

66107 #121

131

8-02-02 F.A.I. 55 McLEAN (57-1,57-2)RS #131

INDEX OF SHEETS

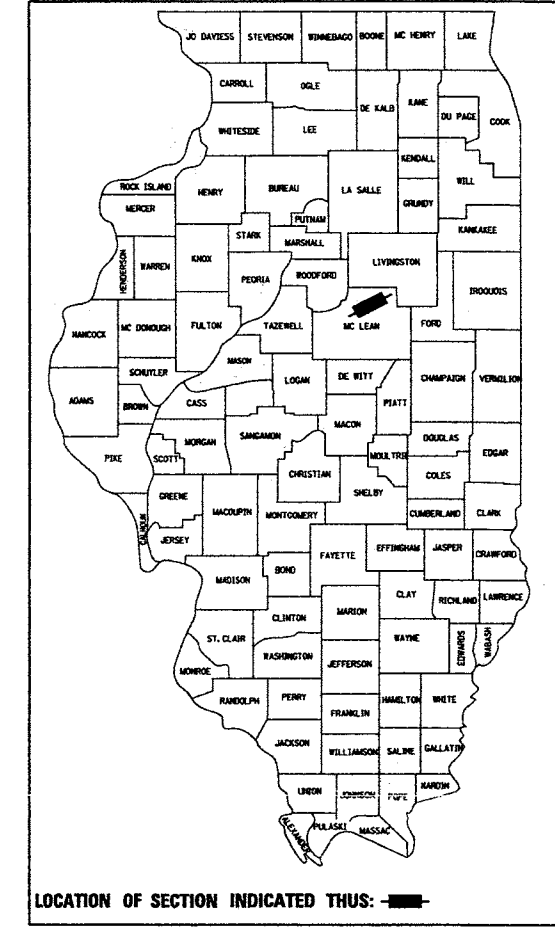
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99%  
11-8-2003

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

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	#	MCLEAN	205	1

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



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

SN 057-0172  
 STA 714+75.07

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

SN 057-2005  
 STA 686+50

SN 057-0171  
 STA 645+71.31

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

END IMPROVEMENT  
 STA 461+67.02

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

SN 057-0177  
 STA 345+71.49

SN 057-2004  
 STA 290+51

SN 057-0175  
 STA 170+65.42

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 **057-0152 (SB) 0153 (NB)**

SUBMITTED APRIL 10 2002  
James M. [Signature] DISTRICT ENGINEER  
May 10, 2002  
Michael [Signature] ENGINEER OF DESIGN AND ENVIRONMENT  
May 10, 2002  
James R. [Signature] DIRECTOR, DIVISION OF HIGHWAYS

PRINTED BY THE AUTHORITY  
 OF THE STATE OF ILLINOIS

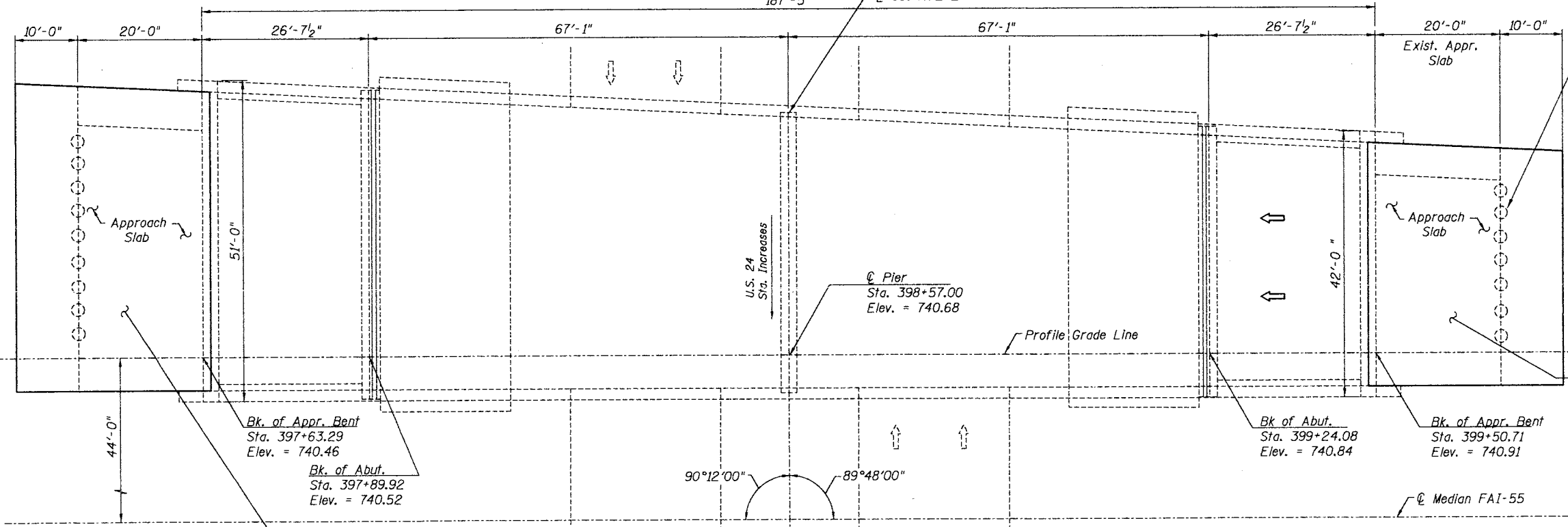
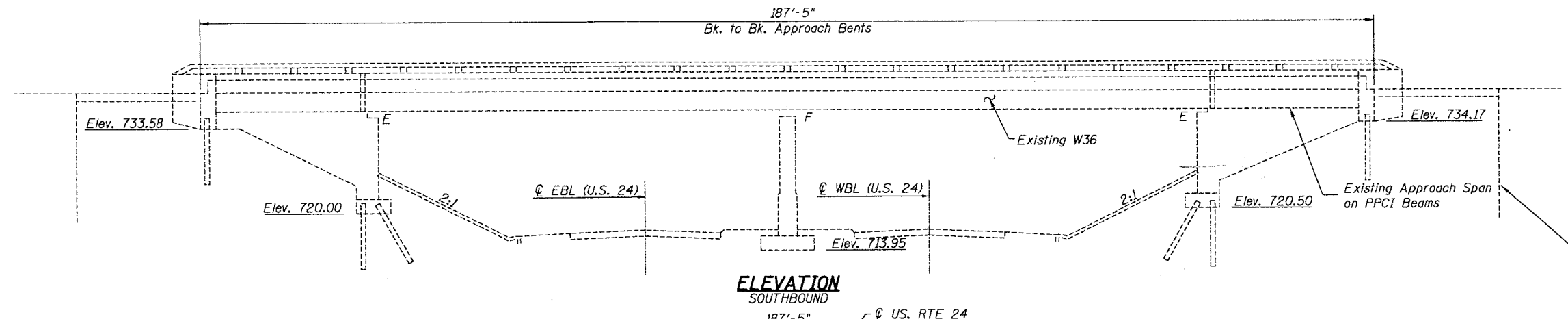
3-228

APRIL 02, 2002 7:50:39 AM SHEETS .06N

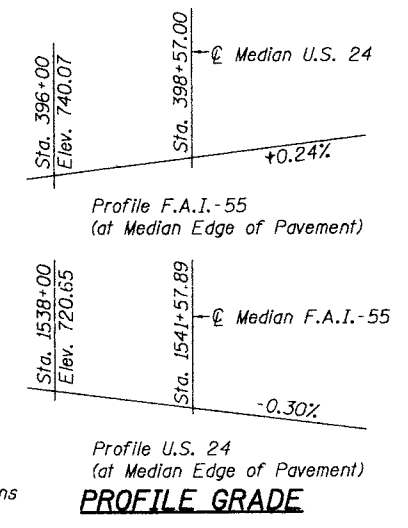
BM Z-846 = Standard C. & G.S. Disk  
126' West of Pt. 25  
Elev. 719.00

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEET	SHEET NO.
55	(57-1, 57-2) RS	McLean	103	1
12 SHEETS				



Existing timber approach piles.  
Cut-off and remove 2'-0" below  
bottom of proposed approach  
pavement (cost to be included with  
Approach Slab Removal)  
Typical 16 places.



Remove and  
replace existing  
approach slab.  
See Roadway Plans  
for details.

Remove and  
replace existing  
approach slab.  
See Roadway Plans  
for details.

PLAN  
SOUTHBOUND

DESIGN STRESSES (ORIGINAL CONSTRUCTION)

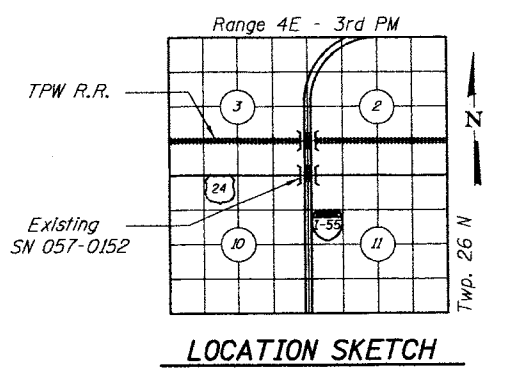
- FIELD UNITS**  
 $f_c = 1,400$  psi  
 $f_s = 20,000$  psi (reinforcement)  
 $f_s = 20,000$  psi (struc. A-36)  
 $n = 10$   
 $V_c = 75$  psi ftgs.  
 $f_c = 1,200$  psi (deck slab)
- PRE-CAST-PRESTRESSED UNITS**  
 $f'_c = 5,000$  psi  
 $f'_c = 4,000$  psi  
 $f'_s = 248,000$  psi  
 $f'_s = 173,600$  psi

HIGHWAY CLASSIFICATION

F.A.I. Rte 55 over F.A. 9 (US Rte 24)  
Functional Class: Interstate  
ADT: 12350 (1999); 24050 (2022)  
Design Speed: 70 m.p.h.  
Posted Speed: 65 m.p.h.

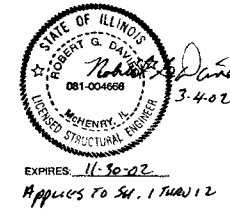
PROPOSED WORK

- Remove Existing Bituminous Overlay and Waterproofing Membrane.
- Deck Repair.
- Place Microsilica Concrete Overlay
- Replace Abutment Expansion Joints.
- Replace Expansion Bearings with Elastomeric Bearings.
- Repair Deck Hammering at Northwest Corner.
- Plug Existing Floor Drains.



LOCATION SKETCH

DESIGNED	JMW
CHECKED	RGD
DRAWN	WJH
CHECKED	NRF



REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
General Plan and Elevation  
F.A.I. Rte 55 over F.A. 9 (U.S. 24)  
Sec (57-1, 57-2) RS  
McLean County  
Sta. 398+57.00  
S.N. 057-0152 (SB)  
DATE 03-04-2002

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEET NO.	SHEET	SHEET NO. 2 12 SHEETS
P.A. 55	(57-1,57-2)RS	McLean	205	104	
FED. ROAD DIST. NO. 3	ILL. DIST. PROJECT				

**GENERAL NOTES**

**TOTAL BILL OF MATERIAL**

ITEM	UNIT	SUPER	SUB	TOTAL
Concrete Removal	Cu. Yds.	22		22
Concrete Superstructures	Cu. Yds.	28.2		28.2
Concrete Bridge Deck Scarification 1/4"	Sq. Yds.	815		815
Bar Splicers	Each	85		85
Reinforcement Bars, Epoxy Coated	Lbs.	10,220		10,220
Silicone Joint Sealer, 1/2"	Foot	93		93
Plug Existing Deck Drain	Each	2		2
Formed Concrete Repair (< 5")	Sq. Ft.		6	6
Furnishing and Erecting Structural Steel	Lbs.	3,090		3,090
Jack and Remove Existing Bearings	Each	16		16
Elastomeric Bearing Assembly, Type I	Each	16		16
Bridge Deck Microsilica Concrete Overlay	Sq. Yds.	815		815
Bituminous Concrete Removal (Deck)	Sq. Yds.	895		895
Stud Shear Connectors	Each	312		312
Deck Slab Repair (Partial Depth)	Sq. Yds.	1		1
Polymer Concrete	Cu. Ft.	6.3		6.3
Bridge Deck Grooving	Sq. Yds.	858		858
Protective Coat	Sq. Yds.	105		105

- 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 I. 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(a) 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"  $\phi$  open holes 13/16"  $\phi$ , unless otherwise noted.
- Existing reinforcement bars extending into the removal area shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system. Cost included with concrete removal.
- Existing structural steel shall only be cleaned as required by the special provision "Cleaning and Painting Adjacent Areas of Existing Steel Structures".

DESIGNED	JMW
CHECKED	RGD
DRAWN	WJH
CHECKED	NRF

SMITH ENGINEERING CONSULTANTS, INC. CIVIL/STRUCTURAL ENGINEERS AND ARCHITECTS www.smithengineering.com	
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

Total Bill of Materials  
&  
General Notes  
S.N. 057-0152 (SB)

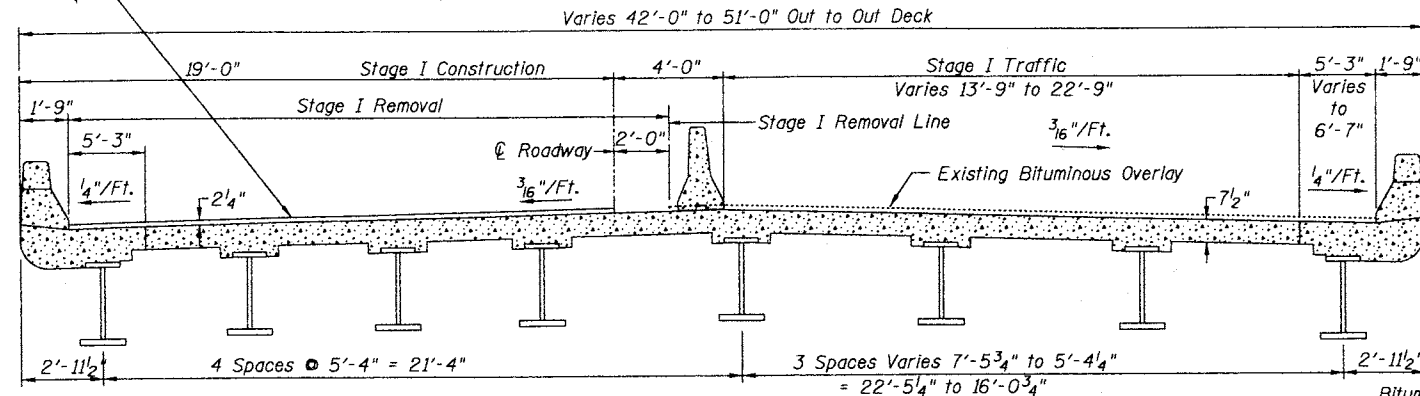
DATE 03-04-2002

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

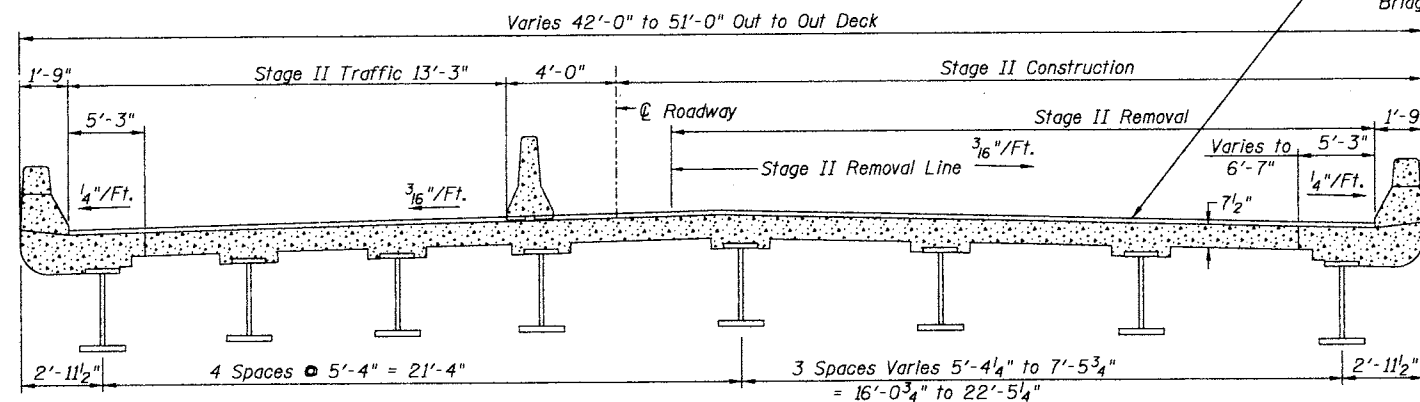
ROUTE NO.	SECTION	COUNTY	SHEET	NO.
55	(57-1,57-2)RS	McLean	105	105
FED. ROAD DIST. NO. 9		ILLINOIS	FED. AID PROJECT	

SHEET NO. 3  
12 SHEETS

Bituminous Concrete removal (deck).  
Concrete Bridge Deck Scarification  $\frac{1}{4}$ "  
and Proposed  $2\frac{1}{4}$ " Bridge Deck  
Microsilica Concrete Overlay  
Bridge Deck Grooving

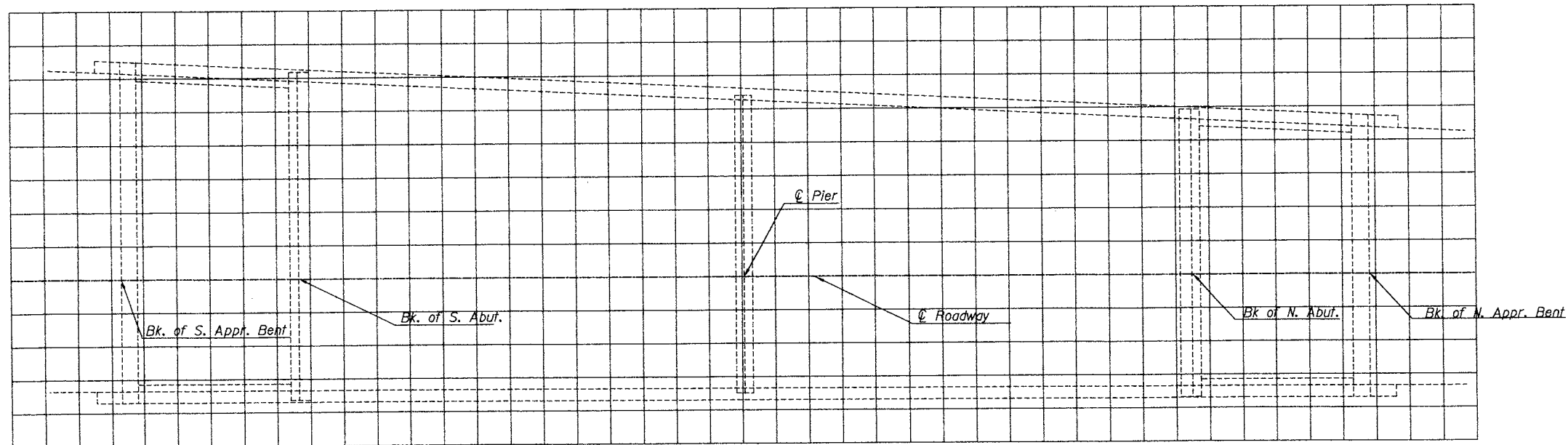


**CROSS-SECTION STAGE I**  
LOOKING SOUTH



**CROSS-SECTION STAGE II**  
LOOKING SOUTH

NOTE: For areas of required deck patching see sheet 4 of 12.



DESIGNED	JMW
CHECKED	RGD
DRAWN	WJH
CHECKED	NRF

**DECK SLAB REPAIR RECORD**  
SOUTHBOUND



NOTE: The Engineer shall mark the actual Deck Slab  
Repair areas above as part of the As-Built Plans.



REVISIONS	
NAME	DATE

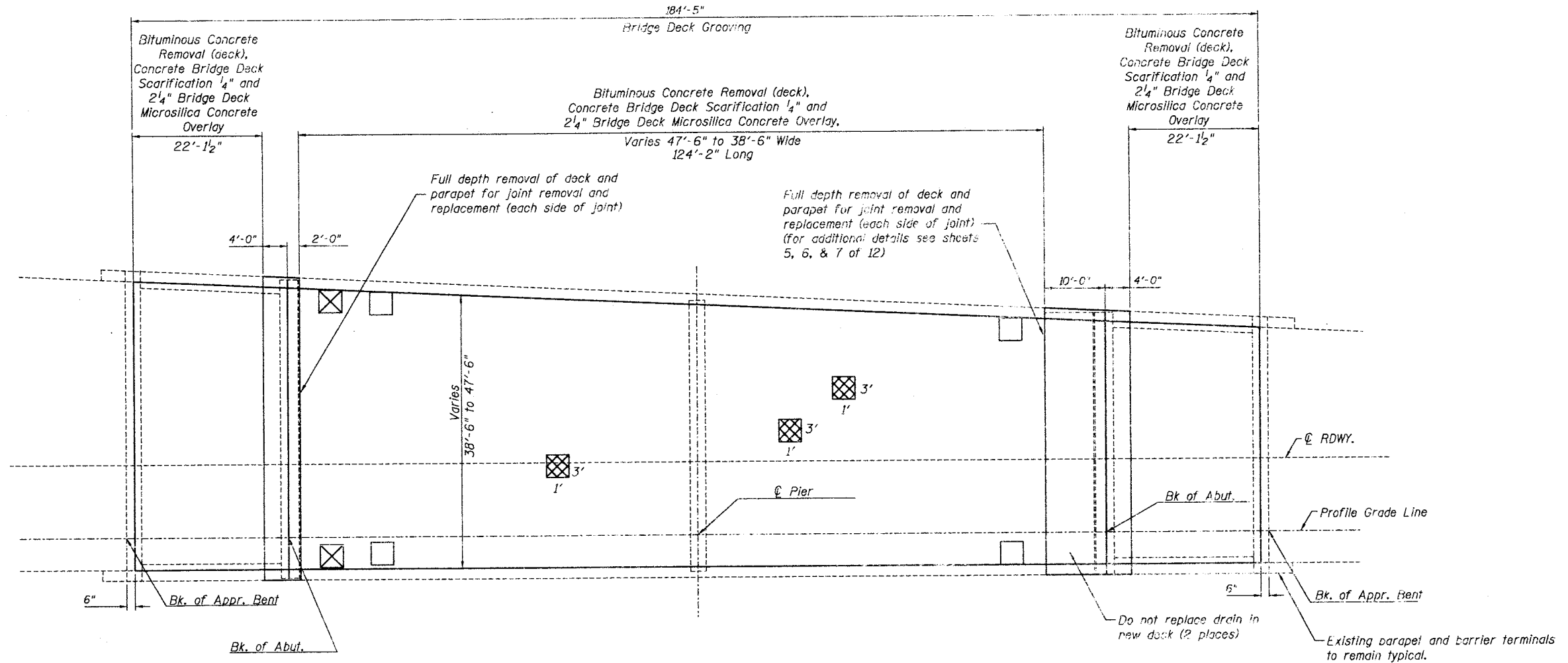
ILLINOIS DEPARTMENT OF TRANSPORTATION

Cross Section  
Staging Details & Deck Slab Repair  
Record  
S.N. 057-0152 (SB)

DATE 03-04-2002

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	DATE	SHEET NO.
55	157-157-2RS	McLean		12 SHEETS
FED. ROAD DIST. NO. 3		CLINCH	FED. AID PROJECT	

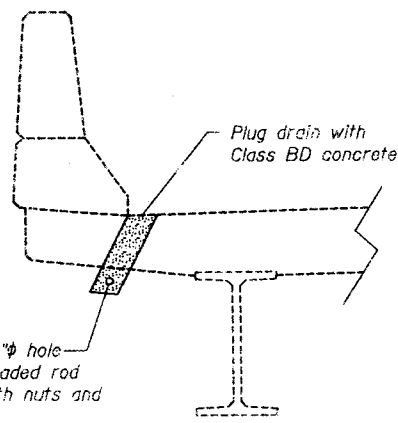


DECK SLAB REPAIR PLAN

- Deck Slab Repair (Partial Depth)
- Plug Existing Deck Drain
- Existing Deck Drain To Remain

**Note:**

The amount of patching quantities shown above are all results of infrared and ground penetrating radar survey performed on 3/01/01.



DRAIN ELIMINATION DETAIL

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Deck Slab Repair (Partial Depth)	Sq. Yds.	1
Bridge Deck Microsilica Concrete Overlay	Sq. Yds.	815
Bituminous Concrete Removal (Deck)	Sq. Yds.	895
Concrete Bridge Deck Scarification 1/4"	Sq. Yds.	815
Plug Existing Deck Drain	Each	2
Bridge Deck Grooving	Sq. Yds.	858

DESIGNED	JMW
CHECKED	RGD
DRAWN	WJH
CHECKED	NRF

SMITH ENGINEERING CONSULTANTS, INC. CIVIL/STRUCTURAL ENGINEERS LAW OFFICES	
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

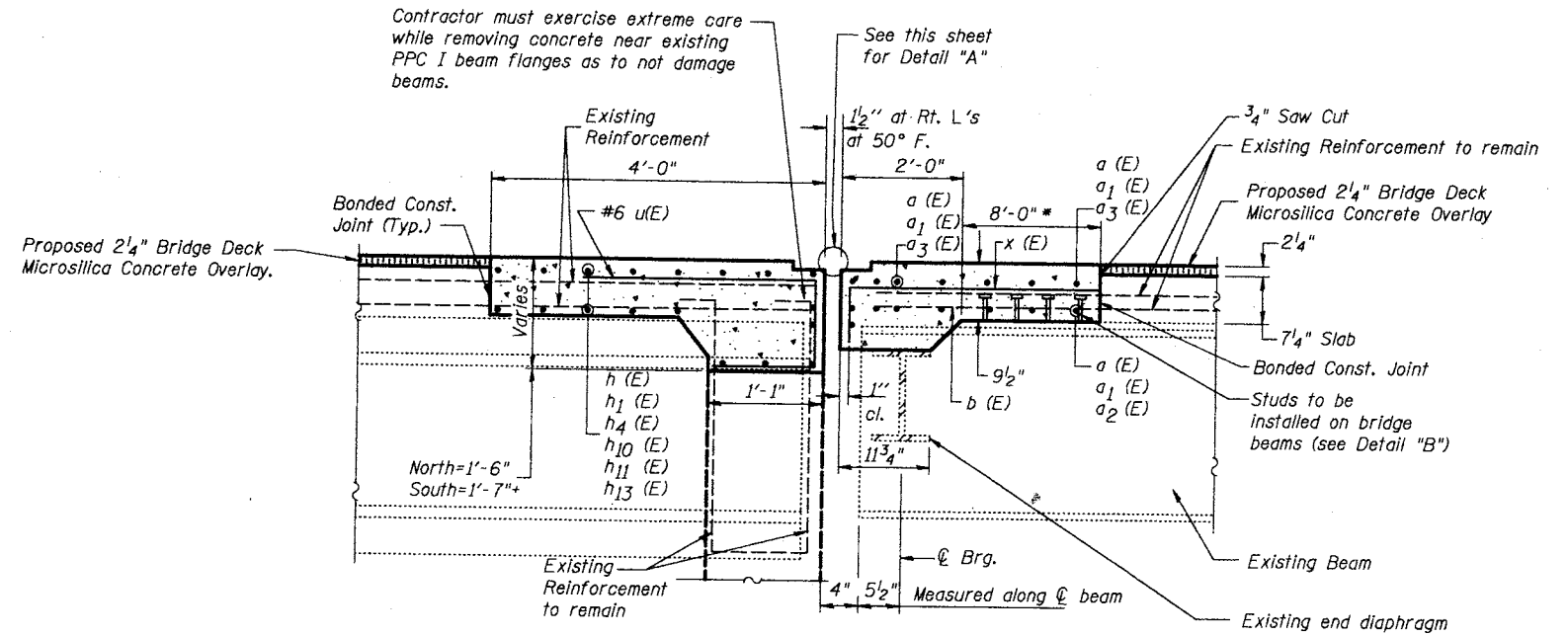
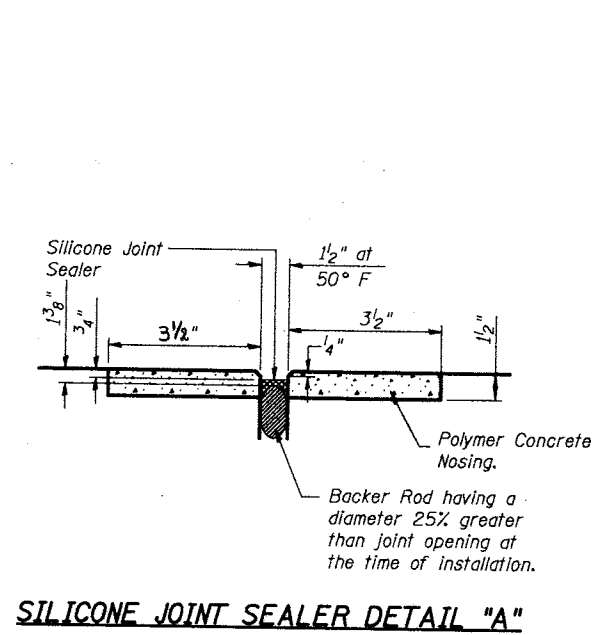
Deck Slab Repair and Drain Elimination Detail

S.N. 057-0152 (SB)

DATE 03-04-2002

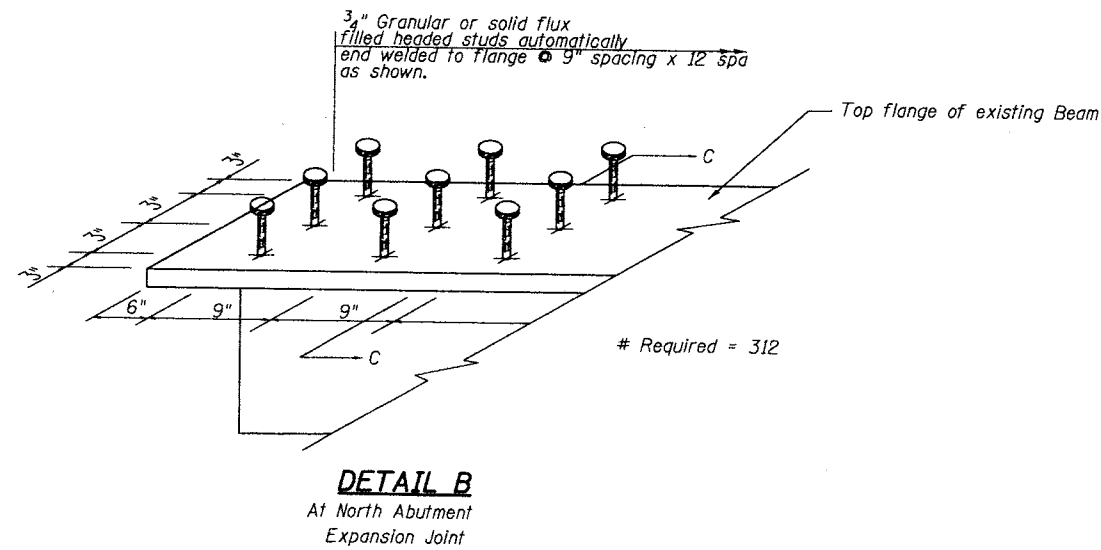
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
S.A.L. P.A. 55	(57-1,57-2)RS	McLean	103	5
SHEET NO. 5		12 SHEETS		



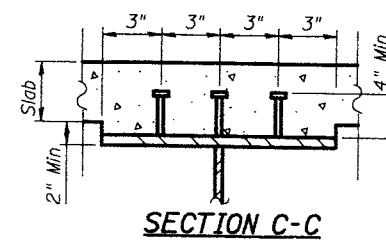
**SECTION A-A AT JOINT AND DECK REPLACEMENT**

\* Additional 8'-0" Repair occurs at North Abutment only, see sheet 4 of 12.



**BILL OF MATERIAL**

ITEM	UNIT	TOTAL
Stud Shear Connectors	Ea.	312
Silicone Joint Sealer, 1 1/2"	L.F.	93
Polymer Concrete	Cu. Ft.	6.3
Concrete Removal	Cu. Yds.	22
Concrete Superstructures	Cu. Yds.	28.2
Protective Coat	Sq. Yds.	105



DESIGNED	JMW
CHECKED	RGD
DRAWN	WJH
CHECKED	NRF

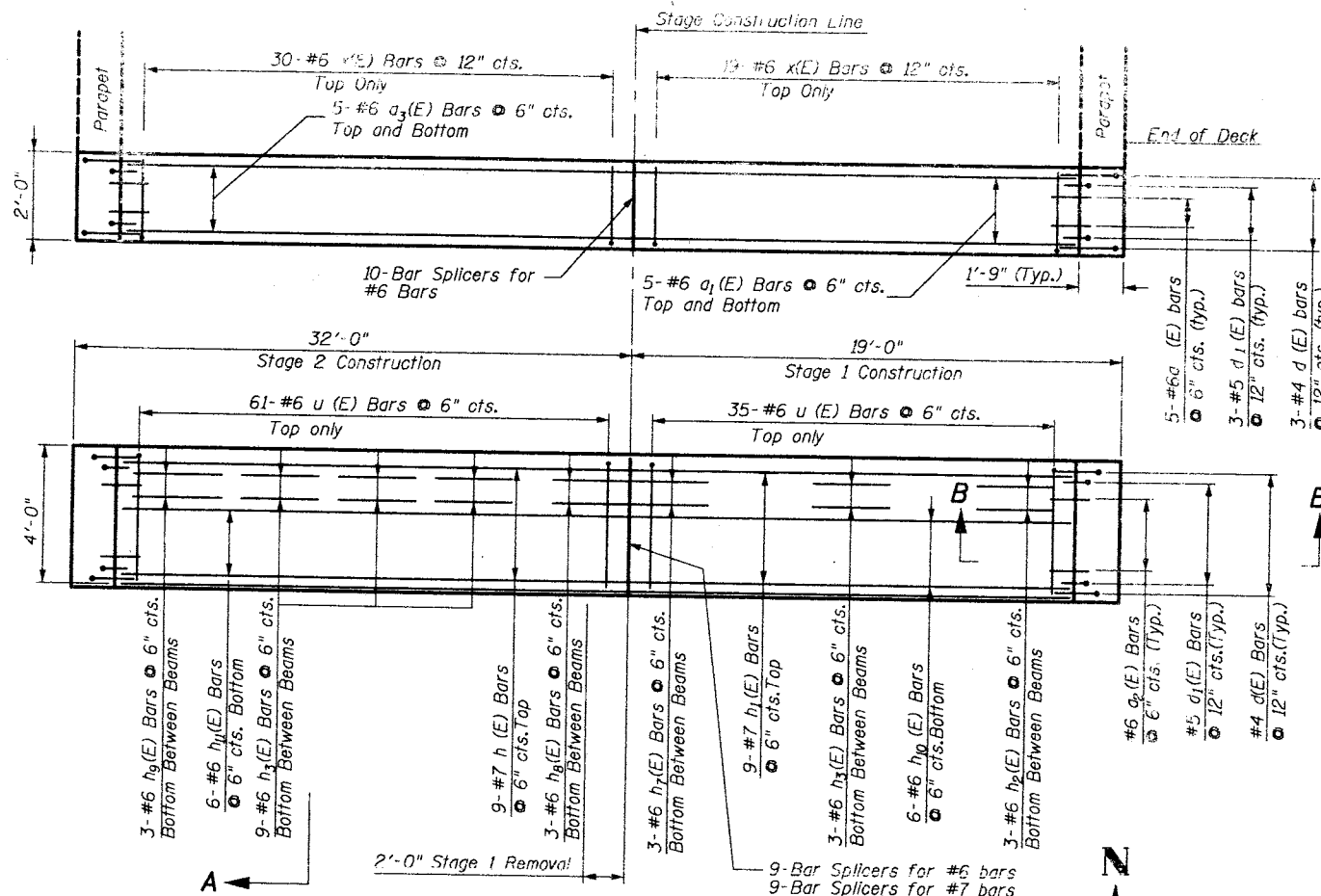
SMITH ENGINEERING CONSULTANTS, INC.	
CIVIL, MECHANICAL, ELECTRICAL AND HYDRAULIC ENGINEERS	
2000 W. BROADWAY, SUITE 200, CHICAGO, ILL. 60604	
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
Deck Separation Repair Details  
S.N. 057-0152 (SB)

DATE 03-04-2002

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	DATE	SHEET	SHEET NO. 6 12 SHEETS
55	(57-1,57-2RS)	McLean	10/8	10/8	
FED. ROAD DIST. NO. 3		ILL. HIGHWAY PROJECT			

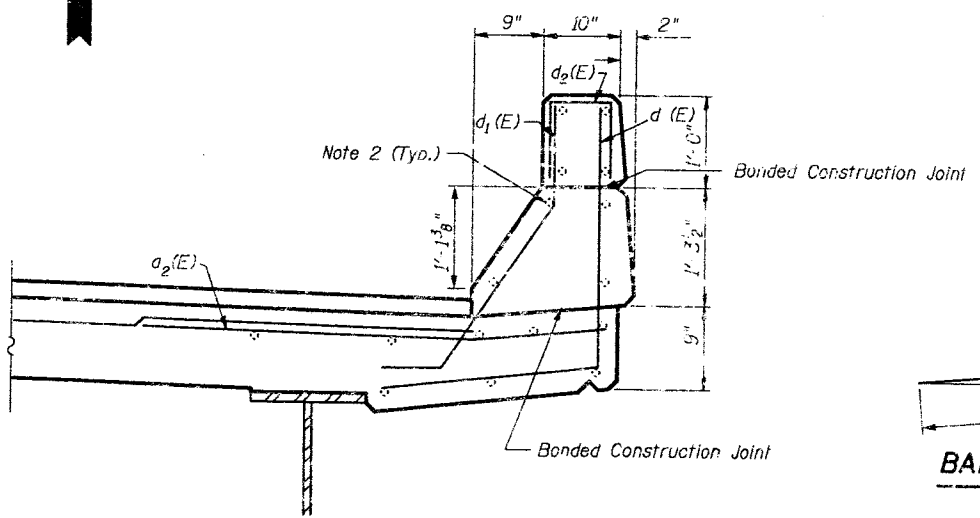


**PLAN AT SOUTH ABUTMENT**

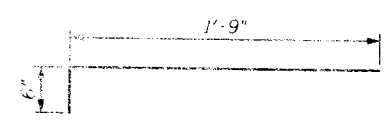
See Sheet 5 of 12 For Section A-A At Joint and Deck Replacement

**NOTES**

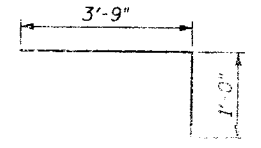
- The limits of all concrete removal shall be saw cut  $\frac{3}{4}$ " into concrete.
- Existing longitudinal bars in deck and vertical bars in abutment back wall extending into the removed area shall be cleaned, straightened and incorporated in the new construction.
- Existing parapet reinforcement extending into the removed area shall be cleaned, straightened, and incorporated into 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 and approach side as shown.
- The aluminum railing post shall be temporarily removed and re-erected in the areas of parapet removal. Cost included with Concrete Superstructure. Any portion of railing that is damaged during construction shall be replaced at the Contractor's expense. (See sheet 8 of 12 for details)
- Two (2)  $d_2(E)$  Bars shall be set in proposed parapet under each rail post.



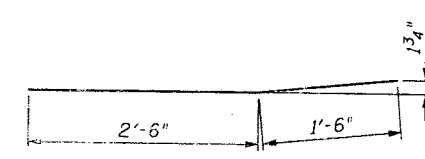
**SECTION B - B**



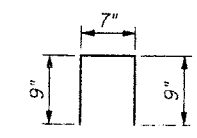
**BAR x (E)**



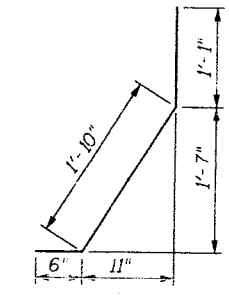
**BAR u (E)**



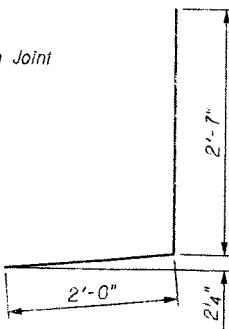
**BAR a2 (E)**



**BAR d2 (E)**



**BAR d1 (E)**



**BAR d (E)**

**BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
$a_1(E)$	10	#6	18'-0"	—
$a_2(E)$	28	#6	4'-0"	—
$a_3(E)$	10	#6	31'-0"	—
$d(E)$	16	#4	4'-7"	└
$d_1(E)$	16	#5	3'-5"	└
$d_2(E)$	8	#4	2'-1"	└
$h(E)$	9	#7	31'-0"	—
$h_1(E)$	9	#7	13'-0"	—
$h_2(E)$	3	#6	5'-6"	—
$h_3(E)$	12	#6	5'-9"	—
$h_7(E)$	3	#6	3'-2"	—
$h_8(E)$	3	#6	2'-5"	—
$h_9(E)$	3	#6	5'-8"	—
$h_{10}(E)$	6	#6	18'-0"	—
$h_{11}(E)$	6	#6	31'-0"	—
$u(E)$	96	#6	4'-9"	└
$x(E)$	49	#6	2'-3"	└
Reinforcement Bars (Epoxy Coated)	L.b.s.		3,570	

Reinforcement Bars designated (E) shall be epoxy coated

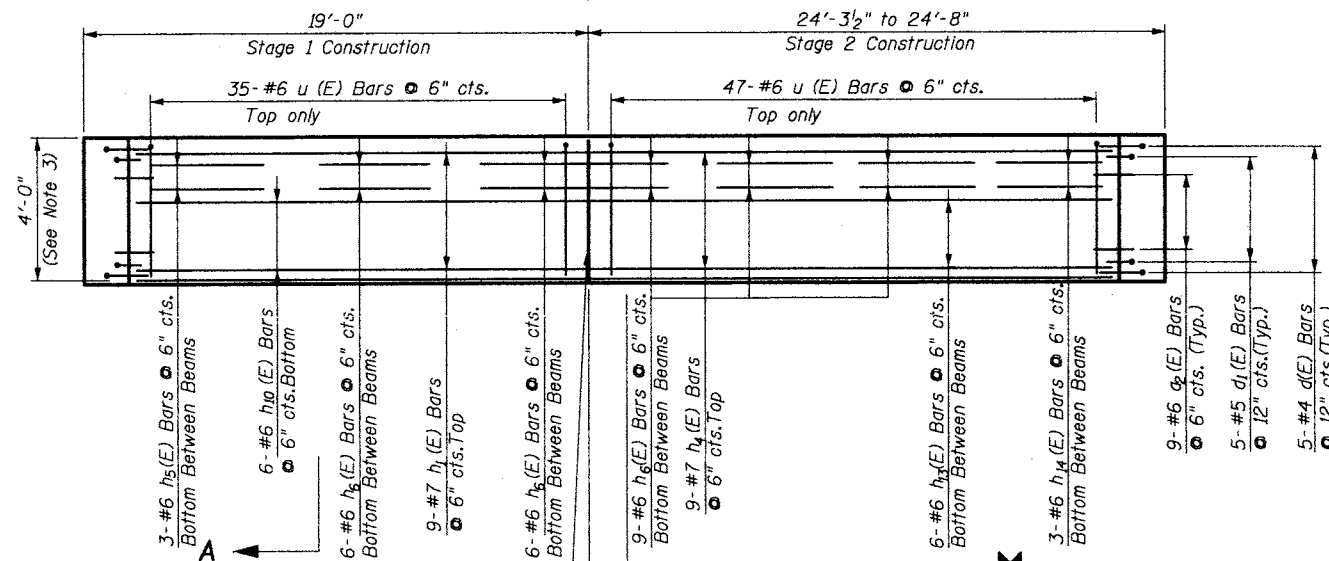
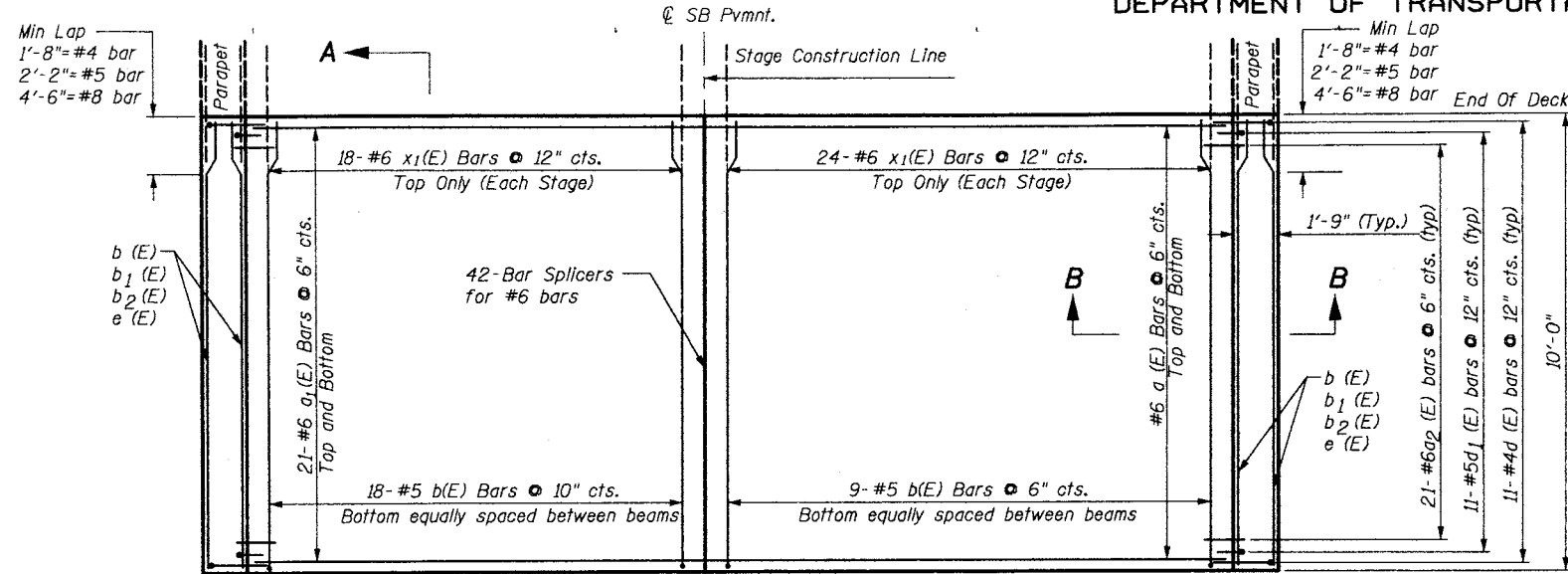
DESIGNED	JMW
CHECKED	RGD
DRAWN	WJH
CHECKED	NRF

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
Expansion Joint Replacement at South Abutment  
S.N. 057-0152 (SB)  
DATE 03-04-2002

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	DISTRICT	SHEET NO.
55	(57-1,57-2)RS	McLean		12 SHEETS
F.A.L.		ILLINOIS	FED. AID PROJECT	

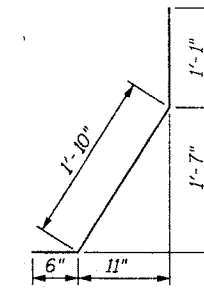


PLAN AT NORTH ABUTMENT

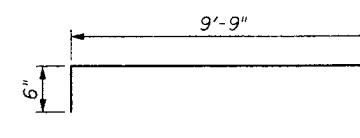
See Sheet 5 Of 12 For Section A-A At Joint and Deck Replacement

NOTES

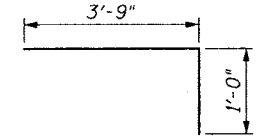
- The limits of all concrete removal shall be saw cut 3/4" into concrete.
- Existing vertical bars in abutment back wall extending into the removed area shall be cleaned, straightened and incorporated in the new construction.
- The removal and replacement of concrete at the abutment stem, parapet and deck will be paid for as concrete removal and concrete superstructure.
- The parapet shall be removed on the deck side and approach side as shown.
- The aluminum railing post shall be temporarily removed and re-erected in the areas of parapet removal. Cost included with Concrete Superstructure. Any portion of railing that is damaged during construction shall be replaced at the Contractor's expense. (See sheet 8 of 12 for details)
- Two (2)  $d(E)$  Bars shall be set in proposed parapet under each rail post.



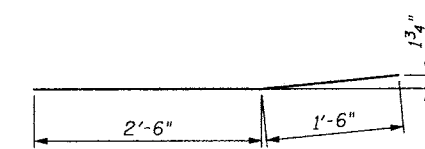
BAR  $d_1(E)$



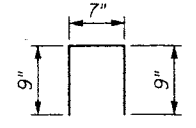
BAR  $x_1(E)$



BAR  $u(E)$



BAR  $a_2(E)$

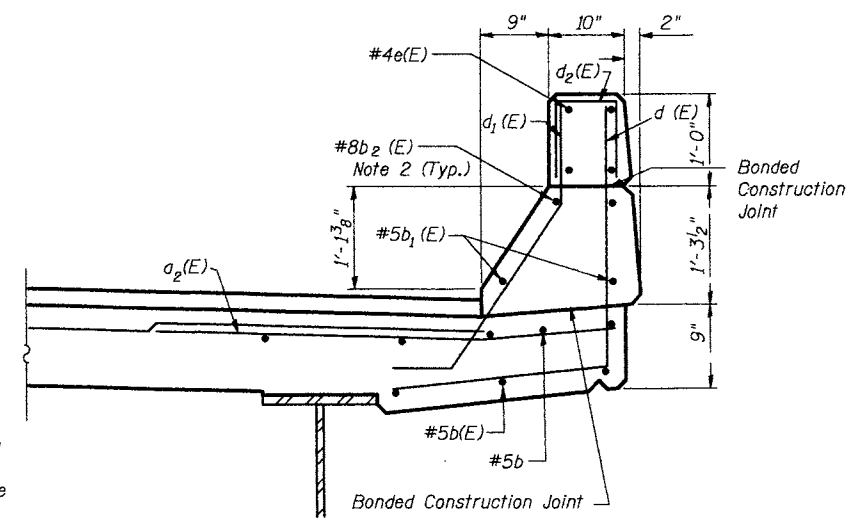


BAR  $d_2(E)$

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
$a(E)$	42	#6	23'-8"	—
$a_1(E)$	42	#6	18'-0"	—
$a_2(E)$	60	#6	4'-0"	—
$b(E)$	70	#5	9'-9"	—
$b_1(E)$	4	#5	9'-9"	—
$b_2(E)$	4	#8	9'-9"	—
$d(E)$	32	#4	4'-7"	└
$d_1(E)$	32	#5	3'-5"	└
$d_2(E)$	12	#4	2'-1"	└
$e(E)$	8	#4	9'-9"	—
$h_1(E)$	9	#7	18'-0"	—
$h_4(E)$	9	#7	23'-8"	—
$h_5(E)$	3	#6	4'-4"	—
$h_6(E)$	15	#6	4'-7"	—
$h_{10}(E)$	6	#6	18'-0"	—
$h_{13}(E)$	6	#6	23'-8"	—
$h_{14}(E)$	3	#6	4'-11"	—
$u(E)$	82	#6	4'-9"	└
$x_1(E)$	42	#6	10'-3"	└
Reinforcement Bars (Epoxy Coated)		L.b.s.	6,650	

Reinforcement Bars designated (E) shall be epoxy coated



SECTION B - B

DESIGNED	JMW
CHECKED	RGD
DRAWN	WJH
CHECKED	NRF

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
Expansion Joint Replacement at North Abutment  
S.N. 057-0152 (SB)

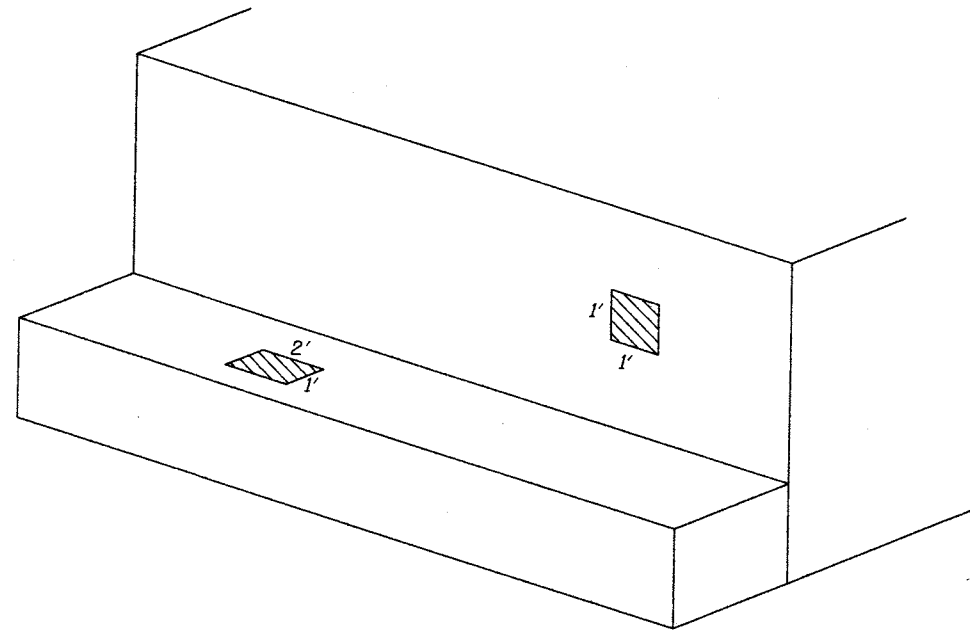




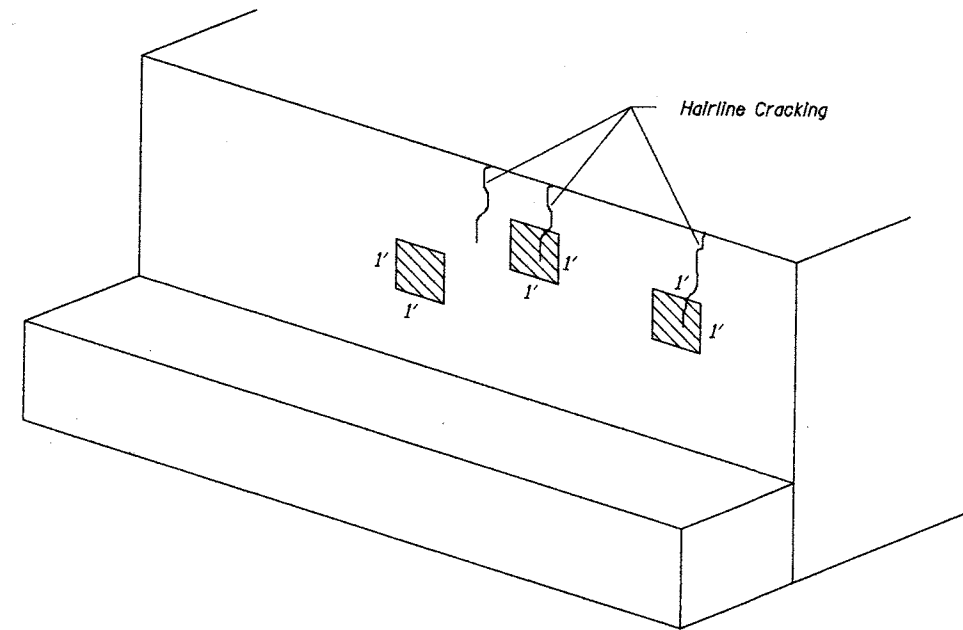
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
S.B.L. P.A. 55	(57-1,57-2)RS	McLean		9
FED. ROAD DIST. NO. 3		ILLINOIS	FED. AID PROJECT	

12 SHEETS



BACKWALL & ABUTMENT CAP  
NORTH ABUTMENT



BACKWALL & ABUTMENT CAP  
SOUTH ABUTMENT

LEGEND

Formed Concrete Repair ( $\leq 5"$ )

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Formed Concrete Repair ( $\leq 5"$ )	Sq. Ft.	6

DESIGNED	JMW
CHECKED	RGD
DRAWN	WJH
CHECKED	NRF

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2625 North Lincoln Street, Chicago, IL 60614

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

Substructure Repair

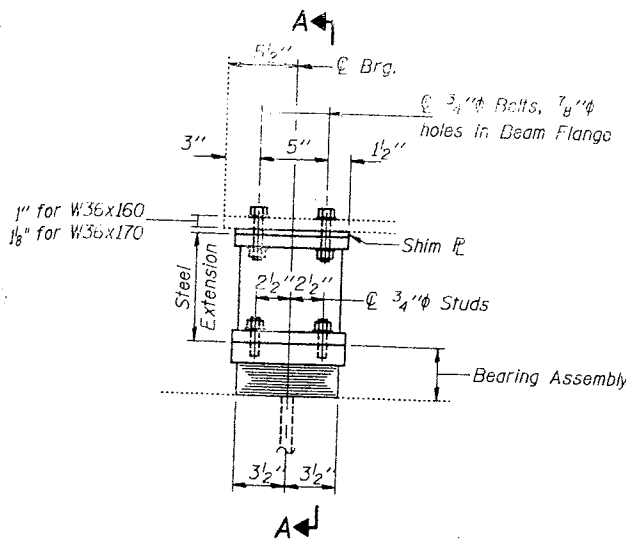
S.N. 057-0152 (SB)

DATE 03-04-2002

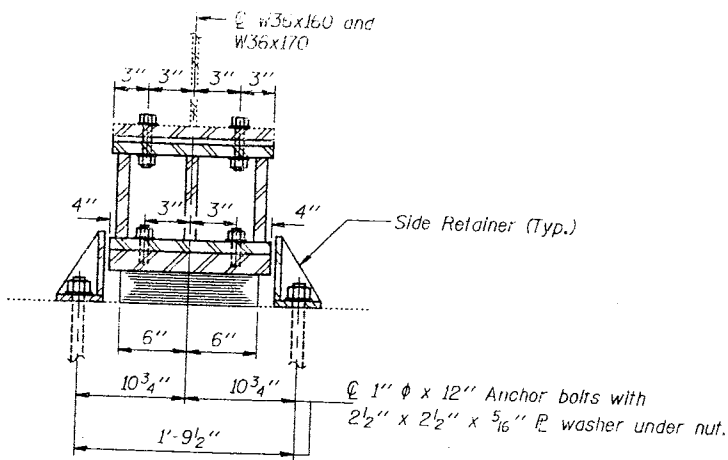
GIRDER REACTIONS

RP	0.1	20.2
RI	0.1	36.6
Imp.	0.1	10.2
W. Br.	0.1	15

DATE	SOLUTION	QUANTITY	UNIT	PRICE
55	(57-1,57-2)RS	McLagan	305	118
FED. ROAD DIST. NO. 3		ILLINOIS	FED. AID PROJECT	

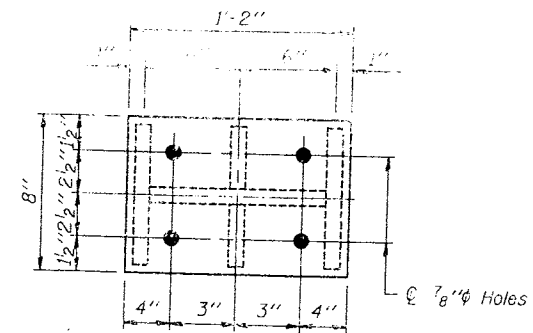


ELEVATION AT SOUTH ABUTMENT



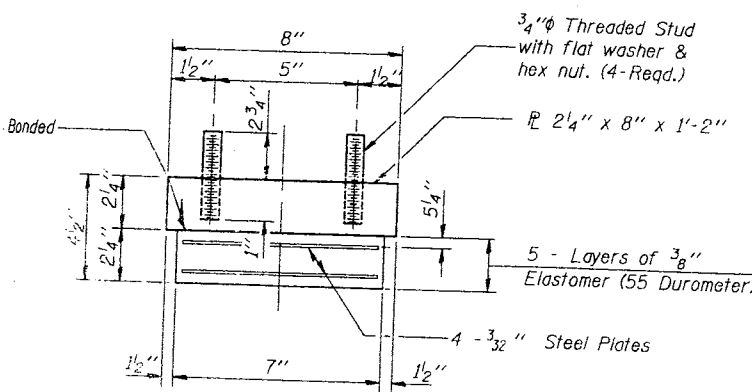
SECTION A-A

Notes: Diephrog 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 P's, connection bolts, and anchor bolts are included in Furnishing and Erecting Structural Steel.  
See Sheet 11 of 12 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 - 38 Tons.



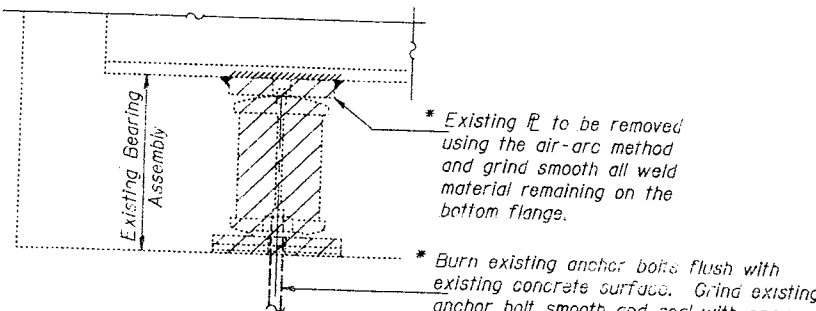
PLAN TOP AND BOTTOM PLATE

TYPE I ELASTOMERIC EXP. BRG.

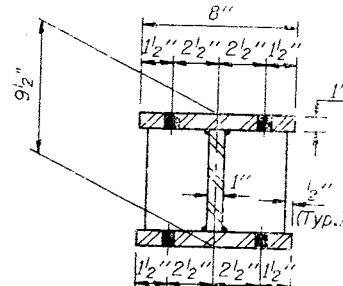


BEARING ASSEMBLY

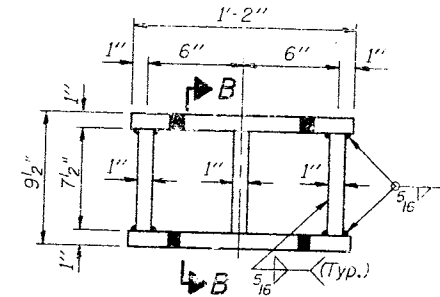
Note: Shim plates shall not be placed under Bearing Assembly.



EXISTING BEARING REMOVAL DETAIL



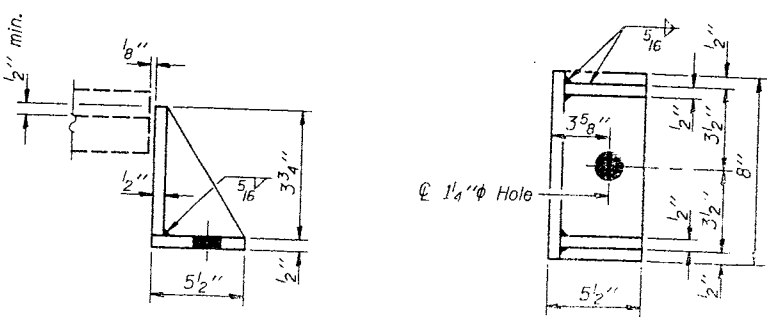
SECTION B-B



STEEL EXTENSION DETAIL

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

\*\* Girder designation is from East to West



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	16
Jack and Remove Existing Bearing	Each	16
Furnishing and Erecting Structural Steel	Lbs.	3,090

DESIGNED	JMW
CHECKED	RGD
DRAWN	WJH
CHECKED	NRF

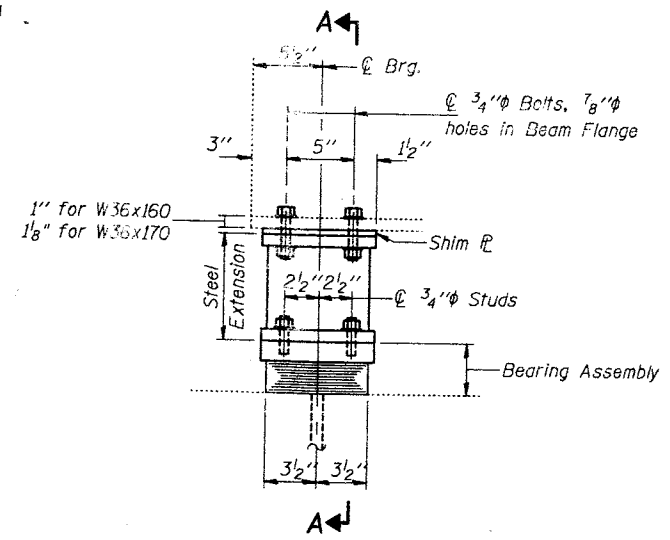
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
North & South Abutments  
Bearing  
S.N. 057-0152 (SB)

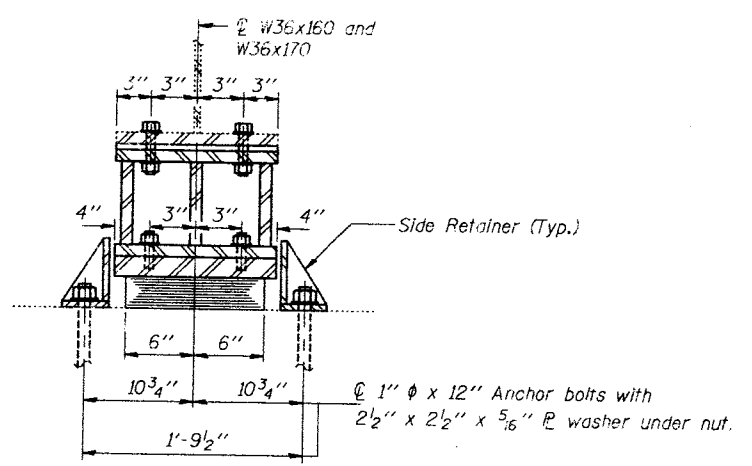
**GIRDER REACTIONS**

RP	(K)	26.2
R1	(K)	38.6
JMB	(K)	10.2
R (34)	(K)	75

ROUTE NO.	ACTION	JOINT	DATE	BY	SHEET NO. 10 12 SHEETS
55	(57-1,57-2)RS	McLean	3/05	113	
FED. ROAD DIST. NO. 3	ALLIANCE	FED. AID PROJECT			

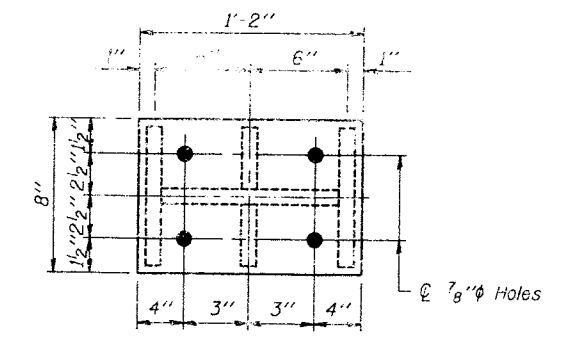


**ELEVATION AT SOUTH ABUTMENT**



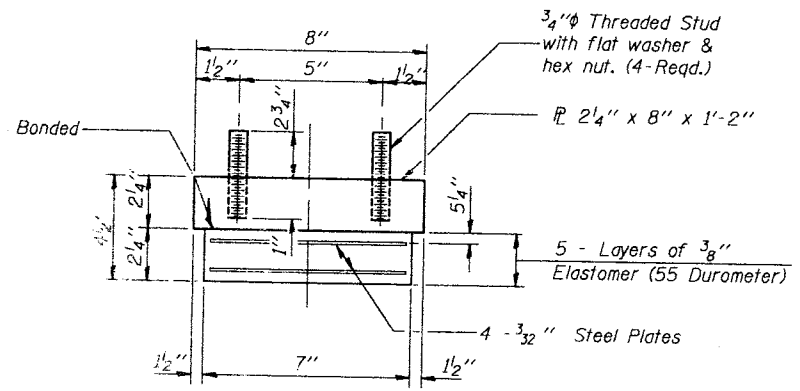
**SECTION A-A**

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 P's, connection bolts, and anchor bolts are included in Furnishing and Erecting Structural Steel.  
See Sheet 11 of 12 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 = 75 Tons.



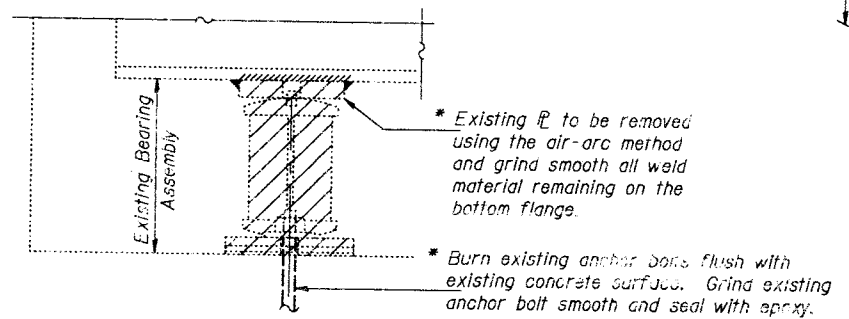
**PLAN TOP AND BOTTOM PLATE**

**TYPE I ELASTOMERIC EXP. BRG.**

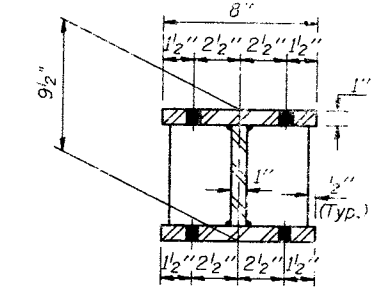


**BEARING ASSEMBLY**

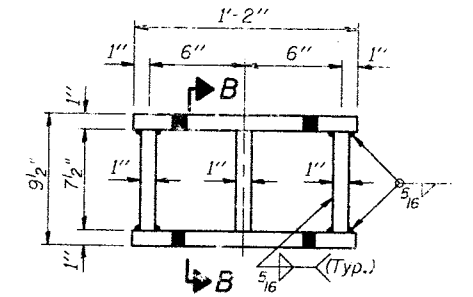
Note: Shim plates shall not be placed under Bearing Assembly.



**EXISTING BEARING REMOVAL DETAIL**



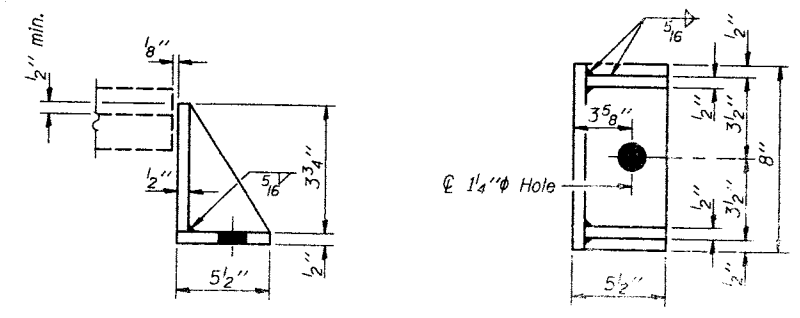
**SECTION B-B**



**STEEL EXTENSION DETAIL**

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

\*\* Girder designation is from East to West



**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	15
Jack and Remove Existing Bearing	Each	15
Furnishing and Erecting Structural Steel	Lbs.	3,090

DESIGNED	JMW
CHECKED	RGD
DRAWN	WJH
CHECKED	NRF

SMITH ENGINEERING CONSULTANTS, INC.	
ILLINOIS PROFESSIONAL ENGINEER AND SURVEYOR	
REVISIONS	
NAME	DATE

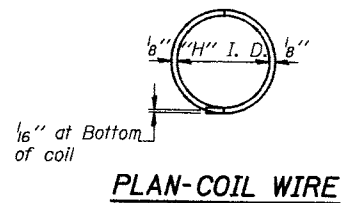
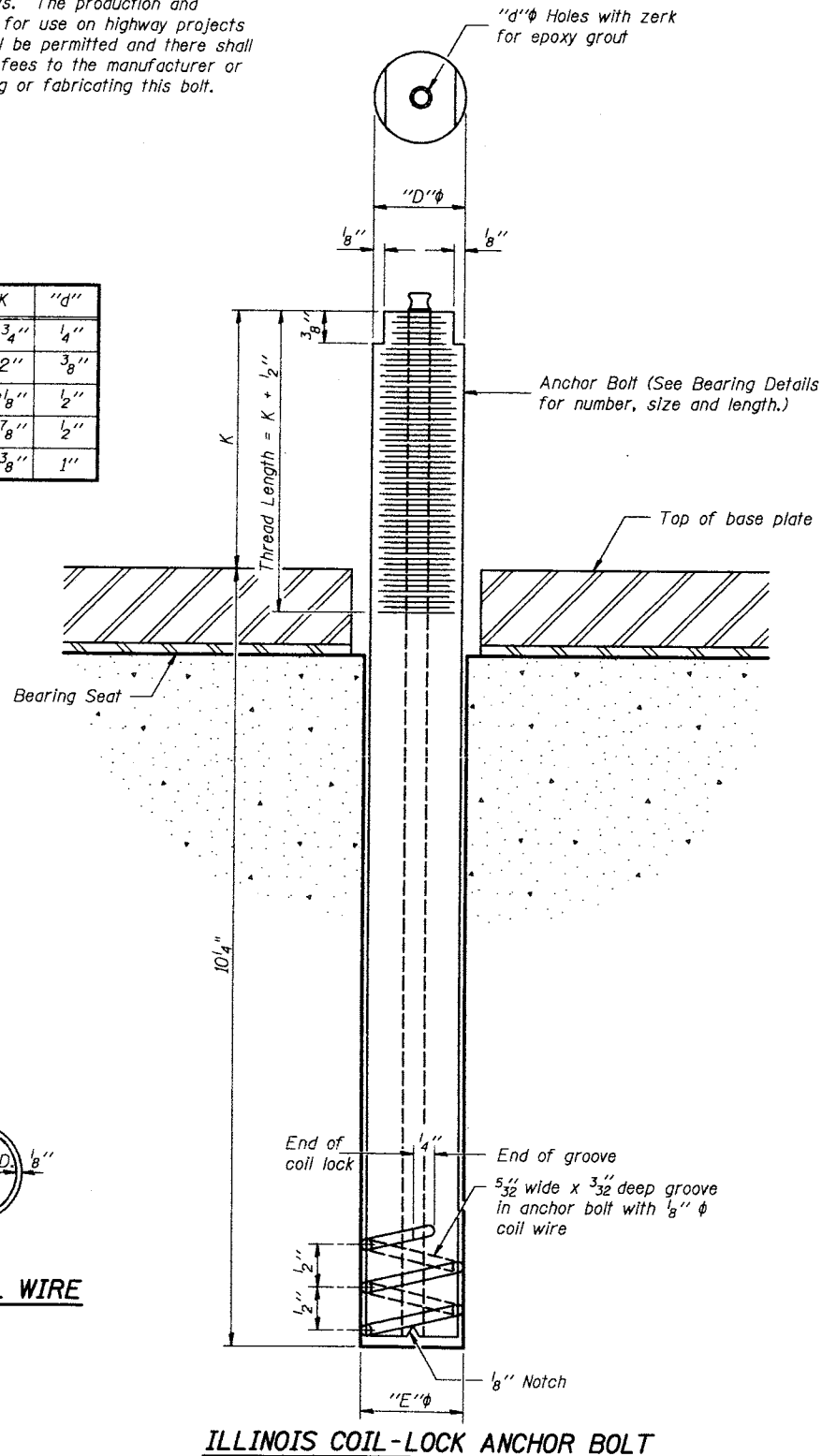
ILLINOIS DEPARTMENT OF TRANSPORTATION  
North & South Abutments Bearing  
S.N. 057-0152 (SB)

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	(57-1,57-2)RS	McLean		11
F.A. 55		ILLINOIS	FED. AID PROJECT	12 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	JMW
CHECKED	RGD
DRAWN	WJH
CHECKED	NRF

ABB-1 4-30-99

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REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

Anchor Bolt Details  
For Bearings

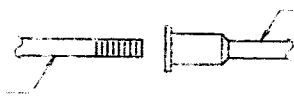
S.N. 057-0152 (SB)

DATE 03-04-2002

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

STATE NO.	SECTION	COUNTY	SHEET	SHEET	SHEET NO. 12
55	(57-1,57-2)RS	McLean	303	11	12 SHEETS
FED. ROAD DIST. NO. 3	ILLINOIS	FED. AID PROJECT			

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



ROLLED THREAD DOWEL BAR

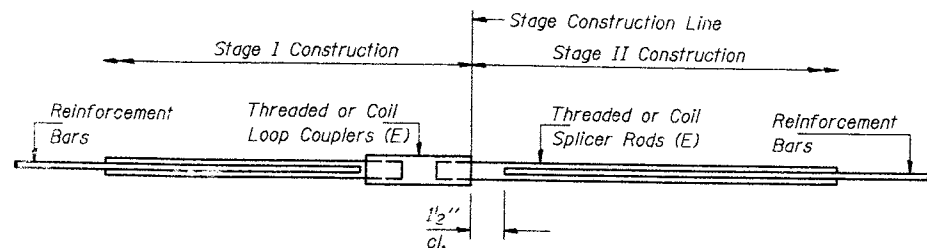


\*\* ONE PIECE

Wire Connector



WELDED SECTIONS

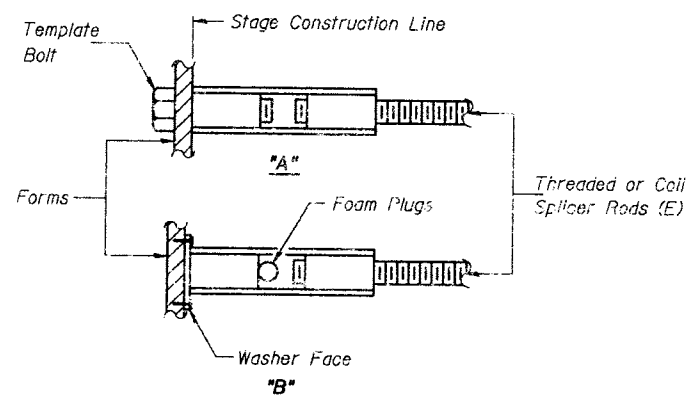


SPLICER DETAIL

Bar Size	No. Assemblies Required	Location
#6	67	Abutments
#7	18	Abutments

BAR SPLICER ASSEMBLY ALTERNATIVES

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

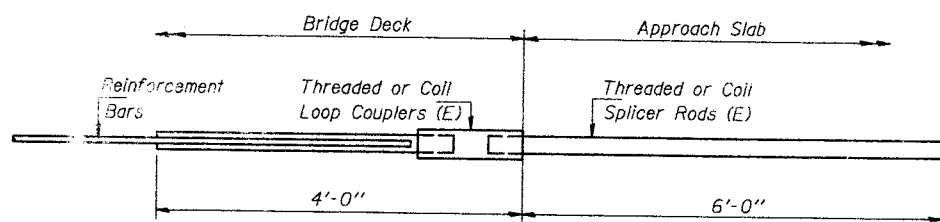


INSTALLATION AND SETTING METHODS

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

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)

$A_t$  = 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	13.7
#7	3'-5"	45.1	18.0
#8	4'-6"	58.9	23.8

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	JMW
CHECKED	RGD
DRAWN	WJH
CHECKED	NRF

BSD-1 4-30-99

SMITH ENGINEERING CONSULTANTS, INC. CIVIL/STRUCTURAL ENGINEERS 1401 WEST 10TH STREET MILWAUKEE, WISCONSIN 53233 www.smith-engineering.com	
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

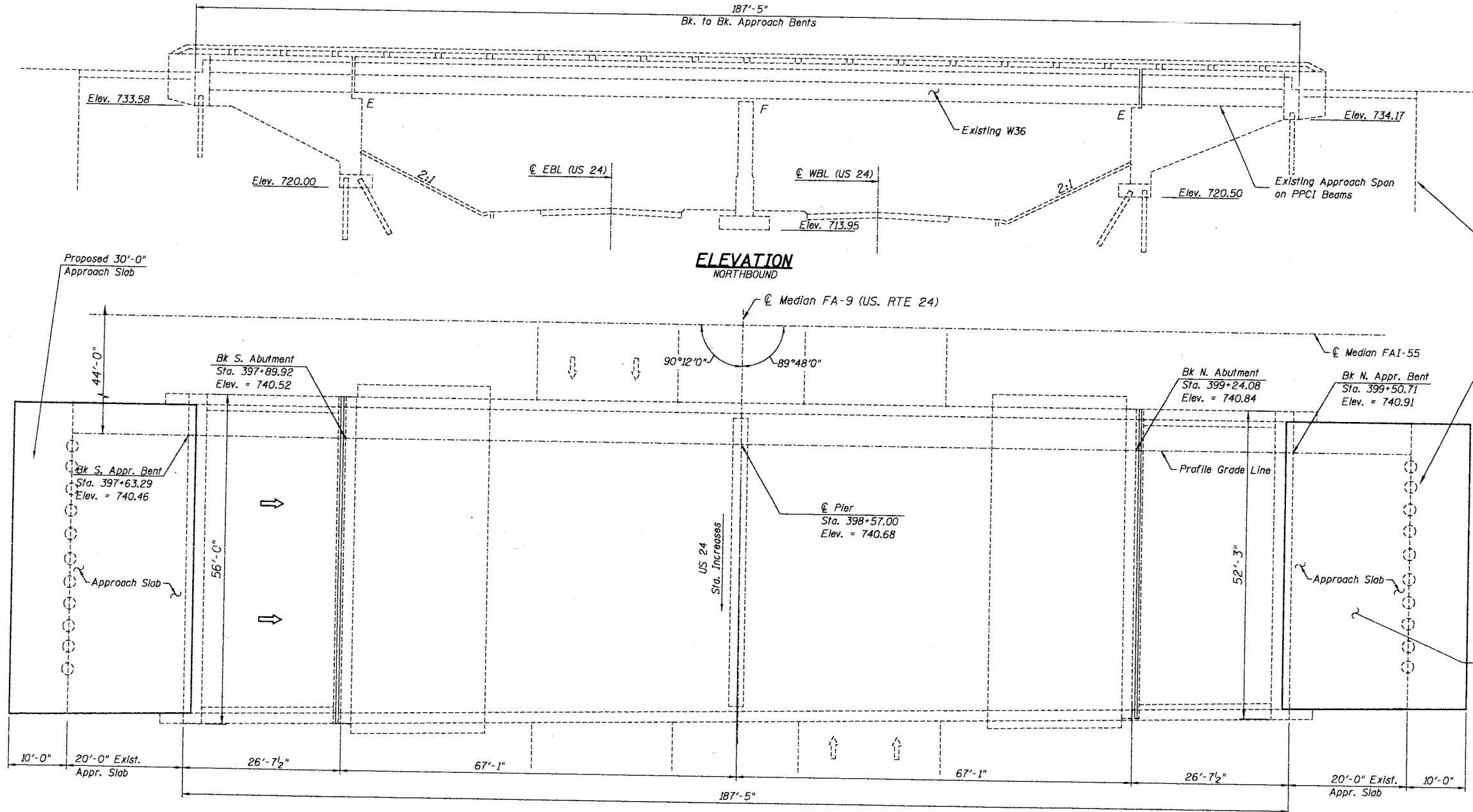
Bar Splicer  
Assembly Detail  
S.N. 057-0152 (SB)

DATE 03-04-2002

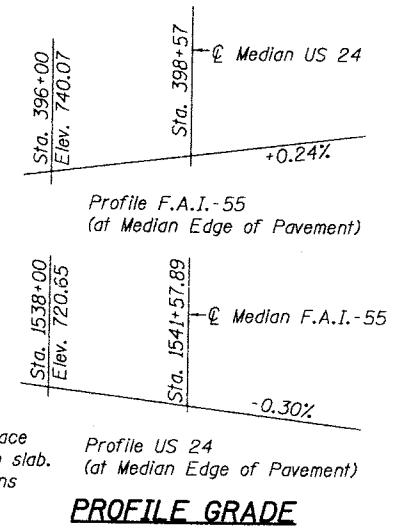
BM Z-846 = Standard C. & G.S. Disk  
126' West of Pt. 25  
Elev. 719.00

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOWNSHIP	SHEET	SHEET NO.
55	157-1,57-2RS	McLean	205	115	12 SHEETS



Existing timber approach piles.  
Cut-off and remove 2'-0" below  
bottom of proposed approach  
pavement (cast to be included with  
Approach Slab Removal)  
Typical 21 places.



Remove and Replace  
existing approach slab.  
See Roadway Plans  
for details.

PROFILE GRADE



PLAN  
NORTHBOUND

PROPOSED WORK

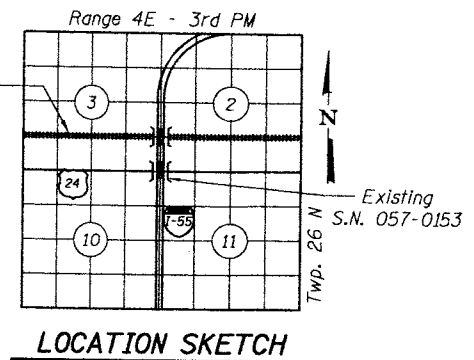
- Remove Existing Bituminous Overlay and Waterproofing Membrane.
- Deck Repair.
- Place Microsilica Overlay
- Replace Abutment Expansion Joints.
- Replace Expansion Bearings with Elastomeric Bearings.
- Plug Existing Floor Drains.

DESIGN STRESSES (ORIGINAL CONSTRUCTION)

- FIELD UNITS
- $f_c = 1,400$  psi
  - $f_s = 20,000$  psi (reinforcement)
  - $f_s = 20,000$  psi (struc. A-36)
  - $n = 10$
  - $V_c = 75$  psi ftgs.
  - $f_c = 1,200$  psi (deck slab)
- PRE-CAST - PRESTRESSED UNITS
- $f'_c = 5,000$  psi
  - $f'_c = 4,000$  psi
  - $f'_s = 248,000$  psi
  - $f'_s = 173,600$  psi

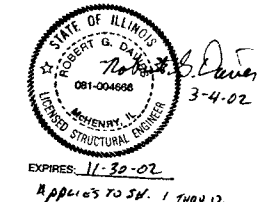
HIGHWAY CLASSIFICATION

F.A.I. Rte 55 over F.A. 9 (US Rte 24)  
Functional Class: Interstate  
ADT: 12350 (1999); 24050 (2022)  
Design Speed: 70 m.p.h.  
Posted Speed: 65 m.p.h.



LOCATION SKETCH

DESIGNED	JMW
CHECKED	RGD
DRAWN	W.J.H.
CHECKED	NRF



REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
General Plan  
F.A.I. 55 over F.A. 9 (US 24)  
Section (57-1, 57-2) RS  
McLean County  
Sta. 398+57.00  
S.N. 057-0153 (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	12	2
FED. ROAD DIST. NO. 5		ILLINOIS	FED. AID PROJECT	

**GENERAL NOTES**

- All structural steel shall conform to AASHTO Classification M-270 Gr. 36 unless otherwise noted.
- All new structural steel shall be shop primed with inorganic zinc rich primer per AASHTO M300, Type I. 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" & open holes 1/8" & unless otherwise noted.
- Existing reinforcement bars extending into the removal area shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system. Cost included with Concrete Removal.
- Existing structural steel shall only be cleaned as required by the Special Provision "Cleaning and Painting Adjacent Areas of Existing Steel Structures".

**TOTAL BILL OF MATERIAL**

ITEM	UNIT	SUPER	SUB	TOTAL
Concrete Removal	Cu. Yds.	17		17
Concrete Superstructures	Cu. Yds.	23		23
Concrete Bridge Deck Scarification 1/4"	Sq. Yds.	982		982
Bar Splicers	Each	50		50
Reinforcement Bars, Epoxy Coated	Lbs.	7,220		7,220
Silicone Joint Sealer, 1/2"	Foot	109		109
Plug Existing Deck Drains	Each	4		4
Formed Concrete Repair (< 5")	Sq. Ft.		2	2
Furnishing and Erecting Structural Steel	Lbs.	3,480		3,480
Jack and Remove Existing Bearings	Each	18		18
Elastomeric Bearing Assembly, Type I	Each	18		18
Bridge Deck Microsilica Concrete Overlay	Sq. Yds.	982		982
Bituminous Concrete Removal (Deck)	Sq. Yds.	1,054		1,054
Deck Slab Repair (Partial Depth)	Sq. Yds.	5		5
Polymer Concrete	Cu. Ft.	7.4		7.4
Bridge Deck Grooving	Sq. Yds.	1007		1007
Protective Coat	Sq. Ft.	105		105

DESIGNED	JMW
CHECKED	RGD
DRAWN	WJH
CHECKED	NRF

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REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
  
Total Bill of Materials  
&  
General Notes  
S.N. 057-0153 (NB)  
  
DATE 03-04-2002

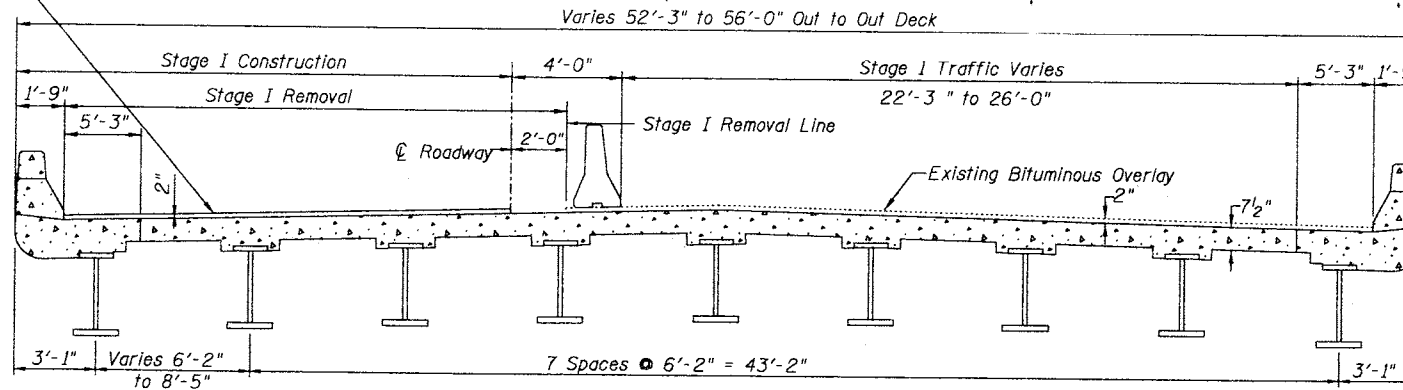


STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET
55	(57-1,57-2RS)	McLean	305	12
F.A. 55		ILL. HIGHWAY PROJECT		ILL. HIGHWAY PROJECT

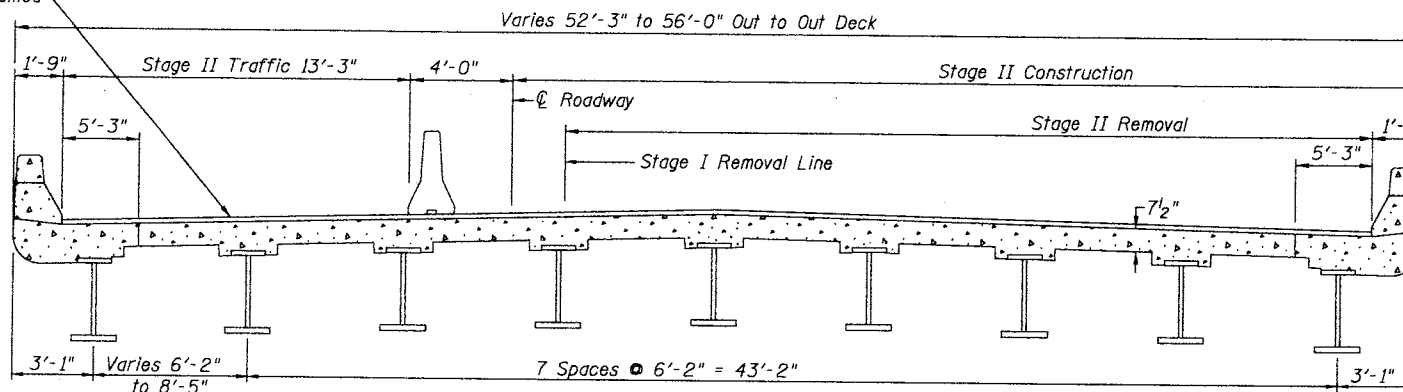
SHEET NO. 3  
12 SHEETS

Bituminous Concrete Removal (deck)  
Concrete Bridge Deck Scarification 1/4"  
and Proposed 2 1/4" Bridge Deck Microsilica  
Concrete Overlay.  
Bridge Deck Grooving



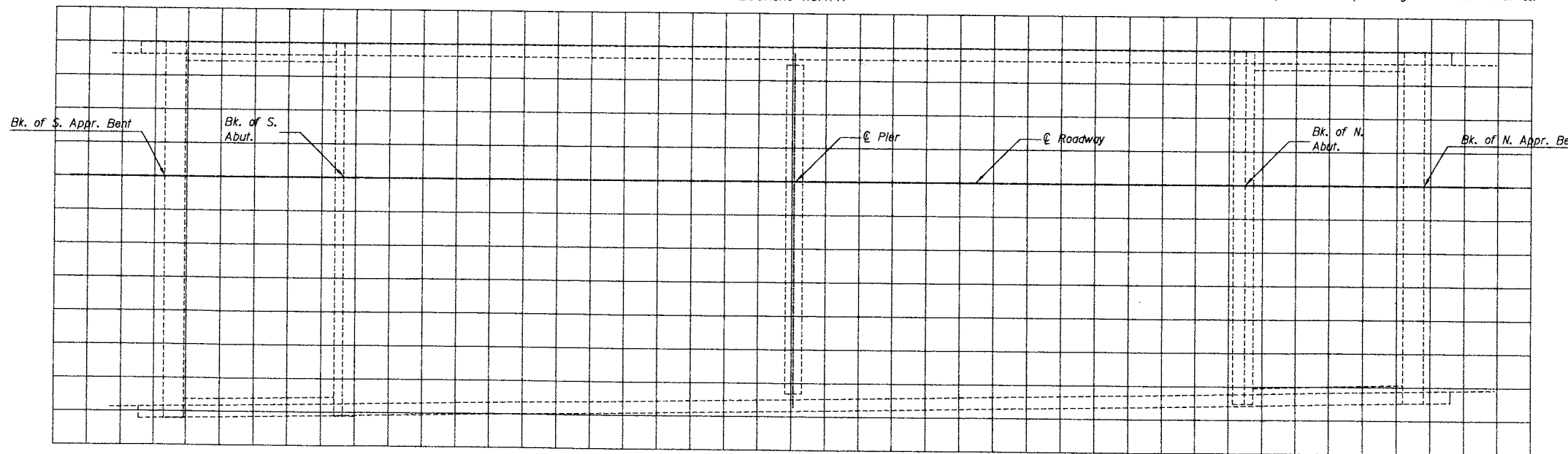
**CROSS-SECTION STAGE I**  
LOOKING NORTH

Bituminous Concrete Removal (deck)  
Concrete Bridge Deck Scarification 1/4"  
and Proposed 2 1/4" Bridge Deck Microsilica  
Concrete Overlay.  
Bridge Deck Grooving



**CROSS-SECTION STAGE II**  
LOOKING NORTH

NOTE: For areas of required deck patching see sheet 4 of 11.



DESIGNED	JMW
CHECKED	RGD
DRAWN	WJH
CHECKED	NRF

**DECK SLAB REPAIR RECORD**  
NORTHBOUND

NOTE: The Engineer shall mark the actual Deck Slab  
Repair Areas as part of the As-Built Plans.



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NAME	DATE

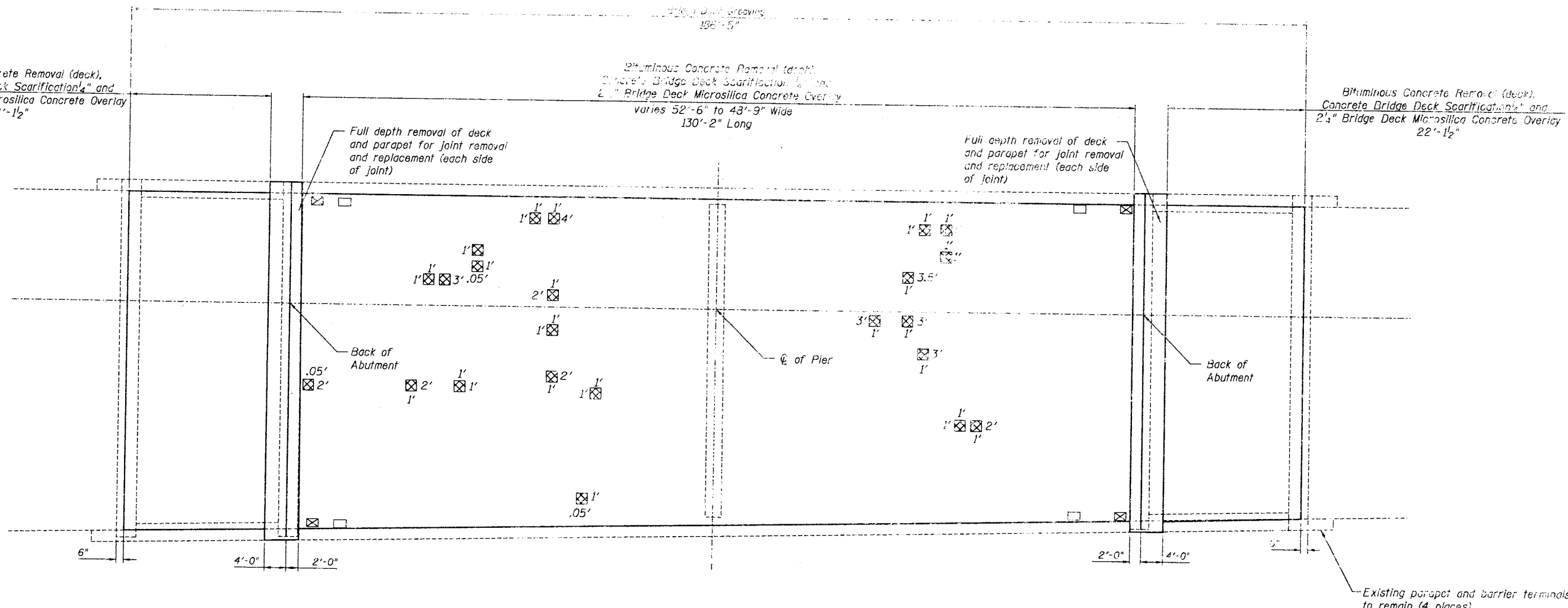
ILLINOIS DEPARTMENT OF TRANSPORTATION  
Cross Section  
Staging Detail & Deck Slab Repair  
Record  
S.N. 057-0153 (NB)

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	205	118
FED. ROAD DIST. NO. 3	ILLINOIS	FED. AID PROJECT		

SHEET NO. 4  
12 SHEETS



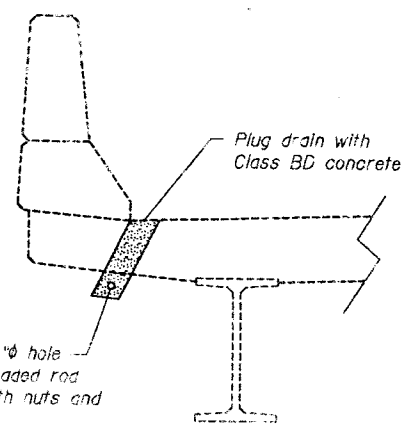
DECK SLAB REPAIR PLAN

LEGEND

- Deck Slab Repair (Partial Depth)
- Plug Existing Deck Drain
- Existing Deck Drain To Remain

Note:

The amount of patching quantities shown above are all results of infrared and ground penetrating radar survey performed on 6/22/99. Visual inspection of deck surface done in 07/2001.



DRAIN ELIMINATION DETAIL

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Bridge Deck Microsilica Concrete Overlay	Sq. Yds.	982
Deck Slab Repair (partial Depth)	Sq. Yds.	5
Bituminous Concrete Removal (Deck)	Sq. Yds.	1,054
Concrete Bridge Deck Scarification 1/4"	Sq. Yds.	982
Plug Existing Deck Drain	Each	4
Bridge Deck Grooving	Sq. Yds.	1007

DESIGNED	JMW
CHECKED	RGD
DRAWN	WJH
CHECKED	NRF

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ILLINOIS DEPARTMENT OF TRANSPORTATION

Deck Slab Repair and Drain Elimination Detail

S.N. 057-0153 (NB)

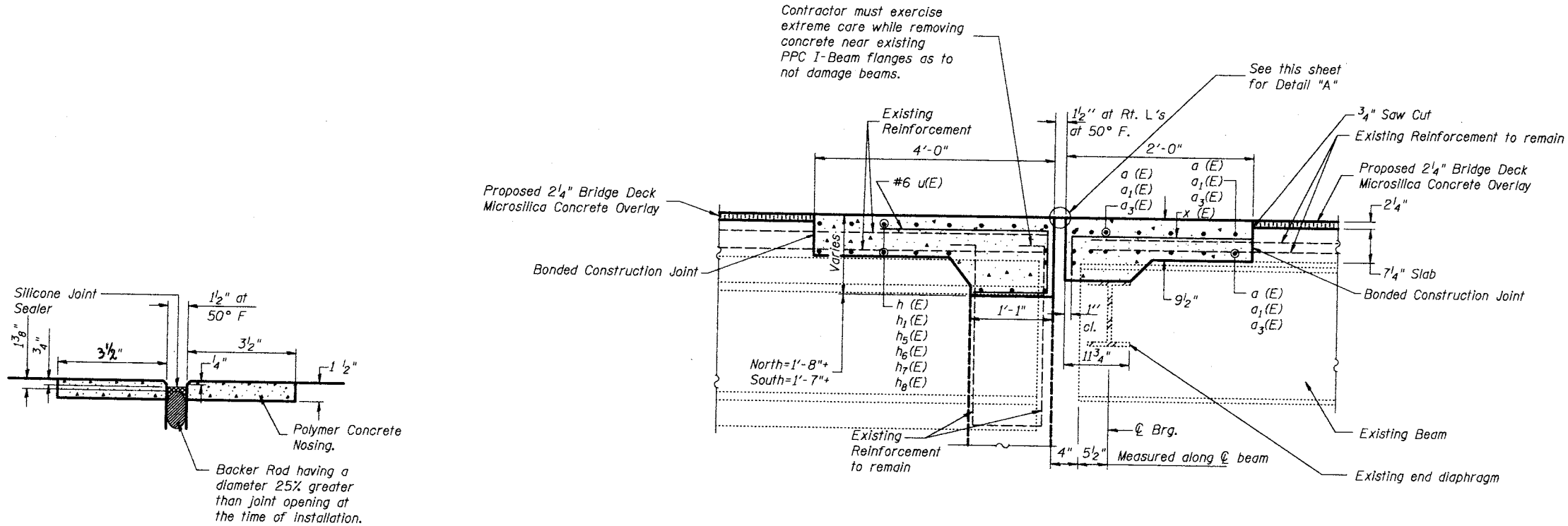
DATE 03-04-2002

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET
P.A. 55	157-1,57-2RS	McLean		5
ILLINOIS		FED. AID PROJECT		

SHEET NO. 5

12 SHEETS



**SILICONE JOINT SEALER DETAIL "A"**

**SECTION A-A AT JOINT AND DECK REPLACEMENT**

**BILL OF MATERIAL**

ITEM	UNIT	TOTAL
Silicone Joint Sealer 1 1/2"	Foot	109
Polymer Concrete	Cu. Ft.	7.4
Concrete Removal	Cu. Yds.	17
Concrete Superstructures	Cu. Yds.	23
Protective Coat	Sq. Yds.	74

DESIGNED	JMW
CHECKED	RGD
DRAWN	WJH
CHECKED	NRF

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Chicago, IL 60610

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

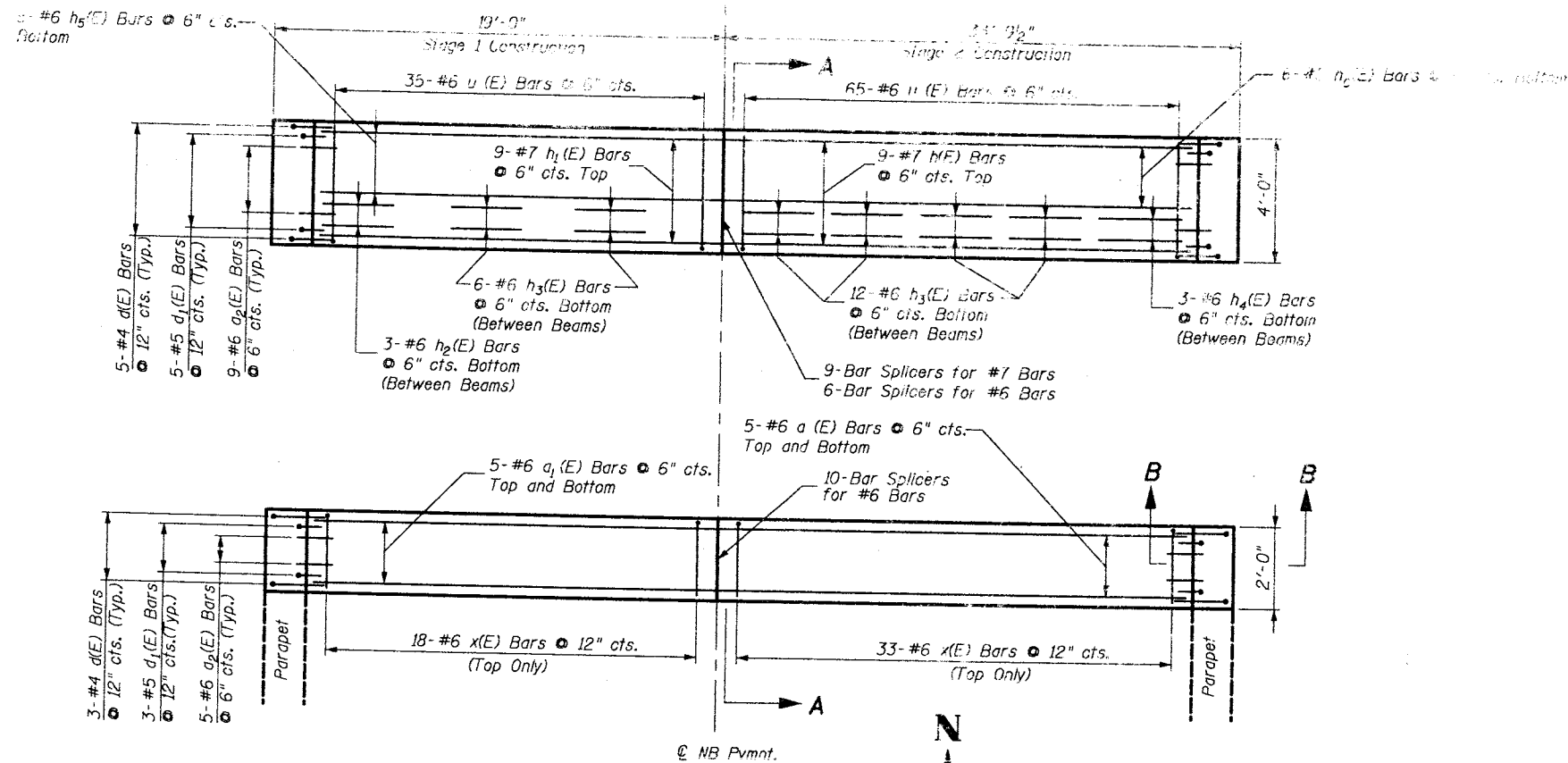
Deck Separation Repair Details

S.N. 057-0153 (NB)

DATE 03-04-2002

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEET	SHEET NO.
P.A. 55	(57-1,57-2)RS	McLean	205	6
ILLINOIS				12 SHEETS

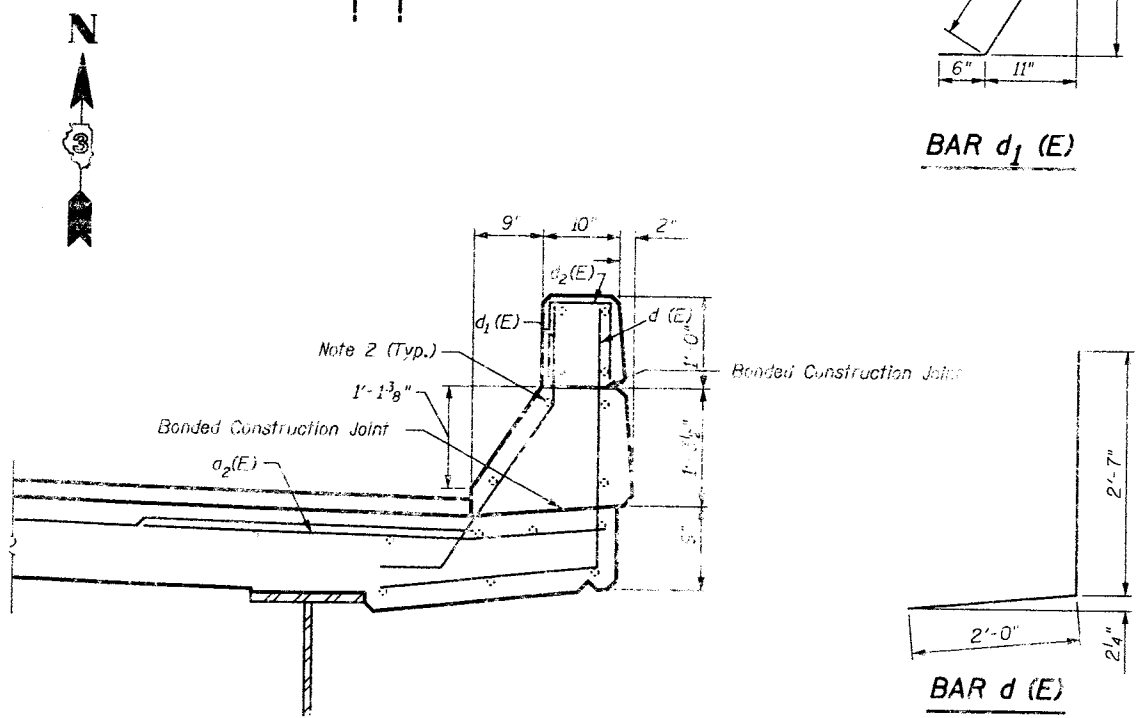


PLAN AT NORTH ABUTMENT

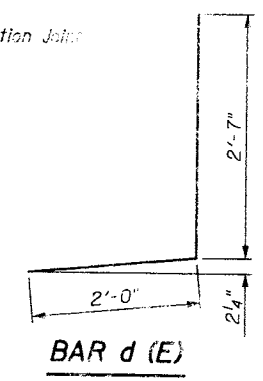
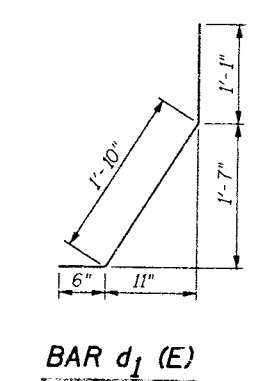
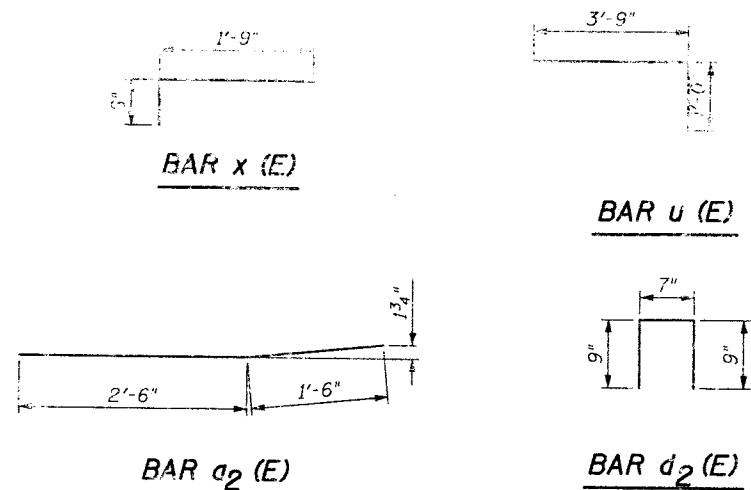
See Sheet 5 of 12 For Section A-A At Joint and Deck Replacement

NOTES

- The limits of all concrete removal shall be saw cut 3/4" into concrete.
- Existing longitudinal bars in deck and vertical bars in abutment back wall extending into the removed area shall be cleaned, straightened and incorporated in the new construction.
- Existing parapet reinforcement extending into the removed area shall be cleaned, straightened, and incorporated into 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 and approach side as shown.
- The aluminum railing post shall be temporarily removed and re-erected in the areas of parapet removal. Cost included with Concrete Superstructure. Any portion of railing that is damaged during construction shall be replaced at the Contractor's expense. (See Sheet 8 of 12 for details)
- Two (2) d (E) Bars shall be set in parapet under each rail post.



SECTION B - B AT PARAPET REPLACEMENT



BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a (E)	10	#6	32'-9 1/2"	—
a1 (E)	10	#6	18'-0"	—
a2 (E)	28	#6	4'-0"	—
a (E)	16	#4	4'-7"	└
a1 (E)	15	#5	3'-5"	└
a2 (E)	8	#4	2'-1"	└
h (E)	9	#7	32'-9 1/2"	—
h1 (E)	9	#7	18'-0"	—
h2 (F)	3	#6	5'-9"	—
h3 (E)	18	#6	5'-9"	—
h4 (E)	3	#6	6'-0"	—
h5 (E)	6	#6	18'-0"	—
h5 (E)	6	#6	32'-9 1/2"	—
u (E)	100	#6	4'-9"	└
x (E)	51	#6	2'-3"	└
Reinforcement Bars, (Epoxy Coated)			Lbs.	3,530

Reinforcement Bars designated (E) shall be epoxy coated.

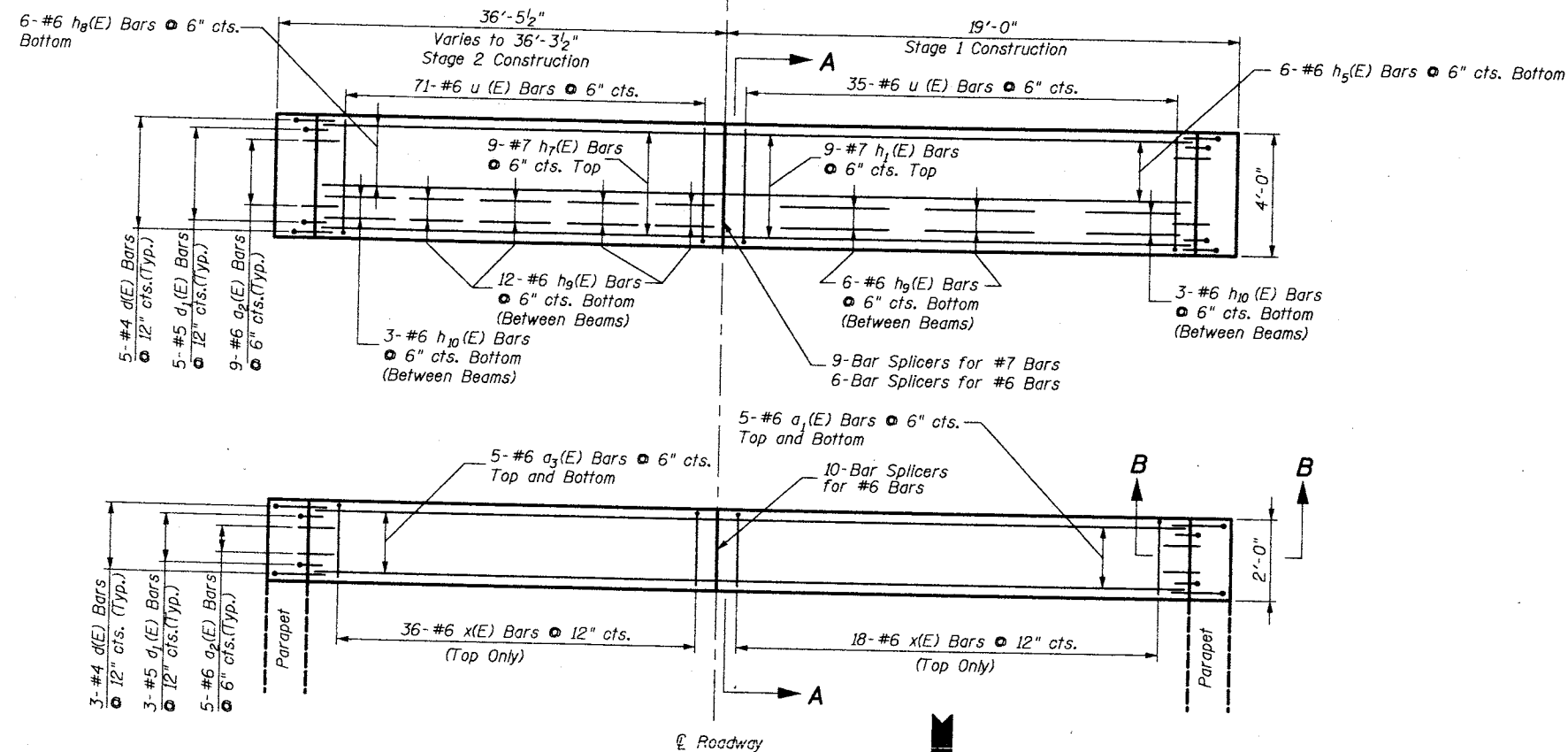
DESIGNED	JMW
CHECKED	RGD
DRAWN	W.JH
CHECKED	NRF

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
Expansion Joint Replacement at North Abutment  
S.N. 057-0153 (NB)  
DATE 03-04-2002

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

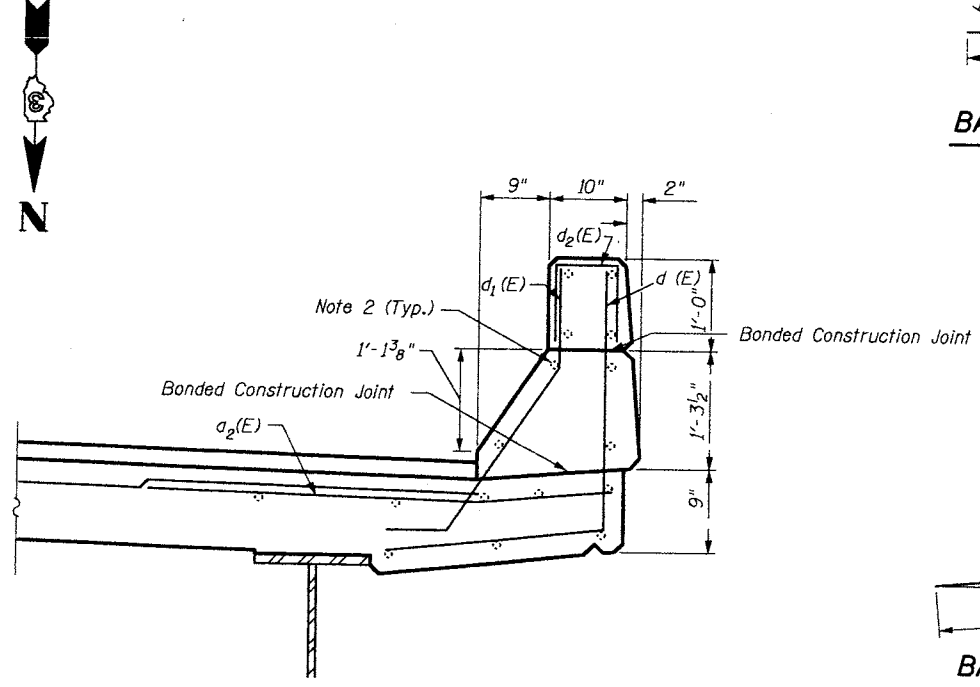
ROUTE NO.	SECTION	COUNTY	SHEET	SHEET NO.
S.A. 55	(57-1,57-2)RS	McLean	7	12 SHEETS
F.A. 55				
FED. AID DIST. NO. 2	ILLINOIS	FED. AID PROJECT		



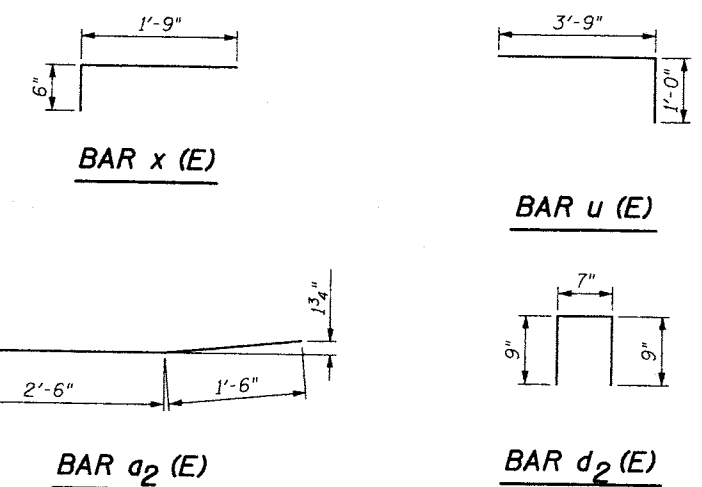
**PLAN AT SOUTH ABUTMENT**  
See Sheet 5 of 12 For Section A-A At Joint and Deck Replacement

**NOTES**

- The limits of all concrete removal shall be saw cut  $\frac{3}{4}$ " into concrete.
- Existing land vertical bars in abutment back wall extending into the removed area shall be cleaned, straightened and incorporated in the new construction.
- Existing parapet reinforcement extending into the removed area shall be cleaned, straightened, and incorporated into 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 and approach side as shown.
- 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 12 for details)
- Two (2)  $d_2(E)$  Bars shall be set in parapet under each rail post.



**SECTION B - B AT PARAPET REPLACEMENT**



**BAR  $a_2(E)$**

**BAR  $d_1(E)$**

**BAR  $d(E)$**

**BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
$a_1(E)$	10	#6	18'-0"	—
$a_2(E)$	28	#6	4'-0"	—
$a_3(E)$	10	#6	35'-5 1/2"	—
$d(E)$	16	#4	4'-7"	└
$d_1(E)$	16	#5	3'-5"	└
$d_2(E)$	8	#4	2'-1"	└
$h_1(E)$	9	#7	18'-0"	—
$h_5(E)$	6	#6	18'-0"	—
$h_7(E)$	9	#7	35'-5 1/2"	—
$h_8(E)$	6	#6	35'-5 1/2"	—
$h_9(E)$	18	#6	5'-4"	—
$h_{10}(E)$	6	#6	6'-1"	—
$u(E)$	106	#6	4'-9"	└
$x(E)$	54	#6	2'-3"	└
Reinforcement Bars, (Epoxy Coated)				Lbs. 3,690

Reinforcement Bars designated (E) shall be epoxy coated

DESIGNED	JMW
CHECKED	RGD
DRAWN	WJH
CHECKED	NRF

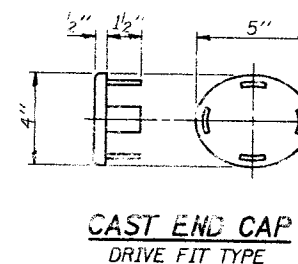
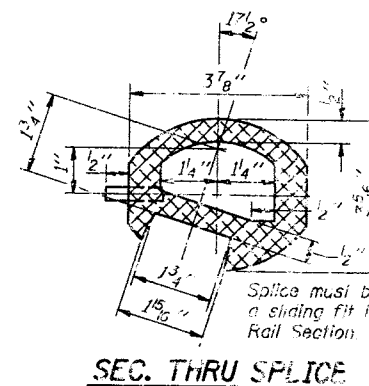
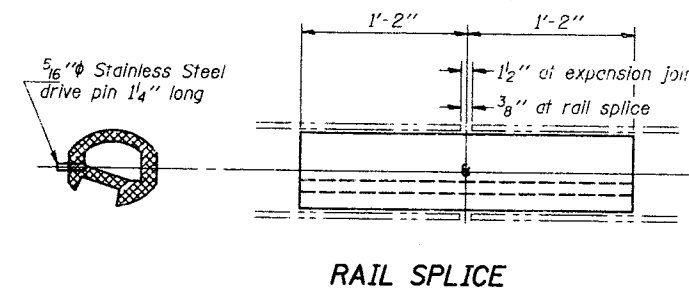
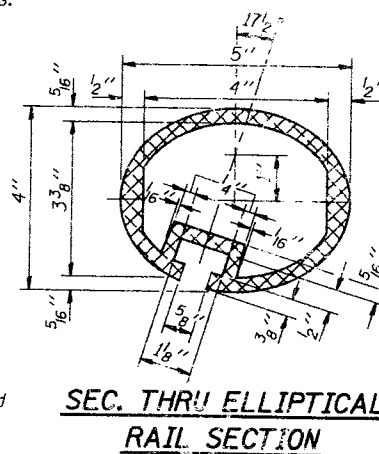
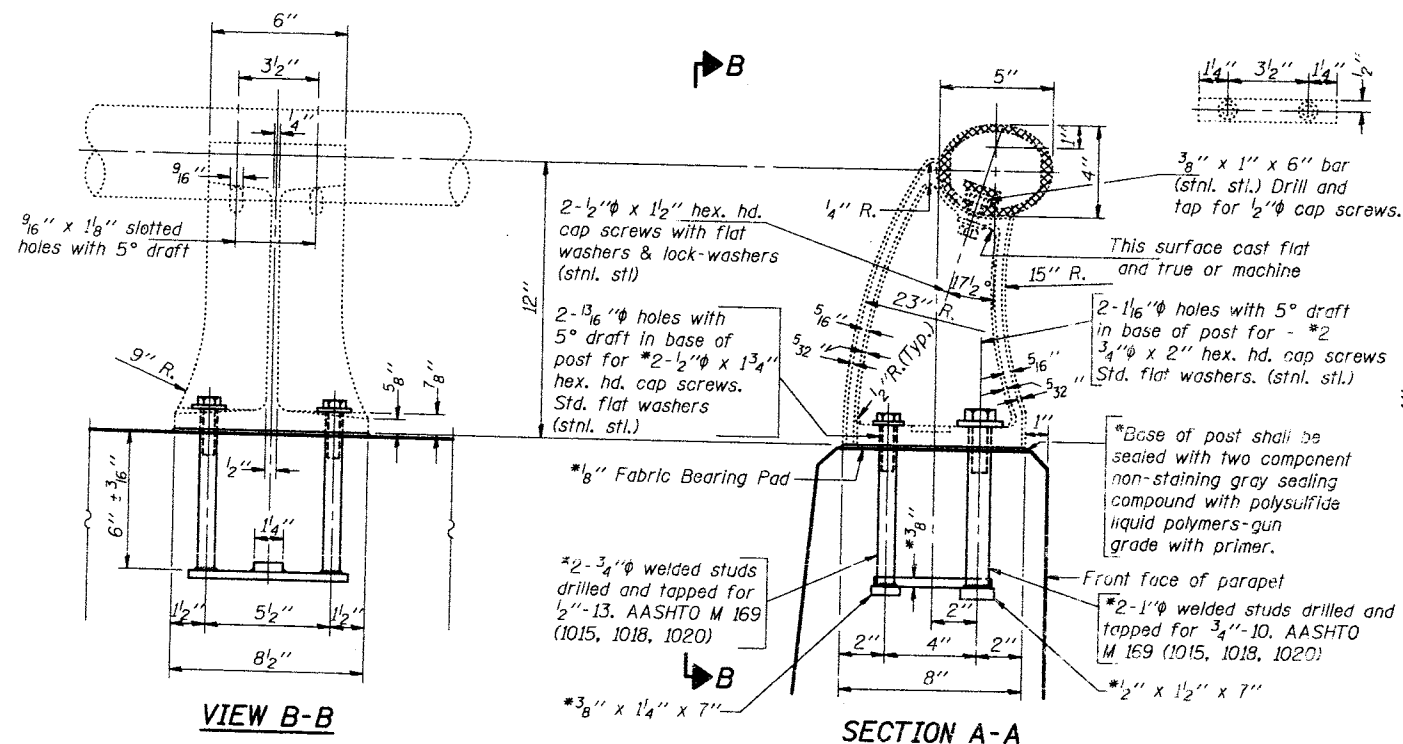
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
Expansion Joint Replacement at South Abutment  
S.N. 057-0153 (NB)  
DATE 03-04-2002

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

ROUTE NO. 55	SECTION 157-1,57-2RS	COUNTY McLean	TOTAL SHEETS 12	SHEET NO. 8
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 2-1/16" 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.



**RAIL POST DETAILS**

\* 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	JMW
CHECKED	RGD
DRAWN	WJH
CHECKED	NRF

R17/REPS 1-27-2000

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

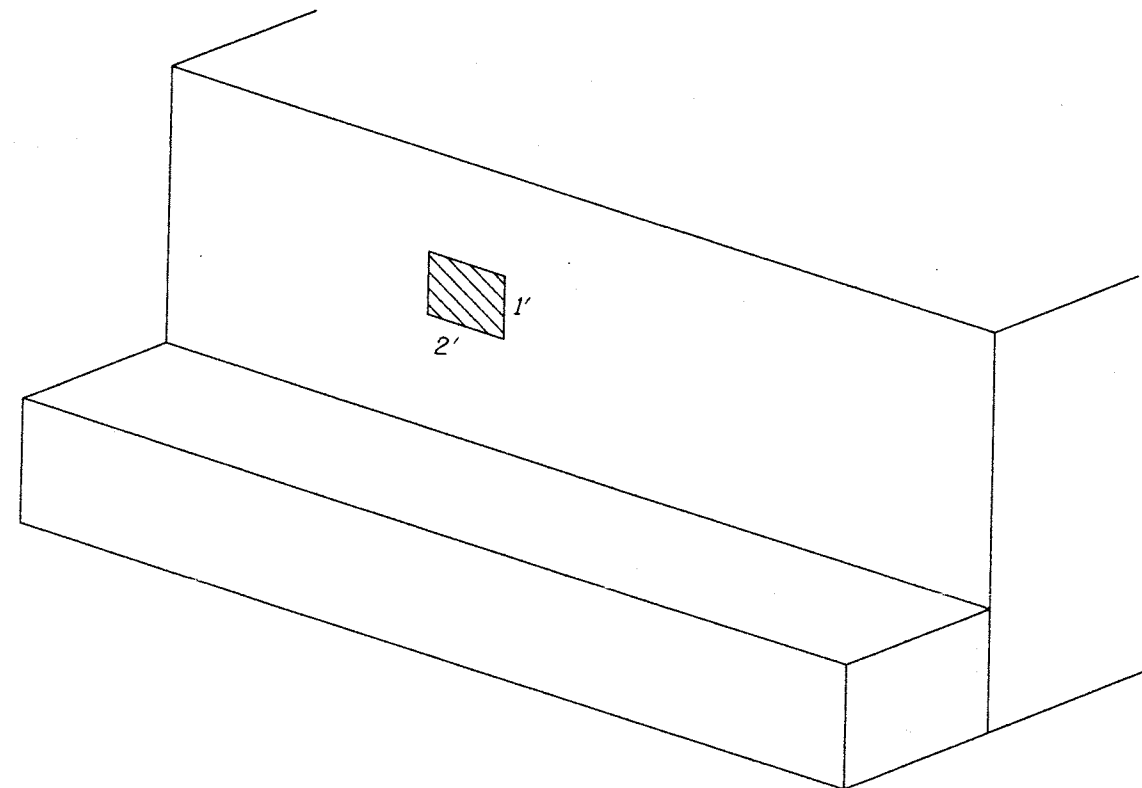
Aluminum Railing Details

S.N. 057-0153


DATE 03-04-2002

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEET NO.	SHEET	SHEET NO. 9 12 SHEETS
P.A. 55	(57-1,57-2)RS	McLean	205	12	
FED. ROAD DIST. NO. 3	ILLINOIS	FED. AID PROJECT			



LEGEND

 Formed Concrete Repair ( $\leq 5"$ )

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Formed Concrete Repair ( $\leq 5"$ )	Sq. Ft.	2

BACKWALL & ABUTMENT CAP  
SOUTH ABUTMENT

DESIGNED	JMW
CHECKED	RGD
DRAWN	WJH
CHECKED	NRF

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REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

Substructure Repair  
S.N. 057-0153 (NB)

DATE 03-04-2002

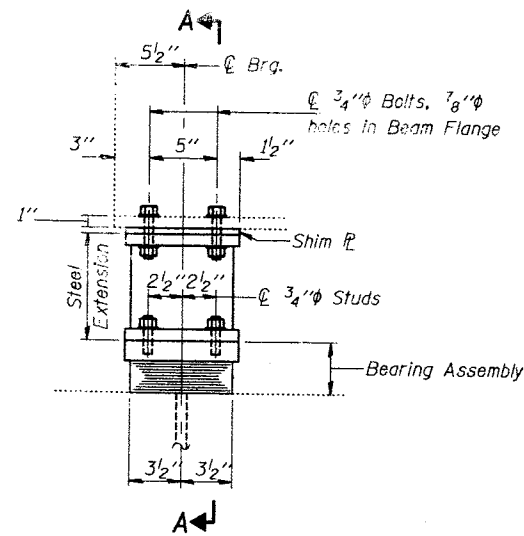
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

GIRDER REACTIONS

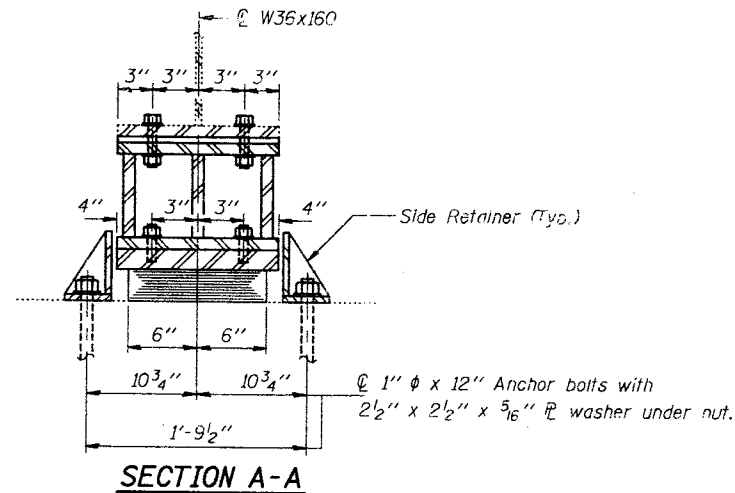
DD	(K)	25.5
RE	(K)	36.4
IMP	(K)	9.5
P (Total)	(K)	71.5

ROUTE NO.	SECTION	COUNTY	SHEETS	SHEET NO.
S.A.L. 55	157-157-2RS	McLean	12	10
ILLINOIS		FED. AID PROJECT		

12 SHEETS

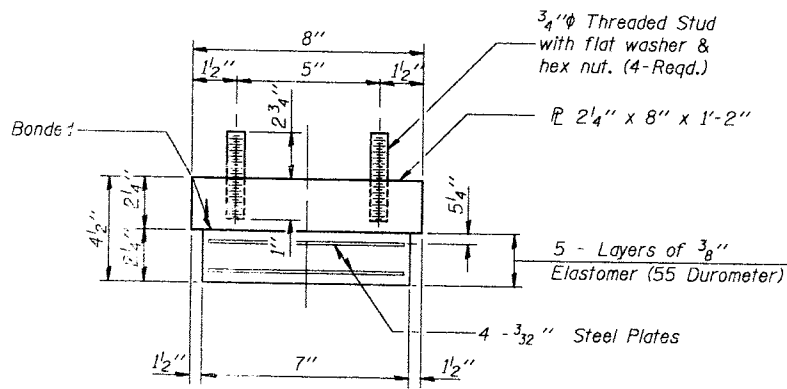


ELEVATION AT SOUTH ABUTMENT



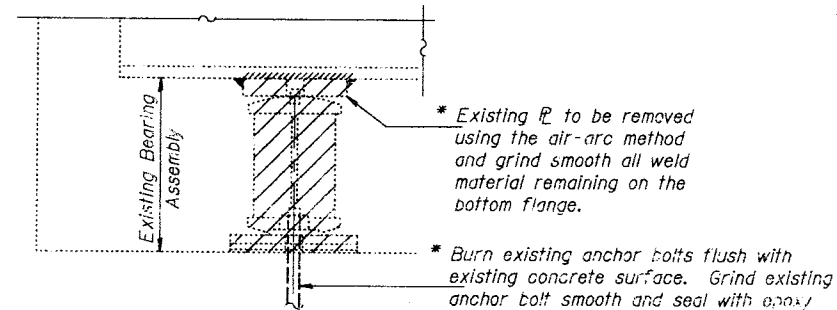
SECTION A-A

TYPE I ELASTOMERIC EXP. BRG.



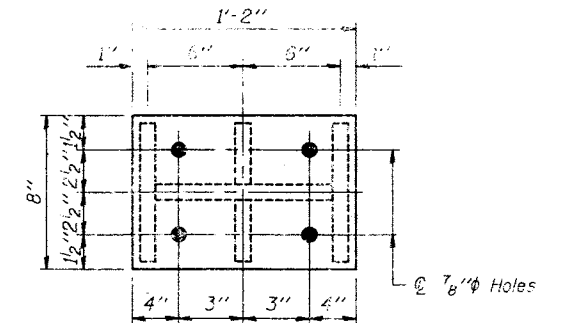
BEARING ASSEMBLY

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

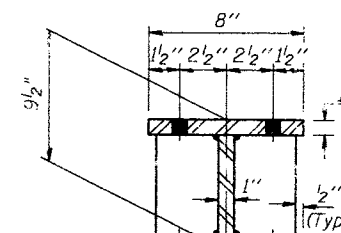


EXISTING BEARING REMOVAL DETAIL

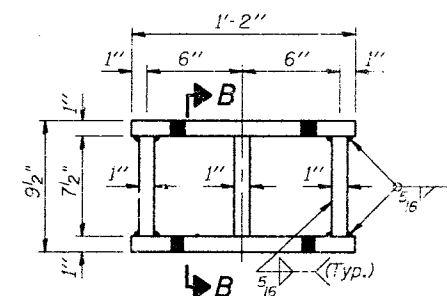
Notes: Diaphragm removal and consolidation may be required to facilitate drilling holes. Cost shall be included in the cost of Furnishing and Erecting Structural Steel.  
New steel extensions, side retainers, shim P's, connection bolts, and anchor bolts are included in Furnishing and Erecting Structural Steel.  
See Sheet 11 of 12 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 = 38



PLAN TOP AND BOTTOM PLATE



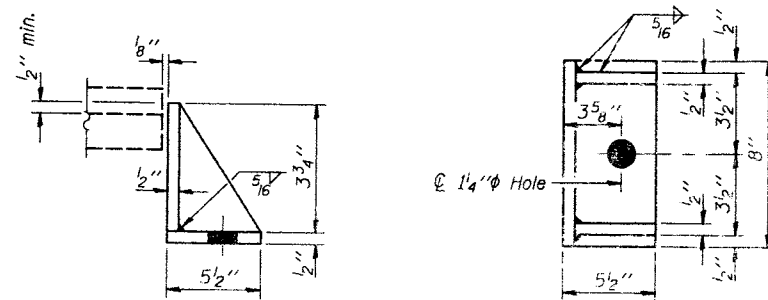
SECTION B-B



STEEL EXTENSION DETAIL

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

\*\* Girder designation is from East to West



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 1	Each	18
Jack and Remove Existing Bearing	Each	15
Furnishing and Erecting Structural Steel	Tons	3,440

DESIGNED	JMW
CHECKED	RGD
DRAWN	WJH
CHECKED	NRF

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ILLINOIS DEPARTMENT OF TRANSPORTATION

North & South  
Abutment Bearings  
S.N. 057-0153 (NB)

DATE 03-04-2002

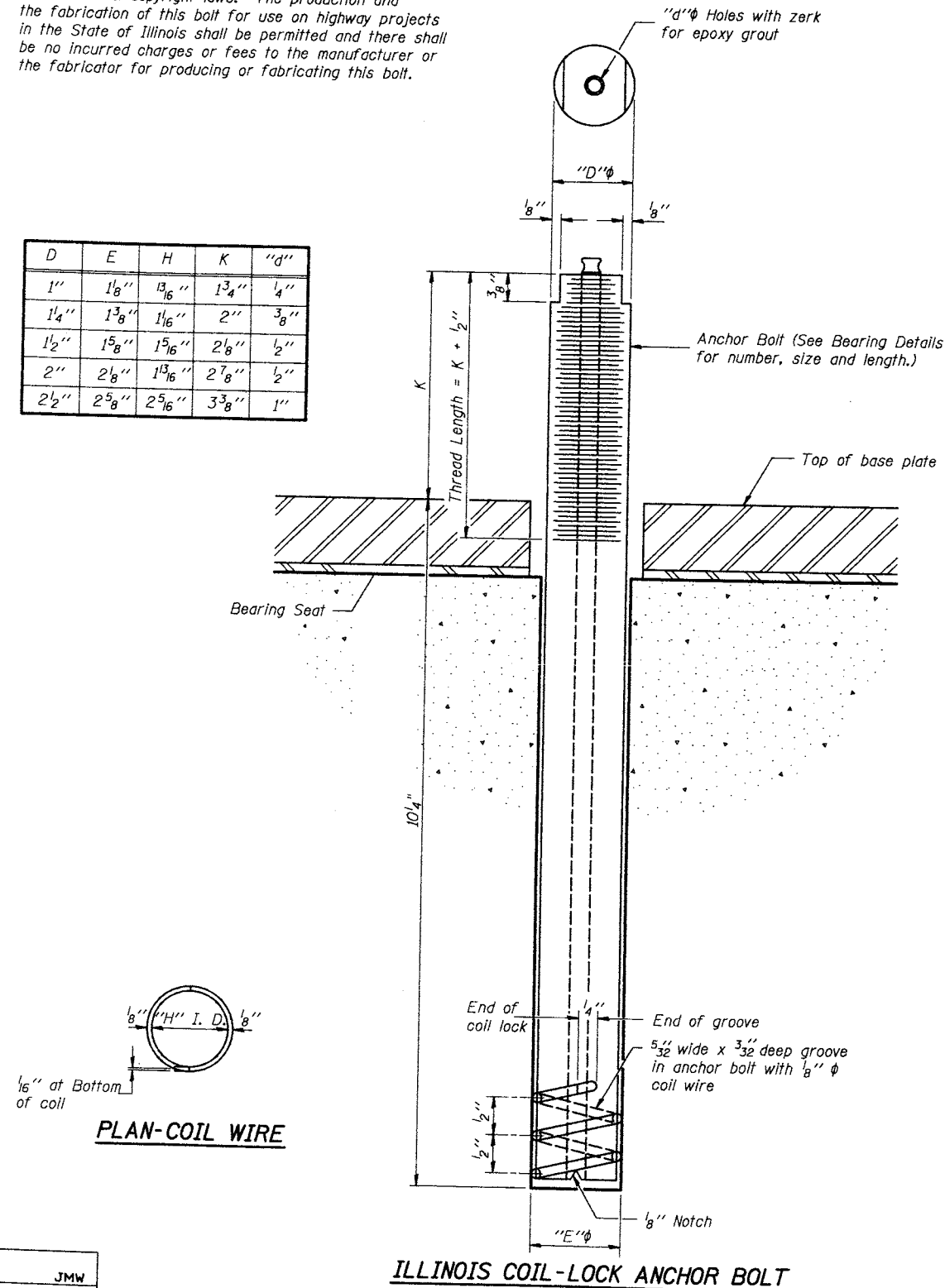


STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOWNSHIP	RANGE	SHEET NO.
55	(57-1,57-2)RS	McLean			11
F.A. 55 (57-1,57-2)RS McLean					12 SHEETS
ILL. HIGHWAY DIST. NO. 3		ILL. HIGHWAY PROJECT		FED. AID PROJECT	

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 1/16"	1 3/4"	1/4"
1 1/4"	1 3/8"	1 1/8"	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 1, 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**

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	JMW
CHECKED	RGD
DRAWN	WJH
CHECKED	NRF

ABB-1 4-30-99

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

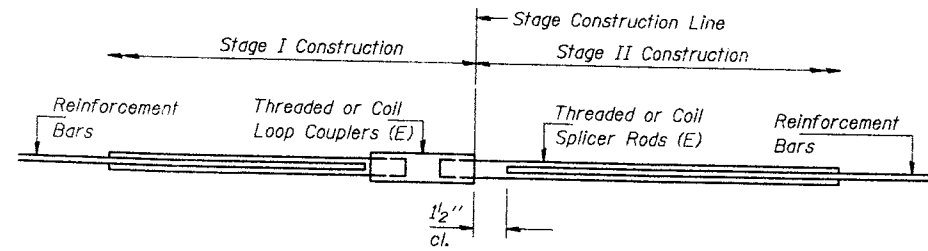
Anchor Bolt Details  
For Bearings

S.N. 057-0153 (NB)

DATE 03-04-2002

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

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



**SPLICER DETAIL**

Bar Size	No. Assemblies Required	Location
#6	32	Abutments
#7	18	Abutments

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

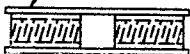
The diameter of this part is equal or larger than the diameter of bar spliced.

**ROLLED THREAD DOWEL BAR**



**\*\* ONE PIECE**

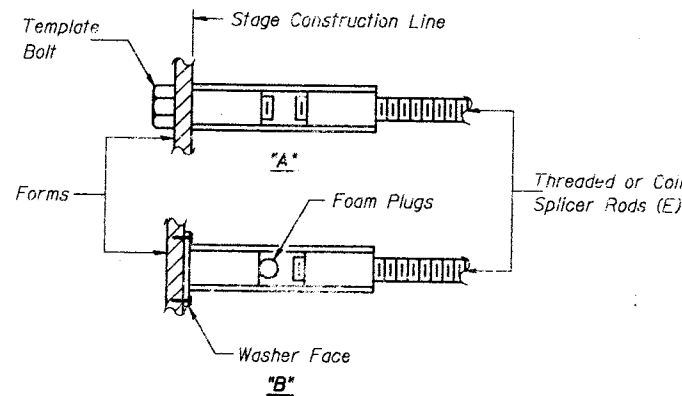
Wire Connector



**WELDED SECTIONS**

**BAR SPLICER ASSEMBLY ALTERNATIVES**

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

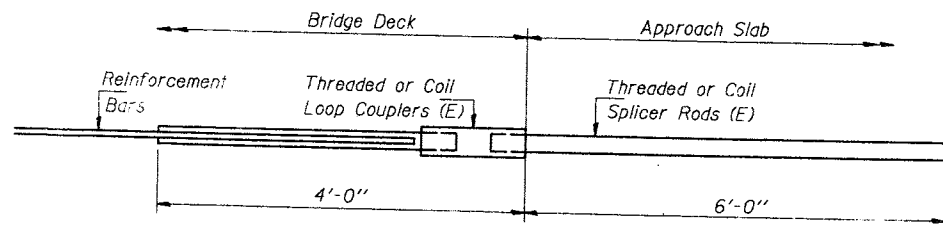


**INSTALLATION AND SETTING METHODS**

"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) =  $1.25 \times f_{s_{allow}} \times A_l$

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 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	JMW
CHECKED	RGD
DRAWN	WJH
CHECKED	NRF

BSD-1 4-30-99

SMITH ENGINEERING  
CONSULTANTS, INC.  
CIVIL/STRUCTURAL ENGINEERS  
AND SURVEYORS  
www.smitheng.com  
www.smithsurvey.com

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

Bar Splicer  
Assembly Detail  
S.N. 057-0153 (NB)

DATE 03-04-2002

80

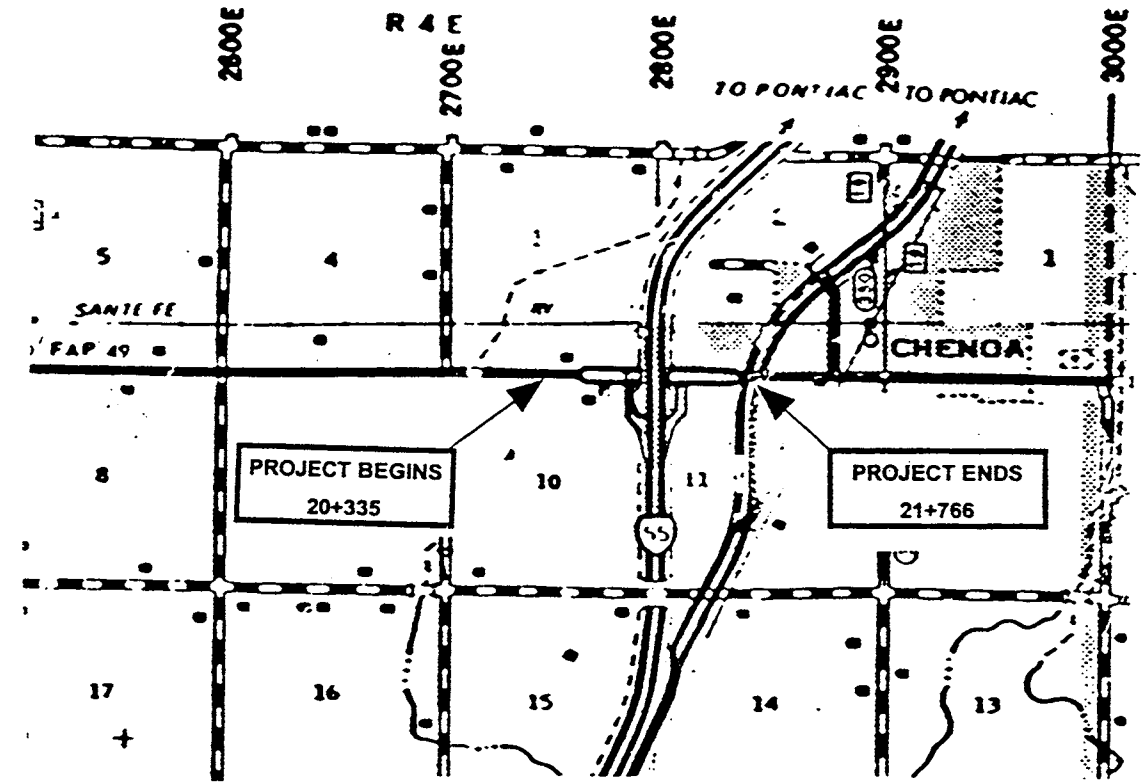
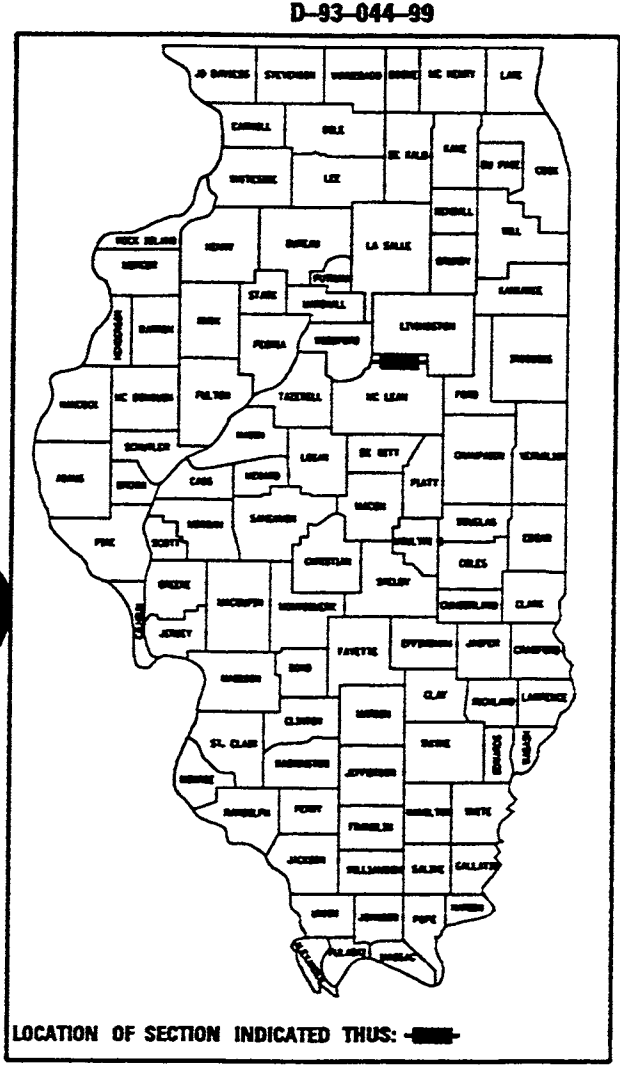
100%  
9-22-2000

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS
49	57-1(1)RS	McLEAN	35
SHEET NO.			1

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

F.A.P. 49 (U.S. 24)  
SECTION 57-1 (1) RS  
McLEAN COUNTY  
C-93-049-99

**PROJ.  
STPF-49(1)**



ADT 1998 8000  
PV 89.0% S.U. 3.6% M.U. 7.4%  
FUNCTIONAL CLASSIFICATION:  
RURAL OTHER PRINCIPAL ARTERIAL

GROSS LENGTH: 1.43 km  
NET LENGTH: 1.43 km

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: RICK POWELL  
UNIT CHIEF: JERRY MAHNKE  
TOWNSHIP: CHENOA

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

SUBMITTED MAY 17 1999

PASSED June 25 1999

APPROVED June 25 1999

Bill Sunley of  
ENGINEER OF DESIGN AND ENVIRONMENT

Jim Slifer of  
DIRECTOR, DIVISION OF HIGHWAYS

MARCH 8, 1999 \ M004499 \ DETAILS .DCN.

CONTRACT NO. 86893

057-0152(SB) 0153(NB)

3-209

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
49	57-1 CURB	McLEAN	35	15
STA.		TO STA.		
FED. ROAD DIST. NO. 4		ILLINOIS FED. AID PROJECT		

### STRUCTURE REPAIR

LOCATION	EPOXY CRACK SEALING M	FORMED CONCRETE REPAIR <=125 mm SQ. M	SLOPE WALL REMOVAL SQ. M	SLOPE WALL 100mm SQ. M
<b>STRUCTURE 057-0152</b>				
S. ABUTMENT		11.6		
N. ABUTMENT		11.9		
<b>PIER CENTER COLUMN</b>				
NE CORNER				
N. FACE		0.1		
E. FACE		0.1		
SE CORNER				
S. FACE		0.1		
E. FACE		0.1		
<b>STRUCTURE 057-0153</b>				
S. ABUTMENT		4.6		
N. ABUTMENT		9.3		
<b>S. SLOPEWALL 27 X 3</b>				
21+030 TO 21+058 RT				
PAVED DITCH TO HORIZ. CRACK			81	81
<b>NW VAULT WALL</b>				
NEAR VAULT DOOR	2.5			
<b>NE VAULT WALL</b>				
NEAR FACE OF ABUT.	2.7			
<b>TOTALS</b>	<b>5.2</b>	<b>37.8</b>	<b>81</b>	<b>81</b>

### SURVEY MARKERS

LOCATION	PERMANENT SURVEY MARKER TYPE 1 EACH	LAND SECTION MARKER EACH
STA 21+015.8 WBL	1	1
5.3 M WEST OF PIER.		
STR. 057-0152		
& 1.4 M NORTH OF		
FACE OF CURB		
(CHISELED X)		
<b>TOTAL</b>	<b>1</b>	<b>1</b>

MARKER SHALL BE STAMPED NW CORNER SECTION 11 TWP 26N R 4E OF 3RD PRINC. MER.

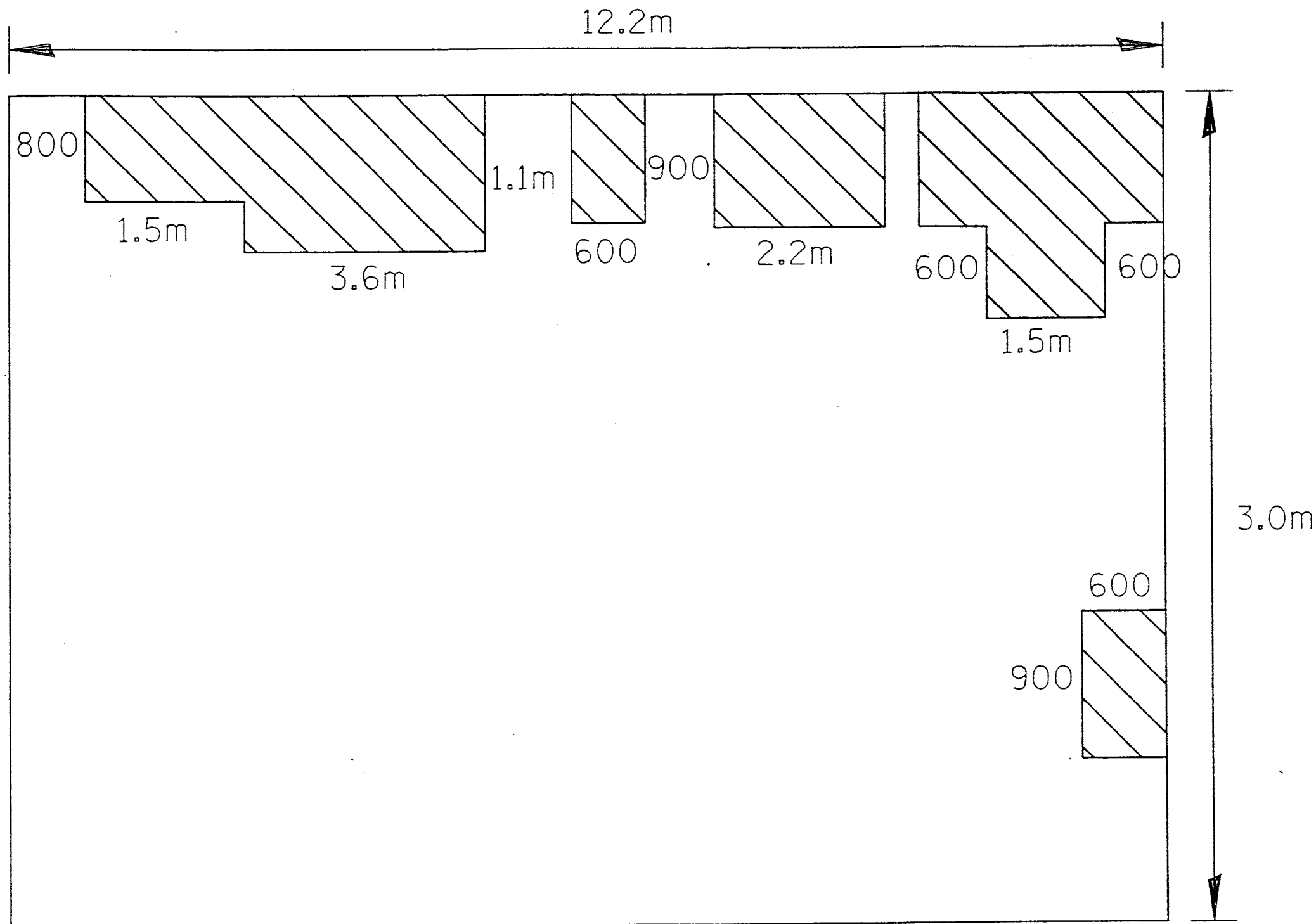
### RIPRAP

	RIPRAP CLASS A4 SQ. M		FILTER FABRIC FOR USE WITH RIPRAP SQ. M
	L	W	
<b>STRUCTURE 057-0152</b>			
SW VAULT WALL	9	2	18
STA. 21+022 RT			
TOP OF SLOPEWALL TO ABUTMENT BACKWALL			
SW SLOPE WALL	6	2	12
ALONG OUTSIDE EDGE OF SLOPEWALL			
<b>STRUCTURE 057-0153</b>			
NE VAULT WALL	9	2	18
STA. 21+073 LT.			
TOP OF SLOPEWALL TO ABUTMENT BACKWALL			
SE SLOPE WALL	6	2	12
ALONG OUTSIDE EDGE OF SLOPEWALL			
STA 20+927 LT	5	3	15
<b>TOTALS</b>			<b>75</b>

EXCAVATION REQUIRED FOR THIS WORK IS INCIDENTAL.

REVISIONS		ILLINOIS DEPARTMENT OF TRANSPORTATION
NAME	DATE	
		DATE
		DRAWN BY
		CHECKED BY

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
49	57-1 (RWS)	MCLEAN	35	16
STA.		TO STA.		
FED. ROAD DIST. NO. 4		ILLINOIS FED. AID PROJECT		



 FORMED CONC. REPAIR

## **SOUTH ABUTMENT (LOOKING SOUTH)**

**STRUCTURE # 057-0152**

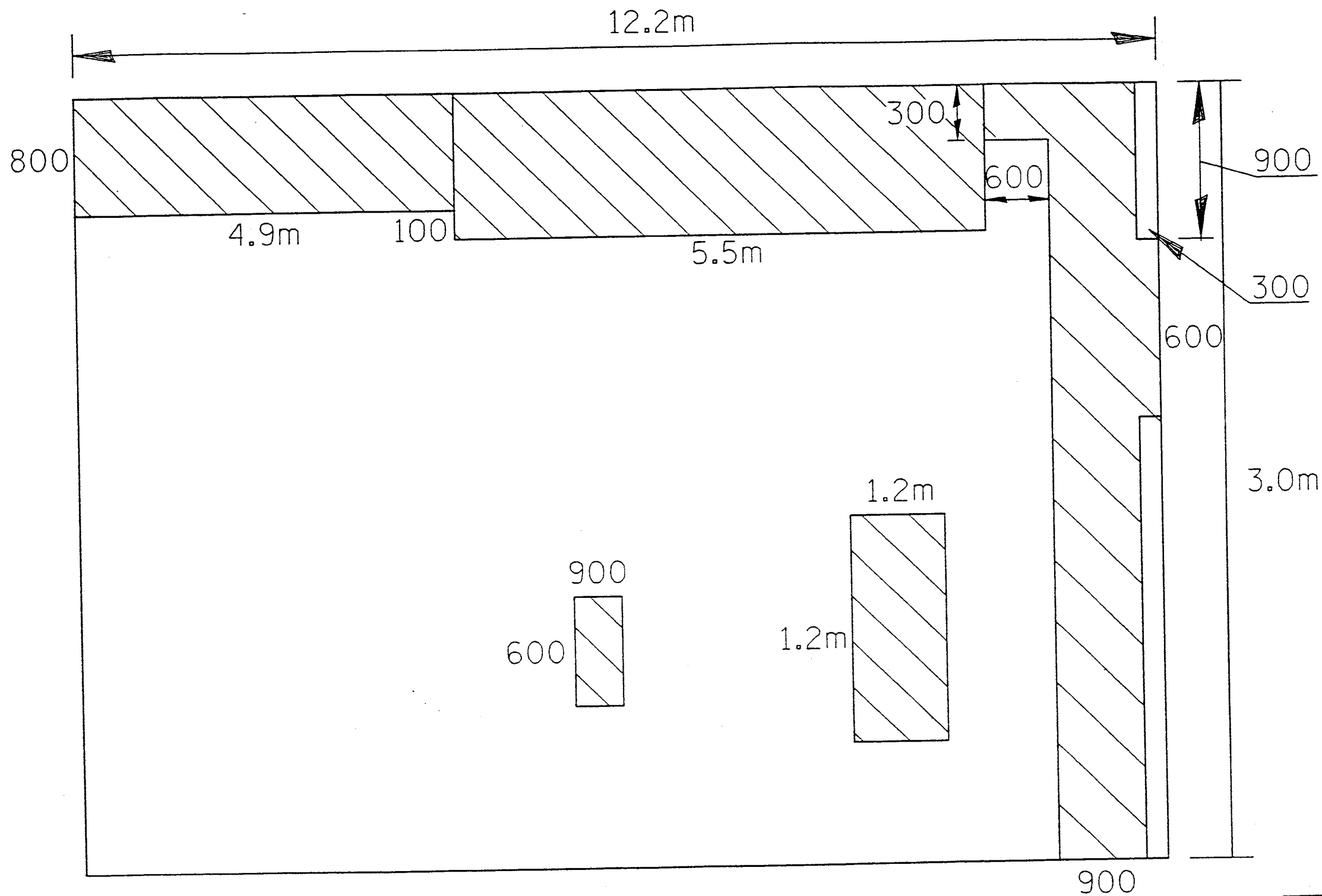
ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN.

NOTE: AREAS ARE APPROXIMATE AND SHOULD BE VERIFIED DURING CONSTRUCTION

REVISIONS		ILLINOIS DEPARTMENT OF TRANSPORTATION
NAME	DATE	
		DATE
		DRAWN BY
		CHECKED BY

MAR . 8 1999  
VMD0499\DETAILS .DGN

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
49	ST-1 CURS	MCLEAN	35	17
STA.		TO STA.		
FED. ROAD DIST. NO. 4		ILLINOIS FED. AID PROJECT		




 FORMED CONC. REPAIR

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN.

# NORTH ABUTMENT (LOOKING NORTH)

STRUCTURE # 057-0152

NOTE: AREAS ARE APPROXIMATE AND SHOULD BE VERIFIED DURING CONSTRUCTION

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

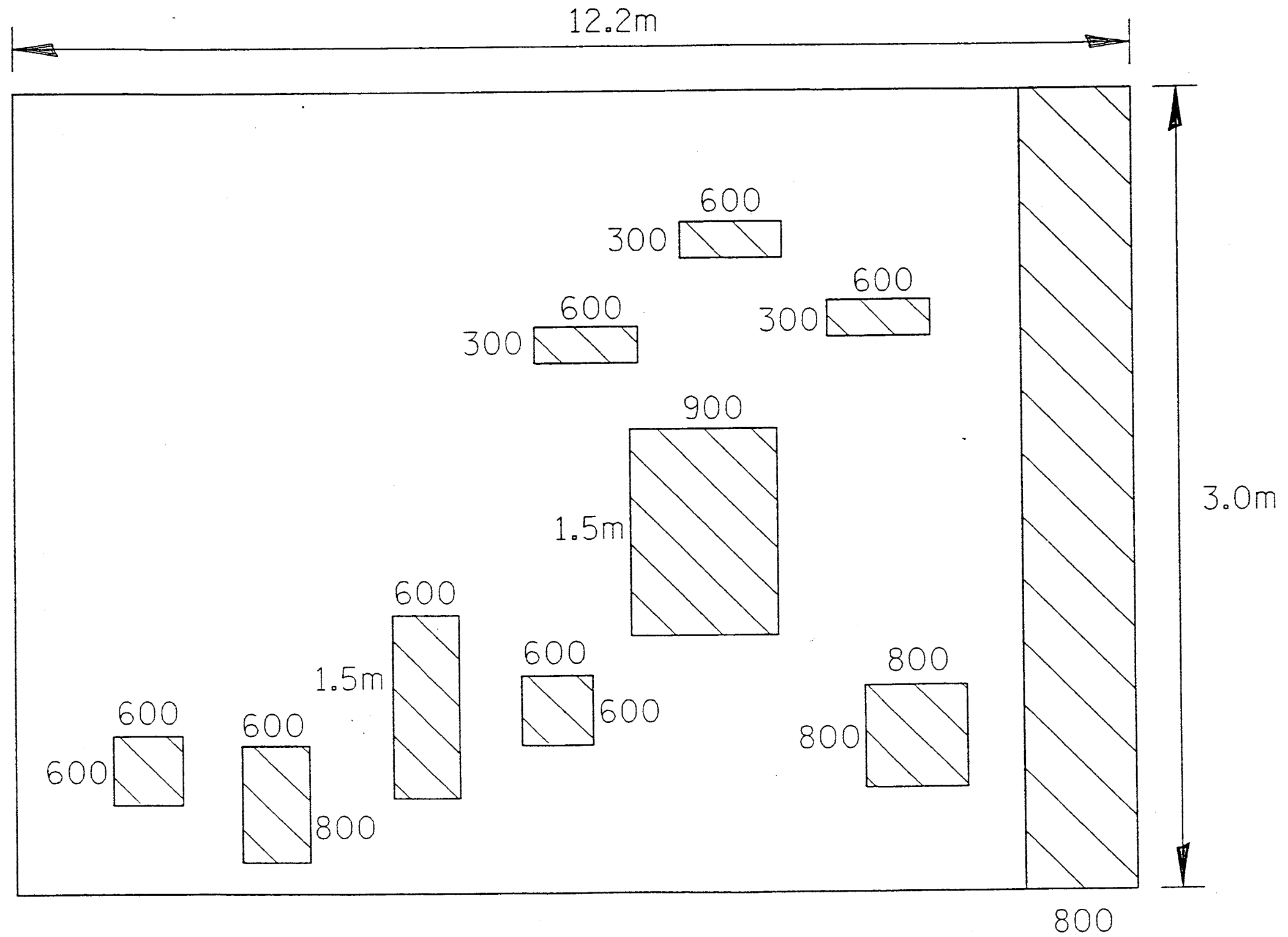
DATE

DRAWN BY

CHECKED BY

MAR . . 8 1999  
 \MDO499\DETAILS .DCN

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
49	57-1 CDS	MCLEAN	35	18
STA.		TO STA.		
FED. ROAD DIST. NO. 4		ILLINOIS FED. AID PROJECT		



 FORMED CONC. REPAIR

## SOUTH ABUTMENT (LOOKING SOUTH)

STRUCTURE # 057-0153

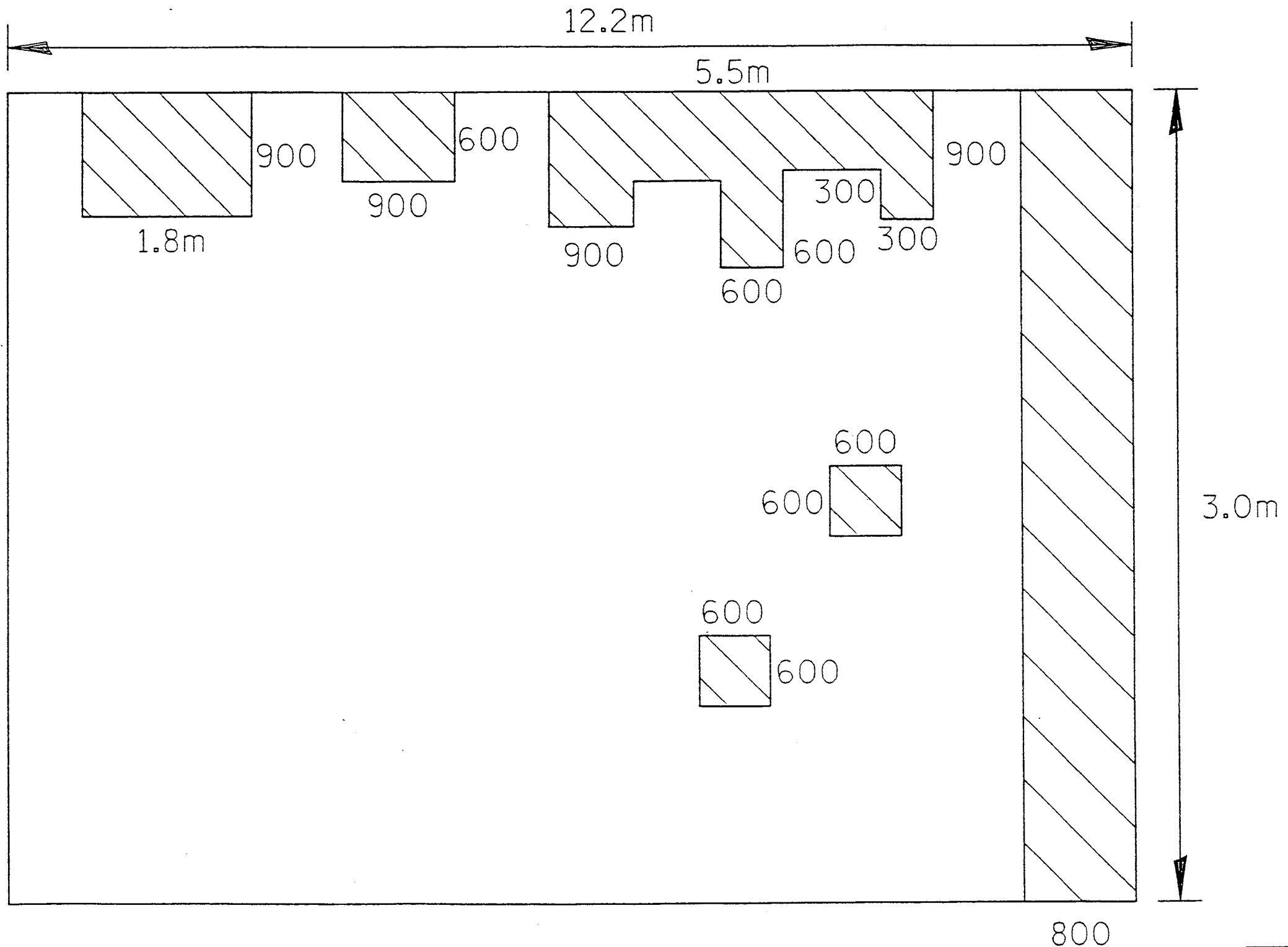
ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN.

NOTE: AREAS ARE APPROXIMATE AND SHOULD BE VERIFIED DURING CONSTRUCTION

REVISIONS		ILLINOIS DEPARTMENT OF TRANSPORTATION
NAME	DATE	
		DATE
		DRAWN BY
		CHECKED BY

MAR 8 1999 MD0499\DETAILS.DGN

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS NO.
49	57-1 DRS	MCLEAN	35/19
STA.		TO STA.	
FED. ROAD DIST. NO. 4		ILLINOIS FED. AID PROJECT	



# NORTH ABUTMENT (LOOKING NORTH)

STRUCTURE # 057-0153

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN.

NOTE: AREAS ARE APPROXIMATE AND SHOULD BE VERIFIED DURING CONSTRUCTION

REVISIONS		ILLINOIS DEPARTMENT OF TRANSPORTATION
NAME	DATE	

DRAWN BY \_\_\_\_\_  
CHECKED BY \_\_\_\_\_  
DATE \_\_\_\_\_

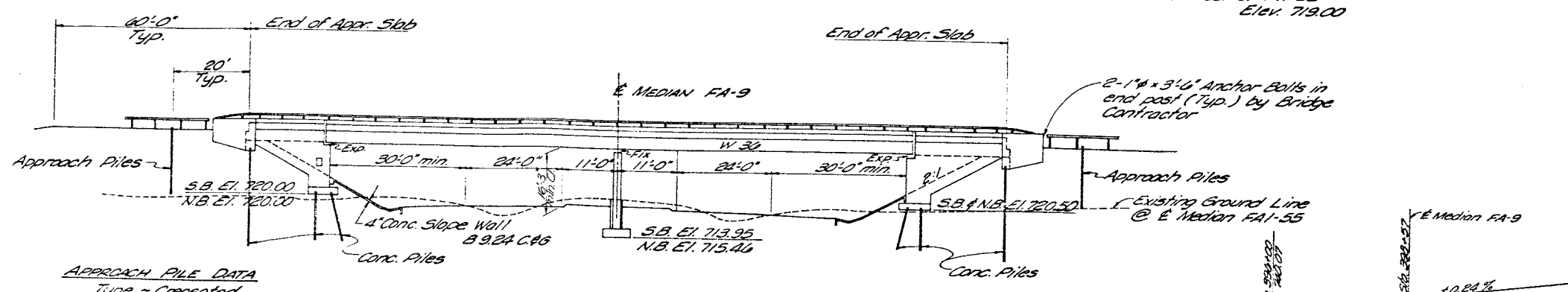
MAR . 8 . 1999  
\\M004499\DETAILS -DCN



B.M. E-246 - Standard C. & G.S. Disk  
120' West of Pt. 25  
Elev. 719.00

ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
FAI-55	57-1HB	McLean	68	25
STA.	TO STA.			
S.P. & S.C. NO. 4	REVISION	PROJECT		

SHEET 1 OF 25 SHEETS



ELEVATION

APPROACH PILE DATA  
Type - Creosoted  
Length Req'd - 19'  
No. Req'd - 37

**GENERAL NOTES**

All reinforcement bars shall be lapped 2d diameters unless otherwise shown.  
Fasteners shall be high strength bolts. Bolts 3/4"  $\phi$ , open holes 1 3/16"  $\phi$  unless noted.  
Calculated weight of Structural Steel = 439,470 Lbs.  
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.  
The embankment configuration shown shall be the minimum embankment that must be constructed prior to the construction of the abutments.  
The concrete rail section above the mandatory construction joint at the top of the slab shall be constructed of Class X concrete, except the aggregates shall conform to the requirements of Normal Concrete.  
The contractor shall drive 3 test piles in permanent locations. (See Sheets 10-21) as directed by the Engineer before ordering the remainder of the piles.  
Protective Coat shall not be applied to surfaces to which Coal Tar Interlayer Protective Coat is applied.  
Slope wall shall be reinforced with welded wire fabric 6" x 6" mesh, weighing 58# per 100 sq. ft.  
Concrete piles @ Abut. Berths shall be driven in holes prepared through the embankment in accordance with Article 513.09(c) of the Standard Specifications.

For Footing Layout See Sheet 15 of 25

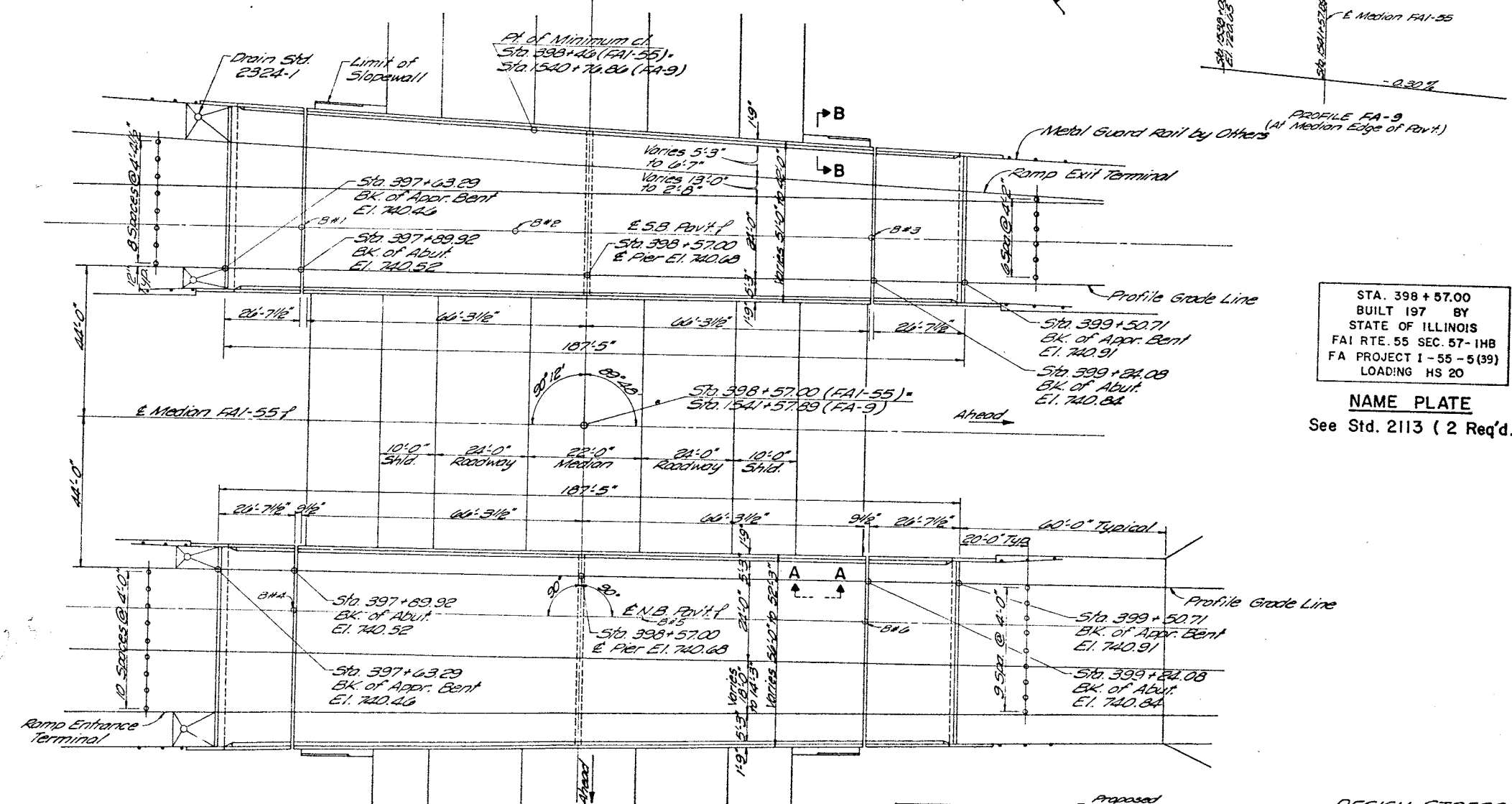
STA. 398 + 57.00  
BUILT 197 BY  
STATE OF ILLINOIS  
FAI RTE. 55 SEC. 57-1HB  
FA PROJECT I-55-5(39)  
LOADING HS 20

**NAME PLATE**  
See Std. 2113 (2 Req'd.)

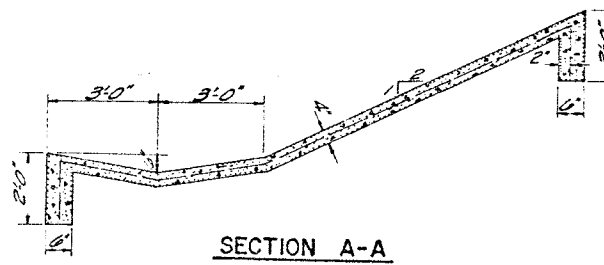
TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
* Bit Conc. Surface Course, Cl. I	Tons	160		160
Structure Excavation	Cu. Yd.		208	208
Class X Concrete	Cu. Yd.	579.6	608.7	1188.3
Precast Prest. Conc. I-Bms. 36	Lin. Ft.	662		662
Aluminum Piling	Lin. Ft.	782		782
Creosoted Piles 19 Ft.	Lin. Ft.		703	703
Concrete Piles	Lin. Ft.		4878	4878
Test Pile (Concrete)	EA		2	2
Name Plate	EA		2	2
Slope Wall, 4"	Sq. Yd.		2	2
* Coal Tar Interlayer Protective Coat	Sq. Yd.	1940		1940
Reinforcement Bars	Lbs.	155,290	68,150	223,440
Structural Steel	Lbs.	439,470		439,470
Prefabricated Joint Sealer 2 1/2"	Lin. Ft.	201		201
Protective Coat	Sq. Yd.	286		286

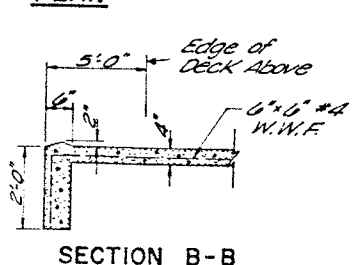
\* For Information Only



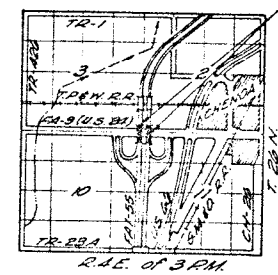
PLAN



SECTION A-A



SECTION B-B



LOCATION PLAN

DESIGN STRESSES

**FIELD UNITS**  
 $f_c = 1,200$  p.s.i. (Deck Slab)  
 $f_c = 1,400$  p.s.i. (Sub-Curb & Perimeter)  
 $f_s = 20,000$  p.s.i. (Reinf.)  
 $f_s = 20,000$  p.s.i. (Struct. A-36)  
 $V_c = 75$  p.s.i. (Figs.)  
 $n = 10$

**PRECAST-PRESTRESSED UNITS**  
 $f_c = 5,000$  p.s.i.  
 $f_c = 4,000$  p.s.i.  
 $f_s = 248,000$  p.s.i.  
 $f_s = 175,600$  p.s.i.

25%  $\phi$  included in D.L. for future wearing surface  
Allowable LL Defl. 4/1000

LOADING HS20-44 & ALTERNATE  
Design Specs. 1909 AASHTO as applicable

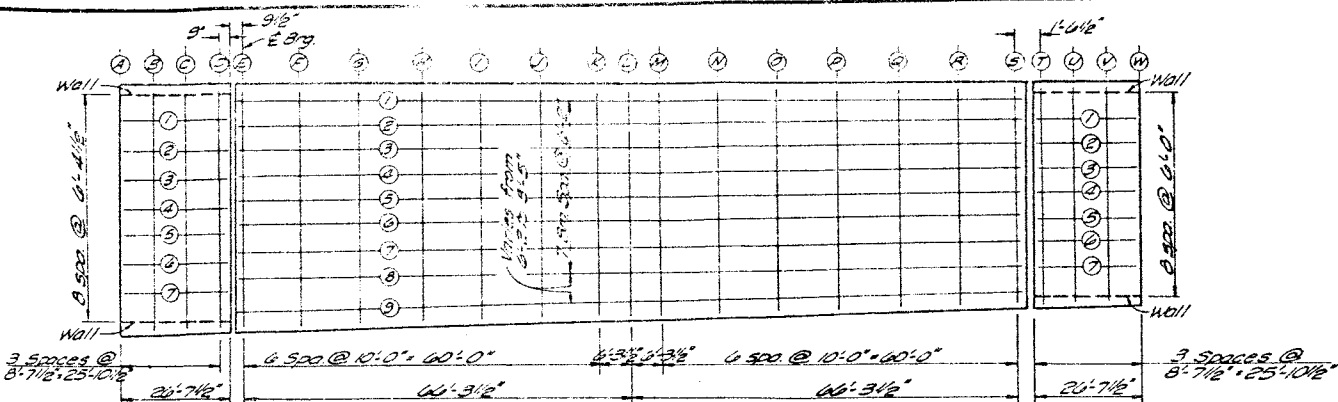
APPROVED  
FOR STRUCTURAL ADEQUACY ONLY  
Robert D. Owen  
Engineer of Bridge & Traffic Structures



**GENERAL PLAN & ELEVATION**  
FAI-55 OVER U.S. RTE. 24 (FA-9)  
PROJECT I-55-5 (39) 184  
FAI ROUTE 55 SECTION 57-1HB  
MCLEAN COUNTY  
STATION 398 + 57.00 (FAI-55)

10 & 24911 N.C.

3-83

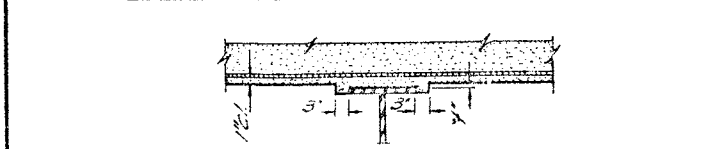


PLAN NORTHBOUND STRUCTURE

SPAN 1					
Location	Beam	Station	Offset	Theoretical Grade Elevation	Theoretical Grade Elevation Adjusted for Dead Load Deflection
A	Wall	397+63.29	14.75	740.343	740.343
	JT	397+63.29	12.00	740.442	740.442
	1	397+63.29	10.375	740.437	740.437
	2	397+63.29	4.000	740.537	740.537
	3	397+63.29	2.375	740.632	740.632
	4	397+63.29	8.75	740.512	740.512
	JT	397+63.29	12.00	740.412	740.412
	5	397+63.29	15.125	740.397	740.397
	6	397+63.29	8.15	740.342	740.342
	7	397+63.29	27.875	740.152	740.152
	Wall	397+63.29	34.25	740.000	740.000
B	Wall	397+71.92	14.75	740.332	740.332
	JT	397+71.92	12.00	740.433	740.433
	1	397+71.92	10.375	740.539	740.539
	2	397+71.92	4.000	740.639	740.639
	3	397+71.92	2.375	740.693	740.693
	4	397+71.92	8.75	740.533	740.533
	JT	397+71.92	12.00	740.433	740.433
	5	397+71.92	15.125	740.413	740.413
	6	397+71.92	8.15	740.358	740.358
	7	397+71.92	27.875	740.168	740.168
	Wall	397+71.92	34.25	740.020	740.020
C	Wall	397+80.54	14.75	740.324	740.324
	JT	397+80.54	12.00	740.425	740.425
	1	397+80.54	10.375	740.538	740.538
	2	397+80.54	4.000	740.638	740.638
	3	397+80.54	2.375	740.692	740.692
	4	397+80.54	8.75	740.532	740.532
	JT	397+80.54	12.00	740.432	740.432
	5	397+80.54	15.125	740.412	740.412
	6	397+80.54	8.15	740.357	740.357
	7	397+80.54	27.875	740.167	740.167
	Wall	397+80.54	34.25	740.020	740.020
D	Wall	397+89.17	14.75	740.315	740.315
	JT	397+89.17	12.00	740.416	740.416
	1	397+89.17	10.375	740.529	740.529
	2	397+89.17	4.000	740.629	740.629
	3	397+89.17	2.375	740.683	740.683
	4	397+89.17	8.75	740.523	740.523
	JT	397+89.17	12.00	740.423	740.423
	5	397+89.17	15.125	740.403	740.403
	6	397+89.17	8.15	740.348	740.348
	7	397+89.17	27.875	740.158	740.158
	Wall	397+89.17	34.25	740.010	740.010
E	Wall	397+97.80	14.75	740.306	740.306
	JT	397+97.80	12.00	740.407	740.407
	1	397+97.80	10.375	740.520	740.520
	2	397+97.80	4.000	740.620	740.620
	3	397+97.80	2.375	740.674	740.674
	4	397+97.80	8.75	740.514	740.514
	JT	397+97.80	12.00	740.414	740.414
	5	397+97.80	15.125	740.394	740.394
	6	397+97.80	8.15	740.339	740.339
	7	397+97.80	27.875	740.149	740.149
	Wall	397+97.80	34.25	740.000	740.000



AT MINIMUM FILLET AT MAXIMUM FILLET  
 STANDARD FILLET - EXTERIOR BEAMS

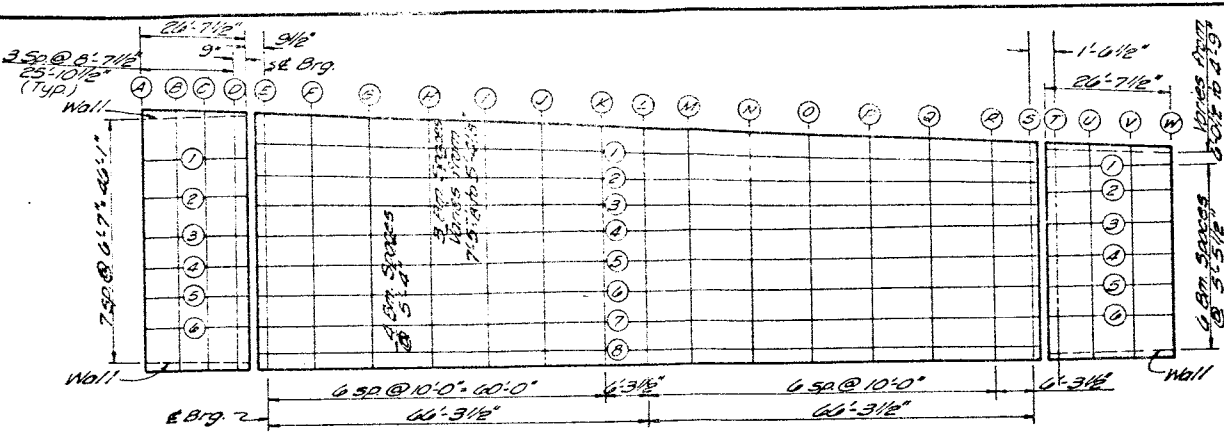


STANDARD FILLET - INTERIOR BEAMS

To determine 't': After all Structural Steel has been erected, elevations of the top flanges of the beams shall be taken at intervals shown on Sheet 2 & 3. These elevations subtracted from the Grade Elevations Adjusted for Dead Load Deflections shown on Sheet 2 & 3, minus slab thickness including the deck surfacing equals the Fillet Height 't' Above Top of Beams.

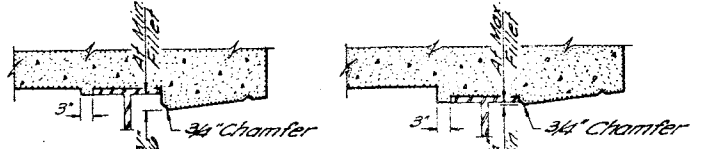
SPAN 2					
Location	Beam	Station	Offset	Theoretical Grade Elevation	Theoretical Grade Elevation Adjusted for Dead Load Deflection
E	1	397+90.71	15.92	740.447	740.447
	JT	397+90.71	12.00	740.528	740.528
	2	397+90.71	9.75	740.563	740.563
	3	397+90.71	3.58	740.659	740.659
	4	397+90.71	2.58	740.675	740.675
	5	397+90.71	8.75	740.578	740.578
	JT	397+90.71	12.00	740.528	740.528
	6	397+90.71	14.92	740.517	740.517
	7	397+90.71	21.08	740.339	740.339
	8	397+90.71	27.25	740.211	740.211
	9	397+90.71	33.42	740.083	740.083
F	1	398+00.71	15.92	740.447	740.447
	JT	398+00.71	12.00	740.528	740.528
	2	398+00.71	9.75	740.563	740.563
	3	398+00.71	3.58	740.659	740.659
	4	398+00.71	2.58	740.675	740.675
	5	398+00.71	8.75	740.578	740.578
	JT	398+00.71	12.00	740.528	740.528
	6	398+00.71	14.92	740.517	740.517
	7	398+00.71	21.08	740.339	740.339
	8	398+00.71	27.25	740.211	740.211
	9	398+00.71	33.42	740.083	740.083
G	1	398+10.71	15.92	740.447	740.447
	JT	398+10.71	12.00	740.528	740.528
	2	398+10.71	9.75	740.563	740.563
	3	398+10.71	3.58	740.659	740.659
	4	398+10.71	2.58	740.675	740.675
	5	398+10.71	8.75	740.578	740.578
	JT	398+10.71	12.00	740.528	740.528
	6	398+10.71	14.92	740.517	740.517
	7	398+10.71	21.08	740.339	740.339
	8	398+10.71	27.25	740.211	740.211
	9	398+10.71	33.42	740.083	740.083
H	1	398+20.71	15.92	740.447	740.447
	JT	398+20.71	12.00	740.528	740.528
	2	398+20.71	9.75	740.563	740.563
	3	398+20.71	3.58	740.659	740.659
	4	398+20.71	2.58	740.675	740.675
	5	398+20.71	8.75	740.578	740.578
	JT	398+20.71	12.00	740.528	740.528
	6	398+20.71	14.92	740.517	740.517
	7	398+20.71	21.08	740.339	740.339
	8	398+20.71	27.25	740.211	740.211
	9	398+20.71	33.42	740.083	740.083
I	1	398+30.71	15.92	740.447	740.447
	JT	398+30.71	12.00	740.528	740.528
	2	398+30.71	9.75	740.563	740.563
	3	398+30.71	3.58	740.659	740.659
	4	398+30.71	2.58	740.675	740.675
	5	398+30.71	8.75	740.578	740.578
	JT	398+30.71	12.00	740.528	740.528
	6	398+30.71	14.92	740.517	740.517
	7	398+30.71	21.08	740.339	740.339
	8	398+30.71	27.25	740.211	740.211
	9	398+30.71	33.42	740.083	740.083
J	1	398+40.71	15.92	740.447	740.447
	JT	398+40.71	12.00	740.528	740.528
	2	398+40.71	9.75	740.563	740.563
	3	398+40.71	3.58	740.659	740.659
	4	398+40.71	2.58	740.675	740.675
	5	398+40.71	8.75	740.578	740.578
	JT	398+40.71	12.00	740.528	740.528
	6	398+40.71	14.92	740.517	740.517
	7	398+40.71	21.08	740.339	740.339
	8	398+40.71	27.25	740.211	740.211
	9	398+40.71	33.42	740.083	740.083
K	1	398+50.71	15.92	740.447	740.447
	JT	398+50.71	12.00	740.528	740.528
	2	398+50.71	9.75	740.563	740.563
	3	398+50.71	3.58	740.659	740.659
	4	398+50.71	2.58	740.675	740.675
	5	398+50.71	8.75	740.578	740.578
	JT	398+50.71	12.00	740.528	740.528
	6	398+50.71	14.92	740.517	740.517
	7	398+50.71	21.08	740.339	740.339
	8	398+50.71	27.25	740.211	740.211
	9	398+50.71	33.42	740.083	740.083

SPAN 3					
Location	Beam	Station	Offset	Theoretical Grade Elevation	Theoretical Grade Elevation Adjusted for Dead Load Deflection
L	1	398+57.00	15.92	740.400	740.400
	JT	398+57.00	12.00	740.487	740.487
	2	398+57.00	9.75	740.522	740.522
	3	398+57.00	3.58	740.618	740.618
	4	398+57.00	2.58	740.634	740.634
	5	398+57.00	8.75	740.537	740.537
	JT	398+57.00	12.00	740.487	740.487
	6	398+57.00	14.92	740.476	740.476
	7	398+57.00	21.08	740.298	740.298
	8	398+57.00	27.25	740.170	740.170
	9	398+57.00	33.42	740.042	740.042
M	1	398+63.29	15.92	740.421	740.421
	JT	398+63.29	12.00	740.508	740.508
	2	398+63.29	9.75	740.543	740.543
	3	398+63.29	3.58	740.639	740.639
	4	398+63.29	2.58	740.655	740.655
	5	398+63.29	8.75	740.558	740.558
	JT	398+63.29	12.00	740.508	740.508
	6	398+63.29	14.92	740.497	740.497
	7	398+63.29	21.08	740.319	740.319
	8	398+63.29	27.25	740.191	740.191
	9	398+63.29	33.42	740.063	740.063
N	1	398+71.92	15.92	740.441	740.441
	JT	398+71.92	12.00	740.528	740.528
	2	398+71.92	9.75	740.563	740.563
	3	398+71.92	3.58	740.659	740.659
	4	398+71.92	2.58	740.675	740.675
	5	398+71.92	8.75	740.578	740.578
	JT	398+71.92	12.00	740.528	740.528
	6	398+71.92	14.92	740.517	740.517
	7	398+71.92	21.08	740.339	740.339
	8	398+71.92	27.25	740.211	740.211
	9	398+71.92	33.42	740.083	740.083
O	1	398+80.54	15.92	740.462	740.462
	JT	398+80.54	12.00	740.549	740.549
	2	398+80.54	9.75	740.584	740.584
	3	398+80.54	3.58	740.680	740.680
	4	398+80.54	2.58	740.696	740.696
	5	398+80.54	8.75	740.599	740.599
	JT	398+80.54	12.00	740.549	740.549
	6	398+80.54	14.92	740.538	740.538
	7	398+80.54	21.08	740.360	740.360
	8	398+80.54	27.25	740.232	740.232
	9	398+80.54	33.42	740.104	740.104
P	1	398+89.17	15.92	740.483	740.483
	JT	398+89.17	12.00	740.570	740.570
	2	398+89.17	9.75	740.605	740.605
	3	398+89.17	3.58	740.701	740.701
	4	398+89.17	2.58	740.717	740.717
	5	398+89.17	8.75	740.620	740.620
	JT	398+89.17	12.00	740.570	740.570
	6	398+89.17	14.92	740.559	740.559
	7	398+89.17	21.08	740.381	740.381
	8	398+89.17	27.25	740.253	740.253
	9	398+89.17	33.42	740.125	740.125
Q	1	398+97.80	15.92	740.504	740.504
	JT	398+97.80	12.00	740.591	740.591
	2	398+97.80	9.75	740.626	740.626
	3	398+97.80	3.58	740.722	740.722
	4	398+97.80	2.58	740.738	740.738
	5	398+			

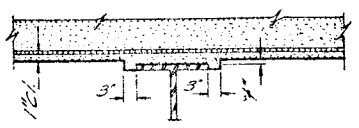


**PLAN**  
 SOUTHBOUND STRUCTURE

SPAN 1				
Location	Beam	Station	Offset	Theoretical Grade Elevation
Back of Southbound Beam	Wall	397+53.29	29.33	740.101
	1	397+63.29	22.75	740.238
	2	397+73.29	16.17	740.375
	Joint	397+83.29	12.00	740.462
	3	397+83.29	9.58	740.500
	4	397+83.29	5.00	740.603
	5	397+83.29	3.58	740.634
	6	397+83.29	10.17	740.691
	Joint	397+83.29	12.00	740.728
	Wall	397+83.29	16.75	740.822
	1	397+71.92	22.33	740.122
	2	397+71.92	16.17	740.259
	3	397+71.92	12.00	740.346
	4	397+71.92	9.58	740.384
	5	397+71.92	5.00	740.487
	6	397+71.92	3.58	740.518
	7	397+71.92	10.17	740.575
	Joint	397+71.92	12.00	740.612
	Wall	397+71.92	16.75	740.706
	1	397+60.54	22.75	740.279
	2	397+60.54	16.17	740.416
	3	397+60.54	12.00	740.503
	4	397+60.54	9.58	740.541
	5	397+60.54	5.00	740.644
	6	397+60.54	3.58	740.675
	7	397+60.54	10.17	740.732
	Joint	397+60.54	12.00	740.769
	Wall	397+60.54	16.75	740.863
E. Brg. Prest. Beam	Wall	397+69.17	29.33	740.163
	1	397+69.17	22.75	740.300
	2	397+69.17	16.17	740.437
	3	397+69.17	12.00	740.524
	4	397+69.17	9.58	740.562
	5	397+69.17	5.00	740.665
	6	397+69.17	3.58	740.696
	7	397+69.17	10.17	740.753
	Joint	397+69.17	12.00	740.790
	Wall	397+69.17	16.75	740.884



**AT MINIMUM FILLET AT MAXIMUM FILLET**  
 STANDARD FILLET - EXTERIOR BEAMS

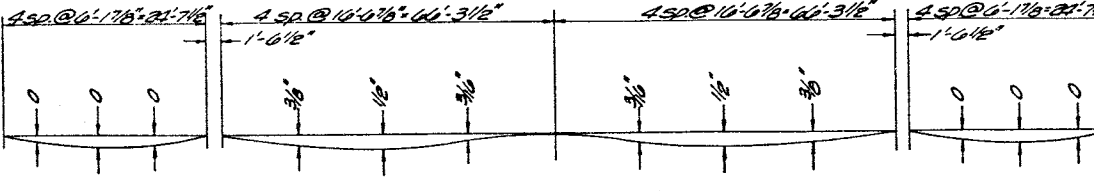


STANDARD FILLET - INTERIOR BEAMS

To determine "f": After all structural steel has been erected, elevations of the top flanges of the beams shall be taken at intervals shown on sheets 2 & 3. These elevations subtracted from the "Grade Elevations Adjusted for Dead Load Deflections" shown on sheets 2 & 3, minus slab thickness including the deck surfacing equals the fillet height "f" above top of beams.

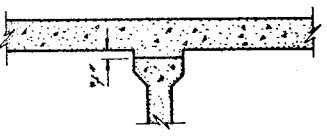
SPAN 2				
Location	Beam	Station	Offset	Theoretical Grade Elevation
E. Brg. Steel Beam	1	397+90.71	27.76	740.200
	2	397+90.71	22.27	740.356
	Joint	397+90.71	14.00	740.486
	3	397+90.71	12.79	740.510
	4	397+90.71	5.29	740.633
	5	397+90.71	0.04	740.715
	6	397+90.71	5.38	740.631
	7	397+90.71	10.71	740.548
	Joint	397+90.71	12.00	740.528
	8	397+90.71	16.04	740.442
	1	398+00.71	27.27	740.232
	2	398+00.71	19.95	740.367
	Joint	398+00.71	14.00	740.510
	3	398+00.71	12.22	740.540
	4	398+00.71	5.29	740.657
	5	398+00.71	0.04	740.739
	6	398+00.71	5.38	740.655
	7	398+00.71	10.71	740.572
	Joint	398+00.71	12.00	740.552
	8	398+00.71	16.04	740.466
	1	398+10.71	26.78	740.264
	2	398+10.71	19.62	740.418
	Joint	398+10.71	14.00	740.534
	3	398+10.71	12.46	740.566
	4	398+10.71	5.29	740.681
	5	398+10.71	0.04	740.763
	6	398+10.71	5.38	740.679
	7	398+10.71	10.71	740.596
	Joint	398+10.71	12.00	740.576
	8	398+10.71	16.04	740.490
	1	398+20.71	26.30	740.303
	2	398+20.71	19.30	740.448
	Joint	398+20.71	14.00	740.558
	3	398+20.71	12.29	740.591
	4	398+20.71	5.29	740.705
	5	398+20.71	0.04	740.787
	6	398+20.71	5.38	740.703
	7	398+20.71	10.71	740.620
	Joint	398+20.71	12.00	740.600
	8	398+20.71	16.04	740.514
	1	398+30.71	25.82	740.337
	2	398+30.71	18.96	740.479
	Joint	398+30.71	14.00	740.588
	3	398+30.71	12.18	740.621
	4	398+30.71	5.29	740.735
	5	398+30.71	0.04	740.817
	6	398+30.71	5.38	740.733
	7	398+30.71	10.71	740.650
	Joint	398+30.71	12.00	740.630
	8	398+30.71	16.04	740.544
	1	398+40.71	25.33	740.371
	2	398+40.71	18.65	740.510
	Joint	398+40.71	14.00	740.621
	3	398+40.71	11.97	740.653
	4	398+40.71	5.29	740.767
	5	398+40.71	0.04	740.849
	6	398+40.71	5.38	740.765
	7	398+40.71	10.71	740.682
	Joint	398+40.71	12.00	740.662
	8	398+40.71	16.04	740.576
	1	398+50.71	24.85	740.405
	2	398+50.71	18.55	740.544
	Joint	398+50.71	14.00	740.653
	3	398+50.71	11.81	740.685
	4	398+50.71	5.29	740.800
	5	398+50.71	0.04	740.882
	6	398+50.71	5.38	740.798
	7	398+50.71	10.71	740.715
	Joint	398+50.71	12.00	740.695
	8	398+50.71	16.04	740.609

SPAN 3				
Location	Beam	Station	Offset	Theoretical Grade Elevation
E. Brg. Pier	1	398+57.00	24.54	740.426
	2	398+57.00	18.15	740.559
	Joint	398+57.00	14.00	740.665
	3	398+57.00	11.71	740.683
	4	398+57.00	5.29	740.792
	5	398+57.00	0.04	740.874
	6	398+57.00	5.38	740.780
	7	398+57.00	10.71	740.707
	Joint	398+57.00	12.00	740.687
	8	398+57.00	16.04	740.603
	1	398+67.00	24.23	740.456
	2	398+67.00	17.93	740.587
	Joint	398+67.00	14.00	740.689
	3	398+67.00	11.61	740.717
	4	398+67.00	5.29	740.816
	5	398+67.00	0.04	740.898
	6	398+67.00	5.38	740.804
	7	398+67.00	10.71	740.731
	Joint	398+67.00	12.00	740.711
	8	398+67.00	16.04	740.627
	1	398+77.00	23.74	740.480
	2	398+77.00	17.61	740.618
	Joint	398+77.00	14.00	740.693
	3	398+77.00	11.45	740.724
	4	398+77.00	5.29	740.820
	5	398+77.00	0.04	740.902
	6	398+77.00	5.38	740.808
	7	398+77.00	10.71	740.735
	Joint	398+77.00	12.00	740.715
	8	398+77.00	16.04	740.631
	1	398+87.00	23.26	740.504
	2	398+87.00	17.28	740.649
	Joint	398+87.00	14.00	740.717
	3	398+87.00	11.29	740.770
	4	398+87.00	5.29	740.864
	5	398+87.00	0.04	740.946
	6	398+87.00	5.38	740.852
	7	398+87.00	10.71	740.779
	Joint	398+87.00	12.00	740.759
	8	398+87.00	16.04	740.675
	1	398+97.00	22.77	740.528
	2	398+97.00	16.96	740.680
	Joint	398+97.00	14.00	740.741
	3	398+97.00	11.12	740.797
	4	398+97.00	5.29	740.889
	5	398+97.00	0.04	740.970
	6	398+97.00	5.38	740.876
	7	398+97.00	10.71	740.803
	Joint	398+97.00	12.00	740.783
	8	398+97.00	16.04	740.699
	1	398+07.00	22.29	740.563
	2	398+07.00	16.04	740.710
	Joint	398+07.00	14.00	740.765
	3	398+07.00	10.96	740.823
	4	398+07.00	5.29	740.916
	5	398+07.00	0.04	740.997
	6	398+07.00	5.38	740.903
	7	398+07.00	10.71	740.830
	Joint	398+07.00	12.00	740.810
	8	398+07.00	16.04	740.726
	1	398+17.00	21.80	740.587
	2	398+17.00	16.31	740.741
	Joint	398+17.00	14.00	740.799
	3	398+17.00	10.80	740.860
	4	398+17.00	5.29	740.930
	5	398+17.00	0.04	741.018
	6	398+17.00	5.38	740.934
	7	398+17.00	10.71	740.861
	Joint	398+17.00	12.00	740.841
	8	398+17.00	16.04	740.757
E. Brg. Slab Beam	1	398+29.29	21.32	740.451
	2	398+29.29	15.99	740.754
	Joint	398+29.29	14.00	740.804
	3	398+29.29	10.64	740.865
	4	398+29.29	5.29	740.949
	5	398+29.29	0.04	741.033
	6	398+29.29	5.38	740.949
	7	398+29.29	10.71	740.876
	Joint	398+29.29	12.00	740.856
	8	398+29.29	16.04	740.772



**DEAD LOAD DEFLECTION DIAGRAM**  
 Includes Weight of Concrete and Deck Surfacing Only

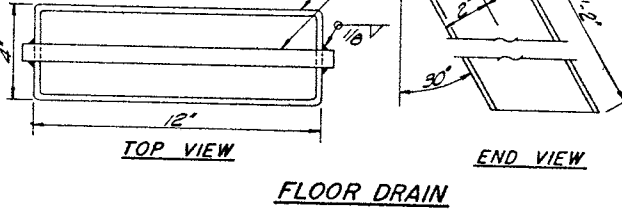
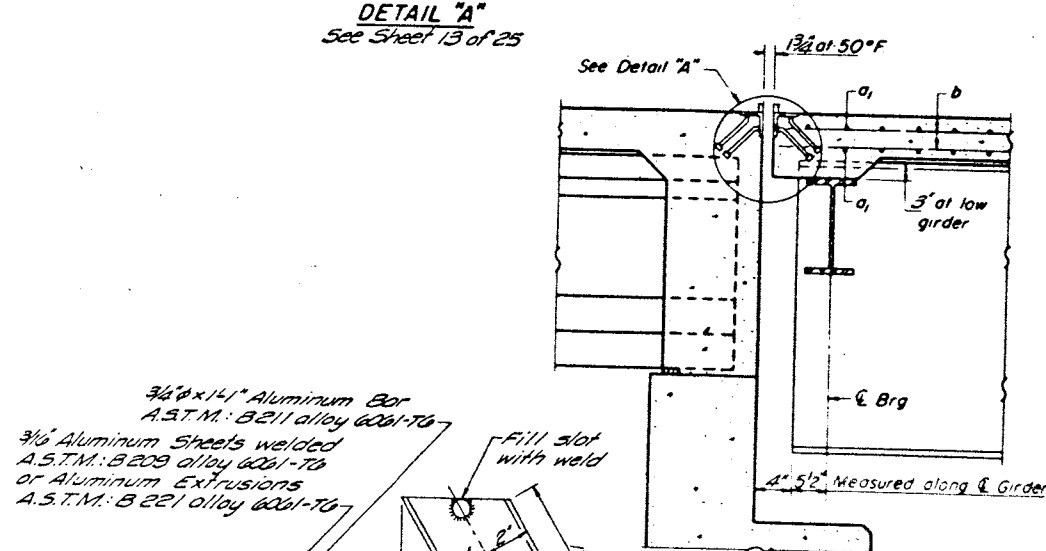
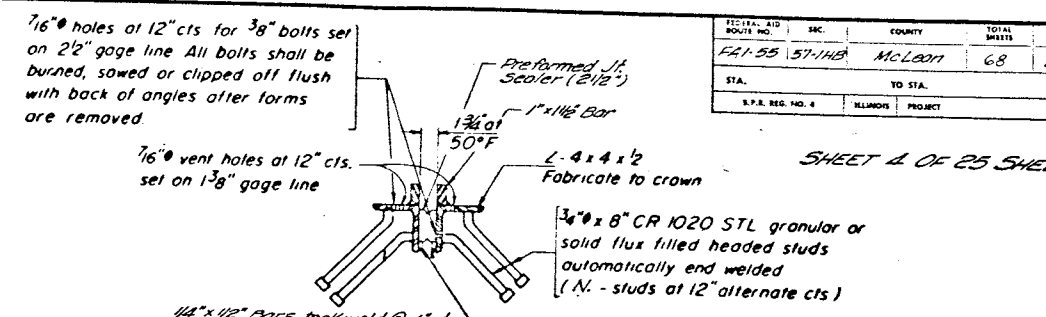
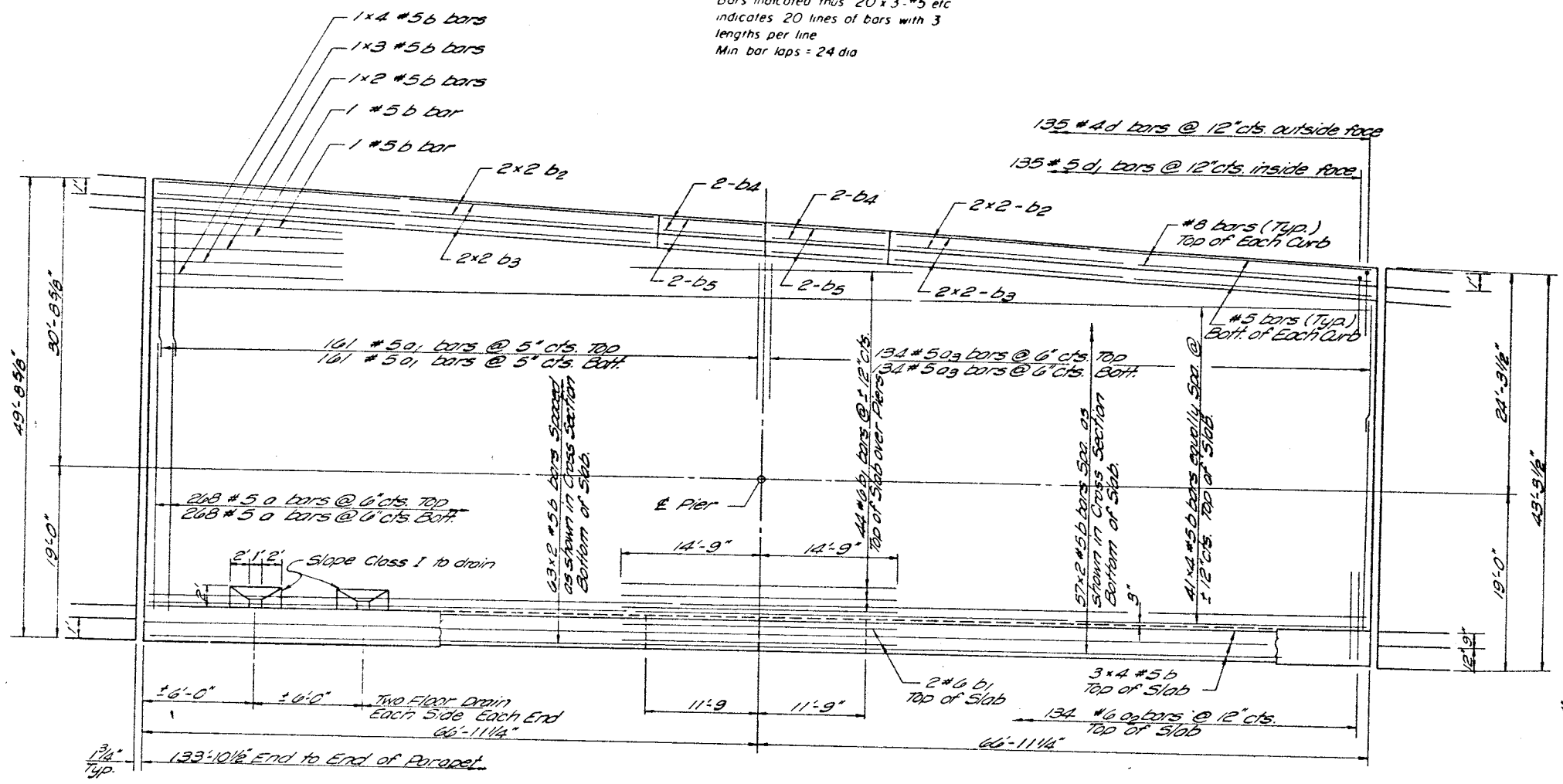
The Above Deflections Are Not For Use in The Field If The Engineer Is Working From The Theoretical Grade Elevations Adjusted for Dead Load Deflections.



To determine "f": After all precast prestressed beams have been erected, elevations of the top flanges of the beams shall be taken at intervals shown above. These elevations subtracted algebraically from the "Theoretical Grade Elevations Adjusted for Dead Load Deflections" shown above, minus slab thickness, (including the deck surfacing) equals the fillet height "f". A positive value of "f" equals the fillet height above the top of the beam. A negative value of "f", not to exceed 1/2", equals the embedment of the beam above the theoretical bottom of slab elevation.

SPAN 4				
Location	Beam	Station	Offset	Theoretical Grade Elevation
E. Brg. Prest. Beam	Wall	399+24.83	22.00	740.642
	1	399+24.83	16.00	740.757
	Joint	399+24.83	13.00	740.829
	2	399+24.83	10.54	740.873
	3	399+24.83	5.08	740.958
	4	399+24.83	0.37	741.031
	5	399+24.83	5.63	740.946
	6	399+24.83	11.23	740.861
	Joint	399+24.83	12.00	740.850
	Wall	399+24.83	16.75	740.951
	1	399+33.44	21.59	740.663
	2	399+33.44	16.00	740.788
	Joint	399+33.44	13.00	740.850
	3	399+33.44	10.54	740.894
	4	399+33.44	5.08	740.979
	5	399+33.44	0.37	741.053
	6	399+33.44	5.63	740.968
	7	399+33.44	11.23	740.883
	Joint	399+33.44	12.00	740.872
	Wall	399+33.44	16.75	740.973
	1	399+42.05	21.17	740.685
	2	399+42.05	16.00	740.809
	Joint	399+42.05	13.00	740.870
	3	399+42.05	10.54	740.914
	4	399+42.05	5.08	740.999
	5	3		

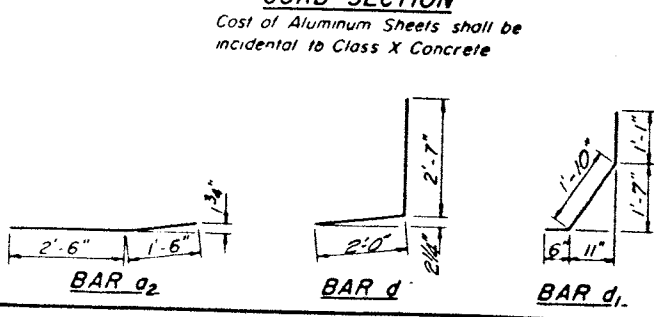
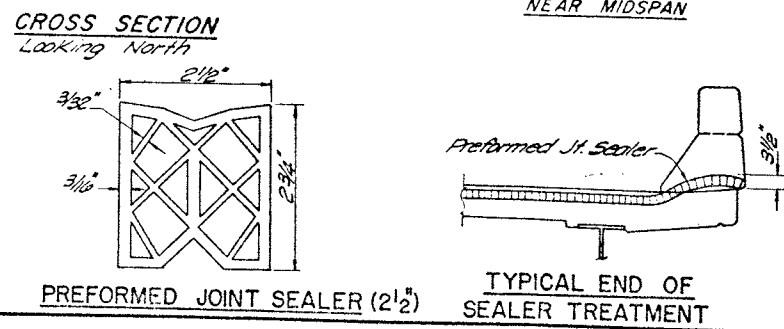
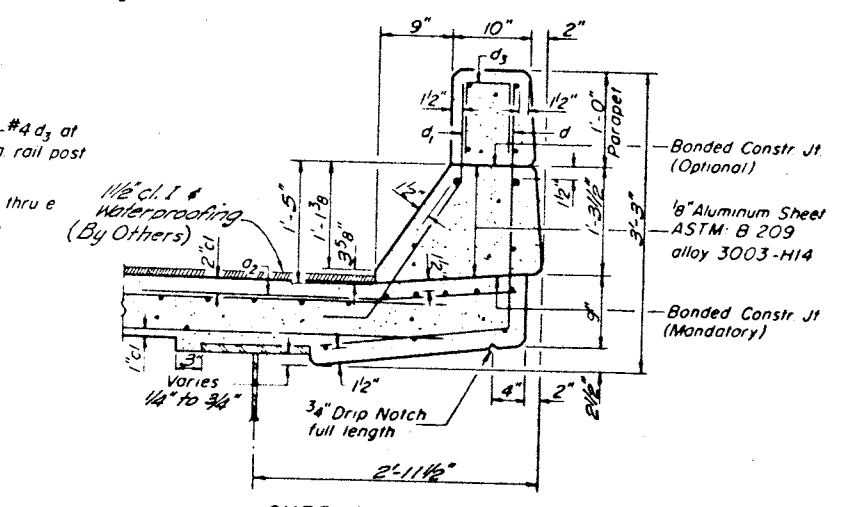
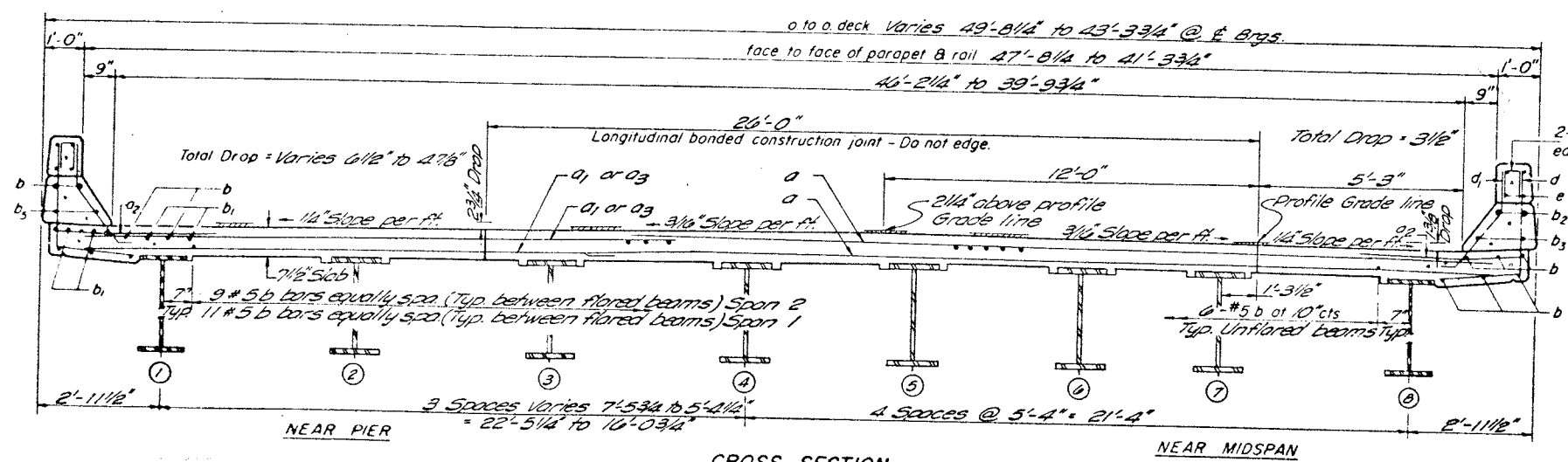
NOTE  
 Bars indicated thus 20x3.#5 etc  
 indicates 20 lines of bars with 3  
 lengths per line  
 Min bar laps = 24 dia



**BILL OF MATERIAL**

Bar	No	Size	Length	Shape
a <sub>0</sub>	536	#5	27'-9"	
a <sub>1</sub>	322	#5	22'-0"	
a <sub>2</sub>	268	#6	4'-0"	
a <sub>3</sub>	268	#5	19'-0"	
b	439	#5	34'-9"	
b <sub>1</sub>	48	#6	29'-6"	
b <sub>2</sub>	16	#8	28'-9"	
b <sub>3</sub>	16	#5	28'-6"	
b <sub>4</sub>	8	#8	11'-6"	
b <sub>5</sub>	8	#5	11'-6"	
d	270	#4	4'-7"	J
d <sub>1</sub>	270	#5	3'-5"	J
Reinforcement Bars				Lbs 51,650
Class X Concrete				Cu Yds 171.5

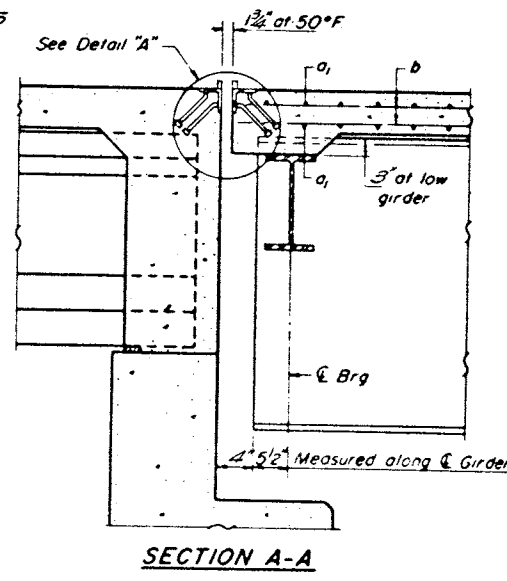
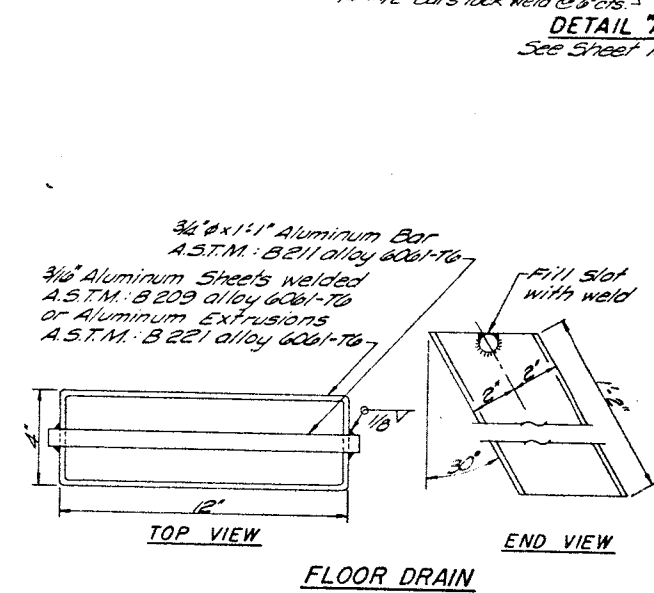
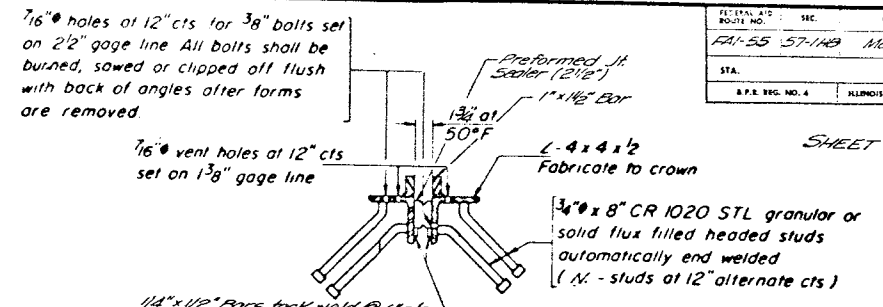
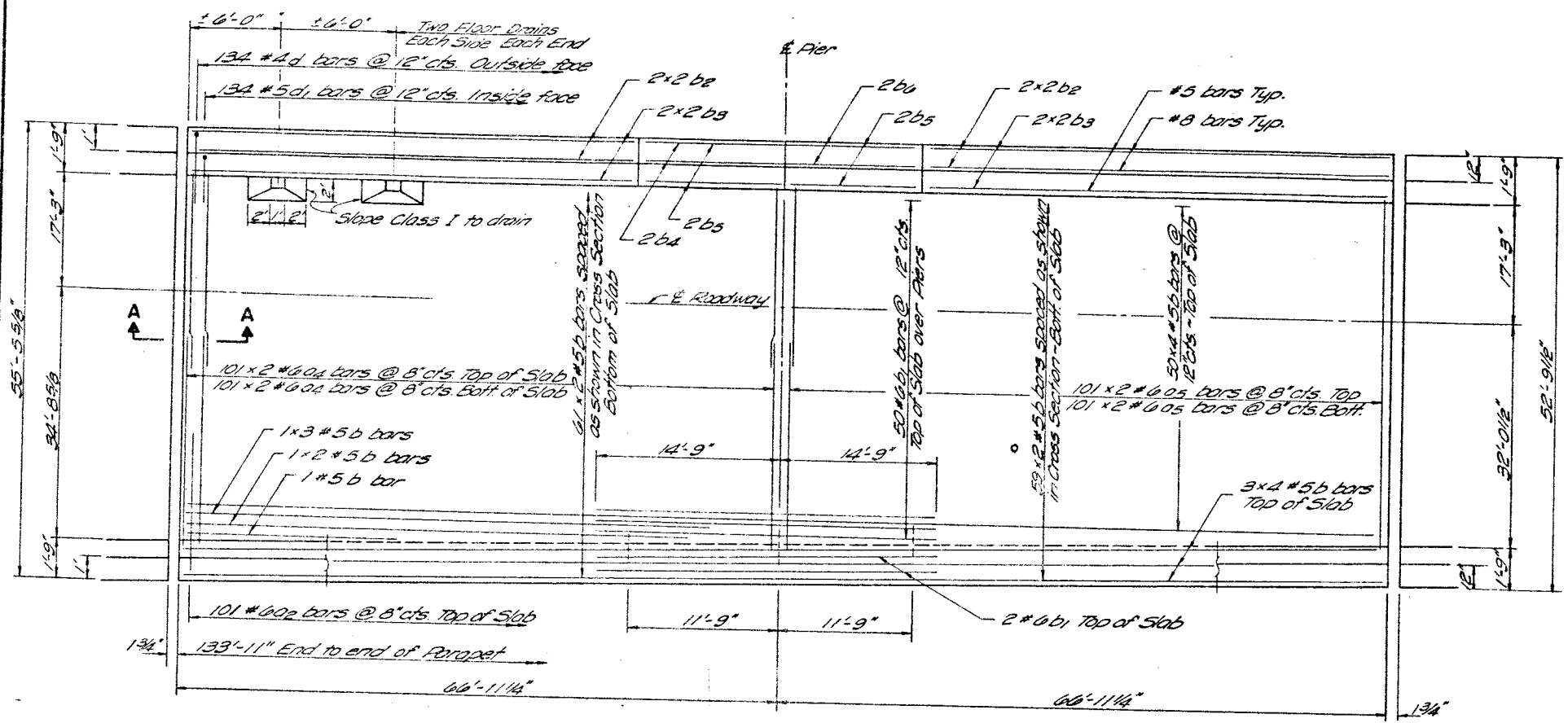
NOTE: For placement of bars d<sub>3</sub> and e thru e<sub>2</sub> see sheet #35



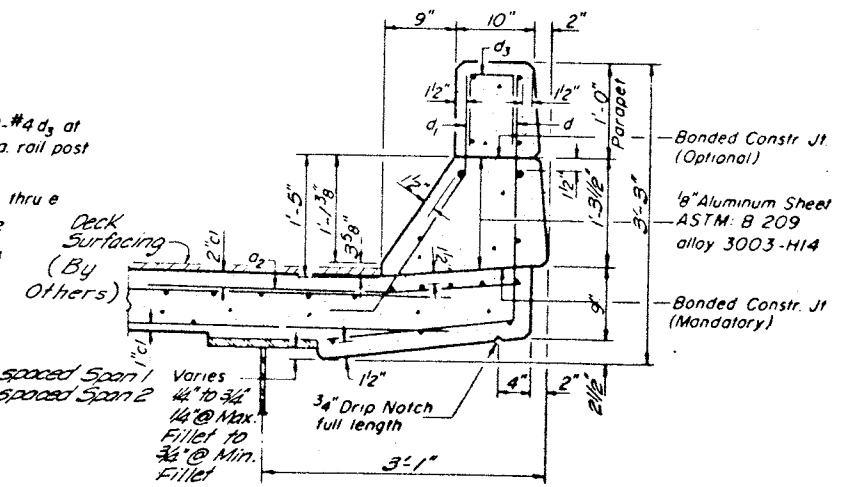
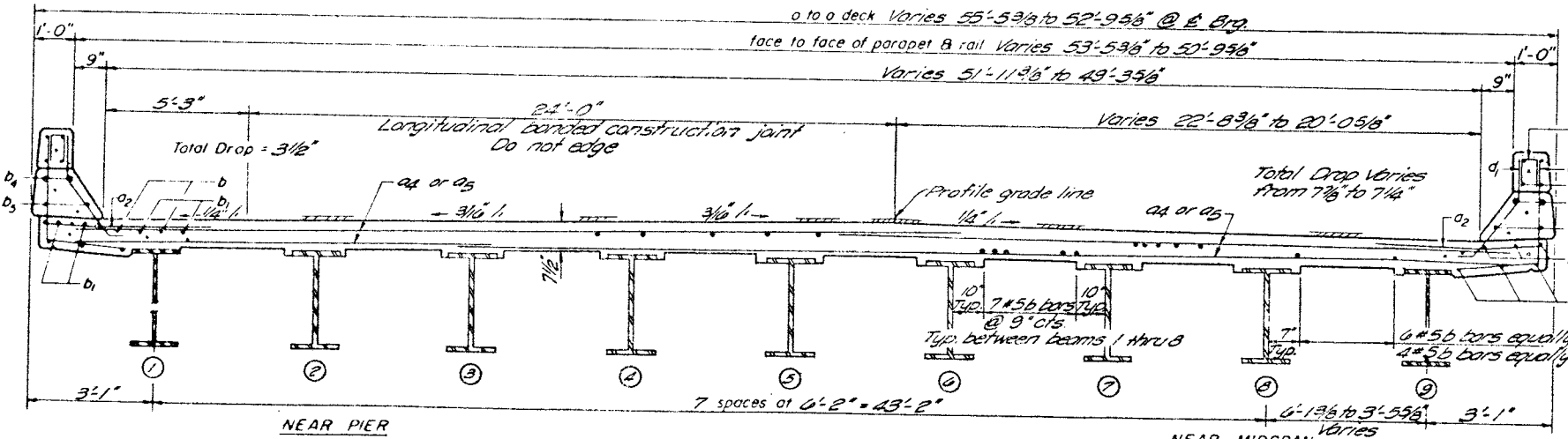
Parapet Reinforcement and Class X Concrete are billed on sheet # 14

**SUPERSTRUCTURE**  
 SOUTHBOUND - STRUCTURE  
 FAI ROUTE 55 SEC. 57-1HB  
 MC LEAN COUNTY  
 STATION 398+57.00

NOTE  
 Bars indicated thus 20 x 3 #5 etc  
 indicates 20 lines of bars with 3  
 lengths per line  
 Min bar laps = 24 dia



NOTE: For placement of bars  $d_3$  and  $e$  thru  $e_2$  see sheet #33



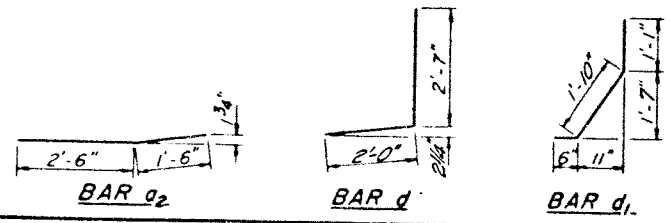
BILL OF MATERIAL

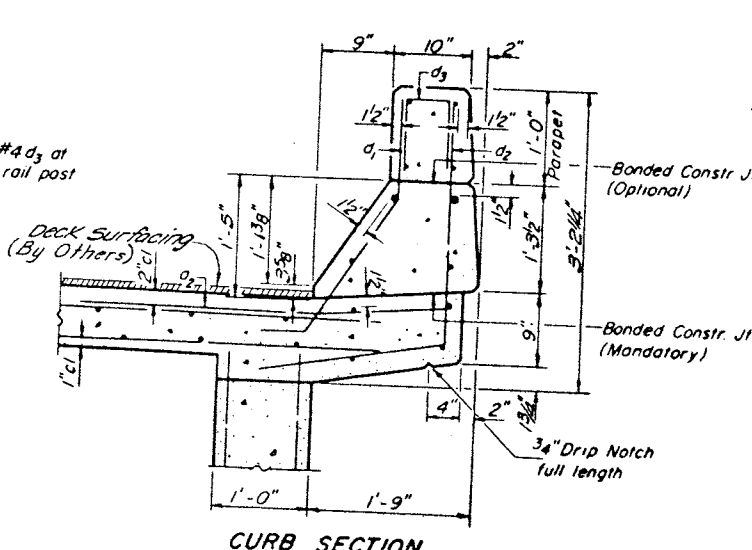
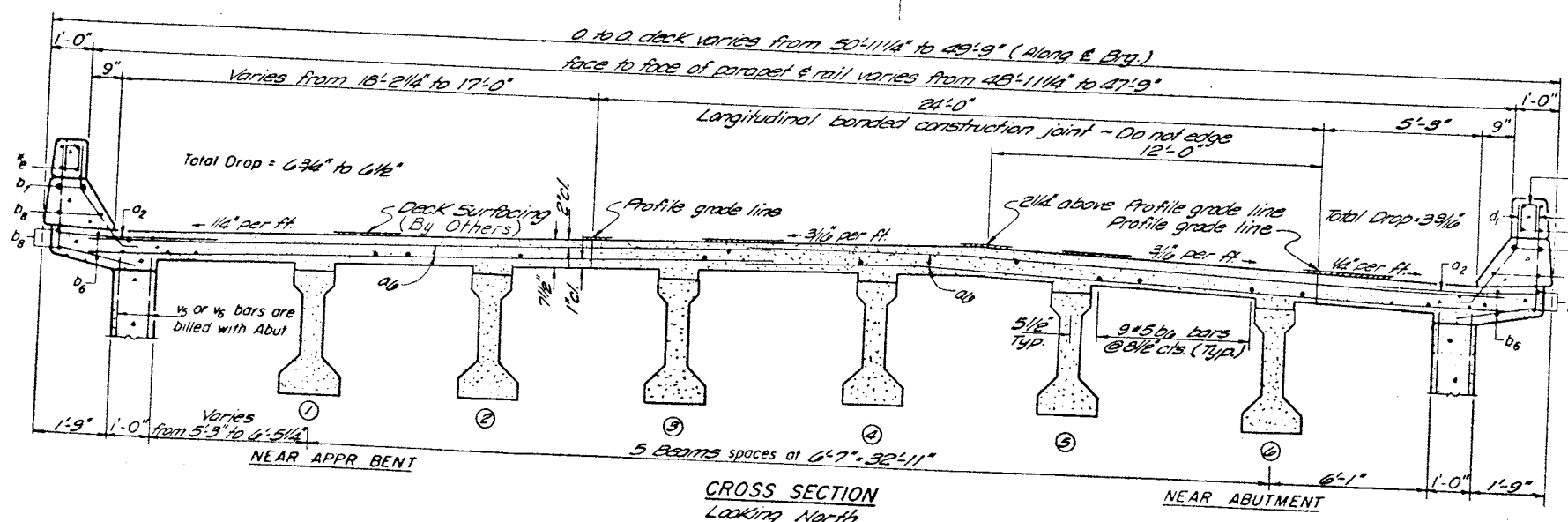
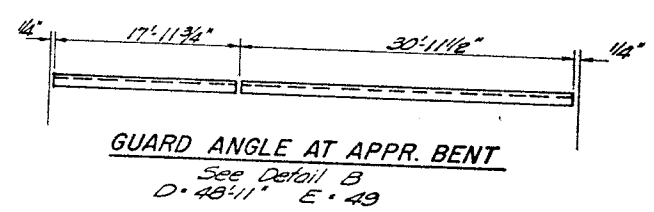
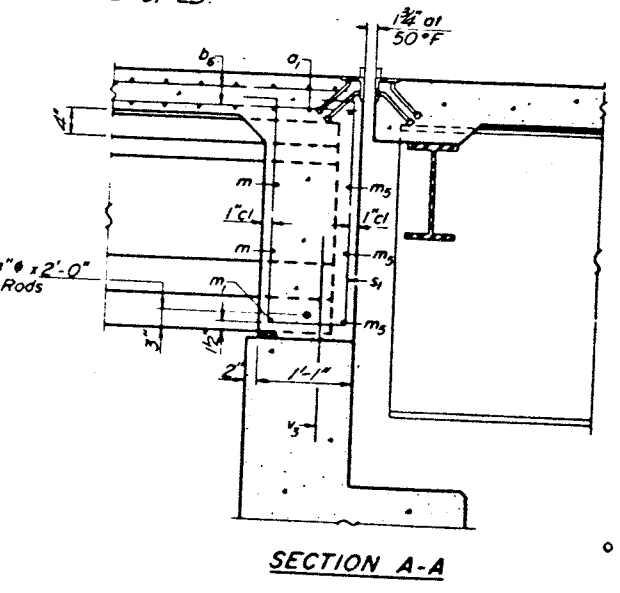
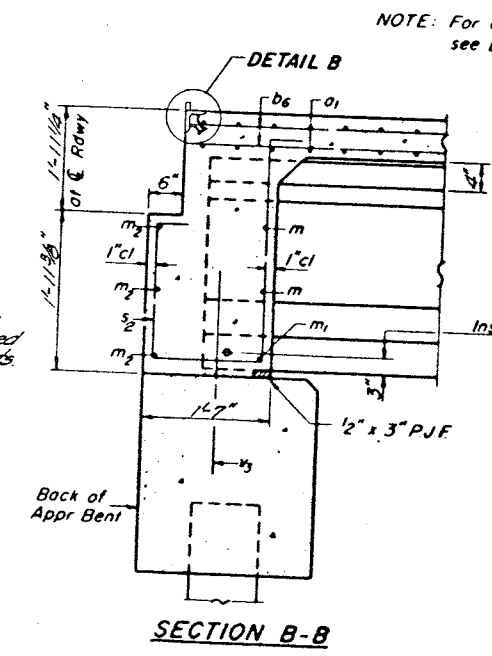
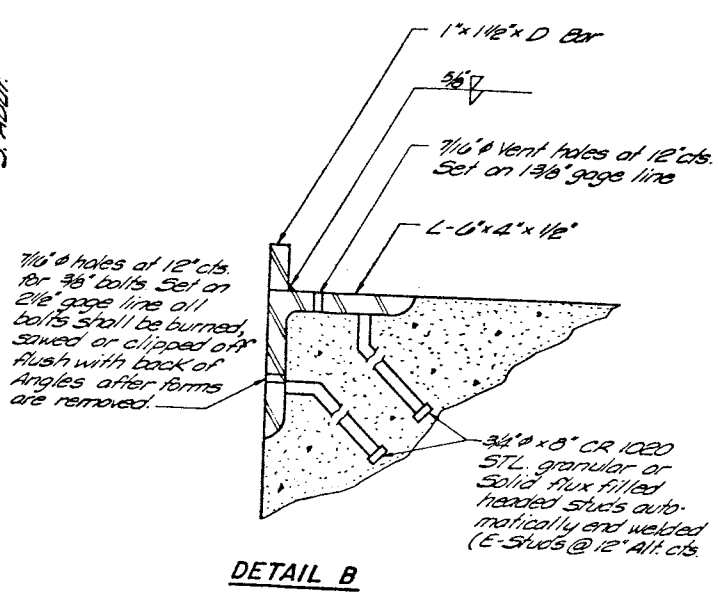
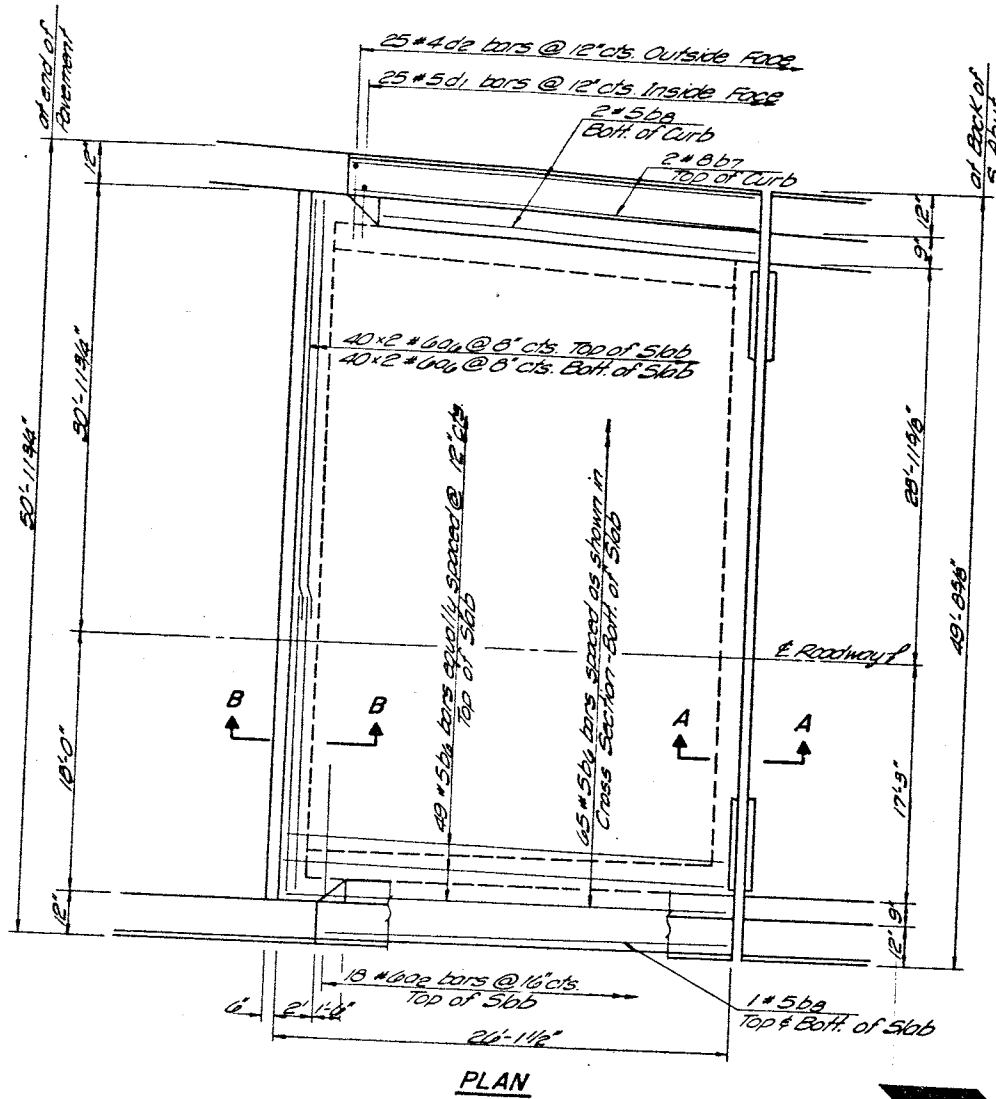
Bar	No	Size	Length	Shape
$a_4$	404	#6	29'-3"	—
$a_2$	202	#6	4'-0"	—
$a_5$	404	#6	28'-3"	—
$b$	404	#5	34'-9"	—
$b_1$	5A	#6	29'-6"	—
$b_2$	10	#8	28'-9"	—
$b_3$	10	#5	28'-6"	—
$b_4$	8	#8	11'-6"	—
$b_5$	8	#5	11'-6"	—
$d$	20B	#4	4'-7"	J
$d_1$	26B	#5	3'-5"	J
Reinforcement Bars			Lbs	59,090
Class X Concrete			Cu Yds	125.9

Parapet Reinforcement and Class X Concrete are billed on sheet # 14

SUPERSTRUCTURE  
 NORTHBOUND - STRUCTURE  
 FAI ROUTE 55 SEC. 57-1HB  
 MC LEAN COUNTY  
 STATION 398+57.00

Note: Preformed joint sealer & Sealer treatment (See Details-Sht A)

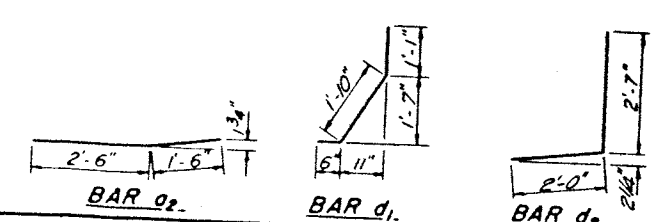


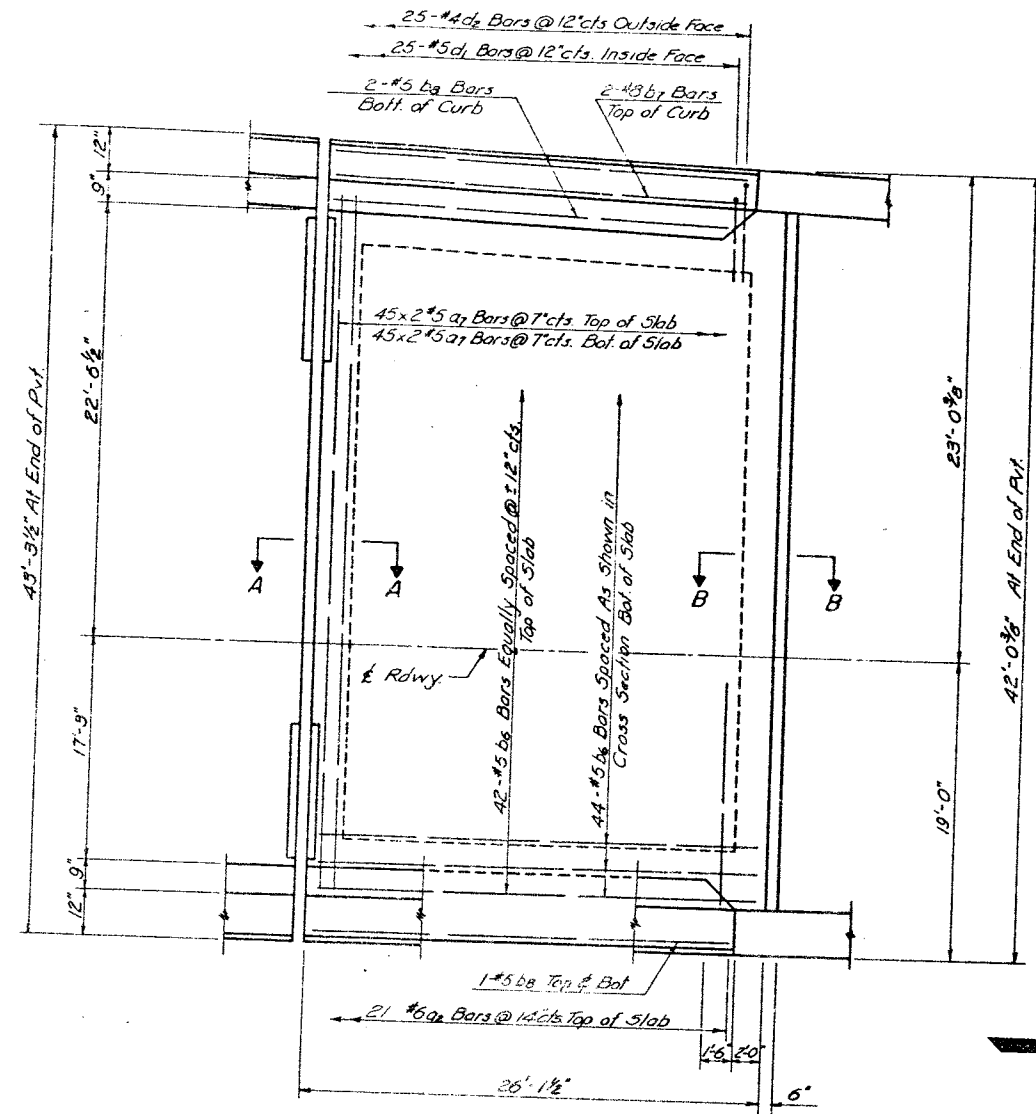


ONE APPR SPAN  
BILL OF MATERIAL

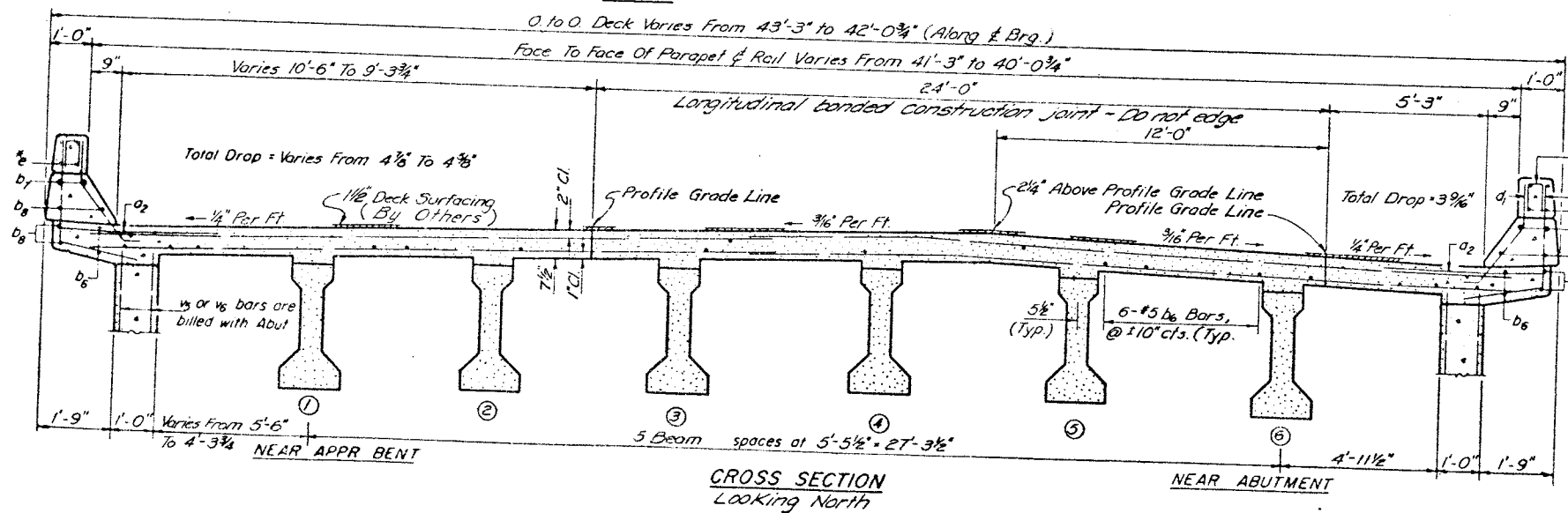
Bar	No	Size	Length	Shape
a1	160	#6	25'-3"	—
a2	36	#6	4'-0"	—
b1	114	#5	25'-9"	—
b2	4	#8	23'-9"	—
b3	8	#5	22'-9"	—
d1	50	#5	3'-5"	U
d2	50	#4	4'-7"	U
m1	28	#4	5'-5"	—
m2	14	#5	4'-11"	—
m3	6	#5	25'-0"	—
s1	42	#4	8'-9"	U
s2	42	#4	7'-9"	U
Reinforcement Bars		Lbs	11,170	
Class X Concrete		Cu Yds	46.6	

\*Parapet Reinforcement and Class X Concrete are billed on sheet # 14  
For placement and details of bars m thru m3 and s1 thru s2 see sheet # 11

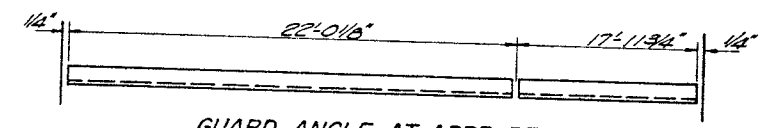
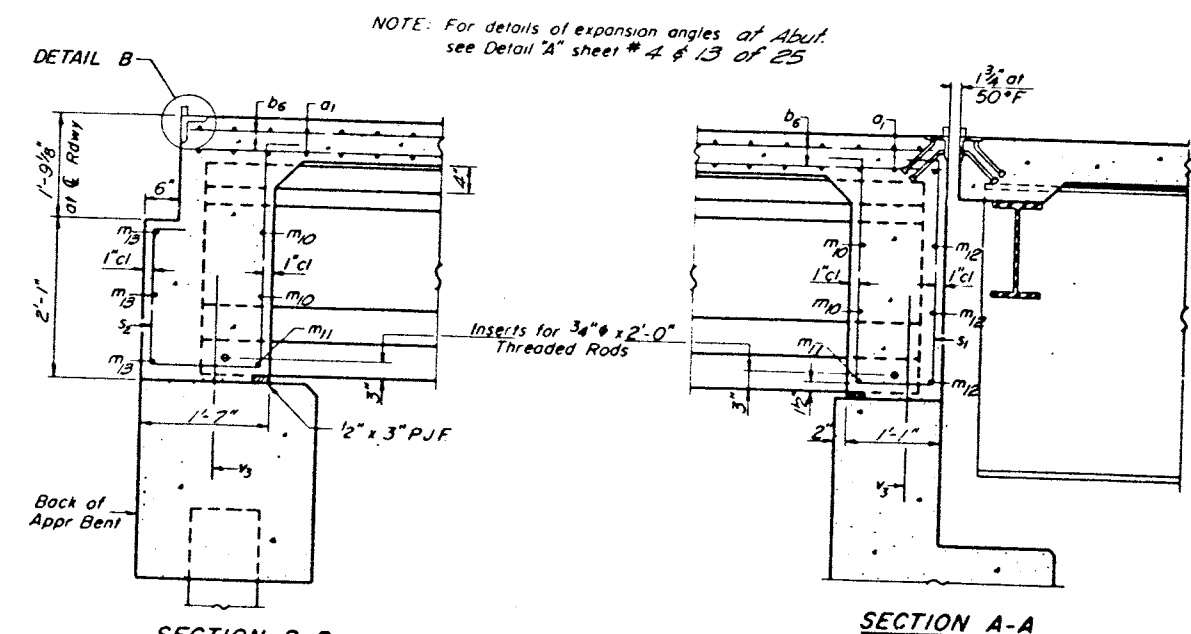




PLAN



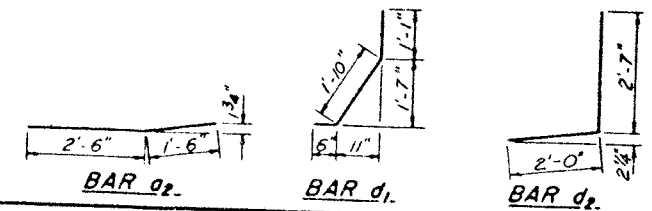
CROSS SECTION Looking North



ONE APPR. SPAN BILL OF MATERIAL

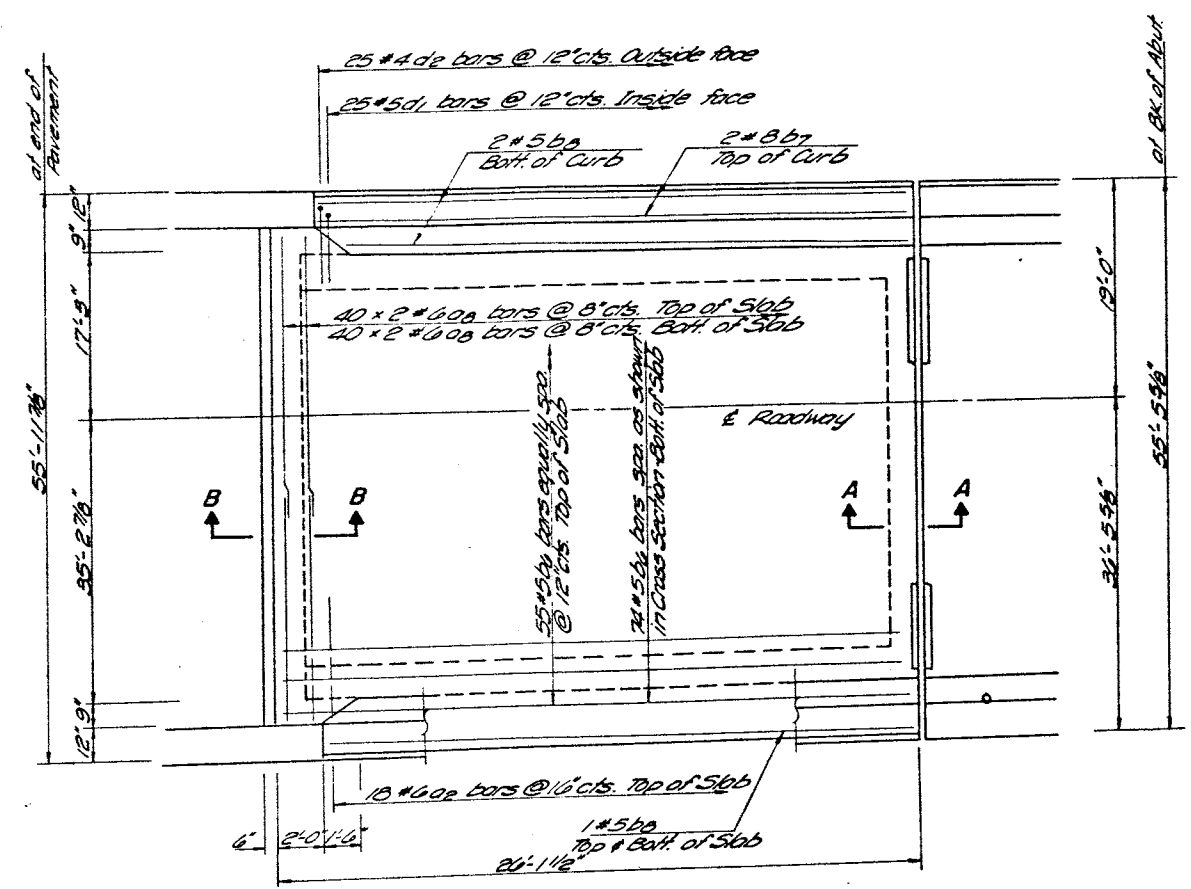
Bar	No	Size	Length	Shape
a <sub>7</sub>	180	#5	21'-9"	—
a <sub>2</sub>	42	#6	4'-0"	—
b <sub>6</sub>	86	#5	25'-9"	—
b <sub>7</sub>	4	#8	23'-9"	—
b <sub>8</sub>	8	#5	22'-9"	—
d <sub>1</sub>	50	#5	3'-5"	—
d <sub>2</sub>	50	#4	4'-7"	—
m <sub>6</sub>	2	#4	5'-0"	—
m <sub>10</sub>	24	#4	4'-6"	—
m <sub>11</sub>	12	#5	3'-9"	—
m <sub>12</sub>	6	#5	19'-6"	—
m <sub>13</sub>	6	#5	20'-6"	—
m <sub>14</sub>	2	#4	3'-9"	—
m <sub>15</sub>	1	#5	3'-3"	—
m <sub>7</sub>	1	#5	4'-6"	—
s <sub>2</sub>	35	#4	7'-9"	—
s <sub>1</sub>	35	#4	8'-9"	—
Reinforcement Bars		Lbs	8,200	
Class X Concrete		Cu Yds	42.1	

\* Parapet Reinforcement and Class X Concrete are billed on sheet # 14  
 For placement and details of bars m<sub>10</sub> thru m<sub>15</sub> and s<sub>1</sub> thru s<sub>2</sub> see sheet # 11

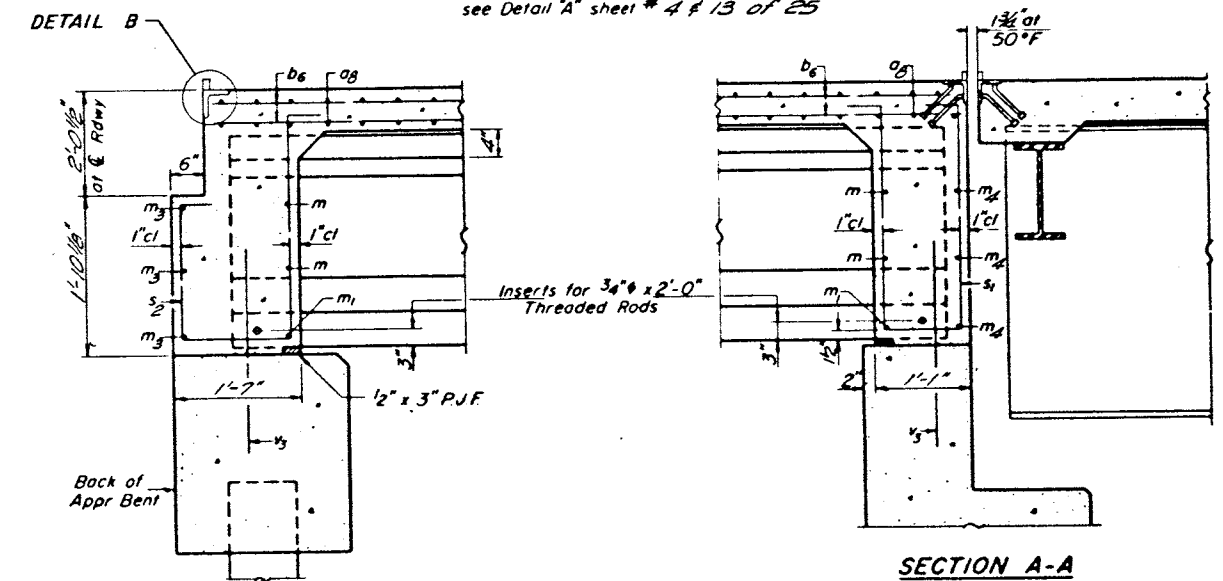


SUPERSTRUCTURE  
 NORTH APPROACH SPAN  
 SOUTHBOUND ROADWAY  
 FAI ROUTE 55 SEC. 57-1HB  
 MC LEAN COUNTY  
 STA. 398 + 57.00

NOTE: For details of expansion angles at Abut. see Detail "A" sheet # 4 & 13 of 25

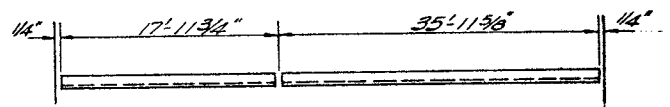


PLAN



SECTION B-B  
 Note: For Detail B See Sheet 6 of 25

SECTION A-A

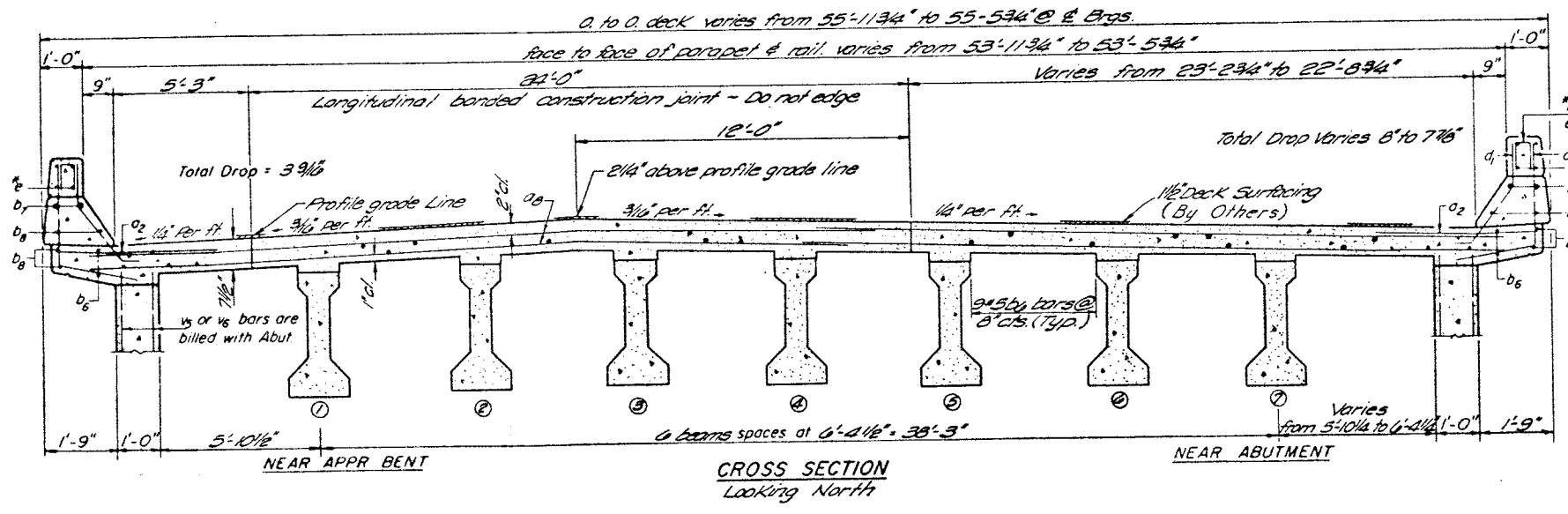


GUARD ANGLE ON APPR. BENT  
 See Detail B Sheet 6 of 25  
 D = 53'-11" E = 54

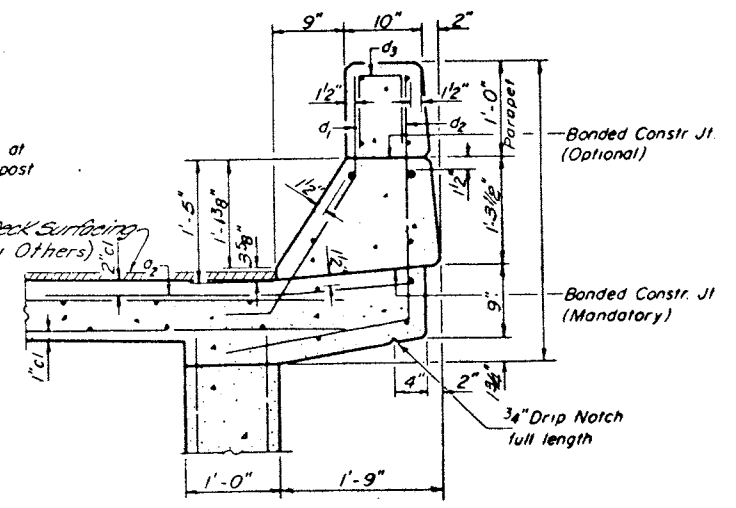
ONE APPR. SPAN  
 BILL OF MATERIAL

Bar	No	Size	Length	Shape
oa	160	#6	28'-9"	—
ob	36	#6	4'-0"	—
ba	129	#5	25'-9"	—
bb	4	#8	23'-9"	—
bc	8	#5	22'-9"	—
ca	50	#5	3'-5"	┌
cb	50	#4	4'-7"	└
ma	32	#4	5'-5"	—
mb	10	#5	4'-11"	—
mc	0	#5	27'-6"	—
md	0	#5	25'-6"	—
sa	48	#4	8'-9"	U
sb	48	#4	7'-9"	U
Reinforcement Bars			Lbs	12,290
Class X Concrete			Cu Yds	52.7

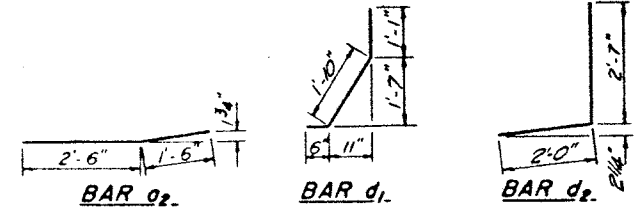
\* Parapet Reinforcement and Class X Concrete are billed on sheet # 14.  
 For placement and details of bars m thru md and s1 thru s2 see sheet # 11



CROSS SECTION  
 Looking North



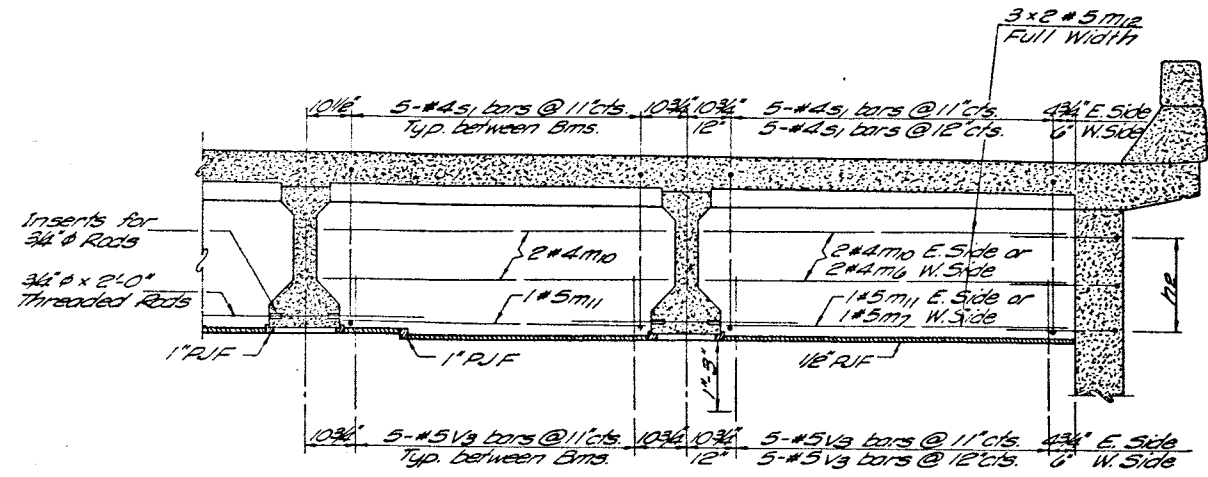
CURB SECTION



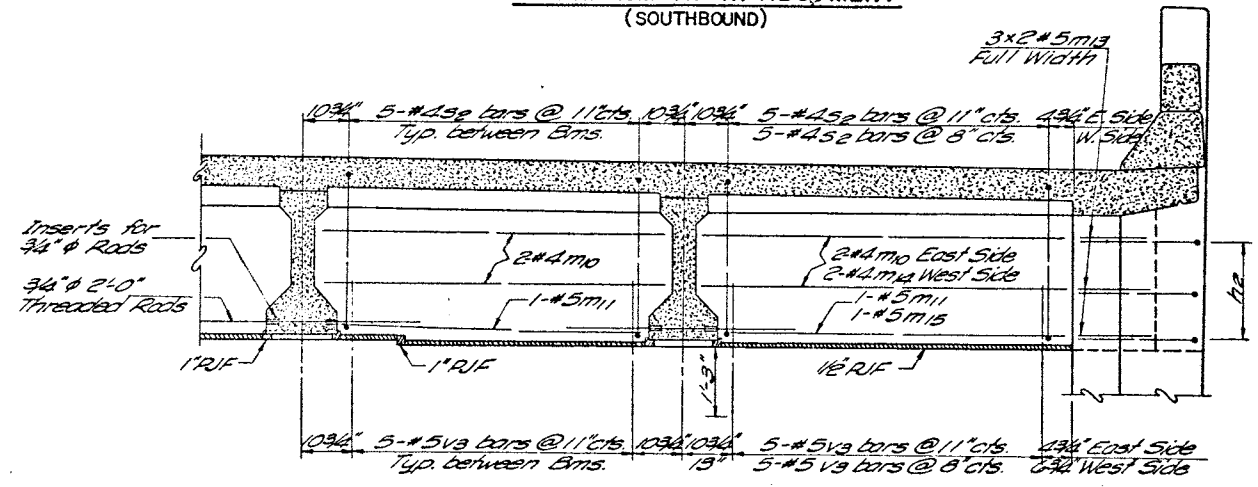
SUPERSTRUCTURE  
 SOUTH APPROACH SPAN  
 NORTHBOUND ROADWAY  
 FAI ROUTE 55 SEC. 57-1HB  
 MC LEAN COUNTY  
 STA. 398 + 57.00



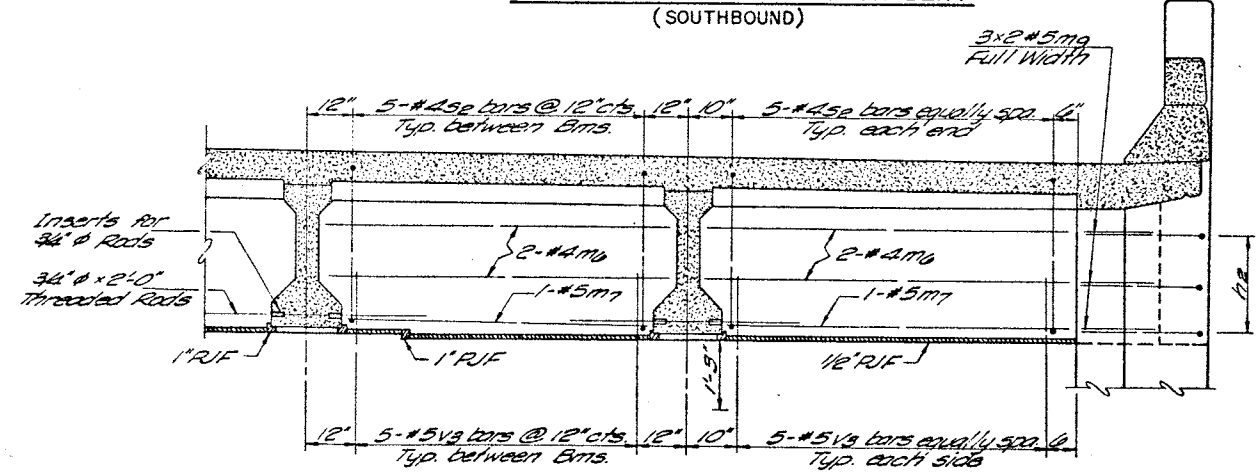




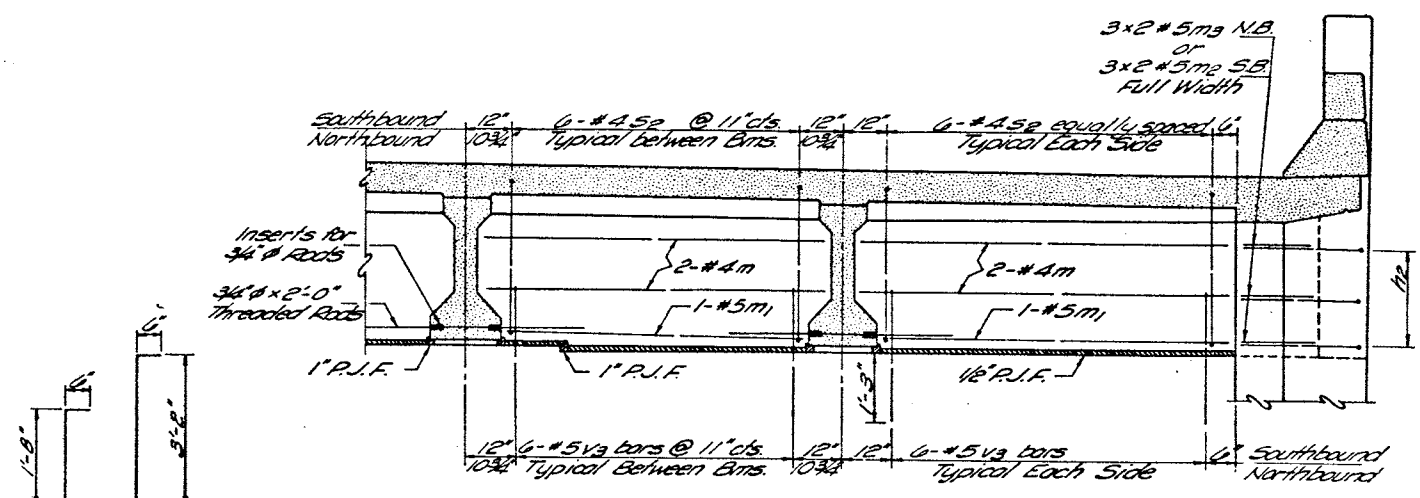
DIAPHRAGM AT N. ABUTMENT  
(SOUTHBOUND)



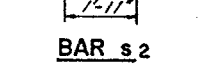
DIAPHRAGM AT N. APPROACH BENT  
(SOUTHBOUND)



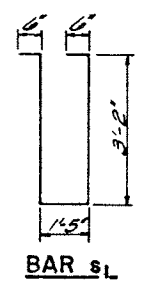
DIAPHRAGM AT N. APPROACH BENT  
(NORTHBOUND)



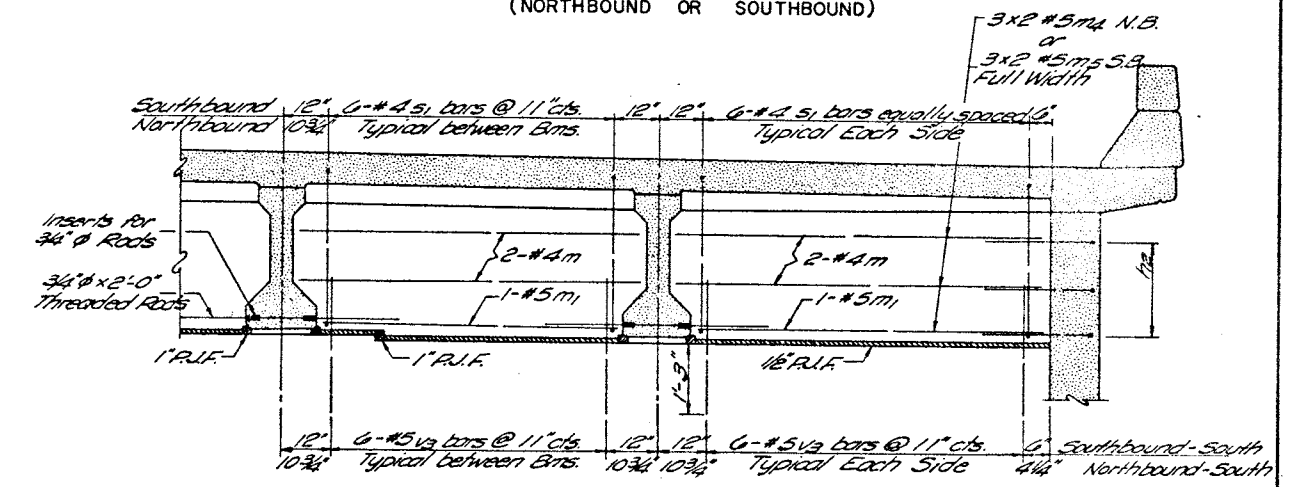
DIAPHRAGM AT S. APPROACH BENT  
(NORTHBOUND OR SOUTHBOUND)



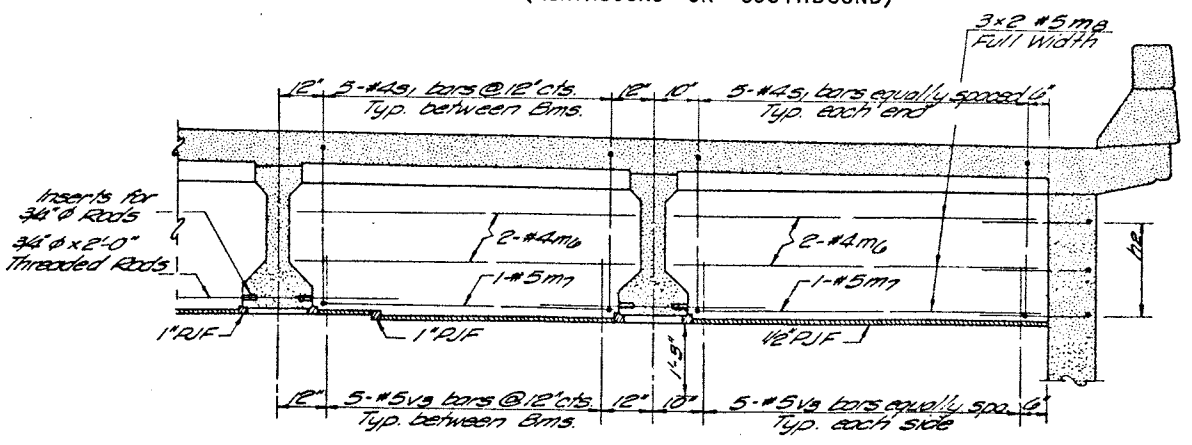
BAR s2



BAR s1



DIAPHRAGM AT S. ABUTMENT  
(NORTHBOUND OR SOUTHBOUND)

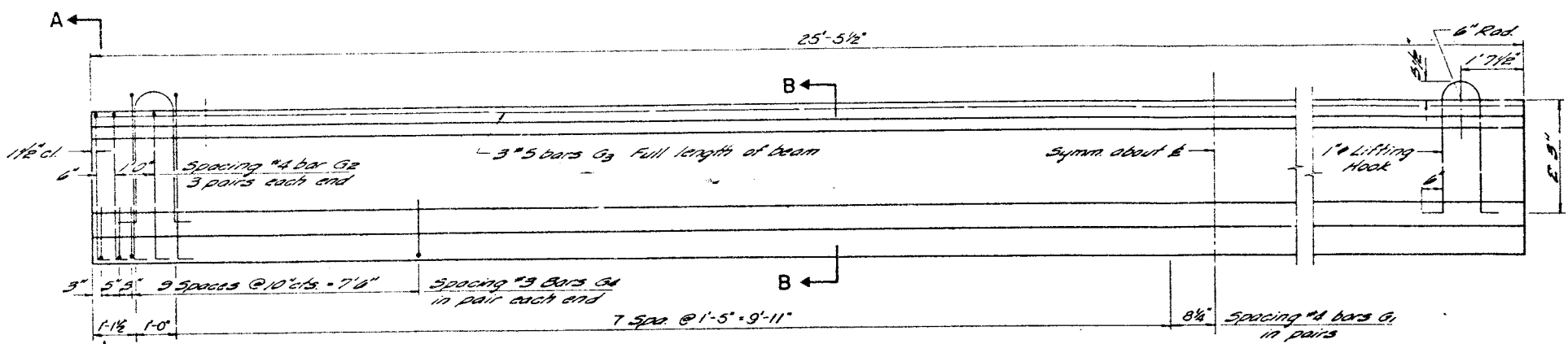


DIAPHRAGM AT N. ABUTMENT  
(NORTHBOUND)

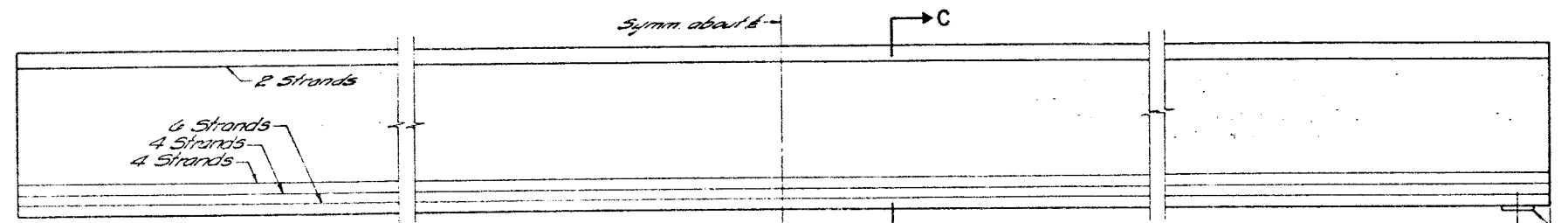
Notes:  
 Bars s1, s2 and m thru m3 are billed with Approach Slab Bill of Material on Sheets # 6 thru 9  
 Bars h1, h2, h3 & v3 are billed with Abutment Bill of Material on Sheet # 18 thru 21  
 See Sheets # 18 thru 21 for sections thru abutment and approach bent diaphragms.

DIAPHRAGM & BEARING DETAILS  
 FAI ROUTE 55 SEC. 57-14B  
 MCLEAN COUNTY  
 STA. 398 + 57.00

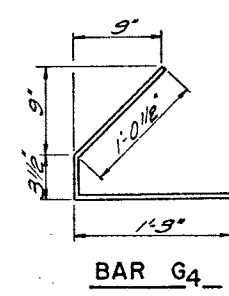
SHEET 11 OF SHEETS 25



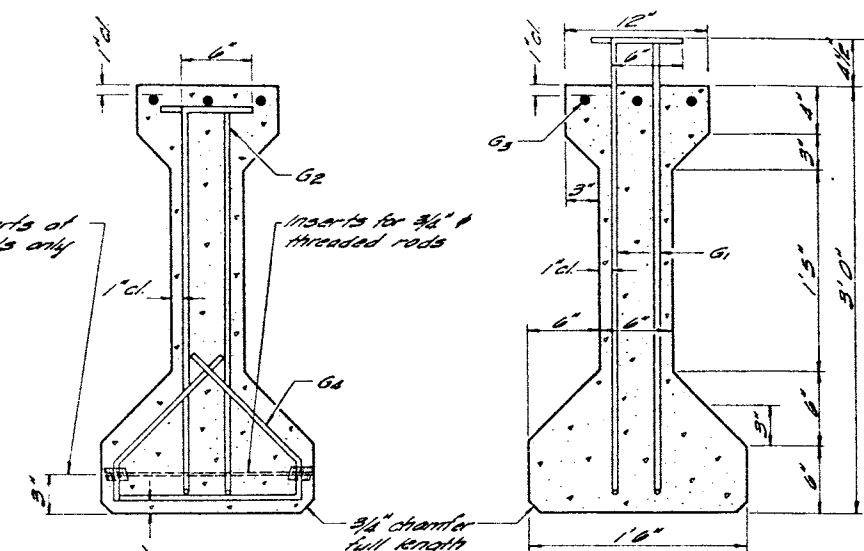
**ELEVATION OF BEAM**  
 Showing Reinforcement & Dimensions



**ELEVATION OF BEAM**  
 Showing Prestressing Steel

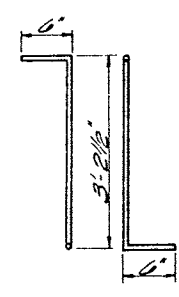


BAR G4

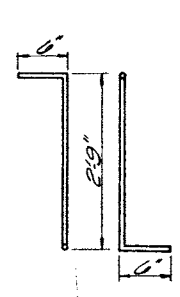


SECTION A-A

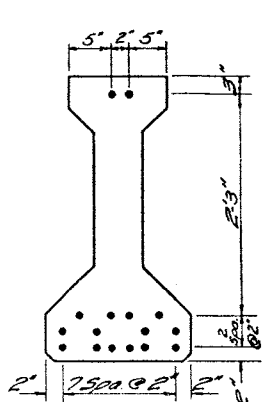
SECTION B-B



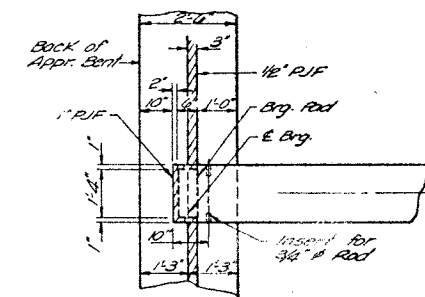
BAR G1



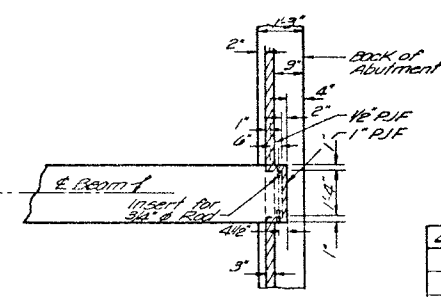
BAR G2



SECTION C-C



DETAIL C  
 Typ. to all beams all Appr. Bents



DETAIL D  
 Typ. to all beams all Abuts.

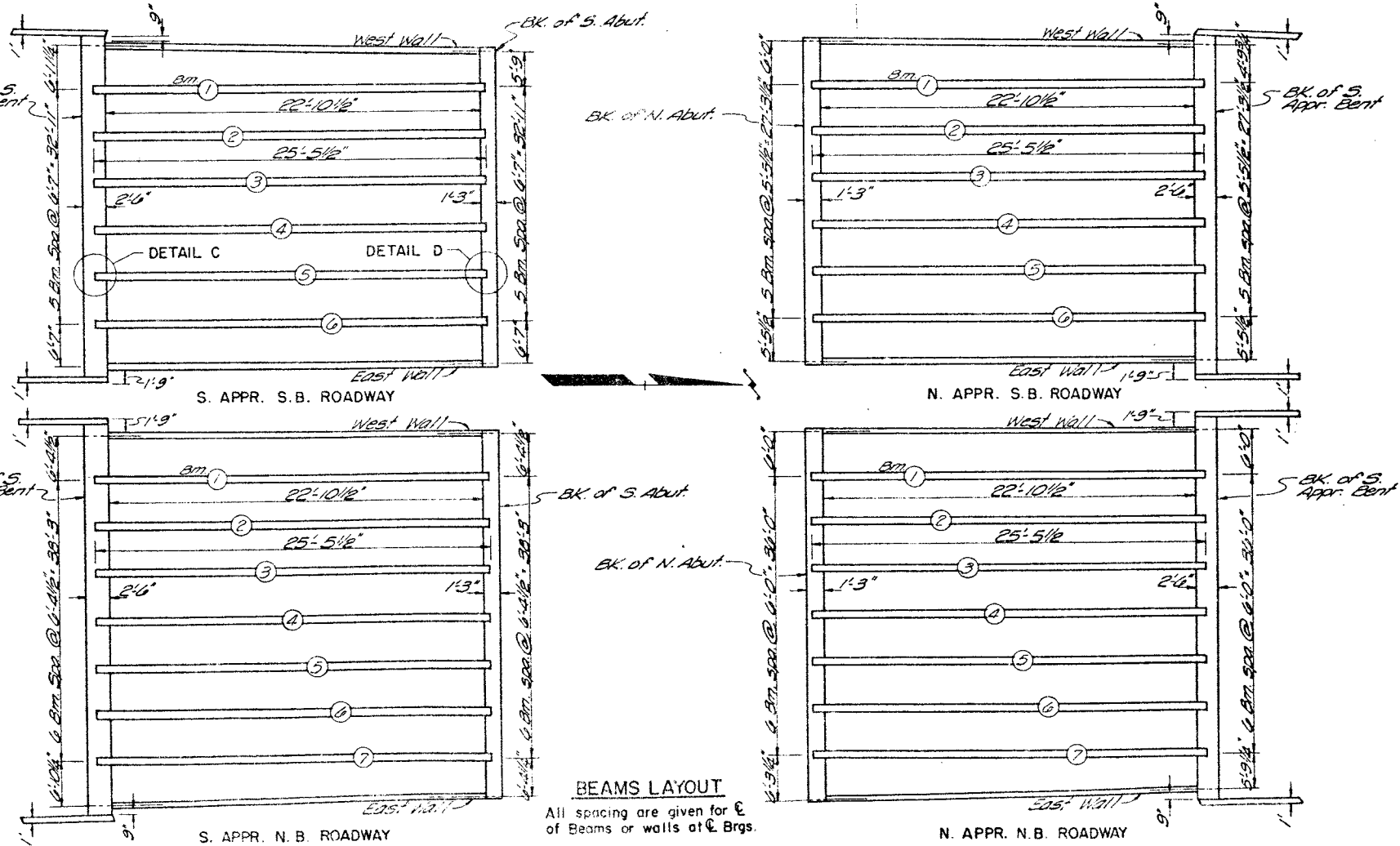
**\* BAR LIST**

Bar	No	Size	Length	Shape
G1	36	#4	4'-2 1/2"	7L
G2	12	#4	3'-9"	7L
G3	3	#5	25'-3"	-
G4	40	#3	2'-7"	L

\* For one beam only

**BILL OF MATERIAL**

Item	Unit	Total
Furnishing & Erecting Precast Prestressed Concrete I-Beams, 36"	Lin. Ft.	662



**BEAMS LAYOUT**  
 All spacing are given for E of Beams or walls at E Brgs.

**NOTES**

All inserts and threaded rods for inserts, reinforcing and Prestressing Steel, and other items which are cast into the Precast Concrete I-Beams shall be included in the contract unit price per linear foot of "Furnishing And Erecting Precast Prestressed Concrete I-Beams, 36 in."

See Standard Specifications for additional information regarding materials, Prestressing equipment, construction and handling methods and other requirements for Precast Prestressed Concrete I-Beams.

Prestressing Steel shall have a nominal diameter of 3/16".

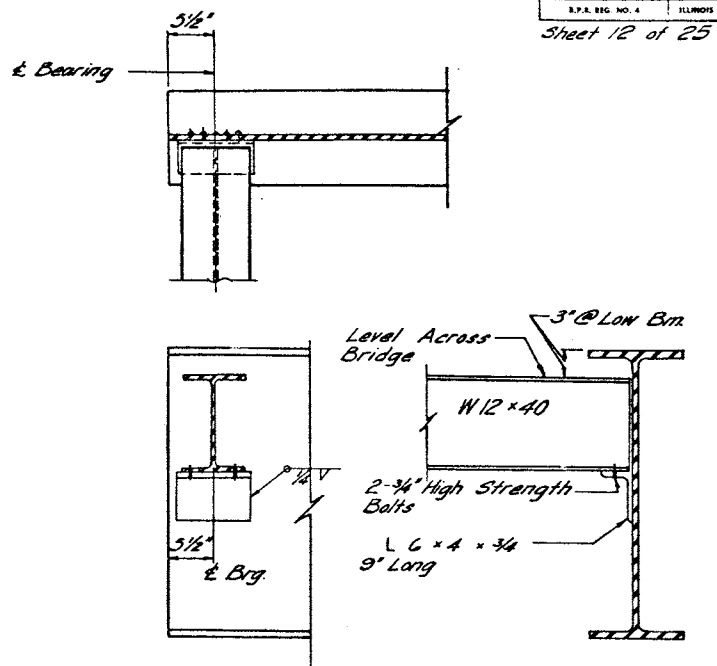
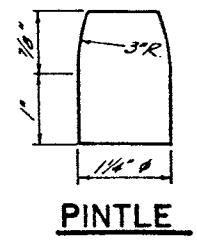
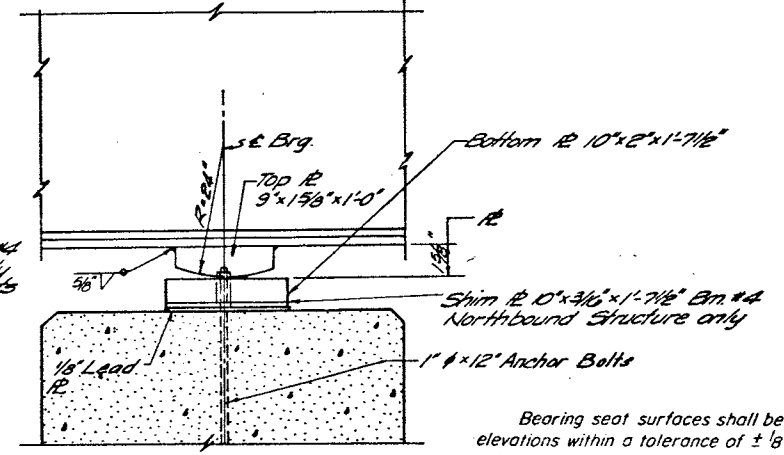
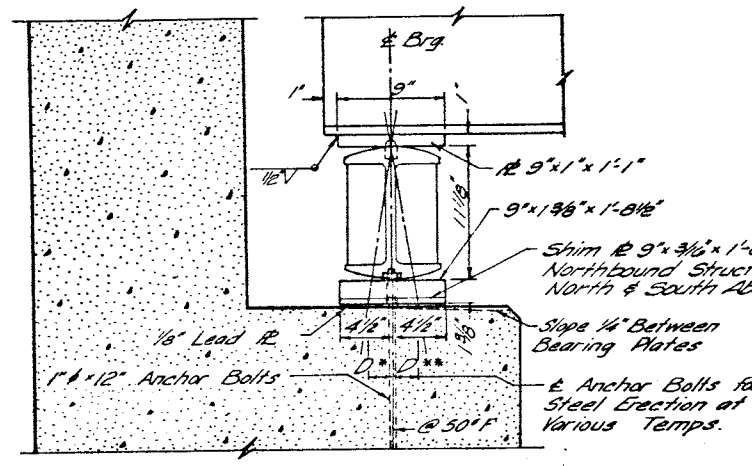
Inserts for 3/4" Threaded rods are to be two strand, coil type for interior I-Beams and single coil, flared loop type for exterior I-Beams.

Steel for lifting hooks shall be ASTM A-306 Grade 70-80.

An alternate strand pattern using Extra High Strength Prestressing strand (270 ksi) is permitted. See Special Provisions.

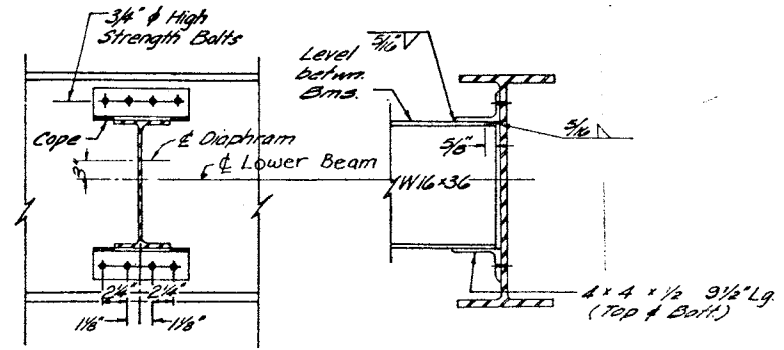
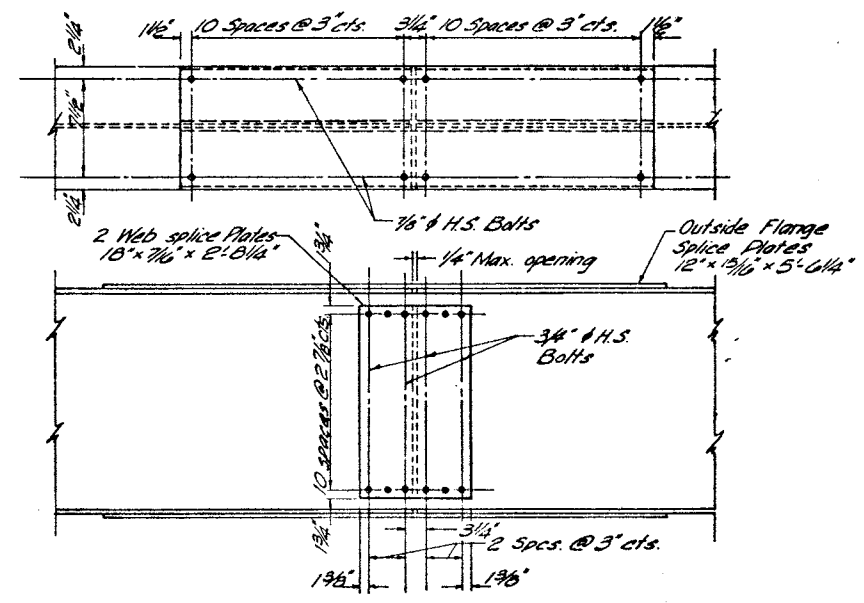
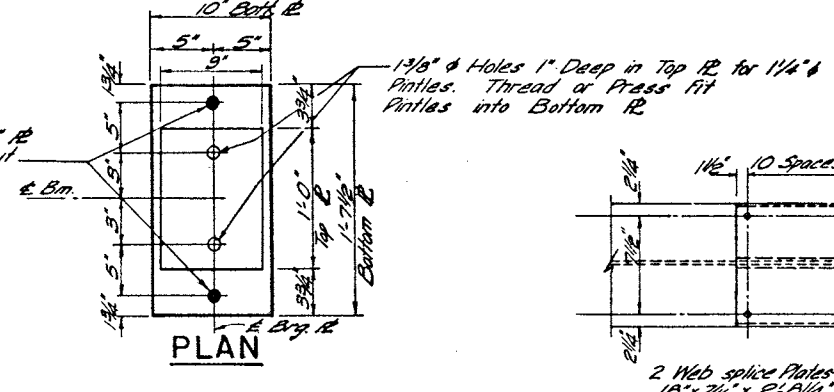
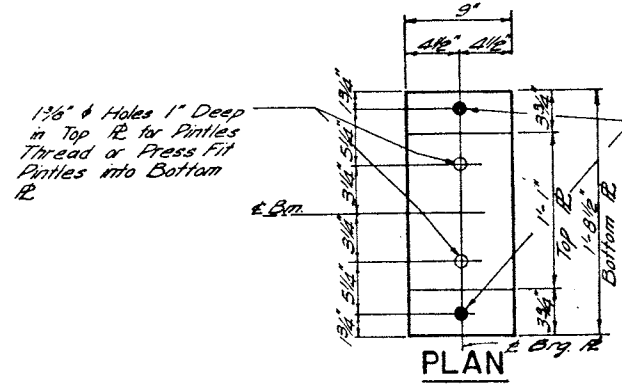
**BEAMS LAYOUT AND PRESTRESSED I-BM. DETAILS**

FA.I. RT. 55 SEC. 57-1HB  
 McLEAN COUNTY  
 STATION 398+57.00

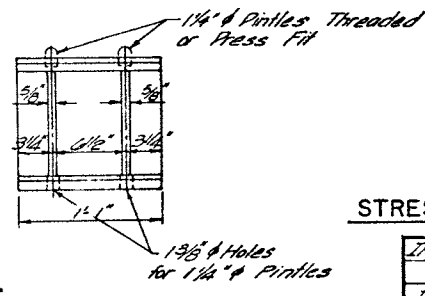
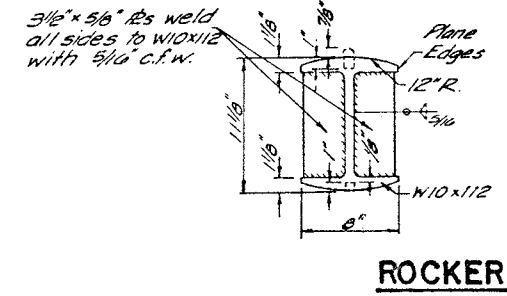


Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of  $\pm \frac{1}{8}$  inch. Adjustment shall be made either by grinding the surface or by shimming the bearing. Two  $3 \cdot \text{O}$  adjusting shims, of the dimensions of the bottom bearing plate, shall be provided for each bearing in addition to all other plates or shims.

**DIAPHRAGM D**  
30 Required  
Lengths vary See Sheet 13 of 25



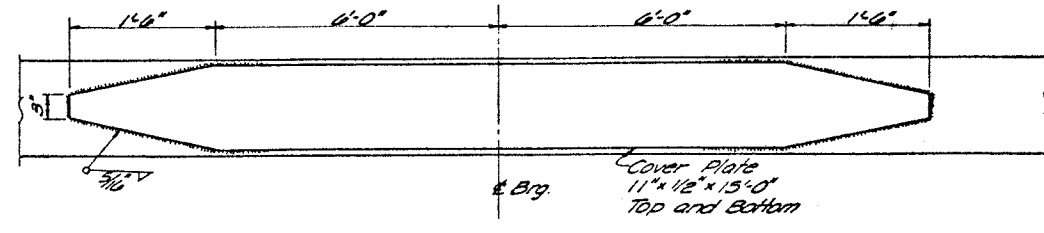
**DIAPHRAGM D<sub>1</sub>**  
75 Required  
Lengths vary See Sheet 13 of 25



**STRESS TABLE FOR N.B. BRIDGE**

INT. BEAM MOMENT TABLE	0.4 Span	Pier
$I_b$ (in <sup>2</sup> )	974.0	13,423
$S_b$ (in <sup>3</sup> )	542	725.6
DL (K/1)	1,197	1,197
M <sub>DL</sub> (1-K)	350.3	-699.6
M <sub>LL</sub> (1-K)	407.5	362.4
M <sub>IMP</sub> (1-K)	106.5	94.7
M <sub>TOTAL</sub> (1-K)	864.3	1,156.7
$I_b$ Total (in <sup>2</sup> )	19.14	19.1

INT. BEAM REACTION TABLE	Abut.	Pier
R <sub>DL</sub> (K)	29.1	100.5
R <sub>LL</sub> (K)	33.3	39.2
I <sub>MP</sub> (K)	8.7	10.3
R <sub>TOTAL</sub> (K)	71.1	150.0

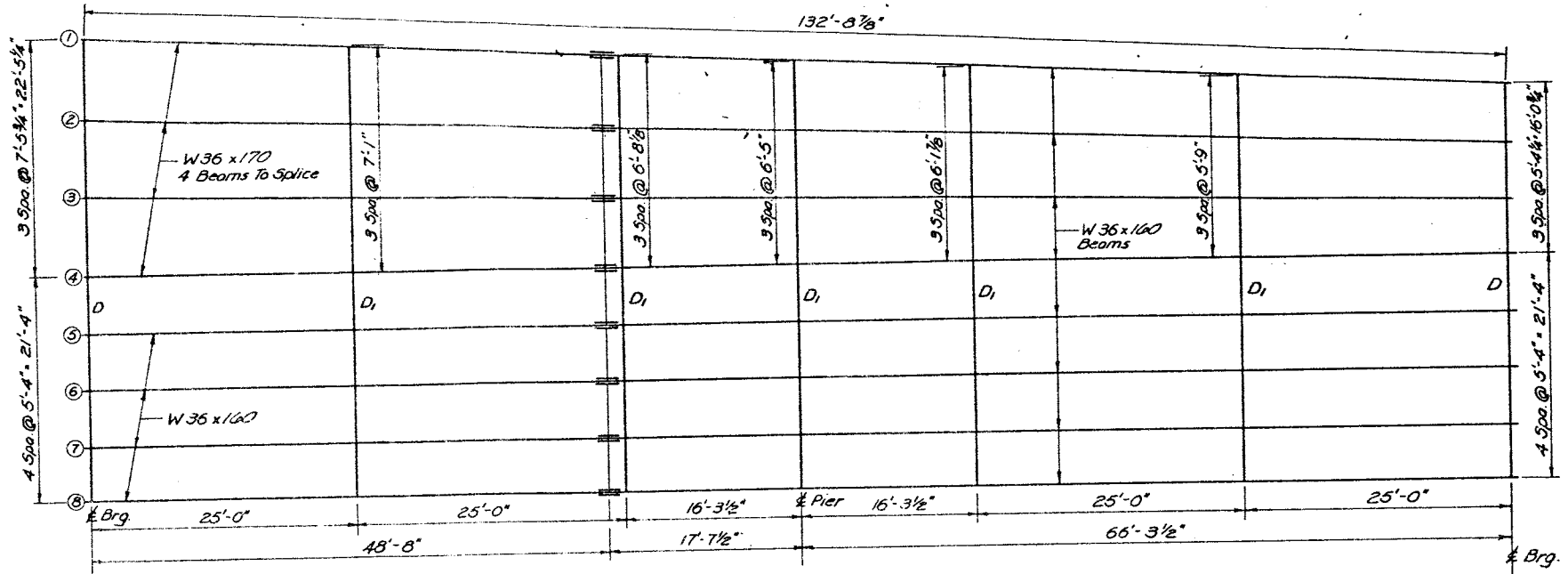


**NOTES FOR SETTING OF ANCHOR BOLTS AT EXPANSION BEARINGS:**

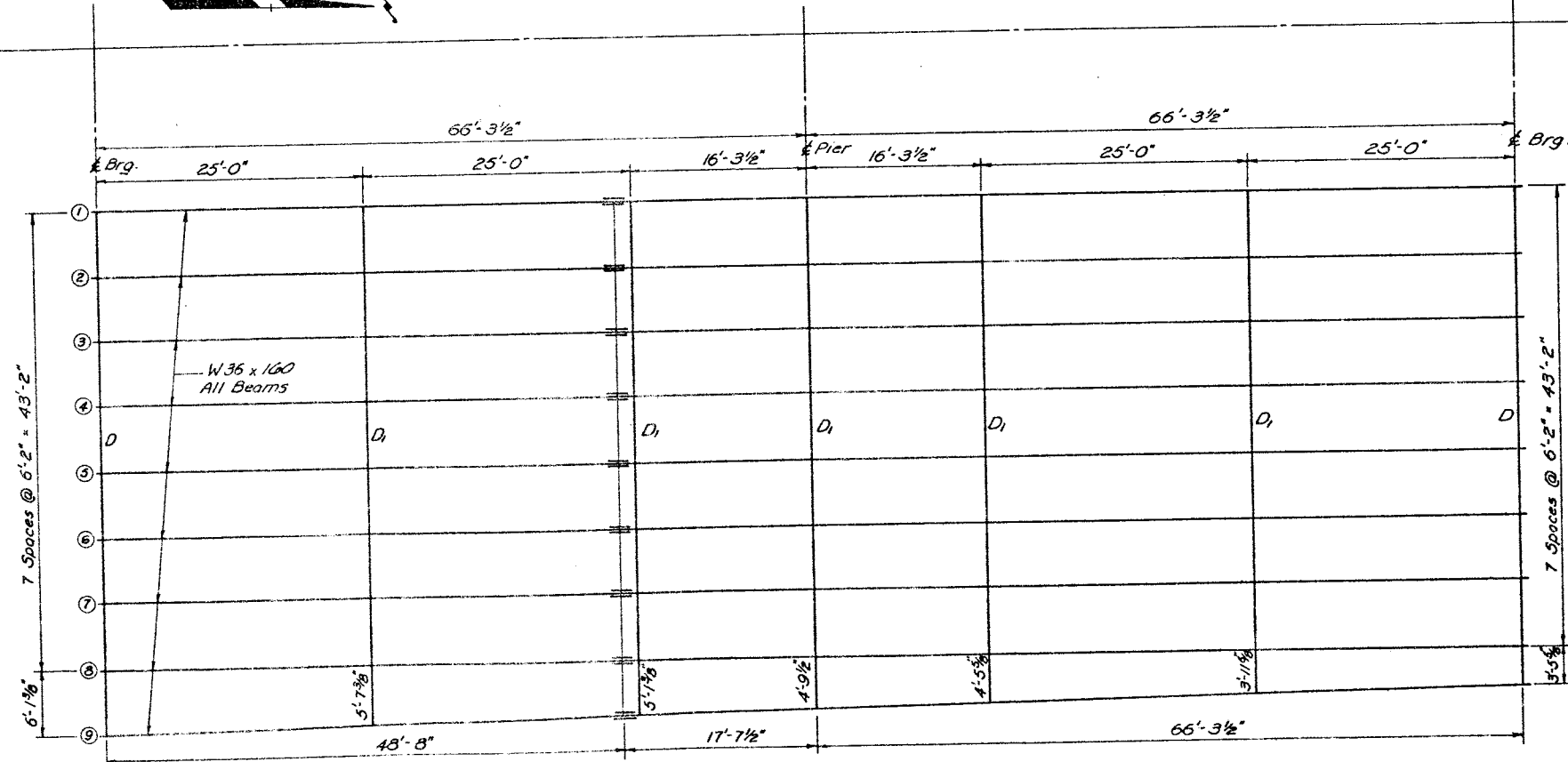
a.  $D^*$  (Side of brg away from fixed brg)  
 $D^* = \frac{1}{8}$ " per each 100' of Expansion for every 15° fall below the normal temp. of 50°F  
 $D^{**}$  (Side of brg toward fixed brg)  
 $D^{**} = \frac{1}{8}$ " per each 100' of Expansion for every 15° rise above the normal temp. of 50°F

b. After beams have been erected and dimensions  $D^*$  &  $D^{**}$  determined, holes shall be drilled and anchor bolts shall be grouted in place. All fixed anchor bolts may be built into the masonry.

**STEEL BEAM DETAILS**  
 FAI ROUTE 55 SEC. 57-1 HB  
 MCLEAN COUNTY  
 STA. 753+54.41



BEAM LAYOUT - SOUTHBOUND STRUCTURE



BEAM LAYOUT - NORTHBOUND STRUCTURE

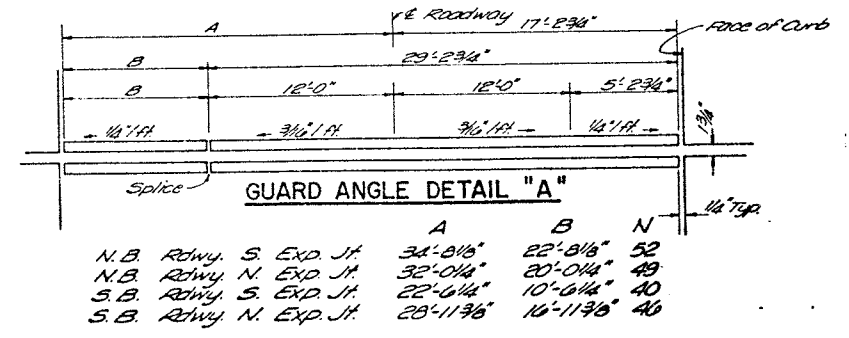
**TOP OF BEAM ELEVATIONS\***

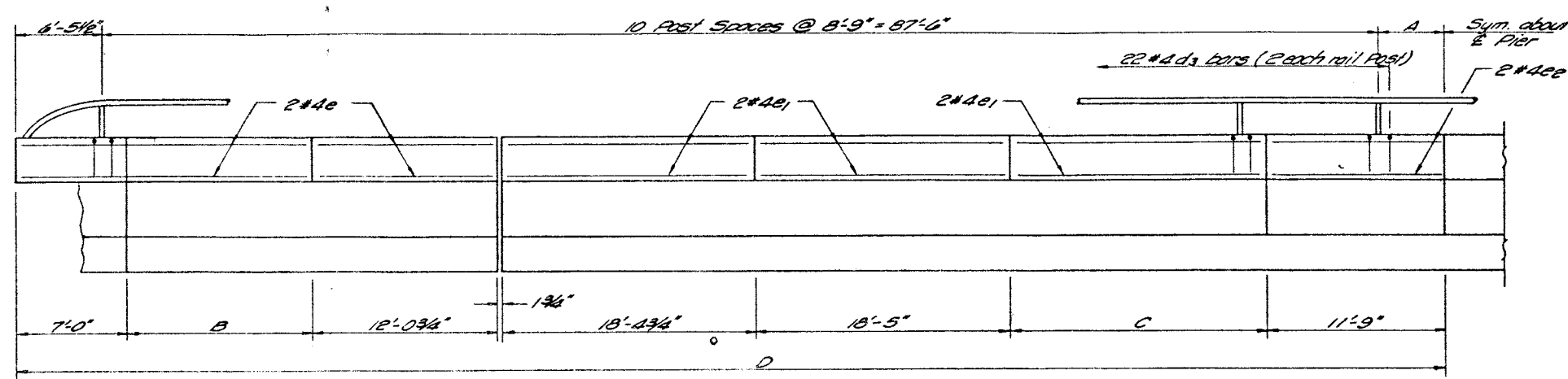
BEAM NO.	SOUTH ABUT.	SPLICE	PIER	NORTH ABUT.
①	739.327	739.492	739.552	739.777
②	739.483	739.632	739.686	739.889
③	739.639	739.769	739.816	739.992
④	739.754	739.873	739.916	740.077
⑤	739.840	739.957	739.999	740.158
⑥	739.757	739.874	739.916	740.075
⑦	739.673	739.790	739.832	739.991
⑧	739.569	739.686	739.728	739.887
①	739.575	739.689	739.735	739.895
②	739.684	739.805	739.847	740.011
③	739.785	739.901	739.945	740.105
④	739.801	739.917	739.961	740.121
⑤	739.705	739.820	739.864	740.023
⑥	739.590	739.709	739.749	739.908
⑦	739.465	739.581	739.624	739.783
⑧	739.330	739.453	739.494	739.658
⑨	739.205	739.345	739.395	739.585

\* For Fabrication Only.

**LENGTHS OF FLARED BEAMS**  
 C. BRG. OF SOUTH ABUT. TO C. BRG. NORTH ABUT.

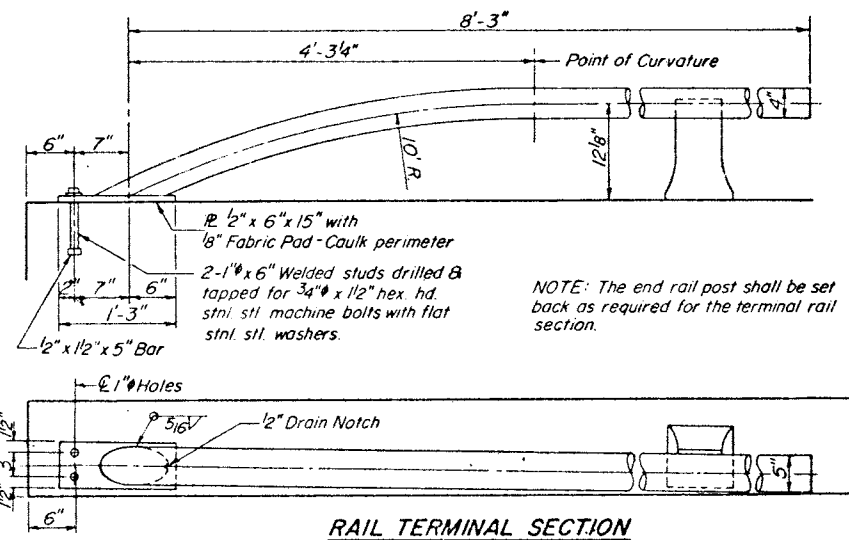
N.B. STR.	S.B. STR.			N.B. & S.B. STR.
BEAM 9	BEAM 1	BEAM 2	BEAM 3	ALL UNFLARED BEAMS
132'-7 3/8"	132'-8 3/8"	132'-7 7/8"	132'-7 1/4"	132'-7"



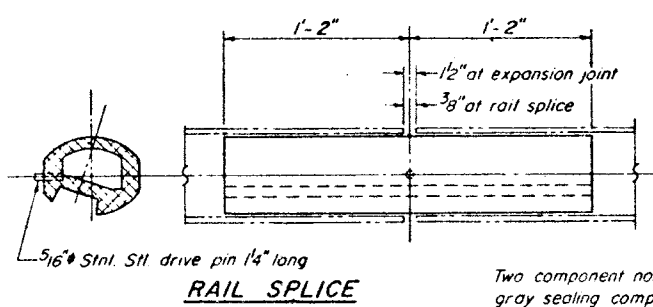
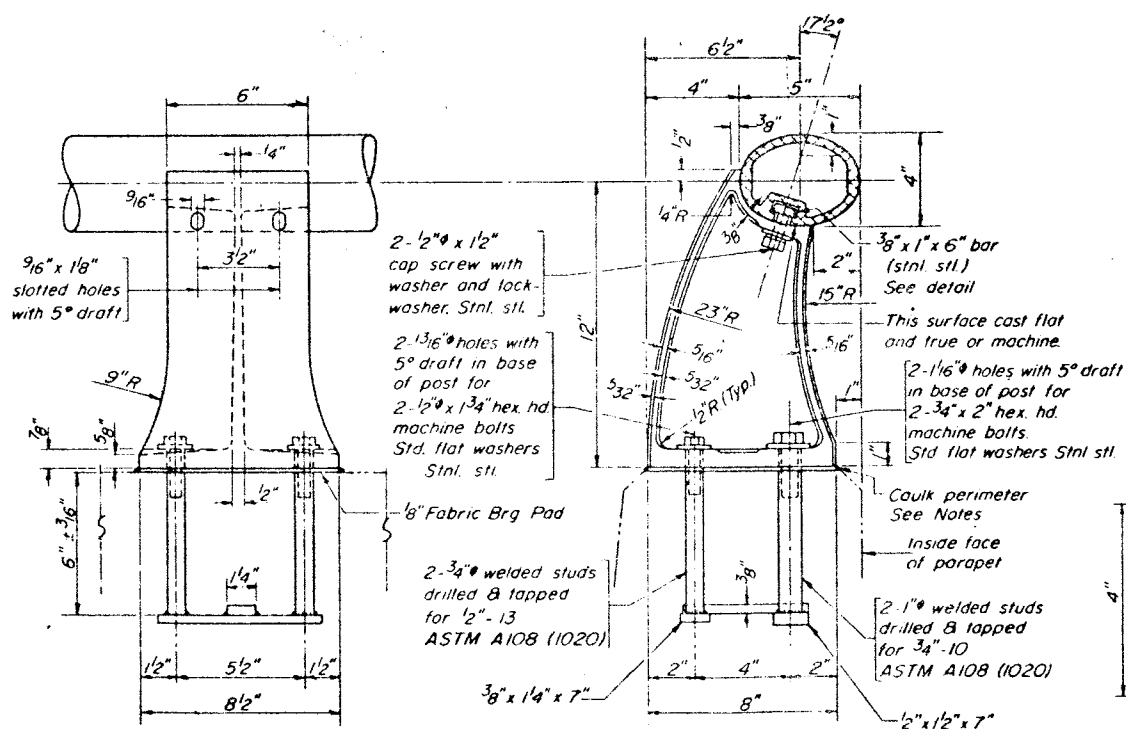


LOCATION	A	B	C	D
S.B. Br. Flared Side	4'-4 1/4"	12'-1 1/4"	18'-5 1/4"	98'-3 3/8"
N.B. Br. Flared Side	4'-3 1/4"	12'-0 3/4"	18'-4 3/4"	98'-2 3/8"
S.B. & N.B. Brs. Unflared Sides	4'-5"	12'-0 3/4"	18'-4 1/2"	98'-2 1/2"

PARAPET ELEVATION

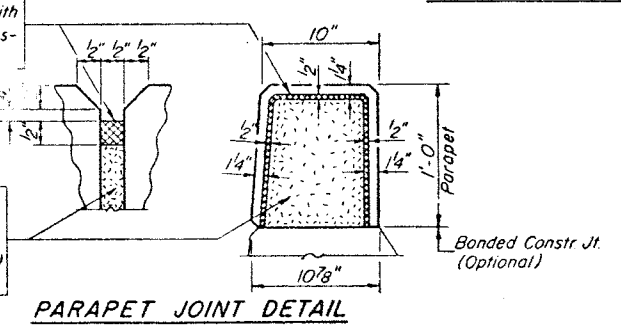


NOTE: The end rail post shall be set back as required for the terminal rail section.



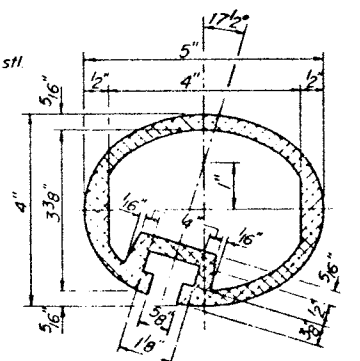
RAIL SPLICE

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

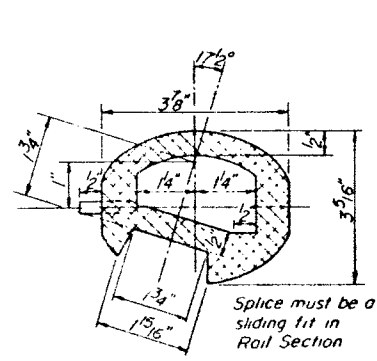


PARAPET JOINT DETAIL

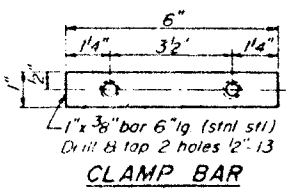
1/2" Preformed Cork Asphalt Joint Filler. (meets qualifications for ASTM Designation D 1751) Cost incidental.



SEC. THRU ELLIPTICAL RAIL SECTION



SEC. THRU SPLICE



CLAMP BAR

PARAPETS & RAILS BILL OF MATERIAL

Bar	No.	Size	Length	Shape	
e	64	#4	11'-9"	—	
e <sub>1</sub>	36	#4	18'-2"	—	
e <sub>2</sub>	32	#4	11'-6"	—	
e <sub>3</sub>	176	#4	2'-1"	□	
Reinforcement Bars				Lbs	2160
Class X Concrete				Cu Yds	23.5
Aluminum Railing				Lin Ft	792

ALUMINUM RAILING

FAI ROUTE 55 SEC. 57-IHB  
MC LEAN COUNTY  
STATION 398+57.00

NOTES:

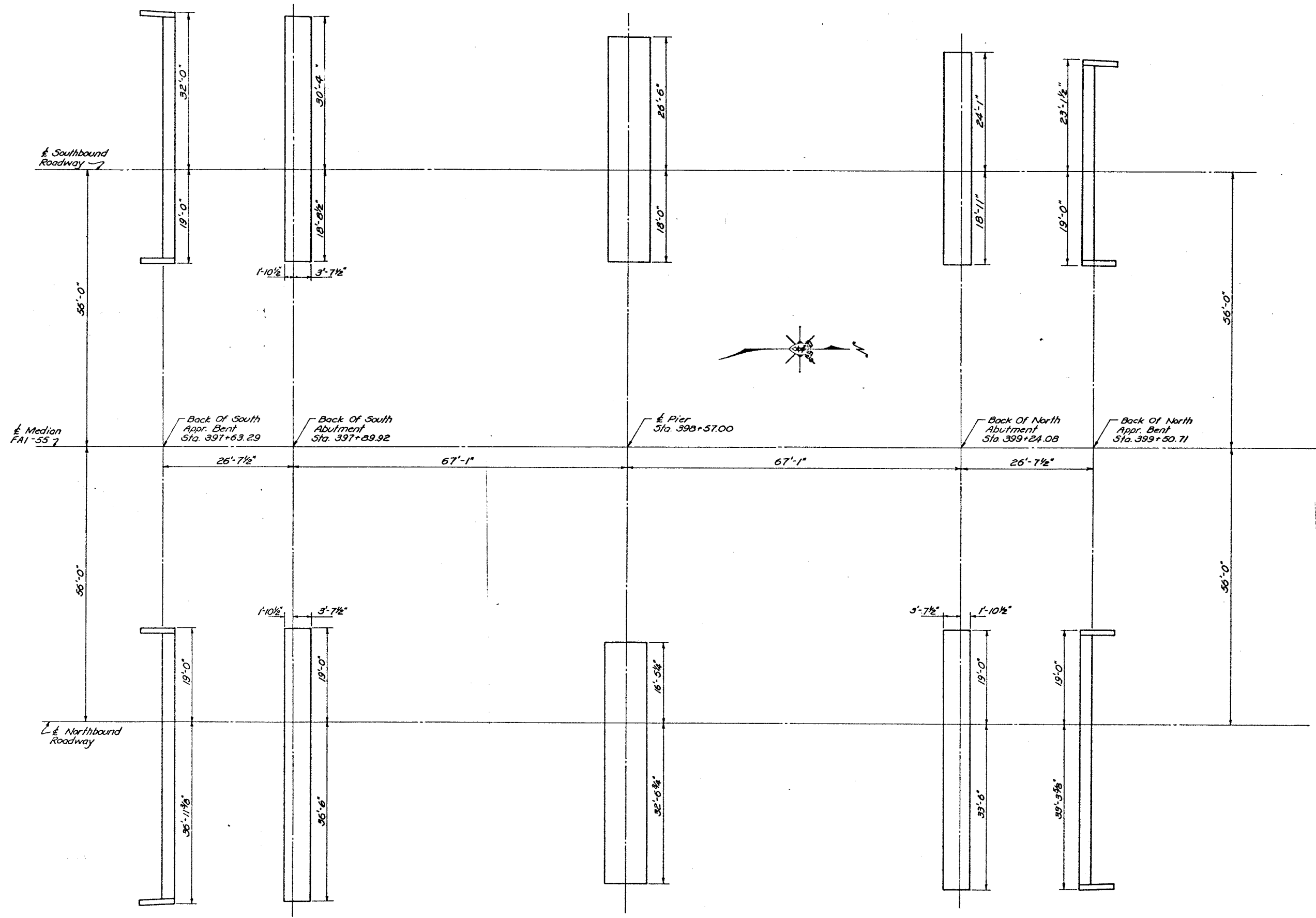
All Aluminum Alloy Extruded Rail shall be supplied in modular lengths of 30 feet, except at the end of bridge or over open joints in bridge deck where the rail shall be attached to a minimum of 2 posts. If the rail is on a horizontal curve of 2300 foot radius or less, the modular lengths may be reduced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

All joints in rail shall be spliced per detail.

Provide 1-1/8" and 2-1/16" Aluminum Shimms for 25% of the Posts. Rail element shall be parallel to Grade - high spots shall be ground and low spots shimmed.

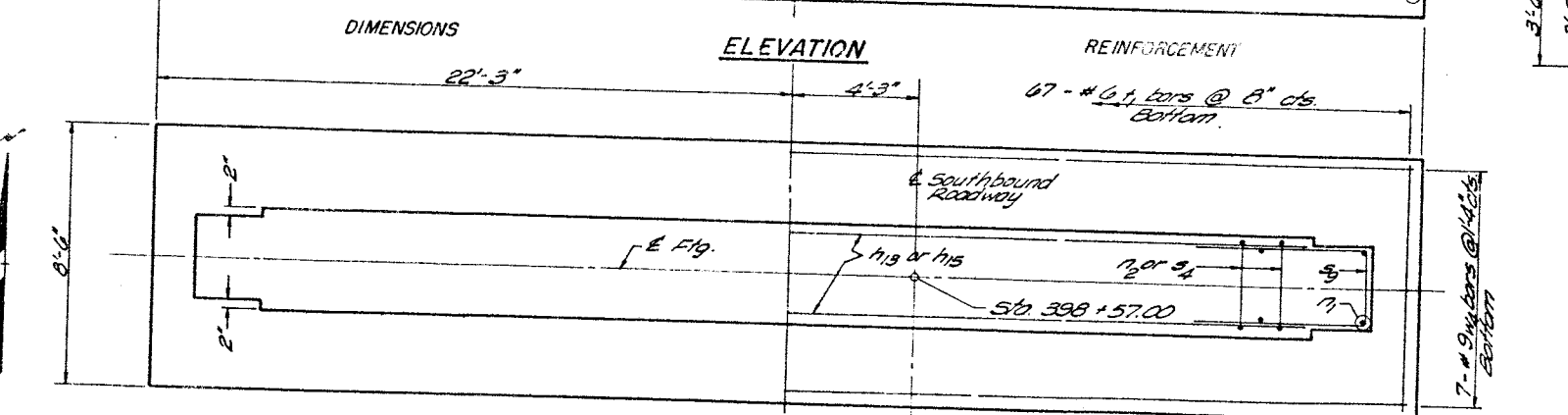
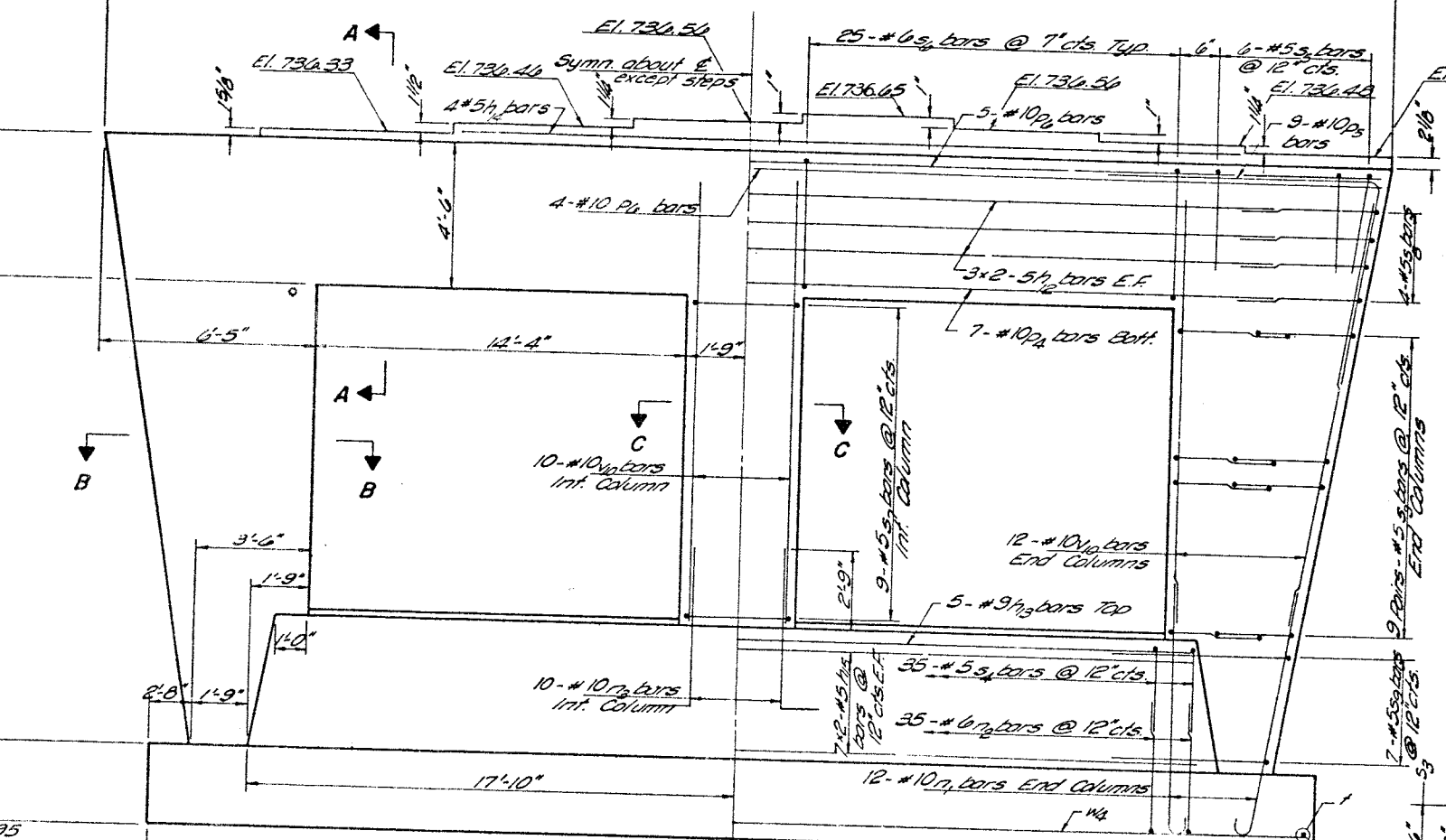
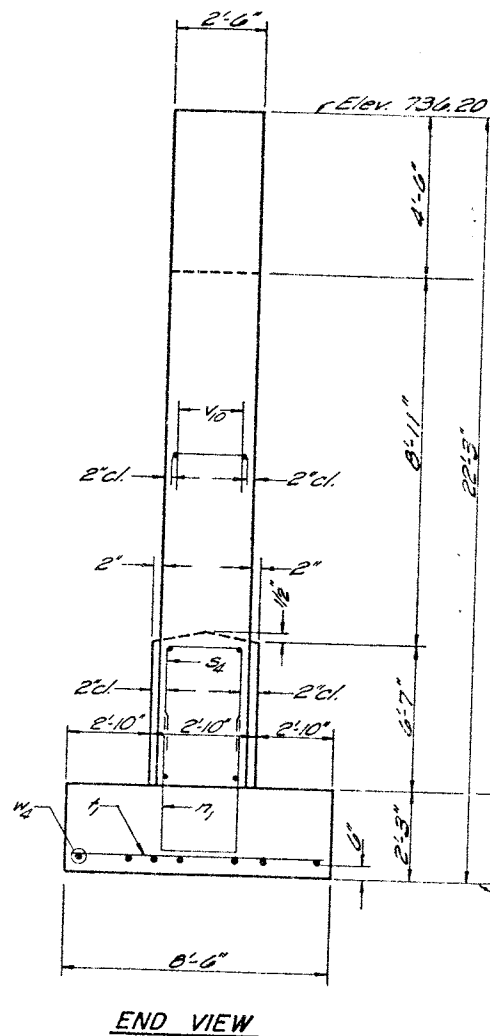
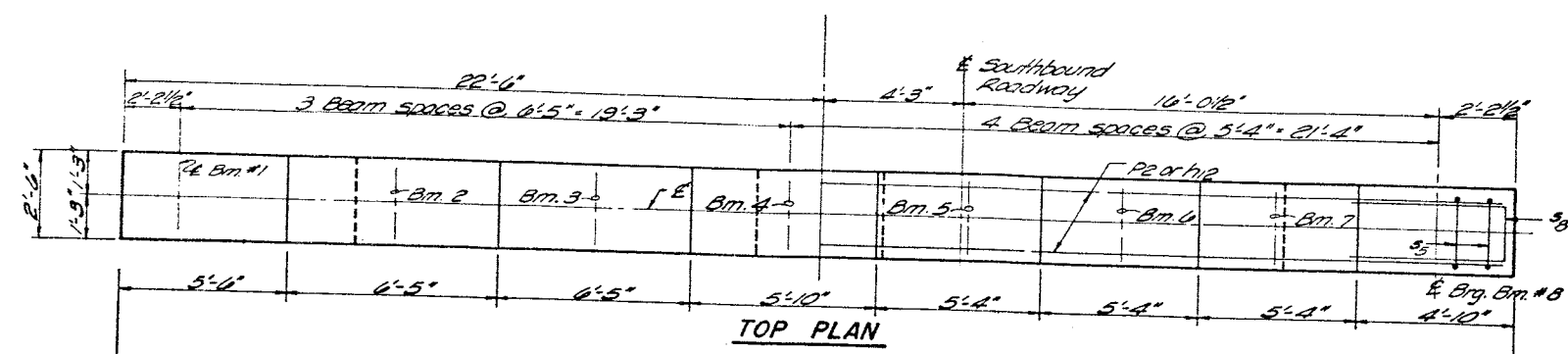
Seal perimeter of base of post to parapet with two component non-staining gray sealing compound with polysulfide liquid polymers, gun grade with primer. Fabric Bearing Pad shall have same dimensions as base of post.

Aluminum alloy rail shall conform to ASTM B 221 alloy 6061-T6 or 6351-T5 with min yield 35 ksi, min tensile 38 ksi, and elongation of 10% in 2 inches.

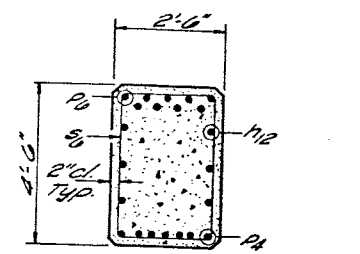


FOOTING LAYOUT  
 FAI ROUTE 55 SEC. 57-IHB  
 MC LEAN COUNTY  
 STATION 398+57.00

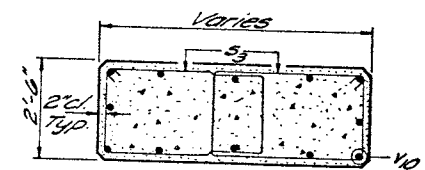
Notes:  
 Space reinforcement in top to miss anchor bolts  
 All edges shall have standard 3/4" chamfers except as noted  
 Pier steps monolithically with cap



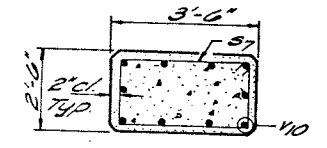
Max. Soil Pressure = 2.1 TSF  
 Min. Soil Pressure = 0.94 TSF



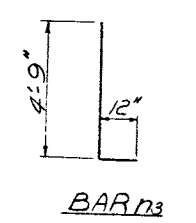
SECTION A-A



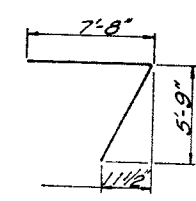
SECTION B-B



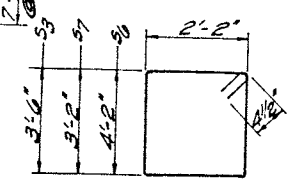
SECTION C-C



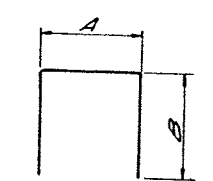
BAR D3



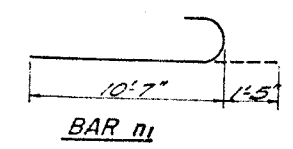
BAR P5



BARS 53, 56, 57



BARS 12, 54, 55, 58, 59



BAR 11

**BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
h12	12	#5	21'-9"	□
h13	5	#9	34'-0"	□
h14	4	#5	28'-0"	□
h15	28	#5	18'-3"	□
n1	24	#10	12'-0"	□
n2	35	#6	15'-0"	□
n3	10	#10	5'-9"	□
p2	7	#10	43'-6"	□
p5	18	#10	13'-6"	□
p6	9	#10	44'-9"	□
s3	14	#5	11'-2"	□
s3	36	#5	12'-1"	□
s4	35	#5	8'-6"	□
s5	12	#5	8'-2"	□
s6	50	#6	13'-5"	□
s7	9	#5	11'-5"	□
s8	8	#5	8'-2"	□
11	67	#6	8'-3"	□
110	34	#10	12'-0"	□
114	14	#9	23'-6"	□

Class X Concrete Cu. Yds. 89.7  
 Reinforcement Bars Lbs. 13,820

**A & B DIMENSIONS**

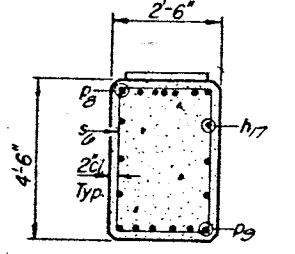
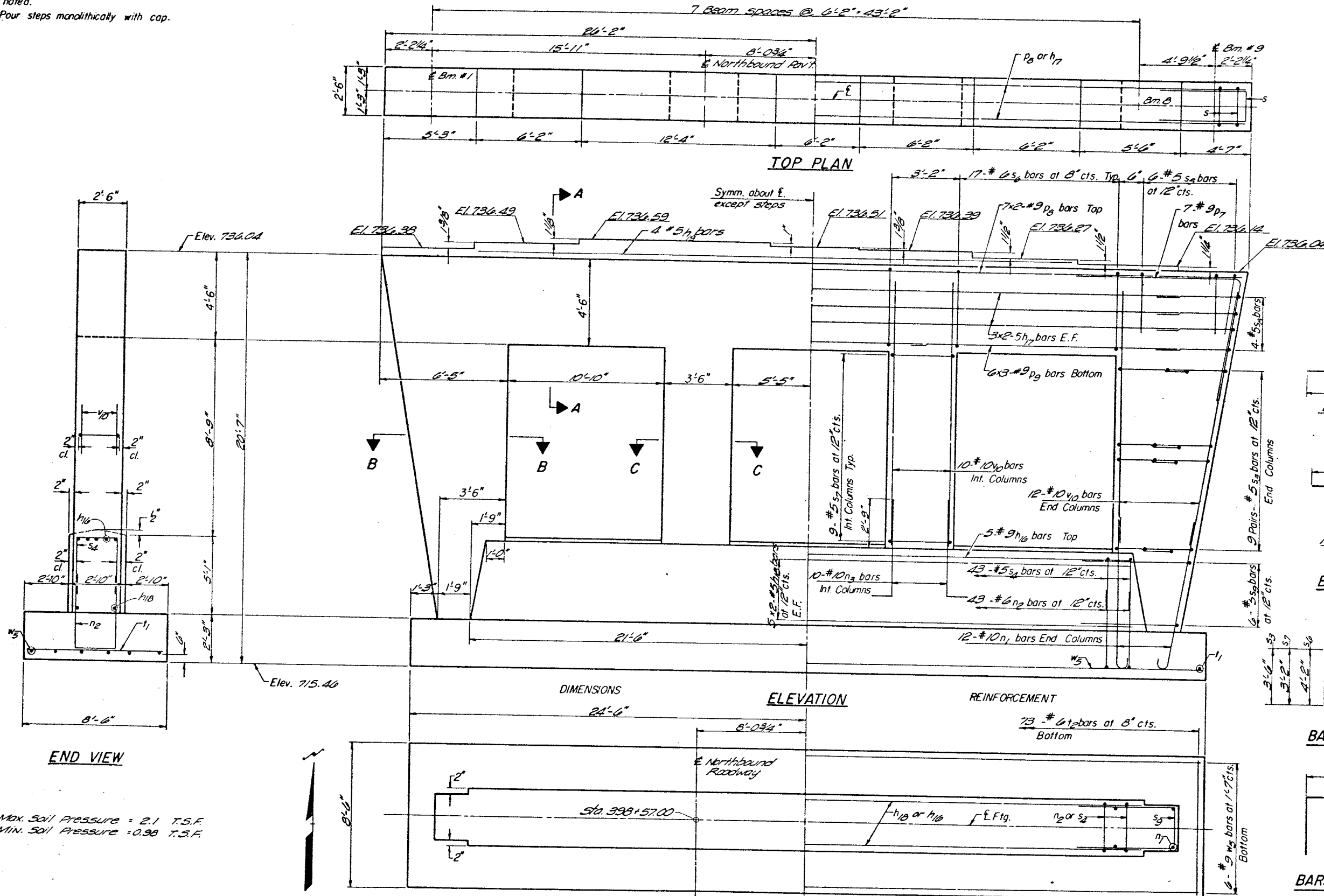
Bar	A	B
12	2'-6"	6'-0"
55	2'-2"	3'-0"
54	2'-0"	3'-0"
59	2'-2"	4'-6"
58	2'-2"	3'-0"

**PIER**  
 SOUTHBOUND ROADWAY  
 FAI ROUTE 55 SEC. 57-1HB  
 MCIAN COUNTY  
 STA. 398 + 57.00

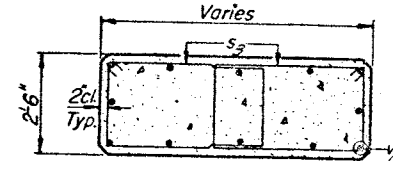


**NOTES**

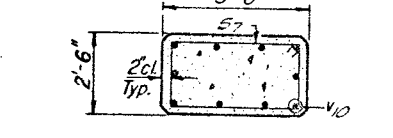
Space reinforcement in cap to miss anchor bolts.  
All edges shall have standard 3/4 chamfers except as noted.  
Pour steps monolithically with cap.



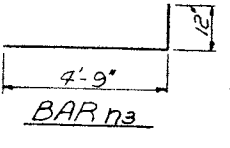
SECTION A-A



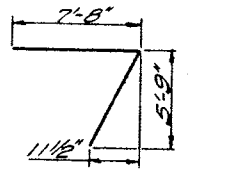
SECTION B-B



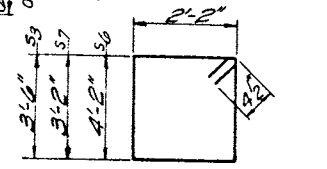
SECTION C-C



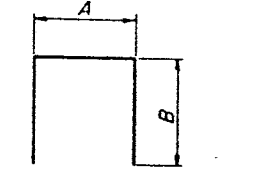
BAR n3



BAR P7



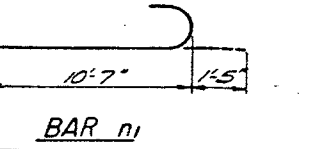
BARS S3, S6, S7



BARS n2, S4, S5, S8, S9

A & B DIMENSIONS

Bar	A	B
n2	2'-6"	6'-6"
S4	2'-6"	3'-0"
S5	2'-2"	3'-0"
S9	2'-2"	4'-6"
S8	2'-2"	3'-0"



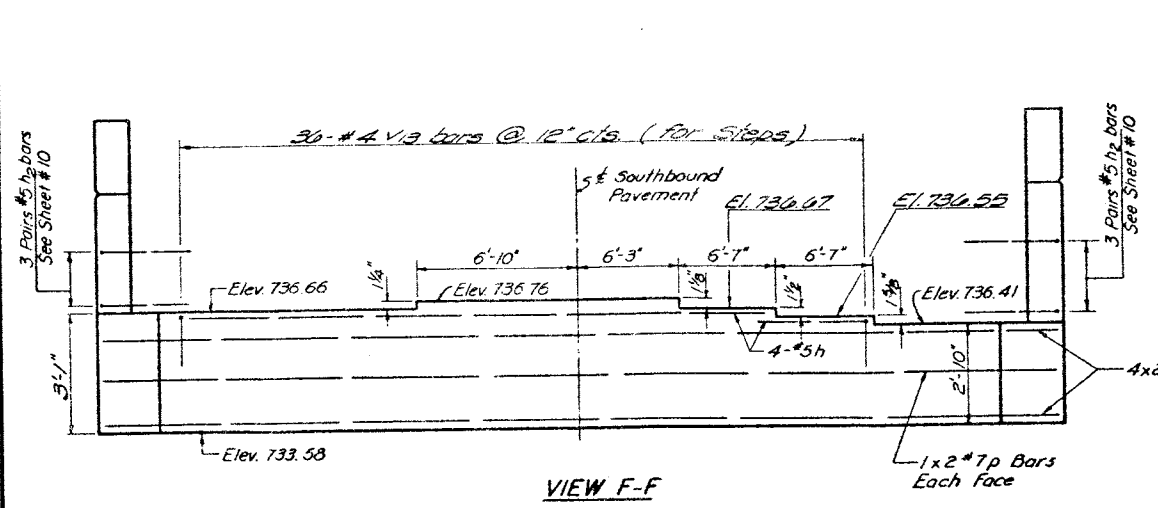
BAR n1

**BILL OF MATERIAL**

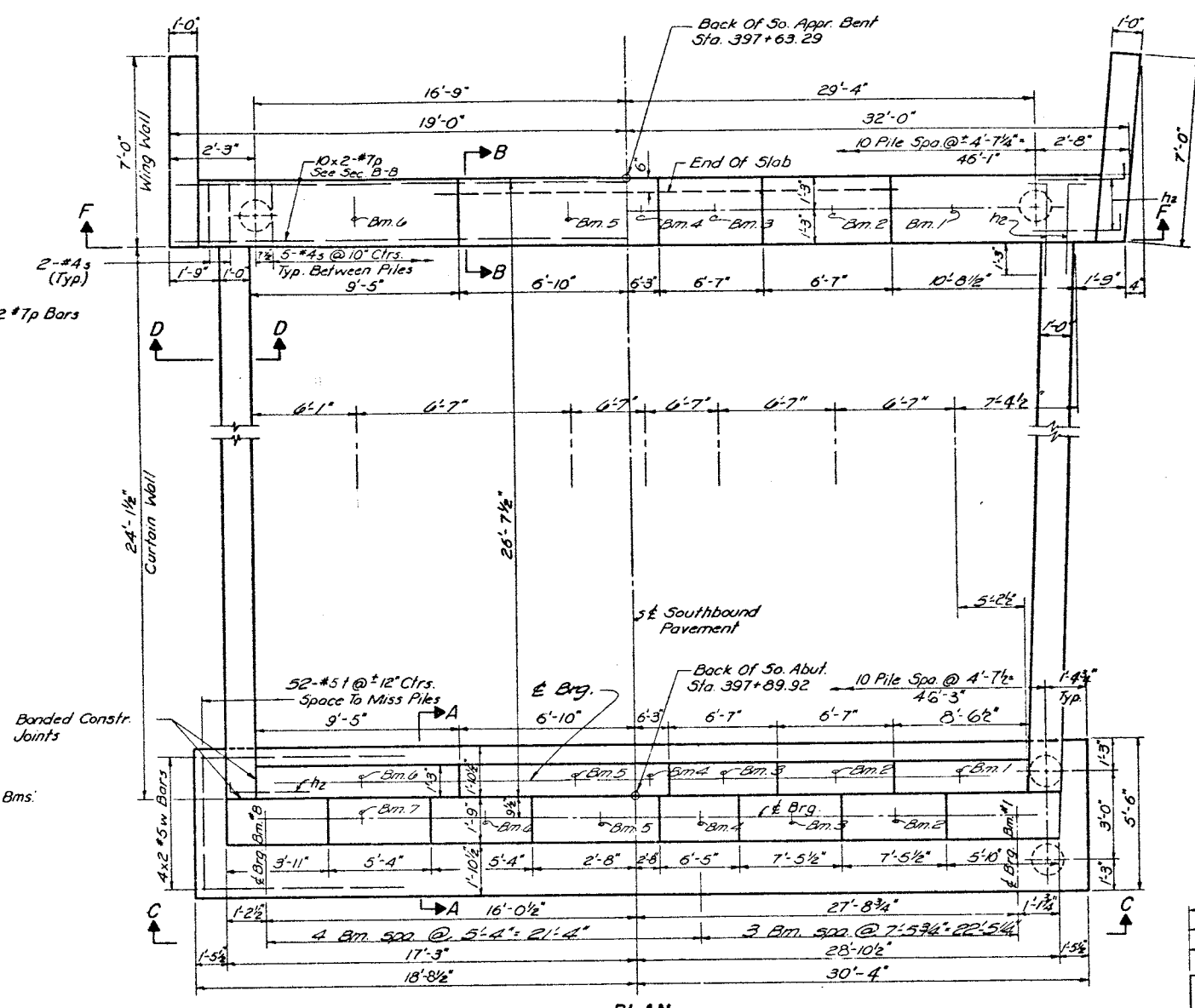
Bar	No.	Size	Length	Shoe
h14	5	#9	41'-0"	
h17	12	#5	24'-0"	
h18	20	#5	22'-0"	
h19	4	#5	31'-9"	
n1	24	#10	12'-0"	U
n2	43	#6	15'-6"	U
n3	20	#10	5'-9"	
P7	14	#9	13'-6"	7
P8	14	#9	27'-0"	
P9	18	#9	18'-0"	
S4	43	#5	8'-6"	□
S5	20	#5	8'-2"	□
S9	12	#5	11'-2"	□
S7	18	#5	11'-5"	□
S6	51	#6	13'-5"	□
S9	36	#5	12'-7"	□
S8	8	#5	8'-2"	□
n1	73	#6	8'-3"	
v10	44	#10	12'-0"	
n5	12	#9	26'-0"	
Class X Concrete		Cu. Yds.	36.5	
Reinforcement Bars		Lbs.	4,190	

**PIER**  
NORTHBOUND ROADWAY  
FAI ROUTE 55 SEC. 57-1HB  
MC LEAN COUNTY  
STA. 398 + 57.00

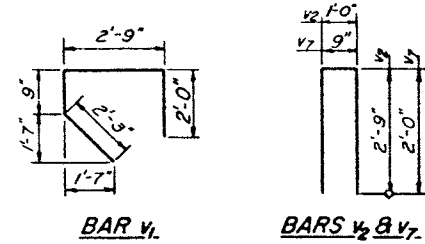
Max. Soil Pressure = 2.1 T.S.F.  
Min. Soil Pressure = 0.98 T.S.F.



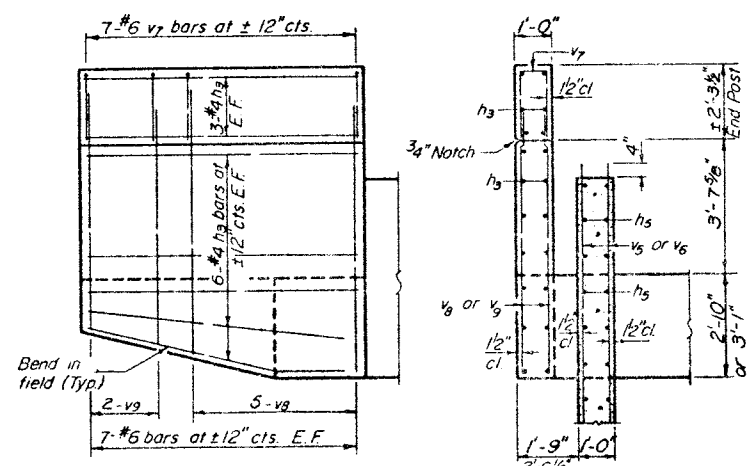
VIEW F-F



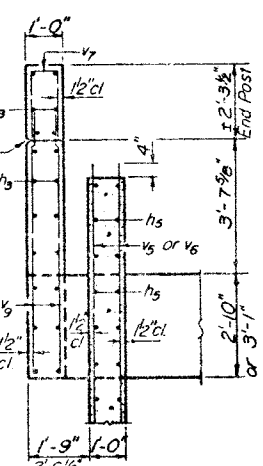
PLAN



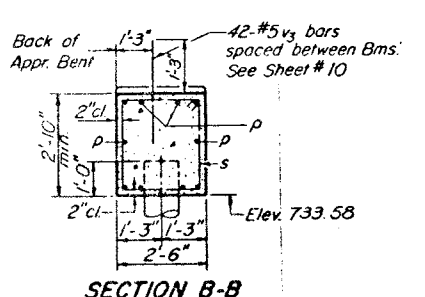
BAR V1, BARS V2 & V7



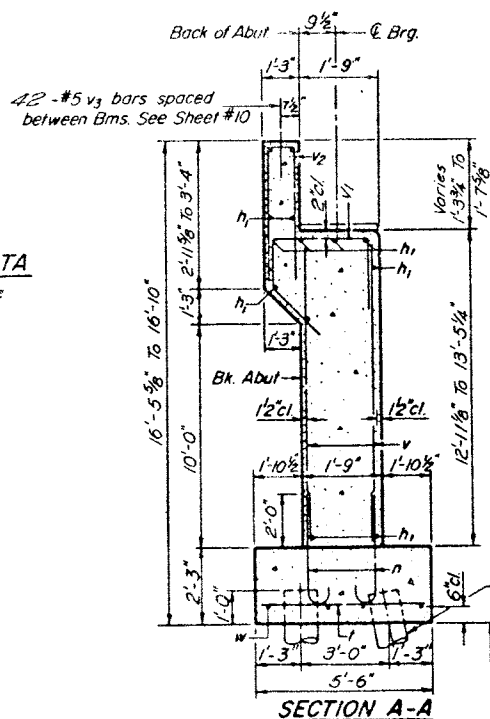
WING WALL REINFORCEMENT



SECTION D-D



SECTION B-B



SECTION A-A

ABUT. PILE DATA

Type	- Concrete
Capacity	- 30 Tons
Est. Length	- 34 Feet
No. Req'd.	- 22

APPR. BENT PILE DATA

Type	- Concrete
Capacity	- 30 Tons
Est. Length	- 45 Feet
No. Req'd.	- 11

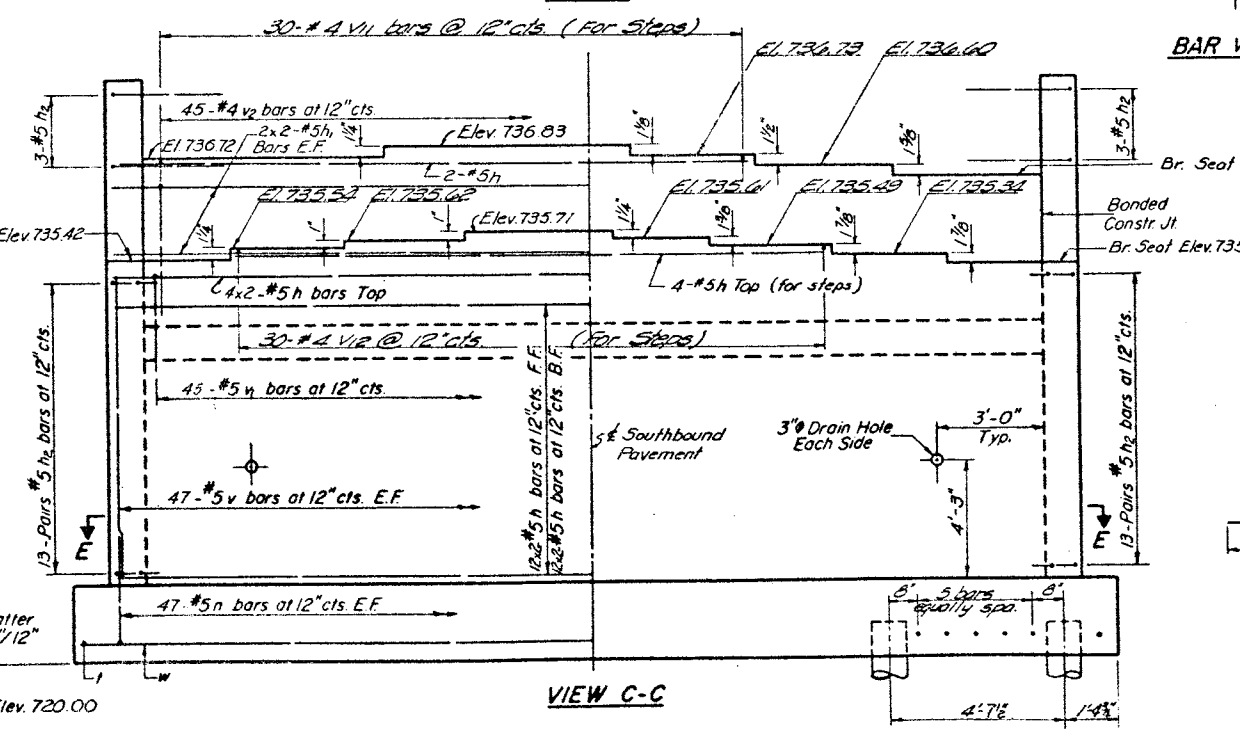
BILL OF MATERIAL

Bar	No	Size	Length	Shape
n	10	#5	29'-6"	—
n1	64	#5	24'-0"	—
n2	82	#5	3'-9"	J
n3	36	#5	6'-9"	—
n4	18	#5	21'-6"	—
n5	24	#5	24'-10"	—
n6	4	#6	24'-6"	—
n	102	#5	4'-3"	—
p	20	#7	26'-3"	—
s	54	#4	10'-1"	□
i	52	#5	5'-3"	—
v	94	#5	12'-8"	—
v1	45	#5	7'-9"	—
v2	45	#5	6'-6"	—
v3	92	#5	2'-6"	—
v4	12	#5	16'-9"	—
v5	38	#5	20'-10"	—
v6	16	#5	5'-9"	—
v7	14	#6	4'-9"	—
v8	20	#6	7'-9"	—
v9	8	#6	7'-0"	—
w	8	#5	25'-6"	—
Reinforcement Bars		Lbs	10,070	
Class X Concrete		Cu Yds.	106.0	
Concrete Piles		Lin. Ft.	1,243	

BAR V11, V12, V13

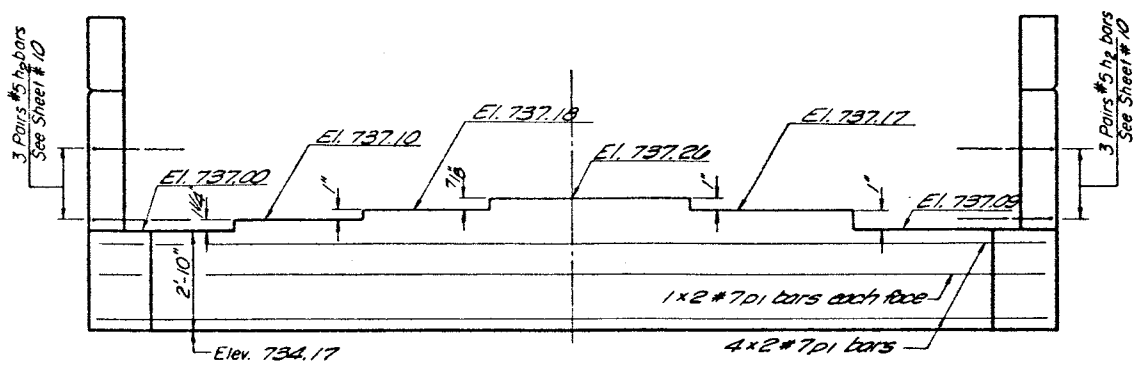
BAR s

BAR n

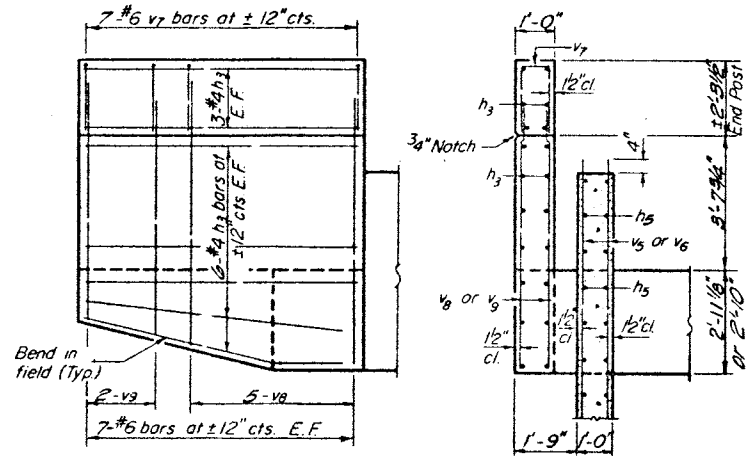


VIEW C-C

SOUTH ABUT. & SOUTH APPR. BENT  
SOUTHBOUND ROADWAY  
FAI ROUTE 55 SEC. 57-1HB  
MC LEAN COUNTY  
STATION 398+57.00



VIEW F-F



WING WALL REINFORCEMENT

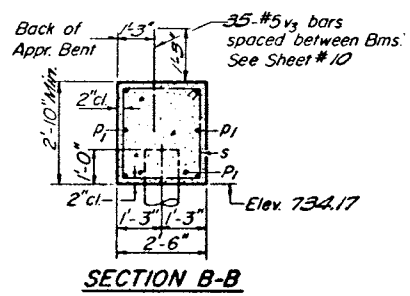
SECTION D-D

**ABUT. PILE DATA**

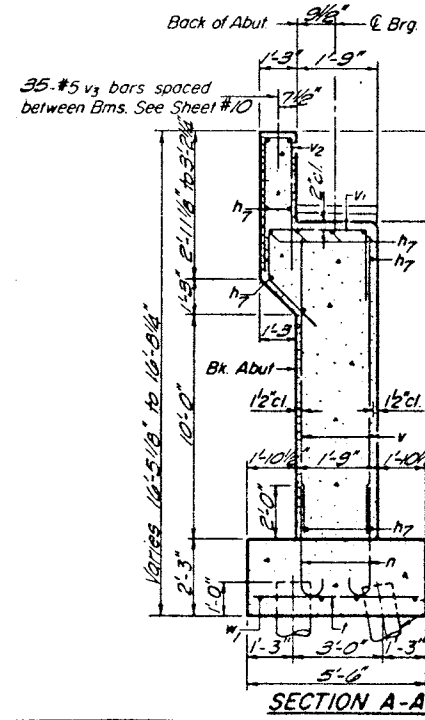
Type - Concrete  
Capacity 30 Tons  
Est. Length 31  
No. Reg'd 20

**ABUT. BENT PILE DATA**

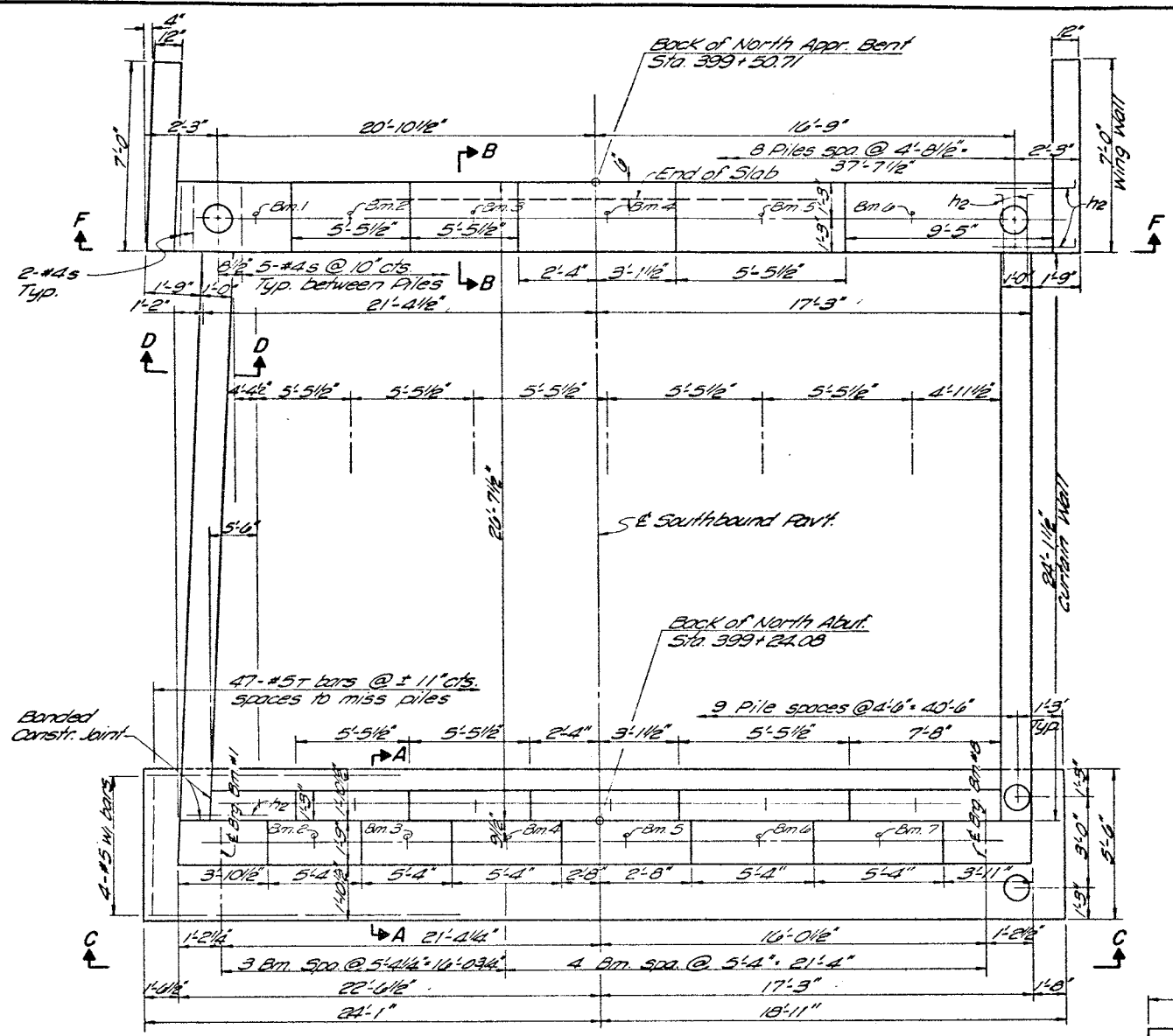
Type Concrete  
Capacity 30 Tons  
Est. Length 42  
No. Reg'd. B+1 Test Pile



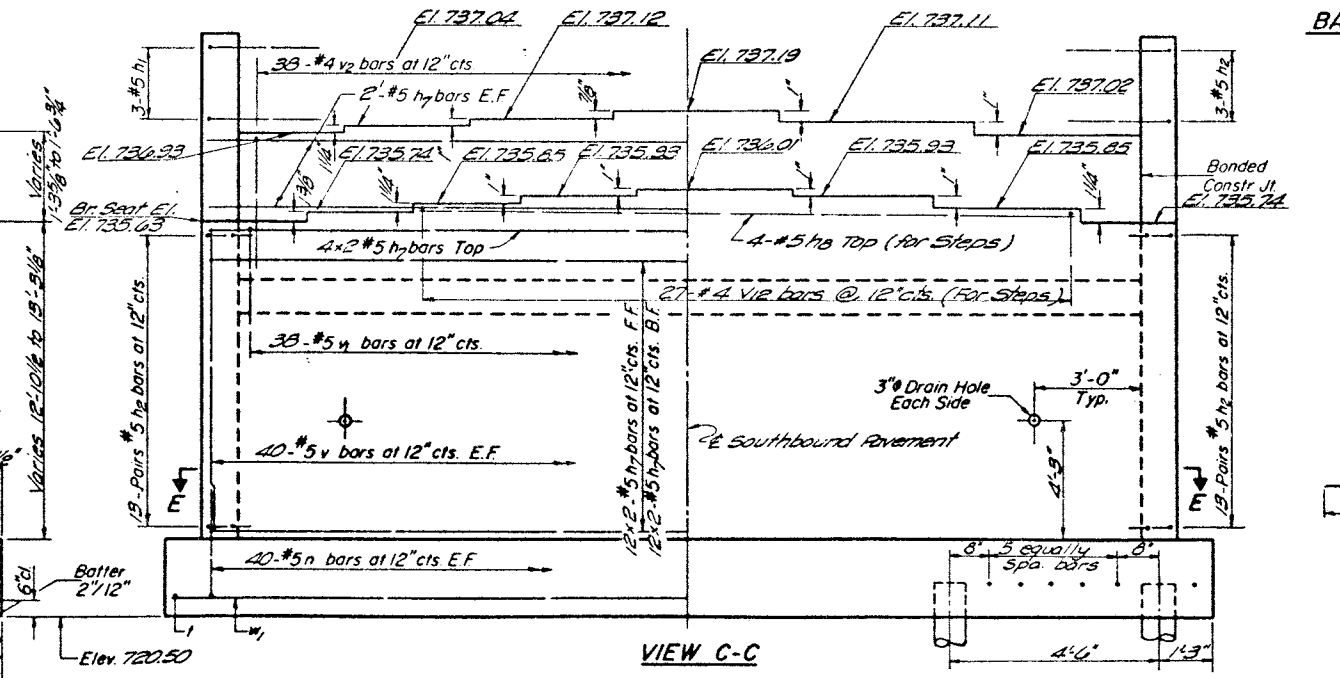
SECTION B-B



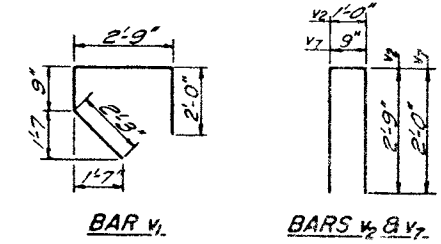
SECTION A-A



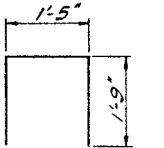
PLAN



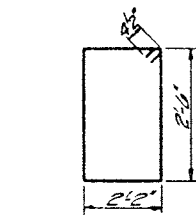
VIEW C-C



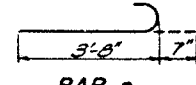
BAR h2



BAR V12



BAR s

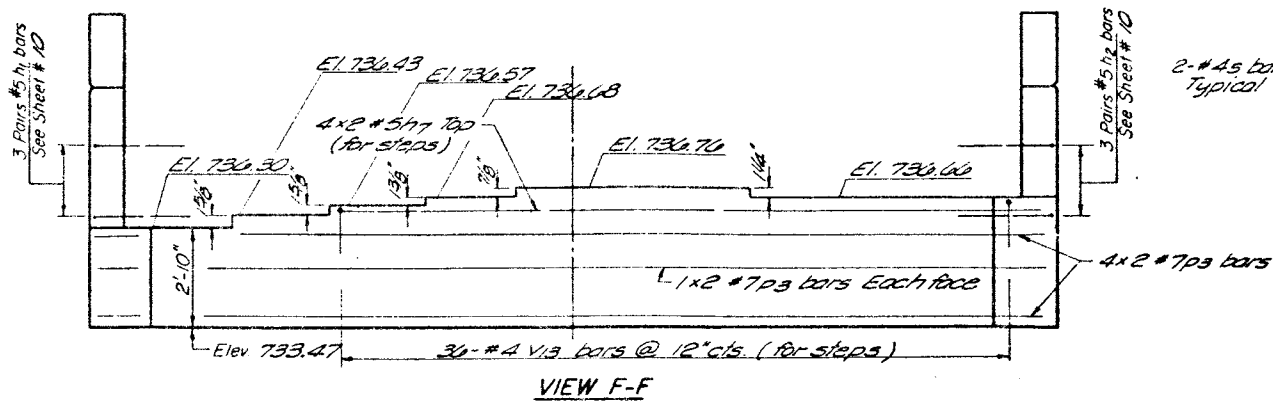


BAR n

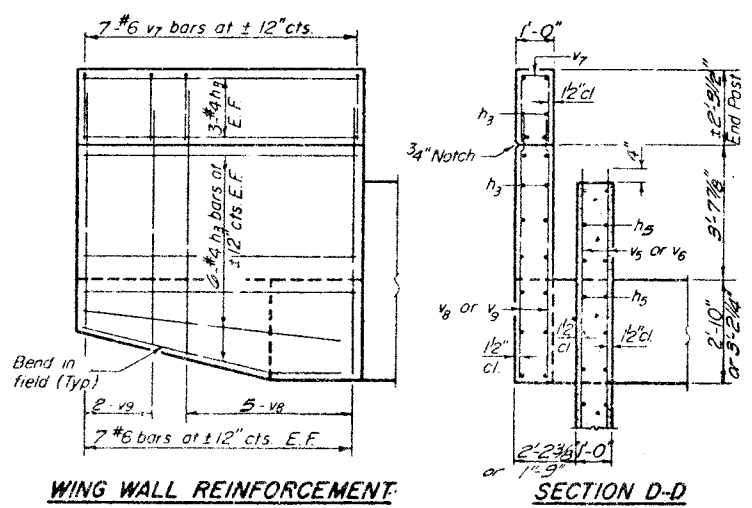
**BILL OF MATERIAL**

Bar	No	Size	Length	Scope
h2	82	#5	2'-9"	U
h3	50	#5	2'-0"	U
h4	19	#5	2'-9"	U
h5	24	#5	2'-0"	U
h6	4	#5	2'-0"	U
h7	64	#5	2'-0"	U
h8	4	#5	2'-0"	U
n	88	#5	4'-3"	U
p1	20	#7	22'-0"	U
s	42	#4	10'-1"	U
1	47	#5	5'-3"	U
v	80	#5	12'-8"	U
v1	38	#5	7'-9"	U
v2	38	#5	6'-6"	U
v3	78	#5	2'-8"	U
v4	12	#5	16'-9"	U
v5	38	#5	20'-0"	U
v6	10	#5	5'-9"	U
v7	14	#6	4'-9"	U
v8	20	#6	7'-9"	U
v9	8	#6	7'-0"	U
v12	27	#4	4'-11"	U
w1	8	#5	22'-0"	U
Reinforcement Bars		Lbs	8,720	
Class X Concrete		Cu Yds	22.4	
Concrete Piles		Lin. Ft.	956	
Test Piles		Each	1	

**NO. ABUT. & NO. APPR. BENT**  
**SOUTHBOUND ROADWAY**  
 FAI ROUTE 55 SEC. 57-1HB  
 MCLEAN COUNTY  
 STA. 398 + 57.00



VIEW F-F



WING WALL REINFORCEMENT

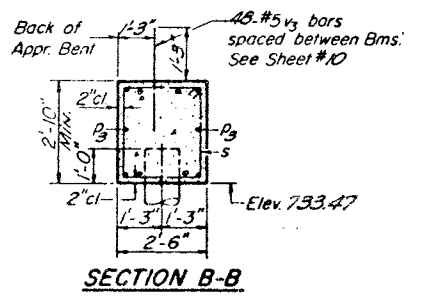
SECTION D-D

**ABUT. PILE DATA**

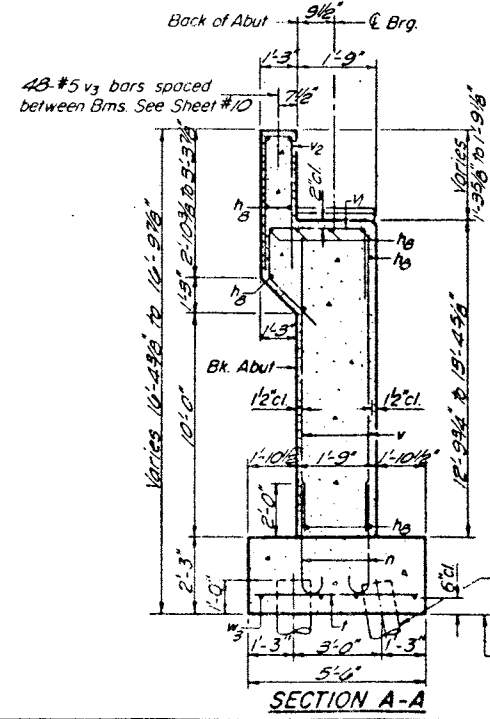
Type Concrete  
Capacity 30 Tons  
Est. Length 34'  
No. Reqd. 23 + 1 Test Pile

**ABUT. BENT PILE DATA**

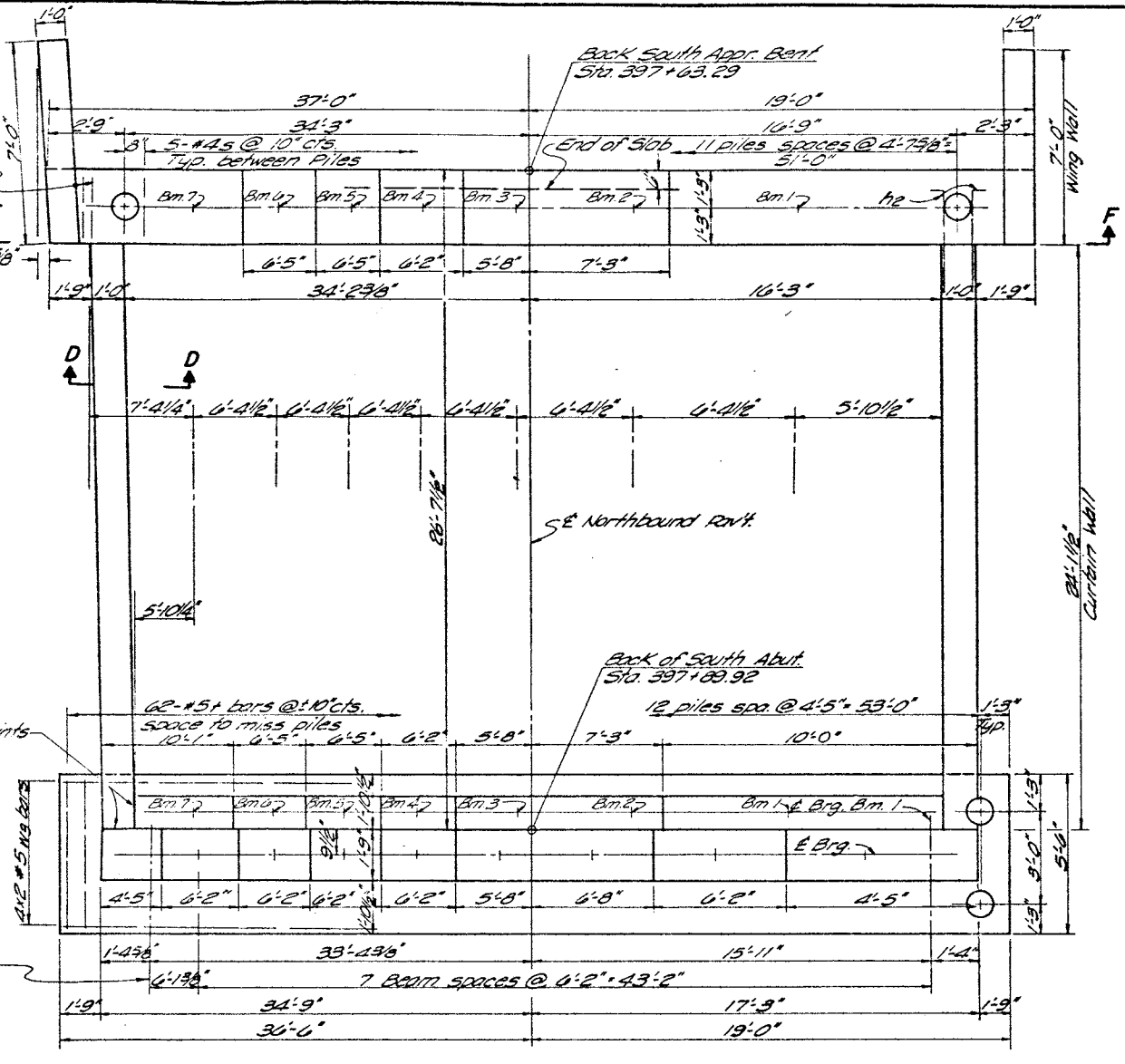
Type Concrete  
Capacity 30 Tons  
Est. Length 45'  
No. Reqd. 12



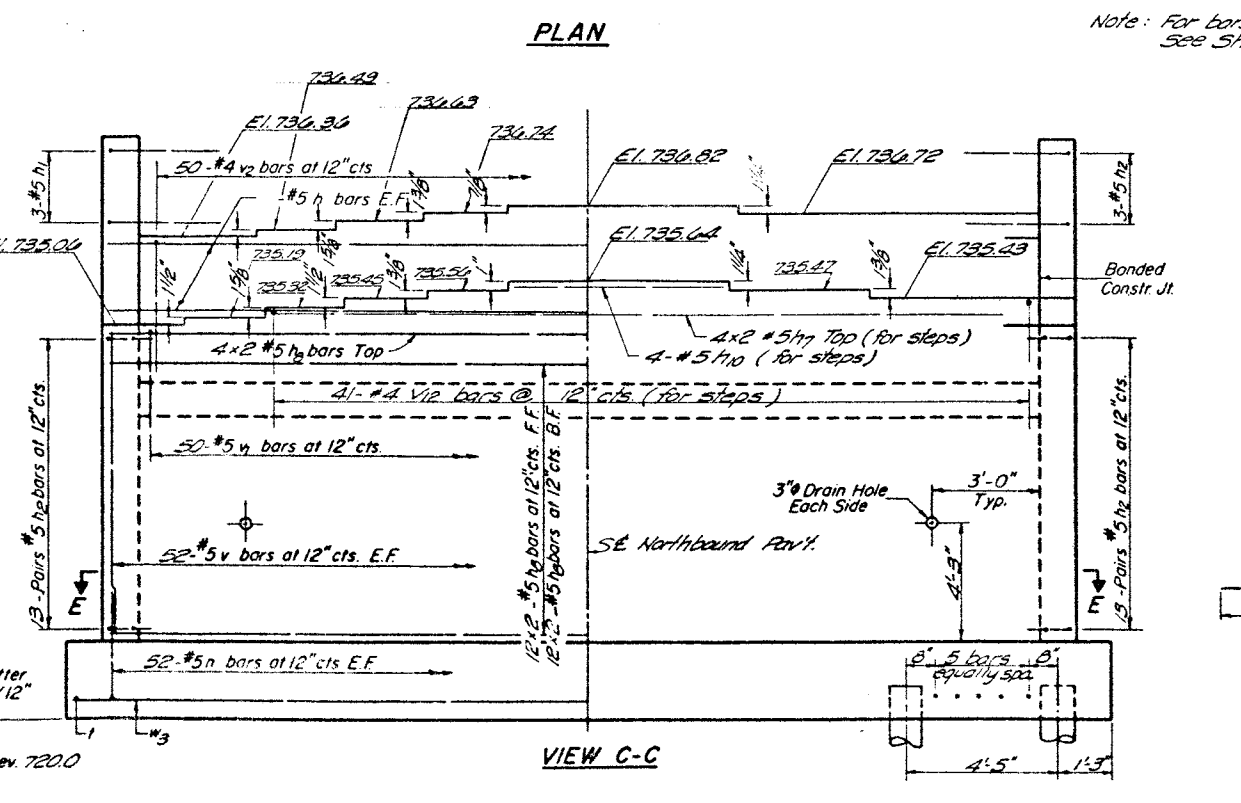
SECTION B-B



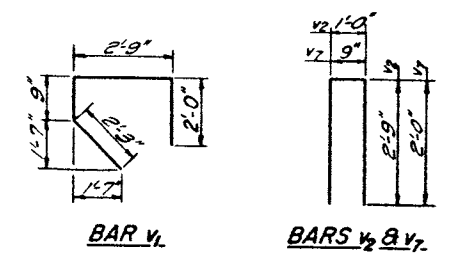
SECTION A-A



PLAN



VIEW C-C



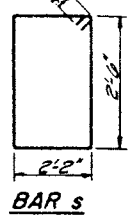
BAR V1

BARS V2 & V7

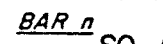
BAR h2

**BILL OF MATERIAL**

Bar	No	Size	Length	Shape
h10	4	#5	12'-0"	—
h2	82	#5	3'-9"	J
h3	36	#5	6'-9"	—
h4	18	#5	21'-8"	—
h5	24	#5	24'-0"	—
h6	4	#6	24'-0"	—
h7	16	#5	20'-6"	—
h8	64	#5	20'-0"	—
n	112	#5	4'-3"	—
p3	20	#7	28'-9"	—
s	50	#4	10'-1"	□
1	62	#5	5'-3"	—
v12	41	#4	4'-11"	□
v	104	#5	12'-8"	—
v1	50	#5	7'-9"	□
v2	50	#5	6'-6"	□
v3	104	#5	2'-6"	—
v4	12	#5	16'-9"	—
v5	36	#5	20'-10"	—
v6	16	#5	5'-9"	—
v7	14	#6	4'-9"	□
v8	20	#6	7'-9"	—
v9	8	#6	7'-0"	—
v13	36	#4	5'-10"	□
w9	8	#5	28'-9"	—
Reinforcement Bars		Lbs.	13,760	
Glass X Concrete		Cu Yds.	115.2	
Concrete Piles		Lin. Ft.	1,322	
Test Piles Concrete		Ed.	1	

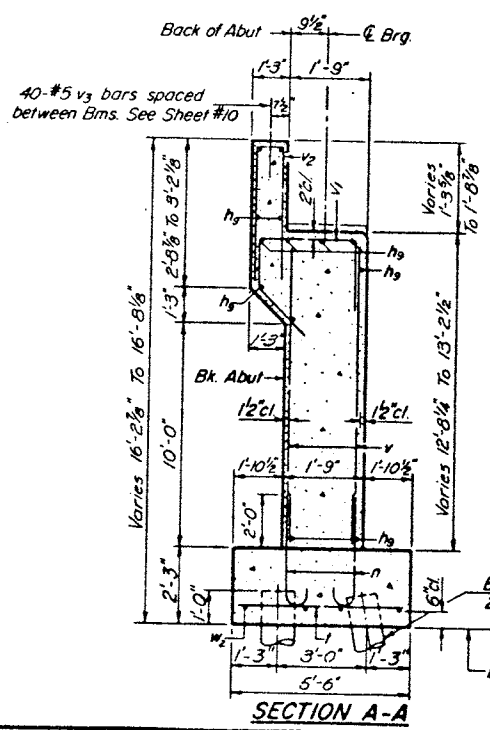
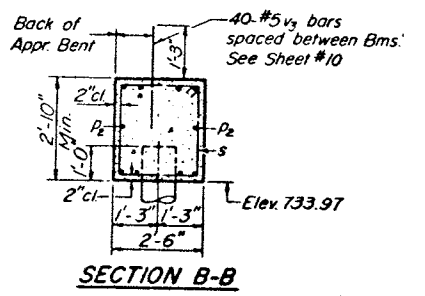
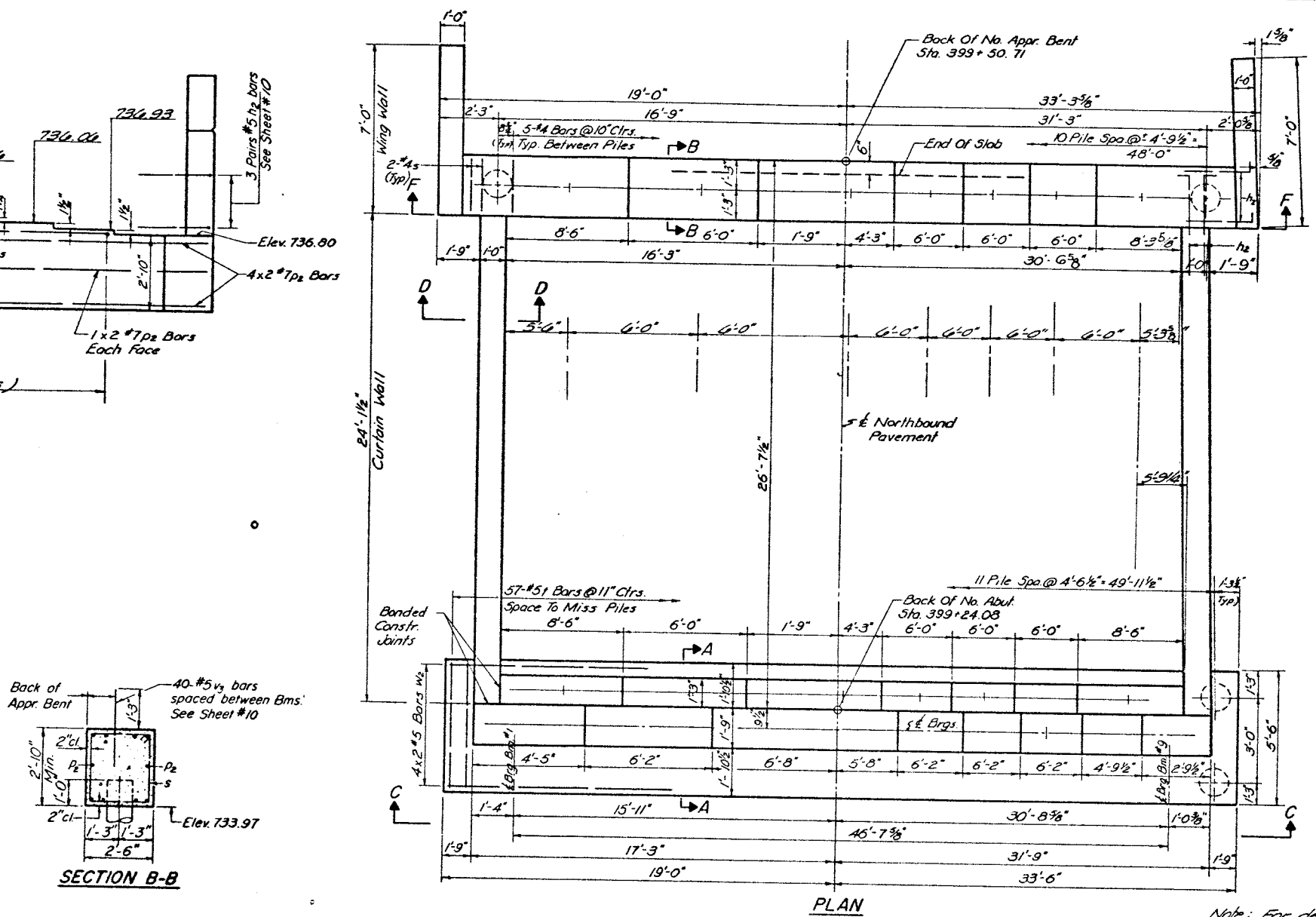
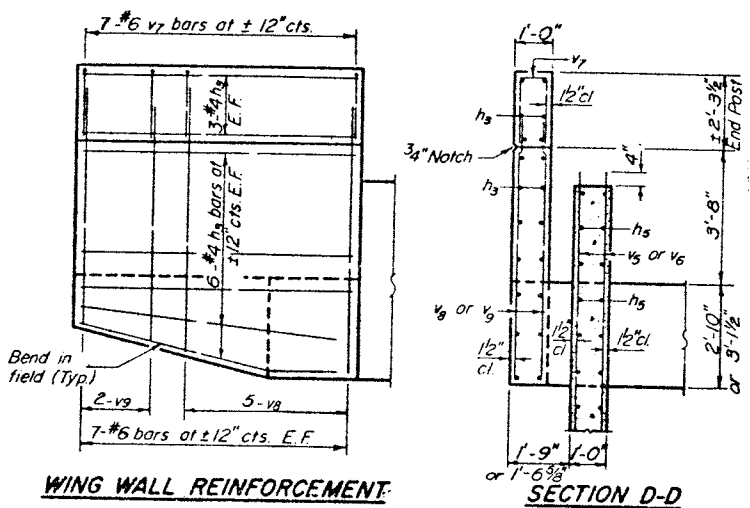
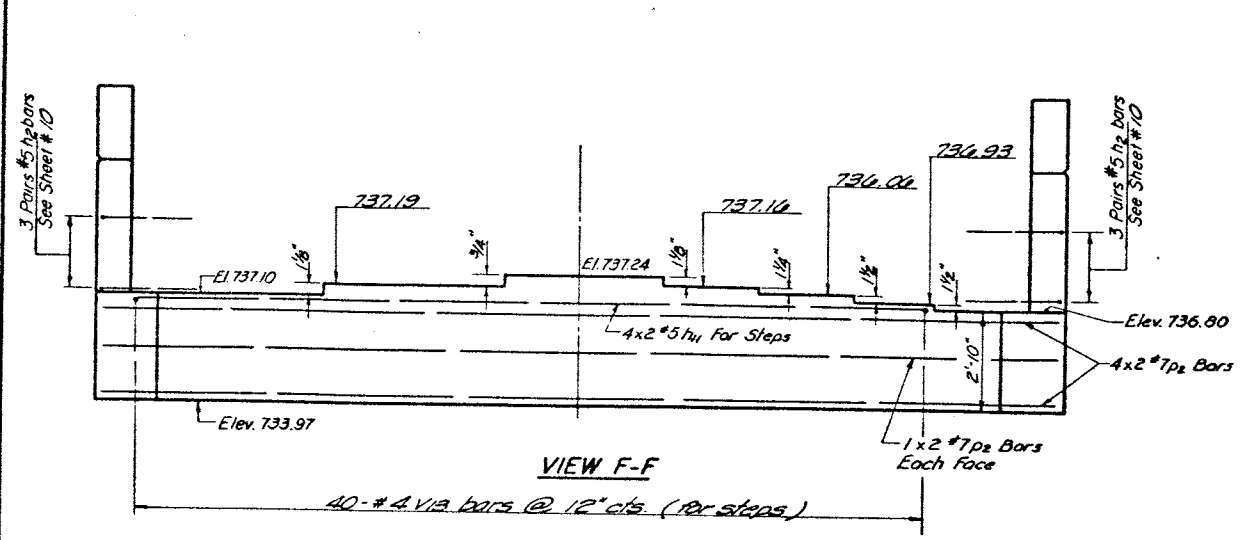


BAR s



BAR n

SO. ABUT. & SO. APPR. BENT  
NORTHBOUND ROADWAY  
FAI ROUTE 55 SEC. 57-1HB  
MCLEAN COUNTY  
STA. 398 + 57.00



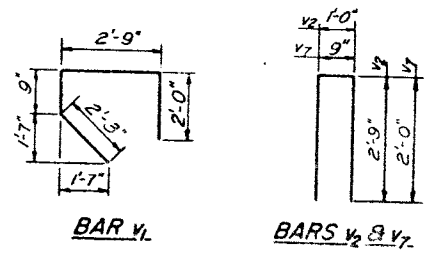
**ABUT. PILE DATA**

Type	- Concrete
Capacity	- 30 Tons
Est. Length	- 35
No. Req'd.	- 24

**APPR. BENT PILE DATA**

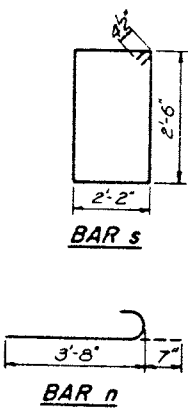
Type	- Concrete
Capacity	- 30 Tons
Est. Length	- 47
No. Req'd.	- 11

Note: For details of Bars V1, V2, V3 See Sheet 18 of 25



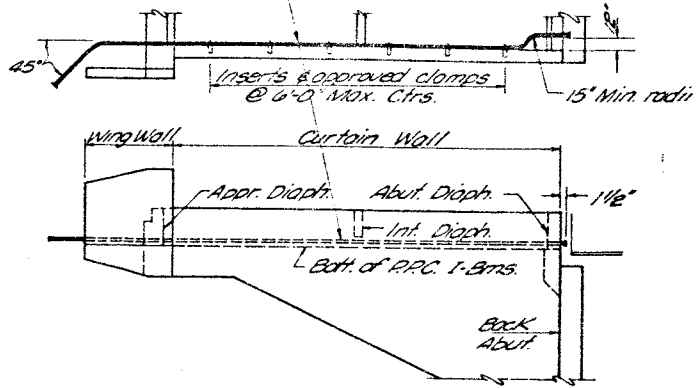
**BILL OF MATERIAL**

Bar	No	Size	Length	Shape
h2	52	#5	27'-0"	J
h3	36	#5	27'-0"	J
h4	18	#5	27'-0"	J
h5	24	#5	24'-0"	J
h6	4	#6	34'-6"	J
h7	8	#5	20'-6"	J
h8	64	#5	25'-0"	J
h9	4	#5	12'-0"	J
h10	16	#5	17'-0"	J
n	106	#5	4'-3"	J
p2	20	#7	27'-0"	J
s	54	#4	10'-1"	J
v	57	#5	5'-3"	J
v11	53	#4	2'-5"	J
v	98	#5	12'-8"	J
v1	47	#5	7'-5"	J
v2	47	#5	6'-6"	J
v3	88	#5	2'-6"	J
v4	12	#5	16'-9"	J
v5	38	#5	20'-10"	J
v6	16	#5	5'-9"	J
v7	14	#6	4'-9"	J
v8	20	#6	7'-9"	J
v9	8	#6	7'-0"	J
v12	41	#4	4'-11"	J
w2	8	#5	26'-9"	J
v13	40	#4	5'-10"	J
Reinforcement Bars		Lbs	10,560	
Glass X Concrete		Cu Yds	108.9	
Concrete Piles		Lin. Ft.	1357	

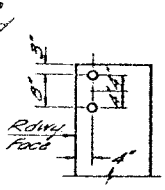


**N. ABUTMENT & N. APPROACH BENT**  
 NORTHBOUND ROADWAY  
 FAI ROUTE 55 SEC. 57-1NB  
 MC LEAN COUNTY  
 STATION 398+57.00

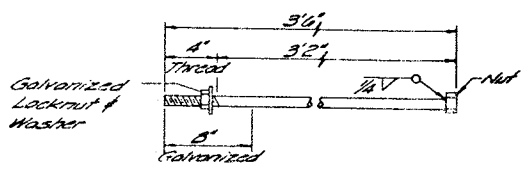
2" Galv. Conduit (Sch. 40 Pipe) Extend to clear end of wing wall and terminate at a point outside of the shoulder. Thread and cap each end. Place conduit at the two outside corners of each dual bridge and all four corners of a single bridge (4 Req'd.) Cost incidental.



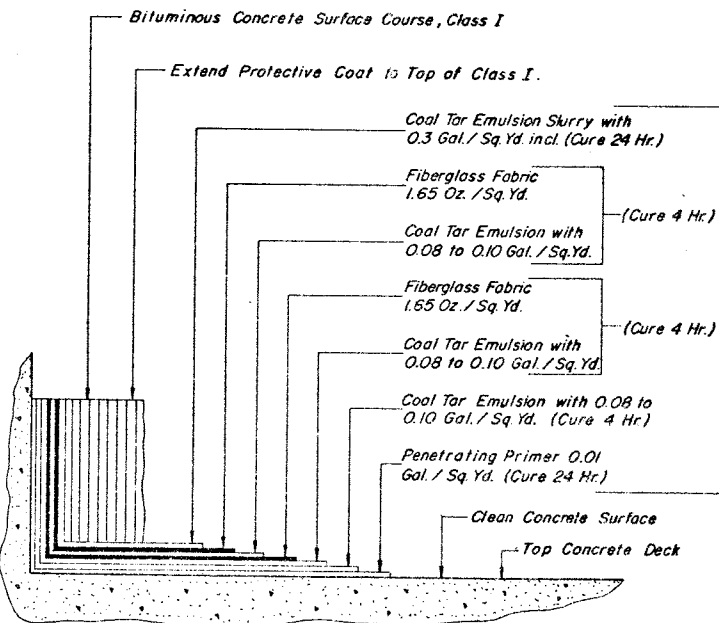
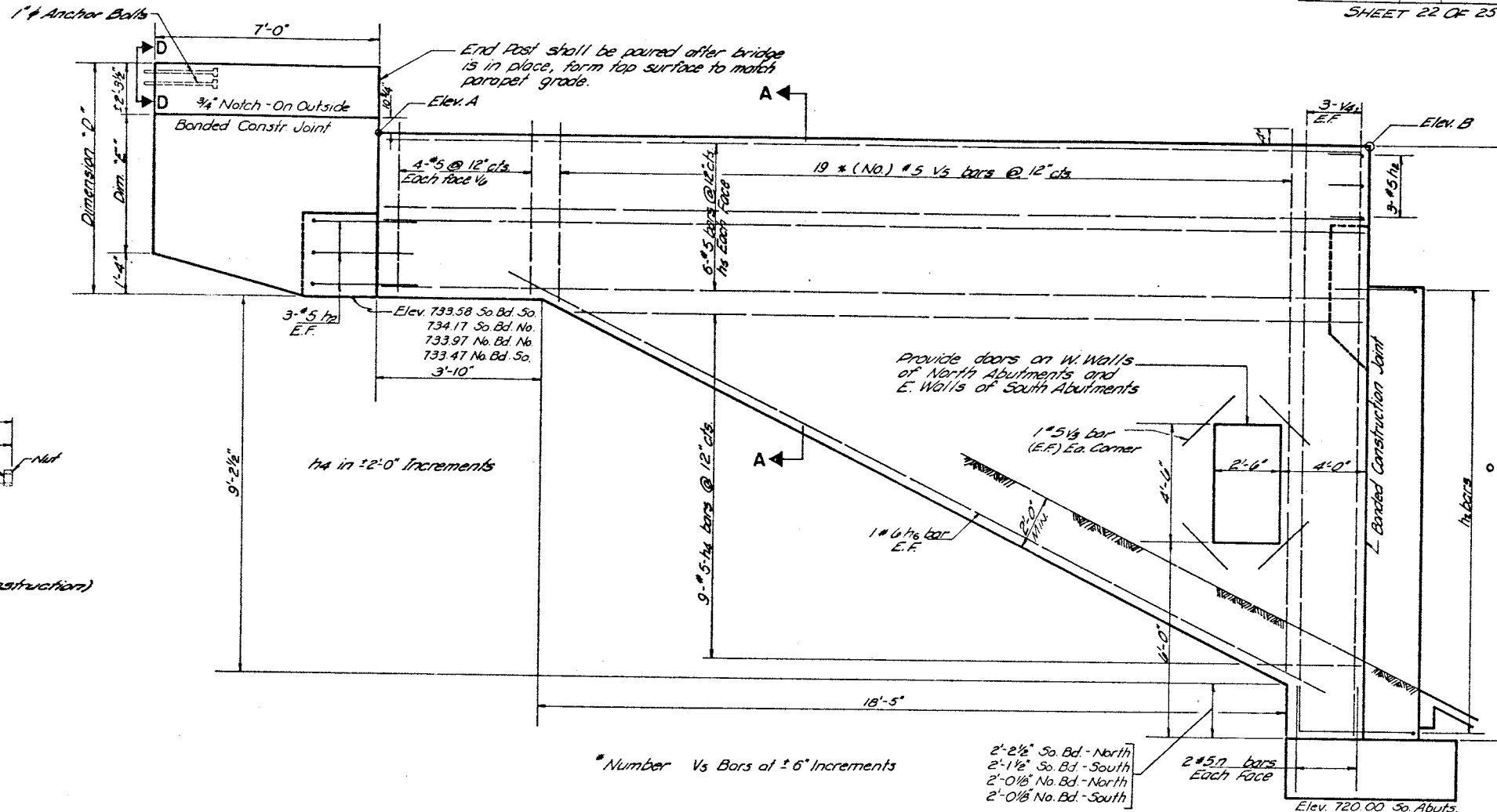
**ELECTRICAL CONDUIT LOCATION**



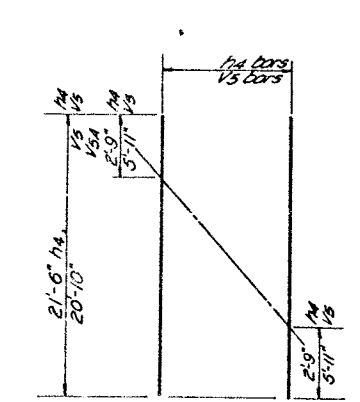
**VIEW D-D**



**1" ANCHOR BOLT**  
(Cast incidental to Bridge Construction)

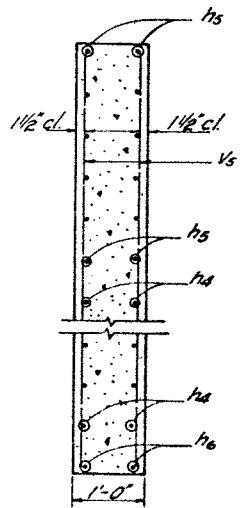


**DECK SURFACING**  
with Coal Tar Interlayer Protective Coat  
(By Others)

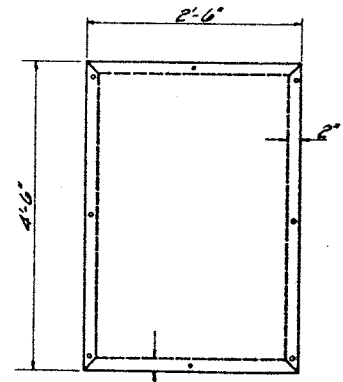


**FIELD CUTTING DIAGRAM**

\* Order  $h_4$  &  $V_5$  bars full length cut to fit as shown and use remainder of bars in other face

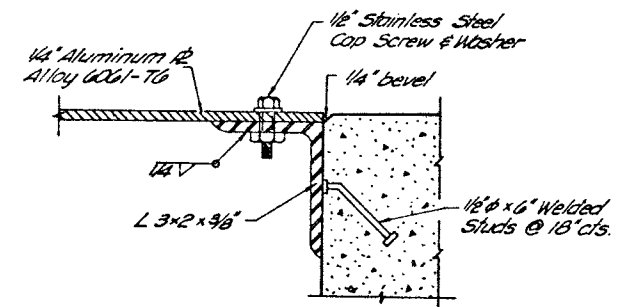


**SECTION A-A**



**DOOR ELEVATION**

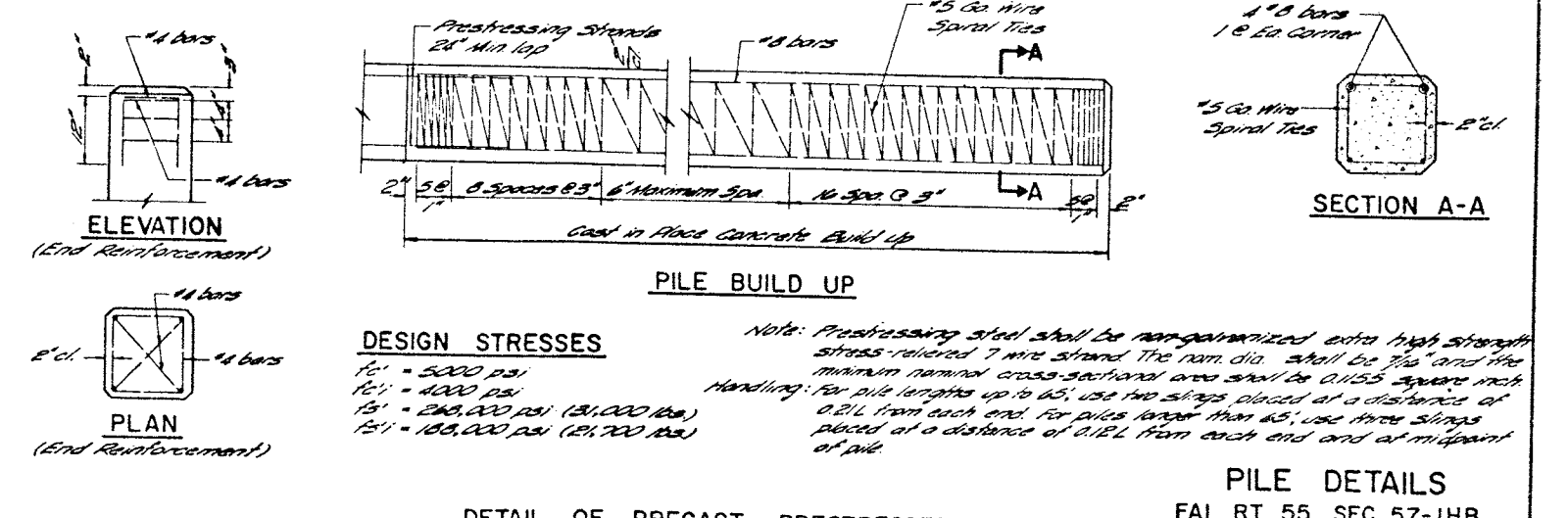
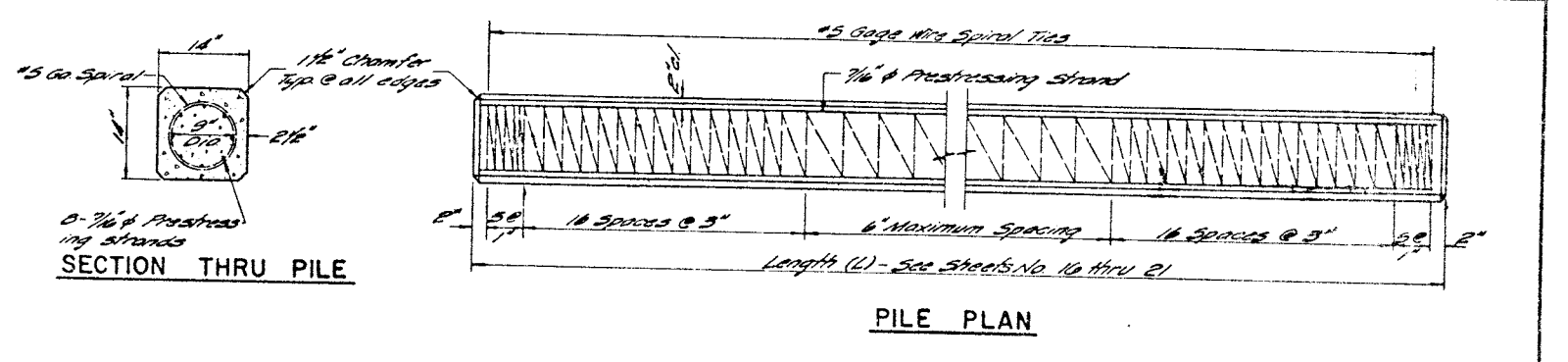
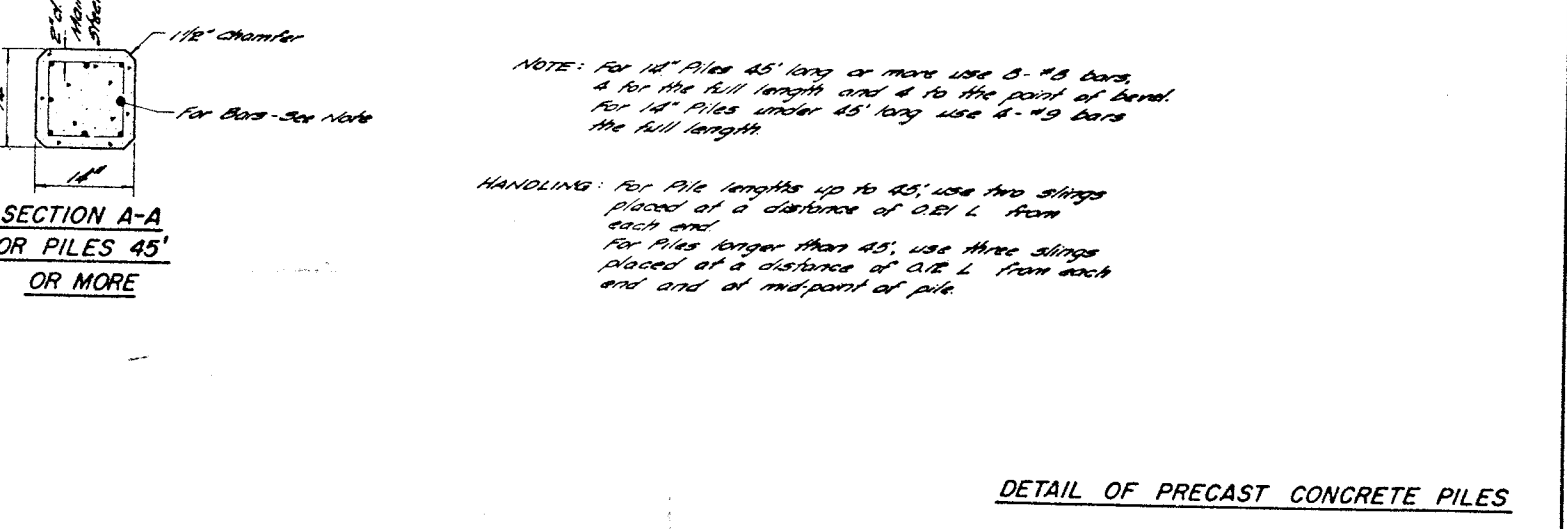
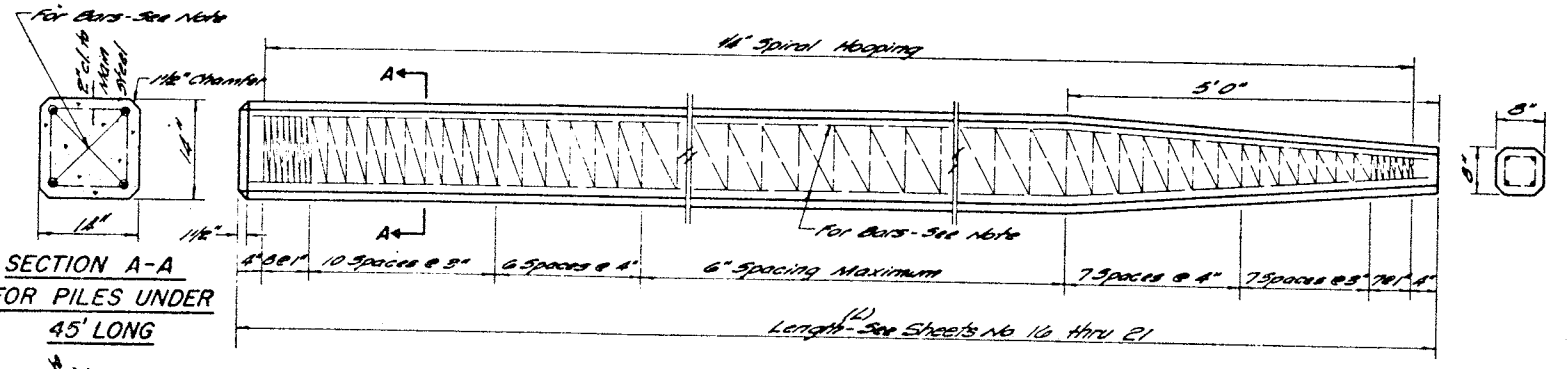
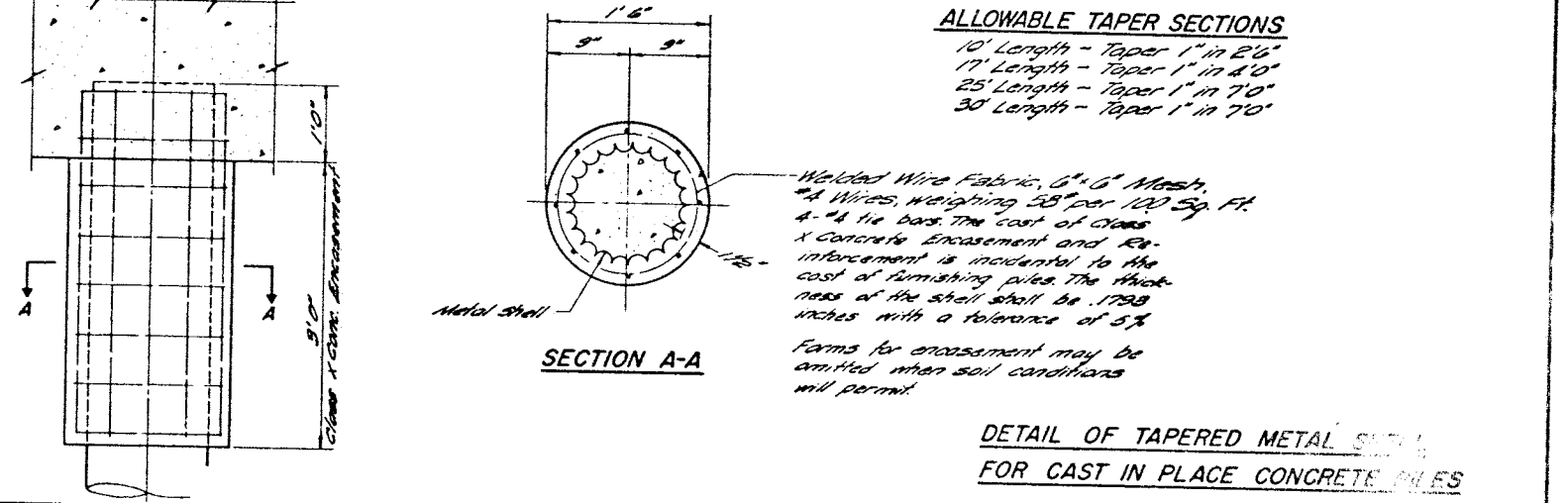
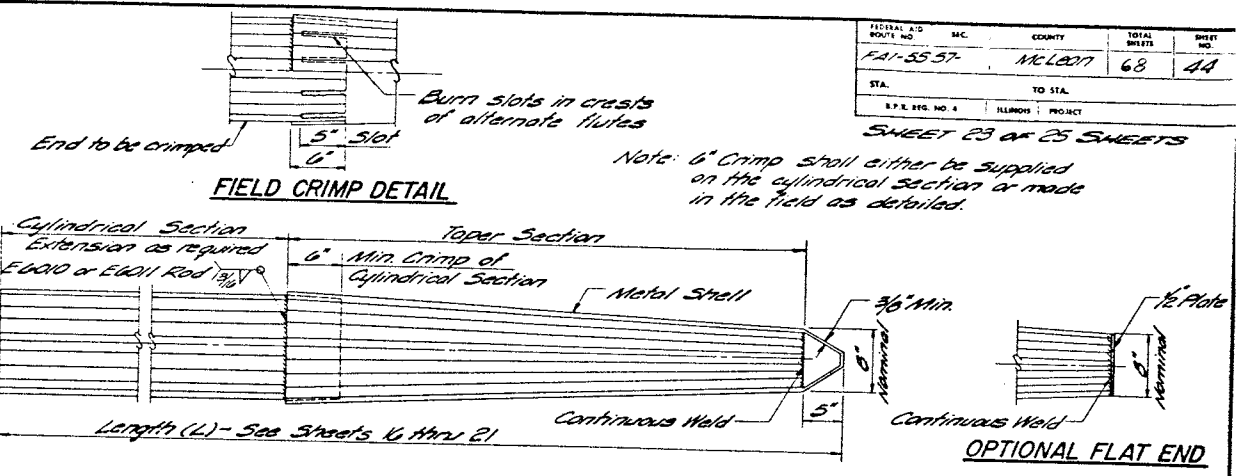
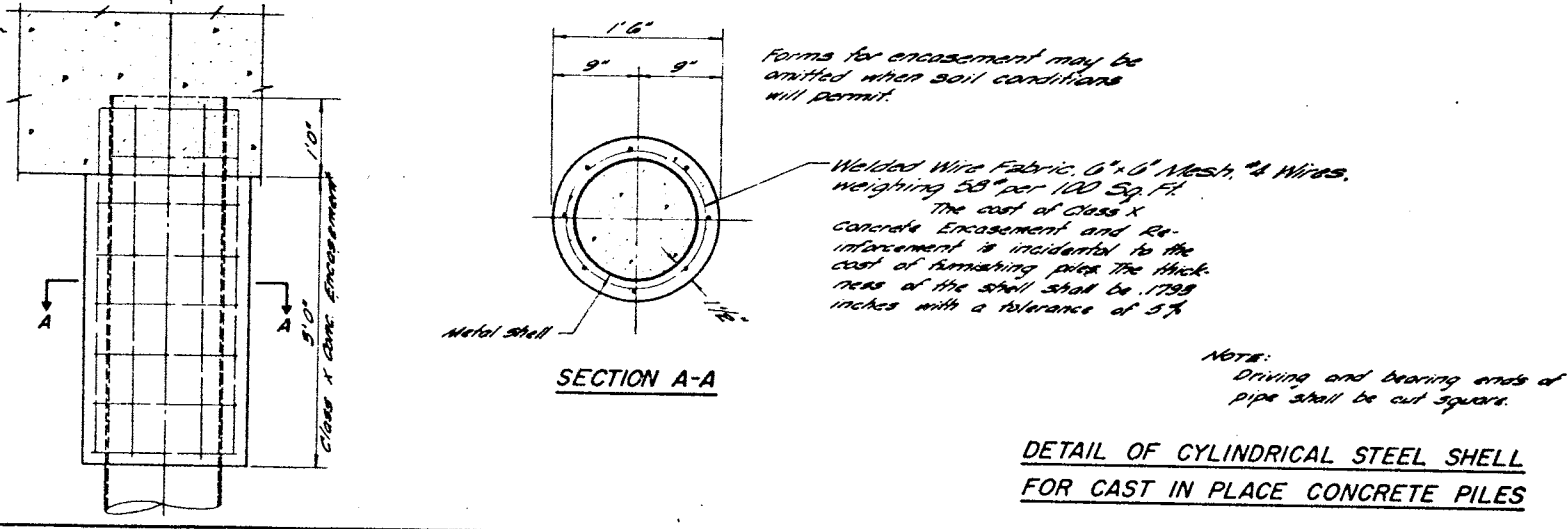
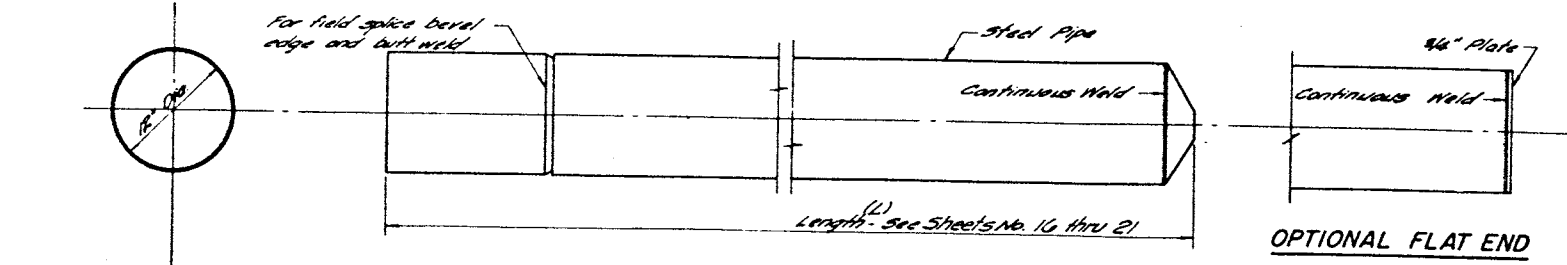
Cost of doors and frames are incidental



**SECTION THRU DOOR FRAME**

	LOCATION	DIM. "C"	DIM. "D"
South Bound Roadway	W. Wall S. Abut.	16'-11 3/4"	8'-9 1/2"
	E. Wall S. Abut.	17'-2 3/4"	9'-0 3/4"
	W. Wall N. Abut.	16'-11 1/4"	8'-9 3/4"
	E. Wall N. Abut.	17'-0 3/8"	8'-10 1/2"
North Bound Roadway	W. Wall S. Abut.	17'-2 3/4"	9'-1 1/2"
	E. Wall S. Abut.	16'-10 1/2"	8'-9 3/4"
	W. Wall N. Abut.	17'-0 3/8"	9'-0 3/4"
	E. Wall N. Abut.	16'-9 1/8"	8'-9 1/2"
South Bound Roadway	W. Wall S. Abut.	739.15	739
	E. Wall S. Abut.	739.42	739
	W. Wall N. Abut.	739.78	739
	E. Wall N. Abut.	739.86	739
North Bound Roadway	W. Wall S. Abut.	739.42	739
	E. Wall S. Abut.	739.06	739
	W. Wall N. Abut.	739.86	739
	E. Wall N. Abut.	739.57	739

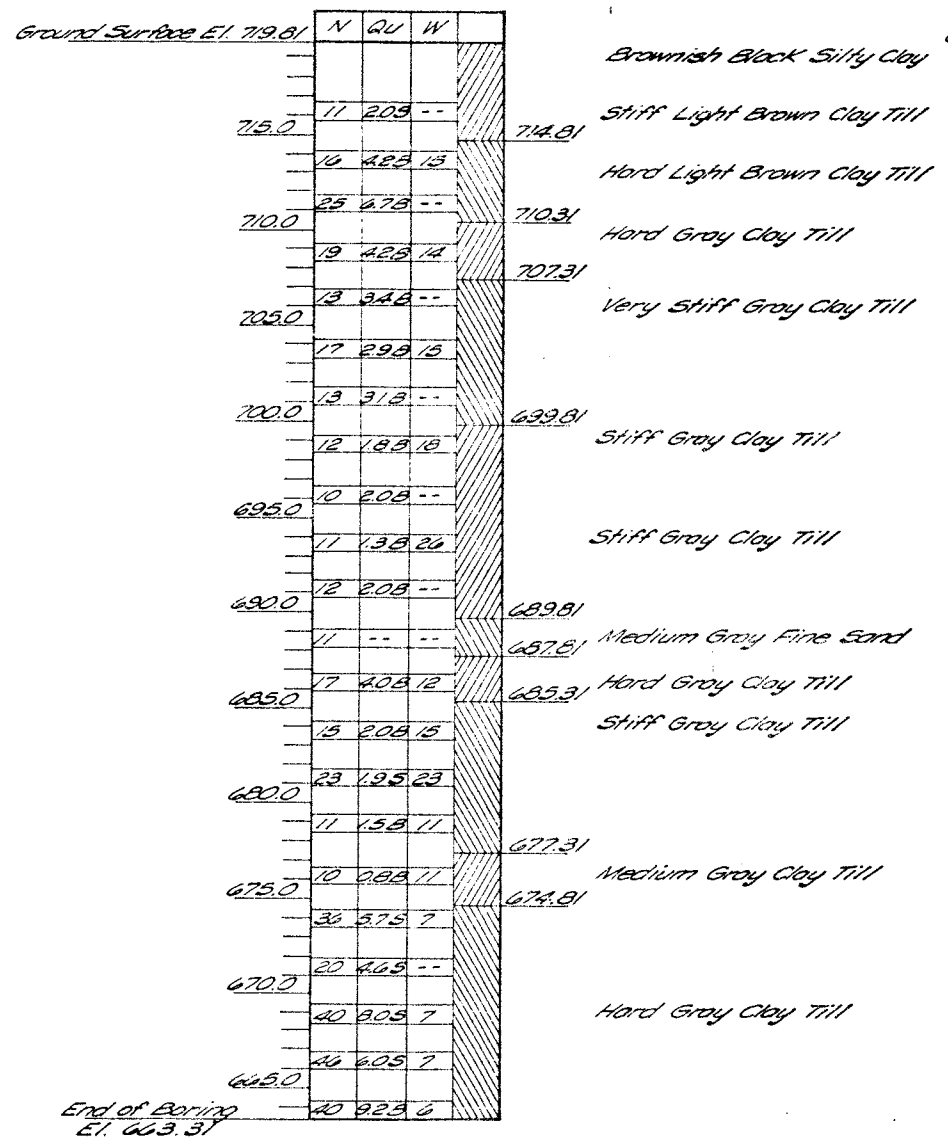
**CURTAIN WALL**  
FAI ROUTE 55 SEC. 57-IHB  
MC LEAN COUNTY  
STATION 398+57.00



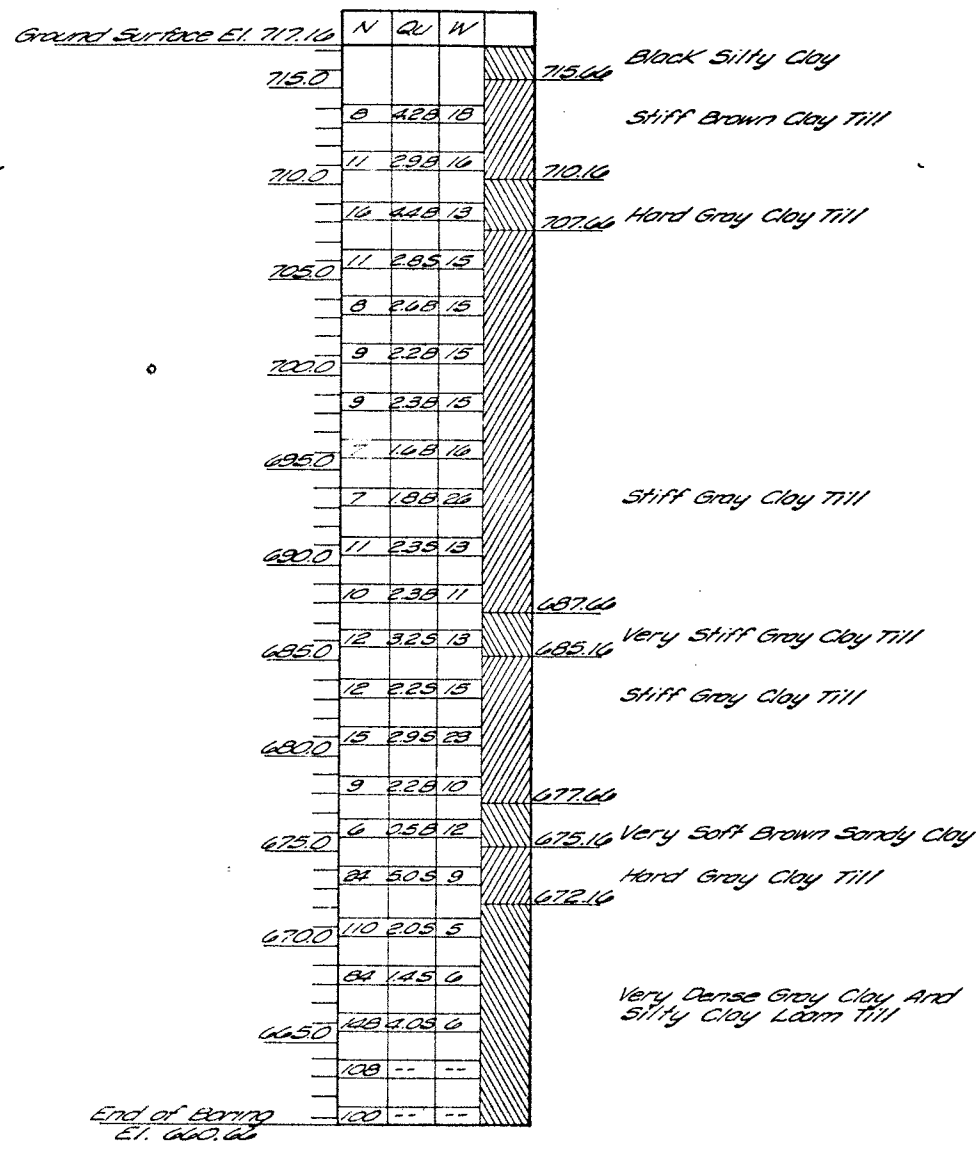
**DESIGN STRESSES**

$f_c = 5000 \text{ psi}$   
 $f_t = 4000 \text{ psi}$   
 $f_s = 200,000 \text{ psi (20,000 lbs.)}$   
 $f_s = 100,000 \text{ psi (20,700 lbs.)}$

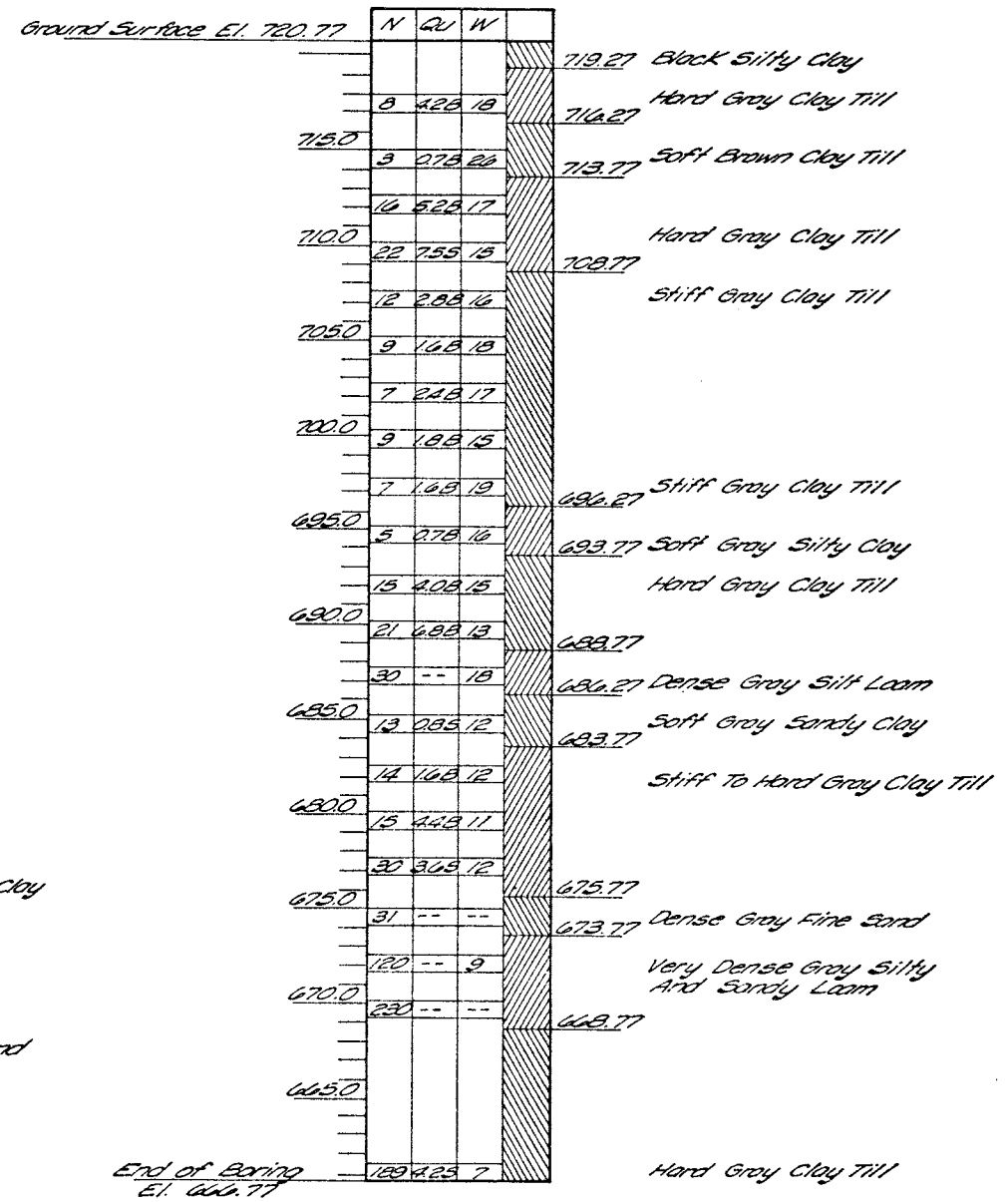
**PILE DETAILS**  
 FAI RT. 55 SEC. 57-1HB  
 MC LEAN COUNTY  
 STA. 398 +57.00



B-1  
STA. 397+89  
56' LT. ☿



B-2  
STA. 398+40  
56' LT. ☿

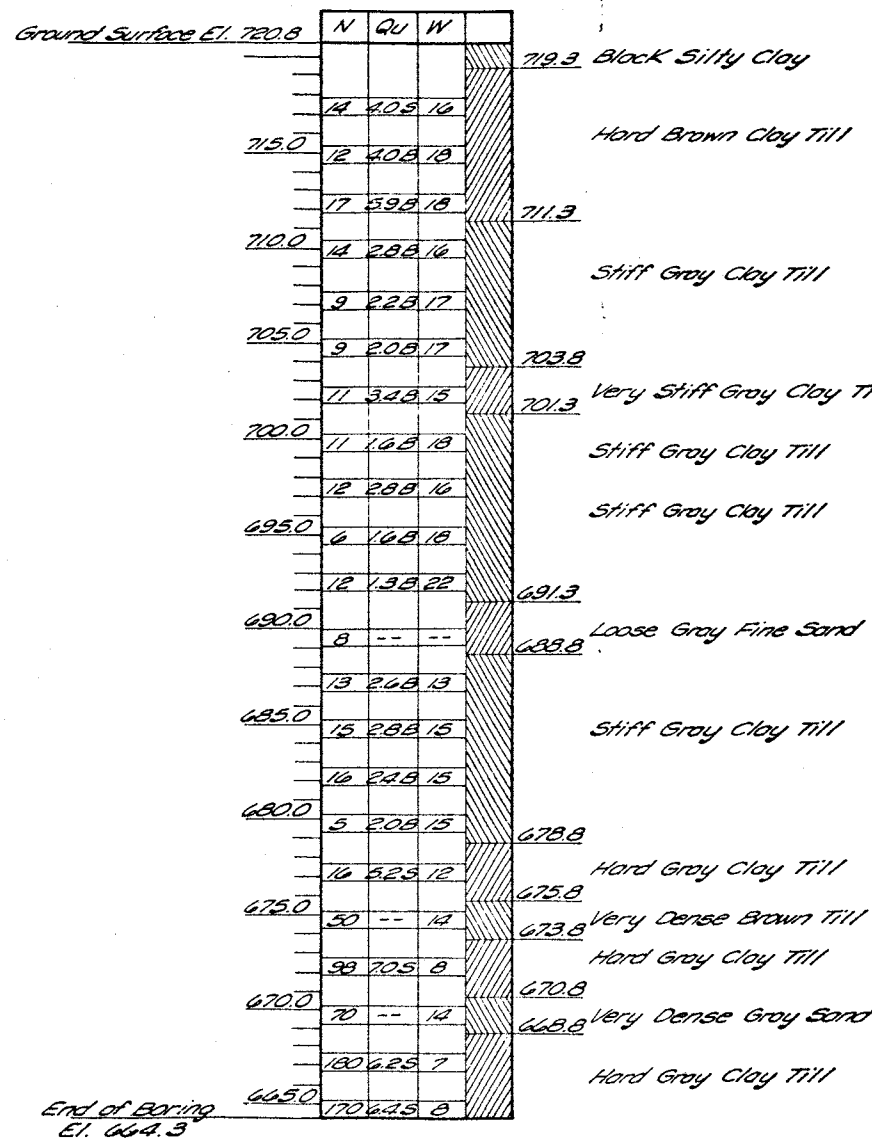


B-3  
STA. 399+21  
56' LT. ☿

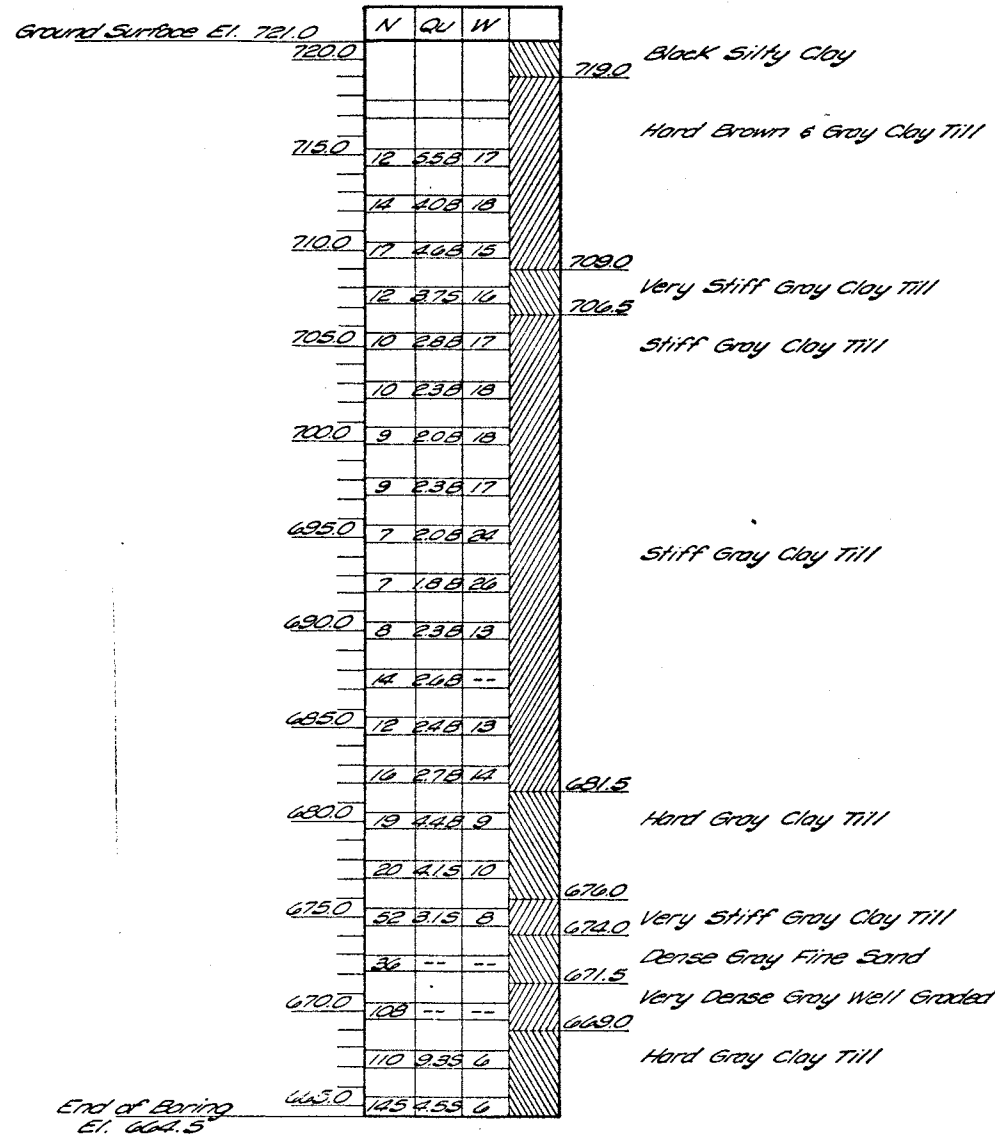
N • Standard Penetration Test - Blows per ft. to drive 2" O.D. Split Spoon Sampler 12" with 140# hammer falling 30"  
 Qu • Unconfined Compressive Strength - Tons per Sq. Ft.  
 W • Water Content - Percentage of Oven Dry Weight - %  
 Type Failure:  
 B • Bulge Failure  
 S • Shear Failure  
 E • Estimated Value

**BORING DATA**  
 FAI ROUTE 55 SEC. 57-1HB  
 McLENN COUNTY  
 STATION 398+55.00

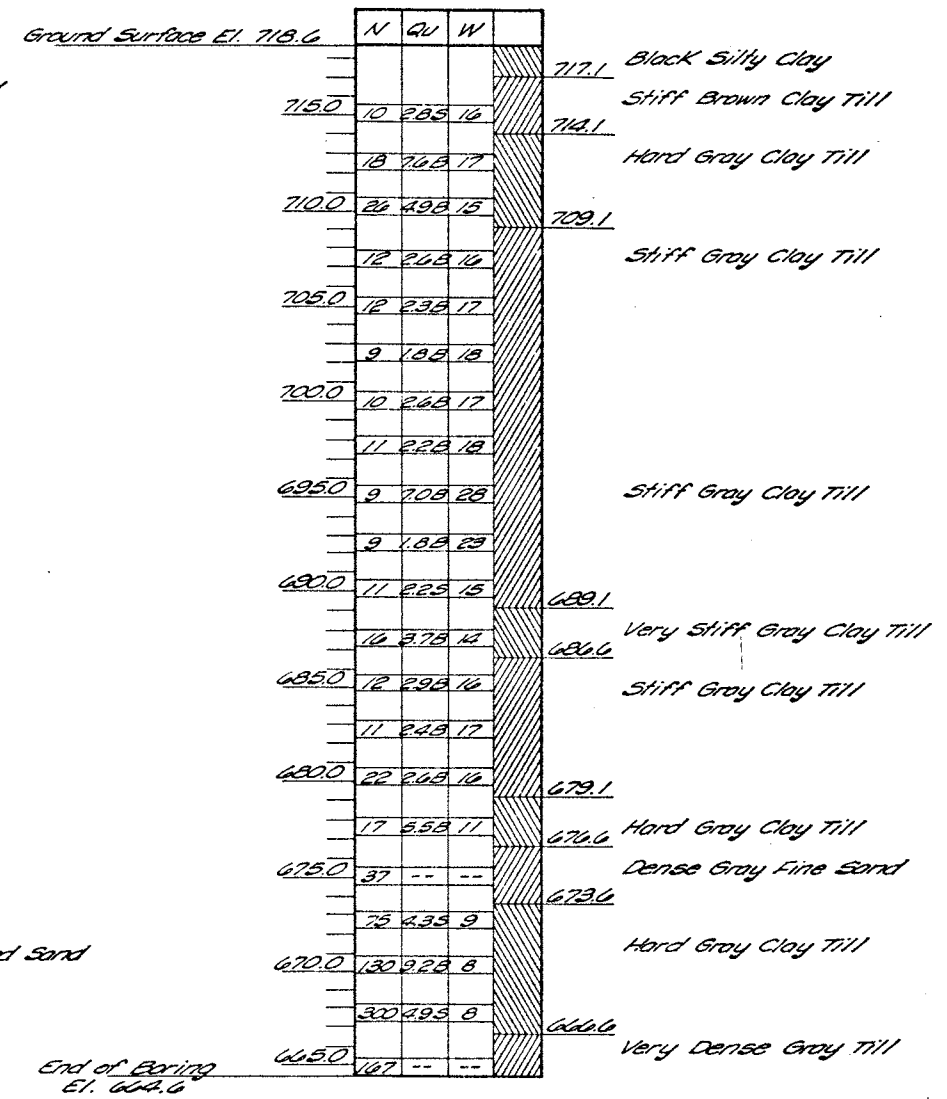




**B-4**  
 STA. 397 + 89  
 56' RT. ☿



**B-5**  
 STA. 398 + 68  
 56' RT. ☿



**B-6**  
 STA. 399 + 21  
 56' RT. ☿

N = Standard Penetration Test - Blows per ft. to drive 2" O.D. Split Spoon Sampler 12" with 140# hammer falling 30"  
 QU = Unconfined Compressive Strength - Tons per Sq. Ft.  
 W = Water Content - Percentage of Oven Dry Weight - %

Type Failure:  
 B = Bulge Failure  
 S = Shear Failure  
 E = Estimated Value

**BORING DATA**  
 FAI ROUTE 55 SEC. 57-1HB  
 McLEAN COUNTY  
 STATION 398 + 55.00