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

PLAN 1" = 50'  
PROFILE HORIZ. 1" = 50'  
PROFILE VERT. 1" = 5'  
CROSS SECTIONS 1" = 10' HORIZ.  
1" = 2' VERT.

**F.A.U. ROUTE 1453 (CERMAK ROAD)  
WIDENING & RESURFACING AND BRIDGE REHABILITATION  
PROJ. STPM-6003(971) : ILL-43 TO WOLF ROAD  
SECTION 551WRS & 551 (B, XB, VB & VB-1) BR-89  
JOB NO.: C-91-435-89  
COOK COUNTY**

VILLAGE OF NORTH RIVERSIDE  
VILLAGE OF WESTCHESTER  
VILLAGE OF BROADVIEW  
VILLAGE OF HILLSIDE  
VILLAGE OF FOREST PARK

FA. RTE.	MUNICIPAL SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1453	*	COOK	233	1
FORMA. NO.	ILLINOIS	PROJECT		

\* 551 WRS & 551 (B, XB, VB & VB-1) BR-89  
C-91-435-89



LOCATION OF SECTION INDICATED THIS: —

FAU ROUTE 1453 OVER 25th. AVE.  
STA. 271+83.0 S.B.I. RTE.55-SECT. 551-VB BUILT IN 1961 STRUCTURE NO. 016-0632  
SUBSTRUCTURE 1-PILE BENT ABUTMENTS AND MULTIPLE COLUMN PIERS  
SUPER STRUCTURE 13-SPAN STEEL BEAMS  
2 059'-5" 1 076'-0"

REPAIR AND OVERLAY CONCRETE DECK, REPAIR PIERS & SLOPEWALLS.  
TRAFFIC TO BE MAINTAINED UTILIZING STAGE CONSTRUCTION.

FAU ROUTE 1453 OVER I.H.B.R.R. & GARDNER RD.  
STA. 282+73.2 S.B.I. RTE.55-SECT. 551-VB BUILT IN 1961 STRUCTURE NO. 016-0631  
SUBSTRUCTURE 1-PILE BENT ABUTMENTS AND MULTIPLE COLUMN PIERS  
SUPER STRUCTURE 110-SPAN STEEL BEAMS  
2 070'-9" 1 059'-1" 1 030'-3"  
2 047'-3" 2 054'-1" 2 069'-3"

REPAIR AND OVERLAY CONCRETE DECK, REPAIR PIERS & SLOPEWALLS.  
TRAFFIC TO BE MAINTAINED UTILIZING STAGE CONSTRUCTION.

FAU ROUTE 1453 OVER ADDISON CREEK  
STA. 200+39.4 S.B.I. RTE.55-SECT. 551-Y BUILT IN 1956 STRUCTURE NO. 016-0633  
SUBSTRUCTURE 1-PILE BENT ABUTMENTS AND PIERS  
SUPER STRUCTURE 13-SPAN R.C. DECK SLAB BRIDGE  
2 030'-9" 1 038'-6"

SUPERSTRUCTURE TO BE PARTIALLY REMOVED AND WIDENED, REPAIR AND OVERLAY CONCRETE DECK.  
TRAFFIC TO BE MAINTAINED UTILIZING STAGE CONSTRUCTION.

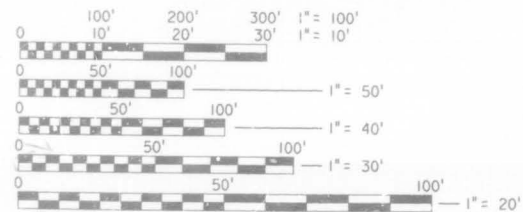
FAU ROUTE 1453 OVER DESPLAINES RIVER  
STA. 377+81.4 S.B.I. RTE.55-SECT. 551-XB BUILT IN 1958 STRUCTURE NO. 016-0634  
SUBSTRUCTURE 1-P.C. CLOSED ABUTMENTS AND SOLID R.C. PIERS  
SUPER STRUCTURE 14-SPAN R.C. GIRDER  
4 061'-2"

SUPERSTRUCTURE TO BE TOTALLY REMOVED AND REPLACED WITH 42" P.P.C. I-BEAMS.  
TOP PORTION OF ABUTMENTS AND PIERS TO BE REMOVED AND REPLACED.  
TRAFFIC TO BE MAINTAINED UTILIZING STAGE CONSTRUCTION.

PROJECT ILL-43 TO WOLF ROAD  
ENDS STA. 441+00.00

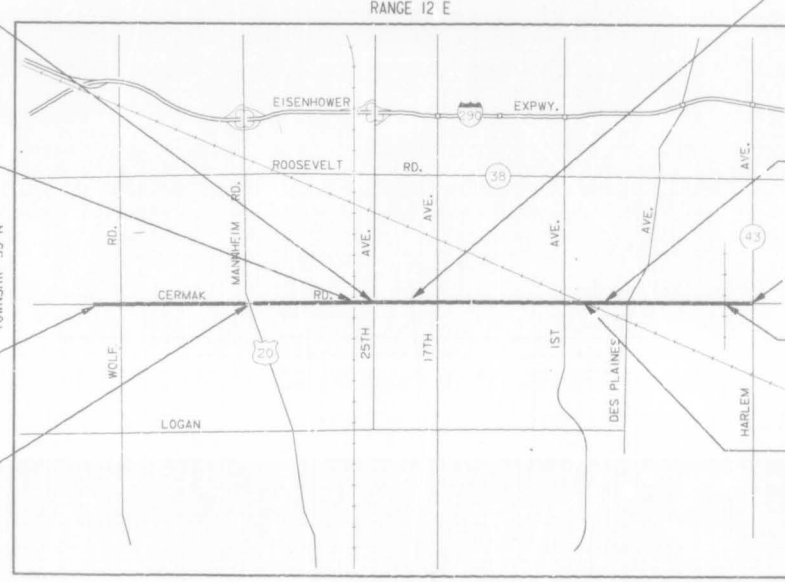
OMISSION  
STA. 430+17.6 - STA. 430+33.6

OMISSION  
STA. 371+40 - STA. 372+25



PROJECT ILL-43 TO WOLF ROAD  
BEGINS STA. 164+93.7

OMISSION  
STA. 229+10 - STA. 232+00



LOCATION MAP  
NO SCALE

FOR UNDERGROUND UTILITY  
LOCATIONS, CALL:  
J.U.L.I.E.  
TOLL FREE  
TEL. 1-800-892-0123

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

DESIGN DESIGNATION  
31,966 ADT (OO) MINOR ARTERIAL (COMP-20)  
CONTRACT NO. 80579

GROSS LENGTH OF PROJECT = 27,606.3 FT. = 5.229 MILES  
NET LENGTH OF PROJECT = 27,215.3 FT. = 5.154 MILES

NOTE: WHEREVER IN THESE PLANS  
REFERENCE IS MADE TO BRIDGE  
APPROACH PAVEMENT STD. 2302,  
IT SHALL MEAN BRIDGE APPROACH  
PAVEMENT MODIFIED.  
(SEE SHEETS 96 & 97.)

David P. Heslinga DATE 7/17/92  
DAVID P. HESLINGA  
ILLINOIS REGISTERED PROFESSIONAL ENGINEER NO. 062-36274  
MY LICENSE EXPIRES ON 11-30-92

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

SUBMITTED July 17 1992  
EXAMINED [Signature]  
PASSED Sept. 4 1992  
APPROVED Sept. 4 1992 [Signature]

PRINTED UNDER THE AUTHORITY  
OF THE STATE OF ILLINOIS

DESIGN CONSULTANT:  
DONOHUE & ASSOCIATES, INC.  
1501 WOODFIELD ROAD, SUITE 200E  
SCHAUMBURG, ILLINOIS 60173  
PHONE: (708) 605-8800

CONSULTANT PROJECT ENGINEER RICK YOUNG 708-705-4232

F.A.U. RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1453	**	COOK	233	135
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
** SECTION 551WRS & 551 (B, XB, VB & VB-1) BR-89				

**BENCH MARKS**

TBM #18 - A Square at the Northwest Corner of the Bridge over the Railroad Tracks (Northside of Cermak Road on curved abutment end). Sta. 268+51 / 37' L 122nd, El. 648.84

TBM #17 - An "x" at the Northwest Corner of the Bridge over 25th Avenue (Northside of Cermak Road adjacent to parapet wall). Sta. 281+63 / 37' L 122nd, El. 646.41

**DESCRIPTION**

CERMAK ROAD OVER I.H.B.R.R. & GARDNER ROAD  
Sta. 272+40.47 S.B.I. Rte. 55 - Sect. 551-WB Built In 1961  
Structure No. 016-0631

Substructure: Pile bent abutments & Multiple column piers  
Superstructure: 10-span Non-composite Steel beams

Repair & overlay concrete deck. Repair abutments, piers & slopewalls.  
Traffic to be maintained utilizing stage construction.

**GENERAL NOTES**

Fasteners shall be high strength bolts. Bolts 3/4"  $\phi$ , open holes 5/8"  $\phi$ , unless otherwise noted.

Calculated weight of Structural Steel = 49,530 Lbs. (M270 Gr. 36)

Two 1/8" adjusting shims, of the dimensions of the bottom pedestal plate, shall be provided for each bearing in addition to all other plates or shims. The adjusting shims shall be used if required to maintain the beams at their original elevations.

The first two coats of the Lead & Chromate-free Alkyd Paint System shall be used for shop & field painting of new structural steel.

Structural steel shall only be cleaned & painted as required by the Special Provision "Cleaning and Painting New Steel and Adjacent Areas of Existing Steel Structures."

Field welding of construction accessories will not be permitted to the bottom flange of beams nor to the top flange for a distance equal to one-fourth the span length each way from the pier supports. Field welding in other areas will be permitted only when approved by the Engineer.

Reinforcement bars shall conform to the requirements of AASHTO M-31, M-42 or M-53 Grade 60.

Slope wall shall be reinforced with welded wire fabric, 6" x 6" - W4.0 x W4.0, weighing 58 lbs. per 100 sq. ft.

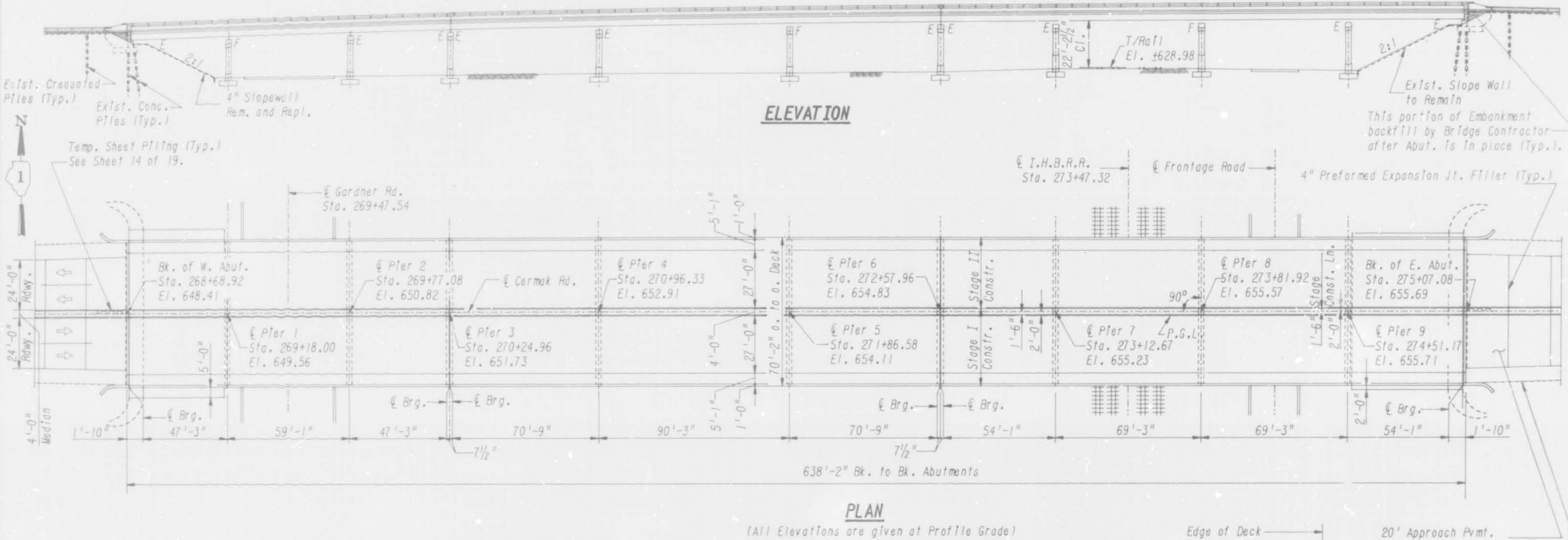
Plan dimensions and details relative to existing structure have been taken from existing plans and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field and make necessary approved adjustments prior to construction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

The Contractor shall submit drawings for Jacking & Removing Existing Bearings. See Special Provisions.

Prior to pouring of the new concrete for the deck, all loose rust, loose mill scale, & all other foreign material shall be removed from the embedded portions of flanges of beams and diaphragms. The removal shall be accomplished in accordance with the requirements of the SSPC Surf. Prep. Specs. SP-11 for Power Tool Cleaning or SP-2 for Hand Tool Cleaning. Cost shall be incidental to Concrete Removal.

Bridge Seat Sealer shall be applied to the seat area of the abutments, Piers 3 & 6.

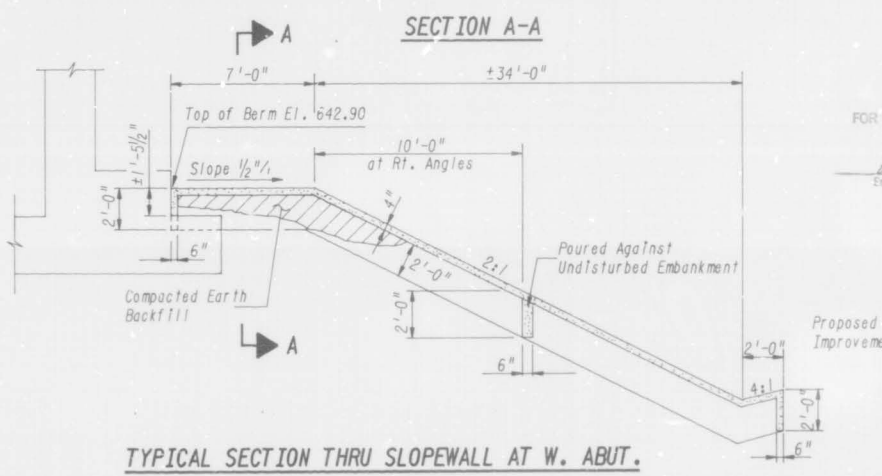
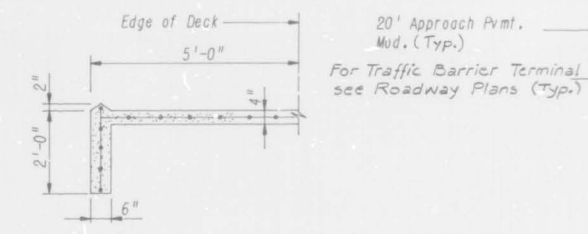
All bonded construction joints bet. new and existing concrete shall be made in accordance with Article 504.13 (a)(12) of the Std. Specifications.



**TOTAL BILL OF MATERIAL**

ITEM	UNIT	SUPER	SUB	TOTAL
Porous Granular Embankment	Cu. Yd.	-	164.4	164.4
Concrete Removal	Cu. Yd.	120.3	27.0	147.3
Structure Excavation	Cu. Yd.	-	48.3	48.3
Preformed Joint Seal 2 1/2"	Lin. Ft.	70	-	70
Preformed Joint Seal 4"	Lin. Ft.	70	-	70
Neoprene Expansion Joint 2 1/2"	Lin. Ft.	70	-	70
Neoprene Expansion Joint 4"	Lin. Ft.	70	-	70
Class X Concrete Superstructure	Cu. Yd.	112.4	-	112.4
Elastomeric Bearing Assembly Type I	Each	72	-	72
Elastomeric Bearing Assembly Type II	Each	36	-	36
Elastomeric Bearing Assembly Type III	Each	12	-	12
Floor Drain Extension	Each	82	-	82
Class X Concrete	Cu. Yd.	-	20.3	20.3
Furnishing & Erecting Structural Steel	Pounds	11,474	38,056	49,530
Jack & Remove Existing Bearings	Each	120	-	120
Protective Coat	Sq. Yd.	1,879.1	37.3	1,916.4
Reinforcement Bars, Epoxy Coated	Pound	17,070	3,840	20,910
Temporary Sheet Piling	Sq. Ft.	-	440	440
Pipe Underdrains 6"	Lin. Ft.	-	236	236
Bituminous Concrete Removal (Deck)	Sq. Yd.	3,883	-	3,883
Slopewall Removal & Replacement	Sq. Yd.	418.7	-	418.7
Formed Conc. Repair (Depth < 5")	Sq. Ft.	-	907	907
Bridge Seat Sealer	Sq. Ft.	-	631	631
Epoxy Crack Sealing	Lin. Ft.	-	123	123
Protective Shield	Sq. Yd.	1,640	-	1,640
Bridge Deck Conc. Overlay Option (t=3")	Sq. Yd.	3,883	-	3,883
Conc. Bridge Deck Surf. Rem. (Method 3)	Sq. Yd.	3,722	-	3,722
Deck Slab Repair (Full-Depth, Type)	Sq. Yd.	43	-	43
Removing and Re-Erecting Existing Railing	Lin. Ft.	240	-	240

\* See Special Provisions



**DESIGN SPECIFICATIONS**

1989 AASHTO, 1990 & 1991 INTERIMS (New Construction Only)

**LOADING HS20-44**

No Additional Allowance for F.W.S.

**DESIGN STRESSES**

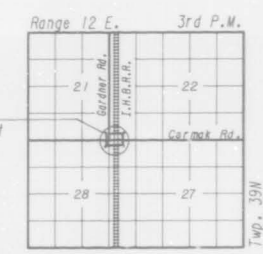
For New Construction Only  
f<sub>c</sub> = 3,500 psi.  
f<sub>y</sub> = 60,000 psi. (Reinf.)  
f<sub>y</sub> = 36,000 psi. (Struct.)  
M27C Gr. 36

**DESIGN STRESSES**

For Exst. Structure  
f<sub>c</sub> = 1,000 psi. (Substructure)  
f<sub>c</sub> = 1,400 psi. (Superstructure)  
f<sub>s</sub> = 20,000 psi. (Reinf.)  
f<sub>s</sub> = 18,000 psi. (Struct.)

**APPROVED**  
FOR STRUCTURAL ADEQUACY ONLY  
*Ralph E. Anderson*  
Engineer of Bridges and Structures

*Phillip D. Fry*  
EXP. 11/30/92



ILLINOIS DEPARTMENT OF TRANSPORTATION  
CERMAK ROAD OVER I.H.B.R.R. & GARDNER ROAD

**GENERAL PLAN**

F.A.U. RTE 1453  
SECTION 551WRS & 551 (B, XB, VB & VB-1) BR-89  
STA. 271+89.00  
COOK COUNTY

Structure #: 016-0631 Date: Jan., 1992

**PROFILE GRADE**  
(Along Median Edge of Roadway)

LVC = 1050'

**Donohue**  
Engineers & Architects

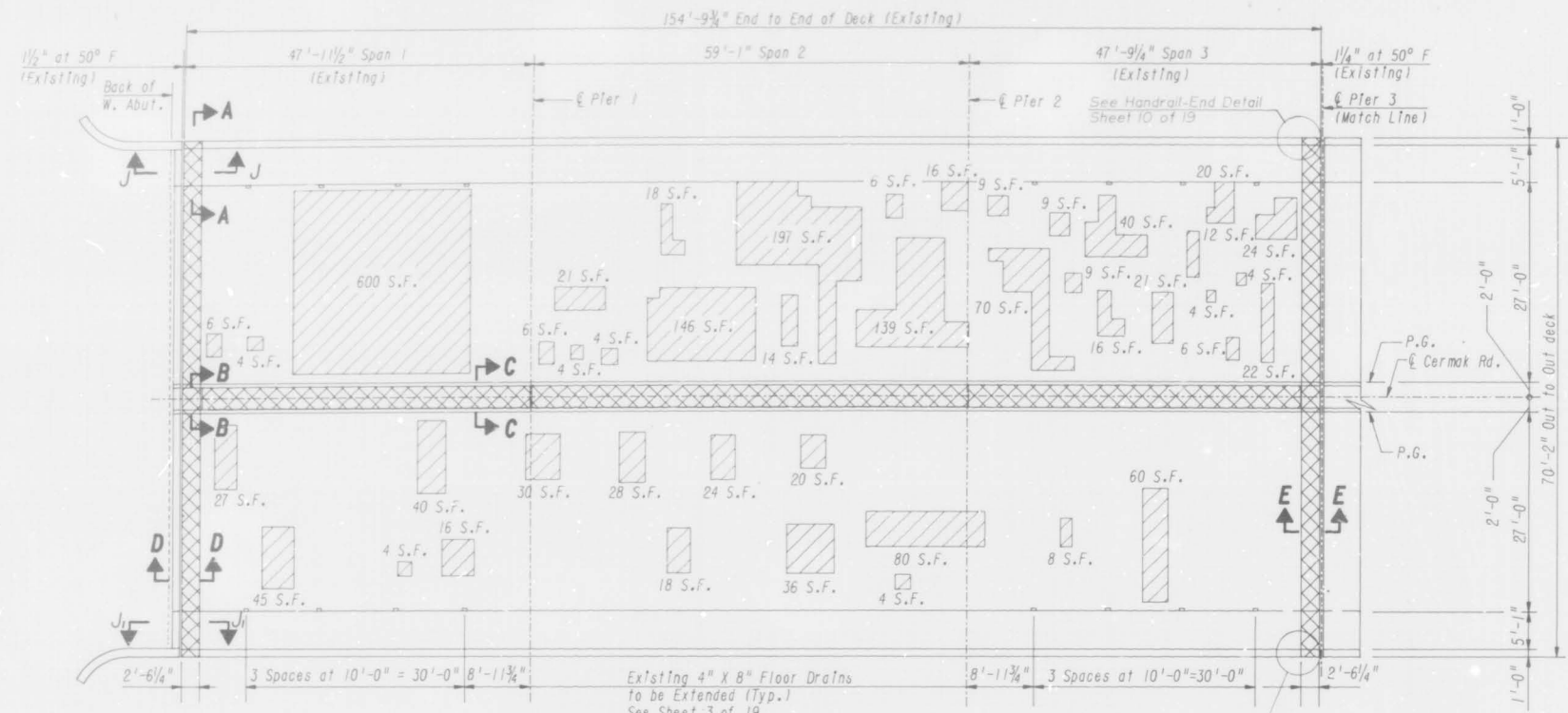
DESIGN BY: S.C.L.	CHECKED BY: H.S.
DESIGN CK'D. BY: P.D.F.	CHECKED BY: E.Z.
DRAWN BY: E.Z.	CHECKED BY: H.S.

PROJECT NUMBER 18046.004

DATE: \_\_\_\_\_  
SCALE: \_\_\_\_\_



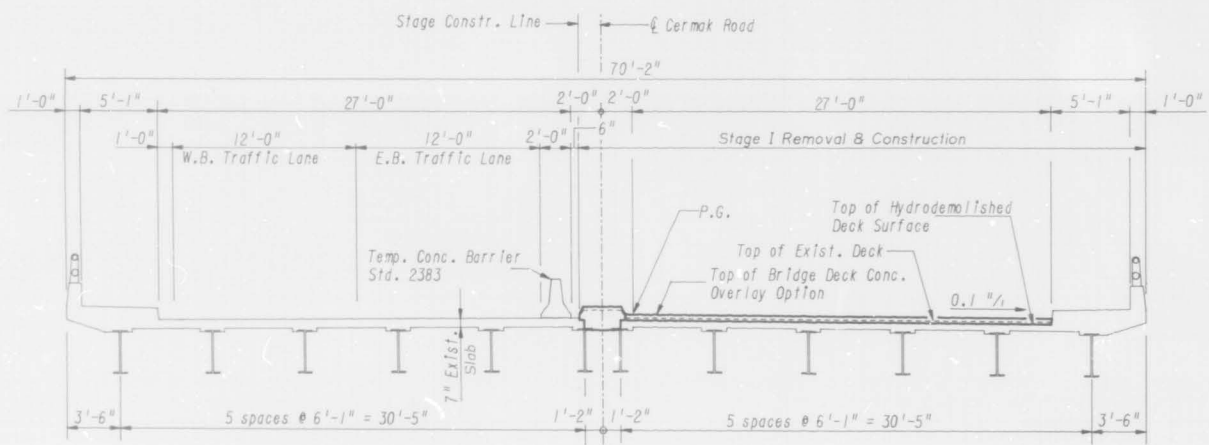
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1453	**	COOK	233	136
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				
**SECTION 551WRS & 551 (B, XB, VB & VB-1) BR-89				



PLAN - DECK SLAB SPANS 1 THRU 3

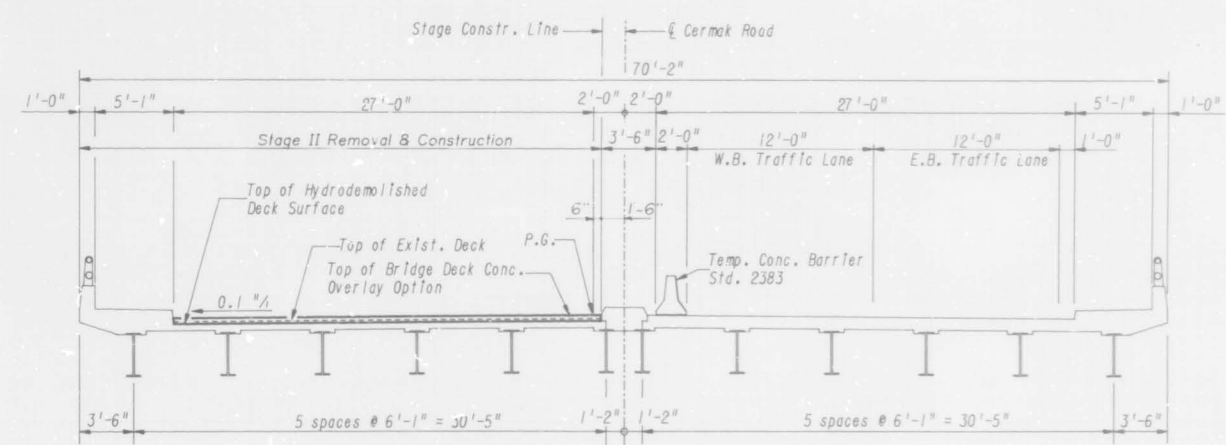
- LEGEND**
- Concrete Removal
  - Delaminated Area

- NOTES:**
1. Quantities and location for delaminated areas are for information purposes only. After the completion of Concrete Bridge Deck Surface Removal (Method 3), the Engineer shall determine the location, dimensions & the type of deck slab removal required.
  2. For Sections A-A, B-B & C-C, see Sheet 6 of 19.
  3. For Section D-D, see Sheet 4 of 19.
  4. For Section E-E, see Sheet 7 of 19.
  5. For Superstructure Bill of Material, see Sheet 7 of 19.
  6. For Sections J-J, J<sub>1</sub>-J<sub>1</sub>, and Handrail-End Detail see Sheet 10 of 19.



TYPICAL CROSS SECTION - STAGE I

Looking East



TYPICAL CROSS SECTION - STAGE II

Looking East

TAPE NO.  
DATE:

**Donohue**  
Engineers & Architects

DESIGN BY:	DESIGN CK'D. BY:	DRAWN BY:	CHECKED BY:
S.C.L.	J.A.P.	N.J.T.	S.C.L.

PROJECT NUMBER 1R046.004

ILLINOIS DEPARTMENT OF TRANSPORTATION  
CERMAK ROAD OVER I.H.B.R.R. & GARDNER ROAD  
**DECK SLAB SPAN 1 - SPAN 3**


F.A.U. RTE 1453  
SECTION 551WRS & 551 (B, XB, VB & VB-1) BR-89  
STA. 27+89.00  
COOK COUNTY  
Structure #: 016-0631 Date: Jan., 1992



F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1453	**	COOK	233	137
FED. ROAD DIST. NO.	FILE NO.	FED. AID PROJECT		

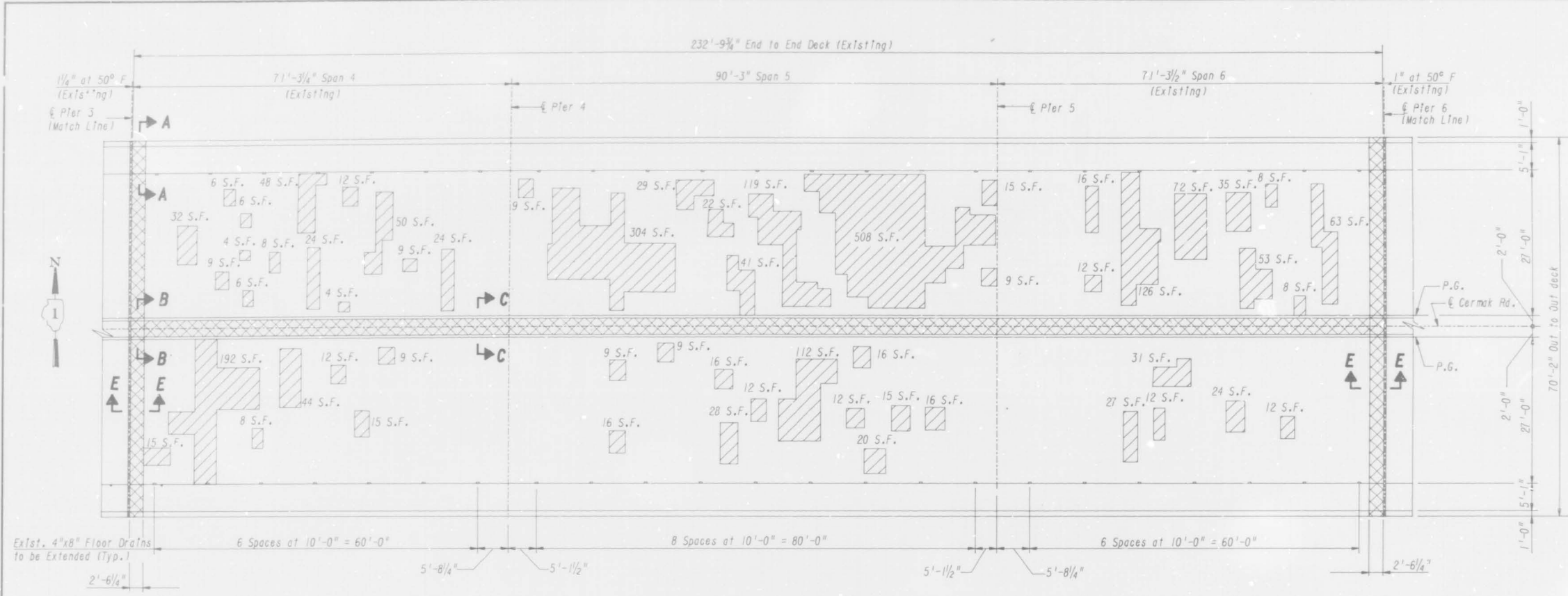
\*\*SECTION 551WRS 8  
551 (B, XB, VB & VB-1) BR-89

**LEGEND**

-  Concrete Removal
-  Delaminated Area

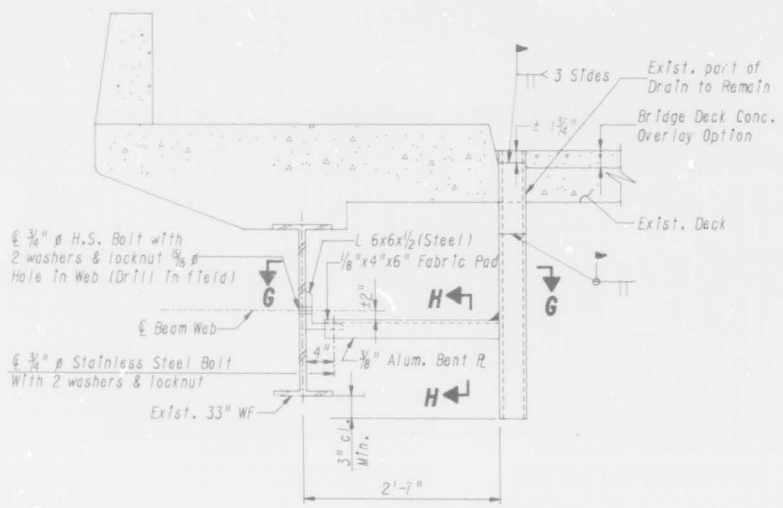
**NOTES:**

1. Quantities and location for delaminated areas are for information purposes only. After the completion of Concrete Bridge Deck Surface Removal (Method 3), the Engineer shall determine the location, dimensions & the type of deck slab removal required.
2. For Sections A-A, B-B & C-C, see Sheet 6 of 19.
3. For Section E-E, see Sheet 7 of 19.
4. For Superstructure Bill of Material, see Sheet 7 of 19.



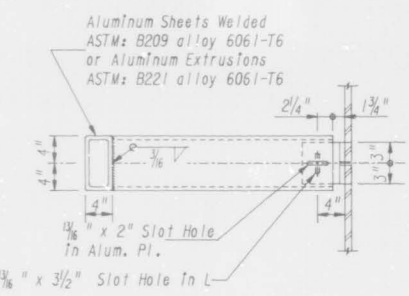
**PLAN - DECK SLAB SPANS 4 THRU 6**

1. Remove existing variable thickness bituminous concrete overlay.
2. Remove the entire surface area of the concrete deck, as shown on the plans, to a depth that will generally expose the upper half of the topmost bars in the main upper reinforcing mat. Removal shall be accomplished using hydrodemolition equipment.
3. After the hydrodemolition is complete & the deck surface has been cleaned, the Engineer may direct additional removal. This removal shall be accomplished using power-driven hand tools or hydrodemolition equipment if approved by the Engineer.
4. Where concrete removal by hydrodemolition has exposed the lower mat of reinforcement, the involved area shall be removed full-depth as directed by the Engineer.
5. Provide Protective Shield beneath Deck Slab Removal (Full Depth).
6. Clean exist. reinforcement bars by sandblasting, as directed by the Engineer.
7. Any existing reinforcement bars which have a loss of more than 25% of their cross-section through corrosion shall be replaced as directed by the Engineer. No welding of bars will be permitted. New bars should be lapped a minimum of 30 bar diameters to existing bars.
8. Forms shall be provided to enable placement of new concrete. Immediately ahead of placing the overlay mixture, a thin coating of grout shall be placed.
9. All patches shall be poured using the overlay material at the time of placement of the overlay. The concrete shall be placed to the level of hydrodemolished deck & shall be thoroughly consolidated with hand-held vibrators.
10. Place Bridge Deck Concrete Overlay Option.
11. See Special Provisions for Bridge Deck Overlay.

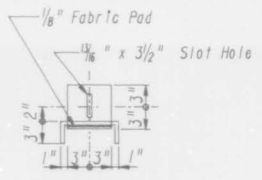


**FLOOR DRAIN EXTENSION DETAIL**  
(B2 Required)

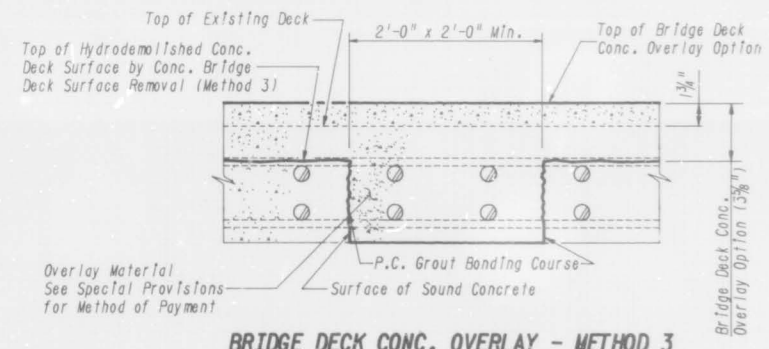
Note: The exterior surfaces of the aluminum drains shall be cleaned & given a washcoat pre-treatment in accordance with the Steel Struct. Painting Council's Spec. SSPC-SP1 & SSPC-Paint 27 followed by the vinyl enamel coat painting specified for Structural Steel.



**SECTION G-G**



**SECTION H-H**



**BRIDGE DECK CONC. OVERLAY - METHOD 3**

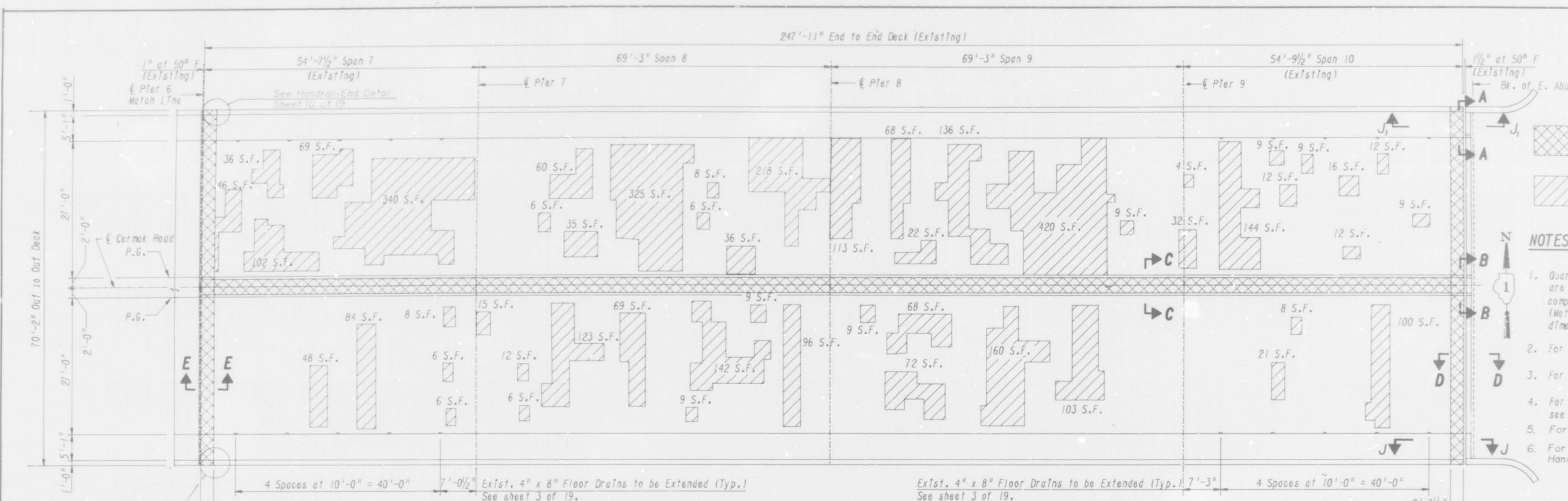
**Donohue**  
Engineers & Architects

DESIGN BY: S.C.L.	DESIGN CK'D. BY: J.A.P.	DRAWN BY: N.J.T.	CHECKED BY: S.C.L.
PROJECT NUMBER 18046.004			

ILLINOIS DEPARTMENT OF TRANSPORTATION  
CERMAK ROAD OVER I.H.B.R.R. & GARDNER ROAD  
**DECK SLAB SPAN 4 - SPAN 6**

F.A.U. RTE 1453  
SECTION 551WRS 8 551 (B, XB, VB & VB-1) BR 89  
STA. 271+89.00  
COOK COUNTY  
Structure #: 016-0631 Date: Jan., 1992

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1453	**	COOK	233	139
FED. ROAD DIST. NO.	STATE	FED. AID PROJECT		
551 (B, XB, VB & VB-1) BR-89	551 (B, XB, VB & VB-1) BR-89			

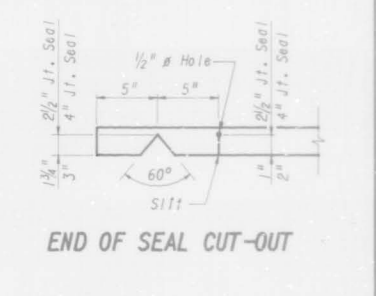
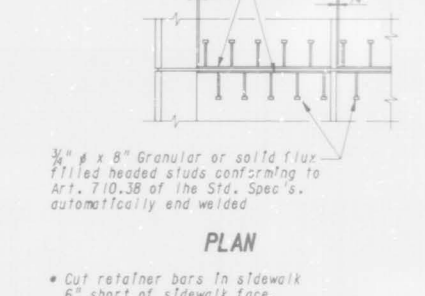
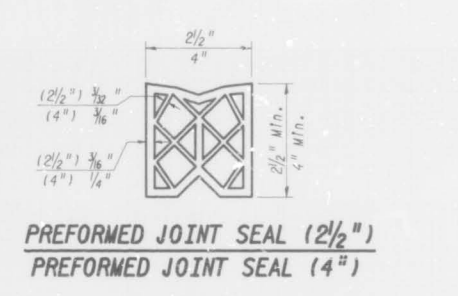
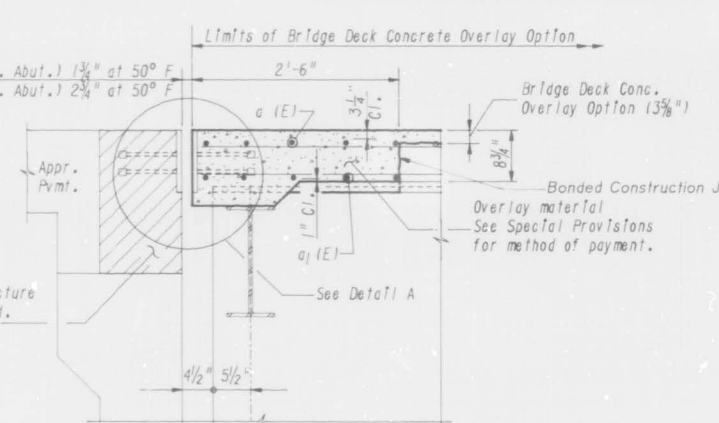
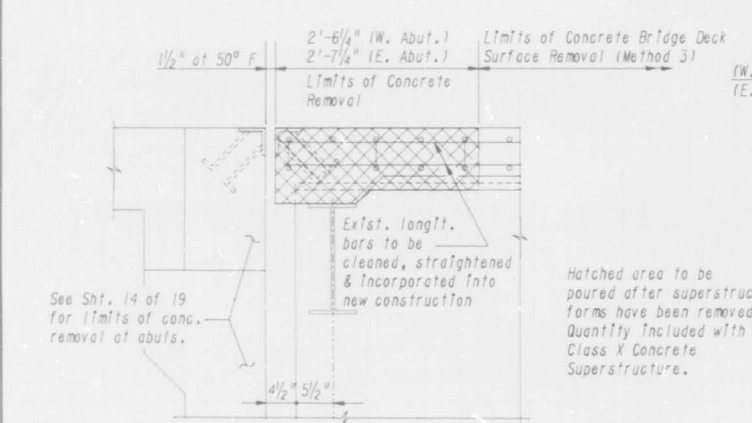


**LEGEND**

- Concrete Removal
- Delaminated Area

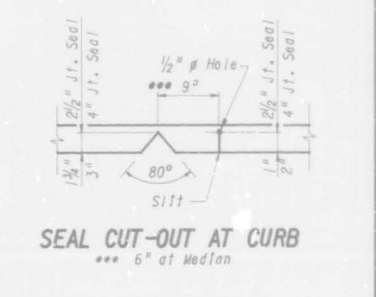
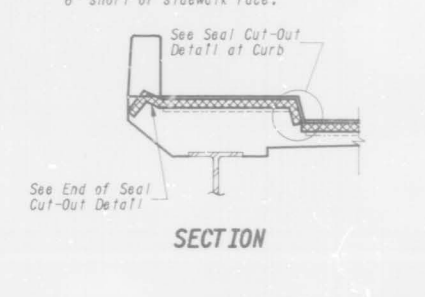
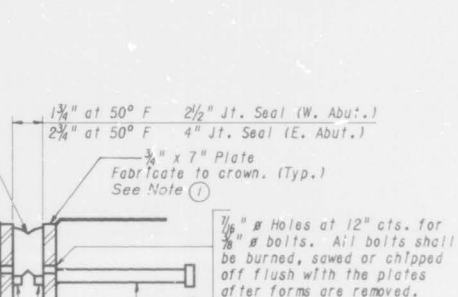
- NOTES:**
- Quantities and location for delaminated areas are for information purposes only. After the completion of Concrete Bridge Deck Surface Removal (Method 3), the Engineer shall determine the location, dimensions & the type of deck slab repair required.
  - For Sections A-A, B-B & C-C, see Sheet 6 of 19.
  - For Section E-E, see Sheet 7 of 19.
  - For Superstructure Bill of Material, see Sheet 7 of 19.
  - For Section D-D, see Sheet 4 of 19.
  - For Sections J-J, J<sub>1</sub>-J<sub>1</sub> and Handrail-End Detail, see Sheet 10 of 19.

**PLAN - DECK SLAB SPANS 7 THRU 10**



**SHOWING REMOVAL**  
 (All reinforcement, angle & studs within removal area shall be removed except as noted.)

**SHOWING NEW CONSTRUCTION**



**TYPICAL SEAL TREATMENTS AT SIDEWALK**  
 (Median Similar Except As Noted)

**Donohue**  
 Engineers & Architects

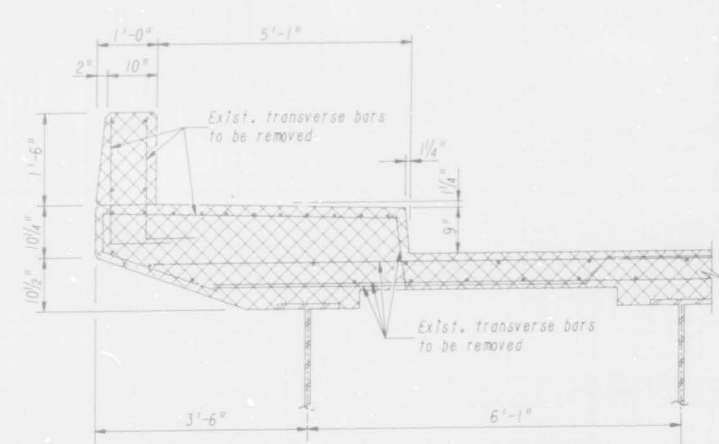
DESIGN BY: S.C.L.	DESIGN CK'D. BY: J.A.P.	DRAWN BY: N.J.T.	CHECKED BY: S.C.L.
PROJECT NUMBER 18046.004			

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 CERMAK ROAD OVER I.H.B.R.R. & GARDNER ROAD  
**DECK SLAB SPAN 7 - SPAN 10**

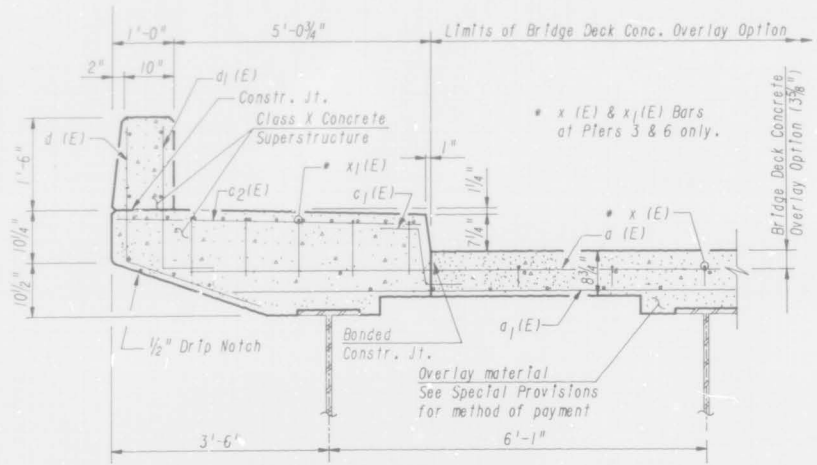
F.A.U. RTE 1453  
 SECTION 551WRS & 551 (B, XB, VB & VB-1) BR-89  
 STA. 271+89.00  
 COOK COUNTY  
 Structure #: 015-0631 Date: Jan., 1992  
 Sheet 4 of 19



F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1453	**	COOK	253	140
FED. ROAD DIST. NO.	FILED NO.	FED. AID PROJECT		

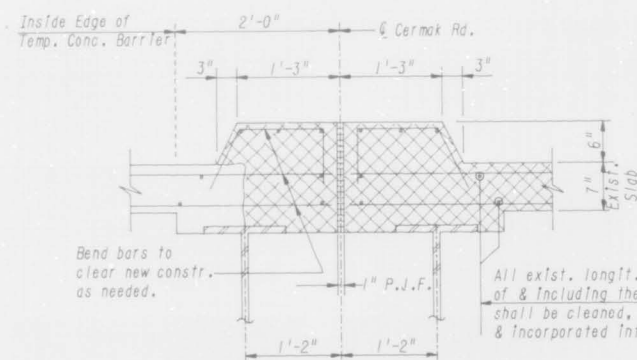


**SHOWING REMOVAL**  
All exist. longitudinal bars shall be cleaned, straightened, & incorporated into new construction.

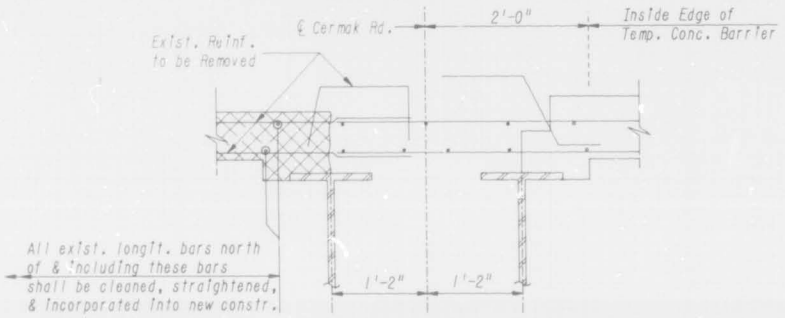


**SHOWING NEW CONSTRUCTION**  
Geometry of new slab, sidewalk and parapet shall match existing.

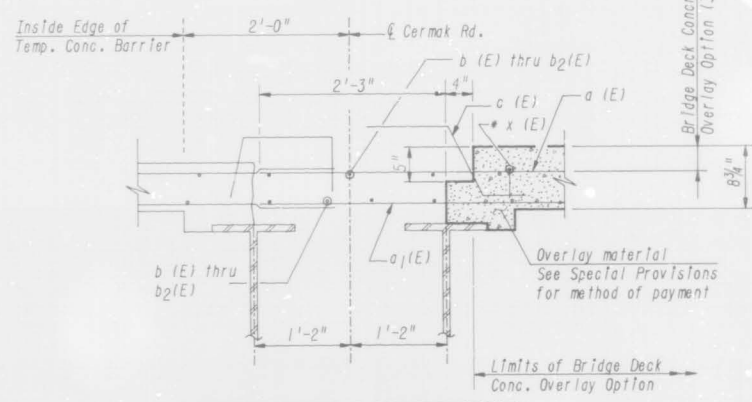
**SECTION A-A**



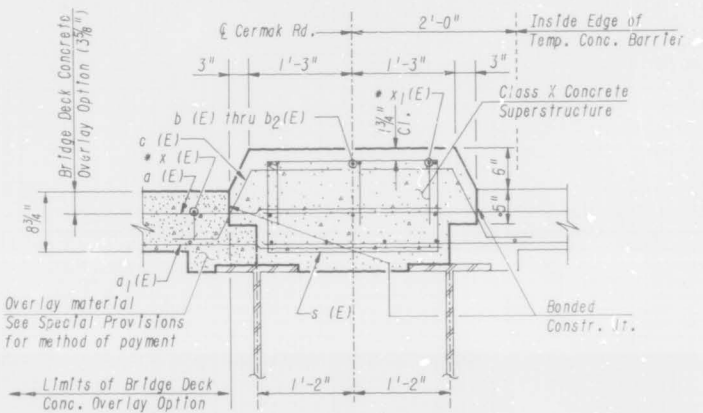
**SHOWING STAGE I REMOVAL**  
All exist. reinf. bars to be removed except as noted.



**SHOWING STAGE II REMOVAL**

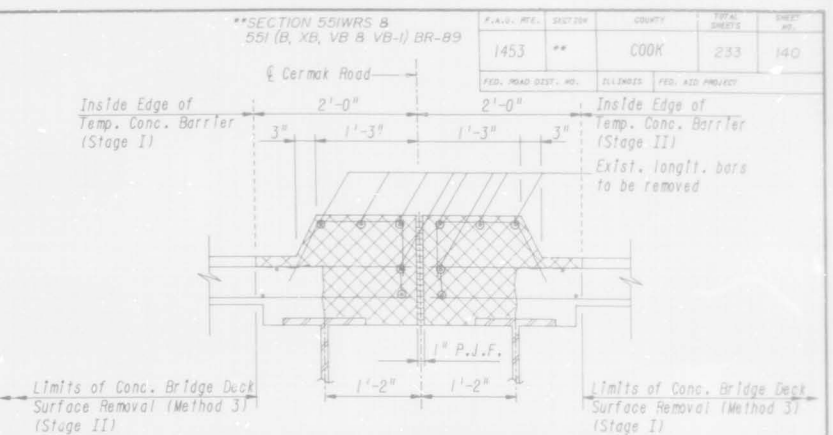


**SHOWING STAGE I CONSTRUCTION**

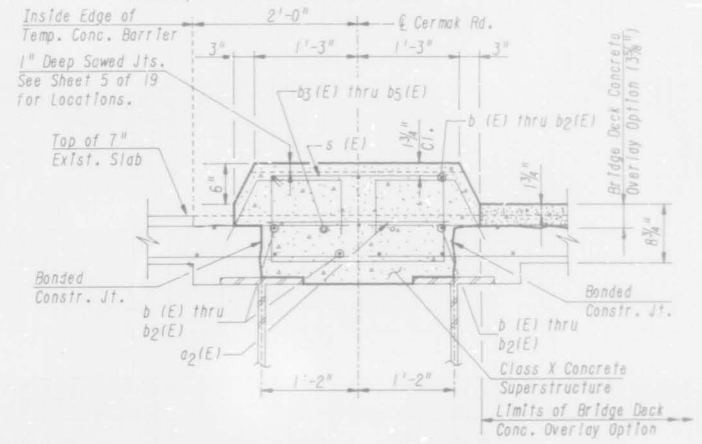


**SHOWING STAGE II CONSTRUCTION**

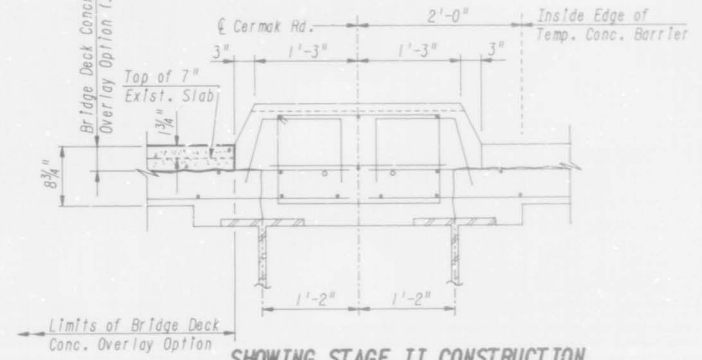
**SECTION B-B**  
Looking East



**SHOWING REMOVAL**  
All exist. transverse bars shall be cleaned, straightened, & incorporated into new construction.

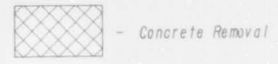


**SHOWING STAGE I CONSTRUCTION**



**SHOWING STAGE II CONSTRUCTION**

**LEGEND**



**SECTION C-C**  
Looking East

ILLINOIS DEPARTMENT OF TRANSPORTATION  
CERMAK ROAD OVER I.H.B.R.R. & GARDNER ROAD  
**TRANSVERSE JOINT & MEDIAN DETAILS**  
F.A.U. RTE 1453  
SECTION 551WRS & 551 (B, XB, VB & VB-1) BR-89  
STA. 271+89.00  
COOK COUNTY  
Structure #: 016-0631 Date: Jan., 1992

PRF=deckgard.prf  
FILE=deckgard1.prf  
%U.=  
SCALE=  
DATE:

<b>Donohue</b> Engineers & Architects INCORPORATED			
DESIGN BY:	DESIGN CK'D.	DRAWN BY:	CHECKED BY:
S.C.L.	BY² P.D.F.	E.Z.	H.S.
PROJECT NUMBER 18046.004			



\*\*SECTION 551WRS A  
551 (B, XB, VB & VB-1) BR-89

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1453	**	COOK	233	141

**SUPERSTRUCTURE  
BILL OF MATERIAL**

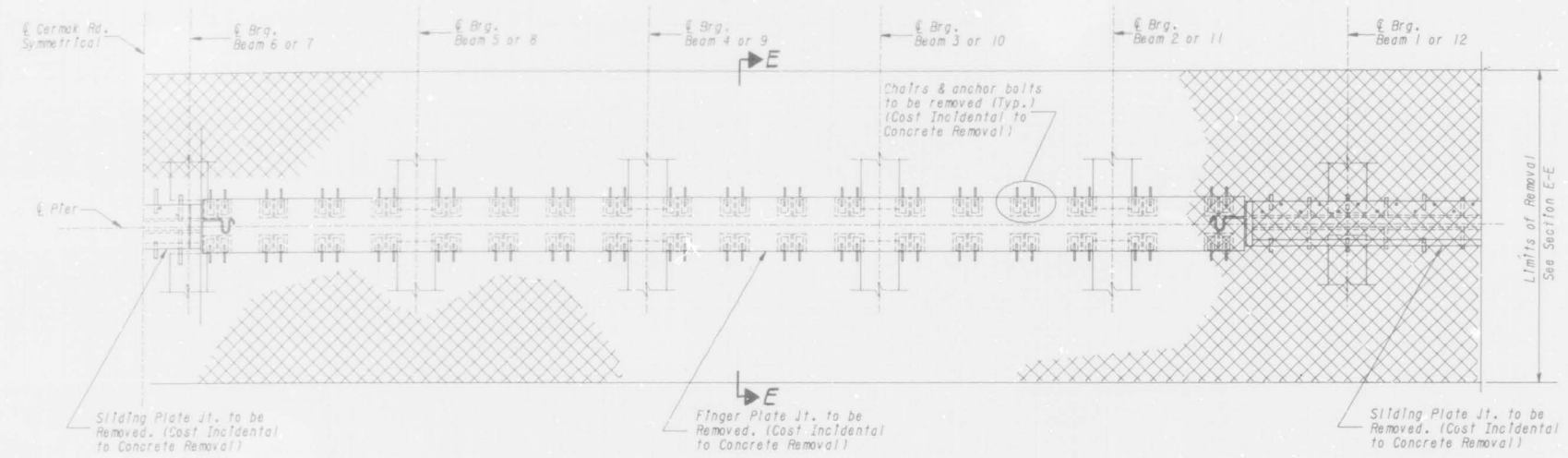
BAR	NO.	SIZE	LENGTH	SHAPE
a1(E)	60	#5	33'-9"	
a1(E)	60	#5	34'-9"	
a2(E)	636	#4	2'-2"	
b1(E)	50	#5	30'-8"	
b1(E)	70	#5	35'-2"	
b2(E)	70	#5	37'-3"	
b3(E)	4	#6	13'-6"	
b4(E)	4	#6	29'-6"	
b5(E)	6	#6	25'-6"	
c(E)	36	#5	2'-6"	
c1(E)	36	#5	2'-6"	
c2(E)	36	#5	5'-8"	
d(E)	36	#4	4'-6"	
d1(E)	36	#6	3'-3"	
s(E)	676	#4	6'-9"	
x(E)	224	#5	2'-9"	
x1(E)	52	#5	3'-2"	

Item	Unit	Quantity
Removing and Re-Erecting Existing Scaffolding	Lin. Ft.	240
Concrete Removal	Cu. Yd.	120.3
Concrete Bridge Deck Surf. Rem. (Method 3)	Sq. Yd.	3,722
Deck Slab Repair (Full Depth, Type I)	Sq. Yd.	43
Reinforcement Bars, Epoxy Coated	Pound	17,070
Bridge Deck Conc. Overlay Option (3%)	Sq. Yd.	3,883
Class X Concrete Superstructure	Cu. Yd.	112.4
Preformed Joint Seal 2 1/2"	Lin. Ft.	70
Preformed Joint Seal 4"	Lin. Ft.	70
Neoprene Expansion Joint 2 1/2"	Lin. Ft.	70
Neoprene Expansion Joint 4"	Lin. Ft.	70
Flour Drain Extension	Each	82

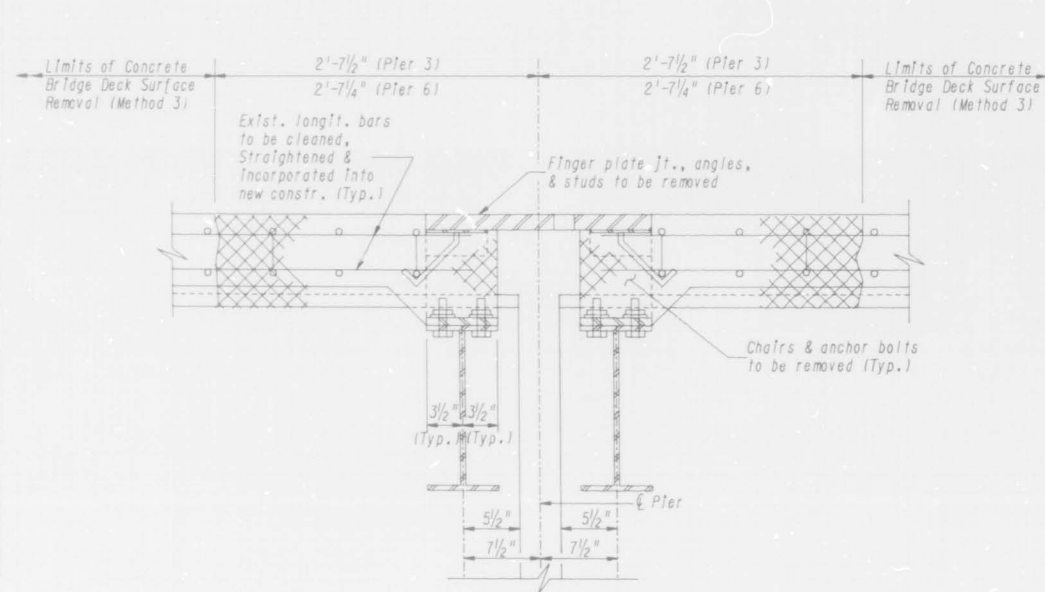
Note: Based on an assumption that 5% of delaminated areas indicated on Sheets 2, 3, & 4 will require Deck Slab Removal (Full-Depth, Type I). Actual quantity may vary.

Reinforcement bars designated (E) shall be epoxy coated.

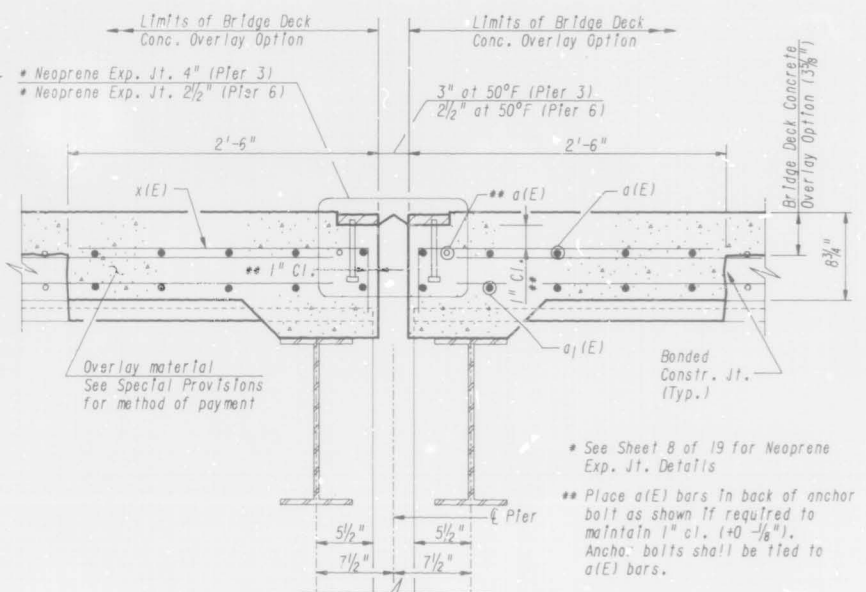
Bars indicated thus 2 x 3 - #5 etc. indicates 2 lines of bars with 3 lengths per line.



**HALF PLAN - TRANSVERSE JT. AT PIERS 3 & 6**  
(Showing Geometry of Finger Plate Jt., Sliding Plate Jts. & Chairs to be Removed)

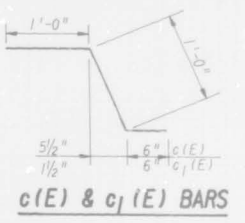


**SHOWING REMOVAL**  
All transverse bars within removal area are to be removed

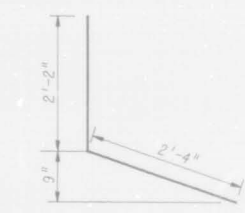


**SHOWING NEW CONSTRUCTION**

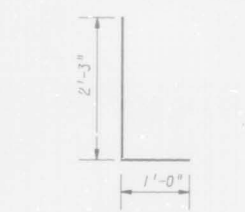
**SECTION E-E**



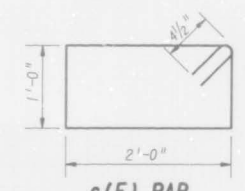
**c(E) & c1(E) BARS**



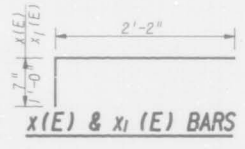
**d(E) BAR**



**d1(E) BAR**



**s(E) BAR**



**x(E) & x1(E) BARS**

PRF= EXPTI-PRF TAPE NO.  
FILE= EXPTI.DGN  
W.U.= 1:12:8000  
SCALE= 1/4" = 1'-0" DATE: APRIL 10, 1991

**Donohue**  
Engineers & Architects  
CORPORATE AND RESIDENTIAL

DESIGN BY: S.C.L.	DESIGN CK'D. BY: J.H.R.	DRAWN BY: R.K.B.	CHECKED BY: S.C.L.
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PROJECT NUMBER 18046.004

**LEGEND**



ILLINOIS DEPARTMENT OF TRANSPORTATION  
CERMAK ROAD OVER I.H.B.R.R. & GARDNER ROAD

**TRANSVERSE JOINT DETAILS**

F.A.U. RTE 1453  
SECTION 551WRS & 551 (B, XB, VB & VB-1) BR-89  
STA. 271+89.00  
COOK COUNTY

Structure #: 016-0631 Date: Jan., 1992





STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

F.A.U. PROJ. SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1453 **	COOK	233	142

\*\*SECTION 551WRS B  
551 (B, XB, VB & VB-1) BR-89

Joint Size	"C" at 50°F	"D" at 50°F
2 1/2"	2 1/2"	1 1/2" Min.
2 1/2"	2 1/2"	1 3/4" Min.
3"	3"	2 1/2" Min.

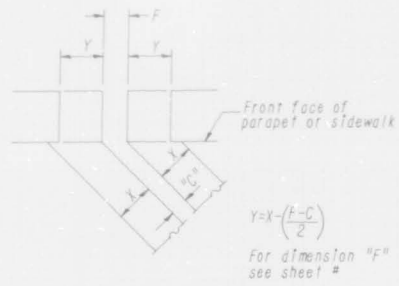
**INSTALLATION NOTES**

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

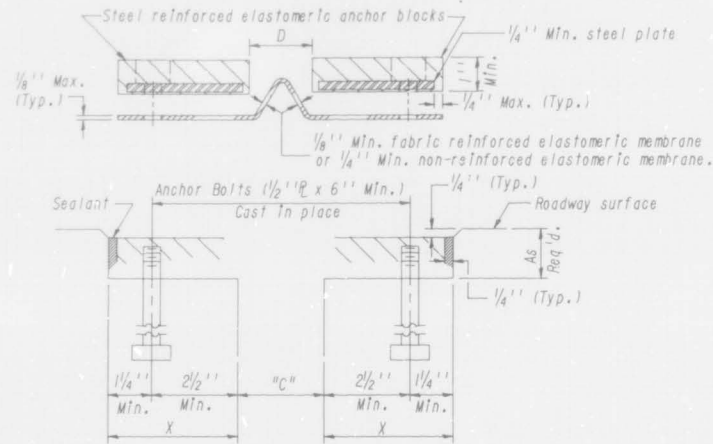
NOTE A: Maximum spacing of anchor bolts shall be 12" centers.

**SKREW LIMITATIONS**

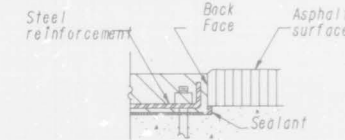
The details of the anchor blocks and the elastomeric membrane in the parapet, as shown, are for up to 50° skews. For skews greater than 50°, the anchor blocks and the elastomeric membrane, installed in accordance with dimension "D", might require modifications to insure a minimum clearance of 1/4" from centerline of anchor studs to edge of parapet opening. The anchor blocks and the elastomeric membrane shall also be installed to the top of the parapet with the anchor studs spaced at ±12" cts.



**FORMING BLOCKOUT SKETCH**



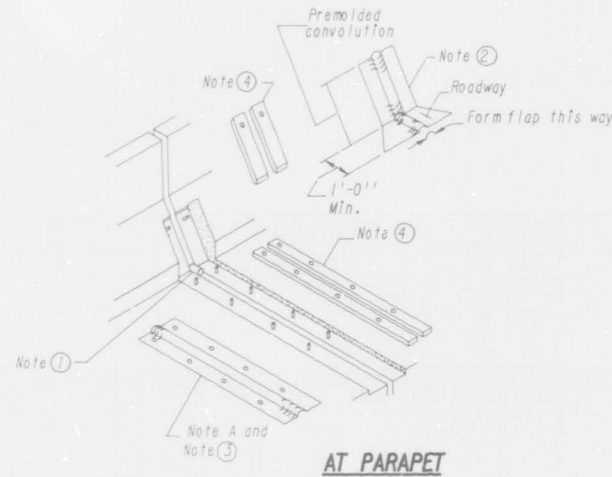
**CROSS SECTION**



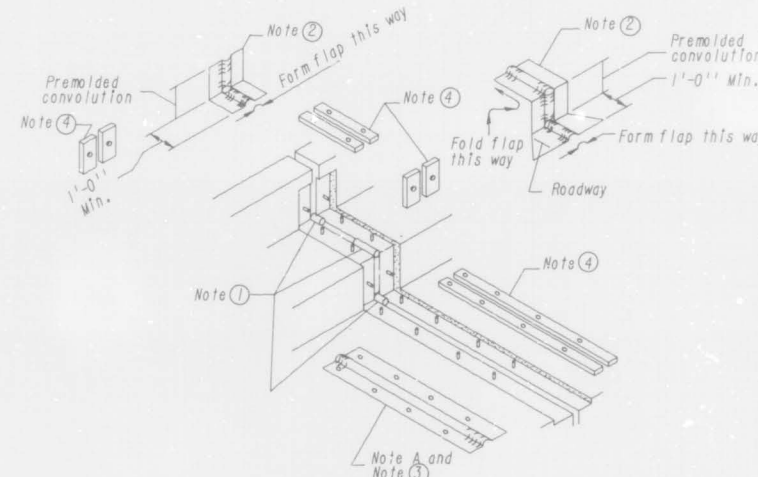
**ANCHOR BLOCK REINFORCEMENT WITH ASPHALT SURFACE**

**GENERAL NOTES**

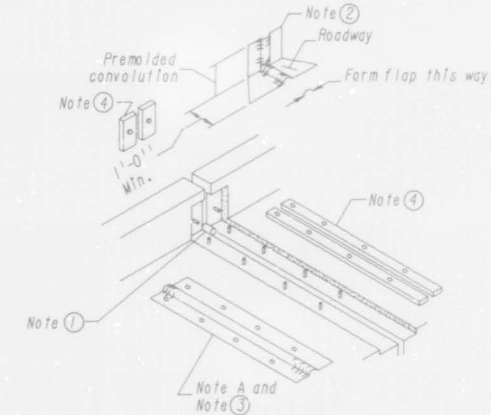
Continuous Seal Neoprene Expansion Joint shall consist of molded anchor blocks of elastomer and steel, field assembled over continuous lengths of elastomeric membrane.  
The elastomeric membrane shall be pre-molded with a single or a double upward convolution that will have a "memory" to return to its molded position upon joint closure.  
The steel reinforcement must extend up the back face of anchor blocks when asphalt surfaces are used but is optional in concrete blockout.  
The convolution length shall be such that the extended length will not be greater than the manufactured length when the joint is fully expanded in its design range and will not protrude above the anchor blocks when the joint is fully compressed.  
Joint openings shall be adjusted in accordance with Article 503.07(c) of the Standard Specifications when the deck is poured at an ambient temperature other than 50° F.  
The parapet and sidewalk flaps may be furnished factory vulcanized to the roadway membrane provided the centerline of the convolution is maintained and the process and method meet the approval of the Engineer.



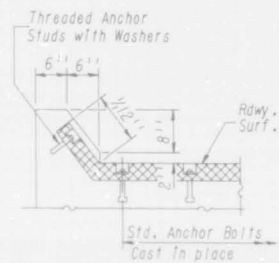
**AT PARAPET**



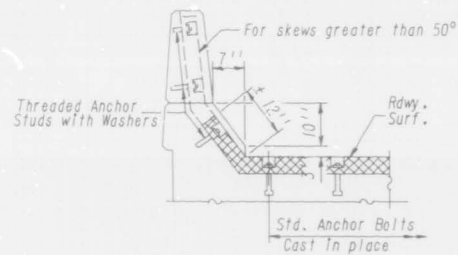
**AT SIDEWALK OR MEDIAN**



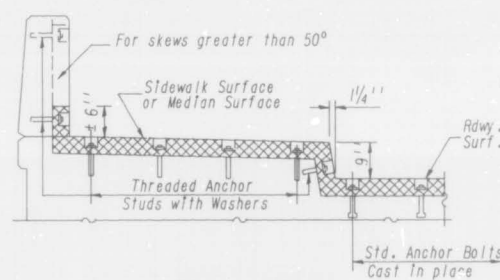
**AT WALL**



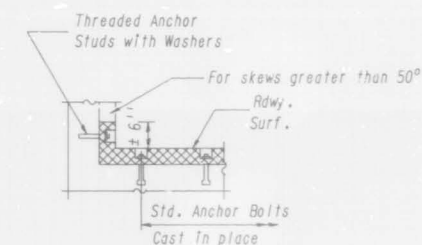
**AT CURB**



**AT PARAPET**



**AT SIDEWALK OR MEDIAN TYPICAL END TREATMENTS**



**AT WALL**

ILLINOIS DEPARTMENT OF TRANSPORTATION  
CERMAK ROAD OVER I.H.B.R.R. & GARDNER ROAD  
**CONTINUOUS SEAL TYPE  
NEOPRENE EXPANSION JOINTS**  
F.A.U. RYE 1453  
SECTION 551WRS & 551 (B, XB, VB & VB-1) BR-89  
STA. 271+89.00  
COOK COUNTY  
Structure #: 016-0631 Date: Jan., 1992

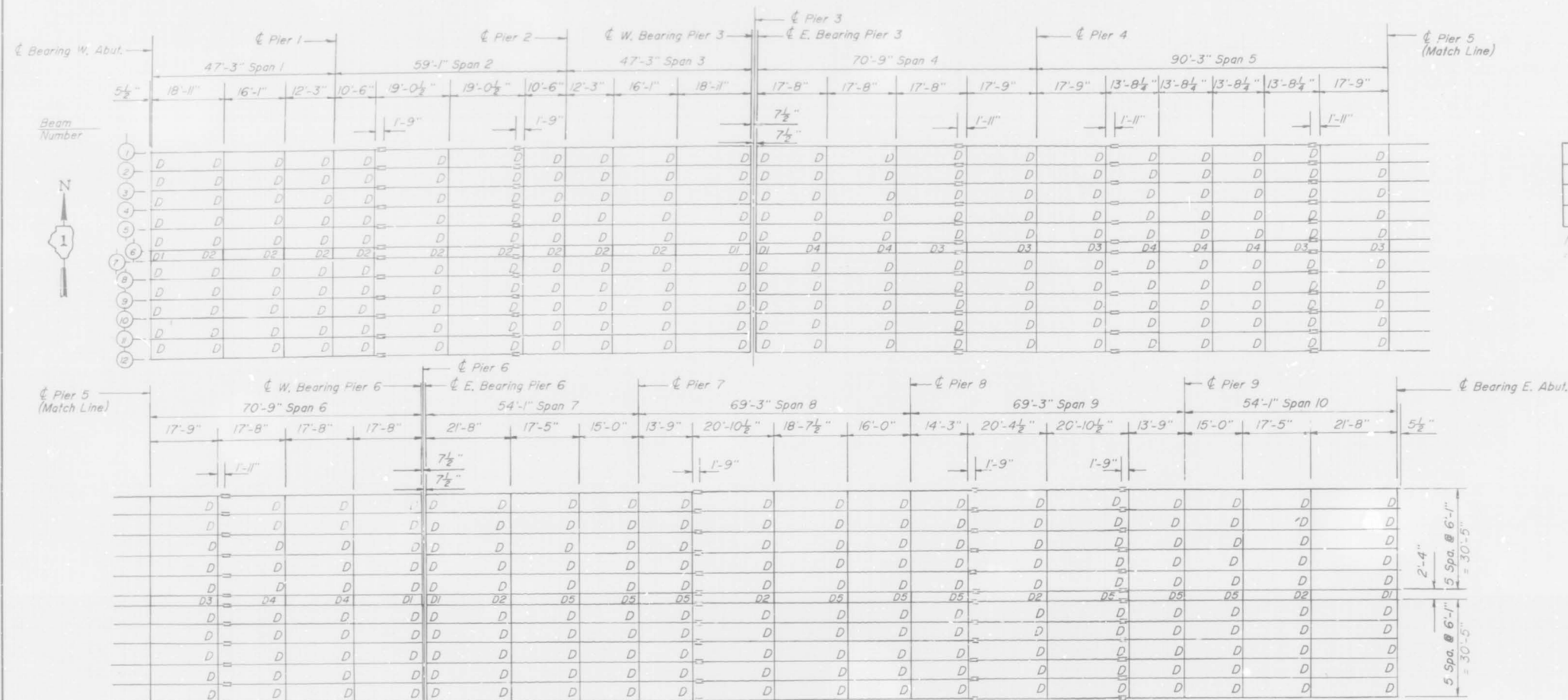
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DATE:

EJ-CS 6-1-89



F.A.U. NO.	SECTION	COUNTY	FILE NO.	DATE
1453	**	COOK	233	14.3
FED. ROAD DIST. NO.		ILL. DIST.	FED. AID PROJECT	
**SECTION 551WRS B 551 (B, XB, VB & VB-1) BR-89				



**EXISTING BEAM & DIAPHRAGM TABLE**

	EXT. BEAM	INT. BEAM	DIAPHRAGM D
SPAN 1 - 3	W36 X 150	W30 X 124	W16 X 36
SPAN 4 - 6	W36 X 170	W36 X 170	W16 X 36
SPAN 7 - 10	W36 X 150	W33 X 130	W16 X 36

Note:  
For Details of new diaphragms D1 thru D5, see Sheet 10 of 19

**FRAMING PLAN**

**INTERIOR GIRDER MOMENT TABLE**

	0.4 Sp. 1	Pier 1	0.5 Sp. 2	Pier 2	0.6 Sp. 3	0.4 Sp. 4	Pier 4	0.5 Sp. 5	Pier 5	0.6 Sp. 6	0.4 Sp. 7	Pier 7	0.5 Sp. 8	Pier 8	0.5 Sp. 9	Pier 9	0.6 Sp. 10
$I_s$ (In <sup>4</sup> )	5,360	5,360	5,360	5,360	5,360	10,500	14,675	10,500	14,675	10,500	6,710	9,673	6,710	9,673	6,710	9,673	6,710
$S_s$ (In <sup>3</sup> )	355.3	355.3	355.3	355.3	355.3	580.8	787.2	580.8	787.2	580.8	405.6	567.5	405.6	567.5	405.6	567.5	405.6
$\bar{Q}$ (K/ft.)	0.86	0.86	0.86	0.86	0.86	0.91	0.92	0.91	0.92	0.91	0.87	0.87	0.87	0.87	0.87	0.87	0.87
$M_D$ (K)	131.1	245.4	127.9	245.4	131.1	294.4	634.6	298.6	634.6	294.4	163.9	351.2	161.5	369.3	161.5	351.2	163.9
$M_L$ (K)	257.2	209.6	265.3	209.6	257.2	440.8	432.5	449.2	432.5	440.8	307.1	289.9	319.6	312.6	319.6	289.9	307.1
$M_{Imp}$ (K)	74.7	58.8	72.0	58.8	74.7	112.6	104.3	105.2	104.3	112.6	85.8	77.6	82.3	80.5	82.3	77.6	85.8
$M_{Total}$ (K)	463.0	513.8	465.2	513.8	463.0	847.8	1,172.3	852.1	1,172.3	847.8	556.8	718.7	563.4	762.4	563.4	718.7	556.8
$f_s$ (k.s.i.)	15.64	17.35	15.71	17.35	15.64	17.52	17.87	17.61	17.87	17.52	16.47	15.20	16.67	16.12	16.67	15.20	16.47

**INTERIOR GIRDER REACTION TABLE**

	W. Abut.	Pier 1	Pier 2	W. Brg. Pier 3	E. Brg. Pier 3	Pier 4	Pier 5	W. Brg. Pier 6	E. Brg. Pier 6	Pier 7	Pier 8	Pier 9	E. Abut.
$R_D$ (K)	15.0	50.7	50.7	15.0	23.3	82.6	82.6	23.3	17.0	59.8	60.8	59.8	17.0
$R_L$ (K)	34.4	41.4	41.4	34.4	37.3	48.4	48.4	37.3	35.4	42.3	42.3	42.3	35.4
$Imp.$ (K)	10.0	9.0	9.0	10.0	9.5	11.8	11.8	9.5	9.9	11.3	10.9	11.3	9.9
$R_{Total}$ (K)	59.4	101.1	101.1	59.4	70.1	142.8	142.8	70.1	62.3	113.4	114.0	113.4	62.3

$I_s$  and  $S_s$  are the moment of Inertia and section modulus of the steel section used in computing  $f_s$ .

**Donohue**  
Engineers & Architects

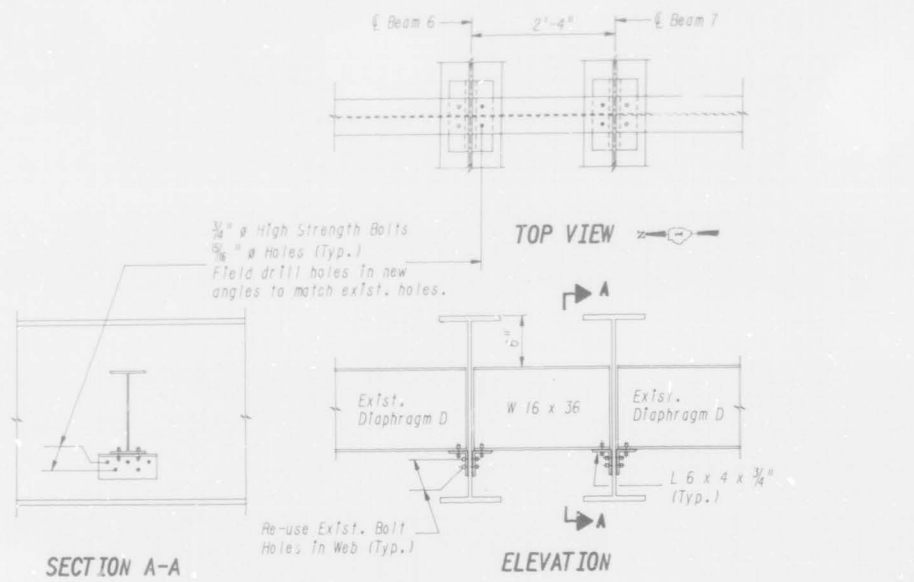
DESIGN BY: S.C.L.	DESIGN CK'D. BY: J.H.R.	DRAWN BY: N.J.T.	CHECKED BY: H.S.
PROJECT NUMBER 18046.004			

ILLINOIS DEPARTMENT OF TRANSPORTATION  
CERNAK ROAD OVER I.H.B.R.R. & GARDNER ROAD

**FRAMING PLAN**  
F.A.U. RTE 145E  
SECTION 551WRS & 551 (B, XB, VB & VB-1) BR-89  
STA. 271+89.00  
COOK COUNTY  
Structure #: 016-0631 Date: Jan., 1992

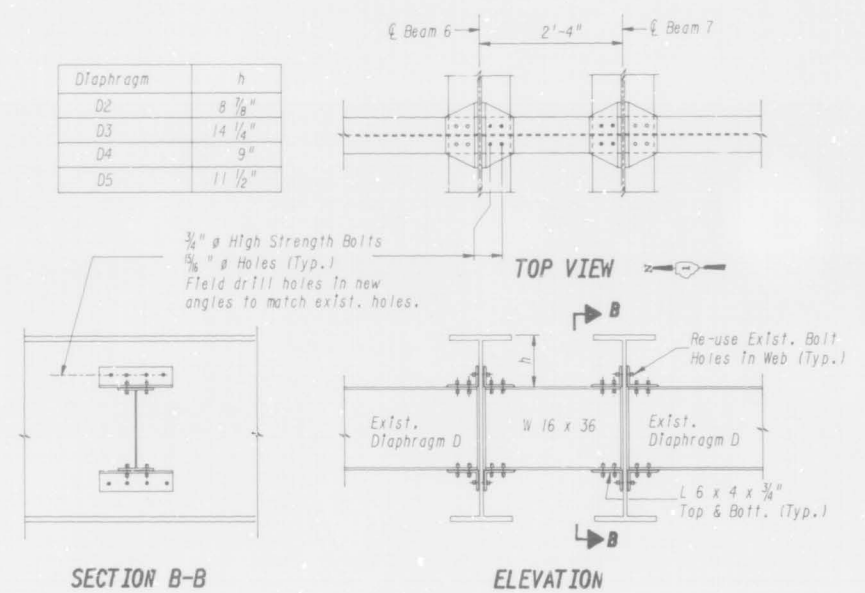
TAPE NO. 8  
DATE: \_\_\_\_\_  
PREF. FILE W.U. SCALE





**DIAPHRAGM D1**  
(6 Required)

Diaphragm	h
D2	8 7/8"
D3	14 1/4"
D4	9"
D5	11 1/2"



**DIAPHRAGMS D2 THRU D5**  
(13 D2's, 6 D3's, 7 D4's & 9 D5's Required)

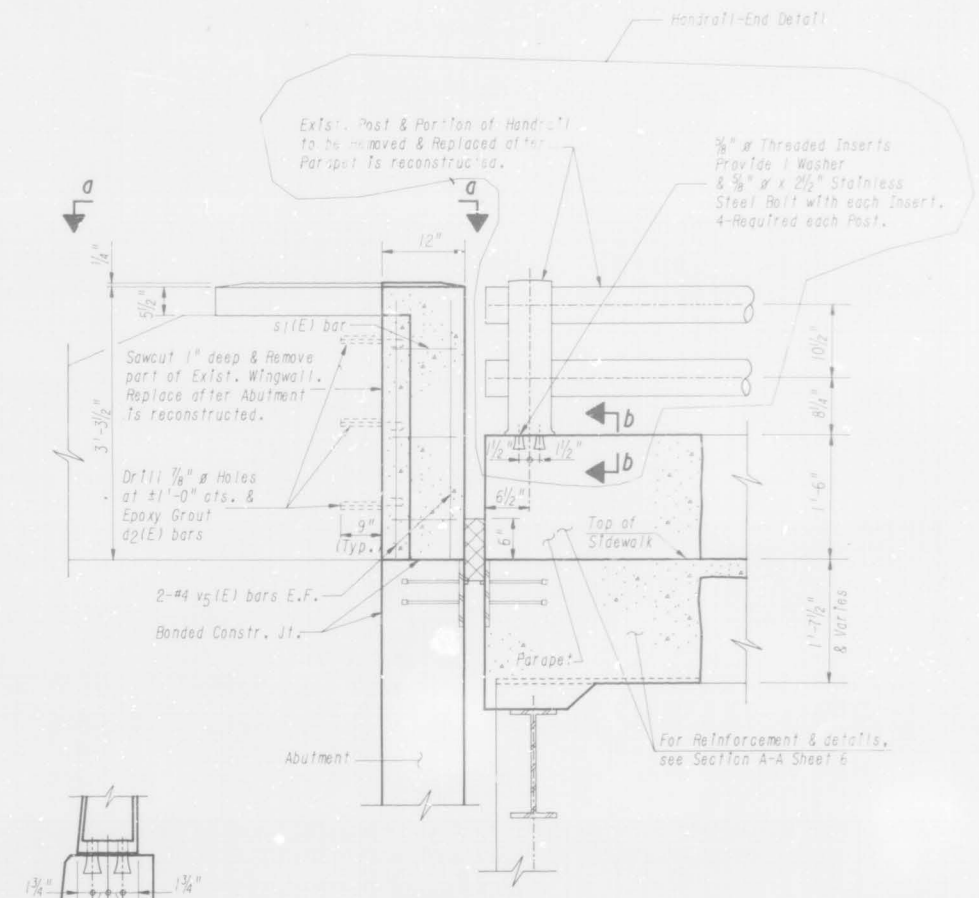
Notes: Two hardened washers shall be required over all oversize holes for diaphragms.

The existing diaphragms shall be supported during the installation of the new diaphragms. Cost incidental to FURNISHING & ERECTING STRUCTURAL STEEL.

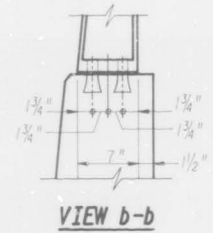
**Donohue**  
Engineers & Architects  
CAPTOR AND DESIGNATING

DESIGN BY:	DESIGN CK'D. BY:	DRAWN BY:	CHECKED BY:
S.C.L.	H.S.	E.Z.	S.C.L.

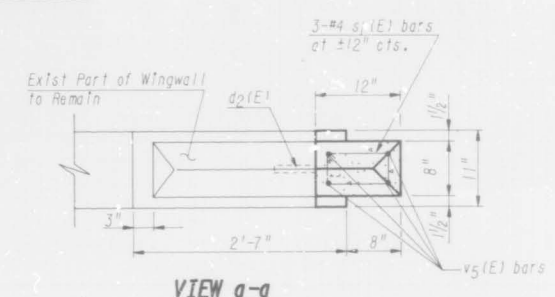
PROJECT NUMBER 18046.004



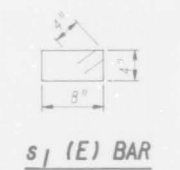
**SECTION J-J**  
**SECTION J<sub>1</sub> - J<sub>1</sub> (similar)**



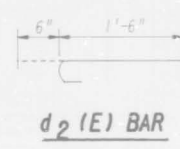
**VIEW b-b**



**VIEW a-a**



**s1 (E) BAR**



**d2 (E) BAR**

NOTE:  
For Wingwall Reconstruction Bill of Material see Sheet 14 of 19  
For Location see Sheet 2 of 19, 3 of 19 and 4 of 19

TAPE NO.  
FILE #  
SCALE #  
DATE:

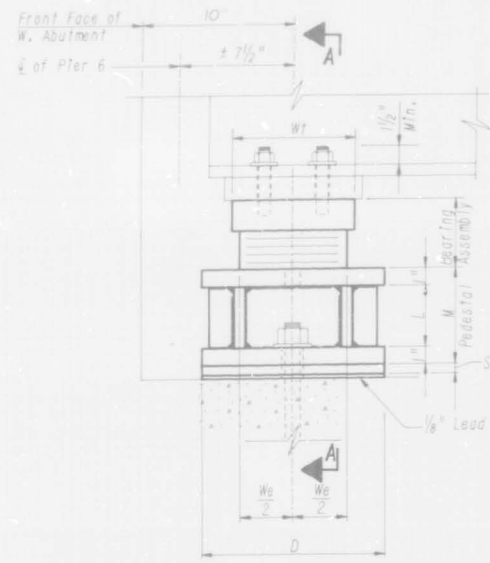
ILLINOIS DEPARTMENT OF TRANSPORTATION  
CERMAK ROAD OVER I.H.B.R.R. GARDNER ROAD

**STRUCTURAL STEEL DETAILS**

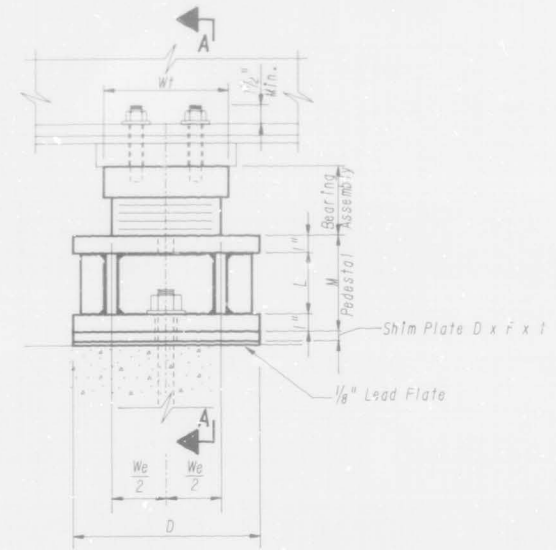
F.A.U. RTE 1453  
SECTION 551WRS & 551 (B, XB, VB & VB-1) BR-89  
STA. 271+89.00  
COOK COUNTY

Structure #: 016-0631 Date: Jan., 1992

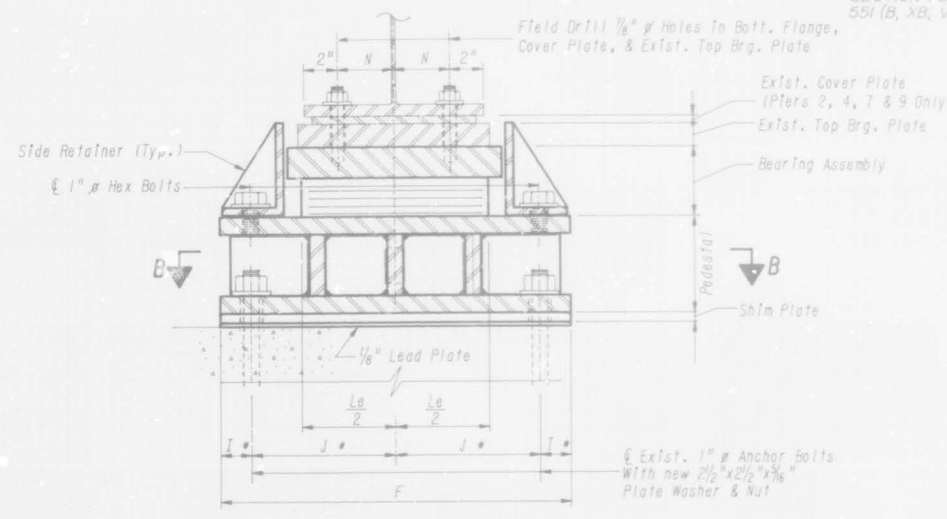
SECTION 551WRS 8  
551 (B, XB, VB & VB-1) BR-89



ELEVATION AT W. ABUT. & W. BRG. PIER 6  
(Side Retainer Omitted to Clarify View)  
(24 Required)

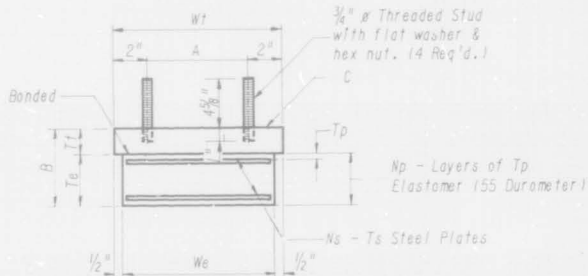


ELEVATION AT PIERS 2, 4, 7 & 9  
(Side Retainer Omitted to Clarify View)  
(48 Required)



SECTION A-A

ELASTOMERIC BEARING ASSEMBLY, TYPE I



BEARING ASSEMBLY

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

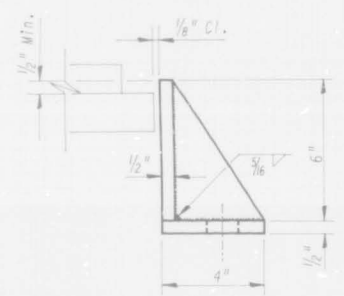
BEARING & PEDESTAL DIMENSION TABLE

LOCATION	NO. OF BRGS.	We	Le	Np	Tp	Ns	Ts	Ta	Tt	Wt	A	B	C	D	E	F	G	H	I*	J*	K	L	M	N
W. Abut. (Beams 1 & 12)	2	7"	12"	4	3/8"	3	3/32"	1 1/4"	1 1/8"	8"	4"	3 3/8"	1 1/8" x 8" x 14"	12"	6 1/4"	22 1/2"	4 1/4"	5 3/4"	2 3/4"	8 1/2"	9 1/4"	6 1/8"	9 1/8"	4"
W. Abut. (All others)	10	7"	12"	4	3/8"	3	3/32"	1 3/4"	1 7/8"	8"	4"	3 3/8"	1 1/8" x 8" x 14"	12"	6 1/4"	22 1/2"	5"	4 3/8"	3 1/2"	7 3/4"	9 1/4"	6 1/8"	8 1/8"	3 1/4"
Pier 2 (Beams 1 & 12)	2	10"	14"	5	7/16"	4	1/8"	2 1/8"	2 1/4"	11"	7"	4 1/2"	2 1/4" x 11" x 16"	15"	9 1/4"	24 1/2"	5"	5 3/8"	3 1/2"	8 3/4"	10 1/4"	5 5/8"	7 1/8"	4"
Pier 2 (All others)	10	10"	14"	5	7/16"	4	1/8"	2 1/8"	2 1/4"	11"	7"	4 1/2"	2 1/4" x 11" x 16"	15"	9 1/4"	24 1/2"	6"	4 3/8"	4 1/2"	7 3/4"	10 1/4"	5 5/8"	7 1/8"	3 1/4"
Pier 4	12	11"	16"	5	7/16"	4	1/8"	3"	2 3/4"	12"	8"	5 1/4"	2 3/4" x 12" x 18"	16"	10 1/4"	26 1/2"	6 3/4"	4 1/8"	5 1/4"	8"	11 1/4"	5 3/8"	7 3/8"	4"
W. Brg. Pier 6	12	7"	12"	5	3/8"	4	3/32"	2 1/4"	2"	8"	4"	4 1/4"	2" x 8" x 14"	12"	6 1/4"	22 1/2"	4 1/4"	5 3/4"	2 3/4"	8 1/2"	9 1/4"	6 1/8"	8 1/4"	4"
Pier 7 (Beams 1 & 12)	2	10"	14"	5	7/16"	4	1/8"	2 1/8"	2 3/8"	11"	7"	5 1/8"	2 3/8" x 11" x 16"	15"	9 1/4"	24 1/2"	5 3/4"	4 1/8"	4 1/4"	8"	10 1/4"	5 5/8"	7 1/8"	4"
Pier 7 (All others)	10	10"	14"	5	7/16"	4	1/8"	2 1/8"	2 3/8"	11"	7"	5 1/8"	2 3/8" x 11" x 16"	15"	9 1/4"	24 1/2"	6"	4 3/8"	4 1/2"	7 3/4"	10 1/4"	5 5/8"	7 1/8"	3 3/4"
Pier 9 (Beams 1 & 12)	2	10"	14"	5	7/16"	4	1/8"	2 1/8"	2 3/8"	11"	7"	5 1/8"	2 3/8" x 11" x 16"	15"	9 1/4"	24 1/2"	5 3/4"	4 1/8"	4 1/4"	8"	10 1/4"	5 5/8"	7 1/8"	4"
Pier 9 (All others)	10	10"	14"	5	7/16"	4	1/8"	2 1/8"	2 3/8"	11"	7"	5 1/8"	2 3/8" x 11" x 16"	15"	9 1/4"	24 1/2"	6"	4 3/8"	4 1/2"	7 3/4"	10 1/4"	5 5/8"	7 1/8"	3 3/4"

SHIM PLATE THICKNESS "t" TABLE

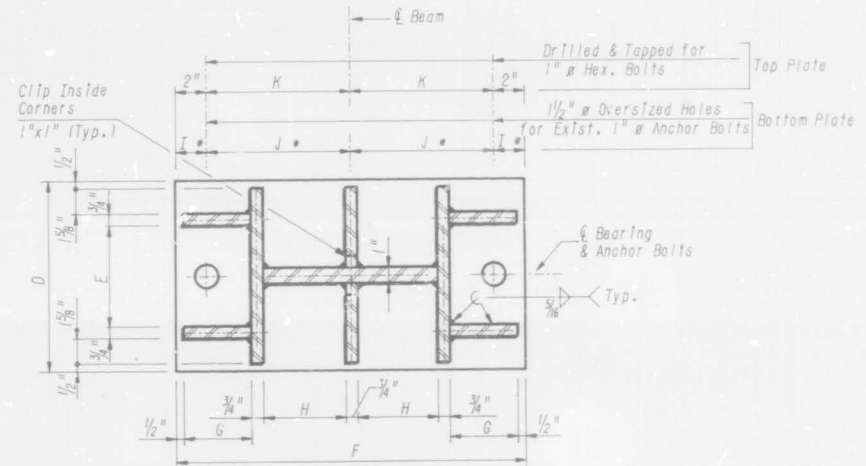
LOCATION	BEAM						
	1 or 12	2 or 11	3 or 10	4 or 9	5 or 8	6 or 7	
W. Abutment	0	0	3/8"	0	5/8"	0	0
Pier 2	1/8"	0	3/8"	0	5/8"	0	0
Pier 4	0	3/8"	0	5/8"	0	3/8"	0
W. Brg. Pier 6	0	3/8"	0	5/8"	0	1/2"	0
Pier 7	1/8"	0	3/8"	0	5/8"	0	0
Pier 9	1/8"	0	3/8"	0	5/8"	0	0

\* The Contractor shall field verify locations of existing anchor bolts prior to fabrication of pedestals.



SIDE RETAINER

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates. Weight included with Structural Steel.



SECTION B-B

(Showing bottom plate, top plate similar except as noted)

BILL OF MATERIAL

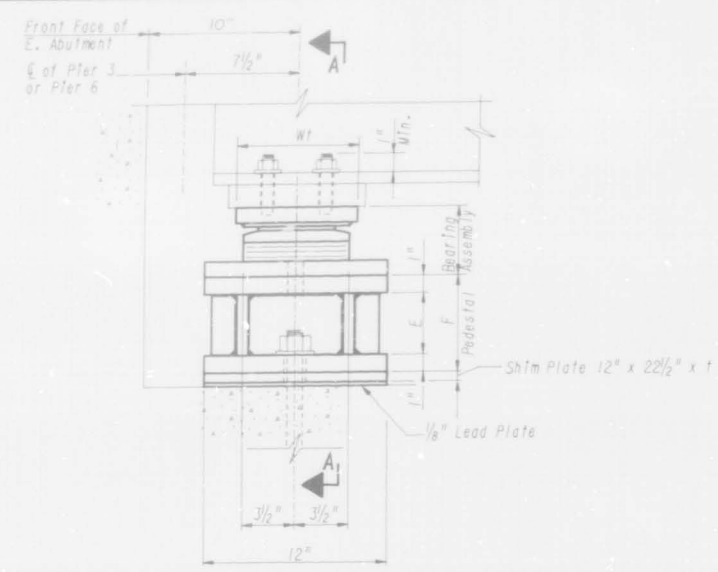
Item	Unit	Total
Jack & Remove Exst. Bearings	Each	72
Elastomeric Bearing Assembly Type I	Each	72

ILLINOIS DEPARTMENT OF TRANSPORTATION  
CERMAK ROAD OVER I.H.B.R.R. & GARDNER ROAD  
**ELASTOMERIC BEARING ASSEMBLY TYPE I**  
F.A.U. RTE 1453  
SECTION 551WRS & 551 (B, XB, VB & VB-1) BR-89  
STA. 271+89.00  
COOK COUNTY  
Structure #: 016-0631 Date: Jan., 1992

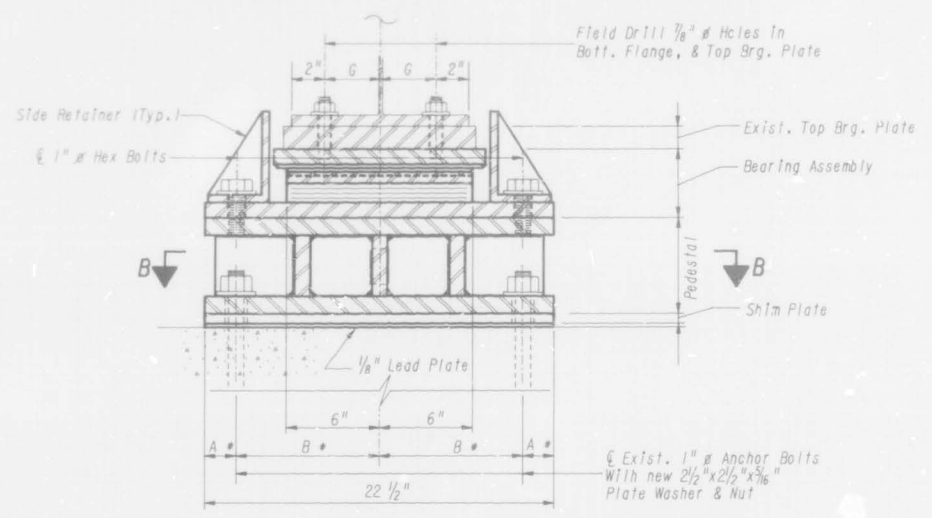
TAPE NO.  
DATE:  
SCALE:  
PROJECT NUMBER 18046.004

**Donohue**  
Engineers & Architects  
DESIGN BY: S.C.L. CHECKED BY: S.C.L.  
DESIGN CK'D. BY: P.D.F. E.Z.  
DRAWN BY: E.Z.  
PROJECT NUMBER 18046.004

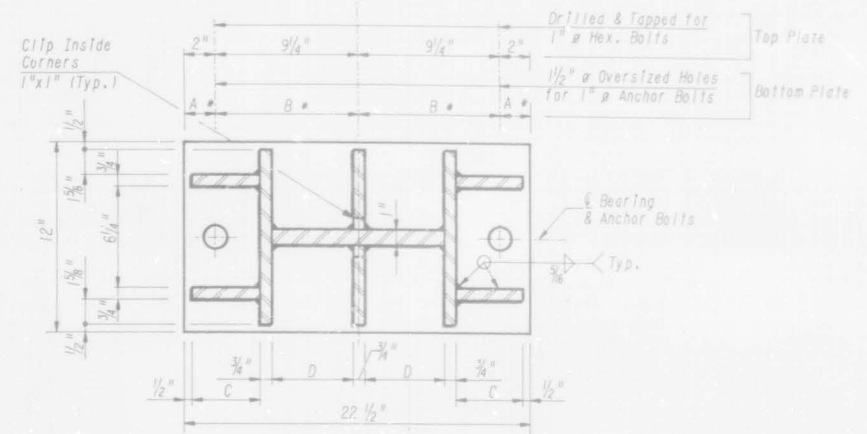




ELEVATION AT E. ABUT., W. BRG. PIER 3 & E. BRG. PIER 6  
(Side Retainer Omitted to Clarify View)  
(36 Required)  
**ELASTOMERIC BEARING ASSEMBLY, TYPE II**

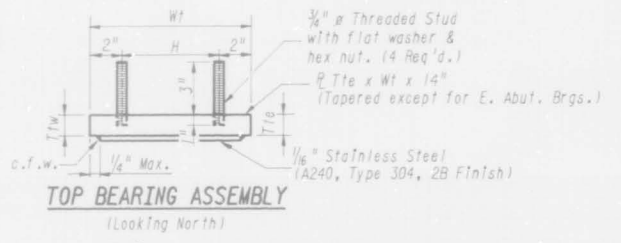


**SECTION A-A**



**SECTION B-B**

(Showing bottom plate, top plate similar except as noted)

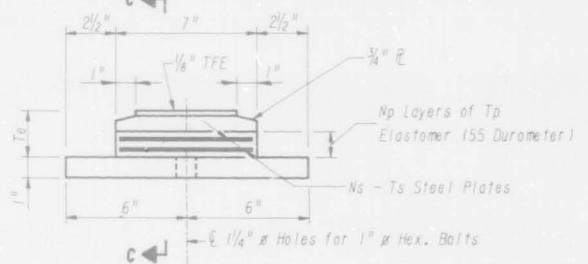


**TOP BEARING ASSEMBLY**  
(Looking North)

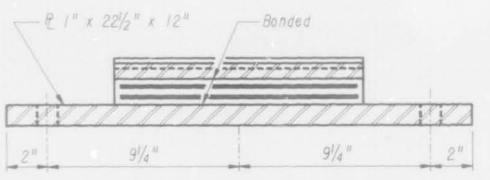
**BEARING & PEDESTAL DIMENSION TABLE**

LOCATION	NO. OF BRGS.	Np	Tp	Ns	Ts	Te	Ttw	Tte	Wt	A*	B*	C	D	E	F	G	H
E. Abut. (Beams 1 & 12)	2	5	3/8"	4	3/2"	3 1/8"	1 1/8"	1 1/8"	8 3/8"	2 3/4"	8 1/2"	4 1/4"	5 3/8"	4 1/8"	6 1/8"	4"	4 3/8"
E. Abut. (All others)	10	5	3/8"	4	3/2"	3 1/8"	1 1/8"	1 1/8"	8 3/8"	3"	8 1/4"	4 1/2"	5 1/8"	4 7/16"	6 1/16"	3 1/4"	4 3/8"
W. Brg. Pier 3 (Beams 1 & 12)	2	4	3/8"	3	3/2"	2 3/8"	1 1/4"	2"	8 3/8"	2 3/4"	8 1/2"	4 1/4"	5 3/8"	4 1/8"	6 1/8"	4"	4 3/8"
W. Brg. Pier 3 (All others)	10	4	3/8"	3	3/2"	2 3/8"	1 1/4"	2"	8 3/8"	3 1/2"	7 3/4"	5"	4 3/8"	4 7/8"	6 7/8"	3 1/4"	4 3/8"
E. Brg. Pier 6 (Beams 1 & 12)	2	5	3/8"	4	3/2"	3 1/8"	1 1/8"	1 1/8"	8 3/8"	2 3/4"	8 1/4"	4 1/4"	5 3/8"	4 1/8"	6 1/8"	4"	4 3/8"
E. Brg. Pier 6 (All others)	10	5	3/8"	4	3/2"	3 1/8"	1 1/8"	1 1/8"	8 3/8"	3"	8 1/4"	4 1/2"	5 1/8"	4 1/8"	6 1/8"	3 3/4"	4 3/8"

\* The Contractor shall field verify locations of existing anchor bolts prior to fabrication of pedestals.



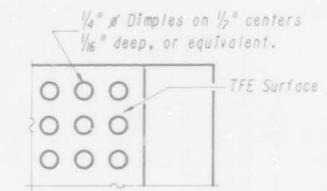
**BOTTOM BEARING ASSEMBLY**



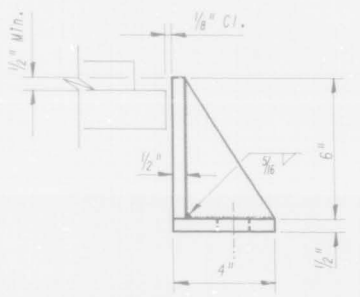
**SECTION C-C**

**SHIM PLATE THICKNESS "t" TABLE**

LOCATION	BEAM					
	1 or 12	2 or 11	3 or 10	4 or 9	5 or 8	6 or 7
E. Abutment	0	0	5/8"	0	5/8"	0
W. Brg. Pier 3	0	0	3/8"	0	3/8"	0
E. Brg. Pier 6	0	0	3/8"	0	3/8"	0

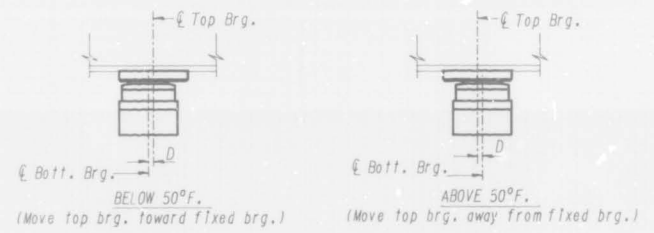


**PLAN-TFE SURFACE**



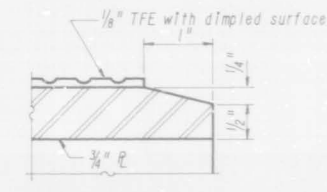
**SIDE RETAINER**

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates. Weight included with Structural Steel.



**SETTING TOP BEARING ASSEMBLIES AT EXP. BRG.**

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



**SECTION THRU TFE**

**BILL OF MATERIAL**

Item	Unit	Total
Jack & Remove Exst. Bearings	E.A.	36
Elastomeric Bearing Assembly Type II	Each	36

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

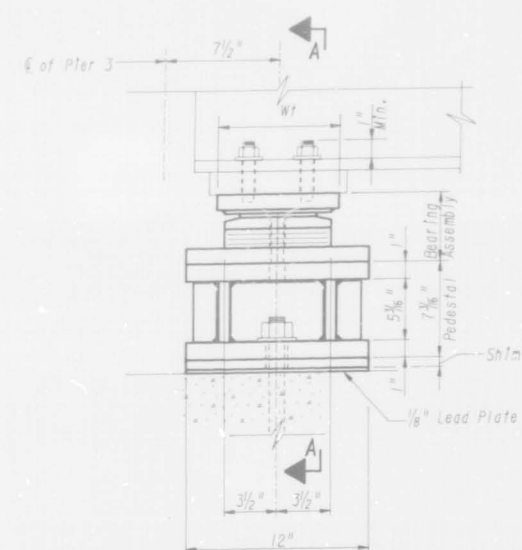
Bonding of 1/8" TFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.

ILLINOIS DEPARTMENT OF TRANSPORTATION  
CERMAK ROAD OVER I.H.B.R.R. & GARDNER ROAD  
**ELASTOMERIC BEARING ASSEMBLY TYPE II**  
F.A.U. RTE 1453  
SECTION 551WRS & 551 (B, XB, VB & VB-1) BR-89  
STA. 271+89.00  
COOK COUNTY  
Structure #: 016-0631 Date: Jan., 1992

TAPE NO.  
DATE  
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W.U.  
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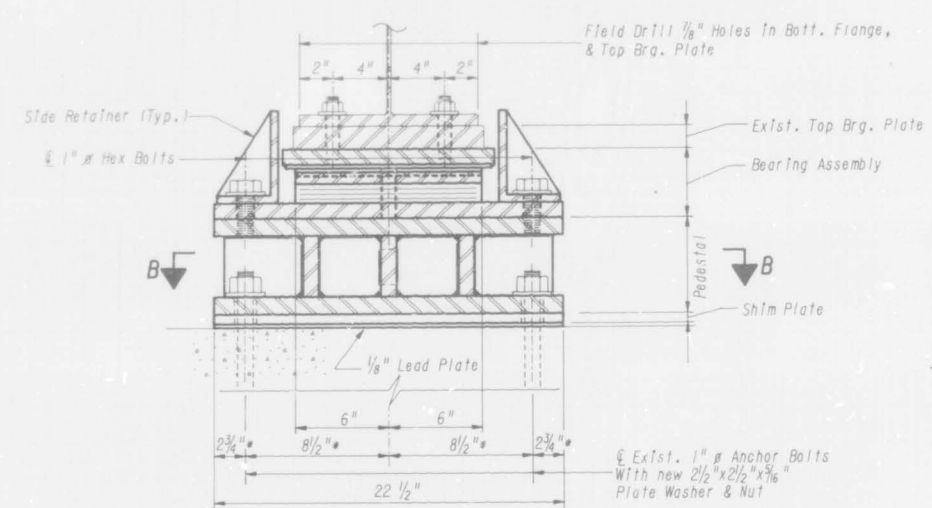
**Donohue**  
Engineers & Architects  
DESIGN BY: S.C.L.  
CHK'D BY: P.D.F.  
DRAWN BY: E.Z.  
CHECKED BY: S.C.L.  
PROJECT NUMBER 18046.004

F.A.U. RTE.	SECTION	DRAWN	TOTAL SHEETS	SHEET NO.
1453	**	COOK	233	147

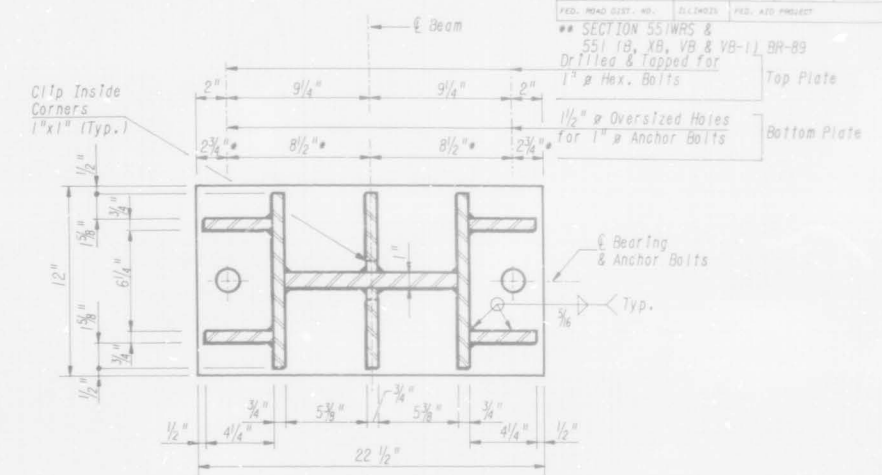


**ELEVATION AT E. BRG. PIER 3**  
(Side Retainer Omitted to Clarify View)  
(12 Required)

**ELASTOMERIC BEARING ASSEMBLY, TYPE III**

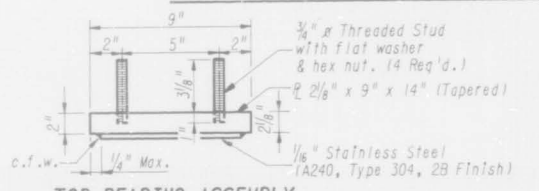


**SECTION A-A**



**SECTION B-B**  
(Showing bottom plate, top plate similar except as noted)

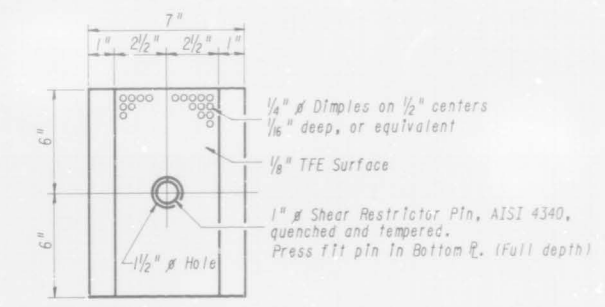
\* The Contractor shall field verify locations of existing anchor bolts prior to fabrication of pedestals.



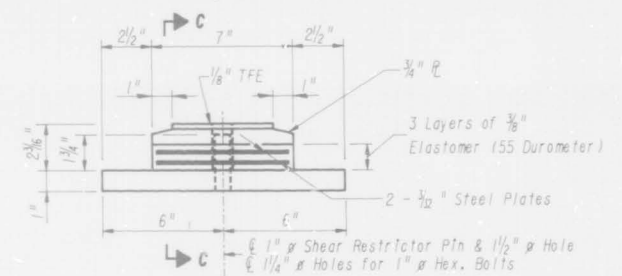
**TOP BEARING ASSEMBLY**  
(Looking North)

**SHIM PLATE THICKNESS "t" TABLE**

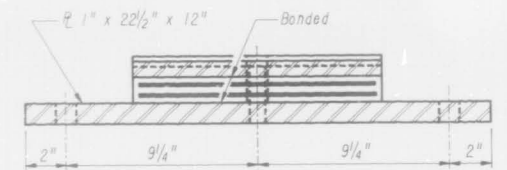
LOCATION	BEAM						
	or 12	2 or 11	3 or 10	4 or 9	5 or 8	6 or 7	
E. Brg. Pier 3	0	3/8"	0	9/16"	0	1/2"	



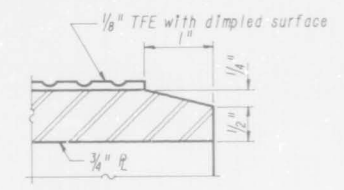
**PLAN-TFE ELASTOMERIC BRG.**



**BOTTOM BEARING ASSEMBLY**



**SECTION C-C**



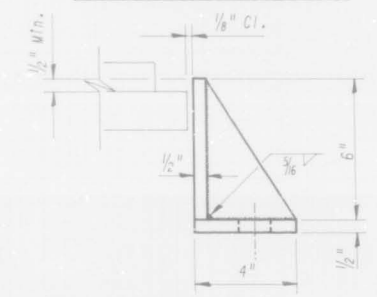
**SECTION THRU TFE**

**BILL OF MATERIAL**

Item	Unit	Total
Jack & Remove Exst. Bearings	Each	12
Elastomeric Bearing Assembly Type III	Each	12

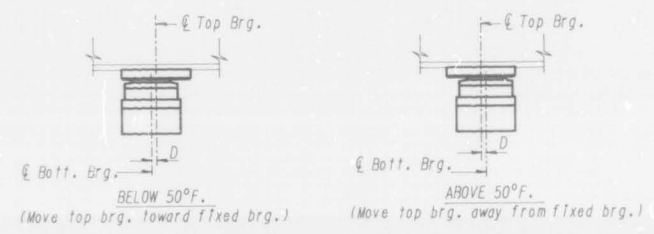
Note: The 1/8" TFE sheet shall be bonded directly to the top steel plate with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MMM-A-134, Type I. The bond agent shall be applied on the full area of the contact surfaces.

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



**SIDE RETAINER**

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates. Weight Included with Structural Steel.



**SETTING TOP BEARING ASSEMBLIES AT EXP. BRG.**

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

**Donohue**  
Engineers & Architects  
Civil and Structural

DESIGN BY: S.C.L.	DESIGN CK'D. BY: P.D.F.	DRAWN BY: E.Z.	CHECKED BY: S.C.L.
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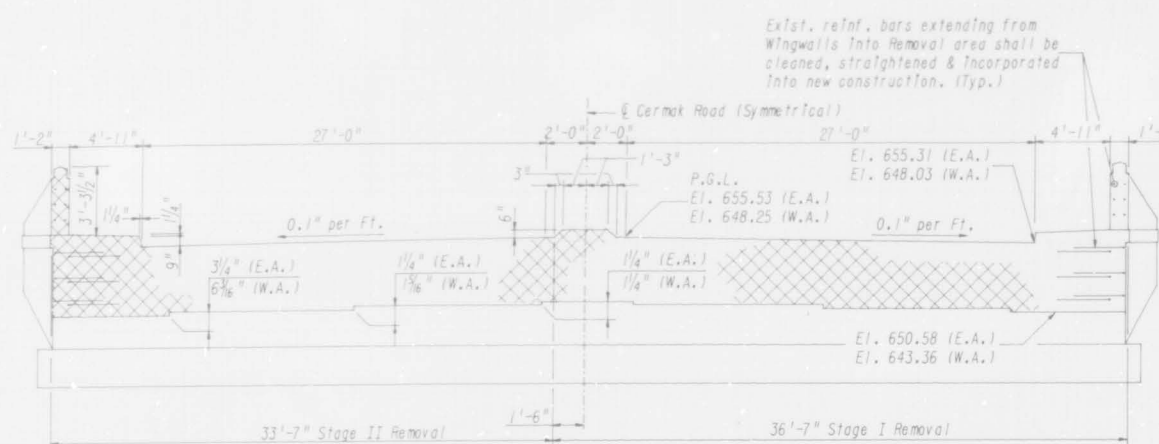
PROJECT NUMBER 18046.004

ILLINOIS DEPARTMENT OF TRANSPORTATION  
CERMAK ROAD OVER I.H.B.R.R. & GARDNER ROAD  
**ELASTOMERIC BEARING ASSEMBLY TYPE III**  
F.A.U. RTE 1453  
SECTION 551 WRS & 551 (B, XB, VB & VB-1) BR-89  
STA. 271+89.00  
COOK COUNTY  
Structure #: 016-0631 Date: Jan., 1992

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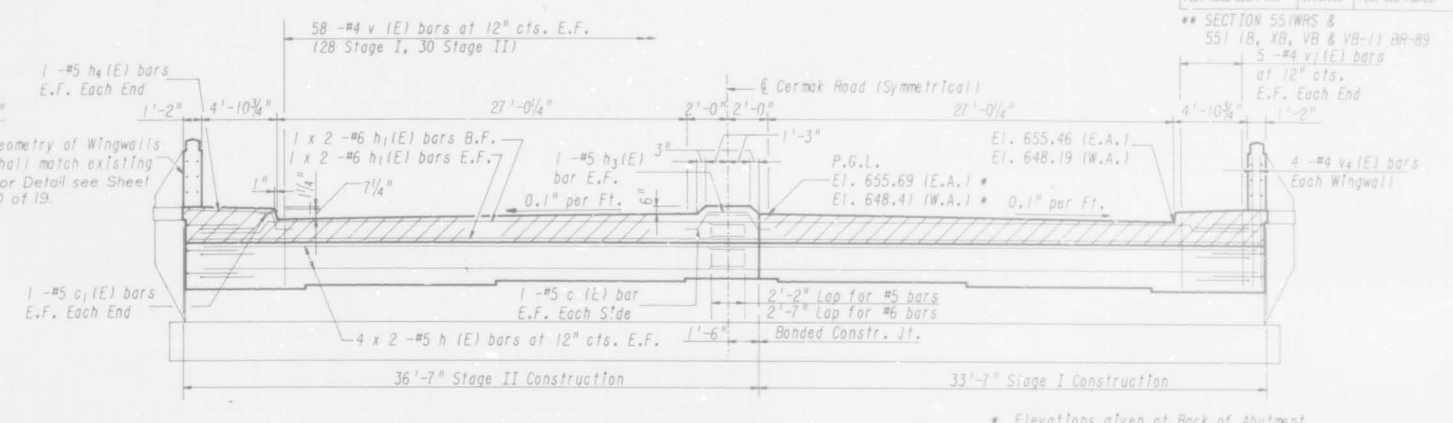
F.A.U. NO.	SECTION	DATE	TOTAL SHEETS	SHEET NO.
1453	**	COOK	233	148

\*\* SECTION 55 (WRS & 551 (B, XB, VB & VB-1)) BR-89



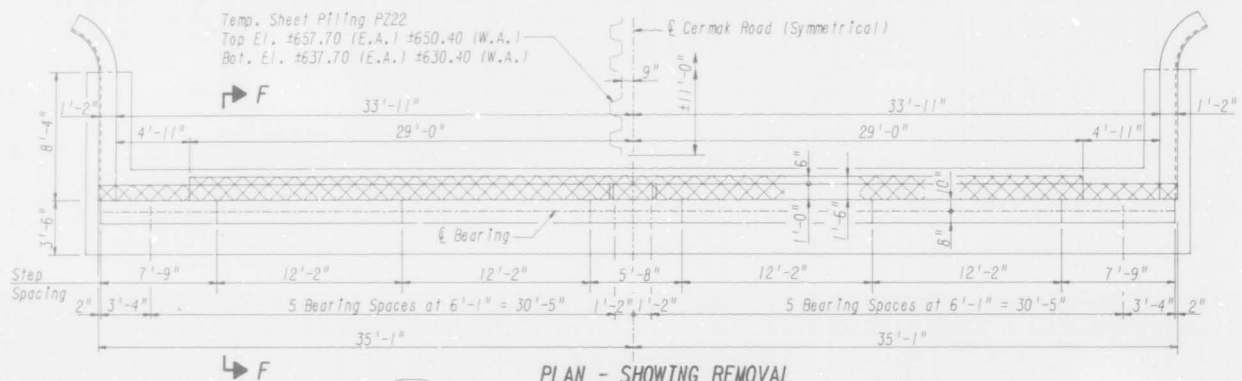
**ELEVATION - SHOWING REMOVAL**

East Abutment Shown, West Abutment Opposite Hand  
All transverse reinf. bars except as noted shall be removed.



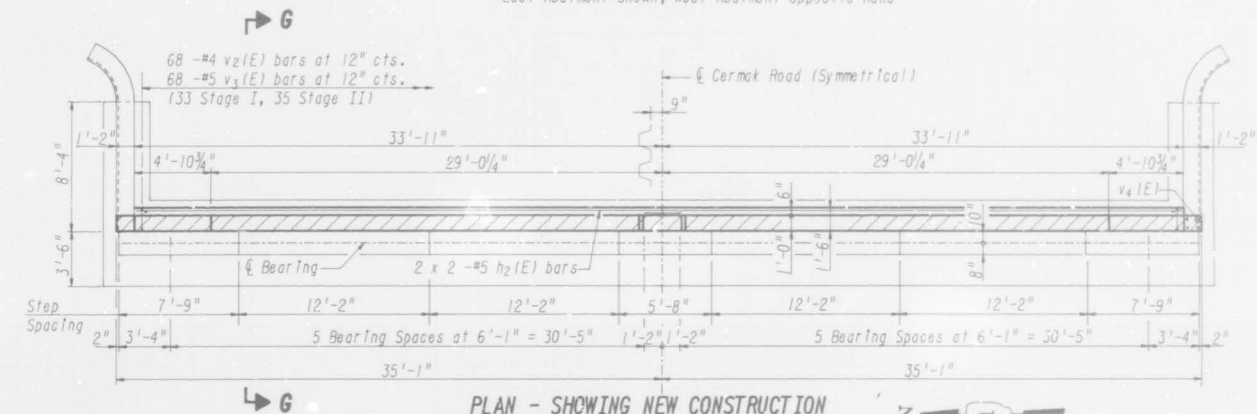
**ELEVATION - SHOWING NEW CONSTRUCTION**

East Abutment Shown, West Abutment Opposite Hand



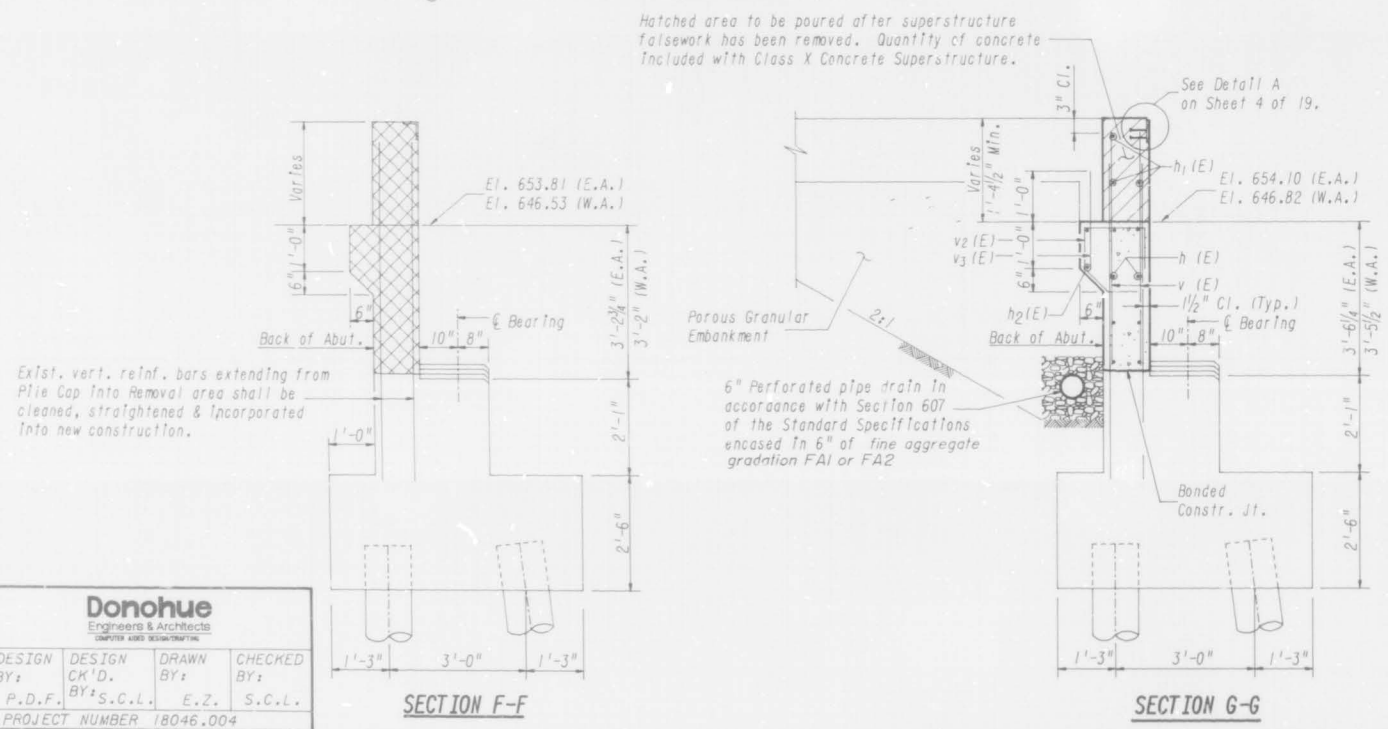
**PLAN - SHOWING REMOVAL**

East Abutment Shown, West Abutment Opposite Hand



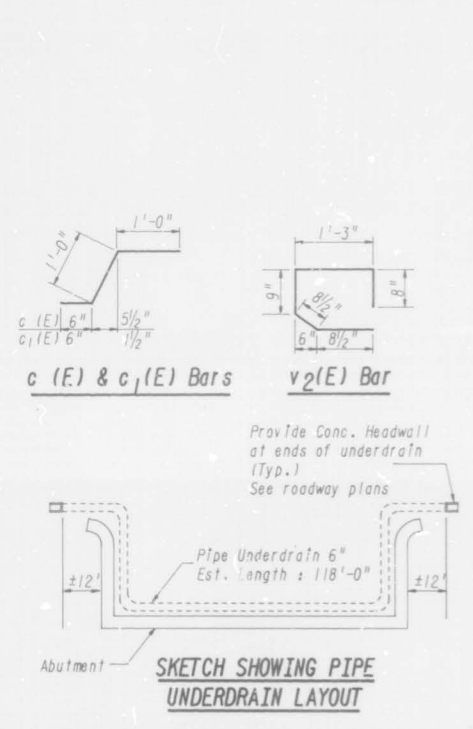
**PLAN - SHOWING NEW CONSTRUCTION**

East Abutment Shown, West Abutment Opposite Hand



**SECTION F-F**

**SECTION G-G**



**SKETCH SHOWING PIPE UNDERDRAIN LAYOUT**

**BILL OF MATERIALS - BOTH ABUTS.**

Bars	No.	Size	Length	Shape
c (E)	8	#5	2'-6"	
c1(E)	8	#5	2'-6"	
h (E)	32	#5	35'-10"	
h1(E)	12	#6	36'-0"	
h2(E)	8	#5	34'-10"	
h3(E)	4	#5	2'-6"	
h4(E)	8	#5	5'-7"	
v (E)	232	#4	4'-1"	
v1(E)	40	#4	5'-0"	
v2(E)	136	#4	4'-1"	
v3(E)	136	#5	2'-0"	
v4(E)	16	#4	8'-4"	
v5(E)	16	#4	3'-1"	
sr(E)	12	#4	2'-8"	
da(E)	12	#6	2'-0"	
Reinforcement Bars Epoxy Coated				3,840
Class X Concrete				Cu. Yd. 20.3
Concrete Removal				Cu. Yd. 27.0
Porous Granular Embankment				Cu. Yd. 164.4
Pipe Underdrain 6"				Lin. Ft. 236
Temp. Sheet Piling				Sq. Ft. 440
Structure Excavation				Cu. Yd. 48.3

**LEGEND**

- Concrete Removal
- E.F. : Each Face
- B.F. : Back Face
- E.A. : East Abutment
- W.A. : West Abutment

**NOTES**

- Reinforcement bars designated (E) shall be epoxy coated.
- Bars indicated thus 2x3-#5 etc. indicates 2 lines of bars with 3 lengths per line.
- Contractor shall exercise caution not to damage exist. anchor bolts.
- The size & length of Temp. Sheet Piling are for estimation purpose only. The Contractor shall be responsible for actual design & shall submit for Engineer's approval according to Specifications.

**Donohue**  
Engineers & Architects  
CORPORATE AND RESIDENTIAL

DESIGN BY: P.D.F.	DESIGN CK'D. BY: S.C.L.	DRAWN BY: E.Z.	CHECKED BY: S.C.L.
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PROJECT NUMBER 18046.004

ILLINOIS DEPARTMENT OF TRANSPORTATION  
CERMAK ROAD OVER I.H.B.R.R. & GARDNER ROAD

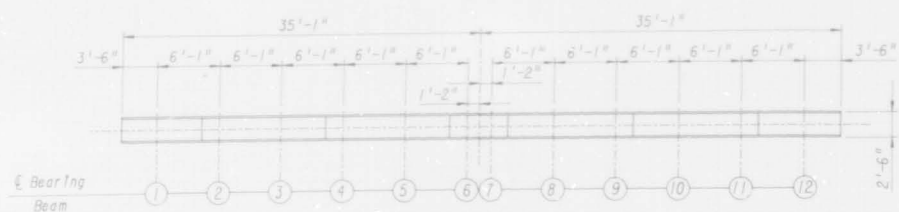
**ABUTMENTS**  
F.A.U. RTE 145  
SECTION 55 (WRS & 551 (B, XB, VB & VB-1)) BR-89  
STA. 271+89.00  
COOK COUNTY

Structure #: 016-0631 Date: Jan., 1992  
Sheet 14 of 19

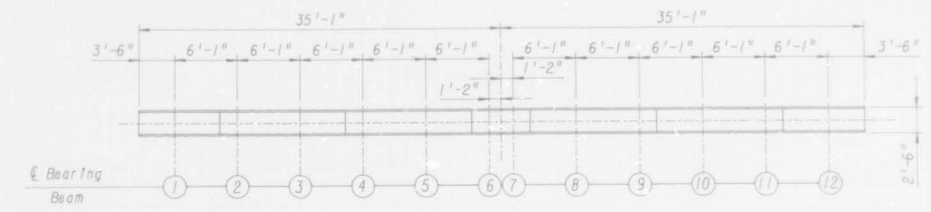
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F.A.U. NO.	SECTION	DATE	TOTAL SHEETS	SHEET NO.
1453	**	COOK	233	145

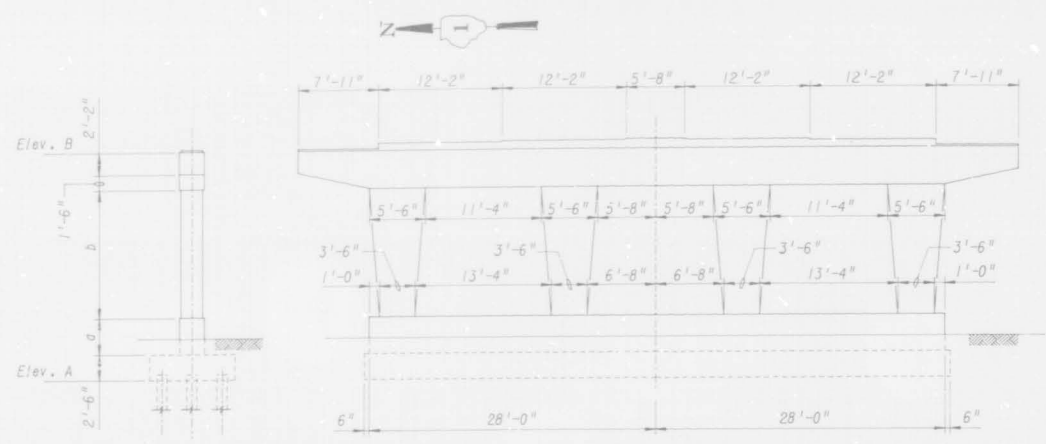
\*\*SECTION 551WRS B  
551 (B, XB, YB & VB-I) BR-89



TOP PLAN

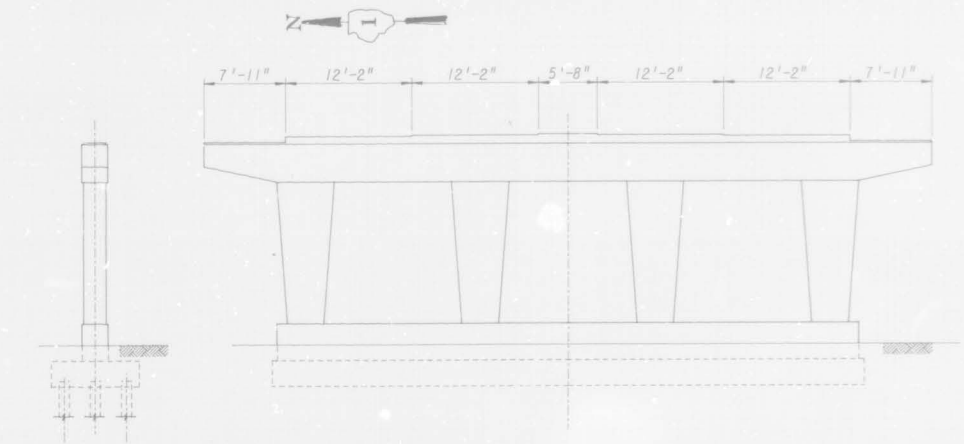


TOP PLAN



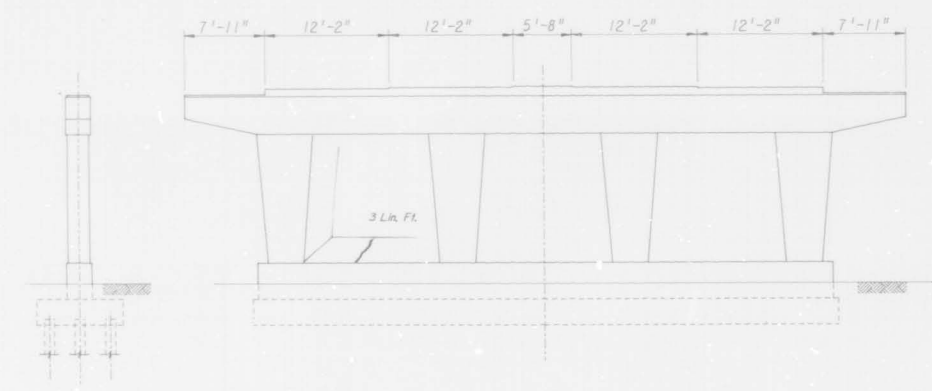
NORTH ELEVATION

WEST ELEVATION



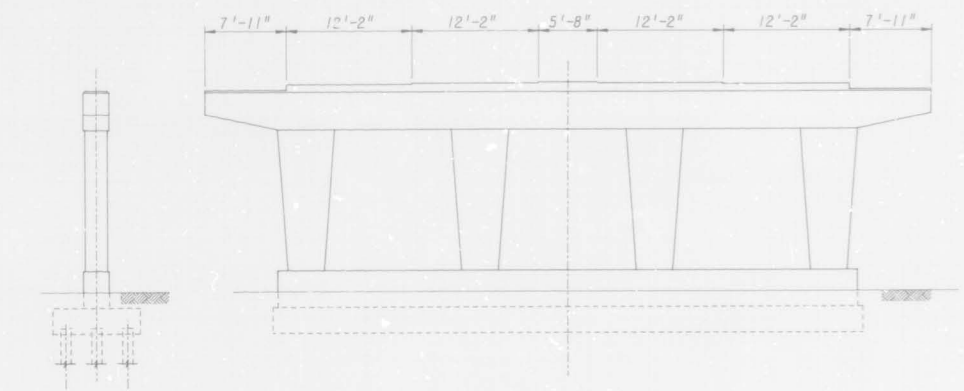
NORTH ELEVATION

WEST ELEVATION



SOUTH ELEVATION

EAST ELEVATION



SOUTH ELEVATION

EAST ELEVATION

PIER 1

PIER 2

**Notes:**

1. See Sheets 15 & 19 of 19 for Pier Dimensions and Beam Seat Elevations.
2. See Sheet 19 of 19 for Bill of Materials.
3. Quantities & location are for information purposes only. It shall be the Contractor's responsibility to verify such dimensions and details in the field and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in the scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.

**LEGEND**

- Formed Concrete Repair (Depth equal to or less than 5")
- Epoxy Crack Sealing

PRF= PIER12.PRF TAPES NO.  
FILE= PIER12.DGN  
W.U.= 1/12:4000  
SCALE= 1/8" = 1'-0" DATE: MARCH 2, 1991

<b>Donohue</b> Engineers & Architects			
DESIGN BY: S.C.L.	DESIGN CK'D BY: J.H.R.	DRAWN BY: R.K.B.	CHECKED BY: S.C.L.
PROJECT NUMBER 18046.004			

ILLINOIS DEPARTMENT OF TRANSPORTATION  
CERMAK ROAD OVER I.H.B.R.R. & GARDNER ROAD

**PIERS 1 & 2**  
F.A.U. RTE 1453  
SECTION 551WRS & 551 (B, XB, YB & VB-I) BR-89  
STA. 271+89.00  
COOK COUNTY

Structure #: 016-0631 Date: Jan., 1992



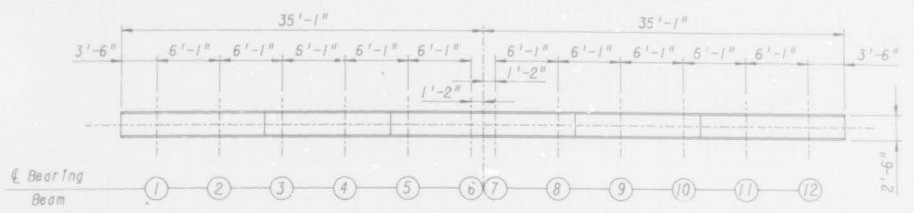


F.A.U. NO.	SECTION	COUNT	TOTAL SHEETS	SHEET NO.
1453	**	COOK	233	150

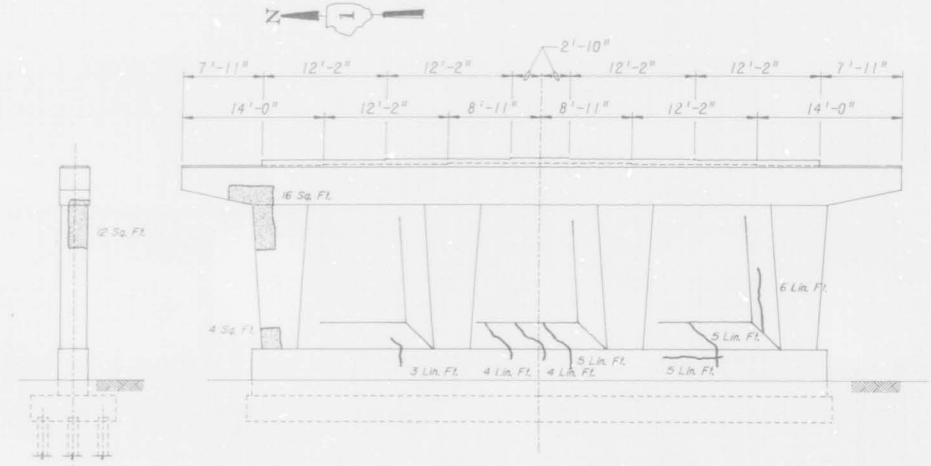
FED. HIGHWAY DIST. NO. SHEETS PROJ. AND PROJECT  
 \*\*SECTION 551WRS B  
 551 (B, XB, VB & VB-1) BR-B9



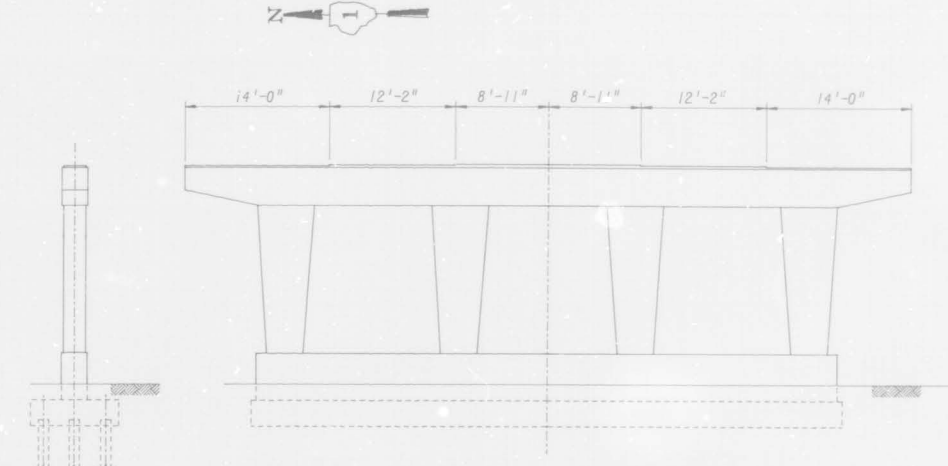
TOP PLAN



TOP PLAN



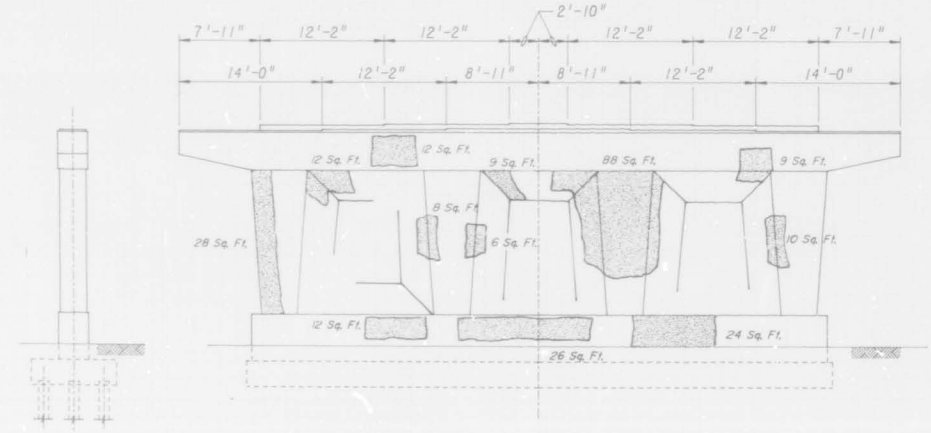
WEST ELEVATION



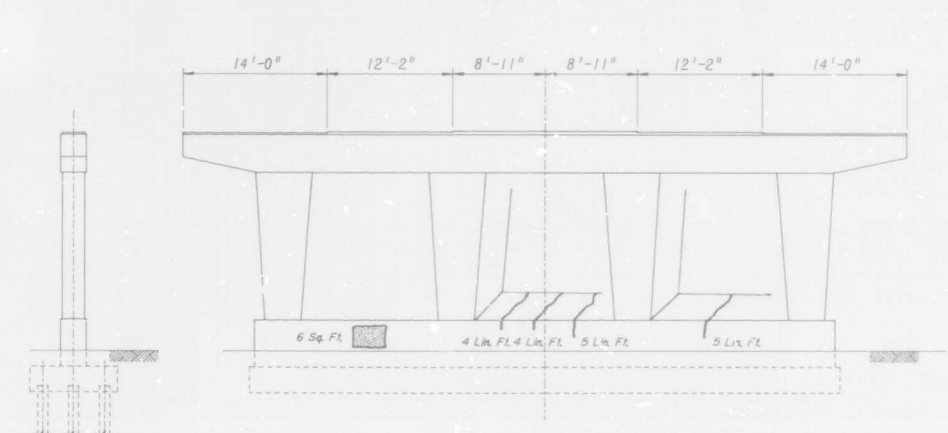
WEST ELEVATION

NORTH ELEVATION

NORTH ELEVATION



EAST ELEVATION



EAST ELEVATION

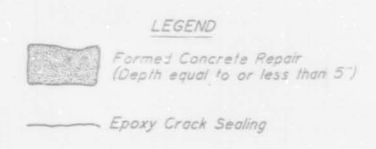
SOUTH ELEVATION

SOUTH ELEVATION

PIER 3

PIER 4

- Notes:**
- See Sheet 15 & 19 of 19 for Pier Dimensions and Beam Seat Elevations.
  - See Sheet 19 of 19 for Bill of Material.
  - Quantities & location are for information purposes only. It shall be the Contractor's responsibility to verify such dimensions and details in the field and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in the scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.



PIER 3, PIR TAPE NO. 51  
 FILE= PIER34.DWG  
 W.U.#= 1112+000  
 SCALE= 1/8" = 1'-0"  
 DATE: MARCH 6, 1991

Donohue Engineers & Architects			
DESIGN BY: S.C.L.	DESIGN CK'D. BY: J.H.R.	DRAWN BY: R.K.B.	CHECKED BY: S.C.L.
PROJECT NUMBER 18046.004			

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 CERMAK ROAD OVER I.H.B.R.R. & GARDNER ROAD

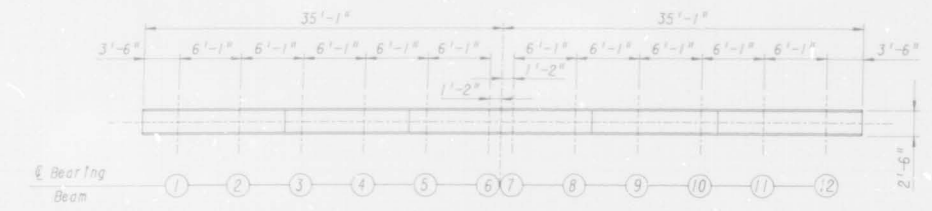
**PIERS 3 & 4**  
 F.A.U. RTE 1453  
 SECTION 551WRS & 551 (B, XB, VB & VB-1) BR-B9  
 STA. 271+89.00  
 COOK COUNTY

Structure #: 016-0631 Date: Jan., 1992

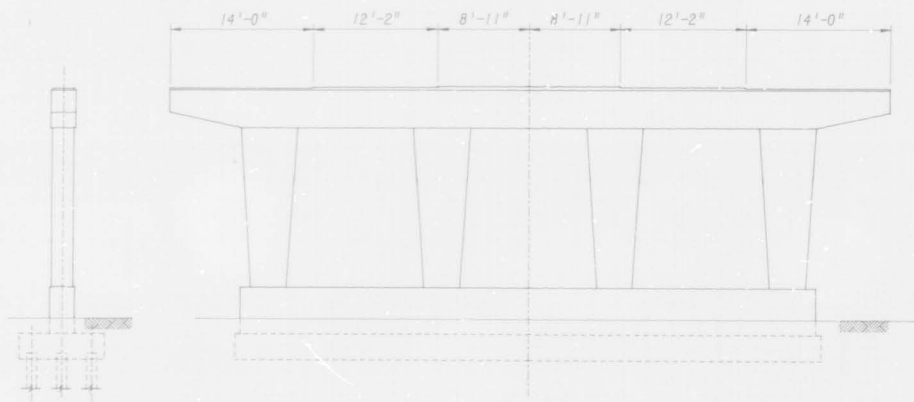


P.A.U. RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1453	**	COOK	233	156
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

\*\*SECTION 551WRS 8  
551 (B, XB, VB & VB-1) BR-89

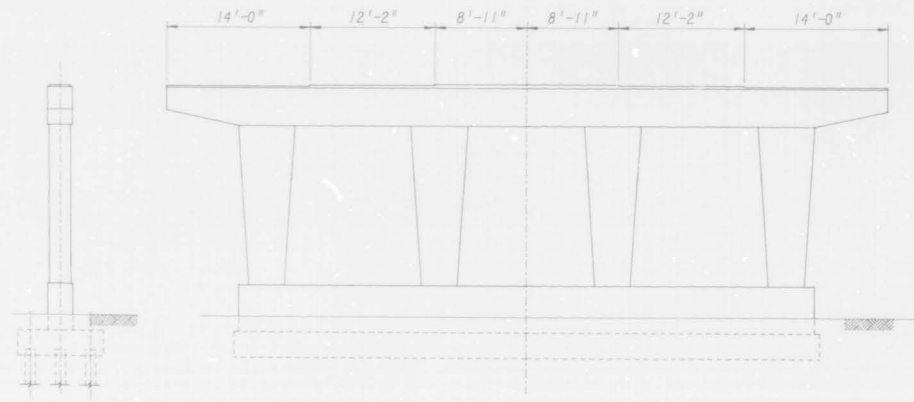


TOP PLAN



WEST ELEVATION

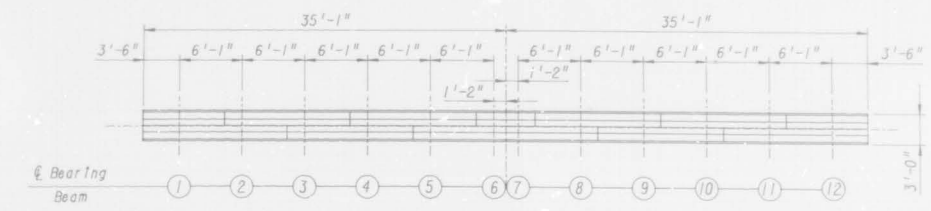
NORTH ELEVATION



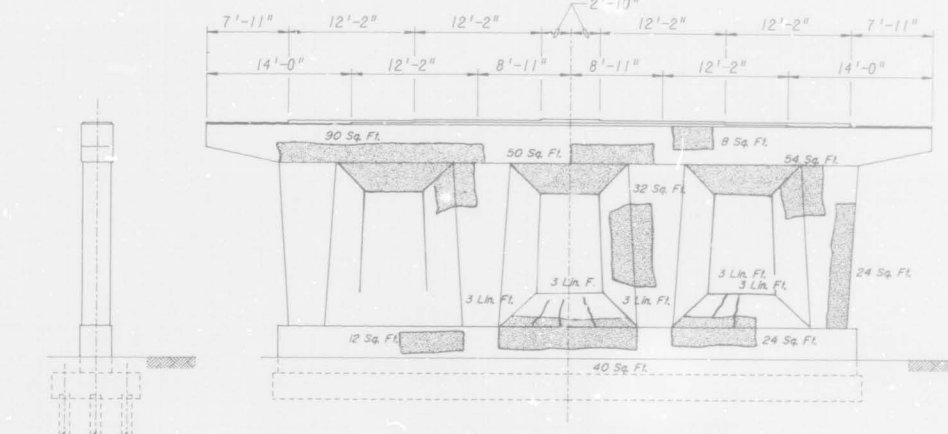
EAST ELEVATION

SOUTH ELEVATION

PIER 5

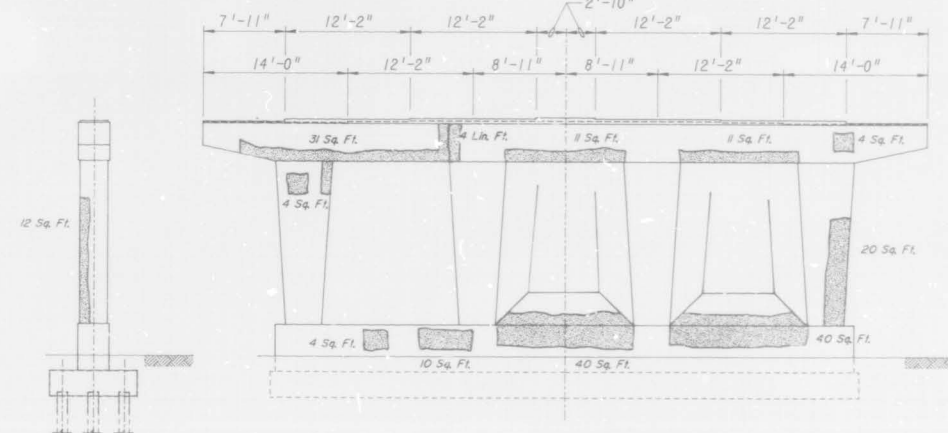


TOP PLAN



WEST ELEVATION

NORTH ELEVATION



EAST ELEVATION

SOUTH ELEVATION

PIER 6

Notes:

1. See Sheets 15 & 19 of 19 for Pier Dimensions and Beam Seat Elevations.
2. See Sheet 19 of 19 for Bill of Materials.
3. Quantities & location are for information purposes only. It shall be the Contractor's responsibility to verify such dimensions and details in the field and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in the scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.

LEGEND

- Formed Concrete Repair (Depth equal to or less than 5')
- Epoxy Crack Sealing

PRE= PIER56.PRF TAPE NO. 91  
FILE= PIER56.DWG  
W.U.= 1:12:4000  
SCALE= 1/8" = 1'-0" DATE: MARCH 5, 1991

<b>Donohue</b> Engineers & Architects			
DESIGN BY: S.C.L.	DESIGN CK'D BY: J.H.R.	DRAWN BY: R.K.B.	CHECKED BY: S.C.L.
PROJECT NUMBER 18046.004			

ILLINOIS DEPARTMENT OF TRANSPORTATION  
CERMAK ROAD OVER I.H.B.R.R. & GARDNER ROAD

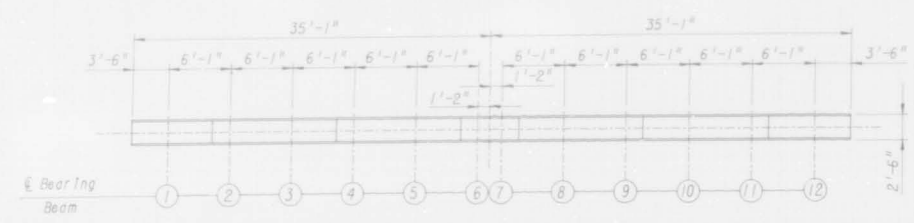
**PIERS 5 & 6**  
F.A.U. RTE 1453  
SECTION 551WRS & 551 (B, XB, VB & VB-1) BR-89  
STA. 271+89.00  
COOK COUNTY

Structure #: 016-0631 Date: Jan., 1992

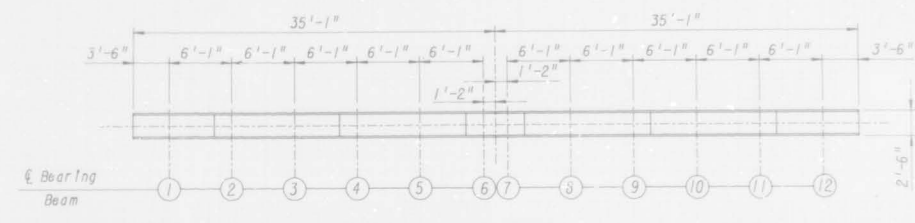


F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1453	**	COOK	233	152
FED. ROAD DIST. NO.	ALIGNED	FED. AID PROJECT		

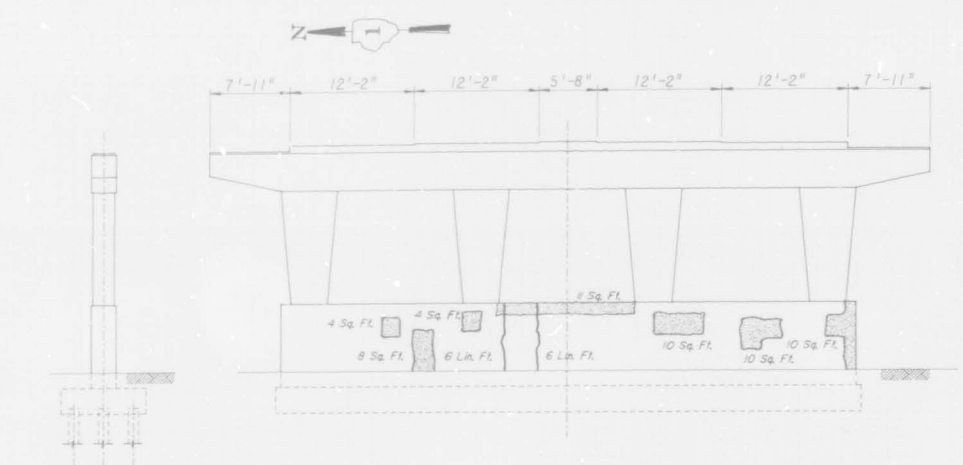
\*\*SECTION 551WRS 8  
551 (B, XB, VB & VB-1) BR-89



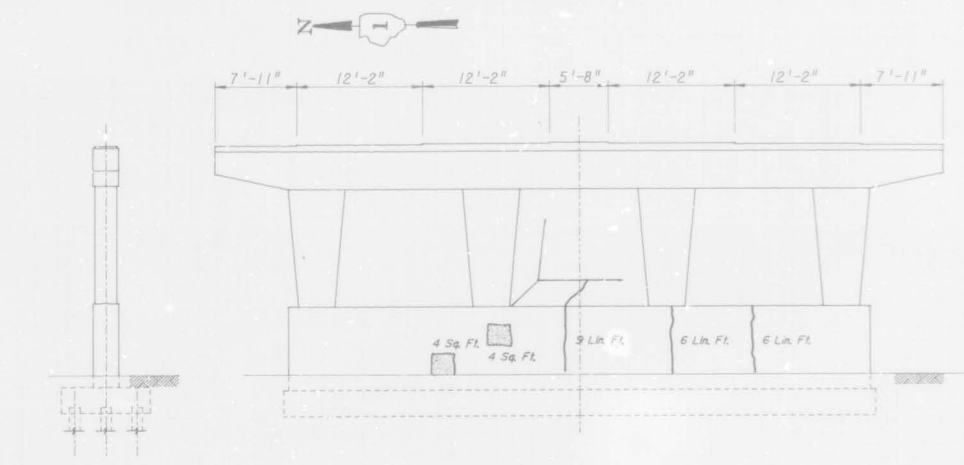
TOP PLAN



TOP PLAN



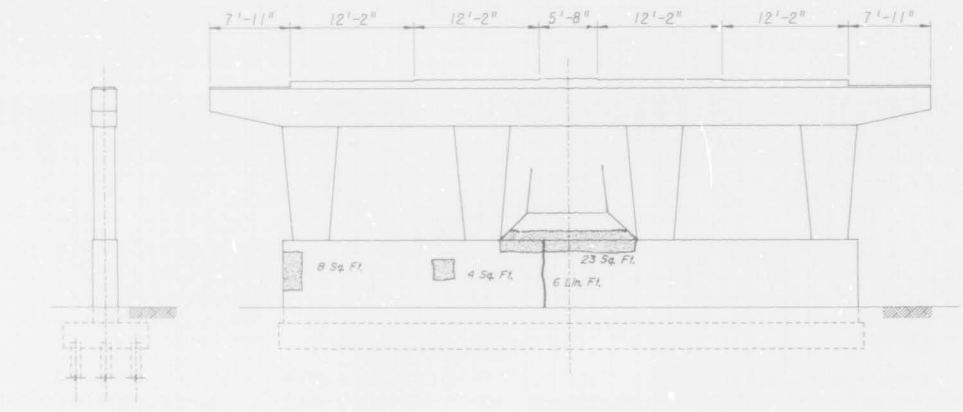
WEST ELEVATION



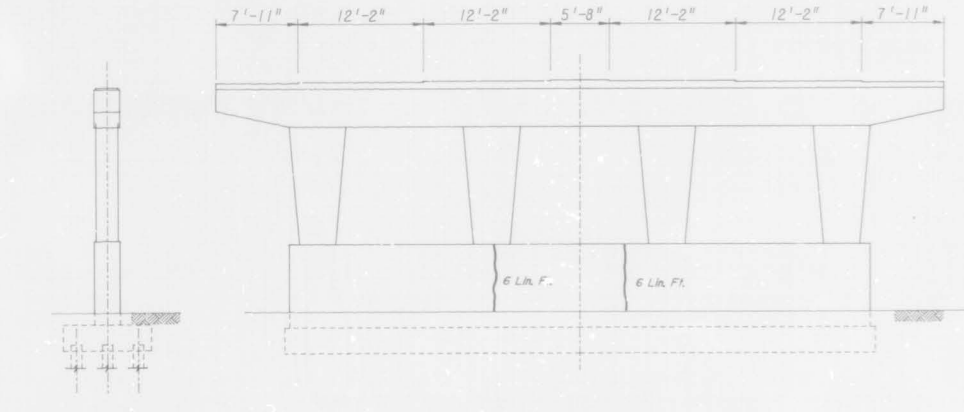
WEST ELEVATION

NORTH ELEVATION

NORTH ELEVATION



EAST ELEVATION



EAST ELEVATION

SOUTH ELEVATION

SOUTH ELEVATION

PIER 7

PIER 8

- Notes:**
1. See Sheets 15 & 19 of 19 for Pier Dimensions and Beam Seat Elevations.
  2. See Sheet 19 of 19 for Bill of Material.
  3. Quantities & location are for information purposes only. It shall be the Contractor's responsibility to verify such dimensions and details in the field and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in the scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.

**LEGEND**

Formed Concrete Repair (Depth equal to or less than 5")

Epoxy Crack Sealing

PREP: PIER 8, PAF  
FILE: PIER 8.DGN  
W.U.: 1/12/00  
SCALE: 1/8" = 1'-0"  
DATE: MARCH 1991

**Donohue**  
Engineers & Architects  
CORPORATE AND RESIDENTIAL

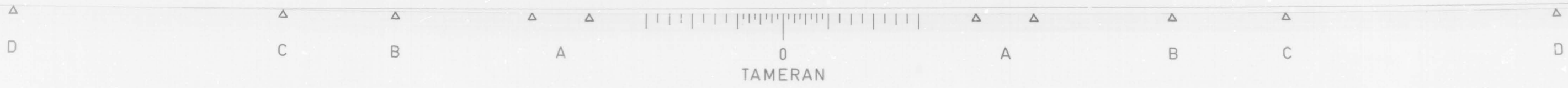
DESIGN BY: S.C.L.	DESIGN CK'D. BY: J.H.R.	DRAWN BY: R.K.B.	CHECKED BY: S.C.L.
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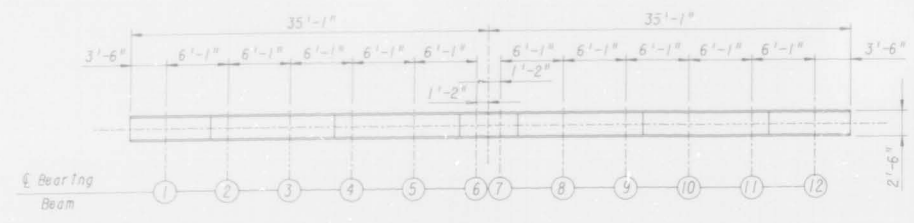
PROJECT NUMBER 18046.004

ILLINOIS DEPARTMENT OF TRANSPORTATION  
CERMAK ROAD OVER I.H.B.R.R. & SARDNER ROAD

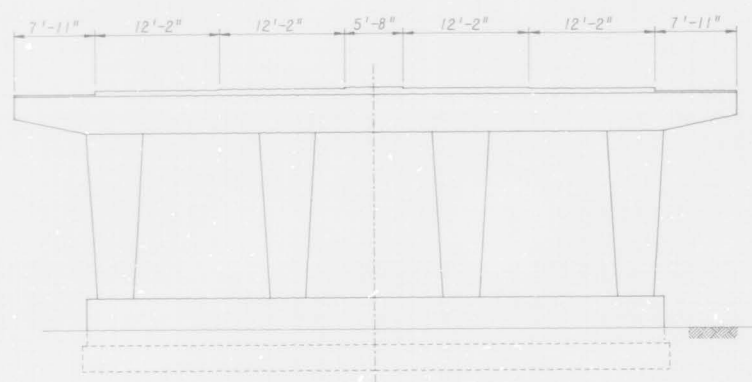
**PIERS 7 & 8**  
F.A.U. RTE 1453  
SECTION 551WRS & 551 (B, XB, VB & VB-1) BR-89  
STA. 271+89.00  
COOK COUNTY

Structure #: 016-0631 Date: Jan., 1992

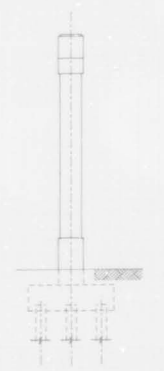




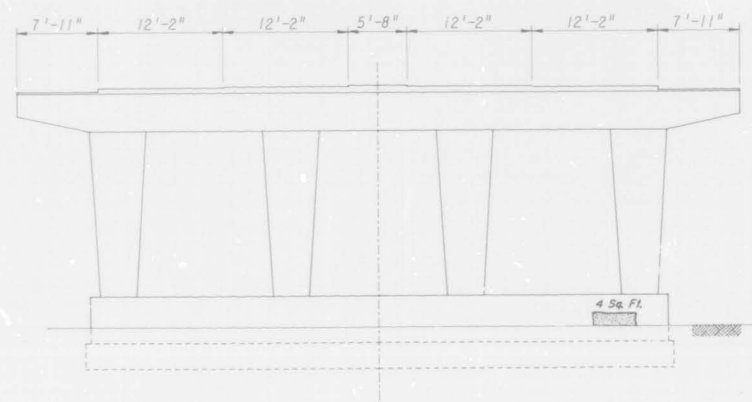
TOP PLAN



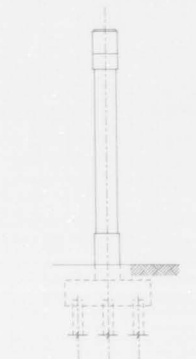
WEST ELEVATION



NORTH ELEVATION



EAST ELEVATION



SOUTH ELEVATION

PIER 9

**Notes:**

- See Sheet 15 of 19 for additional Pier dimensions.
- Quantities & location are for information purposes only. It shall be the Contractor's responsibility to verify such dimensions and details in the field and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in the scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.

**LEGEND**

- Formed Concrete Repair (Depth equal to or less than 5')
- Epoxy Crack Sealing

**Dimensions and Beam Seat Elevation Table**

	Pier 1	Pier 2	Pier 3		Pier 4	Pier 5	Pier 6		Pier 7	Pier 8	Pier 9
			W. Brg.	E. Brg.			W. Brg.	E. Brg.			
a	3'-6"	3'-6"	4'-6"		4'-6"	4'-6"	4'-6"		8'-0"	8'-0"	4'-6"
b	12'-5 3/8"	13'-7 7/8"	13'-10 3/8"		14'-2 3/8"	15'-5 1/2"	15'-9 1/4"		10'-1 1/8"	11'-4 1/4"	15'-1 1/2"
Elev. A	622.08	622.08	621.91		622.48	622.48	623.06		624.58	624.58	623.58
Elev. B	644.22	645.40	646.44		647.38	648.61	649.50		649.74	650.19	650.22
Beam 1	644.38	645.57	646.61	646.61	647.54	648.77	649.66	649.71	649.90	650.27	650.38
Beam 2	644.93	646.11	647.14	646.61	647.54	648.77	649.66	649.95	650.24	650.62	650.72
Beam 3	644.93	646.11	647.14	646.71	647.64	648.88	649.77	649.95	650.24	650.62	650.72
Beam 4	645.04	646.22	647.23	646.71	647.64	648.88	649.77	650.04	650.33	650.73	650.81
Beam 5	645.04	646.22	647.23	646.82	647.74	648.97	649.86	650.04	650.33	650.73	650.81
Beam 6	645.13	646.31	647.34	646.82	647.74	648.97	649.86	650.15	650.43	650.83	650.91
Beam 7	645.13	646.31	647.34	646.82	647.74	648.97	649.86	650.15	650.43	650.83	650.91
Beam 8	645.04	646.22	647.23	646.82	647.74	648.97	649.86	650.04	650.33	650.73	650.81
Beam 9	645.04	646.22	647.23	646.71	647.64	648.88	649.77	650.04	650.33	650.73	650.81
Beam 10	644.93	646.11	647.14	646.71	647.64	648.88	649.77	649.95	650.24	650.62	650.72
Beam 11	644.93	646.11	647.14	646.61	647.54	648.77	649.66	649.95	650.24	650.62	650.72
Beam 12	644.38	645.57	646.61	646.61	647.54	648.77	649.66	649.71	649.90	650.27	650.38

**Bill of Material**

Item	Unit	Pier 1	Pier 2	Pier 3	Pier 4	Pier 5	Pier 6	Pier 7	Pier 8	Pier 9	Total
Epoxy Crack Sealing	LIn. Ft.	3	0	32	18	0	19	18	33	0	123
Formed Conc. Repair (Depth ≤ 5')	Sq. Ft.	0	0	276	6	0	521	92	8	4	907

TRF= PIER9.PRF  
 FILE= PIER9.DGN  
 W.U.= 1:12=4000  
 SCALE= 1/8" = 1'-0"  
 DATE: MARCH 1991

**Donohue**  
Engineers & Architects

DESIGN BY: S.C.L.	DESIGN CK'D. BY: J.H.R.	DRAWN BY: R.K.B.	CHECKED BY: S.C.L.
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PROJECT NUMBER 18046.004

ILLINOIS DEPARTMENT OF TRANSPORTATION  
CERMAK ROAD OVER I.H.B.R.R. & GARDNER ROAD

**PIER 9**  
F.A.U. RTE 1453  
SECTION 551WRS & 551 (B, XB, VB & VB-1) BR-89  
STA. 271+89.00  
COOK COUNTY

Structure #: 016-0631 Date: Jan., 1992