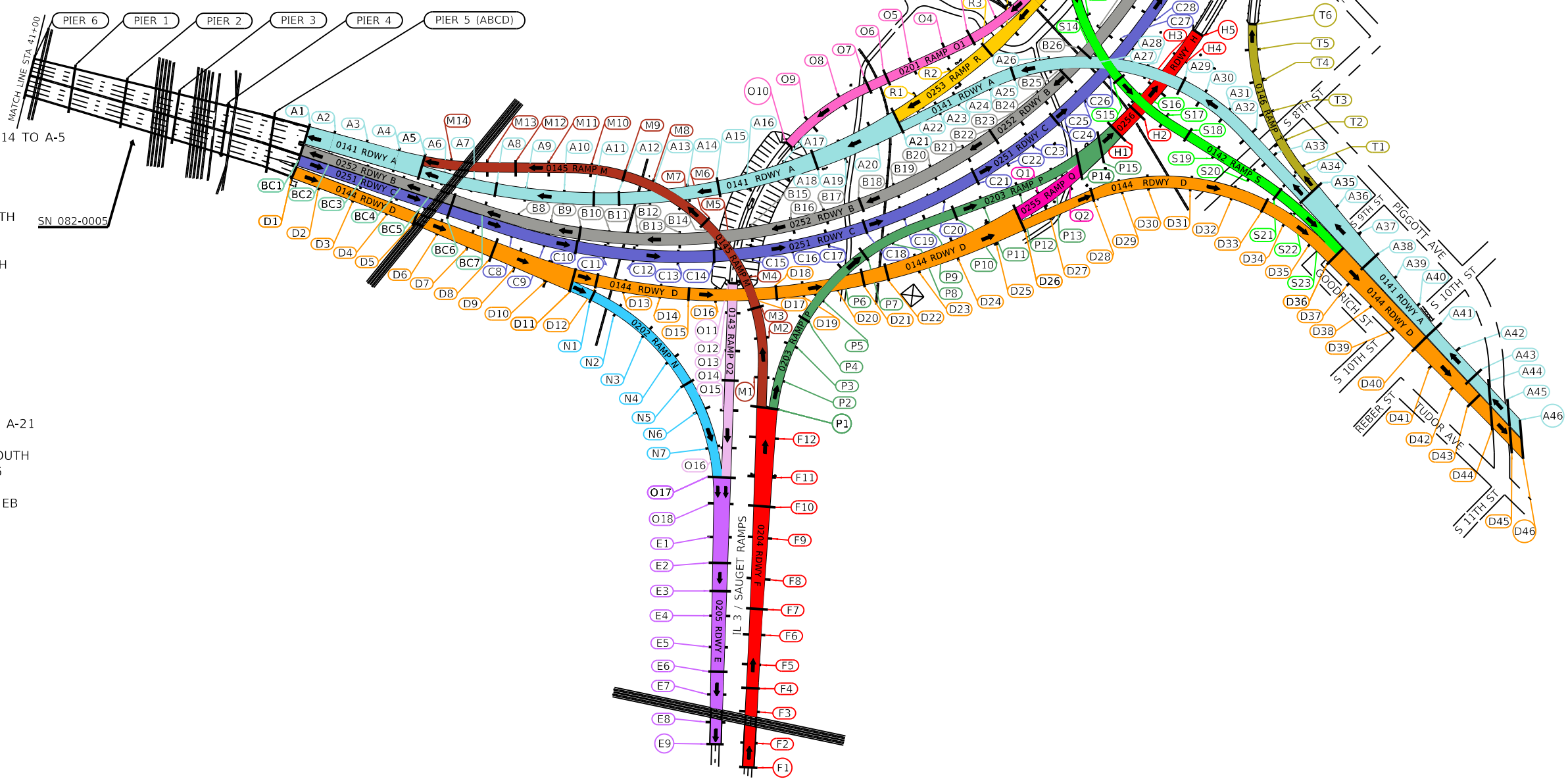
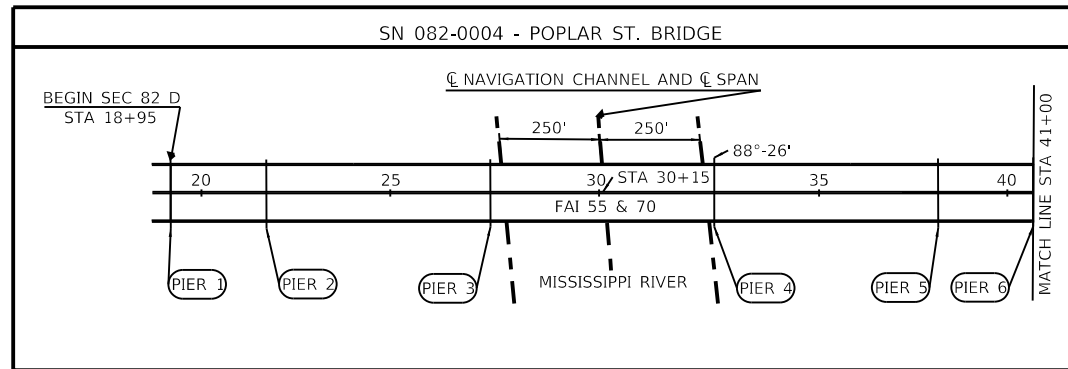


# STRUCTURES

- 082-0004 - POPLAR ST. BRIDGE - ORTHOTROPIC - 5 SPAN  
LIMITS - RIVER PIER #1 TO RIVER PIER #6
- 082-0005 - 82-3 VB - 6 SPAN CONTINUOUS, MULTI BEAM, PLATE GIRDER  
LIMITS - RIVER PIER #6 TO PIERS A1, BC1, AND D1
- Start 2-GIRDER "POPLAR STREET COMPLEX"
- 082-0141 - RDWY "A" 45 SPAN 13TH ST. NORTH TO (C.D. WB)  
LIMITS - PIER A-1 ----- ABUT. A-46
- 082-0252 - RDWY "B" 28 SPAN MAINLINE WEST BOUND  
LIMITS - PIER B-1 ----- ABUT. B-29
- 082-0251 - RDWY "C" 28 SPAN MAINLINE EAST BOUND  
LIMITS - PIER C-1 ----- ABUT. C-29
- 082-0144 - RDWY "D" 45 SPAN ST. LOUIS TO 13TH ST. (C.D. EB)  
LIMITS - PIER D-1 ----- ABUT. D-46
- 082-0205 - RDWY "E" 10 SPAN TO ILL.-3 SB  
LIMITS - PIER O-17, O-18, E-1 ----- ABUT. E-9
- 082-0204 - RDWY "F" 12 SPAN FROM ILL.-3 NB TO RAMP "P" EAST  
LIMITS ABUT. F-1 ----- F-12 TO PIER P-1
- 082-0254 - RDWY "G" 13 SPAN (C.D. WB)  
LIMITS - ABUT. G-14 ----- PIER G-1
- 082-0256 - RDWY "H" 4 SPAN (C.D. EB)  
LIMITS - PIER H-1 ----- ABUT. H-5
- 082-0145 - RAMP "M" 15 SPAN ILL.-3 TO W.B. CD  
LIMITS - PIER P-1 TO ABUT. M-1 ----- PIER M-14 TO A-5
- 082-0202 - RAMP "N" 8 SPAN EB CD TO ILL.-3 SOUTH  
LIMITS - PIER D-11 TO N-1 ----- N-7 TO O-17
- 082-0201 - RAMP "O1" 10 SPAN WB CD TO ILL.-3 SOUTH  
LIMITS - PIER G-1 TO O-1 ----- ABUT. O-10
- 082-0143 - RAMP "O2" 6 SPAN WB CD TO ILL.-3 SOUTH  
LIMITS - ABUT. O-11 ----- PIER O-17
- 082-0203 - RAMP "P" 15 SPAN RTE. ILL.-3 TO EB CD  
LIMITS - PIER P-1 ----- P-15 TO H-1
- 082-0255 - RAMP "Q" 3 SPAN EB CD  
LIMITS - PIER D-26 TO Q-1 TO Q-2 TO P-14
- 082-0253 - RAMP "R" 6 SPAN WB CD  
LIMITS - PIER G-1 TO O-1 TO R-4 ----- R-1 TO A-21
- 082-0142 - RAMP "S" 24 SPAN WB CD TO 13TH ST. SOUTH  
LIMITS - PIER G-12 TO S-1 ----- S-23 TO D-36
- 082-0146 - RAMP "T" 6 SPAN 13TH ST. NORTH TO CD EB  
LIMITS - PIER A-35 TO T-1 ----- ABUT. T-6



**LEGEND**

- ABUTMENT
- ← DIRECTION OF TRAFFIC
- PIER

|                        |            |           |  |
|------------------------|------------|-----------|--|
| USER NAME = HEPPID     | DESIGNED - | REVISED - |  |
|                        | DRAWN -    | REVISED - |  |
| PLOT SCALE = \$SCALE\$ | CHECKED -  | REVISED - |  |
| PLOT DATE = 11/14/2018 | DATE -     | REVISED - |  |

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**POPLAR STREET COMPLEX**

SCALE: NTS    SHEET 1 OF 1 SHEETS    STA.    TO STA.

|                           |         |          |              |           |
|---------------------------|---------|----------|--------------|-----------|
| F.A. RTE.                 | SECTION | COUNTY   | TOTAL SHEETS | SHEET NO. |
|                           |         | ST CLAIR | 1            | 1         |
| CONTRACT NO.              |         |          |              |           |
| ILLINOIS FED. AID PROJECT |         |          |              |           |

MODEL: \$MODELNAME\$  
FILE: \$FILENAME\$. \$EXT\$

143

95%  
6-17-2000

|                |         |           |              |           |
|----------------|---------|-----------|--------------|-----------|
| PROJECT NO.    | SECTION | COUNTY    | TOTAL SHEETS | SHEET NO. |
| 82-3HVB-2R-1-I | 8       | ST. CLAIR | 91           | 1         |
| SHEETS         |         |           |              |           |

82-3HVB-2R-1-I \*ACIM-70-1(171)1

**SET 1 OF 4**  
 STRUCTURE NO. 082-0141 (ROADWAY A)  
 STRUCTURE NO. 082-0253 (RAMP R)  
 STRUCTURE NO. 082-0201 (RAMP O)  
 STRUCTURE NO. 082-0254 (ROADWAY G)

**SET 2 OF 4**  
 STRUCTURE NO. 082-0144 (ROADWAY D)  
 STRUCTURE NO. 082-0255 (RAMP Q)  
 STRUCTURE NO. 082-0203 (RAMP P)  
 STRUCTURE NO. 082-0256 (ROADWAY H)

**SET 3 OF 4**  
 STRUCTURE NO. 082-0206 (RAMP G OVER 4TH ST.)

**SET 4 OF 4**  
 STRUCTURE NO. 082-0140 (RAMP H OVER TRENDLEY AVE.)

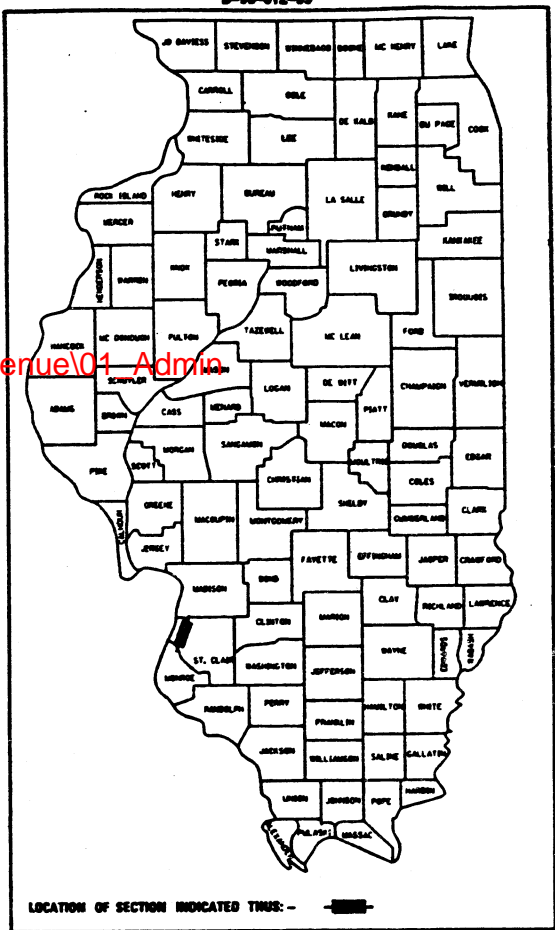
STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
**PLANS FOR PROPOSED  
 SEISMIC AND REDUNDANCY  
 RETROFIT REPAIRS**  
 FAI ROUTE 70

**THIS CONTRACT  
 CONSISTS OF  
 4 SETS**

P:\2014\2014.6xxx\2014.6410.0 - POPLAR STREET BRIDGE PROJECT MGMT (RW)\11 EB Contract 76B55\082-0140\_Trendley Avenue\01\_Admin

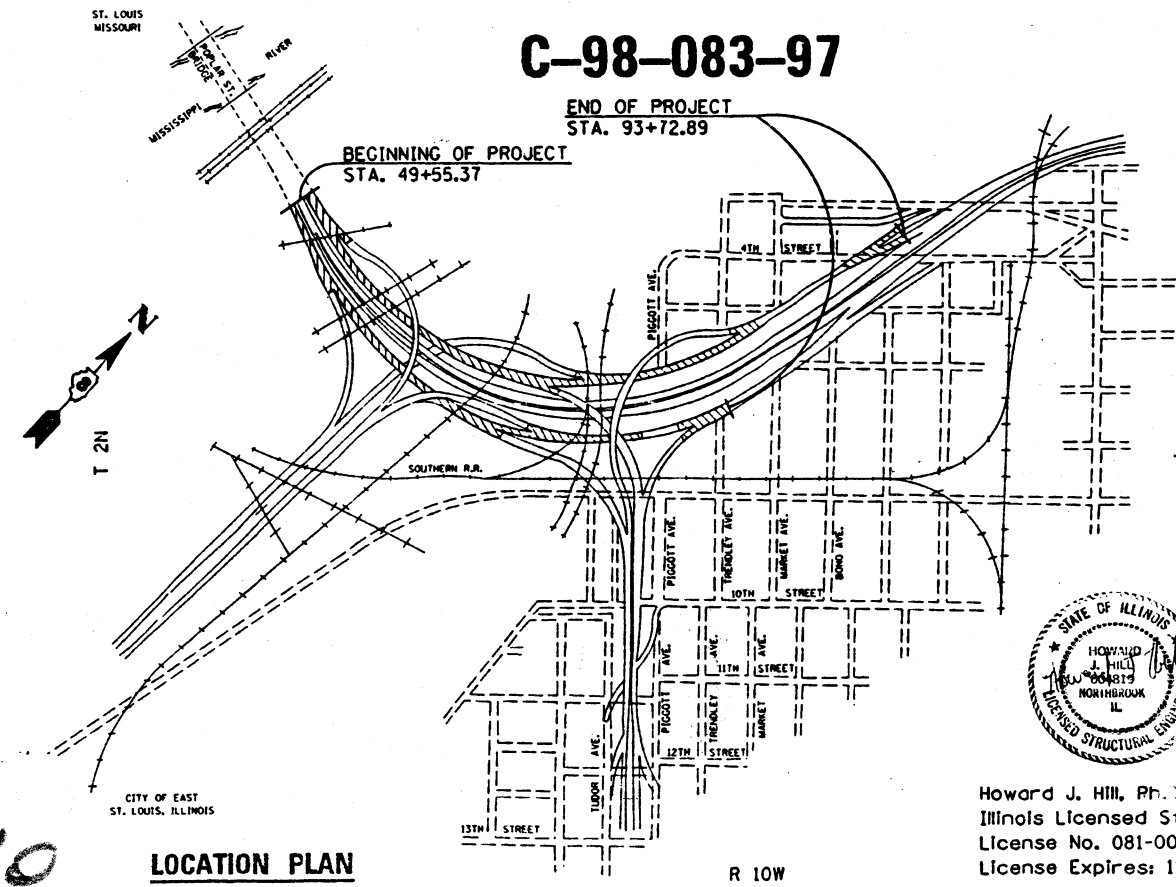
**SECTION 82-3HVB-2R-1-I  
 POPLAR STREET BRIDGE APPROACHES  
 PROJECT ACIM-70-1(171)1  
 ST. CLAIR COUNTY  
 C-98-083-97**

STANDARDS  
 701406  
 702001



082-0140

ROJE



**APPROVED**  
 FOR STRUCTURAL ADEQUACY ONLY  
*Robert E. Anderson*  
 ENGINEER OF BRIDGES AND STRUCTURES

PROJECT NET LENGTH :  
 0.79 MI. = 4178.58 FT.  
 PROJECT GROSS LENGTH :  
 0.84 MI. = 4417.52 FT.



Howard J. Hill, P.E.  
 Illinois Licensed Structural Engineer  
 License No. 081-004819  
 License Expires: 11/30/98

8-231

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION  
 DIVISION OF HIGHWAYS

SUBMITTED Feb 5 19 98  
*James Easterly (MCE)*  
 DISTRICT ENGINEER

ENGINEER OF PROJECT DEVELOPMENT AND IMPLEMENTATION  
June 26 19 98  
*Bill Hunkley*  
 ENGINEER OF DESIGN AND ENVIRONMENT

June 26 19 98  
*James P. Slay*  
 DIRECTOR, DIVISION OF HIGHWAYS

CONTRACT NO. 96680 **082-0140**

LOCATION PLAN

**WJE** **Wiss, Janney, Elstner Associates, Inc.**  
 Engineers, Architects, Material Scientists  
 330 Pfingsten Road, Northbrook, Illinois 60062  
 (847) 272-7400 FAX (847) 291-4813

URBAN  
90% FED.  
10% STATE  
SFTY-2A

|           |         |           |           |              |
|-----------|---------|-----------|-----------|--------------|
| DATE      | SECTION | PROJECT   | SHEET NO. | TOTAL SHEETS |
| F.A.J. 70 |         | ST. CLAIR | 91        | 2            |

SUMMARY OF QUANTITIES

| CODE NO. | ITEM   | UNIT   | QUANTITY |
|----------|--|--------|----------|
| 50102400 | Concrete removal                                     | CUYD   | 81.0     |
| 50206200 | STRUCTURE EXCAVATION (SPECIAL)                       | CUYD   | 70       |
| 50500405 | Furnish & erect structural steel                     | LBS.   | 230760   |
| 50301245 | Formed concrete repair (depth equal to less than 5") | SQ.FT. | 570      |
| X0322549 | Column wrap  | SQ.FT. | 10303    |
| X0322550 | Wire rope  | FT.    | 206.3    |
| X0322551 | Epoxy grouted dowels                                 | EACH   | 1099     |
| X0322552 | Embankment protection                                | SQ.FT. | 150      |
| X0322553 | Foundation wall dowel modification                   | EACH   | 544      |
| X0322554 | Foundation wall modification                         | SQ.FT. | 1915     |
| X0322555 | Cross frame removal                                  | EACH   | 23       |
| X0322556 | Stiffener intersection modification                  | EACH   | 1920     |
| X0322557 | Long span floor beam retrofit                        | EACH   | 64       |
| X0322558 | Bottom flange splice - bolt replacement              | EACH   | 22       |
| X0322559 | Bolt replacement                                     | EACH   | 18       |
| X0322560 | Crack extension modifications                        | EACH   | 6        |
| X0322561 | Cross beam retrofit                                  | EACH   | 10       |
| X0322562 | Steel girder web reinforcement plate                 | LBS.   | 807900   |
| X0322563 | Vertical web stiffener removal                       | EACH   | 2797     |
| X0322564 | Column wrap protection                               | EACH   | 4        |
| 70101800 | Traffic Control and Protection Special               | L Sum  | 1        |
| 70048600 | Railroad Protective Liability Insurance              | L Sum  | 1        |
| X1015000 | CHANGEABLE MESSAGE SIGN                              | CALMO  | 12       |
| 16700000 | ENGINEER'S FIELD OFFICE, TYPE A                      | CALMO  | 12       |

\* Sheet 2A & 2B  
Traffic Control and  
Protection, Special

998,300

\*\* Sheets 21A & 61A  
Redundancy Retrofit Details

INDEX OF SHEETS

| SHEET NO. | DESCRIPTION                                      |
|-----------|--|
| 1         | TITLE SHEET                                      |
| 2 *       | QUANTITIES AND INDEX OF SHEETS                   |
| 3         | SET 1 - TITLE SHEET                              |
| 4         | GENERAL NOTES                                    |
| 5         | SCOPE OF WORK                                    |
| 6         | PROJECT PLAN                                     |
| 7         | KEY PLAN ROADWAYS A, G, R & O                    |
| 8         | ELEVATION ROADWAYS A, G, R & O                   |
| 9         | TYPICAL SUBSTRUCTURE DETAILS                     |
| 10        | SEISMIC RETROFIT DETAILS                         |
| 11        | SEISMIC RETROFIT DETAILS                         |
| 12        | SEISMIC RETROFIT DETAILS                         |
| 13        | SEISMIC RETROFIT DETAILS                         |
| 14        | SEISMIC RETROFIT DETAILS                         |
| 15        | SEISMIC RETROFIT DETAILS                         |
| 16        | SEISMIC RETROFIT DETAILS                         |
| 17        | SEISMIC RETROFIT DETAILS                         |
| 18        | STIFFENER INTERSECTION MODIFICATION DETAIL       |
| 19        | LONG SPAN FLOOR BEAM RETROFIT & BOLT REPLACEMENT |
| 20        | CRACK EXTENSION RETROFITS                        |
| 21**      | REDUNDANCY RETROFIT DETAILS                      |
| 22        | REDUNDANCY RETROFIT DETAILS                      |
| 23        | REDUNDANCY RETROFIT DETAILS                      |
| 24        | CONCRETE REPAIR DETAILS                          |
| 25        | SEISMIC RETROFIT DETAILS                         |
| 26        | TEMPORARY EMBANKMENT PROTECTION                  |
| 27        | PIER A2 RETROFIT                                 |
| 28        | PIER A5 RETROFIT                                 |
| 29        | PIERS A7 & A8 RETROFIT                           |
| 30        | PIERS A9 & A11 RETROFIT                          |
| 31        | PIERS A12 & A15 RETROFIT                         |
| 32        | PIERS A16 & A18 RETROFIT                         |
| 33        | PIER A19 RETROFIT                                |
| 34        | PIER A21 RETROFIT                                |
| 35        | PIERS R1-1 & R2-1 RETROFIT                       |
| 36        | PIER R3-1 RETROFIT                               |
| 37        | PIERS R4-1 & O1-R RETROFIT                       |
| 38        | PIER G1 RETROFIT                                 |
| 39        | PIERS G2 & G5 RETROFIT                           |
| 40        | PIERS G9 & G11 RETROFIT                          |
| 41        | PIER G12 RETROFIT                                |
| 42        | PIER G13 RETROFIT                                |
| 43        | SET 2 - TITLE SHEET                              |
| 44        | GENERAL NOTES                                    |
| 45        | SCOPE OF WORK                                    |
| 46        | PROJECT PLAN                                     |
| 47        | KEY PLAN ROADWAYS D, H, Q & P                    |
| 48        | ELEVATION ROADWAYS D, H, Q & P                   |
| 49        | TYPICAL SUBSTRUCTURE DETAILS                     |
| 50        | SEISMIC RETROFIT DETAILS                         |
| 51        | SEISMIC RETROFIT DETAILS                         |

INDEX OF SHEETS

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|-----------|--|
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| 53        | SEISMIC RETROFIT DETAILS                             |
| 54        | SEISMIC RETROFIT DETAILS                             |
| 55        | SEISMIC RETROFIT DETAILS                             |
| 56        | SEISMIC RETROFIT DETAILS                             |
| 57        | SEISMIC RETROFIT DETAILS                             |
| 58        | STIFFENER INTERSECTION MODIFICATION DETAIL           |
| 59        | LONG SPAN FLOOR BEAM RETROFIT & BOLT REPLACEMENT     |
| 60        | CRACK EXTENSION & CROSS BEAM RETROFITS               |
| 61**      | REDUNDANCY RETROFIT DETAILS                          |
| 62        | REDUNDANCY RETROFIT DETAILS                          |
| 63        | REDUNDANCY RETROFIT DETAILS                          |
| 64        | CONCRETE REPAIR DETAILS                              |
| 65        | SEISMIC RETROFIT DETAILS                             |
| 66        | PIERS D2 & D5 RETROFIT                               |
| 67        | PIERS D8 & D9 RETROFIT                               |
| 68        | PIER D11 RETROFIT                                    |
| 69        | PIERS D12 & D13 RETROFIT                             |
| 70        | PIERS D15 & D17 RETROFIT                             |
| 71        | PIERS D18 & D21 RETROFIT                             |
| 72        | PIERS D22 & D23 RETROFIT                             |
| 73        | PIER D24 RETROFIT                                    |
| 74        | PIER D26 RETROFIT                                    |
| 75        | PIERS Q1-1 & Q2-1 RETROFIT                           |
| 76        | PIER P14 RETROFIT                                    |
| 77        | PIERS P15 & H1 RETROFIT                              |
| 78        | PIERS H2 & H3 RETROFIT                               |
| 79        | PIER H4 RETROFIT                                     |
| 80        | SET 3 - TITLE SHEET                                  |
| 81        | GENERAL NOTES  |
| 82        | PROJECT PLAN/SCOPE OF WORK                           |
| 83        | KEY PLAN AND ELEVATION FOR RAMP G OVER 4TH STREET    |
| 84        | SEISMIC RETROFIT DETAILS                             |
| 85        | PIER NO. 1 & NO. 2 RETROFIT                          |
| 86        | SET 4 - TITLE SHEET                                  |
| 87        | GENERAL NOTES  |
| 88        | PROJECT PLAN/SCOPE OF WORK                           |
| 89        | KEY PLAN AND ELEVATION FOR RAMP H OVER TRENDLEY AVE. |
| 90        | SEISMIC RETROFIT DETAILS                             |
| 91        | PIER NO. 1 & NO. 2 RETROFIT                          |

QUANTITIES AND INDEX OF SHEETS

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
SEISMIC AND REDUNDANCY RETROFIT REPAIRS  
FAI ROUTE 70  
POPLAR STREET BRIDGE APPROACHES  
ST. CLAIR COUNTY

SCALE: NONE  
DATE: 1-23-98

DRAWN BY: JH  
CHECKED BY: JH

Revised 10/21/98 JCM

Revised 7-9-98 R.S.

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION  
 DIVISION OF HIGHWAYS

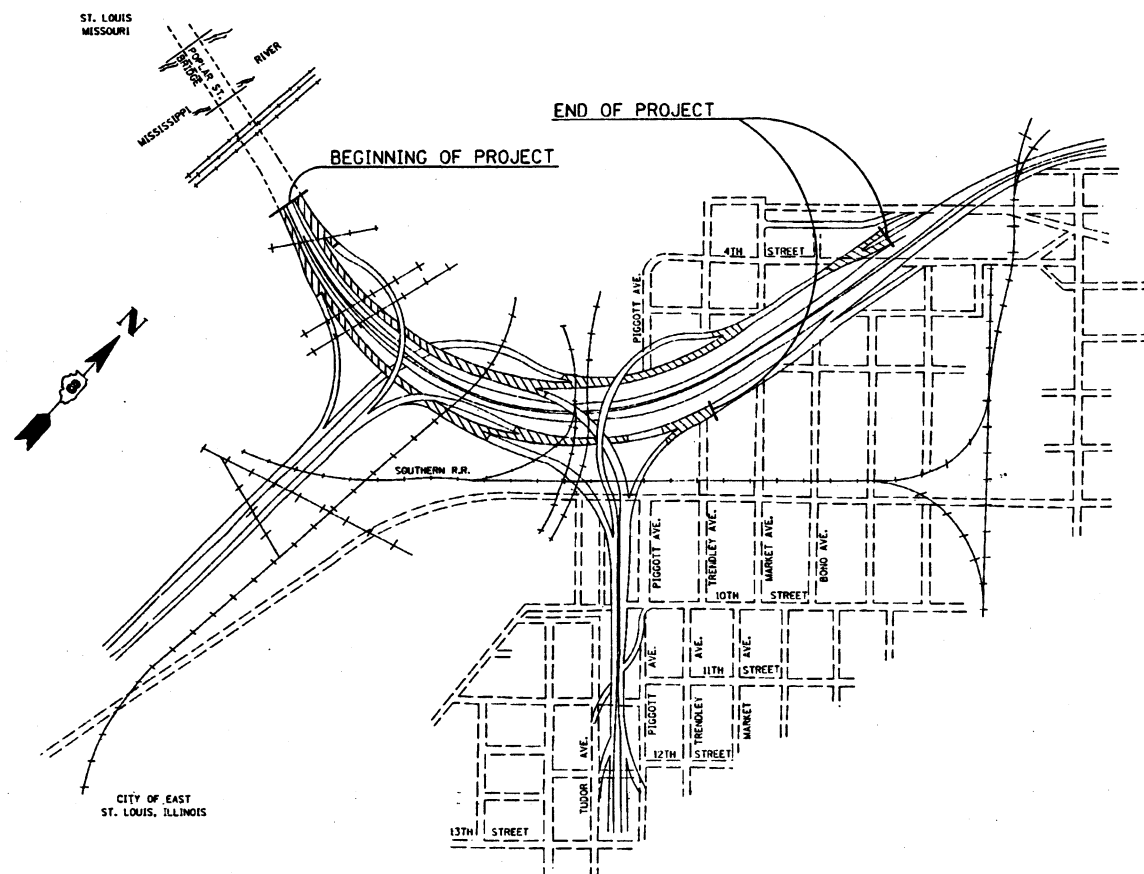
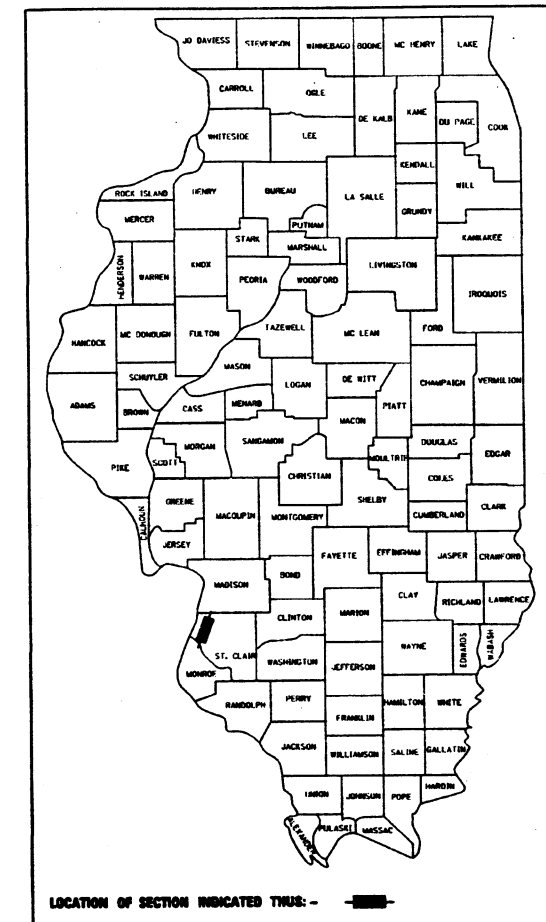
**PLANS FOR PROPOSED  
 SEISMIC  
 RETROFIT REPAIR \***  
 FAI ROUTE 70  
 SECTION 82-3HVB-2R-1-1  
 POPLAR STREET BRIDGE APPROACHES  
 ST. CLAIR COUNTY

\* ENCOMPASSING RAMP H OVER TRENDLEY AVE., STRUCTURE NO. 082-0140

| INDEX OF SHEETS |  |
|-----------------|--|
| SHEET NO.       | DESCRIPTION  |
| S-1             | SET 4 - TITLE SHEET                                  |
| S-2             | GENERAL NOTES  |
| S-3             | PROJECT PLAN/SCOPE OF WORK                           |
| S-4             | KEY PLAN AND ELEVATION FOR RAMP H OVER TRENDLEY AVE. |
| S-5             | SEISMIC RETROFIT DETAILS                             |
| S-6             | PIER NO. 1 & NO. 2 RETROFIT                          |

SET 4 OF  
 4 SETS

|   |          |           |              |           |               |
|---|----------|-----------|--------------|-----------|---------------|
| ROUTE NO.   | DISTRICT | COUNTY    | TOTAL SHEETS | SHEET NO. | SHEET NO. S-1 |
| F.A.I. 70   | *        | ST. CLAIR | 91           | 96        | SHEETS        |
| FED. ROAD DIST. NO. 7 ILLINOIS F.C.O. AND PROJECT |          |           |              |           |               |
| * 82-3HVB-2R-1-1                                  |          |           |              |           |               |
| D-88-012-95                                       |          |           |              |           |               |



CONTRACT NO. 96680

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION  
 DIVISION OF HIGHWAYS

SUBMITTED \_\_\_\_\_ 19\_\_\_\_

\_\_\_\_\_  
 DISTRICT ENGINEER

\_\_\_\_\_  
 ENGINEER OF PROJECT DEVELOPMENT AND IMPLEMENTATION

\_\_\_\_\_  
 ENGINEER OF DESIGN AND ENVIRONMENT

\_\_\_\_\_  
 DIRECTOR, DIVISION OF HIGHWAYS

**GENERAL NOTES:**

1. 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 materials. Such variations shall not be cause for additional compensation for a change in the scope of work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.
2. This project addresses selected seismic, redundancy and fatigue issues related only to those structures that are listed on the drawings. Related hazards associated with nearby structures or roadways that pass over the subject structures were not considered.
3. Unless noted otherwise, all materials and workmanship shall conform to :
  - a. The Illinois Department of Transportation, "Standard Specifications for Road and Bridge Construction", January 1, 1997.
  - b. Bridge Welding Code, American Welding Society, AWS D1.5-95.

**STEEL NOTES:**

1. Actual dimensions may vary slightly from the design drawings. The Contractor shall field verify existing dimensions prior to starting work. Dimensions of new members shall be adjusted as required to fit as-built conditions.
2. All new steel assemblies and pieces shall be shop painted with Inorganic Zinc rich primer/ Acrylic/ Acrylic paint system. The color of the final finish coat shall be Interstate Green, Munsell No. 7.5 G 4/8. Locations to receive field welding shall be masked off prior to shop painting and field painted                      after welding.
3. Unless noted otherwise, all bolts shall be high strength bolts (AASHTO M164). All threaded rods and dowels shall conform to the mechanical properties and thread configuration of AASHTO M164 bolts. All bolts, threaded rods, wire rope and hardware shall be galvanized according to IDOT galvanized bolt provisions. In bolted applications, threads shall not be permitted in shear planes, unless noted otherwise. AASHTO M253 BOLTS SHALL NOT BE GALVANIZED.
4. Unless noted otherwise, all new steel shall be AASHTO M270 Grade 36 and have a minimum CVN impact toughness of 25 Ft.-Lb. at 40° F. All rods with upset ends shall have a maximum yield strength of 45 ksi.



~~5. Welding electrodes shall be low hydrogen E70XX, unless noted otherwise. Weld metal shall have a minimum CVN of 25 Ft.-Lb. at 20° F.~~

**CONCRETE NOTES:**

1. The Engineers' intent is to repair only large areas of unsound concrete or unsound areas receiving column wraps. The contract quantities do not include all of the unsound concrete on the piers. Areas of unsound concrete to be repaired shall be approved by the Engineer.
2. The extent of deteriorated concrete in columns and walls shall be determined by hammer tapping. The concrete removal shall extend a minimum of 4 in. beyond the edge of the unsound area, be as nearly rectangular as possible, and conform to the concrete repair details included in the drawings.
3. Concrete removal equipment consisting of pneumatic chipping hammers shall not exceed a maximum nominal weight of 30 lb. and shall be equipped with a cutting edge not less than 3/4 in. or greater than 2 1/2 in. in width. During concrete removal, exercise reasonable care to avoid cracking of underlying sound concrete.

|   |          |           |              |           |             |
|---|----------|-----------|--------------|-----------|-------------|
| STATE NO.   | DISTRICT | COUNTY    | TOTAL SHEETS | SHEET NO. | SHEET TOTAL |
| ILL. 70   | 4        | ST. CLAIR | 11           | 81        | 92          |
| PROJECT NO. 082-0140 (RAMP 11 OVER TRENDLEY AVE.) |          |           |              |           |             |

92-34VB-2R-1-1

GENERAL NOTES

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION  
 SEISMIC AND REDUNDANCY RETROFIT REPAIRS  
 FAI ROUTE 70  
 POPLAR STREET BRIDGE APPROACHES  
 ST. CLAIR COUNTY  
 STRUCTURE NO. 082-0140 (RAMP 11 OVER TRENDLEY AVE.)

SCALE: NONE  
 DATE: 1-23-98  
 DRAWN BY: JH  
 CHECKED BY: JH

Revised 10/21/98 JCM

|                       |          |                  |              |           |                         |
|-----------------------|----------|------------------|--------------|-----------|-------------------------|
| ROUTE NO.             | SECTION  | COUNTY           | TOTAL SHEETS | SHEET NO. | SHEET NO. S-3<br>SHEETS |
| F.A.I. 70             | *        | ST. CLAIR        | 91           | 88        |                         |
| FED. ROAD DIST. NO. 7 | ILLINOIS | FED. AID PROJECT |              |           |                         |

\* 82-3HVB-2R-1-1

**SCOPE OF WORK**

- SEISMIC RETROFIT**  
 1. Install column wraps on columns of piers 1 and 2 of Structure No. 082-0140.

**SEISMIC DATA**

Bedrock acceleration coefficient (A) = 0.12g  
 Site coefficient (S) = 1.0  
 Seismic performance requirements:  
 • Use of roadways without long delay or major repair.

**DESIGN SPECIFICATIONS**

1996 AASHTO  
 1995 FHWA Seismic Retrofit Manual

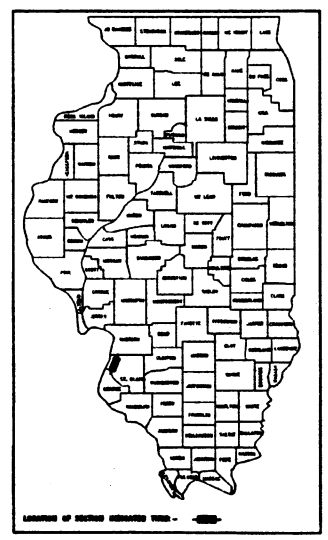
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HS20-44

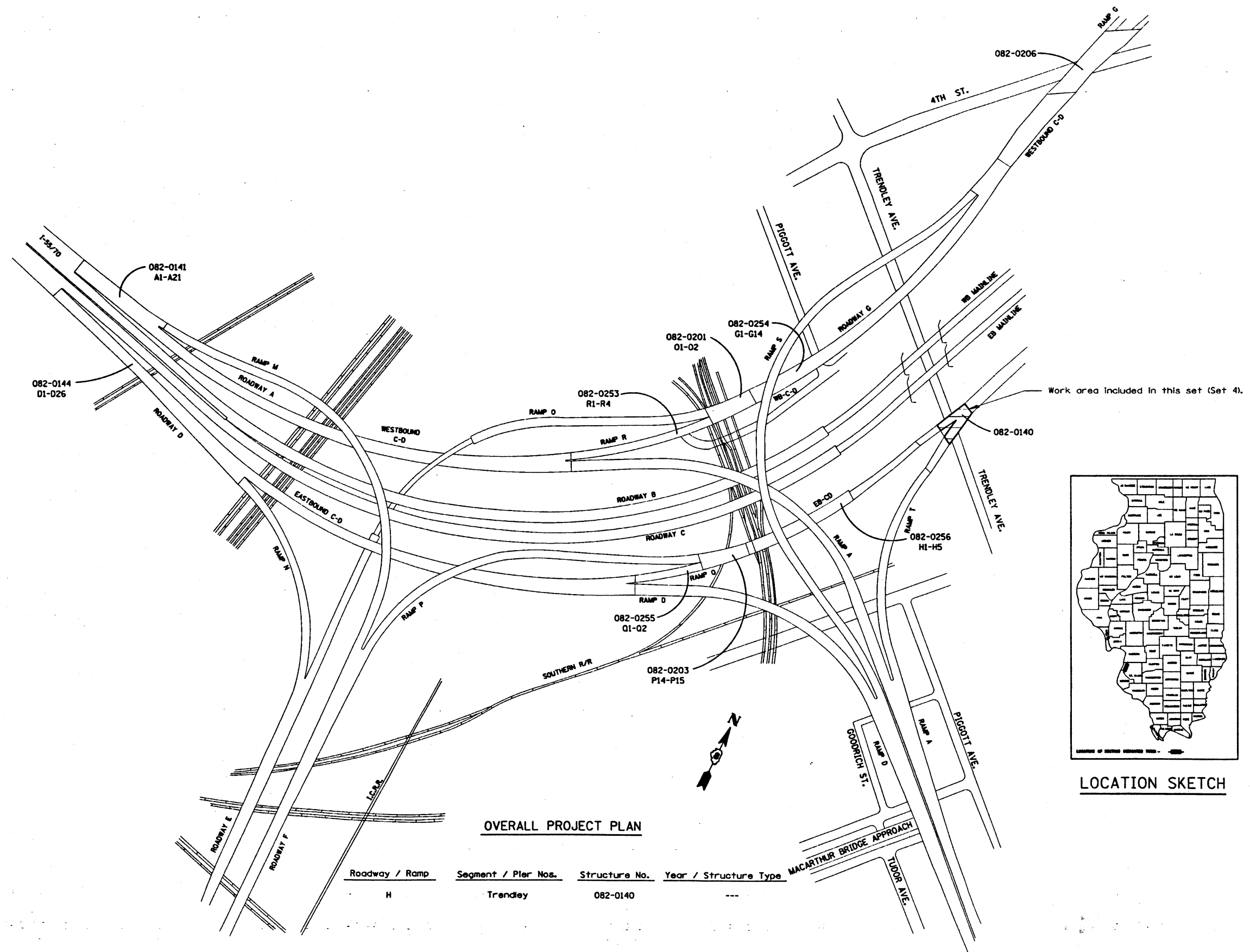
**DESIGN STRESSES**

New Construction:  
 $f'_c = 4500$  psi  
 $f_y = 60,000$  psi (Reinf.)  
 $f_y = 36,000$  psi (M270 Grade 36)

Existing Construction:  
 $f'_c = 3500$  psi  
 $f_y = 40,000$  psi (Reinf.)  
 $f_y = 36,000$  psi (M270 Grade 36)



LOCATION SKETCH



OVERALL PROJECT PLAN

| Roadway / Ramp | Segment / Pier Nos. | Structure No. | Year / Structure Type |
|----------------|---------------------|---------------|-----------------------|
| H              | Trendley            | 082-0140      | ---                   |

PROJECT PLAN / SCOPE OF WORK

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION  
 SEISMIC AND REDUNDANCY RETROFIT REPAIRS  
 FAI ROUTE TO  
 POPLAR STREET BRIDGE APPROACHES  
 ST. CLAIR COUNTY

STRUCTURE NO. 082-0140 (RAMP H OVER TRENDLEY AVE.)

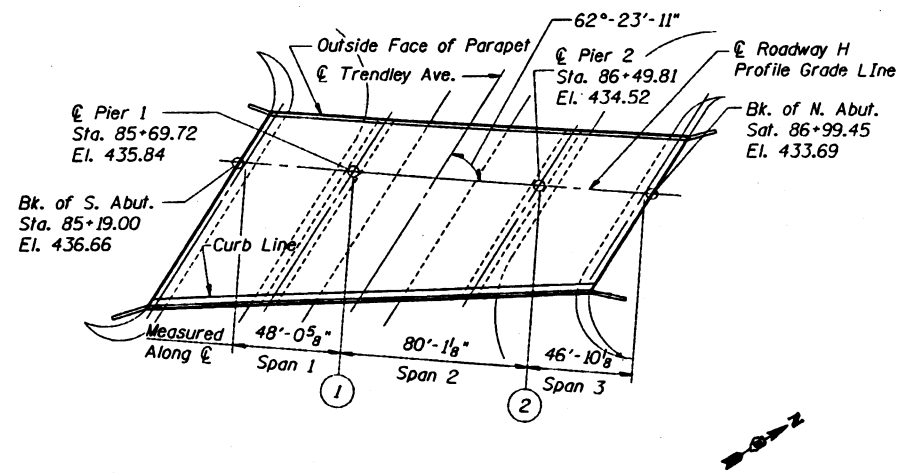
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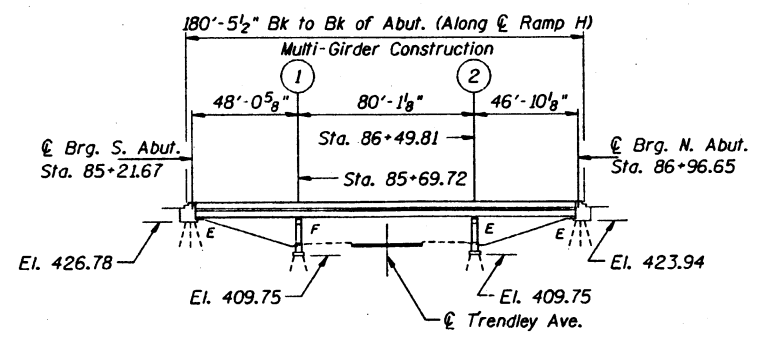
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|                       |         |           |                   |           |                         |
|-----------------------|---------|-----------|-------------------|-----------|-------------------------|
| ROUTE NO.             | SECTION | COUNTY    | TOTAL SHEETS      | SHEET NO. | SHEET NO. S-4<br>SHEETS |
| F.A.I. 70             | *       | ST. CLAIR | 91                | 89        |                         |
| FED. ROAD DIST. NO. 7 |         | ILLINOIS  | FED. ROAD PROJECT |           |                         |

82-3HVB-2R-1-1



1 PLAN RAMP H OVER TRENDLEY AVE.  
S4



2 ELEVATION RAMP H OVER TRENDLEY AVE.  
S4

KEY PLAN AND ELEVATION FOR RAMP H OVER TRENDLEY AVE.

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
SEISMIC AND REDUNDANCY RETROFIT REPAIRS  
FAI ROUTE 70  
POPLAR STREET BRIDGE APPROACHES  
ST. CLAIR COUNTY

STRUCTURE NO. 082-0140 (RAMP H OVER TRENDLEY AVE.)

SCALE: NONE  
DATE: 1-23-98

DRAWN BY: JN  
CHECKED BY: HH

STRUCTUR\97422\SET4\ST4KPLS4.dgn

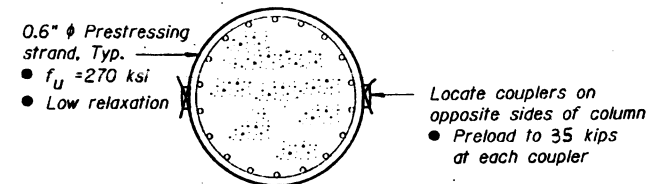
|                       |         |           |                  |           |                         |
|-----------------------|---------|-----------|------------------|-----------|-------------------------|
| ROUTE NO.             | SECTION | COUNTY    | TOTAL SHEETS     | SHEET NO. | SHEET NO. S-5<br>SHEETS |
| F.A.I. 70             | •       | ST. CLAIR | 91               | 90        |                         |
| FED. ROAD DIST. NO. 7 |         | ILLINOIS  | FED. AID PROJECT |           |                         |
| • 82-3HVB-2R-1-1      |         |           |                  |           |                         |

**TABLE OF COLUMN WRAP PARAMETERS**

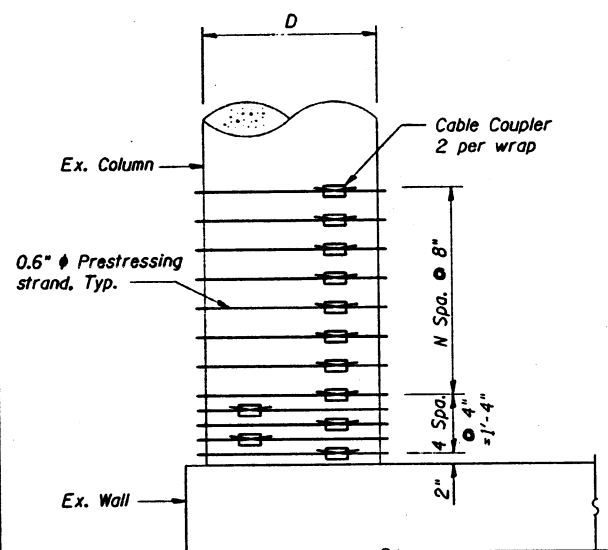
| Pier                     | No. Cols. | D (in.) | N      | Comments   |
|--------------------------|-----------|---------|--------|------------|
| <i>Trendley Overpass</i> |           |         |        |            |
| Pier 1                   | 6         | 30      | Varies | See Note 2 |
| Pier 2                   | 6         | 30      | Varies | See Note 3 |
|                          |           |         |        |            |
|                          |           |         |        |            |

**Notes:**

1. See detail 1/S5 for column wrap U.N.O.
2. N=14, 14, 15, 16, 17, 18 respectively from North to South.
3. N=11, 12, 13, 13, 14, 15 respectively from North to South.



PLAN



**Notes:**

1. See table for dimensions not shown and additional notes.
2. Alternative column wraps may be used. Extent of column wrap retrofit for quantity calculations shall be the height of the column times the column circumference. See Special Provisions.

1  
S5  
**ELEVATION - TYPICAL COLUMN WRAP**

**SEISMIC RETROFIT DETAILS**

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
SEISMIC AND REDUNDANCY RETROFIT REPAIRS  
FAI ROUTE TO  
POPLAR STREET BRIDGE APPROACHES  
ST. CLAIR COUNTY

STRUCTURE NO. 082-0140 (RAMP H OVER TRENDLEY AVE.)

SCALE: NONE  
DATE: 1-23-98

DRAWN BY: JN  
CHECKED BY: HH

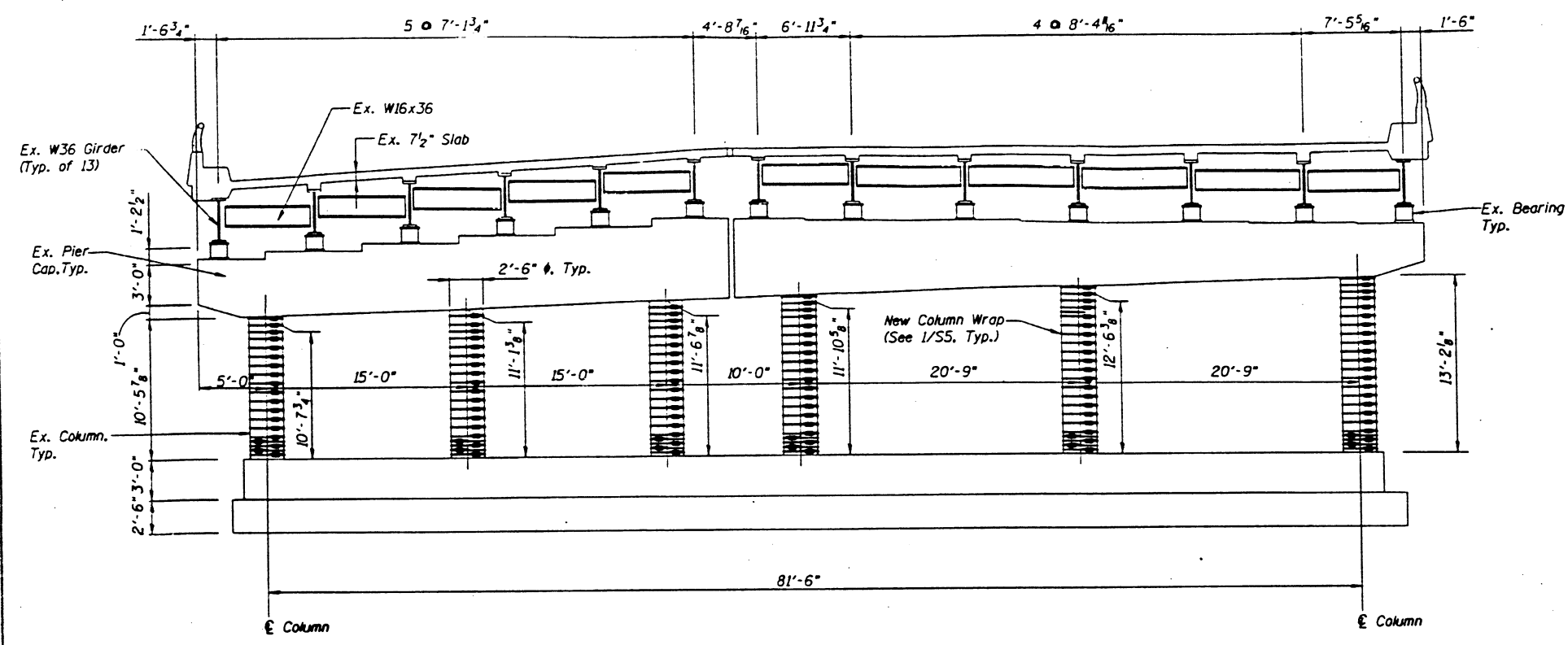
STRUCTURE 97422-827A181-0196.DGN



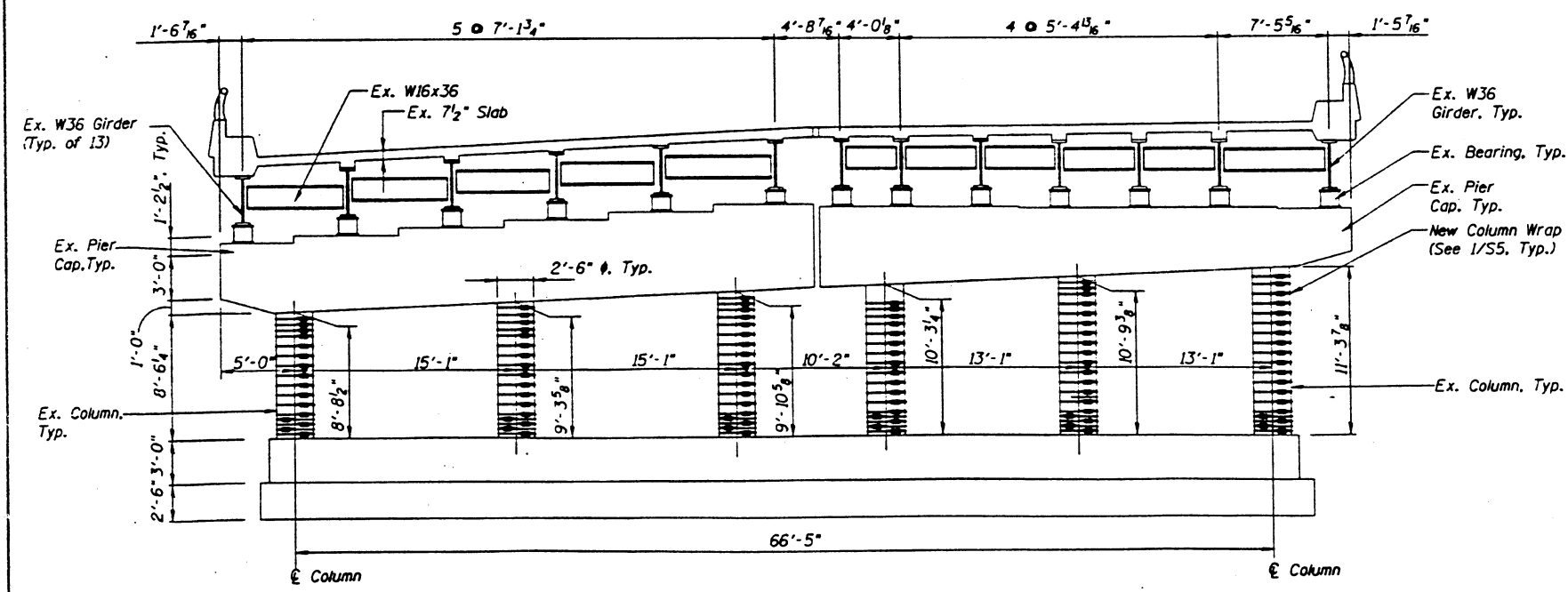
|                       |          |                  |              |           |
|-----------------------|----------|------------------|--------------|-----------|
| ROUTE NO.             | SECTION  | COUNTY           | TOTAL SHEETS | SHEET NO. |
| F.A.I. 7B             | B        | ST. CLAIR        | 91           | 91        |
| FED. ROAD DIST. NO. 7 | ILLINOIS | FED. AID PROJECT |              |           |

SHEET NO. S-6  
SHEETS

# 82-34WB-2R-1-1



1 ELEVATION PIER NO. 1  
S6



2 ELEVATION PIER NO. 2  
S6

557.1

| BILL OF MATERIAL - PIER NO. 1 |         |          |
|-------------------------------|---------|----------|
| ITEM                          | UNIT    | QUANTITY |
| Column wrap                   | SO. FT. | 348.2    |

| BILL OF MATERIAL - PIER NO. 2 |         |          |
|-------------------------------|---------|----------|
| ITEM                          | UNIT    | QUANTITY |
| Column wrap                   | SO. FT. | 295.9    |

475.4

PIER NO. 1 & PIER NO. 2 RETROFITS  
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
SEISMIC AND REDUNDANCY RETROFIT REPAIRS  
FAI ROUTE 70  
POPLAR STREET BRIDGE APPROACHES  
ST. CLAIR COUNTY  
STRUCTURE NO. 002-0140 (RAMP II OVER TREBLEY AVE.)  
SCALE: NONE  
DATE: 1-23-98

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

| * 82-3HVB-2R-1(F) |      |                         |              |           |
|-------------------|------|-------------------------|--------------|-----------|
| F.A.I. ROUTE NO.  | SEC. | COUNTY                  | TOTAL SHEETS | SHEET NO. |
| 70                | *    | ST. CLAIR               | 89           | 1         |
| ILLINOIS          |      | PROJECT 82-3HVB-2R-1(F) |              |           |
| P-98-021-85       |      |                         |              |           |

SEE SHEET NO. FOR INDEX OF SHEETS

THE STRUCTURES REHABILITATED IN THIS PROJECT WERE BUILT AS SECTIONS:

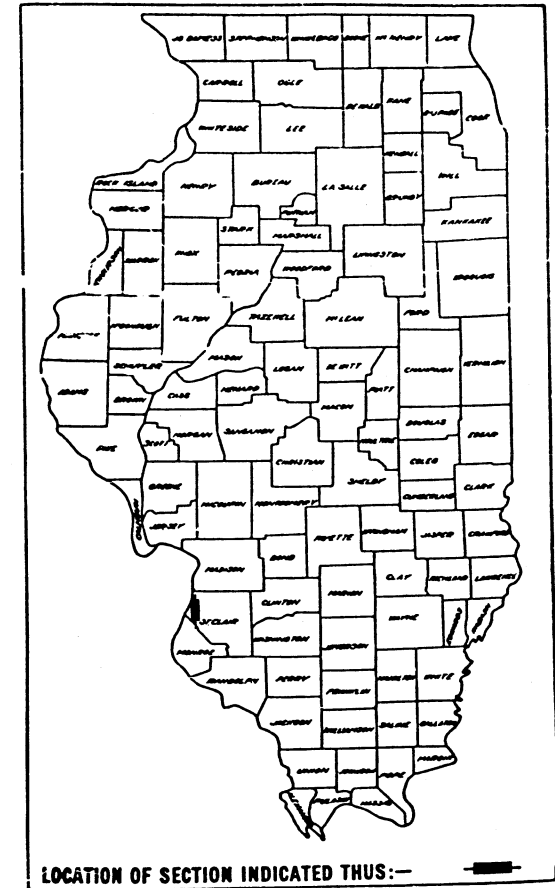
- 82-4HB
- 82-4HB-1
- 82-3HVF&E-1
- 82-4HVB

PLANS FOR PROPOSED  
FEDERAL AID HIGHWAY

SCALE IN FEET  
PLAN 1 INCH 50 FT.  
PROFILE HOR. 1 INCH 50 FT.  
VERT. 1 INCH 5 FT.  
CROSS-SECTIONS  
HOR. 1 INCH 10 FT.  
VERT. 1 INCH 5 FT.

F.A.I. ROUTE 70  
SECTION 82 - 3HVB - 2R - 1(F)  
PROJECT 70-1(157)1  
ST. CLAIR COUNTY

C-98-005-88

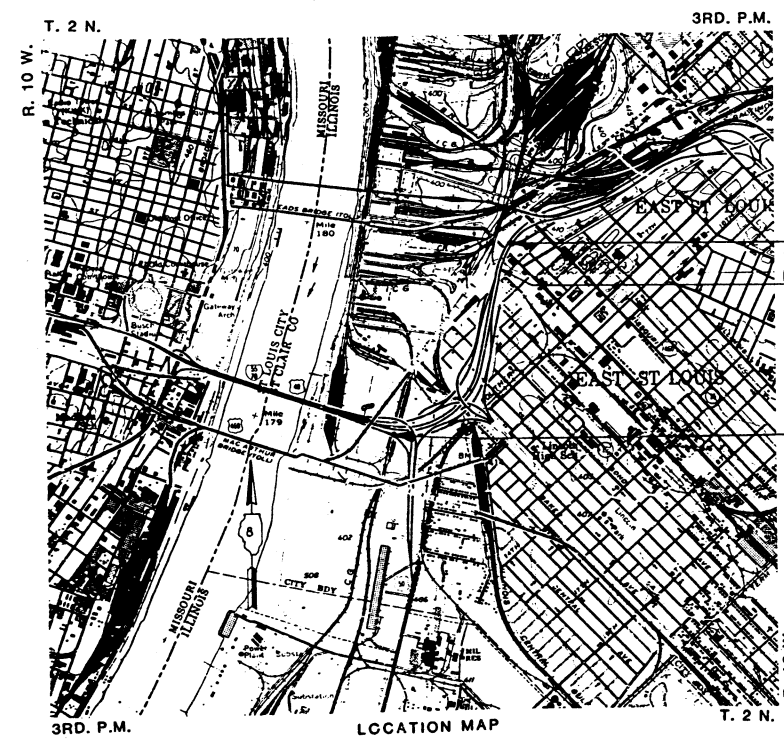


INDEX OF SHEETS

- Sheet No. Title Sheet
- 1 Title Sheet
  - 2 Summary of Quantities
  - 3-20 Roadway A, G & D Deck Rehabilitation
  - 21-38 Ramp R
  - 39-52 Ramp Q, P & Roadway H
  - 53-57 Roadway H over Trendley Avenue
  - 58-66 Ramp G over 4TH Street
  - 67-73 Ramp C over 4TH Street
  - 74-89 Roadway B & C over Broadway and Main Street

082-0140

*See 82-3HVB-2R-1(F)*  
*82-4HB*  
*82-4HB-1*  
*82-3HVF&E-1*  
*82-3HVB-2R-1*



PROJECT  
ENDS 115 + 34.53 E.B. I-55/70  
EQUATION: 111 + 70.90 E.B. C-D BK. =  
109 + 39.40 E.B. I-55/70 AHD.

PROJECT  
BEGINS 59+00.14 E.B. C-D

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

DESIGN DESIGNATION  
C-D'S 2 LANES: 1800(06) TRUNK 17.6(C-20)

1000 0 1000 2000 3000  
SCALE IN FEET

NET LENGTH OF PROJECT - 5,865.89 FT. - 1.111 MILES

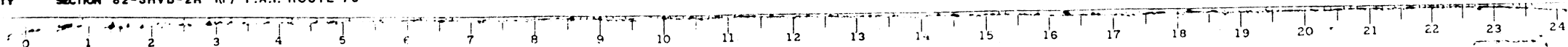
PREPARED BY:  
SVERDRUP CORPORATION  
ST. LOUIS, MISSOURI

| STATE OF ILLINOIS<br>DEPARTMENT OF TRANSPORTATION |                    |
|---|--------------------|
| SUBMITTED   | <i>[Signature]</i> |
| EXAMINED  | 7-24-87            |
| PASSED  | <i>[Signature]</i> |
| APPROVED  | 7-24-87            |
| DIRECTOR OF HIGHWAYS                              |                    |

Reels 8-166  
8-107  
8-63  
8-59  
8-171

CARLOS A. LIZANA-FARIAS  
NO. 81-3956

REEL 8-166

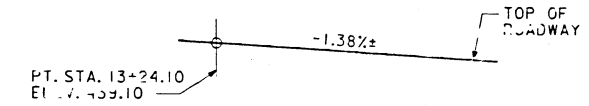
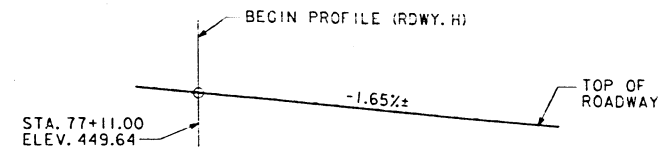
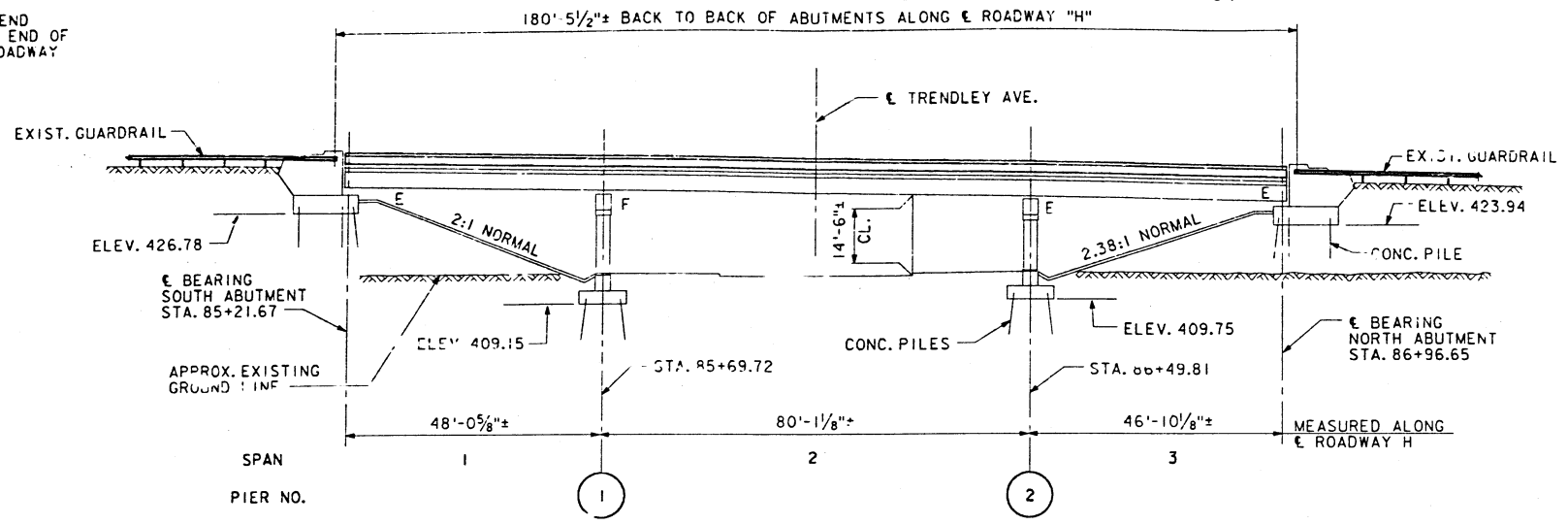


5/19/87

| ROUTE NO.        | SECTION | COUNTY    | TOTAL SHEETS | SHEET NO. |
|------------------|---------|-----------|--------------|-----------|
| F.A.I. 70        | *       | ST. CLAIR | 89           | 53        |
| ILLINOIS PROJECT |         |           |              |           |

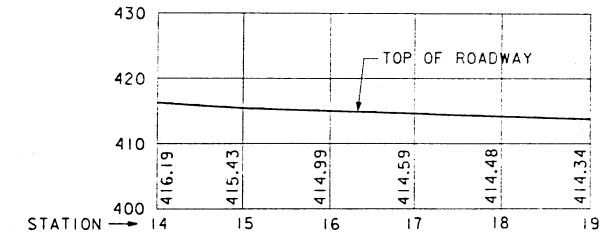
\*82-3HV8-2R-1 (F)

**BENCH MARK E**  
CHISELED "E" IN CENTER AT END OF NORTH CURB WALL AT EAST END OF BRIDGE OVER TRENDLEY ON ROADWAY "H". N.W. CORNER OF BRIDGE. ELEV. 433.97

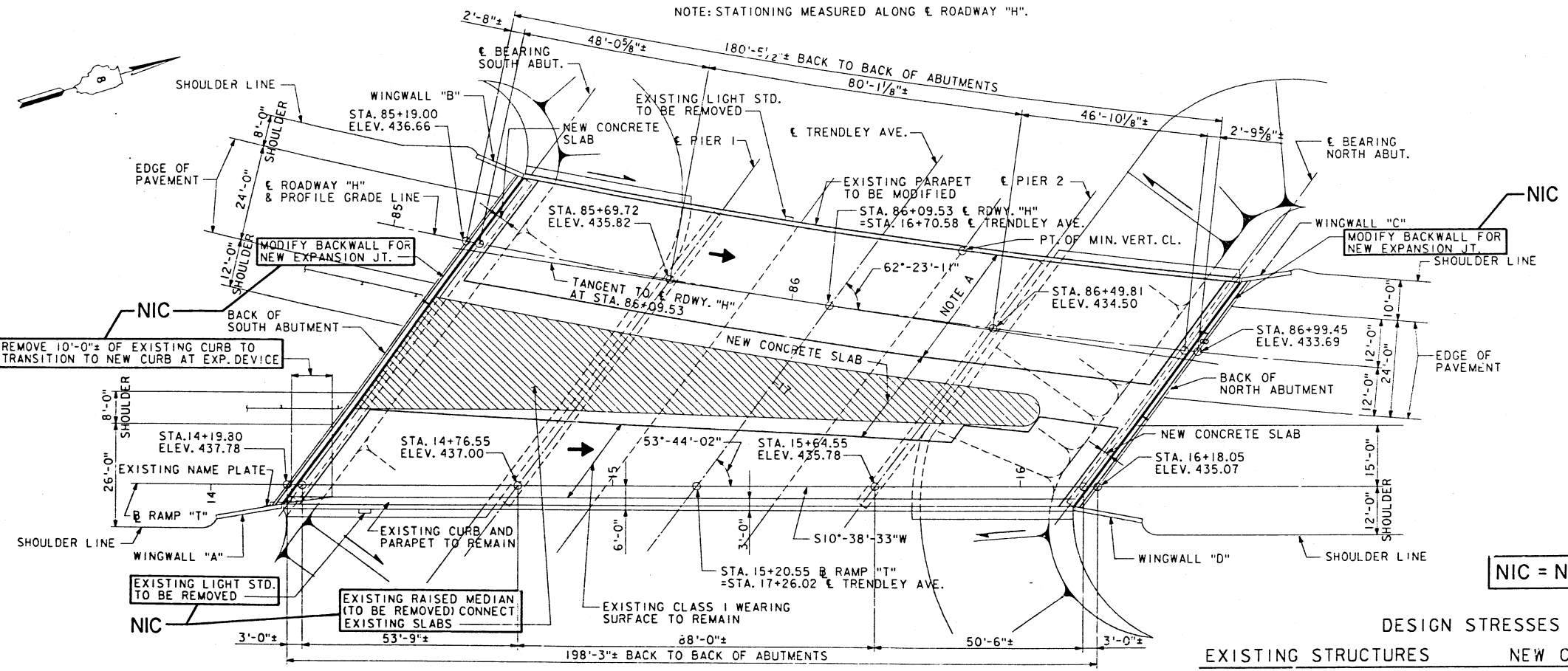


**ELEVATION**

NOTE: STATIONING MEASURED ALONG E ROADWAY "H".



**EXISTING PROFILE E TRENDLEY AVE.**



**CURVE DATA - E ROADWAY "H"**

P.I. STA. = 83+18.82  
 $\Delta = 36^\circ-57'-31"$   
 $D = 3^\circ-09'-01"$   
 $R = 1818.76'$   
 $T = 607.82'$   
 $L = 1173.19'$   
 $E = 98.88'$   
 $S.E. = 8.00\%$   
 $P.C. STA. = 77+11.00$   
 $P.T. STA. = 88+84.19$

**PLAN**

NOTE A: 2" DENSE CONCRETE OVERLAY. REMOVE EXISTING CLASS I WEARING SURFACE.

NIC

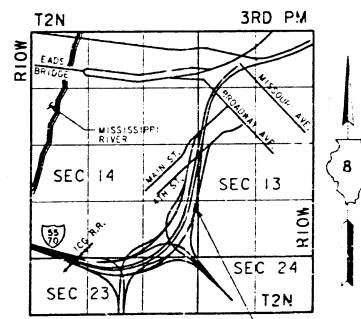
**APPROVED**  
FOR STAFF USE ONLY

*James T. ...*  
Engineer of Bridges & Structures

NIC = NOT IN CONTRACT

|                        | EXISTING STRUCTURES                                | NEW CONSTRUCTION                                   |
|------------------------|--|--|
| DESIGN SPECIFICATIONS: | AASHTO 1961 AND APPLICABLE 1962 AND 1963 INTERIMS. | AASHTO 1983 AND APPLICABLE 1984 AND 1985 INTERIMS. |
| LOADING:               | HS20-44 AND ALTERNATE                              | HS20-44 AND ALTERNATE                              |
| REINFORCED CONCRETE:   |  |  |
| DECK SLAB              | $f_c = 1400$ psi $n = 10$                          | $f_c = 3500$ psi                                   |
| SUBSTRUCTURE           | $f_c = 1400$ psi $n = 10$                          | $f_y = 60,000$ psi (REINFORCEMENT)                 |
| REINFORCING            | $V_c = 75$ psi - FOOTINGS                          | $f_y = 36,000$ psi (M183)                          |
| STRUCTURAL STEEL:      | $f_s = 20,000$ psi                                 |  |

PREPARED BY:  
**SVERDRUP CORPORATION**  
ST. LOUIS, MISSOURI

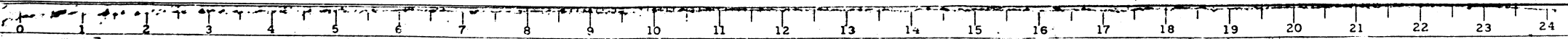


**LOCATION SKETCH**

REHABILITATION FOR  
**FAI - 55/70 COMPLEX**  
F.A.I. ROUTE 70 ROADWAY "H"  
OVER TRENDLEY AVE.  
GENERAL PLAN AND ELEVATION  
STRUCTURE NO. 082-0140  
STA. 86+09.53 (FAI-70) ST. CLAIR CO.

10320 FILE: ZF3(1101)OPENTR.DGN  
 875288 PRF: GHEHTR  
 LEVELS PLOTTED DATE: JUNE 23, 1987  
 2 3 26 28 39 63

|          |           |
|----------|-----------|
| DESIGNED |           |
| CHECKED  |           |
| DRAWN    | K. SCHULT |
| CHECKED  | G.J. DEE  |



**GENERAL NOTES**

FASTENERS SHALL BE 3/4" HIGH STRENGTH BOLTS. 1/16" OPEN HOLES UNLESS OTHERWISE NOTED.

ALL HIGH STRENGTH BOLT CONNECTIONS SHALL CONFORM TO THE REQUIREMENTS OF NOV. 13, 1985 ISSUE OF THE SPECIFICATIONS FOR STRUCTURAL JOINTS USING ASTM A325(M164) OR A490(M253) BOLTS FOR SLIP-CRITICAL CONNECTIONS, EXCEPT THAT TIGHTENING METHODS USING EITHER THE LOAD INDICATING WASHERS OR THE CALIBRATED WRENCH ARE NOT ALLOWED.

CALCULATED WEIGHT OF STRUCTURAL STEEL: 3,525 LBS. M183  
2,315 LBS. M223 (GRADE 50)

The Zinc-silicate and vinyl paint system shall be used for shop and field painting of Structural Steel except where otherwise noted.

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 BEFORE ORDERING OF MATERIALS. SUCH VARIATIONS SHALL NOT BE CAUSE FOR ADDITIONAL COMPENSATION FOR A CHANGE IN SCOPE OF WORK, HOWEVER, THE CONTRACTOR WILL BE PAID FOR THE QUANTITY ACTUALLY FURNISHED AT THE UNIT PRICE BID FOR THE WORK.

✦ INDICATES HIGH STRENGTH BOLT, SHOP OR FIELD INSTALLED UNLESS OTHERWISE NOTED.

ALL DIMENSIONS ARE MEASURED AT A TEMPERATURE OF 50°F.

ALL TRANSVERSE AND LONGITUDINAL DIMENSIONS ARE MEASURED HORIZONTALLY.

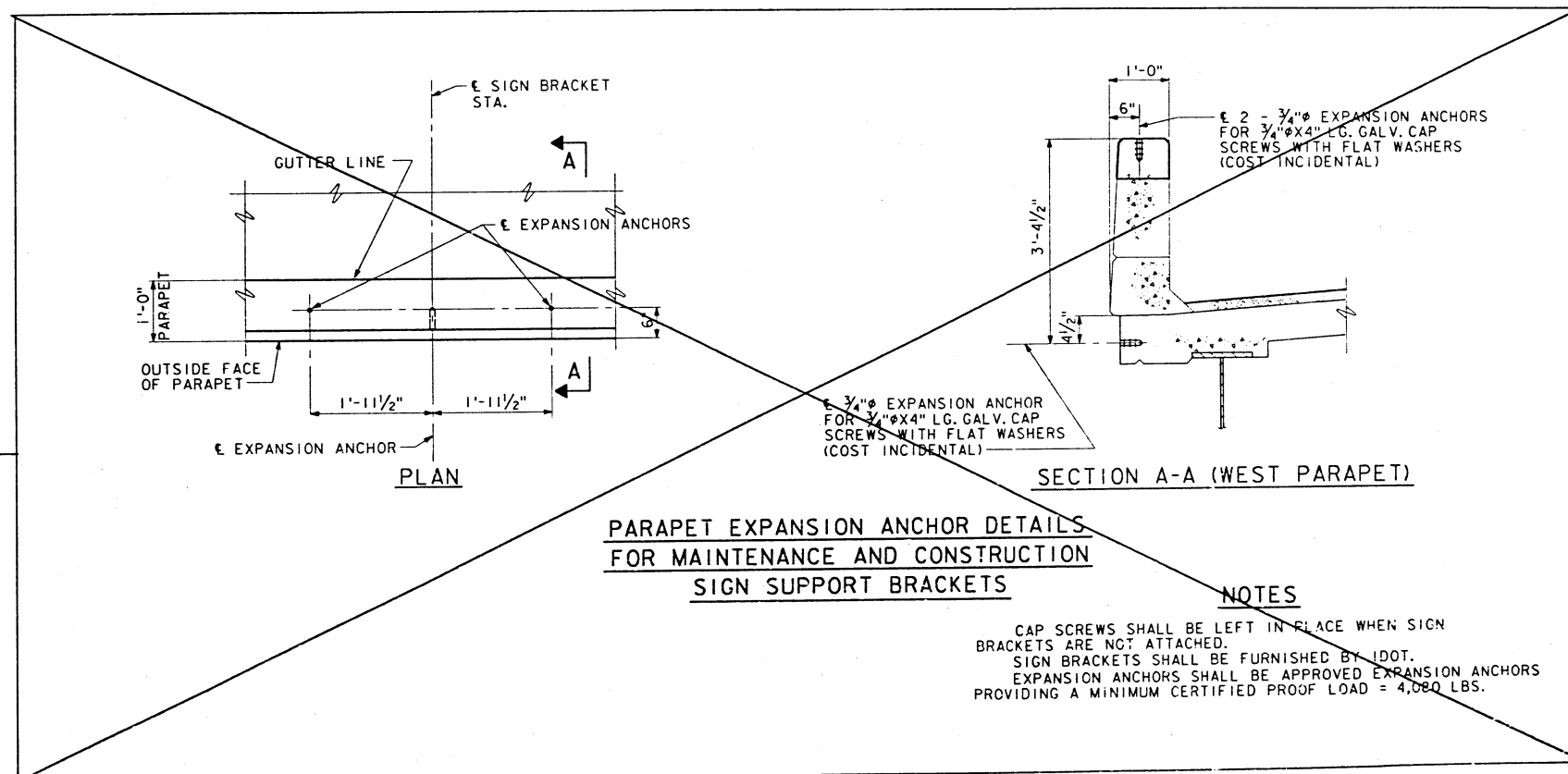
**INDEX OF DRAWINGS**

1. GENERAL PLAN AND ELEVATION
2. GENERAL NOTES, ESTIMATED QUANTITIES AND INDEX OF DRAWINGS
3. FRAMING PLAN AND DETAILS
4. ABUTMENT BEARING MODIFICATIONS
5. ANCHOR BOLT DETAILS FOR BEARINGS

**TOTAL BILL OF MATERIAL**

| ITEM                        | UNIT     | SUPER STRUCTURE | SUB STRUCTURE | TOTAL |
|-----------------------------|----------|-----------------|---------------|-------|
| FURNISHING STRUCTURAL STEEL | LUMP SUM | .01             | —             | .01   |
|                             |          |                 |               |       |
|                             |          |                 |               |       |
|                             |          |                 |               |       |

NOT IN CONTRACT



**PARAPET EXPANSION ANCHOR DETAILS  
FOR MAINTENANCE AND CONSTRUCTION  
SIGN SUPPORT BRACKETS**

**NOTES**

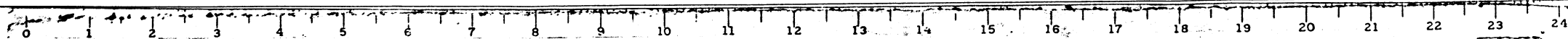
CAP SCREWS SHALL BE LEFT IN PLACE WHEN SIGN BRACKETS ARE NOT ATTACHED.  
SIGN BRACKETS SHALL BE FURNISHED BY IDOT.  
EXPANSION ANCHORS SHALL BE APPROVED EXPANSION ANCHORS PROVIDING A MINIMUM CERTIFIED PROOF LOAD = 4,000 LBS.

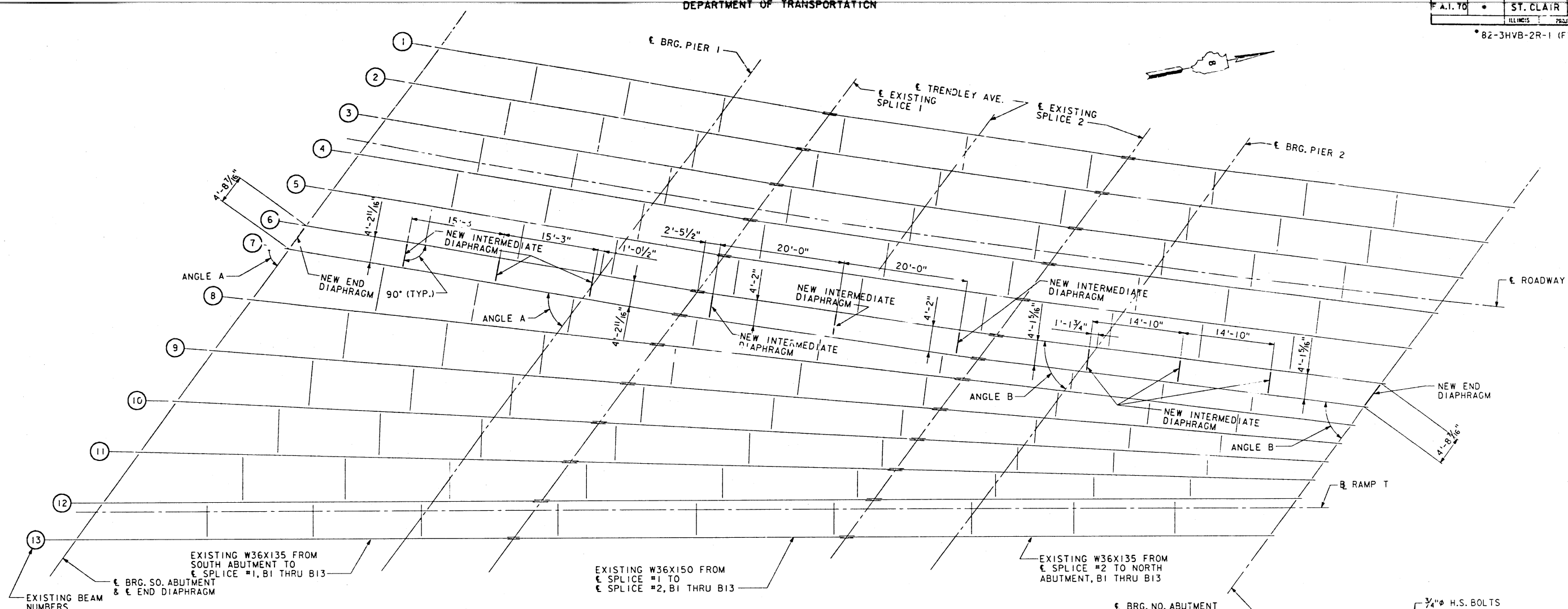
REHABILITATION FOR  
FAI - 55/70 CORNER  
F.A.I. ROUTE 70 ROAD  
OVER TRENDLEY AVE.  
GENERAL NOTES, ESTIMATED QUANTITIES  
AND INDEX OF DRAWINGS  
STRUCTURE NO. 082-0140  
STA. 86+09.53 (FAI-70) ST. CLAIR CO.

PREPARED BY:  
SVERDRUP CORPORATION  
ST. LOUIS, MISSOURI

10370 FILE: ZF3:1110:JGENOTHTR.DGN  
875431 PRF: GENOTHTR  
LEVELS PLOTTED DATE: JUNE 23, 1987  
35, 56, 63

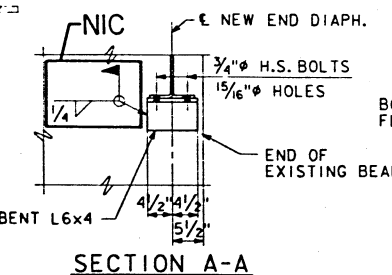
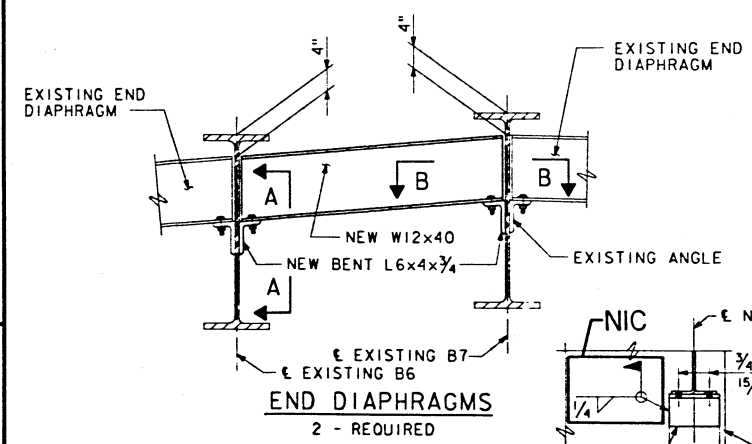
DESIGNED  
CHECKED  
D. RIEHL  
DRAWN  
G. DEE  
CHECKED



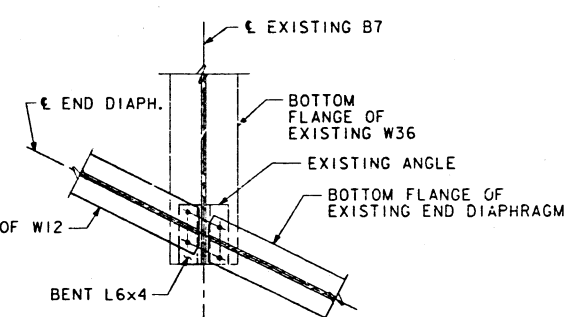


**FRAMING PLAN**

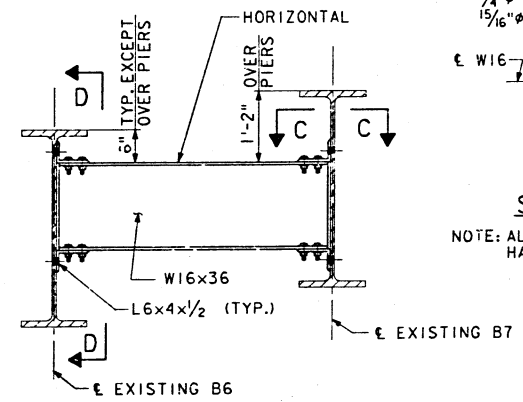
| BEAM  | ANGLE A     | ANGLE B     |
|-------|-------------|-------------|
| 6 & 7 | 63°-51'-51" | 60°-53'-32" |



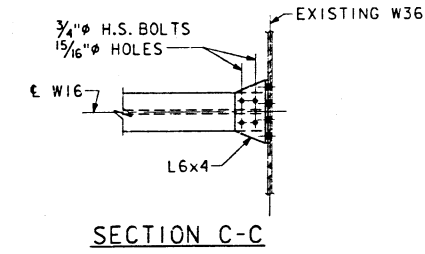
NOTE: ALL OVERSIZE HOLES SHALL HAVE 2 HARDENED WASHERS.



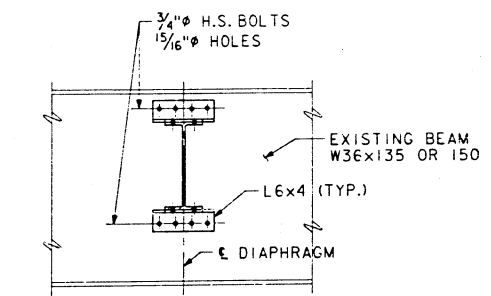
**SECTION B-B**



**INTERMEDIATE DIAPHRAGMS**  
9 REQUIRED



NOTE: ALL OVERSIZE HOLES SHALL HAVE 2 HARDENED WASHERS.



NOTE: ALL OVERSIZE HOLES SHALL HAVE 2 HARDENED WASHERS.  
ALL HOLES IN WEB OF EXISTING BEAM TO BE FIELD DRILLED.

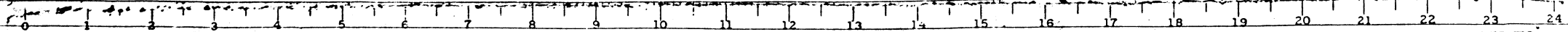
REHABILITATION FOR  
FAI - 55/70 COMPLEX  
F.A.I. ROUTE 70 ROADWAY "H"  
OVER TRENDLEY AVE.  
FRAMING PLAN  
STRUCTURE NO. 082-0140  
STA. 86+09.53 (FAI-70) ST. CLAIR CO.

NIC = NOT IN CONTRACT

PREPARED BY:  
SYVERDRUP CORPORATION  
ST. LOUIS, MISSOURI

10320 FILE: 2F3C110...-HTRS.DGN  
875406 PRF:FPNTRS  
LEVELS PLOTTED DATE: JUNE 23, 1987  
35 56 63

B.E. CARLSON  
DESIGNED  
P.W. CLARK  
S. KAEMMERER  
DRAWN  
P.W. CLARK  
CHECKED



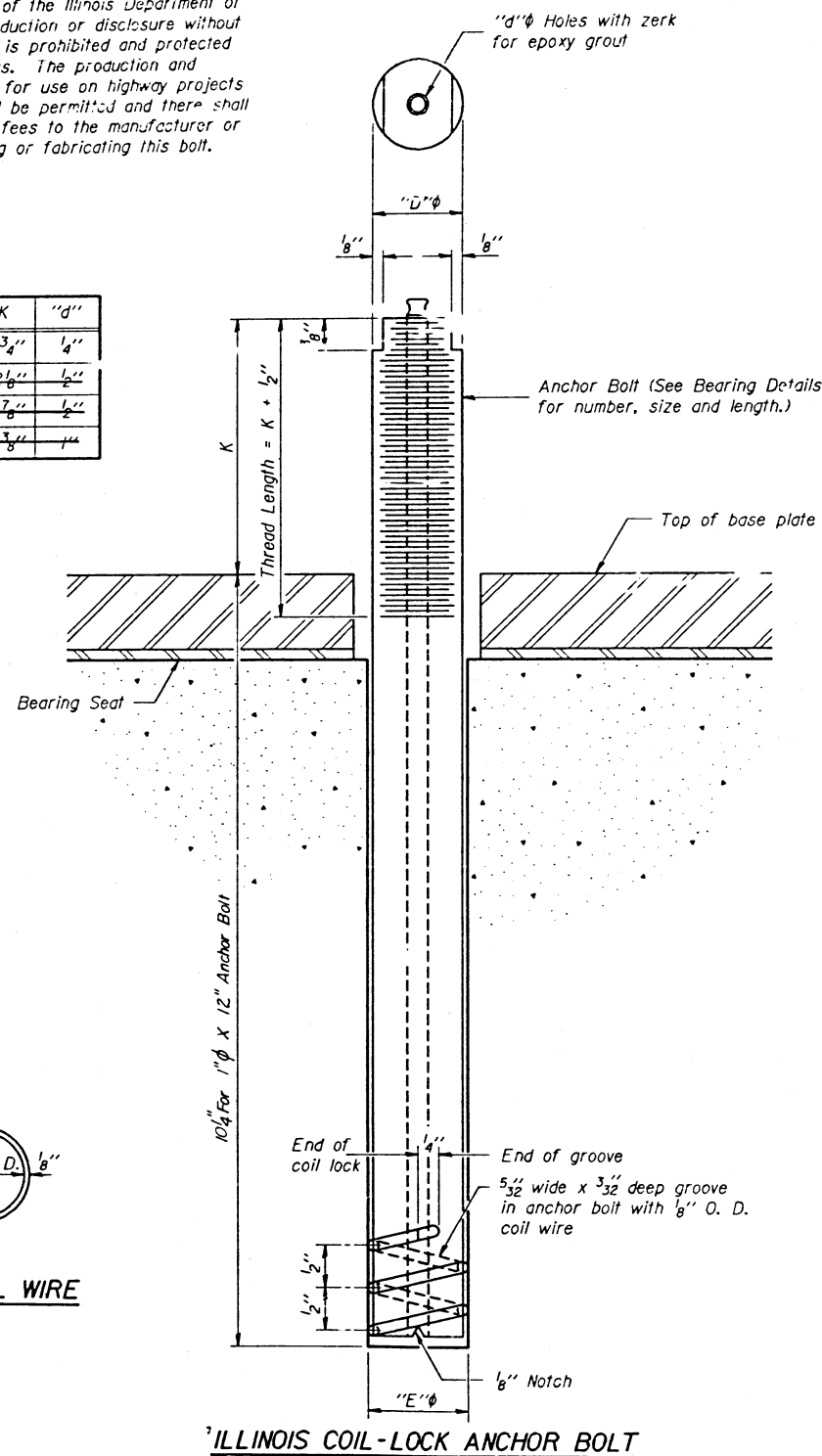


\* 82-3HVB-2R-1(F)

NOT IN CONTRACT

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

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



**MATERIALS FOR ILLINOIS COIL-LOCK ANCHOR BOLT**

The anchor bolt shall be fabricated from cold drawn or hot finished seamless carbon steel mechanical tubing conforming to ASTM A513, Grade 1026 and supplied with hexagonal nuts and cut washers.  
The coil wire shall be made of any suitable soft steel wire.  
The finished anchor bolt shall be cleaned of rust and other foreign materials and wrapped or packaged to prevent contamination until they are installed.  
The epoxy grout shall be a two-component, epoxy resin bonding system conforming to ASTM C82, Type I, Grade I and of a Class suitable for the temperature at installation.

**INSTALLATION PROCEDURE for the ILLINOIS COIL-LOCK ANCHOR BOLT**

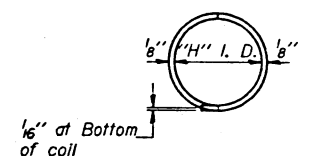
1. With the coil wire in place, the bolt shall be inserted into the hole and turned clockwise to a snug fit in the hole. Nut and washer shall be placed on the bolt. The nut shall be tensioned until the steel base plates are held securely to the concrete bearing seat.
2. Epoxy grout shall be pumped through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

**ALTERNATE ANCHOR BOLTS**

The Contractor may use, at his option, the capsule or the adhesive cartridge type anchor rods that have been previously tested and given a prior approval by the Department. The Contractor shall install these anchor rods in pre-drilled holes in accordance with the manufacturer's recommendations and procedures.  
The capsule or the adhesive cartridge type anchor rods shall be a two part system composed of:  
1. A threaded rod stud with nut and washer conforming to ASTM A307.  
2. A sealed glass capsule or a sealed glass adhesive cartridge containing premeasured amounts of the adhesive chemical.

**GENERAL NOTES**

Holes in the masonry for anchor bolts shall be drilled through the base plates to the diameter and depth shown or in accordance with the manufacturer's recommendation after beams or girders have been erected and adjusted.  
Prior to setting the bolts, the holes shall be dry and all dust and loose particles shall be removed by the use of compressed air or vacuuming.  
The anchor bolts, furnished ~~and including~~ and including the epoxy grout or capsules shall not be paid for separately but shall be included in the unit bid price for "Furnishing ~~and Erecting~~ Structural Steel".  
Anchor bolts, washers and nuts, to be plated against corrosion in accordance with the special provisions, shall be zinc-coated by the mechanical plating method conforming to ASTM B 695, class 50. Zinc-coated nuts shall be tapped oversize in accordance with the requirements of AASHTO M 291 and shall meet the supplementary requirements S1.1 thru S1.2.1 of the same specifications for lubricant and testing.



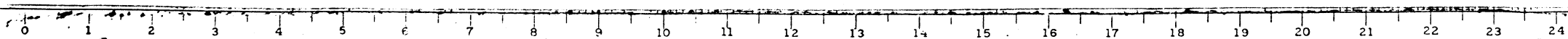
PLAN-COIL WIRE

|          |             |
|----------|-------------|
| DESIGNED | _____       |
| CHECKED  | _____       |
| DRAWN    | _____       |
| CHECKED  | P. W. CLARK |

ABB-1 12-1-83

PREPARED BY:  
SVERDRUP CORPORATION  
ST. LOUIS, MISSOURI

REHABILITATION FOR  
FAI - 55/70 COMPLE  
F.A.I. ROUTE 70 ROADWAY  
OVER TRENDLEY AVE.  
ANCHOR BOLT DETAILS FOR BEARINGS  
STRUCTURE NO. 082-0140  
STA. 86+09.53 (FAI-70) ST. CLAIR CO.



SEE SHEET NO. 7 FOR  
INDEX OF SHEETS

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

| * 82-3HVB-2R-1 |     |                     |              |           |
|----------------|-----|---------------------|--------------|-----------|
| ROUTE NO.      | SEC | COUNTY              | TOTAL SHEETS | SHEET NO. |
| 70             | #   | ST. CLAIR           | 320          | 1         |
|                |     | PROJECT IR-70-(155) |              |           |
| F-98-021-85    |     |                     |              |           |

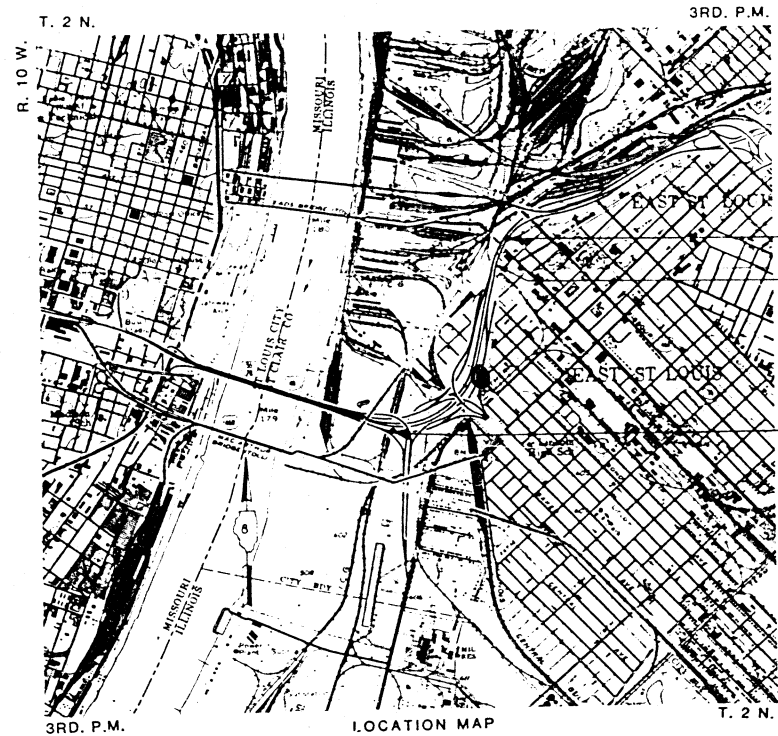
PLANS FOR PROPOSED  
FEDERAL AID HIGHWAY

SCALE IN FEET  
PLAN 1 INCH 50 FT.  
PROFILE HOR. 1 INCH 50 FT.  
VERT. 1 INCH 5 FT.  
CROSS-SECTIONS  
HOR. 1 INCH 10 FT.  
VERT. 1 INCH 5 FT.

F.A.I. ROUTE 70  
SECTION 82 - 3HVB - 2R - 1  
PROJECT IR - 70 - 1(155)  
ST. CLAIR COUNTY  
C-98-106-86

THE STRUCTURES REHABILITATED IN THIS  
PROJECT WERE BUILT AS SECTIONS:

82-4HB  
82-4HB-1  
82-3HVF&E-1  
82-4HVB



PROJECT  
ENDS 115 + 34.53 E.B. F-55/70  
EQUATION: 111 + 70.90 E.B. C-D BK. =  
109 + 39.40 E.B. F-55/70 AHD.

PROJECT  
BEGNS 59+00.14 E.B. C-D

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

DESIGN DESIGNATION  
C-D'S 2 LANES: 1800(06) TRUNK 17.6(C-20)

1000 0 1000 2000 3000  
SCALE IN FEET

NET LENGTH OF PROJECT - 5,865.89 FT. - 1.111 MILES

ANTHONY W. NEMEYER  
NO. 62 - 39027

CARLOS A. LIZANA-FARIAS  
NO. 81-3956

PREPARED BY:  
SVERDRUP CORPORATION  
ST. LOUIS, MISSOURI

S.N. 0B2-0140

CONTRACT NO. 42345

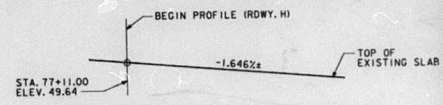
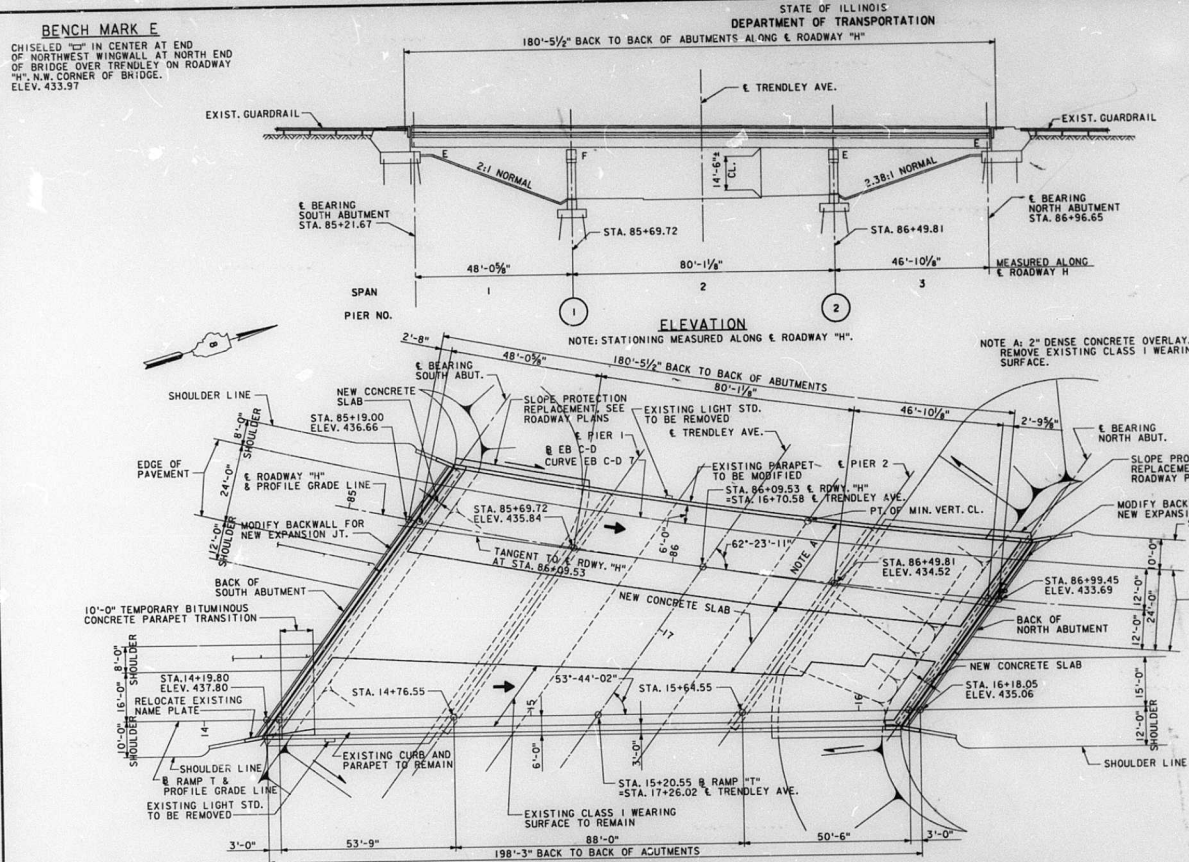
ST. CLAIR COUNTY SECTION 82-3HVB-2R-1 F.A.I. ROUTE 70

8-171

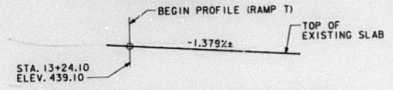


|                  |              |           |      |      |
|------------------|--------------|-----------|------|------|
| STATE NO.        | SECTION      | COUNTY    | DATE | FILE |
| F.A.I. 70        | 82-3HVB-2R-1 | ST. CLAIR | 320  | 177  |
| ILLINOIS PROJECT |              |           |      |      |

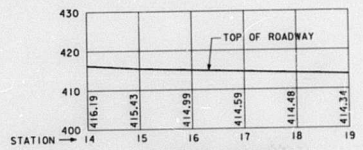
**BENCH MARK E**  
 CHISELED "E" IN CENTER AT END OF NORTHWEST WINGWALL AT NORTH END OF BRIDGE OVER TRENDLEY ON ROADWAY "H", N.W. CORNER OF BRIDGE. ELEV. 433.97



**EXISTING PROFILE GRADE - ROADWAY "H"**  
 NOTE: ELEVATION SHOWN IS AT TOP OF EXISTING SLAB.

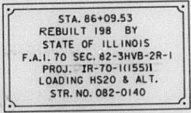


**EXISTING PROFILE GRADE - RAMP "T"**  
 NOTE: ELEVATION SHOWN IS AT TOP OF EXISTING SLAB.

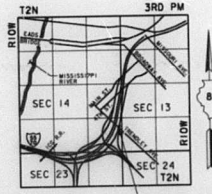


**EXISTING PROFILE TRENDLEY AVE.**

EXISTING NAME PLATE TO BE SALVAGED, CLEANED AND MOUNTED NEXT TO NEW NAME PLATE. COST INCIDENTAL.



**NAME PLATE**  
 (STANDARD 2113)



**LOCATION SKETCH**  
 PROPOSED STRUCTURE MODIFICATION

**REHABILITATION FOR  
 FAI - 55/70 COMPLEX**  
 F.A.I. ROUTE 70 ROADWAY H  
 OVER TRENDLEY AVE.  
 GENERAL PLAN AND ELEVATION  
 STRUCTURE NO. 082-0140  
 STA. 86+09.53 (FAI-70) ST. CLAIR CO.

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

**ELEVATION**

NOTE: STATIONING MEASURED ALONG ROADWAY "H".

NOTE A: 2" DENSE CONCRETE OVERLAY. REMOVE EXISTING CLASS I WEARING SURFACE.

**PLAN**

NOTE: ELEVATIONS SHOWN ARE AT TOP OF DENSE CONCRETE OVERLAY OR TOP OF NEW CONCRETE SLAB.

**CURVE DATA -  
 EB C-D T**

P.I. STA. = 86+68.26  
 $\Delta = 13^{\circ}-07'-45''$  LT  
 $D = 3^{\circ}-10'-16''$   
 $R = 1806.76'$   
 $T = 207.92'$   
 $L = 414.01'$   
 $E = 11.52'$   
 P.C.C. STA. = 84+60.35  
 P.C.C. STA. = 88+74.36

**CURVE DATA -  
 ROADWAY "H"**

P.I. STA. = 83+18.82  
 $\Delta = 36^{\circ}-57'-31''$   
 $D = 3^{\circ}-09'-01''$   
 $R = 1818.76'$   
 $T = 607.82'$   
 $L = 1173.19'$   
 $E = 98.88'$   
 $S.E. = 8.002'$   
 P.C. STA. = 77+11.00  
 P.T. STA. = 88+84.19

**APPROVED**  
 FOR STRUCTURAL ENGINEERING ONLY



PREPARED BY:  
**SVERDRUP CORPORATION**  
 ST. LOUIS, MISSOURI

|          |                |
|----------|----------------|
| DESIGNED |                |
| CHECKED  | K. SCHULT      |
| DRAWN    | R. BUTTERFIELD |
| CHECKED  |                |

B:\SS\81\REF. OPENTURE

1 2 3 20 26 28 29 42 43 50 55 63

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

|           |         |           |      |     |
|-----------|---------|-----------|------|-----|
| ROUTE NO. | SECTION | COUNT     | DATE | BY  |
| F.A.I. 70 | *       | ST. CLAIR | 5/20 | 178 |
| ELEMENT   |         | PROJECT   |      |     |

\* 82-3HVB-2R-1

**GENERAL NOTES**

CONSTRUCTION SPECIFICATIONS: THE 1988 EDITION OF THE STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION'S "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION", ADDENDA AND THE SPECIAL PROVISIONS SHALL GOVERN.

CALCULATED WEIGHT OF ERECTING STRUCTURAL STEEL:  
(\*) ERECTING : 3525 LBS. (M183)  
2315 LBS. (M223, GRADE 50)

\* 3,525 LBS. (M183) AND 2,315 LBS. (M223, GRADE 50) FABRICATED UNDER SEPARATE CONTRACT. (SEE SPECIAL PROVISIONS FOR FIELD PAINTING REQUIREMENTS)

FASTENERS SHALL BE 3/8" HIGH STRENGTH BOLTS, 1/2" Ø OPEN HOLES UNLESS OTHERWISE NOTED.

THE ZINC - SILICATE AND VINYL PAINT SYSTEM SHALL BE USED FOR SHOP AND FIELD PAINTING OF NEW STRUC. STEEL EXCEPT WHERE OTHERWISE NOTED.

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 BEFORE ORDERING OF MATERIALS. SUCH VARIATIONS SHALL NOT BE CAUSE FOR ADDITIONAL COMPENSATION FOR A CHANGE IN SCOPE OF WORK, HOWEVER, THE CONTRACTOR WILL BE PAID FOR THE QUANTITY ACTUALLY FURNISHED AT THE UNIT PRICE BID FOR THE WORK.

\* INDICATES HIGH STRENGTH BOLT, SHOP OR FIELD INSTALLED UNLESS OTHERWISE NOTED.

ALL DIMENSIONS ARE MEASURED AT A TEMPERATURE OF 50°F.

ALL TRANSVERSE AND LONGITUDINAL DIMENSIONS ARE MEASURED HORIZONTALLY.

REINFORCING BARS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M31, M42, OR M53, GRADE 60.

FIELD WELDING OF CONSTRUCTION ACCESSORIES WILL NOT BE PERMITTED TO THE BOTTOM FLANGE OF BEAMS OR GIRDERS NOR TO THE TOP FLANGE FOR A DISTANCE EQUAL TO ONE-FOURTH THE SPAN LENGTH EACH WAY FROM THE PIER SUPPORTS. FIELD WELDING IN OTHER AREAS WILL BE PERMITTED ONLY WHEN APPROVED BY THE ENGINEER.

ANCHOR BOLTS SHALL BE SET BEFORE BOLTING DIAPHRAGMS OVER SUPPORTS.

THE CONCRETE FOR BRIDGE FLOORS FINISHED IN ACCORDANCE WITH ARTICLE 503.15 OF THE STANDARD SPECIFICATIONS, SHALL BE PLACED AND COMPACTED PARALLEL TO THE SKEW IN UNIFORM INCREMENTS ALONG CENTER LINE OF BRIDGE. THE FINISHING MACHINE, WHEN REQUIRED, SHALL BE SET PARALLEL TO THE SKEW FOR STRIKING OFF AND SCREEDING THE CONCRETE.

TRAFFIC CONTROL ON RAMP "T" AND THE EASTBOUND C-D IS TO BE PART OF THE ROADWAY CONTRACT. IT SHALL NOT EXEMPT THE BRIDGE CONTRACTOR FROM PROVIDING ADDITIONAL TRAFFIC CONTROL AND PROTECTION THAT MAY BE REQUIRED FOR THE SAFETY OF THE PUBLIC.

**INDEX OF DRAWINGS**

1. GENERAL PLAN AND ELEVATION
2. GENERAL NOTES, ESTIMATED QUANTITIES AND INDEX OF DRAWINGS
3. STAGE CONSTRUCTION
4. TOP OF SLAB ELEVATIONS
5. DECK DEMOLITION
6. DEMOLITION DETAILS
7. SLAB MODIFICATION
8. SLAB MODIFICATION DETAILS
9. WEST PARAPET MODIFICATIONS
10. WEST PARAPET MODIFICATIONS
11. EAST PARAPET MODIFICATIONS
12. FRAMING PLAN
13. ABUTMENT EXPANSION BEARING MODIFICATIONS
14. ABUTMENT EXPANSION BEARING MODIFICATIONS
15. SCUPPER DETAILS
16. STEEL DRAINAGE SCUPPER
17. ALTERNATE-CAST IRON DRAINAGE SCUPPER
18. NEOPRENE EXPANSION JOINT-2"
19. DEMOLITION DETAILS
20. ABUTMENT MODIFICATIONS
21. ANCHOR BOLT DETAILS FOR BEARINGS
22. TEMPORARY CONCRETE BARRIER FOR STAGE CONSTRUCTION

**TOTAL BILL OF MATERIAL**

| ITEM  | UNIT     | STRUCTURE |     | TOTAL  |
|---|----------|-----------|-----|--------|
|   |          | SUPER     | SUB |        |
| ERECTING STRUCTURAL STEEL                         | LUMP SUM | 1         | —   | 1      |
| CLASS X CONCRETE SUPERSTRUCTURE                   | CU. YDS. | 146.6     | —   | 146.6  |
| REINFORCEMENT BARS, EPOXY COATED                  | LBS.     | 37,460    | —   | 37,460 |
| CONCRETE REMOVAL                                  | CU. YDS. | 168.2     | —   | 168.2  |
| BITUMINOUS CONCRETE SURFACE REMOVAL (BRIDGE DECK) | SQ. YDS. | 395       | —   | 395    |
| CONCRETE BRIDGE DECK SCARIFICATION (1/4" INCH)    | SQ. YDS. | 395       | —   | 395    |
| DECK SLAB REPAIR (PARTIAL DEPTH)                  | SQ. YDS. | 46        | —   | 46     |
| DECK SLAB REPAIR (FULL DEPTH)                     | SQ. YDS. | 16        | —   | 16     |
| Bridge Deck Concrete Overlay Option               | SQ. YDS. | 395       | —   | 395    |
| SLOPE WALL REMOVAL                                | SQ. YDS. | 30        | —   | 30     |
| SLOPE WALL 4 INCH                                 | SQ. YDS. | 30        | —   | 30     |
| NEOPRENE EXPANSION JOINT (2")                     | LIN. FT. | 174       | —   | 174    |
| DRAINAGE SCUPPERS                                 | EACH     | 4         | —   | 4      |
| * PROTECTIVE COAT                                 | SQ. YDS. | 35        | —   | 35     |
| NAME PLATE  | EACH     | 1         | —   | 1      |
| JACK AND REPOSITION BEARINGS                      | EACH     | 26        | —   | 26     |

\*Quantity does not include deck surface.

DESIGNED  
CHECKED  
D. RIEHL  
DRAWN  
R. BUTTERFIELD  
CHECKED

PREPARED BY  
SVERDRUP CORPORATION  
ST. LOUIS, MISSOURI

REV. 8/26/88

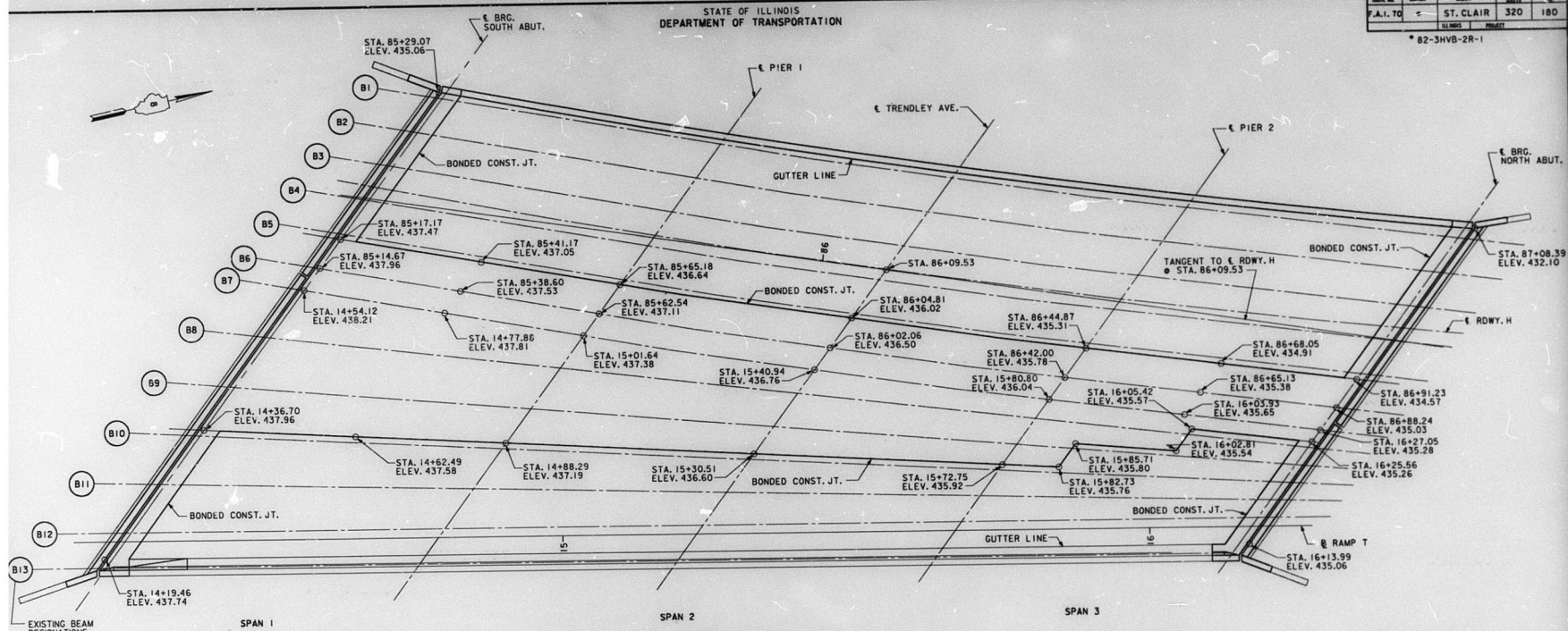
SHEET NO. 2 OF 22

REHABILITATION FOR  
FAI - 55/70 COMPLEX  
F.A.I. ROUTE 70 ROADWAY H  
OVER TRENDLEY AVE.  
GENERAL NOTES, ESTIMATED QUANTITIES,  
AND INDEX OF DRAWINGS  
STRUCTURE NO. 082-0140  
STA. 86+09.53 (FAI-70) ST. CLAIR CO.



STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

| PROJECT NO.    | DISTRICT | COUNTY    | SECTION | POST MILES |
|----------------|----------|-----------|---------|------------|
| F.A.I. 70      |          | ST. CLAIR | 320     | 180        |
|                |          | BRIDGE    |         |            |
| * 82-3HV8-2R-1 |          |           |         |            |



**PLAN**  
NOTE: ELEVATIONS SHOWN ARE THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTIONS AT TOP OF NEW SLAB.  
STA. 85+14.67 TO STA. 87+08.39 ARE MEASURED ALONG E. ROADWAY H. STA. 14+19.46 TO STA. 16+27.05 ARE MEASURED ALONG B RAMP T.

**NOTES**  
WORK THIS SHEET WITH SHEETS 7 & 8.

B. CARLSON  
DESIGNED  
R. BUTTERFIELD  
CHECKED  
S. K. AEMMERER  
DRAWN  
R. BUTTERFIELD  
CHECKED

PREPARED BY:  
SVERDRUP CORPORATION  
ST. LOUIS, MISSOURI

REHABILITATION FOR  
FAI - 55/70 COMPLEX  
F.A.I. ROUTE 70 ROADWAY H  
OVER TRENDLEY AVE.  
TOP OF SLAB ELEVATIONS  
STRUCTURE NO. 082-0140  
STA. 86+09.53 (FAI-70) ST. CLA. R. CO.

SHEET NO. 4 OF 22

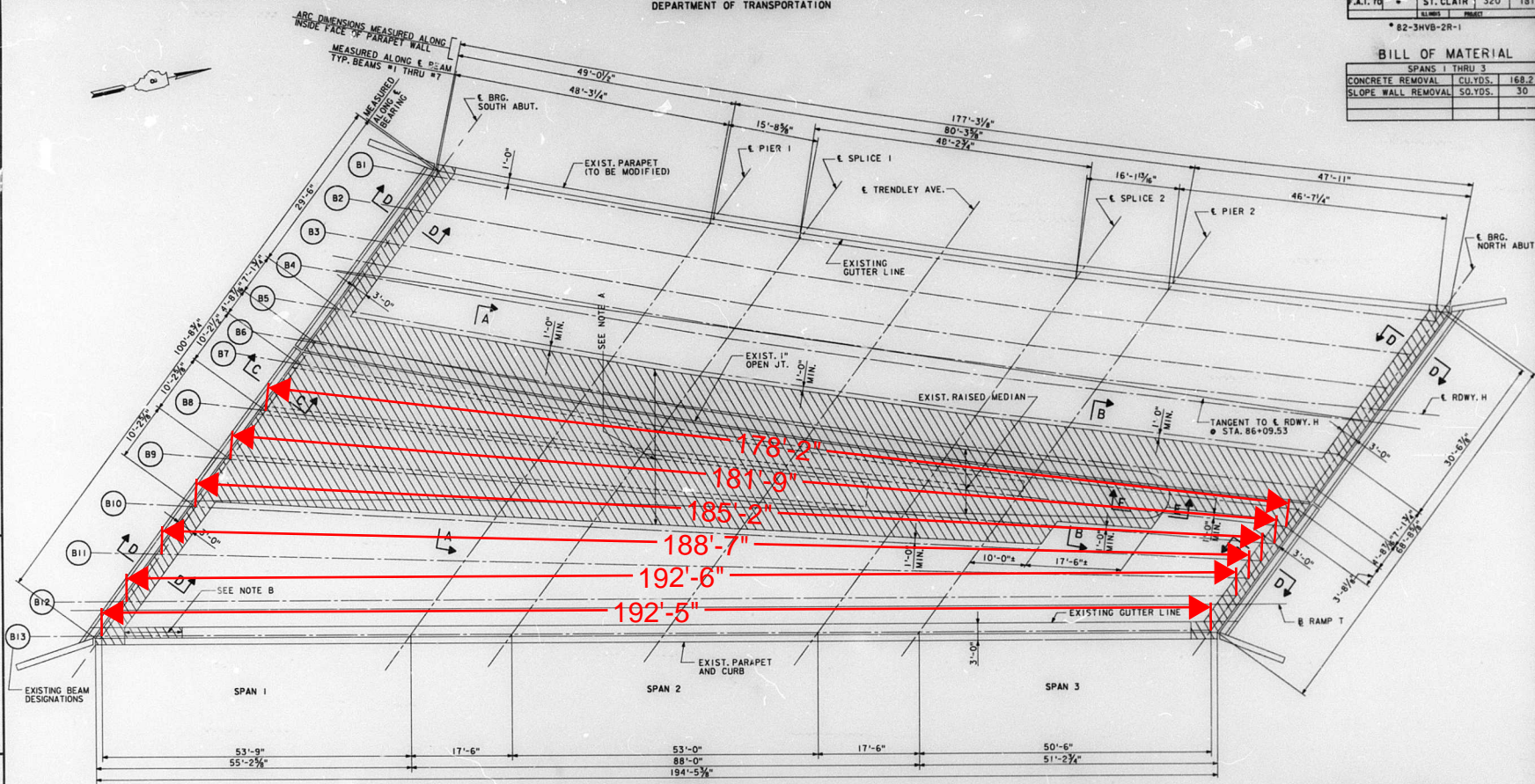


| DATE      | SECTION   | DRY | SHEET | TOTAL |
|-----------|-----------|-----|-------|-------|
| F.A.I. 70 | ST. CLAIR | 320 | 181   |       |

\* 82-3HVB-2R-1

**BILL OF MATERIAL**

| SPANS 1 THRU 3     |          |       |
|--------------------|----------|-------|
| CONCRETE REMOVAL   | CU. YDS. | 168.2 |
| SLOPE WALL REMOVAL | SO. YDS. | 30    |



**PLAN**

NOTE A: REMOVE EXISTING MEDIAN, SLAB, CURB AND PARAPET, TO TOP OF GIRDERS AND END DIAPHRAGMS.  
NOTE B: REMOVE EXISTING CURB TO TOP OF EXISTING CONCRETE SLAB.

**NOTES**

WORK THIS SHEET WITH SHEET 6 & 19. FOR EXISTING PARAPET MODIFICATIONS, SEE SHEET 9, 10 & 11.

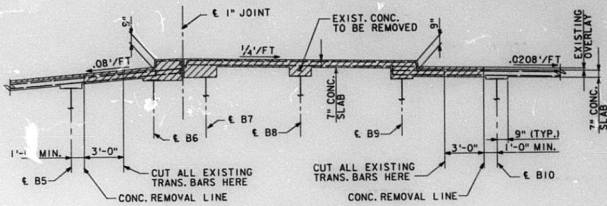
REHABILITATION FOR  
FAI - 55/70 COMPLEX  
F.A.I. ROUTE TO ROADWAY H  
OVER TRENDLEY AVE.  
DECK DEMOLITION  
STRUCTURE NO. 082-0140  
STA. 86+09.53 (FAI-70) ST. CLAIR CO.

|                |          |
|----------------|----------|
| B. CARLSON     | DESIGNED |
| R. BUTTERFIELD | CHECKED  |
| K. SCHULT      | DRAWN    |
| R. BUTTERFIELD | CHECKED  |

PREPARED BY:  
SVERDRUP CORPORATION  
ST. LOUIS, MISSOURI

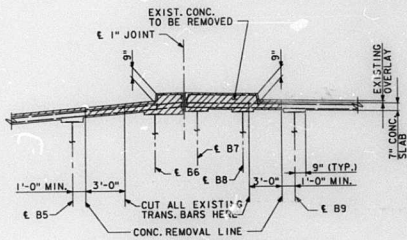
SHEET NO. 5 OF 22

102400  
 875302  
 35 54 56 63  
 875302  
 35 54 56 63



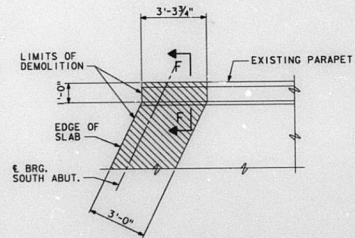
**SECTION A-A**

NOTE: LONGITUDINAL REINF. NOT SHOWN. LONGIT. AND TRANS. REINF. SHALL BE REMOVED UNLESS OTHERWISE NOTED.

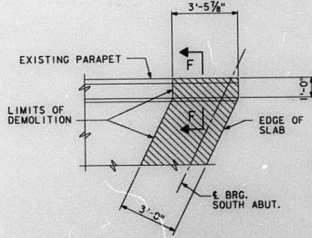


**SECTION B-B**

NOTE: LONGITUDINAL REINF. NOT SHOWN. LONGIT. AND TRANS. REINF. SHALL BE REMOVED UNLESS OTHERWISE NOTED.



**PLAN-SOUTHWEST CORNER**



**PLAN-NORTHWEST CORNER**

**WEST PARAPET DEMOLITION**

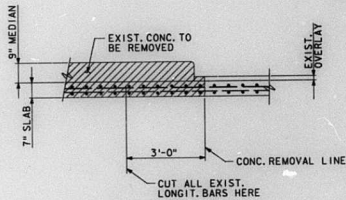
NOTE: EXISTING LONGITUDINAL REINFORCING BARS IN PARAPET TO REMAIN. EXISTING VERTICAL REINFORCING BARS IN PARAPET TO BE REMOVED.

**NOTES**

FOR CONCRETE REMOVAL QUANTITY, SEE SHEET 5.

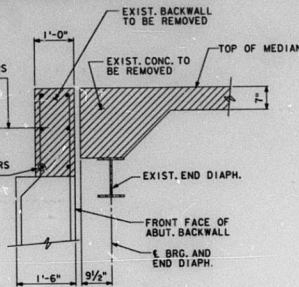
**SECTION C-C**

NOTE: REINFORCEMENT IN MEDIAN NOT SHOWN. FOR ABUTMENT DEMOLITION DETAILS, SEE SHEET 19.



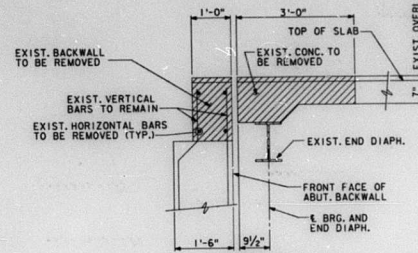
**SECTION E-E**

NOTE: FOR REMOVAL OF TRANS. BARS SEE SECTION B-B. REINFORCEMENT IN MEDIAN NOT SHOWN.



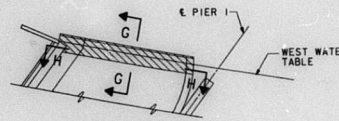
**SECTION C-C**

NOTE: REINFORCEMENT IN MEDIAN NOT SHOWN. FOR ABUTMENT DEMOLITION DETAILS, SEE SHEET 19.

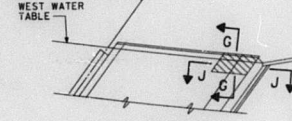


**SECTION D-D**

NOTE: REINFORCEMENT IN SLAB NOT SHOWN. FOR ABUTMENT DEMOLITION DETAILS, SEE SHEET 19. EXISTING LONGITUDINAL REINF. IN SLAB SHALL REMAIN. EXISTING TRANS. REINF. IN SLAB SHALL BE REMOVED.



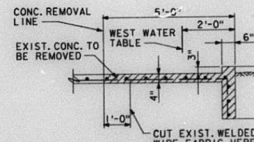
**PLAN-SOUTHWEST SIDE**



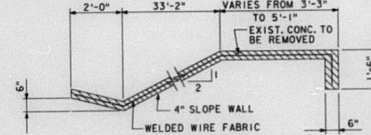
**PLAN-NORTHWEST SIDE**

**SLOPE WALL DEMOLITION**

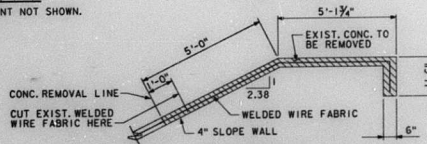
NOTE: FOR REPLACEMENT OF 4" REINFORCED CONCRETE SLOPE WALL, SEE ROADWAY PLANS. REPLACEMENT OF 4" SLOPE WALL INCLUDES 18 CU. YDS. OF STRUCTURAL BACKFILL (INCIDENTAL TO COST OF 4" SLOPE WALL).



**SECTION G-G**



**SECTION H-H**



**SECTION J-J**

PREPARED BY:  
SVERDRUP CORPORATION  
ST. LOUIS, MISSOURI

REHABILITATION FOR  
FAI - 55/70 COMPLEX  
F.A.I. ROUTE TO ROADWAY H  
OVER TRENDLEY AVE.  
DEMOLITION DETAILS

STRUCTURE NO. 082-0140  
STA. 86+09.53 (FAI-70) ST. CLAIR CO.

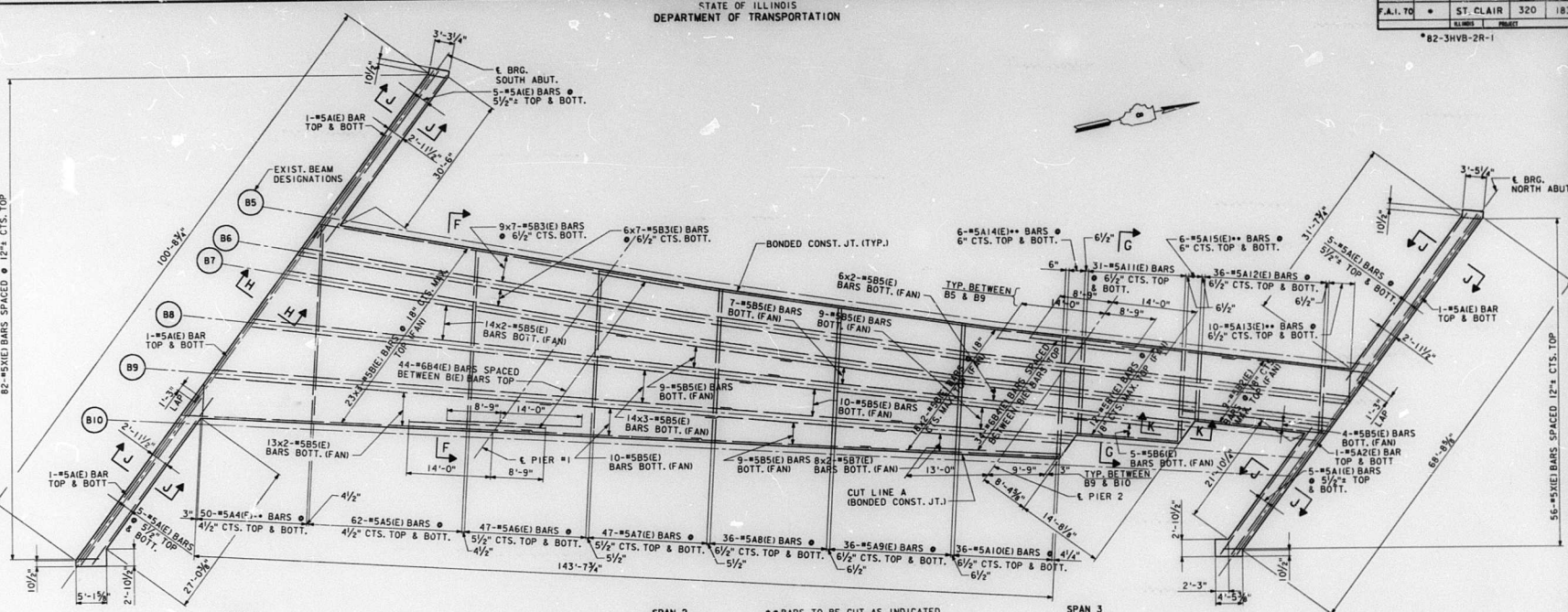
35 54 56 57 58 63  
 875283 PROF. DEMONTRI

B. CARLSON  
 DESIGNED  
 R. BUTTERFIELD  
 CHECKED  
 KMS/SOK  
 DRAWN  
 R. BUTTERFIELD  
 CHECKED

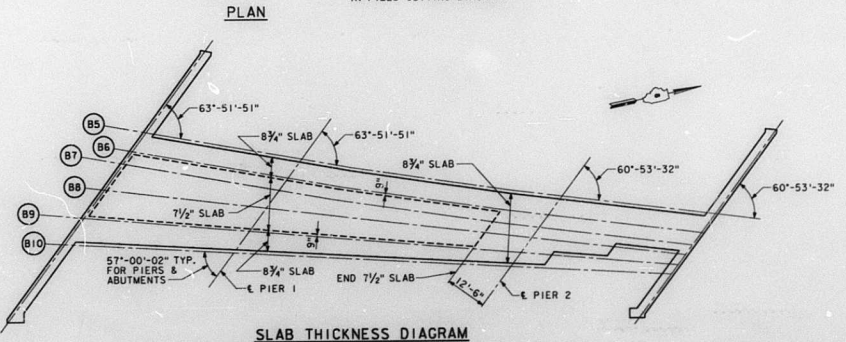
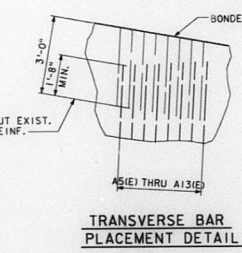
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

|             |         |           |           |              |
|-------------|---------|-----------|-----------|--------------|
| PROJECT NO. | SECTION | COUNTY    | SHEET NO. | TOTAL SHEETS |
| FAI-1-70    | *       | ST. CLAIR | 320       | 183          |
| SHEET NO.   |         | PROJECT   |           |              |

\*82-3HVB-2R-1



\*\* BARS TO BE CUT AS INDICATED IN FIELD CUTTING DIAGRAM.



NOTES

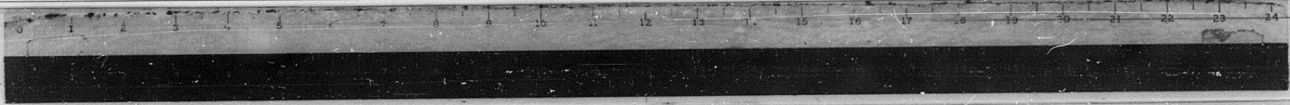
WORK THIS SHEET WITH SHEET B.  
BARS BILLED AS: 22x5-#5 ETC. INDICATES 22 LINES OF BARS WITH 5 LENGTHS PER LINE.  
TRANSVERSE BARS SHALL BE PLACED NORMAL TO AND ALONG CUT LINE A.  
ALL LONGITUDINAL BARS SHALL BE SPECIFIED WITH A 1'-9" MINIMUM LAP. EXCEPT AS NOTED.

REHABILITATION FOR  
FAI - 55/70 COMPLEX  
F.A.I. ROUTE 70 ROADWAY H  
OVER TRENDLEY AVE.  
SLAB MODIFICATION  
STRUCTURE NO. 082-0140  
STA. 86+09.52 (FAI-70) ST. CLAIR CO.

PREPARED BY  
SVERDRUP CORPORATION  
ST. LOUIS, MISSOURI

SHEET NO. 7 OF 22

B. CARLSON  
DESIGNED  
R. BUTTERFIELD  
CHECKED  
S. KAEMMERER  
DRAWN  
R. BUTTERFIELD  
CHECKED



STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

|            |           |        |          |           |
|------------|-----------|--------|----------|-----------|
| ROUTE NO.  | SECTION   | COUNTY | FILE NO. | SHEET NO. |
| F.A.I. TO  | ST. CLAIR | 320    | 184      |           |
| ELIMINATED | PROJECT   |        |          |           |

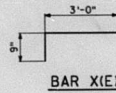
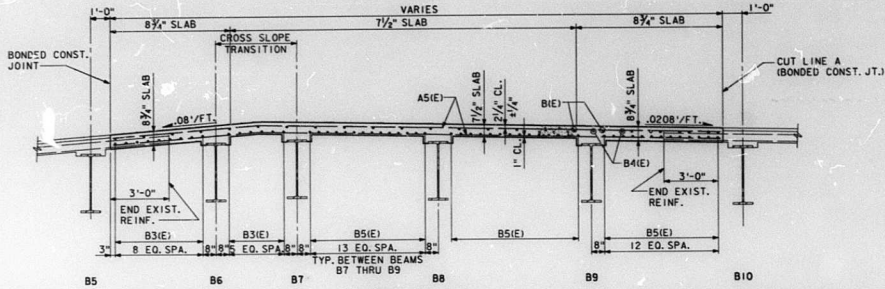
\* 82-3HVB-2R-1

**BILL OF MATERIAL**

| SPANS 1, 2 & 3 |     |      |         |       |
|----------------|-----|------|---------|-------|
| BAR            | NO. | SIZE | LENGTH  | SHAPE |
| A1(E)          | 38  | #5   | 34'-10" |       |
| A11(E)         | 10  | #5   | 26'-1"  |       |
| A2(E)          | 2   | #5   | 36'-6"  |       |
| A4(E)          | 50  | #5   | 38'-6"  |       |
| A5(E)          | 124 | #5   | 30'-8"  |       |
| A6(E)          | 94  | #5   | 28'-2"  |       |
| A7(E)          | 94  | #5   | 25'-7"  |       |
| A8(E)          | 72  | #5   | 23'-9"  |       |
| A9(E)          | 72  | #5   | 22'-0"  |       |
| A10(E)         | 72  | #5   | 20'-3"  |       |
| A11(E)         | 62  | #5   | 15'-2"  |       |
| A12(E)         | 72  | #5   | 11'-2"  |       |
| A13(E)         | 10  | #5   | 15'-0"  |       |
| A14(E)         | 6   | #5   | 36'-0"  |       |
| A15(E)         | 6   | #5   | 26'-0"  |       |
| B1(E)          | 105 | #5   | 30'-9"  |       |
| B11(E)         | 12  | #5   | 19'-0"  |       |
| B2(E)          | 9   | #5   | 23'-6"  |       |
| B3(E)          | 105 | #5   | 26'-9"  |       |
| B4(E)          | 78  | #6   | 22'-9"  |       |
| B5(E)          | 168 | #5   | 27'-2"  |       |
| B6(E)          | 5   | #5   | 34'-1"  |       |
| B7(E)          | 16  | #5   | 23'-5"  |       |
| X1(E)          | 138 | #5   | 3'-9"   |       |

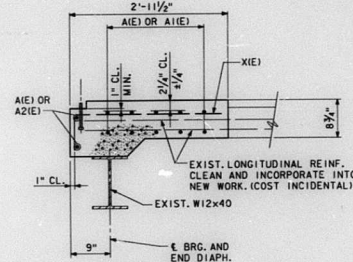
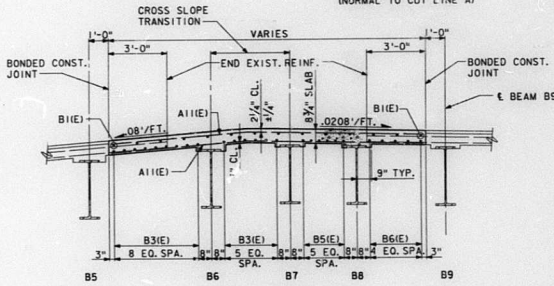
|                                   |          |        |
|-----------------------------------|----------|--------|
| CLASS X CONCRETE SUPERSTRUCTURE   | CU. YDS. | 129.6  |
| REINFORCEMENT BARS (EPOXY COATED) | LBS.     | 35,530 |



| BAR    | DIM. A | DIM. B | DIM. C | QUAN. D |
|--------|--------|--------|--------|---------|
| A4(E)  | 38'-6" | 5'-0"  | 33'-6" | 25      |
| A13(E) | 15'-0" | 4'-0"  | 11'-0" | 5       |
| A14(E) | 36'-0" | 16'-0" | 20'-0" | 3       |
| A15(E) | 26'-0" | 11'-0" | 15'-0" | 3       |

**FIELD CUTTING DIAGRAM**

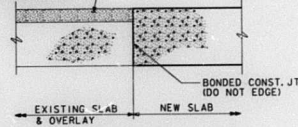
NOTE: ORDER EACH BAR FULL LENGTH CUT IN FIELD AS SHOWN AND USE REMAINING BARS AS INDICATED IN PLAN.



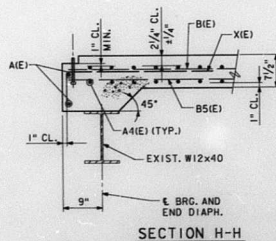
**SECTION J-J**

NOTE: PLACE A1(E) OR A2(E) BARS IN BACK OF ANCHOR BOLT IF REQUIRED TO MAINTAIN 1" CL. (4'-0 1/2"). ANCHOR BOLTS SHOULD BE TIED TO A1(E) OR A2(E) BARS.

CONTRACTOR SHALL REPAIR EXISTING BITUMINOUS CLASS 1 WEARING SURFACE AS REQUIRED (COST INCIDENTAL)

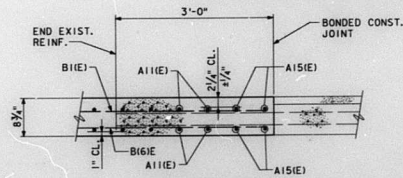


**DETAIL AT BONDED JOINT**



**SECTION H-H**

NOTE: PLACE A1(E) BARS IN BACK OF ANCHOR BOLT IF REQUIRED TO MAINTAIN 1" CL. (4'-0 1/2"). ANCHOR BOLTS SHOULD BE TIED TO A1(E) BARS.



**SECTION K-K**

B. CARLSON  
DESIGNED  
R. BUTTERFIELD  
CHECKED  
S. KAEEMERER  
DRAWN  
R. BUTTERFIELD  
CHECKED

PREPARED BY:  
SVERDRUP CORPORATION  
ST. LOUIS, MISSOURI

REHABILITATION FOR  
FAI - 55/70 COMPLEX  
F.A.I. ROUTE 70 ROADWAY H  
OVER TRENDLEY AVE.  
SLAB MODIFICATION DETAILS  
STRUCTURE NO. 082-0140  
STA. 86+09.53 (FAI-70) ST. CLAIR CO.

SHEET NO. 8 OF 22



STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

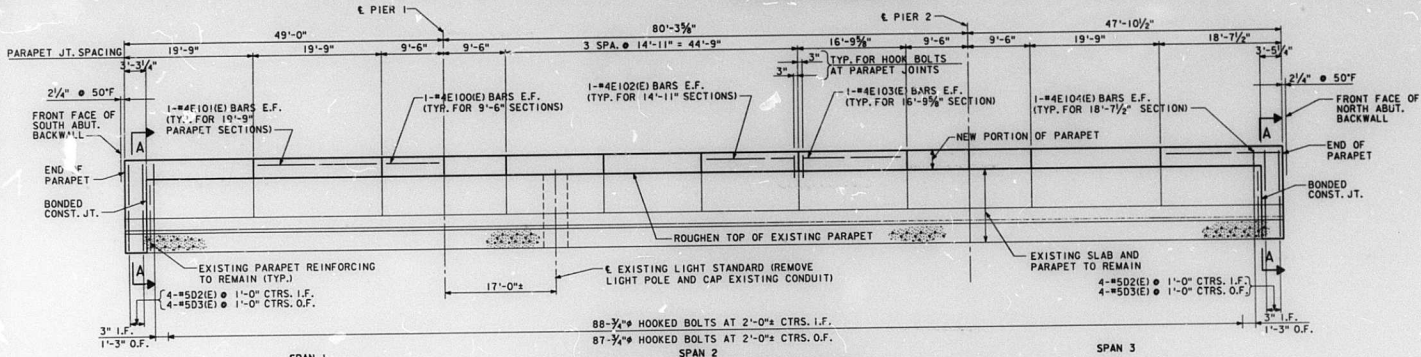
|           |     |           |          |       |       |
|-----------|-----|-----------|----------|-------|-------|
| DATE      | NO. | SECTION   | CONTRACT | SHEET | TOTAL |
| F.A.I. 70 | *   | ST. CLAIR | 320      | 185   |       |

\* 82-3HV8-2R-1

**BILL OF MATERIAL**

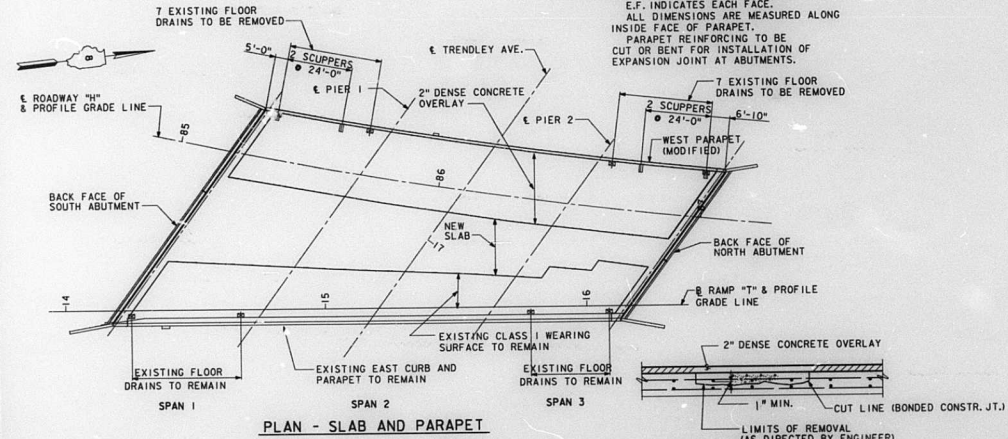
| SPANS 1, 2 & 3                            |     |      |          |       |  |
|---|-----|------|----------|-------|--|
| BAR                                       | NO. | SIZE | LENGTH   | SHAPE |  |
| D2(E)                                     | 8   | #5   | 4'-2"    |       |  |
| D3(E)                                     | 8   | #5   | 5'-6"    |       |  |
| E100(E)                                   | 8   | #4   | 9'-2"    |       |  |
| E101(E)                                   | 6   | #4   | 19'-6"   |       |  |
| E102(E)                                   | 6   | #4   | 14'-7"   |       |  |
| E103(E)                                   | 2   | #4   | 16'-6"   |       |  |
| E104(E)                                   | 2   | #4   | 18'-4"   |       |  |
| BX(E)                                     | 16  | #5   | 2'-0"    |       |  |
| CLASS X CONCRETE SUPERSTRUCTURE           |     |      | CU. YDS. | 4.3   |  |
| REINFORCEMENT BARS (EPOXY COATED)         |     |      | LBS.     | 350   |  |
| BRIDGE DECK CONCRETE OVERLAY              |     |      | SQ. YDS. | 395   |  |
| **DECK SLAB REPAIR (FULL DEPTH)           |     |      | SQ. YDS. | 16    |  |
| **DECK SLAB REPAIR (PARTIAL)              |     |      | SQ. YDS. | 46    |  |
| EXP. BOLTS $\frac{3}{4}$ " $\times$ 1'-9" |     |      | EACH     | 175   |  |

REINFORCEMENT BARS MARKED (E) SHALL BE EPOXY COATED.  
\*\*ACTUAL EXTENT OF PATCHING TO BE DETERMINED AFTER REMOVAL OF EXISTING WEARING SURFACE.



**INSIDE ELEVATION OF WEST PARAPET**

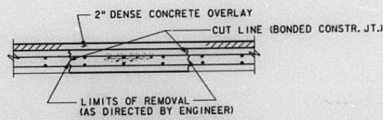
NOTES: I.F. INDICATES INSIDE FACE.  
O.F. INDICATES OUTSIDE FACE.  
E.F. INDICATES EACH FACE.  
ALL DIMENSIONS ARE MEASURED ALONG INSIDE FACE OF PARAPET.  
PARAPET REINFORCING TO BE CUT OR BENT FOR INSTALLATION OF EXPANSION JOINT AT ABUTMENTS.



**PLAN - SLAB AND PARAPET**

**PARTIAL DEPTH PATCHING**

NOTES: AS DIRECTED BY ENGINEER REMOVE EXISTING CONCRETE TO A DEPTH OF  $\frac{3}{4}$ " BELOW THE TOP REINFORCING BARS, LEAVING EXISTING REINFORCING BARS IN PLACE. CLEAN EXISTING REINFORCING BARS AND INCORPORATE INTO NEW WORK.  
CLEAN PATCH AREA OF ANY LOOSE MATERIAL. REPLACE REMOVED MATERIAL WITH CLASS X CONCRETE TO THE LEVEL OF ADJOINING CONCRETE.  
NEW CONCRETE IS TO ATTAIN FULL 28-DAY STRENGTH PRIOR TO PLACING OVERLAY.  
SEE SPECIAL PROVISIONS.



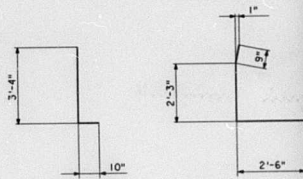
**FULL DEPTH PATCHING**

NOTES: AS DIRECTED BY ENGINEER, REMOVE EXISTING CONCRETE THE FULL DEPTH OF THE DECK WITHOUT DAMAGING EXISTING REINFORCING BARS.  
REMOVE STAY-IN-PLACE PANELS THAT ARE PRESENT WITHIN LIMITS OF FULL DEPTH PATCH.  
CLEAN EXISTING REINFORCING BARS AND INCORPORATE INTO NEW WORK.  
REPLACE REMOVED MATERIAL WITH CLASS X CONCRETE.  
NEW CONCRETE IS TO ATTAIN FULL 28-DAY STRENGTH PRIOR TO PLACING OVERLAY.  
SEE SPECIAL PROVISIONS.

**SLAB REPAIR DETAILS**

PREPARED BY:  
SVERDRUP CORPORATION  
ST. LOUIS, MISSOURI

REV. 8/26/88



BAR D2(E)      BAR D3(E)

**NOTES**

FOR DRAINAGE SCUPPER DETAILS, SEE SHEET 15.  
FOR DETAILS OF REMOVAL OF EXISTING FLOOR DRAINS SEE SHEET 15.  
FOR TYPICAL SECTION THROUGH WEST PARAPET AND SECTION A-A, SEE SHEET 10.  
FOR PARAPET DEMOLITION, SEE SHEET 6.

REHABILITATION FOR  
**FAI - 55/70 COMPLEX**  
F.A.I. ROUTE TO ROADWAY H  
OVER TRENDLEY AVE.  
WEST PARAPET MODIFICATIONS

STRUCTURE NO. 082-0140  
STA. 86+09.53 (FAI-70) ST. CLAIR CO.

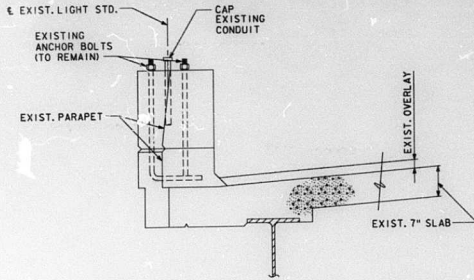
SHEET NO. 9 OF 22

|                |          |
|----------------|----------|
| B. CARLSON     | DESIGNED |
| R. BUTTERFIELD | CHECKED  |
| S. KAEMMERER   | CHECKED  |
| R. BUTTERFIELD | DRAWN    |
|                | CHECKED  |



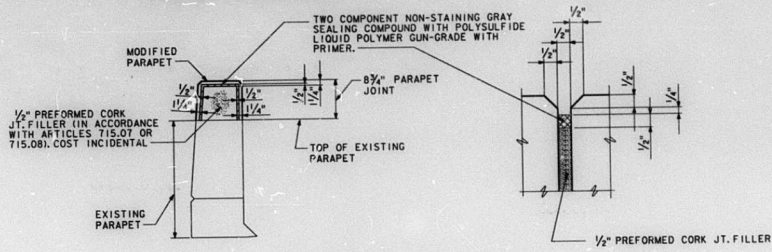
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

| ROUTE NO.     | SECTION | CHART     | SHEET | TOTAL |
|---------------|---------|-----------|-------|-------|
| F.A.I. 70     | *       | ST. CLAIR | 320   | 186   |
| SHEET 1       |         |           |       |       |
| *82-3HVB-2R-1 |         |           |       |       |



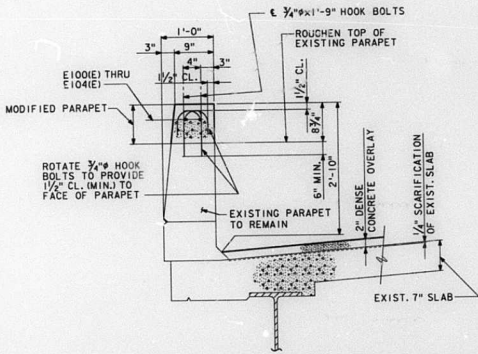
**SECTION THRU EXISTING PARAPET AT LIGHT STANDARD**

NOTE: REMOVE EXISTING LIGHT POLE AND CAP EXISTING CONDUIT ON EAST AND WEST PARAPETS.



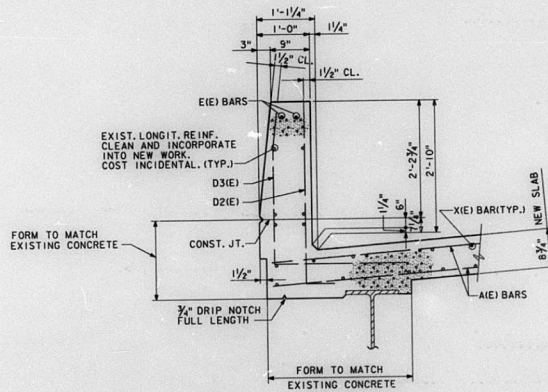
**PARAPET JOINT DETAILS**

NOTE: ALL EDGES SHALL HAVE A 3/8\"/>



**TYPICAL SECTION THRU WEST PARAPET**

NOTE: REMOVE EXISTING HANDRAIL AND POSTS. EXISTING POST ANCHORS TO REMAIN. NEW HOOK BOLT INSERTS TO BE SHIFTED TO MISS EXISTING POST ANCHORS.  
EXPANSION BOLTS SHALL CONSIST OF APPROVED EXPANSION ANCHORS AND 3/4\"/>



**SECTION A-A**

REHABILITATION FOR  
FAI - 55/70 COMPLEX  
F.A.I. ROUTE TO ROADWAY H  
OVER TRENDLEY AVE.  
WEST PARAPET MODIFICATIONS  
STRUCTURE NO. 082-0140  
STA. 86+05.53 (FAI-70) ST. CLAIR CD.

PREPARED BY:  
SVERDRUP CORPORATION  
ST. LOUIS, MISSOURI

SHEET NO. 10 OF 22

B. CARLSON  
DESIGNED  
R. BUTTERFIELD  
CHECKED  
S. KAEMMERER  
LABORER  
R. BUTTERFIELD  
CHECKED

35 56 57 58 63

815443 PRF: WPH/RTZ

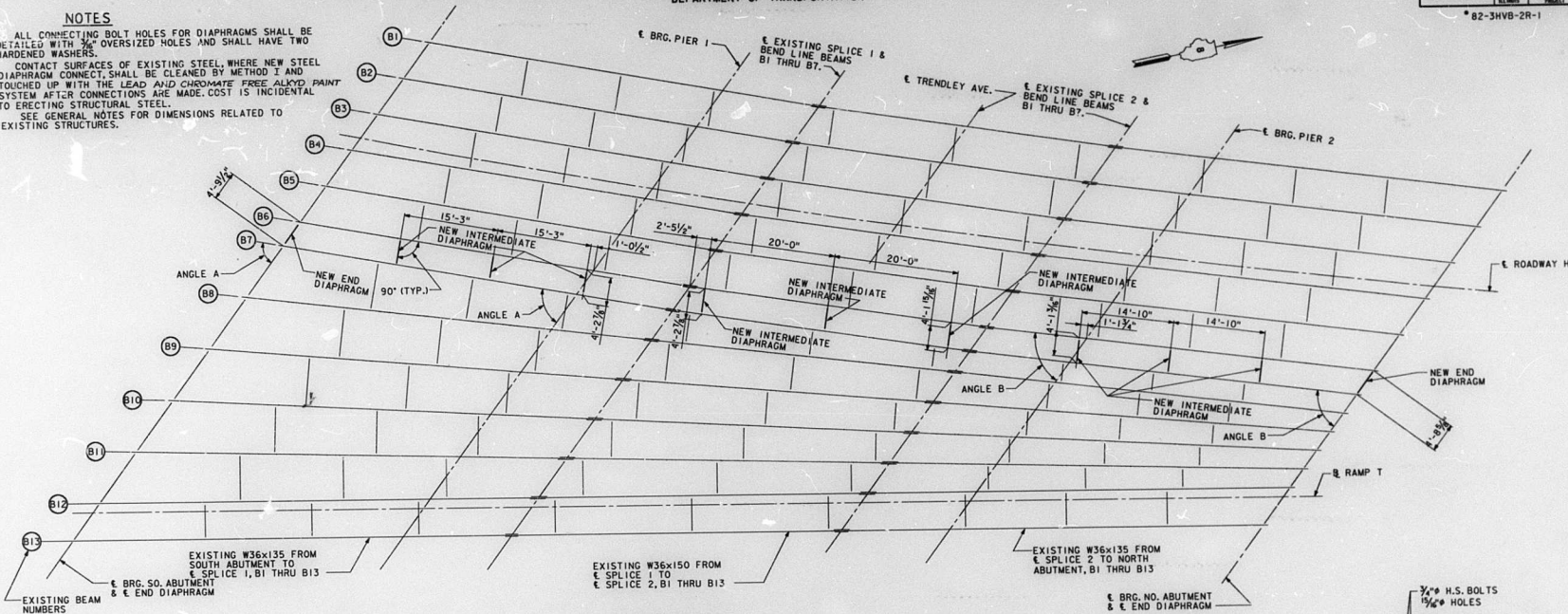


**NOTES**

ALL CONNECTING BOLT HOLES FOR DIAPHRAGMS SHALL BE DETAILED WITH  $\frac{3}{16}$ " OVERSIZED HOLES AND SHALL HAVE TWO HARDENED WASHERS.

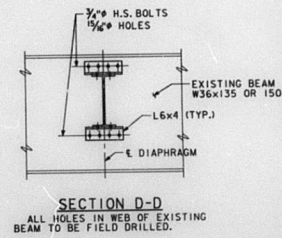
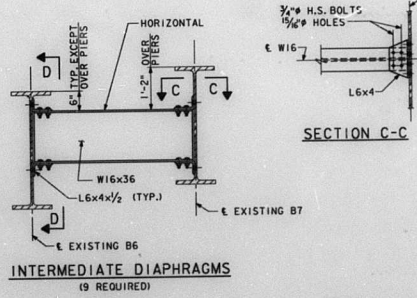
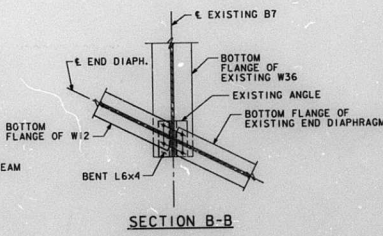
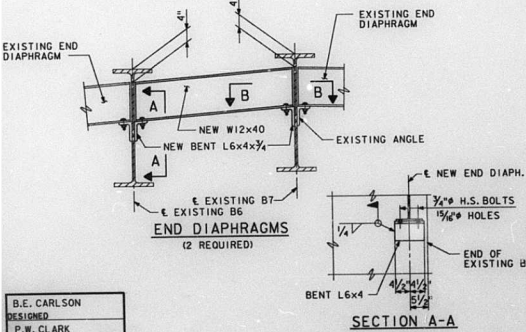
CONTACT SURFACES OF EXISTING STEEL WHERE NEW STEEL DIAPHRAGM CONNECT SHALL BE CLEANED BY METHOD 1 AND TOUCHED UP WITH THE LEAD AND CHROMATE FREE ALLOY PAINT SYSTEM AFTER CONNECTIONS ARE MADE. COST IS INCIDENTAL TO ERECTING STRUCTURAL STEEL.

SEE GENERAL NOTES FOR DIMENSIONS RELATED TO EXISTING STRUCTURES.



**FRAMING PLAN**

| BEAM  | ANGLE A     | ANGLE B     |
|-------|-------------|-------------|
| 6 & 7 | 63°-51'-51" | 60°-53'-32" |



ALL HOLES IN WEB OF EXISTING BEAM TO BE FIELD DRILLED.

**REHABILITATION FOR  
FAI - 55/70 COMPLEX**  
 F.A.I. ROUTE TO ROADWAY H  
 OVER TRENDLEY AVE.  
 FRAMING PLAN  
 STRUCTURE NO. 082-0140  
 STA. 86+09.53 (FAI-70) ST. CLAIR CO.

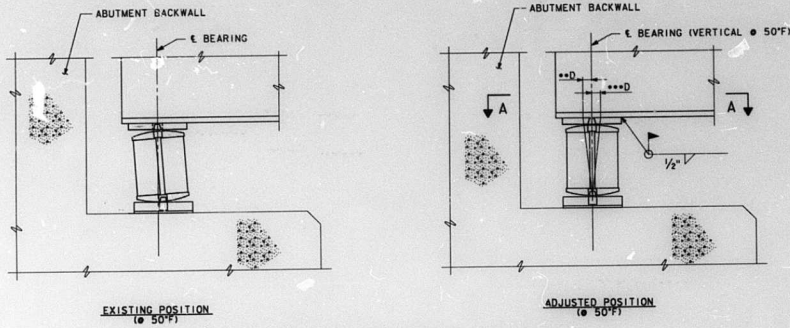
PREPARED BY:  
SYVERDRUP CORPORATION  
ST. LOUIS, MISSOURI

REV. 8/26/88

SHEET NO. 12 OF 22

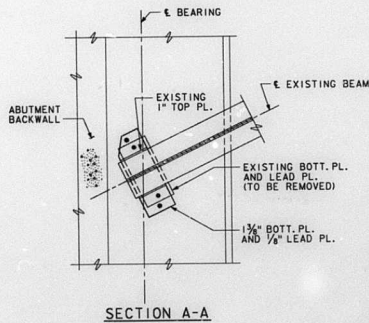
B.E. CARLSON  
DESIGNED  
P.W. CLARK  
CHECKED  
S. KAMMERER  
DRAWN  
R.V. BUTTERFIELD  
CHECKED





ABUTMENT EXPANSION BEARING REPOSITIONING

NOTE: \*\*D=1/4" PER 100' OF EXPANSION FOR EVERY 15' ABOVE 50°F  
 \*\*\*D=1/4" PER 100' OF EXPANSION FOR EVERY 15' BELOW 50°F



NOTES

ALL BEARINGS SHALL BE RESET AND JACKS REMOVED BEFORE START OF CONCRETE REMOVAL FOR THE SLAB MODIFICATIONS.

BEARINGS SHALL BE RESET AND JACKS REMOVED AT ONE ABUTMENT BEFORE JACKING BEGINS AT OTHER ABUTMENT.

THE WELDS ON THE EXISTING TOP PLATE SHALL BE REMOVED BY ARC COUAGING AND /OR GRINDING. CARE SHALL BE TAKEN TO AVOID DAMAGE TO THE BOTTOM FLANGE OF THE BEAM AND THE TOP PLATE. ANY UNAVOIDABLE COUGES IN THE FLANGE SHALL BE GROUND SMOOTH.

AFTER THE REMOVAL OF EXISTING WELDS ON THE TOP PLATE, THE WELD AREA SHALL BE CLEANED BY METHOD I IN ACCORDANCE WITH SECTION 509 OF THE STANDARD SPECIFICATIONS.

ADJUST THE ROCKER AND TOP PLATE AS SHOWN.

LOWER JACKS TO ALLOW CONTACT BETWEEN THE BOTTOM FLANGE AND THE TOP PLATE.

FIELD WELD THE TOP PLATE AS DETAILED.

LOWER JACKS TO FULLY LOAD THE BEARING.

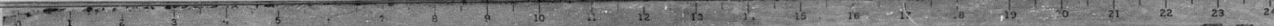
"JACK AND REPOSITIONING BEARINGS" IS REQUIRED ONLY IF "D" IS GREATER OR EQUAL TO 3/4" AT 50°F.

THE TOP PLATE MAY NOT BE REPOSITIONED CLOSER THAN 1/2" TO THE END OF THE BEAM, AS DIRECTED BY THE ENGINEER.

REHABILITATION FOR

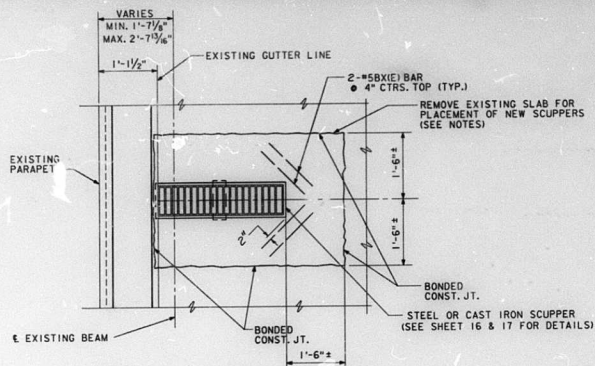
**FAI - 55/70 COMPLEX**  
**F.A.I. ROUTE TO ROADWAY H**  
**OVER TRENDLEY AVE.**  
**ABUTMENT EXPANSION BEARING**  
**MODIFICATIONS**  
 STRUCTURE NO. 082-0140  
 STA. 86+09.53 (FAI-70) ST. CLAIR CO.

|          |              |
|----------|--------------|
| DESIGNED | B.E. CARLSON |
| CHECKED  | P.W. CLARK   |
| CHECKED  | K. SCHULT    |
| DRAWN    | P.W. CLARK   |
| CHECKED  |              |



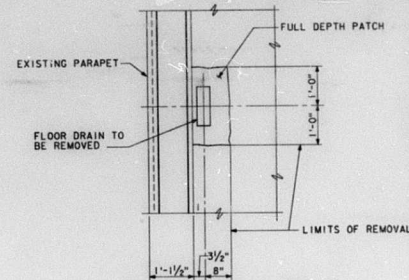
| ROUTE NO. | SECTION | JOINT     | SPCS. | FT. |
|-----------|---------|-----------|-------|-----|
| F.A.I. 70 | *       | ST. CLAIR | 320   | 191 |
| DRAWING   |         | PROJECT   |       |     |

\*B2-3HVB-2R-1



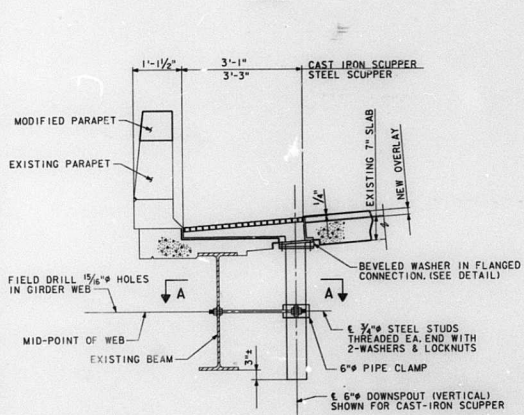
PLAN

**NOTES**  
REMOVE THE EXISTING SLAB TO THE LIMITS SHOWN WITHOUT DAMAGE TO EXISTING REINFORCEMENT BARS. EXISTING TRANSVERSE REINFORCEMENT BARS SHALL BE BENT TO MISS SCUPPER. LONGITUDINAL REINFORCEMENT BARS MAY BE CUT TO ACCOMMODATE SCUPPER AS REQUIRED. CLEAN EXISTING REINFORCEMENT BARS AND ADD NEW BX(E) BARS.  
REPLACE REMOVED CONCRETE WITH CLASS X CONCRETE TO THE LEVEL OF EXISTING CONCRETE. NEW CONCRETE IS TO ATTAIN FULL 28-DAY STRENGTH PRIOR TO PLACING OVERLAY.  
BILL OF MATERIAL FOR BX(E) BARS IS ON THE PARAPET JOINT SHEET (SEE SHEET 9 OF 22).



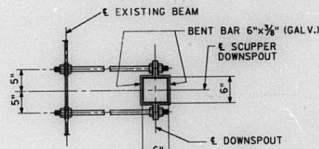
PLAN-FLOOR DRAIN REMOVAL

NOTE: FOR DETAILS OF FULL DEPTH PATCHING OF SLAB, SEE SHEET 9.



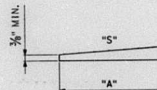
SECTION

NOTE: SQUARE PIPE CLAMP REQUIRED IF STEEL SCUPPER IS USED.



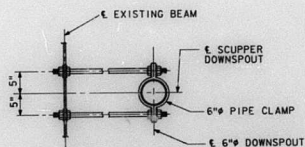
SECTION A-A

NOTE: PIPE CLAMP SHOWN FOR STEEL SCUPPER



BEVELED WASHER DETAIL

1. "S" EQUALS THE SLOPE OF THE SUPERELEVATION AT THE INDIVIDUAL SCUPPER LOCATIONS.
2. THE BEVEL SHALL BE SUFFICIENT TO ALLOW VERTICAL INSTALLATION OF DOWN-SPOUT.
3. DIMENSION "A" SHALL BE AS REQUIRED FOR THE PARTICULAR SCUPPER TYPE.



SECTION A-A

NOTE: PIPE CLAMP SHOWN FOR CAST-IRON SCUPPER

**DRAINAGE SCUPPER**

**BILL OF MATERIAL**

| ITEM              | UNIT | QUANTITY |
|-------------------|------|----------|
| DRAINAGE SCUPPERS | EACH | 4        |

NOTE: FOR SPACING OF DRAINAGE SCUPPERS, SEE SHEETS 9.

REHABILITATION FOR  
FAI - 55/70 COMPLEX  
F.A.I. ROUTE 70 ROADWAY H  
OVER TRENDLEY AVE.  
DECK REHABILITATION  
SCUPPER DETAILS

STRUCTURE NO. 082-0140

STA. 86+09.53 (FAI-70) ST. CLAIR CO.

SHEET NO. 15 OF 22

|          |                |
|----------|----------------|
| DESIGNED | B. CARLSON     |
| CHECKED  | R. BUTTERFIELD |
| DRAWN    | K. SCHULT      |
| CHECKED  | R. BUTTERFIELD |

PREPARED BY:  
SVERDRUP CORPORATION  
ST. LOUIS, MISSOURI

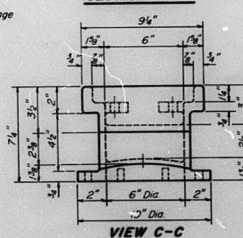
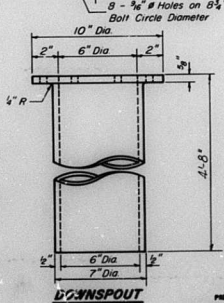
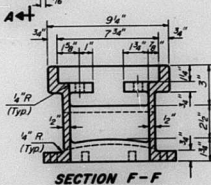
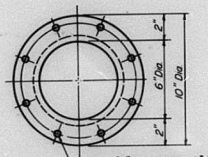
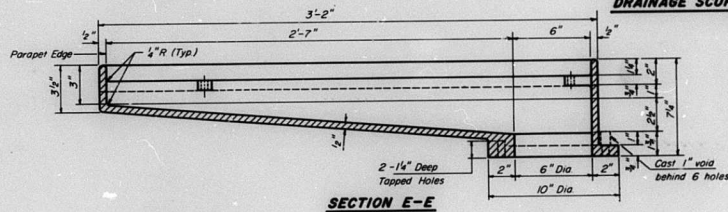
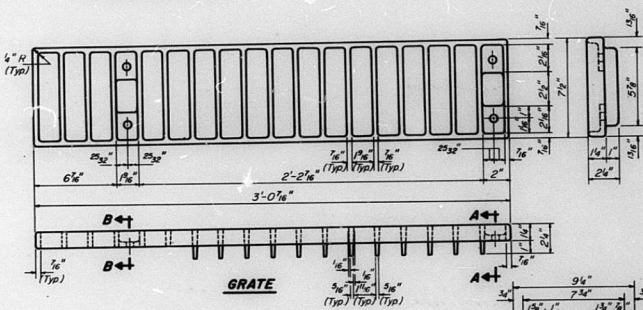
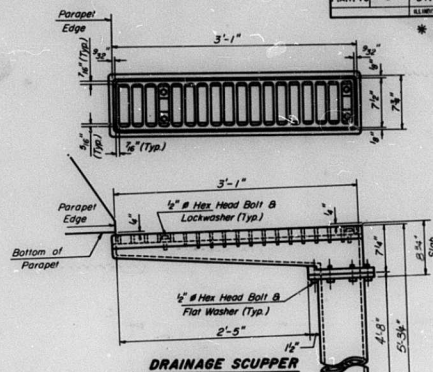
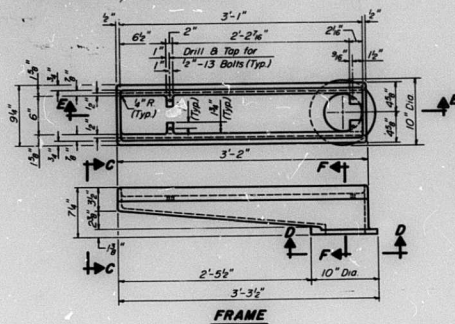
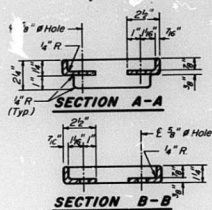




STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

|           |         |           |         |
|-----------|---------|-----------|---------|
| DATE      | SECTION | CONTRACT  | SHEET   |
| F.A.I. 70 | *       | ST. CLAIR | 320 193 |
| DRAWN     |         | PROJECT   |         |

\* B2-3HVB-2R-1



**Notes**

All cast iron parts shall be gray iron conforming to the requirements of AASHTO M-105, Class 30.

Bolts and washers shall conform to the requirements of A.S.T.M. A-307.

All bolts and washers shall be galvanized in accordance with A.A.S.H.T.O. M-232.

As an alternate bolts and washers may be stainless steel conforming to the requirements of A.S.T.M. A-193 Type 304.

Cost of the Grate, Frame, Downspout, bolts and washers including complete installation of Scupper shall be paid for at the unit bid price for "DRAINAGE SCUPPERS".

The Contractor may use at his option steel drainage scuppers or cast iron drainage scuppers.

|          |                |
|----------|----------------|
| DESIGNED | _____          |
| CHECKED  | _____          |
| FR       | _____          |
| DRAWN    | _____          |
| CHECKED  | R. Butterfield |

DS-4 12-1-83 (W.T. to inside of exterior stringer flange shall not be > 3'-11")

PREPARED BY:  
SVERDRUP CORPORATION  
ST. LOUIS, MISSOURI

REHABILITATION FOR  
FAI - 55/70 COMPLEX  
ALTERNATE-CAST IRON  
DRAINAGE SCUPPER

STRUCTURE NO. 082-0140  
STA. 86+09.53 (FAI-70) ST. CLAIR CO.

SHEET NO. 17 OF 22

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

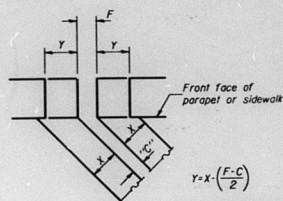
|           |         |           |       |
|-----------|---------|-----------|-------|
| ROUTE NO. | SECTION | COUNTY    | SHEET |
| F.A.I. 70 |         | ST. CLAIR | 320   |
| ALUMNS    | PROJECT |           | 194   |

# 82-3HVB-2R-1

| Joint Size | "C" at 50°F | "D" at 50°F | Location             |
|------------|-------------|-------------|----------------------|
| 2"         | 2"          | 1 1/2" Min. | North & South Abuts. |

**INSTALLATION NOTES**

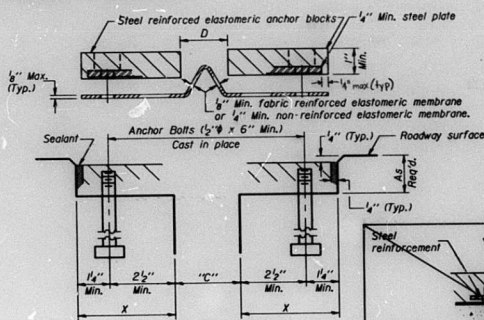
1. Install sponge mandrels into positions shown to form flap convolution.
2. Install parapet or sidewalk piece (trim roadway flap to fit before applying epoxy).
3. Install continuous seal in roadway.
4. Install anchor blocks as indicated.



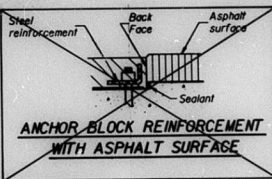
$$Y = X \left( \frac{F-C}{2} \right)$$

For dimension "F" see parapet detail.

**FORMING BLOCKOUT SKETCH**



**CROSS SECTION**



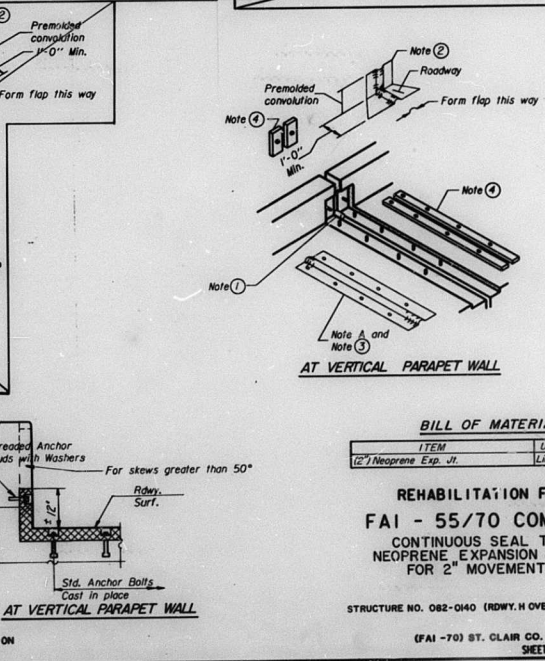
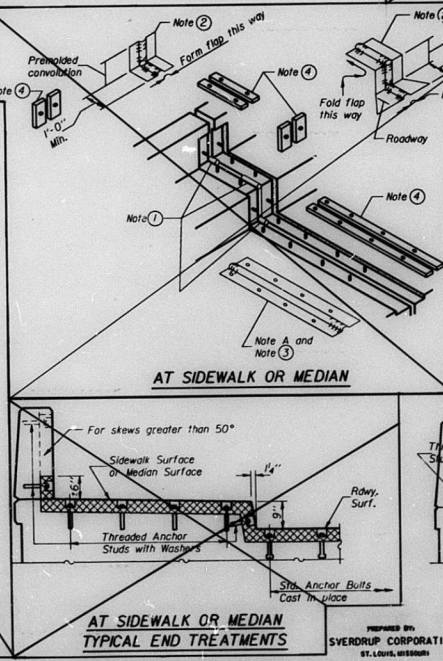
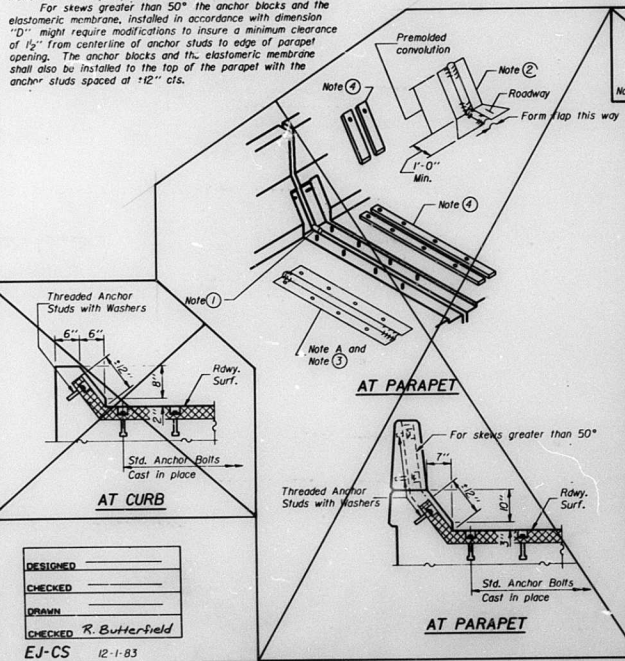
**ANCHOR-BLOCK REINFORCEMENT WITH ASPHALT SURFACE**

**GENERAL NOTES**

Continuous Seal Neoprene Expansion Joint shall consist of molded anchor blocks of elastomer and steel, field assembled over continuous lengths of elastomeric membrane. See Special Provisions.  
The elastomeric membrane shall be preformed with a single or a double upward convolution that will have a "memory" to return to its molded position upon joint closure.  
The steel reinforcement must extend up the back face of anchor blocks when asphalt surfaces are used but is optional in concrete blockout.  
The convolution length shall be such that the extended length will not be greater than the manufactured length when the joint is fully expanded in its design range and will not protrude above the anchor blocks when the joint is fully compressed.  
Joint openings shall be adjusted in accordance with Article 503.07(c) of the Standard Specifications when the deck is poured at an ambient temperature other than 50° F.  
The parapet and sidewalk flaps may be furnished factory vulcanized to the roadway membrane provided the centerline of the convolution is maintained and the process and method meet the approval of the Engineer.  
Anchor bolts, washers and nuts, to be plated against corrosion in accordance with the special provisions, shall be zinc-coated by the mechanical plating method conforming to ASTM B695, class 50. Zinc-coated nuts shall be topped overage in accordance with the requirements of AASHTO M29 and shall meet the supplementary requirements S11 thru S12.1 of the same specifications for treatment and testing.

**SKREW LIMITATIONS**

The details of the anchor blocks and the elastomeric membrane in the parapet, as shown, are for up to 50° skew. For skew greater than 50° the anchor blocks and the elastomeric membrane, installed in accordance with dimension "D" might require modifications to insure a minimum clearance of 1/2" from centerline of anchor studs to edge of parapet opening. The anchor blocks and the elastomeric membrane shall also be installed to the top of the parapet with the anchor studs spaced at 12" cts.



**BILL OF MATERIAL**

| ITEM                  | UNIT     | QUANTITY |
|-----------------------|----------|----------|
| (2) Neoprene Exp. Jt. | Lin. Ft. | 174      |

**REHABILITATION FOR  
FAI - 55/70 COMPLEX  
CONTINUOUS SEAL TYPE  
NEOPRENE EXPANSION JOINT  
FOR 2" MOVEMENT**

STRUCTURE NO. 082-040 (RDWY. H OVER TRENDLEY AVE.)

(FAI - 70) ST. CLAIR CO.  
SHEET NO. 18 OF 22

DESIGNED \_\_\_\_\_  
CHECKED \_\_\_\_\_  
DRAWN \_\_\_\_\_  
CHECKED R. Butterfield

EJ-CS 12-1-83

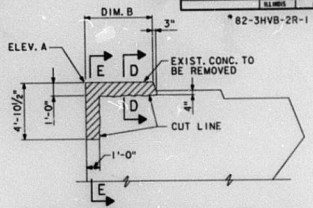
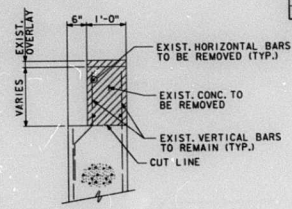
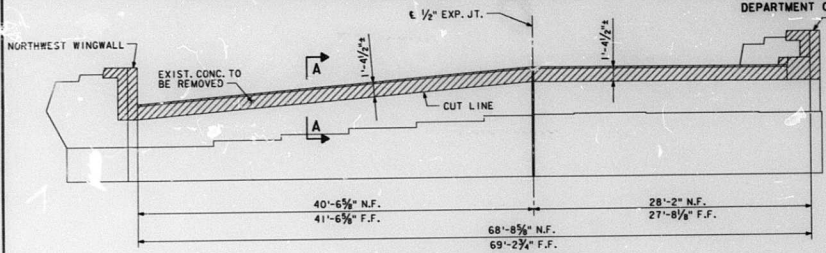
PREPARED BY  
SYVERDRUP CORPORATION  
ST. LOUIS, MISSOURI



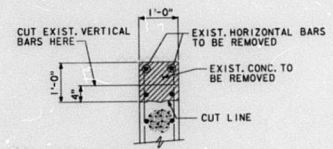
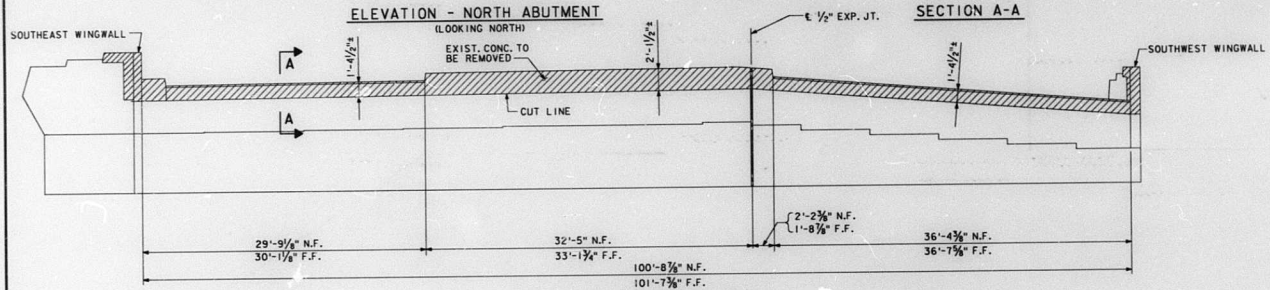
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
NORTHEAST WINGWALL

| LOCATION      | ELEV. A | DIM. B |
|---------------|---------|--------|
| N.W. WINGWALL | 435.43  | 3'-8"  |
| N.E. WINGWALL | 438.39  | 5'-2"  |
| S.E. WINGWALL | 441.07  | 5'-2"  |
| S.W. WINGWALL | 438.41  | 3'-8"  |

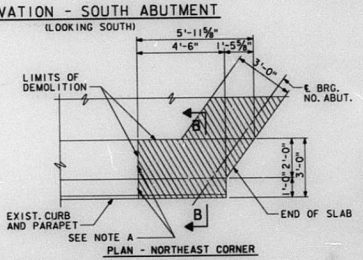
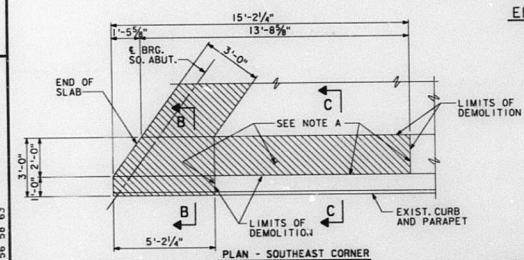
| DATE      | NO. | SECTION   | COUNT | SHEET | OF |
|-----------|-----|-----------|-------|-------|----|
| F.A.I. 70 | *   | ST. CLAIR | 320   | 195   |    |



**ELEVATION - WINGWALL DEMOLITION**  
NOTE: NORTHEAST (OR SOUTHWEST) WINGWALL SHOWN, NORTHWEST (OR SOUTHEAST) WINGWALL SIMILAR BUT OPPOSITE HAND. HORIZONTAL DIMENSIONS MEASURED ALONG INSIDE FACE OF WINGWALL.

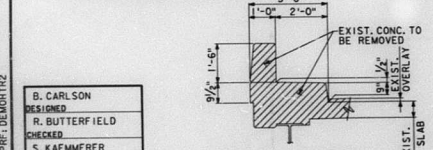


**SECTION D-D**



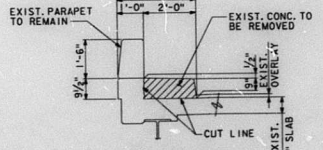
**EAST CURB AND PARAPET DEMOLITION**

NOTE A: EXISTING REINFORCEMENT TO BE REMOVED 1" INTO EXISTING CONCRETE. CONCRETE SHALL BE PATCHED BEFORE PLACING NEW PARAPET AND BITUMINOUS CONCRETE PARAPET TRANSITION.



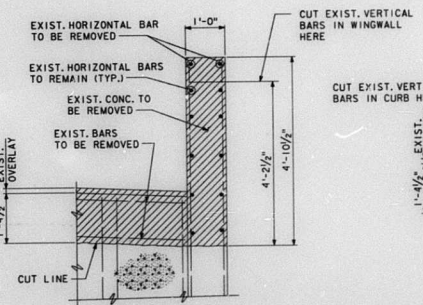
**SECTION B-B**

NOTE: REINFORCEMENT NOT SHOWN.



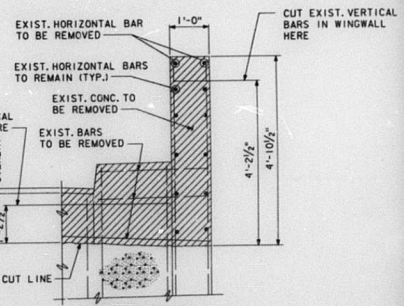
**SECTION C-C**

NOTE: REINFORCEMENT NOT SHOWN.



**SECTION E-E**

NOTE: SOUTHWEST WINGWALL SHOWN, NORTHWEST WINGWALL SIMILAR BUT OPPOSITE HAND.



**SECTION E-E**

NOTE: NORTHEAST WINGWALL SHOWN, SOUTHWEST WINGWALL SIMILAR BUT OPPOSITE HAND.

**REHABILITATION FOR  
FAI - 55/70 COMPLEX**  
F.A.I. ROUTE TO ROADWAY H  
OVER TRENDLEY AVE.  
DEMOLITION DETAILS

**NOTES**  
REMOVE EXISTING HANDRAIL TO DEMOLITION LINE OF EXISTING PARAPETS.  
RELOCATE EXISTING RAIL POST FOR EXISTING HANDRAIL, FOR DETAIL SEE SHEET 11.  
REMOVAL OF HANDRAIL IS INCIDENTAL TO CONCRETE REMOVAL.  
FOR CONCRETE REMOVAL QUANTITY, SEE SHEET 5.  
N.F. INDICATES NEAR FACE.  
F.F. INDICATES FAR FACE.

PREPARED BY  
**SVERDRUP CORPORATION**  
ST. LOUIS, MISSOURI

STRUCTURE NO. 082-0140  
STA. 86+09.53 (FAI-70) ST. CLAIR CO.

SHEET NO. 19 OF 22

|                |          |
|----------------|----------|
| B. CARLSON     | DESIGNED |
| R. BUTTERFIELD | CHECKED  |
| S. KAEMMERER   | DRAWN    |
| R. BUTTERFIELD | CHECKED  |

815483 | PPF. DEMOLITION | 35 54 56 58 63

ELEV 434.93 (N.W. WINGWALL)  
ELEV 437.88 (N.E. WINGWALL)  
ELEV 440.56 (S.E. WINGWALL)  
ELEV 437.89 (S.W. WINGWALL)

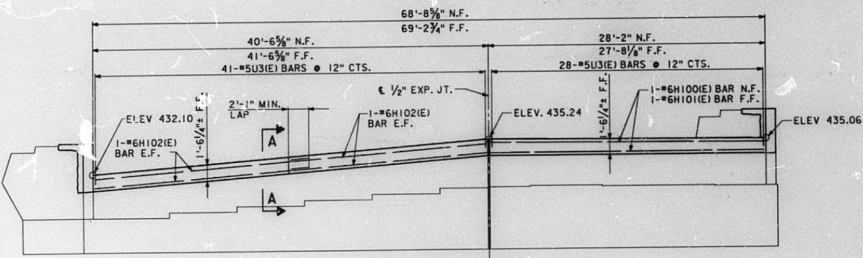
3'-10 1/2" N.W. & S.W. WINGWALLS  
5'-4 3/4" N.E. & S.E. WINGWALLS

| DRAWING NO.    | SECTION | COUNT       | SIZE | REQ. |
|----------------|---------|-------------|------|------|
| F.A.I. 70      | *       | ST. CL. AIR | 320  | 196  |
| * 82-3HWB-2R-1 |         |             |      |      |

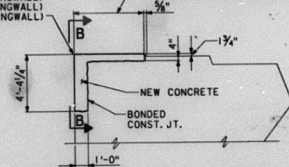
**BILL OF MATERIAL**

| NORTH & SOUTH ABUTMENT            |     |      |          |       |
|-----------------------------------|-----|------|----------|-------|
| BAR                               | NO. | SIZE | LENGTH   | SHAPE |
| H100(E)                           | 2   | #6   | 27'-11"  | ===== |
| H101(E)                           | 2   | #6   | 27'-5"   | ===== |
| H102(E)                           | 8   | #6   | 21'-9"   | ===== |
| H103(E)                           | 8   | #6   | 32'-7"   | ===== |
| H104(E)                           | 8   | #6   | 20'-3"   | ===== |
| U3(E)                             | 171 | #5   | 1'-11"   | □     |
| CLASS X CONCRETE SUPERSTRUCTURE   |     |      | CU. YDS. | 10.5  |
| REINFORCEMENT BARS (EPOXY COATED) |     |      | LBS.     | 1400  |

REINFORCEMENT BARS MARKED (E) SHALL BE EPOXY COATED.

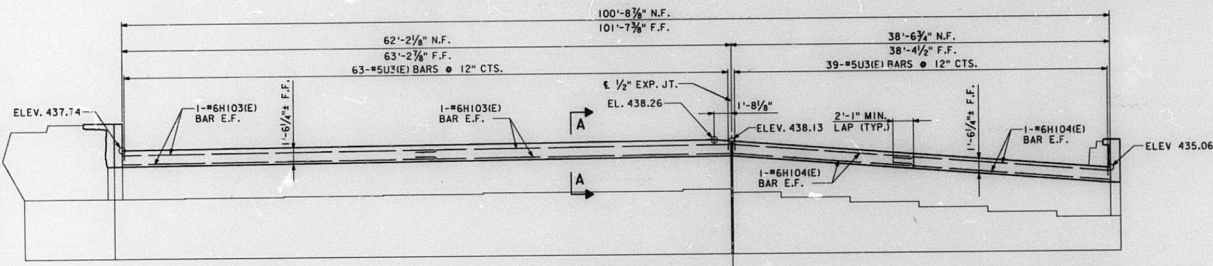


**ELEVATION - NORTH ABUTMENT**  
(LOOKING NORTH)



**ELEVATION - WINGWALL MODIFICATION**

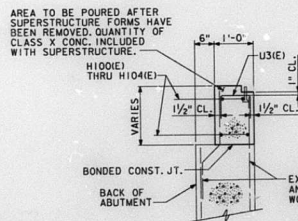
NOTE: NORTHEAST (OR SOUTHWEST) WINGWALL SHOWN, NORTHWEST (OR SOUTHEAST) WINGWALL SIMILAR BUT OPPOSITE HAND.  
CLEAN AND INCORPORATE EXIST. REINF. INTO NEW WORK. (COST INCIDENTAL).  
EXIST. REINF. TO BE CUT OR BENT FOR INSTALLATION OF EXPANSION JOINT AT ABUTMENT.  
HORIZONTAL DIMENSIONS MEASURED ALONG INSIDE FACE OF WINGWALL.



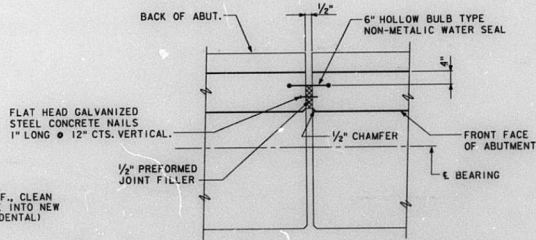
**ELEVATION - SOUTH ABUTMENT**  
(LOOKING SOUTH)



**BAR U3(E)**

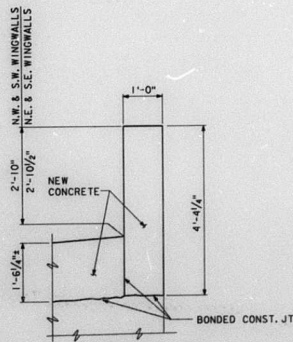


**SECTION A-A**



**EXPANSION JOINT DETAIL**

NOTE: REINFORCEMENT NOT TO PASS THRU JOINT.  
COST OF EXPANSION JOINT INCIDENTAL TO CLASS X CONCRETE.



**VIEW B-B**

NOTE: NORTHEAST (OR SOUTHWEST) WINGWALL SHOWN, NORTHWEST (OR SOUTHEAST) WINGWALL SIMILAR BUT OPPOSITE HAND.

**NOTES**

N.F. INDICATES NEAR FACE.  
F.F. INDICATES FAR FACE.  
E.F. INDICATES EACH FACE.

REHABILITATION FOR  
FAI - 55/70 COMPLEX  
F.A.I. ROUTE 70 ROADWAY H  
OVER TRENDLEY AVE.  
ABUTMENT MODIFICATIONS

STRUCTURE NO. 082-0140  
STA. 86+09.53 (FAI-70) ST. CLAIR CO.

|          |                |
|----------|----------------|
| DESIGNED | B. CARLSON     |
| CHECKED  | R. BUTTERFIELD |
| DRAWN    | S. KAEMMERER   |
| CHECKED  | R. BUTTERFIELD |

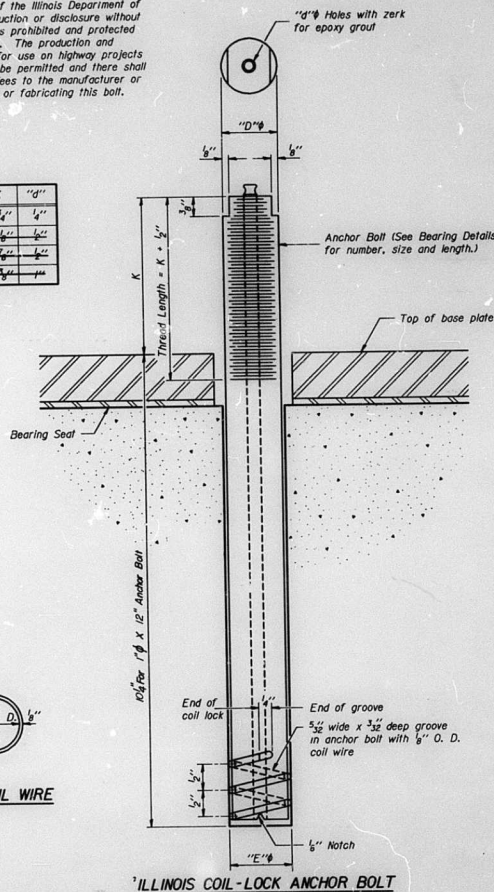
PREPARED BY:  
SVERDRUP CORPORATION  
ST. LOUIS, MISSOURI

SHEET NO. 20 OF 22

φ 82-3HVB-2R-1

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

| D      | E    | H      | K      | "d"    |
|--------|------|--------|--------|--------|
| 1"     | 1/8" | 1/2"   | 1 3/4" | 1/2"   |
| 1 1/2" | 1/4" | 3/4"   | 2 1/4" | 3/4"   |
| 2"     | 3/8" | 1"     | 3 1/4" | 1"     |
| 2 1/2" | 1/2" | 1 1/4" | 4 1/4" | 1 1/4" |



ILLINOIS COIL-LOCK ANCHOR BOLT

**MATERIALS FOR ILLINOIS COIL-LOCK ANCHOR BOLT**

The anchor bolt shall be fabricated from cold drawn or hot finished seamless carbon steel mechanical tubing conforming to ASTM A59, Grade D26 and supplied with hexagonal nuts and coil washers.  
The coil wire shall be made of any suitable soft steel wire.  
The finished anchor bolt shall be cleaned of rust and other foreign materials and wrapped or packaged to prevent contamination until they are installed.  
The epoxy grout shall be a two-component, epoxy resin bonding system conforming to ASTM C881, Type I, Grade I and of a Class suitable for the temperature of installation.

**INSTALLATION PROCEDURE for the ILLINOIS COIL-LOCK ANCHOR BOLT**

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

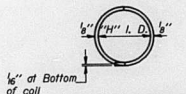
**ALTERNATE ANCHOR BOLTS**

The Contractor may use, at his option, the capsule or the adhesive cartridge type anchor rods that have been previously tested and given a prior approval by the Department. The Contractor shall install these anchor rods in pre-drilled holes in accordance with the manufacturer's recommendations and procedures.  
The capsule or the adhesive cartridge type anchor rods shall be a two part system composed of:  
1. A threaded rod stud with nut and washer conforming to ASTM A307.  
2. A sealed glass capsule or a sealed glass adhesive cartridge containing premeasured amounts of the adhesive chemical.

**GENERAL NOTES**

Holes in the masonry for anchor bolts shall be drilled to the diameter and depth shown or in accordance with the manufacturer's recommendation prior to removal of the existing bearing elements.  
Prior to setting the bolts, the holes shall be dry and all dust and loose particles shall be removed by the use of compressed air or vacuuming.  
Installation of the Anchor Bolts shall be included in the unit bid price for "Erecting Structural Steel".  
Furnishing of anchor bolts, epoxy grout or capsules, hexagonal nuts and washers is not part of this Contract. See Special Provisions.

Anchor bolts, nuts and washers shall be completely coated by either the hot-dipped process conforming with AASHTO M232 or the mechanical plating method conforming to ASTM B695, Class 50. Zinc coated nuts shall be tapered oversize in accordance with the requirements of AASHTO M291 and shall meet the supplementary requirements S1.1 thru S1.2.1 of the same specifications for hot-dip and testing.



FLAN-COIL WIRE

|          |                |
|----------|----------------|
| DESIGNED | _____          |
| CHECKED  | _____          |
| DRAWN    | _____          |
| CHECKED  | R. Butterfield |

ABB-1 12-1-83

REHABILITATION FOR  
FAI - 55/70 COMPLEX  
ANCHOR BOLT DETAILS FOR BEARING

STRUCTURE NO. 082-0140  
STA. 86+09.53 (FAI-70) ST. CLAIR CO.

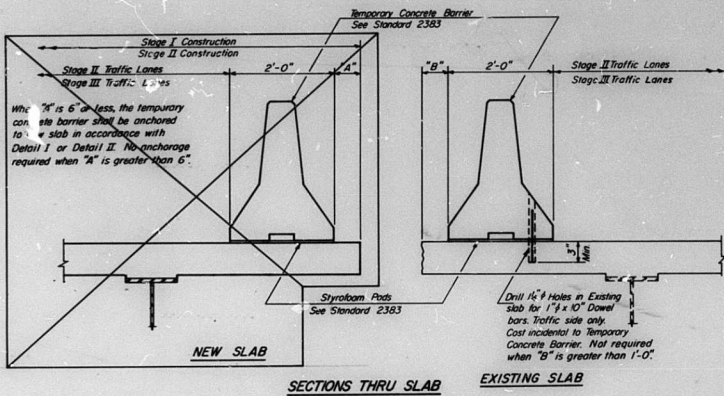
PREPARED BY  
SVERDRUP CORPORATION  
ST. LOUIS, MISSOURI

SHEET NO. 21 OF 22

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

| DISTRICT  | SECTION | COUNTY    | SHEET   | TOTAL |
|-----------|---------|-----------|---------|-------|
| F.A.I. 70 | *       | ST. CLAIR | 320     | 198   |
|           |         | ALIGNED   | PROJECT |       |

\* B2-34VB-2R-1

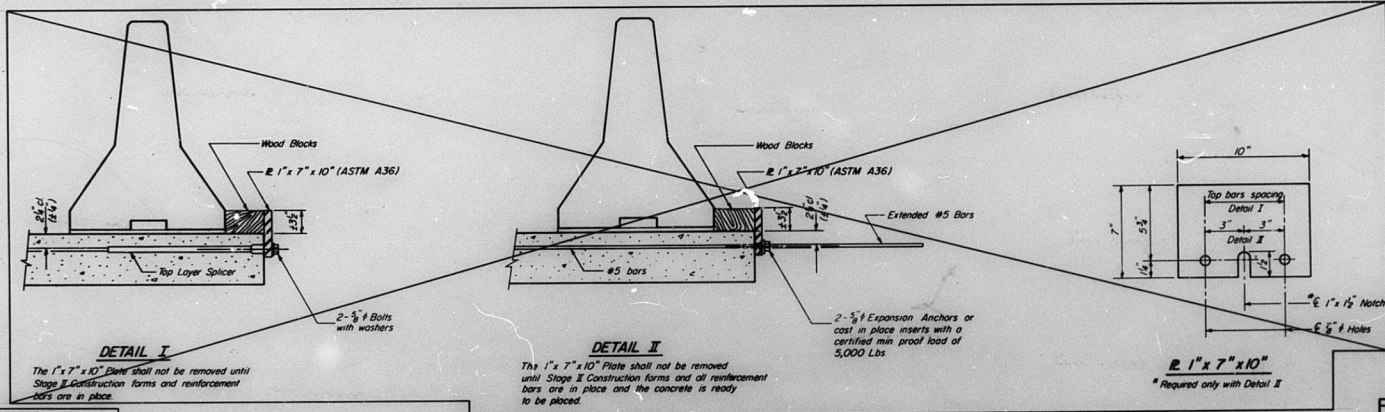


**NOTES**

**Detail I - With Bar Splicer or Couplers:**  
Connect one (1) 1" x 7" x 10" steel E to the top layer of couplers with 2-3/8" bolts spaced to coupler at approximate E of each 10'-0" barrier panel.

**Detail II - With Extended Reinforcement Bars:**  
Connect one (1) 1" x 7" x 10" steel E to the concrete slab with 2-3/8" expansion anchors or cast in place inserts spaced between the top layer of reinforcement at approximate E of each 10'-0" barrier panel.  
Cost of anchorage is incidental to Temporary Concrete Barrier.

For Temporary Concrete Barrier, see Roadway Plans.  
For Location of "Temporary Concrete Barriers", see Sheet 3.



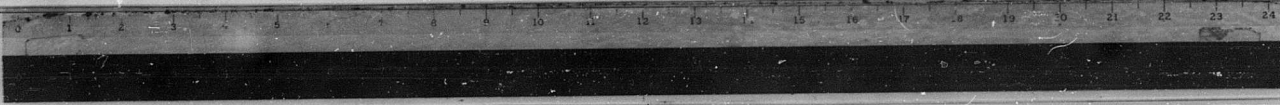
DESIGNED \_\_\_\_\_  
CHECKED \_\_\_\_\_  
DRAWN \_\_\_\_\_  
CHECKED R. Butterfield  
R-27 6-13-83

REHABILITATION FOR  
FAI - 55/70 COMPLEX  
TEMPORARY CONCRETE BARRIER  
FOR STAGE CONSTRUCTION

STRUCTURE NO. 082-0140  
STA. 86+09.53 (FAI-70) ST. CLAIR CO.

PREPARED BY:  
SVERDRUP CORPORATION  
ST. LOUIS, MISSOURI

SHEET NO. 22 OF 22



S.M.# 6 Elev 415.721  
 R.R. spike in East Face of Tower Pile  
 on N.W. Corner of 5th St & Trendley Ave.

Timber piles supporting approach  
 slab at midspan.

HORIZONTAL CURVE DATA

ROADWAY "H"  
 R = 800.00  
 Δ = 36° 57' 31"  
 D = 31.09 + 1  
 L = 1,173.19'  
 T = 207.52'  
 E = 93.53  
 PC = 11+41.00  
 PT = 88+84.19

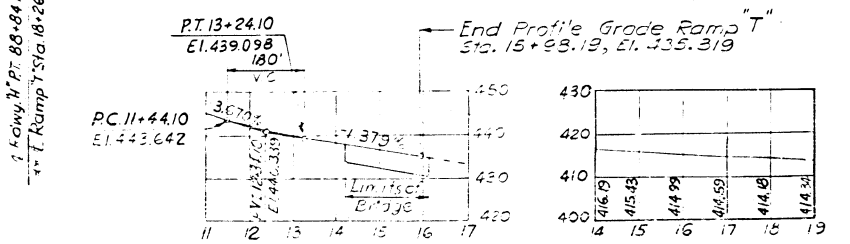
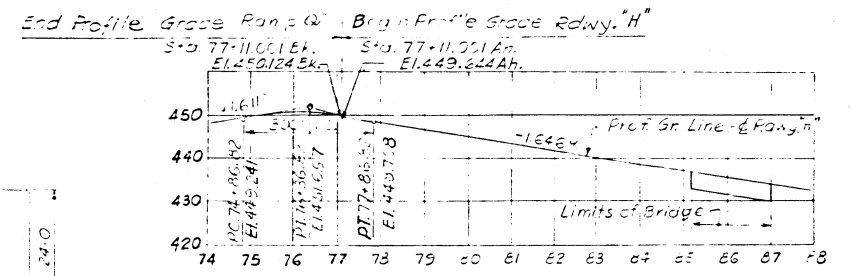
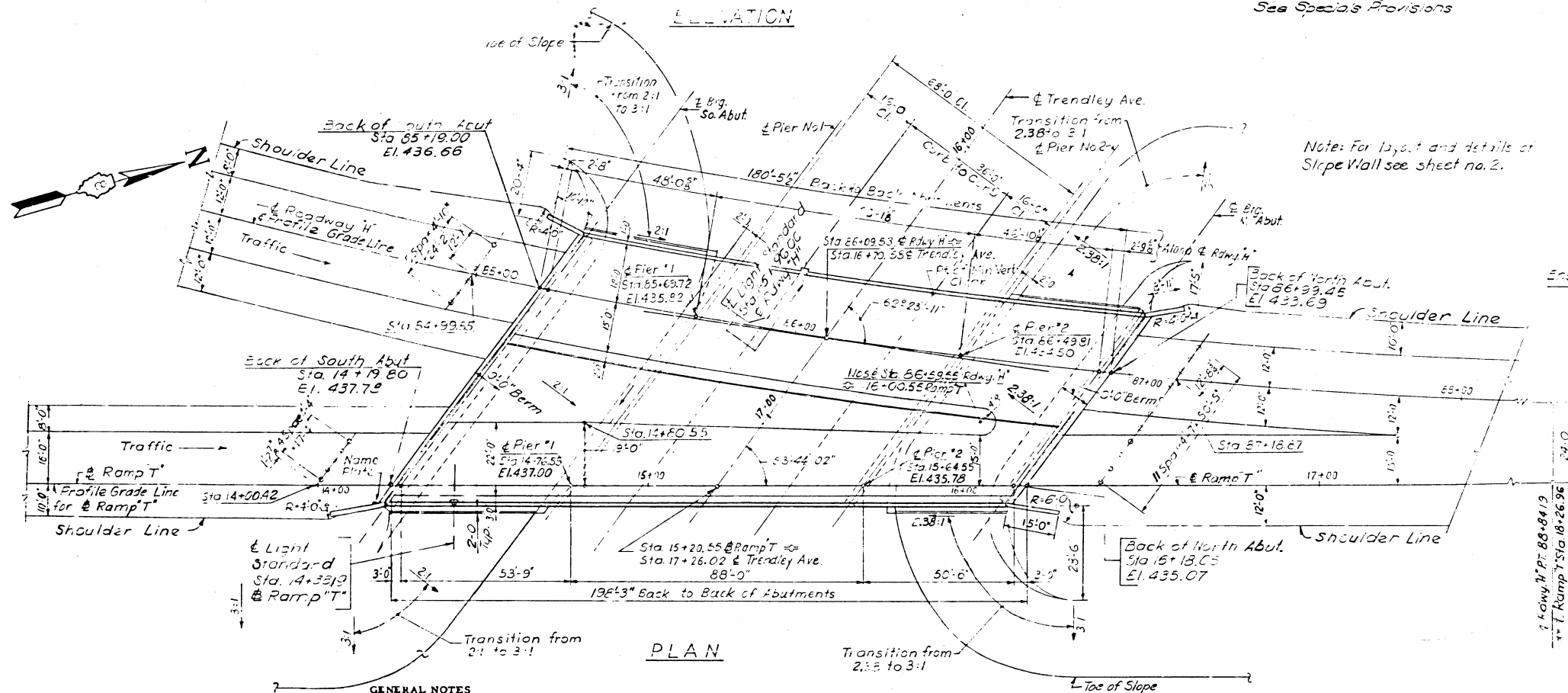
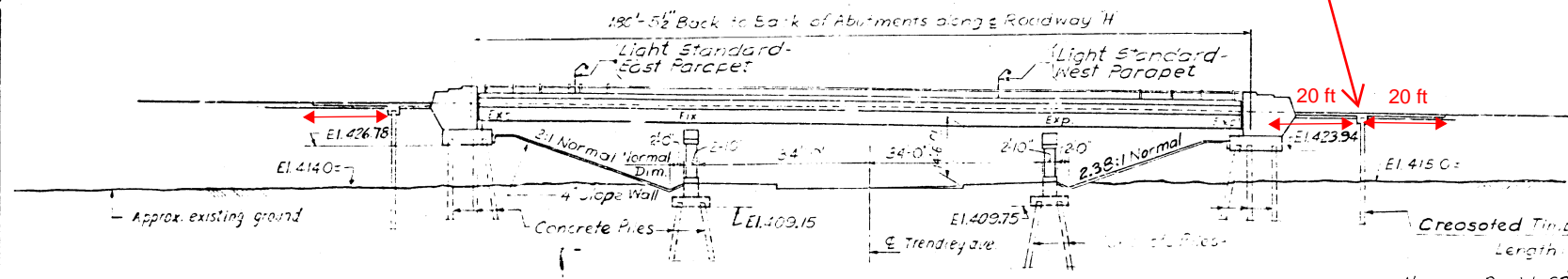
| ROUTE NO.   | SECTION | COUNTY    | TOTAL SHEETS | SHEET NO. |
|-------------|---------|-----------|--------------|-----------|
| F.A.I. - 70 | 82-4HB  | ST. CLAIR | 77           | 49        |

FED. ROAD DIV. NO. 1 ILLINOIS PROJECT 7-70-1(77)

TOTAL BILL OF MATERIALS

| Item                                  | Unit     | Section 82-4HB  |               |         |
|---------------------------------------|----------|-----------------|---------------|---------|
|                                       |          | Super-Structure | Sub-Structure |         |
| Class "A" Excavation for Structures   | Cu Yds.  | —               | 429           | 429     |
| Class "X" Concrete                    | Cu Yds.  | 397.7           | 520.9         | 918.6   |
| Protective Coat                       | Sq Yds.  | 1631            | —             | 1631    |
| Form & Erecting Structural Steel      | Lbs.     | 415,540         | —             | 415,540 |
| Reinforcement Bars                    | Lbs.     | 105,220         | 48,920        | 152,140 |
| Slope Wall 4"                         | Sq Yds.  | —               | 901           | 901     |
| Form. Creosoted Piles 2 1/2" x 3 1/2" | Lin Ft.  | —               | 654           | 654     |
| Driving Timber Piles                  | Lin Ft.  | —               | 654           | 654     |
| Driving Concrete Piles                | Lin Ft.  | —               | 6429          | 6429    |
| Form. Concrete Piles                  | Lin Ft.  | —               | 6429          | 6429    |
| Test Piles Concrete                   | Each     | —               | 4             | 4       |
| Name Plates                           | Each     | —               | 1             | 1       |
| Aluminum Handrail                     | L.F.     | 372             | —             | 372     |
| ** Bridge Seat Sealant                | Lump Sum | —               | 0.4           | 0.4     |

\* Class "A" Excavation for Structures includes excavation for Slope Wall  
 \*\* Bridge Seat Sealant to be used at both Abutments.



EXISTING PROFILE - TRENDLEY AVE.

**GENERAL NOTES**

COARSE AGGREGATE TO BE USED IN PARAPET HANDRAILS AND END POSTS SHALL BE ABSOLUTELY FREE OF CHERT, FLINT, LIMONITE, LIGNITE AND SOFT SANDSTONE.

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" X 6" MESH, WEIGHING 58# PER 100 SQ. FT.

ALL REINFORCEMENT BARS SHALL BE LAPPED 20 DIAMETERS MINIMUM UNLESS OTHERWISE SHOWN.

PERMANENT FORMS WILL NOT BE PERMITTED IN FORMING THE CONCRETE FLOOR.

RIVETS 3/4" #, OPEN HOLES 1 1/2" # UNLESS OTHERWISE NOTED.

ANCHOR BOLTS SHALL BE SET BEFORE RIVETING DIAPHRAGMS OVER SUPPORTS.

ALL STRUCTURAL STEEL SHALL CONFORM TO A. S. T. M. DESIGNATION A-36.

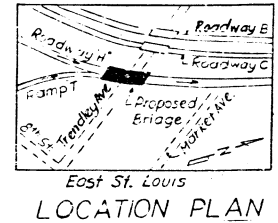
THE EXPOSED SURFACES OF THE EXPANSION GUARD SHALL BE GIVEN TWO SHOP COATS OF RED LEAD PAINT, THE CONTACT SURFACES SHALL BE GIVEN ONE COAT OF RED LEAD PAINT. ANCHOR STUDS SHALL NOT BE PAINTED.

EXPANSION GUARDS ARE INCLUDED IN THE QUANTITY OF STRUCTURAL STEEL. ESTIMATED WEIGHT 3575 LBS.

EXCEPT AS OTHERWISE PROVIDED ALL STRUCTURAL STEEL SHALL RECEIVE ONE SHOP COAT OF RED LEAD PAINT AND TWO FIELD COATS OF GREEN PAINT. SEE ARTICLES 56.1 TO 56.5 INCLUSIVE OF THE STANDARD SPECIFICATIONS.

THE CONTRACTOR SHALL DRIVE ONE CONCRETE TEST PILE IN A PERMANENT LOCATION AT EACH ABUTMENT AND ONE AT EACH PIER AS DIRECTED BY THE ENGINEER BEFORE ORDERING THE REMAINDER OF PILES.

CONCRETE PILES AT BOTH ABUTMENTS SHALL BE DRIVEN IN HOLES PRECURED THROUGH THE EMBANKMENT IN ACCORDANCE WITH ARTICLE 60.9 (c) OF THE STANDARD SPECIFICATIONS.



**DESIGN STRESSES**

$f_c = 14,000$  psi Super & Substruct.  
 $f_s = 20,000$  psi Struct (A-36)  
 $f_s = 20,000$  psi Reinf.  
 $v = 75$  psi Footings  
 $n = 10$

**LOADING: HS20-44#**

Required Capacity of Piles  
 South Abut. = 31 Tons  
 North Abut. = 32 Tons  
 Pier #1 = 35 Tons  
 Pier #2 = 35 Tons

STATE OF ILLINOIS  
 DEPARTMENT OF PUBLIC WORKS  
 DIVISION OF HIGHWAYS

**GENERAL PLAN**  
 F.A.I. ROUTE 70 ROADWAY "H"  
 OVER TRENDLEY AVE.  
 STATION 86 + 09.53

F.A.I. RT. 70 ST. CLAIR CO. SECTION 82-4HB

H. W. LOCHNER, INC.  
 ENGINEERS  
 CHICAGO, ILLINOIS

SHEET 1 OF 17

DESIGNED BY P.X.  
 DRAWN BY J.W.  
 CHECKED BY O.P.  
 APPROVED BY K.A.



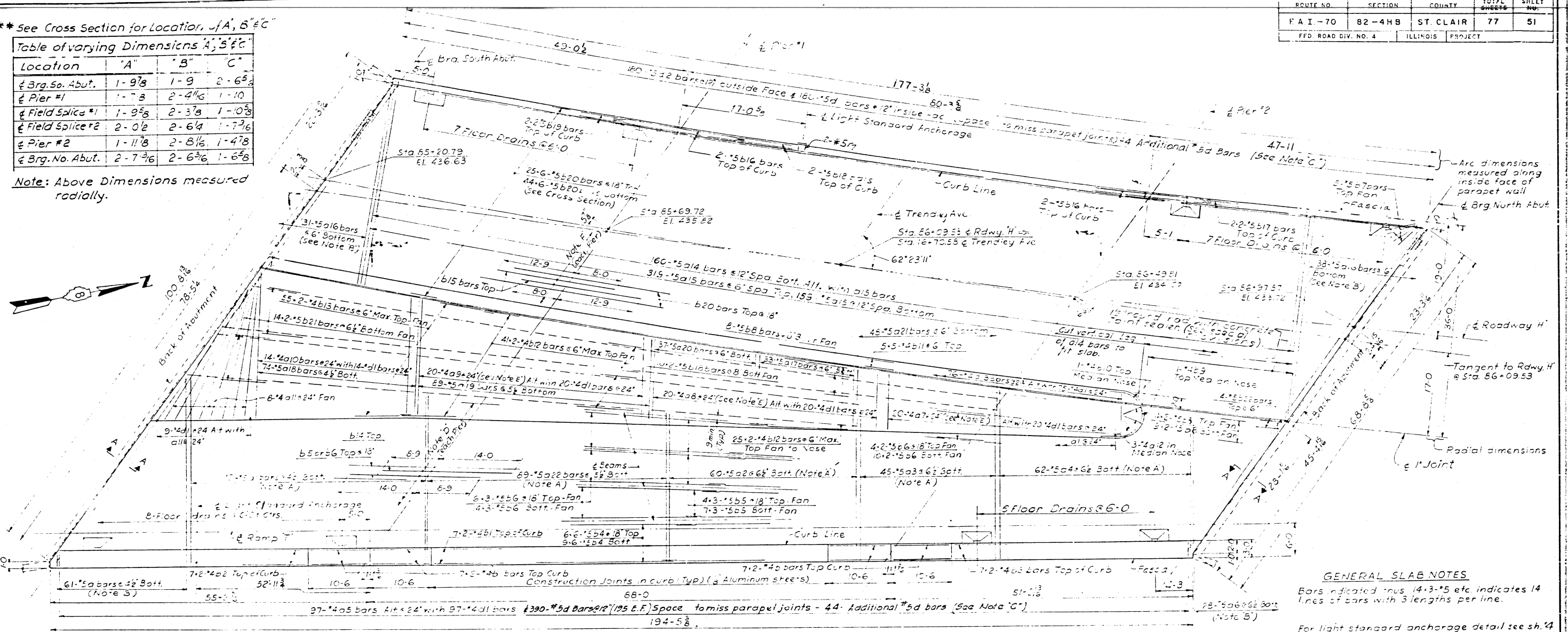


\*\* See Cross Section for Location, A, B, C

Table of Varying Dimensions A, B, C

| Location          | A                                | B                               | C                               |
|-------------------|----------------------------------|---------------------------------|---------------------------------|
| ± Brg. So. Abut.  | 1-9 <sup>3</sup> / <sub>8</sub>  | 1-9                             | 2-6 <sup>5</sup> / <sub>8</sub> |
| ± Pier #1         | 1-7 <sup>3</sup> / <sub>8</sub>  | 2-4 <sup>1</sup> / <sub>8</sub> | 1-10                            |
| ± Field Splice #1 | 1-9 <sup>5</sup> / <sub>8</sub>  | 2-3 <sup>7</sup> / <sub>8</sub> | 1-0 <sup>3</sup> / <sub>8</sub> |
| ± Field Splice #2 | 2-0 <sup>2</sup> / <sub>8</sub>  | 2-6 <sup>4</sup> / <sub>8</sub> | 1-7 <sup>7</sup> / <sub>8</sub> |
| ± Pier #2         | 1-11 <sup>3</sup> / <sub>8</sub> | 2-8 <sup>1</sup> / <sub>8</sub> | 1-4 <sup>7</sup> / <sub>8</sub> |
| ± Brg. No. Abut.  | 2-7 <sup>3</sup> / <sub>8</sub>  | 2-6 <sup>3</sup> / <sub>8</sub> | 1-6 <sup>5</sup> / <sub>8</sub> |

Note: Above Dimensions measured radially.

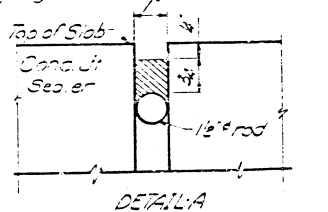


PLAN

**GENERAL SLAB NOTES**  
 Bars indicated thus 14-3-5 etc. indicates 14 lines of bars with 3 lengths per line.

For light standard anchorage detail see sh. 4  
 For parapet reinforcing, handrail post & joint spacing see sheet #5

For Section A-A and Layout Diagram see sheet #9



For rod and sealer see special provisions

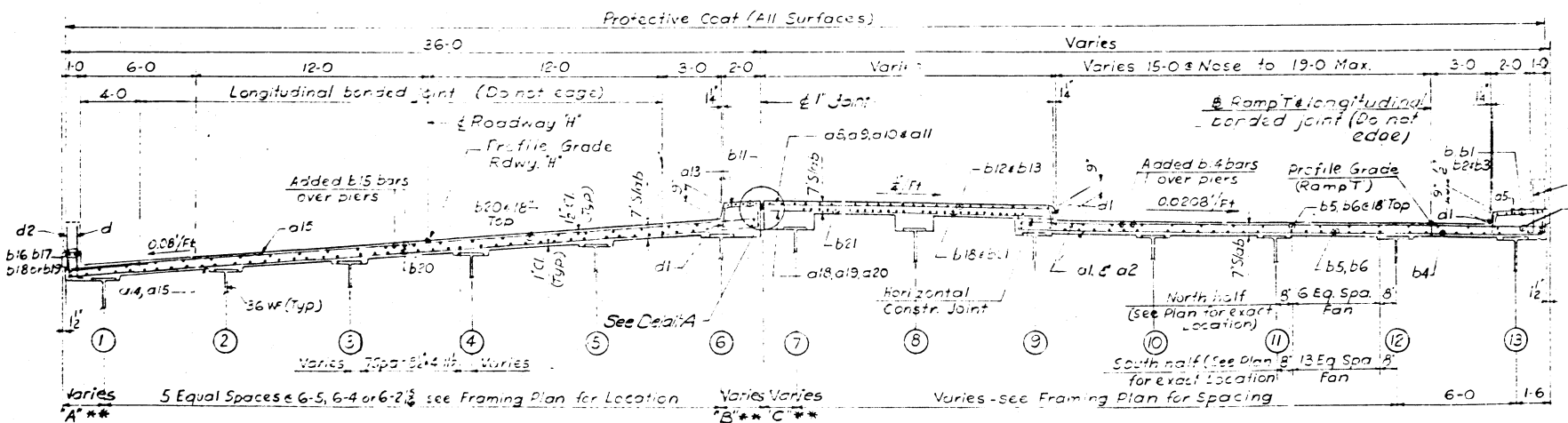
**NOTE A**  
 Order bottom bars full length, cut in shop and use remainder of bars in top of slab. See bar cutting diagram.

**NOTE B**  
 Order bottom bars full length, cut in field and use remainder of bars in top of slab. See bar cutting diagram.

**NOTE C**  
 2 additional #5d bars inside face of parapet at each handrail post. See detail sheet No. 4

**NOTE D**  
 21-#5a4 bars @ max. top spaced between b10 bars over Pier #1.  
 35-#5a14 bars @ max. top spaced between b50 bars over Pier #2.

**NOTE E**  
 48-#5b15 bars @ max. top spaced between b20 bars over Piers #1 & #2 West of open joint.



CROSS SECTION  
 (Looking North)

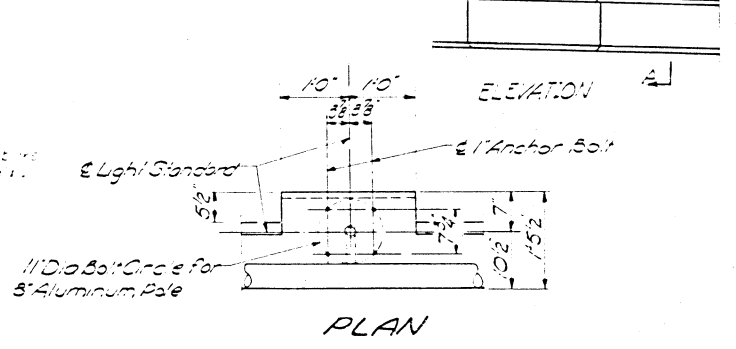
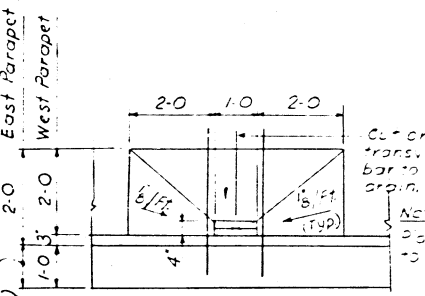
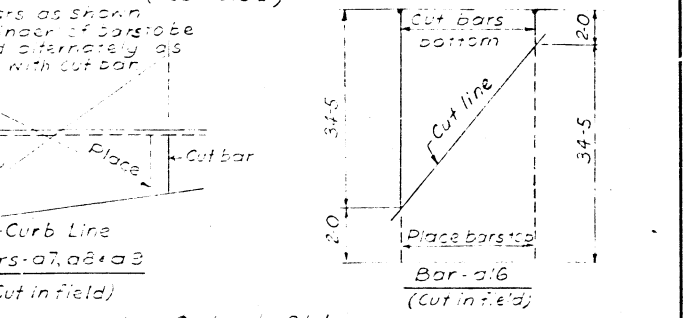
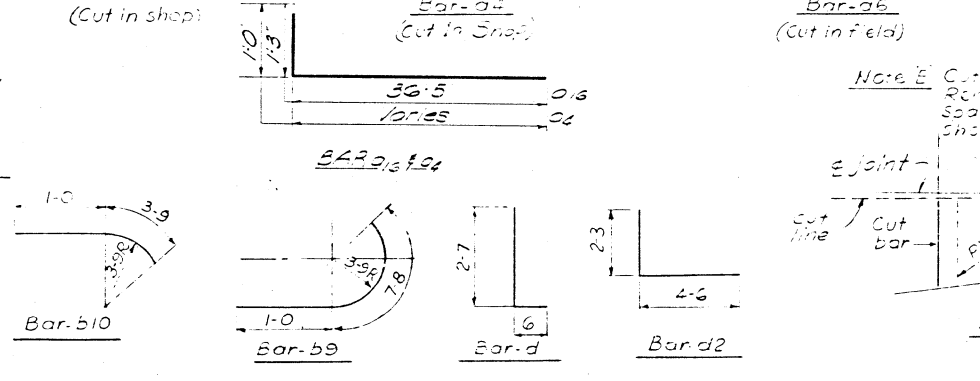
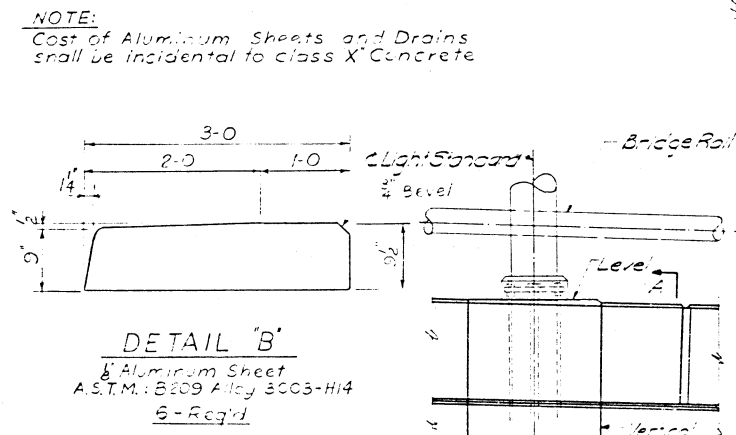
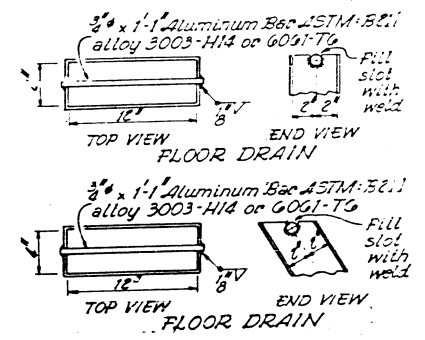
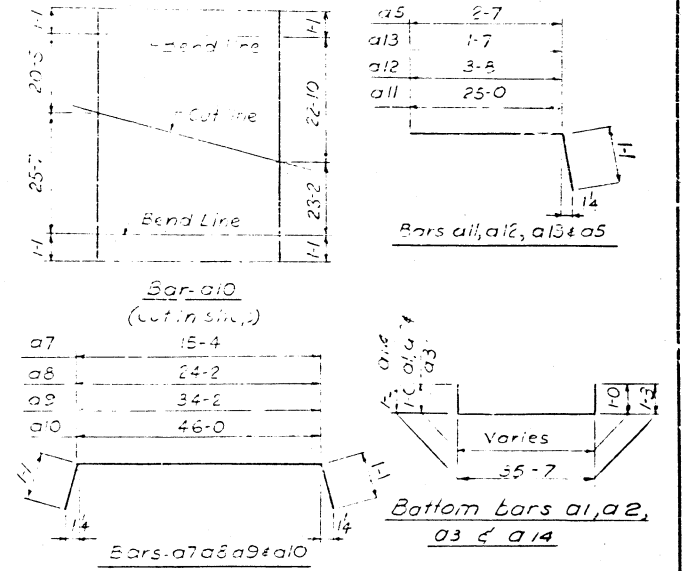
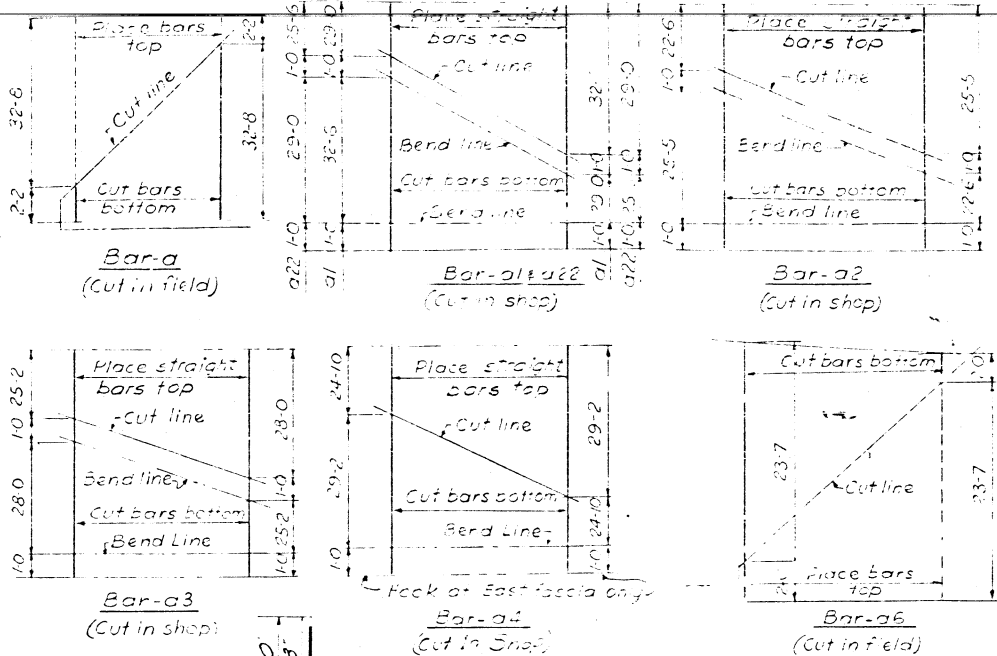
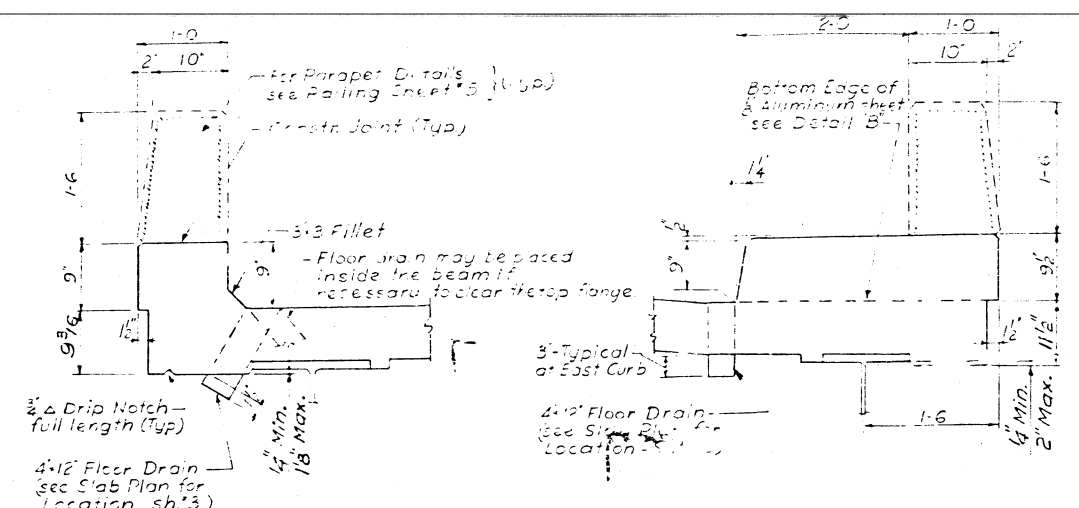
DESIGNED BY: H.C.G.  
 DRAWN BY: B.B.  
 CHECKED BY: E.L.  
 APPROVED BY: S.A.

STATE OF ILLINOIS  
 DEPARTMENT OF PUBLIC WORKS  
 DIVISION OF HIGHWAYS

**SLAB**  
 F.A.I. ROUTE 70 ROADWAY "H"  
 OVER TRENDLEY AVE  
 STATION 86 + 09.53

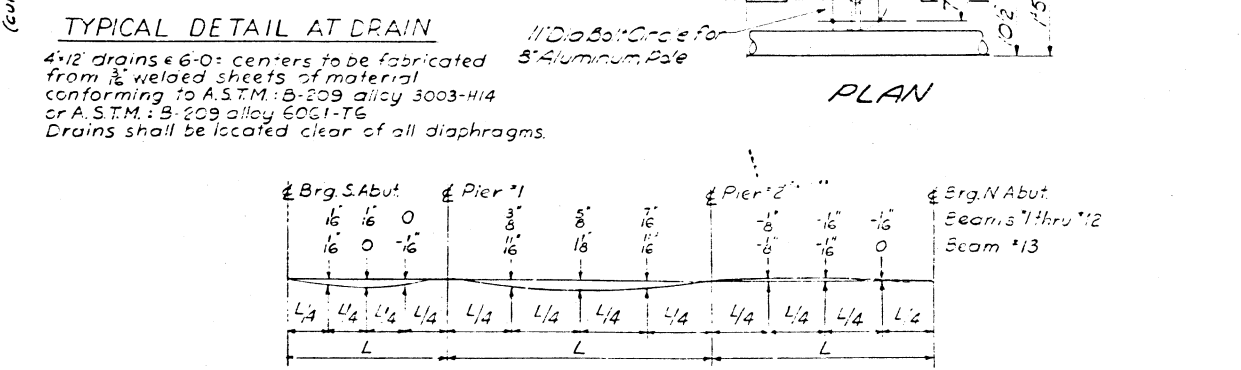
F.A.I. RT. 70 ST. CLAIR CO. SECTION 82-4HB  
 H. W. LOCHNER, INC.  
 ENGINEERS  
 CHICAGO, ILLINOIS

SHEET  
 3 OF 17



**BILL OF MATERIALS**

| Bar No. | Size | Length | Shape | Bar No. | Size | Length | Shape |
|---------|------|--------|-------|---------|------|--------|-------|
| a1      | #5   | 34-0   | □     | b1      | #4   | 10-3   | □     |
| a2      | #5   | 49-11  | □     | b2      | #4   | 22-9   | □     |
| a3      | #5   | 55-2   | □     | b3      | #4   | 21-6   | □     |
| a4      | #5   | 55-0   | □     | b4      | #5   | 33-3   | □     |
| a5      | #4   | 3-5    | □     | b5      | #5   | 30-0   | □     |
| a6      | #5   | 25-7   | □     | b6      | #5   | 36-0   | □     |
| a7      | #4   | 17-6   | □     | b7      | #5   | 4-6    | □     |
| a8      | #4   | 26-4   | □     | b8      | #5   | 24-0   | □     |
| a9      | #4   | 36-4   | □     | b9      | #6   | 8-8    | □     |
| a10     | #4   | 48-2   | □     | b10     | #4   | 4-9    | □     |
| a11     | #4   | 26-1   | □     | b11     | #4   | 32-0   | □     |
| a12     | #4   | 4-9    | □     | b12     | #4   | 31-3   | □     |
| a13     | #4   | 2-8    | □     | b13     | #4   | 22-6   | □     |
| a14     | #5   | 38-1   | □     | b14     | #6   | 22-9   | □     |
| a15     | #5   | 35-7   | □     | b15     | #6   | 20-9   | □     |
| a16     | #5   | 37-8   | □     | b16     | #6   | 21-6   | □     |
| a17     | #5   | 10-6   | □     | b17     | #5   | 19-8   | □     |
| a18     | #5   | 20-0   | □     | b18     | #5   | 31-6   | □     |
| a19     | #5   | 15-2   | □     | b19     | #5   | 20-7   | □     |
| a20     | #5   | 12-6   | □     | b20     | #5   | 30-9   | □     |
| a21     | #5   | 5-6    | □     | b21     | #5   | 26-6   | □     |
| a22     | #5   | 52-6   | □     | b22     | #5   | 4-0    | □     |



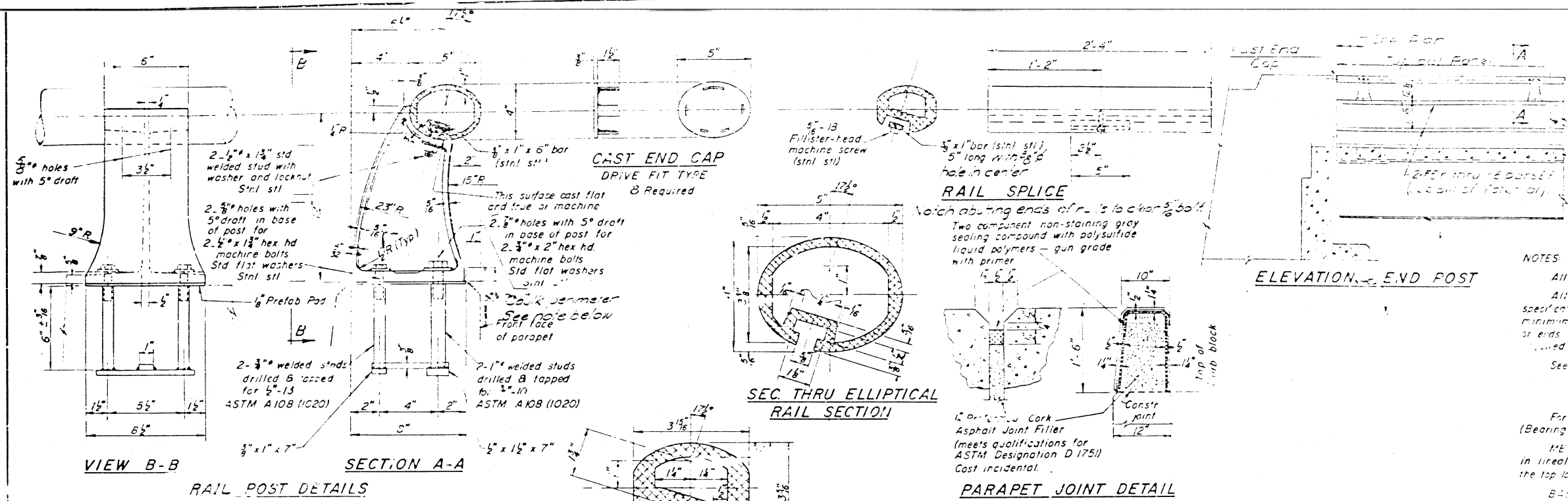
**NOTE:** The above deflections are not to be used in the field if the Engineer is working from the Grade Elevations adjusted for Dead Load Deflections as shown on sheet #6

DESIGNED BY: H.C.G.  
 DRAWN BY: S.S.  
 CHECKED BY: E.L.  
 APPROVED BY: K.A.

**NOTE:** \*Weight of bearing assemblies with lead plates and Anchor bolts included as structural steel. Est. Weight = 15,160 Lbs.

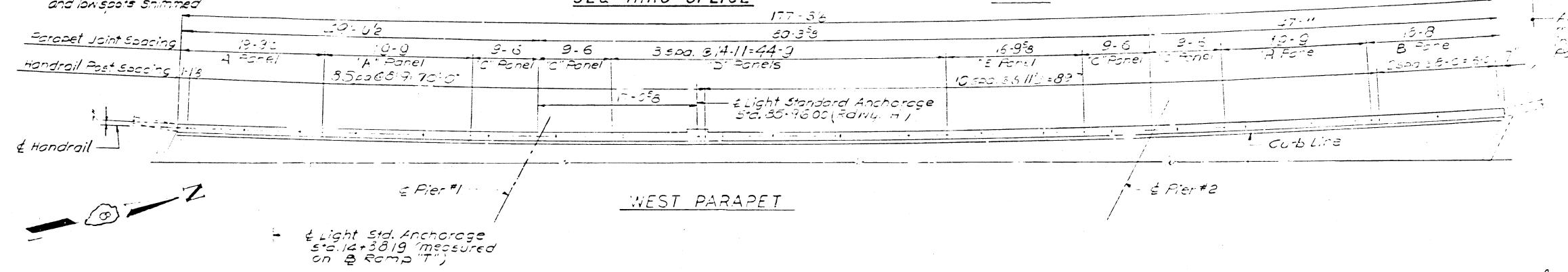
STATE OF ILL. DEPARTMENT OF PUBLIC WORKS  
 DIVISION OF HIGHWAYS  
 SLAB DEPARTMENT  
 F.A.I. ROUTE 70 OVER TRENDLE AVE.  
 STATION 86 + 09.53  
 F.A.I. RT. 70 ST. CLAIR CO. SECTION 82-4H6  
 H. W. LOCHNER, INC. ENGINEERS CHICAGO, ILLINOIS  
 SHEET 4 OF 17

| ROUTE NO.            | SECTION  | COUNTY    | TOTAL SHEETS | SHEET NO. |
|----------------------|----------|-----------|--------------|-----------|
| FAI - 70             | 62 - 4HB | ST. CLAIR | 77           | 53        |
| FED. ROAD DIV. NO. 4 |          | ILLINOIS  | PROJECT      |           |



**SECTION THROUGH PARAPET (WEST)**  
 Parapet Section of East Parapet similar for Core Section of East Parapet see Sheet #4.

**Note**  
 Seal perimeter of base of post to parapet with two component non-staining gray sealing compound with polysulfide liquid polymers - gun grade with primer.  
 Provide 1/8" and 2/16" Aluminum Shims for 25% of the Posts.  
 Rail element shall be parallel to Grade - high spots shall be ground and low spots shimmed.

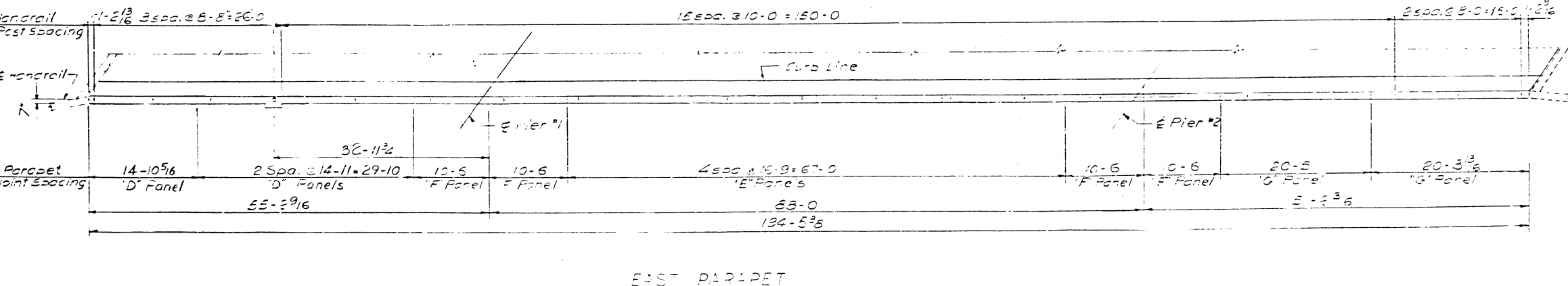


**BILL OF MATERIALS**

| Item | No. of Panels | Marking - Panel Size | Length | Shape   |
|------|---------------|----------------------|--------|---------|
| A    | 3             | r                    | 12     | #5 19-5 |
| B    | 1             | r1                   | 4      | 18-4    |
| C    | -             | r2                   | 16     | 9-2     |
| D    | 5             | r3                   | 24     | 14-7    |
| E    | 5             | r4                   | 20     | 16-5    |
| F    | 4             | r5                   | 16     | 10-2    |
| G    | 2             | r5                   | 8      | 20-0    |
|      |               | r7                   | 4      | #5 3-9  |

| Item               | Unit  | Quantity |
|--------------------|-------|----------|
| Class "A" Concrete | cu yd | 18.9     |
| Performance Bars   | lbs   | 1,540    |
| Aluminum Handrail  | l.f.  | 372      |



STATE OF ILLINOIS  
 DEPARTMENT OF PUBLIC WORKS  
 DIVISION OF HIGHWAYS  
 ALUMINUM HANDRAIL  
 FAI ROUTE 70 ROADWAY  
 OVER TRENDLEY AVE.  
 STATION 86 + 09.53  
 FAI RT 70 ST. CLAIR CO. SECTION 62 4HB  
 H. W. LOCHNER, INC.  
 ENGINEERS  
 CHICAGO, ILLINOIS  
 SHEET 5 of 17

Designed by HCG  
 Drawn by Y.M.  
 Checked by S.C.

**EAST PARAPET**  
**PLAN**

D.L. DEFLECTIONS (FT.)

| BEAMS | BEARING ABUT. | A1   | A2   | A3    | A4     | PIER 1 | B1   | B2   | B3   | B4   | B5   | B6   | B7   | B8   | PIER 2 | C1    | C2    | C3    | C4    | BEARINGS ABUT. |
|-------|---------------|------|------|-------|--------|--------|------|------|------|------|------|------|------|------|--------|-------|-------|-------|-------|----------------|
| 1-7   | .000          | .005 | .007 | .004  | - .001 | .000   | .010 | .027 | .043 | .092 | .082 | .043 | .028 | .011 | .000   | -.007 | -.007 | -.004 | -.001 | .000           |
| 8-12  | .000          | .035 | .007 | .000  | -.000  | .000   | .010 | .027 | .043 | .092 | .082 | .043 | .028 | .011 | .000   | -.007 | -.004 | -.004 | -.001 | .000           |
| 13    | .000          | .003 | .003 | -.001 | -.007  | .000   | .021 | .051 | .077 | .091 | .090 | .074 | .046 | .016 | .000   | -.004 | -.000 | -.001 | .000  | .000           |

|                      |         |           |              |           |
|----------------------|---------|-----------|--------------|-----------|
| ROUTE NO.            | SECTION | COUNTY    | TOTAL SHEETS | SHEET NO. |
| F.A.I. - 70          | B2-4HB  | ST. CLAIR | 77           | 54        |
| FED. ROAD DIV. NO. 4 |         | ILLINOIS  | PROJECT      |           |

TABLE 1

THEORETICAL ELEVATION TOP OF CONCRETE

|    |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
|----|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1  | 435.103 | 434.944 | 434.788 | 434.634 | 434.485 | 434.285 | 434.143 | 434.001 | 433.846 | 433.695 | 433.548 | 433.405 | 433.265 | 433.108 | 432.987 | 432.850 | 432.688 | 432.545 | 432.406 | 432.264 |
| 2  | 435.673 | 435.512 | 435.354 | 435.200 | 435.050 | 434.849 | 434.707 | 434.564 | 434.408 | 434.257 | 434.108 | 433.964 | 433.823 | 433.660 | 433.540 | 433.391 | 433.243 | 433.100 | 432.960 | 432.817 |
| 3  | 436.241 | 436.080 | 435.921 | 435.767 | 435.615 | 435.413 | 435.271 | 435.126 | 434.970 | 434.818 | 434.669 | 434.524 | 434.382 | 434.224 | 434.100 | 433.948 | 433.799 | 433.654 | 433.513 | 433.369 |
| 4  | 436.810 | 436.647 | 436.488 | 436.333 | 436.181 | 435.978 | 435.835 | 435.690 | 435.535 | 435.379 | 435.230 | 435.084 | 434.941 | 434.783 | 434.657 | 434.504 | 434.355 | 434.209 | 434.067 | 433.922 |
| 5  | 437.378 | 437.215 | 437.055 | 436.899 | 436.747 | 436.543 | 436.398 | 436.252 | 436.095 | 435.941 | 435.791 | 435.644 | 435.501 | 435.341 | 435.215 | 435.061 | 434.911 | 434.764 | 434.621 | 434.475 |
| 6  | 437.946 | 437.783 | 437.622 | 437.466 | 437.312 | 437.107 | 436.962 | 436.816 | 436.658 | 436.503 | 436.351 | 436.204 | 436.060 | 435.826 | 435.773 | 435.518 | 435.466 | 435.319 | 435.175 | 435.028 |
| 7  | 438.514 | 438.351 | 438.190 | 438.034 | 437.880 | 437.675 | 437.530 | 437.372 | 437.214 | 437.057 | 436.905 | 436.758 | 436.616 | 436.468 | 436.319 | 436.169 | 436.020 | 435.870 | 435.720 | 435.570 |
| 8  | 439.082 | 438.919 | 438.758 | 438.601 | 438.447 | 438.242 | 438.097 | 437.939 | 437.781 | 437.624 | 437.472 | 437.325 | 437.183 | 437.035 | 436.886 | 436.736 | 436.586 | 436.436 | 436.286 | 436.136 |
| 9  | 439.650 | 439.487 | 439.326 | 439.169 | 439.015 | 438.810 | 438.665 | 438.507 | 438.349 | 438.192 | 438.040 | 437.893 | 437.751 | 437.603 | 437.454 | 437.304 | 437.154 | 437.004 | 436.854 | 436.704 |
| 10 | 440.218 | 440.055 | 439.894 | 439.737 | 439.583 | 439.378 | 439.233 | 439.075 | 438.917 | 438.760 | 438.608 | 438.461 | 438.319 | 438.171 | 438.022 | 437.872 | 437.722 | 437.572 | 437.422 | 437.272 |
| 11 | 440.786 | 440.623 | 440.462 | 440.305 | 440.151 | 439.946 | 439.801 | 439.643 | 439.485 | 439.328 | 439.176 | 439.029 | 438.887 | 438.739 | 438.590 | 438.440 | 438.290 | 438.140 | 437.990 | 437.840 |
| 12 | 441.354 | 441.191 | 441.030 | 440.873 | 440.719 | 440.514 | 440.369 | 440.211 | 440.053 | 439.896 | 439.744 | 439.597 | 439.455 | 439.307 | 439.158 | 439.008 | 438.858 | 438.708 | 438.558 | 438.408 |
| 13 | 441.922 | 441.759 | 441.598 | 441.441 | 441.287 | 441.082 | 440.937 | 440.779 | 440.621 | 440.464 | 440.312 | 440.165 | 440.023 | 439.875 | 439.726 | 439.576 | 439.426 | 439.276 | 439.126 | 438.976 |

TABLE 2

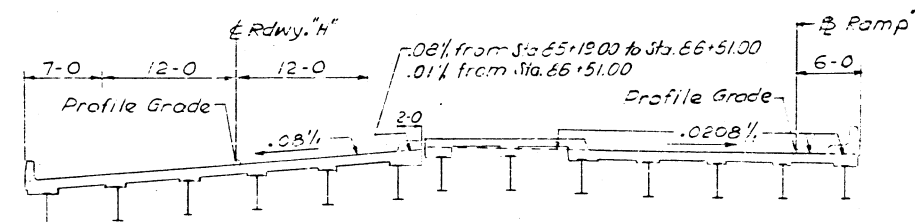
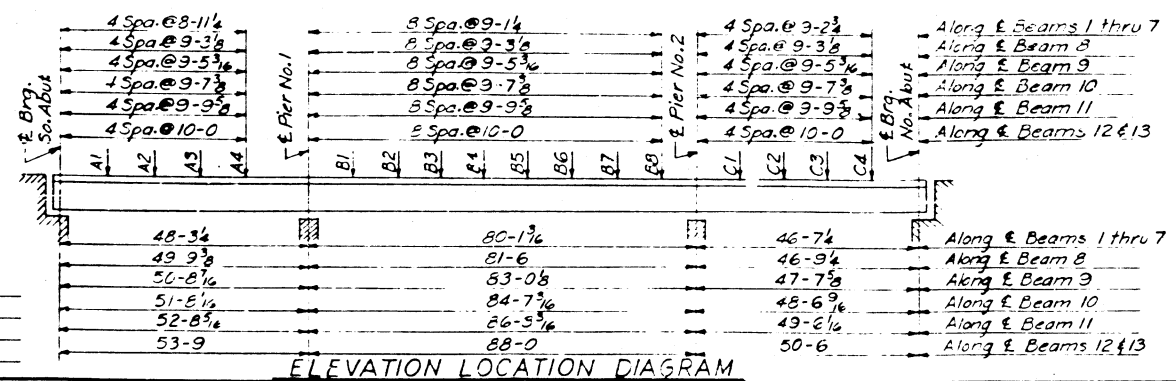
THEORETICAL ELEVATION TOP OF CONCRETE + D.L. DEFLECTION

|    |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
|----|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1  | 435.105 | 434.950 | 434.795 | 434.639 | 434.484 | 434.285 | 434.154 | 434.028 | 433.889 | 433.748 | 433.601 | 433.440 | 433.293 | 433.120 | 432.985 | 432.828 | 432.680 | 432.540 | 432.404 | 432.264 |
| 2  | 435.673 | 435.518 | 435.362 | 435.205 | 435.050 | 434.849 | 434.718 | 434.591 | 434.451 | 434.309 | 434.161 | 434.008 | 433.852 | 433.677 | 433.543 | 433.364 | 433.236 | 433.095 | 432.958 | 432.817 |
| 3  | 436.241 | 436.085 | 435.929 | 435.771 | 435.615 | 435.413 | 435.282 | 435.154 | 435.014 | 434.870 | 434.722 | 434.568 | 434.411 | 434.236 | 434.100 | 433.940 | 433.791 | 433.649 | 433.511 | 433.369 |
| 4  | 436.810 | 436.653 | 436.496 | 436.338 | 436.181 | 435.978 | 435.845 | 435.717 | 435.576 | 435.432 | 435.283 | 435.128 | 434.970 | 434.794 | 434.657 | 434.497 | 434.347 | 434.204 | 434.065 | 433.922 |
| 5  | 437.378 | 437.221 | 437.063 | 436.904 | 436.746 | 436.543 | 436.409 | 436.280 | 436.138 | 435.993 | 435.843 | 435.688 | 435.529 | 435.352 | 435.215 | 435.054 | 434.903 | 434.759 | 434.619 | 434.475 |
| 6  | 437.946 | 437.788 | 437.630 | 437.470 | 437.312 | 437.107 | 436.973 | 436.843 | 436.701 | 436.555 | 436.404 | 436.248 | 436.088 | 435.910 | 435.773 | 435.610 | 435.459 | 435.314 | 435.173 | 435.028 |
| 7  | 438.514 | 438.356 | 438.197 | 438.037 | 437.878 | 437.673 | 437.538 | 437.408 | 437.272 | 437.130 | 436.983 | 436.831 | 436.674 | 436.506 | 436.319 | 436.169 | 436.020 | 435.870 | 435.720 | 435.570 |
| 8  | 439.082 | 438.924 | 438.765 | 438.605 | 438.447 | 438.242 | 438.097 | 437.939 | 437.781 | 437.624 | 437.472 | 437.325 | 437.183 | 437.035 | 436.886 | 436.736 | 436.586 | 436.436 | 436.286 | 436.136 |
| 9  | 439.650 | 439.492 | 439.333 | 439.173 | 439.015 | 438.810 | 438.665 | 438.507 | 438.349 | 438.192 | 438.040 | 437.893 | 437.751 | 437.603 | 437.454 | 437.304 | 437.154 | 437.004 | 436.854 | 436.704 |
| 10 | 440.218 | 440.060 | 439.901 | 439.741 | 439.583 | 439.378 | 439.233 | 439.075 | 438.917 | 438.760 | 438.608 | 438.461 | 438.319 | 438.171 | 438.022 | 437.872 | 437.722 | 437.572 | 437.422 | 437.272 |
| 11 | 440.786 | 440.628 | 440.469 | 440.309 | 440.151 | 439.946 | 439.801 | 439.643 | 439.485 | 439.328 | 439.176 | 439.029 | 438.887 | 438.739 | 438.590 | 438.440 | 438.290 | 438.140 | 437.990 | 437.840 |
| 12 | 441.354 | 441.196 | 441.037 | 440.877 | 440.719 | 440.514 | 440.369 | 440.211 | 440.053 | 439.896 | 439.744 | 439.597 | 439.455 | 439.307 | 439.158 | 439.008 | 438.858 | 438.708 | 438.558 | 438.408 |
| 13 | 441.922 | 441.764 | 441.605 | 441.445 | 441.287 | 441.082 | 440.937 | 440.779 | 440.621 | 440.464 | 440.312 | 440.165 | 440.023 | 439.875 | 439.726 | 439.576 | 439.426 | 439.276 | 439.126 | 438.976 |

TABLE 3

THEORETICAL ELEVATION TOP OF CONCRETE + D.L. DEFLECTION - SLAB THICKNESS (7")

|    |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
|----|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1  | 434.521 | 434.367 | 434.212 | 434.056 | 433.901 | 433.701 | 433.571 | 433.445 | 433.306 | 433.164 | 433.017 | 432.865 | 432.710 | 432.536 | 432.402 | 432.244 | 432.097 | 431.957 | 431.821 | 431.681 |
| 2  | 435.090 | 434.934 | 434.779 | 434.622 | 434.466 | 434.266 | 434.135 | 434.008 | 433.868 | 433.726 | 433.578 | 433.425 | 433.268 | 433.094 | 432.959 | 432.801 | 432.653 | 432.511 | 432.374 | 432.233 |
| 3  | 435.658 | 435.502 | 435.345 | 435.188 | 435.032 | 434.830 | 434.698 | 434.571 | 434.430 | 434.287 | 434.139 | 433.984 | 433.827 | 433.652 | 433.517 | 433.357 | 433.208 | 433.066 | 432.928 | 432.786 |
| 4  | 436.226 | 436.070 | 435.912 | 435.754 | 435.597 | 435.395 | 435.262 | 435.134 | 434.993 | 434.848 | 434.699 | 434.544 | 434.386 | 434.210 | 434.074 | 433.914 | 433.764 | 433.621 | 433.482 | 433.339 |
| 5  | 436.795 | 436.637 | 436.479 | 436.321 | 436.163 | 435.959 | 435.826 | 435.697 | 435.555 | 435.410 | 435.260 | 435.104 | 434.945 | 434.769 | 434.632 | 434.470 | 434.320 | 434.176 | 434.036 | 433.892 |
| 6  | 437.363 | 437.205 | 437.047 | 436.887 | 436.729 | 436.524 | 436.390 | 436.260 | 436.117 | 435.972 | 435.821 | 435.664 | 435.505 | 435.327 | 435.189 | 435.027 | 434.876 | 434.731 | 434.590 | 434.445 |
| 7  | 437.931 | 437.773 | 437.615 | 437.455 | 437.297 | 437.092 | 436.958 | 436.828 | 436.685 | 436.540 | 436.391 | 436.236 | 436.076 | 435.915 | 435.753 | 435.591 | 435.430 | 435.278 | 435.136 | 434.993 |
| 8  | 438.500 | 438.342 | 438.183 | 438.023 | 437.865 | 437.660 | 437.526 | 437.396 | 437.253 | 437.108 | 436.961 | 436.804 | 436.646 | 436.484 | 436.321 | 436.159 | 436.006 | 435.862 | 435.720 | 435.577 |
| 9  | 439.068 | 438.910 | 438.751 | 438.591 | 438.433 | 438.228 | 438.094 | 437.964 | 437.821 | 437.676 | 437.529 | 437.381 | 437.224 | 437.061 | 436.902 | 436.740 | 436.587 | 436.443 | 436.300 | 436.156 |
| 10 | 439.636 | 439.478 | 439.319 | 439.159 | 439.001 | 438.796 | 438.662 | 438.532 | 438.389 | 438.244 | 438.097 | 437.949 | 437.791 | 437.632 | 437.472 | 437.312 | 437.159 | 437.024 | 436.889 | 436.754 |
| 11 | 440.204 | 440.046 | 439.887 | 439.727 | 439.569 | 439.364 | 439.230 | 439.100 | 438.957 | 438.812 | 438.665 | 438.517 | 438.368 | 438.209 | 438.050 | 437.890 | 437.739 | 437.596 | 437.461 | 437.326 |
| 12 | 440.772 | 440.614 | 440.455 | 440.295 | 440.137 | 439.932 | 439.798 | 439.668 | 439.525 | 439.380 | 439.233 | 439.085 | 438.936 | 438.777 | 438.618 | 438.467 | 438.324 | 438.190 | 438.065 | 437.940 |
| 13 | 441.340 | 441.182 | 441.023 | 440.863 | 440.705 | 440.500 | 440.366 | 440.236 | 440.093 | 439.948 | 439.801 | 439.653 | 439.504 | 439.345 | 439.186 | 439.035 | 438.892 | 438.767 | 438.652 | 438.537 |



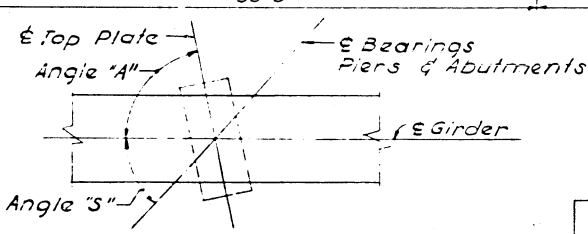
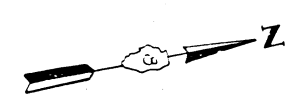
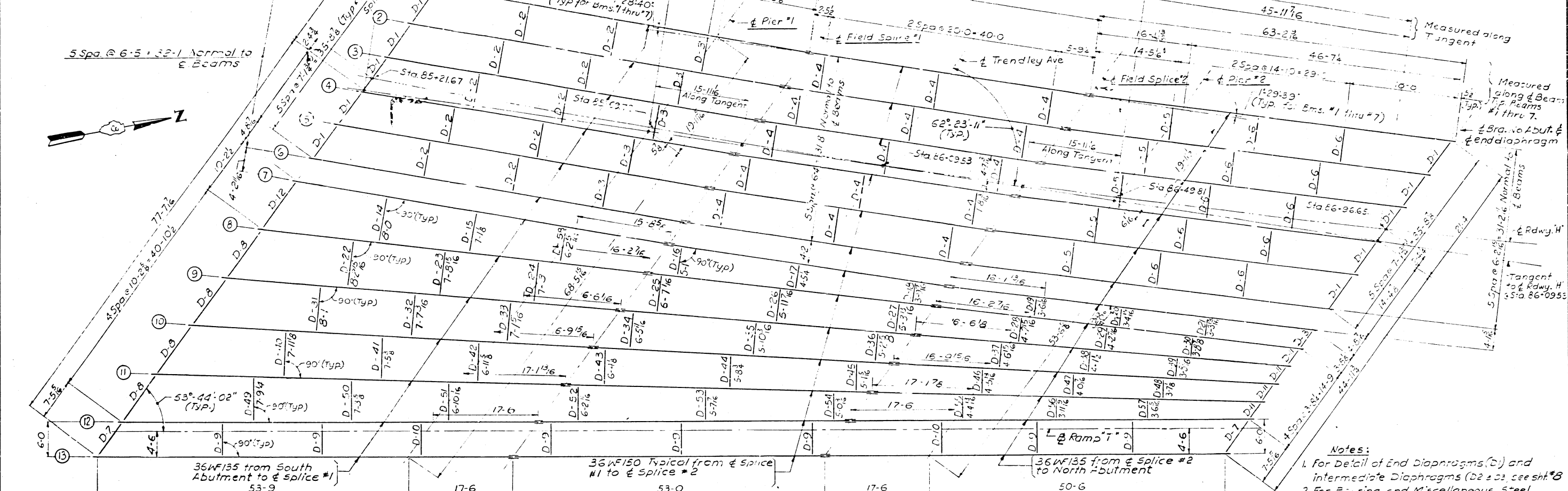
DESIGNED BY M.A.D.  
DRAWN BY K.M.  
CHECKED BY R.F.N.  
APPROVED BY K.A.

STATE OF ILLINOIS  
DEPARTMENT OF PUBLIC WORKS  
DIVISION OF HIGHWAYS  
TABLES OF ELEVATIONS  
F.A.I. ROUTE 70 ROADWAY "H"  
OVER TRENDLEY AVE.  
STATION 86 + 09.53  
F.A.I. RT. 70 ST. CLAIR CO. SECTION #2-4HB  
H. W. LOCHNER, INC.  
ENGINEERS  
CHICAGO, ILLINOIS

SHEET 6 of 17

| DIAPHRAGM SUMMARY |    |    |    |    |    |    |    |
|-------------------|----|----|----|----|----|----|----|
| Work              | D1 | D2 | D3 | D4 | D5 | D6 | D7 |
| No. Reqd.         | 1  | 2  | 3  | 5  | 15 | 5  | 7  |

| SPLICE DIMENSIONS |           |           |             |
|-------------------|-----------|-----------|-------------|
| Beam              | Splice #1 | Splice #2 | North Abut. |
| #2                | 65-11 1/2 | 49-1      | 62-1 1/2    |
| #9                | 67-2 1/2  | 49-1 1/2  | 64-1 3/4    |
| #10               | 68-6      | 50-1 1/2  | 65-4 1/2    |
| #11               | 69-10 3/8 | 51-1 1/2  | 66-7 5/8    |
| #12 & #13         | 71-3      | 53-0      | 68-0        |



**FRAMING PLAN**

- Notes:
- For Detail of End Diaphragms (D1) and Intermediate Diaphragms (D2 to D7, see sheet #8
  - For Bearing and Miscellaneous Steel Details see Sheets #8 & #9
  - For Elevations of top of Beams, table of Shims and Fabrication Diagram see Sheet #8

| Beam Angles and Top Plate Alignment Table |             |             |             |             |             |             |
|---|-------------|-------------|-------------|-------------|-------------|-------------|
| Beam                                      | Angle "S"   |             |             | Angle "A"   |             |             |
|   | Abut.       | Pier        | Abut.       | Abut.       | Pier        | Abut.       |
| 1 to 6                                    | 63°-51'-51" | 60°-53'-32" | 90°-00'-00" | 90°-00'-00" | 90°-00'-00" | 90°-00'-00" |
| 7   | 63°-51'-51" | 60°-53'-32" | 84°-52'-02" | 85°-05'-30" |             |             |
| 8   | 60°-31'-42" | 60°-31'-42" | 88°-12'-11" | 86°-29'-20" |             |             |
| 9   | 58°-43'-53" | 58°-43'-53" | 90°-00'-00" | 85°-16'-09" |             |             |
| 10  | 57°-00'-02" | 57°-00'-02" | 91°-43'-51" | 90°-00'-00" |             |             |
| 11  | 55°-20'-08" | 55°-20'-08" | 92°-23'-47" | 91°-39'-56" |             |             |
| 12  | 53°-44'-02" | 53°-44'-02" | 94°-59'-51" | 93°-16'-00" |             |             |
| 13  | 53°-44'-02" | 53°-44'-02" | 94°-59'-51" | 93°-16'-00" |             |             |

| DIAPHRAGM SPACING DIMENSIONS              |                         |  |
|---|-------------------------|--|
| Diaphragms between # perpendicular beams: | Measured along to beam: | Spacing from E Brg. South Abutment to E Brg. North Abutment                  |
| *7  | *7                      | 3@15-6+46-6, 1@19-1 1/2, 2@20-0=40-0<br>1@20-5 1/2, 2@14-7-29-2, 1@18-8      |
| *8  | *8                      | 3@15-10+47-6, 1@21-0, 2@20-3+40-6<br>1@21-0, 2@12-8+29-4, 1@18-8 1/2         |
| *9  | *9                      | 3@16-2+48-6, 1@21-0, 2@20-9+41-6<br>1@21-3, 2@15-0=30-0, 1@19-1 1/2          |
| *10                                       | *11                     | 1@22-4, 2@16-5+32-10, 1@21-6, 2@21-3+42-6<br>1@21-6, 2@15-4+30-8, 1@17-1 1/2 |
| *11                                       | *12                     | 1@22-10, 2@16-8+33-4, 1@22-0, 2@21-7+43-2<br>1@22-0, 2@15-8+31-4, 1@17-7     |
| *12                                       | *13                     | 1@21-6, 2@17-3+34-6, 4@22-0=88-0<br>2@16-3+32-6, 1@15-9                      |

| TABLE OF MOMENTS & REACTIONS (interior beams) |                    |         |             |         |             |                  |         |         |             |
|---|--------------------|---------|-------------|---------|-------------|------------------|---------|---------|-------------|
| LOADS   | MOMENTS (FT.-KIPS) |         |             |         |             | REACTIONS (KIPS) |         |         |             |
|   | 0.4 Span #1        | Pier #1 | 0.5 Span #2 | Pier #2 | 0.6 Span #3 | South Abut.      | Pier #1 | Pier #2 | North Abut. |
| Beams #2 thru #6                              |                    |         |             |         |             |                  |         |         |             |
| Dead Load                                     | 92                 | 481     | 299         | 473     | 79          | 14               | 73      | 71      | 12          |
| Live Load                                     | 270                | 328     | 373         | 326     | 244         | 32               | 44      | 44      | 32          |
| Impact  | 78                 | 87      | 91          | 87      | 72          | 9                | 12      | 12      | 9           |
| Total   | 440                | 896     | 763         | 886     | 400         | 55               | 129     | 127     | 53          |
| Sec. Mod. (I <sup>2</sup> )                   | 439                | 622     | 503         | 622     | 439         |                  |         |         |             |
| Beam #10                                      |                    |         |             |         |             |                  |         |         |             |
| Dead Load                                     | 187                | 593     | 325         | 461     | 36          | 23               | 90      | 68      | 8           |
| Live Load                                     | 259                | 347     | 387         | 333     | 152         | 33               | 44      | 37      | 21          |
| Impact  | 62                 | 90      | 93          | 68      | 44          | 9                | 12      | 10      | 5           |
| Total   | 557                | 1030    | 805         | 882     | 232         | 65               | 146     | 115     | 34          |
| Sec. Mod. (I <sup>2</sup> )                   | 439                | 622     | 503         | 622     | 439         |                  |         |         |             |

DESIGNED BY: H.C.G.  
 DRAWN BY: B.B.  
 CHECKED BY: E.L.  
 APPROVED BY: K.A.

STATE OF ILLINOIS  
 DEPARTMENT OF PUBLIC WORKS  
 DIVISION OF HIGHWAYS

**FRAMING PLAN**

F.A.I. ROUTE 70 ROADWAY  
 OVER TRENDLEY AVE.

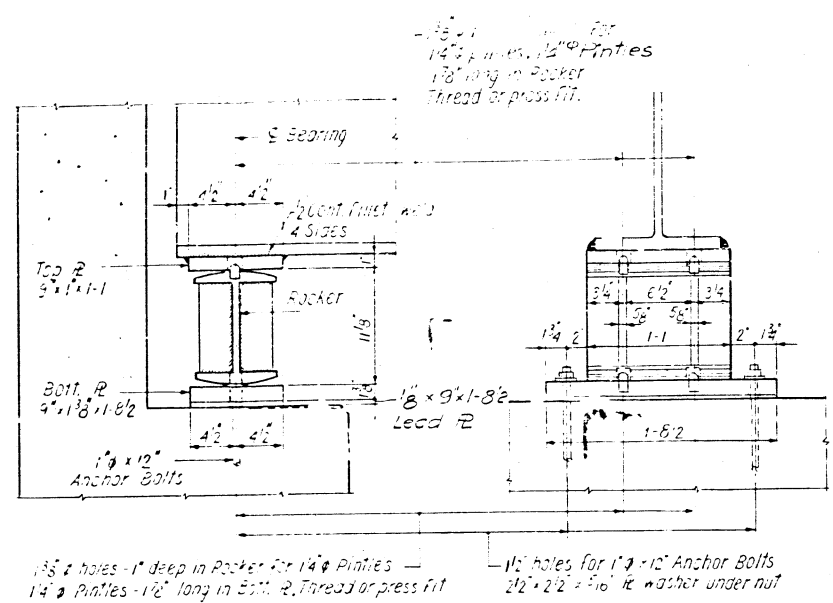
STATION 86 + 09.53

F.A.I. RT. 70 ST. CLAIR CO. SECTION 32-4HB

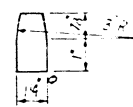
H. W. LOCHNER, INC.  
 ENGINEERS  
 CHICAGO, ILLINOIS

SHEET  
7 OF 17

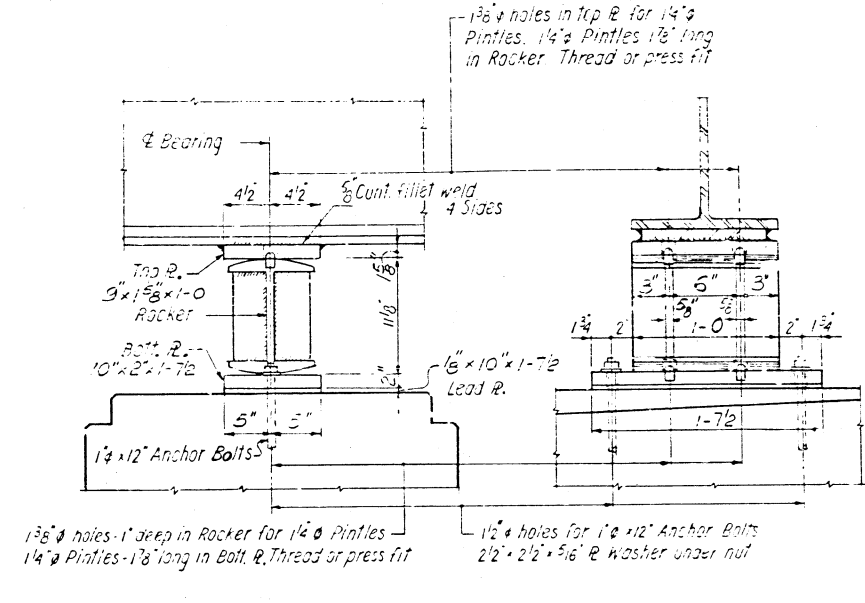
|                      |          |           |              |           |
|----------------------|----------|-----------|--------------|-----------|
| ROUTE NO.            | SECTION  | COUNTY    | TOTAL SHEETS | SHEET NO. |
| F. A. I. - 70        | 82 - 4HB | ST. CLAIR | 77           | 56        |
| FED. ROAD DIV. NO. 4 | ILLINOIS | PROJECT   |              |           |



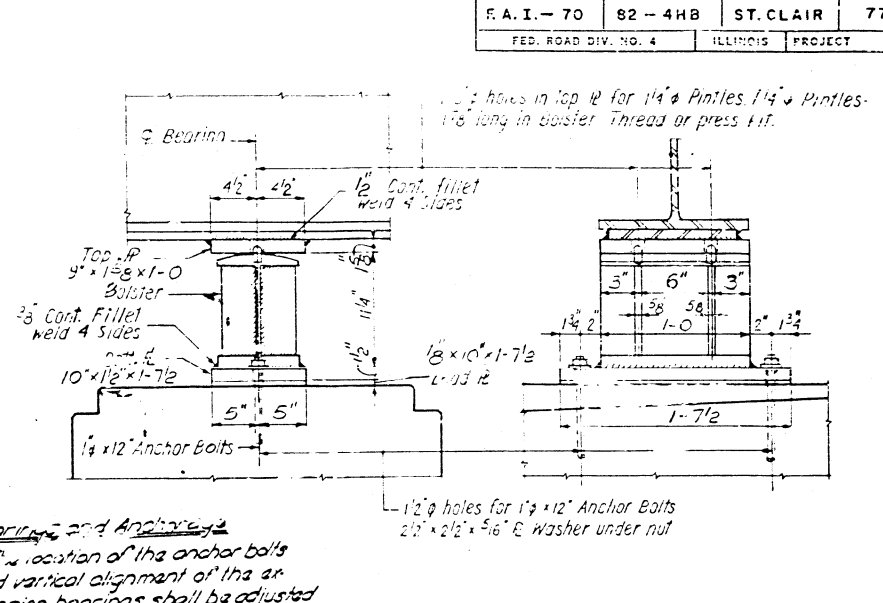
ABUTMENT EXPANSION BEARING



PINTLE DETAIL



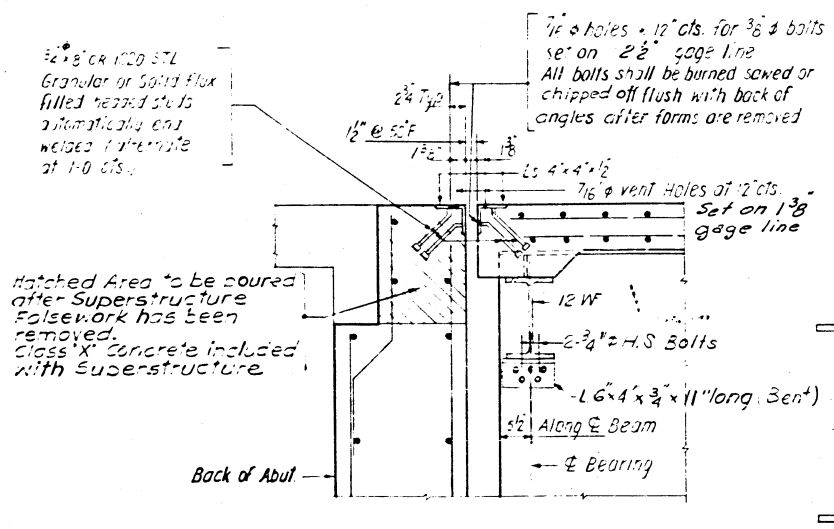
EXPANSION BEARING PIER NO. 2



FIXED BEARING PIER NO. 1

**Bearings and Anchorage**  
The location of the anchor bolts and vertical alignment of the expansion bearings shall be adjusted to the temperature at the time of erection. See Art. 5A. 9(1).

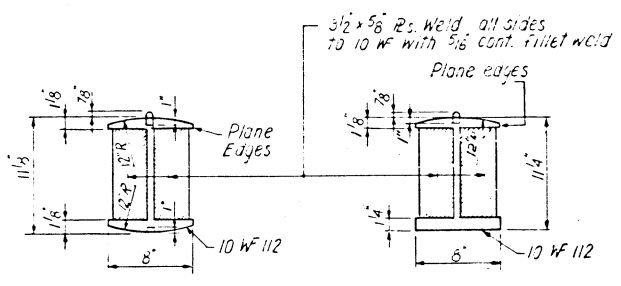
Anchor Bolts shall be grouted into drilled holes if no bars are in place, or bolts or rods may be built into the masonry.



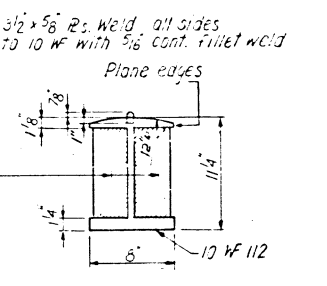
SECTION A-A  
For Location of Section see sheets 3 & 9

In lieu of shop rivets, angles may be attached in a shop with 3/4" high strength bolts or 4" C.P.W.

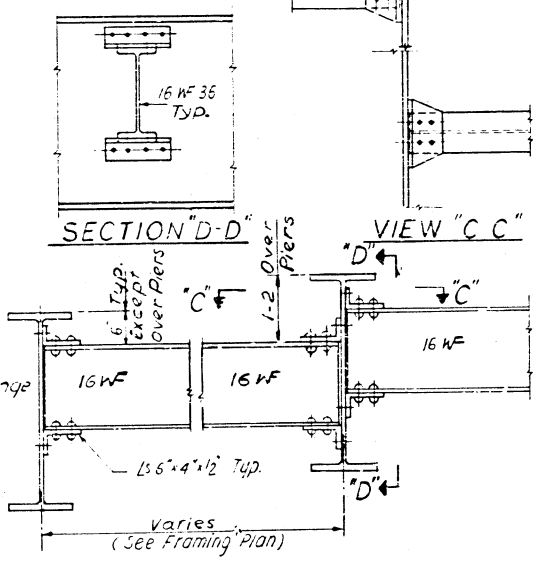
END DIAPHRAGMS



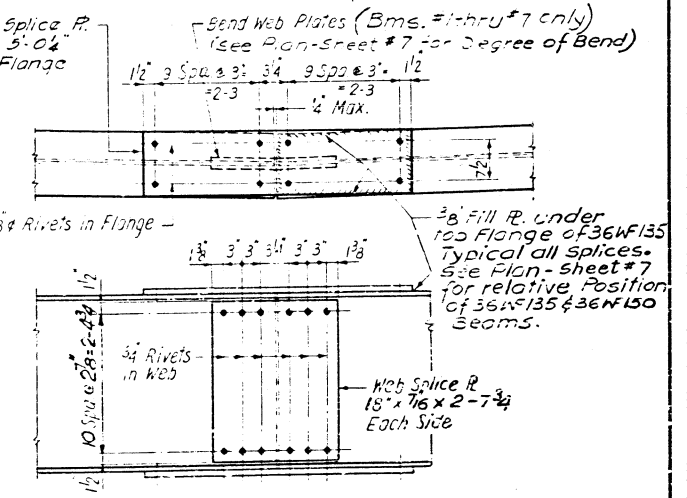
DETAIL OF ROCKER AT EXPANSION BEARING



DETAIL OF BOLSTER AT FIXED BEARING



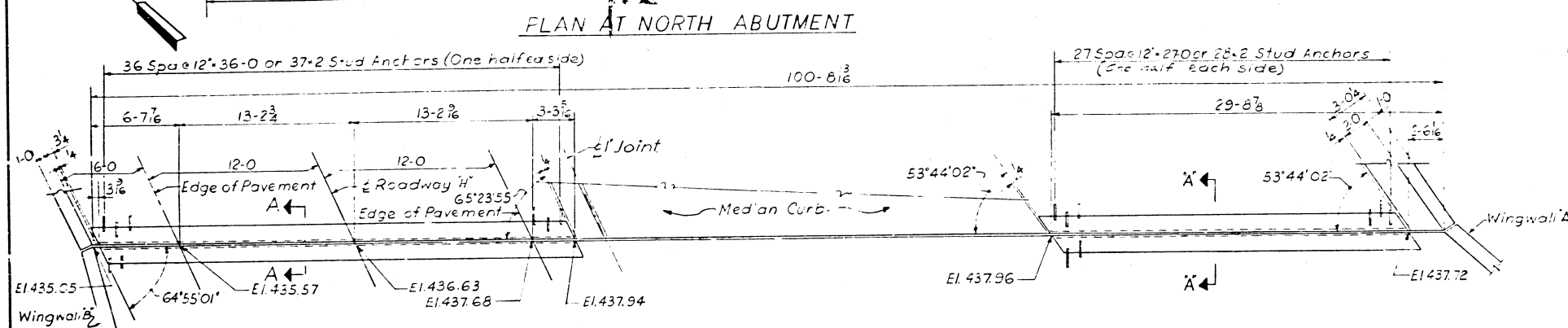
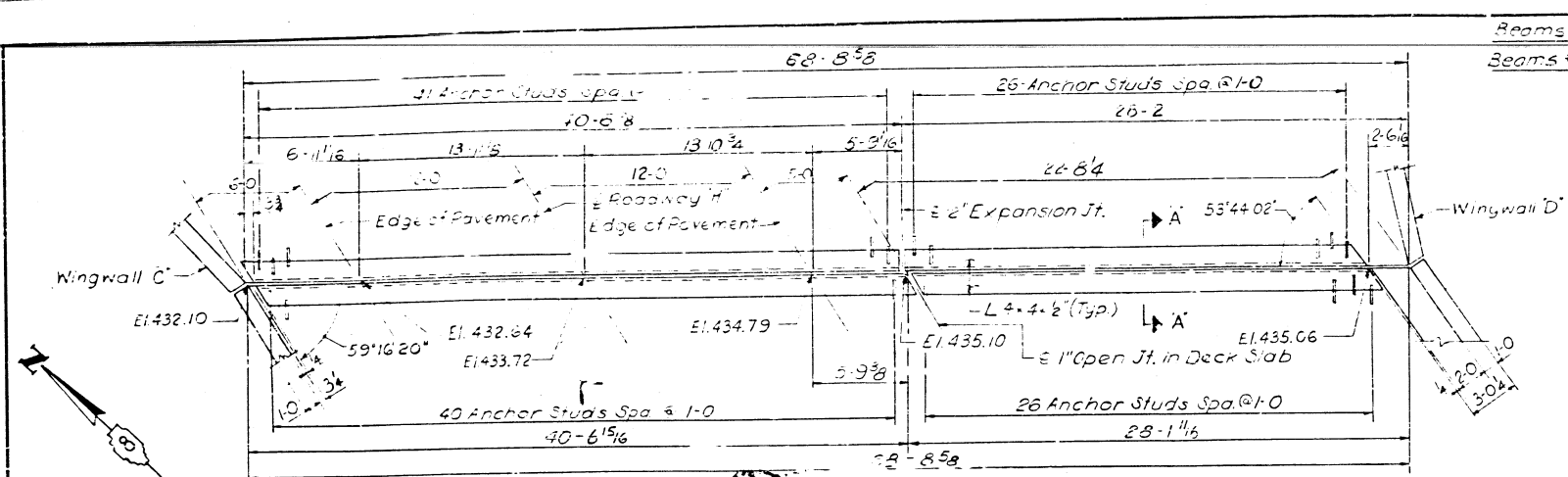
INTERMEDIATE DIAPHRAGMS  
(View Normal to E Beam)



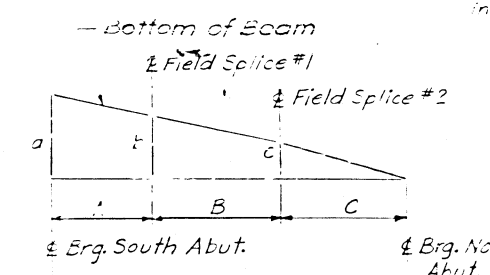
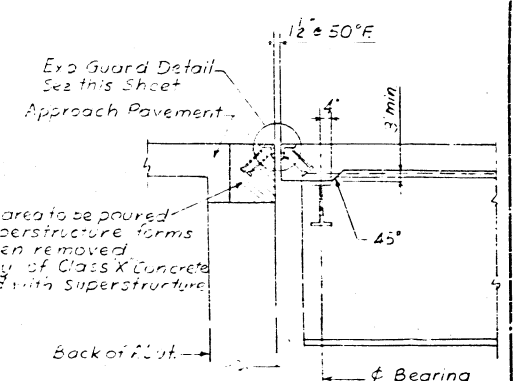
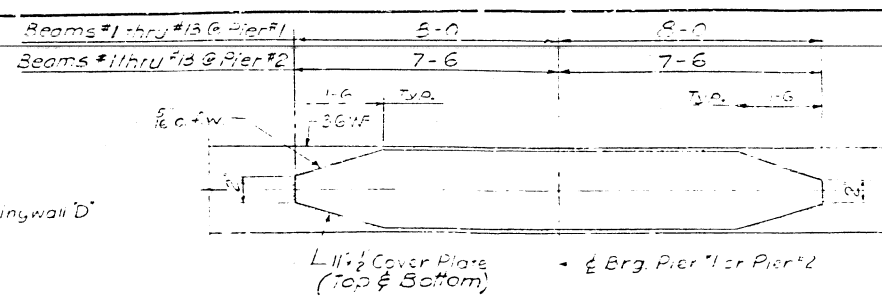
FIELD SPLICE DETAIL

DESIGNED BY H.C.G.  
DRAWN BY K.M.  
CHECKED BY E.L.  
APPROVED BY H.A.

STATE OF ILLINOIS  
DEPARTMENT OF PUBLIC WORKS & BLDGS.  
DIVISION OF HIGHWAYS  
STEEL DEPARTMENT  
F. A. I. ROUTE 70 OVERWAY "H"  
OVER TRENDLEY AVE.  
STATION 66 + 03.53  
F. A. I. RT. 70 ST. CLAIR CO. SECTION 82-4HB  
H. W. LOCHNER, INC.  
ENGINEERS  
CHICAGO, ILLINOIS  
SHEET 8 OF 17



EXPANSION GUARD



DIMENSIONS FOR FABRICATION DIAGRAM

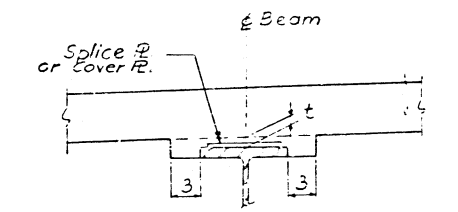
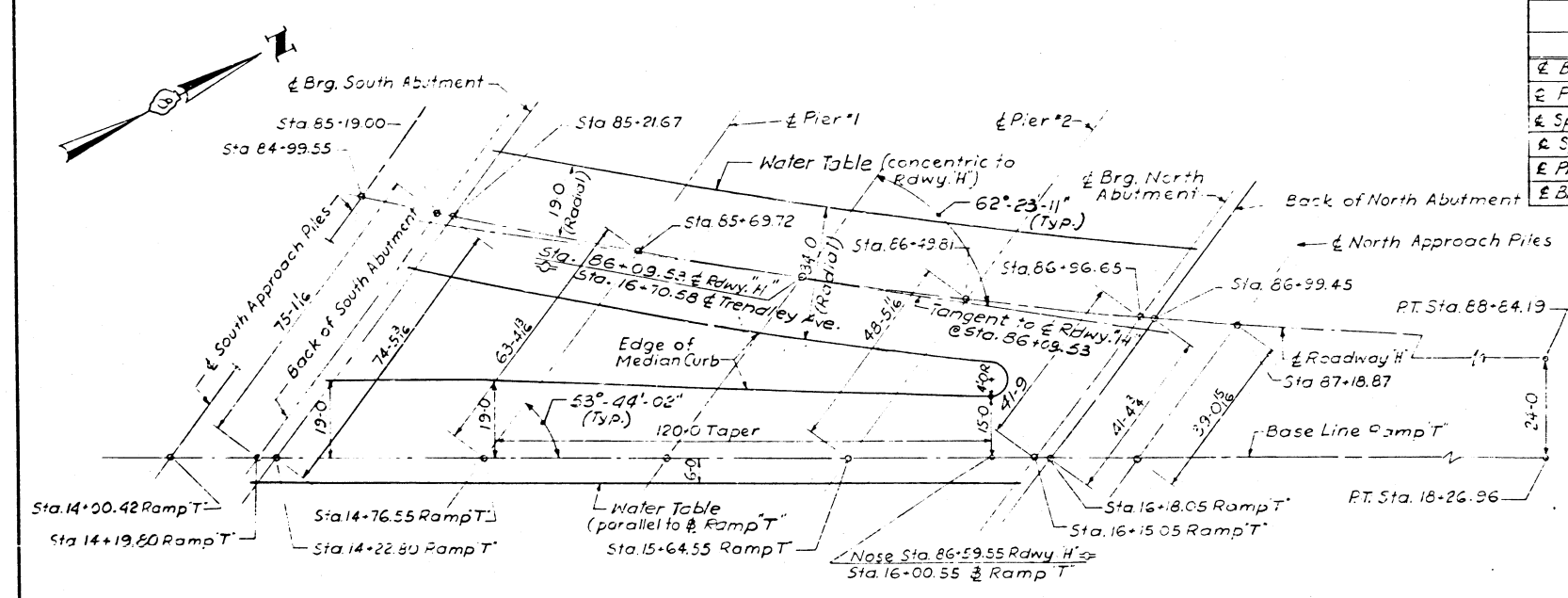
| Beam | a (ft) | b (ft) | c (ft) | A         | B         | C         |
|------|--------|--------|--------|-----------|-----------|-----------|
| 1    | 2.84   | 1.77   | 0.99   | 63-11 1/2 | 48-2 3/4  | 62-9 1/2  |
| 2    |        |        |        |           |           |           |
| 3    |        |        |        |           |           |           |
| 4    |        |        |        |           |           |           |
| 5    |        |        |        |           |           |           |
| 6    | 2.84   | 1.77   | 0.99   |           |           |           |
| 7    | 3.03   | 1.99   | 1.15   | 63-11 1/2 | 48-2 3/4  | 62-9 1/2  |
| 8    | 2.87   | 1.81   | 1.01   | 65-11 1/2 | 49-1      | 62-11 1/2 |
| 9    | 2.52   | 1.78   | 1.00   | 67-2 1/2  | 49-11 1/2 | 64-1 3/4  |
| 10   | 2.76   | 1.73   | 0.97   | 68-6      | 50-11 1/2 | 65-4 1/2  |
| 11   | 2.71   | 1.70   | 0.94   | 69-10 1/2 | 51-11 1/2 | 66-7 1/2  |
| 12   | 2.65   | 1.67   | 0.94   | 71-3      | 53-0      | 68-0      |
| 13   | 2.65   | 1.67   | 0.94   | 71-3      | 53-0      | 68-0      |

TABLE OF THICKNESS OF SHIMS

| Bearing for Beam | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8   | 9   | 10  | 11  | 12 | 13 |
|------------------|---|---|---|---|---|---|---|-----|-----|-----|-----|----|----|
| South Abutment   | 0 |   |   |   |   |   | 0 | 5/8 | 0   |     |     |    | 0  |
| Pier No. 1       | 0 |   |   |   |   |   | 0 | 3/8 | 0   | 5/8 | 0   | 0  | 0  |
| Pier No. 2       | 0 |   |   |   |   |   | 0 | 1/2 | 0   | 5/8 | 3/8 | 0  | 0  |
| North Abutment   | 0 |   |   |   |   |   | 0 | 3/8 | 1/2 | 0   | 0   | 0  | 0  |

ELEVATION @ TOP OF BEAM FOR FABRICATION (DEFLECTION NOT INCLUDED)

|                   | 1      | 2      | 3      | 4      | 5      | 6      | 7      | 8      | 9      | 10     | 11     | 12     | 13     |
|-------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Brig. South Abut. | 434.33 | 434.95 | 435.53 | 436.04 | 436.59 | 437.14 | 437.49 | 437.35 | 437.51 | 437.19 | 437.13 | 437.05 | 436.99 |
| Pier #1           | 433.57 | 434.12 | 434.63 | 435.23 | 435.78 | 436.34 | 436.66 | 436.55 | 436.53 | 436.42 | 436.37 | 436.31 | 436.25 |
| Splice #1         | 433.34 | 433.89 | 434.44 | 435.00 | 435.55 | 436.10 | 436.42 | 436.33 | 436.30 | 436.19 | 436.15 | 436.10 | 436.04 |
| Splice #2         | 432.56 | 433.11 | 433.66 | 434.22 | 434.77 | 435.32 | 435.61 | 435.53 | 435.52 | 435.43 | 435.41 | 435.37 | 435.31 |
| Pier #2           | 432.27 | 432.83 | 433.39 | 433.95 | 434.43 | 435.01 | 435.25 | 435.25 | 435.24 | 435.15 | 435.12 | 435.10 | 435.03 |
| Brig. North Abut. | 431.54 | 432.09 | 432.64 | 433.20 | 433.75 | 434.30 | 434.40 | 434.49 | 434.49 | 434.43 | 434.42 | 434.40 | 434.34 |



To determine 't' after all Structural Steel has been erected, Elevations of top flanges of the Beams shall be taken at intervals shown on sheet #6. These Elevations subtracted from the Theoretical Grade Elevations Adjusted for Dead Load Deflections shown on Sheet #6, minus slab thickness, equals Fillet Heights, 't', above top of beams.

STATE OF ILL. DEPARTMENT OF PUBLIC WORKS  
DIVISION OF HIGHWAYS  
EXPANSION GUARD AND DETAILS

F. A. I. ROUTE 70 ROADWAY "H" OVER TRENDLEY AVE.

STATION S6 + 09.53

F. A. I. RT. 70 ST. CLAIR CO. SECTION 82-4HB

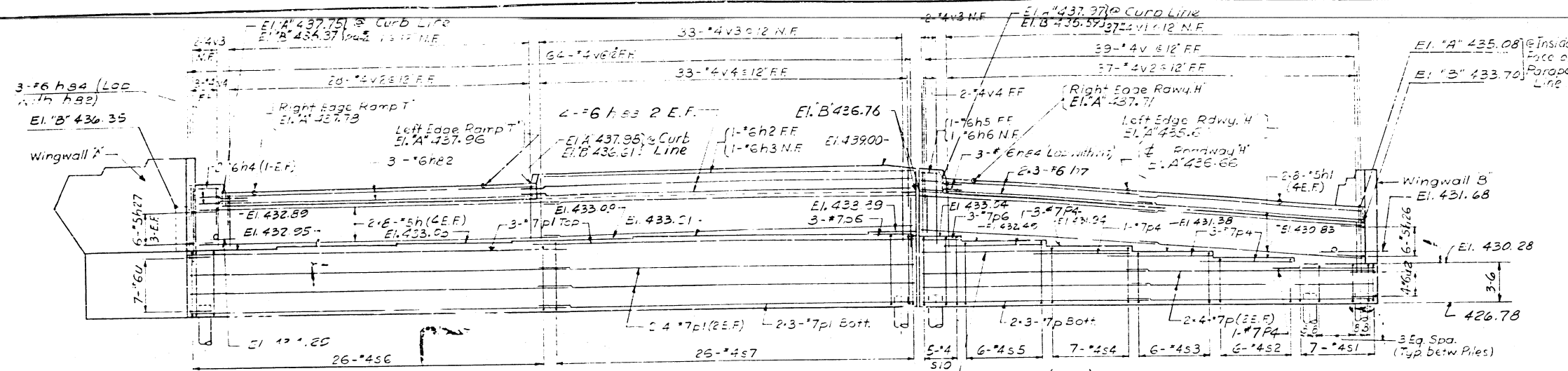
H. W. LUCHNER, INC. ENGINEERS CHICAGO, ILLINOIS

SHEET 9 OF 17

DESIGNED BY H. C. G.  
DRAWN BY B. B.  
CHECKED BY E. L. M. A. D.  
APPROVED BY K. A.

Note: For Offsets between Rdwy. "H" & Tangent to Rdwy. "H" @ Sta. 86+09.53 see Sheets 3, 10, 12, 13 & 14

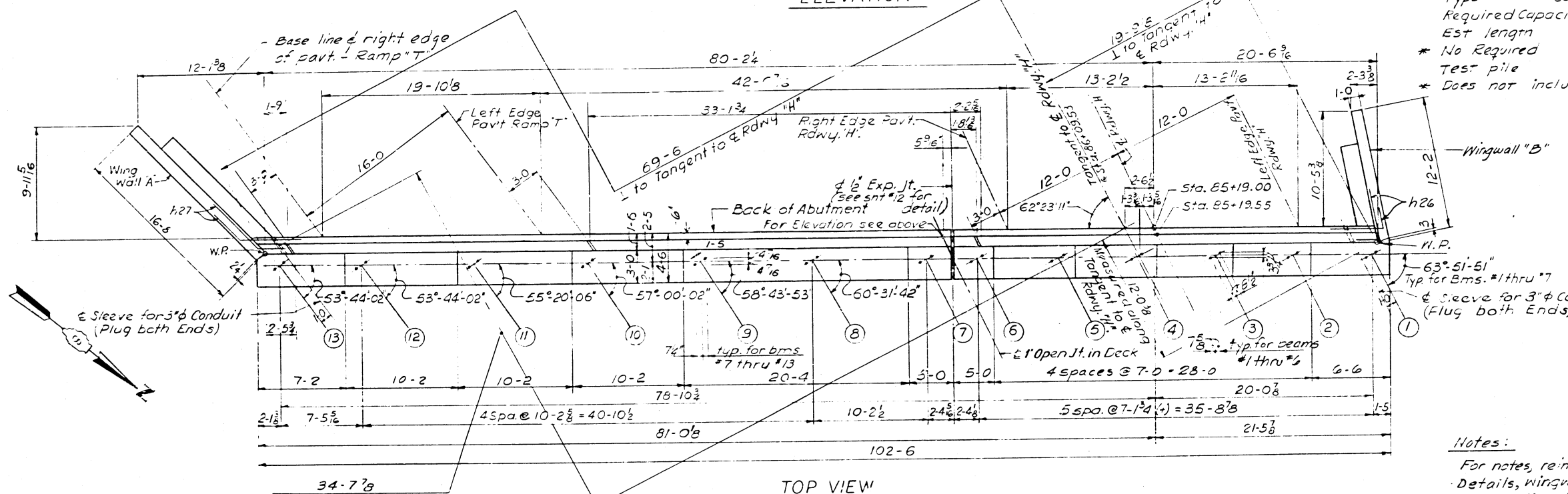
| ROUTE NO.            | SECTION | COUNTY    | TOTAL SHEETS | SHEET NO. |
|----------------------|---------|-----------|--------------|-----------|
| F.A.I. - 70          | 82-4HB  | ST. CLAIR | 77           | 58        |
| FED. ROAD DIV. NO. 4 |         | ILLINOIS  | PROJECT      |           |



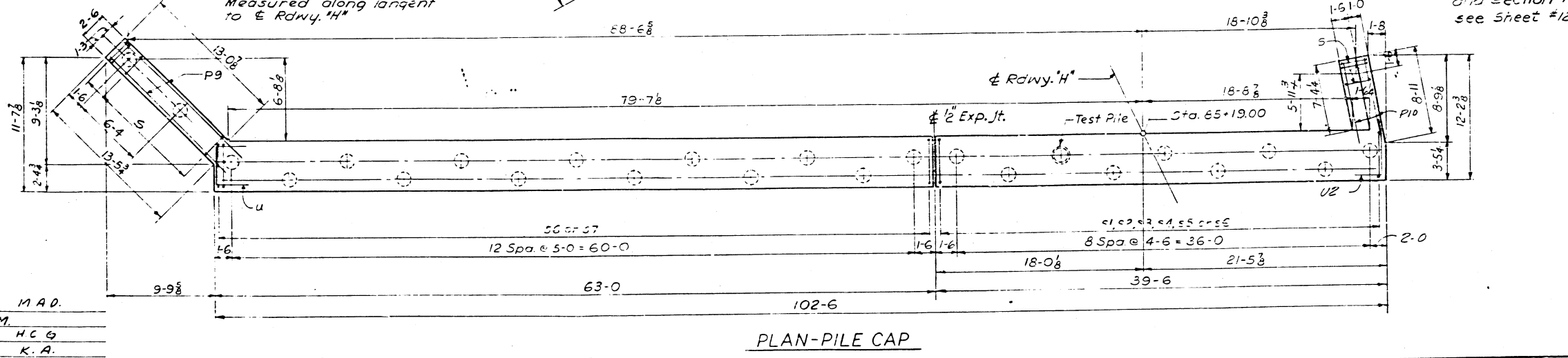
**BILL OF MATERIAL**

| Bar | No  | Size | Length | Shape |
|-----|-----|------|--------|-------|
| h1  | 16  | #5   | 32-0   | ---   |
| h1  | 16  | #5   | 20-0   | ---   |
| h2  | 1   | #6   | 32-3   | ---   |
| h3  | 1   | #6   | 32-0   | ---   |
| h4  | 2   | #6   | 2-0    | ---   |
| h5  | 1   | #6   | 1-3    | ---   |
| h6  | 1   | #6   | 1-6    | ---   |
| h7  | 6   | #6   | 20-1   | ---   |
| h24 | 6   | #6   | 4-0    | ---   |
| h12 | 2   | #4   | 4-8    | ---   |
| h13 | 2   | #4   | 9-10   | ---   |
| h14 | 4   | #4   | 15-0   | ---   |
| h15 | 1   | #4   | 15-10  | ---   |
| h16 | 2   | #4   | 14-10  | ---   |
| h17 | 2   | #4   | 14-0   | ---   |
| h18 | 2   | #4   | 13-3   | ---   |
| h19 | 2   | #4   | 3-3    | ---   |
| h20 | 2   | #4   | 6-10   | ---   |
| h21 | 4   | #4   | 0-6    | ---   |
| h22 | 4   | #4   | 11-0   | ---   |
| h23 | 2   | #4   | 10-0   | ---   |
| h24 | 2   | #4   | 3-6    | ---   |
| h25 | 4   | #4   | 9-0    | ---   |
| h26 | 6   | #4   | 4-6    | ---   |
| h27 | 6   | #4   | 4-9    | ---   |
| h28 | 3   | #6   | 26-11  | ---   |
| h29 | 4   | #6   | 34-3   | ---   |
| h   | 14  | #4   | 5-9    | ---   |
| h1  | 5   | #4   | 7-9    | ---   |
| p   | 14  | #7   | 20-3   | ---   |
| p1  | 20  | #7   | 32-3   | ---   |
| p4  | 11  | #6   | 6-6    | ---   |
| p5  | 2   | #6   | 16-6   | ---   |
| p6  | 5   | #6   | 4-7    | ---   |
| p9  | 14  | #6   | 15-0   | ---   |
| p10 | 6   | #7   | 9-0    | ---   |
| s   | 2   | #4   | 9-6    | ---   |
| s1  | 7   | #4   | 15-6   | ---   |
| s2  | 5   | #4   | 16-6   | ---   |
| s3  | 6   | #4   | 17-8   | ---   |
| s4  | 7   | #4   | 18-10  | ---   |
| s5  | 9   | #4   | 19-10  | ---   |
| s6  | 6   | #4   | 20-8   | ---   |
| s7  | 26  | #4   | 21-2   | ---   |
| s9  | 14  | #4   | 16-8   | ---   |
| s10 | 5   | #4   | 23-0   | ---   |
| u   | 7   | #6   | 8-1    | ---   |
| u2  | 4   | #6   | 7-3    | ---   |
| v   | 103 | #4   | 4-9    | ---   |
| v1  | 65  | #4   | 6-0    | ---   |
| v2  | 65  | #4   | 4-2    | ---   |
| v3  | 37  | #4   | 7-0    | ---   |
| v4  | 35  | #4   | 4-11   | ---   |
| v5  | 20  | #4   | 7-9    | ---   |
| v6  | 20  | #4   | 7-2    | ---   |
| v7  | 24  | #4   | 6-8    | ---   |

**ALL DATA**  
 Type concrete piles  
 Required Capacity 31 tons  
 Est length 68 feet  
 \* No Required 24  
 Test pile 1  
 \* Does not include test pile.



**Notes:**  
 For notes, reinforcement details, wingwall elevations and section thru abutment see sheet #12



| Item               | Unit     | Quant. |
|--------------------|----------|--------|
| Class 'X' concrete | C. Yds.  | 139.7  |
| Reinforcement bars | lbs.     | 7620   |
| Concrete piles     | lin. ft. | 1632*  |
| Test pile          | Each     | 1      |

\* Does not include test pile.

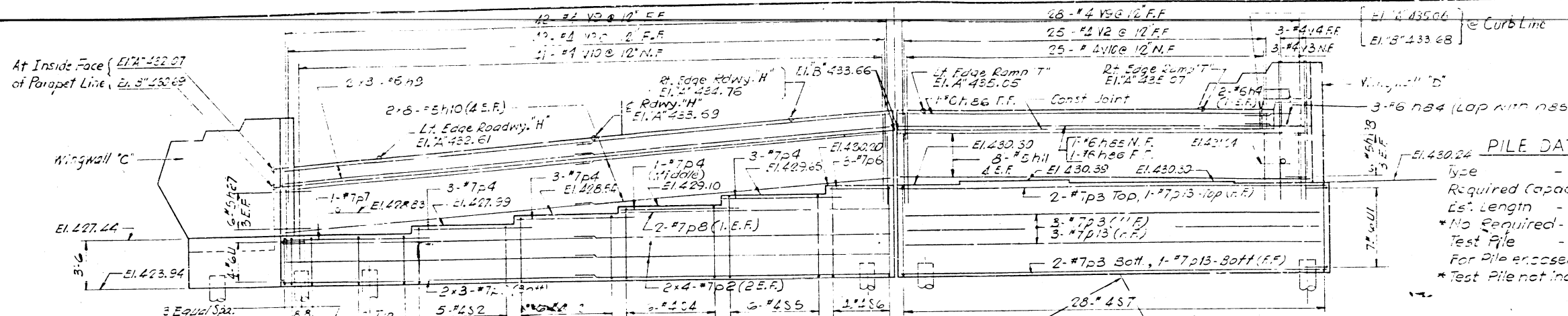
DESIGNED BY: M.A.D.  
 DRAWN BY: K.M.  
 CHECKED BY: H.C.G.  
 APPROVED BY: K.A.

STATE OF ILLINOIS  
 DEPARTMENT OF PUBLIC WORKS  
 DIVISION OF HIGHWAYS  
**SOUTH ABUTMENT**  
 F.A.I. ROUTE 70 ROADWAY "H"  
 OVER TRENDLEY AVE.  
 STATION 85 + 09.53  
 F.A.I. RT. 70 ST. CLAIR CO. SECTION 82-4HB  
 H. W. LOCHNER, INC.  
 ENGINEERS  
 CHICAGO, ILLINOIS

SHEET  
 10 of 17

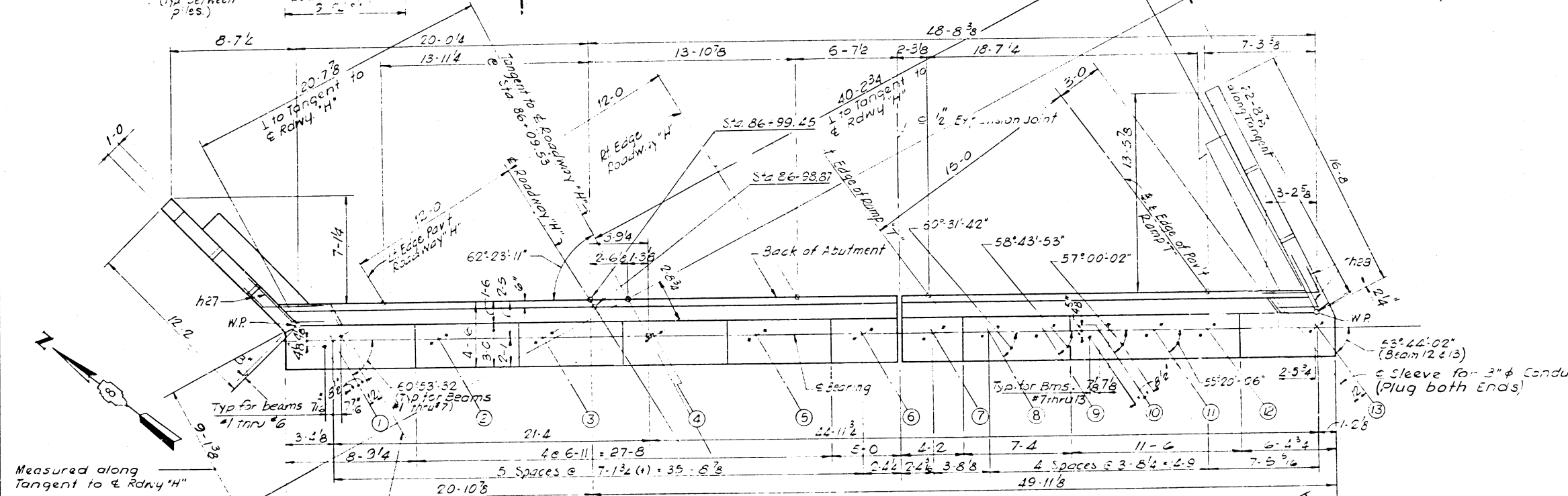


| ROUTE NO.                             | SECTION | COUNTY    | TOTAL SHEETS | SHEET NO. |
|---------------------------------------|---------|-----------|--------------|-----------|
| F.A.I. - 70                           | 82-4HB  | ST. CLAIR | 77           | 59        |
| FED. ROAD DIV. NO. 4 ILLINOIS PROJECT |         |           |              |           |

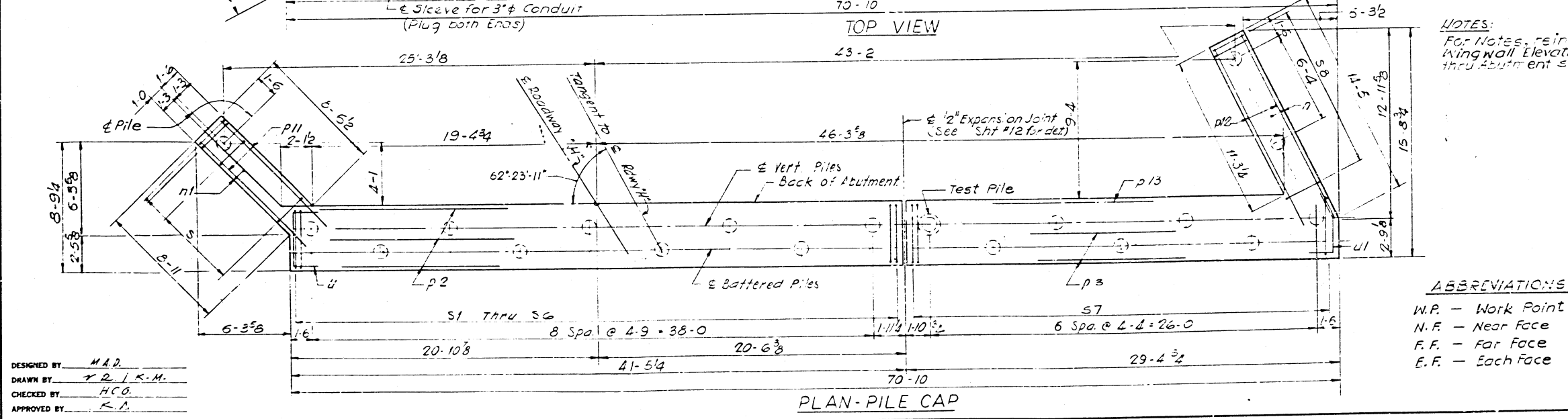


**PILE DATA**  
 Type - Concrete Piles  
 Required Capacity - 32 Tons  
 Est. Length - 65 ft.  
 \*No Required - 18  
 Test Pile - 1  
 For Pile Encasement see Sht. No 17  
 \*Test Pile not included

| Bar No           | No       | Size     | Length | Shape |
|------------------|----------|----------|--------|-------|
| n2               | 2        | #6       | 2-0    |       |
| n9               | 5        | #6       | 21-6   |       |
| n10              | 16       | #5       | 21-3   |       |
| n11              | 8        | #5       | 27-2   |       |
| n12              | 2        | #4       | 4-8    |       |
| n13              | 2        | #4       | 9-10   |       |
| n14              | 4        | #4       | 15-0   |       |
| n15              | 4        | #4       | 15-10  |       |
| n16              | 2        | #4       | 14-10  |       |
| n17              | 3        | #4       | 14-6   |       |
| n18              | 2        | #4       | 13-3   |       |
| n19              | 2        | #4       | 3-3    |       |
| n20              | 2        | #4       | 6-10   |       |
| n21              | 2        | #4       | 10-6   |       |
| n22              | 4        | #4       | 11-0   |       |
| n23              | 2        | #4       | 10-0   |       |
| n24              | 2        | #4       | 9-6    |       |
| n25              | 2        | #4       | 9-0    |       |
| n27              | 6        | #5       | 4-9    |       |
| n28              | 6        | #5       | 4-6    |       |
| n29              | 3        | #6       | 4-0    |       |
| n25              | 1        | #6       | 25-4   |       |
| n26              | 2        | #5       | 24-7   |       |
| n                | 14       | #4       | 5-9    |       |
| n1               | 7        | #4       | 7-9    |       |
| n2               | 14       | #7       | 21-6   |       |
| n3               | 7        | #4       | 29-0   |       |
| n4               | 10       | #4       | 8-6    |       |
| n6               | 3        | #4       | 4-7    |       |
| n7               | 1        | #4       | 9-9    |       |
| n8               | 2        | #4       | 18-0   |       |
| n11              | 6        | #4       | 10-6   |       |
| n12              | 14       | #7       | 12-2   |       |
| n13              | 5        | #7       | 28-1   |       |
| s                | 9        | #4       | 9-6    |       |
| s1               | 9        | #4       | 15-6   |       |
| s2               | 5        | #4       | 16-6   |       |
| s3               | 6        | #4       | 17-8   |       |
| s4               | 2        | #4       | 18-10  |       |
| s5               | 6        | #4       | 19-10  |       |
| s6               | 4        | #4       | 20-8   |       |
| s8               | 14       | #4       | 17-0   |       |
| s7               | 28       | #4       | 21-2   |       |
| u                | 4        | #6       | 8-1    |       |
| u1               | 7        | #6       | 6-6    |       |
| v9               | 70       | #4       | 5-0    |       |
| v10              | 66       | #4       | 6-3    |       |
| v2               | 67       | #4       | 4-2    |       |
| v3               | 23       | #4       | 7-0    |       |
| v4               | 3        | #4       | 4-11   |       |
| v5               | 20       | #4       | 7-9    |       |
| v6               | 10       | #4       | 7-2    |       |
| v8               | 24       | #4       | 6-3    |       |
| Item             | Unit     | Quantity |        |       |
| Class X Concrete | Cu Yds   | 94.0     |        |       |
| Reinforcing bars | Lbs      | 5710     |        |       |
| Concrete Piles   | Lin. Ft. | 1170 *   |        |       |
| Test Piles       | Each     | 1        |        |       |



TOP VIEW



PLAN-PILE CAP

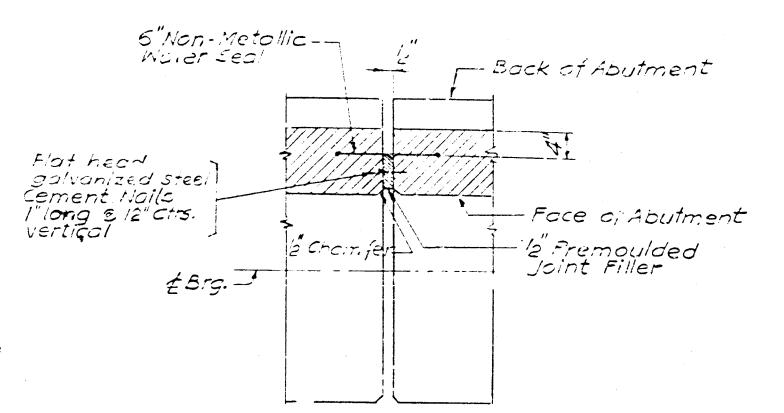
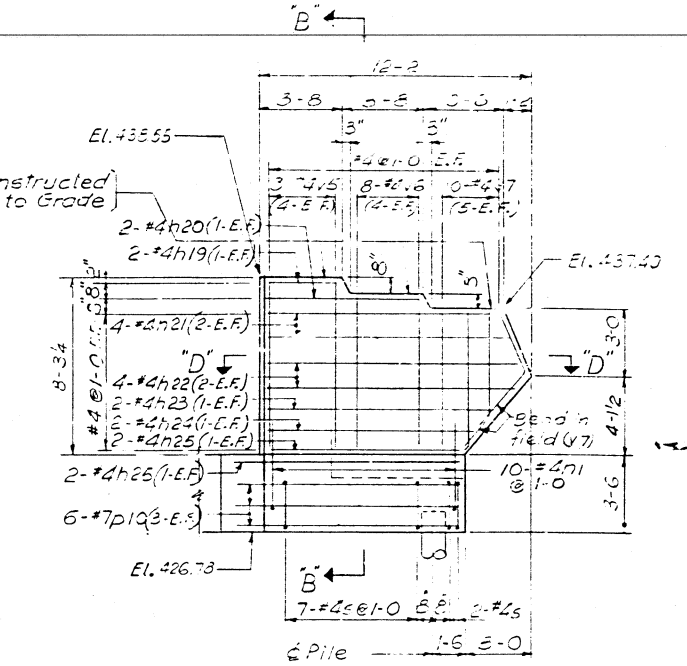
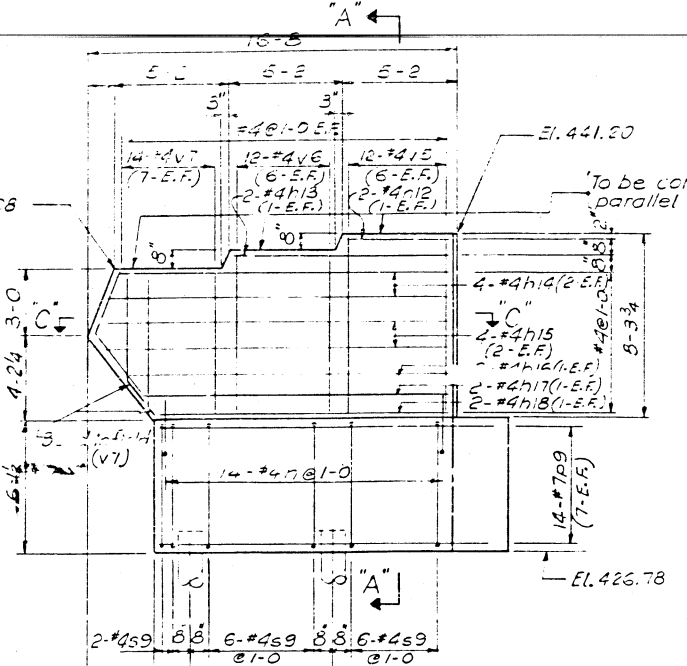
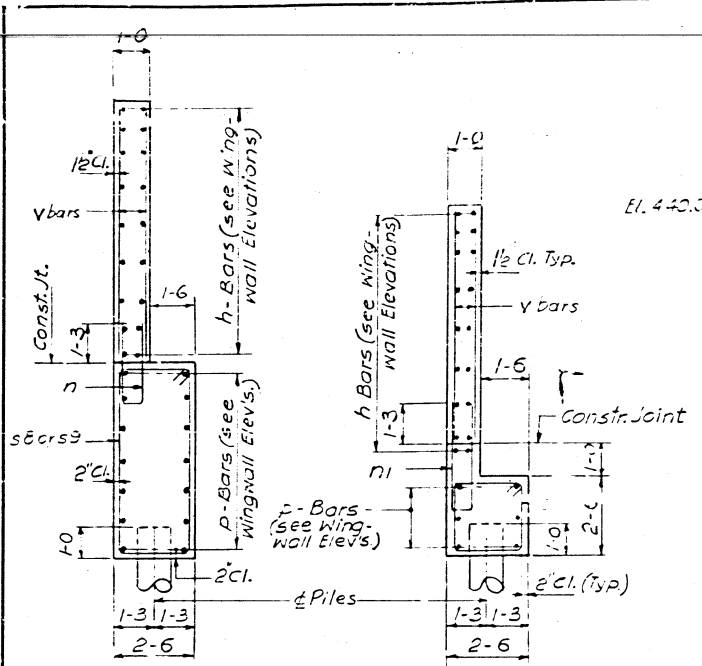
NOTES:  
 For Notes, reinforcement details, wingwall elevations and section thru abutment see sheet #12

ABBREVIATIONS  
 W.P. - Work Point  
 N.F. - Near Face  
 F.F. - Far Face  
 E.F. - Each Face

DESIGNED BY: H.A.D.  
 DRAWN BY: T.R.I.K.M.  
 CHECKED BY: H.C.O.  
 APPROVED BY: R.F.

STATE OF ILLINOIS  
 DEPARTMENT OF PUBLIC WORKS  
 DIVISION OF HIGHWAYS  
 NORTH ABUTMENT  
 F.A.I. ROUTE 70 ROADWAY  
 OVER TRENDLEY AVE.  
 STATION 86 + 09.53  
 F.A.I. RT. 70 ST. CLAIR CO. SECTION 82-4HB  
 H. W. LOCHNER, INC.  
 ENGINEERS  
 CHICAGO, ILLINOIS

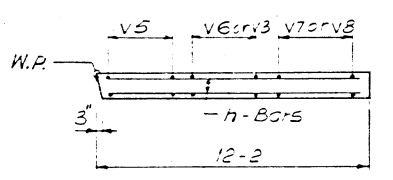
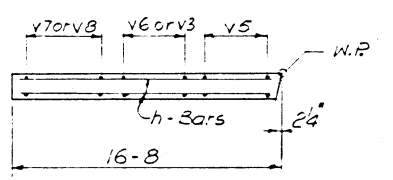
|                      |          |           |              |           |
|----------------------|----------|-----------|--------------|-----------|
| ROUTE NO.            | SECTION  | COUNTY    | TOTAL SHEETS | SHEET NO. |
| F.A.I. -70C          | 82-4HB   | ST. CLAIR | 77           | 60        |
| FED. ROAD DIV. NO. 4 | ILLINOIS | PROJECT   |              |           |



Note: Reinforcement not to pass thru Joint  
**PLAN OF EXPANSION JOINT DETAIL**

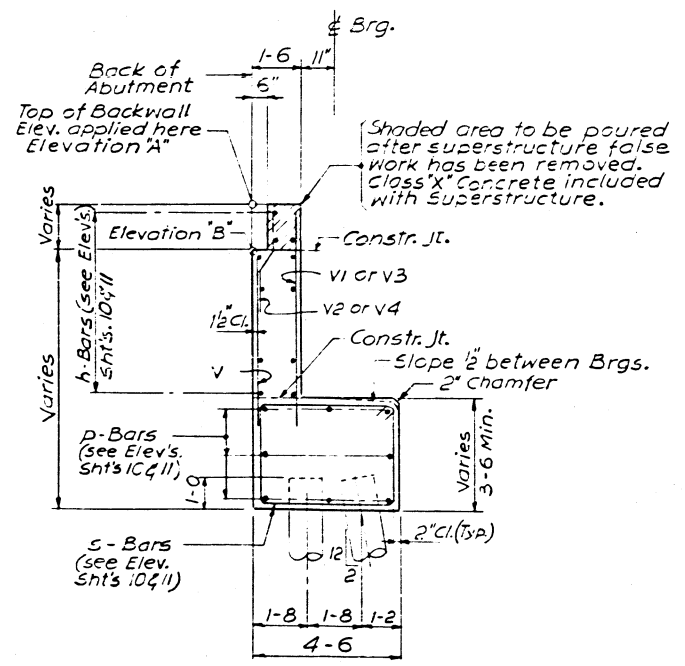
WINGWALL 'A' ELEVATION

WINGWALL 'B' ELEVATION

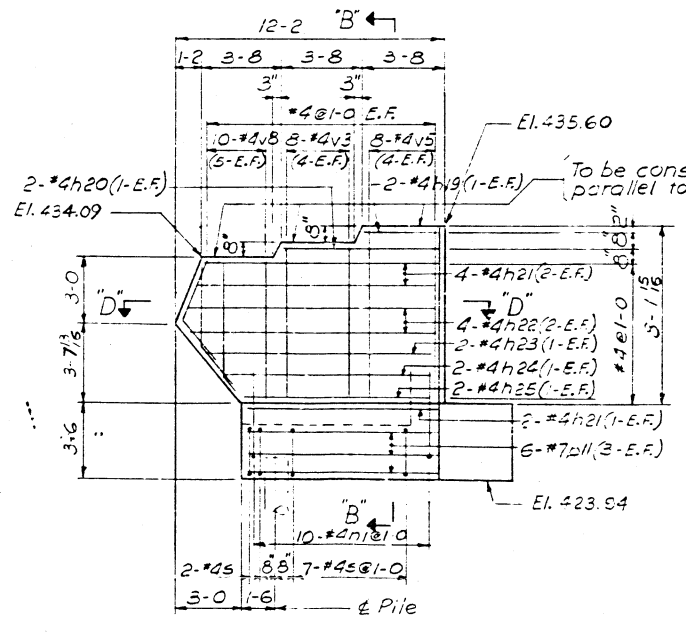


SECTION 'C-C'

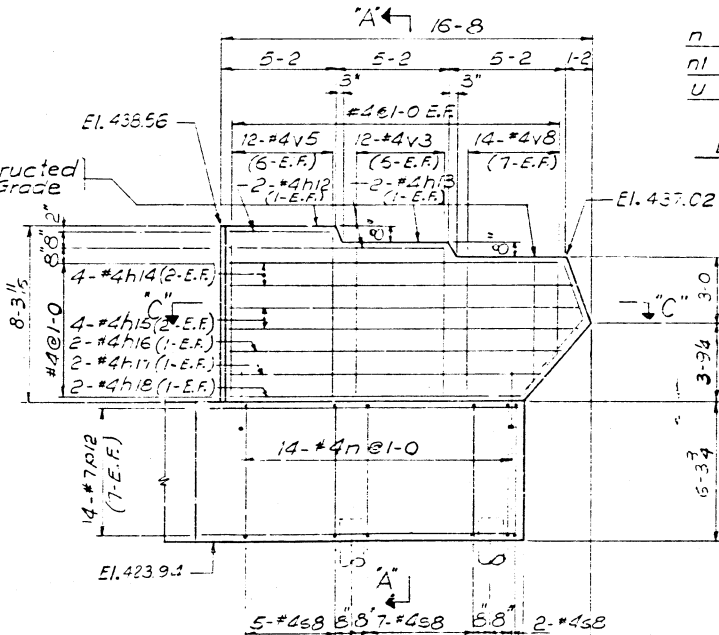
SECTION 'D-D'



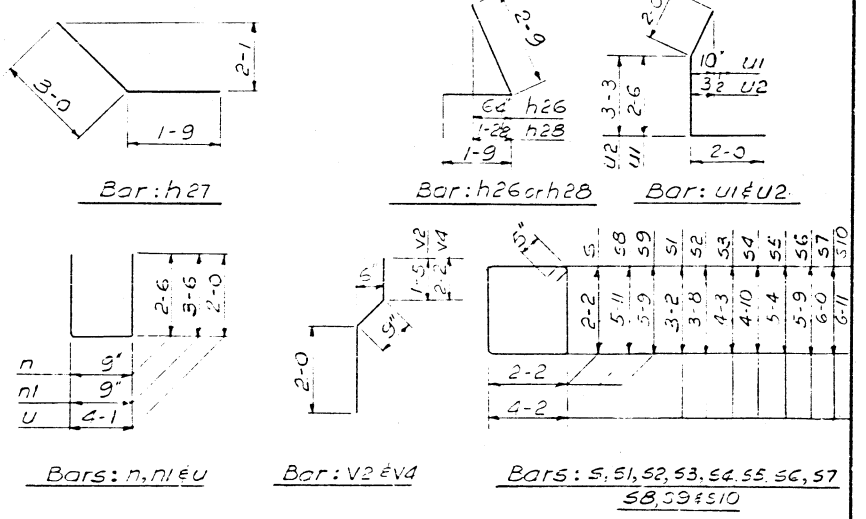
SECTION THRU ABUTMENT



WINGWALL 'C' ELEVATION



WINGWALL 'D' ELEVATION



Notes:  
 In placing reinforcing Bars, care shall be taken to clear Anchor Bolts.  
 For Bearing and Anchor Bolt Details see Sht. No. 9  
 For Expansion Guard see Sht. No. 9  
 For Pile Encasement see Sht. No. 17  
 Minimum Bar Lap for all reinforcing Bars shall be twenty (20) Bar Diameters, unless noted

DESIGNED BY: M.A.D.  
 DRAWN BY: K.M.  
 CHECKED BY: C.S.  
 APPROVED BY: C.A.

STATE OF ILLINOIS  
 DEPARTMENT OF PUBLIC WORKS  
 DIVISION OF HIGHWAYS  
**ABUTMENT DETAILS**  
 F.A.I. ROUTE 70 ROADWAY  
 OVER TRENDLEY AVE.  
 STATION 66 + 09.53  
 F.A.I. RT. 70 ST. CLAIR CO. SECTION 82-4HB  
 H. W. LOCHNER, INC.  
 ENGINEERS  
 CHICAGO, ILLINOIS

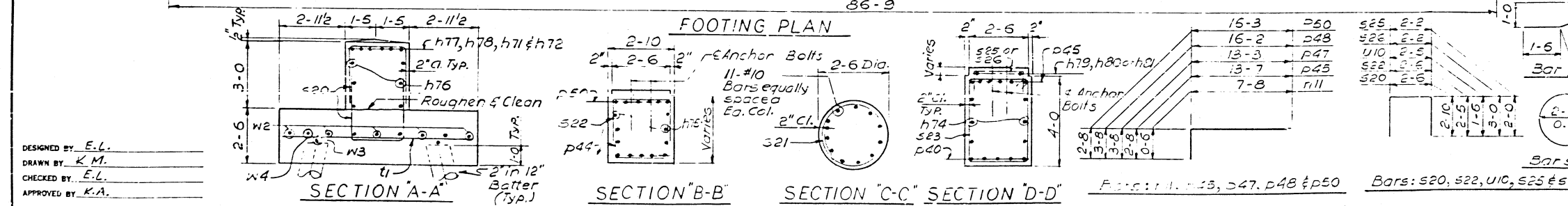
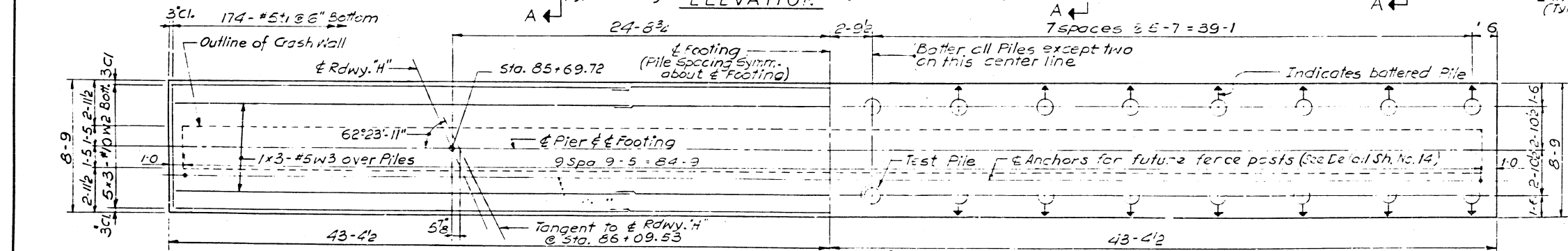
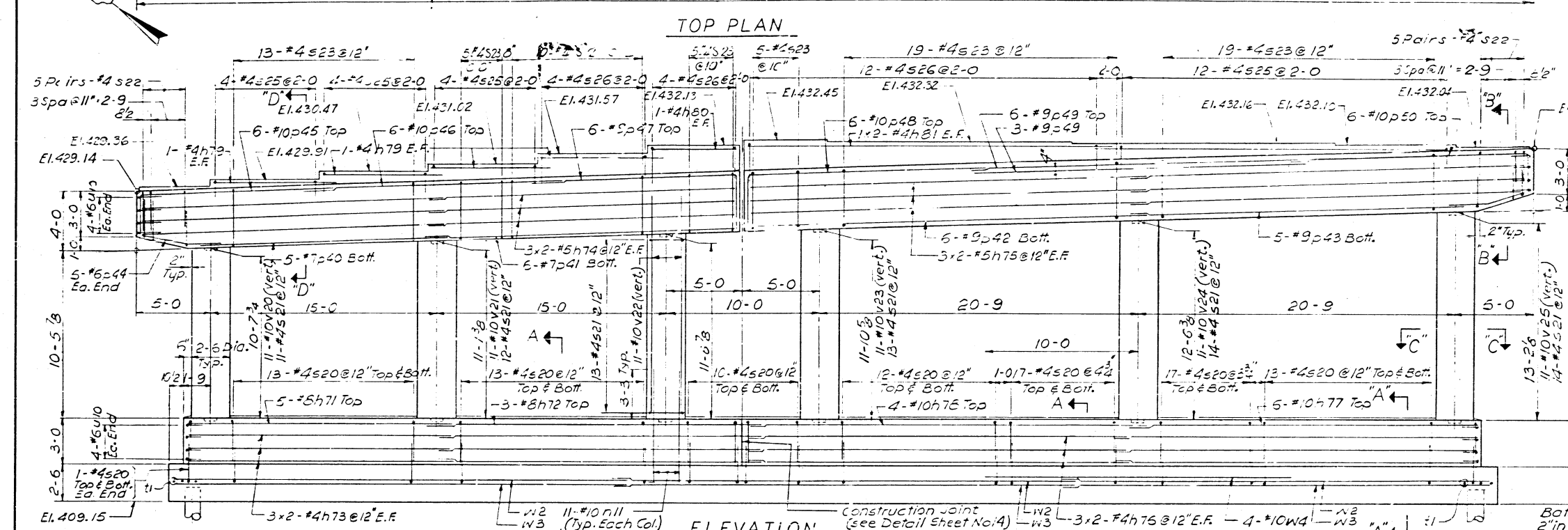
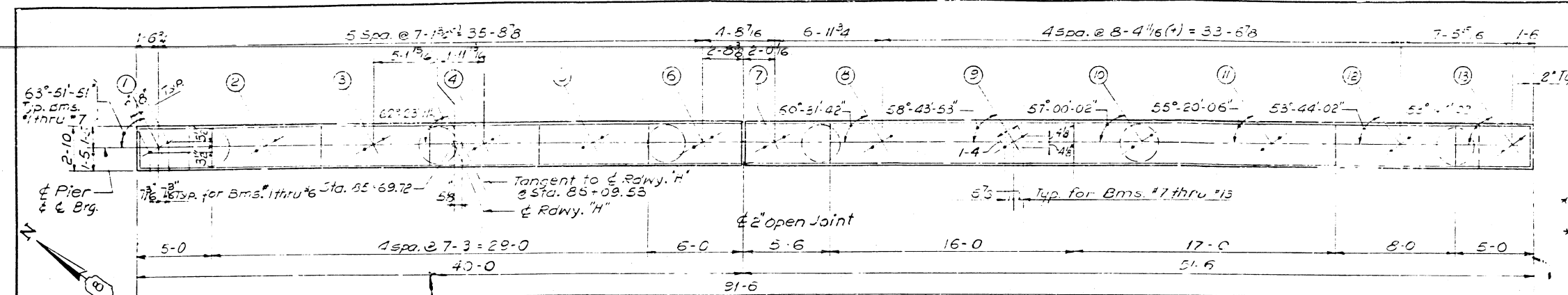
| ROUTE NO.            | SECTION          | COUNTY    | TOT. SHE. |
|----------------------|------------------|-----------|-----------|
| F.A.I. - 70          | 82-4HB           | ST. CLAIR | 7         |
| FED. ROAD DIV. NO. 4 | ILLINOIS PROJECT |           |           |

**BILL OF MATERIALS**

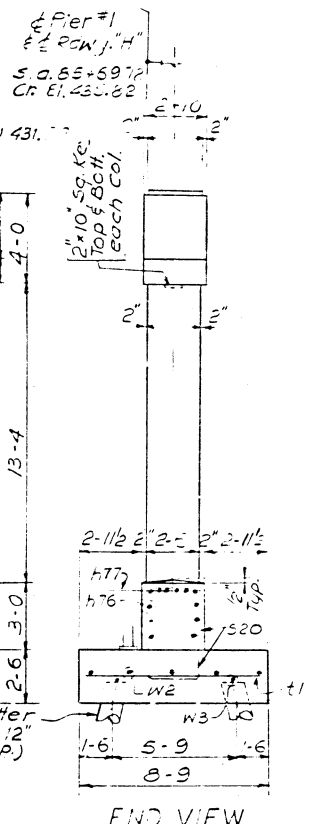
| Mark No. | Reqd. | Size | Len.  |
|----------|-------|------|-------|
| n71      | 5     | #8   | 17-4  |
| n72      | 3     | #8   | 22-8  |
| n73      | 12    | #2   | 18-9  |
| n74      | 12    | #5   | 20-5  |
| n75      | 12    | #5   | 26-0  |
| n76      | 12    | #4   | 26-2  |
| n77      | 6     | #10  | 23-5  |
| n78      | 4     | #10  | 26-10 |
| n79      | 3     | #4   | 8-0   |
| n80      | 3     | #4   | 5-8   |
| n81      | 4     | #4   | 23-9  |
| p41      | 5     | #7   | 20-5  |
| p42      | 1     | #7   | 26-5  |
| p43      | 3     | #9   | 22-9  |
| p44      | 10    | #6   | 5-4   |
| p45      | 1     | #10  | 16-3  |
| p46      | 6     | #10  | 17-3  |
| p47      | 6     | #9   | 15-11 |
| p48      | 6     | #10  | 19-10 |
| p49      | 9     | #9   | 22-11 |
| p50      | 6     | #10  | 18-11 |
| p50      | 5     | #7   | 16-5  |
| n11      | 66    | #10  | 8-2   |
| s20      | 196   | #5   | 8-2   |
| s21      | 77    | #5   | 5-1   |
| s22      | 20    | #5   | 7-4   |
| s23      | 76    | #4   | 15-2  |
| s25      | 24    | #4   | 5-2   |
| s26      | 20    | #4   | 8-2   |
| u10      | 174   | #5   | 8-3   |
| u10      | 6     | #6   | 5-5   |
| u20      | 11    | #10  | 13-0  |
| u21      | 11    |      | 4-2   |
| u22      | 11    |      | 12-10 |
| u23      | 1     |      | 15-2  |
| u24      | 11    |      | 15-10 |
| u25      | 11    | #10  | 15-6  |
| w2       | 15    | #10  | 30-2  |
| w3       | 8     | #5   | 23-6  |
| w4       | 4     | #10  | 20-0  |

| Item               | Unit     | Quantity |
|--------------------|----------|----------|
| Class "X" Concrete | Cu. Yds. | 158.3    |
| Reinforcement Bars | Lbs.     | 20,030   |
| Concrete Piles     | Lin. Ft. | 1953*    |
| Test Piles         | Each     | 1        |

**Notes:**  
 1. Four Steps monolithically with cap.  
 2. Place Reinforcing to clear Anchor Bolts.  
 3. For Anchor Bolts & Org. Assemblies see Sheet No. 8  
 4. Min. Bar Lap = 20 Dia. unless otherwise noted.  
 5. All Edges shall have 3/4 Chamfer except footing



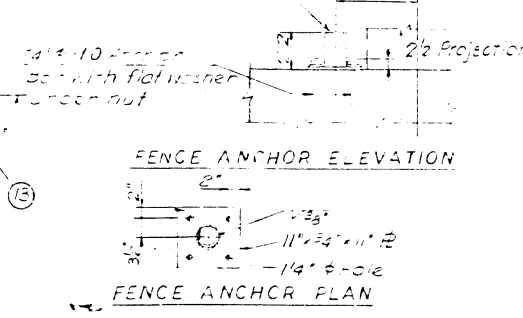
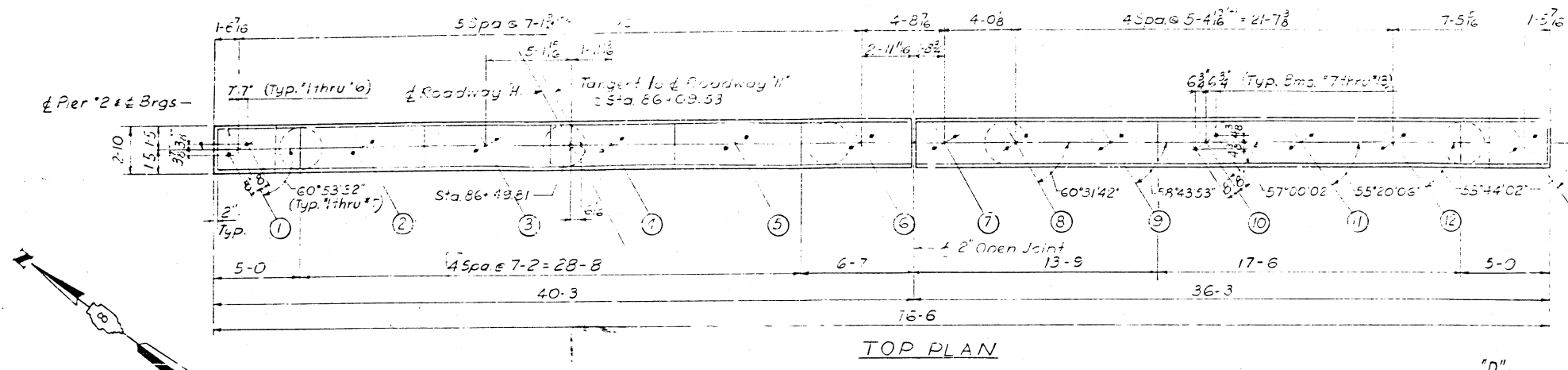
**PILE DATA:**  
 Type: Concrete Piles  
 Required Capacity: 35 Tons  
 Est. Length: 63 Ft.  
 \* No. Required: 31  
 Test Piles: 1  
 \* does not include test pile



**Notes:**  
 1. Four Steps monolithically with cap.  
 2. Place Reinforcing to clear Anchor Bolts.  
 3. For Anchor Bolts & Org. Assemblies see Sheet No. 8  
 4. Min. Bar Lap = 20 Dia. unless otherwise noted.  
 5. All Edges shall have 3/4 Chamfer except footing

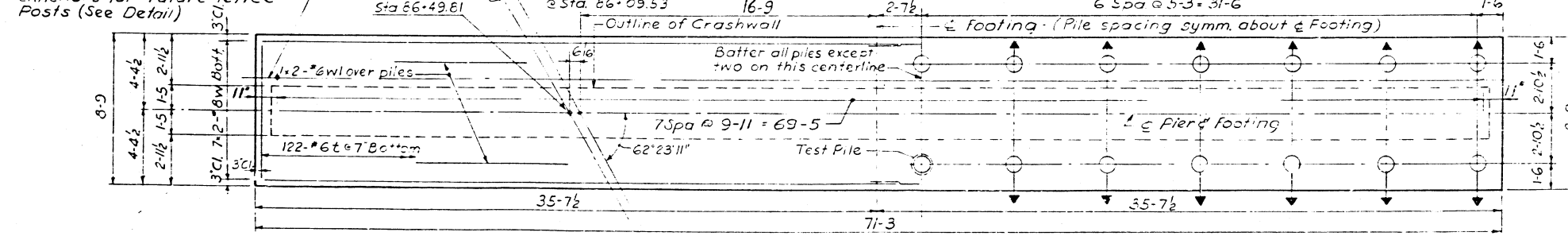
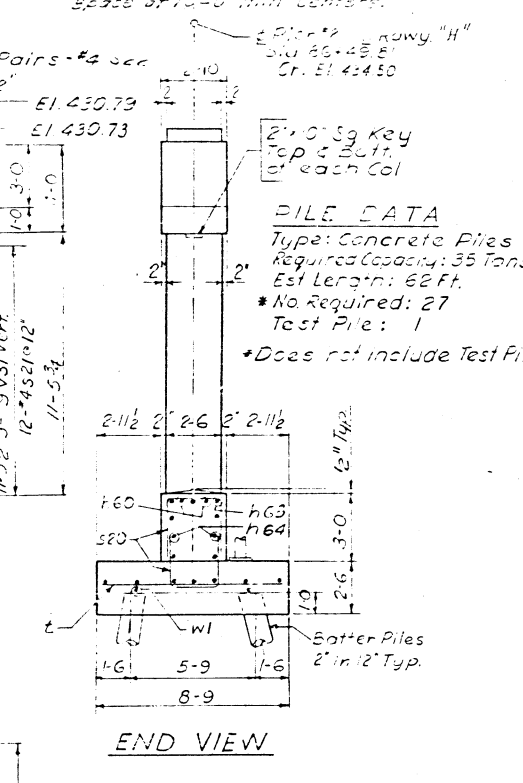
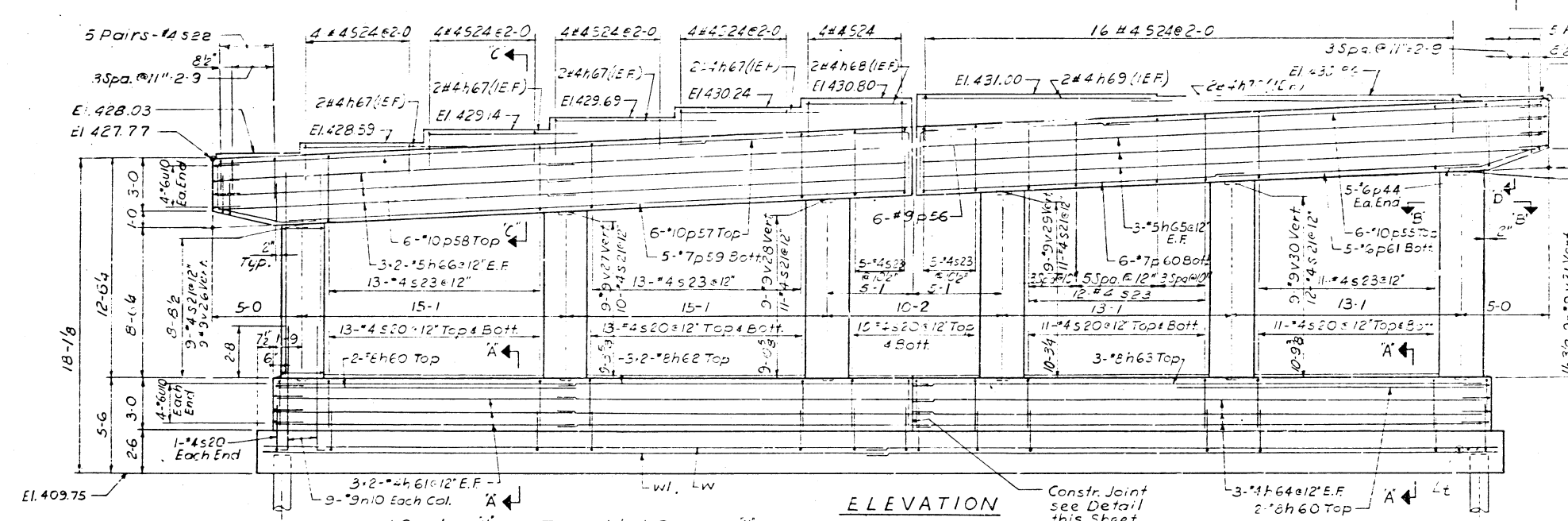
STATE OF ILLINOIS  
 DEPARTMENT OF PUBLIC WORKS  
 DIVISION OF HIGHWAYS  
 PIER No. 1  
 F.A.I. ROUTE 70 ROAD  
 OVER TRENDLEY AVE  
 STATION 66 + 09.53  
 F.A.I. RT. 70 ST. CLAIR CO. SECTION 82-4HB  
 H. W. LOCHNER, INC.  
 ENGINEERS  
 CHICAGO, ILLINOIS

DESIGNED BY: E.L.  
 DRAWN BY: K.M.  
 CHECKED BY: E.L.  
 APPROVED BY: K.A.



**BILL OF MATERIAL**

| Mark No | Read Size | Length | Shape |
|---------|-----------|--------|-------|
| h60     | 4         | 8      | 6-6   |
| h61     | 12        | 14     | 19-6  |
| h62     | 6         | 15     | 20-1  |
| h63     | 3         | 18     | 22-6  |
| h64     | 6         | 14     | 32-6  |
| h65     | 6         | 15     | 35-8  |
| h66     | 12        | 15     | 20-6  |
| h67     | 8         | 14     | 8-2   |
| h68     | 2         | 14     | 6-4   |
| h69     | 2         | 14     | 1-7   |
| h70     | 2         | 14     | 18-2  |
| p54     | 10        | 6      | 5-4   |
| p55     | 6         | 10     | 28-2  |
| p56     | 6         | 10     | 16-0  |
| p57     | 6         | 10     | 17-1  |
| p58     | 6         | 10     | 31-3  |
| p59     | 5         | 17     | 35-9  |
| p60     | 6         | 17     | 18-8  |
| p61     | 5         | 16     | 17-9  |
| s20     | 10        | 14     | 8-2   |
| s21     | 5         | 14     | 8-1   |
| s22     | 20        | 14     | 7-1   |
| s23     | 59        | 14     | 13-2  |
| s24     | 36        | 14     | 7-2   |
| n10     | 54        | 19     | 7-7   |
| n11     | 122       | 16     | 8-3   |
| v26     | 16        | 16     | 5-5   |
| v27     | 9         | 19     | 12-0  |
| v28     | 9         | 19     | 12-7  |
| v29     | 9         | 19     | 13-2  |
| v30     | 9         | 19     | 13-7  |
| v31     | 9         | 19     | 4-1   |
| v32     | 9         | 19     | 14-7  |
| v33     | 4         | 18     | 36-3  |
| v34     | 4         | 18     | 36-2  |

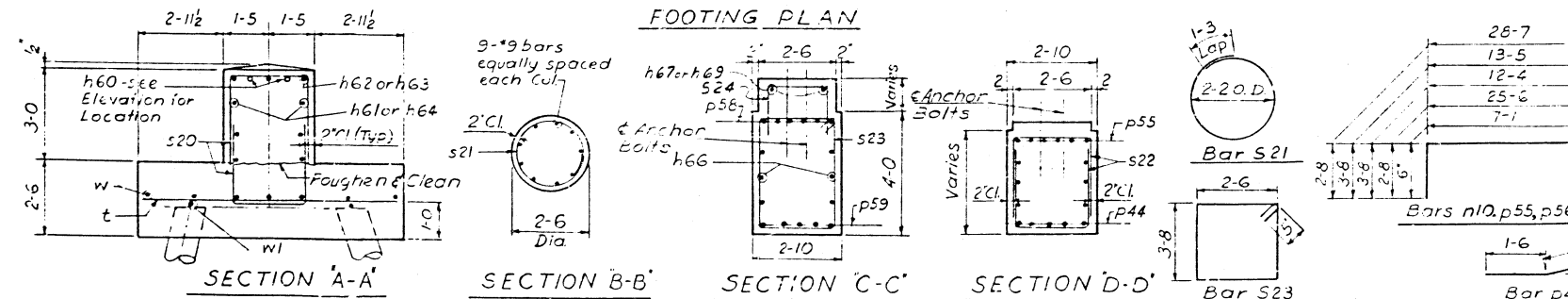
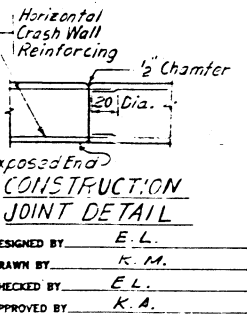


**NOTES:**

Pour steps monolithically with cap.  
 Place reinforcing to clear Anchor Bolts  
 For Anchor Bolts & Brg. Assemblies see Sh. 8  
 Min. Bar Lap - 20 Dia unless otherwise noted  
 All edges shall have 1/4 chamfer except Footing.

| Item               | Unit     | Quantity |
|--------------------|----------|----------|
| Class X Concrete   | Cu. Yds. | 128.9    |
| Reinforcement Bars | Lbs.     | 13,560   |
| Concrete Piles     | Lin. Ft. | 1674*    |
| Test Piles         | Each     | 1        |

\*Does not include Test Pile



STATE OF ILLINOIS  
 DEPARTMENT OF PUBLIC WORKS  
 DIVISION OF HIGHWAYS

**PIER No 2**

F.A.I. ROUTE 70 ROADWAY  
 OVER TRENDLEY AVE.

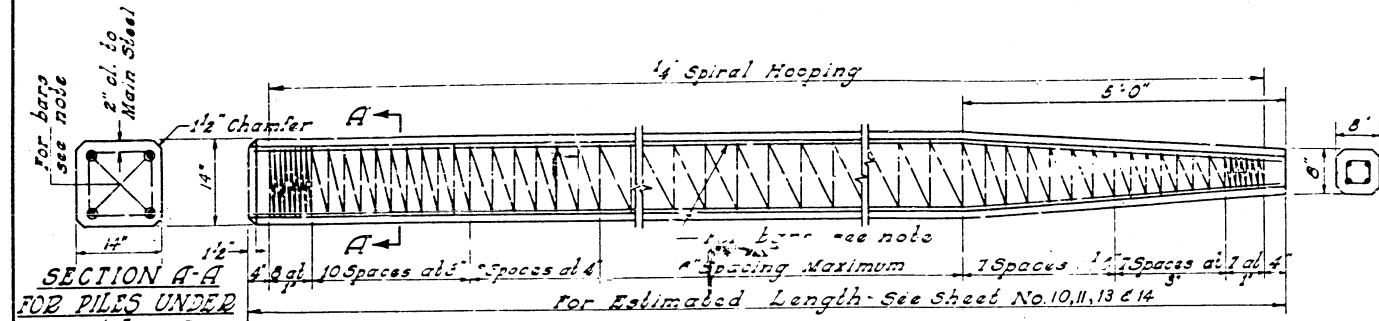
STATION 86+09.53

F.A.I. RT. 70 ST. CLAIR CO. SECTION 82-4HB

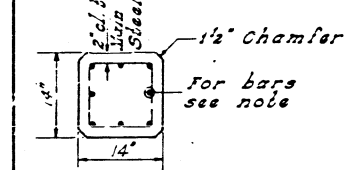
H. W. LOCHNER, INC.  
 ENGINEERS  
 CHICAGO, ILLINOIS

SHEET 14 OF 17

|                       |         |                  |              |           |
|-----------------------|---------|------------------|--------------|-----------|
| FEDERAL AID ROUTE NO. | SECTION | COUNTY           | TOTAL SHEETS | SHEET NO. |
| F.A.I. - 70           | 82-4HB  | ST. CLAIR        | 17           | 55        |
| FED. ROAD DIV. NO. 4  |         | ILLINOIS PROJECT |              |           |



SECTION A-A FOR PILES UNDER 45' LONG

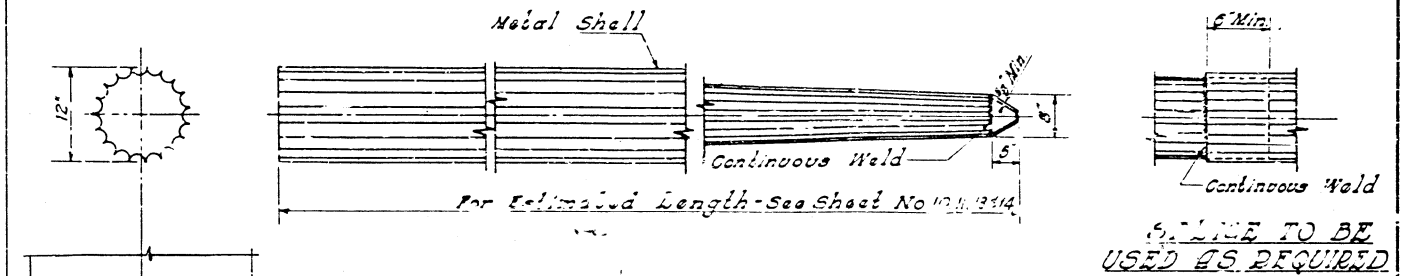


SECTION A-A FOR PILES 45' OR MORE

**NOTE:**  
 For 14" piles 45' long or more use 8-#8 bars - 4 for the full length and 4 to the point of bevel. For 14" piles under 45'-0" long use 4-#9 bars the full length.

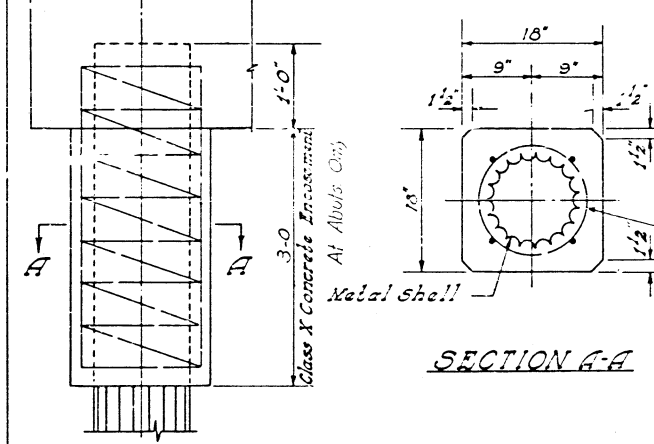
**HANDLING:** For Piles up to 45 Ft. use slings placed at a distance of 0.21 L\* from each end. For Piles longer than 45 Ft., use three slings placed at a distance of 0.12 L\* from each end and at mid-point of pile.  
 \*L = Over all length of pile to be handled

DETAIL OF PRECAST CONCRETE PILES



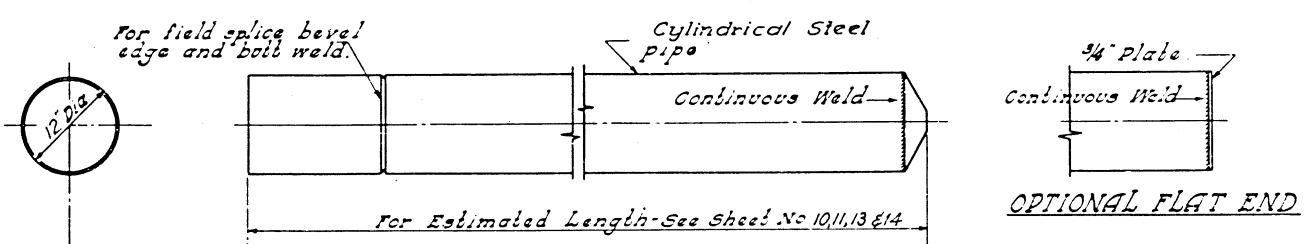
**ALLOWABLE TAPERS**

1. Taper 1/2-6" for 10' x 12" Cylindrical Section Extension
2. Taper 1/4-0" for 17' x 12" Cylindrical Section Extension
3. Taper 1/7-0" for 30' x 12" Cylindrical Section Extension

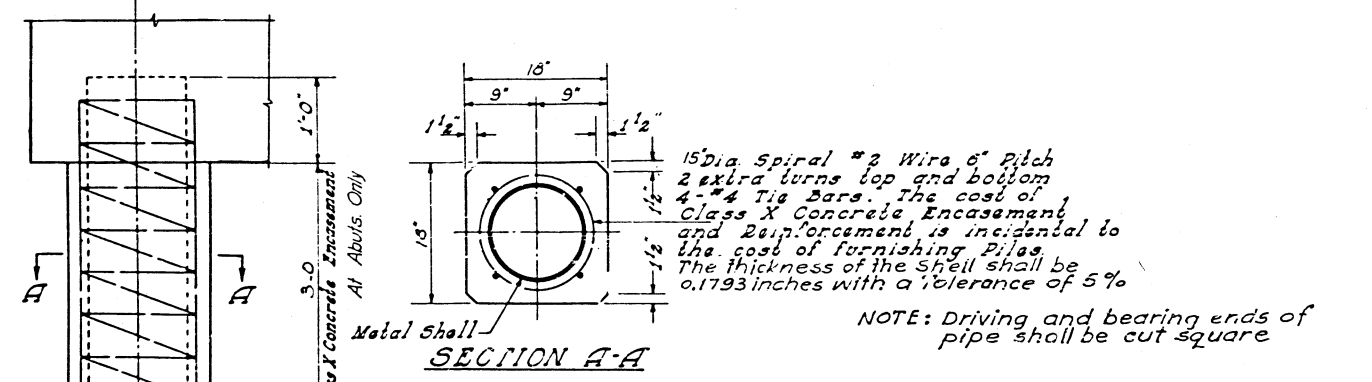


15" Dia Spiral #2 Wire, 6" Pitch  
 2 extra turns top and bottom  
 4-#4 Tie Bars. The cost of Class X Concrete Encasement and Reinforcement is incidental to the cost of furnishing Piles. The thickness of the shell shall be 0.1793 inches with a tolerance of 5%

DETAIL OF TAPERED METAL SHELL FOR CAST IN PLACE CONG. PILES



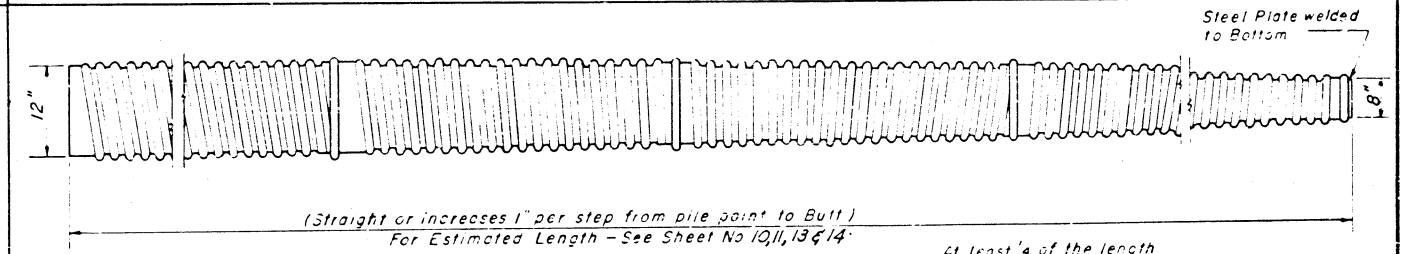
OPTIONAL FLAT END



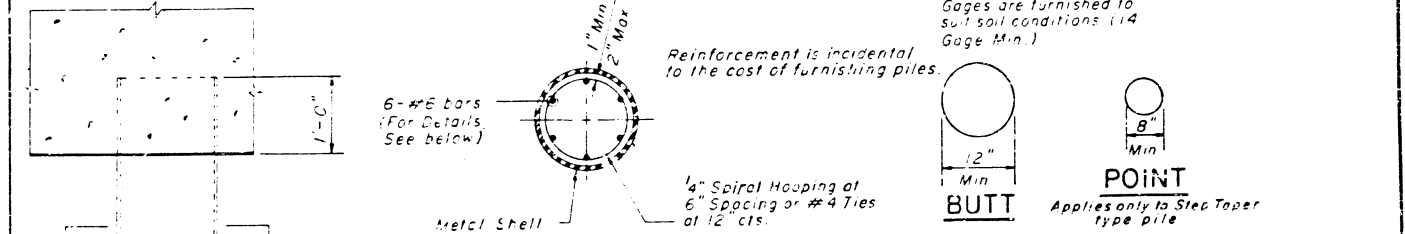
15" Dia. Spiral #2 Wire 6" Pitch  
 2 extra turns top and bottom  
 4-#4 Tie Bars. The cost of Class X Concrete Encasement and Reinforcement is incidental to the cost of furnishing Piles. The thickness of the shell shall be 0.1793 inches with a tolerance of 5%

**NOTE:** Driving and bearing ends of pipe shall be cut square

DETAIL OF CYLINDRICAL STEEL SHELL FOR CAST IN PLACE CONCRETE PILES



(Straight or increases 1" per step from pile point to Butt)  
 For Estimated Length - See Sheet No 10, 11, 13 & 14.



Reinforcement is incidental to the cost of furnishing piles.

6-#6 bars (For Details See below)

1/2" Dia. Spiral Hooping at 6" Spacing or #4 Ties at 12" cts.

1" Min. 2" Max.

12" Min. BUTT

8" Min. POINT

Applies only to Step Taper type pile

STATE OF ILLINOIS  
 DEPARTMENT OF PUBLIC WORKS  
 DIVISION OF HIGHWAYS  
 CONCRETE PILE DETAIL  
 F.A.I. ROUTE 70 ROADWAY OVER TRENDLEY AVE.  
 STATION 86 + 09.53  
 F.A.I. RT. 70 ST. CLAIR CO. SECTION 82-4HB  
 H. W. LOCHNER, INC. ENGINEERS CHICAGO, ILLINOIS

DESIGNED BY \_\_\_\_\_  
 DRAWN BY \_\_\_\_\_  
 CHECKED BY \_\_\_\_\_  
 APPROVED BY \_\_\_\_\_

7-2-65 Added of encasement "At Abut's Only." JRC.-A.S.A.