016-0631

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1453	**	COOK	233	135
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

** SECTION 55IWRS & 55I (B, XB, VB & VB-I) 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+57 / 37' L (22nd), 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 (22nd), El. 646.41

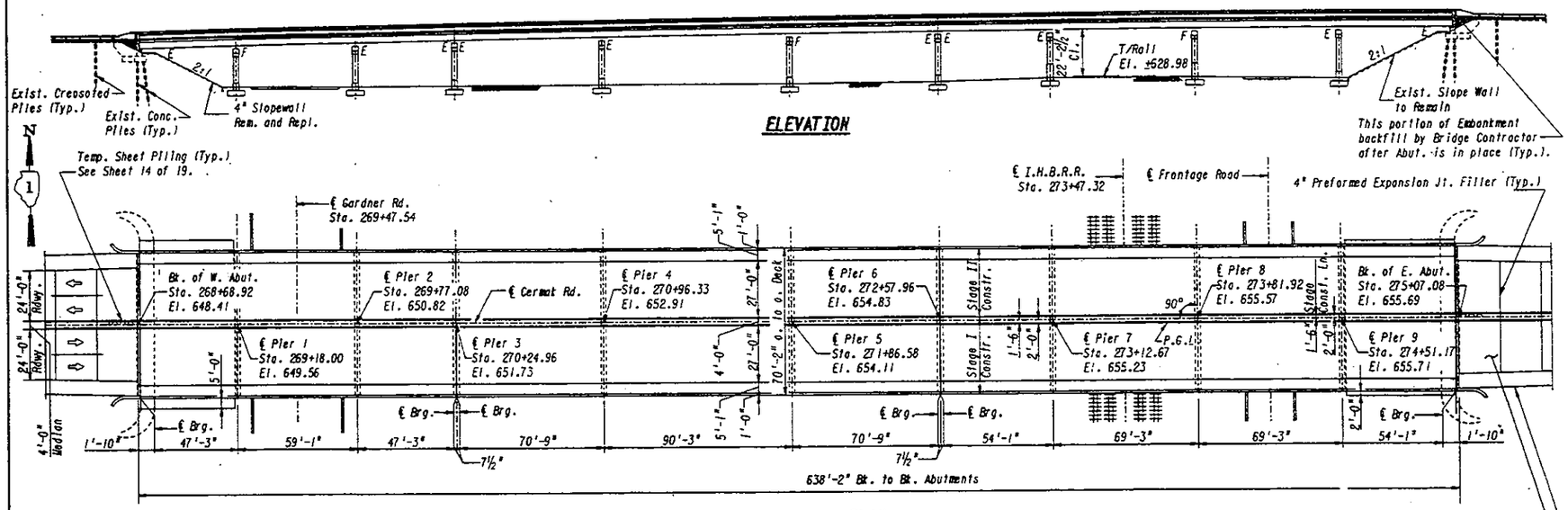
DESCRIPTION

CERMAK ROAD OVER I.H.B.R.R. & GARDNER ROAD
Sta. 272+40.47 S.B.I. Rte. 55 - Sect. 55I-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.

ELEVATION



PLAN

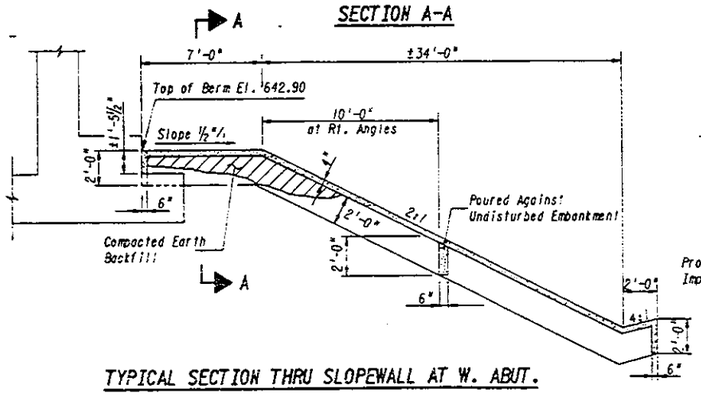
(All Elevations are given at Profile Grade)

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 2½"	Lin. Ft.	70	-	70
Preformed Joint Seal 4"	Lin. Ft.	70	-	70
Neoprene Expansion Joint 2½"	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 (Dect)	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 Dect Conc. Overlay Option (t=3¼")	Sq. Yd.	3,883	-	3,883
Conc. Bridge Dect Surf. Rem. (Method 3)	Sq. Yd.	3,722	-	3,722
Dect Slab Repair (Full-Depth, Type I)	Sq. Yd.	43	-	43
* Removing and Re-Erecting Existing Railing	Lin. Ft.	240		240

* See Special Provisions

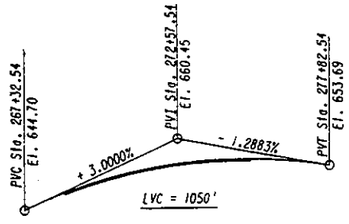
SECTION A-A



TYPICAL SECTION THRU SLOPEWALL AT W. ABUT.

PROFILE GRADE

(Along Median Edge of Roadway)



GENERAL NOTES

Fasteners shall be high strength bolts. Bolts ⅞" ϕ, open holes 1" ϕ, unless otherwise noted.

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

Two ⅛" 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 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 dect, 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)(2) of the Std. Specifications.

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'c = 3,500 psi.
f y = 60,000 psi. (Reinf.)
f y = 36,000 psi. (Struct.) M270 Gr. 36

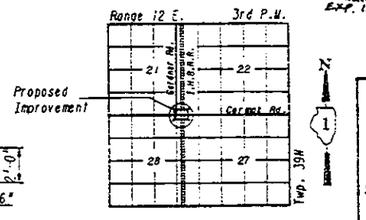
DESIGN STRESSES

For Exist. Structure
fc = 1,000 psi. (Substructure)
fc = 1,400 psi. (Superstructure)
fs = 20,000 psi. (Reinf.)
fs = 18,000 psi. (Struct.)

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

STATE OF ILLINOIS — PHILLIPS — 021-004424 — REGISTERED — PROFESSIONAL ENGINEER
Phillip D. Yang
EXP. 11/30/92

LOCATION SKETCH



Donohue
Engineers & Architects

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

PROJECT NUMBER 18046.004

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W.U.=
SCALE=
DATE:

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

GENERAL PLAN

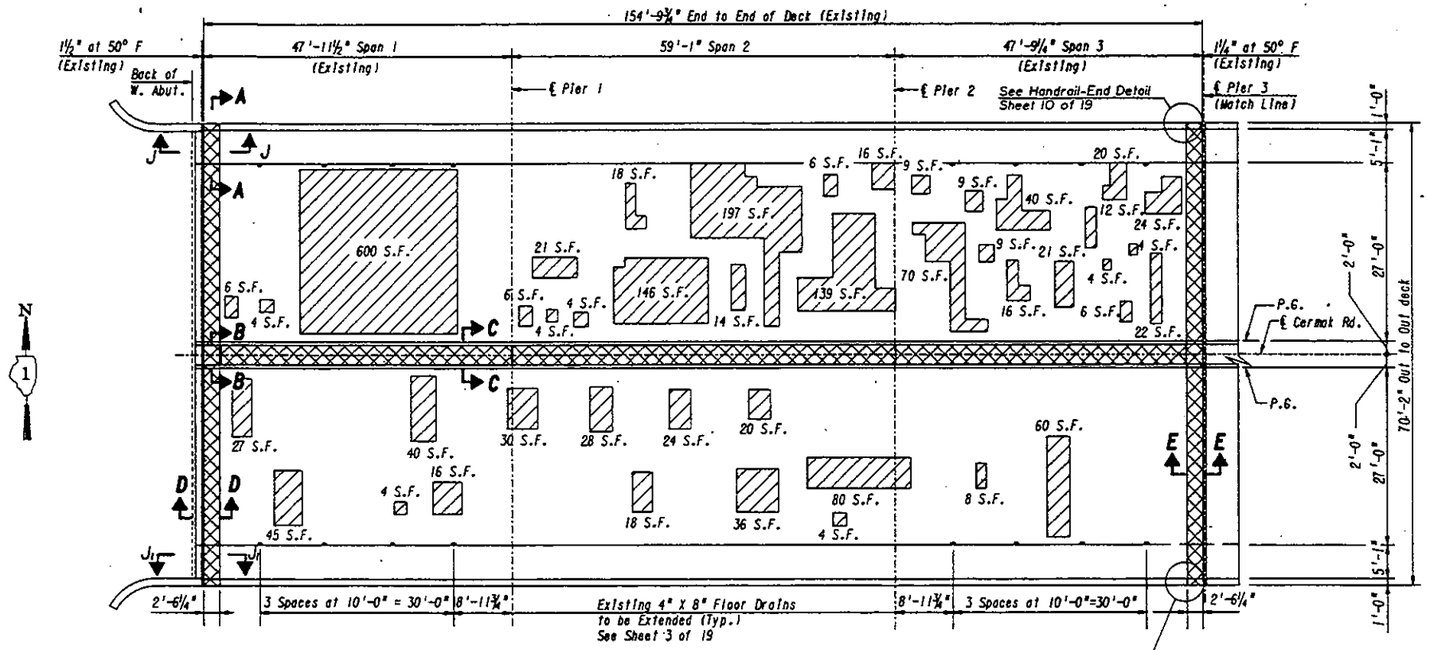
F.A.U. RTE 1453
SECTION 55IWRS & 55I (B, XB, VB & VB-I) BR-89
STA. 271+89.00
COOK COUNTY

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

Sheet 1 of 19

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1453	**	COOK	233	136
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

**SECTION 55HWRS & 55I (B, XB, VB & VB-I) BR-89



PLAN - DECK SLAB SPANS 1 THRU 3

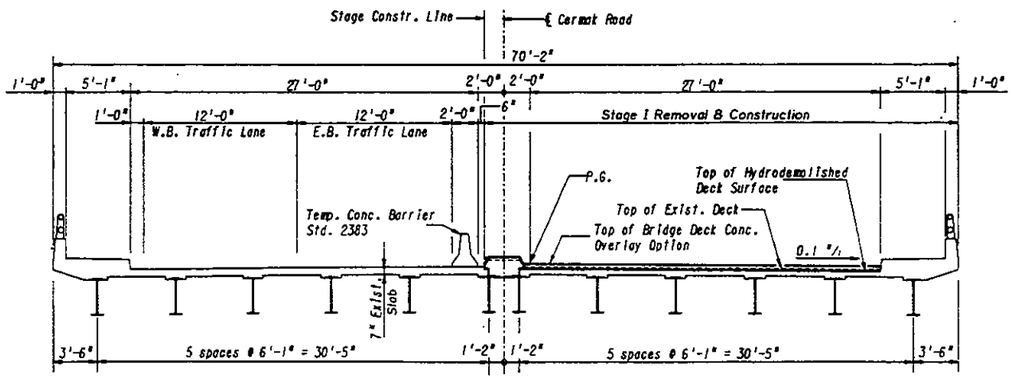
LEGEND

- Concrete Removal
- Delaminated Area

NOTES:

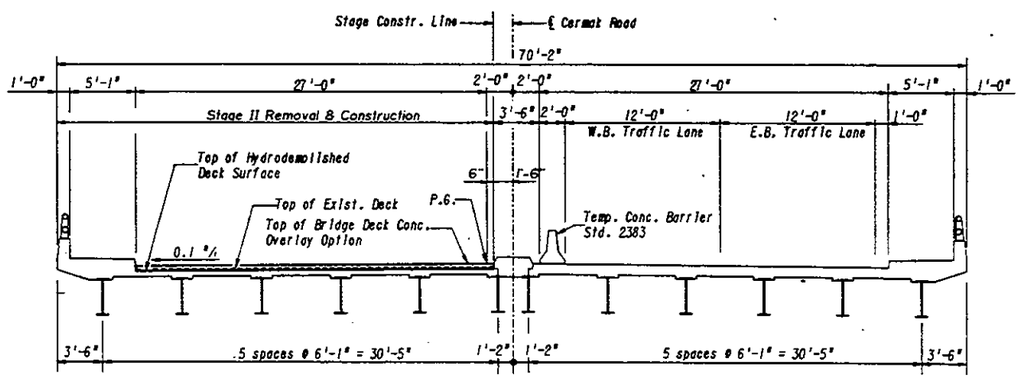
1. Quantities and location for delaminated areas are for information purposes only. After the completion of Concrete Bridge Deck Surface Removal (Method 3), the Engineer shall determine the location, dimensions & the type of deck slab removal required.
2. For Sections A-A, B-B & C-C, see Sheet 6 of 19.
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, J₁-J₁ and Handrail-End Detail see Sheet 10 of 19

159.8
234.8
248.0
630.4*



TYPICAL CROSS SECTION - STAGE I

Looking East



TYPICAL CROSS SECTION - STAGE II

Looking East

TAPE NO.
DATE:
PRF=
FILE=
W.U.=
SCALE=

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 18046.004

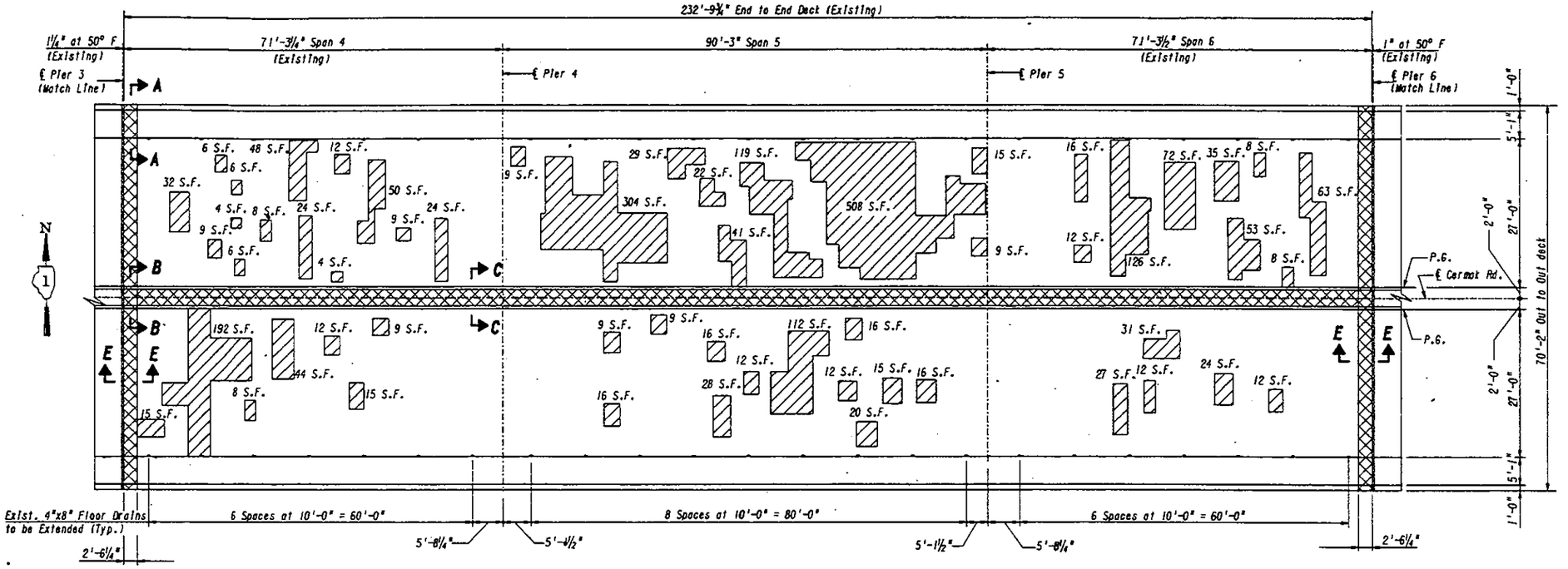
ILLINOIS DEPARTMENT OF TRANSPORTATION
CERMAK ROAD OVER I.H.B.R.R. & GARDNER ROAD

DECK SLAB SPAN 1 - SPAN 3

F.A.U. RTE 1453
SECTION 55HWRS & 55I (B, XB, VB & VB-I) BR-89
STA. 271+89.00
COOK COUNTY
Structure #: 016-0631 Date: Jan., 1992

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

**SECTION 55(WRS & 55I (B, XB, VB & VB-I) BR-89



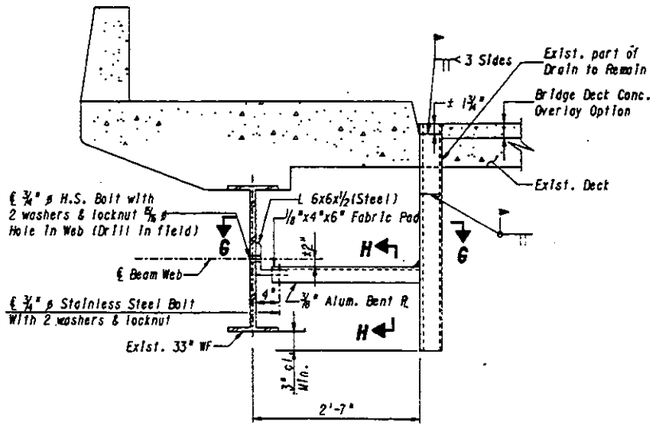
PLAN - DECK SLAB SPANS 4 THRU 6

LEGEND

- Concrete Removal
- Delaminated Area

NOTES:

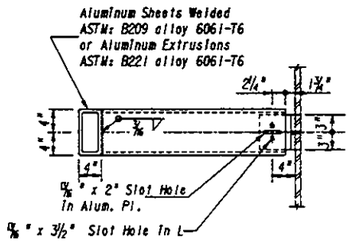
1. Quantities and location for delaminated areas are for information purposes only. After the completion of Concrete Bridge Deck Surface Removal (Method 3), the Engineer shall determine the location, dimensions & the type of deck slab removal required.
2. For Sections A-A, B-B & C-C, see Sheet 6 of 19.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



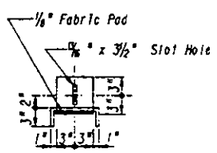
FLOOR DRAIN EXTENSION DETAIL

(82 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.

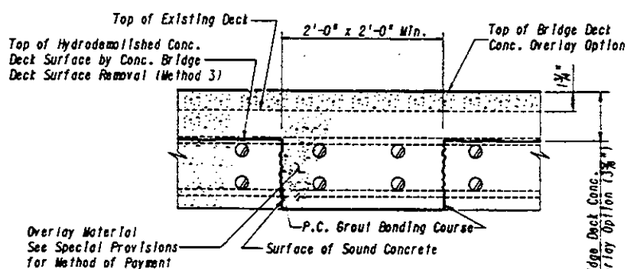


SECTION G-G



SECTION H-H

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.



BRIDGE DECK CONC. OVERLAY - METHOD 3

Donohue Engineers & Architects			
DESIGN BY: S.C.L.	DESIGN CK'D. BY: J.A.P.	DRAWN BY: M.J.T.	CHECKED BY: S.C.L.
PROJECT NUMBER 18046.004			

TAPE NO. DATE:
PRF= FILE= W.U.= SCALE=

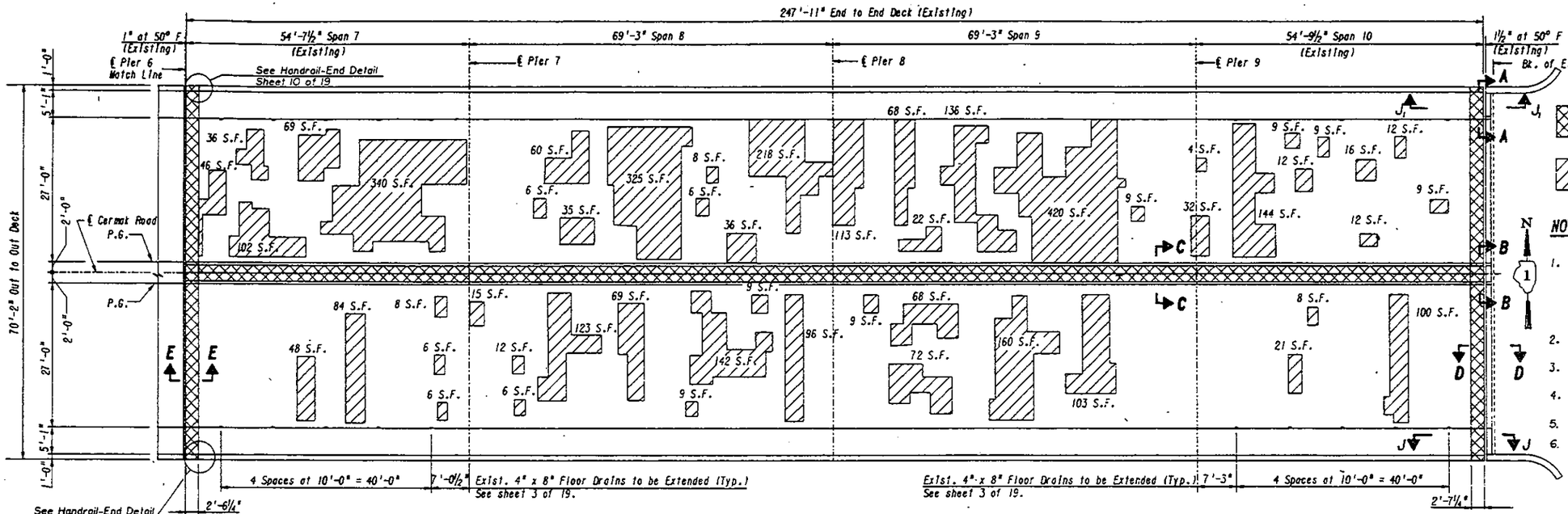
ILLINOIS DEPARTMENT OF TRANSPORTATION
CERMAK ROAD OVER I.H.B.R.R. & GARDNER ROAD

DECK SLAB SPAN 4 - SPAN 6

F.A.P. RTE 1453
SECTION 55(WRS & 55I (B, XB, VB & VB-I) 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	138
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

**SECTION 55IWRS &
55I (B, XB, VB & VB-1) BR-89



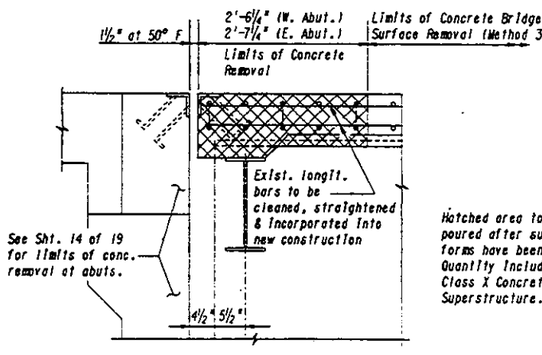
PLAN - DECK SLAB SPANS 7 THRU 10

LEGEND

- Concrete Removal
- Delaminated Area

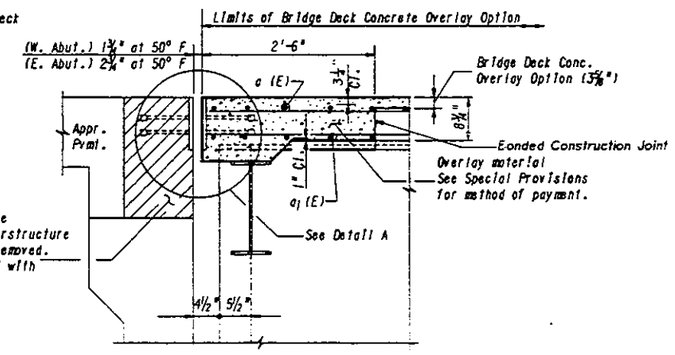
NOTES:

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 repair required.
2. For Sections A-A, B-B & C-C, see Sheet 5 of 19.
3. For Section E-E, see Sheet 7 of 19.
4. For Superstructure Bill of Material, see Sheet 7 of 19.
5. For Section D-D, see Sheet 4 of 19
6. For Sections J-J, J_1-J_1 and Handrail-End Detail see Sheet 10 of 19



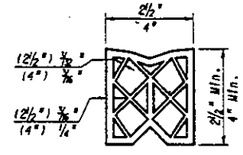
SHOWING REMOVAL

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

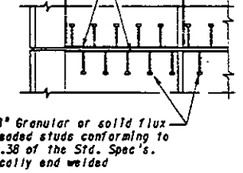


SHOWING NEW CONSTRUCTION

SECTION D-D

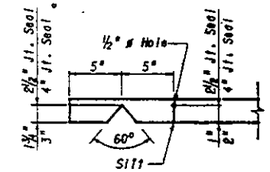


PREFORMED JOINT SEAL (2½")
PREFORMED JOINT SEAL (4")

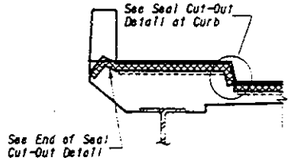


PLAN

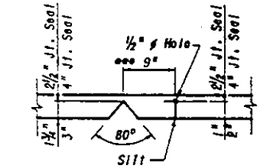
* Cut retainer bars in sidewalk 6" short of sidewalk face.



END OF SEAL CUT-OUT



SECTION

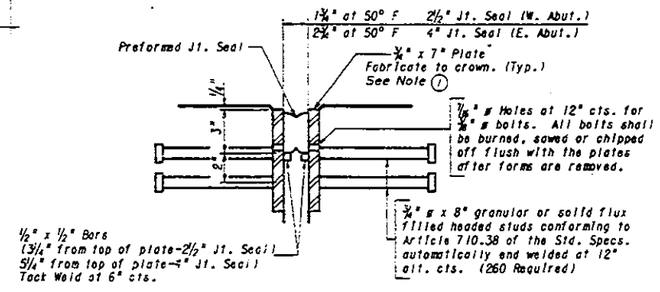


SEAL CUT-OUT AT CURB

*** 6" at Median

TYPICAL SEAL TREATMENTS AT SIDEWALK

(Median Similar Except As Noted)



DETAIL A

Note ① Furnish in segments of 20 ft. maximum length. Maximum space between installed segments shall be ⅜". Seal space with Silicone Sealant suitable for Structural Steel.

TAPE NO.
DATE:
PRF=
FILE=
W.U.=
SCALE=

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			

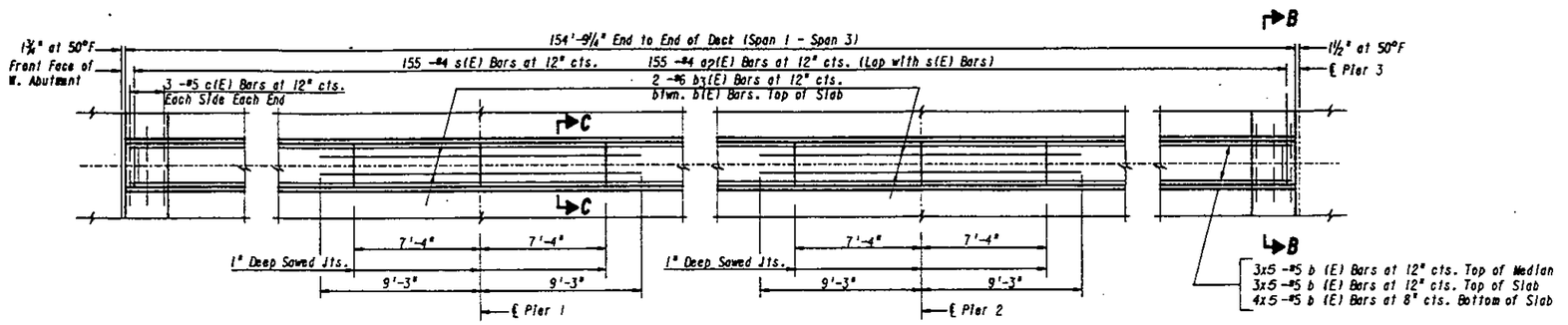
ILLINOIS DEPARTMENT OF TRANSPORTATION
CERMAK ROAD OVER I.H.B.R.R. & GARDNER ROAD

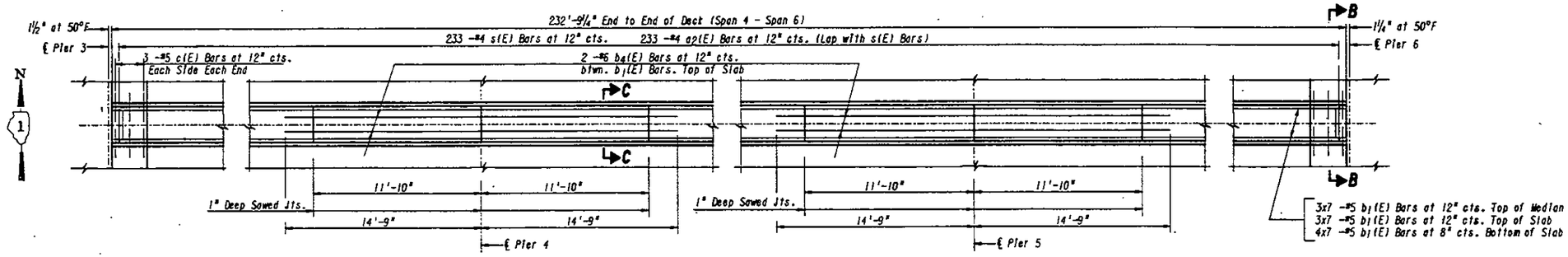
DECK SLAB SPAN 7 - SPAN 10

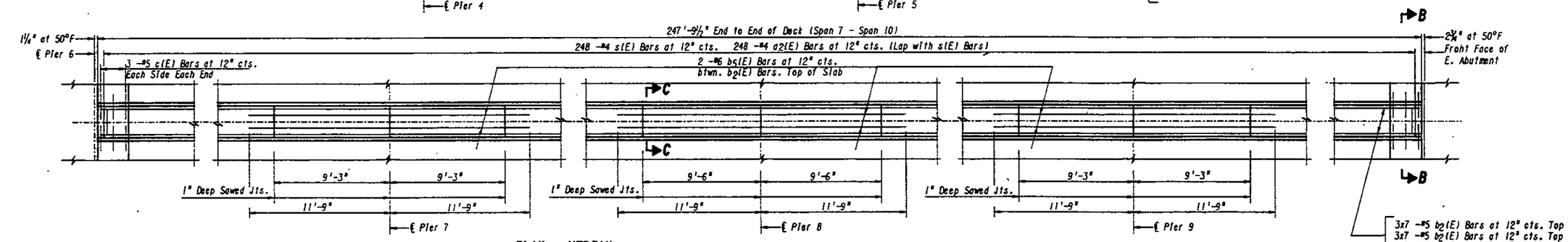
F.A.U. RTE 1453
SECTION 55IWRS & 55I (B, XB, VB & VB-1) BR-89
STA. 27+489.00
COOK COUNTY
Structure #: 016-0631
Date: Jan., 1992

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1453	**	COOK	233	139
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

**SECTION 55IWRS & 55I (B, XB, VB & VB-1) BR-89







NOTES:

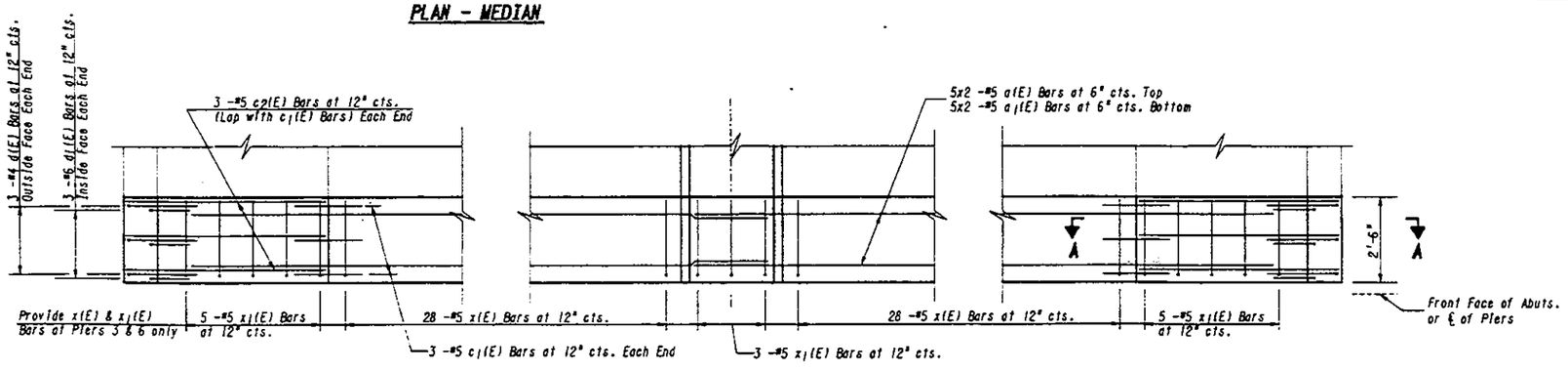
For Sections A-A, B-B, & C-C, see Sheet 6 of 19.

Reinforcement bars designated (E) shall be epoxy coated.

Bars indicated thus 2x3 -#5 etc. indicates 2 lines of bars with 3 lengths per line.

Minimum lap for #5 bars = 2'-2"

PLAN - MEDIAN



PLAN - TRANSVERSE JOINTS

$a_2(E)$, b (E) thru $b_2(E)$, c (E) & s (E) bars not shown for clarity.

Trans. Jts. at E. Abut. & West of Piers 3 & 6

Trans. Jts. at W. Abut. & East of Piers 3 & 6

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

TRANSVERSE JOINTS & MEDIAN

F.A.U. RTE 1453
SECTION 55IWRS & 55I (B, XB, VB & VB-1) BR-89
STA. 27+89.00
COOK COUNTY
Structure #: 016-0631

Date: Jan., 1992

Donohue
Engineers & Architects

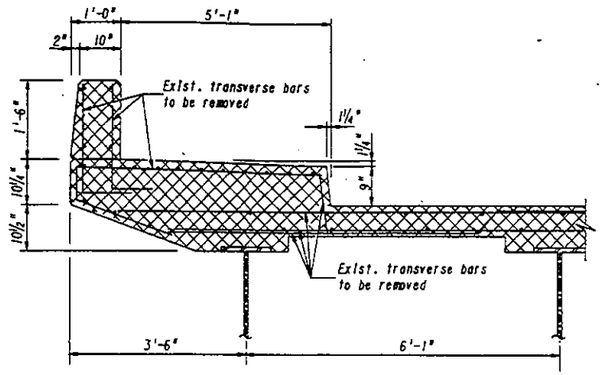
DESIGN BY: S.C.L.	DESIGN CK'D. BY: P.D.F.	DRAWN BY: E.Z.	CHECKED BY: S.C.L.

PROJECT NUMBER 18046.004

PRF=TRANJT.PRF TAPE NO.
FILE=TRANJT.DGN
W.U.=
SCALE=¼" = 1'-0" DATE:

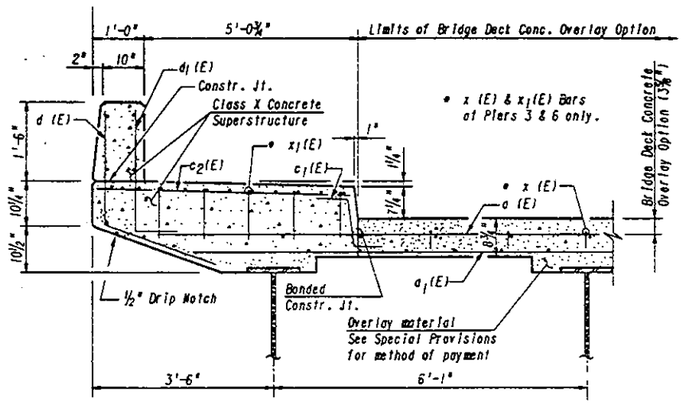
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1453	**	COOK	233	140
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

**SECTION 55IWRS & 55I (B, XB, VB & VB-I) BR-89



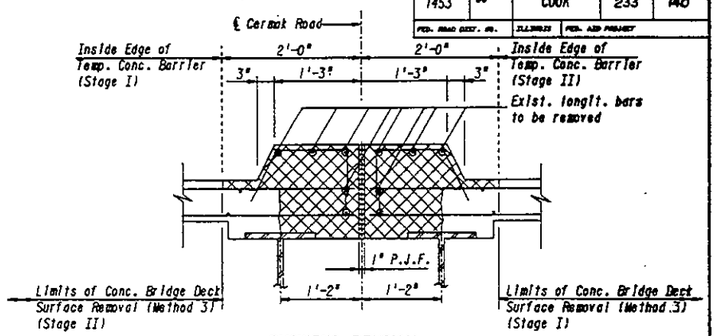
SHOWING REMOVAL

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.



SHOWING REMOVAL

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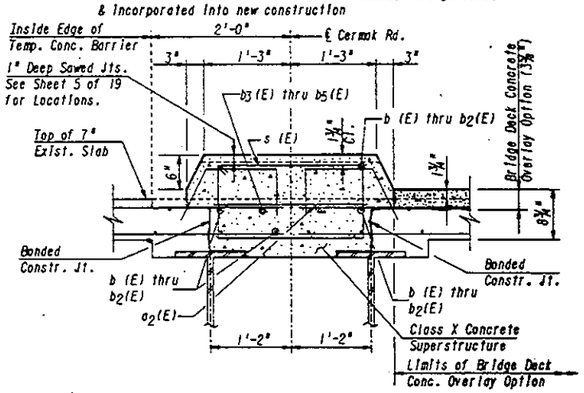
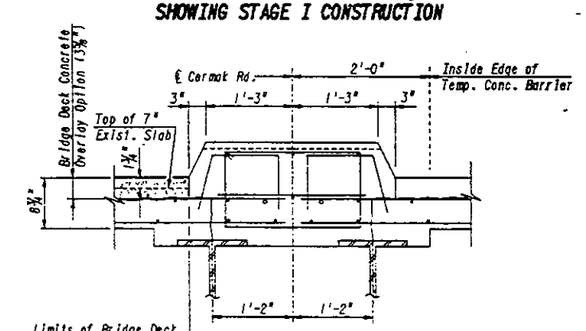
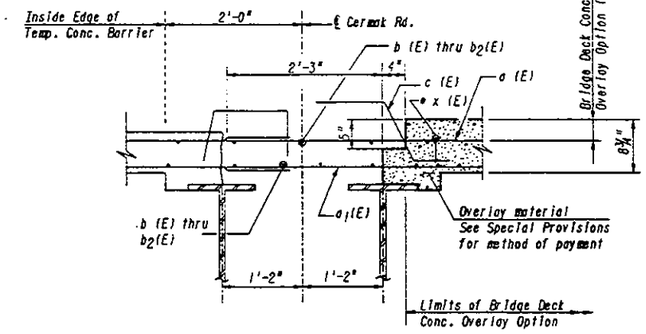


SHOWING STAGE I CONSTRUCTION

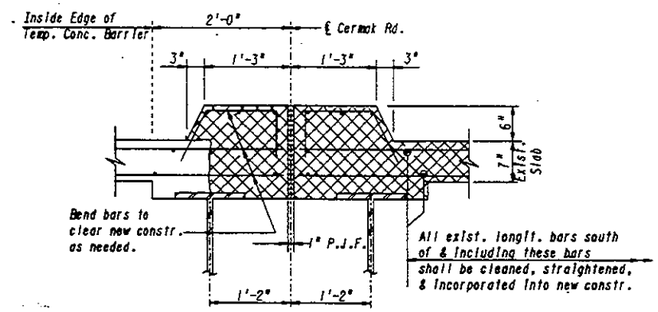


SHOWING STAGE II CONSTRUCTION



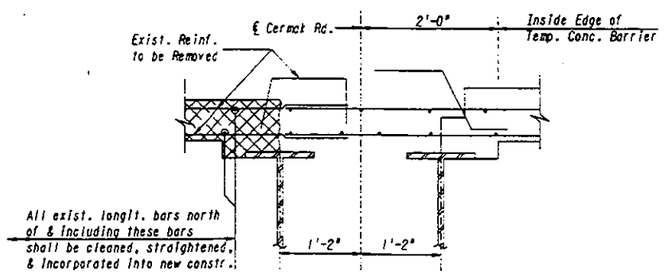
SHOWING STAGE I CONSTRUCTION

* x (E) & x1(E) Bars at Piers 3 & 6 only.

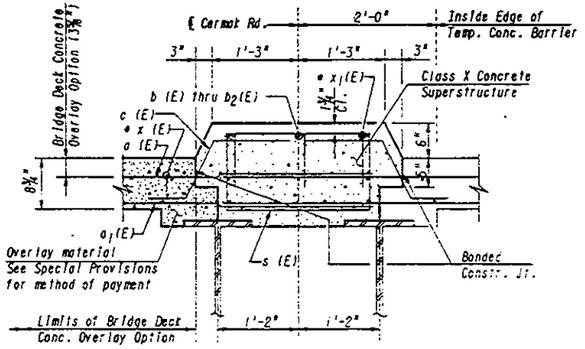


SHOWING STAGE I REMOVAL

All exist. reinf. bars to be removed except as noted.



SHOWING STAGE II REMOVAL



SHOWING STAGE II CONSTRUCTION

SECTION A-A

SECTION B-B

Looking East

SECTION C-C

Looking East

LEGEND

- Concrete Removal

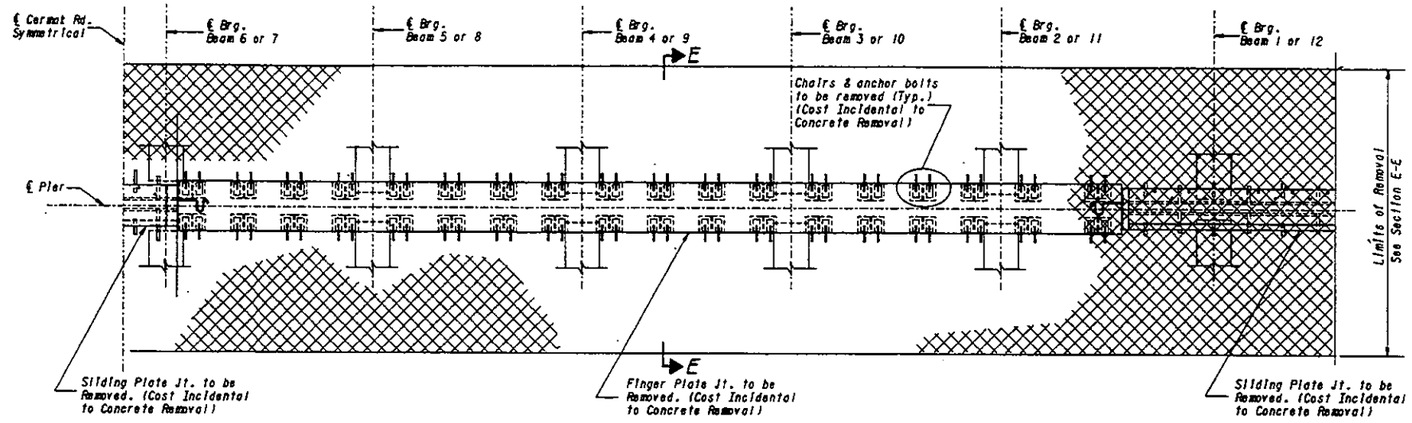
Donohue Engineers & Architects			
DESIGN BY: S.C.L.	DESIGN CK'D. BY: P.D.F.	DRAWN BY: E.Z.	CHECKED BY: H.S.
PROJECT NUMBER 18046.004			

PRF=dectgard.prf TAPE NO.
FILE=dectgard.prf
W.U.=
SCALE=
DATE:

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

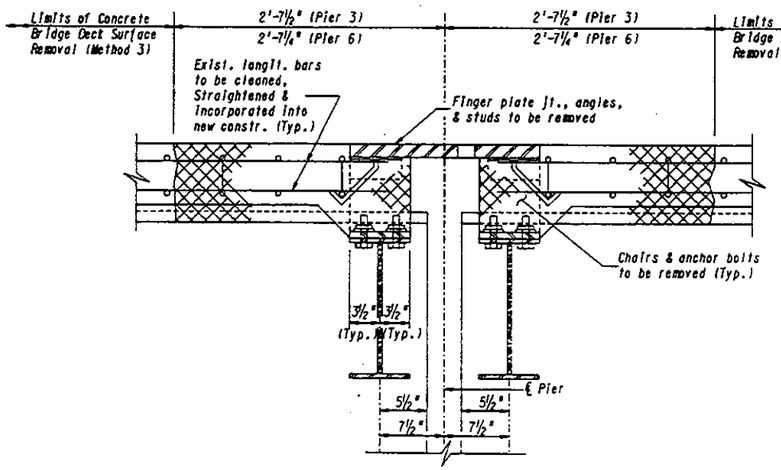
TRANSVERSE JOINT & MEDIAN DETAILS

F.A.U. RTE 1453
SECTION 55IWRS & 55I (B, XB, VB & VB-I) BR-89
STA. 27+489.00
COOK COUNTY
Structure #: 016-0631
Date: Jan., 1992



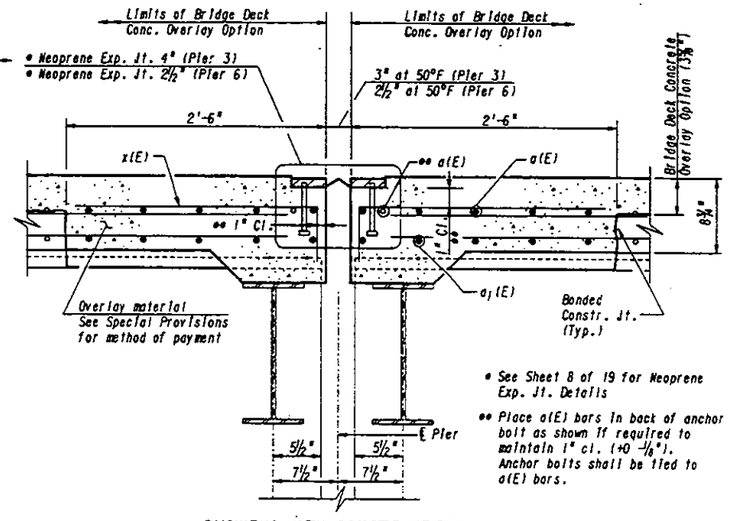
HALF PLAN - TRANSVERSE JT. AT PIERS 3 & 6

(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

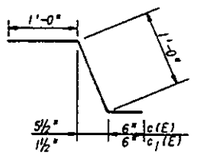


• See Sheet 8 of 19 for Neoprene Exp. Jt. Details

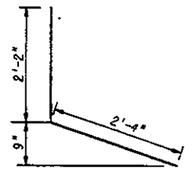
•• Place a(E) bars in back of anchor bolt as shown if required to maintain 1" cl. (+0 -⅛"). Anchor bolts shall be tied to a(E) bars.

SHOWING NEW CONSTRUCTION

SECTION E-E

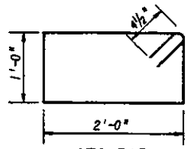


c(E) & c1 (E) BARS

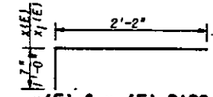


d(E) BAR

d1(E) BAR



s(E) BAR



x(E) & x1 (E) BARS

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

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1453	**	COOK	233	141
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

SUPERSTRUCTURE BILL OF MATERIAL

BAR	NO.	SIZE	LENGTH	SHAPE
a(E)	60	#5	33'-9"	
a1(E)	60	#5	34'-9"	
a2(E)	636	#4	2'-2"	
b(E)	50	#5	32'-8"	
b1(E)	70	#5	35'-2"	
b2(E)	70	#5	37'-3"	
b3(E)	4	#6	18'-6"	
b4(E)	4	#6	89'-6"	
b5(E)	6	#6	23'-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)	636	#4	6'-9"	
x(E)	224	#5	2'-9"	
x1(E)	52	#5	3'-2"	

Removing and Re-Erecting Existing Railing	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 (3⅜")	Sq. Yd.	3,883
Class X Concrete Superstructure	Cu. Yd.	812.4
Preformed Joint Seal 2½"	Lin. Ft.	70
Preformed Joint Seal 4"	Lin. Ft.	70
Neoprene Expansion Joint 2½"	Lin. Ft.	70
Neoprene Expansion Joint 4"	Lin. Ft.	70
Floor Drain Extension	Each	82

Note (1) 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.

LEGEND

Concrete Removal

Donohue Engineers & Architects

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

PROJECT NUMBER 18046.004

PRF= EXJT1.PRF TAPE NO.
FILE= EXJT1.DGN
W.U.= 1:12.8000
SCALE= ¼" = 1'-0" DATE: APRIL 10, 1991

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

TRANSVERSE JOINT DETAILS

F.A.U. RTE 1453
SECTION 55IWRS & 55I (B, XB, VB & VB-1) BR-89
STA. 271+69.00
COOK COUNTY
Structure #: 016-0631
Date: Jan., 1992

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1453	**	COOK	233	142
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

**SECTION 55IWRS B
55I (B, XB, VB & VB-I) BR-89

Joint Size	"C" at 50°F	"D" at 50°F
~~3"~~	~~2"~~	~~1¼" Min.~~
2½"	2½"	1⅞" Min.
4"	3"	2½" Min.

INSTALLATION NOTES

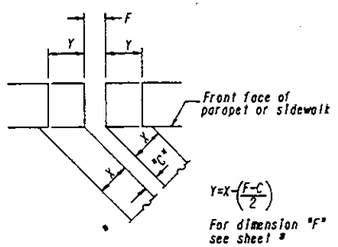
1. Install sponge mandrels into positions shown to form flap convolution.
2. Install parapet or sidewalk piece (trim roadway flap to fit before applying epoxy).
3. Install continuous seal in roadway.
4. Install anchor blocks as indicated.

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

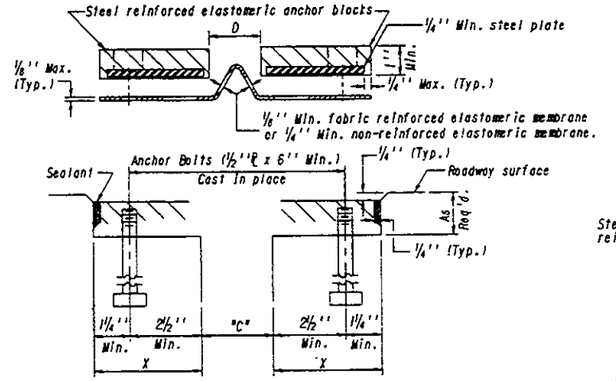
SKEW LIMITATIONS

The details of the anchor blocks and the elastomeric membrane in the parapet, as shown, are for up to 50° skews.

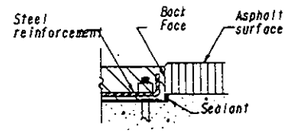
For skews greater than 50°, the anchor blocks and the elastomeric membrane, installed in accordance with dimension "D", might require modifications to insure a minimum clearance of 1½" from centerline of anchor studs to edge of parapet opening. The anchor blocks and the elastomeric membrane shall also 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.

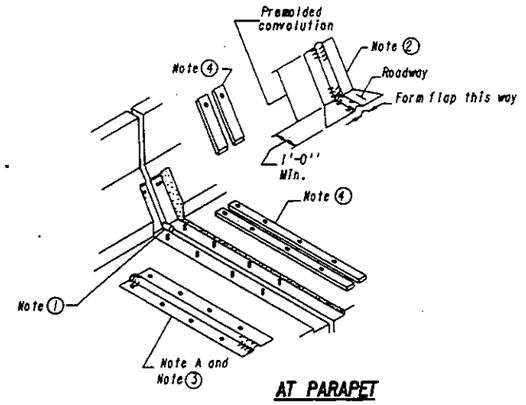
The elastomeric membrane shall be premolded with a single or a double upward convolution that will have a "memory" to return to its molded position upon joint closure.

The steel reinforcement must extend up the back face of anchor blocks when asphalt surfaces are used but is optional in concrete blockout.

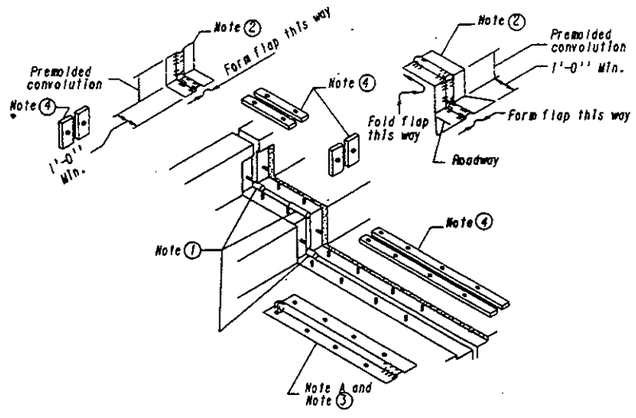
The convolution length shall be such that the extended length will not be greater than the manufactured length when the joint is fully expanded in its design range and will not protrude above the anchor blocks when the joint is fully compressed.

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.

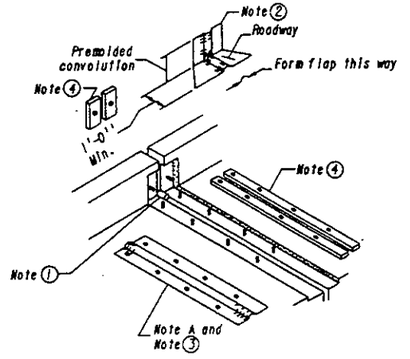
The parapet and sidewalk flaps may be furnished factory vulcanized to the roadway membrane provided the centerline of the convolution is maintained and the process and method meet the approval of the Engineer.



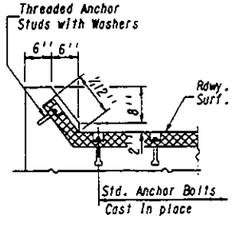
AT PARAPET



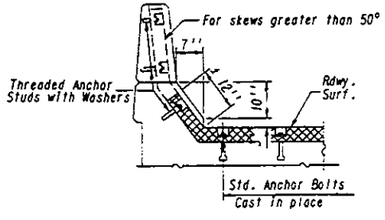
AT SIDEWALK OR MEDIAN



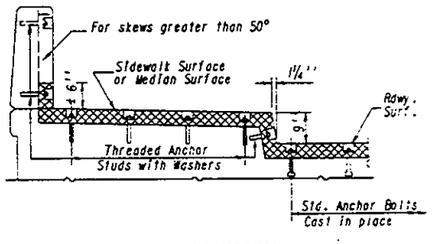
AT WALL



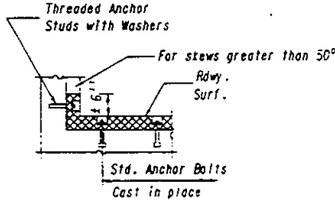
AT CURB



AT PARAPET



AT SIDEWALK OR MEDIAN
TYPICAL END TREATMENTS



AT WALL

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FILE=NEO01BB.DGN
W.U.=
SCALE=
DATE:

EJ-CS 6-1-89

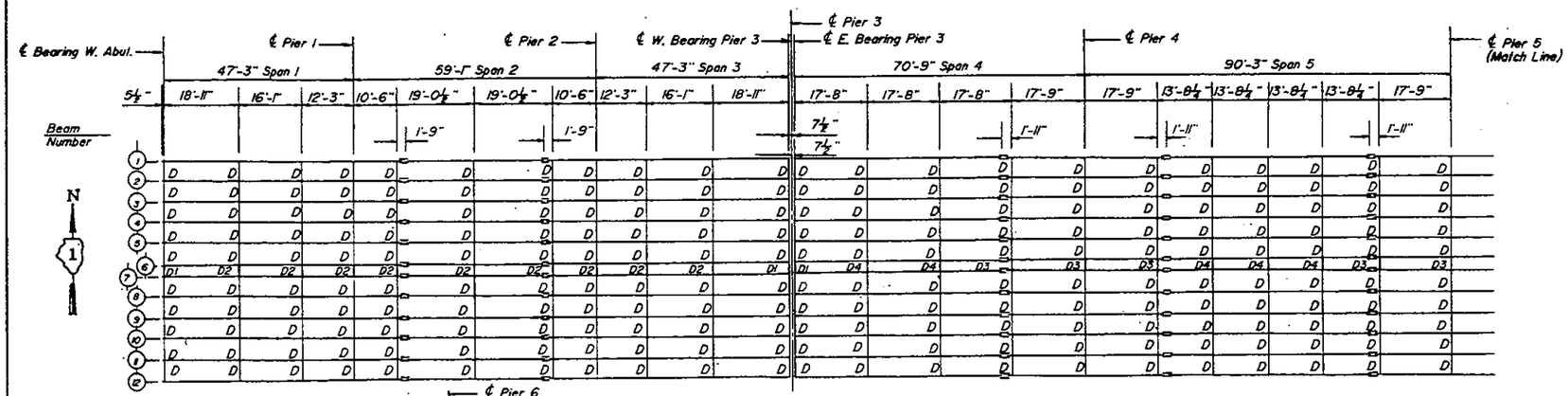
ILLINOIS DEPARTMENT OF TRANSPORTATION
CERMAK ROAD OVER I.H.B.R.R. & GARDNER ROAD

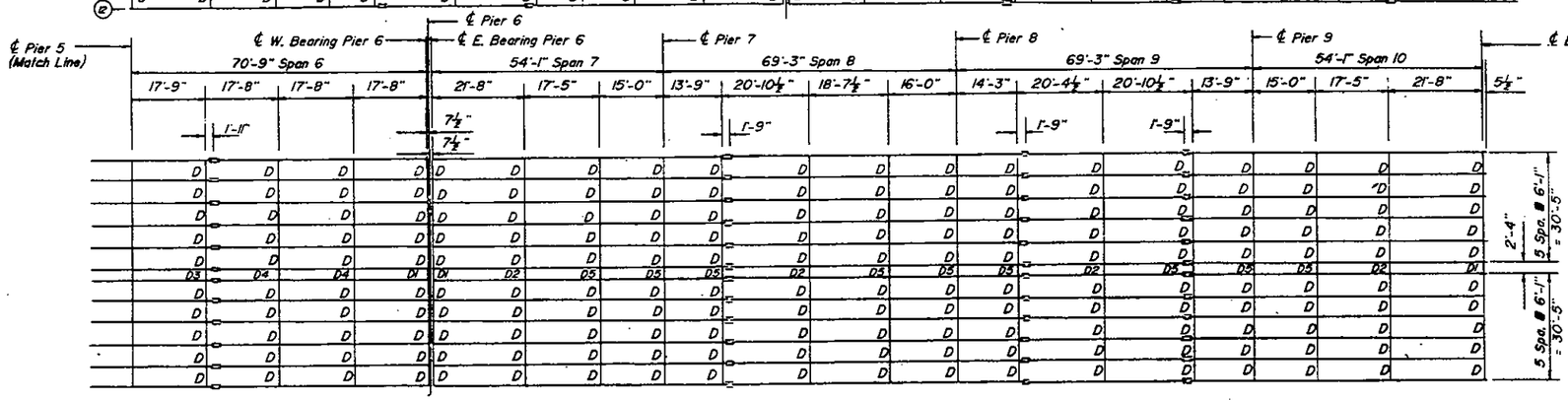
CONTINUOUS SEAL TYPE NEOPRENE EXPANSION JOINTS

F.A.U. RTE 1453
SECTION 55IWRS & 55I (B, XB, VB & VB-I) 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	143
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

**SECTION 55IWRS 8
55I (B, XB, VB & VB-I) BR-89





FRAMING PLAN

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 10of 19

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
Is	(in^4)	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
Ss	(In^3)	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
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 Q	('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	105.2	104.3	105.2	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
fs	(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 Q	(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

Is and Ss are the moment of inertia and section modulus of the steel section used in computing fs.

Donohue
Engineers & Architects

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

PROJECT NUMBER 18046.004

PRF=
FILE=
W.U.=
SCALE= 8

TAPE NO.
DATE:

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

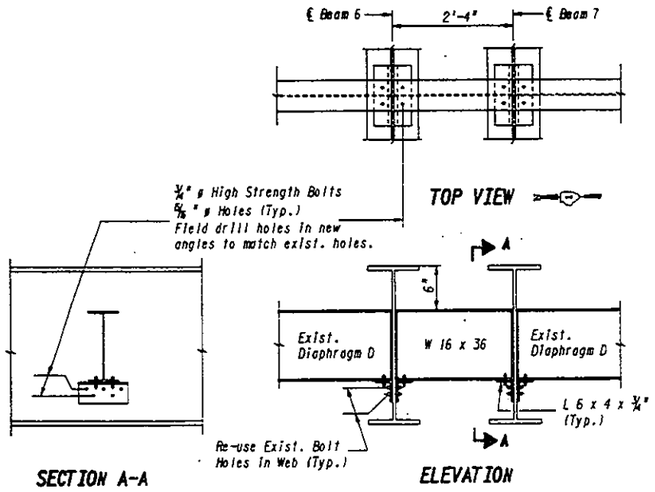
FRAMING PLAN

F.A.U. RTE 1453
SECTION 55IWRS 8 551 (B, XB, VB & VB-I) BR-89
STA. 27+89.00
COOK COUNTY

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

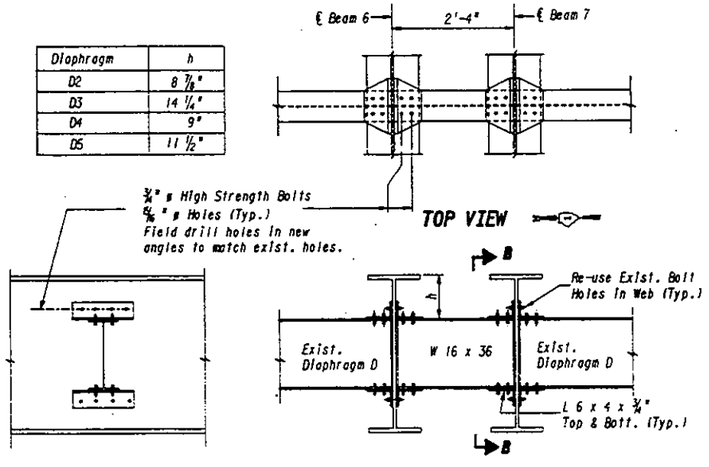
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1453	**	COOK	233	144
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

** SECTION 55IWRS & 55I (B, XB, VB & VB-I) BR-89



DIAPHRAGM D1

(6 Required)



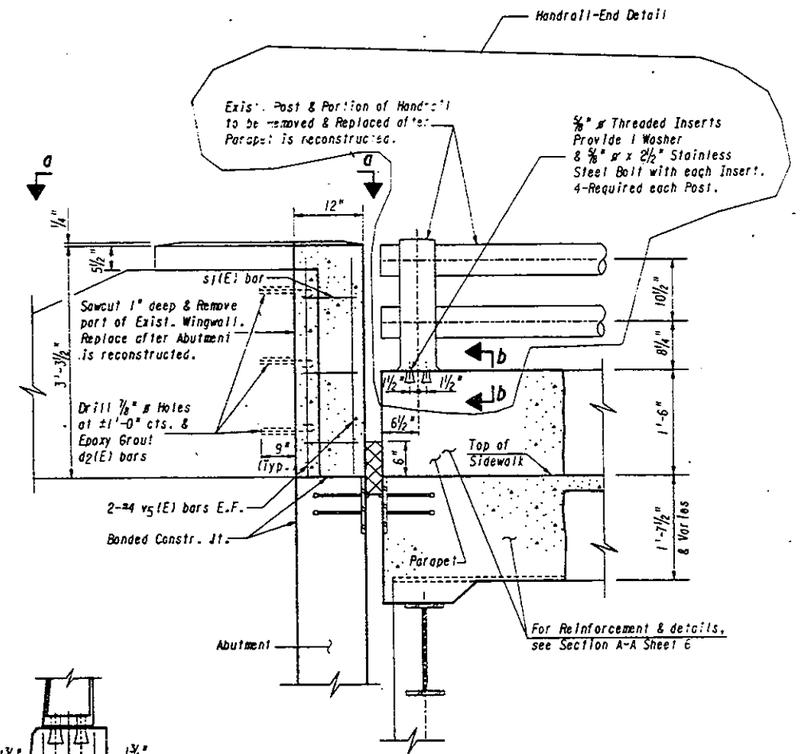
Diaphragm	h
D2	8 ⅞"
D3	14 ¼"
D4	9"
D5	11 ½"

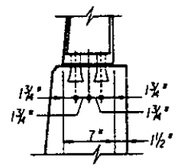
DIAPHRAGMS D2 THRU D5

(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.

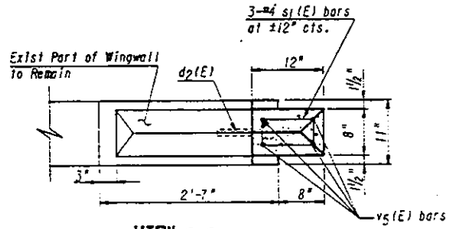




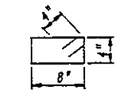
VIEW b-b

SECTION J-J

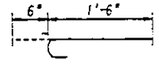
SECTION J_1 - J_1 (similar)



VIEW a-a



s_1 (E) BAR



d_2 (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.
DATE:
PRF=
FILE=
W.U.=
SCALE=

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

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

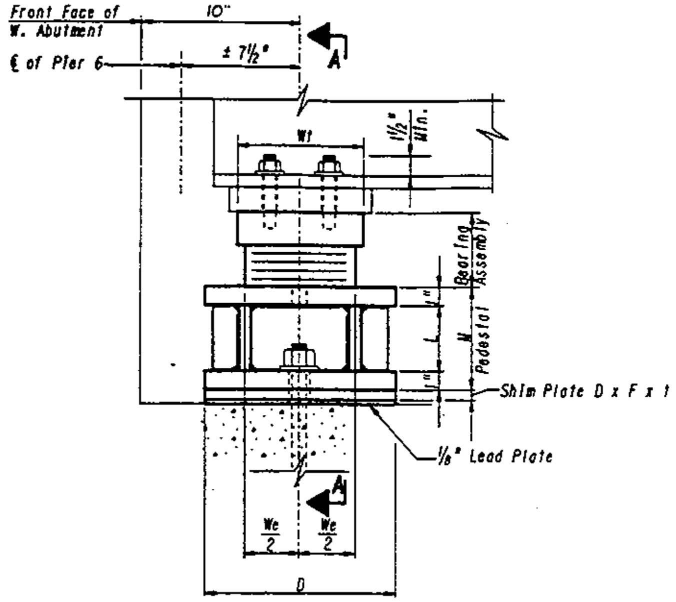
STRUCTURAL STEEL DETAILS

F.A.U. RTE 1453
SECTION 55IWRS & 55I (B, XB, VB & VB-I) BR-89
STA. 27+89.00
COOK COUNTY

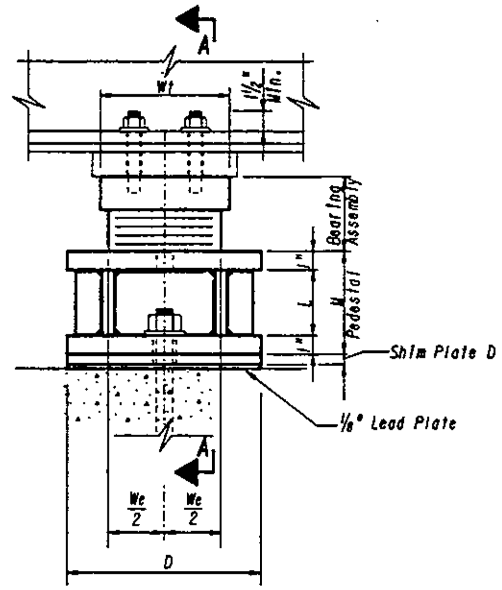
Structure #: 016-0631 Date: Jan., 1992

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

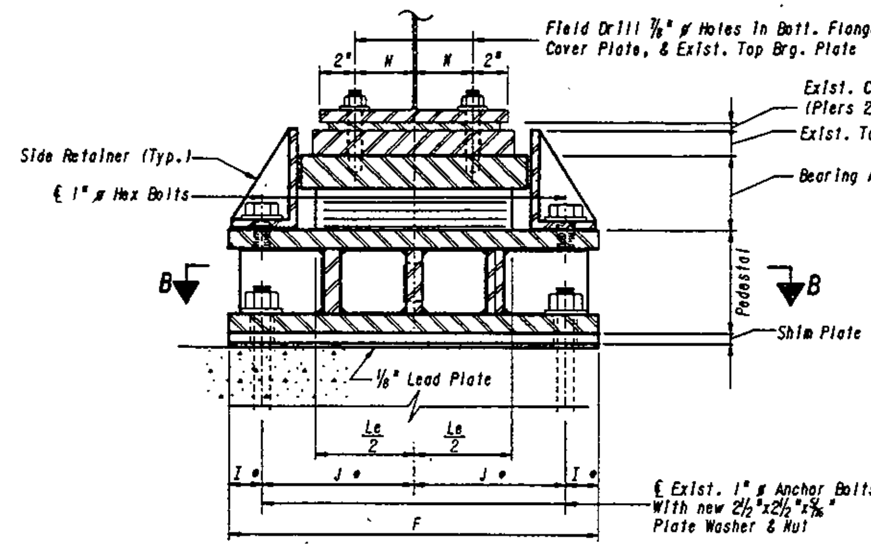
**SECTION 55IWRS & 551 (B, XB, VB & VB-1) BR-89



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

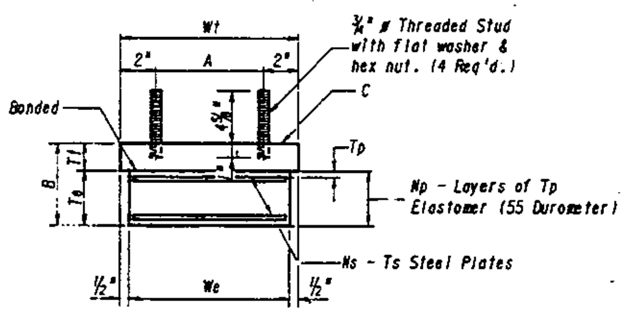


ELEVATION AT PIERS 2, 4, 7 & 9
(Side Retainer Omitted to Clarify View)
(48 Required)



SECTION A-A

ELASTOMERIC BEARING ASSEMBLY, TYPE I



BEARING ASSEMBLY

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

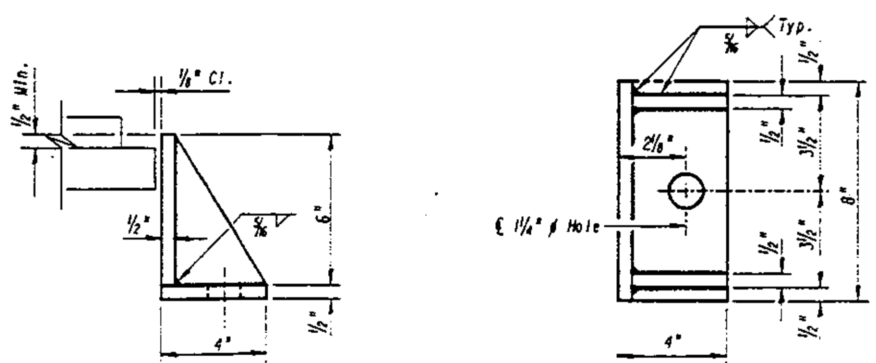
BEARING & PEDESTAL DIMENSION TABLE

LOCATION	NO. OF BRGS.	We	Le	Np	Tp	Ns	Ts	Te	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 3/4"	1 7/8"	8"	4"	3 5/8"	1 7/8"x8"x14"	12"	6 1/4"	22 1/2"	4 1/4"	5 3/8"	2 3/4"	8 1/2"	9 1/4"	6 7/8"	8 7/8"	4"
W. Abut. (All others)	10	7"	12"	4	3/8"	3	3/32"	1 3/4"	1 7/8"	8"	4"	3 5/8"	1 7/8"x8"x14"	12"	6 1/4"	22 1/2"	5"	4 5/8"	3 1/2"	7 3/4"	9 1/4"	6 7/8"	8 7/8"	3 1/4"
Pier 2 (Beams 1 & 12)	2	10"	14"	5	7/16"	4	1/8"	2 11/16"	2 1/4"	11"	7"	4 15/16"	2 1/4"x11"x16"	15"	9 1/4"	24 1/2"	5"	5 5/8"	3 1/2"	8 3/4"	10 1/4"	5 15/16"	7 15/16"	4"
Pier 2 (All others)	10	10"	14"	5	7/16"	4	1/8"	2 11/16"	2 1/4"	11"	7"	4 15/16"	2 1/4"x11"x16"	15"	9 1/4"	24 1/2"	6"	4 5/8"	4 1/2"	7 3/4"	10 1/4"	5 15/16"	7 15/16"	3 1/4"
Pier 4	12	11"	16"	5	1/2"	4	1/8"	3"	2 3/4"	12"	8"	5 3/4"	2 3/4"x12"x18"	16"	10 1/4"	26 1/2"	6 3/4"	4 7/8"	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"x8"x14"	12"	6 1/4"	22 1/2"	4 1/4"	5 3/8"	2 3/4"	8 1/2"	9 1/4"	6 1/4"	8 1/4"	4"
Pier 7 (Beams 1 & 12)	2	10"	14"	5	7/16"	4	1/8"	2 11/16"	2 3/8"	11"	7"	5 1/16"	2 3/8"x11"x16"	15"	9 1/4"	24 1/2"	5 3/4"	4 7/8"	4 1/4"	8"	10 1/4"	5 15/16"	7 15/16"	4"
Pier 7 (All others)	10	10"	14"	5	7/16"	4	1/8"	2 11/16"	2 3/8"	11"	7"	5 1/16"	2 3/8"x11"x16"	15"	9 1/4"	24 1/2"	6"	4 5/8"	4 1/2"	7 3/4"	10 1/4"	5 15/16"	7 15/16"	3 3/4"
Pier 9 (Beams 1 & 12)	2	10"	14"	5	7/16"	4	1/8"	2 11/16"	2 3/8"	11"	7"	5 1/16"	2 3/8"x11"x16"	15"	9 1/4"	24 1/2"	5 3/4"	4 7/8"	4 1/4"	8"	10 1/4"	5 15/16"	7 15/16"	4"
Pier 9 (All others)	10	10"	14"	5	7/16"	4	1/8"	2 11/16"	2 3/8"	11"	7"	5 1/16"	2 3/8"x11"x16"	15"	9 1/4"	24 1/2"	6"	4 5/8"	4 1/2"	7 3/4"	10 1/4"	5 15/16"	7 15/16"	3 3/4"

SHIM PLATE THICKNESS "t" TABLE

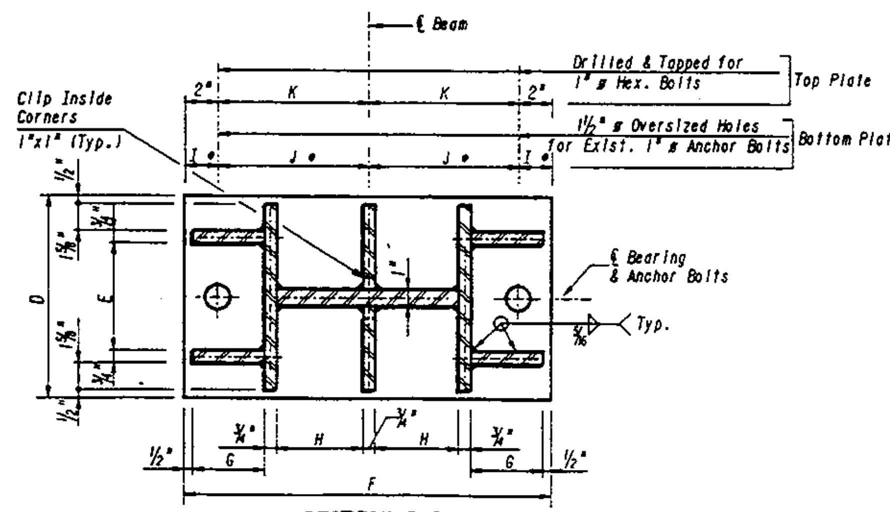
LOCATION	BEAM					
	1 or 12	2 or 11	3 or 10	4 or 9	5 or 8	6 or 7
W. Abutment	0	0	5/16"	0	5/8"	0
Pier 2	1/8"	0	5/8"	0	5/8"	0
Pier 4	0	5/16"	0	5/8"	0	5/16"
W. Brg. Pier 6	0	5/16"	0	5/16"	0	1/2"
Pier 7	1/8"	0	5/16"	0	5/8"	0
Pier 9	1/8"	0	5/16"	0	5/8"	0

• 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 Exist. Bearings	Each	72
Elastomeric Bearing Assembly Type I	Each	72

Donohue Engineers & Architects

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

PROJECT NUMBER 18046.004

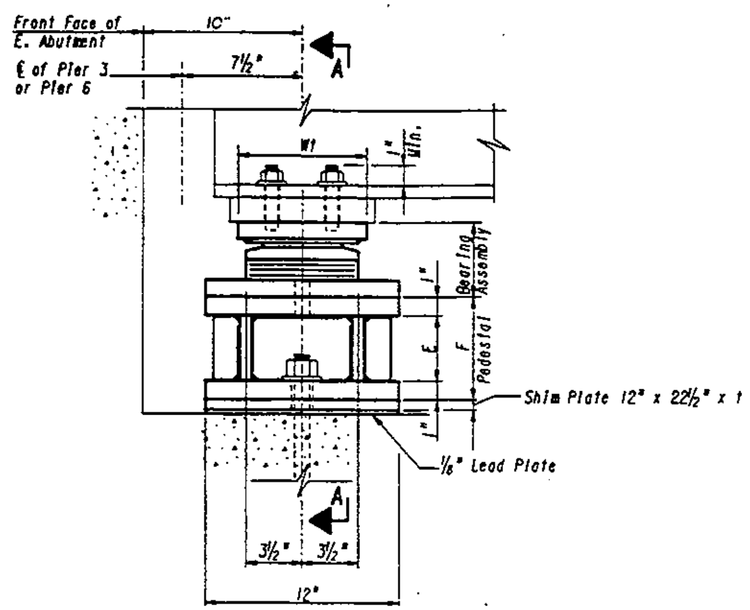
PRF=bearig.prf
FILE=bearig.dgn
W.U.=
SCALE=
TAPE NO.
DATE:

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

ELASTOMERIC BEARING ASSEMBLY TYPE I

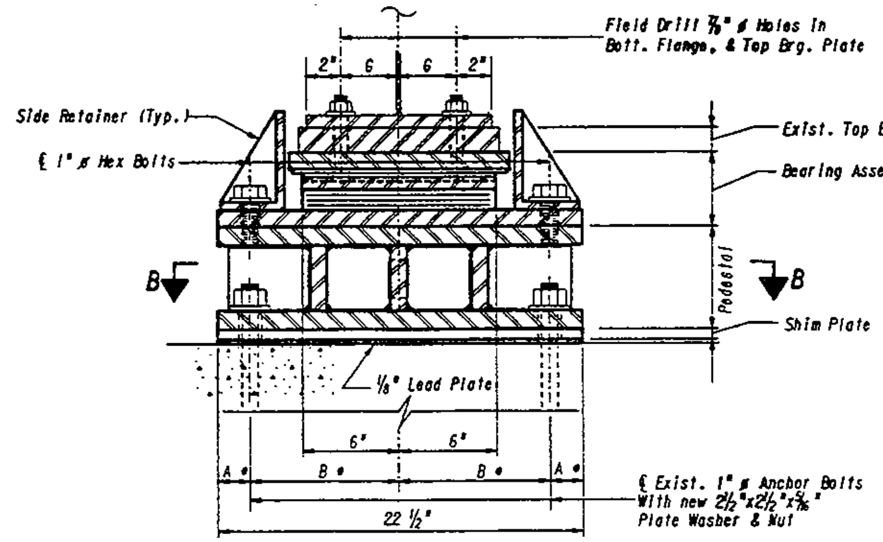
F.A.U. RTE 1453
SECTION 55IWRS & 551 (B, XB, VB & VB-1) BR-89
STA. 271+89.00
COOK COUNTY

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

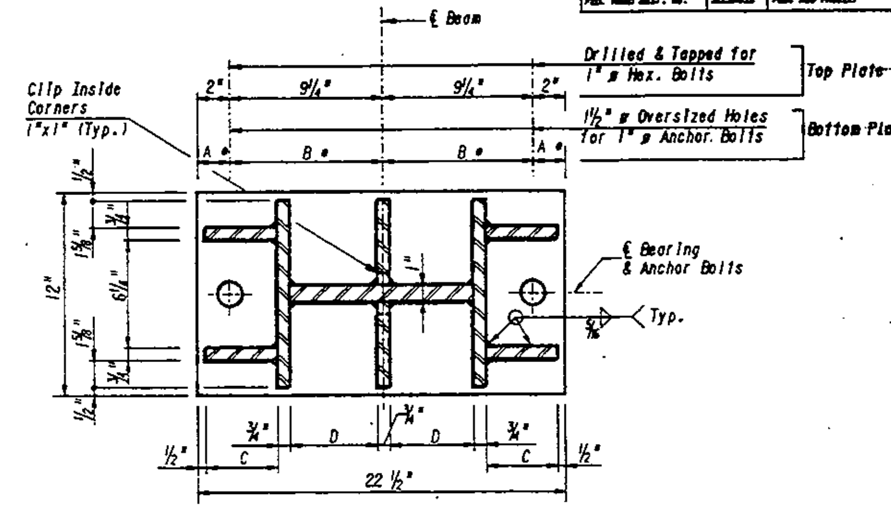


ELEVATION AT E. ABUT., W. BRG. PIER 3 & E. BRG. PIER 6
(Side Retainer Omitted to Clarify View)
(36 Required)

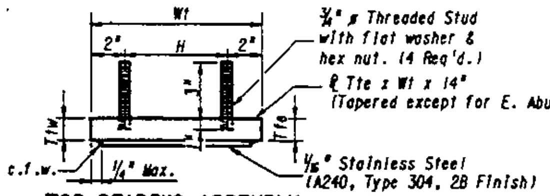
ELASTOMERIC BEARING ASSEMBLY, TYPE II



SECTION A-A



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

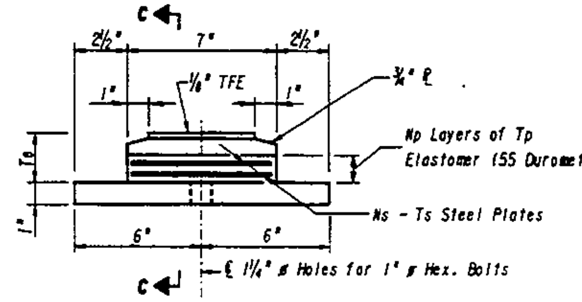


TOP BEARING ASSEMBLY
(Looking North)

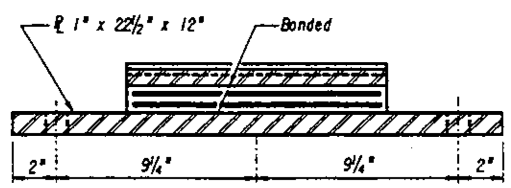
BEARING & PEDESTAL DIMENSION TABLE

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	1/12"	3 1/8"	1 7/8"	1 7/8"	8 5/8"	2 3/4"	8 1/2"	4 1/4"	5 3/8"	4 7/16"	6 7/16"	4"	4 5/8"
E. Abut. (All others)	10	5	3/8"	4	1/12"	3 1/8"	1 7/8"	1 7/8"	8 5/8"	3"	8 1/4"	4 1/2"	5 1/8"	4 7/16"	6 7/16"	3 1/4"	4 5/8"
W. Brg. Pier 3 (Beams 1 & 12)	2	4	3/8"	3	1/12"	2 5/8"	1 15/16"	2"	8 3/8"	2 3/4"	8 1/2"	4 1/4"	5 3/8"	4 7/8"	6 7/8"	4"	4 3/8"
W. Brg. Pier 3 (All others)	10	4	3/8"	3	1/12"	2 5/8"	1 15/16"	2"	8 3/8"	3 1/2"	7 3/4"	5"	4 5/8"	4 7/8"	6 7/8"	3 1/4"	4 3/8"
E. Brg. Pier 6 (Beams 1 & 12)	2	5	3/8"	4	1/12"	3 1/8"	1 15/16"	1 7/8"	8 5/8"	2 3/4"	8 1/2"	4 1/4"	5 3/8"	4 7/16"	6 7/16"	4"	4 5/8"
E. Brg. Pier 6 (All others)	10	5	3/8"	4	1/12"	3 1/8"	1 15/16"	1 7/8"	8 5/8"	3"	8 1/4"	4 1/2"	5 1/8"	4 7/16"	6 7/16"	3 3/4"	4 5/8"

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



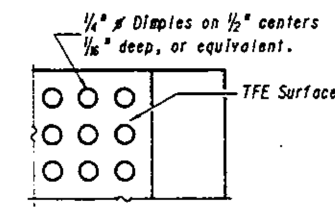
BOTTOM BEARING ASSEMBLY



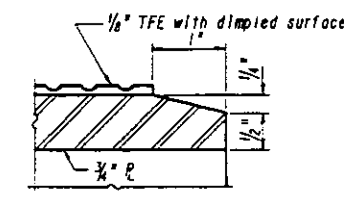
SECTION C-C

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	5/16"	0	5/8"	0
E. Brg. Pier 6	0	0	5/16"	0	5/8"	0



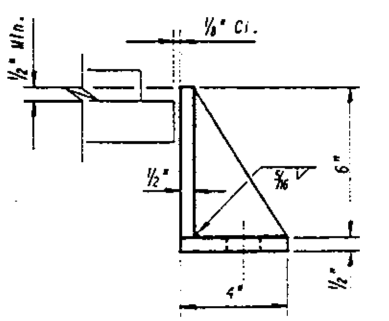
PLAN-TFE SURFACE

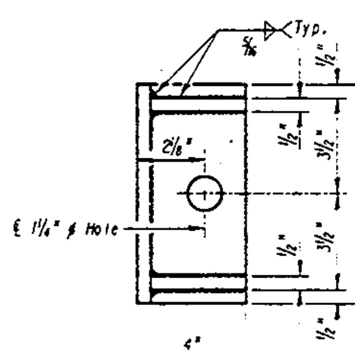


SECTION THRU TFE

BILL OF MATERIAL

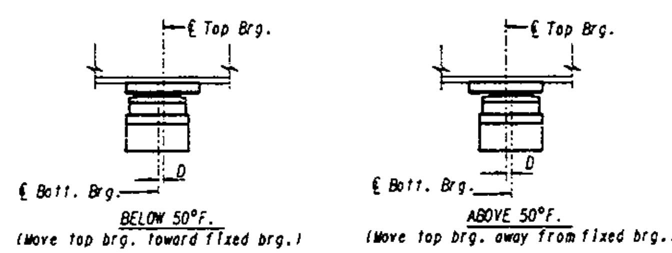
Item	Unit	Total
Jack & Remove Exist. Bearings	Each	36
Elastomeric Bearing Assembly Type II	Each	36





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.

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.

Donohue
Engineers & Architects

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

PROJECT NUMBER 18046.004

PRF=BEAR2G.PRF
FILE=BEAR2G.DGN
W.U.=
SCALE=
TAPE NO.
DATE:

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

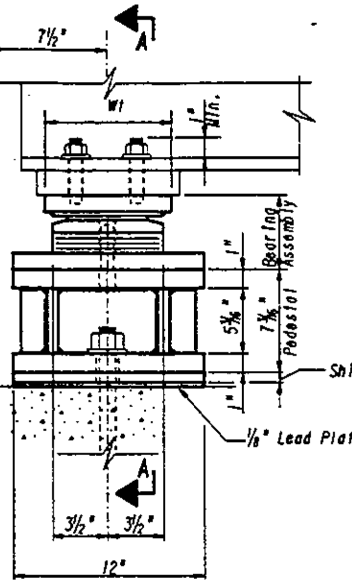
ELASTOMERIC BEARING ASSEMBLY TYPE II

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

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1453	**	COOK	233	147
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

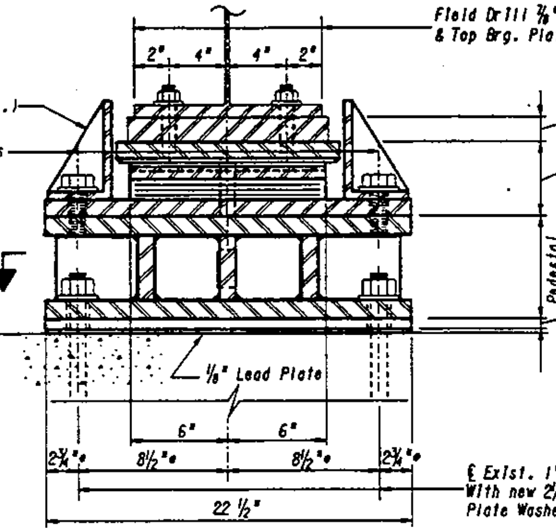
** SECTION 55IWRS & 551 (B, XB, VB & VB-1) BR-89



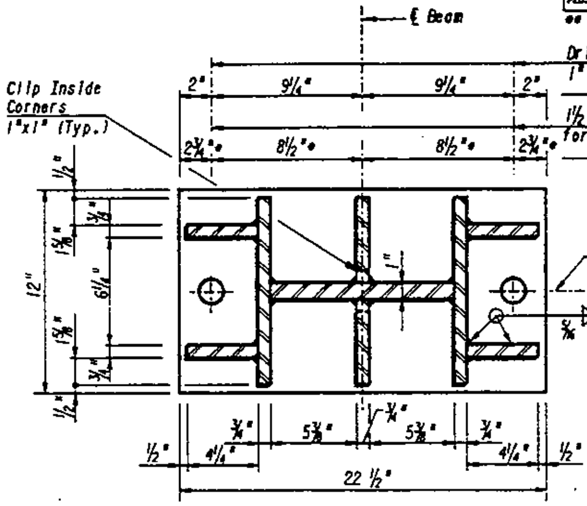
ELEVATION AT E. BRG. PIER 3

(Side Retainer Omitted to Clarify View)
(12 Required)

ELASTOMERIC BEARING ASSEMBLY, TYPE III



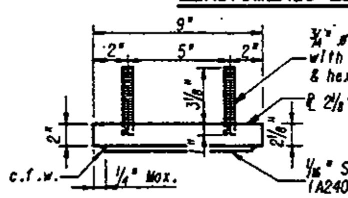
SECTION A-A



SECTION B-B

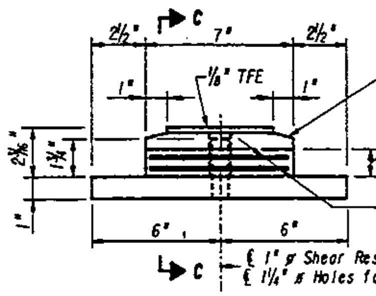
(Showing bottom plate, top plate similar except as noted)

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

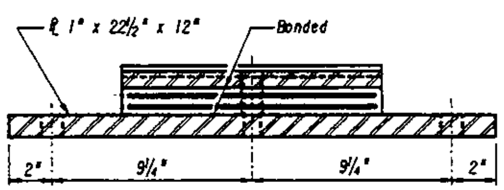


TOP BEARING ASSEMBLY

(Looking North)



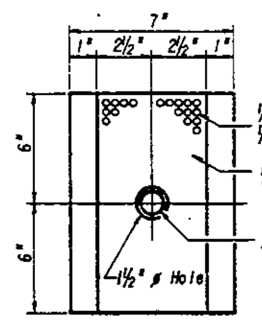
BOTTOM BEARING ASSEMBLY



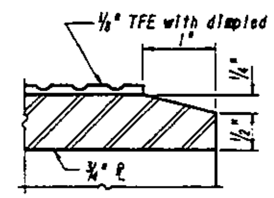
SECTION C-C

SHIM PLATE THICKNESS "t" TABLE

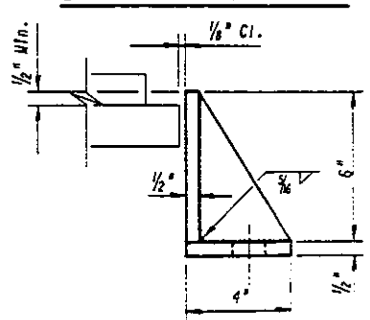
LOCATION	BEAM					
	1 or 12	2 or 11	3 or 10	4 or 9	5 or 8	6 or 7
E. Brg. Pier 3	0	⅝"	0	⁵⁄₁₆"	0	½"

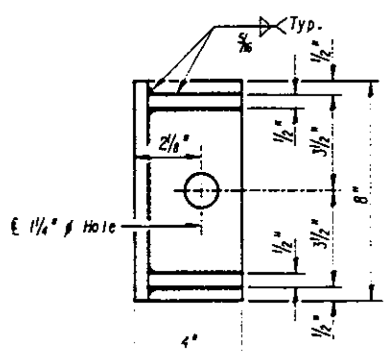


PLAN-TFE ELASTOMERIC BRG.



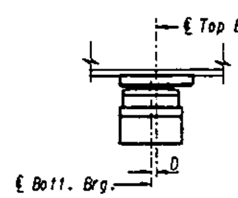
SECTION THRU TFE

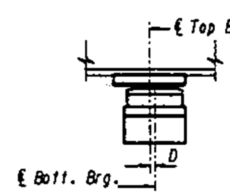




SIDE RETAINER

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=⅛" per each 100' of expansion for every 15° temp. change from the normal temp. of 50°F.

Note: The ⅛" 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 ⅛" TFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.

BILL OF MATERIAL

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

PRF=BEAR3G.PRF
FILE=BEAR3G.DGN
W.U.=
SCALE=
TAPE NO.
DATE:

Donohue Engineers & Architects

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

PROJECT NUMBER 18046.004

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

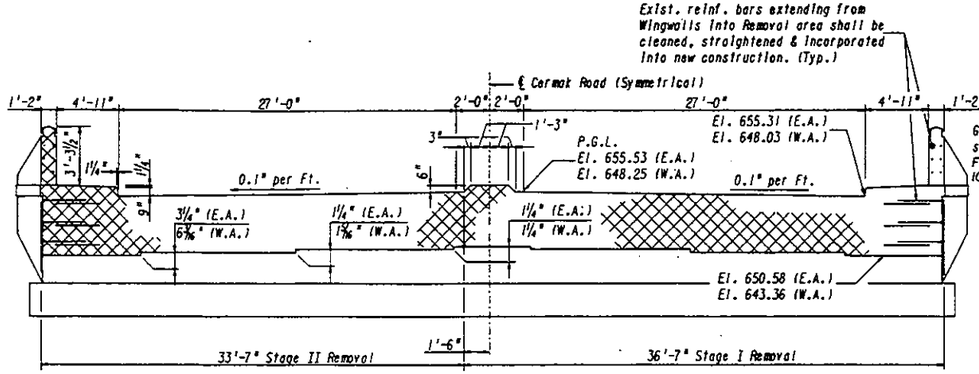
ELASTOMERIC BEARING ASSEMBLY TYPE III

F.A.U. RTE 1453
SECTION 55IWRS & 551 (B, XB, VB & VB-1) BR-89
STA. 271+89.00
COOK COUNTY

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

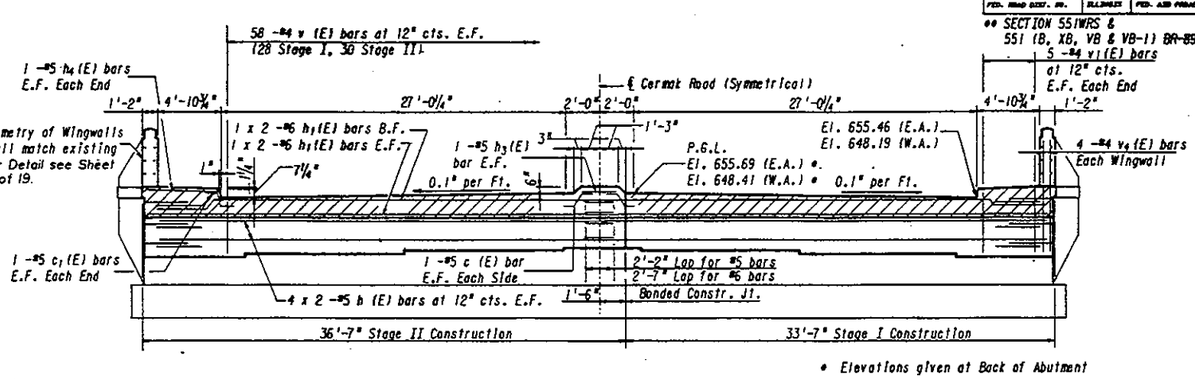
F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1453	**	COOK	233	146
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

** SECTION 55IWRS & 55I (B, XB, VB & VB-1) BR-89



ELEVATION - SHOWING REMOVAL

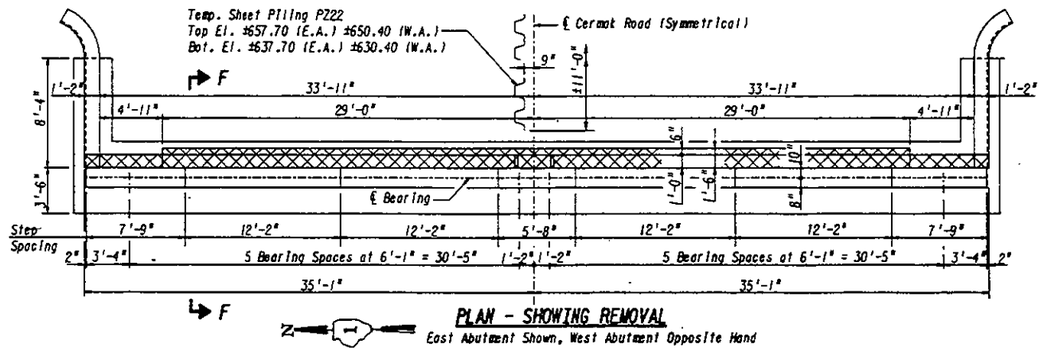
East Abutment Shown, West Abutment Opposite Hand
All transverse reinf. bars except as noted shall be removed.



• Elevations given at Back of Abutment

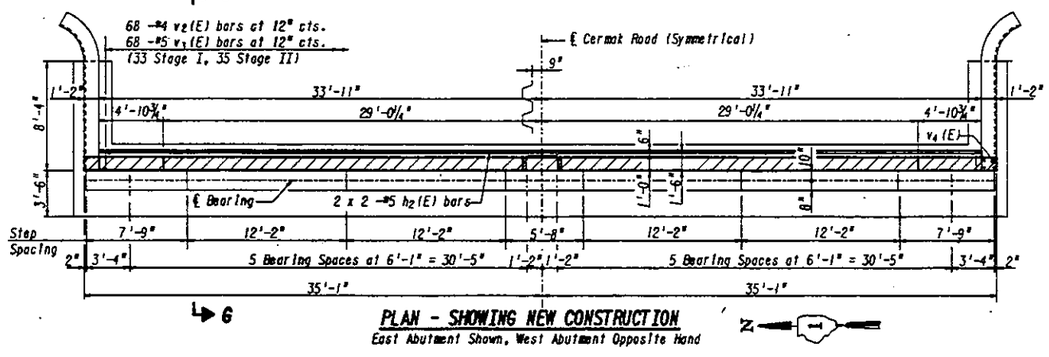
ELEVATION - SHOWING NEW CONSTRUCTION

East Abutment Shown, West Abutment Opposite Hand



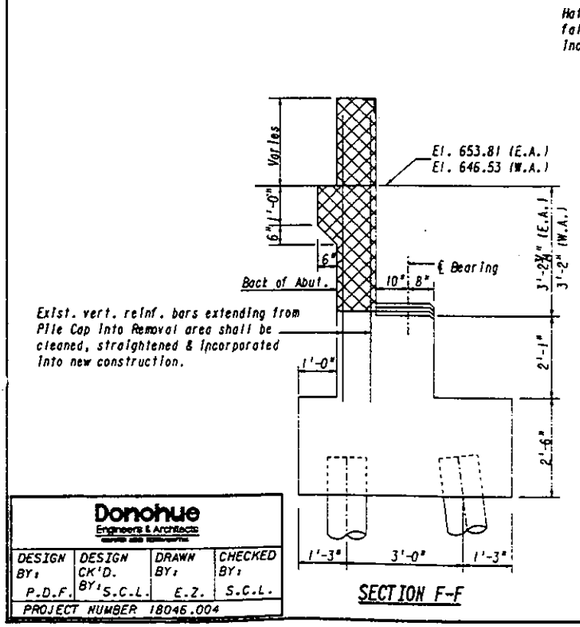
PLAN - SHOWING REMOVAL

East Abutment Shown, West Abutment Opposite Hand

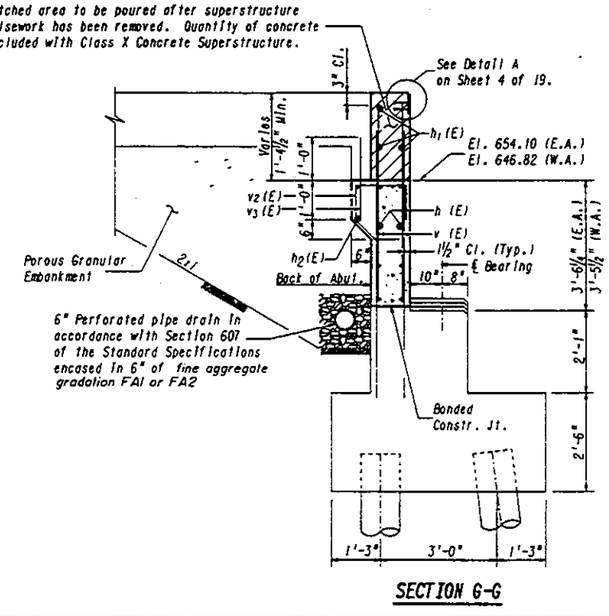


PLAN - SHOWING NEW CONSTRUCTION

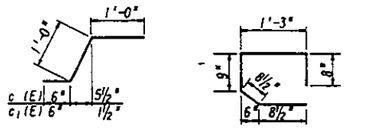
East Abutment Shown, West Abutment Opposite Hand

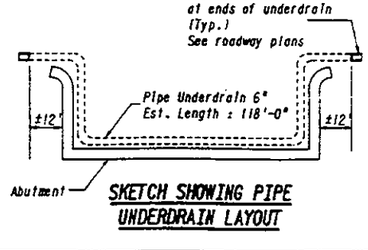


SECTION F-F



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"	
s1(E)	12	#4	2'-8"	
d2(E)	12	#6	2'-0"	
Reinforcement Bars Epoxy Coated			Pounds	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.

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

ABUTMENTS

F.A.U. RTE 1453
SECTION 55IWRS & 55I (B, XB, VB & VB-1) BR-89
STA. 271+89.00
COOK COUNTY

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

Donohue
Engineers & Architects

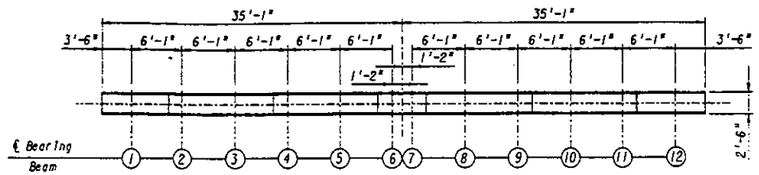
DESIGN BY: P.D.F.	DESIGN CK'D. BY: S.C.L.	DRAWN BY: E.Z.	CHECKED BY: S.C.L.

PROJECT NUMBER 18046.004

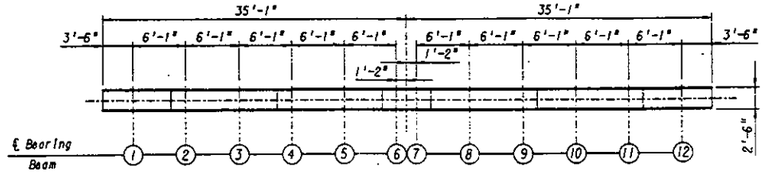
TAPE NO.
DATE:
PRF=
FILE=
W.U.=
SCALE=

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1453	**	COOK	233	149
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

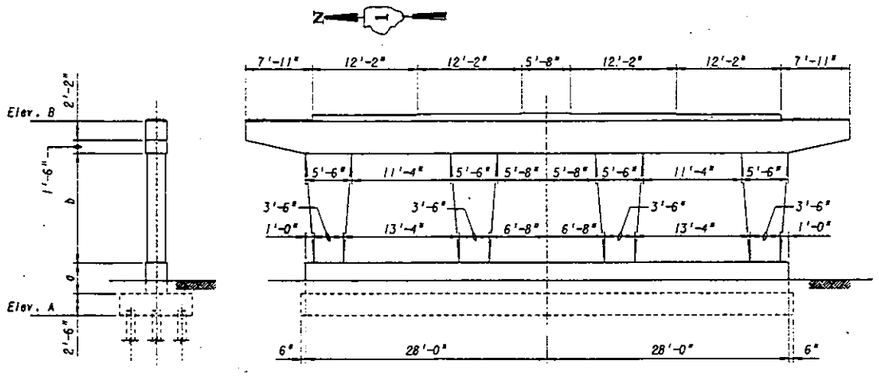
**SECTION 551WRS 8
551 (B, XB, VB & VB-1) BR-89



TOP PLAN

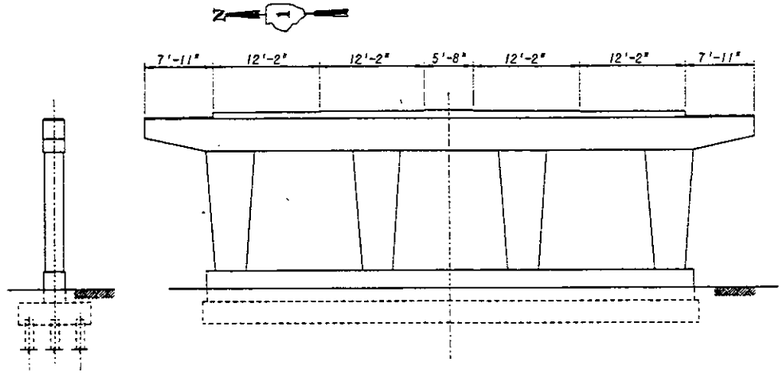


TOP PLAN



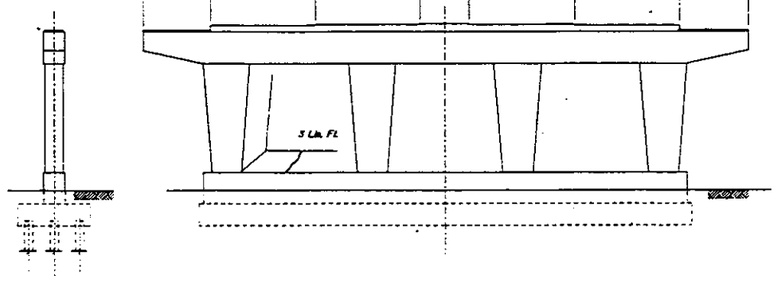
NORTH ELEVATION

WEST ELEVATION



NORTH ELEVATION

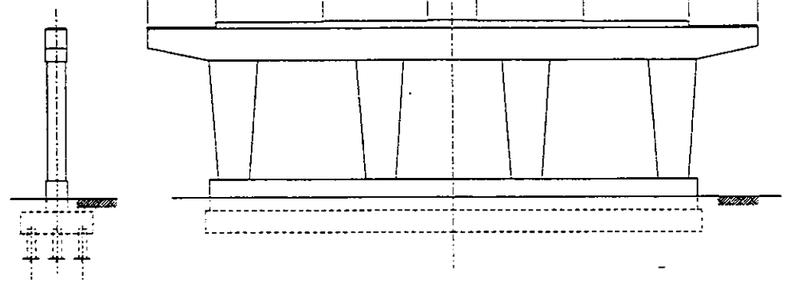
WEST ELEVATION



SOUTH ELEVATION

EAST ELEVATION

PIER 1



SOUTH ELEVATION

EAST ELEVATION

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 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

PRF= PIER12.PRF TAPE NO.
FILE= PIER12.DGN
W.U.= 1:12:4000
SCALE= 1/4" = 1'-0" DATE: MARCH 5, 1991

Donohue
Engineers & Architects

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

PROJECT NUMBER 18046.004

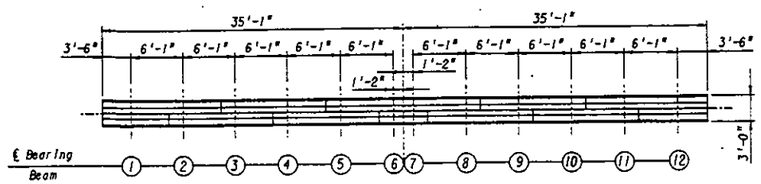
ILLINOIS DEPARTMENT OF TRANSPORTATION
CERMAK ROAD OVER I.H.B.R.R. & GARDNER ROAD

PIERS 1 & 2
F.A.U. RTE 1453
SECTION 551WRS & 551 (B, XB, VB & VB-1) BR-89
STA. 271+89.00
COOK COUNTY
Structure #: 016-0631 Date: Jan., 1992

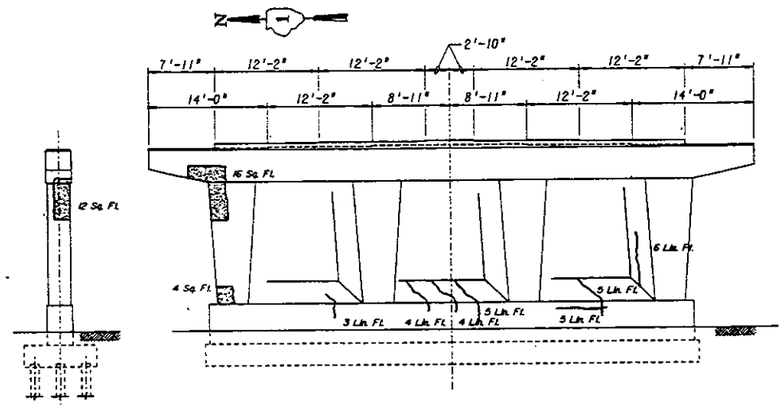
Sheet 15 of 19

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1453	**	COOK	233	150
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

**SECTION 55IWRS & 55I (B, XB, VB & VB-I) BR-89

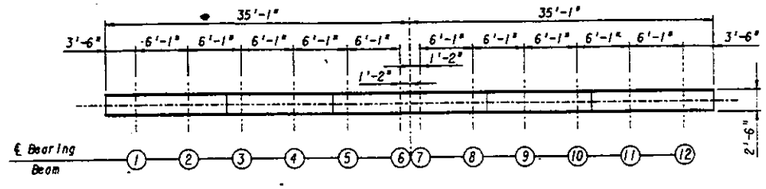


TOP PLAN

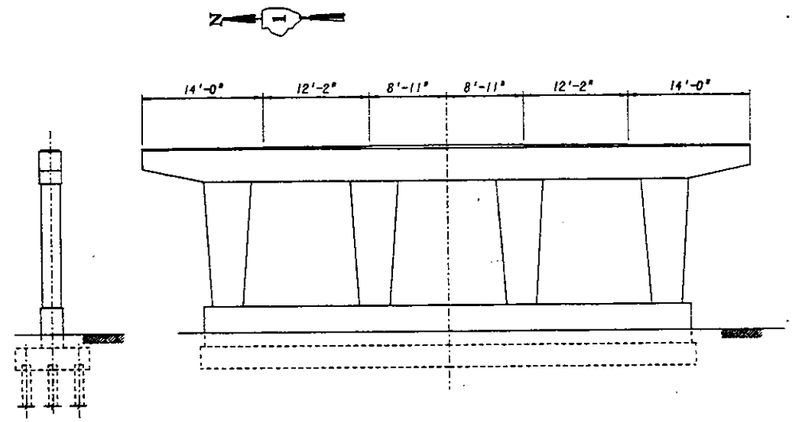


NORTH ELEVATION

WEST ELEVATION

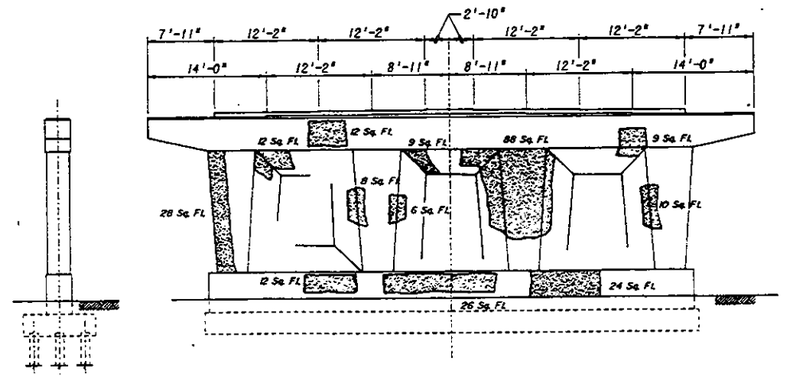


TOP PLAN



NORTH ELEVATION

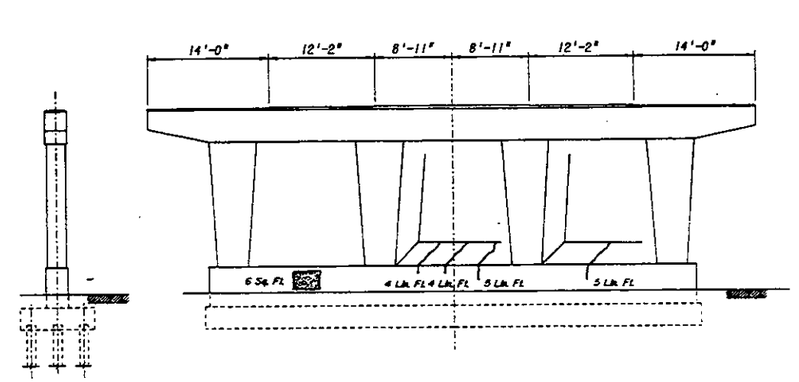
WEST ELEVATION



SOUTH ELEVATION

EAST ELEVATION

PIER 3



SOUTH ELEVATION

EAST ELEVATION

PIER 4

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

PRF= PIER34.PRF TAPE NO.
FILE= PIER34.DGN
W.U.= 1:12:4000 DATE: MARCH © 1991
SCALE= 1/8" = 1'-0"

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

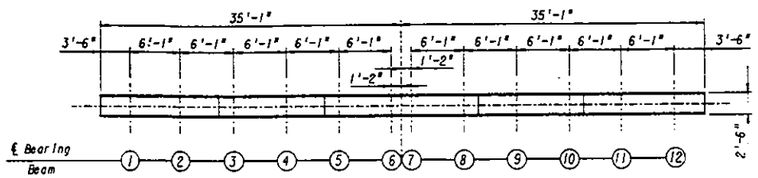
ILLINOIS DEPARTMENT OF TRANSPORTATION
CERMAK ROAD OVER I.H.B.R.R. & GARDNER ROAD

PIERS 3 & 4
F.A.U. RTE 1453
SECTION 55IWRS & 55I (B, XB, VB & VB-I) BR-89
STA. 271+89.00
COOK COUNTY
Structure #: 016-0631 Date: Jan., 1992

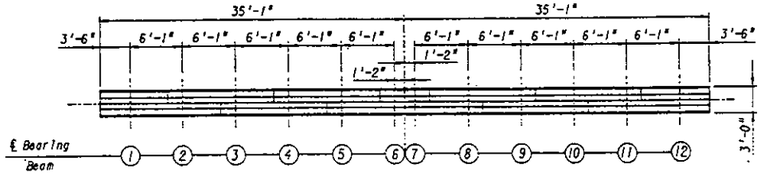
Sheet No. of 19

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1453	**	COOK	233	151
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

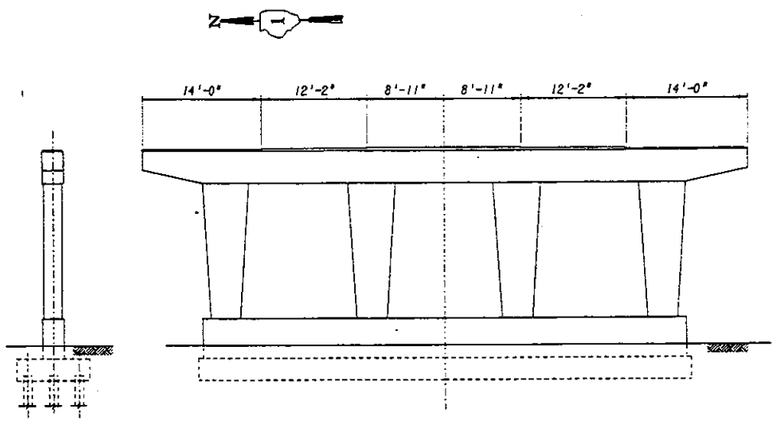
**SECTION 55IWRS 8
551 (B, XB, VB & VB-I) BR-89



TOP PLAN

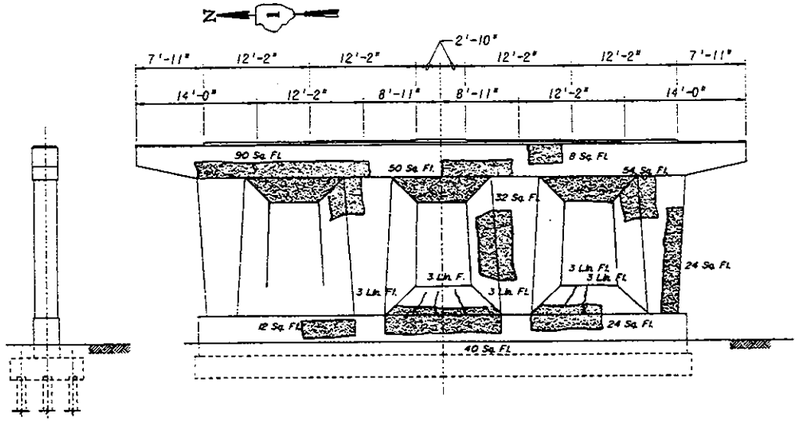


TOP PLAN



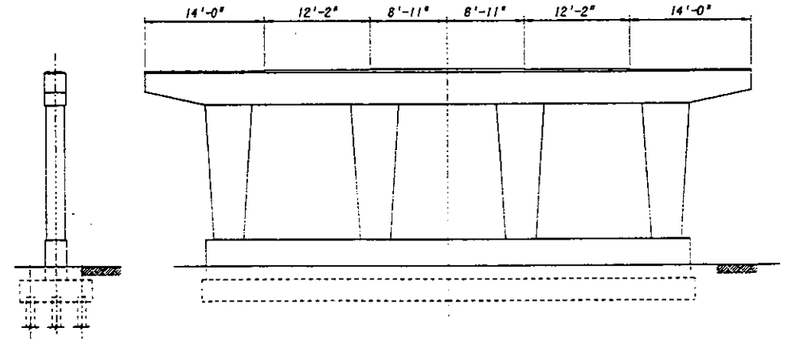
NORTH ELEVATION

WEST ELEVATION



NORTH ELEVATION

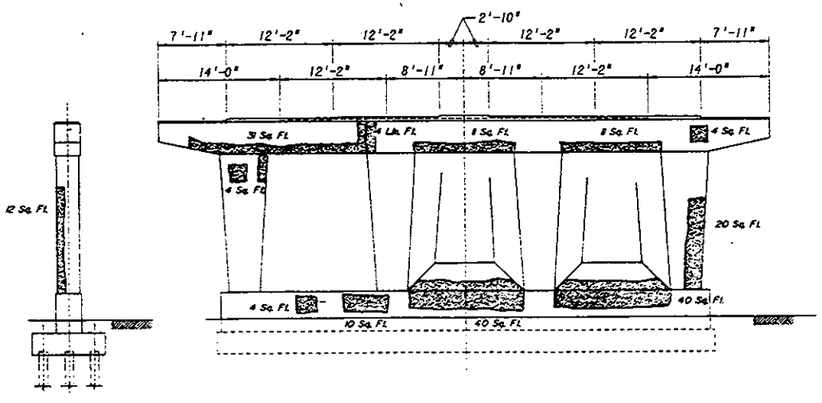
WEST ELEVATION



SOUTH ELEVATION

EAST ELEVATION

PIER 5



SOUTH ELEVATION

EAST 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 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

PRF= PIER56.PRF TAPE NO. 91
FILE= PIER56.DGN
W.U.= 1:12:1000
SCALE: ⅛" = 1'-0" DATE: MARCH 5, 1991

Donohue
Engineers & Architects

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

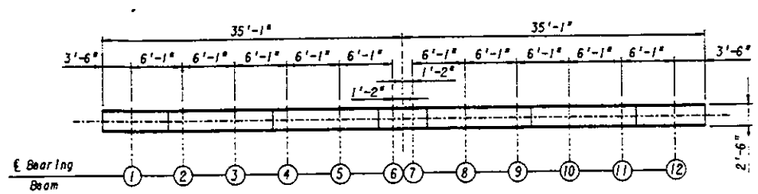
PROJECT NUMBER 18046.004

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

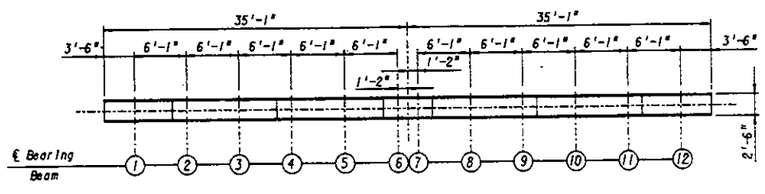
PIERS 5 & 6
F.A.U. RTE 1453
SECTION 55IWRS & 551 (B, XB, VB & VB-I) BR-89
STA. 271+89.00
COOK COUNTY
Structure #: 016-0631 Date: Jan., 1992

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

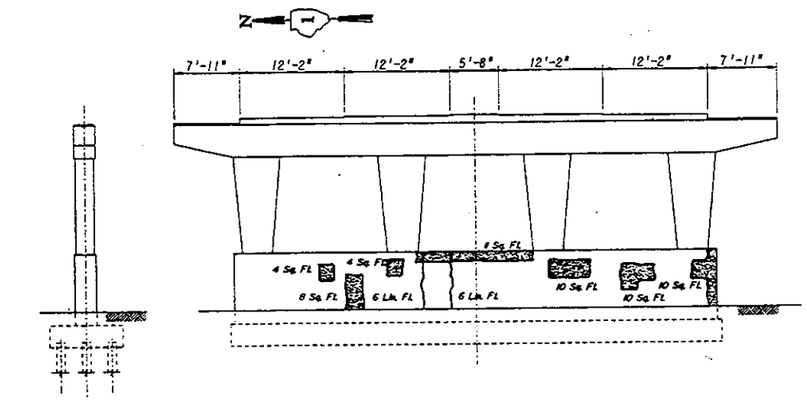
**SECTION 55IWRS 8
551 (B, XB, VB & VB-1) BR-89



TOP PLAN

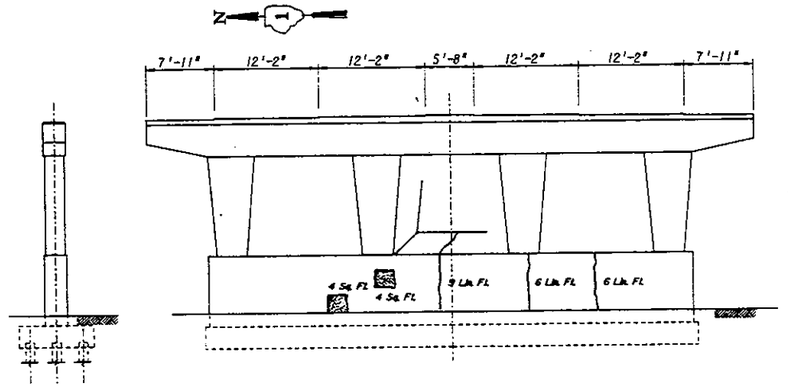


TOP PLAN



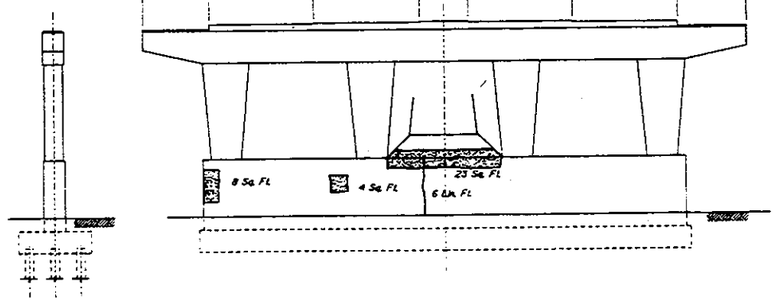
NORTH ELEVATION

WEST ELEVATION



NORTH ELEVATION

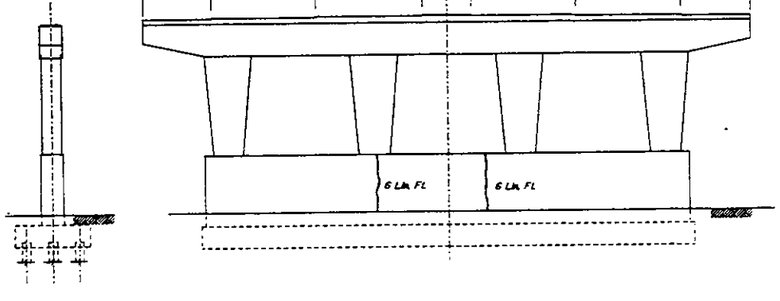
WEST ELEVATION



SOUTH ELEVATION

EAST ELEVATION

PIER 7



SOUTH ELEVATION

EAST ELEVATION

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

PRF= PIER78.PRF TAPE NO.
FILE= PIER78.DGN
W.U.= 1:12:1000
SCALE= 1/8" = 1'-0" DATE: MARCH 1991

Donohue
Engineers & Architects

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

PROJECT NUMBER 18046.004

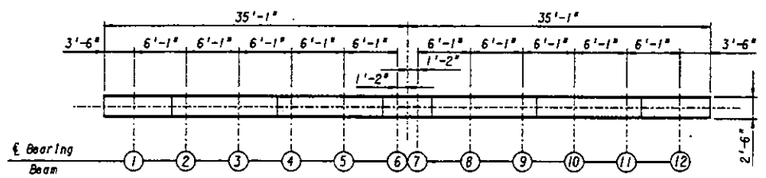
ILLINOIS DEPARTMENT OF TRANSPORTATION
CERMAK ROAD OVER I.H.B.R.R. & GARDNER ROAD

PIERS 7 & 8
F.A.U. RTE 1453
SECTION 55IWRS & 551 (B, XB, VB & VB-1) BR-89
STA. 27+89.00
COOK COUNTY
Structure #: 016-0631 Date: Jan., 1992

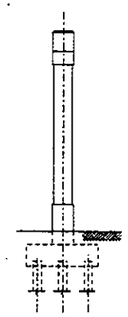
Sheet 18 of 19

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1453	**	COOK	233	153
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

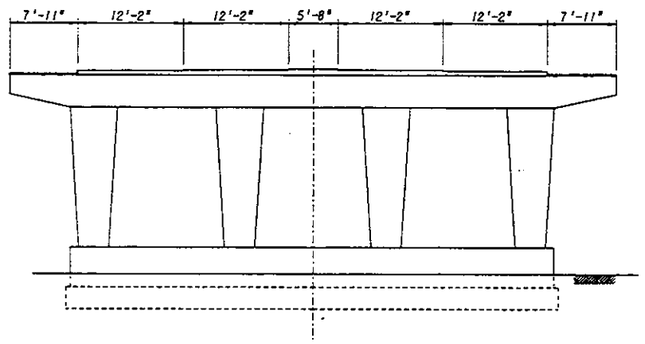
**SECTION 551WRS B
551 (B, XB, VB & VB-1) BR-89



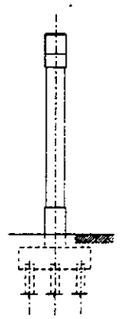
TOP PLAN



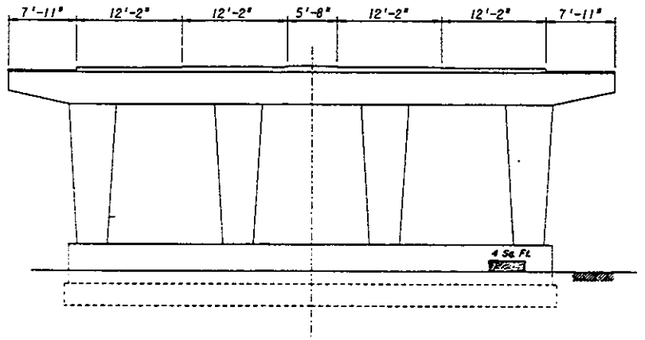
NORTH ELEVATION



WEST ELEVATION



SOUTH ELEVATION



EAST ELEVATION

PIER 9

Notes:

1. See Sheet 15 of 19 for additional Pier dimensions.

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

Dimensions and Beam Seat Elevation Table

		Pier 1	Pier 2	Pier 3 W. Brg.	Pier 3 E. Brg.	Pier 4	Pier 5	Pier 6 W. Brg.	Pier 6 E. Brg.	Pier 7	Pier 8	Pier 9
	a	3'-6"	3'-6"	4'-6"		4'-6"	4'-6"	4'-6"		8'-0"	8'-0"	4'-6"
	b	12'-5⅝"	13'-7⅛"	13'-10⅜"		14'-2¾"	15'-5½"	15'-9¼"		10'-11⅞"	11'-4¼"	15'-11⅝"
	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	650.10	650.22
Beam Seat Elevations	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

PRF= PIER9.PRF TAPE NO. 1 of 1
FILE= PIER9.DGN
W.U.= 1:12+4000
SCALE= ⅛" = 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.
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