| FAI RTE. | SECTION | COUNTY | TOTAL SHEET SHEETS | NO. |
|---|---|---|---|---|
| I-80 | * | WILL | 181 | |

D-91-257-88

* 99-4RS-2 & 99(3B,4B-1,4HB-1,4VB)BR-88

# STATE OF ILLINOIS
# DEPARTMENT OF TRANSPORTATION
# DIVISION OF HIGHWAYS

# PLANS FOR PROPOSED
# FEDERAL AID INTERSTATE HIGHWAY

FOR INDEX OF SHEETS, SEE SHEET NO. 2

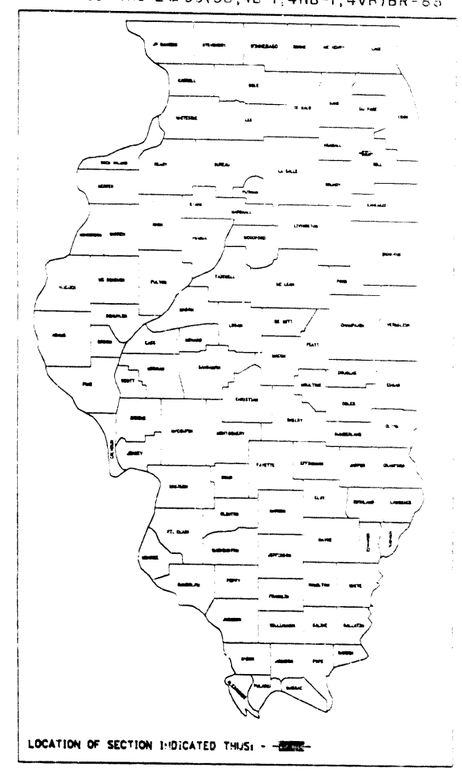
SCALES
- PLAN — 1 INCH = * FEET
- PROFILE HORIZ. — 1 INCH = * FEET
- PROFILE VERT. — 1 INCH = * FEET
- CROSS SECTIONS — 1 INCH = * FEET HORIZONTAL; 1 INCH = * FEET VERTICAL

* SEE PLANS

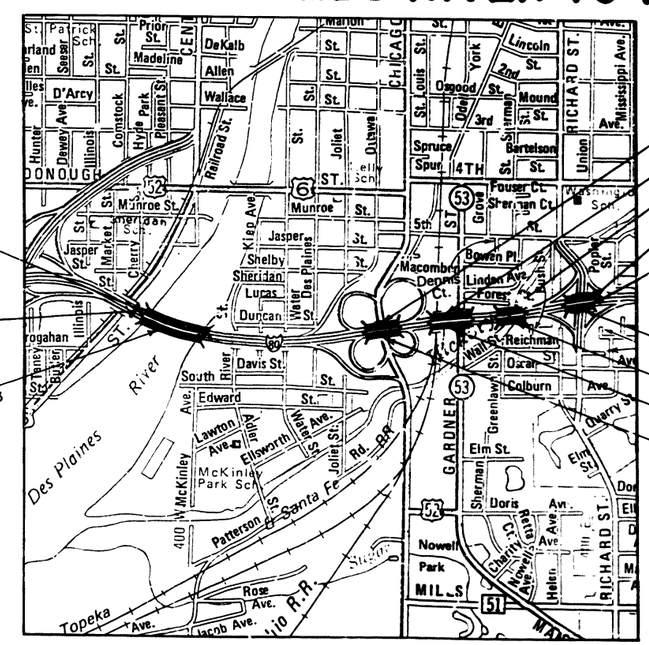
## F.A.I. ROUTE I-80
## SECTION: 99-4RS-2 & 99(3B, 4B-1, 4HB, 4HB-1, 4VB)BR-88
## WILL COUNTY
## C-91-169-88
## DESPLAINES RIVER TO RICHARD STREET

CITY OF JOLIET

SECTION NUMBERS 99-3B-BR(88) AND SECTION NUMBER 99-4RS-2 & 99-4(B-1, HB, HB-1, VB)BR-88 HAVE BEEN REVISED TO SECTION NUMBER 99-4RS-2 & 99(3B, 4B-1, 4HB, 4HB-1, 4VB)BR-88



LOCATION OF SECTION INDICATED THUS: -




IMROVEMENT BEGINS
STA.379+04(WB)
STA.378+72(E.B.)

STRUC. NO.0099-0056
STA.379+64.57 TO 402+34

STRUC. NO.0099-0057
STA.379+34.27 TO 402+74.03

STRUC. NO.0099-0058
STA.413+88.93 TO 415+68.53

STRUC. NO.0099-0061
STA.420+44.78 TO 425+21.84

STRUC. NO.0099-0063
STA.429+59.91 TO 432+25.33

STRUC. NO.0099-0065
STA.439+14.09 TO 440+79.84

IMPROVEMENT ENDS
STA. 440+79.84

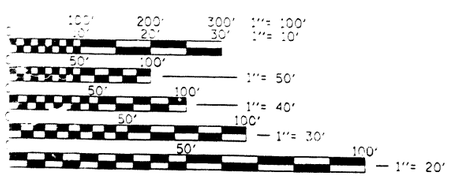
STRUC. NO.0099-0064
STA.439+04.41 TO 440+71.37

STRUC. NO.0099-0062
STA. 429+32.62 TO 431+98.04

STRUC. NO.0099-0060
STA. 420+24.46 TO 425+07.87

STRUC. NO.0099-0059
STA.414+00.94 TO 415+80.55

N




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.

NET LENGTH OF W.B. = 6,17[illegible] FT. = [illegible] MILES

NET LENGTH OF E.B. = 6205.84 = 1.175 MILES

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED _____ 19__
ASSISTANT ENGINEER

EXAMINED _____ 19__
ENGINEER OF PLANS AND CONTRACTS

PASSED _____ 19__
ENGINEER OF DESIGN

APPROVED _____ 19__
DIRECTOR, DIVISION OF HIGHWAYS

CONTRACT NO. 80194

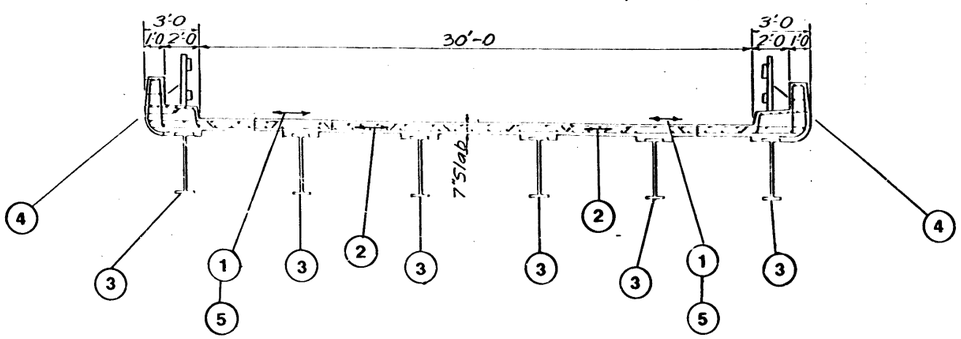
LOCATION MAP

COUNTY: WILL FAI ROUTE: I-80 SECTION: 99-4RS-2 & 99(3B,4B-1,4HB,4HB-1,4VB)BR-88

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| I-80 | * | WILL | 181 | 149 |
| STA. | | TO STA | | |
| FED. ROAD DIST. NO. 7 | ILLINOIS | FED. A.D. PROJECT | | |

*99-4RS-2 & 99-4(B-1,HB,HB-1 & VB)ER-88

SHEET 2 OF 14




TYPICAL CROSS SECTION

## TOTAL BILL OF MATERIALS

| ITEM | UNIT | QUANTITY Sub-struct. | Super-struct. | Total |
|---|---|---|---|---|
| Jack Deck Beam, Crb. Under 10ft. | Each | 2 | | 2 |
| Jack and Remove Exist. Bearings | Each | | 6 | 6 |
| Elastomeric Bearing Assembly, T-1 | Each | | 6 | 6 |
| Concrete Removal | Cu. Yds. | | 17.5 | 17.5 |
| Furnish and Erect. Structural Stl. | Pounds | | 6512 | 6512 |
| Class X Concrete Superstructure | Cu. Yds. | | 20.2 | 20.2 |
| Preformed Joint Seal, 1 3/4" | Lin. Ft. | | 74 | 74 |
| Preformed Joint Seal, 2 1/2" | Lin. Ft. | | 37 | 37 |
| Preformed Joint Seal, 4" | Lin. Ft. | | 37 | 37 |
| Reinforcement Bars, Epoxy Coated | Pounds | | 2742 | 2742 |
| Waterproofing Membrane System | Sq. Yds. | | 552 | 552 |
| Deck Drain to be extended | Each | | 8 | 8 |
| Deck Slab Repair (Partial) | Sq. Yds. | | 37.3 | 37.3 |
| Deck Slab Repair (Full Depth) T-1 | Sq. Yds. | | 3.6 | 3.6 |
| | | | | |
| Epoxy Crack Sealing | Lin. Ft. | 24 | | 24 |
| Formed Conc. Repair (Depth ≤5") | Sq. Ft. | 74 | | 74 |
| Formed Conc. Repair (Depth >5") | Sq. Ft. | 23 | | 23 |
| Bit. Conc. Surface Removal (Deck) | Sq. Yds. | | 552 | 552 |
| Bit. Conc. Surface Cse., Mix E, CLI, T-1 | Tons | | 72 | 72 |
| Protective Coat | Sq. Yds. | | 145.3 | 145.3 |
| Protective Shield | Sq. Yds. | | 552 | 552 |
| Clean and Paint Steel Bridge | L. Sum | | | .05 |
| Protect and Maintain Exist. Underpass Luminaires | L. Sum | | | .16 |
| Steel Bridge Rail | Lin. Ft. | | 328 | 328 |
| Remove Conduit Attached to Struct. | Lin. Ft. | | 170 | 170 |
| Drainage Structure to be Cleaned | Each | | | 2 |
| Slopewall Rem. & Repl. | Sq. Yds. | | | 25 |

## LEGEND

1. REMOVAL OF EXISTING ASPHALTIC CONCRETE
2. STANDARD PARTIAL & FULL DEPTH PATCHING OF BRIDGE DECK AT VARIOUS LOCATIONS.
3. JACK & REMOVE EXISTING BEARING AT ABUTMENTS; FURNISH & INSTALL ELASTOMERIC BEARING ASSEMBLY, TYPE I
4. RETROFIT THE PARAPETS WITH A BRIDGE STEEL RAILING (STANDARD 2399-1).
5. WATERPROOFING OF DECK WITH MEMBRANE SYSTEM; PLACEMENT OF 2" BITUMINOUS CONCRETE OVERLAY.

| REVISIONS | |
|---|---|
| NAME | DATE |
| | |
| | |
| | |
| | |
| | |

ILLINOIS DEPARTMENT OF TRANSPORTATION

F.A.I.

BRIDGE REHABILITION

STRCTURE NO. 099-0064

TYPICAL CROSS SECTION

SCALE: VERT. HORIZ.

DRAWN BY CP

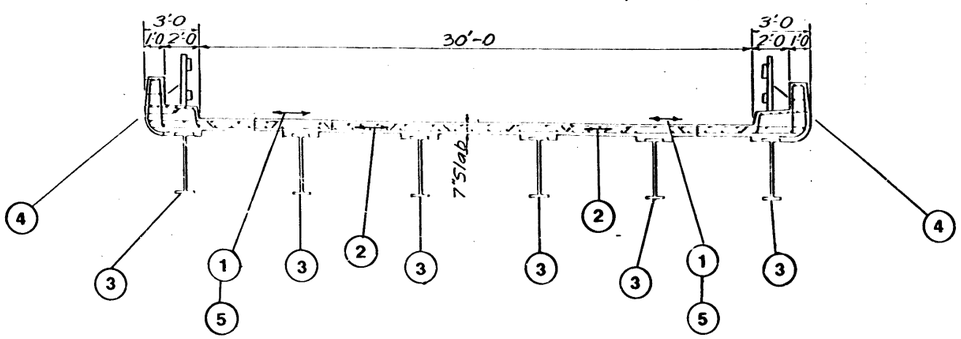
DATE

CHECKED BY

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| I-80 | * | WILL | 181 | 149 |
| STA. | | TO STA | | |
| FED. ROAD DIST. NO. 7 | ILLINOIS | FED. A.D. PROJECT | | |

*99-4RS-2 & 99-4(B-1,HB,HB-1 & VB)ER-88

SHEET 2 OF 14




TYPICAL CROSS SECTION

## TOTAL BILL OF MATERIALS

| ITEM | UNIT | QUANTITY Sub-struct. | Super-struct. | Total |
|---|---|---|---|---|
| Jack Deck Beam, Crb. Under 10ft. | Each | 2 | | 2 |
| Jack and Remove Exist. Bearings | Each | | 6 | 6 |
| Elastomeric Bearing Assembly, T-1 | Each | | 6 | 6 |
| Concrete Removal | Cu. Yds. | | 17.5 | 17.5 |
| Furnish and Erect. Structural Stl. | Pounds | | 6512 | 6512 |
| Class X Concrete Superstructure | Cu. Yds. | | 20.2 | 20.2 |
| Preformed Joint Seal, 1 3/4" | Lin. Ft. | | 74 | 74 |
| Preformed Joint Seal, 2 1/2" | Lin. Ft. | | 37 | 37 |
| Preformed Joint Seal, 4" | Lin. Ft. | | 37 | 37 |
| Reinforcement Bars, Epoxy Coated | Pounds | | 2742 | 2742 |
| Waterproofing Membrane System | Sq. Yds. | | 552 | 552 |
| Deck Drain to be extended | Each | | 8 | 8 |
| Deck Slab Repair (Partial) | Sq. Yds. | | 37.3 | 37.3 |
| Deck Slab Repair (Full Depth) T-1 | Sq. Yds. | | 3.6 | 3.6 |
| | | | | |
| Epoxy Crack Sealing | Lin. Ft. | 24 | | 24 |
| Formed Conc. Repair (Depth ≤5") | Sq. Ft. | 74 | | 74 |
| Formed Conc. Repair (Depth >5") | Sq. Ft. | 23 | | 23 |
| Bit. Conc. Surface Removal (Deck) | Sq. Yds. | | 552 | 552 |
| Bit. Conc. Surface Cse., Mix E, CLI, T-1 | Tons | | 72 | 72 |
| Protective Coat | Sq. Yds. | | 145.3 | 145.3 |
| Protective Shield | Sq. Yds. | | 552 | 552 |
| Clean and Paint Steel Bridge | L. Sum | | | .05 |
| Protect and Maintain Exist. Underpass Luminaires | L. Sum | | | .16 |
| Steel Bridge Rail | Lin. Ft. | | 328 | 328 |
| Remove Conduit Attached to Struct. | Lin. Ft. | | 170 | 170 |
| Drainage Structure to be Cleaned | Each | | | 2 |
| Slopewall Rem. & Repl. | Sq. Yds. | | | 25 |

## LEGEND

1. REMOVAL OF EXISTING ASPHALTIC CONCRETE
2. STANDARD PARTIAL & FULL DEPTH PATCHING OF BRIDGE DECK AT VARIOUS LOCATIONS.
3. JACK & REMOVE EXISTING BEARING AT ABUTMENTS; FURNISH & INSTALL ELASTOMERIC BEARING ASSEMBLY, TYPE I
4. RETROFIT THE PARAPETS WITH A BRIDGE STEEL RAILING (STANDARD 2399-1).
5. WATERPROOFING OF DECK WITH MEMBRANE SYSTEM; PLACEMENT OF 2" BITUMINOUS CONCRETE OVERLAY.

| REVISIONS | |
|---|---|
| NAME | DATE |
| | |
| | |
| | |
| | |
| | |

ILLINOIS DEPARTMENT OF TRANSPORTATION

F.A.I.

BRIDGE REHABILITION

STRCTURE NO. 099-0064

TYPICAL CROSS SECTION

SCALE: VERT. HORIZ.

DRAWN BY CP

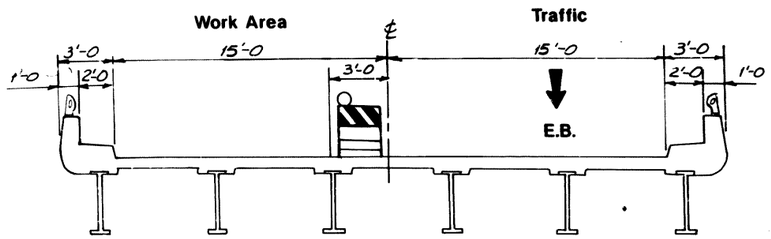
DATE

CHECKED BY

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| I-80 | * | WILL | 181 | 150 |
| STA | | TO STA | | |
| FED. ROAD DIST. NO. 7 | ILLINOIS | FED. AID PROJECT | | |

*99-4RS-2&99-4(B-1,HB,HB-1&VB)BR-88

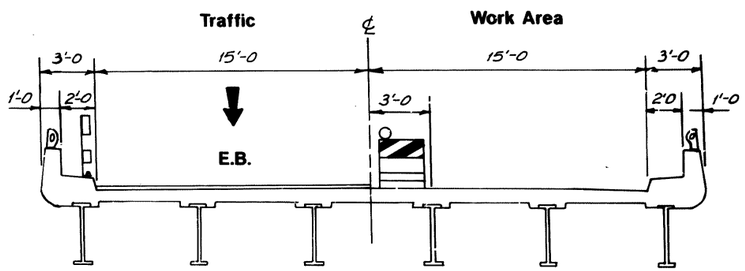
SHEET 3 OF 14




STAGE II
(Facing East)

STAGE I

1. PLACE TRAFFIC CONTROL AND DIVERT TRAFFIC TO NORTH SIDE.
2. REMOVE EXISTING BRIDGE CONCRETE OVERLAY
3. CONSTRUCT PARTIAL AND FULL DEPTH SLAB REPAIRS
4. JACK BRIDGE AND REMOVE EXISTING BEARINGS AND INSTALL PROPOSED ELASTOMERIC BEARING ASSEMBLY.
5. EXTEND DECK DRAINS
6. REPLACE TRANVERSE JOINTS
7. PAINT STRUCTURAL STEEL (5' ON EITHER SIDE OF BEARINGS AT ABUTMENTS AND 10' ON EITHER SIDE OF THE BEARINGS AT THE PIERS.
8. REPAIR SUBSTRUCTURE
9. RETROFIT THE SAFETY CURBS BY PLACING A BRIDGE STEEL RAIL (STANDARD 2399-1)
10. APPLY WATERPROOFING MEMBRANE AND RESURFACE BRIDGE




STAGE I
(Facing East)

STAGE II

1. PLACE TRAFFIC CONTROL AND DIVERT TRAFFIC TO SOUTH SIDE.
2. REMOVE EXISTING BRIDGE CONCRETE OVERLAY
3. CONSTRUCT PARTIAL AND FULL DEPTH SLAB REPAIRS
4. JACK BRIDGE AND REMOVE EXISTING BEARINGS AND INSTALL PROPOSED ELASTOMERIC BEARING ASSEMBLY.
5. EXTEND DECK DRAINS
6. REPLACE TRANVERSE JOINTS
7. PAINT STRUCTURAL STEEL (5' ON EITHER SIDE OF BEARINGS AT ABUTMENTS AND 10' ON EITHER SIDE OF THE BEARINGS AT THE PIERS.
8. REPAIR SUBSTRUCTURE*
9. RETROFIT THE SAFETY CURBS BY PLACING A BRIDGE STEEL RAIL (STANDARD 2399-1)
10. APPLY WATERPROOFING MEMBRANE AND RESURFACE BRIDGE

**#FORMED CONCRETE REPAIR OF THE CAP AT PIER 3 REQUIRES JACKING & CRIBBING OF THE BRIDGE. THIS WORK IS TO BE DONE ON STAGE 2 ONLY.**

| REVISIONS | |
|---|---|
| NAME | DATE |
| | |
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| | |
| | |
| | |

ILLINOIS DEPARTMENT OF TRANSPORTATION

FA,I 80

BRIDGE REHABILITATION

STRUCTURE NO.099-0064

STAGE CONSTRUCTION

SCALE: VERT. HORIZ.

DRAWN BY

DATE

CHECKED BY

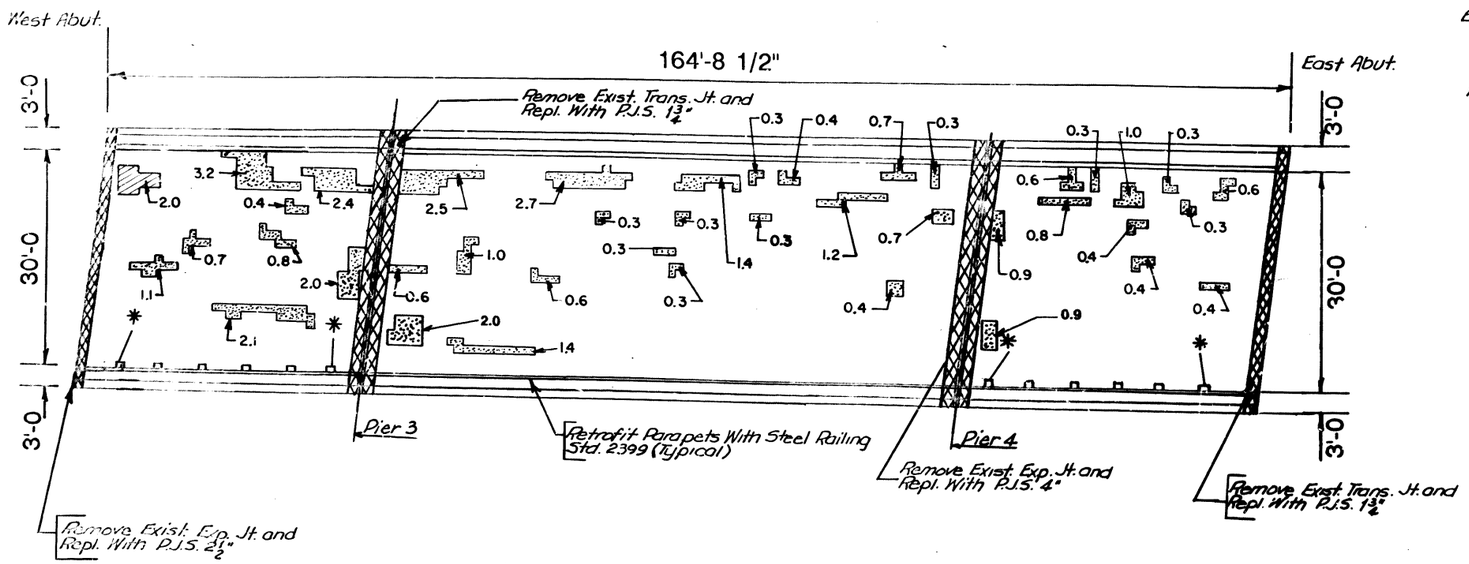
| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| I-80 | * | WILL | 181 | 151 |
| STA | | TO STA | | |
| FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT | | |

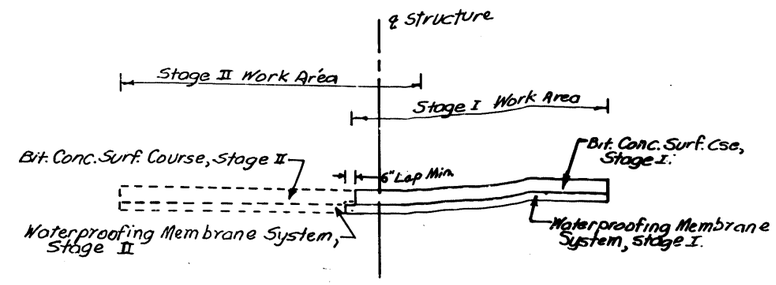
*99-4RS-2 & 99-4(B-1,HB,HB-1&VB)8R-88

SHEET 4 OF 14

Repairs Over Entire Deck:

1. Remove Exist. Bit. Conc. Overlay
2. Deleted.
3. Perform Standard, Partial and Full Depth Patching as Shown
4. Waterproof the Deck With a Membrane System
5. Resurface the Deck With Bit. Conc. Surface Cse., Mix E, CL I, 2", T-1




**DETAIL OF WATERPROOFING MEMBRANE SYSTEM**

**(6" Lap)**

Note:

Exposed Reinforcement Shall be Cleaned and Incorporated into the Concrete Patch or, If Necessary, Replacement Reinforcement Added and Spliced With the Existing Retained Reinforcement, as directed by the Engineer.

SCALE: 1" = 10'

DATE OF LATEST DELAMTECT: 9-23-89

* Deck drains within 10' of the substructure to be eliminated. All others to be extended.

Removal of existing deck drain is incidental to the pay item of "Deck Slab Repair, Full Depth".

Removal of existing deck drain & repair of deck to be paid for at the contract unit per Sq. Yd. for Deck Slab Repair (Full Depth) use 0.4 S.Y. per location.

## DECK SLAB REPAIR

**LEGEND**

0.4 SQ. YDS ← 0.4 — Deck Slab Repair (Partial Depth)

Deck Slab Repair (Full Depth)

Concrete Removal

**BILL OF MATERIALS**

| ITEM | UNIT | QUANTITY |
|---|---|---|
| Bit. Conc. Surf. Cse, Mix E, CL I, T-1 2"* | Tons | 72 |
| Waterproofing Membrane Sys | Sq. Yds. | 552 |
| | | |
| Deck Slab Repair (Part. Depth) | Sq. Yds. | 37.3 |
| Deck Slab Repair (Full Depth), T-1 | Sq. Yds. | 3.6 |
| Bit. Conc. Surf. Removal (Deck | Sq. Yds. | 552 |
| | | |
| | | |

* Mix E = 130 #/Sq. Yd./Inch Depth

| REVISIONS | |
|---|---|
| NAME | DATE |
| | |
| | |
| | |
| | |

ILLINOIS DEPARTMENT OF TRANSPORTATION

F.A.I. 80

BRIDGE REHABILITATION

STRUCTURE NO. 099-0064

DECK DETAILS

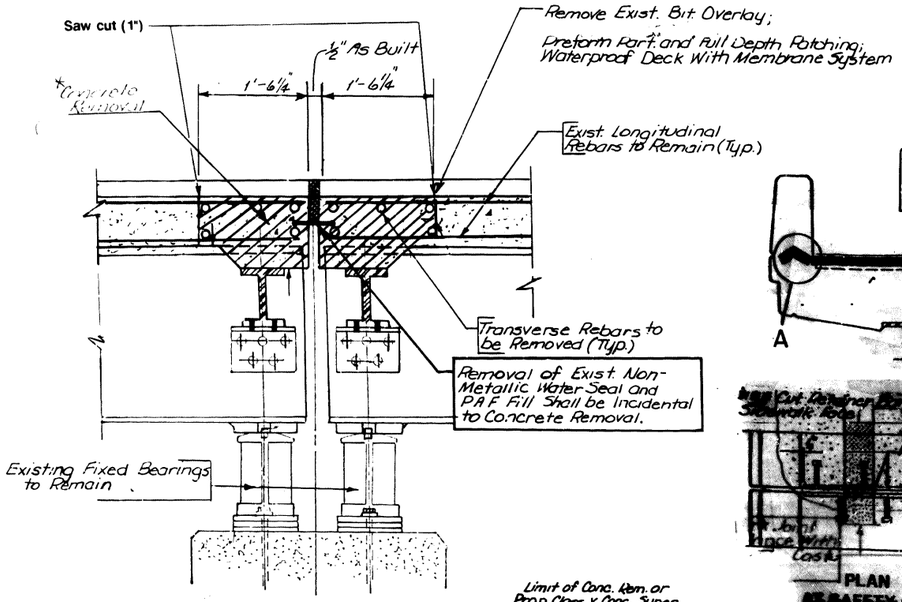
SCALE: VERT. HORIZ. DRAWN BY

DATE CHECKED BY

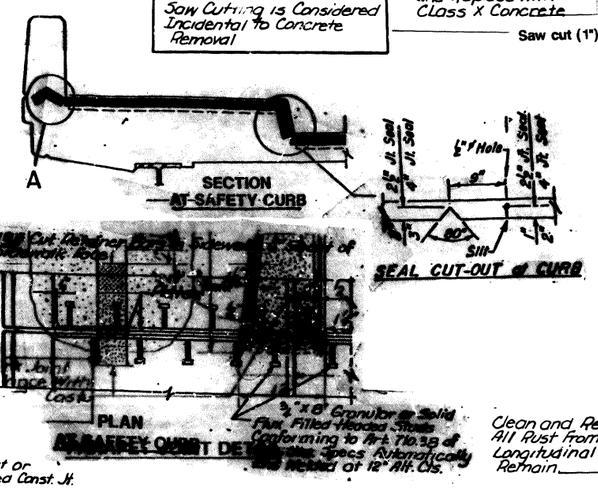
| I-80 | * | WILL | 181 | 152 |
|---|---|---|---|---|

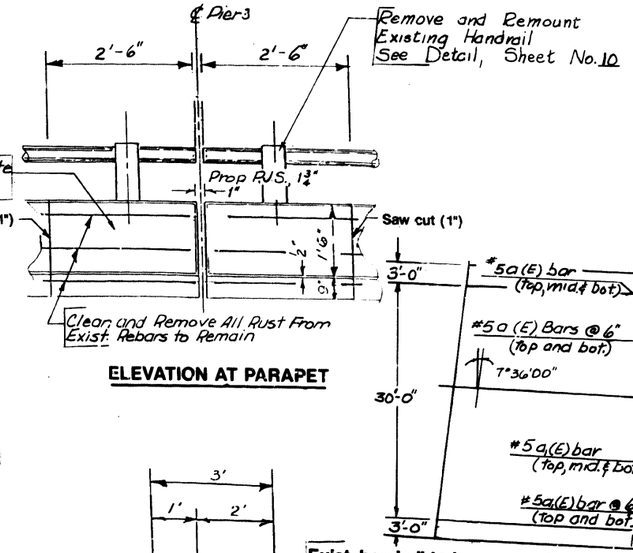
*99-4RS-2 & 99-4(B-1,HB,HB-1 & VB)BR-88

SHEET 5 OF 14

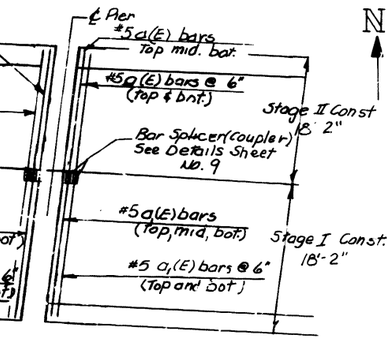



EXISTING PIER 3

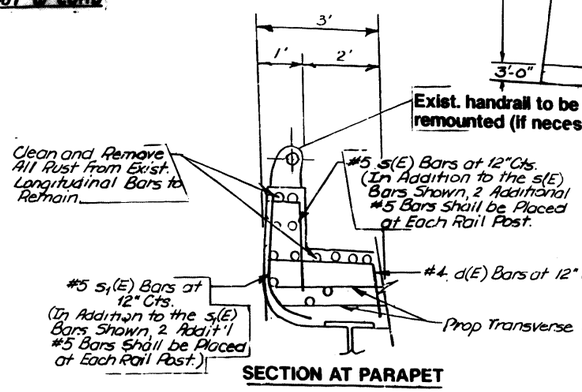


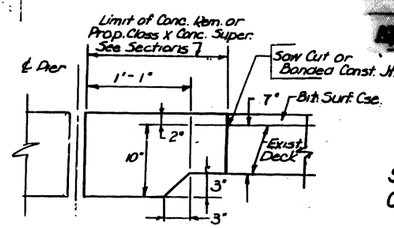

ELEVATION AT PARAPET



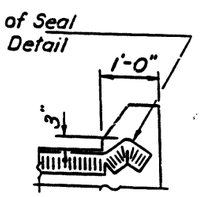

PLAN VIEW - SLAB REINFORCEMENT



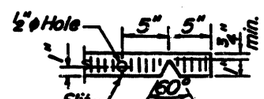

SECTION AT PARAPET



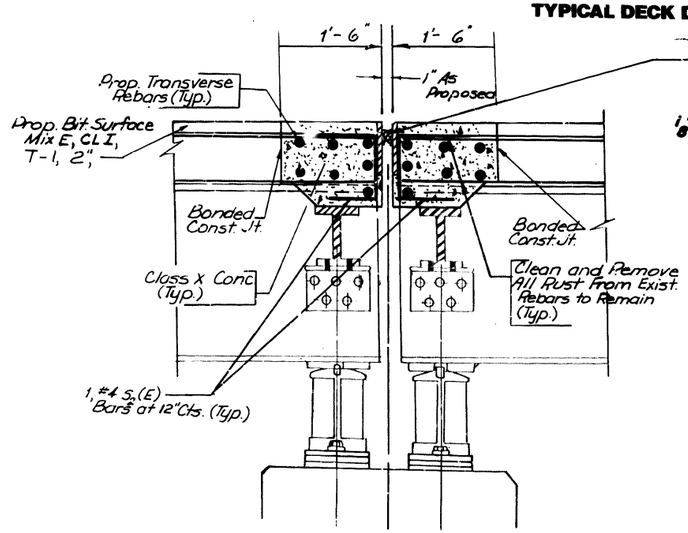

TYPICAL DECK DIMENSIONS



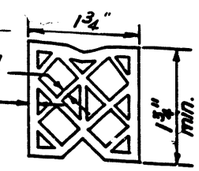

A END OF SEAL TREATMENT




SEAL CUT-OUT

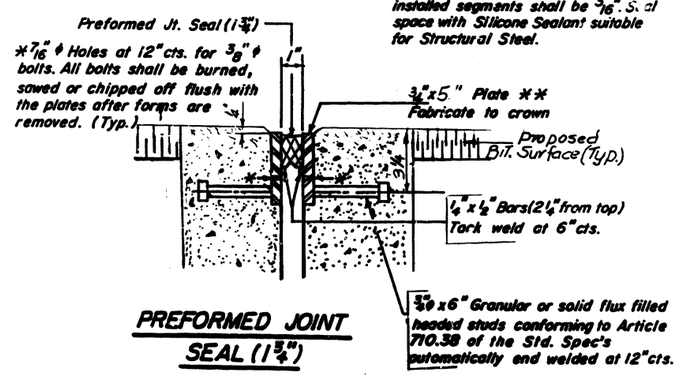



PROPOSED MODIFICATIONS TO PIER 3

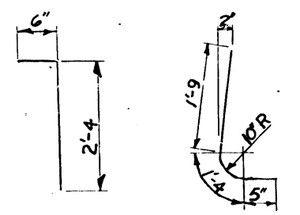



P.J.S., 1 3/4"

** Furnish in segments of 20 ft. maximum length. Maximum space between installed segments shall be 3/16". Seal space with Silicone Sealant suitable for Structural Steel.

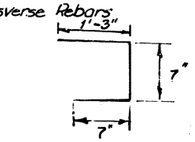



PREFORMED JOINT SEAL (1 3/4")

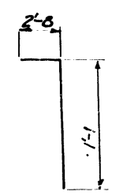



S Bar S(E)

S1 Bar (E)




S2 Bar (E)




d Bar (E).

Note: After fabrication all surfaces of the steel plates shall be given one shop coat of paint specified for structural steel

Clearance shall be maintained for slab reinforcement, (2" clear for top of slab & 1" for bottom of slab).

Quantities have been provided for a third row of bars, however this quantity may or may not be needed. Its neccessity shall be determined in the field & the rebars used at discretion of field Engineer.

## BAR SCHEDULE

| BAR | NO. REQ'D | SIZE | LENGTH | SHAPE |
|---|---|---|---|---|
| a(E) | 14 | #5 | 17'-9" | — |
| a1(E) | 14 | #5 | 17'-9 1/2" | — |
| | | | | |
| s(E) | 20 | #5 | 2'-10" | ⌉ |
| s1(E) | 20 | #5 | 3'-6" | L |
| s2(E) | 73 | #4 | 2'-5" | ⌉ |
| d(E) | 12 | #4 | 3'-9" | ⌉ |

(E) Denotes Epoxy Coated

## BILL OF MATERIALS

| ITEM | UNIT | QUANTITY |
|---|---|---|
| Concrete Removal | Cu.Yds. | 4.6 |
| Class X Conc. Super | Cu.Yds. | 5.3 |
| Reinforcement Bars, Epoxy Ctd. | Pound | 800 |
| Preformed Joint Seal, 1 3/4" | Lin.Ft. | 37 |
| Furnish and Erect Struct. Steel | Pound | 115? |
| PROTECTIVE COAT | SQ YD | 19.1 |

| REVISIONS | |
|---|---|
| NAME | DATE |
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ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 80
BRIDGE REHABILITATION
STRUCTURE NO. 099-0064
DECK DETAILS

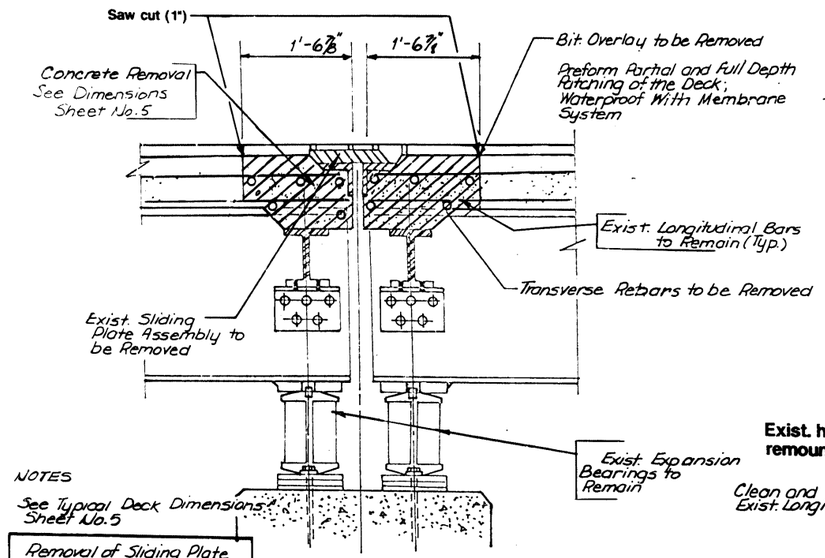
SCALE: VERT. HORIZ.
DATE
DRAWN BY
CHECKED BY

Revised: Added 1/4" to P.J.S. detail. 3-22-90 ENK

| FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|---|
| 1-80 | * | | WILL | 181 | 153 |
| STA. | | | TO STA. | | |

*99-4RS-2 & 99-4(B-1, HB, HB-1 & VB)BR-86

SHEET 6 OF 14

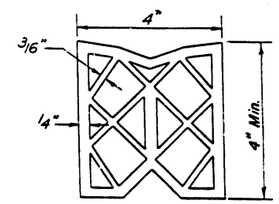


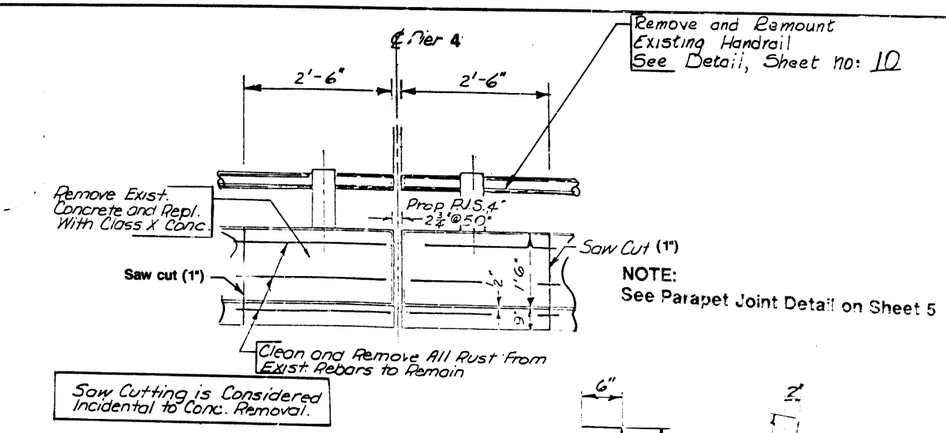

NOTES

See Typical Deck Dimensions Sheet No. 5

Removal of Sliding Plate Assembly and Transverse Rebars Shall be Incidental to Concrete Removal.

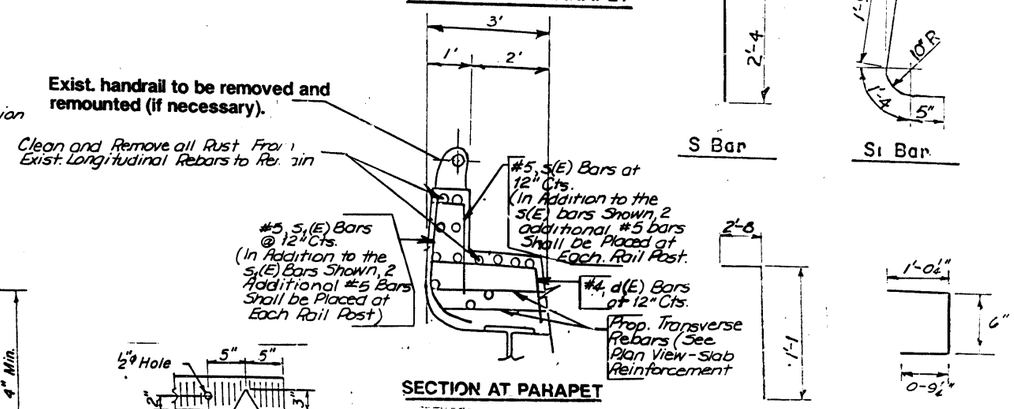
EXISTING PIER 4



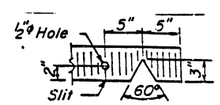




NOTE:
See Parapet Joint Detail on Sheet 5

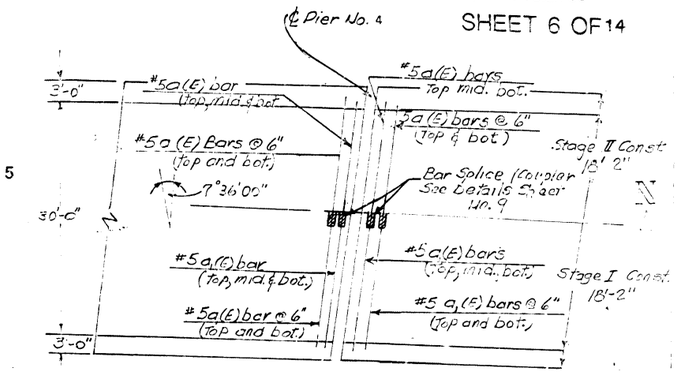
ELEVATION AT PARAPET




SECTION AT PARAPET




SEAL CUT-OUT (4")




PLAN VIEW - SLAB REINFORCEMENT

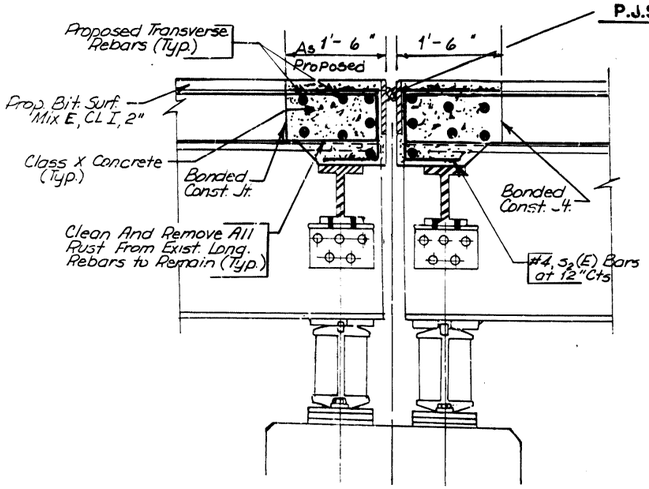
**Clearance shall be maintained for slab rienforcement (2" clear for top of slab & 1" for bottom of slab).**

Quantities have been provided for a third row of bars, however, this quantity may or may not be needed. Its necessity shall be determined in the field and the rebars used at the discretion of the field engineer.

| BAR SCHEDULE | | | | |
|---|---|---|---|---|
| BAR | NO. REQ'D | SIZE | LENGTH | SHAPE |
| a(E) | 14 | #5 | 17'-9" | — |
| a1(E) | 14 | #5 | 17'-9 1/2" | — |
| | | | | |
| s(E) | 20 | #5 | 2'-10" | ⌐ |
| s1(E) | 20 | #5 | 3'-6" | ⌐ |
| s2(E) | 73 | #4 | 2'-3 1/2" | ⌐ |
| d(E) | 12 | #4 | 3'-9" | ⌐ |

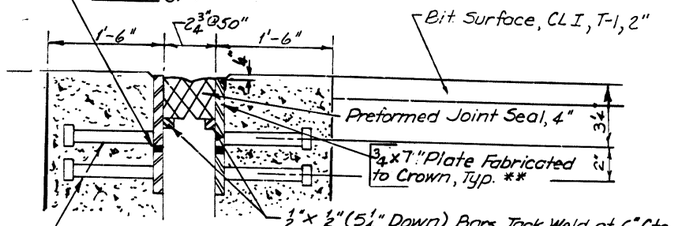
(E) Denotes Epoxy Coated

P.J.S. 4"




PROPOSED MODIFICATIONS AT PIER 4

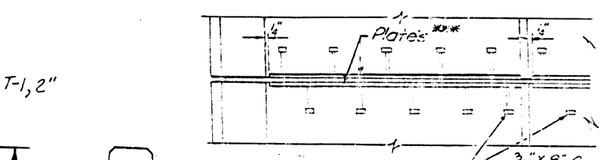
7/16" ϕ Holes at 12" Cts for 3/8" Bolts. All Bolts Shall be Burned, Sawed or Chipped Off Flush With the Plates After Forms are Rem'd (Typ.)




3/4" ϕ x 8" Granular or Solid Flux Filled Headed Studs Conforming to Article 710.38 of the Std. Specs. Automatically End Welded at 12" Alt. Cts.

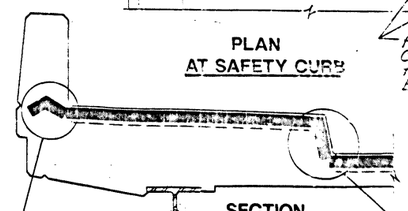
See End of Seal Cut-Out Detail

PREFORMED JOINT SEAL, 4"

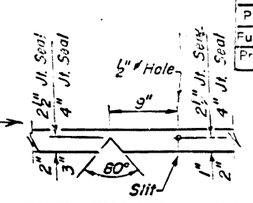



PLAN AT SAFETY CURB

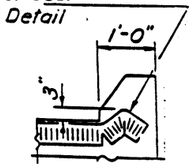
3/4" x 8" Granular or Solid Flux Filled Headed Studs Conforming to Art. 710.38 of the Std. Specs Automatically End Welded at 12" Alt. Cts.



SECTION AT SAFETY CURB




SEAL CUT-OUT at CURB




END OF SEAL TREATMENT

Notes

* At 50° the Opening is 2 3/4". Their Total Movement for Temp. Var. of -30° F to 130°F is Shown on Sheet 8.

** Furnish in Segments of 20' Max. Length. Max Space Between Installed Segments Shall be 3/16". Seal Space With Silicone Sealant Suitable for Structural Steel.

After Fabrication All Surfaces of the Steel Plates Shall be Given One Shop Coat of Paint Specified for Structural Steel.

*** Cut Retainer Bars in Sidewalk 6" Short of Sidewalk Face

| BILL OF MATERIALS | | |
|---|---|---|
| ITEM | UNIT | QUANTITY |
| Concrete Removal | Cu. Yds. | 4.7 |
| Class X Conc. Super | Cu. Yds. | 5.3 |
| **Reinforcement bars, epoxy ctd.** | Pound | 800 |
| Preformed Joint Seal, 4" | Lin. Ft. | 37 |
| Furnish and Erect Struct. Steel | Pound | 1345 |
| Protective Coat | Sq. Yd. | 19.1 |

| REVISIONS | |
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ILLINOIS DEPARTMENT OF TRANSPORTATION

FA.I. 80

BRIDGE REHABILITATION

STRUCTURE NO. 099-0064

DECK DETAILS

SCALE VERT. HORIZ.

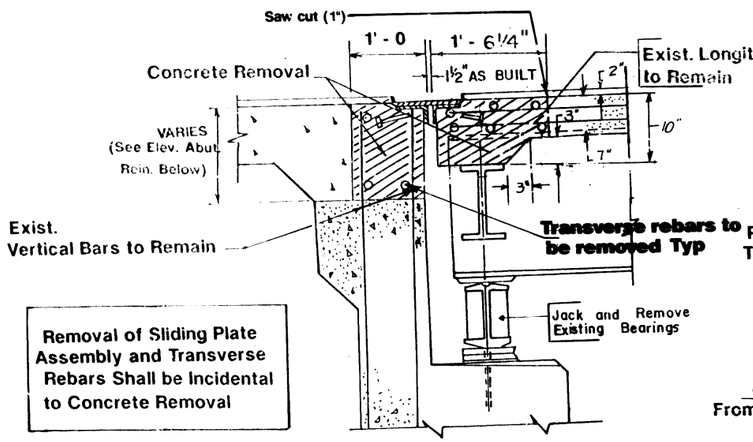
DATE

DRAWN BY

CHECKED BY

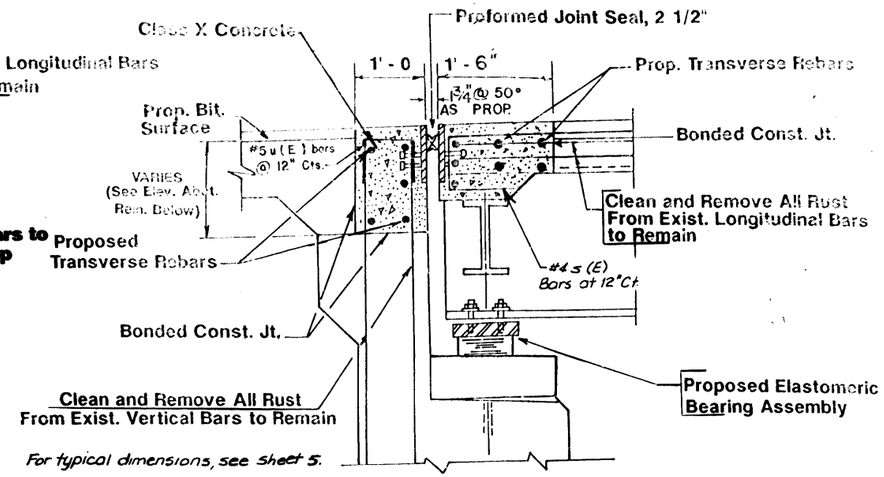
DETAIL OF EXPANSION JOINT REPLACEMENT AT PIER NO. 4

Revised: Added 4" to P.J.S. detail, 3-22-90 ENR



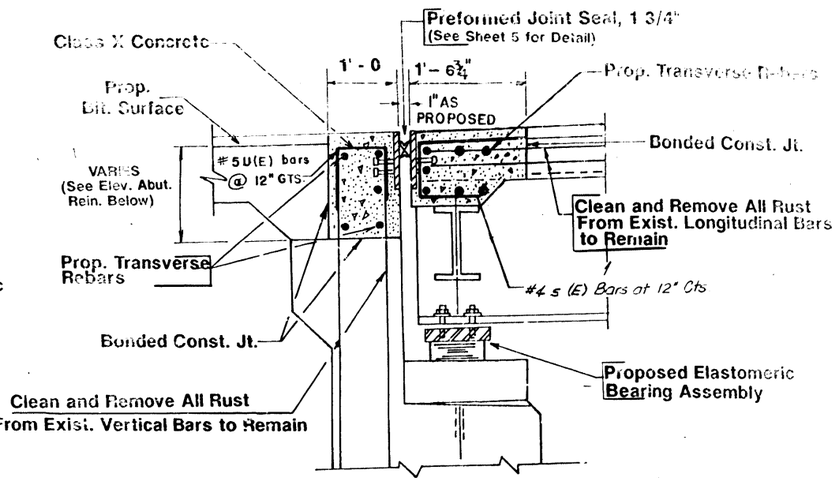

Removal of Sliding Plate Assembly and Transverse Rebars Shall be Incidental to Concrete Removal

EXISTING SECTION AT ABUTMENT



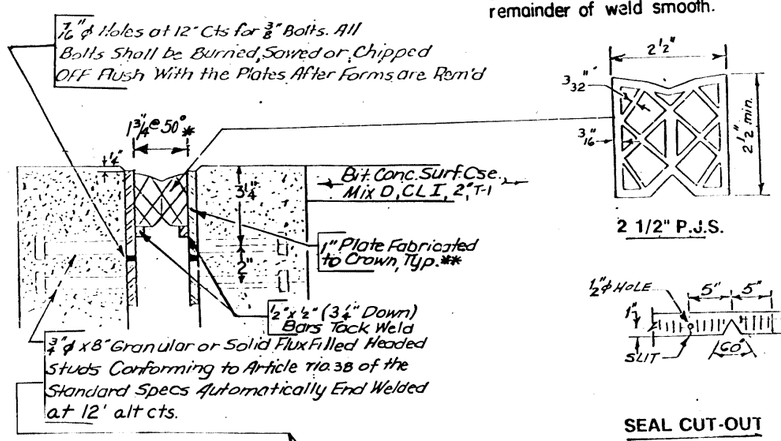

For typical dimensions, see sheet 5.

PROPOSED MODIFICATIONS WEST ABUTMENT

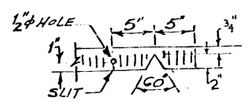



PROPOSED MODIFICATIONS EAST ABUTMENT

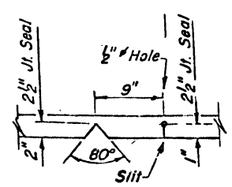
Note:
Sole plate to be removed by air-arc method & then grind remainder of weld smooth.



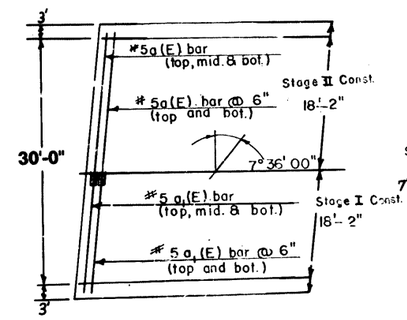

2 1/2" P.J.S.




SEAL CUT-OUT

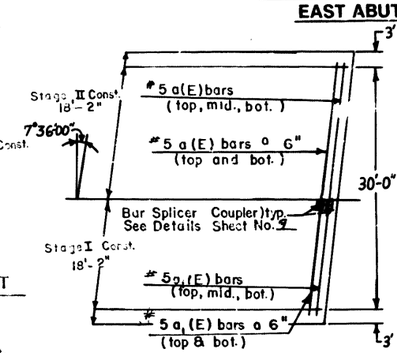



SEAL CUT-OUT at CURB

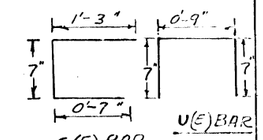



PLAN VIEW - SLAB REINFORCEMENT WEST ABUTMENT

NOTE:
Clearance shall be maintained for slab reinforcement.
(2" clear for top of slab & 1" clear for bottom of slab).

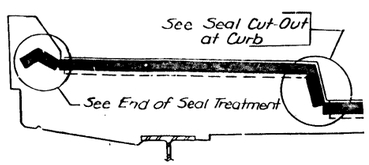



PLAN VIEW - SLAB REINFORCEMENT EAST ABUTMENT

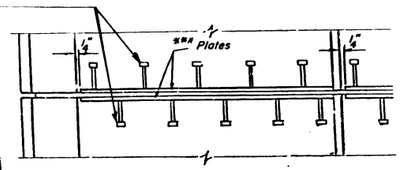



| BAR SCHEDULE | | | | |
|---|---|---|---|---|
| BAR | NO. REQ'D | SIZE | LENGTH | SHAPE |
| a(E) | 14 | #5 | 17'-9" | —— |
| a₁(E) | 14 | #5 | 17' 9½" | —— |
| h₁(E) | 10 | #4 | 14'-6" | —— |
| h(E) | 10 | #4 | 14'-5½" | —— |
| s(E) | 74 | #4 | 2'-5" | [ |
| U(E) | 74 | #5 | 1'-11" | [ ] |
| | | | | |

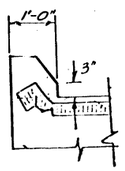
(E) Denotes Epoxy Coated
Quantities include both abuts
Quantities have been provided for a third row of bars, however this quantity may or may not be needed. Its necessity shall be determined in the field and the rebars used at the discretion of the field engineer.




SECTION AT SAFETY CURB




PLAN AT SAFETY CURB




END OF SEAL TREATMENT

PREFORMED JOINT SEAL 2 1/2"

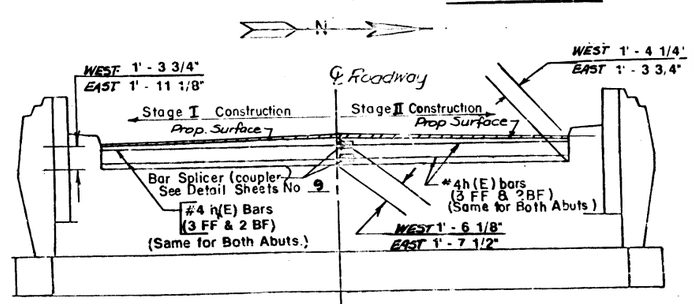
Notes:

* At 50°, the Opening is 1¾". The Total Movement for Temp. Variances from -30°F to 130°F is Shown on Sheet 8.

** Furnish in Segments of 20' Max. Length. Max. Space Between Installed Segments Shall be 3/16". Seal Space With Silicone Sealant Suitable for Structural Steel.

*** Cut Retainer Bars in Sidewalk 6" Short of Sidewalk Face.

After Fabrication All Surfaces of the Steel Plates Shall be Given One Shop Coat of Paint Specified for Structural Steel.




ELEVATION ABUTMENT REINFORCEMENT

NOTE: See Parapet Details at Abutments, Sheet 8.

| BILL OF MATERIALS | | |
|---|---|---|
| ITEM | UNIT | QUANTITY |
| Concrete Removal | Cu.Yds. | 68. |
| Class X Conc. Super | Cu.Yds. | 8.2 |
| Reinforcement bars, epoxy ctd. | Pound | 980 |
| Preformed Joint Seal, 2½" | Lin.Ft. | 37 |
| Furnish and Erect Struct. Steel | Pound | 2498 |
| Preformed Joint Seal, 1¾" | Lin.Ft. | 37 |
| PROTECTIVE COAT | Sq.Yd. | 101 |

| REVISIONS | |
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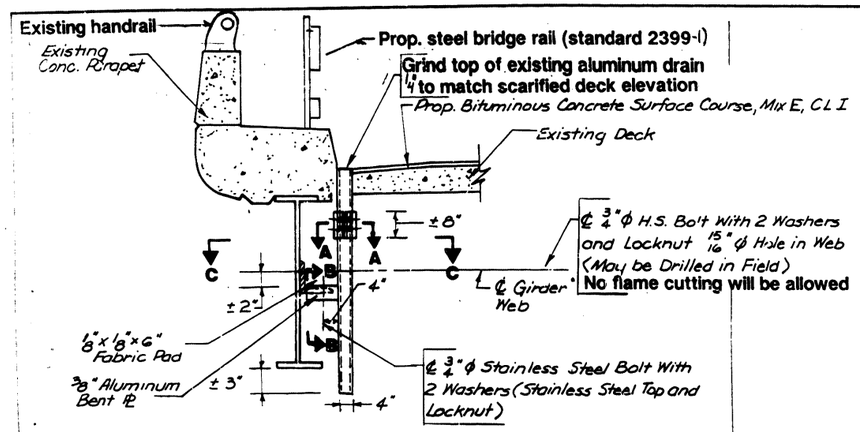
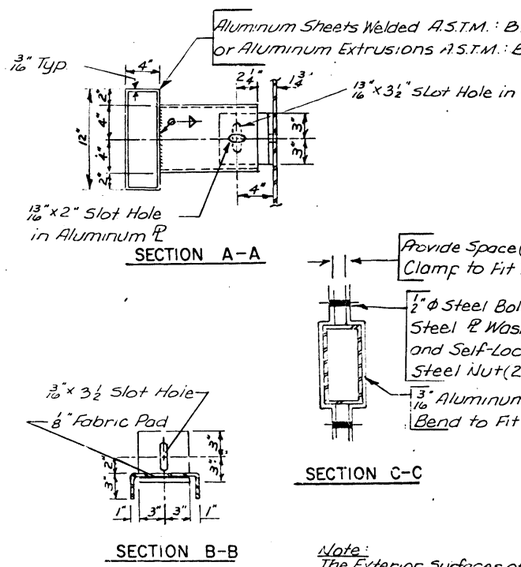
ILLINOIS DEPARTMENT OF TRANSPORTATION

F.A.I 80
BRIDGE REHABILITATION
STRUCTURE NO.099-0064
DECK DETAILS

SCALE: VERT. HORIZ.
DATE
DRAWN BY
CHECKED BY

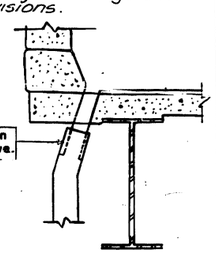



## SECTION AT PARAPET




Note:
The Exterior Surfaces of the Aluminum Drains shall be Cleaned and Given a Washcoat Pretreatment. This Shall be followed by the Lead and Chromate Free Alkyd Paint System. See Special Provisions.

Note:
If the existing deck drain extends through the deck at an angle the contractor shall fabricate the aluminum drain extension with an angle to extend the drain vertically. see detail A.

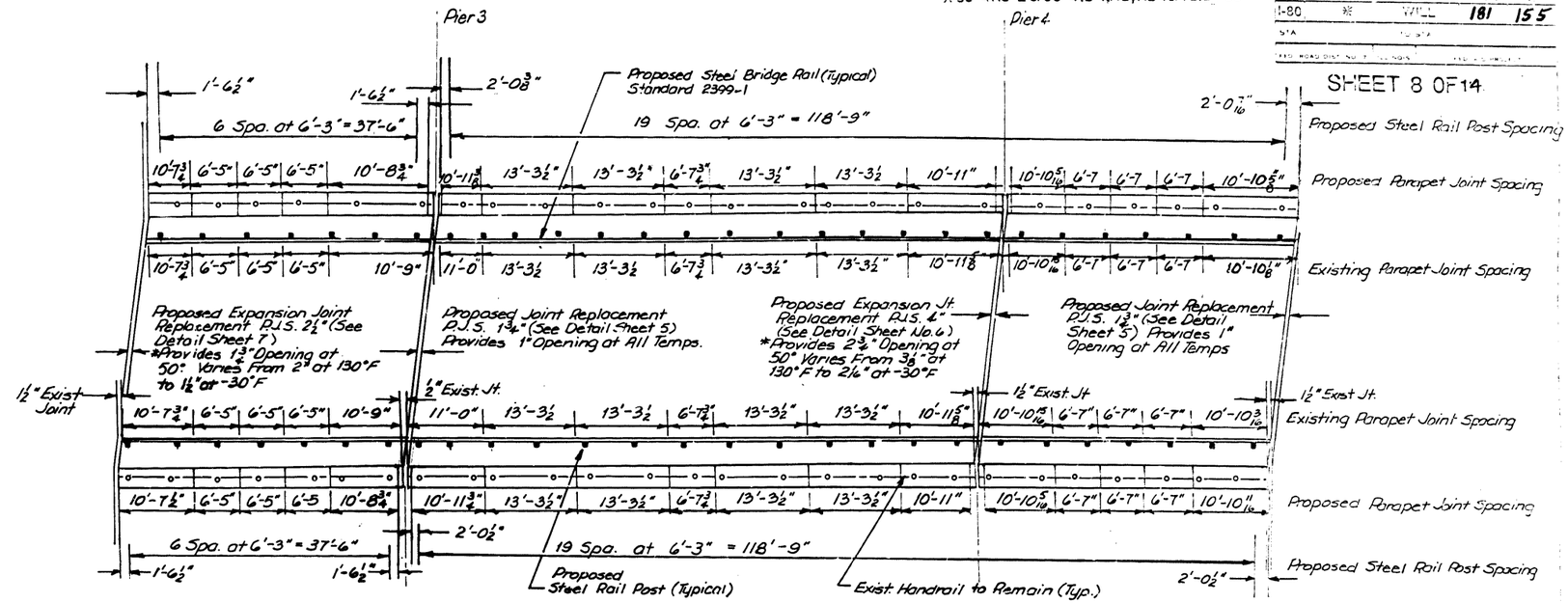



DETAIL A

| BILL OF MATERIALS | | |
|---|---|---|
| ITEM | UNIT | QUANTITY |
| Deck Drain to be Extended | Each | 8 |

## DETAIL OF DECK DRAIN EXTENSION



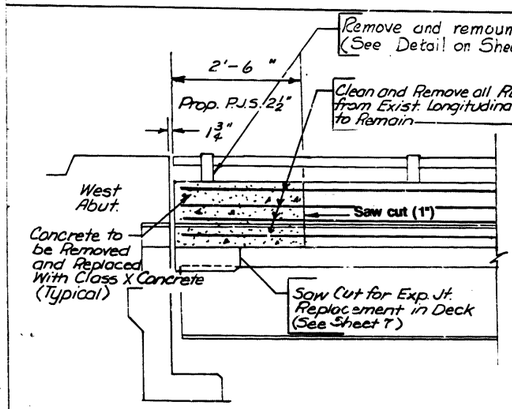



*The clearance for each 100' of the bridge between the nearest fixed bearings each way from the joint shall be reduced 1/8" from that amount specified, for each 15° that the temperature at the time of placing exceeds 50°F, and increased 1/8" from that amount specified for each 15°F that the temperature at the time of placing is below 50°F. (See Art. 503.07 of the Standard Specifications for Road and Bridge Construction, I.D.O.T., July 1, 1988.)

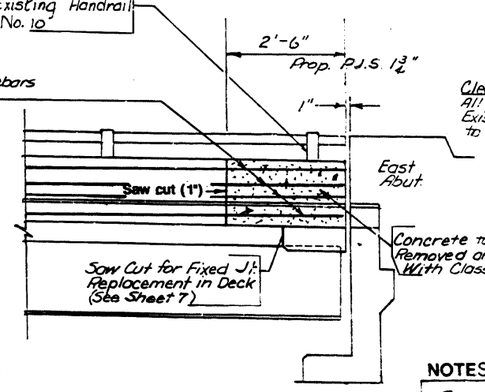
| BILL OF MATERIALS | | |
|---|---|---|
| ITEM | UNIT | QUANTITY |
| Steel Bridge Rail | LIN. FT. | 32.8 L.F. |

## DETAIL OF POST SPACING FOR RETROFIT STEEL BRIDGE RAIL

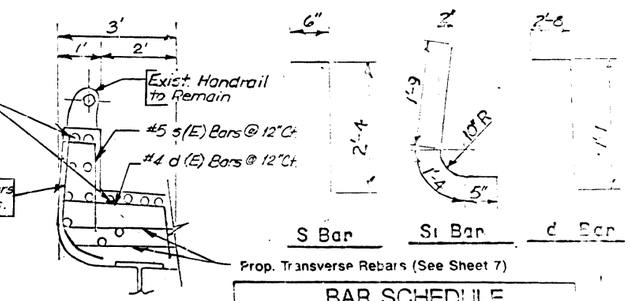
STANDARD 2399-1




ELEVATION AT PARAPET WEST ABUTMENT




ELEVATION AT PARAPET EAST ABUTMENT




SECTION AT PARAPET

NOTES:

Saw Cutting is Considered Incidental to Concrete Removal.

See Parapet Joint Detail on Sheet 5.

In addition to the s(E) and s1(E) bars Shown 2 additional #5 bars shall be Placed at each rail post.

| BAR SCHEDULE | | | | |
|---|---|---|---|---|
| BAR | NO. REQ'D | SIZE | LENGTH | SHAPE |
| s(E) | 20 | #5 | 2' - 10" | ⌐ |
| s1(E) | 20 | #5 | 3' - 6" | L |
| | | | | |
| d(E) | 12 | #4 | 3' - 9" | ⌐ |

(E) Denotes Epoxy Coated

| BILL OF MATERIALS | | |
|---|---|---|
| ITEM | UNIT | QUANTITY |
| Concrete Removal | Cu.Yds. | 1.4 |
| Class X Conc. Super | Cu.Yds. | 1.4 |
| Reinforcement bars, epoxy ctd. | Pound | 162 |
| PROTECTIVE COAT | Sq.Yd. | 6.1 |

## PARAPET DETAILS AT ABUTMENTS

| REVISIONS | |
|---|---|
| NAME | DATE |
| | |

ILLINOIS DEPARTMENT OF TRANSPORTATION

FAI-80
BRIDGE REHABILITATION
STRUCTURE NO. 099-0084
DECK DETAILS

SCALE VERT. HORIZ.
DATE
DRAWN BY
CHECKED BY

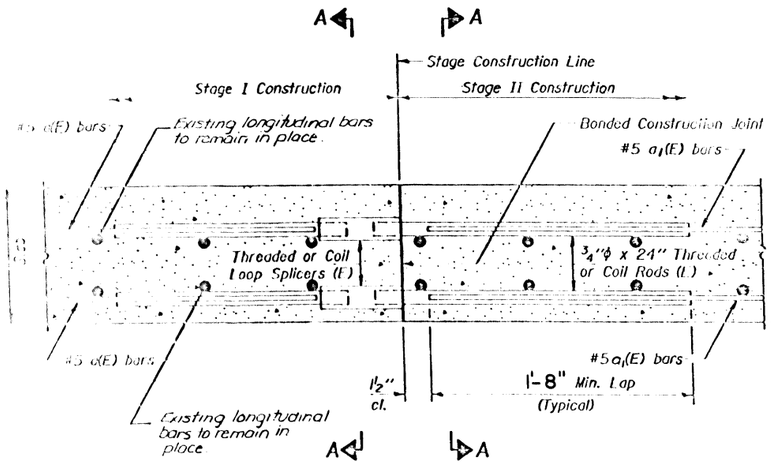
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

| ROUTE NO. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| F.A.I. 80 | * | WILL | 181 | 156 |

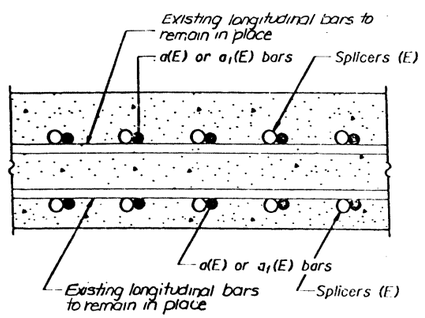
FED. ROAD DIST. NO. 7 — ILLINOIS — FED. AID PROJECT -

*99-4RS-2 & 99-4(B-1, HB, HB-1 & VB) BR-BB

SHEET 9 OF 14



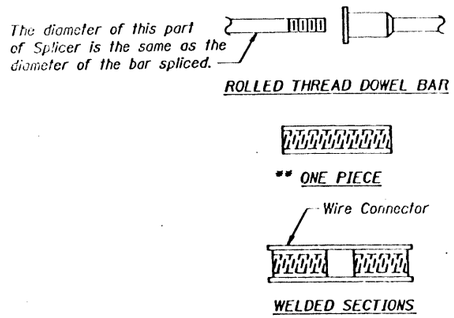

SECTION THRU SLAB




SECTION A-A

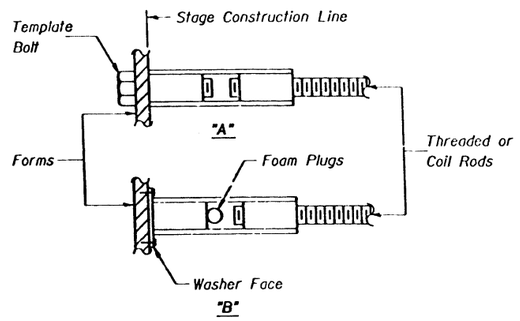
SPLICER DETAILS
(No. Req'd. 104 )

Cost Incidental to Reinforcement Bars (Epoxy Coated).



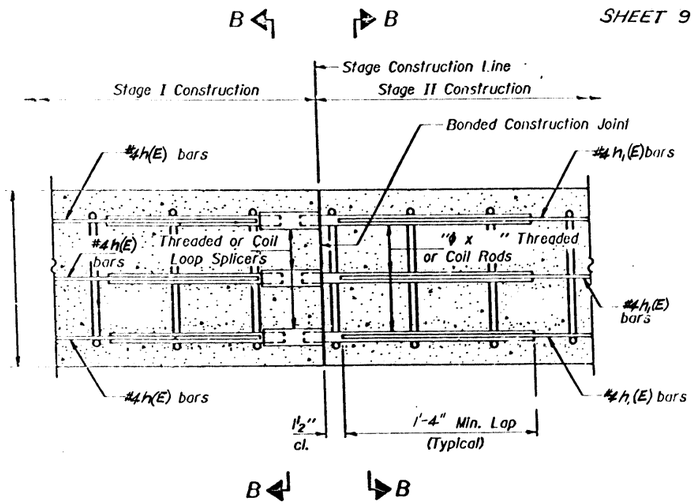

SPLICER ALTERNATIVES

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




INSTALLATION AND SETTING METHODS

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




SECTION THRU ABUTMENTS

NOTES

Steel Splicer (Coupler) assembly shall be of an approved type and shall develop in tension at least 125 percent of the yield strength of the lapped reinforcement bars.

Steel Splicer rods shall be of minimum 60 ksi yield strength, threaded or coiled full length and have effective tensile stress area equal to or greater than that of the lapped reinforcement bars.

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

Splicer (coupler) assembly in the slab shall be epoxy coated in accordance with 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 splicer (coupler) assembly satisfies the following requirements:

(1) Minimum Capacity (Tension in kips) = $1.25 \times f_y \times A_1$

(2) Minimum *Pull out Strength (Tension in kips) = $1.25 \times fs_{allow} \times A_1$

Where $f_y$ = Yield strength of lapped reinforcement bars in ksi.
$fs_{allow}$ = Allowable tensile stress in lapped reinforcement bars in ksi (Service Load)
$A_1$ = Tensile stress area of lapped reinforcement bars.
* = 28 day concrete

Typical Splicer (Coupler) Assembly Sizes:

In Slabs:
- #5 bar lap with 3/4"ϕ Splicer (Coupler) x 2'-0" Splicer Rods — Minimum Capacity = 23.0 kips-tension; Minimum Pull-out Strength = 9.2 kips-tension
- #6 bar lap with 7/8"ϕ Splicer (Coupler) x 2'-4" Splicer Rods — Minimum Capacity = kips-tension; Minimum Pull-out Strength = kips-tension

In Sub-Structure:
- #7 bar lap with 1"ϕ Splicer (Coupler) x 3'-5" Splicer Rods — Minimum Capacity = 45.1 kips-tension; Minimum Pull-out Strength = 18.0 kips-tension
- #8 bar lap with 1¼"ϕ Splicer (Coupler) x 4'-6" Splicer Rods — Minimum Capacity = 58.9 kips-tension; Minimum Pull-out Strength = 23.6 kips-tension

| | |
|---|---|
| DESIGNED | |
| CHECKED | |
| DRAWN | |
| CHECKED | |

EXAMINED — ENGINEER OF BRIDGE DESIGN
PASSED — ENGINEER OF BRIDGES AND STRUCTURES
APPROVED — DIRECTOR OF HIGHWAYS

BSD-1 6-1-89

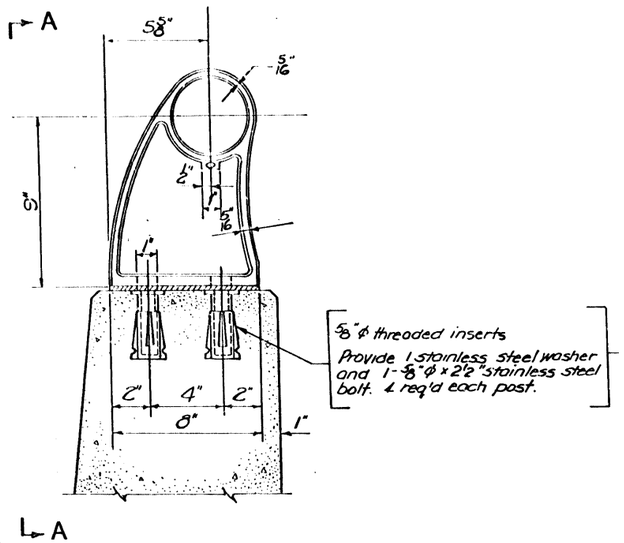
ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I.-80
BRIDGE REHABILITATION
STRUCTURE NO. 099-0064
BAR SPLICER (COUPLER) DETAILS AT STAGE CONSTRUCTION

SCALE: VERT. HORIZ. — DRAWN BY
DATE — CHECKED BY

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| I-80 | | WILL | 181 | 157 |
| STA. | | TO STA | | |
| FED. ROAD DIST. NO. 7 | ILLINOIS | FED. AID PROJECT | | |

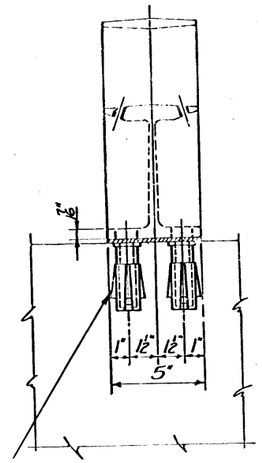
99-4RS-2 & 99-4(B-1, HB, HB-1 & VB)BR-88

SHEET 10 OF 14

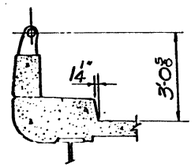



5/8"ϕ threaded inserts
Provide 1 stainless steel washer and 1-5/8"ϕ x 2 1/2" stainless steel bolt. 4 req'd each post.

SECTION AT RAIL POST




VIEW A-A




SECTION THRU CURB

The Removal and Remounting of the existing handrail shall be incidental to Concrete Removal.

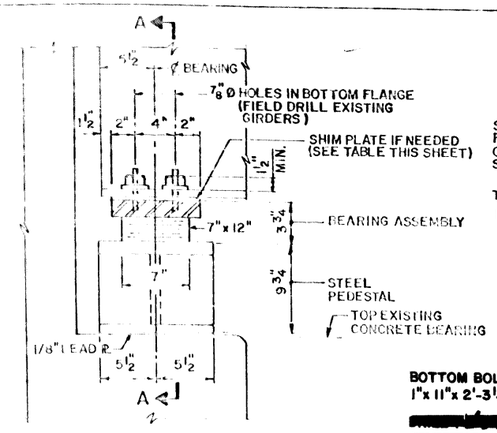
REMOVAL AND REMOUNTING OF HANDRAIL

| REVISIONS | |
|---|---|
| NAME | DATE |
| | |
| | |
| | |
| | |

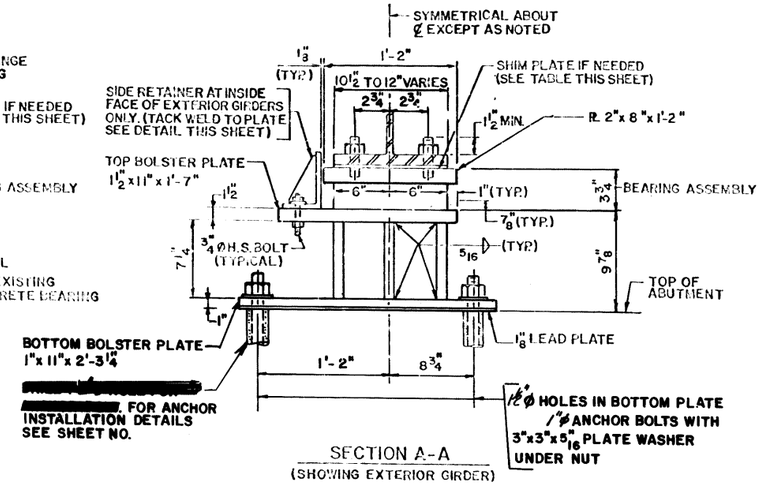
ILLINOIS DEPARTMENT OF TRANSPORTATION

F.A.I. - 80
BRIDGE REHABILITATION
STRUCTURE NO. 099-0064
REMOVAL AND REMOUNTING OF HANDRAIL

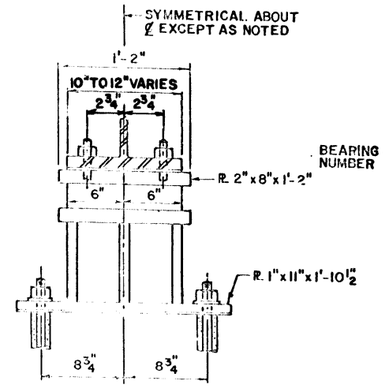
SCALE: VERT. HORIZ.
DRAWN BY
DATE
CHECKED BY



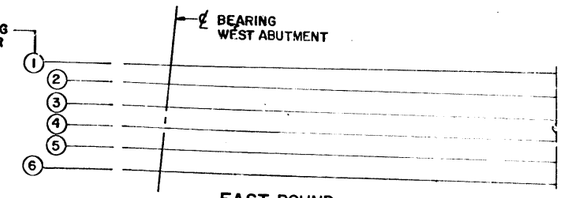

ELEVATION AT ABUTMENT



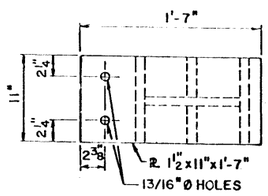

SECTION A-A
(SHOWING EXTERIOR GIRDER)



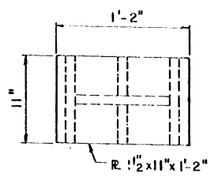

SECTION A-A
(SHOWING INTERIOR GIRDER)




EAST BOUND
SOUTH BRIDGE
(WEST ABUTMENT ONLY)



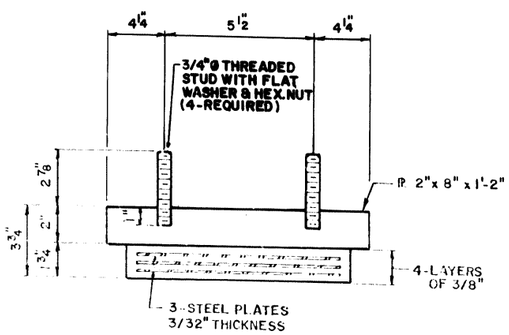

PLAN
TOP PLATE




PLAN
TOP PLATE

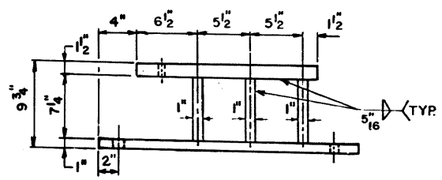
SOUTH BRIDGE (EAST BOUND)

| BEARING NUMBER | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| THICKNESS OF SHIM PLATE | 0 | 1/16" | ⅞" | 13/16" | 0 | 0 |

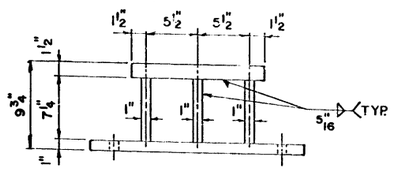



BEARING ASSEMBLY
F.A.I-80 OVER RICHARDS STREET
WEST ABUTMENT OF SOUTH BRIDGE

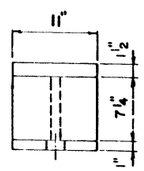
TYPE I
ELASTOMERIC EXPANSION BEARING



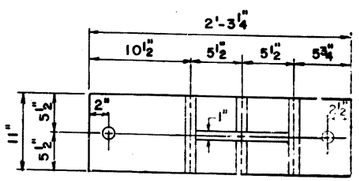

ELEVATION
(SHOWING EXTERIOR PEDESTAL)



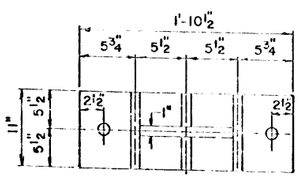

ELEVATION
(SHOWING INTERIOR PEDESTAL)



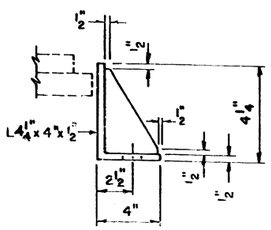

END VIEW
(TYPICAL)



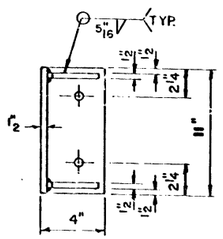

PLAN
BOTTOM PLATE




PLAN
BOTTOM PLATE




ELEVATION




PLAN

SIDE RETAINER

BILL OF MATERIAL

| ITEM | UNIT | TOTAL |
|---|---|---|
| ELASTOMERIC BEARING ASSEMBLY TYPE I | EACH | 6 |
| JACK AND REMOVE EXISTING BEARINGS | EACH | 6 |
| FURNISHING AND ERRECTING STRUCTURAL STEEL | LBS | 1516 |

NOTES:

BOLSTER ASSEMBLY HEIGHT OF 9¾" DOES NOT INCLUDE SHIM PLATE THICKNESS.

FOR SHIM PLATE THICKNESSES SEE TABLE THIS SHEET.

SHIM PLATES SHALL NOT BE PLACED UNDER BEARING ASSEMBLY.

EQUIVALENT ROLLED ANGLE WITH STIFFENERS WILL BE ALLOWED IN LIEU OF WELDED PLATES, FOR SIDE RETAINERS.

NEW STEEL PEDESTALS AND ANCHOR BOLTS SHALL BE PAID FOR AS FURNISHING AND ERECTING STRUCTURAL STEEL.

**SIDE RETAINERS AND BOLTS SHALL BE INCLUDED IN F & E STRUCTURAL STEEL.**

**EXISTING ANCHOR BOLTS SHALL BE CUT OFF FLUSH WITH THE CONCRETE SURFACE. GROUND SMOOTH AND SEALED WITH EPOXY. COST INCIDENTAL TO COST OF NEW BEARING ASSEMBLIES.**

| REVISIONS | |
|---|---|
| NAME | DATE |
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ILLINOIS DEPARTMENT OF TRANSPORTATION

F.A.I. 80
BRIDGE REHABILITATION
STRUCTURE NO. 099-0064
ELASTOMERIC BEARING

SCALE: VERT. HORIZ. DRAWN BY M.V.T

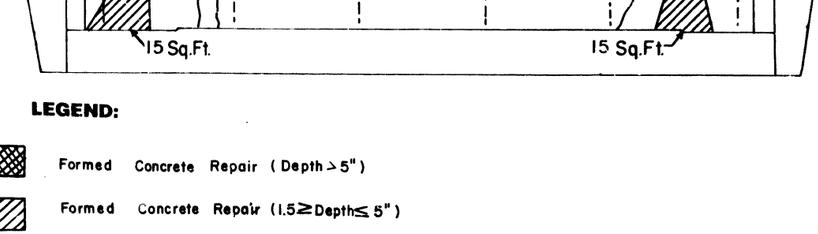
Revised: Changed anchor bolt hole size to 1½" & bottom

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| I-80 | * | WILL | 181 | 159 |
| STA | | TO STA | | |
| FED. ROAD DIST. NO. 7 | ILLINOIS | FED. AID PROJECT | | |

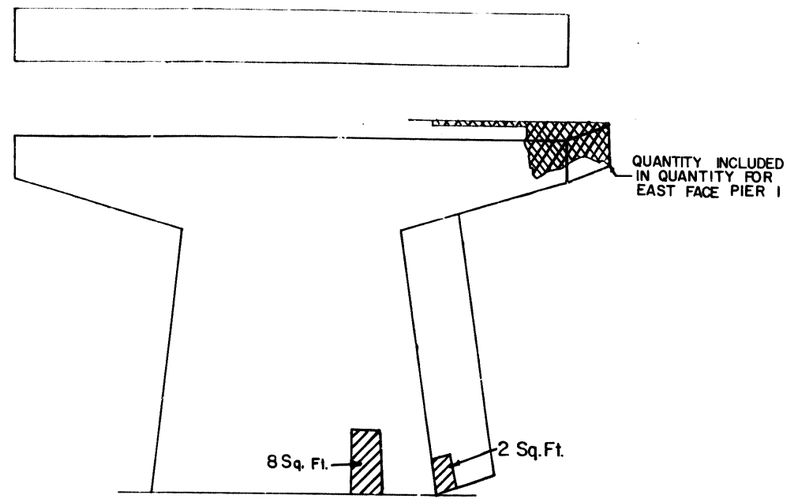
*99-4RS-2 & 99-4(B-1,HB,HB-1&VB)BR-88

SHEET 12 OF 14

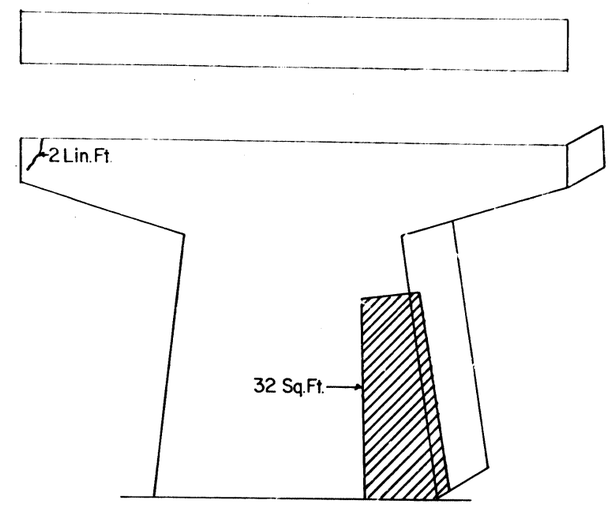
## WEST ABUTMENT



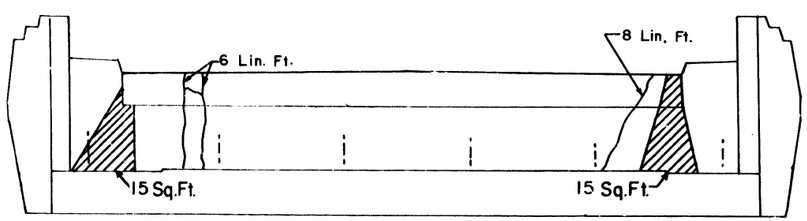
## PIER #3 (WEST FACE)



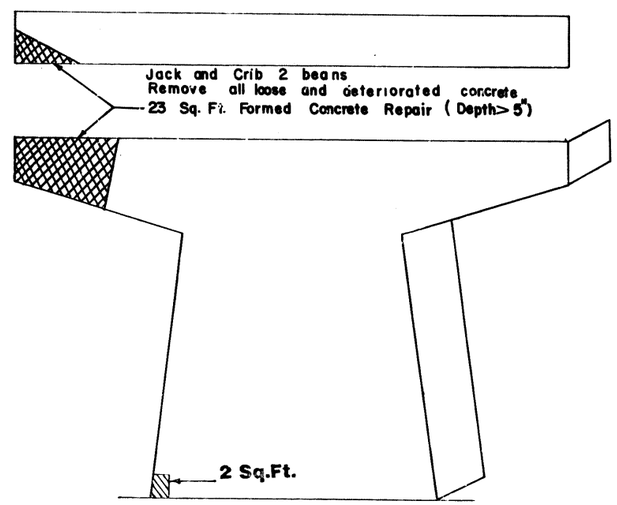

## PIER #4 (WEST FACE)



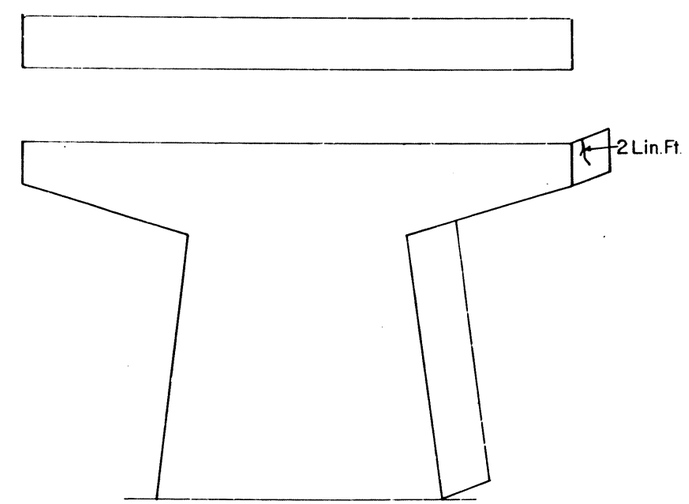

## EAST ABUTMENT




## PIER #3 (EAST FACE)




## PIER #4 (EAST FACE)




**LEGEND:**

- Formed Concrete Repair ( Depth > 5")
- Formed Concrete Repair (1.5 ≥ Depth ≤ 5")
- Epoxy Crack Sealing

**NOTE:**

See Detail of Formed Concrete Repair on Sheet No. 14 of 14.

## BILL OF MATERIALS

| ITEM | UNIT | QUANTITY |
|---|---|---|
| Epoxy Crack Sealing | Lin. Ft | 24 |
| Formed Concrete Repair (Depth ≤ 5") | Sq. Ft | 74 |
| Formed Concrete Repair (Depth > 5") | Sq. Ft. | 23 |
| Jacking and Cribbing, less than 10' | Each | 2 |

| REVISIONS | |
|---|---|
| NAME | DATE |
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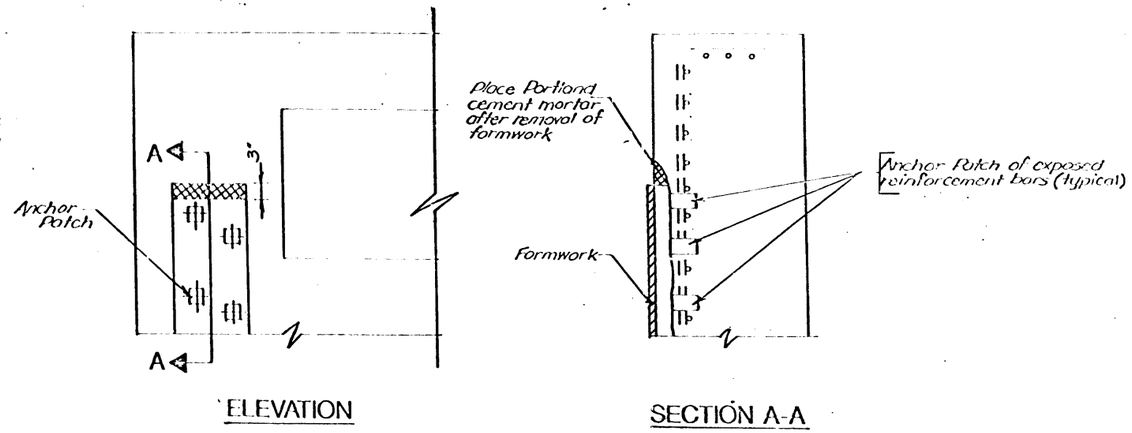
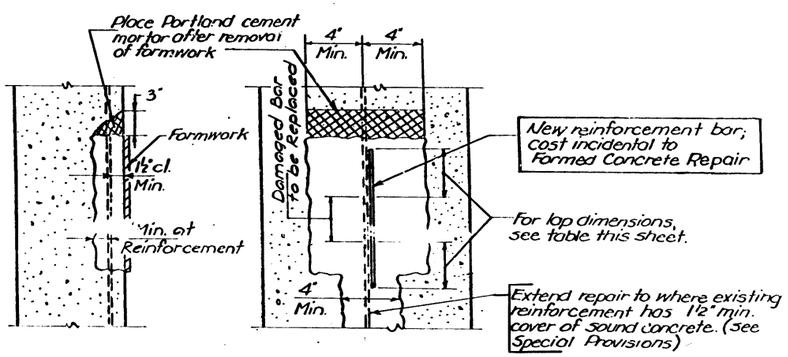
ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 80
BRIDGE REHABILITION
STRUCTURE NO. 099-0064
SUBSTRUCTURE REPAIRS

SCALE: VERT. HORIZ.
DATE
DRAWN BY CP
CHECKED BY




## EPOXY MORTAR REPAIR
(DEPTH 1-1/2")




## FORMED CONCRETE REPAIR DETAIL WITH REINFORCEMENT

Notes:
Existing reinforcement having 20% or more of cross-sectional area lost due to corrosion or damaged during concrete removal shall be replaced by new reinforcement lapped as shown or noted.

All formed concrete repair dimensions are approximate.

## LAP DIMENSIONS

| Bar Size | Lap Length |
|---|---|
| #4 | 1'-4" |
| #5 | 1'-8" |
| #6 | 2'-0" |
| #7 | 2'-9" |

| REVISIONS | |
|---|---|
| NAME | DATE |
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ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. - 80
BRIDGE REHABILITATION
STRUCTURE NO. 099 - 0064
DETAIL OF
FORMED CONCRETE REPAIR

SCALE: VERT. HORIZ.
DRAWN BY
DATE
CHECKED BY

The Illinois Coil Lock Anchor Bolt is a proprietary item which is the property of the Illinois Department of Transportation. Use, reproduction, publication or other use without express written permission is prohibited and protected under Federal copyright laws. The construction 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 of the [illegible] providing or fabricating this bolt.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

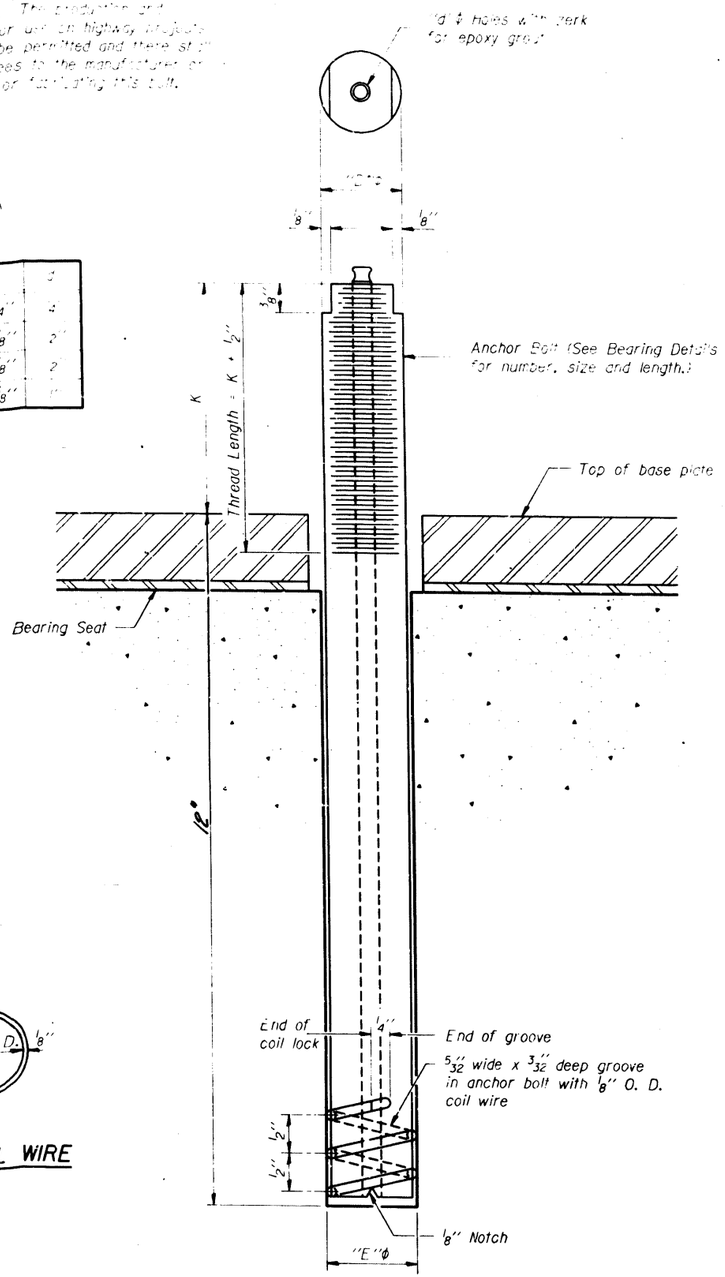
| ROUTE NO. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| F.A.I. I-80 | * | WILL | 181 | 161 |
| FED. ROAD DIST. NO. 7 | | ILLINOIS | FED. AID PROJECT | |

SHEET NO.
SHEETS

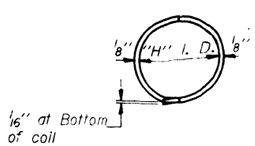
* 99-4RS-2 & 99-4(B-1,HB,HB-1 & VB)BR-88

**SHEET 14 OF 14**

| D | t | tt | K | J |
|---|---|---|---|---|
| 1" | 1/8" | 13/16" | 1 3/4" | 4" |
| 1 1/2" | 1 5/8" | 1 5/16" | 2 1/8" | 2" |
| 2" | 2 1/8" | 1 13/16" | 2 7/8" | 2" |
| 2 1/2" | 2 5/8" | 2 5/16" | 3 3/8" | 1" |




ILLINOIS COIL-LOCK ANCHOR BOLT




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 A519, Grade 1026 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 C881, 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 in accordance with 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 conforming to ASTM A307.
2. A sealed glass capsule or a sealed glass adhesive cartridge containing premeasured amounts of the adhesive chemical.

## GENERAL NOTES

Holes in the masonry for anchor bolts shall be drilled through the base plates to the diameter and depth shown or in accordance with the manufacturer's recommendation after bearing or girder 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".

| | |
|---|---|
| DESIGNED | |
| CHECKED | |
| DRAWN | |
| CHECKED | |

19
EXAMINED
ENGINEER OF BRIDGE DESIGN
PASSED
ENGINEER OF BRIDGES AND STRUCTURES
APPROVED
DIRECTOR OF HIGHWAYS

ABB-1 12-1-83

ANCHOR BOLT DETAILS FOR BEARINGS

Str. No. 099-0064

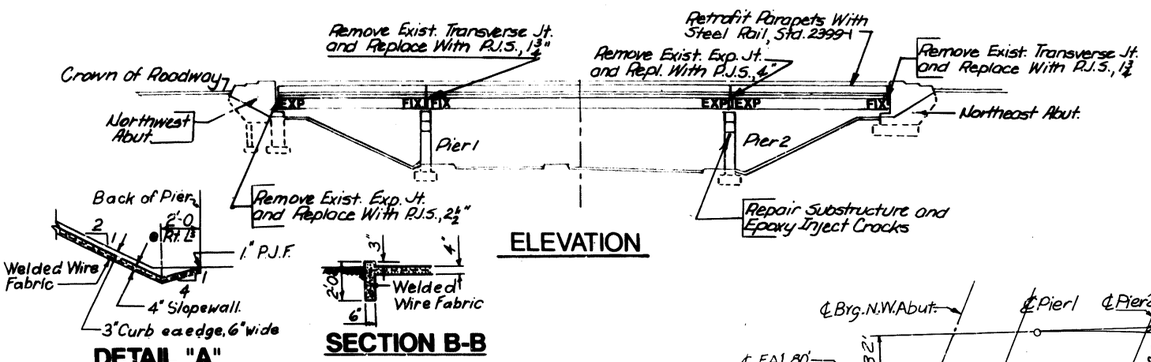
| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 180 | * | WILL | 181 | 162 |
| STA | | TO STA | | |
| FED. ROAD DIST. NO. 7 | ILLINOIS | FED. AID PROJECT | | |

*99-4RS-2 & 99-4(B-1, HB, HB-1 & VB) BR-88

SHEET 1 OF 14

## EXISTING BRIDGE DESCRIPTION

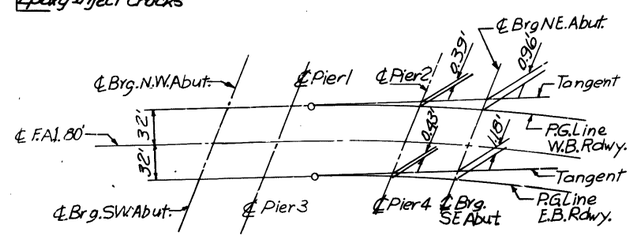
The Bridge is Comprised of 3 Simple Spans Constructed of Continuous Steel Wide Flange Beams. The 7-Inch-Thick Deck is Supported on Reinforced Concrete Piers and Abutments With Footings That Extend a Minimum of One Foot into Solid Rock.




ELEVATION

DETAIL "A"

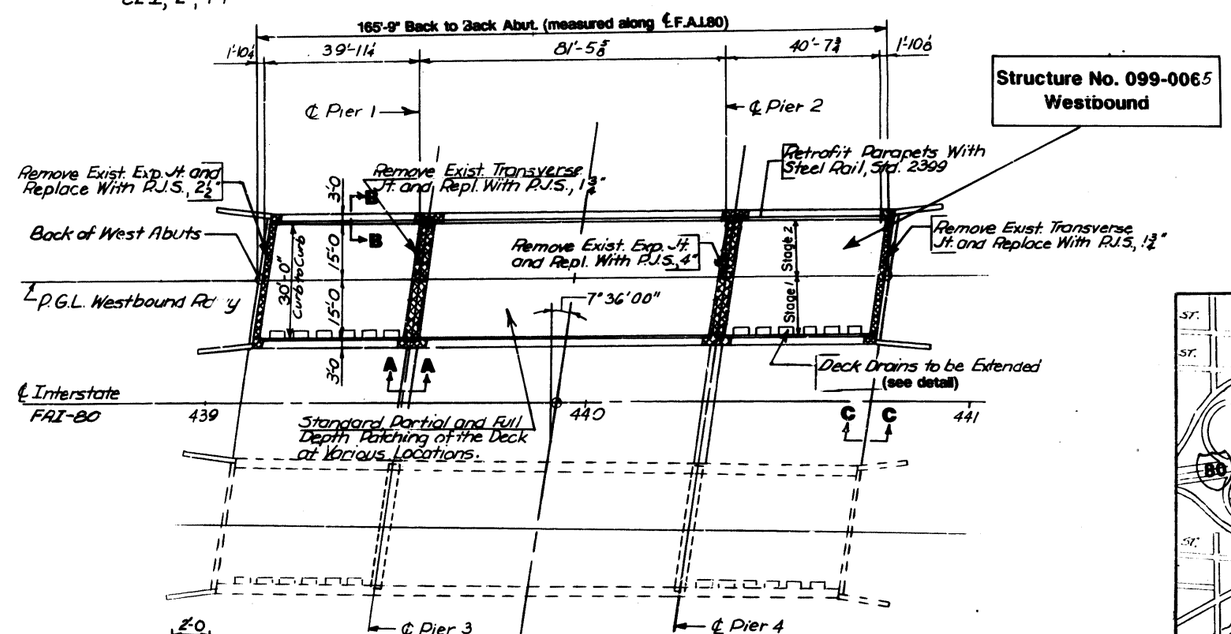
SECTION B-B




PIER & ABUTMENT LAYOUT

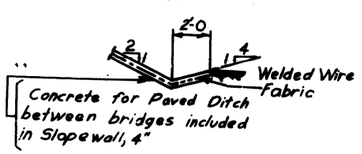
### Repairs Over Entire Deck:

1. Remove Exist. Asphaltic Conc. Overlay
2. DELETED
3. Apply Waterproofing Membrane System
4. Overlay With Bit. Conc. Surface Crse, Mix E, CL I, 2", T-1

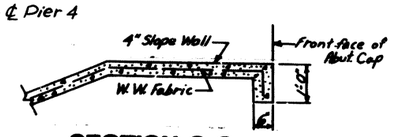



Structure No. 099-0065
Westbound

PLAN




SECTION A-A




SECTION C-C

## PLAN NOTES

Plan Dimensions and Details Relative to the Existing Structure Have Been Taken From Existing Plans and are Subject to Nominal Construction Variations. It shall be the Contractors Responsibility to Verify Such Dimensions and Details in the Field and Make Necessary, Approved Adjustments Prior to Construction or Ordering of Materials. Such Variations Shall Not be Cause for Additional Compensation for a Change in Scope of Work, However, the Contractor Will be Paid for the Quantity Actually Furnished at the Unit Price Bid for the Work.

The Contractor Must Use Extreme Care When Doing Concrete Removal as not to Nick, Cut or Damage any of the Structural Steel.

Reinforcement Bars Shall Conform to the Requirements of A.A.S.H.T.O. M-42, M-31 or M-53, Grade 60.

Existing Underpass Luminaires Which are Attached to the Underside of the Bridge shall be Maintained Operational Throughout the Duration of the Contract and Protected from Damage During Deck Repair Operations.

For Pavement Markings on Bridge, See Roadway Plans.

All Contact Surface Areas of New and Existing Structural Steel Shall be Free of Paint or Laquer.

All Structural Steel Beneath Expansion Joints Shall be Sandblasted and Repainted; 5' on Either Side at Abuts and 10' on Either Side at Piers.

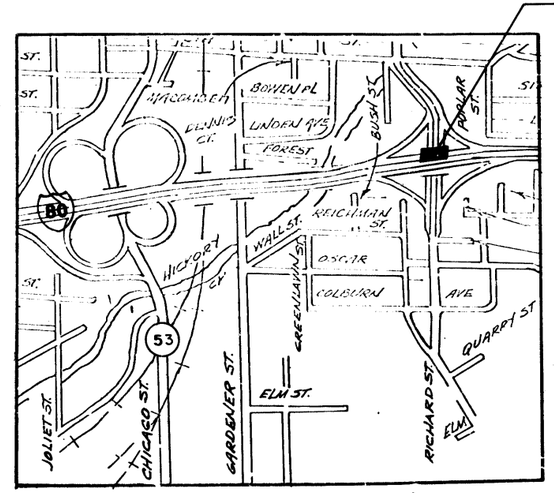
The 3-coat lead and chromatic free alkyd paint system shall be used for field painting of existing structural steel, and new structural steel. The color of the final finish coat shall be Interstate Green (Munsell 7.5 G 4/8) on fascia beams (visible from expressways) and Light Gray (Munsell 10 YR 7/1) on all interior beams. See Special Provision for "Cleaning and Painting Steel Structure."

The exact location of slopewall Removal and Replacement shall be determined by the field engineer.

Field Welding of Construction Accessories will not be Permitted to the Bottom Flange of Beams or Girders, Nor to the Top Flange for a Distance Equal to ¼ the Span Length Each Way from the Pier Supports. Field Welding in other Areas Will be Permitted Only When Approved by the Engineer.

All drainage structures in paved ditch at slopewalls shall be cleaned.

Structure No. 099-0065
Westbound




LOCATION MAP

### INDEX OF SHEETS


| Sheet No. | |
|---|---|
| 1 | Plan & Elevation |
| 2 | Typical Section |
| 3 | Stage Construction |
| 4-10 | Deck Details |
| 11 | Elastomeric Bearings |
| 12-13 | Substructure Repairs |
| 14 | Anchor Bolt Details For Bearings |


| REVISIONS | |
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| NAME | DATE |
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ILLINOIS DEPARTMENT OF TRANSPORTATION

**FAI-80**
**BRIDGE REHABILITATION**
**STRUCTURE NO. 099-0065**
**PLAN & ELEVATION**

SCALE: VERT. HORIZ.

DRAWN BY C.P.

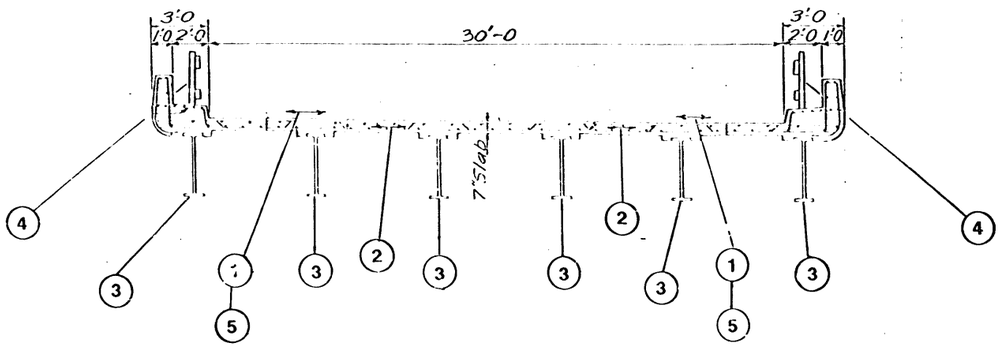
DATE

CHECKED BY

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 80 | * | WILL | 181 | 163 |
| STA. | | TO STA. | | |
| FED. ROAD DIST. NO. 7 | ILLINOIS | FED. AID PROJECT | | |

*99-4RS-2 & 99-4(B-1,HB,HB-1 & VB)ER-88

SHEET 2 OF 14




TYPICAL CROSS SECTION

## TOTAL BILL OF MATERIALS

| ITEM | UNIT | QUANTITY Sub-struct. | Super-struct. | Total |
|---|---|---|---|---|
| | | | | |
| Jack and Remove Exist. Bearings | Each | | 6 | 6 |
| Elastomeric Bearing Assembly, T-1 | Each | | 6 | 6 |
| Concrete Removal | Cu. Yds. | | 17.5 | 17.5 |
| Furnish and Erect. Structural Stl. | Pounds | | 6512 | 6512 |
| Class X Concrete Superstructure | Cu. Yds. | | 20.2 | 20.2 |
| Preformed Joint Seal, 1¾" | Lin. Ft | | 74 | 74 |
| Preformed Joint Seal, 2½" | Lin. Ft. | | 37 | 37 |
| Preformed Joint Seal, 4" | Lin. Ft. | | 37 | 37 |
| Reinforcement Bars, Epoxy Coated | Pounds | | 2742 | 2742 |
| Waterproofing Membrane System | Sq. Yds. | | 552 | 552 |
| Deck Drain **to be extended.** | Each | | 8 | 8 |
| Deck Slab Repair (Partial) | Sq. Yds. | | 220.5 | 220.5 |
| Deck Slab Repair (Full Depth) T-1 | Sq. Yds. | | 21.6 | 21.6 |
| | | | | |
| Epoxy Crack Sealing | Lin. Ft. | 10 | | 10 |
| Formed Conc. Repair (Depth≤5") | Sq. Ft. | 14 | | 14 |
| Epoxy Mortar Repair (Depth<1.5") | Sq. Ft. | | 15 | 15 |
| Bit. Conc. Surface Removal (Deck) | Sq. Yds. | | 552 | 552 |
| Bit. Conc. Surface Cse., Mix E, CLI, T-1 | Tons | | 72 | 72 |
| Protective Coat | Sq. Yds | | 145.3 | 145.3 |
| Protective Shield | Sq. Yds | | 552 | 552 |
| Clean and Paint Steel Bridge | L. Sum | | | .05 |
| Protect and Maintain Exist. Underpass Luminaires | L. Sum | | | .16 |
| Steel Bridge Rail | Lin. Ft. | | 328 | 328 |
| Slopewall Removal and Replacement | Sq. Yd. | | 25 | 25 |
| Drainage Structure to be Cleaned | Each | | | 2 |
| | | | | |

## LEGEND

(1) REMOVAL OF EXISTING ASPHALTIC CONCRETE

(2) STANDARD PARTIAL & FULL DEPTH PATCHING OF BRIDGE DECK AT VARIOUS LOCATIONS.

(3) JACK & REMOVE EXISTING BEARING AT ABUTMENTS; FURNISH & INSTALL ELASTOMERIC BEARING ASSEMBLY, TYPE I

(4) RETROFIT THE PARAPETS WITH A BRIDGE STEEL RAILING (STANDARD 2399-1)

(5) WATERPROOFING OF DECK WITH MEMBRANE SYSTEM; PLACEMENT OF 2" BITUMINOUS CONCRETE OVERLAY.

| REVISIONS | |
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| NAME | DATE |
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ILLINOIS DEPARTMENT OF TRANSPORTATION

F.A.T.

BRIDGE REHABILITION

STRCTURE NO.099-0065

TYPICAL CROSS SECTION

SCALE: VERT. HORIZ.

DRAWN BY CP

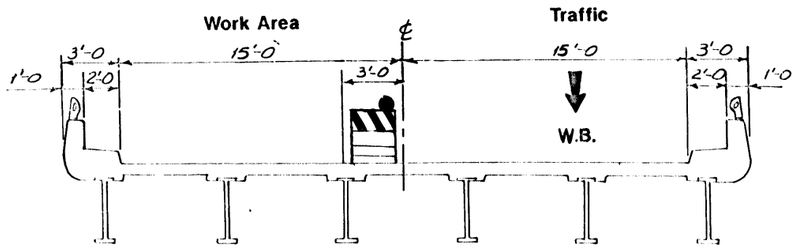
DATE

CHECKED BY

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| I-80 | * | WILL | 181 | 169 |
| STA. | | TO STA. | | |
| FED. ROAD DIST. NO. 7 | ILLINOIS | FED. AID PROJECT | | |

*99-4RS-2&99-4(B-1,HB,HB-1&V5)BR-88

SHEET 3 OF 14

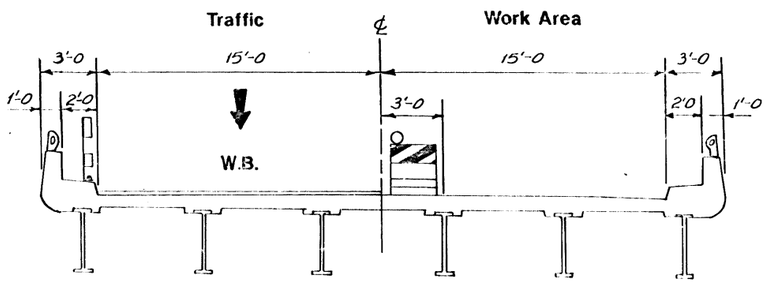



STAGE I

**(Facing West)**

STAGE I

1. PLACE TRAFFIC CONTROL AND DIVERT TRAFFIC TO NORTH SIDE.
2. REMOVE EXISTING BRIDGE CONCRETE OVERLAY
3. CONSTRUCT PARTIAL AND FULL DEPTH SLAB REPAIRS
4. JACK BRIDGE AND REMOVE EXISTING BEARINGS AND INSTALL PROPOSED ELASTOMERIC BEARING ASSEMBLY.
5. EXTEND DECK DRAINS
6. REPLACE TRANVERSE JOINTS
7. PAINT STRUCTURAL STEEL (5' ON EITHER SIDE OF BEARINGS AT ABUTMENTS AND 10' ON EITHER SIDE OF THE BEARINGS AT THE PIERS.
8. REPAIR SUBSTRUCTURE
9. RETROFIT THE SAFETY CURBS BY PLACING A BRIDGE STEEL RAIL (STANDARD 2399-I
10. APPLY WATERPROOFING MEMBRANE AND RESURFACE BRIDGE




STAGE II

**(Facing West)**

STAGE II

1. PLACE TRAFFIC CONTROL AND DIVERT TRAFFIC TO SOUTH SIDE.
2. REMOVE EXISTING BRIDGE CONCRETE OVERLAY
3. CONSTRUCT PARTIAL AND FULL DEPTH SLAB REPAIRS
4. JACK BRIDGE AND REMOVE EXISTING BEARINGS AND INSTALL PROPOSED ELASTOMERIC BEARING ASSEMBLY.
5. EXTEND DECK DRAINS
6. REPLACE TRANVERSE JOINTS
7. PAINT STRUCTURAL STEEL (5' ON EITHER SIDE OF BEARINGS AT ABUTMENTS AND 10' ON EITHER SIDE OF THE BEARINGS AT THE PIERS.
8. REPAIR SUBSTRUCTURE
9. RETROFIT THE SAFETY CURBS BY PLACING A BRIDGE STEEL RAIL (STANDARD 2399-I
10. APPLY WATERPROOFING MEMBRANE AND RESURFACE BRIDGE

| REVISIONS | |
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| NAME | DATE |
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ILLINOIS DEPARTMENT OF TRANSPORTATION

F.A.I 80

BRIDGE REHABILITATION

STRUCTURE NO.099-0065

STAGE CONSTRUCTION

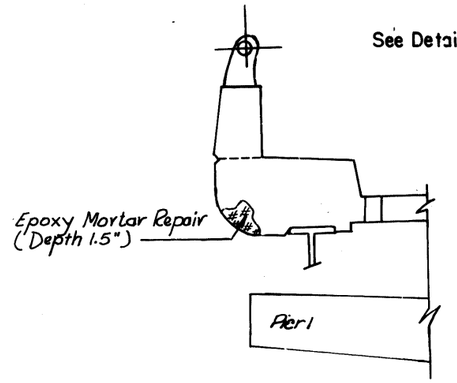
SCALE: VERT. HORIZ.

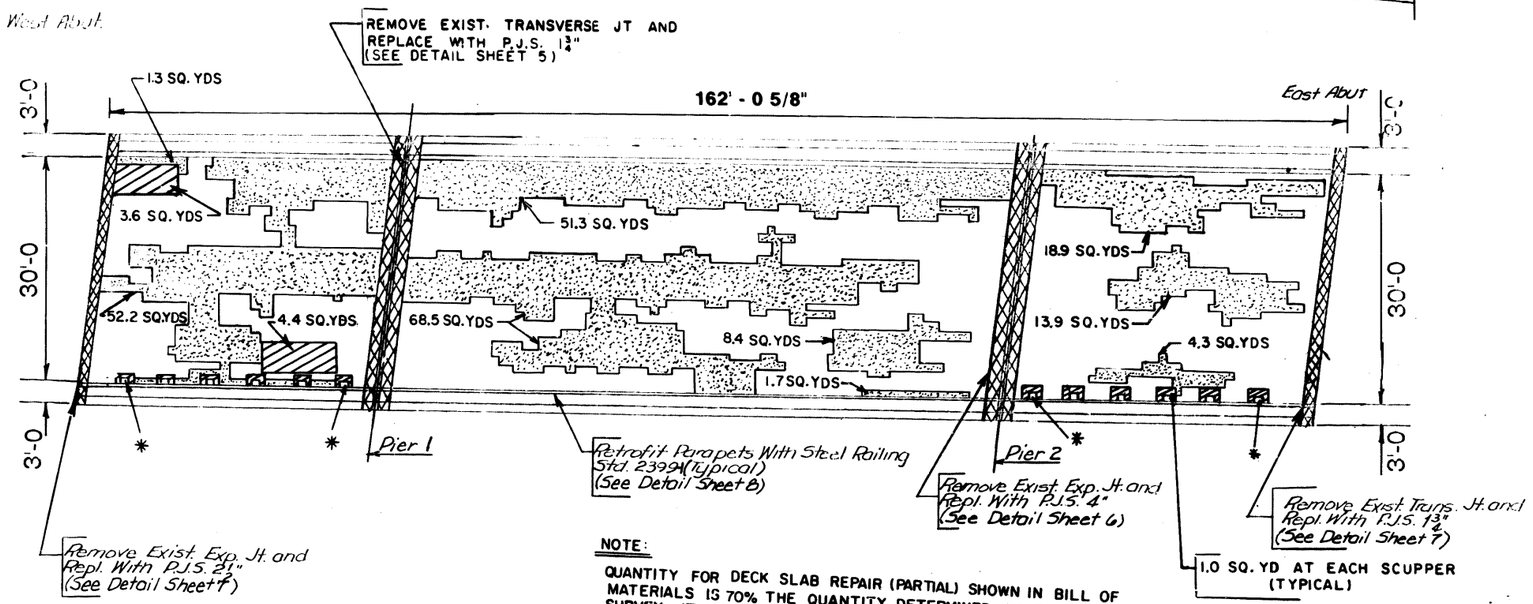
DRAWN BY

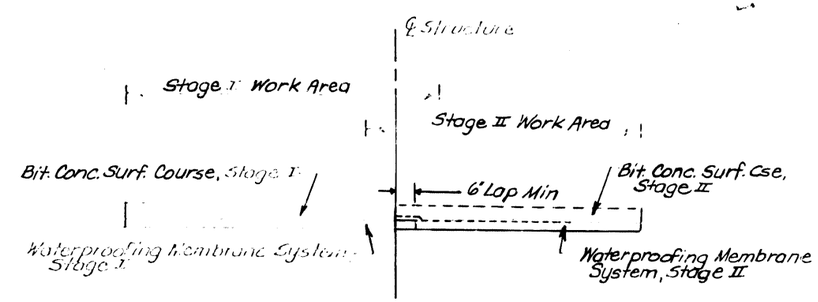
DATE

CHECKED BY

Repairs Over Entire Deck:
1. Remove Exist. Bit Conc. Overlay
2. DELETED
3. Perform Standard, Partial and Full Depth Patching as Shown
4. Waterproof the Deck With a Membrane System
5. Resurface the Deck With Bit. Conc. Surface Crse., Mix E, CL I, 2", T-1




## DETAIL OF WATERPROOFING MEMBRANE SYSTEM
(6" Lap)

Note:
Exposed Reinforcement Shall be Cleaned and Incorporated into the Concrete Patch or, If Necessary, Replacement Reinforcement Added and Spliced With the Existing Retained Reinforcement, as directed by the Engineer.

SCALE: 1" = 10'

DATE OF LATEST DELAMTECT: 9-23-89

NOTE:
QUANTITY FOR DECK SLAB REPAIR (PARTIAL) SHOWN IN BILL OF MATERIALS IS 70% THE QUANTITY DETERMINED BY THE DELAMTECT SURVEY. IT IS ANTICIPATED THAT 30% OF THE DELAMINATIONS OCCUR BECAUSE OF DEBONDING BETWEEN THE ASPHALT OVERLAY AND THE CONCRETE DECK

* Deck drains within 10' of the substructure to be eliminated.
All others deck drains are to be extended. (see detail sheet 8.).

Removal of existing deck drain is incidental to the pay item of "Deck Slab Repair, Full Depth".

Removal of existing deck drain & repair of deck to be paid for at the contract unit per Sq. Yd. for Deck Slab Repair (Full Depth) use 0.4 S.Y. per location.

## DECK SLAB REPAIR

LEGEND

- Deck Slab Repair (Partial Depth)
- Deck Slab Repair (Full Depth)
- Concrete Removal
- Epoxy Mortar Repair (Depth 1.5")

### BILL OF MATERIALS

| ITEM | UNIT | QUANTITY |
|---|---|---|
| Bit. Conc. Surf. Cse., Mix E, CL I, T-1, 2" * | Tons | 72 |
| Waterproofing Membrane Sys. | Sq.Yds. | 552.0 |
| | | |
| Deck Slab Repair (Part. Depth) | Sq.Yds. | 220.5 |
| Deck Slab Repair (Full Depth), T-1 | Sq.Yds. | 21.6 |
| Bit. Conc. Surf. Removal (Deck) | Sq.Yds. | |
| Epoxy Mortar Repair (Depth 1.5") | Sq. Ft. | 15.0 |
| | | |

* Mix E = 130 #/Sq.Yd./Inch Depth

| REVISIONS | |
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| NAME | DATE |
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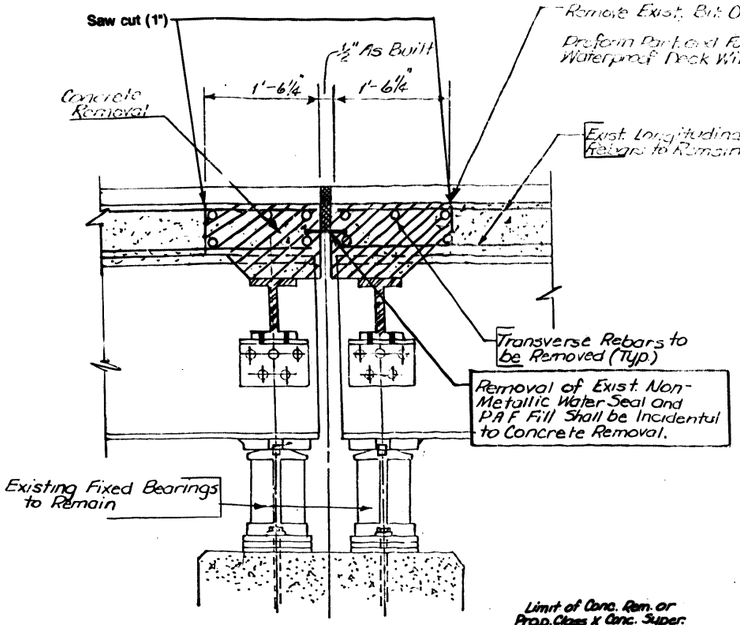
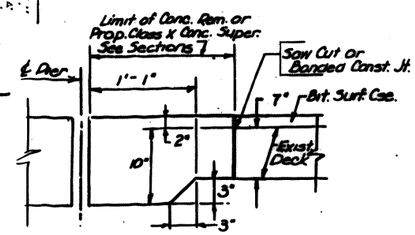
ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 80
BRIDGE REHABILITATION
STRUCTURE NO. 099-0065
DECK DETAILS

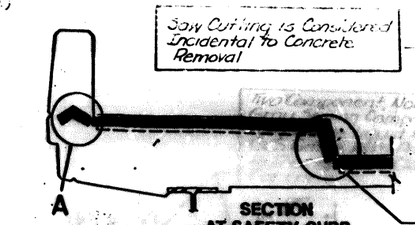
SCALE: VERT. HORIZ.
DATE
DRAWN BY
CHECKED BY



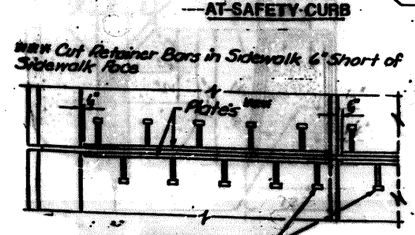

EXISTING PIER I



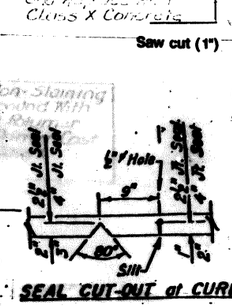

TYPICAL DECK DIMENSIONS




SECTION AT SAFETY CURB

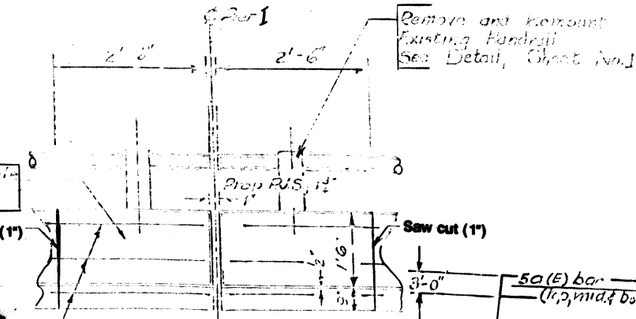



PLAN AT SAFETY CURB

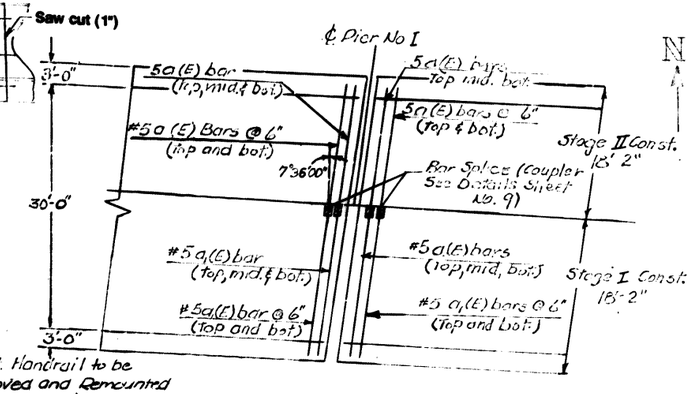



SEAL CUT-OUT at CURB

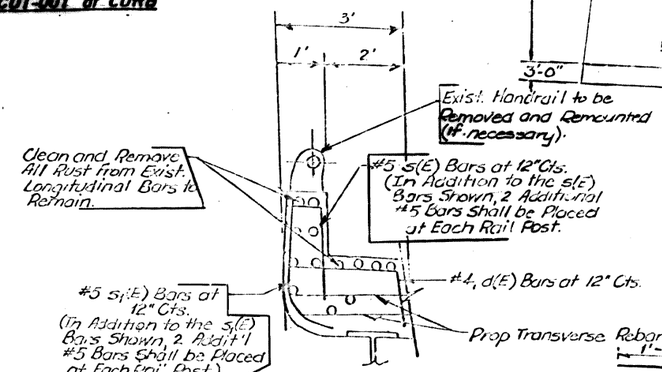
3/8" x 8" Granular or Solid Flux Filled Headed Studs Conforming to Art. 710.38 of the Std. Specs. Automatically End Welded at 12" Alt. Cts.




ELEVATION AT PARAPET



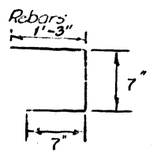

PLAN VIEW - SLAB REINFORCEMENT



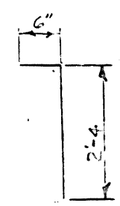

SECTION AT PARAPET

Notes

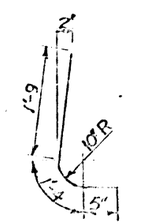
1. (E) Denotes Epoxy Coated
2. Clearance shall be maintained for slab reinforcement. (2" clear for top of slab & 1" clear for bottom of slab).
3. Quantities have been provided for a third row of bars, however this quantity may or may not be needed. Its necessity shall be determined in the field and the rebars used at the discretion of the field engineer.



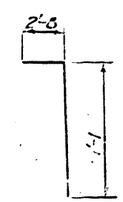

$s_2$(E) Bar




s(E) Bar



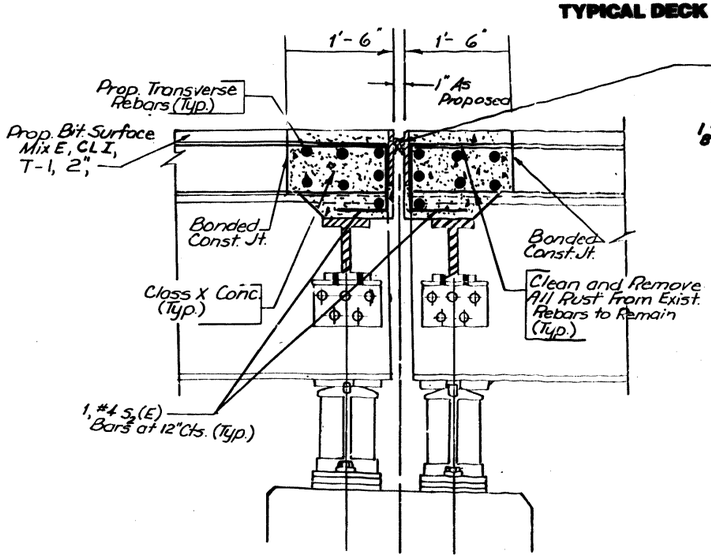

$s_1$(E) Bar



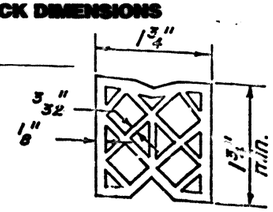

d(E) Bar

BAR SCHEDULE

| BAR | NO. REQ'D | SIZE | LENGTH | SHAPE |
|---|---|---|---|---|
| $a_1$(E) | 14 | #5 | 17'-9 1/2" | |
| a(E) | 14 | #5 | 17'-9" | |
| | | | | |
| s(E) | 20 | #5 | 2'-10" | |
| $s_1$(E) | 20 | #5 | 3'-6" | |
| $s_2$(E) | 73 | #4 | 2'-5" | |
| d(E) | 12 | #4 | 3'-9" | |

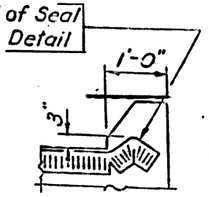



PROPOSED MODIFICATIONS TO PIER 3

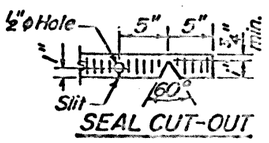



P.J.S., 1 3/4"

See End of Seal Cut-Out Detail

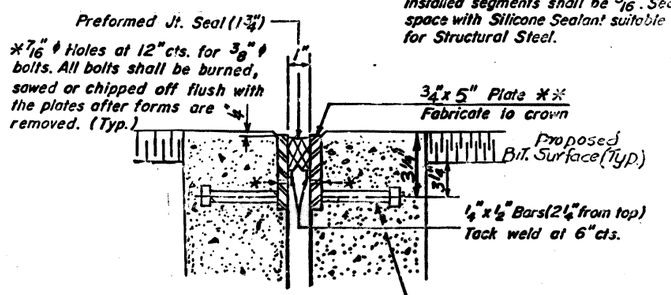



A END OF SEAL TREATMENT




SEAL CUT-OUT

** Furnish in segments of 20 ft. maximum length. Maximum space between installed segments shall be 3/16". Seal space with Silicone Sealant suitable for Structural Steel.




PREFORMED JOINT SEAL (1 3/4")

Note:
After fabrication all surfaces of the steel plates shall be given one shop coat of paint specified for structural steel

BILL OF MATERIALS

| ITEM | UNIT | QUANTITY |
|---|---|---|
| Concrete Removal | CU. YD. | 4.6 |
| Class X Conc. Super | CU. YD. | 5.3 |
| Reinforcement bars, epoxy ctd. | POUNDS | 800 |
| Preformed Joint Seal, 1 3/4" | LIN. FT. | 37 |
| Furnish and Erect Struct. Steel | POUNDS | 1153 |
| PROTECTIVE COAT | SQ. YD. | 19.1 |

REVISIONS

| NAME | DATE |
|---|---|
| | |

ILLINOIS DEPARTMENT OF TRANSPORTATION

FA, I 80

BRIDGE REHABILITATION

STRUCTURE NO. 099-0065

DECK DETAILS

SCALE: VERT. HORIZ.

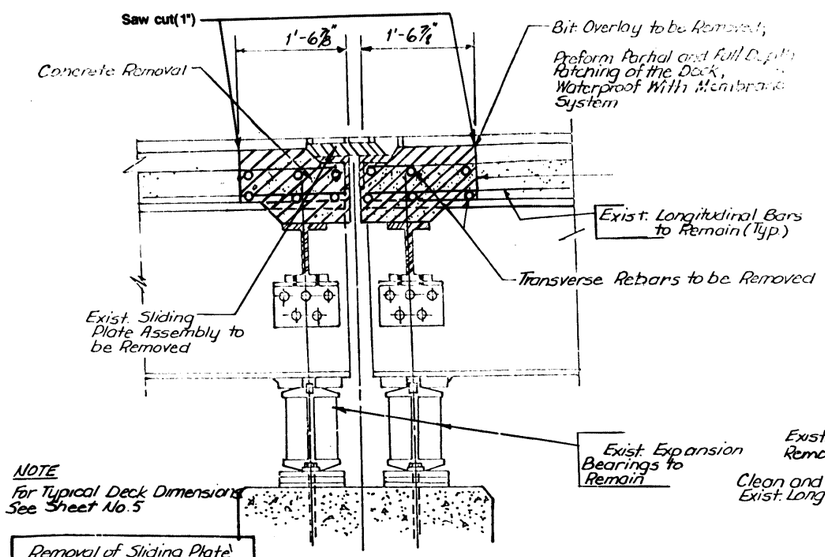
DATE

DRAWN BY

CHECKED BY

Revised: Added 1/4" to P.J.S. detail. 3-22-90 ENR

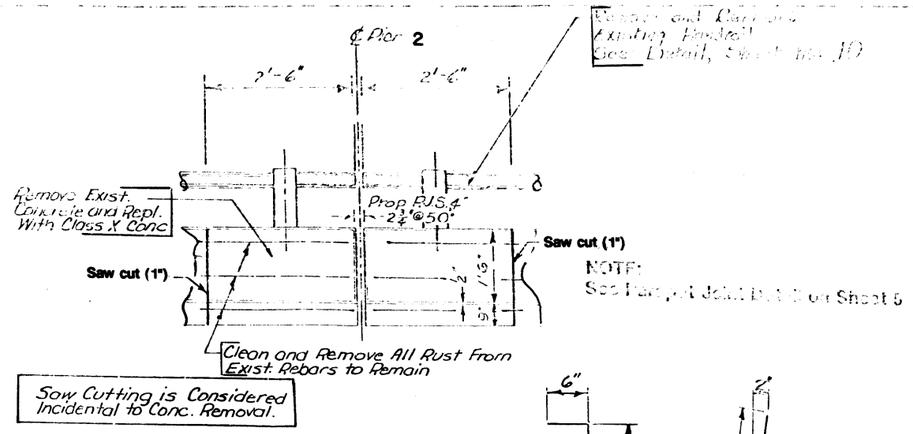
Δ




NOTE
For Typical Deck Dimensions See Sheet No. 5

Removal of Sliding Plate Assembly and Transverse Rebars Shall be Incidental to Concrete Removal.

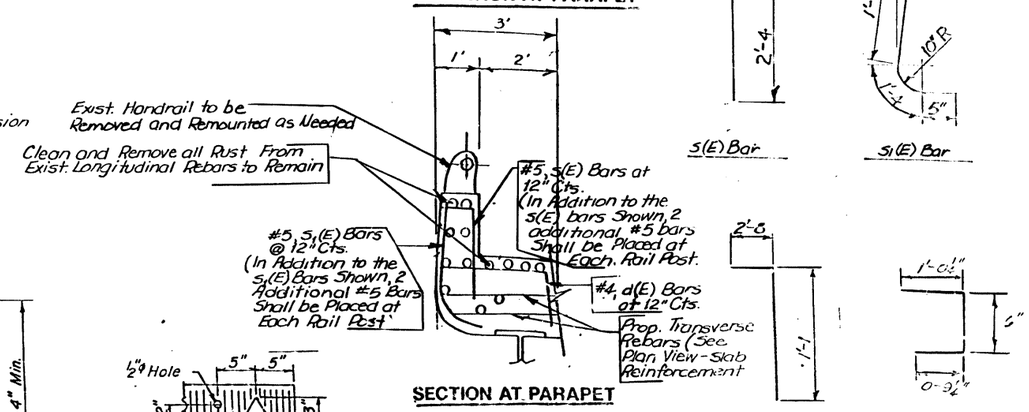
EXISTING PIER 2



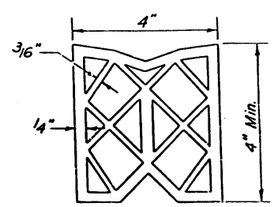

NOTE:
See Parapet Joint Detail Sheet 5

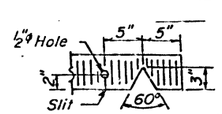
Saw Cutting is Considered Incidental to Conc. Removal.

ELEVATION AT PARAPET

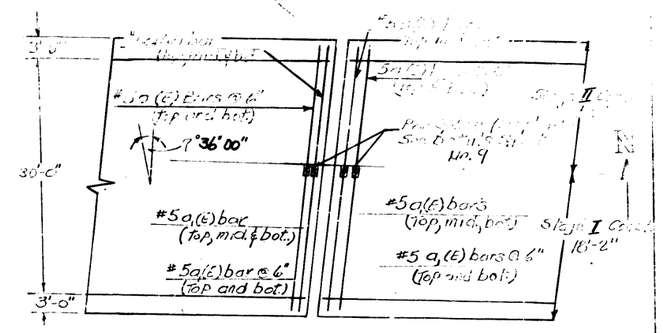



SECTION AT PARAPET



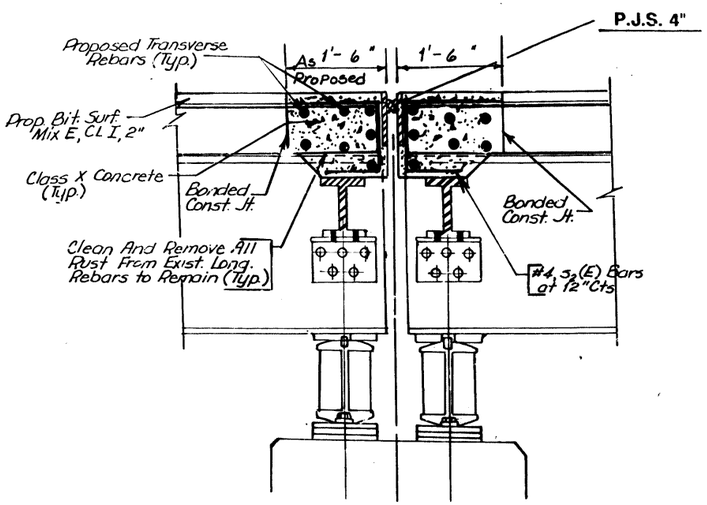

SEAL CUT-OUT (4")



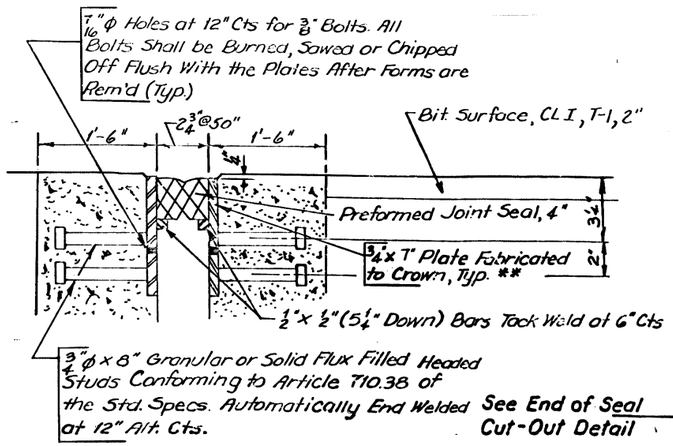

PLAN VIEW - SLAB REINFORCEMENT

NOTES:
1) (E) Denotes Epoxy coated
2) Clearance shall be maintained for slab reinforcement (2" clear for top of slab & 1" clear for bottom of slab).
3. Quantities have been provided for a third row of bars, however, this quantity may or may not be needed. Its necessity shall be determined in the field and the rebars used at the discretion of the field engineer.

| BAR SCHEDULE | | | | |
|---|---|---|---|---|
| BAR | NO. REQ'D | SIZE | LENGTH | SHAPE |
| a1(E) | 14 | #5 | 17'-9 1/2" | |
| a(E) | 14 | #5 | 17'-9" | |
| | | | | |
| s(E) | 20 | #5 | 2'-10" | |
| s1(E) | 20 | #5 | 3'-6" | |
| s2(E) | 73 | #4 | 2'-3 1/2" | |
| d(E) | 12 | #4 | 3'-9" | |

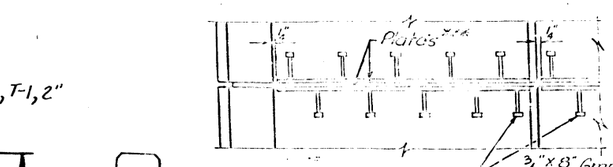



PROPOSED MODIFICATIONS AT PIER 2



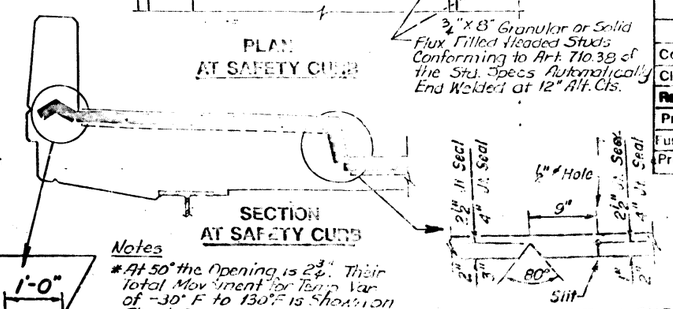

See End of Seal Cut-Out Detail

PREFORMED JOINT SEAL, 4"



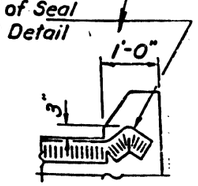

PLAN AT SAFETY CURB

3/4" x 8" Granular or Solid Flux Filled Headed Studs Conforming to Art. 710.38 of the Std. Specs. Automatically End Welded at 12" Alt. Cts.




SECTION AT SAFETY CURB

SEAL CUT-OUT at CURB




END OF SEAL TREATMENT

Notes

* At 50° the Opening is 2 3/4". Their total Movement for Temp. Var. of -30° F to 130° F is Shown on Sheet 8.

** Furnish in Segments of 20' Max. Length. Max Space Between Installed Segments Shall be 3/16" Seal Space With Silicone Sealant Suitable for Structural Steel.

After Fabrication All Surfaces of the Steel Plates Shall be Given One Shop Coat of Paint Specified for Structural Steel.

*** Cut Reginal Bars in Sidewalk 6" Short of

| BILL OF MATERIALS | | |
|---|---|---|
| ITEM | UNIT | QUANTITY |
| Concrete Removal | Cu. Yd. | 4.7 |
| Class X Conc. Super | Cu. Yd. | 5.3 |
| Reinforcement bars, epoxy ctd. | Pound | [illegible] |
| Preformed Joint Seal, 4" | Lin. Ft. | 47 |
| Furnish and Erect Struct. Steel | Pounds | 1345 |
| Protective Coat | Sq. Yd. | [illegible] |

| REVISIONS | |
|---|---|
| NAME | DATE |
| | |

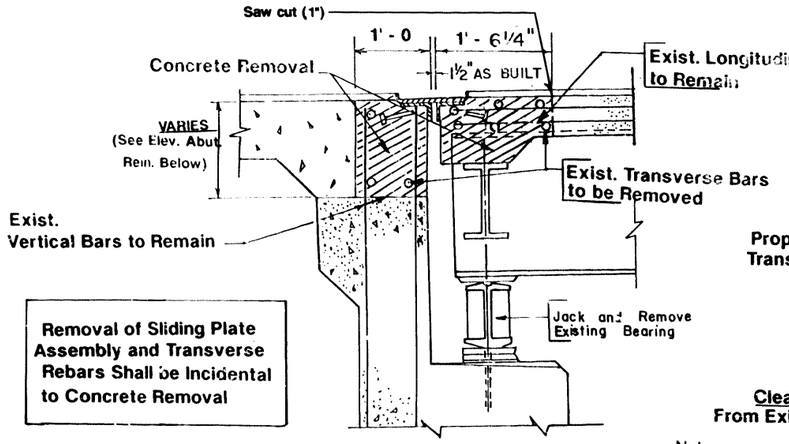
ILLINOIS DEPARTMENT OF TRANSPORTATION

F.A.I 80
BRIDGE REHABILITATION
STRUCTURE NO. 099-0065
DECK DETAILS

SCALE VERT. HORIZ
DATE
DRAWN BY
CHECKED

DETAIL OF EXPANSION JOINT REPLACEMENT AT PIER NO. 4

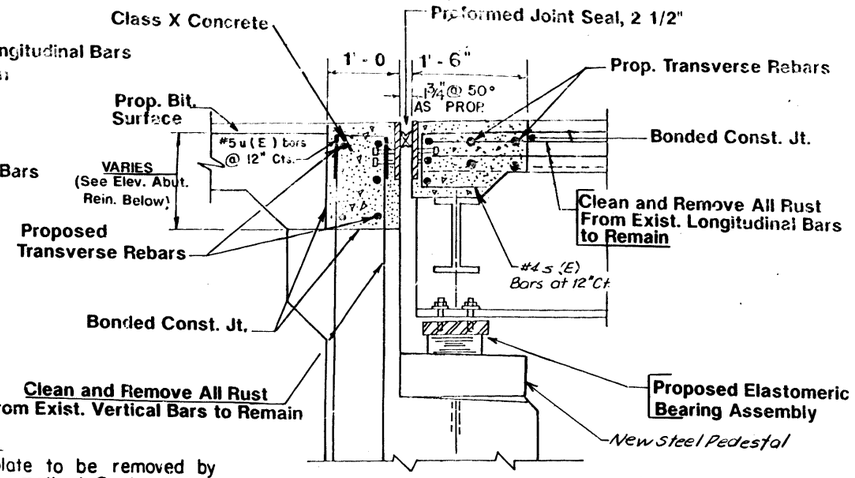
Revised: Added 6" to P.J.S. detail. 5-22-90 FAIR




**Removal of Sliding Plate Assembly and Transverse Rebars Shall be Incidental to Concrete Removal**

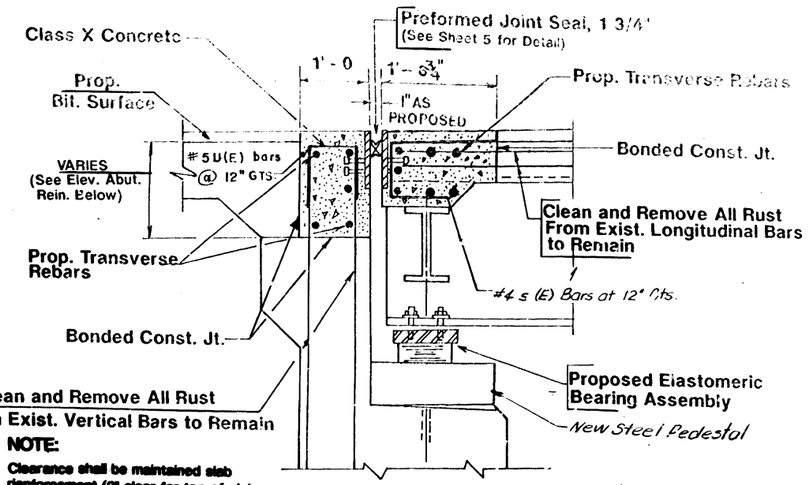
*For Typical Deck Dimensions, See Sheet No. 5*

**EXISTING SECTION AT ABUTMENT**



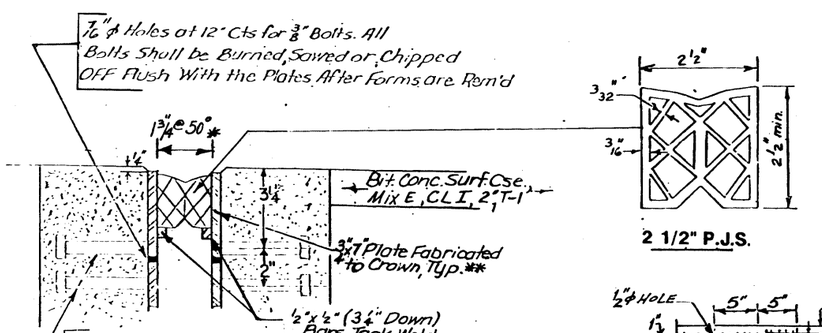

Note:
Sole plate to be removed by air-arc method & then grind remainder of weld smooth.

**PROPOSED MODIFICATIONS WEST ABUTMENT**

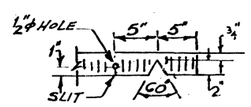



**NOTE:**
**Clearance shall be maintained slab reinforcement (2" clear for top of slab & 1" for bottom of slab ).**

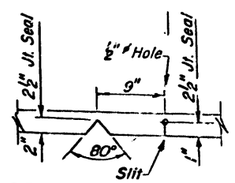
**PROPOSED MODIFICATIONS EAST ABUTMENT**



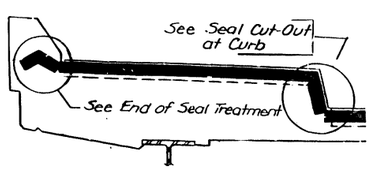

**2 1/2" P.J.S.**



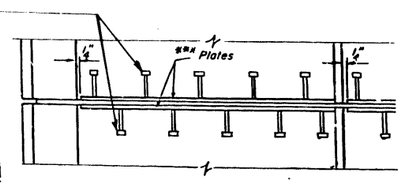

**SEAL CUT-OUT**



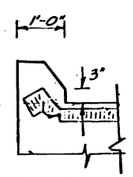

**SEAL CUT-OUT at CURB**




**SECTION AT SAFETY CURB**




**PLAN AT SAFETY CURB**




**END OF SEAL TREATMENT**

**PREFORMED JOINT SEAL 2 1/2"**

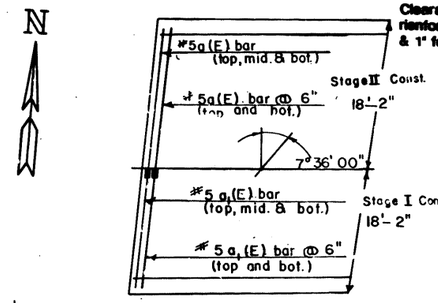
*Notes:*

** At 50° the Opening is 1¾". The Total Movement for Temp. Variances from -30°F to 130°F is Shown on Sheet 8.*

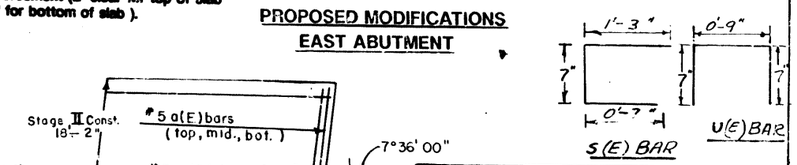
*** Furnish in Segments of 20' Max. Length. Max. Space Between Installed Segments Shall be 3/16". Seal Space With Silicone Sealant Suitable for Structural Steel.*

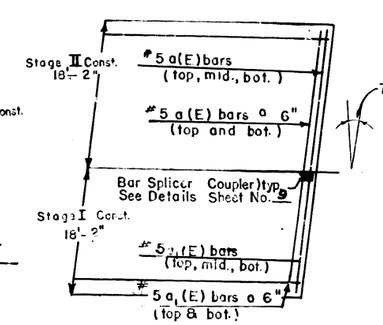
**** Cut Retainer Bars in Sidewalk 6" Short of Sidewalk Face.*

*After Fabrication All Surfaces of the Steel Plates Shall be Given One Shop Coat of Paint Specified for Structural Steel.*




**PLAN VIEW - SLAB REINFORCEMENT WEST ABUTMENT**

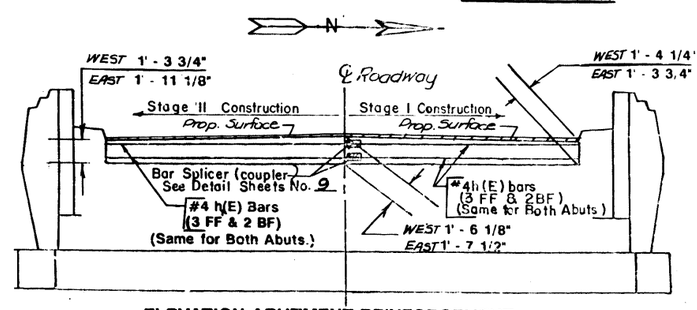



**PLAN VIEW - SLAB REINFORCEMENT EAST ABUTMENT**

| BAR SCHEDULE | | | | |
|---|---|---|---|---|
| BAR | NO. REQ'D | SIZE | LENGTH | SHAPE |
| $a_1$(E) | 14 | #5 | 17'-9½" | — |
| a (E) | 14 | #5 | 17' 9" | — |
| h (E) | 10 | #4 | 14'-6" | — |
| $h_1$(E) | 10 | #4 | 14'-5½" | — |
| s(E) | 74 | #4 | 2'-5" | ⊏ |
| U(E) | 74 | #5 | 1'-11" | ⊓ |
| | | | | |

—(E) Denotes Epoxy Coated
—Quantities include both abuts
—Quantities have been provided for a third row of bars, however this quantity may or may not be needed. Its necessity shall be determined in the field and the rebars used at the discretion of the field engineer.




**ELEVATION ABUTMENT REINFORCEMENT**

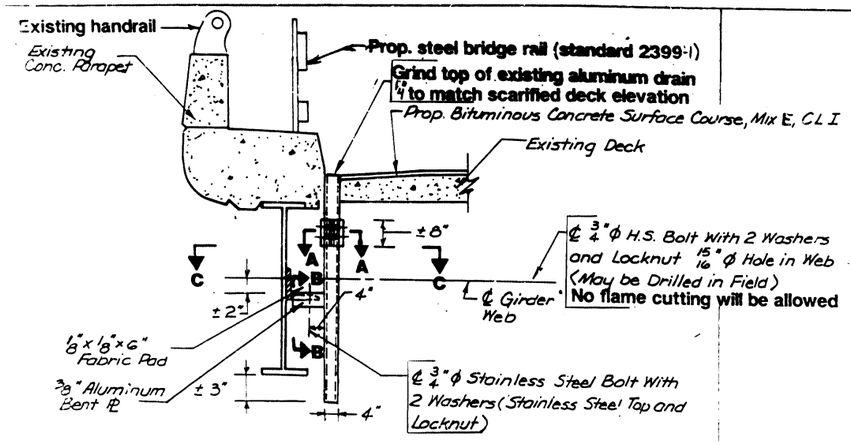
**NOTE: See Parapet Details at Abutments, Sheet 8.**

| BILL OF MATERIALS | | |
|---|---|---|
| ITEM | UNIT | QUANTITY |
| Concrete Removal | Cu.Yds. | 6.8 |
| Class X Conc. Super | Cu.Yds. | 8.2 |
| Reinforcement bars, epoxy ctd. | Pound | 930 |
| Preformed Joint Seal, 2½" | Lin.Ft. | 37 |
| Furnish and Erect Struct. Steel | Pound | 2498 |
| Preformed Joint Seal, 1¾" | Lin. Ft. | 37 |
| PROTECTIVE COAT | Sq.Yd. | 101 |

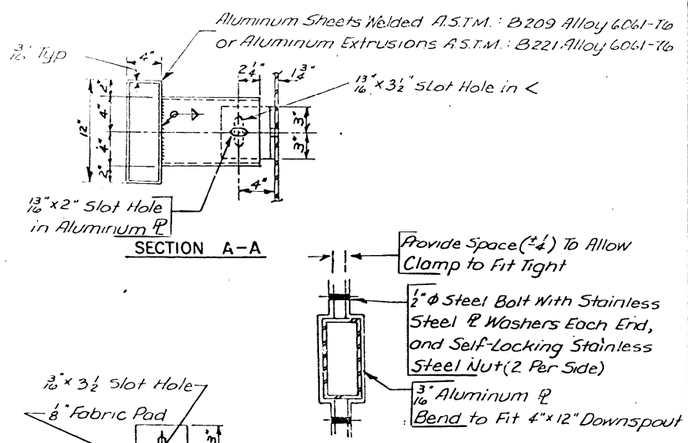
| REVISIONS | |
|---|---|
| NAME | DATE |
| | |

ILLINOIS DEPARTMENT OF TRANSPORTATION
**F.A.I 80**
**BRIDGE REHABILITATION**
**STRUCTURE NO.099-0065**
**DECK DETAILS**

SCALE: VERT / HORIZ
DRAWN BY
DATE
CHECKED BY

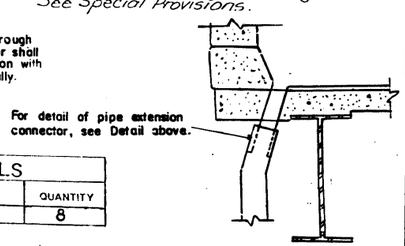



SECTION AT PARAPET



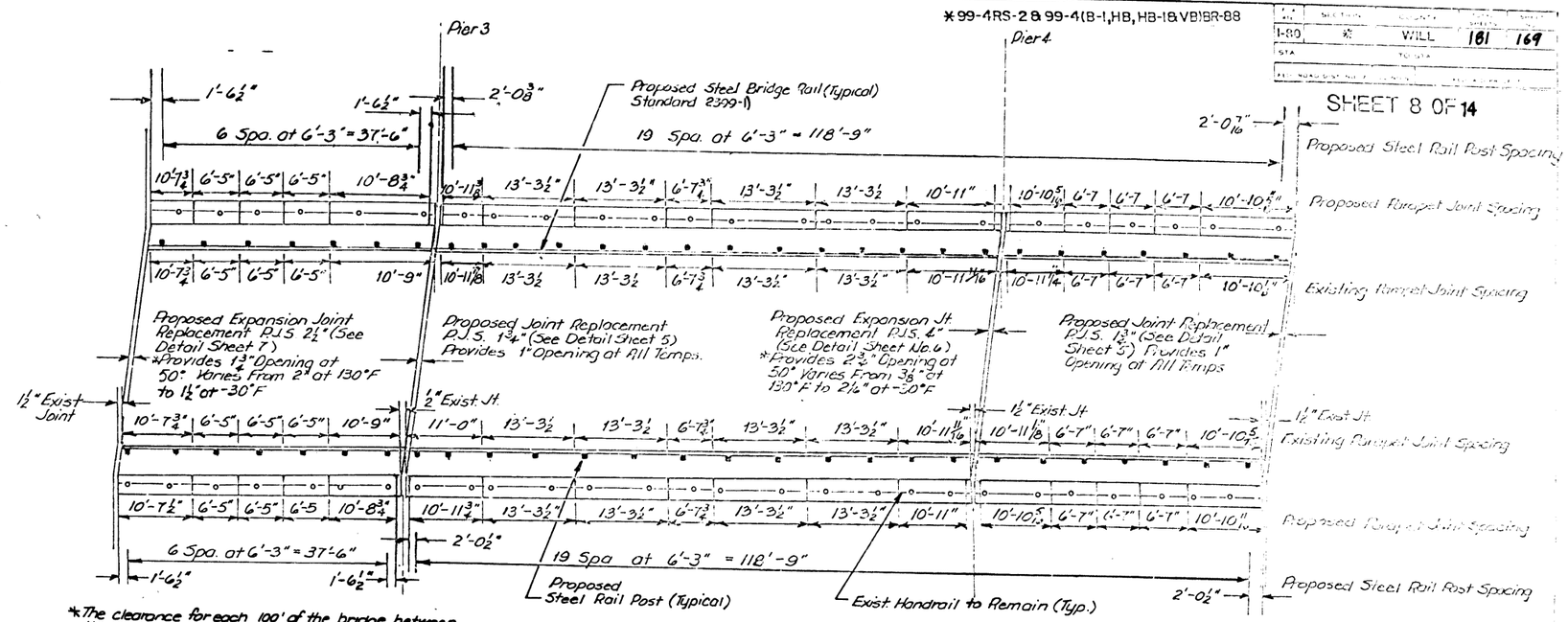

Note:
The Exterior Surfaces of the Aluminum Drains shall be Cleaned and Given a Washcoat Pretreatment. This Shall be followed by the Lead and Chromate Free Alkyd Paint System. See Special Provisions.

Note:
If the existing deck drain extends through the deck at an angle the contractor shall fabricate the aluminum drain extension with an angle to extend the drain vertically.




| BILL OF MATERIALS | | |
|---|---|---|
| ITEM | UNIT | QUANTITY |
| Deck Drain to be Extended | Each | 8 |

DETAIL OF DECK DRAIN EXTENSION

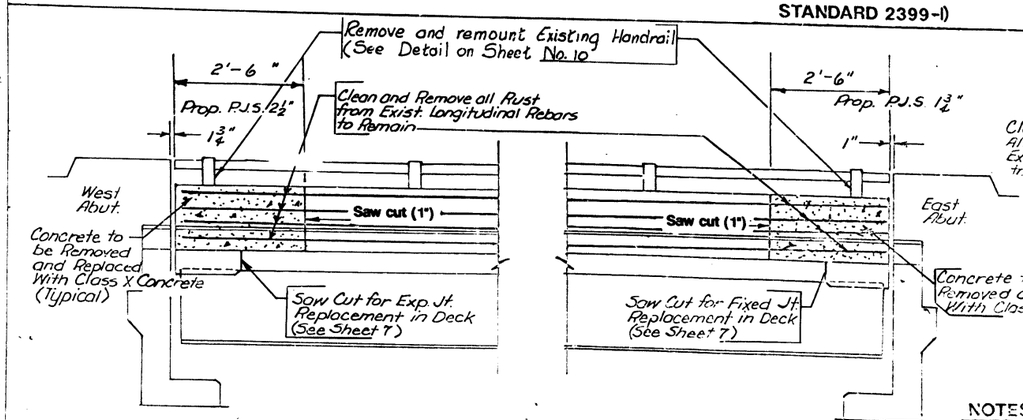



*The clearance for each 100' of the bridge between the nearest fixed bearings each way from the joint shall be reduced 1/8" from that amount specified, for each 15° that the temperature at the time of placing exceeds 50°F, and increased 1/8" from that amount specified for each 15°F that the temperature at the time of placing is below 50°F. (See Art. 503.07 of the Standard Specifications for Road and Bridge Construction, I.D.O.T., July 1, 1988.)

| BILL OF MATERIALS | | |
|---|---|---|
| ITEM | UNIT | QUANTITY |
| Steel Bridge Rail | LIN. FT. | 328 LF |

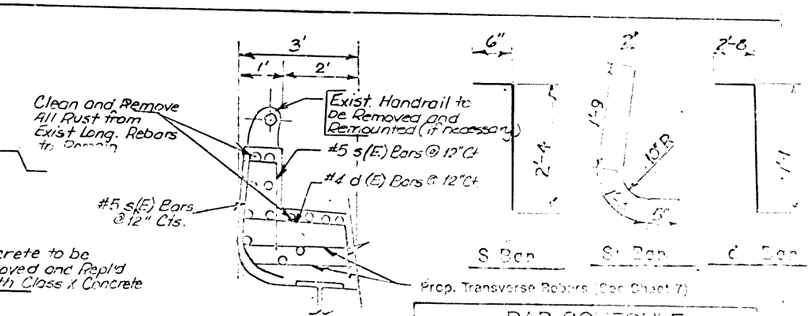
DETAIL OF POST SPACING FOR RETROFIT STEEL BRIDGE RAIL

STANDARD 2399-I)




ELEVATION AT PARAPET WEST ABUTMENT

ELEVATION AT PARAPET EAST ABUTMENT




SECTION AT PARAPET

| BAR SCHEDULE | | | | |
|---|---|---|---|---|
| BAR | No. | SIZE | [illegible] | SHAPE |
| s(E) | 20 | #5 | 2'-10" | — |
| s1(E) | 20 | #5 | 2'-6" | |
| d(E) | 12 | #4 | 3'-2" | |

(E) Denotes Epoxy Coated

NOTES:

Saw Cutting is Considered Incidental to Concrete Removal.

See Parapet Joint Detail on Sheet 5.

In addition to the s(E) and s1(E) bars Shown 2 additional #5 bars shall be Placed at each rail post.

| BILL OF MATERIALS | | |
|---|---|---|
| ITEM | UNIT | QUANTITY |
| Concrete Removal | Cu.Yds. | 1.4 |
| Class X Conc. Super | Cu.Yds. | 1.4 |
| Reinforcement bars, epoxy ctd. | Pound | 162 |
| PROTECTIVE COAT | Sq.Yd. | 6.1 |

PARAPET DETAILS AT ABUTMENTS

| REVISIONS | |
|---|---|
| NAME | DATE |

ILLINOIS DEPARTMENT OF TRANSPORTATION

FAI-80

BRIDGE REHABILITATION

STRUCTURE NO. 099-0065

DECK DETAILS

SCALE: VERT. HORIZ.

DATE

DRAWN BY

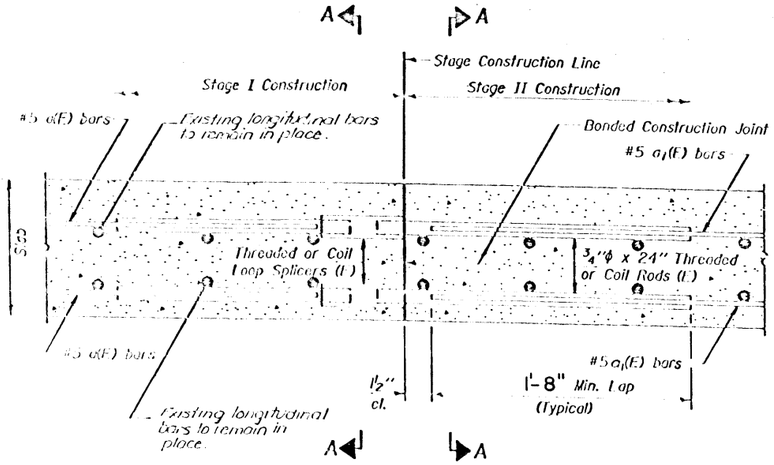
CHECKED BY

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

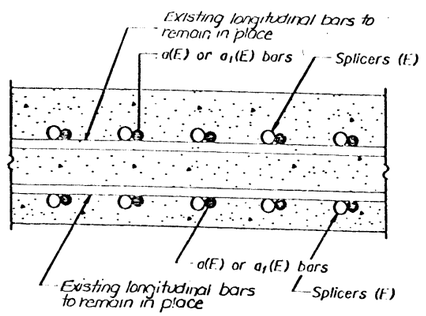
| ROUTE NO. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| F.A.I. FAI-80 | * | WILL | 181 | 170 |
| FED. ROAD DIST. NO. 7 | | ILLINOIS | FED. AID PROJECT | |

*99-4RS-2 & 99-4(B-1, HB, HB-1 & VB) BR BB

SHEET 9 OF 14




SECTION THRU SLAB

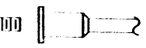



SECTION A-A

SPLICER DETAILS
(No. Req'd. 104)

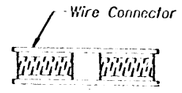
Cost Incidental to Reinforcement Bars (Epoxy Coated)

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



ROLLED THREAD DOWEL BAR

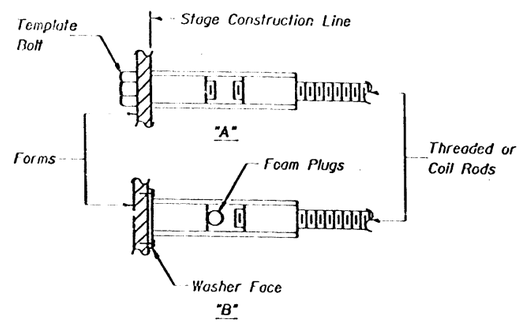
** ONE PIECE




WELDED SECTIONS

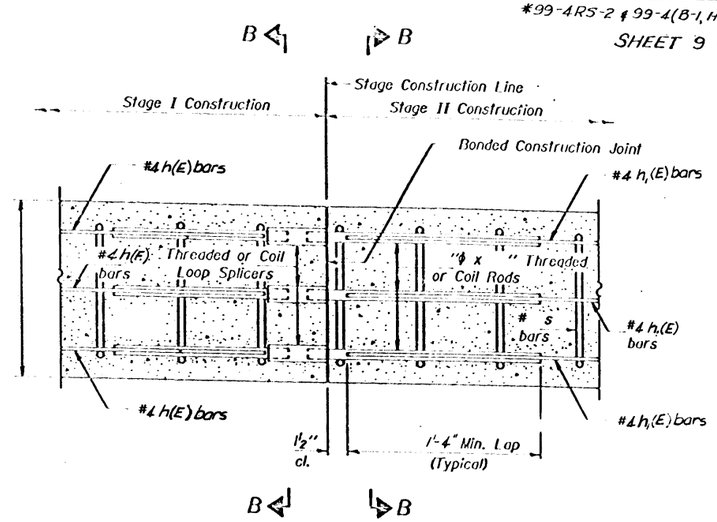
SPLICER ALTERNATIVES

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




INSTALLATION AND SETTING METHODS

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




SECTION THRU ABUTMENTS AND PIERS

NOTES

Steel Splicer (Coupler) assembly shall be of an approved type and shall develop in tension at least 125 percent of the yield strength of the lapped reinforcement bars.

Steel Splicer rods shall be of minimum 60 ksi yield strength, threaded or coiled full length and have effective tensile stress area equal to or greater than that of the lapped reinforcement bars.

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

Splicer (coupler) assembly in the slab shall be epoxy coated in accordance with 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 splicer (coupler) assembly satisfies the following requirements:

(1) Minimum Capacity (Tension in kips) = $1.25 \times f_y \times A_1$

(2) Minimum *Pull-out Strength (Tension in kips) = $1.25 \times f_{s(allow)} \times A_1$

Where $f_y$ = Yield strength of lapped reinforcement bars in ksi.
$f_{s(allow)}$ = Allowable tensile stress in lapped reinforcement bars in ksi (Service Load)
$A_1$ = Tensile stress area of lapped reinforcement bars.
* = 28 day concrete

Typical Splicer (Coupler) Assembly Sizes:

| | | |
|---|---|---|
| In Slabs | #5 bar lap with 3/4"ϕ Splicer (Coupler) x 2' 0" Splicer Rods | Minimum Capacity = 23.0 kips-tension<br>Minimum Pull-out Strength = 9.2 kips-tension |
| | #6 bar lap with 13/8"ϕ Splicer (Coupler) x 2' 4" Splicer Rods | Minimum Capacity = kips-tension<br>Minimum Pull-out Strength = kips-tension |
| In Sub-Structure | #7 bar lap with 1"ϕ Splicer (Coupler) x 3'-3" Splicer Rods | Minimum Capacity = 45.1 kips-tension<br>Minimum Pull-out Strength = 18.0 kips-tension |
| | #8 bar lap with 1 1/8"ϕ Splicer (Coupler) x 4'-6" Splicer Rods | Minimum Capacity = 58.9 kips-tension<br>Minimum Pull-out Strength = 23.6 kips-tension |

| | |
|---|---|
| DESIGNED | EXAMINED |
| CHECKED | PASSED — ENGINEER OF BRIDGE DESIGN |
| DRAWN | APPROVED — ENGINEER OF BRIDGES AND STRUCTURES |
| CHECKED | ENGINEER OF BRIDGES AND STRUCTURES |

BSD-1 5-1-89

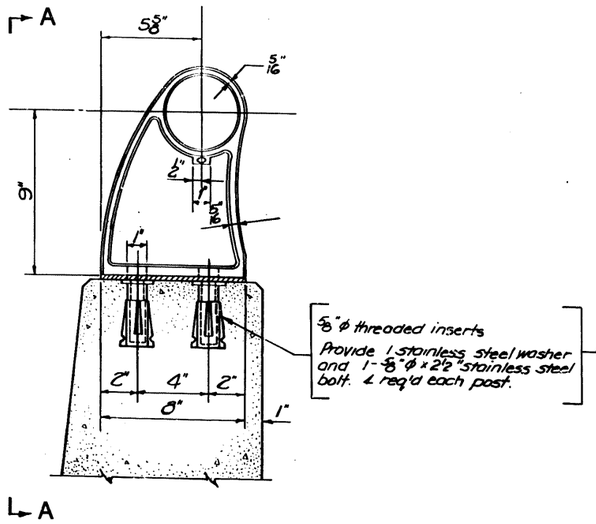
ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I.-80
BRIDGE REHABILITATION
STRUCTURE NO. 099-0065
BAR SPLICER (COUPLER) DETAILS AT STAGE CONSTRUCTION

SCALE: VERT. HORIZ. DRAWN BY
DATE CHECKED BY

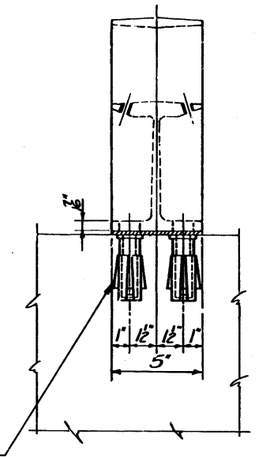
| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| I-80 | | WILL. | 181 | 171 |
| STA. | | TO STA | | |
| FED. ROAD DIST. NO. 7 | ILLINOIS | FED. A.I. PROJECT | | |

99-4RS-2 & 99-4(B-1, HB, HB-1 & VB)BR-88

SHEET 10 OF 14



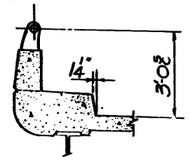

SECTION AT RAIL POST




5/8"ϕ threaded inserts
Provide 1 stainless steel washer and 1-5/8"ϕ x 2 1/2" stainless steel bolt. 4 req'd each post.

VIEW A-A

The Removal and Remounting of the existing handrail shall be incidental to Concrete Removal.




SECTION THRU CURB

REMOVAL AND REMOUNTING OF HANDRAIL

| REVISIONS | |
|---|---|
| NAME | DATE |
| | |
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| | |

ILLINOIS DEPARTMENT OF TRANSPORTATION

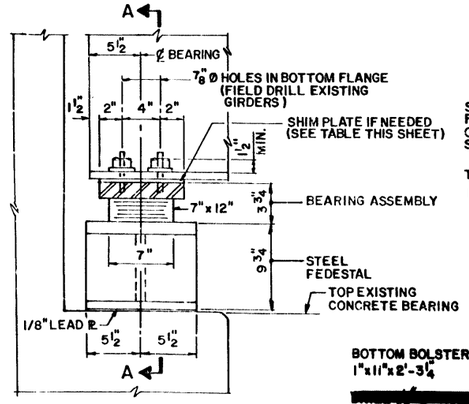
F.A.I. - 80
BRIDGE REHABILITATION
STRUCTURE NO. 099-0065
REMOVAL AND REMOUNTING OF HANDRAIL

SCALE: VERT. HORIZ.

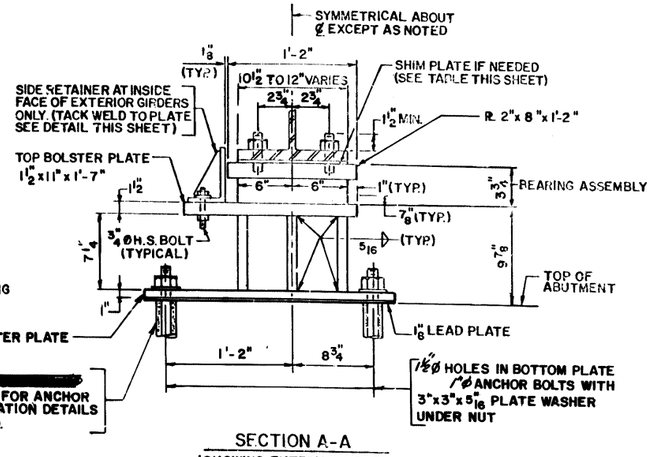
DRAWN BY

DATE

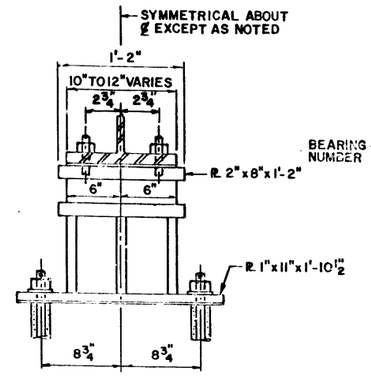
CHECKED BY



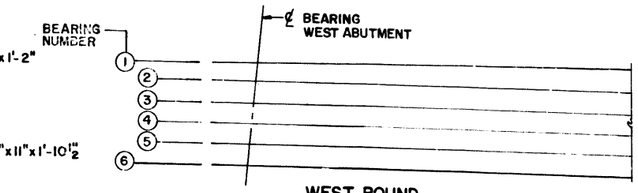

ELEVATION AT ABUTMENT



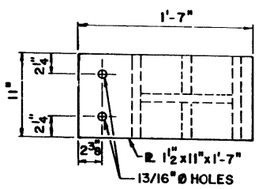

SECTION A-A
(SHOWING EXTERIOR GIRDER)



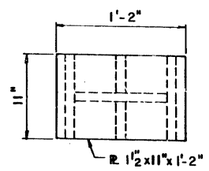

SECTION A-A
(SHOWING INTERIOR GIRDER)




WEST BOUND
NORTH BRIDGE
(WEST ABUTMENT ONLY)



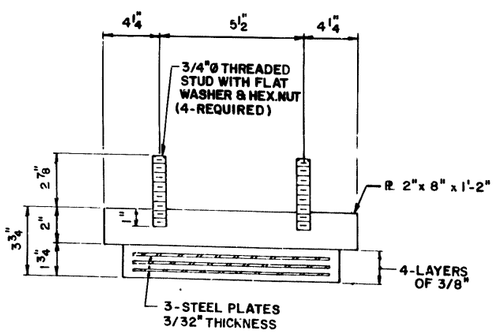

PLAN
TOP PLATE




PLAN
TOP PLATE

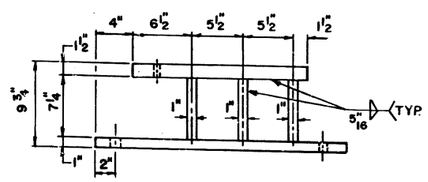
NORTH BRIDGE (WEST BOUND)

| BEARING NUMBER | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| THICKNESS OF SHIM PLATE | 0 | 3/16" | 15/16" | 7/8" | 0 | 0 |

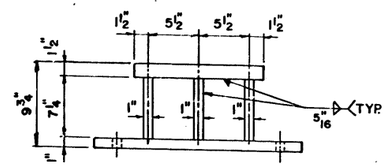



BEARING ASSEMBLY
F.A.I-80 OVER RICHARDS STREET
WEST ABUTMENT OF NORTH BRIDGE

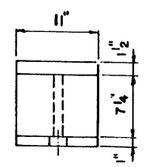
TYPE I
ELASTOMERIC EXPANSION BEARING



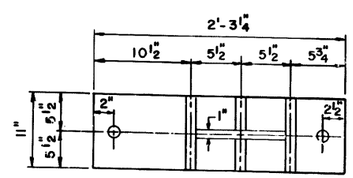

ELEVATION
(SHOWING EXTERIOR PEDESTAL)



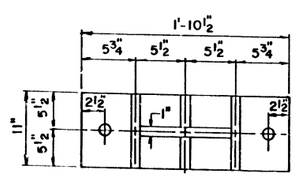

ELEVATION
(SHOWING INTERIOR PEDESTAL)



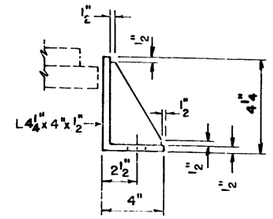

END VIEW
(TYPICAL)



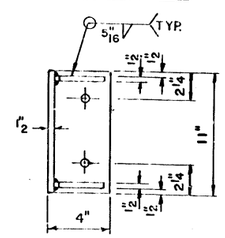

PLAN
BOTTOM PLATE




PLAN
BOTTOM PLATE




ELEVATION




PLAN

SIDE RETAINER

BILL OF MATERIAL

| ITEM | UNIT | TOTAL |
|---|---|---|
| ELASTOMERIC BEARING ASSEMBLY TYPE I | EACH | 6 |
| JACK AND REMOVE EXISTING BEARINGS | EACH | 6 |
| FURNISHING AND ERRECTING STRUCTURAL STEEL | LBS | 1516 |

NOTES:

BOLSTER ASSEMBLY HEIGHT OF 9¾" DOES NOT INCLUDE SHIM PLATE THICKNESS.

FOR SHIM PLATE THICKNESSES SEE TABLE THIS SHEET.

SHIM PLATES SHALL NOT BE PLACED UNDER BEARING ASSEMBLY.

EQUIVALENT ROLLED ANGLE WITH STIFFENERS WILL BE ALLOWED IN LIEU OF WELDED PLATES, FOR SIDE RETAINERS.

NEW STEEL PEDESTALS AND ANCHOR BOLTS SHALL BE PAID FOR AS FURNISHING AND ERECTING STRUCTURAL STEEL.

SIDE RETAINERS AND BOLTS SHALL BE INCLUDED IN F&E STRUCTURAL STEEL.

EXISTING ANCHOR BOLTS SHALL BE CUT OFF FLUSH WITH THE CONCRETE SURFACE, GROUND SMOOTH AND SEALED WITH EPOXY. COST INCIDENTAL TO COST OF NEW BEARING ASSEMBLIES.

| REVISIONS | |
|---|---|
| NAME | DATE |
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ILLINOIS DEPARTMENT OF TRANSPORTATION

F.A.I. 80
BRIDGE REHABILITATION
STRUCTURE NO. 099-0065
ELASTOMERIC BEARING

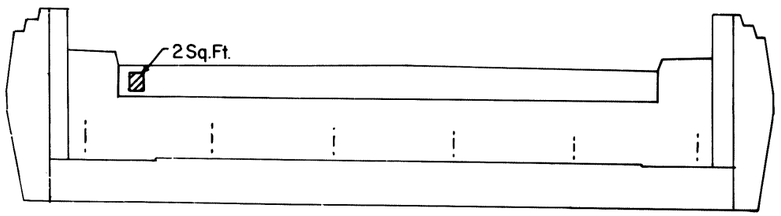
SCALE: VERT. HORIZ. DRAWN BY M.V.T
DATE CHECKED BY

Revised: changed anchor bolt hole size to 1½" & bolt size to 1". 3-22-90 ENR

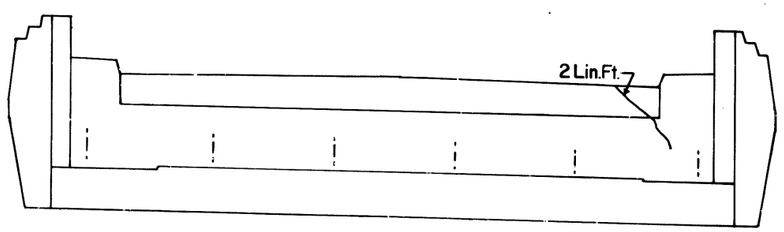
| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 180 | * | WILL | 181 | 173 |
| STA | | TO STA | | |
| FED. ROAD DIST. NO. 7 | ILLINOIS | | | |

*99-4RS-2 & 99-4(B-1,HB,HB-18 & VB)BR-86

SHEET 12 OF 14

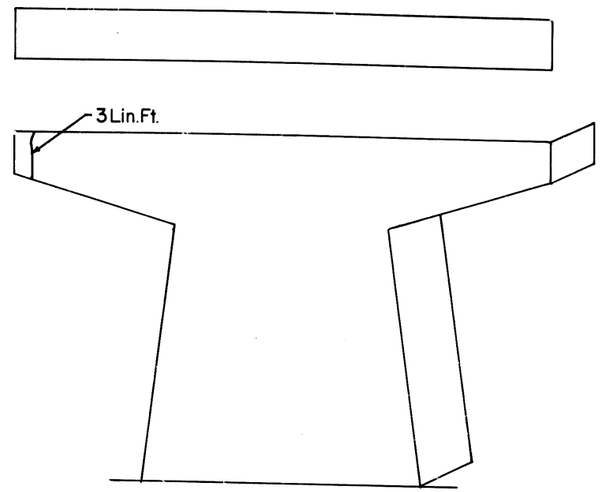



**WEST ABUTMENT**

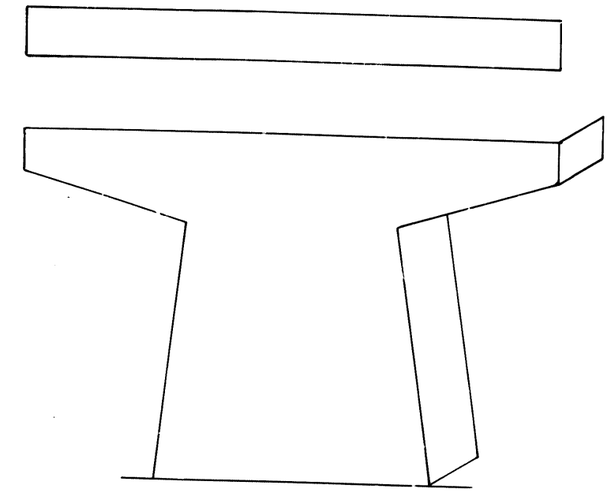



**EAST ABUTMENT**

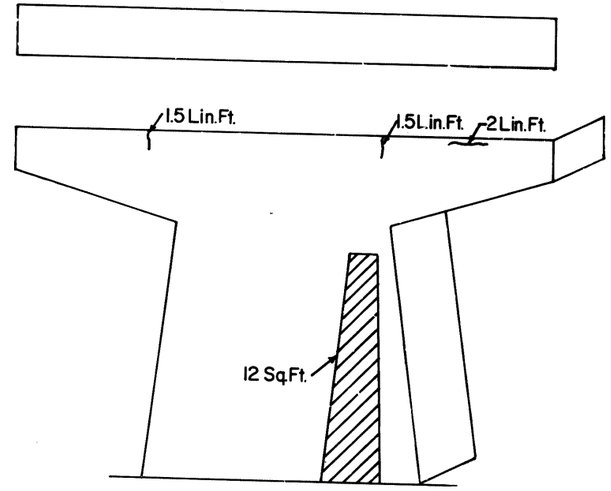
**PIER #1 (EAST FACE)**



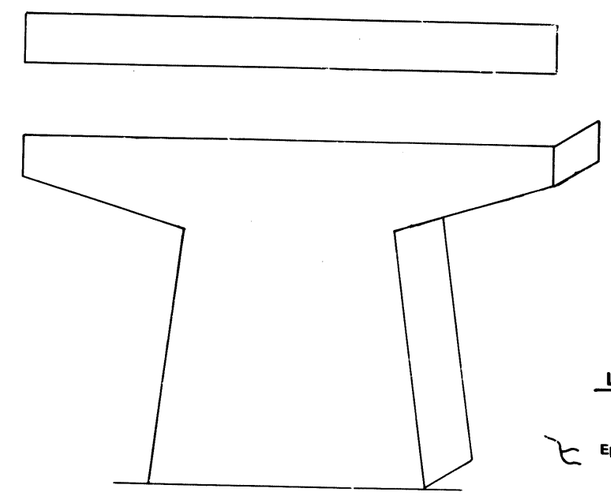

**PIER #2 (EAST FACE)**



**PIER #1 (WEST FACE)**




**PIER #2 (WEST FACE)**



**SUBSTRUCTURE REPAIRS**

**LEGEND**

Epoxy Crack Sealing

FORMED CONCRETE REPAIR

**BILL OF MATERIALS**

| ITEM | UNIT | QUANTITY |
|---|---|---|
| Epoxy Crack Sealing | Lin. Ft. | 10 |
| FORMED CONCRETE REPAIR (DEPTH ≤ 5") | Sq. Ft. | 14 |

| REVISIONS | |
|---|---|
| NAME | DATE |
| | |
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| | |
| | |
| | |

ILLINOIS DEPARTMENT OF TRANSPORTATION

FAI-80
BRIDGE REHABILITATION
STRUCTURE NO. 099-0065

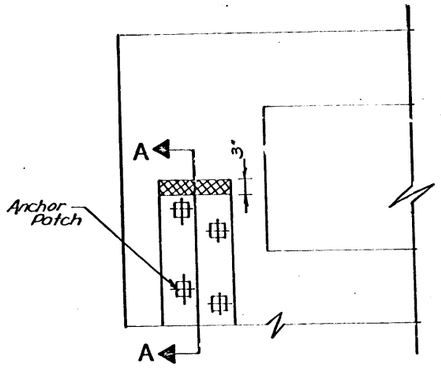
**SUBSTRUCTURE REPAIRS**

SCALE: VERT. HORIZ.

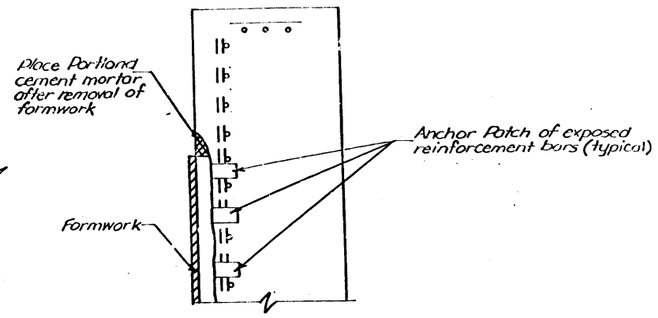
DATE

DRAWN BY C.P.

CHECKED BY

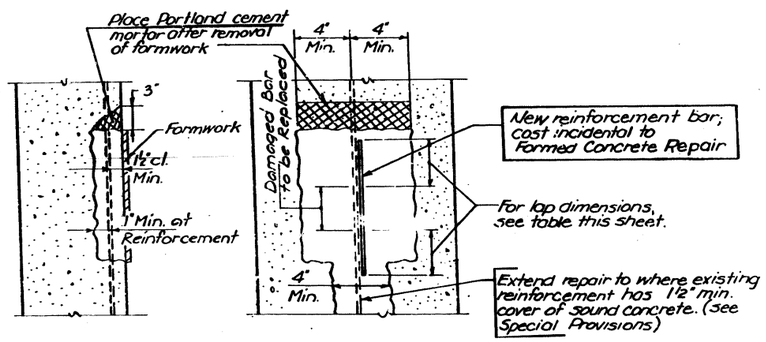



ELEVATION




SECTION A-A

## EPOXY MORTAR REPAIR
(DEPTH 1-1/2")




## FORMED CONCRETE REPAIR DETAIL
## WITH REINFORCEMENT

Notes:
Existing reinforcement having 20% or more of cross-sectional area lost due to corrosion or damaged during concrete removal shall be replaced by new reinforcement lapped as shown or noted.

All formed concrete repair dimensions are approximate.

### LAP DIMENSIONS

| Bar Size | Lap Length |
|---|---|
| #4 | 1'-4" |
| #5 | 1'-8" |
| #6 | 2'-0" |
| #7 | 2'-9" |

| REVISIONS | |
|---|---|
| NAME | DATE |
| | |
| | |
| | |
| | |
| | |

ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. - 80
BRIDGE REHABILITATION
STRUCTURE NO. 099 - 0065

DETAIL OF
FORMED CONCRETE REPAIR

SCALE: VERT. HORIZ.
DRAWN BY
DATE
CHECKED BY

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.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

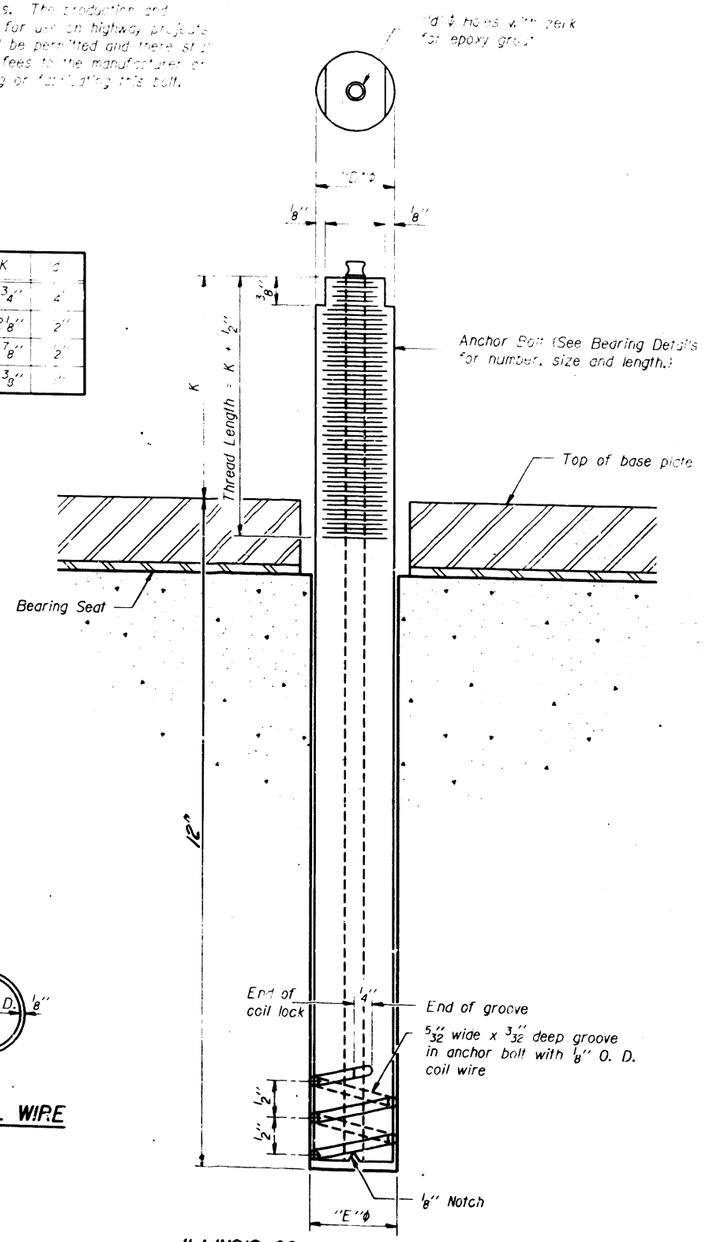
| ROUTE NO. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| S.B.I. F.A. I-80 | * | WILL | 181 | 175 |
| FED. ROAD DIST. NO. | | ILLINOIS | FED. AID PROJECT | |

SHEET NO.
SHEETS

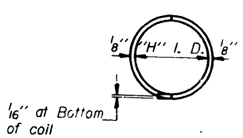
* 99-4RS-2 & 99(3B, 4B-1, 4HB, 4HB-1, & 4VB) BR-88

SHEET 14 OF 14

| D | E | H | K | G |
|---|---|---|---|---|
| 1" | 1/8" | 13/16" | 1 3/4" | 4" |
| 1 1/2" | 1 5/8" | 1 5/16" | 2 1/8" | 2" |
| 2" | 2 1/8" | 1 13/16" | 2 7/8" | 2" |
| 2 1/2" | 2 5/8" | 2 5/16" | 3 3/8" | 2" |




ILLINOIS COIL-LOCK ANCHOR BOLT




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 A519, Grade 1026 and supplied with hexagonal nuts and cut washers.

The coil wire shall be made of any suitable cold drawn 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 C881, Type I, Grade 3 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 in accordance with 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 conforming to ASTM A307.
2. A sealed glass capsule or a sealed glass adhesive cartridge containing premeasured amounts of the adhesive chemical.

## GENERAL NOTES

Holes in the masonry for anchor bolts shall be drilled through the base plates to the diameter and depth shown or in accordance with the manufacturer's recommendations 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".

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EXAMINED
ENGINEER OF BRIDGE DESIGN
PASSED
ENGINEER OF BRIDGES AND STRUCTURES
APPROVED
DIRECTOR OF HIGHWAYS

ABB-1 12-1-83

ANCHOR BOLT DETAILS FOR BEARINGS

Str. No. 099-0065