

INDEX					
PROJECT	STRUCTURE	TYPE	SPAN	OVER	STATION
IM/80-1(143)4	I-80-5-7823	CONTINUOUS POST-TENSIONED CONCRETE BOX GIRDER BRIDGE	65'-0, 157'-9 1/8, 120'-6 1/16 166'-4 1/2, 166'-4 1/2, 166'-4 5/8, 151'-10, 200'-4 7/16, 65'-0	S.R.912 AND I-80/94	616+64.0 "SE"
SHEET NO.	SHEET DESIGNATION	SUBJECT			F. H. W. A. APPROVAL
1	ONE SHEET	TITLE SHEET			
2	FOR INFORMATION ONLY	TYPICAL SECTIONS I-80			
3-4	FOR INFORMATION ONLY	TYPICAL SECTIONS S.R. 912			
5	FOR INFORMATION ONLY	TYPICAL SECTIONS RAMP			
6-7	FOR INFORMATION ONLY	ROAD PLAN AND PROFILE I-80			
8	FOR INFORMATION ONLY	ROAD PLAN AND PROFILE S.R.912			
9	ONE SHEET	R.C. BRIDGE APPROACH DETAILS			
10	ONE SHEET	GENERAL NOTES			
11-15B	SEVEN SHEETS	SOIL BORINGS			
16-17	C1, C2	LAYOUT			
18-19	C3, C4	GENERAL PLAN			
20	C5	TYPICAL SECTIONS			
21	C6	TIE-UP DIAGRAM			
22-23	C7, C8	BENT 1 DETAILS			
24-25	C9, C10	BENT 10 DETAILS			
26	C11	PIER 2, 3, 4, 5, 7, 8 & 9 DETAILS			
27	C12	PIER 6 DETAILS			
28-28A	C13, C13A	DRILLED SHAFT DETAILS			
29	C14	TYPICAL SECTION REINFORCING DETAILS, UNIT 1			
30	C15	TYPICAL SECTION REINFORCING DETAILS, UNIT 2			
31-35	C16, C17, C18, C19, C20	SUPERSTRUCTURE REINFORCING DETAILS, UNIT 1			
36	C21	MISCELLANEOUS FLOOR DETAILS UNIT 1			
37-40	C22, C23, C24, C25	SUPERSTRUCTURE REINFORCING DETAILS, UNIT 2			
41-42	C26, C27	MISCELLANEOUS FLOOR DETAILS UNIT 2			
43	C28	END DIAPHRAGM AT BENT 1 REINFORCING			
44	C29	END DIAPHRAGM AT BENT 10 REINFORCING			
45	C30	PIER DIAPHRAGM AT PIER 2, 4 & 5 REINFORCING			
46	C31	PIER DIAPHRAGM AT PIER 3 REINFORCING			
47	C32	PIER DIAPHRAGM AT PIER 6 (UNITS 1) REINFORCING			
48	C33	PIER DIAPHRAGM AT PIER 6 (UNITS 2) REINFORCING			
49	C34	PIER DIAPHRAGM AT PIER 7, 8 & 9 REINFORCING			
50	C35	POST-TENSIONING DETAILS, STRESSING BLOCK, SPAN C, REINFORCING			
51	C36	POST-TENSIONING DETAILS, STRESSING BLOCK SPAN G, REINFORCING			
52	C37	POST-TENSIONING DETAILS, TRANSVERSE			
53	C38	POST-TENSIONING DETAILS, BENT 1 & 10			
54	C39	POST-TENSIONING DETAILS, PIER 6 DOWN STATION & UP STATION			
55	C40	POST-TENSIONING DETAILS, STRESSING BLOCK, SPAN C REINFORCING			
56	C41	POST-TENSIONING DETAILS, STRESSING BLOCK, SPAN G REINFORCING			
57-61	C42, C43, C44, C45, C46	TENDON LAYOUT			
62	C47	CASTING CURVES			
63	C48	BEARING DETAILS			
64-64A	C49, C49A	EXPANSION JOINT DETAILS, MISC. DETAILS			
65	C50	CONSTRUCTION SEQUENCE			
66	C51	BRIDGE SUMMARY			

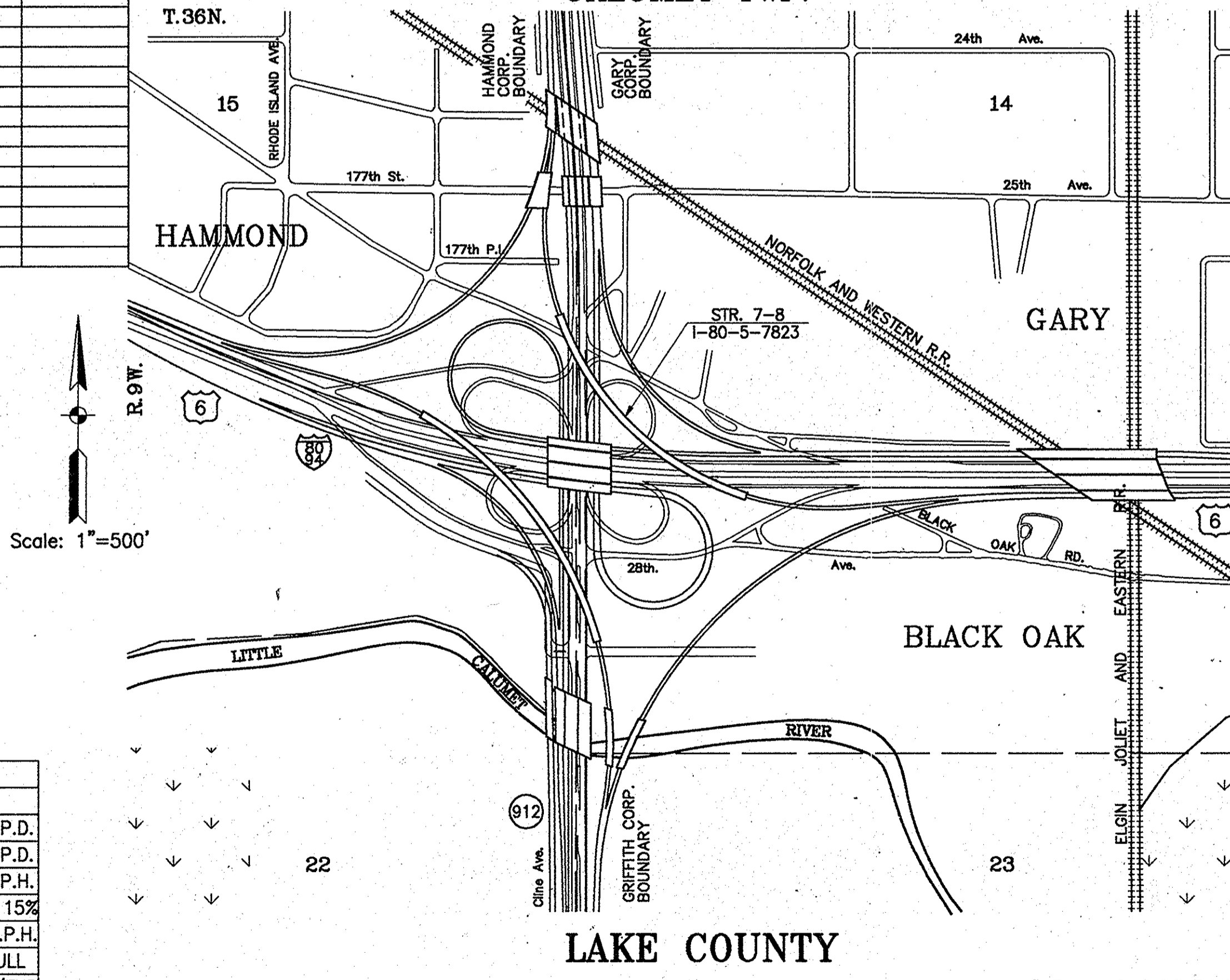
R-23808 part 5 of 9

INDIANA
DEPARTMENT OF
TRANSPORTATION

BRIDGE PLANS
FOR SPANS OVER 20 FEET
ON
I-80/94 AND S.R.912
INTERCHANGE MODIFICATION

PROJECT NO. MM-220-1(029) P.E.
NH-080-1(026)4 R/W
IM/80-1(143)4 CONST.

I-80/94, S.R. 912 @ R.P. 10 + 41
CALUMET TWP.



TRAFFIC DATA					
	RAMP "NW"		I-80/94		S.R.912
A. D. T. (1987)	5,500	V.P.D.	124,700	V.P.D.	53,900 V.P.D.
A. D. T. (2007 PROJECTED)	8,250	V.P.D.	187,050	V.P.D.	80,850 V.P.D.
D. H. V. (2007 PROJECTED)	630	V.P.H.	14,310	V.P.H.	7,205 V.P.H.
TRUCKS	D.H.V. 8%	A.D.T. 15%	D.H.V. 17%	A.D.T. 26%	D.H.V. 13% A.D.T. 15%
DESIGN SPEED	50 M.P.H.		60 M.P.H.		60 M.P.H.
ACCESS CONTROL	FULL		FULL		FULL
FUNCTIONAL CLASSIFICATION	URBAN INTERSTATE		URBAN INTERSTATE		URBAN OTHER FREEWAY/EXP.

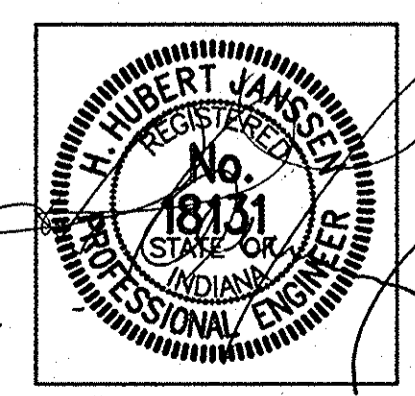
NOTE:
WHEREVER PROJECT NO. NH-80-1()4 APPEARS
ON THESE PLANS OR CONTRACT DOCUMENTS, IT
SHALL BE INTERPRETED AS IM/80-1(143)4.

REVISIONS		
DATE	REV. SHTS.	SHEET NO.
07-10-98	REV. SHTS. 10, 11, 19, 22, 28, 31, 33, 36, 41, 43, 51, 61, 62, 66	14/5
07-10-98	ADD SHTS. 15A, 15B, 28A, 64A, 73A-73M	
Sept. 1, 1998	Revised Sheets No. 11, 18, 19, 23, 25, 28, 28A, 66	

REVISIONS		
DATE	REV. SHTS.	SHEET NO.

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	BRIDGE STD. BR1A	CONCRETE BRIDGE RAILING TRANSITION TYPE TGB	
	BRIDGE STD. BR2	CONCRETE BRIDGE RAILING TRANSITION TYPE WGB	
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	BRIDGE STD. C2	MISCELLANEOUS DETAILS	
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	BRIDGE STD. C4	PRESTRESSED CONCRETE PILES	
	BRIDGE STD. C5	PRECAST DECK PANEL DETAILS	
69	BRIDGE STD. D	CASTING DETAILS, ROADWAY DRAINS	1-11-89 R 9-1-88
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	BRIDGE STD. PB6	PRESTRESSED BOX BEAMS	
	BRIDGE STD. PB	PRESTRESSED COMPOSITE BOX BEAMS, WIDE	
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	ROAD STD. SHEET MH2A	MISCELLANEOUS STANDARDS	
	ROAD STD. SHEET MN	MISCELLANEOUS STANDARDS	
	ROAD STD. SHEET MN1	MISCELLANEOUS STANDARDS	
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	ROAD STD. SHEET 3 DETOURS	STANDARD DETOUR SIGNS	
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	ROAD STD. SHEET 4 DETOURS	STANDARD DETOUR SIGNS	
	ROAD STD. SHEET 5 DETOURS	STANDARD DETOUR SIGNS	

PLANS PREPARED BY:
JSE CONSULTING ENGINEERS, INC
2825 E. 56TH STREET
INDIANAPOLIS, INDIANA 46220
TEL 317-254-9686
FAX 317-259-8262



APPROVED FOR LETTING 6/22/98
Phelan K. Kilday
CHIEF, DIVISION OF DESIGN

FEDERAL HIGHWAY ADMINISTRATION
DEPARTMENT OF TRANSPORTATION

APPROVED: _____
DIVISION ADMINISTRATOR

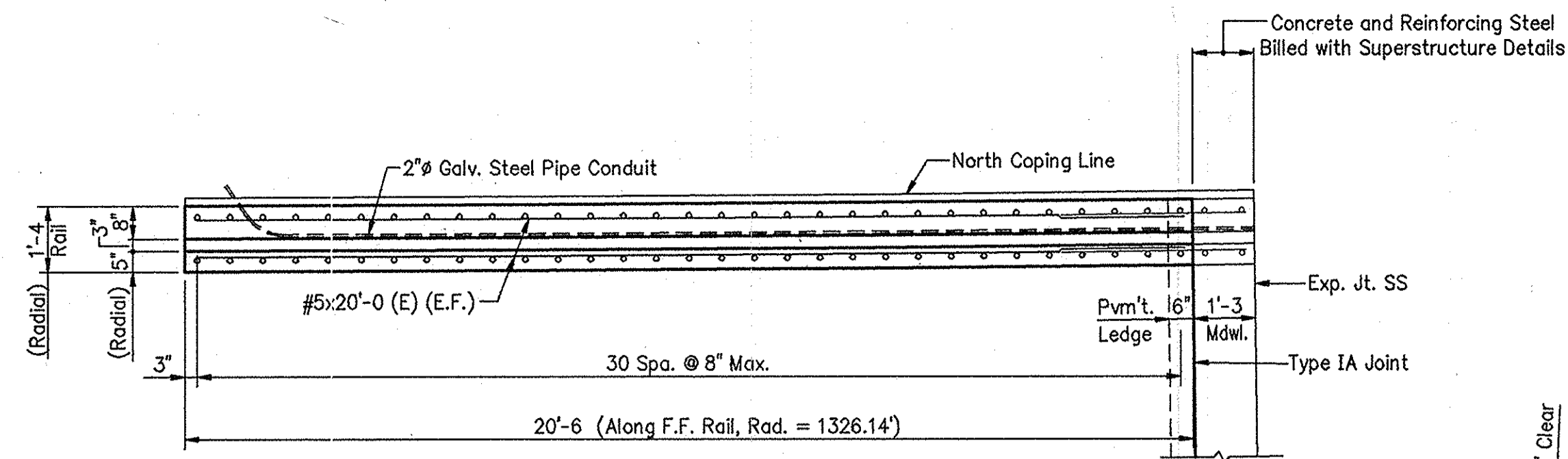
DATE _____

INDIANA DEPARTMENT OF TRANSPORTATION
STANDARD SPECIFICATIONS DATED 1995
TO BE USED WITH THESE PLANS.
DES. NO. 920260A

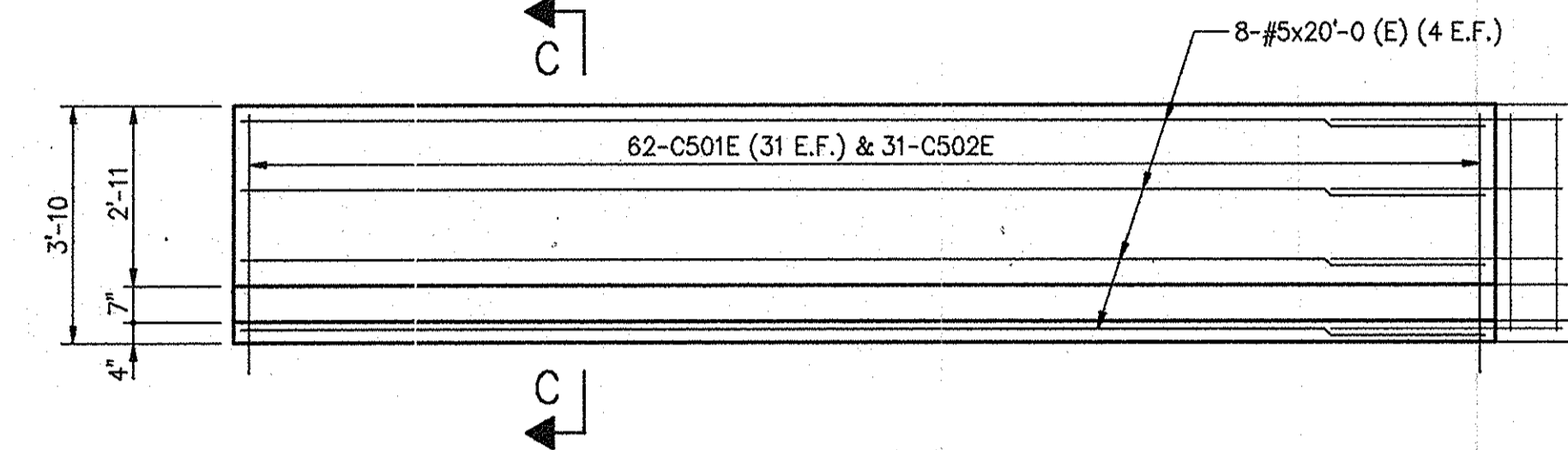
BRIDGE FILE: I-80-5-7823

**BILL OF MATERIALS
BENT NO.1
(BENT NO. 10 SAME)**

Epoxy Coated Reinforcing Steel			
Size And Mark	No. Of Bars	Length (Feet)	Weight (Lbs.)
C501E	126	4'-1	
C502E	63	5'-5	
582	105	6'-0	
591	10	20'-7	
#5	8	20'-6	
#5	8	20'-0	
Total Epoxy Coated Reinforcing Steel			2102
Plain Reinforcing Steel			
From Bridge Design Memorandum #42 Revised, November 2, 1992			
73.9 Sys. Pvm't. x 25.4 Lbs./Sys.			
Total Plain Reinforcing Steel			1877
Concrete			
Concrete Railing Class "C" (3'-10)			
North Coping			2.6 Cys.
South Coping			3.0 Cys.
Total Concrete Railing Class "C" (3'-10)			5.6 Cys.
Cement, Conc, Pvm't., Reinf., 11 Inch			81 Sys.
Miscellaneous			
Subbase For Cement Concrete Pavement			11 Cys.
Surface Seal			360 Sft.
Barrier Delineator			2 Each
Masonry Coating			360 Sft.
2" Galvanized Steel Pipe Conduit			20 Lft.



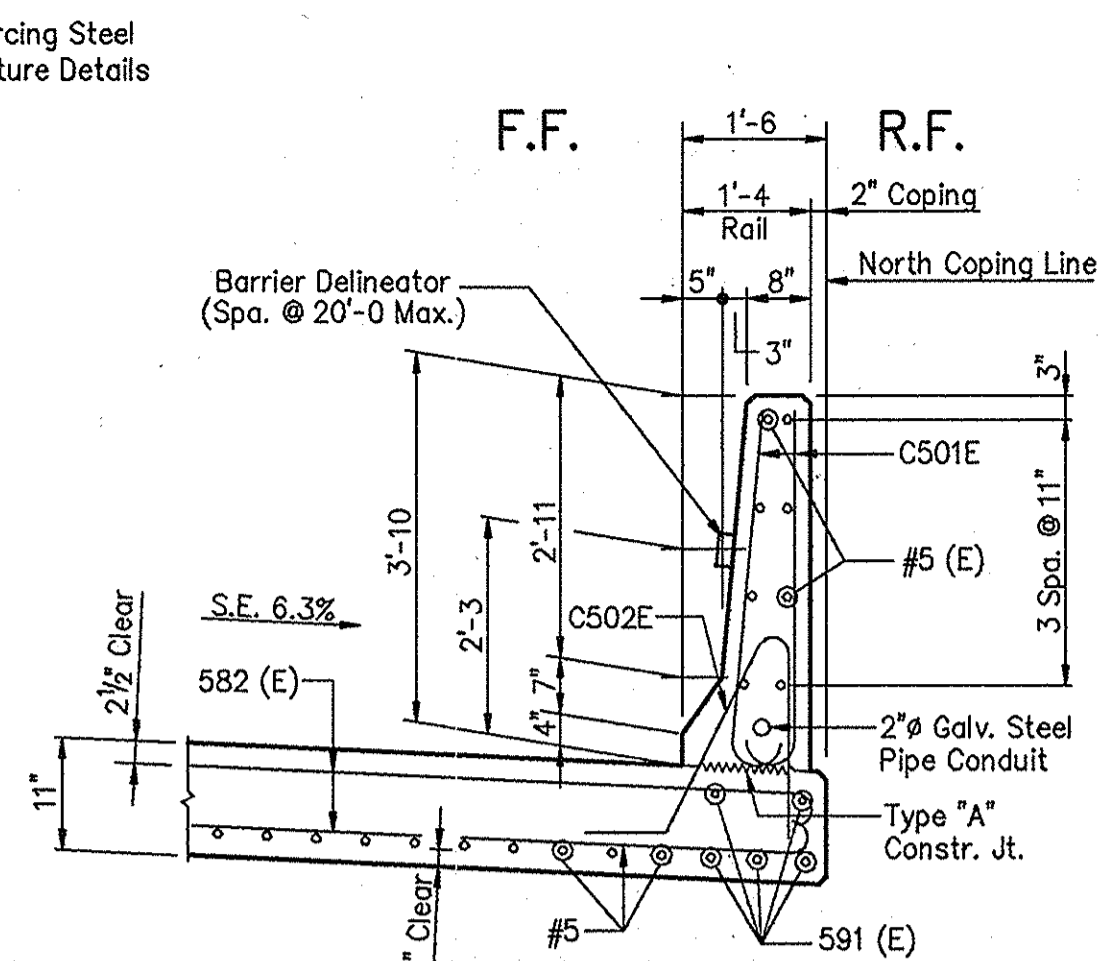
PLAN



ELEVATION

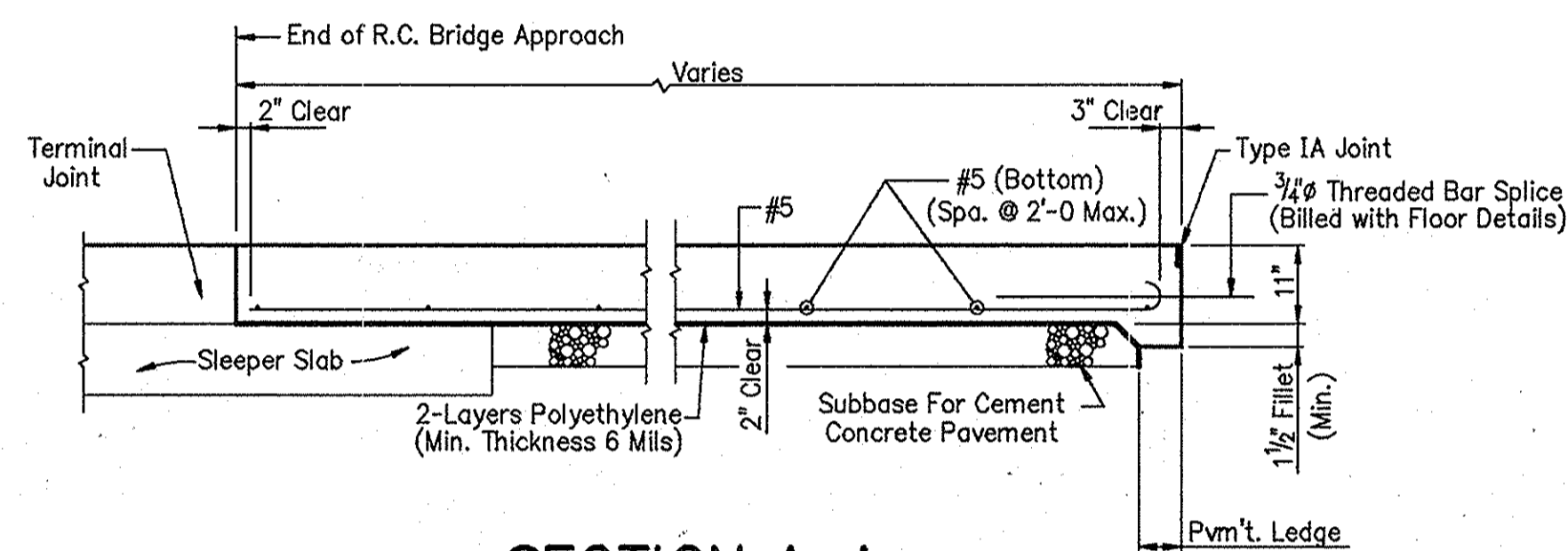
**RAILING DETAILS @ BENT NO.1
(RAILING @ BENT NO. 10 SAME BY OPPOSITE HAND)**

Scale: 3/8" = 1'-0



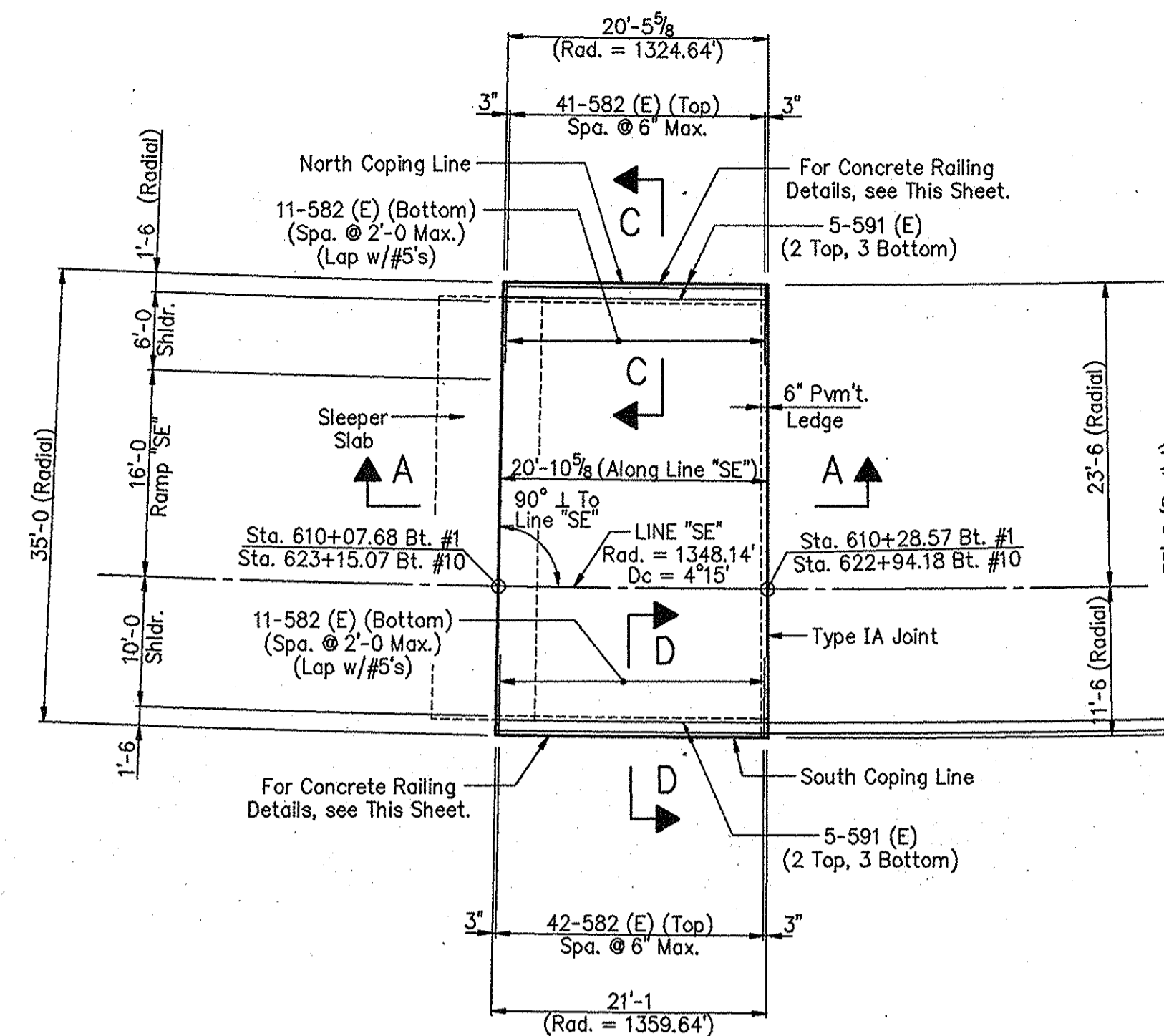
SECTION C-C

Scale: 1/2" = 1'-0



SECTION A-A

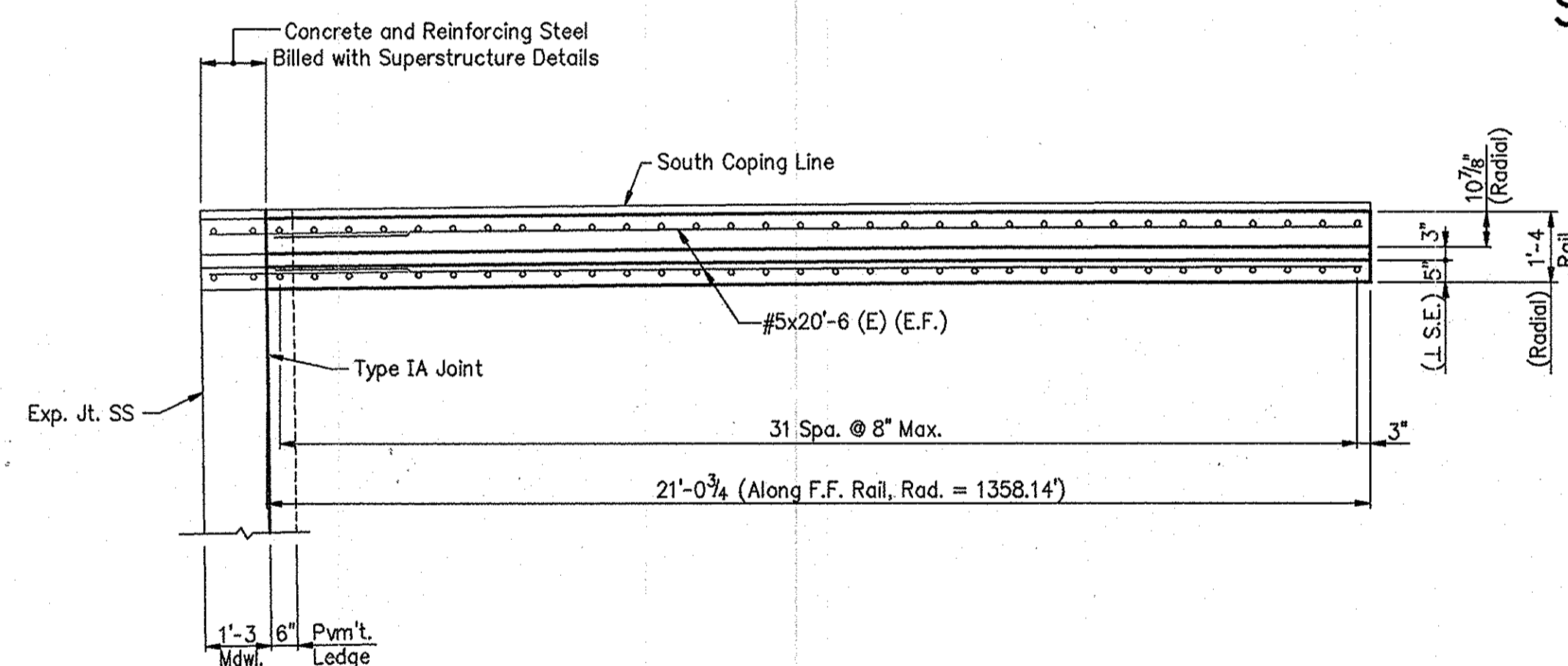
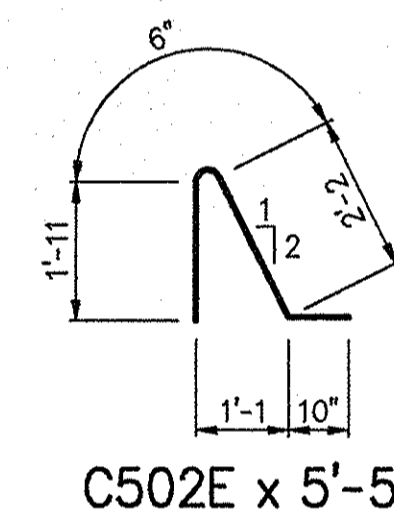
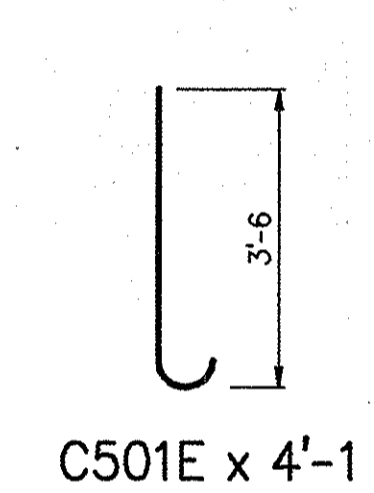
Scale: 1/2" = 1'-0



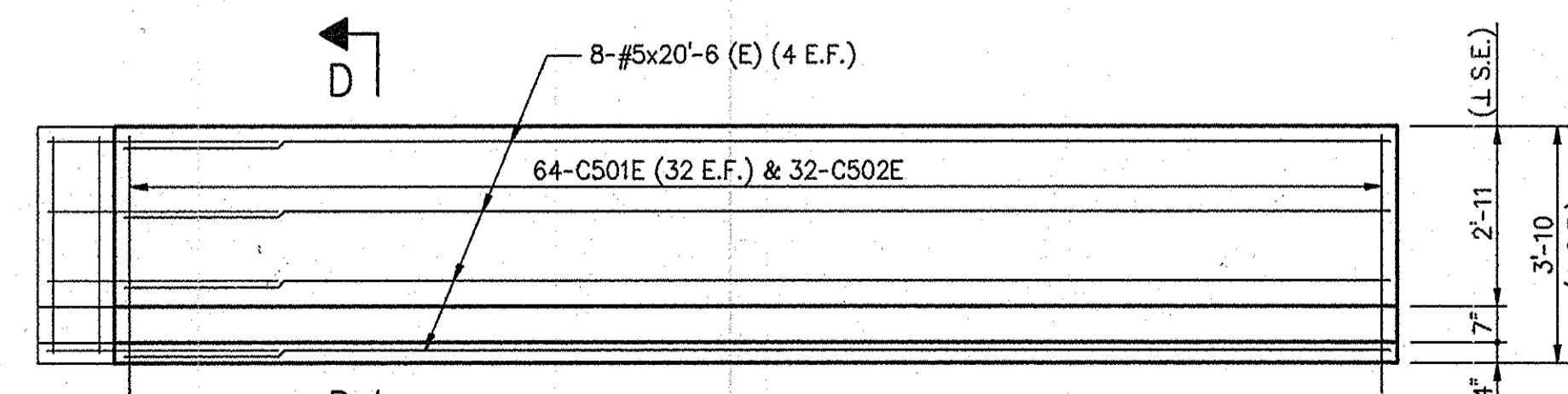
**PLAN @ BENT NO. 1
(BENT NO. 10 SAME BY OPPOSITE HAND, EXCEPT AS NOTED)**

Scale: 3/32" = 1'-0

Mark	A	Length
591 (E)	20'-0	20'-7
582 (E)	6'-0	6'-7



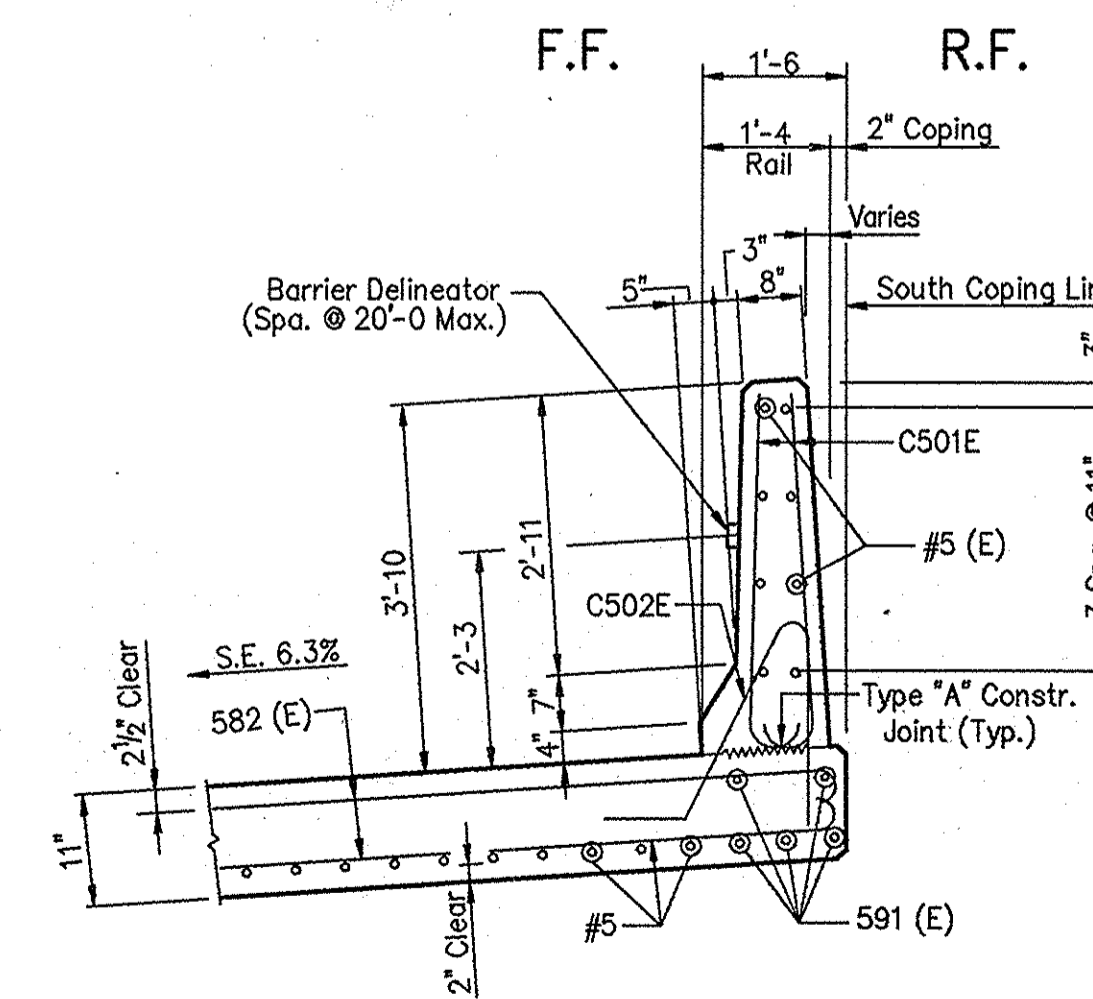
PLAN



ELEVATION

**RAILING DETAILS @ BENT NO.1
(RAILING @ BENT NO. 10 SAME BY OPPOSITE HAND)**

Scale: 3/8" = 1'-0



SECTION D-D

Scale: 1/2" = 1'-0

NOTES:

- (E) Indicates Epoxy Coated Reinforcing Steel.
- Minimum lap for #5 Bar = 1'-9.
- For reinforcing bar notes, see Bridge Standard C1.
- For Type IA Joint installation details, see Bridge Standard C3.
- For additional notes and details, see Road Standard Sheets RCBA-1 and RCBA-2.

R.C. BRIDGE APPROACH DETAILS

INDIANA DEPARTMENT OF TRANSPORTATION

SCALE: - As Noted

DATE: - July 9, 1998

SUBMITTED FOR APPROVAL

[Signature]

DRAWING: - OF SHEET: - 9 OF 73

PROJECT: - IM-80-1 (143)4

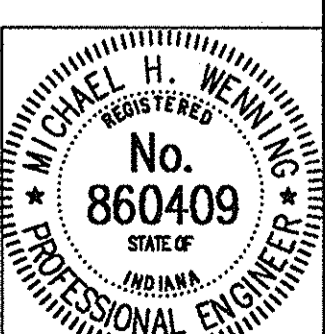
CONTRACT NO. R-23808

BRIDGE FILE: - I-80-5-7823

DESIGNED	C'KD	MHW 5/29/98
DRAWN	DSH 3/10/98	
TRACED	C'KD	

DWG FILE: C:\V71\44\47144A04
PLOT SCALE: 1:128.000
PLOT ORIGIN: 0.000,0.000

SPELLOG: 07/10/98 12:42:37
EDIT DATE: DSH - 591



GENERAL NOTES

GENERAL SPECIFICATIONS: INDIANA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (1995 EDITION)

DESIGN SPECIFICATIONS: AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES (15TH EDITION, 1992) AND APPROVED INTERIM SPECIFICATIONS THROUGH 1995.

AASHTO GUIDE SPECIFICATIONS FOR HORIZONTALLY CURVED HIGHWAY BRIDGES, 1980 AND APPROVED INTERIM SPECIFICATIONS AS UPDATED THROUGH THE CURRENT INTERIM.

DESIGN LOADING: LIVE LOADS: HS 20-44 MODIFIED FOR MILITARY LOADING PLUS IMPACT.

DEAD LOADS: ACTUAL LOADS PLUS 35 LBS. PER SQ. FT. WEIGHT ALLOWANCE FOR FUTURE WEARING SURFACE.

SEISMIC DESIGN FORCES: SEISMIC PERFORMANCE CATEGORY "A".

DESIGN TEMPERATURES:

	MEAN	RISE FROM MEAN	FALL FROM MEAN	RANGE
CONCRETE	60 F.	+ 30 F.	- 40 F.	70 F.

DRILLED SHAFT DESIGN: SEE DRILLED SHAFT DWG C13.

CONCRETE: ALL CONCRETE SHALL BE IN ACCORDANCE WITH SECTION 702 AND THE SPECIAL PROVISIONS.

CLASS OF CONCRETE	MINIMUM 28-DAY COMPRESSIVE STRENGTH (PSI)	DESIGN UNIT WEIGHT INCL REINFORCING (PCF)	LOCATION
A	f' c = 3500	150	END BENTS PIER COLUMNS PIER CAP (PIER 6)
B	f' c = 3000	150	DRILLED SHAFTS
C	f' c = 4000	150	TRAFFIC BARRIER
C MODIFIED	f' c = 5500	150	CAST-IN-PLACE BRIDGE DECK

REINFORCING STEEL:

ASTM A615, GRADE 60, UNCOATED (BLACK) FOR PIERS AND DRILLED SHAFTS.
ASTM A615, GRADE 60, EPOXY COATED, FOR END BENTS AND SUPER-STRUCTURE.

POST-TENSIONING STEEL:

STRANDS: ASTM A-416, GRADE 270, LOW-RELAXATION
BARS: ASTM A-722, GRADE 150 (TYPE 2)

POST-TENSIONING PARAMETERS:
(STRANDS FOR LONGITUDINAL TENDONS IN GALVANIZED SHEATING)

FRICITION COEFFICIENT:	0.25
WOBBLE COEFFICIENT:	0.0002
ANCHOR SET:	0.375" (STRANDS) .0625" (BARS)
MAX JACKING STRESS:	216 KSI (STRANDS) * 120 KSI (BARS)
MAX ANCHORING STRESS:	189 KSI (STRANDS) 105 KSI (BARS)

* SPECIFIED STRESS MAY BE LOWER THAN THIS MAXIMUM.
SEE PLAN FOR DETAILS.

UNLESS NOTED ELSEWHERE ON THE PLANS, DUCTS FOR STRAND OR BAR TENDONS, OTHER THAN TRANSVERSE STRAND TENDONS, SHALL BE CORRUGATED SEMI-RIGID GALVANIZED STEEL. THE FOLLOWING INTERNAL DIAMETERS SHALL APPLY:

1 1/4" BARS	ø 1 7/8"
9*0.6" STRANDS	ø 3"
19*0.6" STRANDS	ø 4"

TRANSVERSE TENDONS (4X0.6" STRANDS) SHALL USE POLYETHELENE DUCTS WITH 1" X 3" INTERNAL DIMENSIONS.

SPIRALS BEHIND POST-TENSIONING ANCHORAGES AND ANY OTHER LOCAL REINFORCEMENT IS TO BE DESIGNED AND DETAILED BY THE SUPPLIER OF THE POST-TENSIONING SYSTEM AND IS TO BE INCIDENTAL TO THE COST OF POST-TENSIONING STEEL

BEARINGS:

A - POT BEARINGS ARE DESIGNATED ON THE PLANS

B - BEARING MOVEMENTS SHOWN ON THE PLANS INCLUDE A 25% INCREASE FOR VARIATIONS IN ASSUMPTIONS OF TEMPERATURE FALL, CREEP, SHRINKAGE AND ELASTIC SHORTENING.

C - BEARINGS SHALL BE DESIGNED FOR FUTURE REPLACEMENT.

STRUCTURAL STEEL:

UNLESS OTHERWISE NOTED, STRUCTURAL STEEL FOR HATCHES, BARRIER SLIDING PLATES, AND OTHER MISCELLANEOUS DETAILS SHALL BE M270 GRADE 36. ALL STRUCTURAL STEEL SHALL BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM-A-123. ANCHOR BOLTS & NUTS SHALL BE HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM-153.

CONCRETE COVERS: UNLESS OTHERWISE SHOWN ON THE PLANS, THE FOLLOWING CONCRETE COVERS SHALL BE USED:

LOCATION	COVER	DESCRIPTION
SUPERSTRUCTURE	2 1/2"	TOP DECK SLAB
	1 1/2"	ALL REMAINING EXTERIOR AND INTERIOR SURFACES
SUBSTRUCTURE	3"	EXTERNAL SURFACES CAST AGAINST EARTH
	2"	EXTERNAL SURFACES FORMED
	6"	DRILLED SHAFTS

CHAMFER: ALL EXPOSED EDGES AND CORNERS OF CONCRETE SHALL BE CHAMFERED 3/4" UNLESS OTHERWISE NOTED.

SURFACE SEAL: TOP OF EXPANSION PIERS AND END BENT CAPS, FRONT AND TOP OF MUDWALL, EXPOSED SURFACES OF WING WALLS, FACE OF END DIAPHRAGMS, FACE OF DECK COPING, UNDERSIDE OF BOX GIRDER OVERHANG FROM COPING TO DRIP BEAD, BRIDGE DECK AND CONCRETE BARRIER RAILINGS SHOULD BE SURFACE SEALED.

SCREEDING DECK SLABS: THE RIDING SURFACE OF THE BRIDGE DECK SHALL BE SCREED TO FINISHED GRADE WITH AN ALLOWANCE FOR CAMBER AS SHOWN ON THE PLANS.

DESIGN METHOD:

- END BENTS AND PIER COLUMNS ARE DESIGNED BY THE LOAD FACTOR METHOD.
- POST-TENSIONED SUPERSTRUCTURE ELEMENTS ARE DESIGNED BY THE ALLOWABLE STRESS METHOD AND CHECKED FOR ULTIMATE CAPACITY BY THE LOAD FACTOR METHOD.
- LOADS ON PILING AND DRILLED SHAFTS ARE SERVICE LOADS.
- ALL STRUCTURAL COMPONENTS SATISFY THE REQUIREMENTS OF THE AASHTO BRIDGE DESIGN SPECIFICATIONS.

ELEVATIONS: ALL ELEVATIONS ARE REFERRED TO NATIONAL GEODETIC VERTICAL DATUM (NGVD) OF 1929.

DIMENSIONS: ALL DIMENSIONS ARE MEASURED HORIZONTALLY AND VERTICALLY UNLESS OTHERWISE NOTED. ALL DIMENSIONS AND JOINT OPENINGS IN THE STRUCTURE ARE MEASURED AT THE MEAN TEMPERATURE OF 60° F.

CONSTRUCTION OVER TRAFFIC: IN CASES WHERE BRIDGE CONSTRUCTION IS PERFORMED WHILE TRAFFIC (ROADWAY) IS MAINTAINED UNDERNEATH THE CONSTRUCTION, THE CONTRACTOR SHALL COMPLY WITH THE STATE AND FEDERAL REGULATIONS REGARDING THE PROTECTION OF THE PUBLIC AND SHALL PREPARE A PROTECTION PLAN DETAILING PROPOSED PROCEDURES AND DEVICES. THE PROTECTION PLAN SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND COMMENTS, AND CONSTRUCTION SHALL NOT PROCEED UNTIL APPROVED BY THE ENGINEER.

MASONRY COATING: COAT ALL SURFACES OF CONCRETE BARRIER RAILING, CONCRETE BARRIER RAILING TRANSITIONS, EXPOSED SURFACES OF WINGWALLS AND DECK COPING. MASONRY COATING COLOR SHALL CONFORM TO FEDERAL COLOR STD. 595, COLOR NO. 27778 (IVORY). SEE SPECIAL PROVISIONS. EST. QTY. FOR DECK COPING AND WINGWALLS = 3051 SFT. FOR BARRIER RAILING, SEE DWG. C21

GENERAL NOTES

INDIANA DEPARTMENT OF TRANSPORTATION
LAKE COUNTY

SCALE: NONE

DATE: July 10, 1998

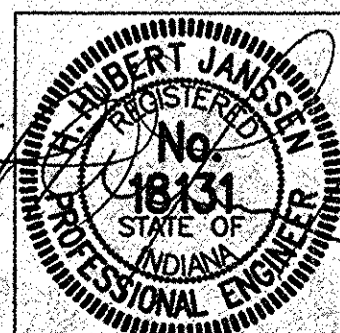
SUBMITTED FOR APPROVAL

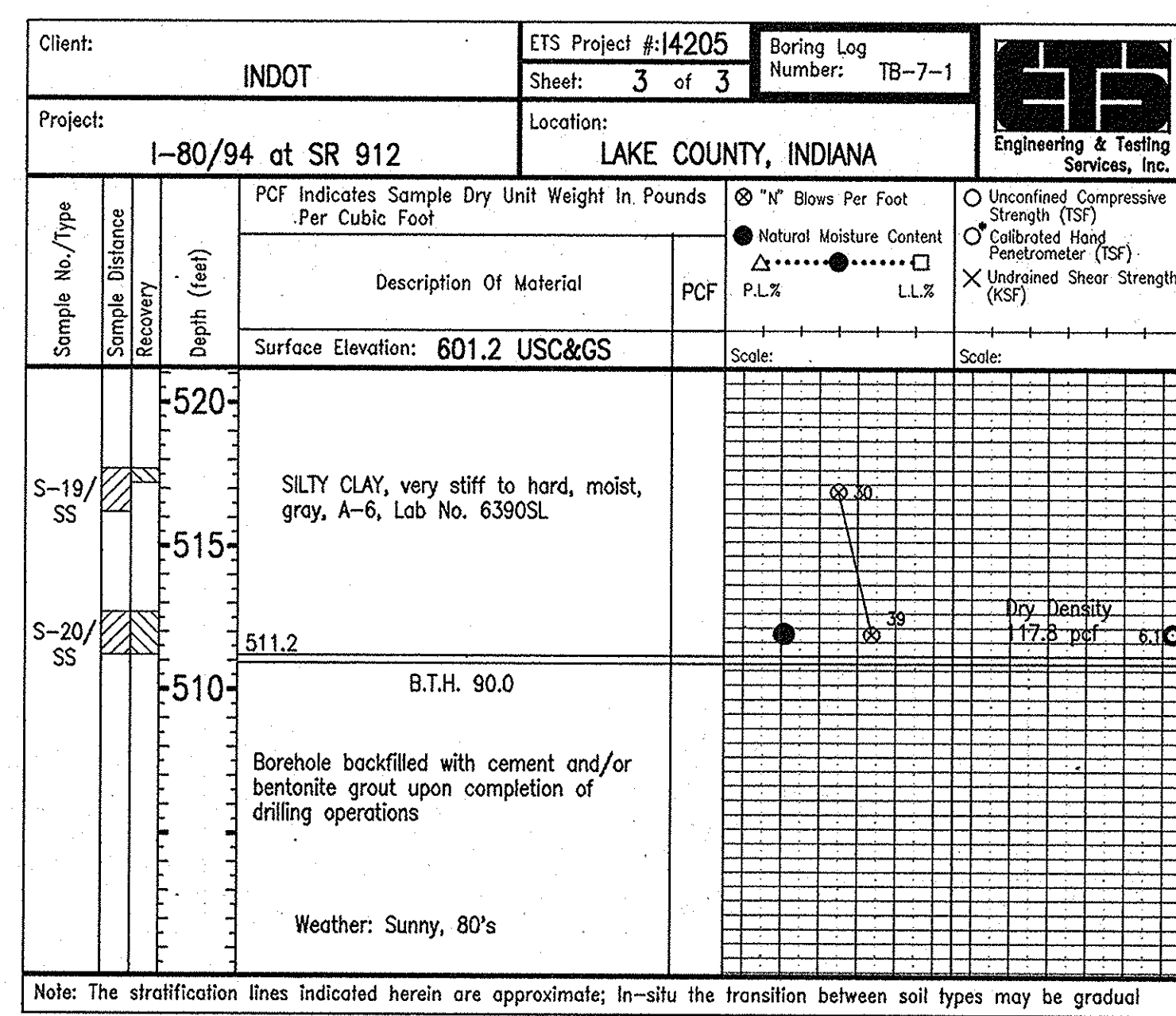
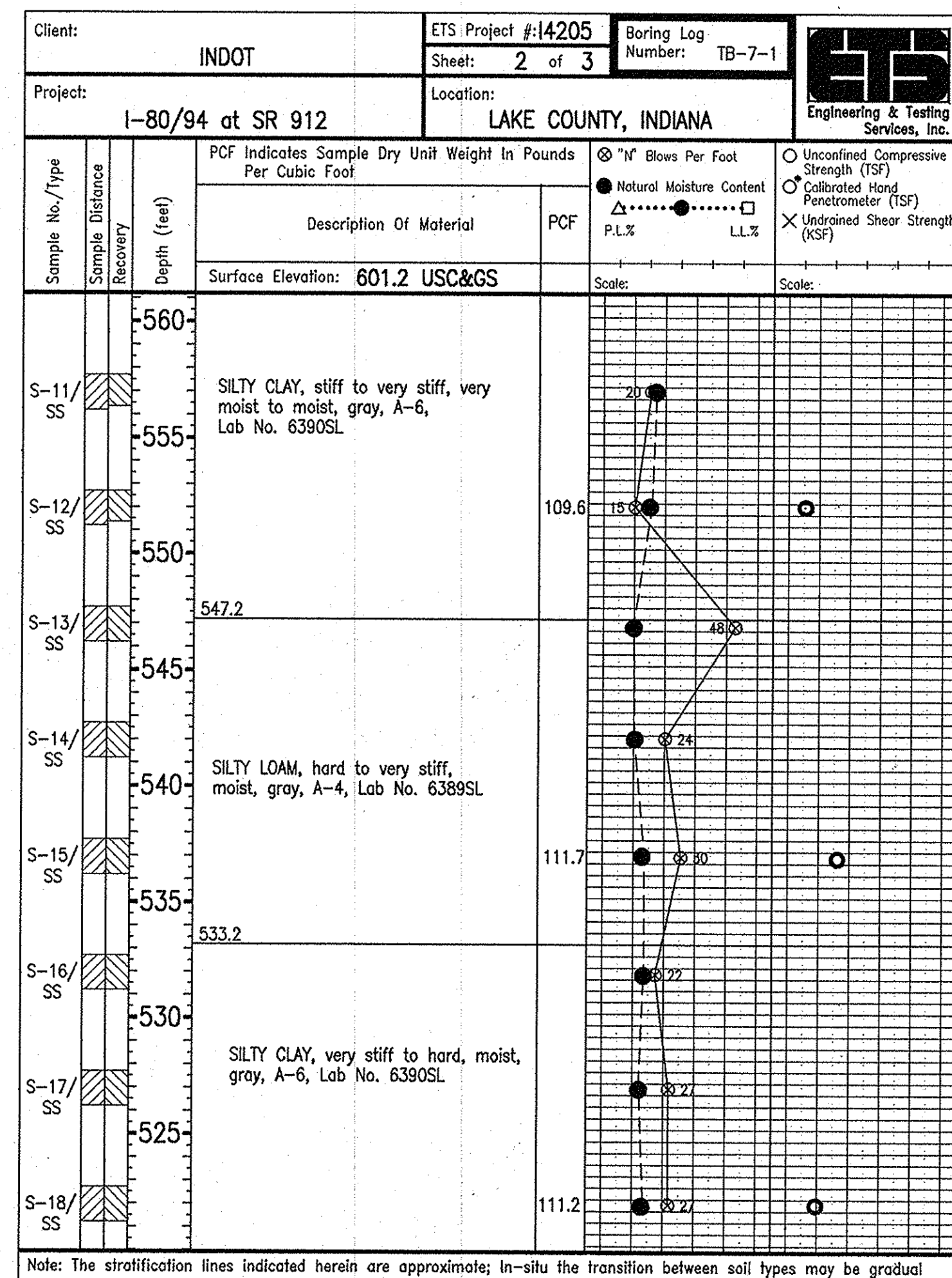
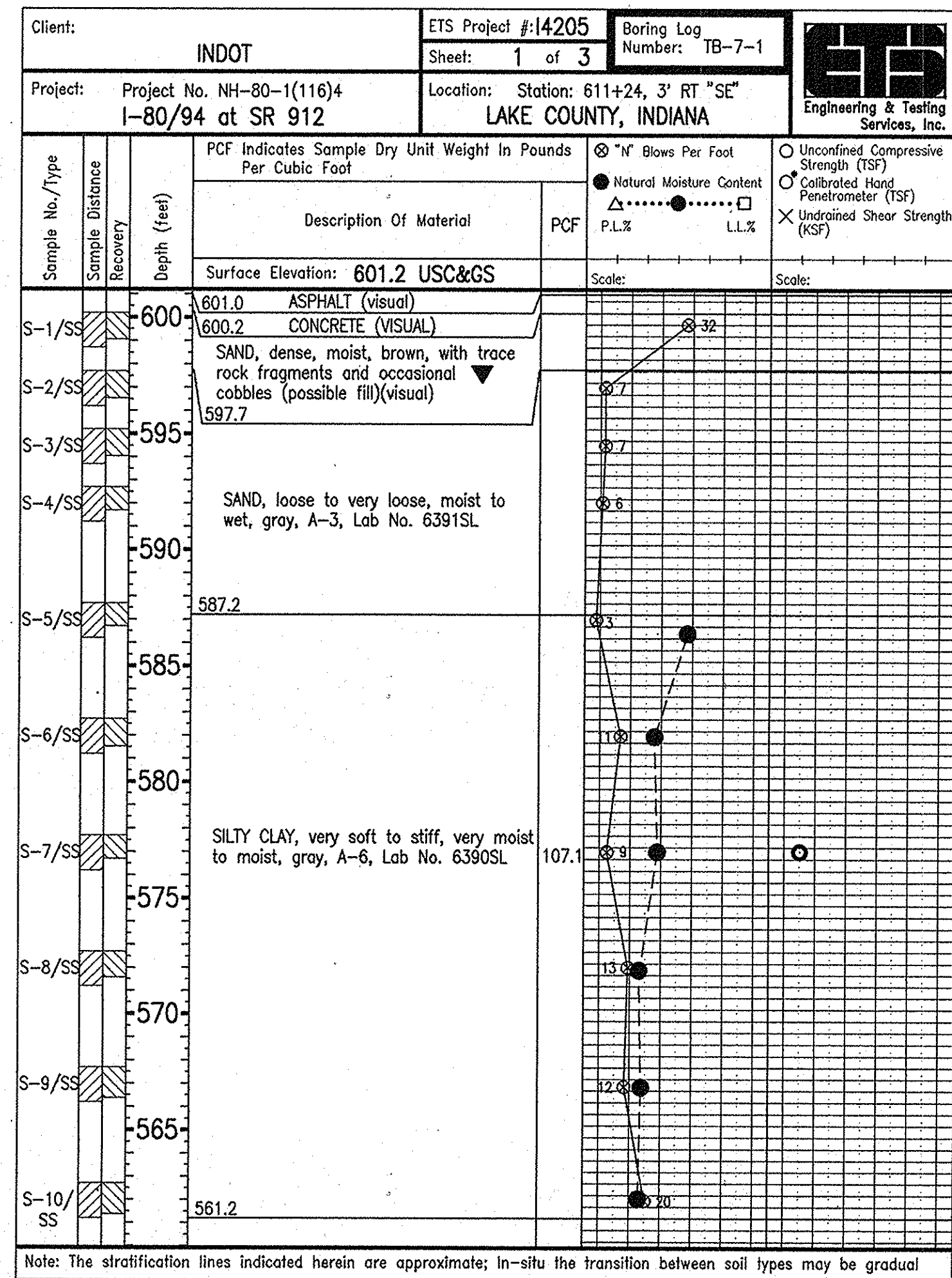
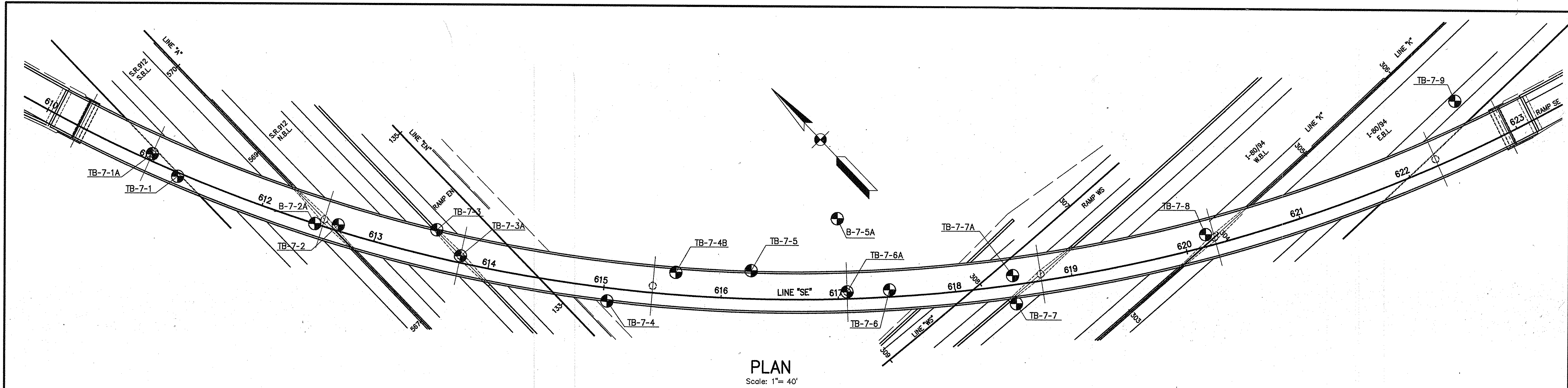
DRAWING: 1 OF 1 SHEET: 10 OF 73

PROJECT: NH 480-1-1-1

CONTRACT NO.

BRIDGE FILE: I-80-5-7823





PILE LOADING FOR GEOTECHNICAL TESTING		
BENT	NO. 1	NO. 9
ALLOWABLE DESIGN LOAD	55 ±0 Tons	55 ±0 Tons
FACTOR OF SAFETY	2.5 ±0	2.5 ±0
FACTORED DESIGN LOAD	138 ±00 Tons	138 ±00 Tons
SCOUR ZONE FRICTION	0 Tons	0 Tons
DOWN DRAG FRICTION	27 ± Tons	0 Tons
ULTIMATE LOAD (BEARING)	165 ±00 Tons	138 ±00 Tons
TESTING METHOD	By Formula, Standard Specifications 701.06	

NOTES:

- ▼ Indicates Ground Water Level
- N Indicates the number of blows required to drive a 1 1/8" I.D., 2" O.D. Split Spoon sampler 12" by means of a 140 lb. weight falling 30".

The soils report prepared by Engineering and Testing Services, Inc. is on file at the offices of the Indiana Department of Transportation and is available upon request.

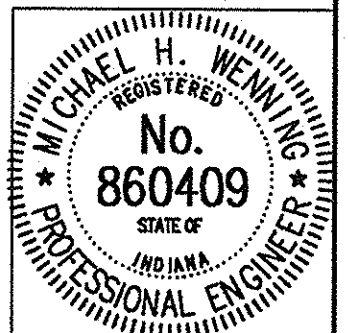
SOIL BORINGS INDIANA DEPARTMENT OF TRANSPORTATION

SCALE: - Horiz. 1"=40'
Vert. 1"=5'

DATE: - July 9, 1998

SUBMITTED FOR APPROVAL *[Signature]*

DRAWING: - OF SHEET: - 11 OF 73
PROJECT: - IM-80-1(143)4
CONTRACT NO. R-23808
BRIDGE FILE: - I-80-5-7823

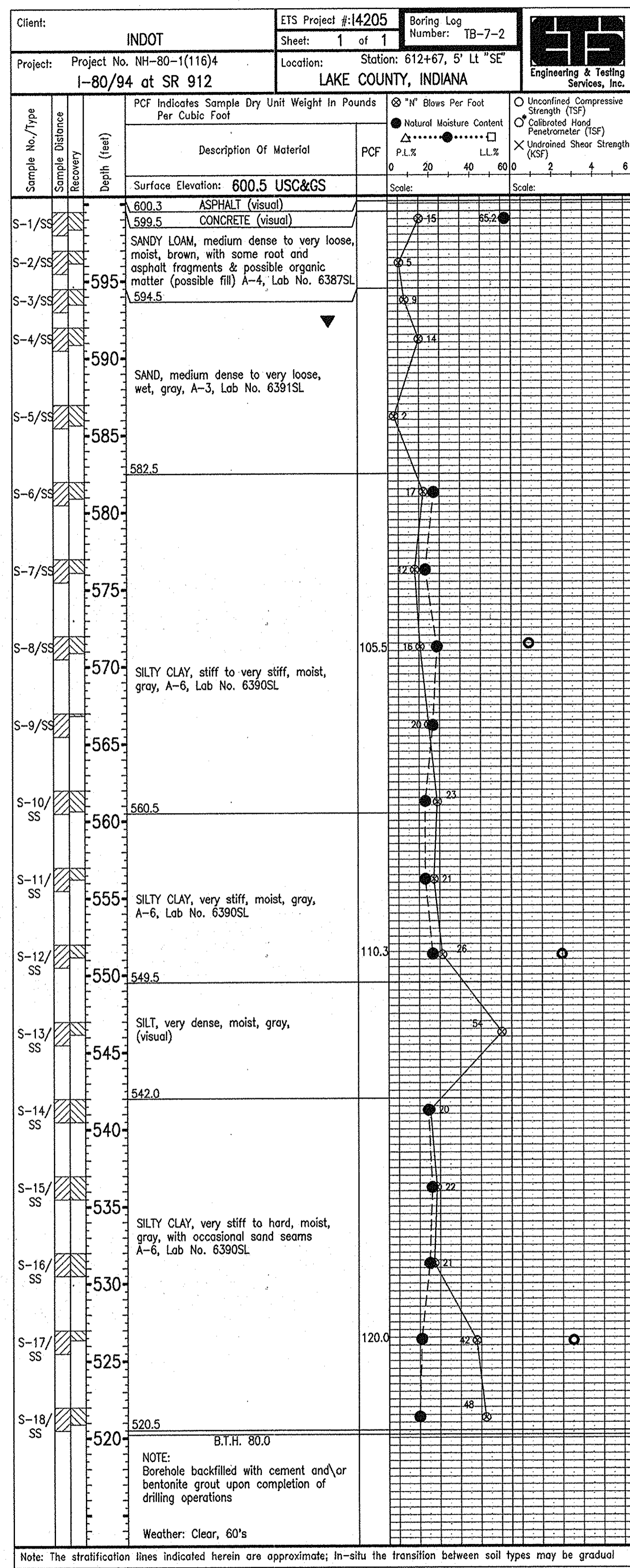


9-1-98 Revised Pile Loading

DESIGNED: CKD
DRAWN: JDC 12/10/92 CKD MHW 6/8/93
TRACED: CKD

DWG FILE: C:\37144\97144501
PLOT SCALE: 1:1000
PLOT ORIGIN: 0.00,0.00

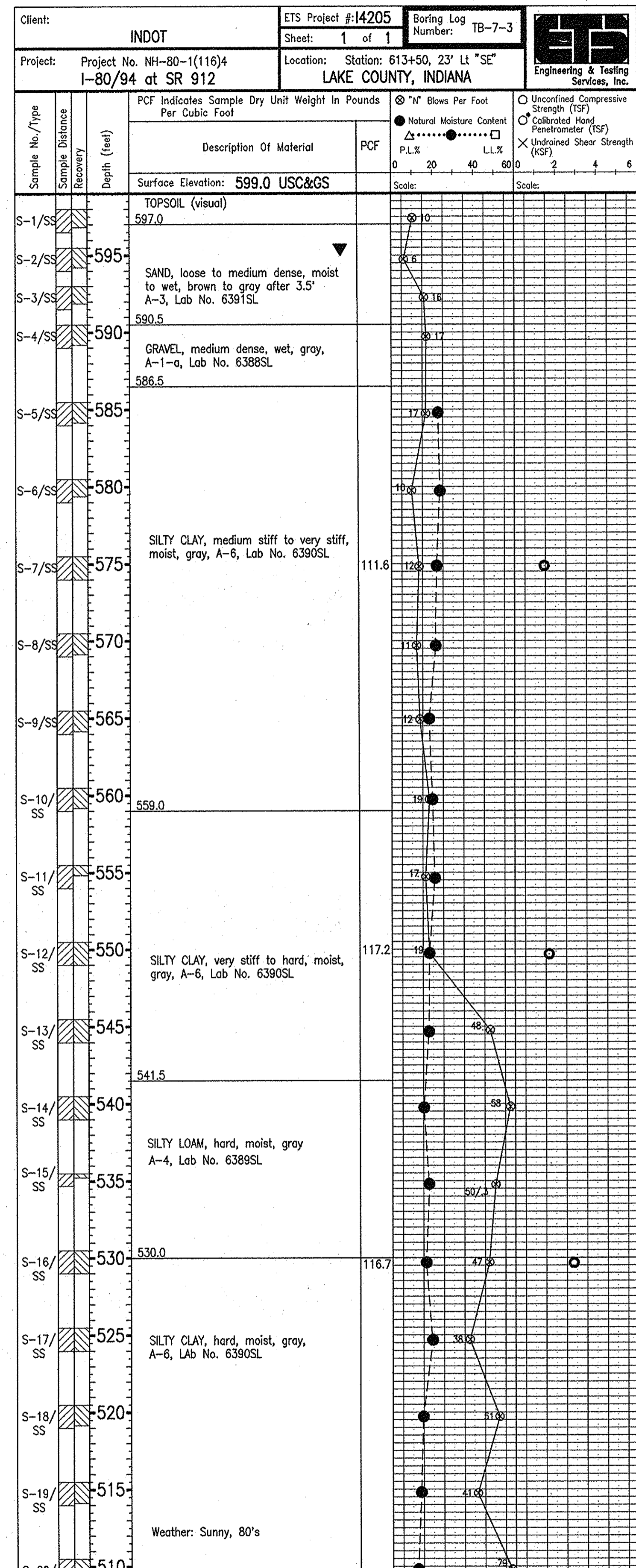
SPELLOTH: 03/22/98
EDIT DATE: 02/10/98 12:16:02
EDITED BY: DSH - 591



DESIGNED: CWD
 DRAWN: JDC 12/10/92 CWD MHW 6/8/93
 TRACED: CWD

DWG FILE: C:\97144\97144302
 PLOT SCALE: 1:1,000
 PLOT ORIGIN: 0.00,0.00

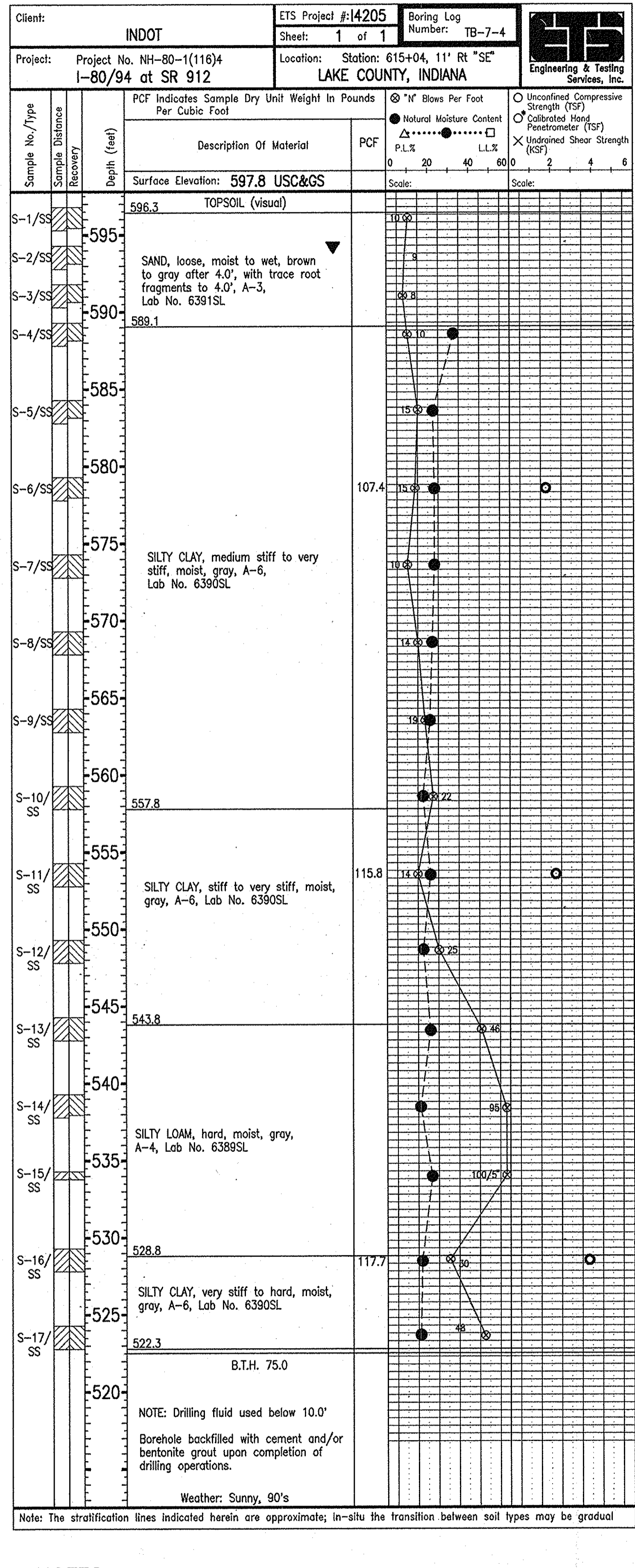
SPELLING: 08/01/98
 EDIT DATE: 08/01/98
 EDITED BY: DSH - 591



DESIGNED: CWD
 DRAWN: JDC 12/10/92 CWD MHW 6/8/93
 TRACED: CWD

DWG FILE: C:\97144\97144302
 PLOT SCALE: 1:1,000
 PLOT ORIGIN: 0.00,0.00

SPELLING: 08/01/98
 EDIT DATE: 08/01/98
 EDITED BY: DSH - 591



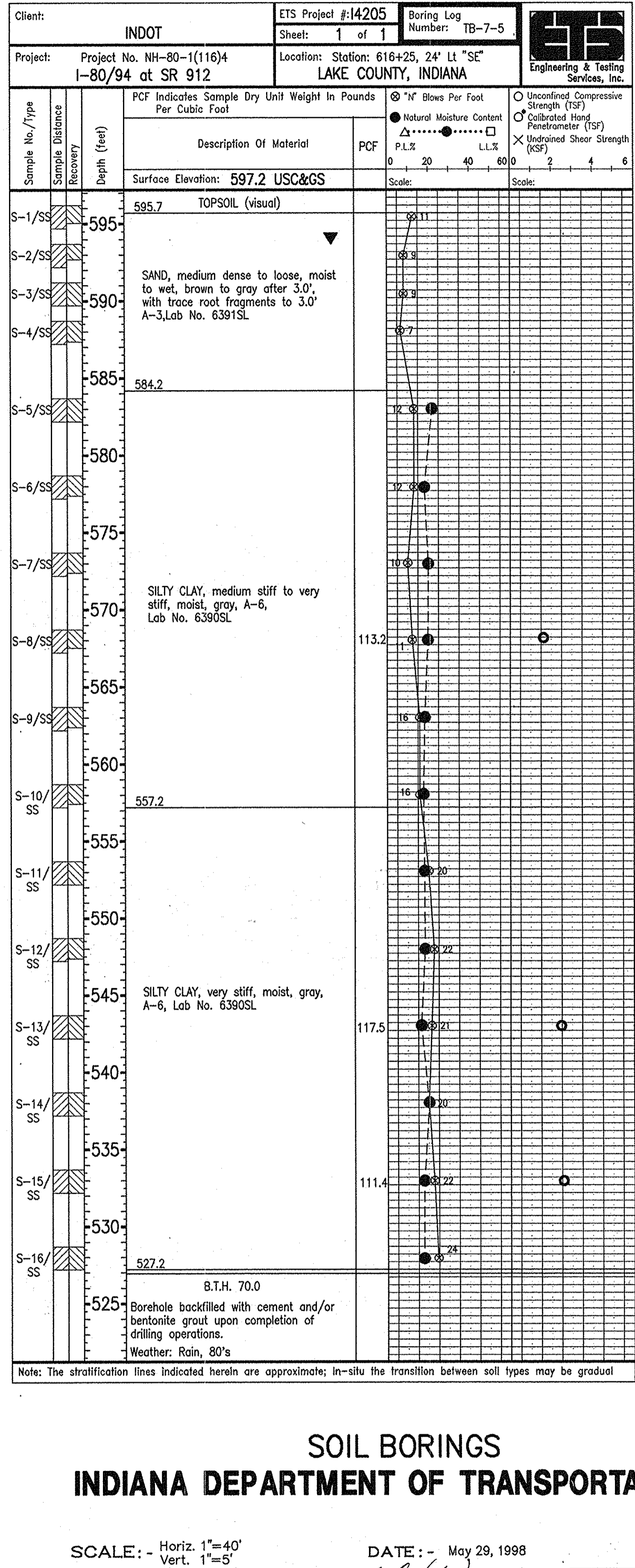
NOTES:

- ▼ Indicates Ground Water Level
- N Indicates the number of blows required to drive a 1 1/8" I.D., 2" O.D. Split Spoon sampler 12" by means of a 140 lb. weight falling 30".

DESIGNED: CWD
 DRAWN: JDC 12/10/92 CWD MHW 6/8/93
 TRACED: CWD

DWG FILE: C:\97144\97144302
 PLOT SCALE: 1:1,000
 PLOT ORIGIN: 0.00,0.00

SPELLING: 08/01/98
 EDIT DATE: 08/01/98
 EDITED BY: DSH - 591



NOTES:

- ▼ Indicates Ground Water Level
- N Indicates the number of blows required to drive a 1 1/8" I.D., 2" O.D. Split Spoon sampler 12" by means of a 140 lb. weight falling 30".

DESIGNED: CWD
 DRAWN: JDC 12/10/92 CWD MHW 6/8/93
 TRACED: CWD

DWG FILE: C:\97144\97144302
 PLOT SCALE: 1:1,000
 PLOT ORIGIN: 0.00,0.00

SPELLING: 08/01/98
 EDIT DATE: 08/01/98
 EDITED BY: DSH - 591

SOIL BORINGS

INDIANA DEPARTMENT OF TRANSPORTATION

SCALE: - Horiz. 1"=40'
 Vert. 1"=5'

DATE: - May 29, 1998

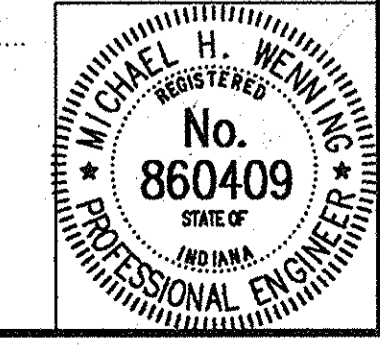
SUBMITTED FOR APPROVAL: *Michael H. Wynn*

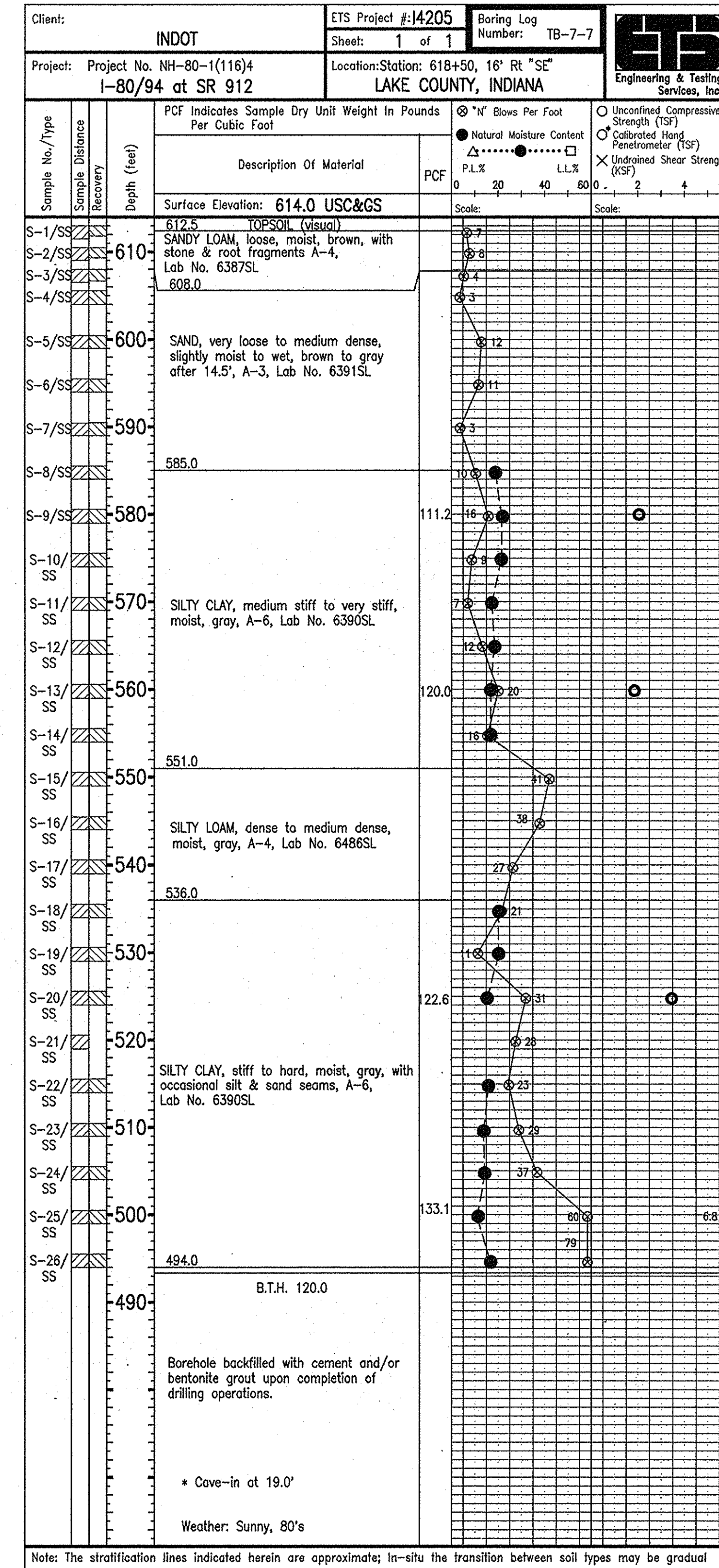
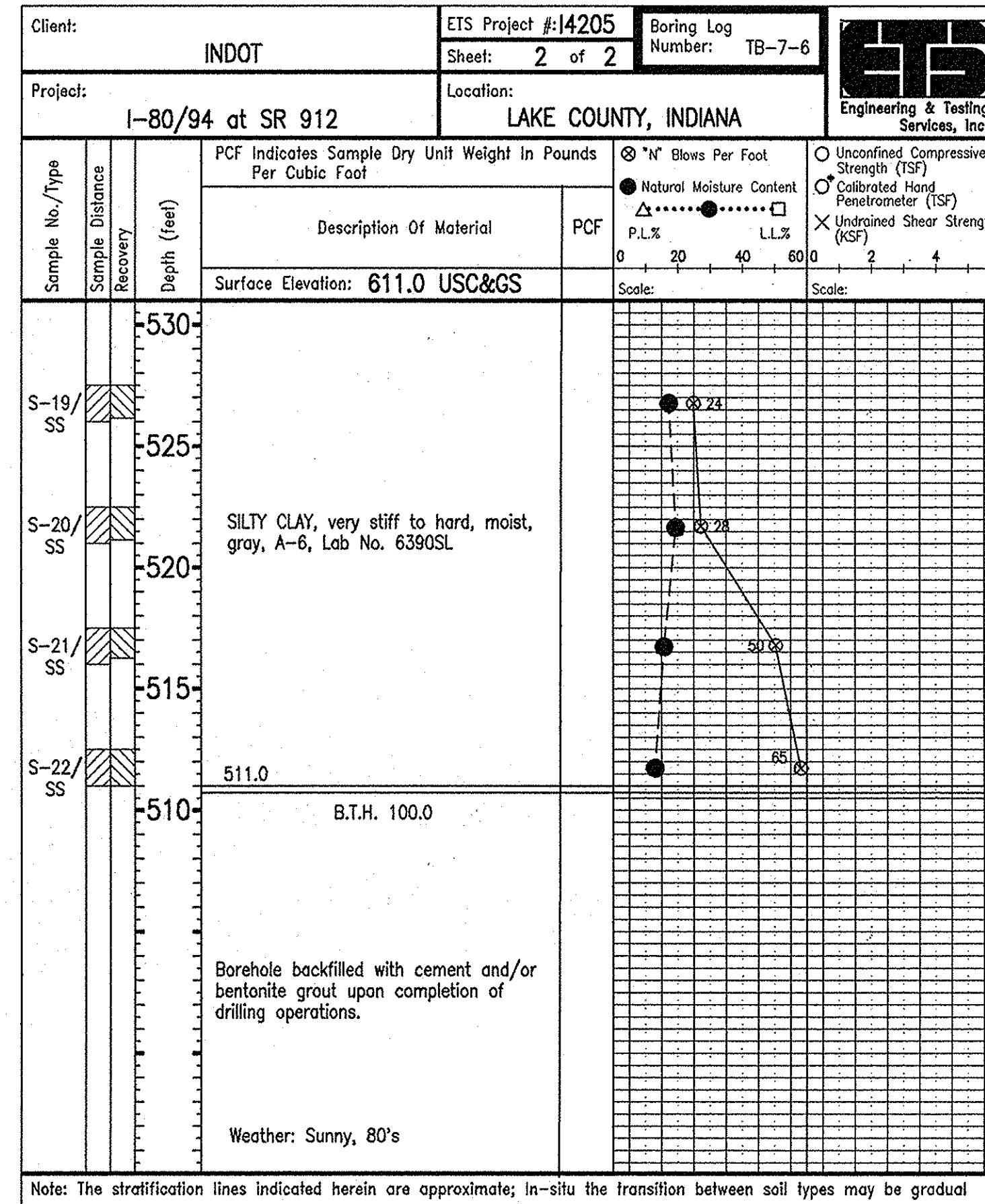
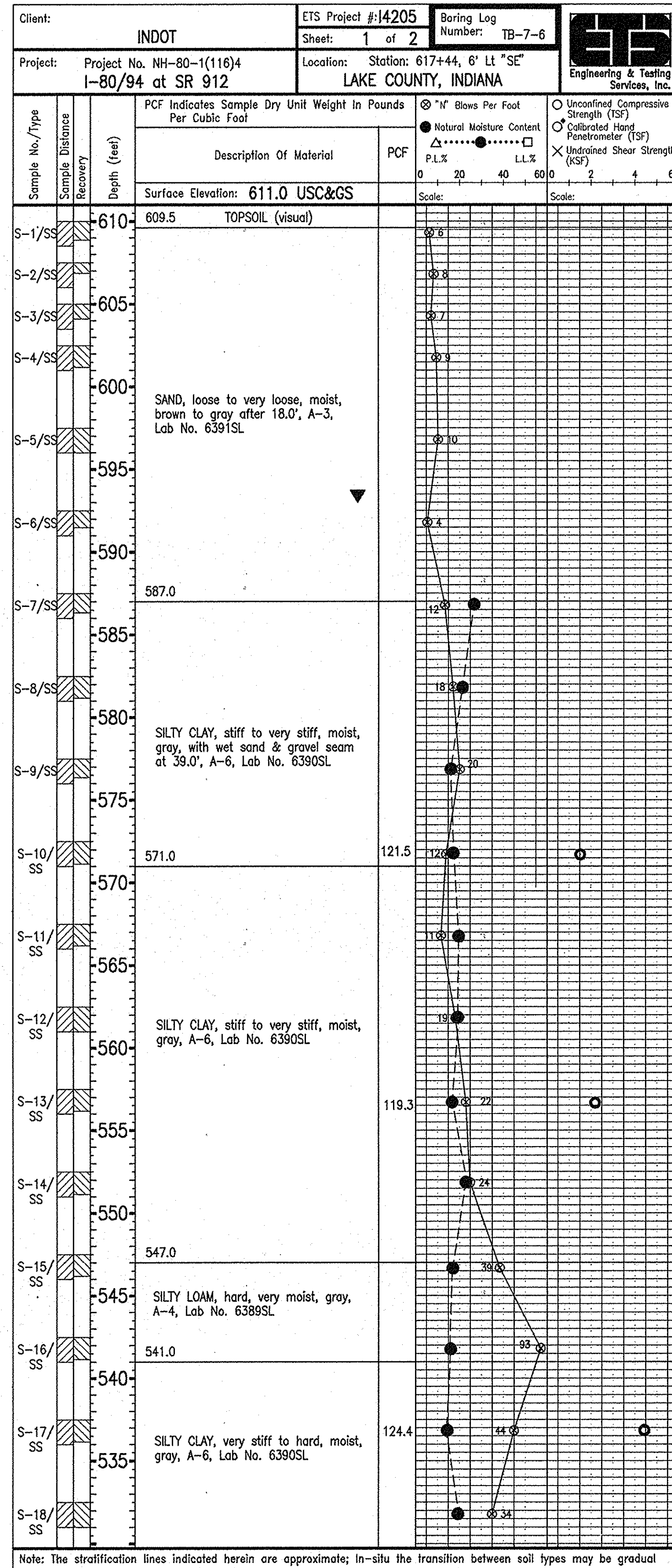
DRAWING: - OF SHEET: - 12 OF 73

PROJECT: - IM-80-1 (143)4

CONTRACT NO. R-23808

BRIDGE FILE: - I-80-5-7823





NOTES:

▼ Indicates Ground Water Level

N Indicates the number of blows required to drive a 1 7/8" I.D., 2" O.D. Split Spoon sampler 12" by means of a 140 lb. weight falling 30".

SOIL BORINGS INDIANA DEPARTMENT OF TRANSPORTATION

SCALE: - Horiz. 1"=40'
Vert. 1"=5'

DATE: - May 29, 1998

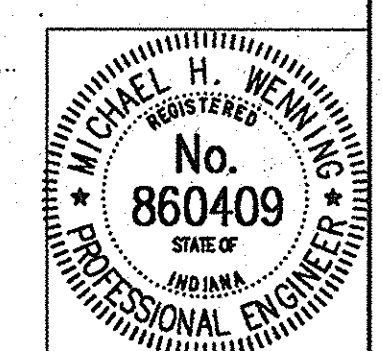
SUBMITTED FOR APPROVAL *[Signature]*

DRAWING: - OF SHEET: - 14 OF 73

PROJECT: - IM-80-1 (143)4

CONTRACT NO. R-23808

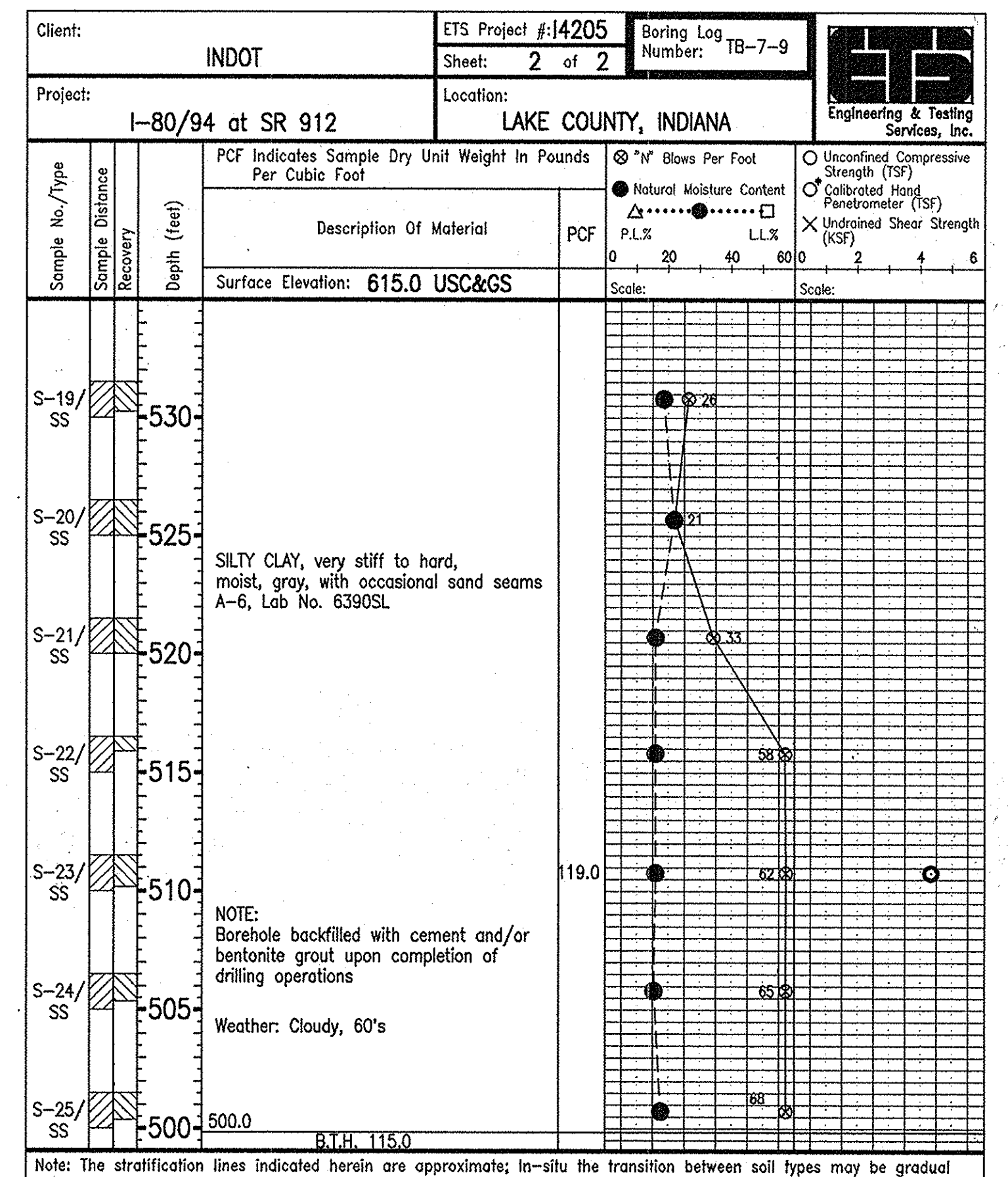
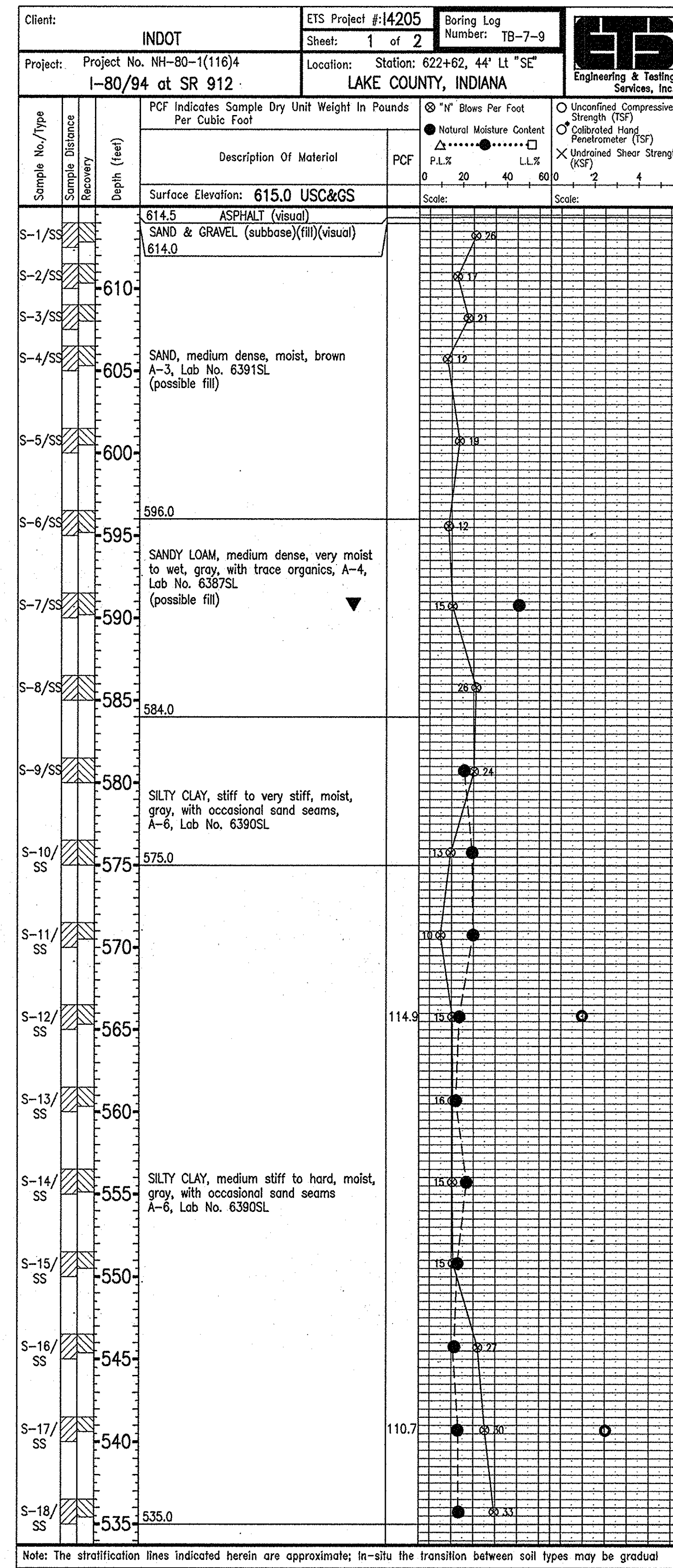
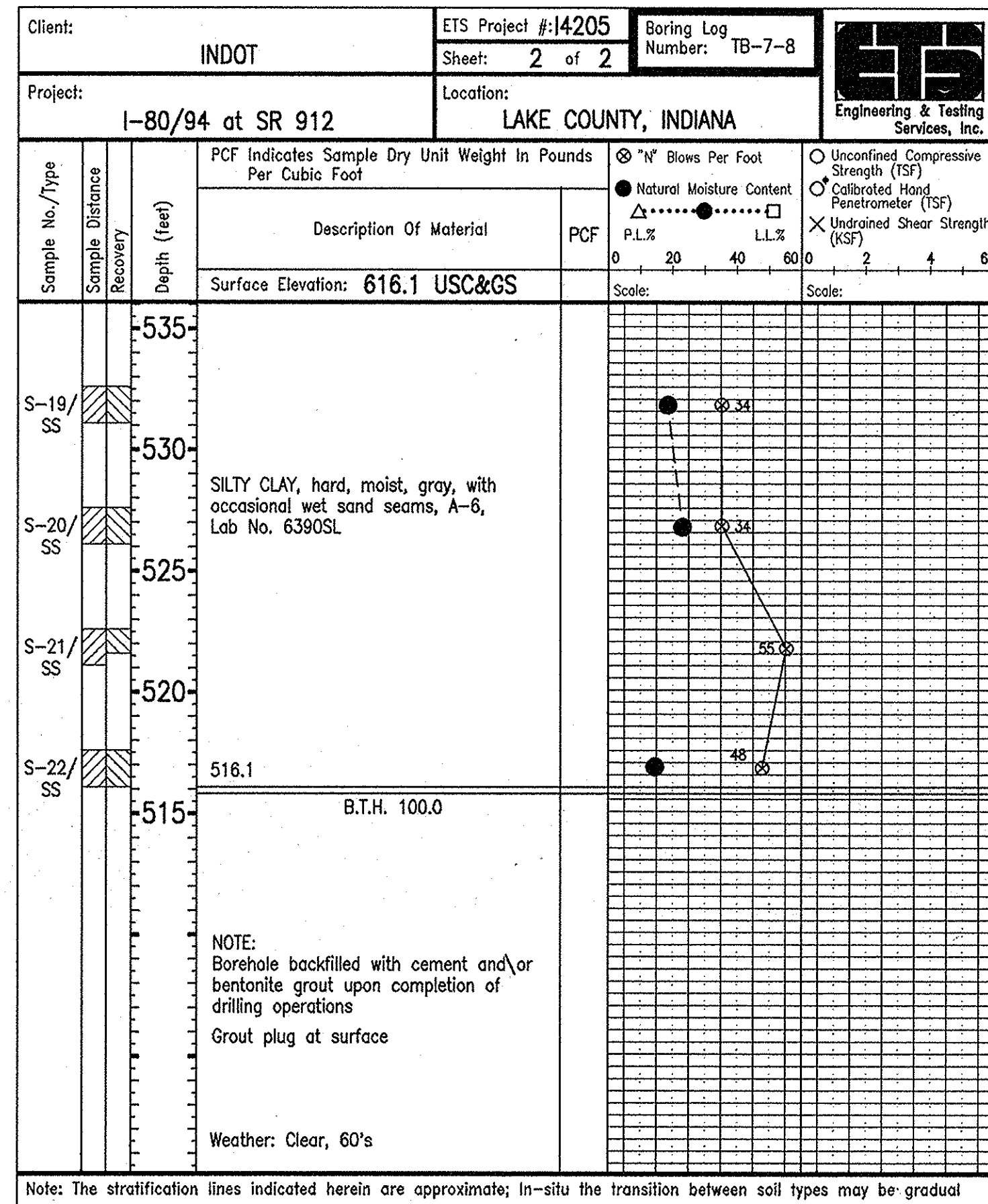
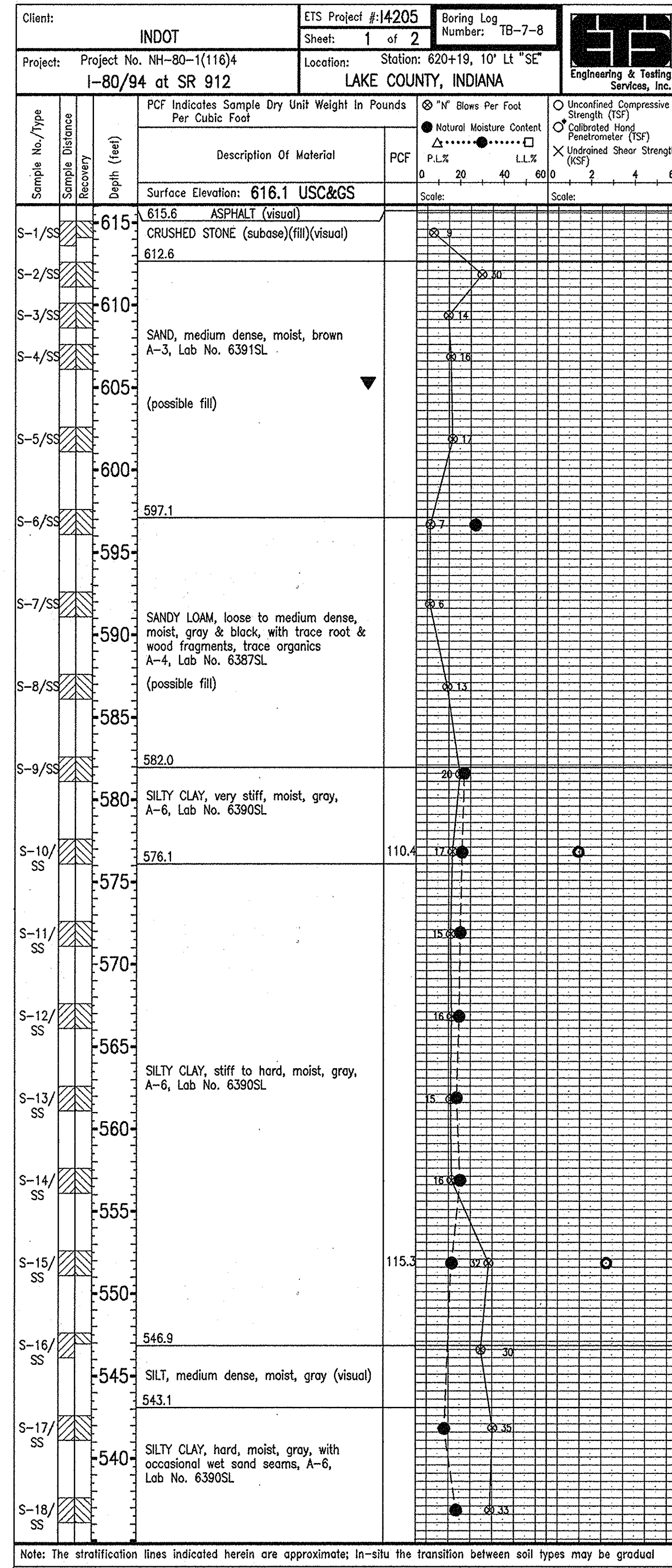
BRIDGE FILE: - I-80-5-7823



DESIGNED: C.K.D.
DRAWN: JDC 12/10/92 MHW 6/8/93
TRACED: C.K.D.

DWG FILE: C:\87\144\97144503
PLOT SCALE: 1:1000
PLOT ORIGIN: 0.00,0.00

SPELLING: 06/01/98
EDIT DATE: 06/01/98
EDIT BY: DSH - SBI



NOTES:

- ▼ Indicates Ground Water Level
- N Indicates the number of blows required to drive a 1 3/8" I.D., 2' O.D. Split Spoon sampler 12" by means of a 140 lb. weight falling 30".

SOIL BORINGS INDIANA DEPARTMENT OF TRANSPORTATION

SCALE: - Horiz. 1"=40'
Vert. 1"=5'

DATE: - May 29, 1998

SUBMITTED FOR APPROVAL *Michael H. Wanning*

DRAWING: - OF SHEET: - 15 OF 73

PROJECT: - IM-80-1 (143)4

CONTRACT NO. R-23808

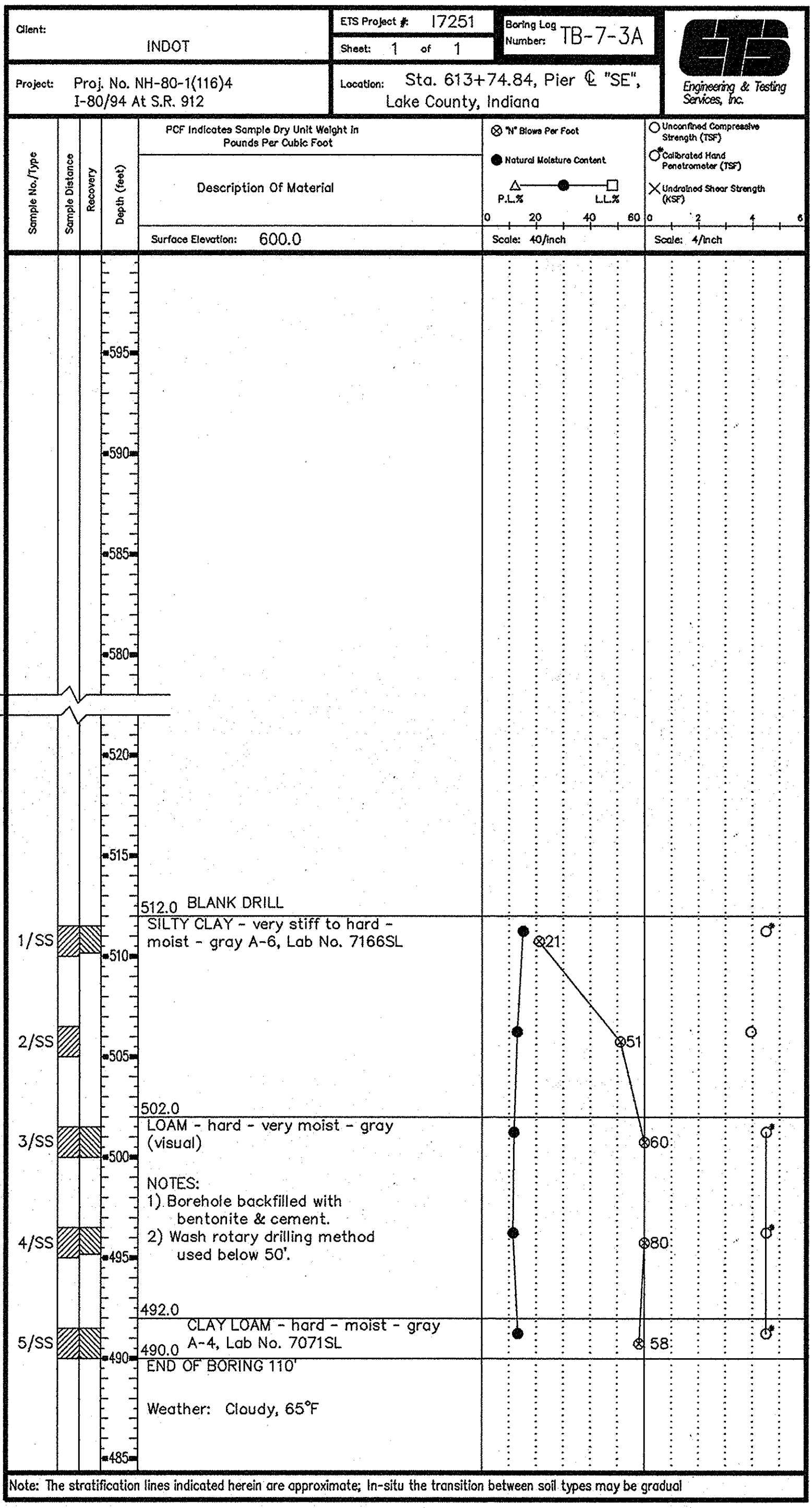
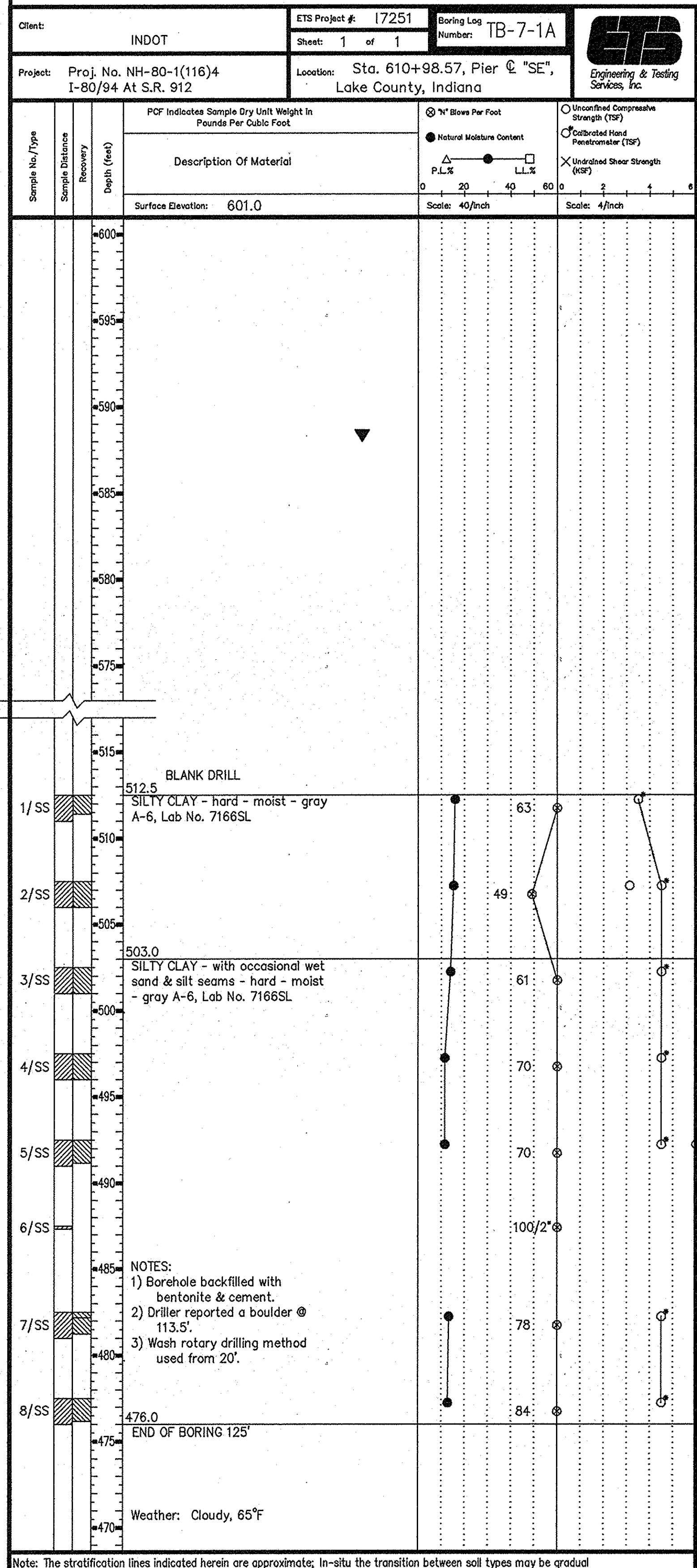
BRIDGE FILE: - I-80-5-7823

DESIGNED: C'KD
DRAWN: JDC 12/10/92 C'KD MHW 6/8/93
TRACED: C'KD

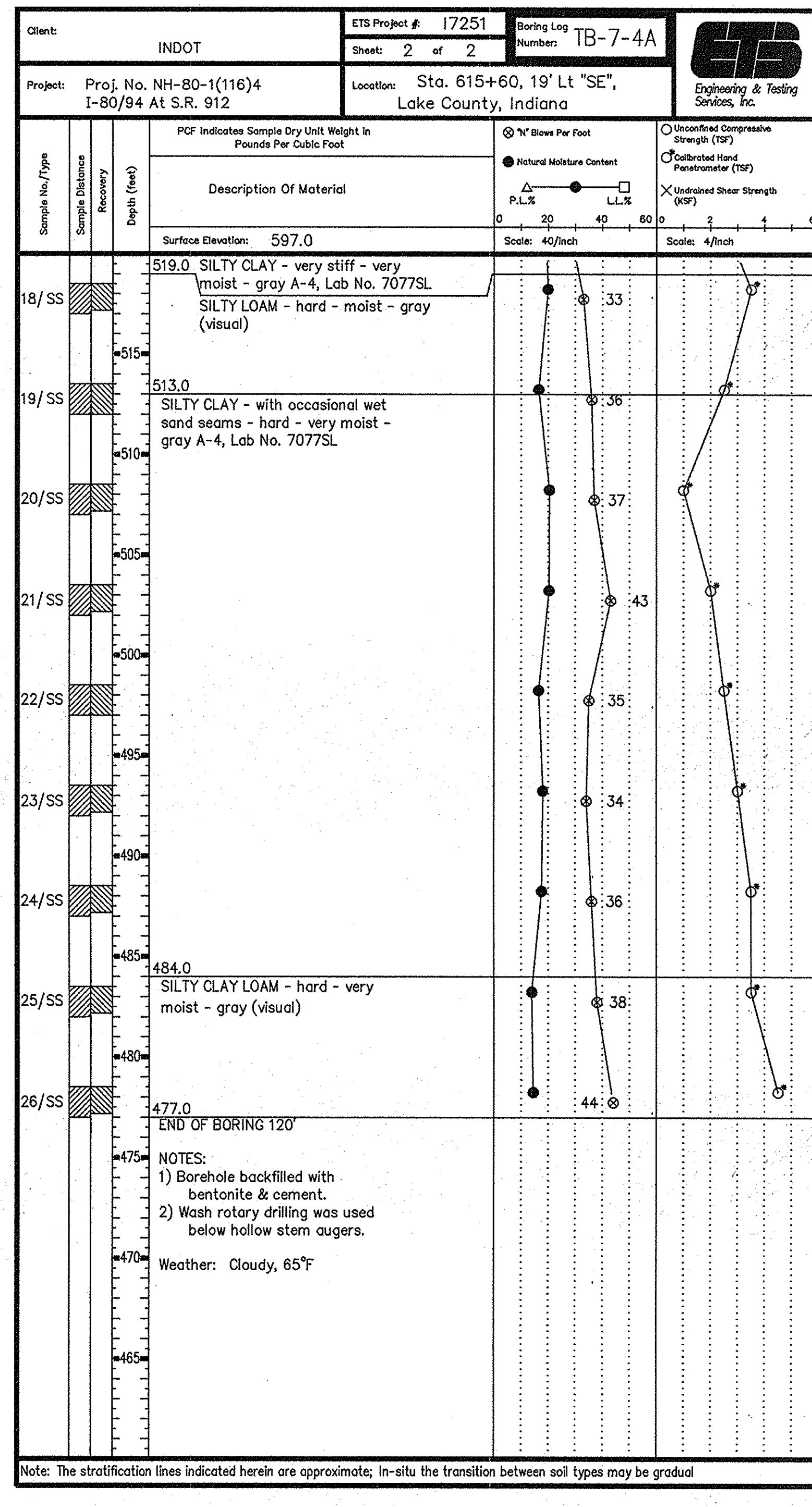
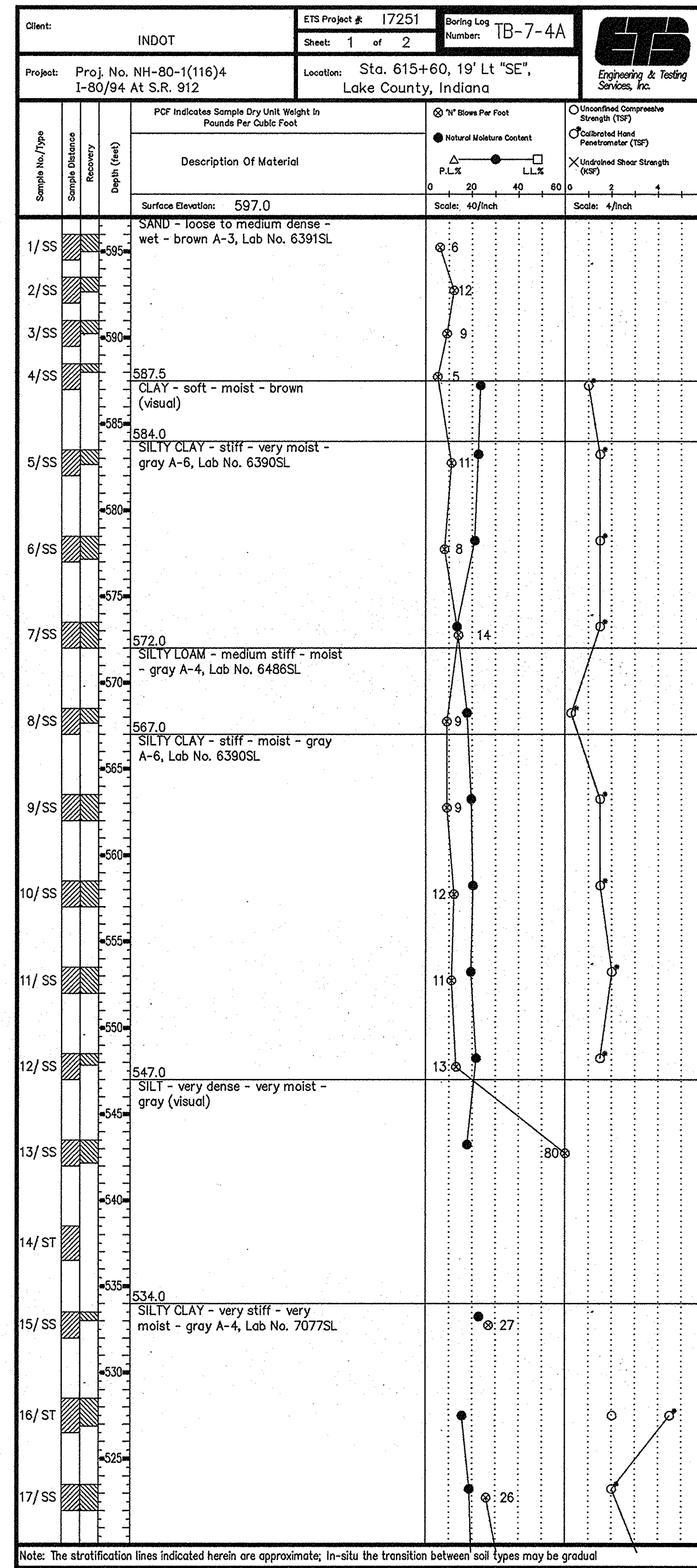
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PLOT SCALE: 1:10000
PLOT ORIGIN: 0.00,0.00

SPELLOK: 08/01/98
EDITED BY: DSH - 591





Notes:
▼ Indicates Ground Water Level
N Indicates the number of blows required to drive a 1 3/8" I.D., 2" O.D. Split Spoon sampler 12" by means of a 140 lb. weight falling 30".



Notes:
1) Borehole backfilled with bentonite & cement.
2) Wash rotary drilling was used below hollow stem augers.

SOIL BORINGS
INDIANA DEPARTMENT OF TRANSPORTATION

SCALE: - Horiz. 1"=40'
Vert. 1"=5'

DATE: - July 9, 1998

SUBMITTED FOR APPROVAL *[Signature]*

DRAWING: - OF SHEET: - 15A OF 73

PROJECT: - IM-80-1 (143)4

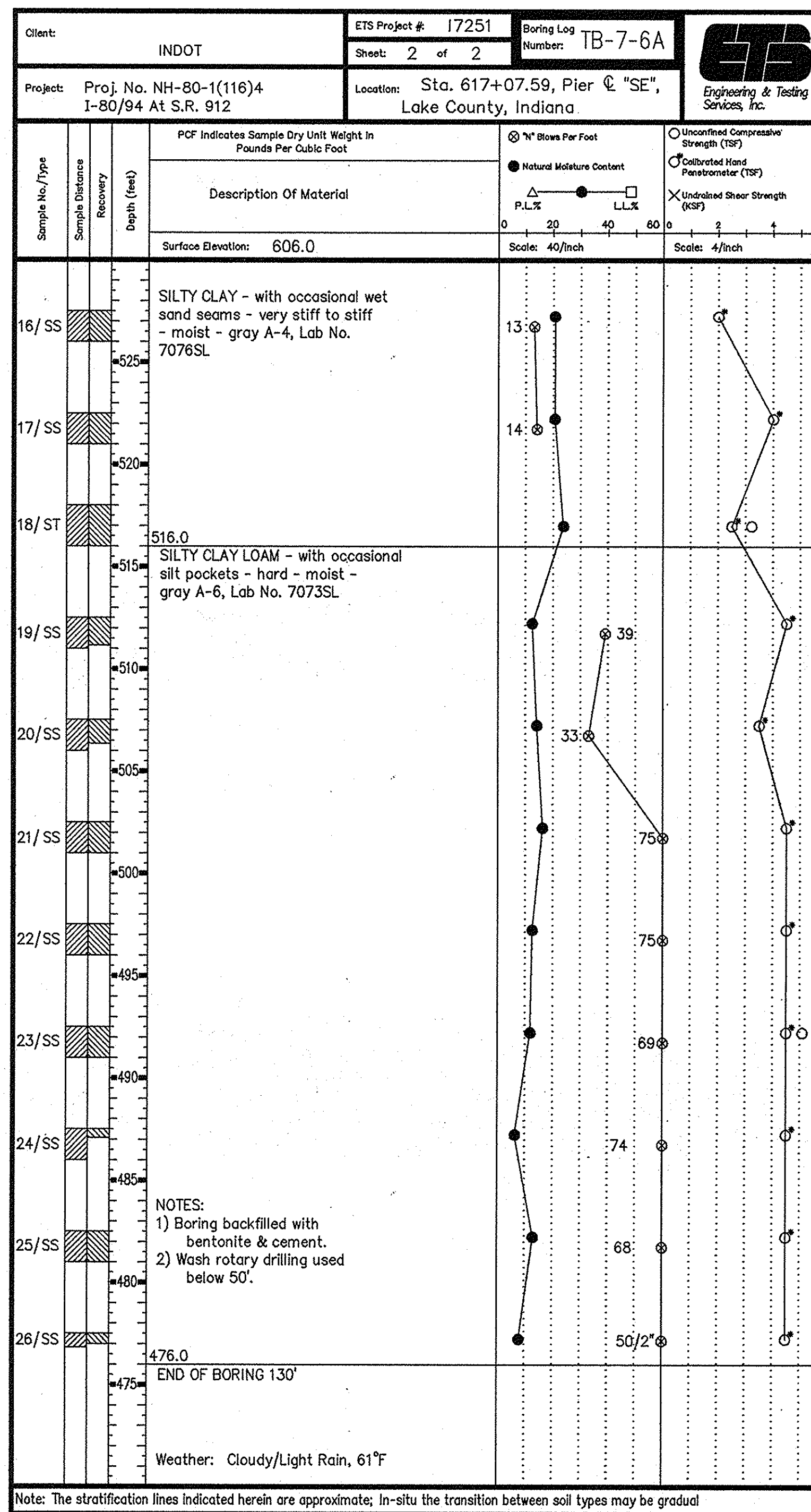
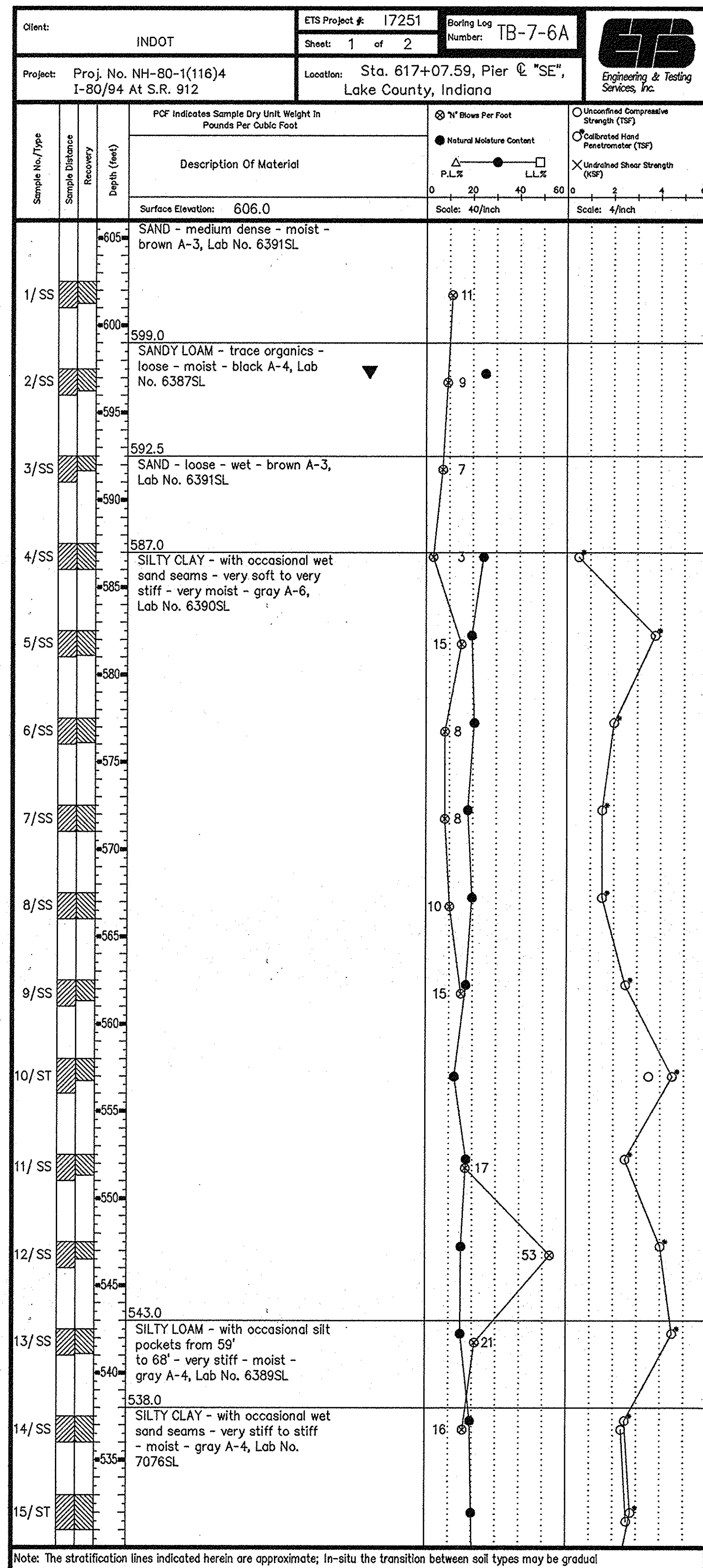
CONTRACT NO. R-23808

BRIDGE FILE: - I-80-5-7823

DESIGNED: CKD
DRAWN: DSH 7/6/98 CKD MHW 7/8/98
TRACED: CKD

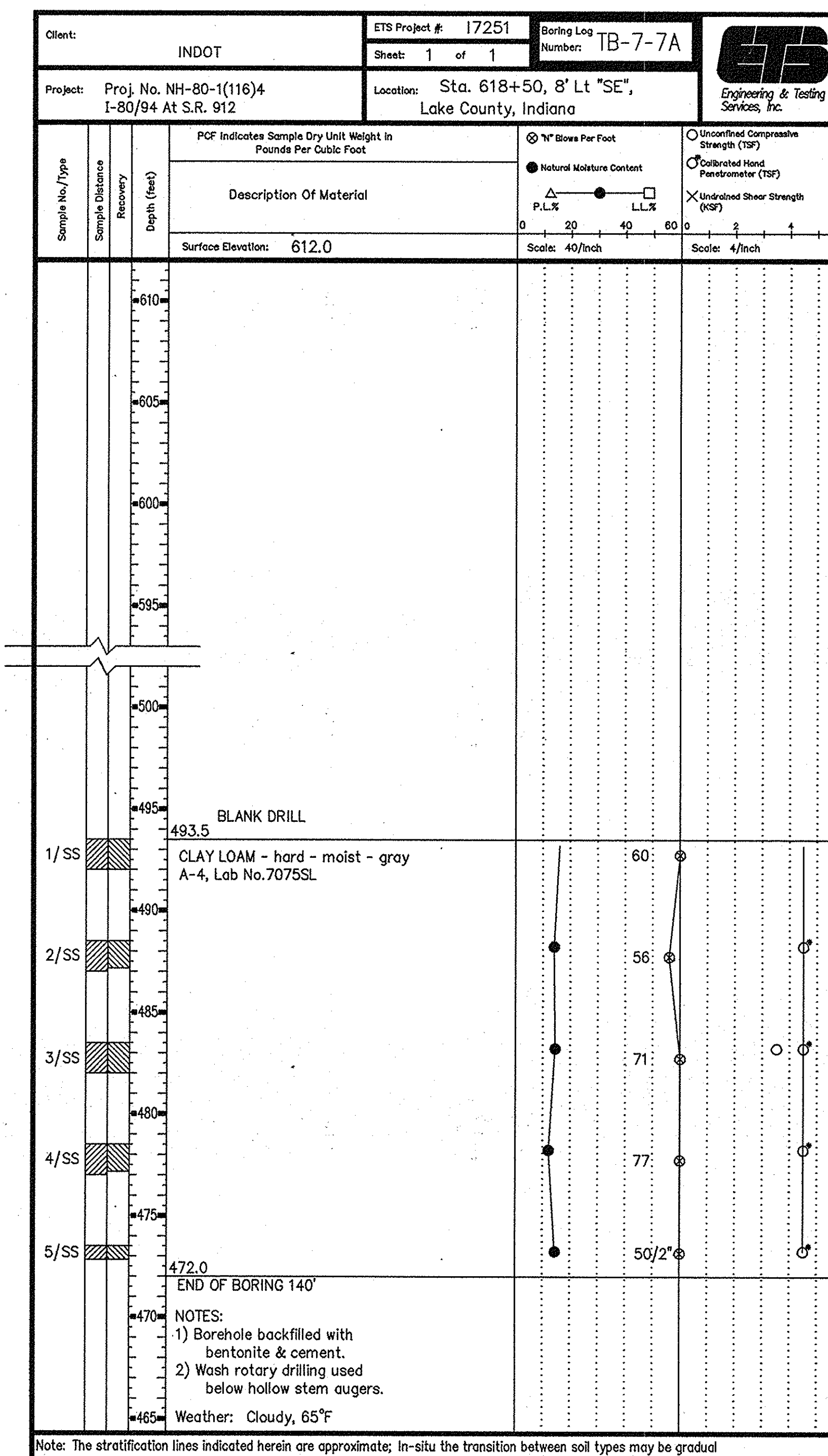
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PLOT ORIGIN: 0.00,0.00

SPELLOK
EDIT DATE: 07/10/98 13:21:39
EDITED BY: DSH - 591



NOTES:

- ▼ Indicates Ground Water Level
- N Indicates the number of blows required to drive a 1 3/8" I.D., 2" O.D. Split Spoon sampler 12" by means of a 140 lb. weight falling 30".



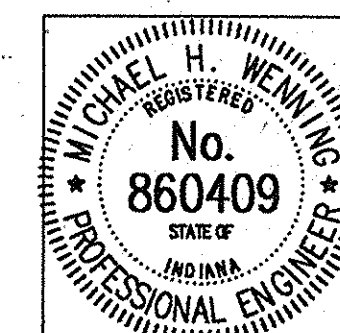
SOIL BORINGS
INDIANA DEPARTMENT OF TRANSPORTATION

SCALE: - Horiz. 1"=40'
Vert. 1"=5'

DATE: - July 9, 1998

SUBMITTED FOR APPROVAL

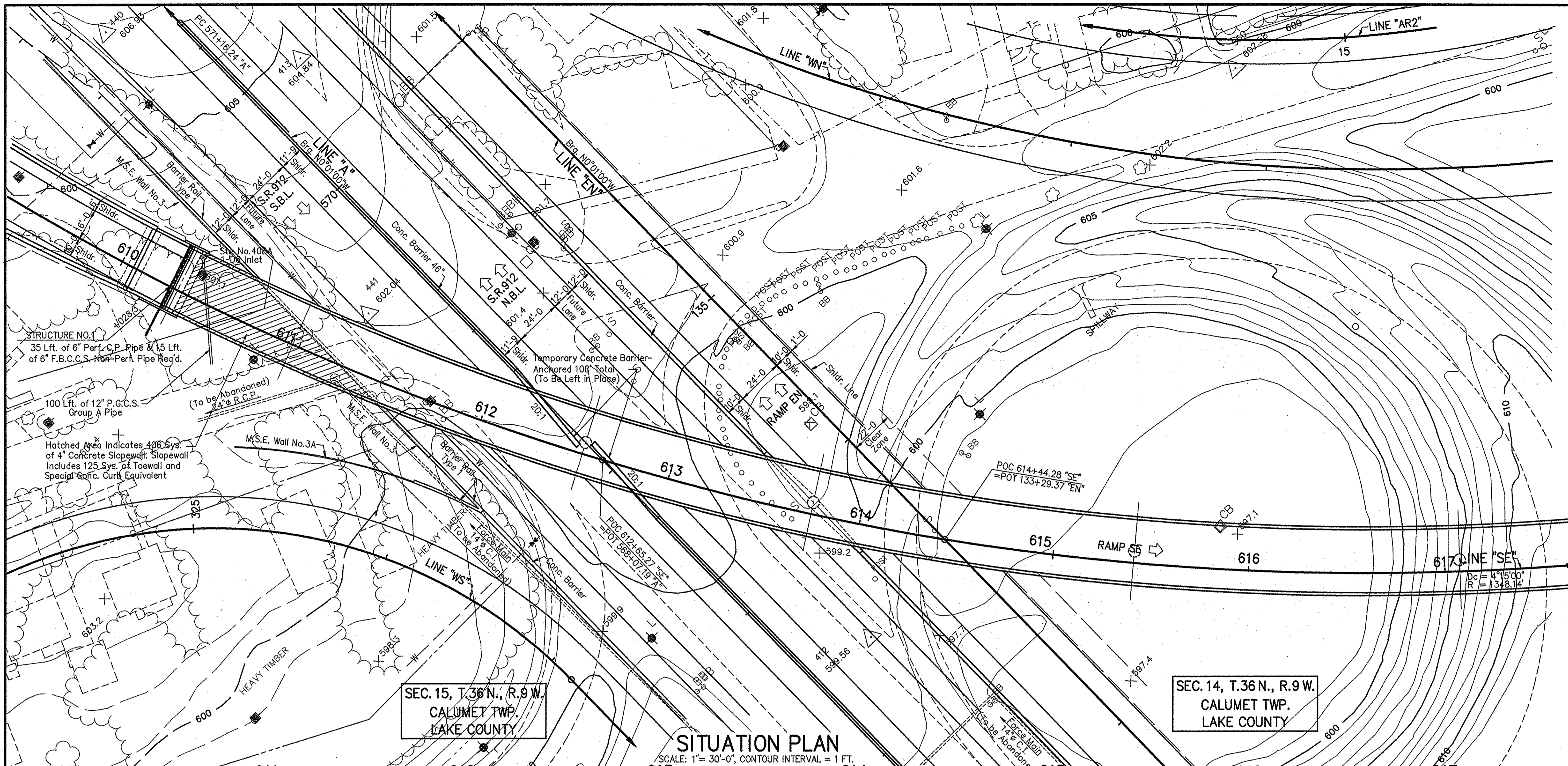
DRAWING: - OF SHEET: - 15B OF 73
PROJECT: - IM-80-1 (143)4
CONTRACT NO. R-23808
BRIDGE FILE: - I-80-5-7823



DESIGNED: C.K'D
DRAWN: DSH 7/6/98 C.K'D MHW 7/8/98
TRACED: C.K'D

DWG FILE: S:\171\144\97144507
PLOT SCALE: 1:1000
PLOT ORIGIN: 0.000,0.000

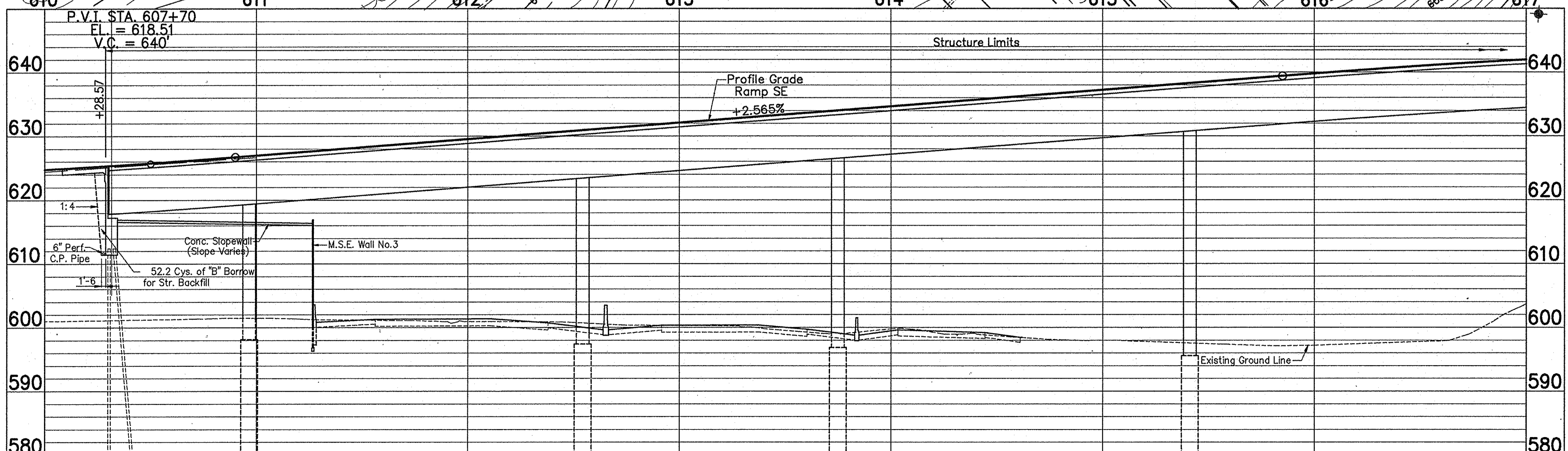
SPELLING: 07/10/98 13:23:47
EDIT DATE: DSH - 581



CURVE DATA

P.I.	621+05.23 "SE"
Δ	103°56'22" Lt.
Dc	4°15'00"
R	1348.14'
T	1723.65'
L	2445.63'
E	840.12'
Se	6.3%

- NOTES:**
- Hatched area indicate limits of concrete slopewall.
 - For Utility Owners, see Sheet No. 10.
 - For Alignment References, and Bench Marks See Road Plan And Profile Sheets No. 6-8.
 - * Indicates Road Item.



P.V.I. STA. 620+60
EL. = 651.60
V.C. = 950'

LAYOUT

CONTINUOUS POST-TENSIONED CONCRETE BOX GIRDER BRIDGE

9 SPANS: 65'-0", 157'-9 1/8", 120'-6 1/16", 166'-4 1/2", 166'-4 1/2",
166'-4 5/8", 151'-10", 200'-4 9/16", 85'-0" SKEW: Varies

32'-0 CLEAR ROADWAY

RAMP SE OVER S.R.912 AND I-80/94

INDIANA DEPARTMENT OF TRANSPORTATION

LAKE COUNTY

DESIGNED: CK'D
DRAWN: RJC 6/17/93 CK'D MHW 6/18/93
TRACED: CK'D

PROFILE LINE SE

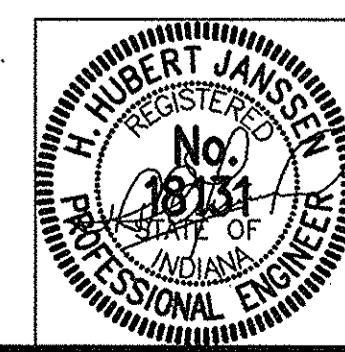
SCALE: 1" = 30'-0" Horizontal, 1" = 10'-0" Vertical

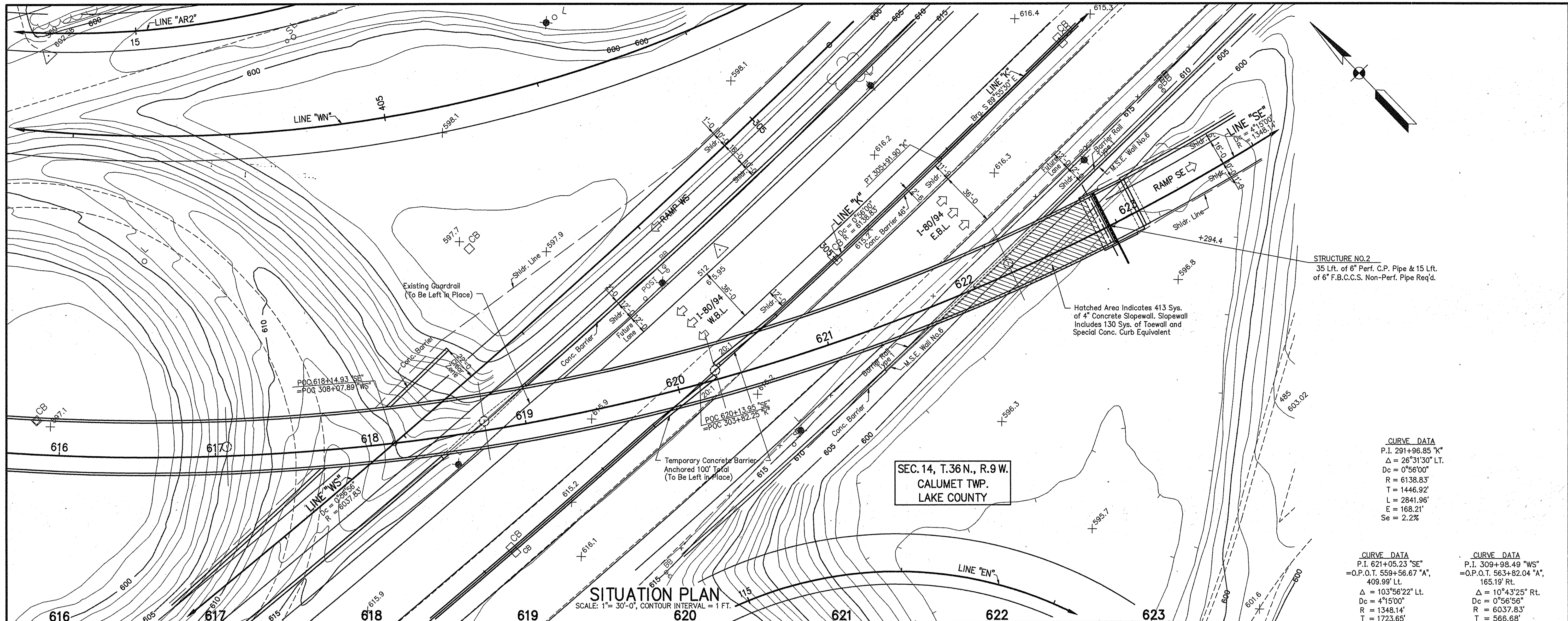
NOTE: FIELD NOTES, BOOK: 16215L1 & 16215T1

SCALE: - As Noted DATE: - 7-10-98

SUBMITTED FOR APPROVAL

DRAWING: - C1 OF C51 SHEET: - 16 OF 73
PROJECT: - NH-80-1 () 4
CONTRACT NO.
BRIDGE FILE: - I-80-5-7823

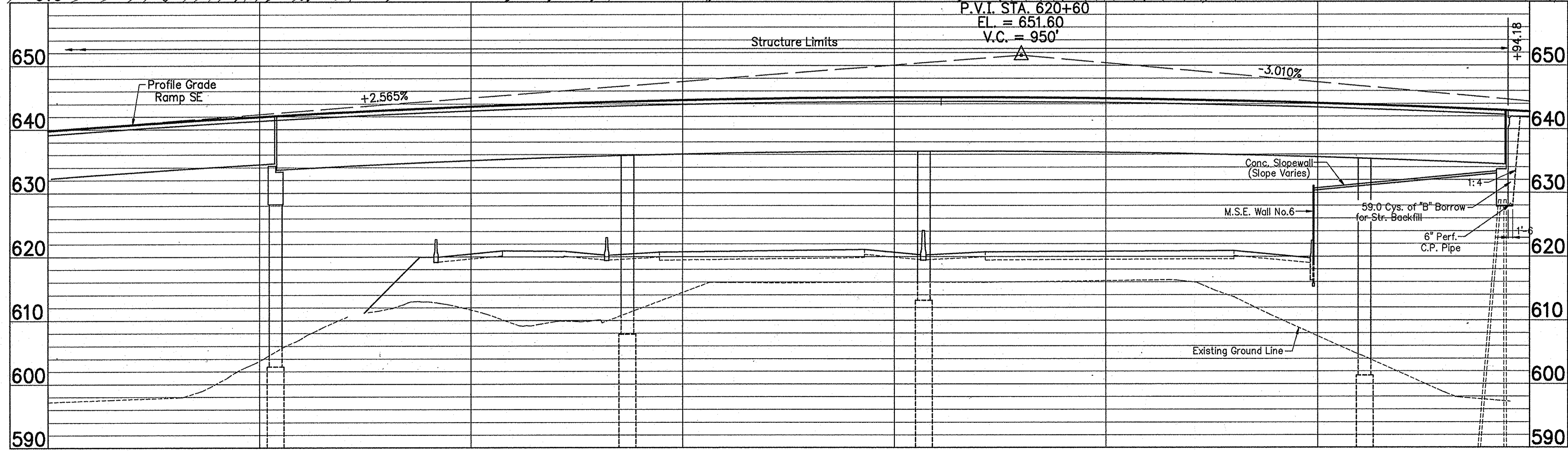




CURVE DATA
P.I. 291+96.85 "K"
Δ = 26°31'30" LT.
Dc = 0°56'00"
R = 6138.83'
T = 1446.92'
L = 2841.96'
E = 168.21'
Se = 2.2%

CURVE DATA
P.I. 621+05.23 "SE"
=O.P.O.T. 559+56.67 "A",
409.99' Lt.
Δ = 103°56'22" Lt.
Dc = 4°15'00"
R = 1348.14'
T = 1723.65'
L = 2445.63'
E = 840.12'
Se = 6.3%

CURVE DATA
P.I. 309+98.49 "WS"
=O.P.O.T. 563+82.04 "A",
165.19' Rt.
Δ = 10°43'25" Rt.
Dc = 0°56'56"
R = 6037.83'
T = 566.68'
L = 1130.06'
E = 26.53'
Se = 2%



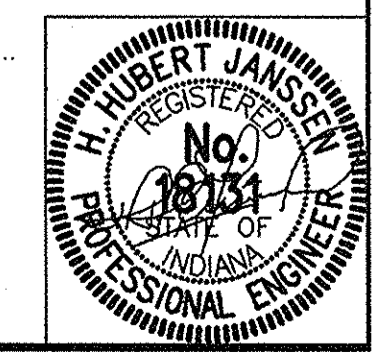
NOTES:

- Hatched area indicate limits of concrete slopewall.
- For Utility Owners, see Sheet No. 10.
- For Alignment References, and Bench Marks See Road Plan And Profile Sheets No. 6-8.
- * Indicates Road Item.

LAYOUT
CONTINUOUS POST-TENSIONED CONCRETE BOX GIRDER BRIDGE
9 SPANS: 65'-0", 157'-9 1/8", 120'-6 1/16", 166'-4 1/2", 166'-4 1/2",
166'-4 5/8", 151'-10", 200'-4 9/16", 65'-0" SKEW: Varies
32'-0 CLEAR ROADWAY
RAMP SE OVER S.R.912 AND I-80/94
INDIANA DEPARTMENT OF TRANSPORTATION
LAKE COUNTY

SCALE: - As Noted DATE: - 7-10-98
SUBMITTED FOR APPROVAL

DRAWING: - C2 OF C51 SHEET: - 17 OF 73
PROJECT: - NH-80-1 ()
CONTRACT NO.
BRIDGE FILE: - I-80-5-7823

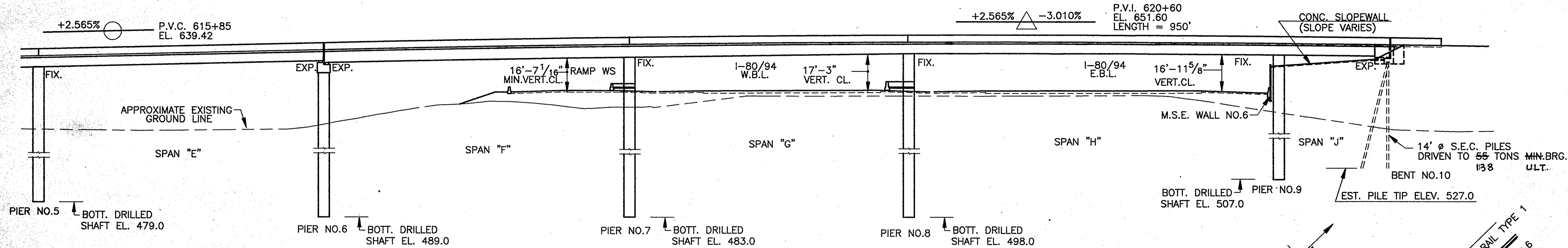


DESIGNED: C.K.D.
DRAWN: RJC 7/17/93
TRACED: C.K.D.

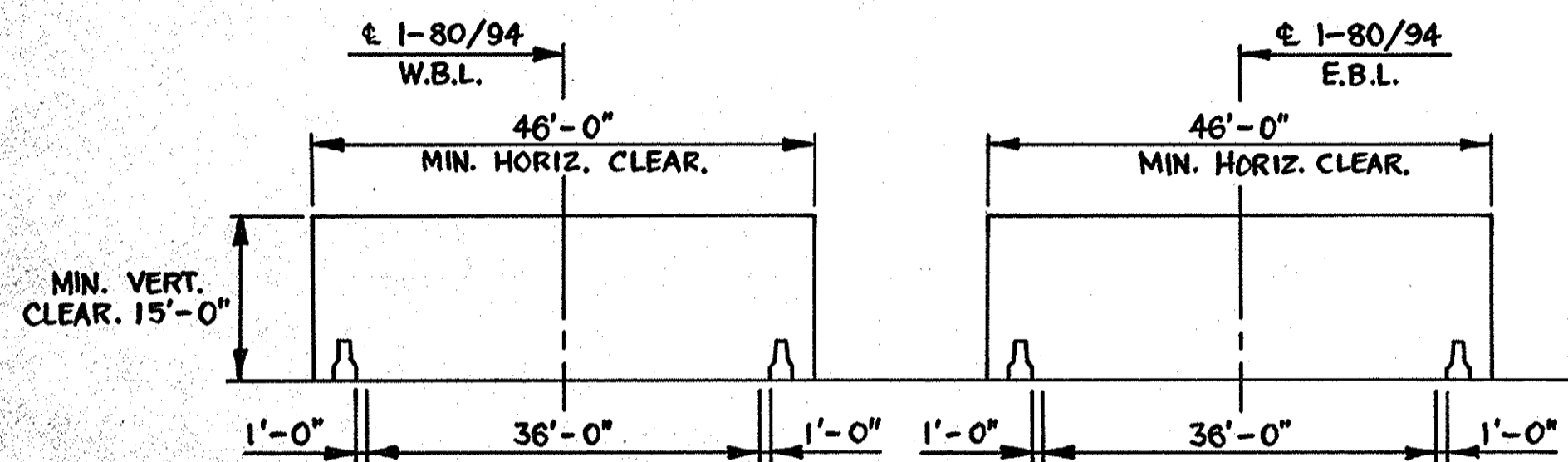
CHECKED: MHW 6/18/93
EDIT DATE: 07/11/98 08:45:26
EDITED BY: CSH - 591

NOTE: FIELD NOTES, BOOK: 16215L1 & 16215T1

THIS PORTION OF STRUCTURE TO BE BUILT TO A +2.565% GRADE, A 950' VERTICAL CURVE, AND A 4° 15' HORIZONTAL CURVE

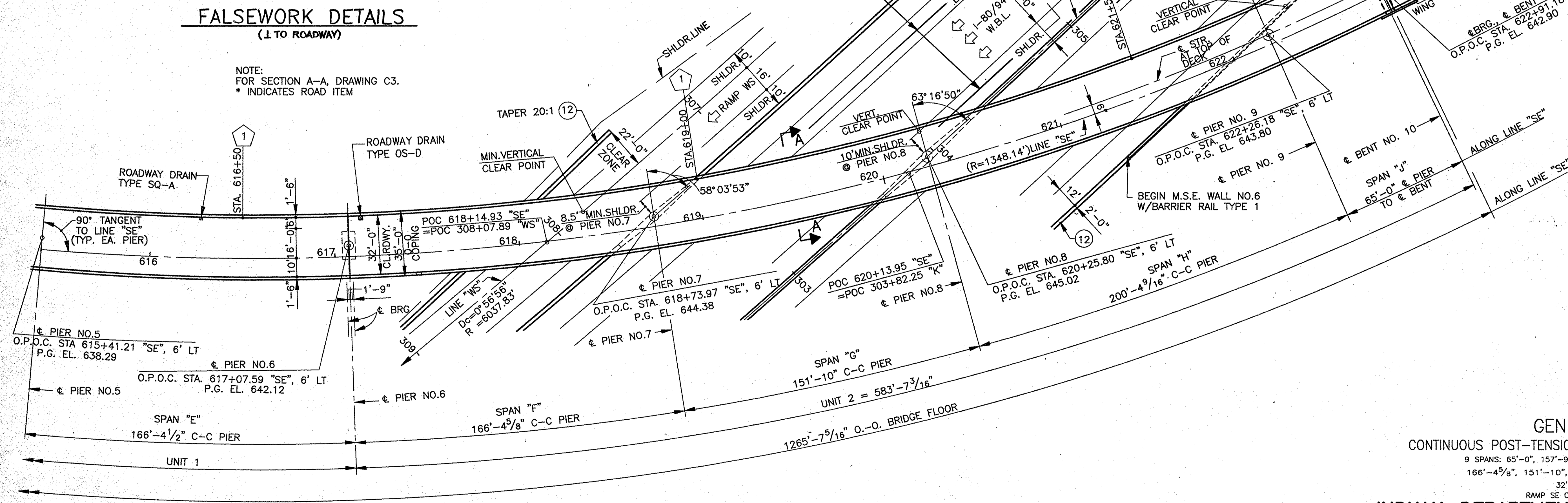


ELEVATION



FALSEWORK DETAILS
(1 TO ROADWAY)

NOTE:
FOR SECTION A-A, DRAWING C3.
* INDICATES ROAD ITEM



PLAN

CURVE DATA		CURVE DATA		CURVE DATA	
P.I. 309+98.49 "WS"	P.I. 291+96.85 "K"	P.I. 621+05.23 "SE"			
A = 10° 43' 25" RT.	A = 26° 31' 30" LT.	A = 10° 3' 56" 22" LT.			
DC = 0° 56' 56"	DC = 0° 56' 00"	DC = 4° 15' 00"			
R = 6037.83'	R = 6138.83'	R = 1348.14'			
T = 566.68'	T = 1446.92'	T = 1723.65'			
L = 1130.06'	L = 2841.96'	L = 2445.63'			
E = 26.53'	E = 168.21'	E = 840.12'			
Se = 2%	Se = 2.2%	Se = 6.3%			

LEGEND

- (2) EXPANSION JOINT CLASS S-S
- (5) TYPE IA JOINT
- * CONCRETE BARRIER
- (14) * TERMINAL JOINT
- (1) CONDUIT PULL BOX, FOR DETAILS SEE DWG C26

NOTE:

EXPANSION LENGTHS ARE NOT GIVEN. TABLE ON DRAWING C49 SHOULD BE USED FOR INITIAL SET OF S-S AND MODULAR JOINTS.

GENERAL PLAN
CONTINUOUS POST-TENSIONED CONCRETE BOX GIRDER BRIDGE
9 SPANS: 65'-0", 157'-9 1/8", 120'-6 1/16", 166'-4 1/2", 166'-4 1/2", 166'-4 5/8", 151'-10", 200'-4 9/16", 65'-0" SKEW: VARIES
32'-0" CLEAR ROADWAY
RAMP SE OVER S.R. 912 AND I-80/94

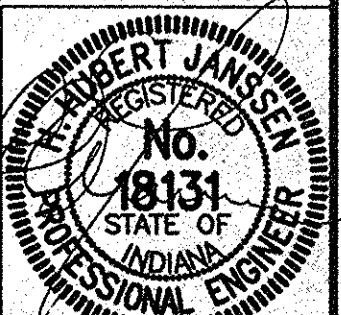
INDIANA DEPARTMENT OF TRANSPORTATION
LAKE COUNTY

SCALE: 1"=30'-0", UNLESS NOTED

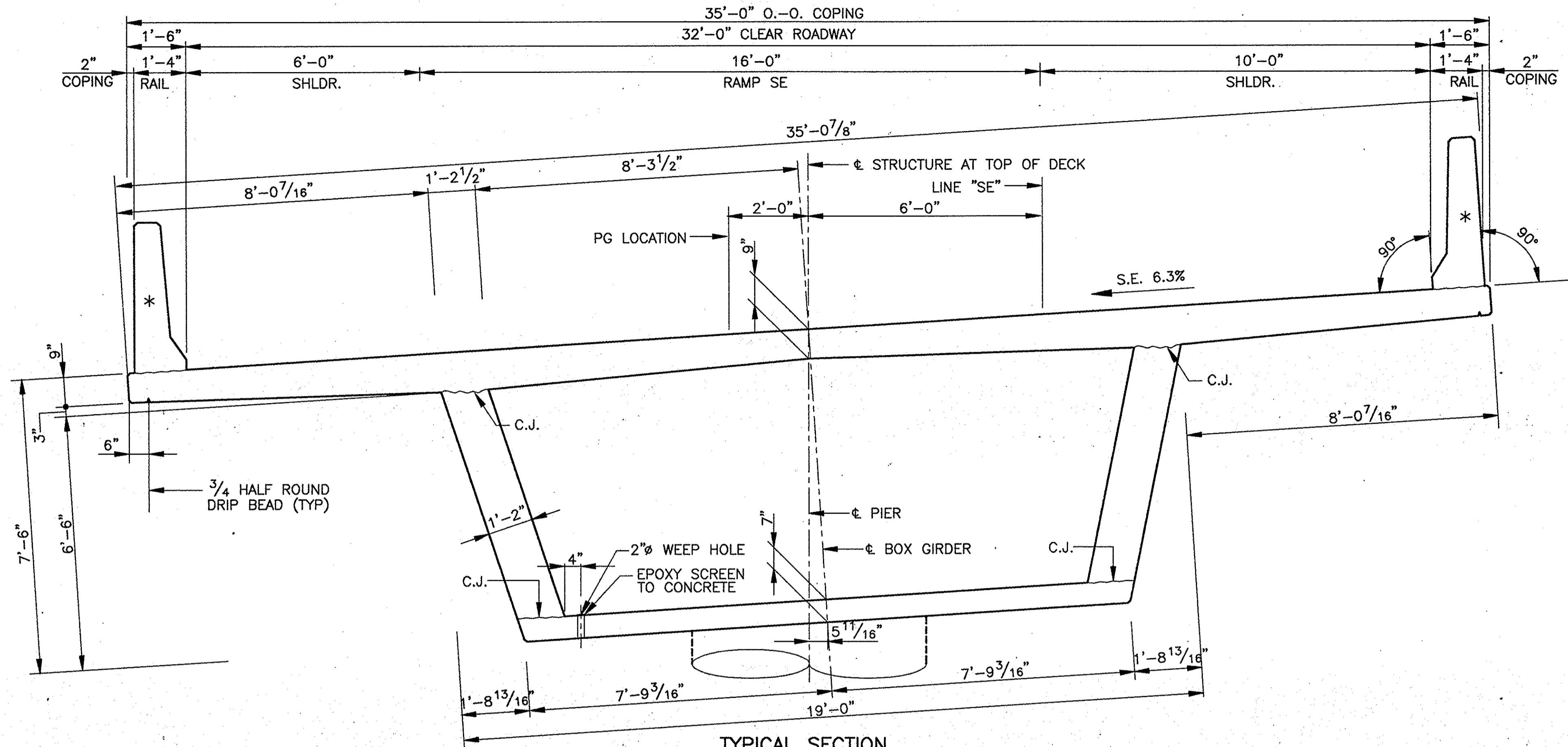
DATE: July 10, 1998

SUBMITTED FOR APPROVAL

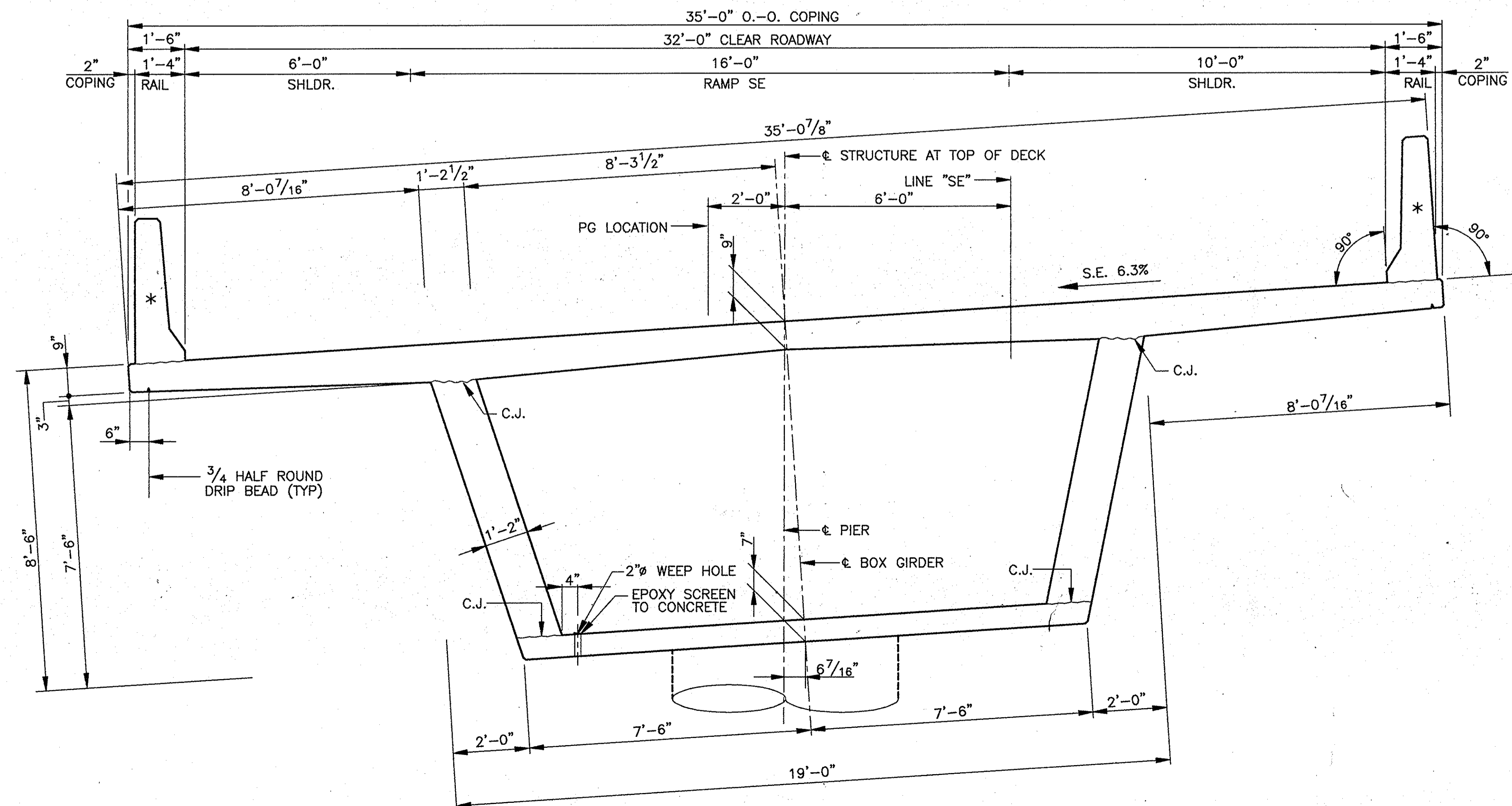
DRAWING: C4 OF C51 SHEET: 19 OF
PROJECT: NH-80-1 ()
CONTRACT NO.
BRIDGE FILE: I-80-5-7823



DESIGNED	HHJ	C/K'D	LS
DRAWN	TMD	C/K'D	HHJ
TRACED		C/K'D	



TYPICAL SECTION
VALID FOR UNIT 1



TYPICAL SECTION
VALID FOR UNIT 2

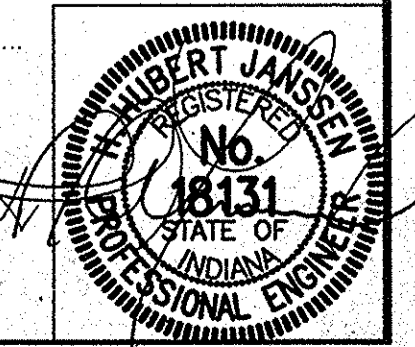
* NOTE:
BOTH FACES OF THE HIGH SIDE BARRIER
ARE TO BE CAST PERPENDICULAR TO THE
DECK SURFACE.
BOTH FACES OF THE LOW SIDE BARRIER
ARE TO BE CAST PLUMB.

TYPICAL SECTION
INDIANA DEPARTMENT OF TRANSPORTATION
LAKE COUNTY

SCALE: 1/2"=1'-0", UNLESS NOTED DATE: 1/22/98

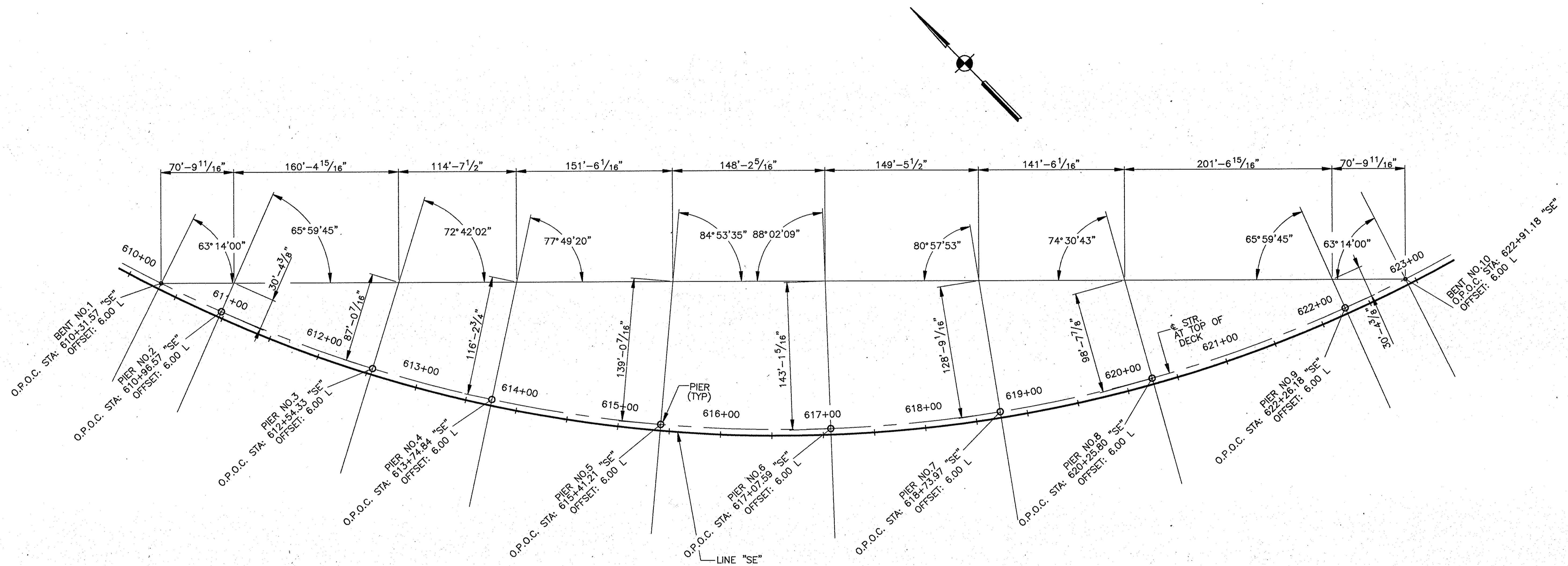
SUBMITTED FOR APPROVAL

DRAWING: C5 OF C51 SHEET: 20 OF 73
PROJECT: NH-80-1 () 4
CONTRACT NO.
BRIDGE FILE: I-80-5-7823



D:\BA7-8\TYPSECD. 88/26/97 at 0842
PLT81=24

DESIGNED	HHJ	C'K'D	LS
DRAWN	TMD	C'K'D	HHJ
TRACED		C'K'D	



TIE-UP DIAGRAM
INDIANA DEPARTMENT OF TRANSPORTATION
 LAKE COUNTY

SCALE: 1"=50'-0", UNLESS NOTED DATE: 5/22/98

SUBMITTED FOR APPROVAL

DRAWING: C6 OF C51 SHEET: 21 OF 73

PROJECT: NH-80-1 () 4

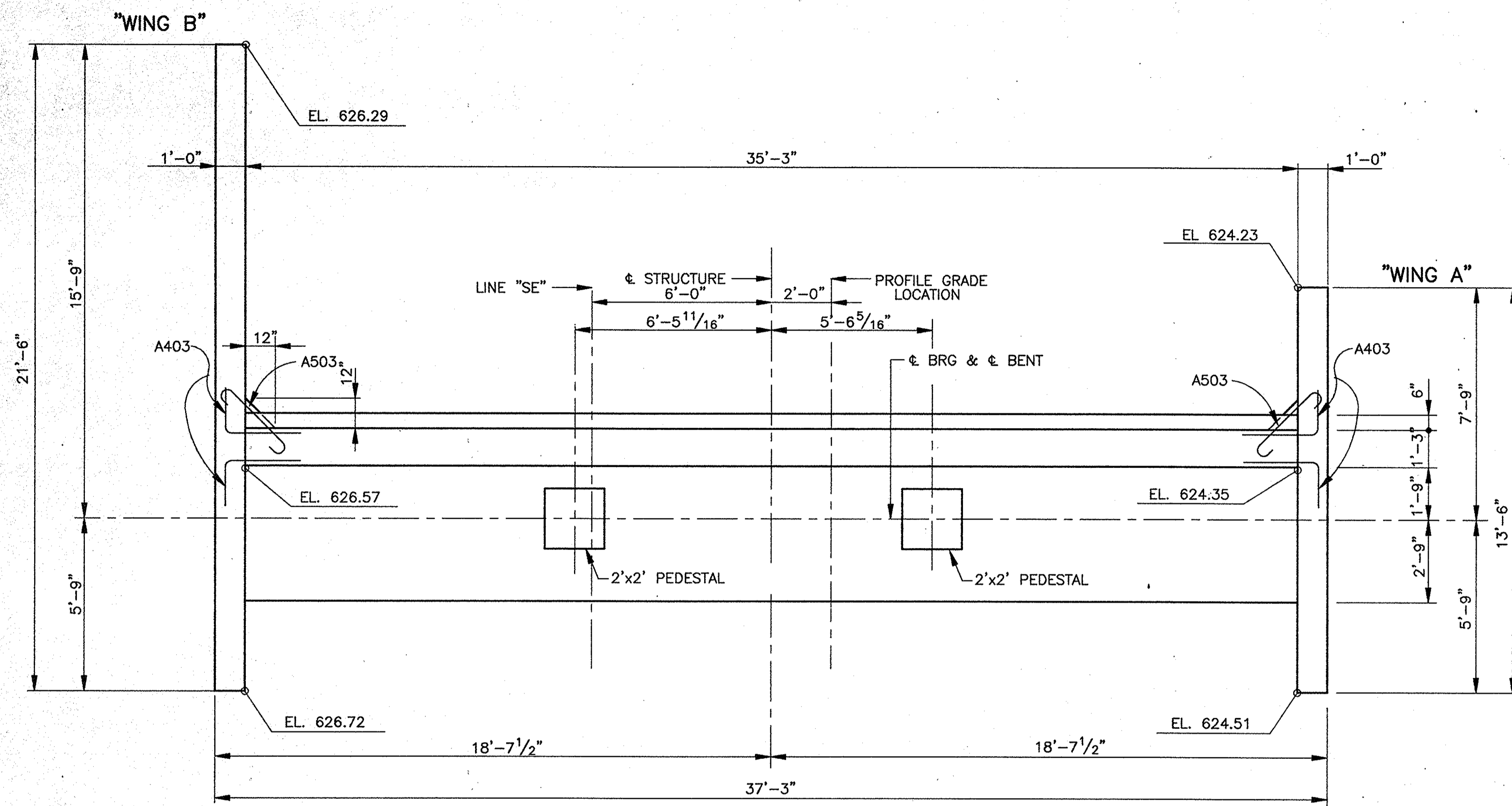
CONTRACT NO.

BRIDGE FILE: I-80-5-7823



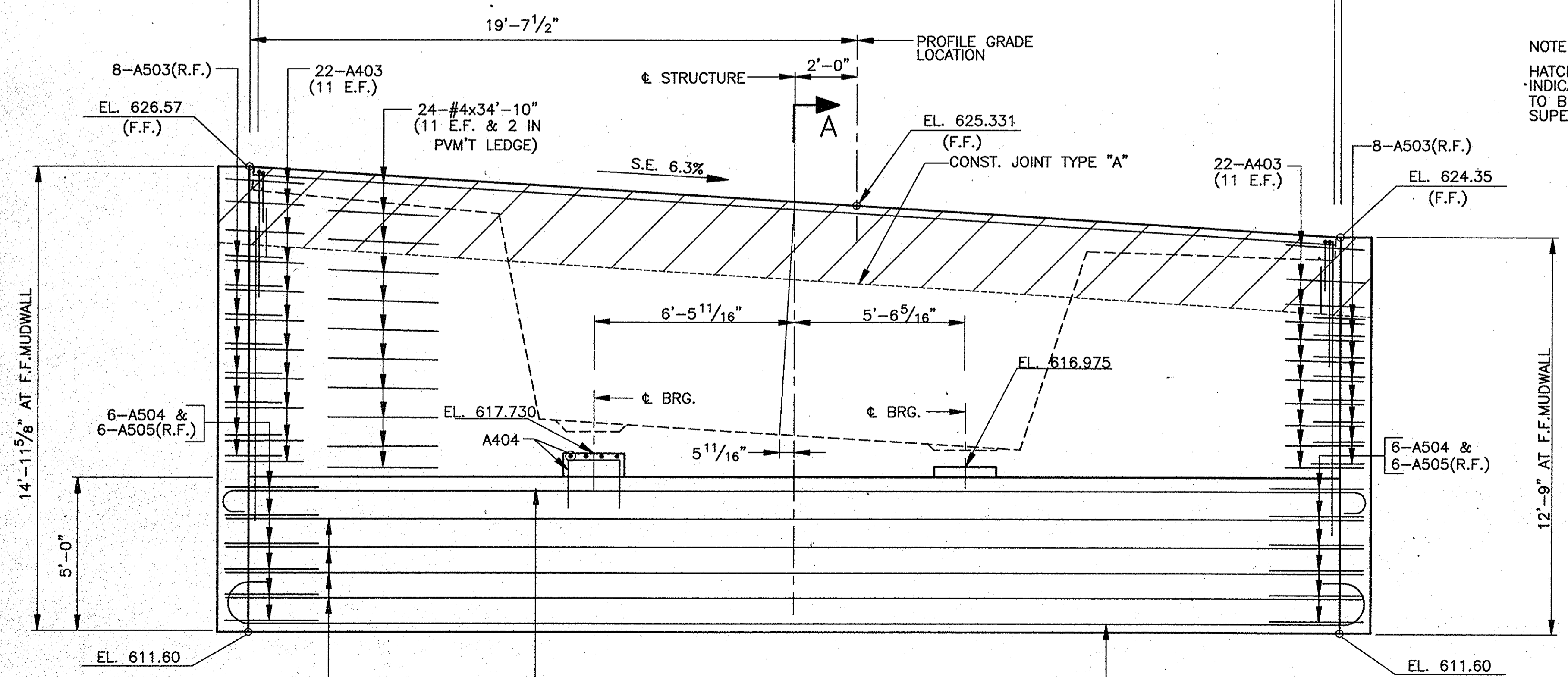
PL0181-535

DESIGNED	HHJ	C'K'D	LS
DRAWN	TMD	C'K'D	HHJ
TRACED		C'K'D	

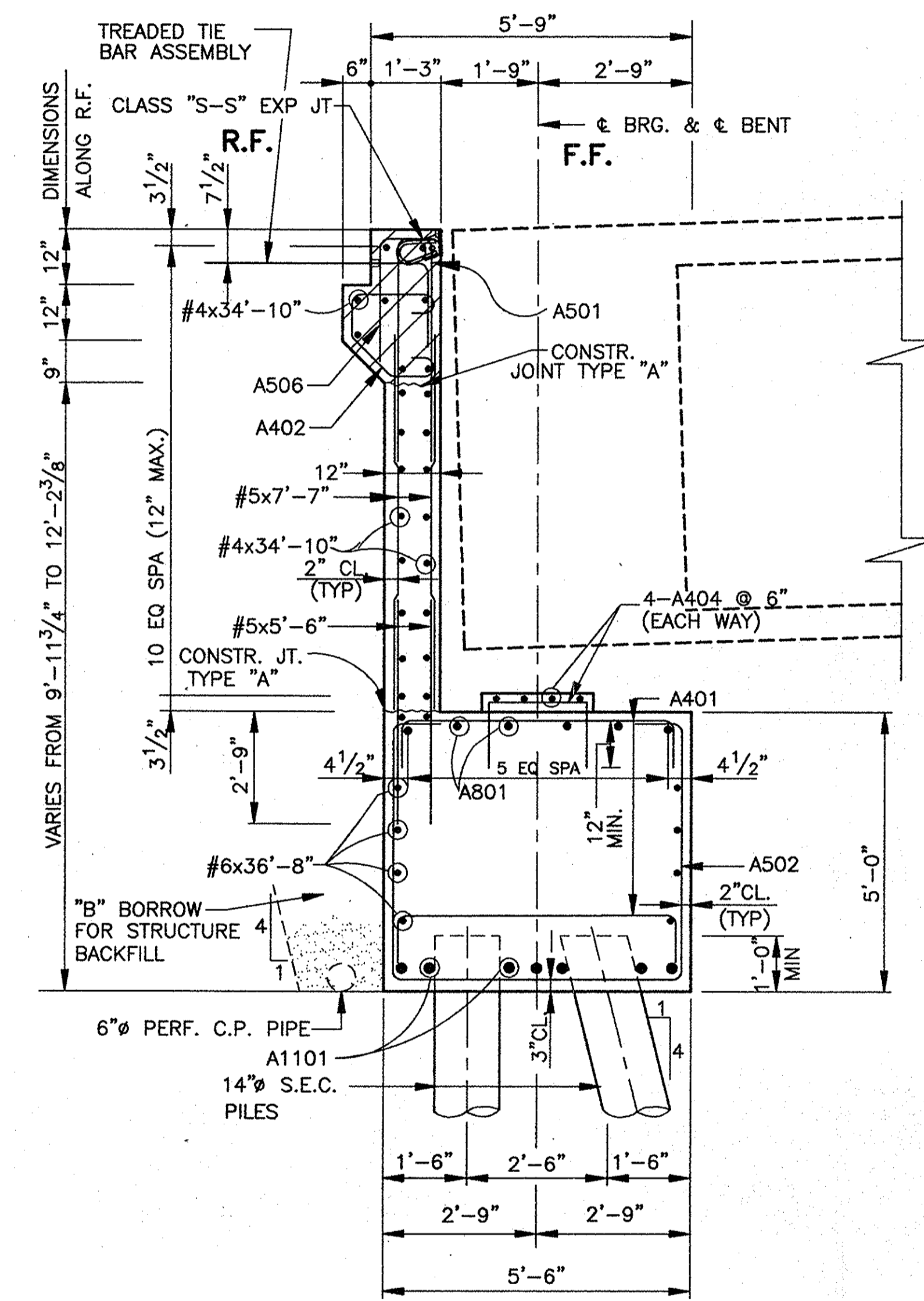


PLAN
3/8" = 1'-0"

1 1/2" 35 SPACES @ 12"± (36-A402 BARS IN PVM'T LEDGE, 36-A501 & A506 BARS & 36-#5x7'-7" & 36-#5x5'-6" IN F.F. MUDWALL) 1 1/2"
 47 SPACES @ 9"± (48-MODIFIED E.C. THREADED TIE BAR ASSEMBLIES & 48-#5x7'-7" & 48-#5x5'-6" IN R.F. MUDWALL)
 19'-7 1/2"



ELEVATION
3/8" = 1'-0"

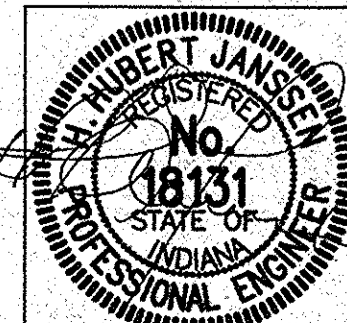


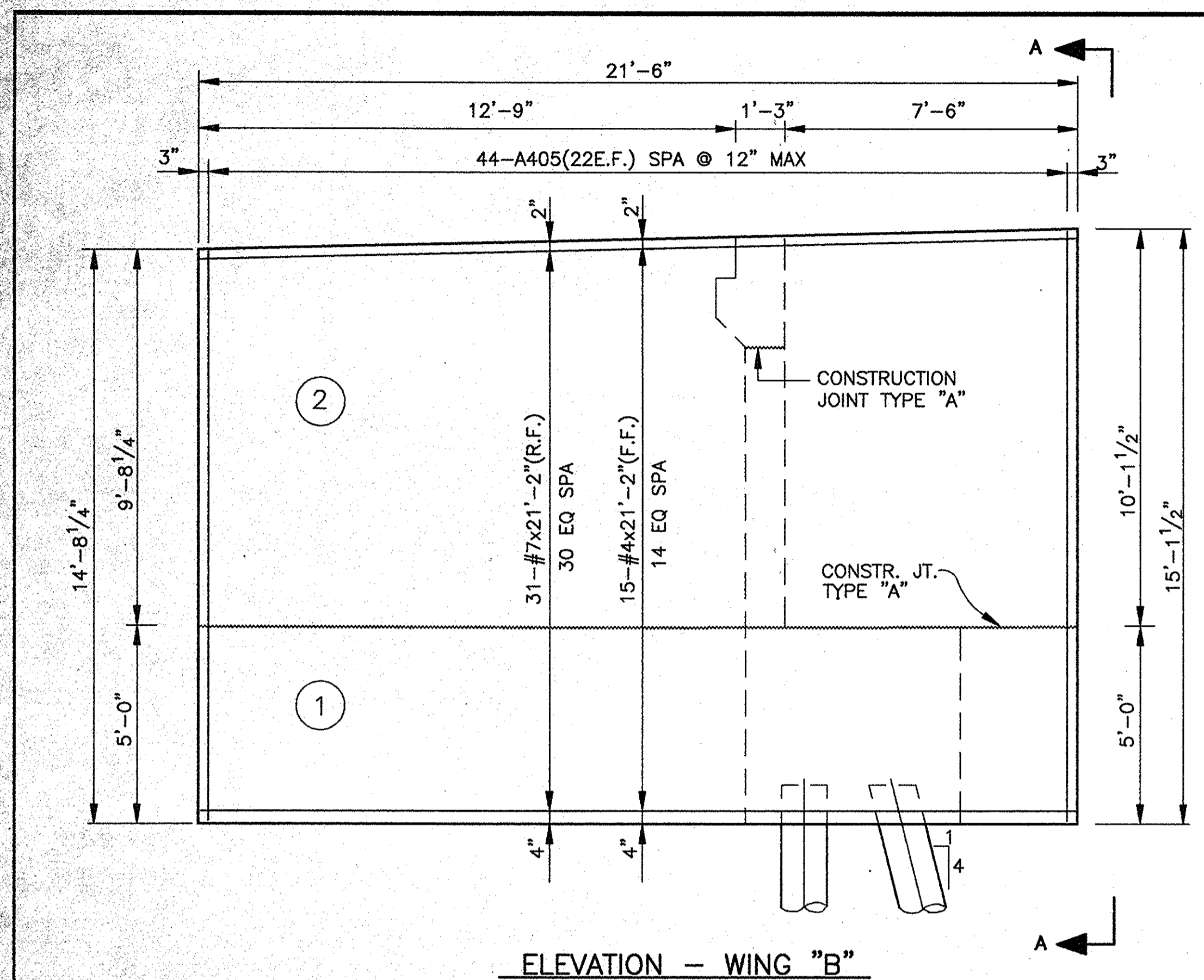
SECTION A-A
1/2" = 1'-0"

NOTE:
 HATCHED AREAS
 INDICATE CONCRETE
 TO BE POURED WITH
 SUPERSTRUCTURE.

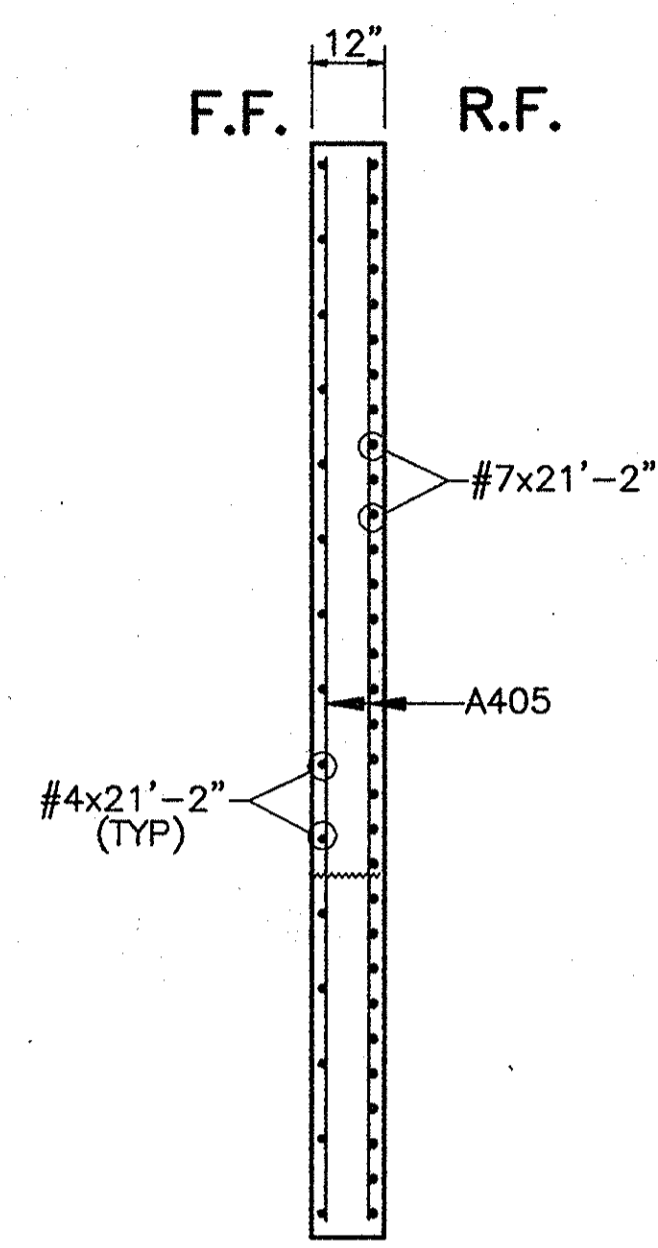
SUBSTRUCTURE DETAILS - BENT NO. 1
 INDIANA DEPARTMENT OF TRANSPORTATION
 LAKE COUNTY
 SCALE: 3/8"=1'-0", UNLESS NOTED DATE: July 10, 1998
 SUBMITTED FOR APPROVAL
 DRAWING: C7 OF C51 SHEET: 22 OF
 PROJECT: - NH-80-1 () 4
 CONTRACT NO.
 BRIDGE FILE: I-80-5-7823

DESIGNED	HHJ	C'K'D	LS
DRAWN	TMD	C'K'D	HHJ
TRACED		C'K'D	

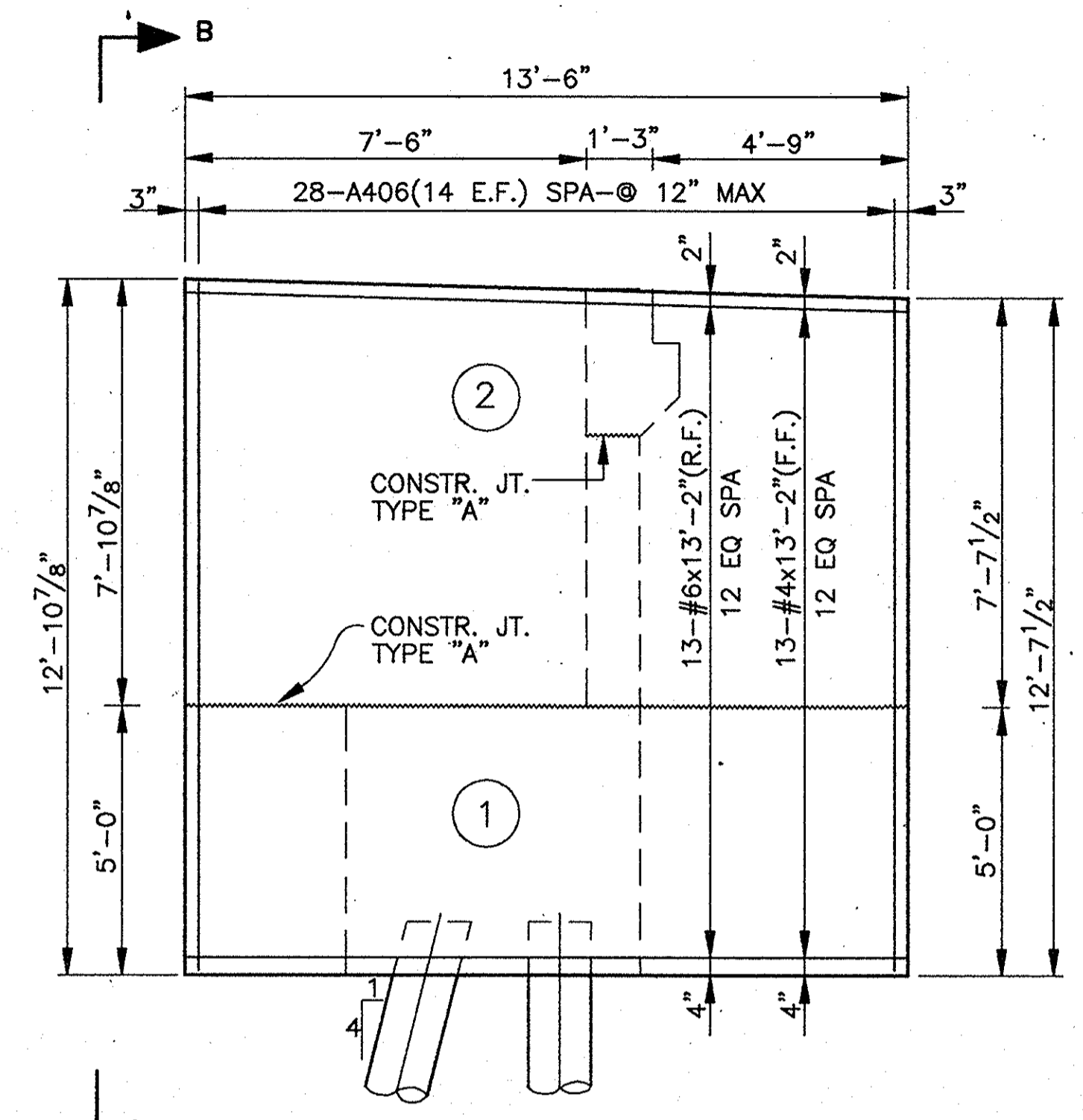




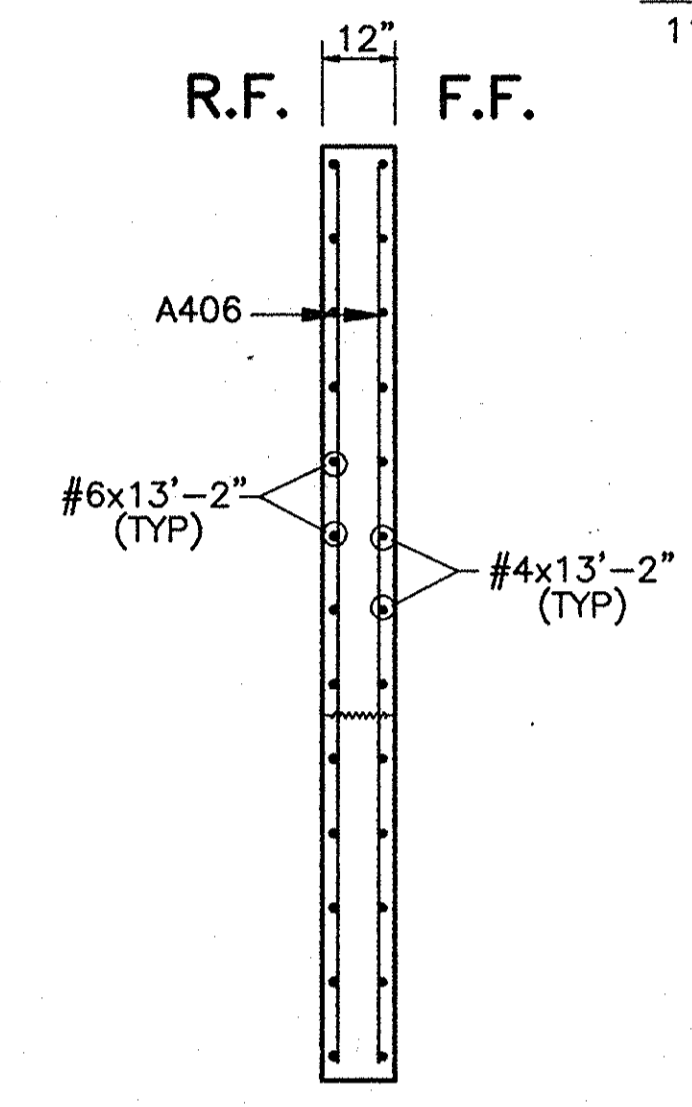
ELEVATION - WING "B"



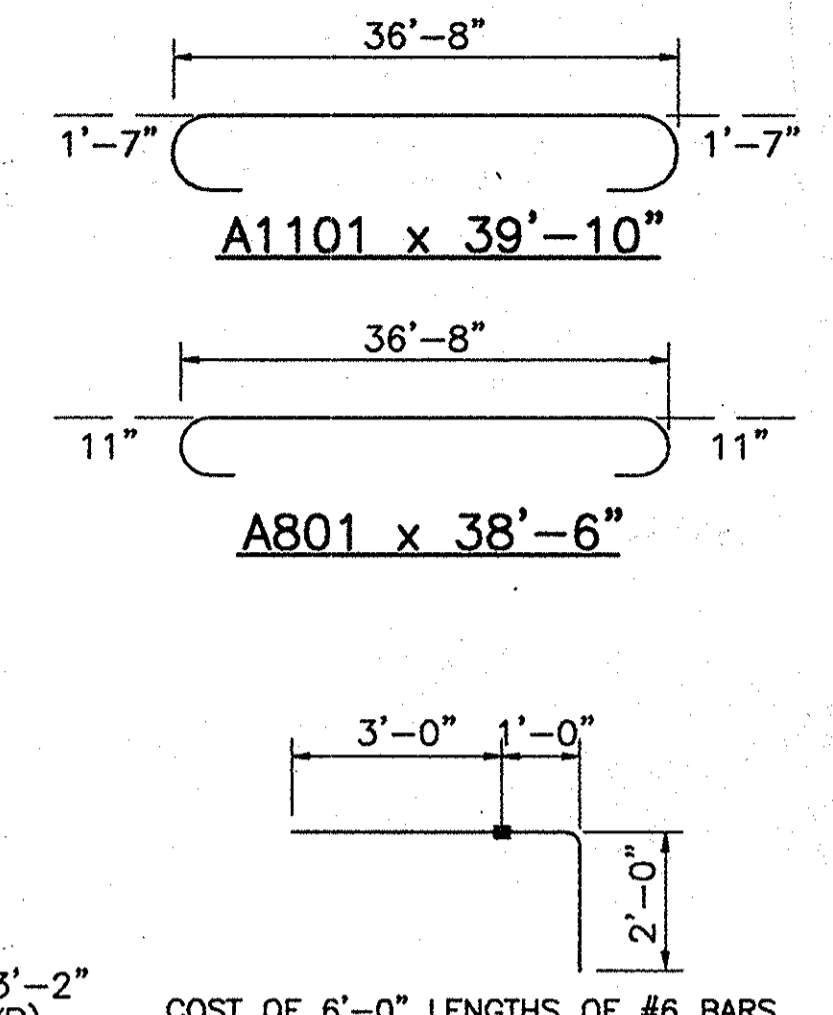
SECTION "A-A"



ELEVATION - WING "A"

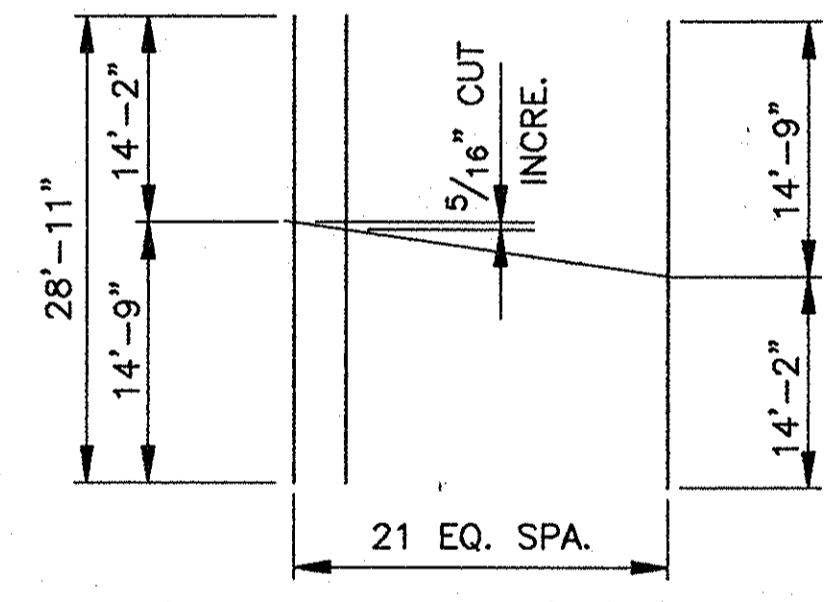


SECTION "B-B"

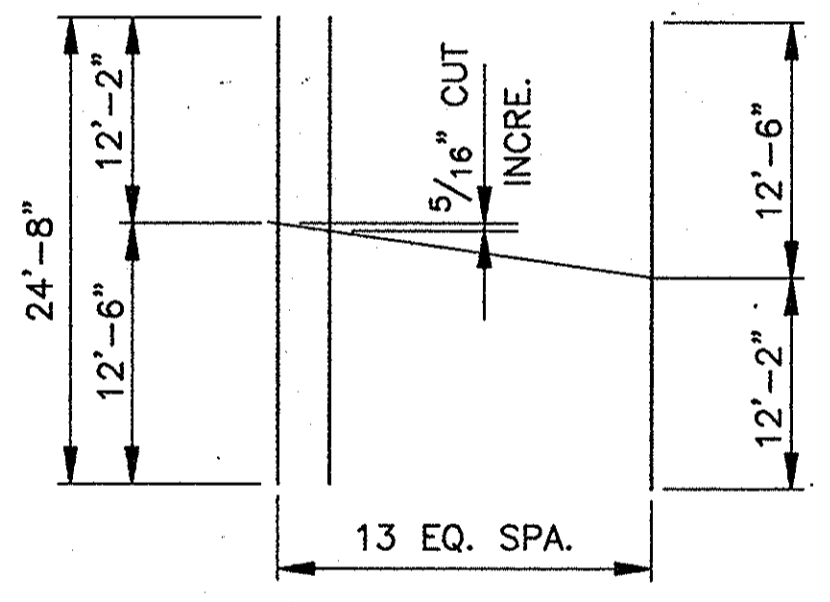


COST OF 6'-0" LENGTHS OF #6 BARS TO BE INCLUDED IN THE COST OF THE MODIFIED E.C. THREADED TIE BAR ASSEMBLY

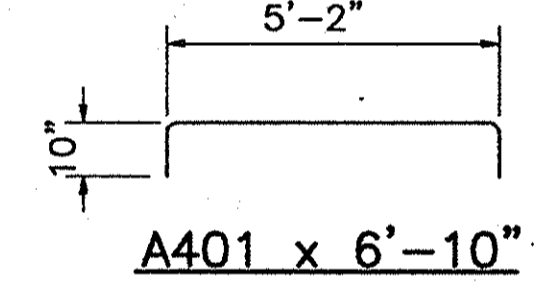
***MODIFIED E.C. THREADED TIE BAR ASSEMBLY**



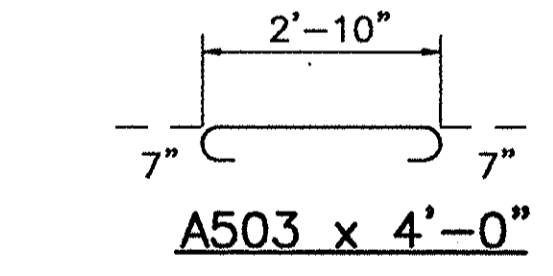
A405 x 14'-5 1/2" (AVE)
(22 BARS CUT TO MAKE 44)



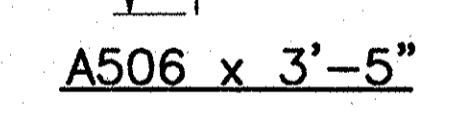
A406 x 12'-4" (AVE)
(14 BARS CUT TO MAKE 28)



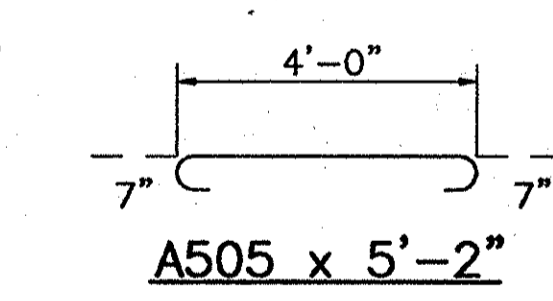
A401 x 6'-10"



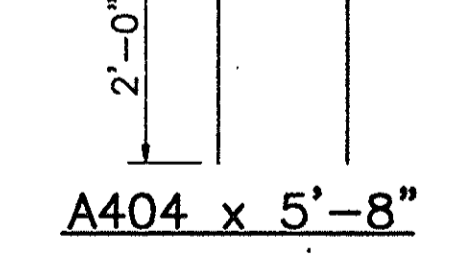
A503 x 4'-0"



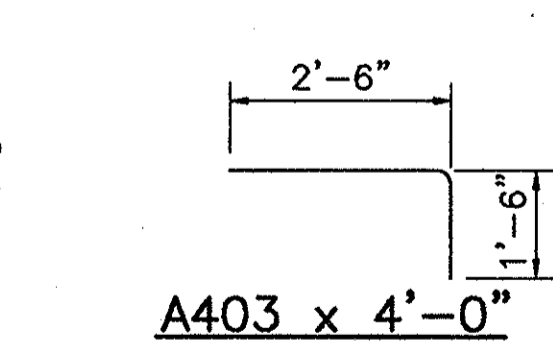
A506 x 3'-5"



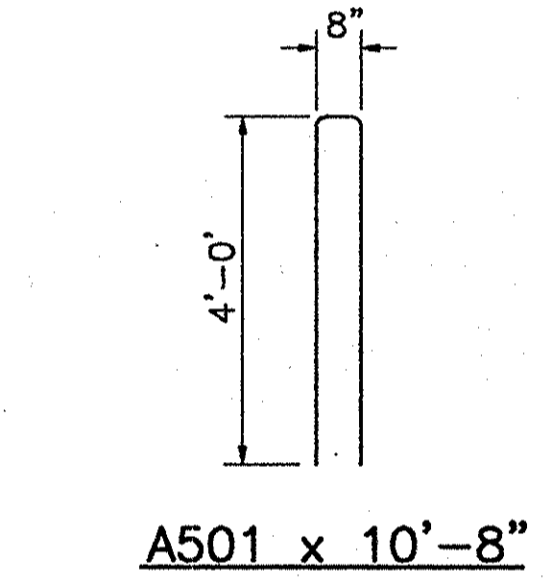
A505 x 5'-2"



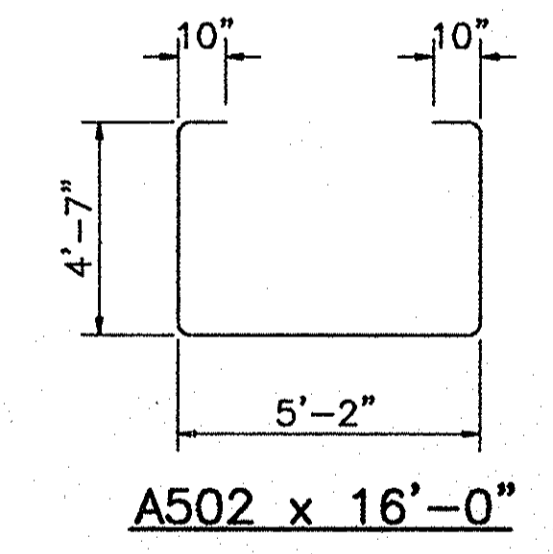
A404 x 5'-8"



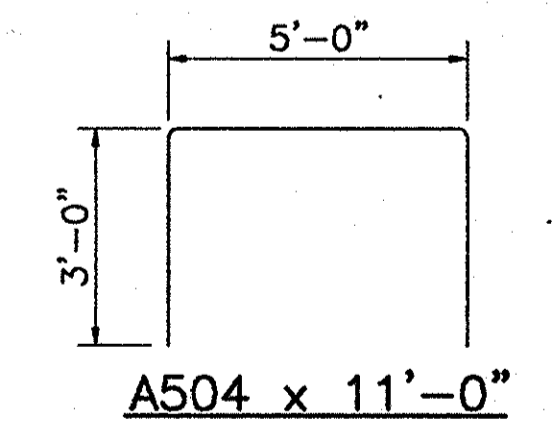
A403 x 4'-0"



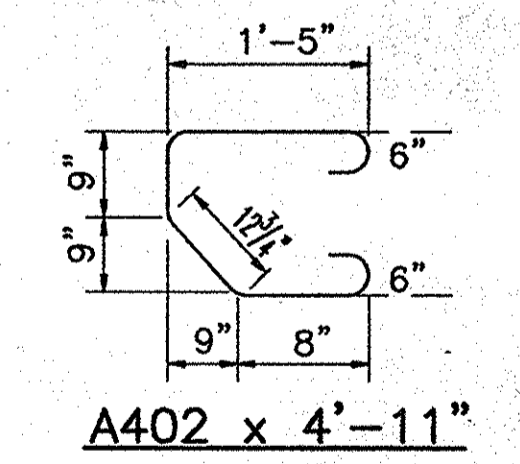
A501 x 10'-8"



A502 x 16'-0"

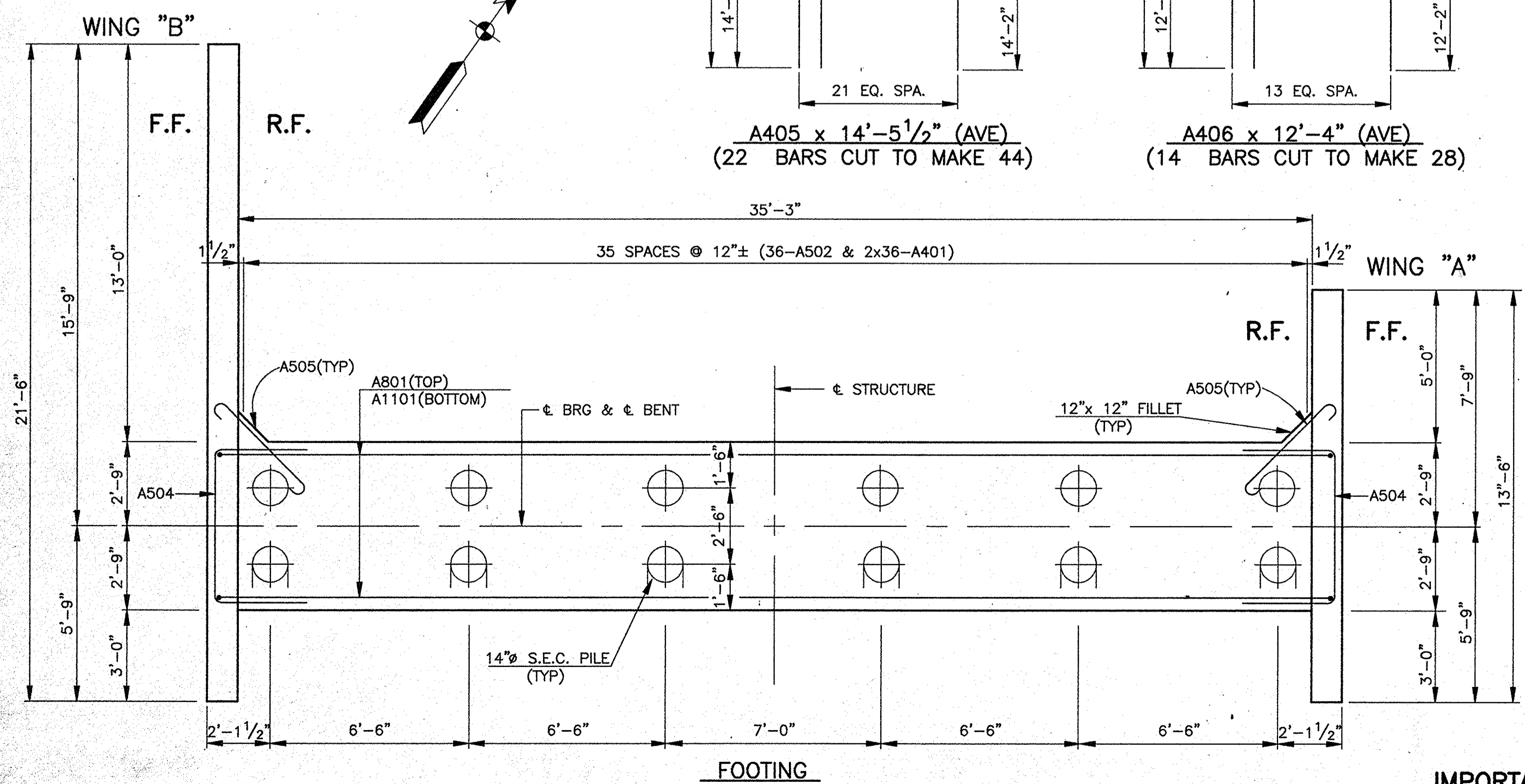


A504 x 11'-0"



A402 x 4'-11"

ALL REINFORCING STEEL IN BENT TO BE EPOXY COATED



FOOTING

NOTE:

- # - INDICATES CONCRETE IN MUDWALL ABOVE TYPE "A" CONSTRUCTION JOINT TO BE BILLED WITH SUPERSTRUCTURE.
- (X) - INDICATES CONCRETE POUR SEQUENCE.
- FOR REINFORCING BAR NOTES, SEE BR. STD. C1. SEE BR. STD C3 FOR CONSTR. JOINT TYPE "A".

F.F. - INDICATES FRONT FACE.
R.F. - INDICATES REAR FACE.
E.F. - INDICATES EACH FACE.

IMPORTANT - POUR MUDWALL AFTER STRESSING OF LONGITUDINAL POST-TENSIONING

BILL OF MATERIALS BENT NO. 1			
EPOXY COATED STEEL GRADE 60			
Size And Mark	No. Of Bars	Length (Feet)	Weight (Lbs.)
A1101	7	39'-10"	1481
TOTAL NO.11			1481
AB01	6	38'-6"	617
TOTAL NO.8			617
#7	31	21'-2"	1428
TOTAL NO.7			1428
#6	8	36'-8"	
#6	13	13'-2"	
TOTAL NO.6			698
#5	84	5'-6"	
#5	84	7'-7"	
A501	36	10'-8"	
A502	36	16'-0"	
A503	16	4'-0"	
A504	12	11'-0"	
A505	12	5'-2"	
A506	36	3'-5"	
TOTAL NO.5			2545
#4	24	34'-10"	
#4	15	21'-2"	
#4	13	13'-2"	
A401	72	6'-10"	
A402	36	4'-11"	
A403	44	4'-0"	
A404	16	5'-8"	
A405	44	14'-5 1/2"	
A406	28	12'-4"	
TOTAL NO.4			2168
TOTAL EPOXY COATED STEEL			8937
CONCRETE			
Class "A" Conc. in Substructure			
POUR No. 1			42.7 Cys.
Class "A" Conc. in Substructure			
POUR No. 2			20.2 Cys.
TOTAL			62.9 Cys.
Class "C" Concrete in Superstructure (4.1 Cys.)			#
MISCELLANEOUS			
Surface Seal (Estimated Quantity = 952 Sft.)			1 L.SUM
12-14" S.E.C. PILES			+065 LFT
*MODIFIED EPOXY COATED TIE BAR ASSEMBLIES			48 EACH

SUBSTRUCTURE DETAILS - BENT NO. 1
INDIANA DEPARTMENT OF TRANSPORTATION
LAKE COUNTY

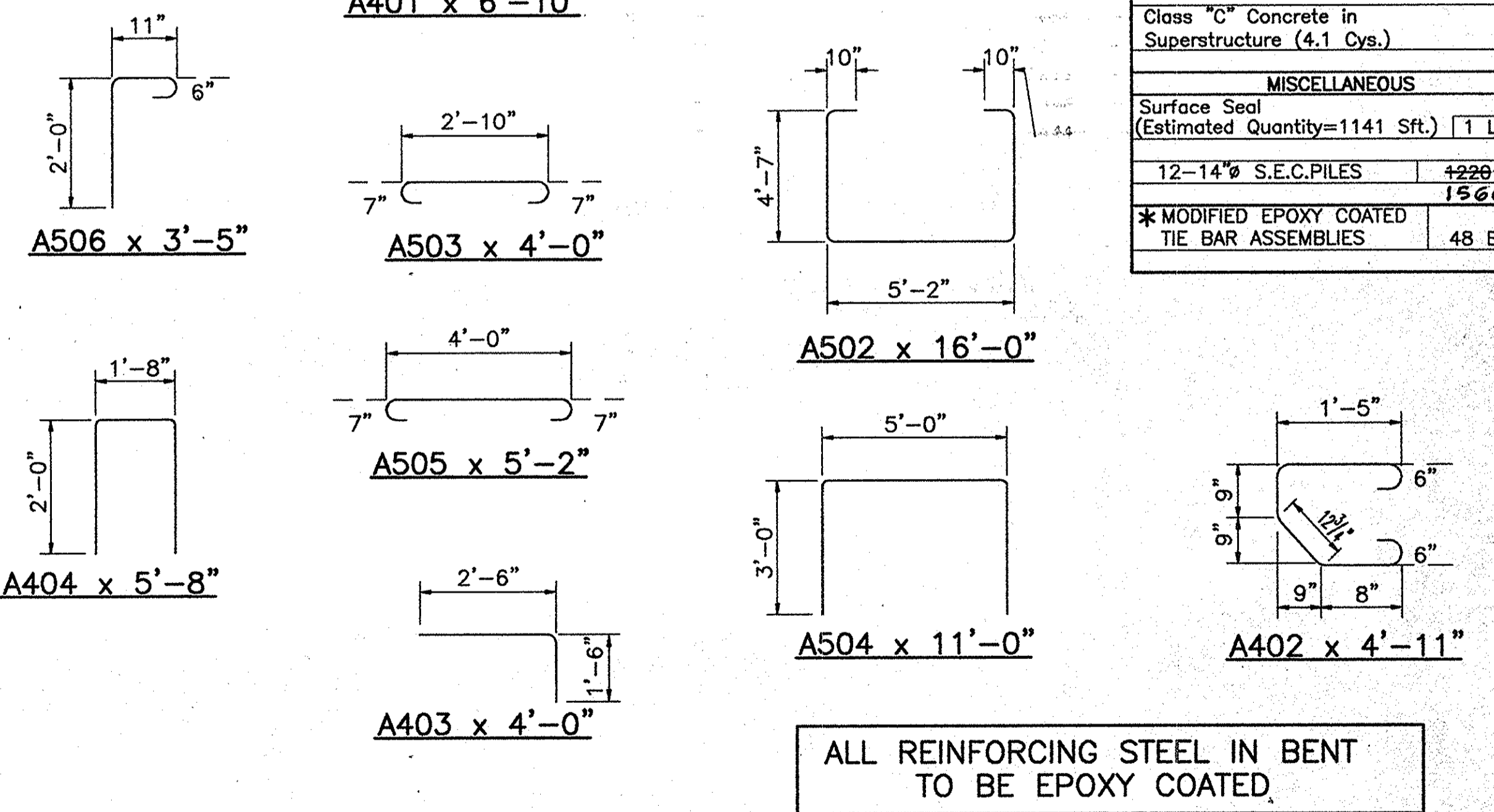
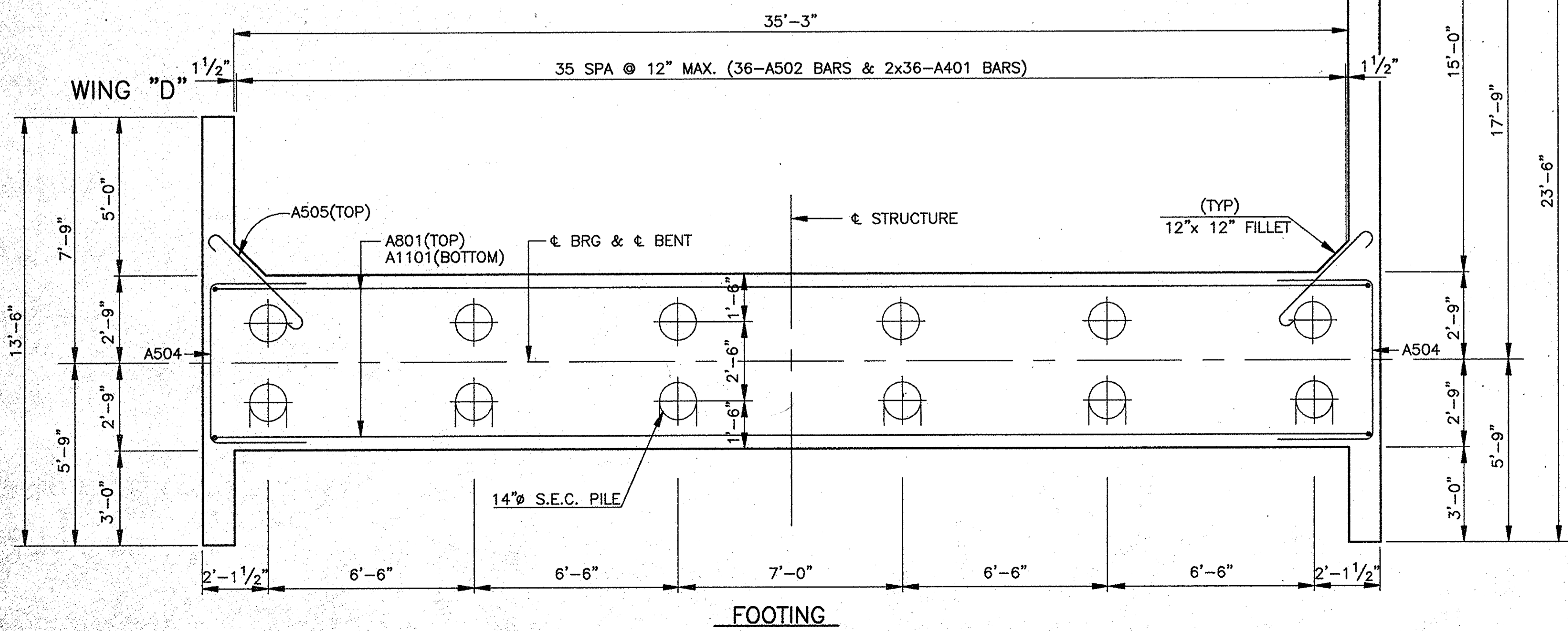
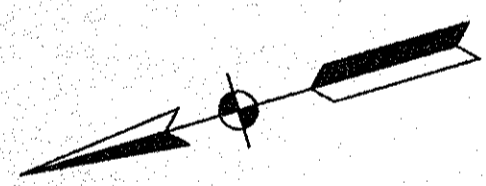
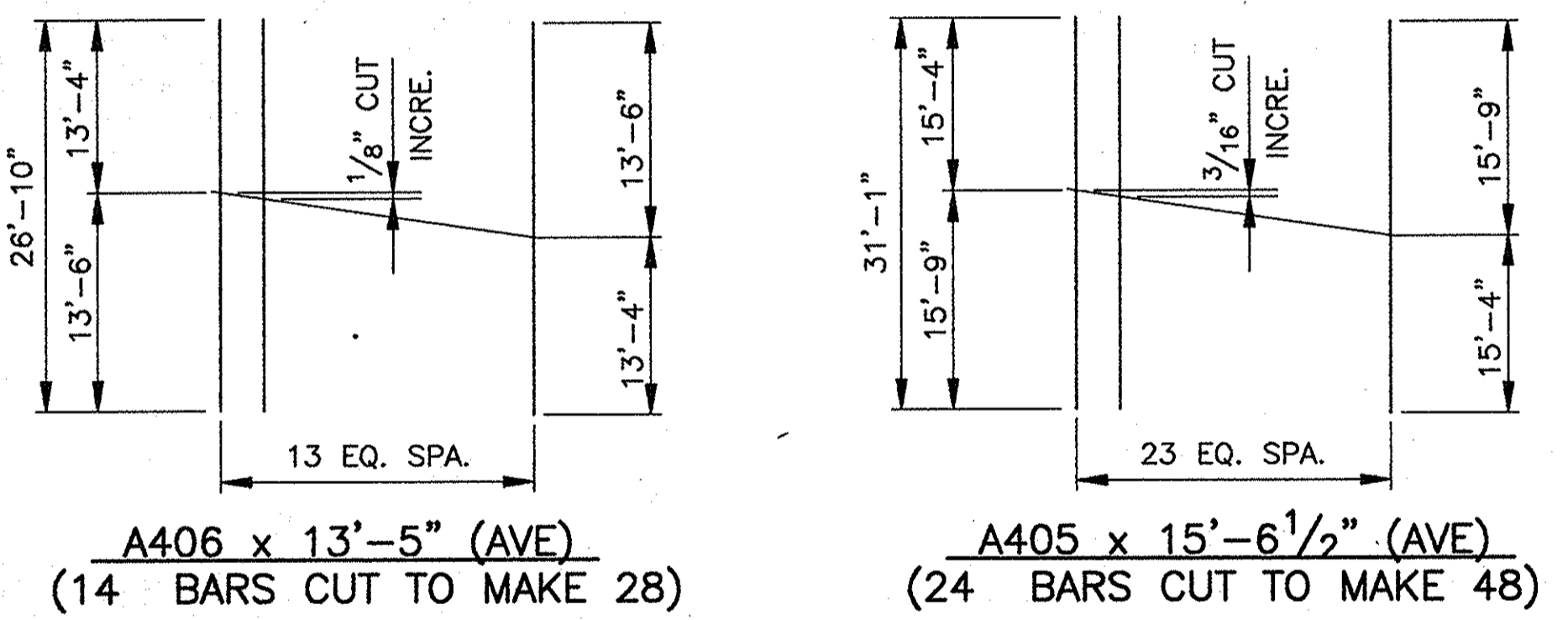
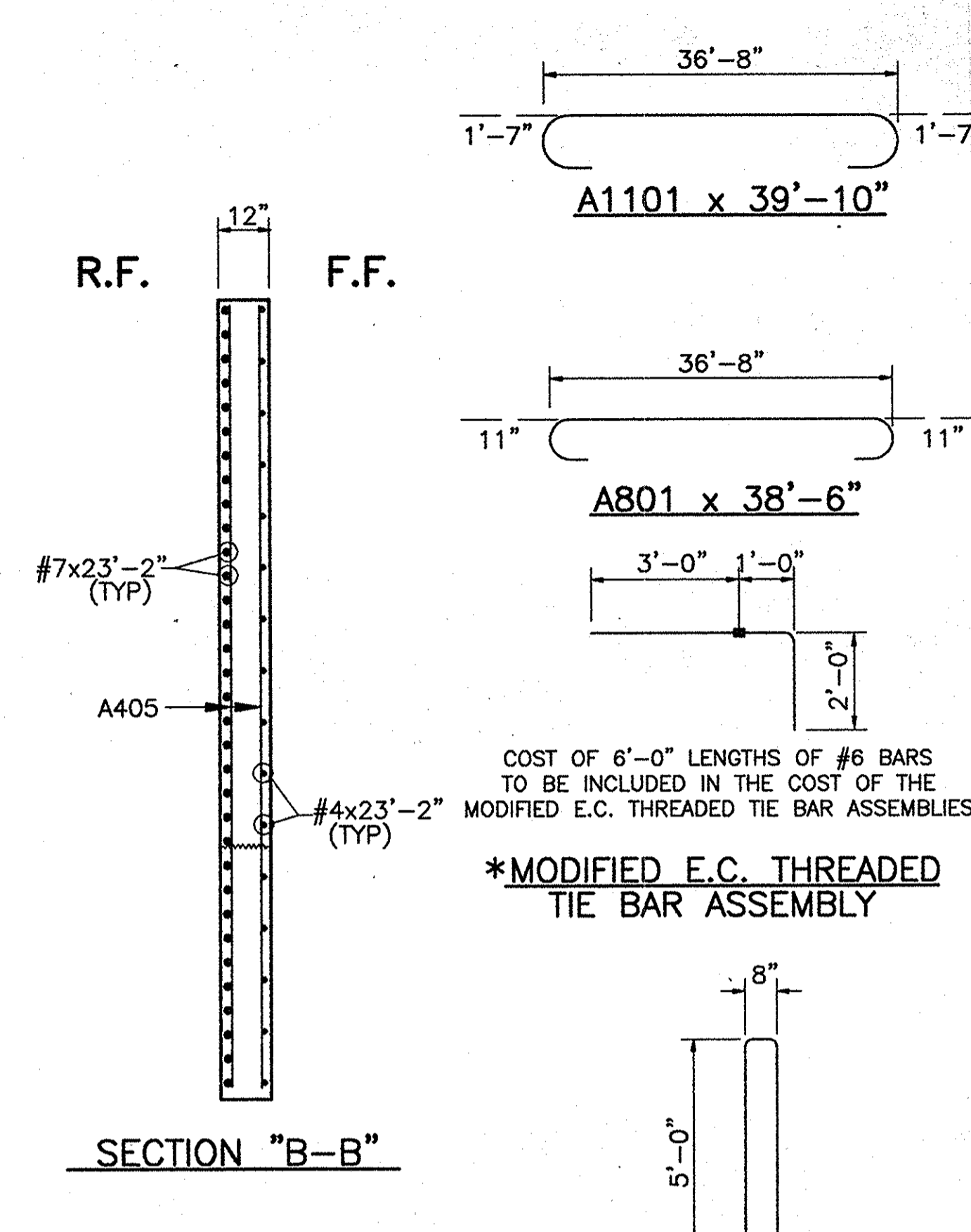
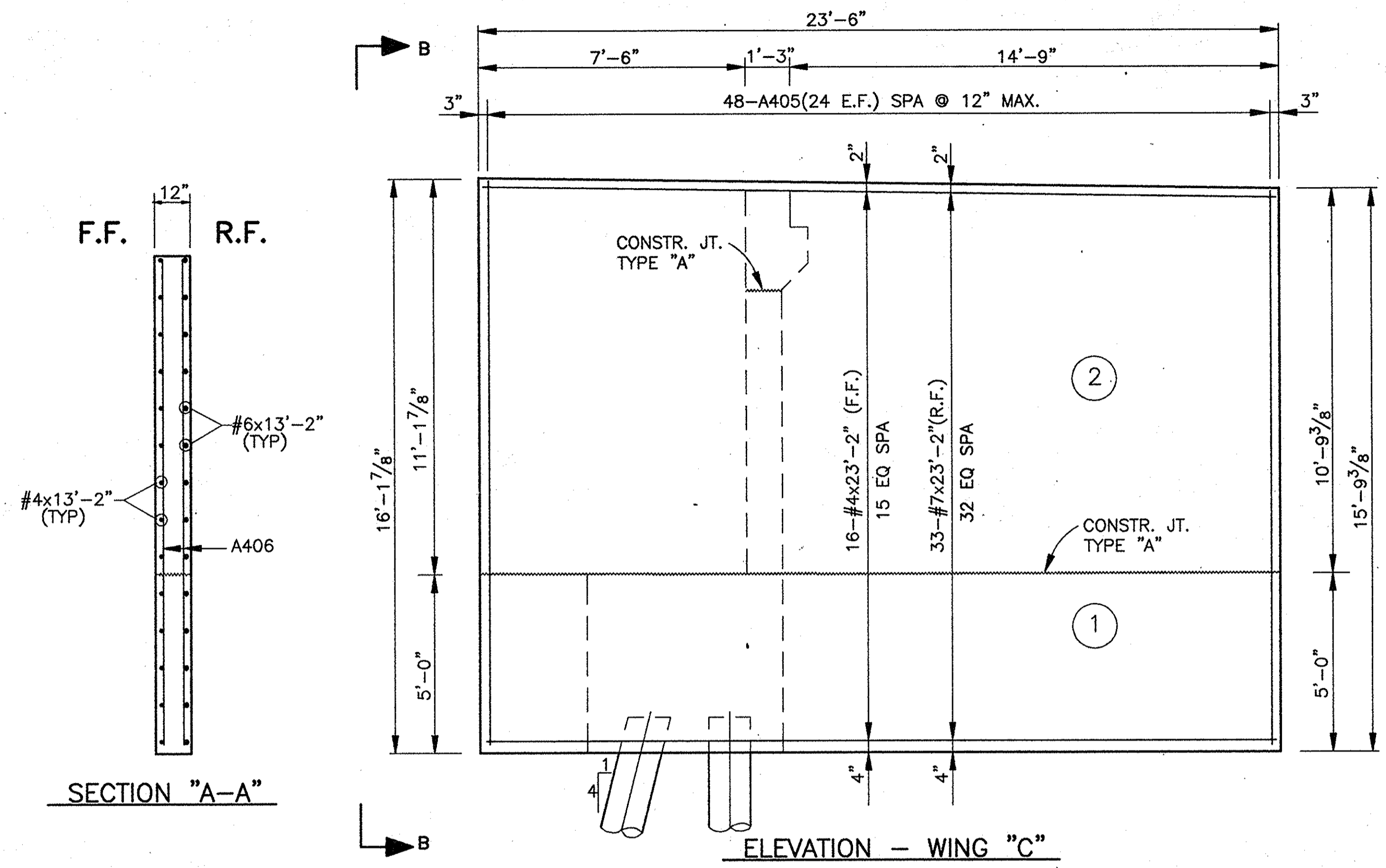
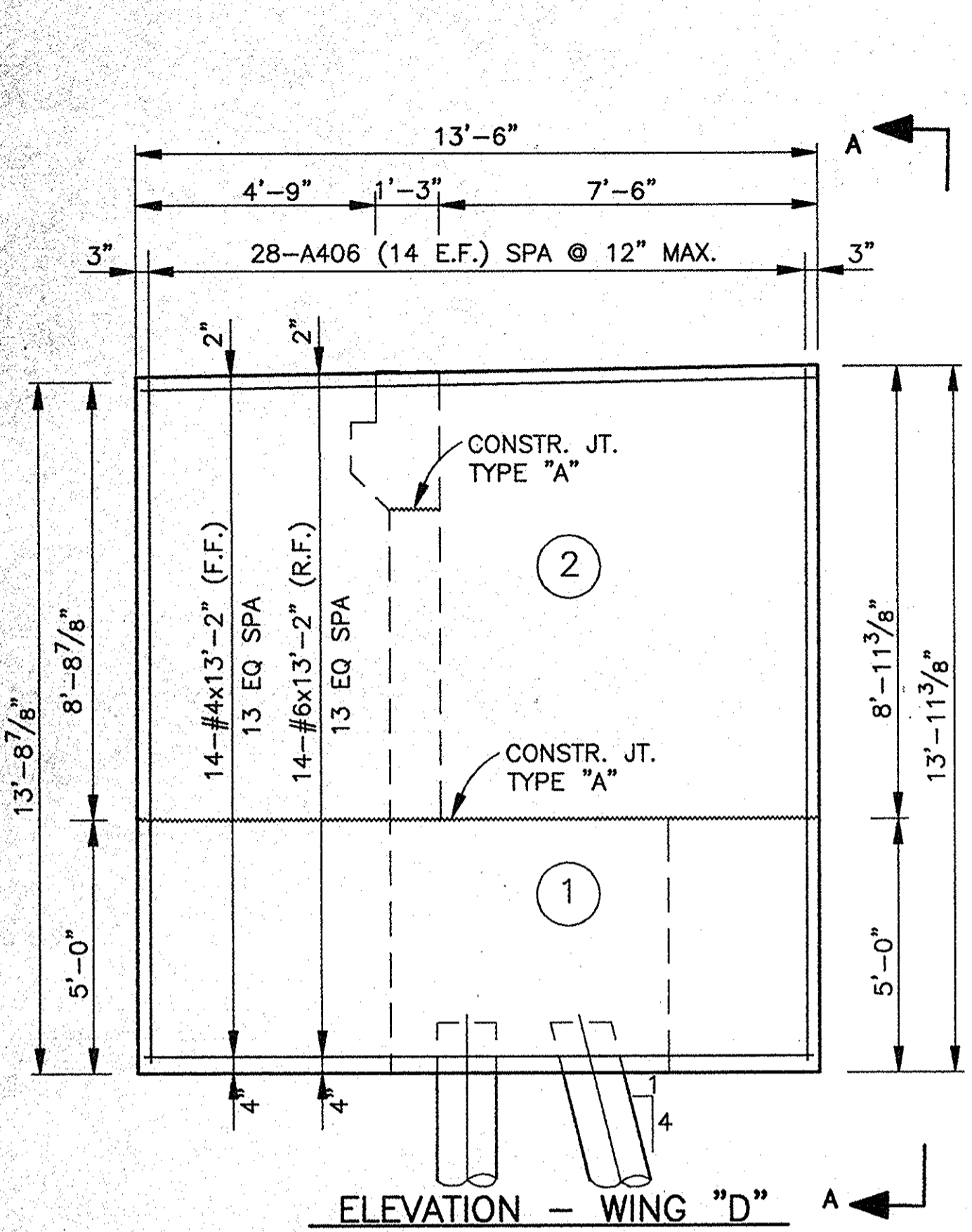
SCALE: 3/8"=1'-0", UNLESS NOTED DATE: July 10, 1998

SUBMITTED FOR APPROVAL

DRAWING: C8 OF C51 SHEET: 23 OF
PROJECT: -- NH-80-1 (4)
CONTRACT NO.
BRIDGE FILE: I-80-5-7823



DESIGNED: HHJ C.K.D. LS
DRAWN: TMD C.K.D. HHJ
TRACED: C.K.D.



ALL REINFORCING STEEL IN BENT TO BE EPOXY COATED.

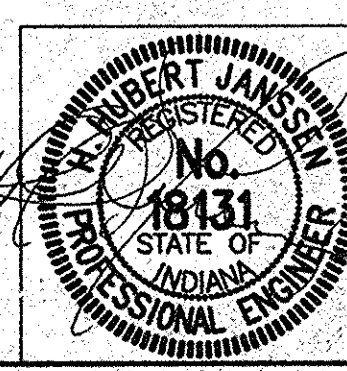
NOTES:
 # - INDICATES CONCRETE IN MUDWALL ABOVE TYPE "A" CONSTRUCTION JOINT TO BE BILLED WITH SUPERSTRUCTURE.
 (X) - INDICATES CONCRETE POUR SEQUENCE.
 FOR REINFORCING BAR NOTES, SEE BR. STD. C1. SEE BR. STD C3 FOR CONSTR. JOINT TYPE "A".
 F.F. - INDICATES FRONT FACE.
 R.F. - INDICATES REAR FACE.
 E.F. - INDICATES EACH FACE.

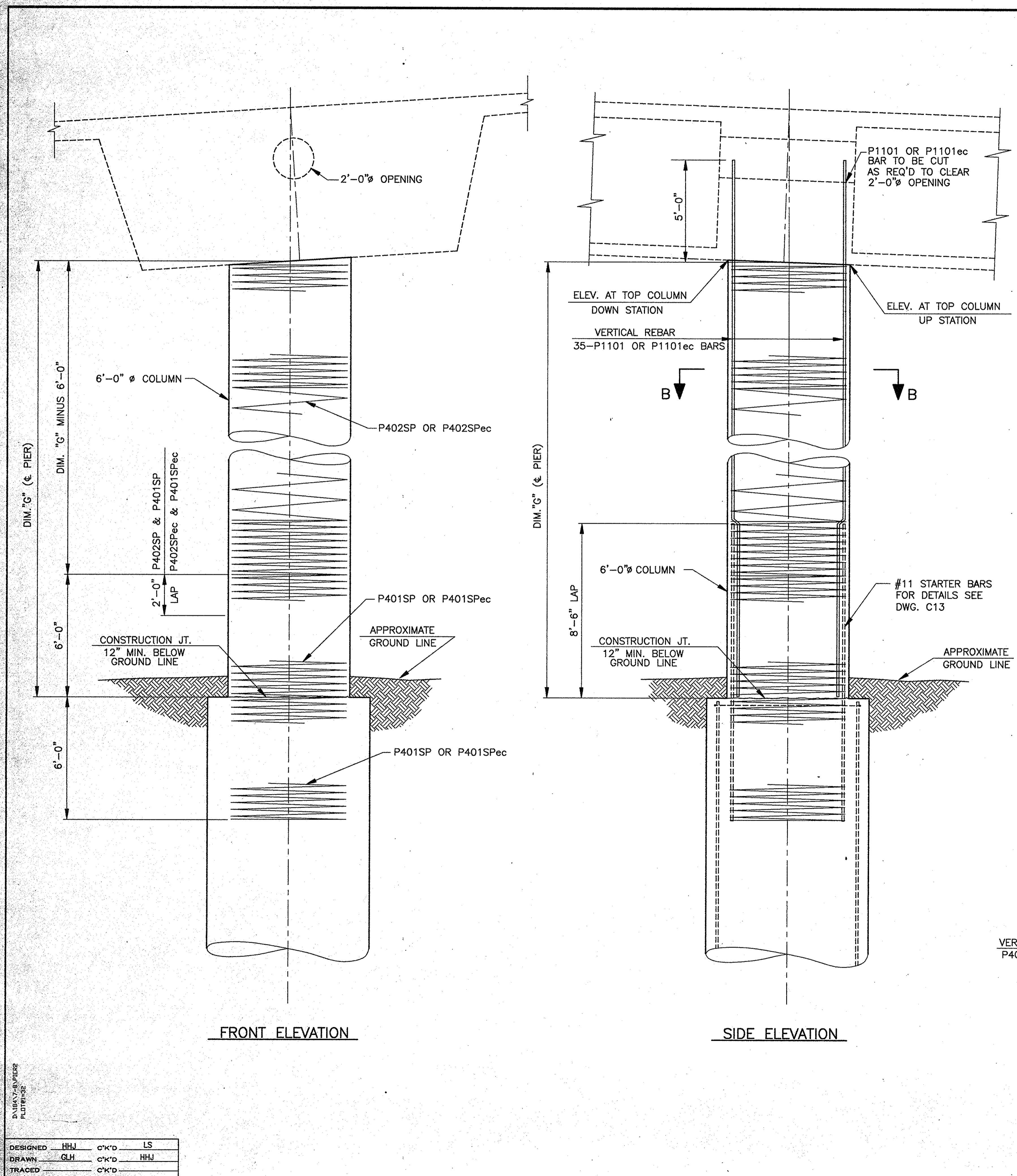
IMPORTANT POUR MUDWALL AFTER STRESSING OF LONGITUDINAL POST-TENSIONING.

BILL OF MATERIALS BENT NO. 10			
EPOXY COATED STEEL GRADE 60			
Size And Mark	No. Of Bars	Length (Feet)	Weight (Lbs.)
A1101	7	39'-10"	1481
TOTAL NO.11			1481
A801	6	38'-6"	617
TOTAL NO.8			617
#7	33	23'-2"	1563
TOTAL NO.7			1563
#6	8	36'-8"	718
#6	14	13'-2"	718
TOTAL NO.6			718
#5	84	5'-6"	2648
#5	84	8'-8"	2648
A501	36	10'-8"	2648
A502	36	16'-0"	2648
A503	18	4'-0"	2648
A504	12	11'-0"	2648
A505	12	5'-2"	2648
A506	36	3'-5"	2648
TOTAL NO.5			2648
#4	26	34'-10"	2361
#4	16	23'-2"	2361
#4	14	13'-2"	2361
A401	72	6'-10"	2361
A402	36	4'-11"	2361
A403	48	4'-0"	2361
A404	16	5'-8"	2361
A405	48	15'-6 1/2"	2361
A406	28	13'-5"	2361
TOTAL NO.4			2361
TOTAL EPOXY COATED STEEL			9388
CONCRETE			
Class "A" Conc. in Substructure POUR No. 1			43.0 Cys.
Class "C" Conc. in Substructure POUR No. 2			26.0 Cys.
TOTAL			69.0 Cys.
Class "C" Concrete in Superstructure (4.1 Cys.)			#
MISCELLANEOUS			
Surface Seal (Estimated Quantity=1141 Sft.)			1 L.Sum
12-14" S.E.C. PILES			4220 LFT.
* MODIFIED EPOXY COATED TIE BAR ASSEMBLIES			1560
			48 EACH

SUBSTRUCTURE DETAILS - BENT NO. 10
 INDIANA DEPARTMENT OF TRANSPORTATION
 LAKE COUNTY
 SCALE: 3/8"=1'-0", UNLESS NOTED DATE: July 10, 1998
 SUBMITTED FOR APPROVAL
 DRAWING: C10 OF C51 SHEET: 25 OF
 PROJECT: - NH-80-1 ()
 CONTRACT NO.
 BRIDGE FILE: I-80-5-7823

DESIGNED: HHJ C.K.D. LS
 DRAWN: TMD C.K.D. HHJ
 TRACED: C.K.D.





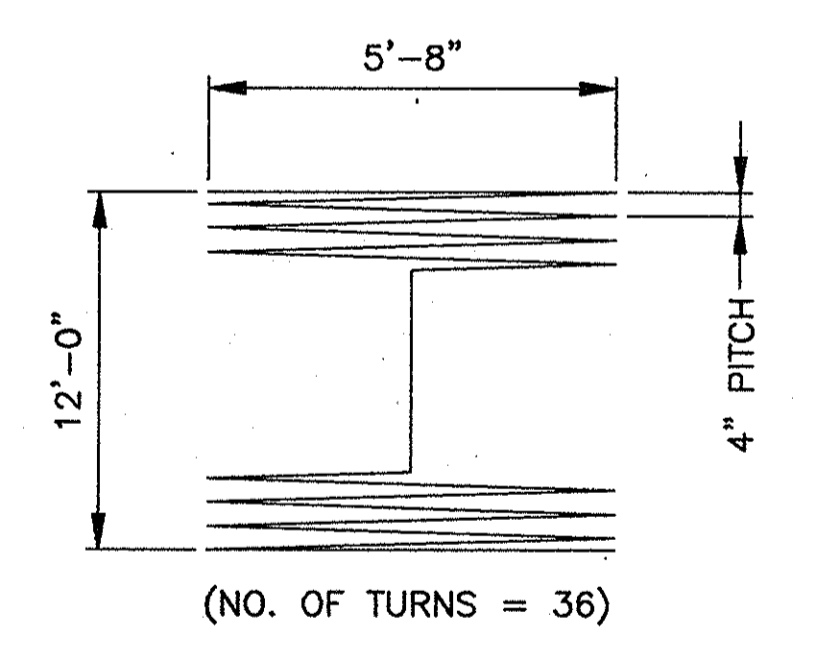
BILL OF MATERIALS

PIER NO.2				PIER NO.3				PIER NO.4				PIER NO.5			
REINFORCING STEEL GRADE 60				EPOXY COATED REINFORCING STEEL GRADE 60				EPOXY COATED REINFORCING STEEL GRADE 60				REINFORCING STEEL GRADE 60			
Size And Mark	No. Of Bars	Length (Feet)	Weight (Lbs.)	Size And Mark	No. Of Bars	Length (Feet)	Weight (Lbs.)	Size And Mark	No. Of Bars	Length (Feet)	Weight (Lbs.)	Size And Mark	No. Of Bars	Length (Feet)	Weight (Lbs.)
P1101	35	29'-6"	5486	P1101ec	35	29'-6"	5486	P1101ec	35	33'-8"	6260	P1101	35	44'-11"	8352
P401SP	1	660'-0"	441	P401SPec	1	660'-0"	441	P401SPec	1	660'-0"	441	P401SP	1	660'-0"	441
P402SP	1	716'-0"	478	P402SPec	1	716'-0"	478	P402SPec	1	790'-0"	528	P402SP	1	991'-0"	662
TOTAL REINFORCING STEEL				TOTAL E.C. REINFORCING STEEL				TOTAL E.C. REINFORCING STEEL				TOTAL REINFORCING STEEL			
6405				6405				7229				9455			
CONCRETE				CONCRETE				CONCRETE				CONCRETE			
Class "A" Conc. in Substructure 25.7 Cys.				Class "A" Conc. in Substructure 25.7 Cys.				Class "A" Conc. in Substructure 30.0 Cys.				Class "A" Conc. in Substructure 41.8 Cys.			

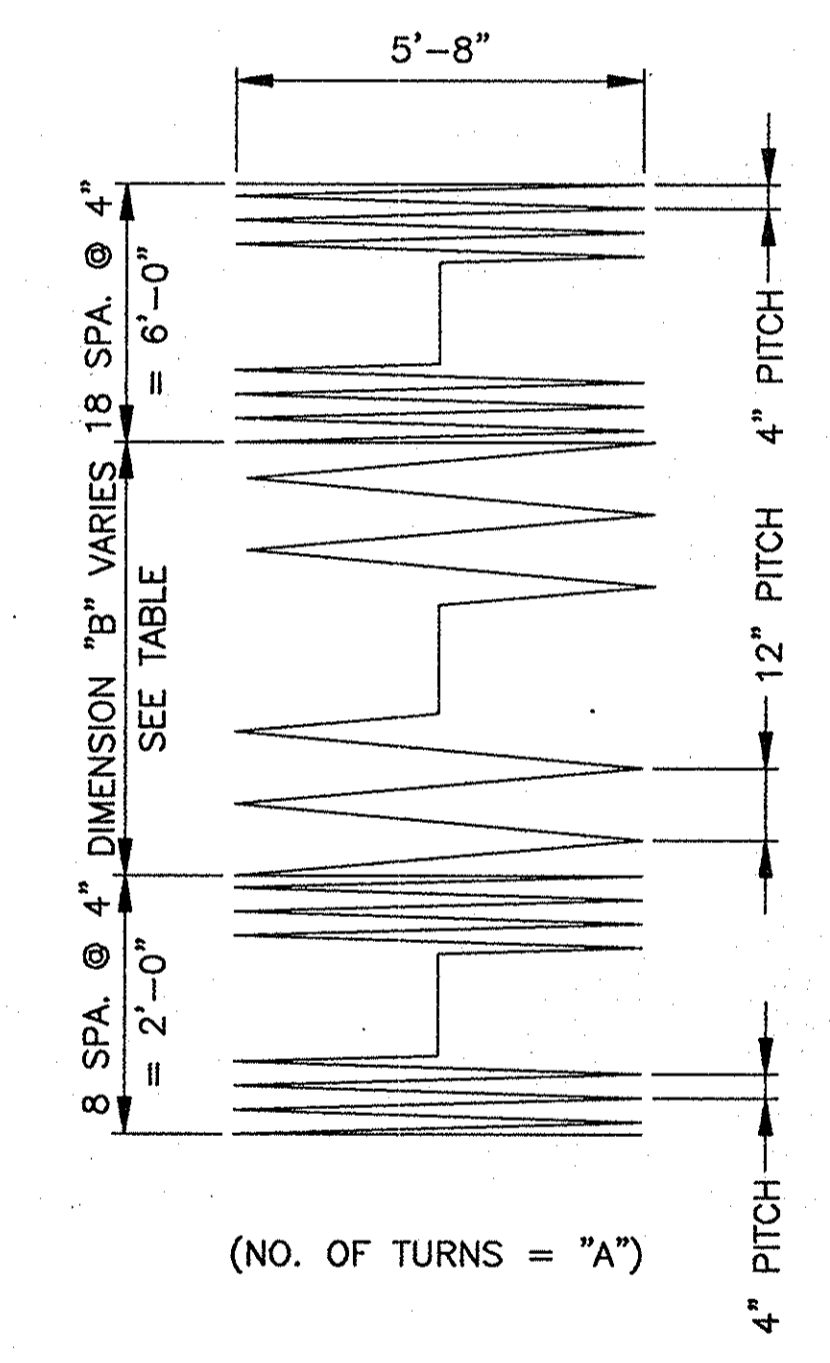
PIER NO.7				PIER NO.8				PIER NO.9			
EPOXY COATED REINFORCING STEEL GRADE 60				EPOXY COATED REINFORCING STEEL GRADE 60				REINFORCING STEEL GRADE 60			
Size And Mark	No. Of Bars	Length (Feet)	Weight (Lbs.)	Size And Mark	No. Of Bars	Length (Feet)	Weight (Lbs.)	Size And Mark	No. Of Bars	Length (Feet)	Weight (Lbs.)
P1101ec	35	24'-0"	4463	P1101ec	35	23'-8"	4401	P1101	35	31'-5"	5842
P401SPec	1	660'-0"	441	P401SPec	1	660'-0"	441	P401SP	1	660'-0"	441
P402SPec	1	606'-0"	405	P402SPec	1	606'-0"	405	P402SP	1	752'-0"	502
TOTAL E.C. REINFORCING STEEL				TOTAL E.C. REINFORCING STEEL				TOTAL REINFORCING STEEL			
5309				5247				6785			
CONCRETE				CONCRETE				CONCRETE			
Class "A" Conc. in Substructure 19.9 Cys.				Class "A" Conc. in Substructure 19.5 Cys.				Class "A" Conc. in Substructure 27.6 Cys.			

TABLE OF ELEVATIONS & DIMENSIONS (FT.)

PIER NO.	ELEV. AT TOP COLUMN DOWNSTA.	ELEV. AT TOP COLUMN UPSTATION	APPROX. DIMENSIONS "G"
2	619.42	619.58	24'-6"
3	623.46	623.63	24'-6"
4	626.56	626.72	28'-8"
5	630.82	630.98	39'-11"
7	635.96	636.01	19'-0"
8	636.63	636.63	18'-8"
9	635.45	635.37	26'-5"



TOTAL LENGTH OF BAR BASED ON MAXIMUM INDIVIDUAL BAR LENGTH OF 60'-0" WITH LAPS OF 2'-0".



P402SP x VARIES (SEE TABLE)
P402SPec x VARIES (SEE TABLE)

TOTAL LENGTH OF BAR BASED ON A 2'-0" LAP AT THE BOTTOM OF THE SPIRAL AND A MAXIMUM INDIVIDUAL BAR LENGTH OF 60'-0". INTERMEDIATE LAPS ARE TO BE 2'-0".

P402SP & P402SPec SPIRAL TABLE

PIER NO.	"A" (TURNS)	"B"	TOTAL LENGTH
2	39	12'-6"	716'-0"
3	39	12'-6"	716'-0"
4	43	16'-8"	790'-0"
5	54	27'-11"	991'-0"
7	33	7'-0"	606'-0"
8	33	6'-8"	606'-0"
9	41	14'-5"	752'-0"

- NOTE:
- FOR DRILLED SHAFT DETAILS SEE DWG. C13
 - TOP OF SHAFT ELEVATIONS FOR PIERS NO. 2 & NO. 9 MUST BE BELOW THE M.S.E. WALL LEVELLING PAD.

SUBSTRUCTURE DETAILS
PIERS 2, 3, 4, 5, 7, 8 & 9
INDIANA DEPARTMENT OF TRANSPORTATION
LAKE COUNTY

SCALE: 3/8"=1'-0" DATE: July 10, 1998

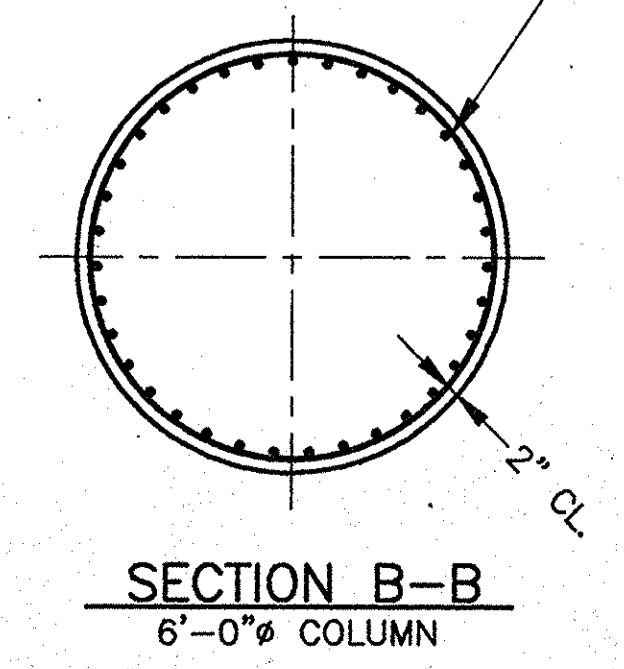
SUBMITTED FOR APPROVAL

DRAWING: C11 OF C51 SHEET: 26 OF 73

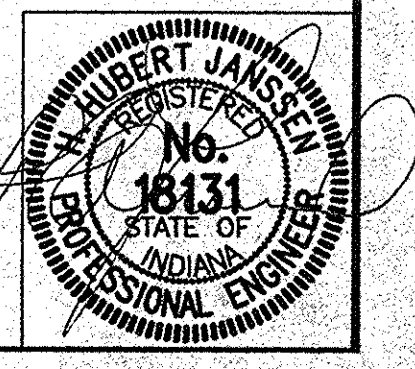
PROJECT: - NH-80-1 () 4

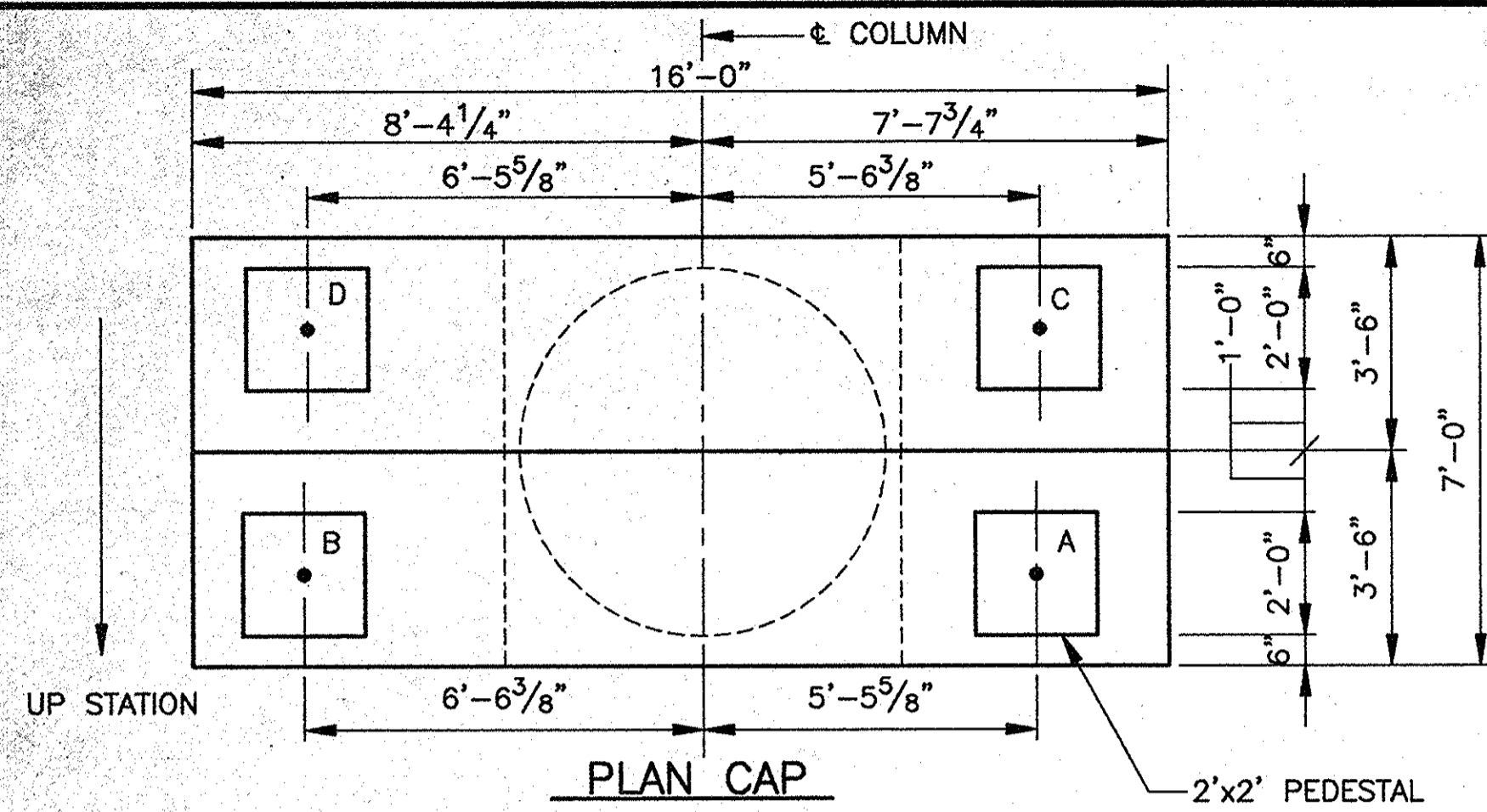
CONTRACT NO.

BRIDGE FILE: I-80-5-7823

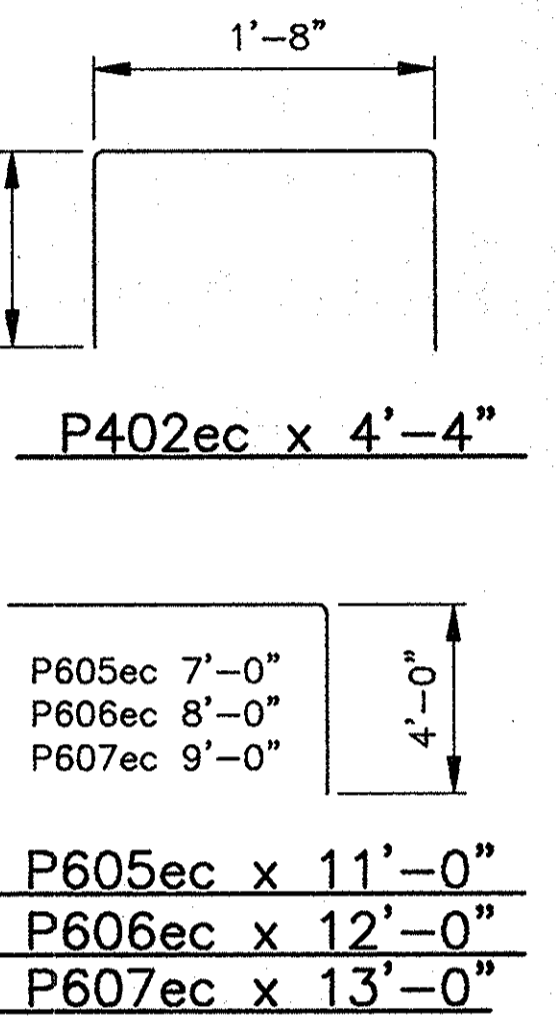
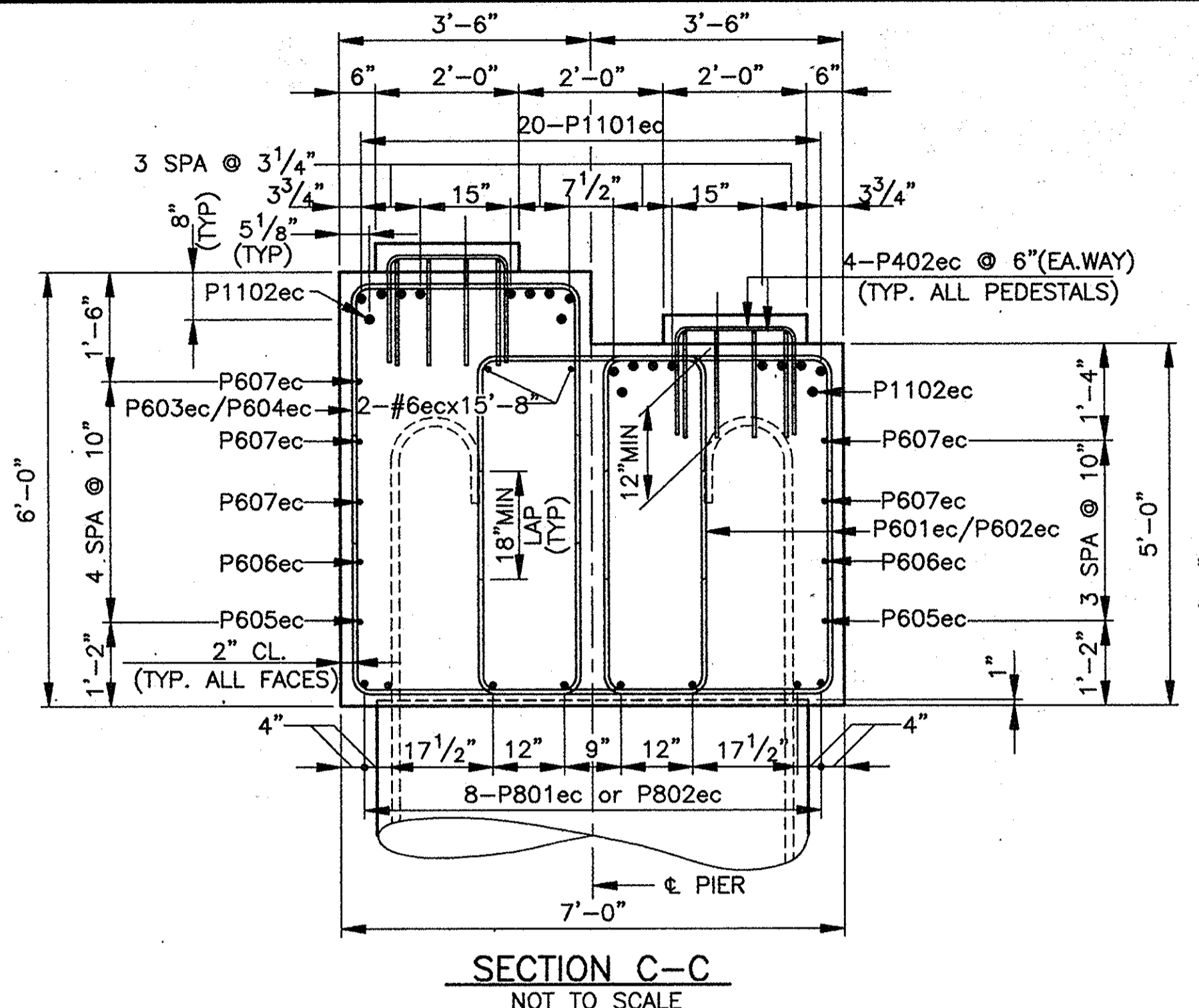
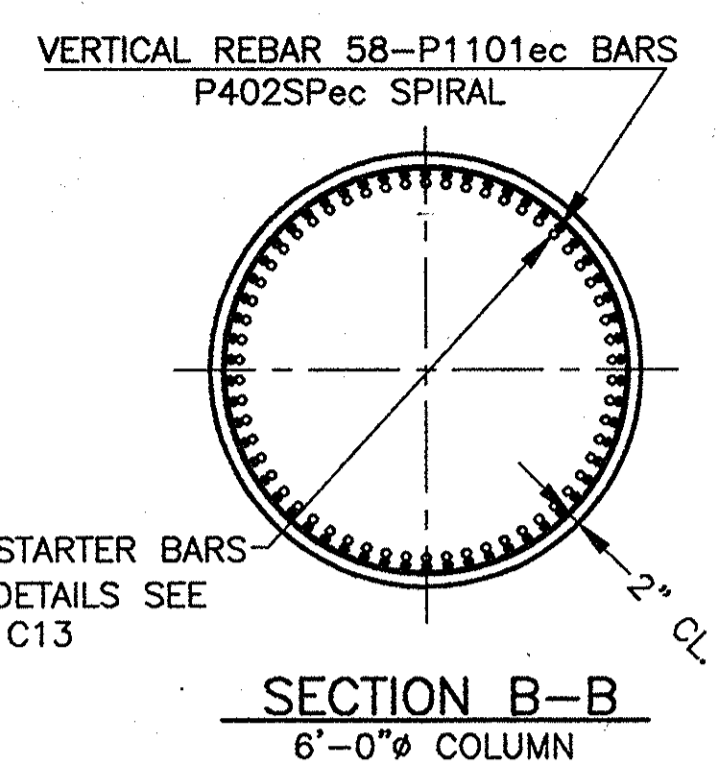


DESIGNED	HHJ	C'K'D	LS
DRAWN	GLH	C'K'D	HHJ
TRACED		C'K'D	

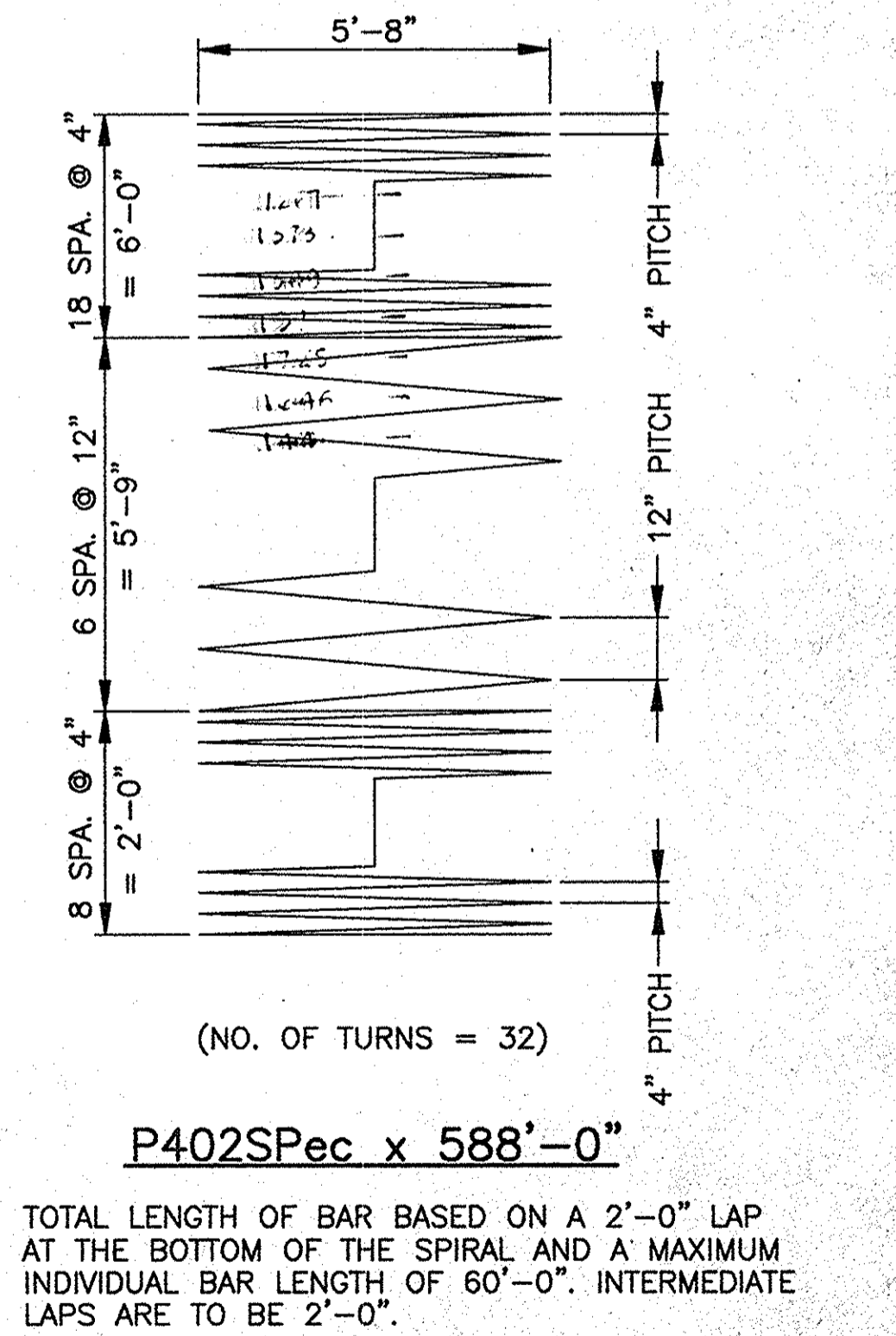
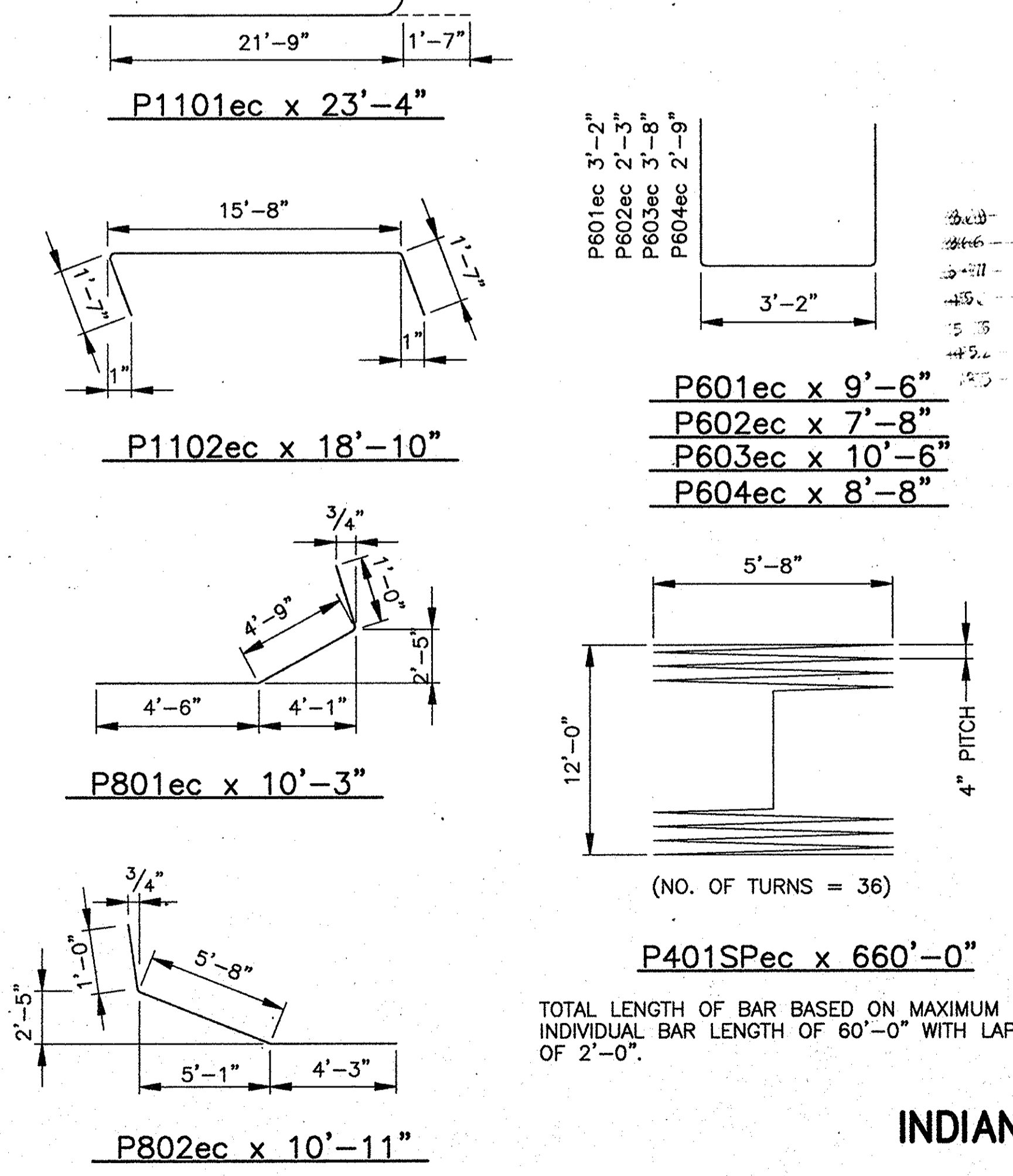
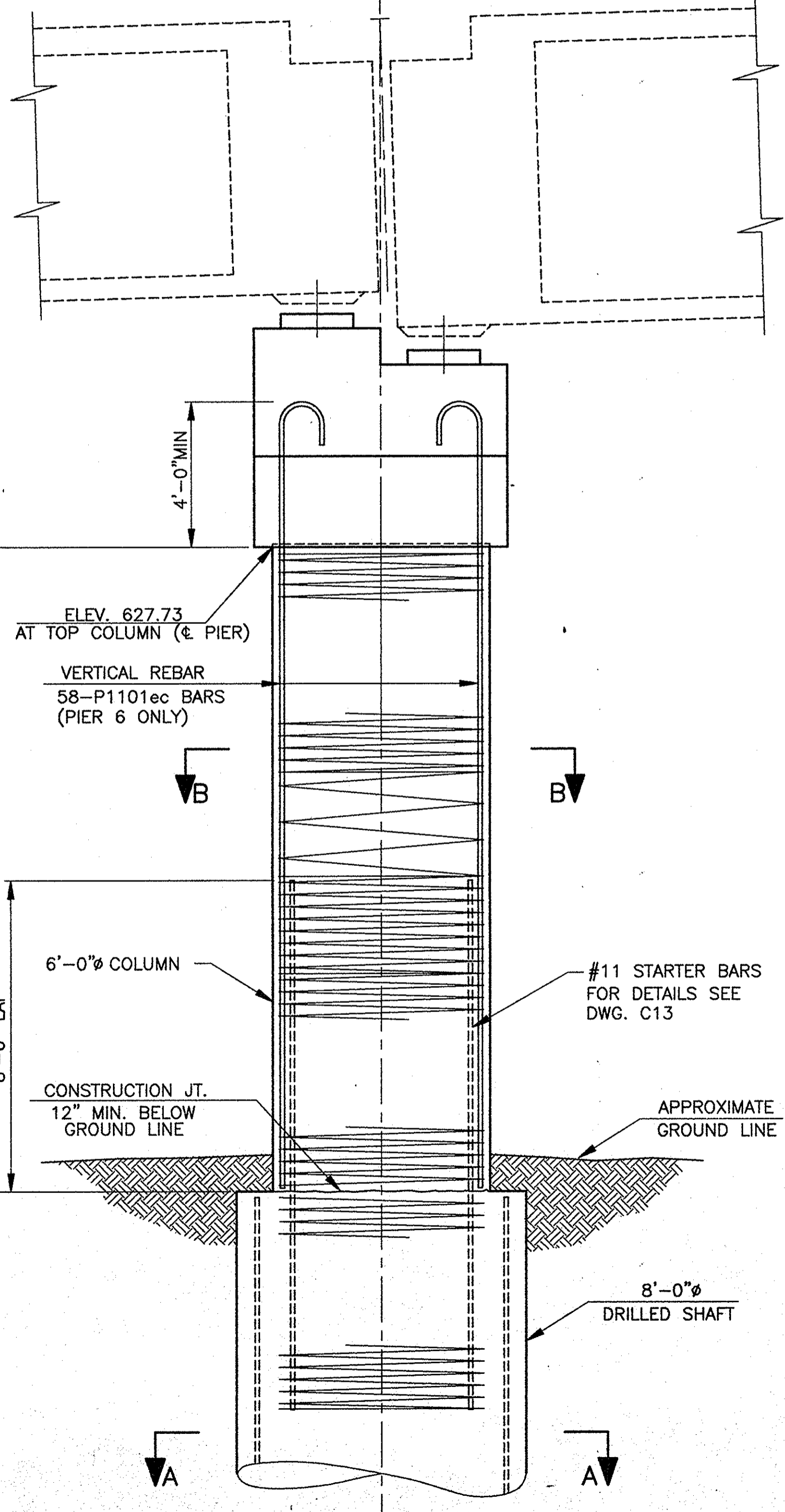
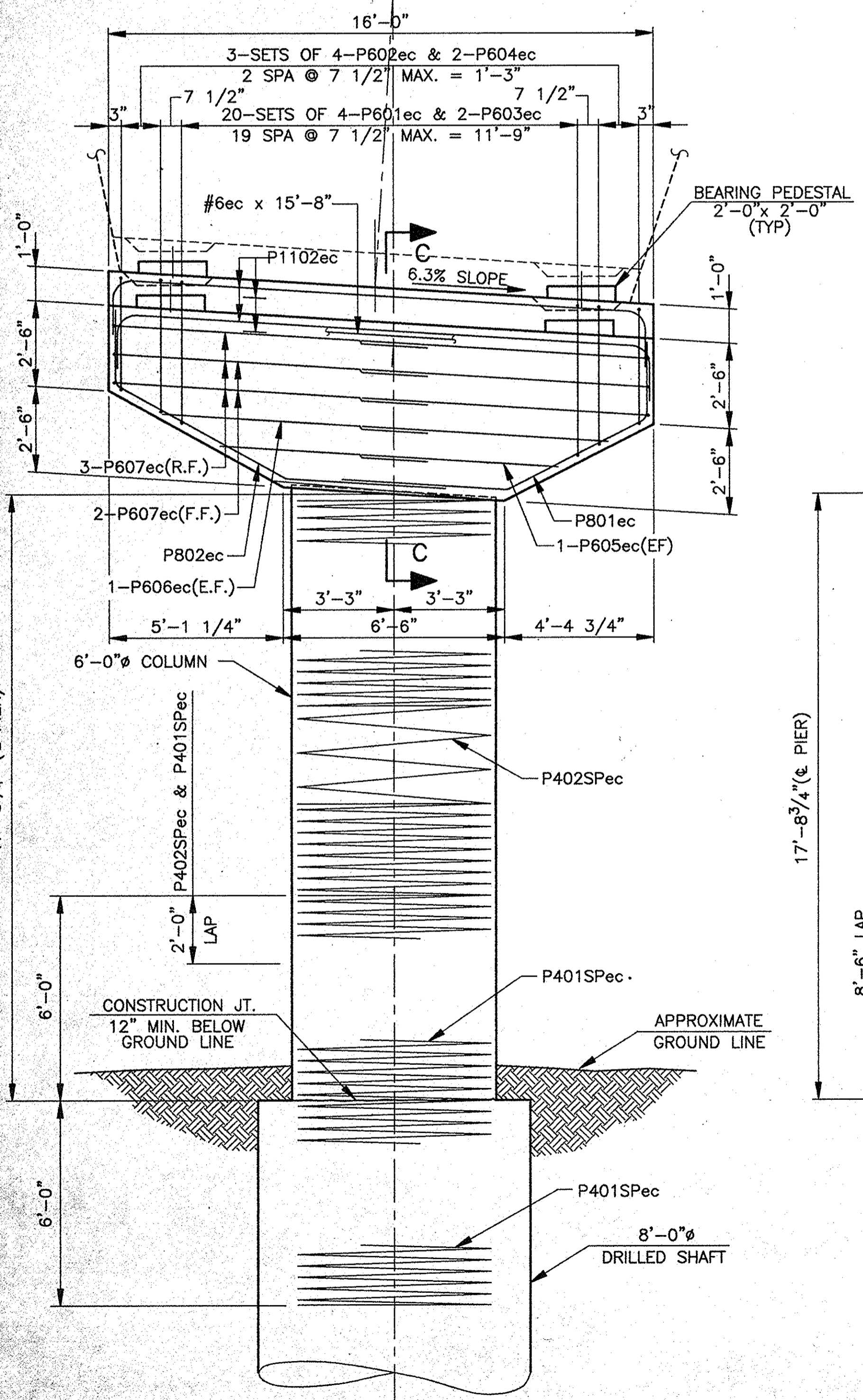




TOP OF PEDESTAL ELEVATIONS	
A	632.760
B	633.510
C	633.680
D	634.430



BILL OF MATERIALS PIER NO.6			
EPOXY COATED REINF. STEEL GRADE 60			
Size And Mark	No. Of Bars	Length (Feet)	Weight (Lbs.)
P1101ec	58	23'-4"	
P1102ec	20	18'-10"	
TOTAL # 11			9191
P801ec	8	10'-3"	
P802ec	8	10'-11"	
TOTAL # 8			452
#6	2	15'-8"	
P601ec	80	9'-6"	
P602ec	24	7'-8"	
P603ec	40	10'-6"	
P604ec	12	8'-8"	
P605ec	4	11'-0"	
P606ec	4	12'-0"	
P607ec	10	13'-0"	
TOTAL # 6			2586
P402ec	32	4'-4"	
P401SPec	1	660'-0"	
P402SPec	1	588'-0"	
TOTAL # 4			926
TOTAL E.C. REINF. STEEL			13,155
CONCRETE			
Class "A" Conc. in Substructure			
COLUMN			18.6 Cys
CAP			19.9 Cys
TOTAL CLASS "A"			38.5 Cys
MISCELLANEOUS			
SURFACE SEAL			
(ESTIMATED QUANTITY=112SFT) 1 LSM			



- NOTE:
- FOR DRILLED SHAFT DETAILS SEE DWG. C13
 - F.F.- INDICATES FRONT FACE
R.F.- INDICATES REAR FACE
E.F.- INDICATES EACH FACE

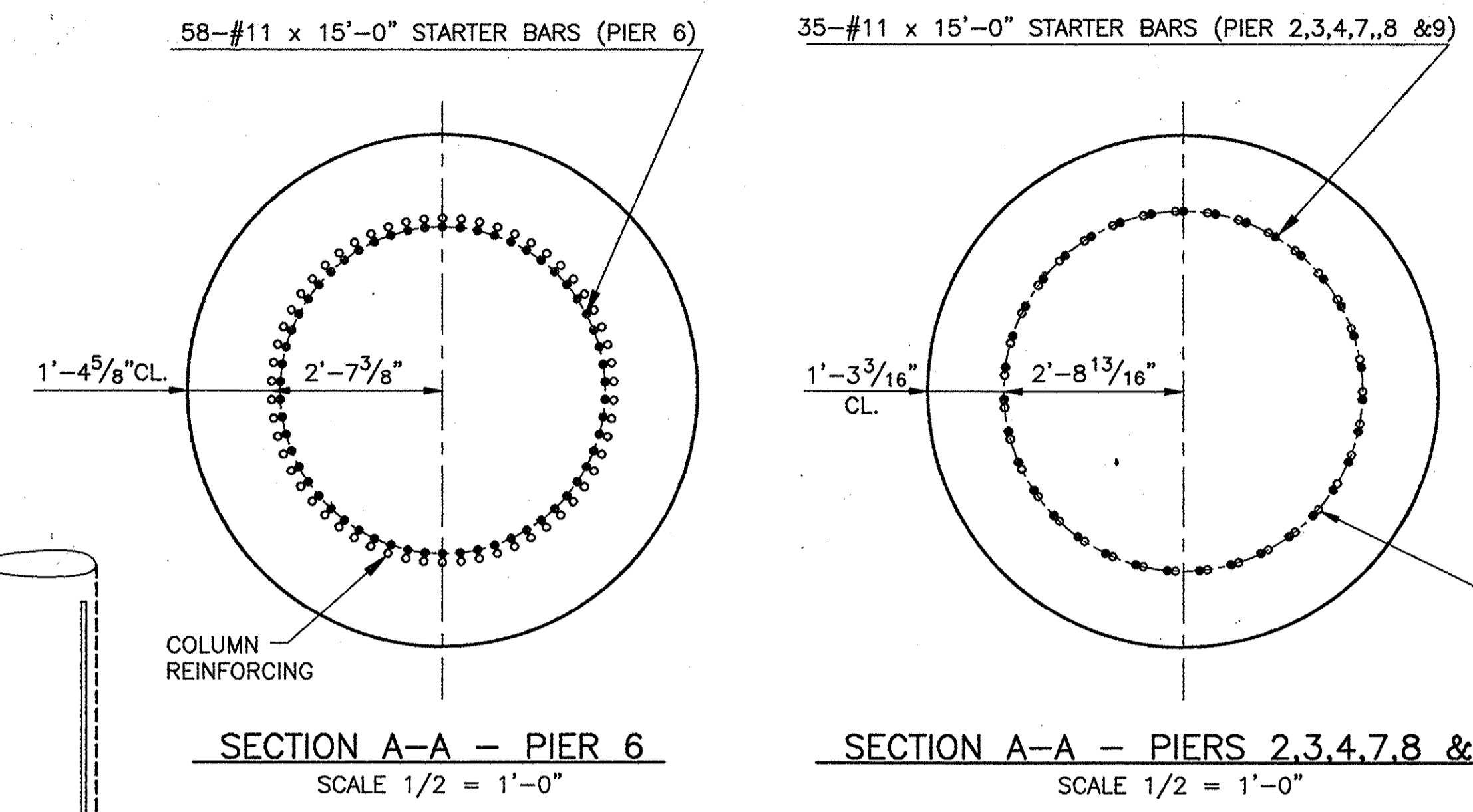
SUBSTRUCTURE DETAILS
PIER 6
INDIANA DEPARTMENT OF TRANSPORTATION
LAKE COUNTY

SCALE: 3/8"=1'-0", UNLESS NOTED DATE: July 10, 1998

SUBMITTED FOR APPROVAL

DRAWING: C12 OF C51 SHEET: 27 OF 73
PROJECT: - NH-80-1 () 4
CONTRACT NO.
BRIDGE FILE: - I-80-5-7823

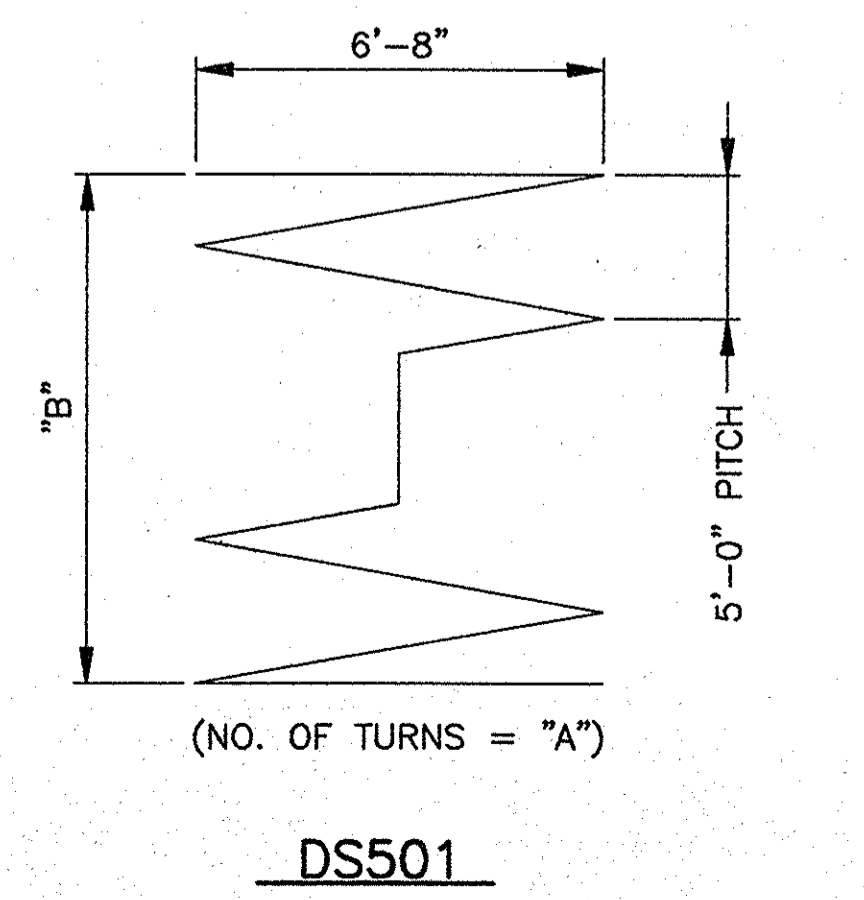
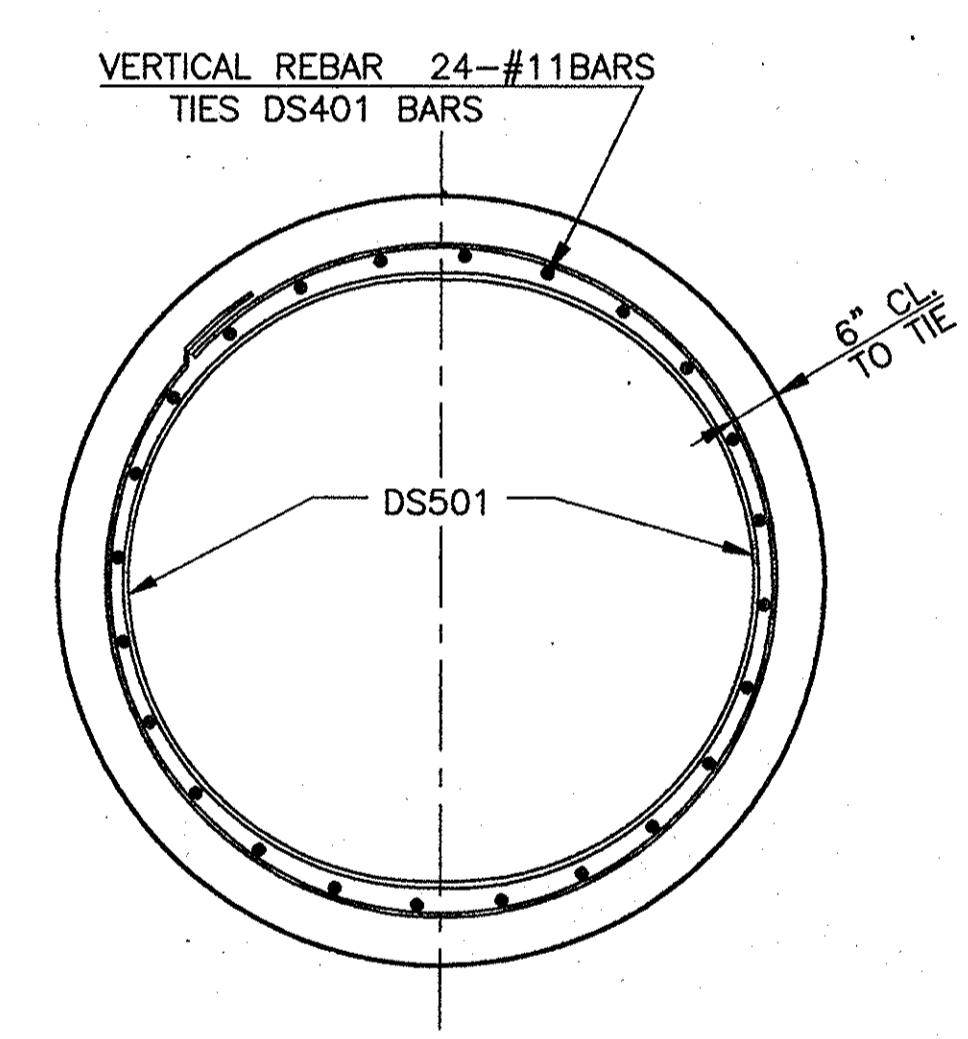
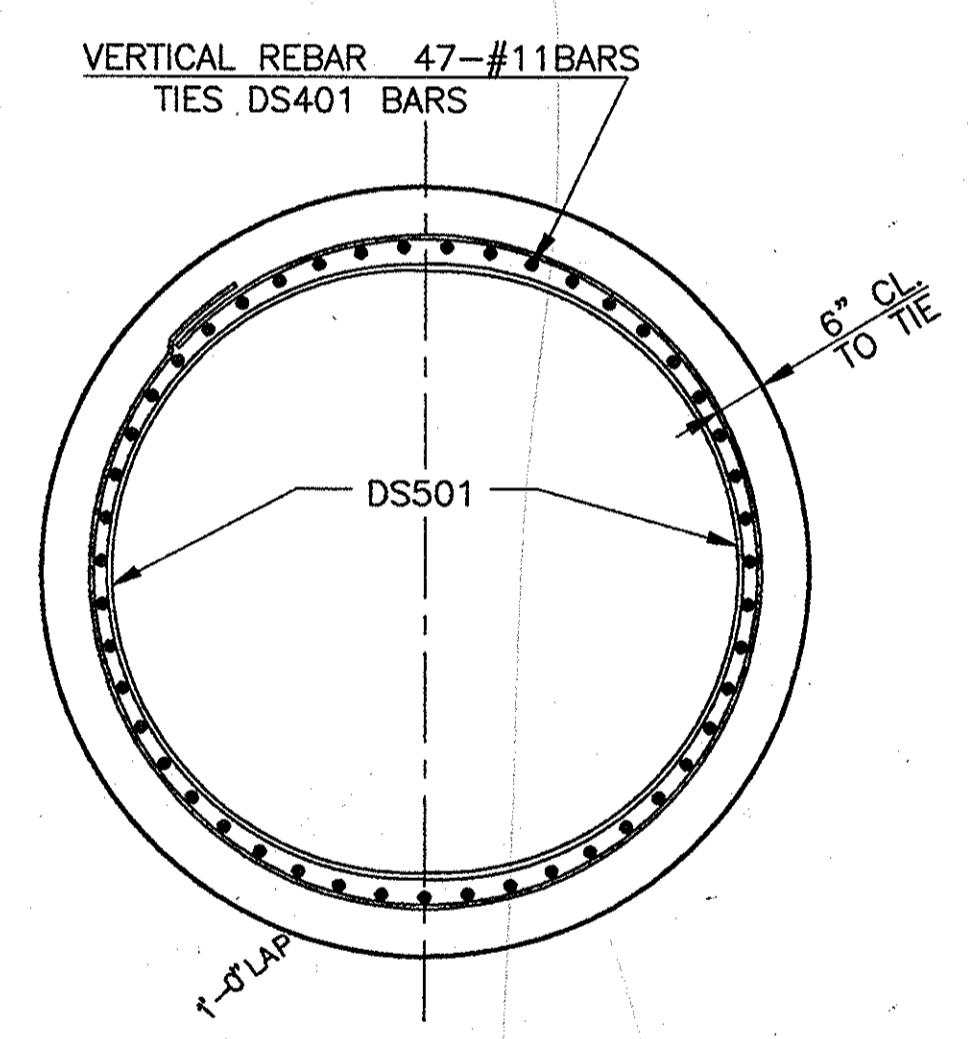
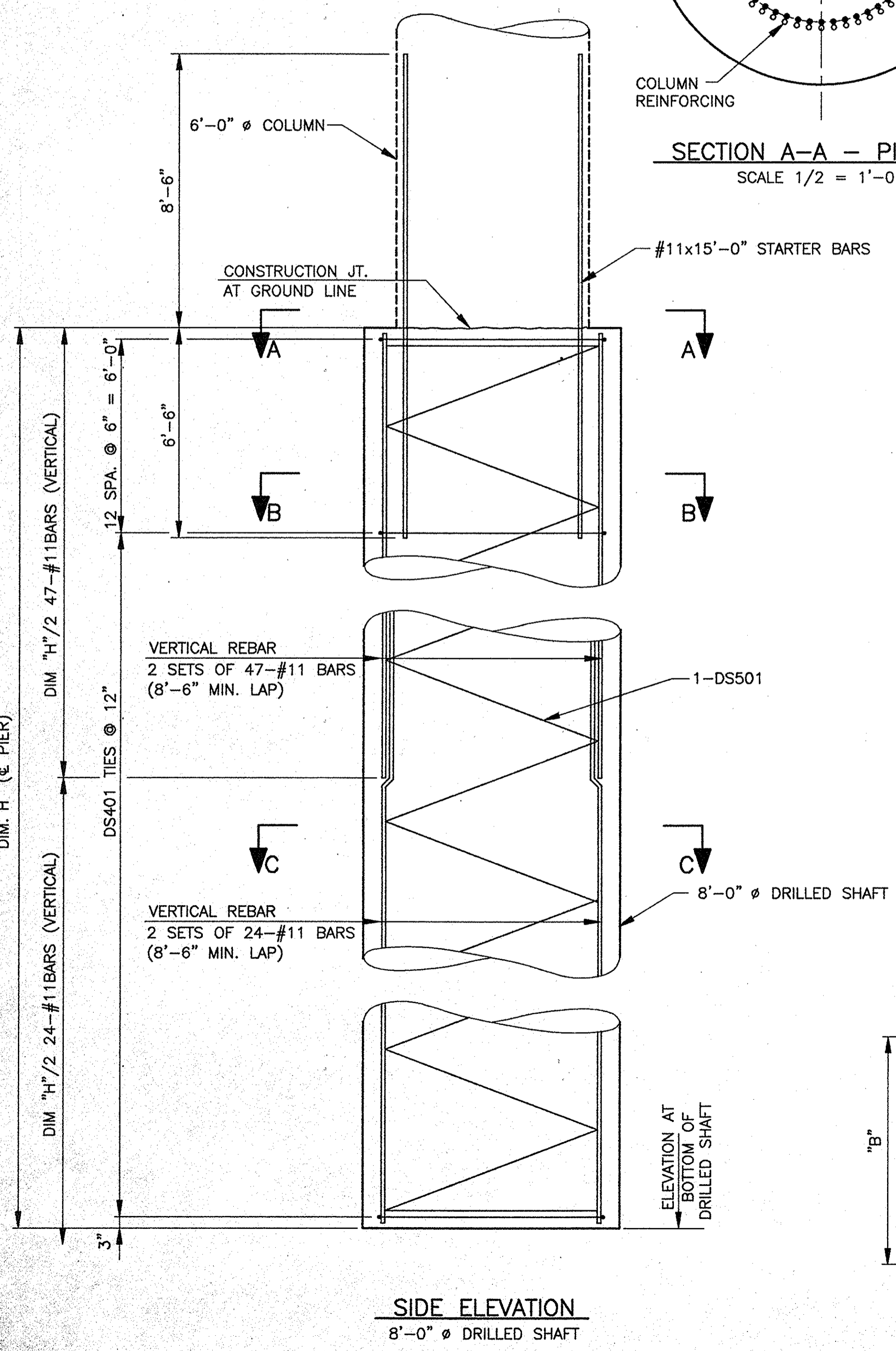
DESIGNED: HHJ C'K'D LS
DRAWN: GLH C'K'D HHJ
TRACED: C'K'D



BILL OF MATERIALS

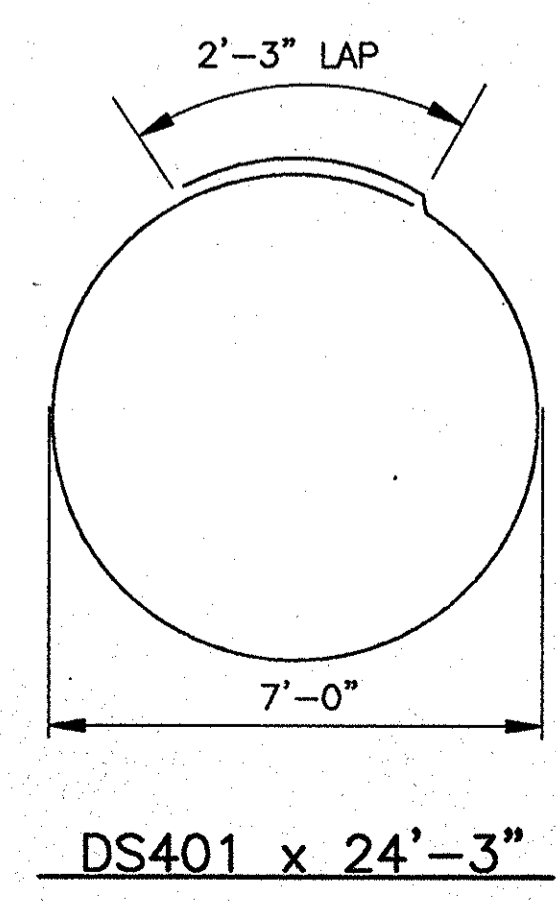
PIER NO.2				PIER NO.3				PIER NO.4				PIER NO.6							
REINFORCING STEEL GRADE 60				REINFORCING STEEL GRADE 60				REINFORCING STEEL GRADE 60				REINFORCING STEEL GRADE 60							
Size And Mark	No. Of Bars	Length (Feet)	Weight (Lbs.)	Size And Mark	No. Of Bars	Length (Feet)	Weight (Lbs.)	Size And Mark	No. Of Bars	Length (Feet)	Weight (Lbs.)	Size And Mark	No. Of Bars	Length (Feet)	Weight (Lbs.)				
#11	48	33'-0"		#11	48	33'-0"		#11	48	31'-6"		#11	48	38'-9"					
#11	94	28'-9"		#11	94	28'-9"		#11	94	27'-3"		#11	94	34'-6"					
#11	35	15'-0"		#11	35	15'-0"		#11	35	15'-0"		#11	58	15'-0"					
TOTAL #11			25,564	TOTAL #11			25,564	TOTAL #11			24,432	TOTAL #11			31,735				
DS501	1	431'-0"	450	DS501	1	431'-0"	450	DS501	1	410'-0"	428	DS501	1	540'-0"	563				
DS401	105	24'-3"	1701	DS401	104	24'-3"	1685	DS401	99	24'-3"	1604	DS401	128	24'-3"	2073				
TOTAL REINFORCING STEEL			27,715	TOTAL REINFORCING STEEL			27,699	TOTAL REINFORCING STEEL			26,464	TOTAL REINFORCING STEEL			34,371				
CONCRETE				CONCRETE				CONCRETE				CONCRETE							
Class "B" Conc. in Substructure				182.4 Cys	Class "B" Conc. in Substructure				180.6 Cys	Class "B" Conc. in Substructure				171.3 Cys	Class "B" Conc. in Substructure				225.3 Cys

PIER NO.7				PIER NO.8				PIER NO.9							
REINFORCING STEEL GRADE 60				REINFORCING STEEL GRADE 60				REINFORCING STEEL GRADE 60							
Size And Mark	No. Of Bars	Length (Feet)	Weight (Lbs.)	Size And Mark	No. Of Bars	Length (Feet)	Weight (Lbs.)	Size And Mark	No. Of Bars	Length (Feet)	Weight (Lbs.)	Size And Mark	No. Of Bars	Length (Feet)	Weight (Lbs.)
#11	48	42'-0"		#11	48	38'-6"		#11	48	34'-0"		#11	48	34'-0"	
#11	94	37'-9"		#11	94	34'-3"		#11	94	29'-9"		#11	94	29'-9"	
#11	35	15'-0"		#11	35	15'-0"		#11	35	15'-0"		#11	35	15'-0"	
TOTAL #11			32,354	TOTAL #11			29,713	TOTAL #11			26,318	TOTAL #11			26,318
DS501	1	584'-0"	609	DS501	1	521'-0"	543	DS501	1	454'-0"	474	DS501	1	454'-0"	474
DS401	141	24'-3"	2284	DS401	127	24'-3"	2057	DS401	109	24'-3"	1766	DS401	109	24'-3"	1766
TOTAL REINFORCING STEEL			35,247	TOTAL REINFORCING STEEL			32,313	TOTAL REINFORCING STEEL			28,558	TOTAL REINFORCING STEEL			28,558
CONCRETE				CONCRETE				CONCRETE							
Class "B" Conc. in Substructure				249.5 Cys	Class "B" Conc. in Substructure				223.4 Cys	Class "B" Conc. in Substructure				189.9 Cys	



DS501 SPIRAL TABLE

PIER NO.	"A" (TURNS)	"B"	TOTAL LENGTH
2	20	98'-0"	431'-0"
3	20	97'-0"	431'-0"
4	19	92'-0"	410'-0"
6	25	121'-0"	540'-0"
7	27	134'-0"	584'-0"
8	24	120'-0"	521'-0"
9	21	102'-0"	454'-0"



DRILLED SHAFT INSTALLATION TABLE

PIER NO.	SIZE (INCHES)	SHAFT NO. OF SHAFTS	DEAD LOAD SHAFT (TONS)	DEAD LOAD STRUCT (TONS)	LIVE LOAD (TONS)	TOTAL DESIGN LOAD (TONS)	MIN. TIP ELEV. (FT.)	APPROX. DIM. "H" (FT.)
PIER 2	96	1	369-162	765	133	1267-060	497	98
PIER 3	96	1	366-283	868	139	1373-1290	502	97
PIER 4	96	1	347-448	856	146	1349-450	506	92
PIER 6	96	1	456-674	950	167	1673-787	489	121
PIER 7	96	1	525-580	1055	165	1725-1799	483	134
PIER 8	96	1	452-512	1028	166	1641-706	498	120
PIER 9	96	1	385-356	896	163	1444-1408	507	102

- NOTES:**
- DRILLED SHAFTS WILL BE CONSTRUCTED IN ACCORDANCE WITH THE SPECIAL PROVISIONS
 - MAXIMUM AXIAL LOAD FOR AXIAL CAPACITY SHOWN IN THE TABLE CONSISTS OF DEAD LOAD + LIVE LOAD.
 - CONCRETE FOR DRILLED SHAFTS SHALL BE CLASS B (DRILLED SHAFT)
 - REINFORCING STEEL SHALL CONFORM TO ASTM A-615, GRADE 60, NOT EPOXY COATED.
 - THE MINIMUM PILE TIP ELEVATION IS BASED ON THE BORING LOGS. THE ACTUAL GROUND LINE MAY VARY. MINIMUM PILE TIP ELEVATION AS NOTED ON THESE PLANS ARE SUBJECT TO CHANGE, DEPENDENT UPON THE INSPECTION OF THE EXCAVATED SHAFT BY THE ENGINEER OR HIS REPRESENTATIVE.
 - LAP SPLICES FOR #11 BARS ARE 8'-6".
 - FOR PROTRUDING COLUMN REBAR SEE COLUMN REINFORCING DWGS C11 & C12
 - COST OF REINFORCING STEEL TO BE INCLUDED IN THE COST OF CLASS "B" CONCRETE IN SUBSTRUCTURE. REINFORCING QUANTITIES SHOWN ARE FOR INFORMATION ONLY.

SUBSTRUCTURE DETAILS
DRILLED SHAFT 8'-0"
PIERS 2, 3, 4, 6, 7, 8 & 9.

INDIANA DEPARTMENT OF TRANSPORTATION
LAKE COUNTY

SCALE: 3/8"=1'-0", UNLESS NOTED DATE: July 10, 1998

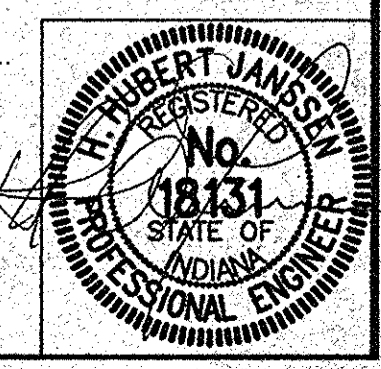
SUBMITTED FOR APPROVAL

DRAWING: C13 OF C51 SHEET: 28 OF 73
PROJECT: - NH-80-1 ()
CONTRACT NO.
BRIDGE FILE: L 1-804-5-7823

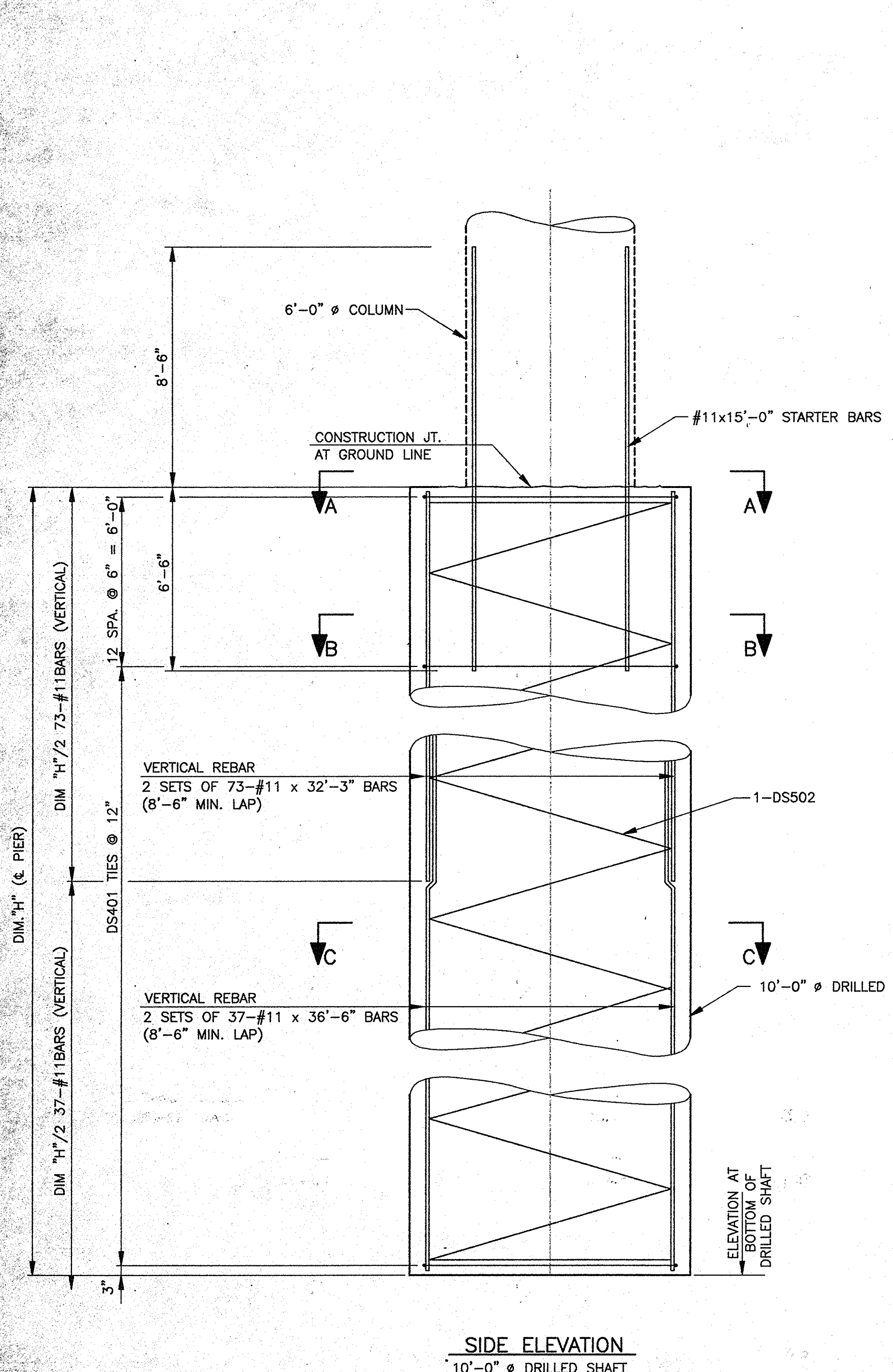
9-1-98: Revised Loads

DESIGNED: HHJ C.K.D. LS
DRAWN: GLH C.K.D. HHJ
TRACED: C.K.D.

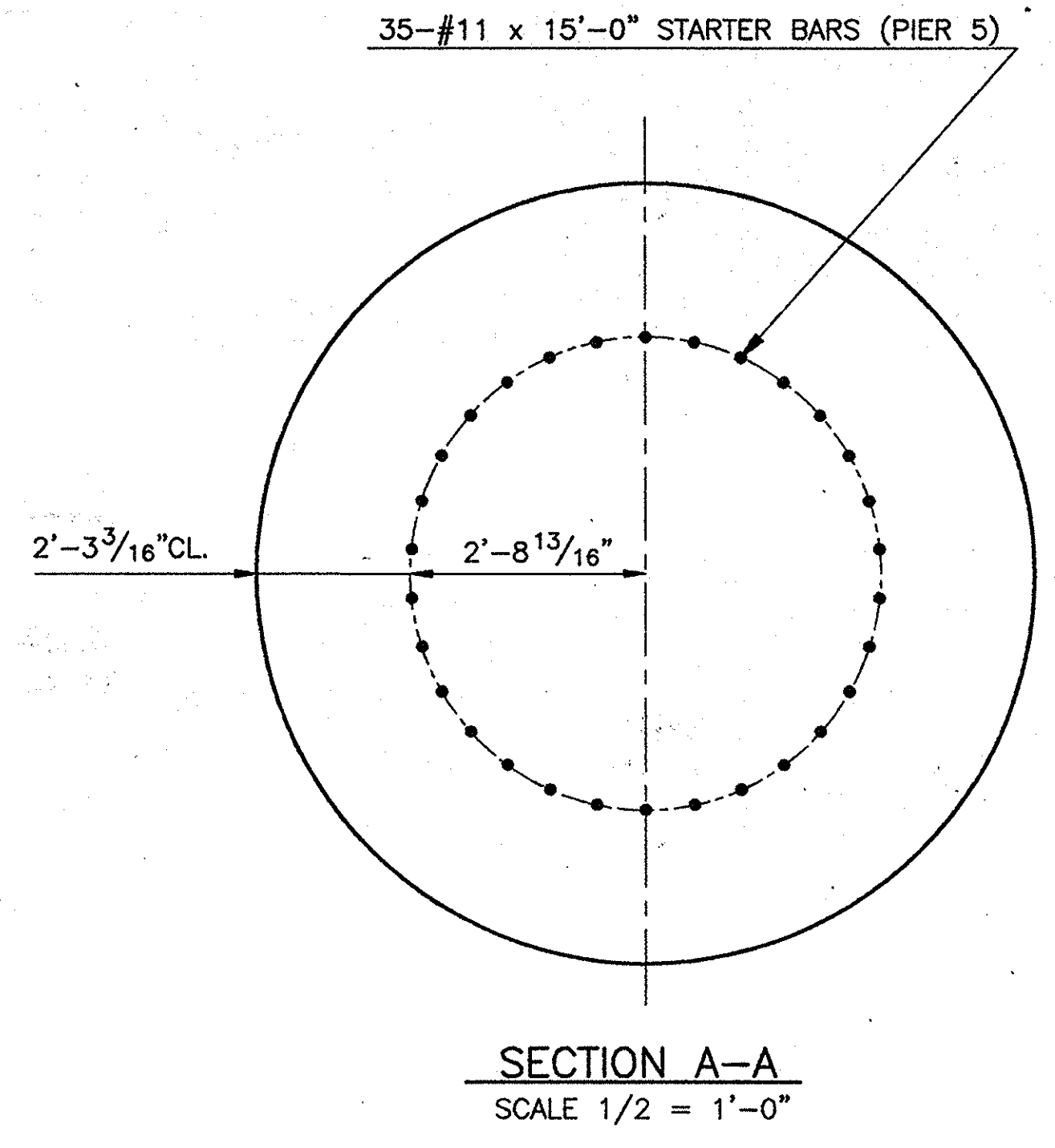
TOTAL LENGTH OF BAR BASED ON MAXIMUM INDIVIDUAL BAR LENGTH OF 60'-0" WITH LAPS OF 2'-0".



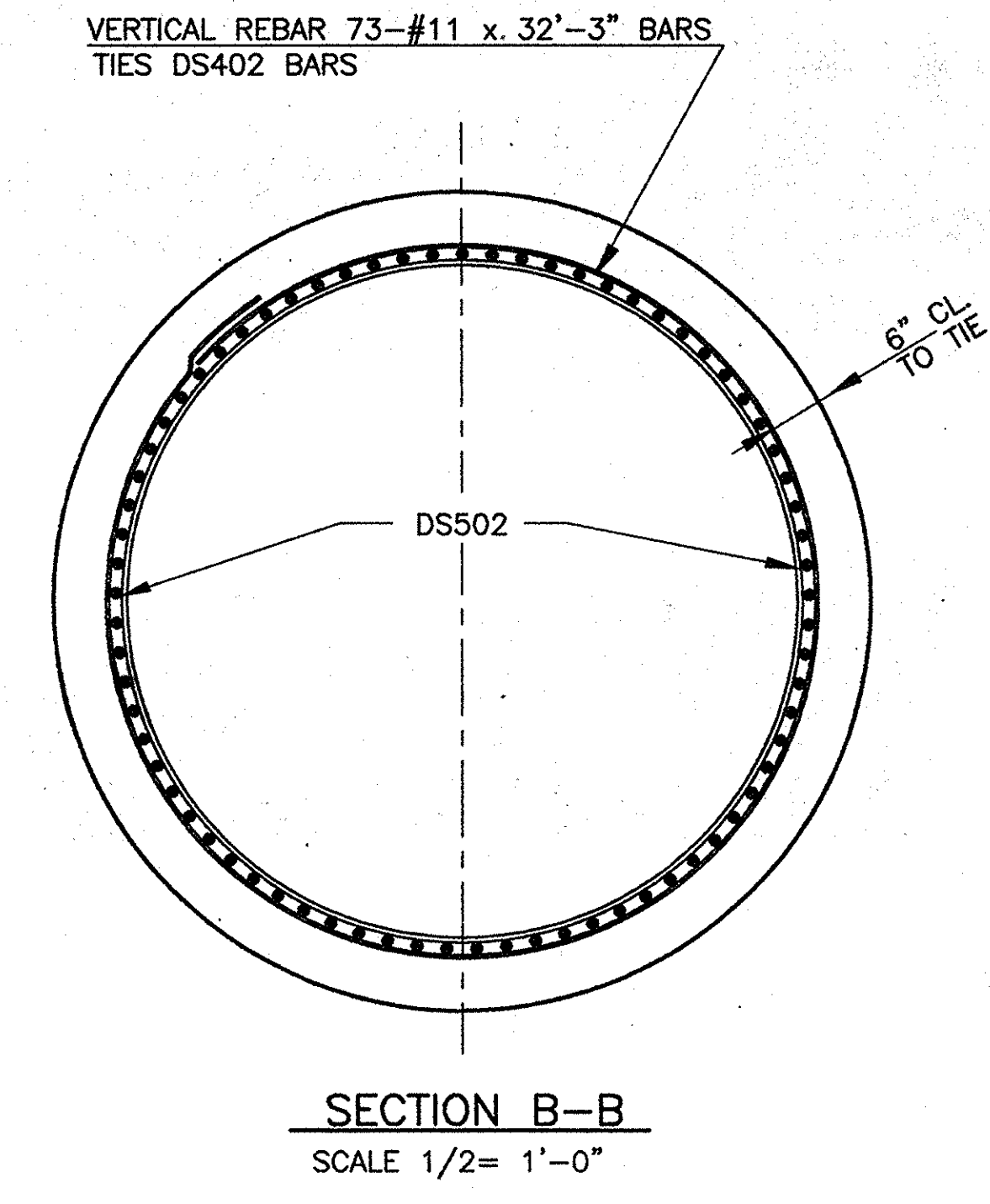
BILL OF MATERIALS			
PIER NO.5			
REINFORCING STEEL GRADE 60			
Size And Mark	No. Of Bars	Length (Feet)	Weight (Lbs.)
#11	74	36'-6"	
#11	146	32'-3"	
#11	35	15'-0"	
TOTAL #11			42,156
DS502	1	646'-0"	674
DS402	119	30'-6"	2425
TOTAL REINFORCING STEEL			45,255
CONCRETE			
Class "B" Conc. in Substructure			325.8 Cys



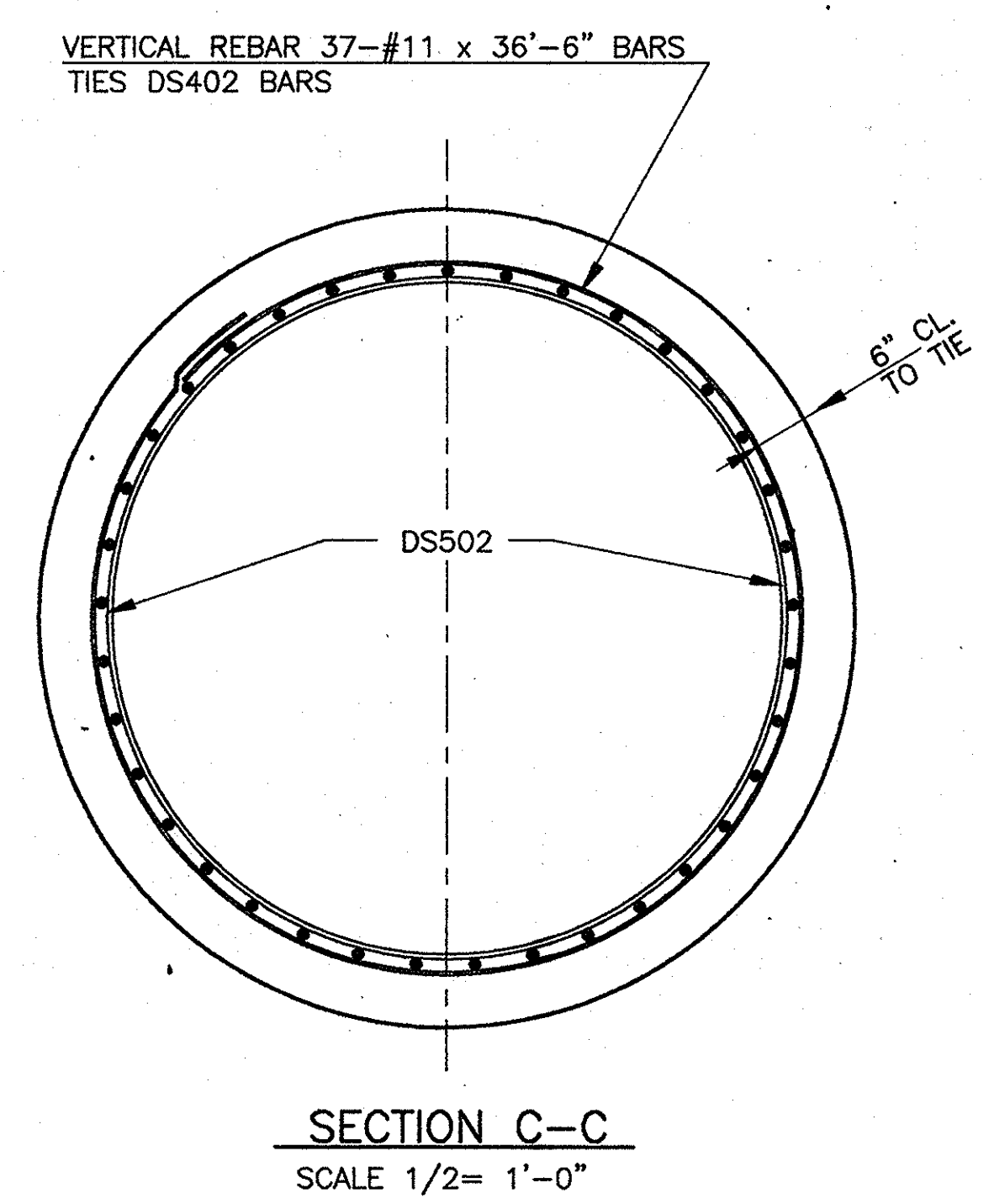
SIDE ELEVATION
10'-0" Ø DRILLED SHAFT



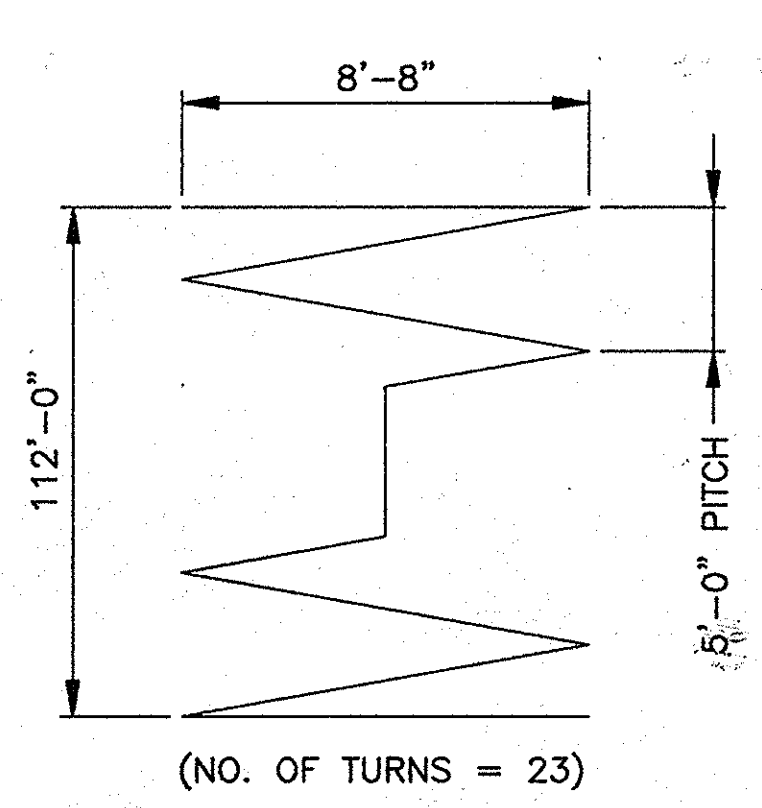
SECTION A-A
SCALE 1/2 = 1'-0"



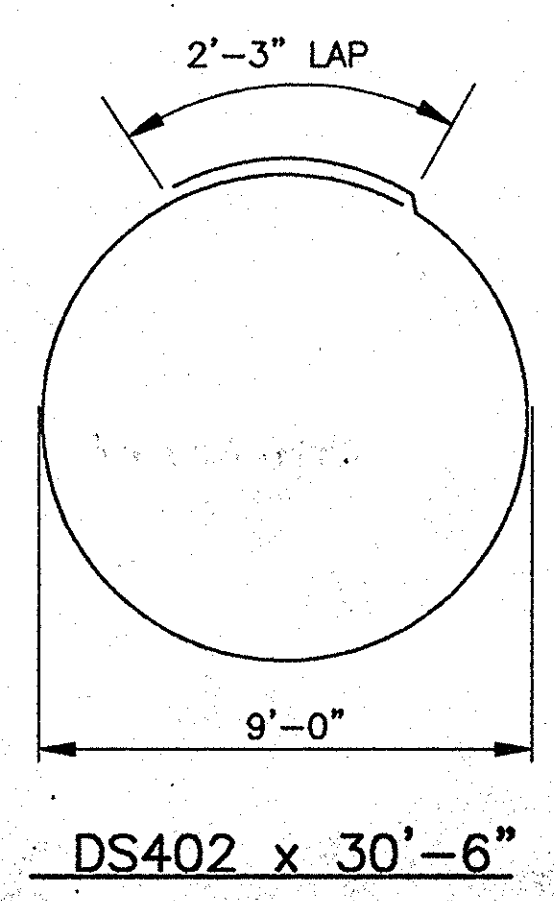
SECTION B-B
SCALE 1/2 = 1'-0"



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



DS502 x 646'-0"



DS402 x 30'-6"

TOTAL LENGTH OF BAR BASED ON MAXIMUM INDIVIDUAL BAR LENGTH OF 60'-0" WITH LAPS OF 2'-0".

DRILLED SHAFT INSTALLATION TABLE								
PIER NO.	SIZE (INCHES)	SHAFT NO. OF SHAFTS	DEAD LOAD (TONS)	DEAD LOAD STRUCT (TONS)	LIVE LOAD (TONS)	TOTAL DESIGN LOAD (TONS)	MIN. TIP ELEV. (FT.)	APPROX. DIM. "H" (FT.)
PIER 5	120	1	777	1148	182	2107	479	112
			660			1990		

NOTES:

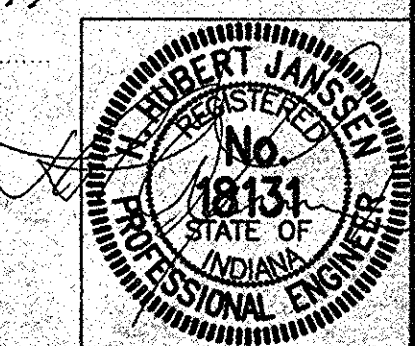
- DRILLED SHAFTS WILL BE CONSTRUCTED IN ACCORDANCE WITH THE SPECIAL PROVISIONS
- MAXIMUM AXIAL LOAD FOR AXIAL CAPACITY SHOWN IN THE TABLE CONSISTS OF DEAD LOAD + LIVE LOAD.
- CONCRETE FOR DRILLED SHAFTS SHALL BE CLASS B (DRILLED SHAFT)
- REINFORCING STEEL SHALL CONFORM TO ASTM A-615, GRADE 60, NOT EPOXY COATED.
- THE MINIMUM PILE TIP ELEVATION IS BASED ON THE BORING LOGS. THE ACTUAL GROUND LINE MAY VARY. MINIMUM PILE TIP ELEVATION AS NOTED ON THESE PLANS ARE SUBJECT TO CHANGE, DEPENDENT UPON THE INSPECTION OF THE EXCAVATED SHAFT BY THE ENGINEER OR HIS REPRESENTATIVE.
- LAP SPLICES FOR #11 BARS ARE 8'-6".
- FOR PROTRUDING COLUMN REBAR SEE COLUMN REINFORCING DWGS C11 & C12
- COST OF REINFORCING STEEL TO BE INCLUDED IN THE COST OF CLASS "B" CONCRETE IN SUBSTRUCTURE. REINFORCING QUANTITIES SHOWN ARE FOR INFORMATION ONLY.

SUBSTRUCTURE DETAILS
DRILLED SHAFT 10'-0"
PIER 5

INDIANA DEPARTMENT OF TRANSPORTATION
LAKE COUNTY

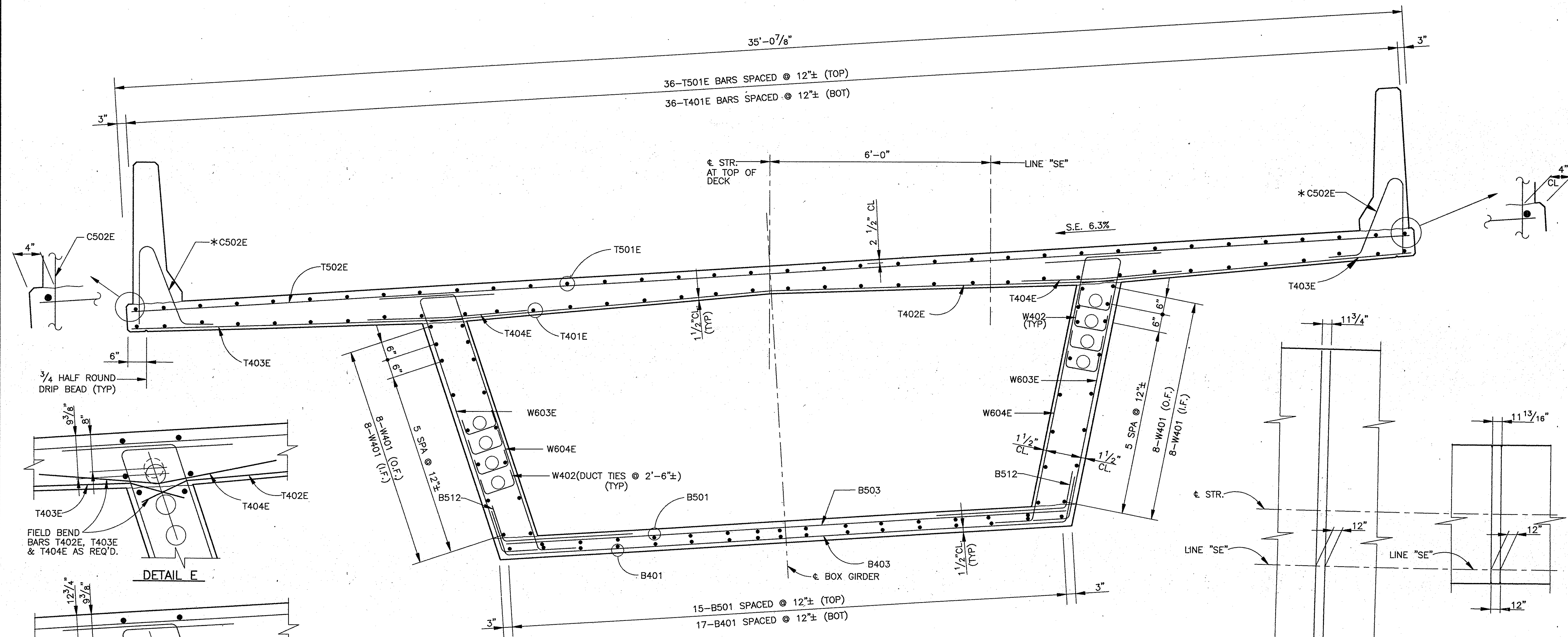
SCALE: - 3/8"=1'-0", UNLESS NOTED DATE: - July 10, 1998

SUBMITTED FOR APPROVAL
DRAWING: C13A OF C51 SHEET: 28A OF 73
PROJECT: - NB-80-1 () 4
CONTRACT NO.
BRIDGE FILE: - I-80-5-7823

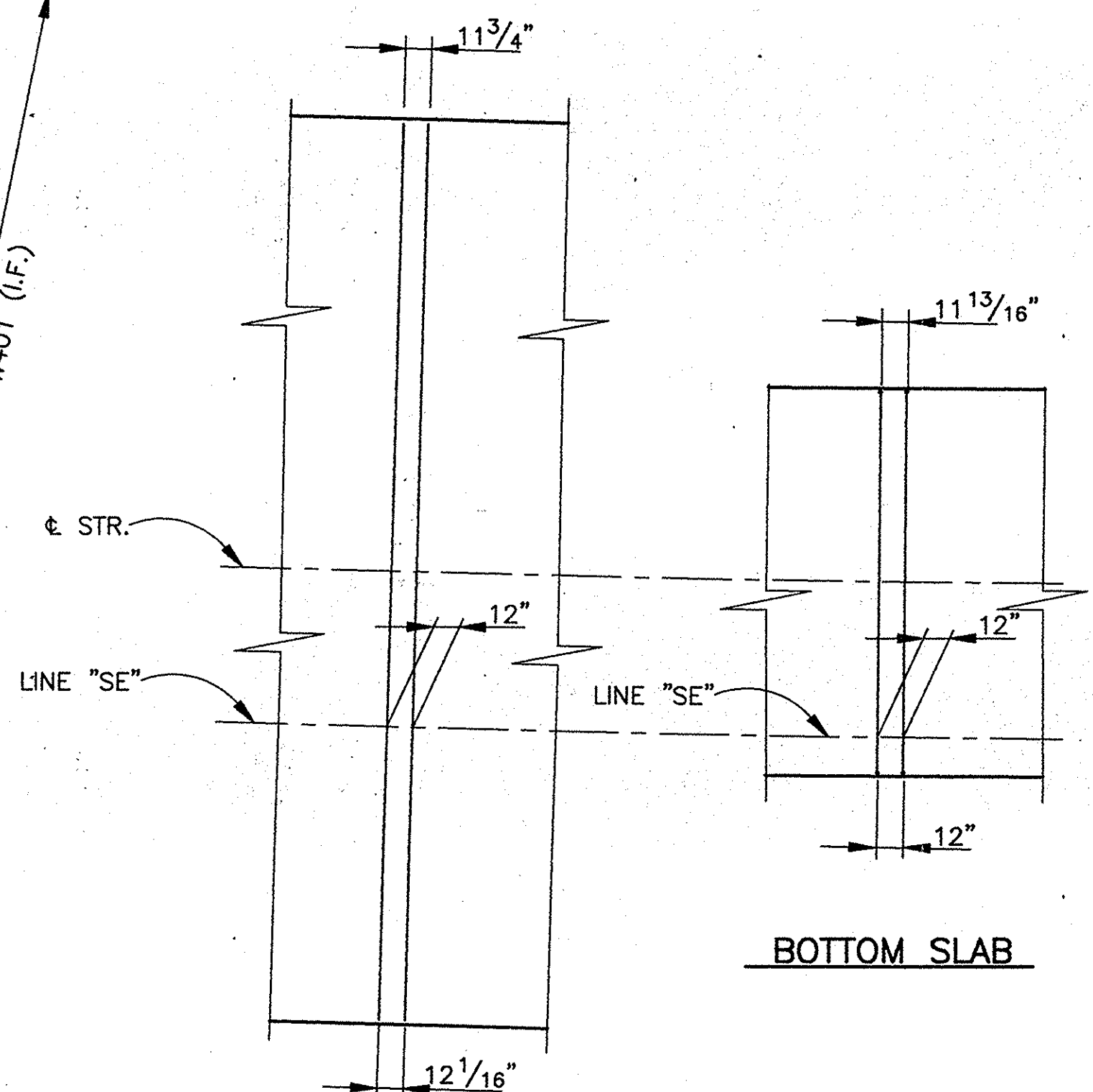


D:\BAV\B\DRILLED SHAFTS
PLOT 1-23

DESIGNED	HHJ	C'K'D	LS
DRAWN	GLH	C'K'D	HHJ
TRACED		C'K'D	



TYPICAL SECTION
(VALID FOR SPANS A, B, C, D & E)



TYPICAL TRANSVERSE BAR SPACING
NOT TO SCALE

BAR GROUPS

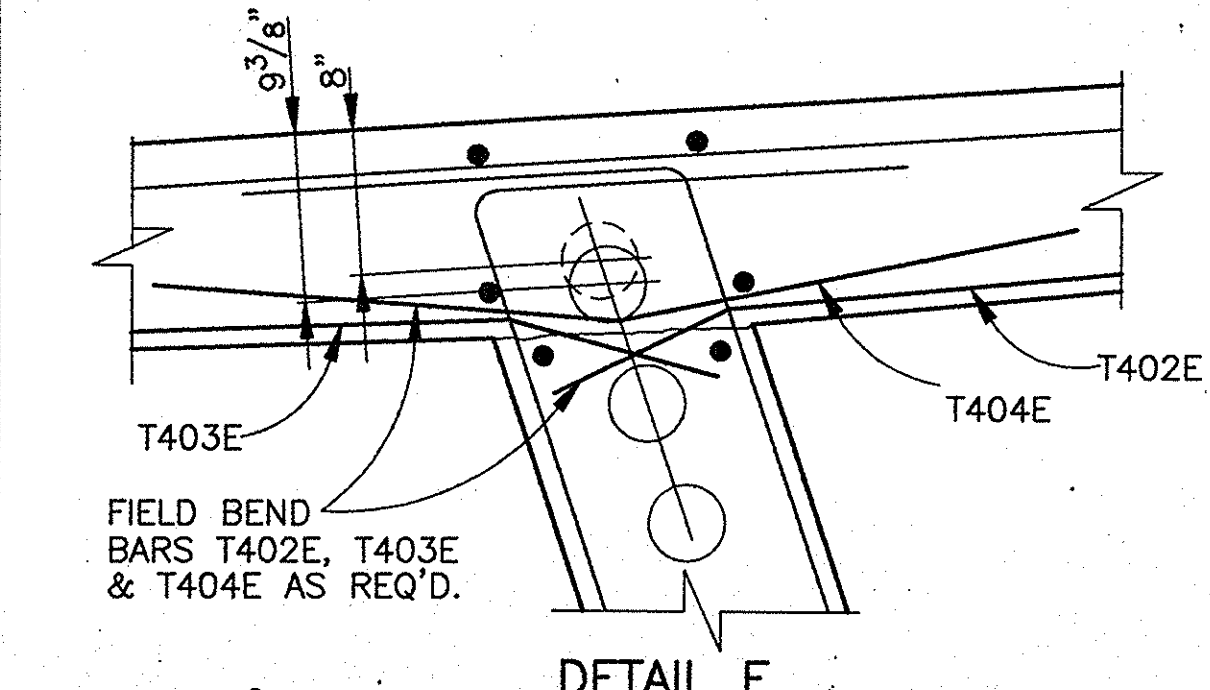
- GROUP T BARS = T502E, T402E, 2-T403E & 2-T404E
- GROUP B2 BARS = B503, 2-B512 & B403
- GROUP W2 BARS = W603E & W604E (PER WEB)

NOTES:

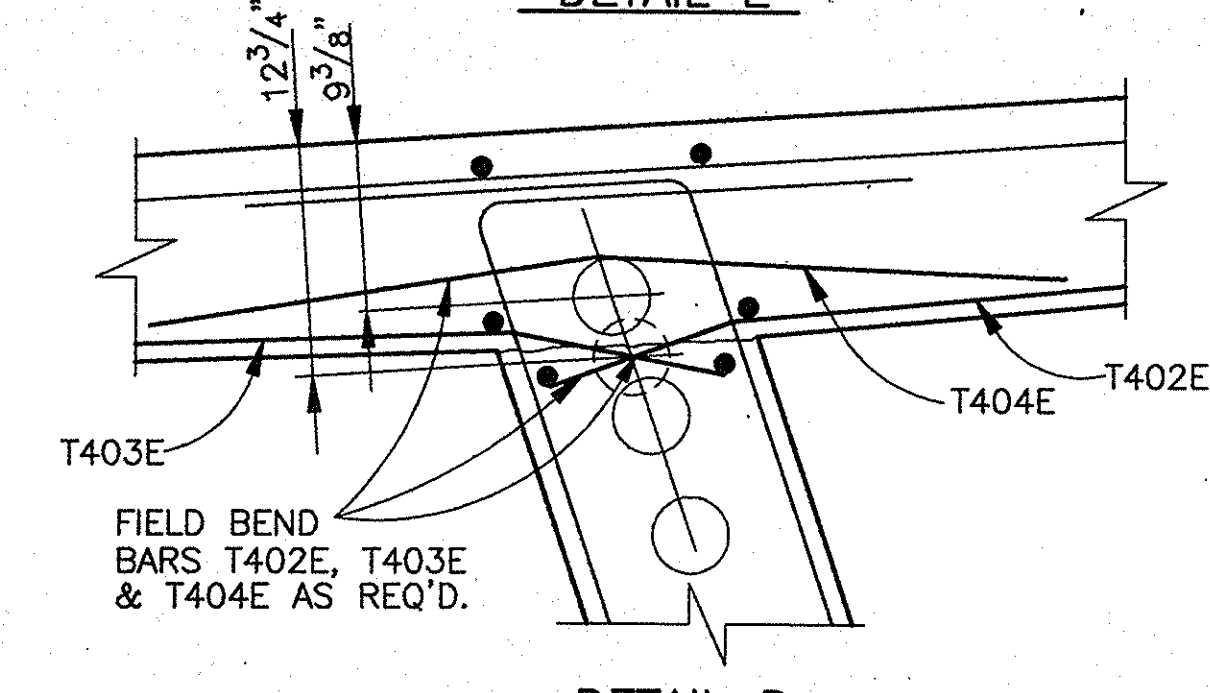
- ALL TRANSVERSE STEEL PLACED RADIAL TO LINE "SE"
- O.F. DENOTES OUTSIDE FACE
- I.F. DENOTES INSIDE FACE
- CONCRETE COVER SHALL BE:

TOP DECK SLAB	2 1/2"
OUTSIDE FACE	1 1/2"
INSIDE FACE	1 1/2"

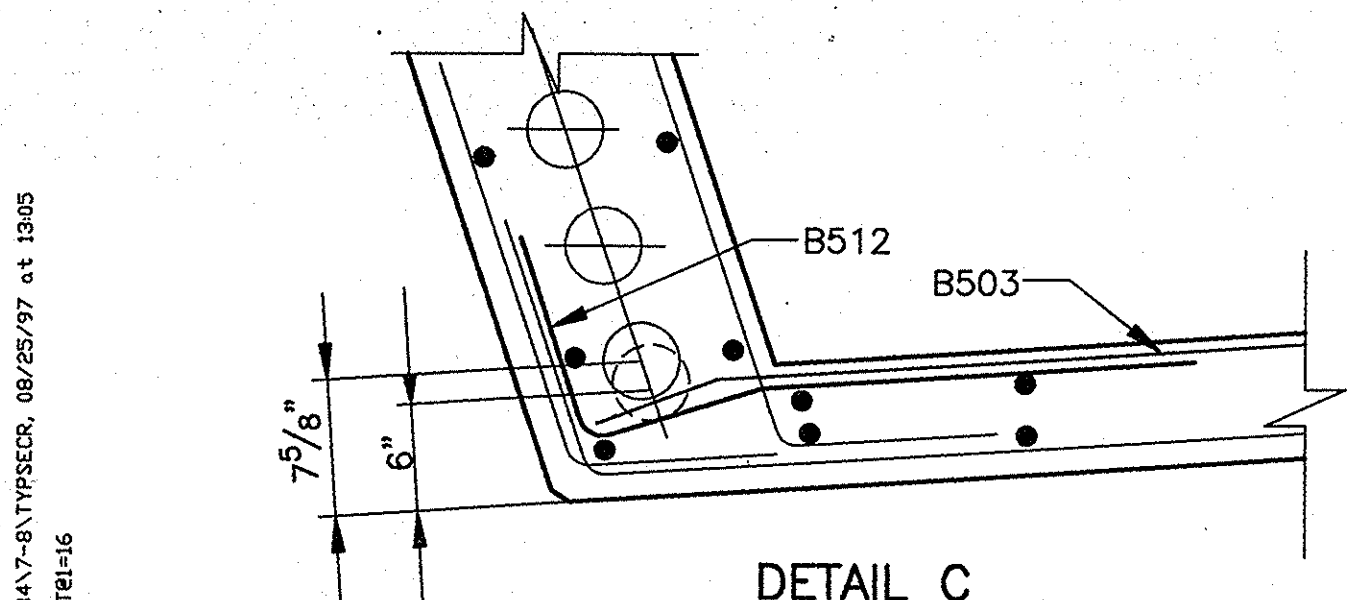
* C502E TO BE CAST WITH SUPERSTRUCTURE POUR.
FOR QUANTITIES SEE SHEET C21.



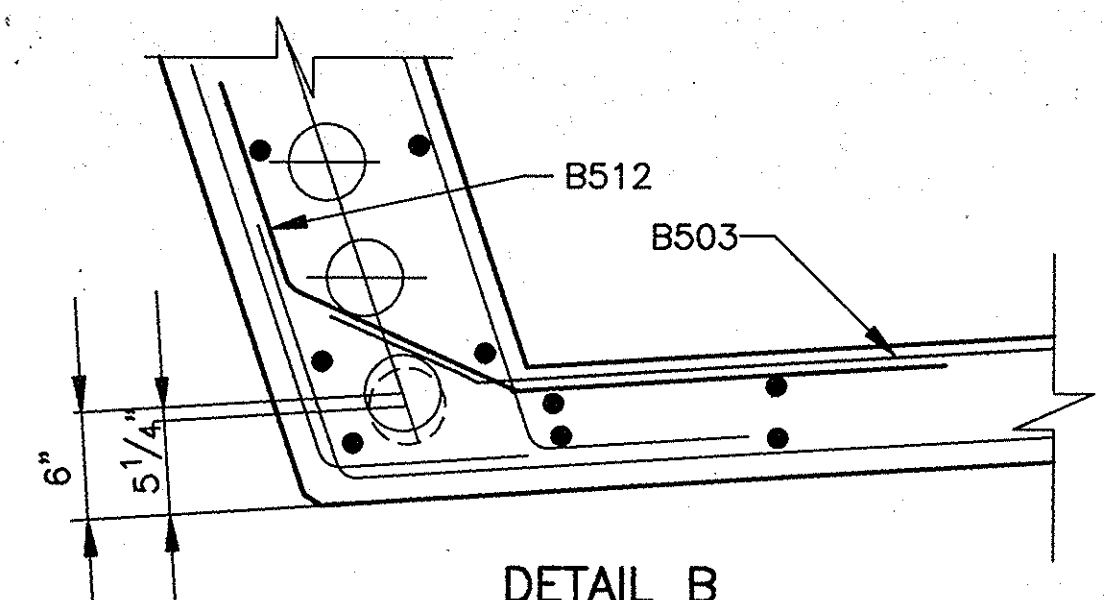
DETAIL E



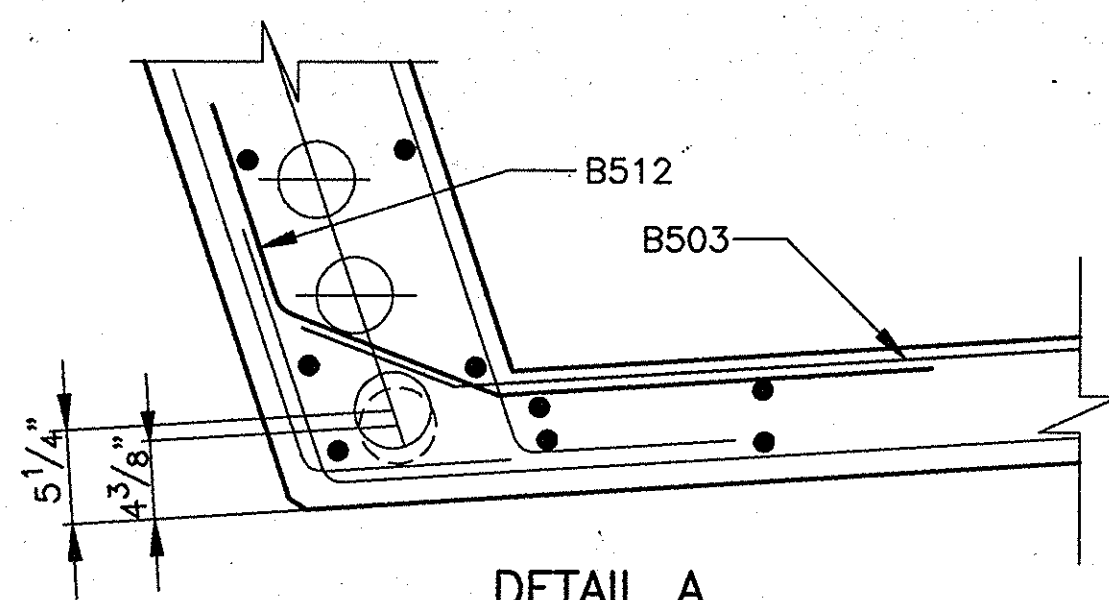
DETAIL D



DETAIL C



DETAIL B



DETAIL A

DUCT CROSSOVER DETAILS

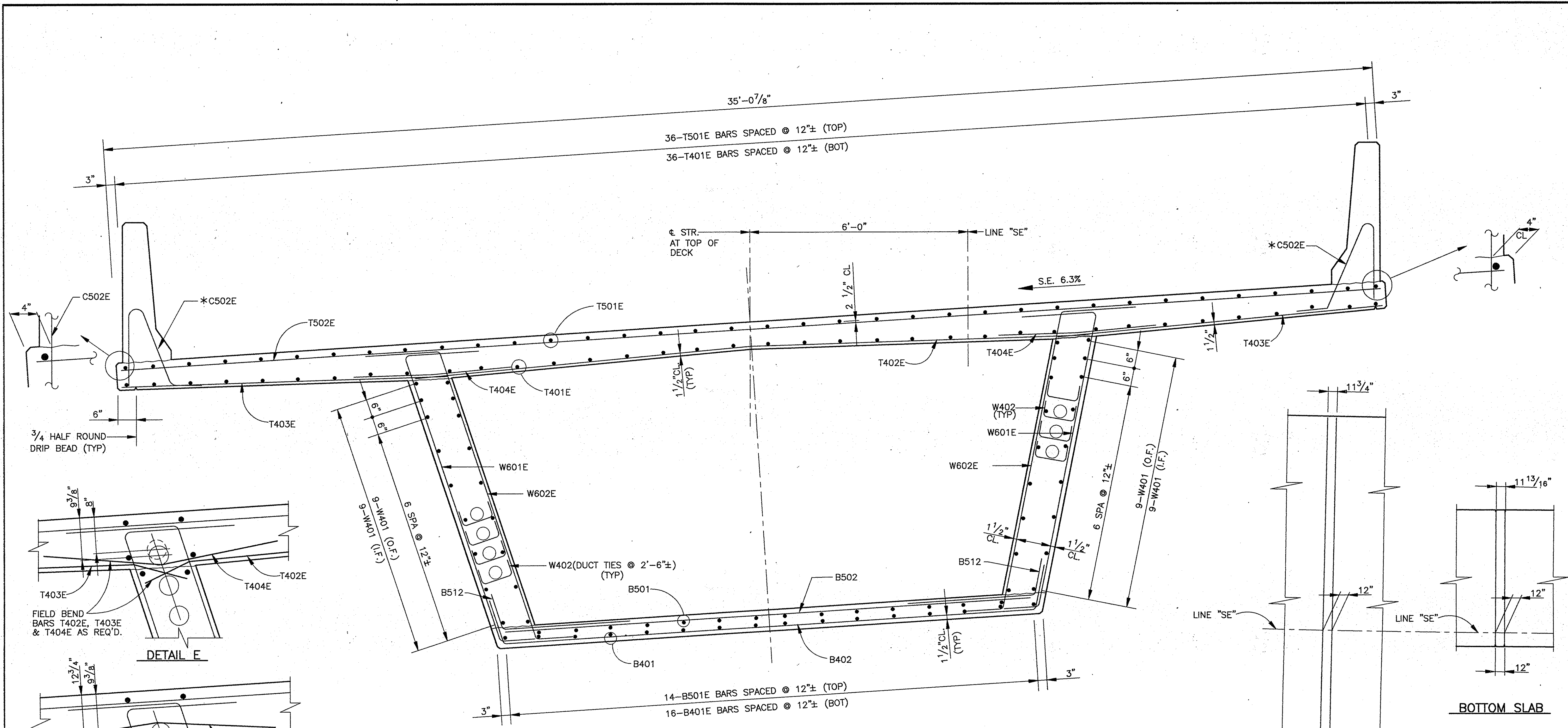
NOTE: FIELD BEND B503 & B512 BARS AS REQUIRED TO CLEAR P.T. DUCTS. (SEE DETAILS A THRU C)

DESIGNED: HHJ C'K'D LS
 DRAWN: TMD C'K'D HHJ
 TRACED: C'K'D

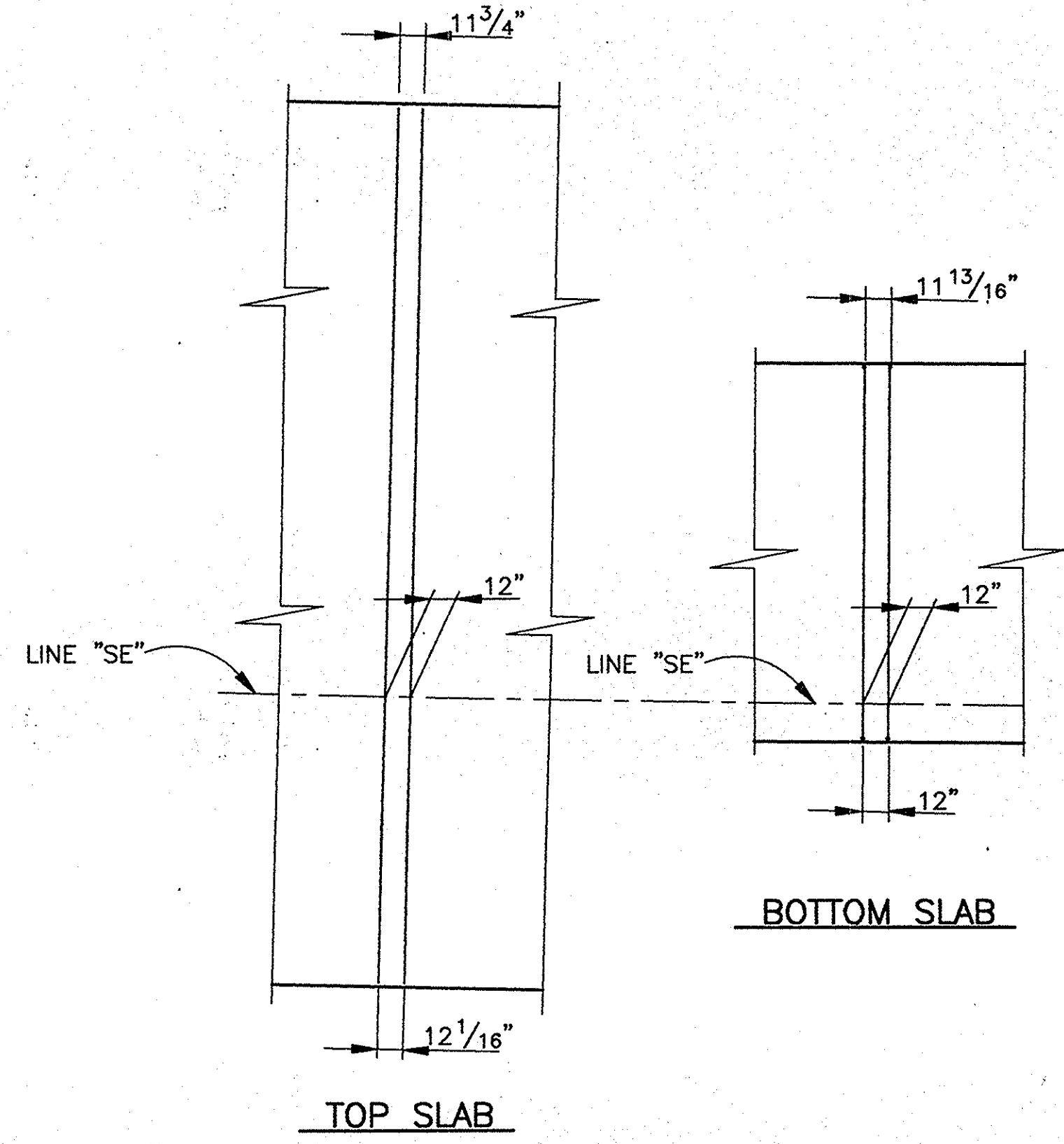
DESIGNED	HHJ	C'K'D	LS
DRAWN	TMD	C'K'D	HHJ
TRACED		C'K'D	

SUPERSTRUCTURE DETAILS—
TYPICAL SECTION REINFORCING (UNIT 1)
INDIANA DEPARTMENT OF TRANSPORTATION
 LAKE COUNTY

SCALE: 3/4"=1'-0", UNLESS NOTED DATE: 5/22/88
 SUBMITTED FOR APPROVAL
 DRAWING: C14 OF C51 SHEET: 29 OF 73
 PROJECT: - NH-80-1 ()
 CONTRACT NO.
 BRIDGE FILE: I-80-5-7823



TYPICAL SECTION
(VALID FOR SPANS F, G, H & J)



VERTICAL TRANSVERSE BAR SPACING
NOT TO SCALE

BAR GROUPS

- GROUP T BARS = T502E, T402E, 2-T403E & 2-T404E
- GROUP B BARS = B502, 2-B512 & B402
- GROUP W BARS = W601E & W602E (PER WEB)

NOTES:

- ALL TRANSVERSE STEEL PLACED RADIAL TO LINE "SE"
- O.F. DENOTES OUTSIDE FACE
- I.F. DENOTES INSIDE FACE
- CONCRETE COVER SHALL BE:

TOP DECK SLAB	2 1/2"
OUTSIDE FACE	1 1/2"
INSIDE FACE	1 1/2"

* C502E TO BE CAST WITH SUPERSTRUCTURE POUR.
FOR QUANTITIES SEE SHEET C26 & C27

ENBA17-8-TYPSECR, 05/20/97 at 14-01

DESIGNED	HHJ	C'K'D	LS
DRAWN	TMD	C'K'D	HHJ
TRACED		C'K'D	

NOTE: FIELD BEND B502 & B512 BARS AS REQUIRED TO CLEAR P.T. DUCTS. (SEE DETAILS A THRU C)

SUPERSTRUCTURE DETAILS—
TYPICAL SECTION REINFORCING (UNIT 2)
INDIANA DEPARTMENT OF TRANSPORTATION
LAKE COUNTY

SCALE: 3/4"=1'-0", UNLESS NOTED DATE: 5/22/98

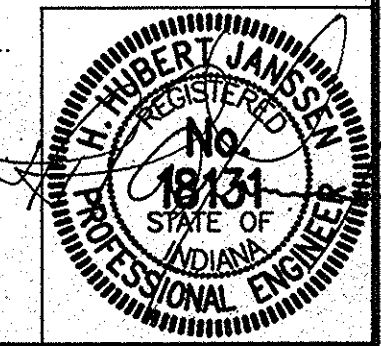
SUBMITTED FOR APPROVAL

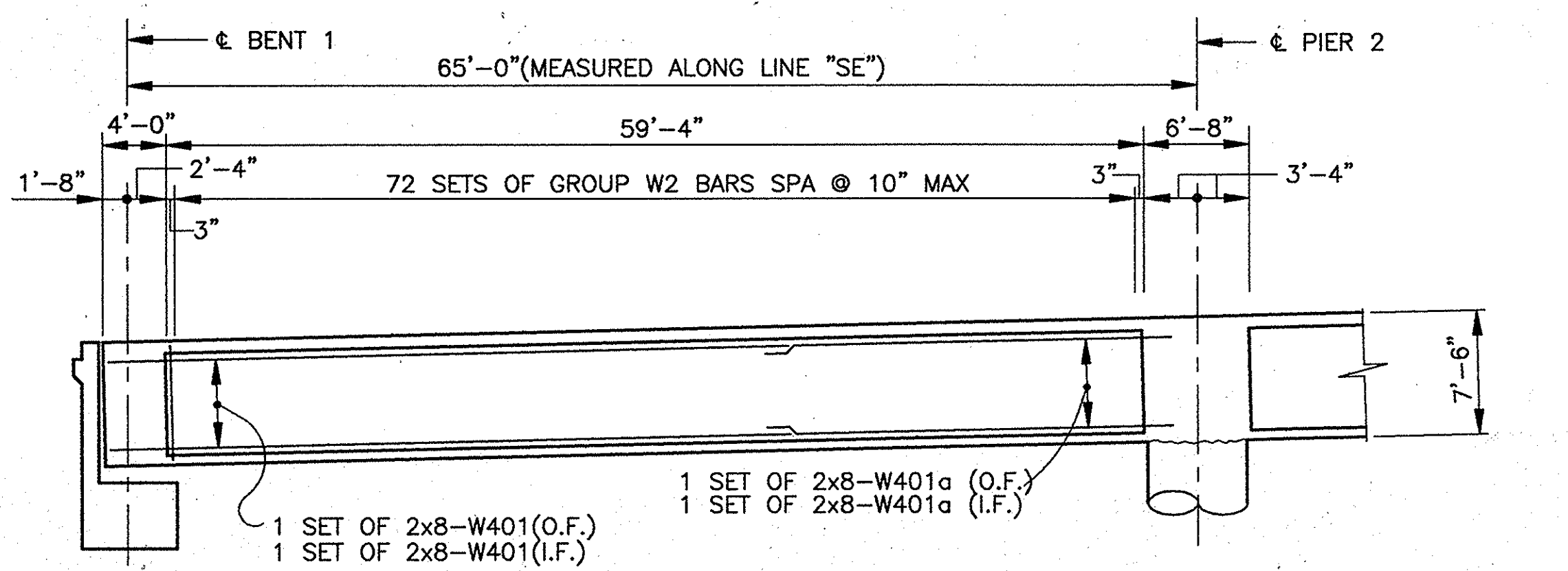
DRAWING: C15 OF C51 SHEET: 30 OF 73

PROJECT: - NH-80-1 () 4

CONTRACT NO.

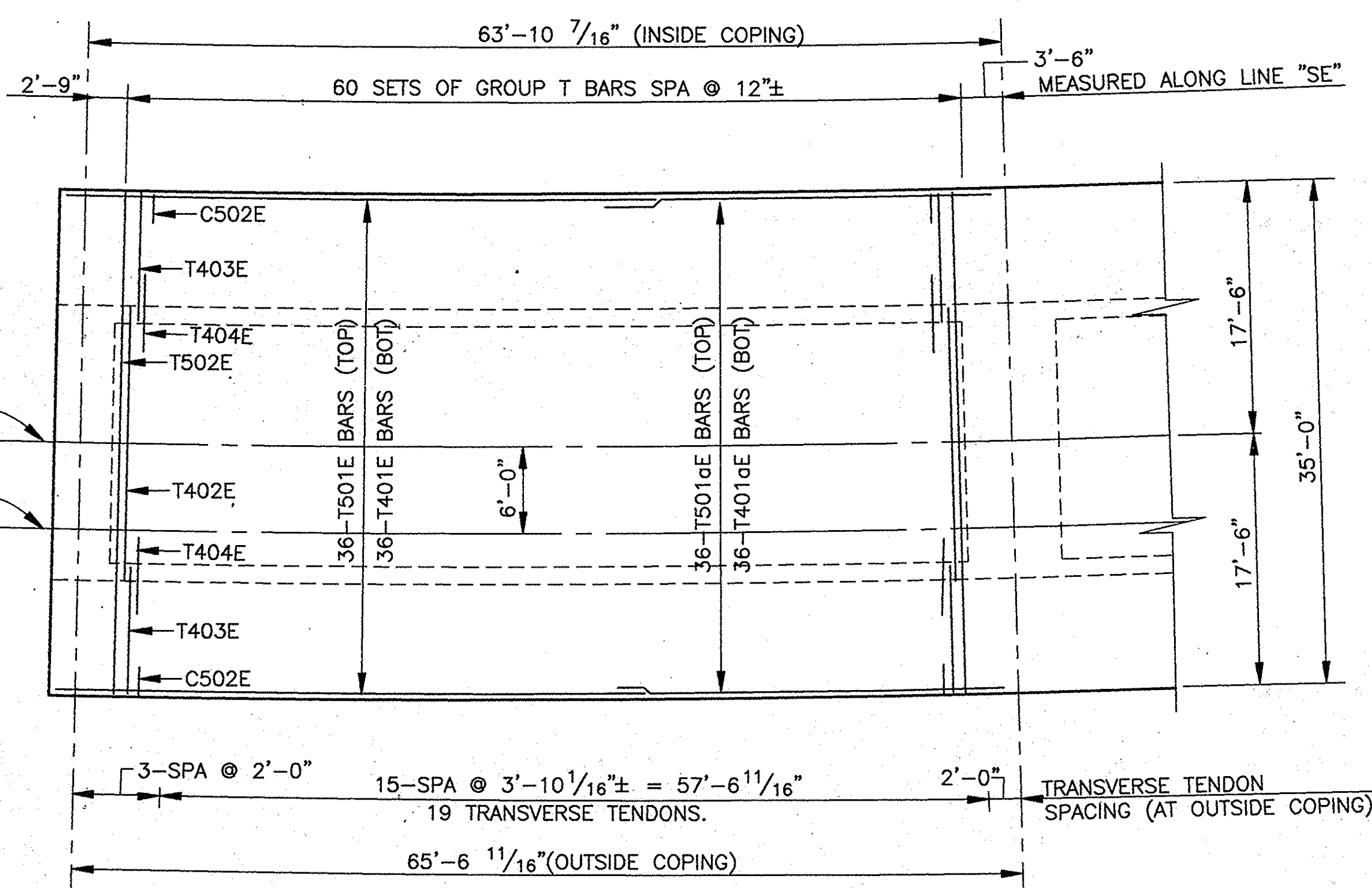
BRIDGE FILE: I-80-5-7823



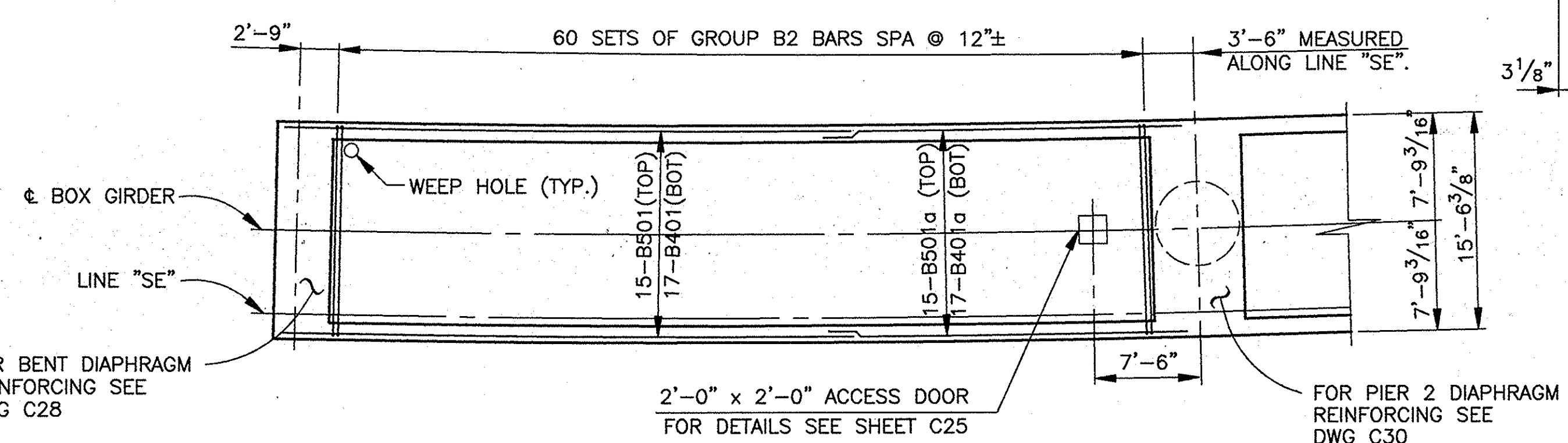


ELEVATION
(SHOWING WEB REINFORCING)

NOTE:
I.F. = INSIDE FACE
O.F. = OUTSIDE FACE

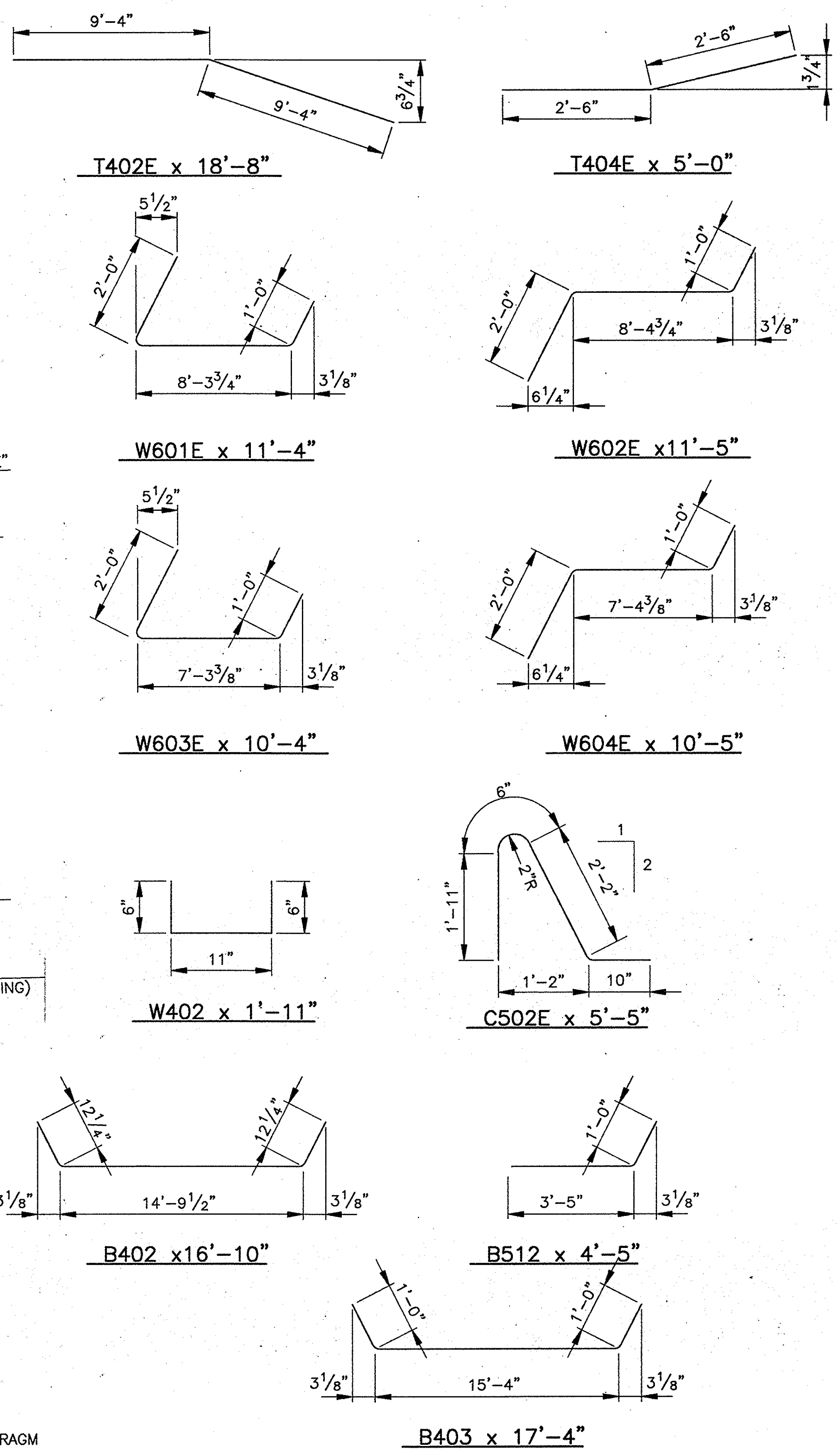


PLAN TOP SLAB



PLAN BOTTOM SLAB

- NOTE:**
1. FOR TYPICAL SECTION REINFORCING SEE SHEETS DWGS C14 & C15.
 2. FOR TYPICAL LAP SPLICE DIMENSIONS SEE DWG C16.
 3. FOR BAR SHAPES SEE DWG C16.
 4. FOR BRIDGE RAILING DETAILS & QUANTITIES SEE DWGS C21, C26 & C27.
 5. FOR TRANSVERSE TENDON DETAILS & QUANTITIES SEE DWG C37.
 6. SPACING OF ALL TRANSVERSE BARS ARE MEASURED ALONG LINE "SE".
 7. FOR BAR SHAPES FOR ACCESS OPENING SEE DWG C25.



STRAIGHT BARS

- TRANSVERSE**
T502E x 34'-9"
T403E x 8'-11"
B502 x 14'-9"
B503 x 15'-6"

LONGITUDINAL

- B501 & T501E x 40'-0"
B501a & T501aE x 29'-6"
B501b & T501bE x 9'-9"
B501c & T501cE x 31'-9"
B501cc & T501ccE x 17'-2"
B501d & T501dE x 17'-2"
B501e & T501eE x 17'-9"
B501f & T501fE x 17'-9"
B501g & T501gE x 40'-0"
B501h & T501hE x 14'-7"
B501j & T501jE x 29'-7"
T401E x 40'-0"
T401aE x 29'-0"
T401bE x 7'-9"
T401cE x 31'-9"
T401ccE x 16'-2"
T401eE x 15'-9"
B401 & W401 x 40'-0"
B401a & W401a x 29'-0"
B401b & W401b x 7'-9"
B401c & W401c x 31'-9"
B401cc & W401cc x 16'-2"
B401d & W401d x 15'-9"
B401e & W401e x 15'-9"
B401f & W401f x 15'-9"
B401g & W401g x 40'-0"
B401h & W401h x 12'-1"
B401j & W401j x 29'-1"

BAR	MIN LAP SPLICE
#4	2'-0"
#5	2'-6"

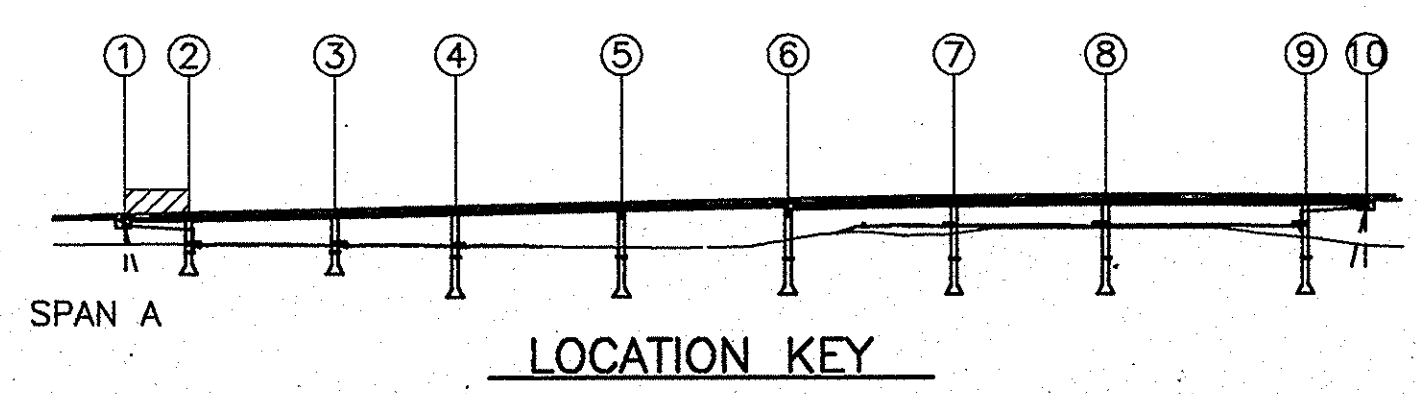
BILL OF MATERIALS

REINFORCING STEEL GRADE 60			
Size And Mark	No. Of Bars	Length (Feet)	Weight (Lbs.)
GROUP W2 BARS			
W603E	144	10'-4"	
W604E	144	10'-5"	
TOTAL #6 BARS			4488
GROUP T BARS			
T502E	60	34'-9"	2175
T402E	60	18'-8"	
T403E	120	8'-11"	
T404E	120	5'-0"	
TOTAL #4			1864
LONGITUDINAL BARS			
T501E	36	40'-0"	
T501aE	36	29'-6"	
TOTAL #5			2610
T401E	36	40'-0"	
T401aE	36	29'-0"	
TOTAL #4			1659
TOTAL EPOXY COATED REINFORCING 12796			
GROUP B2 BARS			
B503	60	15'-6"	
B512	120	4'-5"	
TOTAL #5			1523
B403	60	17'-4"	695
LONGITUDINAL BARS			
B501	15	40'-0"	
B501a	15	29'-6"	
TOTAL #5			1087
B401	17	40'-0"	
B401a	17	29'-0"	
W401	32	40'-0"	
W401a	32	29'-0"	
W401E	156	1'-11"	
TOTAL #4			2459
ACCESS OPENING			
AD601	8	5'-0"	
AD602	16	7'-6"	
TOTAL #6			240
AD501	6	5'-4"	
AD502	6	5'-4"	
TOTAL #5			67
TOTAL REGULAR REINFORCING 6071			
SUPERSTRUCTURE CONCRETE			158.1 cys.
MISCELLANEOUS			
SURFACE SEAL			
(ESTIMATED QUANTITY = 3405 SFT 1 LSM)			

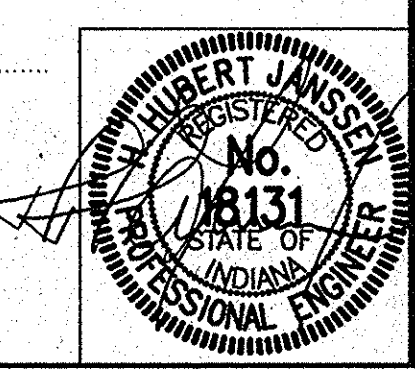
INDIANA DEPARTMENT OF TRANSPORTATION
LAKE COUNTY

SCALE: 1/8"=1'-0", UNLESS NOTED DATE: 7/22/98

SUBMITTED FOR APPROVAL
DRAWING: C16 OF C51 SHEET: 31 OF 73
PROJECT: - NH-80-1 () 4
CONTRACT NO.
BRIDGE FILE: I-80-5-7823

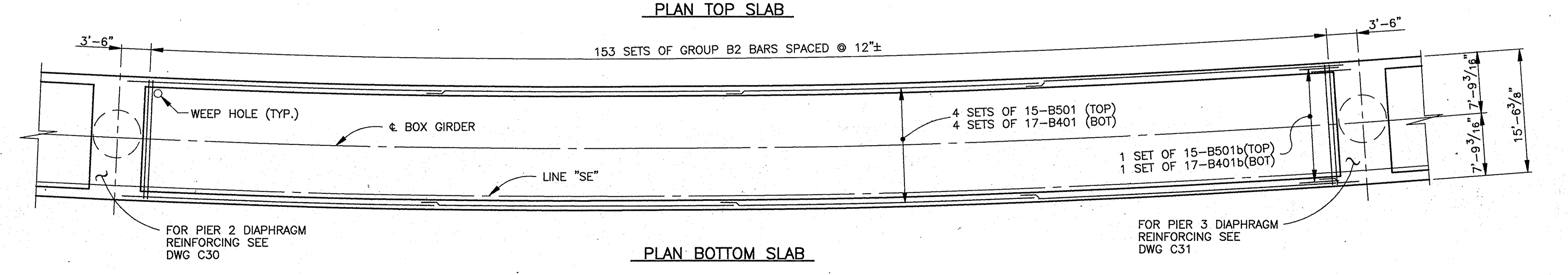
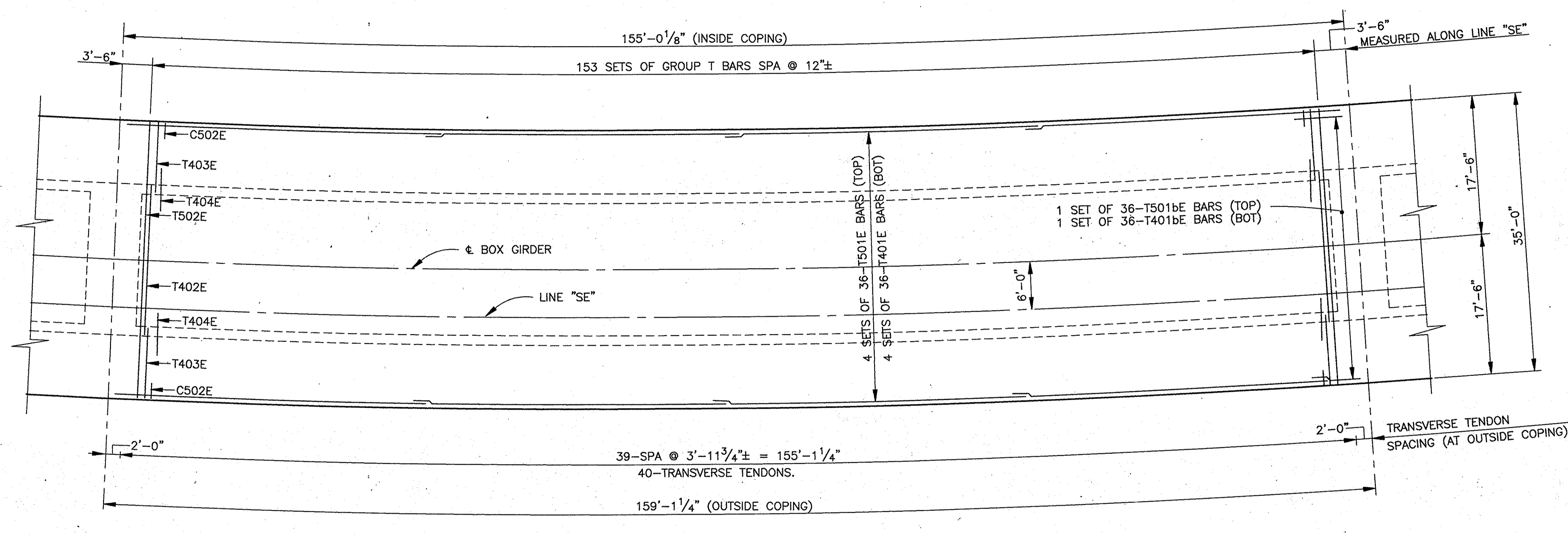
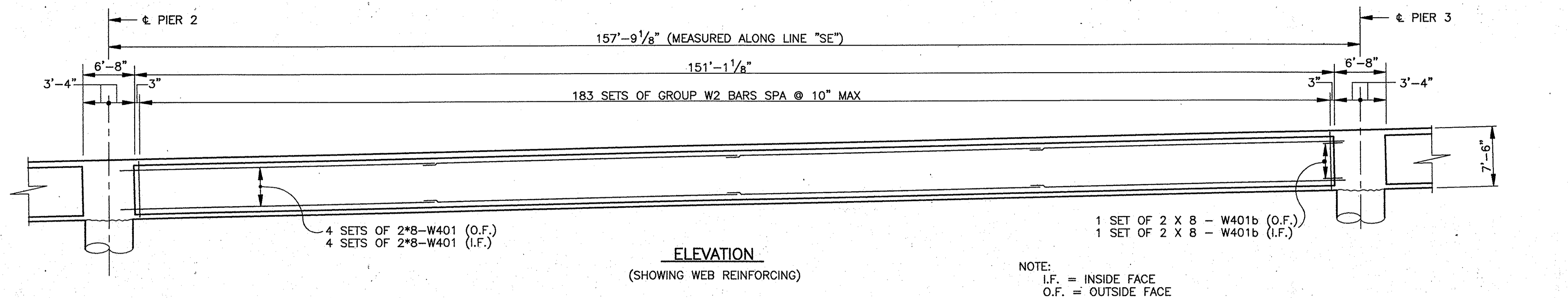


DESIGNED: HHJ C'K'D LS
DRAWN: TMD C'K'D HHJ
TRACED: C'K'D



BILL OF MATERIALS

REINFORCING STEEL GRADE 60			
Size And Mark	No. Of Bars	Length (Feet)	Weight (Lbs.)
GROUP W2 BARS			
W603E	366	10'-4"	
W604E	366	10'-5"	
TOTAL #6			11407
GROUP T BARS			
T502E	153	34'-9"	5545
T402E	153	18'-8"	
T403E	306	8'-11"	
T404E	306	5'-0"	
TOTAL #4			4754
LONGITUDINAL BARS			
T501E	144	40'-0"	
T501bE	36	9'-9"	
TOTAL #5			6374
T401E	144	40'-0"	
T401bE	36	7'-9"	
TOTAL #4			4034
TOTAL EPOXY COATED REINFORCING			32114
GROUP B2 BARS			
B503	153	15'-6"	
B512	306	4'-5"	
TOTAL #5			3884
B403	153	17'-4"	1771
LONGITUDINAL BARS			
B501	60	40'-0"	
B501b	15	9'-9"	
TOTAL #5			2656
B401	68	40'-0"	
B401b	17	7'-9"	
W401	128	40'-0"	
W401b	32	7'-9"	
W402	384	1'-11"	
TOTAL #4			5983
TOTAL REGULAR REINFORCING			14294
SUPERSTRUCTURE CONCRETE			341.7 cys.
MISCELLANEOUS			
SURFACE SEAL			
ESTIMATED QUANTITY = 8078 SFT			1 LSM



- NOTE:**
- FOR TYPICAL SECTION REINFORCING SEE SHEETS DWGS C14 & C15.
 - FOR TYPICAL LAP SPLICE DIMENSIONS SEE DWG C16.
 - FOR BAR SHAPES SEE DWG C16.
 - FOR BRIDGE RAILING DETAILS & QUANTITIES SEE DWGS C21, C26 & C27.
 - FOR TRANSVERSE TENDON DETAILS & QUANTITIES SEE DWG C37.
 - SPACING OF ALL TRANSVERSE BARS ARE MEASURED ALONG LINE "SE".

INDIANA DEPARTMENT OF TRANSPORTATION
LAKE COUNTY

SCALE: 1/8"=1'-0", UNLESS NOTED DATE: 5/22/98

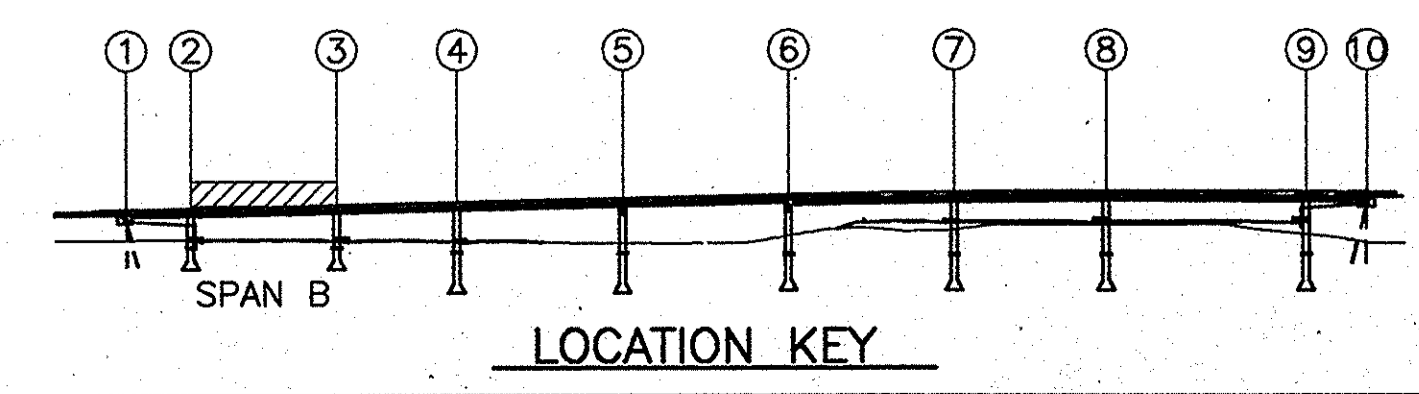
SUBMITTED FOR APPROVAL

DRAWING: C17 OF C51 SHEET: 32 OF 73

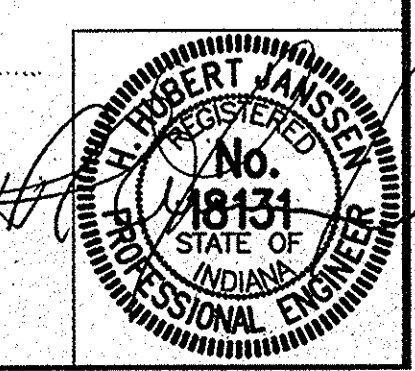
PROJECT: NH-80-1 ()4

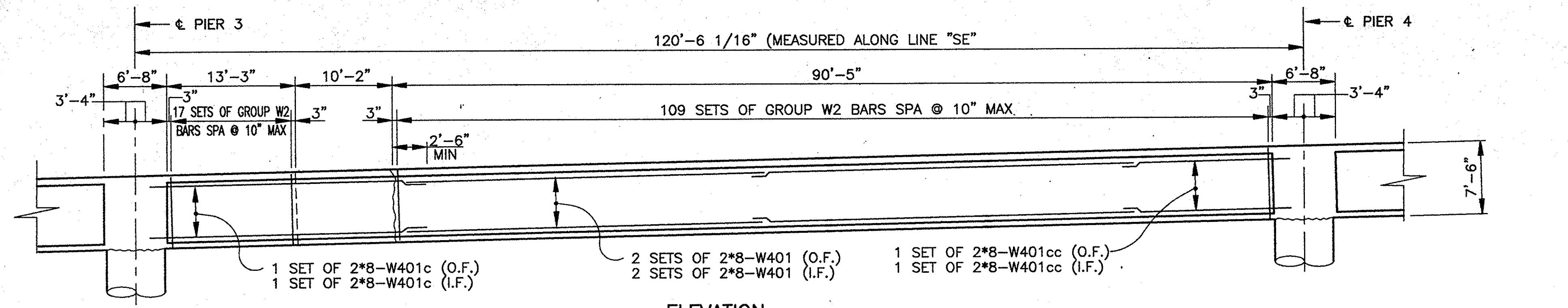
CONTRACT NO.

BRIDGE FILE: I-80-5-7823



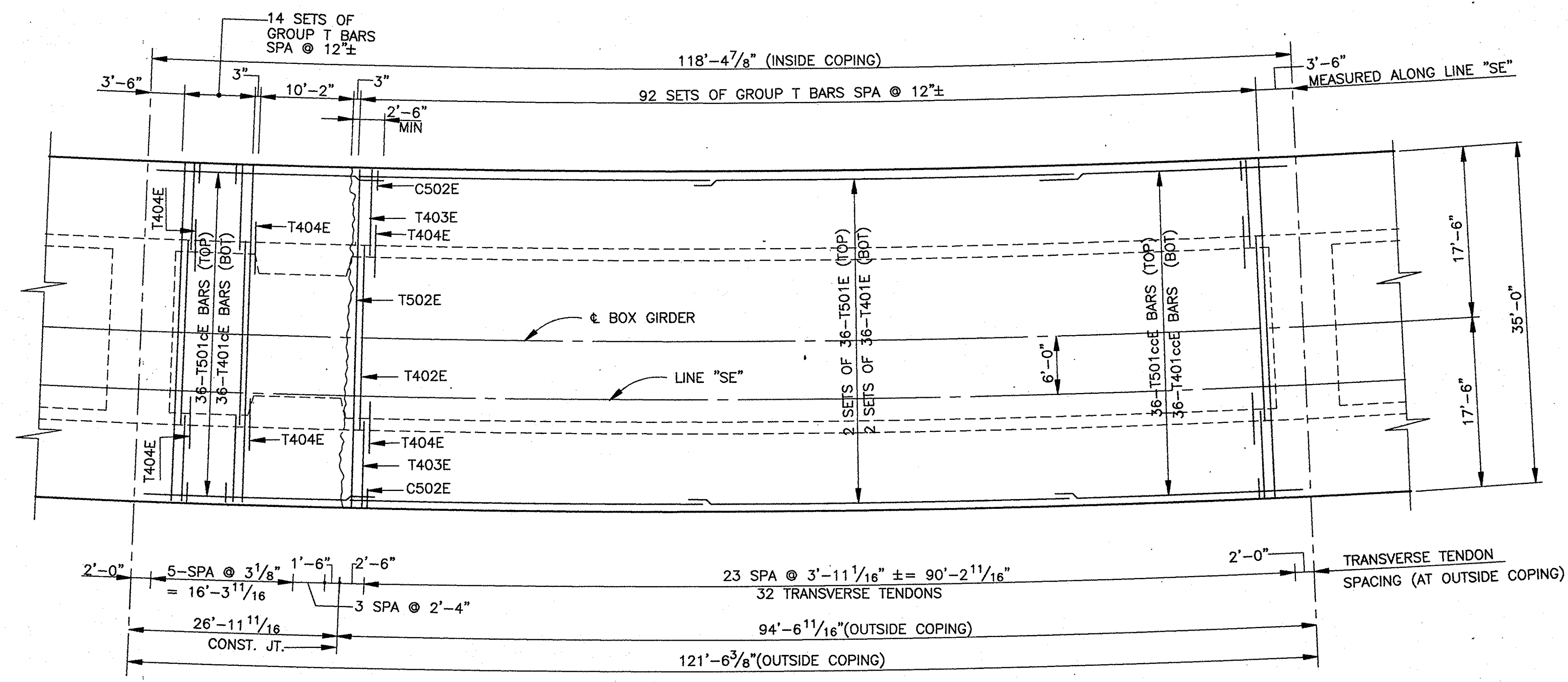
DESIGNED HHJ C'K'D LS
DRAWN TMD C'K'D HHJ
TRACED C'K'D



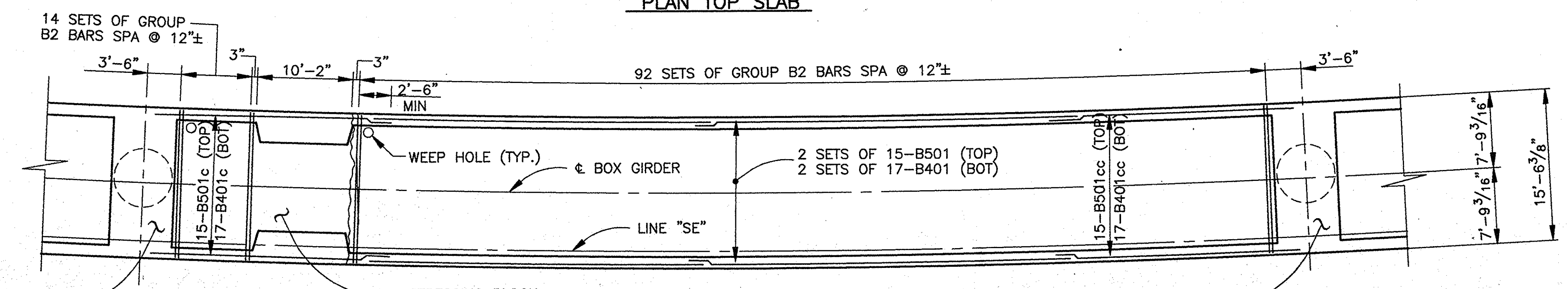


ELEVATION
(SHOWING WEB REINFORCING)

NOTE:
I.F. = INSIDE FACE
O.F. = OUTSIDE FACE



PLAN TOP SLAB

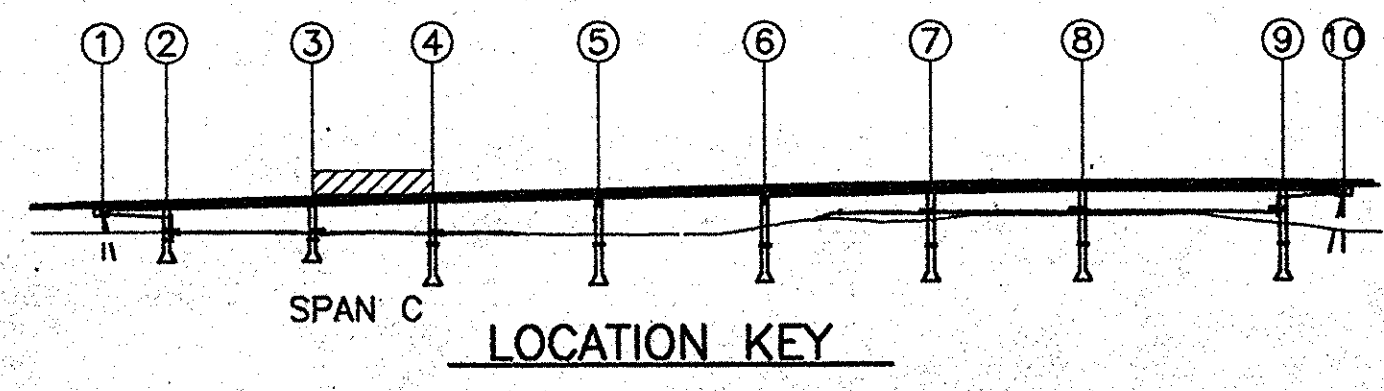


PLAN BOTTOM SLAB

FOR PIER 3 DIAPHRAGM REINFORCING SEE DWG C31

FOR STRESSING BLOCK REINFORCING SEE DWG C35

FOR PIER 4 DIAPHRAGM REINFORCING SEE DWG C30



BILL OF MATERIALS

REINFORCING STEEL GRADE 60			
Size And Mark	No. Of Bars	Length (Feet)	Weight (Lbs.)
GROUP W2 BARS			
W603E	252	10'-4"	
W604E	252	10'-5"	
TOTAL #6			7854
GROUP T BARS			
T502E	106	34'-9"	3842
T402E	106	18'-8"	
T403E	212	8'-11"	
T404E	212	5'-0"	
TOTAL #4			3293
LONGITUDINAL BARS			
T501E	72	40'-0"	
T501cE	36	31'-9"	
T501ccE	36	17'-2"	
TOTAL #5			4840
T401E	72	40'-0"	
T401cE	36	31'-9"	
T401ccE	36	16'-2"	
TOTAL #4			3076
TOTAL EPOXY COATED REINFORCING			22905
GROUP B2 BARS			
B503	106	15'-6"	
B512	212	4'-5"	
TOTAL #5			2691
B403	106	17'-4"	1227
LONGITUDINAL BARS			
B501	30	40'-0"	
B501c	15	31'-9"	
B501cc	15	17'-2"	
TOTAL #5			2017
B401	34	40'-0"	
B401c	17	31'-9"	
B401cc	17	16'-2"	
W401	64	40'-0"	
W401c	32	31'-9"	
W401cc	32	16'-2"	
W402	384	1'-11"	
TOTAL #4			4680
TOTAL REGULAR REINFORCING			10615
SUPERSTRUCTURE CONCRETE			273.9 cys.
MISCELLANEOUS			
SURFACE SEAL			
(ESTIMATED QUANTITY = 6170 SFT 1 LSM)			

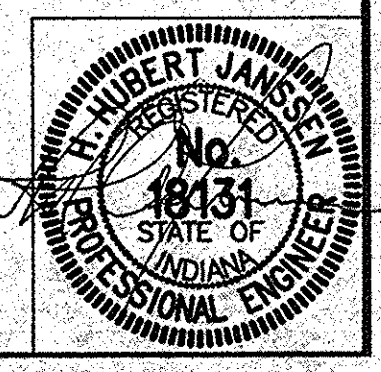
- NOTE:
- FOR TYPICAL SECTION REINFORCING SEE SHEETS DWGS C14 & C15.
 - FOR TYPICAL LAP SPLICE DIMENSIONS SEE DWG C16.
 - FOR BAR SHAPES SEE DWG C16.
 - FOR BRIDGE RAILING DETAILS & QUANTITIES SEE DWGS C21, C26 & C27.
 - FOR TRANSVERSE TENDON DETAILS & QUANTITIES SEE DWG C37.
 - SPACING OF ALL TRANSVERSE BARS ARE MEASURED ALONG LINE "SE".

SUPERSTRUCTURE DETAILS-SPAN C
INDIANA DEPARTMENT OF TRANSPORTATION
LAKE COUNTY

SCALE: 1/8"=1'-0", UNLESS NOTED DATE: July 10, 1988

SUBMITTED FOR APPROVAL

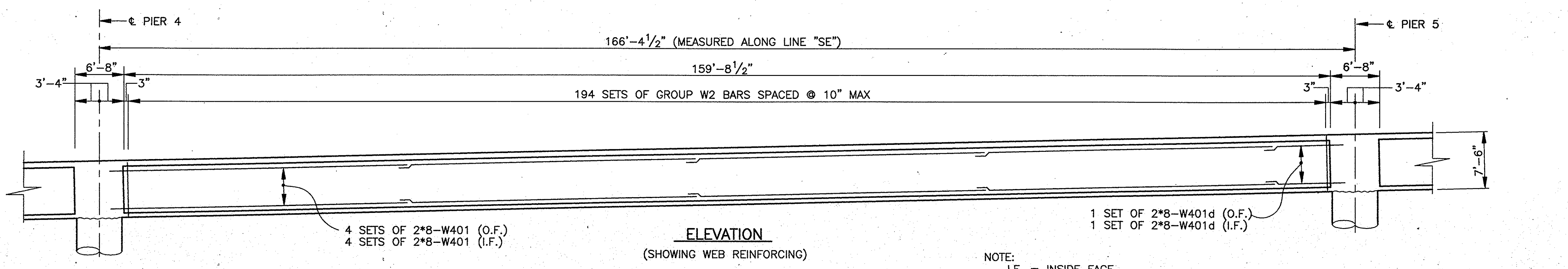
DRAWING: C18 OF C51 SHEET: 33 OF
PROJECT: - NH-80-1 ()
CONTRACT NO.
BRIDGE FILE: 1-80-5-7823



DESIGNED: HHJ C'K'D LS
DRAWN: TMD C'K'D HHJ
TRACED: C'K'D

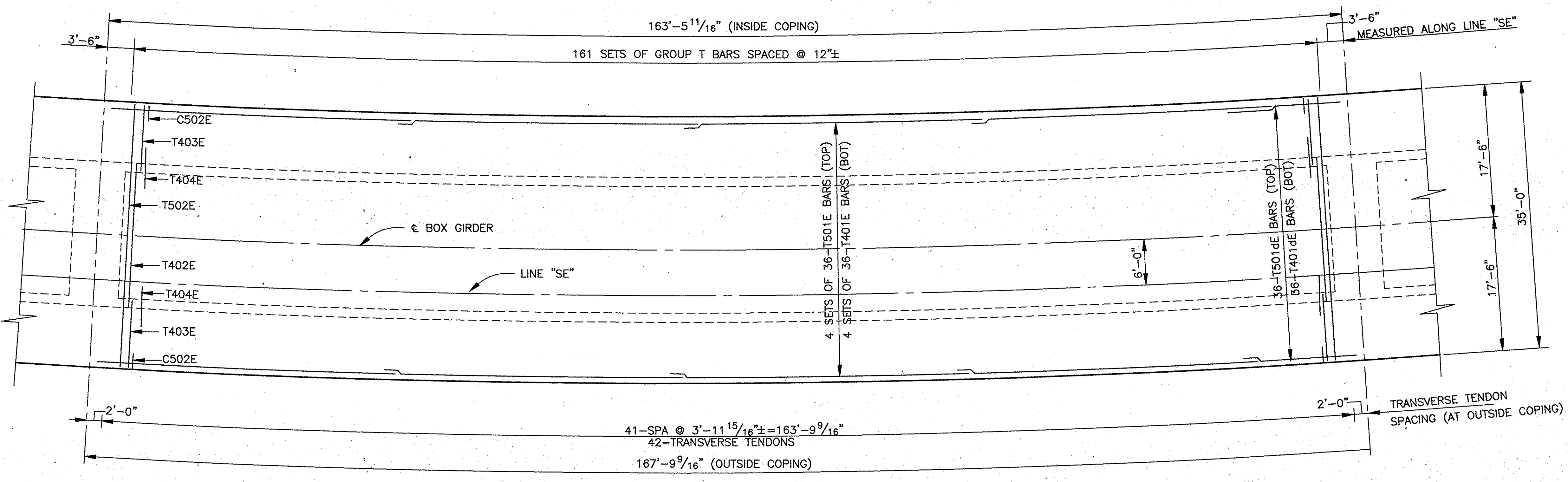
BILL OF MATERIALS

REINFORCING STEEL GRADE 60			
Size And Mark	No. Of Bars	Length (Feet)	Weight (Lbs.)
GROUP W2 BARS			
W603E	388	10'-4"	
W604E	388	10'-5"	
TOTAL #6			12093
GROUP T BARS			
T502E	161	34'-9"	5835
T402E	161	18'-8"	
T403E	322	8'-11"	
T404E	322	5'-0"	
TOTAL #4			5002
LONGITUDINAL BARS			
T501E	144	40'-0"	
T501dE	36	17'-9"	
TOTAL #5			6674
T401E	144	40'-0"	
T401dE	36	15'-9"	
TOTAL #4			4226
TOTAL EPOXY COATED REINFORCING			33831
GROUP B2 BARS			
B503	161	15'-6"	
B512	322	4'-5"	
TOTAL #5			4087
B403	161	17'-4"	1864
LONGITUDINAL BARS			
B501	60	40'-0"	
B501d	15	17'-9"	
TOTAL #5			2781
B401	68	40'-0"	
B401d	17	15'-9"	
W401	128	40'-0"	
W401d	32	15'-9"	
W402	536	1'-11"	
TOTAL #4			6440
TOTAL REGULAR REINFORCING			15172
SUPERSTRUCTURE CONCRETE			355.9 cys.
MISCELLANEOUS			
SURFACE SEAL			
(ESTIMATED QUANTITY = 8519 SFT			1 LSUM

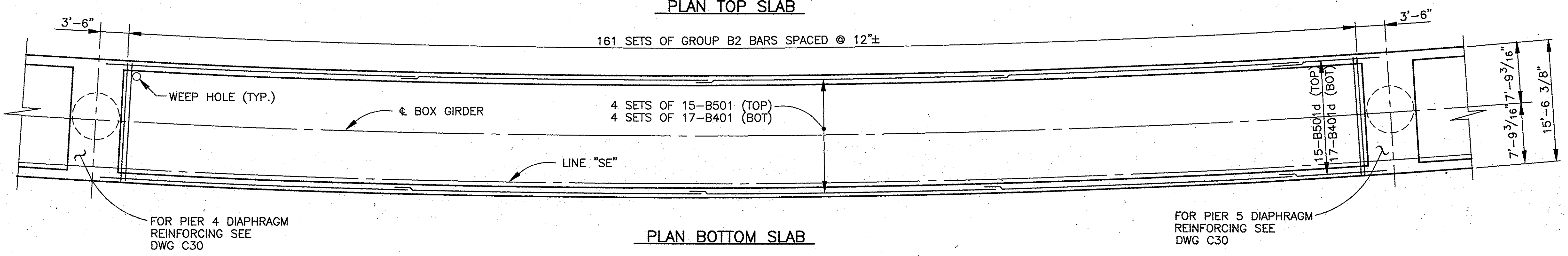


ELEVATION
(SHOWING WEB REINFORCING)

NOTE:
I.F. = INSIDE FACE
O.F. = OUTSIDE FACE



PLAN TOP SLAB



PLAN BOTTOM SLAB

- NOTE:
- FOR TYPICAL SECTION REINFORCING SEE SHEETS DWGS C14 & C15.
 - FOR TYPICAL LAP SPLICE DIMENSIONS SEE DWG C16.
 - FOR BAR SHAPES SEE DWG C16.
 - FOR BRIDGE RAILING DETAILS & QUANTITIES SEE DWGS C21, C26 & C27.
 - FOR TRANSVERSE TENDON DETAILS & QUANTITIES SEE DWG C37.
 - SPACING OF ALL TRANSVERSE BARS ARE MEASURED ALONG LINE "SE".

SUPERSTRUCTURE DETAILS-SPAN D
INDIANA DEPARTMENT OF TRANSPORTATION
LAKE COUNTY

SCALE: 1/8"=1'-0", UNLESS NOTED DATE: 5/22/98

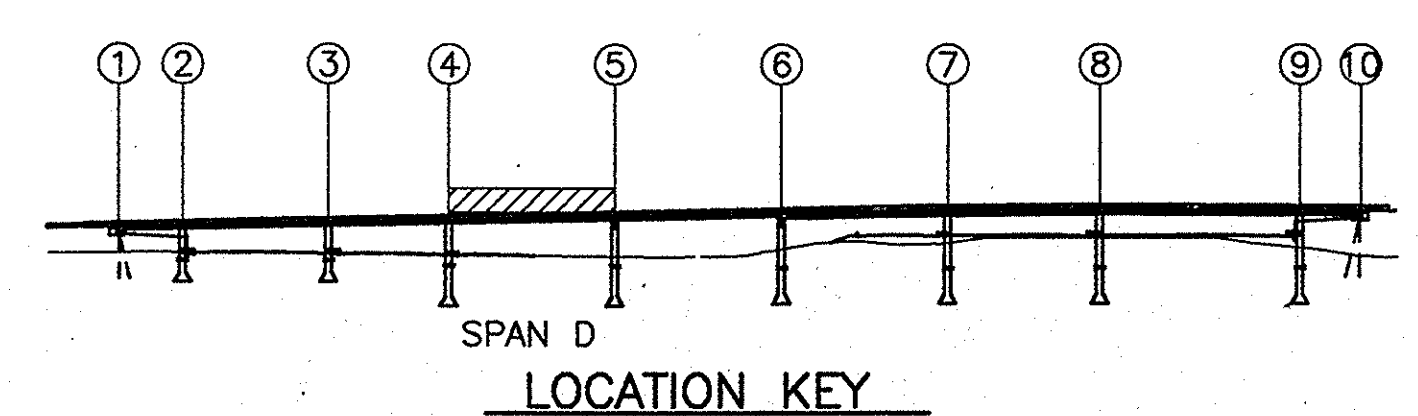
SUBMITTED FOR APPROVAL

DRAWING: C19 OF C51 SHEET: 34 OF 73

PROJECT: - NH-80-1 () 4

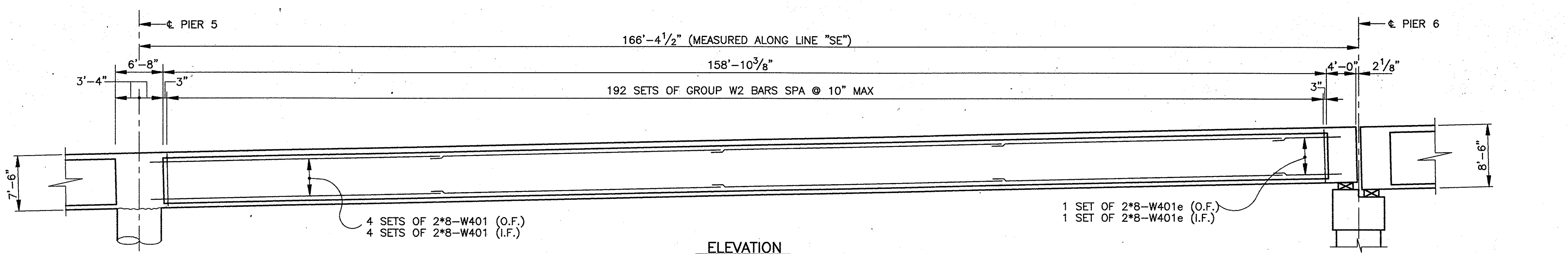
CONTRACT NO.

BRIDGE FILE: I-80-5-7823



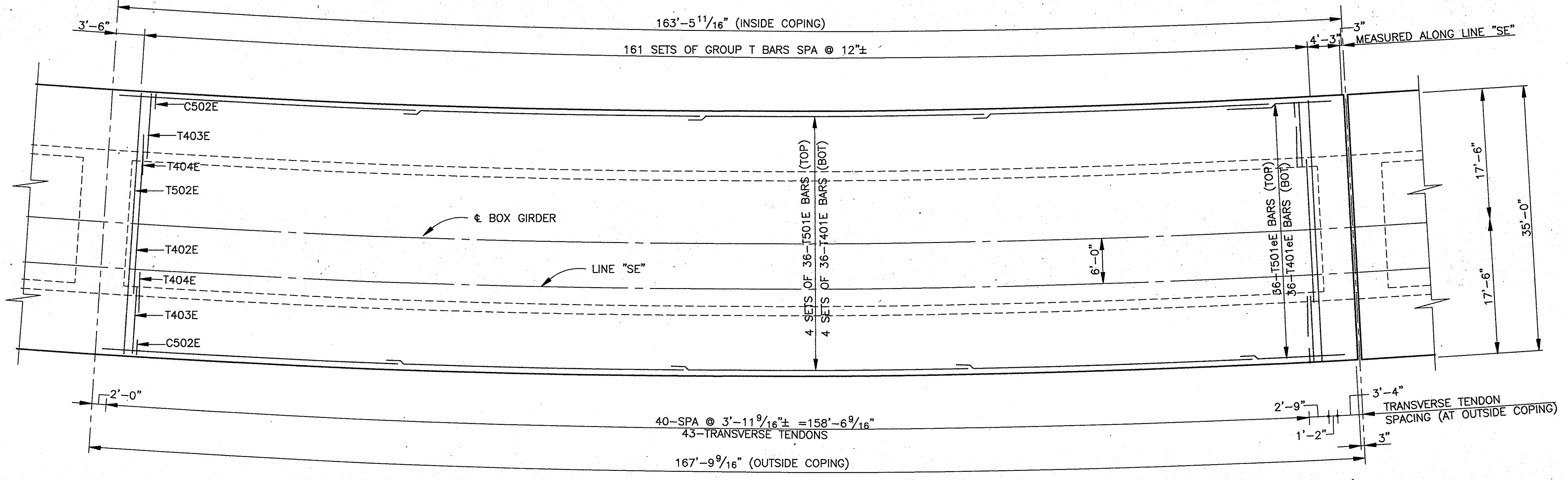
DESIGNED: HHJ C'K'D LS
DRAWN: TMD C'K'D HHJ
TRACED: C'K'D



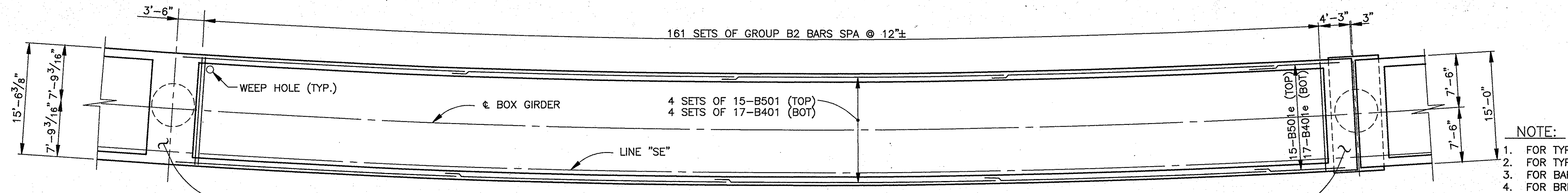


ELEVATION
(SHOWING WEB REINFORCING)

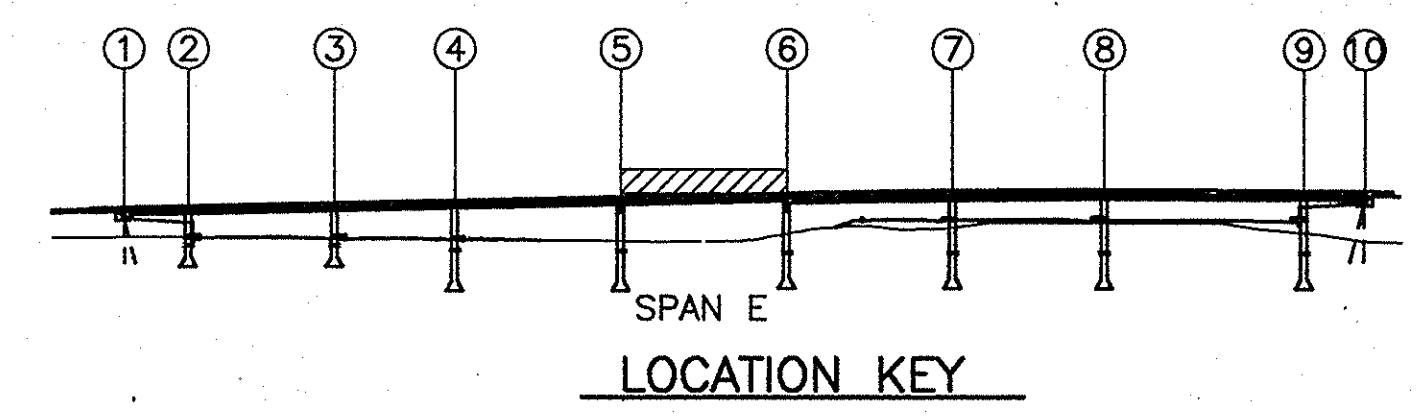
NOTE:
I.F. = INSIDE FACE
O.F. = OUTSIDE FACE



PLAN TOP SLAB



PLAN BOTTOM SLAB



LOCATION KEY

BILL OF MATERIALS

REINFORCING STEEL GRADE 60			
Size And Mark	No. Of Bars	Length (Feet)	Weight (Lbs.)
GROUP W2 BARS			
W603E	384	10'-4"	
W604E	384	10'-5"	
TOTAL #6 BARS			11968
GROUP T BARS			
T502E	161	34'-9"	5835
T402E	161	18'-8"	
T403E	322	8'-11"	
T404E	322	5'-0"	
TOTAL #4			5002
LONGITUDINAL BARS			
T501E	144	40'-0"	
T501eE	36	17'-9"	
TOTAL #5			6674
T401E	144	40'-0"	
T401eE	36	15'-9"	
TOTAL #4			4226
TOTAL EPOXY COATED REINFORCING			33706
GROUP B2 BARS			
B503	161	15'-6"	
B512	322	4'-5"	
TOTAL #5			4087
B403	161	17'-4"	1864
LONGITUDINAL BARS			
B501	60	40'-0"	
B501e	15	17'-9"	
TOTAL #5			2781
B401	68	40'-0"	
B401e	17	15'-9"	
W401	128	40'-0"	
W401e	32	15'-9"	
W402	536	1'-11"	
TOTAL #4			6440
TOTAL REGULAR REINFORCING			15172
SUPERSTRUCTURE CONCRETE			357.7
MISCELLANEOUS			
SURFACE SEAL			
(ESTIMATED QUANTITY = 8507 SFT) 1 LSUM			

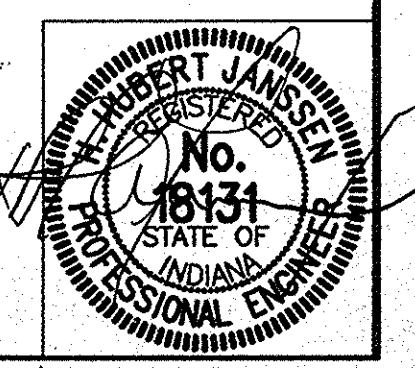
- NOTE:
- FOR TYPICAL SECTION REINFORCING SEE SHEETS DWGS C14 & C15.
 - FOR TYPICAL LAP SPLICE DIMENSIONS SEE DWG C16.
 - FOR BAR SHAPES SEE DWG C16.
 - FOR BRIDGE RAILING DETAILS & QUANTITIES SEE DWGS C21, C26 & C27.
 - FOR TRANSVERSE TENDON DETAILS & QUANTITIES SEE DWG C37.
 - SPACING OF ALL TRANSVERSE BARS ARE MEASURED ALONG LINE "SE".

SUPERSTRUCTURE DETAILS-SPAN E
INDIANA DEPARTMENT OF TRANSPORTATION
LAKE COUNTY

SCALE: 1/8"=1'-0", UNLESS NOTED DATE: 5/22/98

SUBMITTED FOR APPROVAL

DRAWING: C20 OF C51 SHEET: 35 OF 73
PROJECT: - NH-80-1 () 4
CONTRACT NO.
BRIDGE FILE: I-80-5-7823

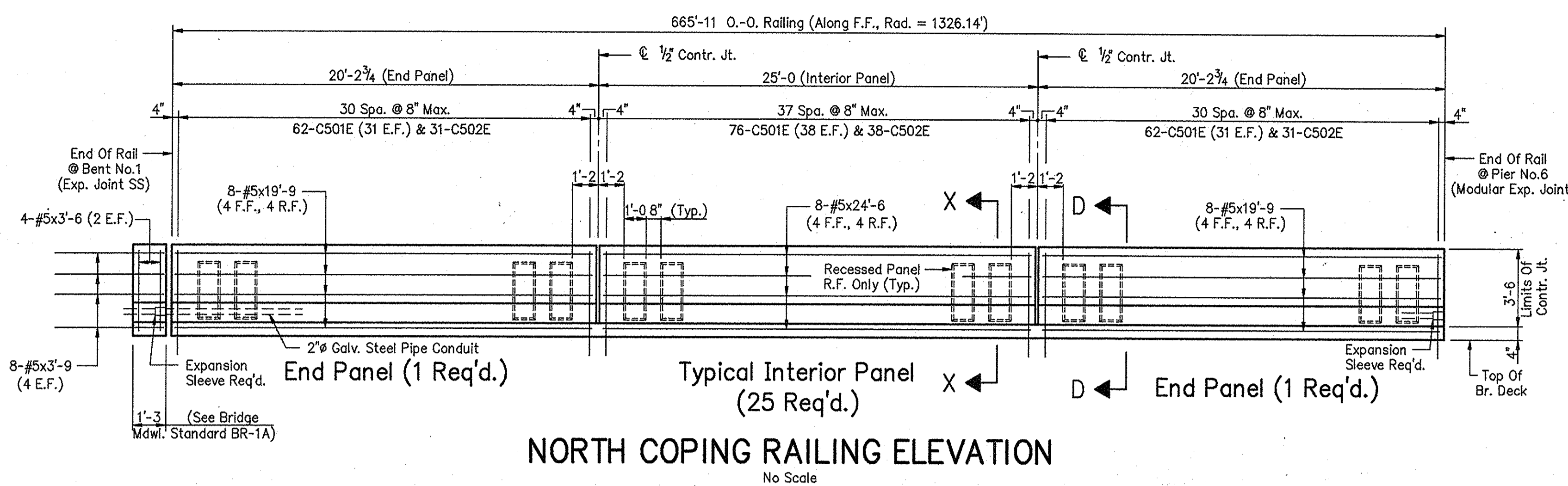


DESIGNED HHJ C'K'D LS
DRAWN TMD C'K'D HHJ
TRACED C'K'D

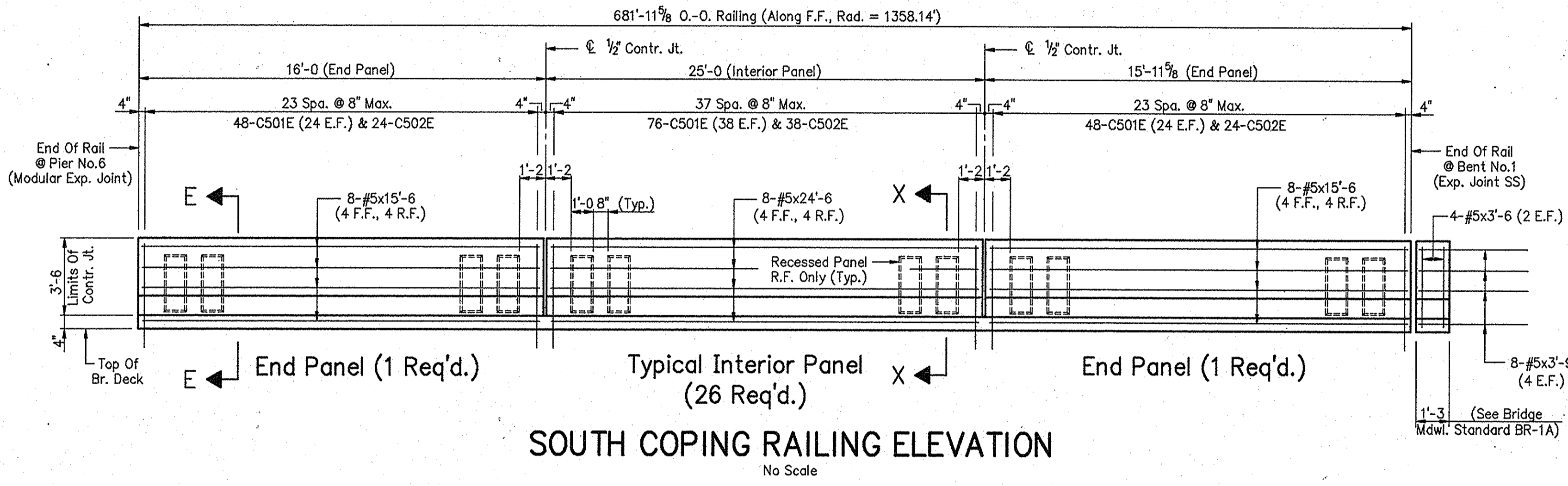
IN/BA-7-8 SPANE, 09/26/97 et 1147
 PLT/EPG

RAILING BILL OF MATERIALS

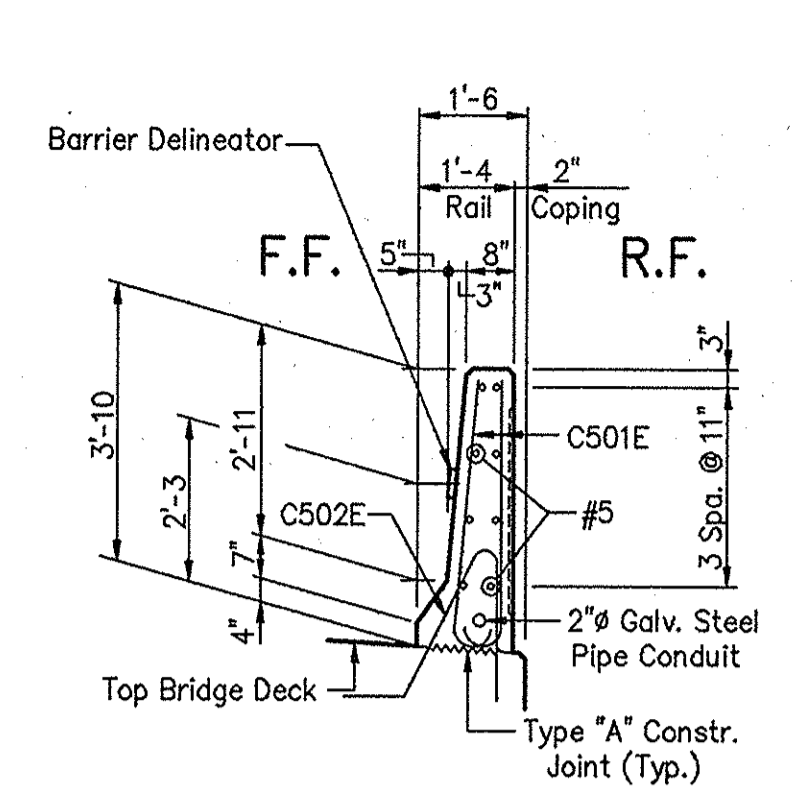
Epoxy Coated Reinforcing Steel			
Size And Mark	No. Of Bars	Length (Feet)	Weight (Lbs.)
C501E	4096	4'-1	
C502E	2048	5'-5	
#5	408	24'-6	
#5	16	20'-0	
#5	16	15'-6	
#5	16	3'-9	
#5	8	3'-6	
Total Epoxy Coated Reinforcing Steel			40,121
Concrete			
Concrete Railing Class "C"			
North Coping			85.0 Cys.
South Coping			86.3 Cys.
Total Concrete Railing Class "C"			171.3 Cys.
Miscellaneous			
Masonry Coating			12,840 Sft.
Barrier Delineators			69 Eft.
2" Galvanized Steel Pipe Conduit			678 Lft.
Cast Iron Grates, Basins And Fittings			
1- Standard Roadway Drain			
Type SQ, Grate A			192 Lbs.
3- Conduit Pull Boxes @ 105 Lbs. Each			315 Lbs.
Total Cast Iron Grates, Basins And Fittings			507 Lbs.
Pipe, PVC, 6"			7 Lft.



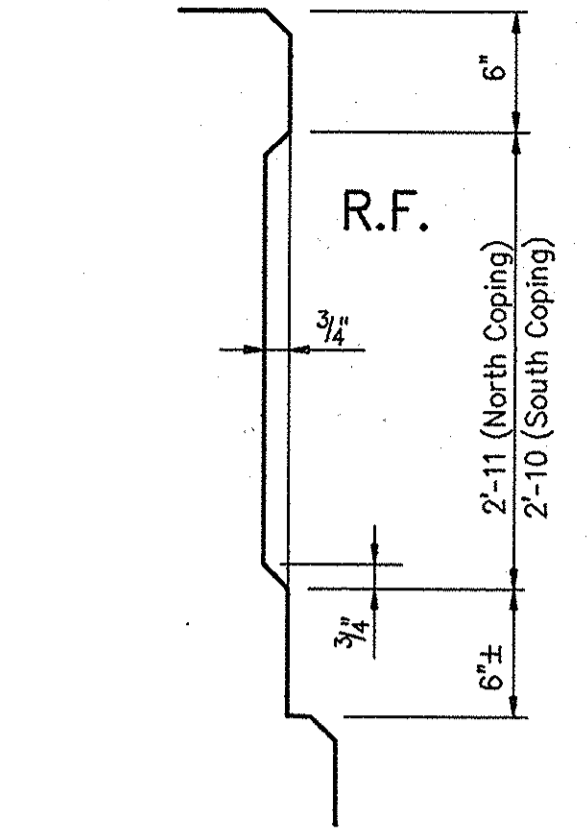
NORTH COPING RAILING ELEVATION
No Scale



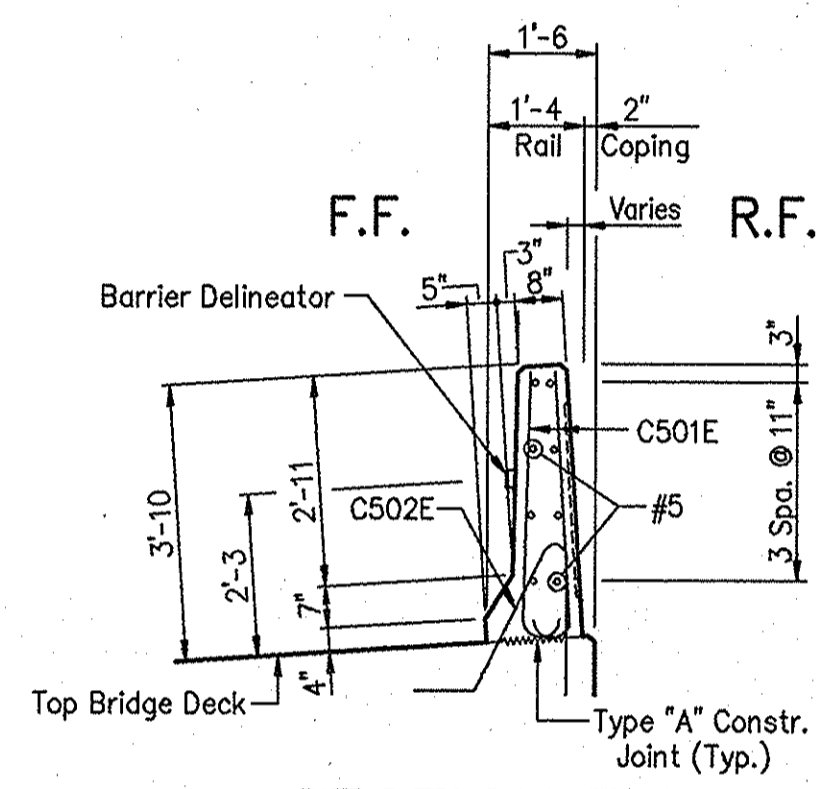
SOUTH COPING RAILING ELEVATION
No Scale



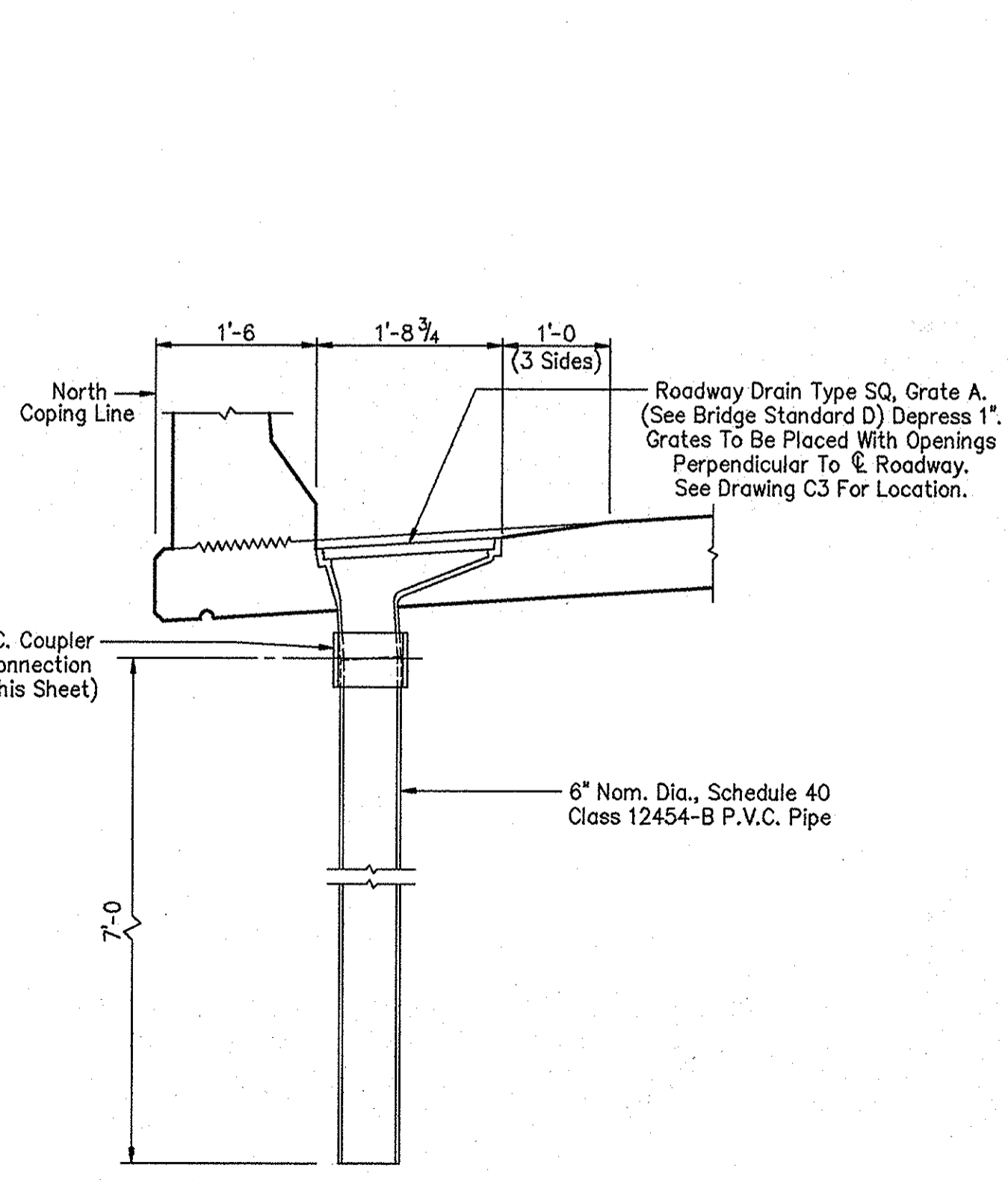
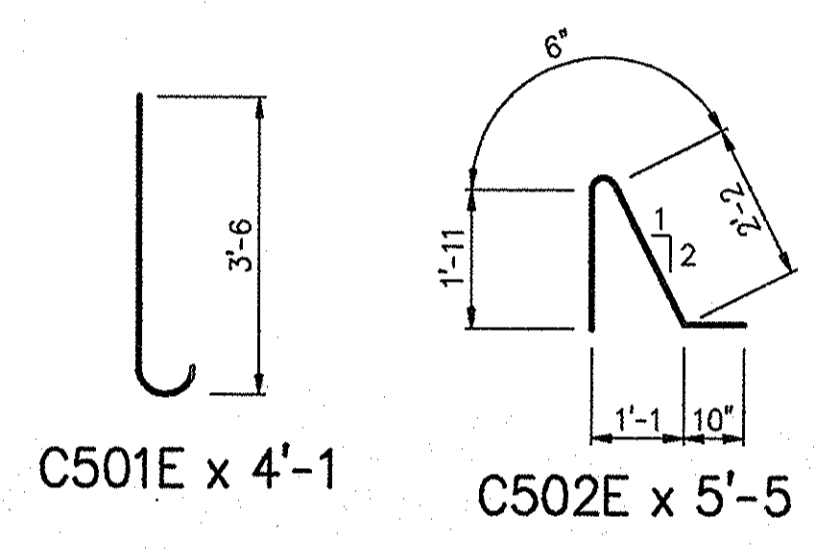
SECTION D-D



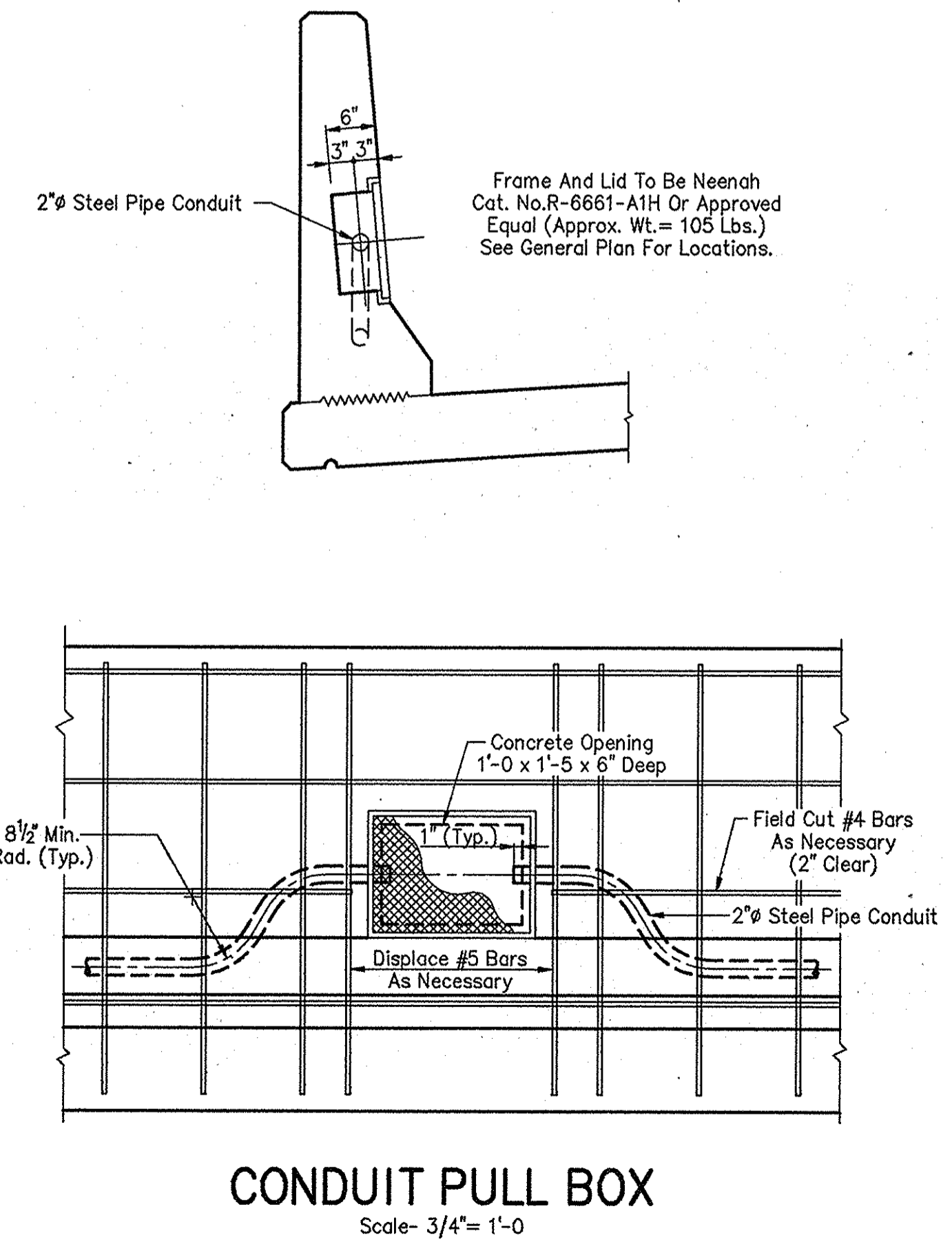
PARTIAL SECTION X-X
Showing Recessed Panel
No Scale



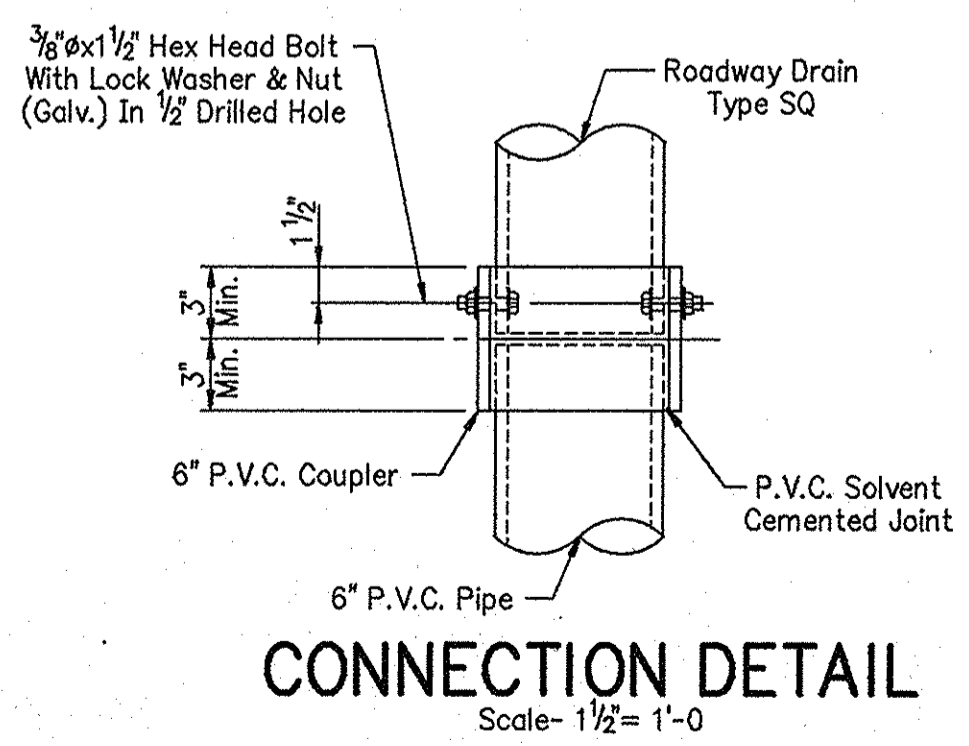
SECTION E-E



SECTION @ ROADWAY DRAIN TYPE SQ-A
(1 REQUIRED)
Scale- 3/4" = 1'-0"



CONDUIT PULL BOX
Scale- 3/4" = 1'-0"



CONNECTION DETAIL
Scale- 1 1/2" = 1'-0"

NOTES:
For reinforcing bar notes, see Bridge Standard C1.
All reinforcing steel to be epoxy coated.

MISCELLANEOUS FLOOR DETAILS - UNIT 1

INDIANA DEPARTMENT OF TRANSPORTATION

SCALE: - 3/8" = 1'-0, Unless Noted DATE: - July 9, 1998

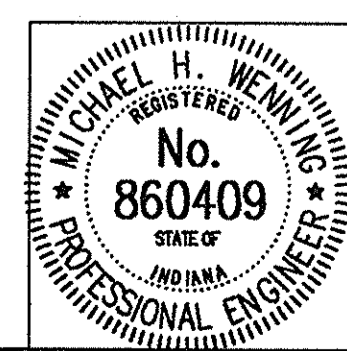
SUBMITTED FOR APPROVAL *[Signature]*

DRAWING: - C21 OF C51 SHEET: - 36 OF 73

PROJECT: - IM-80-1 (143)4

CONTRACT NO. R-23808

BRIDGE FILE: - I-80-5-7823

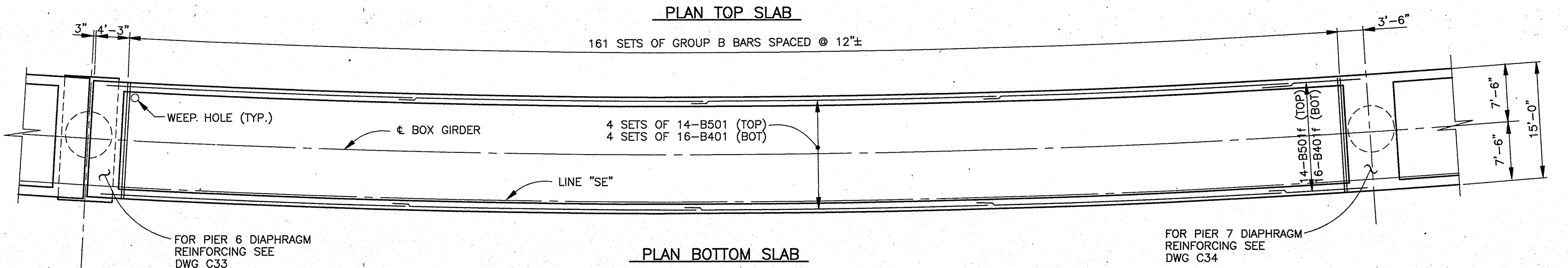
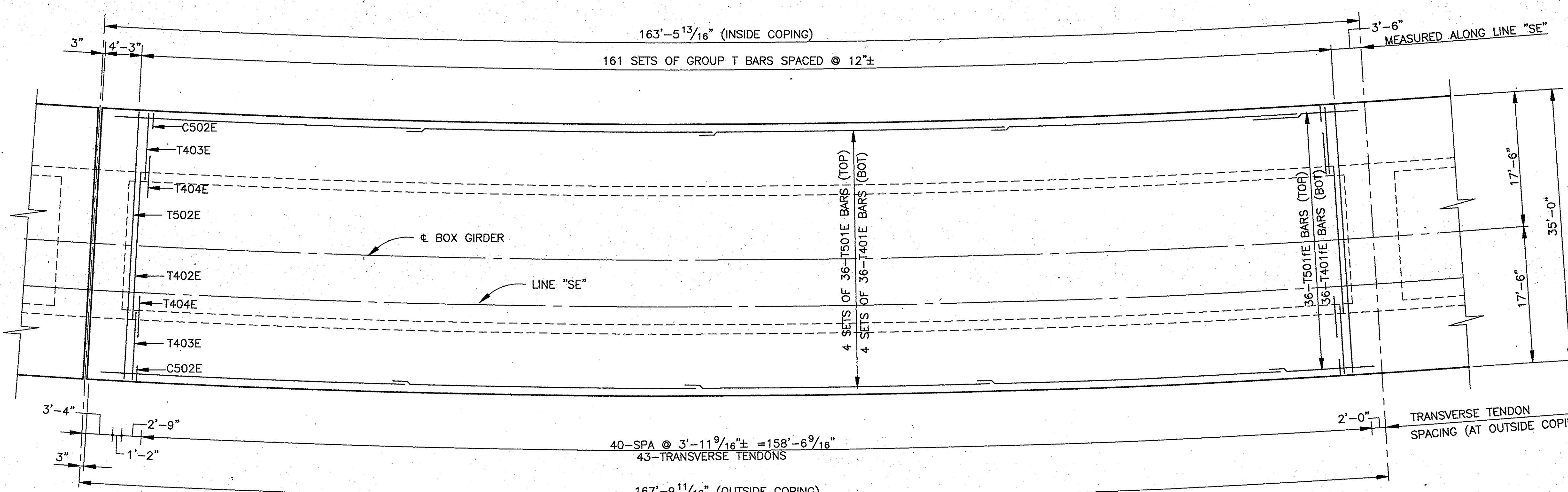
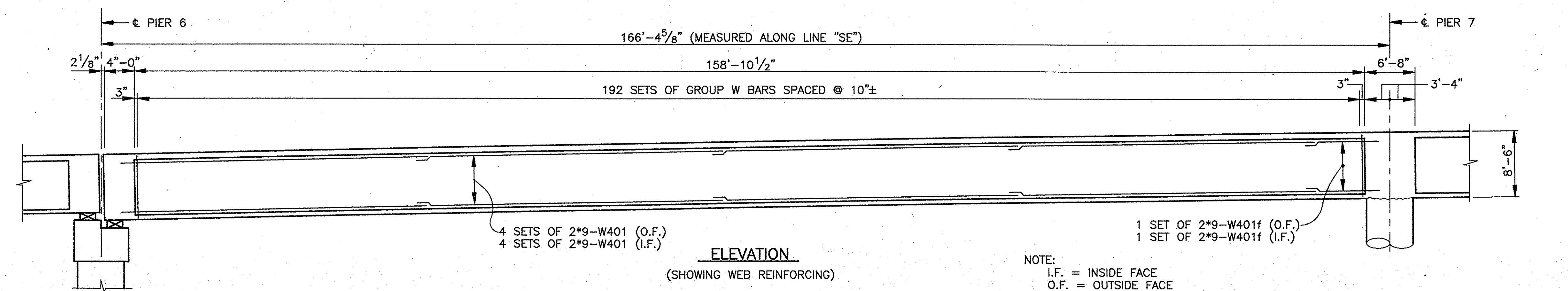


DESIGNED: C.K.D.
DRAWN: DSH 2/25/98 C.K.D. MHW 5/29/98
TRACED: C.K.D.

DATE PLOTTED: 07/10/98 12:51:45
EDIT DATE: DSH - 591

BILL OF MATERIALS

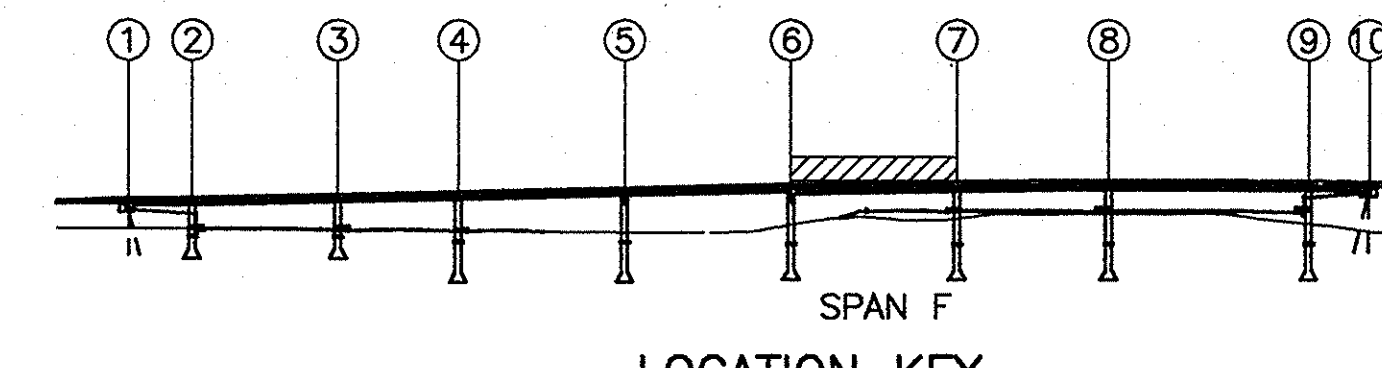
REINFORCING STEEL GRADE 60			
Size And Mark	No. Of Bars	Length (Feet)	Weight (Lbs.)
GROUP W BARS			
W601E	384	11'-4"	
W602E	384	11'-5"	
TOTAL #6 BARS			13121
GROUP T BARS			
T502E	161	34'-9"	5835
T402E	161	18'-8"	
T403E	322	8'-11"	
T404E	322	5'-0"	
TOTAL #4			5002
LONGITUDINAL BARS			
T501E	144	40'-0"	
T501fE	36	17'-9"	
TOTAL #5			6674
T401E	144	40'-0"	
T401fE	36	15'-9"	
TOTAL #4			4226
TOTAL EPOXY COATED REINFORCING			34859
GROUP B BARS			
B502	161	14'-9"	
B512	322	4'-5"	
TOTAL #5			3961
B402	161	16'-10"	1810
LONGITUDINAL BARS			
B501	56	40'-0"	
B501f	14	17'-9"	
TOTAL #5			2596
B401	64	40'-0"	
B401f	16	15'-9"	
W401	144	40'-0"	
W401f	36	15'-9"	
W402	536	1'-11"	
TOTAL #4			6792
TOTAL REGULAR REINFORCING			15159
SUPERSTRUCTURE CONCRETE			374.1
MISCELLANEOUS			
SURFACE SEAL			(ESTIMATED QUANTITY = 8507 SFT 1 LSUM)



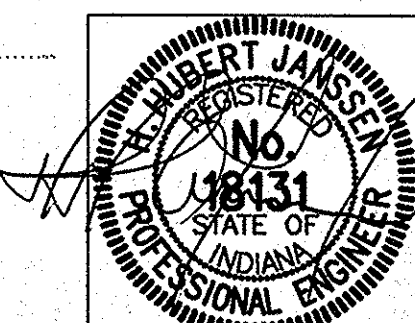
- NOTE:**
- FOR TYPICAL SECTION REINFORCING SEE SHEETS DWGS C14 & C15.
 - FOR TYPICAL LAP SPLICE DIMENSIONS SEE DWG C16.
 - FOR BAR SHAPES SEE DWG C16.
 - FOR BRIDGE RAILING DETAILS & QUANTITIES SEE DWGS C21, C26 & C27.
 - FOR TRANSVERSE TENDON DETAILS & QUANTITIES SEE DWG C37.
 - SPACING OF ALL TRANSVERSE BARS ARE MEASURED ALONG LINE "SE".

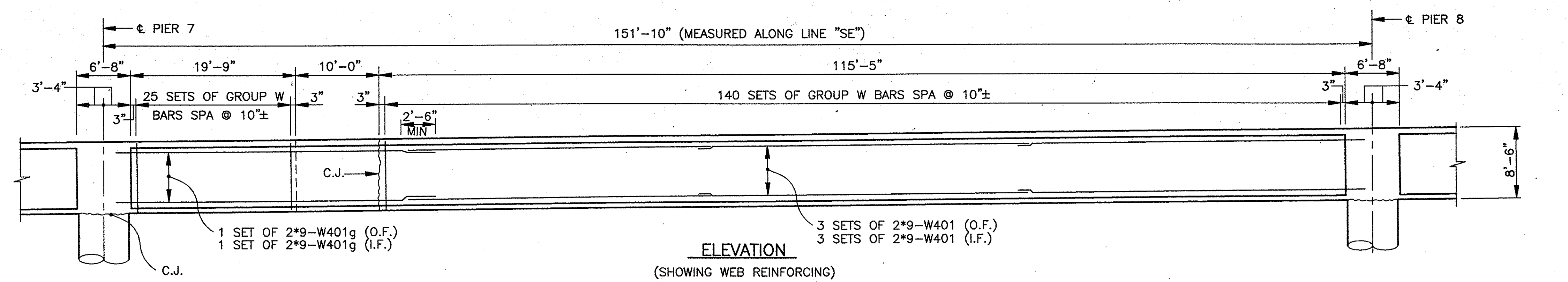
SUPERSTRUCTURE DETAILS-SPAN F
INDIANA DEPARTMENT OF TRANSPORTATION
LAKE COUNTY

SCALE: 1/8"=1'-0", UNLESS NOTED DATE: 5/22/98
SUBMITTED FOR APPROVAL
DRAWING: C22 OF C51 SHEET: 37 OF 73
PROJECT: - NH-80-1 () 4
CONTRACT NO.
BRIDGE FILE: I-80-5-7823



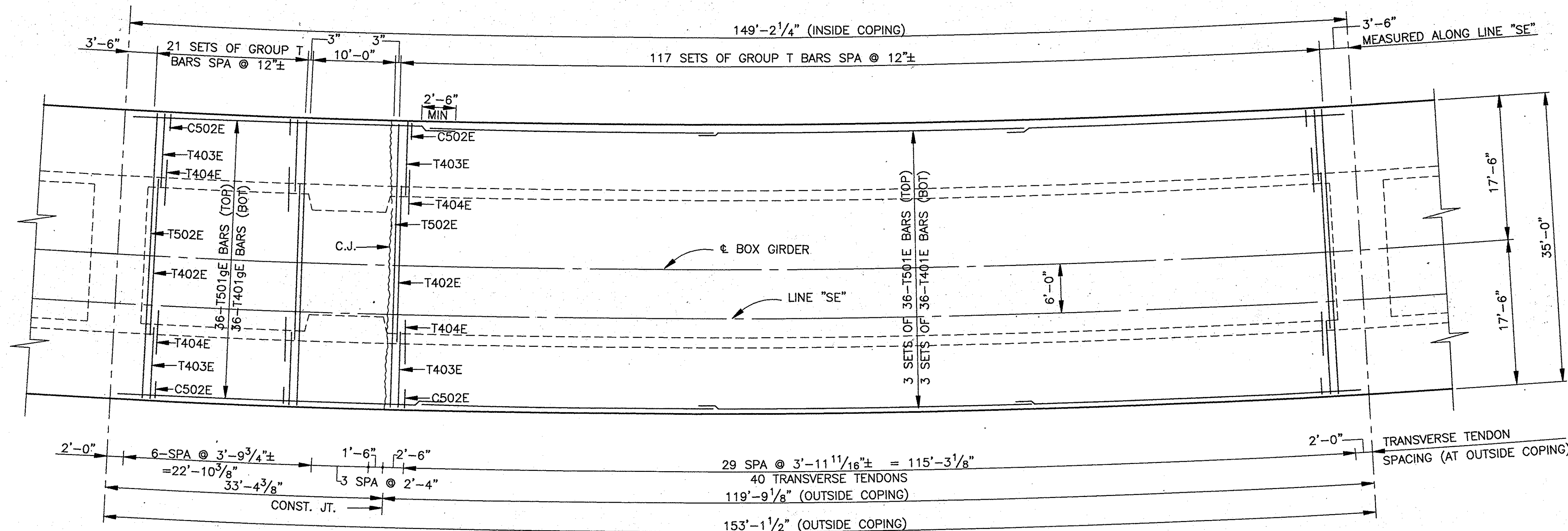
DESIGNED	HHJ	C'K'D	LS
DRAWN	TMD	C'K'D	HHJ
TRACED		C'K'D	



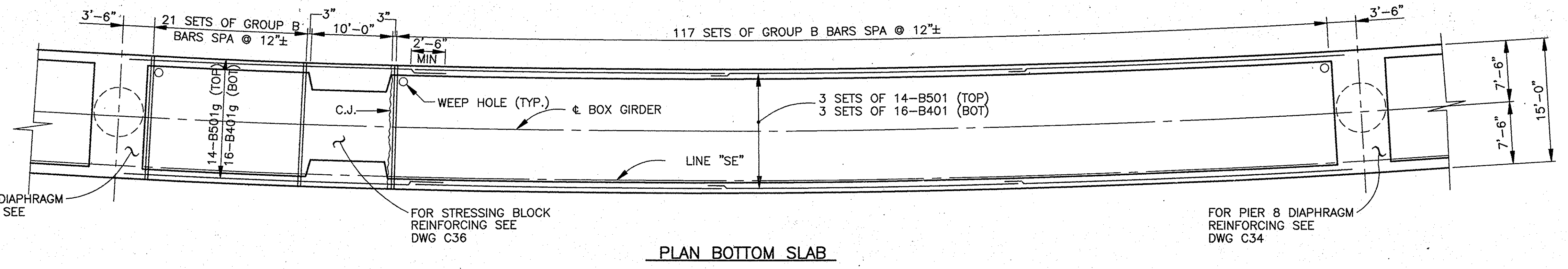


ELEVATION
(SHOWING WEB REINFORCING)

NOTE:
I.F. = INSIDE FACE
O.F. = OUTSIDE FACE



PLAN TOP SLAB



PLAN BOTTOM SLAB

FOR PIER 7 DIAPHRAGM REINFORCING SEE DWG C34

FOR STRESSING BLOCK REINFORCING SEE DWG C36

FOR PIER 8 DIAPHRAGM REINFORCING SEE DWG C34

BILL OF MATERIALS			
REINFORCING STEEL GRADE 60			
Size And Mark	No. Of Bars	Length (Feet)	Weight (Lbs.)
GROUP W BARS			
W601E	330	11'-4"	
W602E	330	11'-5"	
TOTAL #6 BARS			11276
GROUP T BARS			
T502E	138	34'-9"	5002
T402E	138	18'-8"	
T403E	276	8'-11"	
T404E	276	5'-0"	
TOTAL #4			4287
LONGITUDINAL BARS			
T501E	108	40'-0"	
T501gE	36	40'-0"	
TOTAL #5			6008
T401E	108	40'-0"	
T401gE	36	40'-0"	
TOTAL #4			3848
TOTAL EPOXY COATED REINFORCING			30421
GROUP B BARS			
B502	138	14'-9"	
B512	276	4'-5"	
TOTAL #5			3395
B402	138	16'-10"	1551
LONGITUDINAL BARS			
B501	42	40'-0"	
B501g	14	40'-0"	
TOTAL #5			2336
B401	48	40'-0"	
B401g	16	40'-0"	
W401	108	40'-0"	
W401g	36	40'-0"	
W402	488	1'-11"	
TOTAL #4			6184
TOTAL REGULAR REINFORCING			13467
SUPERSTRUCTURE CONCRETE			352.3
MISCELLANEOUS SURFACE SEAL			
(ESTIMATED QUANTITY = 7775 SFT)			1 LSM

- NOTE:**
- FOR TYPICAL SECTION REINFORCING SEE SHEETS DWGS C14 & C15.
 - FOR TYPICAL LAP SPLICE DIMENSIONS SEE DWG C16.
 - FOR BAR SHAPES SEE DWG C16.
 - FOR BRIDGE RAILING DETAILS & QUANTITIES SEE DWGS C21, C26 & C27.
 - FOR TRANSVERSE TENDON DETAILS & QUANTITIES SEE DWG C37.
 - SPACING OF ALL TRANSVERSE BARS ARE MEASURED ALONG LINE "SE".

SUPERSTRUCTURE DETAILS-SPAN G
INDIANA DEPARTMENT OF TRANSPORTATION
LAKE COUNTY

SCALE: 1/8"=1'-0", UNLESS NOTED DATE: 5/22/98

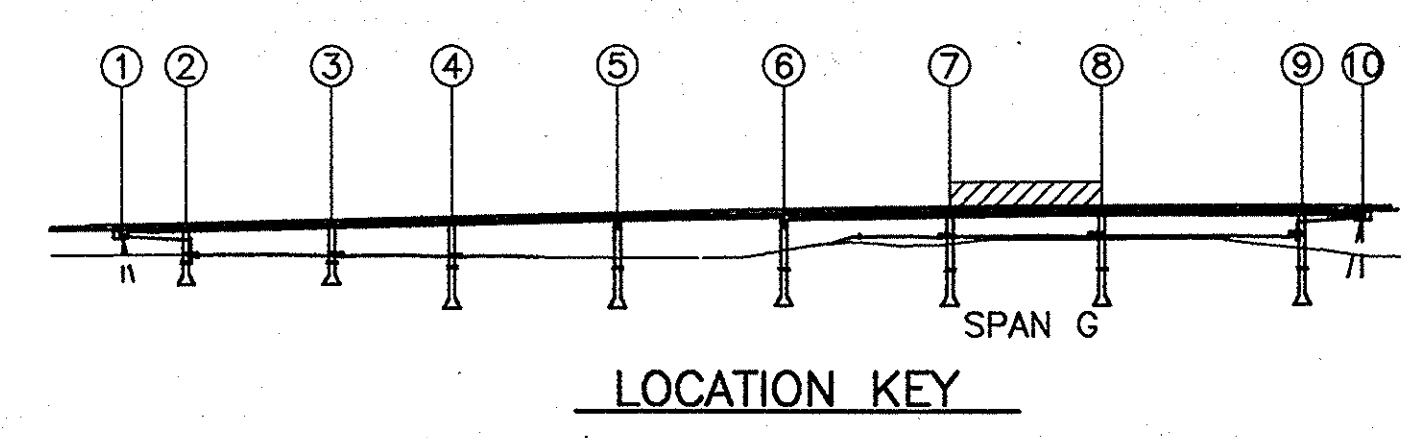
SUBMITTED FOR APPROVAL

DRAWING: C23 OF C51 SHEET: 38 OF 73

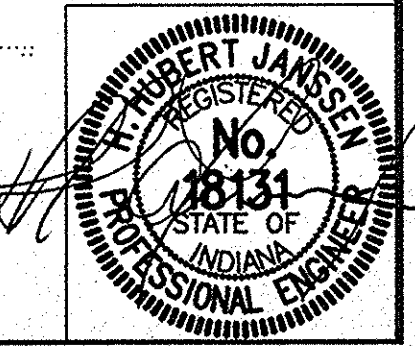
PROJECT: - NH-80-1 ()

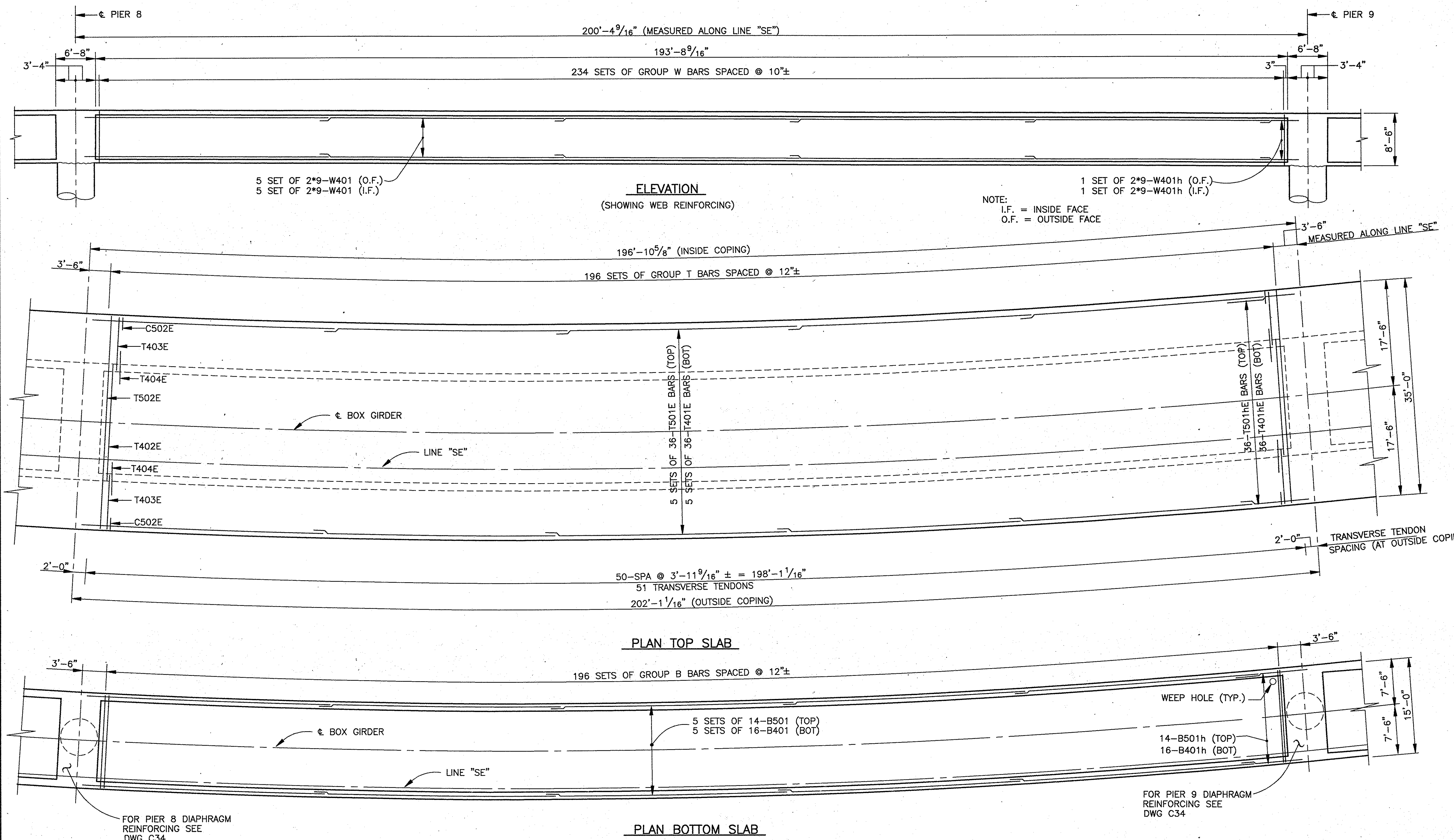
CONTRACT NO.

BRIDGE FILE: I-80-5-7823



DESIGNED: HHJ C'K'D LS
DRAWN: TMD C'K'D HHJ
TRACED: C'K'D

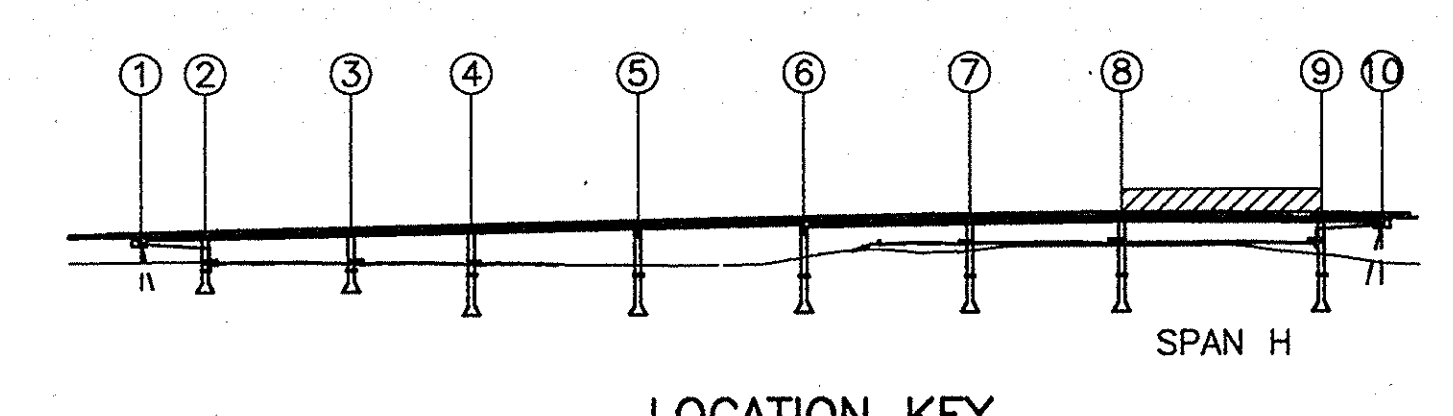




BILL OF MATERIALS

REINFORCING STEEL GRADE 60			
Size And Mark	No. Of Bars	Length (Feet)	Weight (Lbs.)
GROUP W BARS			
W601E	468	11'-4"	
W602E	468	11'-5"	
TOTAL #6 BARS			15992
GROUP T BARS			
T502E	196	34'-9"	7104
T402E	196	18'-8"	
T403E	392	8'-11"	
T404E	392	5'-0"	
TOTAL #4			6089
LONGITUDINAL BARS			
T501E	180	40'-0"	
T501hE	36	14'-7"	
TOTAL #5			8057
T401E	180	40'-0"	
T401hE	36	12'-1"	
TOTAL #4			5100
TOTAL EPOXY COATED REINFORCING			42342
GROUP B BARS			
B502	196	14'-9"	
B512	392	4'-5"	
TOTAL #5			4822
B402	196	16'-10"	2204
LONGITUDINAL BARS			
B501	70	40'-0"	
B501h	14	14'-7"	
TOTAL #5			3133
B401	80	40'-0"	
B401h	16	12'-1"	
W401	180	40'-0"	
W401h	36	12'-1"	
W402	648	1'-11"	
TOTAL #4			8198
TOTAL REGULAR REINFORCING			18357
SUPERSTRUCTURE CONCRETE			442.8
MISCELLANEOUS			
SURFACE SEAL			(ESTIMATED QUANTITY = 10260 SFT) 1 LSUM

- NOTE:**
- FOR TYPICAL SECTION REINFORCING SEE SHEETS DWGS C14 & C15.
 - FOR TYPICAL LAP SPLICE DIMENSIONS SEE DWG C16.
 - FOR BAR SHAPES SEE DWG C16.
 - FOR BRIDGE RAILING DETAILS & QUANTITIES SEE DWGS C21, C26 & C27.
 - FOR TRANSVERSE TENDON DETAILS & QUANTITIES SEE DWG C37.
 - SPACING OF ALL TRANSVERSE BARS ARE MEASURED ALONG LINE "SE".



SUPERSTRUCTURE DETAILS-SPAN H
INDIANA DEPARTMENT OF TRANSPORTATION
 LAKE COUNTY

SCALE: 1/8"=1'-0", UNLESS NOTED DATE: - 5/22/98

SUBMITTED FOR APPROVAL

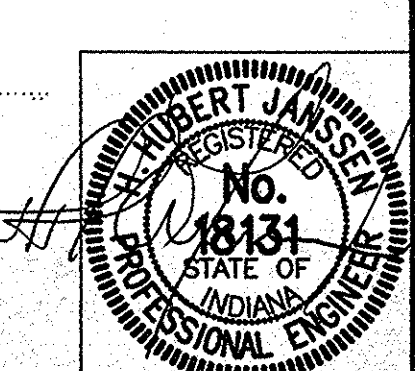
DRAWING: C24 OF C51 SHEET: 39 OF 73

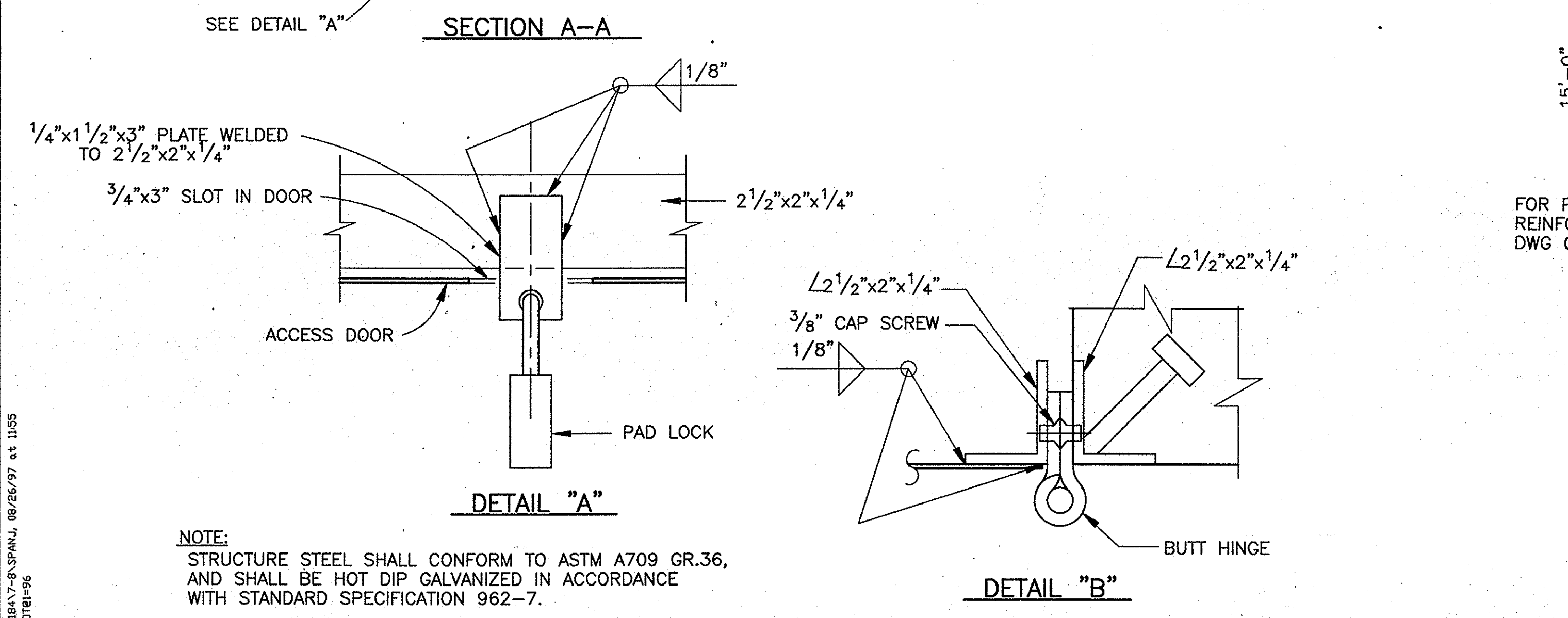
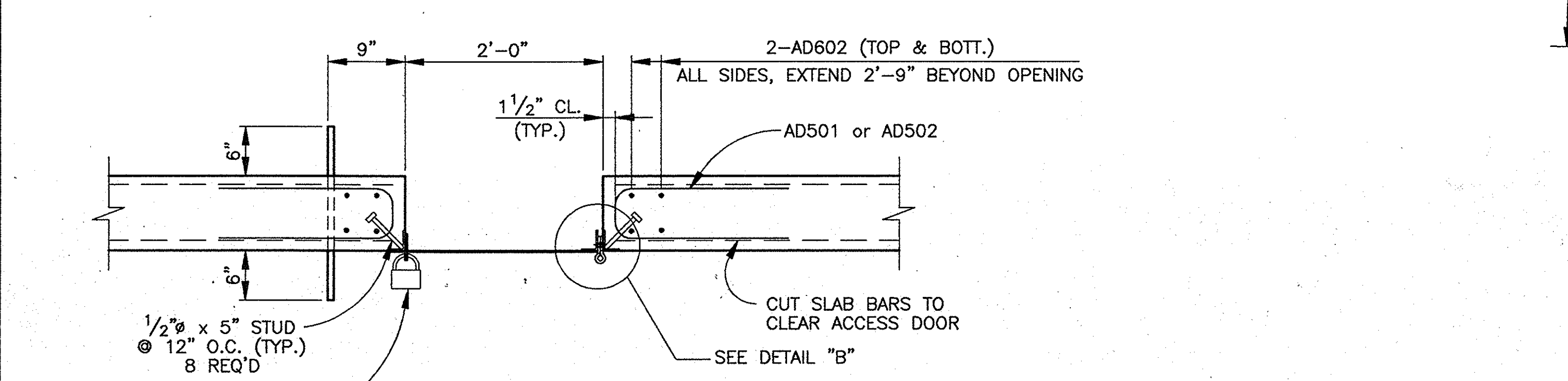
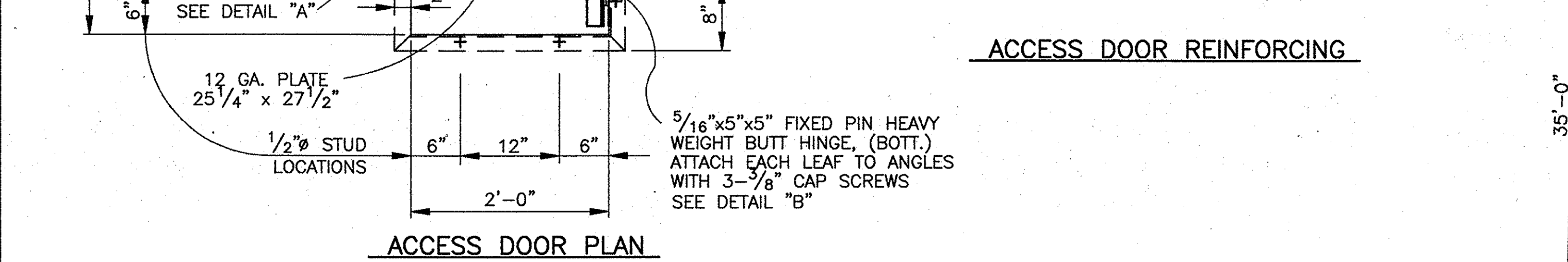
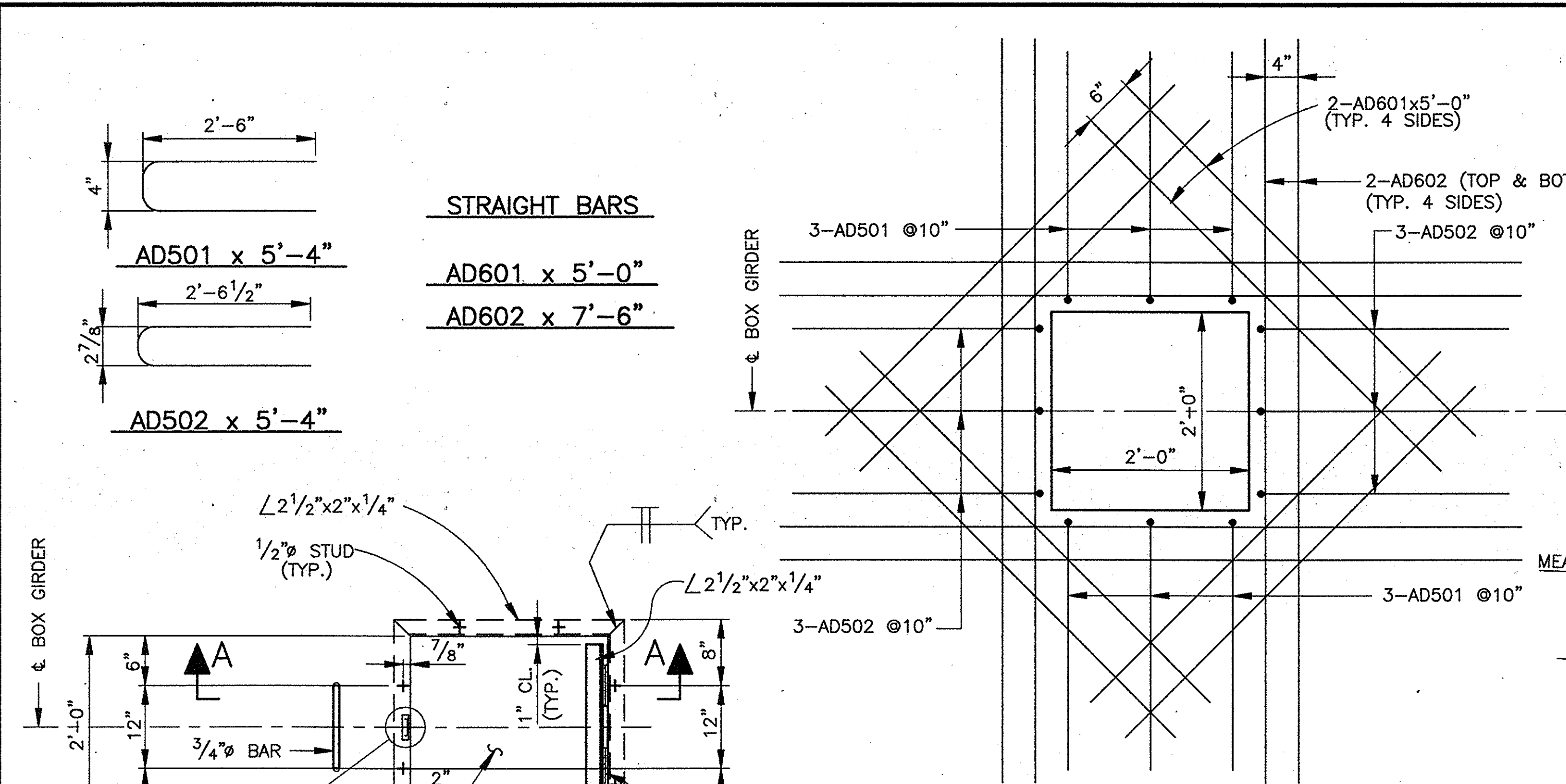
PROJECT: - NH-80-1 () 4

CONTRACT NO.

BRIDGE FILE: I-80-5-7823

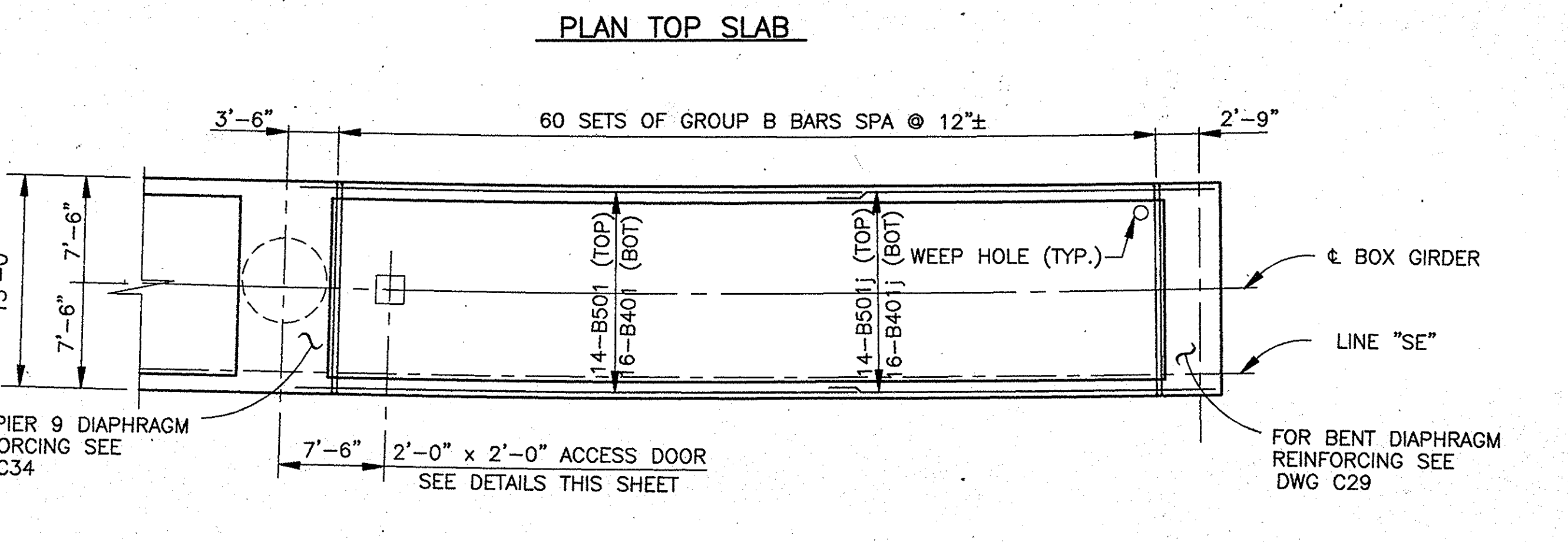
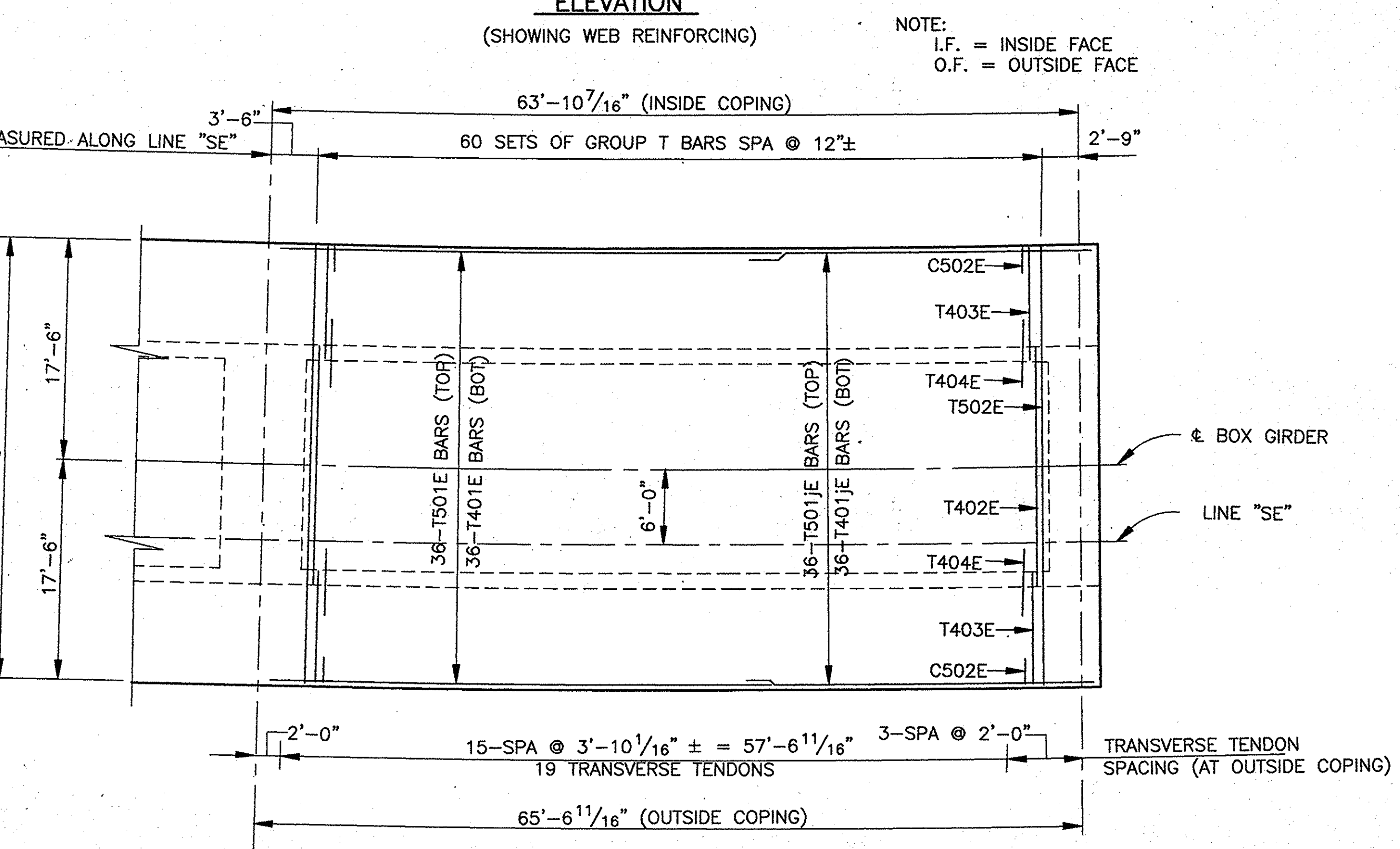
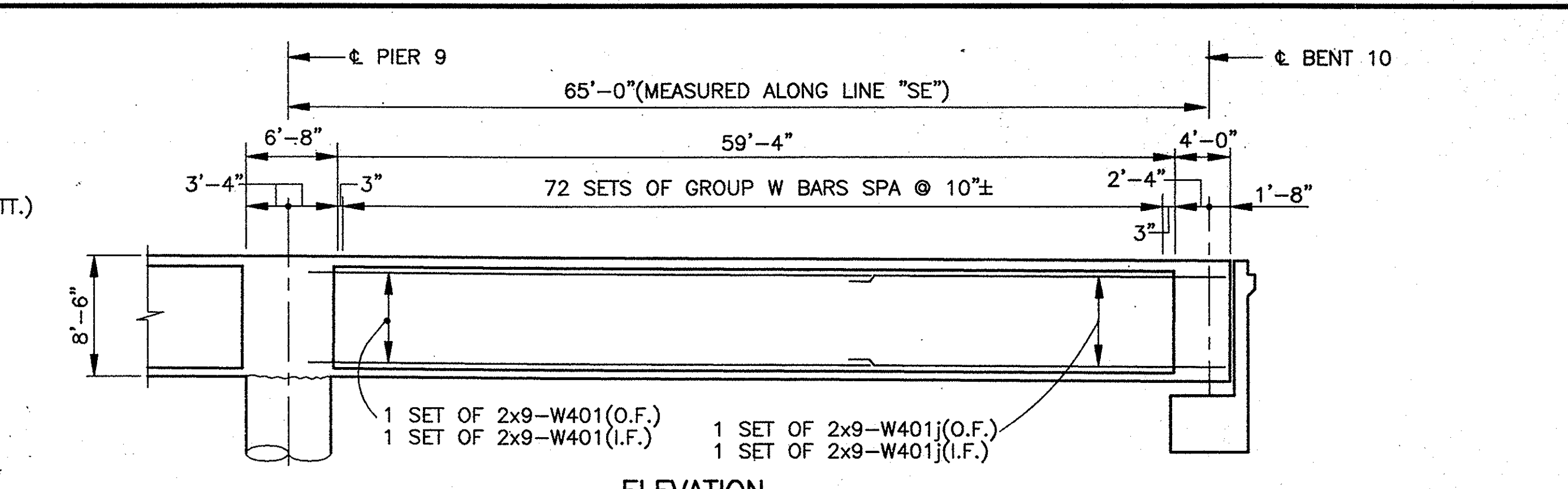
DESIGNED: HHJ C.K'D LS
 DRAWN: TMD C.K'D HHJ
 TRACED: C.K'D



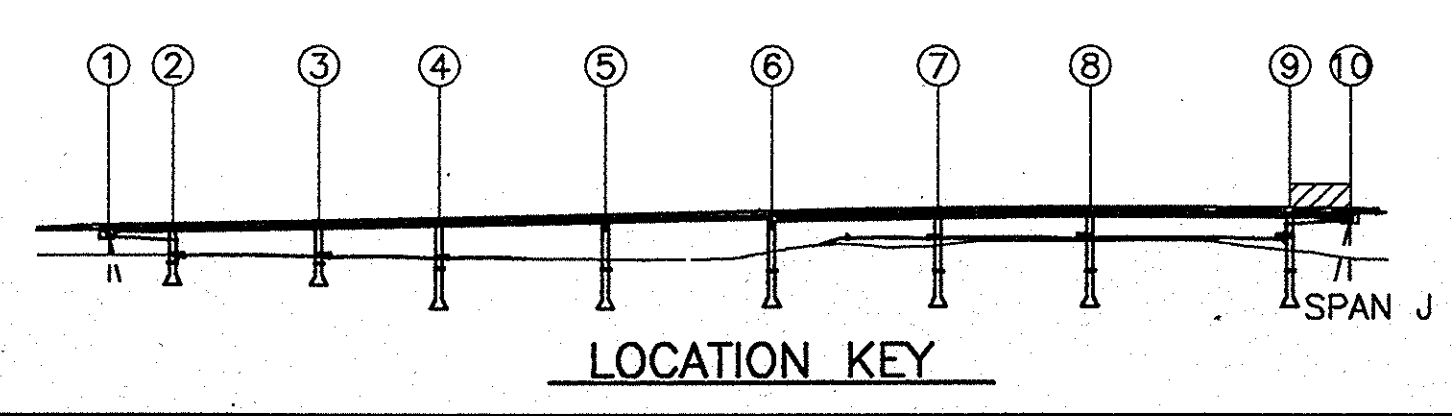


DESIGNED	HHJ	CHK'D	LS
DRAWN	TMD	CHK'D	HHJ
TRACED		CHK'D	

ACCESS DOOR DETAILS



- NOTE:**
- FOR TYPICAL SECTION REINFORCING SEE SHEETS DWGS C14 & C15.
 - FOR TYPICAL LAP SPLICE DIMENSIONS SEE DWG C16.
 - FOR BAR SHAPES SEE DWG C16.
 - FOR BRIDGE RAILING DETAILS & QUANTITIES SEE DWGS C21, C26 & C27.
 - FOR TRANSVERSE TENDON DETAILS & QUANTITIES SEE DWG C37.
 - SPACING OF ALL TRANSVERSE BARS ARE MEASURED ALONG LINE "SE".



BILL OF MATERIALS

REINFORCING STEEL GRADE 60			
Size And Mark	No. Of Bars	Length (Feet)	Weight (Lbs.)
GROUP W BARS			
W601E	144	11'-4"	
W602E	144	11'-5"	
TOTAL #6 BARS			4921
GROUP T BARS			
T502E	60	34'-9"	2175
T402E	60	18'-8"	
T403E	120	8'-11"	
T404E	120	5'-0"	
TOTAL #4			1864
LONGITUDINAL BARS			
T501E	36	40'-0"	
T501E	36	29'-7"	
TOTAL #5			2613
T401E	36	40'-0"	
T401E	36	29'-1"	
TOTAL #4			1661
TOTAL EPOXY COATED REINFORCING			
13233			
GROUP B BARS			
B502	60	14'-9"	
B512	120	4'-5"	
TOTAL #5			1476
B402	60	16'-9"	675
LONGITUDINAL BARS			
B501	14	40'-0"	
B501j	14	29'-7"	
TOTAL #5			1016
B401	16	40'-0"	
B401j	16	29'-1"	
W401	36	40'-0"	
W401j	36	29'-1"	
W402	216	1'-11"	
TOTAL #4			2677
ACCESS OPENING			
AD601	8	5'-0"	
AD602	16	7'-6"	
TOTAL #6			240
AD501	6	5'-4"	
AD502	6	5'-4"	
TOTAL #5			67
TOTAL REGULAR REINFORCING			
6150			
SUPERSTRUCTURE CONCRETE			166.7 cys.
MISCELLANEOUS			
SURFACE SEAL			(ESTIMATED QUANTITY = 3405 SFT) 1 LSUM

SCALE: 1/8"=1'-0", UNLESS NOTED DATE: 5/22/98

SUBMITTED FOR APPROVAL

INDIANA DEPARTMENT OF TRANSPORTATION
LAKE COUNTY

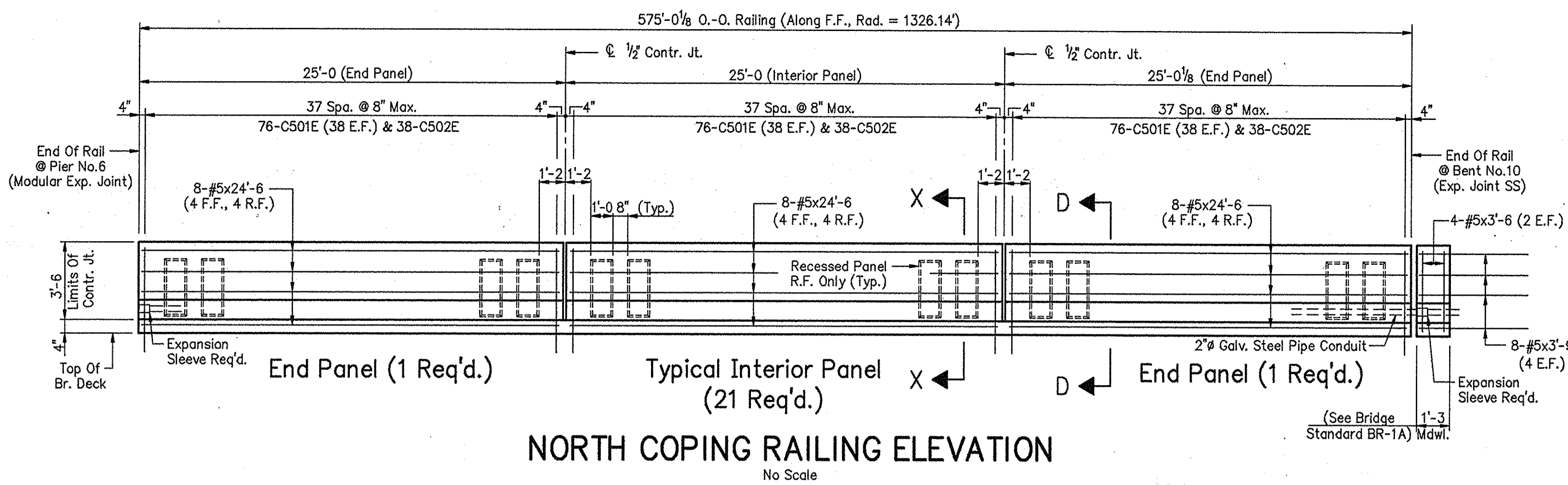
REGISTERED PROFESSIONAL ENGINEER
No. 18431
STATE OF INDIANA

DRAWING: C25 OF C51 SHEET: 40 OF 73
PROJECT: - NH-80-1 () 4
CONTRACT NO.
BRIDGE FILE: I-80-5-7823

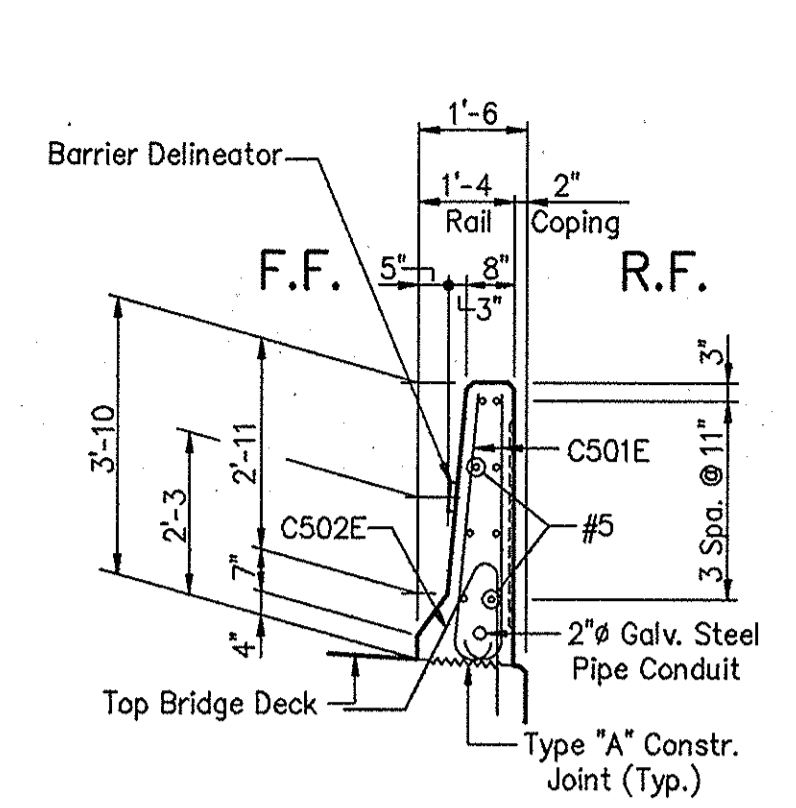
INDIANA DEPARTMENT OF TRANSPORTATION
 PROJECT: NH-80-1 () 4
 SHEET: 40 OF 73
 DATE: 5/22/98

RAILING BILL OF MATERIALS

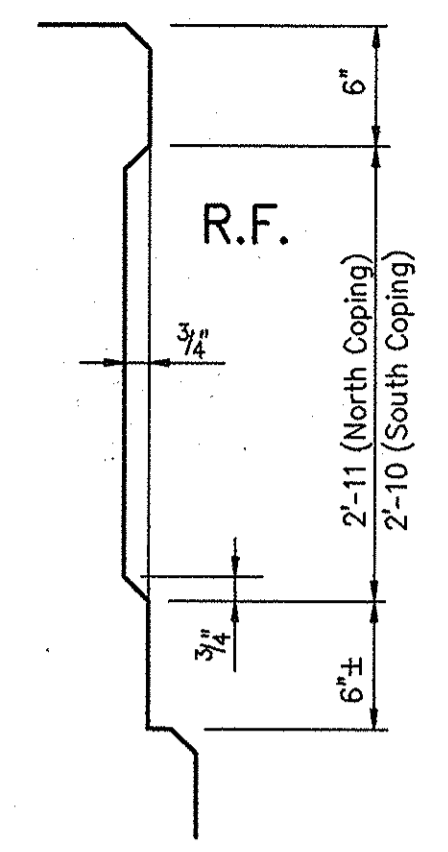
Epoxy Coated Reinforcing Steel			
Size And Mark	No. Of Bars	Length (Feet)	Weight (Lbs.)
C501E	3540	4'-1"	
C502E	1770	5'-5"	
#5	360	24'-6"	
#5	16	19'-0"	
#5	16	3'-9"	
#5	8	3'-6"	
Total Epoxy Coated Reinforcing Steel 34,684			
Concrete			
Concrete Railing Class "C"			
North Coping		73.4 Cys.	
South Coping		74.5 Cys.	
Total Concrete Railing Class "C"		147.9 Cys.	
Miscellaneous			
Masonry Coating		11,090 Sft.	
Barrier Delineators		61 Each	
2" Galvanized Steel Pipe Conduit		585 Lft.	
Cast Iron Grates, Basins And Fittings			
1- Standard Roadway Drain			
Type OS, Grate D		322 Lbs.	
2- Conduit Pull Boxes @ 105 Lbs. Each		210 Lbs.	
Total Cast Iron Grates, Basins And Fittings		532 Lbs.	



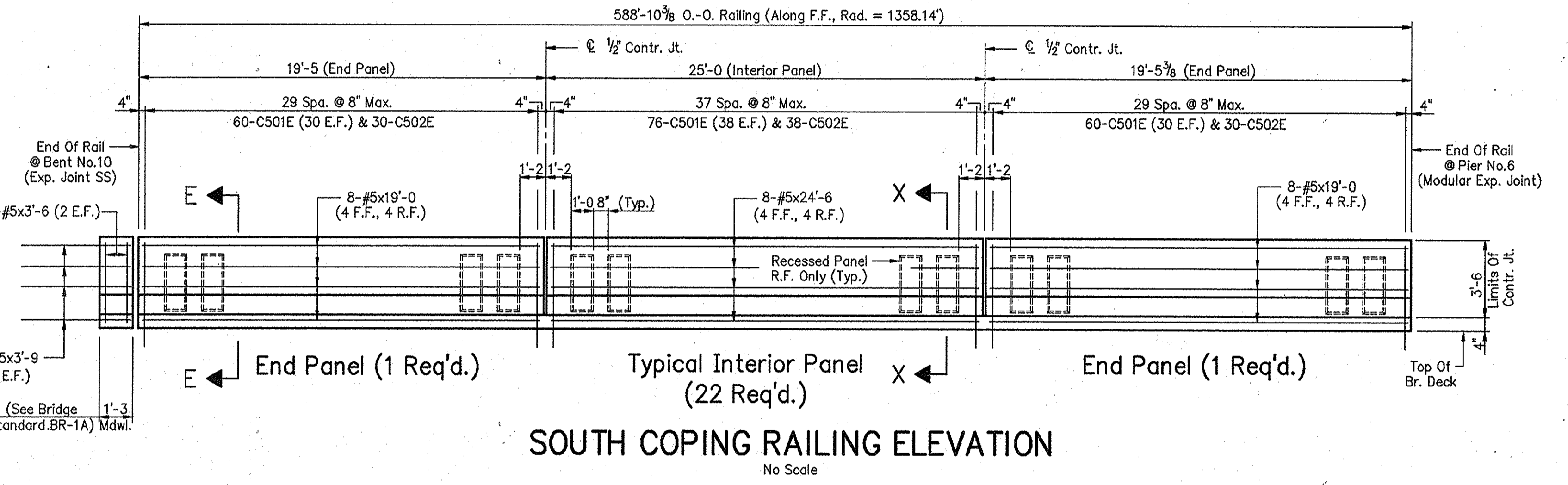
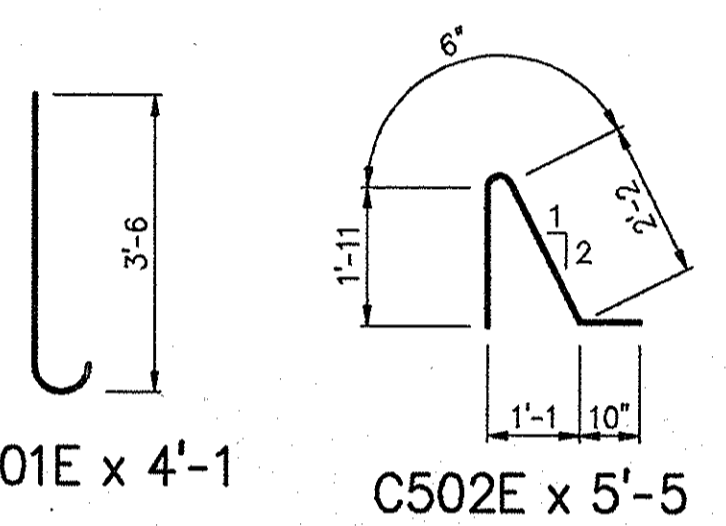
NORTH COPING RAILING ELEVATION
No Scale



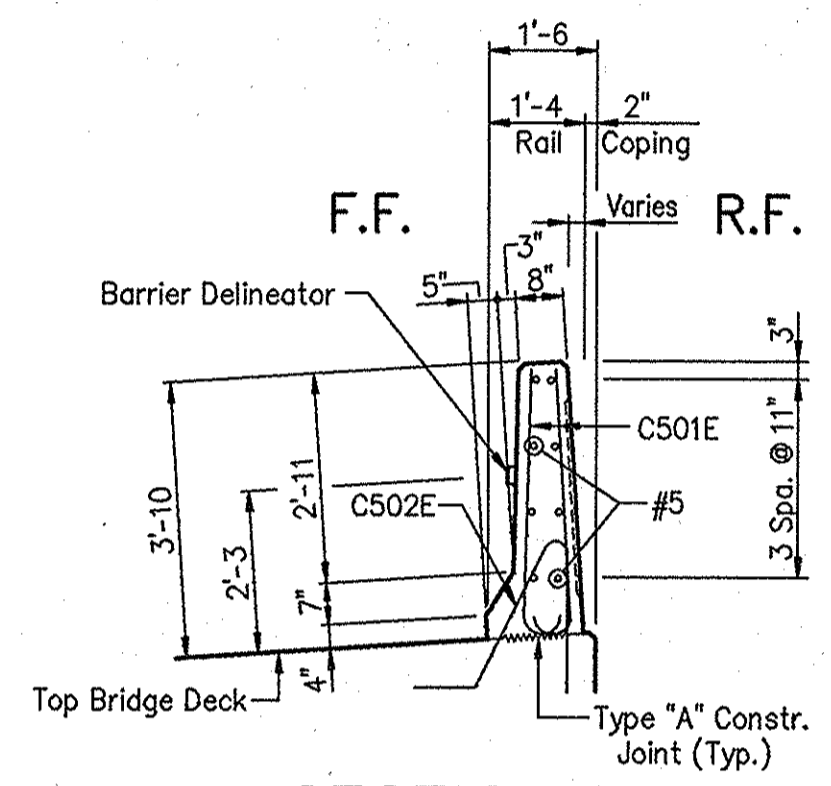
SECTION D-D



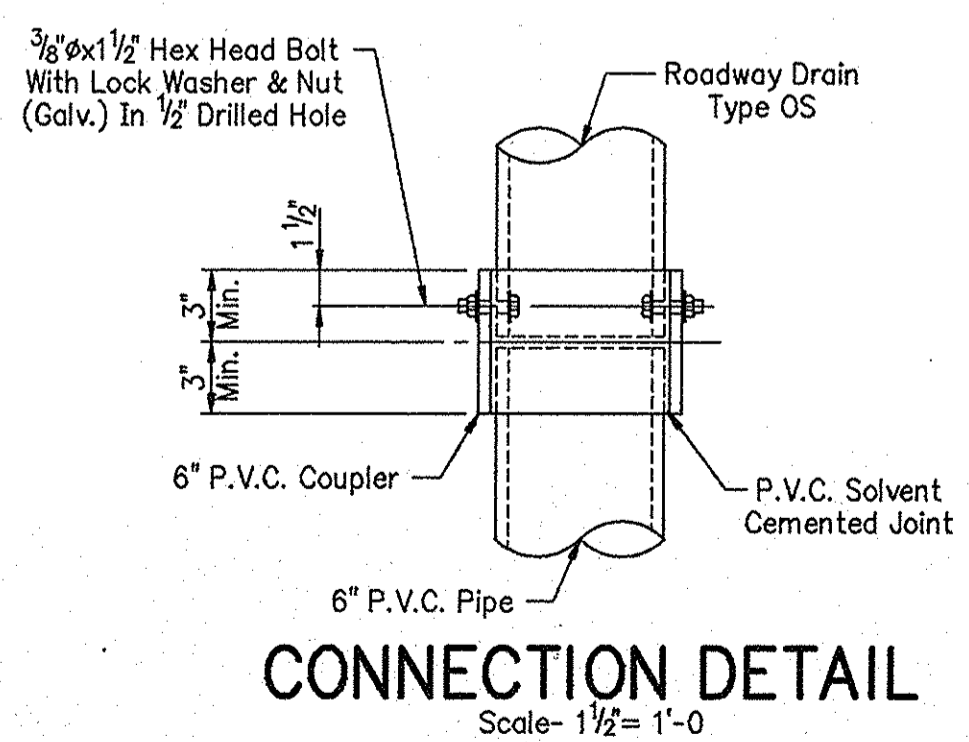
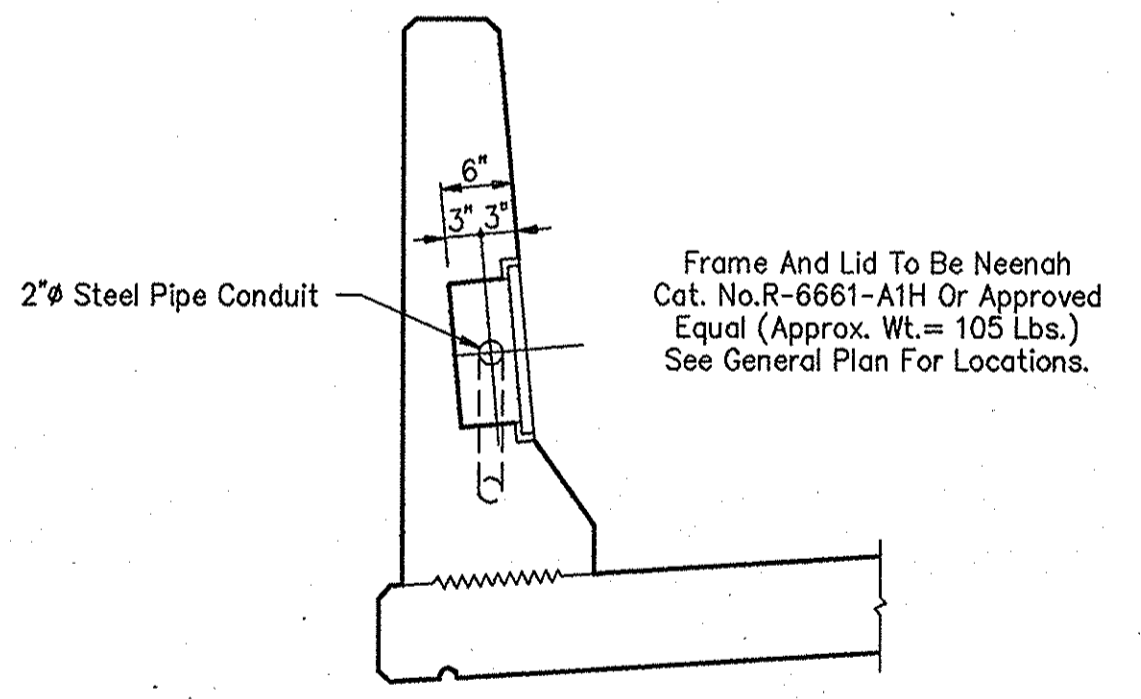
PARTIAL SECTION X-X
Showing Recessed Panel
No Scale



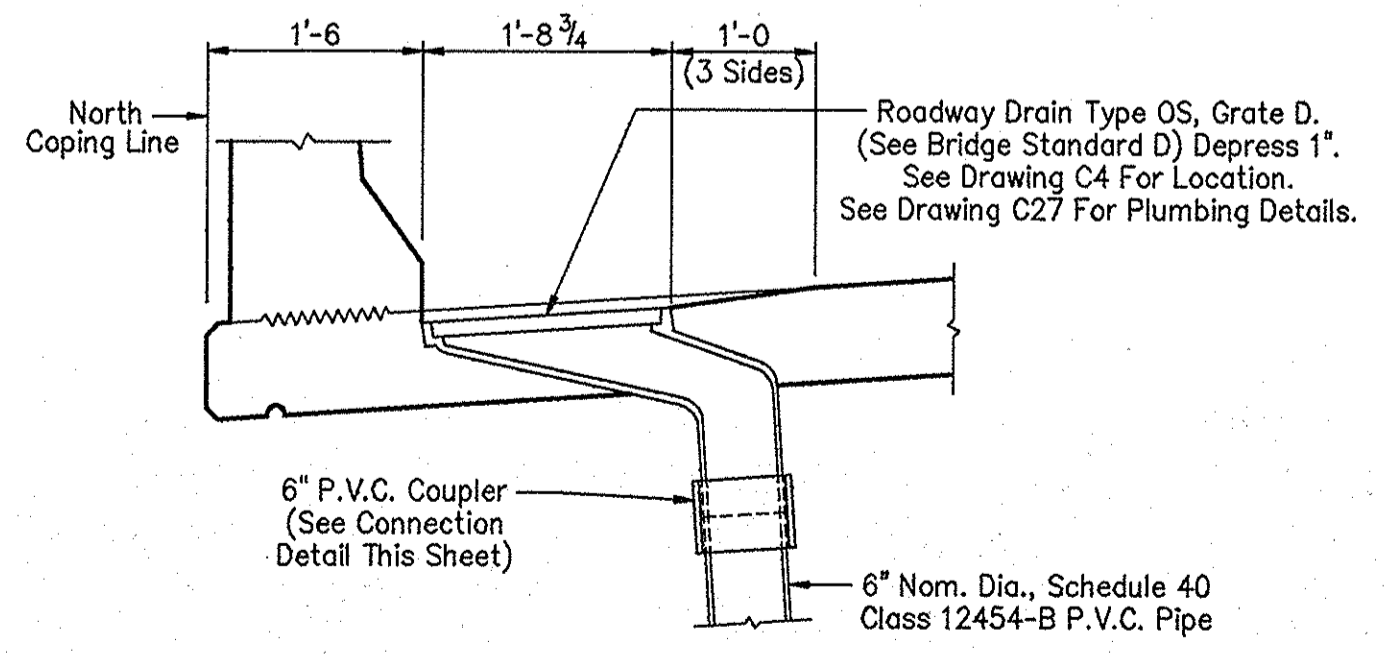
SOUTH COPING RAILING ELEVATION
No Scale



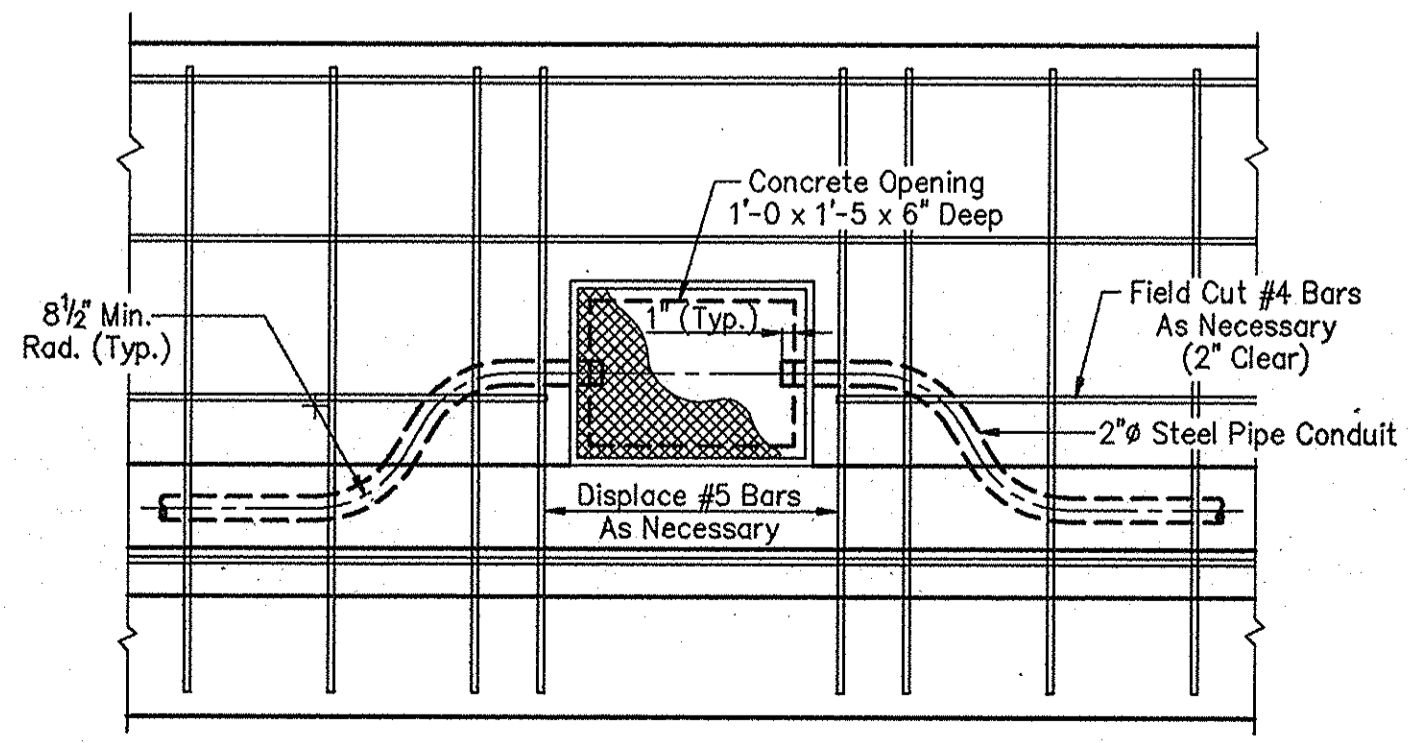
SECTION E-E



CONNECTION DETAIL
Scale- 1 1/2" = 1'-0"



SECTION @ ROADWAY DRAIN TYPE OS-D
(1 REQUIRED)
Scale- 3/4" = 1'-0"



CONDUIT PULL BOX
Scale- 3/4" = 1'-0"

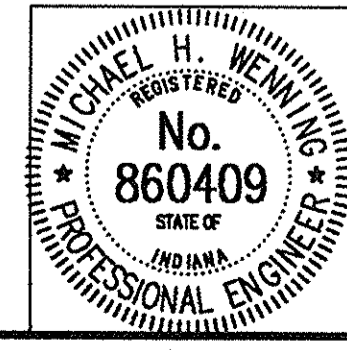
NOTES:
For reinforcing bar notes, see Bridge Standard C1.
All reinforcing steel to be epoxy coated.

MISCELLANEOUS FLOOR DETAILS - UNIT 2

INDIANA DEPARTMENT OF TRANSPORTATION

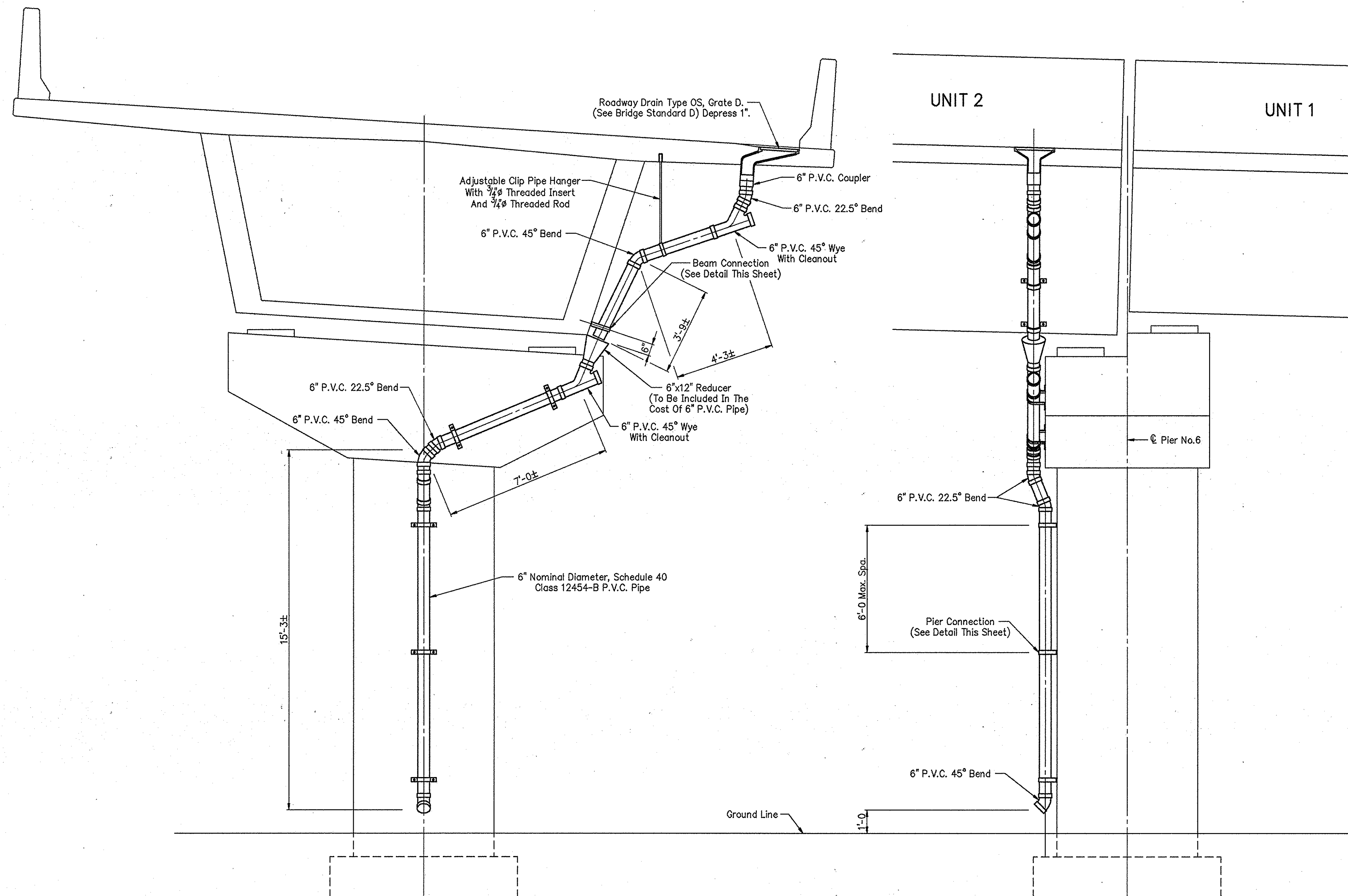
SCALE: - 3/8" = 1'-0, Unless Noted
DATE: - July 9, 1998
SUBMITTED FOR APPROVAL

DRAWING: - C26 OF C51 SHEET: - 41 OF 73
PROJECT: - IM-80-1 (143)4
CONTRACT NO. R-23808
BRIDGE FILE: - I-80-5-7823



DESIGNED C.K'D
DRAWN DSH 2/25/98 C.K'D MHW 5/29/98
TRACED C.K'D

DWG FILE: C:\87144\97144.dwg
PLOT SCALE: 1:32.000
PLOT ORIGIN: 0.00,0.00
SPELLCHK: 07/10/98 12:42:18
EDIT DATE: DSH - 581

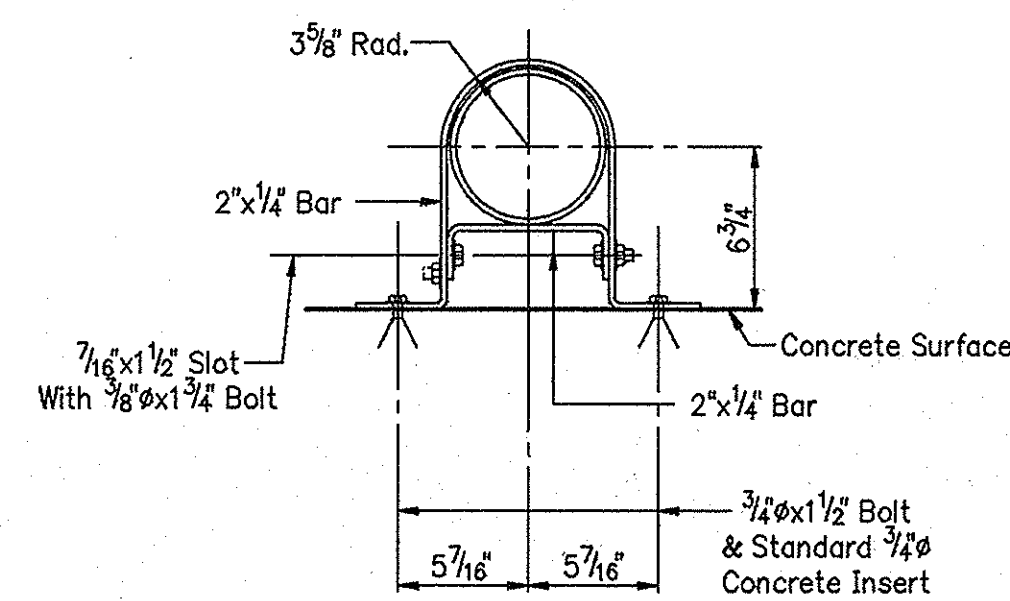


ELEVATION AT PIER NO.6
(Looking Back Stationing)

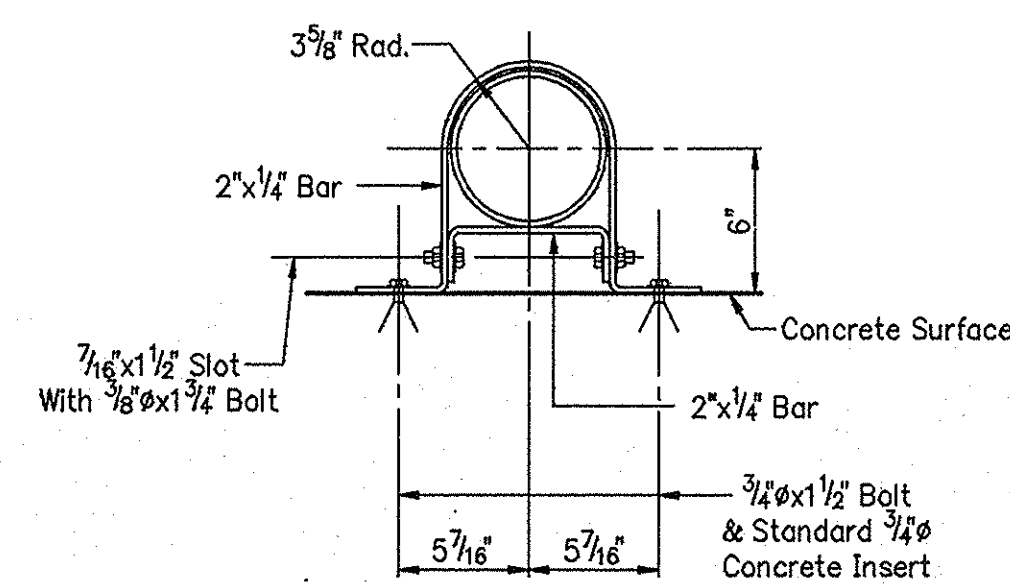
SIDE ELEVATION AT PIER NO.6

NOTES:
The cost of hangers, straps, bolts, concrete inserts, clean out covers and miscellaneous items to be included in the cost of P.V.C. pipe.

PVC PIPE SUMMARY	
Material	Length
6" P.V.C. Pipe	31.0 Lft.
3- 45° Elbows @ 2.0 Lft.	6.0 Lft.
4- 22.5° Elbows @ 2.0 Lft.	8.0 Lft.
2- 45° Wye @ 5.0 Lft.	10.0 Lft.
1- Reducer @ 5.0 Lft.	5.0 Lft.
Total P.V.C. Pipe	60.0 Lft.



BEAM CONNECTION DETAIL
Scale- 1 1/2" = 1'-0"



PIER CONNECTION DETAIL
Scale- 1 1/2" = 1'-0"

BRIDGE PLUMBING DETAILS - UNIT 2
INDIANA DEPARTMENT OF TRANSPORTATION

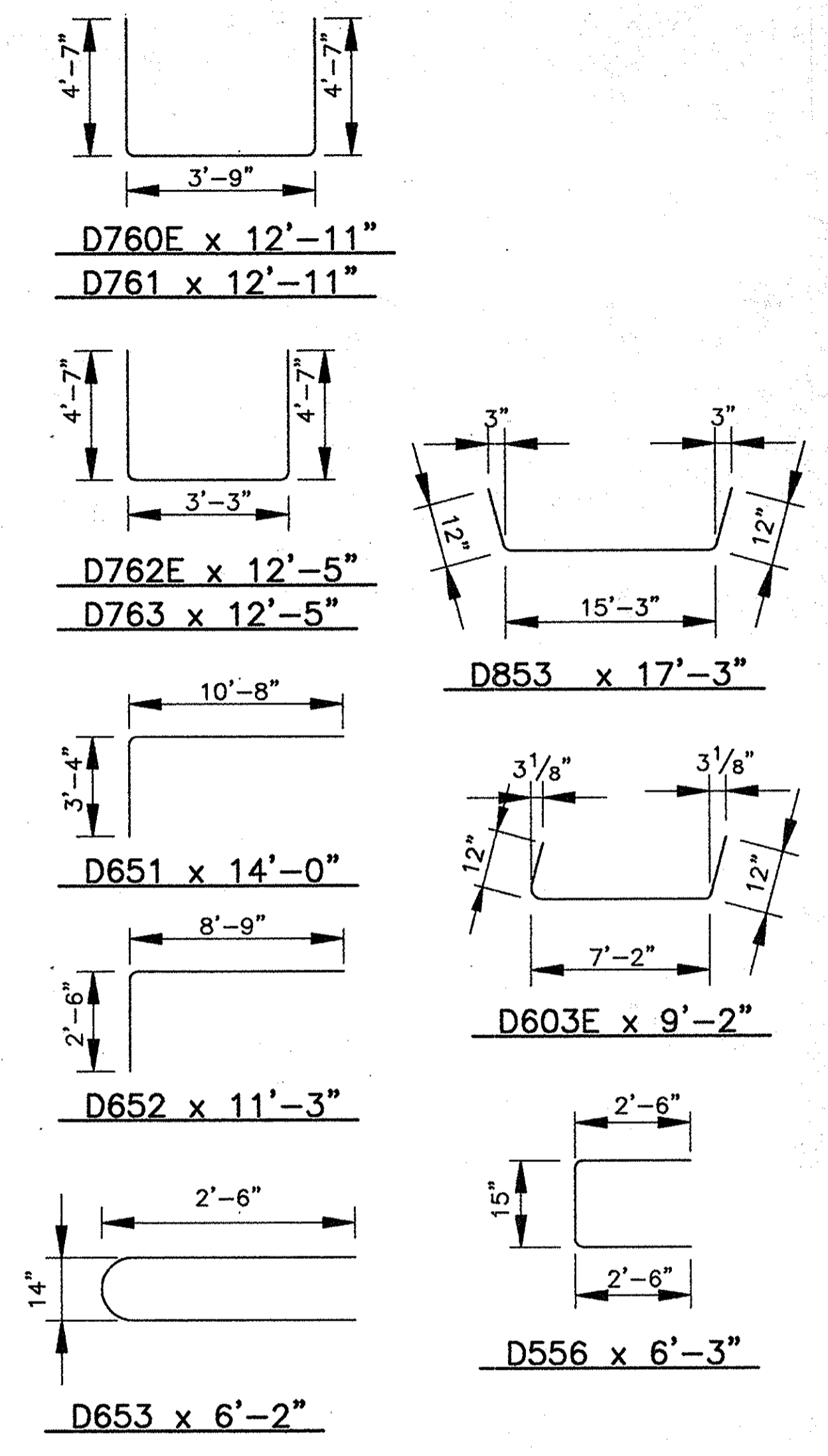
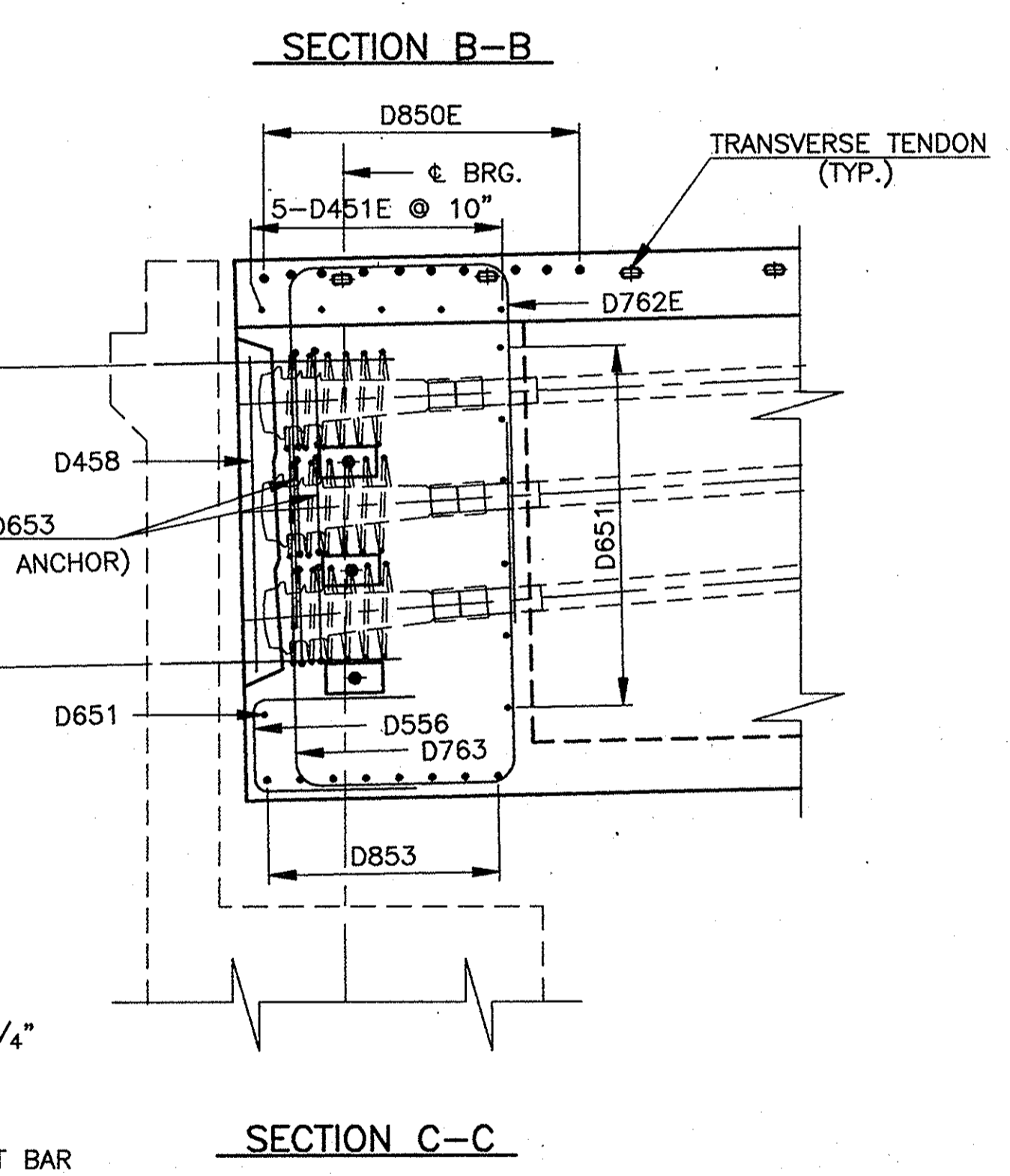
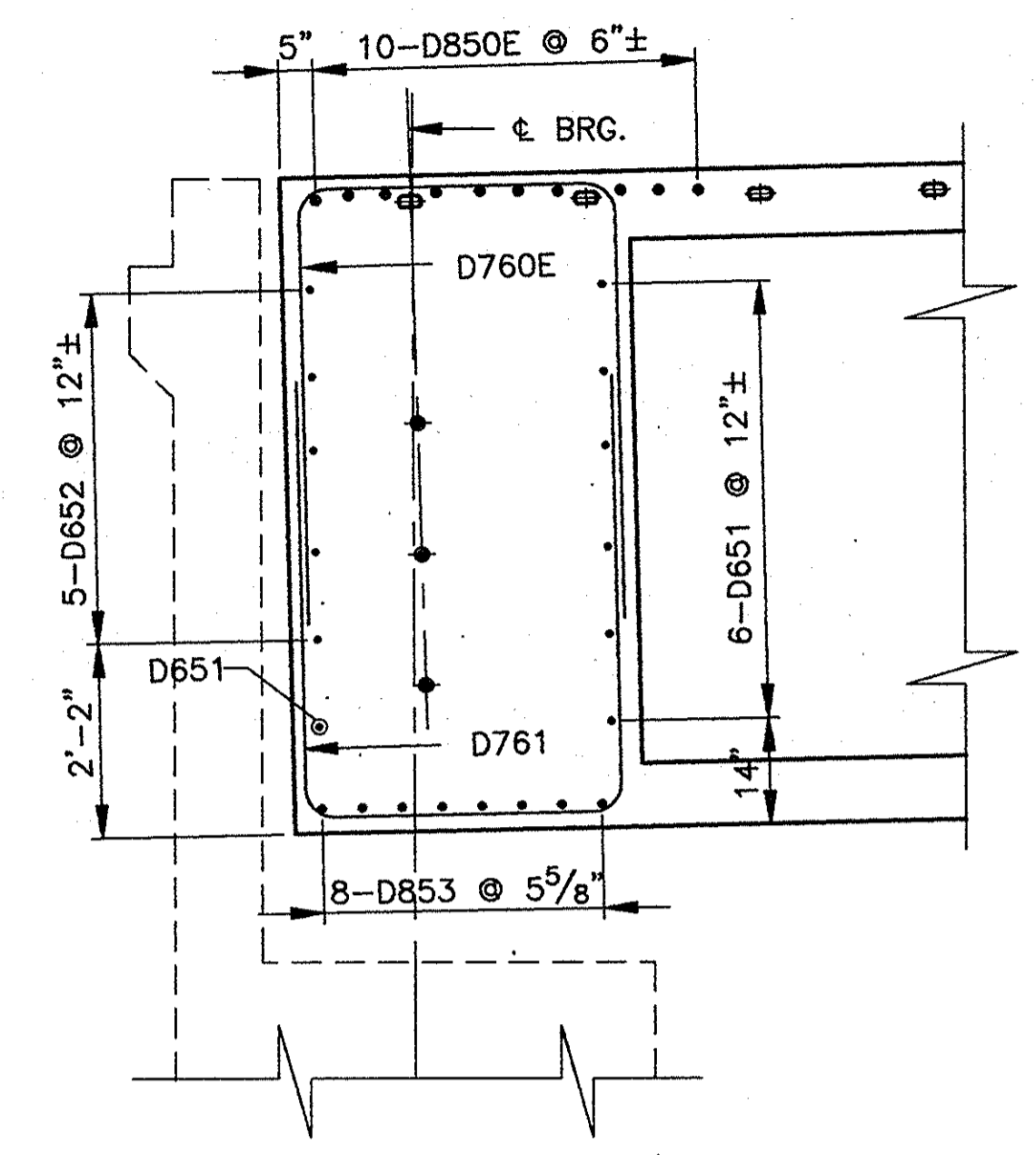
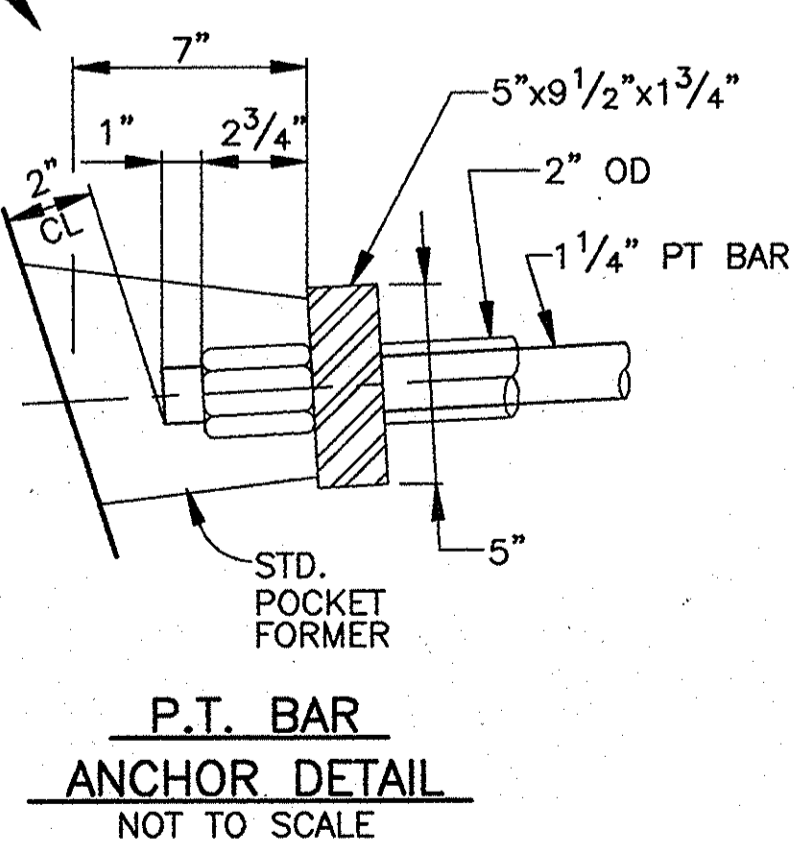
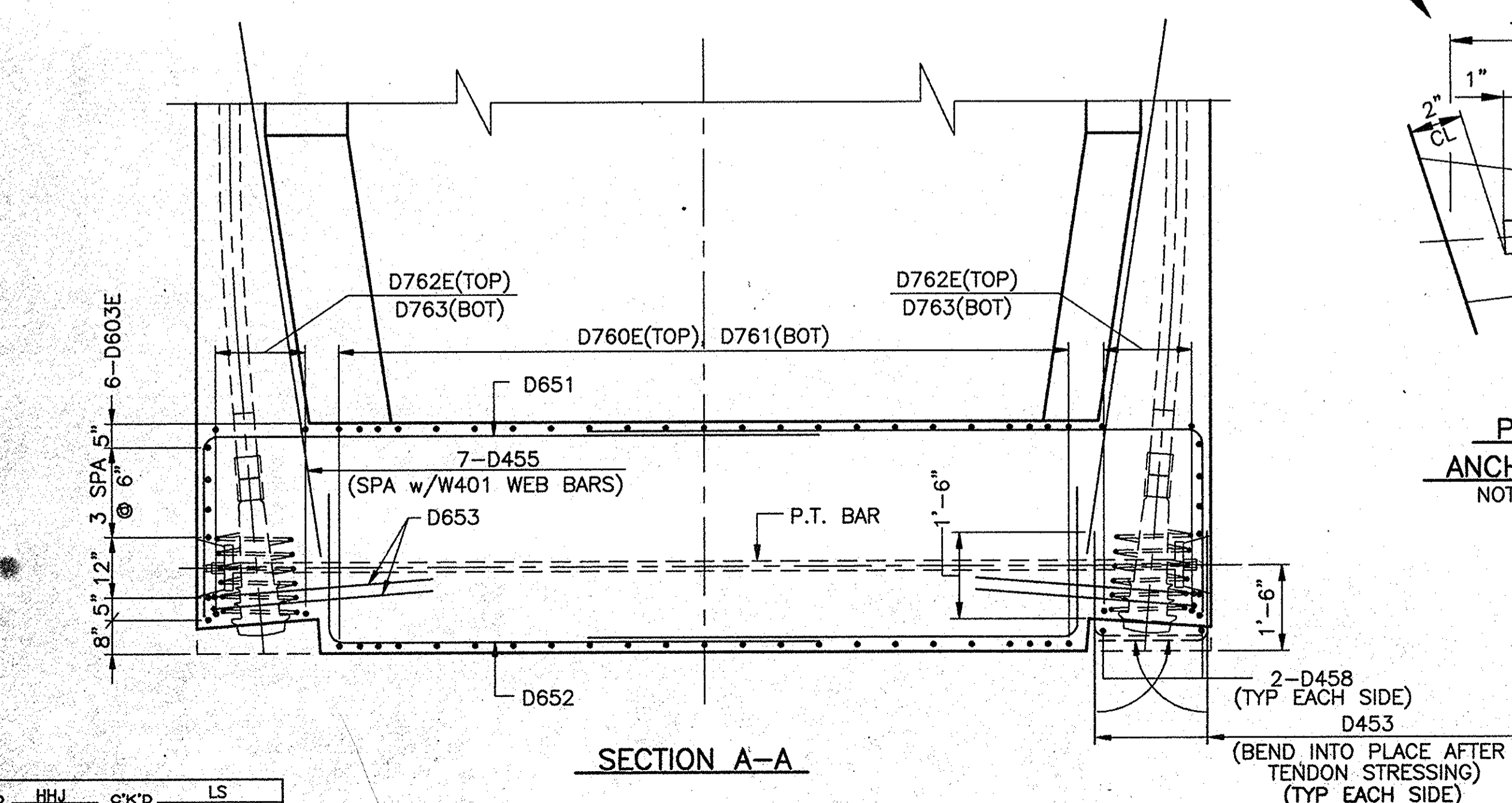
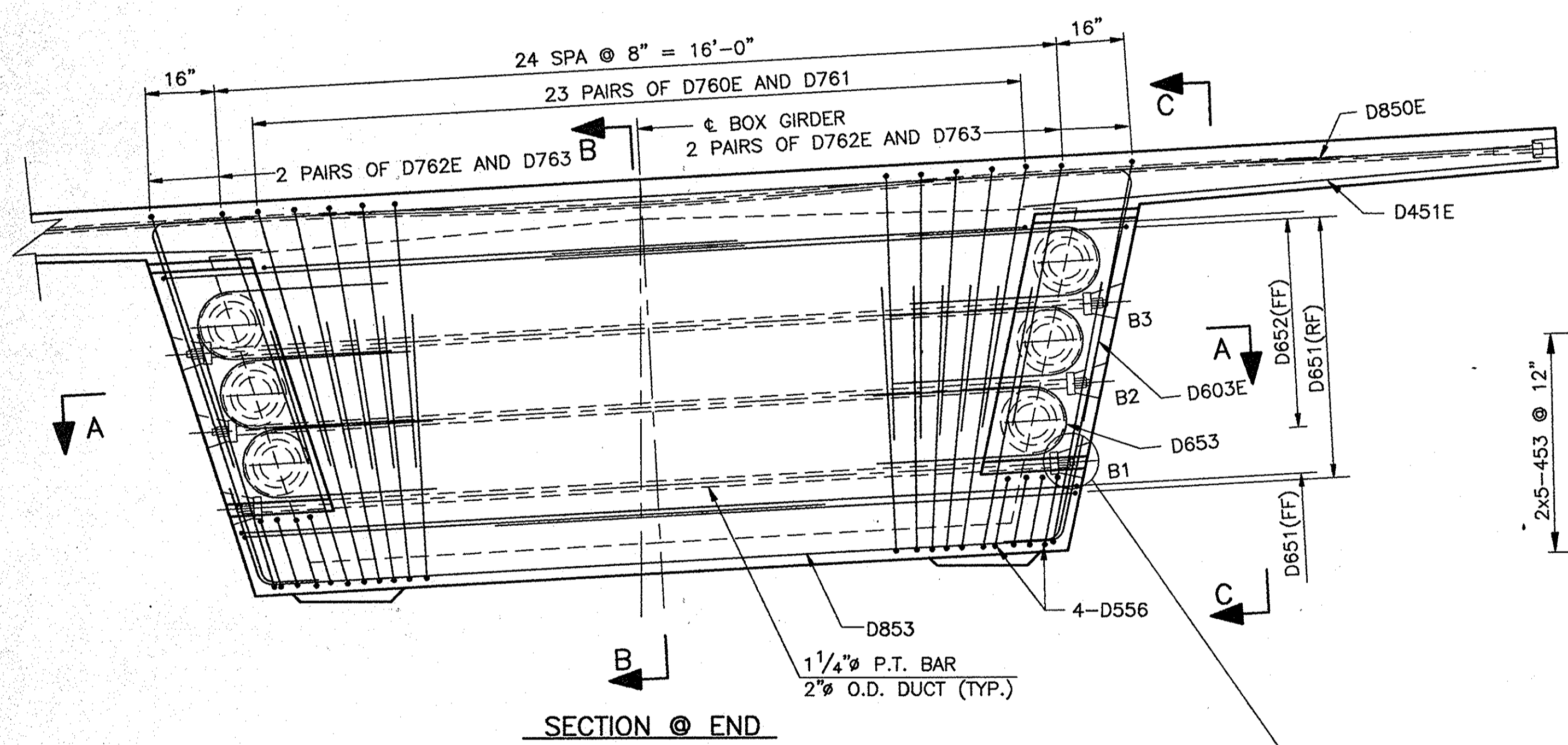
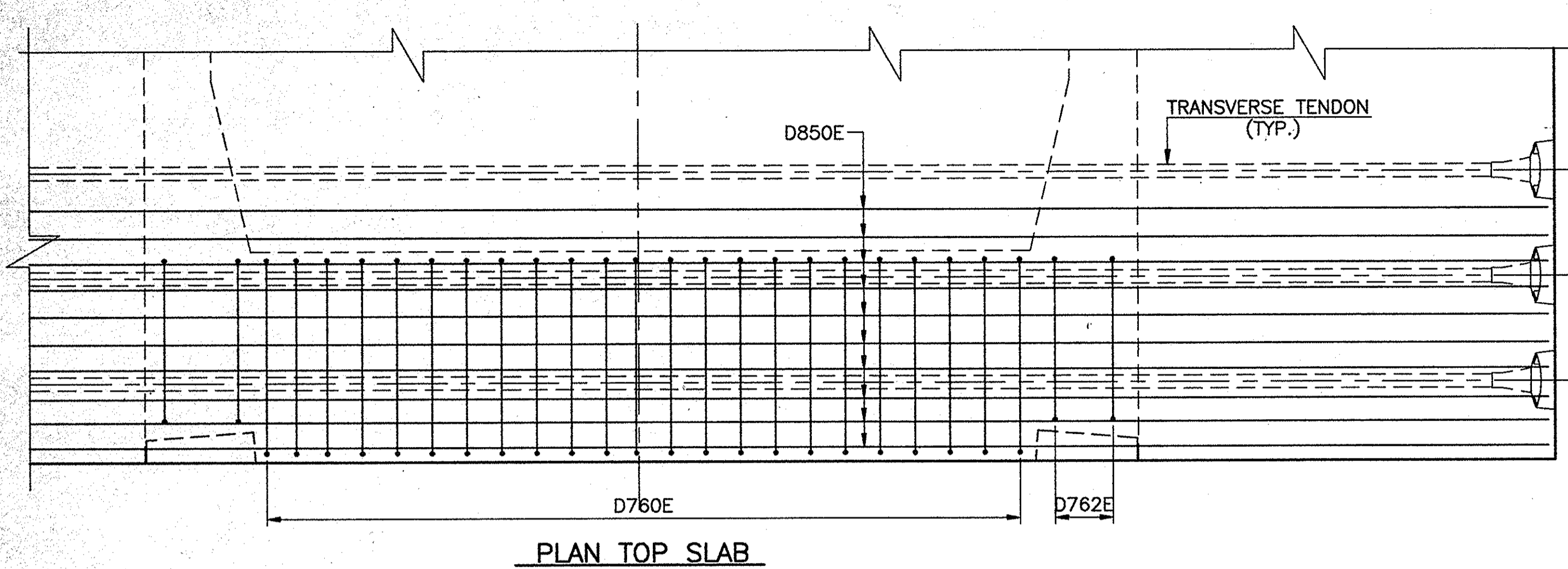
SCALE: - 3/8" = 1'-0, Unless Noted DATE: - May 29, 1998
SUBMITTED FOR APPROVAL *[Signature]*

DRAWING: - C27 OF C51 SHEET: - 42 OF 73
PROJECT: - IM-80-1 (143)4
CONTRACT NO. R-23808
BRIDGE FILE: - I-80-5-7823



DESIGNED: _____ CK'D: _____
DRAWN: DSH 3/9/98 CK'D: MHW 5/29/98
TRACED: _____ CK'D: _____

DWG FILE: C:\97\144\07144A03
PLOT SCALE: 1:32,000
PLOT ORIGIN: 0.00,0.00
SPELLOW: _____
EDIT DATE: 05/01/98
EDITED BY: DSH - 581



BILL OF MATERIALS			
EPOXY COATED STEEL GRADE 60			
Size And Mark	No. Of Bars	Length (Feet)	Weight (Lbs.)
D850E	10	34'-9"	928
D760E	23	12'-11"	
D762E	4	12'-5"	
TOTAL #	7		709
D603E	12	9'-2"	165
D451E	10	10'-0"	67
TOTAL EPOXY COATED STEEL			1869
D853	8	17'-3"	368
D761	23	12'-11"	
D763	4	12'-5"	
TOTAL #	7		709
D651	14	14'-0"	
D652	10	11'-3"	
D653	12	6'-2"	
TOTAL #	6		574
D556	8	6'-3"	52
D453	20	3'-6"	
D455	14	10'-0"	
D458	4	4'-2"	
TOTAL #	4		151
TOTAL REINFORCING STEEL			1854

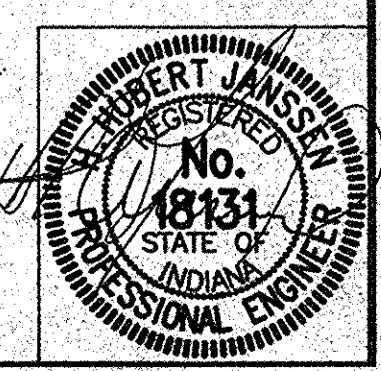
STRAIGHT BARS
 D850E x 34'-9"
 D451E x 10'-0"
 D453 x 3'-6"
 D455 x 10'-0"
 D458 x 4'-2"
 D556 x 6'-3"

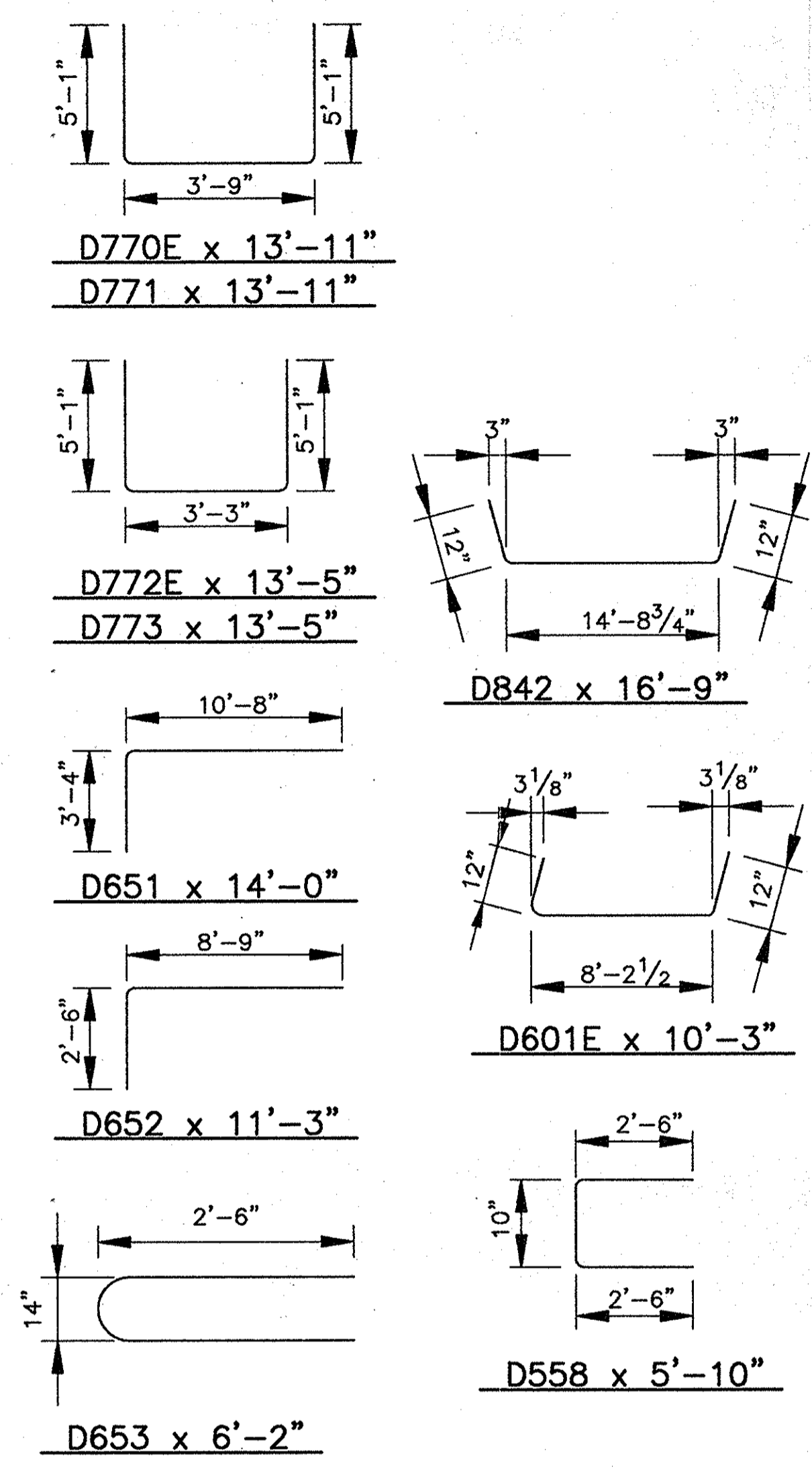
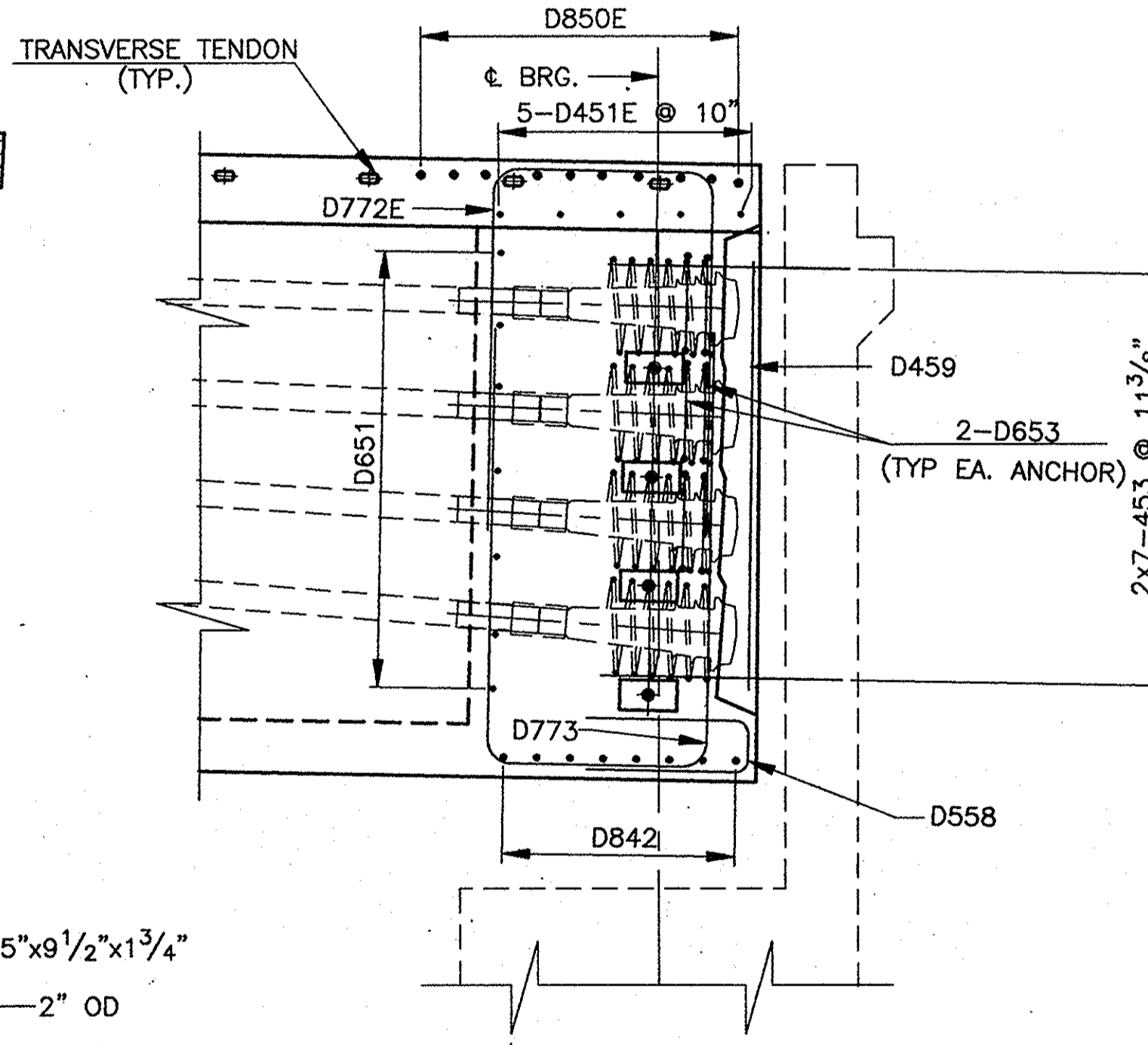
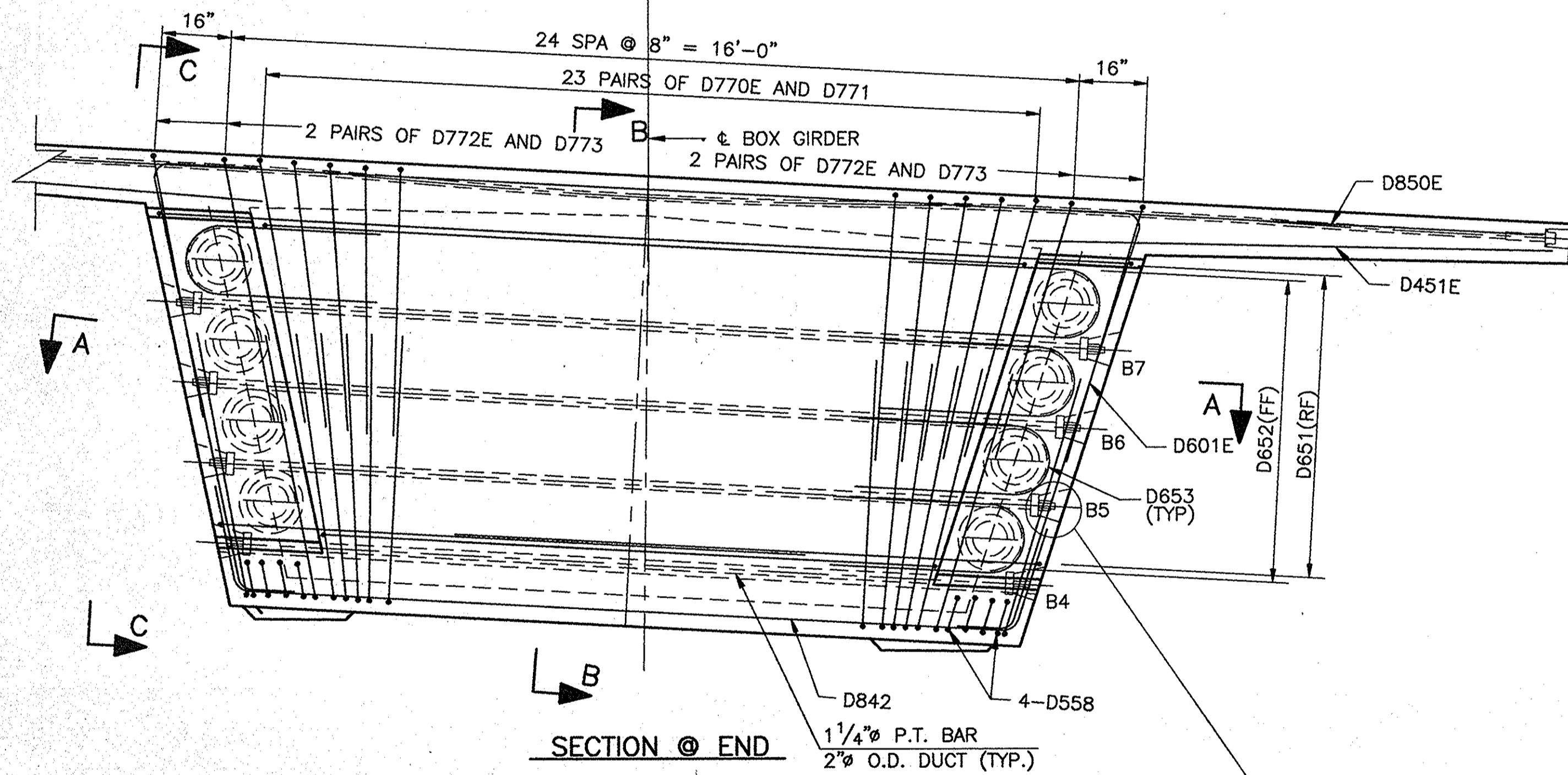
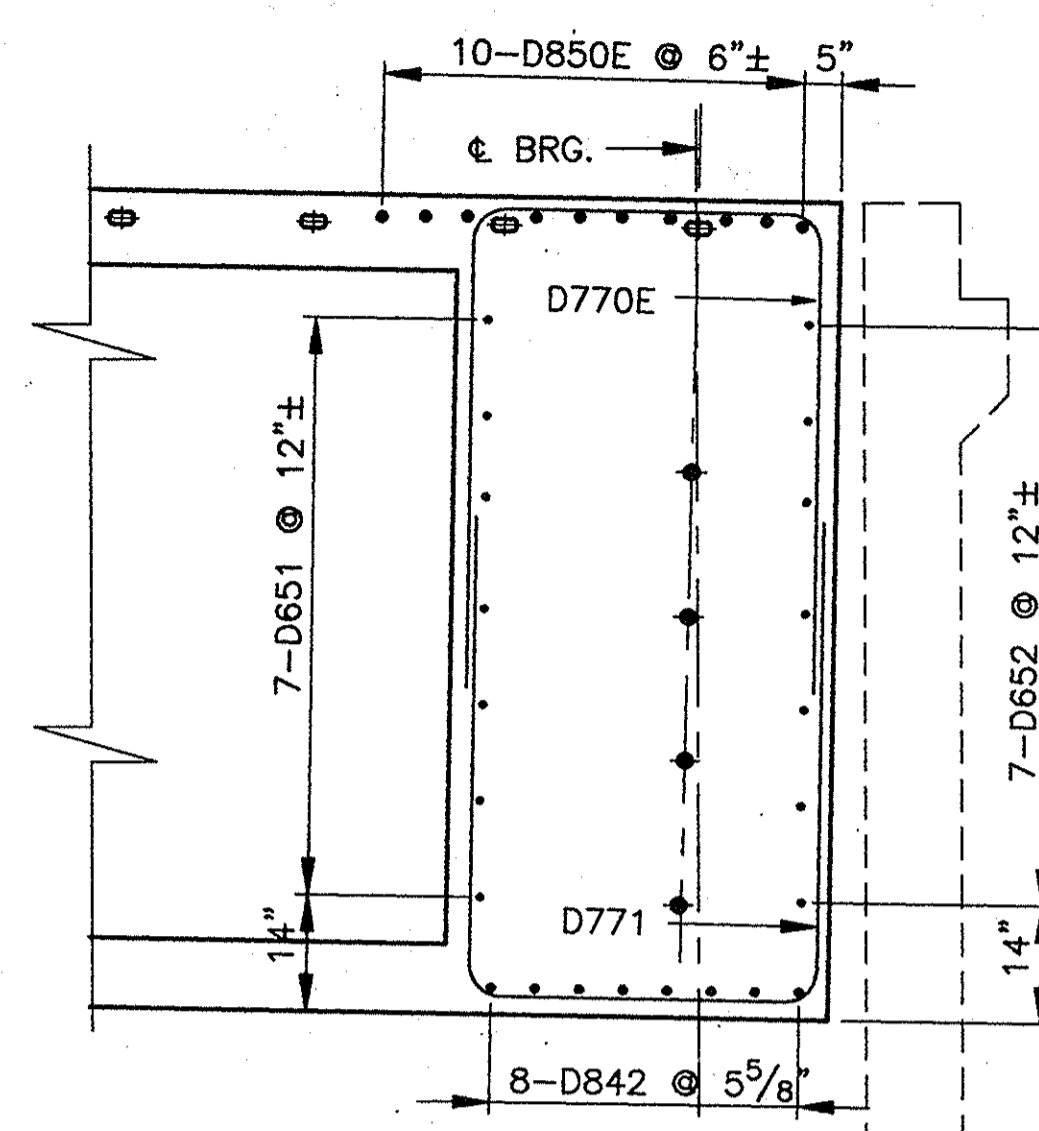
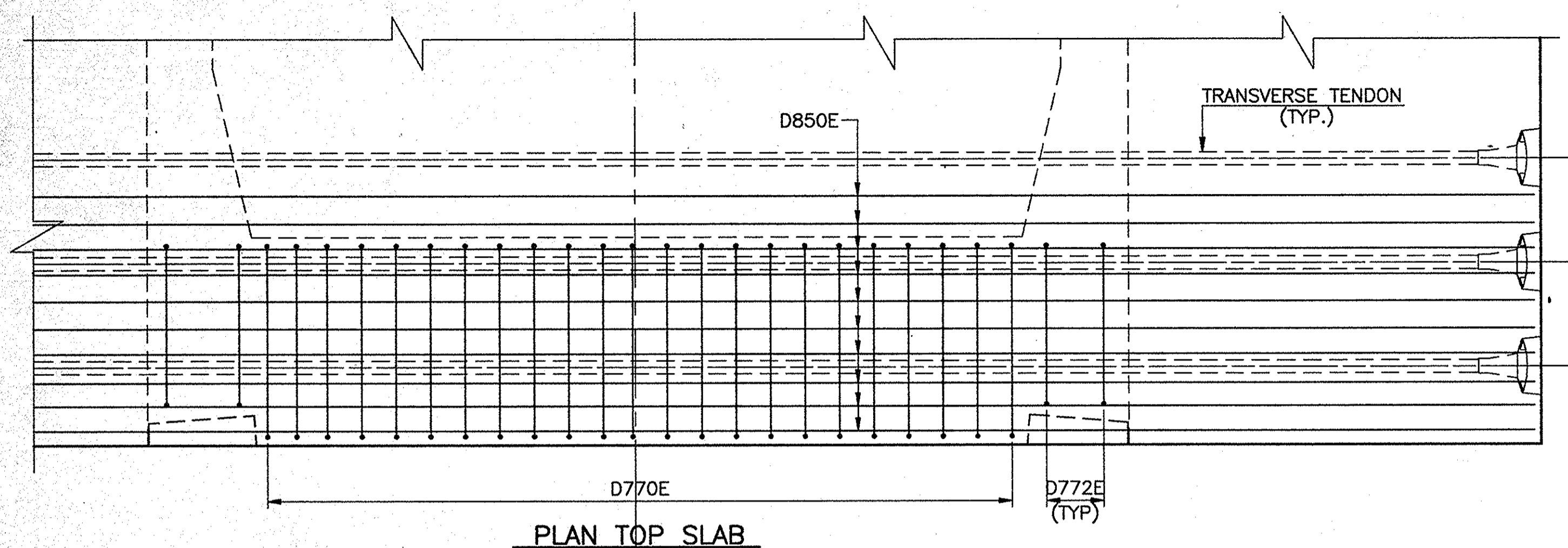
STRESSING INSTRUCTIONS					
BAR	JACK FORCE (KIPS)	ELONGATION BEFORE SEATING 100 % (IN)	ELONGATION AFTER SEATING 100 % (IN)	SET (IN)	BAR LENGTH (APPROX.)
B1	142.5	.77	.71	.06	16.39
B2	142.5	.81	.74	.06	17.09
B3	142.5	.84	.78	.06	17.80
TOTAL LENGTH (FT.)					51.28

NOTES:
 1. FOR DIMENSIONS SEE DWG C38.
 2. FF INDICATES FRONT FACE, RF INDICATES REAR FACE.
 3. FOR TRANSVERSE POST-TENSIONING LOCATIONS, SEE DWG. NO. C16

INDIANA DEPARTMENT OF TRANSPORTATION
 LAKE COUNTY
 SUPERSTRUCTURE DETAILS-
 DIAPHRAGM AT BENT NO. 1
 SCALE: 1/2"=1'-0", UNLESS NOTED
 DATE: July 10, 1998
 SUBMITTED FOR APPROVAL
 DRAWING: C28 OF C51 SHEET: 43 OF
 PROJECT: - NH-80-1 () 4
 CONTRACT NO.
 BRIDGE FILE: I-80-5-7823

DESIGNED HHJ C'K'D LS
 DRAWN TMD C'K'D HHJ
 TRACED C'K'D





BILL OF MATERIALS

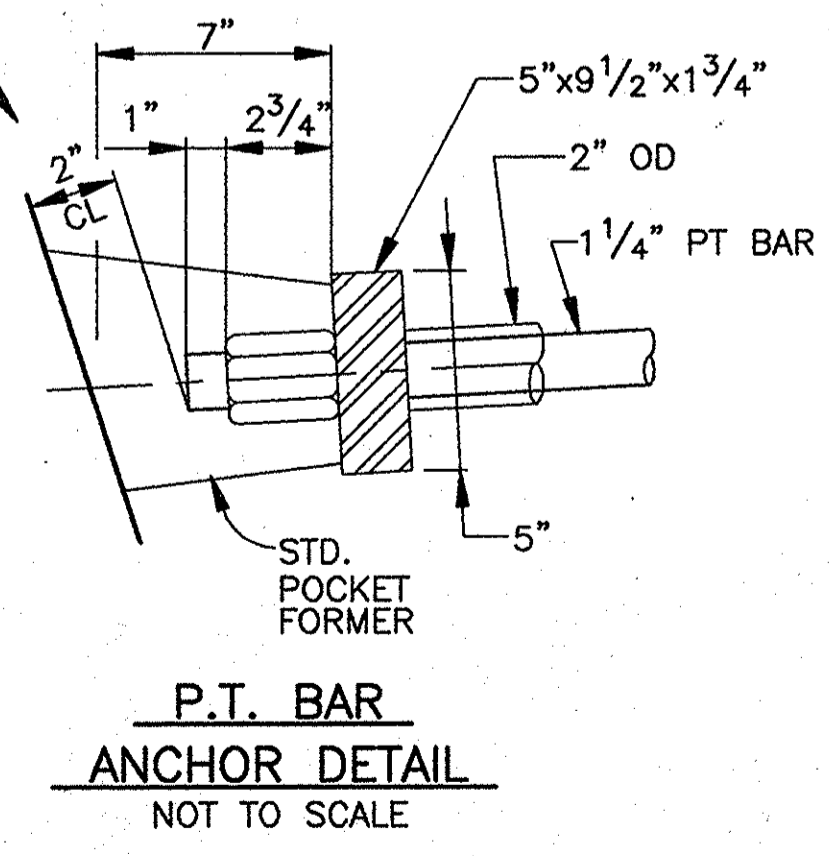
EPOXY COATED STEEL GRADE 60

Size And Mark	No. Of Bars	Length (Feet)	Weight (Lbs.)
D850E	10	34'-9"	928
D770E	23	13'-11"	
D772E	4	13'-5"	
TOTAL # 7			764
D601E	12	10'-3"	185
D451E	10	10'-0"	67
TOTAL EPOXY COATED STEEL			1944
D842	8	16'-9"	358
D771	23	13'-11"	
D773	4	13'-5"	
TOTAL # 7			764
D651	14	14'-0"	
D652	14	11'-3"	
D653	16	6'-2"	
TOTAL # 6			679
D558	8	5'-10"	49
D453	28	3'-6"	
D455	18	10'-0"	
D459	4	5'-9"	
TOTAL # 4			201
TOTAL REINFORCING STEEL			2051

CLASS "C" IN SUPERSTRUCTURE *CYS.
*CONCRETE BILLED WITH SUPERSTRUCTURE

STRAIGHT BARS

D850E	x 34'-9"
D451E	x 10'-0"
D453	x 3'-6"
D455	x 10'-0"
D459	x 5'-9"



STRESSING INSTRUCTIONS

BAR	JACK FORCE (KIPS)	ELONGATION BEFORE SEATING 100 % (IN)	ELONGATION AFTER SEATING 100 % (IN)	SET (IN)	BAR LENGTH (APPROX.)
B4	142.5	.72	.66	.06	15.29
B5	142.5	.76	.70	.06	16.09
B6	142.5	.80	.73	.06	16.89
B7	142.5	.83	.77	.06	17.69
TOTAL LENGTH (FT.)					65.96

- NOTES:
- FOR DIMENSIONS SEE DWG C38.
 - FF INDICATES FRONT FACE, RF INDICATES REAR FACE.
 - FOR TRANSVERSE POST-TENSIONING LOCATIONS, SEE DWG. NO. C25

DESIGNED: HHJ C'K'D LS
DRAWN: TMD C'K'D HHJ
TRACED: C'K'D

INDIANA DEPARTMENT OF TRANSPORTATION
LAKE COUNTY

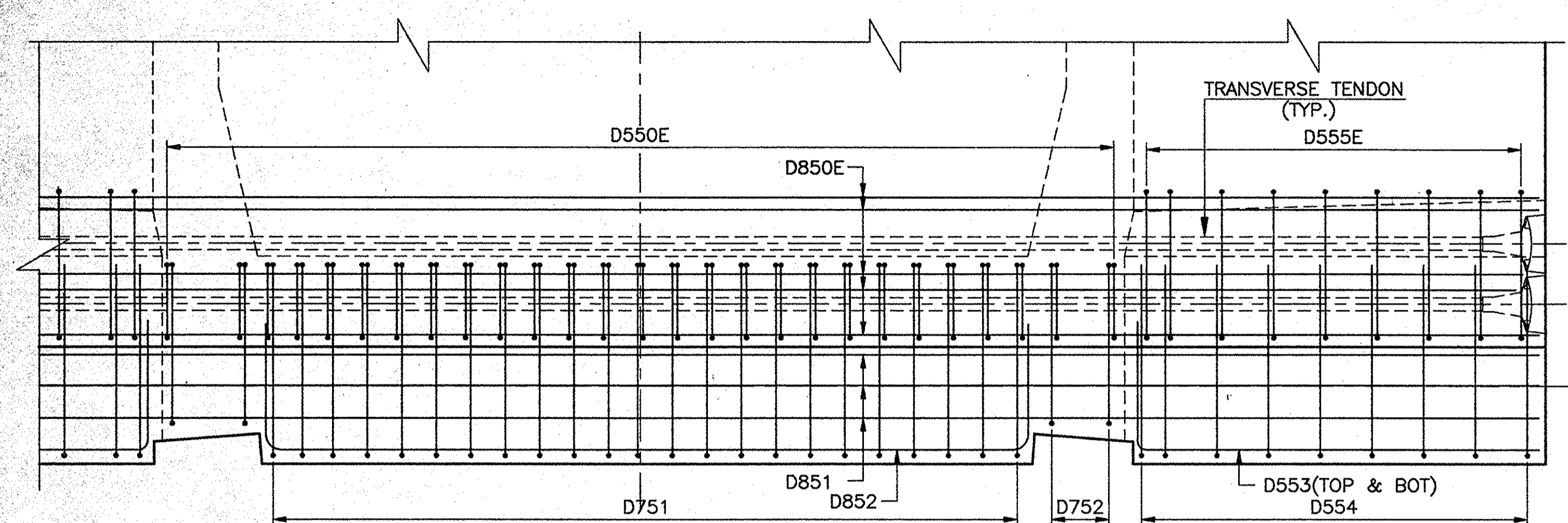
SCALE: 1/2"=1'-0", UNLESS NOTED DATE: July 10, 1998

SUBMITTED FOR APPROVAL

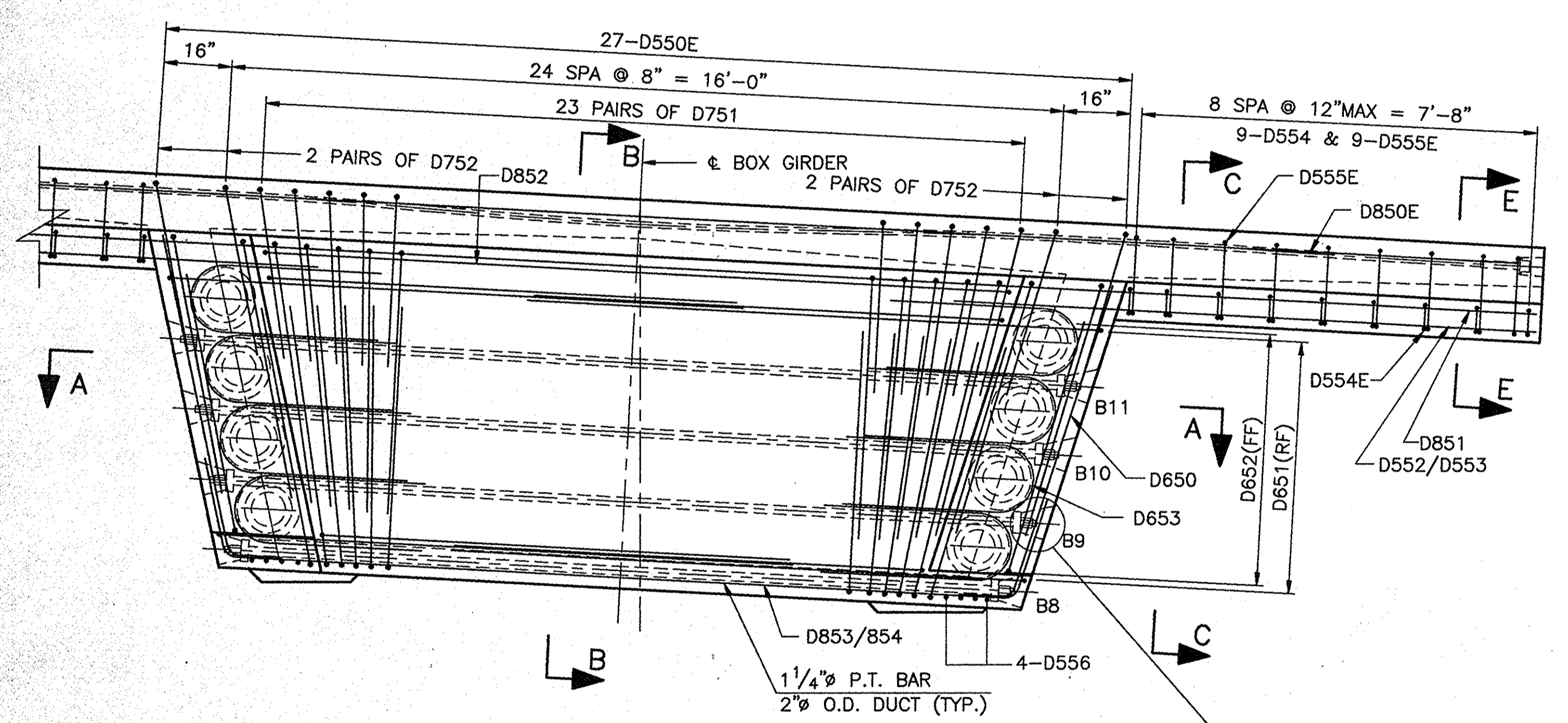
DRAWING: C29 OF C51 SHEET: 44 OF 73
PROJECT: - NH-80-1 ()
CONTRACT NO.
BRIDGE FILE: I-80-5-7823

ALBERT J. HANSEN
REGISTERED PROFESSIONAL ENGINEER
No. 18131
STATE OF INDIANA

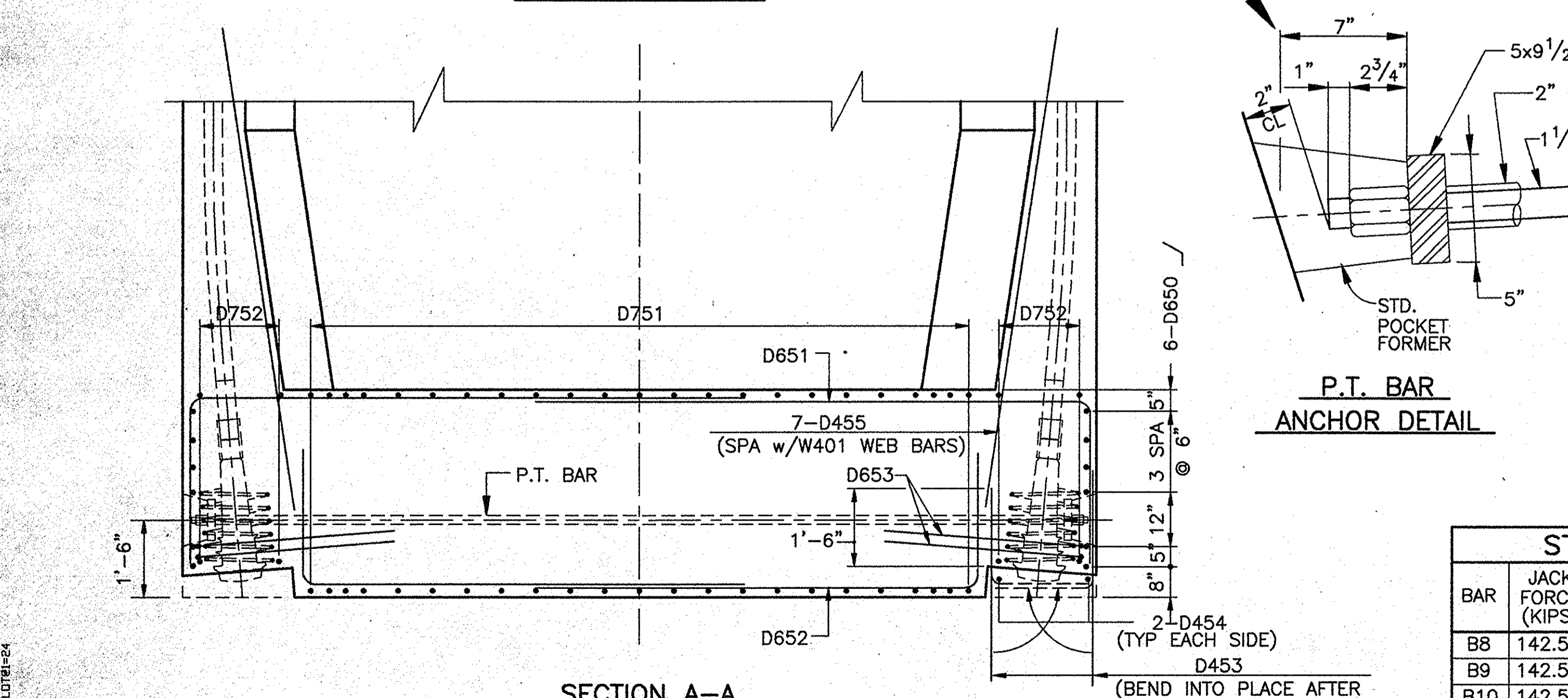
PLUMBING & ELECTRICITY
 1000 N. W. 10th St.
 Ft. Lauderdale, FL 33304
 (305) 555-1234



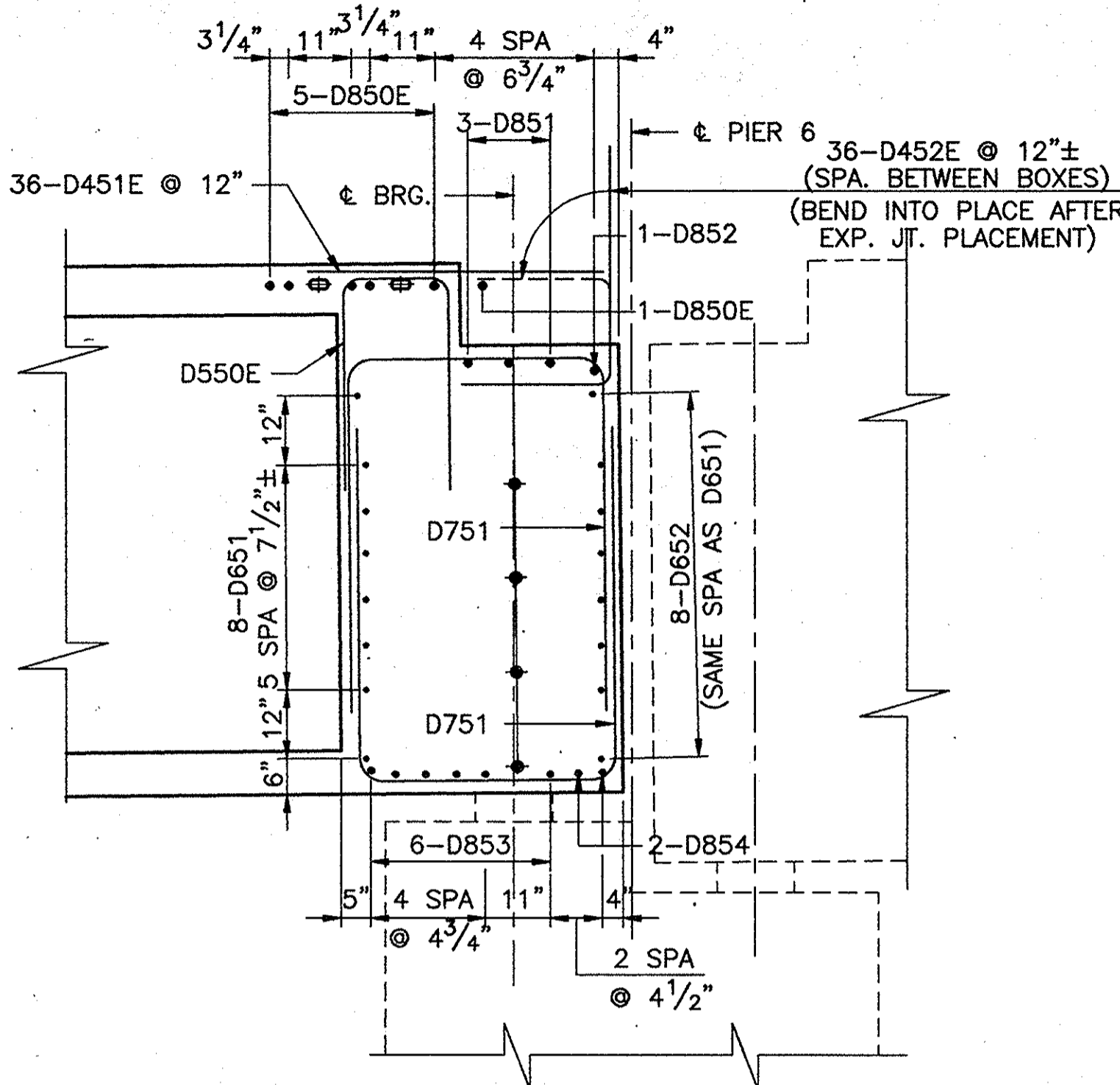
PLAN TOP SLAB



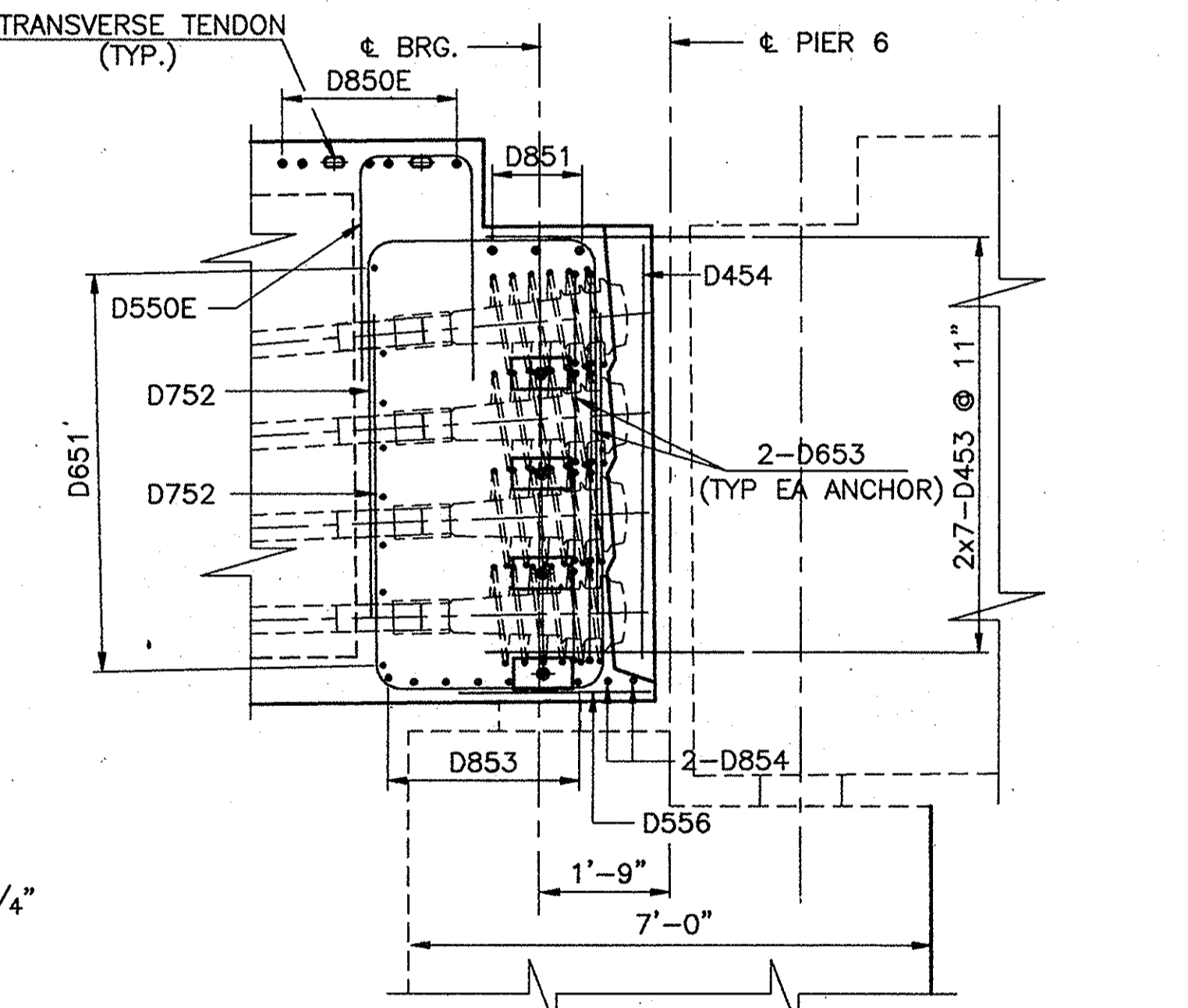
SECTION @ END



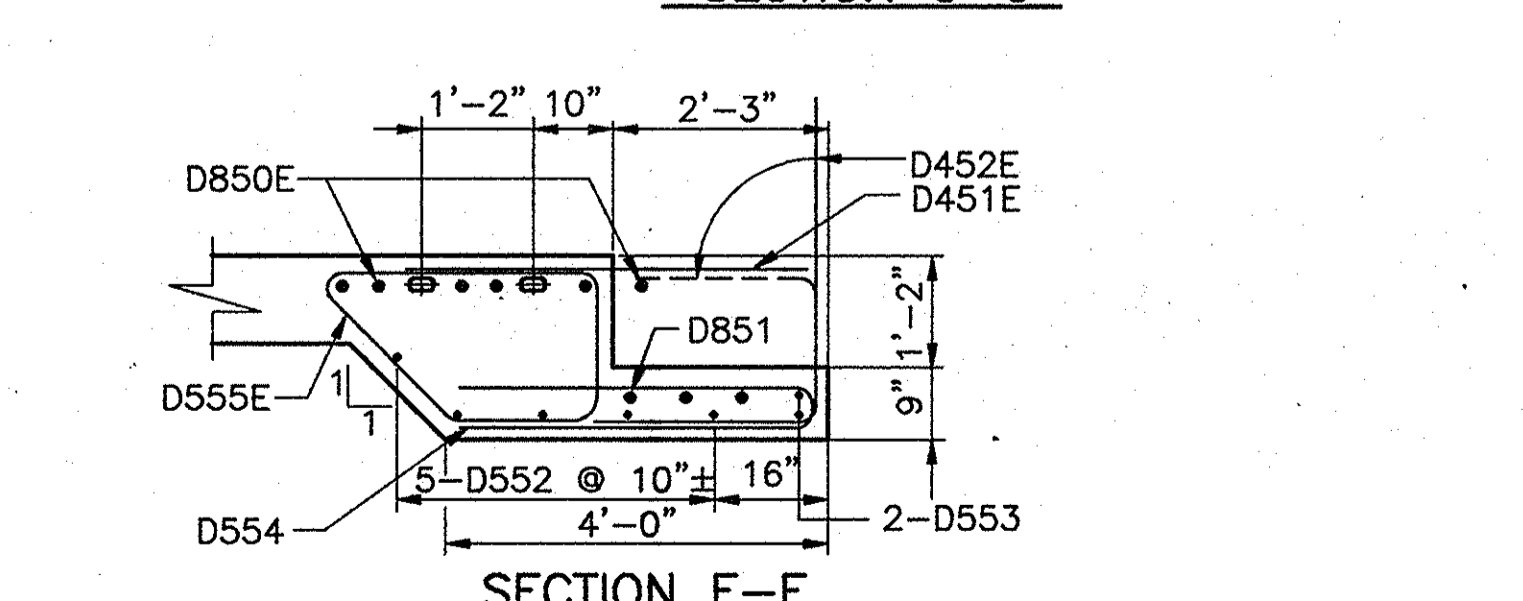
SECTION A-A



SECTION B-B



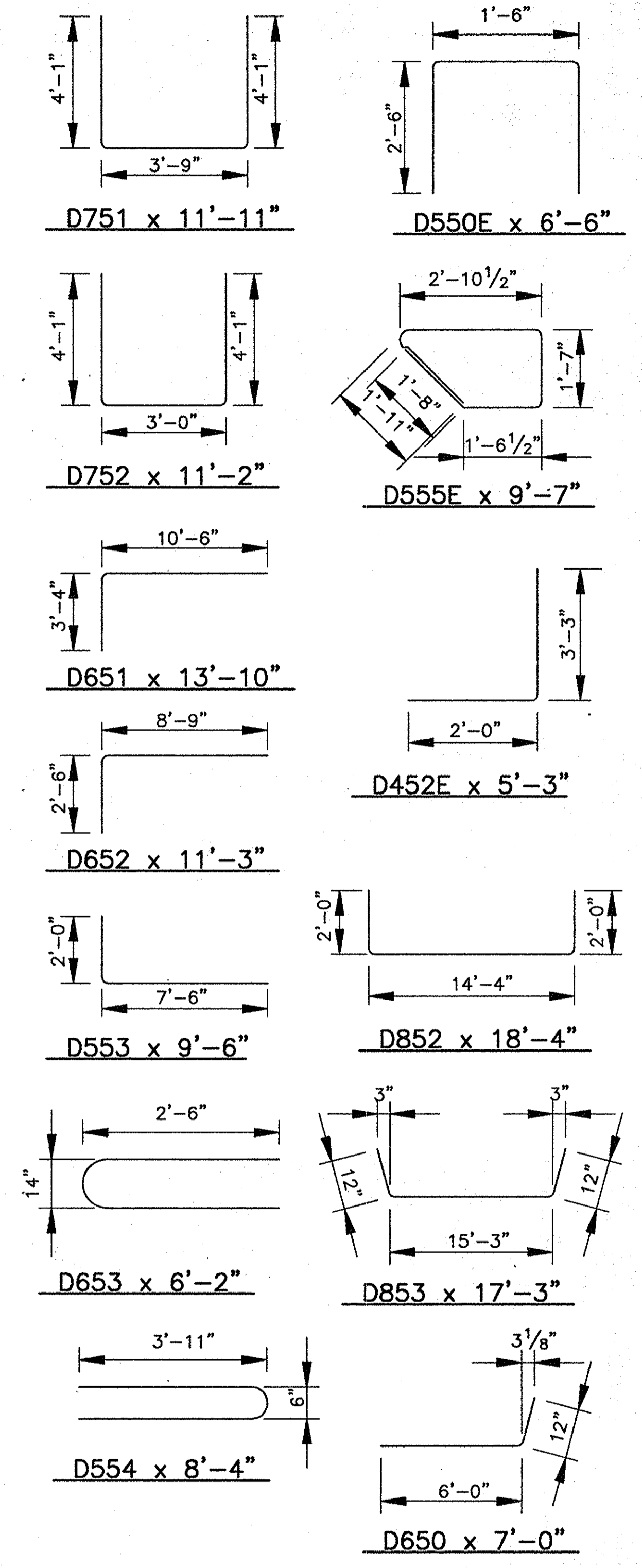
SECTION C-C



SECTION E-E

STRESSING INSTRUCTIONS					
BAR	JACK FORCE (KIPS)	ELONGATION BEFORE SEATING 100 % (IN)	ELONGATION AFTER SEATING 100 % (IN)	SET (IN)	BAR LENGTH (APPROX.)
B8	142.5	.74	.68	.06	15.75'
B9	142.5	.77	.71	.06	16.38'
B10	142.5	.80	.74	.06	17.01'
B11	142.5	.83	.77	.06	17.58'
TOTAL LENGTH (FT.)					66.72'

- NOTES:
- FOR DIMENSIONS SEE DWG C39.
 - FF INDICATES FRONT FACE, RF INDICATES REAR FACE.



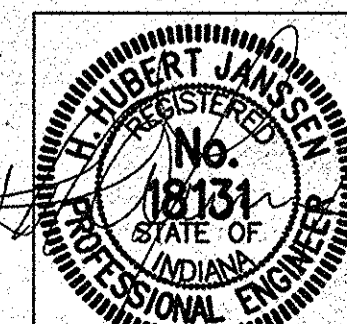
BILL OF MATERIALS

EPOXY COATED STEEL GRADE 60			
Size And Mark	No. Of Bars	Length (Feet)	Weight (Lbs.)
D850E	6	34'-9"	557
D550E	27	6'-6"	
D555E	18	9'-7"	
TOTAL #5			363
D451E	36	4'-0"	
D452E	36	5'-3"	
TOTAL #4			222
TOTAL EPOXY COATED STEEL 1142			
D851	3	34'-9"	
D852	1	16'-4"	
D853	6	17'-3"	
D854	2	15'-3"	
TOTAL #8			680
D751	46	11'-11"	
D752	8	11'-2"	
TOTAL #7			1303
D650	12	7'-0"	
D651	16	13'-10"	
D652	16	11'-3"	
D653	16	6'-2"	
TOTAL #6			877
D552	10	11'-0"	
D553	4	9'-6"	
D554	18	8'-4"	
D556	8	2'-6"	
TOTAL #5			332
D453	28	3'-6"	
D454	4	5'-8"	
D455	14	10'-0"	
TOTAL #4			174
TOTAL REINFORCING STEEL 3366			

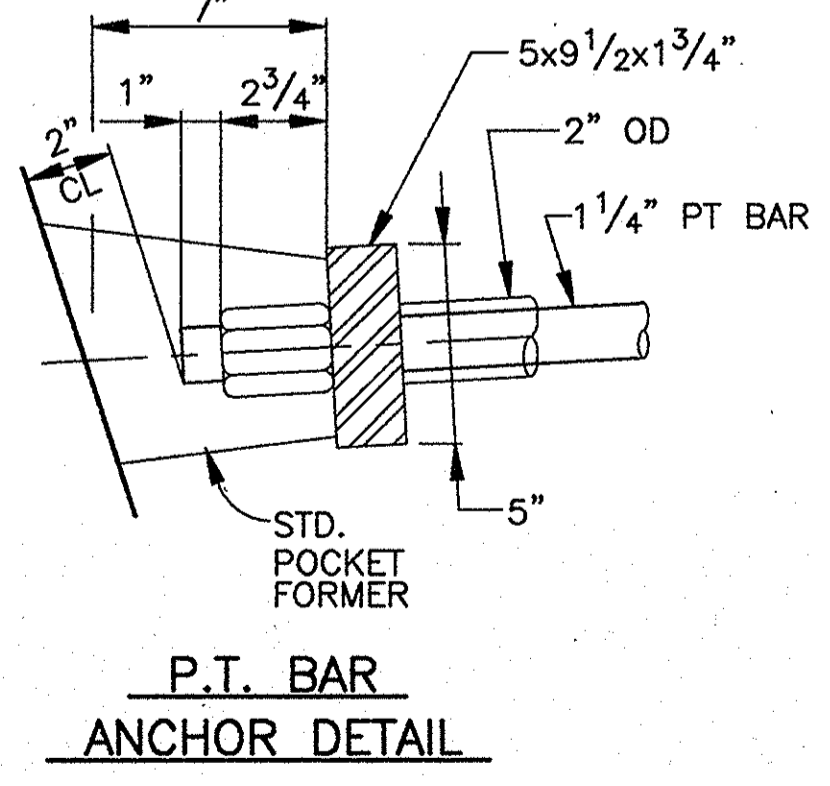
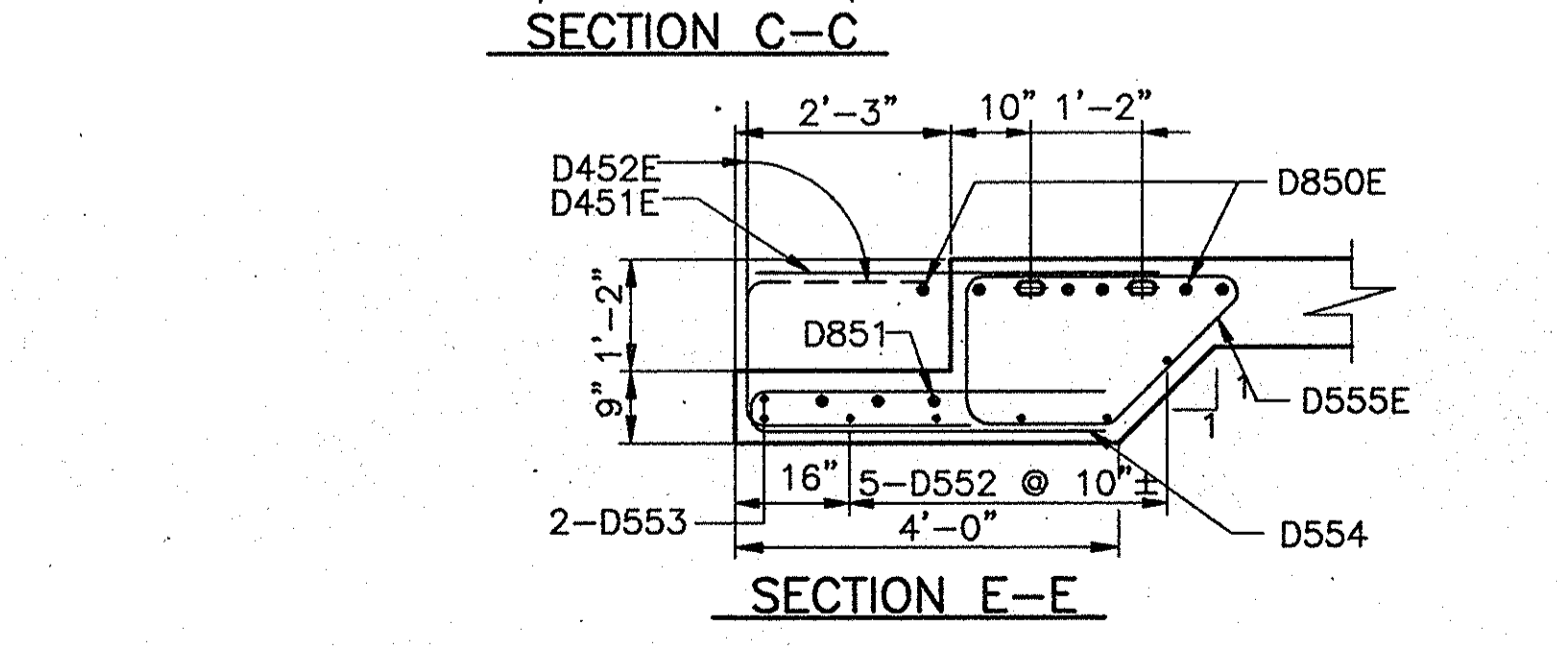
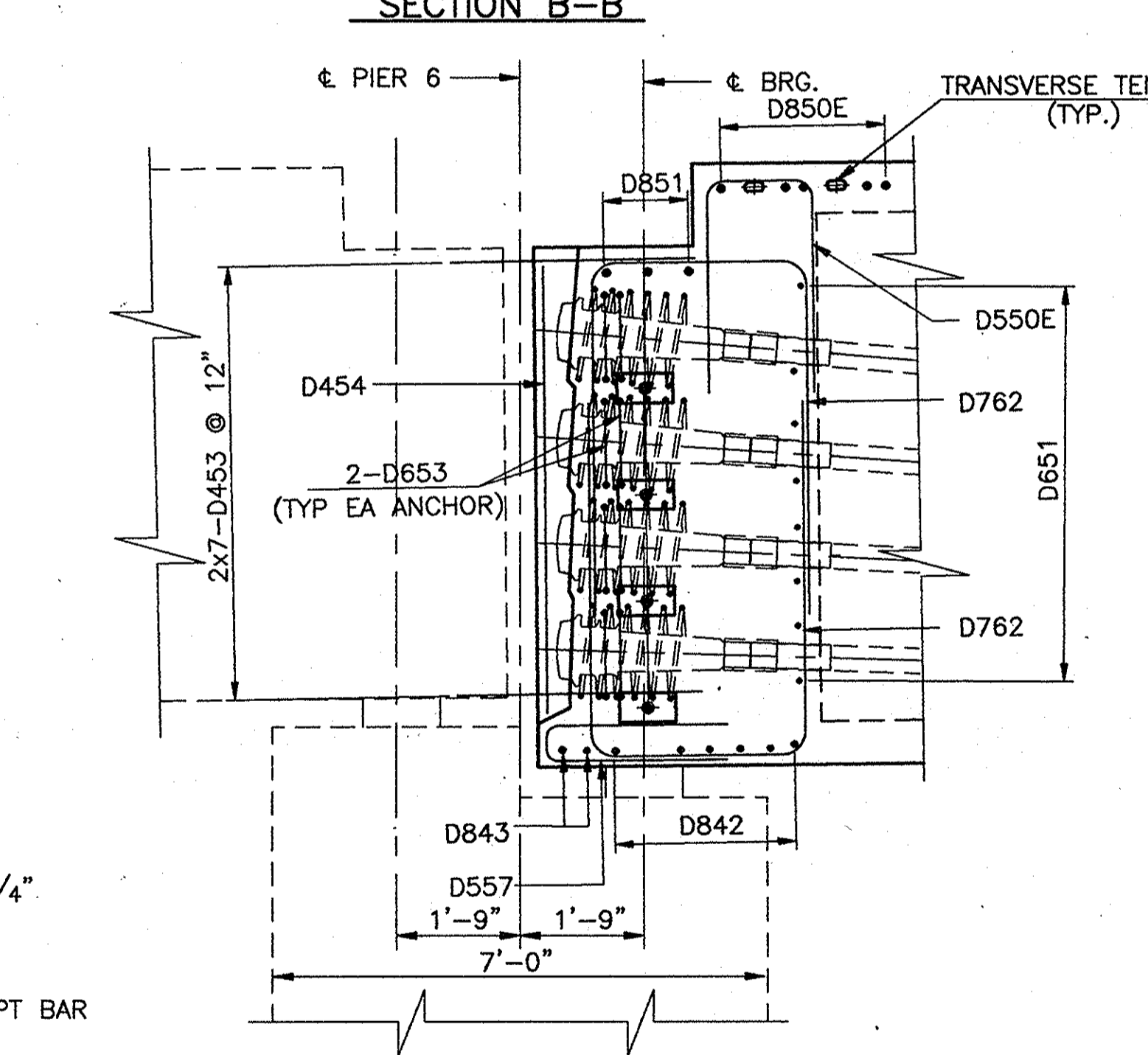
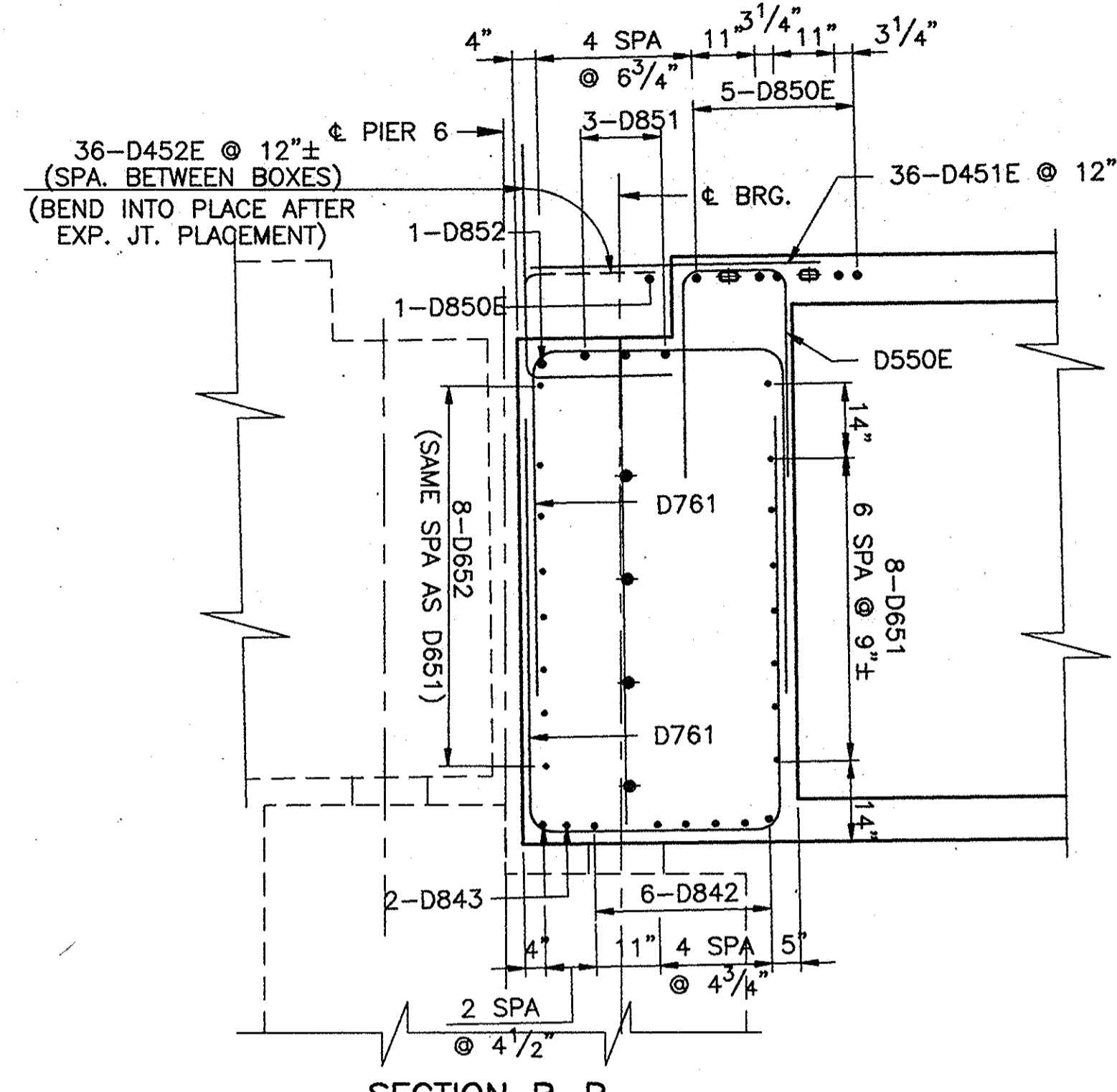
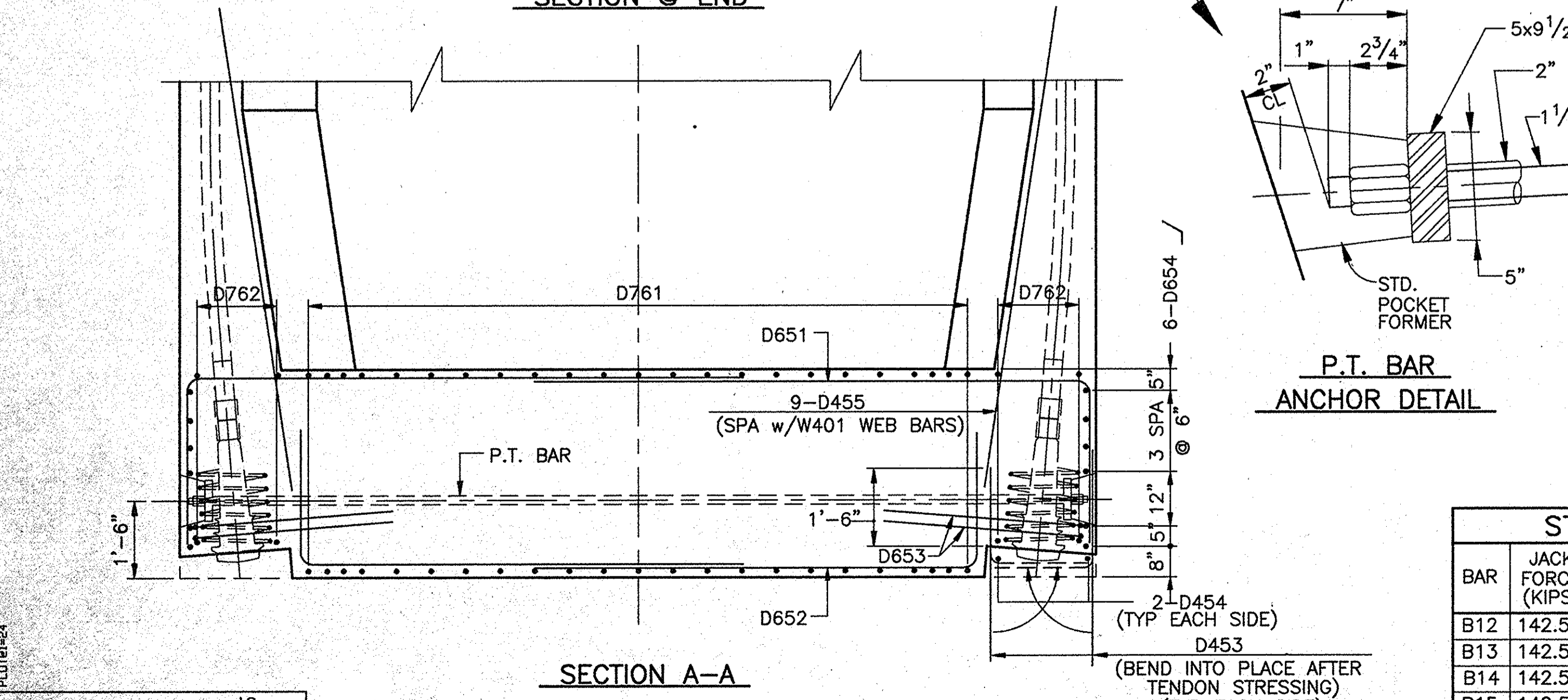
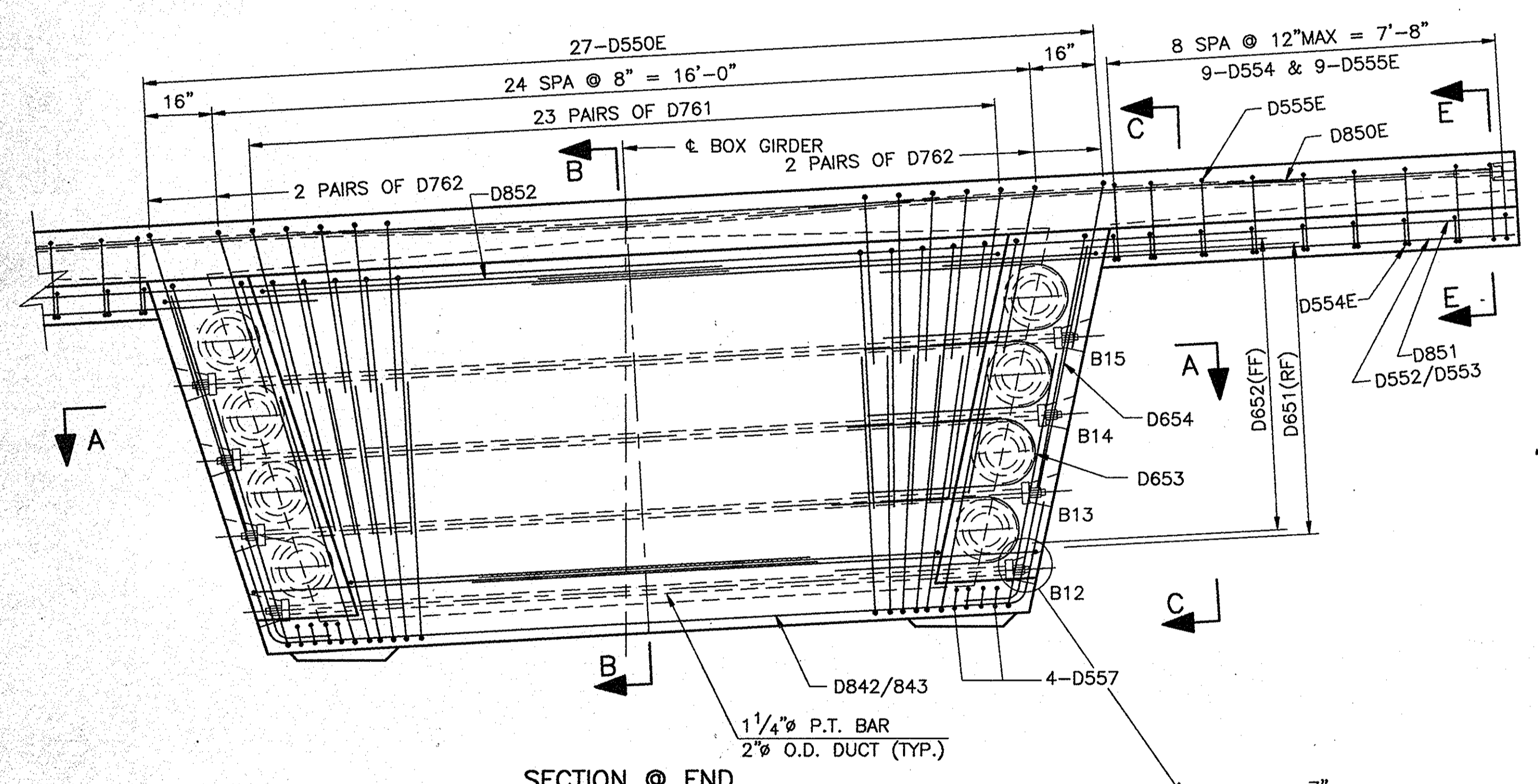
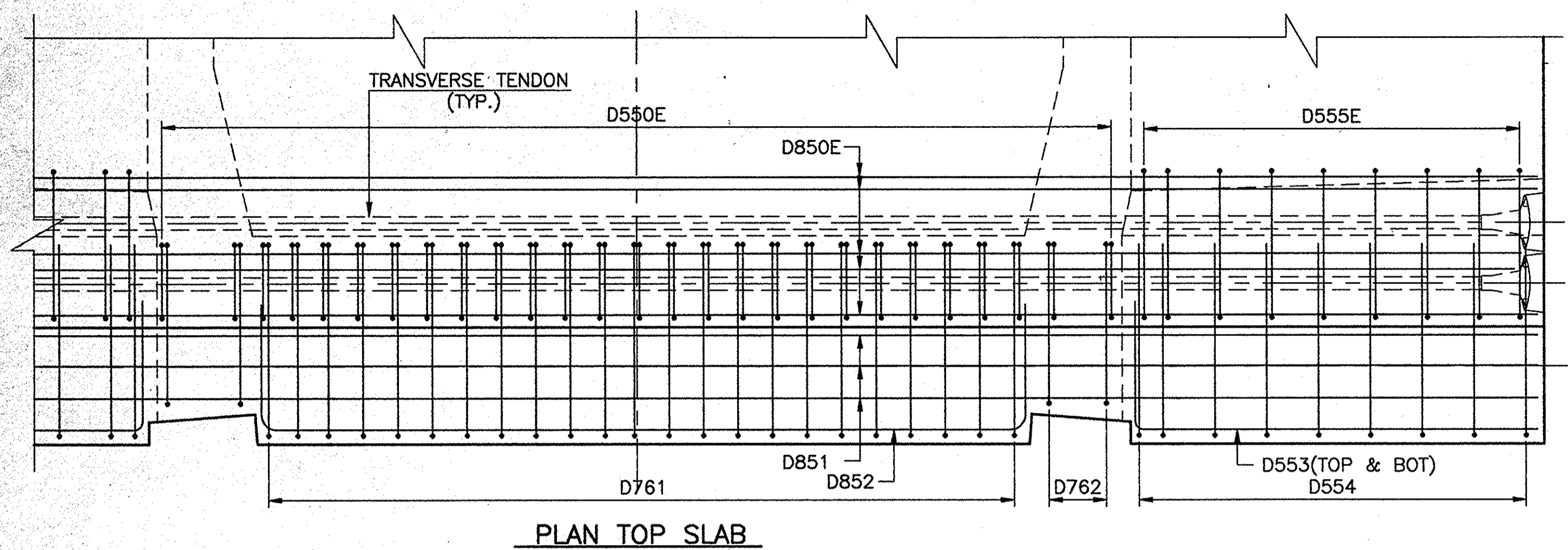
- STRAIGHT BARS
- D850E x 34'-9"
 - D851 x 34'-9"
 - D854 x 15'-3"
 - D552 x 11'-0"
 - D451E x 4'-0"
 - D453 x 3'-6"
 - D454 x 5'-8"
 - D455 x 10'-0"
 - D556 x 2'-6"

SUPERSTRUCTURE DETAILS-
DIAPHRAGM AT PIER NO. 6 (UNIT 1)
DOWN STATION
INDIANA DEPARTMENT OF TRANSPORTATION
LAKE COUNTY

SCALE: 1/2"=1'-0", UNLESS NOTED DATE: July 10, 1990
SUBMITTED FOR APPROVAL
DRAWING: C32 OF C51 SHEET: 47 OF 73
PROJECT: - NH-80-1 (J4)
CONTRACT NO.
BRIDGE FILE: I-80-5-7823

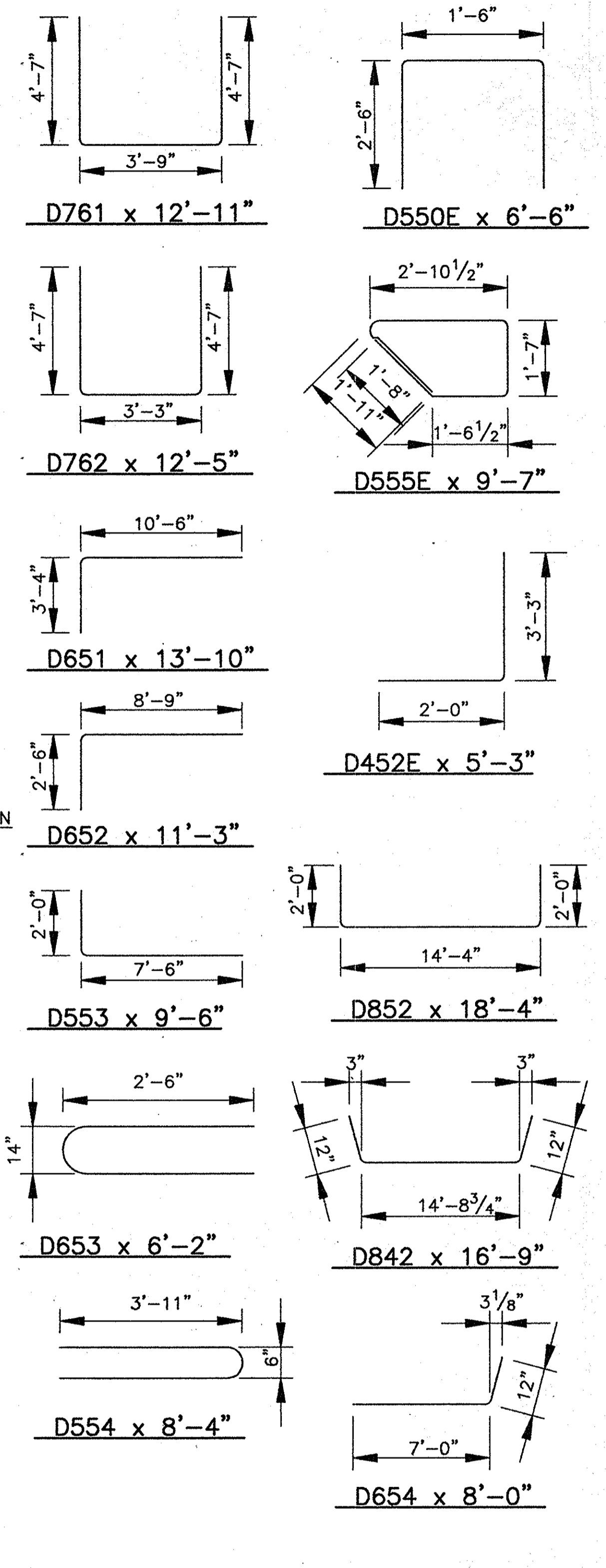


DESIGNED: HHJ C'K'D LS
DRAWN: TMD C'K'D HHJ
TRACED: C'K'D



STRESSING INSTRUCTIONS					
BAR	JACK FORCE (KIPS)	ELONGATION BEFORE SEATING 100 % (IN)	ELONGATION AFTER SEATING 100 % (IN)	SET (IN)	BAR LENGTH (APPROX.)
B12	142.5	.71	.65	.06	15.11'
B13	142.5	.75	.69	.06	15.91'
B14	142.5	.79	.73	.06	16.71'
B15	142.5	.83	.76	.06	17.51'
TOTAL LENGTH (FT.)					65.24

NOTES:
 1. FOR DIMENSIONS SEE DWG C39.
 2. FF INDICATES FRONT FACE, RF INDICATES REAR FACE.



BILL OF MATERIALS

EPOXY COATED STEEL GRADE 60			
Size And Mark	No. Of Bars	Length (Feet)	Weight (Lbs.)
D850E	6	34'-9"	557
D550E	27	6'-6"	
D555E	18	9'-7"	
TOTAL #5			363
D451E	36	4'-0"	
D452E	36	5'-3"	
TOTAL #4			222
TOTAL EPOXY COATED STEEL			1142
D851	3	34'-9"	
D852	1	18'-4"	
D842	6	16'-9"	
D843	2	14'-10"	
TOTAL #8			675
D761	46	12'-11"	
D762	8	12'-5"	
TOTAL #7			1418
D651	16	13'-10"	
D652	16	11'-3"	
D653	16	6'-2"	
D654	12	8'-0"	
TOTAL #6			895
D552	10	11'-0"	
D553	4	9'-6"	
D554	18	8'-4"	
D557	8	5'-6"	
TOTAL #5			357
D453	28	3'-6"	
D454	4	6'-4"	
D455	18	10'-0"	
TOTAL #4			203
TOTAL REINFORCING STEEL			3548

- STRAIGHT BARS**
 D850E x 34'-9"
 D851 x 34'-9"
 D843 x 14'-10"
 D552 x 11'-0"
 D451E x 4'-0"
 D453 x 3'-6"
 D454 x 6'-4"
 D455 x 10'-0"
 D842 x 16'-9"
 D852 x 18'-4"
 D653 x 6'-2"
 D842 x 16'-9"
 D554 x 8'-4"
 D654 x 8'-0"
 D557 x 5'-6"

**SUPERSTRUCTURE DETAILS-
 DIAPHRAGM AT PIER NO. 6 (UNIT 2)
 UP STATION**

**INDIANA DEPARTMENT OF TRANSPORTATION
 LAKE COUNTY**

SCALE: 1/2"=1'-0", UNLESS NOTED DATE: July 10, 1998

SUBMITTED FOR APPROVAL

DRAWING: C33 OF C51 SHEET: 48 OF 73

PROJECT: - NH-80-1 (J4)

CONTRACT NO.

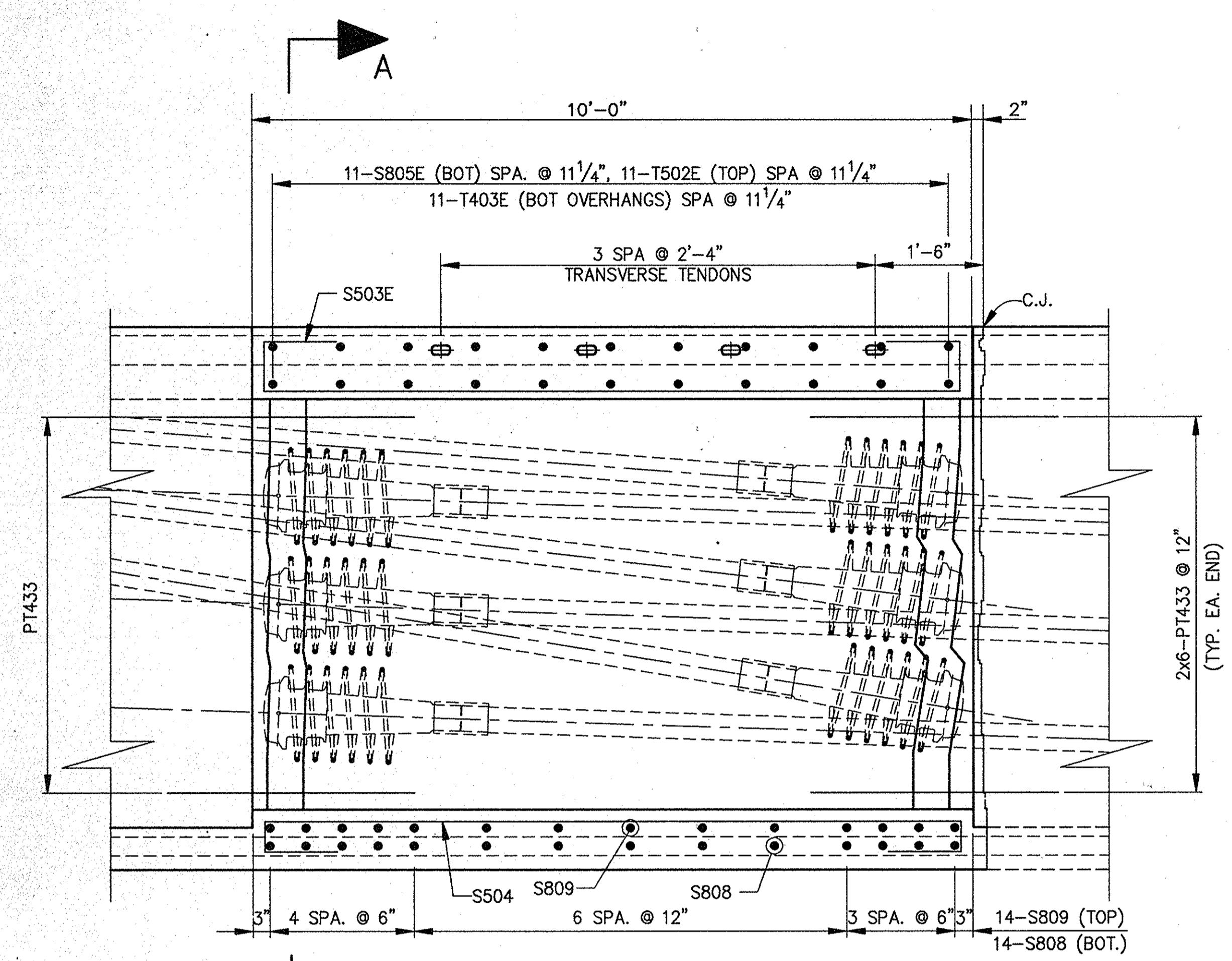
BRIDGE FILE: I-80-5-7823



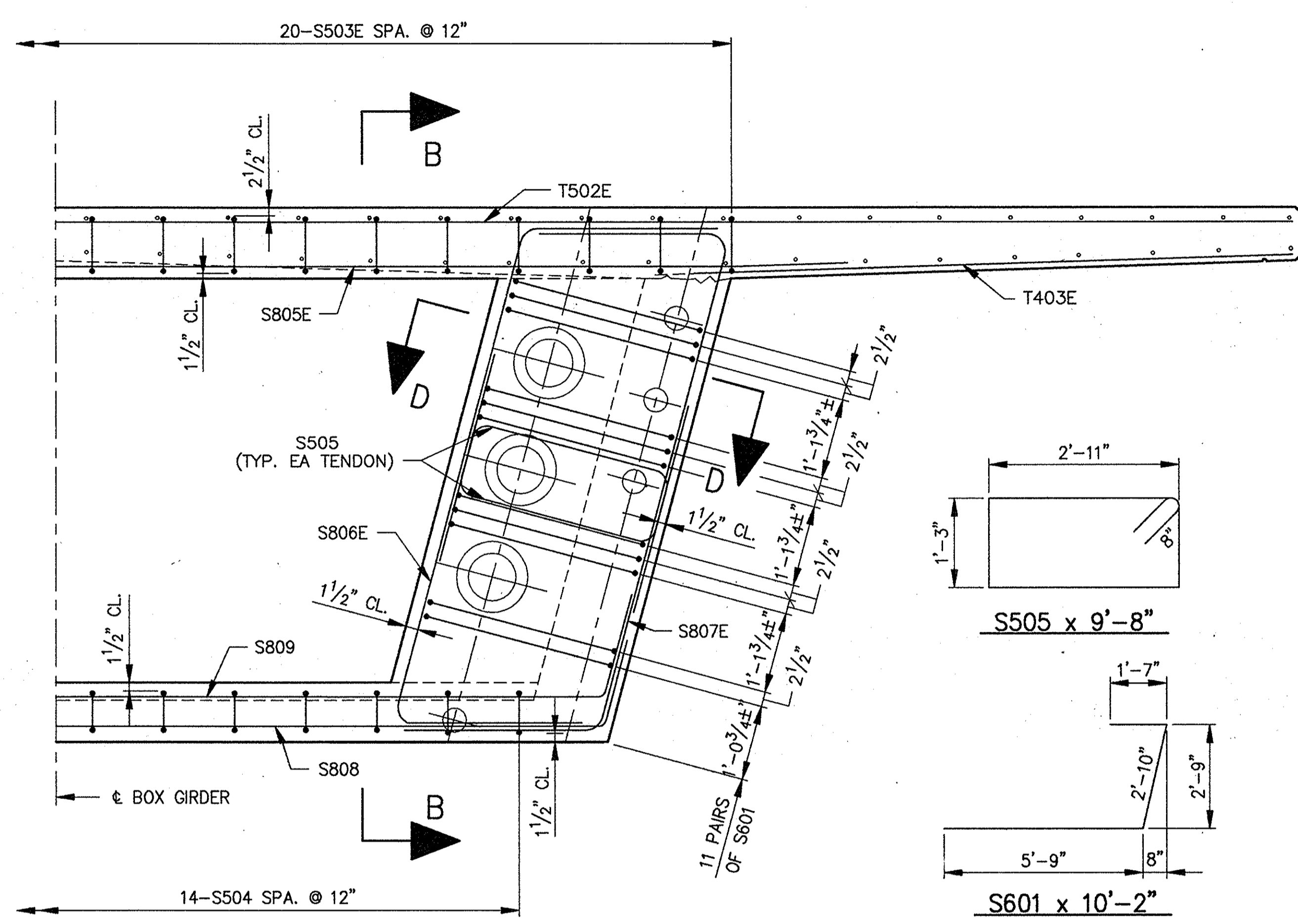
DESIGNED: HHJ C'K'D LS
 DRAWN: TMD C'K'D HHJ
 TRACED: C'K'D

BILL OF MATERIALS

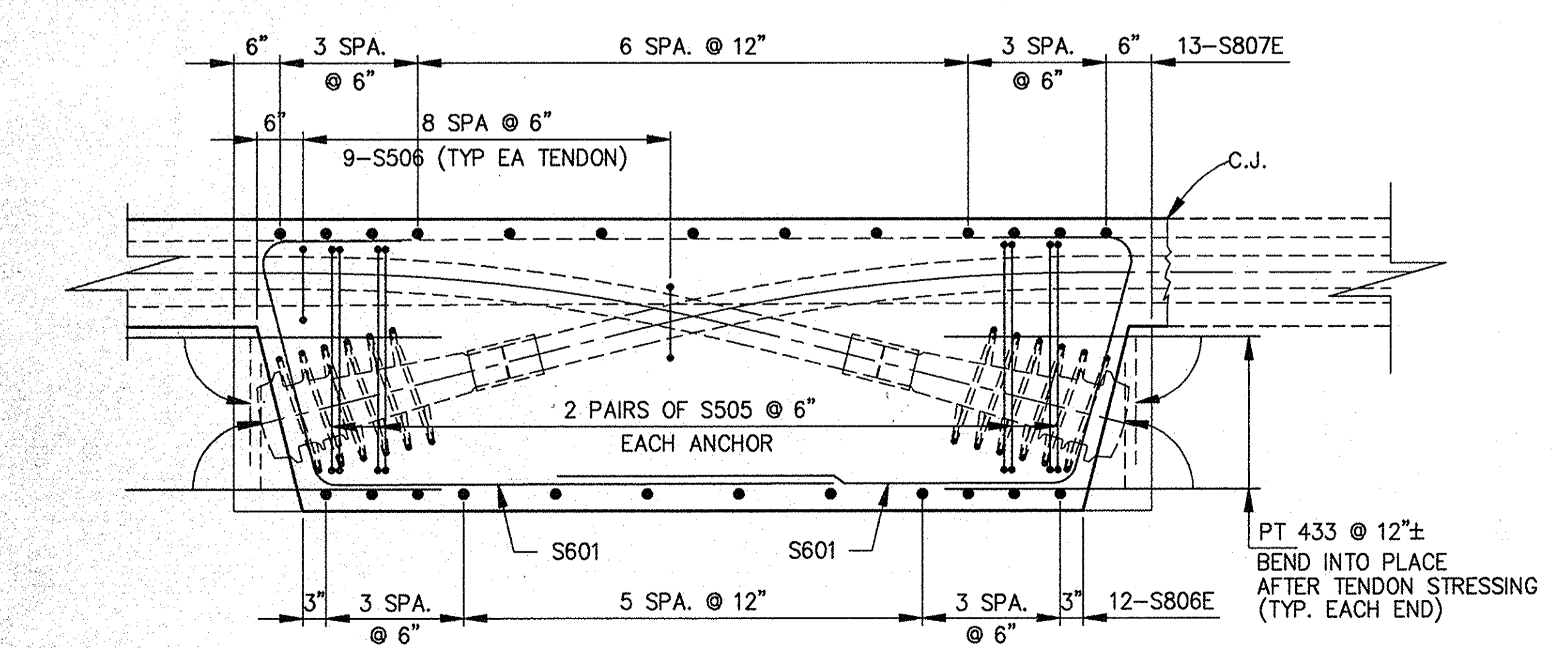
REINFORCING STEEL GRADE 60			
Size And Mark	No. Of Bars	Length (Feet)	Weight (Lbs.)
S806E	24	12'-10"	
S807E	26	12'-10"	
S805E	11	22'-4"	
TOTAL # 8			2369
S503E	20	13'-1"	
T502E	11	34'-9"	
TOTAL # 5			672
T403E	22	8'-11"	131
TOTAL EPOXY COATED STEEL			3172
S808	14	18'-3"	
S809	14	18'-5"	
TOTAL # 8			1371
S601	44	10'-2"	672
S504	14	12'-11"	
S505	48	9'-8"	
S506	108	3'-0"	
TOTAL # 5			1010
PT433	24	3'-0"	48
TOTAL REGULAR REINFORCING CONCRETE			3101
Class "C" in Superstructure *			
* INCLUDED WITH BOX GIRDER QUANTITY			



SECTION B-B

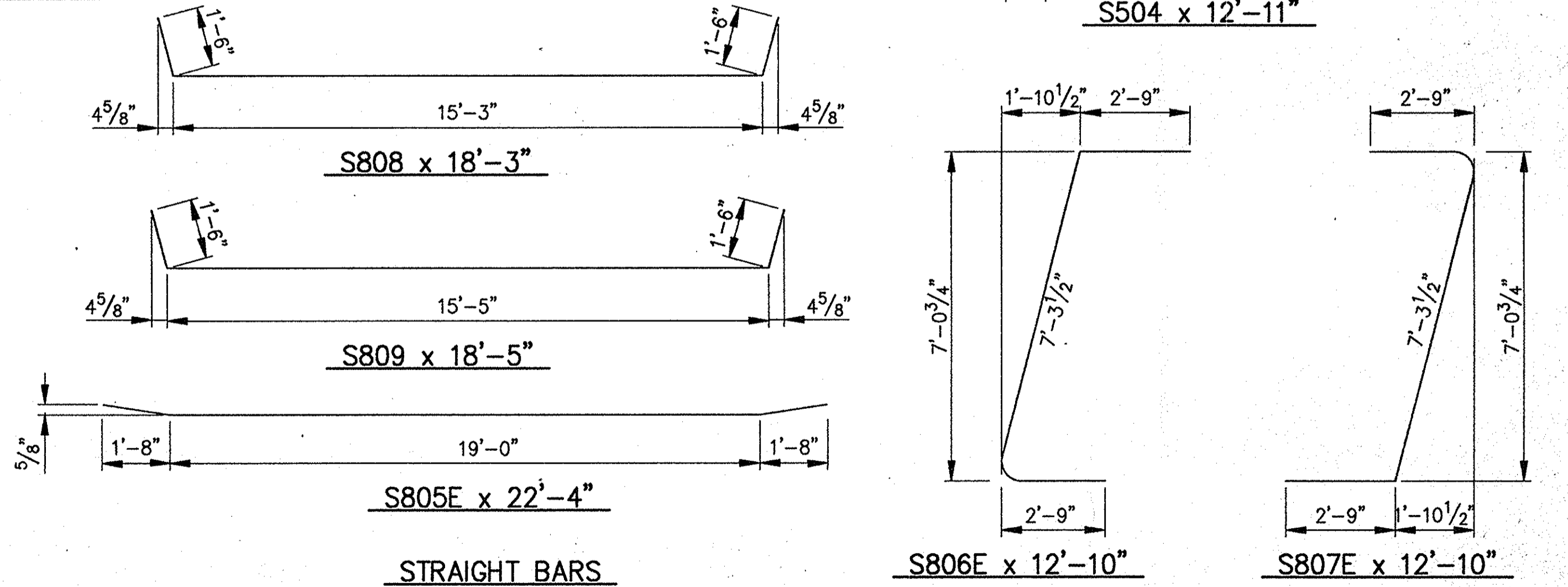


HALF SECTION A-A



SECTION D-D

NOTES:
1. FOR DIMENSIONS SEE DWG C40



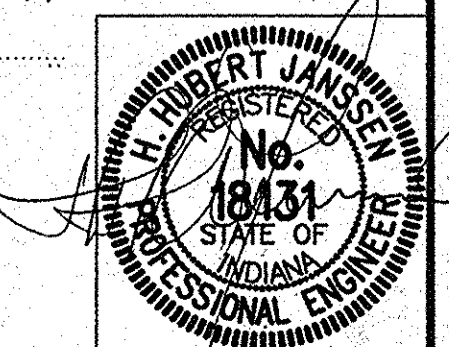
STRAIGHT BARS
T502E x 34'-9"
T403E x 8'-11"
T433 x 3'-0"

SUPERSTRUCTURE DETAILS - STRESSING BLOCK REINFORCING
INDIANA DEPARTMENT OF TRANSPORTATION
LAKE COUNTY

SCALE: 3/4"=1'-0", UNLESS NOTED DATE: July 10, 1998

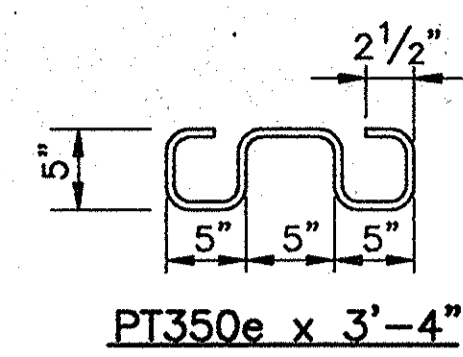
SUBMITTED FOR APPROVAL

DRAWING: C35 OF C51 SHEET: 50 OF 73
PROJECT: - NH-80-1 (4)
CONTRACT NO.
BRIDGE FILE: I-80-5-7823



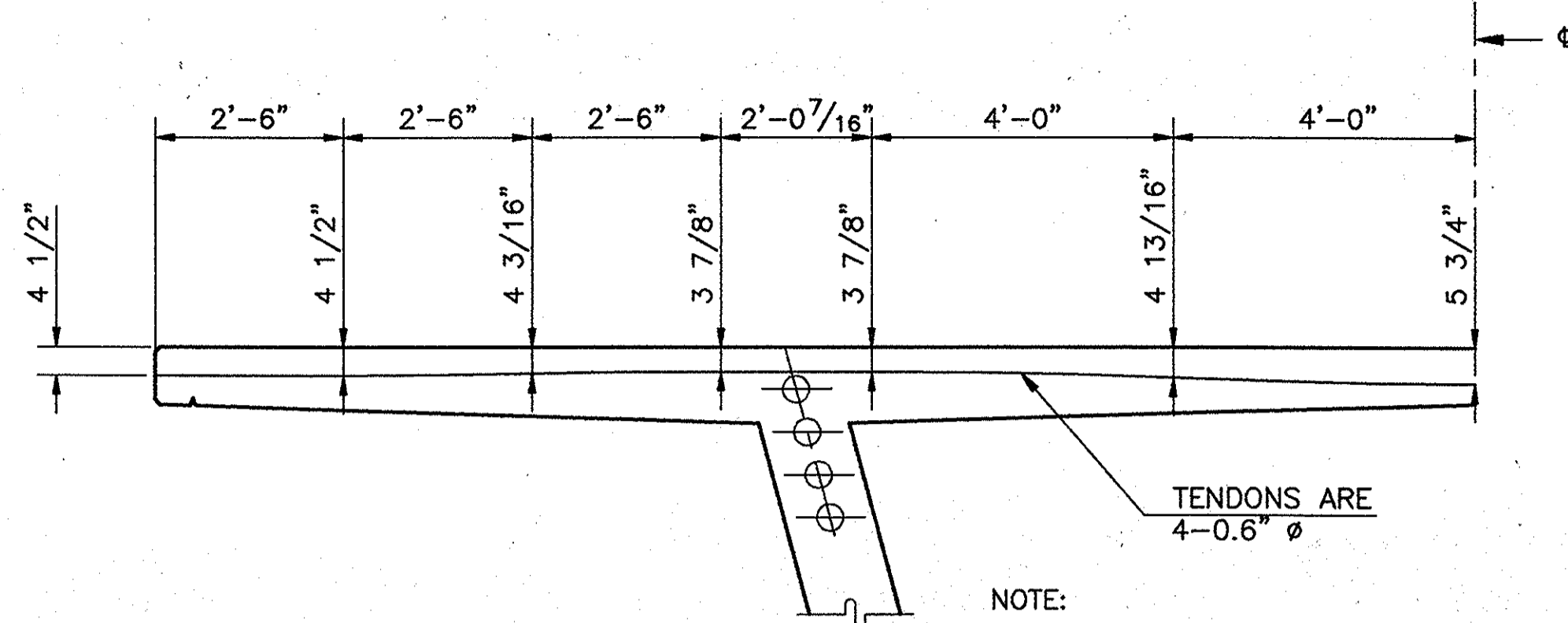
ANCHORAGE DETAILS AT STRESSING BLOCK SPAN C

DESIGNED: HHJ C'K'D LS
DRAWN: TMD C'K'D HHJ
TRACED: C'K'D



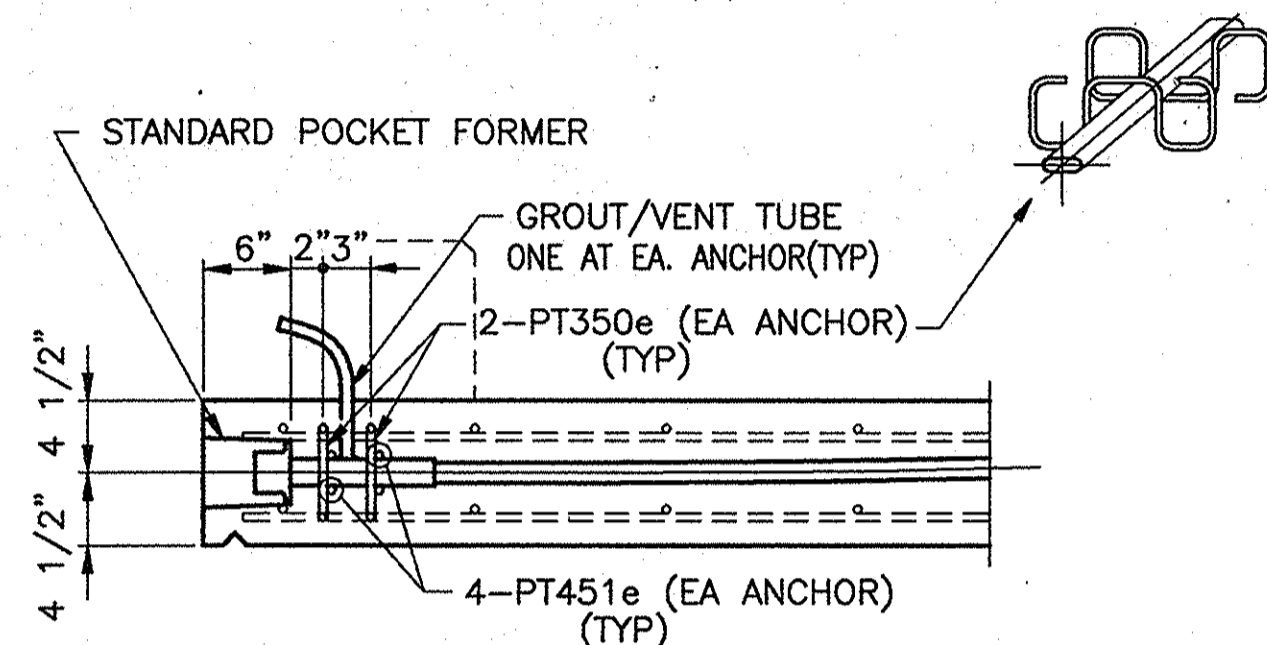
PT350e x 3'-4"

PT451e x 2'-6"

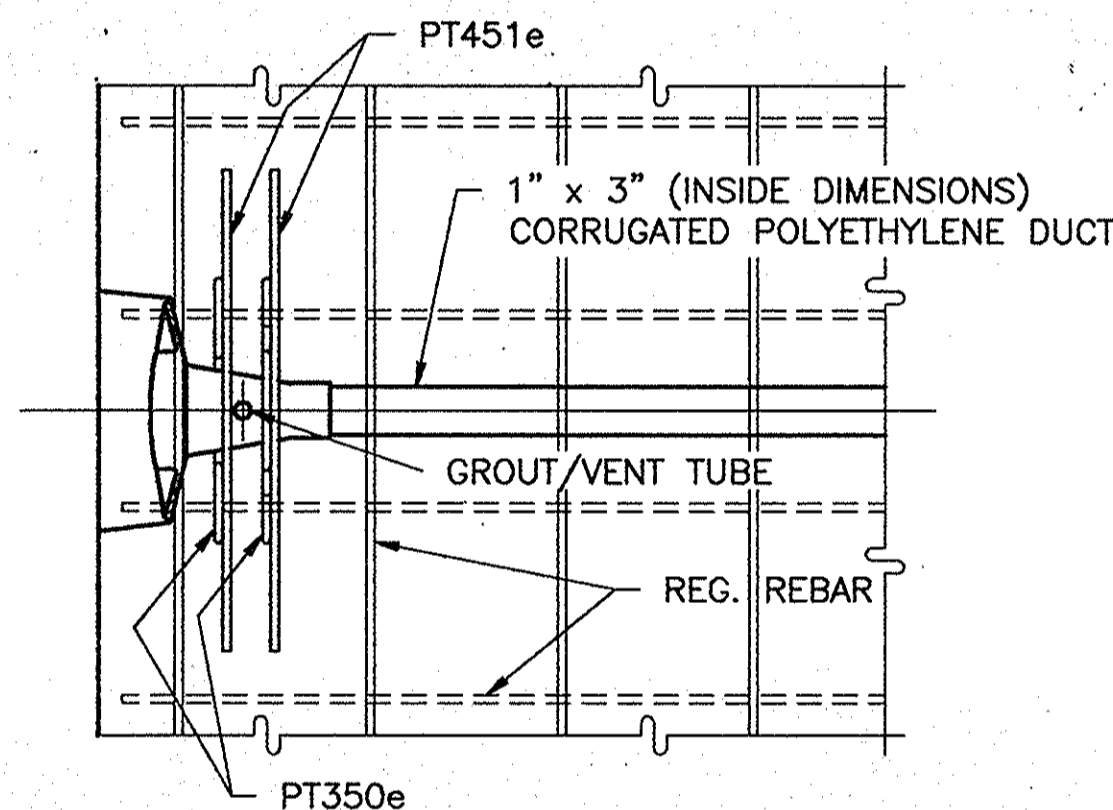


TENDON LAYOUT
(SYMM ABOUT ϵ)

NOTE:
DIMENSIONS ARE
TO ϵ DUCT.



SECTION



PLAN

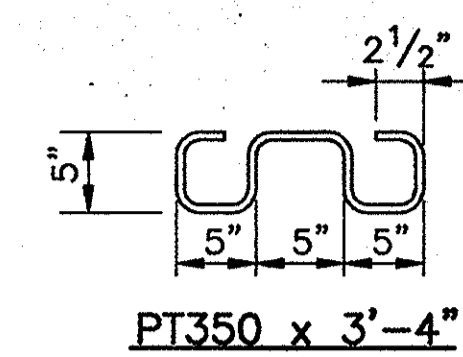
REINFORCEMENT AT
TRANSVERSE POST TENSIONING ANCHORS

SCALE 1"=1'-0"

REINFORCING STEEL GRADE 60 EPOXY COATED STEEL			
SIZE & MARK	NUMBER OF BARS	LENGTH	WEIGHT
PT350E	1316	3'-4"	1649
PT451E	2632	2'-6"	4409
TOTAL EPOXY COATED STEEL			6058

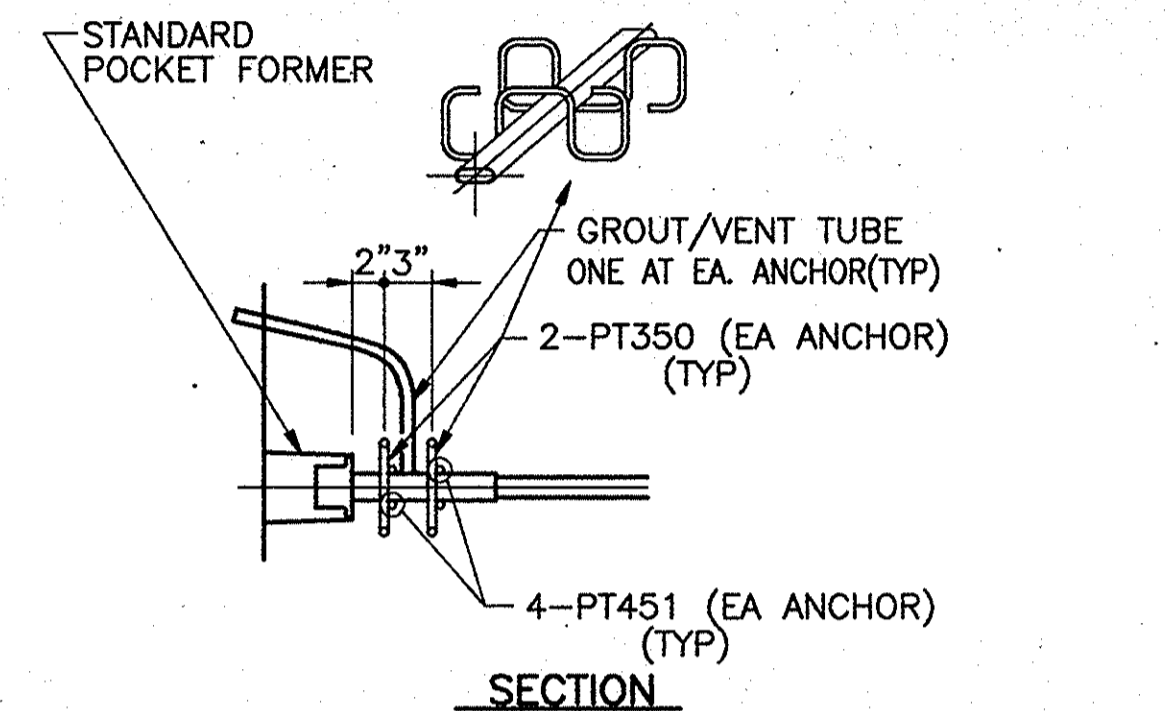
TOTAL QUANTITIES			
NO. OF TENDONS (EA)	NO. OF ANCHORS	LENGTH(NET) DUCT 0.6" ϕ STRAND (NET) *	
		1" x 3" LFT	.74 LBS LBS/LFT
329	658	11377	33676

STRESSING DATA (PER STRAND)				
JACK FORCE (KIPS)	ELONGATION BEFORE SEATING 100 % (IN)	ELONGATION AFTER SEATING 100 % (IN)	ANCHOR SET (IN)	APPROX LENGTH (FT/IN)
46.9	3 1/8	2 15/16	3/16	34'-7"

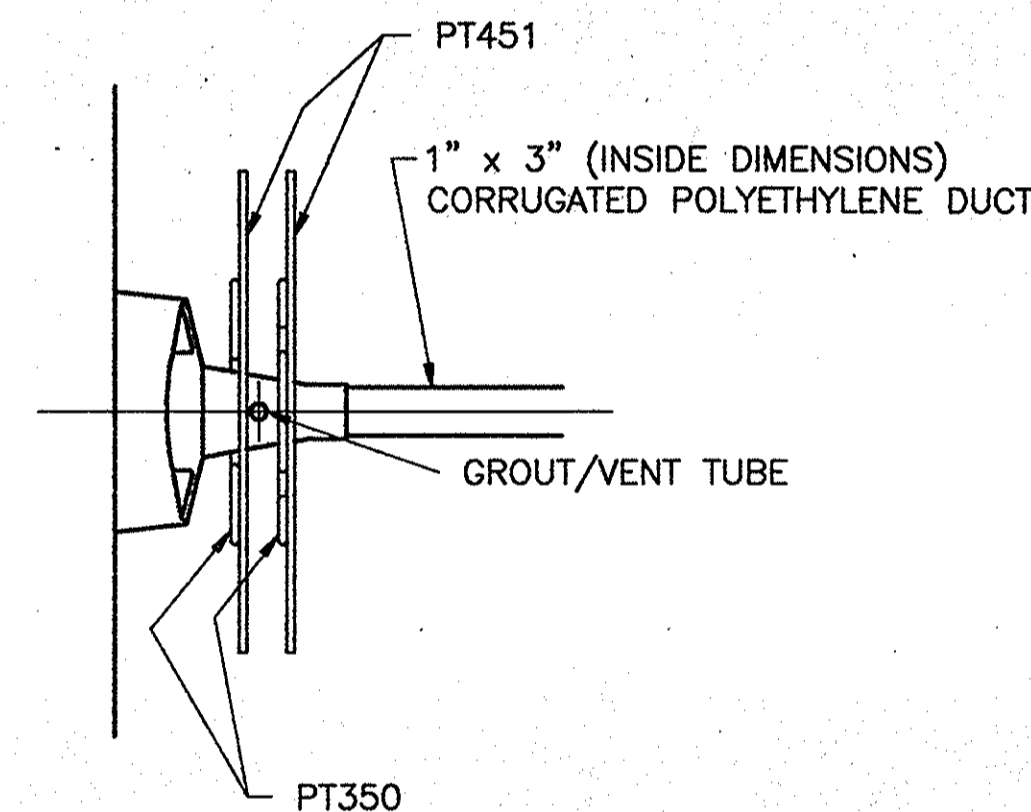


PT350 x 3'-4"

PT451 x 2'-6"



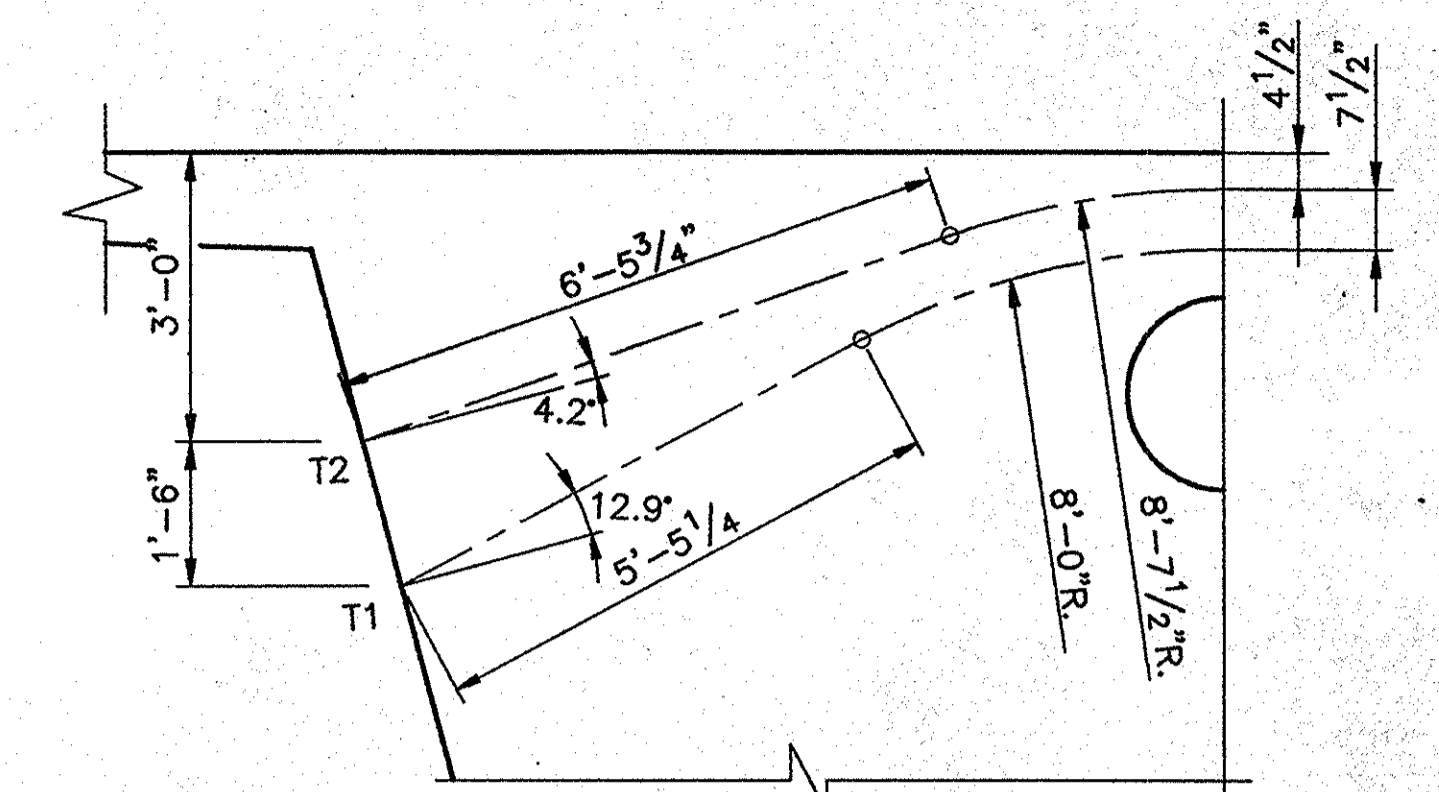
SECTION



PLAN

REINFORCEMENT AT
TRANSVERSE POST TENSIONING ANCHORS

SCALE 1"=1'-0"



TENDON LAYOUT
(SYMM ABOUT ϵ)

NOTE:
DIMENSIONS ARE
TO ϵ DUCT.

REINFORCING STEEL GRADE 60 STEEL			
SIZE & MARK	NUMBER OF BARS	LENGTH	WEIGHT
PT350	168	3'-4"	210
PT451	336	2'-6"	563
TOTAL STEEL			773

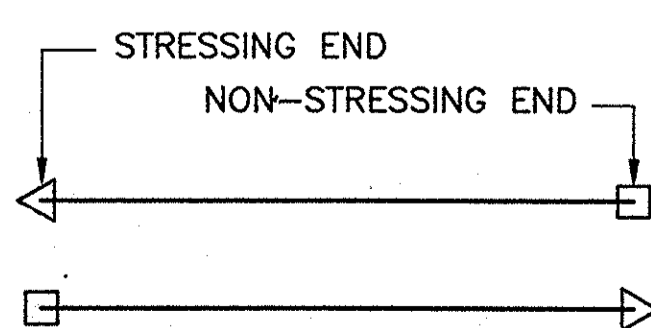
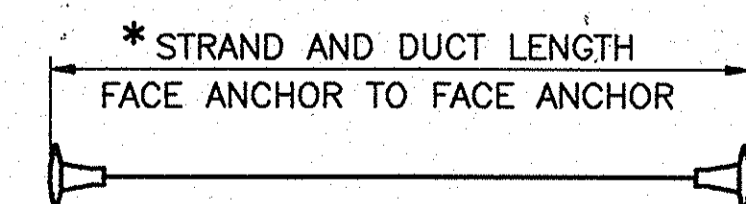
TOTAL QUANTITIES			
NO. OF TENDONS (EA)	NO. OF ANCHORS	LENGTH(NET) DUCT 0.6" ϕ STRAND (NET) *	
		1" x 3" LFT	.74 LBS LBS/LFT
42	84	785	2323

STRESSING DATA (PER STRAND)					
TENDON	JACK FORCE (KIPS)	ELONGATION BEFORE SEATING 100 % (IN)	ELONGATION AFTER SEATING 100 % (IN)	SET (IN)	APPROX LENGTH
T1	146.9	1 1/2	1 1/8	3/8	18'-3 3/4"
T2	146.9	1 9/16	1 3/16	3/8	18'-4 1/4"

TRANSVERSE POST-TENSIONING FOR DECK

TRANSVERSE POST-TENSIONING FOR PIERS 2, 3, 4, 5, 7, 8 & 9

NOTES:



** STRESSING FROM ALTERNATING ENDS

- ALL TENDONS ARE 4-0.6"-270 KSI, LOLAX STRANDS.
- ULTIMATE CAPACITY - 234.4 KIPS.
- THE TRANSVERSE POST-TENSIONING SHALL NOT BE APPLIED UNTIL THE CONCRETE HAS REACHED A MINIMUM STRENGTH OF 4000 PSI.
- ALL TRANSVERSE POST-TENSIONING TO BE STRESSED BEFORE FINAL LONGITUDINAL POST-TENSIONING IS STRESSED.
- TENDONS ARE TO BE STRESSED FROM ALTERNATING ENDS.
- TRANSVERSE TENDONS ARE RADIAL TO CENTERLINE BOX. FOR SPACING SEE SUPER STRUCTURE DETAIL SHEETS.
- ELONGATIONS ARE BASED ON THE FOLLOWING ASSUMPTIONS: EMOD = 28500 KSI, K = 0.0002, μ = 0.25, ANCHOR SET = 3/8". IF FIELD CONDITIONS DIFFER FROM ABOVE ASSUMPTIONS ELONGATIONS SHALL BE ADJUSTED ACCORDINGLY.
- DECK FORMS SHALL NOT BE REMOVED PRIOR TO STRESSING OF TRANSVERSE POST-TENSIONING. NO CONSTRUCTION LOADS CAN BE PLACED ON DECK PRIOR TO COMPLETION OF TRANSVERSE POST-TENSIONING EXCEPT FOR LABOR AND STRESSING EQUIPMENT.
- CARE SHALL BE EXERCISED NOT TO DEFORM THE PLASTIC POCKET FORMERS FOR THE ANCHOR RECESSES.
- RECESSES TO BE FILLED WITH NON SHRINK GROUT.

TRANSVERSE POST-TENSIONING
INDIANA DEPARTMENT OF TRANSPORTATION
LAKE COUNTY

SCALE: 1/2"=1'-0", UNLESS NOTED DATE: 5/22/98

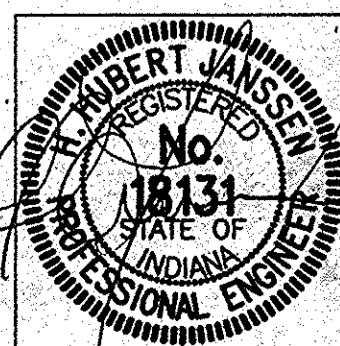
SUBMITTED FOR APPROVAL

DRAWING: C37 OF C51 SHEET: 52 OF 78

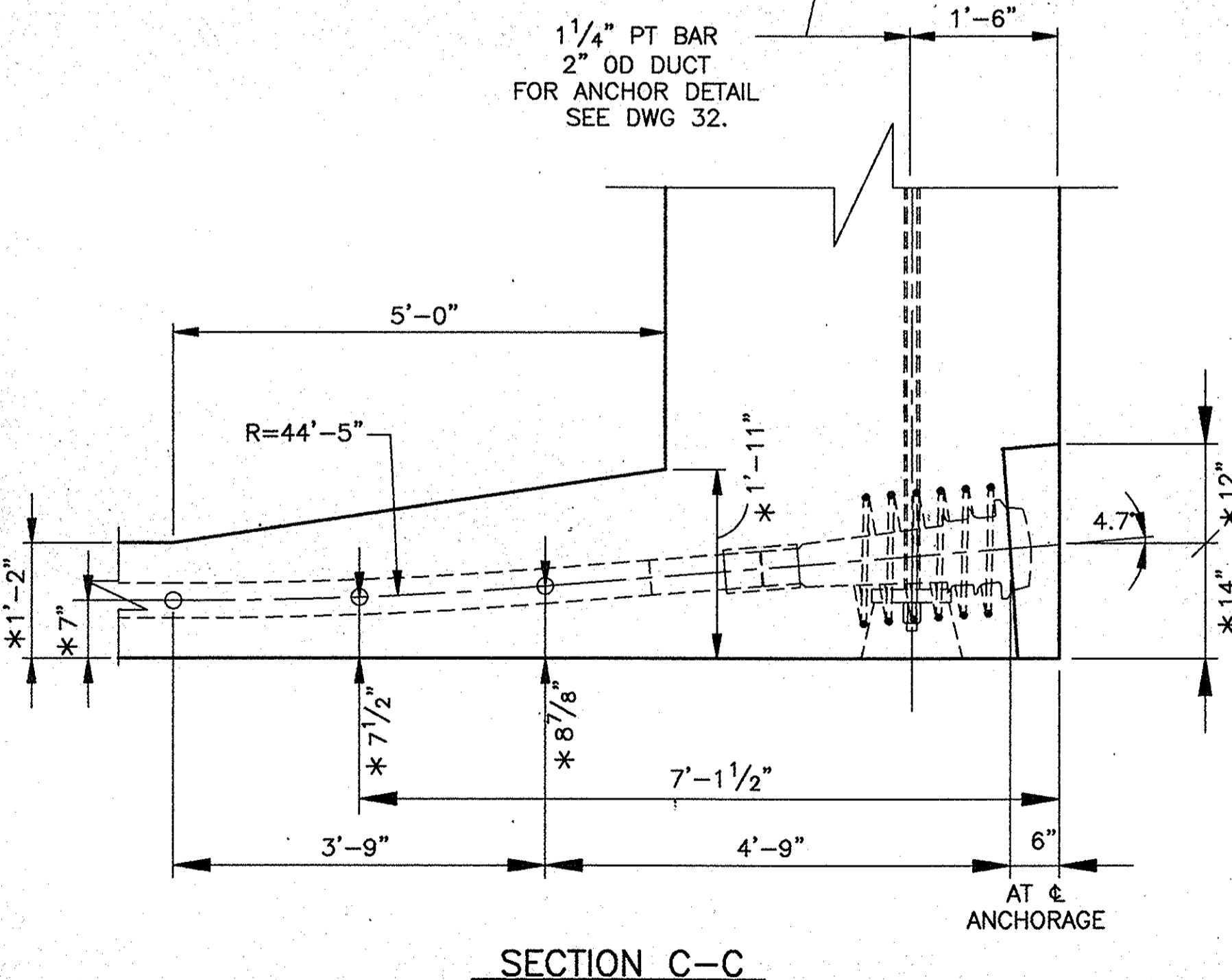
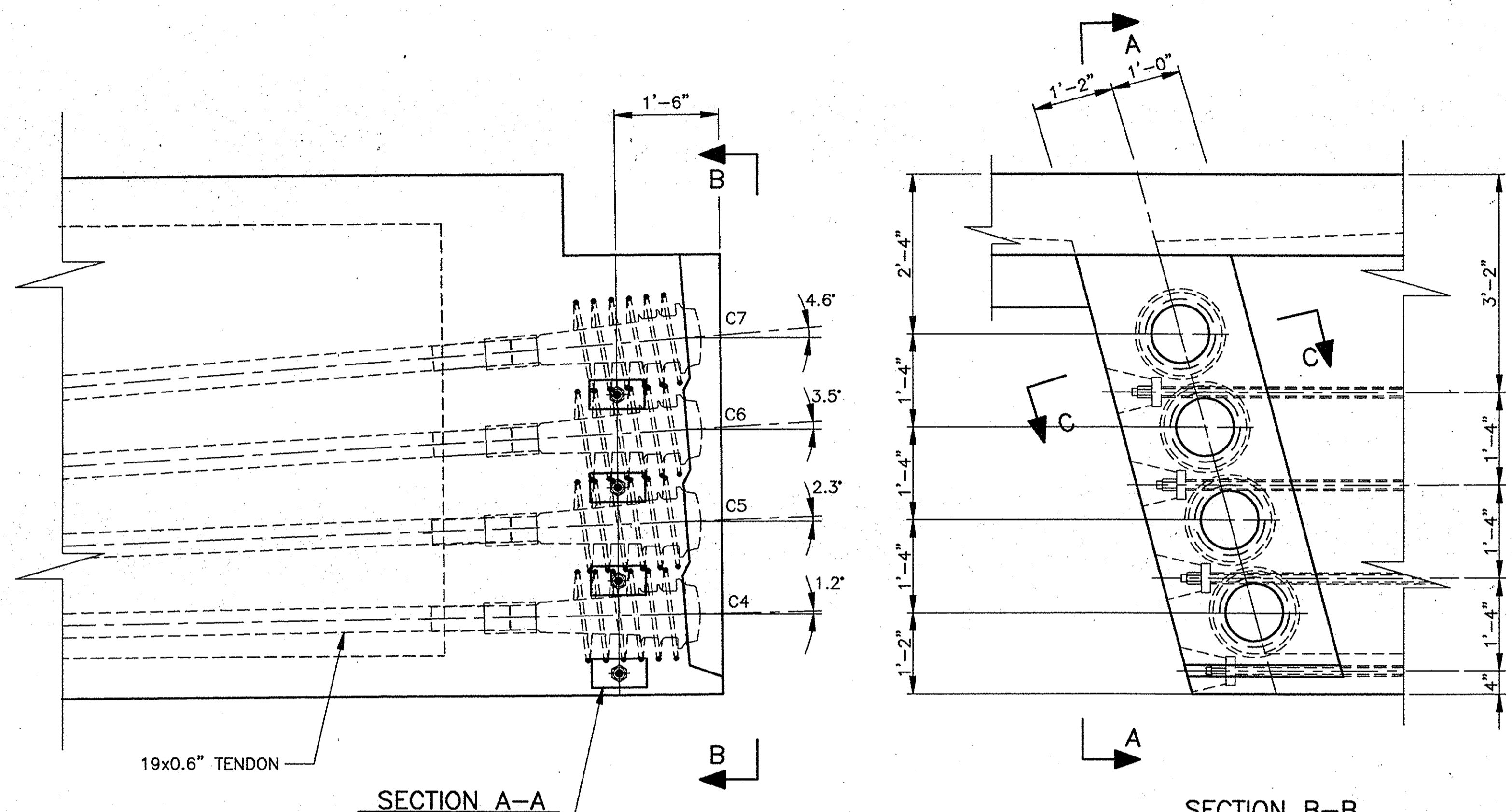
PROJECT: - NH-80-1 ()

CONTRACT NO.

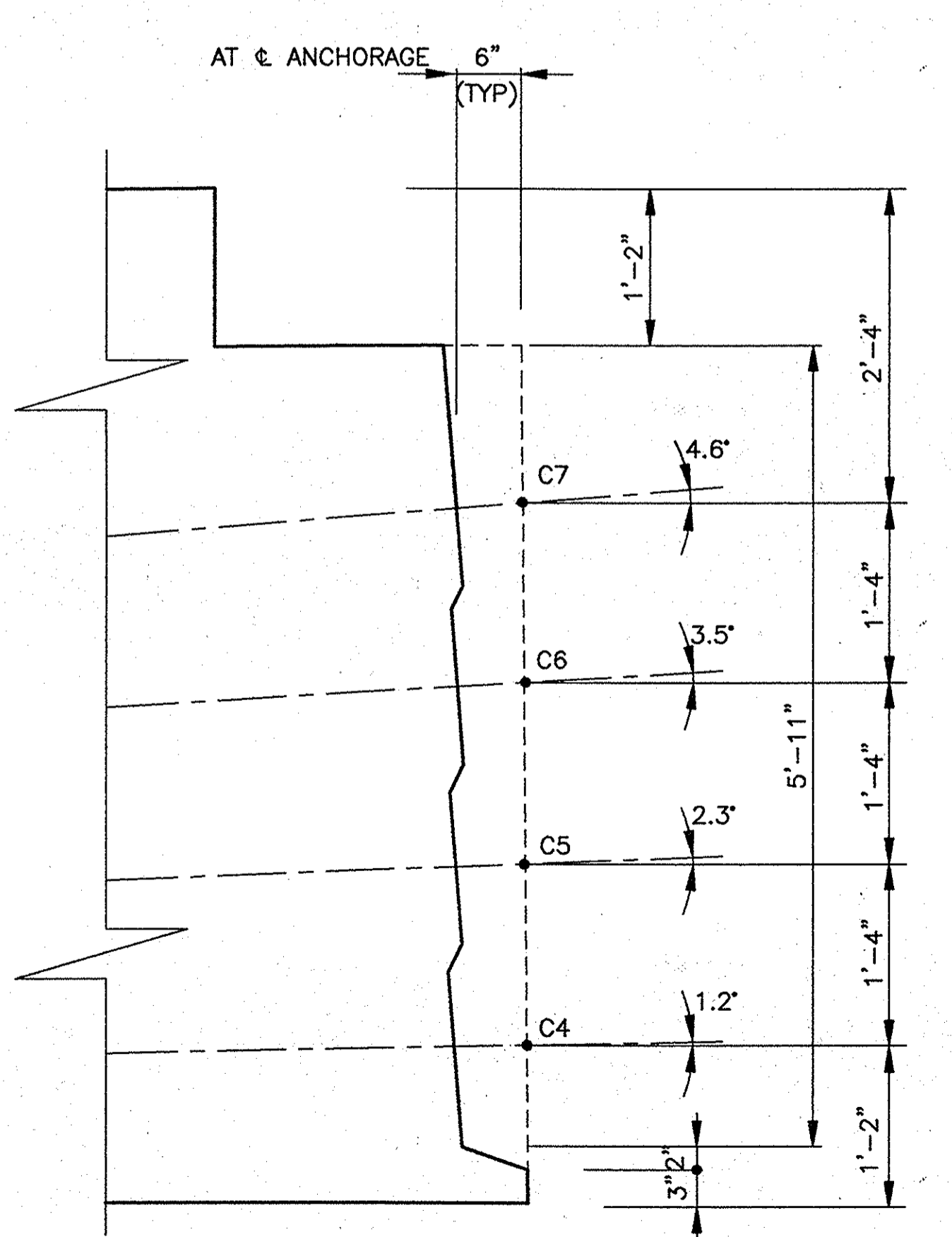
BRIDGE FILE: I-80-5-7823



ANCHORAGE DETAILS AT PIER 6 (LOOKING DOWN STATION)

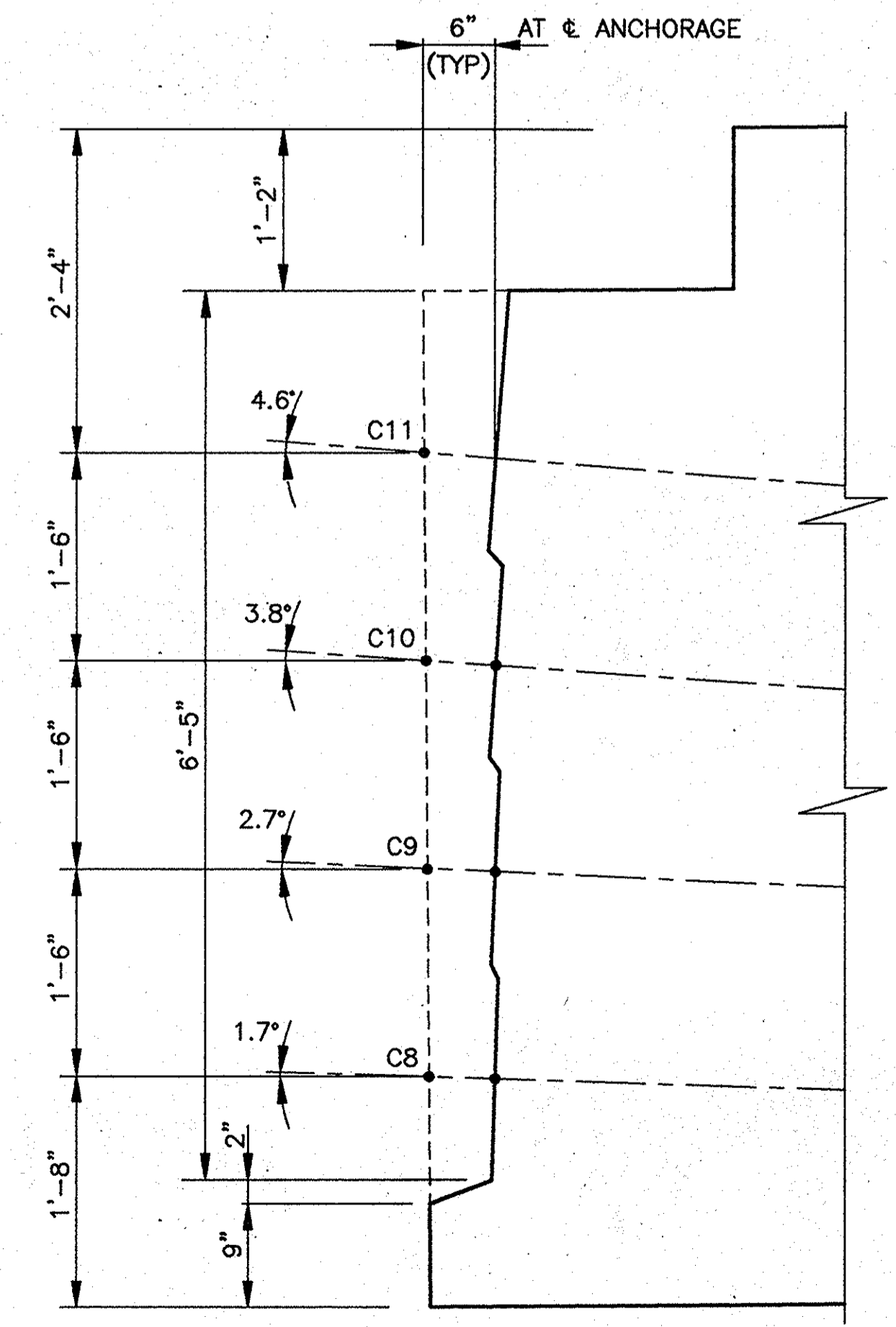
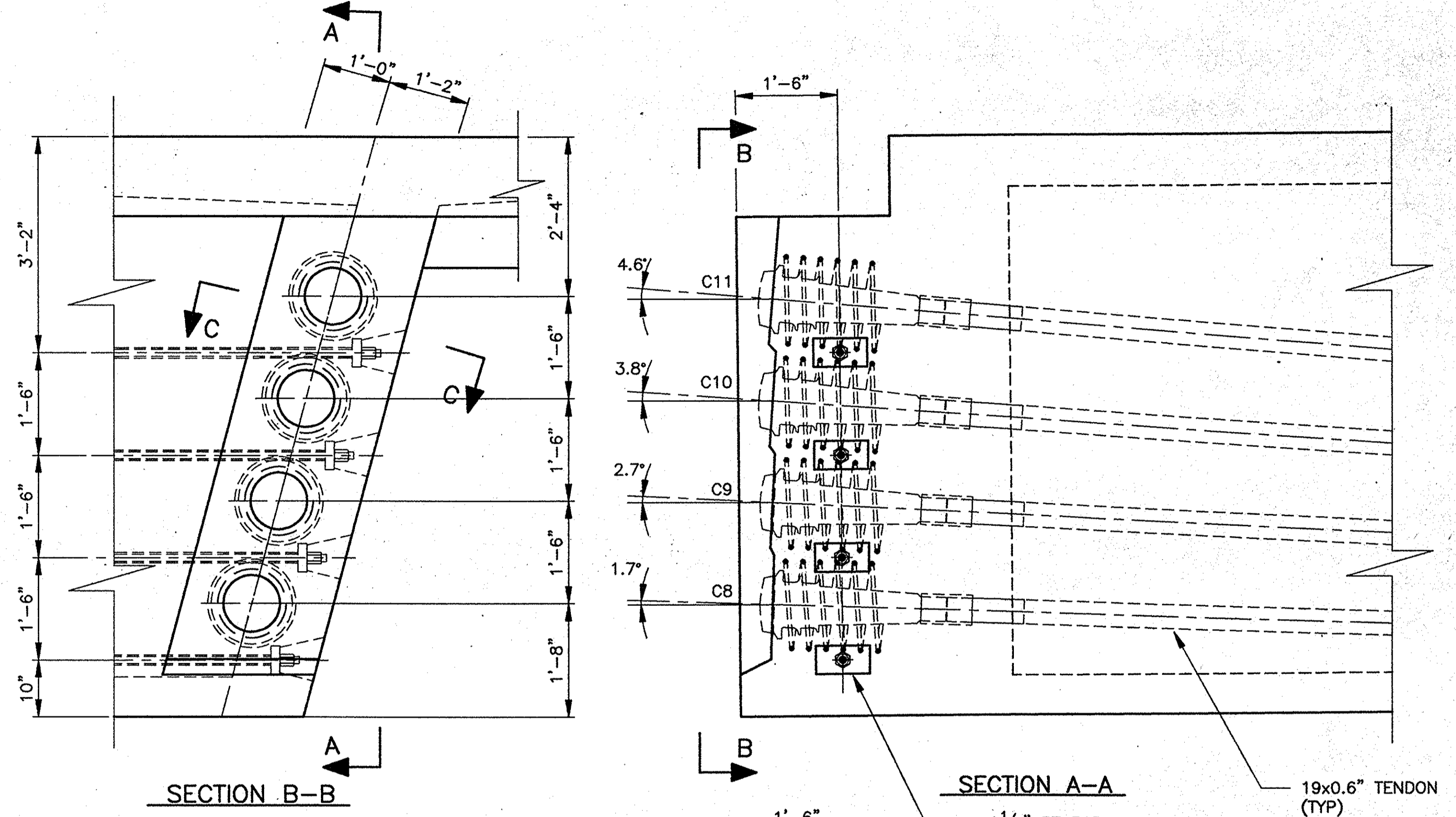


NOTE:
* THESE DIMENSIONS ARE PERPENDICULAR TO OUTSIDE FACE OF WEB.

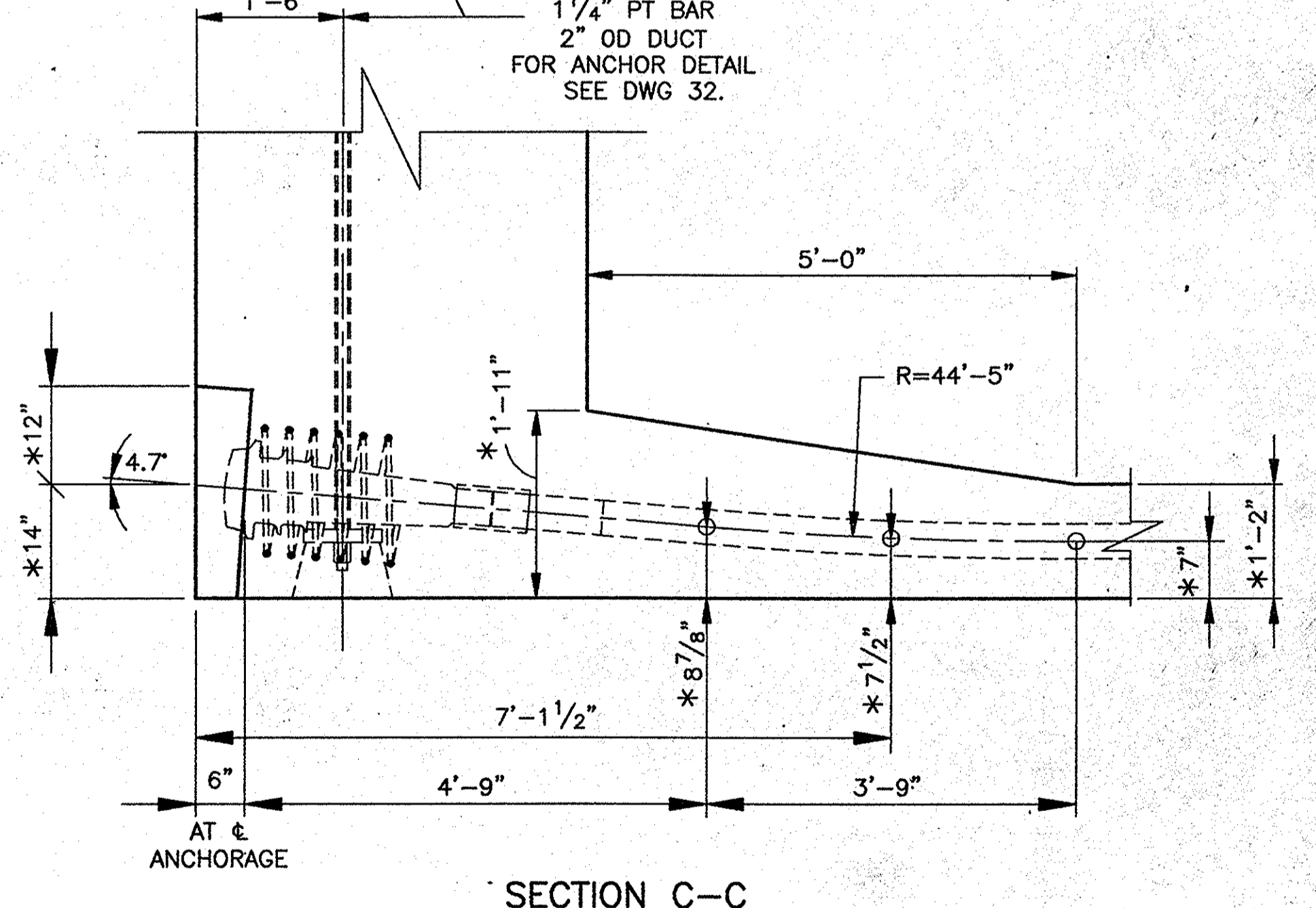


TENDON ANCHORAGE
BLOCKOUT DETAIL
(DIMENSIONS ⊥ TO BOTTOM)
SCALE 1"=1'-0"

ANCHORAGE DETAILS AT PIER 6 (LOOKING UP STATION)



TENDON ANCHORAGE
BLOCKOUT DETAIL
(DIMENSIONS + TO BOTTOM)
SCALE 1"=1'-0"



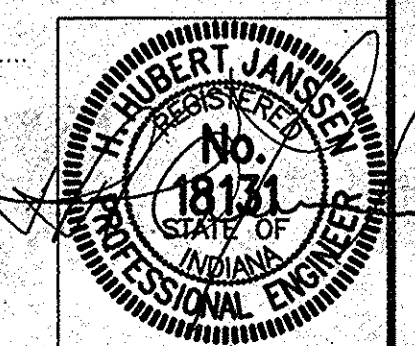
NOTE:
* THESE DIMENSIONS ARE PERPENDICULAR TO OUTSIDE FACE OF WEB.

SUPERSTRUCTURE DETAILS-
POST-TENSIONING DETAILS
INDIANA DEPARTMENT OF TRANSPORTATION
LAKE COUNTY

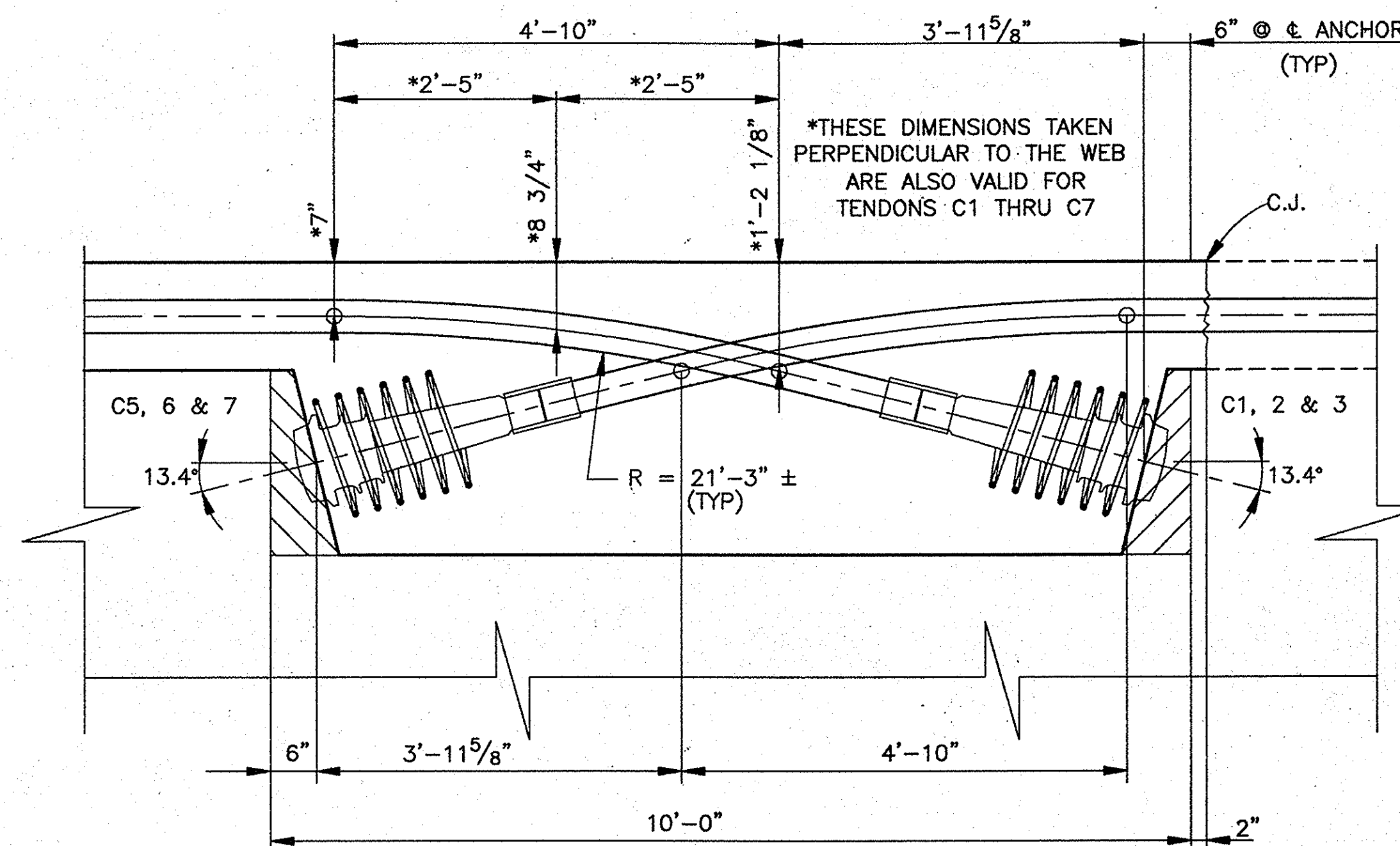
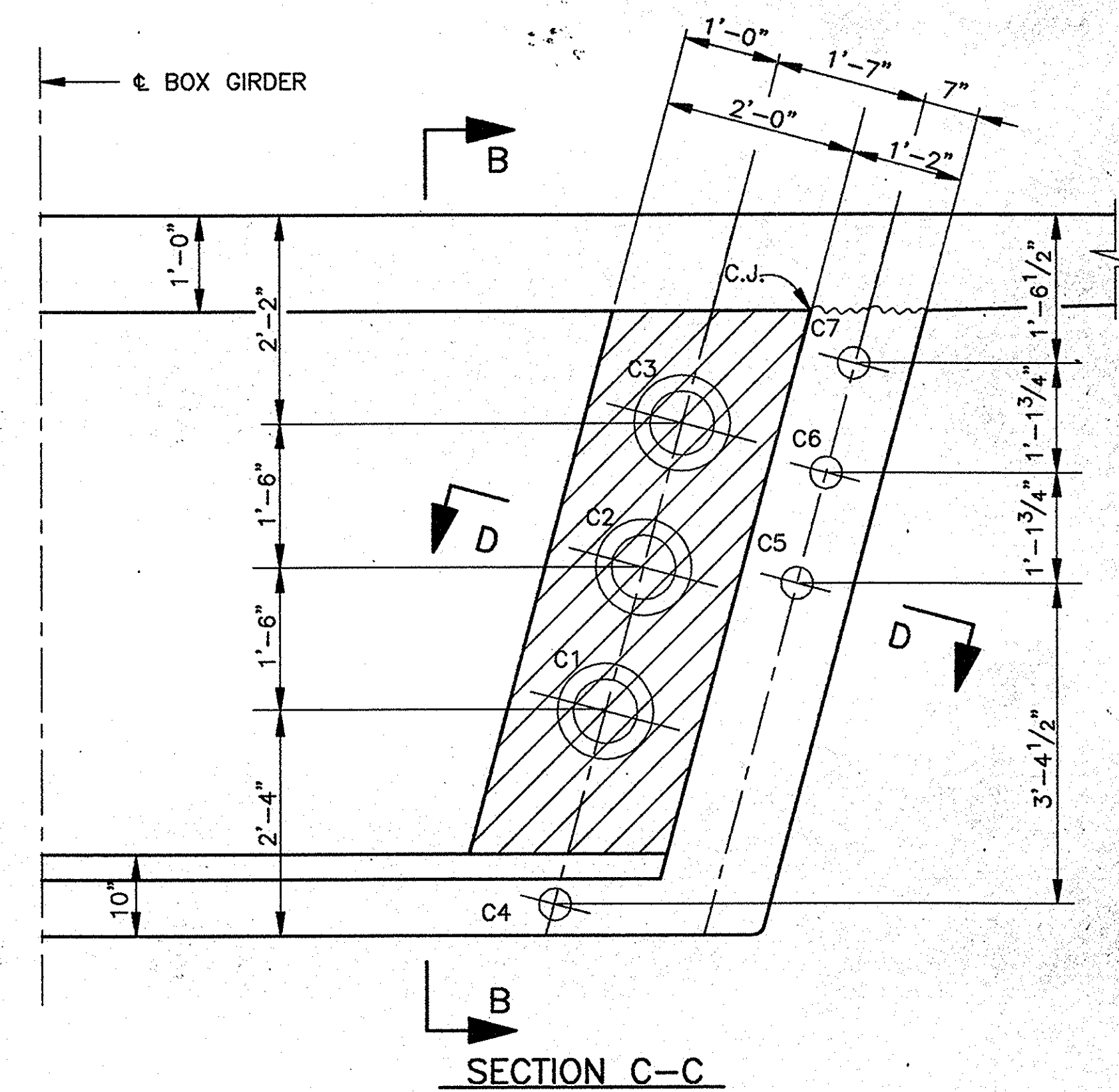
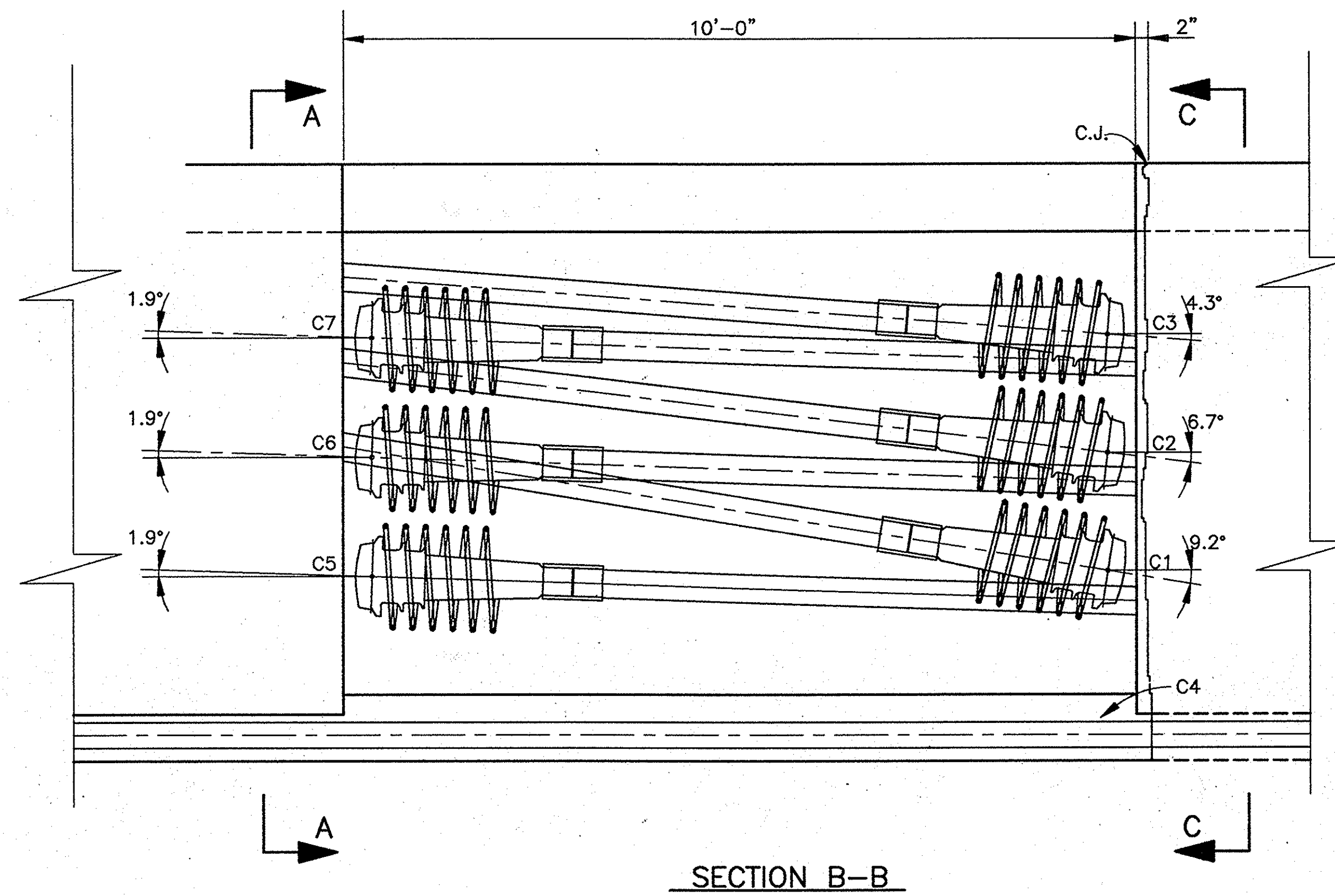
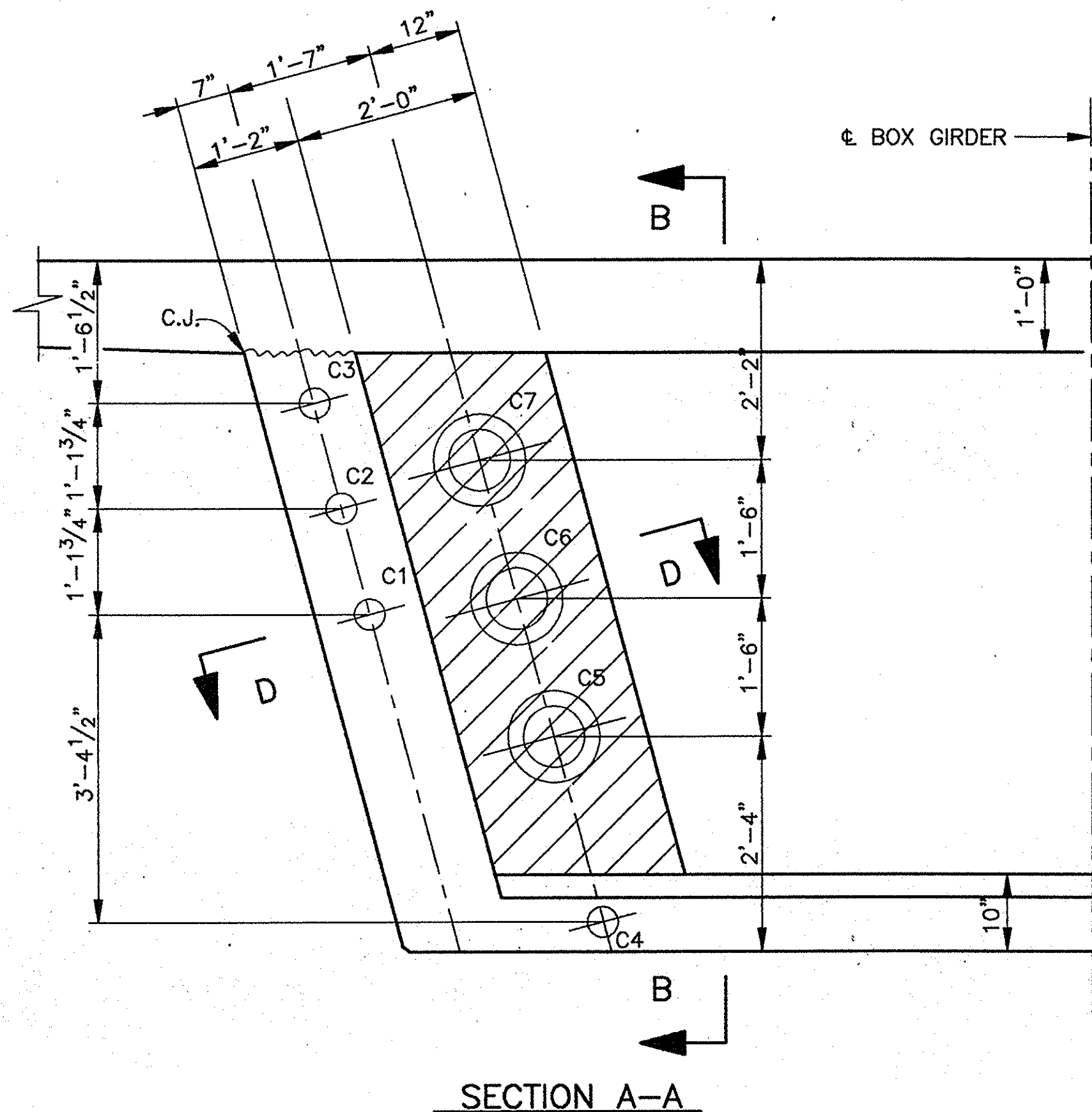
SCALE: 3/4"=1'-0", UNLESS NOTED DATE: 1/22/98

SUBMITTED FOR APPROVAL

DRAWING: C39 OF C51 SHEET: 54 OF 73
PROJECT: - NH-80-1 () 4
CONTRACT NO.
BRIDGE FILE: I-80-5-7823



DESIGNED	HHJ	C'K'D	LS
DRAWN	TMD	C'K'D	HHJ
TRACED		C'K'D	



SECTION D-D
ANCHORAGE DETAILS AT STRESSING BLOCK - SPAN C

SUPERSTRUCTURE DETAILS-
POST-TENSIONING DETAILS
INDIANA DEPARTMENT OF TRANSPORTATION
LAKE COUNTY

SCALE: 3/4"=1'-0", UNLESS NOTED DATE: 5/22/88

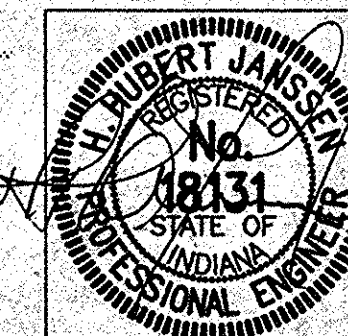
SUBMITTED FOR APPROVAL

DRAWING: C40 OF C51 SHEET: 55 OF 73

PROJECT: - NH-80-1 () 4

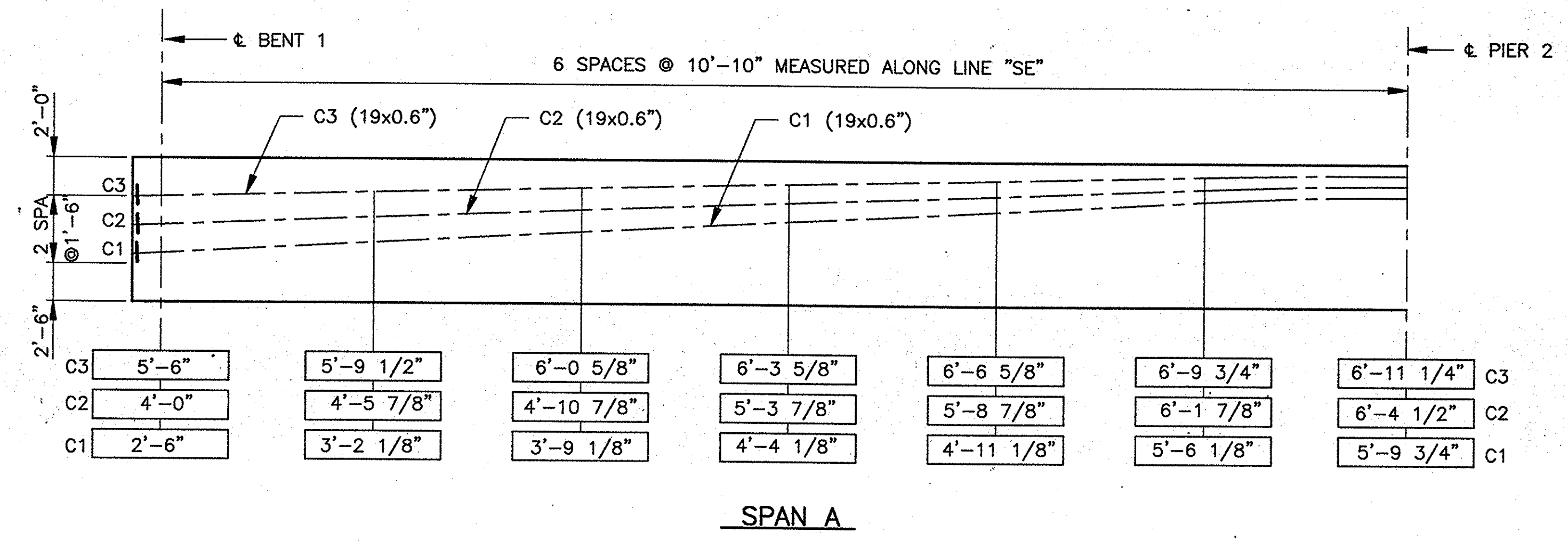
CONTRACT NO.

BRIDGE FILE: I-80-5-7823

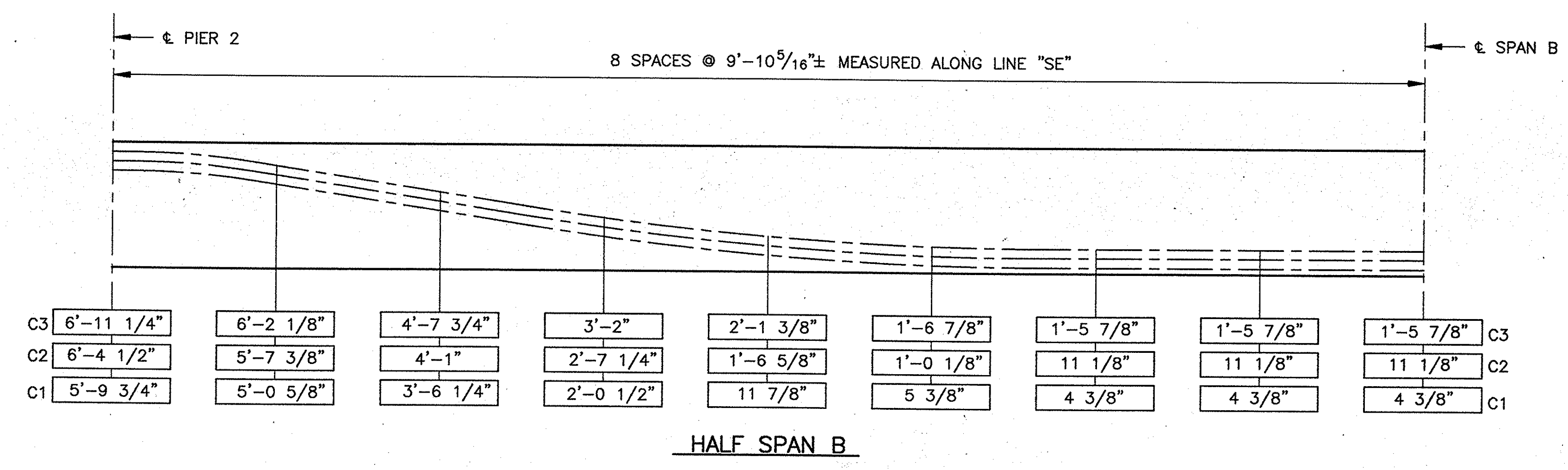


ENR 8/27/82 P. 12, ENR 9/27/82 P. 12, ENR 10/27/82 P. 12

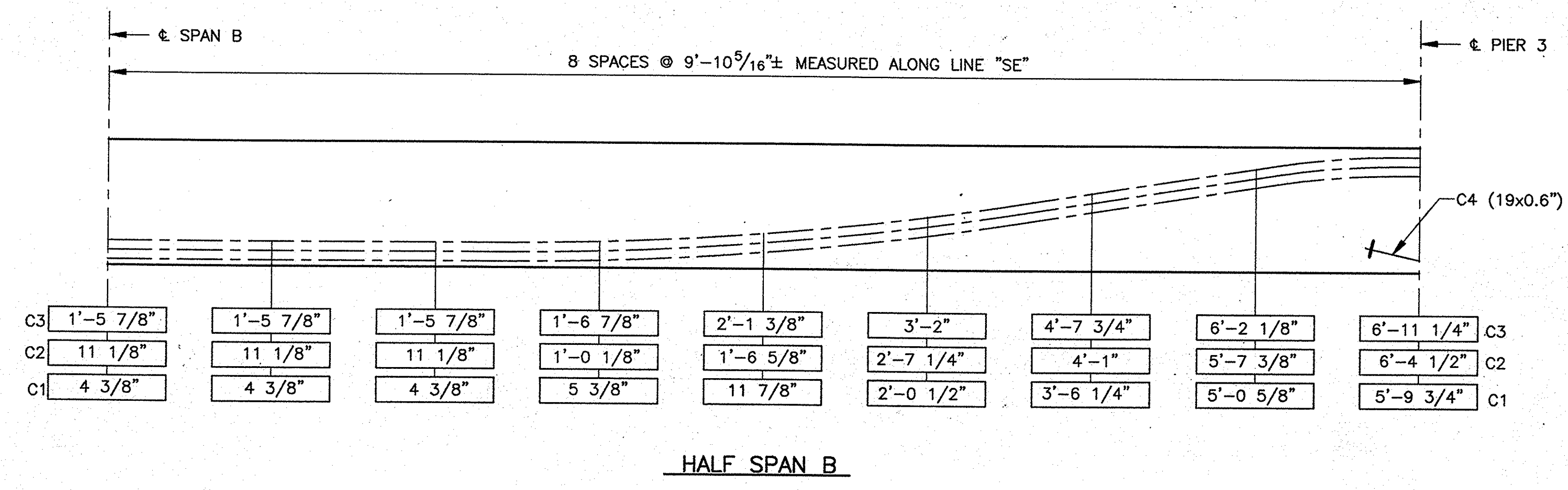
DESIGNED	HHJ	C'K'D	LS
DRAWN	TMD	C'K'D	HHJ
TRACED		C'K'D	



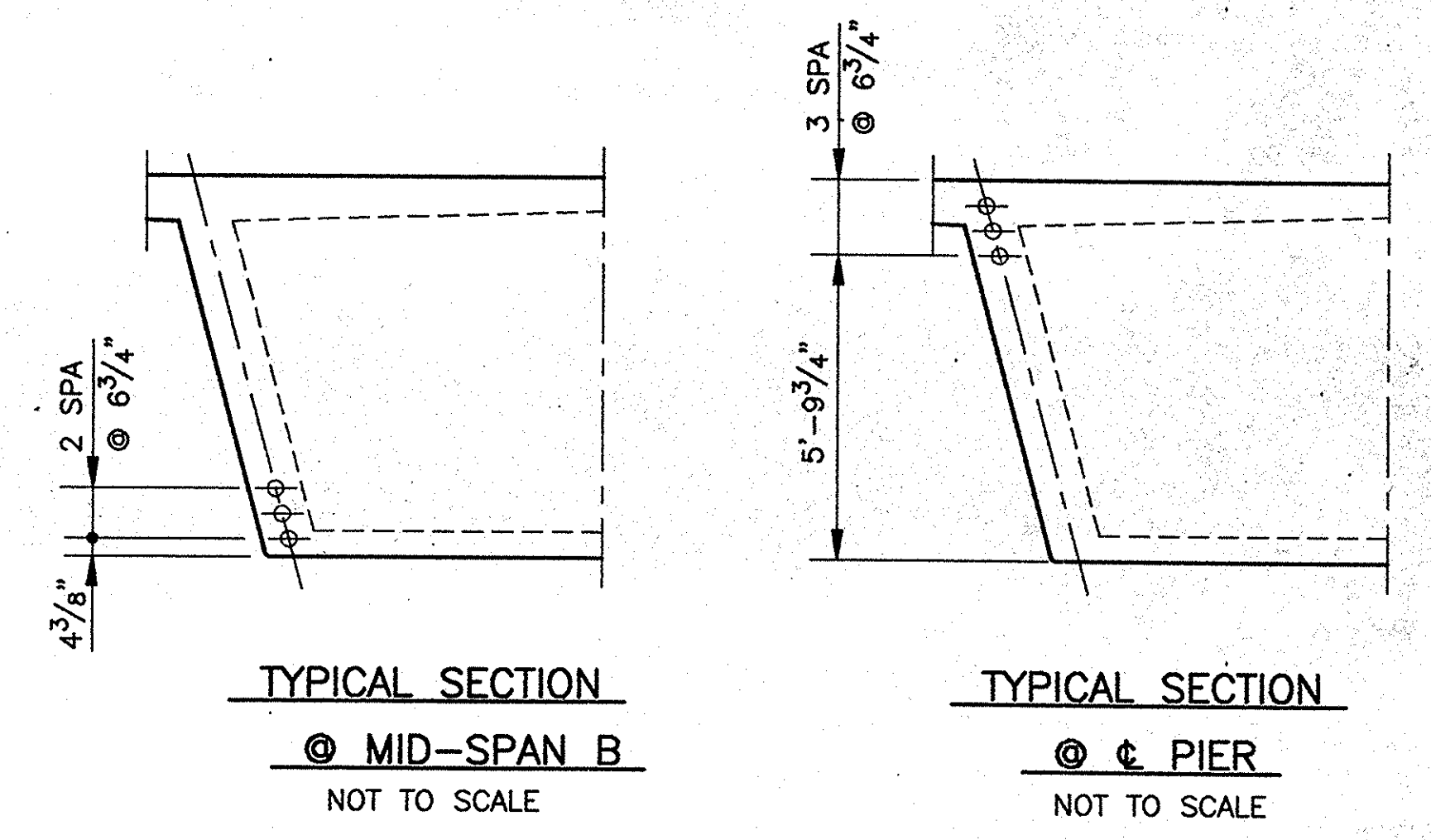
SPAN A



HALF SPAN B

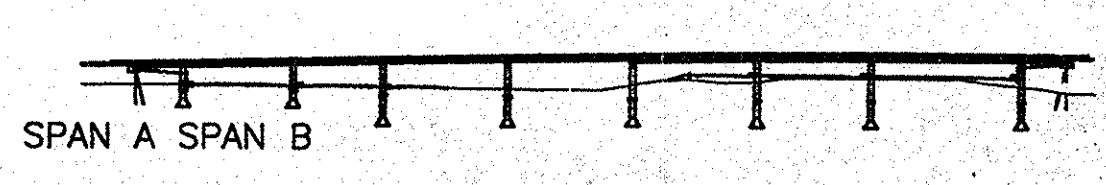


HALF SPAN B



TENDONS DATA:
 1. TENDONS 19 x 0.6
 2. Fu = 1113.4 KIPS PER TENDON
 3. DUCTS: 4" I.D., 4 1/4" O.D.

NOTES:
 TENDON LAYOUT DIMENSIONS ARE FROM BOTTOM OF BOX GIRDER TO CENTERLINE OF DUCT MEASURED PERPENDICULAR TO THE BOX GIRDER BOTTOM.



SUPERSTRUCTURE DETAILS—
 SPANS A & B TENDON LAYOUT
 INDIANA DEPARTMENT OF TRANSPORTATION
 LAKE COUNTY

SCALE: 3/16"=1'-0", UNLESS NOTED DATE: 5/22/88

SUBMITTED FOR APPROVAL

DRAWING: C42 OF C51 SHEET: 57 OF 73

PROJECT: - NH-80-1 () 4

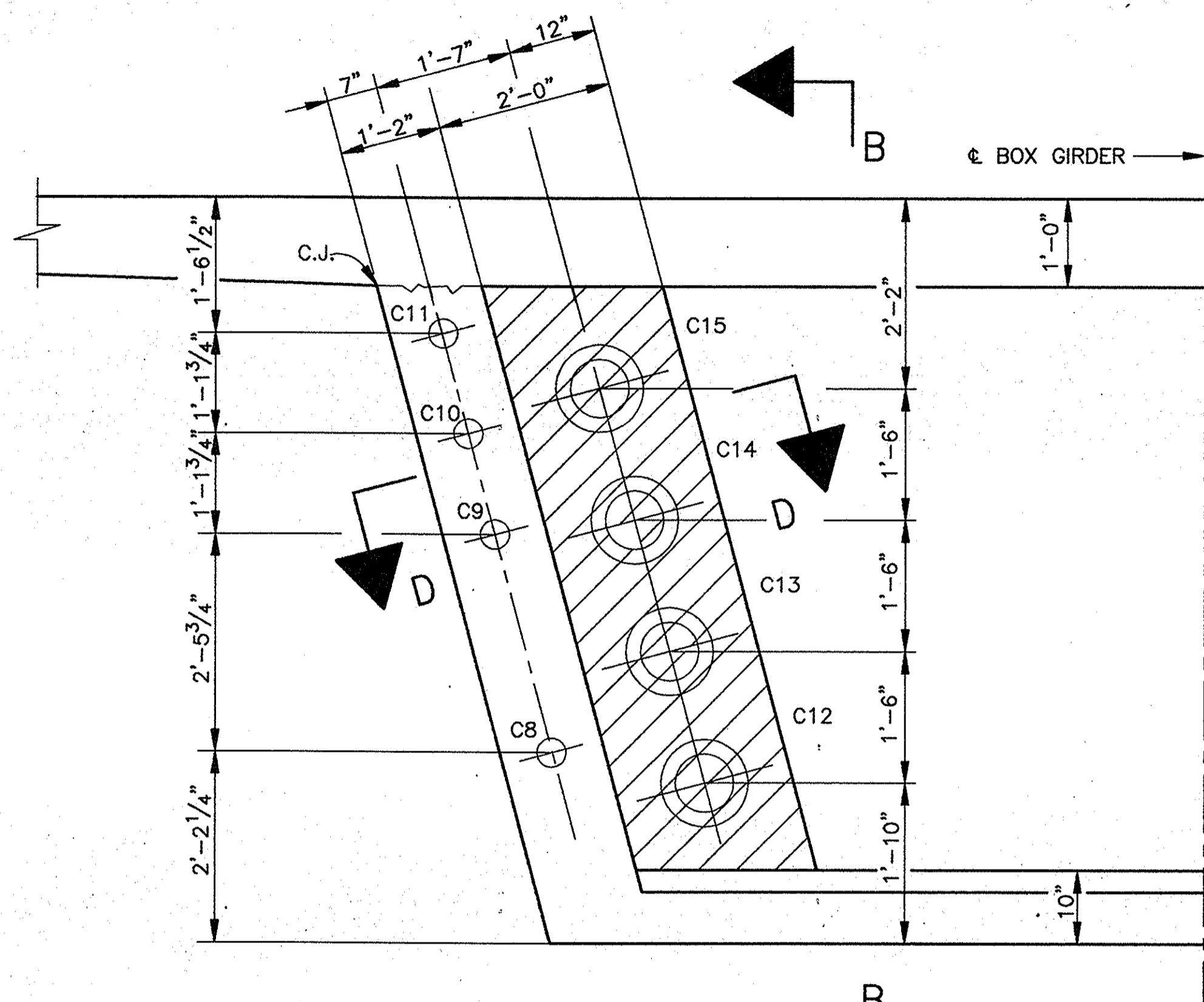
CONTRACT NO.

BRIDGE FILE: I-80-5-7823

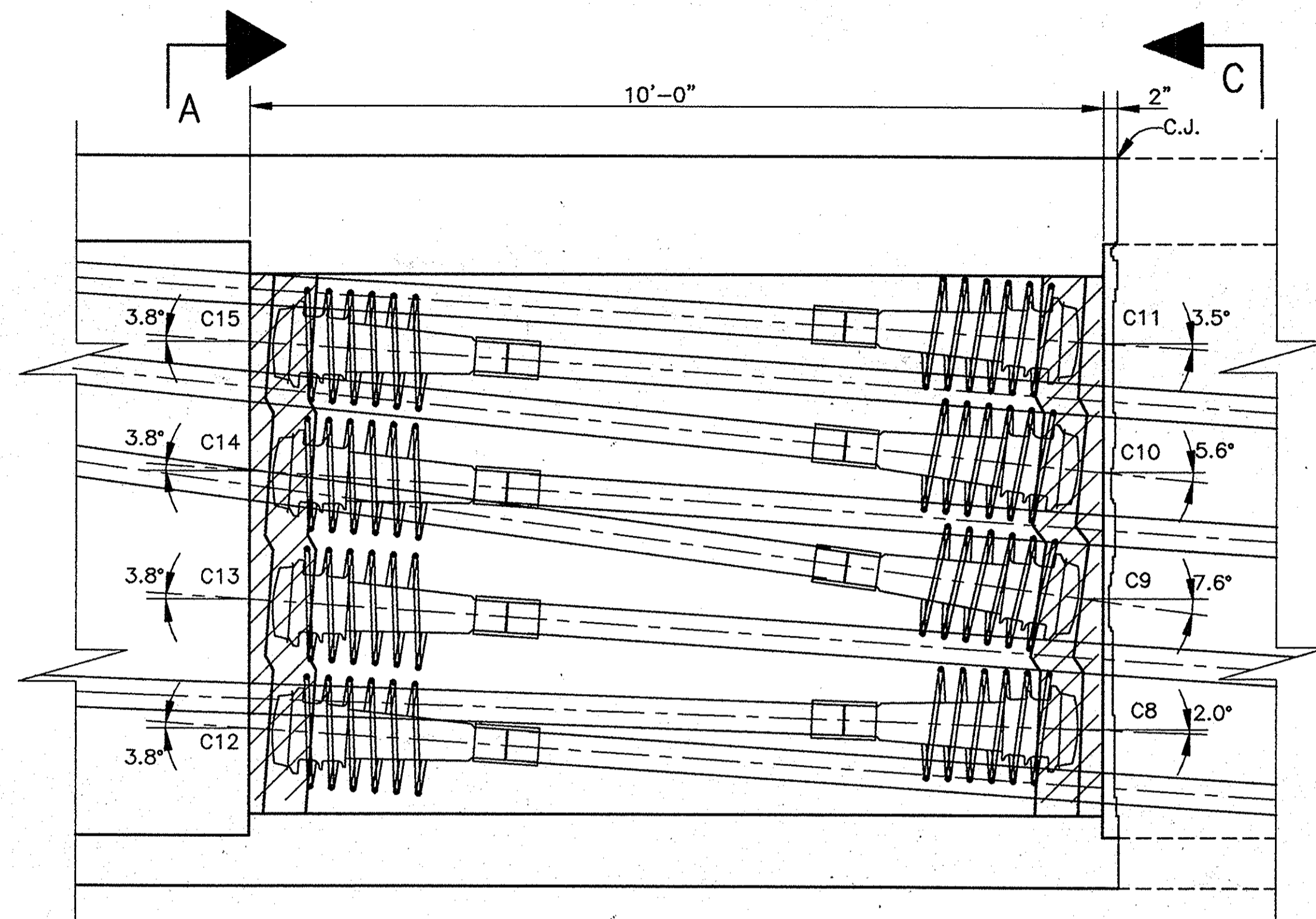
IN 18847-8 TENDL.D 02/22/97 at 10:2
 PLOT: 18847

DESIGNED	HHJ	C'K'D	LS
DRAWN	TMD	C'K'D	HHJ
TRACED		C'K'D	

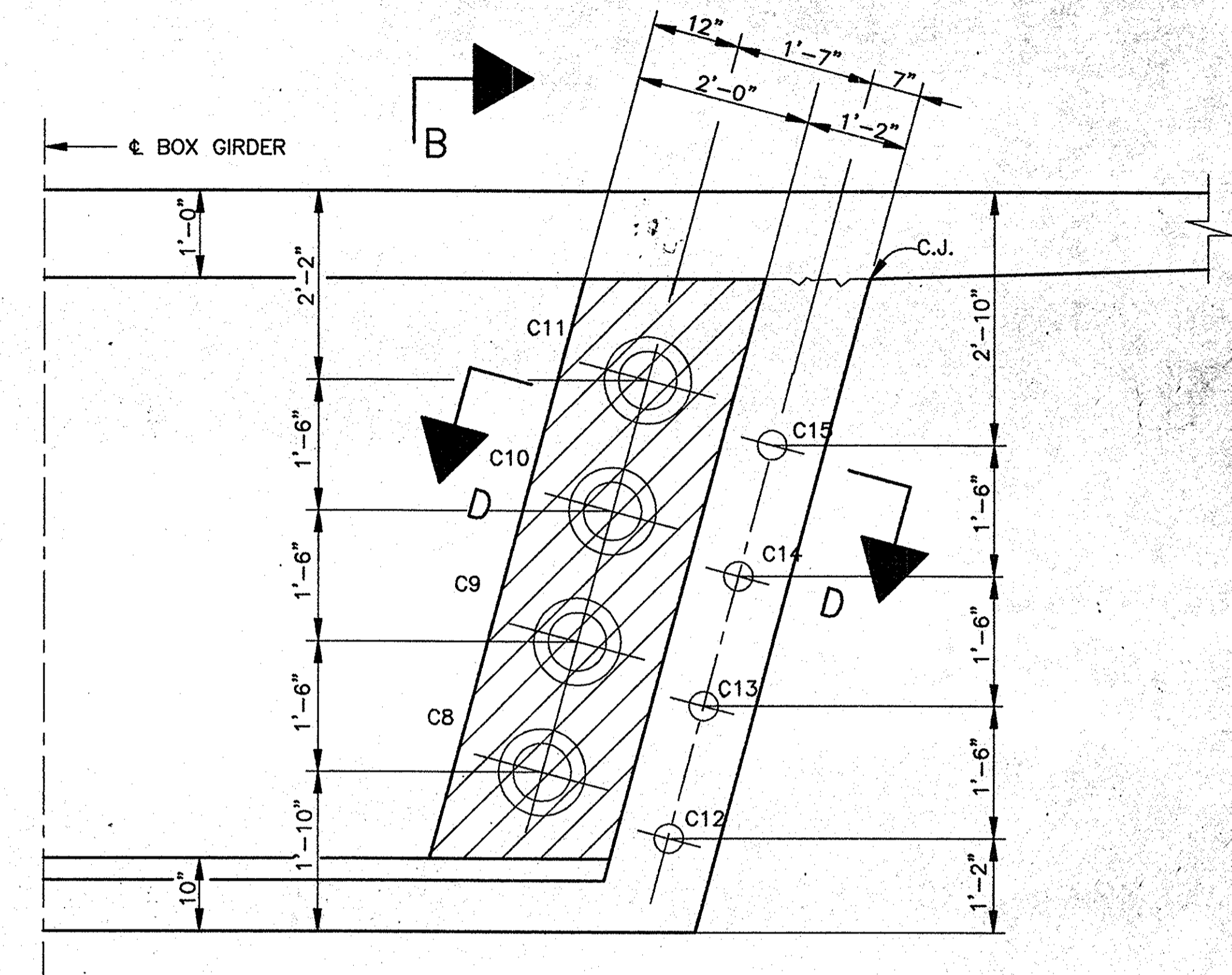




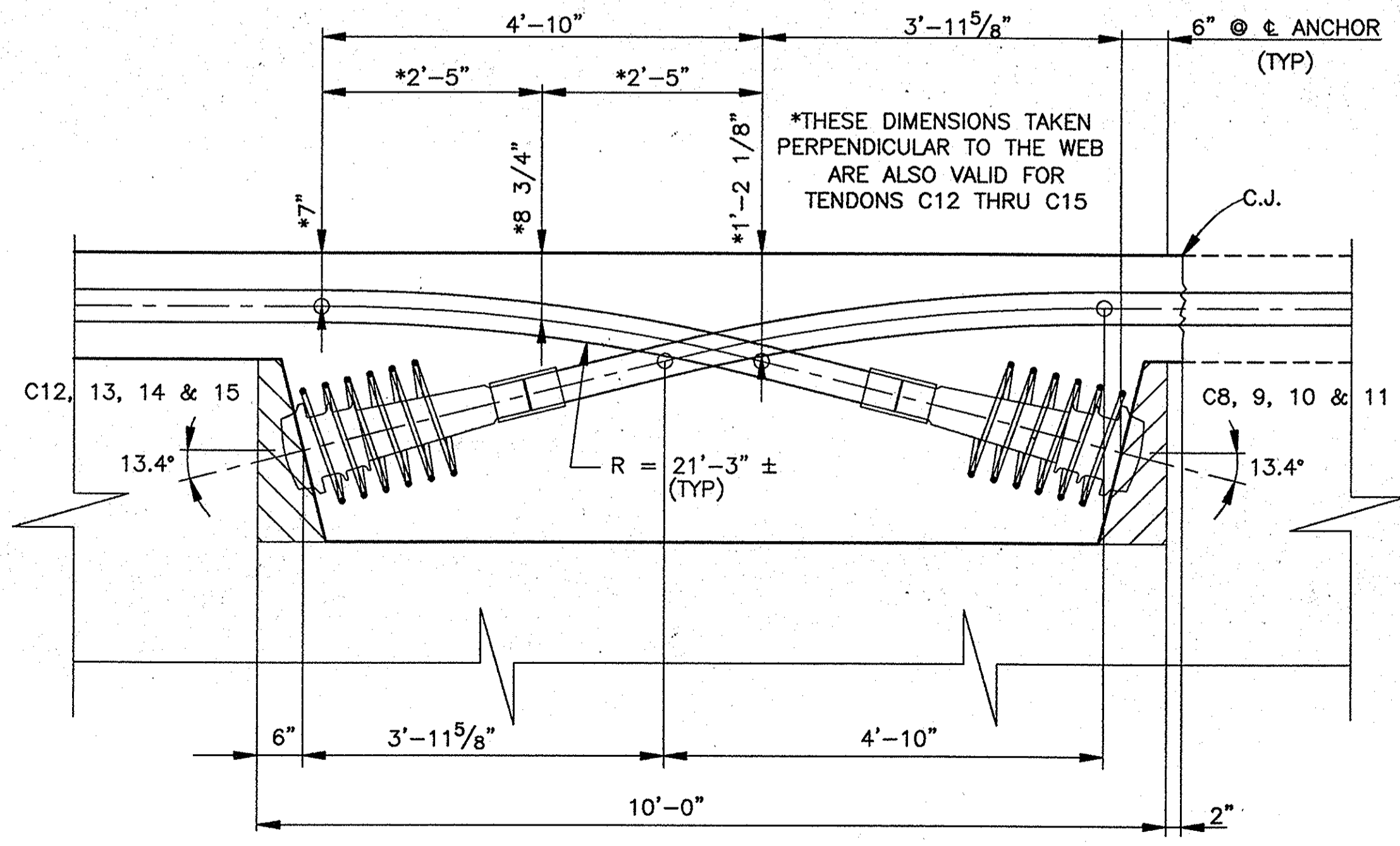
SECTION A-A



SECTION B-B



SECTION C-C



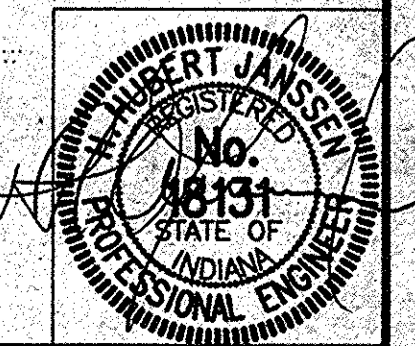
SECTION D-D

ANCHORAGE DETAILS AT STRESSING BLOCK SPAN G

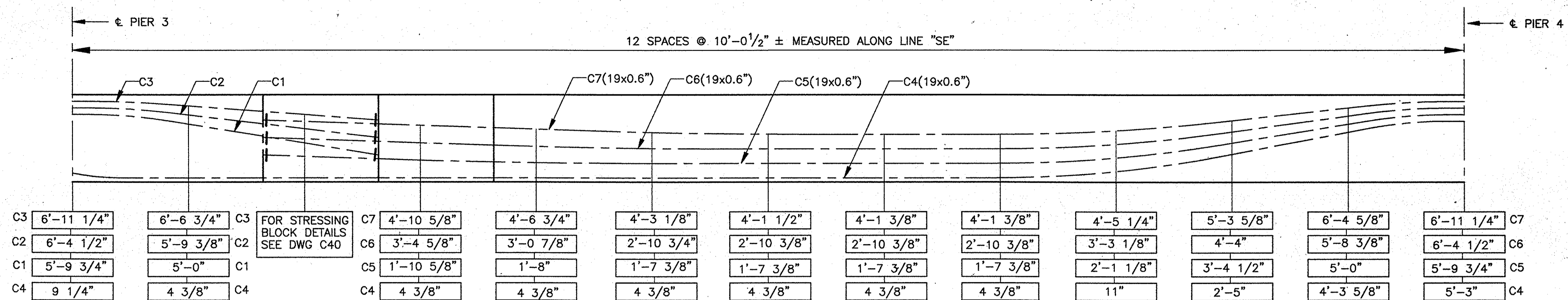
SUPERSTRUCTURE DETAILS -
 POST-TENSIONING DETAILS
INDIANA DEPARTMENT OF TRANSPORTATION
 LAKE COUNTY

SCALE: 1"=30'-0", UNLESS NOTED DATE: 5/22/98
 SUBMITTED FOR APPROVAL

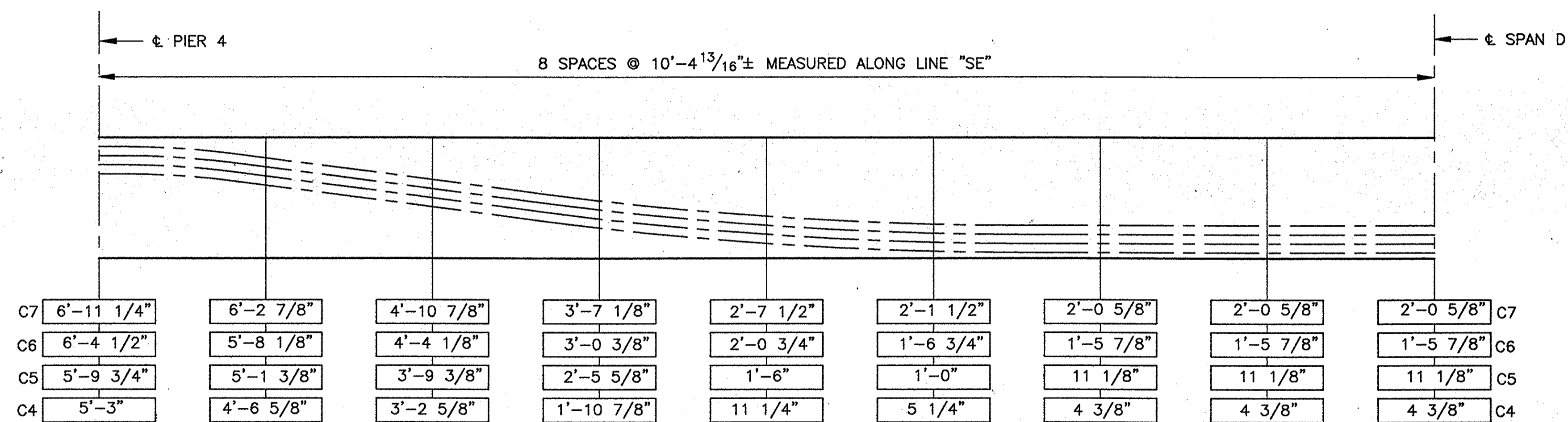
DRAWING: C41 OF C51 SHEET: 56 OF 73
 PROJECT: - NH-80-1 () 4
 CONTRACT NO.
 BRIDGE FILE: I-80-5-7823



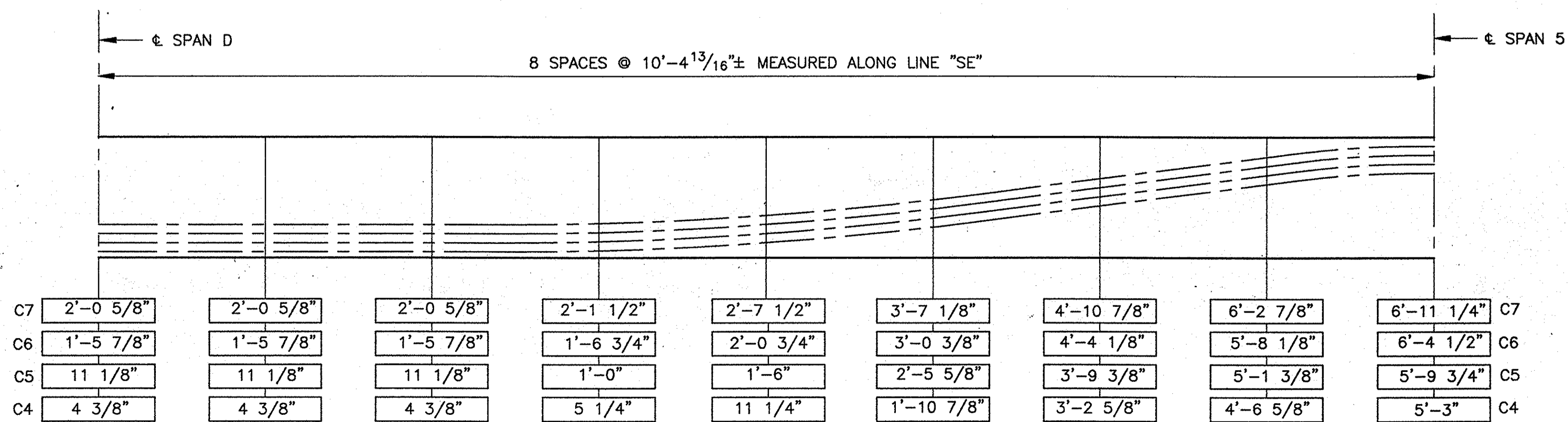
DESIGNED	HHJ	C'K'D	LS
DRAWN	TMD	C'K'D	HHJ
TRACED		C'K'D	



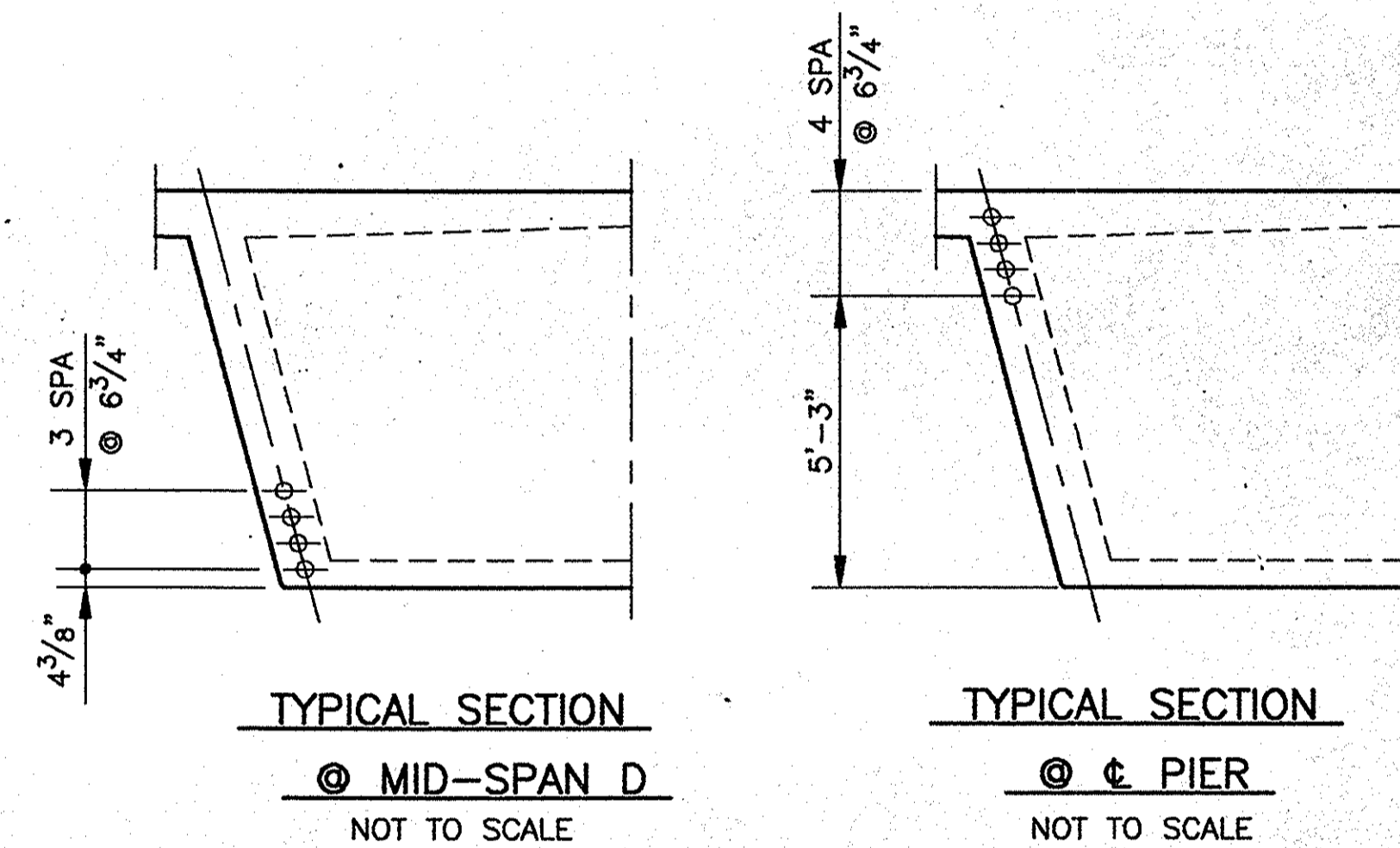
SPAN C



HALF SPAN D

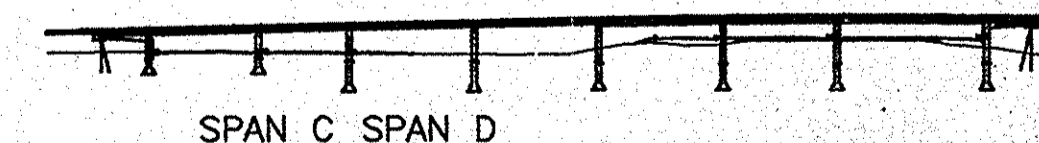


HALF SPAN D



TENDONS DATA:
 1. TENDONS 19 x 0.6
 2. Fu = 1113.4 KIPS PER TENDON
 3. DUCTS: 4" I.D., 4 1/4" O.D.

NOTES:
 TENDON LAYOUT DIMENSIONS ARE FROM BOTTOM OF BOX GIRDER TO CENTERLINE OF DUCT MEASURED PERPENDICULAR TO THE BOX GIRDER BOTTOM.



SUPERSTRUCTURE DETAILS-
 SPANS C & D TENDON LAYOUT
 INDIANA DEPARTMENT OF TRANSPORTATION
 LAKE COUNTY

SCALE: 3/16"=1'-0", UNLESS NOTED DATE: 5/22/98

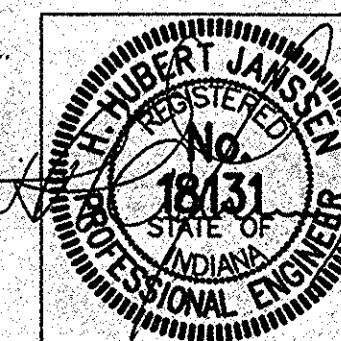
SUBMITTED FOR APPROVAL

DRAWING: C43 OF C51 SHEET: 58 OF 73

PROJECT: - NH-80-1 () 4

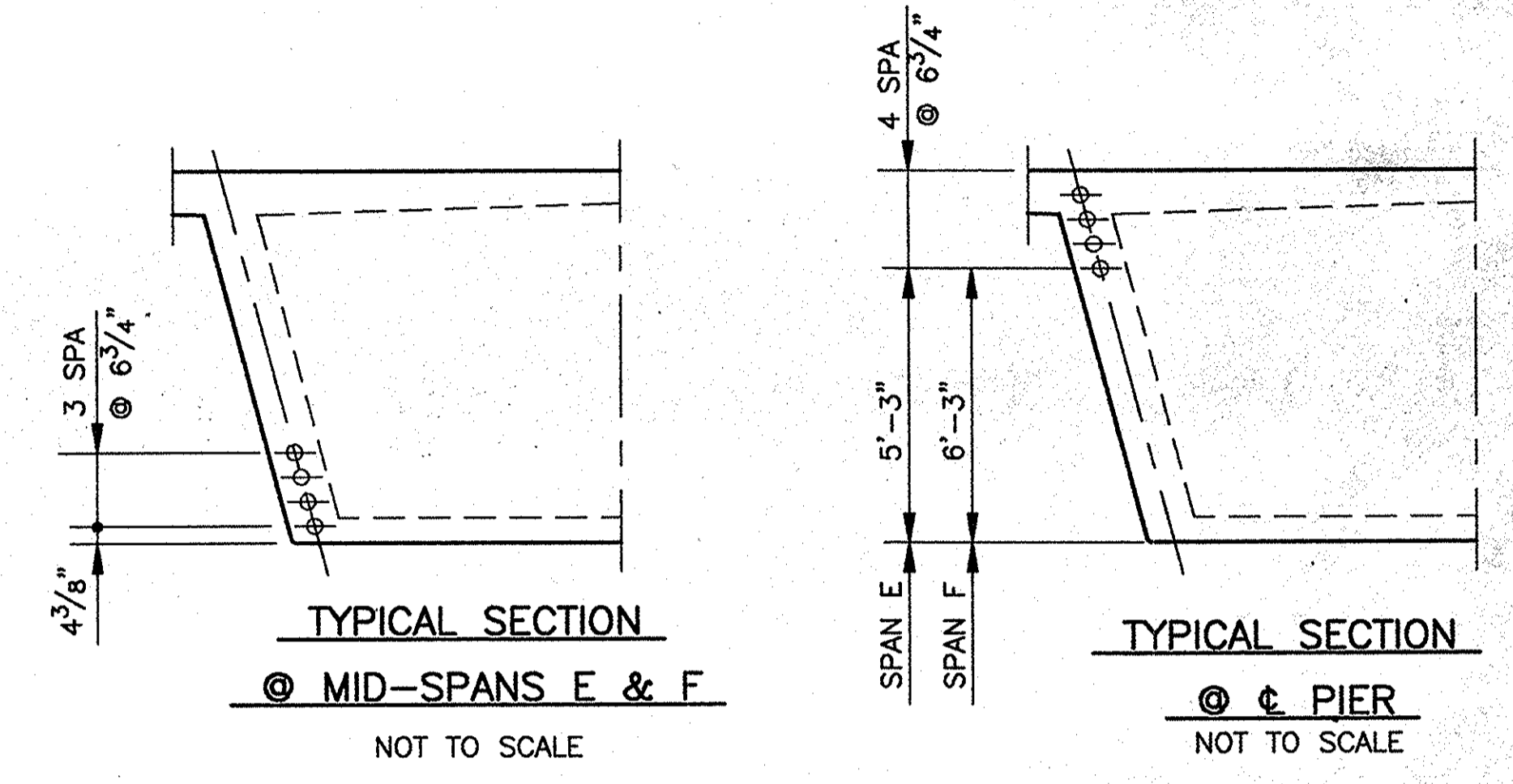
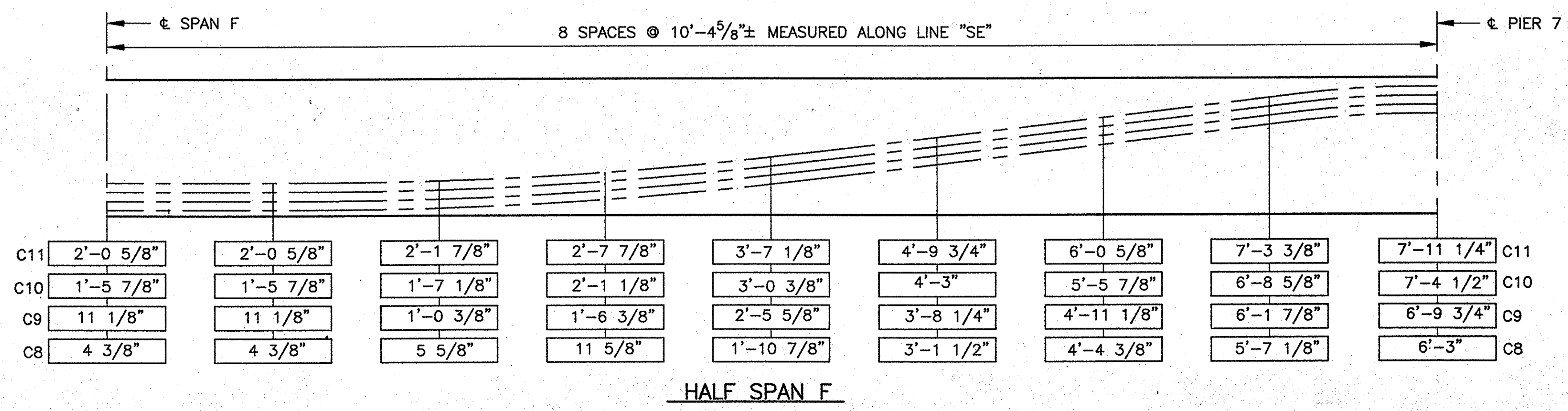
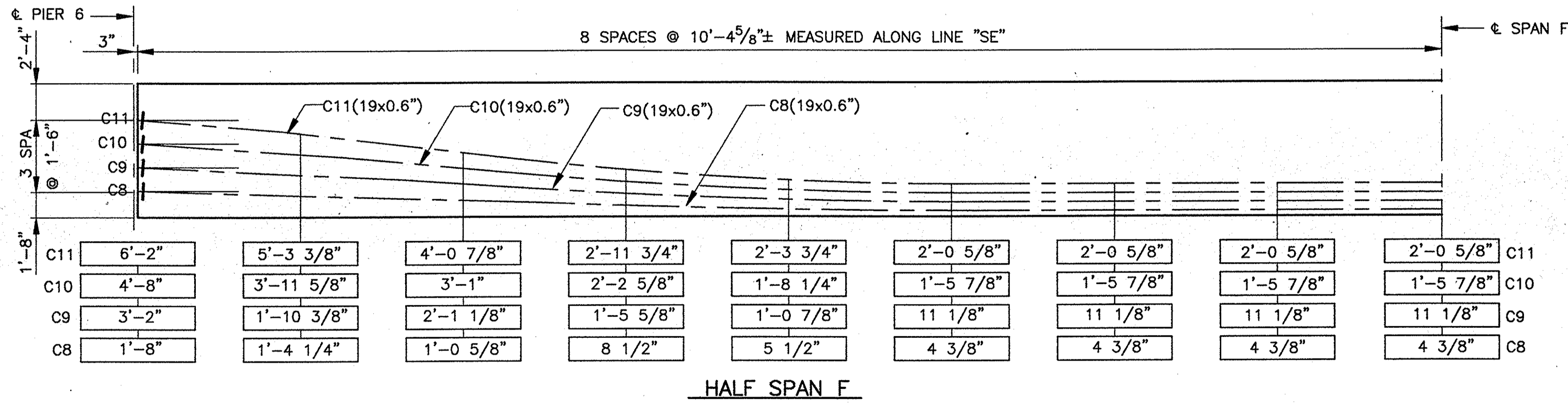
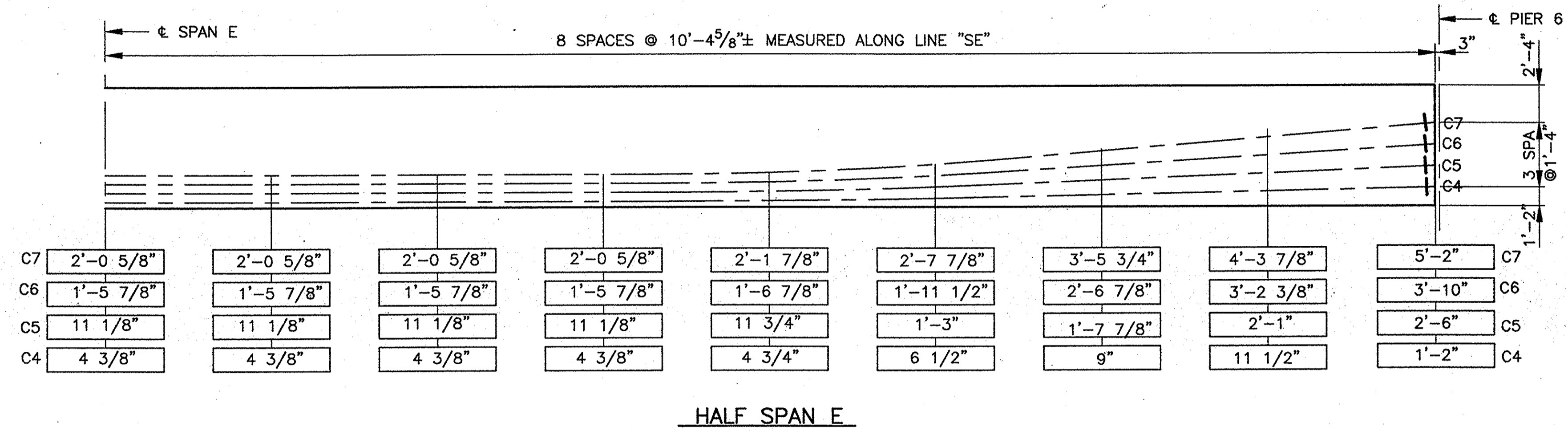
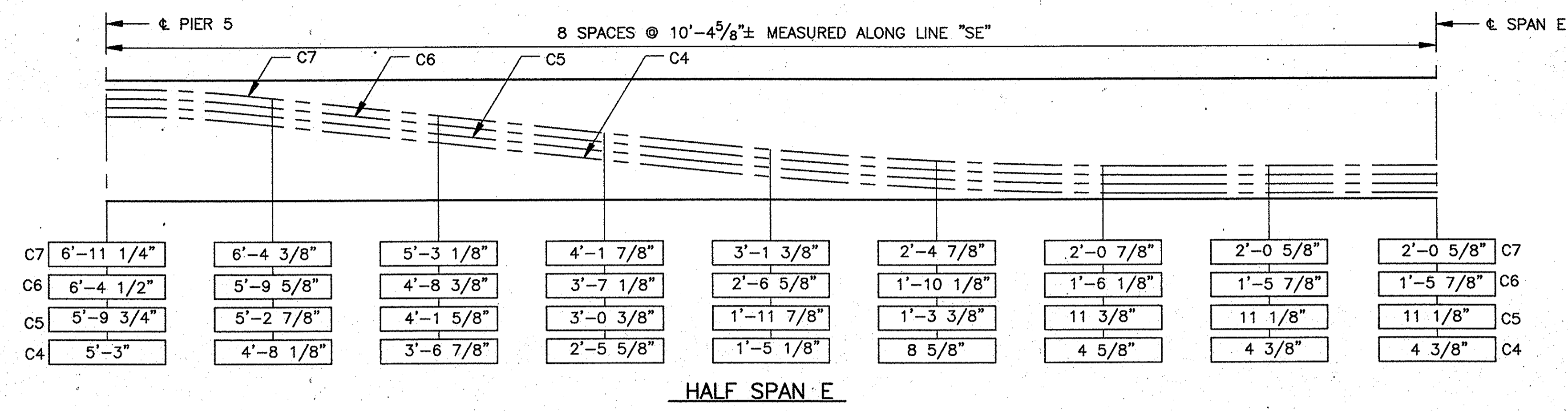
CONTRACT NO.

BRIDGE FILE: I-80-5-7823



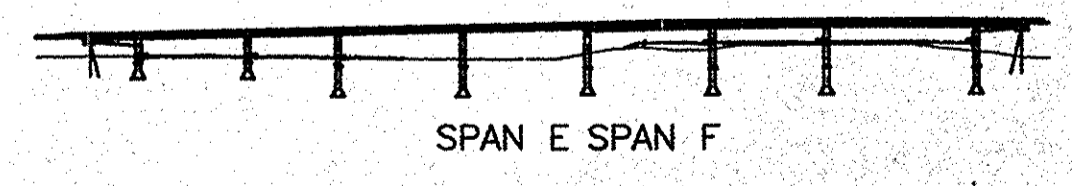
D:\BAV-8\VENUE.05/26/97 at 10:24

DESIGNED: HHJ C.K'D LS
 DRAWN: TMD C.K'D HHJ
 TRACED: C.K'D



TENDONS DATA:
 1. TENDONS 19 x 0.6
 2. Fu = 1113.4 KIPS PER TENDON
 3. DUCTS: 4" I.D., 4 1/4" O.D.

NOTES:
 TENDON LAYOUT DIMENSIONS ARE FROM BOTTOM OF BOX GIRDER TO CENTERLINE OF DUCT MEASURED PERPENDICULAR TO THE BOX GIRDER BOTTOM.



SUPERSTRUCTURE DETAILS—
 SPAN E & F TENDON LAYOUT
 INDIANA DEPARTMENT OF TRANSPORTATION
 LAKE COUNTY

SCALE: 3/16"=1'-0", UNLESS NOTED DATE: 7/22/98

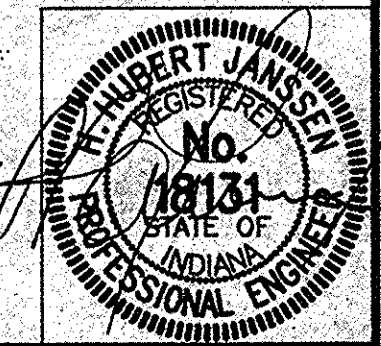
SUBMITTED FOR APPROVAL

DRAWING: C44 OF C51 SHEET: 59 OF 73

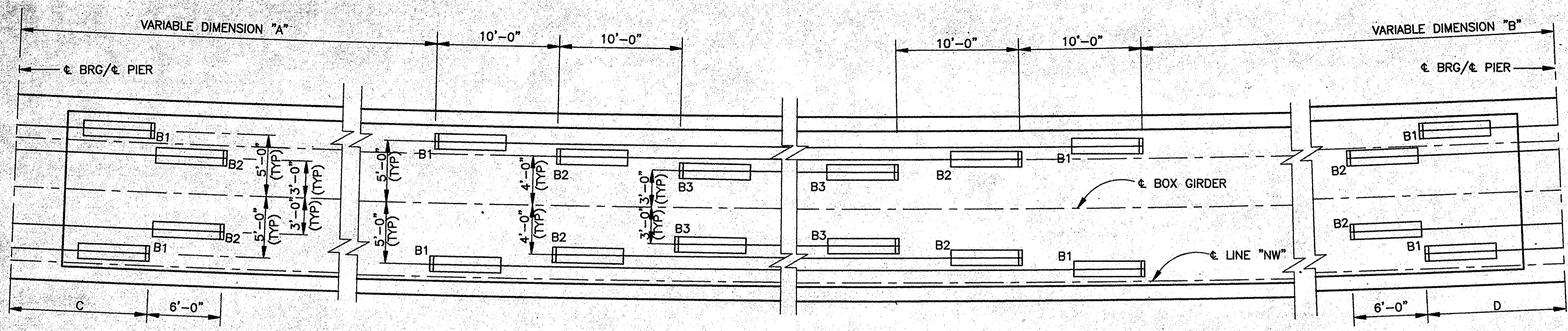
PROJECT: -NH-80-1()4

CONTRACT NO.

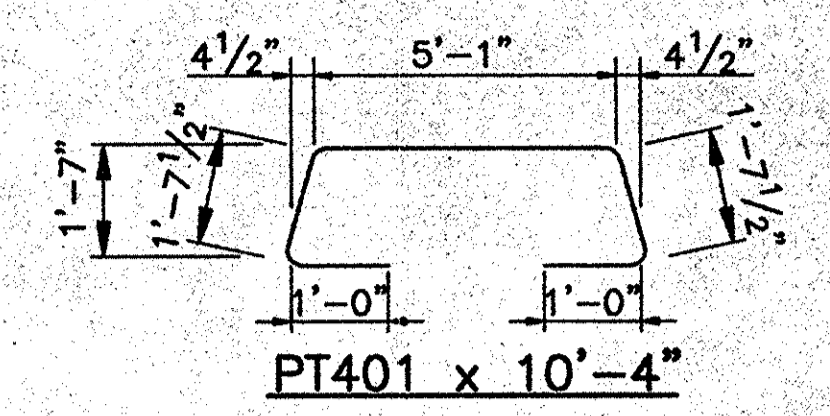
BRIDGE FILE: I-80-5-7823



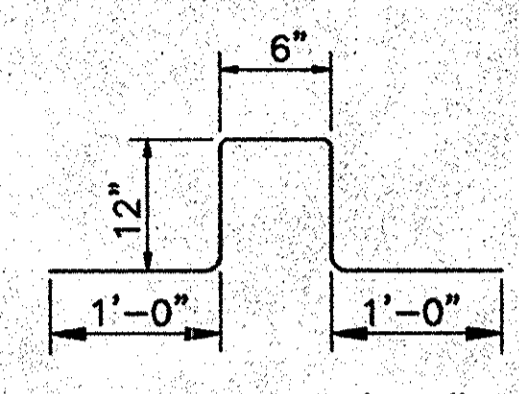
DESIGNED HHJ C'K'D LS
 DRAWN TMD C'K'D HHJ
 TRACED C'K'D



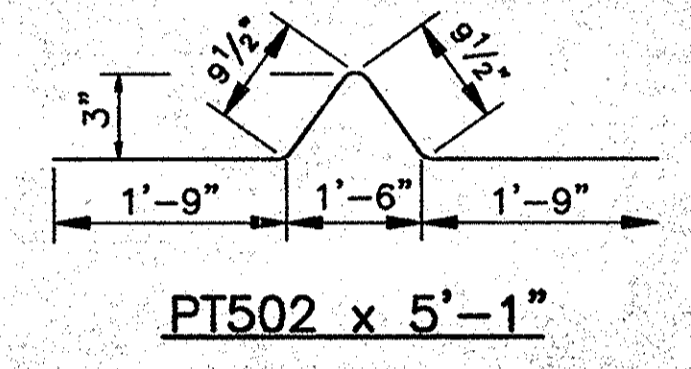
PLAN BOTTOM SLAB



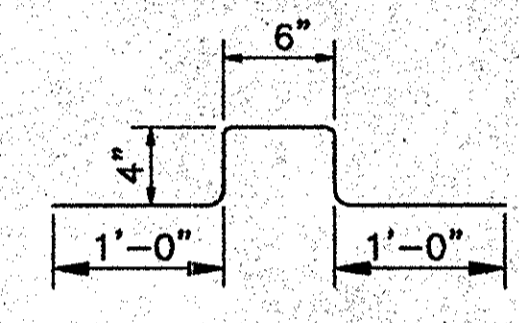
PT401 x 10'-4"



PT402 x 4'-6"

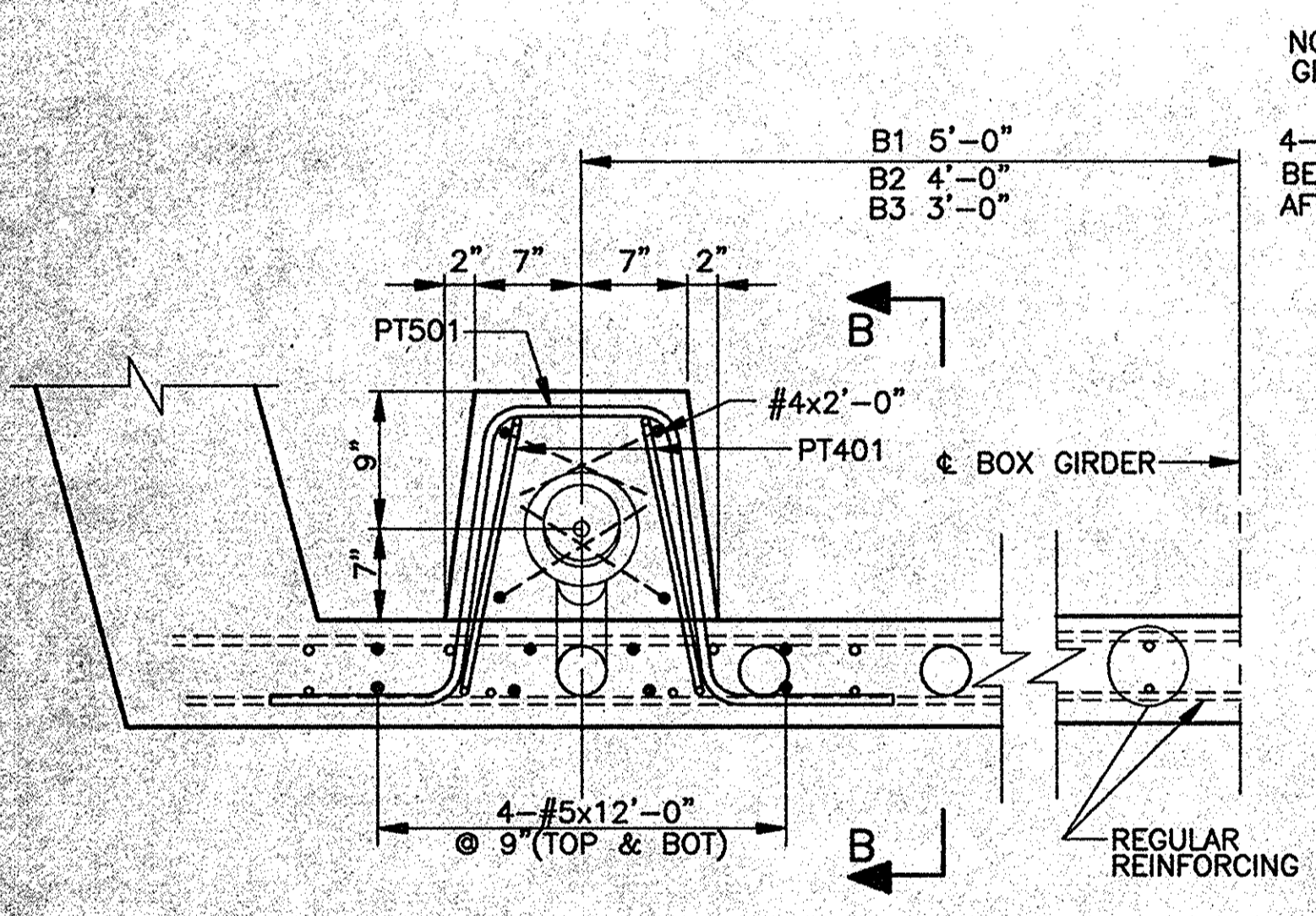


PT502 x 5'-1"

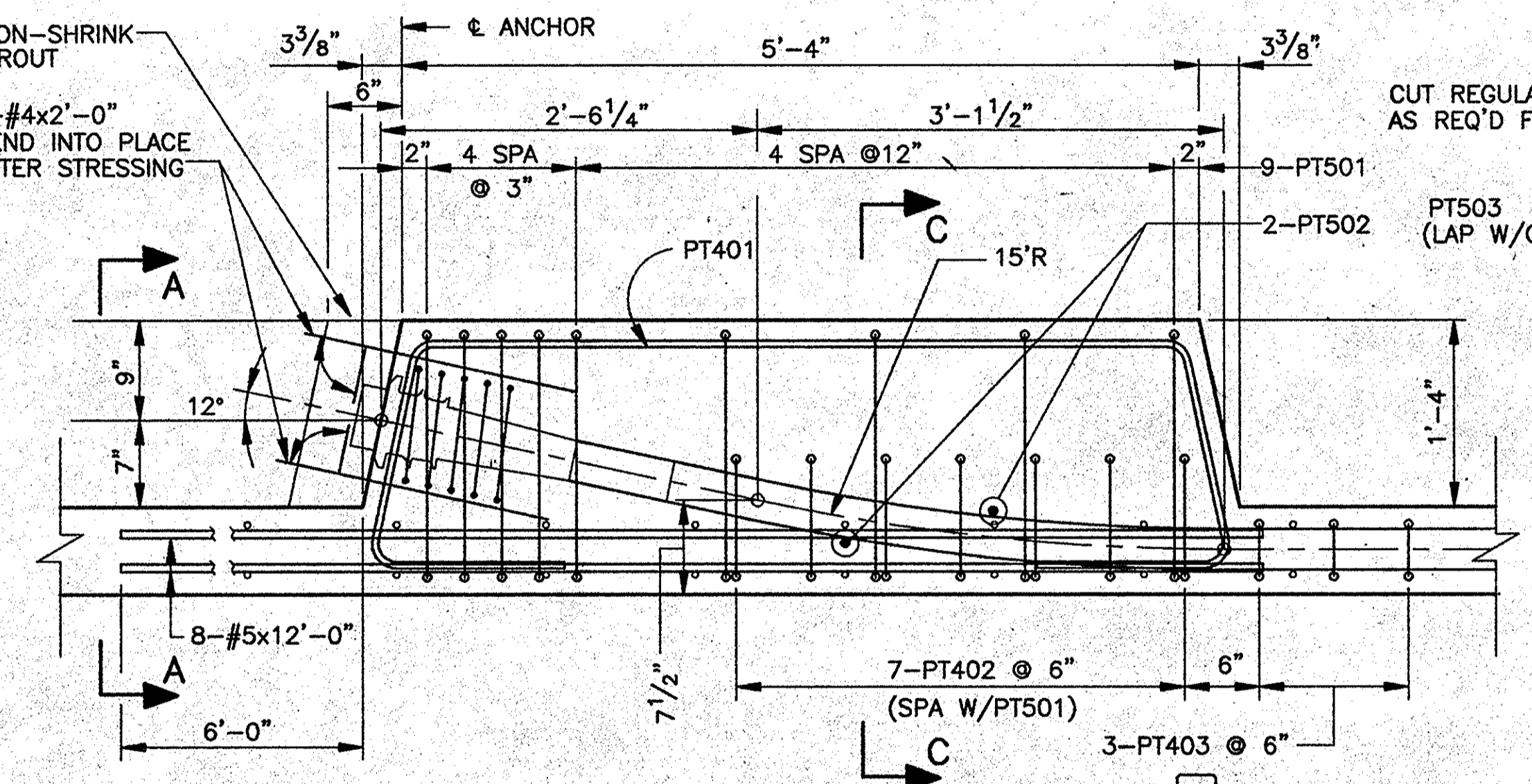


PT501 x 6'-4"

BILL OF MATERIALS			
EPOXY COATED STEEL GRADE 60			
Size And Mark	No. Of Bars	Length (Feet)	Weight (Lbs.)
PT501	252	6'-5"	
PT502	56	5'-1"	
#5x12'-0"	224	12'-0"	
TOTAL #5			4788
PT401	56	10'-4"	
PT402	196	4'-6"	
PT403	84	3'-2"	
#4	112	2'-0"	
TOTAL #4			1303
TOTAL REINFORCING STEEL			6091
SUPERSTRUCTURE CONCRETE 28 BLOCKS			10.29 Cyds

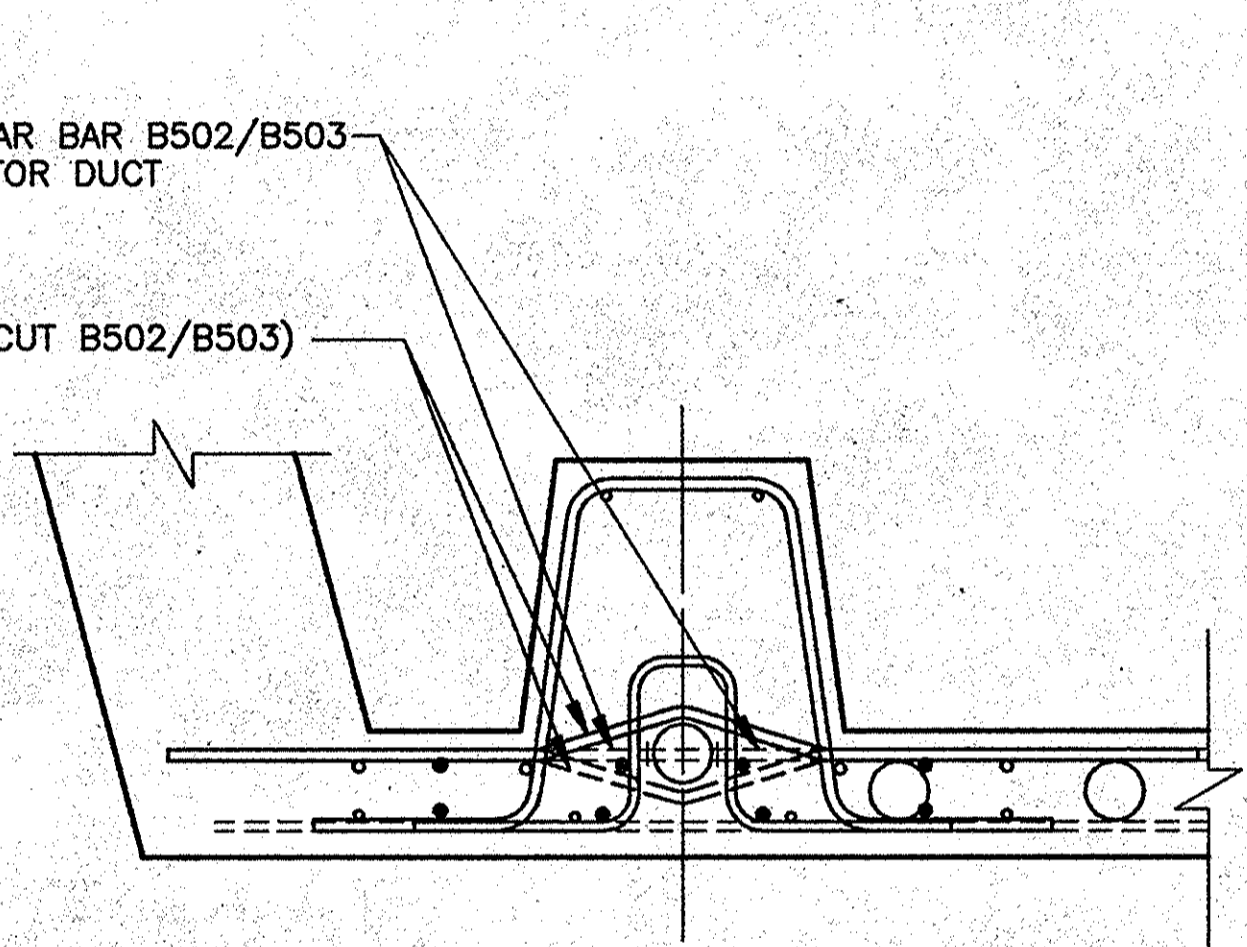


SECTION A-A



SECTION B-B

ANCHOR DETAILS
SCALE: 1"=1'-0"



SECTION C-C

TOTAL QUANTITIES				
TENDON	NO. OF TENDONS	NO. OF ANCHORS	LENGTH(NET) DUCT LFT	0.6"Ø STRAND LBS
19 *6	30	60	20597	137175
9 *6	14	28	1567	10438

LOCATION CHART					
SPAN	TENDONS STRESSED	VAR. DIM.			
		A	B	C	D
A	B1(B) B2(B)	-	-	-	9'-6"
B	-	-	-	-	-
C	B1(B) B2(B)	-	-	-	9'-6"
D	B1(D)	44'-0"	57'-0"	-	-
E	B1(E)	54'-0"	57'-0"	-	-
F	-	-	-	-	-
G	-	-	-	-	-
H	B1(H) B2(H) B3(H)	37'-0"	47'-0"	-	-
J	-	-	-	-	-

STRESSING INSTRUCTIONS LONGITUDINAL POST-TENSIONING								
TENDON	STRESSING END	ELONGATION BEFORE SET (FT)	ELONGATION AFTER SET (FT)	SET (IN)	JACK FORCE (KIPS)	APPROX. TENDON LENGTH (FT)	TENDON TO BE STRESSED AT	STRESSING SEQUENCE
C1	S	1'-8 3/4"	1'-8"	3/8	864	249'-4 3/4"	BOTH ENDS	2
C2	N	1'-8 3/4"	1'-8"	3/8	891			
C2	S	1'-8 5/8"	1'-8 1/8"	3/8	863	249'-2 3/8"	BOTH ENDS	1
C3	N	1'-8 5/8"	1'-8 1/8"	3/8	891			
C3	S	1'-9"	1'-8 1/8"	3/8	863	249'-1 1/4"	BOTH ENDS	3
C4	N	1'-9"	1'-8 1/8"	3/8	888			
C4	S	3'-0 1/2"	2'-11 3/4"	3/8	860	454'-6"	BOTH ENDS	9
C5	N	3'-0 1/2"	2'-11 3/4"	3/8	863			
C5	S	2'-11"	2'-10 1/4"	3/8	865	435'-7 1/8"	BOTH ENDS	6
C6	N	2'-11"	2'-10 1/4"	3/8	867			
C6	S	2'-11 1/8"	2'-10 3/8"	3/8	865	435'-7 1/8"	BOTH ENDS	7
C7	N	2'-11 1/8"	2'-10 3/8"	3/8	871			
C7	S	2'-11 1/4"	2'-10 1/2"	3/8	864	435'-7 1/8"	BOTH ENDS	8
C7	N	2'-11 1/4"	2'-10 1/2"	3/8	875			
B1 (SPAN B)	-	1'-3 1/8"	1'-2 3/4"	3/8	407	177'-7 1/8"	ALTERNATE ENDS	4
B2 (SPAN B)	-	1'-4 1/8"	1'-3 3/4"	3/8	407	189'-7 1/8"	ALTERNATE ENDS	5
B1 (SPAN D)	-	5 3/4"	5 3/8"	3/8	418	64'-4 3/4"	ALTERNATE ENDS	10
B1 (SPAN E)	-	5 3/4"	5 1/2"	3/8	417	64'-7 1/8"	ALTERNATE ENDS	11

STRESSING INSTRUCTIONS LONGITUDINAL POST-TENSIONING								
TENDON	STRESSING END	ELONGATION BEFORE SET (FT)	ELONGATION AFTER SET (FT)	SET (IN)	JACK FORCE (KIPS)	APPROX. TENDON LENGTH (FT)	TENDON TO BE STRESSED AT	STRESSING SEQUENCE
C8	N	1'-4 1/8"	1'-3 3/4"	3/8	889	199'-1 1/4"	ONE END	4
C9	N	1'-4 1/4"	1'-3 7/8"	3/8	887	199'-0"	ONE END	1
C10	N	1'-4 1/4"	1'-3 7/8"	3/8	884	199'-0"	ONE END	2
C11	N	1'-4 1/4"	1'-3 7/8"	3/8	880	199'-0"	ONE END	3
C12	S	2'-8"	2'-7 1/4"	3/8	868	393'-6"	BOTH ENDS	8
C12	N	2'-8"	2'-7 1/4"	3/8	864			
C13	S	2'-8"	2'-7 1/4"	3/8	866	393'-3 5/8"	BOTH ENDS	5
C13	N	2'-8"	2'-7 1/4"	3/8	864			
C14	S	2'-8 1/8"	2'-7 3/8"	3/8	864	393'-2 3/8"	BOTH ENDS	6
C14	N	2'-8 1/8"	2'-7 3/8"	3/8	863			
C15	S	2'-8 1/8"	2'-7 3/8"	3/8	863	393'-1 1/4"	BOTH ENDS	7
C15	N	2'-8 1/8"	2'-7 3/8"	3/8	863			
B1 (SPAN H)	-	10"	9 5/8"	3/8	407	115'-9 5/8"	ALTERNATE ENDS	9
B2 (SPAN H)	-	8 3/8"	8"	3/8	409	95'-9 5/8"	ALTERNATE ENDS	10
B3 (SPAN H)	-	6 3/4"	6 3/8"	3/8	413	75'-9 5/8"	ALTERNATE ENDS	11

N=NORTH
S=SOUTH

- WEB TENDONS:
- TENDONS: 19x.06" STRANDS
 - Fu = 1113.4 KIPS PER TENDON
 - DUCTS: 4" I.D. (4 1/4" O.D.)
- BOTTOM SLAB TENDONS:
- TENDONS: 9x.06" STRANDS
 - Fu = 527.4 KIPS PER TENDON
 - DUCTS: 3" I.D. (3 1/4" O.D.)

SUPERSTRUCTURE DETAILS -
BOTTOM SLAB TENDON LAYOUT

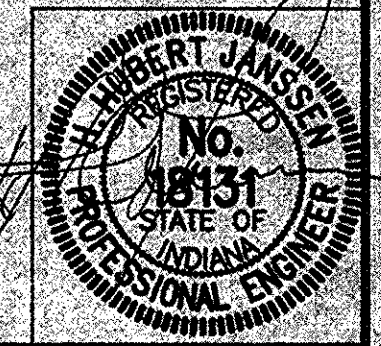
INDIANA DEPARTMENT OF TRANSPORTATION
LAKE COUNTY

SCALE: 3/16"=1'-0", UNLESS NOTED DATE: July 10, 1998

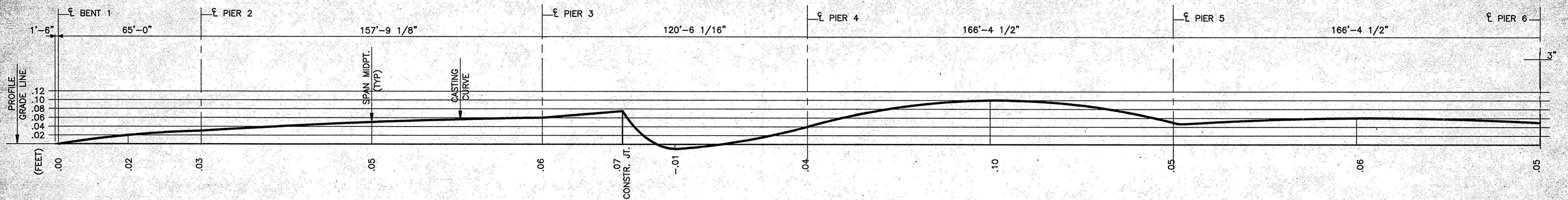
SUBMITTED FOR APPROVAL

DRAWING: C46 OF C51 SHEET: 61 OF 73
PROJECT: NH-80-1 ()

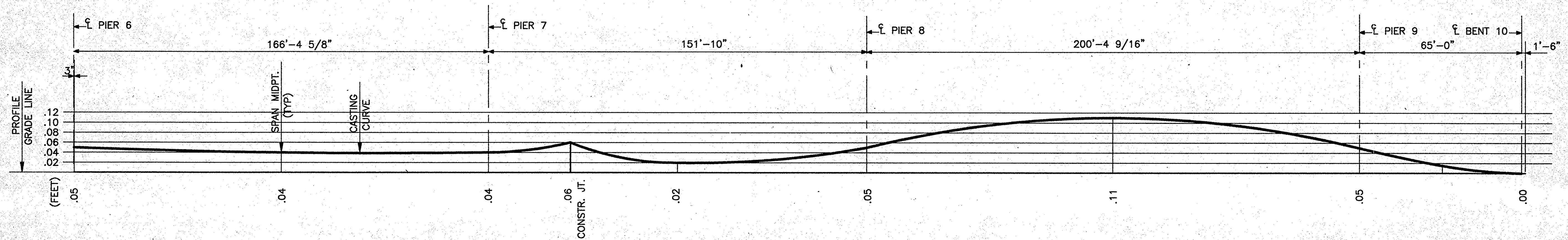
CONTRACT NO.
BRIDGE FILE: I-80-5-7823



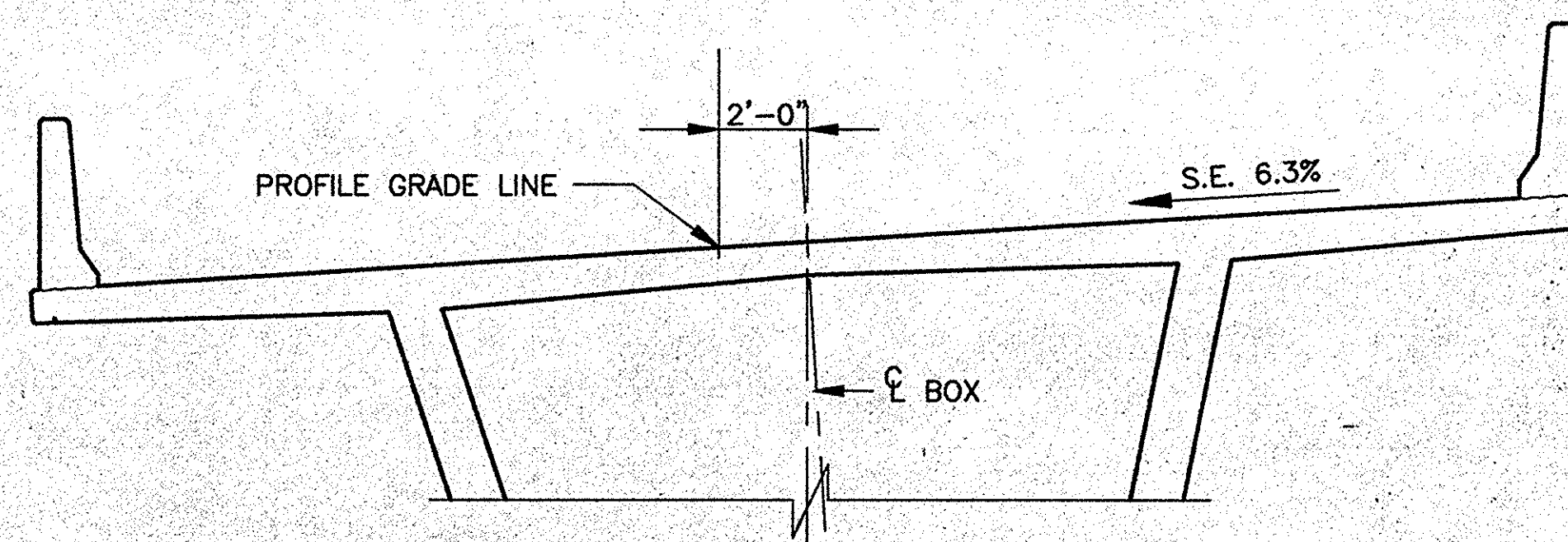
DESIGNED: HHJ C.K.D. LS
DRAWN: TMD C.K.D. HHJ
TRACED: C.K.D.



UNIT 1 ELEVATION



UNIT 2 ELEVATION



CROSS SECTION

CAMBER DIAGRAM NOTES:

1. THE CAMBER DIAGRAM SHOWN REPRESENTS THE OPPOSITE OF THE CALCULATED DEFLECTIONS AFTER ALL POST-TENSIONING LOSSES. CAMBERS ARE IN FEET.
2. TOP OF FALSEWORK ELEVATIONS SHALL INCLUDE THE CAMBERS AS SHOWN.
3. CONTRACTOR SHALL DETERMINE AND SUBMIT TO THE ENGINEER FOR APPROVAL THE ANTICIPATED FALSEWORK SUPPORT SETTLEMENTS AND DEFORMATIONS AND WILL ADJUST TOP OF FALSEWORK ELEVATIONS ACCORDINGLY.
4. FINAL TOP OF DECK ELEVATIONS WILL BE PROVIDED AT THE PRECONSTRUCTION MEETING.

CASTING CURVES
 INDIANA DEPARTMENT OF TRANSPORTATION
 LAKE COUNTY

SCALE: NOT TO SCALE

DATE: July 10, 1988

SUBMITTED FOR APPROVAL

DRAWING: C47 OF C51 SHEET: 62 OF 73

PROJECT: NH-80-1 () 4

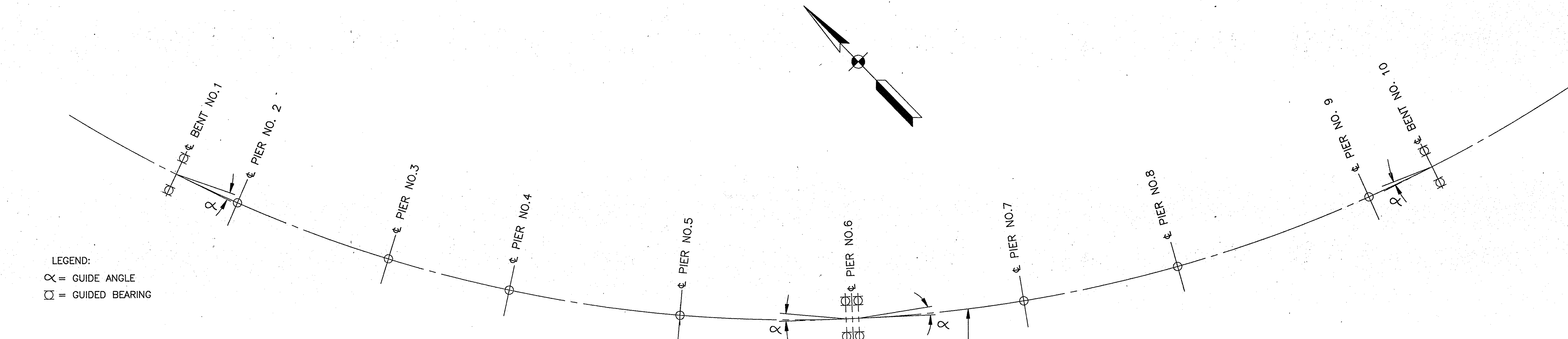
CONTRACT NO.

BRIDGE FILE: I-80-5-7823



SUBMITTAL CURVE: 10/12/97 4: 1853

DESIGNED: HHJ C'K'D TDJ
 DRAWN: GLH C'K'D HHJ
 TRACED: C'K'D



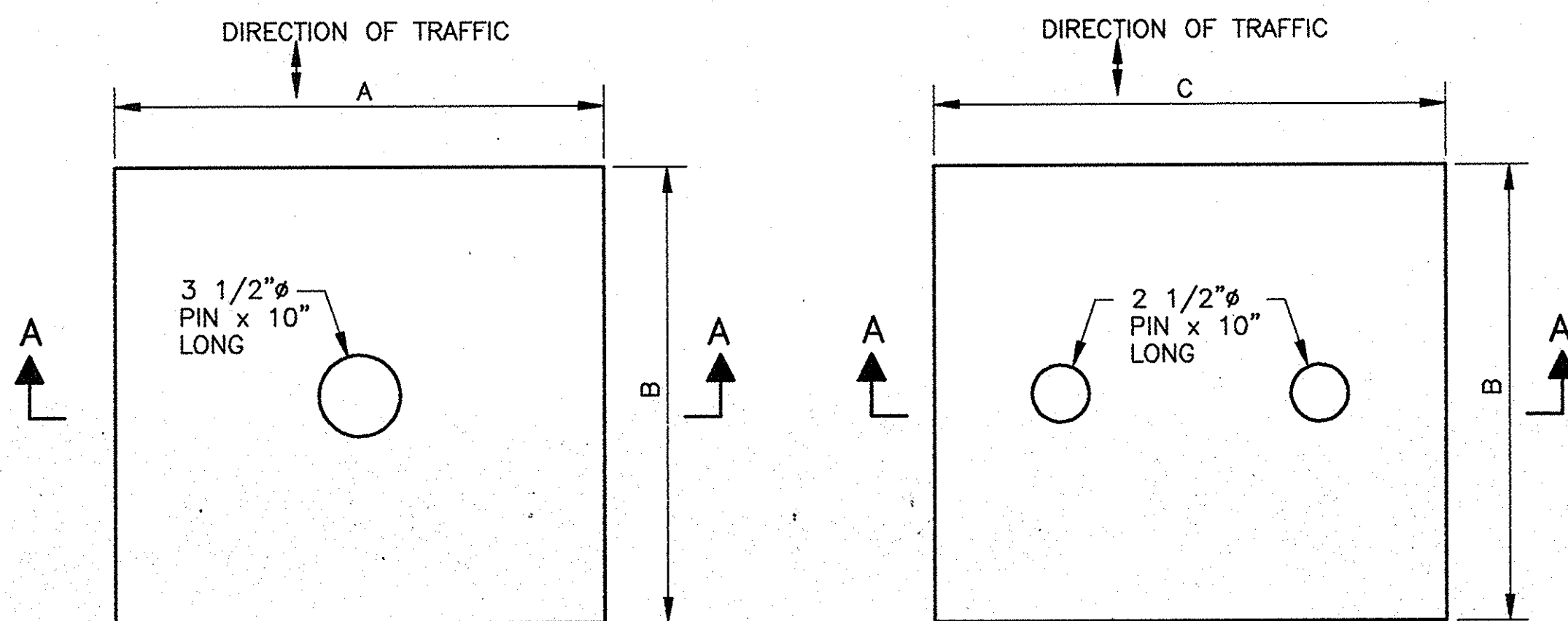
LEGEND:
 α = GUIDE ANGLE
 = GUIDED BEARING

LOCATION	BEARING CAPACITY		MOVEMENTS		ADJUSTMENT PER 10°F	α
	VERTICAL	HORIZONTAL	EXPANSION	CONTRACTION		
END BENT 1	300 K	60 K	1"	4"	1/4"	7.24°
PIER 6 DOWN STA.	700 K	140 K	1 3/4"	6 1/4"	5/16"	6.44°
PIER 6 UP STA.	700 K	140 K	1 3/4"	6 1/4"	5/16"	6.08°
END BENT 10	300 K	60 K	1"	4"	1/4"	5.54°

SCHEMATIC BEARING LAYOUT

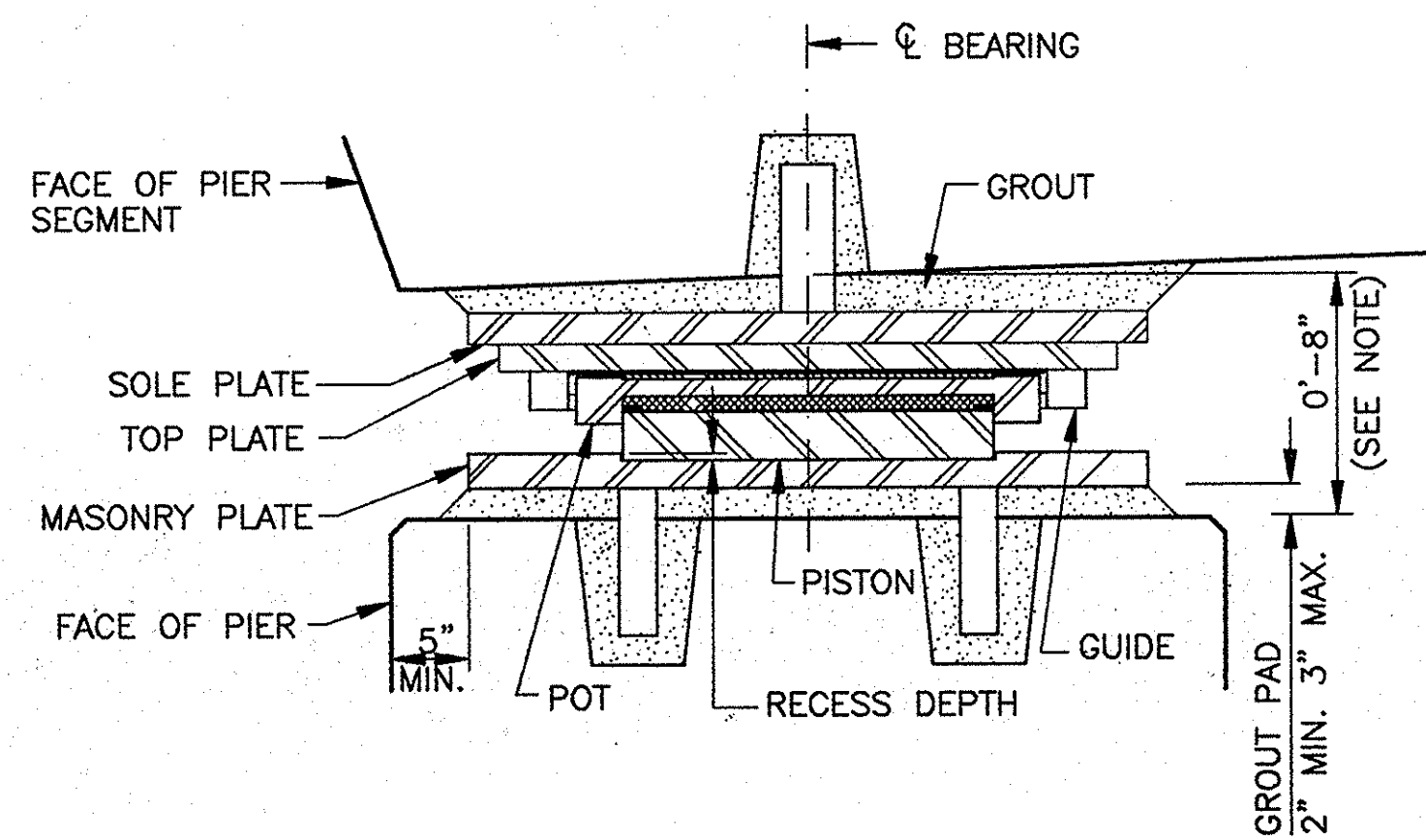
BEARING NOTES

- DESIGN OF ALL BEARING ELEMENTS, SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- DESIGN LOADINGS AND HORIZONTAL MOVEMENT CAPACITIES SHALL NOT BE LESS THAN THE VALUES TABULATED. ALL BEARINGS SHALL BE DESIGNED FOR 0.02 RADIAN'S ROTATION.
- THE COEFFICIENT OF SLIDING FRICTION SHALL NOT EXCEED 3% AT 3500 PSI CONTACT PRESSURE ON THE PTFE.
- ALL BEARING ELEMENTS BETWEEN THE SOLE PLATE AND THE MASONRY PLATE SHALL BE DESIGNED TO BE REPLACEABLE.
- DIMENSIONS A, B AND C SHALL BE SET BY THE CONTRACTOR.
- AS SHOWN IN SECTION A-A, THE BRIDGE HAS BEEN DETAILED ON THE BASIS OF A VERTICAL DIMENSION OF 0'-8" FOR THE HEIGHT OF THE BEARING. IF NECESSARY THIS DIMENSION CAN BE VARIED TO SUIT THE FINAL DESIGN DIMENSIONS OF THE BEARINGS. THE CONTRACTOR SHALL RECALCULATE ALL ELEVATIONS AND DIMENSIONS, AS REQUIRED, AND SUBMIT FOR APPROVAL.
- THE GUIDE BARS ON THE SLIDING GUIDED BEARINGS SHALL BE SET PARALLEL TO A LINE JOINING THE BEARING AND THE FIXED BEARINGS AT PIERS 4 AND 8. THE GUIDE ANGLES α ARE SHOWN IN THE TABLE.
- ALL EXPOSED STEEL COMPONENTS OF THE BEARINGS, OTHER THAN STAINLESS STEEL, SHALL BE ZINC METALIZED IN ACCORDANCE WITH AWS C2.2.
- ALL STAINLESS STEEL COMPONENTS, INCLUDING THE SLIDING SURFACES, SHALL BE ASTM A-240, TYPE 316.
- MOVEMENTS ARE BASED ON AN AMBIENT TEMPERATURE AT INSTALLATION OF 60°F. INSTALLATION AT A DIFFERENT TEMPERATURE REQUIRES ADJUSTMENT OF THE BEARING. (SEE TABLE)



SOLE PLATE

MASONRY PLATE



SECTION A-A
 (SHOWING SLIDING GUIDED BEARING) AT PIER SEGMENT

BEARING DETAILS

INDIANA DEPARTMENT OF TRANSPORTATION
 LAKE COUNTY

SCALE: NOT TO SCALE

DATE: 7/2/08

SUBMITTED FOR APPROVAL

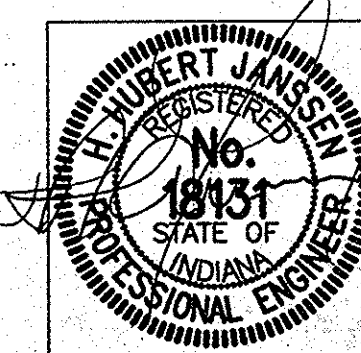
DRAWING: C48 OF C51 SHEET: 63 OF 73

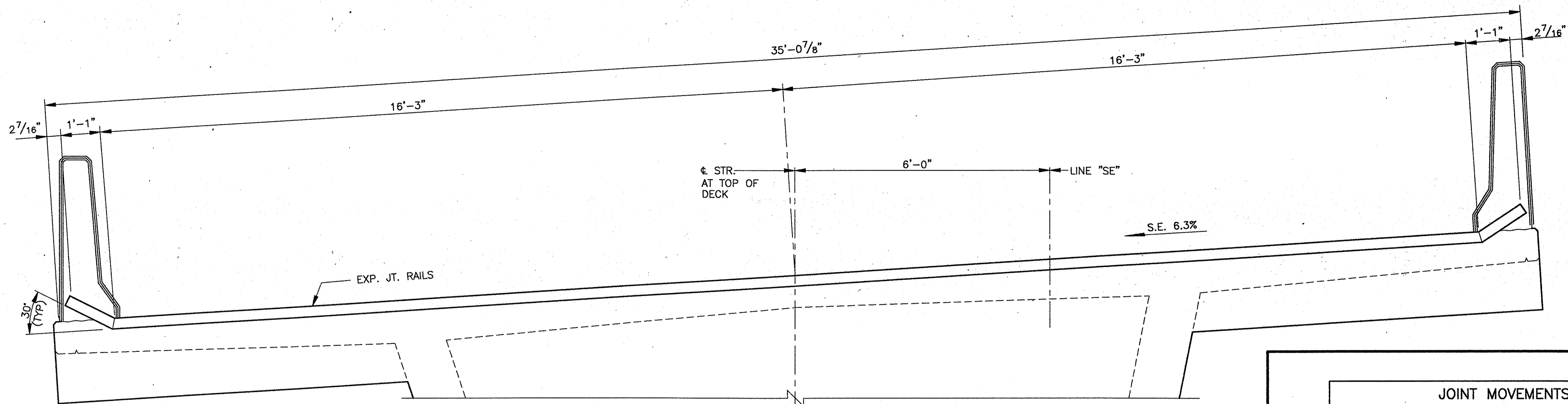
PROJECT: - NH-80-1 () 4

CONTRACT NO.

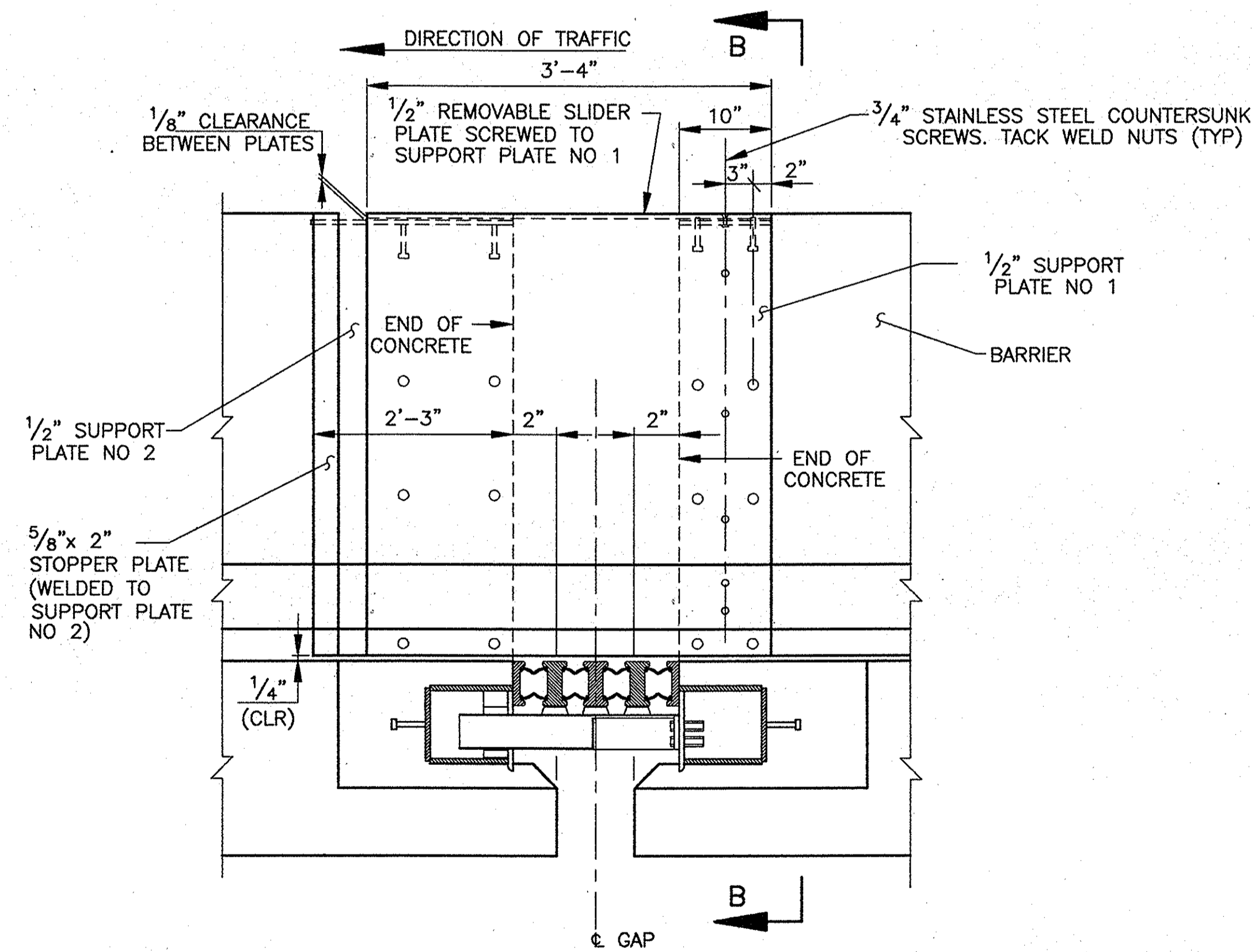
BRIDGE FILE: I-80-5-7823

DESIGNED: HHJ C'K'D LS
 DRAWN: IPV C'K'D HHJ
 TRACED: C'K'D

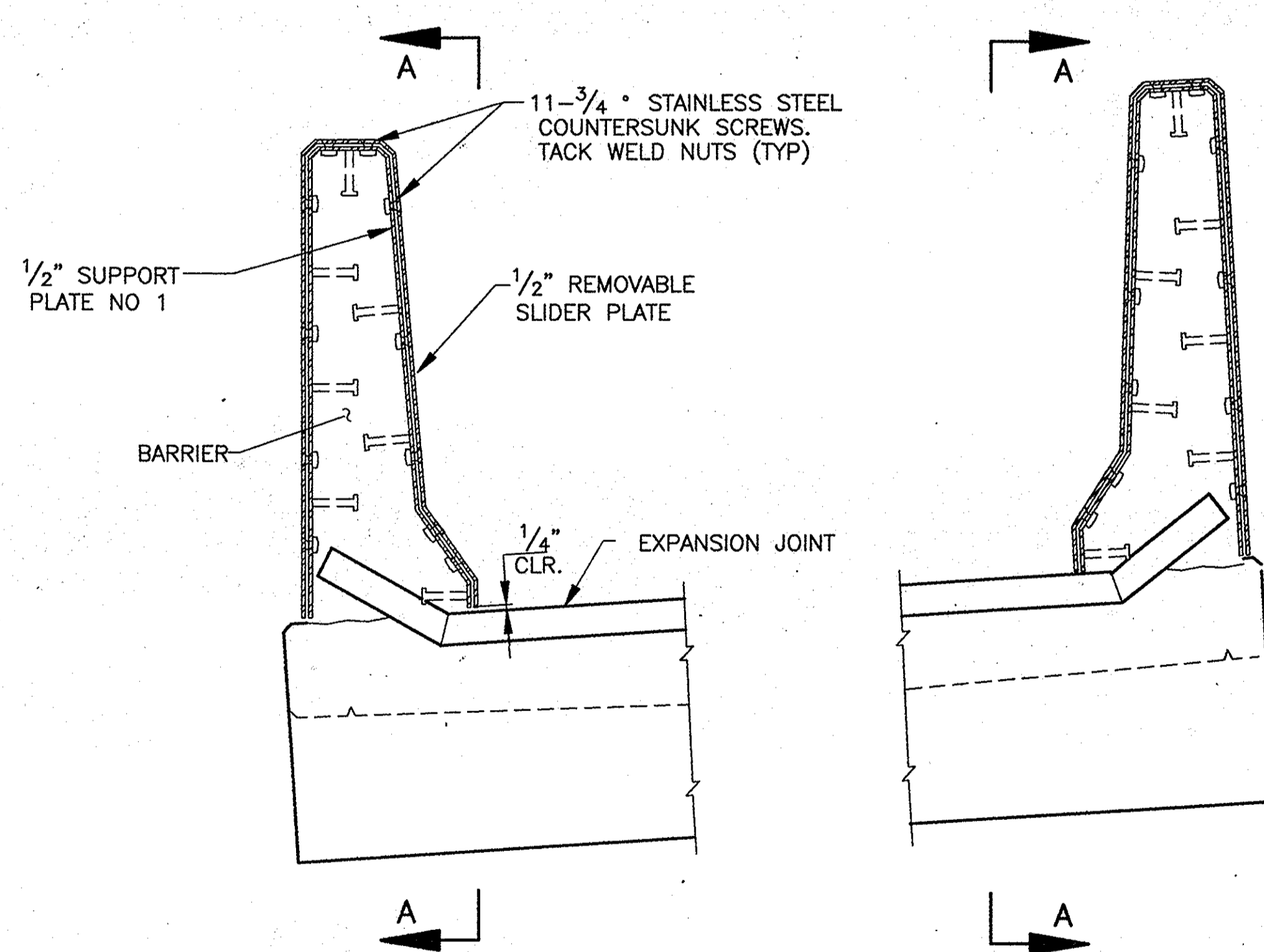




SECTION AT & EXP. JT. PIER NO. 6



SECTION A-A

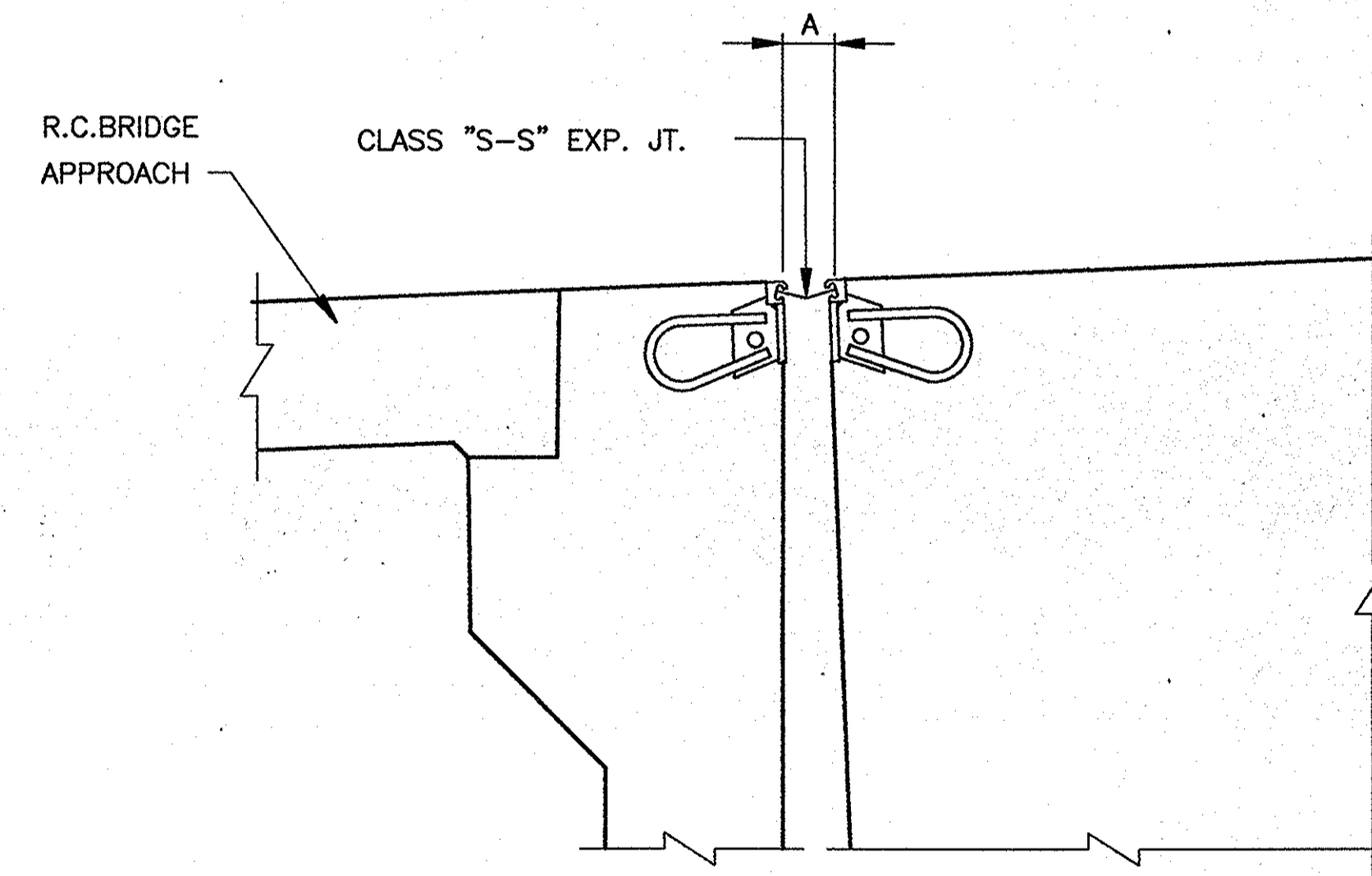


SECTION B-B

EXPANSION JOINT DETAIL AT PIER 6
(35 LFT REQ'D)
NOT TO SCALE

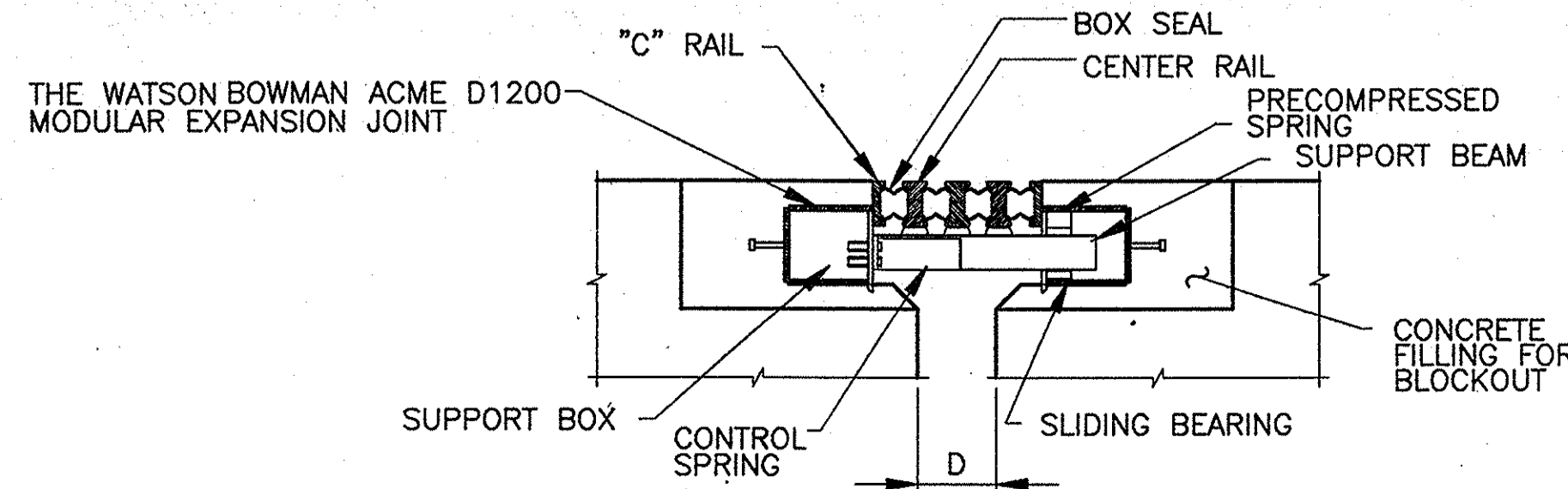
JOINT MOVEMENTS (INCHES)							
40° TEMP RISE FROM 60° MEAN	30° TEMP FALL FROM 60° MEAN	CREEP AND SHRINKAGE	TOTAL DESIGN MOVEMENT	DIMENSIONS (IN)			EXPANSION PER 10° F DEVIATION
				INITIAL SET "A"	MIN. "A"	MAX. "A"	
0.88	-0.66	-2.05	3.43	1.08	0.20	3.80	0.22

(-) SIGN DENOTES JOINT OPENING MOVEMENT



SECTION THROUGH EXP JT

EXPANSION JOINT DETAIL AT BENTS 1 & 10
(35 LFT REQ'D AT EACH BENT)
NOT TO SCALE



SECTION THRU EXP. JT. PIER NO. 6

NOTES:

1. THE SLIDER PLATE ASSEMBLY SHALL NOT BE PAID FOR DIRECTLY BUT SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM FOR MODULAR EXPANSION JOINT.
2. SLIDER PLATE ASSEMBLIES SHALL BE HOT-DIPPED GALVANIZED.
3. ALL EXPOSED SURFACES OF EXPANSION JOINT TO RECEIVE ONE SHOP COAT OF PAINT.

JOINT MOVEMENTS (INCHES)							
40° TEMP RISE FROM 60° MEAN	30° TEMP FALL FROM 60° MEAN	CREEP AND SHRINKAGE	TOTAL DESIGN MOVEMENT	DIMENSIONS (IN)			EXPANSION PER 10° F DEVIATION
				INITIAL SET "D"	MIN. "D"	MAX. "D"	
2.71	-2.04	-5.05	8.82	4.21	1.50	11.30	0.68

(-) SIGN DENOTES JOINT OPENING MOVEMENT

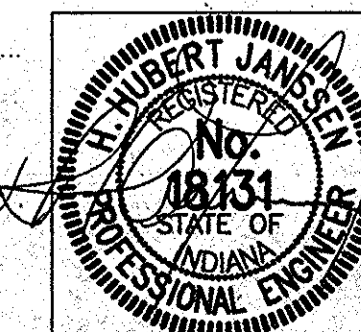
SUPERSTRUCTURE DETAILS-
EXPANSION JOINTS
INDIANA DEPARTMENT OF TRANSPORTATION
LAKE COUNTY

SCALE: 3/4"=1'-0"

DATE: 5/22/98

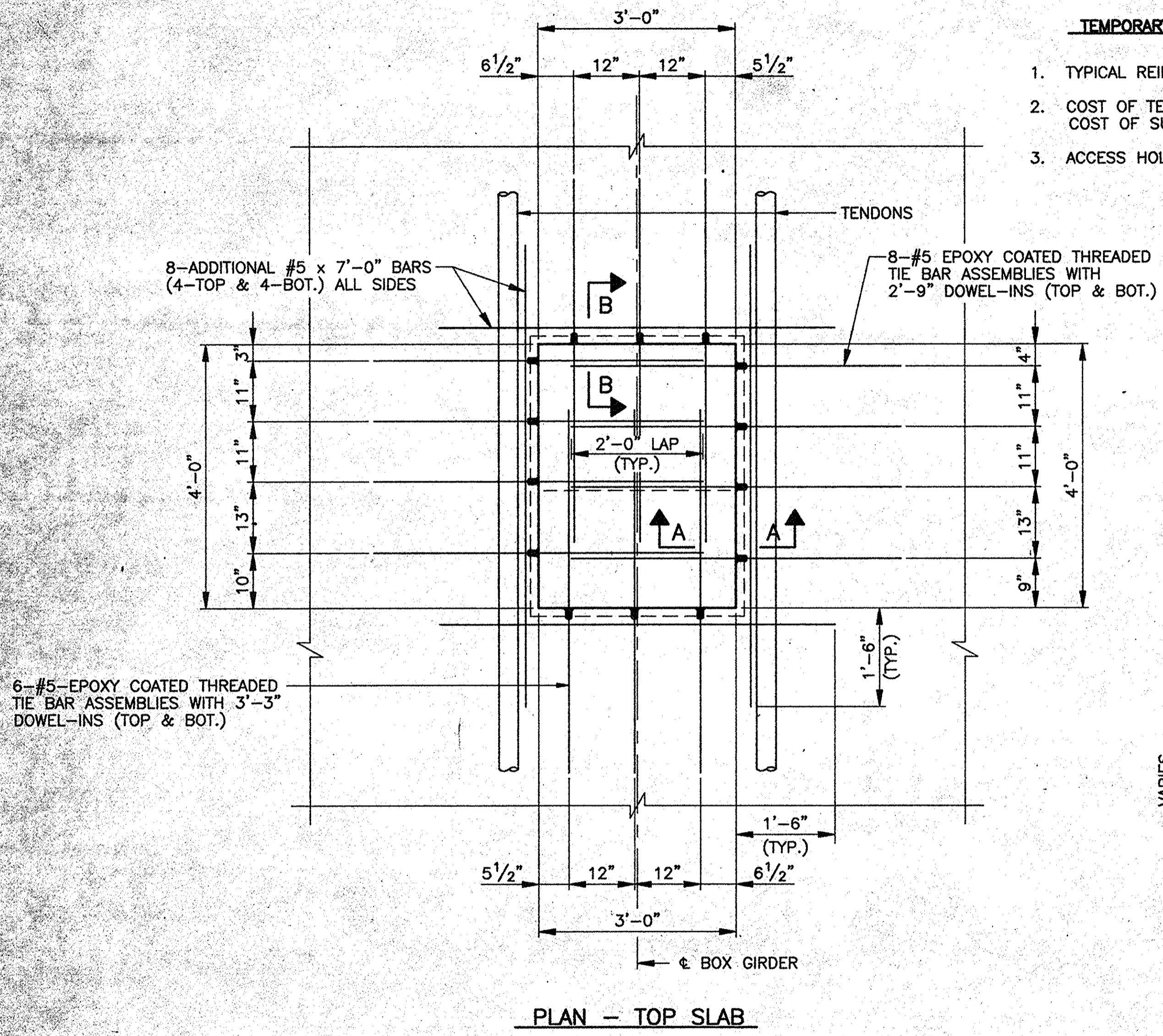
SUBMITTED FOR APPROVAL

DRAWING: C49 OF C51 SHEET: 64 OF 73
PROJECT: - NH-80-1 (-) 4
CONTRACT NO.
BRIDGE FILE: I-80-5-7823



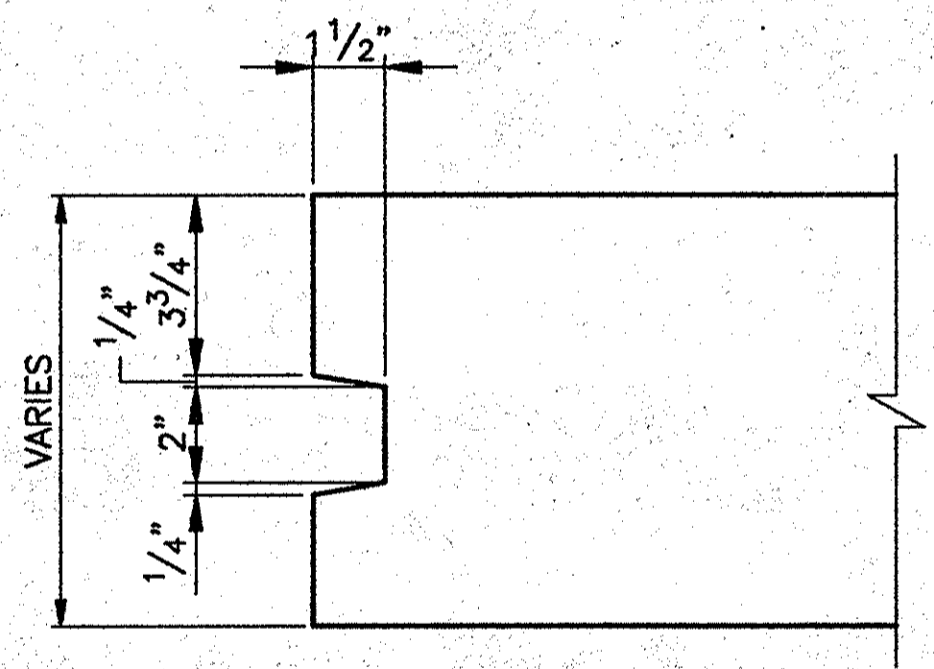
ENR 17-8-98 P. 14

DESIGNED: HHJ C'K'D: LS
DRAWN: TMD C'K'D: HHJ
TRACED: C'K'D



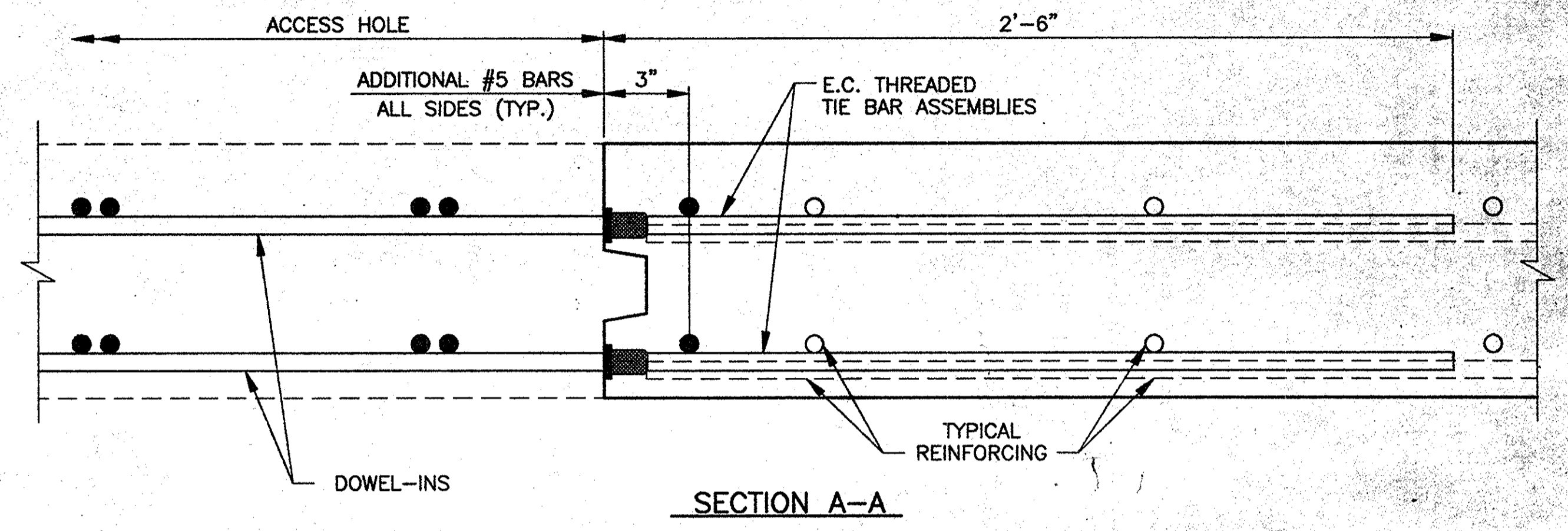
- TEMPORARY ACCESS HOLE NOTES:**
1. TYPICAL REINFORCING TO BE CUT 1 1/2" CLEAR OF ACCESS HOLE.
 2. COST OF TEMPORARY ACCESS HOLES TO BE INCLUDED IN THE COST OF SUPERSTRUCTURE CONCRETE.
 3. ACCESS HOLES SHOULD BE PLACED IN EACH SPAN.

ACCESS HOLE BILL OF MATERIALS	
#5 E.C. THREADED TIE BAR ASSEMBLY (2'-9" DOWEL)	16 EACH
#5 E.C. THREADED TIE BAR ASSEMBLY (3'-3" DOWEL)	12 EACH
#5 x 7'-0"	8 EACH

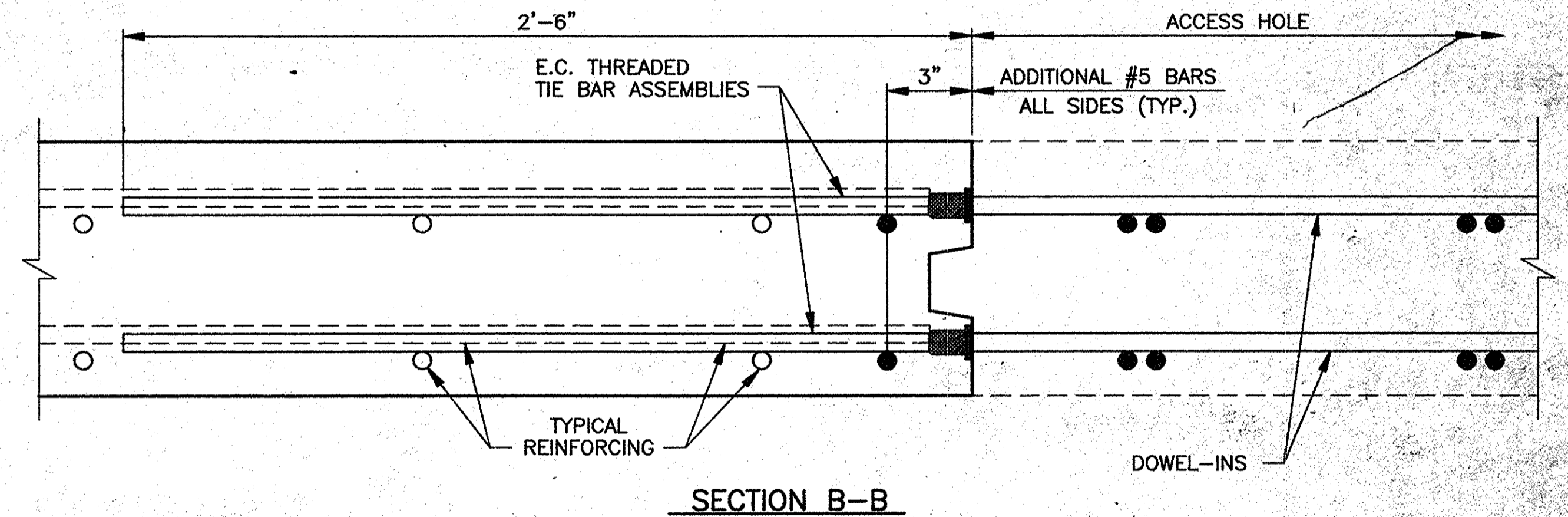


KEYWAY DETAIL

TEMPORARY ACCESS HOLE DETAILS



SECTION A-A



SECTION B-B

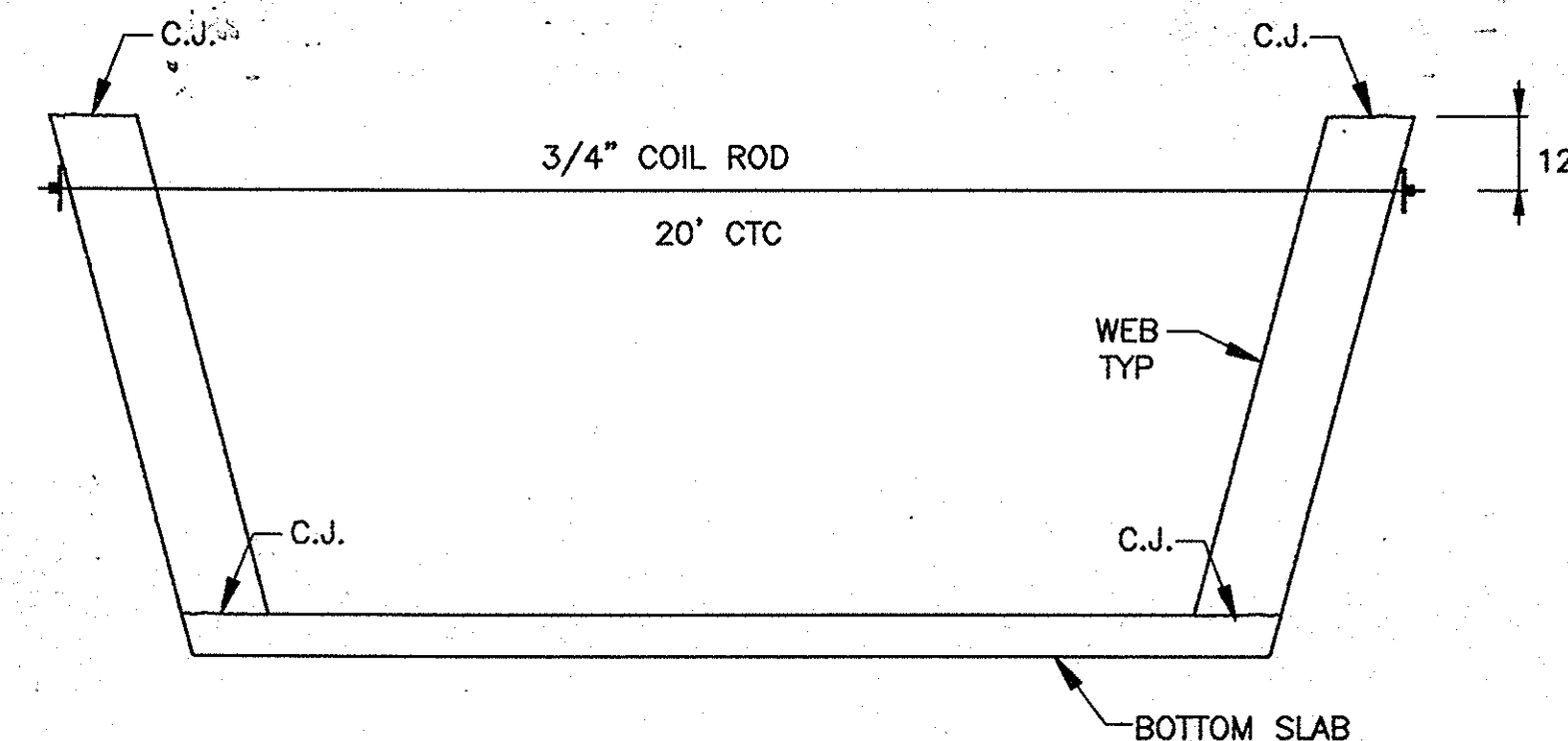
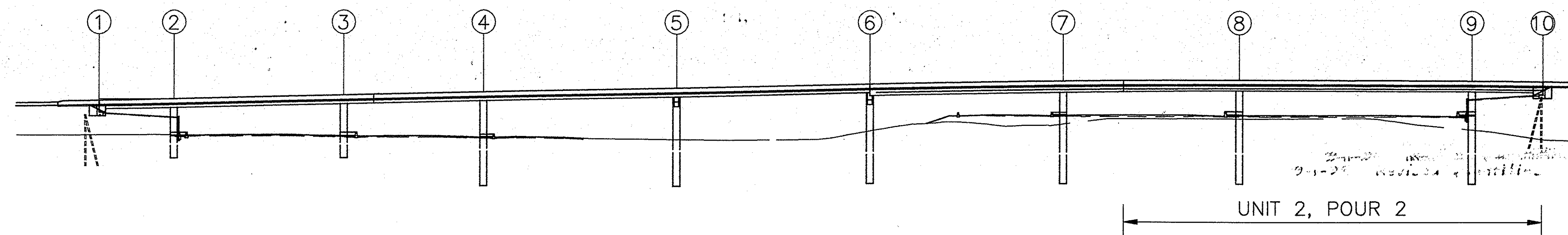
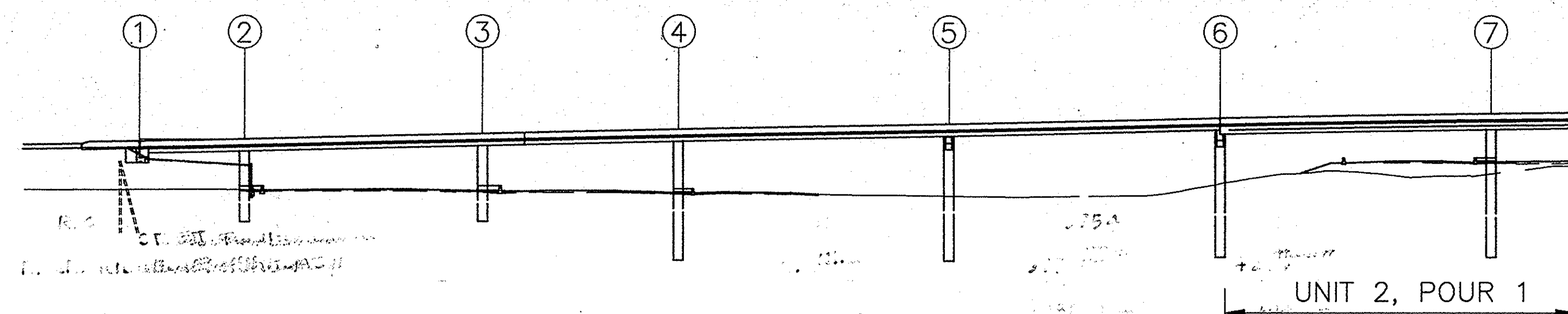
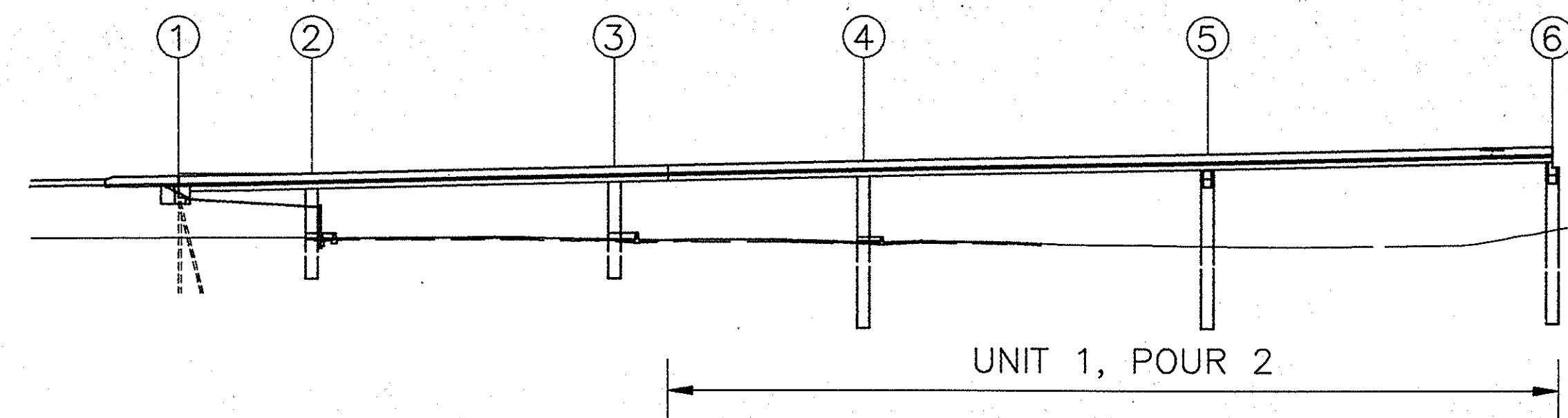
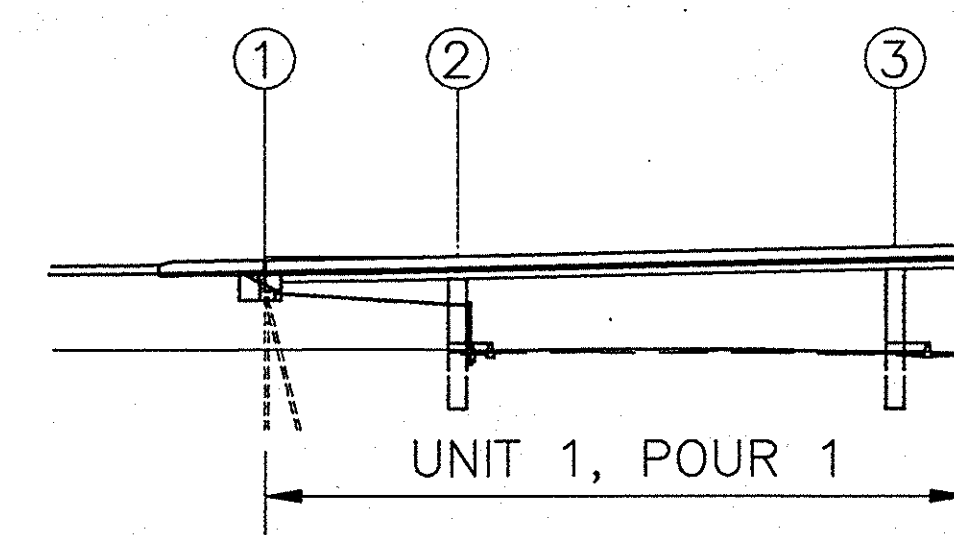
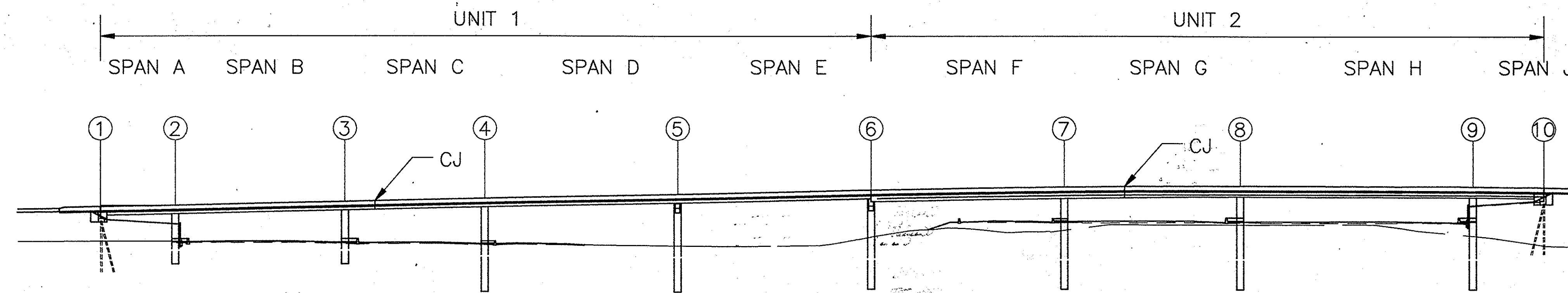
DESIGNED	HHJ	C'K'D	LS
DRAWN	DWB	C'K'D	HHJ
TRACED		C'K'D	

MISCELLANEOUS DETAILS
INDIANA DEPARTMENT OF TRANSPORTATION
 LAKE COUNTY

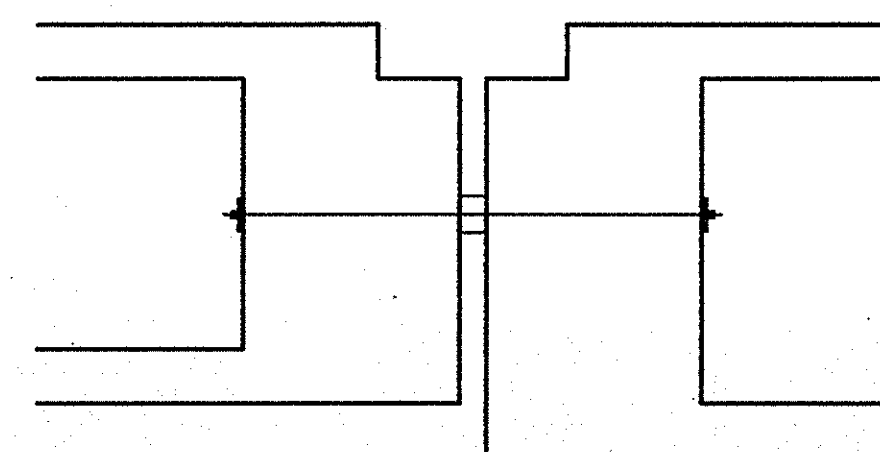
SCALE: 1/2"=1'-0", UNLESS NOTED DATE: July 10 1968

SUBMITTED FOR APPROVAL

DRAWING: C49A OF C51 SHEET: 64A OF 73
 PROJECT: - NH-80-1 () 4
 CONTRACT NO.
 BRIDGE FILE: I-80-5-7823



DETAIL "A"



TEMPORARY CONNECTION NOTES

(SEE STEP 12)

1. PROVIDE TEMPORARY WOOD BLOCKING BETWEEN THE ENDS OF UNITS 1 AND 2 AT OR CLOSE TO EACH WEB.
2. STRESS ONE DYWIDAG BAR 1 1/4" TO A FORCE OF 50K AT EACH WOOD BLOCKING LOCATION.
3. CONTRACTOR TO PROVIDE SHOP DRAWINGS WITH DETAILS FOR APPROVAL OF THE ENGINEER.

CONSTRUCTION SEQUENCE

STEP DESCRIPTION

1 CONSTRUCT SUBSTRUCTURE END BENT 1, PIERS 2 THROUGH 9 AND END BENT 10

NOTE THAT THE END BENT 1 BACK WALL CANNOT BE CONSTRUCTED UNTIL UNIT I IS FULLY POST-TENSIONED. SIMILARLY END BENT 10 BACK WALL CANNOT BE CONSTRUCTED UNTIL UNIT II IS FULLY POST-TENSIONED.

ERECT FALSEWORK FOR UNIT I, POUR 1.

POUR BOTTOM SLAB OF POUR 1. SEE DETAIL "A" FOR CONSTRUCTION JOINTS.

POUR WEBS AND DIAPHRAGMS.

NOTE: AS WEB FORMS ARE REMOVED, INSTALL LATERAL TIES (3/4" DIAMETER COIL RODS A 36" MINIMUM) SPACE AT 20' CTC 12" FROM TOP OF WEB. SEE DETAIL "A".

2 POUR DECK.

3 STRESS TRANSVERSE POST-TENSIONING, AS SOON AS THE DECK CONCRETE REACHES A MINIMUM STRENGTH OF 4000 PSI, PRIOR TO ANY LONGITUDINAL STRESSING.

STRESS LONGITUDINAL TENDONS AS SOON AS THE WEB CONCRETE REACHES A MINIMUM STRENGTH OF 4500 PSI, BUT AFTER THE TRANSVERSE DECK AND DIAPHRAGM POST-TENSIONING HAS BEEN STRESSED.

GROUT ALL TENDONS (LONGITUDINAL AND TRANSVERSE). DO NOT APPLY OR REMOVE ANY LOAD FROM STRUCTURE OR SCAFFOLDING UNTIL GROUT HAS REACHED A MINIMUM STRENGTH OF 2000 PSI.

4 REMOVE FALSEWORK FROM UNITS I, POUR 1. HOWEVER, LEAVE ONE FALSEWORK BENT IN THE CENTER OF SPAN B.

5 ERECT FALSEWORK FOR UNIT I, POUR 2.

6 POUR BOTTOM SLAB. SEE DETAIL "A" FOR CONSTRUCTION JOINTS.

POUR WEBS AND DIAPHRAGMS.

NOTE: AS WEB FORMS ARE REMOVED INSTALL LATERAL TIES (3/4" DIAMETER COIL ROD A 36" MINIMUM) SPACED AT 20' CTC 12" FROM TOP OF WEB. SEE DETAIL "A".

7 POUR DECK.

8 REPEAT STEP 3.

9 REMOVE FALSEWORK FROM UNIT I, POUR 2.

10 ERECT FALSEWORK FOR UNIT II, POUR 1.

11 REPEAT STEPS 6 AND 7.

12 PROVIDE TEMPORARY CONNECTION BETWEEN UNITS I AND II.

13 REPEAT STEP 3.

14 REMOVE THE FALSEWORK OF UNIT II, POUR 1. ONE FALSEWORK BENT SHOULD BE LEFT IN THE CENTER OF SPAN F.

15 ERECT FALSEWORK FOR UNIT II, POUR 2.

16 REPEAT STEPS 6 THROUGH 9.

17 FILL ALL RECESSES AND MANHOLES IN DECK.

THE STRUCTURE HAS BEEN DESIGNED ASSUMING THE ABOVE ORDER OF CONSTRUCTION AND POURING SEQUENCE. ANY DEVIATION FROM THE DESCRIBED PROCEDURE WILL AFFECT THE STRESSES AND THE CASTING CURVE.

CONSTRUCTION SEQUENCE
INDIANA DEPARTMENT OF TRANSPORTATION
LAKE COUNTY

SCALE: NOT TO SCALE

DATE: 1/22/88

SUBMITTED FOR APPROVAL

DRAWING: C50 OF C51 SHEET: 65 OF 73

PROJECT: - NH-80-1 () 4

CONTRACT NO.

BRIDGE FILE: I-80-5-7823



DRAWN BY: TMD
 DESIGNED BY: MJH
 CHECKED BY: C.K.D.
 DATE: 05/28/87
 PLOT: 1-88

DESIGNED MJH C.K.D. LS
 DRAWN TMD C.K.D. MJH
 TRACED C.K.D.

