

06-12-2020 LETTING ITEM 021

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

PROPOSED  
HIGHWAY PLANS

F.A.I. ROUTE I-74280 (I-74280)  
SECTION: D2 BP 2020-3  
PROJECT: NHPP-B55S(672)  
TYPE of IMPROVEMENT: BRIDGE PAINTING  
HENRY COUNTY

FOR INDEX OF SHEETS, SEE SHEET NO. 2  
FOR STATE STANDARDS, SEE SHEET NO. 2

HENRY COUNTY - COLONA TOWNSHIP - SECTION 16

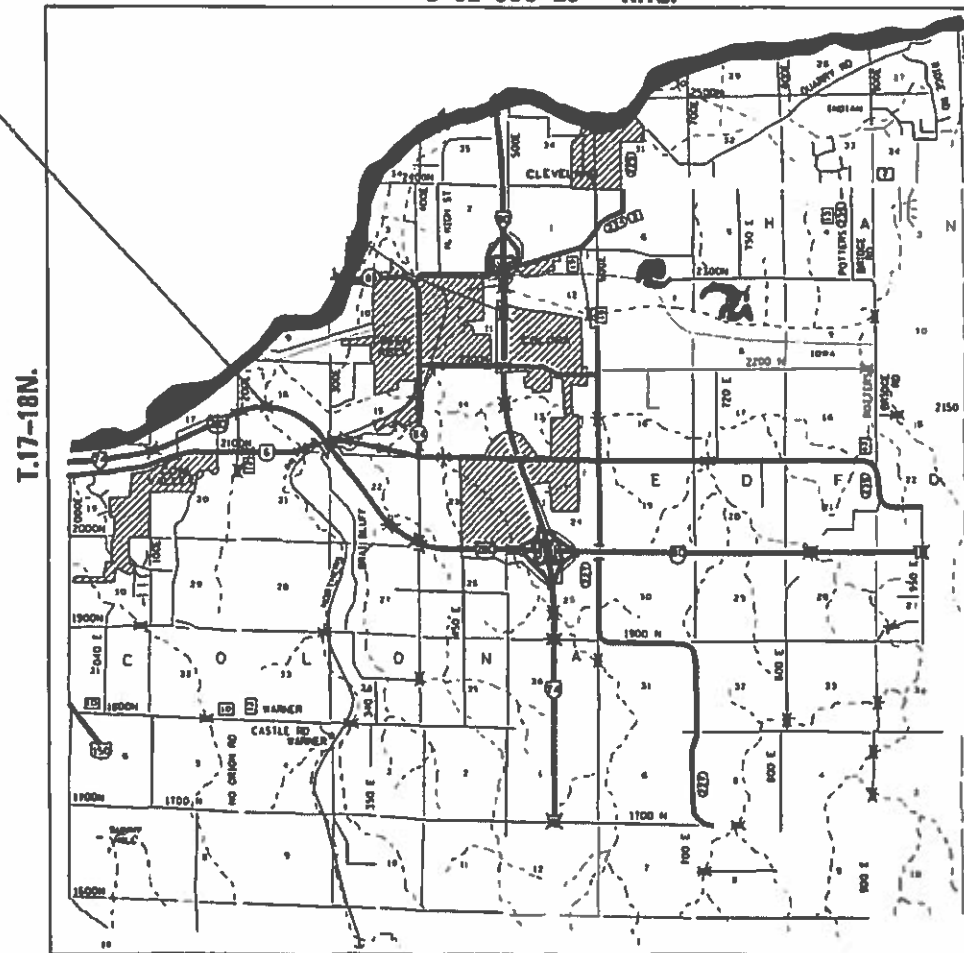
| F.A.I. RTE. | SECTION      | COUNTY | TOTAL SHEETS       | SHEET NO. |
|-------------|--------------|--------|--------------------|-----------|
| 74/280      | D2 BP 2020-3 | HENRY  | 12                 | 1         |
| ILLINOIS    |              |        | CONTRACT NO. 64P33 |           |

D-92-036-20



C-92-058-20 R.1E.

SN 037-0001  
SN 037-0002



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

J.U.L.I.E.  
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION  
1-800-892-0123  
OR 811

PROJECT ENGINEER: DAVID DOSS (815) 284-5416  
PROJECT MANAGER: MAHMOUD ETEMADI (815) 284-5393

CONTRACT NO. 64P33

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

SUBMITTED March 04, 20 20

David Doss  
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER

MAY 8 20 20

David Doss  
ENGINEER-OF-DESIGN AND ENVIRONMENT

MAY 8 20 20

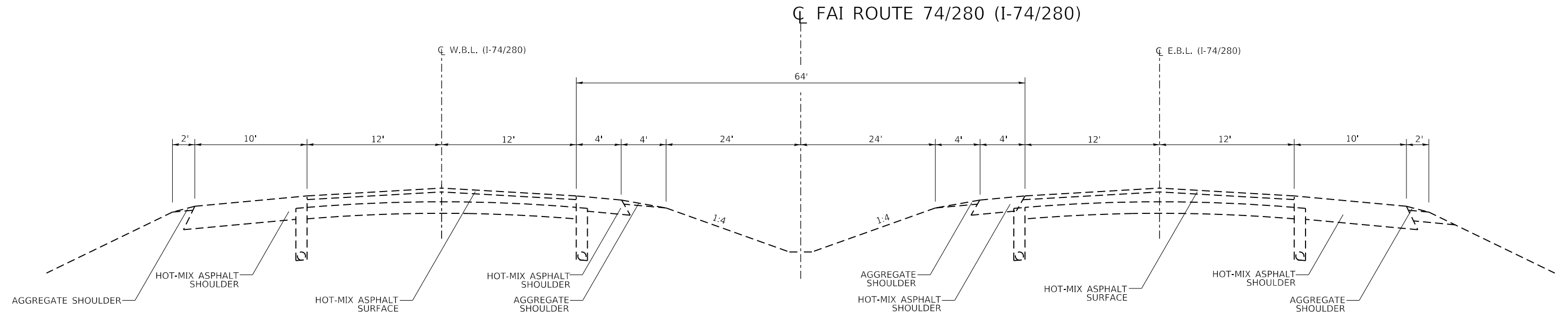
David Doss  
DIRECTOR OF HIGHWAYS PROJECT IMPLEMENTATION

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OF THE STATE OF ILLINOIS





# EXISTING TYPICAL



MODEL: Default  
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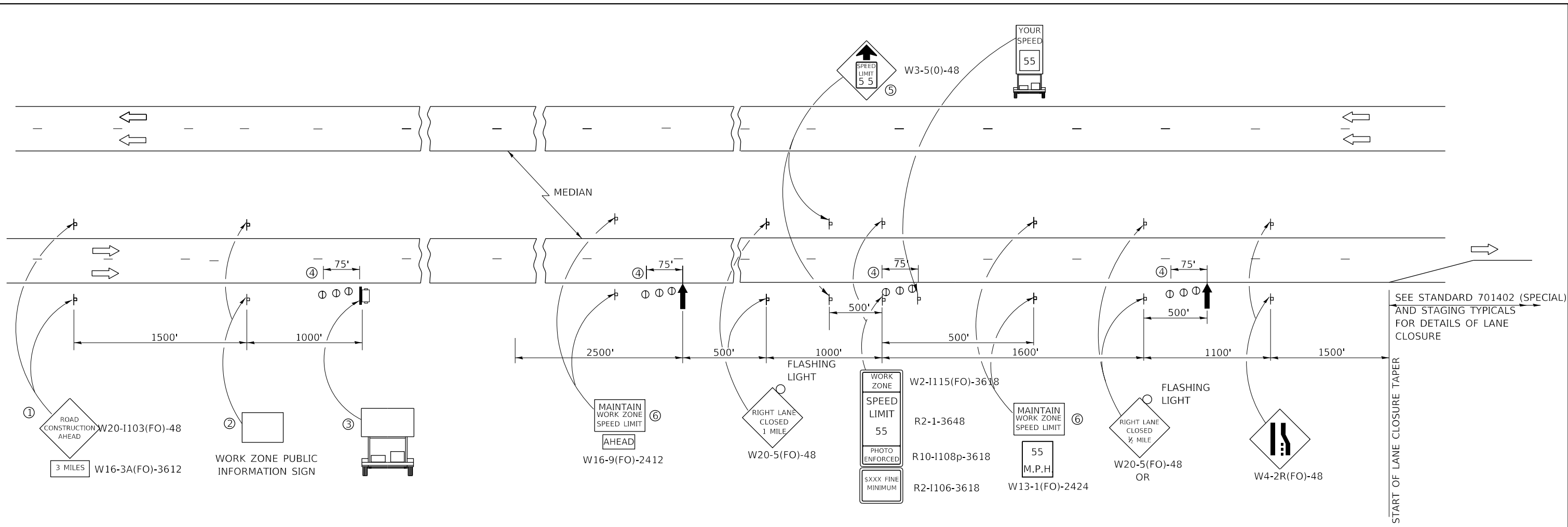
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| USER NAME = dossed                  | DESIGNED - _____ | REVISED - _____ |
|                                     | DRAWN - _____    | REVISED - _____ |
| PLOT SCALE = 100,0000' / in.        | CHECKED - _____  | REVISED - _____ |
| PLOT DATE = Feb-18-2020 11:38:37 AM | DATE - _____     | REVISED - _____ |

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

|                         |                           |
|-------------------------|---------------------------|
| <b>EXISTING TYPICAL</b> |                           |
| SCALE: _____            | SHEET ____ OF ____ SHEETS |
| STA. _____              | TO STA. _____             |

| F.A.I. RTE.               | SECTION      | COUNTY | TOTAL SHEETS | SHEET NO. |
|---------------------------|--------------|--------|--------------|-----------|
| 74/280                    | D2 BP 2020-3 | HENRY  | 12           | 4         |
| CONTRACT NO. 64P33        |              |        |              |           |
| ILLINOIS FED. AID PROJECT |              |        |              |           |





- ① THE ROAD CONSTRUCTION AHEAD SIGN SHALL BE LOCATED 3 MILES IN ADVANCE OF THE PROJECT LIMITS.
- ② THE MESSAGE AND SIZE OF THE WORK ZONE PUBLIC INFORMATION SIGN SHALL BE AS SPECIFIED BY THE DEPARTMENT.
- ③ TO BE PLACED IN THE MEDIAN WHEN FEASIBLE. THE MESSAGE BOARD SHALL BE USED TO DISPLAY STATUS OF LANES WITHIN THE PROJECT. THE PRIMARY MESSAGES SHALL BE:  
 "RIGHT LANE CLOSED" / " x MILES AHEAD"  
 "LEFT LANE CLOSED" / " x MILES AHEAD"  
 "ALL LANES OPEN"
- ④ THREE, TYPE II BARRICADES, DRUMS, OR VERTICAL BARRICADES AT 25' CENTERS.
- ⑤ THIS SIGN SHALL ONLY BE USED IF THE EXISTING SPEED LIMIT IS GREATER THAN 65 MPH.
- ⑥ 48"x36" FLUORESCENT ORANGE SIGN WITH BLACK LETTERS.

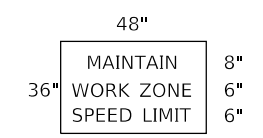
- ↑ ARROW BOARD
- ☐ PORTABLE CHANGEABLE MESSAGE SIGN
- ⊥ SIGN
- ⊙ TYPE II BARRICADE, DRUM, OR VERTICAL BARRICADE WITH MONODIRECTIONAL FLASHING LIGHT
- 🚛 TRAILER MOUNTED SPEED DISPLAY SIGN

**GENERAL NOTE:**

THIS STANDARD IS USED WHERE AT ANY TIME A LANE IS CLOSED ON A FREEWAY/EXPRESSWAY.

WHEN THE LEFT LANE IS CLOSED, LEFT LANE CLOSED SIGNS SHALL BE SUBSTITUTED FOR THE RIGHT LANE CLOSED SIGNS.

THE FIRST TWO SIGNS AND THE MESSAGE BOARD ARE STATIONARY. THE OTHER SIGNS AND ARROWBOARDS SHALL BE MOVED AS NECESSARY TO MAINTAIN THE REQUIRED DISTANCE FROM THE START OF THE LANE CLOSURE TAPER(S).



MODEL: Default  
FILE: h:\mfc\_p\pub\barroom.d\at\illinois.gov\PI\DOT\Documents\IBDOT\_Offices\District\_2\Projects\Operations\Bridges\_Section\Henry037-0001\_037-0002\_64P33\CADD\B33-shh.dgn

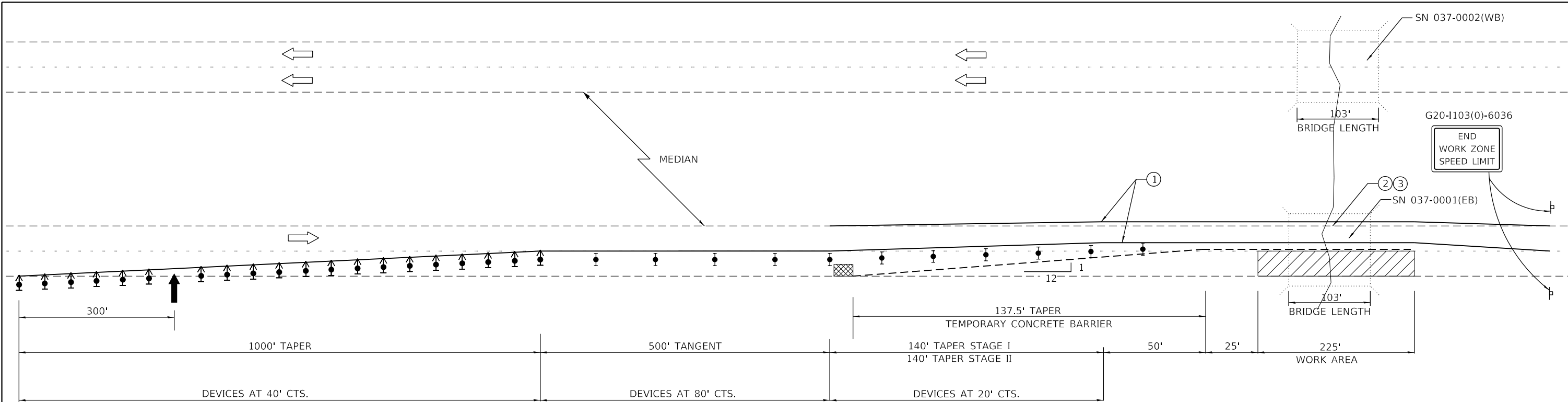
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| PLOT DATE = Feb-18-2020 11:38:52 AM | DATE - _____     | REVISED - _____ |

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**TRAFFIC CONTROL & PROTECTION, STANDARD 701400 (SPECIAL)  
FOR SN's 037-0001 & 037-0002 (MOSQUITO CREEK OVER I-74/280)**

|                    |                      |              |                 |                           |
|--------------------|----------------------|--------------|-----------------|---------------------------|
| F.A.I. RTE. 74/280 | SECTION D2 BP 2020-3 | COUNTY HENRY | TOTAL SHEETS 12 | SHEET NO. 6               |
| CONTRACT NO. 64P33 |                      |              |                 | ILLINOIS FED. AID PROJECT |

SCALE: \_\_\_\_\_ SHEET \_\_\_\_ OF \_\_\_\_ SHEETS STA. \_\_\_\_\_ TO STA. \_\_\_\_\_



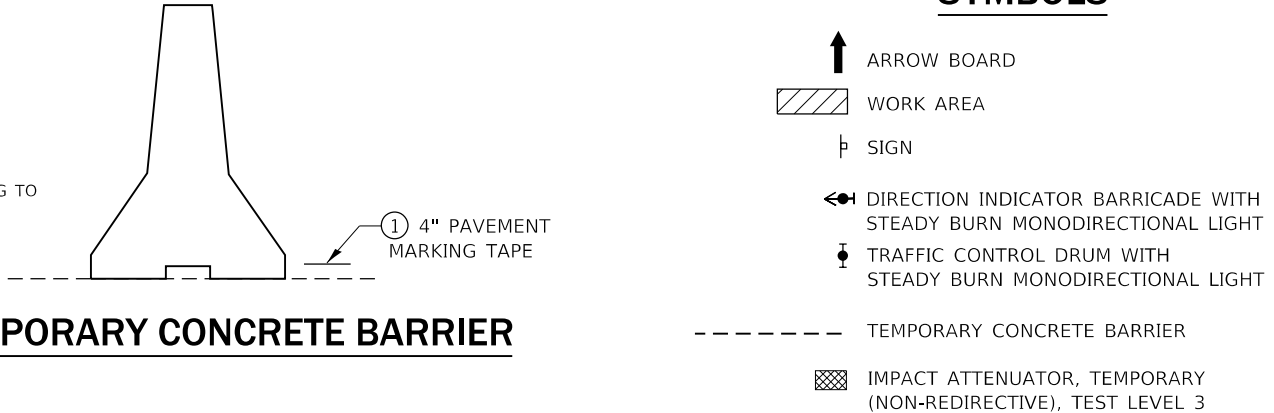
**PAVEMENT MARKINGS**

ALL TEMPORARY PAVEMENT MARKING SHALL BE, PAVEMENT MARKING TAPE, TYPE IV 4" AND THE MATERIALS SHALL BE ACCORDING TO ARTICLE 1095.06 OF THE STANDARD AND SPECIFICATIONS. THE CONTRACTOR SHALL INSTALL, MAINTAIN AND REMOVE ALL TEMPORARY PAVEMENT MARKING TAPE. THIS WORK SHALL NOT BE PAID SEPERATELY AND SHALL BE INCLUDED IN THE COST OF THE "TRAFFIC CONTROL AND PROTECTION STANDARD 701402 (SPECIAL)".

ALL CONFLICTING PAVEMENT MARKINGS AND RAISED REFLECTIVE PAVEMENT MARKERS SHALL BE PROTECTED PRIOR TO COVERING WITH PAVEMENT MARKING BLACKOUT TAPE, 4". PAVEMENT MARKING BLACKOUT TAPE, 4" SHALL EXTEND A MINIMUM OF 2 INCHES BEYOND THE EXISTING MARKINGS OR REFLECTORS IN ALL DIRECTIONS. THIS WORK SHALL INCLUDE PROTECTING EXISTING PAVEMENT MARKINGS AND RAISED REFLECTIVE PAVEMENT MARKERS, INSTALLING, MAINTAINING AND REMOVING BLACKOUT TAPE. THIS WORK SHALL NOT BE PAID SEPERATELY AND SHALL BE INCLUDED IN THE COST OF THE "TRAFFIC CONTROL AND PROTECTION STANDARD 701402 (SPECIAL)".

\*NO EQUIPMENT OR MATERIALS SHALL ENCR OACH WITHIN A DISTANCE OF 2'-0" AS MEASURED FROM THE BASE OF THE TEMPORARY CONCRETE BARRIER TO THE CL OF ROADWAY

**SYMBOLS**



**TEMPORARY CONCRETE BARRIER**

ANCHORED ACCORDING TO ARTICLE 704.04

- ① TEMPORARY PAVEMENT MARKING TAPE SHALL BE PLACED THROUGHOUT THE TAPER AND ALONG-SIDE THE WORK AREA. THE RIGHT EDGE LINE SHALL BE WHITE AND THE LEFT EDGE LINE SHALL BE YELLOW.
- ② EXISTING PAVEMENT MARKING LINE
- ③ BLACKOUT TAPE TO COVER CONFLICTING EXISTING PAVEMENT MARKING LINES

**GENERAL NOTES**

THIS STANDARD IS USED WHERE AT ANY TIME ANY VEHICLE, EQUIPMENT, WORKERS OR THEIR ACTIVITIES WILL ENCR OACH ON THE PAVEMENT OR ON THE SHOULDER WITHIN 24 (600) OF THE EDGE OF PAVEMENT FOR DAYLIGHT OPERATION EXCEEDING ONE DAY AND WHERE TEMPORARY CONCRETE BARRIER IS UTILIZED.

THIS STANDARD MUST ALWAYS BE USED IN COMBINATION WITH STANDARD 701400.

TEMPORARY CONCRETE BARRIER SHALL BE ACCORDING TO STANDARD 704001.

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|                                     |                  |                 |
|-------------------------------------|------------------|-----------------|
| USER NAME = drossdd                 | DESIGNED - _____ | REVISED - _____ |
| PLOT SCALE = 100.0000' / in.        | CHECKED - _____  | REVISED - _____ |
| PLOT DATE = Mar-03-2020 10:37:35 AM | DATE - _____     | REVISED - _____ |

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**TRAFFIC CONTROL & PROTECTION, STANDARD 701402 (SPECIAL)  
FOR SN's 037-0001 & 037-0002 (MOSQUITO CREEK OVER I-74/280)**

SCALE: \_\_\_\_\_ SHEET \_\_\_\_\_ OF \_\_\_\_\_ SHEETS STA. \_\_\_\_\_ TO STA. \_\_\_\_\_

|                    |                      |              |                  |             |
|--------------------|----------------------|--------------|------------------|-------------|
| F.A.I. RTE. 74-280 | SECTION D2 BP 2020-3 | COUNTY HENRY | TOTAL SHEETS 12  | SHEET NO. 7 |
| ILLINOIS           |                      |              | FED. AID PROJECT |             |

CONTRACT NO. 64P33

037-0001 & 2

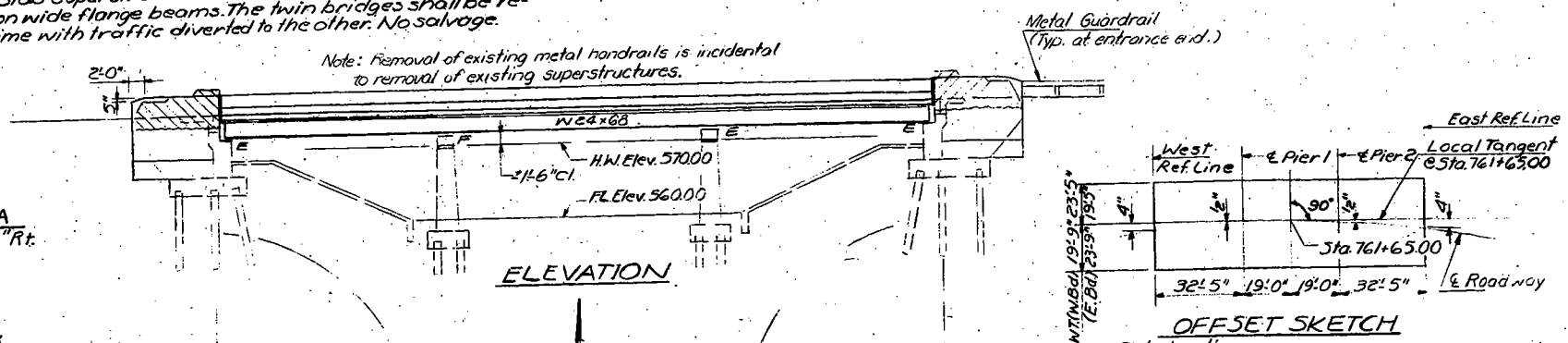
|           |         |        |              |           |
|-----------|---------|--------|--------------|-----------|
| ROUTE NO. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|           |         |        | 77           | 19        |
| 21 SHEETS |         |        |              |           |

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

Bench Mark: #83 pk. nail & cap in 8" box elder 130' R. Sta. 761+50, Elev. 569.71  
#84 pk. nail & cap in 8" box elder 155' L. Sta. 762+00, Elev. 563.49  
Existing Structures: #037-0001 & #037-0002, each 44'-0" wide by 102'-10" long,  
built as FAI Rte. 74, Section 37-1-B at Station 761+65 in 1960. The existing dual,  
three span concrete slab superstructures shall be removed and replaced  
with concrete decks on wide flange beams. The twin bridges shall be re-  
constructed one at a time with traffic diverted to the other. No salvage.

Note: Removal of existing metal handrails is incidental  
to removal of existing superstructures.

**CURVE DATA**  
Δ = 82°-34'-00" Rt.  
D = 1°-30'-00"  
R = 3819.83'  
L = 550.444'  
T = 5353.83'  
E = 1263.41'  
PC = 741+47.13  
PI = 775+00.96  
PT = 796+51.57  
S = 0.017 F<sub>v</sub>/F<sub>t</sub>



**GENERAL NOTES**

Reinforcement bars shall conform to the requirements of AASHTO M-31 or M-53 Grade 60. Fasteners shall be high strength bolts (AASHTO M164, Type 3), Eolt's 8" open holes 1/2", unless otherwise noted. 33970 Lbs. AASHTO (M222) Calculated weight of Structural Steel = 4590 Lbs. AASHTO (M183) All structural steel shall be AASHTO M222 except expansion joint angles and attached bars which shall be AASHTO M 183.

AASHTO M222 structural steel shall not be painted except, that for a distance of three times the depth of the beams each way from deck joints, the AASHTO M222 structural steel shall be cleaned and given one coat of the zinc-silicate primer and a dark maroon vinyl finish. Both coats may be applied in the shop with spot painting only in the field.

Field welding of construction accessories will not be permitted to the bottom flange of beams 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.

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

Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of 1/8 inch. Adjustment shall be made either by grinding the surface or by shimming the bearing. Two 1/2" adjusting shims, of the dimensions of the bottom bearing plate, shall be provided for each bearing in addition to all other plates or shims. (For Type I Elastomeric Bearings, shims of the dimensions of top plate shall be provided and placed as detailed).

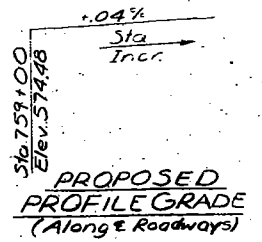
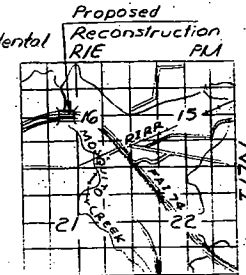
The main load carrying member components subject to tensile stress shall conform to the Supplemental Requirements for Notch Toughness Zone 2. These components are the wide flange beams and all splice plate materials.

The structural steel bearing plates of the Elastomeric Bearing Assembly shall conform to the requirements of AASHTO M222.

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

Expansion joint angles and attached bars shall be shop painted with the zinc-silicate primer.

Expansion bolts shall consist of approved expansion anchors, providing minimum certified proof load = 4,080 lbs., and 3/4" x 12" hooked bolts.



STATION 761+65  
BUILT 198 BY  
STATE OF ILLINOIS  
FAI RT 74 SEC. 37-1BR  
FA PROJ IR-74-1(14)  
LOADING H520FALT.  
\*\*\* STR. NO.

**NAME PLATE**  
See Std 2113  
(2 Required)  
\*\* 037-0001 (East Bound Structure)  
\*\* 037-0002 (West Bound Structure)

**TOTAL BILL OF MATERIAL**

| Item  | Unit     | Super  | Sub.   | Total  |
|---|----------|--------|--------|--------|
| Removal of Existing Superstructures   | Each     | 2      |        | 2      |
| Protective Coat   | Sq. Yd.  | 172    |        | 172    |
| Class X Concrete  | Cu. Yd.  | 279.0  | 120.2  | 399.2  |
| Structural Steel  | Lump Sum | 0.5    |        | 0.5    |
| Stud Shear Connectors   | Each     | 3600   |        | 3600   |
| Reinforcement Bars  | Pound    |        | 16,560 | 16,560 |
| Reinforcement Bars (Epoxy Coated)   | Pound    | 20,280 |        | 20,280 |
| Name Plates   | Each     | 2      |        | 2      |
| Concrete Removal  | Cu. Yd.  |        | 102    | 102    |
| Elastomeric Bearing Assembly, Type I  | Each     | 30     |        | 30     |
| Preformed Joint Seal 2 1/2"   | Lin. Ft. | 172    |        | 172    |
| Pavement Removal and Portland Cement Concrete Replacement Type III, 10 inch | Sq. Yd.  | 27     |        | 27     |
| Structure Excavation  | Cu. Yd.  |        | 232    | 232    |
| Expansion Bolts (3/4")  | Each     |        | 28     | 28     |
| Floor Drains  | Each     | 6      |        | 6      |

**PLAN**  
\*Assuming 120 Sq Ft openings Sta. 745+25 double 10'x7' (Not included here)  
\*\*Assuming 140 Sq Ft openings Sta. 755+25 double 10'x7' (Not included here)

Drainage Area 1565.33 sq. ft. Low Grade El. 573.85 @ Sta. 752+00

| Flood                | Yr. | CFS  | Exist. Prop. | Head - Ft. | Headwater El. |
|----------------------|-----|------|--------------|------------|---------------|
| Design               | 50  | 3240 | 370          | 4.58       | 571.10        |
| Base                 | 100 | 3720 | 390          | 4.78       | 571.30        |
| Overlapping          | 125 | 3870 | 398          | 4.87       | 571.38        |
| Proposed Overlapping | 500 | 4830 | 525          | 5.71       | 571.71        |

**DESIGN STRESSES**  
f<sub>c</sub> = 3500 psi  
f<sub>y</sub> = 60,000 psi (Reinforcement)  
f<sub>y</sub> = 50,000 psi (Structural AASHTO M222)  
f<sub>y</sub> = 36,000 psi (Structural AASHTO M183)

Allow 2545 sq ft for future wearing surface  
Design Specifications: 1971 AASHTO, 1976, 1979, 1980, 1981, 1982 & 1983 Interim Specifications.  
LOADING H520-14 (ALT.)

**GENERAL PLAN**  
FAI RTE 74 OVER MOSQUITO CREEK  
FAI ROUTE 74  
SECTION 37-1BR  
HENRY COUNTY  
STATION 761+6500

DESIGNED Mary Bloadorf  
CHECKED JIM KOHOUT  
DRAWN M.H.B.  
CHECKED Lonnie K. S.

FOR INFORMATION ONLY

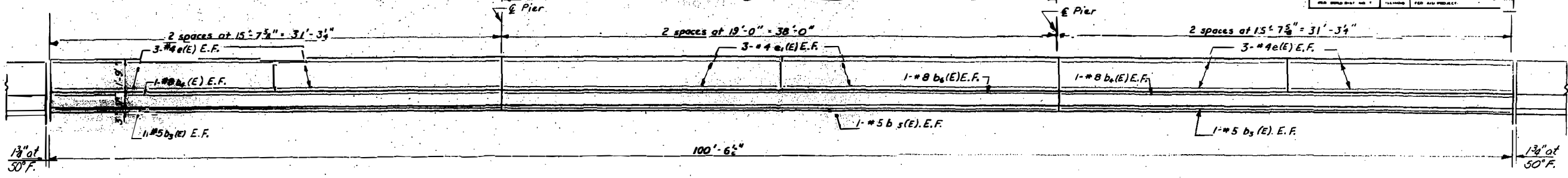




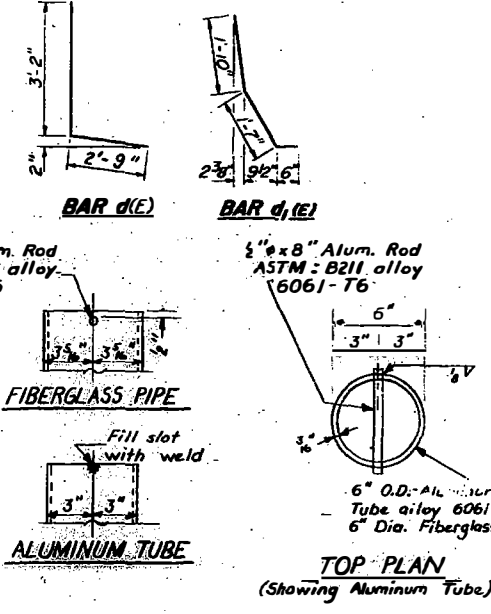
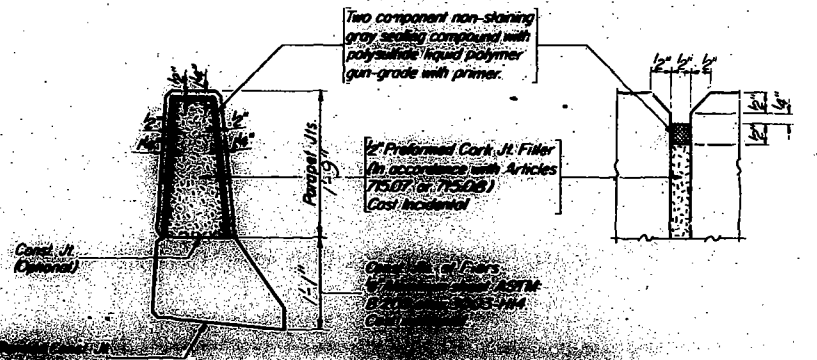
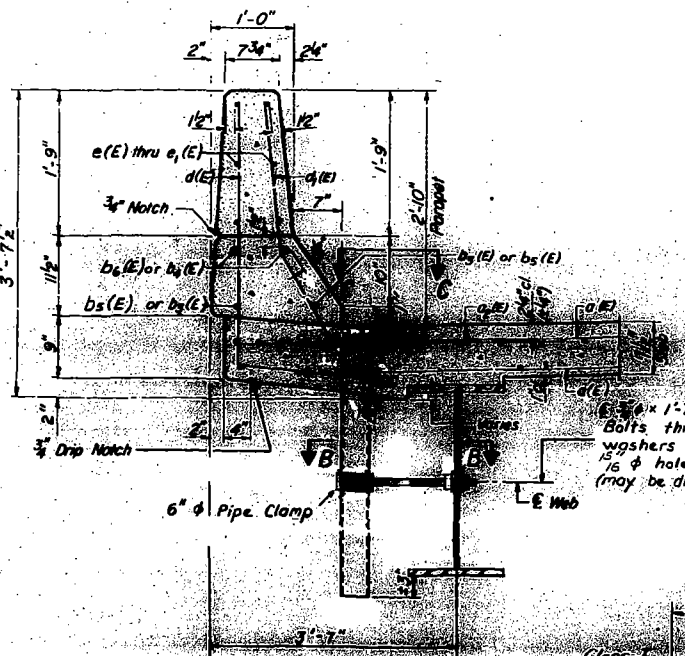
# FOR INFORMATION ONLY

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
Aluminum sheathed cast pits in base of parapets

|      |         |     |      |     |             |
|------|---------|-----|------|-----|-------------|
| DATE | SECTION | NO. | DATE | NO. | SHEET NO. 6 |
|      |         |     | 77   | 24  | 21 SHEETS   |



**INSIDE ELEVATION OF PARAPET**  
(North Parapets Looking North)  
(South Parapets Looking South)



**ONE SUPERSTRUCTURE  
BILL OF MATERIAL**

| Bar                               | No. | Size | Length  | Shape        |
|-----------------------------------|-----|------|---------|--------------|
| a(E)                              | 413 | #5   | 40'-11" |              |
| a1(E)                             | 240 | #6   | 4'-0"   |              |
| d1(E)                             | 352 | #5   | 26'-4"  |              |
| b1(E)                             | 86  | #6   | 18'-10" |              |
| b3(E)                             | 8   | #5   | 31'-0"  |              |
| b4(E)                             | 8   | #8   | 31'-0"  |              |
| b5(E)                             | 4   | #5   | 37'-8"  |              |
| b6(E)                             | 4   | #8   | 37'-8"  |              |
| d(E)                              | 202 | #4   | 5'-11"  | L            |
| d1(E)                             | 220 | #5   | 3'-11"  | L            |
| e(E)                              | 48  | #4   | 15'-4"  |              |
| e1(E)                             | 24  | #4   | 18'-9"  |              |
| Reinforcement Bars (Epoxy Coated) |     |      |         | Lbs 35,140   |
| Class X Concrete                  |     |      |         | Cu Yds 139.5 |

**NOTES:** Fiberglass pipe shall conform to ASTM D2936, with short-time rupture strength hoop tensile stress of 30,000 p.s.i. minimum.  
The exterior surfaces of the Floor Drains shall be painted with a dark maroon vinyl enamel coat. The vinyl enamel coat may be applied in the shop with spot paint and then in the field and given a washcoat finish. The exterior surface of the aluminum tube shall be painted with Steel Enamel. See SPS-5PI for painting details.

**SOUTH SIDE:**  
The exterior surface of fiberglass pipe shall be free of bond-inhibiting agents (omit drains at north parapets).

STAMPED  
APPROVED

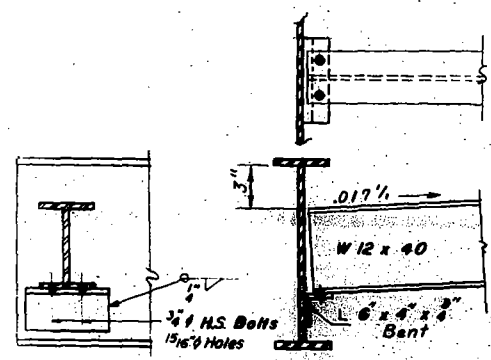
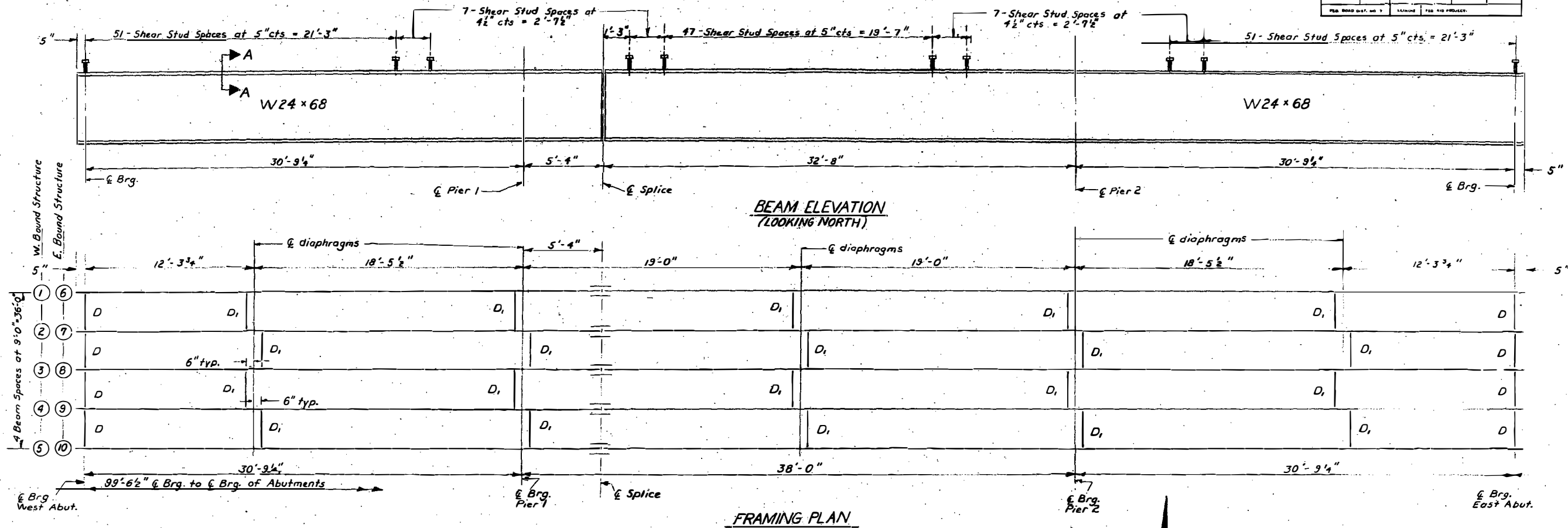
EAST & WEST BOUND STRUCTURES  
SUPERSTRUCTURE DETAILS  
FAI ROUTE 74 SECTION 37-100  
HENRY COUNTY  
STATION 761 + 65

\*Dimension as required by pipe clamp

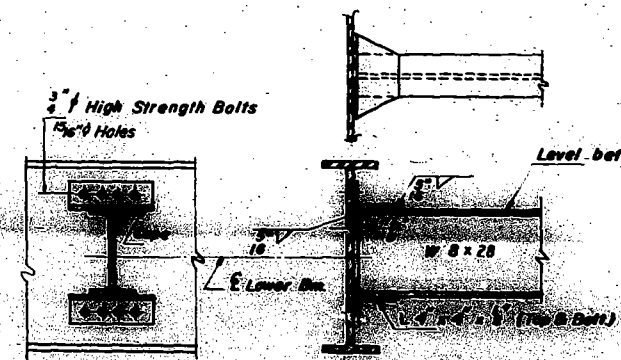
**SECTION B-B**

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

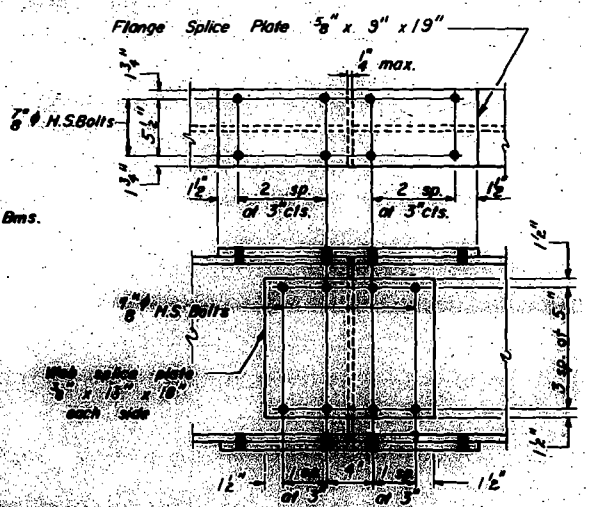
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|-------------|---------|-----------|--------------|-----------|
| ROUTE NO.   | SECTION | COUNTY    | TOTAL SHEETS | SHEET NO. |
|             |         |           | 77           | 25        |
| SHEET NO. 7 |         | 21 SHEETS |              |           |



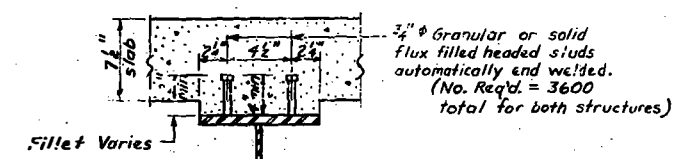
**DIAPHRAGM D**  
16 Required  
(total both structures)



**DIAPHRAGM B**  
16 Required  
(total both structures)



**SPLICE**



**SECTION A-A**

|          |               |
|----------|---------------|
| DESIGNED | Mary Bloxdorf |
| CHECKED  | Jim Kehlert   |
| DRAWN    | M. Bloxdorf   |
| CHECKED  | Lance Ford    |

|          |  |
|----------|--|
| EXAMINED |  |
| PASSED   |  |
| APPROVED |  |

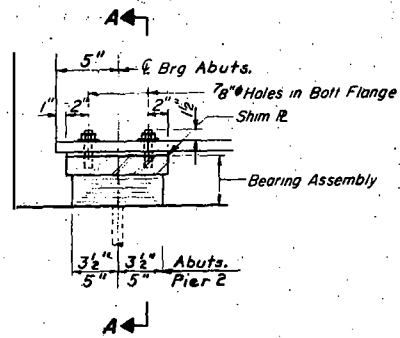
**NOTES**  
All splice plates and wide flange beams shall conform to the Supplemental Requirements for Notch Toughness Zone 2.  
All contact surfaces of joints for the diaphragms shall be free of paint or lacquer.  
All holes used for the connection of diaphragms shall be fabricated 1/8" oversize.

EAST & WEST BOUND STRUCTURES  
STRUCTURAL STEEL  
FAI ROUTE 74 SECTION 37-1BR  
HENRY COUNTY  
STATION 761+65

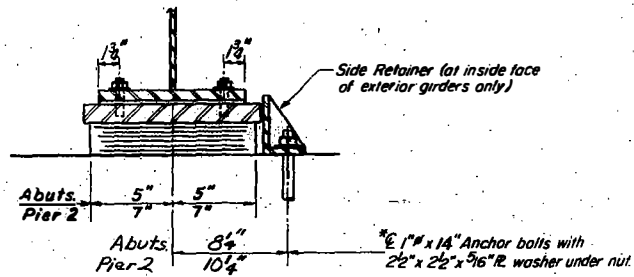
**FOR INFORMATION ONLY**

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

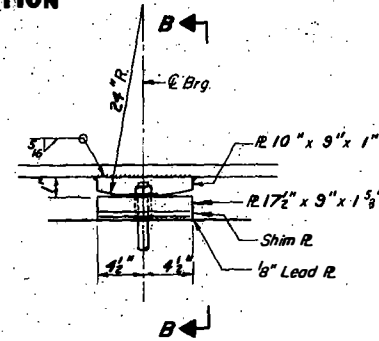
|           |         |        |              |           |                          |
|-----------|---------|--------|--------------|-----------|--------------------------|
| ROUTE NO. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. | SHEET NO. 8<br>21 SHEETS |
| 77        | 26      |        |              |           |                          |



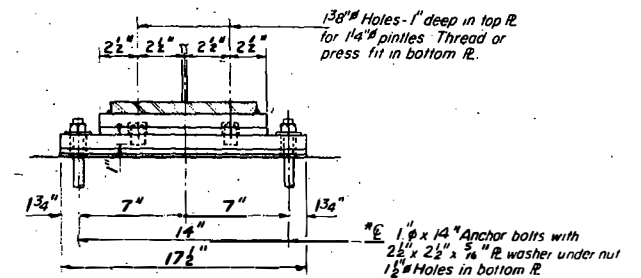
SECTION AT ABUTS & PIER 2



SECTION A-A



ELEVATION AT PIER 1

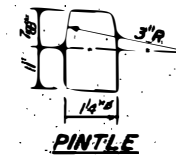


SECTION B-B

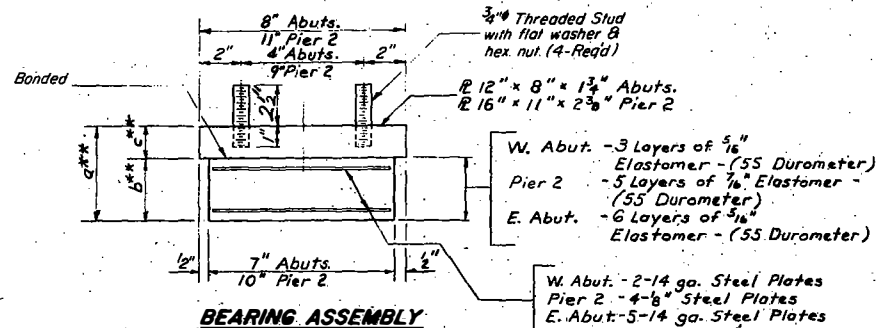
FIXED BEARING

TYPE I ELASTOMERIC EXP. BRG.

\*Note: After girders have been erected holes at expansion bearings shall be drilled and anchor bolts grouted in place. Anchor bolts at fixed bearings may be built into the masonry. See Sheet # 9 for drilled in place anchor bolt details.



PINTLE



Note: Shim plates shall not be placed under Bearing Assembly.

| Dimension | a      | b      | c      | d      |
|-----------|--------|--------|--------|--------|
| W. Abut.  | 2 1/2" | 1 1/2" | 1 3/4" | 3 3/4" |
| Pier 2    | 5 1/8" | 2 1/8" | 2 3/8" | 5 3/8" |
| E. Abut.  | 4"     | 2 1/4" | 1 3/4" | 4 1/2" |

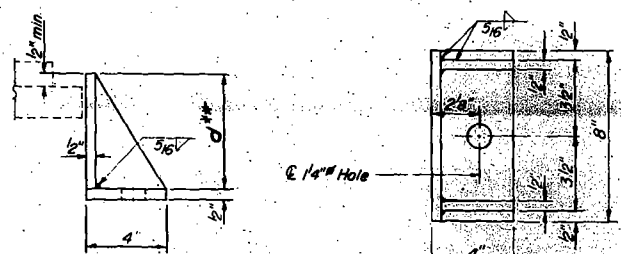
|                          | .4 Span 1 or .6 Span 3 | Pier 1 or Pier 2 | .05 Span 2 |
|--------------------------|------------------------|------------------|------------|
| $I_x$ (in <sup>4</sup> ) | 1830                   | 1830             | 1830       |
| $I_y$ (in <sup>4</sup> ) | 6044                   | 6044             | 6044       |
| $S_x$ (in <sup>3</sup> ) | 154                    | 154              | 154        |
| $S_y$ (in <sup>3</sup> ) | 250                    | 250              | 250        |
| $\phi$ (in)              | .94                    | .94              | .94        |
| $M_D$ (k)                | 60.28                  | -111.90          | 57.95      |
| $S_D$ (k)                | 0.43                   | 0.43             | 0.43       |
| $M_E$ (k)                | 32.94                  | -37.59           | 39.88      |
| $M_L$ (k)                | 207.3                  | -125.85          | 238.02     |
| $M_{Imax}$ (k)           | 61.95                  | -37.75           | 71.41      |
| $S(M_E+I)$ (k)           | 448.75                 | -272.67          | 515.72     |
| $M_s$ (k)                | 704.56                 | -548.81          | 797.75     |
| $M_{max}$ (k)            | 1513.78                |                  | 1513.78    |
| $f_s$ non comp (ksi)     | 4.70                   | 11.65            | 4.52       |
| $f_s$ comp (ksi)         | 1.58                   |                  | 1.92       |
| $f_s$ (k+I) (ksi)        | 21.54                  | 21.24            | 24.75      |
| $f_s$ (overload) (ksi)   | 27.82                  | 32.89            | 31.19      |
| $f_s$ (overload) (ksi)   | 42.76                  |                  | 42.76      |
| VR (k)                   | 55.7                   |                  | 47.5       |

|                 | West & East Abutments | Piers 1 & 2 |
|-----------------|-----------------------|-------------|
| $R_E + s_E$ (k) | 16                    | 51.9        |
| $R_E$ (k)       | 39.3                  | 50.4        |
| Imp. (k)        | 11.8                  | 15.1        |
| $R_{Total}$ (k) | 671                   | 1176        |

NOTES:  
 $M_{FC}$  = Full Moment Capacity for compact braced section  
 $M_{FC}$  - compact section  
 $M_{FC}$  (Applied Moment) =  $1.3 [M_D + M_s E + \frac{1}{3} (M_E + I)]$   
 $I_{steel}$  = Section moment of inertia and section modulus of the steel section used in computing  $f_s$  (Total & Overload).  
 $I_{comp}$  &  $S_c$  are the moment of inertia and section modulus of the composite section used in computing  $f_s$  (total and overload).  
 VR is the max. impact shear range in span.  
 The Full Moment Capacity ( $M_{FC}$ ) is computed according to AASHTO 1.7.52 (a).  
 $f_s$  (total) is the sum of the stresses due to  $1.3 [M_D + \frac{1}{3} (M_E + I)]$ .  
 $f_s$  (overload) is the sum of the stresses due to  $M_D + \frac{1}{3} (M_E + I)$ .



NOTES: All bearing plates shall be AASHTO #422



SIDE RETAINER  
(Retainers built at 45 degree are permitted)

|                        |          |
|------------------------|----------|
| DESIGNED Mary Bloxdorf | EXAMINED |
| CHECKED Jim Kohnert    | PASSED   |
| DRAWN M. Bloxdorf      | APPROVED |
| CHECKED Louis Hill     |          |

EAST & WEST BOUND LANES  
 BEARING DETAILS  
 FAI ROUTE 74 SECTION 37-18A  
 HENRY COUNTY  
 STATION 761 + 65

FOR INFORMATION ONLY

I-2-EI 8-30-80