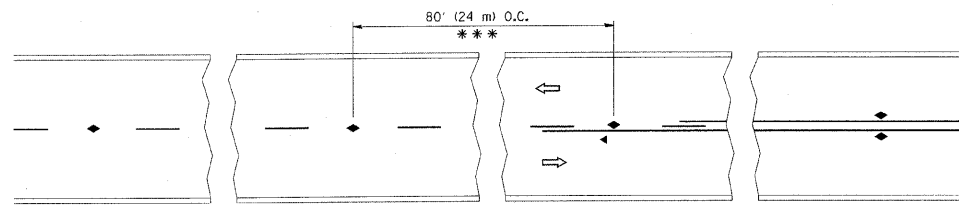
BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Stone Rip Rap, Class A3	Ton	60

STONE RIPRAP PLACEMENT
STRUCTURE NO. 049-0012

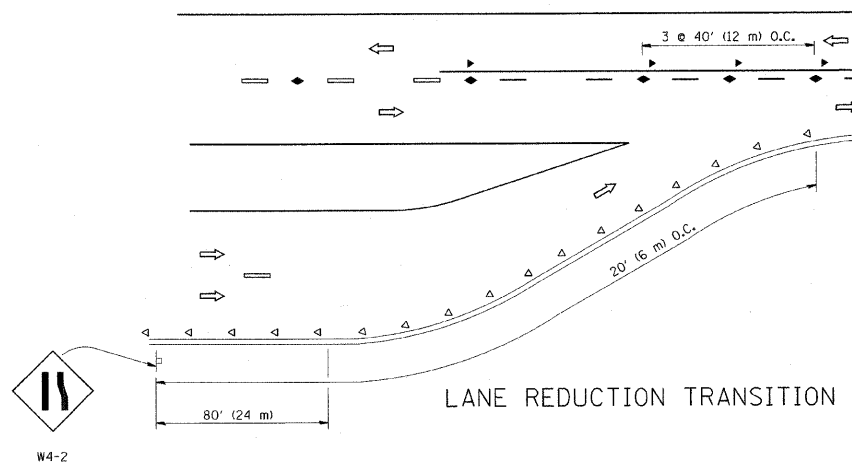
DESIGNED <i>JWK</i>	January, 2010
CHECKED <i>JMH</i>	EXAMINED
DRAWN <i>DR</i>	ENGINEER OF STRUCTURAL SERVICES
CHECKED <i>JWK</i>	PASSED
	ENGINEER OF BRIDGES AND STRUCTURES

SHEET NO. S15 OF S15 SHEETS	F.A.U. RTE. 2711	SECTION K-VB-I	COUNTY LAKE	TOTAL SHEETS 21	SHEET NO. 18
	CONTRACT NO. 60J63			ILLINOIS FED. AID PROJECT	

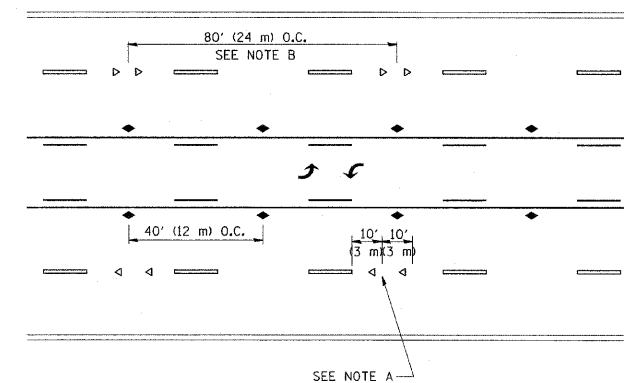


*** REDUCE TO 40' (12 m) O.C. ON CURVES WITH POSTED OR ADVISORY SPEED 45 M.P.H. (70 km/h) OR LESS.

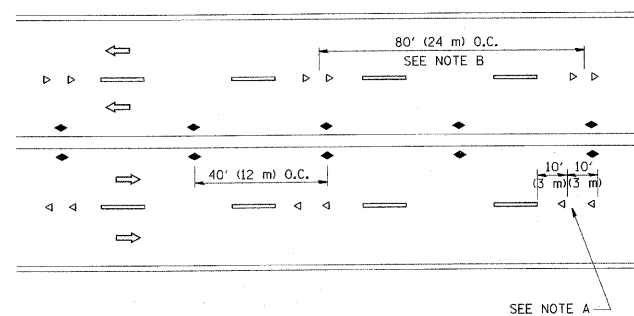
TWO-LANE/TWO-WAY



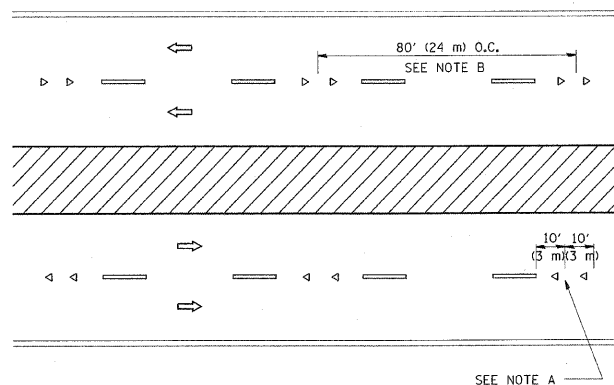
LANE REDUCTION TRANSITION



TWO-WAY LEFT TURN



MULTI-LANE/UNDIVIDED



MULTI-LANE/DIVIDED

GENERAL NOTES

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

SYMBOLS

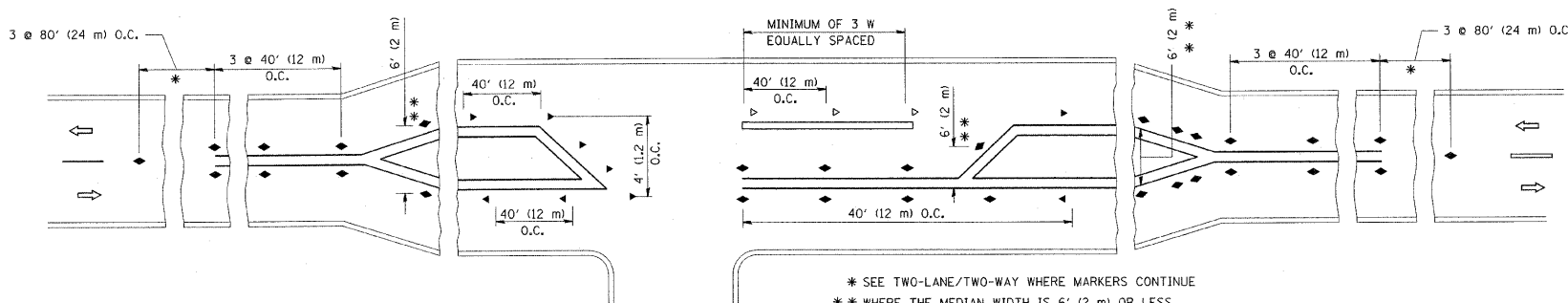
- YELLOW STRIPE
- WHITE STRIPE
- ◀ ONE-WAY AMBER MARKER
- ◁ ONE-WAY CRYSTAL MARKER (W/O)
- ◆ TWO-WAY AMBER MARKER

LANE MARKER NOTES

- A. USE DOUBLE LANE LINE MARKERS SPACED AS SHOWN.
- B. REDUCE TO 40' (12 m) O.C. ON CURVES WHERE ADVISORY SPEEDS ARE 10 M.P.H. (20 km/h) LOWER THAN POSTED SPEEDS.

DESIGN NOTES

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



LEFT TURN

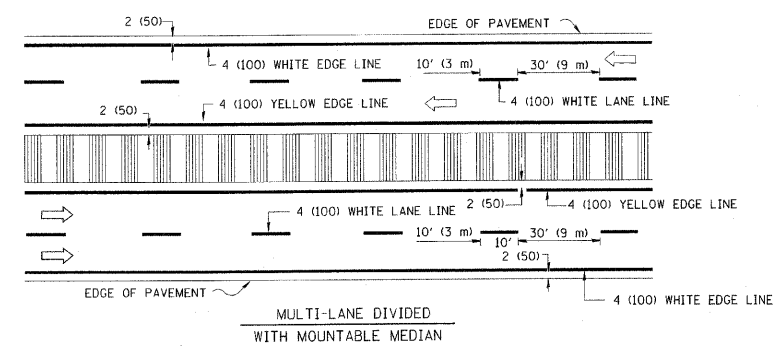
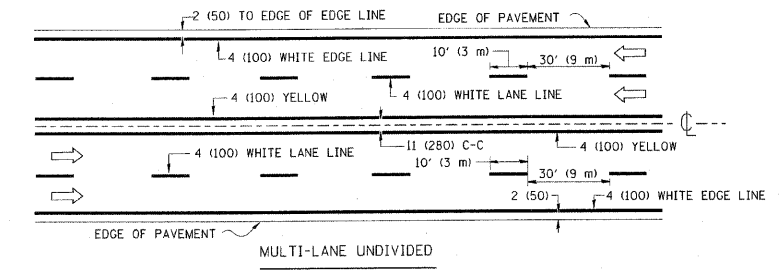
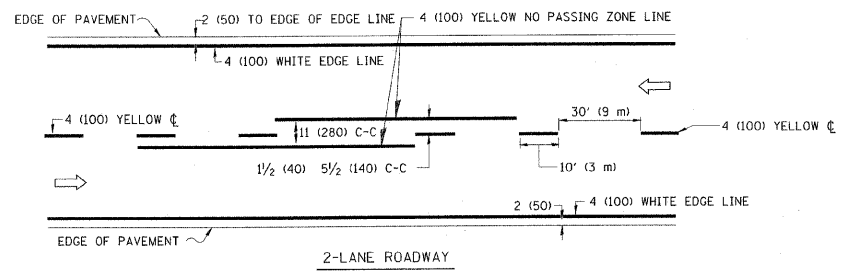
* SEE TWO-LANE/TWO-WAY WHERE MARKERS CONTINUE
 ** WHERE THE MEDIAN WIDTH IS 6' (2 m) OR LESS USE TWO-WAY MARKERS.

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

FILE NAME =	USER NAME = drivakosgn	DESIGNED -	REVISED - T. RAMMACHER 09-19-94
at\pwwork\pwwork\drivakosgn\d2100315\1.dgn		DRAWN -	REVISED - T. RAMMACHER 03-12-99
	PLOT SCALE = 50.000 1/ IN.	CHECKED -	REVISED - T. RAMMACHER 01-06-00
	PLOT DATE = 9/9/2009	DATE -	REVISED - C. JUJUS 09-09-09

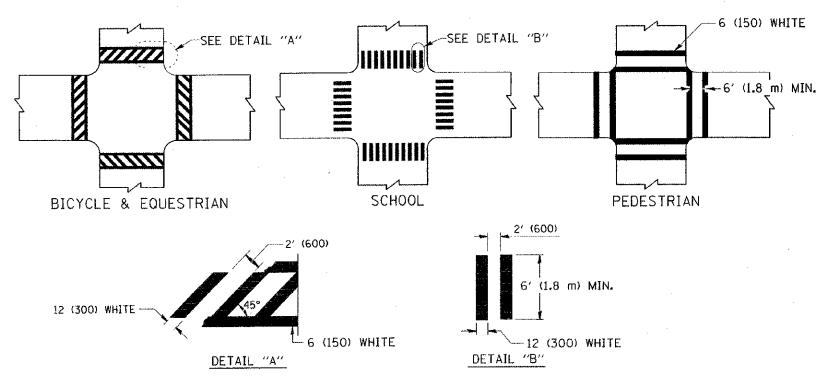
STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

TYPICAL APPLICATIONS				F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
RAISED REFLECTIVE PAVEMENT MARKERS (SNOW-PLOW RESISTANT)				2711	K-VB-I	LAKE	21	19
SCALE: NONE SHEET NO. 1 OF 1 SHEETS STA. TO STA.				TC-11		CONTRACT NO. 60J63		
				FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				

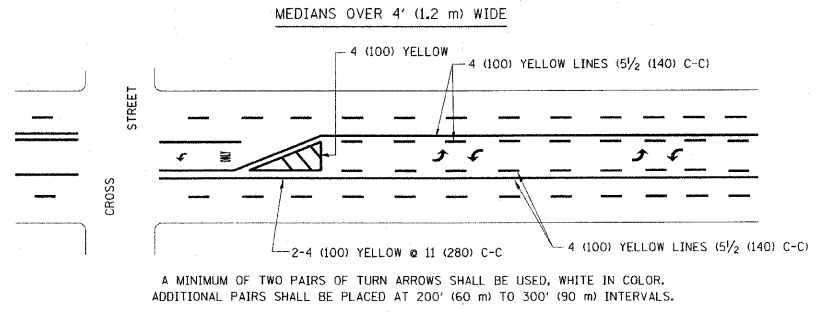
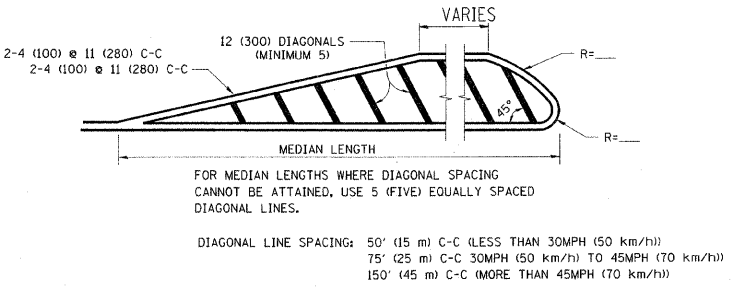
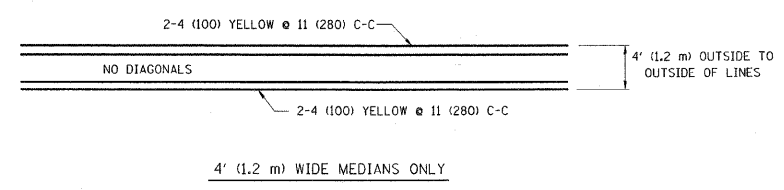


NOTE: MEDIANS WITH BARRIER CURB DO NOT REQUIRE AN EDGE LINE

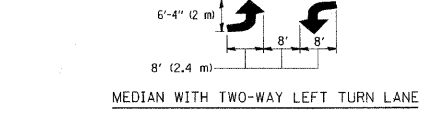
TYPICAL LANE AND EDGE LINE MARKING



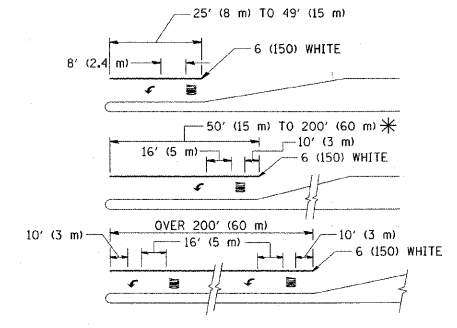
TYPICAL CROSSWALK MARKING



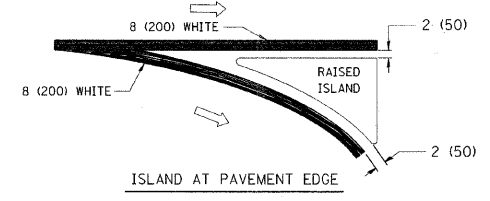
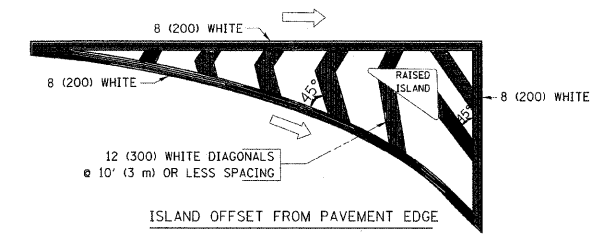
TYPICAL PAINTED MEDIAN MARKING



TYPICAL LEFT (OR RIGHT) TURN LANE



TYPICAL TURN LANE MARKING



TYPICAL ISLAND MARKING

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

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

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

FILE NAME =	USER NAME = drivakosgn	DESIGNED - EVERS	REVISED - T. RAMMACHER 10-27-94
ca:\pwork\pavdot\drivakosgn\d0108315\to3.dgn		DRAWN -	REVISED - C. JUCIUS 09-09-09
	PLOT SCALE = 50.000' / IN.	CHECKED -	REVISED -
	PLOT DATE = 9/9/2009	DATE - 03-19-90	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**DISTRICT ONE
TYPICAL PAVEMENT MARKINGS**

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

F.A.I.T. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2711	K-VB-I	LAKR	21	20
TC-13		CONTRACT NO. 60J63		
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				

ROUTE MARKERS

FOR U.S. ROUTES
M1-40-2424

FOR ILLINOIS ROUTES
M1-50-2424

R.R. UNMARKED ROUTES
SPECIAL 24" x 18" VARIABLE
4" BLACK LETTERS ON WHITE
REFLECTIVE BACKGROUND

ARROWS SIGNS

M5-1L-2115

M5-1R-2115

M6-1-2115

M6-1-2115

M6-3-2115

CARDINAL DIRECTION & DETOUR SIGNS

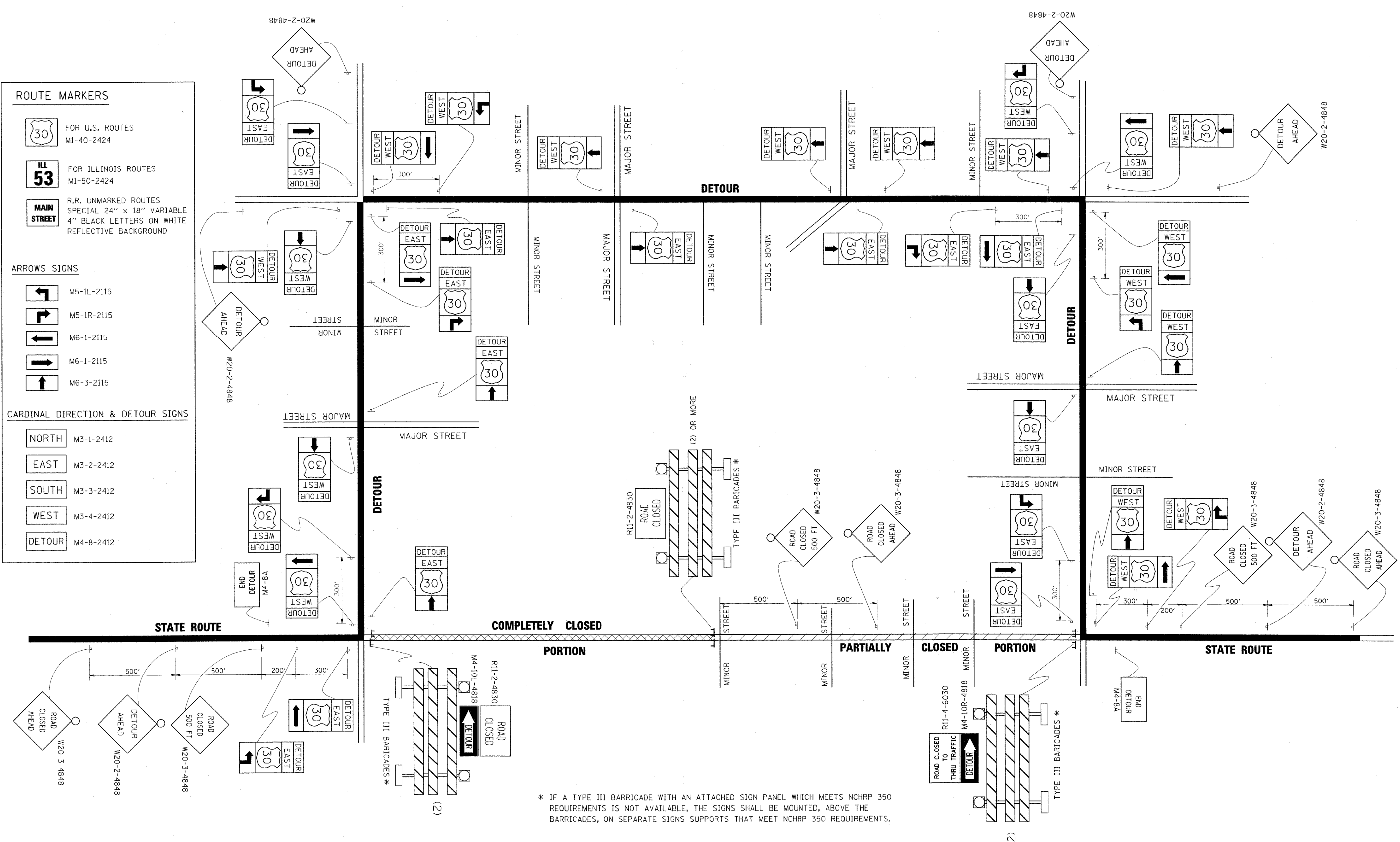
NORTH M3-1-2412

EAST M3-2-2412

SOUTH M3-3-2412

WEST M3-4-2412

DETOUR M4-8-2412



* IF A TYPE III BARRICADE WITH AN ATTACHED SIGN PANEL WHICH MEETS NCHRP 350 REQUIREMENTS IS NOT AVAILABLE, THE SIGNS SHALL BE MOUNTED, ABOVE THE BARRICADES, ON SEPARATE SIGNS SUPPORTS THAT MEET NCHRP 350 REQUIREMENTS.

FILE NAME =
c:\pwwork\p\j\DOT\DRIVKOSGN\d0108315\21.dgn

USER NAME = drivakosgn
DESIGNED -
DRAWN -
CHECKED -
DATE -

DESIGNED -
DRAWN -
CHECKED -
DATE -

REVISED - 10-18-02
REVISED - R. BORO 09-14-09
REVISED -
REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**DETOUR SIGNING
FOR CLOSING STATE HIGHWAYS**

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

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2711	K-VB-I	LAKE	21	21
TC-21		CONTRACT NO. 60J63		
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				