

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
PLANS FOR PROPOSED  
FEDERAL AID HIGHWAY

INDEX OF SHEETS

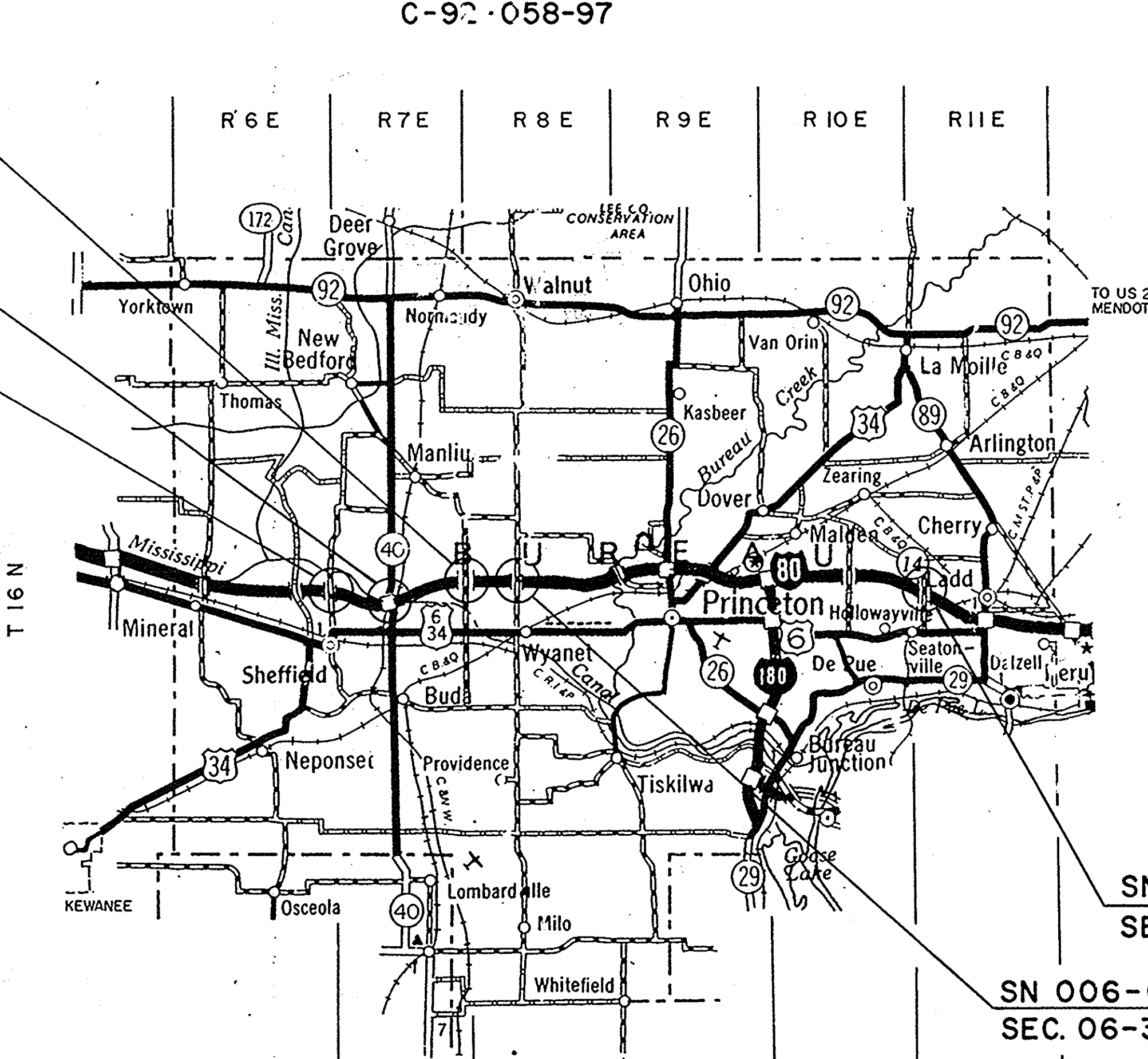
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FAI ROUTE 80 ( I 80 )  
SECTION D-2 BRIDGE PIN REPLACE 1997-1  
BUREAU COUNTY

STANDARDS

- 701201 LANE CLOSURE, 2L, 2W, DAY ONLY ON-RD TO 24" OFF-RD FOR SPEEDS > 45 MPH.
- 701206 LANE CLOSURE, 2L, 2W, NIGHT ONLY ON-RD TO 24" OFF-RD FOR SPEEDS > 45 MPH.
- 701311 LANE CLOSURE, 2L, 2W, MOVING OPERATIONS-DAY ONLY FOR SPEEDS > 45 MPH.
- 701301 LANE CLOSURE, 2L, 2W, SHORT TIME OPERATIONS FOR SPEEDS > 45 MPH.
- 701321 LANE CLOSURE, 2L, 2W, BRIDGE REPAIR WITH BARRIER FOR SPEEDS > 45 MPH.
- 702001 TRAFFIC CONTROL DEVICES.
- 705001 TEMPORARY CONCRETE BARRIER.

SN 006-0123  
SEC. 06-3 HB  
SN 006-0089  
SEC. 06-2 HB-1  
SN 006-0117  
SEC. 06-2 HB



SN 006-0133  
SEC. 06-7 HB-1

SN 006-0112  
SEC. 06-3 HB-1

CONCORD TOWNSHIP  
006-0117 SECTION 7  
006-0089 SECTION 9&10  
006-0123 SECTION 12

WYANET TOWNSHIP  
006-0123 SECTION 7  
006-0112 SECTION 8&9

PRINCETON TOWNSHIP

SELBY TOWNSHIP

HALL TOWNSHIP  
006-0133 SECTION 17&18

"CALL J.U.L.I.F.  
BEFORE YOU DIG"  
800-892-0123

CONTRACT No. 64202

015-4

| RTE.                            | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---------------------------------|---------|--------|--------------|-----------|
| FAI 80                          | *       | BUREAU | 26           | 1         |
| * D-2 BRIDGE PIN REPLACE 1997-1 |         |        |              |           |



LOCATION OF SECTION INDICATED THUS:—

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

SUBMITTED 4/15 1997  
William D. DeLoe DISTRICT ENGINEER

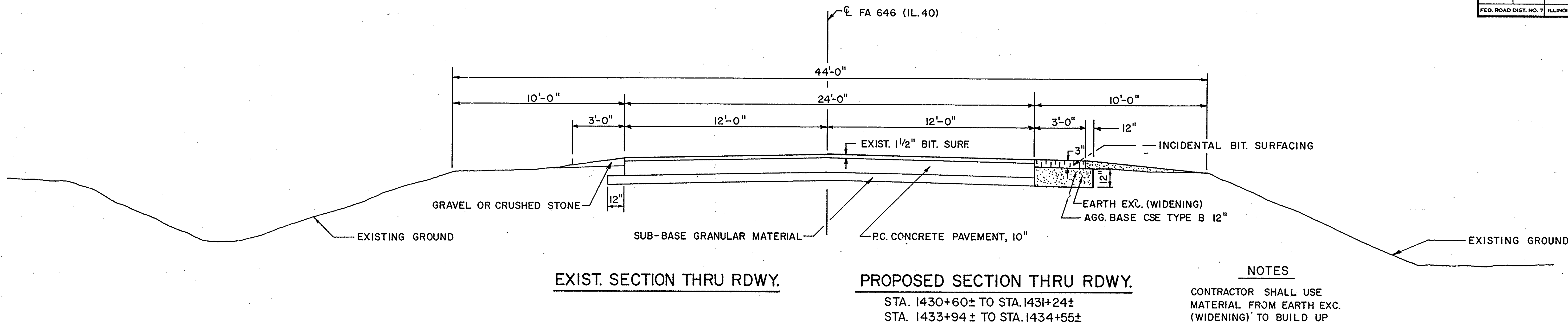
EXAMINED \_\_\_\_\_ 19\_\_\_\_  
ENGINEER OF PLANS AND CONTRACTS

PASSED May 9, 1997  
Bill J. J. J. ENGINEER OF DESIGN

APPROVED May 9, 1997  
James P. Slayton DIRECTOR, DIVISION OF HIGHWAYS

PROJECT ENGINEER: DONALD PAUSER PHONE (618) 284-5398

|                                        |      |        |              |           |
|----------------------------------------|------|--------|--------------|-----------|
| * D-2 BRIDGE PIN REPLACE 1997-1        |      |        |              |           |
| ROUTE NO.                              | SEC. | COUNTY | TOTAL SHEETS | SHEET NO. |
| FAI 80                                 | *    | BUREAU | 26           | 2         |
| FED. ROAD DIST. NO. 7 ILLINOIS PROJECT |      |        |              |           |



## GENERAL NOTES

Project reviewed for traffic control measures.

District Operations Engineer: *[Signature]* Date: *4/1/97*

These structures will retain the same numbers 006-0089, 006-0112, 006-0117, 006-0123, and 006-133.

The contractor shall submit four copies of the required shop drawings for review and approval to the Bureau of Bridges and Structures, 2300 South Dirksen Parkway, Springfield, IL 62764. After approval of initial submittal, the contractor shall submit one set of shop drawings to J. G. Gehler, Engineer of Materials, 126 East Ash Street, Springfield, IL 62706, and eight (8) sets of shop drawings to be distributed to:

District 2 District Engineer (1)  
Fabricator (1)  
Contractor (2)  
Resident Engineer (2)  
District 2 Bureau of Materials (2)

The Contractor shall be responsible for protecting utility property during construction operations as outlined in Article 107.31 of the Standard Specifications. The JULIE number is 800-892-0123. These utilities located within the project limits are immediately adjacent to the project construction limits are members of JULIE. A minimum of 48 hours advance notice is required for non-emergency work.

American Natural Resources Pipeline Co.  
GTE North, Inc.  
Illinois Power Co.  
Natural Gas Pipeline Co. of America  
Northern Illinois Gas Co.  
TCI Cablevision of Rock Falls

These are the known utilities located within the project limits or immediately adjacent to the project construction limits which are not members of JULIE and should be notified individually by the contractor.

Illinois Valley Electric Co-op.  
PO Box 70/West Routes 6 & 34  
Princeton, IL 61356  
815/875-4488

Princeton Municipal Utility Co.  
2 South Main St.  
Princeton, IL 61356  
815/875-4144

## SUMMARY OF QUANTITIES

| CODE NUMBER | ITEM                                           | UNIT    | TOTAL | 100% ST. SFTY-2A |
|-------------|------------------------------------------------|---------|-------|------------------|
| X0301424    | SILICONE JOINT SEALER                          | FOOT    | 275   | 201              |
| Z0002600    | BAR SPLICERS                                   | EACH    | 60    |                  |
| Z0006110    | BRIDGE DECK MICROSILICA CONCRETE OVERLAY       | SQ YD   | 848   | 855.4            |
| X0320530    | CONCRETE BRIDGE DECK SCARIFICATION 1"          | SQ YD   | 848   | 863.2            |
| Z0015970    | DECK SLAB REMOVAL (PARTIAL DEPTH)              | SQ YD   | 35    | 107.48           |
| Z0016001    | DECK SLAB REPAIR (FULL DEPTH, TYPE I)          | SQ YD   | 5     | 1                |
| Z0016002    | DECK SLAB REPAIR (FULL DEPTH, TYPE II)         | SQ YD   | 20    | 29.2             |
| Z0040330    | PIN AND LINK REPLACEMENT                       | EACH    | 32    |                  |
| Z0073400    | TEMPORARY SUPPORT SYSTEM                       | EACH    | 52    |                  |
| Z0200500    | EARTH EXCAVATION (WIDENING)                    | CU YD   | 48    | 46.8             |
| 35102400    | AGGREGATE BASE COURSE, TYPE B 12"              | SQ YD   | 112   | 112.4            |
| 40800040    | INCIDENTAL BITUMINOUS SURFACING                | TON     | 18    | 18               |
| 44000910    | BITUMINOUS CONCRETE REMOVAL (DECK)             | SQ YD   | 901   | 907.4            |
| 50102400    | CONCRETE REMOVAL                               | CU YD   | 41.3  | 38.67            |
| 50300130    | PREFORMED JOINT SEAL 4"                        | FOOT    | 78    | 73.4             |
| 50300225    | CONCRETE STRUCTURES                            | CU YD   | 1.6   |                  |
| 50300255    | CONCRETE SUPER STRUCTURES                      | CU YD   | 41.5  | 38.56            |
| 50300260    | BRIDGE DECK GROOVING                           | SQ YD   | 901   | 894.16           |
| 50500405    | FURNISHING AND ERECTING STRUCTURAL STEEL       | POUND   | 2430  | 2391             |
| 50800205    | REINFORCEMENT BARS, EPOXY COATED               | POUND   | 4150  | 4359.4           |
| 67000400    | ENGINEER FIELD OFFICE, TYPE A                  | CAL. MO | 4     | 2                |
| 70100405    | TRAFFIC CONTROL AND PROTECTION STANDARD 701321 | EACH    | 1     |                  |
| 70100450    | TRAFFIC CONTROL AND PROTECTION STANDARD 701201 | L SUM   | 1     |                  |
| 70100455    | TRAFFIC CONTROL AND PROTECTION STANDARD 701206 | L SUM   | 1     |                  |
| 70106500    | TEMPORARY BRIDGE TRAFFIC SIGNALS               | EACH    | 1     |                  |
| 70300100    | SHORT-TERM PAVEMENT MARKING                    | FOOT    | 254   | 144              |
| 70400100    | TEMPORARY CONCRETE BARRIER                     | FOOT    | 610   |                  |
| 70400200    | RELOCATE TEMPORARY CONCRETE BARRIER            | FOOT    | 624   | 620              |
| 70400300    | TEMPORARY CONCRETE BARRIER, TERMINAL SECTION   | EACH    | 2     |                  |
| 78001110    | PAINT PAVEMENT MARKING-LINE 4"                 | FOOT    | 960   | 2594             |
| 78300100    | PAVEMENT MARKING REMOVAL                       | SQ FT   | 210   | 317.6            |
| X0985600    | PIN REPLACEMENT                                | EACH    | 20    |                  |

DISTRICT NO. 2 DIXON

DESIGNED

DRAWN

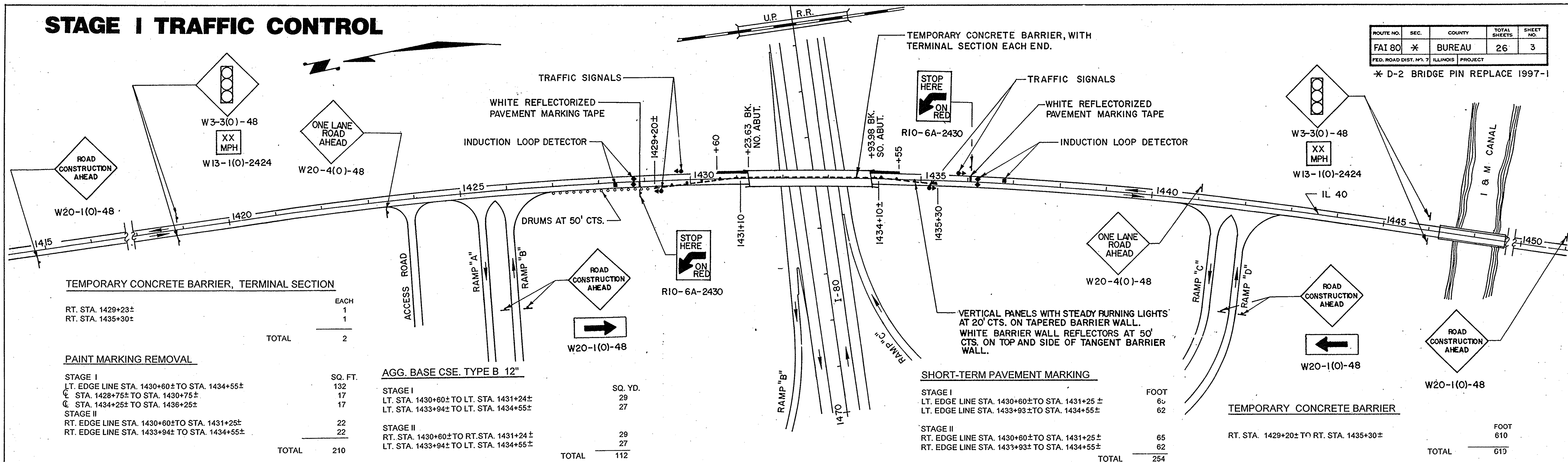
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DATE

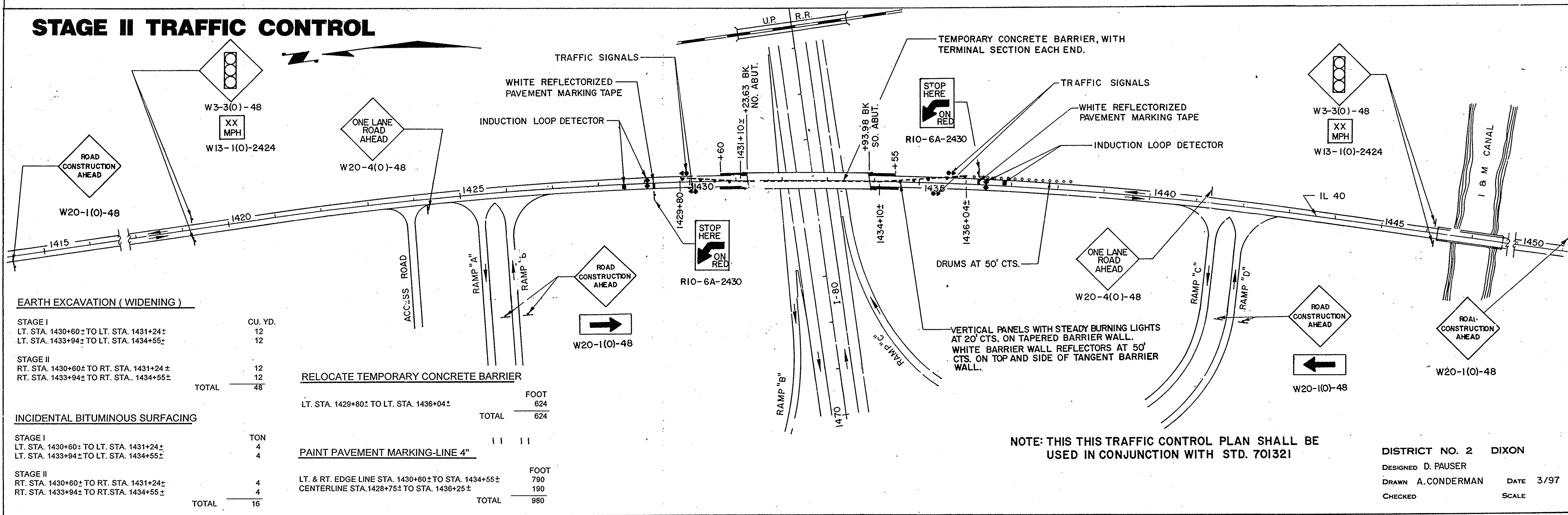
SCALE

REVISED 4/97

# STAGE I TRAFFIC CONTROL



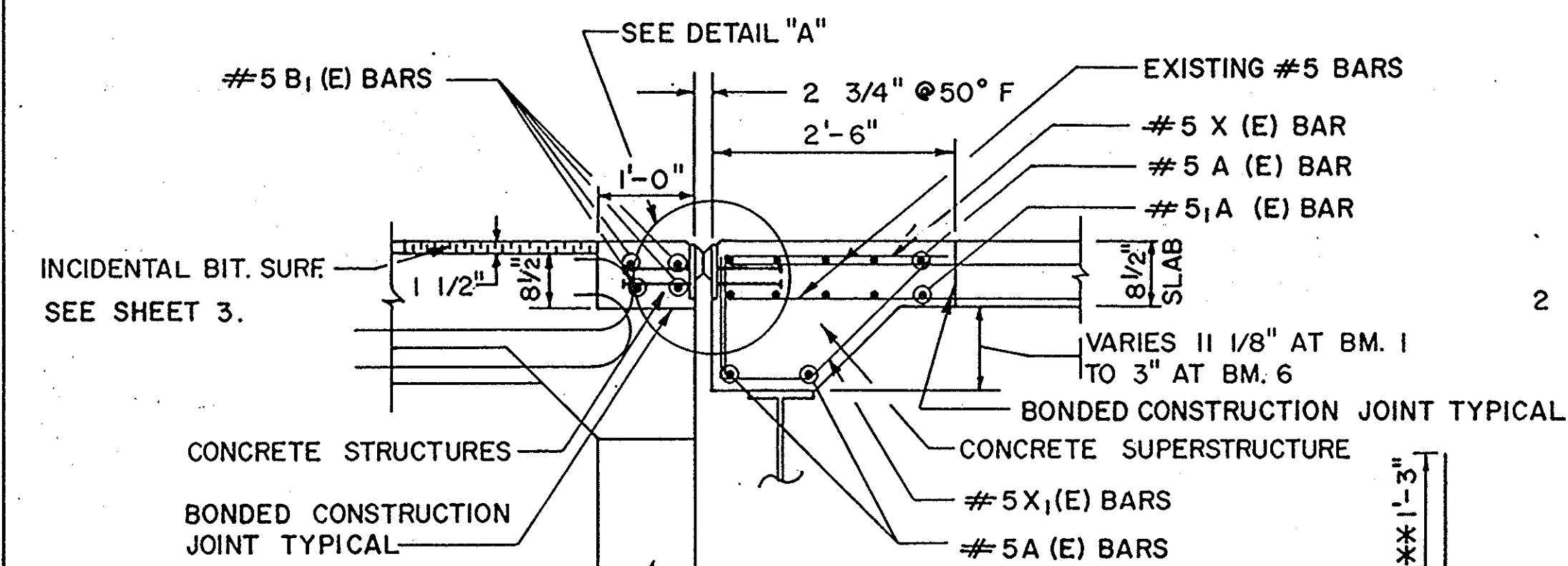
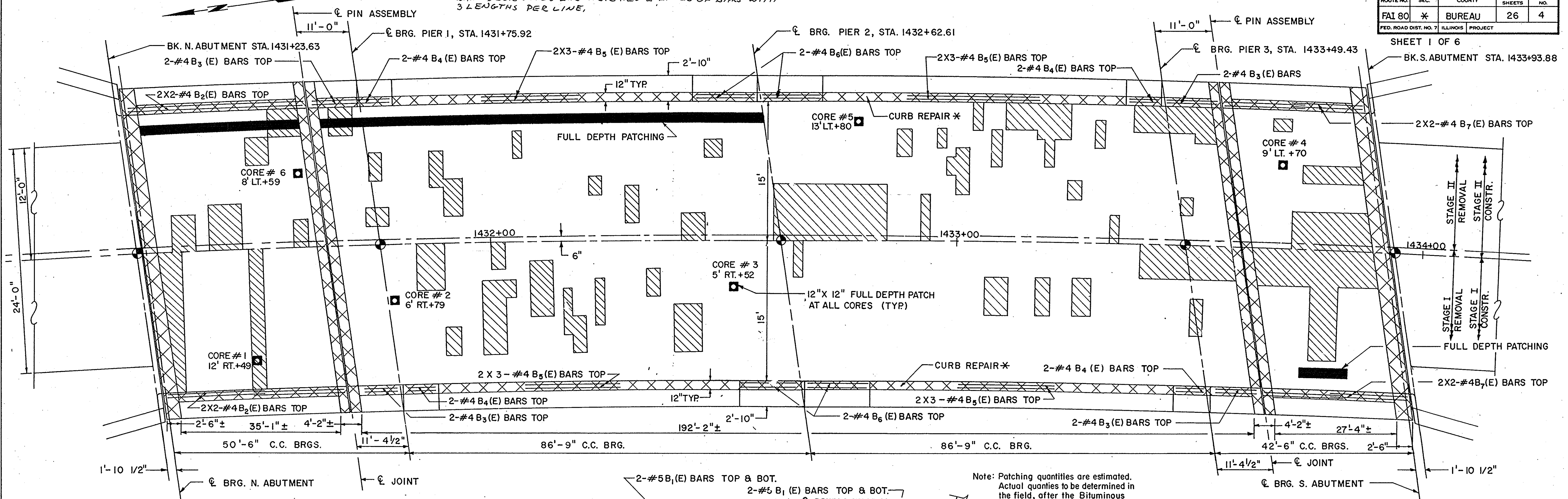
# STAGE II TRAFFIC CONTROL



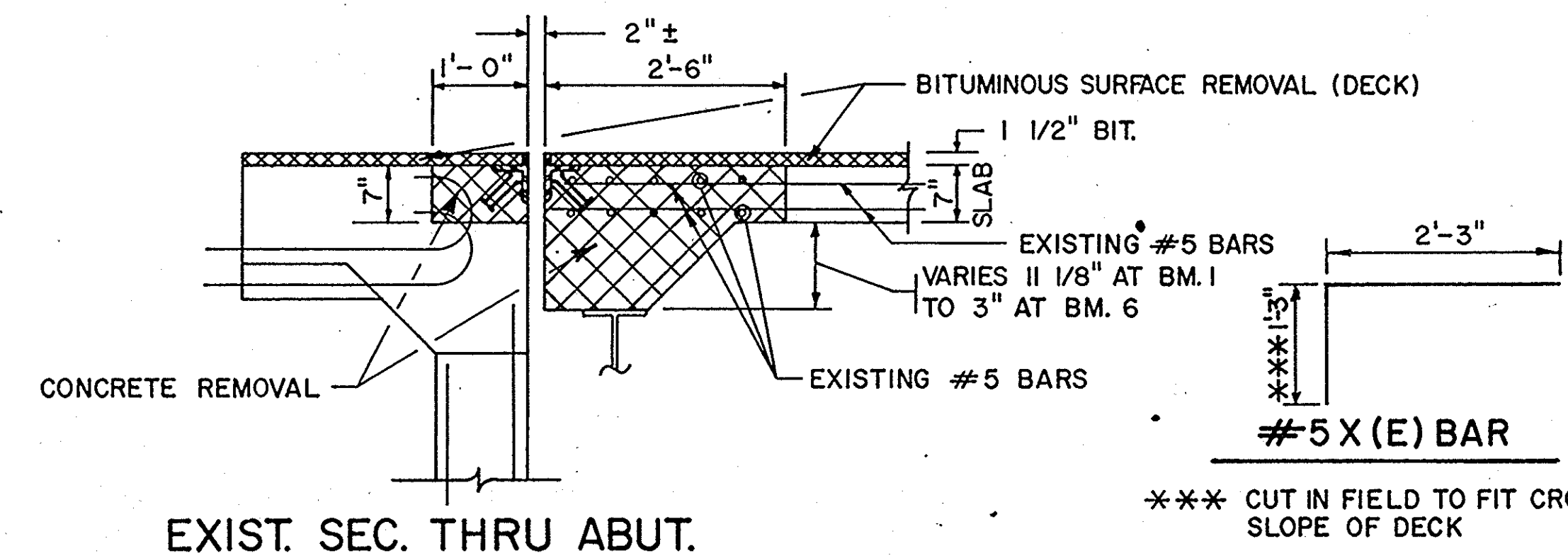
\* FOR CURB REPAIR DETAILS, SEE HALF SECTION DECK SHEET 2 OF 6.  
BARS DESIGNATED 2X3 INDICATES 2 LINES OF BARS WITH 3 LENGTHS PER LINE.

| * D-2 BRIDGE PIN REPLACE 1997-1        |      |        |              |           |
|----------------------------------------|------|--------|--------------|-----------|
| ROUTE NO.                              | SEC. | COUNTY | TOTAL SHEETS | SHEET NO. |
| FAI 80                                 | *    | BUREAU | 26           | 4         |
| FED. ROAD DIST. NO. 7 ILLINOIS PROJECT |      |        |              |           |

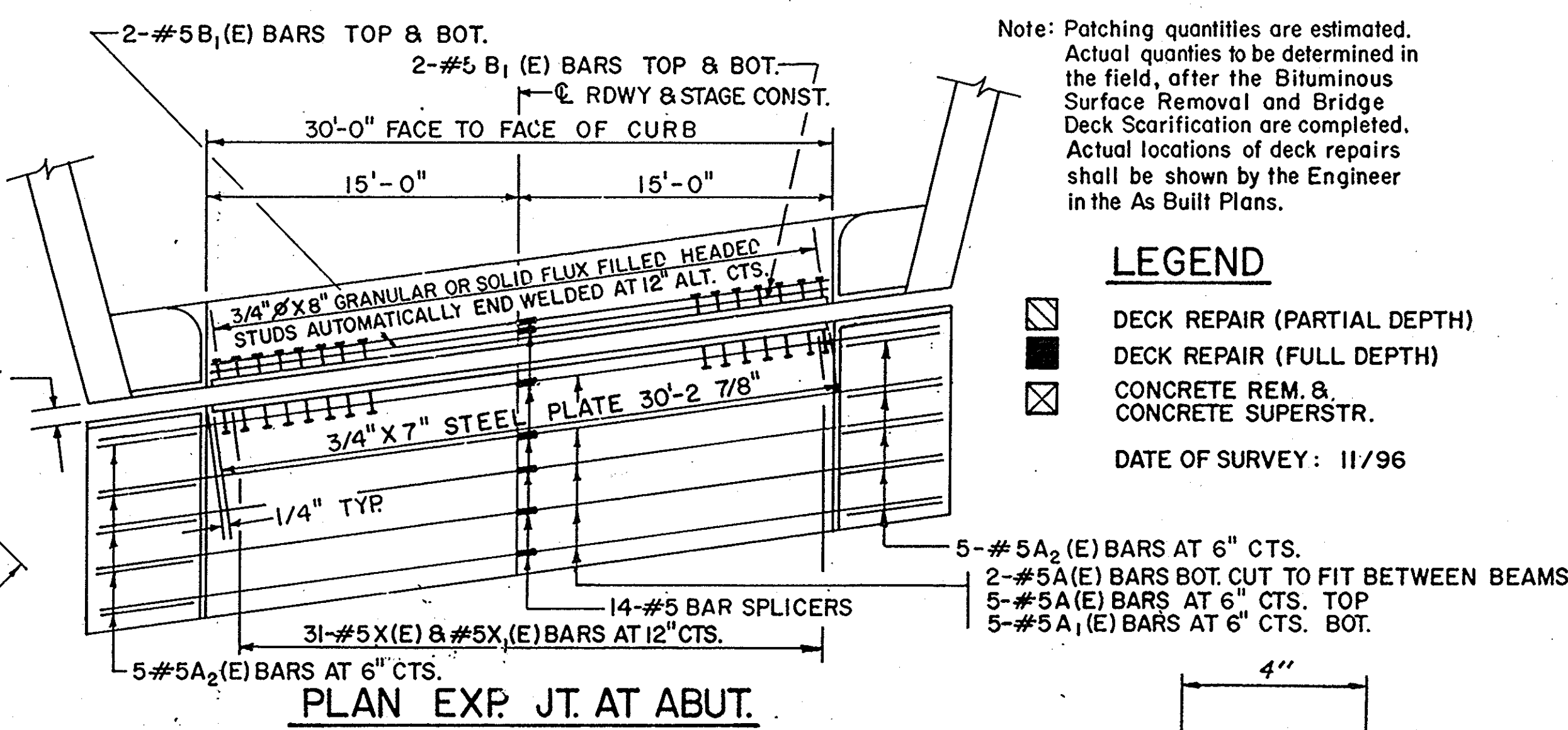
SHEET 1 OF 6



PROP. SEC. THRU ABUTMENT



EXIST. SEC. THRU ABUT.



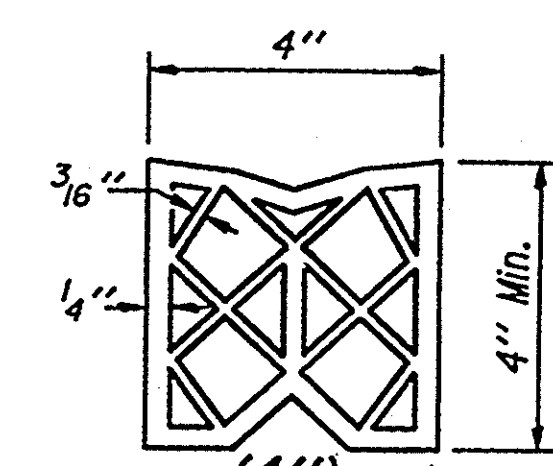
SEC. THRU CURB

Note: Patching quantities are estimated. Actual quantities to be determined in the field, after the Bituminous Surface Removal and Bridge Deck Scarification are completed. Actual locations of deck repairs shall be shown by the Engineer in the As Built Plans.

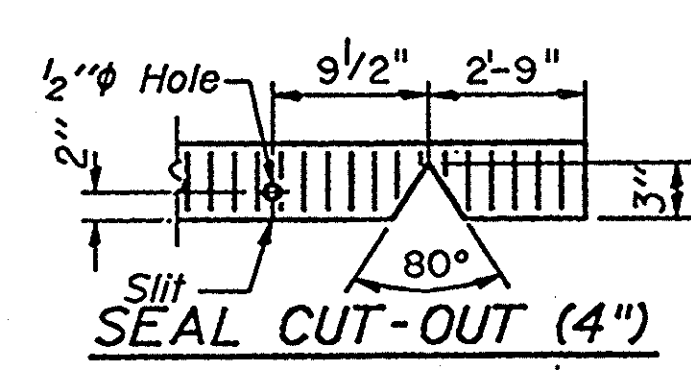
### LEGEND

- DECK REPAIR (PARTIAL DEPTH)
- DECK REPAIR (FULL DEPTH)
- CONCRETE REM. & CONCRETE SUPERSTR.

DATE OF SURVEY: 11/96



PREFORMED JOINT SEAL



### Repair Plans - General Notes

All new structural steel shall conform to AASHTO Classification M-270 Gr. 36. Reinforcement bars shall conform to the requirements of AASHTO M-31, M-42 or M-53 Grade 60.

Prior to pouring the new concrete for the deck, all loose rust, loose mill scale and all other loose, detrimental foreign material shall be removed from the portions of flanges of stringers in contact with concrete. The removal shall be accomplished according to the requirements of the SSPC Surface Preparation Specifications SP-3 for power tool cleaning or SP-2 for hand tool cleaning. Cost shall be included in the cost of "Concrete Superstructure".

Plan dimensions and details relative to existing structure have been taken from existing plans and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in the scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.

Joint plates and attached bars shall be shop painted with the inorganic zinc rich primer. No field paint required.

Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system. Cost shall be included in the cost of "Concrete Removal".

Existing longitudinal reinforcement extending into the removed area shall be cleaned, straightened and incorporated into the new construction. Existing transverse reinforcement may be cut as shown and removed.

See sheet #3 of 6 for additional notes.

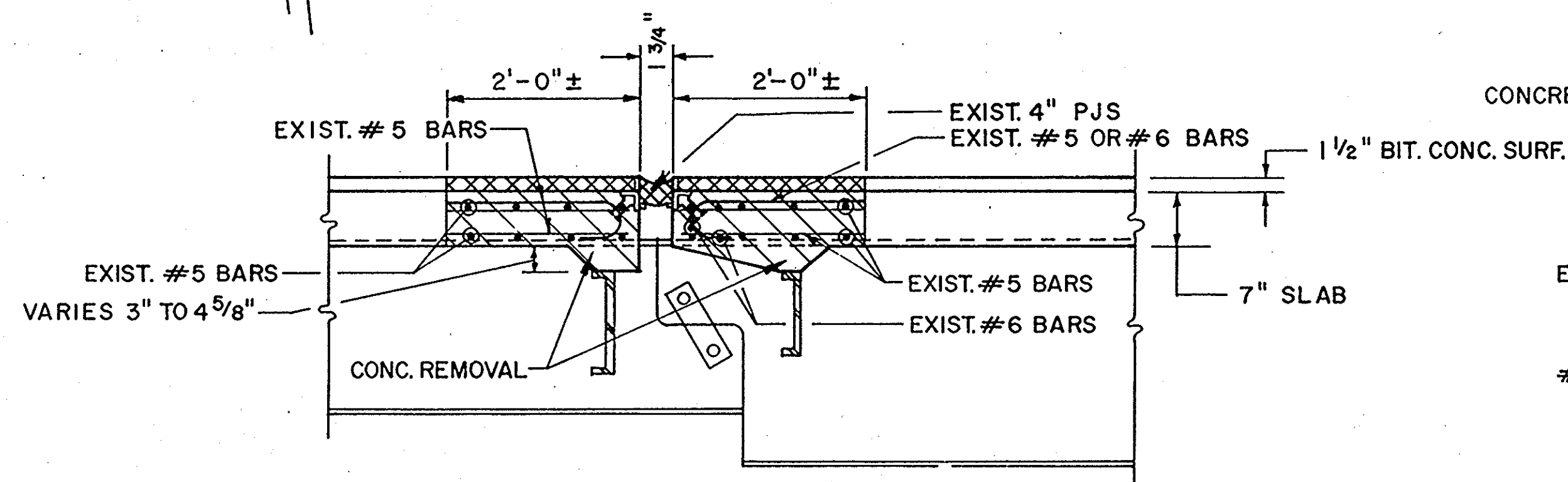
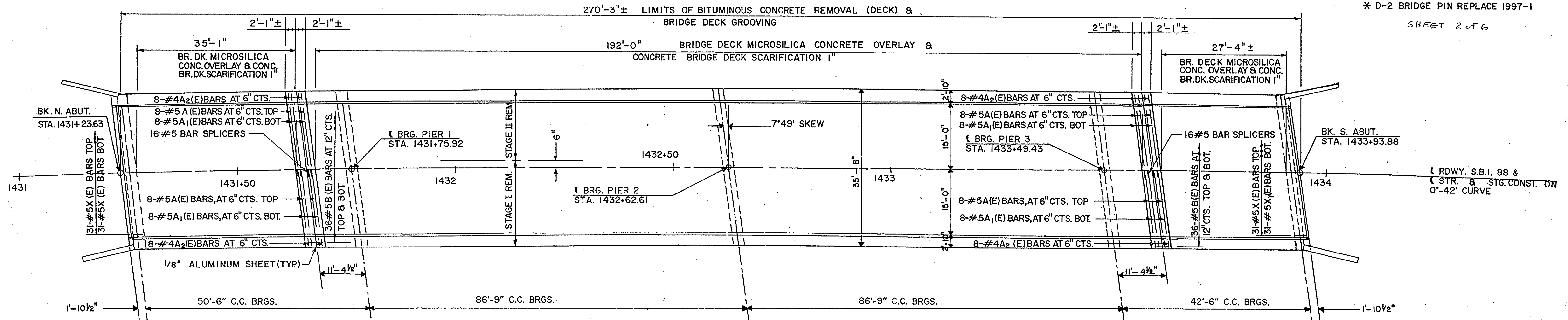
SN 006-0089  
DISTRICT NO. 2 DIXON  
DESIGNED D. PAUSER  
DRAWN A. CONDERMAN DATE 3/97  
CHECKED SCALE

REVISED 4/97

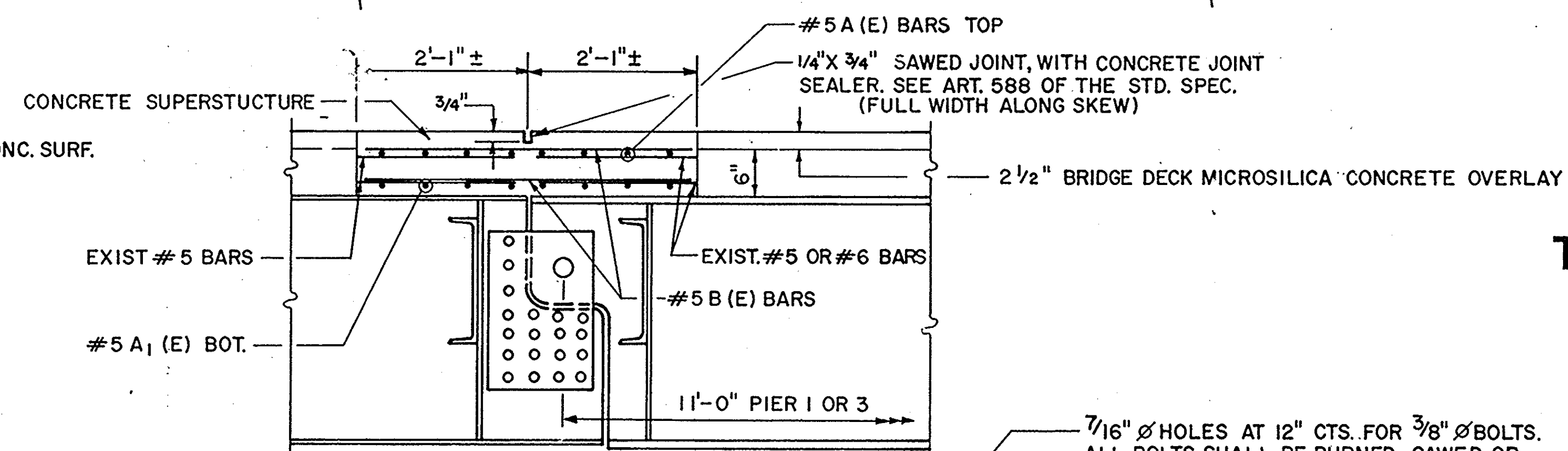
| ROUTE NO.                              | SEC. | COUNTY | TOTAL SHEETS | SHEET NO. |
|----------------------------------------|------|--------|--------------|-----------|
| FAI 80                                 | *    | BUREAU | 26           | 5         |
| FED. ROAD DIST. NO. 7 ILLINOIS PROJECT |      |        |              |           |

\* D-2 BRIDGE PIN REPLACE 1997-1

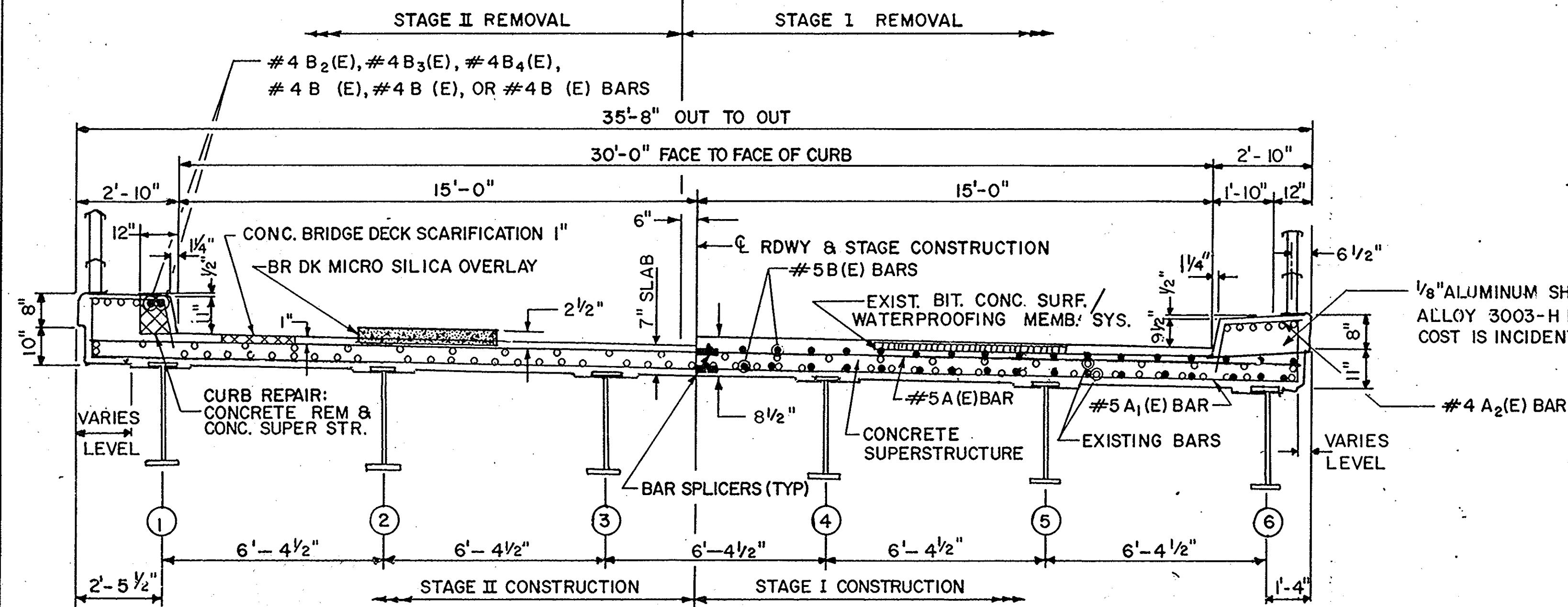
SHEET 2 OF 6



EXISTING SECTION THRU DECK AT PIN ASSEMBLY

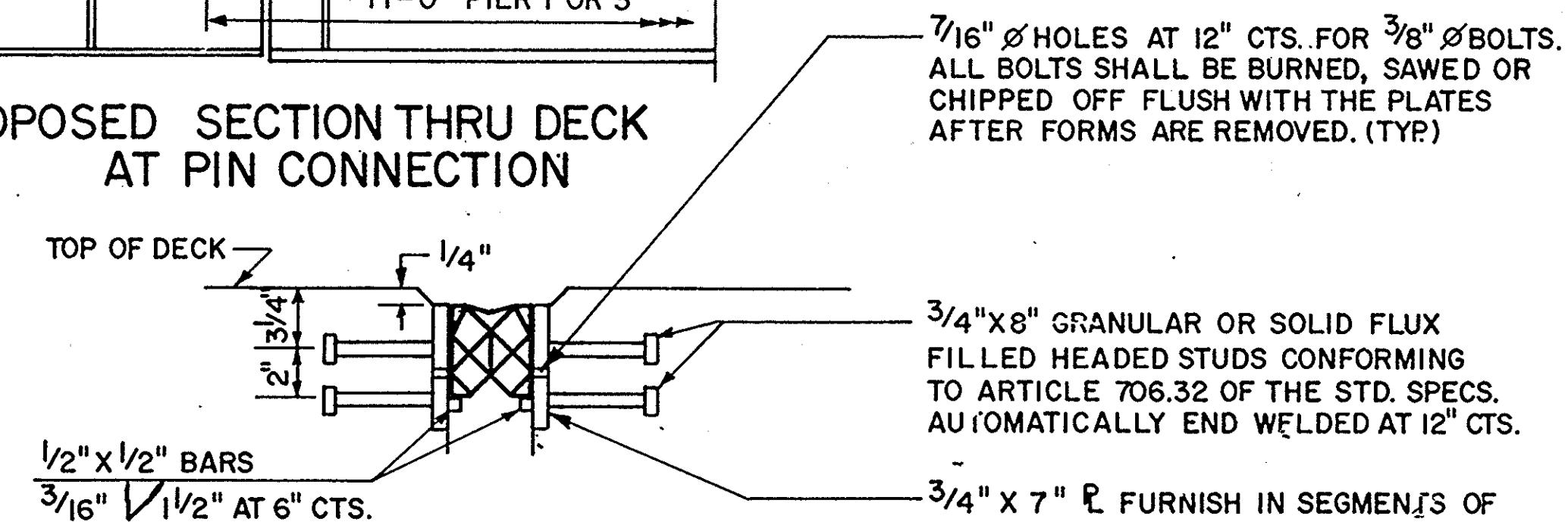


PROPOSED SECTION THRU DECK AT PIN CONNECTION



TYP. HALF SECTION OF DECK

TYP. HALF SECTION OF DECK THRU PIN CONNECTION



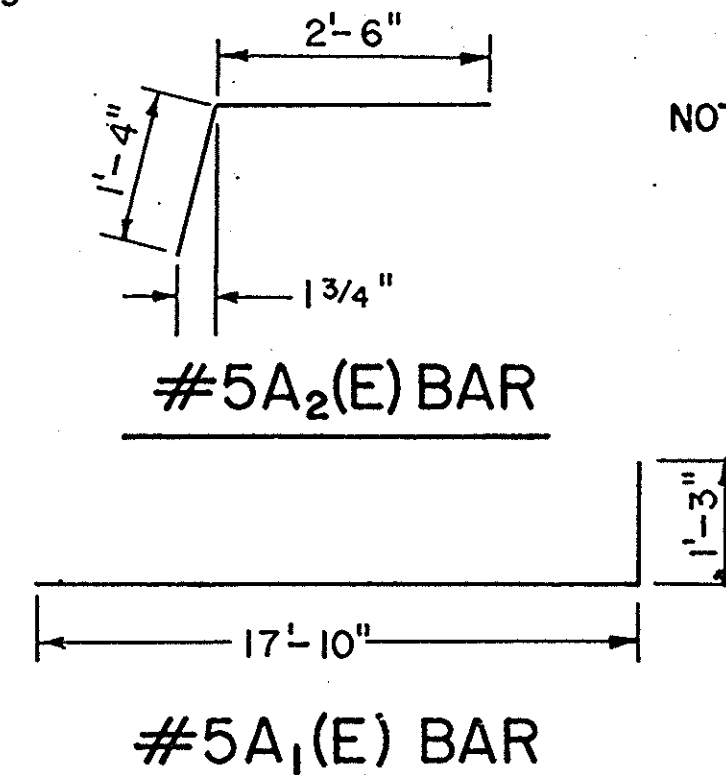
DETAIL A

7/16" Ø HOLES AT 12" CTS. FOR 3/8" Ø BOLTS. ALL BOLTS SHALL BE BURNED, SAWED OR CHIPPED OFF FLUSH WITH THE PLATES AFTER FORMS ARE REMOVED. (TYP)

3/4" x 8" GRANULAR OR SOLID FLUX FILLED HEADED STUDS CONFORMING TO ARTICLE 706.32 OF THE STD. SPECS. AUTOMATICALLY END WELDED AT 12" CTS.

3/4" x 7" P. 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.

NOTE: AFTER FABRICATION, ALL SURFACES OF THE STEEL PLATES SHALL BE GIVEN ONE SHOP COAT OF PAINT SPECIFIED FOR STRUCTURAL STEEL. NO FIELD PAINTING REQUIRED.



## TOTAL BILL OF MATERIALS

| BAR                            | No. | SIZE | LENGTH  | SHAPE | UNIT    | QTY. |
|--------------------------------|-----|------|---------|-------|---------|------|
| A (E)                          | 52  | #5   | 17'-10" |       | CU. YD. | 41.3 |
| A (E)                          | 52  | #5   | 19'-1"  |       | SQ. YD. | 901  |
| A (E)                          | 52  | #5   | 3'-10"  |       | CU. YD. | 1.6  |
| B (E)                          | 144 | #5   | 4'-0"   |       | CU. YD. | 41.5 |
| B (E)                          | 8   | #5   | 15'-0"  |       | POUND   | 4150 |
| B (E)                          | 8   | #4   | 20'-7"  |       | EACH    | 60   |
| B (E)                          | 8   | #4   | 11'-0"  |       | POUND   | 2430 |
| B (E)                          | 8   | #4   | 7'-3"   |       | FOOT    | 75   |
| B (E)                          | 24  | #4   | 22'-6"  |       | SQ. YD. | 848  |
| B (E)                          | 8   | #4   | 13'-9"  |       | SQ. YD. | 848  |
| B (E)                          | 8   | #4   | 16'-9"  |       | SQ. YD. | 35   |
| X (E)                          | 62  | #5   | 3'-6"   |       | SQ. YD. | 5    |
| X (E)                          | 62  | #5   | 3'-9"   |       | SQ. YD. | 20   |
| CONC. REMOVAL                  |     |      |         |       | CU. YD. | 41.3 |
| BIT. CONC. REMOVAL (DECK)      |     |      |         |       | SQ. YD. | 901  |
| CONCRETE STRUCTURES            |     |      |         |       | CU. YD. | 1.6  |
| CONCRETE SUPERSTRUCTURE        |     |      |         |       | CU. YD. | 41.5 |
| REINFOR. BARS EPOXY COATED     |     |      |         |       | POUND   | 4150 |
| BAR SPLICERS                   |     |      |         |       | EACH    | 60   |
| F & E STRUCTURAL STEEL         |     |      |         |       | POUND   | 2430 |
| PREFORMED JOINT SEAL 4"        |     |      |         |       | FOOT    | 75   |
| CONC. BR. DK. SCARIFICATION 1" |     |      |         |       | SQ. YD. | 848  |
| BR. DK. MICRO. CON. OVLY       |     |      |         |       | SQ. YD. | 848  |
| DECK SLAB REP. (PARTIAL)       |     |      |         |       | SQ. YD. | 35   |
| DECK SLAB REP. (FD - TI)       |     |      |         |       | SQ. YD. | 5    |
| DECK SLAB REP. (FD - TII)      |     |      |         |       | SQ. YD. | 20   |
| BRIDGE DECK GROOVING           |     |      |         |       | SQ. YD. | 901  |
| TEMP. SUPPORT SYS.             |     |      |         |       | EA.     | 12   |
| PIN & LINK PL REPL.            |     |      |         |       | EA.     | 12   |

SN 006-0089

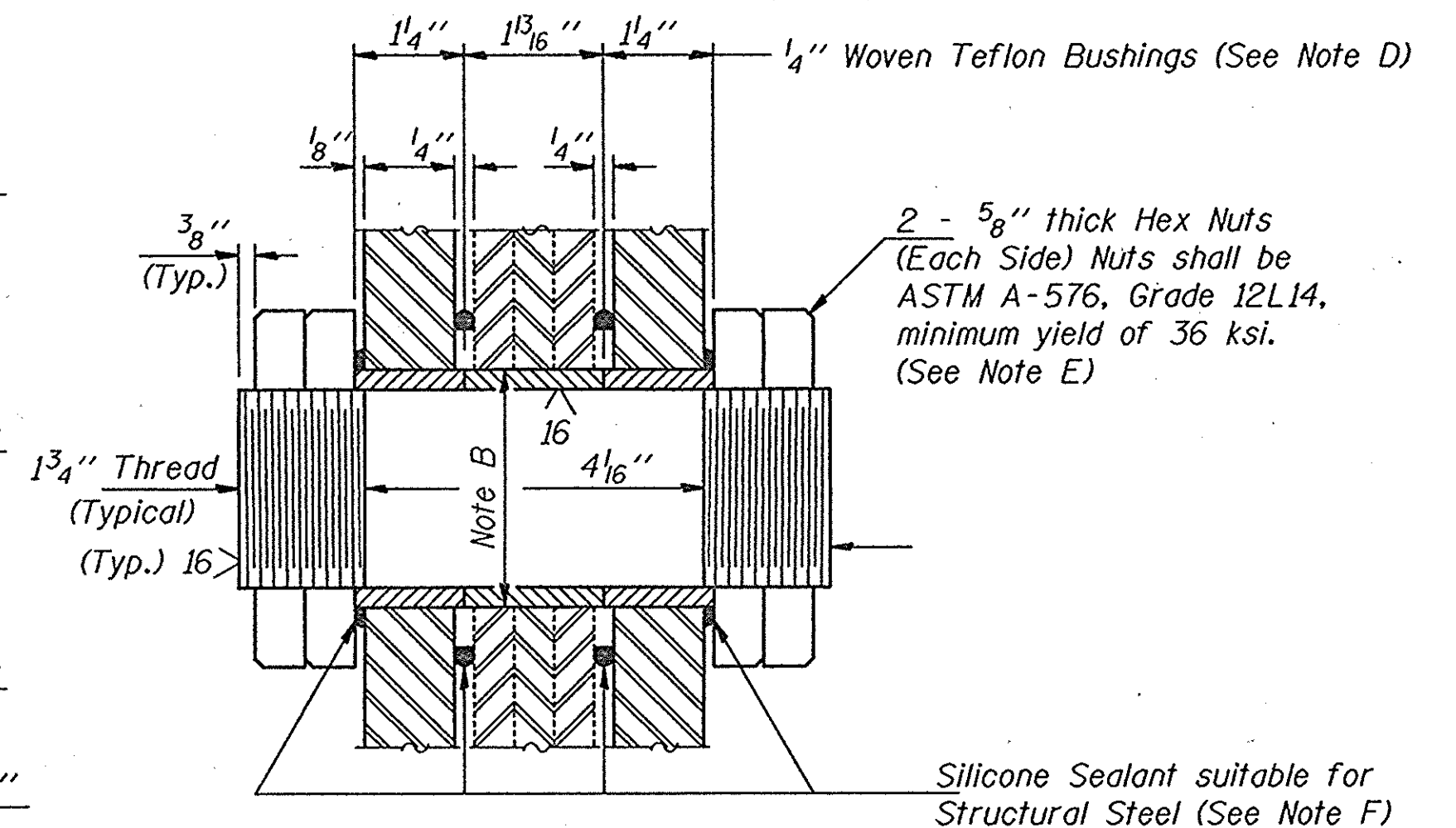
DISTRICT NO. 2 DIXON

DESIGNED D. PAUSER

DRAWN A. CONDERMAN DATE 1/97

CHECKED SCALE

REVISED 4/97



FILL PLATE DETAIL  
(24 Required)

### GENERAL NOTES

All new structural steel shall conform to AASHTO Classification M-270 Gr. 36, unless otherwise noted.

All new fasteners shall be high strength bolts. Holes shall be subpunched or subdrilled  $\frac{1}{16}$ "  $\phi$  and reamed in the field to  $\frac{1}{16}$ "  $\phi$  for  $\frac{3}{4}$ "  $\phi$  high strength bolts unless otherwise noted after structural steel sections are properly fitted into position.

The Contractor shall provide support and/or shoring systems for the beam in the area of existing pin and link plate replacement. See Special Provisions for "Temporary Support System."

The inorganic zinc rich primer/acrylic/acrylic paint system shall be used for shop and field painting of new structural steel except where otherwise noted. The color of the acrylic finish coat shall be Interstate Green, Munsell No. 7.5G 4/8. See Special Provisions "Cleaning and Painting New Metal Structures". Cost shall be included in the cost of "Pin and Link Plate Replacement".

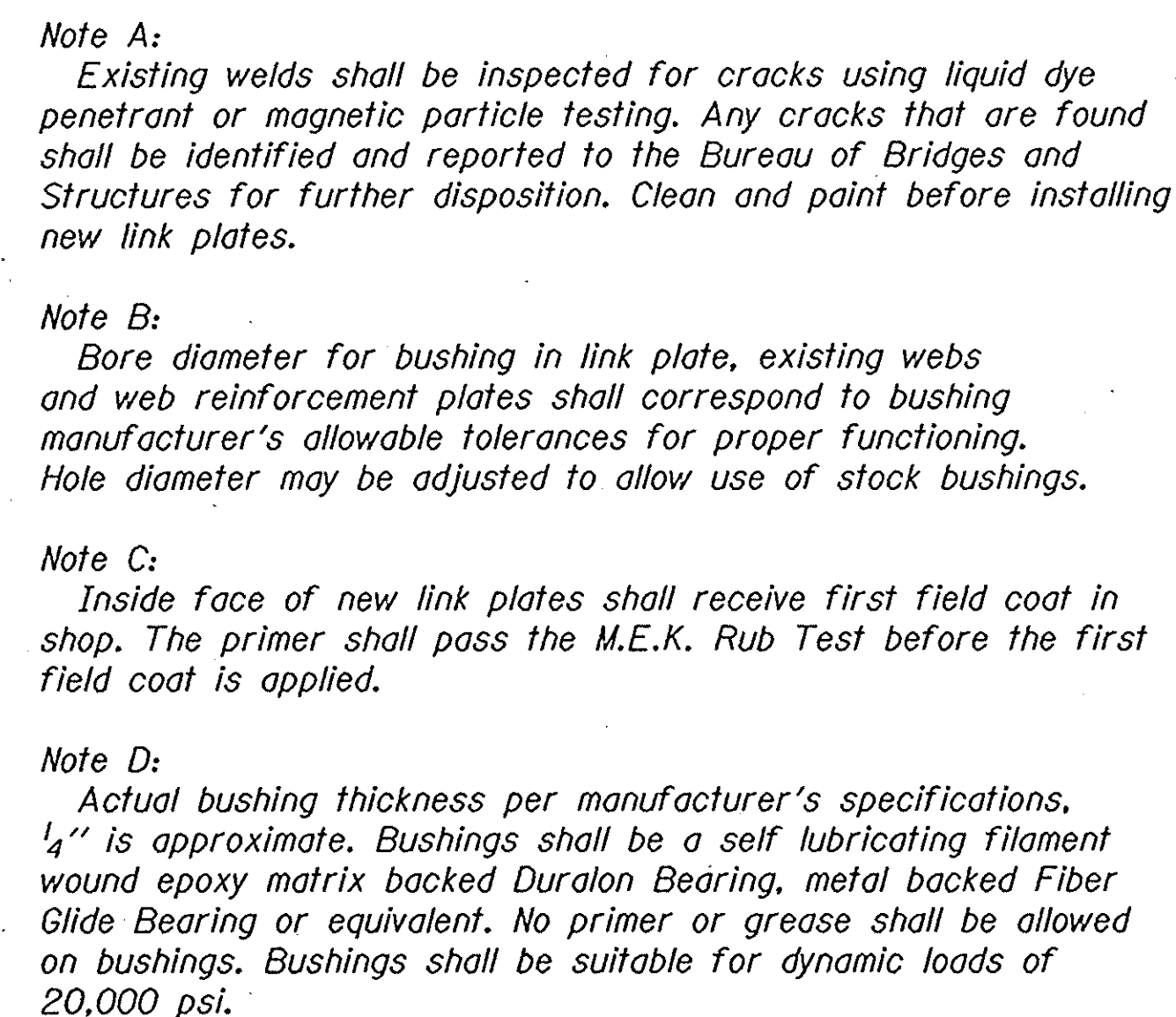
Existing Structural steel shall be cleaned and painted as required by the Special Provision "Cleaning and Painting Adjacent Areas of Existing Steel Structures". Cost shall be included in the cost of "Pin and Link Plate Replacement".

All existing steel surfaces behind link plates shall be cleaned and primed before installation of new link plates. Cost shall be included in the cost of "Pin and Link Plate Replacement."

Plan dimensions and details relative to existing structure have been taken from existing plans and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field, except the pin diameters, and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in the scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.

The Pins and Link Plates shall conform to the minimum Charpy V-Notch Toughness of 25 ft.-lbs. at 40° F.

The pins, link plates, fill plates, bushings, nuts, silicone sealant and high strength bolts are the items included in "Pin and Link Plate Replacement".

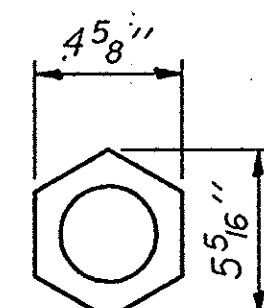


ELEVATION AT NEW PIN ASSEMBLY  
FOR EXTERIOR BEAMS

*Note E:*  
Tighten inside nuts to bring all bushings into firm contact, then back off  $\frac{1}{4}$  turn and tighten outer nuts.

*Note F:*  
Apply  $\frac{3}{8}$ " bead to face of the web reinforcing plates approximately  $\frac{1}{2}$ " from bushing immediately before installing new link plates. Place sealant around nuts after installation. Sealant shall be suitable for prolonged exterior exposure without losing flexibility or adhesion to painted steel surfaces. Proposed products shall be subject to Department's acceptance based on documented testing or other evidence.

|             |     |      |
|-------------|-----|------|
| $R\phi$     | (K) | 22.0 |
| $R_L$       | (K) | 31.9 |
| $Imp.$      | (K) | 9.6  |
| $R$ (Total) | (K) | 63.4 |



|          |                           |           |                                                         |
|----------|---------------------------|-----------|---------------------------------------------------------|
| DESIGNED | <i>Kenneth P. Stutz</i>   | APRIL 29, | 19 97                                                   |
| CHECKED  | <i>Nicholas J. Lovell</i> | EXAMINED  | <i>Todd E. Adams</i><br>ENGINEER OF STRUCTURAL SERVICES |
| DRAWN    | <i>Paul Summer</i>        | PASSED    | ENGINEER OF BRIDGES AND STRUCTURES                      |
| CHECKED  | <i>KPS</i>                |           |                                                         |

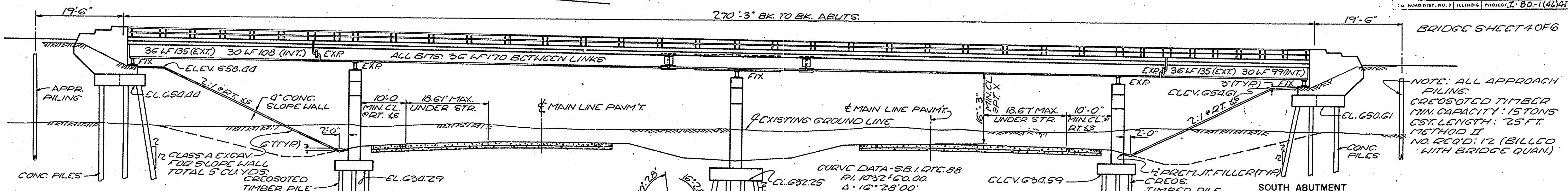
| ITEM                           | UNIT | QUANTITY |
|--------------------------------|------|----------|
| Temporary Support System       | Each | 12       |
| Pin and Link Plate Replacement | Each | 12       |
|                                |      |          |

PIN AND LINK PLATE REPLACEMENT  
F.A.I. RT. 80 SEC. 06-2HB-1  
BUREAU COUNTY  
STA. 475+09.54  
STR. No. 006-0089

B.M. #37 ~ CHISELED "D" ON CONC. HEADWALL 280' LT.  
STA. 475+20 (F.A.I. 80) ELEV. 647+80 (U.S.G.S. DATUM)  
EXISTING STRUCTURE: NONE

P.I. STA. 1432+00 CL. 669.31  
V.C. 1120' E.G. 174  
+1.00% -3.91%

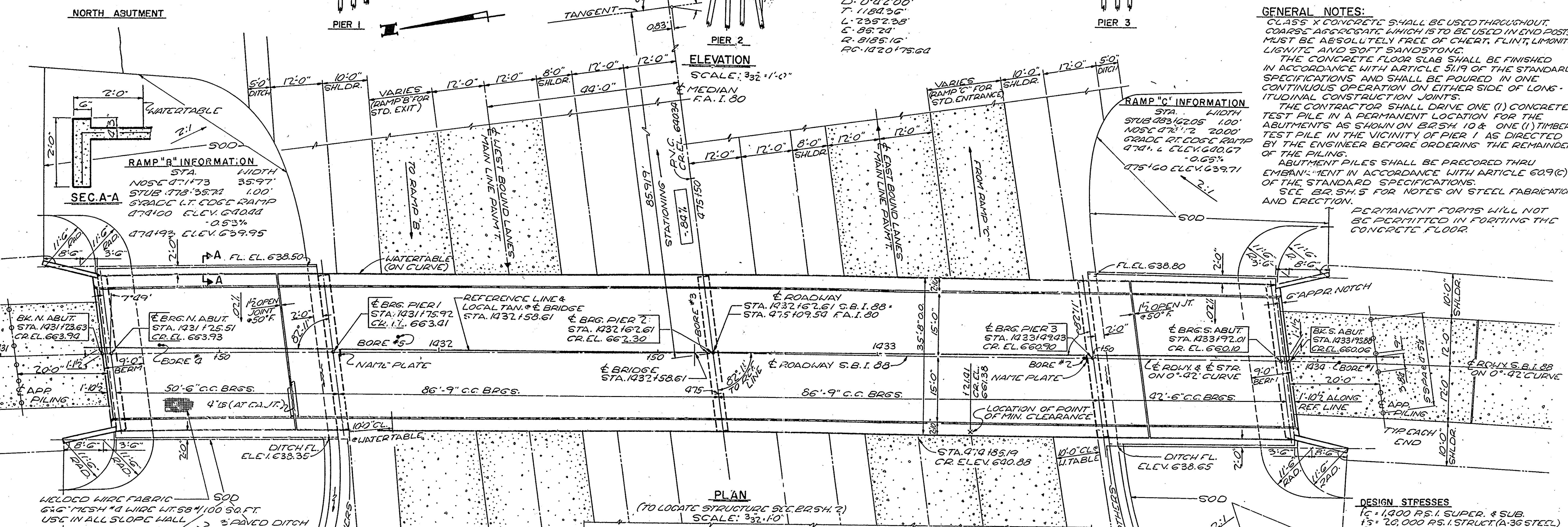
PROJECT NO. 80-1(46)A  
SHEET NO. 26  
COUNTY BUREAU  
TOTAL SHEETS 26



BRIDGE SHEET 4 OF 6

NOTE: ALL APPROACH PILING CREOSOTED TIMBER PILING CAPACITY: 15 TONS EST. LENGTH: 25 FT. METHOD II NO. REQ'D: 12 (BILLED WITH BRIDGE QUAN.)

**GENERAL NOTES:**  
CLASS X CONCRETE SHALL BE USED THROUGHOUT. COARSE AGGREGATE WHICH IS TO BE USED IN END POSTS MUST BE ABSOLUTELY FREE OF CHERT, FLINT, LIMONITE, LIGNITE AND SOFT SANDSTONE.  
THE CONCRETE FLOOR SLAB SHALL BE FINISHED IN ACCORDANCE WITH ARTICLE 51.9 OF THE STANDARD SPECIFICATIONS AND SHALL BE POURED IN ONE CONTINUOUS OPERATION ON EITHER SIDE OF LONG-ITUDINAL CONSTRUCTION JOINTS.  
THE CONTRACTOR SHALL DRIVE ONE (1) CONCRETE TEST PILE IN A PERMANENT LOCATION FOR THE ABUTMENTS AS SHOWN ON BR. 51.10 & ONE (1) TIMBER TEST PILE IN THE VICINITY OF PIER 1 AS DIRECTED BY THE ENGINEER BEFORE ORDERING THE REMAINDER OF THE PILING.  
ABUTMENT PILES SHALL BE PRECORED THRU EMBANKMENT IN ACCORDANCE WITH ARTICLE 60.9(C) OF THE STANDARD SPECIFICATIONS.  
SEE BR. 51.5 FOR NOTES ON STEEL FABRICATION AND ERECTION.  
PERMANENT FORMS WILL NOT BE PERMITTED IN FORTING THE CONCRETE FLOOR.



**BILL OF MATERIAL (STRUCTURE)**

| ITEM                                      | UNITS    | SUPER  | SUB    | TOTAL  |
|-------------------------------------------|----------|--------|--------|--------|
| CLASS A EXCAVATION FOR STRUCTURES         | CU YDS   |        | 185    | 185    |
| CLASS X CONCRETE                          | CU YDS   | 274.5  | 274.1  | 548.6  |
| ERECTING STRUCTURAL STEEL                 | LBS      | 304840 |        | 304840 |
| FURNISHING AND ERECTING METAL HANDRAIL    | LIN. FT. | 536    |        | 536    |
| REINFORCEMENT BARS                        | LBS      | 63,550 | 28,390 | 91,940 |
| FURNISHING CREOSOTED PILES 20.1 TO 38 FT. | LIN. FT. |        | 1,854  | 1,854  |
| TEST PILE TIMBER                          | EACH     |        | 1      | 1      |
| DRIVING TIMBER PILES                      | LIN. FT. |        | 1,854  | 1,854  |
| PROTECTIVE COAT                           | SQ. YDS. | 1,330  |        | 1,330  |
| DRIVING CONCRETE PILES                    | LIN. FT. |        | 1,000  | 1,000  |
| FURNISHING CONCRETE PILES                 | LIN. FT. |        | 1,000  | 1,000  |
| TEST PILE CONCRETE                        | EACH     |        | 1      | 1      |
| NAME PLATES                               | EACH     |        | 2      | 2      |
| SLOPE WALL - 4 INCH                       | SQ. YD.  |        | 479    | 479    |

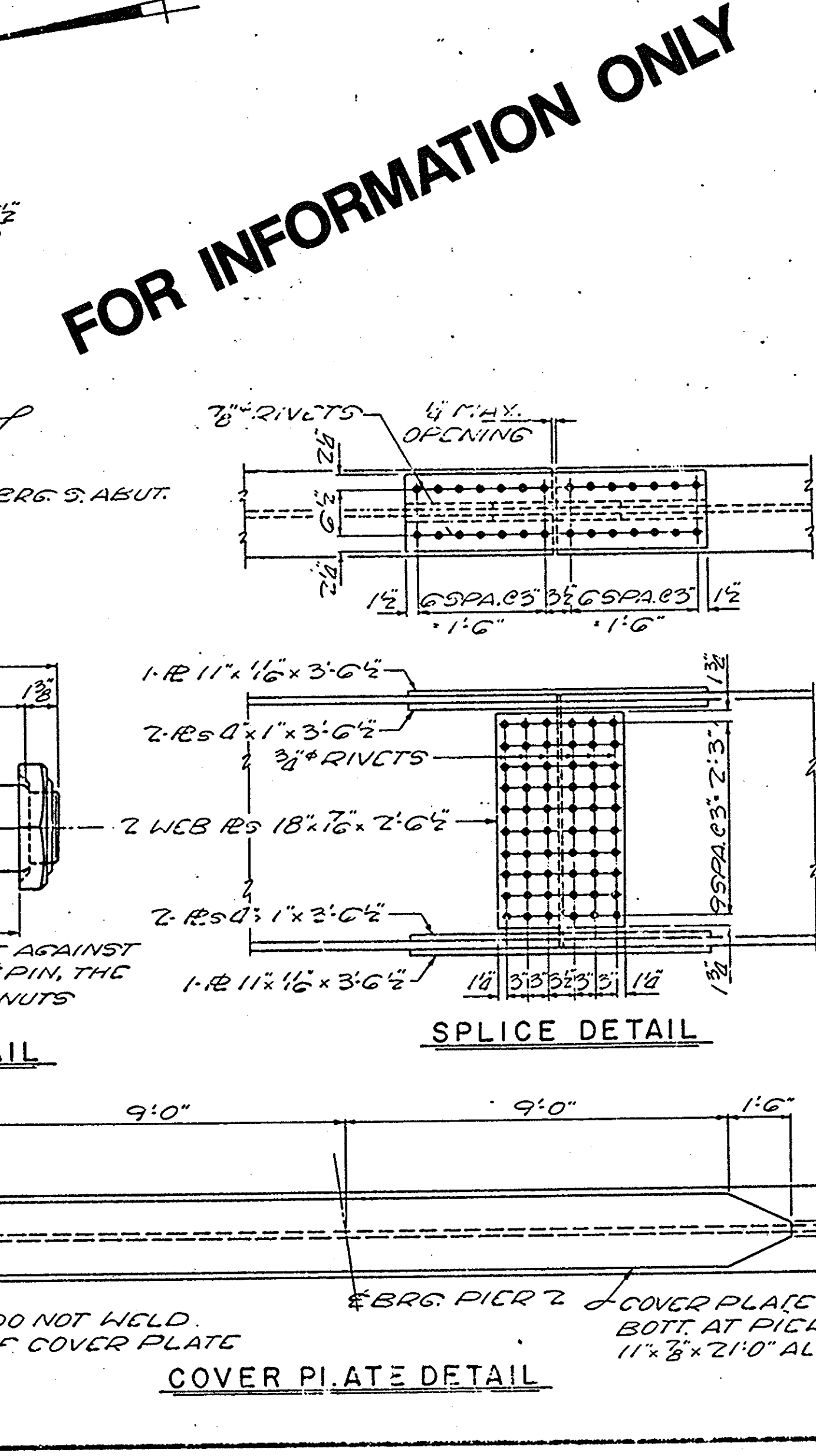
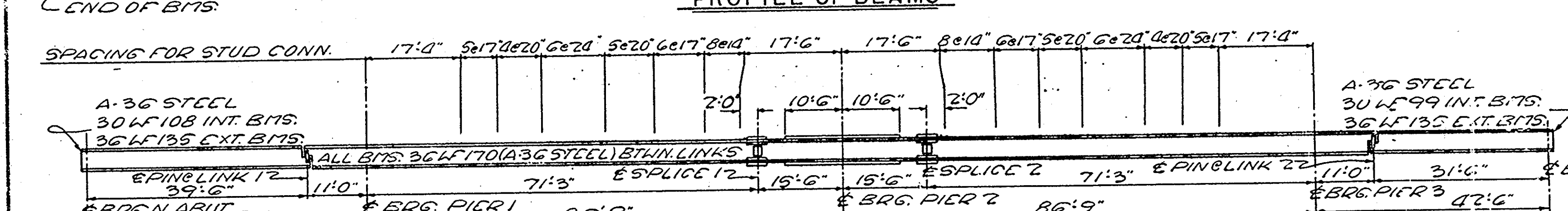
STA. 475+09.54  
BUILT 196 BY  
STATE OF ILLINOIS  
F.A.I. 80 - SEC. 06.2 HB-1  
F.A. PROJ. 1-80-1(46)  
LOADING H20-S16

LETTERING FOR NAMEPLATE  
SEE STD. 2113

**DESIGN STRESSES**  
FC = 1,400 P.S.I. SUPER. & SUB.  
FS = 20,000 P.S.I. STRUCT. (A-36 STEEL)  
FS = 20,000 P.S.I. REINF.  
V = 75 P.S.I. FOOTINGS  
n = 10  
**H20-S16 LOADING**  
DEAD LOAD TO INCLUDE 18" 16"  
RDWY. FOR FUTURE SURFACING  
DESIGNED BY: T.D. GAZDA  
CHECKED BY: J. DUNLAP  
DRAWN BY: F.H. & R.R.

**GENERAL PLAN & ELEVATION**  
F.A.I. RTE. 80 - SEC. 06.2 HB-1  
PROJECT 1-80-1(46)45  
S.B.I. RTE. 88 OVER F.A.I. RTE. 80  
BUREAU COUNTY, ILLINOIS  
STA. 475+09.54 F.A.I. 80

**FOR INFORMATION ONLY**



## GENERAL NOTES

ALL BEAMS 1 THRU 6, ALL SPLICE COMPONENTS, AND ALL COVER PLATES SHALL BE OF A-36 STEEL.

ALL ROCKERS, BOLSTERS, BEARING PLATES, PINTLES, AND ANCHOR BOLTS SHALL BE FABRICATED AND SET IN ACCORDANCE WITH ARTICLE 51.15 OF THE STANDARD SPECIFICATIONS AND ARE INCLUDED IN QUANTITY OF STRUCTURAL STEEL EST. 9,210 LBS.

ANCHOR BOLTS SHALL BE SET BEFORE RIVETING DIAPHRAGMS OVER PIERS AND ABUTMENTS.

ALL RIVETS  $\frac{3}{4}$ " OPEN HOLES  $\frac{1}{2}$ " UNLESS OTHERWISE NOTED. ALL W F BEAM SPLICES SHALL BE SUBPUNCHED, REAMED AND MATCH-MARKED. SUBPUNCH  $\frac{1}{8}$ " AND REAM TO PROPER SIZE.

ALL W F BEAMS SHALL BE SHOP ASSEMBLED TO THEIR PROPER GRADE AND ALIGNMENT WITH OR WITHOUT DIAPHRAGMS, INSPECTED AND REAMED WHILE SO ASSEMBLED.

EXCEPT AS OTHERWISE PROVIDED FOR, ALL STRUCTURAL STEEL SHALL RECEIVE ONE SHOP COAT OF RED LEAD PAINT AND TWO FIELD COATS OF ALUM. PAINT. ALL PAINT SHALL BE FURNISHED AND APPLIED BY THE CONTRACTOR INVOLVED. STRUCTURAL STEEL SHALL BE INSPECTED BY ILLINOIS DIVISION OF HIGHWAYS BEFORE PAINTING.

S36W170

### \* ELEVATION TOP OF W F BEAMS

| LOCATION       | BM.1   | BM.2   | BM.3   | BM.4   | BM.5   | BM.6   |
|----------------|--------|--------|--------|--------|--------|--------|
| EBRG. N. ABUT. | 663.69 | 663.55 | 663.41 | 663.27 | 663.13 | 662.99 |
| EPINE LINK 1   | 663.27 | 663.13 | 662.99 | 662.85 | 662.71 | 662.57 |
| EBRG. PIER 1   | 663.13 | 662.99 | 662.85 | 662.71 | 662.57 | 662.43 |
| ESPLICE 1      | 662.21 | 662.07 | 662.93 | 662.79 | 662.65 | 662.51 |
| EBRG. PIER 2   | 661.98 | 661.84 | 661.70 | 661.56 | 661.42 | 661.28 |
| ESPLICE 2      | 661.75 | 661.61 | 661.47 | 661.33 | 661.19 | 661.05 |
| EBRG. PIER 3   | 660.60 | 660.46 | 660.32 | 660.18 | 660.04 | 659.90 |
| EPINE LINK 2   | 660.42 | 660.28 | 660.14 | 660.00 | 659.86 | 659.72 |
| EBRG. S. ABUT. | 659.86 | 659.72 | 659.58 | 659.44 | 659.30 | 659.16 |

\* ELEVATIONS REFER TO TOP OF TOP FLANGES OF ACTUAL ROLLED BEAMS. DOES NOT INCLUDE SPLICE RS OR COVER RS. THESE ELEVATIONS ARE THEORETICAL AND ARE TO BE USED FOR FABRICATION OF STRUCTURAL STEEL AND DO NOT INCLUDE ANY ALLOWANCE FOR DEFLECTION.

- TOP &  
ONLY  
L BMS.

STEEL FRAMING PLAN & DETAILS  
F.A.I. RTE. 80 SEC. 06.24B-1  
S.B.I. RTE. 88 OVER F.A.I. RTE. 80  
BUREAU COUNTY, ILL.  
STA. 475+09.54 F.A.I. 80

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

| ROUTE NO.             | SECTION  | COUNTY           | TOTAL SHEETS | SHEET NO. | SHEET NO. 6 |
|-----------------------|----------|------------------|--------------|-----------|-------------|
| FAI 80                | *        | BUREAU           | 26           | 9         | 6 SHEETS    |
| FED. ROAD DIST. NO. 7 | ILLINOIS | FED. AID PROJECT |              |           |             |

\* D-2 BRIDGE PIN REPLACE 1997-1

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. All reinforcement bars shall be lapped and tied to the splicer rods.  
Splicer (coupler) assembly 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:

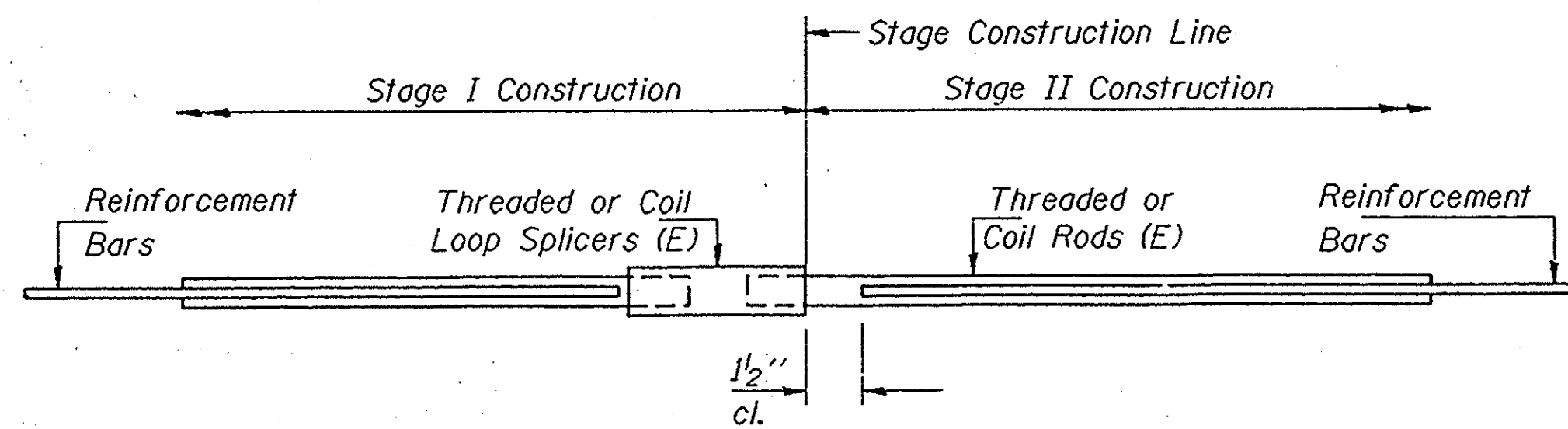
- Minimum Capacity (Tension in kips) =  $1.25 \times f_y \times A_1$
- Minimum \*Pull-out Strength (Tension in kips) =  $1.25 \times f_{s_{allow}} \times A_1$

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:

|                                                                                |                                                                                       |
|--------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| #5 bar lap with $\frac{3}{4}$ " $\phi$ 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 $\frac{7}{8}$ " $\phi$ Splicer (Coupler) x 2'-7" Splicer Rods  | Minimum Capacity = 33.1 kips-tension<br>Minimum Pull-out Strength = 13.3 kips-tension |
| #7 bar lap with 1" $\phi$ Splicer (Coupler) x 3'-5" Splicer Rods               | Minimum Capacity = 45.1 kips-tension<br>Minimum Pull-out Strength = 18.0 kips-tension |
| #8 bar lap with $1\frac{1}{4}$ " $\phi$ Splicer (Coupler) x 4'-6" Splicer Rods | Minimum Capacity = 58.9 kips-tension<br>Minimum Pull-out Strength = 23.6 kips-tension |

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



SPLICER DETAIL

| Bar Size | No. Req'd. (Splicers) | Location |
|----------|-----------------------|----------|
| # 5      | 28                    | ABUT     |
| # 5      | 32                    | HINGE    |
|          |                       |          |
|          |                       |          |

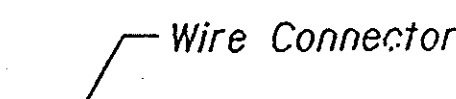
The diameter of this part of Splicer is the same as the diameter of the bar spliced.

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

ROLLED THREAD DOWEL BAR



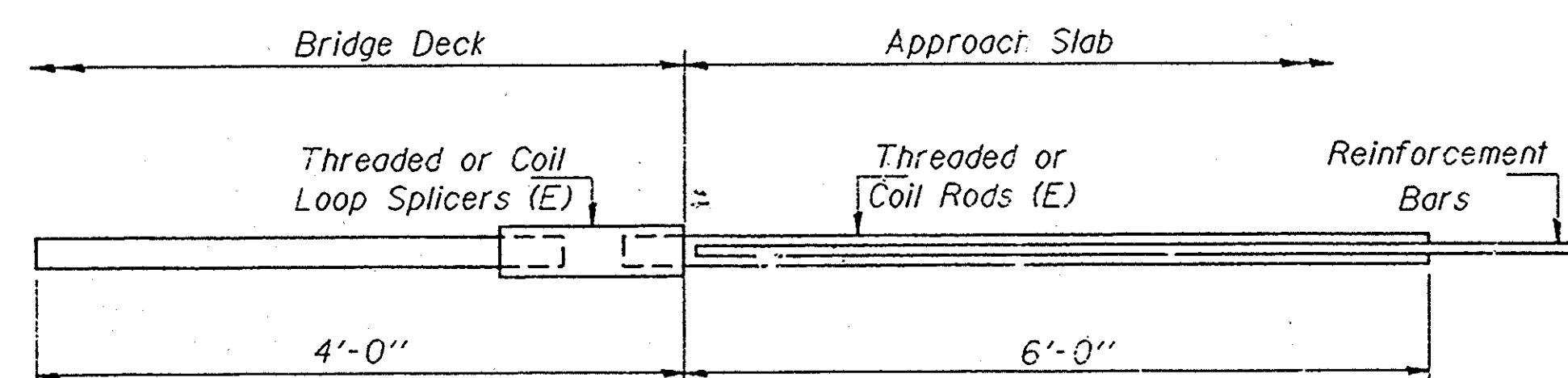
\*\* ONE PIECE



WELDED SECTIONS

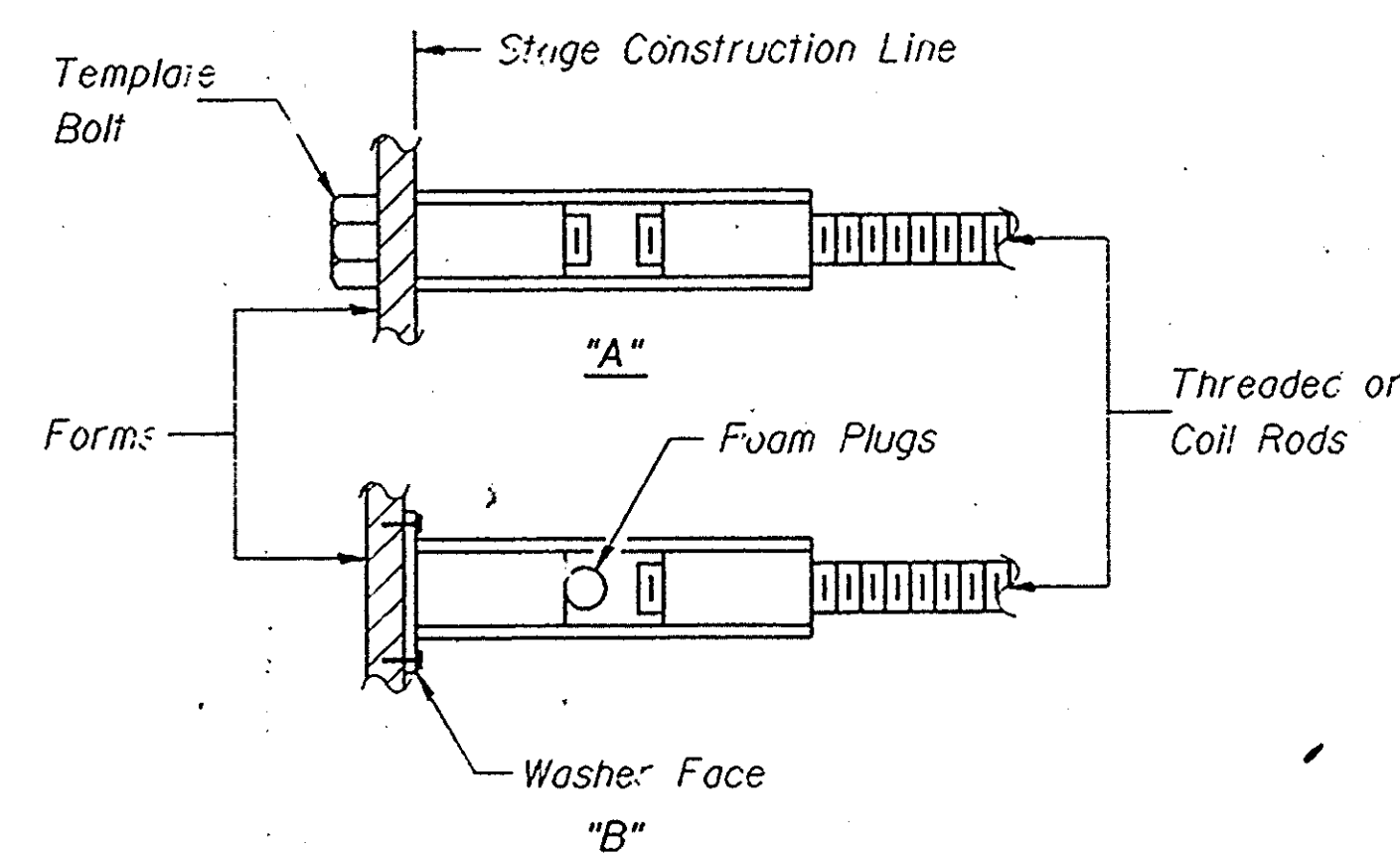
SPLICER ALTERNATIVES

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



BAR SPLICER ASSEMBLY DETAIL  
FOR INTEGRAL ABUTMENT

$\frac{3}{4}$ "  $\phi$  Bar Splicer Assembly x 4'-0" and 6'-0" Splicer Rods — Minimum Capacity = 23.0 kips-tension  
Minimum Pull-out Strength = 9.2 kips-tension



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.

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

|          |                                    |
|----------|------------------------------------|
| EXAMINED | 19                                 |
| PASSED   | ENGINEER OF BRIDGE DESIGN          |
|          | ENGINEER OF BRIDGES AND STRUCTURES |

BSD-1 3-31-95

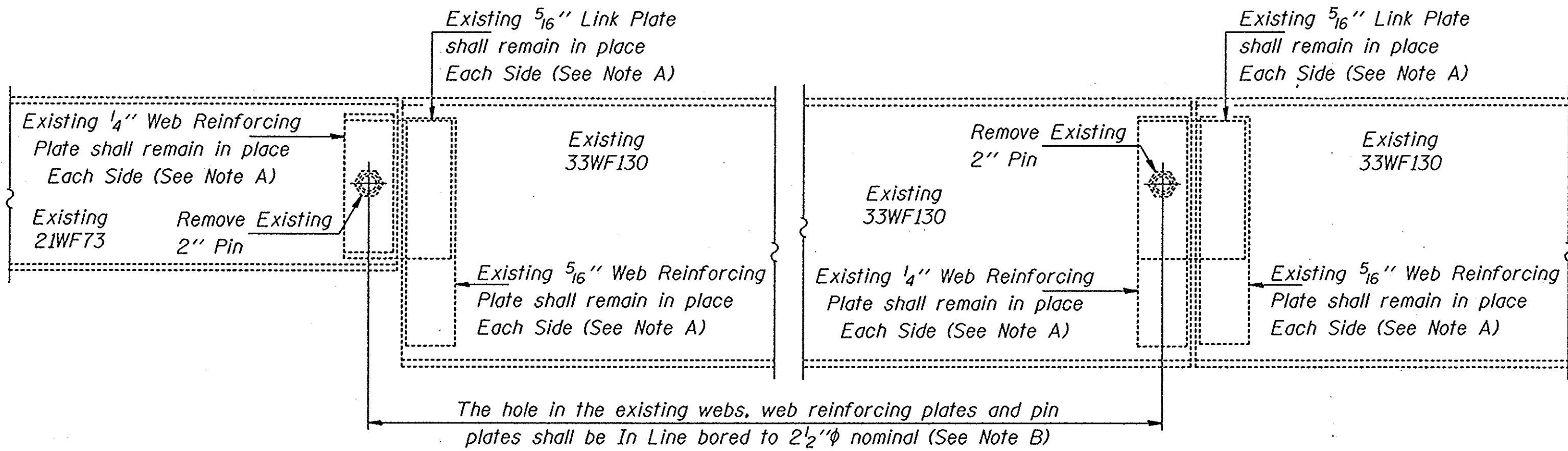
BAR SPLICER (COUPLER) DETAILS  
AT STAGE CONSTRUCTION

STR # 006-0089

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

\* D-2 BRIDGE PIN REPLACE 1997-1

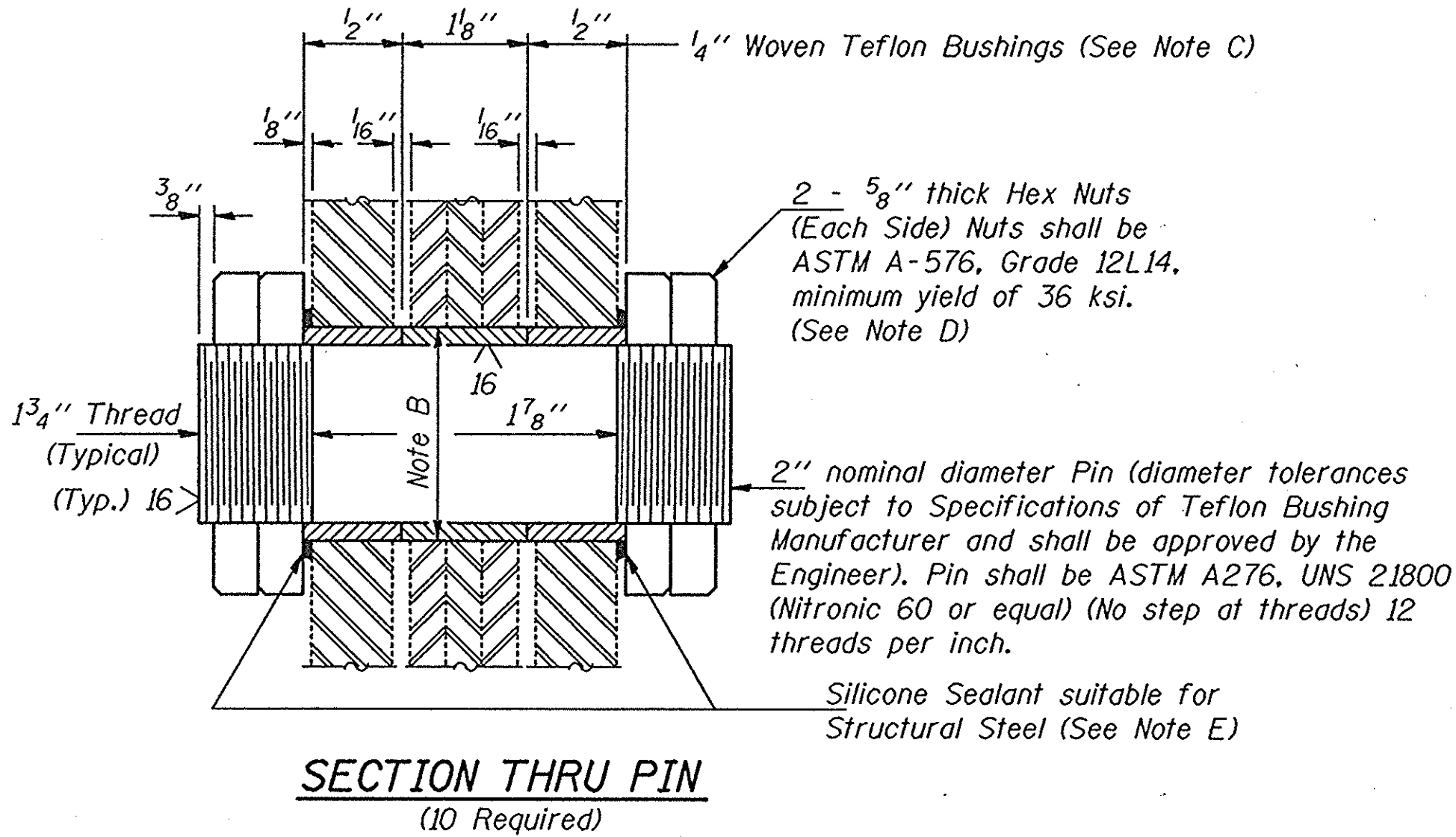
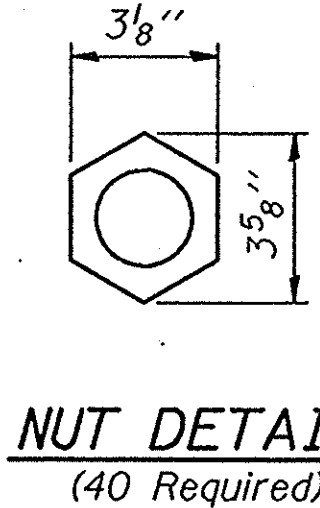
| ROUTE NO.             | SECTION  | COUNTY           | TOTAL SHEETS | SHEET NO. | SHEET NO. 1 |
|-----------------------|----------|------------------|--------------|-----------|-------------|
| FAI 80                | *        | BUREAU           | 26           | 10        | 4 SHEETS    |
| FED. ROAD DIST. NO. 7 | ILLINOIS | FED. AID PROJECT |              |           |             |



ELEVATION AT EXISTING PIN ASSEMBLY  
FOR INTERIOR BEAMS

ELEVATION AT EXISTING PIN ASSEMBLY  
FOR EXTERIOR BEAMS

Any Pins that can be easily removed without damage to the pin shall be salvaged and the Bridge Engineer shall be contacted for disposition. Cost of salvage is included in "Pin Replacement".



SECTION THRU PIN  
(10 Required)

GENERAL NOTES

All new structural steel shall conform to AASHTO Classification M-270 Gr. 36, unless otherwise noted.

The Contractor shall provide support and/or shoring systems for the beam in the area of existing pin replacement. See Special Provision "Temporary Support System."

The inorganic zinc rich primer/acrylic/acrylic paint system shall be used for shop and field painting of new structural steel except where otherwise noted. The color of the acrylic finish coat shall be Interstate Green, Munsell No. 7.5G 4/8. See Special Provisions "Cleaning and Painting New Metal Structures". Cost shall be included in the cost of "Pin Replacement".

Existing Structural steel shall be cleaned and painted as required by the Special Provision "Cleaning and Painting Adjacent Areas of Existing Steel Structures". Cost shall be included in the cost of "Pin Replacement."

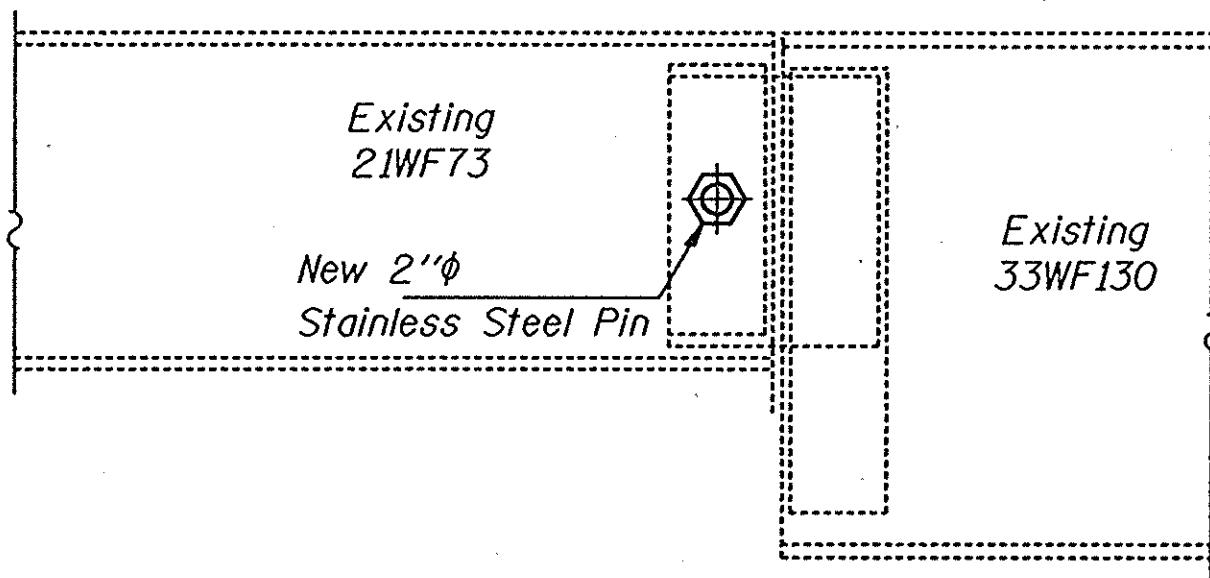
Plan dimensions and details relative to existing structure have been taken from existing plans and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field, except the pin diameters, and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in the scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.

The Pins shall conform to the minimum Charpy V-Notch Toughness of 25 ft.-lbs. at 40° F.

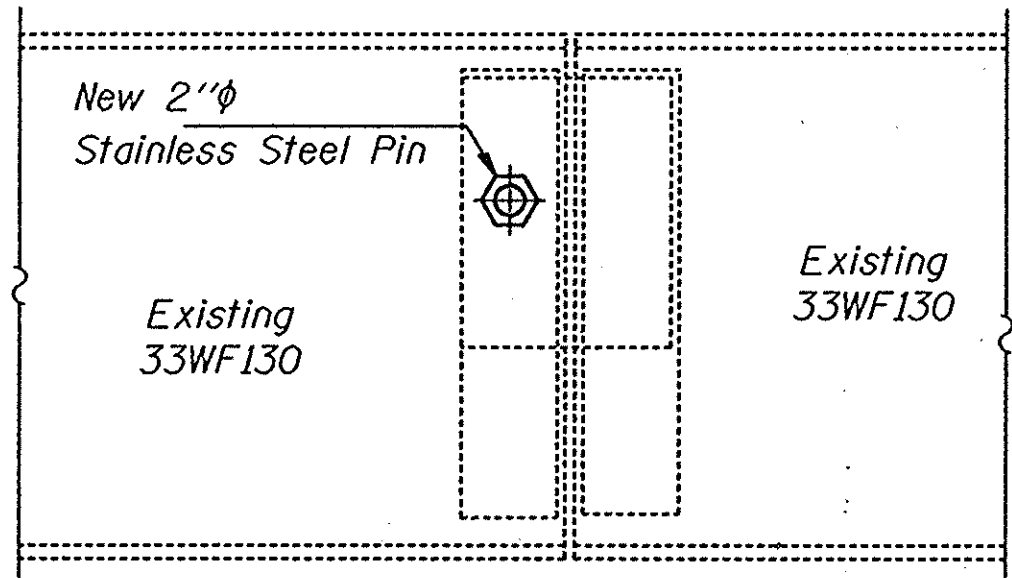
The pins, bushings, nuts and silicone sealant are the items included in "Pin Replacement".

TOTAL BILL OF MATERIAL

| ITEM                     | UNIT | QUANTITY |
|--------------------------|------|----------|
| Temporary Support System | Each | 10       |
| Pin Replacement          | Each | 10       |
| Silicone Joint Sealer    | Foot | 68       |



ELEVATION AT NEW PIN ASSEMBLY  
FOR INTERIOR BEAMS



ELEVATION AT NEW PIN ASSEMBLY  
FOR EXTERIOR BEAMS

Note A:  
Existing welds shall be inspected for cracks using liquid dye penetrant or magnetic particle testing. Any cracks that are found shall be identified and reported to the Bureau of Bridges and Structures for further disposition. Clean and paint before installing new pins.

Note B:  
Bore diameter for bushing in existing link plates, webs and web reinforcement plates shall correspond to bushing manufacturer's allowable tolerances for proper functioning. Hole diameter may be adjusted to allow use of stock bushings.

Note C:  
Actual bushing thickness per manufacturer's specifications, 1/4" is approximate. Bushings shall be a self lubricating filament wound epoxy matrix backed Duralon Bearing, metal backed Fiber Glide Bearing or equivalent. No primer or grease shall be allowed on bushings. Bushings shall be suitable for dynamic loads of 20,000 psi.

Note D:  
Tighten inside nuts to bring all bushings into firm contact, then back off 1/4 turn and tighten outer nuts.

Note E:  
Place sealant around nuts after installation. Sealant shall be suitable for prolonged exterior exposure without losing flexibility or adhesion to painted steel surfaces. Proposed products shall be subject to Department's acceptance based on documented testing or other evidence.

MAXIMUM REACTIONS AT PIN

|                |     |      |
|----------------|-----|------|
| R <sub>1</sub> | (K) | 16.0 |
| R <sub>2</sub> | (K) | 21.7 |
| Imp.           | (K) | 6.5  |
| R (Total)      | (K) | 44.1 |

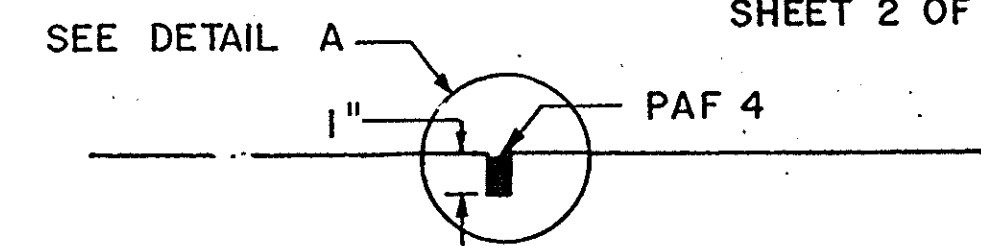
|          |                   |
|----------|-------------------|
| DESIGNED | Kenneth P. Stultz |
| CHECKED  | Nicholas J. Gault |
| DRAWN    | Paul Summer       |
| CHECKED  | KPS               |

|           |               |       |
|-----------|---------------|-------|
| APRIL 29, |               | 19 97 |
| EXAMINED  | Todd E. Adams |       |
| PASSED    |               |       |

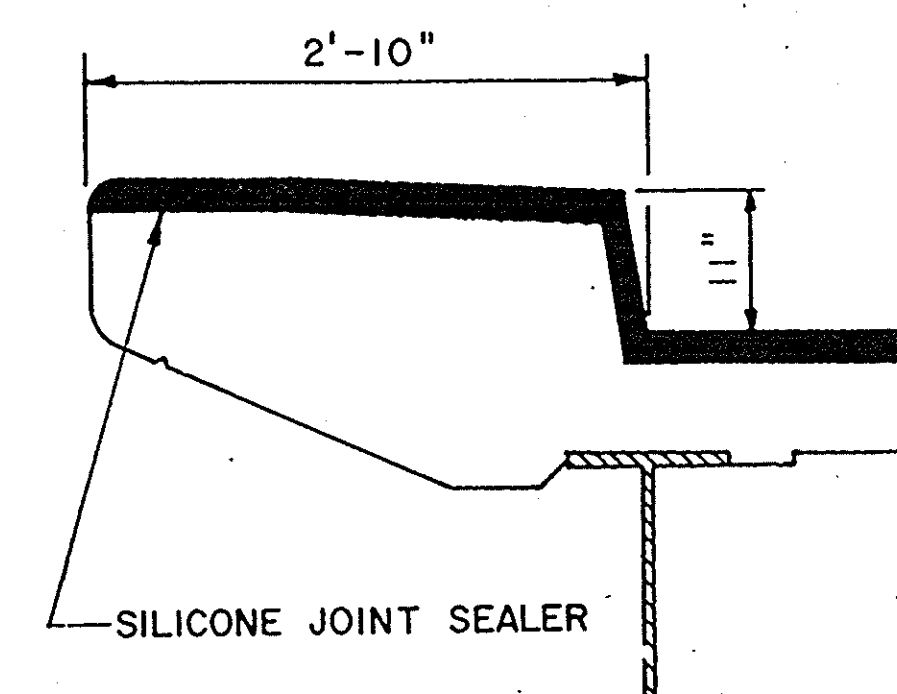
PIN REPLACEMENT  
FAS 1248 SEC. 06-2HB  
BUREAU COUNTY  
STA. 342+38.40  
STR. No. 006-0117

|                                       |      |        |              |           |
|---------------------------------------|------|--------|--------------|-----------|
| * D-2 BRIDGE PIN REPLACE 1997-1       |      |        |              |           |
| ROUTE NO.                             | SEC. | COUNTY | TOTAL SHEETS | SHEET NO. |
| FAI 80                                | *    | BUREAU | 26           | 11        |
| FED. ROAD DIST. NO. 7 ILL. VS PROJECT |      |        |              |           |

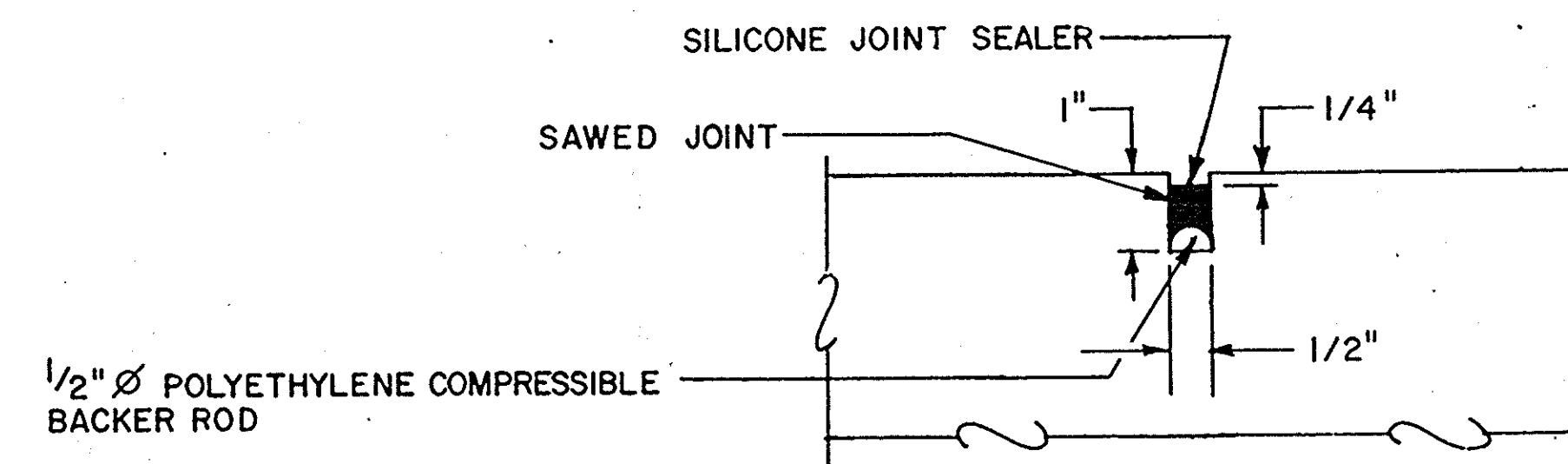
SHEET 2 OF 4



EXIST JT. AT PINS



CURB DETAIL



DETAIL A

# BILL OF MATERIALS

| ITEM                  | UNIT | QUANTITY |
|-----------------------|------|----------|
| SILICONE JOINT SEALER | FOOT | 68       |

SN 006-0117

DISTRICT NO. 2 DIXON

DESIGNED D. PAUSER

DRAWN A. CONDERMAN

DATE 3/97

CHECKED

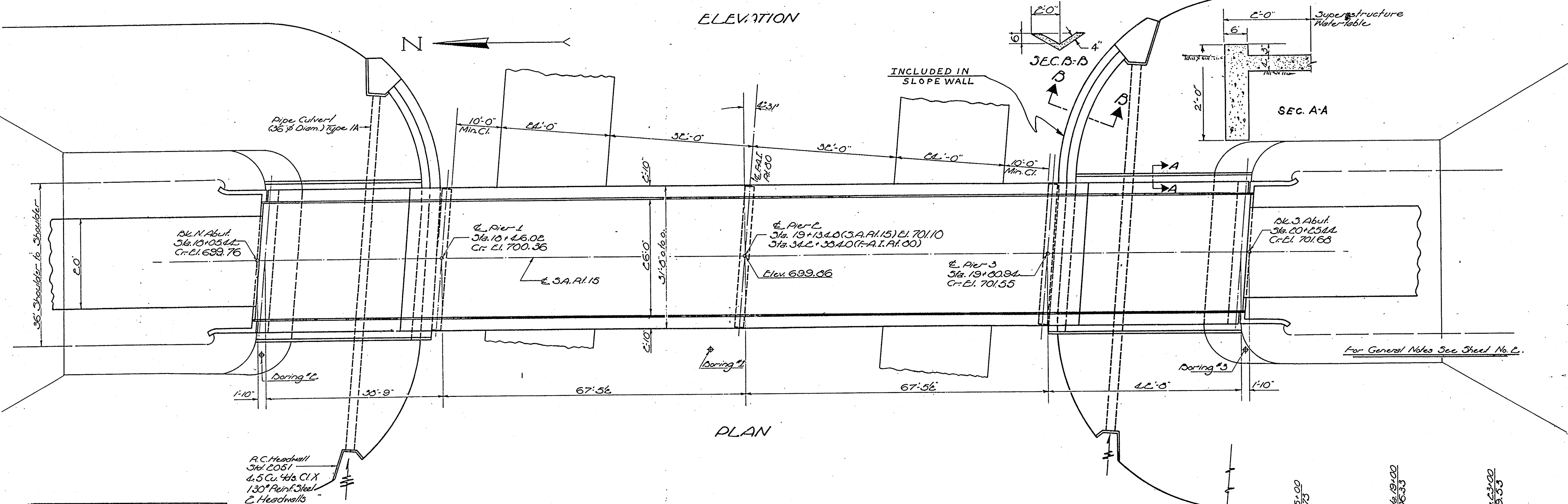
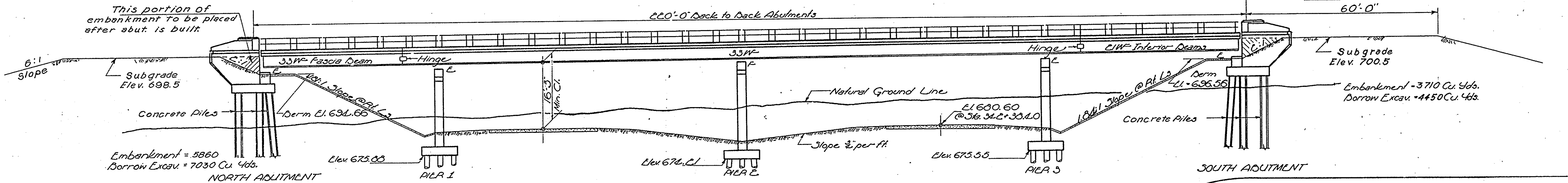
SCALE

REVISED 4/97

STATE OF ILLINOIS  
DEPARTMENT OF PUBLIC WORKS & BUILDINGS  
DIVISION OF HIGHWAYS

| ROUTE NO.             | SECTION  | COUNTY           | TOTAL SHEETS | SHEET NO. | SHEET NO. 3 |
|-----------------------|----------|------------------|--------------|-----------|-------------|
| 80                    | 06-248   | Bureau           | 26           | 12        | 4 SHEETS    |
| FED. ROAD DIST. NO. 7 | ILLINOIS | FED. AID PROJECT | I-80-1(49)41 |           |             |

R.M. Top of Concrete R.O.W. Marker 37' R/L  
Sta. 342+77.5 Elev. 697.46 (U.S.G.S. Datum).  
No Existing Structure.

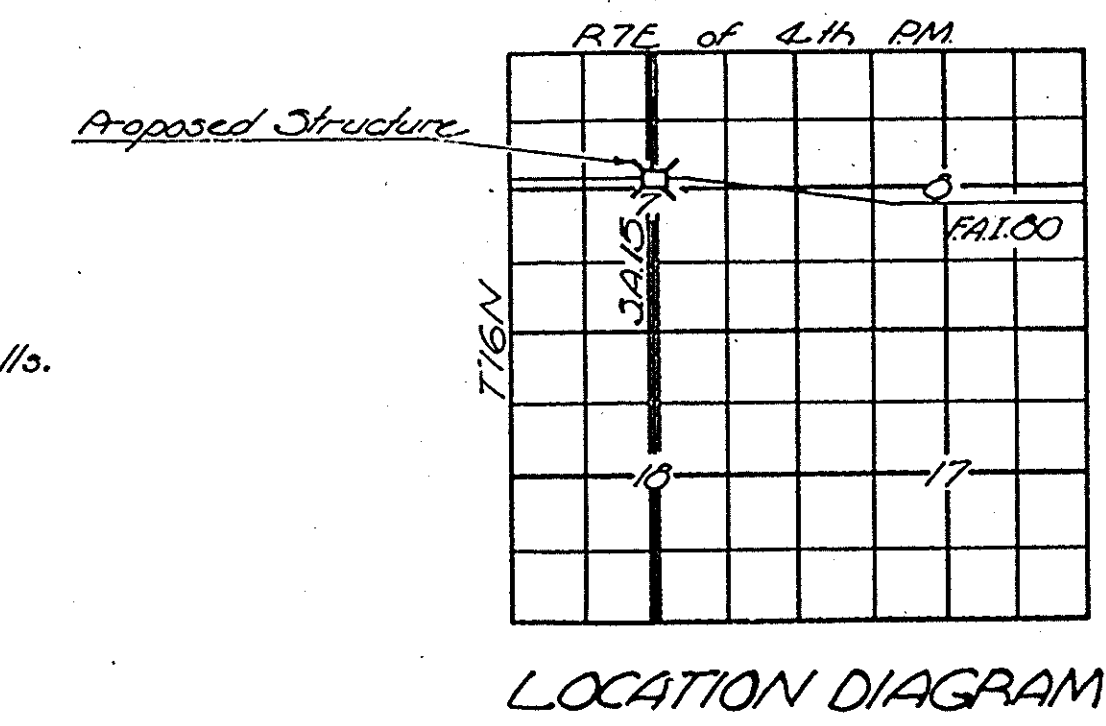


STATION 342+38.40  
BUILT 196 BY  
STATE OF ILLINOIS  
F.A.I. R.T. 80 ~ SEC. 06-2-HB  
F.A. PROJ. I-80-1(49)  
LOADING H15-S12  
NAME PLATE  
See Std. C113

TOTAL BILL OF MATERIALS

| ITEM                              | UNIT     | SUPER  | SUB    | TOTAL  |
|-----------------------------------|----------|--------|--------|--------|
| Class X Concrete                  | Cu. Yds. | 197.9  | 195.6  | 393.7  |
| Class X Concrete (Head walls)     | Cu. Yds. |        |        | 9.0    |
| Reinforcement Bars†               | Lbs.     | 31,810 | 13,880 | 45,690 |
| Structural Steel                  | Lbs.     | 16,890 |        | 16,890 |
| Metal Handrail                    | Lin. Ft. | 436    |        | 436    |
| Concrete Piles                    | Lin. Ft. |        | 335    | 335    |
| Test Piles (Concrete)             | Each     |        | One    | One    |
| Crossed Piles                     | Lin. Ft. |        | 636    | 636    |
| Test Piles (Crossed)              | Each     |        | One    | One    |
| Name Plates                       | Each     |        |        | 2      |
| Slope Wall                        | Sq. Yds. |        | 360    | 360    |
| Class A Excavation for Structures | Cu. Yds. |        | 314    | 314    |
| Borrow Excavation                 | Cu. Yds. |        | 11480  | 11480  |
| Pipe Culvert, 36" Dia., Type 1A   | Lin. Ft. |        | 160    | 160    |
| Protective Coat                   | Sq. Yds. | 830    |        | 830    |

† Includes 260 lbs. for 4 Headwalls.



FOR INFORMATION ONLY

GENERAL PLAN & ELEVATION  
F.A.I. R.T. 80 ~ SEC. 06-2-HB  
PROJ. I-80-1(49)41  
BUREAU COUNTY  
STA. 342+38.40

DESIGNED: J. G. O'Connell  
CHECKED: J. G. O'Connell  
DRAWN: W. L. Jacobs  
CHECKED: W. L. Jacobs

EXAMINED: J. G. O'Connell  
PASSED: J. G. O'Connell  
APPROVED: J. G. O'Connell

19

ENGINEER OF BRIDGE AND TRAFFIC STRUCTURES

ENGINEER OF DESIGN

CHIEF HIGHWAY ENGINEER

DESIGN STRESSES  
R = 1400 psi. Super & Sub.  
F<sub>s</sub> = 20,000 psi. Reinf.  
F<sub>s</sub> = 20,000 psi. Struct.  
V = 75 p.s.i. Flg.  
n = 10

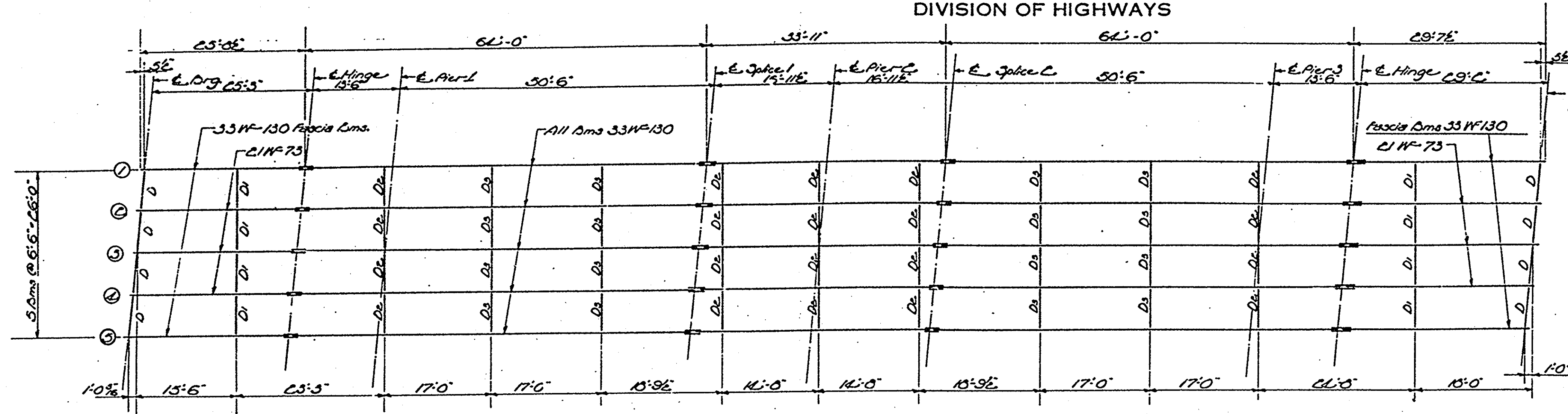
LOADING H15-S12-LL

1-29-63 W.L.P. Rev. 20' Bridge Come to 60' f increase Emb. from 5860 to 5860 f from 780 to 3710. But Etc. from 3020 to 7030, f from 890 to 4450 f total from 3920 to 11480. Add P.S. Item of 9.0 Cu. Yds. C.I. X Conc. Hdwl. Reduced C.I. X Conc. by 9.0 a.d.s. 2-14-63 Revised Sect. B-B. Added notation TRM \*INCLUDED IN SLOPE WALL.

Rev. Sec. A-A With Top Wall. Pipe Cul. from Type 1 to Type 1A. Added Protective Coat to Bill of Materials. Removed Headwall Conc. f out Quantity of 2.3 Cu. Yds. in C.I. X Conc. Design Stresses f<sub>s</sub> from 18000 to 20000. Slope Quen. from 335 to 360. Changed Sta. 34 from 14,160 to 14,180. Changed Reinf. Bars from 27,890 to 31,810 f from 43,720 to 45,690

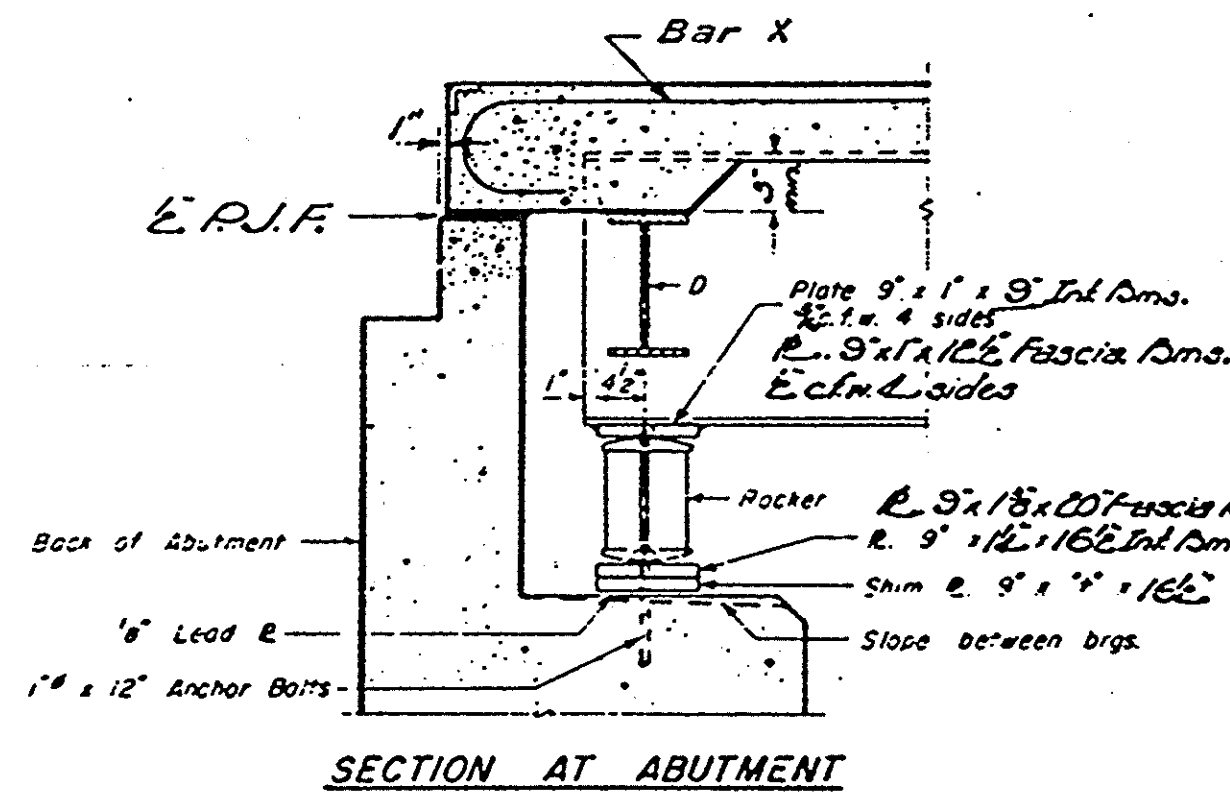
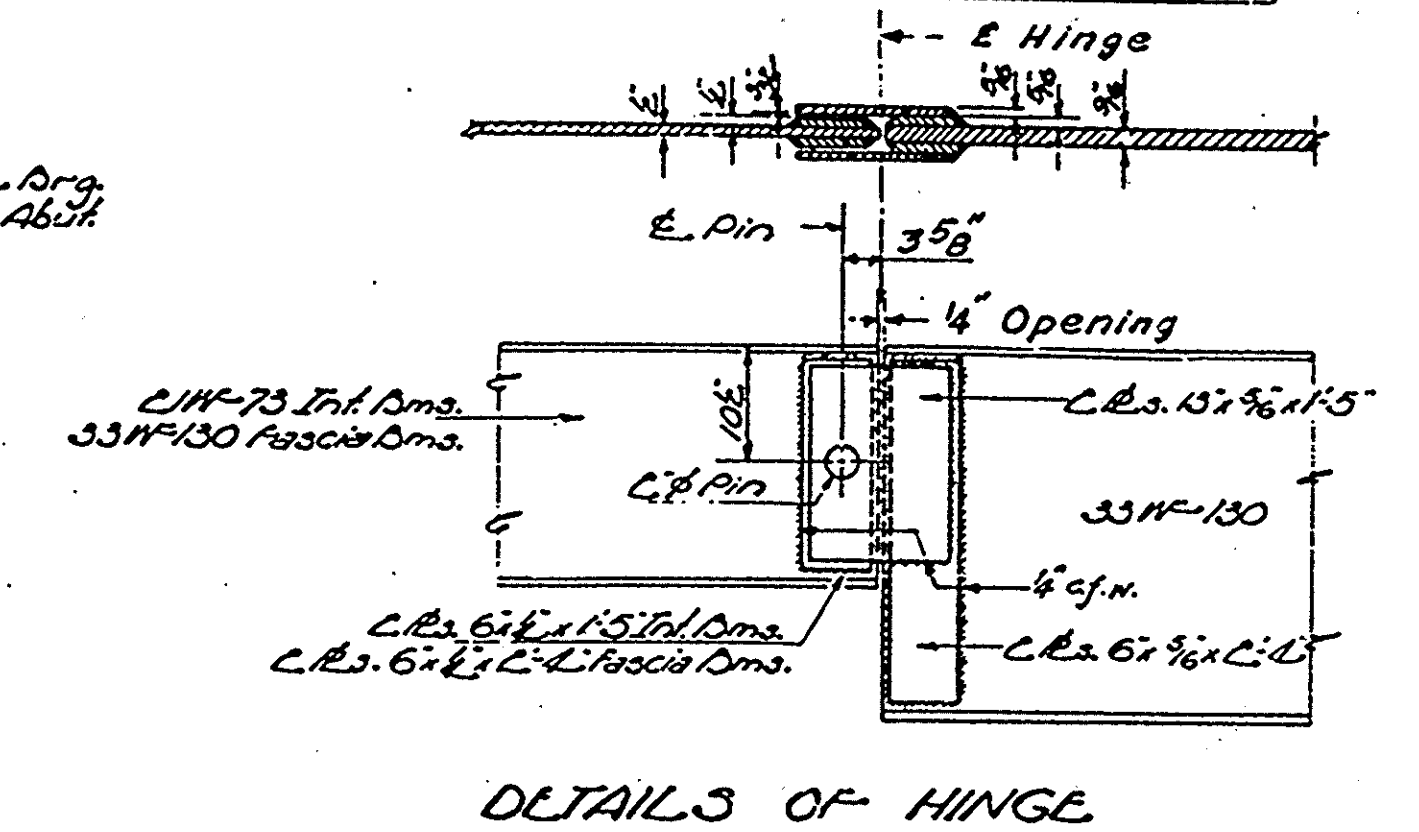
STATE OF ILLINOIS  
DEPARTMENT OF PUBLIC WORKS & BUILDINGS  
DIVISION OF HIGHWAYS

| ROUTE NO.             | SECTION | COUNTY | TOTAL<br>SHEETS | SHEET<br>NO. | SHEET<br>NO. 4 |
|-----------------------|---------|--------|-----------------|--------------|----------------|
|                       |         | Bureau | 26              | 13           | 4 SHEETS       |
| FED. ROAD DIST. NO. 1 |         |        |                 |              |                |

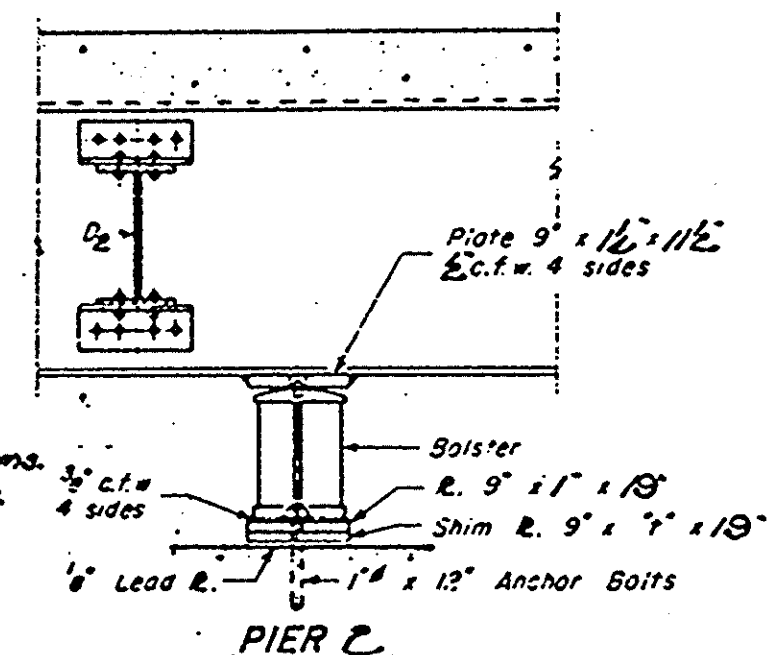


LAYOUT OF STRUCTURAL STEEL

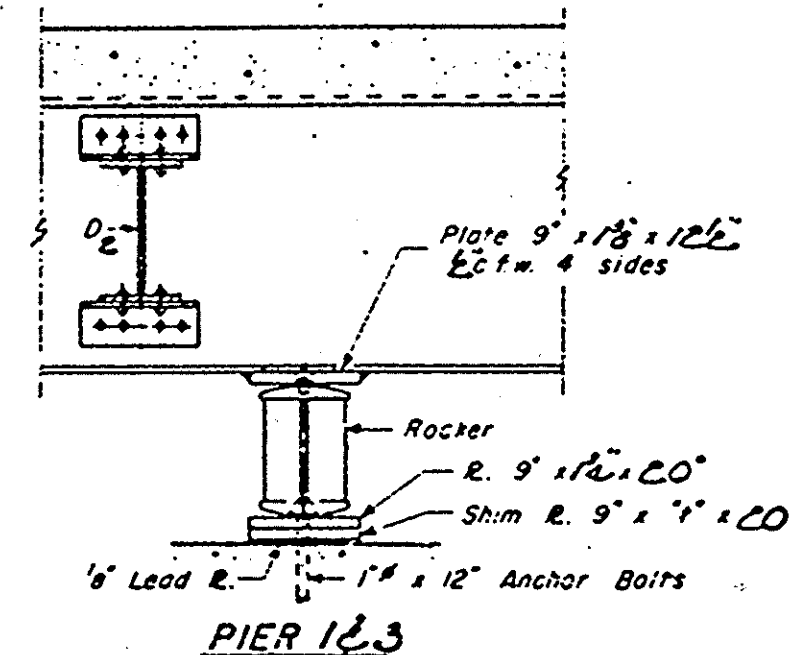
FOR  
INFORMATION  
ONLY



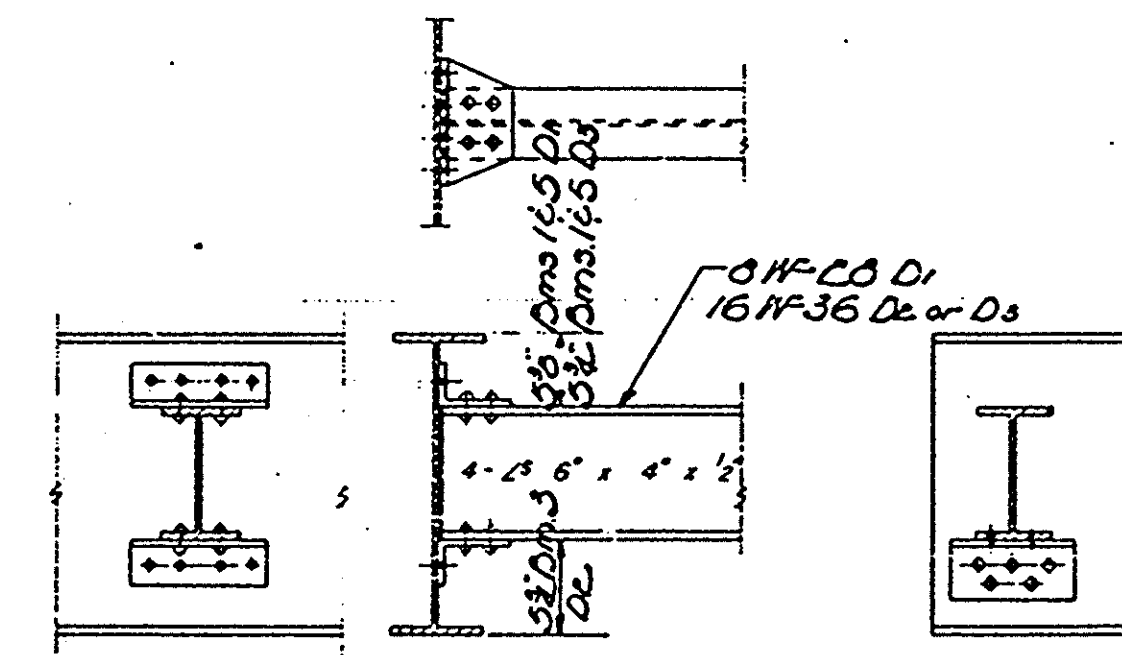
SECTION AT ABUTMENT



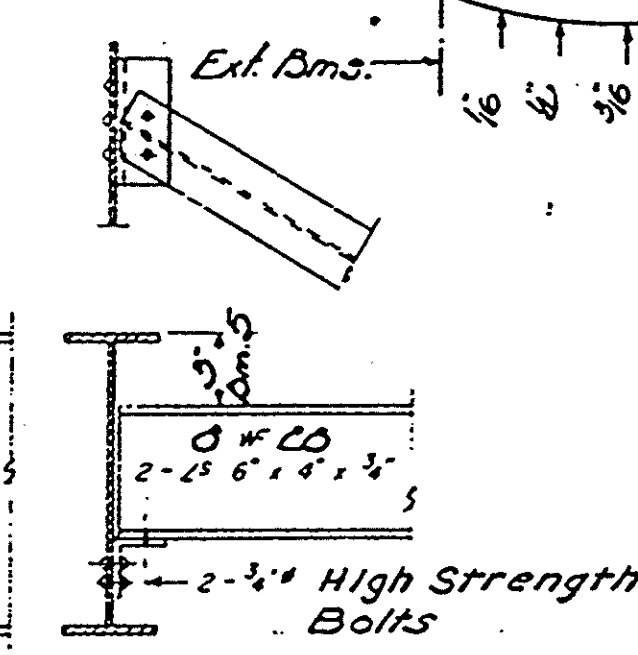
PIER 2



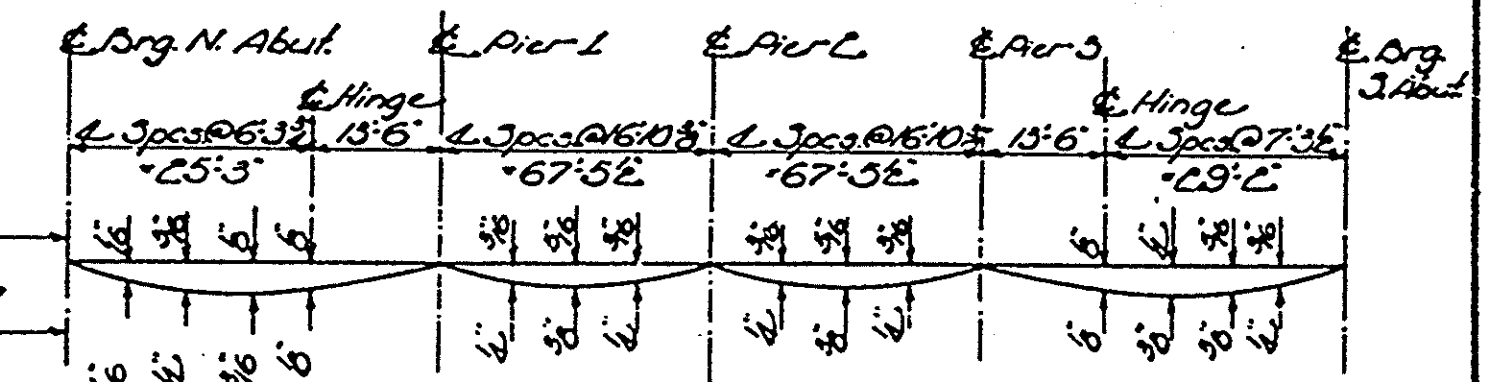
PIER 1 & 3



DIAPHRAGM D1-D2-D3

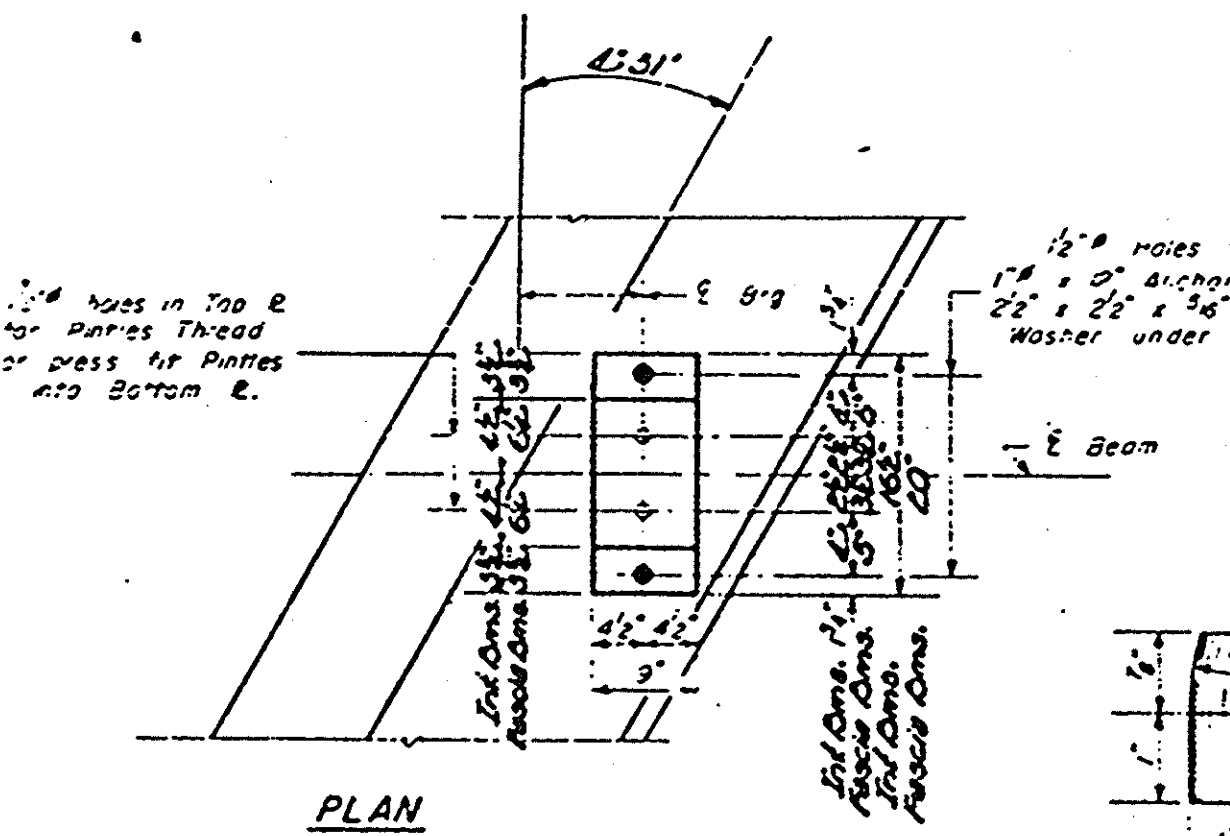


DIAPHRAGM D

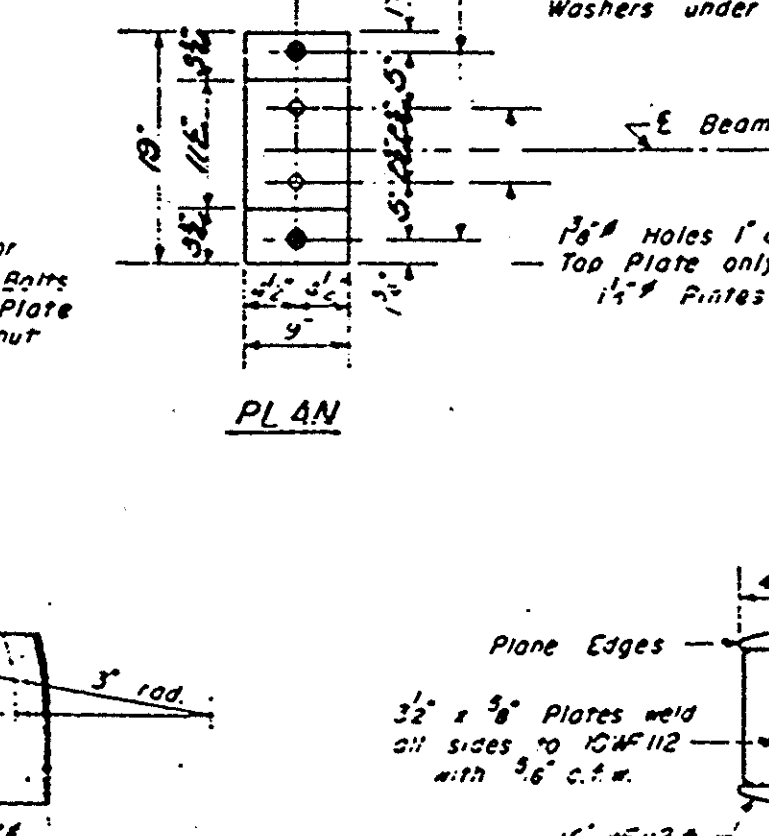


DEAD LOAD DEFLECTION DIAGRAM

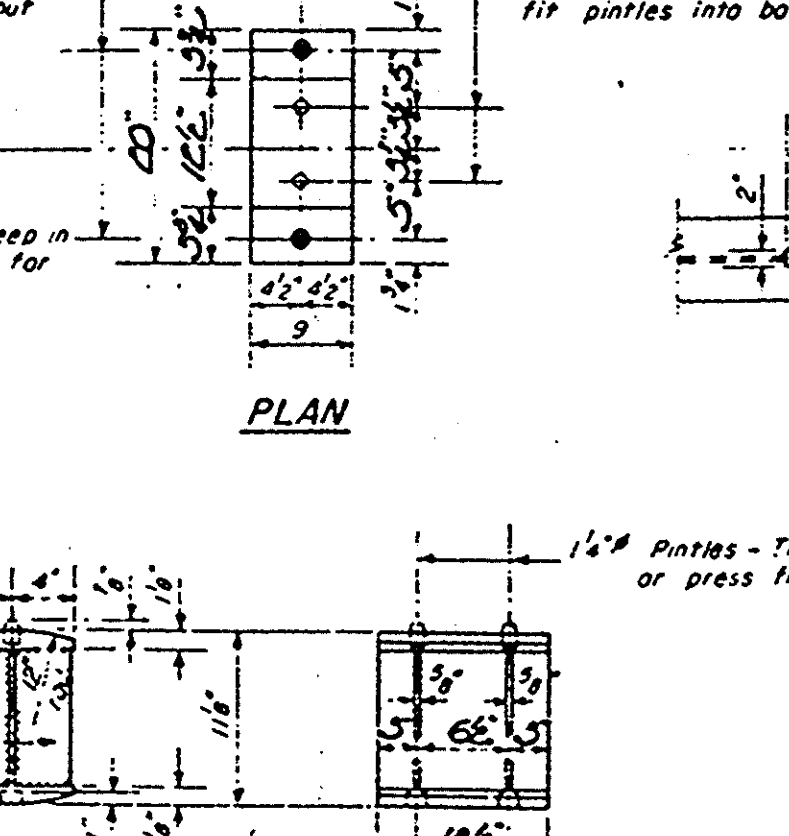
| ELEVATION TOP OF BEAMS |        |        |        |        |        |
|------------------------|--------|--------|--------|--------|--------|
| Location               | Am.1   | Am.2   | Am.3   | Am.4   | Am.5   |
| E. Org. N. Abut.       | 699.09 | 699.10 | 699.20 | 699.16 | 699.05 |
| E. Hinge               | 699.41 | 699.51 | 699.54 | 699.49 | 699.39 |
| E. Pier-L              | 699.59 | 699.60 | 699.71 | 699.67 | 699.56 |
| E. Splice-L            | 700.24 | 700.33 | 700.36 | 700.32 | 700.22 |
| E. Pier-C              | 700.39 | 700.40 | 700.51 | 700.47 | 700.37 |
| E. Splice-C            | 700.53 | 700.63 | 700.66 | 700.62 | 700.52 |
| E. Pier-3              | 700.76 | 700.86 | 700.89 | 700.85 | 700.75 |
| E. Hinge               | 700.81 | 700.92 | 700.95 | 700.92 | 700.82 |
| E. Org. S. Abut.       | 700.95 | 701.05 | 701.09 | 701.05 | 700.96 |



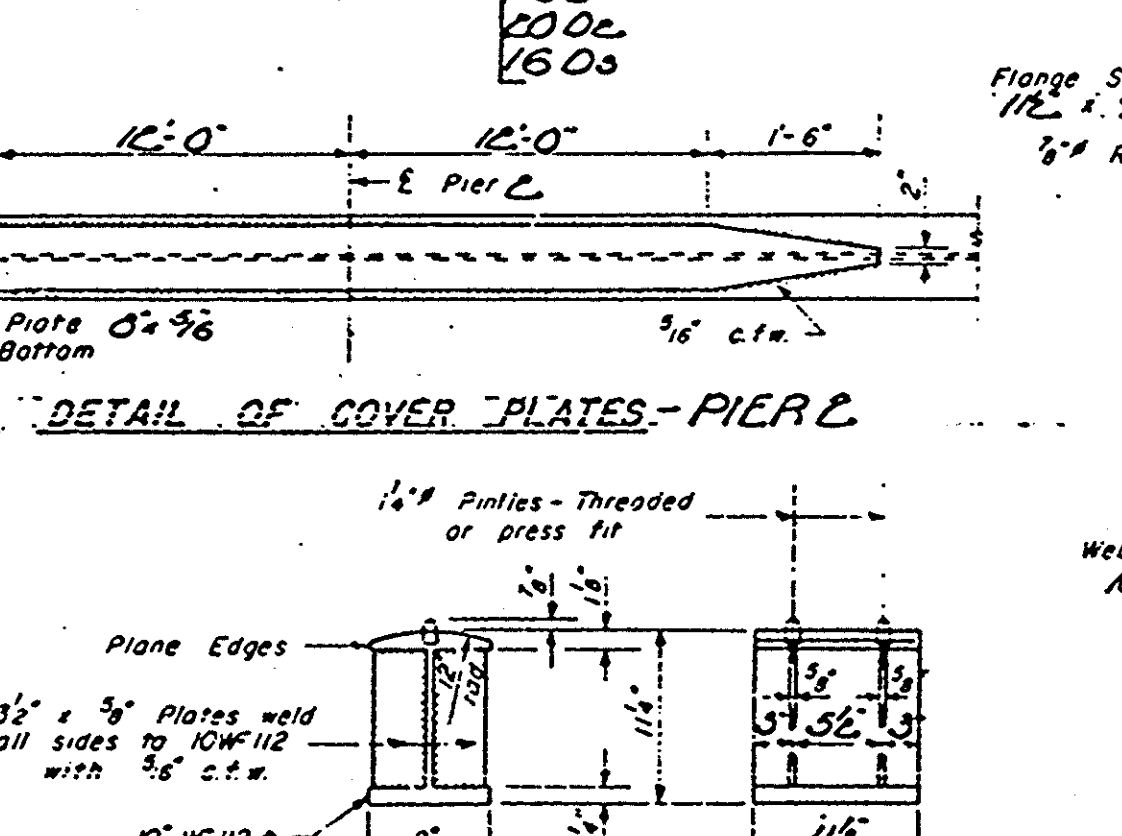
PLAN



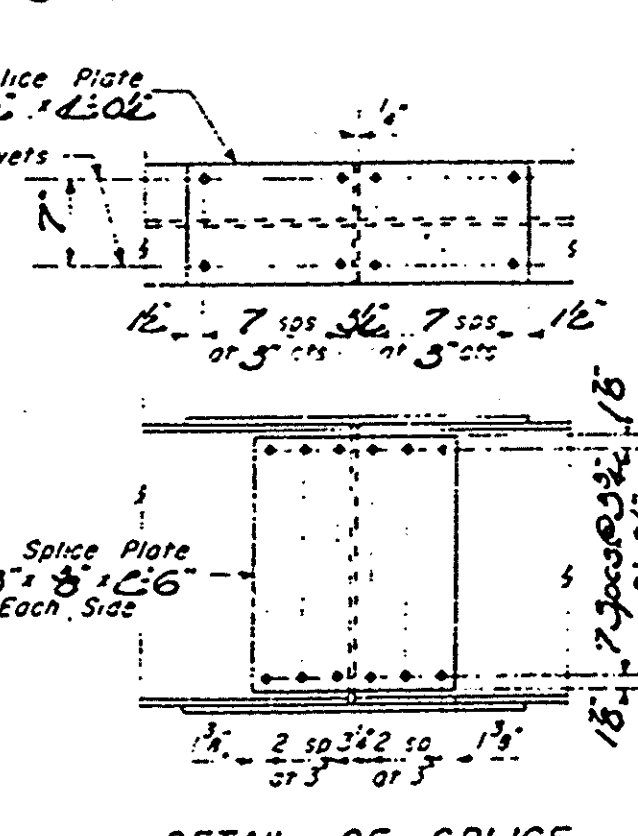
PIER 2



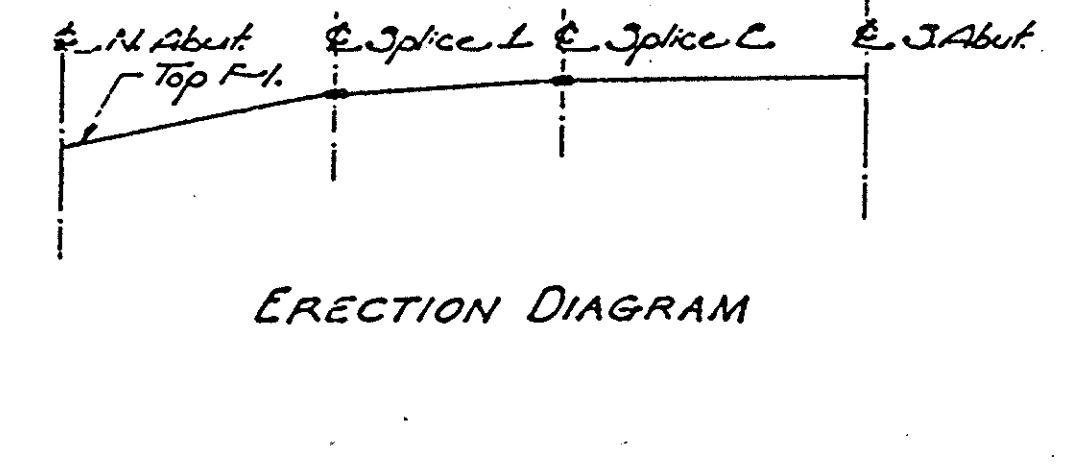
PIER 1 & 3



DIAPHRAGM D1-D2-D3



DIAPHRAGM D



ERECTION DIAGRAM

DESIGNED: *W. J. Jacobs*  
CHECKED: *W. J. Jacobs*  
APPROVED: *W. J. Jacobs*

EXAMINED: *W. J. Jacobs*  
PASSED: *W. J. Jacobs*  
APPROVED: *W. J. Jacobs*

DETAIL OF BEARING  
AT PIERS 1, 3 & ABUTS.

DETAIL OF BEARING  
AT PIER 2

DETAIL OF SPLICE

STEEL LAYOUT & BEARING DETAILS  
P.A.I. Rt. 80 ~ Sec. 06 - E-HB  
BUREAU COUNTY  
Sta. 342+38.40

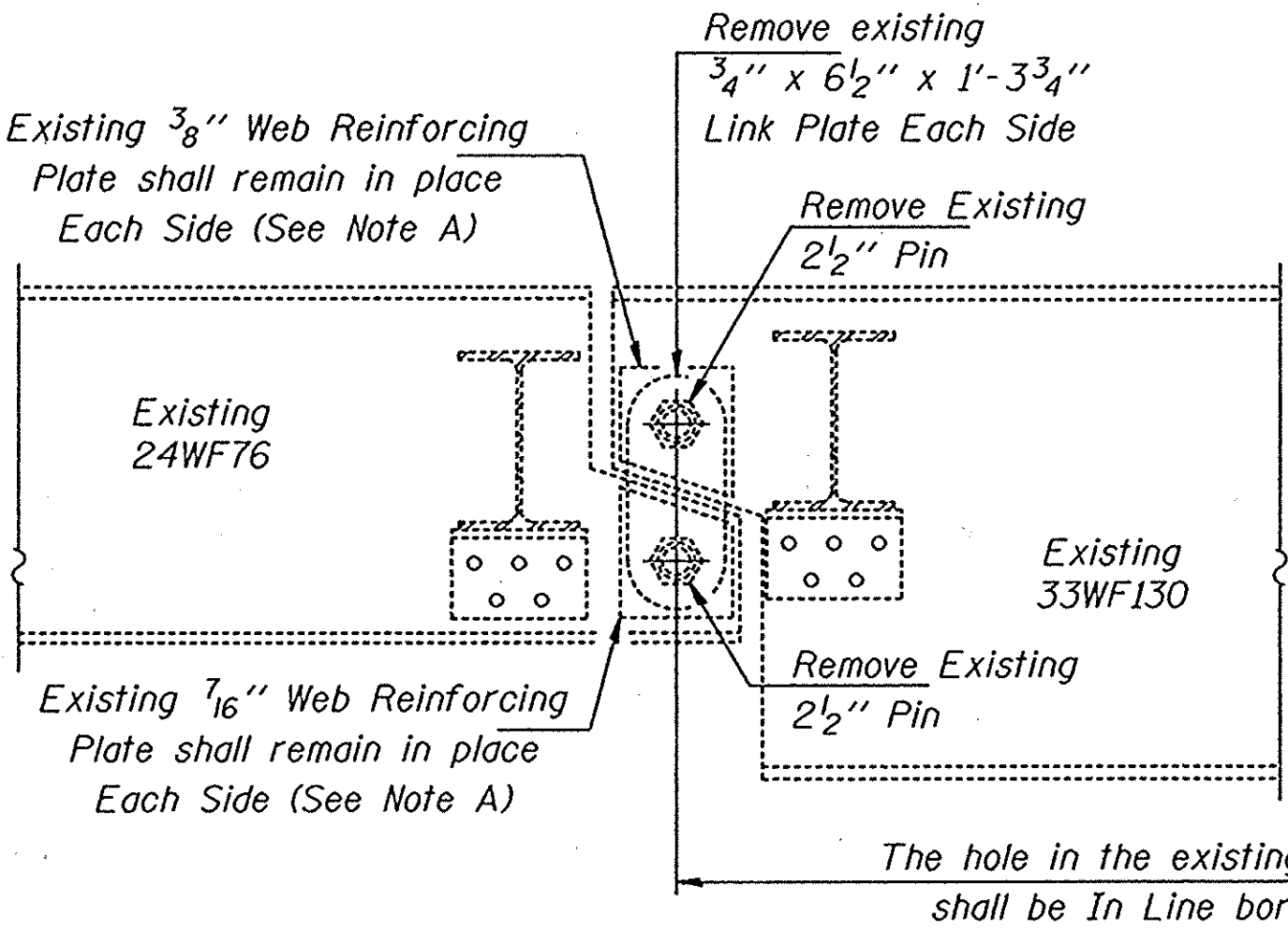
| TABLE OF "I" DIMENSIONS |      |      |      |      |      |
|-------------------------|------|------|------|------|------|
| Location                | Am.1 | Am.2 | Am.3 | Am.4 | Am.5 |
| E. Org. N. Abut.        | -    | -    | -    | -    | -    |
| E. Hinge                | -    | -    | -    | -    | -    |
| E. Pier-L               | -    | -    | -    | -    | -    |
| E. Pier-C               | -    | -    | -    | -    | -    |
| E. Pier-3               | -    | -    | -    | -    | -    |
| E. Org. S. Abut.        | -    | -    | -    | -    | -    |

I-2-L 342+38.40  
1-2-23 W.L.P. Added High Strength Bolts to end diaphragms; located 2  
Hinge, & revised Sec. 06 & Abut.

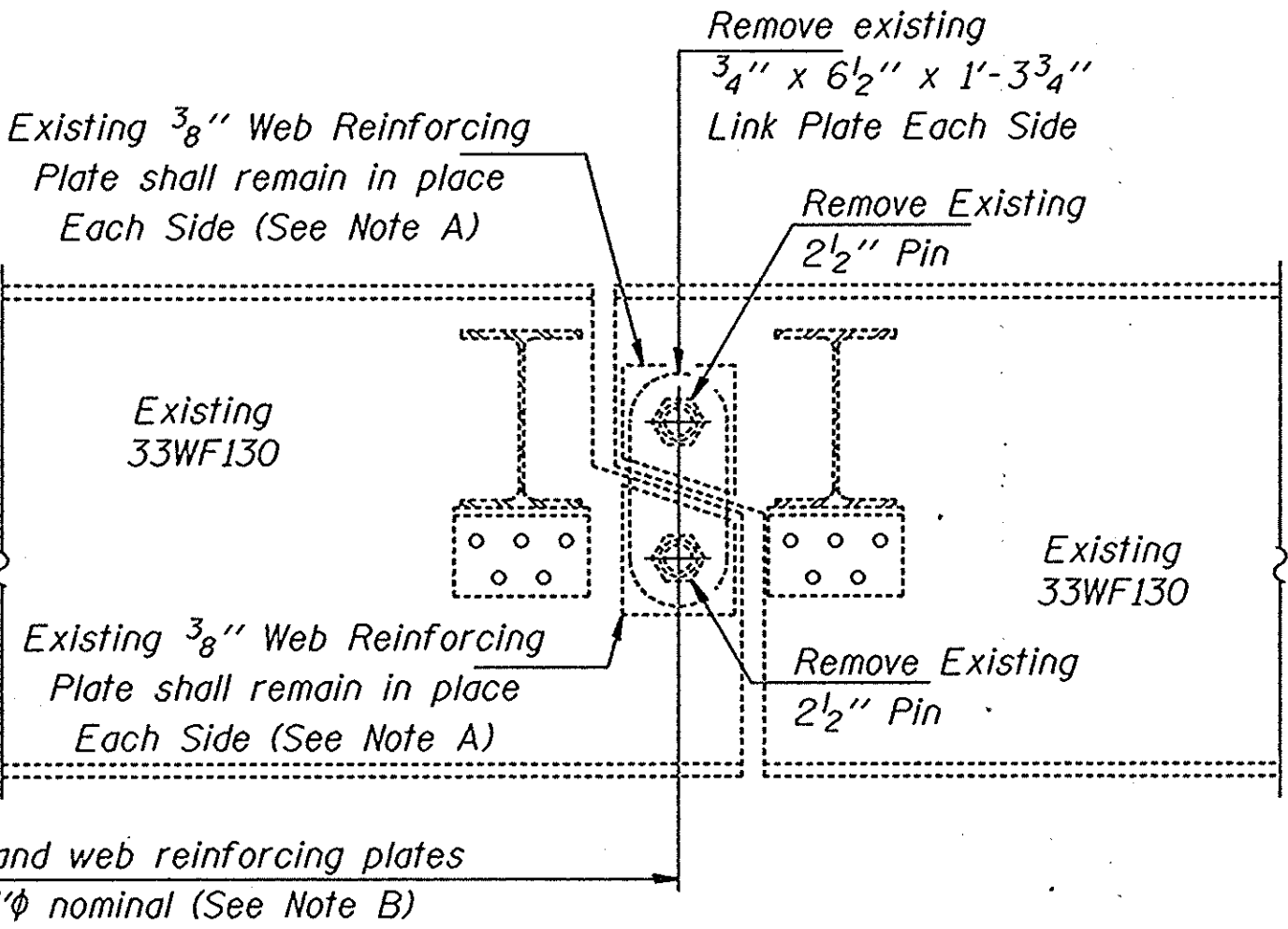
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

\* D-2 BRIDGE PIN REPLACE 1997-1

| ROUTE NO.             | SECTION  | COUNTY           | TOTAL SHEETS | SHEET NO. | SHEET NO. 1 |
|-----------------------|----------|------------------|--------------|-----------|-------------|
| FAI 80                | *        | BUREAU           | 26           | 14        | 4 SHEETS    |
| FED. ROAD DIST. NO. 7 | ILLINOIS | FED. AID PROJECT |              |           |             |

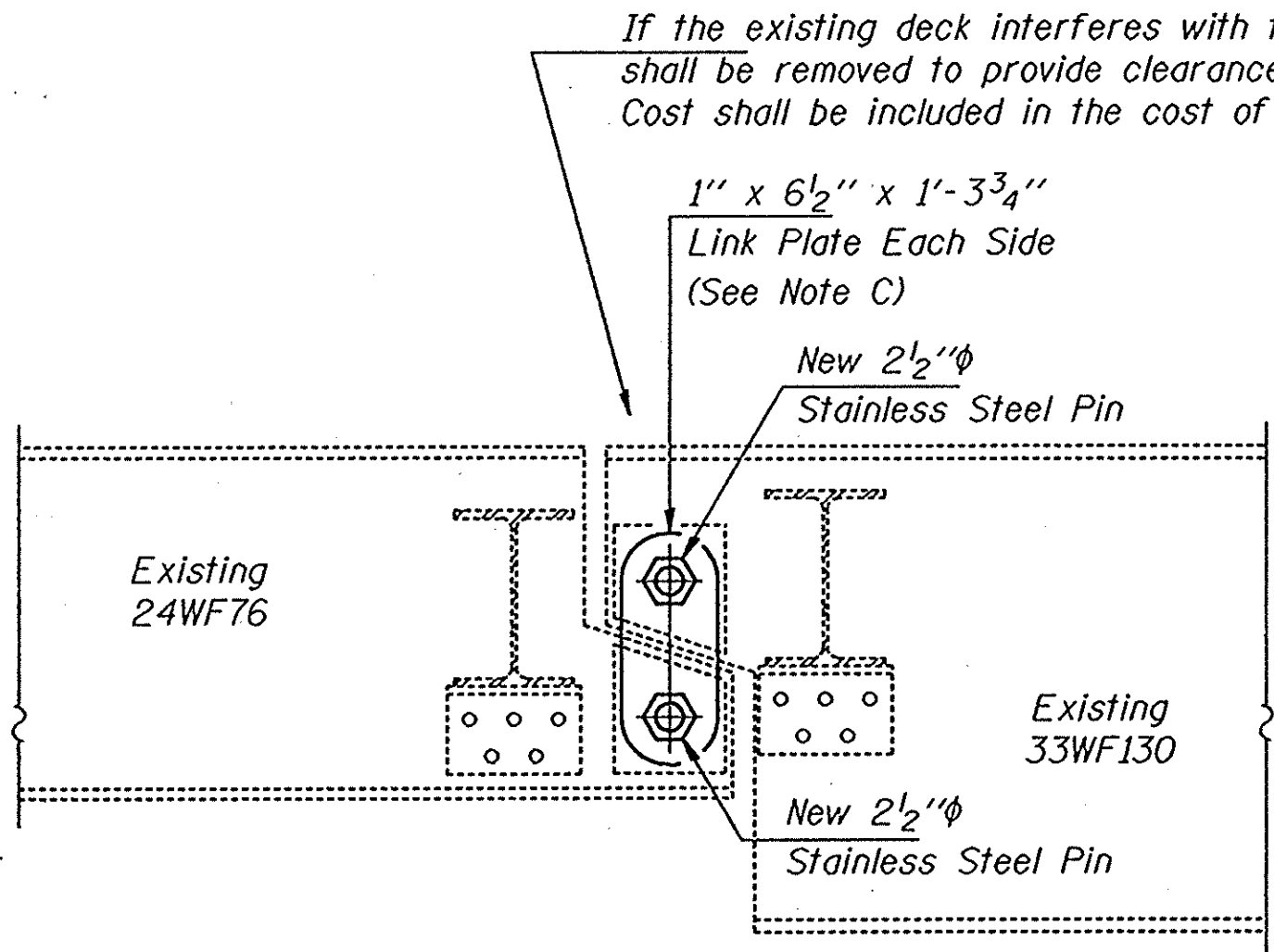


ELEVATION AT EXISTING PIN ASSEMBLY  
FOR INTERIOR BEAMS

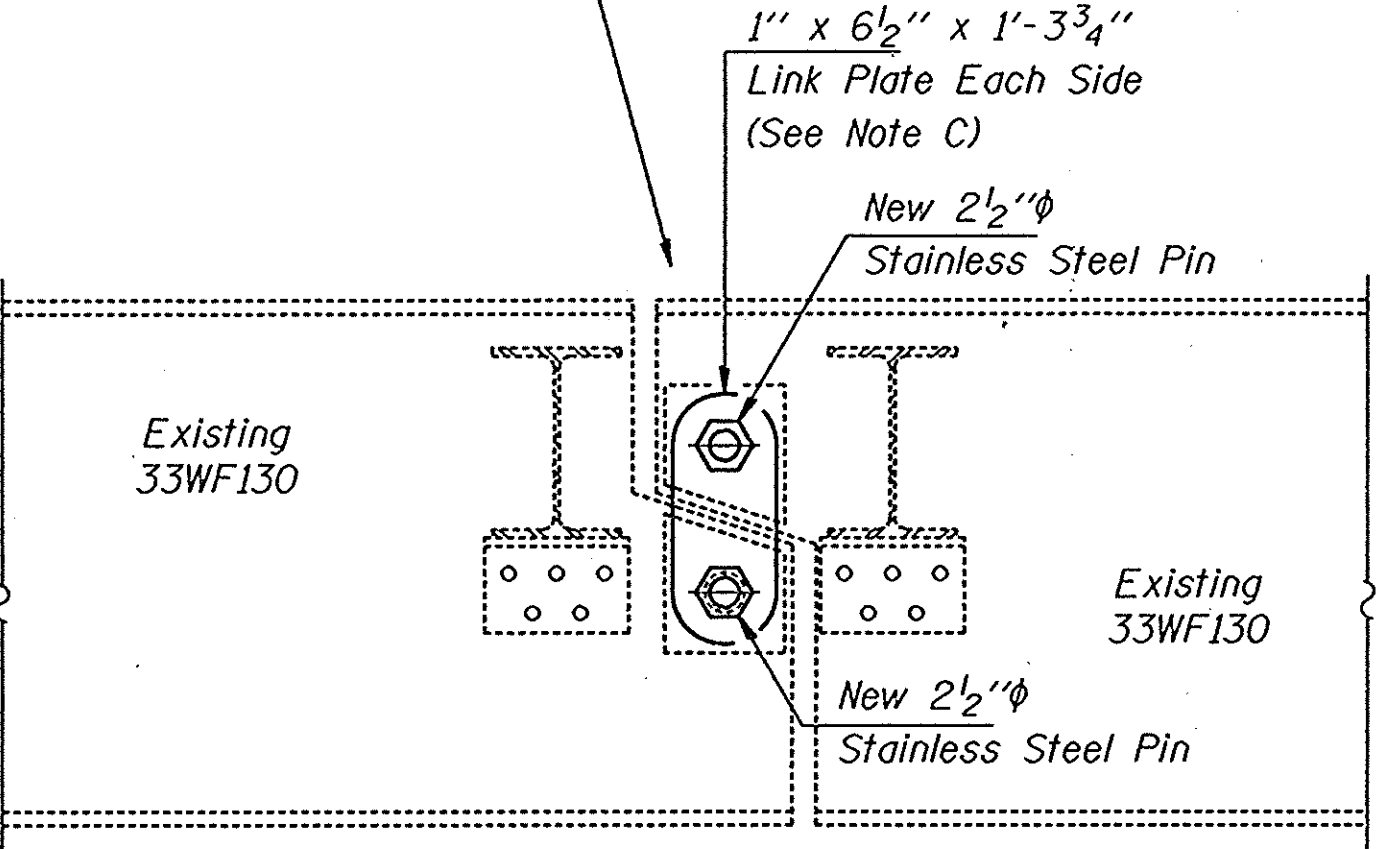


ELEVATION AT EXISTING PIN ASSEMBLY  
FOR EXTERIOR BEAMS

Any Pins that can be easily removed without damage to the pin shall be salvaged and the Bridge Engineer shall be contacted for disposition. Cost of salvage is included in "Pin and Link Plate Replacement".



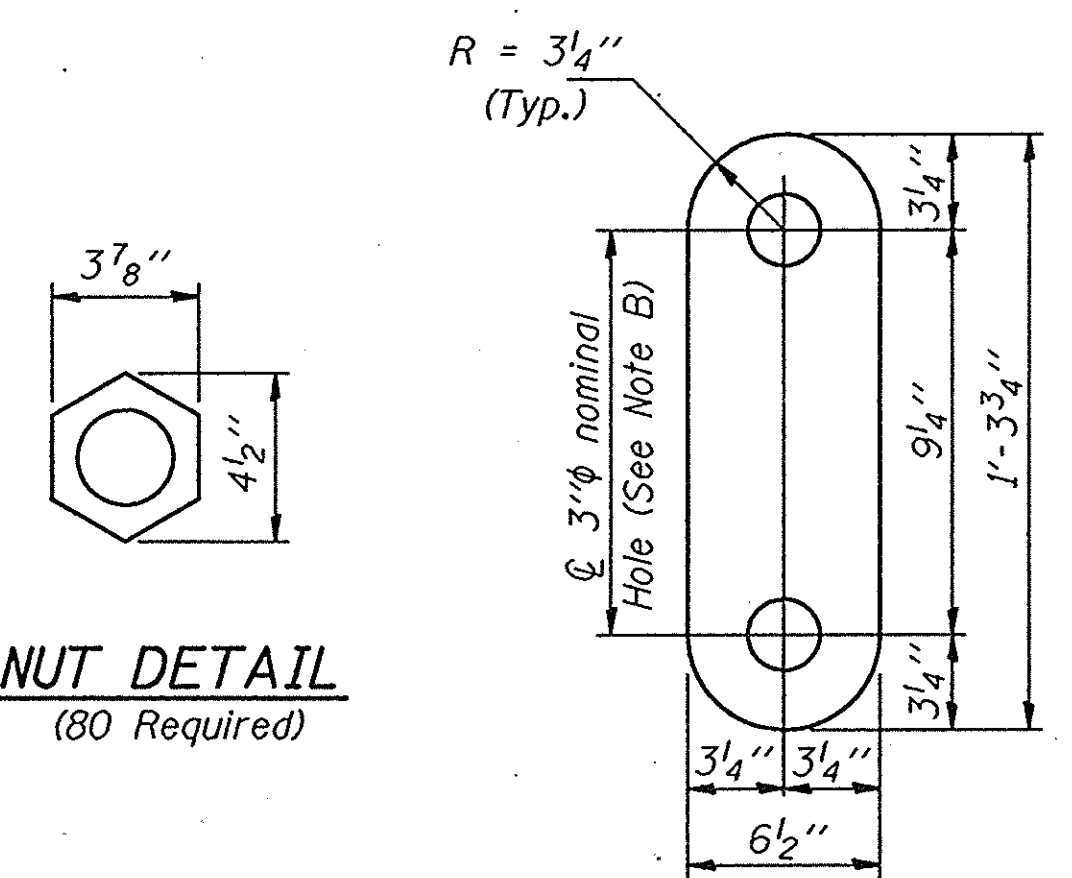
ELEVATION AT NEW PIN ASSEMBLY  
FOR INTERIOR BEAMS



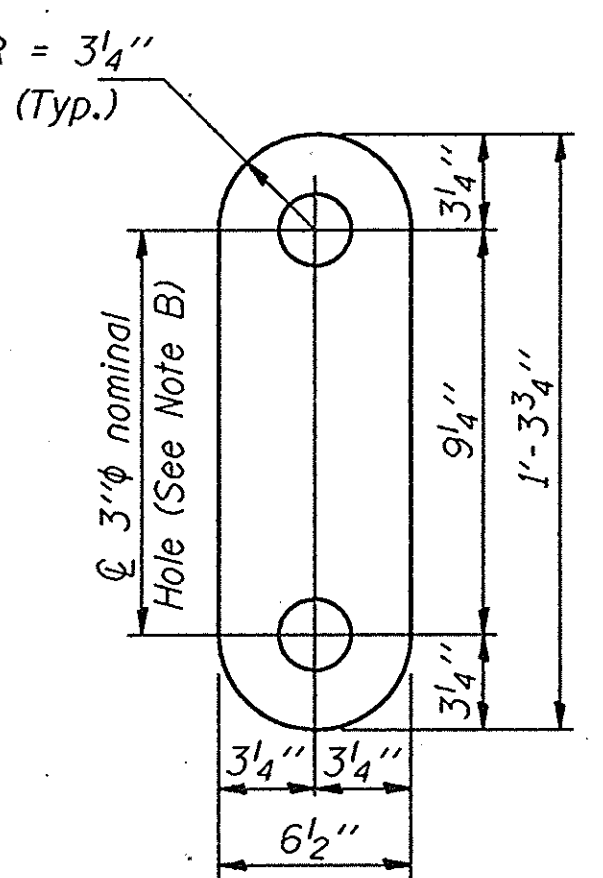
ELEVATION AT NEW PIN ASSEMBLY  
FOR EXTERIOR BEAMS

MAXIMUM REACTIONS AT PIN

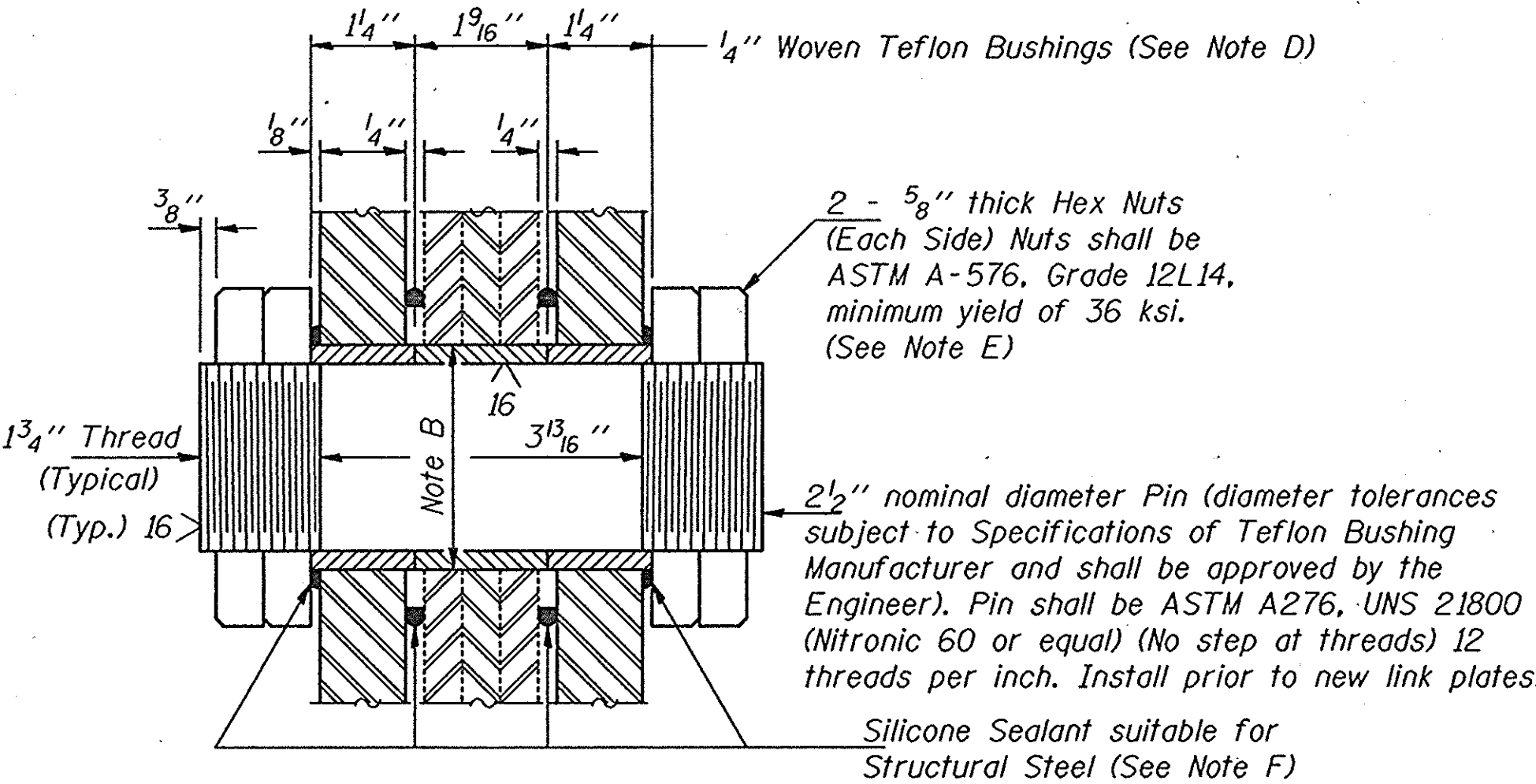
|                |     |      |
|----------------|-----|------|
| R <sub>l</sub> | (K) | 14.3 |
| R <sub>t</sub> | (K) | 25.6 |
| Imp.           | (K) | 7.7  |
| R (Total)      | (K) | 47.6 |



NUT DETAIL  
(80 Required)



LINK PLATE DETAIL  
(20 Required)



SECTION THRU PIN  
(20 Required)

GENERAL NOTES

All new structural steel shall conform to AASHTO Classification M-270 Gr. 36, unless otherwise noted.

The Contractor shall provide support and/or shoring systems for the beam in the area of existing pin and link plate replacement. See Special Provision "Temporary Support System."

The inorganic zinc rich primer/acrylic/acrylic paint system shall be used for shop and field painting of new structural steel except where otherwise noted. The color of the acrylic finish coat shall be Interstate Green, Munsell No. 7.5G 4/8. See Special Provisions "Cleaning and Painting New Metal Structures". Cost shall be included in the cost of "Pin and Link Plate Replacement".

Existing structural steel shall be cleaned and painted as required by the Special Provision "Cleaning and Painting Adjacent Areas of Existing Steel Structures". Cost shall be included in the cost of "Pin and Link Plate Replacement".

All existing steel surfaces behind link plates shall be cleaned and primed before installation of new link plates. Cost shall be included in the cost of "Pin and Link Plate Replacement".

Plan dimensions and details relative to existing structure have been taken from existing plans and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field, except the pin diameters, and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in the scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.

The Pins and Link Plates shall conform to the minimum Charpy V-Notch Toughness of 25 ft.-lbs. at 40° F.

The pins, link plates, bushings, nuts and silicone sealant are the items included in "Pin and Link Plate Replacement".

TOTAL BILL OF MATERIAL

| ITEM                           | UNIT | QUANTITY |
|--------------------------------|------|----------|
| Temporary Support System       | Each | 10       |
| Pin and Link Plate Replacement | Each | 10       |
| Silicone Joint Sealer          | Foot | 64       |

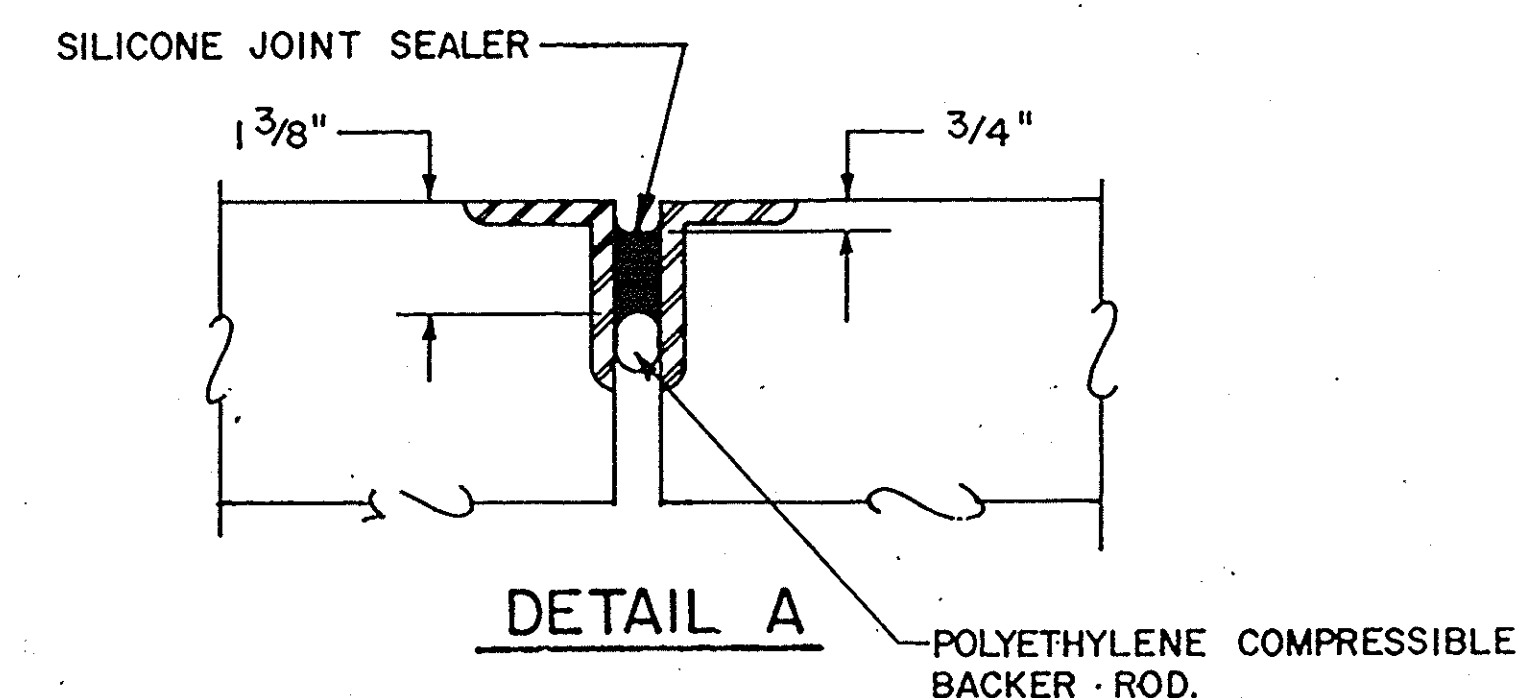
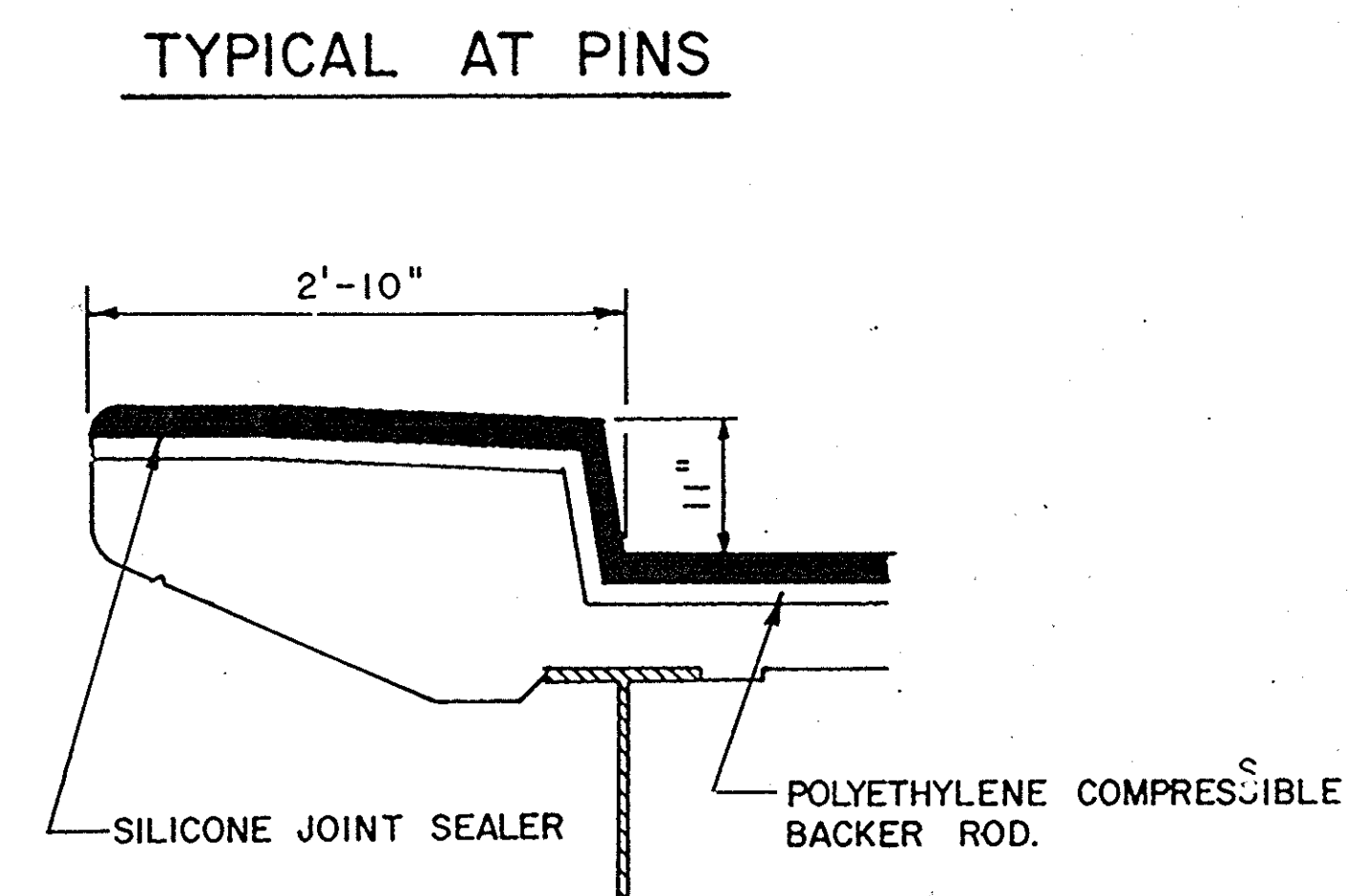
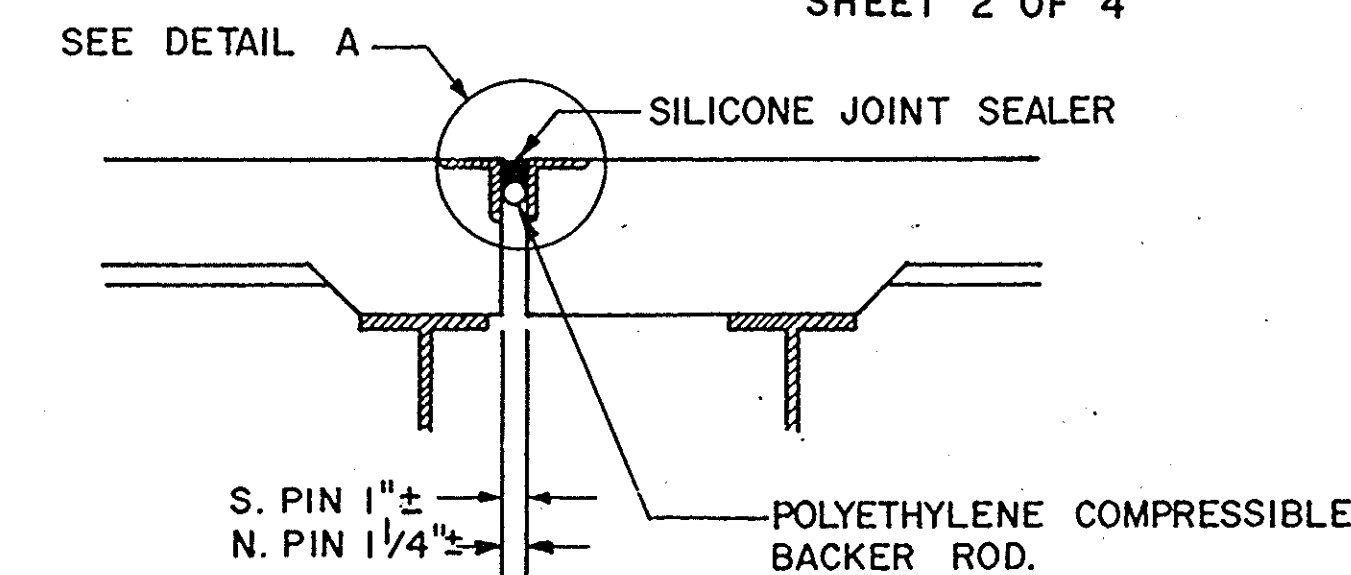
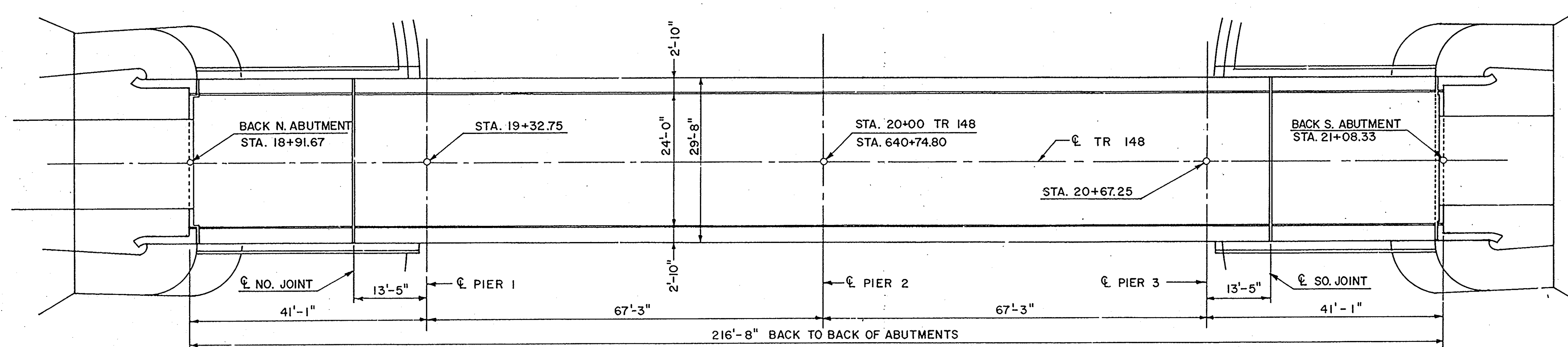
PIN REPLACEMENT  
TR ROUTE 148 SEC. 06-3HB  
BUREAU COUNTY  
STA. 640+74.80  
STR. No. 006-0123

|          |                   |                                    |
|----------|-------------------|------------------------------------|
| DESIGNED | Kenneth A. Stultz | APRIL 29, 1997                     |
| CHECKED  | Nicholas J. Lawl  | EXAMINED Todd E. Adams             |
| DRAWN    | Paul Summer       | PASSED                             |
| CHECKED  | KPS NJS           | ENGINEER OF BRIDGES AND STRUCTURES |

\* D-2 BRIDGE PIN REPLACE 1997-1

| ROUTE NO.                              | SEC. | COUNTY | TOTAL SHEETS | SHEET NO. |
|----------------------------------------|------|--------|--------------|-----------|
| FAI 80                                 | *    | BUREAU | 26           | 15        |
| FED. ROAD DIST. NO. 7 ILLINOIS PROJECT |      |        |              |           |

SHEET 2 OF 4



NOTE: BACKER ROD SHALL BE 25% GREATER IN DIAMETER THAN THE JOINT OPENING AT THE TIME OF INSTALLATION.

# BILL OF MATERIALS

| ITEM                  | UNIT | QUANTITY |
|-----------------------|------|----------|
| SILICONE JOINT SEALER | FOOT | 64       |

SN 006-0123

DISTRICT NO. 2 DIXON

DESIGNED D. PAUSER

DRAWN A. CONDERMAN DATE 3/97

CHECKED SCALE

No Existing Structure

|                       |            |                                |              |           |
|-----------------------|------------|--------------------------------|--------------|-----------|
| ROUTE NO.             | SECTION    | COUNTY                         | TOTAL SHEETS | SHEET NO. |
| E. & I.<br>F. & I. 80 | 06-<br>3HB | Bureau                         | 26           | 16        |
| FED. ROAD DIST. NO. 7 | ILLINOIS   | FED. AID PROJECT. T-80-1(40)48 |              |           |

SHEET NO. 3  
4 SHEETS

*Class-X Concrete shall be used throughout except in End Posts. Handrail Concrete shall be used in the End Posts. The concrete floor slab shall be finished in accordance with Art. 51.19 of the Standard Specifications. Slope Wall shall be reinforced with welded wire fabric 6"x6" mesh, 4 wires, weighing 58"/100 sq. ft. Rivets 2", Open Holes 1/8" unless noted.*

All rockers, bolsters, bearing plates, lead plates, pintles and anchor bolts shall be fabricated and set in accordance with Art. 51.15 of the Standard Specifications.  
Anchor bolts shall be set before riveting diaphragms over supports.

Expansion guards shall be fabricated and erected in accordance with Art. 51.13(d) of the Standard Specifications and are included in quantity of Structural Steel.

Except as otherwise provided all Structural Steel and Handrail shall receive one shop coat of red lead paint and two field coats of aluminum paint. See Articles 56.1 to 56.5 inclusive of the Standard Specifications.

The Contractor shall drive two test piles; one Concrete test pile in the South Abutment and one timber test pile near Pier 1.

Holes shall be precored for piles under Abutments.  
See Art. 60.9 (c) of the Standard Specifications.  
- All paint shall be furnished and applied by the Contractor.



LOCATION SKETCH

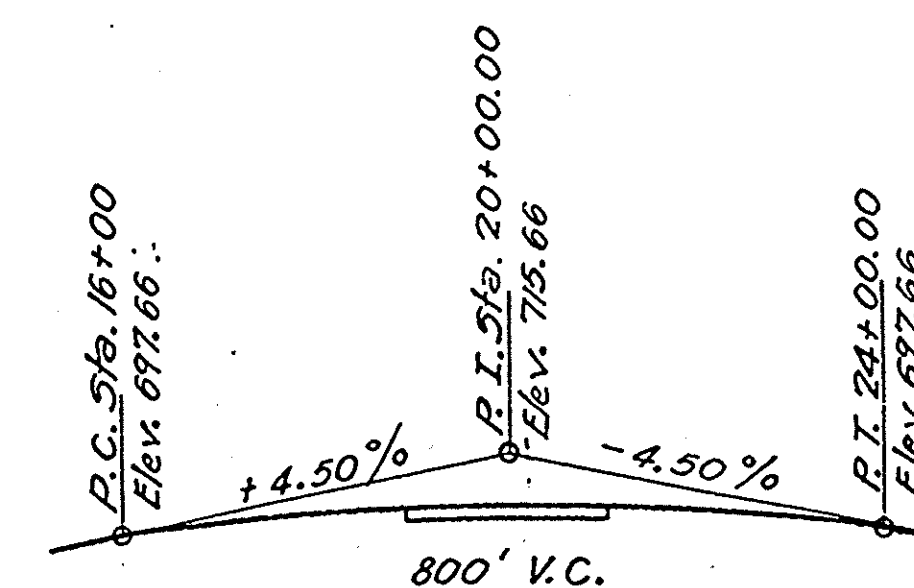
TOTAL BILL OF MATERIAL

| ITEM                           | SUPER.         | SUBSTR. | TOTAL  |
|--------------------------------|----------------|---------|--------|
| Class-X Concrete               | Cu. Yds. 182.0 | 200.4   | 382.4  |
| Handrail Concrete              | Cu. Yds. 2.9   |         | 2.9    |
| Reinforcement Bars             | Lbs. 32,900    | 16,960  | 49,860 |
| Structural Steel               | Lbs. 166810    |         | 166810 |
| Metal Handrail                 | Lin. Ft. 429   |         | 429    |
| Concrete Piles                 | Lin. Ft.       | 442     | 442    |
| Creosoted Piles                | Lin. Ft.       | 1122    | 1122   |
| Test Piles (Concrete)          | Each           | 1       | 1      |
| Test Piles (Timber)            | Each           | 1       | 1      |
| Name Plates                    | Each           | 2       | 2      |
| Class-A Excavation for Struct. | Cu. Yds.       | 270     | 270    |
| Protective Coat                | Sq. Yds. 758   |         | 758    |
| Slope Wall ("A")               | Sq. Yds.       |         | 227    |
| Pipe Culverts Type 2 A-2       | Lin. Ft.       |         | 130    |



STATION 640+74.80  
BUILT 196 BY  
STATE OF ILLINOIS  
F.A.I. RT. 80-SEC. 06-3-HB  
F.A. PROJECT I-80-1(40)  
LOADING H15-512

LETTERING FOR NAME PLATE  
See Standard 2113



GRADE PROFILE-TWP. RD. 148

### DESIGN STRESSES

DESIGN STRESSES

|       |     |                         |                |
|-------|-----|-------------------------|----------------|
| $f_c$ | --- | 1400 #/in <sup>2</sup>  | Super and Sub. |
| $V$   | --- | 75 #/in <sup>2</sup>    | Footing        |
| $f_s$ | --- | 20000 #/in <sup>2</sup> | Reinf.         |
| $f_s$ | --- | 18000 #/in <sup>2</sup> | Struct.        |
| $n$   | --- | 10                      |                |

**F**

Loading H15-512-44

GENERAL PLAN & ELEVATION

F.A.I. RT. 80-SEC. 06-3-HB

F.A. PROJECT I-80-1(40)48

BUREAU COUNTY

STATION 640+74.80

STATION 600, 700, 800

DESIGNED *J. B. Nelson*  
CHECKED *P. H. Hogewerf*  
DRAWN *J. B. N.* *M. Miller*  
CHECKED *P. H. H.*

MAY 27 1960

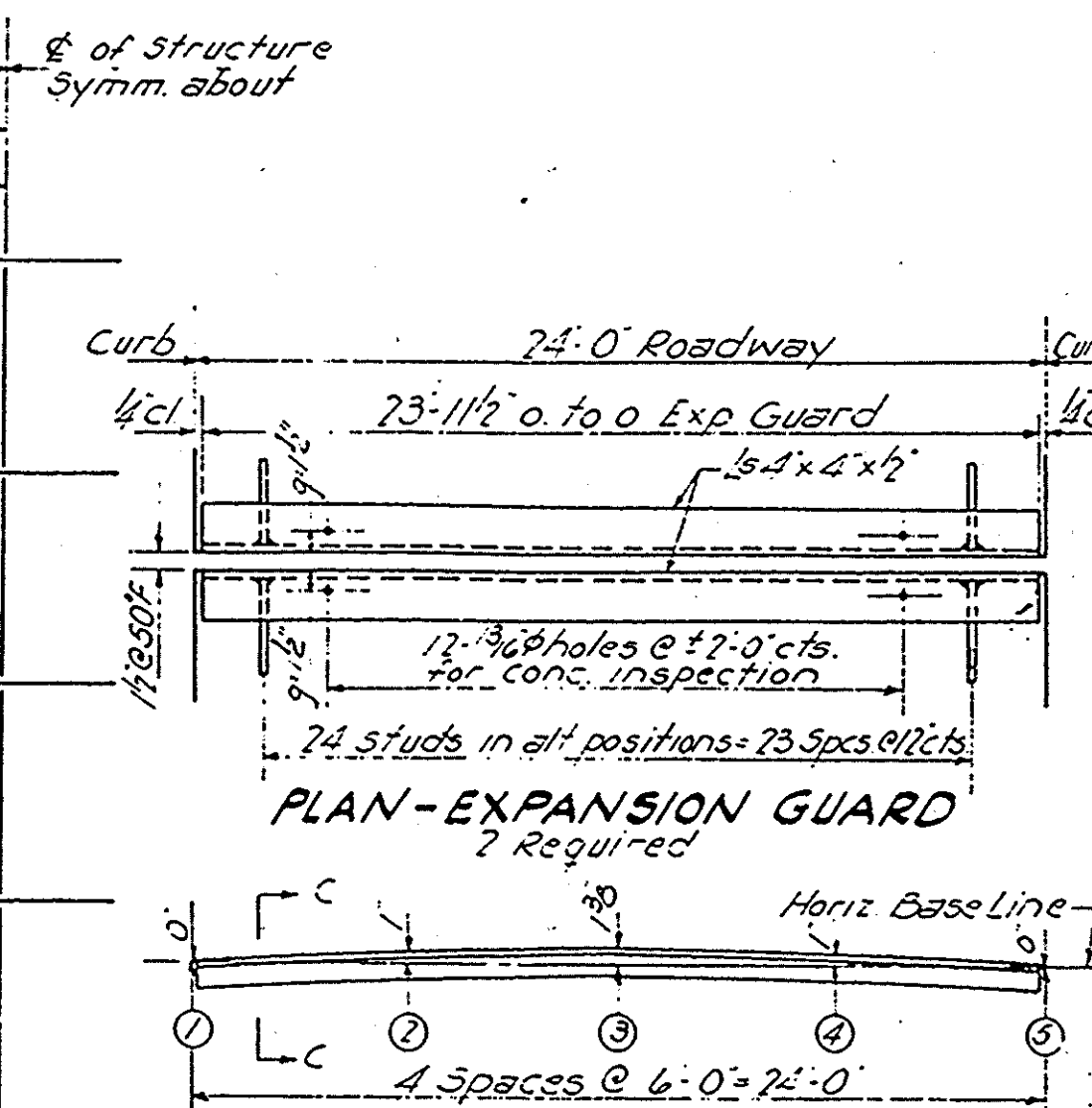
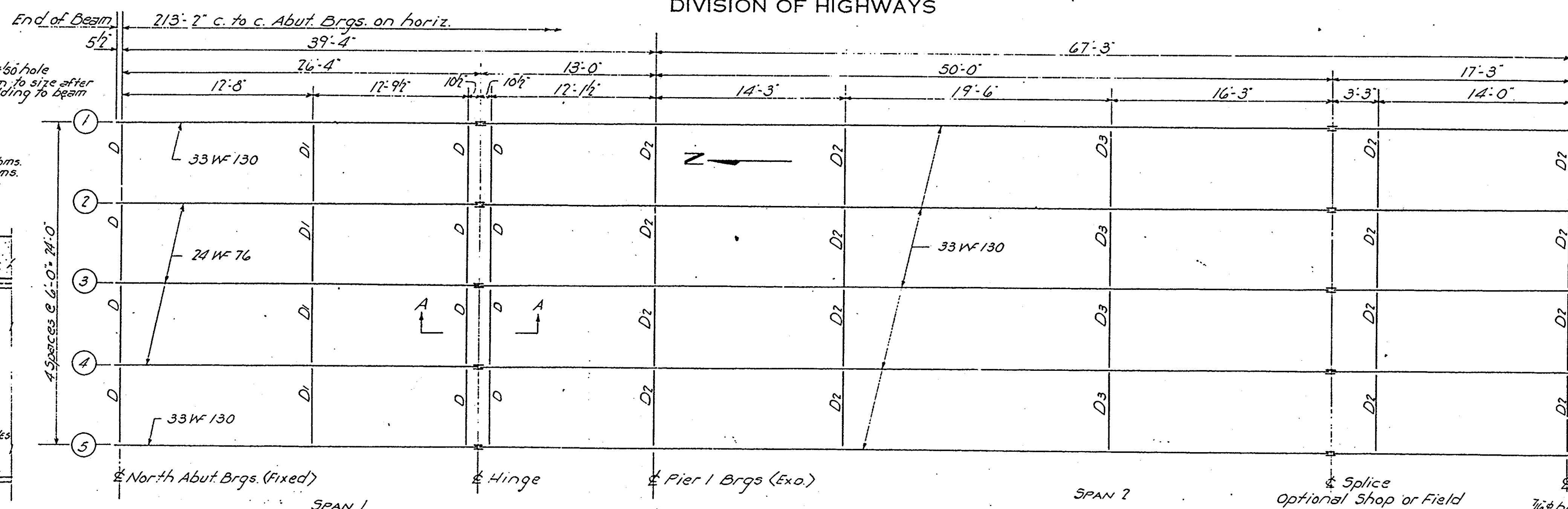
EXAMINED *V. M. Romine*  
ENGINEER OF BRIDGES AND TRAFFIC STRUCTURES

PASSED *E. H. [Signature]*  
SUPERVISOR OF DESIGN

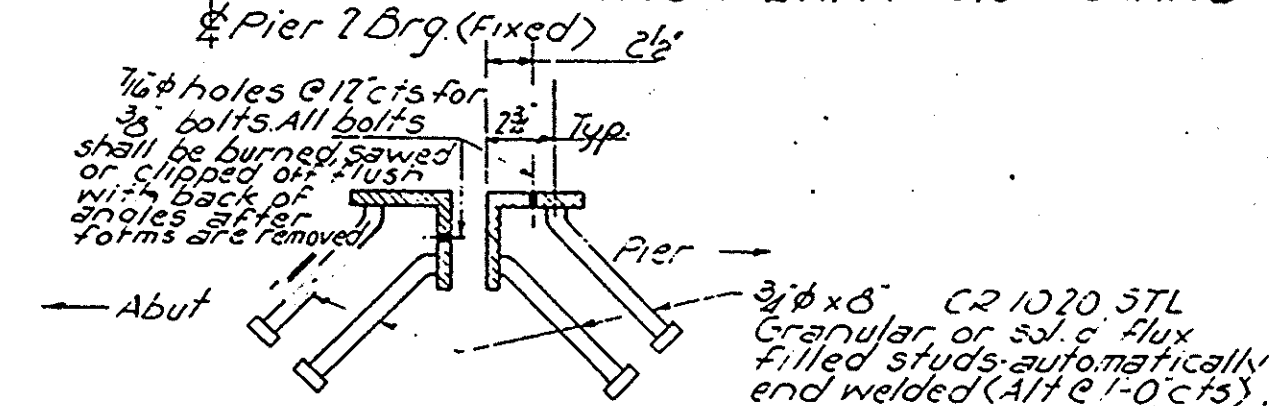
APPROVED *R. H. [Signature]*  
CHIEF HIGHWAY ENGINEER

Revised 4/23/62 In total bill of MTL. quantity of Reinf. Bars chgd. from 34,980 to 32,900 (Super.) & from 43,340 to 49,860 (Norml) RAZ.

USE 100 IMPERIAL 4

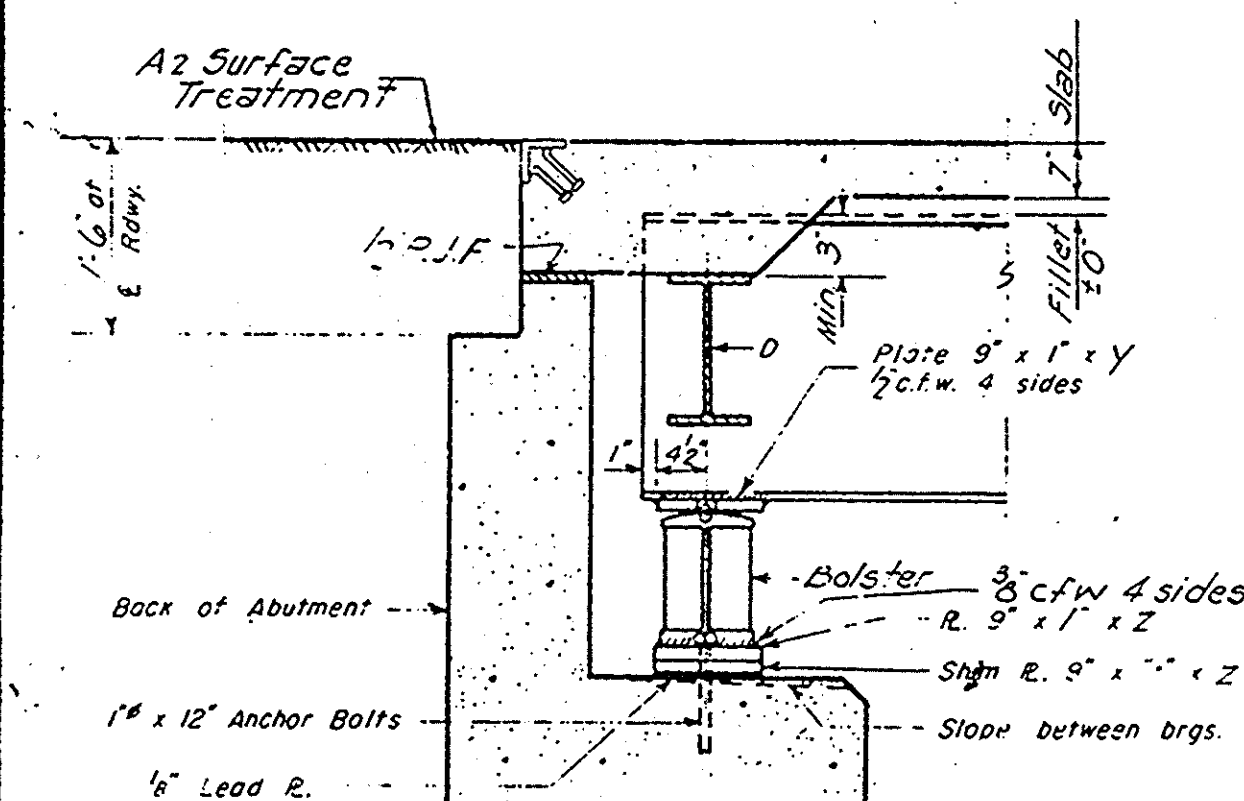


*ELEVATION-EXPANSION GUARD*

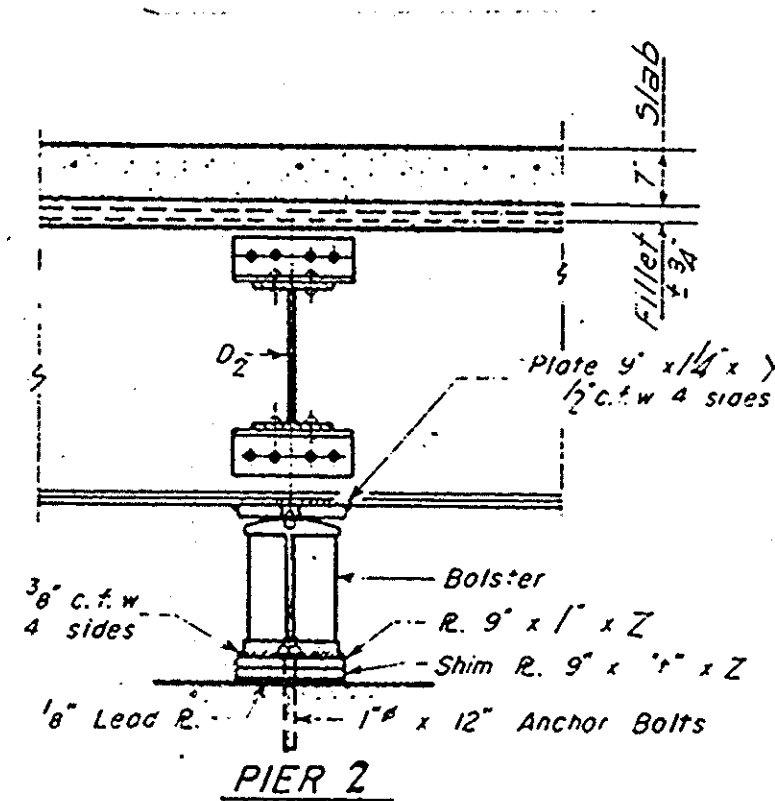


**SEC. C-C**

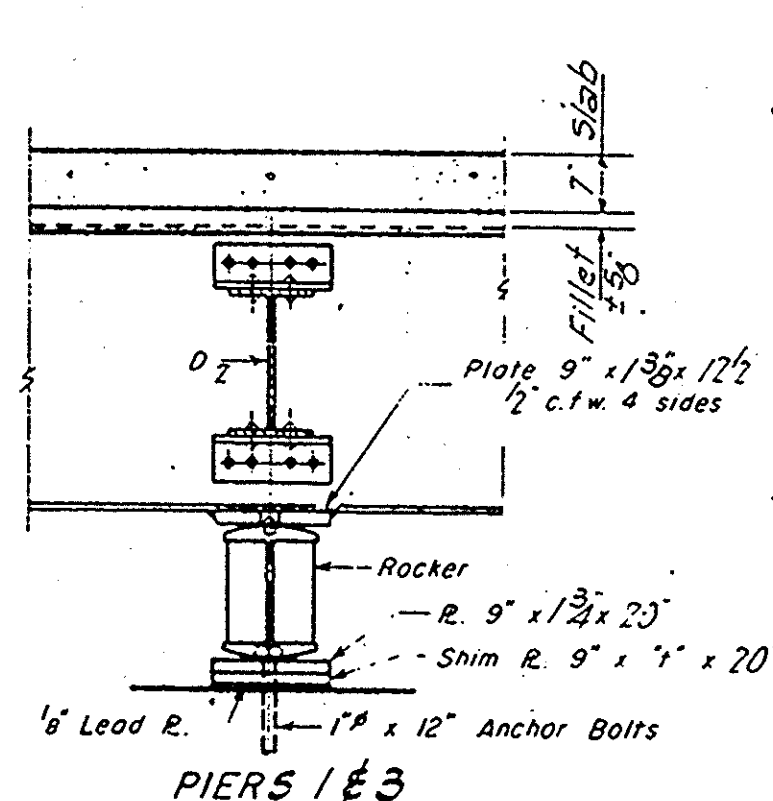
Estimated weight of Expansion Guards  
1350 lbs



SECTION AT ABUTMENT



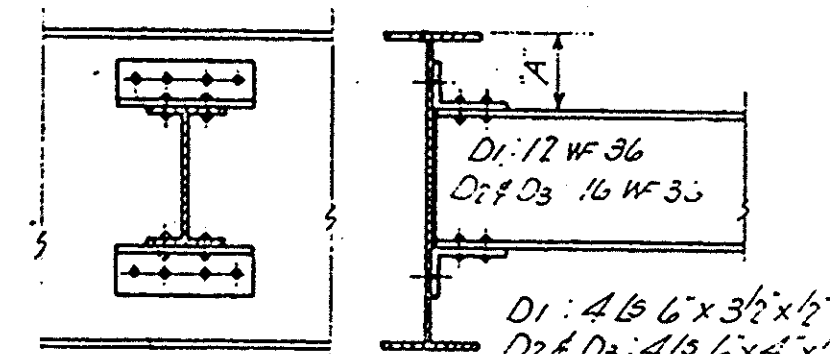
PIER



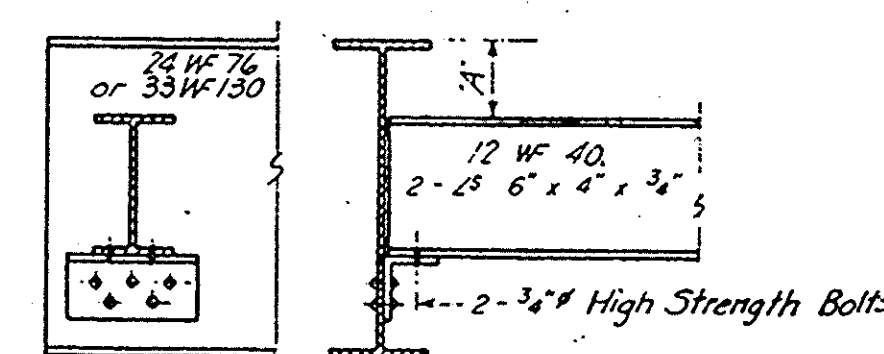
PIERS / £3

**SCHEDULE CF DIMENSIONS "A"**

| BEAM  | D      | D <sub>1</sub> | D <sub>2</sub> | D <sub>3</sub> |
|-------|--------|----------------|----------------|----------------|
| 1 & 5 | 3"     | 5 1/2"         | 10 1/8"        | 5 3/4"         |
| 2 & 4 | 4"     | 6 1/4"         | 11 1/8"        | 6 3/4"         |
| 3     | 4 3/8" | 6 5/8"         | 11 1/2"        | 7 1/8"         |

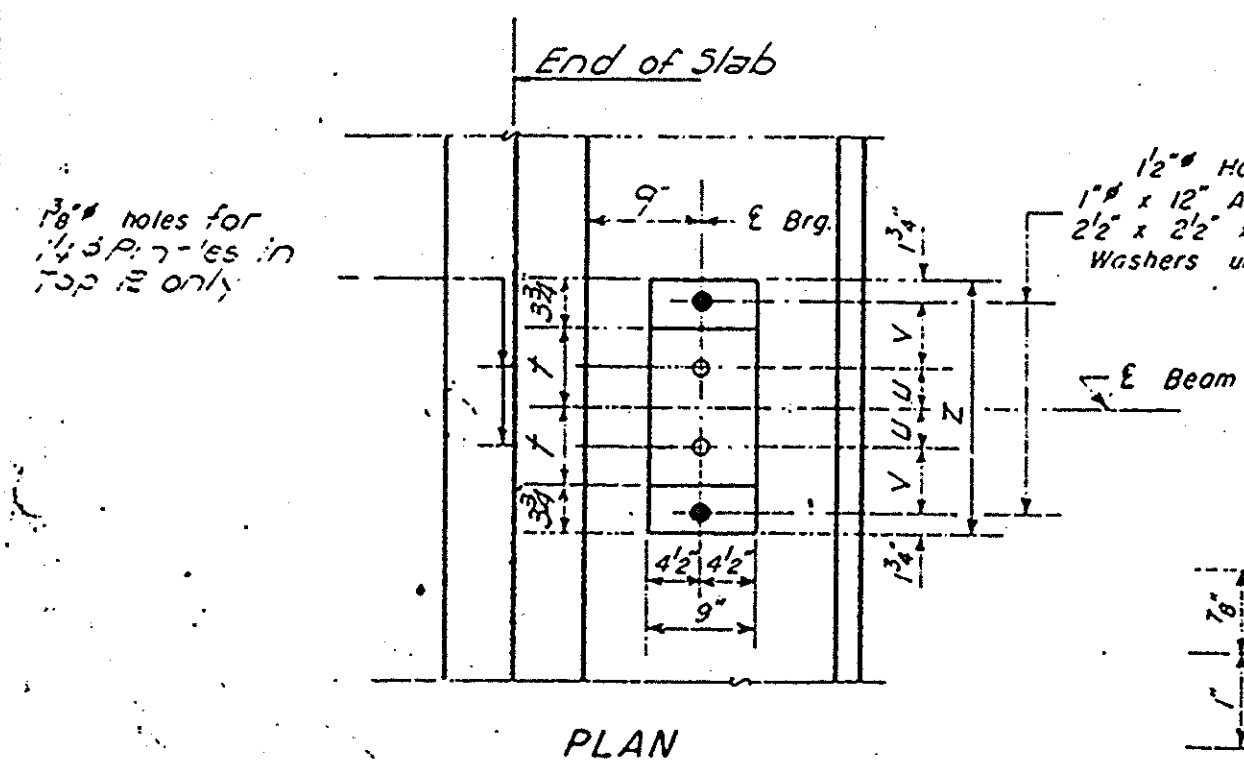


DIAPHRAGM  $D_1, D_2, D_3$

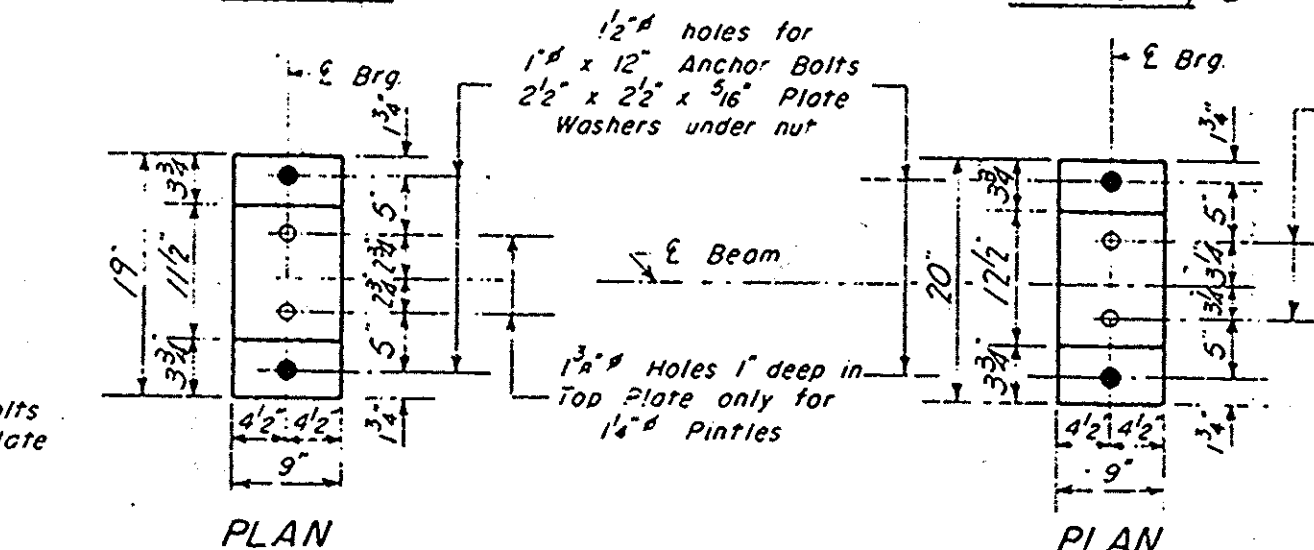


DIAPHRAGM D

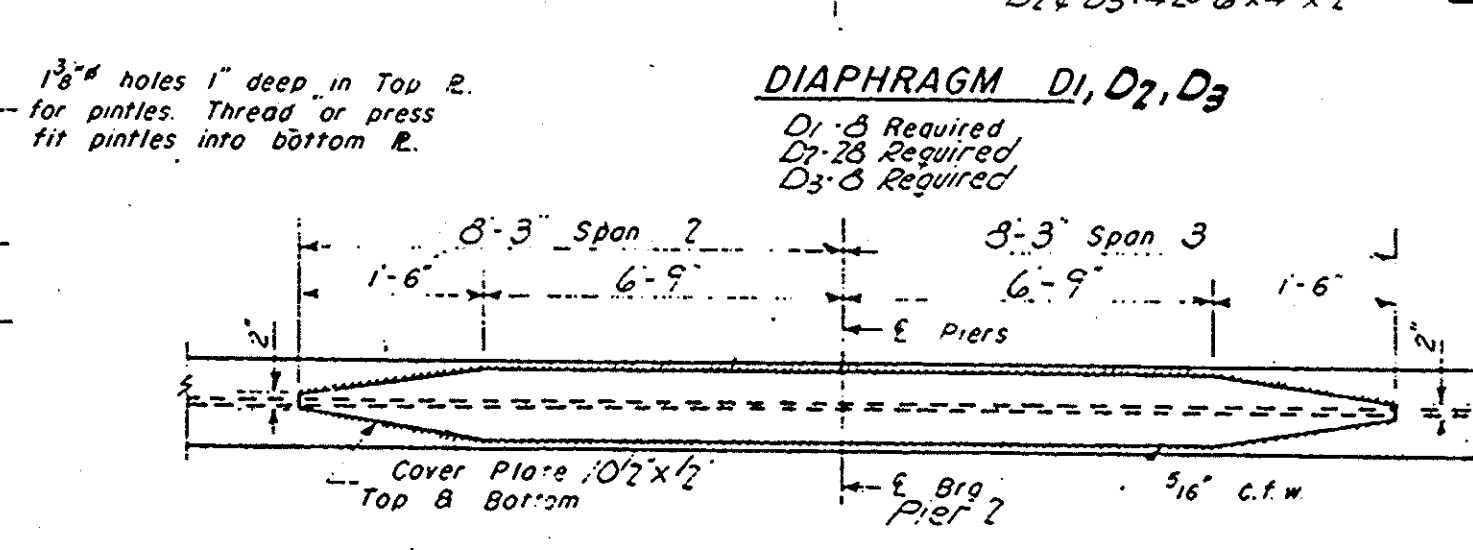
| <u>ELEVATION TOP OF BEAMS</u> |        |        |         |        |        |
|-------------------------------|--------|--------|---------|--------|--------|
| BEAMS                         | ABUTS. | HINGE  | PIER #3 | SPLICE | PIER 2 |
| 1 & 5                         | 705.53 | 705.64 | 705.70  | 705.91 | 705.91 |
| 2 & 4                         | 705.41 | 705.72 | 705.75  | 705.99 | 705.99 |
| 3                             | 705.44 | 705.75 | 705.71  | 706.02 | 706.02 |



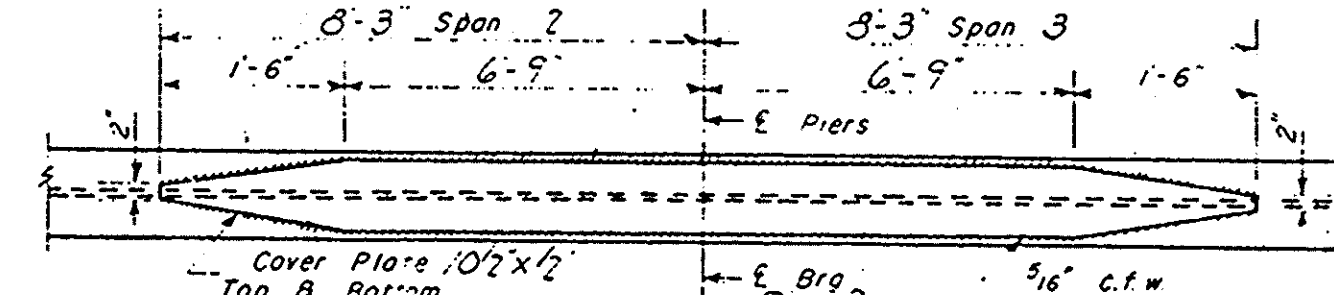
*PLAN*



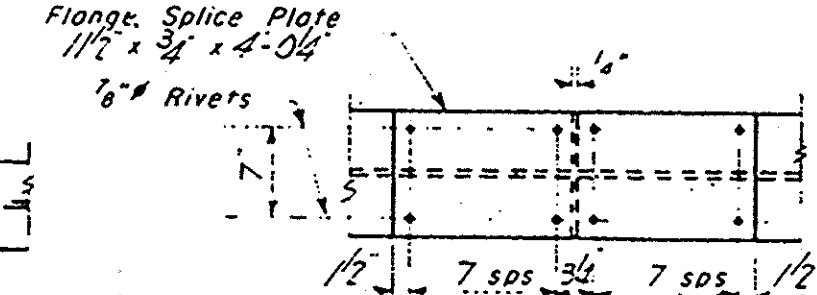
*PLAN*



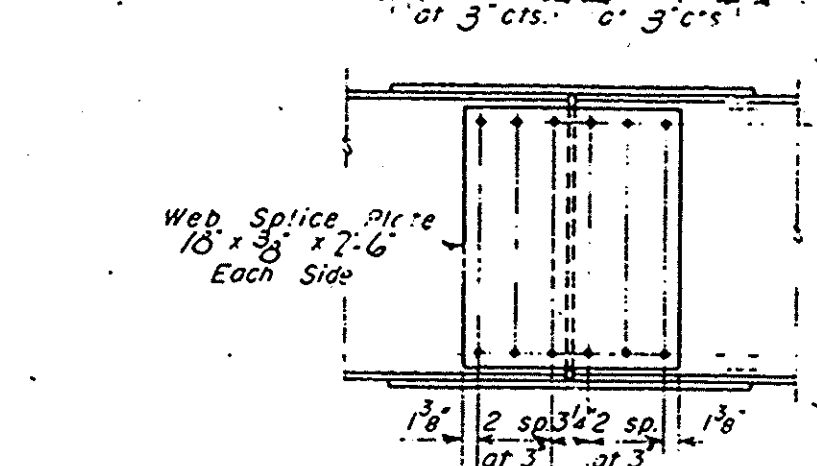
## PLAN



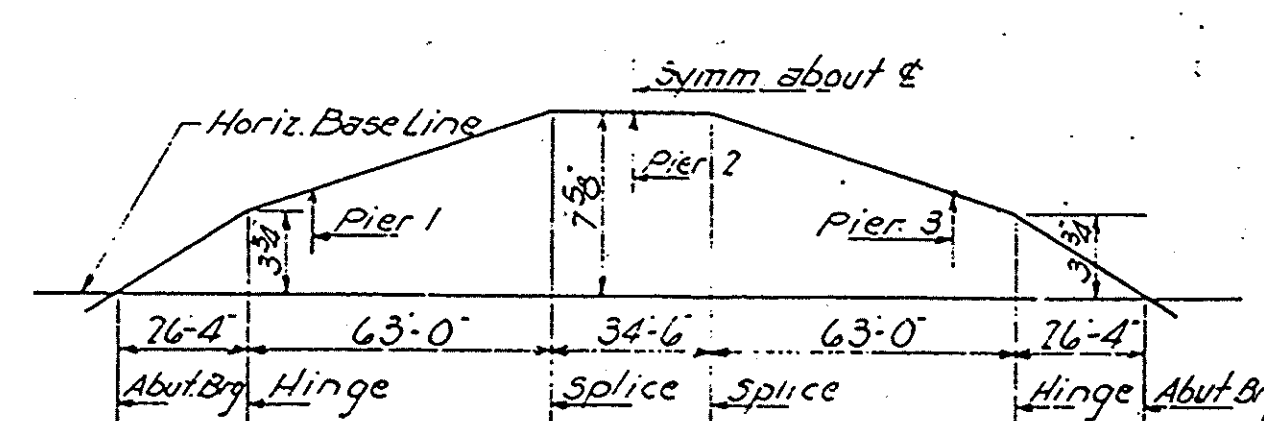
DETAIL OF COVER PLATES



1



DETAIL OF SPLICE



FABRICATION DIAGRAM

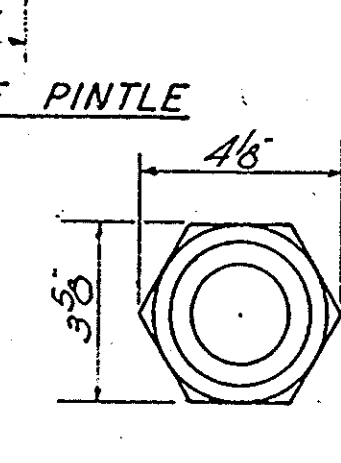
|          |                                                |
|----------|------------------------------------------------|
| DESIGNED | <i>J. B. Adams</i>                             |
| CHECKED  | <i>P. H. Hogeveen</i>                          |
| DRAWN    | <i>J. A. Sandoval</i><br><i>W. A. Sausamon</i> |
| CHECKED  | <i>P. H. H.</i>                                |

MAY 27 1960

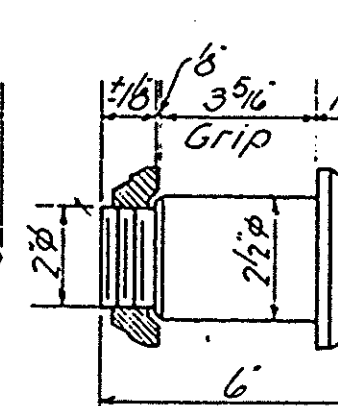
EXAMINED *V. M. Romine*  
ENGINEER OF BRIDGE AND TRAFFIC STRUCTURES

PASSED *E. Harvey*  
SUPERVISOR OF UCRION

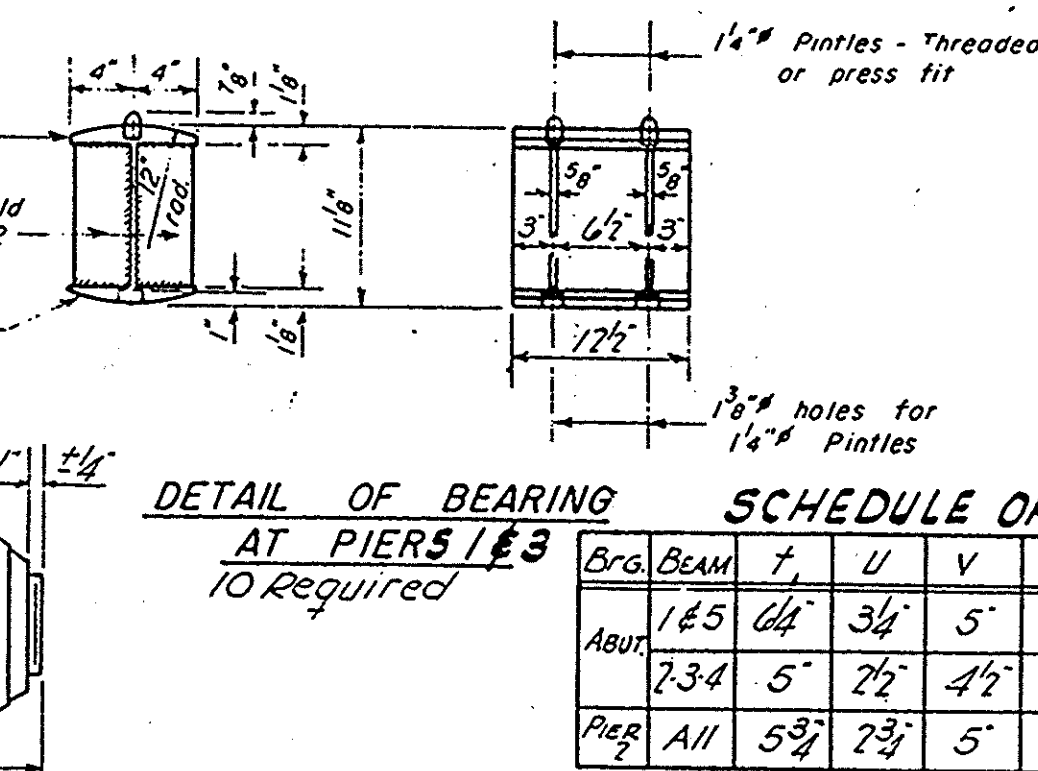
APPROVED *R. L. Bartelmeayer*



DETAIL OF PINTLE



PIN DETAIL  
20 Required -



DETAIL OF BEARING  
AT PIERS 1 & 3  
*10 Required*

| SCHEDULE OF BOLSTER DIMENSION |      |         |         |        |        |        |         |         |           |
|-------------------------------|------|---------|---------|--------|--------|--------|---------|---------|-----------|
| Brg.                          | BEAM | T       | U       | V      | W      | X      | Y       | Z       | No. REQ'D |
| ABUT.                         | 145  | 64"     | 34"     | 5"     | 3"     | 62"    | 17 1/2" | 20"     | 4         |
|                               | 234  | 5"      | 72"     | 4 1/2" | 7 1/2" | 5"     | 10"     | 17 1/2" | 6         |
| PIER 2                        | A11  | 53 1/2" | 23 1/2" | 5"     | 3"     | 5 1/2" | 11 1/2" | 19"     | 5         |

*SCHEDULE OF BOLSTER DIMENSIONS*

| <i>BEAM</i>    | <i>ALL BEARINGS</i> |
|----------------|---------------------|
| <i>1-2-4-5</i> | <i>0"</i>           |
| <i>3</i>       | <i>3/8"</i>         |

TABLE OF "t" DIMENSIONS


  
 OF SPLICE
  
 quired

FOR INFORMATION ONLY

STRUCTURAL

FAIRPLAY 80 SE

## STRUCTURAL STEEL

F.A.I.R.T. 80 SEC. 06-3-HB.  
BUREAU COUNTY  
STA. 640+74.80

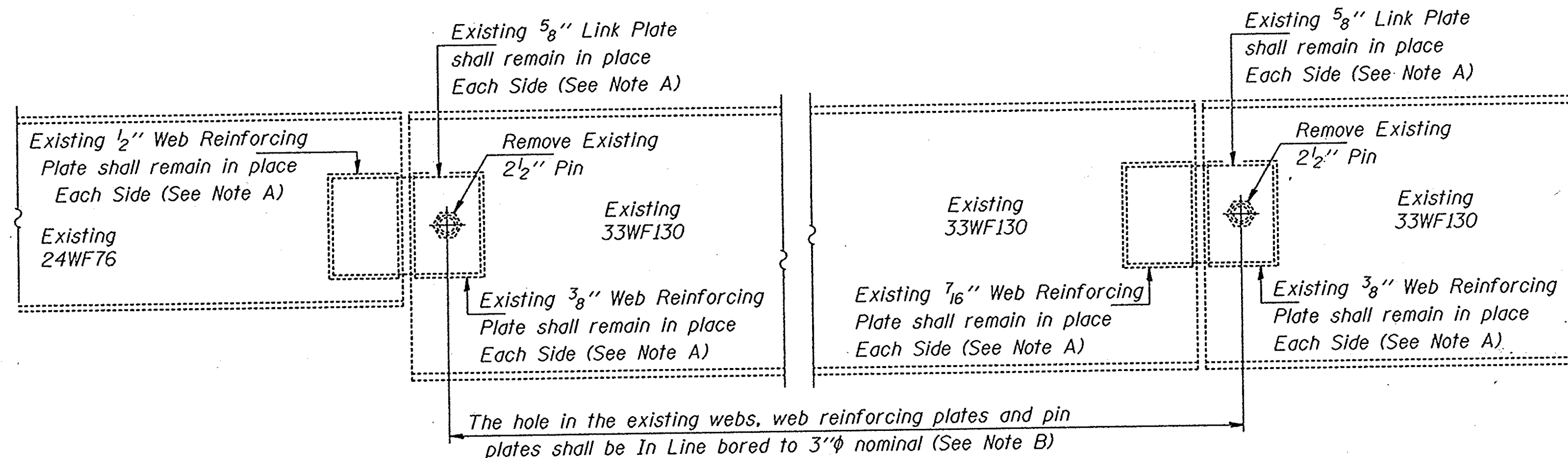
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

\* D-2 BRIDGE PIN REPLACE 1997-1

| ROUTE NO.             | SECTION  | COUNTY           | DISTRICT | SHEET |
|-----------------------|----------|------------------|----------|-------|
| FAI 88                | *        | BUREAU           | 25       | 18    |
| FED. ROAD DIST. NO. 7 | ILLINOIS | FED. AID PROJECT |          |       |

SHEET NO. 1

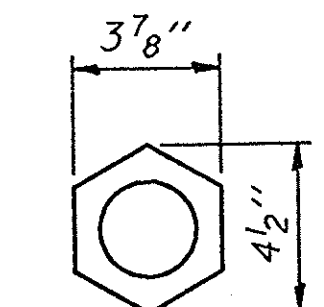
4 SHEETS



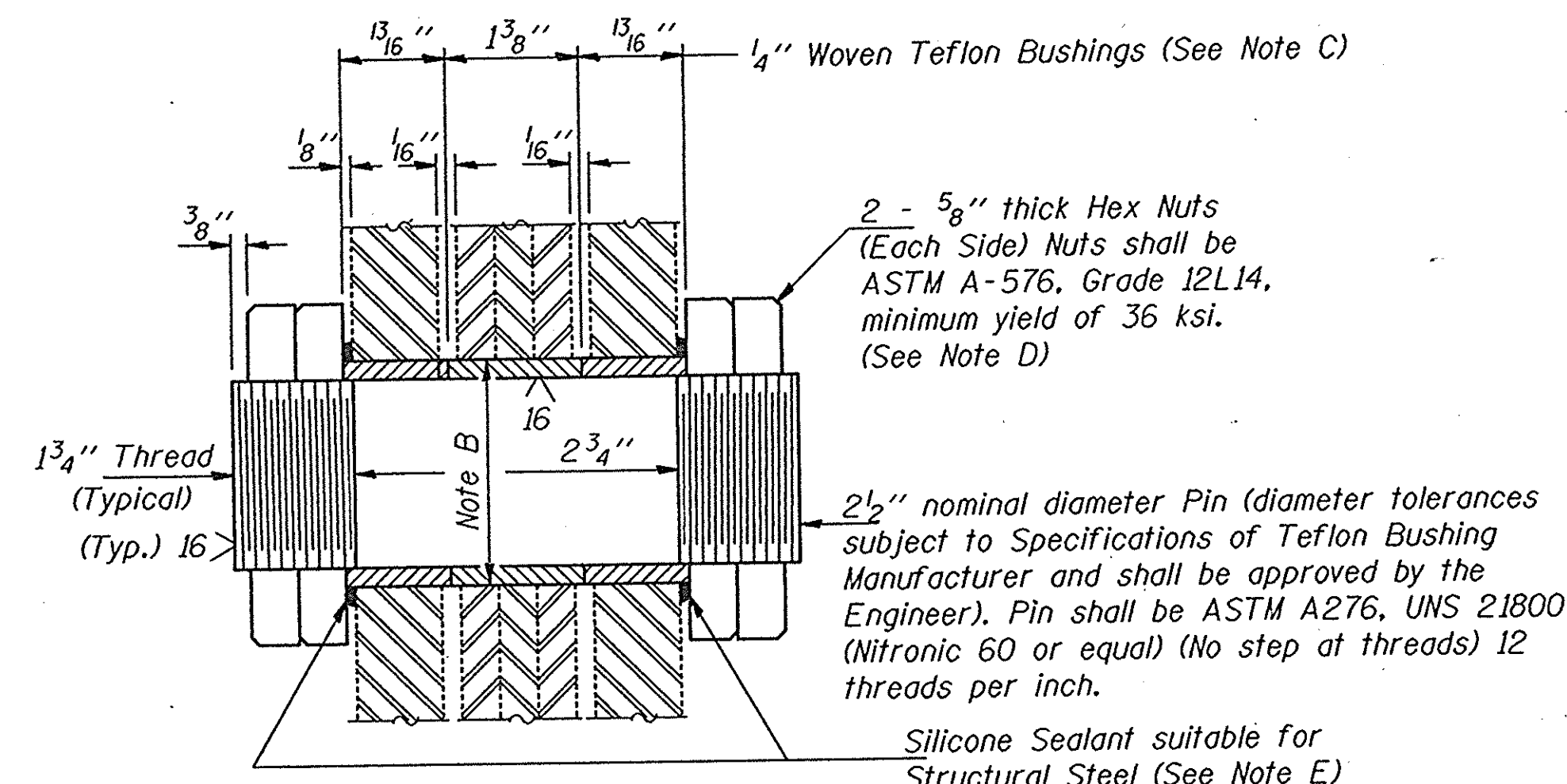
ELEVATION AT EXISTING PIN ASSEMBLY  
FOR INTERIOR BEAMS

ELEVATION AT EXISTING PIN ASSEMBLY  
FOR EXTERIOR BEAMS

All Pins that can be easily removed without damage to the pin shall be salvaged and the Bridge Engineer shall be contacted for disposition. Cost of salvage is included in "Pin Replacement".



NUT DETAIL  
(40 Required)



SECTION THRU PIN  
(10 Required)

GENERAL NOTES

All new structural steel shall conform to AASHTO Classification M-270 Gr. 36, unless otherwise noted.

The Contractor shall provide support and/or shoring systems for the beam in the area of existing pin replacement. See Special Provision "Temporary Support System."

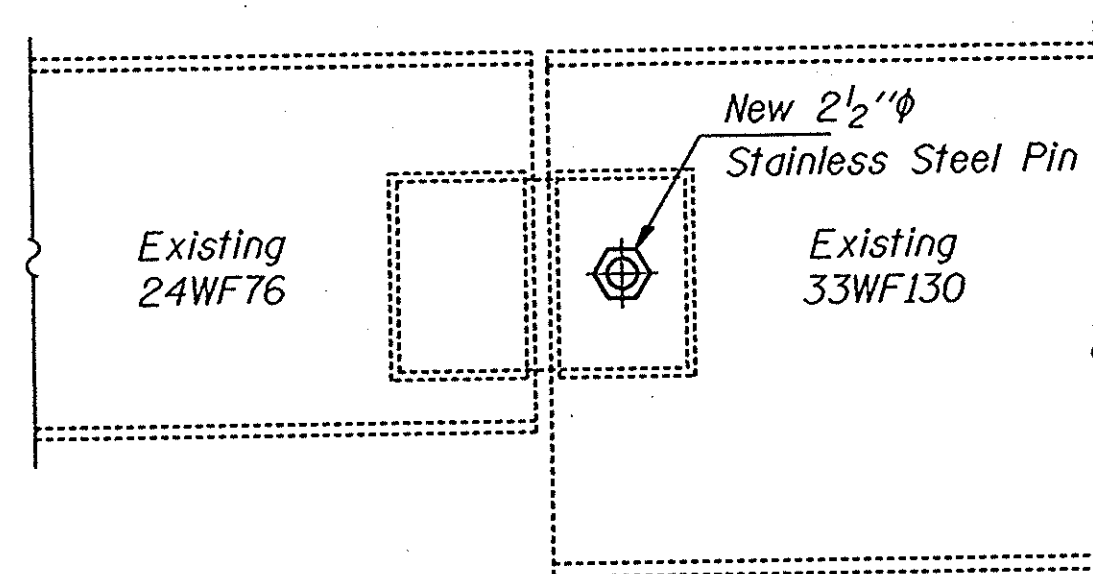
The inorganic zinc rich primer/acrylic/acrylic paint system shall be used for shop and field painting of new structural steel except where otherwise noted. The color of the acrylic finish coat shall be Interstate Green, Munsell No. 7.5G 4/8. See Special Provisions "Cleaning and Painting New Metal Structures". Cost shall be included in the cost of "Pin Replacement".

Existing structural steel shall be cleaned and painted as required by the Special Provision "Cleaning and Painting Adjacent Areas of Existing Steel Structures". Cost shall be included in the cost of "Pin Replacement."

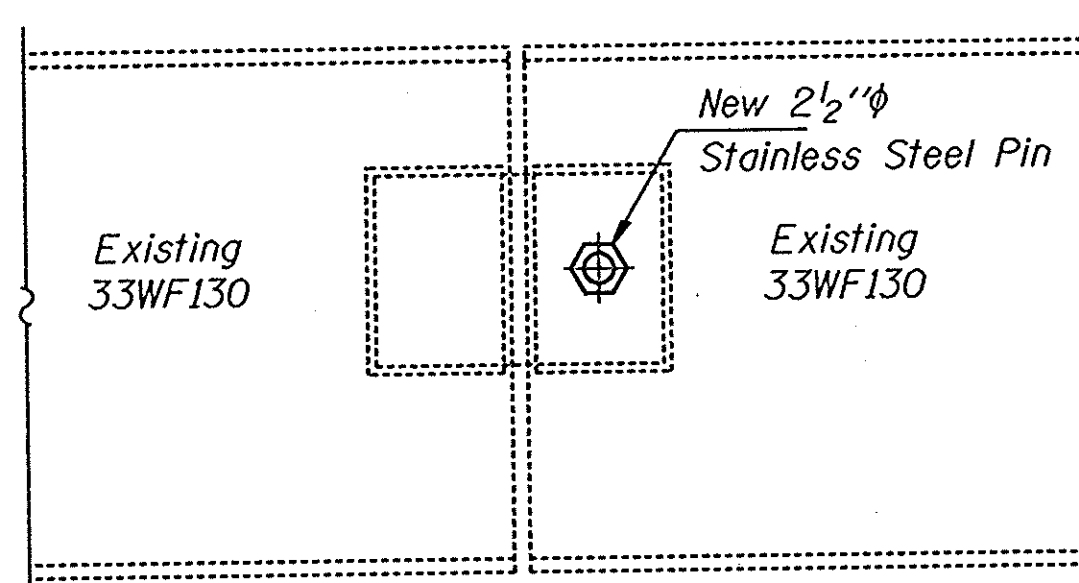
Plan dimensions and details relative to existing structure have been taken from existing plans and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field, except the pin diameters, and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in the scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.

The Pins shall conform to the minimum Charpy V-Notch Toughness of 25 ft.-lbs. at 40° F.

The pins, bushings, nuts and silicone sealant are the items included in "Pin Replacement".



ELEVATION AT NEW PIN ASSEMBLY  
FOR INTERIOR BEAMS



ELEVATION AT NEW PIN ASSEMBLY  
FOR EXTERIOR BEAMS

Note A:

Existing welds shall be inspected for cracks using liquid dye penetrant or magnetic particle testing. Any cracks that are found shall be identified and reported to the Bureau of Bridges and Structures for further disposition. Clean and paint before installing new pins.

Note B:

Bore diameter for bushing in existing link plates, webs and web reinforcement plates shall correspond to bushing manufacturer's allowable tolerances for proper functioning. Hole diameter may be adjusted to allow use of stock bushings.

Note C:

Actual bushing thickness per manufacturer's specifications, 1/4 inch is approximate. Bushings shall be a self lubricating filament wound epoxy matrix backed Duralon Bearing, metal backed Fiber Glide Bearing or equivalent. No primer or grease shall be allowed on bushings. Bushings shall be suitable for dynamic loads of 20,000 psi.

Note D:

Tighten inside nuts to bring all bushings into firm contact, then back off 1/4 turn and tighten outer nuts.

Note E:

Place sealant around nuts after installation. Sealant shall be suitable for prolonged exterior exposure without losing flexibility or adhesion to painted steel surfaces. Proposed products shall be subject to Department's acceptance based on documented testing or other evidence.

TOTAL BILL OF MATERIAL

| ITEM                     | UNIT | QUANTITY |
|--------------------------|------|----------|
| Temporary Support System | Each | 10       |
| Pin Replacement          | Each | 10       |
| Silicone Joint Sealer    | Foot | 68       |

MAXIMUM REACTIONS AT PIN

|                |     |      |
|----------------|-----|------|
| R <sub>P</sub> | (K) | 15.1 |
| R <sub>L</sub> | (K) | 27.7 |
| Imp.           | (K) | 8.3  |
| R (Total)      | (K) | 51.1 |

|          |                   |
|----------|-------------------|
| DESIGNED | Kenneth P. Stutts |
| CHECKED  | Nicholas J. Smith |
| DRAWN    | Paul Summer       |
| CHECKED  | KPS NJS           |

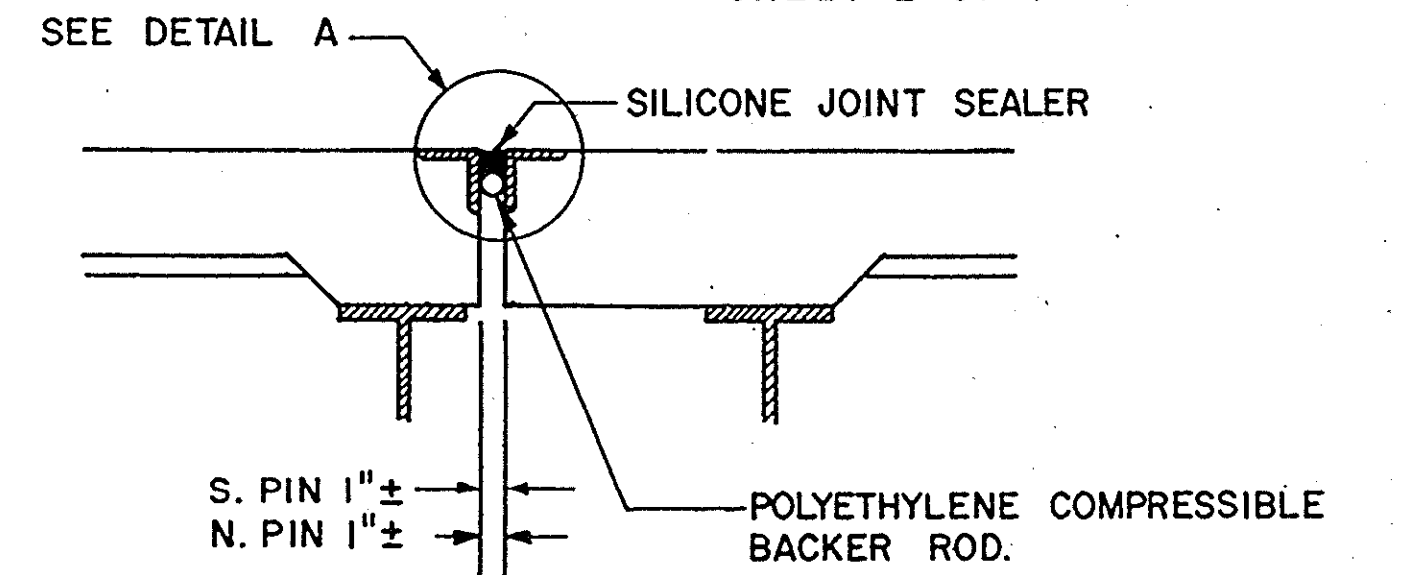
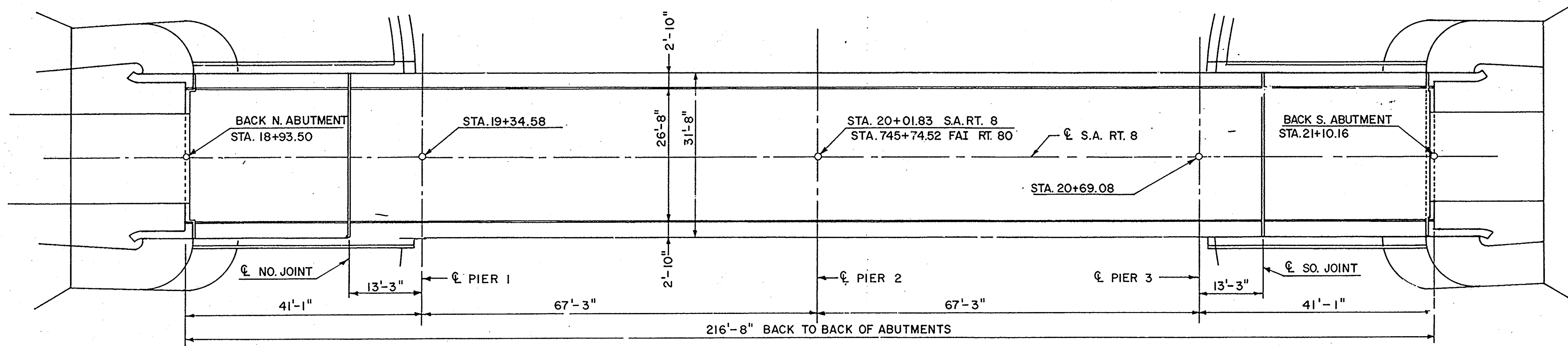
|                                    |               |
|------------------------------------|---------------|
| APRIL 29, 1997                     |               |
| EXAMINED                           | Todd E. Adams |
| ENGINEER OF STRUCTURAL SERVICES    |               |
| PASSED                             |               |
| ENGINEER OF BRIDGES AND STRUCTURES |               |

PIN REPLACEMENT  
FAS 188 SEC. 06-3HB-1  
BUREAU COUNTY  
STA. 745+74.52  
STR. No. 006-0112

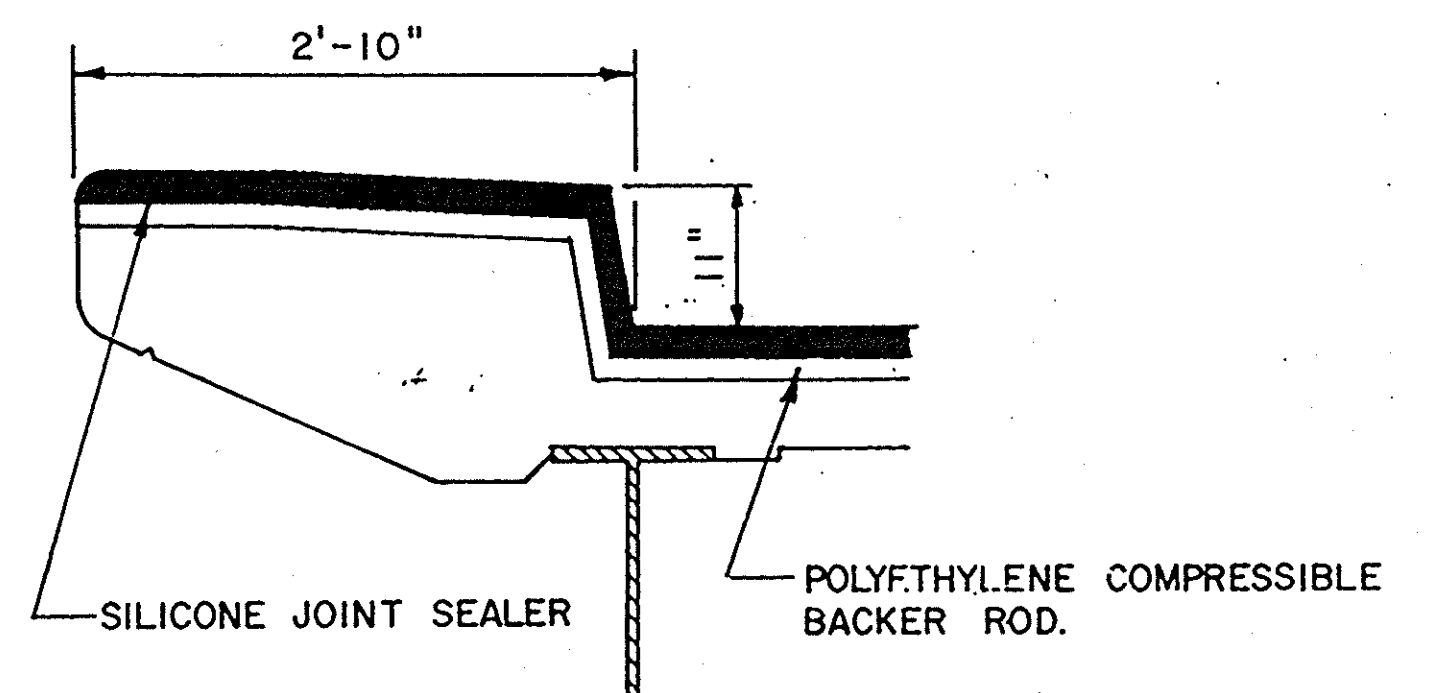
\* D-2 BRIDGE PIN REPLACE 1997-1

| ROUTE NO.                              | SEC. | COUNTY | TOTAL SHEETS | SHEET NO. |
|----------------------------------------|------|--------|--------------|-----------|
| FAI 80                                 | *    | BUREAU | 26           | 19        |
| FED. ROAD DIST. NO. 7 ILLINOIS PROJECT |      |        |              |           |

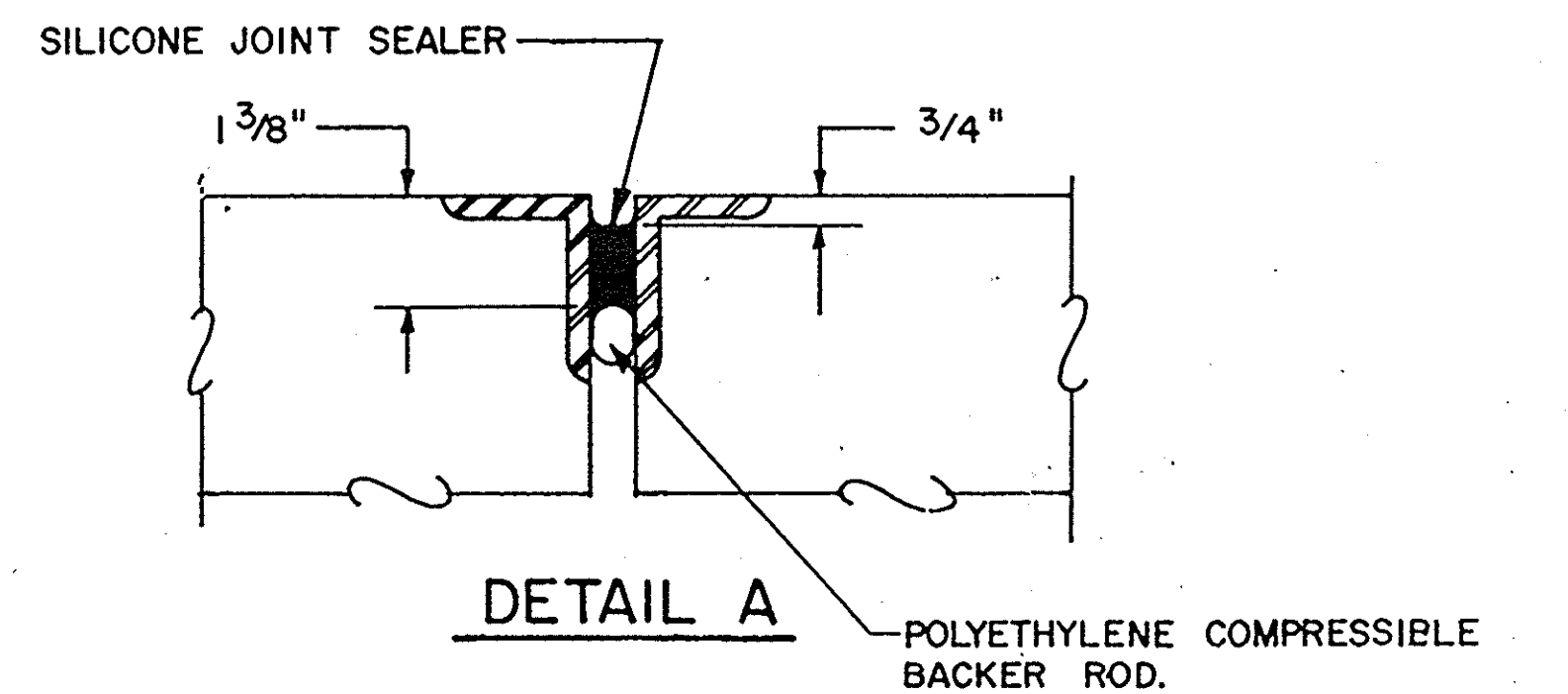
SHEET 2 OF 4



TYPICAL AT PINS



CURB DETAIL



NOTE: BACKER ROD SHALL BE 25% GREATER IN DIAMETER THAN THE JOINT OPENING AT THE TIME OF INSTALLATION.

BILL OF MATERIALS

| ITEM                  | UNIT | QUANTITY |
|-----------------------|------|----------|
| SILICONE JOINT SEALER | FOOT | 68       |

SN 006-0112

DISTRICT NO. 2 DIXON

DESIGNED D. PAUSER

DRAWN A. CONDERMAN

CHECKED

DATE 3/97

SCALE

*No Existing Structure*

DEPARTMENT OF PUBLIC WORKS & BUILDINGS  
DIVISION OF HIGHWAYS

SHEET NO. 3  
4 SHEETS

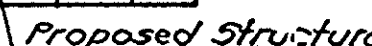


ELEVATION  
Scale  $\frac{3}{32}'' = 1'-0''$



I-80-2(7)50

Name Plate Lettering  
See Std. 2113  
For Location see  
Sheet 7 of 9



### LOCATION SKETCH



| <u>DESIGN STRESSES</u> |                                     |
|------------------------|-------------------------------------|
| $f_c$ - - -            | 1400 #/in <sup>2</sup> Super & Sub. |
| $f_c$ - - -            | 75 #/in <sup>2</sup> Ftg.           |
| $f_s$ - - -            | 20000 #/in <sup>2</sup> Reinf.      |
| $f_s$ - - -            | 18000 #/in <sup>2</sup> Struct.     |
| $n$ - - -              | 10                                  |

*Loading H15-512-44*

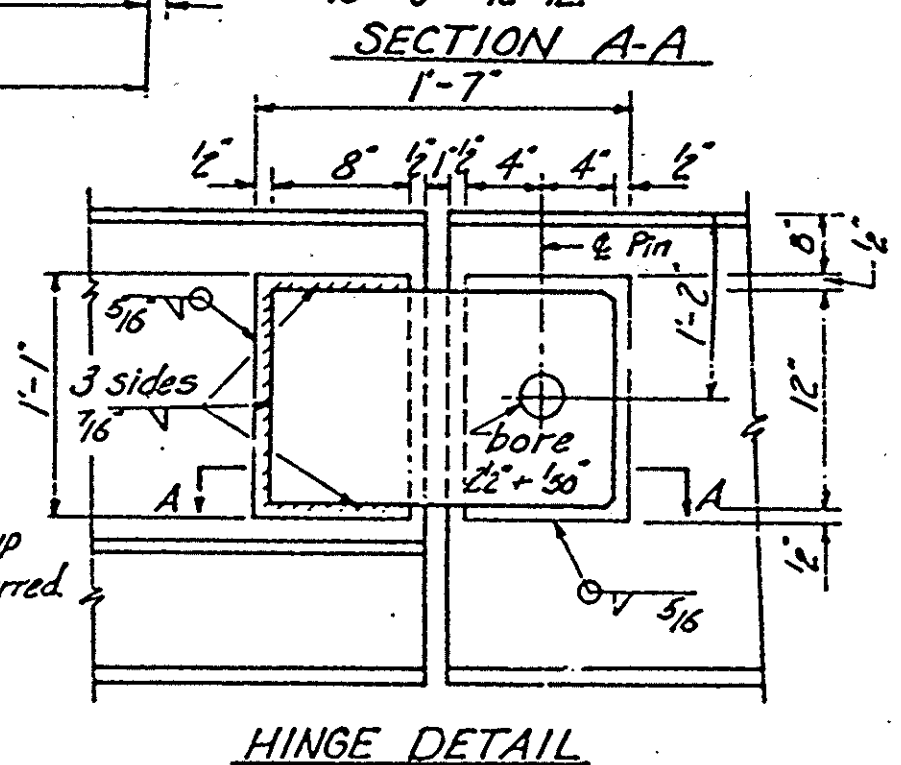
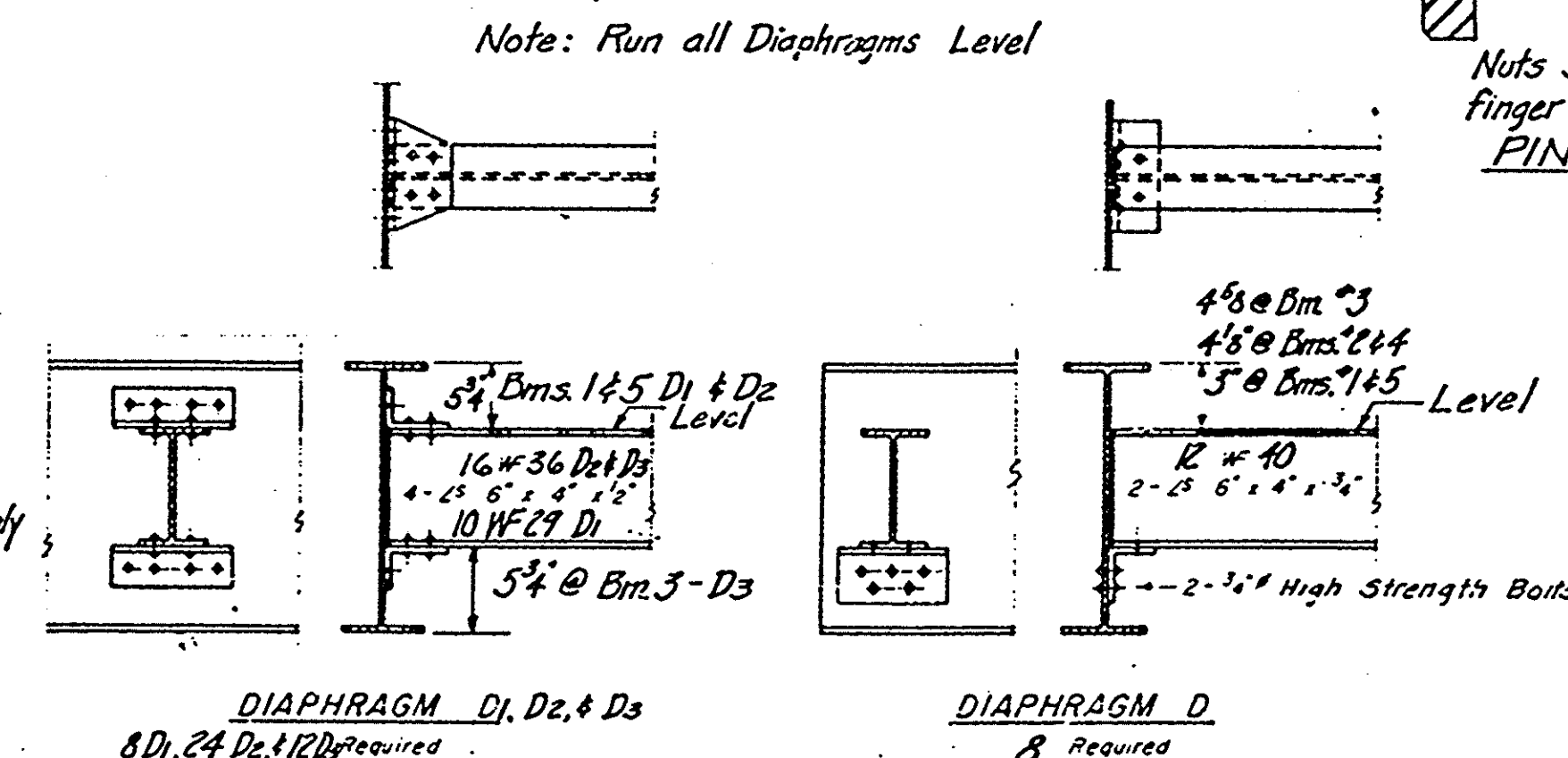
TOTAL BILL OF MATERIAL

| ITEM                          | UNIT    | SUBSTR. | TOTAL   |
|-------------------------------|---------|---------|---------|
| Class-X Concrete              | Cu.Yds. | 188.5   | 392.8   |
| Handrail Concrete             | Cu.Yds. | 2.3     | 2.3     |
| Reinforcement Bars            | Lbs.    | 31990   | 45,320  |
| Structural Steel              | Lbs.    | 163,070 | 163,070 |
| Neame Plates                  | Each    | 2       | 2       |
| Handrail                      | Lin.Ft. | 430     | 430     |
| Class-A Excav. for Structures | Cu.Yds. | 107     | 107     |
| Slope Wall 4"                 | Sq.Yds. | 440     | 440     |
| Concrete Piles                | Lin.Ft. | 544     | 544     |
| Test Piles (Concrete)         | Each    | 1       | 1       |
| Grouted Piles                 | Lin.Ft. | 630     | 630     |
| Test Piles (Timber)           | Each    | 1       | 1       |
| Pipe Culvert Type 2-24"       | Lin.Ft. |         | 152     |

GENERAL PLAN & ELEVATION  
PROJ. I-80-2(7)50  
F.A.I. RT. 80-SEC. 06-3HB-1  
BUREAU COUNTY  
STATION 745+74.52

Revised 8-27-63 H.P.G. Project Number Revised in Name Plate Lettering  
Revised 1-3-61 J.M.J. Change Clearance from 15'-0" to 16'-3" Changed all Cr. Elev. and revised Total Bill of Material

Revised 12/31/82: In ELEVATION removed construction forms at N.H.4 Emb. 2680, Borrow J220, So. Abut. Emb. 2500, Borrow J215 and S.F.P. between  
Slope Nail and Abut. Cap. In PLAN removed section "c" of main under. Revised Ditch. In GENERAL NOTES add note for A-36 Steel. In TOTAL  
STATE OF MAINE removed BORROW EXCAVATION cubic yds.

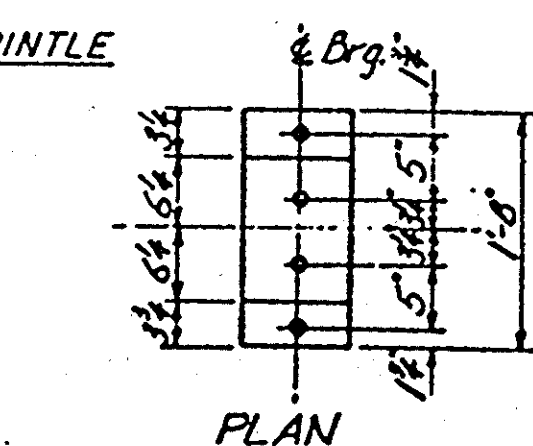
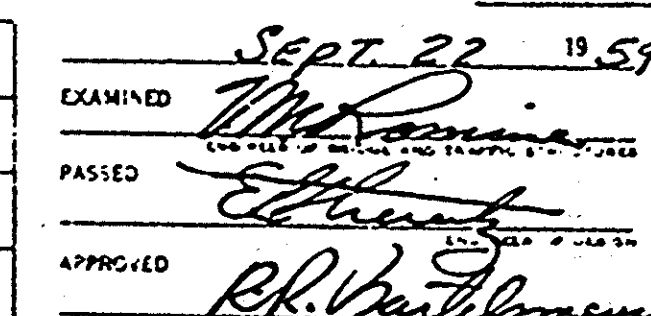
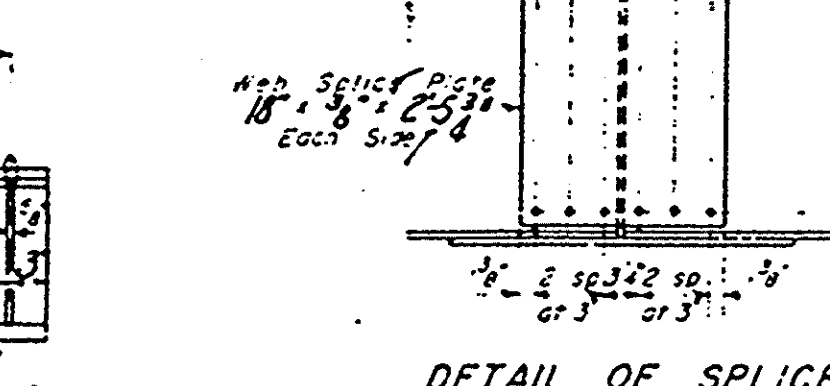
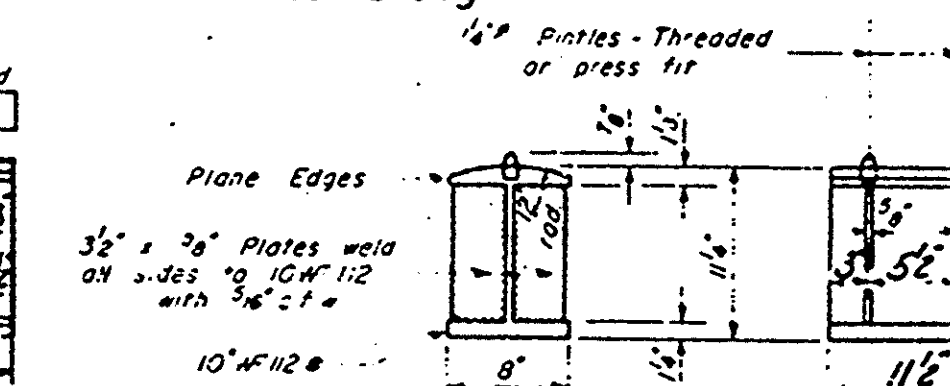
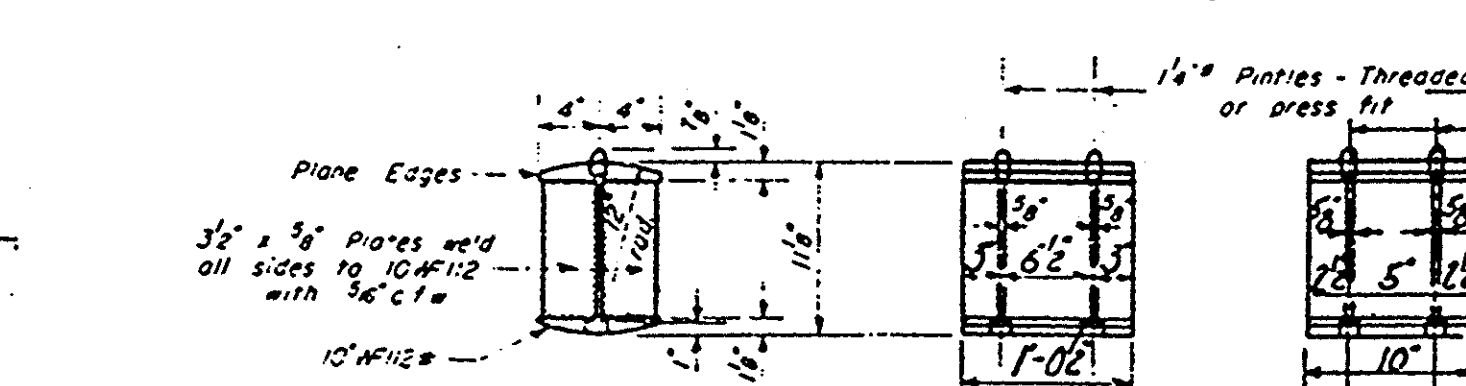
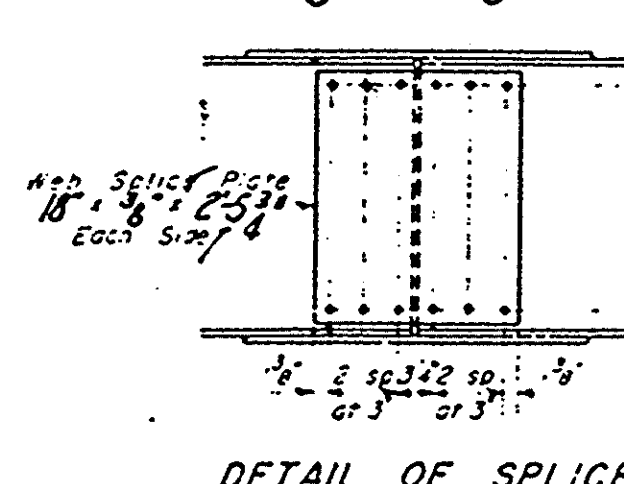
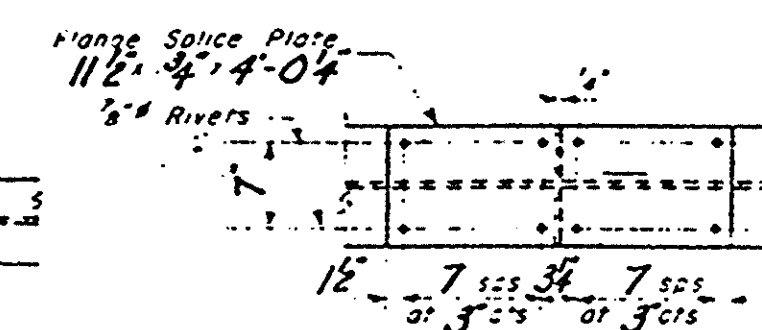
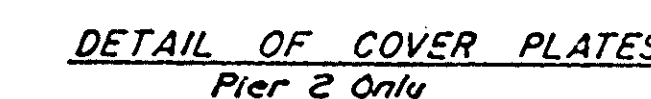
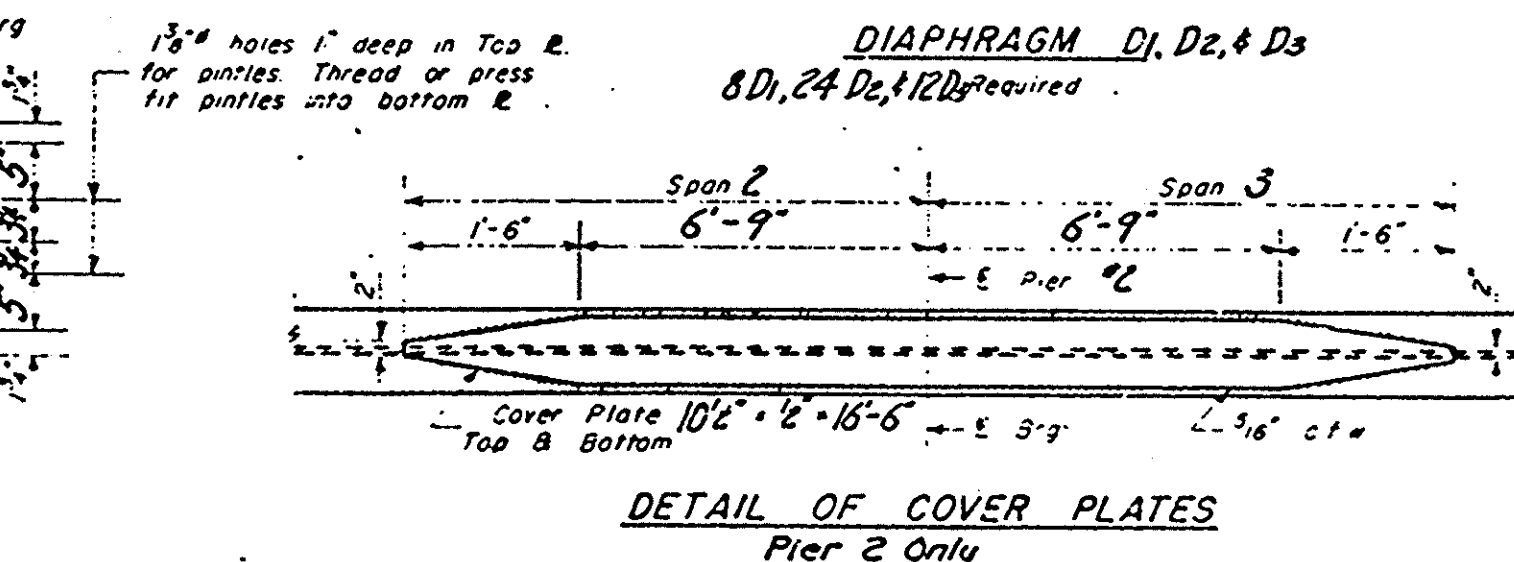


Note: Elevations refer to top flanges of top flanges of beams irrespective of cover plates & splice plates.

ELEVATION TOP OF BEAMS

| Location           | 1      | 2      | 3      | 4      | 5      |
|--------------------|--------|--------|--------|--------|--------|
| ± Brg. N<br>Abut.  | G76.72 | G76.82 | G76.86 | G76.82 | G76.72 |
| ± Pin #1           | G76.88 | G76.98 | G77.02 | G76.98 | G76.88 |
| ± Brg. Pier 1      | G76.93 | G77.03 | G77.07 | G77.03 | G76.93 |
| ± Splice #1        | G77.02 | G77.12 | G77.16 | G77.12 | G77.02 |
| ± Brg. Pier 2      | G77.03 | G77.13 | G77.17 | G77.13 | G77.03 |
| ± Splice #2        | G77.02 | G77.12 | G77.16 | G77.12 | G77.02 |
| ± Brg. Pier 3      | G76.93 | G77.03 | G77.07 | G77.03 | G76.93 |
| ± Pin #2           | G76.88 | G76.98 | G77.02 | G76.98 | G76.88 |
| ± Brg. S.<br>Abut. | G76.72 | G76.82 | G76.86 | G76.82 | G76.72 |

~~Cover plates and all stringers to which they are attached shall conform to structural steel for welding A.S.T.M. Designation A-7.~~



| Station<br>Beams | & Drg<br>at Abuts. | a      | b      | &<br>Pins | & Piers<br>1 & 3 | c      | d      | e      | f      | &<br>Splices | g      | &<br>Pier 2 |
|------------------|--------------------|--------|--------|-----------|------------------|--------|--------|--------|--------|--------------|--------|-------------|
| 1 & 5            | G77-30             | G77-36 | G77-42 | G77-46    | G77-53           | G77-57 | G77-60 | G77-63 | G77-65 | G77-67       | G77-68 | G77-68      |
| 2 & 4            | G77-40             | G77-46 | G77-51 | G77-56    | G77-62           | G77-67 | G77-70 | G77-73 | G77-75 | G77-76       | G77-77 | G77-77      |
| 3                | G77-46             | G77-50 | G77-55 | G77-60    | G77-66           | G77-71 | G77-76 | G77-77 | G77-79 | G77-80       | G77-81 | G77-81      |

TOP OF SLAB ELEVATIONS (Does not include Dead Load Deflections)

STRUCTURAL STEEL  
F.A.I. RT. 80 SEC. 06-3HB-1  
BUREAU COUNTY  
STA. 745+74.52

Revised 1-3-61 J.M.J. Increased Top of Beam and Top of Slab Elevations. by 1'-3".

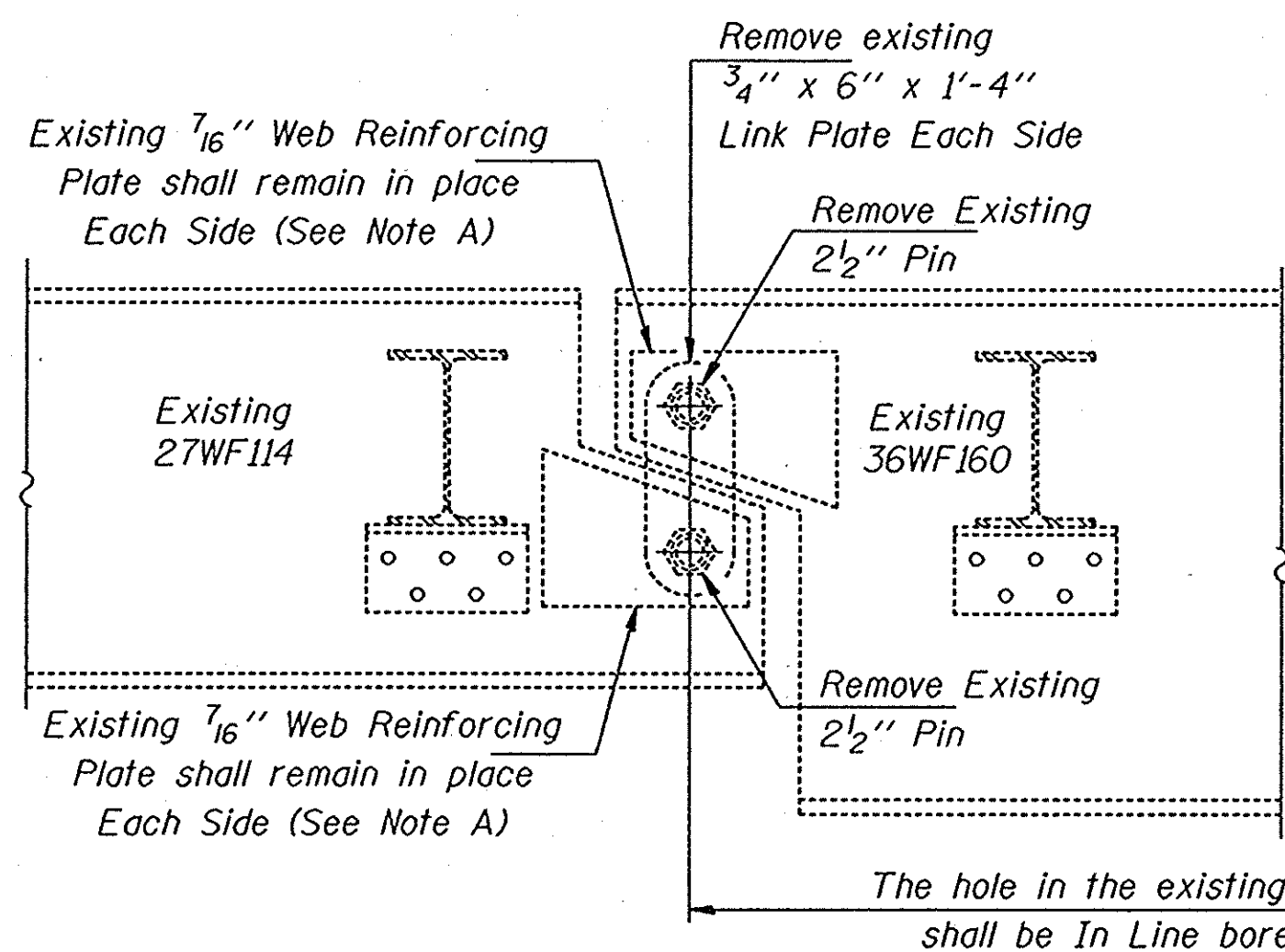
Revised 8-27-63 H.P.G. Note concerning the use of A-7 steel eliminated since General Notes state A-36 steel is to be used through out

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

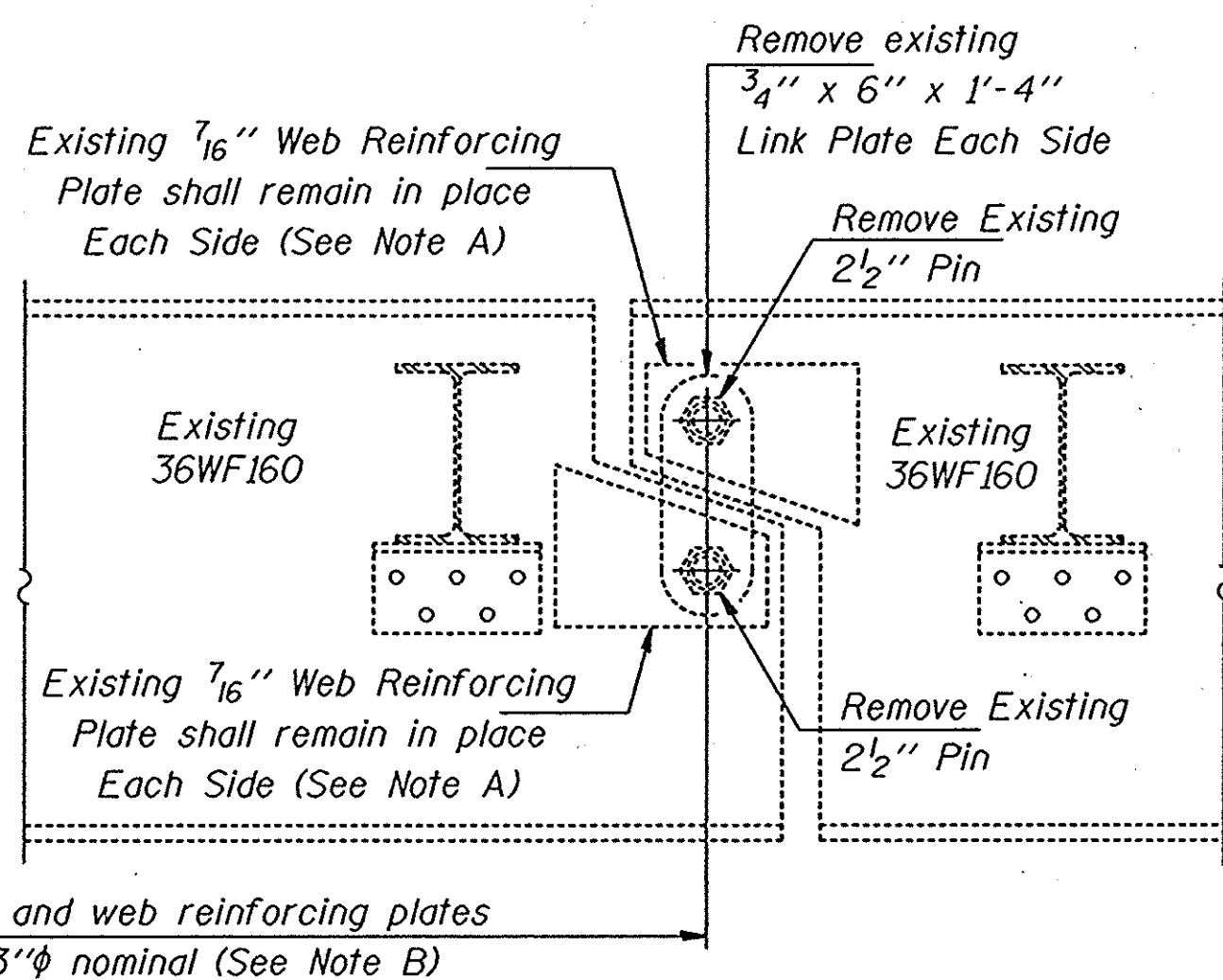
\* D-2 BRIDGE PIN REPLACE 1997-1

| ROUTE NO.             | SECTION  | COUNTY            | TOTAL SHEETS | SHEET NO. |
|-----------------------|----------|-------------------|--------------|-----------|
| FAI 80                | *        | BUREAU            | 26           | 22        |
| FED. ROAD DIST. NO. 7 | ILLINOIS | FED. AID PROJECT- |              |           |

SHEET NO. 1  
5 SHEETS

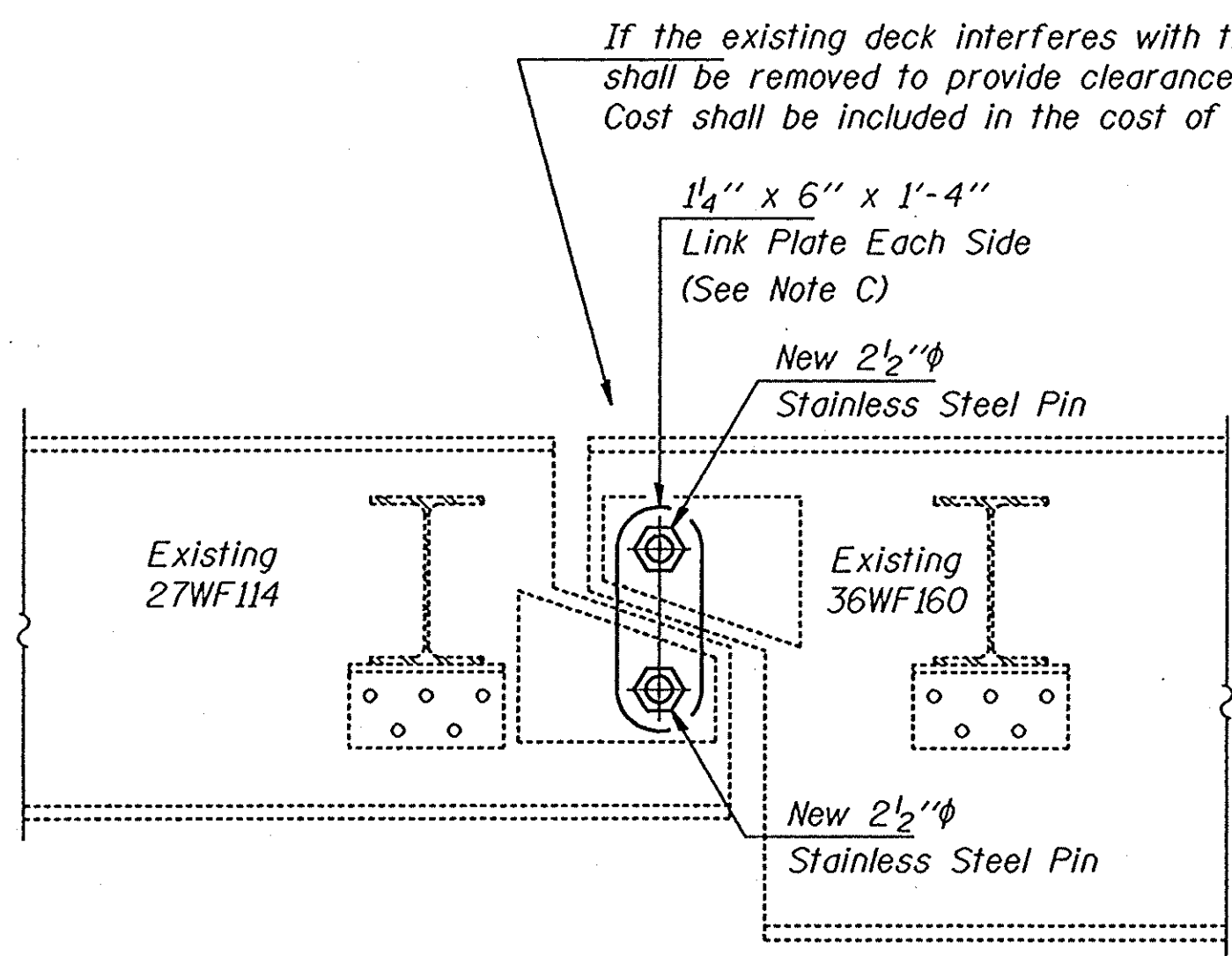


**ELEVATION AT EXISTING PIN ASSEMBLY  
FOR INTERIOR BEAMS**

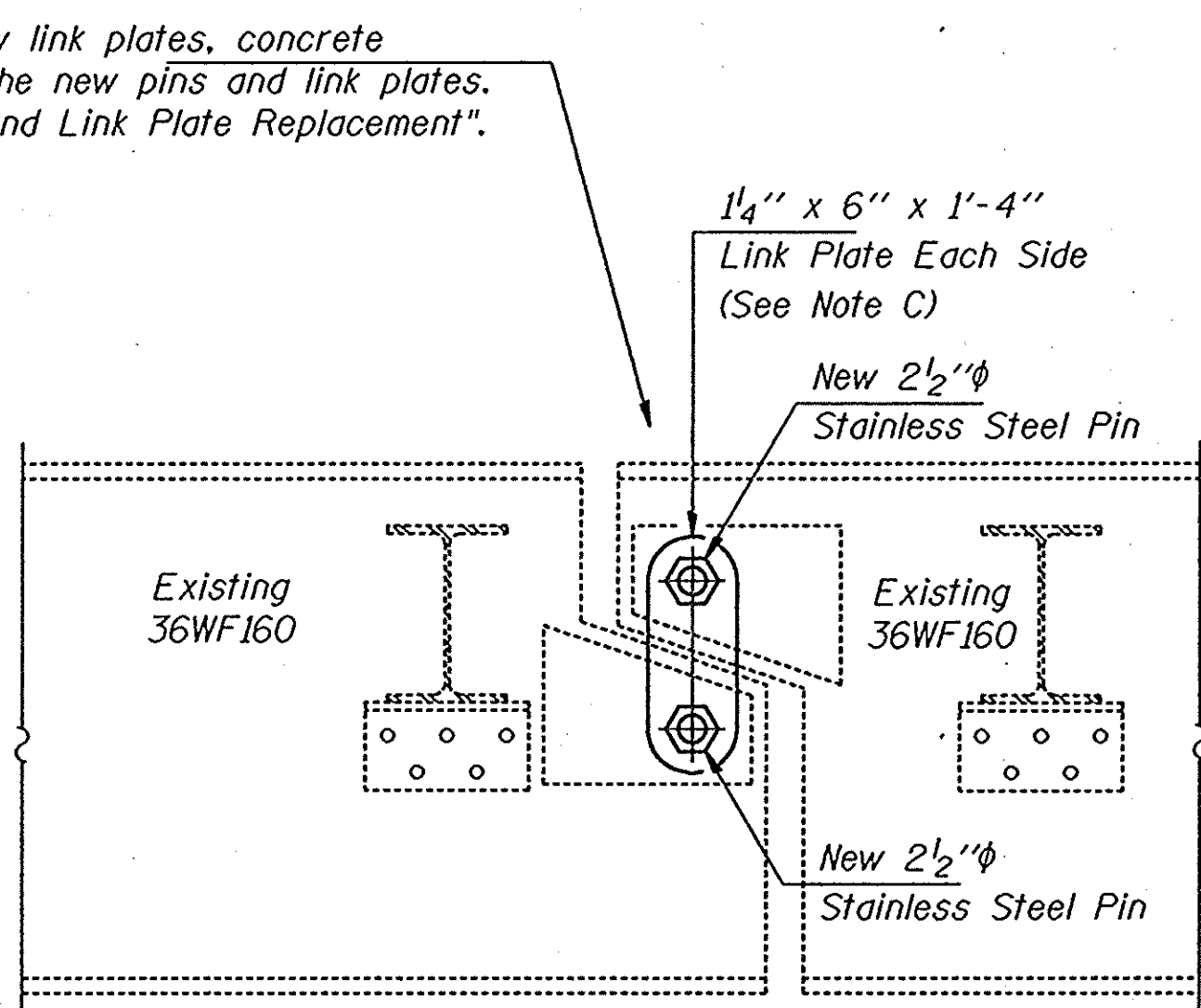


**ELEVATION AT EXISTING PIN ASSEMBLY  
FOR EXTERIOR BEAMS**

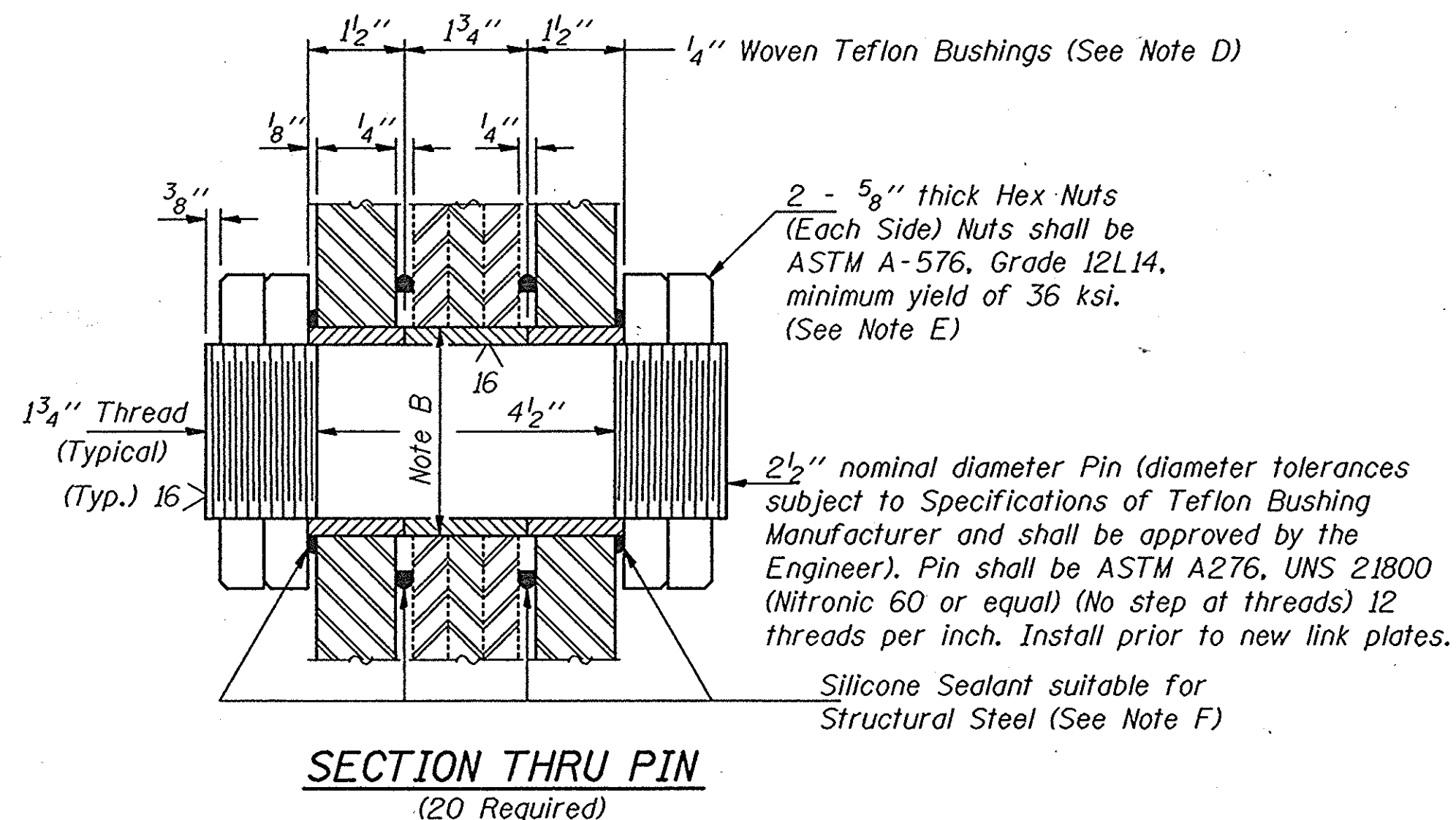
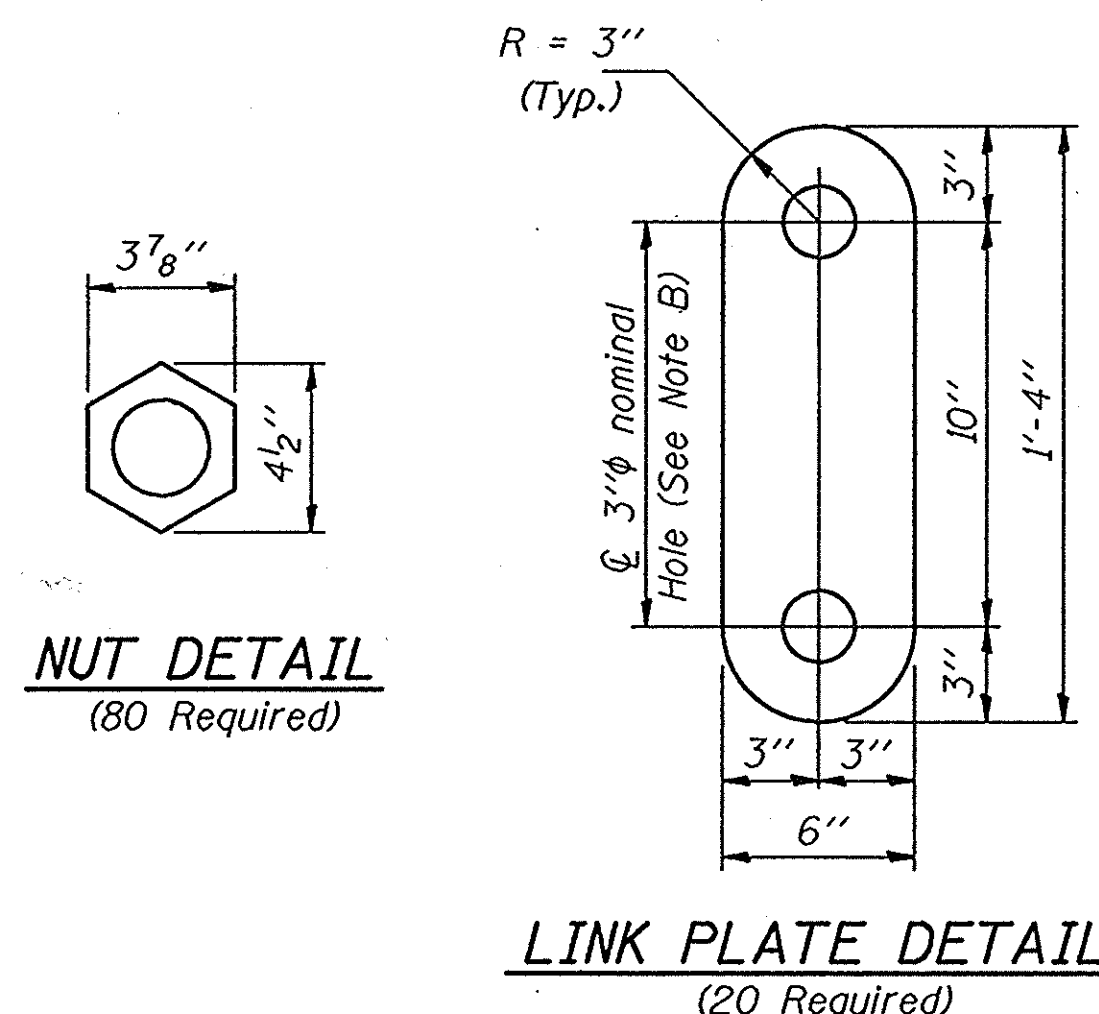
Any Pins that can be easily removed without damage to the pin shall be salvaged and the Bridge Engineer shall be contacted for disposition. Cost of salvage is included in "Pin and Link Plate Replacement".



**ELEVATION AT NEW PIN ASSEMBLY  
FOR INTERIOR BEAMS**



**ELEVATION AT NEW PIN ASSEMBLY  
FOR EXTERIOR BEAMS**



**GENERAL NOTES**

All new structural steel shall conform to AASHTO Classification M-270 Gr. 36, unless otherwise noted.

The Contractor shall provide support and/or shoring systems for the beam in the area of existing pin and link plate replacement. See Special Provision "Temporary Support System."

The inorganic zinc rich primer/acrylic/acrylic paint system shall be used for shop and field painting of new structural steel except where otherwise noted. The color of the acrylic finish coat shall be Interstate Green, Munsell No. 7.5G 4/8. See Special Provisions "Cleaning and Painting New Metal Structures". Cost shall be included in the cost of "Pin and Link Plate Replacement".

Existing structural steel shall be cleaned and painted as required by the Special Provision "Cleaning and Painting Adjacent Areas of Existing Steel Structures". Cost shall be included in the cost of "Pin and Link Plate Replacement".

All existing steel surfaces behind link plates shall be cleaned and primed before installation of new link plates. Cost shall be included in the cost of "Pin and Link Plate Replacement".

Plan dimensions and details relative to existing structure have been taken from existing plans and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field, except the pin diameters, and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in the scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.

The Pins and Link Plates shall conform to the minimum Charpy V-Notch Toughness of 25 ft.-lbs. at 40° F.

The pins, link plates, bushings, nuts and silicone sealant are the items included in "Pin and Link Plate Replacement".

**TOTAL BILL OF MATERIAL**

| ITEM                           | UNIT | QUANTITY |
|--------------------------------|------|----------|
| Temporary Support System       | Each | 10       |
| Pin and Link Plate Replacement | Each | 10       |
| Silicone Joint Sealer          | Foot | 75       |

**PIN REPLACEMENT**  
**FAS 309 SEC. 06-7HB-1**  
**BUREAU COUNTY**  
**STA. 1738+38**  
**STR. No. 006-0133**

|          |                   |
|----------|-------------------|
| DESIGNED | Kenneth P. Dutton |
| CHECKED  | Michael J. Javell |
| DRAWN    | Paul Summer       |
| CHECKED  | KB                |

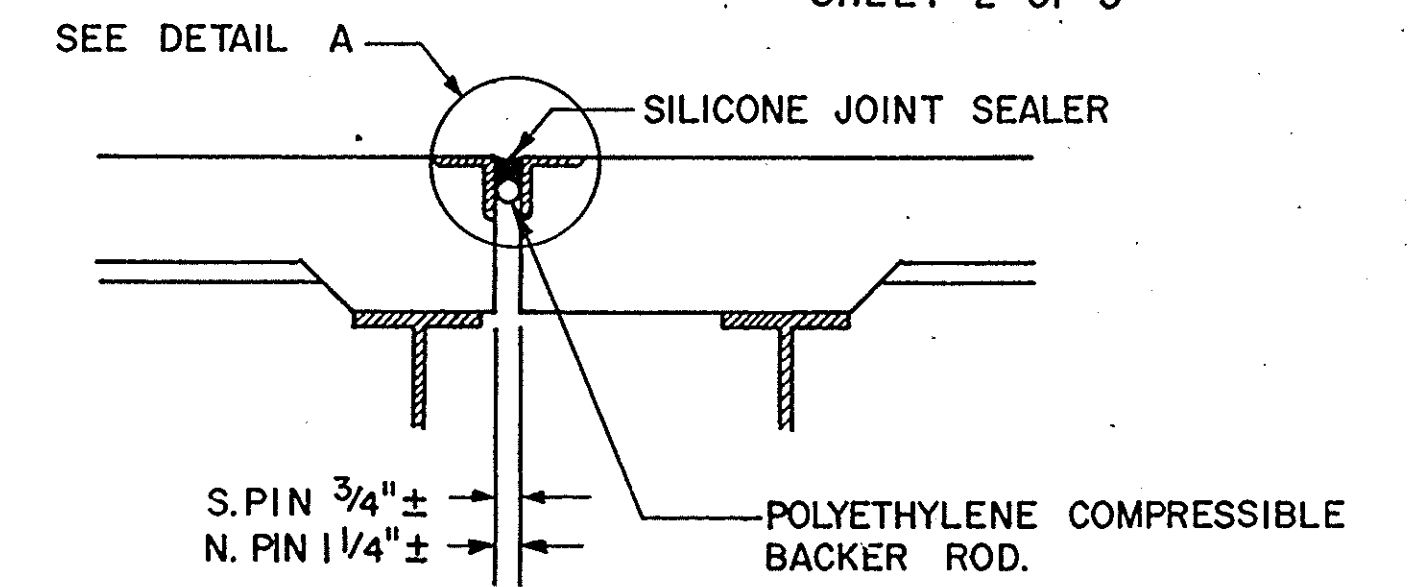
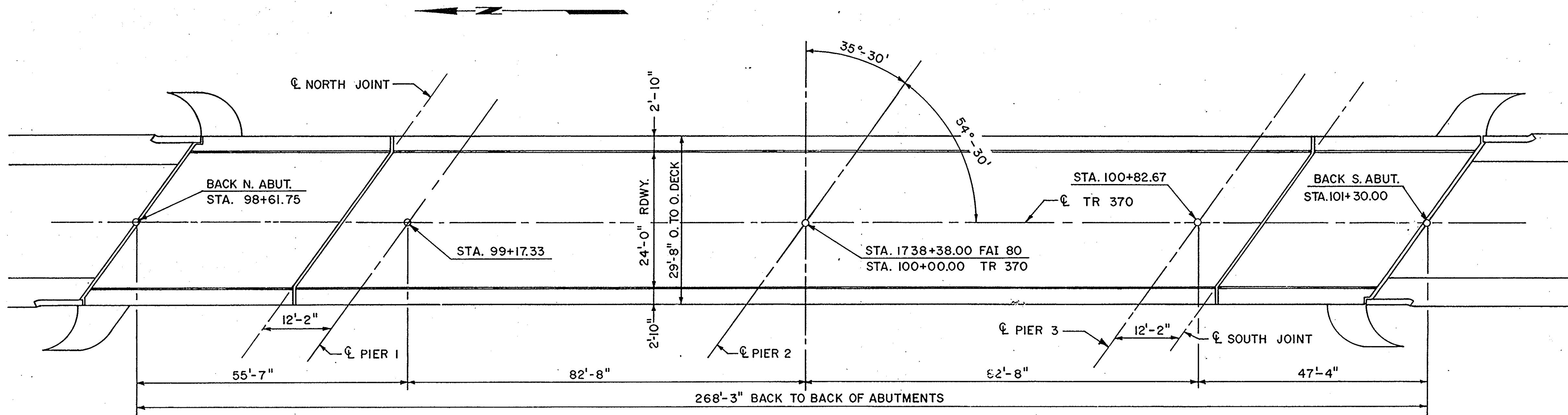
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|----------------|----------|---------------|
| APRIL 29, 1997 | EXAMINED | Todd E. Adams |
|                | PASSED   |               |

**MAXIMUM REACTIONS AT PIN**

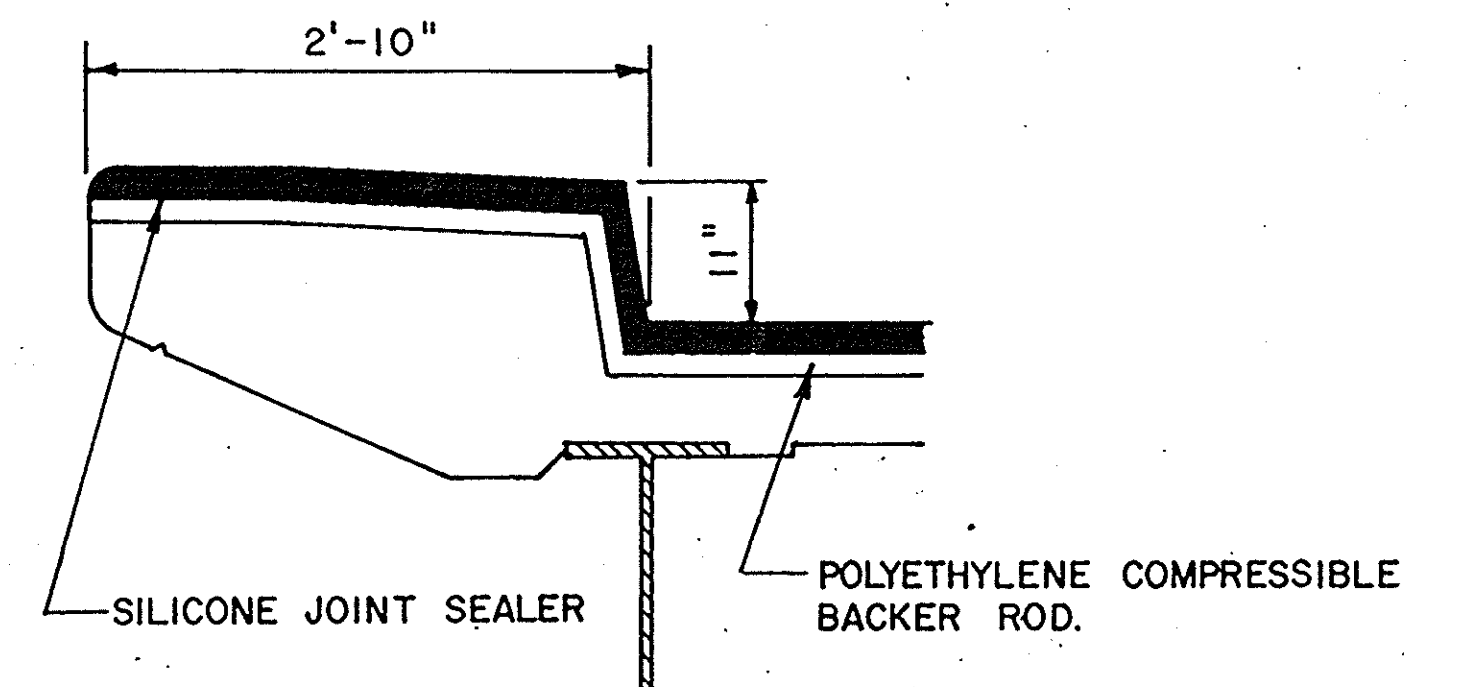
|                |     |      |
|----------------|-----|------|
| R <sub>P</sub> | (K) | 22.3 |
| R <sub>L</sub> | (K) | 30.3 |
| Imp.           | (K) | 9.1  |
| R (Total)      | (K) | 61.7 |

| ROUTE NO.                              | SEC. | COUNTY | TOTAL SHEETS | SHEET NO. |
|----------------------------------------|------|--------|--------------|-----------|
| FAI 80                                 | *    | BUREAU | 26           | 23        |
| FED. ROAD DIST. NO. 7 ILLINOIS PROJECT |      |        |              |           |

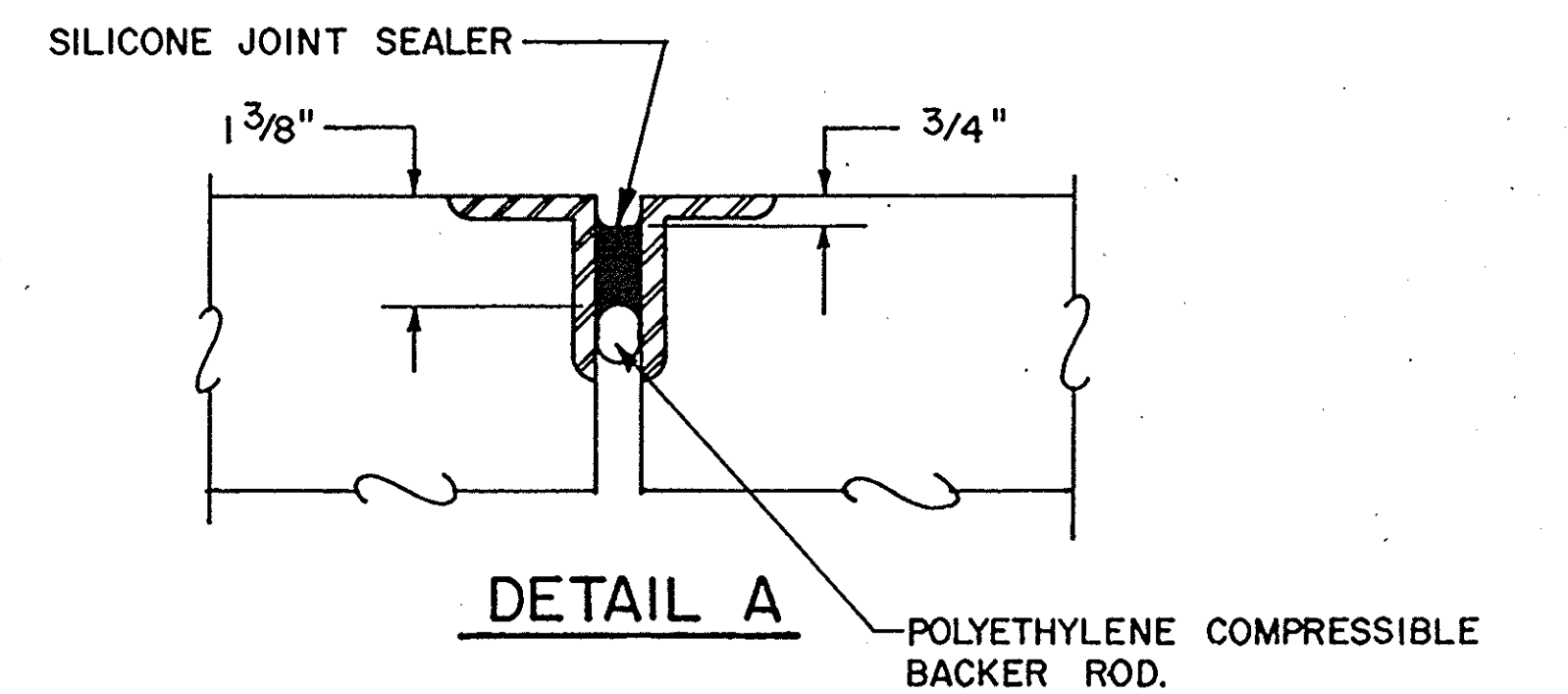
SHEET 2 OF 5



TYPICAL AT PINS



CURB DETAIL



NOTE: BACKER ROD SHALL BE 25% GREATER IN DIAMETER THAN THE JOINT OPENING AT THE TIME OF INSTALLATION.

BILL OF MATERIALS

| ITEM                  | UNIT | QUANTITY |
|-----------------------|------|----------|
| SILICONE JOINT SEALER | FOOT | 75       |

SN 006-0133

DISTRICT NO. 2 DIXON

DESIGNED D. PAUSER

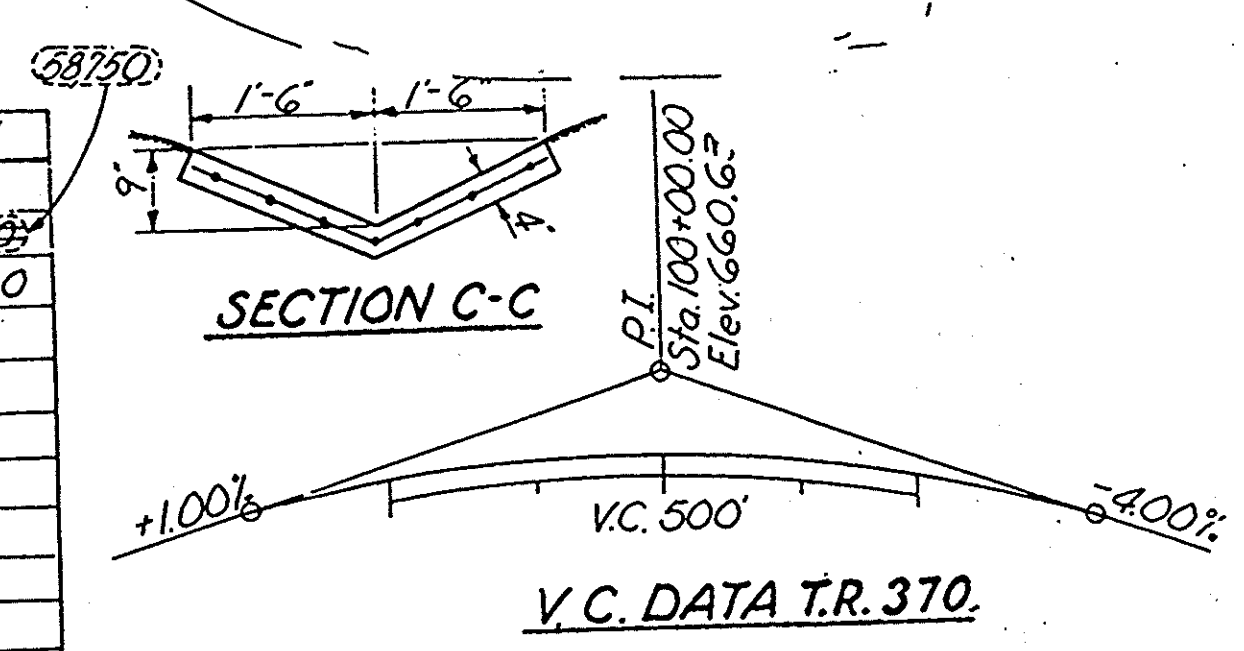
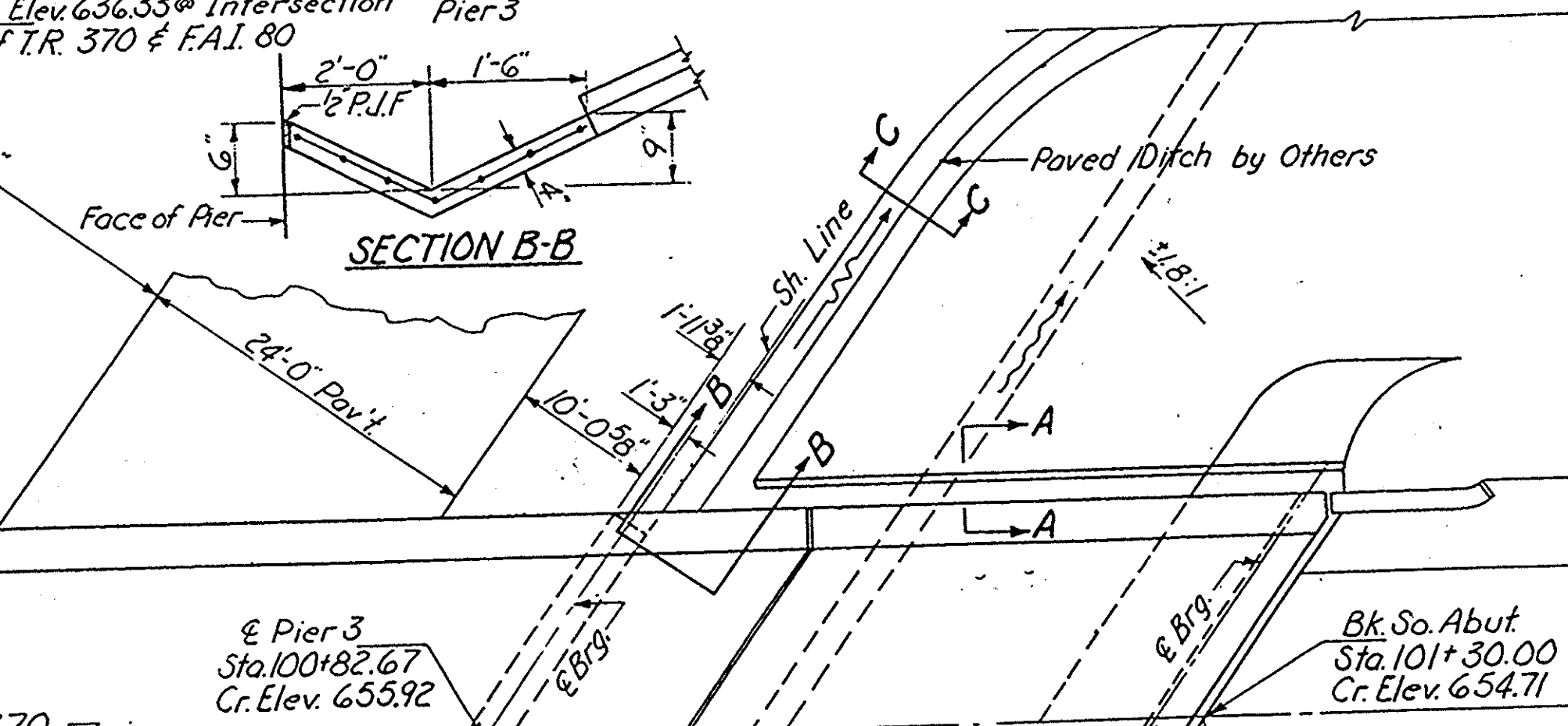
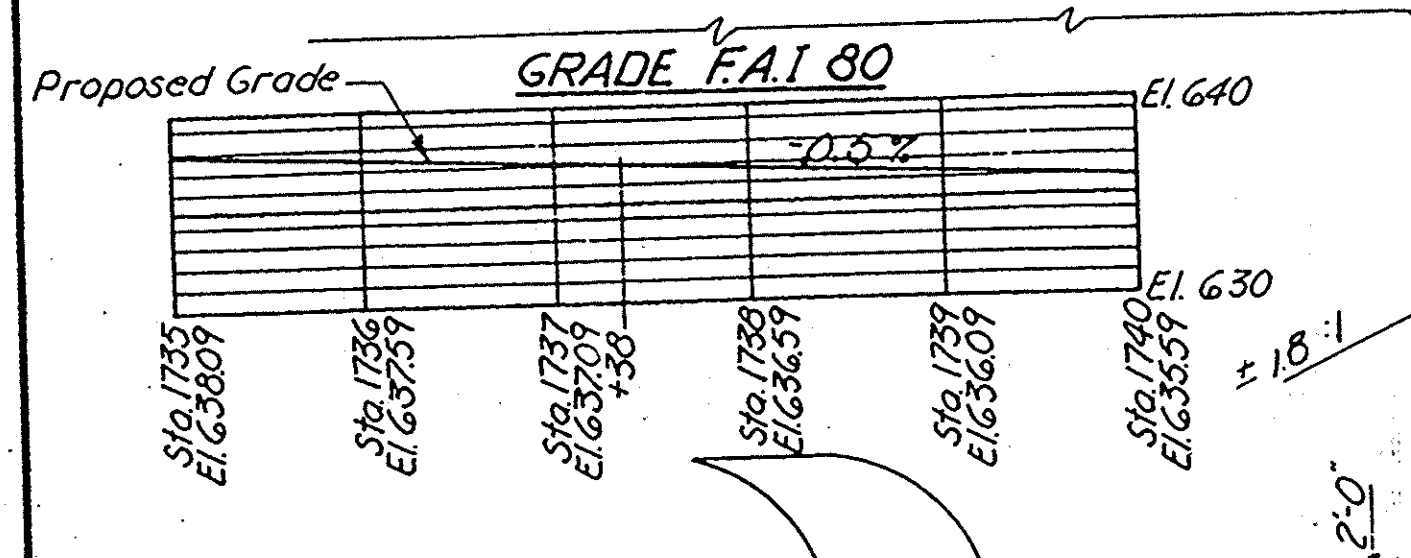
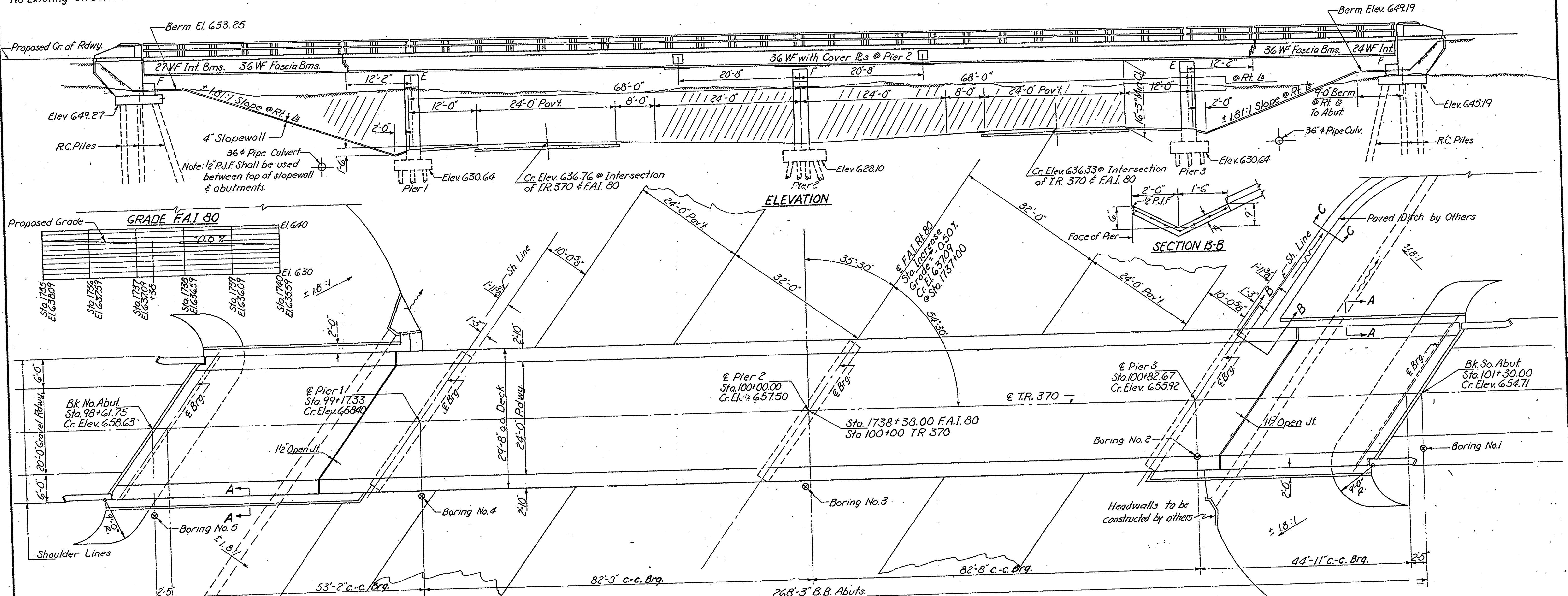
DRAWN A. CONDERMAN DATE 3/97

CHECKED SCALE

STATE OF ILLINOIS  
DEPARTMENT OF PUBLIC WORKS & BUILDINGS  
DIVISION OF HIGHWAYS

| ROUTE NO.             | SECTION  | COUNTY           | TOTAL SHEETS | SHEET NO. | SHEETS |
|-----------------------|----------|------------------|--------------|-----------|--------|
| S.B.L.<br>F.A.I. 80   | 06-7HB   | BUREAU           | 26           | 24        | 5      |
| FED. ROAD DIST. NO. 7 | ILLINOIS | FED. AID PROJECT |              |           |        |

B.M. #92 34" Iron pipe opposite Sta. 1741+00 and  
272.5' So. of centerline Elev. 646.63  
No Existing Structure.



GENERAL NOTES

Class X Concrete shall be used throughout except in handrail end posts.  
Handrail Concrete shall be used in handrail end posts.  
The concrete floor slab shall be finished in accordance with Article 51.19 of the Standard Specifications.  
Slope wall shall be reinforced with welded wire fabric 6"x6" mesh, #4 wires, weighing 58# per 100 sq. ft.

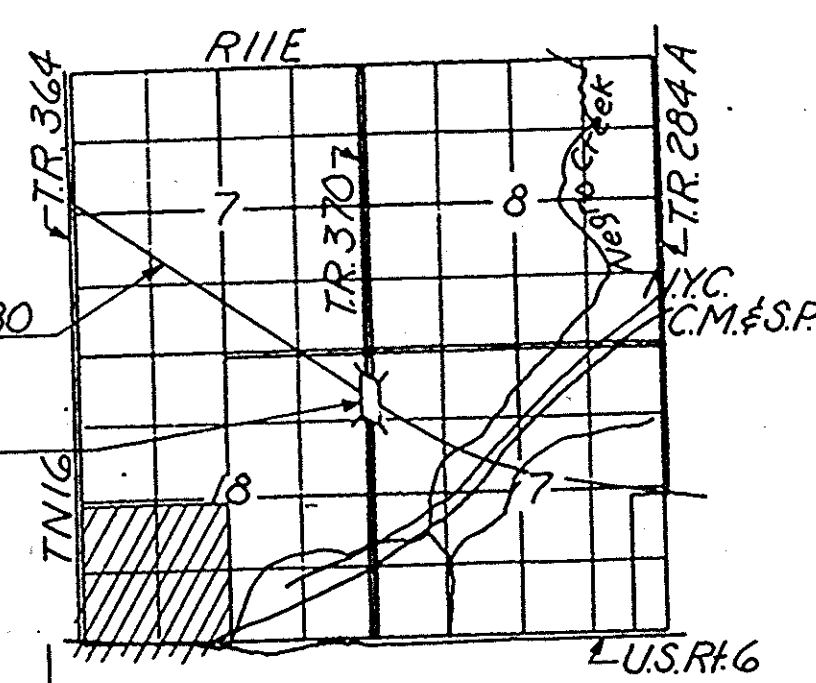
PLAN

Expansion guards shall be fabricated and erected in accordance with Article 51.13(d) of the Standard Specifications.  
Expansion guard, are included in quantity of Structural Steel.  
All the outside vertical faces of the vertical legs of angles in the expansion guards shall be given two shop coats of red lead paint.  
Rivets 3/4" #, open holes 1 1/4" #, unless noted.  
All rollers, rockers, bearing plates, lead plates, pintles, and anchor bolts shall be fabricated and set in accordance with Article 51.15 of the Standard Specifications and are included in quantity of Structural Steel.  
Anchor bolts shall be set before riveting diaphragms over supports.  
Except as otherwise provided, all structural steel shall receive one shop coat of red lead paint and two field coats of aluminum paint.  
See Articles 56.1 to 56.5 inclusive of the Standard Specifications.  
Pins, Pin Plates and Links are included in quantity of Structural Steel.  
The Contractor shall drive 1 test pile at N. Abut. and 1 test pile in the vicinity of Pier 2 as directed by the Engineer before ordering remainder of piles.  
Test Pile at N. Abut. shall be driven in a permanent location.

TOTAL BILL OF MATERIAL

| Item                           | Unit     | Super  | Sub    | Total  |
|--------------------------------|----------|--------|--------|--------|
| Class X Concrete               | Cu. Yds. | 2143   | 2693   | 4836   |
| Reinforcement Bars             | Lbs.     | 57638  | 19,600 | 77,238 |
| Structural Steel               | Lbs.     | 241640 |        | 241640 |
| Handrail Concrete              | Cu. Yds. | 29     |        | 29     |
| Metal Handrail                 | Lin. Ft. | 530    |        | 530    |
| Class A Excavation For Struct. | Cu. Yds. |        | 280    | 280    |
| Concrete Piles                 | Lin. Ft. |        | 925    | 925    |
| Crested Piles                  | Lin. Ft. |        | 845    | 845    |
| Test Piles (Concrete)          | Each     |        | 1      | 1      |
| Test Piles (Timber)            | Each     |        | 1      | 1      |
| Slope wall (4')                | Sq. Yds. |        | 380    | 380    |
| Name Plates                    | Each     |        | 2      | 2      |
| Metal Shoes                    | Each     |        | 53     | 53     |
| Pipe Culverts 36" T.Y. 2A      | Lin. Ft. |        | 178    | 178    |

LOCATION PLAN

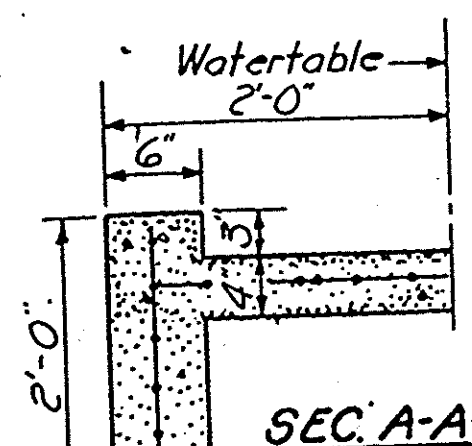


DESIGN STRESSES

$f_c = 1400$  psi. Super  
 $f_c = 75$  psi. Footings  
 $f_s = 20,000$  psi. Reinf.  
 $f_s = 18,000$  psi. Struct.  
 $n = 10$

LOADING H 15-S12-44

SEC. A-A



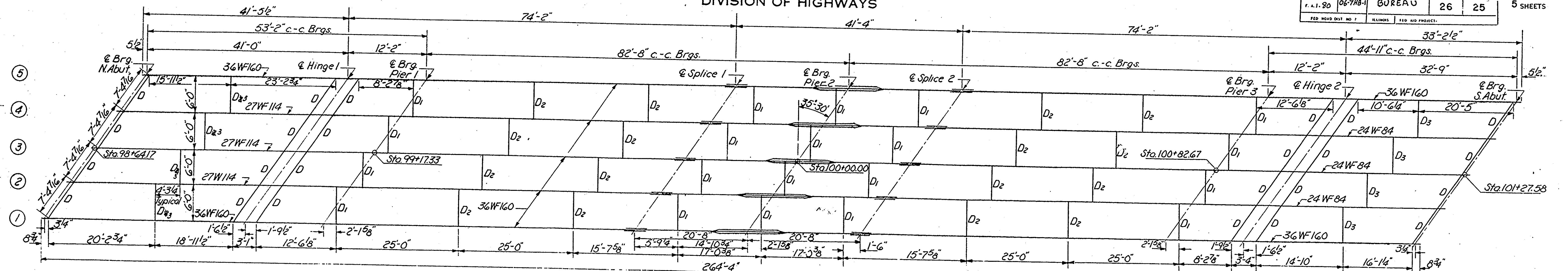
DESIGNED Wm. C. Keene  
CHECKED Emory G. Stuken  
DRAWN J. L. Armstrong  
CHECKED E. S.

JAN 31 1961  
EXAMINED H. C. Bauman  
PASSED E. S. Shultz  
APPROVED C. R. Bauman

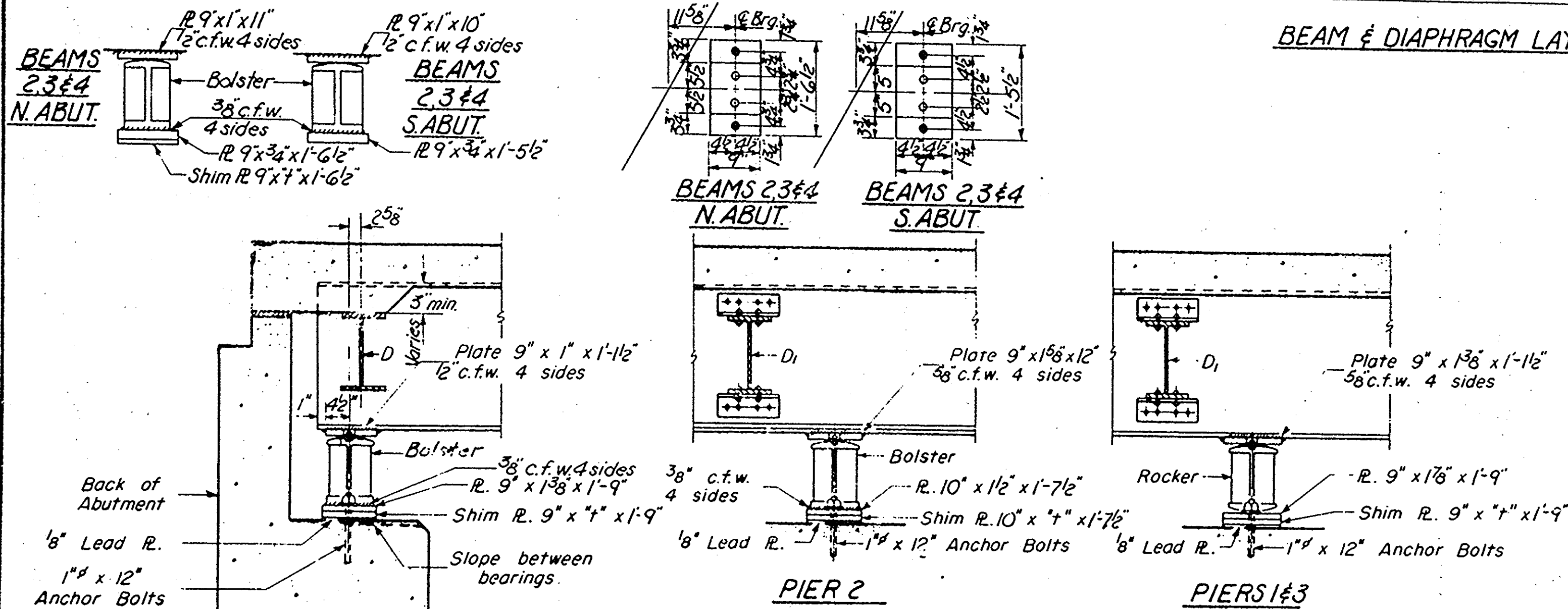
FOR INFORMATION ONLY  
T.R. 370 OVER F.A.I. RT. 80  
GENERAL PLAN  
PROJ. I-80-2 (2) 67  
F.A.I. RT. 80 SEC. 6-7HB-1  
BUREAU COUNTY  
STA. 1738+38

STATE OF ILLINOIS  
DEPARTMENT OF PUBLIC WORKS & BUILDINGS  
DIVISION OF HIGHWAYS

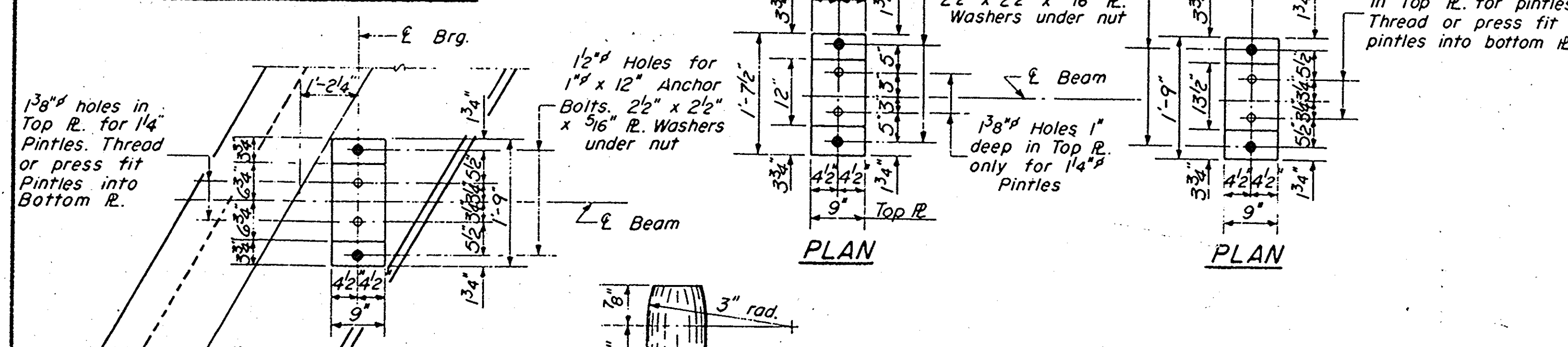
| ROUTE NO. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|-----------|---------|--------|--------------|-----------|
| 66-7HB-1  | BUREAU  | 26     | 25           | 5 SHEETS  |



BEAM & DIAPHRAGM LAYOUT

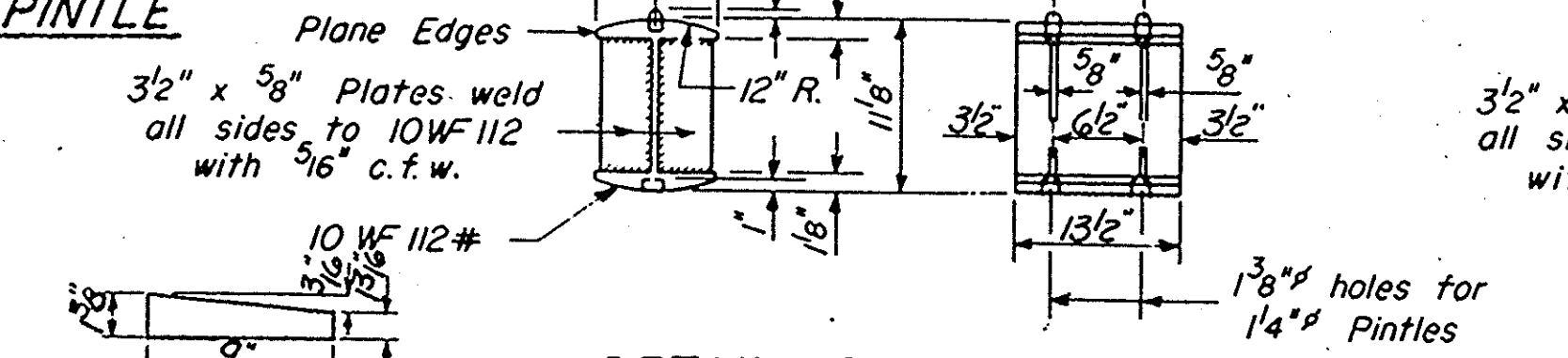


SECTION AT ABUTMENT  
(BEAMS 1 & 5) N. & S. ABUTS.

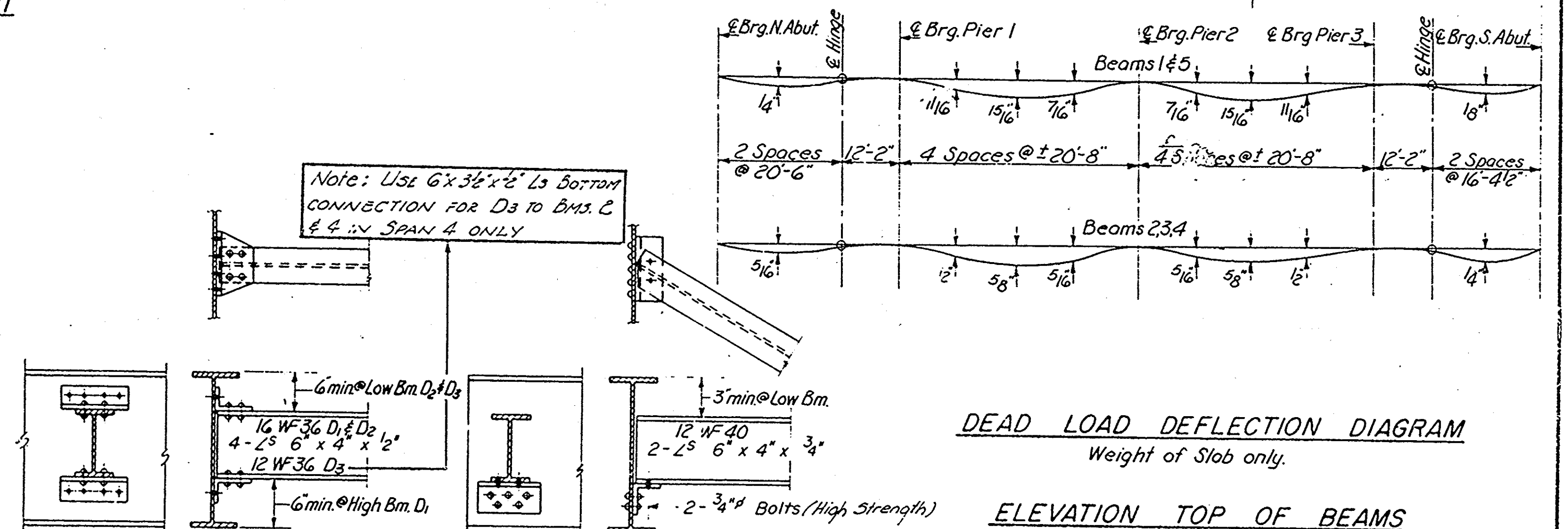


PLAN (BEAMS 1 & 5)  
N. & S. ABUTS.

DETAIL OF PINTLE



DETAIL OF BEARING  
AT PIERS 1 & 3



DEAD LOAD DEFLECTION DIAGRAM  
Weight of Slab only.

ELEVATION TOP OF BEAMS

| Beam | Abut. | Hinge | Pier 1 | Splice | Pier 2 | Splice | Pier 3 | Hinge | Abut. |
|------|-------|-------|--------|--------|--------|--------|--------|-------|-------|
| 1    | 65794 | 65783 | 65772  | 65717  | 65687  | 65658  | 65538  | 65515 | 65432 |
| 2    | 65802 | 65789 | 65778  | 65720  | 65690  | 65660  | 65537  | 65513 | 65429 |
| 3    | 65804 | 65790 | 65778  | 65717  | 65686  | 65655  | 65530  | 65505 | 65420 |
| 4    | 65800 | 65785 | 65773  | 65709  | 65677  | 65645  | 65517  | 65492 | 65405 |
| 5    | 65791 | 65773 | 65760  | 65695  | 65662  | 65629  | 65499  | 65473 | 65384 |

Note: Elevations top of beams do not include dead load deflections.

BILL OF MATERIAL

| Item             | Unit | Quantity |
|------------------|------|----------|
| Structural Steel | Lbs. | 241,640  |

TABLE OF "t" DIMENSIONS

| Beam | Abut. | Pier 1 | Pier 2 | Pier 3 | Abut. |
|------|-------|--------|--------|--------|-------|
| 1    | 3/8"  | 0      | 1/8"   | 1/8"   | 0     |
| 2    | 1/4"  | 5/8"   | 3/8"   | 0      | 0     |
| 3    | 1/2"  | 5/8"   | 0      | 0      | 0     |
| 4    | 0     | 0      | 0      | 1/8"   | 0     |
| 5    | 0     | 0      | 0      | 0      | 0     |

DESIGNED **Wm. C. Keene**  
CHECKED **Emery F. Stuck**  
DRAWN **W. A. Sausaman**  
CHECKED **E.S.**

EXAMINED **W. G. Baumann**  
PASSED **E. J. Smith**  
APPROVED **D. J. Bartelme**

I-2-L Re-drawn 9-21-59

NOTE: Top bearing R's at Pier 3 shall be beveled as shown.

**FOR INFORMATION ONLY**  
STRUCTURAL STEEL DETAILS  
IR 370 OVER F.A.I. 80  
F.A.I. RT 80 SEC. 6-7HB-1  
BUREAU COUNTY  
STA. 1738+38

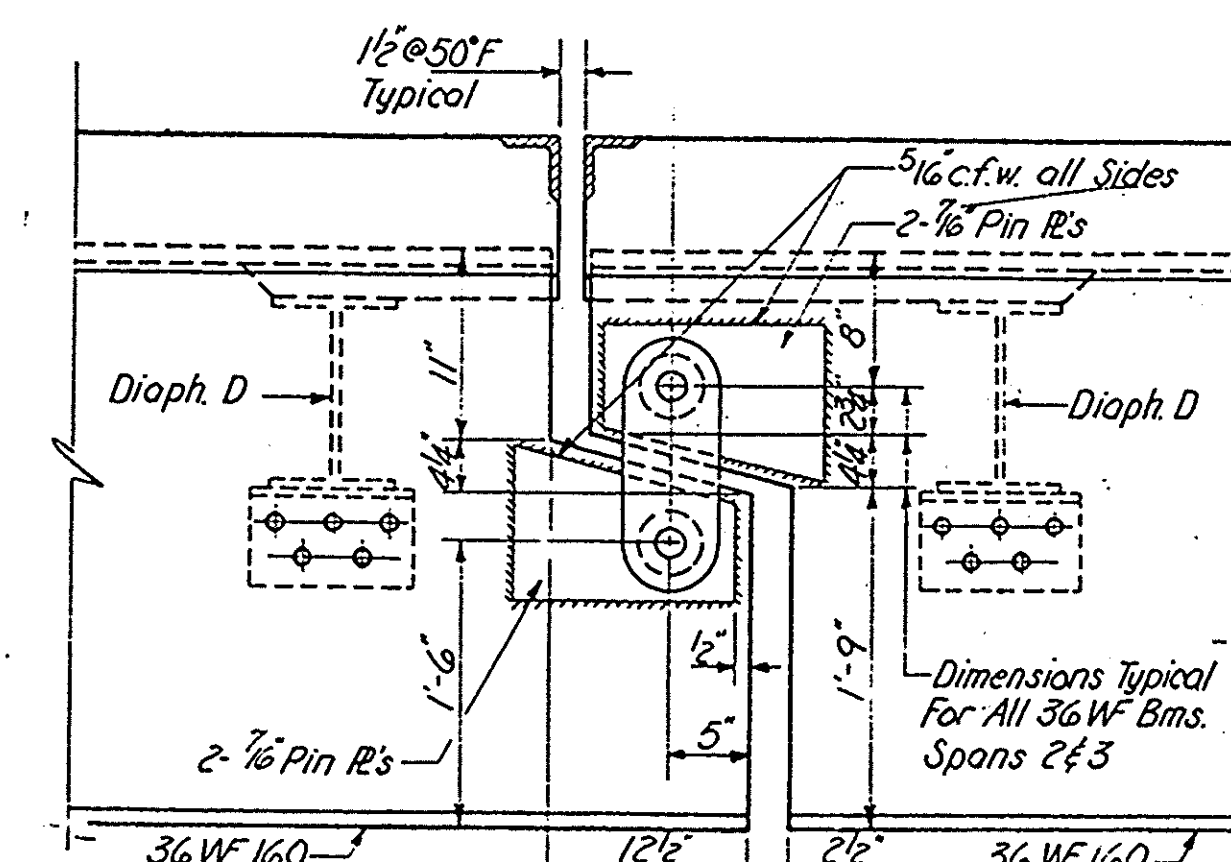
| ROUTE NO.             | SECTION  | COUNTY           | TOTAL SHEETS | SHEET NO. |
|-----------------------|----------|------------------|--------------|-----------|
| S.B.1<br>F.A.I.-80    | 06-7H-8  | BUREAU           | 26           | 26        |
| FED. ROAD DIST. NO. 2 | ILLINOIS | FED. AID PROJECT |              |           |

SHEET NO. 5  
5 SHEETS

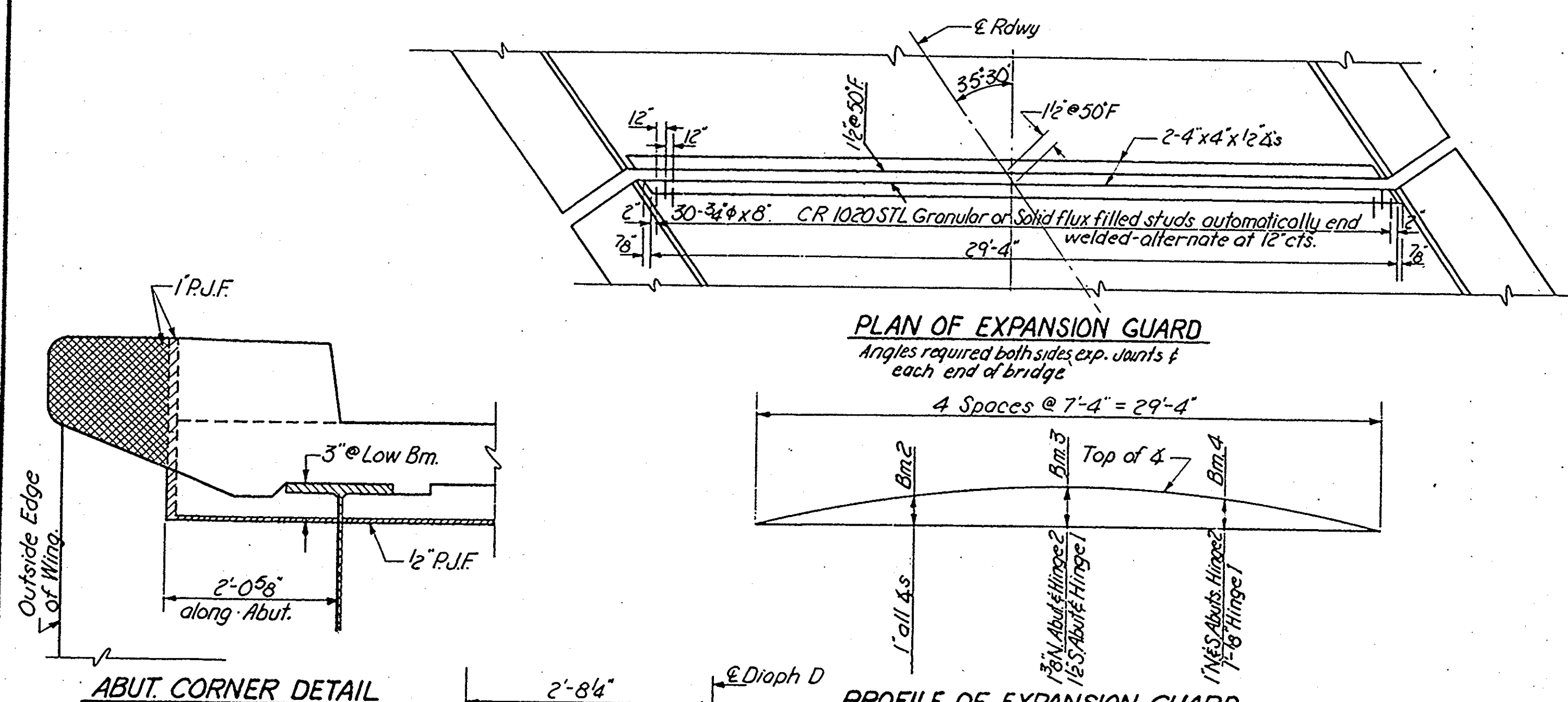
Diagram of a 2-7/8 inch pin and link assembly. The diagram shows a vertical assembly with a central pin and links. The overall height is labeled as 2-7/8 inches. The components are labeled as follows:

- 2-7/8" Pin R's
- 2-6" x 3/4" Links
- 2-7/8" Pin R's (36 WF Bms)
- 2-1/8" Pin R's (27 WF Bms)
- 2-1/2" Pin R's (24 WF Bms)

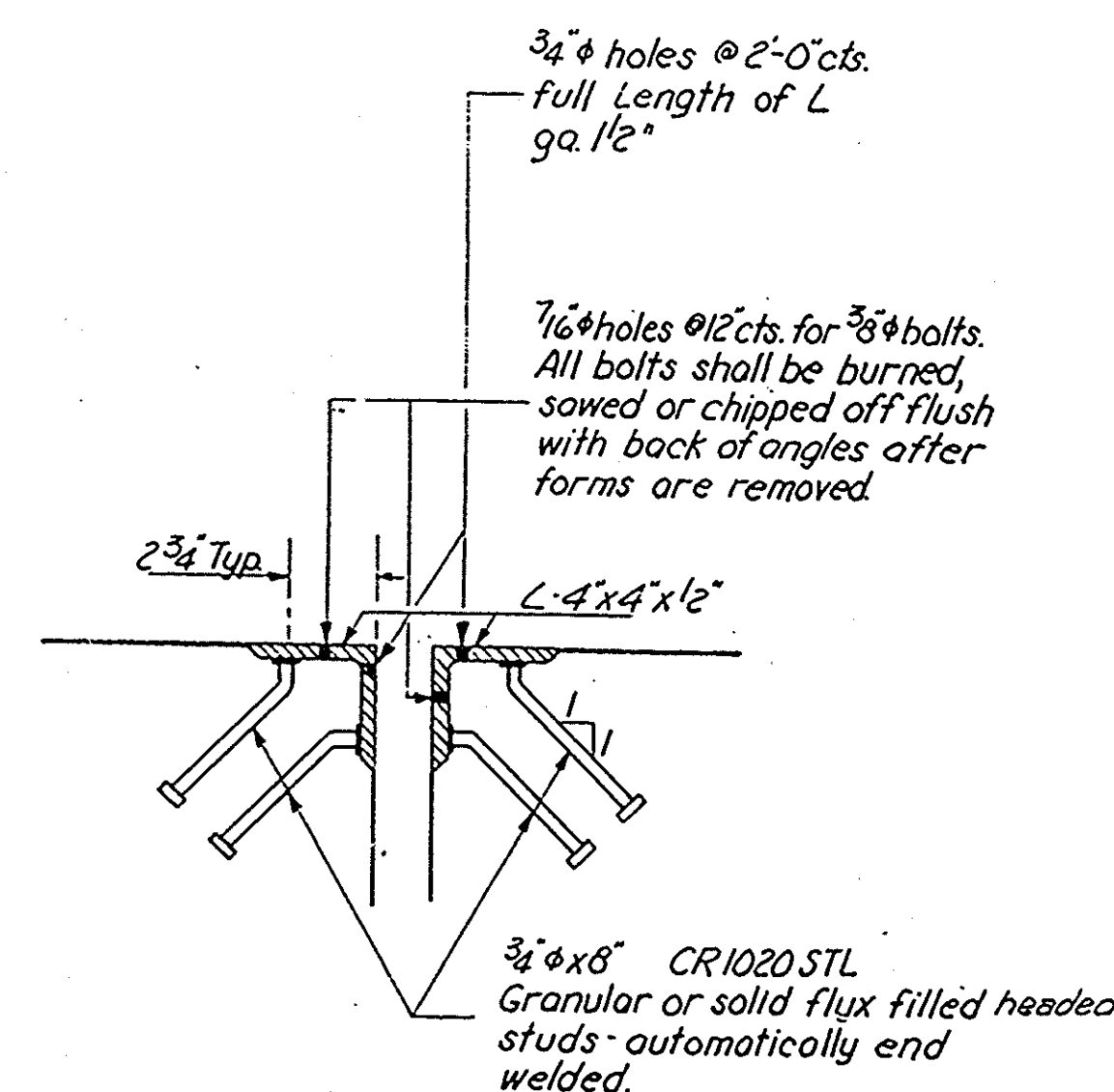
SECTION THRU  
CONNECTION



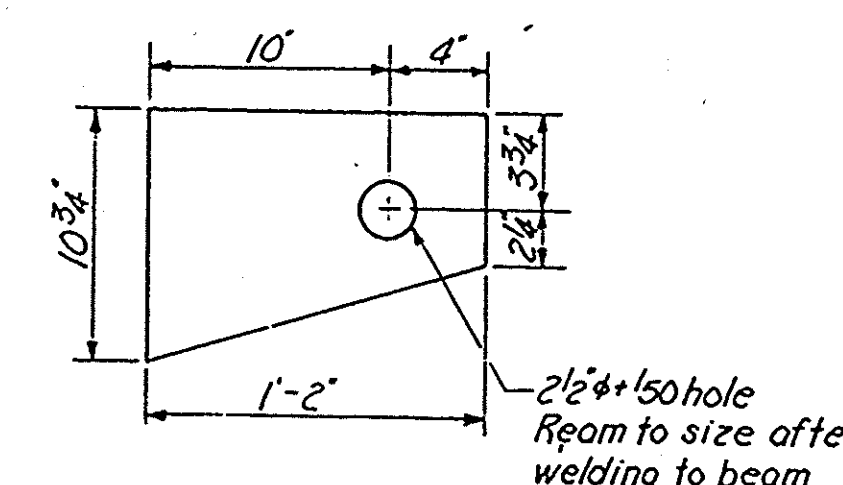
PIN CONNECTION 36 WF TO 36WF (FASCIA BMS.)



ABUT. CORNER DETAIL

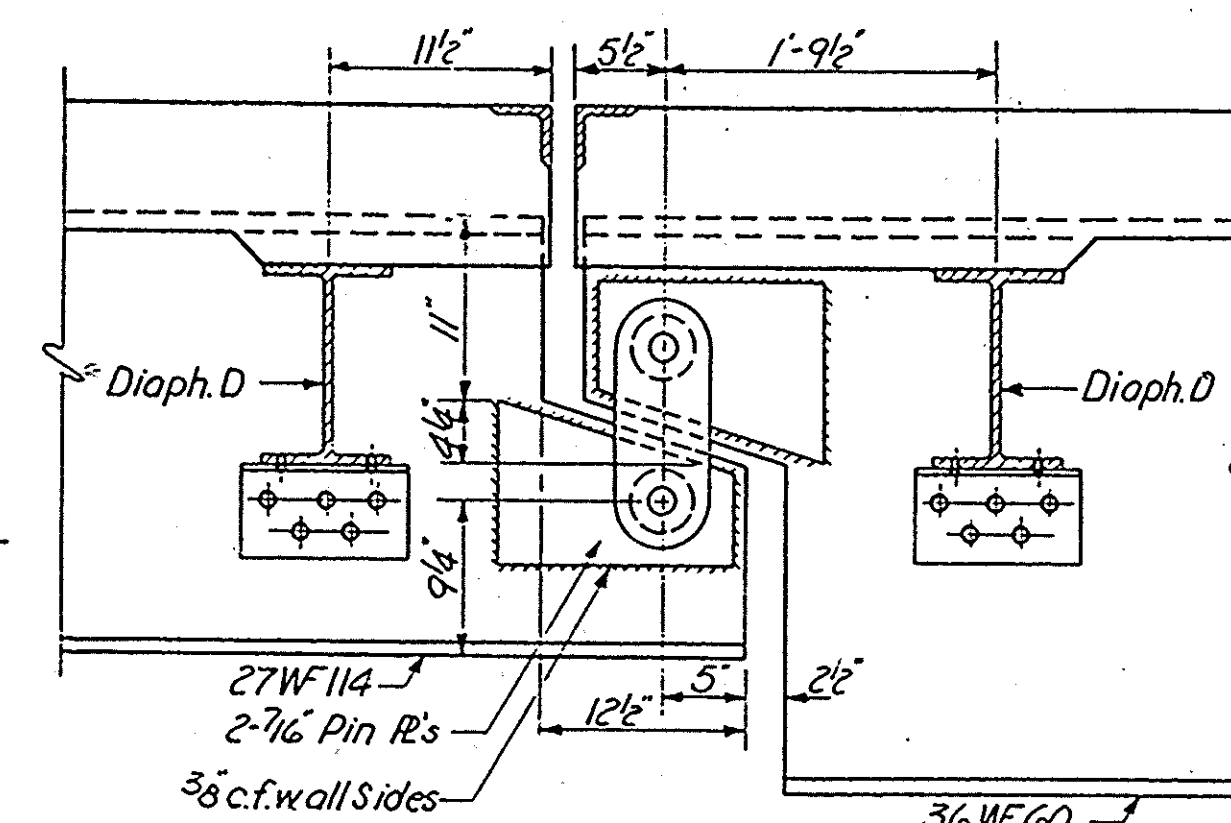


WELDED STUD DETAIL

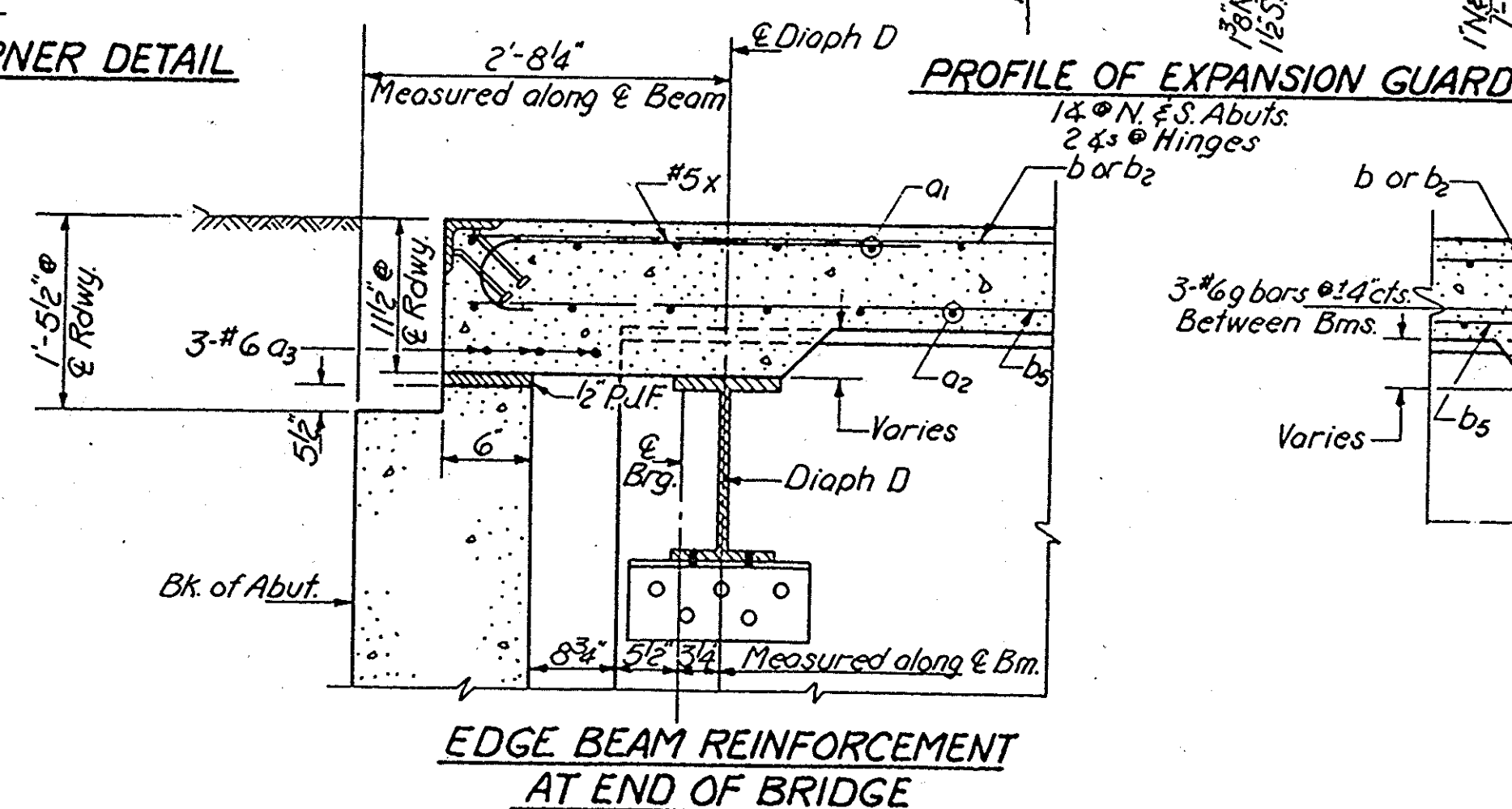


PIN PLATE

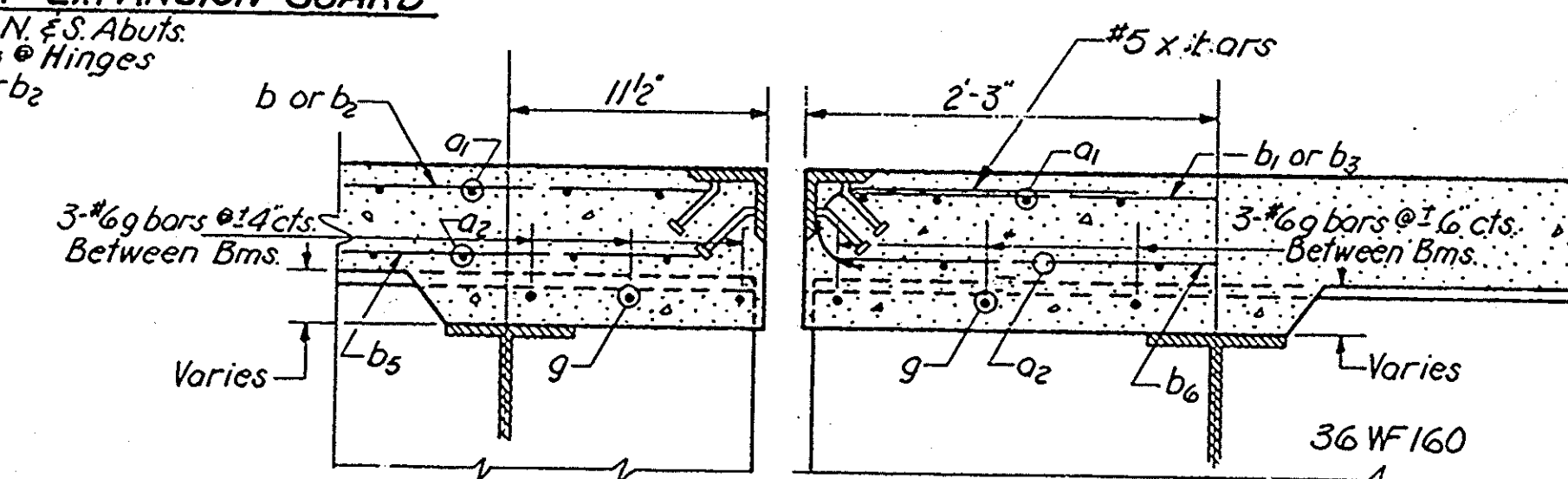
28-7/16" Thick for 36 WF 160 Bms.  
6-7/16" Thick for 27 WF 114 Bms  
6-1/2" Thick for 24 WF 84 Bms.



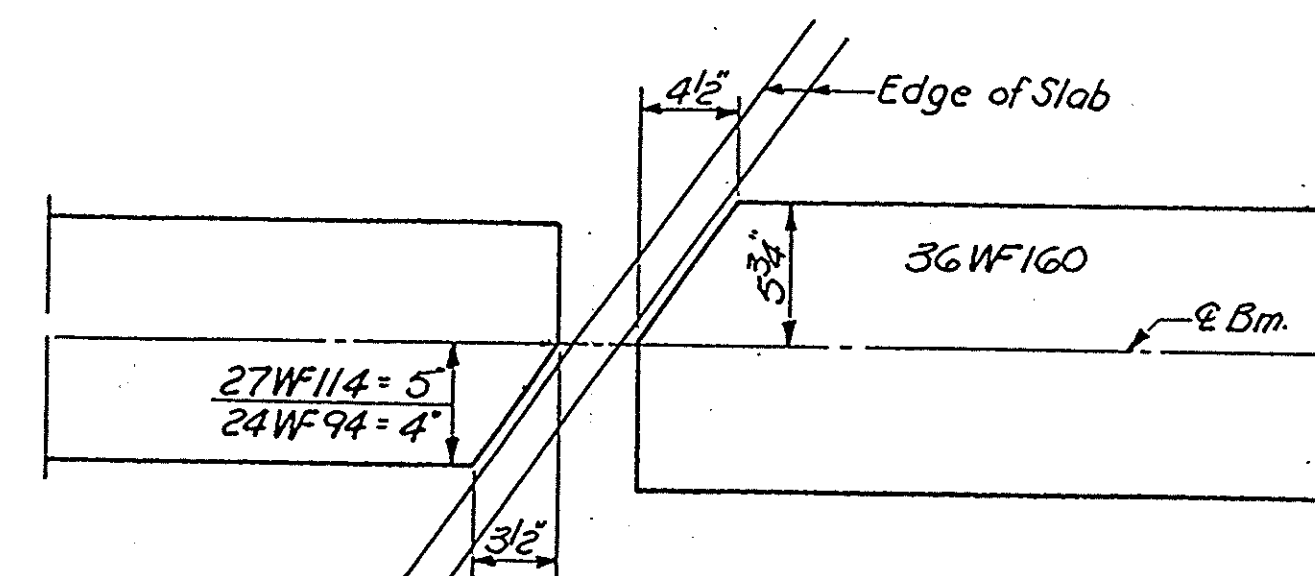
PIN CONNECTION 27WF TO 36WF (SPAN 1)



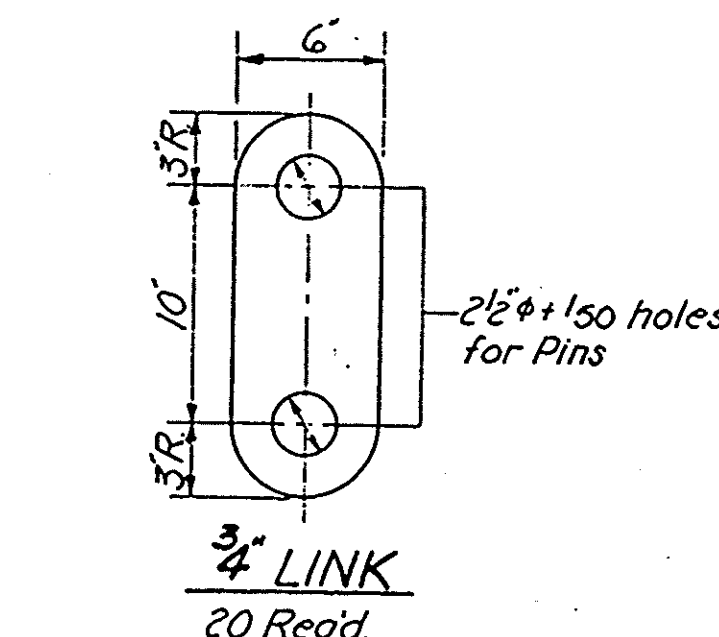
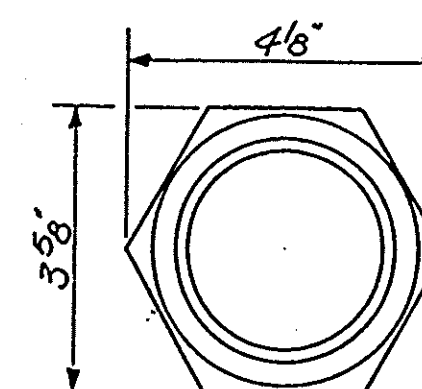
EDGE BEAM REINFORCEMENT  
AT END OF BRIDGE



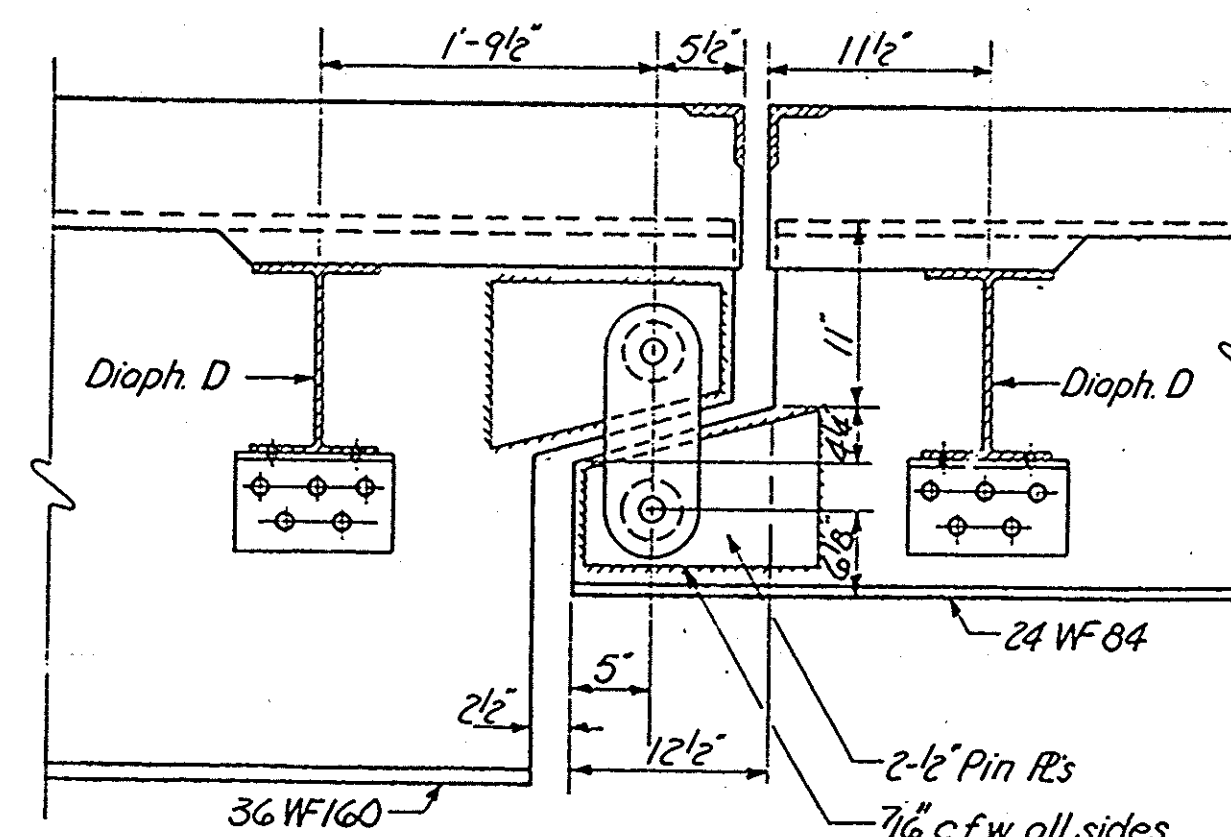
### EDGE BEAM REINFORCEMENT AT HINGES



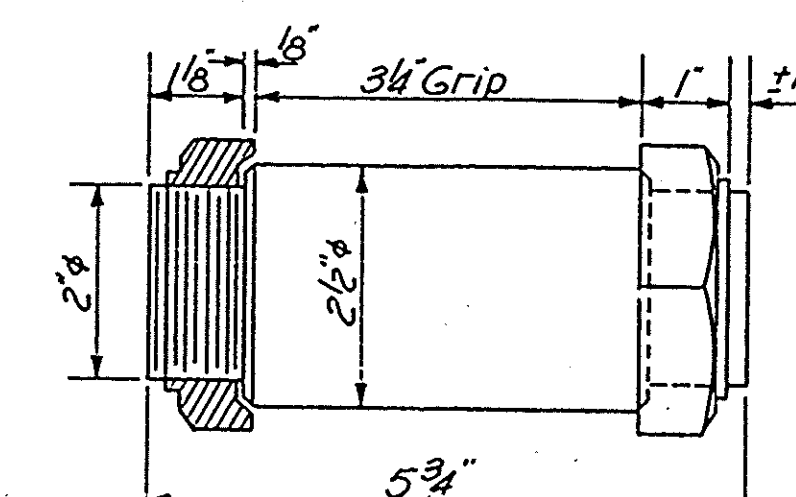
PLAN OF BEAMS @ EXPANSION JOINT  
cut Top Flange Only



3/4" LINK  
20 Req'd



PIN CONNECTION 24 WF TO 36 WF (SPAN 4)



PIN DETAIL  
20 Req'd.

JAN 31 1961

EXAMINED *W. E. Baumann*  
ENGINEER OF BRIDGE AND TRAFFIC STRUCTURES

PASSED *E. L. Shultz*  
ENGINEER OF DESIGN

APPROVED *W. R. Barthelmey*  
CHIEF HIGHWAY ENGINEER

Revised 6/20/61-J.E.K. Welded studs modernized to meet SWI rev. dated 8-23-60 -  
 5/2 Link changed to 3/2 Link & 3/2 Thick Pin Plate changed to 7/8" Thick Pin Plate for 36W 160 Dms. Revised 6/29/62 Removed 2" dimension (head over) from identification of studs.

2. *Def.*

±14"

**FOR INFORMATION ONLY**

SPECIAL DETAILS  
T.R.370 OVER F.A.I. RT.80  
F.A.I. RT.80 SEC.6-7HB-1  
BUREAU COUNTY  
STA.1738+36