

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
412	(50-6VB)I-2	LASALLE	27	1

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

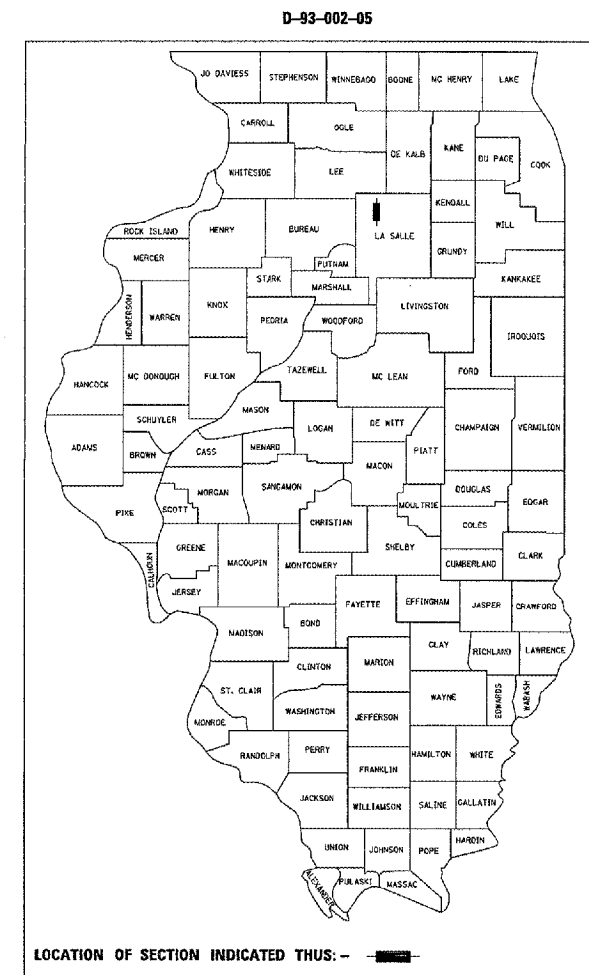
**PROPOSED
HIGHWAY PLANS**

FAI ROUTE 412 (I-39)
SECTION (50-6VB)I-2

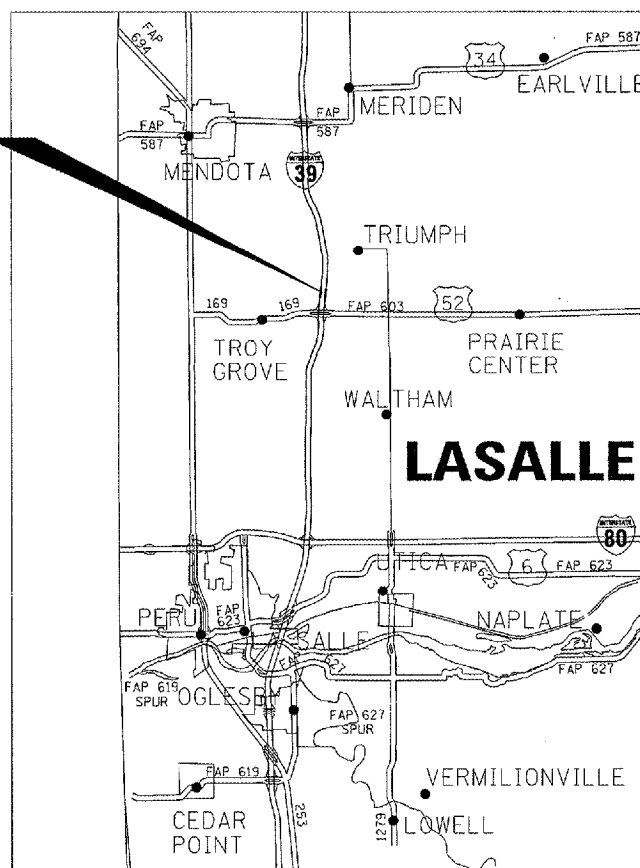
LASALLE COUNTY
C-93-074-05
BRIDGE REPAIR

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PROJECT LOCATION
FAI 412 OVER C. & N.W. RAILROAD
S.N. 050-0168 (NB)



GROSS LENGTH OF PROJECT = SB: 176 FEET 0.03 MI
NB: 176 FEET 0.03 MI
NET LENGTH OF PROJECT = SB: 176 FEET 0.03 MI
NB: 176 FEET 0.03 MI

MICROFILMED _____
REEL NUMBER _____
AWARDED _____
RESIDENT ENGINEER _____
AS BUILT CHANGES WERE MADE
ON THE FOLLOWING SHEETS _____

JULIE 1-800-892-0123

DISTRICT 3 NO. (815) 434-6131

CONTRACT 66568

PROJECT ENGINEER: TOM HUFNAGEL (815) 434-8418
UNIT CHIEF: RON WOODSHANK (815) 434-8419

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED 3/29 2005
Bryson J. Mount
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER

May 13, 2005
Mike Hene
ENGINEER OF DESIGN AND ENVIRONMENT

May 13, 2005
Victor Moders
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

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OF THE STATE OF ILLINOIS

CONTRACT NO. 66568				
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
412	(50-6VB)I-2	LASALLE	25	2
FED. ROAD DIST. NO.	ILLINOIS	STATE AID PROJECT		

GENERAL NOTES:

Plan dimensions and details relative to the existing roadway and structure have been taken from existing 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 to 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 actually furnished at the unit price bid for the work.

The contractor shall be responsible for protecting utility property from construction operations as outlined in Article 107.31 of the Standard Specifications. The "Julie" Number is 1-800-892-0123. A minimum of forty-eight (48) hours advance notice is required.

The cost of any saw cuts made to complete the work as described in plan details, unless otherwise noted shall not be paid for separately but shall be included in the various pay items involved.

Where section or subsection monuments are encountered, the engineer shall be notified before such monuments are removed. The contractor shall protect and carefully preserve all monuments until an authorized surveyor or agent has witnessed or otherwise referenced their location. The contractor shall be responsible for having an authorized surveyor reestablish any section or subsection monuments destroyed by his operations.

Any reference to a standard in these plans shall be interpreted to mean the edition as indicated by the subnumber listed on the index of sheets or the copy of the standard included in these plans.

New Reinforcement bars shall be Epoxy Coated.

Reinforcement bars that are to remain in place which are damaged during concrete removal operations shall be repaired or replaced using approved bar splicer or anchorage system. Cost Included with "Concrete Removal".

All structural steel shall be AASHTO M 270 Grade 50 except expansion joint plates and attached bars which shall be AASHTO M 270 Grade 36.

Anchor Bolts shall be high strength bolts (AASHTO M 164, Type3). 1/2" dia. open holes for 1" dia. bolts.

Expansion joint plates and attached bars shall be shop painted with the inorganic zinc rich primer.

Reinforcement bars shall conform to the requirements of AASHTO M 31 or M322 Grade 60.

STANDARDS

- 000001-04 STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
- 001001 AREAS OF REINFORCEMENT
- 001006 DECIMAL OF AN INCH AND OF A FOOT
- 609001-02 BRIDGE APPROACH SHOULDER PAVEMENT AND DRAIN
- 635011-01 REFLECTOR MARKER AND MOUNTING DETAILS
- 701101-01 OFF-ROAD OPERATIONS, MULTILANE, 4.5 m (15') TO 600mm (24") FROM EDGE OF PAVEMENT
- 701106-01 OFF-ROAD OPERATIONS, MULTILANE, MORE THAN 4.5 m (15') AWAY
- 701400-02 APPROACH TO LANE CLOSURE, FREEWAY/EXPRESSWAY
- 701402-05 LANE CLOSURE, FREEWAY/EXPRESSWAY
- 701411-03 LANE CLOSURE, MULTILANE, AY ENTRANCE OR EXIT RAMP, FOR SPEEDS \geq 45 MPH
- 702001-05 TRAFFIC CONTROL DEVICES
- 701426-02 LANE CLOSURE, MULTILANE, INTERMITTENT OR MOVING OPER., FOR SPEEDS \geq 45 MPH

DATE: 4/1/2005

PREPARED BY: Bruce A. Bucken
DISTRICT OPERATIONS ENGINEER

EXAMINED BY: Herbert J. Janyan
DISTRICT CONSTRUCTION ENGINEER

Thomas R. Lamb
DISTRICT STUDIES & PLANS ENGINEER

Kenneth R. Long
DISTRICT MATERIALS ENGINEER

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
GENERAL NOTES
 S.N. 050-0168 (NB)
 F.A.I. 412 OVER C. & N.W. RAILROAD
 SECTION (50-6VB)I-1
 STA. 1429 + 12.74

MARCH 21, 2005
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SUMMARY OF QUANTITIES

CONSTRUCTION CODE TYPE: X181-2A

CODE NO.	ITEM	UNIT	TOTAL QUANTITY
44000910	BITUMINOUS CONCRETE REMOVAL (DECK)	SQ YD	682
50102400	CONCRETE REMOVAL	CU YD	32.6
50300255	CONCRETE SUPERSTRUCTURE	CU YD	32.3
50301245	FORMED CONCRETE REPAIR (DEPTH EQUAL TO OR LESS THAN 5")	SQ FT	220
50500725	JACK AND REPLACE BEARINGS	EACH	12
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	7463
67000400	ENGINEER'S FIELD OFFICE, TYPE A	CAL MO	3
67100100	MOBILIZATION	L SUM	1
70100305	TRAFFIC CONTROL AND PROTECTION, STANDARD 701400	L SUM	1
70100805	TRAFFIC CONTROL AND PROTECTION, STANDARD 701402	L SUM	1
70300220	TEMPORARY PAVEMENT MARKING - LINE 4"	FOOT	1914
70301000	WORK ZONE PAVEMENT MARKING REMOVAL	SQ FT	632
70400100	TEMPORARY CONCRETE BARRIER	FOOT	1144
70400200	RELOCATE TEMPORARY CONCRETE BARRIER	FOOT	1144
** 78005110	EPOXY PAVEMENT MARKING - LINE 4"	FOOT	1914
** 78005130	EPOXY PAVEMENT MARKING - LINE 6"	FOOT	50
78300100	PAVEMENT MARKING REMOVAL	SQ FT	632
XZ191205	BRIDGE DECK MICROSILICA CONCRETE OVERLAY 3"	SQ YD	682
X0321468	PLUG EXISTING DECK DRAINS	EACH	8
X0322379	CONCRETE SEALER	SQ YD	93
XX005128	STRIP SEAL EXPANSION JOINT ASSEMBLY	FOOT	100
X7200201	WIDTH RESTRICTION SIGNING	L SUM	1
Z0002600	BAR SPLICER	EACH	28
Z0006205	BRIDGE DECK HYDRO-SCARIFICATION 1 1/2"	SQ YD	682
Z0015595	DECK DRAIN EXTENSIONS	EACH	24
* Z0030250	IMPACT ATTENUATOR, TEMPORARY, NON-REDIRECTIVE, TEST LEVEL 3	EACH	1
* Z0030350	IMPACT ATTENUATOR, RELOCATE, NON-REDIRECTIVE, TEST LEVEL 3	EACH	1
Z0048665	RAILROAD PROTECTIVE LIABILITY INSURANCE	L SUM	1
X0322194	POLYMER MODIFIED PORTLAND CEMENT MORTAR	SQ FT	59
X0322905	PPC I BEAM REPAIRS	L SUM	1

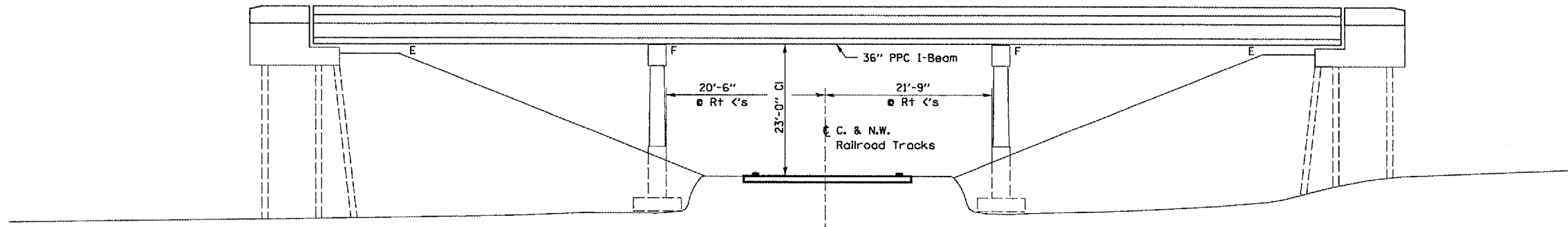
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
SUMMARY OF QUANTITIES
 S.N. 050-0168 (NB)
 F.A.I. 412 OVER C. & N.W. RAILROAD
 SECTION (50-GVB)I-1
 STA. 1429+12.74

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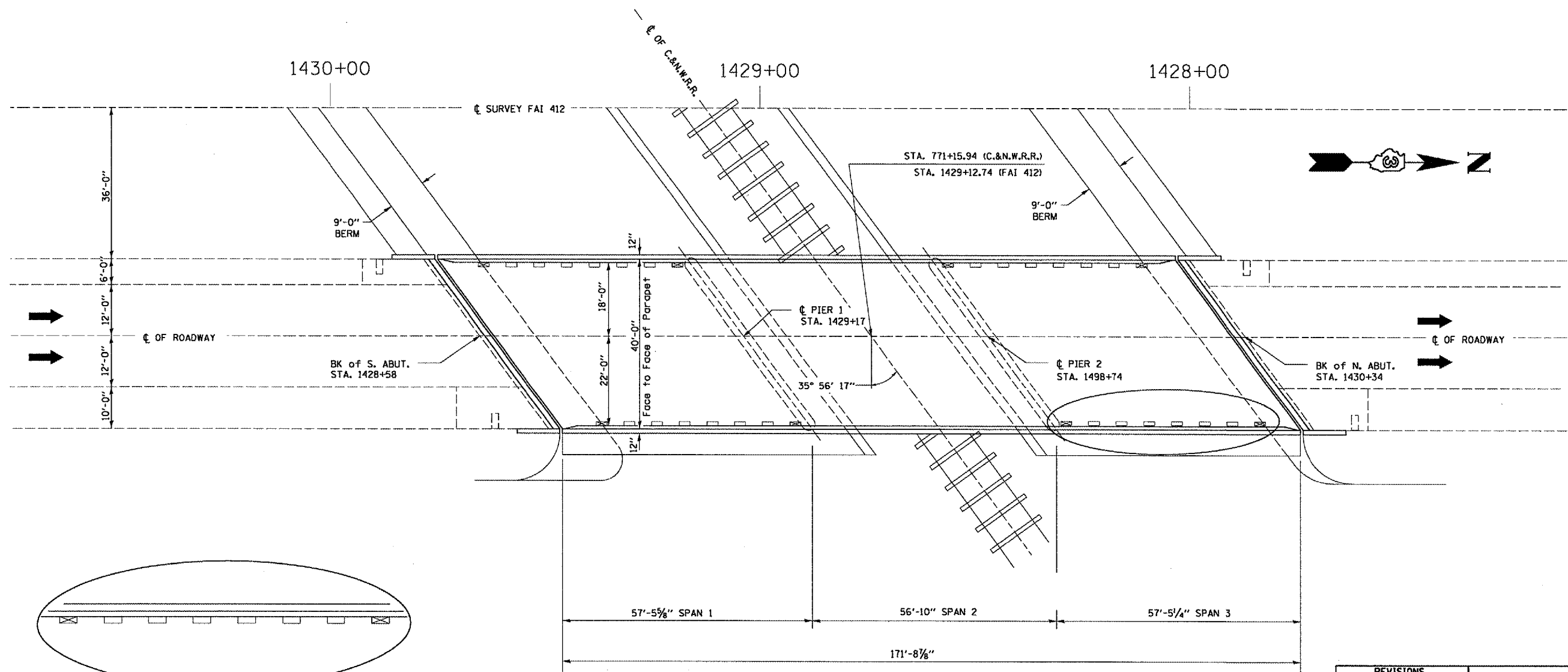
*SFTY-3N **SPECIALTY ITEMS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
412	(50-CVB)-2	LASALLE	25	4
FED. ROAD DIST. NO. ILLINOIS		STATE AID PROJECT		



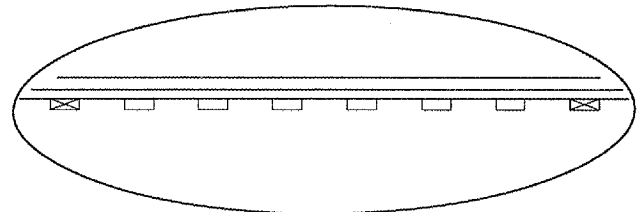
ELEVATION

For General Notes see Sheet 6 of 25.



PLAN

S.N. 050-0168 (NB)



- ☒ PLUG THE FIRST DRAIN AND LAST DRAIN AT ALL LOCATIONS
- ☐ EXTEND REMAINING SIX DRAINS

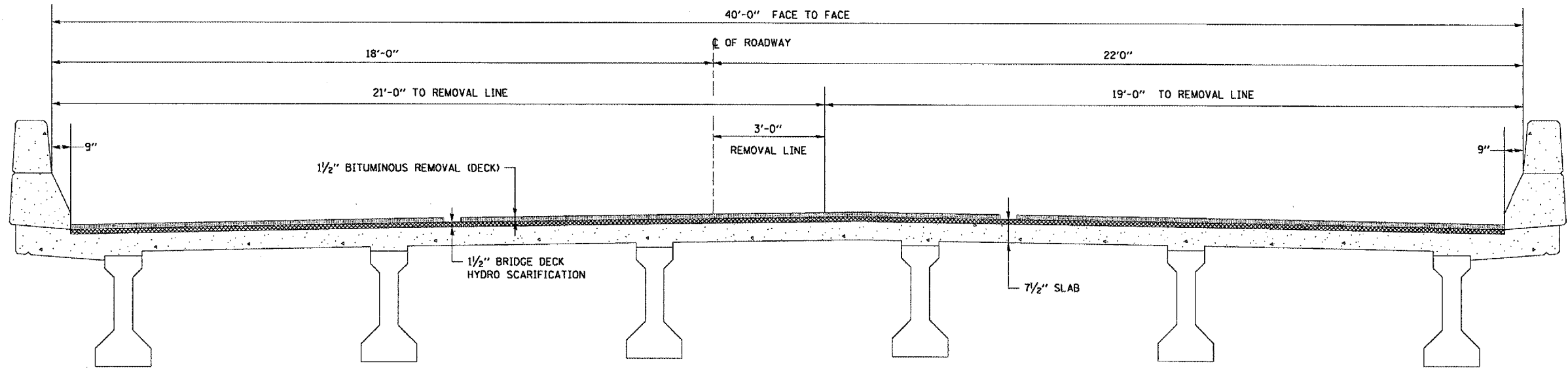
DECK DRAIN DETAIL
(FOR ALL DECK DRAIN LOCATIONS)

REVISIONS	
NAME	DATE

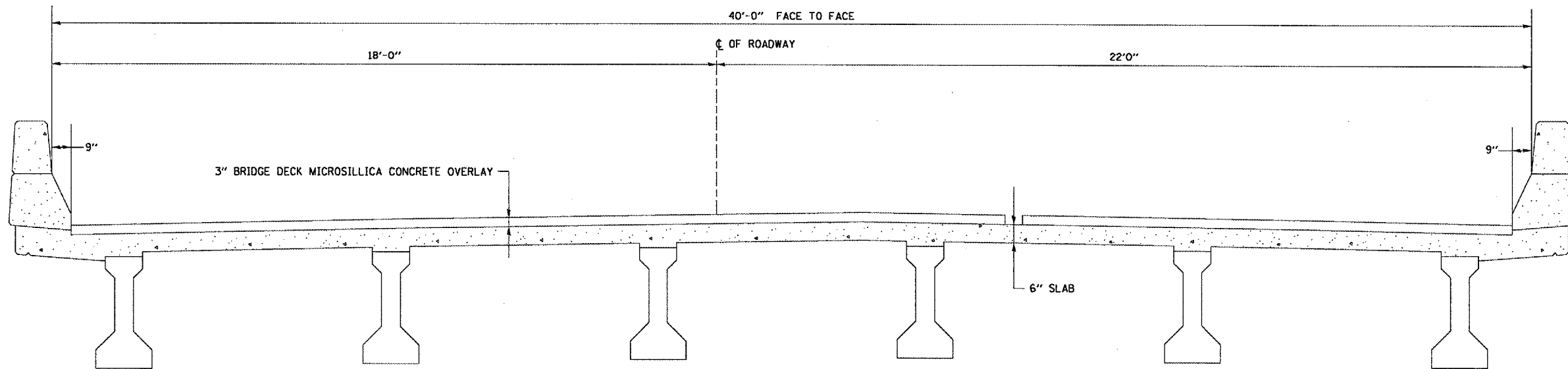
ILLINOIS DEPARTMENT OF TRANSPORTATION
GENERAL PLAN VIEW
S.N. 050-0168 (NB)
F.A.I. 412 OVER C. & N.W. RAILROAD
SECTION (50-6VB)-1
STA. 1429+12.74

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F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
412	(50-6VB)I-2	LASALLE	25	5
FED. ROAD DIST. NO. ILLINOIS		STATE AID PROJECT		



EXISTING TYPICAL SECTION



PROPOSED TYPICAL SECTION

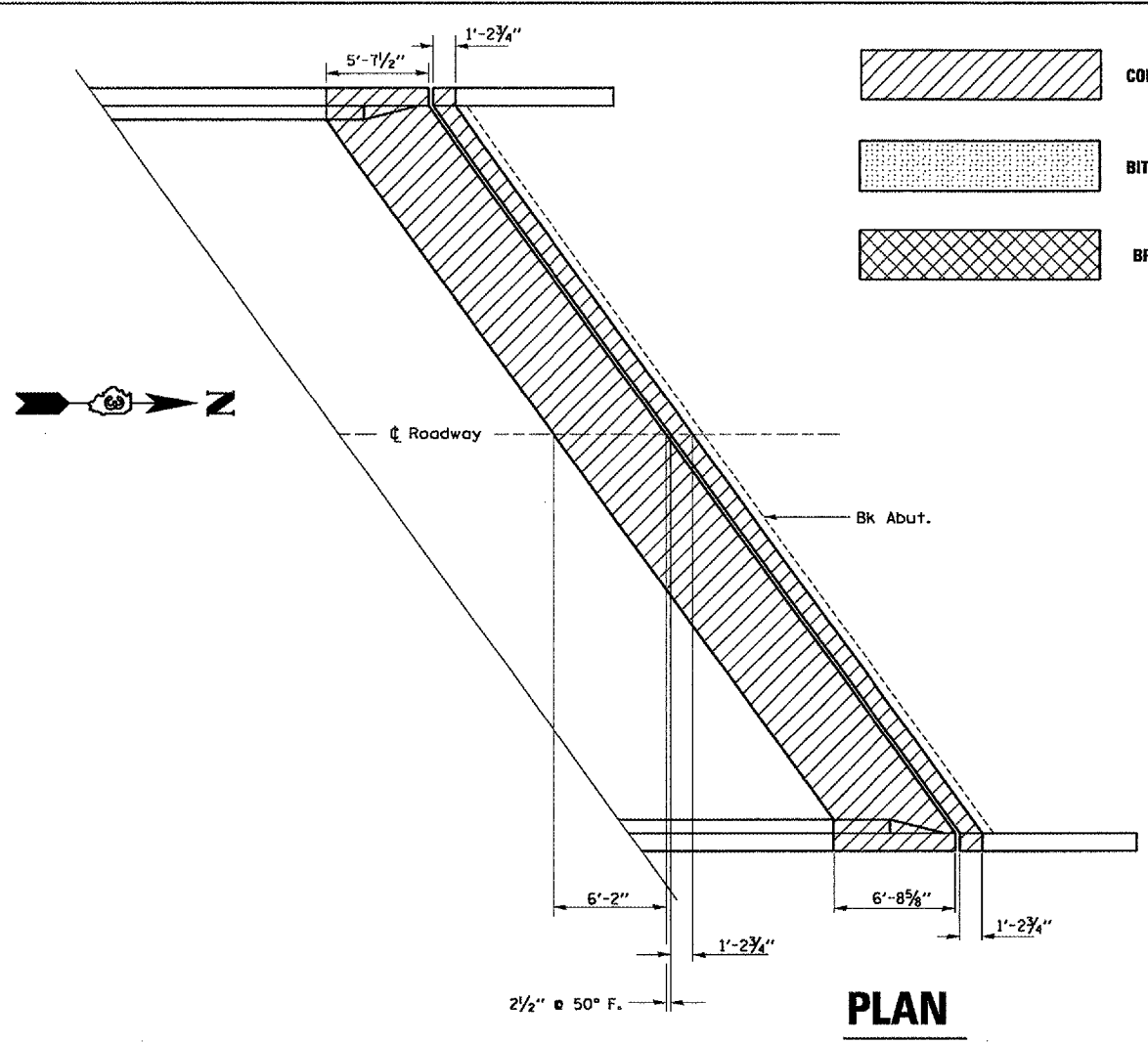
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
DECK RECONSTRUCTION DETAILS
 TYPICALS
 S.N. 050-0168 (NB)
 F.A.I. 412 OVER C. & N.W. RAILROAD
 SECTION (50-6VB)I-1
 STA. 1429 + 12.74

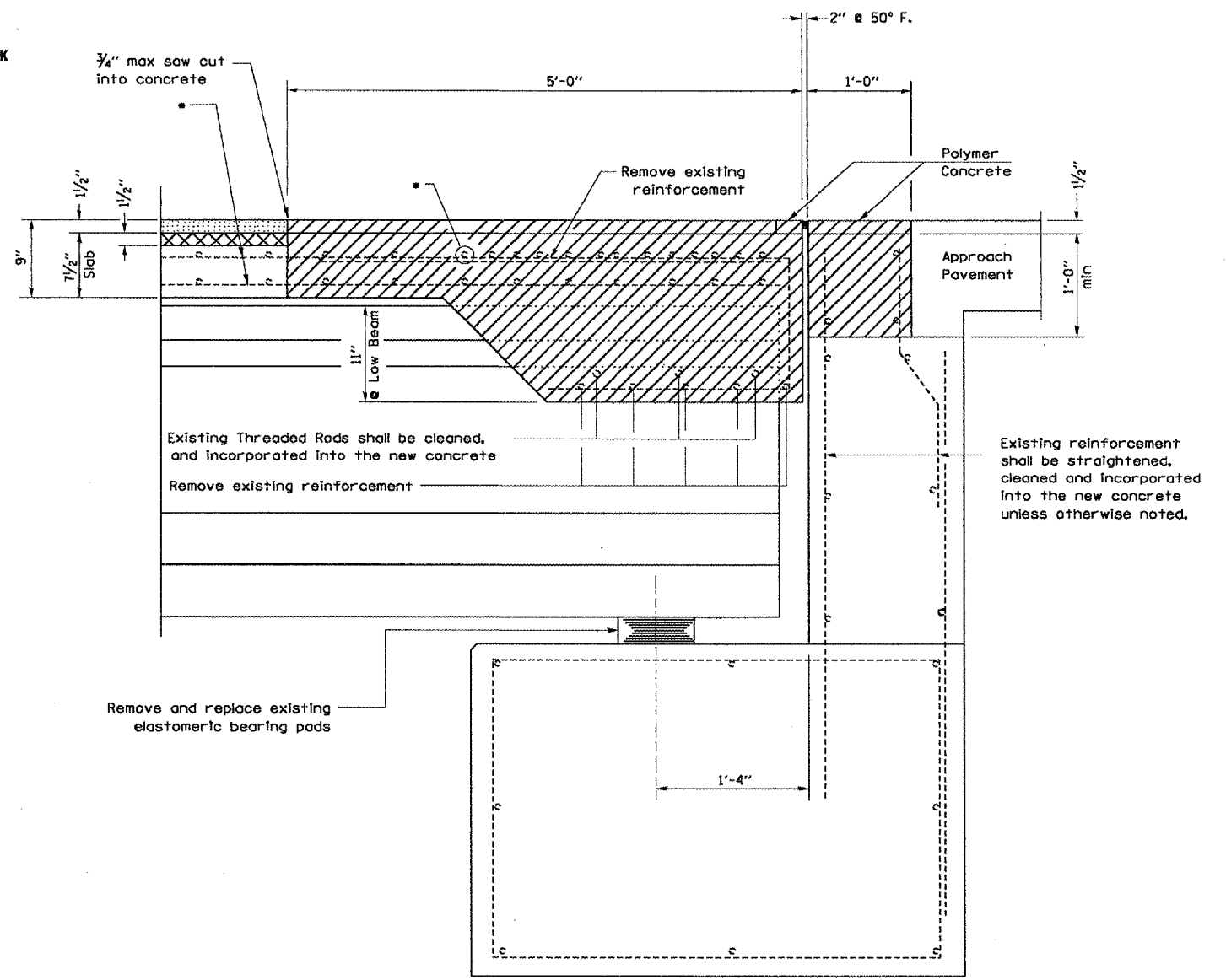
MARCH 21, 2005
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F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
412	(50-GVB)I-2	LASALLE	25	6
FED. ROAD DIST. NO. ILLINOIS		STATE AID PROJECT		

▪ Cut existing reinforcement extending into removal area 3'-0" min to provide required lap with new reinforcement



PLAN



**ABUTMENT SECTION
@ RT <'S**

GENERAL NOTES:

- Plan dimensions and details relative to the existing roadway and structure have been taken from existing 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 to 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 actually furnished at the unit price bid for the work.
- Two coats of an approved Bridge Seat Sealer shall be applied to the deck and face of parapet to the limits shown on plan details. Cost of this work shall be paid for per sq yd for "Concrete Sealer".
- New Reinforcement bars shall be Epoxy Coated.
- Reinforcement bars that are to remain in place which are damaged during concrete removal operations shall be repaired or replaced using approved bar splicer or anchorage system. Cost Included with "Concrete Removal".
- The roadway expansion plates shall be flame cut as provided in Article 505.04(k) of the Standard Specifications.
- All expansion joint plates and attached bars shall be AASHTO M 270 Grade 36
- Expansion joint plates and attached bars shall be shop painted with the Inorganic zinc rich primer.
- Anchor bolts, High Strength Steel Bolts, Nuts and washers shall conform to the requirements of Article 1006.08 and Article 1006.09 of the Standard Specifications.
- Reinforcement bars shall conform to the requirements of AASHTO M 31 or M322 Grade 60.
- Existing reinforcement extending into the concrete removal area shall be cut to provide the required bar lap for the size of bar as shown. All other reinforcement shall be removed and replaced with new Epoxy Coated bars.
- The Contractor shall exercise care during concrete removal operations so the the existing PPC Beams are not damaged. If the beams are damaged due to the Contractor's operations, they shall be repaired to the satisfaction of the Engineer at no expense to the department.
- Removal of existing expansion joint steel, anchor studs, expansion material shall ne be paid for separately but shall be included in the cost of "Concrete Removal".

BILL OF MATERIAL SOUTH ABUTMENT

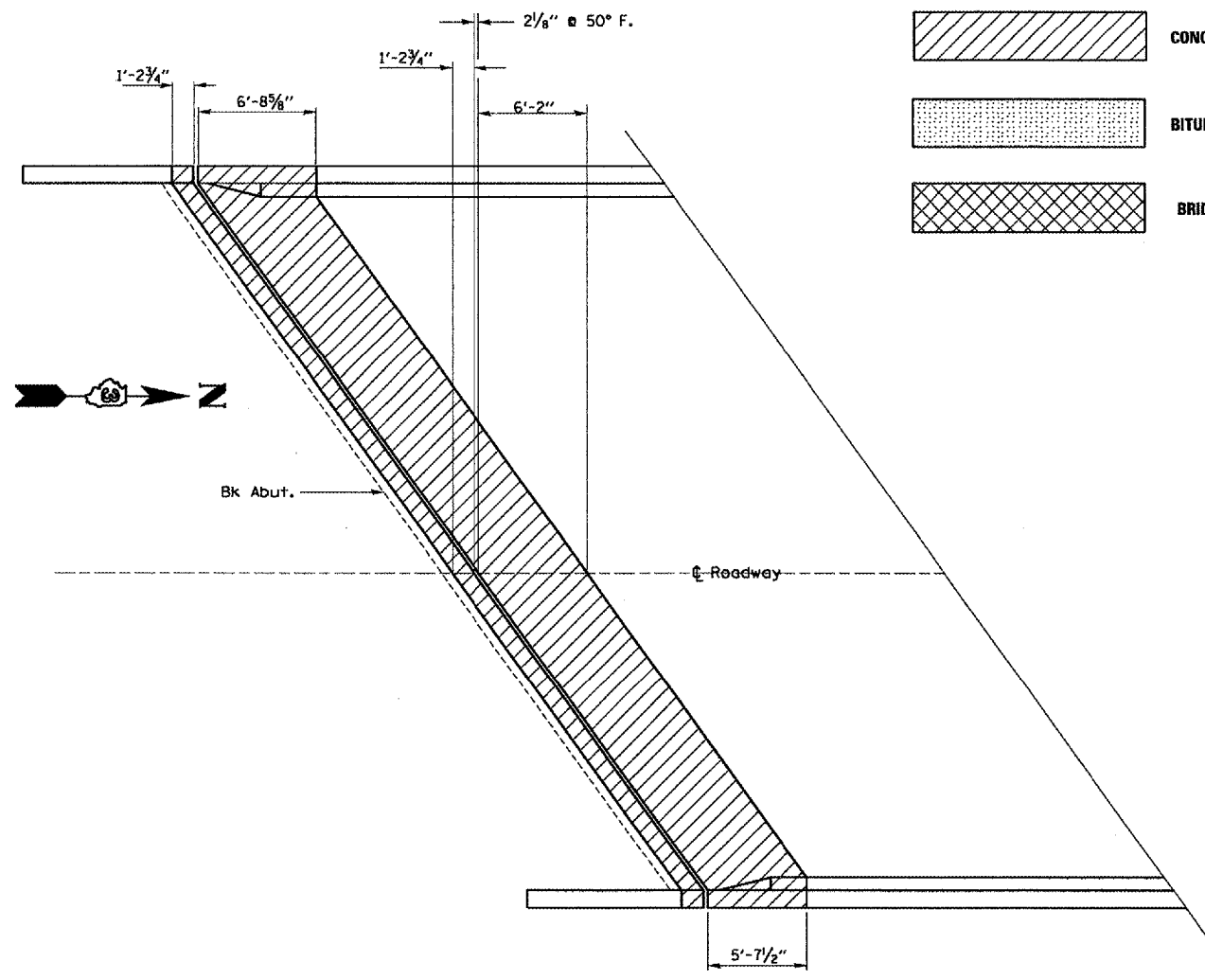
Item	Unit	Total
CONCRETE REMOVAL	CU. YD.	15.9
JACK AND REPLACE BEARINGS	EACH	6

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
**CONCRETE REMOVAL
 NORTH ABUTMENT**
 S.N. 050-0168 (NB)
 F.A.I. 412 OVER C. & N.W. RAILROAD
 SECTION (50-6VB)I-1
 STA. 1429 + 12.74

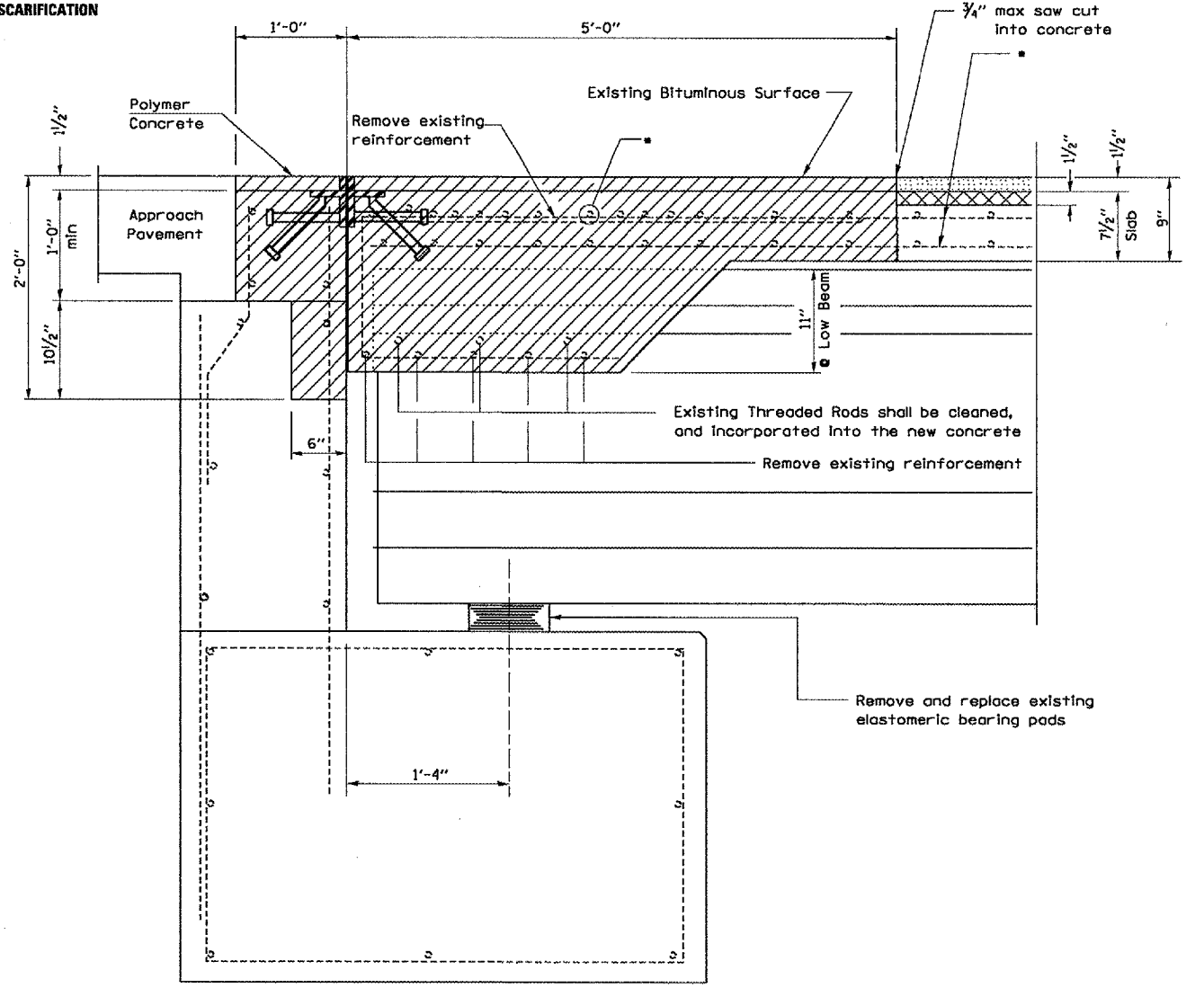
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412	(50-GVB)I-2	LASALLE	25	7
FED. ROAD DIST. NO.		ILLINOIS	STATE AID PROJECT	

* Cut existing reinforcement extending into removal area 3'-0" min to provide required lap with new reinforcement



- CONCRETE REMOVAL
- BITUMINOUS CONCRETE REMOVAL - DECK
- BRIDGE DECK HYDRO - SCARIFICATION

PLAN



ABUTMENT SECTION

@ RT <'S

BILL OF MATERIAL SOUTH ABUTMENT

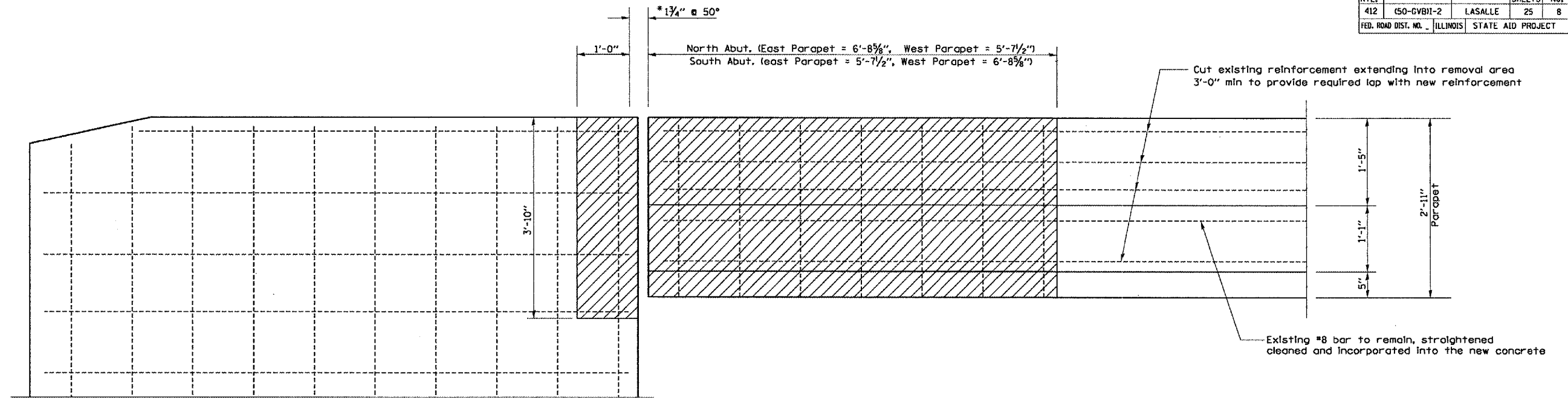
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CONCRETE REMOVAL	CU. YD.	16.7
JACK AND REPLACE BEARINGS	EACH	6

REVISIONS	
NAME	DATE

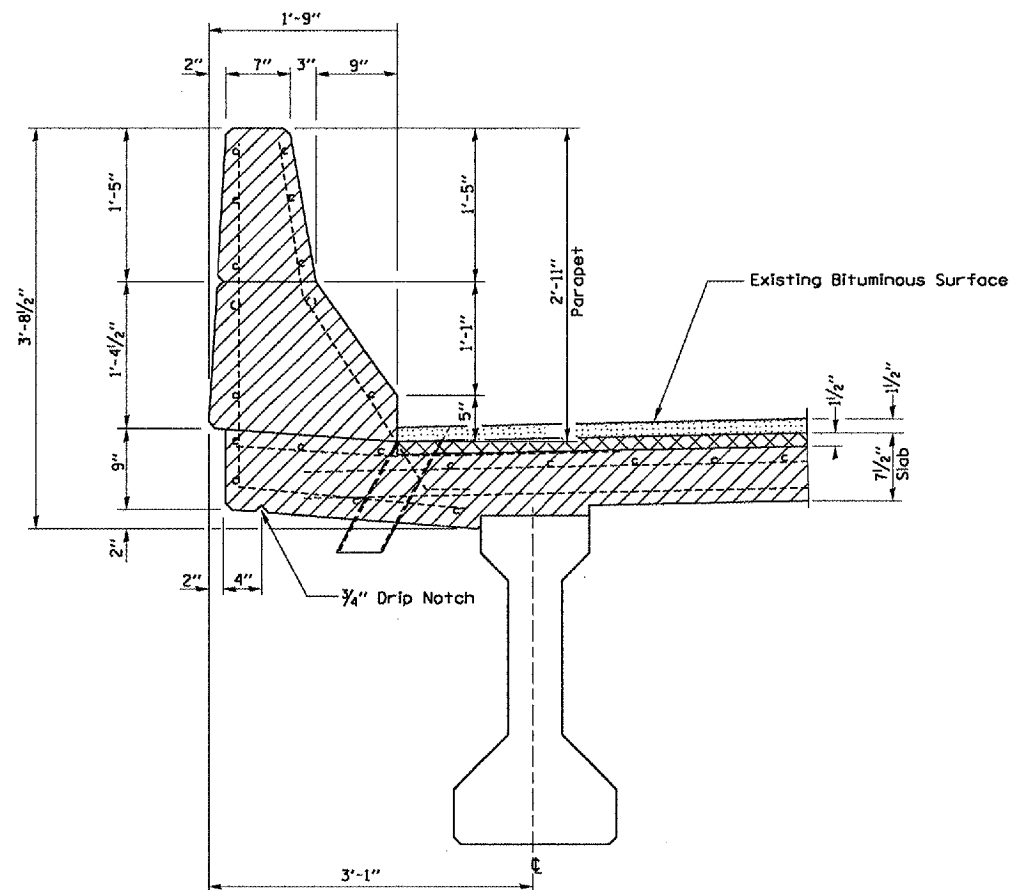
ILLINOIS DEPARTMENT OF TRANSPORTATION
CONCRETE REMOVAL
SOUTH ABUTMENT
 S.N. 050-0168 (NB)
 F.A.I. 412 OVER C. & N.W. RAILROAD
 SECTION (50-6VB)I-1
 STA. 1429 + 12.74

MARCH 21, 2005
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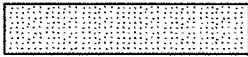

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
412	(50-6VB)I-2	LASALLE	25	8
FED. ROAD DIST. NO. ILLINOIS		STATE AID PROJECT		



ELEVATION AT PARAPET



SECTION AT PARAPET

-  CONCRETE REMOVAL
-  BITUMINOUS CONCRETE REMOVAL - DECK
-  BRIDGE DECK HYDRO - SCARIFICATION

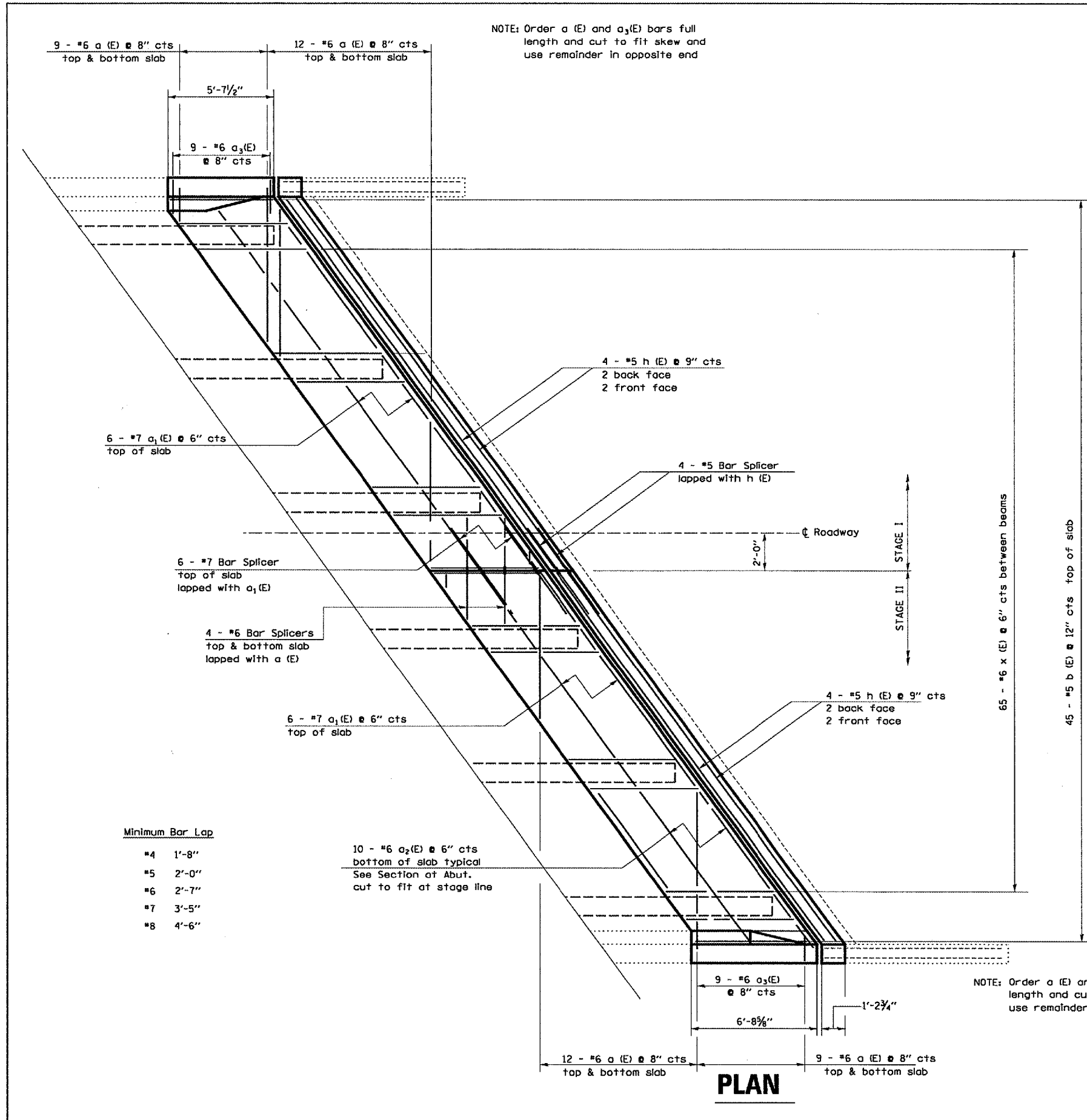
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
CONCRETE REMOVAL AT PARAPET
 S.N. 050-0168 (NB)
 F.A.I. 412 OVER C. & N.W. RAILROAD
 SECTION (50-6VB)I-1
 STA. 1429 + 12.74

MARCH 21, 2005
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F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
412	(50-GVB)I-2	LASALLE	25	9
FED. ROAD DIST. NO.		ILLINOIS	STATE AID PROJECT	

NOTE: Order a (E) and a₃(E) bars full length and cut to fit skew and use remainder in opposite end

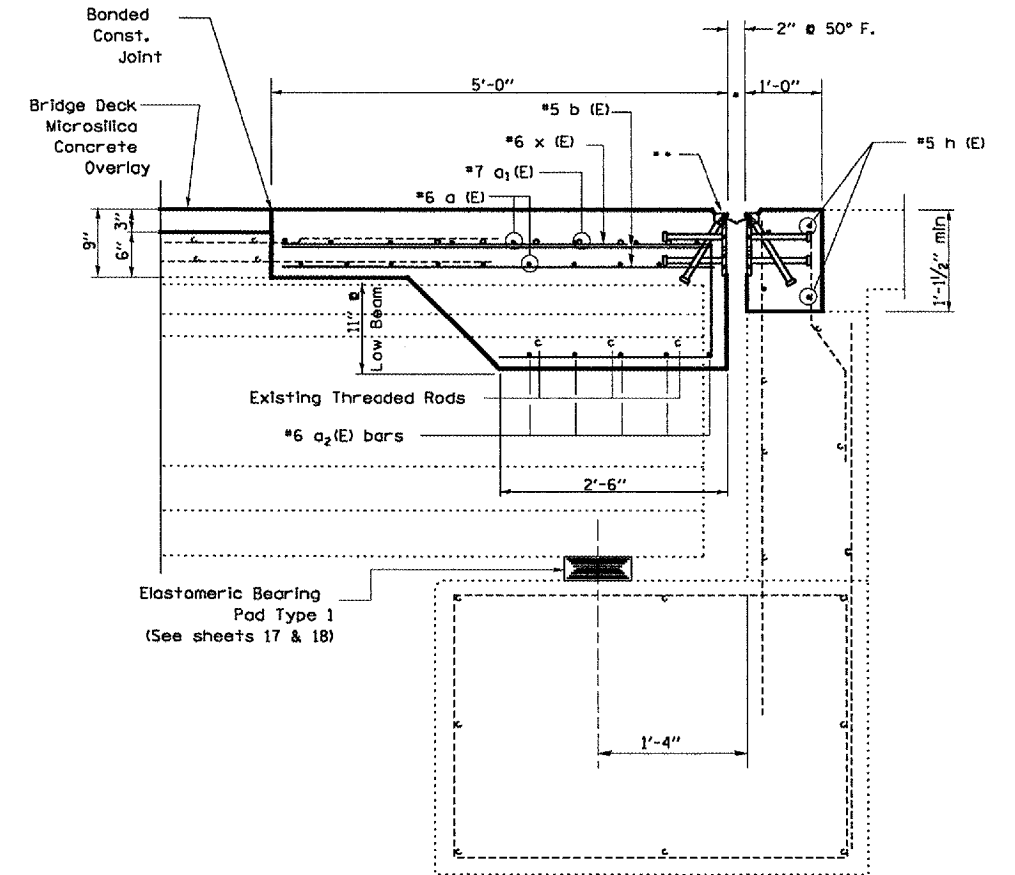


Minimum Bar Lap

- #4 1'-8"
- #5 2'-0"
- #6 2'-7"
- #7 3'-5"
- #8 4'-6"

NOTE: Order a (E) and a₃(E) bars full length and cut to fit skew and use remainder in opposite end

** Strip Seal Expansion Joint Assembly (See sheet 16 of 25)



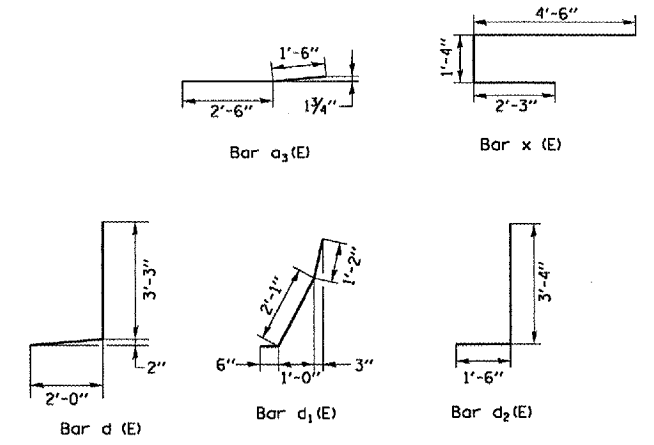
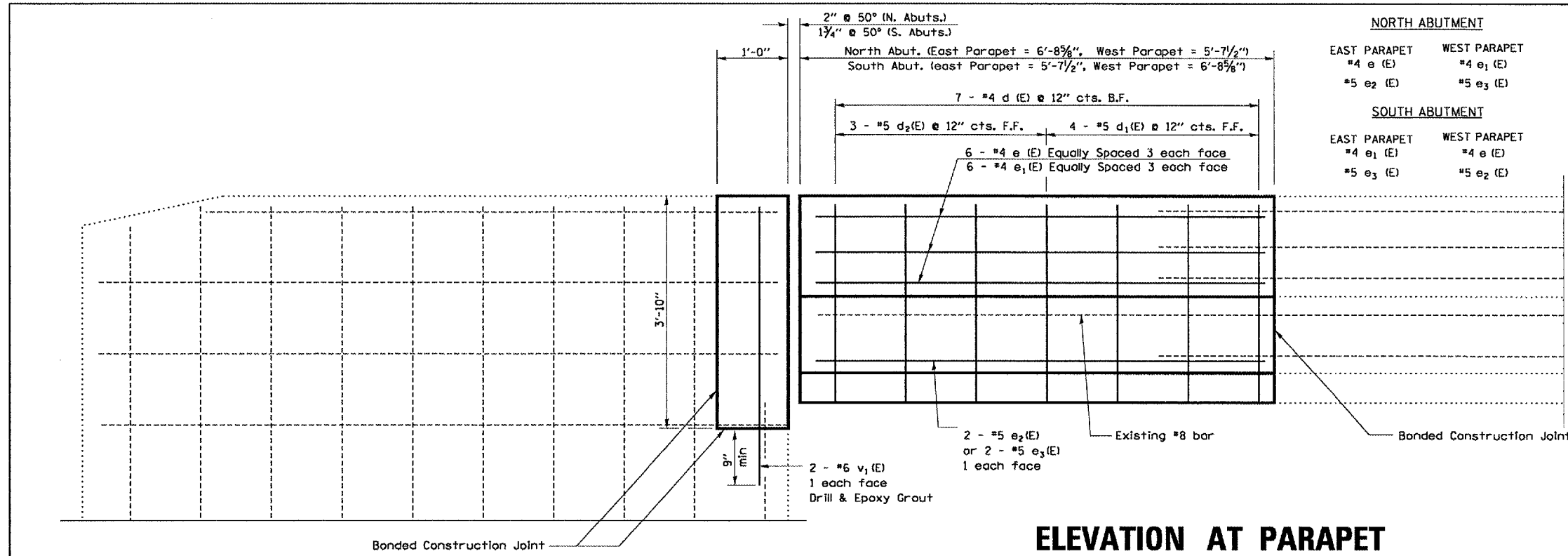
ABUTMENT SECTION

@ RT <'S

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
CONCRETE CONSTRUCTION
NORTH ABUTMENT
 S.N. 050-0168 (NB)
 F.A.I. 412 OVER C. & N.W. RAILROAD
 SECTION (50-GVB)I-1
 STA. 1429+12.74

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
412	(50-CVB)I-2	LASALLE	25	10
FED. ROAD DIST. NO.		ILLINOIS	STATE AID PROJECT	



ELEVATION AT PARAPET

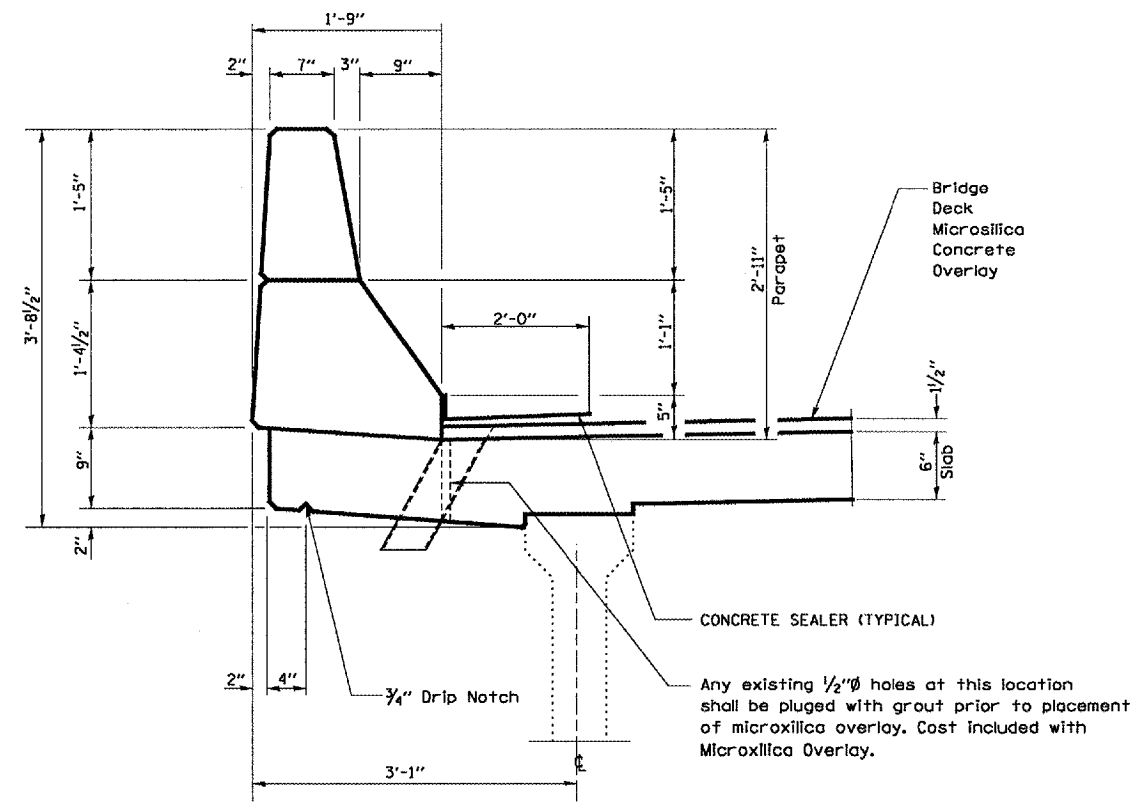
Minimum Bar Lap

#4	1'-8"
#5	2'-0"
#6	2'-7"
#7	3'-5"
#8	4'-6"

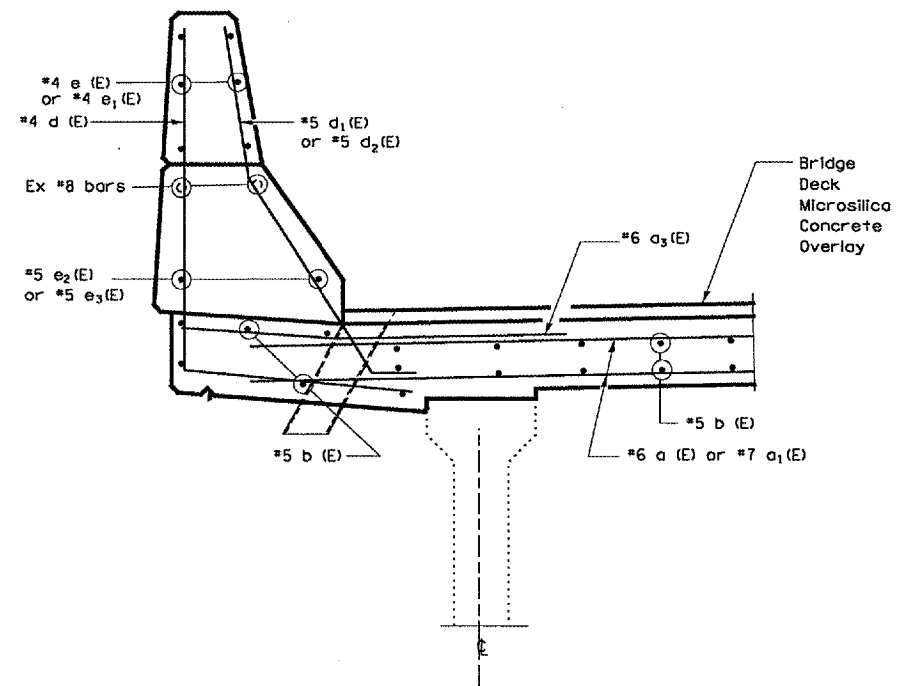
**SUPERSTRUCTURE
 BILL OF MATERIAL
 FOR "ONE" ABUTMENT**

Bar	No.	Size	Length	Shape
a (E)	42	6	8'-2"	—
a ₁ (E)	12	7	25'-2"	—
a ₂ (E)	50	6	8'-6"	—
a ₃ (E)	18	6	4'-0"	—
b (E)	96	5	5'-10"	—
d (E)	14	4	5'-3"	┘
d ₁ (E)	8	5	3'-9"	┘
d ₂ (E)	6	5	4'-10"	┘
e (E)	6	4	6'-4"	—
e ₁ (E)	6	4	5'-4"	—
e ₂ (E)	2	5	6'-4"	—
e ₃ (E)	2	5	5'-4"	—
h (E)	8	5	24'-4"	—
x (E)	65	6	8'-1"	┘
v ₁ (E)	4	6	4'-5"	—
Reinforcement Bars, Epoxy Coated		Pound	3663	
Concrete Superstructure		Cu. Yds.	15.9	

Reinforcement bars designated (E) shall be epoxy coated.



**SECTION AT PARAPET
 DIMENSIONS**

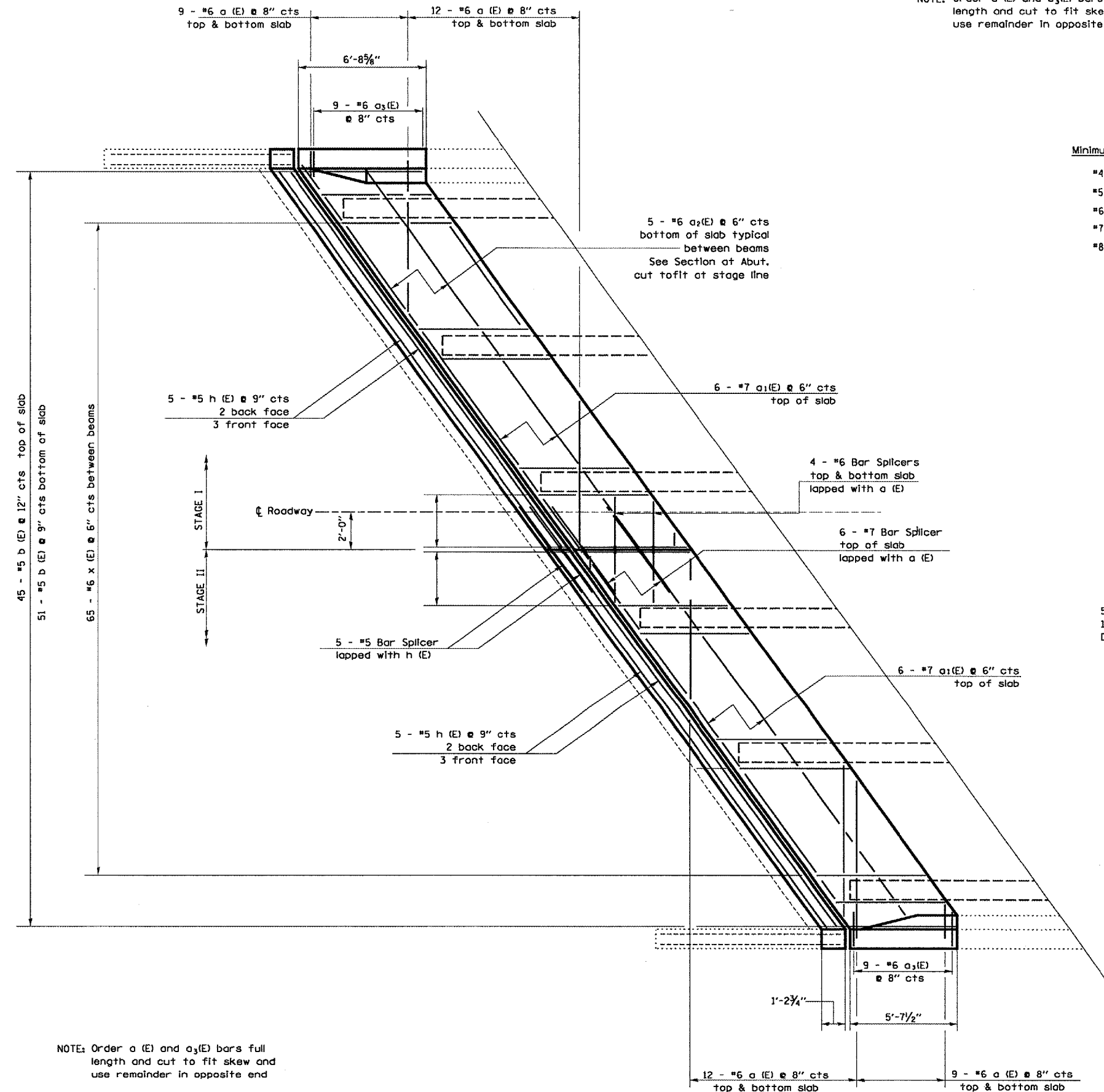


**SECTION AT PARAPET
 REINFORCEMENT**

REVISIONS		ILLINOIS DEPARTMENT OF TRANSPORTATION PARAPET RECONSTRUCTION NORTH ABUTMENT S.N. 050-0168 (NB) F.A.I. 412 OVER C. & N.W. RAILROAD SECTION (50-6VB)I-1 STA. 1429 + 12.74
NAME	DATE	

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
412	(50-6VB)I-2	LASALLE	25	11
FED. ROAD DIST. NO.		ILLINOIS	STATE AID PROJECT	

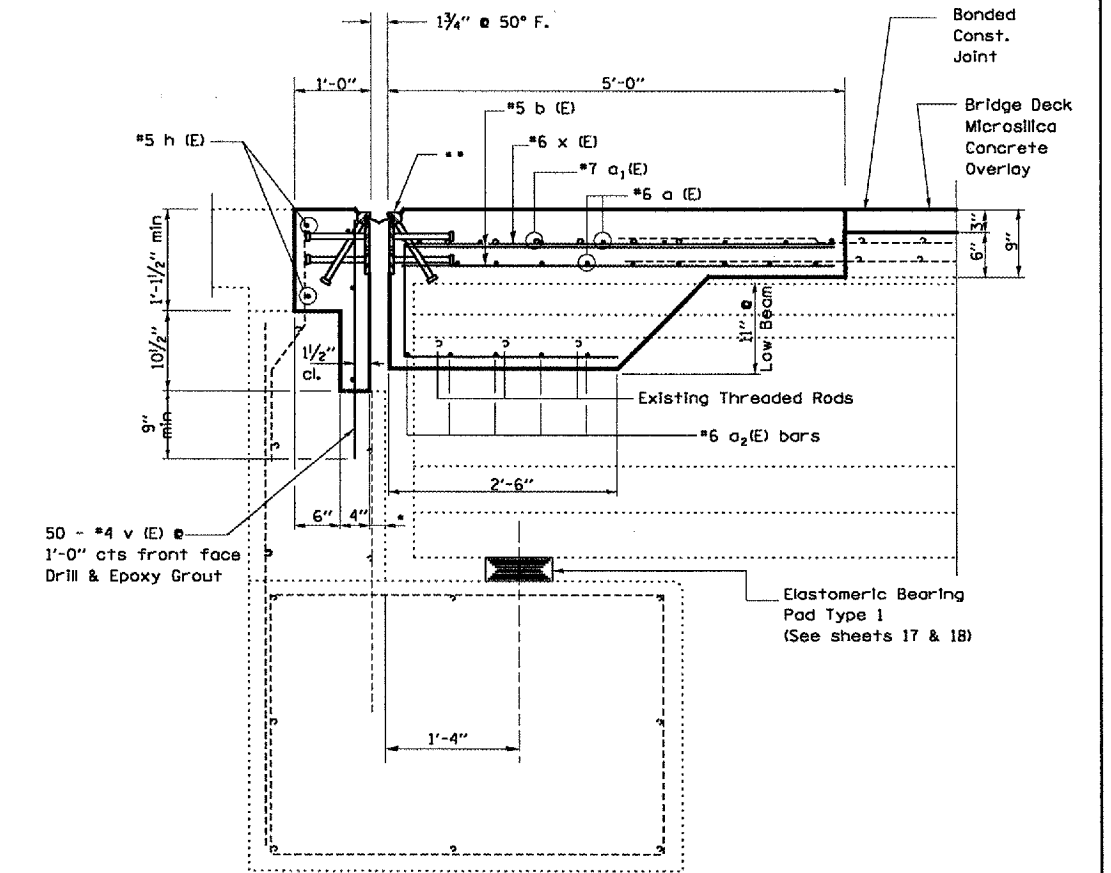
NOTE: Order a (E) and a₃(E) bars full length and cut to fit skew and use remainder in opposite end



Minimum Bar Lap

- #4 1'-8"
- #5 2'-0"
- #6 2'-7"
- #7 3'-5"
- #8 4'-6"

** Strip Seal Expansion Joint Assembly (See sheet 16 of 25)



ABUTMENT SECTION

@ RT <'S

NOTE: Order a (E) and a₃(E) bars full length and cut to fit skew and use remainder in opposite end

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
CONCRETE CONSTRUCTION
SOUTH ABUTMENT
 S.N. 050-0168 (NB)
 F.A.I. 412 OVER C. & N.W. RAILROAD
 SECTION (50-6VB)I-1
 STA. 1429+12.74

MARCH 21, 2005
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F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
412	(50-GVB)I-2	LASALLE	25	12
FED. ROAD DIST. NO. ILLINOIS		STATE AID PROJECT		

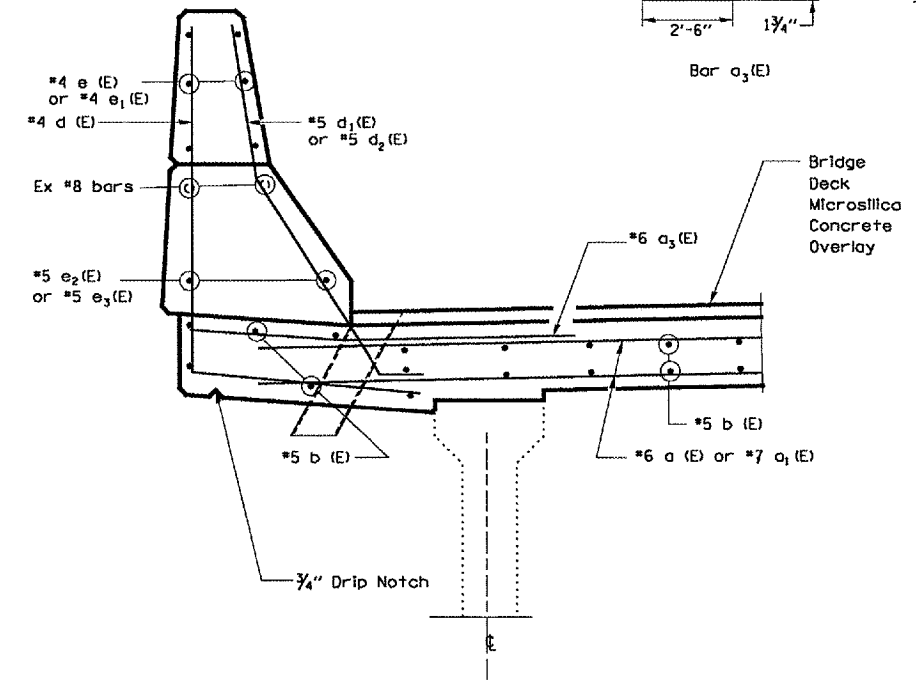
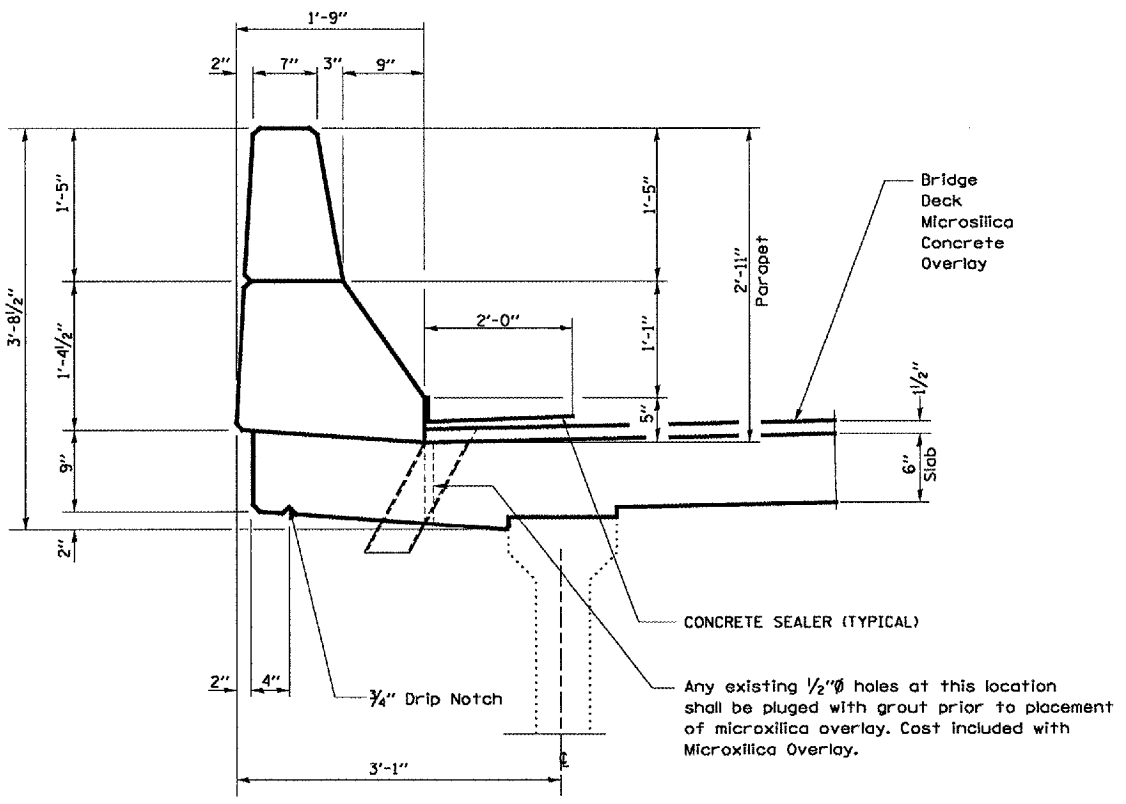
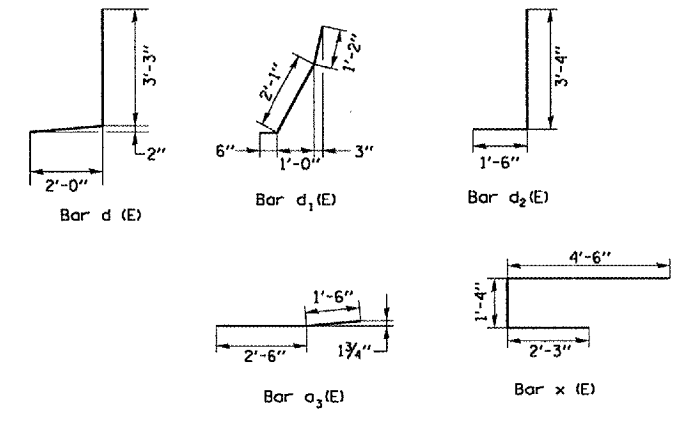
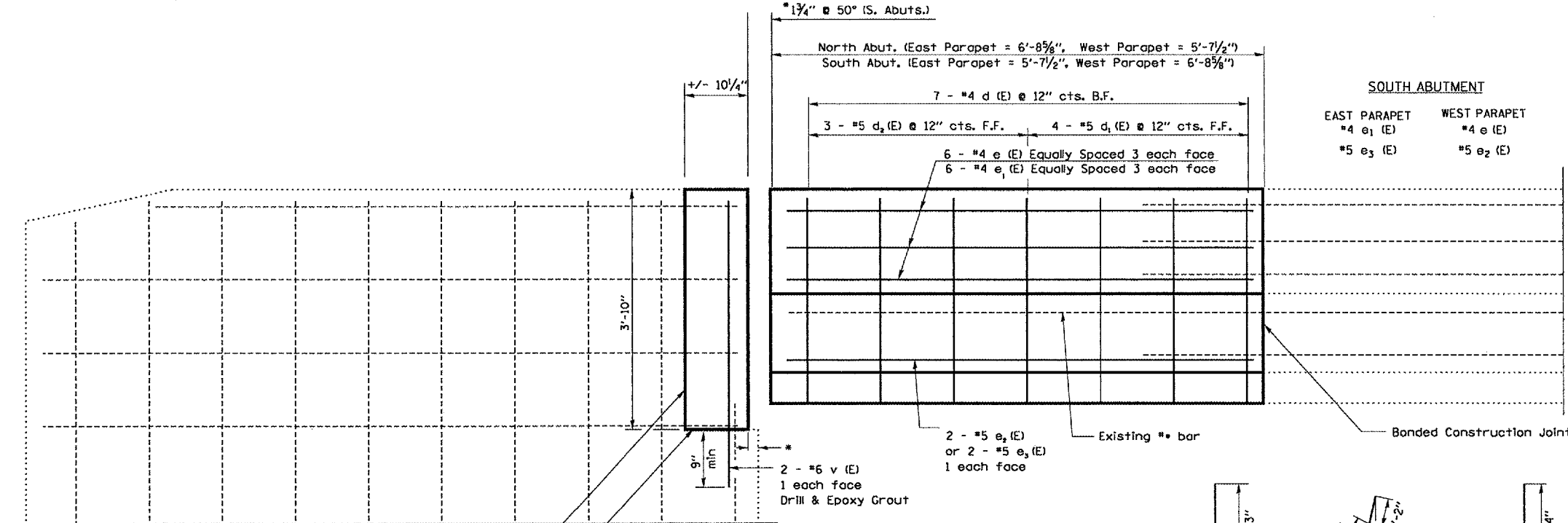
**SUPERSTRUCTURE
BILL OF MATERIAL
FOR SN 050-0168 @
SOUTH ABUTMENT**

Bar	No.	Size	Length	Shape
a (E)	42	6	8'-2"	—
a ₁ (E)	12	7	25'-2"	—
a ₂ (E)	50	6	8'-6"	—
a ₃ (E)	18	6	4'-0"	—
b (E)	96	5	5'-10"	—
d (E)	14	4	5'-3"	┘
d ₁ (E)	8	5	3'-9"	┘
d ₂ (E)	6	5	4'-10"	┘
e (E)	6	4	6'-4"	—
e ₁ (E)	6	4	5'-4"	—
e ₂ (E)	2	5	6'-4"	—
e ₃ (E)	2	5	5'-4"	—
h (E)	10	5	24'-4"	—
x (E)	65	6	8'-1"	┘
v (E)	50	4	2'-7"	—
v ₁ (E)	4	6	4'-5"	—
Reinforcement Bars, Epoxy Coated		Pound	3800	
Concrete Superstructure		Cu. Yds.	16.4	

Reinforcement bars designated (E) shall be epoxy coated.

Minimum Bar Lap

#4	1'-8"
#5	2'-0"
#6	2'-7"
#7	3'-5"
#8	4'-6"



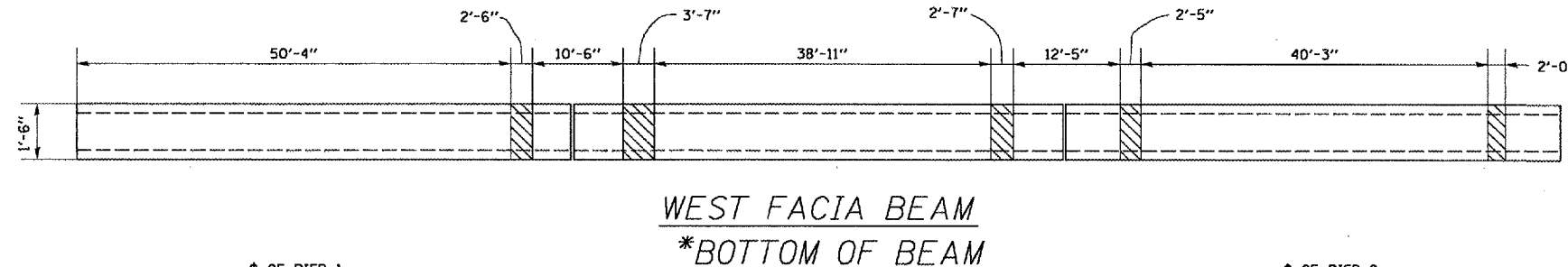
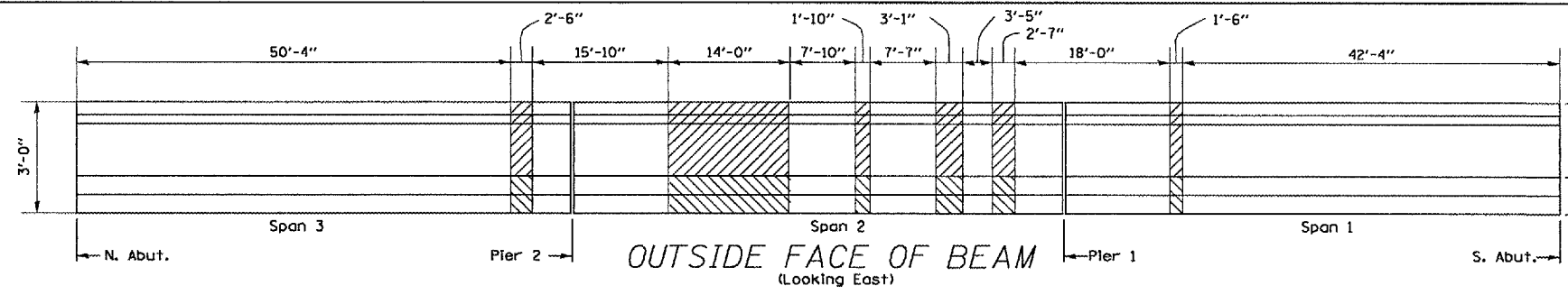
REVISIONS

NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
PARAPET RECONSTRUCTION
 SOUTH ABUTMENT
 S.N. 050-0168 (NB)
 F.A.I. 412 OVER C. & N.W. RAILROAD
 SECTION (50-6VB)I-1
 STA. 1429 + 12.74

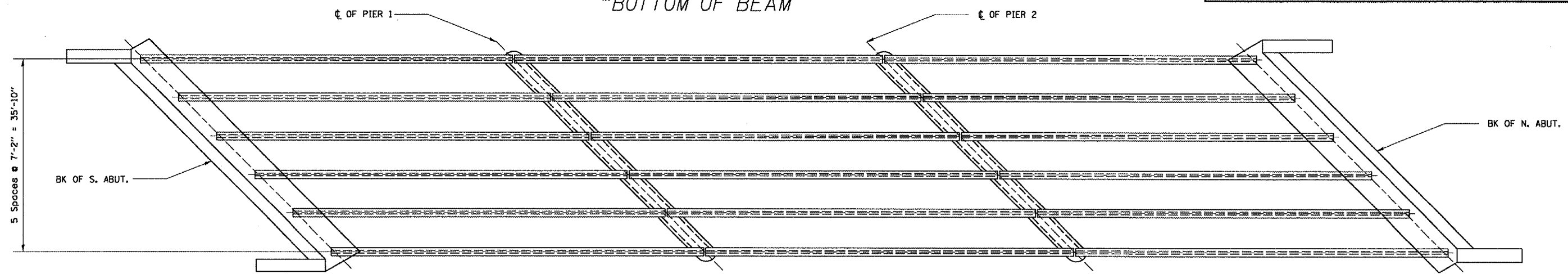
MARCH 21, 2005 C:\PROJECTS\CMA IN06\CM30\DETAILS.DGN

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
412	(50-GVB)I-2	LASALLE	25	13
FED. ROAD DIST. NO. ILLINOIS		STATE AID PROJECT		



BILL OF MATERIAL

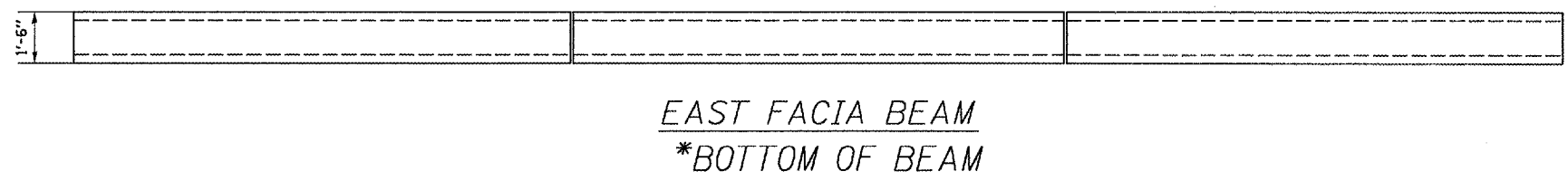
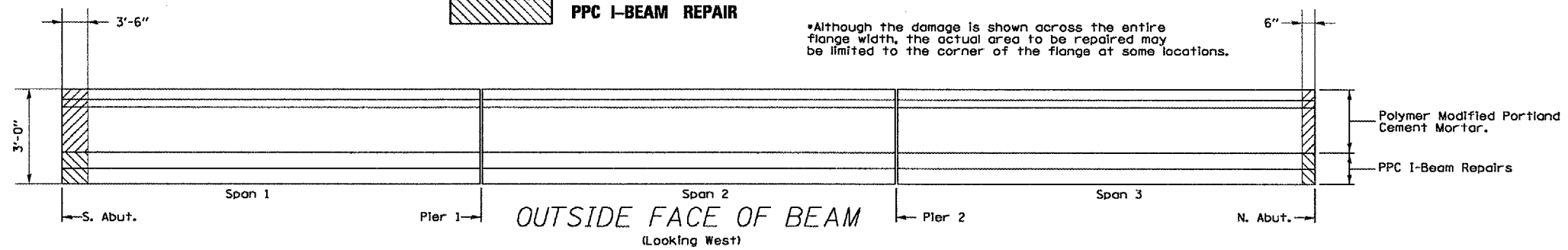
Item	Unit	Total
PPC I-Beam Repairs	L.S.	1
Polymer Modified Portland Cement Mortar	Sq. Ft.	59



 **POLYMER MODIFIED PORTLAND CEMENT MORTAR**
 **PPC I-BEAM REPAIR**

*Although the damage is shown across the entire flange width, the actual area to be repaired may be limited to the corner of the flange at some locations.

For location of required preloading see sheet 13A of 25.

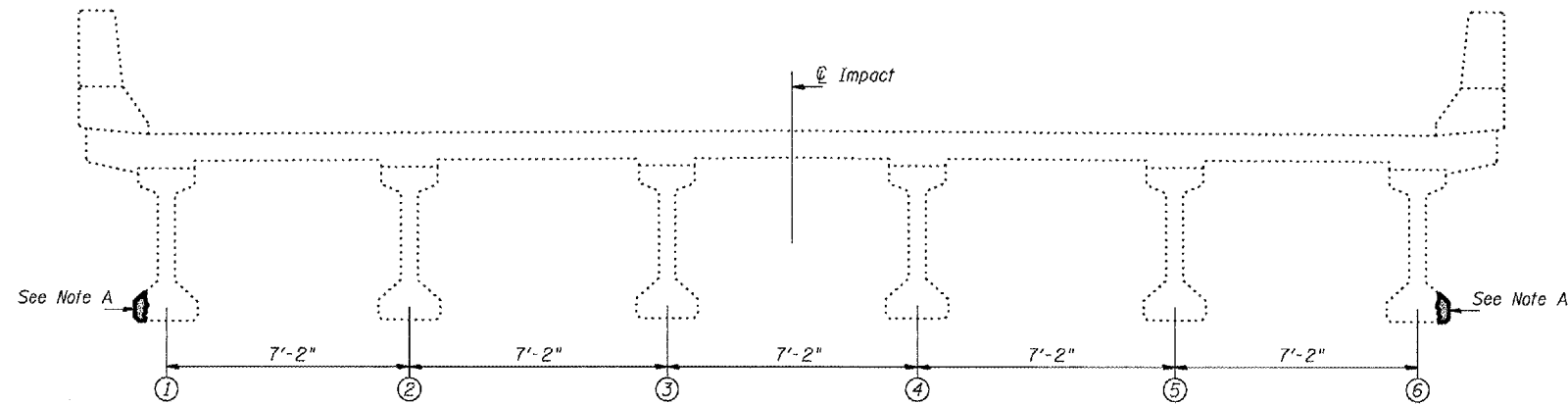


REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
P.P.C. DECK BEAM REPAIR
 S.N. 050-0168 (NB)
 F.A.I. 412 OVER C. & N.W. RAILROAD
 SECTION (50-6VB)I-1
 STA. 1429 + 12.74

MARCH 21, 2005
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F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
412	ISO-GVBII-2	LASALLE	25	13A
FED. ROAD DIST. NO. _ ILLINOIS		STATE AID PROJECT		



CROSS SECTION
(Looking North)

Note A:
PPC I-Beams to be repaired as detailed.

NOTES

Prior to beginning any repair work, the contractor shall be responsible for providing a preloading system on the bridge deck over the existing damaged beam at the specified locations. The preloading system should produce a total maximum service load moment as shown at the centerline of the damaged area.

Preloading shall be kept in place for at least three (3) days after completion of concrete repair or until the concrete has reached an ultimate strength of 5,000 psi.

The contractor's proposed preloading system, with computations, sealed and signed by an Illinois Structural Engineer shall be submitted to the Bureau of Bridges and Structures for approval. The preloading system shall be placed shortly after bridge closure for repairs.

Separate preload sequences may be necessary for repair of different areas in one span. It may not be possible to use one preload within a span for repair of all areas within that span without overstressing the beam. The calculations submitted must ensure that any preload system proposed for use during repair of multiple locations does not overstress the beam.

PRELOADING FOR PPC I-BEAM REPAIRS

(Service Moment)

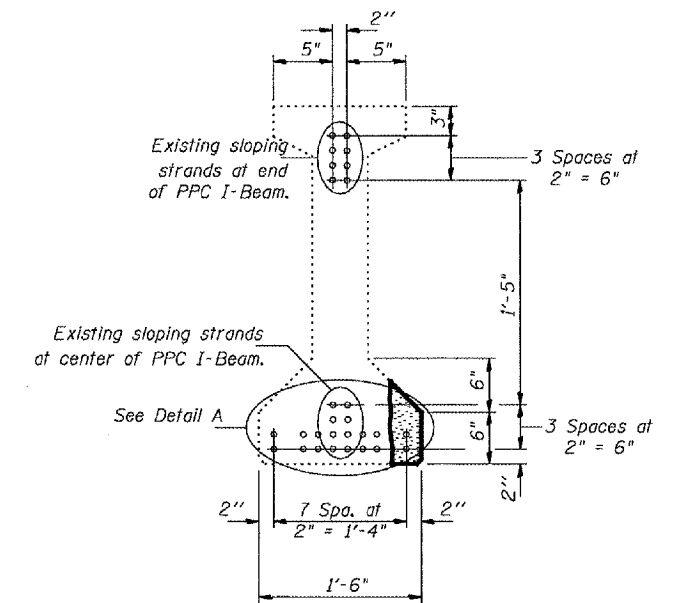
WEST FASCIA

Span	Location		*Moment (klps)
	From	Distance	
2	Pier 2	19'-6"	260
2	Pier 2	35'-6"	270
2	Pier 2	45'-6"	160
3	Pier 1	12'-3"	170

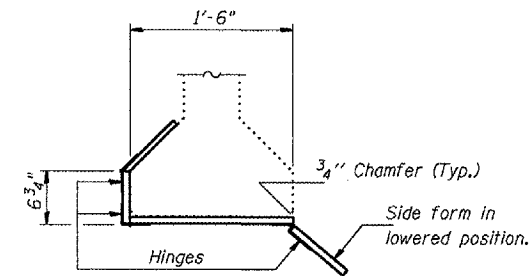
*The magnitude of the moments to be applied were obtained by assuming a simple span behavior between the fascia and first interior beams (AASHTO 3.23.2.3.1.2) for Live Load + Impact. The effect of the proposed preload system shall be determined using the same assumption.

REPAIR PROCEDURES FOR WEST AND EAST FASCIA BEAMS

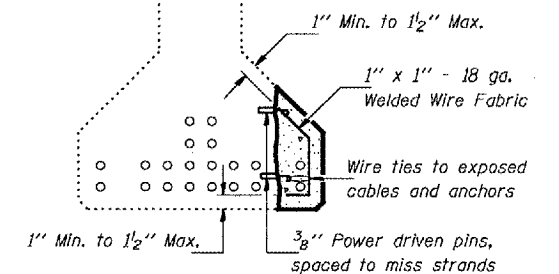
- The damaged area of the beam shall be cleaned of all loose and spalled concrete, and sealant. Hand tools shall be used for the removal of concrete adjacent to the prestressing strands. While a 15 pound chipping hammer may be used away from prestressing strands, extreme care shall be taken not to damage the exposed prestressing strands. Any exposed portions of the strands shall be sandblasted.
- Using the same tools, remove the existing concrete to sound concrete along the edges of the damaged area to a depth of 1" min. to 1 1/2" max. The edges shall be saw cut 3/4" deep or less.
- Power driven pins as shown in Detail A shall be placed at 9" alternate centers horizontally and located vertically 3" and 7" up from bottom of Fascia Beams. Use wire ties in areas where the strands are exposed as shown in Detail A. Place 1" x 1" x 18 gauge welded wire fabric in repair areas and attach it to the pins or strands with wire ties. The clearance between the finished surface of the new concrete and the welded wire fabric shall be 1" minimum. All beams involved in this work shall be rebuilt to their original dimensions.
- All surfaces of existing concrete in the area to be repaired shall be coated with an epoxy-resin primer bonding agent. The concrete beam to be repaired or crack sealed must be at a temperature of at least 50° F. or higher.
- The repair shall be made using a concrete meeting all the requirements specified in Section 1020 of the Standard Specifications for Class PS Concrete for precast prestressed concrete members, except the maximum size of the aggregate shall be 1/2". Place the lower form on the bottom of the beam and compact by vibrating (or other approved methods) the concrete mix into the voids. After accessible voids have been filled and compacted, the top vertical form shall be raised into position and the remaining voids filled and compacted. The sloping upper surface shall be finished to the configuration of the existing PPC I-Beam flange. The cost of concrete removal, Class PS Concrete, power driven pins, wire ties, wire mesh, epoxy bonding agent, and all other work required to perform any repairs on East and West Fascia beams is included in the Lump Sum price for PPC I-Beam Repairs. The preloading system will not be paid separately but will be included in the unit bid for this item.



PATCHING DETAIL
Beam 5, Span 3.



SUGGESTED FORM DETAIL



DETAIL A

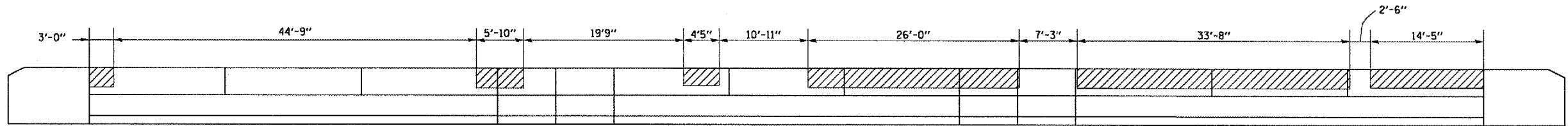
BILL OF MATERIAL

ITEM	UNIT	QUANTITY
PPC I Beam Repairs	L.S.	1

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
FORMED CONCRETE REPAIR
PPC I-BEAMS
S.N. 050-0168 (NB)
F.A.I. 412 OVER C. & N.W. RAILROAD
SECTION (50-6VB)I-1
STA. 1429 + 12.74

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
412	(50-6VB)I-2	LASALLE	25	14
FED. ROAD DIST. NO.		ILLINOIS	STATE AID PROJECT	

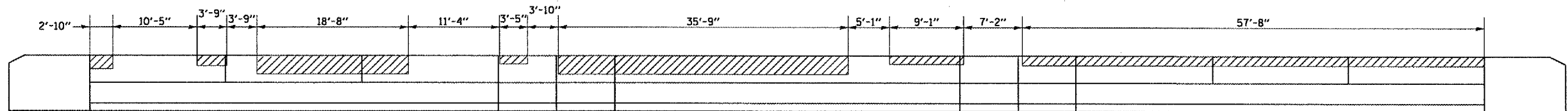


BILL OF MATERIAL WEST PARAPET

Item	Unit	Total
Formed Concrete Repair (Depth ≤ 5")	Sq. Ft.	87

WEST PARAPET ELEVATION
INSIDE FACE

FORMED CONCRETE REPAIR ≤ 5"



BILL OF MATERIAL EAST PARAPET

Item	Unit	Total
Formed Concrete Repair (Depth ≤ 5")	Sq. Ft.	92

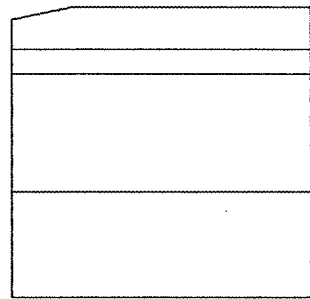
EAST PARAPET ELEVATION
INSIDE FACE

REVISIONS	
NAME	DATE

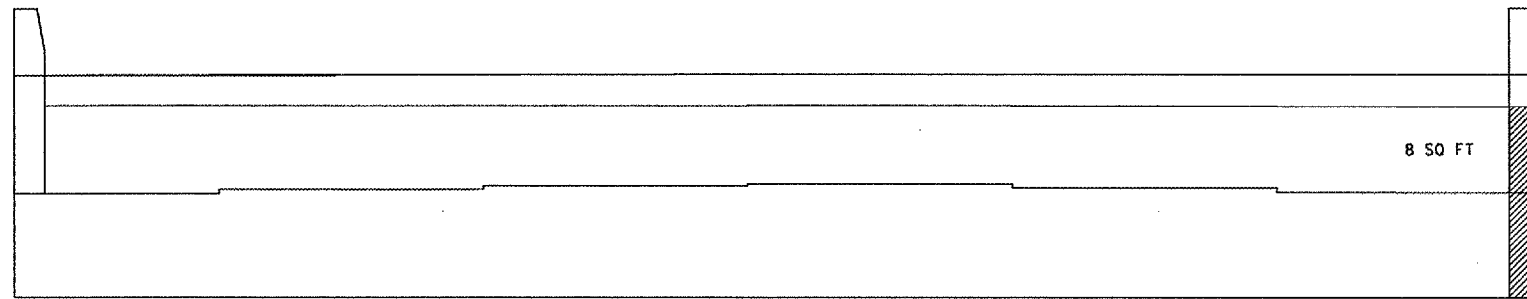
ILLINOIS DEPARTMENT OF TRANSPORTATION
PARAPET WALL REPAIR
 S.N. 050-0168 (NB)
 F.A.I. 412 OVER C. & N.W. RAILROAD
 SECTION (50-6VB)I-1
 STA. 1429 + 12.74

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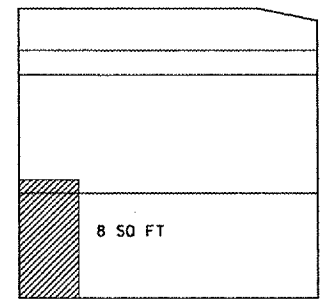
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
412	(50-6VB)I-2	LASALLE	25	15
FED. ROAD DIST. NO. .		ILLINOIS	STATE AID PROJECT	



EAST WING



ELEVATION



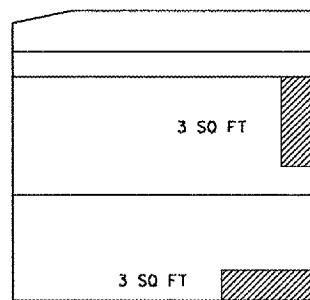
WEST WING

BILL OF MATERIAL N. ABUTMENT

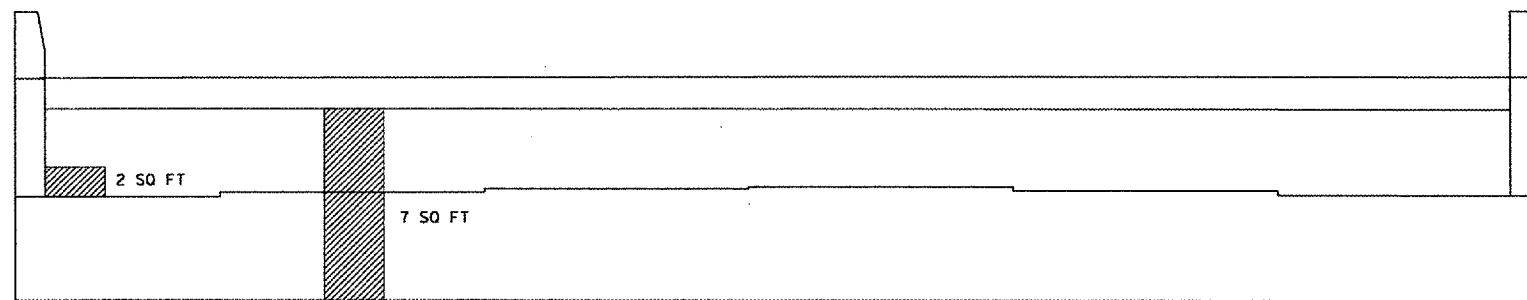
Item	Unit	Total
Formed Concrete Repair (Depth ≤ 5")	Sq. Ft.	16

NORTH ABUTMENT

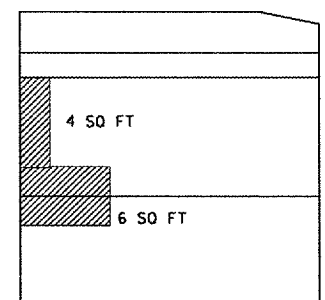
FORMED CONCRETE REPAIR ≤ 5"



EAST WING



ELEVATION



WEST WING

BILL OF MATERIAL S. ABUTMENT

Item	Unit	Total
Formed Concrete Repair (Depth ≤ 5")	Sq. Ft.	25

SOUTH ABUTMENT

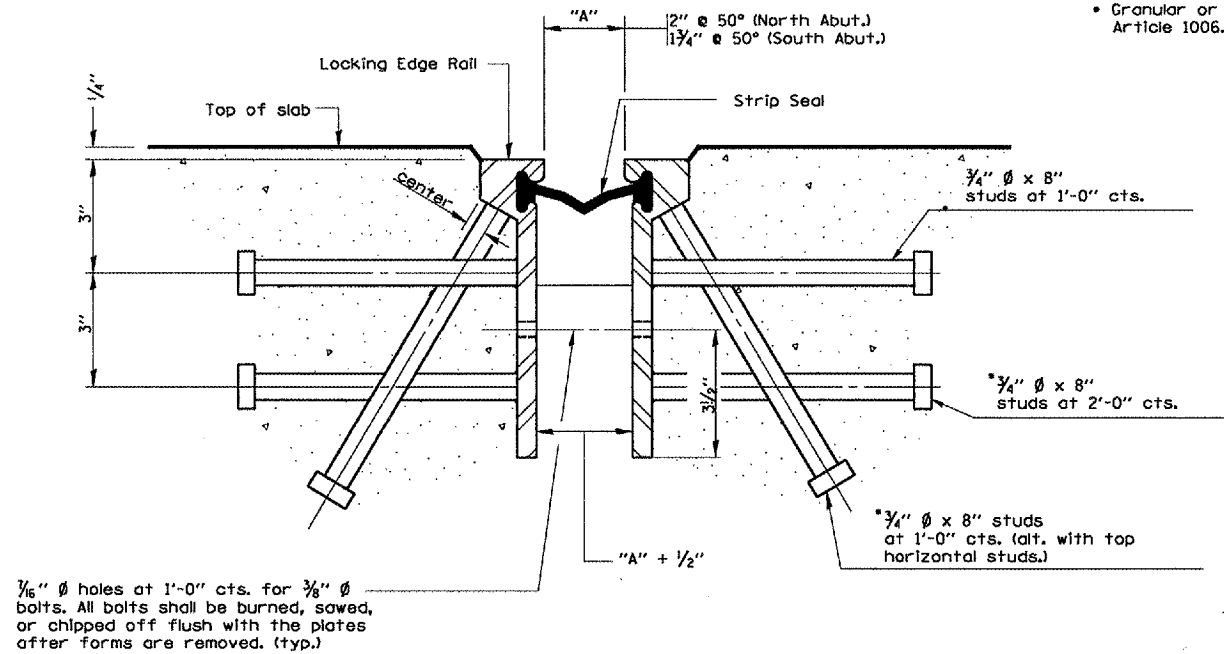
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
ABUTMENT WALL REPAIR
 S.N. 050-0168 (NB)
 F.A.I. 412 OVER C. & N.W. RAILROAD
 SECTION (50-6VB)I-1
 STA. 1429 + 12.74

MARCH 21, 2005
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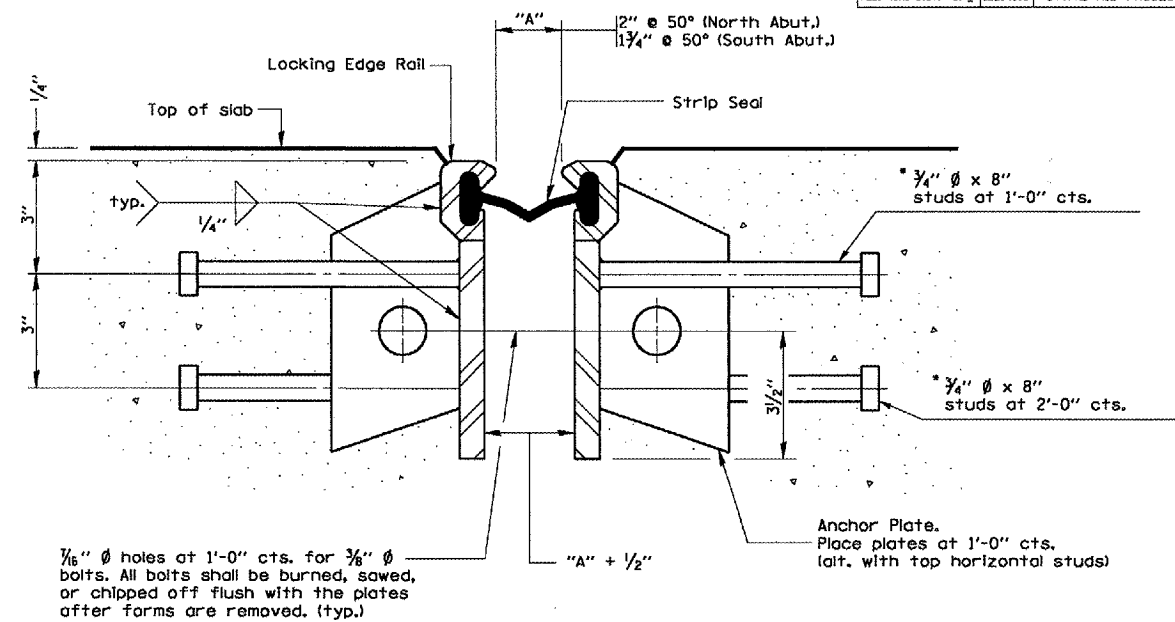
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
412	(50-GVB)-2	LASALLE	25	16
FED. ROAD DIST. NO.		ILLINOIS	STATE AID PROJECT	

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



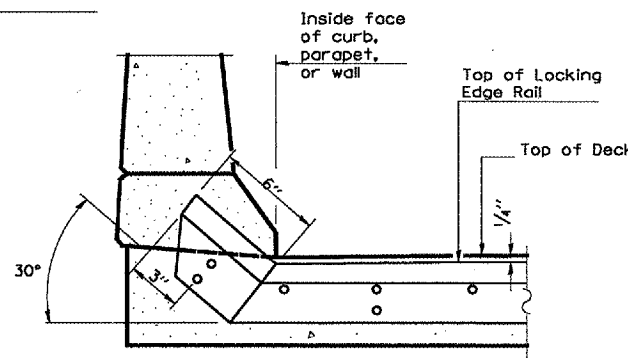
SECTION THRU ROLLED RAIL EXP. JOINT

(480 Studs Required)



SECTION THRU WELDED RAIL EXP. JOINT

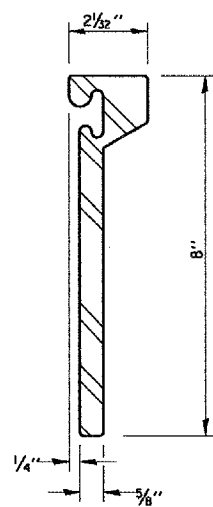
(288 Studs Required)
(192 Anchor Plates Required)



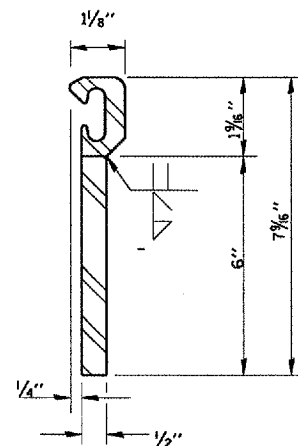
AT PARAPET

NOTES

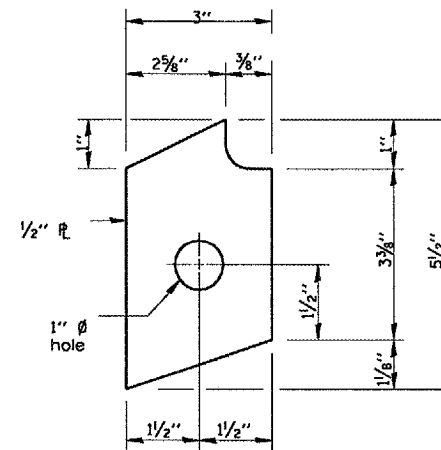
The strip seal shall be made continuous and shall have a minimum thickness of 1/4". The configuration of the strip seal shall match the configuration of the Locking Edge Rails.
The height and thickness of the Locking Edge Rails shown are minimum dimensions. The actual configuration of the Locking Edge Rails and matching strip seal may vary from manufacturer to manufacturer. Flanged edge rails will not be allowed.
Locking Edge Rails may be spliced at slope discontinuities and stage construction joints.
The manufacturer's recommended installation methods shall be followed.



ROLLED (EXTRUDED) RAIL
LOCKING EDGE RAILS



WELDED RAIL

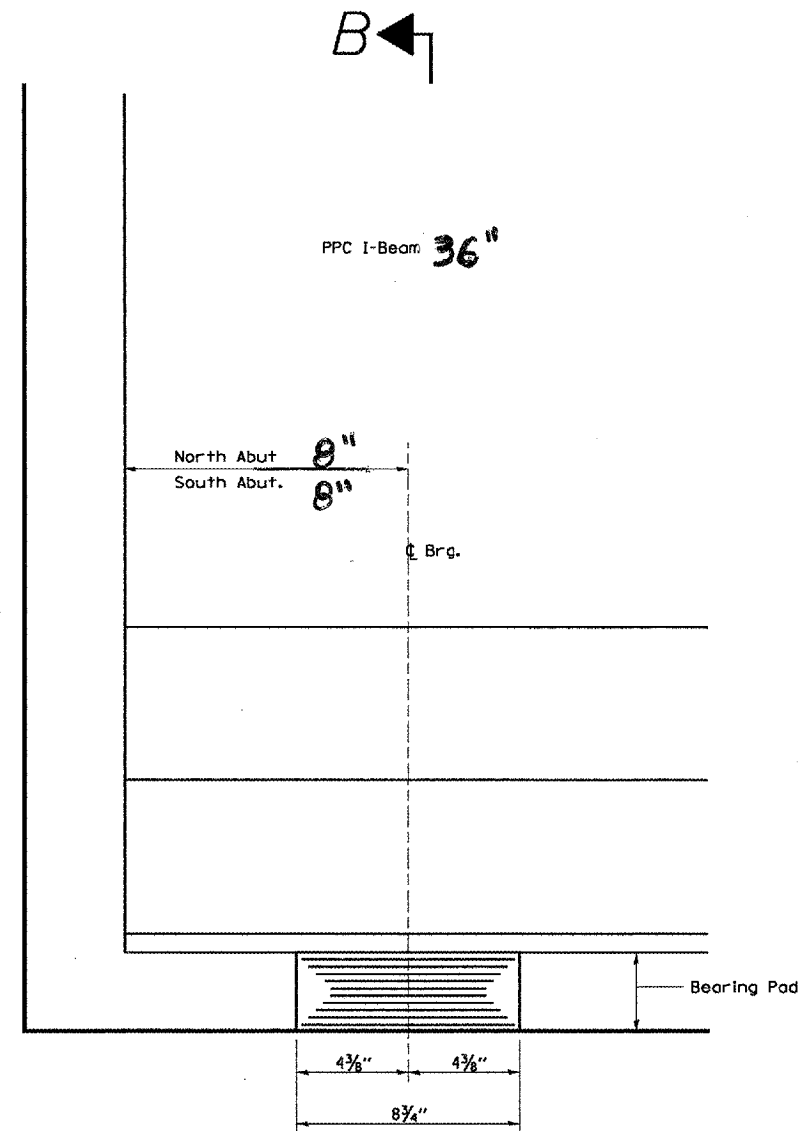


ANCHOR
(for welded rail)

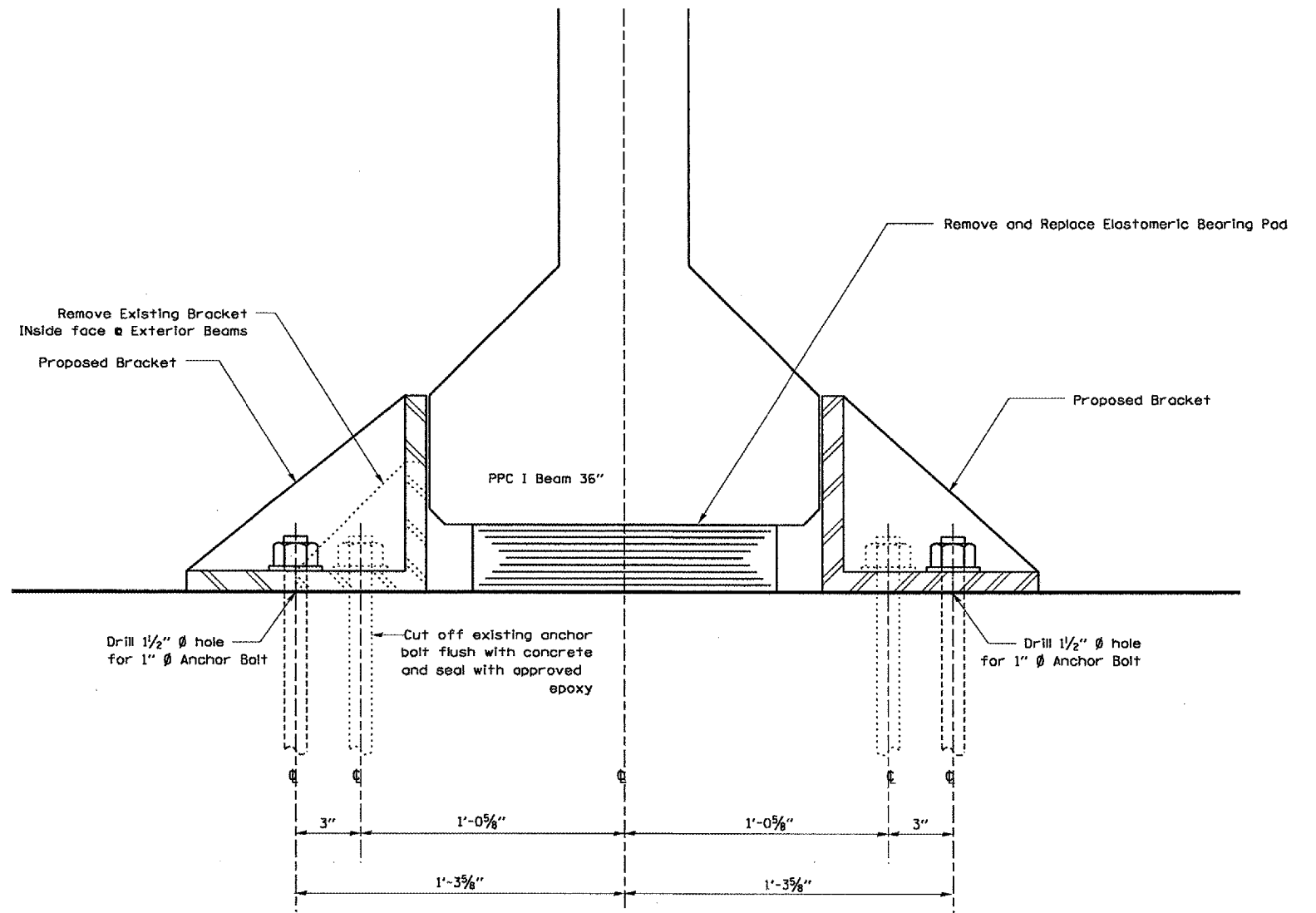
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
STRIP SEAL EXPANSION
JOINT ASSEMBLY
S.N. 050-0168 (NB)
F.A.I. 412 OVER C. & N.W. RAILROAD
SECTION (50-6VB)-1
STA. 1429 + 12.74

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
412	(50-6VB)-2	LASALLE	25	17
FED. ROAD DIST. NO. -		ILLINOIS	STATE AID PROJECT	



ELEVATION AT ABUT.
(Along & Beam)



SECTION B-B

Reaction for Bearing Replacement

- R DL = 29.2 kips
- R SDL = 6.7 kips
- R LL = 37.3 kips
- R Imp = 10.3 kips

Min Jack size: $1.5 \cdot (R DL + R SDL + 1/2(R LL + R Imp)) / 2$ In Tons

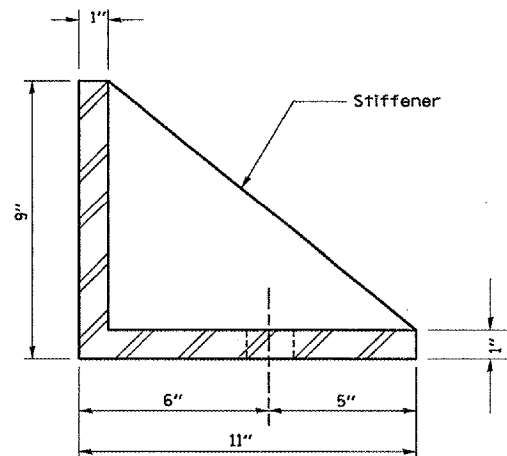
NOTE: The minimum Jack size assumes no traffic over bearings being replaced plus a 50% safety factor for the Jack.

REVISIONS	
NAME	DATE

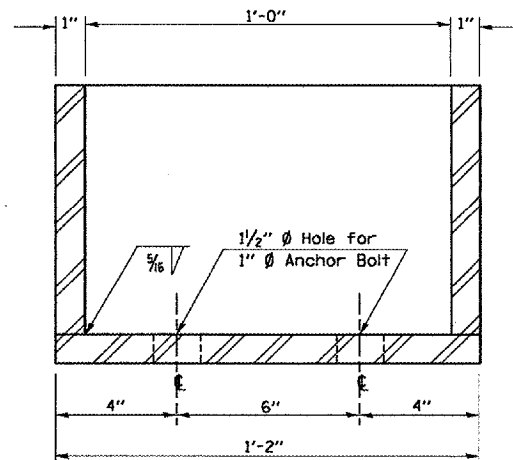
ILLINOIS DEPARTMENT OF TRANSPORTATION
BEARING REPLACEMENT DETAILS
 S.N. 050-0168 (NB)
 F.A.I. 412 OVER C. & N.W. RAILROAD
 SECTION (50-6VB)-1
 STA. 1429 + 12.74

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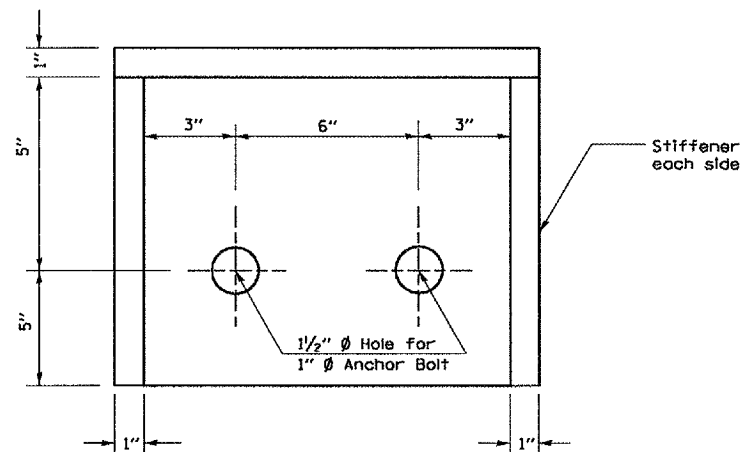
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
412	(50-GVB)I-2	LASALLE	25	18
FED. ROAD DIST. NO.	ILLINOIS	STATE AID PROJECT		



SIDE VIEW



FRONT VIEW

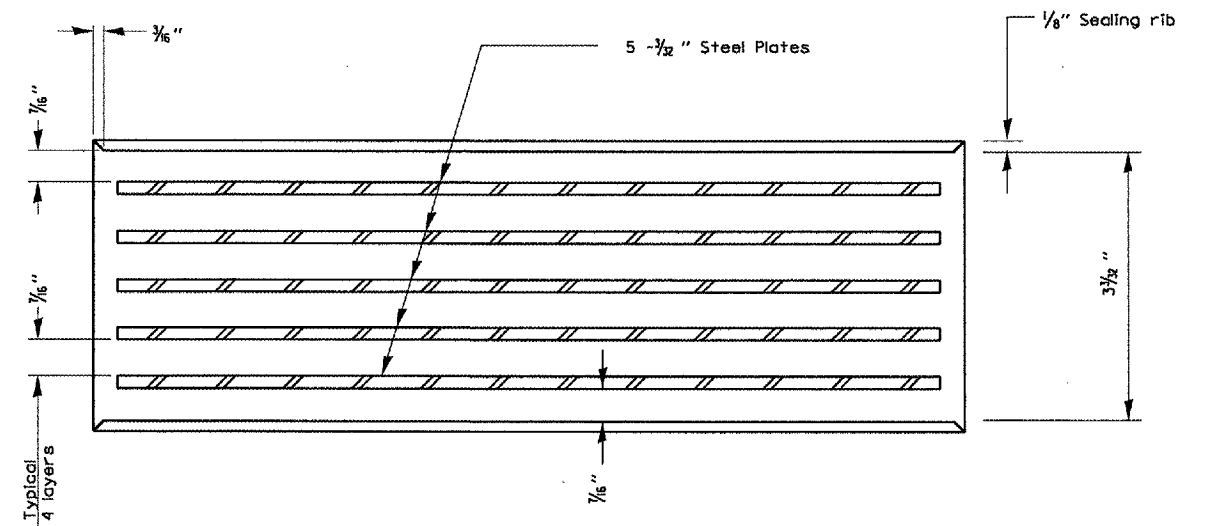


PLAN VIEW

The cost of side retainers and anchor bolts is included with Elastomeric Bearing Assembly Type I.

BRACKET DETAIL

11" X 9" X 1" X 1'-2"
24 REQUIRED



ELASTOMERIC BEARING PAD

3 3/32" X 8 3/4" X 1'-2"
12 REQUIRED

BILL OF MATERIAL

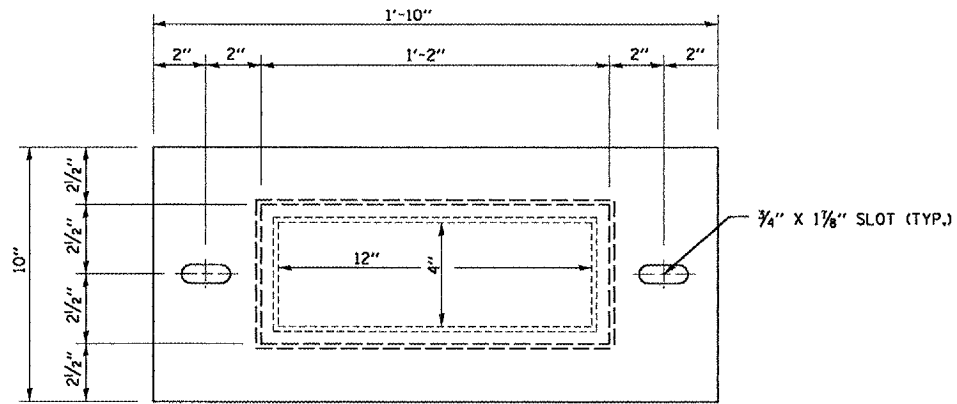
Item	Unit	Total
Elastomeric Bearing Assembly Type I	Each	24

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
BEARING REPLACEMENT DETAILS
S.N. 050-0168 (NB)
F.A.I. 412 OVER C. & N.W. RAILROAD
SECTION (50-GVB)I-1
STA. 1429 + 12.74

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F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
412	(50-6VB)I-2	LASALLE	25	19
FED. ROAD DIST. NO.	ILLINOIS	STATE AID PROJECT		



1/2" x 4" Expansion Bolt with Washer

Seal with approved Silicone Caulk

Galvanized nut, lock washer & flat washer
4 each required per drain

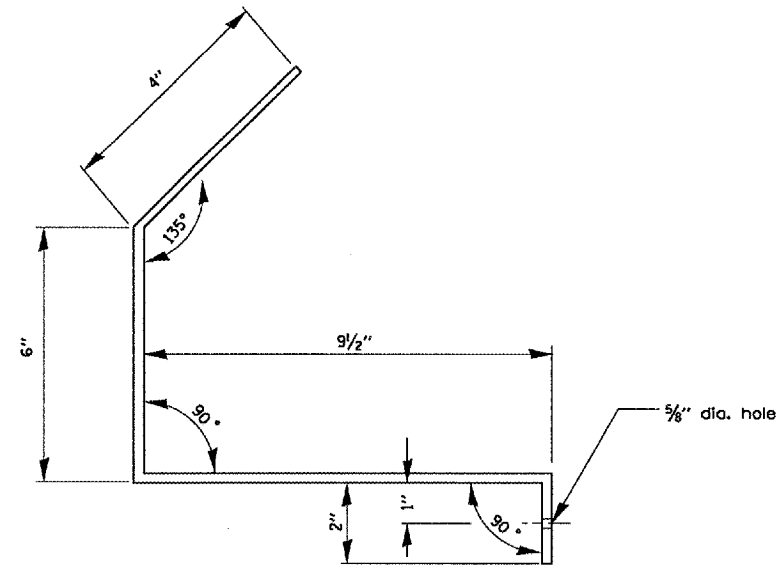
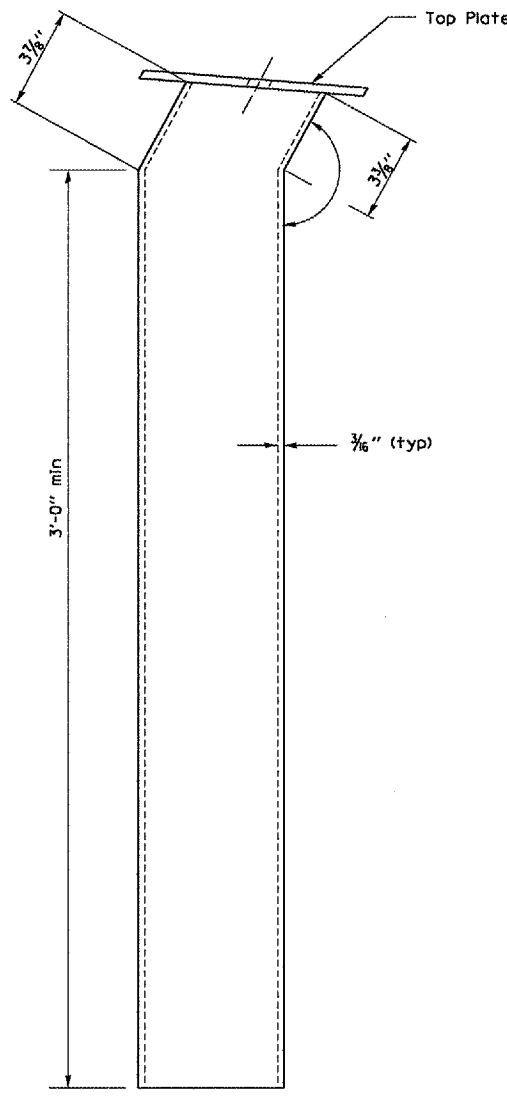
1/2" x 24" Galvanized Threaded Rod

3" min

Field drill 3/8" Ø hole for 1/4" Ø threaded rod 13" long with nuts and washers

Plug drain monolithically with Bridge Deck Microsilica Concrete Overlay

PLUG DECK DRAIN



DECK DRAIN EXTENSION

REVISIONS	
NAME	DATE

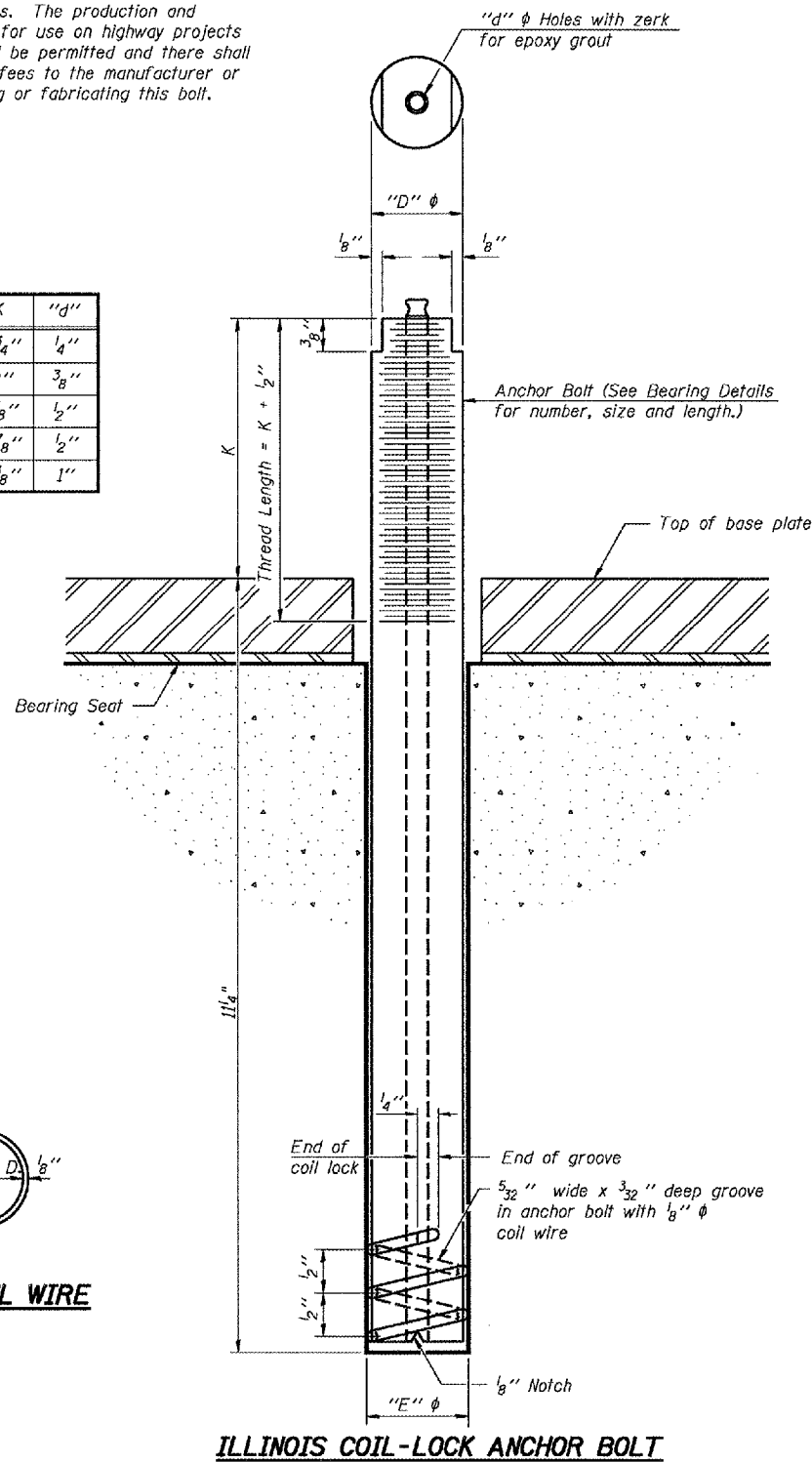
ILLINOIS DEPARTMENT OF TRANSPORTATION
DECK DRAIN DETAILS
 S.N. 050-0168 (NB)
 F.A.I. 412 OVER C. & N.W. RAILROAD
 SECTION (50-6VB)I-1
 STA. 1429 + 12.74

MARCH 21, 2005
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F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
412	(50-CVB)I-2	LASALLE	25	19A
FED. ROAD DIST. NO. ILLINOIS		STATE AID PROJECT		

The Illinois Coil-Lock Anchor Bolt is a proprietary item which is the property of the Illinois Department of Transportation. Use, reproduction or disclosure without express written permission is prohibited and protected under Federal copyright laws. The production and the fabrication of this bolt for use on highway projects in the State of Illinois shall be permitted and there shall be no incurred charges or fees to the manufacturer or the fabricator for producing or fabricating this bolt.

D	E	H	K	"d"
1"	1 1/8"	1 3/8"	1 3/4"	1/4"
1 1/4"	1 3/8"	1 1/2"	2"	3/8"
1 1/2"	1 5/8"	1 5/8"	2 1/8"	1/2"
2"	2 1/8"	1 3/4"	2 7/8"	1/2"
2 1/2"	2 5/8"	2 5/8"	3 3/8"	1"



PLAN-COIL WIRE

MATERIALS FOR ILLINOIS COIL-LOCK ANCHOR BOLT

The anchor bolt shall be fabricated from cold drawn or hot finished seamless carbon steel mechanical tubing conforming to ASTM A 519, Grade 1026, CW and supplied with hexagonal nuts and cut washers.

The coil wire shall be made of any suitable soft steel wire. The finished anchor bolt shall be cleaned of rust and other foreign materials and wrapped or packaged to prevent contamination until they are installed. The epoxy grout shall be a two-component, epoxy resin bonding system conforming to ASTM C 881, Type I, Grade 1 and of a Class suitable for the temperature at installation.

INSTALLATION PROCEDURE for the ILLINOIS COIL-LOCK ANCHOR BOLT

1. With the coil wire in place, the bolt shall be inserted into the hole and turned clockwise to a snug fit in the hole. Nut and washer shall be placed on the bolt. The nut shall be tensioned until the steel base plates are held securely to the concrete bearing seat.
2. Epoxy grout shall be pumped through the zerk fitting with a pressure gun. Pumping shall continue until the epoxy overflows the hole around the bolt shank. After pumping is discontinued, excess epoxy shall be immediately wiped off.

ALTERNATE ANCHOR BOLTS

The Contractor may use, at his option, the capsule or the adhesive cartridge type anchor rods that have been previously tested and given a prior approval by the Department. The Contractor shall install these anchor rods in pre-drilled holes according to the manufacturer's recommendations and procedures.

- The capsule or the adhesive cartridge type anchor rods shall be a two part system composed of:
1. A threaded rod stud with nut and washer of the type specified.
 2. A sealed glass capsule or a sealed glass adhesive cartridge containing premeasured amounts of the adhesive chemical.

Location	Type
Abutments	A307

ASTM F 1554 Grade 105, ASTM A 449 and AASHTO M 314 Grade 105 anchor bolts may be substituted for the anchor bolts shown above.

GENERAL NOTES

Holes in the masonry for anchor bolts shall be drilled through the base plates to the diameter and depth shown or according to the manufacturer's recommendation after beams or girders have been erected and adjusted. Prior to setting the bolts, the holes shall be dry and all dust and loose particles shall be removed by the use of compressed air or vacuuming. The anchor bolts, furnished and installed and including the epoxy grout or capsules shall not be paid for separately but shall be included in the unit bid price for Furnishing and Erecting Structural Steel.

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
ANCHOR BOLT DETAILS
 S.N. 050-0168 (NB)
 F.A.I. 412 OVER C. & N.W. RAILROAD
 SECTION (50-6VB)I-1
 STA. 1429 + 12.74

ABB-1

10-22-04

LASALLE COUNTY

SECTION: (50-6VB)I-2

FAI 412 (I-39)

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
412	(50-GVB)I-2	LASALLE	25	20
FED. ROAD DIST. NO. 1		ILLINOIS	STATE AID PROJECT	

NOTES

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

- ① Minimum Capacity = $1.25 \times f_y \times A_t$
(Tension in kips)
- ② Minimum Pull-Out Strength = $1.25 \times f_{allow} \times A_t$
(Tension in kips)

Where f_y = Yield strength of lapped reinforcement bars in ksi.
 f_{allow} = Allowable tensile stress in lapped reinforcement bars in ksi (Service Load)
 A_t = Tensile stress area of lapped reinforcement bars.
 * = 28 day concrete

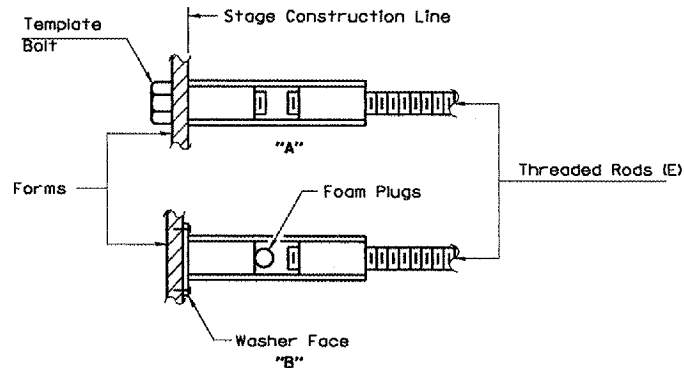
Bar Size to be Spliced	Splicer Rod or Dowel Bar Length	Strength Requirements	
		Min. Capacity kips - tension	Min. Pull-Out Strength kips - tension
#4	1'-8"	14.7	5.9
#5	2'-0"	23.0	9.2
#6	2'-7"	33.1	13.3
#7	3'-5"	45.1	18.0
#8	4'-6"	58.9	23.6
#9	5'-9"	75.0	30.0
#10	7'-3"	95.0	38.0
#11	9'-0"	117.4	46.8

Bar splicer assemblies shall be according to Section 508 of the Standard Specifications, except as noted. The furnishing and installation of bar splicer assemblies will be measured and paid for at the contract unit price each for "BAR SPLICERS."

The diameter of this part is equal or larger than the diameter of bar spliced.

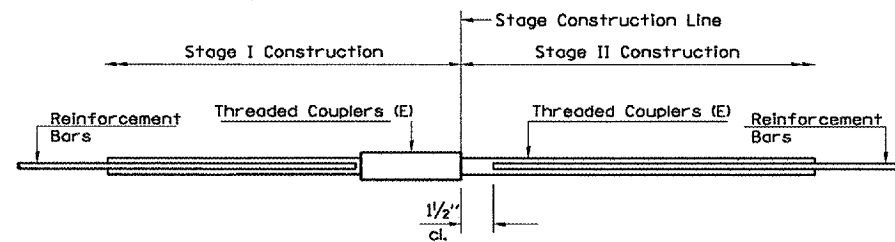
The diameter of this part is the same as the diameter of the bar spliced.

ROLLED THREAD DOWEL BAR



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

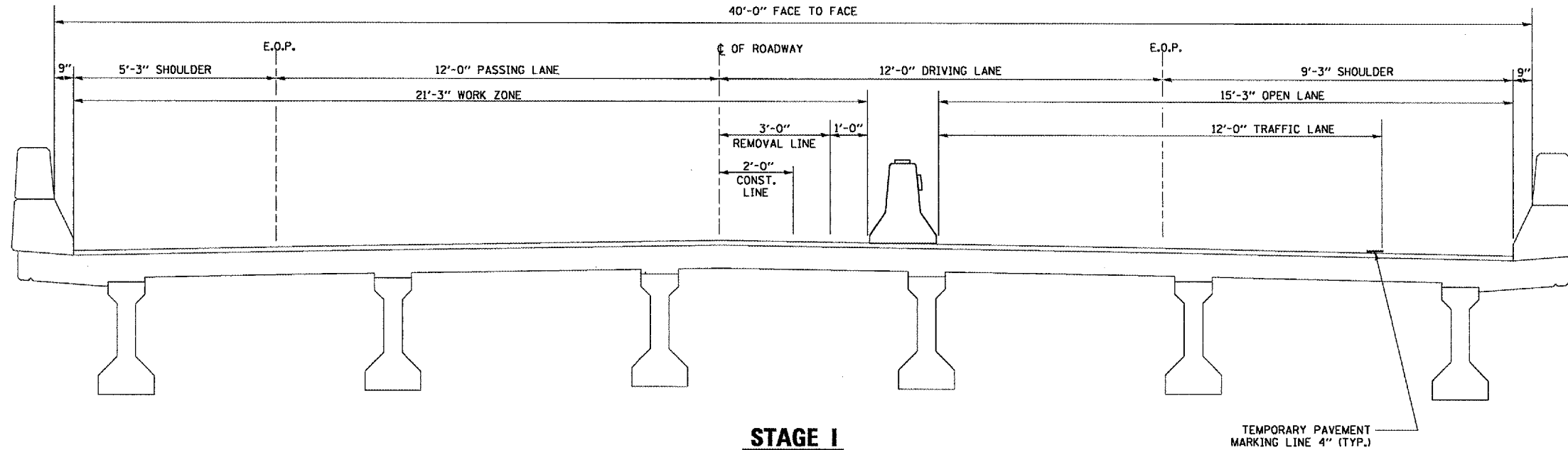
	No. Assemblies Required	Location
#5	9	N & S ABUTS @ STAGE LINE
#6	8	N & S ABUTS @ STAGE LINE
#7	12	N & S ABUTS @ STAGE LINE

REVISIONS	
NAME	DATE

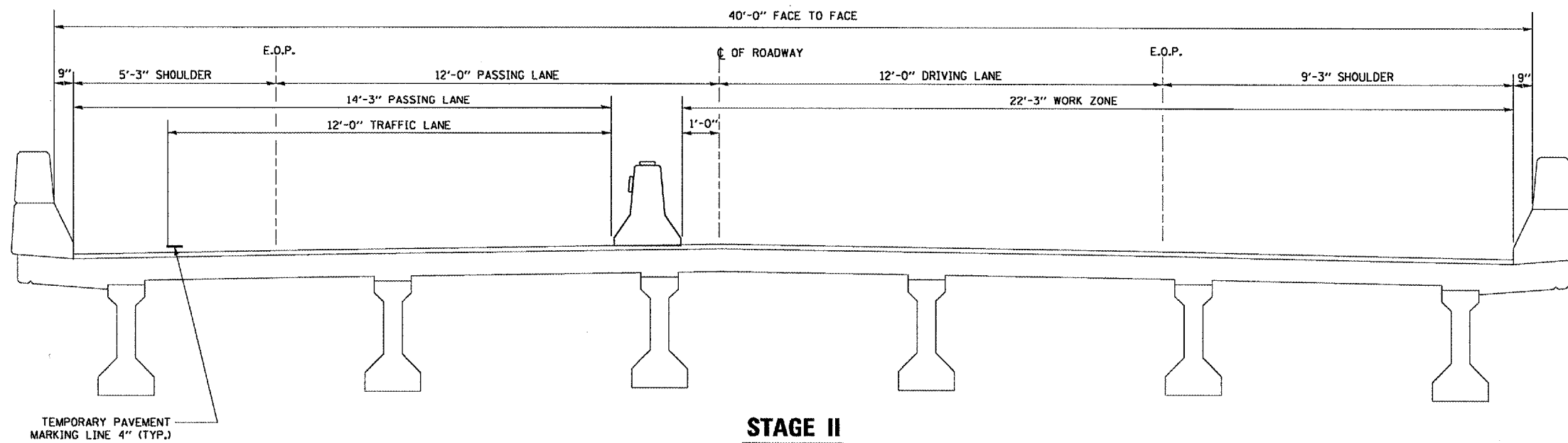
ILLINOIS DEPARTMENT OF TRANSPORTATION
BAR SPLICER ASSEMBLY DETAILS
 S.N. 050-0168 (NB)
 F.A.I. 412 OVER C. & N.W. RAILROAD
 SECTION (50-6VB)I-1
 STA. 1429 + 12.74

MARCH 21, 2005
 C:\PROJECTS\CMA\106\CM30\DETAILS.DGN

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
412	(50-6VB)-2	LASALLE	25	21
FED. ROAD DIST. NO. _		ILLINOIS	STATE AID PROJECT	



STAGE I
NORTHBOUND LANE SHOWN
(SOUTHBOUND LANE SIMILAR)



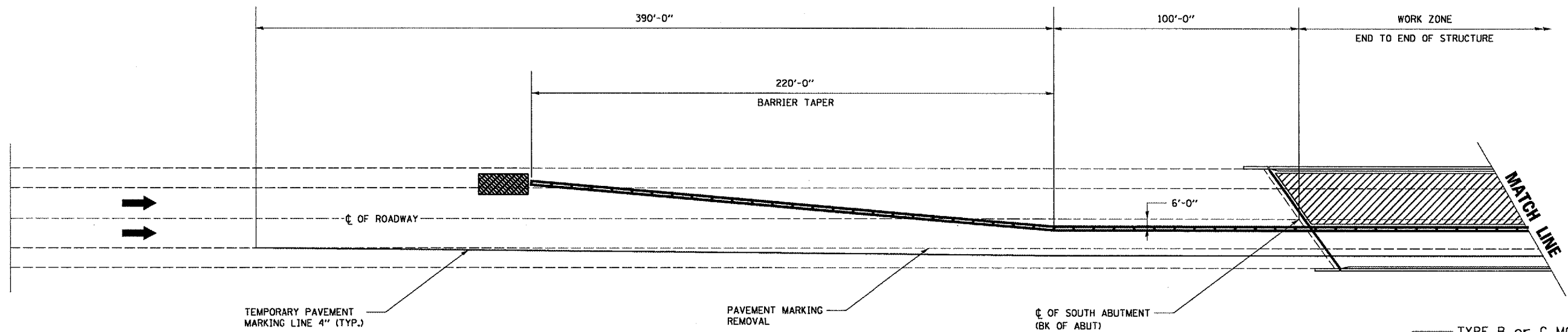
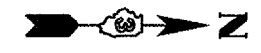
STAGE II
NORTHBOUND LANE SHOWN
(SOUTHBOUND LANE SIMILAR)

MARCH 21, 2005
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REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
STAGING AND TRAFFIC CONTROL
TYPICAL SECTIONS
S.N. 050-0168 (NB)
F.A.I. 412 OVER C. & N.W. RAILROAD
SECTION (50-6VB)I-1
STA. 1429 + 12.74

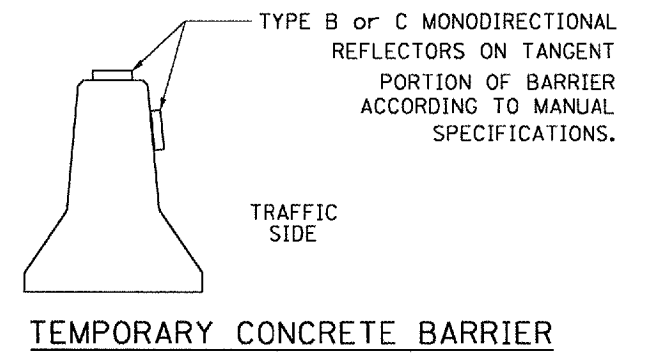
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
412	(50-6VB)I-2	LASALLE	25	22
FED. ROAD DIST. NO.	ILLINOIS	STATE AID PROJECT		



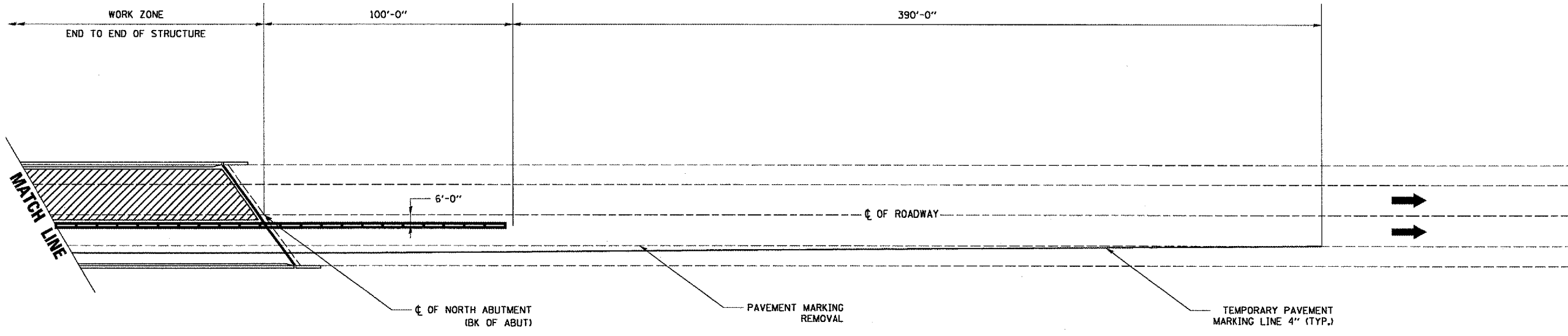
PLAN

LEGEND

- TEMPORARY CONCRETE BARRIER
- WORK ZONE
- IMPACT ATTENUATOR



TEMPORARY CONCRETE BARRIER



PLAN

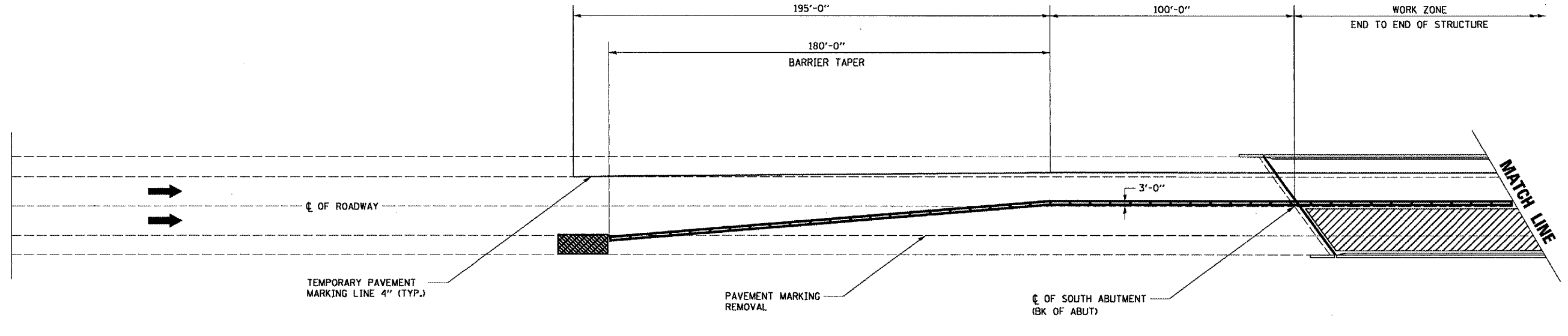
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
STAGING AND TRAFFIC CONTROL
 STAGE I
 S.N. 050-0168 (NB)
 F.A.I. 412 OVER C. & N.W. RAILROAD
 SECTION (50-6VB)I-1
 STA. 1429+12.74

WORK THIS SHEET WITH TRAFFIC CONTROL AND PROTECTION STANDARD 701402

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F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
412	(50-6VB)I-2	LASALLE	25	23
FED. ROAD DIST. NO. 1		ILLINOIS	STATE AID PROJECT	

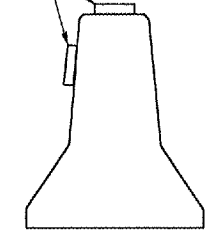


PLAN

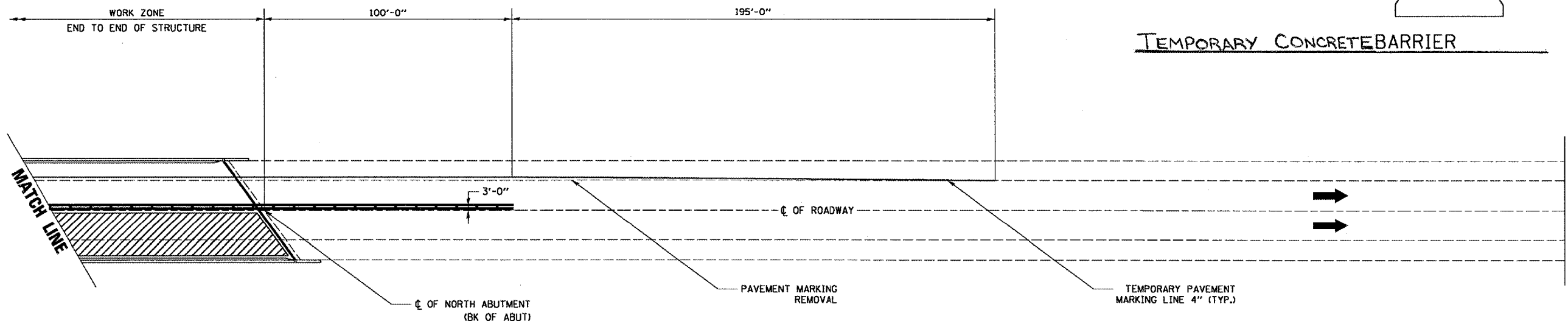
LEGEND

- TEMPORARY CONCRETE BARRIER
- WORK ZONE
- IMPACT ATTENUATOR

TYPE B or C MONODIRECTIONAL REFLECTORS ON TANGENT PORTION OF BARRIER ACCORDING TO MANUAL SPECIFICATIONS.



TEMPORARY CONCRETE BARRIER



PLAN

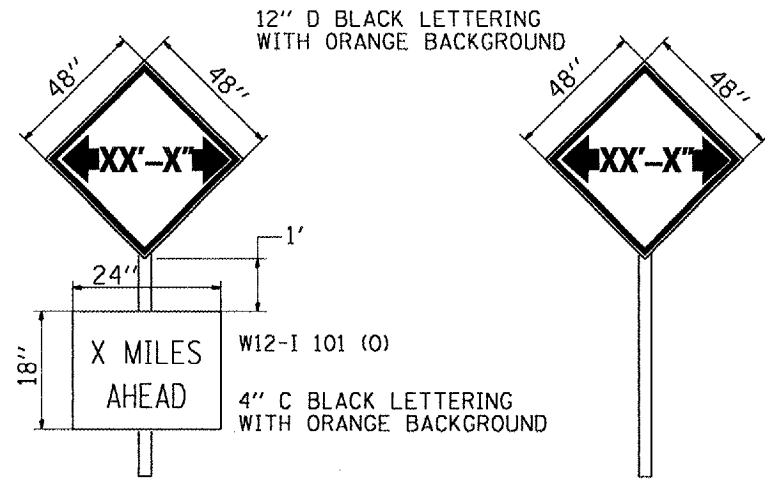
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
STAGING AND TRAFFIC CONTROL
 STAGE II
 S.N. 050-0168 (NB)
 F.A.I. 412 OVER C. & N.W. RAILROAD
 SECTION (50-6VB)I-1
 STA. 1429 + 12.74

WORK THIS SHEET WITH TRAFFIC CONTROL AND PROTECTION STANDARD 701402

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F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
412	(50-6VB)-2	LASALLE	25	24
FED. ROAD DIST. NO. ILLINOIS		STATE AID PROJECT		



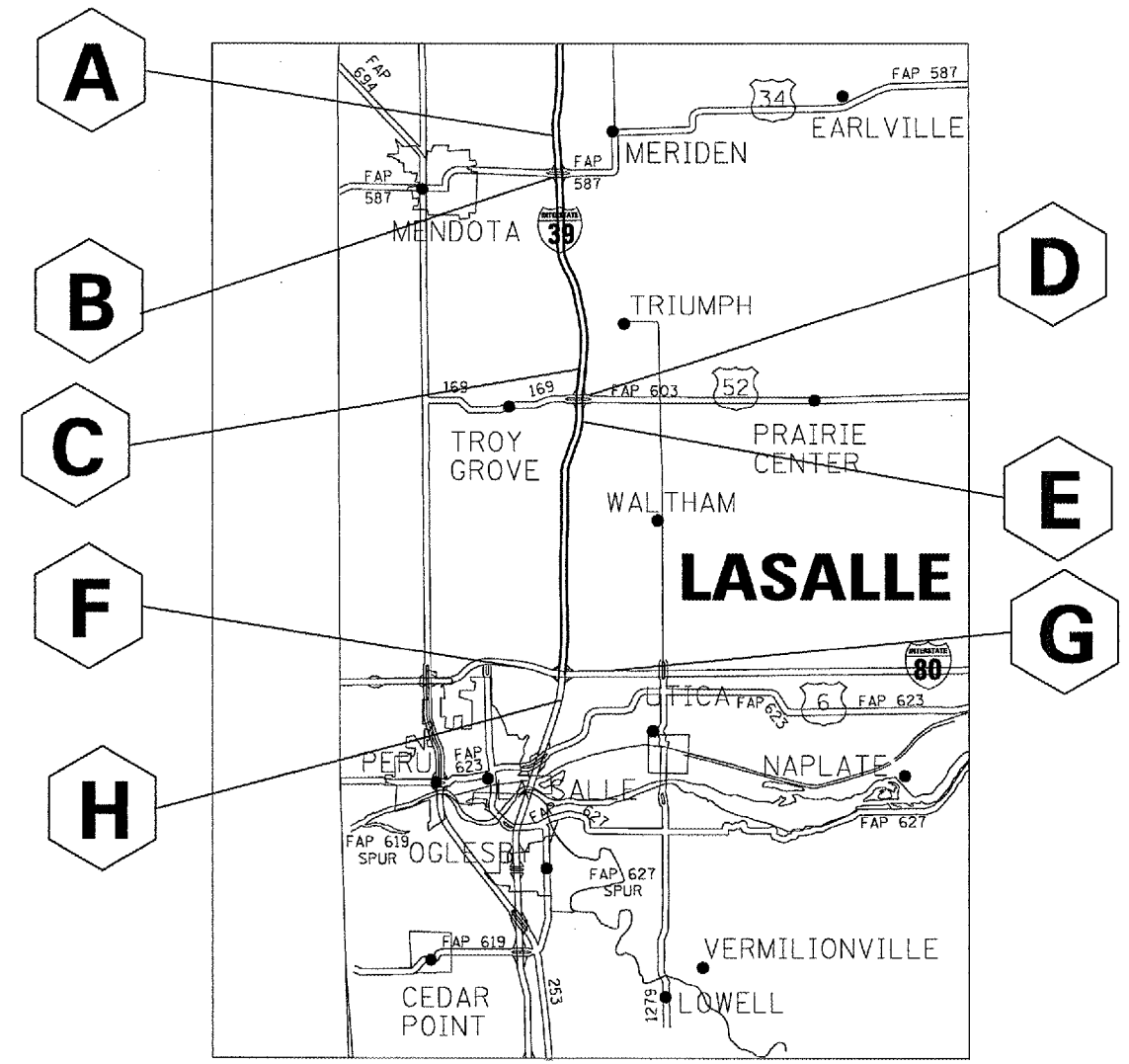
TO BE POST MOUNTED AS SHOWN ELSEWHERE IN THE PLANS.

THE ENGINEER WILL NOTIFY DISTRICT 3 BUREAU OF OPERATIONS 14 CALENDAR DAYS PRIOR TO INSTALLING ANY TRAFFIC CONTROL DEVICES THAT WILL RESTRICT THE PAVEMENT WIDTH.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH THE ENGINEER TO MEET THIS REQUIREMENT.

WIDTH RESTRICTION SIGNING DETAILS

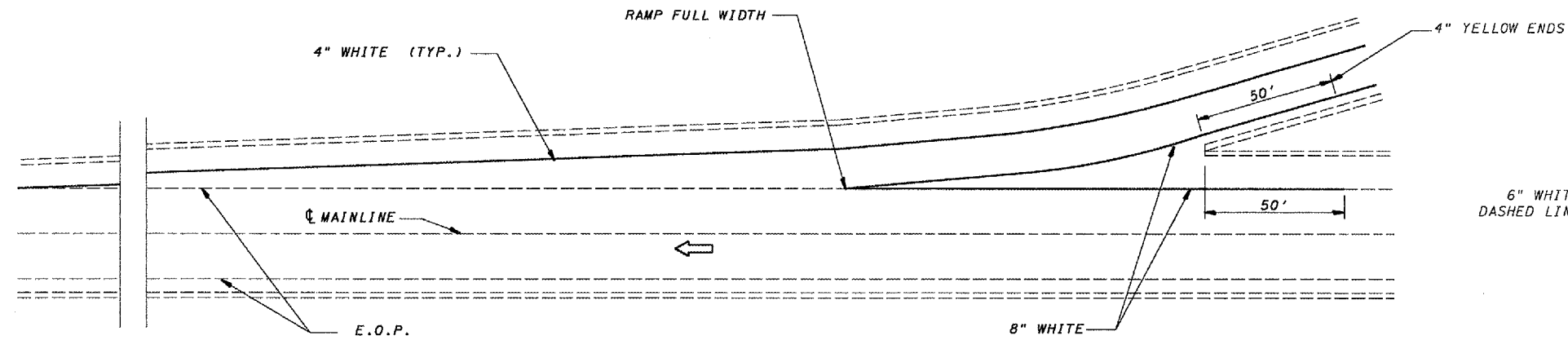
TABLE OF WIDTH RESTRICTION SIGNS				
NO. OF SIGNS	TYPE OF SIGN	LOCATION		WIDTH RESTRICTION & MILES AHEAD
2	WIDTH RESTRICTION WITH WITH W12-I101 (O)	A	I-39 SOUTHBOUND 1 MI NORTH OF US 34	12'-9" 7 MI AHEAD
2	WIDTH RESTRICTION WITH WITH W12-I101 (O)	B	US 34, TOP OF SOUTHBOUND ON RAMP TO I-39	12'-9" 6 MI AHEAD
2	WIDTH RESTRICTION	C	WITHIN TRAFFIC CONTROL STANDARD 701401	12'-9"
2	WIDTH RESTRICTION WITH WITH W12-I101 (O)	D	US 52, TOP OF RAMP TO I-39 NORTHBOUND	12'-9" 0.2 MI AHEAD
2	WIDTH RESTRICTION WITH WITH W12-I101 (O)	E	I-39 NORTHBOUND 1 MI SOUTH OF US 52	12'-9" 1.2 MI AHEAD
2	WIDTH RESTRICTION WITH WITH W12-I101 (O)	F	1 80 EASTBOUND 1/4 MI WEST OF I-39	12'-9" 7 MI AHEAD I-39 NORTHBOUND
2	WIDTH RESTRICTION WITH WITH W12-I101 (O)	G	I-80 WESTBOUND 1/4 MI EAST OF I-39	12'-9" 7 MI AHEAD I-39 NORTHBOUND
2	WIDTH RESTRICTION WITH WITH W12-I101 (O)	H	I-39 NORTHBOUND 1 MI SOUTH OF I-80	12'-9" 8 MI AHEAD



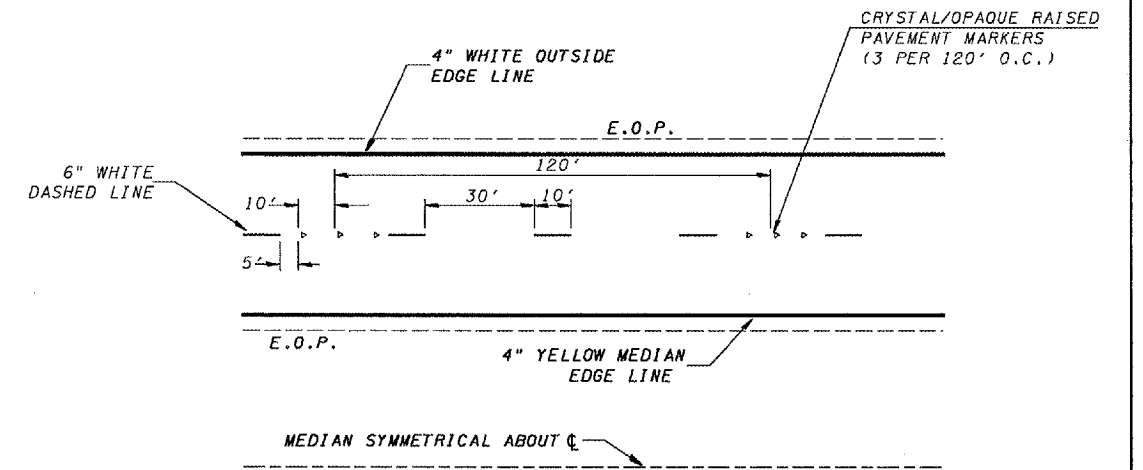
**NOTE:
THE CONTRACTOR SHALL FURNISH ERECT AND MAINTAIN THE ABOVE SIGNS.**

REVISIONS		ILLINOIS DEPARTMENT OF TRANSPORTATION WIDTH RESTRICTION SIGNING S.N. 050-0168 (NB) F.A.I. 412 OVER C. & N.W. RAILROAD SECTION (50-6VB)-1 STA. 1429 + 12.74
NAME	DATE	

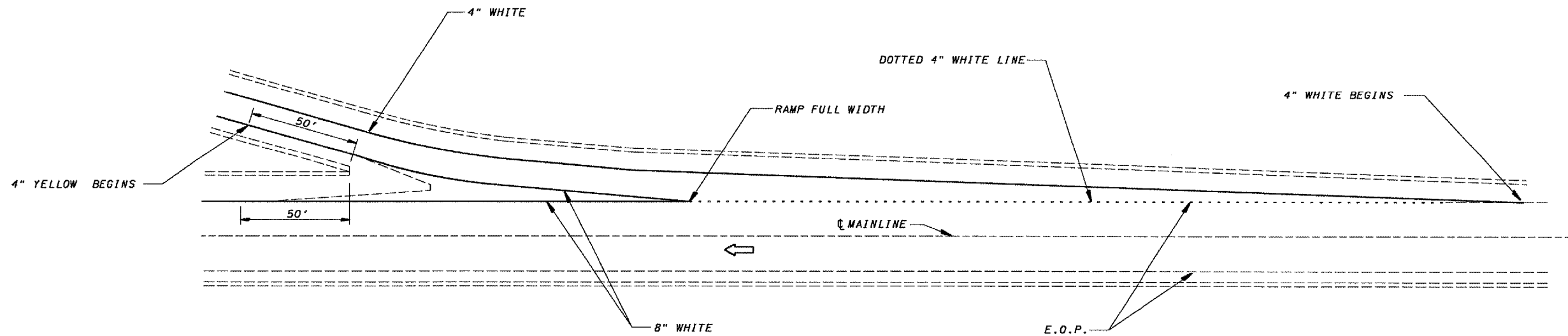
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
412	(50-6VB)I-2	LASALLE	25	25
FED. ROAD DIST. NO. _		ILLINOIS	STATE AID PROJECT	



TYPICAL PAVEMENT MARKING FOR ENTRANCE RAMP TERMINALS



TYPICAL PAVEMENT MARKINGS



TYPICAL PAVEMENT MARKINGS FOR EXIT RAMP TERMINALS

MARCH 21, 2005
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REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
TYPICAL PAVEMENT MARKING
 S.N. 050-0168 (NB)
 F.A.I. 412 OVER C. & N.W. RAILROAD
 SECTION (50-6VB)I-1
 STA. 1429 + 12.74