

BRIDGES OVER 20' SPAN					
FEDERAL REGION NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	IND.	MAIM-94-2(81)44		1	23

INDEX					
PROJECT	STRUCTURE	TYPE	SPAN	OVER	STATION
MAIM-94-2(81)44	I-94-47-2254A	BRIDGE DECK OVERLAY AND WIDENING	3 SPANS @ 48'-6, 59'-0, 48'-6 SKEW: SQUARE	C.S.S. AND S.B. RAILROAD	

SHEET NO.	SHEET DESIGNATION	SUBJECT	F. H. W. A. APPROVAL
1	ONE SHEET	INDEX AND TITLE SHEET	
2	W1	GENERAL PLAN	
3	W2	GENERAL PLAN DETAILS	
4, 5	W3, W4	BENT NO.1 NO.4 DETAILS	
6	W5	BENT NO.1 NO.4 DETAILS AND BILL OF MATERIALS	
7	W6	BENT NO.2 NO.3 DETAILS	
8	W7	BENT NO.2 NO.3 DETAILS AND BILL OF MATERIALS	
9	W8	PARTIAL FRAMING PLAN	
10	W9	STRUCTURAL STEEL DETAILS	
11	W10	SHOE DETAILS	
12	W11	SUPERSTRUCTURE DETAILS	
13	W12	SUPERSTRUCTURE DETAILS AND BILL OF MATERIALS	
14	W13	CORNER DETAILS	
15	W14	SPECIAL RAILING CONNECTION DETAILS AND BILL OF MATERIALS	
16	W15	R.C. BRIDGE APPROACH DETAILS AND BILL OF MATERIALS	
17	ONE SHEET	BRIDGE SUMMARY	

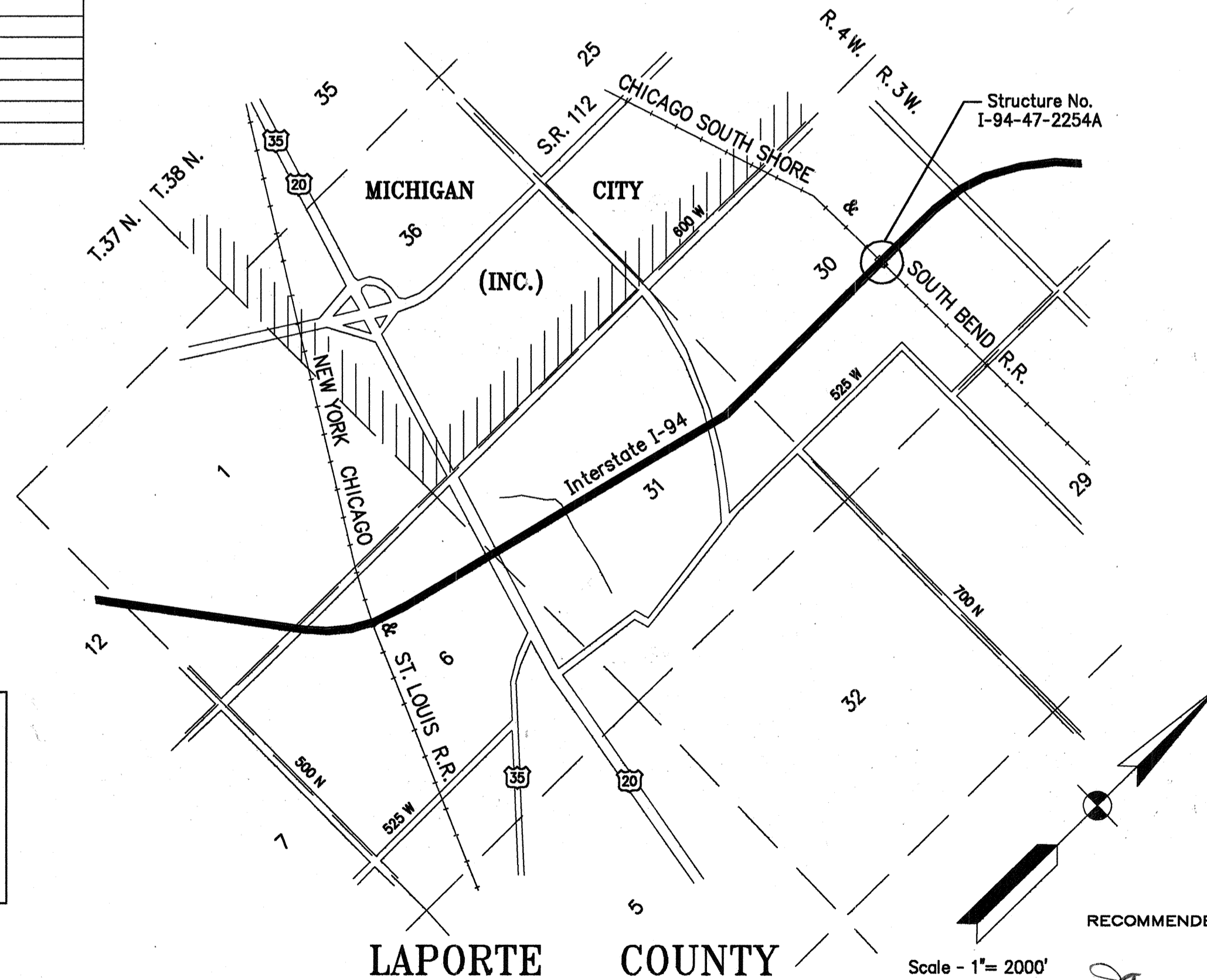
INDIANA
DEPARTMENT OF
TRANSPORTATION

BRIDGE PLANS
FOR SPANS OVER 20 FEET
ON
INTERSTATE ROUTE NO. 94
PROJECT NO. MAIM-94-2(81)44

This Structure is located on I-94 over C.S.S. and S.B. Railroad approximately 1.7 Miles East of U.S. 20 in Section 30, T.38 N., R.3W., LaPorte County, Indiana.

NOTE:
WHENEVER IR-94-2(71)44 APPEARS ON THESE PLANS OR CONTRACT DOCUMENTS IT SHALL BE INTERPRETED AS MAIM-94-2(81)44

TRAFFIC DATA			
A. D. T. (1988)		12,800	V.P.D.
A. D. T. (19 PROJECTED)			V.P.D.
D. H. V. (19 PROJECTED)			V.P.H.
TRUCKS	D.H.V.	% A.D.T.	%
DESIGN SPEED		70	M.P.H.
ACCESS CONTROL		FULL	
FUNCTIONAL CLASSIFICATION		RURAL FREEWAY	

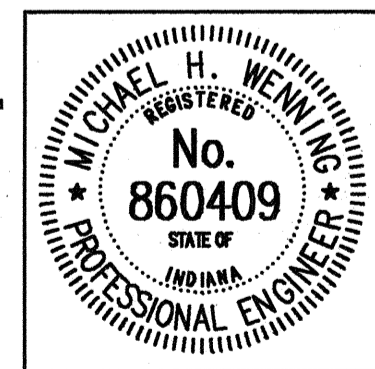


INDEX CONTINUED STANDARD DRAWINGS					
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	BRIDGE STD. C1	MISCELLANEOUS DETAILS	11-22-91		R 10-01-91
	BRIDGE STD. C2	MISCELLANEOUS DETAILS			
19	BRIDGE STD. C3	MISCELLANEOUS DETAILS	1-26-88		R 11-02-87
	BRIDGE STD. C4	MISCELLANEOUS DETAILS			
	BRIDGE STD. C5	PRECAST DECK PANEL DETAILS			
	BRIDGE STD. D	CASTING DETAILS, ROADWAY DRAINS			
	BRIDGE STD. D1	ADJUSTING FRAME DETAILS FOR ROADWAY DRAINS			
	BRIDGE STD.				
	BRIDGE STD. PB	PRESTRESSED CONCRETE, TYPE I-BEAMS			
	BRIDGE STD. PB	PRESTRESSED CONCRETE, TYPE I-BEAMS			
	BRIDGE STD. PB6	PRESTRESSED BOX BEAMS			
	BRIDGE STD. PB	PRESTRESSED COMPOSITE BOX BEAMS, WIDE			
	BRIDGE STD. PB	PRESTRESSED COMPOSITE BOX BEAMS, WIDE			
	BRIDGE STD. PB10	TOLERANCES FOR FABRICATION OF PRESTRESSED BEAMS			
	BRIDGE STD. PB11	ELASTOMERIC BEARING PAD DETAILS			
	BRIDGE STD.				
	BRIDGE STD. R2A	BRIDGE LIGHTING DETAILS			
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	BRIDGE STD. S1	MISCELLANEOUS DETAILS			
	BRIDGE STD. SH1	STEEL SHOE DETAILS			
	BRIDGE STD. T SHEET A	STANDARD TEMPORARY BRIDGE			
	BRIDGE STD. T SHEET B	STANDARD TEMPORARY BRIDGE			
	BRIDGE STD.				
	BRIDGE STD.				
	BRIDGE STD.				
	BRIDGE STD.				
20	ROAD STD. SHEET A	STANDARD PAVEMENT JOINTS	PENDING		R 3-01-90
	ROAD STD. SHEET B	STANDARD PAVEMENT JOINTS			
	ROAD STD. SHEET WA	MISCELLANEOUS STANDARDS			
21	ROAD STD. SHEET MB1	MISCELLANEOUS STANDARDS	5-19-88		R 4-04-88
22	ROAD STD. SHEET MB2	MISCELLANEOUS STANDARDS	5-21-82		R 4-01-82
	ROAD STD. SHEET MB2	MISCELLANEOUS STANDARDS			
	ROAD STD. SHEET	MISCELLANEOUS STANDARDS			
	ROAD STD. SHEET	MISCELLANEOUS STANDARDS			
	ROAD STD. SHEET MC2	MISCELLANEOUS STANDARDS			
	ROAD STD. SHEET	MISCELLANEOUS STANDARDS			
	ROAD STD. SHEET	MISCELLANEOUS STANDARDS			
	ROAD STD. SHEET ME	MISCELLANEOUS STANDARDS			
	ROAD STD. SHEET	MISCELLANEOUS STANDARDS			
	ROAD STD. SHEET MH	MISCELLANEOUS STANDARDS			
	ROAD STD. SHEET MH1	MISCELLANEOUS STANDARDS			
	ROAD STD. SHEET MH2	MISCELLANEOUS STANDARDS			
	ROAD STD. SHEET MH2A	MISCELLANEOUS STANDARDS			
	ROAD STD. SHEET	MISCELLANEOUS STANDARDS			
	ROAD STD. SHEET MN	MISCELLANEOUS STANDARDS			
	ROAD STD. SHEET MN1	MISCELLANEOUS STANDARDS			
	ROAD STD. SHEET	MISCELLANEOUS STANDARDS			
	ROAD STD. SHEET	MISCELLANEOUS STANDARDS			
	ROAD STD. SHEET	MISCELLANEOUS STANDARDS			
	ROAD STD. SHEET	MISCELLANEOUS STANDARDS			
	ROAD STD. SHEET GR2	GUARD RAIL CLASS H _h			
	ROAD STD. SHEET GR3	GUARD RAIL CLASS			
	ROAD STD. SHEET GR4A	GUARD RAIL CLASS H _h			
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	ROAD STD. SHEET GR5	ALUMINUM GUARD RAIL DETAILS			
	ROAD STD. SHEET GR6	STEEL TUBE GUARD RAIL DETAILS			
	ROAD STD. SHEET GR7	GUARD RAIL PIER CONNECTION DETAILS			
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	ROAD STD. SHEET GR10A	GUARD RAIL BREAKAWAY CABLE TERMINAL			
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23	ROAD STD. SHEET CB1	CONCRETE MEDIAN BARRIER	1-11-89		R 9-01-88
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	ROAD STD. SHEET 1A DETOURS	STANDARD DETOUR SIGNS			
	ROAD STD. SHEET 1B DETOURS	STANDARD DETOUR SIGNS			
	ROAD STD. SHEET 2 DETOURS	STANDARD DETOUR SIGNS			
	ROAD STD. SHEET 2A DETOURS	STANDARD DETOUR SIGNS			
	ROAD STD. SHEET 3 DETOURS	STANDARD DETOUR SIGNS			
	ROAD STD. SHEET 3A DETOURS	STANDARD DETOUR SIGNS			
	ROAD STD. SHEET 4 DETOURS	STANDARD DETOUR SIGNS			
	ROAD STD. SHEET 5 DETOURS	STANDARD DETOUR SIGNS			
	ROAD STD. SHEET 5A DETOURS	STANDARD DETOUR SIGNS			

R-20060 6 OF 6

PLANS PREPARED BY:
AMERICAN CONSULTING ENGINEERS, INC.

CERTIFIED BY: *Michael H. Wynn* DATE: *May 15, 1992*



RECOMMENDED FOR APPROVAL *7-9-92*
James C. Karr
BRIDGE REHABILITATION ENGINEER, INDOT



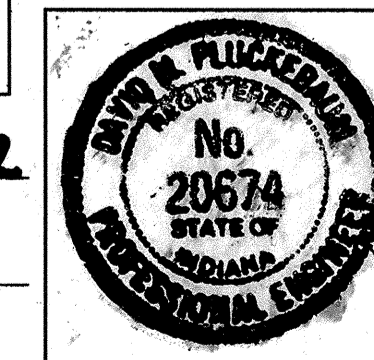
APPROVED *7-14-92*
Steph 2. Kule
CHIEF, DIVISION DESIGN

INDIANA DEPARTMENT OF HIGHWAYS
STANDARD SPECIFICATIONS DATED 1988
TO BE USED WITH THESE PLANS.
DES. NO 8349560

REVISIONS SHEET NO.	
DATE	

REVISIONS SHEET NO.	
DATE	

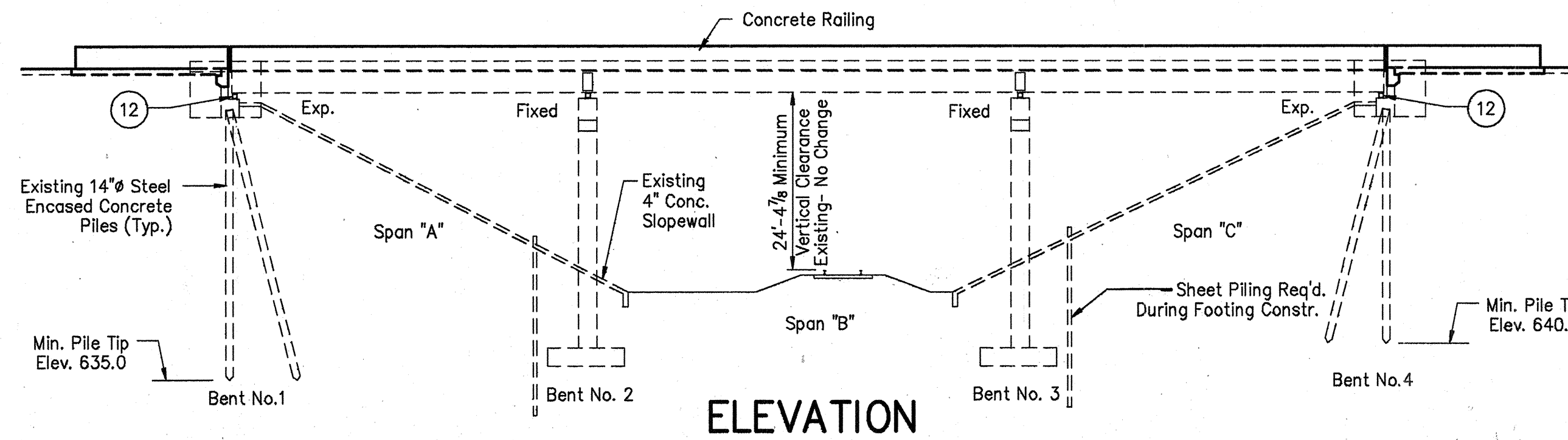
RECOMMENDED FOR APPROVAL *7-10-92*
John Bell
DESIGN CONSULTANT SERVICES ENGINEER, INDOT



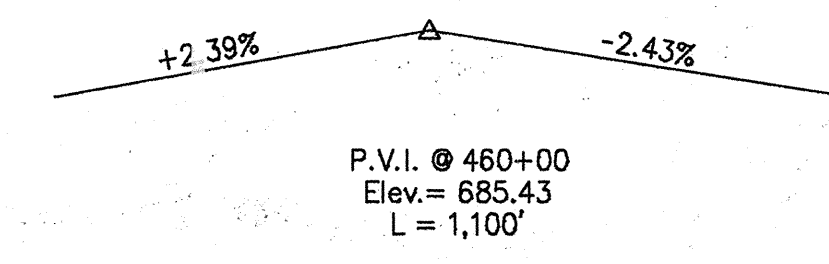
FEDERAL HIGHWAY ADMINISTRATION
DEPARTMENT OF TRANSPORTATION
APPROVED: _____
DIVISION ADMINISTRATOR _____ DATE _____

BRIDGE FILE: I-94-47-2254A

STRUCTURE BUILT TO A 1100' V.C.

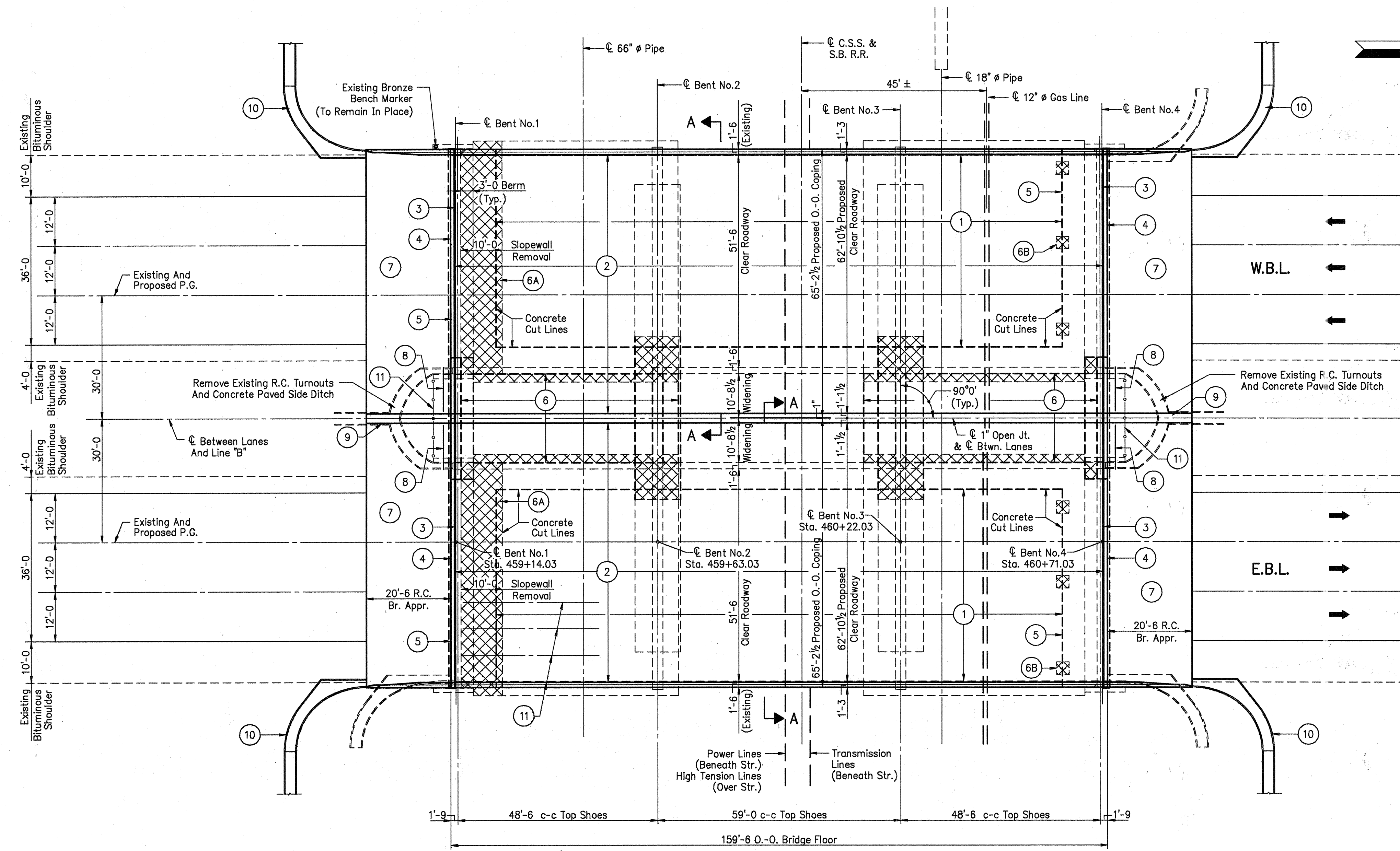


ELEVATION



LEGEND

- 1 Limits Of 1/4" Surface Milling
- 2 Limits Of Bridge Deck Overlay
- 3 Install Expansion Joint Type BS11
- 4 Type IA Joint
- 5 Remove 10'-0" Of Existing Bridge Deck And Portion Of Existing Mudwall And Reconstruct With Pavement Ledge
- 6 Remove 2'-0" Width Of Existing Concrete Slopewall And Reconstruct Concrete Slopewall Continuous Between Structures Per Road Standard MB2
- 6A Remove And Reconstruct 10'-0" Width Of Existing Concrete Slopewall. Fill Voids With Flowable Mortar.
- 6B Remove And Reconstruct 3'-0" x 3'-0" Section Of Existing Concrete Slopewall. Fill Voids With Flowable Mortar.
- 7 Remove Existing Approach, Construct New R.C. Bridge Approach And Bridge Railing Transition.
- 8 6" F.B.C.C.S. (Perf.) Pipe
- 9 Construct Concrete Median Barrier. Transition From 2'-3" Width At Bridge To 2'-0" Width At End Of R.C. Bridge Approach.
- 10 Remove Existing R.C. Turnout Where Shown. Construct 97 Lft. Of R.C. Gutter. (Includes 45 Lft. For R.C. Gutter Turnout.)
- 11 Remove Existing Fence (Included In Cost Of Other Items)
- 12 Clean And Paint End Bearing Assemblies. Existing Paint Contains Lead.



PLAN

UTILITY OWNERS

- ELECTRIC: Chicago South Shore & South Bend Railroad Company
South Bend, Indiana
And
Northern Indiana Public Service Company
Michigan City, Indiana
- GAS: Northern Indiana Public Service Company
Michigan City, Indiana

GENERAL PLAN
BRIDGE DECK RECONSTRUCTION AND WIDENING
TWIN CONTINUOUS STEEL BEAM BRIDGES
3 SPANS: 48'-6", 59'-0", 48'-6" SQUARE
2 @ 62'-10 1/2" CLEAR ROADWAYS
INTERSTATE 94 OVER C.S.S. AND S.B. R.R.

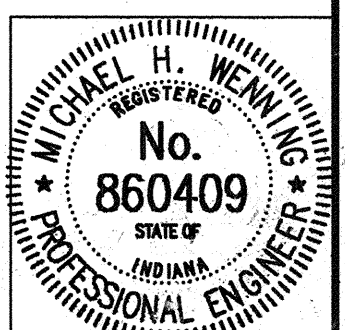
INDIANA DEPARTMENT OF HIGHWAYS

LAPORTE COUNTY

SCALE: - 1/16" = 1'-0" DATE: - May 15, 1992

SUBMITTED FOR APPROVAL *Michael H. Weening*

DRAWING: - W1 OF W15 SHEET: - 2 OF 23
PROJECT: - IR-94-2(71)44
CONTRACT NO. R-20060
BRIDGE FILE: - 1-94-47-2254A



NOTES:

- For Existing and Proposed Section A-A and additional details, see Drawing W2.
- For General Notes, Material Notes, Standard Drawings and additional Details, see Drawing W2.
- Cross-hatched areas indicate 250 Sys. Removal Of Slopewall. 569 Sys. of 4" Concrete Slopewall required. (Includes 51 Sys. for Toewall Equivalent and 6 Sys. for replacement @ Inspection Holes)

DESIGNED	CK'D
DRAWN	CK'D
TRACED	CK'D

DWG FILE: V88\B225801
PLOT SCALE: 1=182
PLOT ORIGIN: 0,000,000

SPELLCHK: 05/14/92
EDIT DATE: 05/14/92
EDITED BY: DDC

GENERAL NOTES

Two lanes of traffic shall be maintained in each direction throughout the length of the project.

Plans of the existing structures are on file in the Bridge Department, Indiana Department of Transportation, as Bridge No.: 1-94-47-2254.

Where new work is to be fitted to old work, the contractor shall check all dimensions and conditions in the field, and report any errors or discrepancies to the engineer and assume responsibility for their correctness and fit of the new part to the old.

Reinforcing steel covering shall be 1" below the top and 1" minimum above the bottom of the Class "C" portion of the floor slab, 3" in the footings except bottom steel which shall be 4" and 2" in all other parts, unless noted.

Continuous concrete pours shall be required between construction joints as shown in the detail plans.

Chamfer exposed edges 1", unless noted. Bevel forms 1/4" under copings.

Concrete in floor slab, mudwall and railing to be Class "C".

Concrete in the footings and crashwalls to be Class "B".

Concrete in the columns and bent caps to be Class "A".

All concrete not noted above to be Class "A".

Piles shall have a minimum bearing value shown on the detail drawings. Determine the pile lengths by Article 701 of the Specifications.

Barrier Delineators shall be placed at the interior end of railing transitions and at 20 feet spacing (max.) thereafter. The color of the delineators shall match the adjacent lane line.

DESIGN DATA

LIVE LOAD: HS20-44 Loading with impact and distribution of loads in accordance with 1989 AASHTO Specifications and Interim Specifications and checked for 2-24,000 lb. axes spacing 4'-0" apart and Special Toll Road Loading shown on this drawing.

DEAD LOAD: Actual weight plus 35 lbs./sq.ft. to provide for future wearing surface.

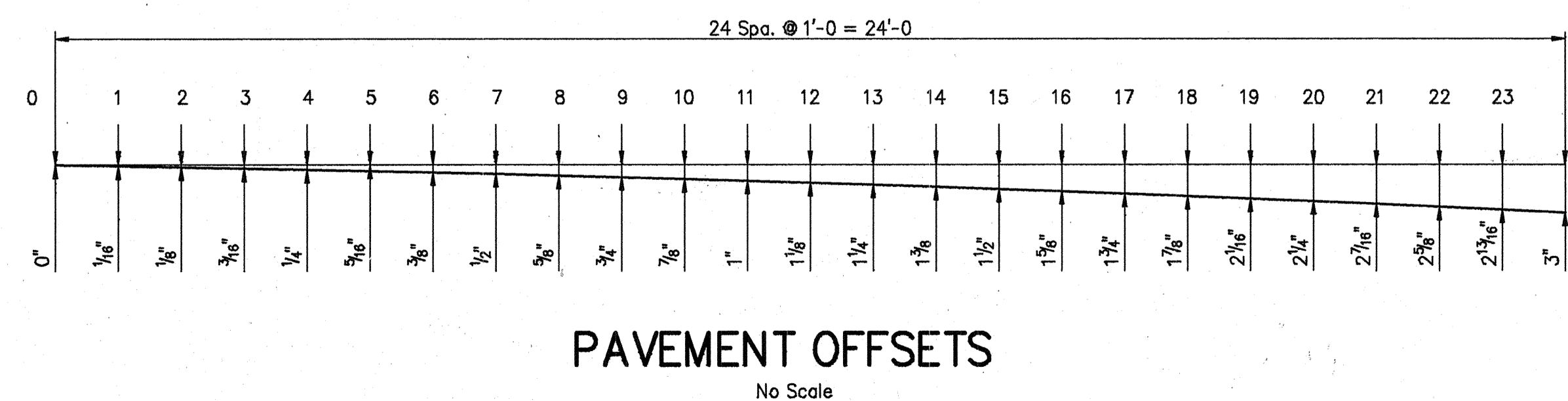
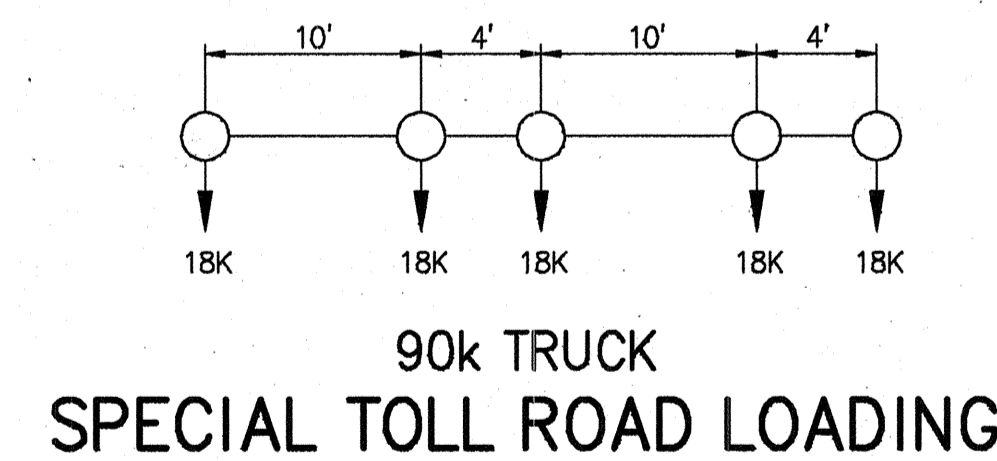
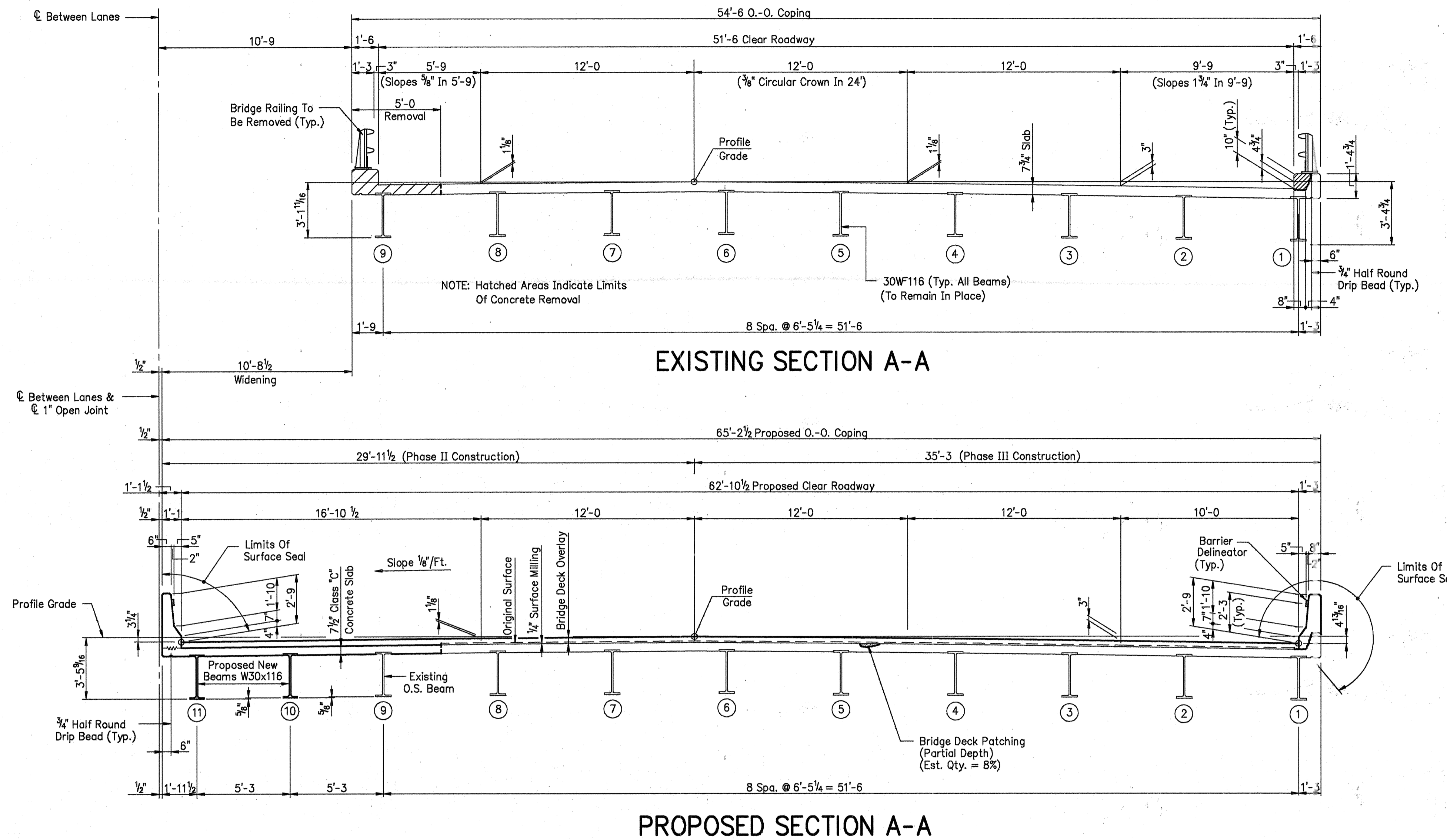
ALLOWABLE STRESSES: $f_c = 3,000$ psi $f_y = 40,000$ psi

MATERIAL NOTES

BRIDGE DECK OVERLAY: 1 3/4" Modified Portland Cement Concrete or 2 1/2" Dense Portland Cement Concrete (1 1/2" or 2 1/4" respectively, above the original surface).

Standard Drawings

Bridge Standard	Road Standard	Description
C1		Reinforcing Bar Notes, Pile Shell Splice
C3		Type IA Joint, BS Joint Details And Optional Splice For Railing Reinforcing
	Sht. A Jt's.	Sheet Wire Fabric, Longitudinal Joint
	MB1	Reinforced Concrete Gutter Turnout
	MB2	Concrete Slopewall Details
	CB1	Concrete Median Barrier



GENERAL PLAN DETAILS

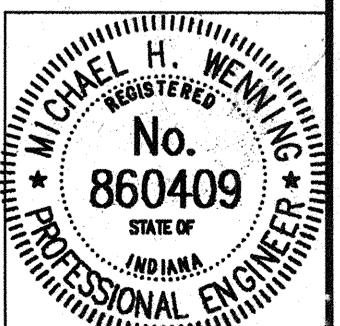
BRIDGE DECK RECONSTRUCTION AND WIDENING

INDIANA DEPARTMENT OF HIGHWAYS

SCALE: - 1/4" = 1'-0" UNLESS NOTED DATE: - May 15, 1992

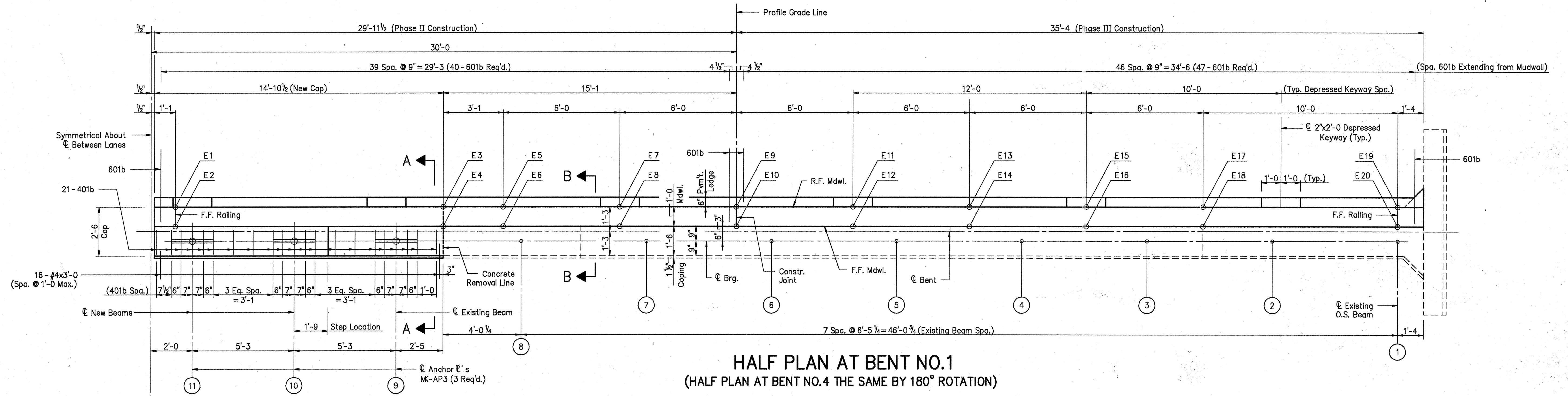
SUBMITTED FOR APPROVAL *[Signature]*

DRAWING: - W2 OF W15 SHEET: - 3 OF 23
 PROJECT: - IR-94-2(71)44
 CONTRACT NO. R-20060
 BRIDGE FILE: - 1-94-47-2254A

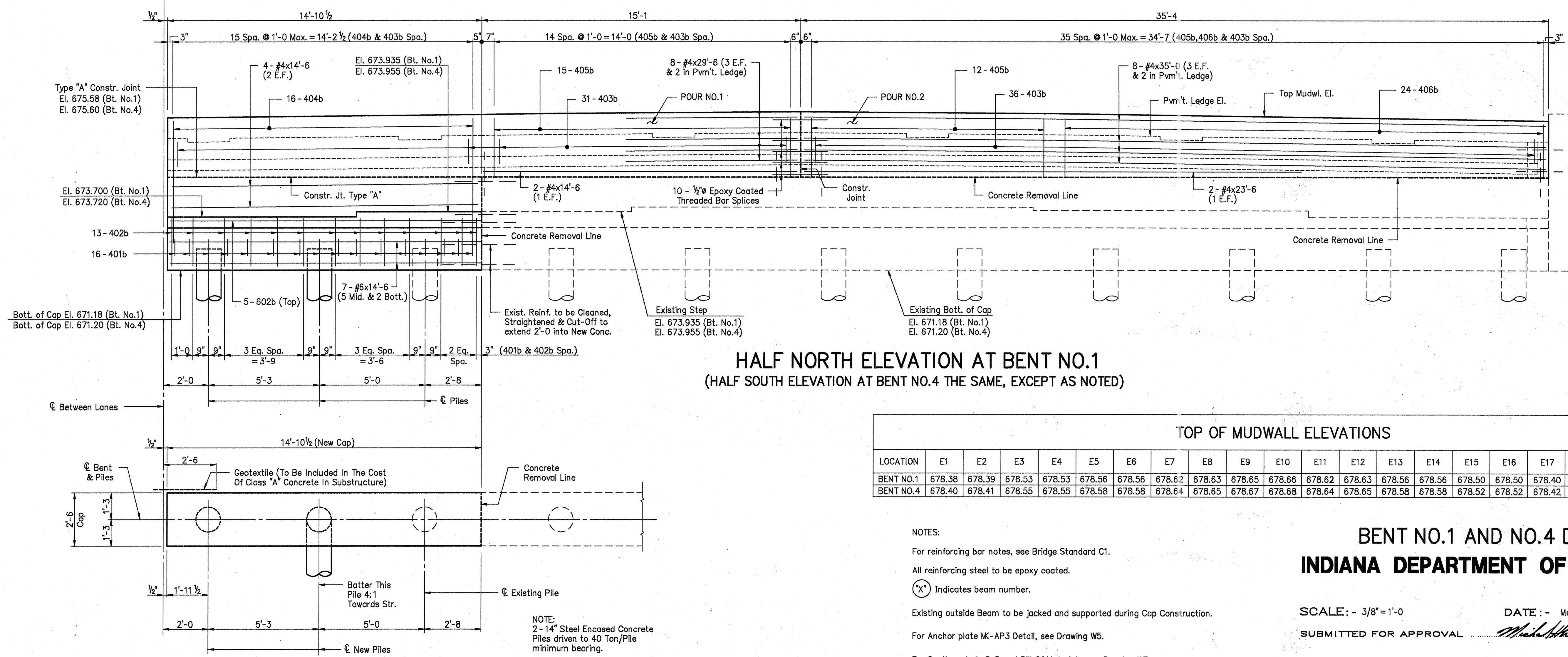


DESIGNED: C.K'D
 DRAWN: RJC 4/7/89 C.K'D DAD 5/6/92
 TRACED: C.K'D

DWG FILE: \88\88225802
 PLOT SCALE: 1"=48'
 PLOT ORIGIN: 0,00,00
 SPELLCHK: 05/12/92
 EDIT DATE: 05/14/92
 EDITED BY: DDC



HALF PLAN AT BENT NO.1
(HALF PLAN AT BENT NO.4 THE SAME BY 180° ROTATION)



HALF NORTH ELEVATION AT BENT NO.1
(HALF SOUTH ELEVATION AT BENT NO.4 THE SAME, EXCEPT AS NOTED)

TOP OF MUDWALL ELEVATIONS																				
LOCATION	E1	E2	E3	E4	E5	E6	E7	E8	E9	E10	E11	E12	E13	E14	E15	E16	E17	E18	E19	E20
BENT NO.1	678.38	678.39	678.53	678.53	678.56	678.56	678.62	678.63	678.65	678.66	678.62	678.63	678.56	678.56	678.50	678.50	678.40	678.41	678.25	678.26
BENT NO.4	678.40	678.41	678.55	678.55	678.58	678.58	678.64	678.65	678.67	678.68	678.64	678.65	678.58	678.58	678.52	678.52	678.42	678.43	678.27	678.28

- NOTES:
- For reinforcing bar notes, see Bridge Standard C1.
 - All reinforcing steel to be epoxy coated.
 - (X) Indicates beam number.
 - Existing outside Beam to be jacked and supported during Cap Construction.
 - For Anchor plate MK-AP3 Detail, see Drawing W5.
 - For Sections A-A, B-B and Bill of Materials, see Drawing W5.
 - For Removal Details, see Drawing W4.

BENT NO.1 AND NO.4 DETAILS
INDIANA DEPARTMENT OF HIGHWAYS

SCALE: - 3/8" = 1'-0" DATE: - May 15, 1992

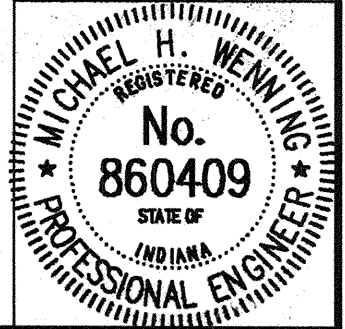
SUBMITTED FOR APPROVAL *Michael H. Weinstock*

DRAWING: - W3 OF W15 SHEET: - 4 OF 23

PROJECT: - IR-94-2(71)J44

CONTRACT NO. R-20060

BRIDGE FILE: - I-94-47-2254A



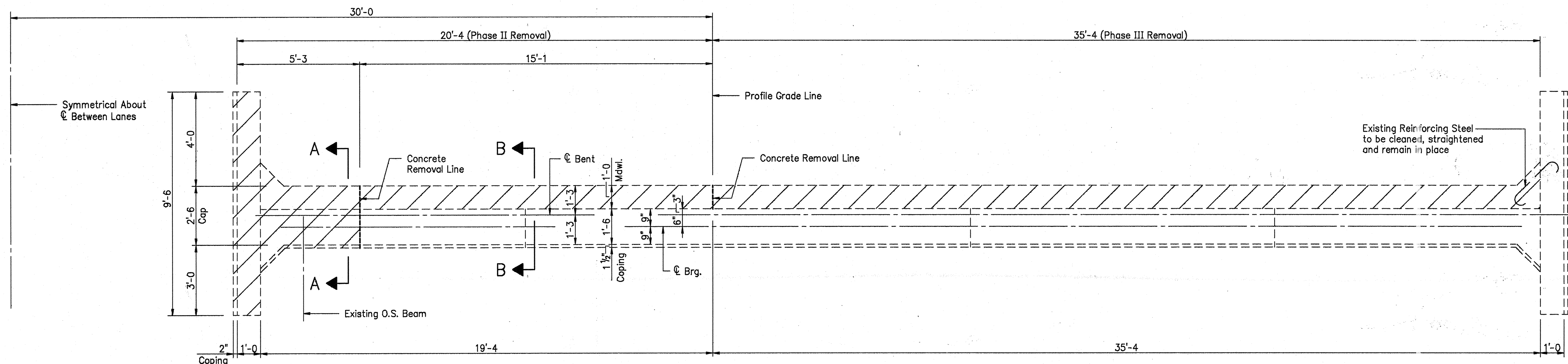
DESIGNED JSS 10/12/89 CK'D CLS 10/19/89
 DRAWN RJC 10/18/89 CK'D DAD 5/11/92
 TRACED CK'D

DWG FILE: \88\88225814
 PLOT SCALE: 1-32
 PLOT ORIGIN: 0,0,0,0

SPELCHK: EDIT DATE: 05/14/92
 EDITED BY: DGS

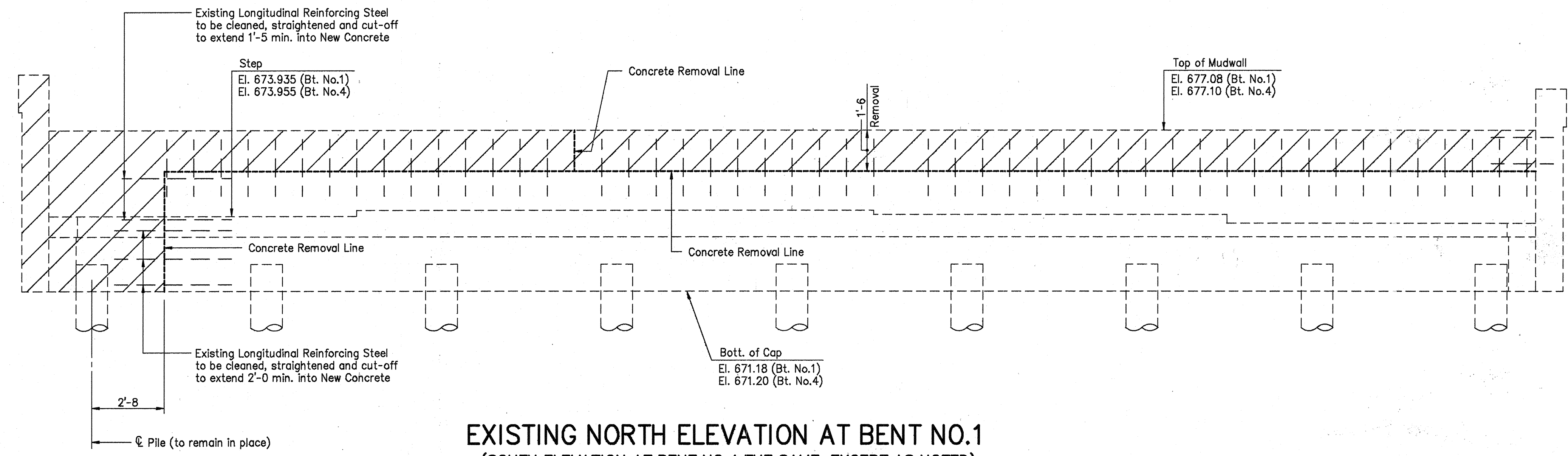
PILING PLAN

NOTE:
 2-14" Steel Encased Concrete Piles driven to 40 Ton/Pile minimum bearing.

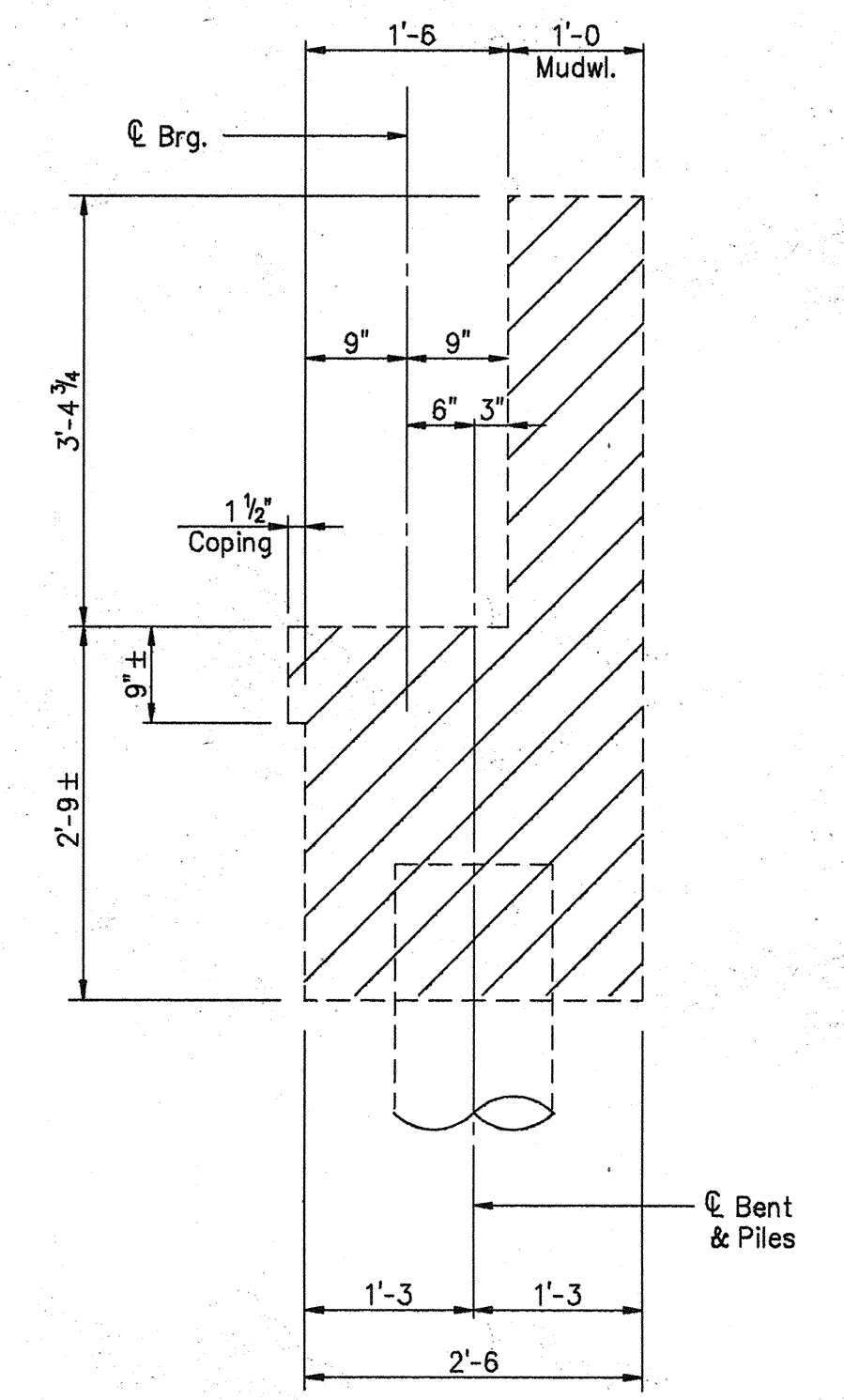


NOTE:
Existing O.S. Beam to be jacked and supported during bent cap construction. Jacking Reaction (Including Deck) = 8 Tons

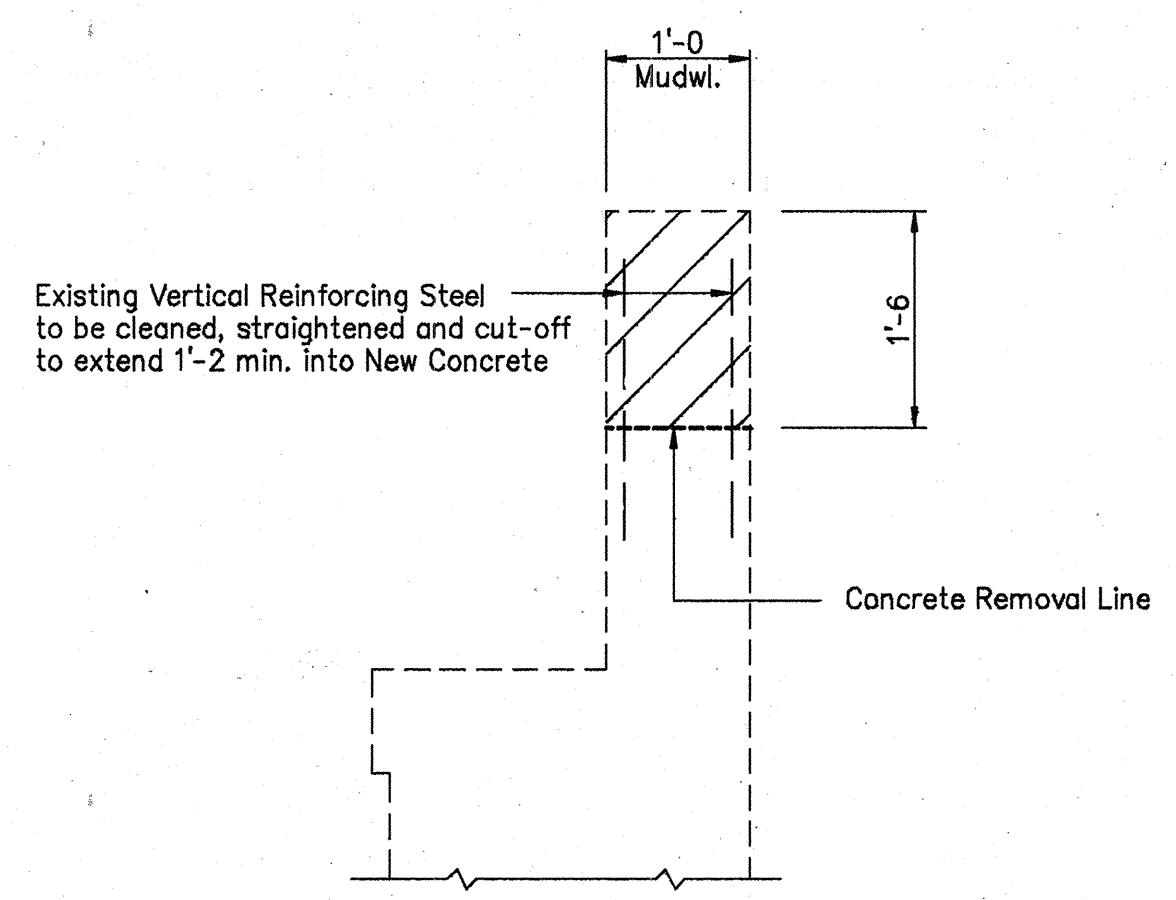
EXISTING PLAN AT BENT NO.1
(BENT NO.4 THE SAME BY 180° ROTATION)



EXISTING NORTH ELEVATION AT BENT NO.1
(SOUTH ELEVATION AT BENT NO.4 THE SAME, EXCEPT AS NOTED)



EXISTING SECTION A-A
Scale: 3/4" = 1'-0"



EXISTING SECTION B-B
Scale: 3/4" = 1'-0"

NOTE:
Hatched areas indicate limits of concrete removal.
For additional details, see Drawings W3 and W5.
For Bill Of Materials, see Drawing W5.

BENT NO.1 AND NO.4 DETAILS
INDIANA DEPARTMENT OF HIGHWAYS

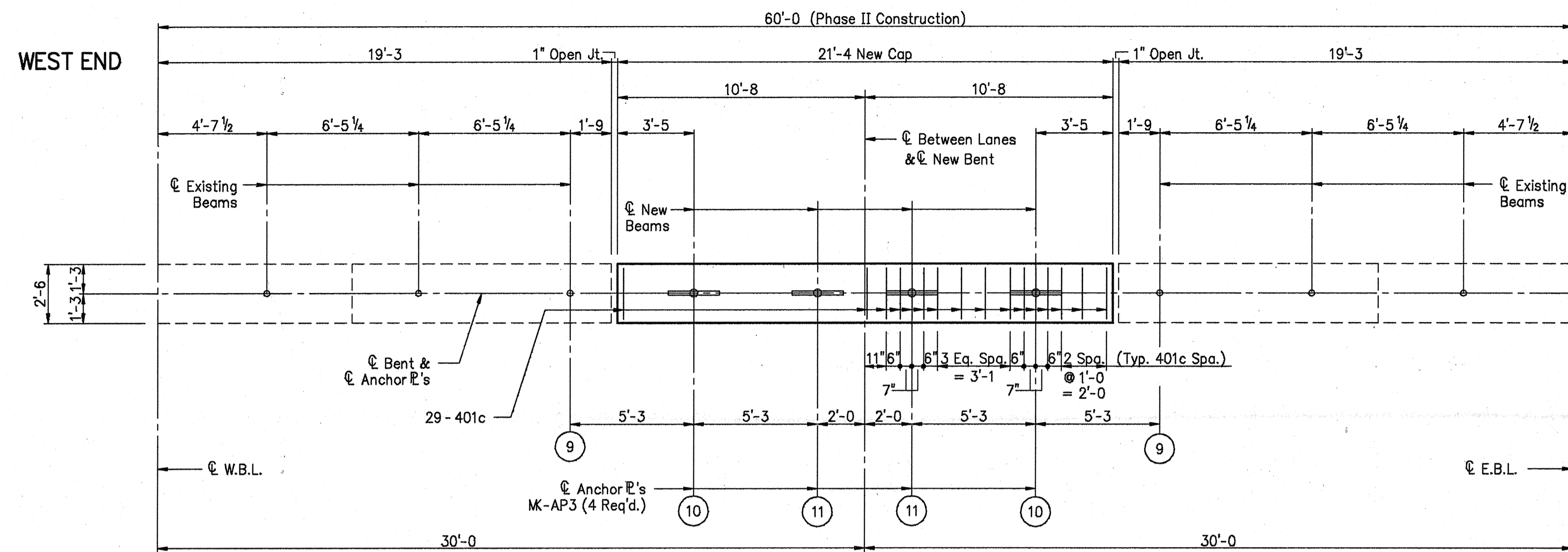
SCALE: - 3/8" = 1'-0, UNLESS NOTED DATE: - May 15, 1992
SUBMITTED FOR APPROVAL *[Signature]*

DRAWING: - W4 OF W15 SHEET: - 5 OF 23
PROJECT: - IR-94-2(71)44
CONTRACT NO. R-20060
BRIDGE FILE: - I-94-47-2254A

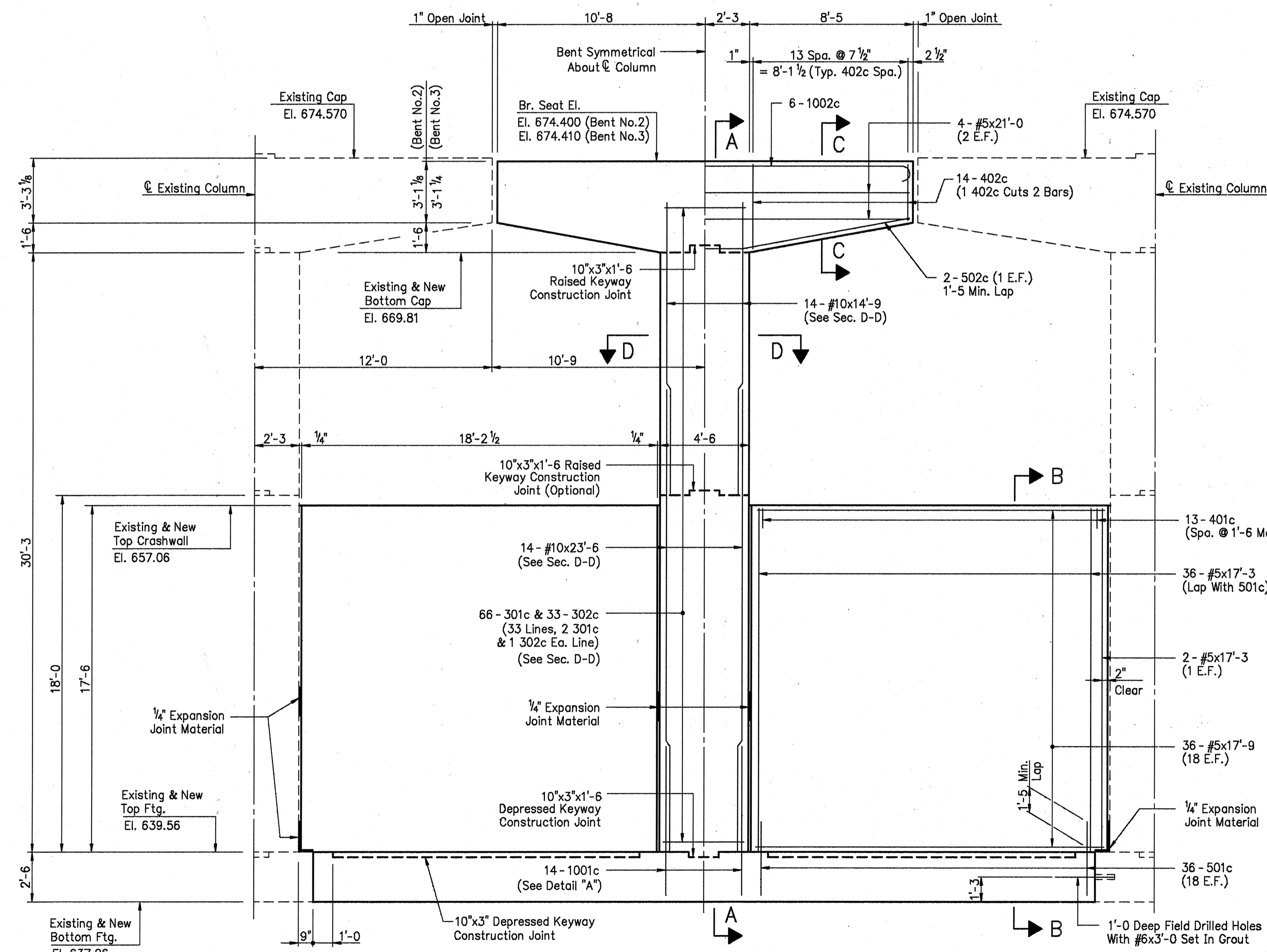


DESIGNED: JSS 10/12/89 CK'D: CLS 10/19/89
DRAWN: RJC 10/17/89 CK'D: JSS 11/2/89
TRACED: _____ CK'D: _____

DWG FILE: V88\882254\3
PLOT SCALE: 1/32
PLOT ORIGIN: 0.00,0.00
SPELLOK: _____
EDIT DATE: 05/14/92
EDITED BY: DGS



CAP PLAN AT BENT NO. 2
(BENT NO. 3 THE SAME)

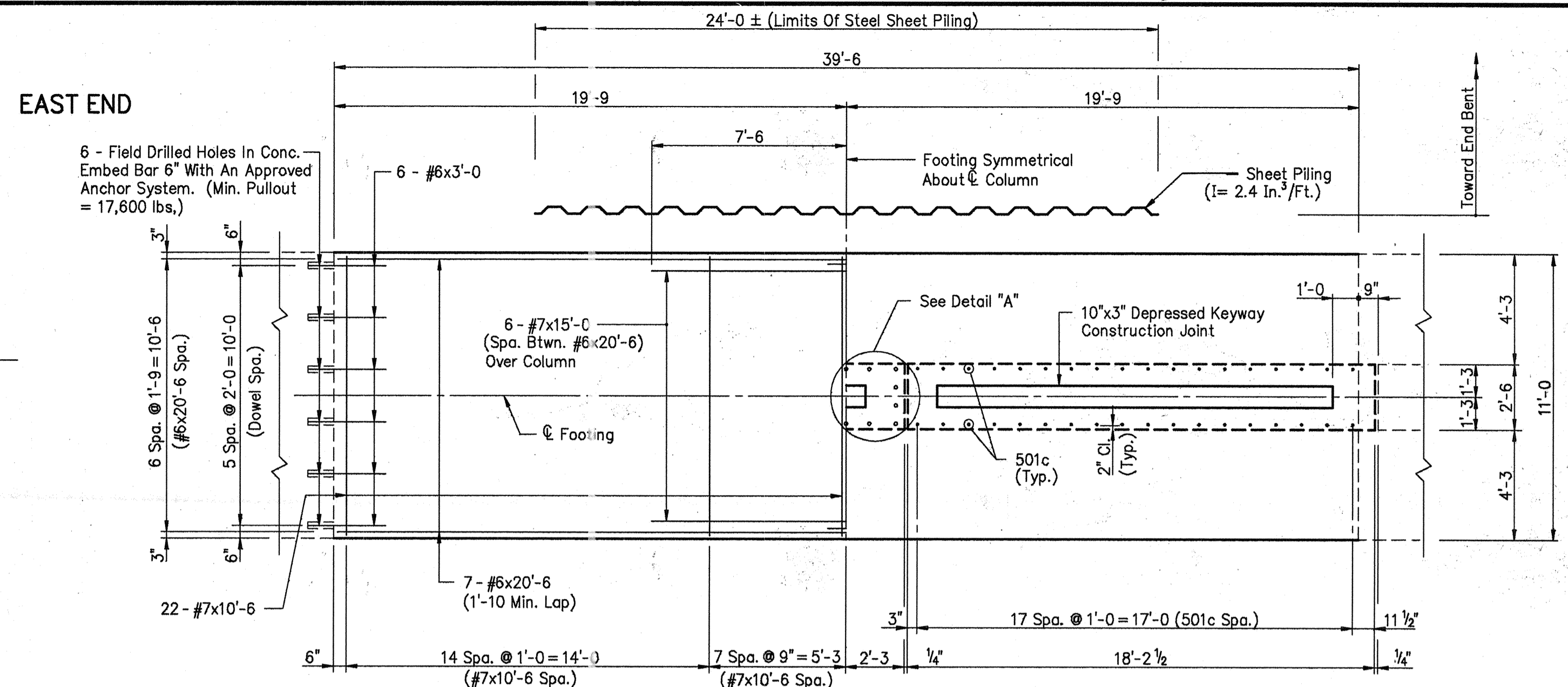


(THIS HALF SHOWING CONCRETE DIMENSIONS)

(THIS HALF SHOWING REINFORCING STEEL)

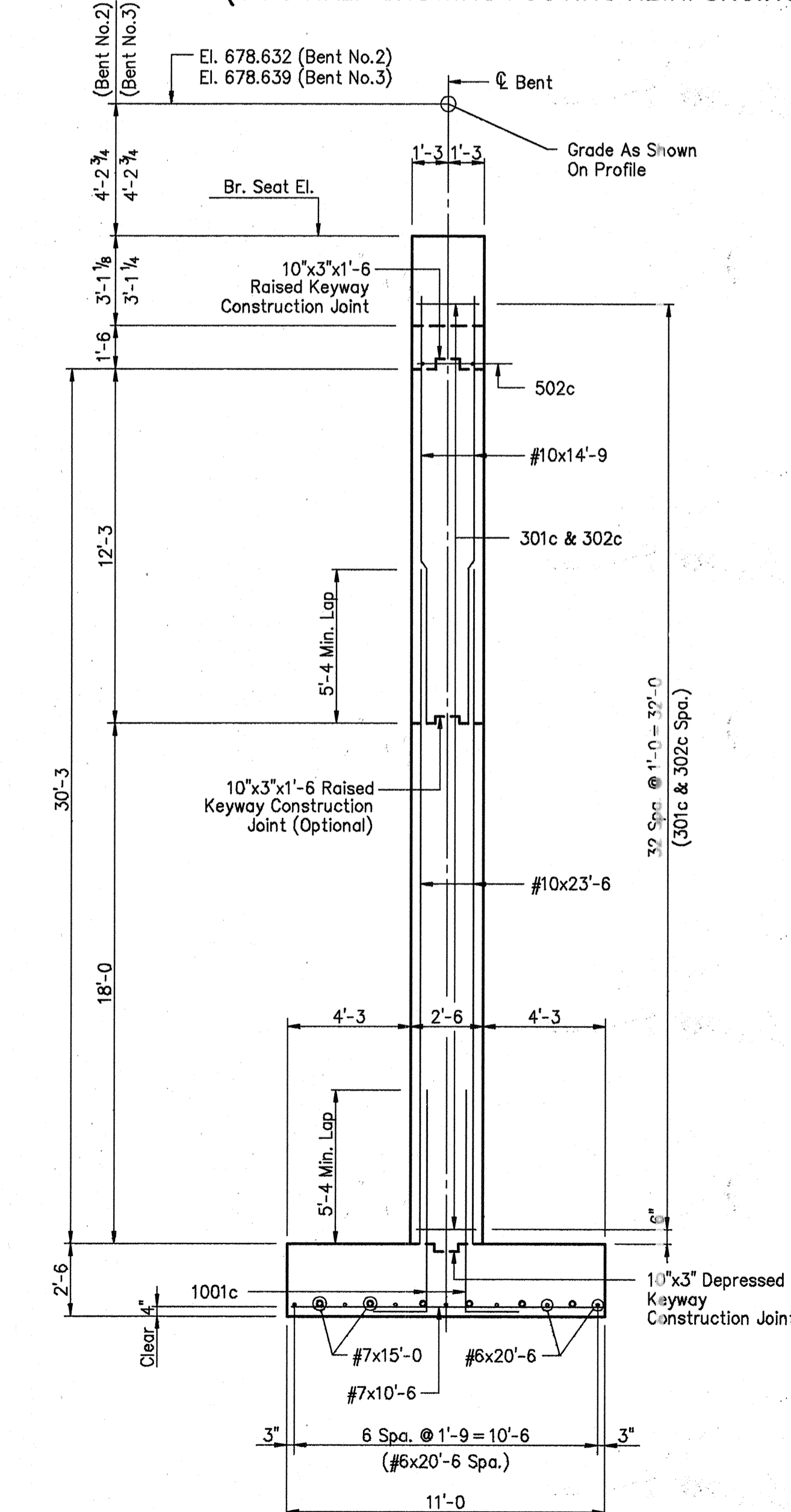
ELEVATION AT BENT NO. 2
(BENT NO. 3 THE SAME, EXCEPT AS NOTED)

EAST END

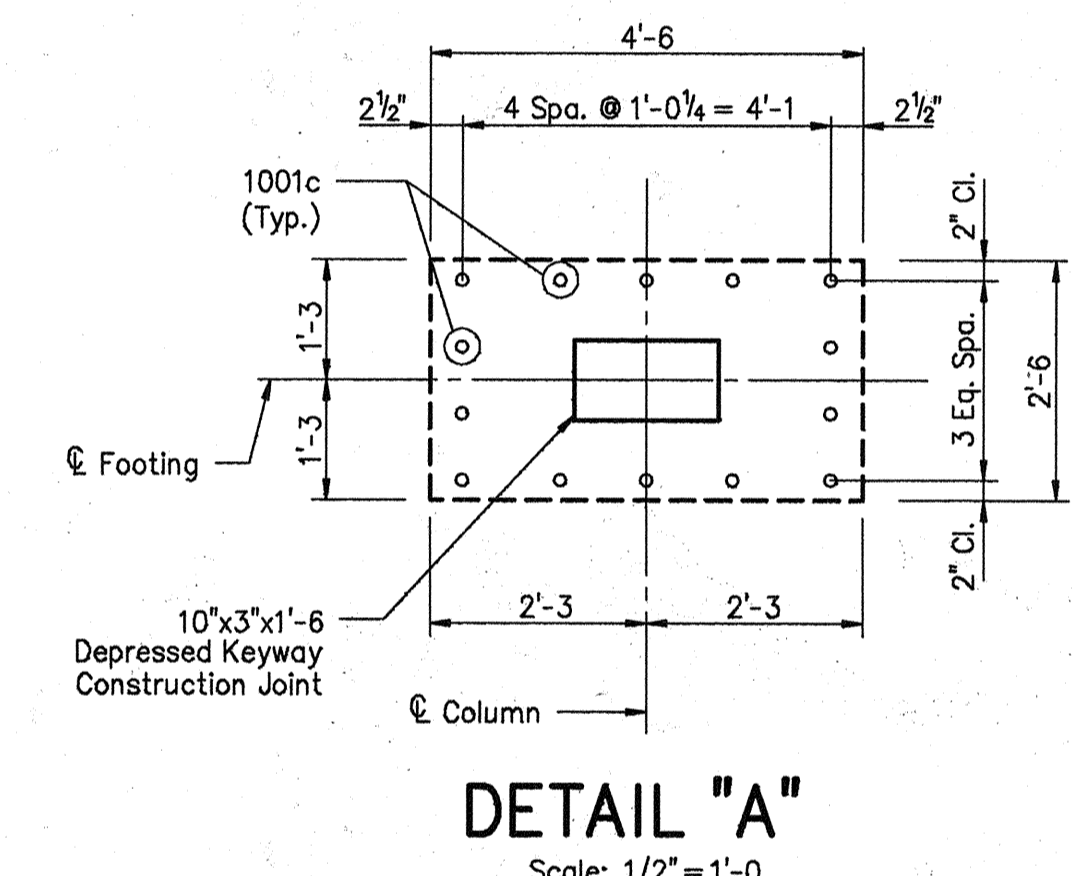


(THIS HALF SHOWING NEAT LINES AND VERTICAL STEEL EXTENDING FROM FOOTING)
FOOTING PLAN

(THIS HALF SHOWING FOOTING REINFORCING)



SECTION A-A



DETAIL "A"
Scale: 1/2" = 1'-0"

NOTES:

For Sections B-B, C-C & D-D, additional details and Bill Of Materials, see Drawing W7.

⊗ Indicates beam number.

For Anchor Plate MK-AP3 Detail, see Drawing W5.

BENT NO.2 AND NO.3 DETAILS
INDIANA DEPARTMENT OF HIGHWAYS

SCALE: - 1/4" = 1'-0, UNLESS NOTED

DATE: - May 15, 1992

SUBMITTED FOR APPROVAL

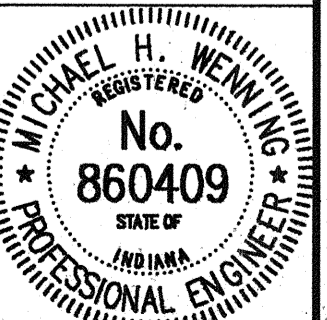
Michael H. Wenzel

DRAWING: - W6 OF W15 SHEET: - 7 OF 23

PROJECT: - IR-94-2(71)44

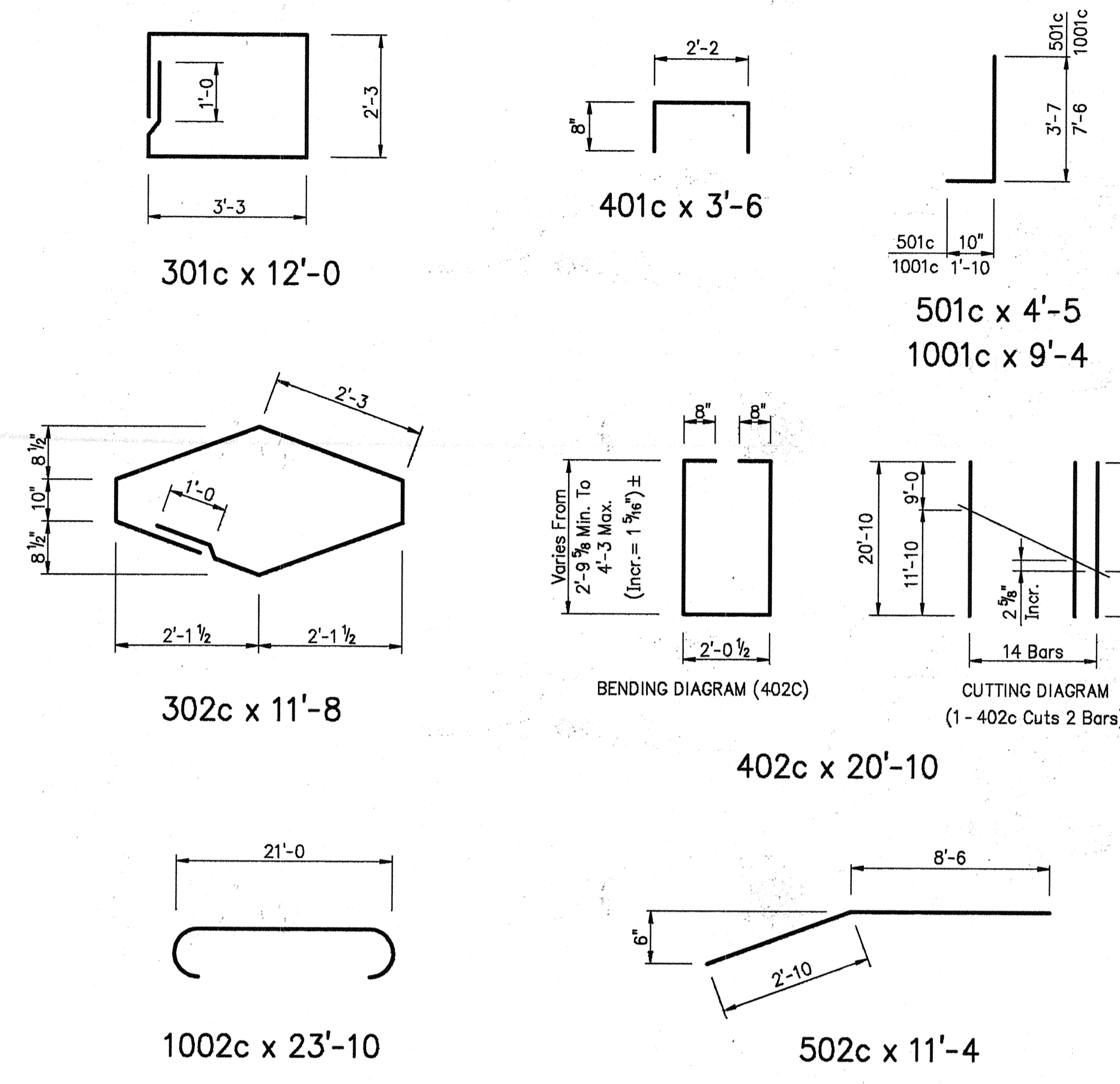
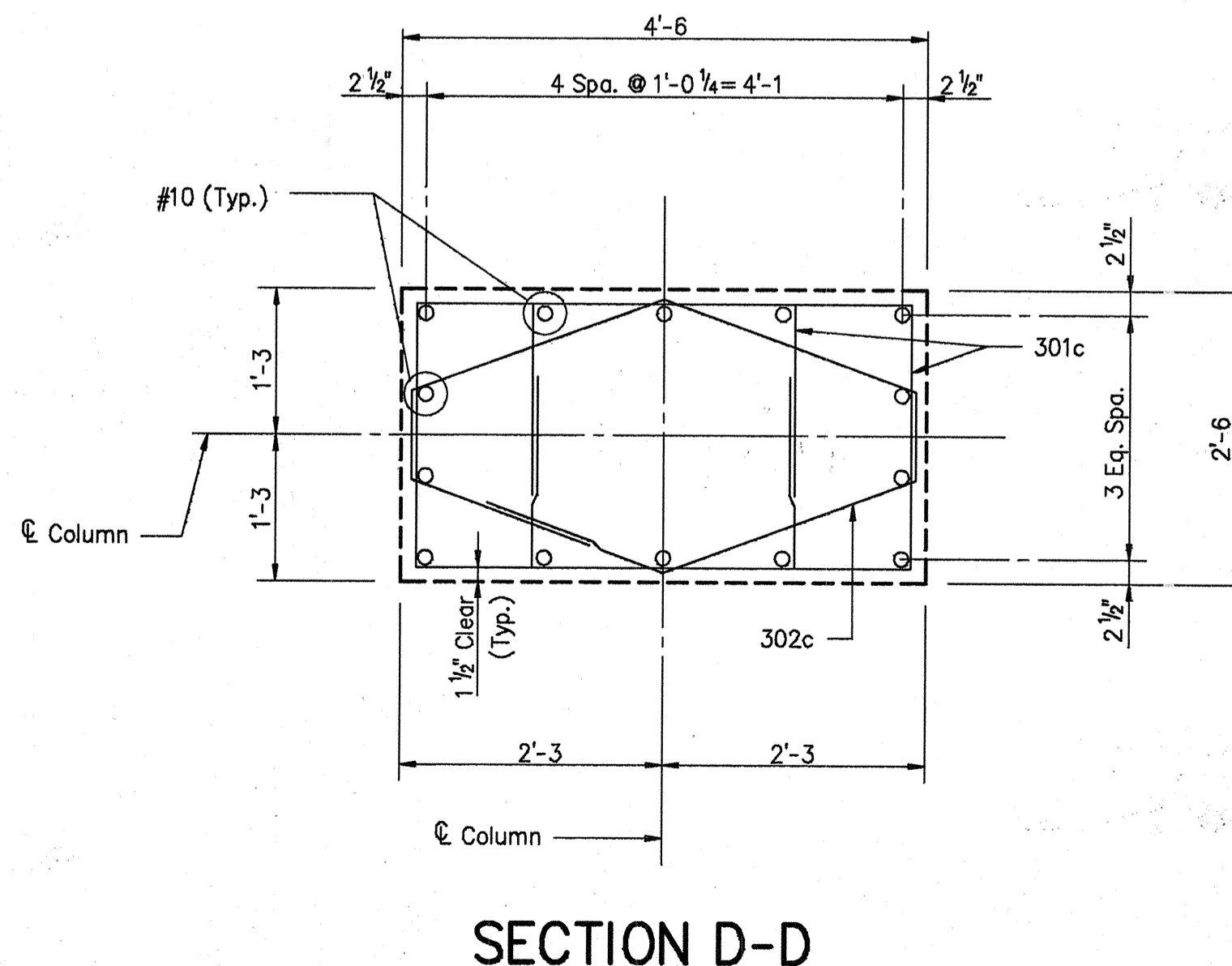
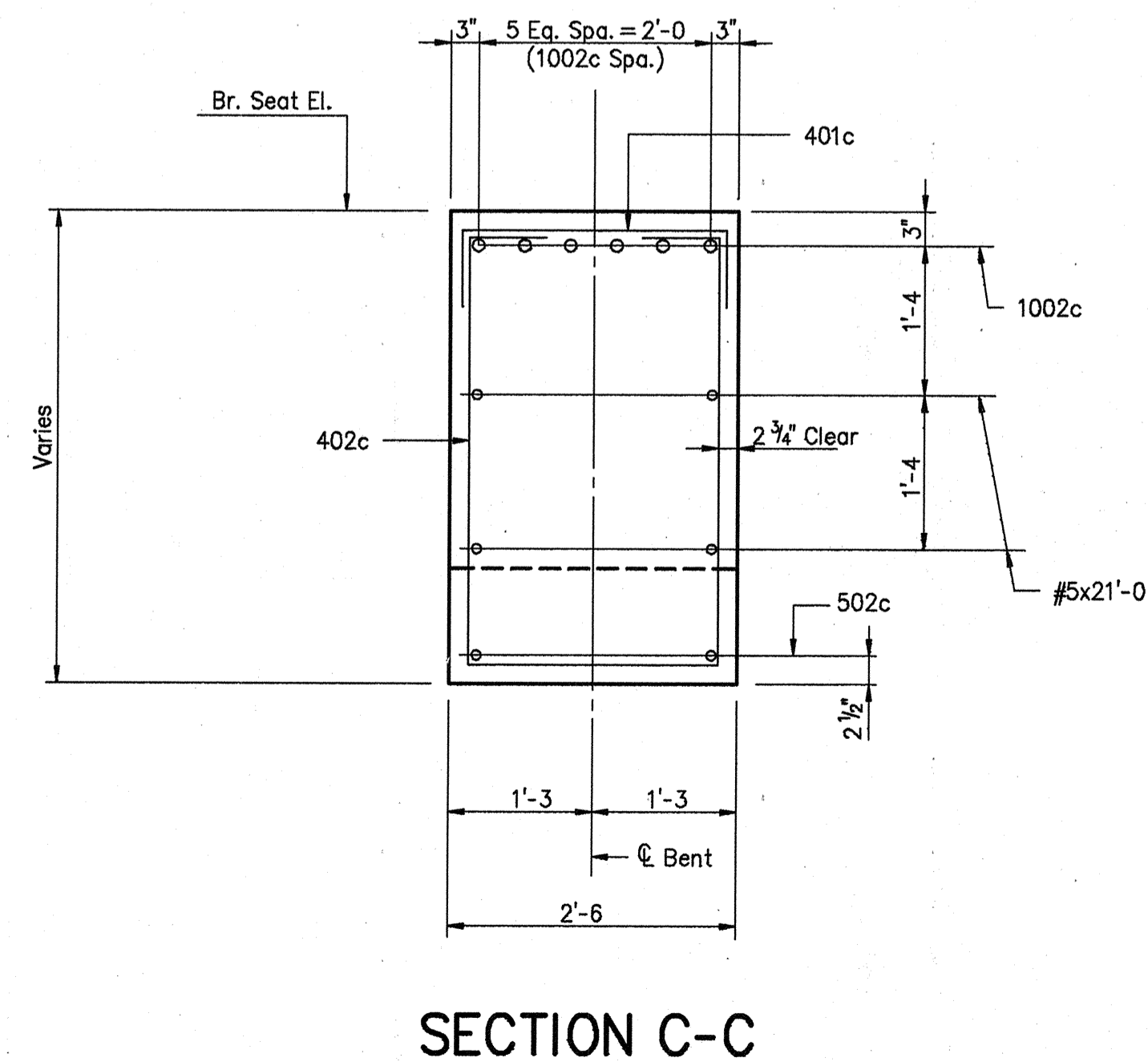
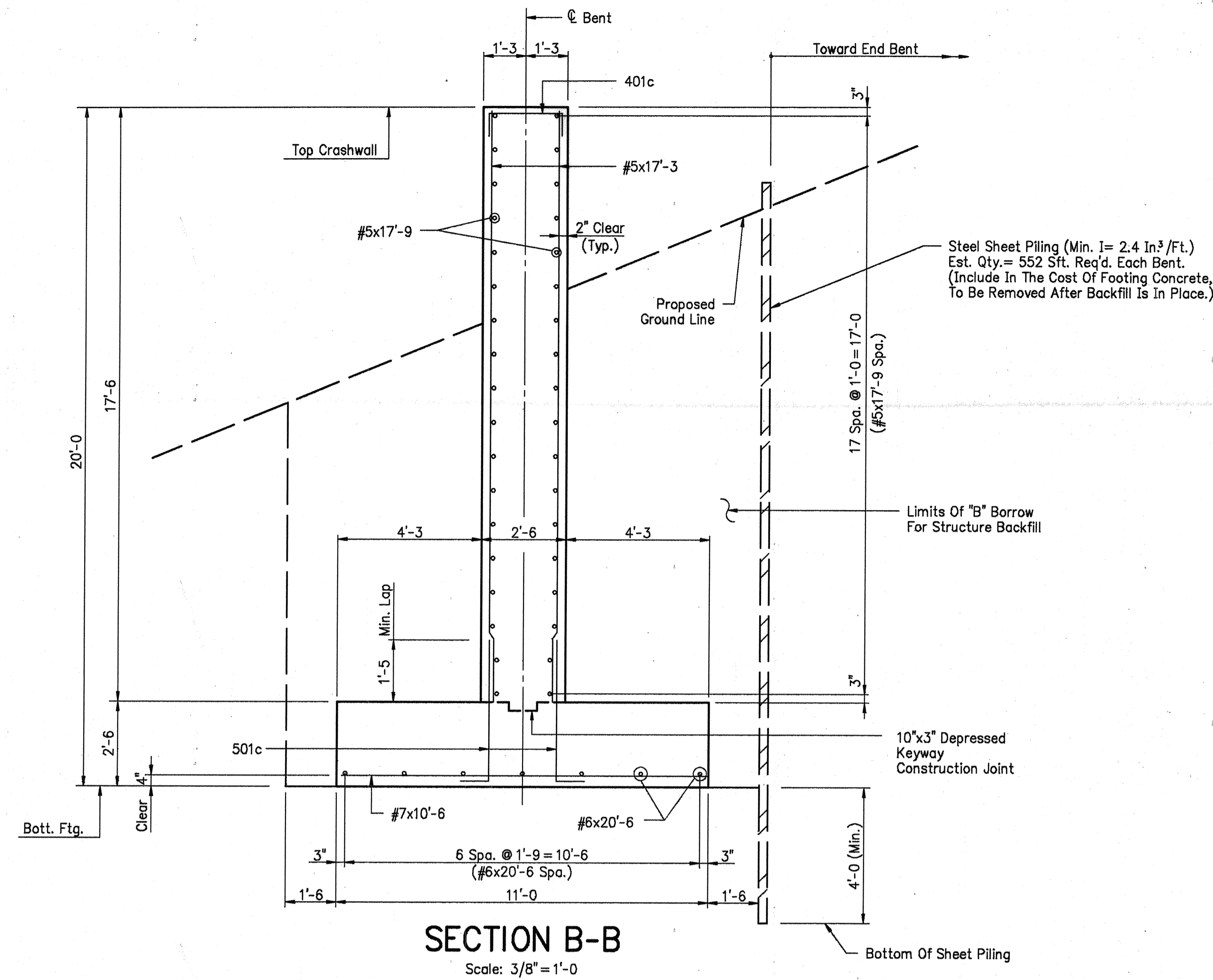
CONTRACT NO. R-20060

BRIDGE FILE: - I-94-47-2254A



DESIGNED MHW 10/19/89 CWD CLS 10/23/89
DRAWN RJC 10/27/89 CWD JSS 11/6/89
TRACED CWD

DWG FILE: V8518225818
PLOT SCALE: 1"=40'
PLOT ORIGIN: 0,00,0,00
SPELLCHK: OK
EDIT DATE: 05/14/92
EDITED BY: CWD



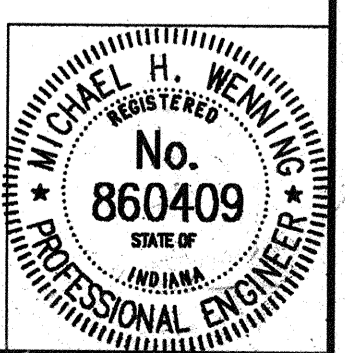
BILL OF MATERIALS BENT No.2 (BENT NO.3 THE SAME)

REINFORCING STEEL			
Size And Mark	No. Of Bars	Length (Feet)	Weight (Lbs.)
1001c	14	9'-4	
1002c	6	23'-10	
#10	14	23'-6	
#10	14	14'-9	
Total No. 10			3,482
#7	6	15'-0	
#7	43	10'-6	
Total No. 7			1,107
#6	14	20'-6	
#6	12	3'-0	
Total No. 6			485
501c	72	4'-5	
502c	4	11'-4	
#5	4	21'-0	
#5	72	17'-9	
#5	76	17'-3	
Total No. 5			3,167
401c	55	3'-6	
402c	14	20'-10	
Total No. 4			323
301c	66	12'-0	
302c	33	11'-8	
Total No. 3			443
TOTAL REINFORCING STEEL			9,007
CONCRETE			
Class "A" In Substructure			
Cap			7.9 Cys.
Column			12.6 Cys.
Total Class "A" In Substructure			20.5 Cys.
Class "B" Above Footing (Crashwall)			
2 @ 29.5 Cys.			59.0 Cys.
Class "B" In Footing			40.2 Cys.
MISCELLANEOUS			
Field Drilled Holes In Concrete			12 Ea.
Anchor Plate MK-AP3			4 Ea.
"B" Borrow For Structure Backfill			205 Cys.

NOTES:
For reinforcing bar notes, see Bridge Standard C1.
For location of Sections B-B, C-C and D-D, see Drawing W6.

BENT NO.2 AND NO.3 DETAILS AND BILL OF MATERIALS INDIANA DEPARTMENT OF HIGHWAYS

SCALE: - 3/4" = 1'-0, UNLESS NOTED DATE: - May 15, 1992
SUBMITTED FOR APPROVAL *[Signature]*
DRAWING: - W7 OF W15 SHEET: - 8 OF 23
PROJECT: - IR-94-2 71 44
CONTRACT NO: - 20060
BRIDGE FILE: - I-94-47-2254A



DESIGNED: MHW 10/19/89 C.K'D C.L.S. 10/19/89
DRAWN: R.J.C. 10/31/89 C.K'D J.S.S. 10/6/89
TRACED: C.K'D
DWG FILE: \88\88225419
PLOT SCALE: 1=16
PLOT ORIGIN: 0,000,000
SPELCHK: 05/14/92
EDIT DATE: 05/14/92
ENTER BY: DJS

GENERAL PROCEDURE

- After the new beams have been erected, install the diaphragms necessary to connect the new beams securely to each other.
- Adjust the new beam system longitudinally so that dimension "C" from the centerline of top shoe to the face of the mudwall at Bent No.1 and Bent No.4 are equal.
- Field drill the necessary holes in the existing outside beams and install the remaining diaphragms. Tighten all bolts and complete the welding of end diaphragm connections.
- After the above operations are complete, weld the fixed shoes to the anchor plates at Bent No.2 and Bent No.3.
- Adjust the expansion plate under each expansion shoe in accordance with Dimension "A" or "B" in Table I for the prevailing temperature. Note that Dimension "A" is always the distance from a vertical line through the centerline of top shoes in a direction away from the fixed shoe. Weld the expansion plates to the anchor plates at Bent No.1 and Bent No.4.
- Screed elevations shall be determined by adding the concrete dead load deflection given on this drawing to the required final concrete elevations at all screed points. Take elevations at screed points on top of the beams adjacent to the screed points. Subtract these elevations from the elevations corrected for deflection and use the resulting dimensions as the height for setting the screed form above the top of the beam. These dimensions remain constant regardless of how much or in what order the concrete is poured. DO NOT SET SCREEDS BY LEVELING.
- No concrete in the floor is to be poured until the above operations are completed.
- Screed elevations will be furnished upon request.

DESIGN DATA

Live Load: HS20-44 and Military Loading of 2-24,000 lb. axles spaced 4'-0" apart and Special Toll Road Loading with impact and distribution of loads in accordance with 1989 AASHTO Specifications.

Dead Load: Actual weight of concrete slab and bridge deck overlay (No future wearing surfaces)

Floor Slab: Designed for 16,000 Lbs. wheel load plus impact.

Stresses: In accordance with 1989 AASHTO Specifications, and Interims.

NOTES:

The dimensions used for these detail plans are based on the original plans for this structure. It is the contractor's responsibility to verify the controlling dimensions in the field prior to fabrication of the steel.

The weight of the high strength bolts is not included in the estimated weight of structural steel. The cost of these bolts shall be included in the cost of the structural steel.

Structural Steel shall be paid for as "Lump Sum".

All new Interior and End Diaphragms are erected perpendicular to the beam lines. For Fabrication Notes, see the Special Provisions.

For additional Structural Steel Details, see Drawing W9.

For Shoe Details, see Drawing W10.

All Structural Steel is to be ASTM A36, unless otherwise noted.

ESTIMATED WEIGHT OF STRUCTURAL STEEL

WESTBOUND LANE = 45,100 lbs.	WESTBOUND LANE = 282 lbs.
EASTBOUND LANE = 45,100 lbs.	EASTBOUND LANE = 282 lbs.
TOTAL = 90,200 lbs.	TOTAL = 564 lbs.

FIELD DRILLED HOLES	SHEAR CONNECTORS
WESTBOUND LANE = 30	WESTBOUND LANE = 220
EASTBOUND LANE = 30	EASTBOUND LANE = 220
TOTAL = 60	TOTAL = 440

PARTIAL FRAMING PLAN INDIANA DEPARTMENT OF HIGHWAYS

SCALE: - AS NOTED DATE: - May 15, 1992

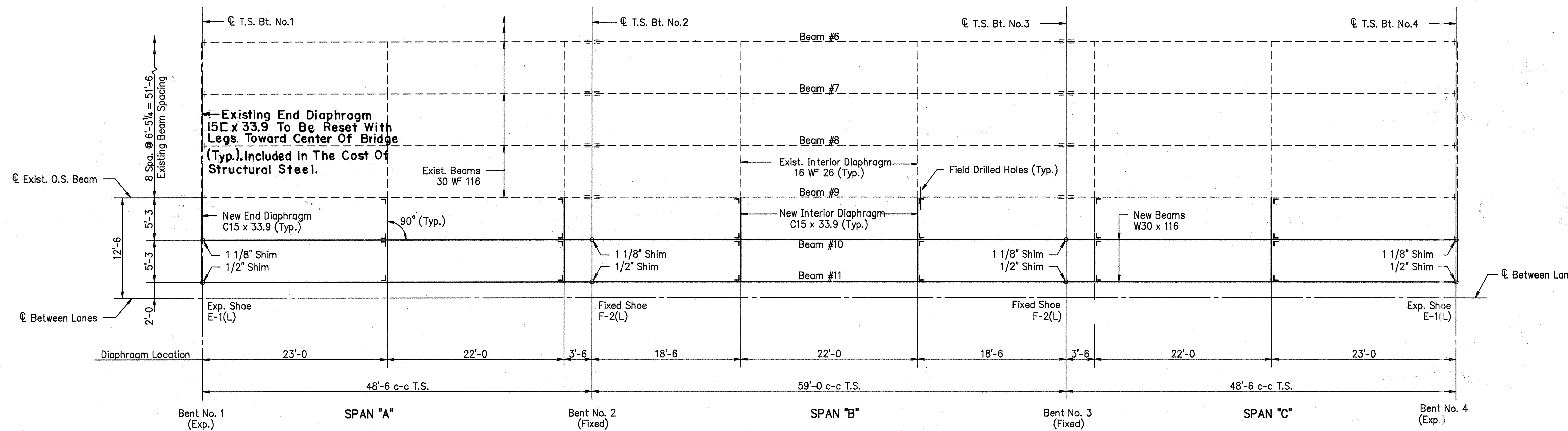
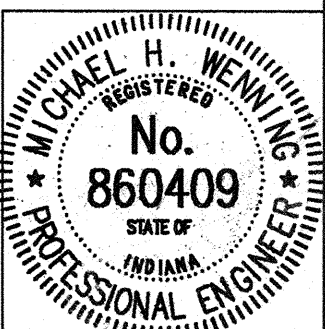
SUBMITTED FOR APPROVAL *[Signature]*

DRAWING: - W8 OF W15 SHEET: - 9 OF 23

PROJECT: - IR-94-2(71)44

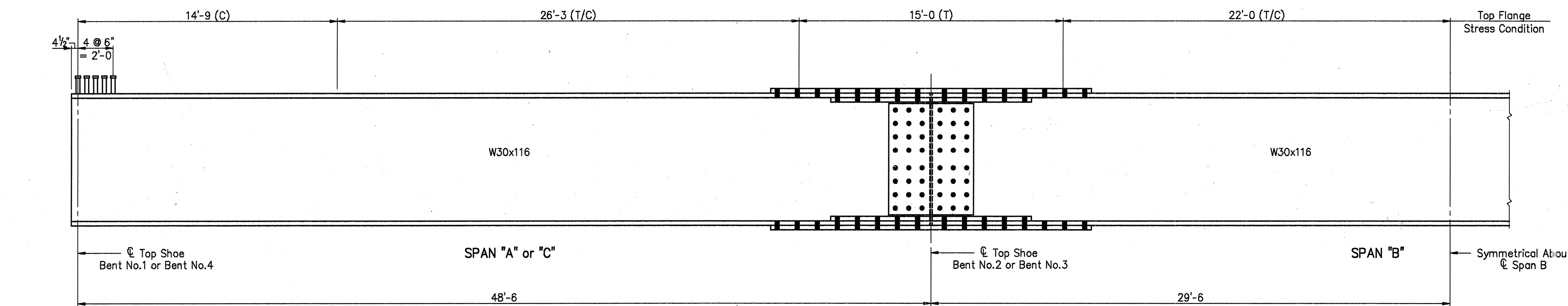
CONTRACT NO. R-20060

BRIDGE FILE: - I-94-47-2254A



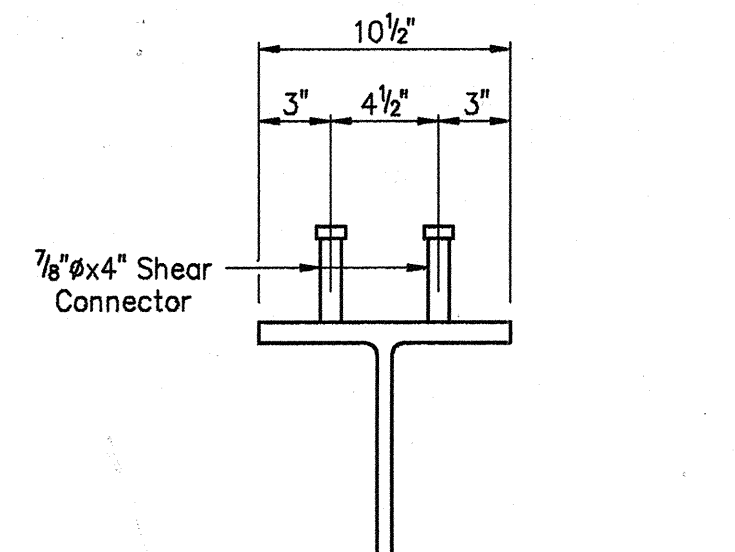
PARTIAL FRAMING PLAN - W.B.L. (E.B.L. SAME BY OPPOSITE HAND)

SCALE: 1/8" = 1'-0"



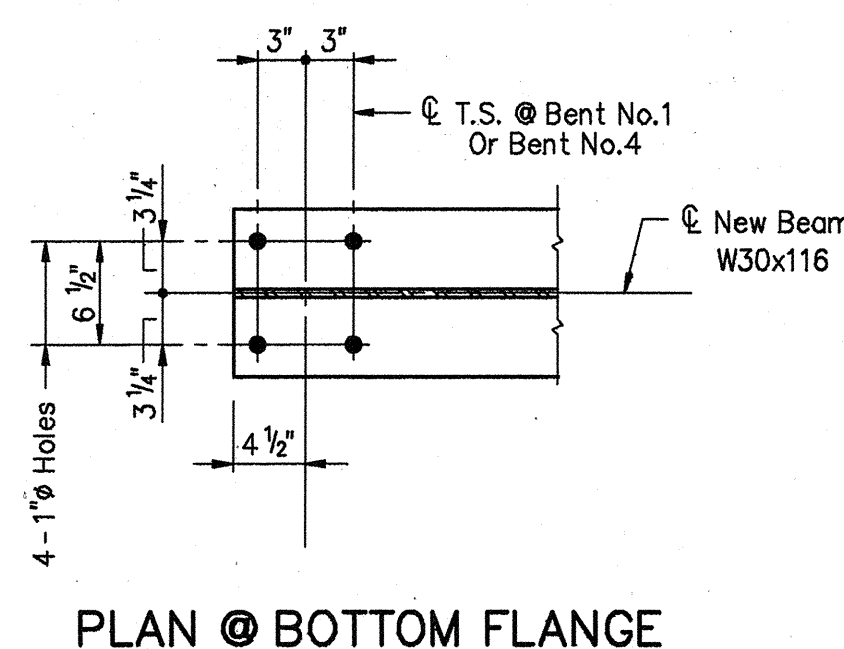
HALF ELEVATION (ALL BEAMS)

No Scale



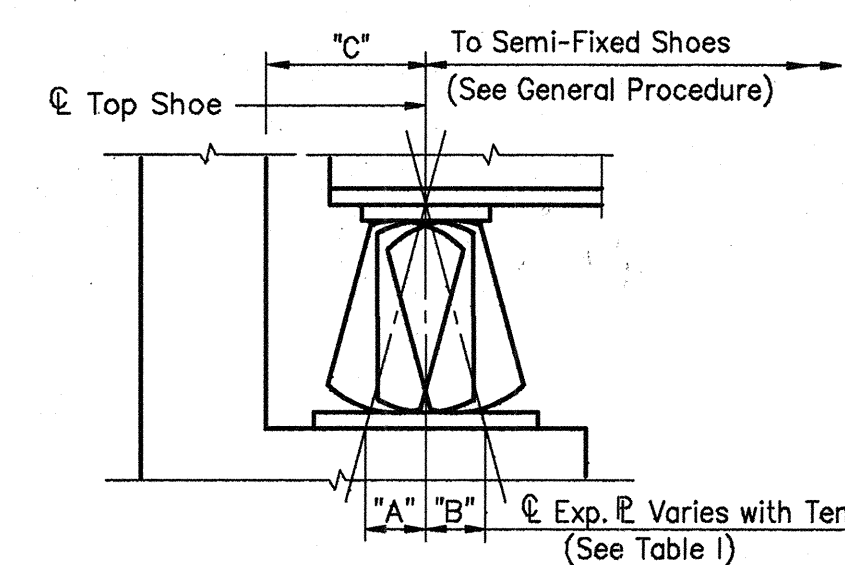
SHEAR CONNECTOR DETAIL

Scale: 1/2" = 1'-0"



BEAM DETAIL AT BENT NO. 1 AND BENT NO. 4

Scale: 1" = 1'-0"



EXPANSION SHOE SETTINGS @ BENT NO.1 AND BENT NO.4

No Scale

TABLE I

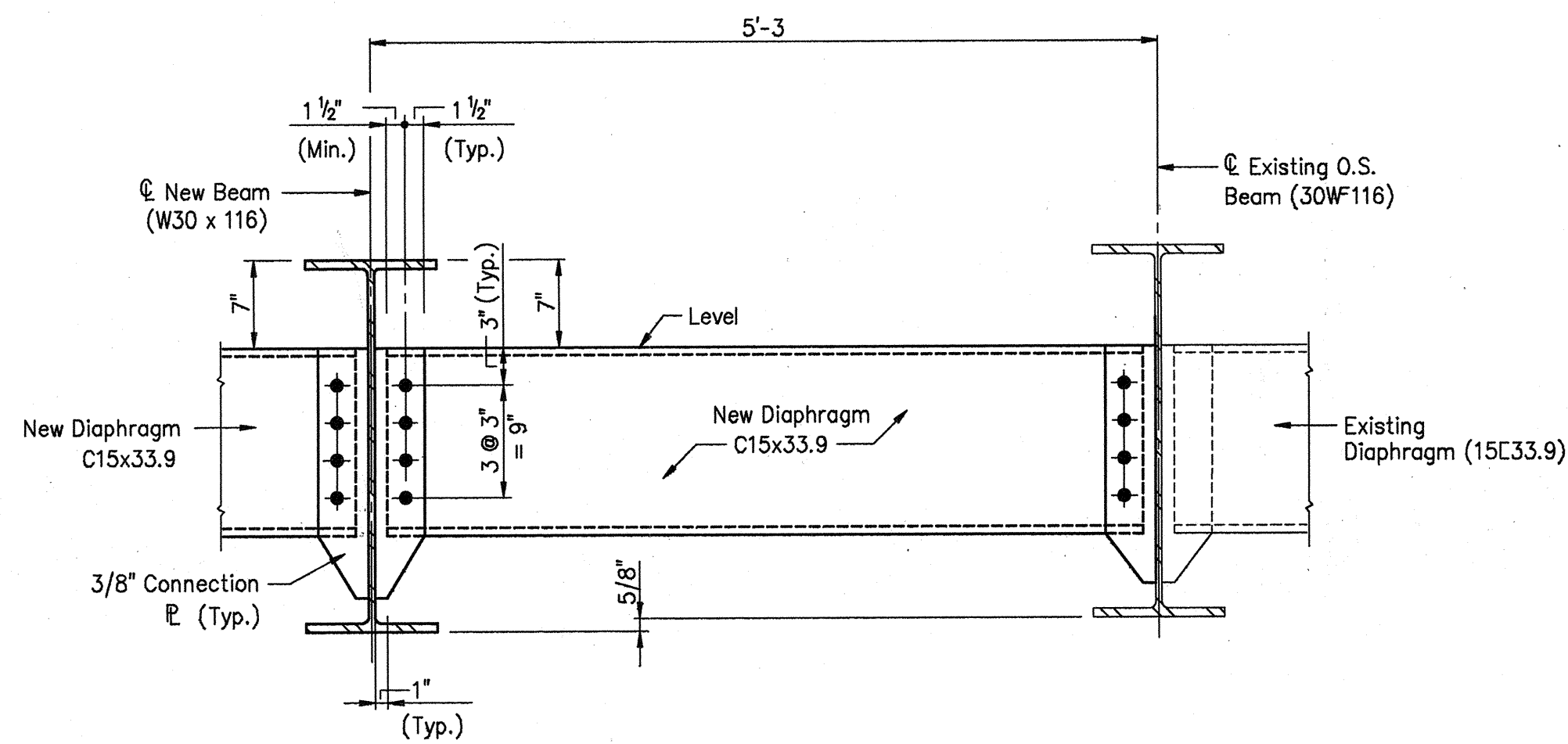
Temperature of Beam	DIMENSION "A"						DIMENSION "B"			
	0°	20°	40°	60°	80°	100°	120°	80°	100°	120°
Dist. \bar{C} T.S. to \bar{C} Exp. \bar{R}	3/16"	3/16"	1/8"	0"	-	-	-	1/8"	3/16"	3/16"

SHOE SETTING DATA

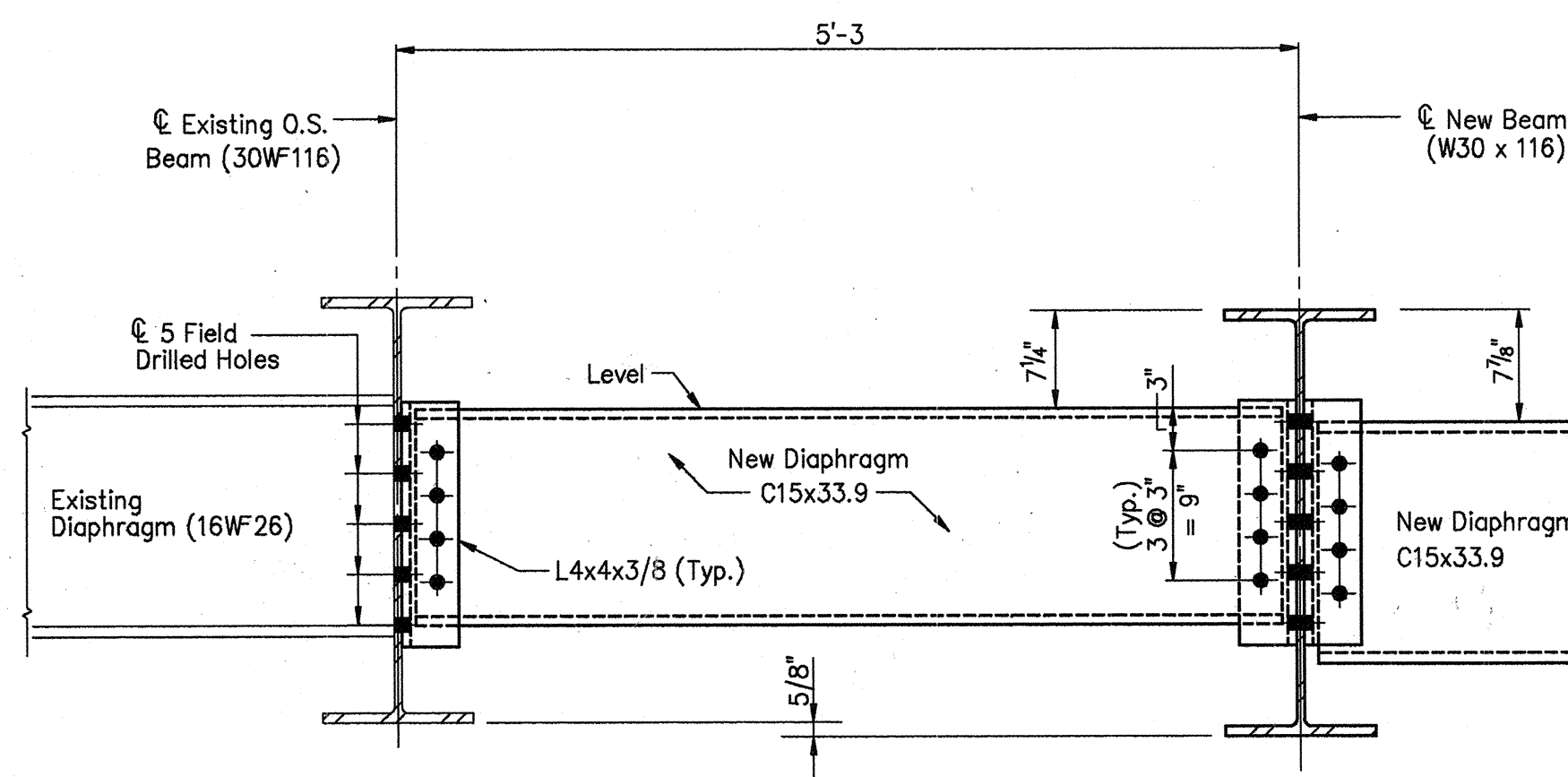
DESIGNED: CLS 9/29/89 CK'D: JSS 10/3/89
DRAWN: DJD 10/4/89 CK'D: DAD 5/11/92
TRACED: CK'D

DWG FILE: V8918822507
PLOT SCALE: 1/8" = 1'-0"
PLOT SHOWN: 0.00,0.00

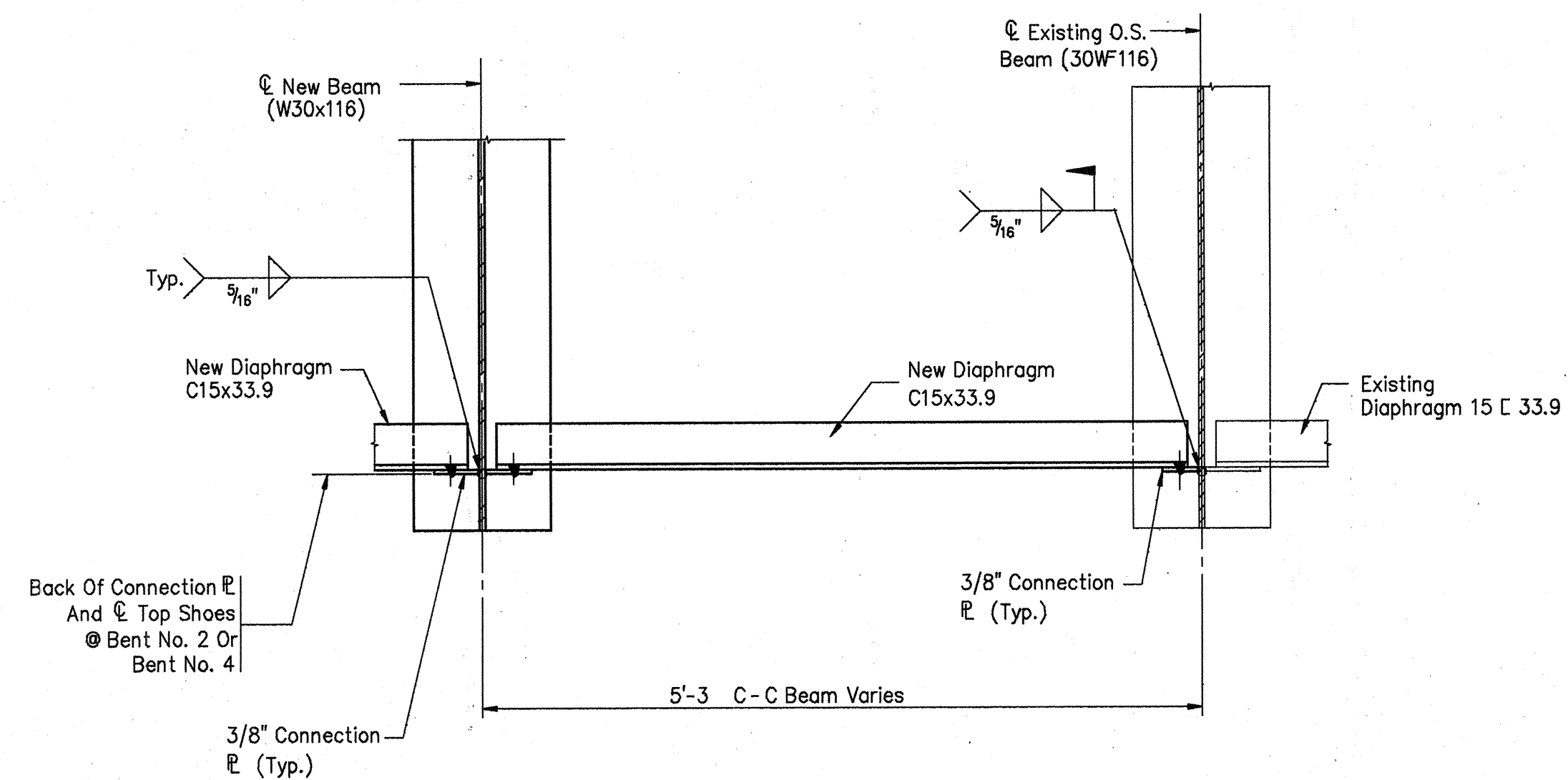
SPELLOCH: 05/13/92
EDIT DATE: 05/15/92
EDITED BY: DDC



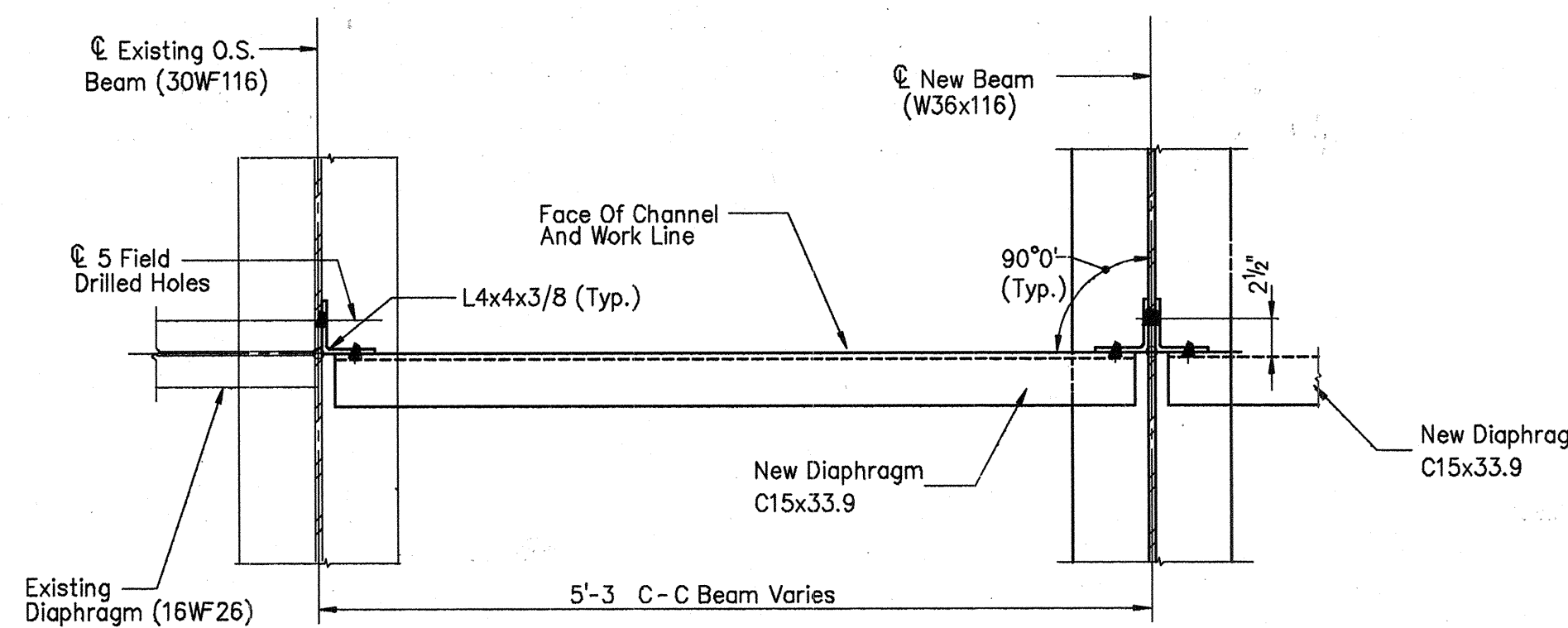
ELEVATION AT END DIAPHRAGM



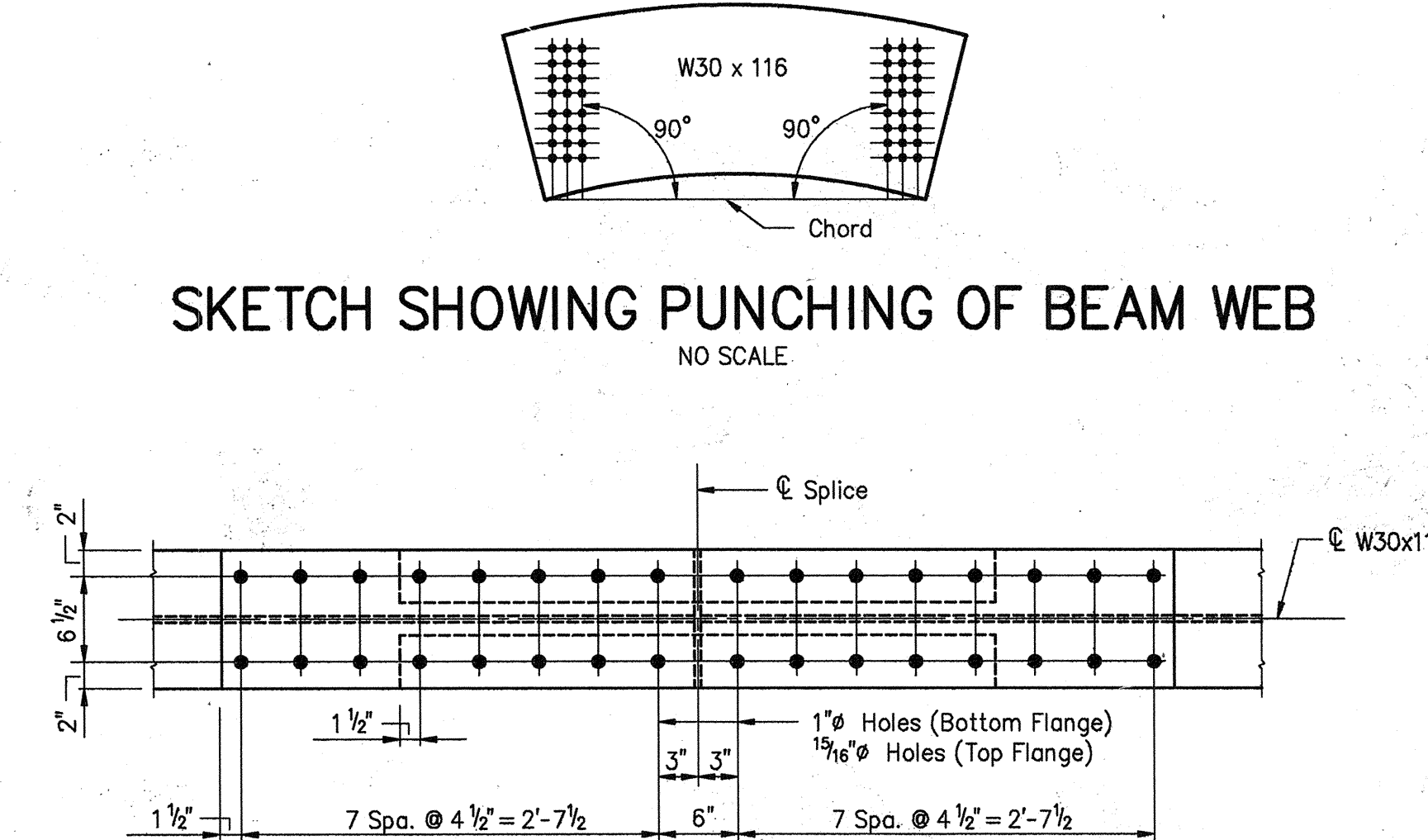
ELEVATION AT INTERIOR DIAPHRAGM



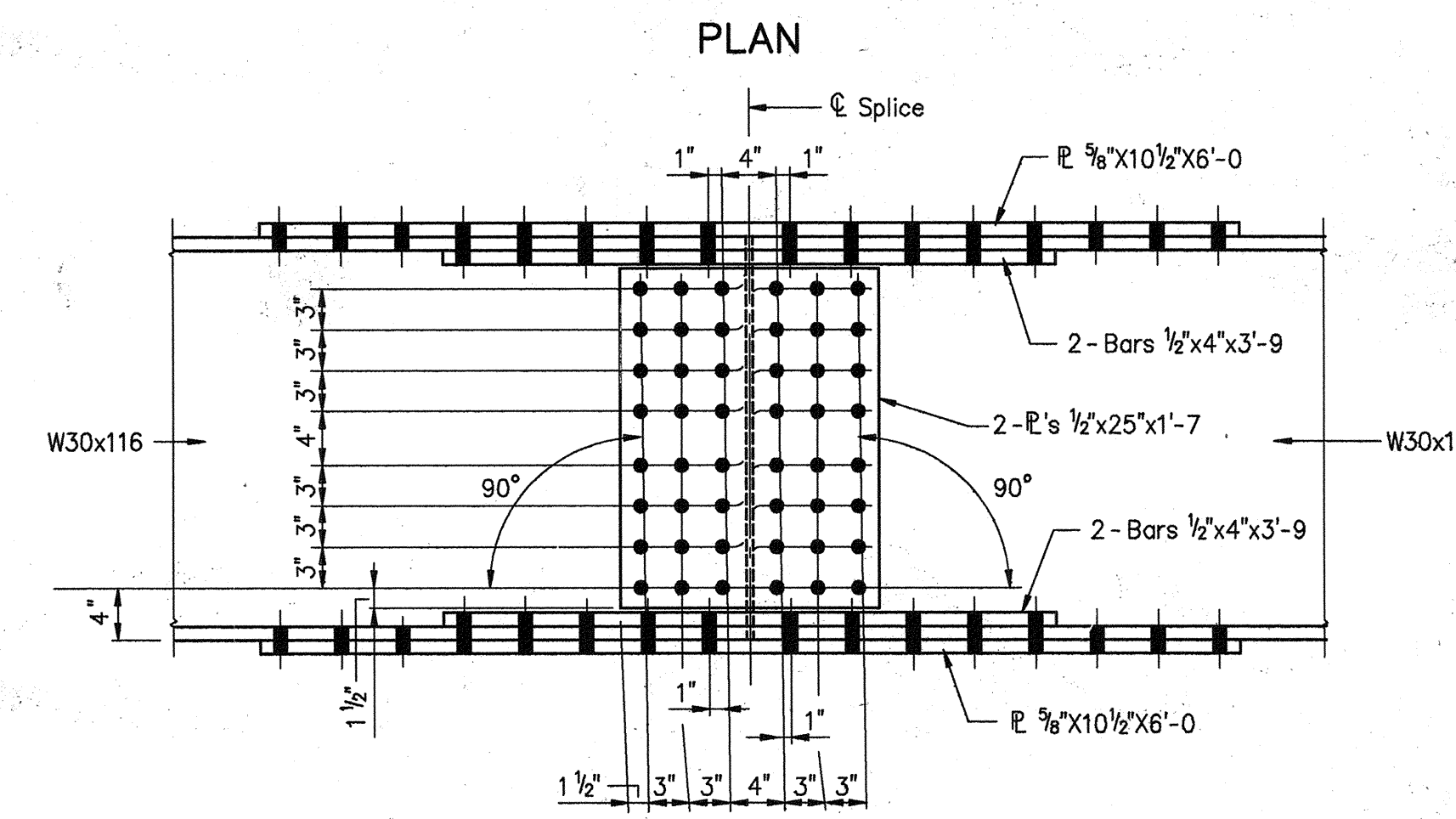
PLAN AT END DIAPHRAGM



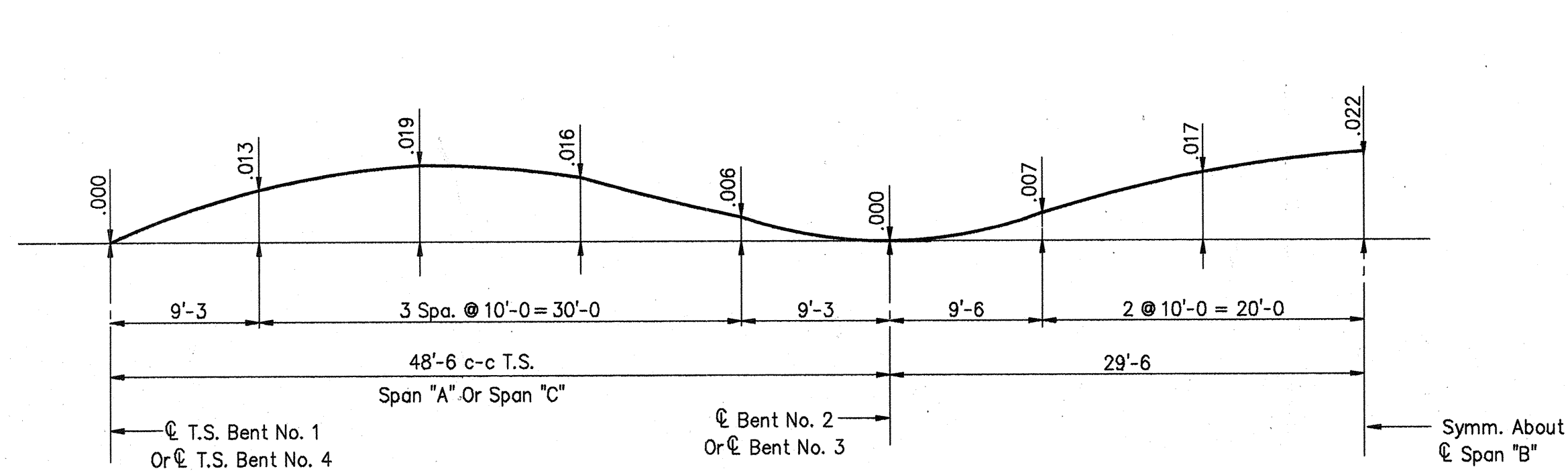
PLAN AT INTERIOR DIAPHRAGM



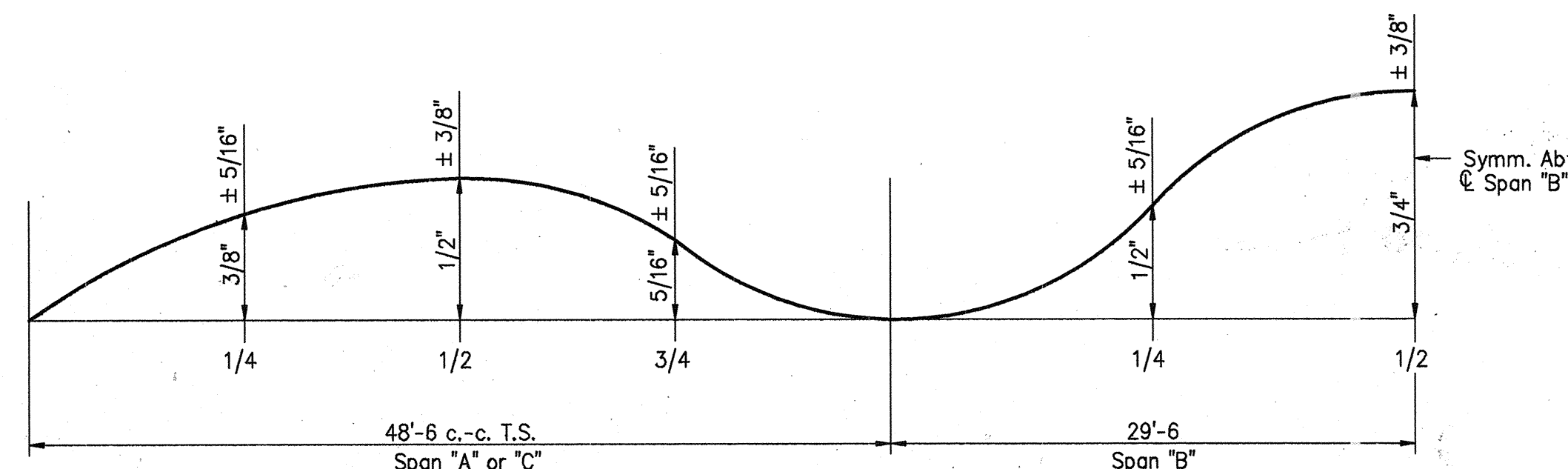
SKETCH SHOWING PUNCHING OF BEAM WEB
NO SCALE



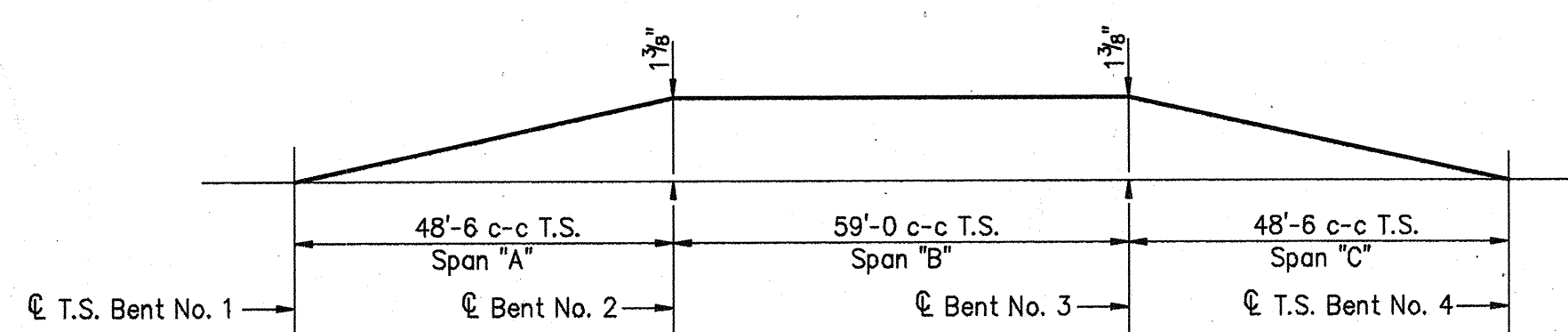
SPLICE DETAILS (BEAMS NO. 10 & NO. 11)



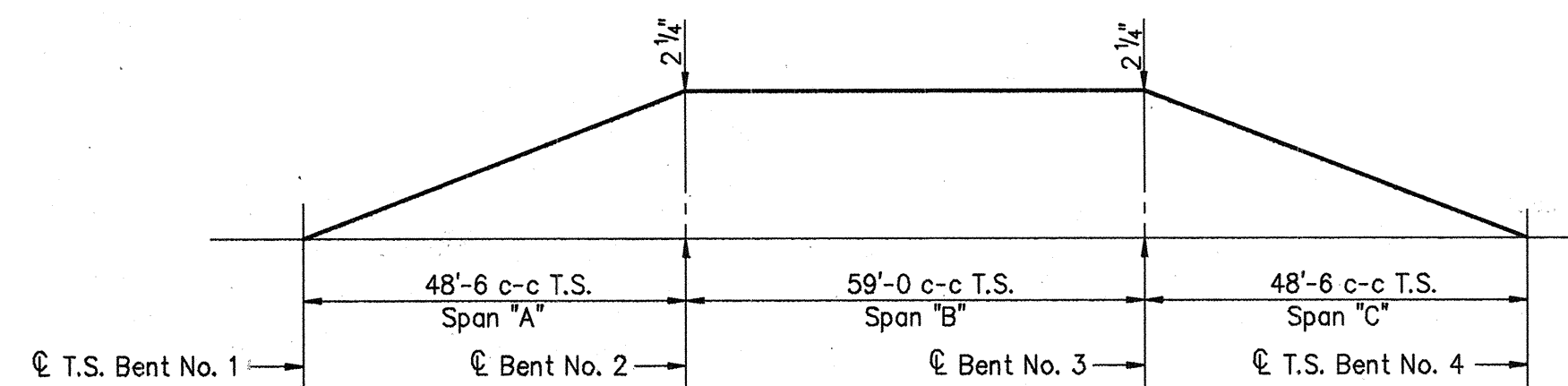
CONCRETE DEAD LOAD DEFLECTION (FEET)
No Scale



CAMBER DIAGRAM
No Scale



BLOCKING DIAGRAM- WEBS VERTICAL
No Scale



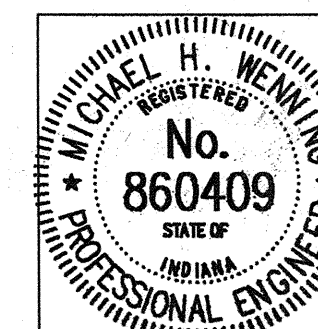
BLOCKING DIAGRAM- WEBS HORIZONTAL
No Scale

NOTES:
All Structural Steel is to be ASTM A36.
All Open Holes are to be 15/16" unless noted.
For beam No's. and additional details, see Drawing WB.

STRUCTURAL STEEL DETAILS
INDIANA DEPARTMENT OF HIGHWAYS

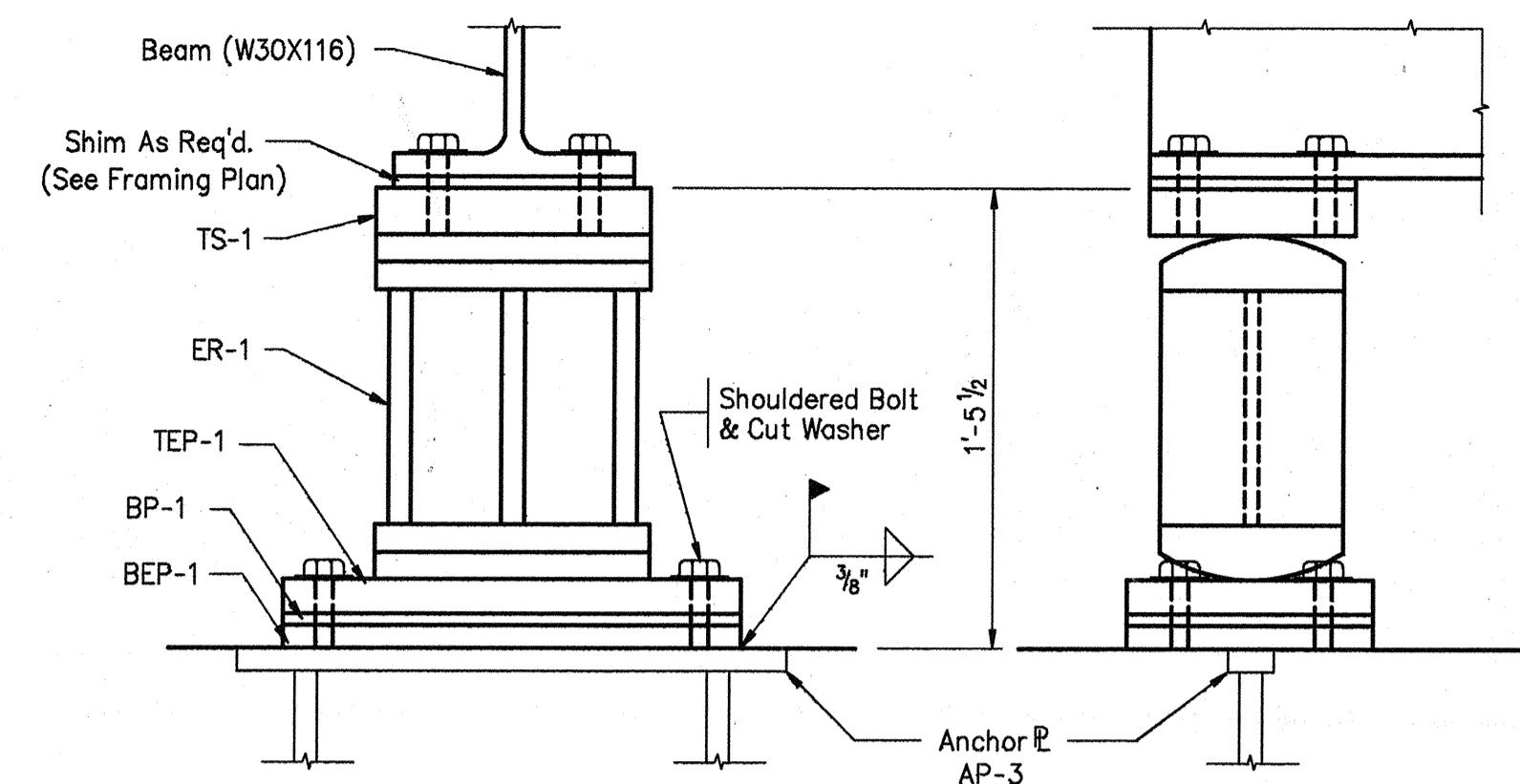
SCALE: - 1" = 1'-0, UNLESS NOTED
DATE: - May 15, 1992
SUBMITTED FOR APPROVAL *Michael H. Wynn*

DRAWING: - W9 OF W15 SHEET: - 10 OF 23
PROJECT: - IR-94-2(71)44
CONTRACT NO. R-20060
BRIDGE FILE: - I-94-47-2254A

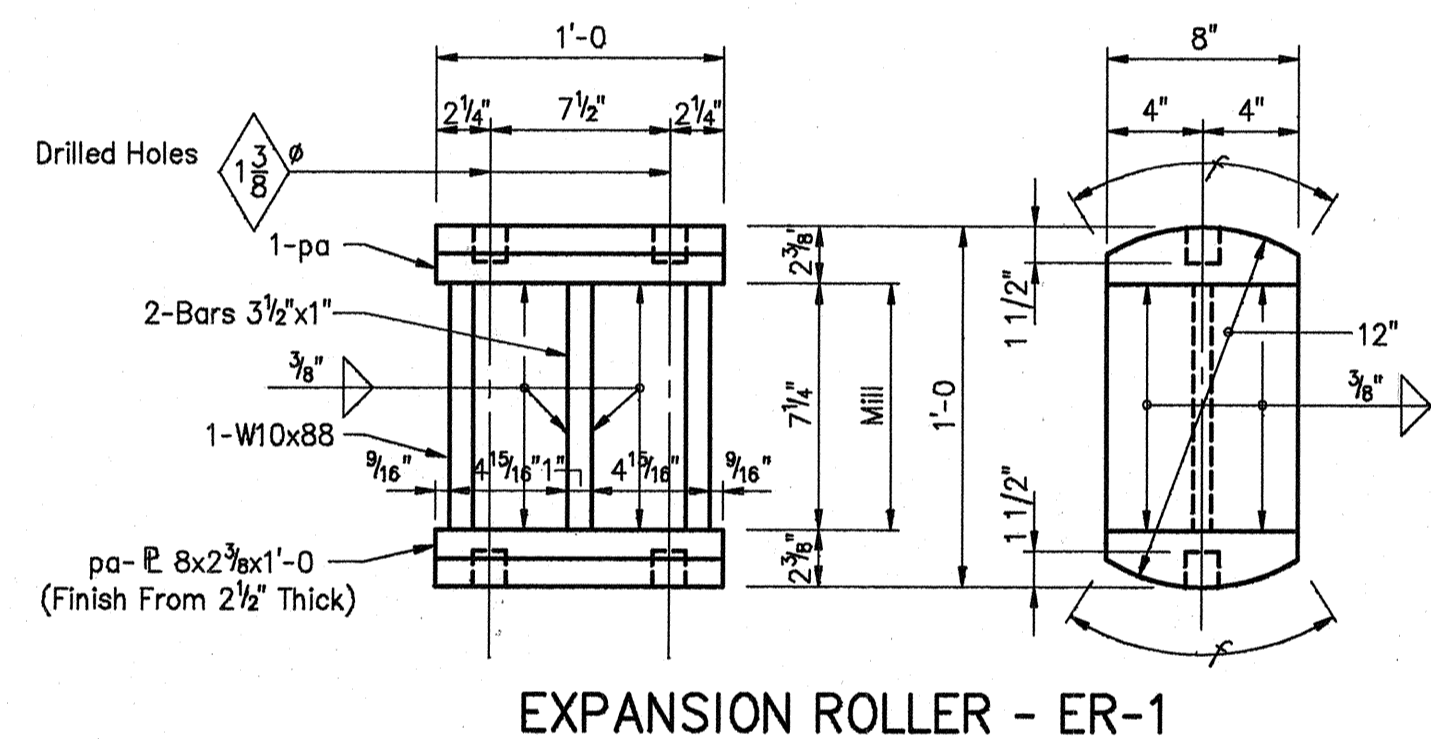


DESIGNED: CK'D
DRAWN: DJD 10/5/89 CK'D: DAD 5/11/92
TRACED: CK'D

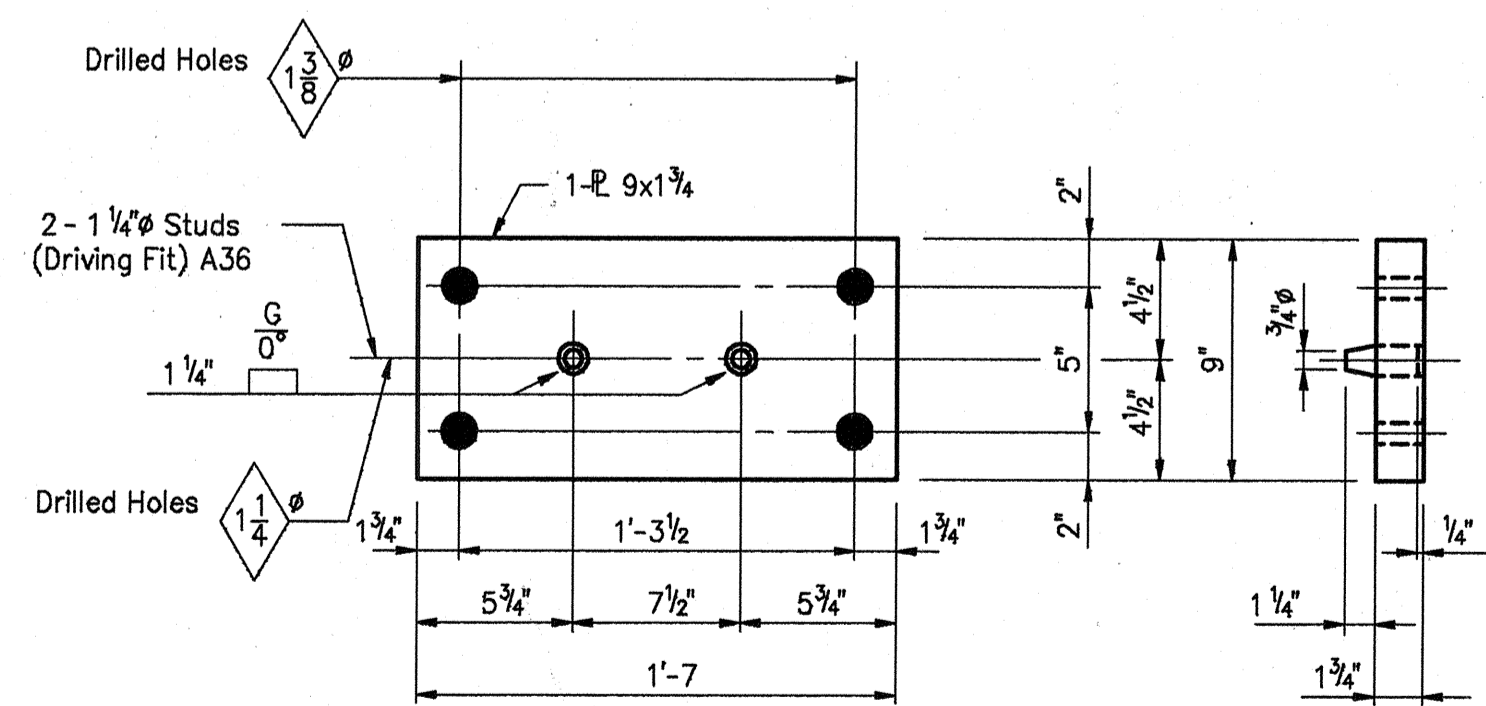
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SPELCHK: 05/12/92
EDIT DATE: 08/29/92
EDITED BY: DSS



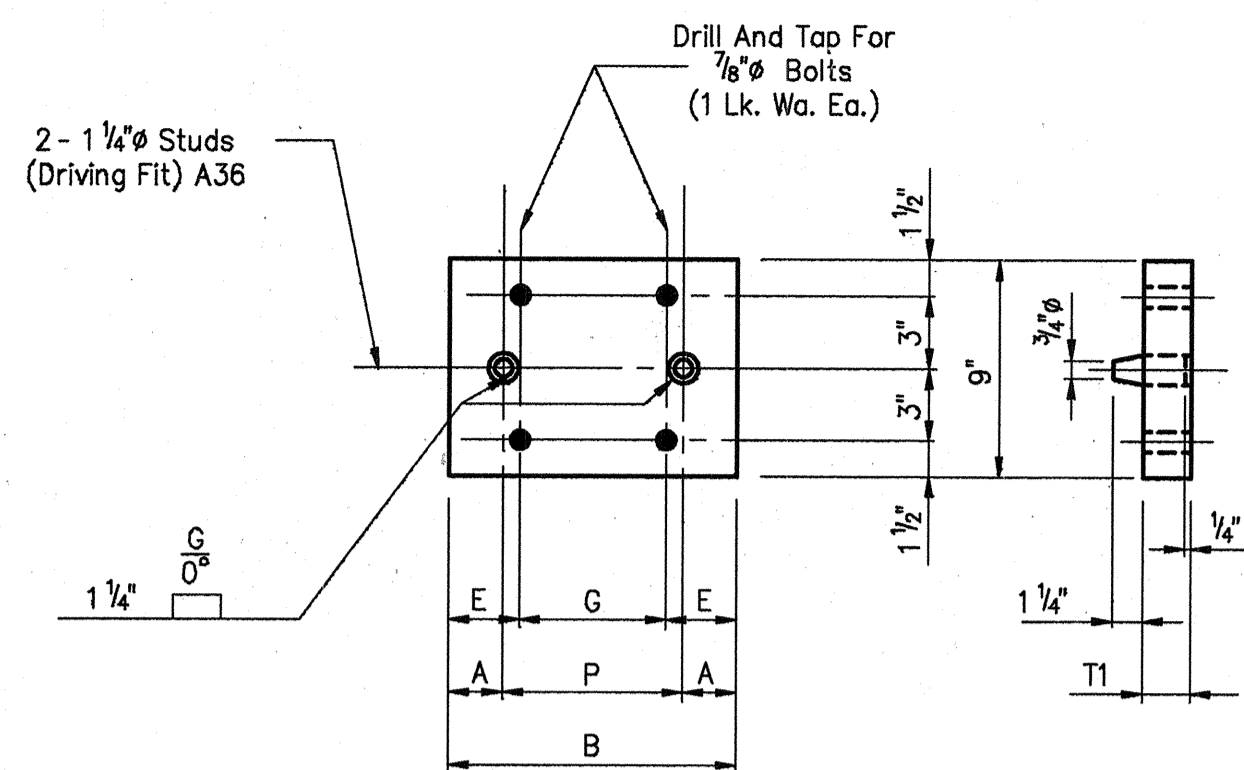
EXPANSION SHOE ASSEMBLY E-1(L)
AT BENTS NO. 1 AND BENTS NO. 4
 (With Lateral Expansion)
 (8 REQ'D.)



EXPANSION ROLLER - ER-1

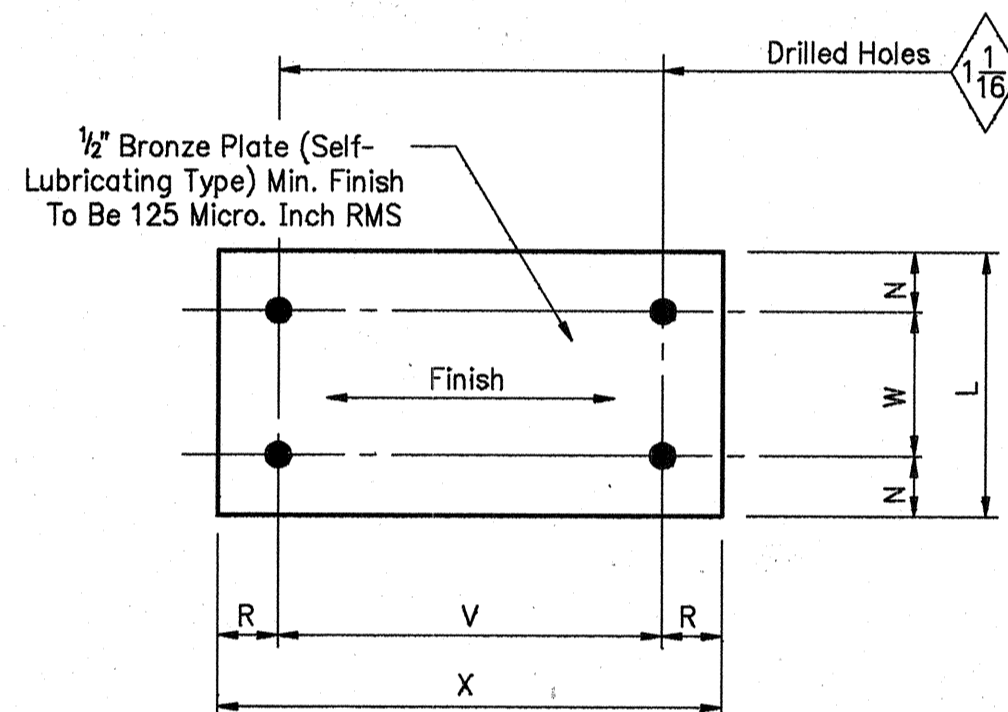


TOP EXPANSION PLATE - TEP-1



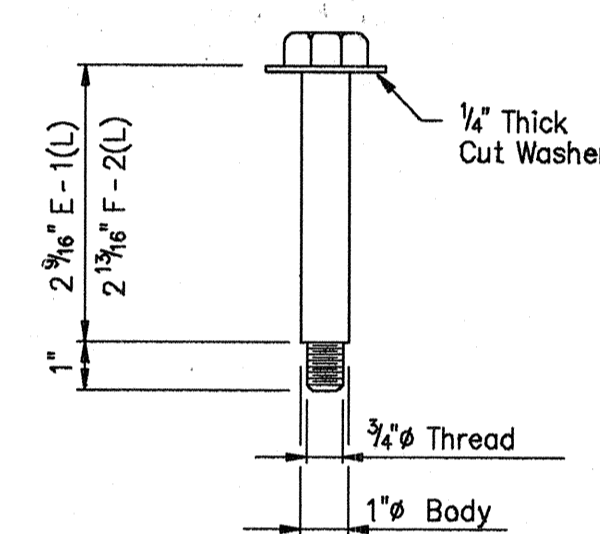
TOP SHOE - TS-1
TOP SHOE - TS-2

MARK	B	T1	E	G	A	P	SECTION	MATERIAL
TS-1	1'-0"	1 3/4"	2 3/4"	6 1/2"	2 1/4"	7 1/2"	9x1 3/4"	A36
TS-2	1'-0"	2"	2 3/4"	6 1/2"	2 1/2"	7"	9x2"	A36

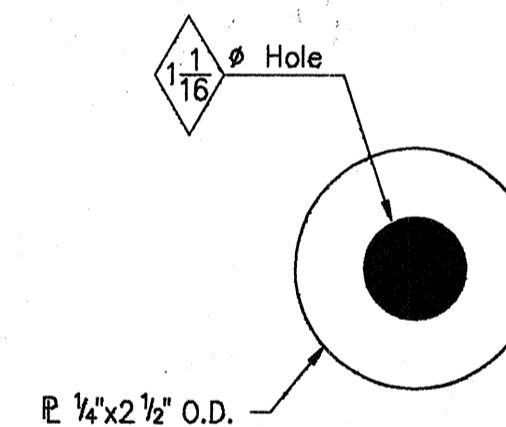


BRONZE PLATE - BP-1
BRONZE PLATE - BP-3

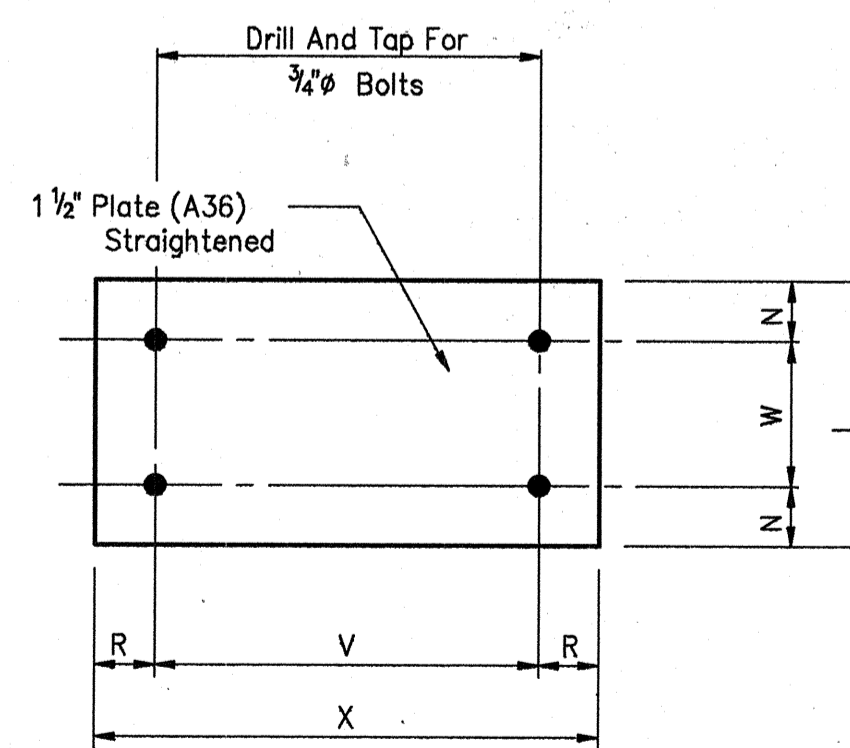
MARK	X	L	V	W	R	N	SECTION
BP-1	1'-8"	9 1/2"	1'-3 1/2"	5"	2 1/4"	2 1/4"	9 1/2 x 1 1/2"
BP-3	1'-9"	1'-0"	1'-4"	8"	2 1/2"	2"	12 x 1 1/2"



SHOULDERED BOLT

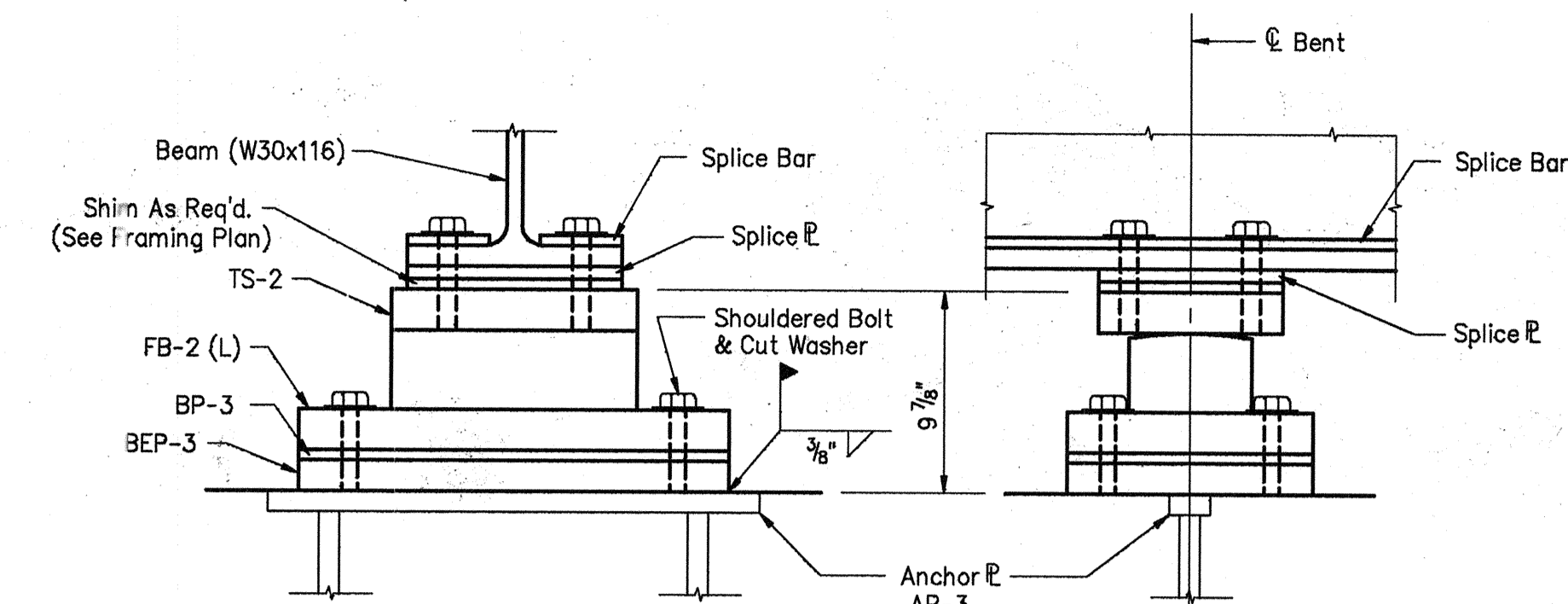


CUT WASHER

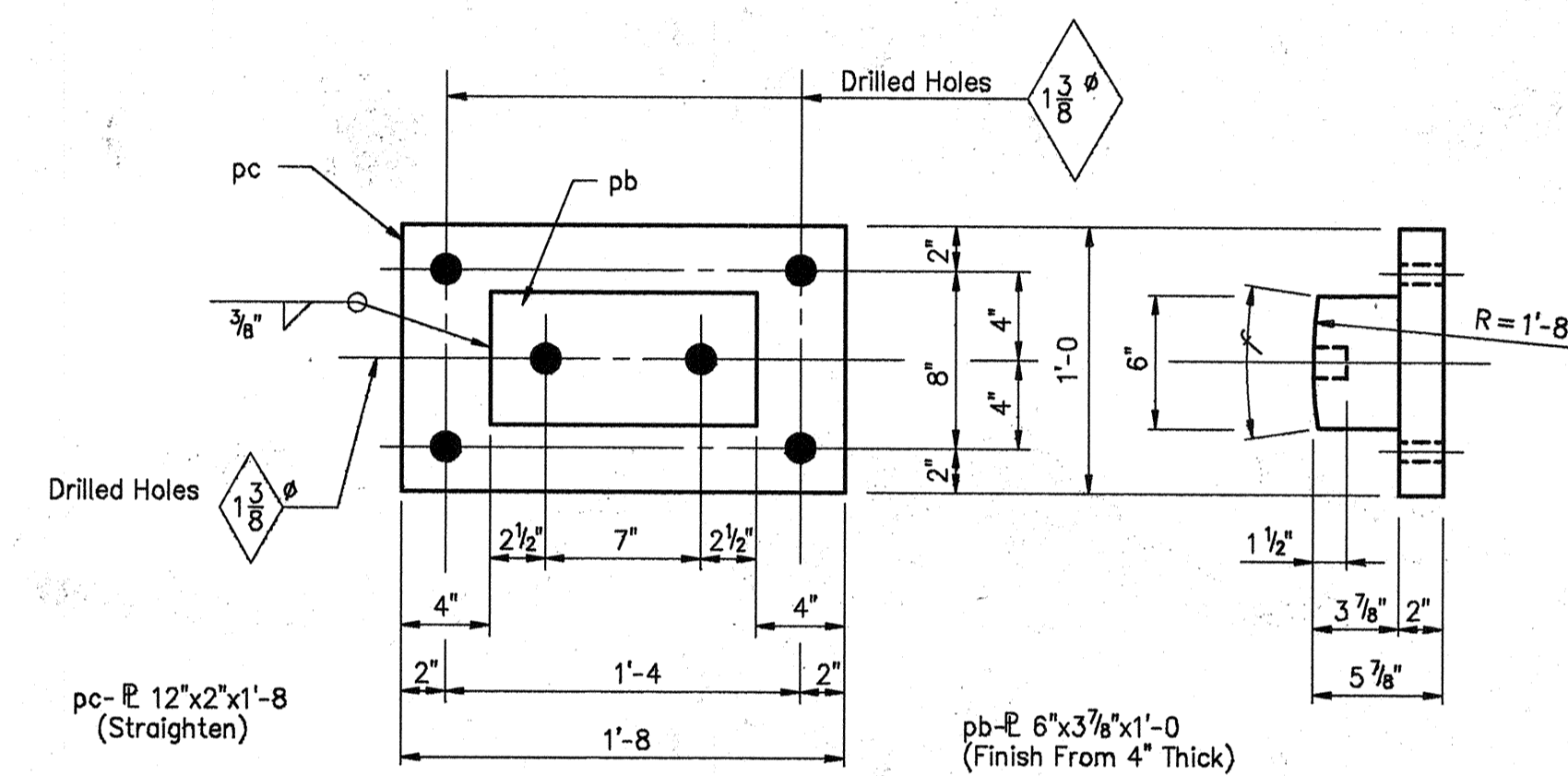


BOTTOM EXPANSION PLATE - BEP-1
BOTTOM EXPANSION PLATE - BEP-3

MARK	X	L	V	W	R	N	SECTION
BEP-1	1'-8"	9 1/2"	1'-3 1/2"	5"	2 1/4"	2 1/4"	9 1/2 x 1 1/2"
BEP-3	1'-9"	1'-0"	1'-4"	8"	2 1/2"	2"	12 x 1 1/2"



FIXED SHOE ASSEMBLY F-2(L)
AT BENTS NO. 2 AND NO. 3
 (With Lateral Expansion)
 (8 REQ'D.)



FIXED BASE - FB-2(L)

NOTES:

- All material to be A-36 except as noted.
- Curved surfaces of shoes to be machined after weldments have been completed.
- At the contractor's option, A588 steel may be used in lieu of A36 steel at no increase in the unit price of material.

SHOE DETAILS
INDIANA DEPARTMENT OF HIGHWAYS

SCALE: - NO SCALE DATE: - May 15, 1992

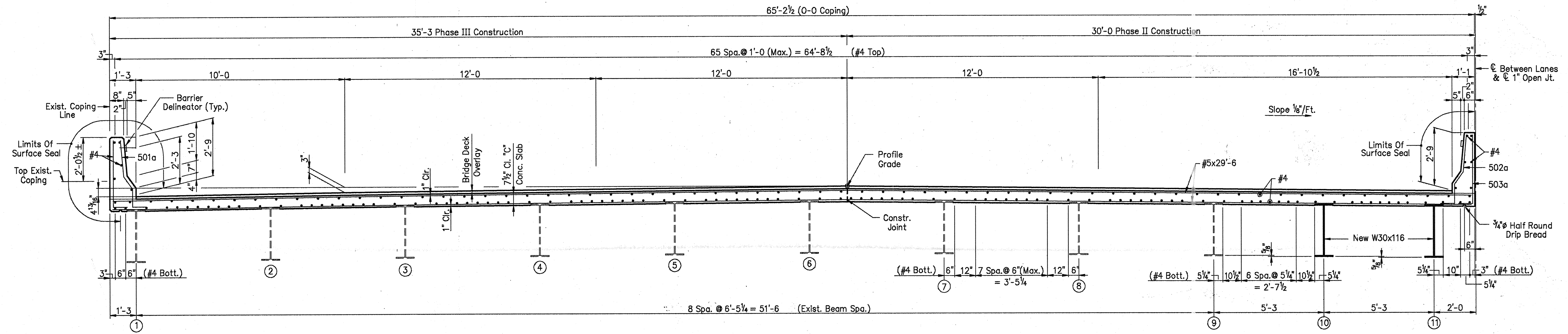
SUBMITTED FOR APPROVAL *[Signature]*

DRAWING: - W10 OF W15 SHEET: - 11 OF 23
 PROJECT: - IR-94-2(71)44
 CONTRACT NO. R-20060
 BRIDGE FILE: - I-94-47-2254A

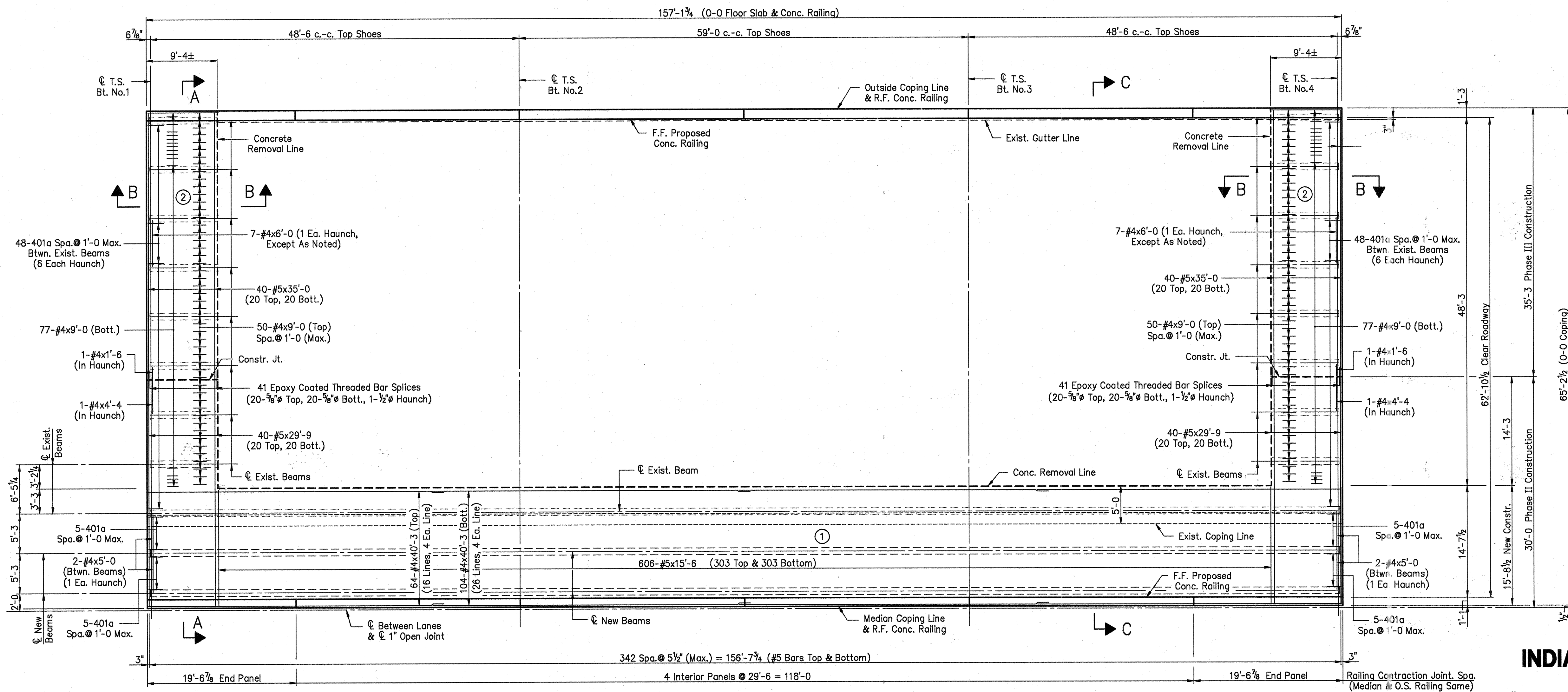


DESIGNED JSS 10/4/89 C'K'D CLS 10/6/89
 DRAWN DJD 10/6/89 C'K'D DAD 5/11/92
 TRACED _____ C'K'D _____

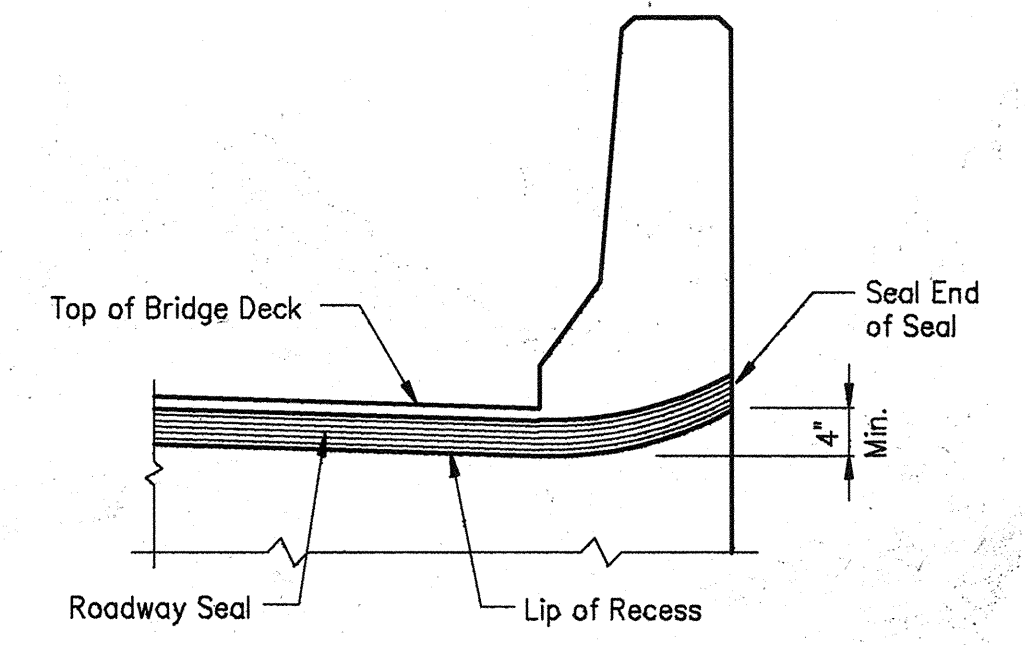
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 PLOT SCALE: 1/8"=1' EDIT DATE: 05/14/92
 PLOT ORIGIN: 0,0,0,0,0,0 EDIT BY: DJC



SECTION A-A
Scale: 3/8" = 1'-0"



PLAN - W.B.L.
(E.B.L. THE SAME BY OPPOSITE HAND)
Scale: 1/8" = 1'-0"



**TYPICAL EXP. JOINT TYPE BS
INSTALLATION @ RAILING**
No Scale

NOTES:

- For Reinforcing Bar Notes, see Bridge Std. C1.
- All reinforcing steel to be epoxy coated, unless noted.
- For Corner Details, see Drawing W13.
- For additional details, Section B-B, C-C and Bill Of Materials, see Drawing W12.
- (X) Indicates pour number.

**SUPERSTRUCTURE DETAILS
INDIANA DEPARTMENT OF HIGHWAYS**

SCALE: - AS NOTED

DATE: - May 15, 1992

SUBMITTED FOR APPROVAL

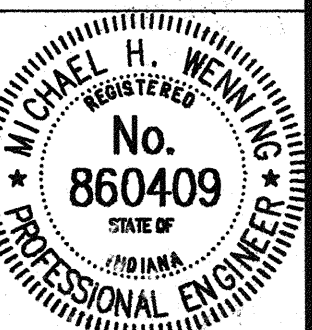
Michael H. Wynn

DRAWING: - W11 OF W15 SHEET: - 12 OF 25
PROJECT: - IR-94-2(71)44
CONTRACT NO. R-20060
BRIDGE FILE: - I-94-47-2254A

MIN. BAR LAPS	
#4	1'-2"
#5	1'-5"

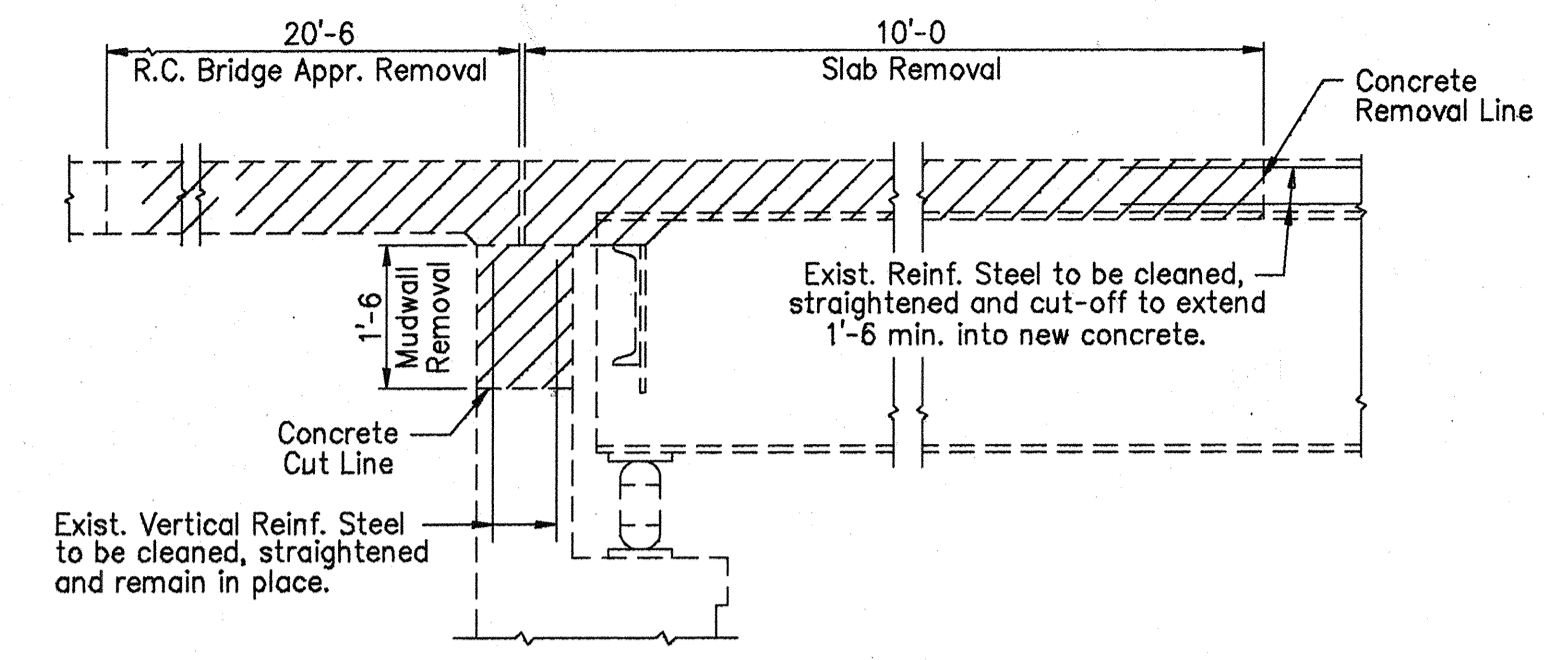
DESIGNED: CKD
DRAWN: DDG 4/15/92
TRACED: CKD

SPELLOK: 05/12/92
EDIT DATE: 05/14/92
EDITED BY: CKD

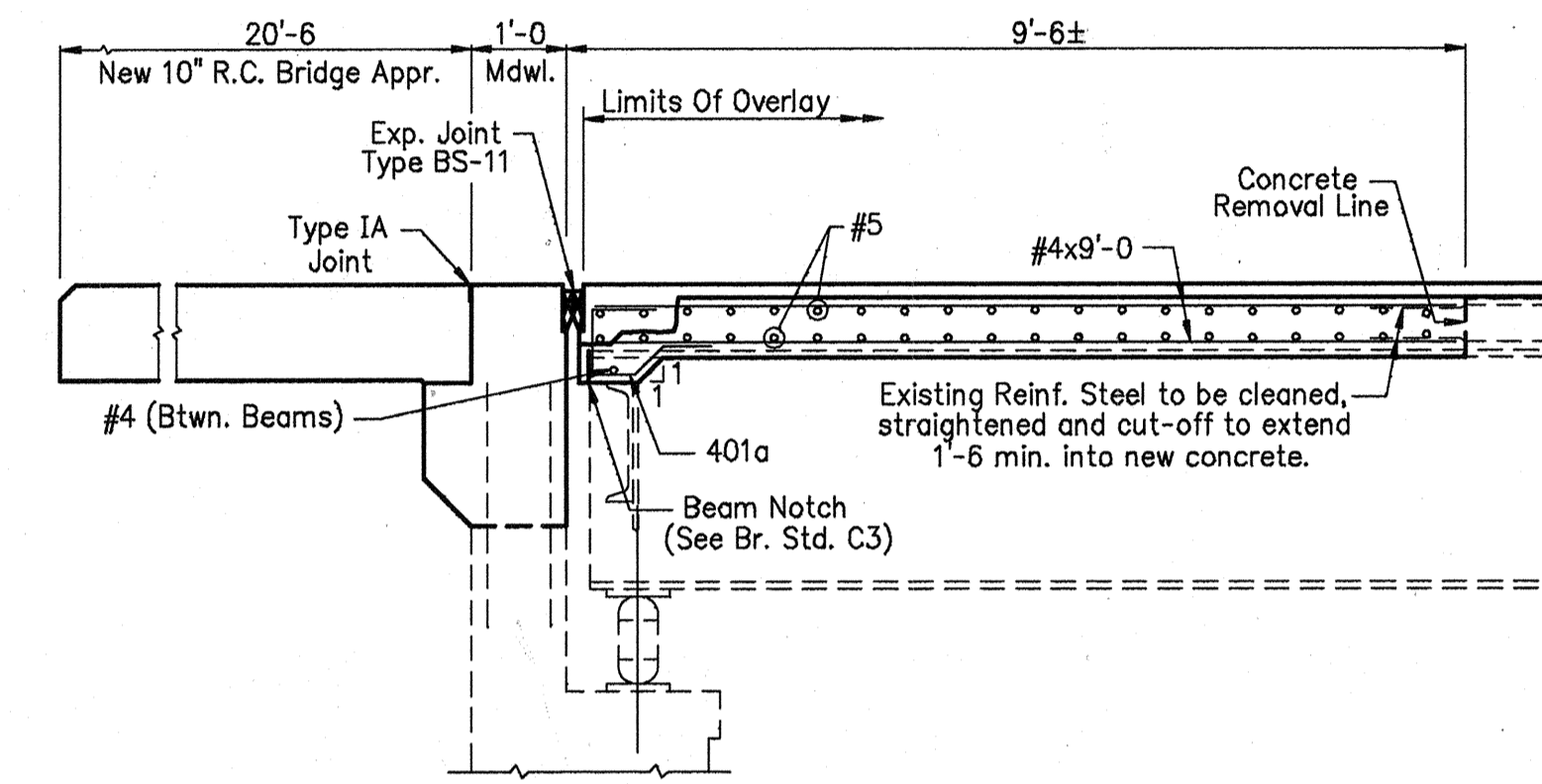


**SUPERSTRUCTURE
BILL OF MATERIALS
W.B.L.
(E.B.L. THE SAME)**

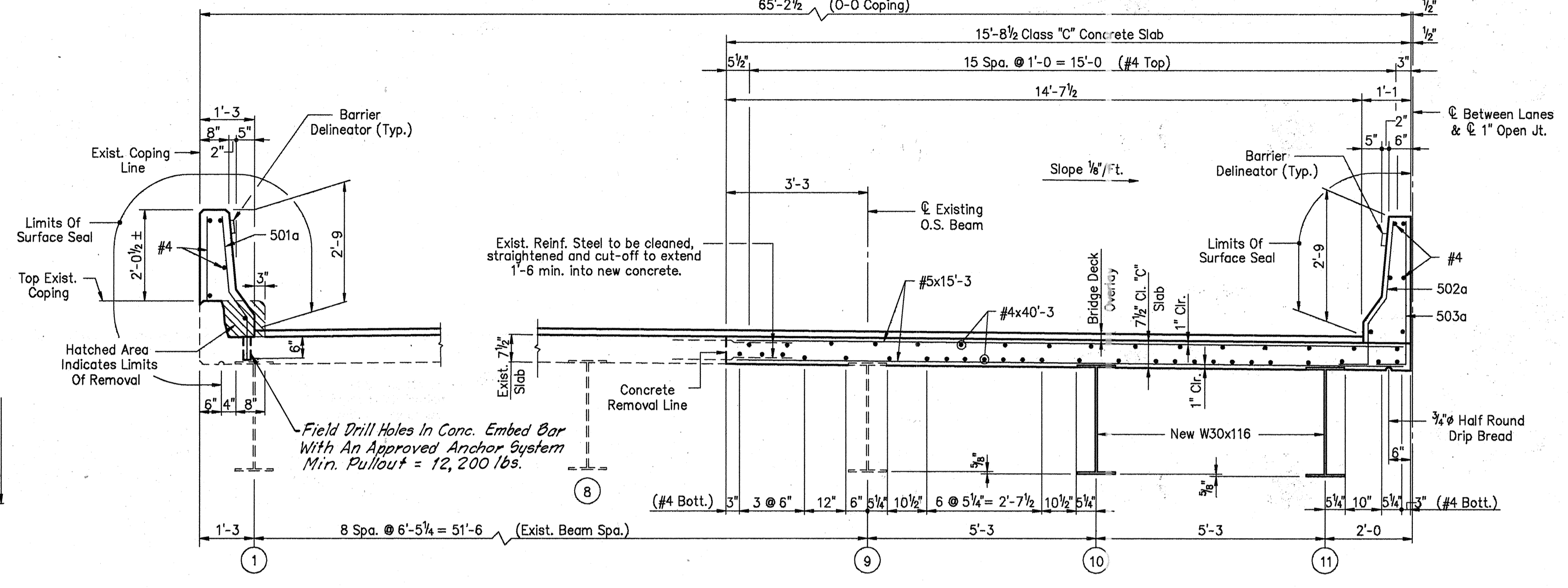
EPOXY COATED REINFORCING STEEL				
Size And Mark	No. Of Bars	Length (Feet)	Weight (Lbs.)	
501a	140	3'-3"		
502a	180	3'-9"		
503a	180	3'-9"		
#5	80	35'-0"		
#5	80	29'-9"		
#5	606	15'-6"		
Total No.5			17,082	
401a	116	3'-0"		
#4	168	40'-3"		
#4	44	29'-0"		
#4	22	19'-0"		
#4	254	9'-0"		
#4	14	6'-0"		
#4	4	5'-0"		
#4	2	4'-4"		
#4	140	1'-9"		
#4	2	1'-6"		
Total No.4			7,649	
Total Epoxy Coated Reinforcing Steel				24,731
Concrete				
Class "C" In Superstructure				
Pour No.1			63.2 Cys.	
Pour No.2 (2 @ 8.0 Cys.)			16.0 Cys.	
Total Class "C" In Superstructure			79.2 Cys.	
Class "C" Conc. Railing (2 @ 157 Lft.)				314 Lft.
Miscellaneous				
Surface Seal			1,725 Sft.	
Epoxy Coated Threaded Bar Splice			82 Ea.	
Expansion Joint Type BS-11			131 Lft.	
Barrier Delineator			18 Ea.	
Field Drilled Holes In Concrete			140 Ea.	



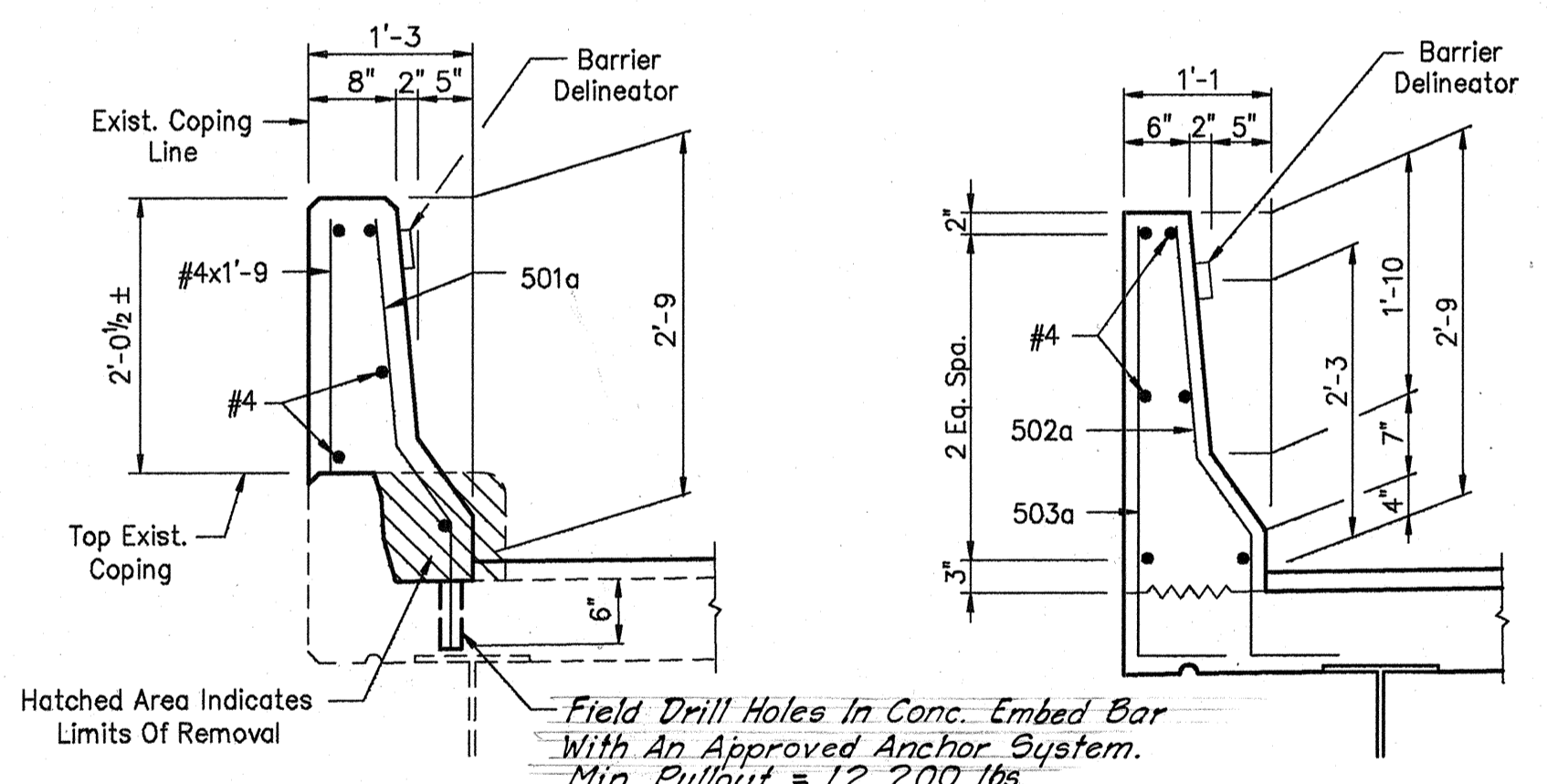
EXISTING SECTION B-B
Scale: 1/2" = 1'-0"



PROPOSED SECTION B-B
Scale: 1/2" = 1'-0"

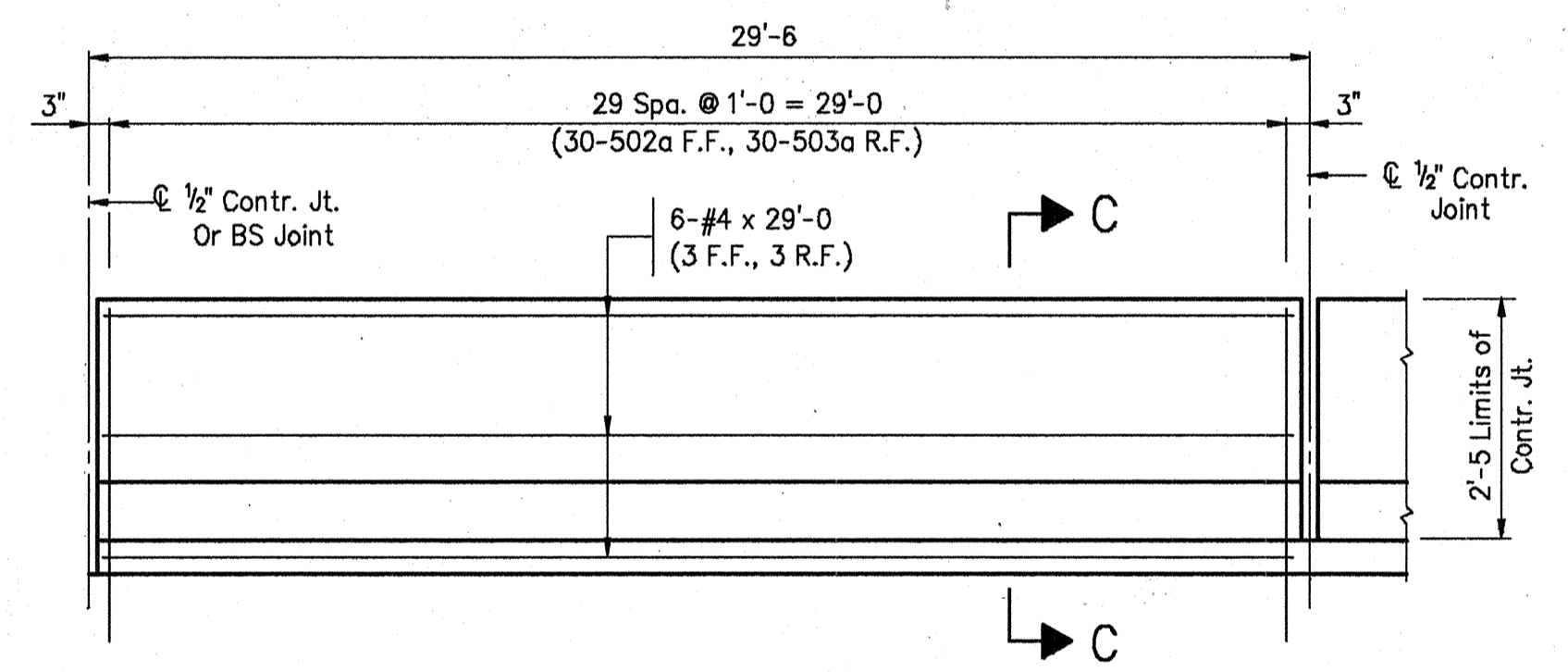


SECTION C-C
Scale: 1/2" = 1'-0"

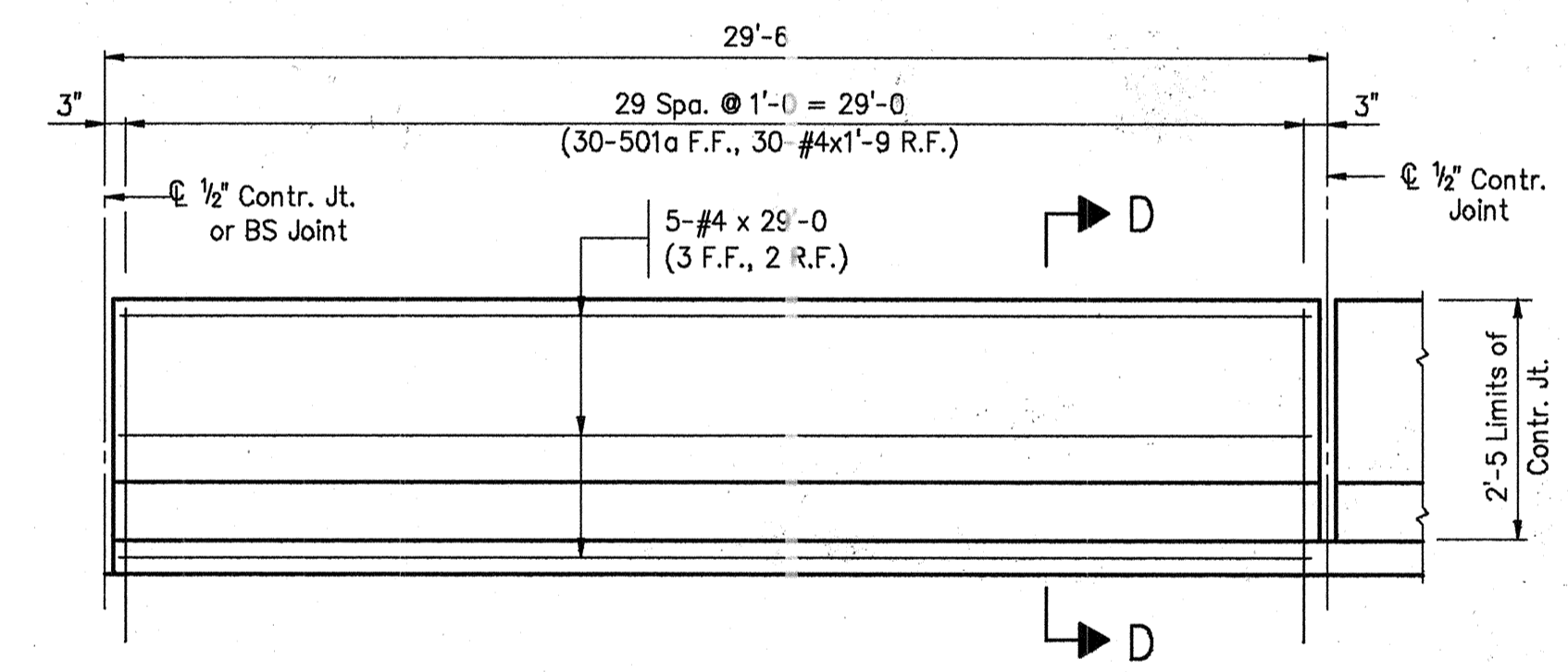


SECTION D-D

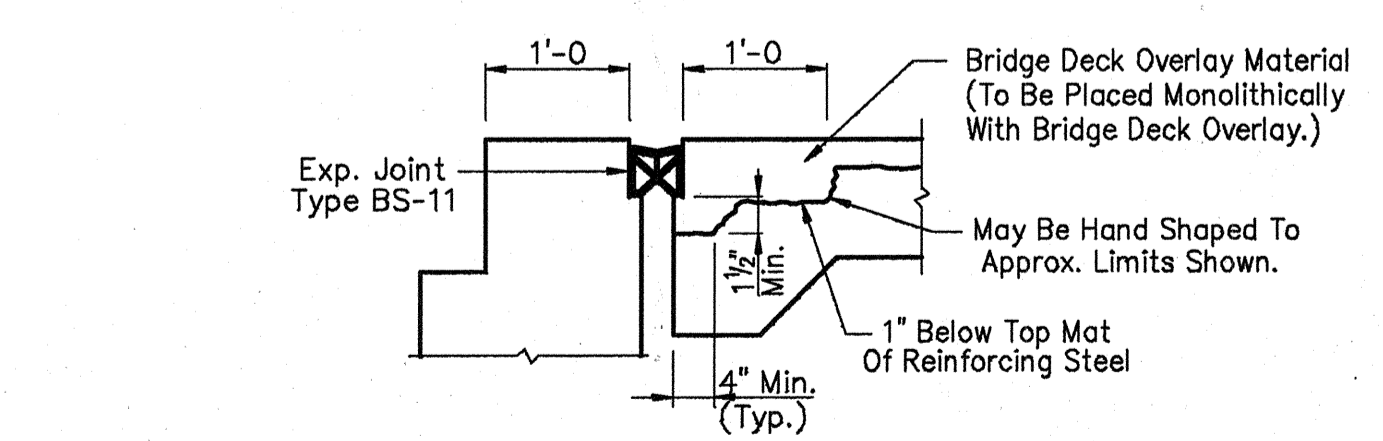
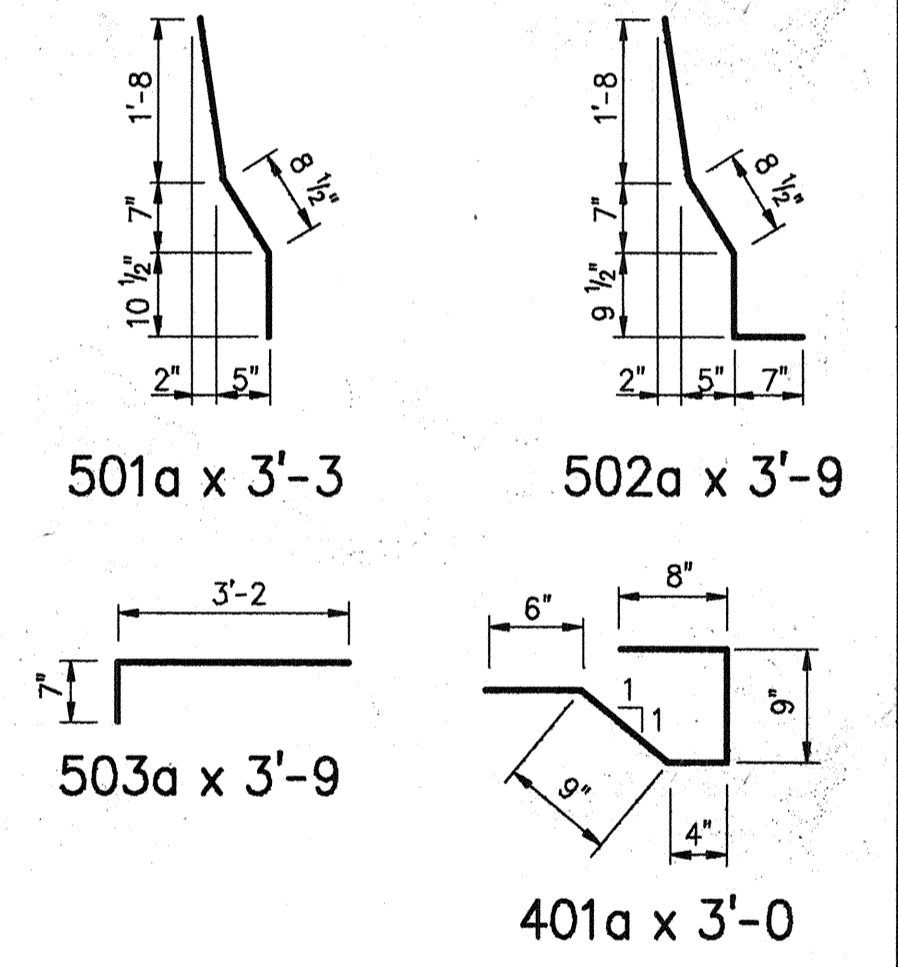
SECTION C-C



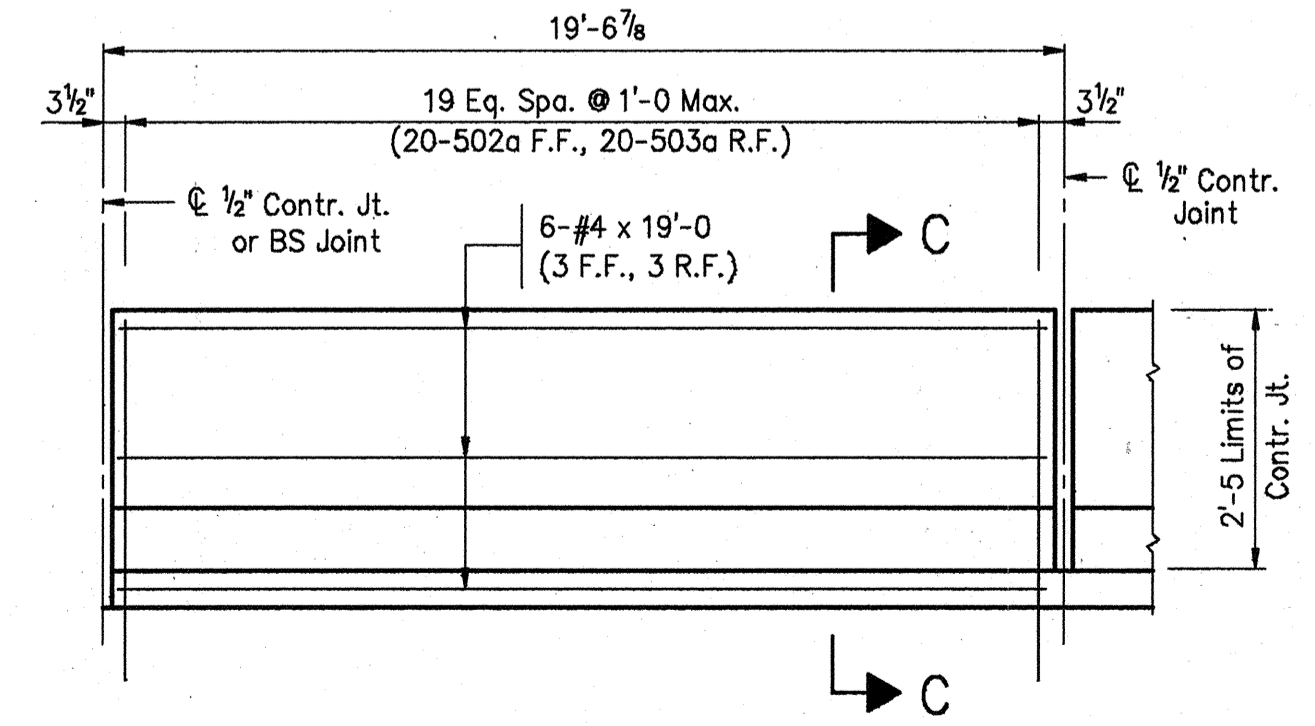
TYPICAL INTERIOR MEDIAN RAILING PANEL
(4 PANELS REQUIRED)
No Scale



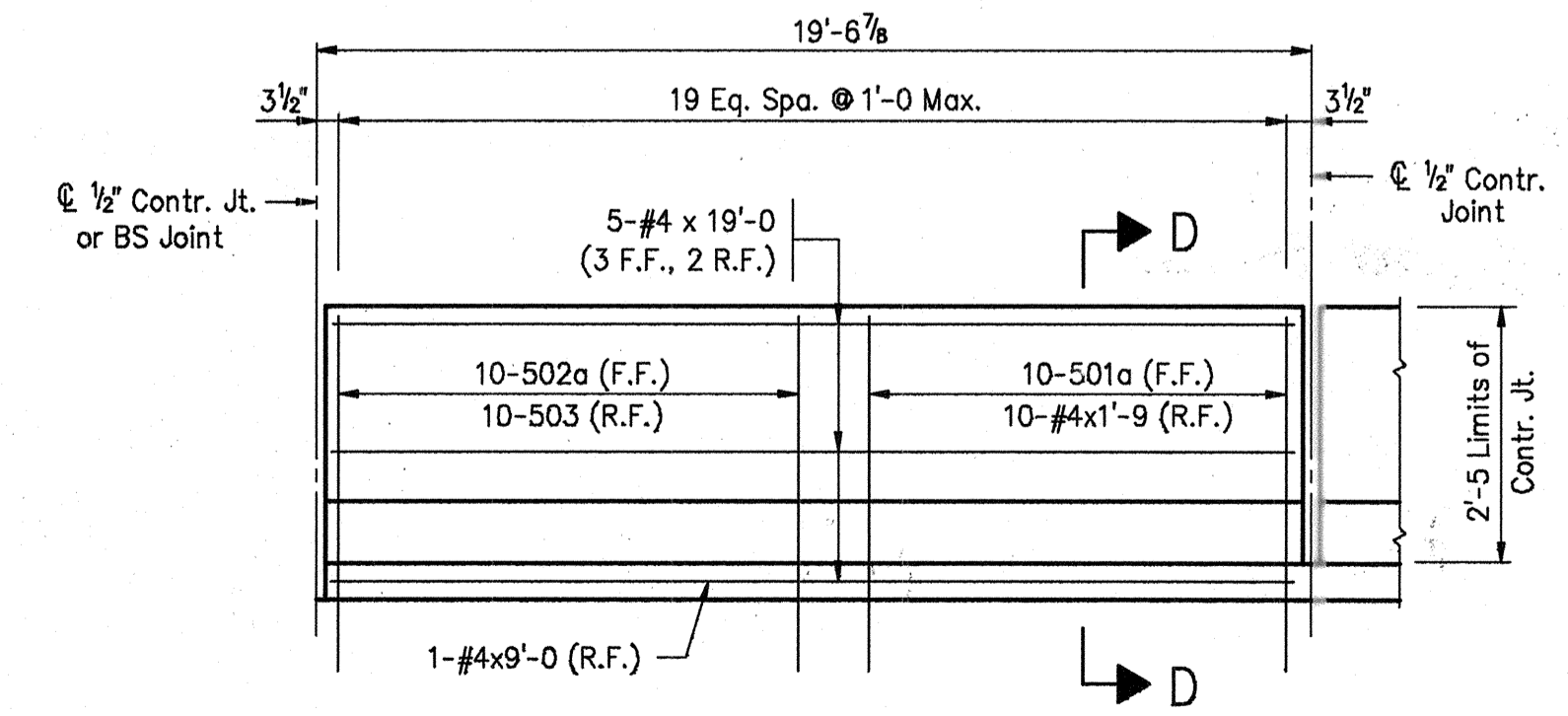
TYPICAL INTERIOR OUTSIDE RAILING PANEL
(4 PANELS REQUIRED)
No Scale



BS JOINT INSTALLATION DETAIL



TYPICAL END MEDIAN RAILING PANEL
(2 PANELS REQUIRED)
No Scale

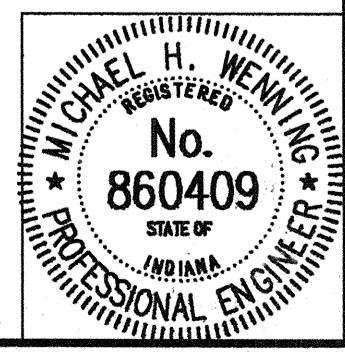


TYPICAL END OUTSIDE RAILING PANEL
(2 PANELS REQUIRED)
No Scale

NOTES:
All reinforcing steel to be epoxy coated, unless noted.
For Reinforcing Bar Notes, see Bridge Standard C1.

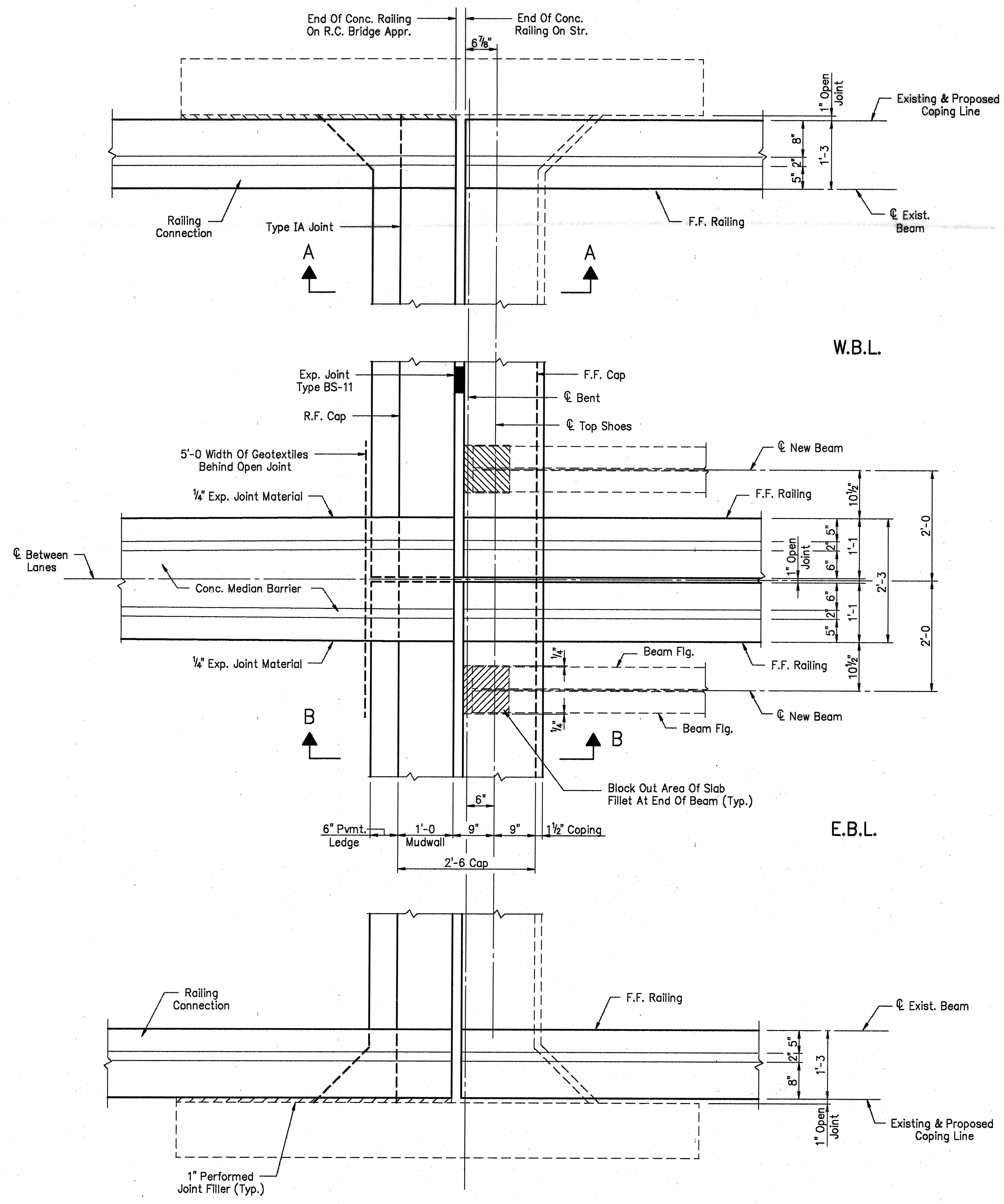
**SUPERSTRUCTURE DETAILS
AND BILL OF MATERIALS
INDIANA DEPARTMENT OF HIGHWAYS**

SCALE: - 3/4" = 1'-0, UNLESS NOTED DATE: - May 15, 1992
SUBMITTED FOR APPROVAL
DRAWING: - W12 OF W15 SHEET: - 13 OF 23
PROJECT: - IR-94-2(71)44
CONTRACT NO. R-20060
BRIDGE FILE: - I-94-47-2254A

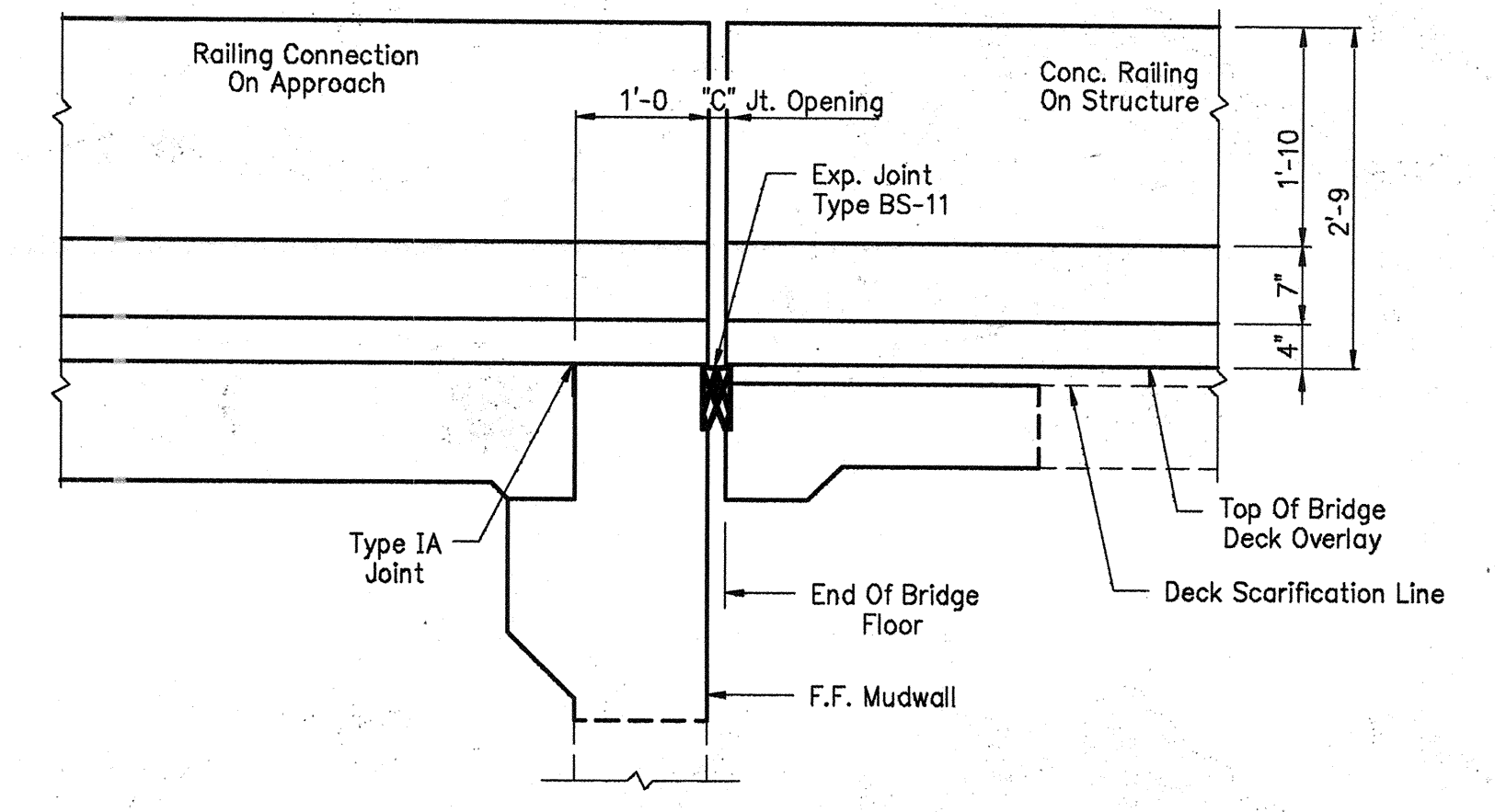


DESIGNED CJK/D
DRAWN DDC 4/15/92 CJK/D DAD 5/11/92
TRACED CJK/D

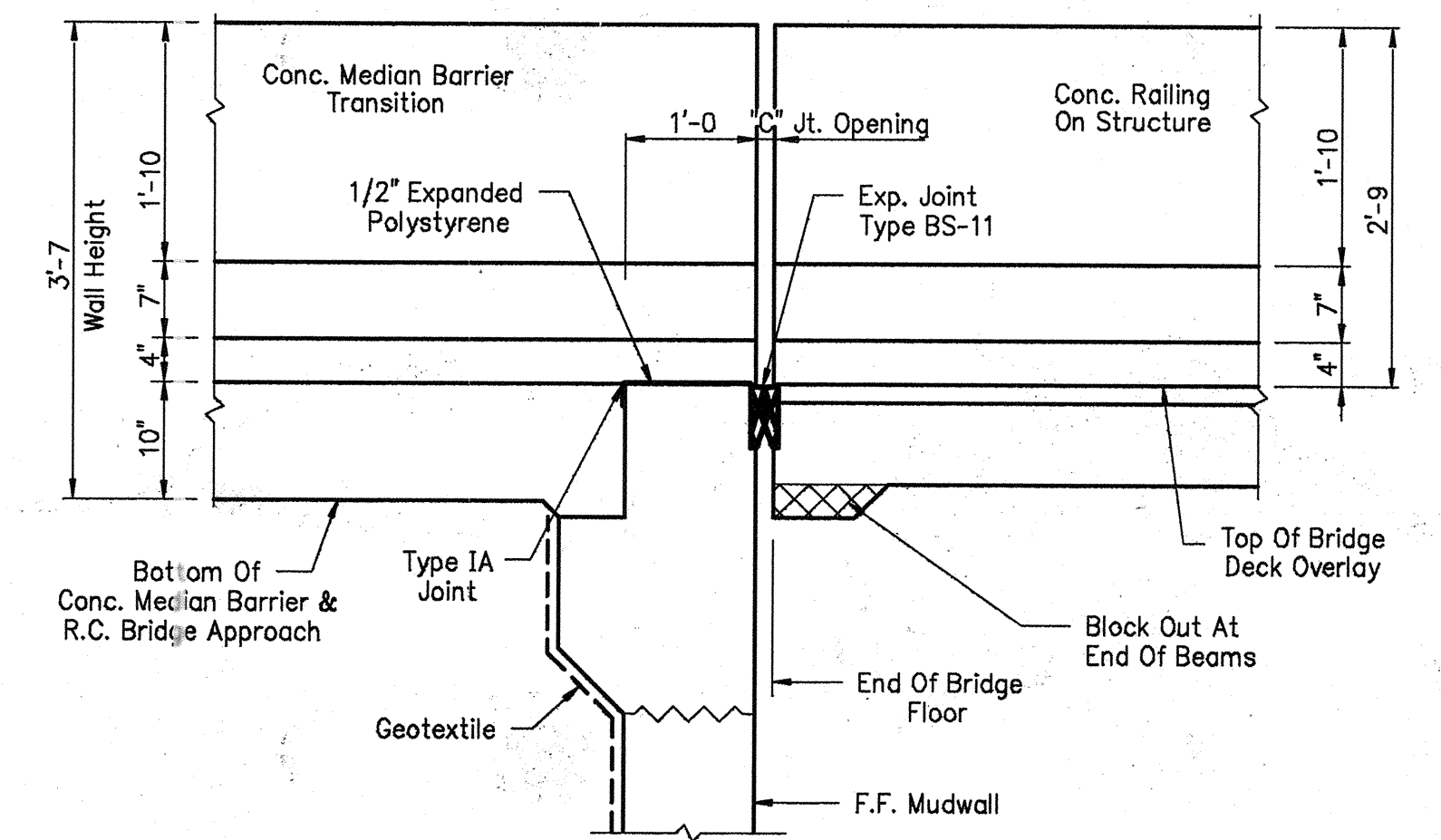
DWG FILE: \BP\8225812
PLOT SCALE: 1/8"
PLOT ORIGIN: 0,00,0,00
SPELLCHK: 05/12/92
EDIT DATE: 05/14/92
EDIT BY: DDC



BENT NO. 1
(BENT NO. 4 SAME BY 180° ROTATION)



SECTION A-A

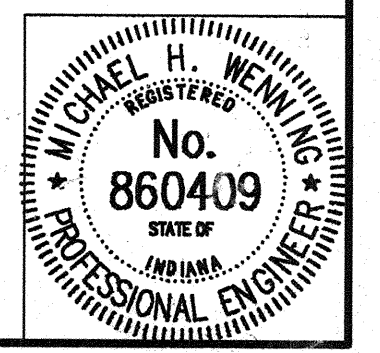


SECTION B-B

NOTE:
For R.C. Bridge Approach Details, see Drawing W15.
For Dimension "C", see Bridge Standard C3.

CORNER DETAILS
INDIANA DEPARTMENT OF HIGHWAYS

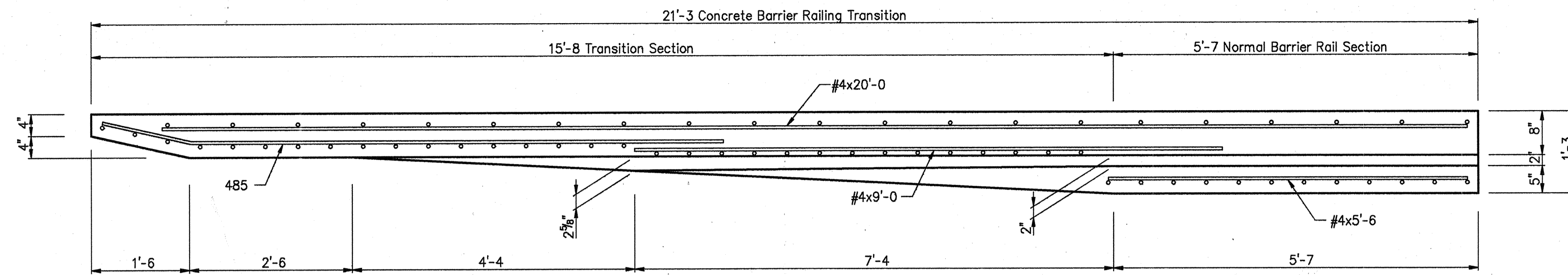
SCALE: - 3/4" = 1'-0" DATE: - May 15, 1992
SUBMITTED FOR APPROVAL: *[Signature]*
DRAWING: - W13 OF W15 SHEET: - 14 OF 23
PROJECT: - IR-94-2(71)44
CONTRACT NO. R-20060
BRIDGE FILE: - I-94-47-2254A



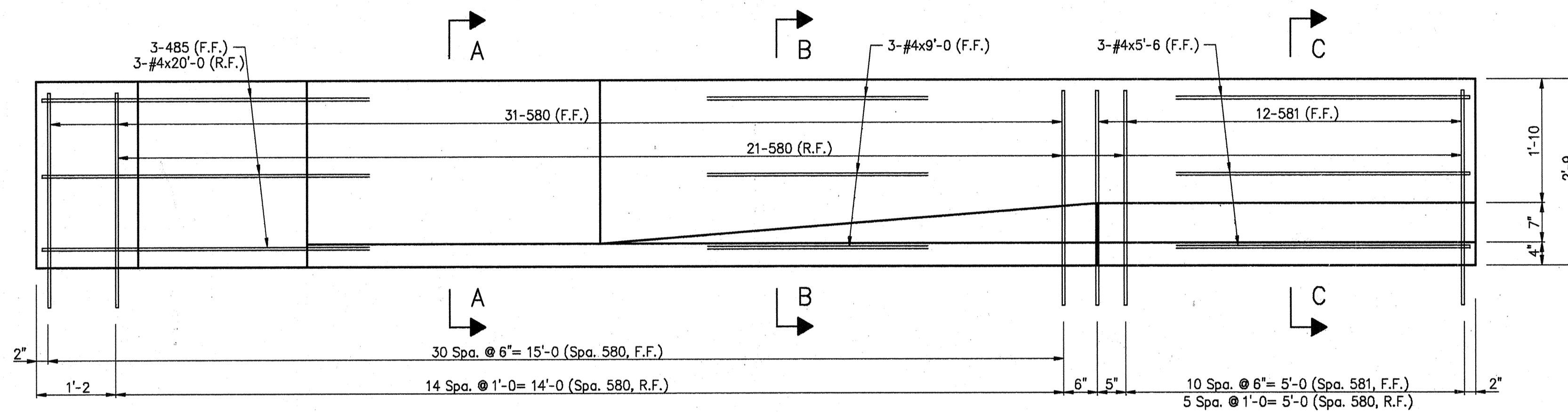
DESIGNED	C.K'D	JSS 10/25/89
DRAWN	DDG 10/19/89	C.K'D
TRACED		C.K'D

DWG FILE: \88\88225817
PLOT SCALE: 1/16
PLOT ORIGIN: 0,00,0.00

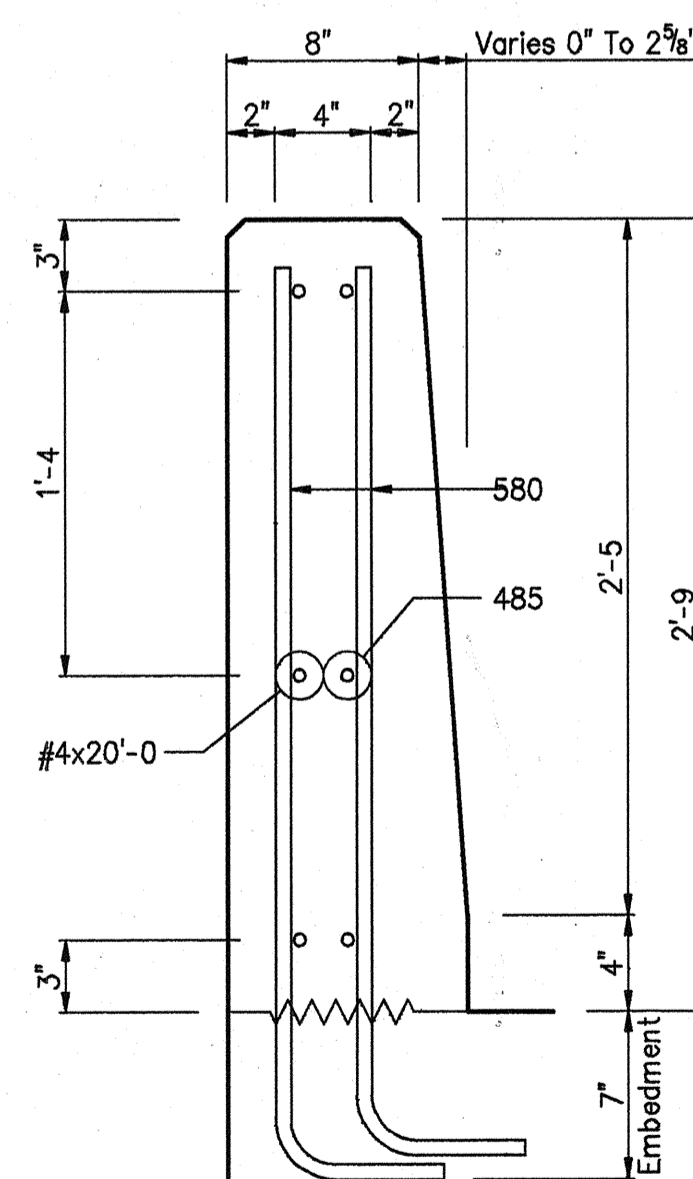
SPELLCHK: 05/12/92
EDIT DATE: 05/14/92
EDITED BY: JSS



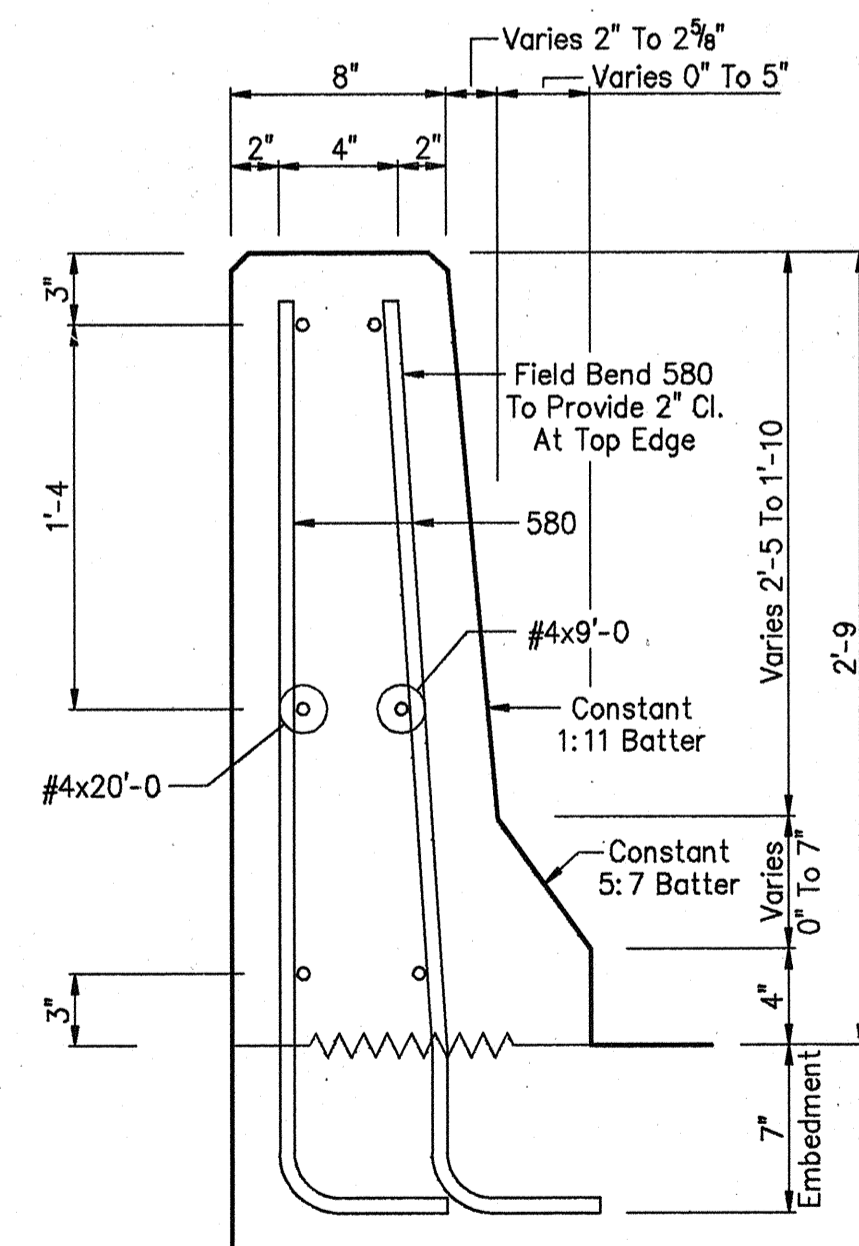
PLAN



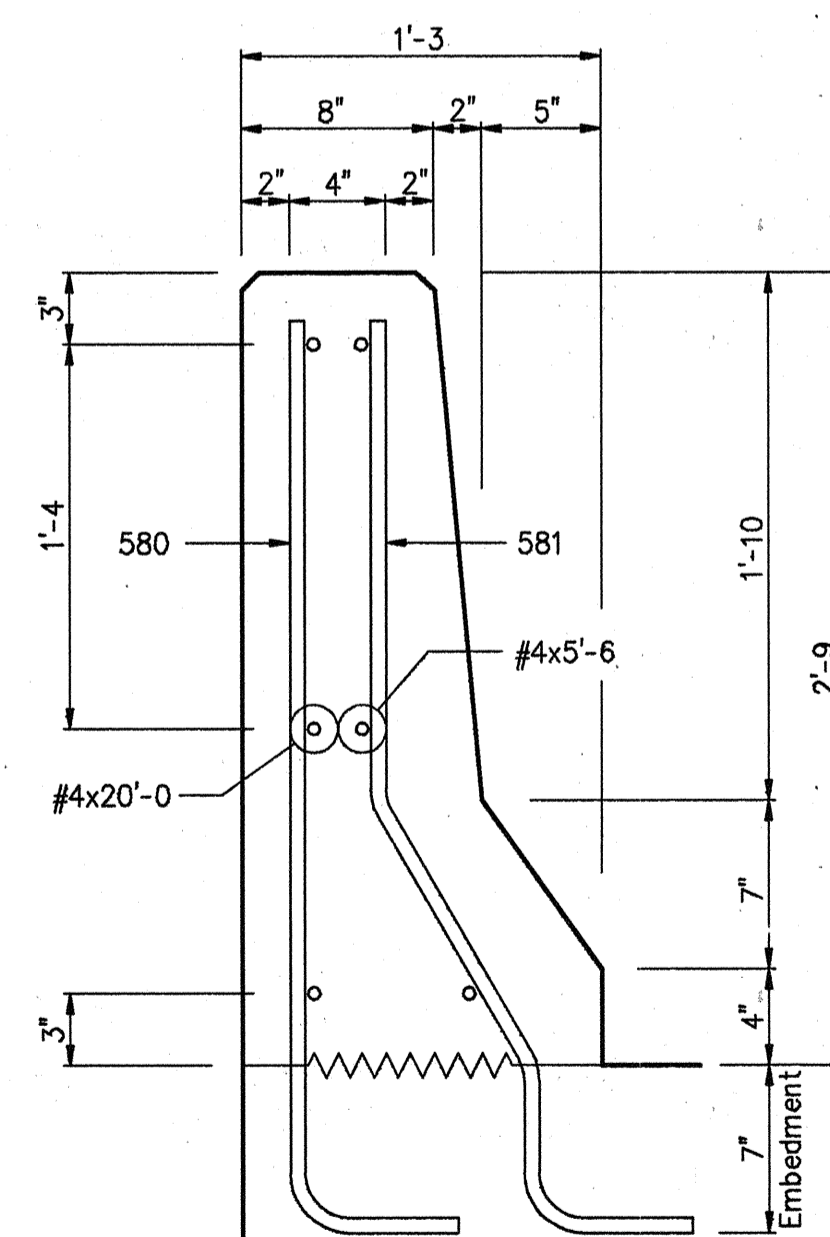
ELEVATION



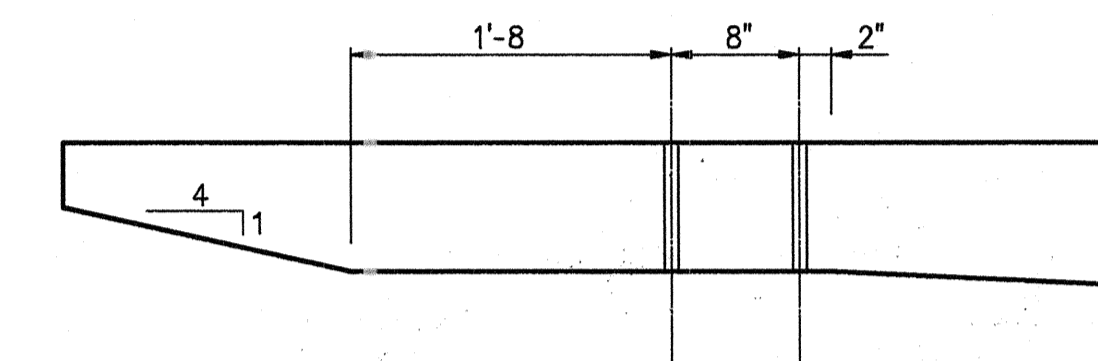
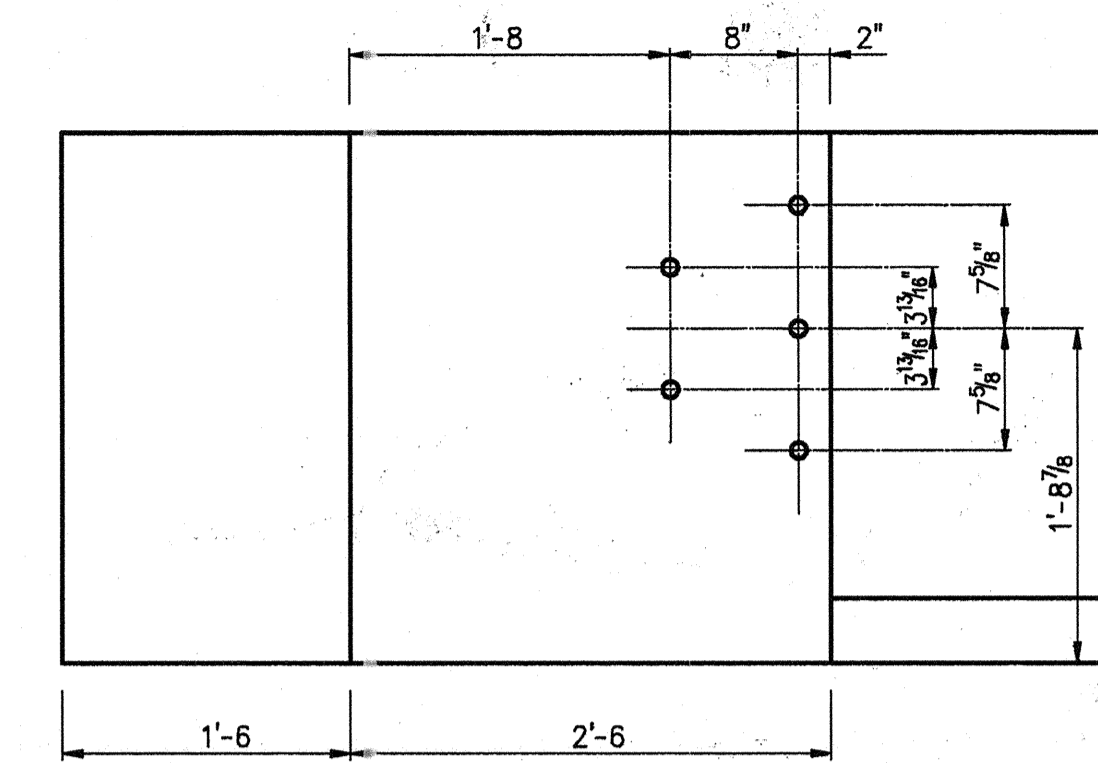
SECTION A-A
Scale- 1 1/2" = 1'-0



SECTION B-B
Scale- 1 1/2" = 1'-0

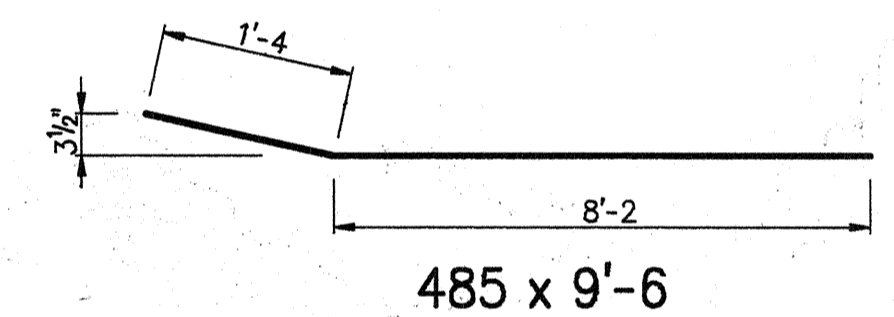
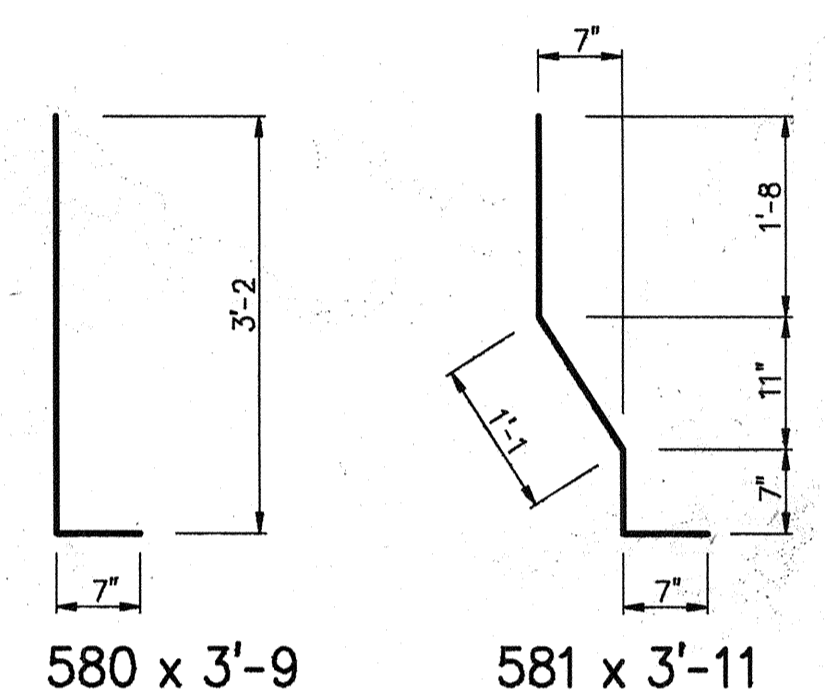


SECTION C-C
Scale- 1 1/2" = 1'-0



GUARDRAIL ATTACHMENT DETAILS

Scale- 1" = 1'-0



**BILL OF MATERIALS
(4 REQUIRED)**

Epoxy Coated Reinforcing Steel			
Size And Mark	No. Of Bars	Length (Feet)	Weight (Lbs.)
580	52	3'-9	
581	12	3'-11	
Total No.5			252
485	3	9'-6	
#4	3	20'-0	
#4	3	9'-0	
#4	3	5'-6	
Total No.4			88
Total Epoxy Coated Reinforcing Steel			340
Concrete			
Total Class "C" In Railing			21.25 Lft.
Miscellaneous			
Surface Seal			135 Sft.

**CONCRETE BARRIER BRIDGE RAILING TRANSITION
W/THRIE BEAM TRANSITION CONNECTION
INDIANA DEPARTMENT OF TRANSPORTATION**

SCALE: - 3/4" = 1'-0, UNLESS NOTED DATE: - May 15, 1992

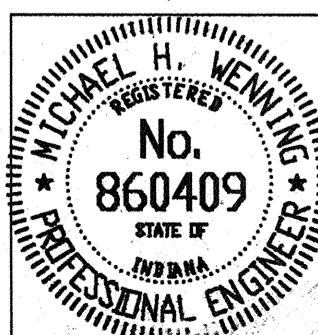
SUBMITTED FOR APPROVAL *Michael H. Mennig*

DRAWING: - W14 OF W15 SHEET: - 15 OF 23

PROJECT: - IR-94-2(71)44

CONTRACT NO. R-20060

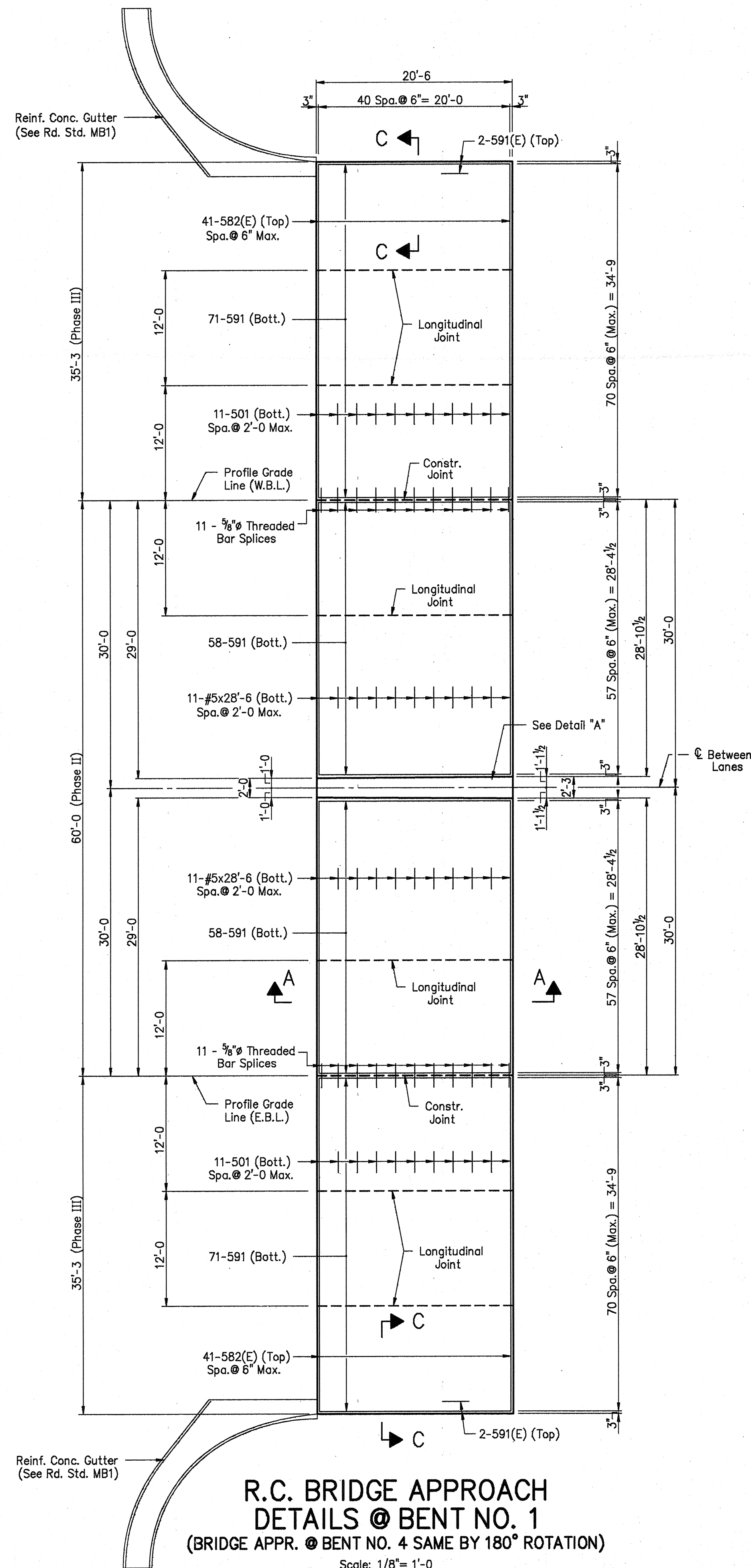
BRIDGE FILE: - I-94-47-2254A



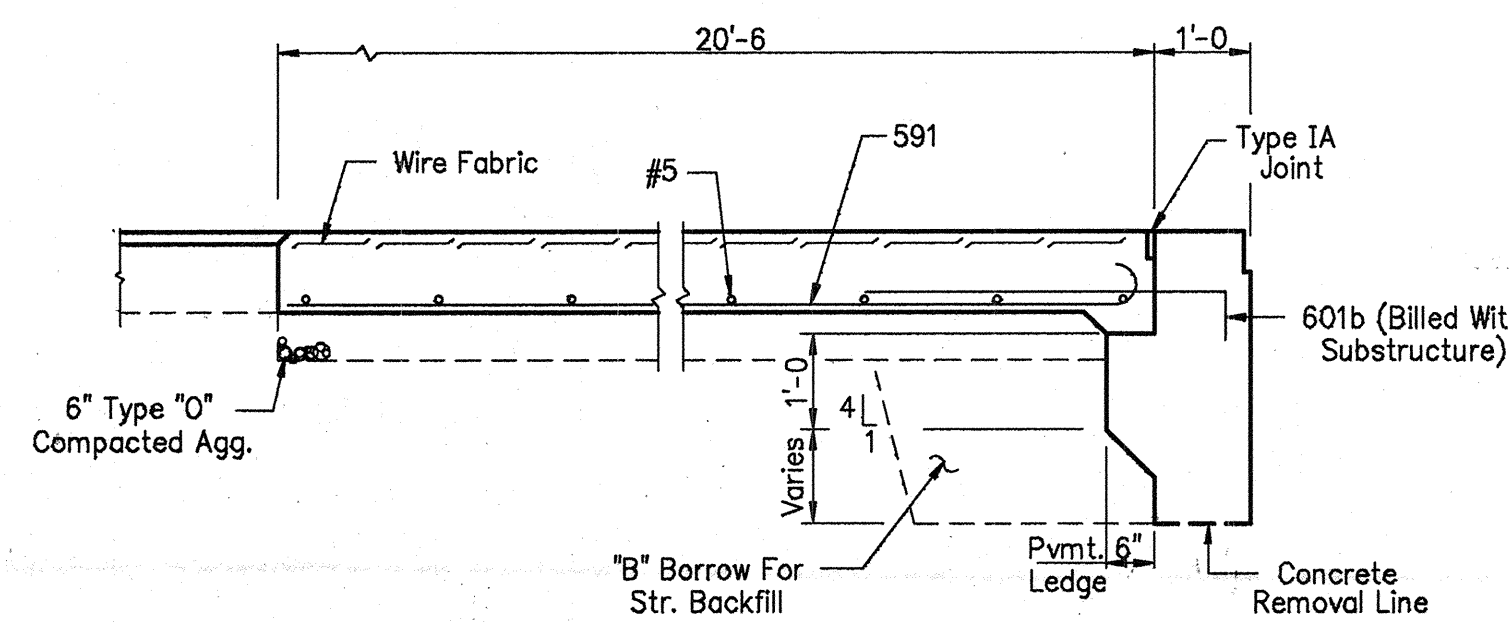
DESIGNED: C.K.D.
DRAWN: DDG 4/23/92 C.K.D. DAD 5/8/92
TRACED: C.K.D.

DWG FILE: \88\98225303
PLOT SCALE: 1/16
PLOT ORIGIN: 0,0,0,0

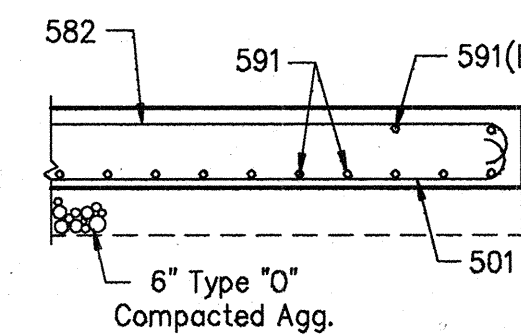
SPELLCHK: 05/11/92
EDIT DATE: 05/15/92
EDITED BY: DDG



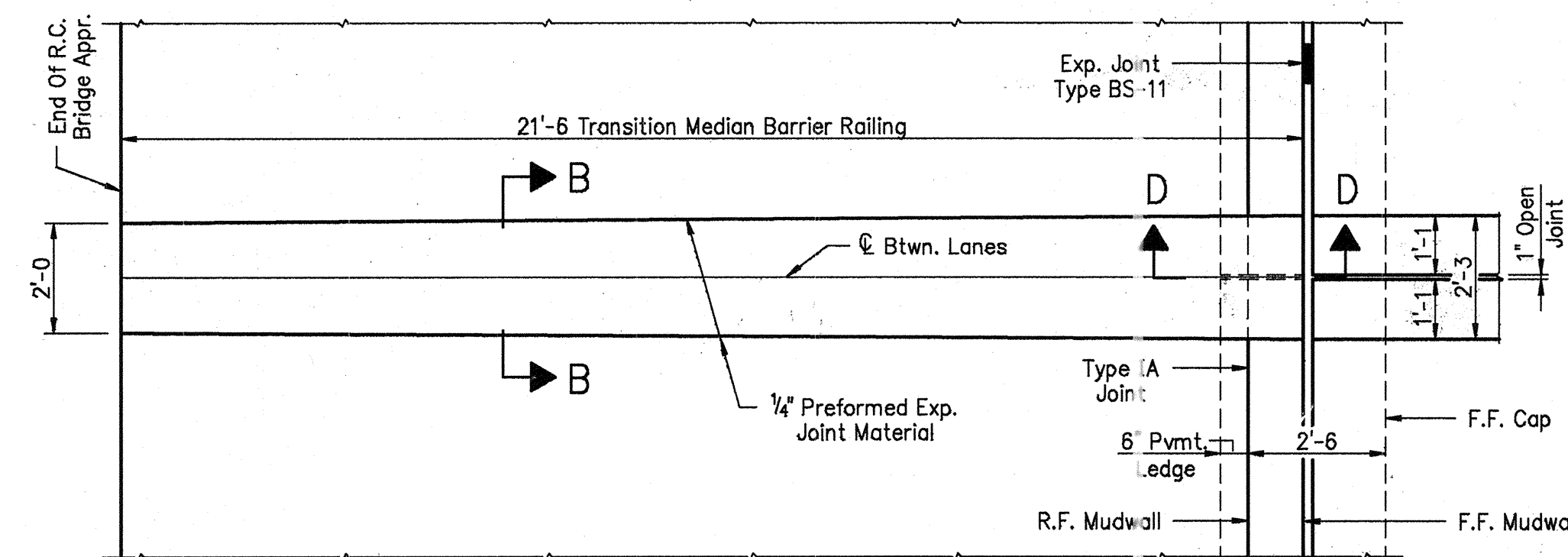
**R.C. BRIDGE APPROACH
DETAILS @ BENT NO. 1**
(BRIDGE APPR. @ BENT NO. 4 SAME BY 180° ROTATION)
Scale: 1/8" = 1'-0"



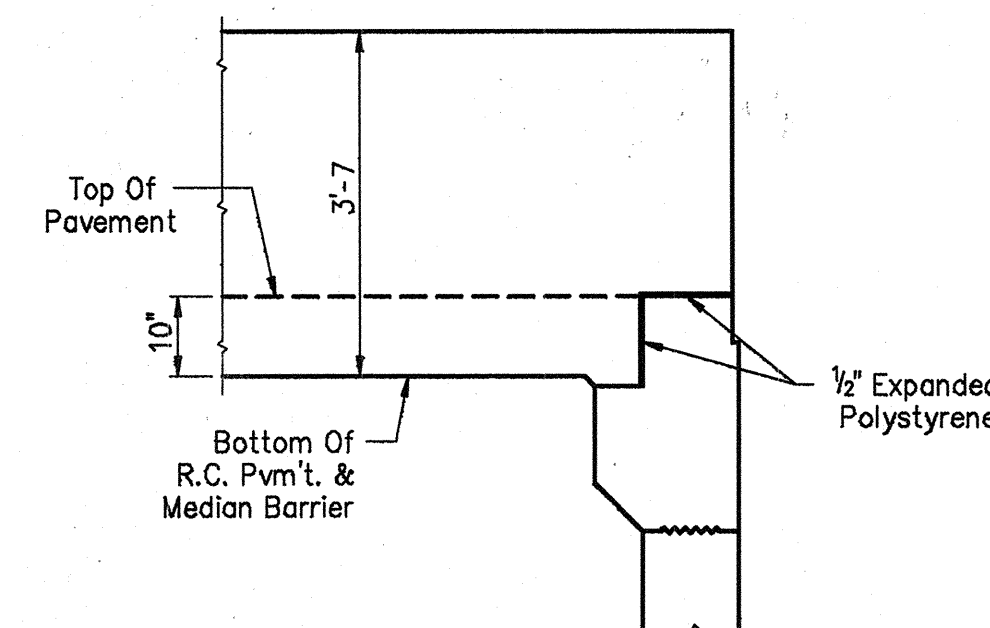
SECTION A-A
Scale: 1/2" = 1'-0"



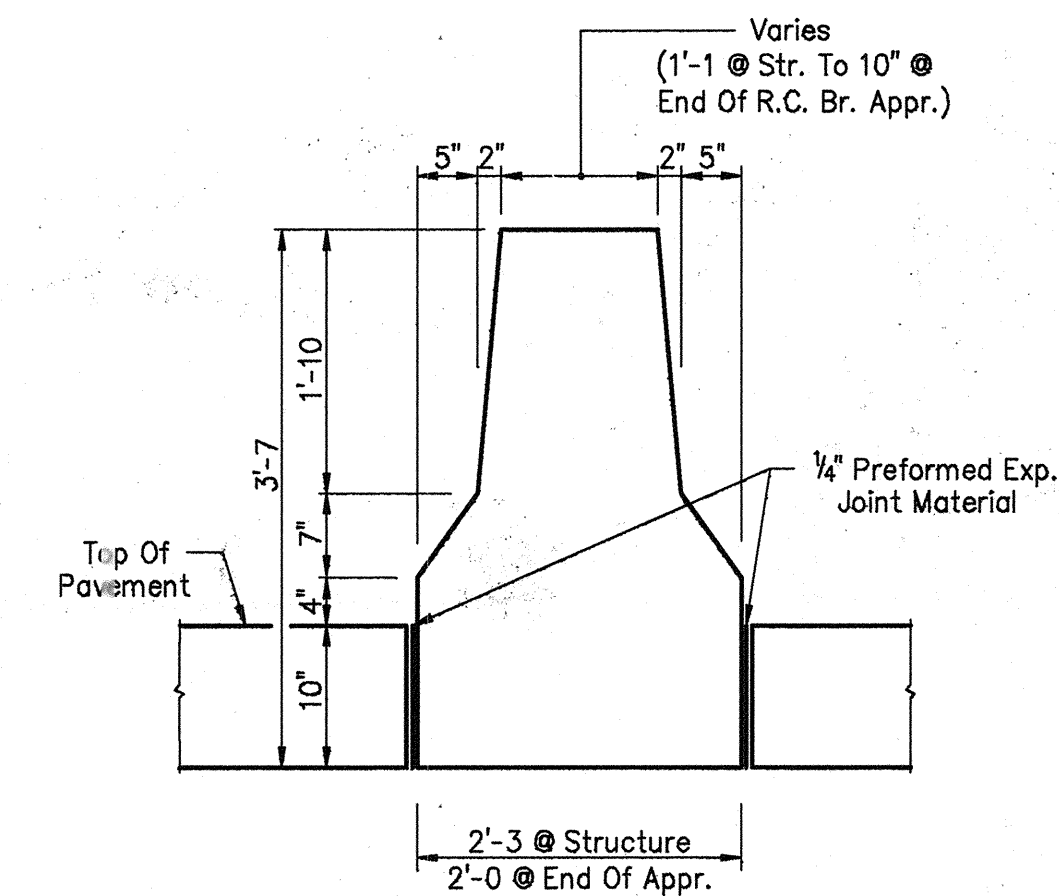
SECTION C-C
Scale: 1/2" = 1'-0"



DETAIL "A"
Scale: 3/8" = 1'-0"



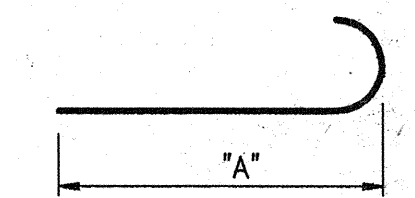
SECTION D-D
Scale: 1/2" = 1'-0"



SECTION B-B
Scale: 3/4" = 1'-0"

**R.C. BRIDGE APPROACH
BILL OF MATERIALS
@ BENT NO. 1
(BENT NO.4 THE SAME)**

Epoxy Coated Reinforcing Steel			
Size And Mark	No. Of Bars	Length (Feet)	Weight (Lbs.)
582	82	6'-7	
591	4	20'-7	
Total Epoxy Coated Reinforcing Steel			649
Plain Reinforcing Steel			
501	22	35'-4	
591	258	20'-7	
#5	22	28'-6	
Total Plain Reinforcing Steel			7,004
Concrete			
Cement Conc. Pavement Reinf. 10"			
Phase II	(2 @ 66)		132 Sys.
Phase III	(2 @ 80)		160 Sys.
Total Cement Conc. Pvm't. Reinf. 10"			292 Sys.
Miscellaneous			
Epoxy Coated Threaded Bar Splices		22	Ea.
Concrete Median Barrier		21.5	Lft.
Type 'O' Compacted Agg. For Base		95	Tons



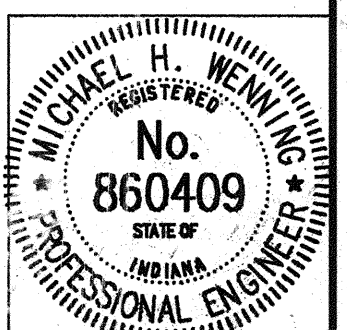
Mark	"A"	Length
501	34'-9	35'-4
582	6'-0	6'-7
591	20'-0	20'-7

NOTES:
For Reinforcing Bar Notes, see Bridge Standard C1.
(E) Indicates Epoxy Reinforcing Steel.
For Type IA Joint, see Bridge Standard C3.

**R.C. BRIDGE APPROACH DETAILS
AND BILL OF MATERIALS
INDIANA DEPARTMENT OF HIGHWAYS**

SCALE: - AS NOTED
DATE: - May 15, 1992
SUBMITTED FOR APPROVAL *Michael H. Wenning*

DRAWING: - W15 OF W15 SHEET: - 16 OF 23
PROJECT: - IR-94-2(71)44
CONTRACT NO. R-20060
BRIDGE FILE: - IR-94-47-2254A



DESIGNED: CK'D
DRAWN: DDG 10/19/89 CK'D DAD 5/8/92
TRACED: CK'D

DWG FILE: \88\88225816
PLOT SCALE: 1/24
PLOT ORIGIN: 0.00,0.00
SPELLCHK: 05/12/92
EDIT DATE: 05/14/92
EDIT BY: DDG

