

66107 #12

131

8-02-02 F.A.I. 55 (1-55) LEAN (57-1,57-2)RS

| F.A.I. RTE. | SECTION | COUNTY | TOTAL SHEETS |
|------------------|---------|--------|--------------|
| 55 | 1 | MCLEAN | 205 |
| ILLINOIS PROJECT | | | 1 |

57-1,57-2RS
P-93-033-99
D-93-081-01

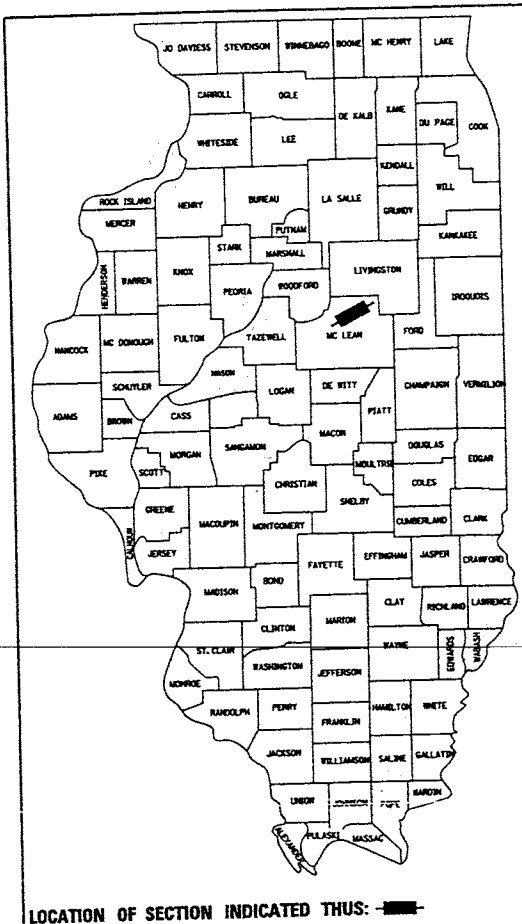
INDEX OF SHEETS

- 1 COVER SHEET
- 2 GENERAL NOTES & STANDARDS
- 3-5 SUMMARY OF QUANTITIES
- 6-7 TYPICAL SECTIONS
- 8-25 SCHEDULE OF QUANTITIES
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- 44-49 RAMP PLAN VIEWS
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99%
11-8-2003

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
**PLANS FOR PROPOSED
FEDERAL AID HIGHWAY**
FAI 55 (1-55)
SECTION (57-1,57-2)RS
PROJECT ACIM-55-5(106) 175
MCLEAN COUNTY

C-93-124-01



DESIGN DESIGNATION - INTERSTATE
ADT(2002) = 26700
P.V. = 75.6%
S.U. = 3.3%
M.U. = 21.1%

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED APRIL 10 2002
[Signature] DISTRICT ENGINEER
MAY 10 2002
[Signature] ENGINEER OF DESIGN AND ENVIRONMENT
MAY 10 2002
[Signature] DIRECTOR, DIVISION OF HIGHWAYS

SN 057-0152 (SB)
SN 057-0153 (NB)
STA 398+57

END IMPROVEMENT
STA 461+67.02

SN 057-0172
STA 714+75.07

SN 057-0178 (SB)
SN 057-0179 (NB)
STA 411+28.42

SN 057-0182 (SB)
SN 057-0183 (NB)
STA 711+75

SN 057-0177
STA 345+71.49

SN 057-2005
STA 686+50

SN 057-2004
STA 290+51

SN 057-0171
STA 645+71.31

SN 057-0175
STA 170+65.42

BEGIN IMPROVEMENT
STA 626+40 NB
STA 622+77 SB

SN 057-0173 (SB)
SN 057-0174 (NB)
STA 781+50



GROSS & NET LENGTH OF IMPROVEMENT:
S.B. = 52,389.21 FT = 9.92 MI
N.B. = 52,026.21 FT = 9.85 MI

STATION EQUATION 784+99.19 BK = 100+00 AH

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

JULIE 1-800-892-0123

DISTRICT 3 NO. (815) 434-6131

PROJECT ENGINEER: DAN DRAPER
UNIT CHIEF: MICHELE LINDEMANN
TOWNSHIP: MONEY CREEK, LEXINGTON, CHENOA

CONTRACT NO. 66107 057-0178 (SB) 0179 (NB)

MCLEAN COUNTY SECTION: (57-1,57-2)RS

ROUTE: FAI 55

3-228

PRINTED BY THE AUTHORITY
OF THE STATE OF ILLINOIS

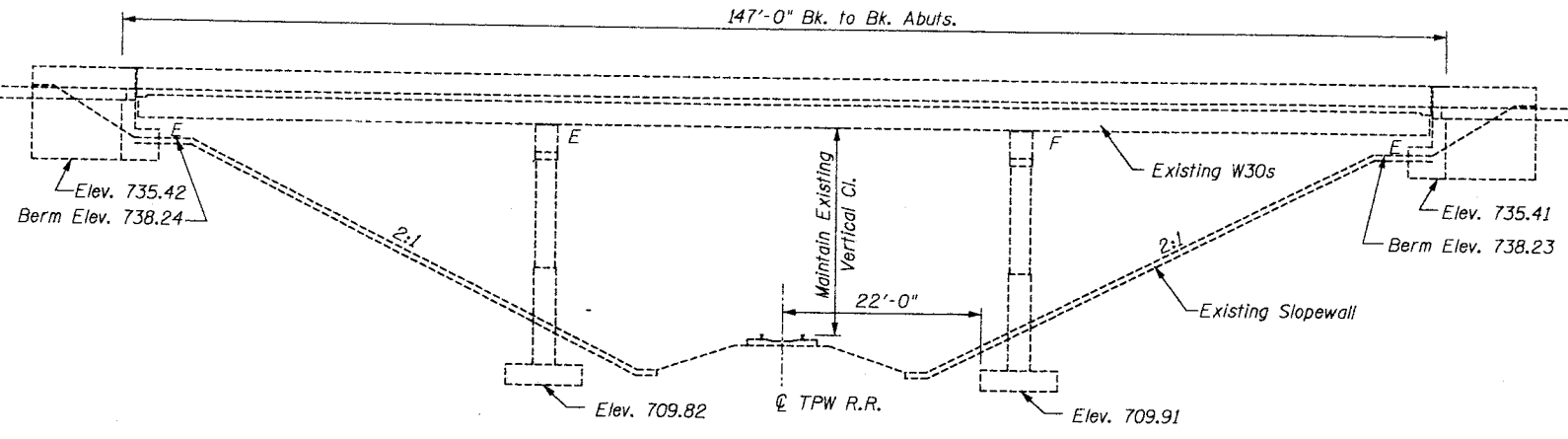
057-0178 & -0179

APRIL 02, 2002
/EPO3399/SHEETS

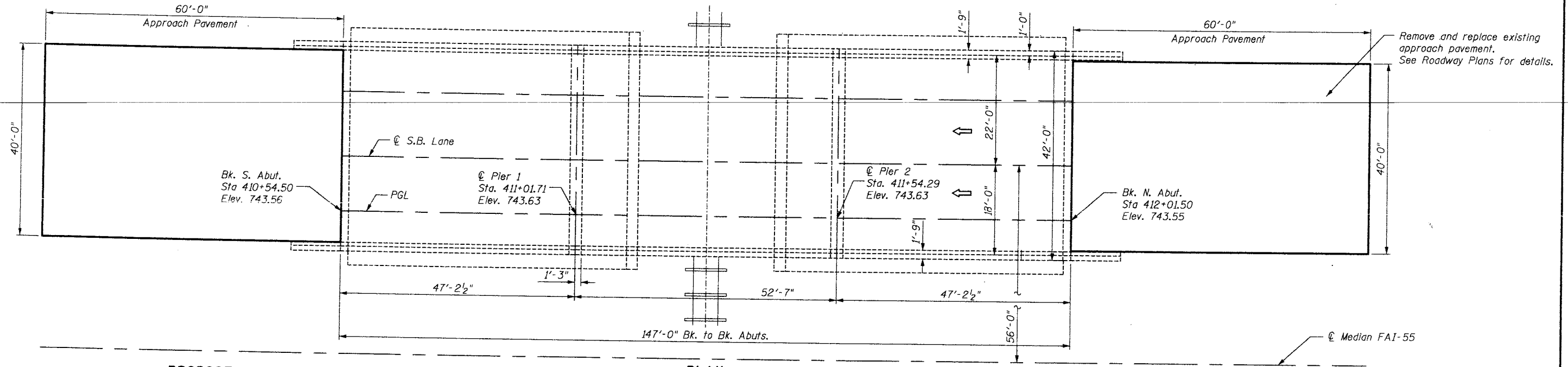
B.M. #144 R.R. Spike in power pole on 2nd pole west of Hte. 55, North Side of railroad Elev. 718.86

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

| | | | | |
|-----------------------|---------------|----------|------------------|-----------|
| ROUTE NO. | SECTION | COUNTY | SHEET NO. | SHEET NO. |
| 55 | (57-1,57-2)RS | McLean | 205 | 14 SHEETS |
| FED. ROAD DIST. NO. 3 | | ALLIANCE | FED. AID PROJECT | |



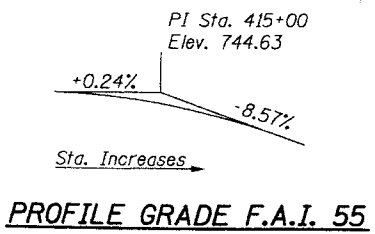
ELEVATION



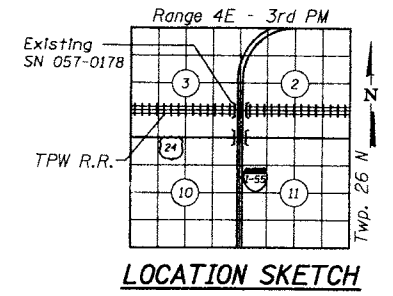
PLAN

PROPOSED WORK

- Remove bituminous concrete overlay and waterproofing.
- Repair separation between bridge deck and steel beams at abutments by removing a 10 foot portion of the deck at each abutment, welding shear studs to the exposed beams, and replacing the deck.
- Overlay remaining deck areas with microsilica concrete.
- Replace abutment bearings with elastomeric bearings.
- Repair areas of delamination in north pier cap.
- Repair areas of delamination on both abutments.
- Epoxy seal cracks on the north abutment cap and backwall.
- Replace expansion joints.
- Remove and replace areas of slope wall failure.
- Repair gap at abutments and slope wall with CLSM.
- Plug drains within 10' of piers and abutments.
- Extend drains below bottom flanges of beams.



PROFILE GRADE F.A.I. 55



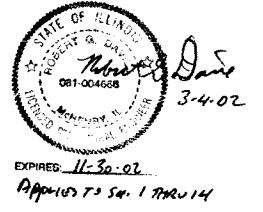
LOCATION SKETCH

DESIGN STRESSES (ORIGINAL CONSTRUCTION)

- FIELD UNITS**
- $f_c = 1,200$ psi (Deck Slab)
 - $f_c = 1,400$ psi (Curb, Parapet, Sub)
 - $f_s = 20,000$ psi (Reinforcement)
 - $f_s = 20,000$ psi (Structural Steel)
 - $w_c = 75$ psi (Ftgs)
 - $n = 10$

| | |
|----------|-----|
| DESIGNED | KMA |
| CHECKED | RGD |
| DRAWN | WJH |
| CHECKED | NRF |

| REVISIONS | |
|-----------|------|
| NAME | DATE |
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ILLINOIS DEPARTMENT OF TRANSPORTATION
General Plan & Elevation
F.A.I. Rt. 55 Over TPW R.R.
(Sec 57-1, 57-2)RS
McLean County
Sta. 411+28.42
S.N. 057-0178 (SB)
DATE 03-04-2002

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

| | | | | |
|-----------------------|--------------|----------|------------------|-----------|
| ROUTE NO. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
| 55 | (57-157-2)RS | McLean | 14 | 2 |
| FED. ROAD DIST. NO. 3 | | ILLINOIS | FED. AID PROJECT | |

SHEET NO. 2
14 SHEETS

GENERAL NOTES

TOTAL BILL OF MATERIAL

| ITEM | UNIT | SUPER | SUB | TOTAL |
|------------------------------------------|----------|-------|------|-------|
| Concrete Removal | Cu. Yds. | 29.8 | | 29.8 |
| Concrete Superstructures | Cu. Yds. | 34.8 | | 34.8 |
| Concrete Bridge Deck Scarification 1/4" | Sq. Yds. | 543 | | 543 |
| Bar Splicers | Each | 70 | | 70 |
| Reinforcement Bars, Epoxy Coated | Lbs. | 7,880 | | 7,880 |
| Silicone Joint Sealer, 1/2" | Foot | 42 | | 42 |
| Silicone Joint Sealer, 2" | Foot | 42 | | 42 |
| Floor Drain Extension | Each | 12 | | 12 |
| Plug Existing Deck Drain | Each | 12 | | 12 |
| Formed Concrete Repair (<5") | Sq. Ft. | | 127 | 127 |
| Sloped Wall Repair | Sq. Yds. | | 22.1 | 22.1 |
| Epoxy Crack Sealing | Foot | | 5 | 5 |
| Controlled Low Strength Material (CLSM) | Cu. Yds. | | 0.2 | 0.2 |
| Furnishing and Erecting Structural Steel | Lbs. | 2,410 | | 2,410 |
| Jack and Remove Existing Bearings | Each | 12 | | 12 |
| Elastomeric Bearing Assembly, Type I | Each | 6 | | 6 |
| Elastomeric Bearing Assembly, Type II | Each | 6 | | 6 |
| Bridge Deck Microsilica Concrete Overlay | Sq. Yds. | 543 | | 543 |
| Bituminous Concrete Removal (Deck) | Sq. Yds. | 629 | | 629 |
| Stud Shear Connectors | Each | 468 | | 468 |
| Polymer Concrete | Cu. Ft. | 5.6 | | 5.6 |
| Bridge Deck Grooving | Sq. Yds. | 596 | | 596 |
| Protective Coat | Sq. Yds. | 106 | | 106 |

- All structural steel shall conform to AASHTO Classification M-270 Gr. 36 unless otherwise noted.
- All new structural steel shall be shop painted with inorganic zinc rich primer per AASHTO M300, Type 1. The cost shall be included in the cost of furnishing and erecting structural steel.
- The existing structural steel contains lead. The Contractor should take appropriate precautions to deal with the presence of lead on this project.
- Reinforcement bars shall conform to the requirements of AASHTO M-31, M-42, or M-53 Grade 60.
- Prior to pouring the new concrete deck, all loose rust, loose mill scale, and other loose potentially detrimental foreign material shall be removed from the surfaces of the beams or girders in contact with concrete. The cost of this work will be included in the pay item covering removal of the existing concrete. All heavy rust and other tightly adhered potentially detrimental foreign matter shall also be removed from the surfaces of the beams or girders in contact with concrete. Tightly adhered paint may remain unless otherwise noted. This removal shall be accomplished by methods that will not damage the steel. The cost of this work will be paid for according to Article 103.04 of the Standard Specifications.
- Joint openings shall be adjusted according to Article 513.10(c) of the Standard Specifications when the deck is poured at an ambient temperature other than 50 degrees Fahrenheit.
- 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 adjustments. 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.
- Fasteners shall be high strength bolts. Bolts 3/4" ϕ , open holes 5/8" ϕ , unless otherwise noted.
- The area along the sloped walls as determined by the engineer should be cleared of vegetation, bushes, saplings, etc. according to Section 201 of the Standard Specs.
- Existing structural steel shall only be cleaned as required by the Special Provision "Cleaning and Painting Adjacent Areas of Existing Steel Structures."

| | |
|----------|-----|
| DESIGNED | KMA |
| CHECKED | RGD |
| DRAWN | WJH |
| CHECKED | NRF |



| REVISIONS | |
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| NAME | DATE |
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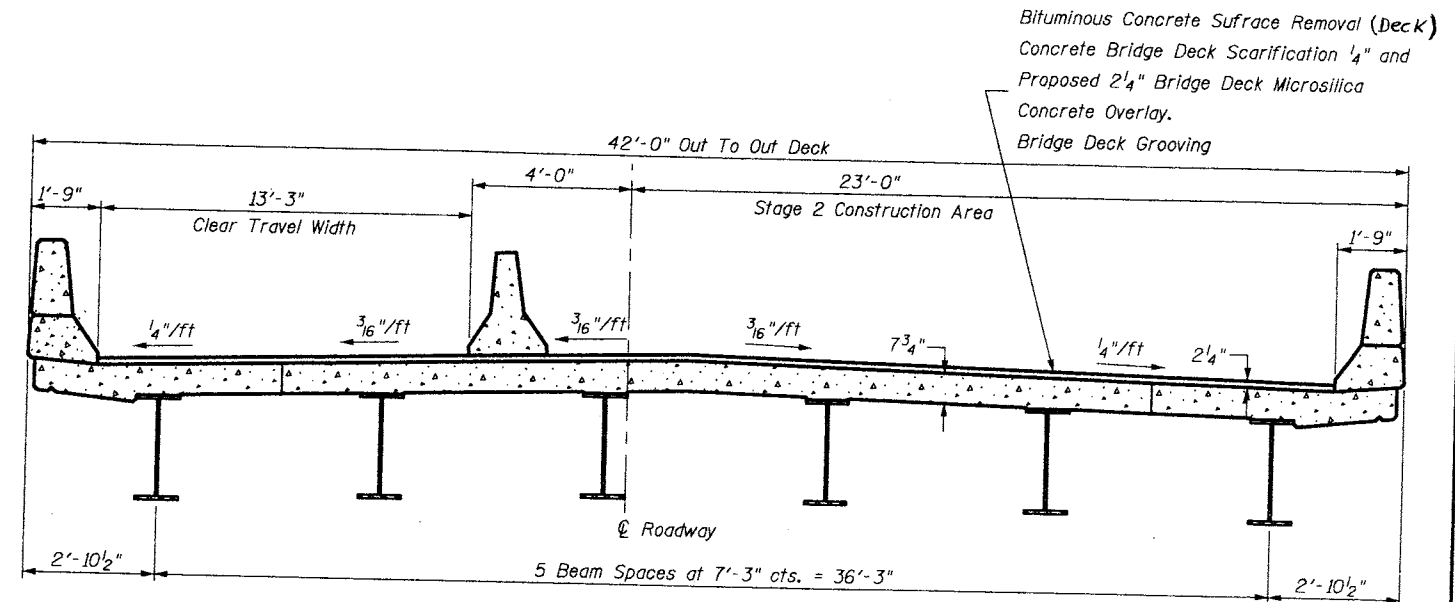
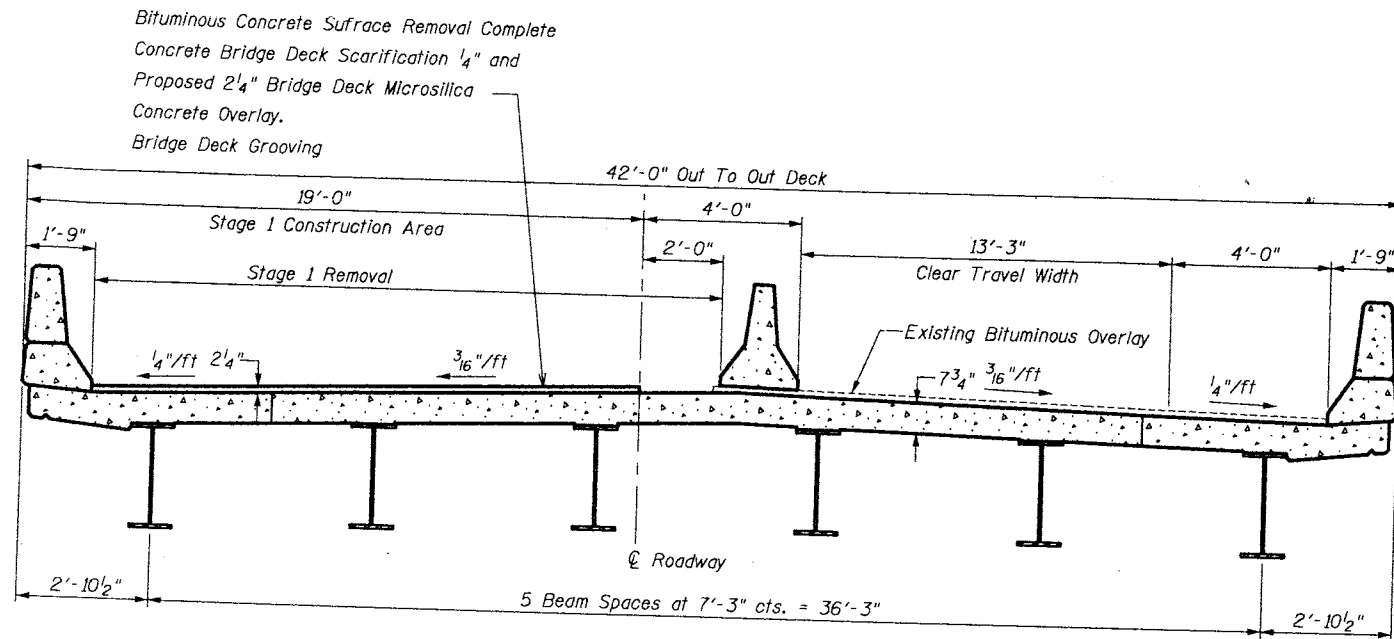
ILLINOIS DEPARTMENT OF TRANSPORTATION
Total Bill of Materials
&
General Notes
S.N. 057-0178 (SB)

DATE 03-04-2002

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

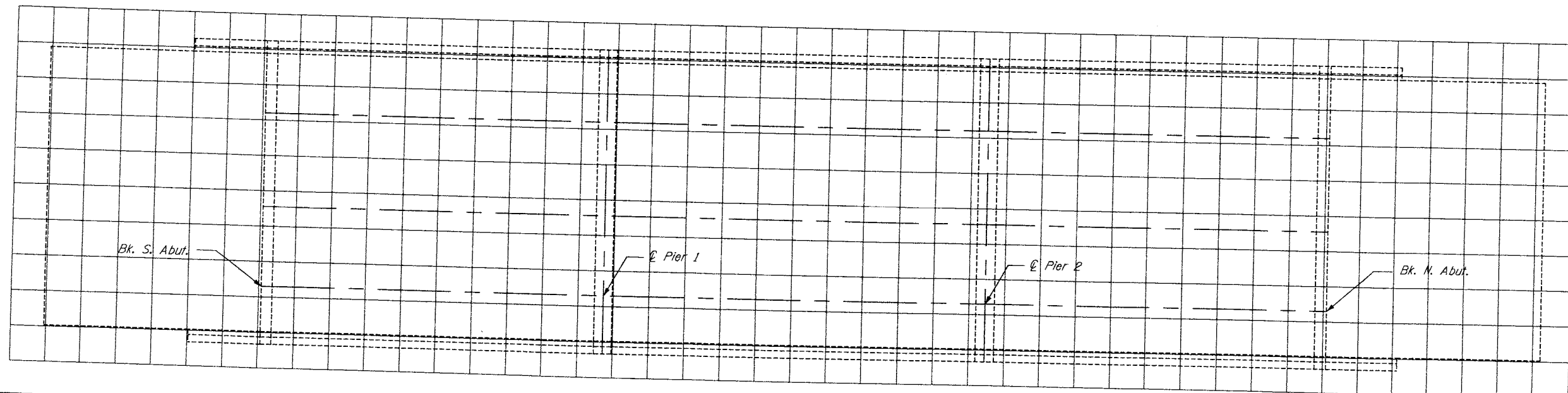
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| PROJECT NO. | SECTION | COUNTY | DATE | SHEET NO. |
| 55 | (57-1,57-2)RS | McLean | | 3 |
| FED. ROAD DIST. NO. 3 | | ILLINOIS FED. AID PROJECT | | |

14 SHEETS



CROSS-SECTION STAGE 1
(LOOKING SOUTH)

CROSS-SECTION STAGE 2
(LOOKING SOUTH)



| | |
|----------|-----|
| DESIGNED | KMA |
| CHECKED | RGD |
| DRAWN | WJH |
| CHECKED | NRF |

Note: Deck slab repair record is provided for tracking purposes only. Based on testing results, no area of deck slab repair are anticipated.

DECK SLAB REPAIR RECORD
SOUTHBOUND



| SMITH ENGINEERING CONSULTANTS, INC. CITY OF CHICAGO REGISTERED PROFESSIONAL ENGINEERS LAB SUPERVISOR | |
|------------------------------------------------------------------------------------------------------------|------|
| REVISIONS | |
| NAME | DATE |
| | |
| | |
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| | |

ILLINOIS DEPARTMENT OF TRANSPORTATION
Cross Section, Staging Details,
And Deck Slab Repair Record
S.N. 057-0178 (SB)

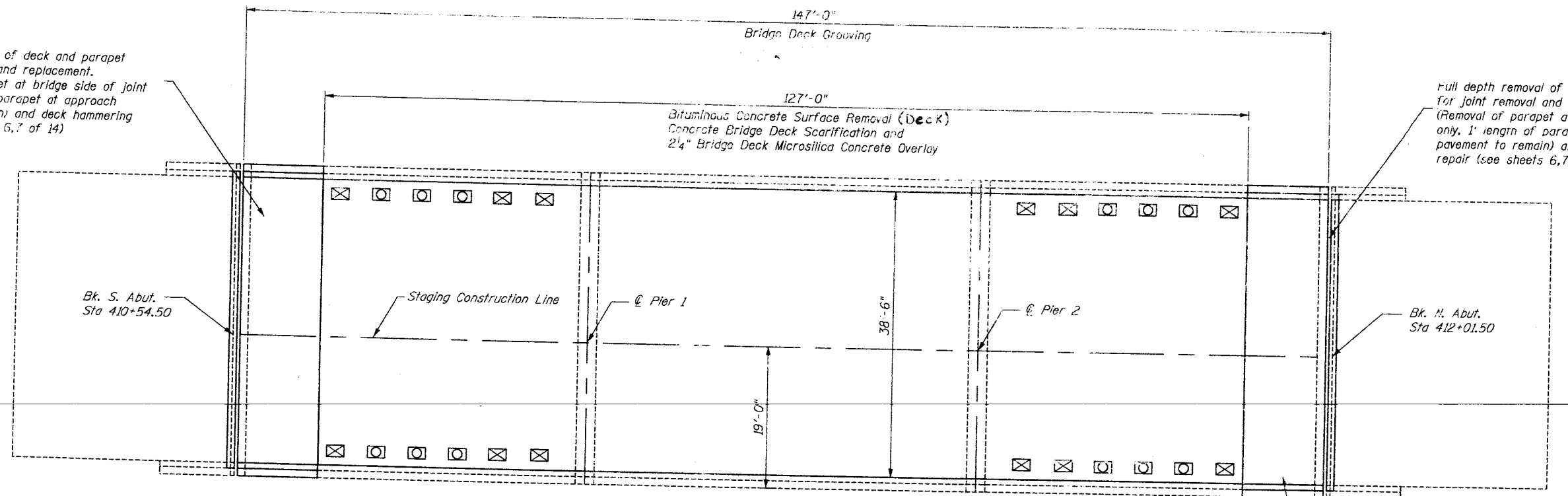
DATE 03-04-2002

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

| | | | | |
|-----------------------|---------------|----------|------------------|-----------|
| ROUTE NO. | SECTION | COUNTY | PROJECT | SHEET NO. |
| 55 | (57-1,57-2)RS | McLEOD | | 4 |
| FED. ROAD DIST. NO. 3 | | ILLINOIS | FED. AID PROJECT | 14 SHEETS |

Full depth removal of deck and parapet for joint removal and replacement. (Removal of parapet at bridge side of joint only. 1' length of parapet at approach pavement to remain) and deck hammering repair (see sheets 6,7 of 14)



Full depth removal of deck and parapet for joint removal and replacement. (Removal of parapet at bridge side of joint only. 1' length of parapet at approach pavement to remain) and deck hammering repair (see sheets 6,7 of 14)



DECK SLAB REPAIR PLAN



LEGEND

-  Exist. floor drain to be extended
-  Exist. floor drain to be plugged

BILL OF MATERIAL

| ITEM | UNIT | TOTAL |
|----------------------------------------------|----------|-------|
| Bridge Deck Microsilica Concrete Overlay | Sq. Yds. | 543 |
| Bituminous Concrete Surface Removal Complete | Sq. Yds. | 629 |
| Concrete Bridge Deck Scarification 1/4" | Sq. Yds. | 543 |
| Bridge Deck Grooving | Sq. Yds. | 596 |

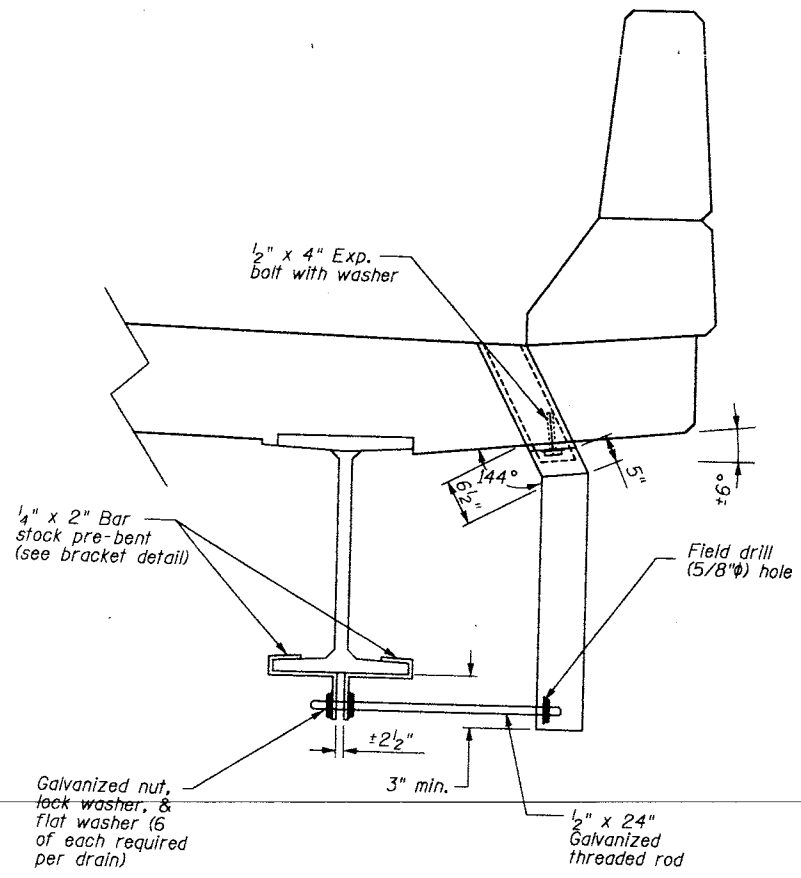
| | |
|----------|-----|
| DESIGNED | KMA |
| CHECKED | RGD |
| DRAWN | WJH |
| CHECKED | NRF |

| | |
|---------------------------------------------------------------------------------|------|
| SMITH ENGINEERING CONSULTANTS, INC. CIVIL-STRUCTURAL ENGINEERS AND SURVEYORS | |
| REVISIONS | |
| NAME | DATE |
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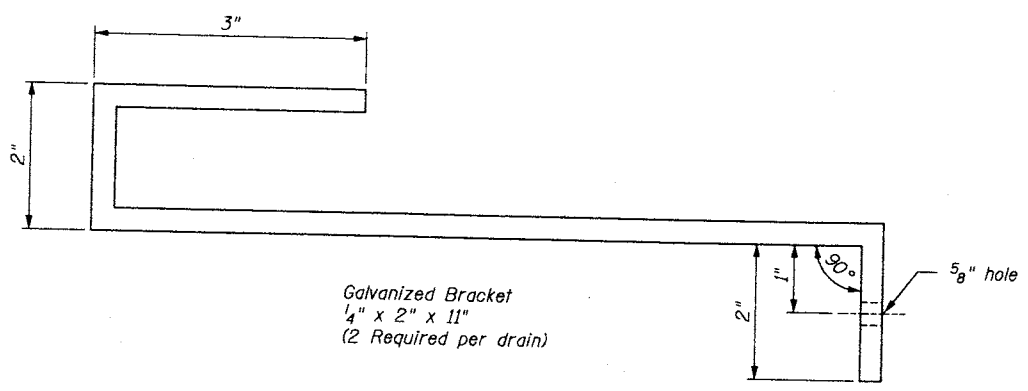
ILLINOIS DEPARTMENT OF TRANSPORTATION
Deck Slab Repair
S.N. 057-0178 (SB)
DATE 03-04-2002

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

| | | | | | |
|-----------------------|---------------|------------|----------|------------------|--------------------------|
| ROUTE NO. | SECTION | COUNTY | TOWNSHIP | SHEET NO. | SHEET NO. 5 14 SHEETS |
| P.A. 55 | (57-1.57-2)RS | McLean | | | |
| FED. ROAD DIST. NO. 3 | | ALLOCATION | | FED. AID PROJECT | |

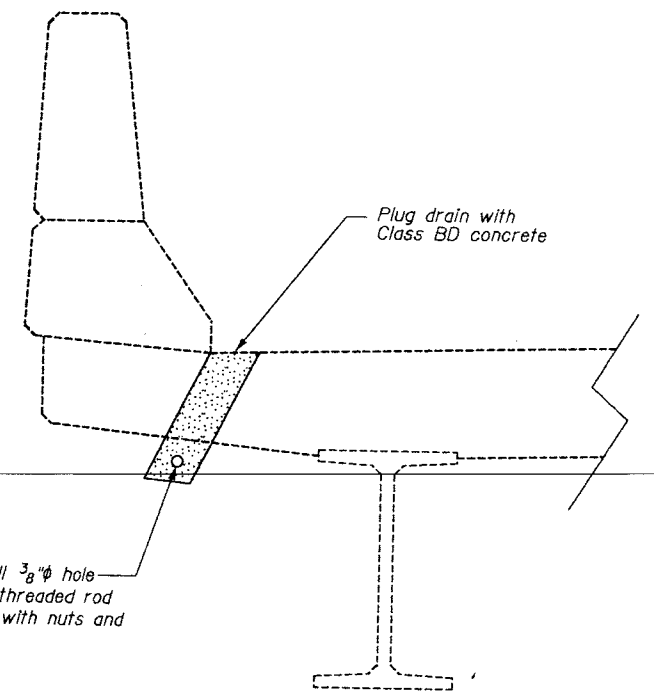


SECTION AT DRAIN



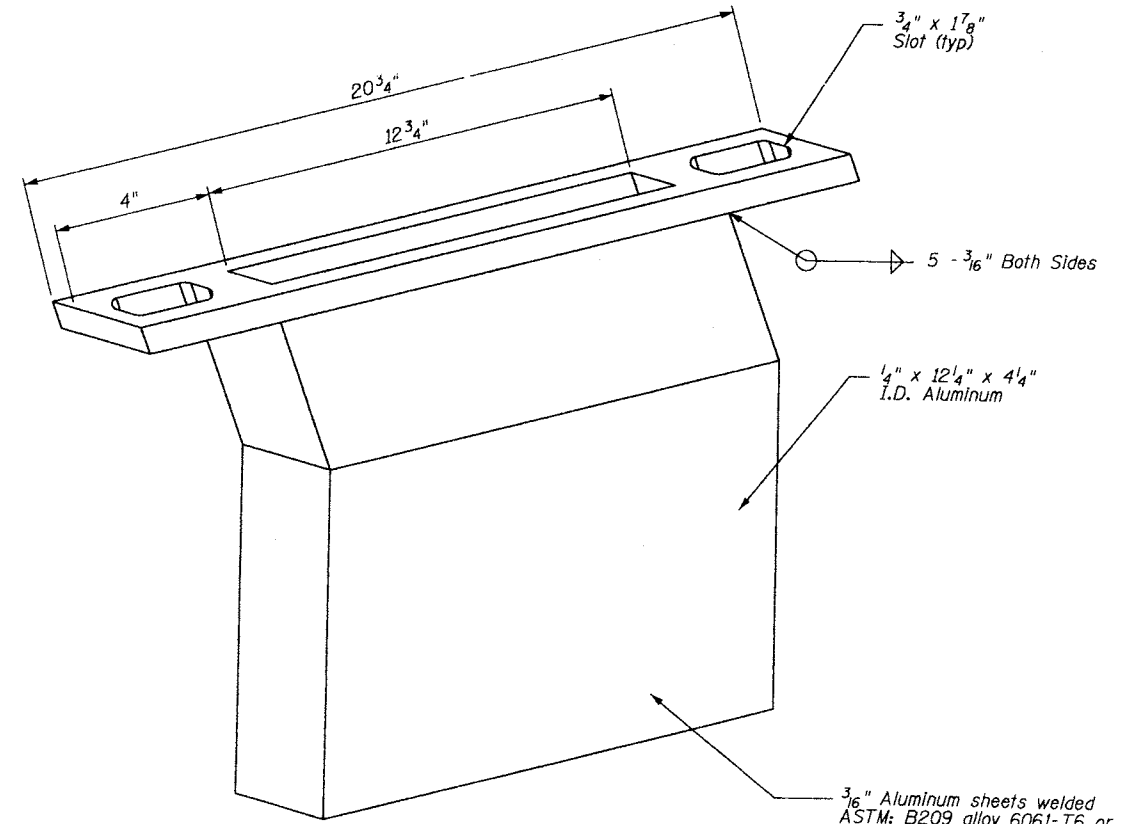
BRACKET DETAIL

NOTE:
For actual locations of drains to be extended or plugged, see sheet 4 of 14.



DRAIN ELIMINATION DETAIL

NOTE:
Expansion bolts, washers, nuts, threaded rods, and brackets will not be paid for separately but shall be included in the cost of "Floor Drain Extension".



DRAIN EXTENSION

BILL OF MATERIAL

| ITEM | UNIT | TOTAL |
|--------------------------|------|-------|
| Plug Existing Deck Drain | Each | 12 |
| Floor Drain Extension | Each | 12 |

| | |
|----------|-----|
| DESIGNED | KMA |
| CHECKED | RGD |
| DRAWN | WJH |
| CHECKED | NRF |

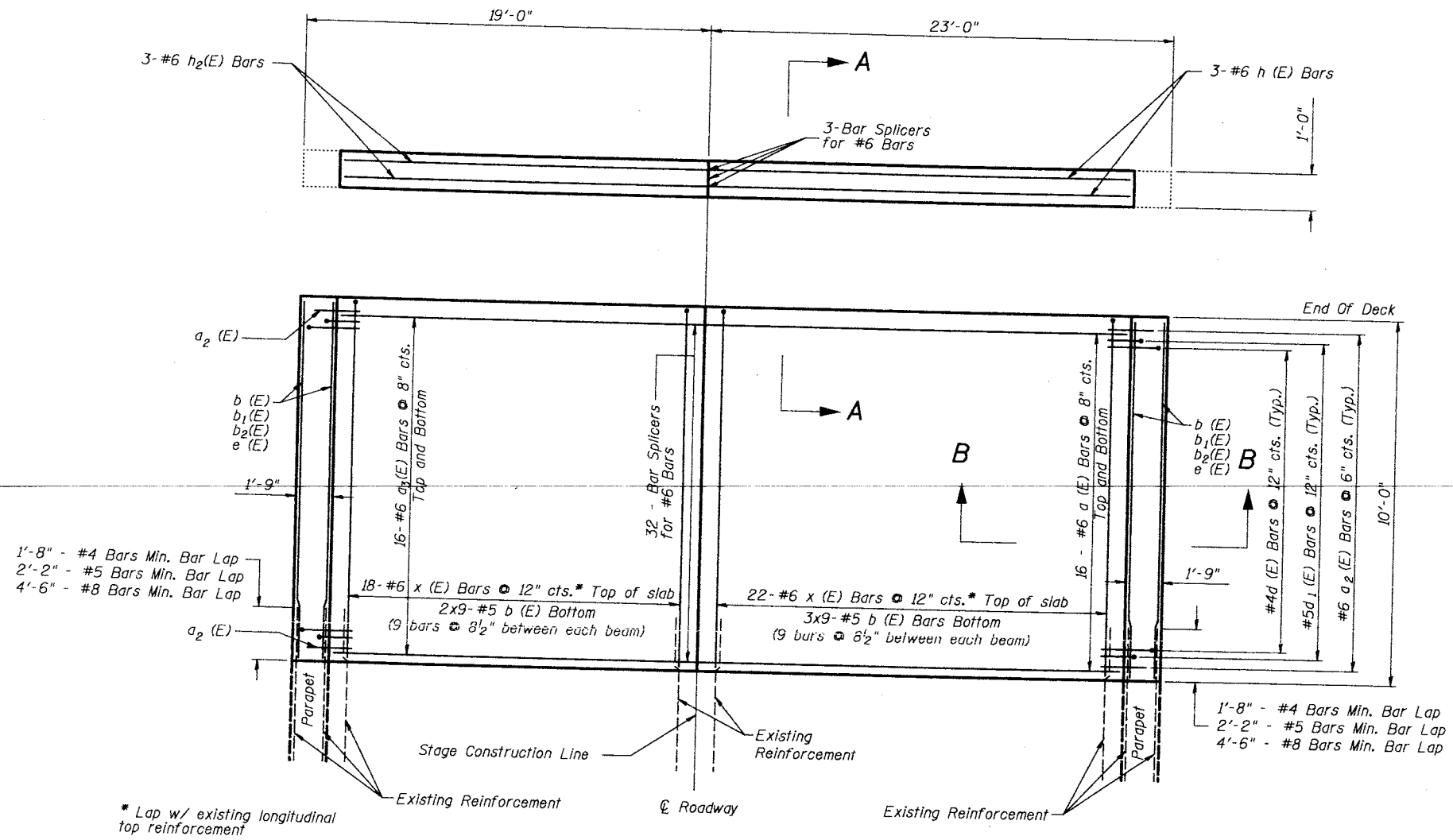
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|--------------------------------------------|------|
| SMITH ENGINEERING CONSULTANTS, INC. | |
| CIVIL/STRUCTURAL ENGINEERING AND SURVEYING | |
| 1101 W. MONROE ST. CHICAGO, ILL. 60606 | |
| REVISIONS | |
| NAME | DATE |
| | |
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ILLINOIS DEPARTMENT OF TRANSPORTATION
Floor Drain
Extension & Removal
Details
S.N. 057-0178 (SB)

DATE 03-04-2002

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

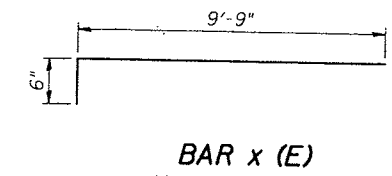
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|-----------------------|--------------|--------|--------------|-------|-------------|
| ROUTE NO. | APPROX. | COUNTY | TOTAL SHEETS | SHEET | SHEET NO. 7 |
| 55 | 157-1,57-2RS | McLean | | 14 | 14 SHEETS |
| F.A. | | | | | |
| FED. ROAD DIST. NO. 2 | | | | | |



BILL OF MATERIAL *

| Bar | No. | Size | Length | Shape |
|-----------------------------------|-----|------|--------|-------|
| a (E) | 64 | #6 | 22'-0" | — |
| a ₂ (E) | 84 | #6 | 4'-0" | — |
| a ₃ (E) | 64 | #6 | 18'-0" | — |
| b (E) | 122 | #5 | 9'-9" | — |
| b ₁ (E) | 8 | #5 | 9'-9" | — |
| b ₂ (E) | 8 | #8 | 9'-9" | — |
| d (E) | 44 | #4 | 4'-6" | └ |
| d ₁ (E) | 44 | #5 | 3'-5" | └ |
| d ₂ (E) | 8 | #4 | 2'-1" | └ |
| e (E) | 16 | #4 | 9'-9" | — |
| h (E) | 6 | #6 | 22'-0" | — |
| h ₂ (E) | 6 | #6 | 18'-0" | — |
| x (E) | 80 | #6 | 10'-3" | — |
| Reinforcement Bars (Epoxy Coated) | | | Lbs | 7,880 |

* Total for both abutments
Reinforcement Bars designated (E) shall be epoxy coated.



PLAN AT SOUTH ABUTMENT

North Abutment Similar

Notes:

- See sheet 6 of 14 for Sections A-A at Joint and Deck Replacement and B-B at Parapet Replacement
- For 10' slab and parapet removal existing longitudinal reinforcement bars shall be cut back to provide the minimum bar lap noted. The remaining reinforcement bars shall be cleaned, straightened and incorporated into the new construction.



| | |
|----------|-----|
| DESIGNED | KMA |
| CHECKED | RGD |
| DRAWN | WJH |
| CHECKED | NRF |

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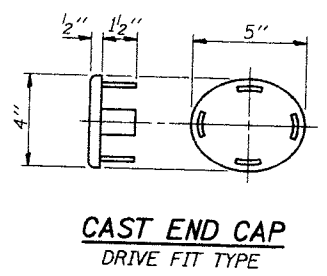
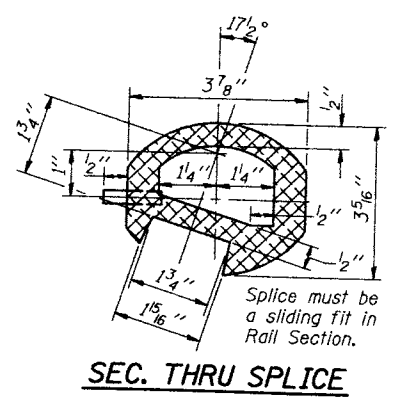
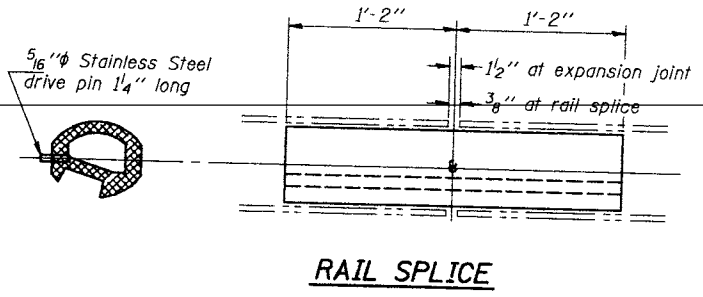
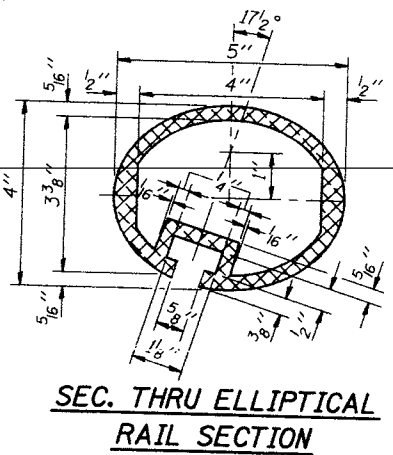
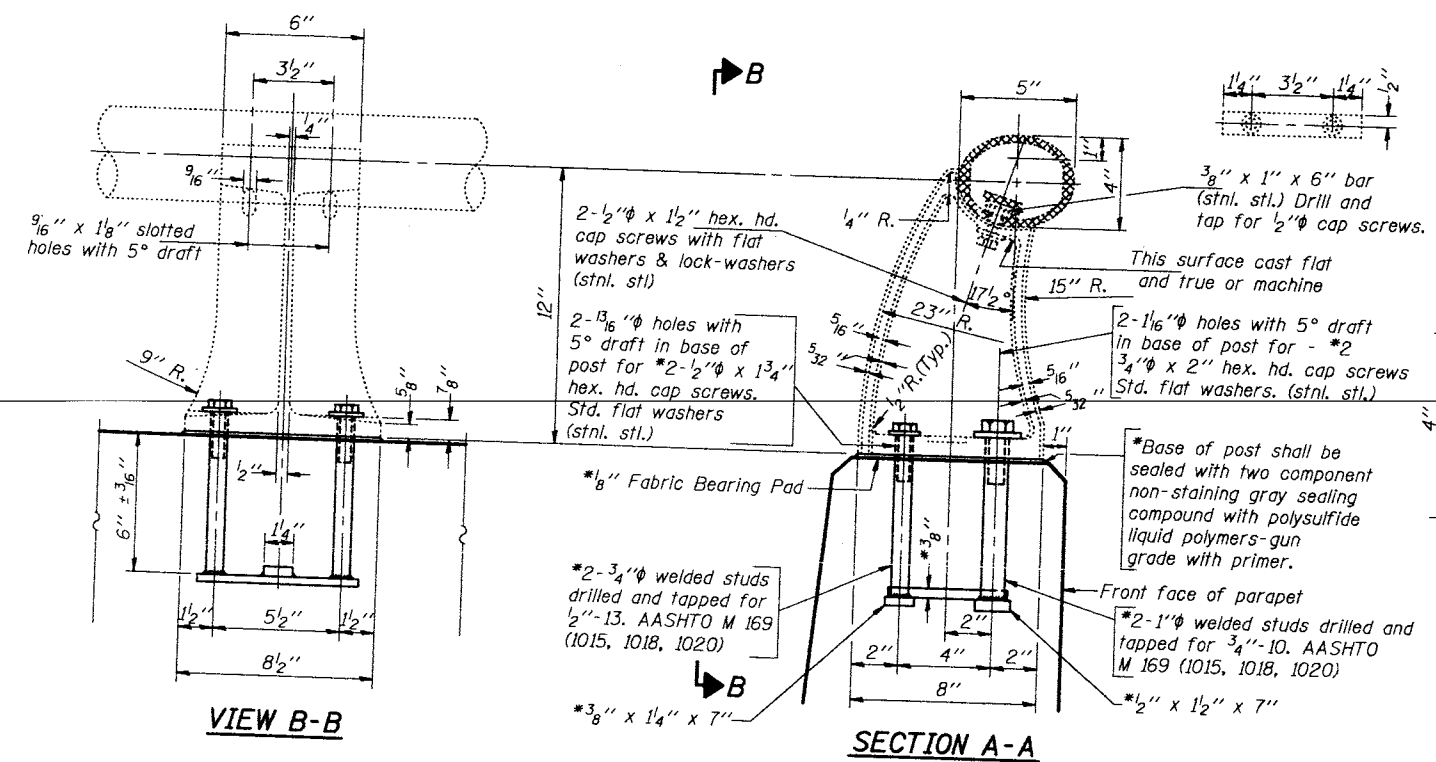
ILLINOIS DEPARTMENT OF TRANSPORTATION

Expansion Joint
Replacement at
Abutments

S.N. 057-0178 (SB)

DATE 03-04-2002

Notes: All Posts shall be normal to parapet.
All joints in rail shall be spliced per detail.
Provide 1-1/8" and 2-1/16" Aluminum Shims for 25% of the Posts.
Rail elements shall be parallel to Grade-high spots will be ground and low spots shimmed.
This information is included for the contractor to use to replace portions of the Rail, Rail Post and Anchorage devices damaged during parapet removal. Cost of replacement shall be included with Concrete Superstructures.
Horizontal rail elements & rail posts shown are for information only.



* New Rail Post anchorage devices will be required at each location where posts are connected to new construction. Cost shall be included with Removing and Re-erecting Existing Railing.

| | |
|----------|-----|
| DESIGNED | KMA |
| CHECKED | RGD |
| DRAWN | WJH |
| CHECKED | NRF |

R17/REPS 1-27-2000

| SMITH ENGINEERING CONSULTANTS, INC. CIVIL, MECHANICAL, ELECTRICAL AND PLUMBING ENGINEERS 2000 W. BROADWAY CHICAGO, ILLINOIS 60604 312.467.1000 | |
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| REVISIONS | |
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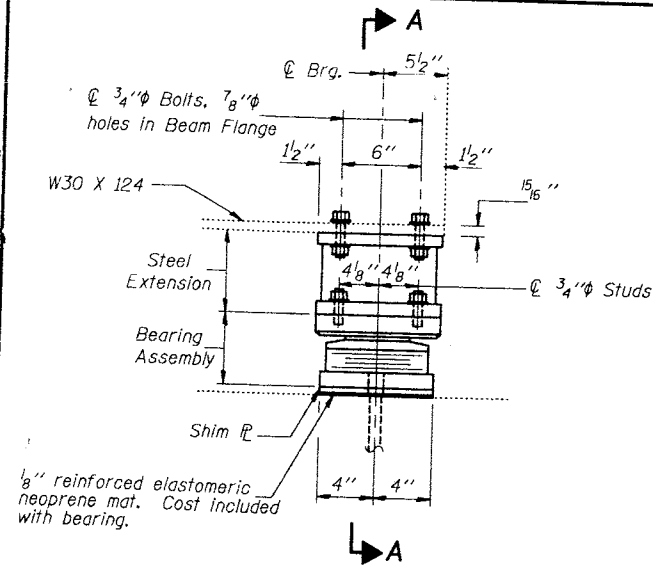
ILLINOIS DEPARTMENT OF TRANSPORTATION
Aluminum Railing Details
S.N. 057-0178 (SB)
DATE 03-04-2002

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

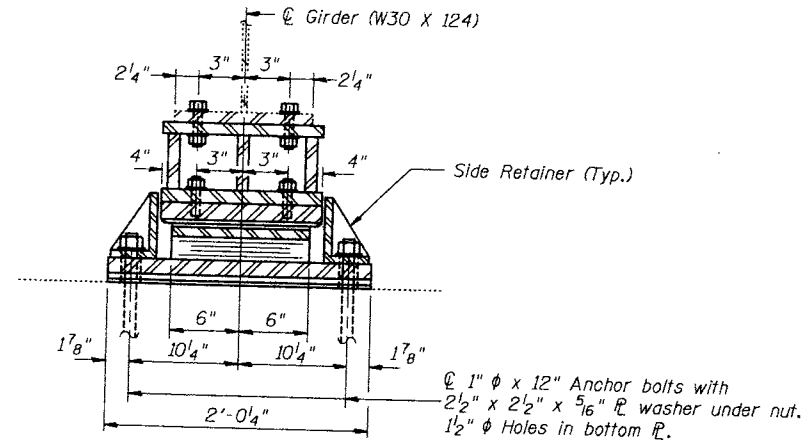
GIRDER REACTIONS

| | | |
|----------------|-----|------|
| R _P | (K) | 19.7 |
| R _t | (K) | 39.8 |
| Imp. | (K) | 11.7 |
| R (Total) | (K) | 71.2 |

| | | | | |
|-----------------------|-------------|----------|------------------|-----------|
| TRAFFIC NO. | MILE/POST | COUNTY | TOTAL SHEETS | SHEET NO. |
| 55 | 157-157-2RS | McLean | 137 | 11 |
| FED. ROAD DIST. NO. 3 | | ILLINOIS | FED. AID PROJECT | 14 SHEETS |

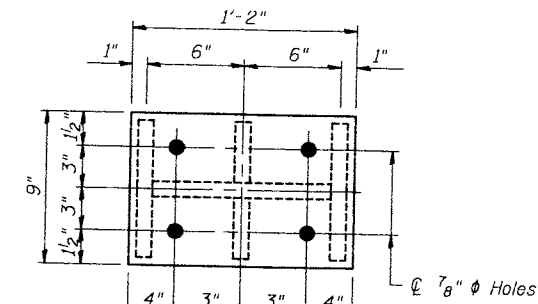


ELEVATION AT SOUTH ABUTMENT



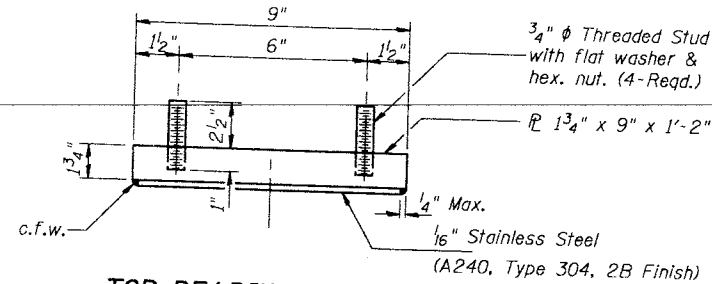
SECTION A-A

Notes: Diaphragm removal and reinstallation may be required to facilitate drilling holes. Cost shall be included in the cost of Furnishing and Erecting Structural Steel.
New steel extensions, side retainers, shim's, connection bolts and anchor bolts are included in Furnishing and Erecting Structural Steel.
See Sheet 13 of 14 for Anchor Bolt Installation.
Prior to ordering any material, the Contractor shall verify in the field all bearing height and shim thickness dimensions.
Min. jack capacity = 35 Tons.

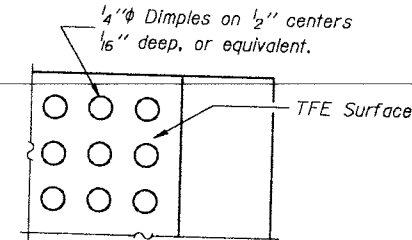


PLAN TOP AND BOTTOM PLATE

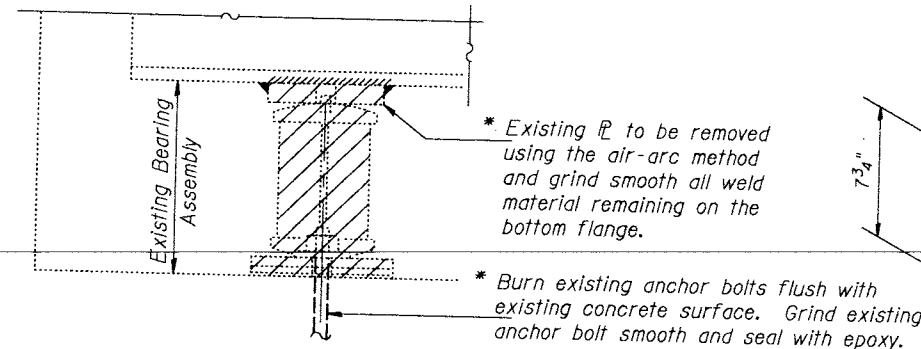
TYPE II TFE ELASTOMERIC EXP. BRG.



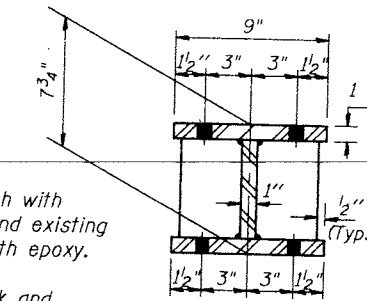
TOP BEARING ASSEMBLY



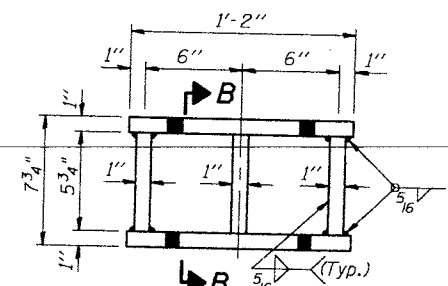
PLAN-TFE SURFACE



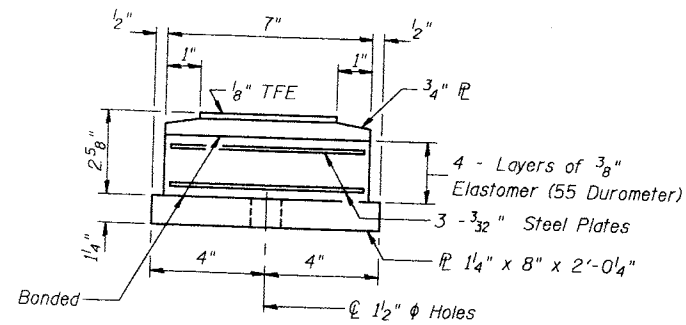
EXISTING BEARING REMOVAL DETAIL



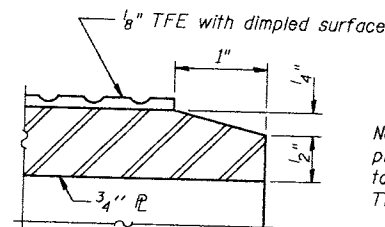
SECTION B-B



STEEL EXTENSION DETAIL



BOTTOM BEARING ASSEMBLY



SECTION THRU TFE

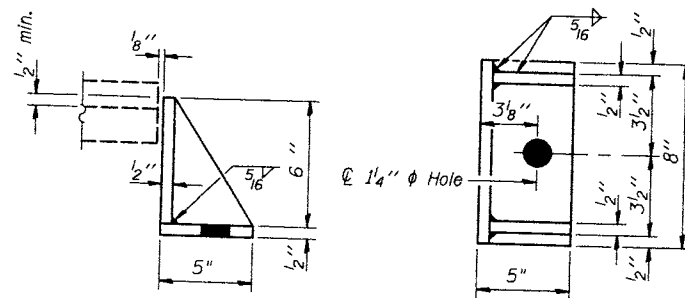
Note: The 1/8" TFE sheet shall be bonded directly to the top steel plate with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MMM-A-134, Type I. The bond agent shall be applied on the full area of the contact surfaces.

Bonding of 1/8" TFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.

| Location | ** Girder | 1 | 2 | 3 | 4 | 5 | 6 |
|----------------|-----------------|--------|--------|--------|--------|--------|--------|
| South Abutment | Steel Extension | 7 3/4" | 7 3/4" | 7 3/4" | 7 3/4" | 7 3/4" | 7 3/4" |
| | Shim thickness | 9/16" | 9/16" | 3/8" | 3/4" | 9/16" | 13/16" |

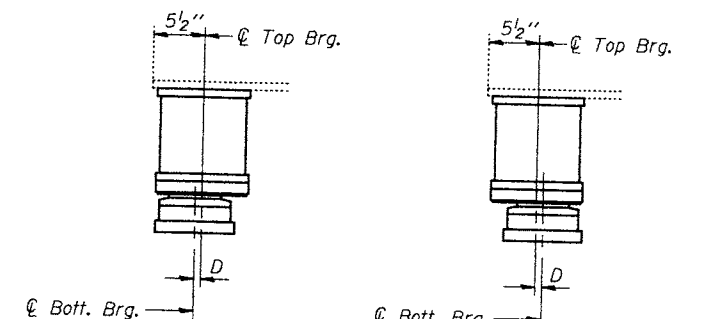
** Girder designation is from West to East

| | |
|----------|-----|
| DESIGNED | KMA |
| CHECKED | RGD |
| DRAWN | WJH |
| CHECKED | NRF |



SIDE RETAINER

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.



BELOW 50°F.

(Move bott. brg. away from fixed brg.)

ABOVE 50°F.

(Move bott. brg. toward fixed brg.)

SETTING ANCHOR BOLTS AT EXP. BRG.

D = 1/8" per each 100' of expansion for every 15° temp. change from the normal temp. of 50°F.

BILL OF MATERIAL

| Item | Unit | Total |
|------------------------------------------|------|-------|
| Elastomeric Bearing Assembly Type II | Each | 6 |
| Jack and Remove Existing Bearing | Each | 6 |
| Furnishing and Erecting Structural Steel | Lbs. | 1,210 |

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

ILLINOIS DEPARTMENT OF TRANSPORTATION

Bearing Extension Details
South Abutment

S.N. 057-0178 (SB)

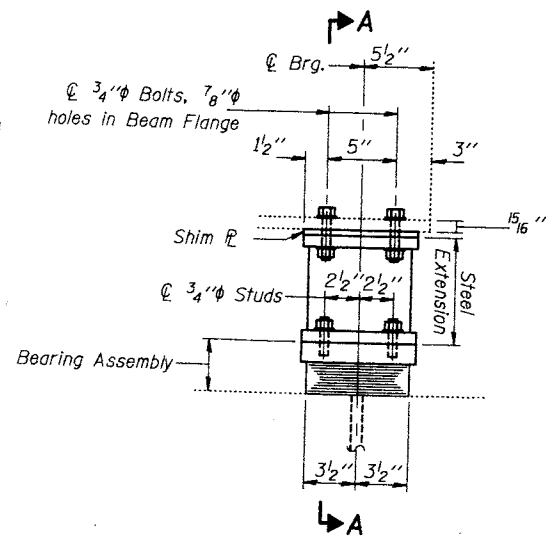
DATE 03-04-2002

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

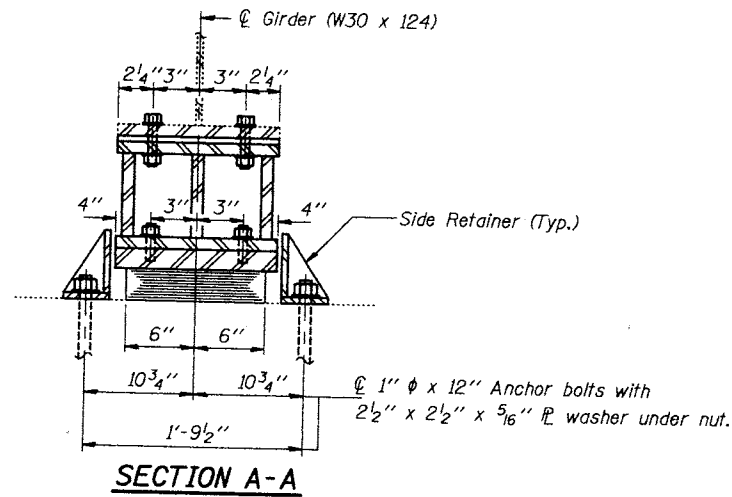
GIRDER REACTIONS

| | | |
|-----------|-----|------|
| RP | (K) | 19.7 |
| Rt | (K) | 39.8 |
| Imp. | (K) | 11.7 |
| R (Total) | (K) | 71.2 |

| | | | | |
|-----------------------|---------------|------------------|--------------|-----------|
| ROUTE NO. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
| 55 | (57-1,57-2)RS | McLean | 14 | 12 |
| FED. ROAD DIST. NO. 3 | ILLINOIS | FED. AID PROJECT | | |

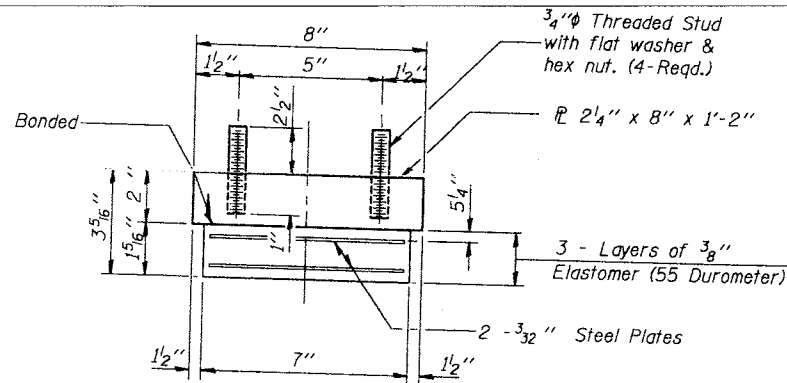


ELEVATION AT NORTH ABUTMENT



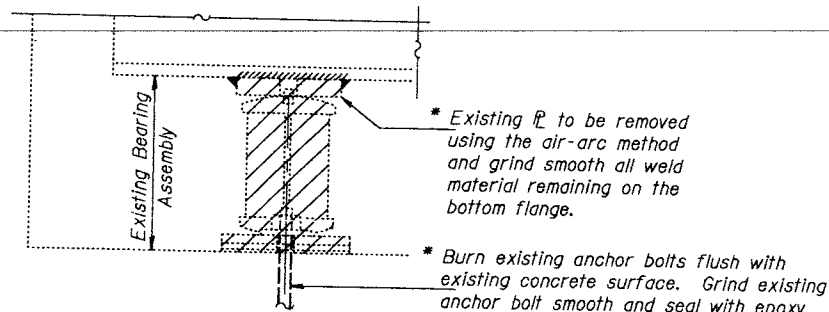
SECTION A-A

TYPE I ELASTOMERIC EXP. BRG.



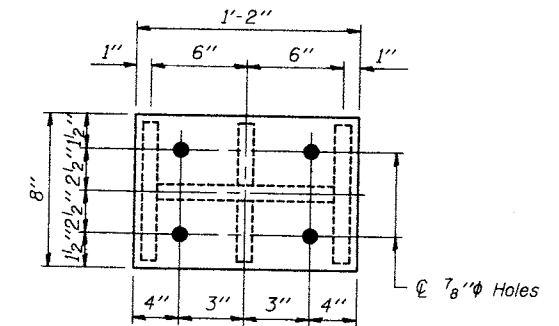
BEARING ASSEMBLY

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

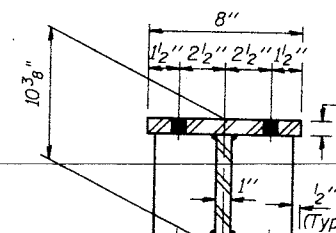


EXISTING BEARING REMOVAL DETAIL

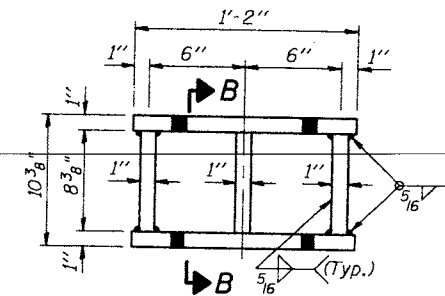
Notes: Diaphragm removal and reinstallation may be required to facilitate drilling holes. Cost shall be included in the cost of Furnishing and Erecting Structural Steel.
New steel extensions, side retainers, shim R's, connection bolts, and anchor bolts are included in Furnishing and Erecting Structural Steel.
See Sheet 13 of 14 for Anchor Bolt Installation.
Prior to ordering any material, the Contractor shall verify in the field all bearing height and shim thickness dimensions.
Min. jack capacity = 35 Tons.



PLAN TOP AND BOTTOM PLATE



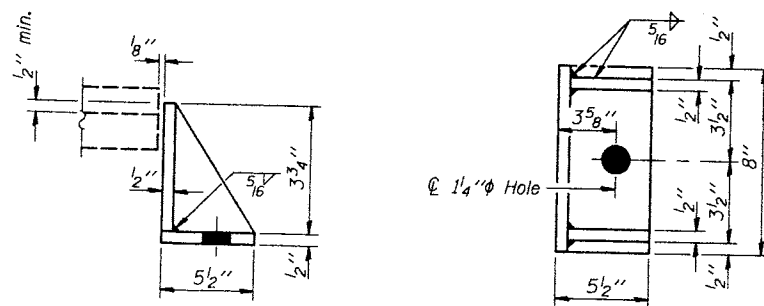
SECTION B-B



STEEL EXTENSION DETAIL

| Location | *** Girder | 1 | 2 | 3 | 4 | 5 | 6 |
|----------------|-----------------|---------|---------|---------|---------|---------|---------|
| North Abutment | Steel Extension | 10 3/8" | 10 3/8" | 10 3/8" | 10 3/8" | 10 3/8" | 10 3/8" |
| | Shim thickness | 3/8" | - | - | - | 3/8" | 1/2" |

*** Girder designation is from West to East



SIDE RETAINER

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.

| | |
|----------|-----|
| DESIGNED | JMW |
| CHECKED | RGD |
| DRAWN | WJH |
| CHECKED | NRF |

BILL OF MATERIAL

| Item | Unit | Total |
|------------------------------------------|------|-------|
| Elastomeric Bearing Assembly Type I | Each | 6 |
| Jack and Remove Existing Bearing | Each | 6 |
| Furnishing and Erecting Structural Steel | Lbs. | 1,200 |

| | |
|--------------------------------------------------------------------------------------------------------------------------------------------|------|
| SMITH ENGINEERING CONSULTANTS, INC. CIVIL/STRUCTURAL ENGINEERS AND ARCHITECTS www.smithengineering.com smith@smithengineering.com | |
| REVISIONS | |
| NAME | DATE |
| | |
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ILLINOIS DEPARTMENT OF TRANSPORTATION

Bearing Extension Details
North Abutment
S.N. 057-0178 (SB)

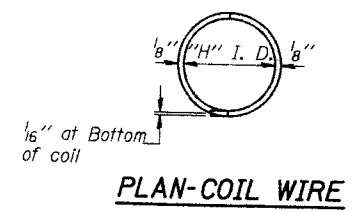
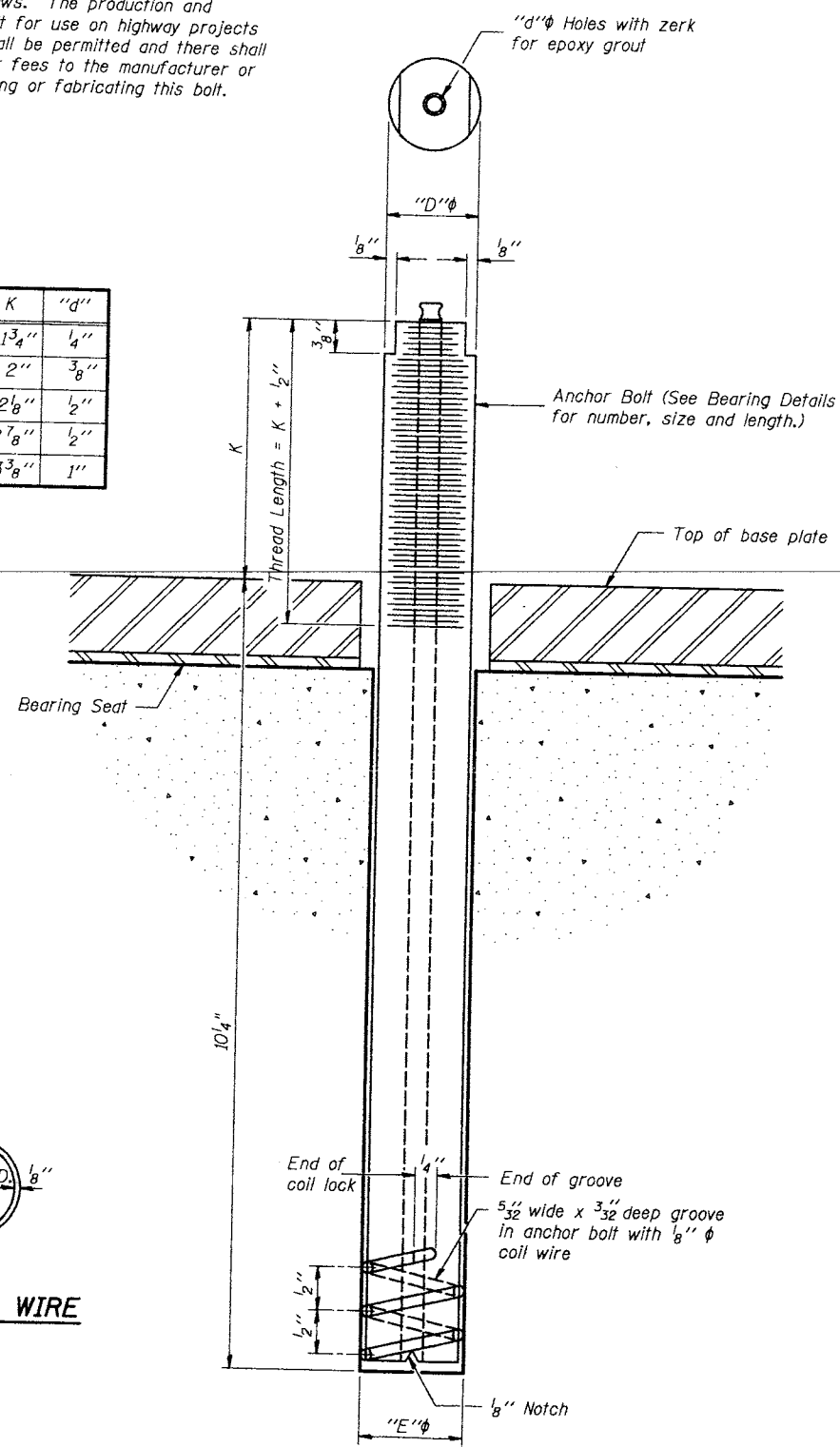
DATE 03-04-2002

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

| | | | | |
|-----------|---------------|--------------|------------|-------|
| ROUTE NO. | SECTION | COUNTY | POST MILES | SHEET |
| 55 | 157-1,57-2/RS | McLean | | 13 |
| F. A. 55 | | SHEET NO. 13 | | |
| 14 SHEETS | | | | |

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 1/4" | 1 3/8" | 1 1/16" | 2" | 3/8" |
| 1 1/2" | 1 5/8" | 1 5/16" | 2 1/8" | 1/2" |
| 2" | 2 1/8" | 1 13/16" | 2 7/8" | 1/2" |
| 2 1/2" | 2 5/8" | 2 5/16" | 3 3/8" | 1" |



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 A 519, Grade 1026, CW and supplied with hexagonal nuts and cut washers.
The coil wire shall be made of any suitable soft steel wire.
The finished anchor bolt shall be cleaned of rust and other foreign materials and wrapped or packaged to prevent contamination until they are installed.
The epoxy grout shall be a two-component, epoxy resin bonding system conforming to ASTM C 881, Type I, Grade 1 and of a Class suitable for the temperature at installation.

GENERAL NOTES

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

INSTALLATION PROCEDURE for the ILLINOIS COIL-LOCK ANCHOR BOLT

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

ALTERNATE ANCHOR BOLTS

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

| Location | Type |
|----------|------|
| N. Abut. | A307 |
| S. Abut. | A307 |
| | |
| | |

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

| | |
|----------|-----|
| DESIGNED | KMA |
| CHECKED | RGD |
| DRAWN | WJH |
| CHECKED | NRF |

ABB-1 4-30-99



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

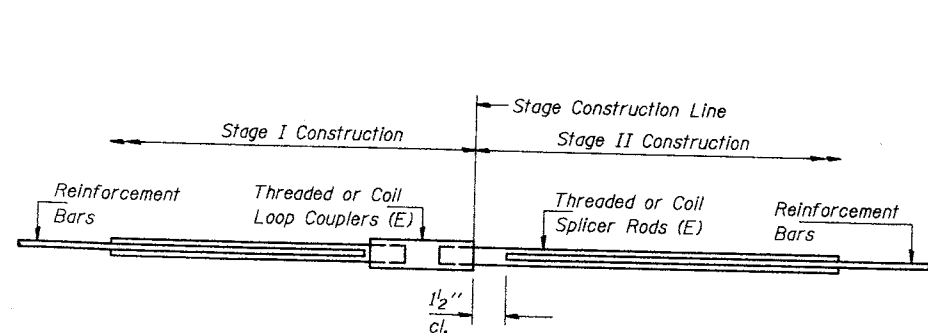
Anchor Bolt Details
For Bearings

S.N. 057-0178 (SB)

DATE 03-04-2002

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

| | | | | |
|--------------|---------------|-----------|------------|-----------|
| ROUTE NO. | SECTION | COUNTY | DATE | SHEET NO. |
| 55 | (57-1,57-2)RS | McLean | 8/03/11/10 | 14 |
| SHEET NO. 14 | | 14 SHEETS | | |



SPLICER DETAIL

| Bar Size | No. Assemblies Required | Location |
|----------|-------------------------|----------------|
| #6 | 35 | North Abutment |
| #6 | 35 | South Abutment |
| | | |
| | | |

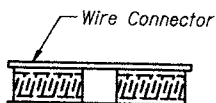
The diameter of this part is the same as the diameter of the bar spliced.

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

ROLLED THREAD DOWEL BAR



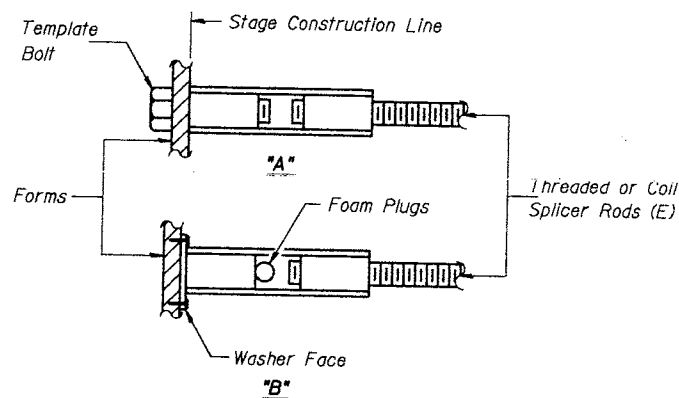
**** ONE PIECE**



WELDED SECTIONS

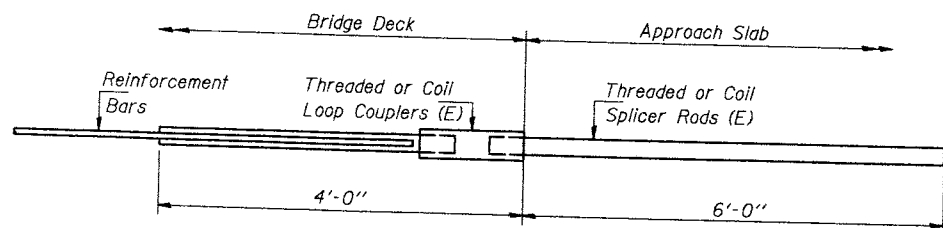
BAR SPLICER ASSEMBLY ALTERNATIVES

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



INSTALLATION AND SETTING METHODS

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



**INTEGRAL ABUTMENT
BAR SPLICER ASSEMBLY DETAIL
FOR #5 BAR**

| |
|---------------------------------------------|
| Min. Capacity = 23.0 kips - tension |
| Min. Pull-out Strength = 9.2 kips - tension |
| No. Required = 0 |

NOTES

Bar splicer assemblies shall be of an approved type and shall develop in tension at least 125 percent of the yield strength of the lapped reinforcement bars.
Splicer rods shall be of minimum 60 ksi yield strength, threaded or coiled full length.
All reinforcement bars shall be lapped and tied to the splicer rods or dowel bars.
Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars.

Other systems of similar design may be submitted to the Engineer for approval. Approval shall be based on certified test results from an approved testing laboratory that the proposed bar splicer assembly satisfies the following requirements:

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

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

Where f_y = Yield strength of lapped reinforcement bars in ksi.

$f_{s_{allow}}$ = Allowable tensile stress in lapped reinforcement bars in ksi (Service Load)

A_l = Tensile stress area of lapped reinforcement bars.

* = 28 day concrete

| BAR SPLICER ASSEMBLIES | | | |
|------------------------|---------------------------------|------------------------------|---------------------------------------|
| Bar Size to be Spliced | Splicer Rod or Dowel Bar Length | Strength Requirements | |
| | | Min. Capacity kips - tension | Min. Pull-Out Strength kips - tension |
| #5 | 2'-0" | 23.0 | 9.2 |
| #6 | 2'-7" | 33.1 | 13.3 |
| #7 | 3'-5" | 45.1 | 18.0 |
| #8 | 4'-6" | 58.9 | 23.6 |

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

| | |
|----------|-----|
| DESIGNED | KMA |
| CHECKED | RGD |
| DRAWN | WJH |
| CHECKED | NRF |

BSD-1 4-30-99

| SMITH ENGINEERING CONSULTANTS, INC. CIVIL, MECHANICAL, ELECTRICAL AND SCAFFOLDING www.smithengineering.com 2140 W. 15th Street, Chicago, IL 60648 | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
| REVISIONS | |
| NAME | DATE |
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| | |

ILLINOIS DEPARTMENT OF TRANSPORTATION

Bar Splicer
Assembly Detail

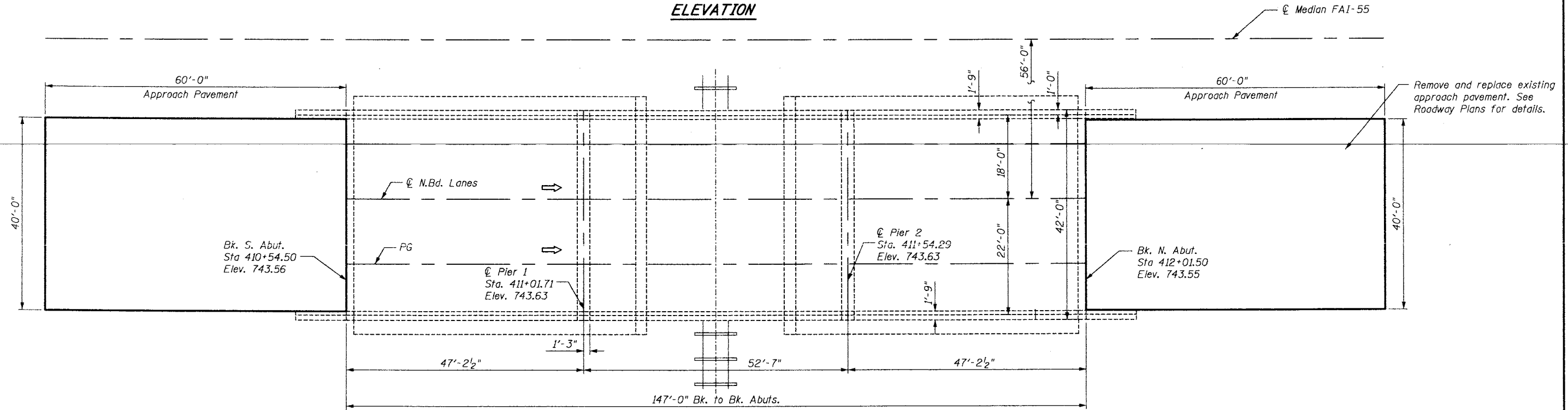
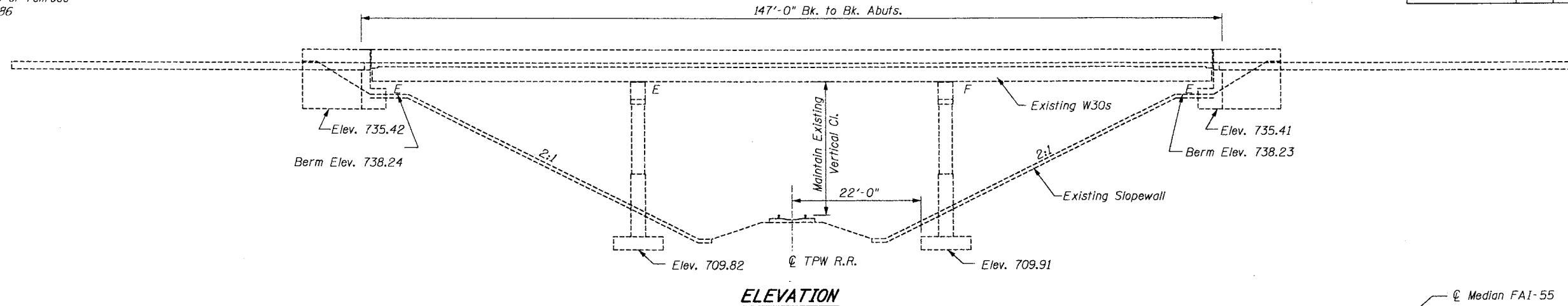
S.N. 057-0178 (SB)

DATE 03-04-2002

B.M. #144 R.R. Spike in power pole on 2nd pole west of Rte. 55, North Side of railroad Elev. 718.86

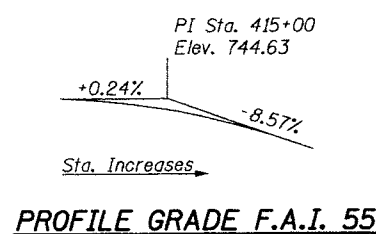
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

| | | | | | |
|-----------------------|--------------|----------|------------------|-------|-----------|
| ROUTE NO. | SECTION | COUNTY | TWP. | RANGE | SHEET NO. |
| 55 | 157-1,57-2RS | McLean | 26 N | 4E | 14 SHEETS |
| FED. ROAD DIST. NO. 3 | | ILLINOIS | FED. AID PROJECT | | |



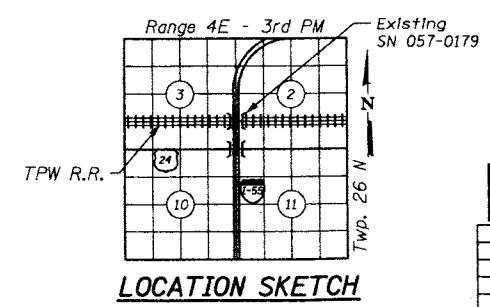
PROPOSED WORK

- Remove bituminous concrete overlay and waterproofing.
- Repair separation between bridge deck and steel beams at abutments by removing a 10 foot portion of the deck at each abutment, welding shear studs to the exposed beams, and replacing the deck.
- Overlay remaining deck areas with microsilica concrete.
- Replace abutment bearings with elastomeric bearings.
- Repair areas of delamination in north pier cap.
- Repair areas of delamination on both abutments.
- Epoxy seal cracks on the north abutment cap and backwall.
- Replace expansion joints.
- Remove and replace areas of slopewall failure.
- Repair gap at abutments and slopewall with CLSM.
- Plug drains within 10' of piers and abutments.
- Extend drains below bottom flanges of beams.



DESIGN STRESSES (ORIGINAL CONSTRUCTION)

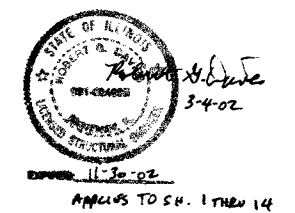
- FIELD UNITS**
- $f_c = 1,200$ psi (Deck Slab)
 - $f_c = 1,400$ psi (Curb, Parapet, Sub)
 - $f_s = 20,000$ psi (Reinforcement)
 - $f_s = 20,000$ psi (Structural Steel)
 - $v_c = 75$ psi (Ftgs)
 - $n = 10$



| | |
|----------|-----|
| DESIGNED | KMA |
| CHECKED | RGD |
| DRAWN | WJH |
| CHECKED | NRF |

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

ILLINOIS DEPARTMENT OF TRANSPORTATION
General Plan & Elevation
F.A.I. Rt. 55 Over TPW R.R.
(Sec 57-1,57-2)RS
McLean County
Sta. 411+28.42
S.N. 057-0179 (NB)



STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

| | | | | | |
|-----------------------|---------------|------------------|--------------|-----------|-------------|
| ROUTE NO. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. | SHEET NO. 2 |
| P.A. 55 | (57-1,57-2)RS | McLean | 14 | 14 | 14 SHEETS |
| FED. ROAD DIST. NO. 3 | ILLINOIS | FED. AID PROJECT | | | |


GENERAL NOTES

TOTAL BILL OF MATERIAL

| ITEM | UNIT | SUPER | SUB | TOTAL |
|------------------------------------------|----------|-------|------|-------|
| Concrete Removal | Cu. Yds. | 29.8 | | 29.8 |
| Concrete Superstructures | Cu. Yds. | 34.8 | | 34.8 |
| Concrete Bridge Deck Scarification 1/4" | Sq. Yds. | 543 | | 543 |
| Bar Splicers | Each | 70 | | 70 |
| Reinforcement Bars, Epoxy Coated | Lbs. | 7,880 | | 7,880 |
| Silicone Joint Sealer, 1/2" | Foot | 42 | | 42 |
| Silicone Joint Sealer, 2" | Foot | 42 | | 42 |
| Floor Drain Extension | Each | 12 | | 12 |
| Plug Existing Deck Drain | Each | 12 | | 12 |
| Formed Concrete Repair (≤ 5") | Sq. Ft. | | 111 | 111 |
| Sloped Wall Repair | Sq. Yds. | | 80.4 | 80.4 |
| Epoxy Crack Sealing | Foot | | 1.5 | 1.5 |
| Controlled Low Strength Material (CLSM) | Cu. Yds. | | 0.2 | 0.2 |
| Furnishing and Erecting Structural Steel | Lbs. | 2,440 | | 2,440 |
| Jack and Remove Existing Bearings | Each | 12 | | 12 |
| Elastomeric Bearing Assembly, Type I | Each | 6 | | 6 |
| Elastomeric Bearing Assembly, Type II | Each | 6 | | 6 |
| Bridge Deck Microsilica Concrete Overlay | Sq. Yds. | 543 | | 543 |
| Bituminous Concrete Removal (Deck) | Sq. Ft. | 629 | | 629 |
| Deck Slab Repair (Partial Depth) | Sq. Yds. | 1.2 | | 1.2 |
| Stud Shear Connectors | Each | 468 | | 468 |
| Polymer Concrete | Cu. Ft. | 5.6 | | 5.6 |
| Bridge Deck Grooving | Sq. Yds. | 596 | | 596 |
| Protective Coat | Sq. Yds. | 106 | | 106 |

- All structural steel shall conform to AASHTO Classification M-270 Gr. 36 unless otherwise noted.
- All new structural steel shall be shop painted with inorganic zinc rich primer per AASHTO M300, Type 1. The cost shall be included in the cost of Furnishing and Erecting Structural Steel.
- The existing structural steel contains lead. The Contractor should take appropriate precautions to deal with the presence of lead on this project.
- Reinforcement bars shall conform to the requirements of AASHTO M-31, M-42, or M-53 Grade 60.
- Prior to pouring the new concrete deck, all loose rust, loose mill scale, and other loose potentially detrimental foreign material shall be removed from the surfaces of the beams or girders in contact with concrete. The cost of this work will be included in the pay item covering removal of the existing concrete. All heavy rust and other tightly adhered potentially detrimental foreign matter shall also be removed from the surfaces of the beams or girders in contact with concrete. Tightly adhered paint may remain unless otherwise noted. This removal shall be accomplished by methods that will not damage the steel. The cost of this work will be paid for according to Article 109.04 of the Standard Specifications.
- Joint openings shall be adjusted according to Article 503.10(c) of the Standard Specifications when the deck is poured at an ambient temperature other than 50 degrees Fahrenheit.
- 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 adjustments. 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.
- Fasteners shall be high strength bolts. Bolts 3/4" ϕ , open holes 13/16" ϕ , unless otherwise noted.
- The area along the sloped walls as determined by the engineer should be cleared of vegetation, bushes, saplings, etc. according to Section 201 of the Standard Specs.
- Existing structural steel shall only be cleaned as required by the Special Provision "Cleaning and Painting Adjacent Areas of Existing Steel Structures".

| | |
|----------|-----|
| DESIGNED | KMA |
| CHECKED | RGD |
| DRAWN | WJH |
| CHECKED | NRF |

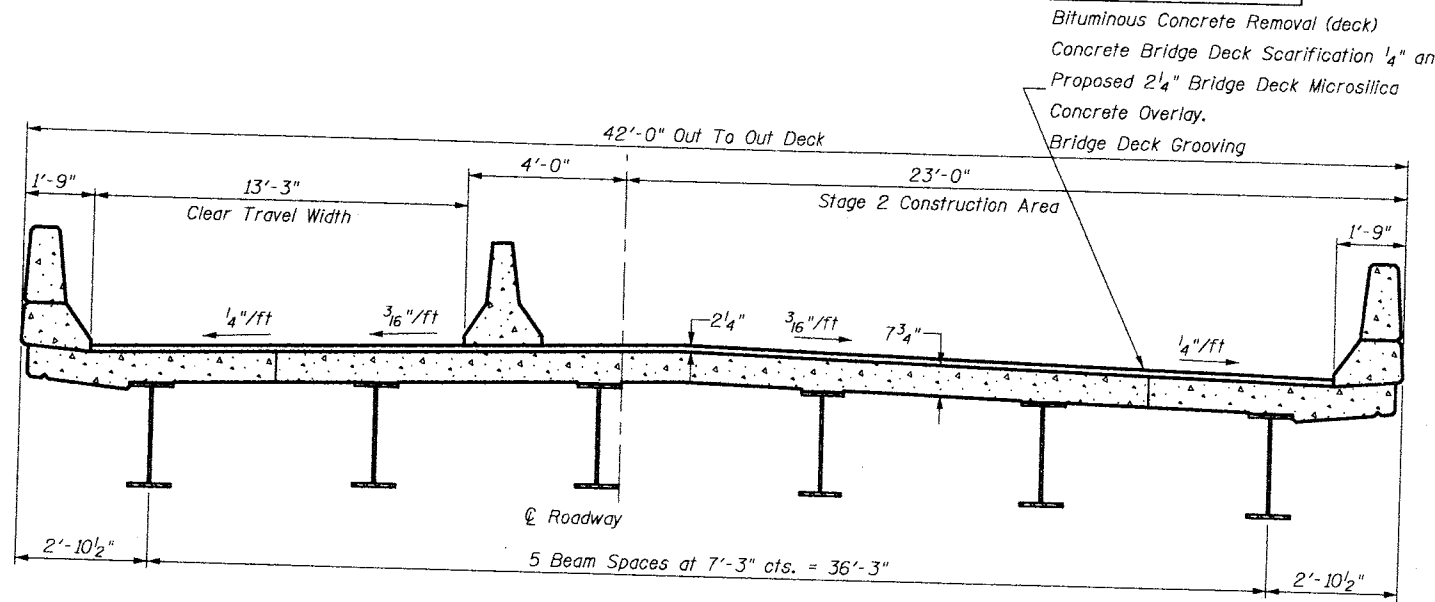
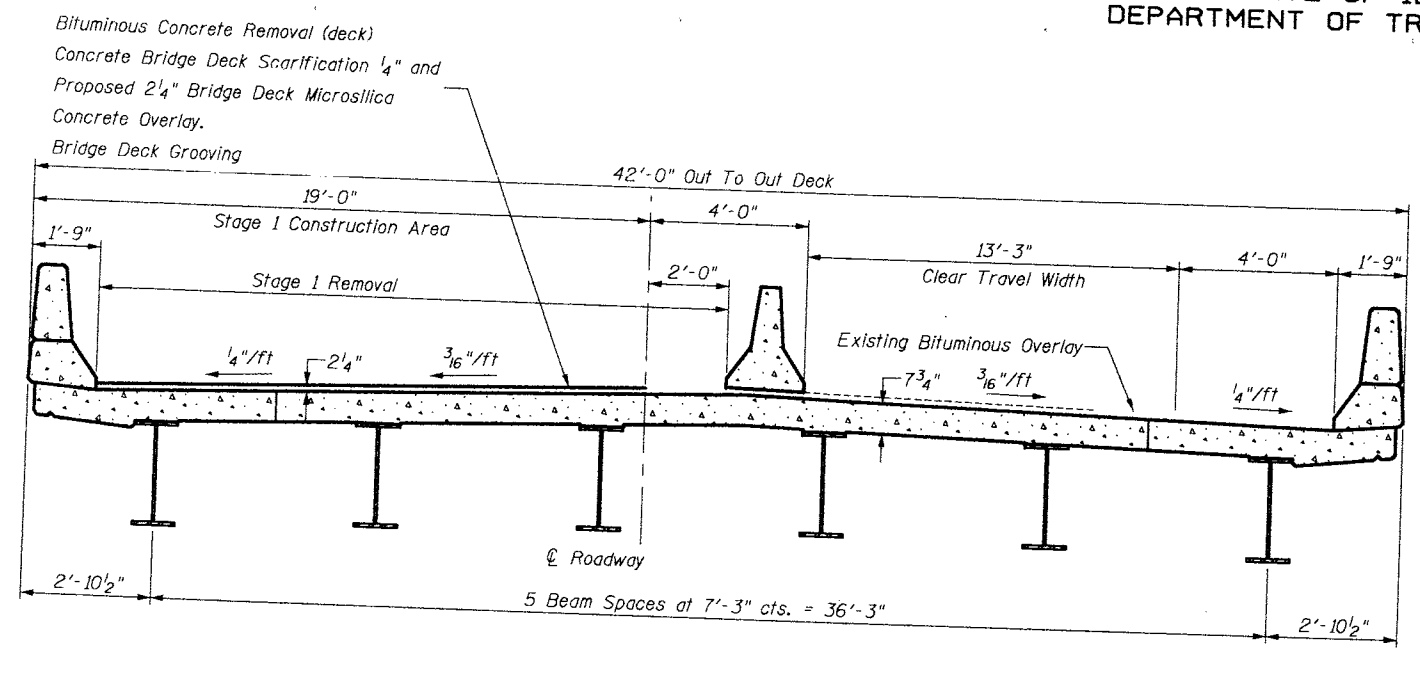
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|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
|  | |
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|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

ILLINOIS DEPARTMENT OF TRANSPORTATION
Total Bill of Materials
&
General Notes
S.N. 057-0179 (NB)

DATE 03-04-2002

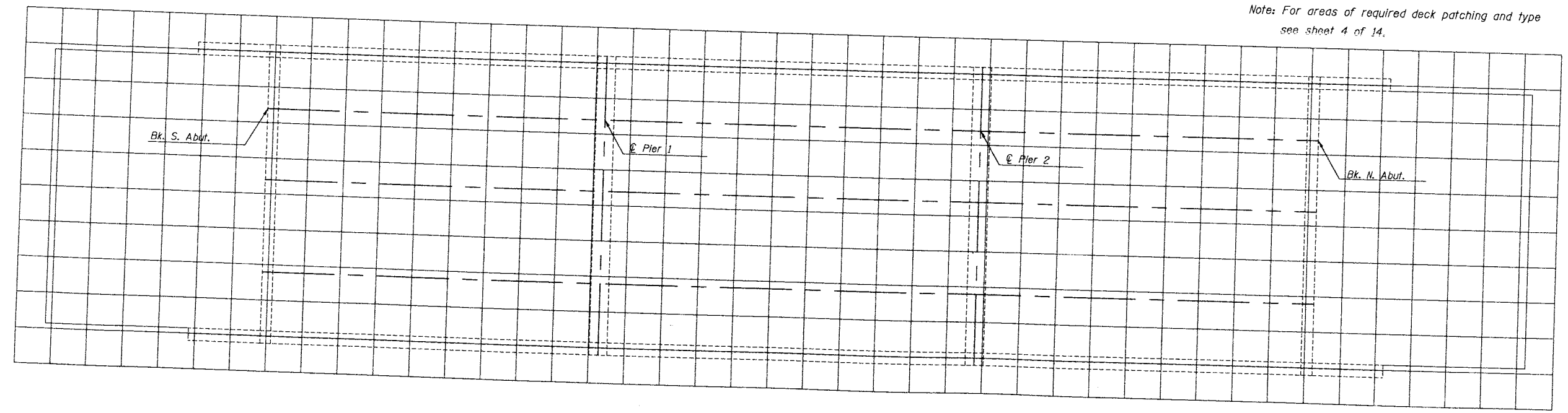
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

| | | | | |
|-----------------------|-----------------------|------------------|--------------|-----------|
| ROUTE NO. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
| 55 | (57-1,57-2)RS | McLean | 14 | 3 |
| FED. ROAD DIST. NO. 3 | ILL. ROAD DIST. NO. 3 | FED. AID PROJECT | | |



CROSS-SECTION STAGE 1
(LOOKING NORTH)

CROSS-SECTION STAGE 2
(LOOKING NORTH)



Note: For areas of required deck patching and type see sheet 4 of 14.

| | |
|----------|-----|
| DESIGNED | KMA |
| CHECKED | RGD |
| DRAWN | WJH |
| CHECKED | NRF |

Note: The Engineer shall mark the actual deck slab repair areas above as part of the As-Built plans

DECK SLAB REPAIR RECORD
NORTHBOUND

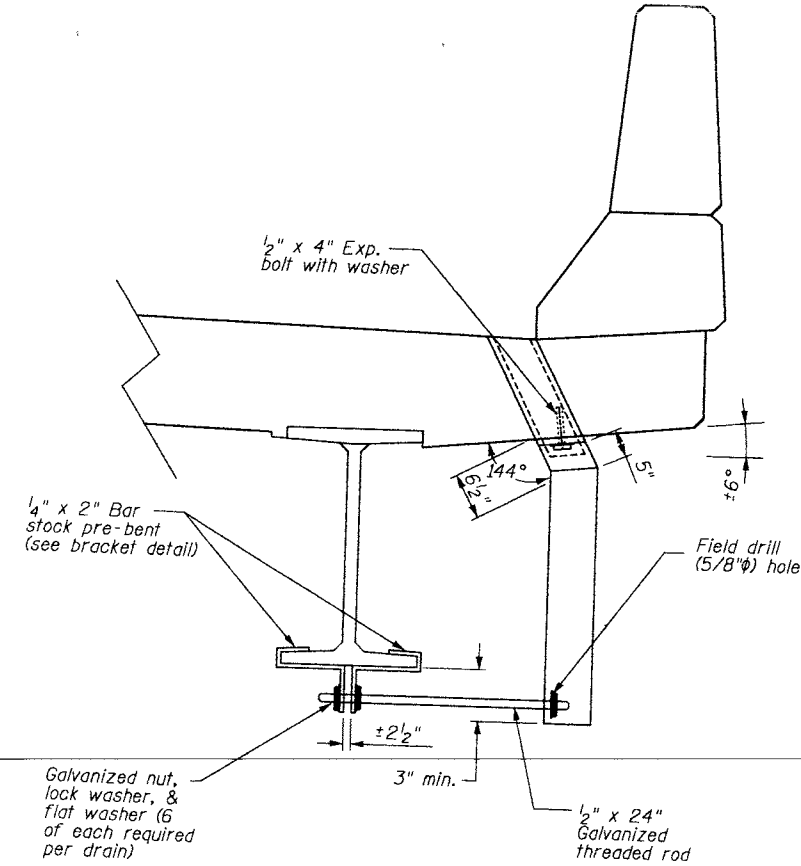


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| NAME | DATE |
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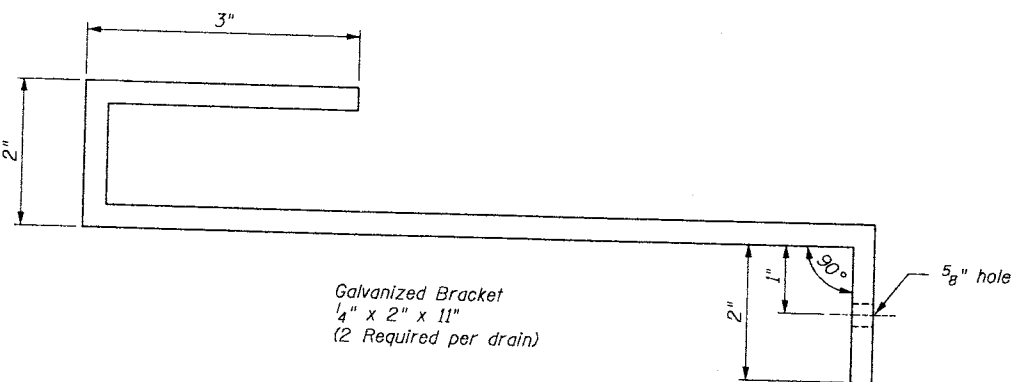
ILLINOIS DEPARTMENT OF TRANSPORTATION
Cross Section, Staging Details
And Deck Slab Repair Record
S.N. 057-0179 (NB)

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

| | | | | |
|-----------------------|---------------|--------------------|-----------|-----------|
| ROUTE NO. | SECTION | COUNTY | SHEET NO. | SHEET NO. |
| 55 | (57-1,57-2)RS | McLean | 14 | 5 |
| F.A. 55 | | ILLINOIS | | |
| FED. ROAD DIST. NO. 3 | | FED. AID PROJECT - | | |

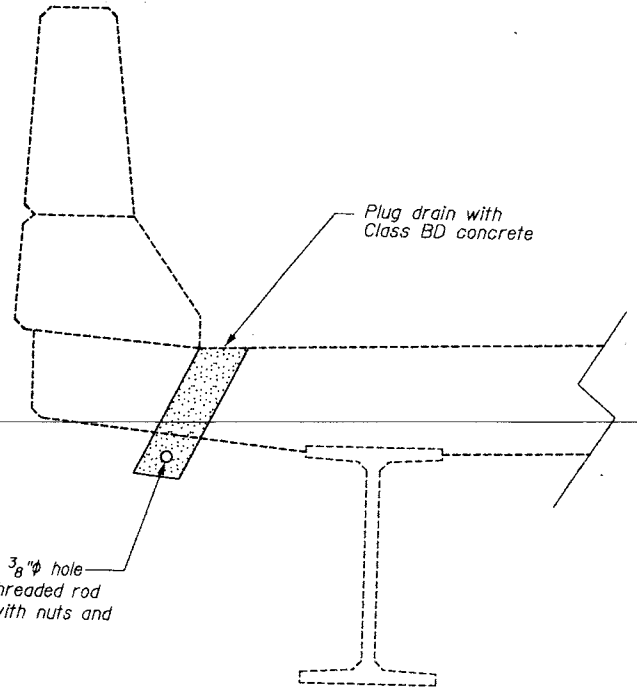


SECTION AT DRAIN



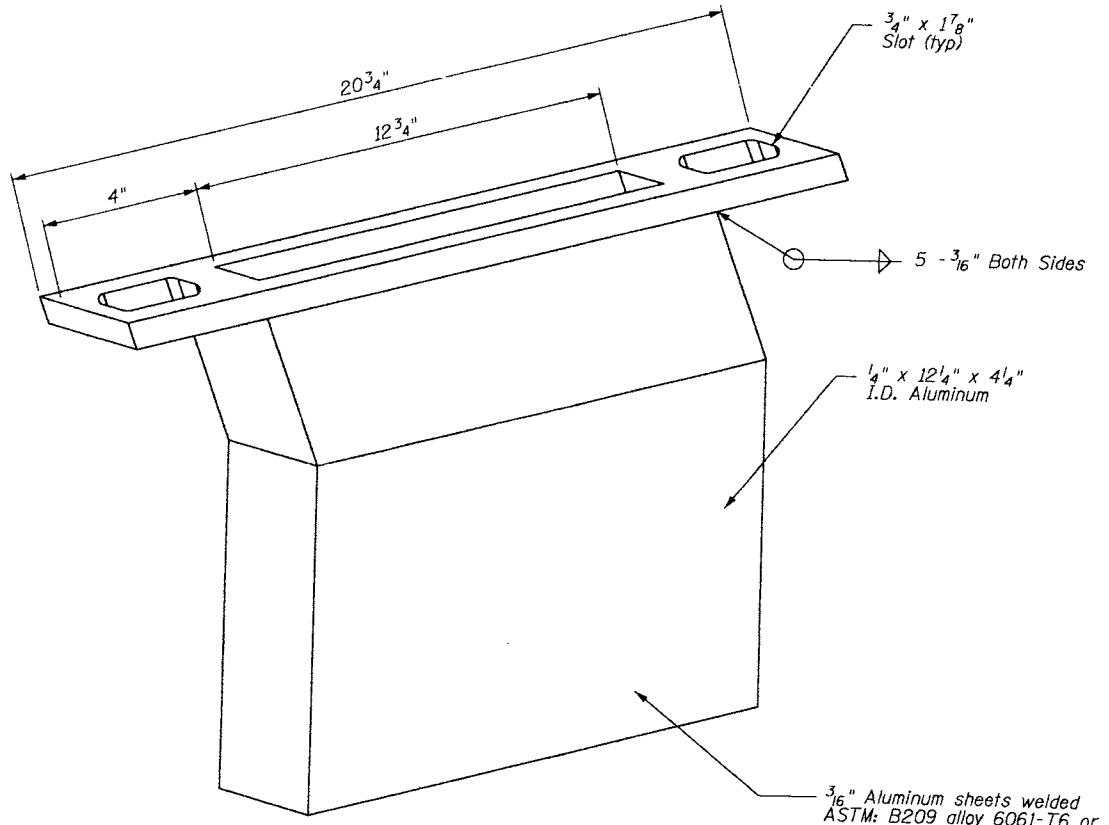
BRACKET DETAIL

NOTE:
For actual locations of drains to be extended or plugged, see sheet 4 of 14.



DRAIN ELIMINATION DETAIL

NOTE:
Expansion bolts, washers, nuts, threaded rods, and brackets will not be paid for separately but shall be included in the cost of "Floor Drain Extension".



DRAIN EXTENSION

BILL OF MATERIAL

| ITEM | UNIT | TOTAL |
|--------------------------|------|-------|
| Plug Existing Deck Drain | Each | 12 |
| Floor Drain Extension | Each | 12 |

| | |
|----------|-----|
| DESIGNED | KMA |
| CHECKED | RGD |
| DRAWN | WJH |
| CHECKED | NRF |

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CITY OF CHICAGO, ILLINOIS
770 N. LAKE STREET, CHICAGO, ILL. 60611
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WWW.SMITHENGINEERING.COM

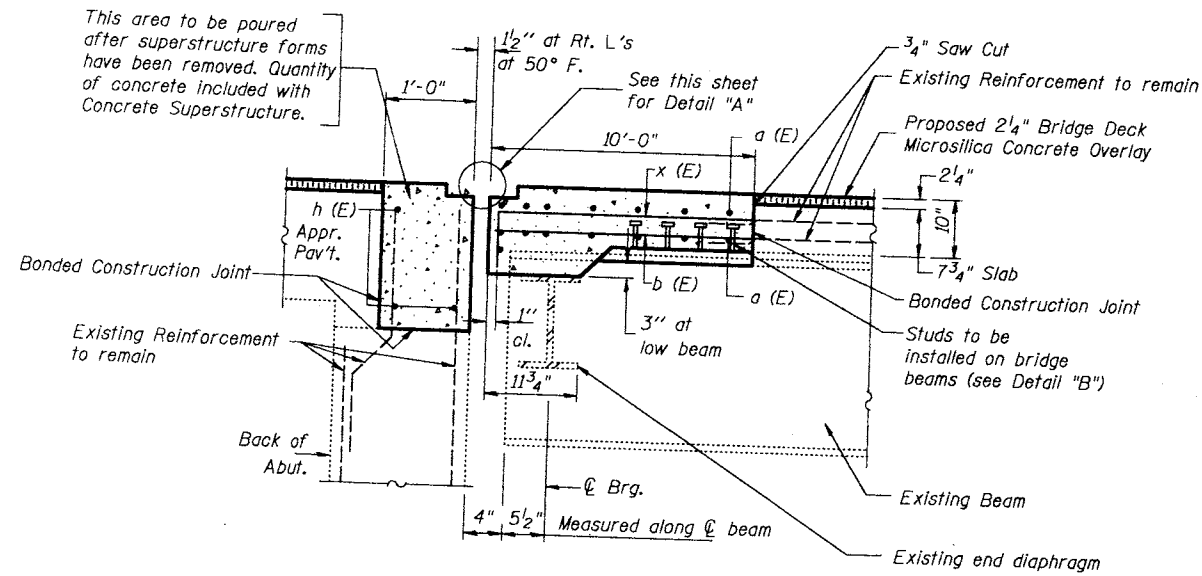
| REVISIONS | |
|-----------|------|
| NAME | DATE |
| | |
| | |
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ILLINOIS DEPARTMENT OF TRANSPORTATION
Floor Drain
Extension & Removal
Details
S.N. 057-0179 (NB)

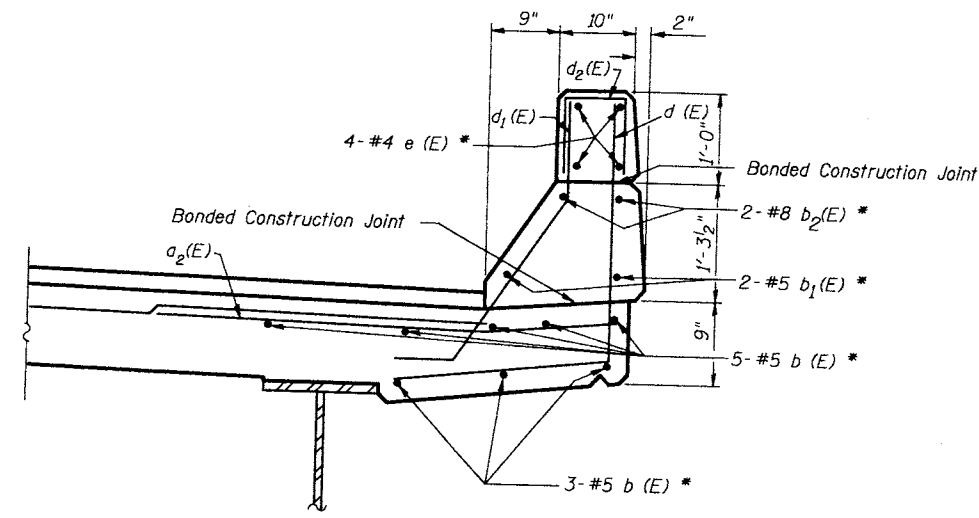
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

| | | | | |
|-----------------------|---------------|---------------------------|------|-------|
| ROUTE NO. | SECTION | COUNTY | MILE | SHEET |
| S.A. 55 | (57-1,57-2)RS | McLean | | |
| FED. ROAD DIST. NO. 2 | | ILLINOIS FED. AID PROJECT | | |

SHEET NO. 6
14 SHEETS

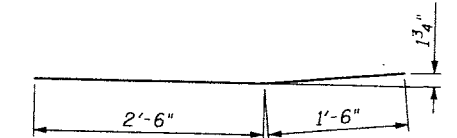


SECTION A-A AT JOINT AND DECK REPLACEMENT

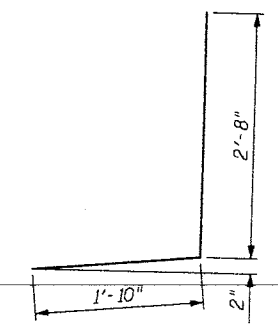


SECTION B - B AT PARAPET REPLACEMENT

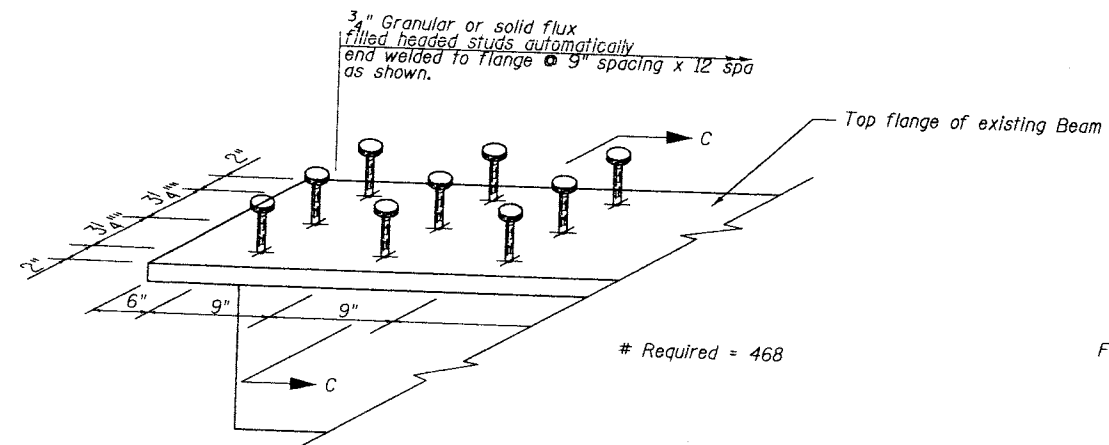
* Lap w/ existing longitudinal reinforcement



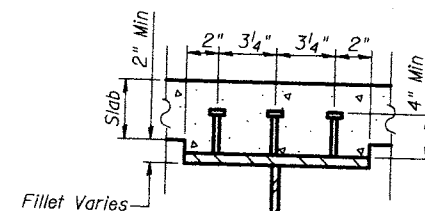
BAR a2 (E)



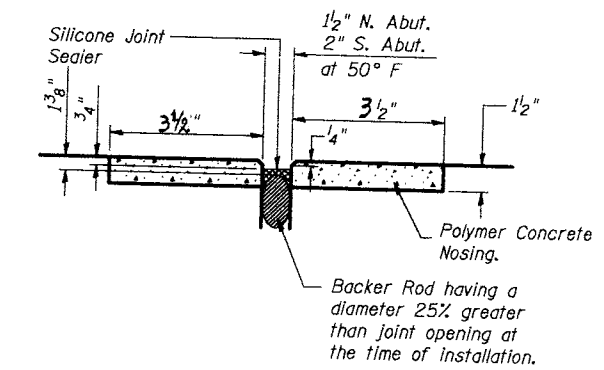
BAR d (E)



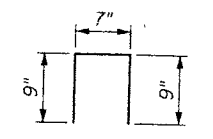
DETAIL B
Typical Repair for Each Beam
• Each Abutment



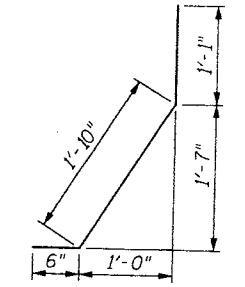
SECTION C-C



SILICONE JOINT SEALER DETAIL "A"



BAR d2 (E)



BAR d1 (E)

NOTES

- The limits of all concrete removal shall be saw cut 3/4" into concrete.
- Existing vertical bars in abutment back wall extending into the removed area shall be cleaned, straightened and incorporated in the new construction.
- The removal and replacement of concrete at the abutment stem, parapet and deck will be paid for as concrete removal and concrete superstructure.
- The parapet shall be removed on the deck side as shown on sheet 7 of 14.
- The aluminum railing post shall be temporarily removed and re-erected in the areas of parapet removal. Cost included with Concrete Superstructures. Any portion of railing that is damaged during construction shall be replaced at the Contractor's expense. (See sheet 8 of 14 for details)
- Two (2) d2(E) Bars shall be set in parapet under each rail post.
- Work this sheet with sheet 7 of 14

BILL OF MATERIAL

| ITEM | UNIT | TOTAL |
|----------------------------|----------|-------|
| Stud Shear Connectors | Each | 468 |
| Concrete Removal | Cu. Yds. | 29.8 |
| Concrete Superstructures | Cu. Yds. | 34.8 |
| Silicone Joint Sealer 1/2" | Foot | 42 |
| Silicone Joint Sealer 2" | Foot | 42 |
| Polymer Concrete | Cu. Ft. | 5.6 |
| Protective Coat | Sq. Yds. | 106 |

| | |
|----------|-----|
| DESIGNED | KMA |
| CHECKED | RGD |
| DRAWN | WJH |
| CHECKED | NRF |

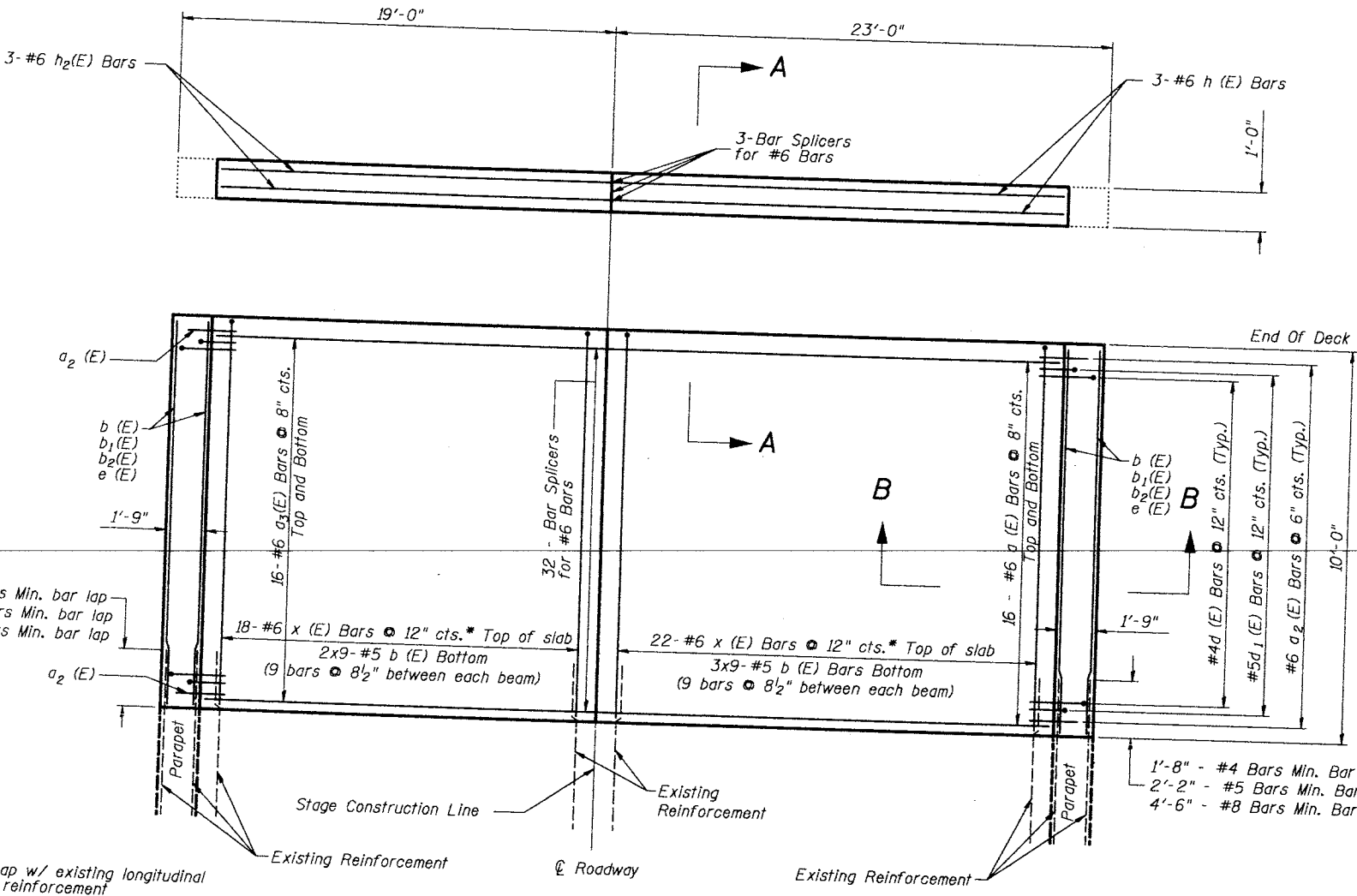
| SMITH ENGINEERING CONSULTANTS, INC. | |
|-------------------------------------|------|
| 1100 W. MONROE ST. SUITE 200 | |
| CHICAGO, ILL. 60606 | |
| TEL: 312-567-8900 | |
| FAX: 312-567-8901 | |
| WWW.SMITHENGINEERING.COM | |
| REVISIONS | |
| NAME | DATE |
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| | |

ILLINOIS DEPARTMENT OF TRANSPORTATION
Deck Separation Repair Details
S.N. 057-0179 (NB)

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

| | | | | |
|-----------------------|---------------|------------------|-------|------|
| ROUTE NO. | SECTION | COUNTY | SHEET | DATE |
| P.A. 55 | (57-1,57-2RS) | McLean | 205 | 1/7 |
| FED. ROAD DIST. NO. 3 | ILLINOIS | FED. AID PROJECT | | |

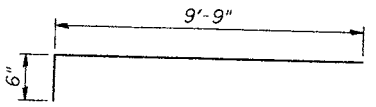
SHEET NO. 7
14 SHEETS



BILL OF MATERIAL *

| Bar | No. | Size | Length | Shape | |
|-----------------------------------|-----|------|--------|-------|-------|
| a (E) | 64 | #6 | 22'-0" | — | |
| a2(E) | 84 | #6 | 4'-0" | — | |
| a3(E) | 64 | #6 | 18'-0" | — | |
| b (E) | 122 | #5 | 9'-9" | — | |
| b1(E) | 8 | #5 | 9'-9" | — | |
| b2(E) | 8 | #8 | 9'-9" | — | |
| d (E) | 44 | #4 | 4'-6" | └ | |
| d1(E) | 44 | #5 | 3'-5" | └ | |
| d2(E) | 8 | #4 | 2'-1" | └ | |
| e (E) | 16 | #4 | 9'-9" | — | |
| h (E) | 6 | #6 | 22'-0" | — | |
| h2(E) | 6 | #6 | 18'-0" | — | |
| x (E) | 80 | #6 | 10'-3" | └ | |
| Reinforcement Bars (Epoxy Coated) | | | | Lbs | 7,880 |

* Total for both abutments
Reinforcement Bars designated (E) shall be epoxy coated.



BAR x (E)

PLAN AT NORTH ABUTMENT
South Abutment Similar

- Notes:
- See sheet 6 of 14 for Sections A-A at Joint and Deck Replacement and B-B at Parapet Replacement
 - For 10' slab and parapet removal existing longitudinal reinforcement bars shall be cut back to provide the minimum bar lap noted. The remaining reinforcement bars shall be cleaned, straightened and incorporated into the new construction.

| | |
|----------|-----|
| DESIGNED | KMA |
| CHECKED | RGD |
| DRAWN | WJH |
| CHECKED | NRF |



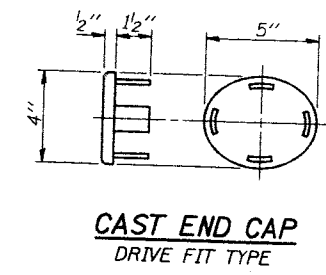
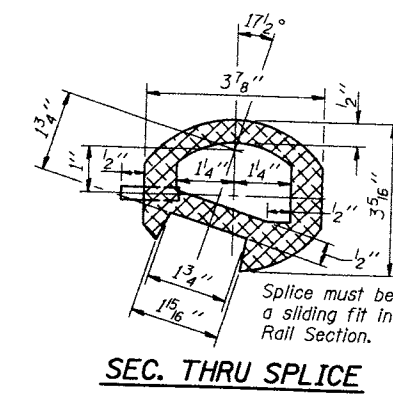
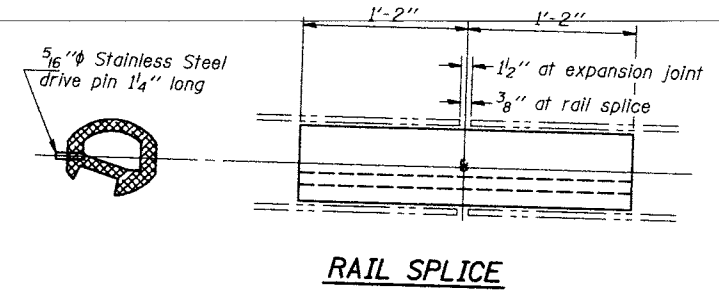
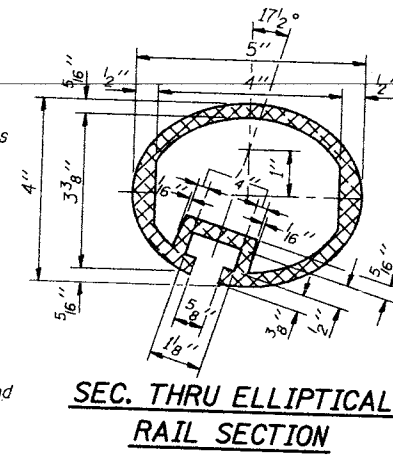
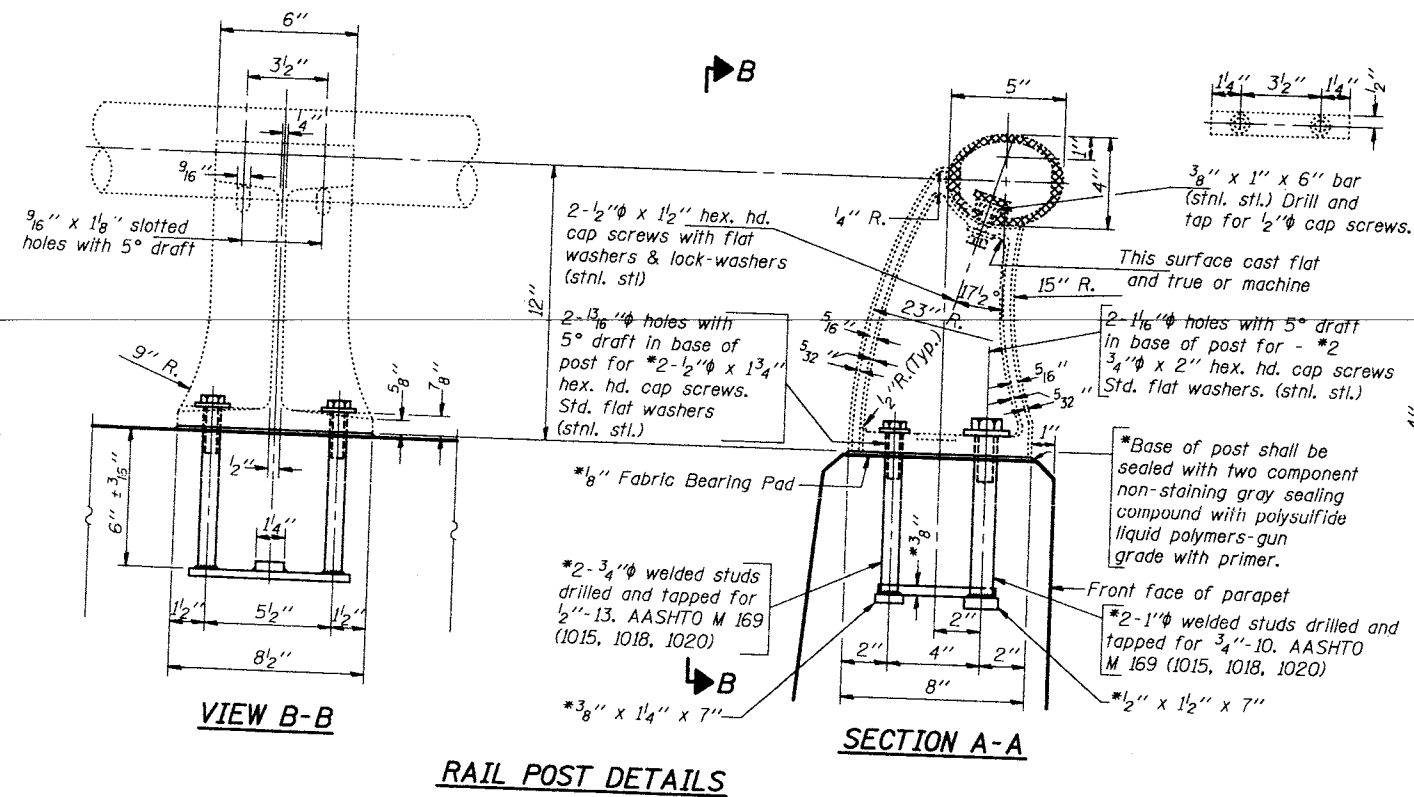
| REVISIONS | |
|-----------|------|
| NAME | DATE |
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ILLINOIS DEPARTMENT OF TRANSPORTATION
Expansion Joint Replacement at Abutments
S.N. 057-0179 (NB)
DATE 03-04-2002

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

| | | | | |
|-----------------------|--------------|------------------|--------------|-----------|
| ROUTE NO. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
| P.A. .55 | (57-157-2)RS | McLean | 205 | 14 SHEETS |
| FED. ROAD DIST. NO. 3 | ILLINOIS | FED. AID PROJECT | | |

Notes: All Posts shall be normal to parapet.
All joints in rail shall be spliced per detail.
Provide 1-1/8" and 2-1/5" Aluminum Shims for 25% of the Posts.
Rail elements shall be parallel to Grade-high spots will be ground and low spots shimmed.
This information is included for the contractor to use to replace portions of the Rail, Rail Post and Anchorage devices damaged during parapet removal. Cost of replacement shall be included with Concrete Superstructures.
Horizontal rail element & rail posts shown are for information only.



* New Rail Post anchorage devices will be required at each location where posts are connected to new construction. Cost shall be included with Removing and Re-erecting Existing Railing.

| | |
|----------|-----|
| DESIGNED | KMA |
| CHECKED | RGD |
| DRAWN | WJH |
| CHECKED | NRF |

RI7/REPS 1-27-2000

| | |
|---------------------------------------------|------|
| SMITH ENGINEERING CONSULTANTS, INC. | |
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| 2100 W. 111th Street, Chicago, IL 60648 | |
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ILLINOIS DEPARTMENT OF TRANSPORTATION

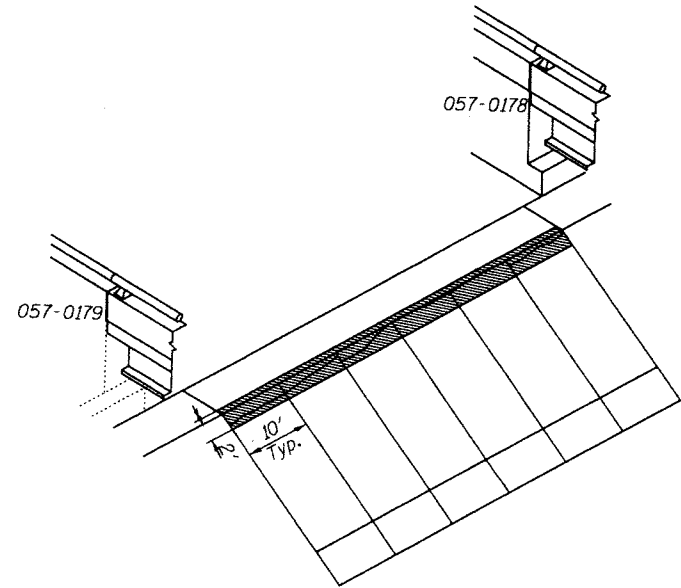
Aluminum Railing Details

S.N. 057-0179 (SB)

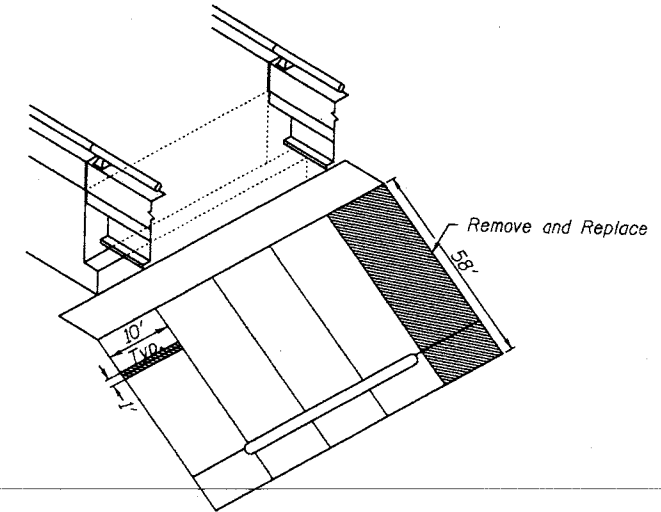
DATE 03-04-2002

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

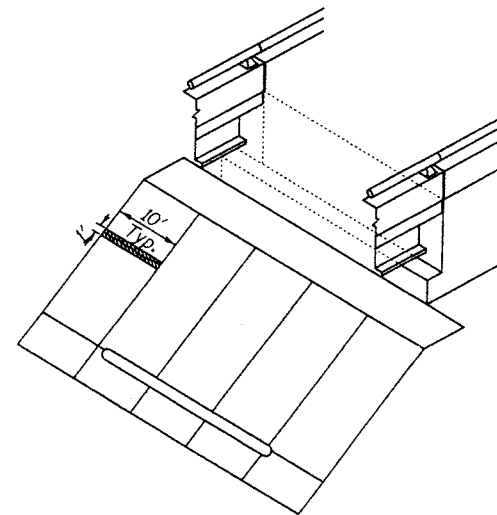
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| ROUTE NO. | SECTION | COUNTY | DISTRICT | SHEET | SHEET NO. 9 14 SHEETS |
| P.A. 55 | (57-1,57-2)RS | McLean | 005 | 009 | |
| FED. ROAD DIST. NO. 3 | | ILLINOIS | FED. AID PROJECT | | |



SOUTH SLOPEWALL REPAIR BETWEEN
SN 057-0178 & 057-0179




SOUTH SLOPEWALL REPAIR



NORTH SLOPEWALL REPAIR

LEGEND

 Slopewall Repair

BILL OF MATERIAL

| ITEM | UNIT | TOTAL |
|------------------|----------|-------|
| Slopewall Repair | Sq. Yds. | 80.4 |

| | |
|----------|-----|
| DESIGNED | KMA |
| CHECKED | RGD |
| DRAWN | WJH |
| CHECKED | NRF |

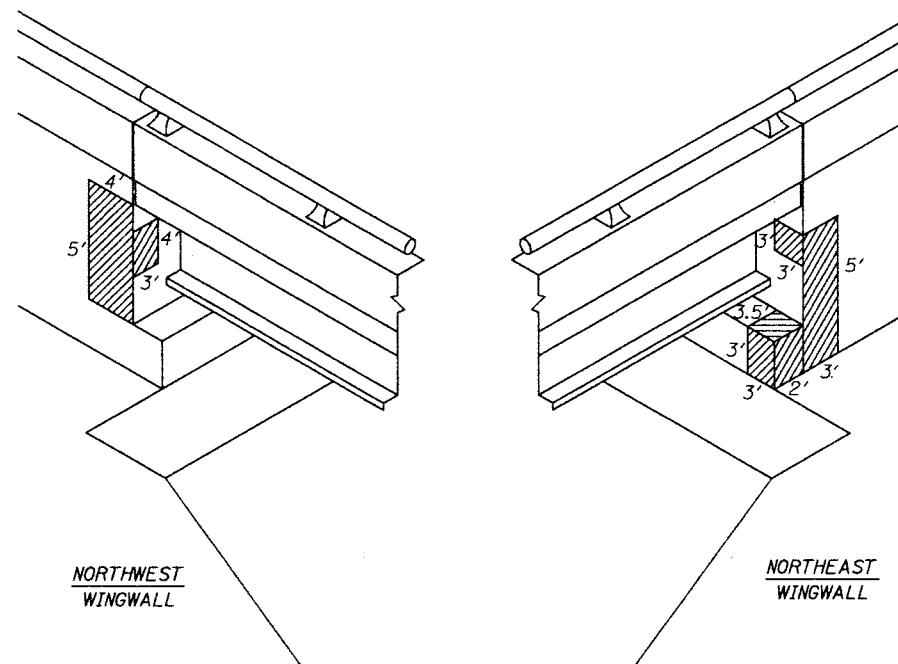
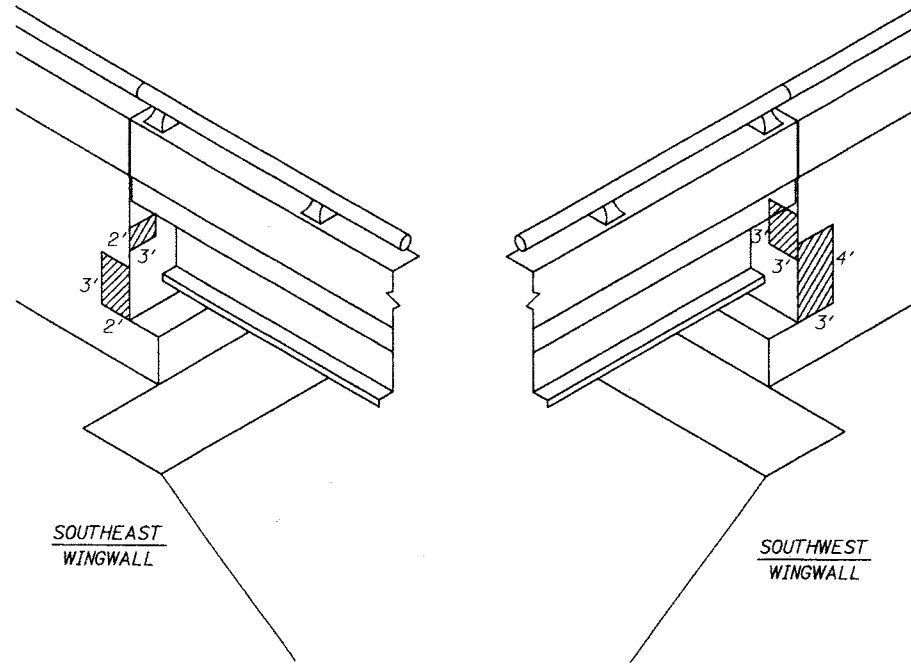
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| NAME | DATE |
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ILLINOIS DEPARTMENT OF TRANSPORTATION
*Slopewall Repair
Details*
S.N. 057-0179 (NB)
DATE 03-04-2002

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

| | | | | |
|-----------------------|--------------|------------------|--------------|-----------|
| ROUTE NO. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
| 55 | (57-157-2)RS | McLean | 14 | 10 |
| FED. ROAD DIST. NO. 3 | ILLINOIS | FED. AID PROJECT | | |



LEGEND

Formed Concrete Repair (≤5")

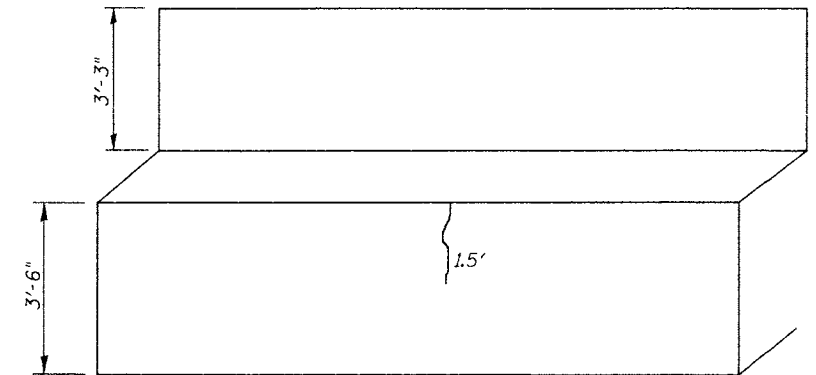
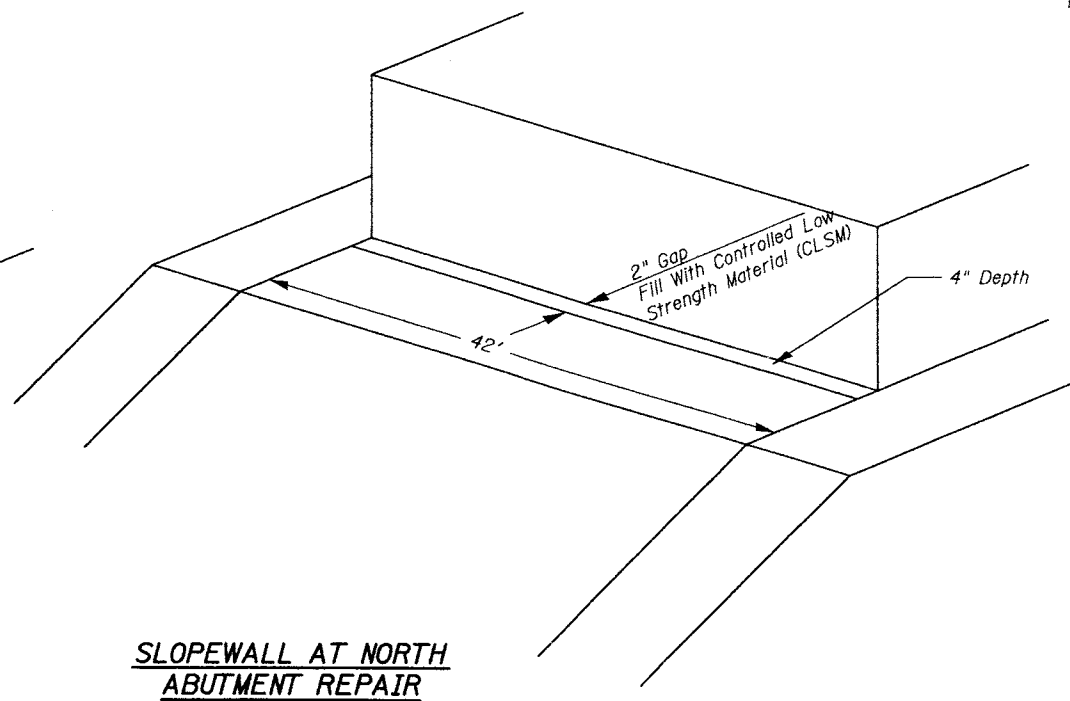
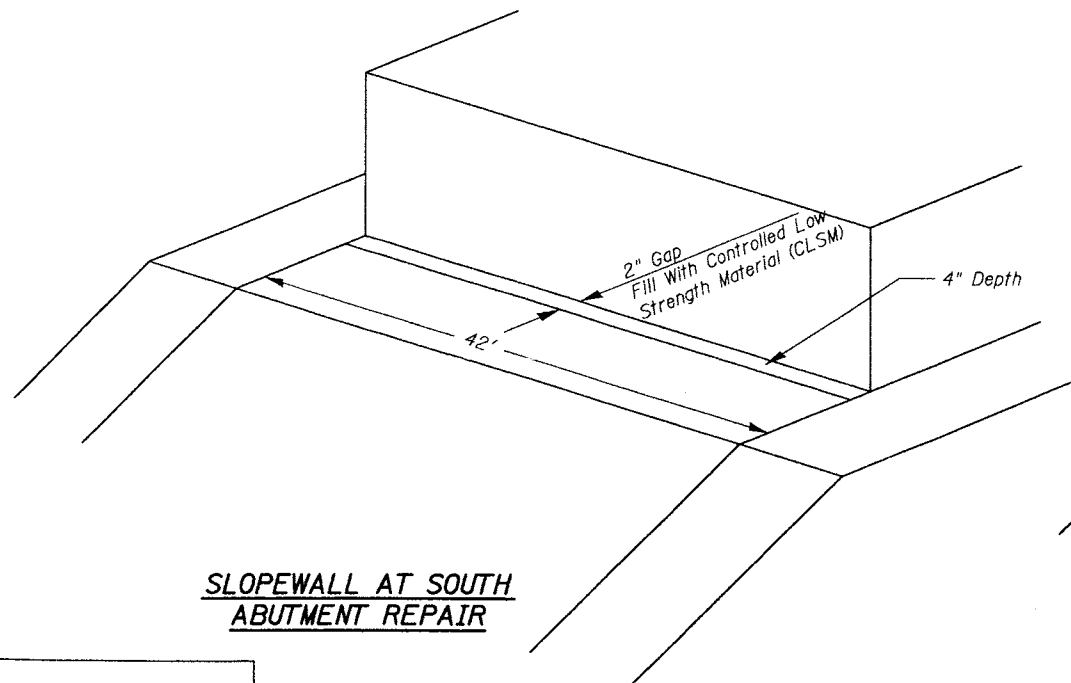
Epoxy Crack Sealing

BILL OF MATERIAL

| ITEM | UNIT | TOTAL |
|-----------------------------------------|----------|-------|
| Controlled Low Strength Material (CLSM) | Cu. Yds. | 0.2 |
| Formed Concrete Repair (≤5") | Sq. Ft. | 111 |
| Epoxy Crack Sealing | Foot | 1.5 |

SOUTH WING WALL REPAIRS

NORTH WING WALL REPAIRS



SOUTH ABUTMENT AND BACKWALL CRACK REPAIR

SLOPEWALL AT SOUTH ABUTMENT REPAIR

SLOPEWALL AT NORTH ABUTMENT REPAIR

| | |
|----------|-----|
| DESIGNED | KMA |
| CHECKED | RGD |
| DRAWN | WJH |
| CHECKED | NRF |

| SMITH ENGINEERING CONSULTANTS, INC. CIVIL/STRUCTURAL ENGINEERS 415 WESTBROOK www.smith-engineering.com 2020.smith-engineering.com | |
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| REVISIONS | |
| NAME | DATE |
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ILLINOIS DEPARTMENT OF TRANSPORTATION

Abutment/ Wingwall Repairs

S.N. 057-0179 (NB)

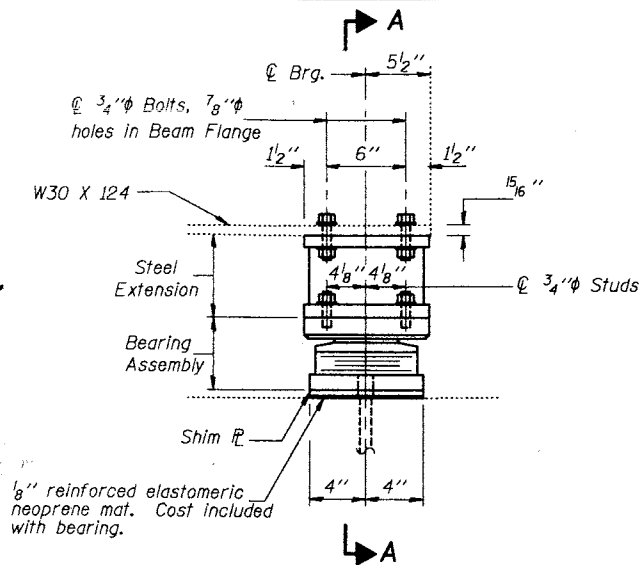
DATE 03-04-2002

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

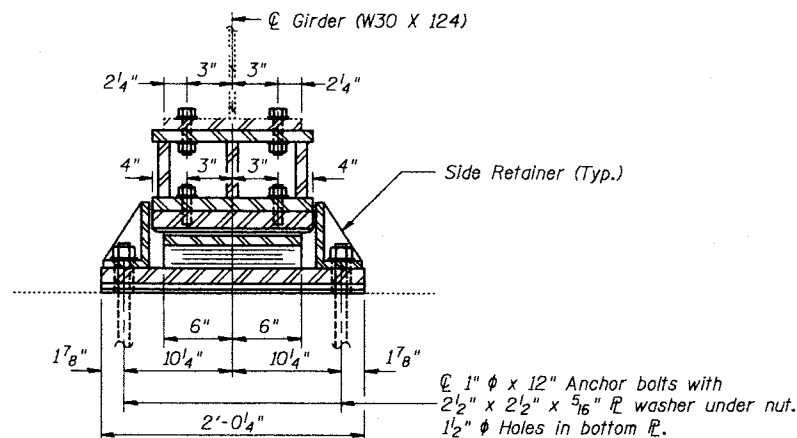
GIRDER REACTIONS

| | | |
|----------------|-----|------|
| RP | (K) | 19.7 |
| R _L | (K) | 39.8 |
| Imp. | (K) | 11.7 |
| R (Total) | (K) | 71.2 |

| | | | | | |
|-----------------------|---------------|--------|----------|-------|-----------|
| ROUTE NO. | SECTION | COUNTY | TOWNSHIP | RANGE | SHEET NO. |
| 55 | (57-1.57-2RS) | McLEOD | | | 11 |
| FED. ROAD DIST. NO. 3 | | | | | 14 SHEETS |

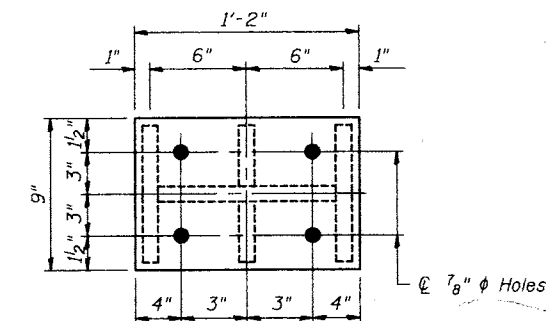


ELEVATION AT NORTH ABUTMENT



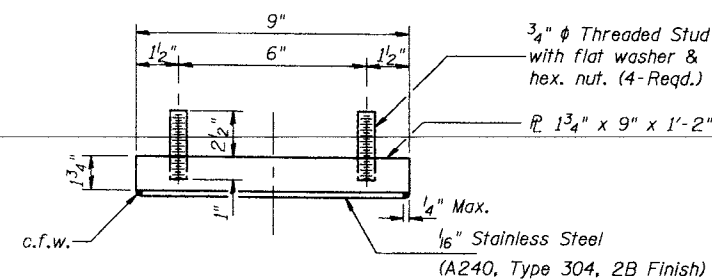
SECTION A-A

Notes: Diaphragm removal and reinstallation may be required to facilitate drilling holes. Cost shall be included in the cost of Furnishing and Erecting Structural Steel.
New steel extensions, side retainers, shim \bar{r} 's, connection bolts and anchor bolts are included in Furnishing and Erecting Structural Steel.
See Sheet 13 of 14 for Anchor Bolt installation.
Prior to ordering any material, the Contractor shall verify in the field all bearing height and shim thickness dimensions.
Min. jack capacity = 35 Tons.

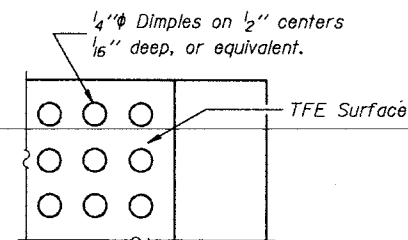


PLAN TOP AND BOTTOM PLATE

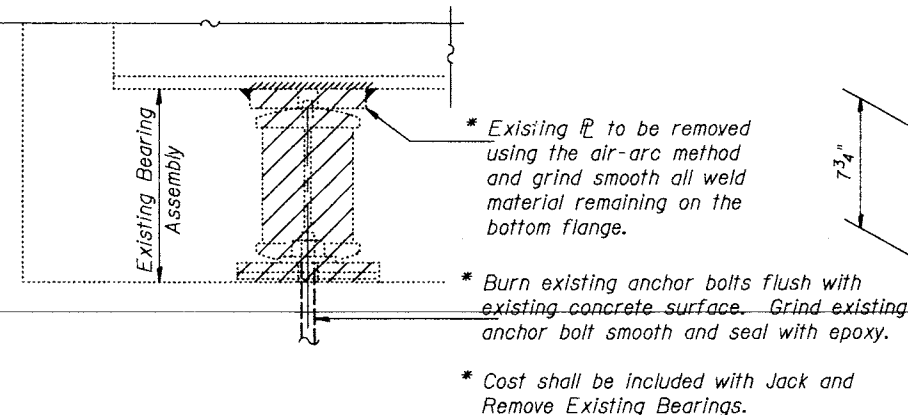
TYPE II TFE ELASTOMERIC EXP. BRG.



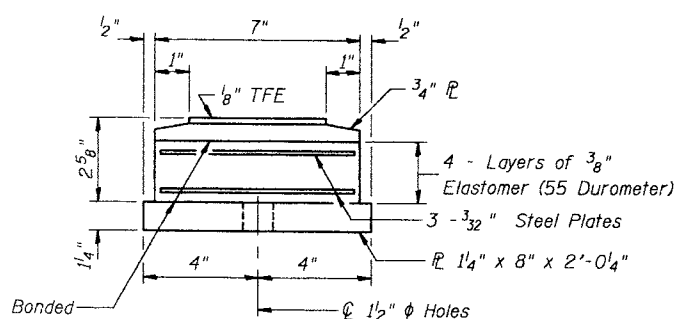
TOP BEARING ASSEMBLY



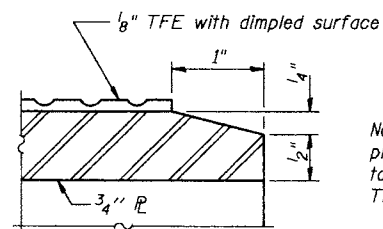
PLAN-TFE SURFACE



EXISTING BEARING REMOVAL DETAIL



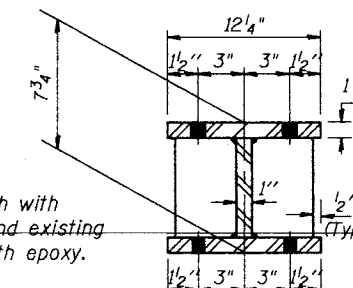
BOTTOM BEARING ASSEMBLY



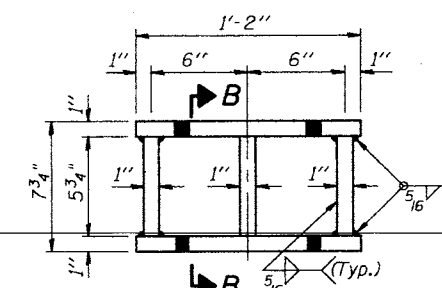
SECTION THRU TFE

Note: The 1/8" TFE sheet shall be bonded directly to the top steel plate with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MMM-A-134, Type I. The bond agent shall be applied on the full area of the contact surfaces.

Bonding of 1/8" TFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.



SECTION B-B



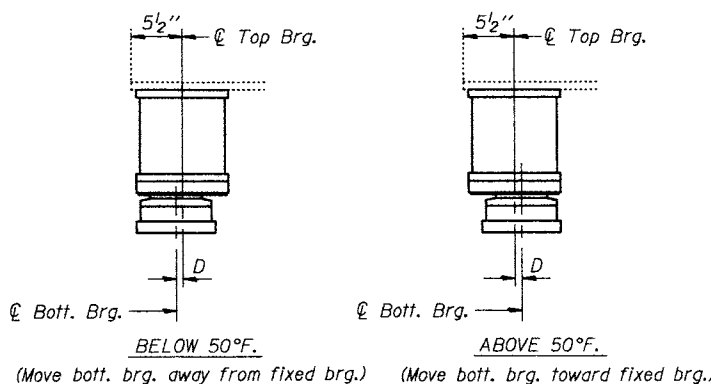
STEEL EXTENSION DETAIL

| Location | ** Girder | 1 | 2 | 3 | 4 | 5 | 6 |
|----------------|-----------------|---------|--------|--------|--------|--------|--------|
| South Abutment | Steel Extension | 7 3/4" | 7 3/4" | 7 3/4" | 7 3/4" | 7 3/4" | 7 3/4" |
| | Shim thickness | 1 5/16" | 3/8" | 9/16" | 1/2" | 9/16" | 1/2" |

** Girder designation is from West to East

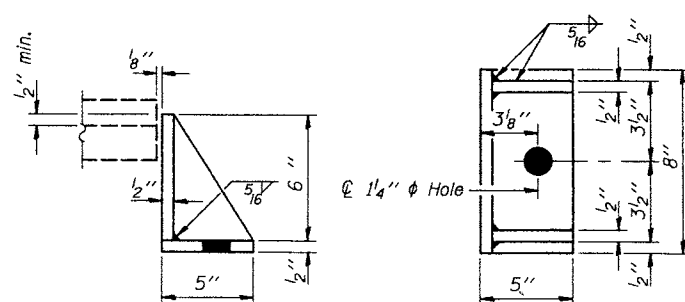
BILL OF MATERIAL

| Item | Unit | Total |
|------------------------------------------|------|-------|
| Elastomeric Bearing Assembly Type II | Each | 6 |
| Jack and Remove Existing Bearing | Each | 6 |
| Furnishing and Erecting Structural Steel | Lbs. | 1,212 |



SETTING ANCHOR BOLTS AT EXP. BRG.

D=1/8" per each 100' of expansion for every 15° temp. change from the normal temp. of 50°F.



SIDE RETAINER

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.

| | |
|----------|-----|
| DESIGNED | KMA |
| CHECKED | RGD |
| DRAWN | WJH |
| CHECKED | NRF |

| | |
|-----------------------------------------------------------|------|
| SMITH ENGINEERING CONSULTANTS, INC. | |
| CIVIL, ARCHITECTURAL, ELECTRICAL AND MECHANICAL ENGINEERS | |
| 1001 W. MONROE ST. CHICAGO, ILL. 60606 | |
| REVISIONS | |
| NAME | DATE |
| | |
| | |
| | |
| | |

ILLINOIS DEPARTMENT OF TRANSPORTATION

Bearing Extension Details
South Abutment

S.N. 057-0179 (NB)

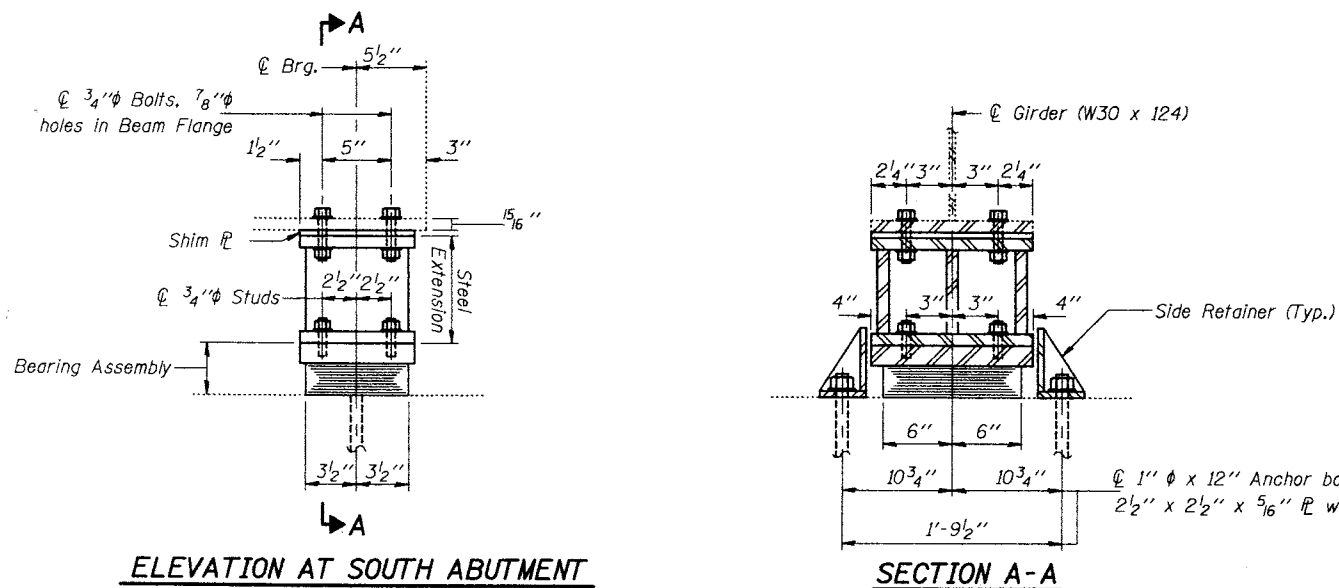
DATE 03-04-2002

GIRDER REACTIONS

| | | |
|----------------|-----|------|
| R _D | (K) | 19.7 |
| R _L | (K) | 39.8 |
| Imp. | (K) | 11.7 |
| R (Total) | (K) | 71.2 |

| | | | | |
|-----------------------|---------------|---------------------------|----------|-----------|
| ROUTE NO. | SECTION | COUNTY | TOWNSHIP | SHEET NO. |
| 55 | (57-1,57-2)RS | McLean | | 12 |
| FED. ROAD DIST. NO. 3 | | ILLINOIS FED. AID PROJECT | | |

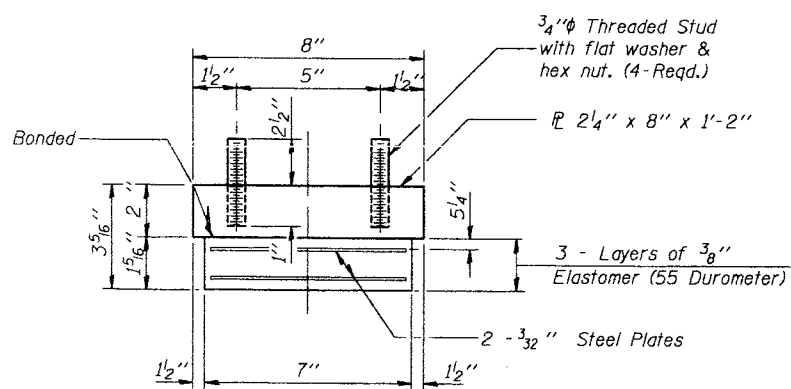
SHEET NO. 12
14 SHEETS



ELEVATION AT SOUTH ABUTMENT

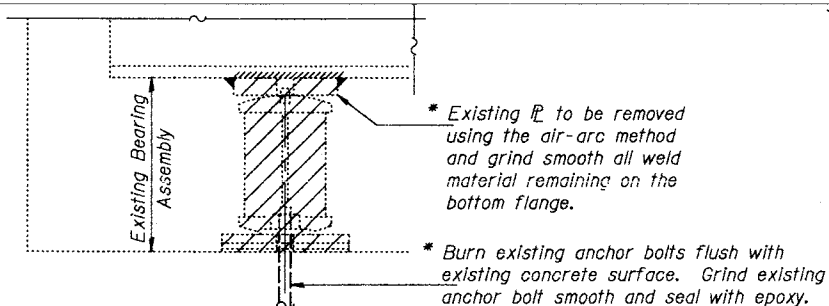
SECTION A-A

TYPE I ELASTOMERIC EXP. BRG.



BEARING ASSEMBLY

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

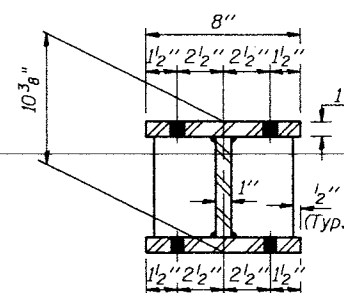


EXISTING BEARING REMOVAL DETAIL

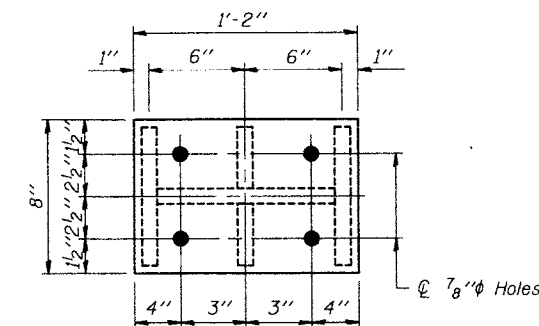
* Existing ϕ to be removed using the air-arc method and grind smooth all weld material remaining on the bottom flange.

* Burn existing anchor bolts flush with existing concrete surface. Grind existing anchor bolt smooth and seal with epoxy.

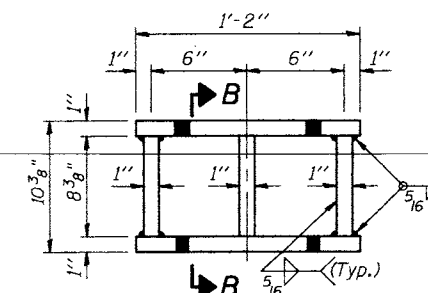
* Cost shall be included with Jack and Remove Existing Bearings.



SECTION B-B



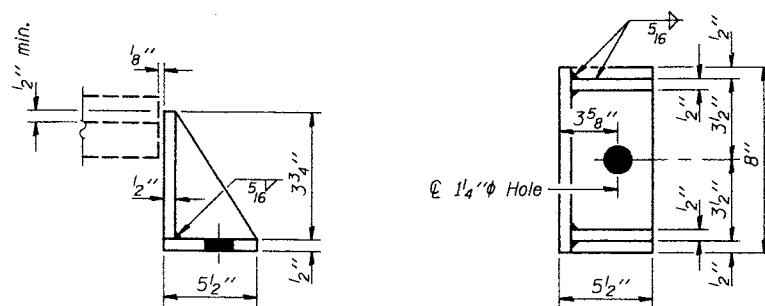
PLAN TOP AND BOTTOM PLATE



STEEL EXTENSION DETAIL

| Location | ** Girder | 1 | 2 | 3 | 4 | 5 | 6 |
|----------------|-----------------|---------|---------|---------|---------|---------|---------|
| North Abutment | Steel Extension | 10 1/4" | 10 1/4" | 10 1/4" | 10 1/4" | 10 1/4" | 10 1/4" |
| | Shim thickness | 1/16" | 5/8 | - | 1/2" | 1/4" | 1/2" |

** Girder designation is from West to East



SIDE RETAINER

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.

BILL OF MATERIAL

| Item | Unit | Total |
|------------------------------------------|------|-------|
| Elastomeric Bearing Assembly Type I | Each | 6 |
| Jack and Remove Existing Bearing | Each | 6 |
| Furnishing and Erecting Structural Steel | Lbs. | 1,228 |

| | |
|----------|-----|
| DESIGNED | JMW |
| CHECKED | RGD |
| DRAWN | WJH |
| CHECKED | NRF |

| SMITH ENGINEERING CONSULTANTS, INC. CIVIL/STRUCTURAL ENGINEERS AND SURVEYORS www.smith-engineering.com | |
|--------------------------------------------------------------------------------------------------------------|------|
| REVISIONS | |
| NAME | DATE |
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| | |
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| | |

ILLINOIS DEPARTMENT OF TRANSPORTATION

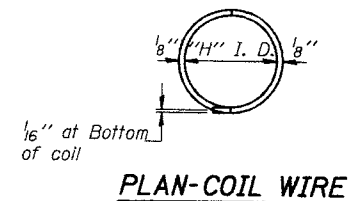
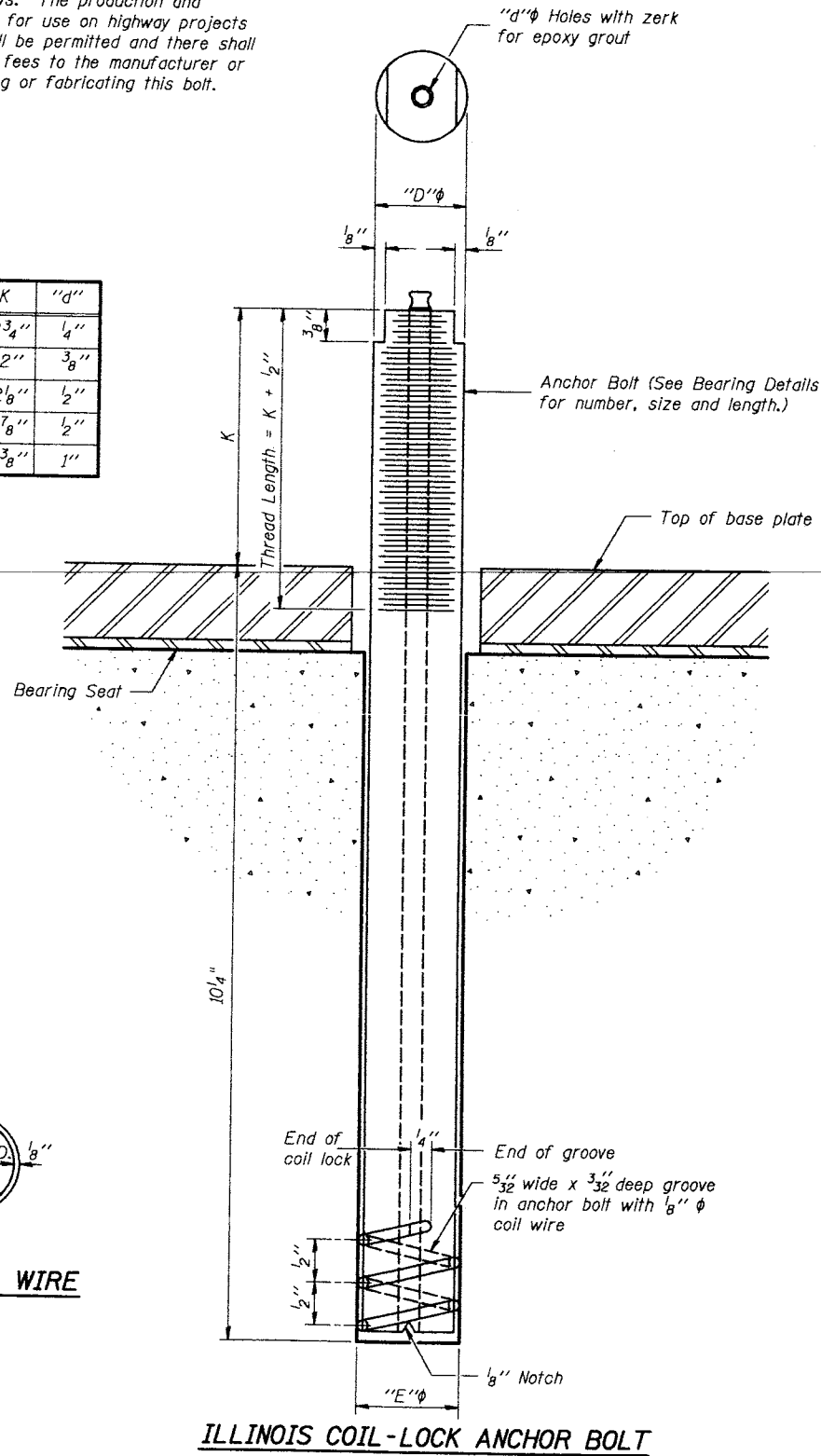
Bearing Extension Details
North Abutment
S.N. 057-0179 (NB)

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

| | | | | |
|-----------------------|----------|--------------------|--------|-----------|
| ROUTE NO. | SECTION | COUNTY | DIST. | SHEET NO. |
| S.A.L. | S5 | (57-1,57-2)RS | MoLeon | 13 |
| F.A. | | | | 14 SHEETS |
| FED. ROAD DIST. NO. 3 | ILLINOIS | FED. AID PROJECT 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 1/8" | 1 3/16" | 1 3/4" | 1/4" |
| 1 1/4" | 1 3/8" | 1 1/16" | 2" | 3/8" |
| 1 1/2" | 1 5/8" | 1 5/16" | 2 1/8" | 1/2" |
| 2" | 2 1/8" | 1 3/16" | 2 7/8" | 1/2" |
| 2 1/2" | 2 5/8" | 2 5/16" | 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 A 519, Grade 1026, CW and supplied with hexagonal nuts and cut washers.
The coil wire shall be made of any suitable soft steel wire.
The finished anchor bolt shall be cleaned of rust and other foreign materials and wrapped or packaged to prevent contamination until they are installed.
The epoxy grout shall be a two-component, epoxy resin bonding system conforming to ASTM C 881, Type I, Grade 1 and of a Class suitable for the temperature at installation.

GENERAL NOTES

Holes in the masonry for anchor bolts shall be drilled through the base plates to the diameter and depth shown or according to the manufacturer's recommendation after beams or girders have been erected and adjusted.
Prior to setting the bolts, the holes shall be dry and all dust and loose particles shall be removed by the use of compressed air or vacuuming.
The anchor bolts, furnished and installed 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".

INSTALLATION PROCEDURE for the ILLINOIS COIL-LOCK ANCHOR BOLT

- 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.
- Epoxy grout shall be pumped through the zerk fitting with a pressure gun. Pumping shall continue until the epoxy overflows the hole around the bolt shank. After pumping is discontinued, excess epoxy shall be immediately wiped off.

ALTERNATE ANCHOR BOLTS

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

| Location | Type |
|----------|------|
| N. Abut. | A307 |
| S. Abut. | A307 |
| | |
| | |

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

| | |
|----------|-----|
| DESIGNED | KMA |
| CHECKED | RGD |
| DRAWN | WJH |
| CHECKED | NRF |

ABB-1 4-30-99

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

ILLINOIS DEPARTMENT OF TRANSPORTATION

Anchor Bolt Details

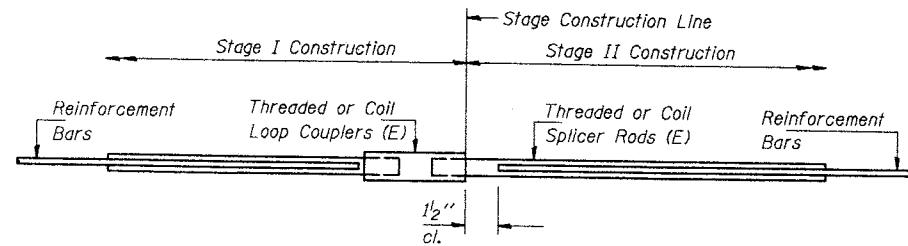
S.N. 057-0179 (NB)

DATE 03-04-2002

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

| | | | | |
|-----------------------|---------------|----------|------------------|-----------|
| ROUTE NO. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
| 55 | (57-1,57-2)RS | McLean | 14 | 14 |
| FED. ROAD DIST. NO. 3 | | ILLINOIS | FED. AID PROJECT | |

SHEET NO. 14
14 SHEETS



SPLICER DETAIL

| Bar Size | No. Assemblies Required | Location |
|----------|-------------------------|----------------|
| #6 | 35 | North Abutment |
| #6 | 35 | South Abutment |
| | | |
| | | |

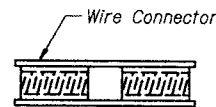
The diameter of this part is the same as the diameter of the bar spliced.

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

ROLLED THREAD DOWEL BAR



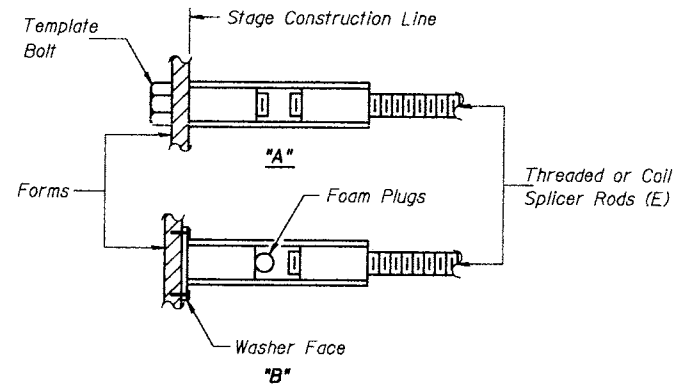
**** ONE PIECE**



WELDED SECTIONS

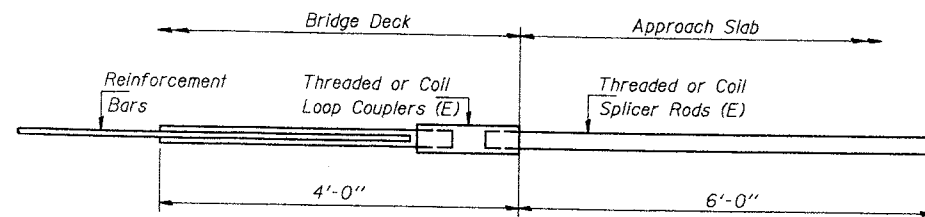
BAR SPLICER ASSEMBLY ALTERNATIVES

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



INSTALLATION AND SETTING METHODS

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



**INTEGRAL ABUTMENT
BAR SPLICER ASSEMBLY DETAIL
FOR #5 BAR**

| |
|---------------------------------------------|
| Min. Capacity = 23.0 kips - tension |
| Min. Pull-out Strength = 9.2 kips - tension |
| No. Required = 0 |

NOTES

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

- ① Minimum Capacity
(Tension in kips) = $1.25 \times f_y \times A_l$
- ② Minimum *Pull-out Strength
(Tension in kips) = $1.25 \times f_{sallow} \times A_l$

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

| Bar Size to be Spliced | Splicer Rod or Dowel Bar Length | Strength Requirements | |
|------------------------|---------------------------------|------------------------------|---------------------------------------|
| | | Min. Capacity kips - tension | Min. Pull-Out Strength kips - tension |
| #5 | 2'-0" | 23.0 | 9.2 |
| #6 | 2'-7" | 33.1 | 13.3 |
| #7 | 3'-5" | 45.1 | 18.0 |
| #8 | 4'-6" | 58.9 | 23.6 |

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

| | |
|----------|-----|
| DESIGNED | KMA |
| CHECKED | RGD |
| DRAWN | WJH |
| CHECKED | NRF |

BSD-1 4-30-99

| | |
|-------------------------------------|------|
| SMITH ENGINEERING CONSULTANTS, INC. | |
| CREATING THE FUTURE | |
| REVISIONS | |
| NAME | DATE |
| | |
| | |
| | |
| | |

ILLINOIS DEPARTMENT OF TRANSPORTATION
Bar Splicer Assembly Detail
S.N. 057-0179 (NB)
DATE 03-04-2002

B.M. # 144 RR Spike in Power Pole on end pole West of Pt. 26, North side of railroad Elev. 712.86.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

| | | | | | |
|-----------------------|----------|-------------------|--------------|-----------|-------------|
| ROUTE NO. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. | SHEET NO. / |
| RT. 55 | 57-IVB | MCLEAN | 134 | 20 | 14 SHEETS |
| FILE ROAD DIST. NO. 7 | RAILROAD | PROJ. AND PROJECT | | | |

GENERAL NOTES

All reinforcement bars shall be lapped 24 diameters unless otherwise shown
Calculated Weight of Structural Steel = 267,520 lbs.

Fasteners shall be high strength bolts. Bolts 3/4" open holes 1 1/8" unless otherwise noted.

The basic lead silico chromate paint system shall be used for shop and field painting of Structural Steel.

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.

Slope wall shall be reinforced with welded wire fabric 6"x6" mesh, weighing 58# per 100 Sq. Ft.

Concrete piles of Abutts. shall be driven in holes prepared through the embankment in accordance with Art. 51309(c) of the Standard Specifications.

The embankment configuration shown shall be the minimum embankment that must be constructed prior to construction of the abutments & piers.

The concrete rail section above the mandatory construction Jt. at the top of the slab shall be constructed of Class X Concrete, except the aggregates shall conform to the requirements of Handrail Concrete.

Protective Coat shall not be applied to surfaces to which Waterproofing Membrane System is applied.

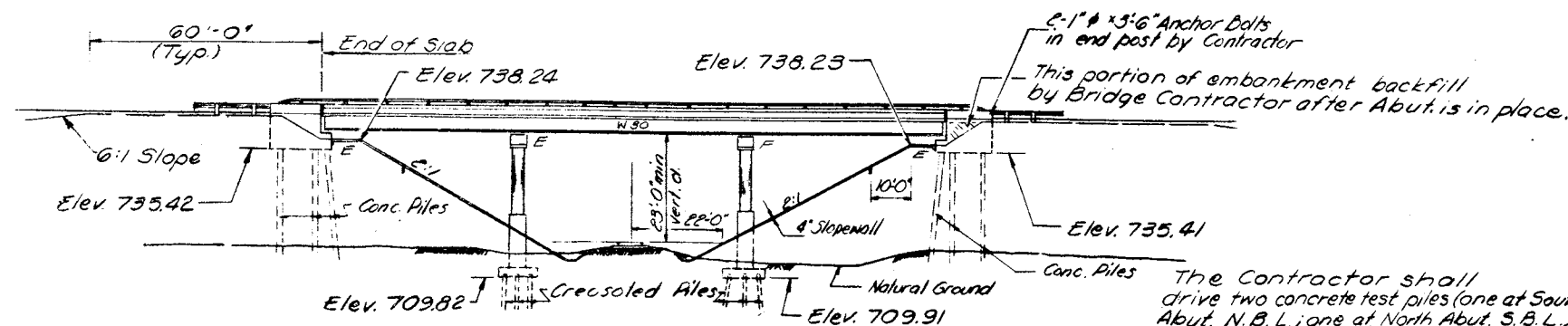
Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of ± 1/8". Adjustment shall be made either by grinding the surface or by shimming the bearing. Two 1/2" adjusting shims, of the dimensions of the bottom bearing plate, shall be provided for each bearing in addition to all other plates.

TOTAL BILL OF MATERIALS

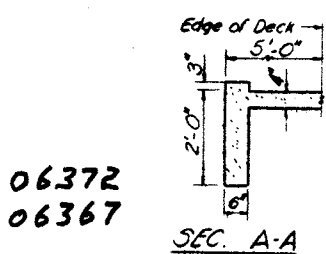
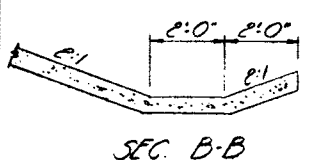
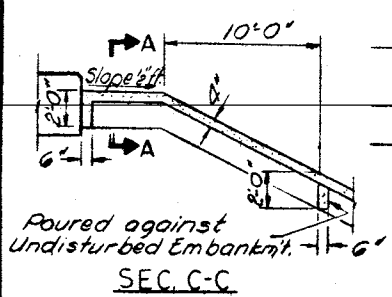
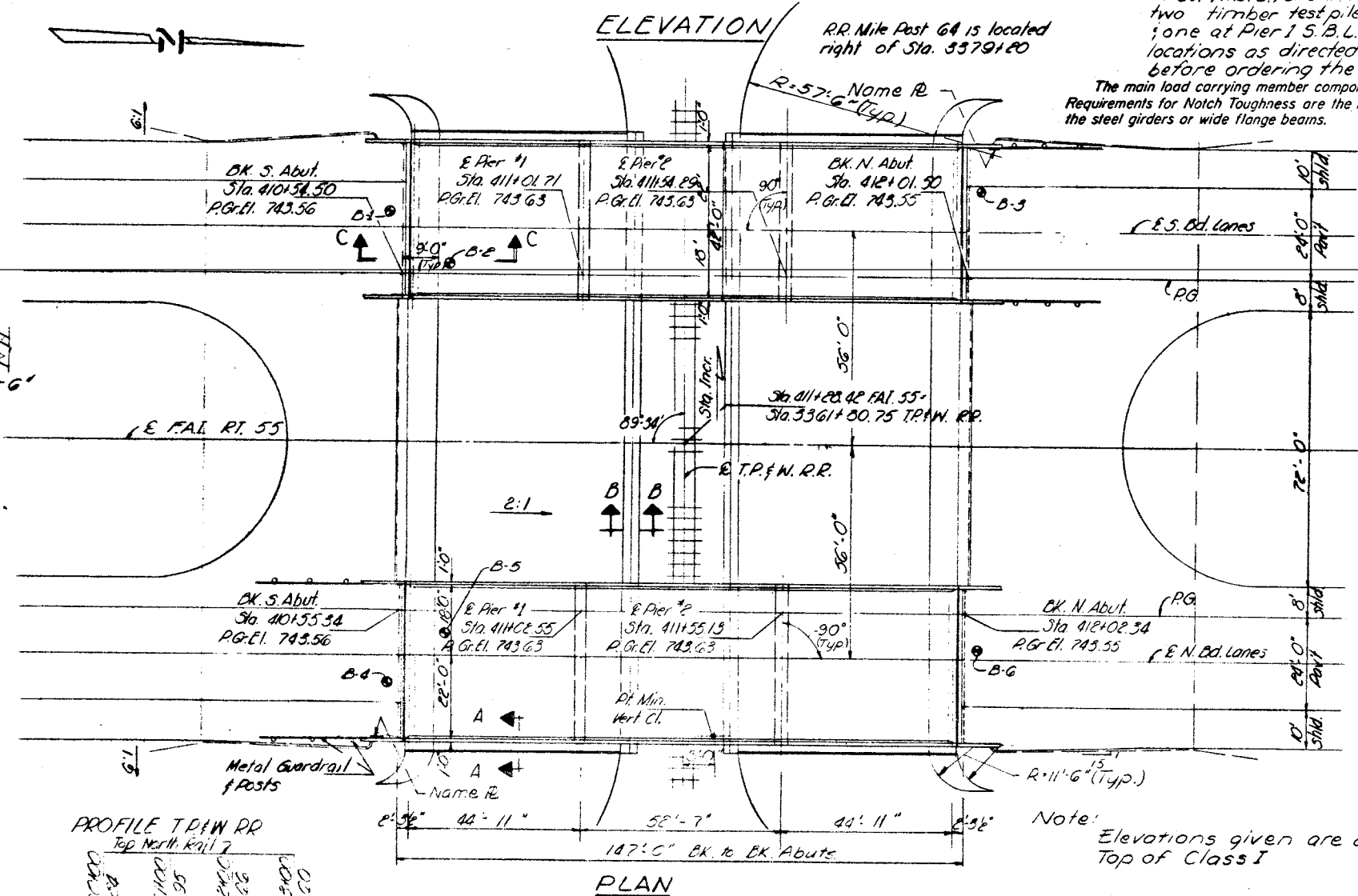
| Item | Unit | Super | Sub | Total |
|--------------------------------|----------|--------|--------|---------|
| Structure Excavation | Cu. Yds. | | 180 | 180 |
| Class X Concrete | Cu. Yds. | 388.1 | 456.8 | 844.9 |
| Reinforcement Bars | Lbs. | 87,040 | 48,130 | 135,170 |
| Structural Steel | L.S. | | | L.S. |
| Aluminum Railing | Lin. Ft. | 660 | | 660 |
| Concrete Piles | Lin. Ft. | | 2309 | 2309 |
| Test Piles, Concrete | Each | | 2 | 2 |
| Creosoted Piles (20' to 38') | Lin. Ft. | | 3186 | 3186 |
| Test Piles, Timber | Each | | 2 | 2 |
| Name Plates | Each | | 2 | 2 |
| Slope wall, 4" | Sq. Yds. | | 2500 | 2500 |
| Bit Conc. Surf. Course Class I | Tons | 100 | | 100 |
| Waterproofing Membrane System | Sq. Yds. | 1230 | | 1230 |
| Protective Coat | Sq. Yds. | 248 | | 248 |
| Preformed Jt. Sealer 2 1/2" | Lin. Ft. | 168 | | 168 |

STATION 411+28.42
BUILT 19 BY
STATE OF ILLINOIS
F.A.I. RT 55 SEC. 57-IVB
F.A. PROJ. 55-5(21)
LOADING HS 20' ALT.

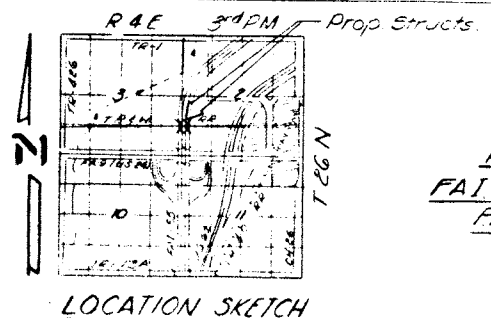
NAME PLATE
See Std. 2113



The Contractor shall drive two concrete test piles (one at South Abut. N.B.L.; one at North Abut. S.B.L.); two timber test piles one at Pier 2 N.B.L.; one at Pier 1 S.B.L., all in permanent locations as directed by the Engineer before ordering the remainder of piles.
The main load carrying member components subject to the Supplemental Requirements for Notch Toughness are the flanges, webs, and splice plates of the steel girders or wide flange beams.



DESIGN STRESSES
 F_c = 1200 psi (Deck Slab)
 F_c = 1400 psi (Curb, Parapet, Sub)
 F_s = 20,000 psi (Reinf.)
 F_s = 20,000 psi (Struct.)
 W_c = 75 psi (Flgs.)
 n = 10
 Allow 25#/sq ft. for future MS

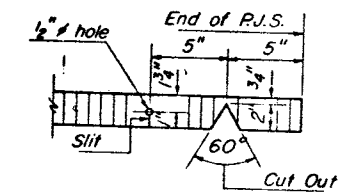
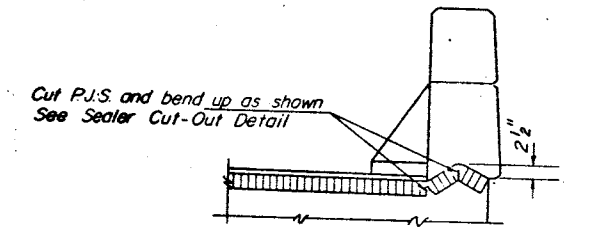
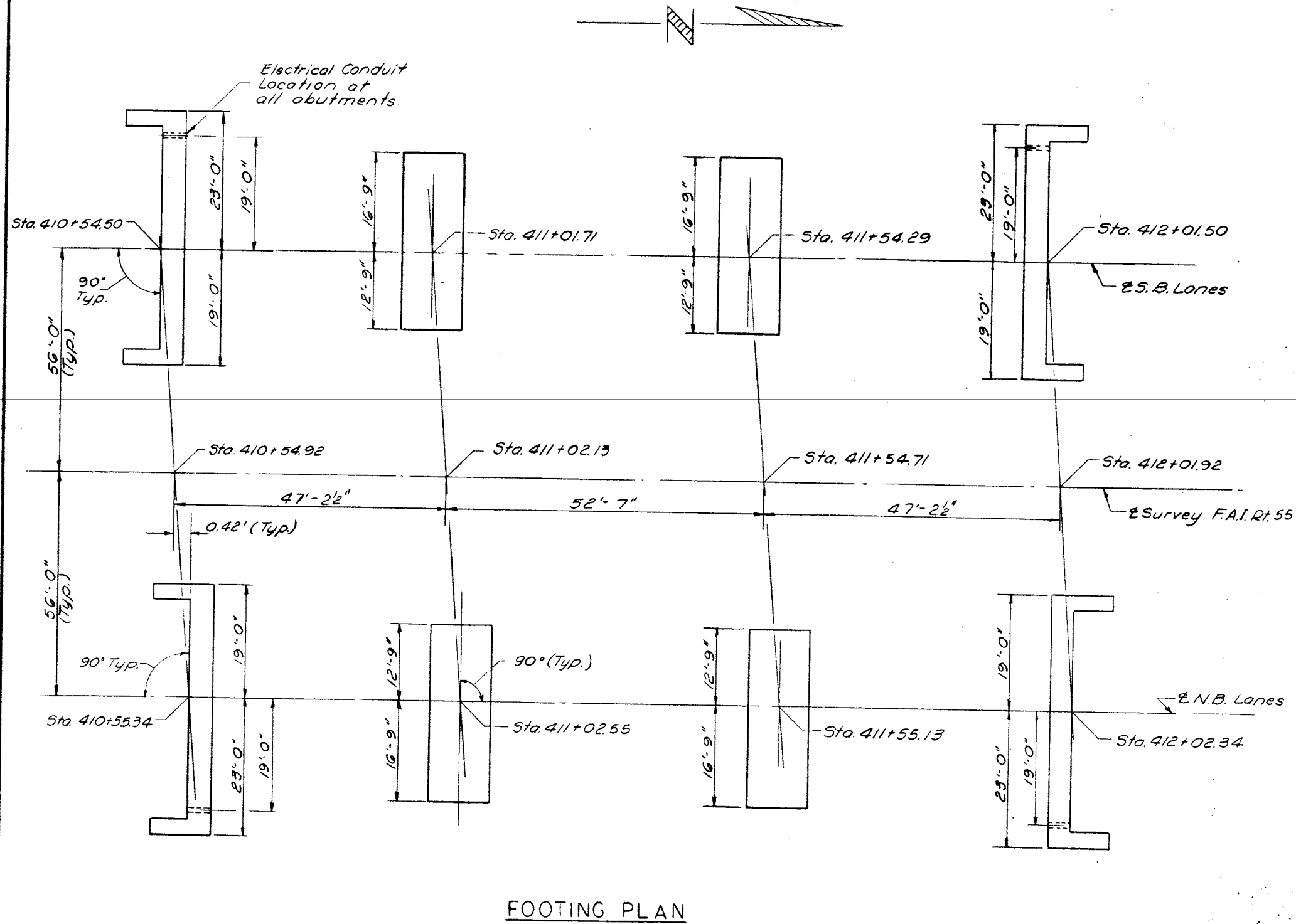


PROJ. 55-5(21)192
FAI RT. 55 OVER T.P. & W. R.R.
FAI RT. 55 SECTION 57-IVB
MCLEAN COUNTY
STATION 411+28.42 (FAI 55) -
STATION 336+75 (T.P. & W. R.R.)

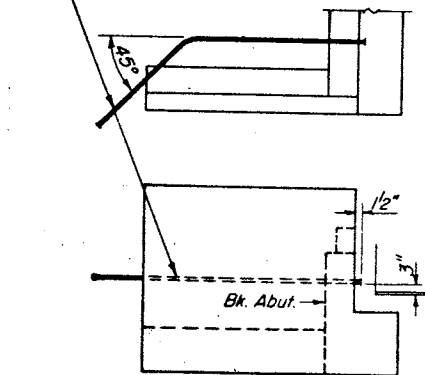
LOADING HS 20' ALT

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

| | | | | | |
|-----------------------|----------|------------------|--------------|-----------|--------------------------|
| ROUTE NO. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. | SHEET NO. 2 14 SHEETS |
| F.A.I.R.T. 55 | 57-IV B | MCLEAN | 134 | 21 | |
| FED. ROAD DIST. NO. 7 | ILLINOIS | FED. AID PROJECT | | | |



Locate 2" Galv. Conduit (Sch. 40 Pipe) 1/2" inside of fascia beam web and parallel to beam line. Extend to clear the wing wall and terminate at a point outside of shoulder. Thread and cap each end. Place conduit at the two outside corners of each dual bridge & all four corners of a single bridge. (4-Req'd) Cost Incidental



| | |
|----------|--------------------|
| DESIGNED | <i>F. H. Chung</i> |
| CHECKED | <i>T. C. C.</i> |
| DRAWN | <i>F. M.</i> |
| CHECKED | <i>T. C. C.</i> |

| | | |
|----------|--------------------|-------------|
| EXAMINED | <i>[Signature]</i> | OCT 31 1972 |
| PASSED | | |
| APPROVED | | |

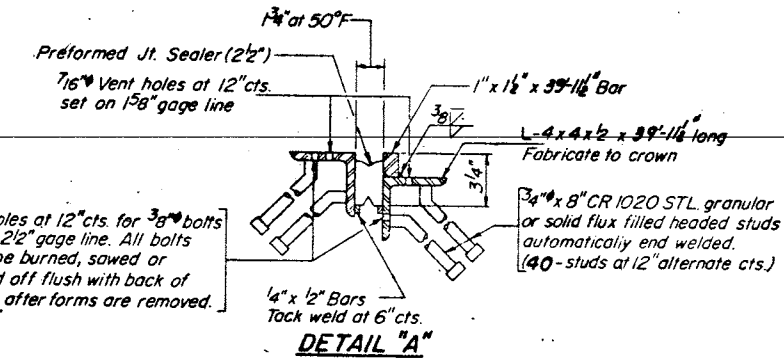
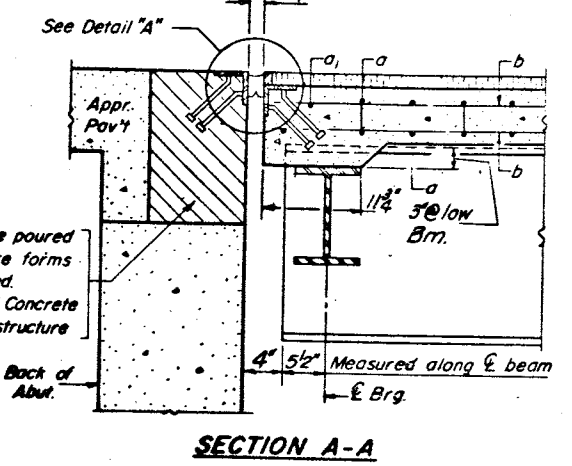
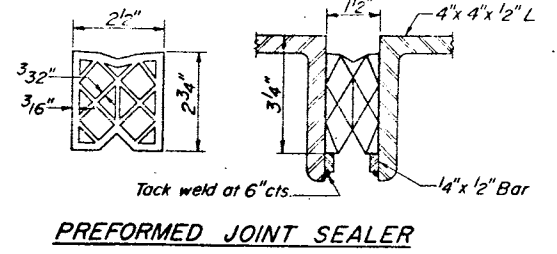
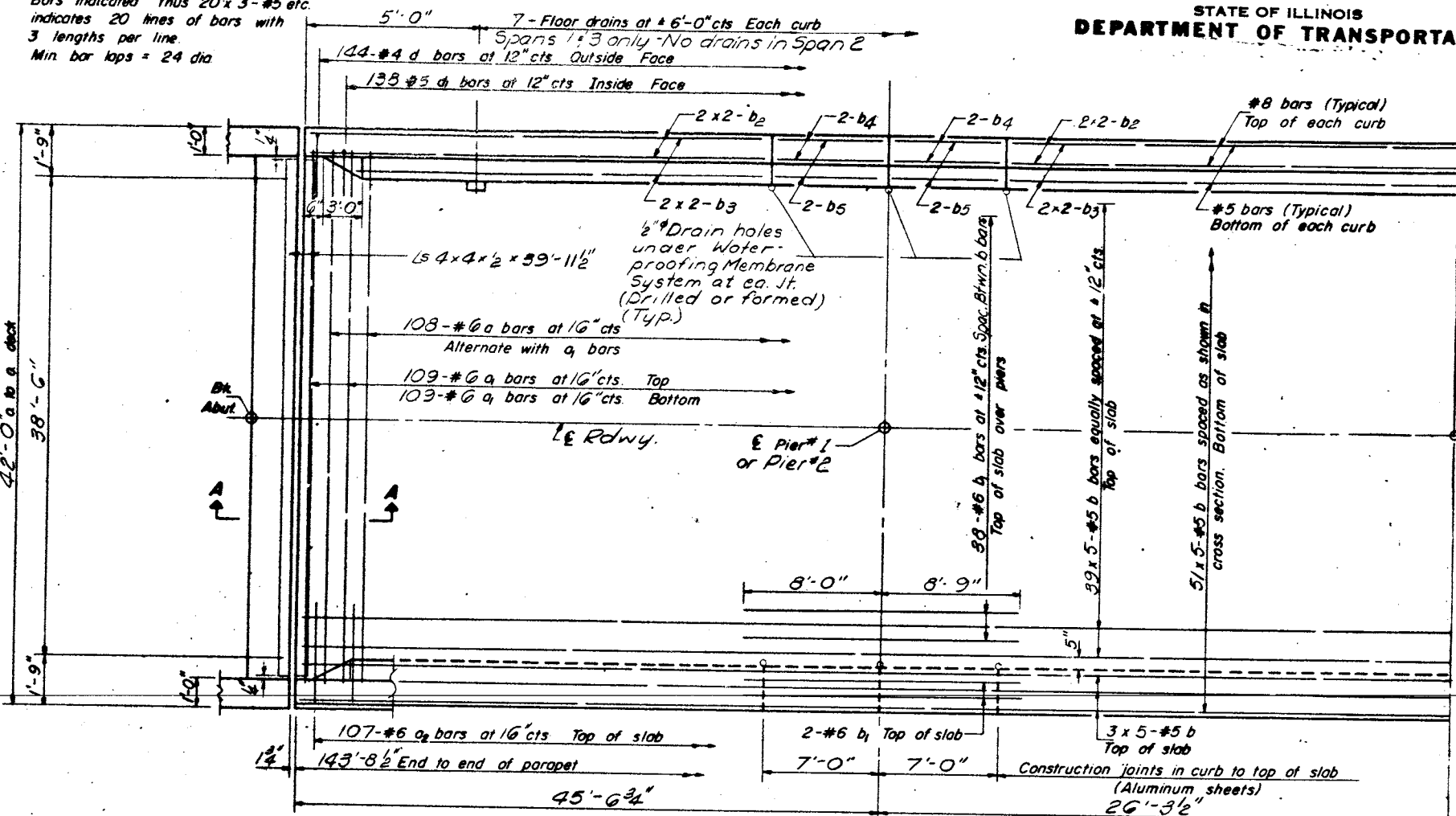
FOOTING LAYOUT & DETAILS
F.A.I.R.T. 55 SEC. 57-IV B
MCLEAN COUNTY
STA. 411+28.42

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

| | | | | |
|-----------------------|---------|----------|--------------|------------------|
| ROUTE NO. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
| 55 | 57-IVB | MCLEAN | 134 | 22 |
| FED. ROAD DIST. NO. 7 | | ILLINOIS | | FED. AID PROJECT |

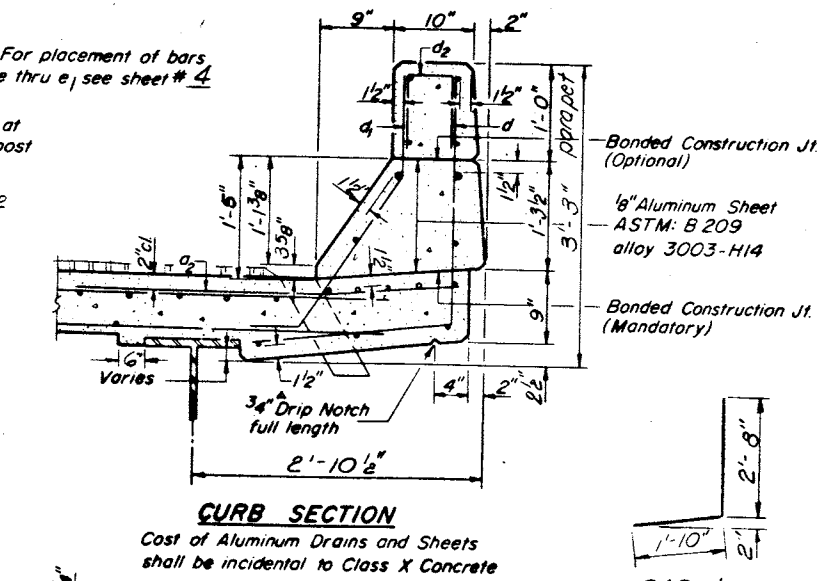
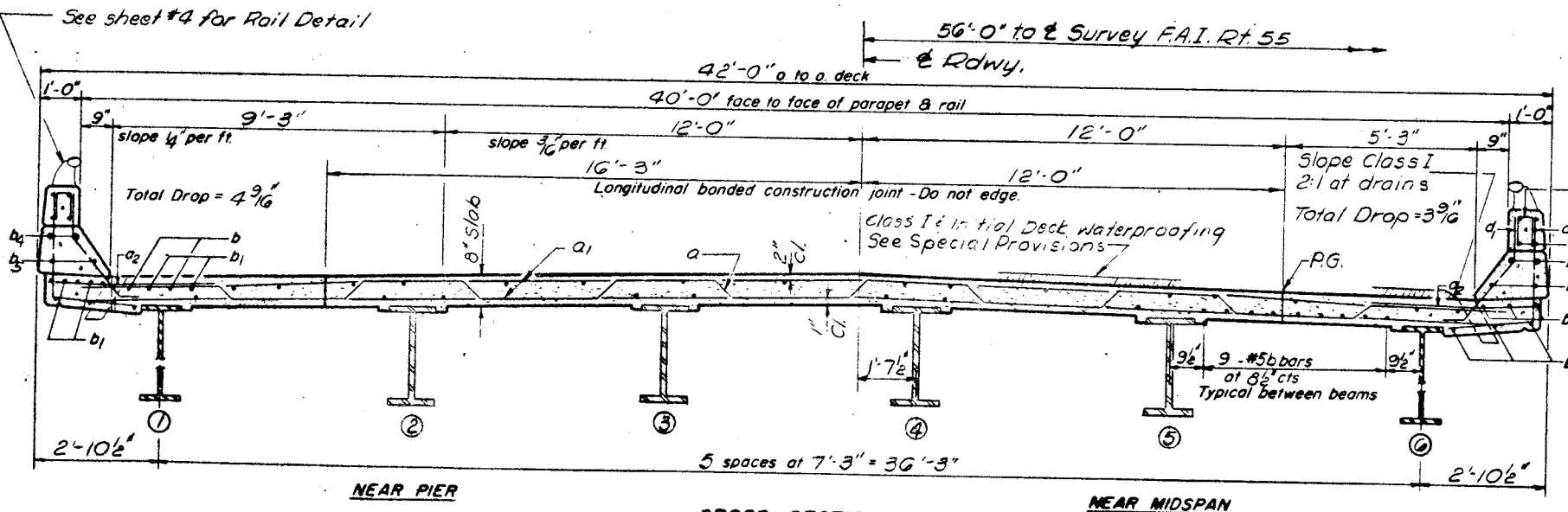
SHEET NO. 3
14 SHEETS

Note:
Bars indicated thus 20x3-#5 etc.
indicates 20 lines of bars with
3 lengths per line.
Min bar laps = 24 dia

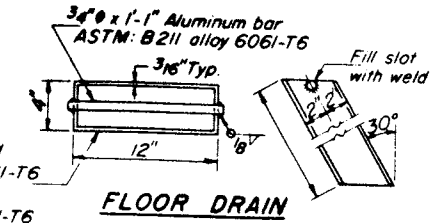
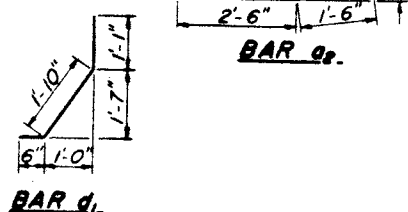
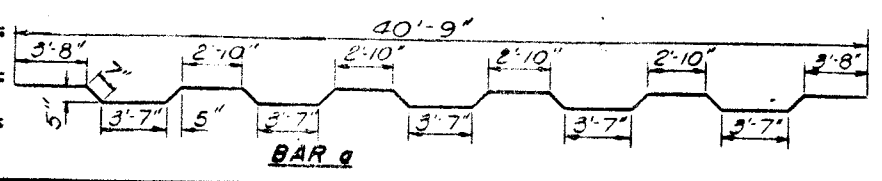


**TWO STRUCTURES
BILL OF MATERIAL**

| Bar | No | Size | Length | Shape |
|--------------------|-----|------|--------|-------|
| a | 216 | #6 | 42'-5" | |
| a ₁ | 436 | #6 | 40'-9" | |
| a ₂ | 430 | #6 | 4'-0" | |
| b | 960 | #5 | 30'-0" | |
| b ₁ | 168 | #6 | 16'-9" | |
| b ₂ | 48 | #8 | 20'-0" | |
| b ₃ | 48 | #5 | 19'-9" | |
| b ₄ | 32 | #8 | 6'-9" | |
| b ₅ | 32 | #5 | 6'-9" | |
| d | 576 | #4 | 4'-6" | |
| d ₁ | 552 | #5 | 3'-5" | |
| Reinforcement Bars | | | Lbs | 85380 |
| Class X Concrete | | | Cu Yds | 3695 |



CROSS SECTION
LOOKING NORTH - S.B. Lanes
LOOKING SOUTH - N.B. Lanes



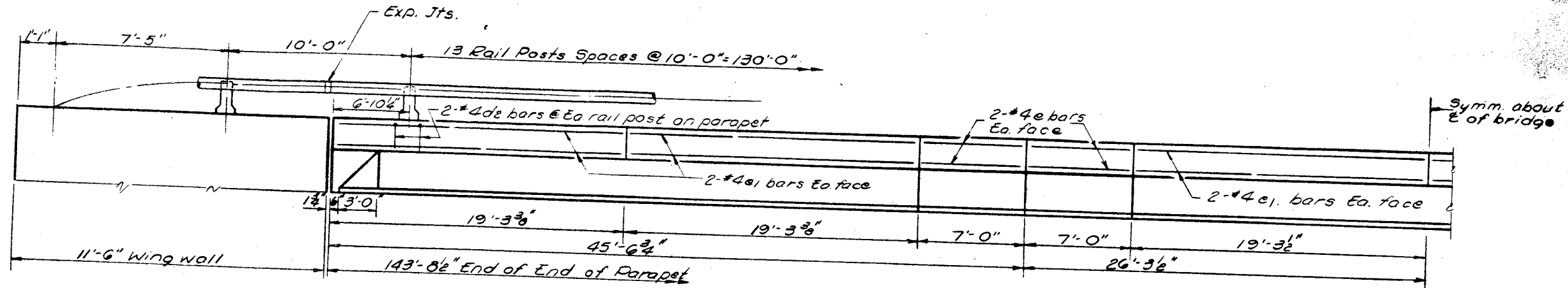
The lengths and quantities of longitudinal reinforcement and Class X Concrete in parapets are not included in above quantities. See sheet

SUPERSTRUCTURE
F.A.I. RT 55 SEC. 57-IVB
MCLEAN COUNTY
STA. 411+28.42

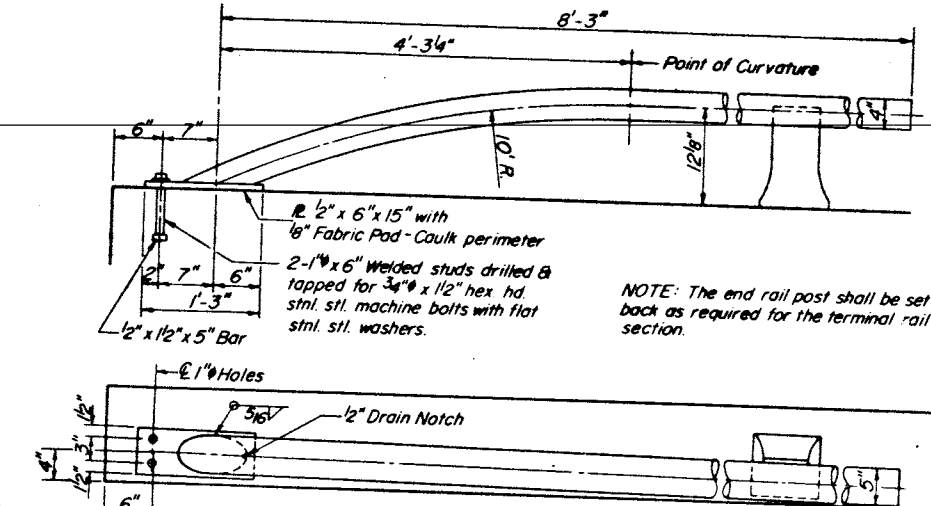
| | |
|----------|--------------------|
| DESIGNED | <i>Bilchey Chy</i> |
| CHECKED | <i>...</i> |
| DRAWN | F.M. TCC |
| CHECKED | |

| | | |
|----------|------------|--------------|
| EXAMINED | <i>...</i> | OCT. 31 1972 |
| PASSED | | |
| APPROVED | | |

I-4106-0 3-1-68, 12-3-69

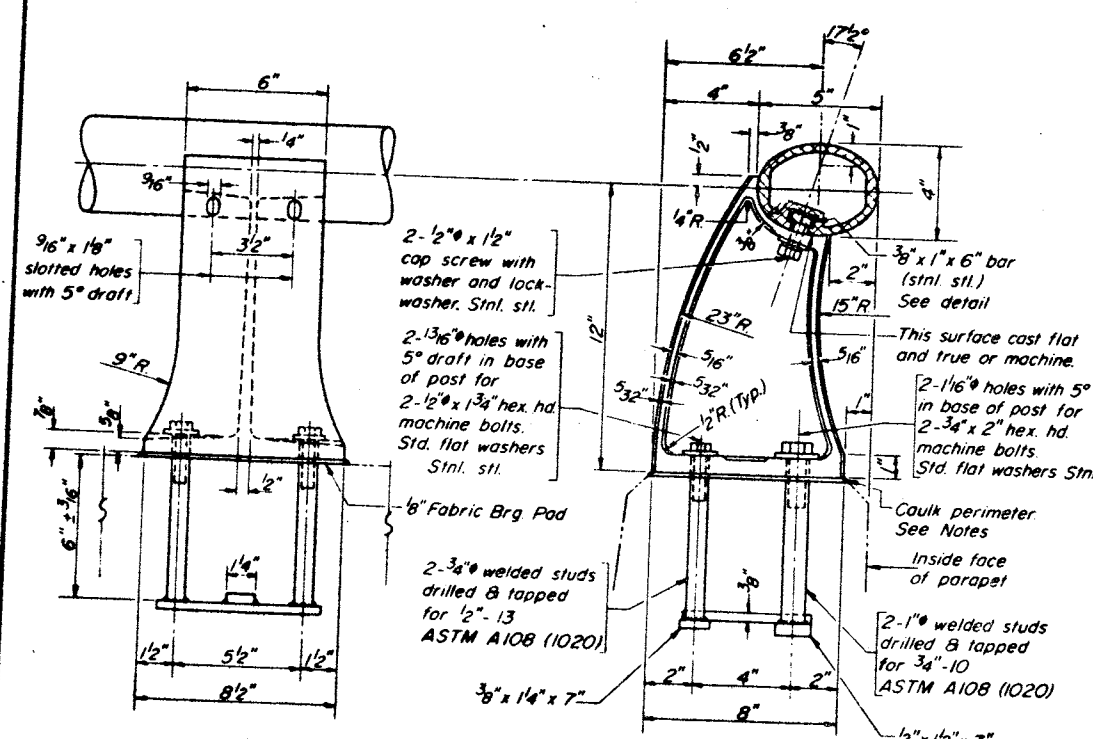


HALF ELEVATION
(Inside View)

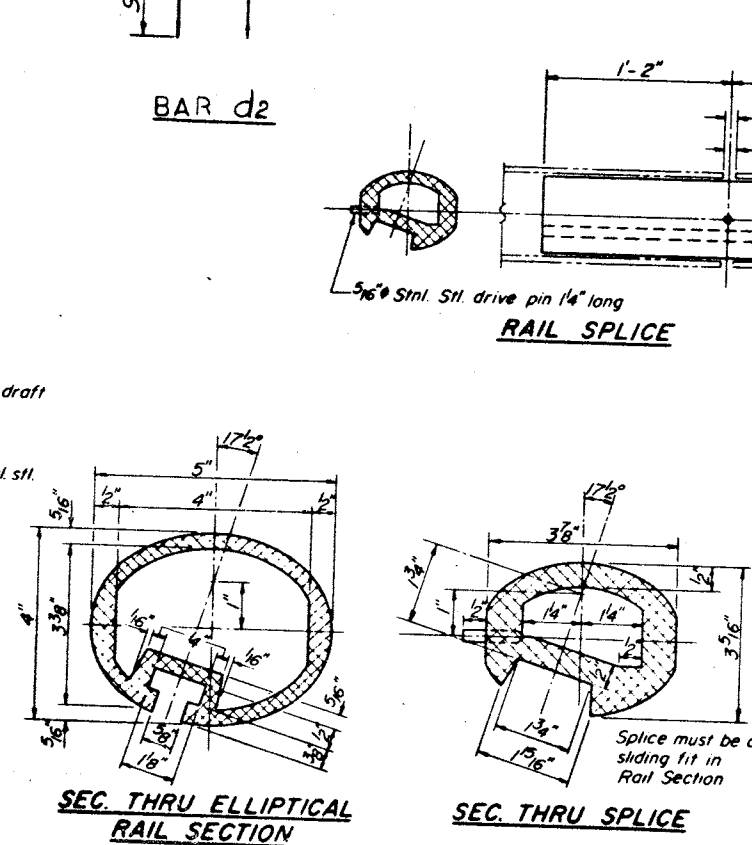


NOTE: The end rail post shall be set back as required for the terminal rail section.

RAIL TERMINAL SECTION



RAIL POST DETAILS



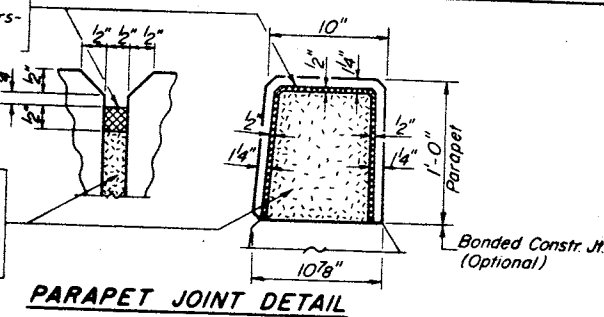
SEC. THRU ELLIPTICAL RAIL SECTION

SEC. THRU SPLICE

CLAMP BAR

Two component non-staining gray sealing compound with polysulfide liquid polymers-gun grade with primer.

1/2" Preformed Cork Asphalt Joint Filler. (meets qualifications for ASTM: Designation D 1751) Cost incidental.



PARAPET JOINT DETAIL

Stainless steel machine bolts or cap screws shall be in accordance with Article 710.37(a) of the Standard Specifications except Grade B8 or B8M may be furnished.

All Aluminum Alloy Extruded Rail shall be supplied in modular lengths of 30 feet, except at the end of bridge or over open joints in bridge deck where the rail shall be attached to a minimum of 2 posts. If the rail is on a horizontal curve of 2300 foot radius or less, the modular lengths may be reduced but shall be attached to a minimum of 2 posts.

All joints in rail shall be spliced per detail. Provide 1-8" and 2-1/16" Aluminum Shims for 25% of the Posts. Rail element shall be parallel to Grade-high spots shall be ground and low spots shimmed.

Seal perimeter of base of post to parapet with two component non-staining gray sealing compound with polysulfide liquid polymers, gun grade with primer. Fabric Bearing Pad shall have same dimensions as base of post.

Aluminum alloy rail shall conform to ASTM B221 alloy 6061-T6 or 6351-T5 with min. yield 35 ksi, min. tensile 38 ksi, and elongation of 10% in 2 inches.

TWO STRUCTURES
PARAPETS & RAILS
BILL OF MATERIAL

| Bar | No. | Size | Length | Shape |
|--------------------|--------|------|--------|-------|
| de | 112 | #4 | 2'-1" | □ |
| e | 64 | #4 | 6'-9" | — |
| e | 96 | #4 | 19'-0" | — |
| | | | | |
| Reinforcement Bars | Lbs | 1660 | | |
| Class X Concrete | Cu Yds | 186 | | |
| Aluminum Railing | Lin Ft | 660 | | |

ALUMINUM RAILING

F.A.I. RT. 55 SEC. 57-IVB

MCLEAN COUNTY

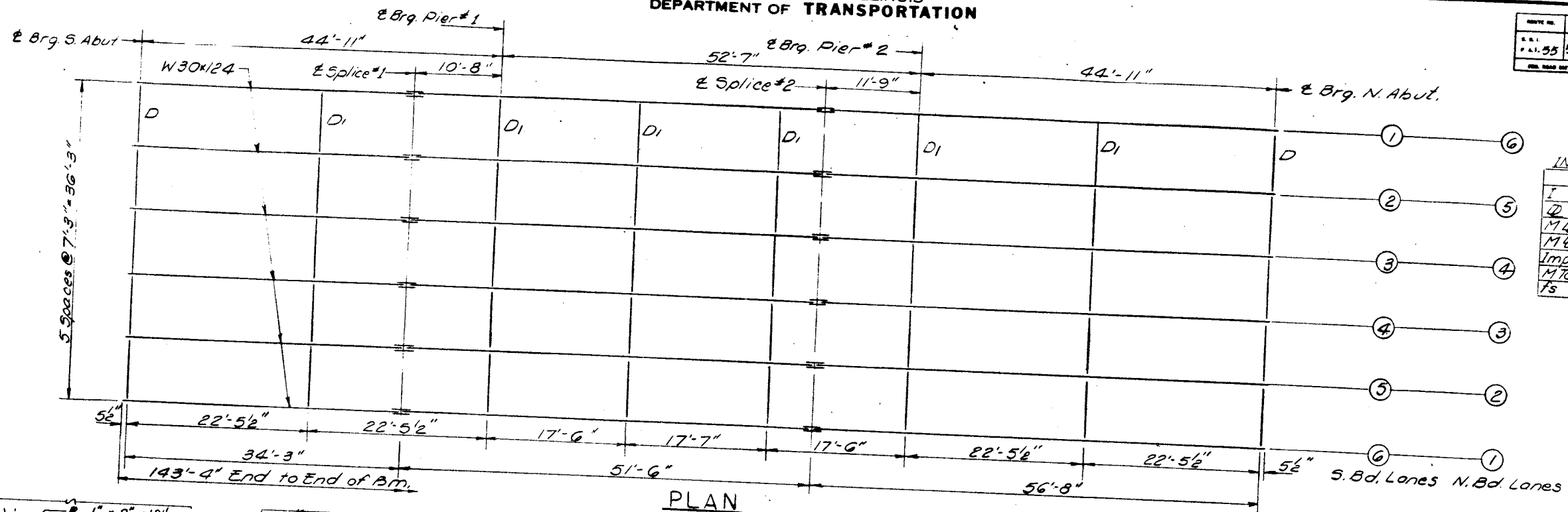
STA. 411+28.42

DESIGNED: *[Signature]*
CHECKED: *[Signature]*
DRAWN: F.M.
CHECKED: *[Signature]*

EXAMINED: *[Signature]* Oct 31 1972
PASSED: *[Signature]*
APPROVED: *[Signature]*

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

| | | | | |
|--------------------------|---------|--------|--------------|-----------|
| ROUTE NO. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
| P.A.I. 55 | 57-IVB | MCLEAN | 134 | 24 |
| SHEET NO. 5 14 SHEETS | | | | |

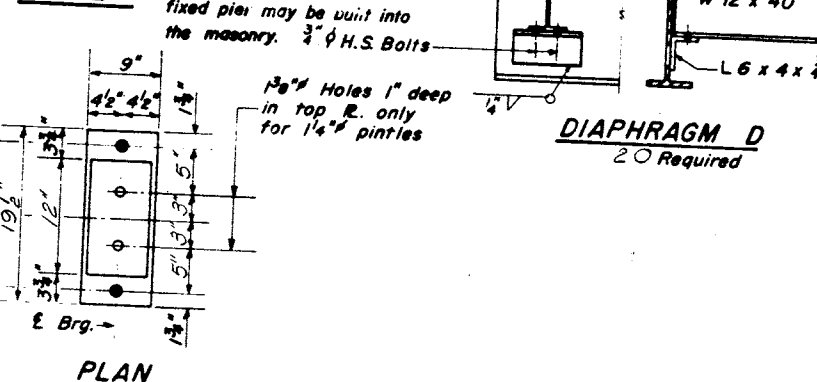
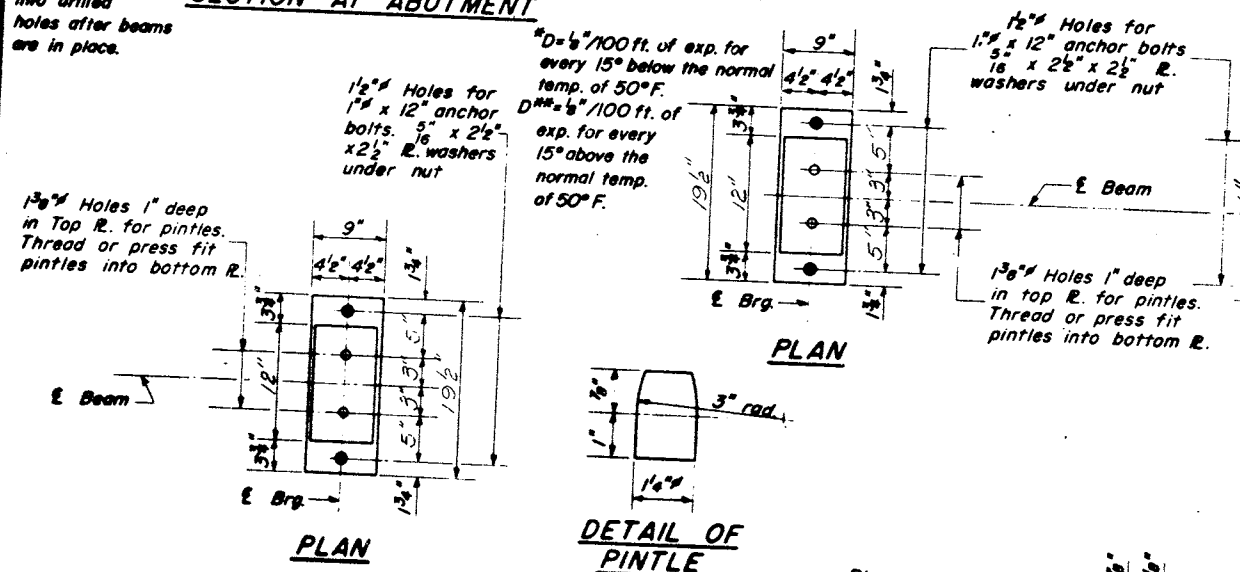
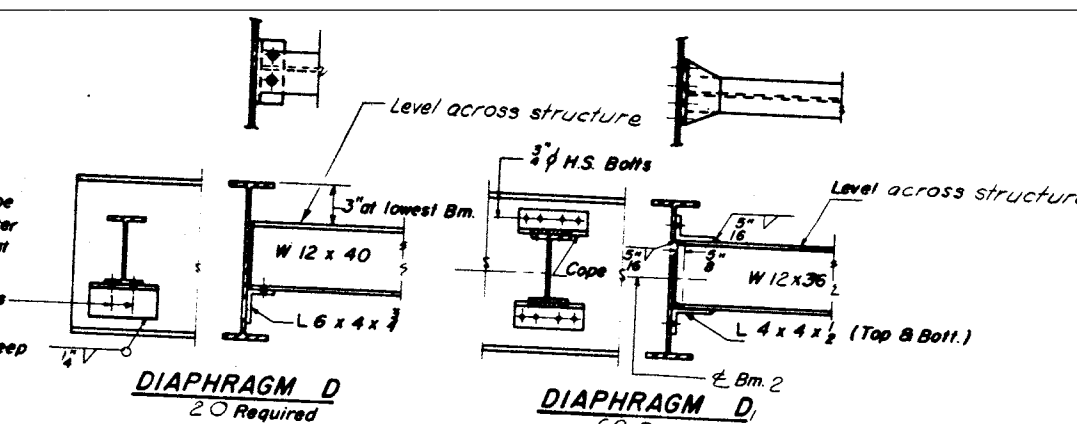
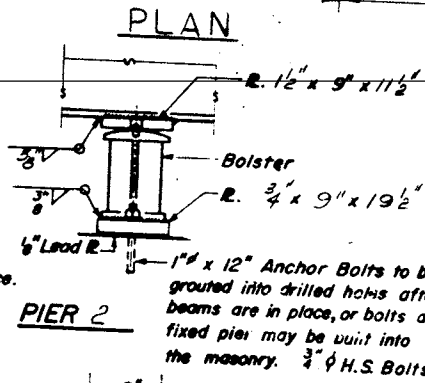
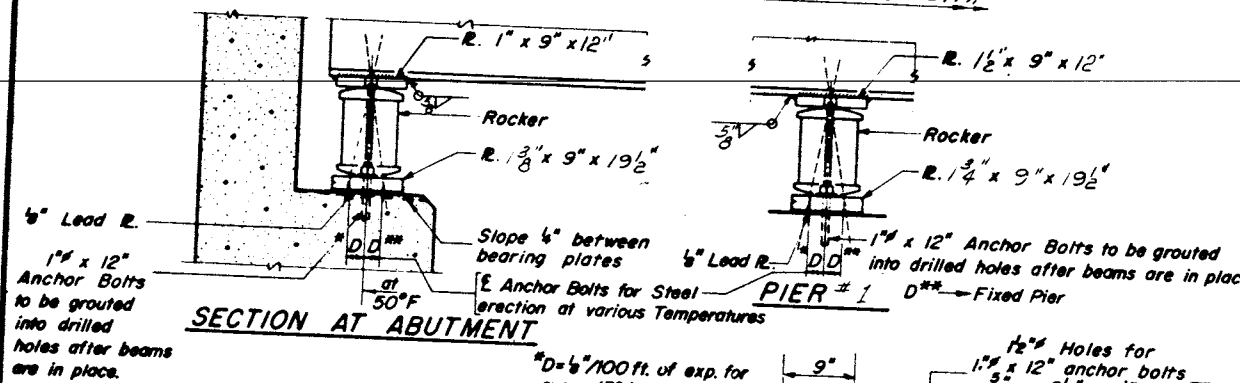


INTERIOR BEAM MOMENT TABLE

| Span | 0-4 Sp. for 3 Piers | 1-05 Sp. 2 |
|------------------------|---------------------|------------|
| I (in ⁴) | 5360 | 5360 |
| D (K) | 1348 | 1348 |
| M _D (K) | 197 | 320 |
| M _E (K) | 283 | 219 |
| Imp. (K) | 83 | 63 |
| M _{Total} (K) | 563 | 602 |
| I _s (Esl.) | 190 | 20.3 |

INTERIOR GIRDER REACTION TABLE

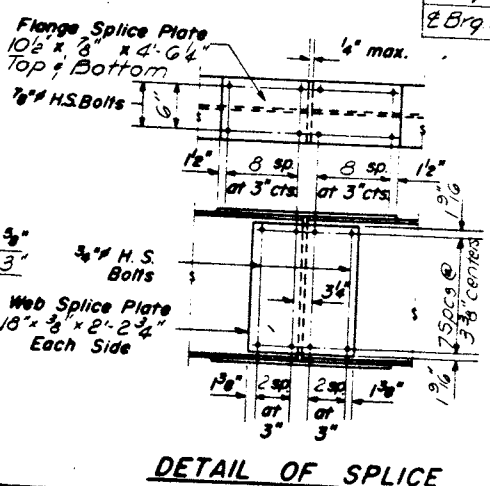
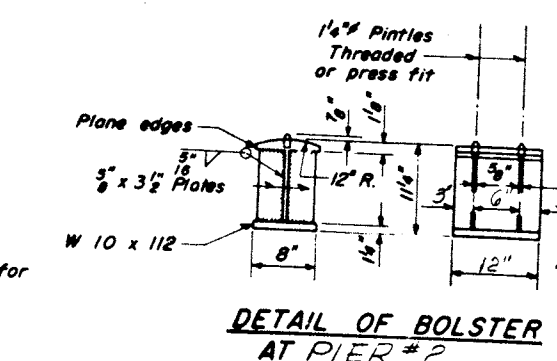
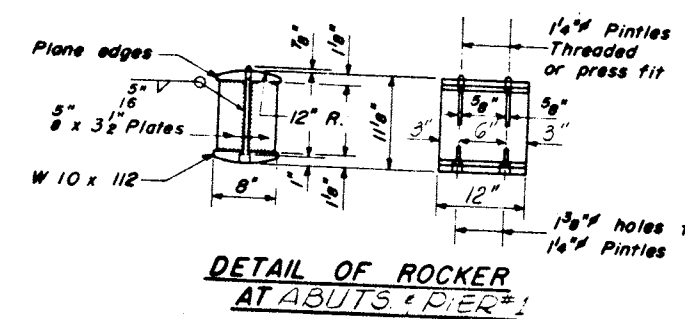
| | Abuts | Piers |
|------------------------|-------|--------|
| R _D (K) | 23.05 | 72.63 |
| R _E (K) | 35.68 | 44.69 |
| Imp. (K) | 10.5 | 12.87 |
| R _{Total} (K) | 69.23 | 130.21 |



ELEVATION TOP OF W
(For Fabrication only)

| Beam Number | 1 | 2 | 3 | 4 | 5 | 6 |
|---------------|--------|--------|--------|--------|--------|--------|
| 2 Brg S. Abut | 742.57 | 742.72 | 742.84 | 742.90 | 742.79 | 742.65 |
| 2 Splice #1 | 742.53 | 742.68 | 742.80 | 742.86 | 742.75 | 742.61 |
| 2 Brg Pier #1 | 742.54 | 742.69 | 742.81 | 742.87 | 742.76 | 742.62 |
| 2 Splice #2 | 742.56 | 742.71 | 742.83 | 742.89 | 742.78 | 742.64 |
| 2 Brg Pier #2 | 742.56 | 742.71 | 742.83 | 742.89 | 742.78 | 742.64 |
| 2 Brg N. Abut | 742.56 | 742.71 | 742.83 | 742.89 | 742.78 | 742.64 |

DESIGNED: *T.H. Cheng*
 CHECKED: *PG Barney*
 DRAWN: *W.A. Sausomen Jr.*
 EXAMINED: *[Signature]*
 PASSED: *[Signature]*
 APPROVED: *[Signature]*
 OCT 31 1972

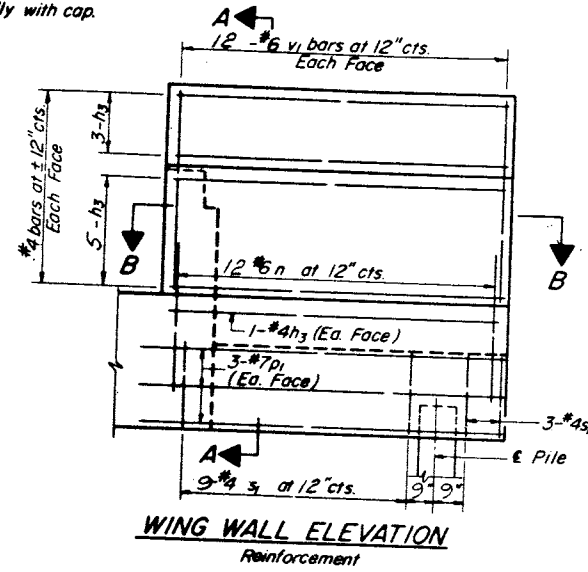
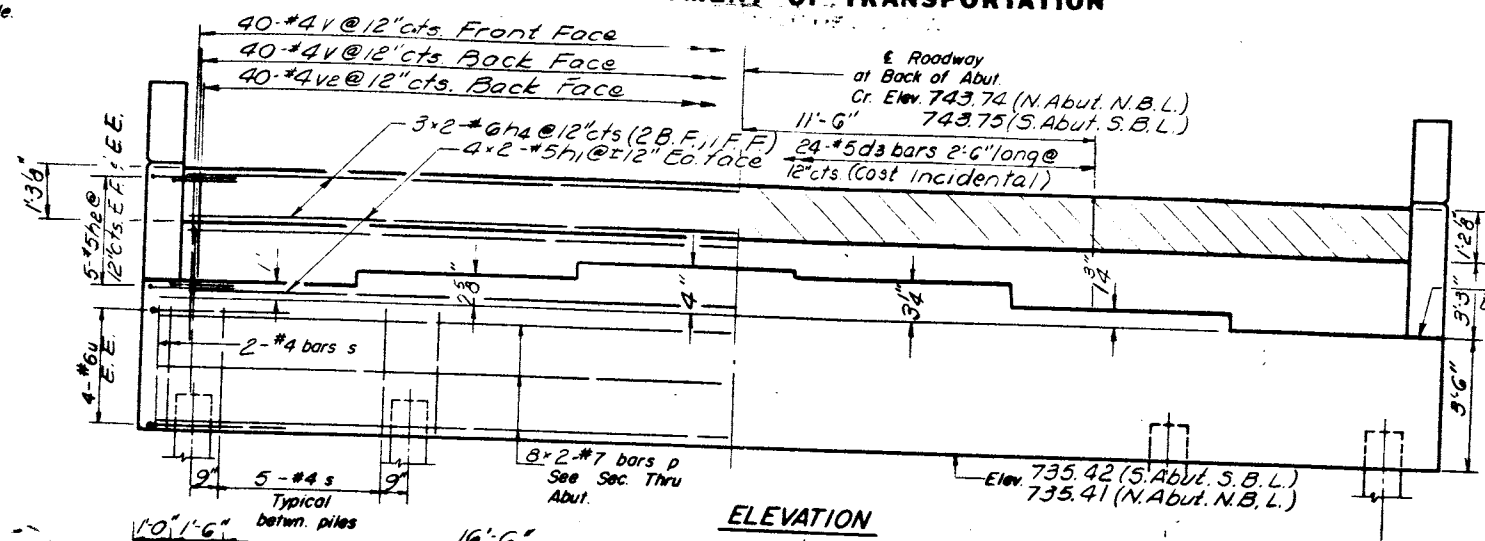
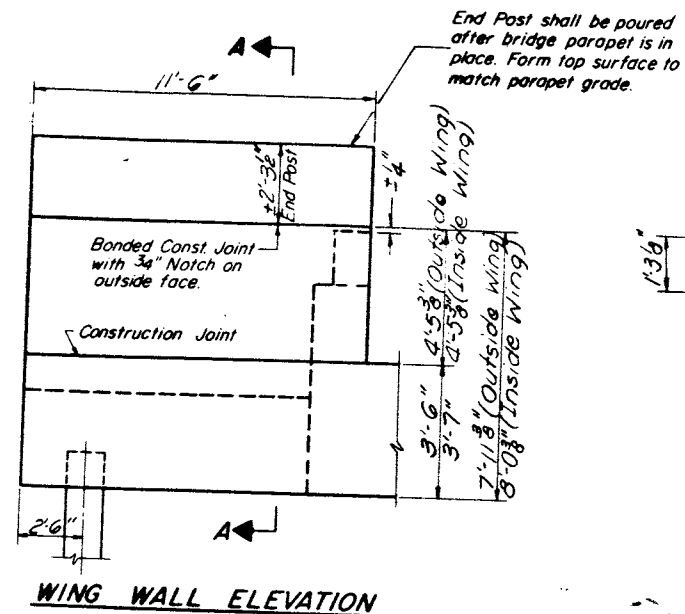


STRUCTURAL STEEL
 E.A.I.R.T. 55 SEC. 57-IVB
 MCLEAN COUNTY
 STA. 411+28.42

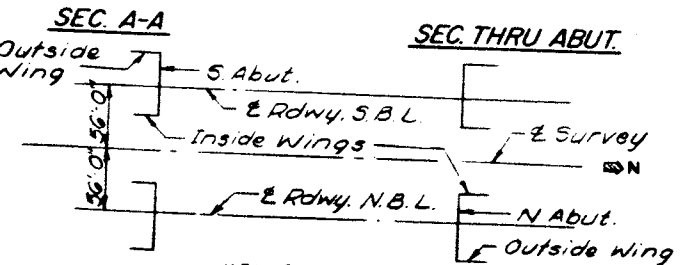
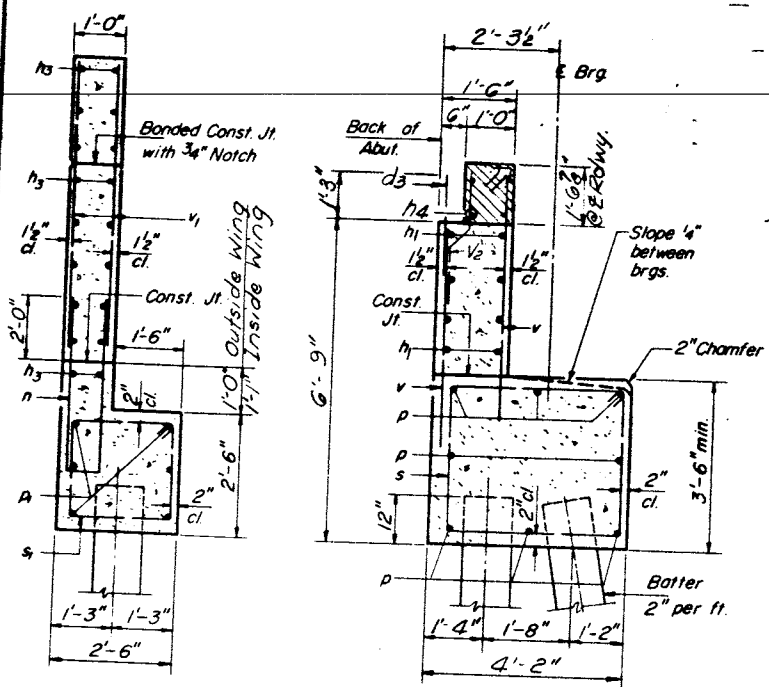
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

| | | | | | |
|-----------------------|---------|----------|------------------|-----------|-------------|
| ROUTE NO. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. | SHEET NO. ① |
| 1-1-55 | 57-IV B | MCCLEAN | 134 | 25 | 14 SHEETS |
| FED. ROAD DIST. NO. 1 | | ILLINOIS | FED. AID PROJECT | | |

Space reinforcement in cap to miss anchor bolts.
Four steps monolithically with cap.

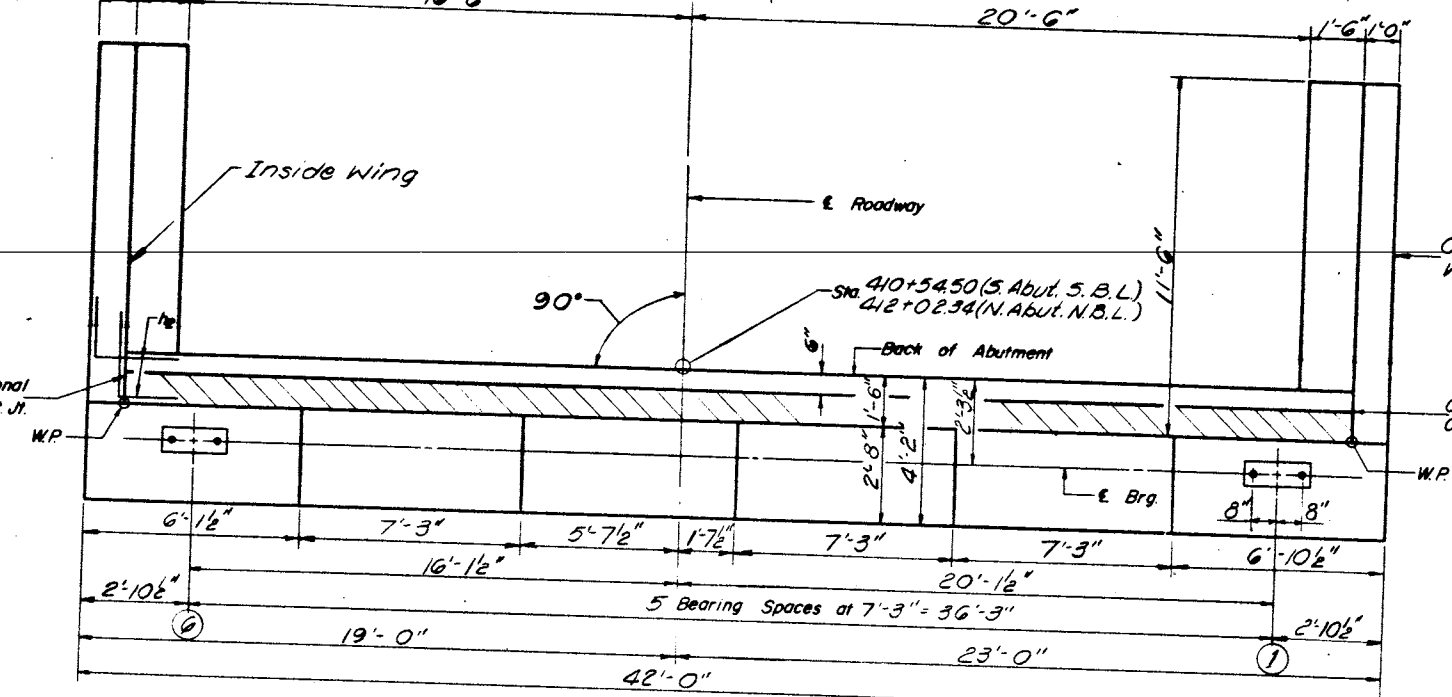


Note: Hatched area to be poured after superstructure false work has been removed.



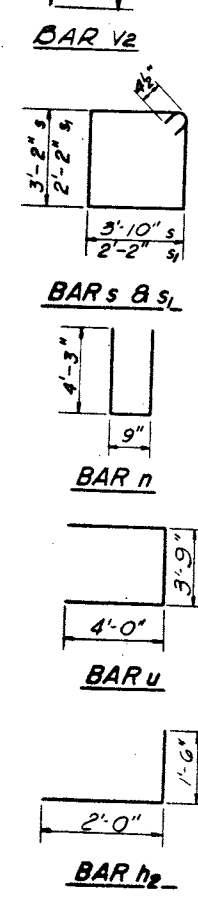
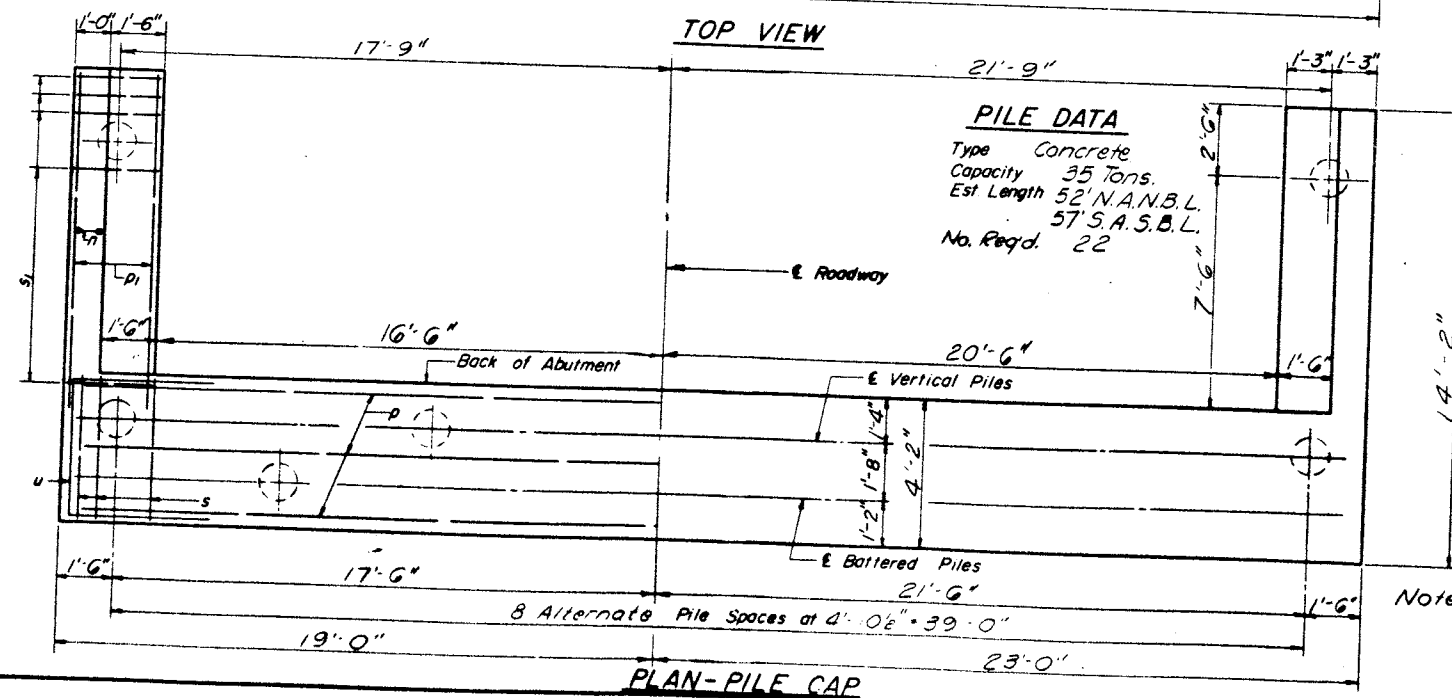
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|----------|-----------------------|----------|-----------------------|
| DESIGNED | By <i>John Chen</i> | EXAMINED | By <i>[Signature]</i> |
| CHECKED | By <i>[Signature]</i> | PASSED | By <i>[Signature]</i> |
| DRAWN | FM | APPROVED | By <i>[Signature]</i> |
| CHECKED | By <i>[Signature]</i> | | |

DATE: OCT. 31 1972



PILE DATA

| | |
|-------------|----------------------------------|
| Type | Concrete |
| Capacity | 35 Tons |
| Est. Length | 52' N.A.N.B.L. 57' S.A.S.B.L. |
| No. Req'd. | 22 |



SEC. B-B
TWO ABUTMENTS

BILL OF MATERIAL

| Bar | No. | Size | Length | Shape |
|--------------------|-----|----------|--------|-------|
| h1 | 32 | #5 | 21'-6" | — |
| h2 | 40 | #5 | 3'-6" | — |
| h3 | 72 | #4 | 11'-3" | — |
| h4 | 12 | #6 | 20'-9" | — |
| n | 48 | #6 | 9'-5" | U |
| p | 32 | #7 | 21'-0" | — |
| pi | 24 | #7 | 12'-6" | — |
| s | 88 | #4 | 14'-9" | J |
| s1 | 48 | #4 | 9'-5" | □ |
| u | 16 | #6 | 11'-9" | J |
| v | 160 | #4 | 6'-0" | — |
| vi | 96 | #6 | 6'-6" | — |
| ve | 80 | #4 | 3'-5" | — |
| Class X Concrete | | Cu. Yds. | 83.2 | |
| Reinforcement Bars | | Lbs. | 7,700 | |
| Concrete Piles | | Lin. Ft. | 1,139 | |

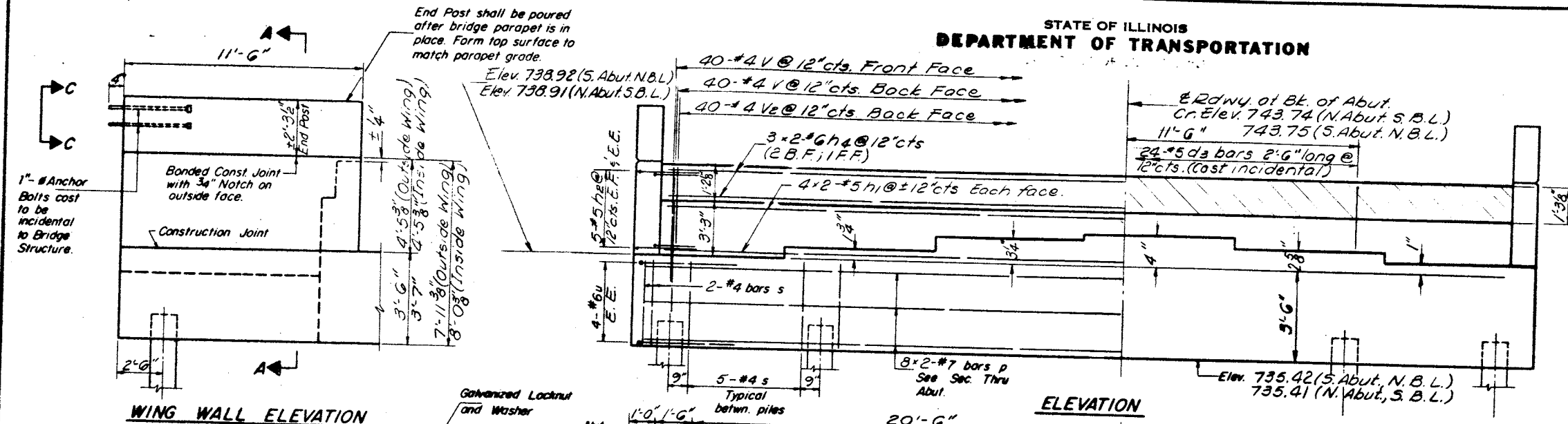
Note: See sheet #2 for location of electrical conduit

SO. ABUT. SO. B.D.L. / NO. ABUT. NO. B.D.L.
E.A.I. RT. 55 SEC. 57-IV B
MCCLEAN COUNTY
STA. 411+28.42

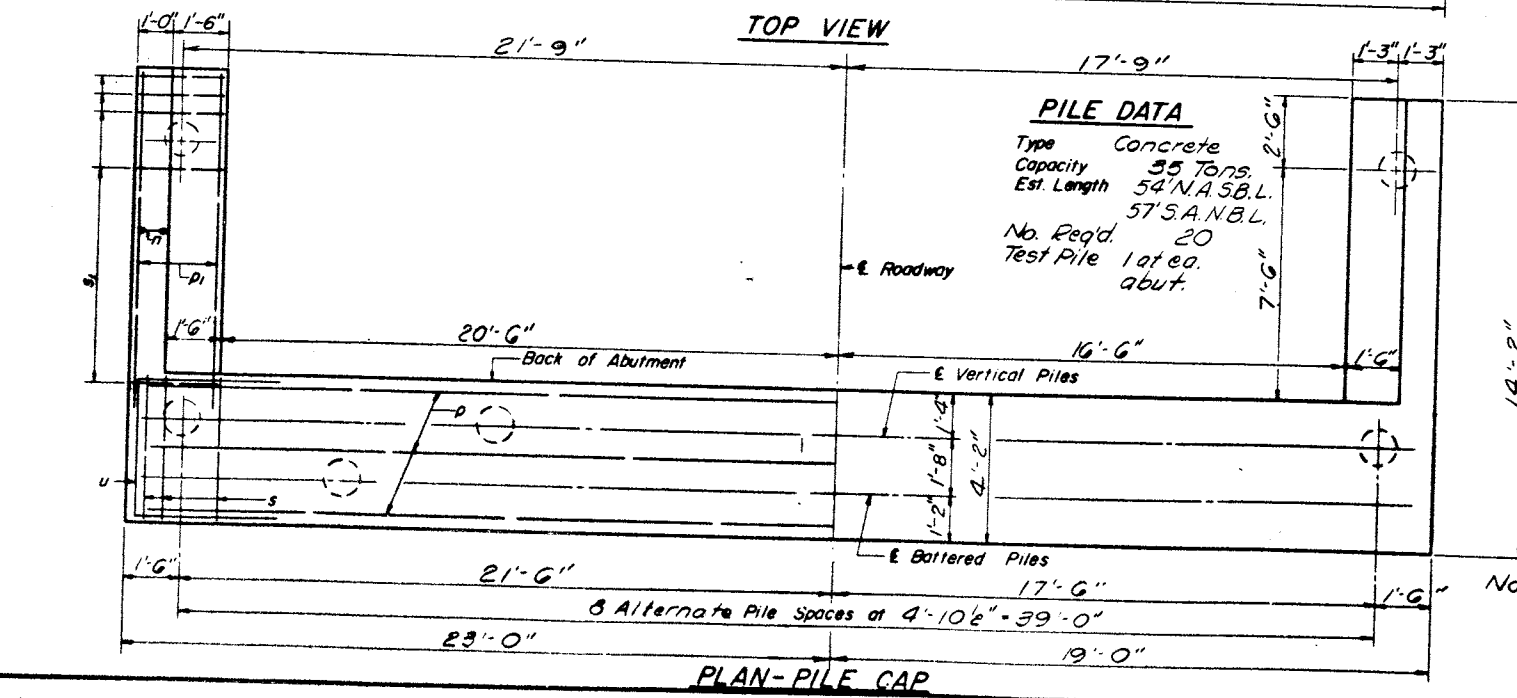
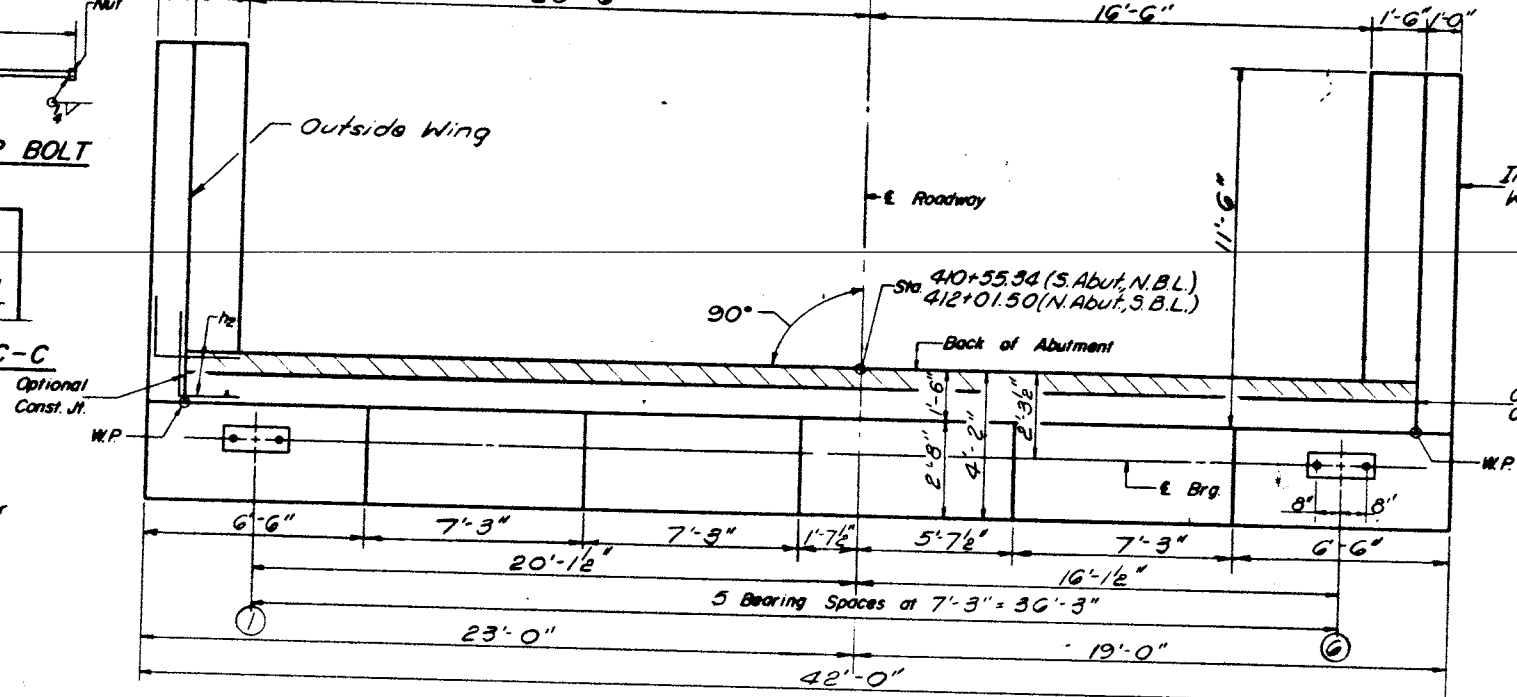
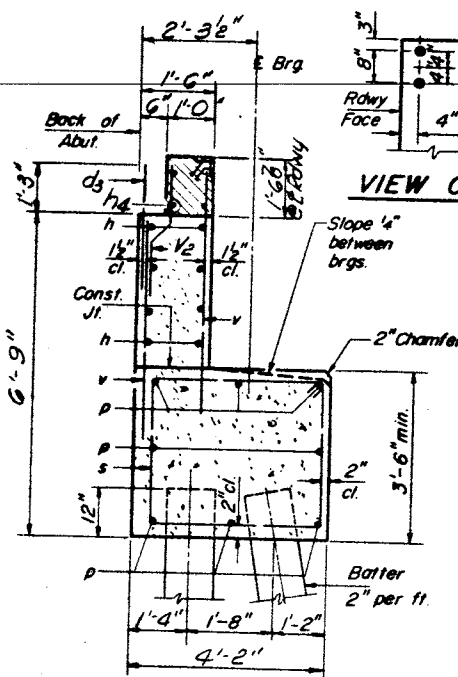
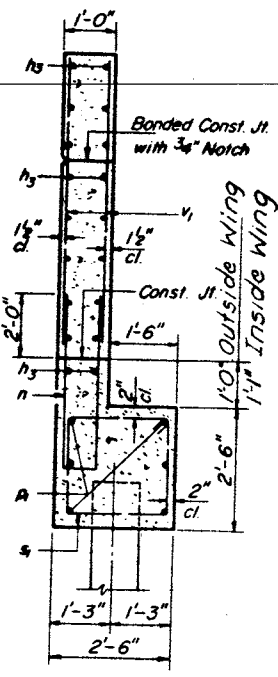
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

| | | | | |
|-----------|---------|--------|--------------|-----------|
| ROUTE NO. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
| 74 | IVB | MCLEAN | 134 | 26 |
| PROJECT | | | 14 SHEETS | |

Space reinforcement in cap to miss anchor bolts.
Pour steps monolithically with cap.

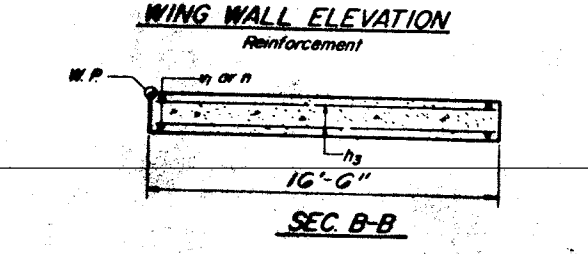
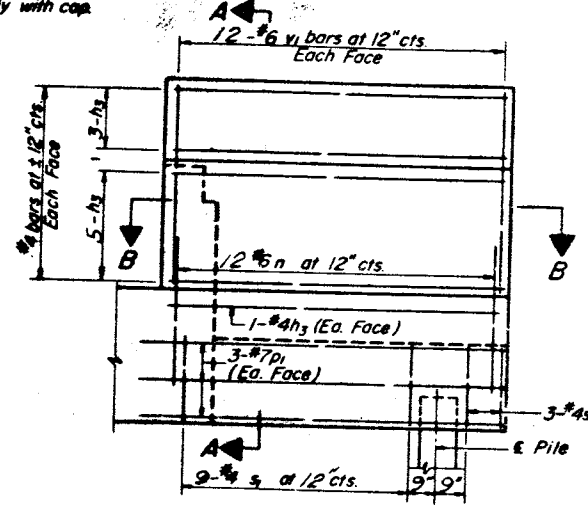


Note:
Hatched area to be poured after superstructure false work has been removed.



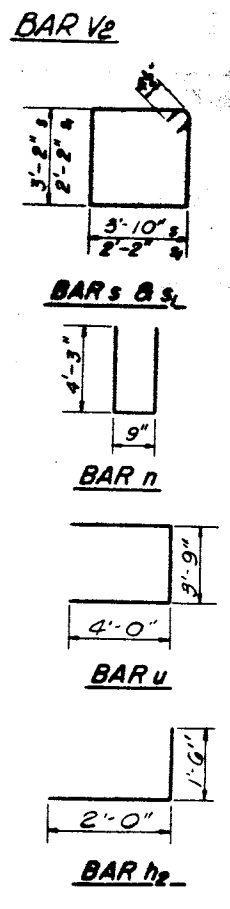
PILE DATA

| | |
|-------------|----------------|
| Type | Concrete |
| Capacity | 35 Tons |
| Est. Length | 54' N.A.S.B.L. |
| | 57' S.A.N.B.L. |
| No. Req'd | 20 |
| Test Pile | late abut. |



TWO ABUTMENTS
BILL OF MATERIAL

| Bar | No. | Size | Length | Shape |
|---------------------|-----|----------|---------|-------|
| h ₁ | 32 | #5 | 21'-6" | — |
| h ₂ | 40 | #5 | 3'-6" | — |
| h ₃ | 72 | #4 | 11'-3" | — |
| h ₄ | 12 | #6 | 20'-9" | — |
| n | 48 | #6 | 3'-3" | U |
| p | 32 | #7 | 21'-10" | — |
| p ₁ | 24 | #7 | 12'-6" | — |
| s | 88 | #4 | 14'-9" | □ |
| s ₁ | 48 | #4 | 9'-5" | □ |
| u | 16 | #6 | 11'-9" | — |
| v | 160 | #4 | 6'-0" | — |
| v ₁ | 96 | #6 | 6'-6" | — |
| v ₂ | 80 | #4 | 3'-5" | — |
| Class X Concrete | | Cu Yds. | 834 | |
| Reinforcement Bars | | Lbs. | 7700 | |
| Concrete Piles | | Lin. Ft. | 1110 | |
| Test Piles Concrete | | Ea. | 2 | |



Note: See sheet #2 for location of electrical conduits.

NO. ABUT. SO BDL; SO ABUT. NO. BDL.
 E.A.I. RT. 55 SEC. 57-IVB
 MCLEAN COUNTY
 STA. 411+28.42

| | |
|----------|--------------------|
| DESIGNED | <i>John Chen</i> |
| CHECKED | <i>TCC</i> |
| DRAWN | <i>FM</i> |
| CHECKED | <i>[Signature]</i> |

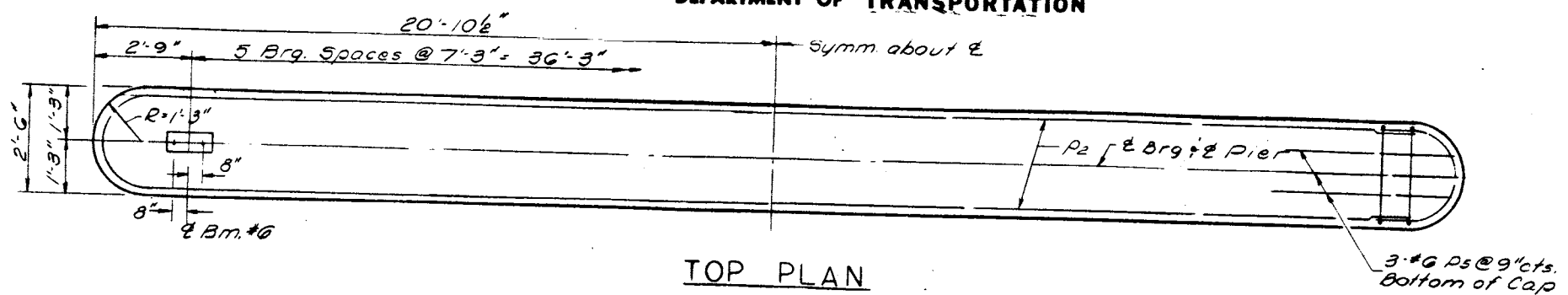
| | | |
|----------|--------------------|-------------|
| EXAMINED | <i>[Signature]</i> | OCT 31 1972 |
| PASSED | | |
| APPROVED | | |

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

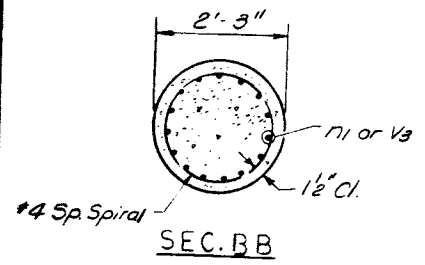
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|-----------|---------|--------|--------------|-----------|
| ROUTE NO. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
| 57-IVB | MCLEAN | 134 | 27 | 14 |

SHEET NO. 8
14 SHEETS

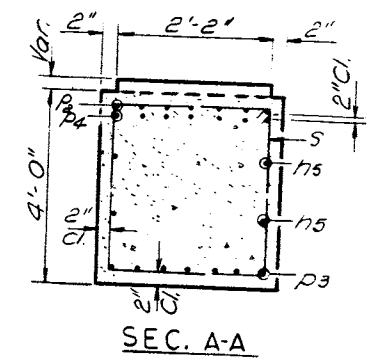
Note:
Space reinforcement in cap to miss anchor bolts
Min. bar laps = 24-dia. unless otherwise noted.
All edges shall have standard 4" chamfers except as noted
Four steps monolithically with cap
Min. spiral lap = 1/2 turns



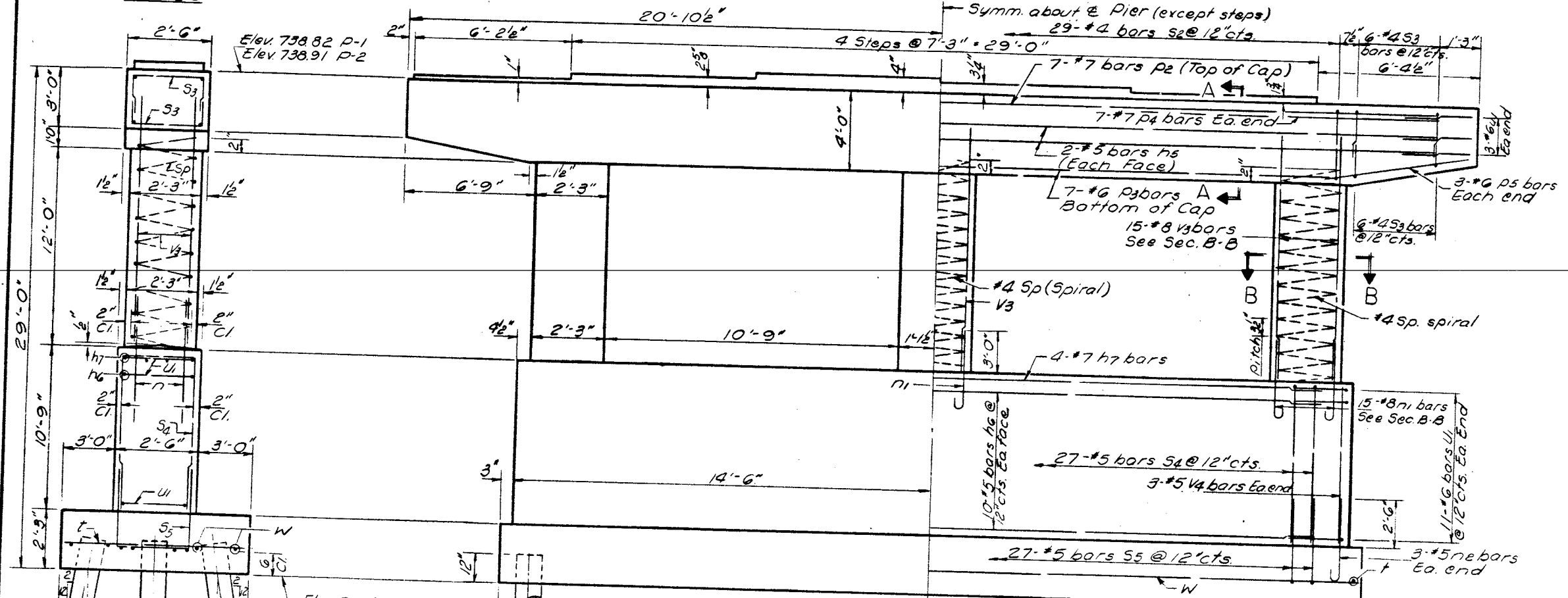
TOP PLAN



SEC. BB

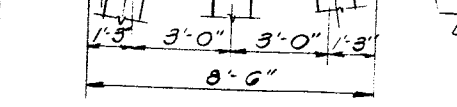


SEC. A-A



ELEVATION

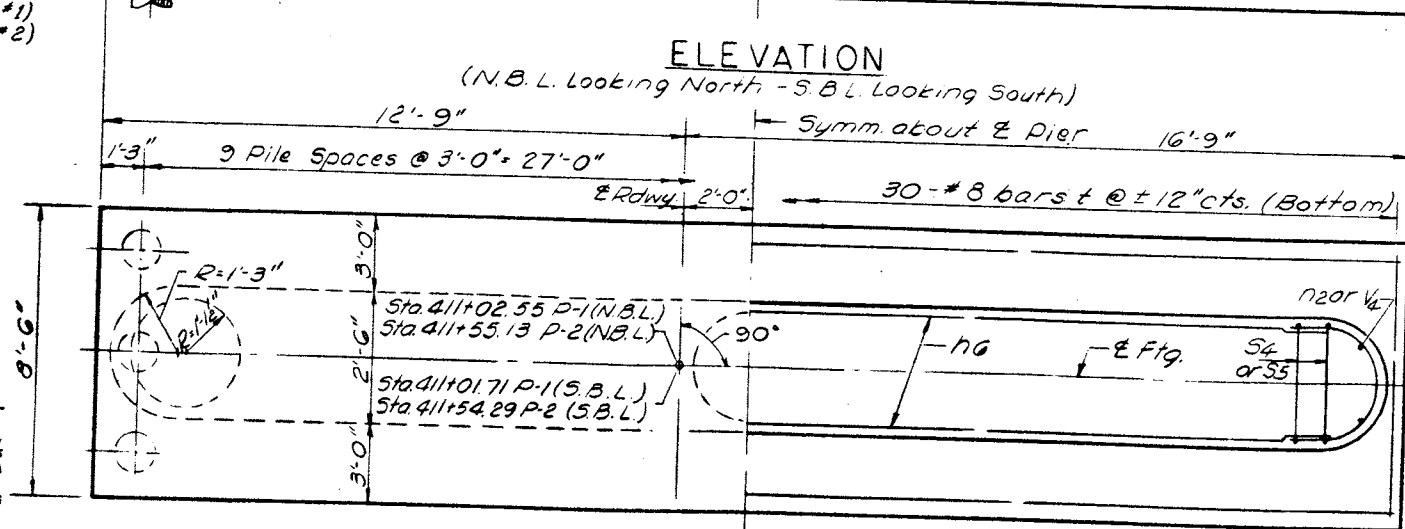
(N.B.L. Looking North - S.B.L. Looking South)



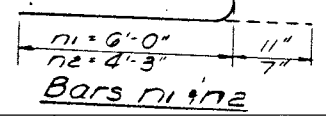
END VIEW

DESIGNED *[Signature]*
CHECKED *[Signature]*
DRAWN *F. Mercado*
CHECKED *[Signature]*

OCT. 31 1972
EXAMINED *[Signature]*
PASSED
APPROVED *[Signature]*



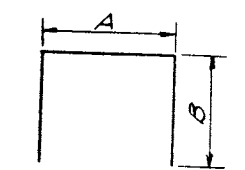
FOOTING PLAN



Bars n1 n2

4 PIERS
BILL OF MATERIAL

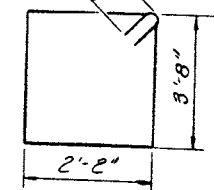
| Bar No. | Size | Length | Shape |
|---------|------|--------|-------|
| h5 | #5 | 39'-3" | — |
| h6 | #5 | 26'-6" | — |
| h7 | #7 | 26'-6" | — |
| n1 | #8 | 6'-11" | — |
| n2 | #5 | 4'-10" | — |
| p2 | #7 | 39'-3" | — |
| p3 | #6 | 28'-3" | — |
| p4 | #7 | 13'-0" | — |
| p5 | #6 | 6'-9" | — |
| s2 | #4 | 12'-5" | — |
| s3 | #4 | 7'-2" | — |
| s4 | #5 | 23'-2" | — |
| s5 | #5 | 10'-8" | — |
| sp | #4 | 12'-2" | — |
| t | #8 | 8'-3" | — |
| u1 | #6 | 9'-5" | — |
| v3 | #8 | 15'-0" | — |
| v4 | #5 | 10'-6" | — |
| w | #5 | 29'-3" | — |



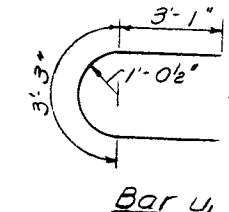
Bars s

A-B DIMENSIONS

| | A | B |
|----|-------|--------|
| s3 | 2'-2" | 2'-6" |
| s4 | 2'-2" | 10'-6" |
| s5 | 2'-2" | 4'-3" |



Bar s2



Bar u

PILE DATA

Type: Creosoted
Capacity: 24 Tons
Est Length: 27 Ft
No Req'd: 118
Test Piles: 2

Class X Concrete: Cuyds 280
Reinforcement Bars: Lbs. 32730
Creosoted Piles: Lin. Ft. 3136
Test Piles, Timber: Each 2
* Vertical height
† Includes 24" ht. for spacers

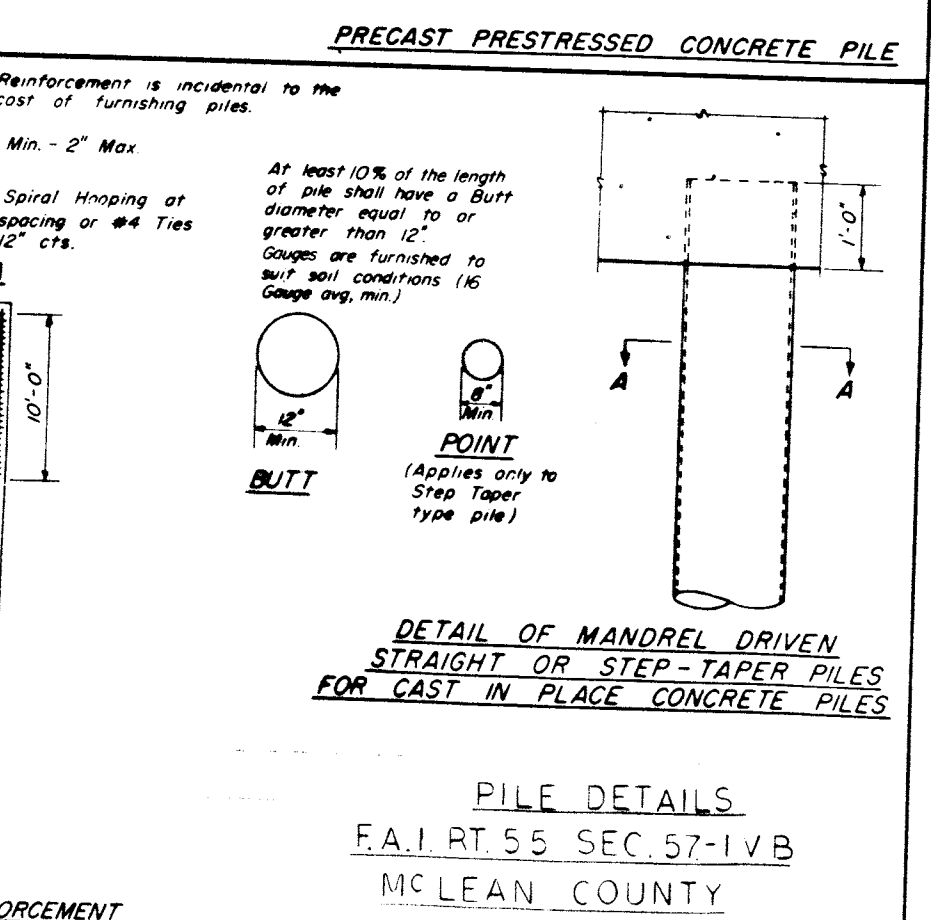
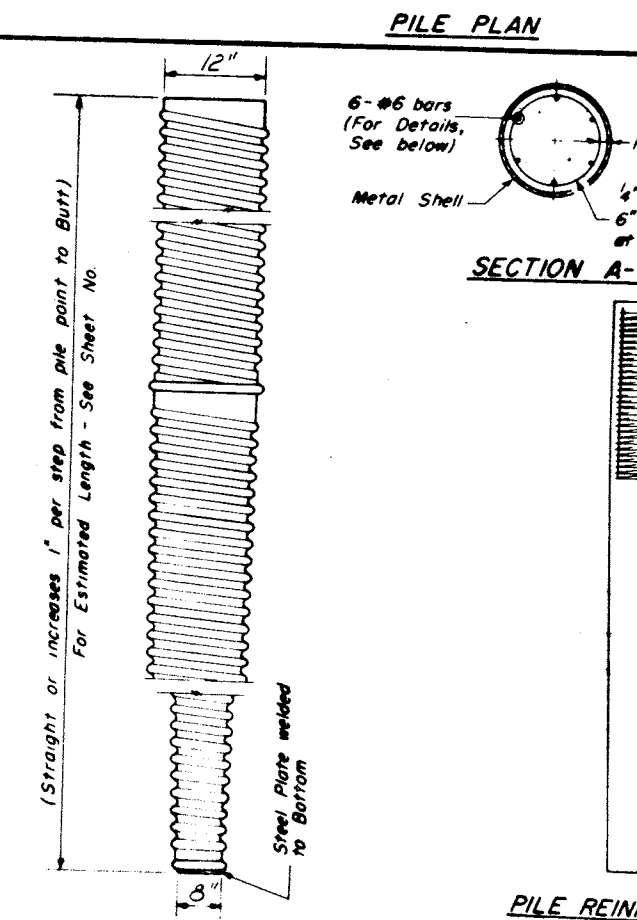
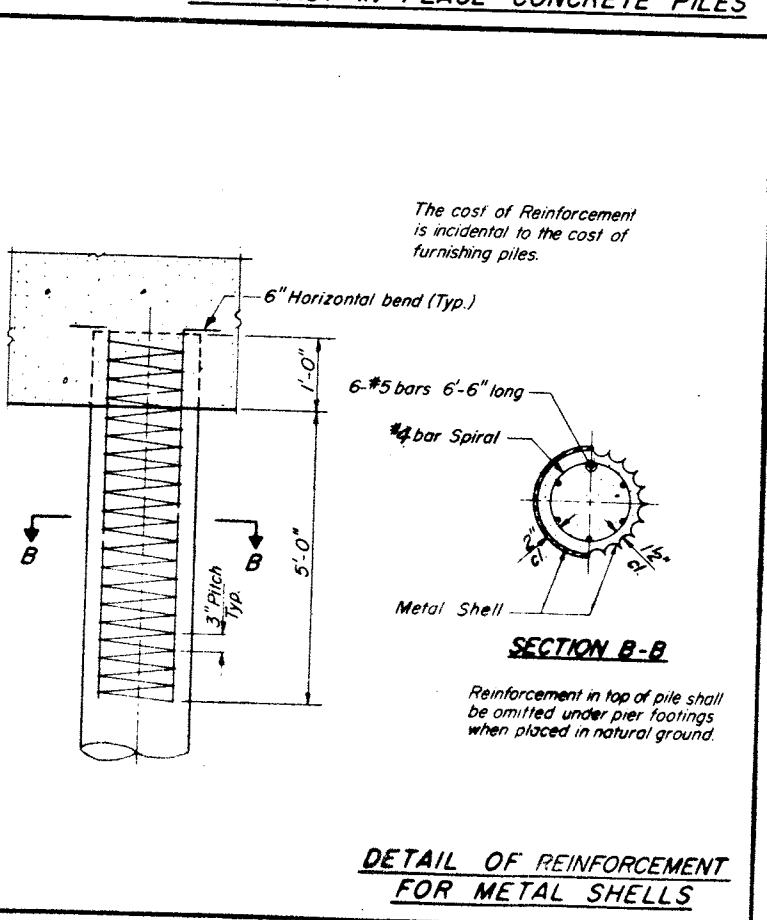
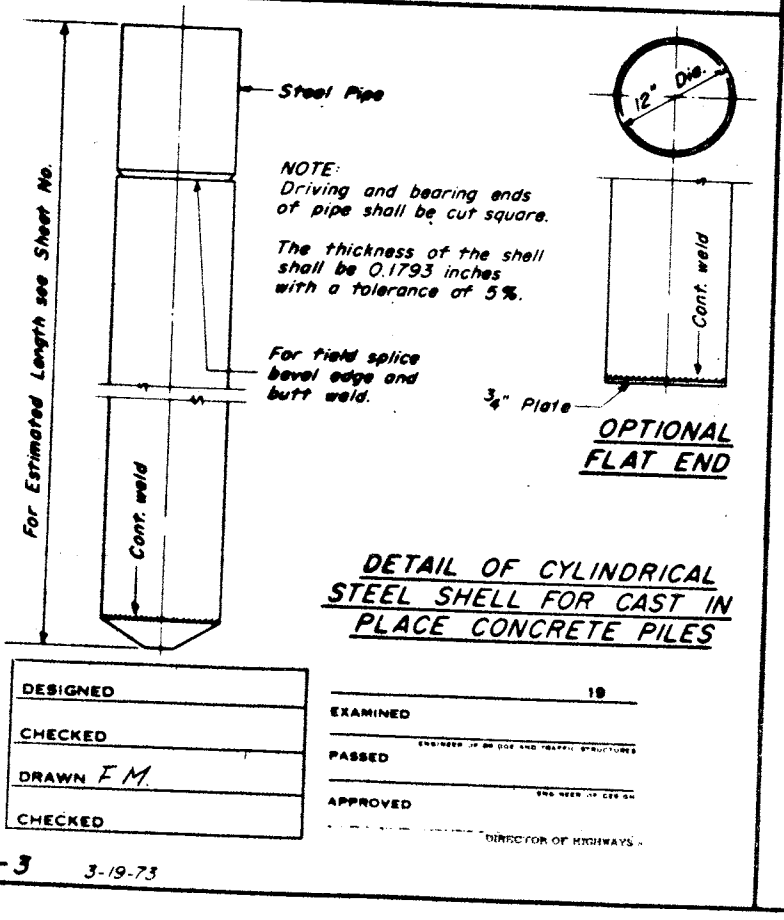
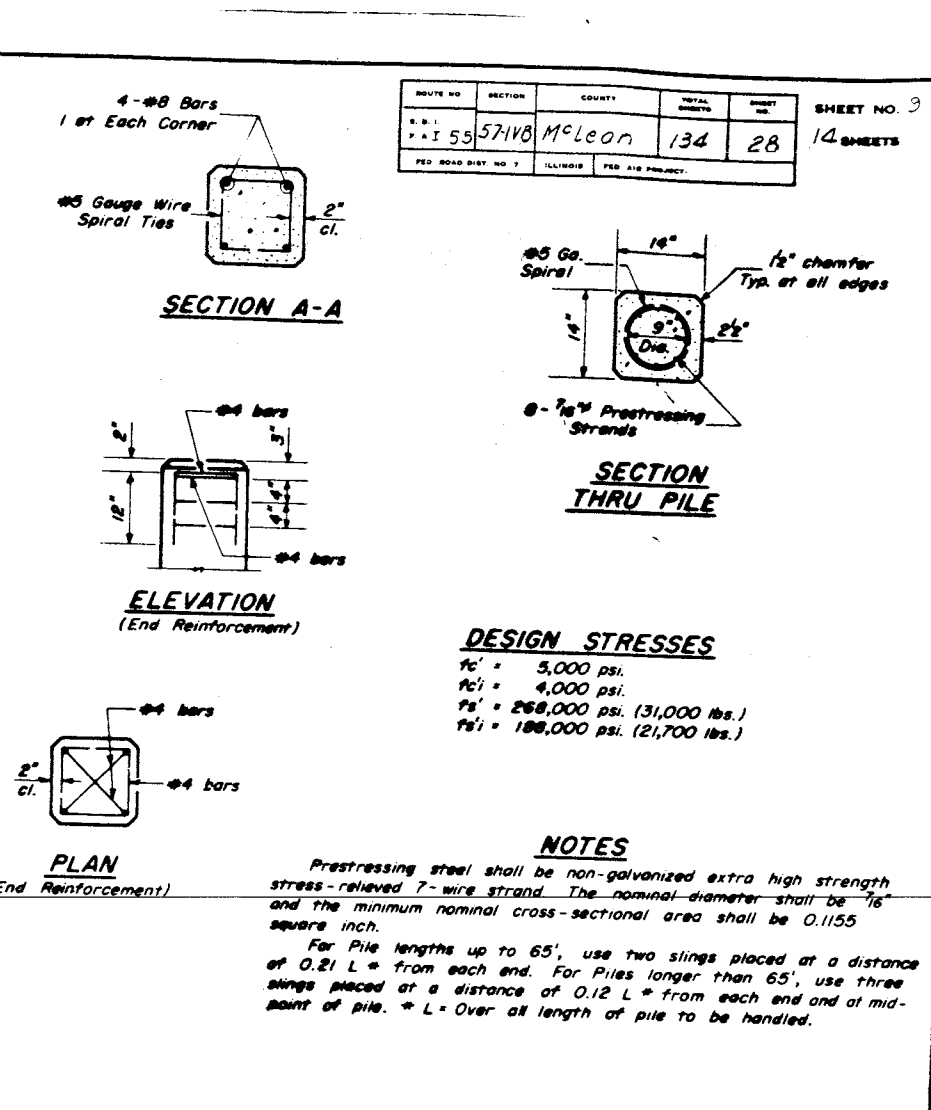
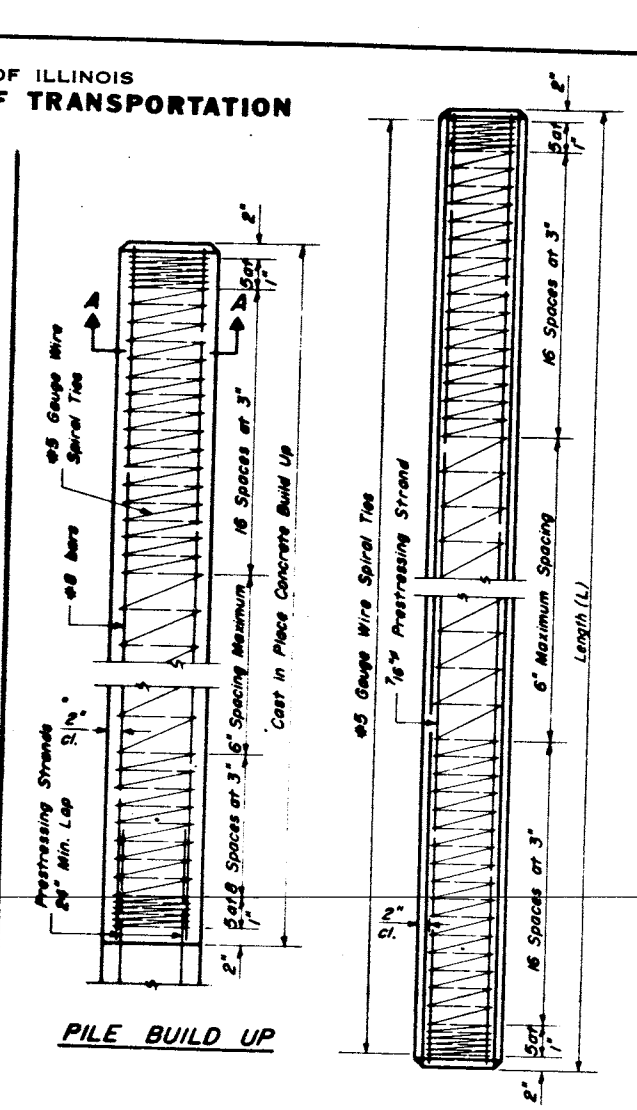
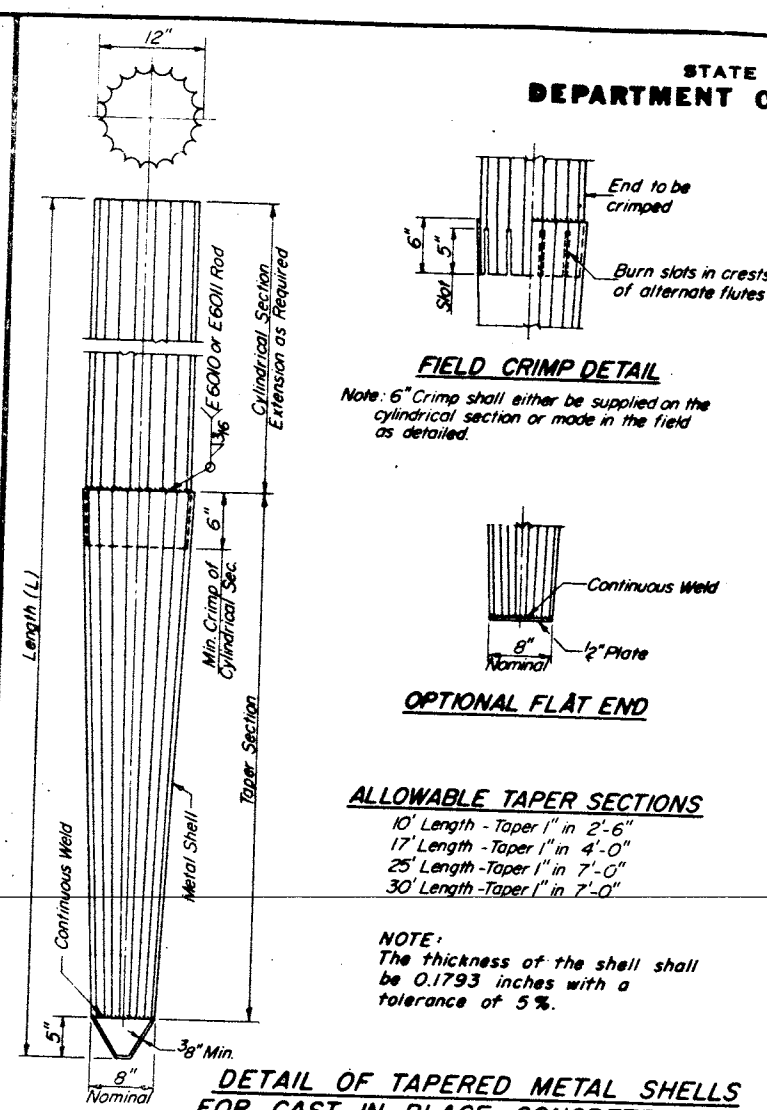
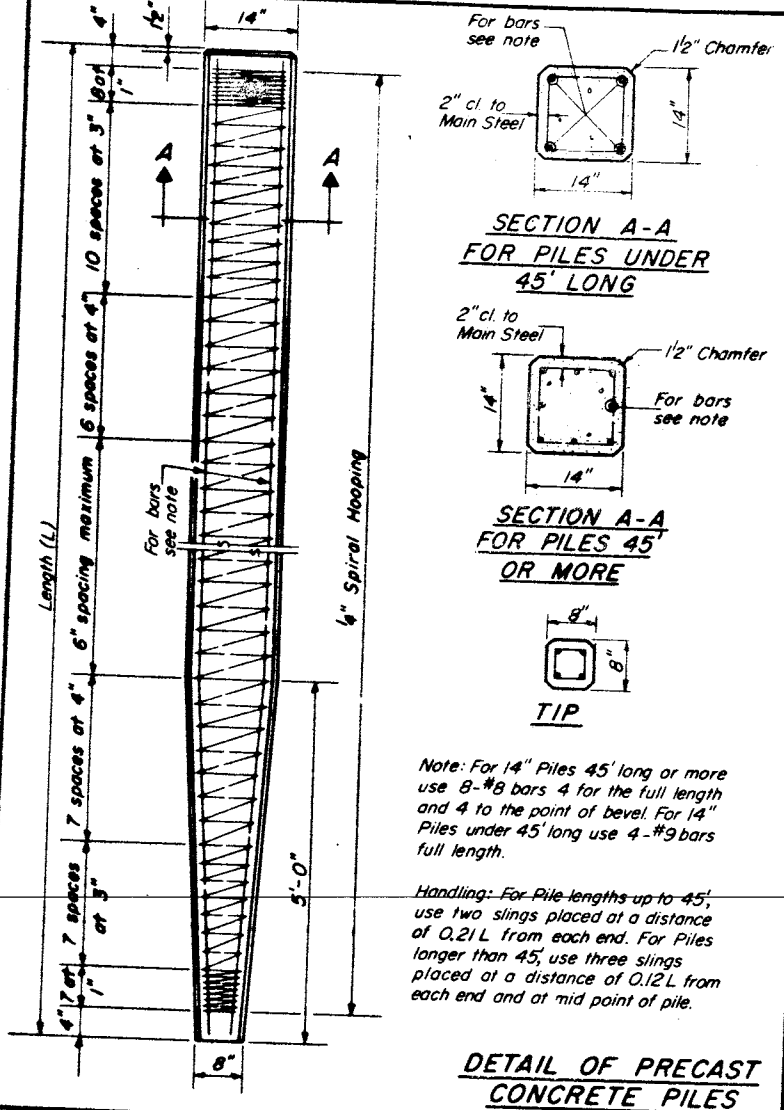
PIERS

FAI.RT.55 SEC.57-IVB
MCLEAN COUNTY
STA.411+28.42

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

| | | | | |
|-----------------------|----------|------------------|-------------|-----------|
| ROUTE NO. | SECTION | COUNTY | INVEST. NO. | SHEET NO. |
| F.A.I. RT. 55 | 57-1VB | McLean | 134 | 28 |
| FED. ROAD DIST. NO. 7 | ILLINOIS | FED. AID PROJECT | | |

SHEET NO. 9
14 SHEETS



| | |
|------------|----|
| DESIGNED | 19 |
| CHECKED | |
| DRAWN F.M. | |
| CHECKED | |

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

DIRECTOR OF HIGHWAYS

PILE DETAILS
F.A.I. RT. 55 SEC. 57-1VB
MCLEAN COUNTY
STA 411+28.42

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

| COUNTY MC LEAN | | Surface Water El. NONE | | Groundwater El. at Completion After 24 Hours | | NONE | | PLUGGED | | |
|-------------------------------------------------------|------------------|------------------------|-----------|----------------------------------------------|-----------|-------|-----------|---------|-----------|-------|
| Boring No. 1 | Station 410 + 51 | Offset 60' LT b | Elevation | N | Qu / s.f. | w (%) | Elevation | N | Qu / s.f. | w (%) |
| Ground Surface | 713.77 | 0 | | | | | | | | |
| STIFF BROWNISH BLACK CLAY LOAM | 711.77 | | 690.27 | 16 | | | | | | |
| VERY STIFF YELLOWISH BROWN CLAY TILL | 710.27 | 18 2.3 B | 687.27 | 17 | 1.6 B | 14 | | | | |
| HARD DARK BROWN AND GRAY CLAY TILL | 705.27 | 16 5.8 B | 685.27 | 28 | 4.6 B | 15 | | | | |
| VERY STIFF GRAY CLAY TILL -- THIN SAND STRIP @ 10' | 695.27 | 26 6.4 B | 690.27 | 22 | 2.9 B | 17 | | | | |
| VERY STIFF GRAY CLAY TILL | 692.77 | 19 2.3 B | 675.77 | 47 | | | | | | |
| MEDIUM BROWNISH GRAY FINE SAND | 668.27 | 15 2.3 B | 675.77 | 196 | | 20 | | | | |
| STIFF GRAY CLAY TILL | 692.77 | 16 2.5 B | 690.27 | 71 | 7.2 S | 8 | | | | |
| MEDIUM BROWNISH GRAY FINE SAND | 668.27 | 18 1.6 B | 690.27 | 28 | 4.5 B | 9 | | | | |
| | | | 668.27 | 47 | 7.0 B | 8 | | | | |

| COUNTY MC LEAN | | Surface Water El. NONE | | Groundwater El. at Completion After 24 Hours | | NONE | | PLUGGED | | |
|---------------------------------|------------------|------------------------|-----------|----------------------------------------------|-----------|-------|-----------|---------|-----------|-------|
| Boring No. 2 | Station 410 + 66 | Offset 47' LT b | Elevation | N | Qu / s.f. | w (%) | Elevation | N | Qu / s.f. | w (%) |
| Ground Surface | 713.60 | 0 | | | | | | | | |
| STIFF BROWNISH BLACK SANDY LOAM | 718.10 | | 690.10 | 16 | | | | | | |
| HARD DARK BROWN CLAY TILL | 707.10 | 22 2.0 P | 687.60 | 10 | 1.6 B | 12 | | | | |
| STIFF DARK BROWN CLAY TILL | 706.60 | 15 4.5 P | 682.60 | 28 | 5.4 B | 17 | | | | |
| STIFF BROWNISH GRAY CLAY TILL | 701.10 | 20 1.2 B | 677.10 | 24 | 1.7 S | 21 | | | | |
| VERY STIFF GRAY CLAY TILL | 695.60 | 17 2.7 B | 675.10 | 33 | 2.3 S | 11 | | | | |
| VERY STIFF GRAY CLAY TILL | 692.60 | 15 2.3 B | 670.60 | 89 | 9.7 B | 8 | | | | |
| STIFF GRAY CLAY LOAM TILL | 691.60 | 10 1.0 B | 670.60 | 107 | 7.2 B | 8 | | | | |

| COUNTY MC LEAN | | Surface Water El. NONE | | Groundwater El. at Completion After 24 Hours | | NONE | | PLUGGED | | |
|------------------------------------------|------------------|------------------------|-----------|----------------------------------------------|-----------|-------|-----------|---------|-----------|-------|
| Boring No. 3 | Station 412 + 05 | Offset 66' LT b | Elevation | N | Qu / s.f. | w (%) | Elevation | N | Qu / s.f. | w (%) |
| Ground Surface | 712.17 | 0 | | | | | | | | |
| VERY STIFF YELLOWISH BROWN CLAY | 708.17 | 14 2.1 B | 690.67 | 23 | 2.3 B | 14 | | | | |
| MEDIUM YELLOWISH BROWN & GRAY CLAY TILL | 705.67 | 8 0.5 B | 690.67 | 23 | 2.9 B | 16 | | | | |
| HARD GRAY CLAY TILL | 695.17 | 19 4.3 B | 690.67 | 19 | 3.7 B | 16 | | | | |
| VERY STIFF GRAY CLAY AND SILTY CLAY TILL | 692.17 | 21 5.6 B | 690.67 | 28 | | | | | | |
| VERY STIFF GRAY CLAY AND SILTY CLAY TILL | 685.17 | 18 4.5 B | 690.67 | 18 | 5.8 B | 9 | | | | |
| | | | 695.17 | 56 | 9.1 B | 7 | | | | |
| | | | 692.17 | 33 | 4.6 B | 7 | | | | |
| | | | 690.67 | 69 | 6.1 B | 8 | | | | |
| | | | 685.17 | 42 | 5.4 B | 8 | | | | |

N-Standard Penetration Test-Blows per foot to drive 2" O.D. Split Spoon Sampler 12" with 140 # hammer falling 30".
 Qu-Unconfined Compressive Strength-1/sf
 w-Water Content - percentage of oven dry weight-%.
 Type failure
 B-Bulge Failure
 S-Shear Failure
 E-Estimated Value
 P-Penetrometer

DESIGNED J.C. Chu
 CHECKED [Signature]
 DRAWN F.M. TCC
 CHECKED [Signature]

EXAMINED [Signature] OCT 31 1972
 PASSED
 APPROVED

BORINGS
 F.A.I. RT. 55 SEC. 57-1VB
 MCLEAN COUNTY
 STA. 411+28.42

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

| ROUTE NO. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|-----------|---------|--------|--------------|-----------|
| 57-IVB | | MCLEAN | 134 | 30 |

SHEET NO. 11
14 SHEETS

| COUNTY MC LEAN | | Groundwater El. at Completion | | NONE | | NONE | |
|----------------|----------|-------------------------------|----------------|-------------------|-------------------------------|----------------|-------------------|
| Boring No. | Station | Offset | After 24 Hours | Surface Water El. | Groundwater El. at Completion | After 24 Hours | Surface Water El. |
| 4 | 410 + 51 | 63' RT B | | 703.4 | 707.4 | | |
| | 714.43 | 0 | | | | | |
| | 712.93 | | | | | | |
| | 710.35 | | | | | | |
| | 697.93 | | | | | | |
| | 683.43 | | | | | | |
| | 703.93 | | | | | | |
| | 677.93 | | | | | | |
| | 675.93 | | | | | | |
| | 668.43 | | | | | | |

| COUNTY MC LEAN | | Groundwater El. at Completion | | NONE | | NONE | |
|----------------|----------|-------------------------------|----------------|-------------------|-------------------------------|----------------|-------------------|
| Boring No. | Station | Offset | After 24 Hours | Surface Water El. | Groundwater El. at Completion | After 24 Hours | Surface Water El. |
| 5 | 410 + 66 | 49' RT B | | 701.5 | | | |
| | 714.43 | 0 | | | | | |
| | 712.93 | | | | | | |
| | 710.45 | | | | | | |
| | 698.95 | | | | | | |
| | 678.95 | | | | | | |
| | 675.95 | | | | | | |
| | 668.95 | | | | | | |

| COUNTY MC LEAN | | Groundwater El. at Completion | | NONE | | NONE | |
|----------------|----------|-------------------------------|----------------|-------------------|-------------------------------|----------------|-------------------|
| Boring No. | Station | Offset | After 24 Hours | Surface Water El. | Groundwater El. at Completion | After 24 Hours | Surface Water El. |
| 6 | 412 + 05 | 54' RT B | | 701.5 | | | |
| | 713.55 | 0 | | | | | |
| | 711.55 | | | | | | |
| | 698.55 | | | | | | |
| | 684.05 | | | | | | |
| | 681.55 | | | | | | |
| | 679.05 | | | | | | |
| | 676.55 | | | | | | |
| | 668.05 | | | | | | |

DESIGNED T.C. Chu
 CHECKED [Signature]
 DRAWN F.M. TCC
 CHECKED [Signature]

EXAMINED [Signature]
 PASSED [Signature]
 APPROVED [Signature]

NOV 31 1973

BORINGS
 F.A.I. RT. 55 SEC. 57-IVB
 MCLEAN COUNTY
 STA. 411+28.42

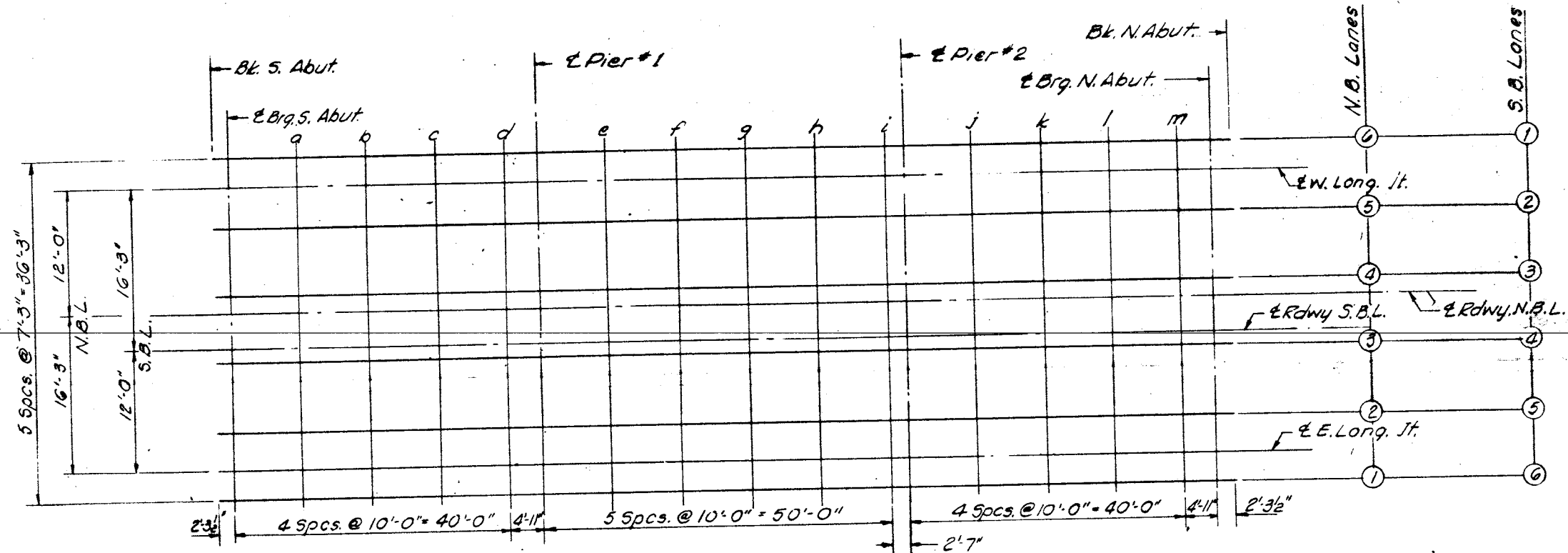
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PROFILE GRADE
E. LONG. JT. S.B.L.

| Location | Station | Offset | Theoretical Grade Elevations | Theoretical Grade Elevations Adjusted For Dead Load Deflection |
|---------------|-----------|---------|------------------------------|----------------------------------------------------------------|
| Bl. S. Abut. | 41054.500 | -12.000 | 743.431 | 743.431 |
| Brq. S. Abut. | 41056.792 | -12.000 | 743.436 | 743.436 |
| a | 41066.792 | -12.000 | 743.456 | 743.473 |
| b | 41076.792 | -12.000 | 743.474 | 743.495 |
| c | 41086.792 | -12.000 | 743.488 | 743.502 |
| d | 41096.792 | -12.000 | 743.499 | 743.504 |
| Pier #1 | 41101.708 | -12.000 | 743.503 | 743.503 |
| e | 41111.708 | -12.000 | 743.509 | 743.516 |
| f | 41121.708 | -12.000 | 743.512 | 743.525 |
| g | 41131.708 | -12.000 | 743.512 | 743.527 |
| h | 41141.708 | -12.000 | 743.509 | 743.518 |
| i | 41151.708 | -12.000 | 743.503 | 743.505 |
| Pier #2 | 41154.292 | -12.000 | 743.501 | 743.501 |
| j | 41164.292 | -12.000 | 743.491 | 743.501 |
| k | 41174.292 | -12.000 | 743.478 | 743.487 |
| l | 41184.292 | -12.000 | 743.461 | 743.481 |
| m | 41194.292 | -12.000 | 743.442 | 743.450 |
| Brq. N. Abut. | 41199.208 | -12.000 | 743.431 | 743.431 |
| Bl. N. Abut. | 41201.500 | -12.000 | 743.426 | 743.426 |

BM #6 S.B.L.

| Location | Station | Offset | Theoretical Grade Elevations | Theoretical Grade Elevations Adjusted For Dead Load Deflection |
|---------------|-----------|---------|------------------------------|----------------------------------------------------------------|
| Bl. S. Abut. | 41054.500 | -16.125 | 743.345 | 743.345 |
| Brq. S. Abut. | 41056.792 | -16.125 | 743.350 | 743.350 |
| a | 41066.792 | -16.125 | 743.371 | 743.387 |
| b | 41076.792 | -16.125 | 743.388 | 743.409 |
| c | 41086.792 | -16.125 | 743.402 | 743.417 |
| d | 41096.792 | -16.125 | 743.413 | 743.418 |
| Pier #1 | 41101.708 | -16.125 | 743.417 | 743.417 |
| e | 41111.708 | -16.125 | 743.423 | 743.430 |
| f | 41121.708 | -16.125 | 743.427 | 743.440 |
| g | 41131.708 | -16.125 | 743.427 | 743.441 |
| h | 41141.708 | -16.125 | 743.424 | 743.432 |
| i | 41151.708 | -16.125 | 743.417 | 743.419 |
| Pier #2 | 41154.292 | -16.125 | 743.415 | 743.415 |
| j | 41164.292 | -16.125 | 743.405 | 743.415 |
| k | 41174.292 | -16.125 | 743.392 | 743.411 |
| l | 41184.292 | -16.125 | 743.375 | 743.395 |
| m | 41194.292 | -16.125 | 743.356 | 743.364 |
| Brq. N. Abut. | 41199.208 | -16.125 | 743.345 | 743.345 |
| Bl. N. Abut. | 41201.500 | -16.125 | 743.340 | 743.350 |



PLAN

DESIGNED *[Signature]*
CHECKED *[Signature]*
DRAWN F.M.
CHECKED *[Signature]*

EXAMINED *[Signature]* OCT 31 1973
PASSED
APPROVED
ILLINOIS HIGHWAY ENGINEER

TOP OF CONCRETE ELEVATION
F.A.I. RT. 55 SEC. 57-1VB
MCLEAN COUNTY
STA. 411+28.42