

BRIDGES OVER 20' SPAN					
FEDERAL REGION NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	IND.	IM/80-1(143)4		1	

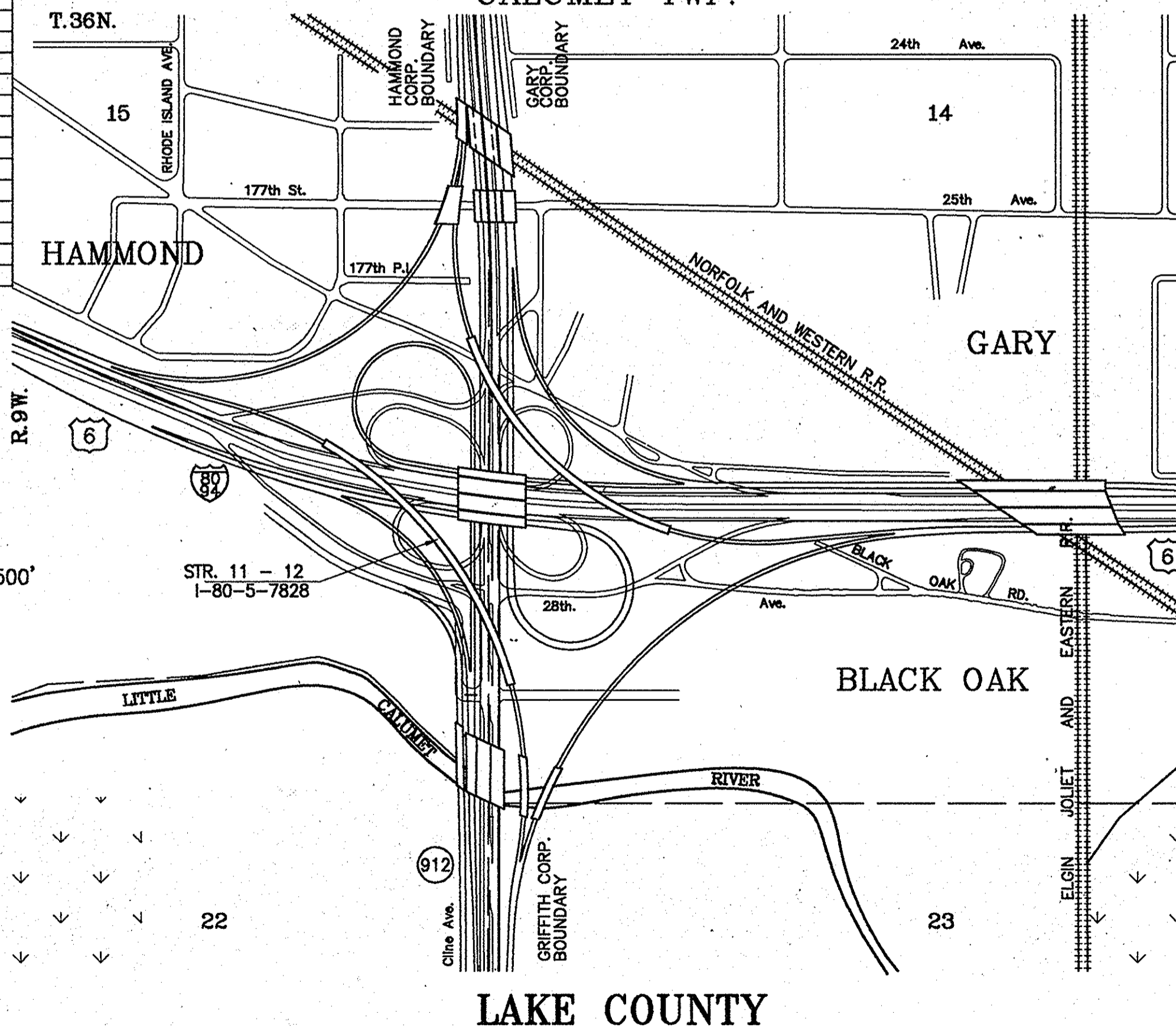
INDIANA
DEPARTMENT OF
TRANSPORTATION

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.



INDEX					
PROJECT	STRUCTURE	TYPE	SPAN	OVER	STATION
IM/80-1(143)4	I-80-5-7828	CONTINUOUS POST-TENSIONED CONCRETE BOX GIRDER BRIDGE	65'-0, 188'-6 1/2, 140'-10 9/16, 182'-4 7/8, 182'-4 7/8, 185'-10 9/16, 148'-2 7/8, 203'-8 1/16, 65'-0	S.R.912 AND I-80/94	819+96.0 "NW"
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 RAMPS			
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			
11-15C	EIGHT 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			
28-29	C13, C14	DRILLED SHAFT DETAILS			
30	C15	TYPICAL SECTION REINFORCING DETAILS, UNITS 1 & 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 BENTS 1 & 10 REINFORCING			
44	C29	PIER DIAPHRAGM AT PIER 2, 3, 4, 5, 7, 8 & 9 REINFORCING			
45	C30	PIER DIAPHRAGM AT PIER 6 (UNITS 1 & 2) REINFORCING			
46	C31	POST-TENSIONING DETAILS, STRESSING BLOCK REINFORCING			
47	C32	POST-TENSIONING DETAILS, TRANSVERSE			
48	C33	POST-TENSIONING DETAILS, BENT 1 & 10 AND PIER 6			
49	C34	POST-TENSIONING DETAILS, STRESSING BLOCK, SPANS C & G REINFORCING			
50-54	C35, C36, C37, C38, C39	TENDON LAYOUT			
55	C40	CASTING CURVES			
56	C41	BEARING DETAILS			
57-57A	C42, C42A	EXPANSION JOINT DETAILS, MISC. DETAILS			
58	C43	CONSTRUCTION SEQUENCE			
59	C44	BRIDGE SUMMARY			

R-23808 part 7 of 9

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	10, 11, 19, 21, 29, 36, 41, 43, 46, 54, 59	
07-10-98	ADD SHTS. 15A, 15B, 15C, 57A, 65A-65M	
9-1-98	REV. SHTS. 11, 12, 19, 23, 25 AND 59, 28 AND 29	

REVISIONS		
DATE	REV. SHTS.	SHEET NO.

INDEX CONTINUED					
SHEET NO.	SHEET DESIGNATION	SUBJECT	F. H. W. A. APPROVAL	ADOPTED REVISION	"A" "B"
	BRIDGE STD. BR1	CONCRETE BRIDGE RAILING TRANSITION TYPE TGB			
	BRIDGE STD. BR1A	CONCRETE BRIDGE RAILING TRANSITION TYPE TGB			
	BRIDGE STD. BR2	CONCRETE BRIDGE RAILING TRANSITION TYPE WGB			
	BRIDGE STD. BR2A	CONCRETE BRIDGE RAILING TRANSITION TYPE WGB			
60	BRIDGE STD. C1	MISCELLANEOUS DETAILS	9-1-97		R 9-1-97
	BRIDGE STD. C2	MISCELLANEOUS DETAILS			
61	BRIDGE STD. C3	MISCELLANEOUS DETAILS	1-28-95		R 1-3-95
	BRIDGE STD. C4	PRESTRESSED CONCRETE PILES			
	BRIDGE STD. C5	PRECAST DECK PANEL DETAILS			
62	BRIDGE STD. D	CASTING DETAILS, ROADWAY DRAINS	1-11-89		R 9-1-88
	BRIDGE STD. D1	ADJUSTING FRAME DETAILS FOR ROADWAY DRAINS			
	BRIDGE STD. PB	PRESTRESSED CONCRETE, TYPE I - BEAMS			
	BRIDGE STD. PB8	PRESTRESSED CONCRETE, TYPE I - BEAMS			
	BRIDGE STD. PB	PRESTRESSED BOX BEAMS			
	BRIDGE STD. PB	PRESTRESSED COMPOSITE BOX BEAMS, WIDE			
	BRIDGE STD. PB10	PRESTRESSED COMPOSITE BOX BEAMS, WIDE			
	BRIDGE STD. PB11	TOLERANCES FOR FABRICATION OF PRESTRESSED BEAMS			
	BRIDGE STD.	ELASTOMERIC BEARING PAD DETAILS			
	BRIDGE STD.				
	BRIDGE STD. R2B	BRIDGE LIGHTING DETAILS			
63	BRIDGE STD. S1	"B" BORROW PLACEMENT	1-22-89		R 12-1-88
	BRIDGE STD. SH1	STEEL SHOE DETAILS			
64	BRIDGE STD. SS-1A	STRUCTURAL EXPANSION JOINTS CLASS SS, SHEET 1A	12-14-94		A 12-1-94
65	BRIDGE STD. SS-1B	STRUCTURAL EXPANSION JOINTS CLASS SS, SHEET 1B	12-14-94		A 12-1-94
65	BRIDGE STD. SS2	STRUCTURAL EXPANSION JOINTS CLASS SS, SHEET 2	6-20-91		A 4-1-91
	BRIDGE STD. TA	STANDARD TEMPORARY BRIDGE			
	BRIDGE STD. TB	STANDARD TEMPORARY BRIDGE			
	BRIDGE STD.				
	BRIDGE STD.				
	ROAD STD. SHEET A	STANDARD PAVEMENT JOINTS			
	ROAD STD. SHEET B	STANDARD PAVEMENT JOINTS			
	ROAD STD. SHEET MA	MISCELLANEOUS STANDARDS			
65A	ROAD STD. SHEET CCPJ-1	SAWED LONGITUDINAL JOINT	1-31-96		R 9-1-95
65B	ROAD STD. SHEET CCPJ-2	SAWED CONTRACTION JOINT SEAL	1-31-96		R 9-1-95
65C	ROAD STD. SHEET MB2	CONCRETE SLOPE WALL	5-21-82		R 4-1-82
65D	ROAD STD. SHEET MB4	SLOPEWALL DRAINAGE	6-14-74		R 1-2-74
	ROAD STD. SHEET	MISCELLANEOUS STANDARDS			
	ROAD STD. SHEET MC2	MISCELLANEOUS STANDARDS			
65E	ROAD STD. SHEET RCBA-1	R.C. APPROACH TERMINAL JOINT	1-31-96		R 10-2-95
65F	ROAD STD. SHEET RCBA-2	R.C. APPROACH	1-31-96		R 1-2-96
	ROAD STD. SHEET ME	MISCELLANEOUS STANDARDS			
	ROAD STD. SHEET MH	MISCELLANEOUS STANDARDS			
	ROAD STD. SHEET MH1	MISCELLANEOUS STANDARDS			
	ROAD STD. SHEET MH2	MISCELLANEOUS STANDARDS			
	ROAD STD. SHEET MH2A	MISCELLANEOUS STANDARDS			
	ROAD STD. SHEET	MISCELLANEOUS STANDARDS			
	ROAD STD. SHEET MN	MISCELLANEOUS STANDARDS			
	ROAD STD. SHEET MN1	MISCELLANEOUS STANDARDS			
	ROAD STD. SHEET	MISCELLANEOUS STANDARDS			
	ROAD STD. SHEET	MISCELLANEOUS STANDARDS			
	ROAD STD. SHEET	MISCELLANEOUS STANDARDS			
	ROAD STD. SHEET	MISCELLANEOUS STANDARDS			
65G	GUARDRAIL SHEET G-1	W-BEAM GUARDRAIL COMPONENTS	2-5-96		R 1-2-96
	GUARDRAIL SHEET G-2	THREE-BEAM GUARDRAIL COMPONENTS			
65H	GUARDRAIL SHEET G-3	W-BEAM GUARDRAIL ASSEMBLIES	5-1-98		R 5-1-98
	GUARDRAIL SHEET B-1	TYPICAL BRIDGE APPROACH GUARDRAIL			
65I	GUARDRAIL SHEET E-1	GUARDRAIL END TREATMENT TYPE I	1-31-96		R 11-1-95
	GUARDRAIL SHEET E-2	GUARDRAIL END TREATMENT TYPE OS			
	GUARDRAIL SHEET E-3	GUARDRAIL END TREATMENT TYPE MS			
	GUARDRAIL SHEET E-4	CURVED W-BEAM GUARDRAIL SYSTEM			
65J	GUARDRAIL SHEET E-5	GUARDRAIL GRADING DETAILS	2-5-96		A 1-2-96
65K	GUARDRAIL SHEET E-5A	GUARDRAIL GRADING DETAILS	2-5-96		A 1-2-96
	GUARDRAIL SHEET T-2	GUARDRAIL TRANSITION TYPE GP			
	GUARDRAIL SHEET T-3	GUARDRAIL TRANSITION TYPE VH			
	GUARDRAIL SHEET T-4	PIER CONNECTION DETAILS			
	GUARDRAIL SHEET P-1	PIER PROTECTION GUARDRAIL			
65L	ROAD STD. SHEET CB-2	TEMPORARY CONCRETE BARRIER	1-2-98		R 1-2-98
65M	ROAD STD. SHEET CB-2A	TEMPORARY CONCRETE BARRIER	1-21-94		A 11-1-93
	ROAD STD. SHEET 1	STANDARD DETOUR SIGNS			
	ROAD STD. SHEET 1A	STANDARD DETOUR SIGNS			
	ROAD STD. SHEET 1B	STANDARD DETOUR SIGNS			
	ROAD STD. SHEET 2	STANDARD DETOUR SIGNS			
	ROAD STD. SHEET 2A	STANDARD DETOUR SIGNS			
	ROAD STD. SHEET 3	STANDARD DETOUR SIGNS			
	ROAD STD. SHEET 3A	STANDARD DETOUR SIGNS			
	ROAD STD. SHEET 4	STANDARD DETOUR SIGNS			
	ROAD STD. SHEET 5	STANDARD DETOUR SIGNS			
	ROAD STD. SHEET 5A	STANDARD DETOUR SIGNS			

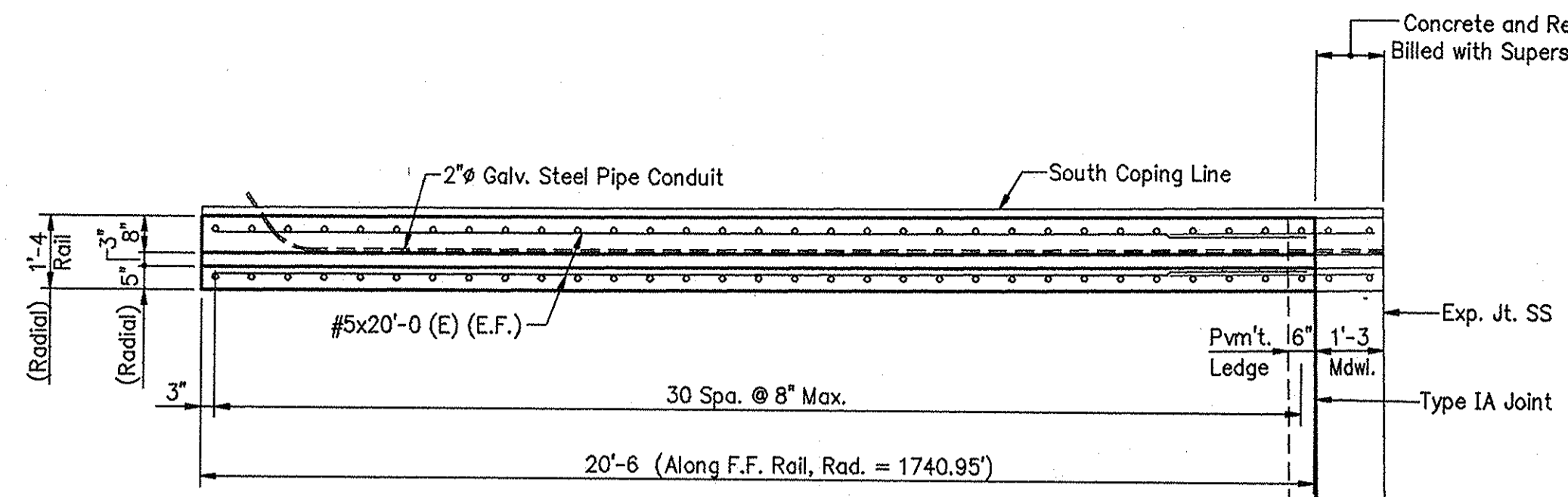
PLANS PREPARED BY:
JSE CONSULTING ENGINEERS, INC
2825 E. 56TH STREET
INDIANAPOLIS, INDIANA 46220
TEL 317-254-9686
FAX 317-259-8262



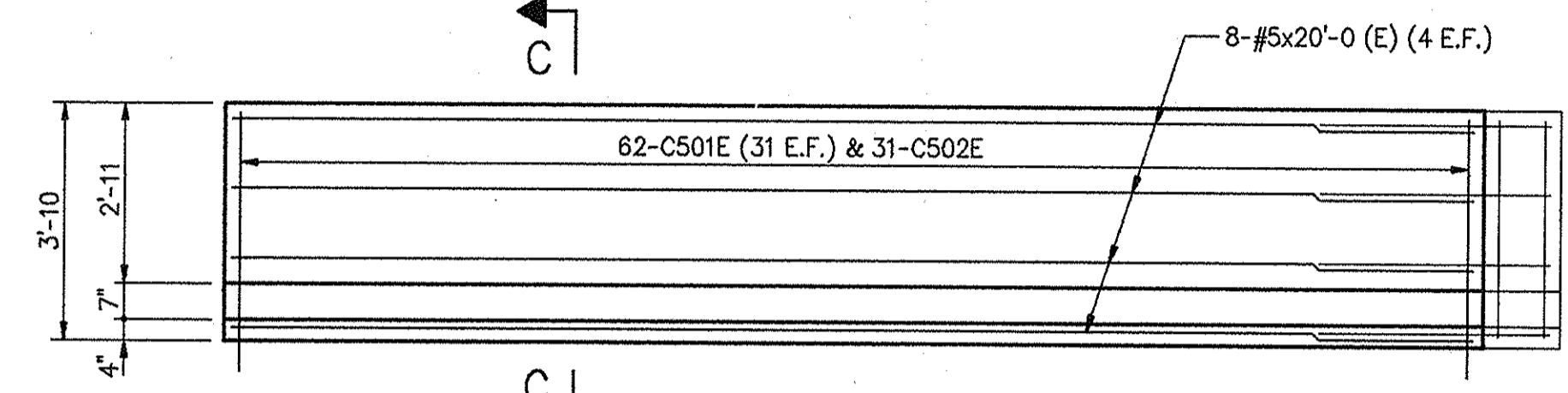
APPROVED FOR LETTING 6/10/98
Phillip H. Kiska
CHIEF, DIVISION OF DESIGN

FEDERAL HIGHWAY ADMINISTRATION
DEPARTMENT OF TRANSPORTATION

APPROVED: _____
DIVISION ADMINISTRATOR DATE



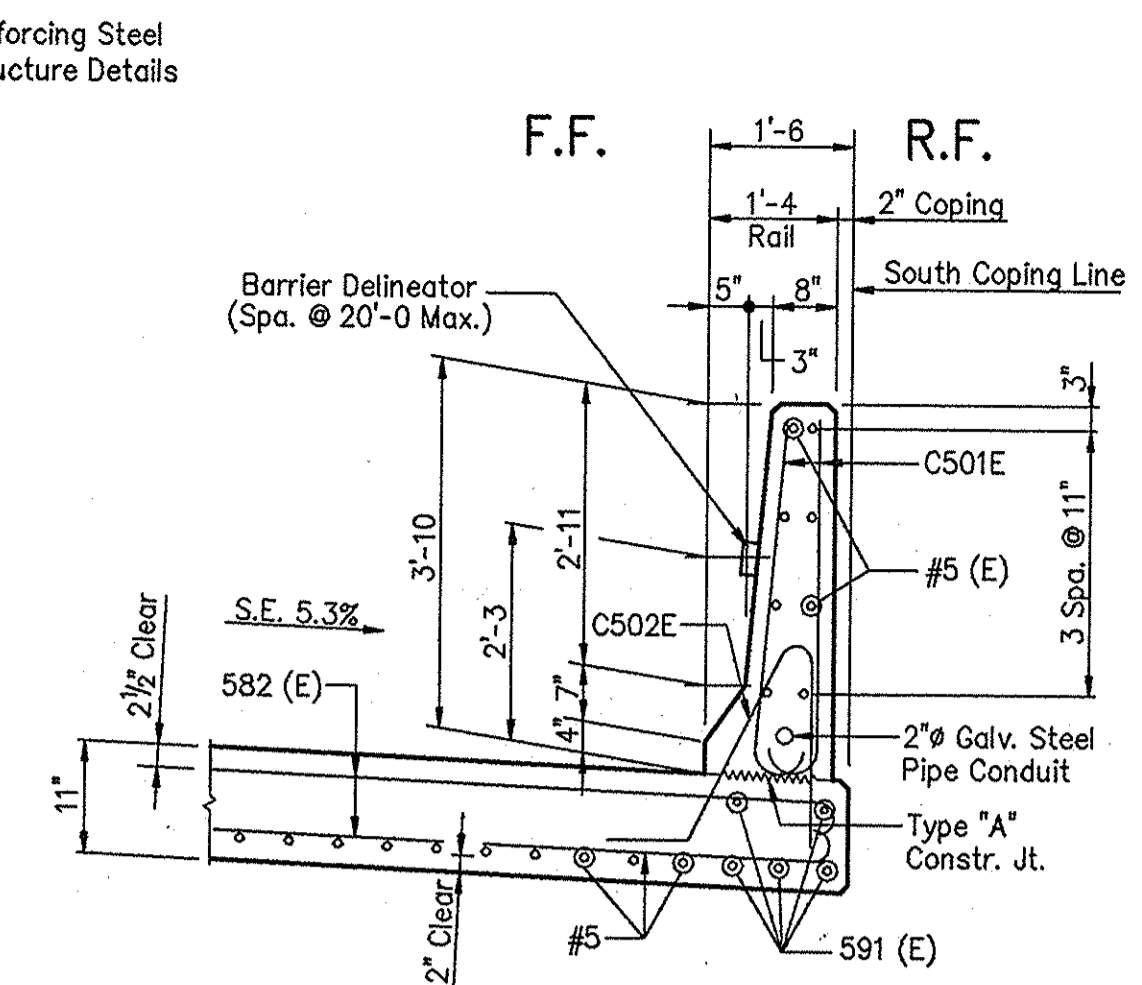
PLAN



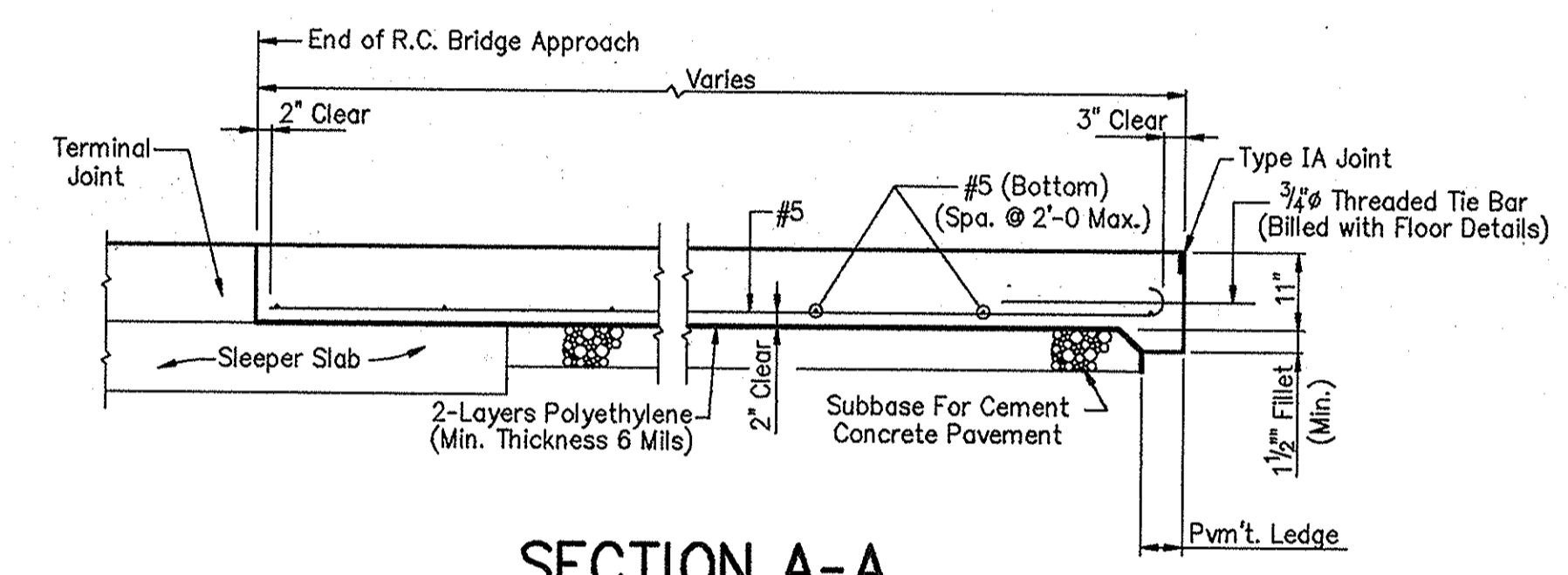
ELEVATION

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

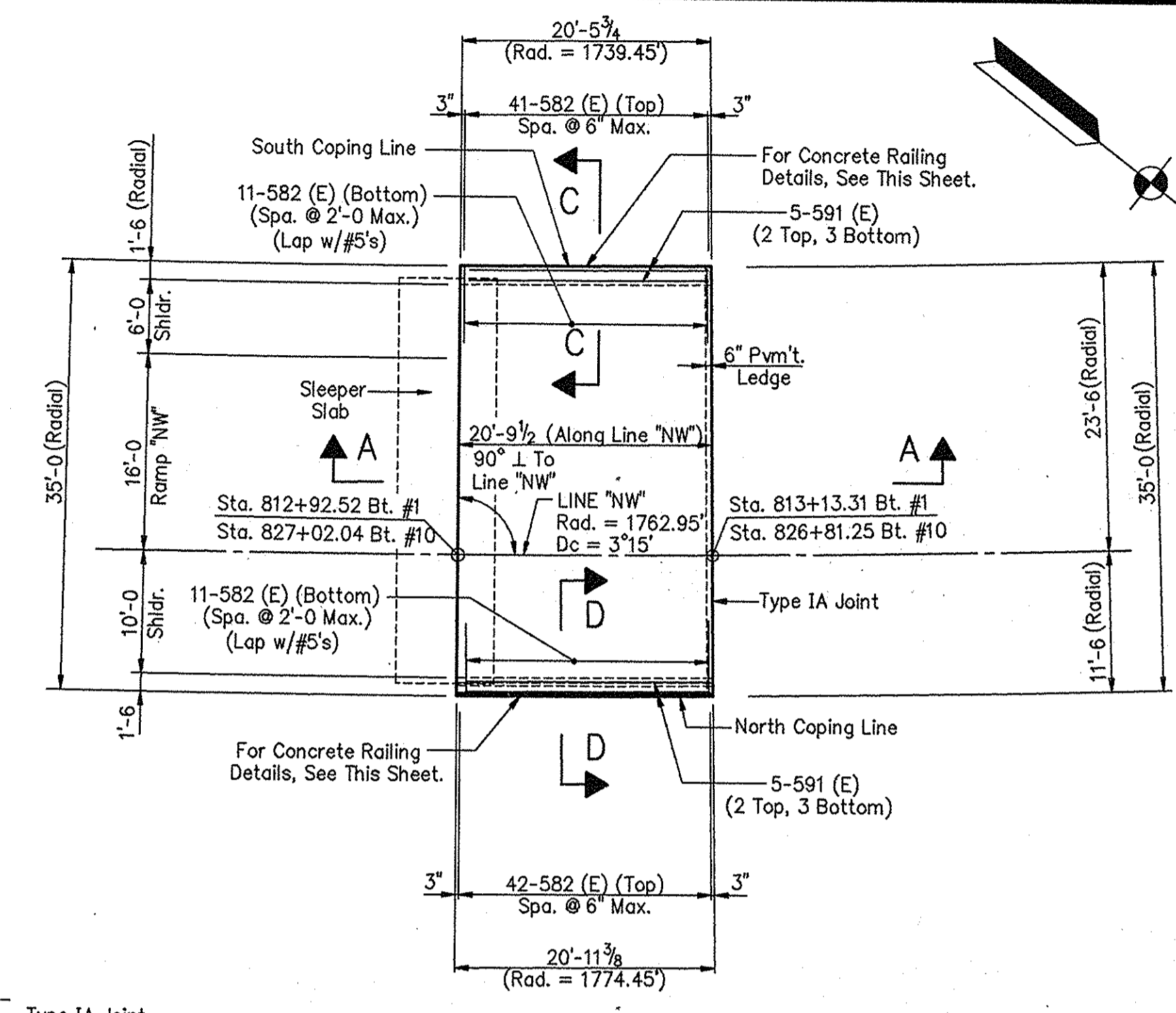
Scale: 3/8" = 1'-0"



SECTION C-C



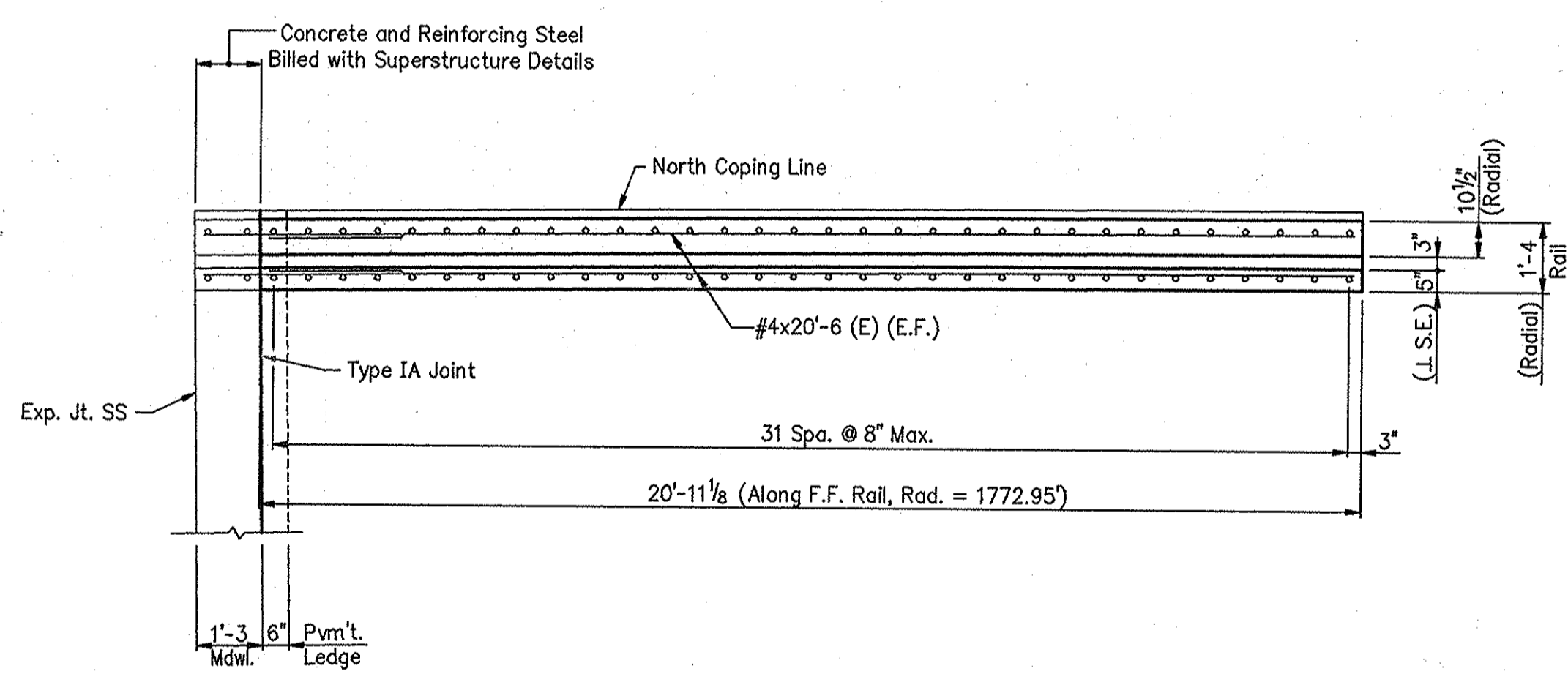
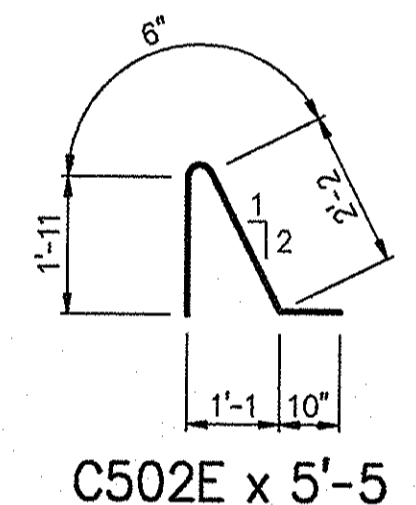
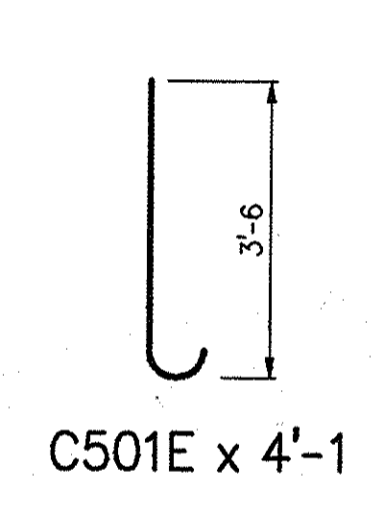
SECTION A-A
Scale: 1/2" = 1'-0"



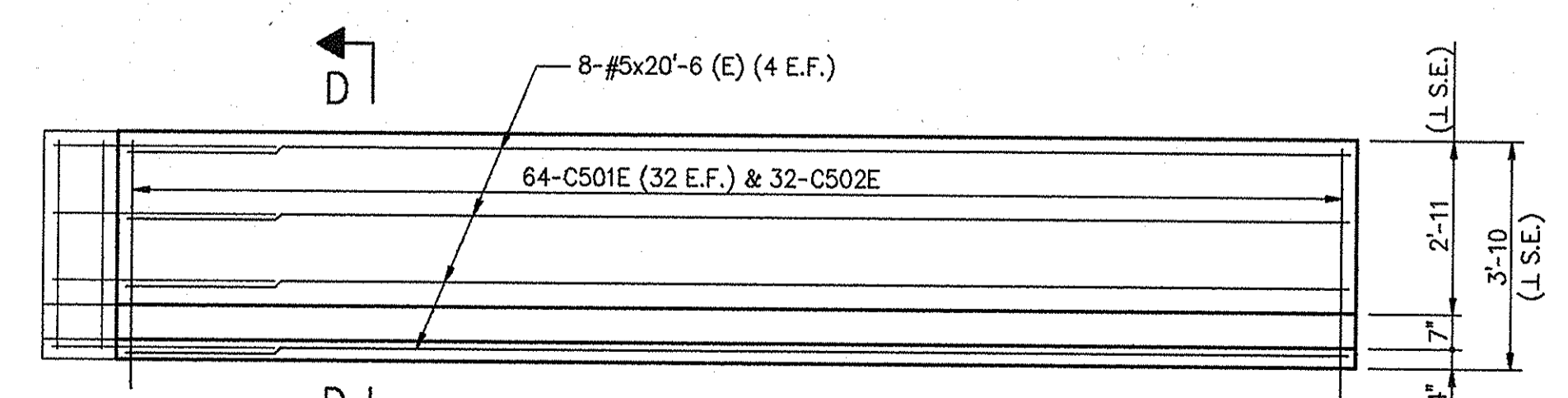
PLAN @ BENT NO. 1
(BENT NO. 10 SAME BY OPPOSITE HAND, EXCEPT AS NOTED)

Scale: 3/32" = 1'-0"

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



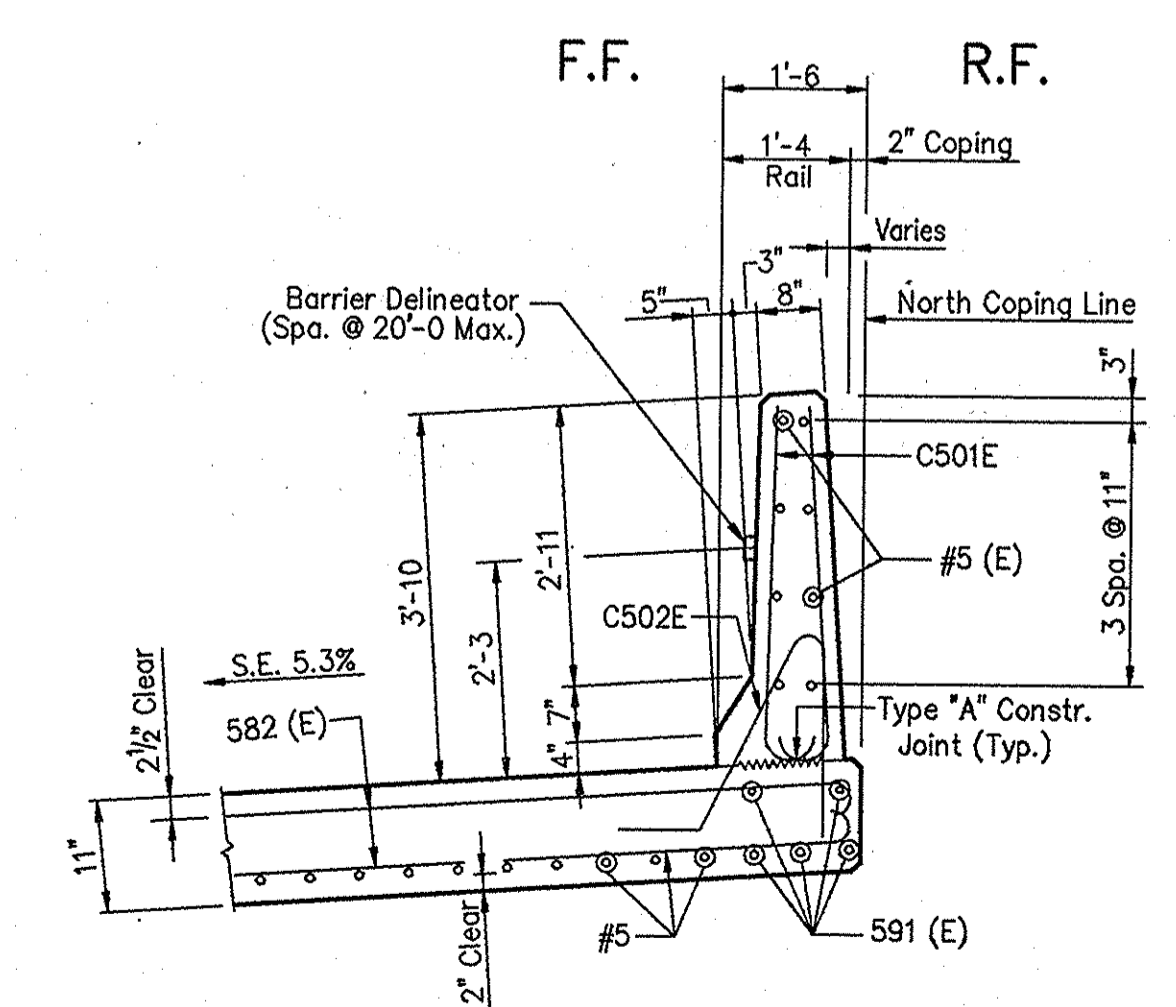
PLAN



ELEVATION

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

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



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

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			
73.6 Sys. Pvm't. x 25.4 Lbs./Sys.			
Total Plain Reinforcing Steel			1869
Concrete			
Concrete Railing Class "C" (3'-10")			
North Coping			2.9 Cys.
South Coping			2.6 Cys.
Total Concrete Railing Class "C" (3'-10")			5.5 Cys.
Cement, Conc, Pvm't., Reinf., 11 Inch			81 Sys.
Miscellaneous			
Subbase For Cement Concrete Pavement			11 Cys.
Surface Seal			350 Sft.
Barrier Delineator			2 Each
Masonry Coating			350 Sft.
2" Galvanized Steel Pipe Conduit			20 Lft.

NOTES:

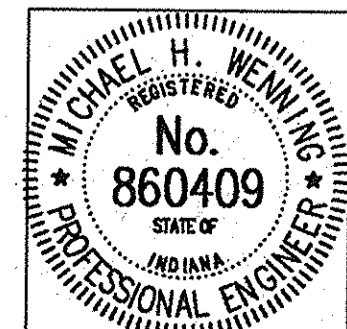
- (E) Indicates epoxy coated reinforcing steel.
- Minimum lap for #5 Bar = 1'-9".
- For reinforcing bar notes, see Bridge Standard C1.
- For Type IA Joint installation details, see Bridge Standard C3.
- For additional notes and details, see Road Standard Sheets RCBA-1 and RCBA-2.

R.C. BRIDGE APPROACH DETAILS

INDIANA DEPARTMENT OF TRANSPORTATION

SCALE: - As Noted DATE: - July 9, 1998
SUBMITTED FOR APPROVAL *Michael H. Wenzling*

DRAWING: - OF SHEET: - 9 OF 65
PROJECT: - IM-80-1 (143)4
CONTRACT NO. R-23808
BRIDGE FILE: - I-80-5-7828



DESIGNED: DSH 3/10/98 CK'D: MHW 5/29/98
DRAWN: DSH 3/10/98 CK'D: MHW 5/29/98
TRACED: CK'D:
DWG FILE: C:\P\144\97144804
PLOT SCALE: 1:125.000
PLOT ORIGIN: 0.00,0.00
SPELLOK: 07/10/98 12:53:18
EDITED BY: 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 DWGS NO. C13 & C14.

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

TRANSVERSE TENDONS (4X0.6" STRANDS) SHALL USE POLYETHYLENE 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-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 = 3240 SFT. FOR BARRIER RAILING, SEE DWG. C21

SUBSTRUCTURE DETAILS-
GENERAL NOTES

INDIANA DEPARTMENT OF TRANSPORTATION
LAKE COUNTY

SCALE: - NOT TO SCALE

DATE: - July 10, 1998

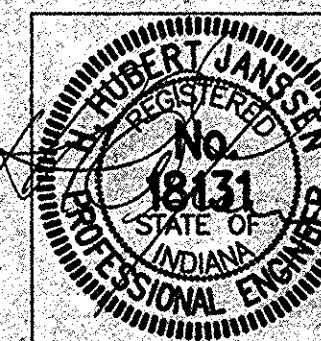
SUBMITTED FOR APPROVAL

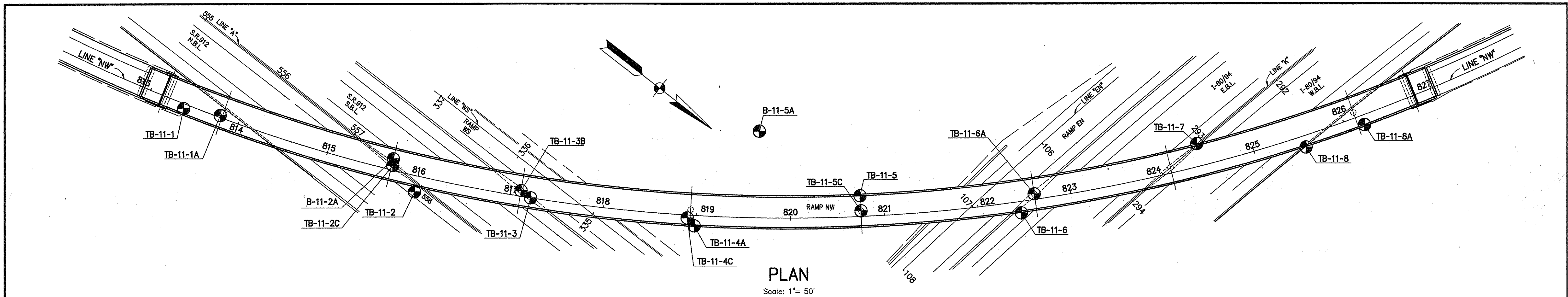
DRAWING: - 1 OF 1 SHEET: - 10 OF 65

PROJECT: - NH-80-1 () 4

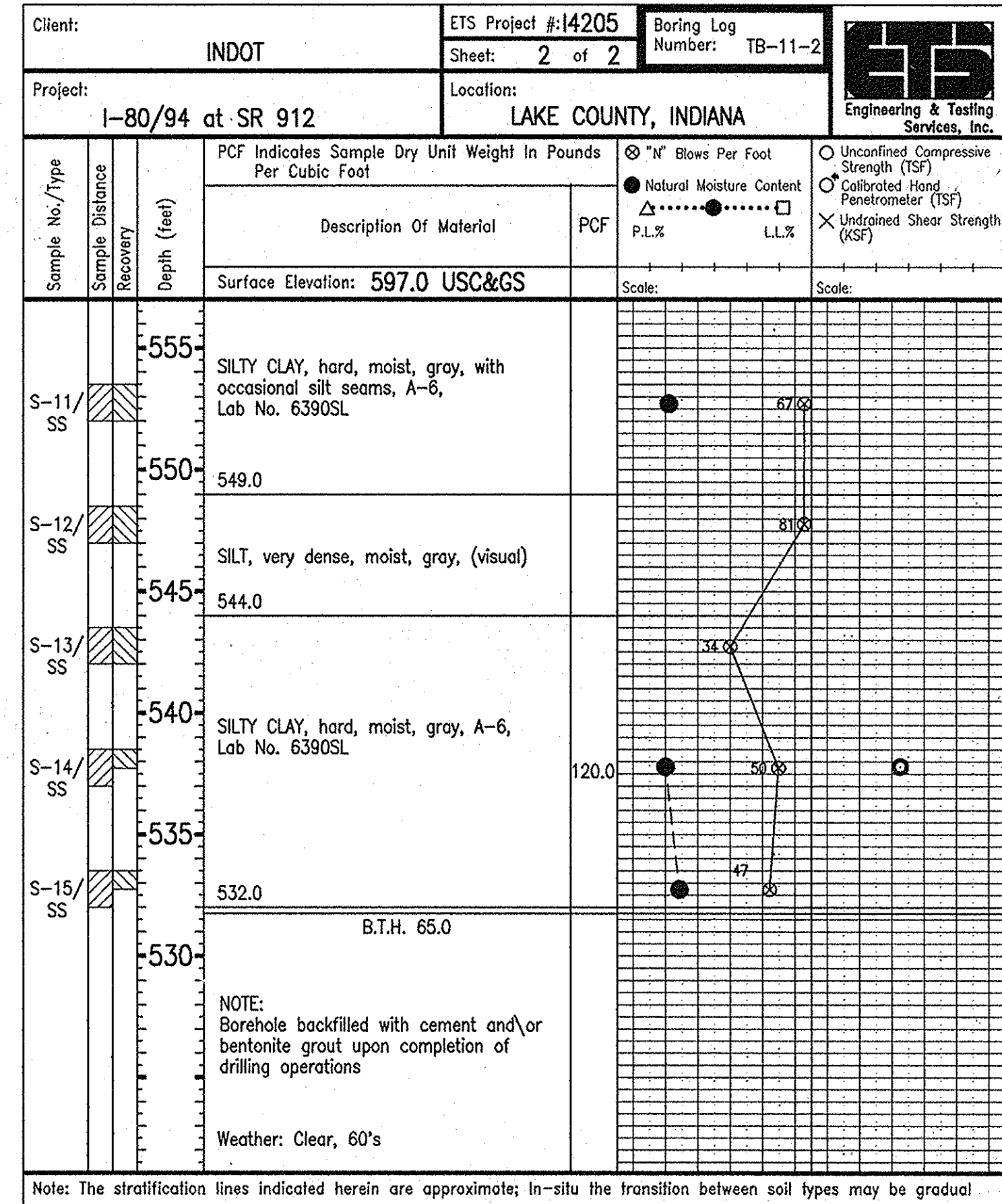
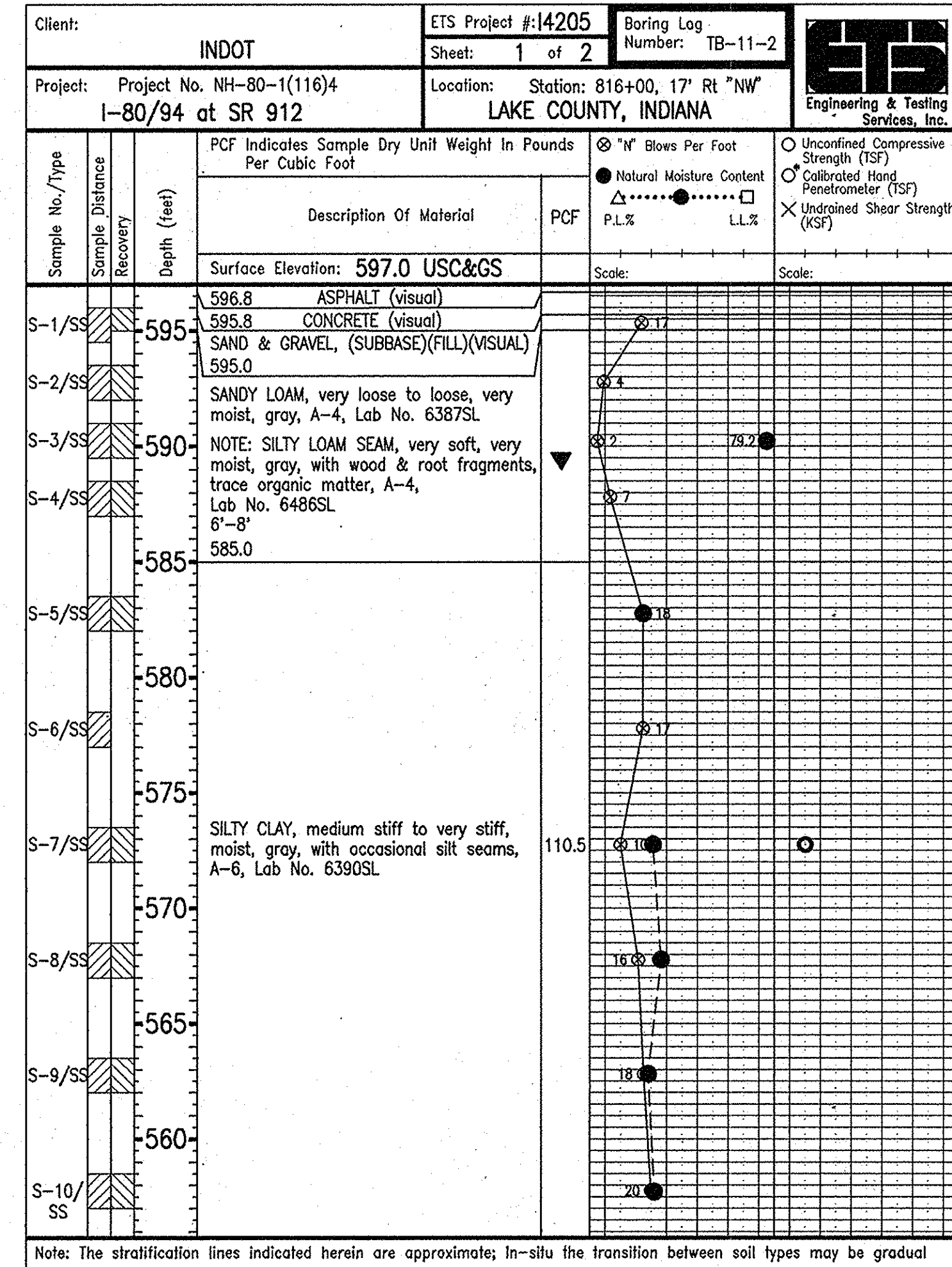
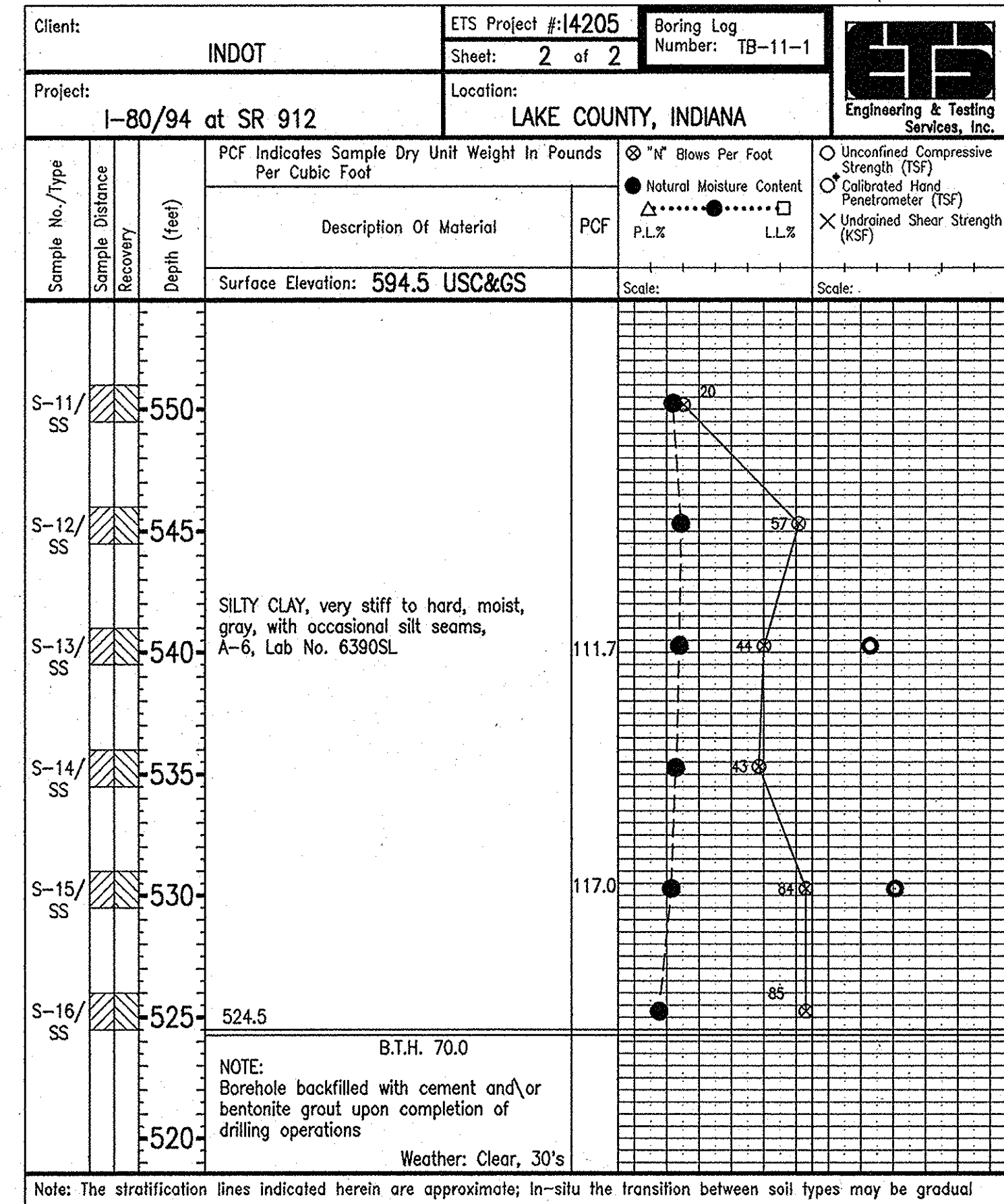
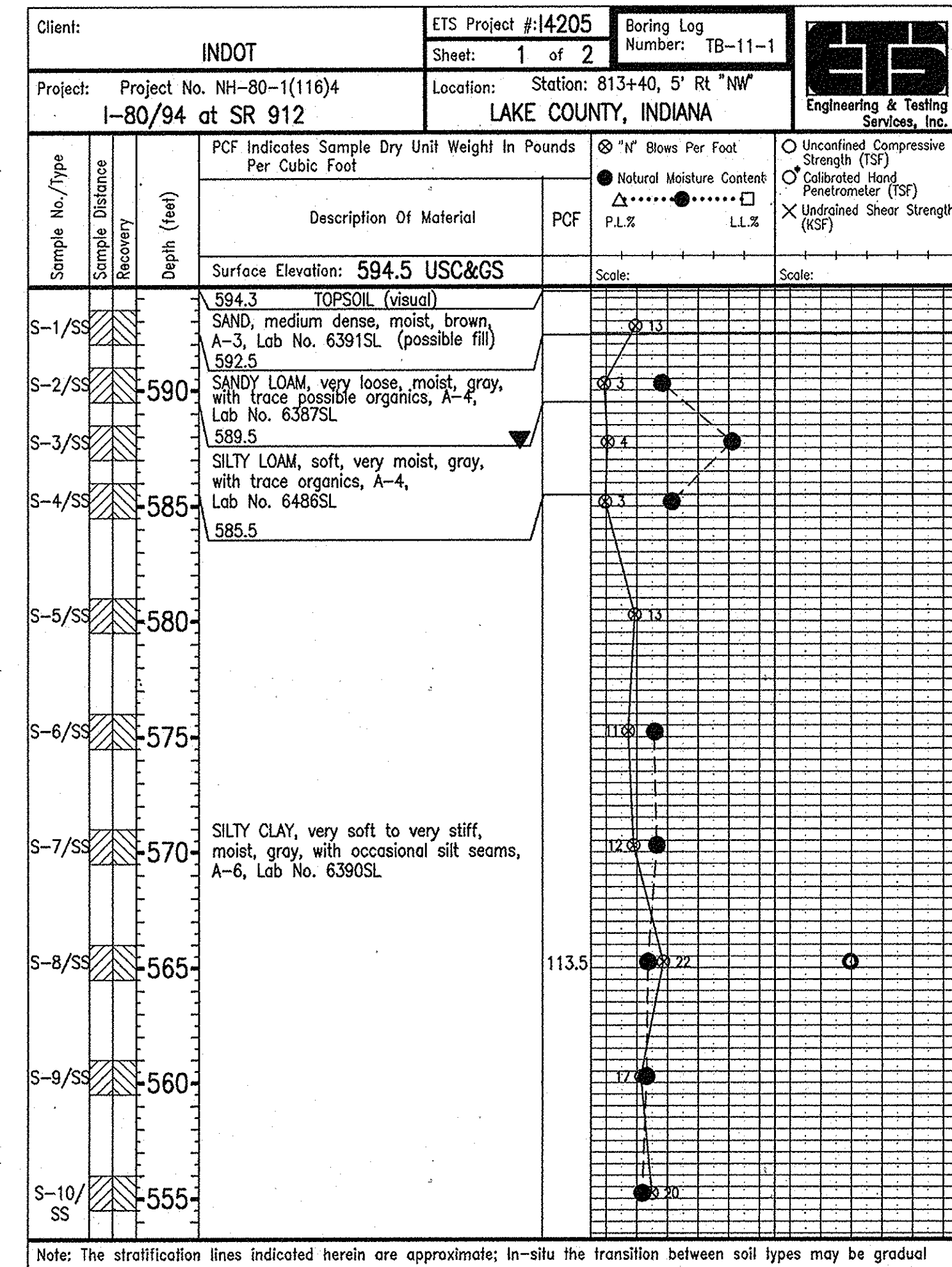
CONTRACT NO.

BRIDGE FILE: - I-80-5-7828





PLAN
Scale: 1"= 50'



BENT	NO. 1	NO. 8
ALLOWABLE DESIGN LOAD	55 ± 90 Tons	55 ± 90 Tons
FACTOR OF SAFETY	2.5 ± 2.0	2.5 ± 2.0
FACTORED DESIGN LOAD	138 ± 80 Tons	138 ± 80 Tons
SCOUR ZONE FRICTION	0 Tons	0 Tons
DOWN DRAG FRICTION	50 ± Tons	50 ± Tons
ULTIMATE LOAD (BEARING)	188 ± 80 Tons	194 ± 80 Tons
TESTING METHOD	By Formula, Standard Specifications 701.06	

NOTES:

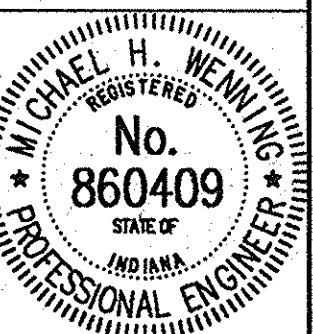
- ▼ Indicates Ground Water Level
- N Indicates the number of blows required to drive a 1 3/8" I.D., 2" O.D. Split Spoon sampler 12" by means of a 140 lb. weight falling 30".

9-1-98 Revised: Pile Loading For Geotechnical Testing Values.

SOIL BORINGS
INDIANA DEPARTMENT OF TRANSPORTATION

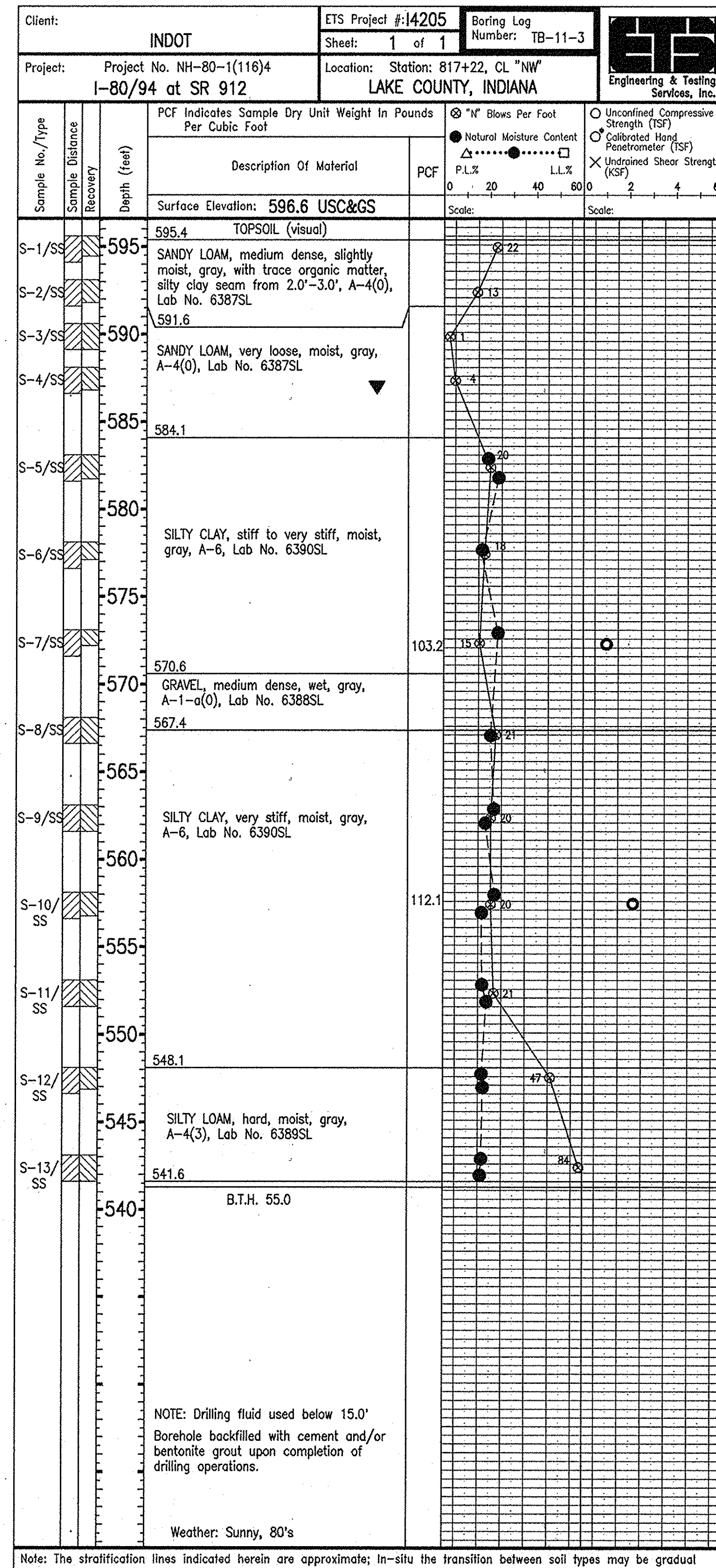
SCALE: - Horiz. 1"=40'
Vert. 1"=5'
DATE: - July 9, 1998
SUBMITTED FOR APPROVAL: *[Signature]*

DRAWING: - OF SHEET: - 11 OF 65
PROJECT: - IM-80-1(143)4
CONTRACT NO. R-23808
BRIDGE FILE: - I-80-5-7828



DESIGNED: CKD
DRAWN: JDC 12/10/92
TRACED: CKD

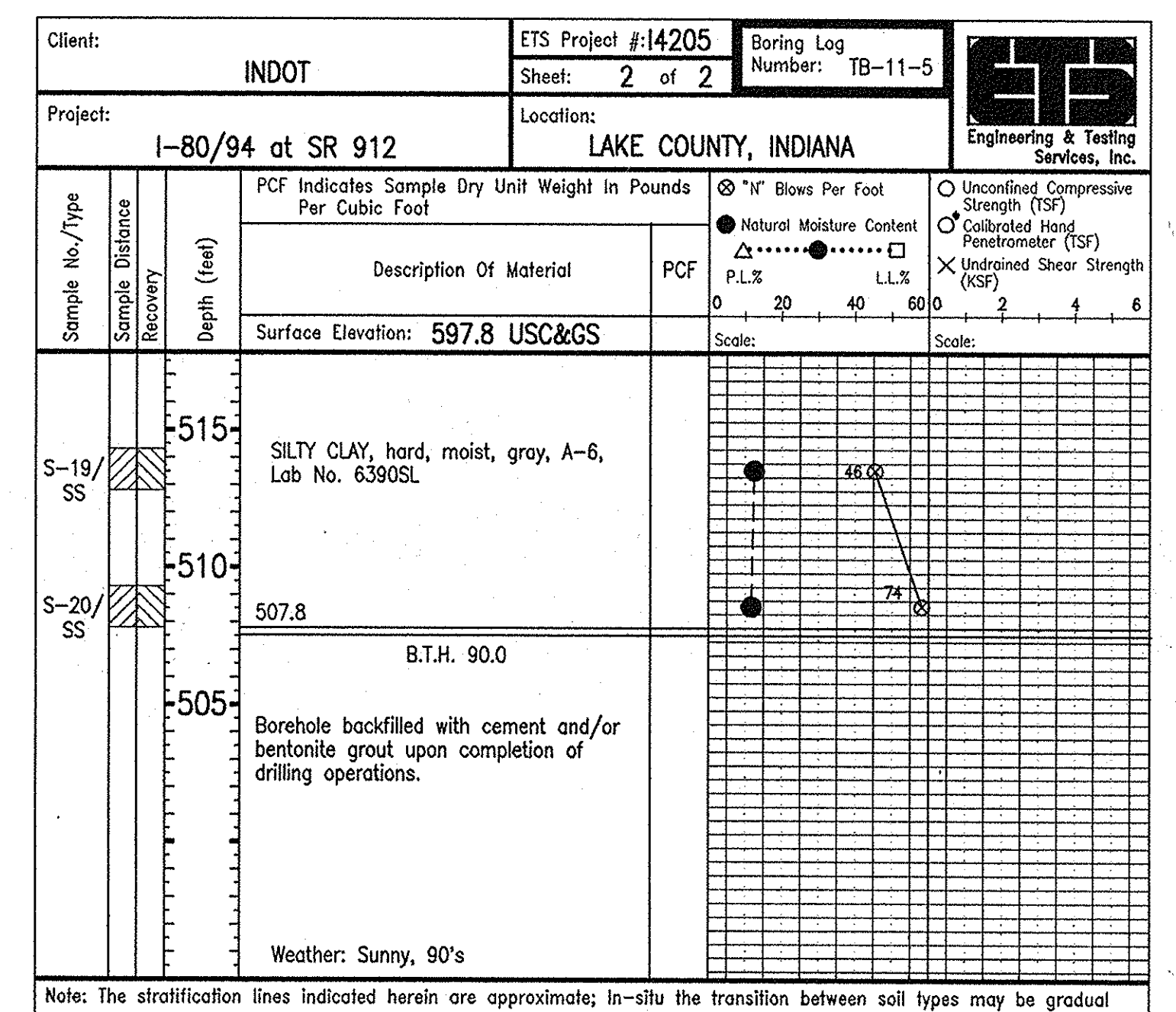
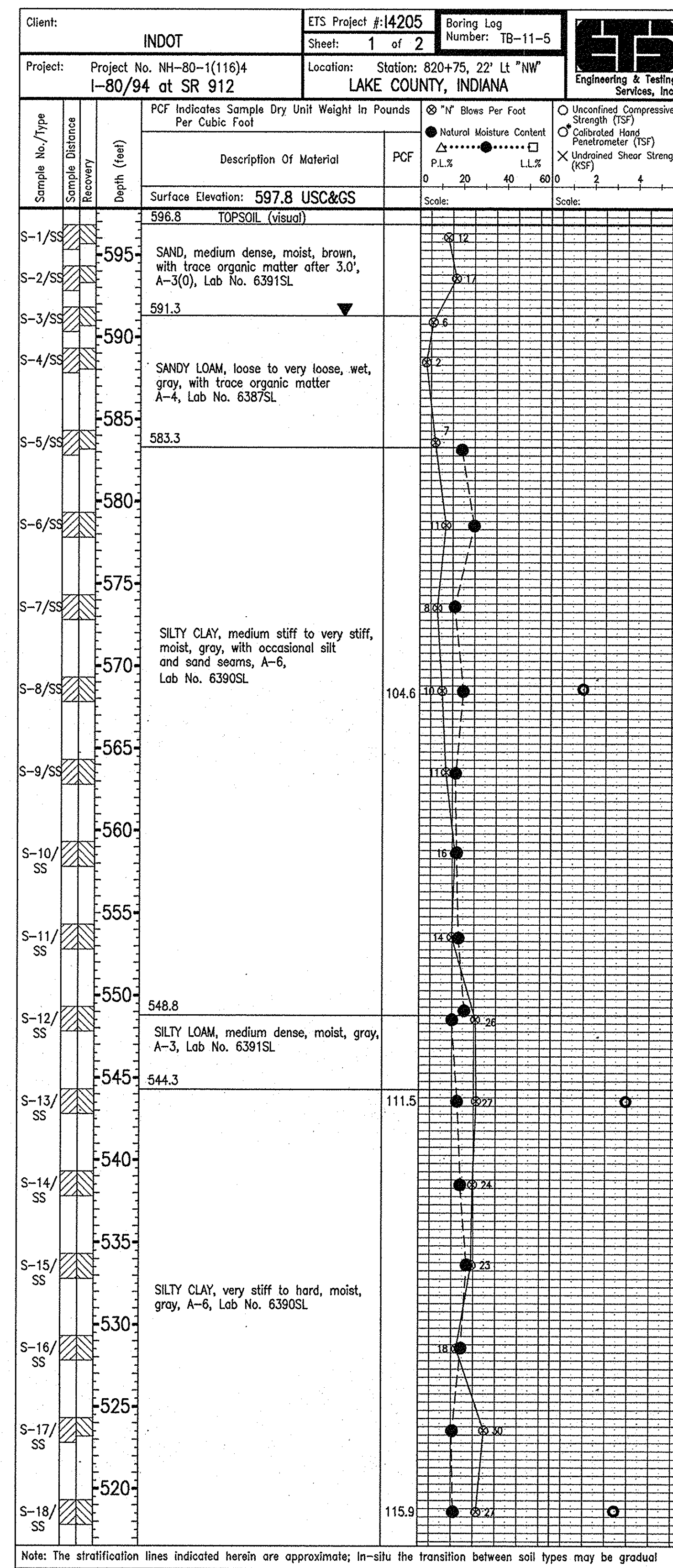
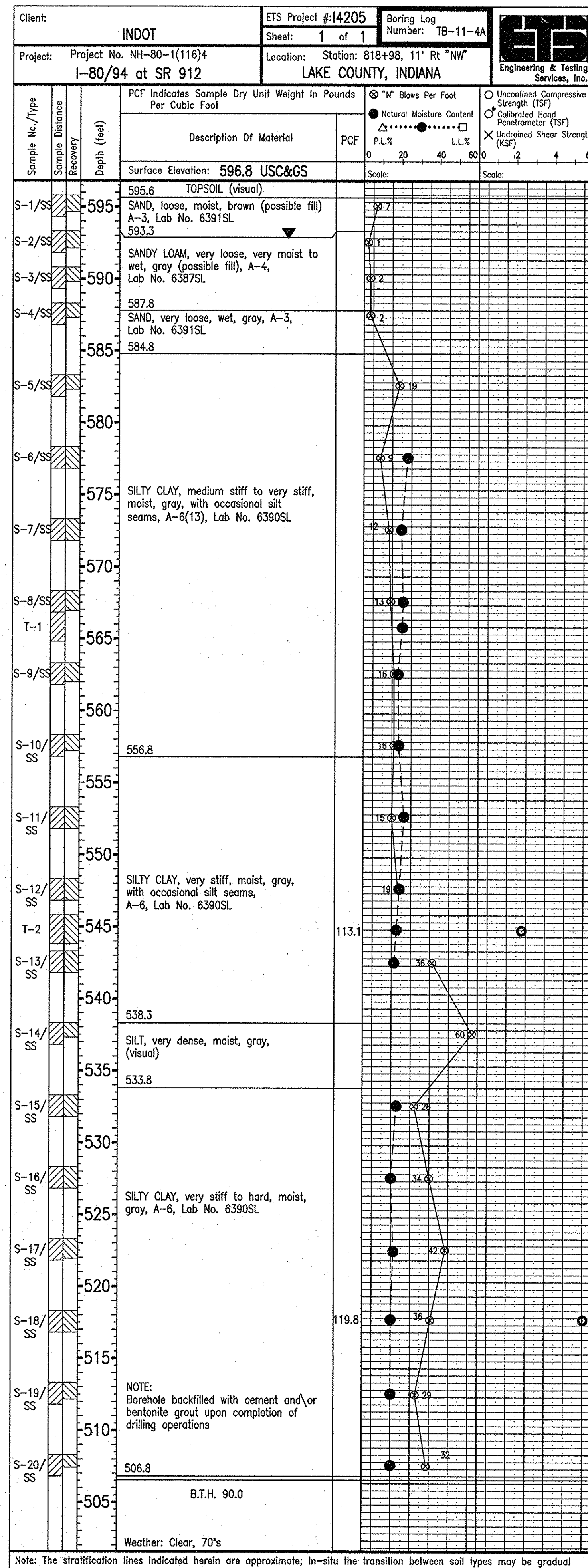
SP: 07/14/97 44511
PLOT SCALE: 1:1200
PLOT ORIGIN: 0.00,0.00
SPELLOW: 07/08/98 09:34:18
EDITED BY: DSH - 591



DESIGNED: CKD
DRAWN: JDC 12/10/92 CKD MHW 6/16/93
TRACED: CKD

DWG FILE: C:\DTP\141\07144512
PLOT SCALE: 1:1,000
PLOT ORIGIN: 0,00,000

SPELLCHK: 08/02/98
EDIT DATE: 08/02/98
EDITED BY: DSH - 581



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. Womack*

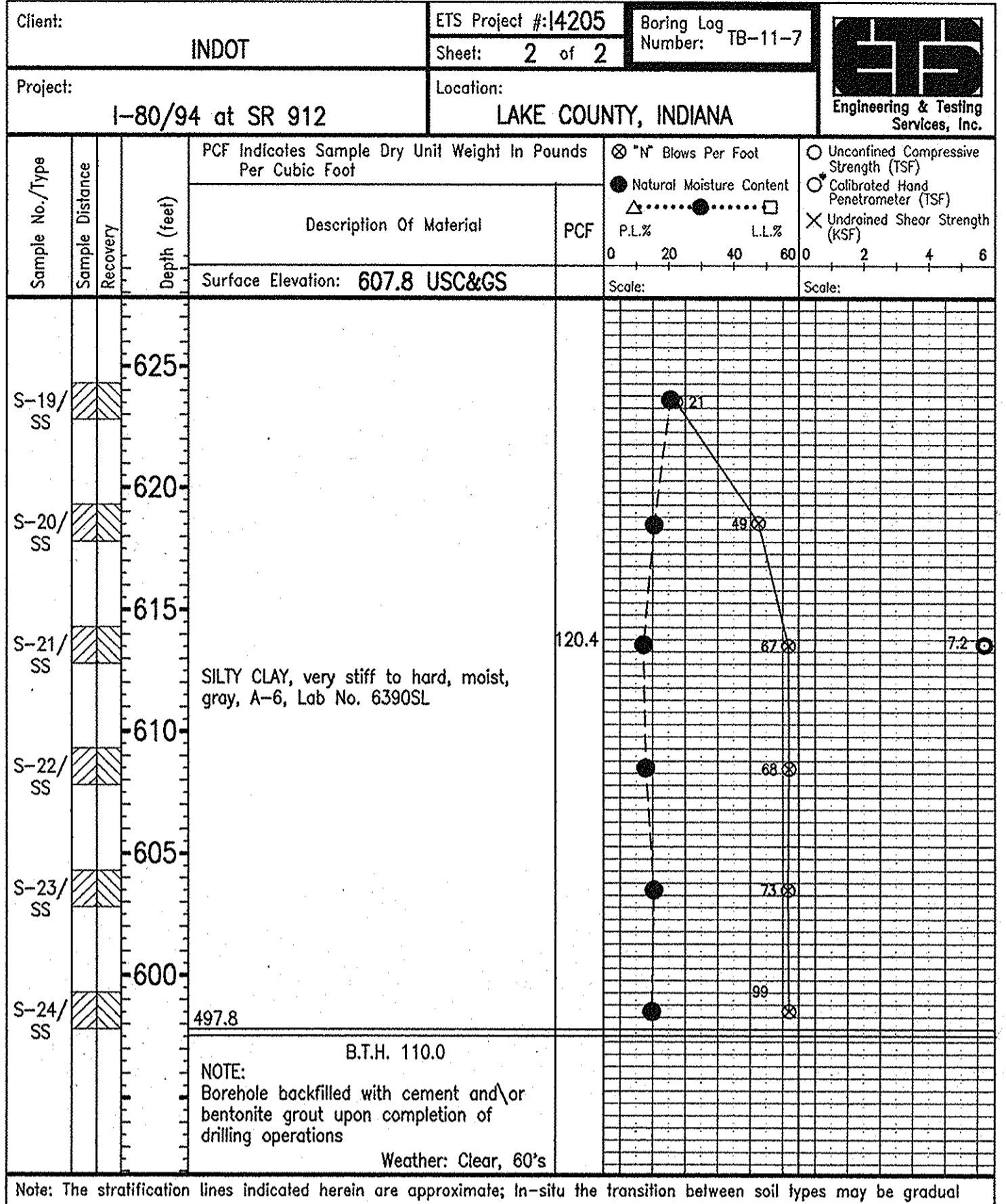
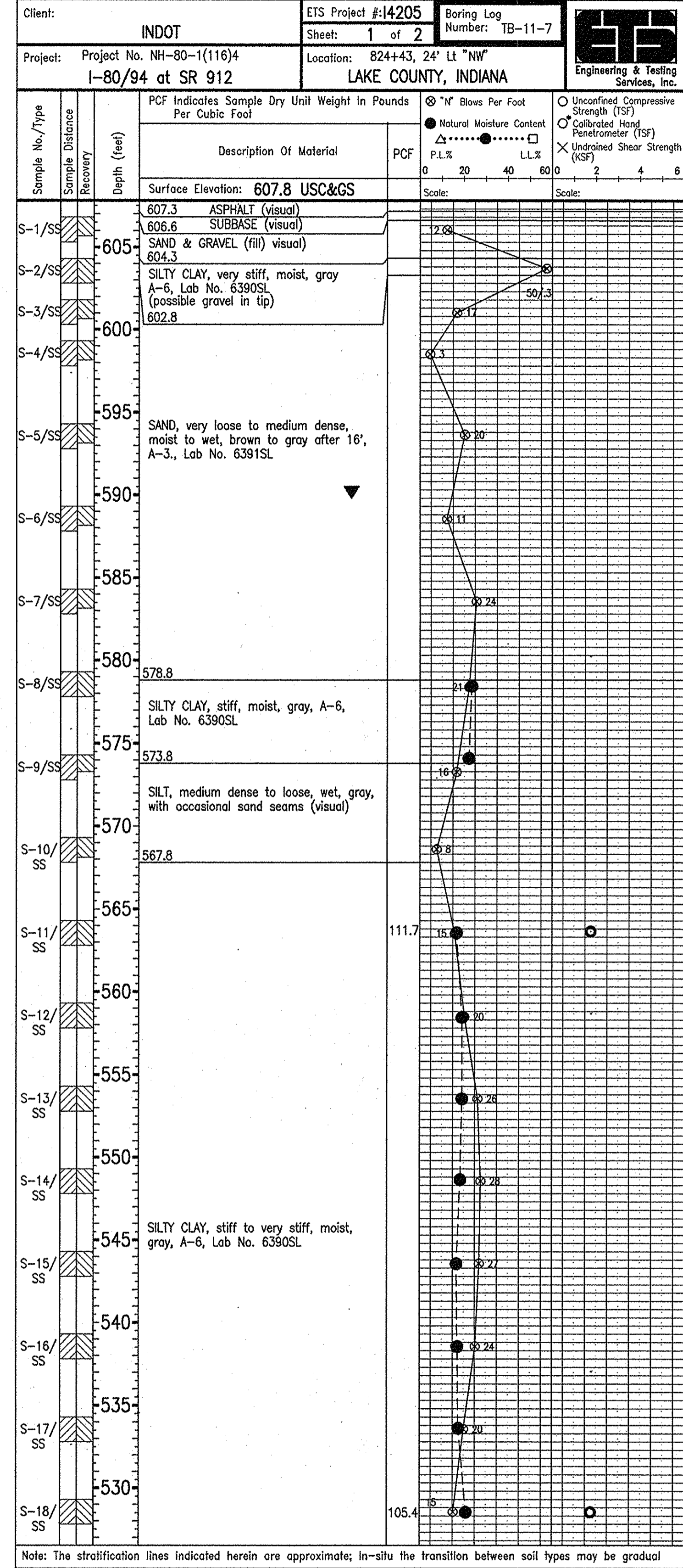
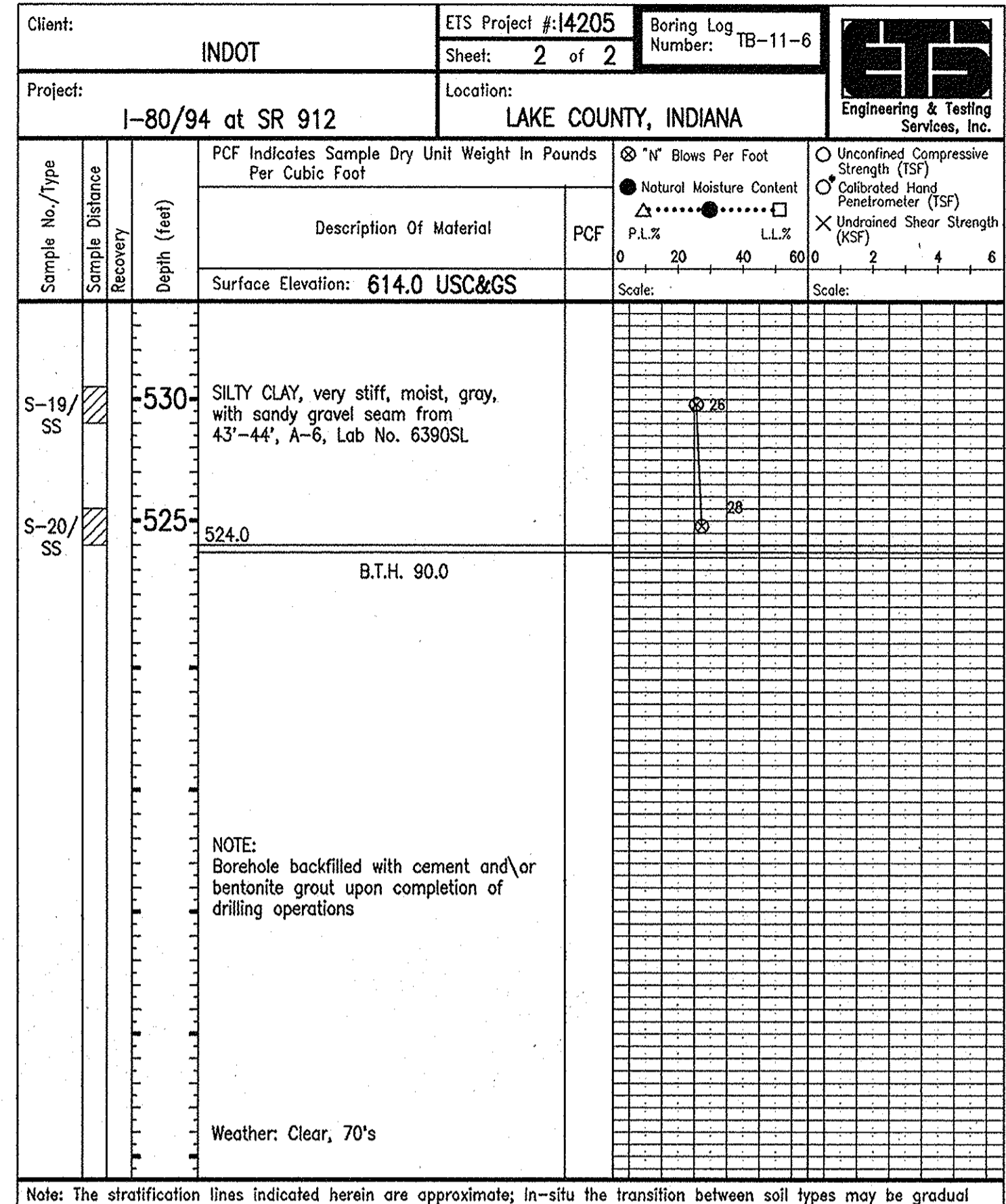
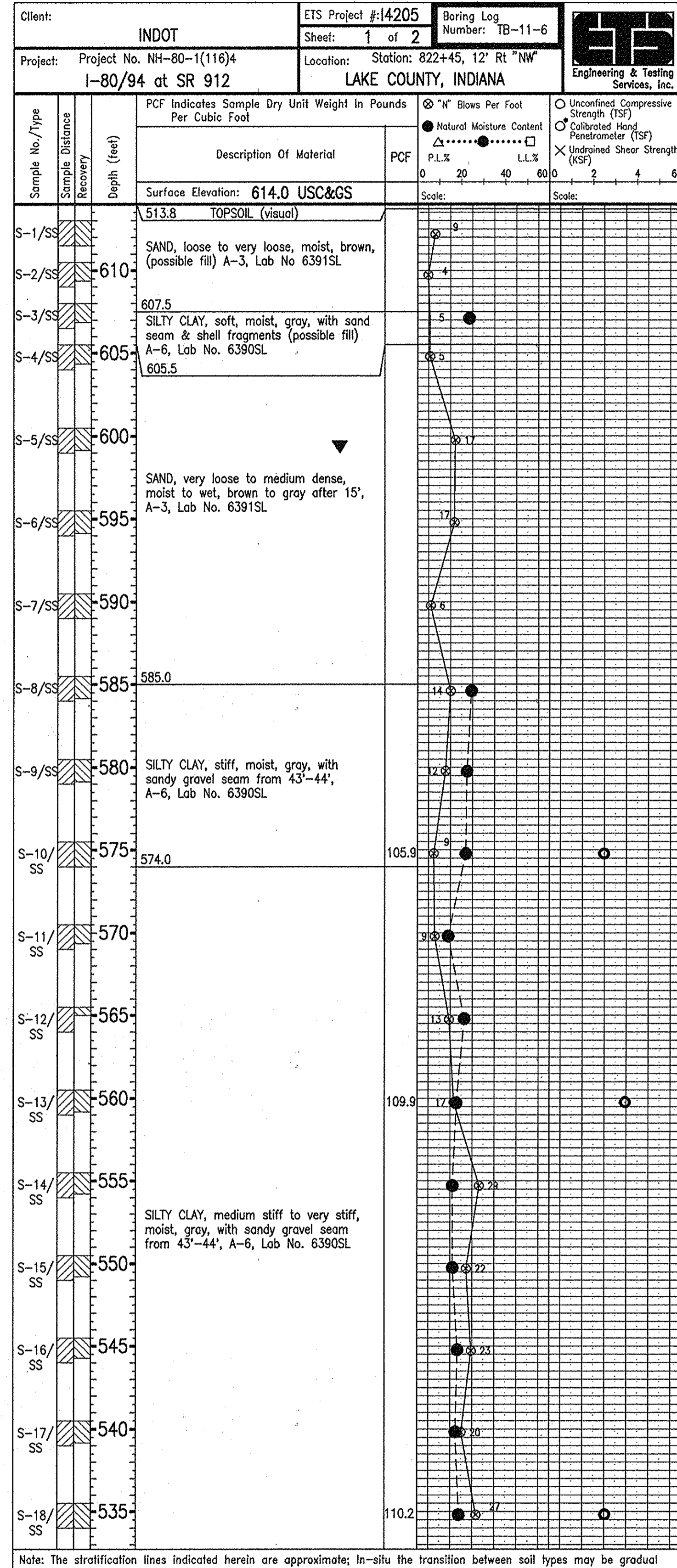
DRAWING: - OF SHEET: - 12 OF 65

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

CONTRACT NO. R-23808

BRIDGE FILE: - I-80-5-7828

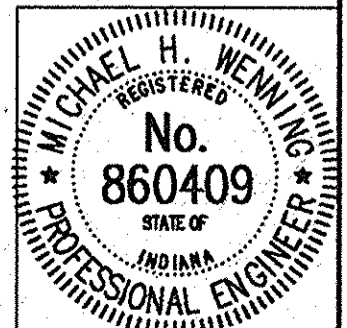




NOTES:
 ▼ Indicates Ground Water Level
 N Indicates the number of blows required to drive a 1 3/8" I.D., 2" O.D. Split Spoon sampler 12" by means of a 140 lb. weight falling 30".

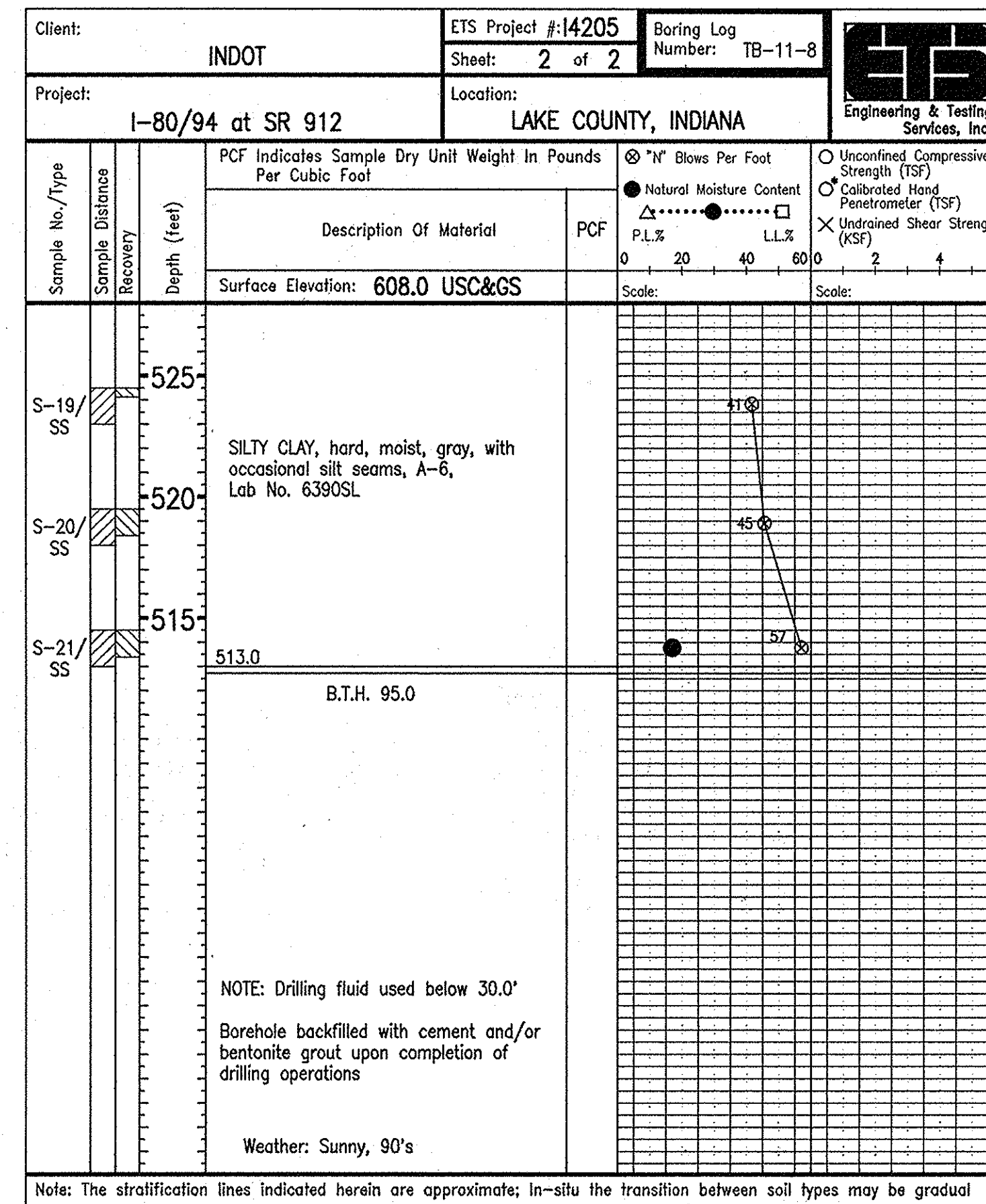
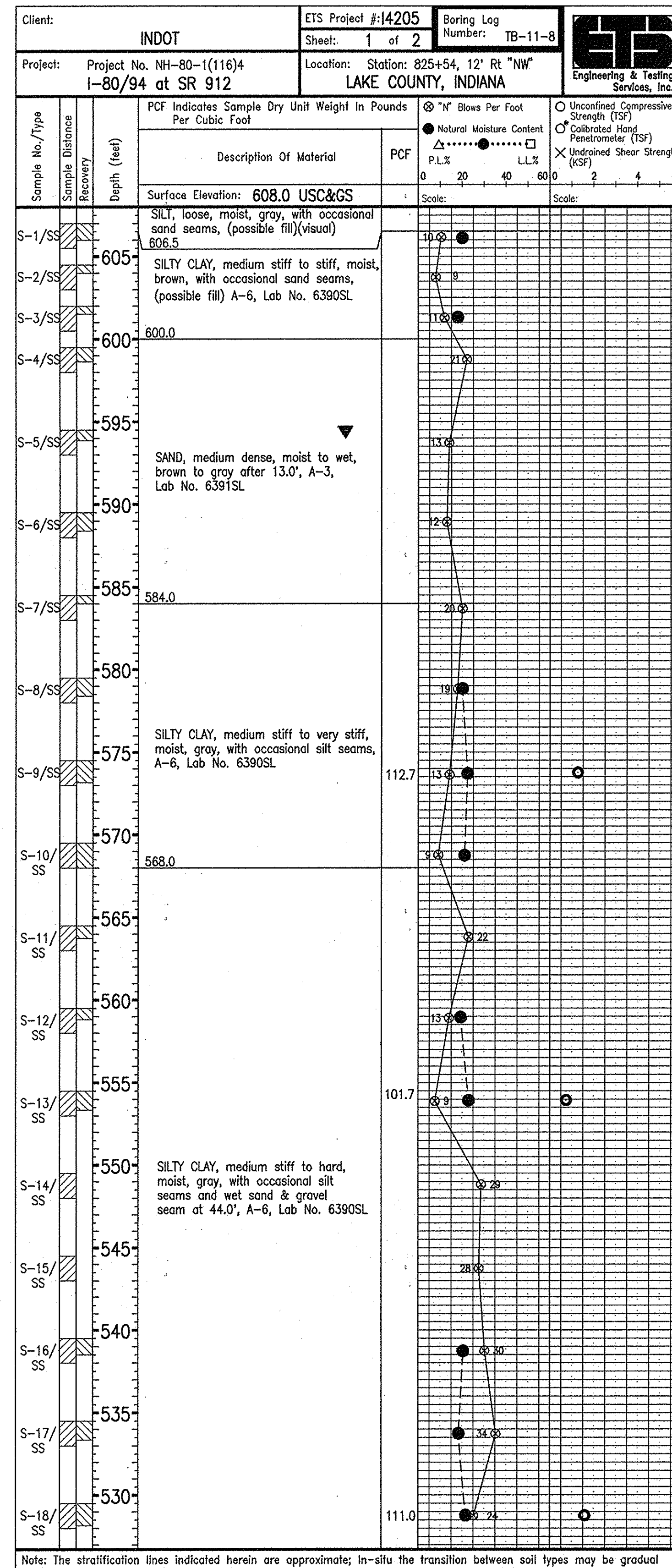
SOIL BORINGS
 INDIANA DEPARTMENT OF TRANSPORTATION

SCALE: - Horiz. 1"=40'
 Vert. 1"=5'
 DATE: - May 29, 1998
 SUBMITTED FOR APPROVAL: *Michael H. Deering*
 DRAWING: - OF SHEET: - 13 OF 65
 PROJECT: - IM-80-1(143)4
 CONTRACT NO. R-23808
 BRIDGE FILE: - I-80-5-7828



DESIGNED: CKD
 DRAWN: JDC 12/10/92
 TRACED: CKD
 CHECKED: MHW 6/16/93

DWG FILE: C:\PT\144\97144513
 PLOT SCALE: 1:1,000
 PLOT ORIGIN: 0.00,0.00
 SHELLING: 06/02/98
 EDIT DATE: DSH - S91



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

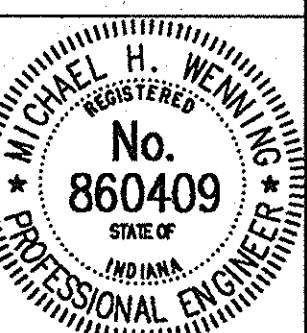
SUBMITTED FOR APPROVAL *Michael W. ...*

DRAWING: - OF SHEET: - 14 OF 65

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

CONTRACT NO. R-23808

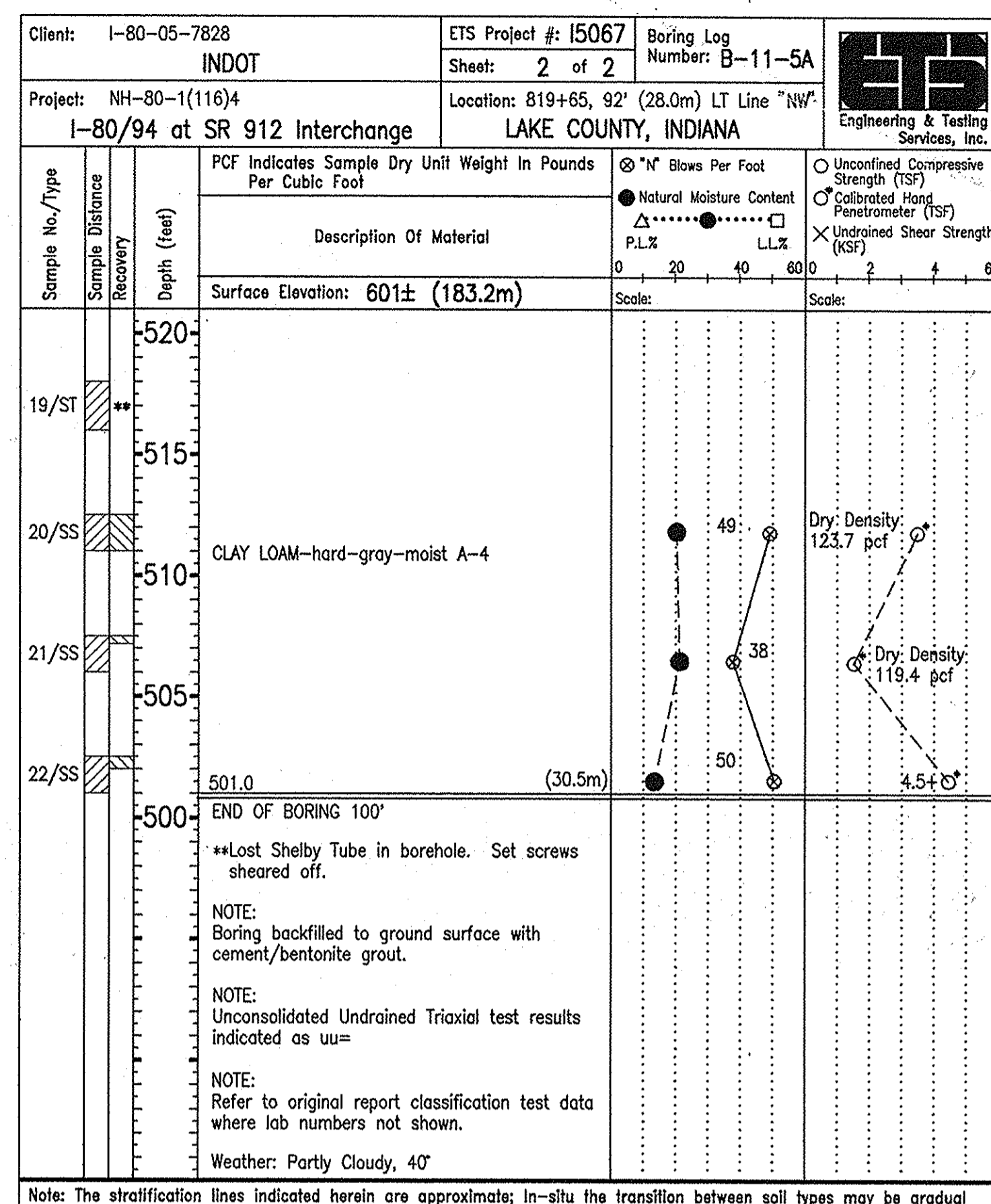
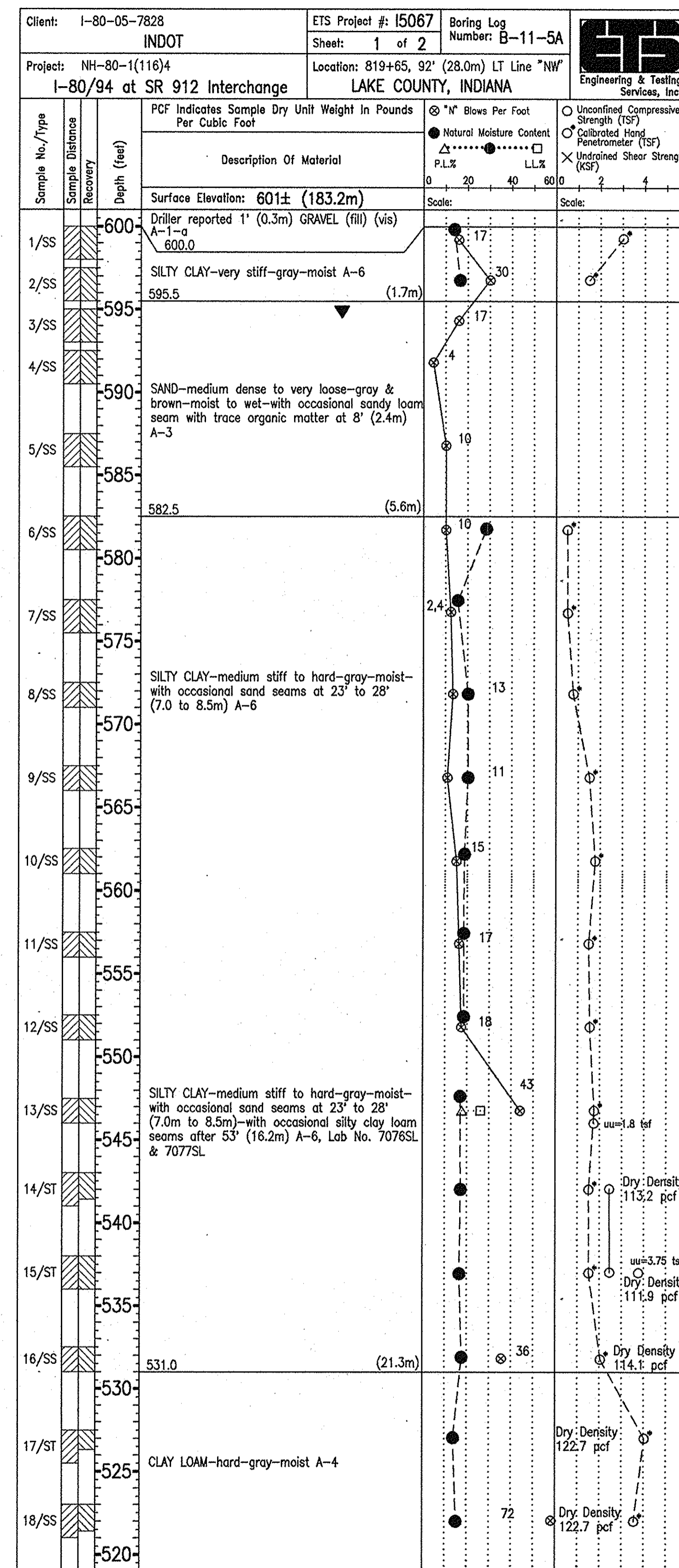
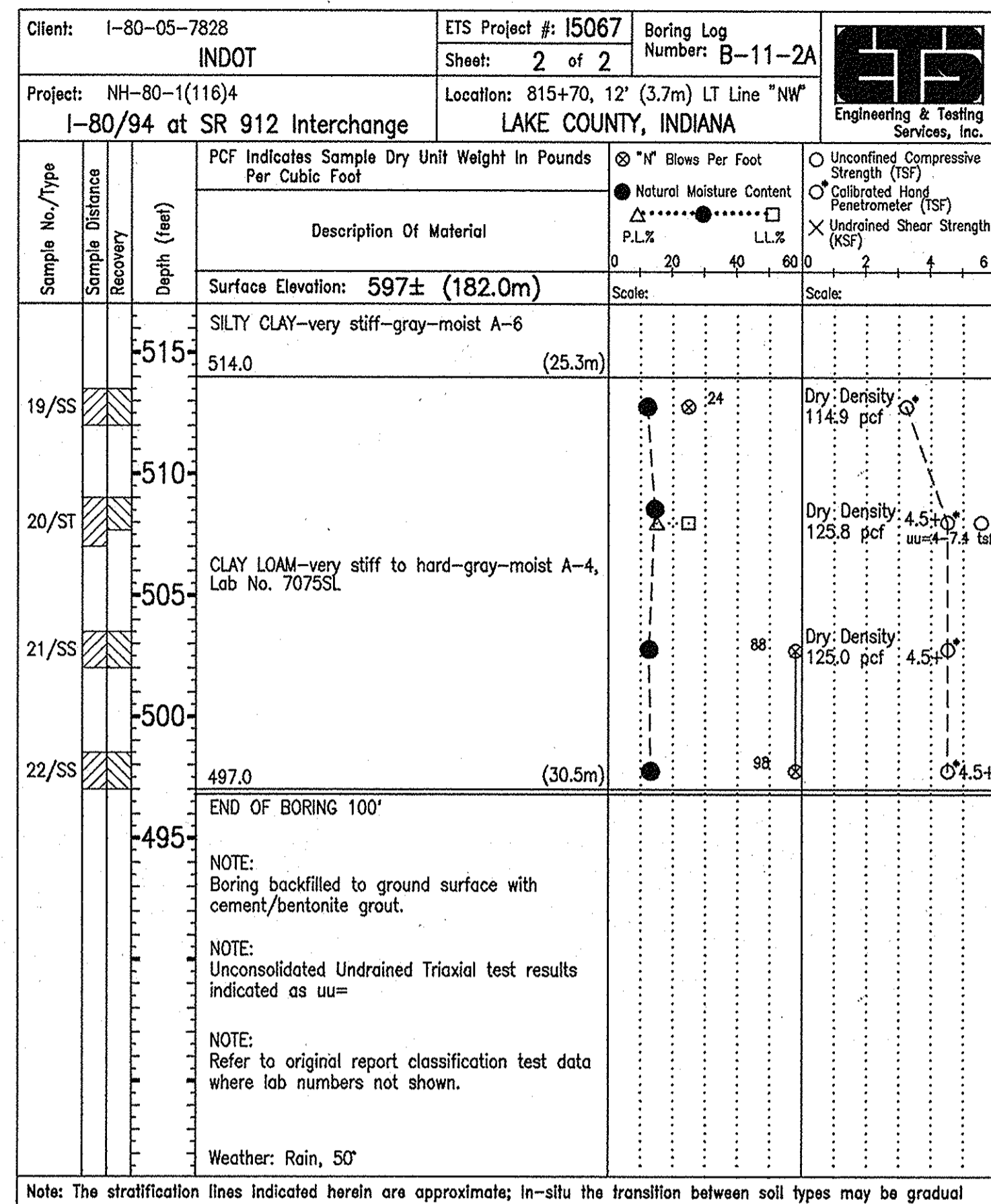
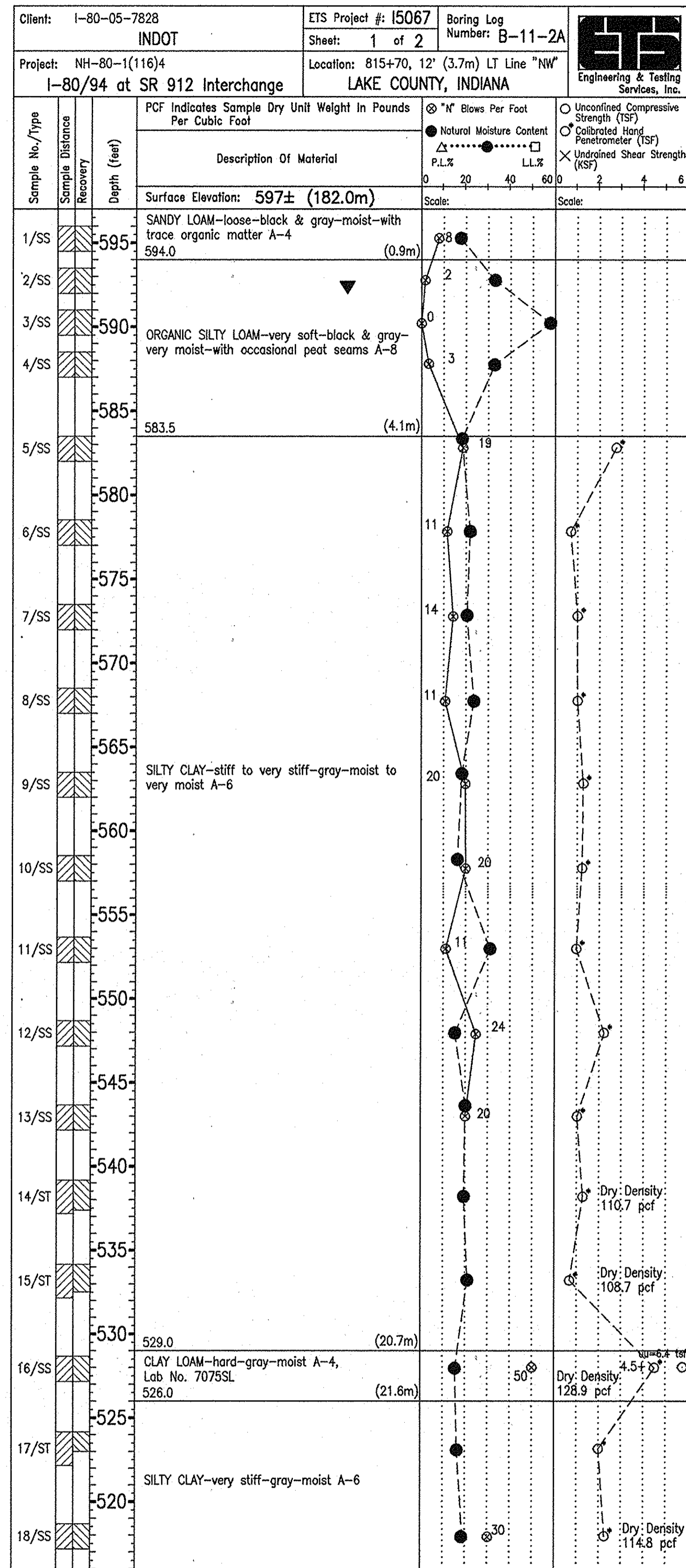
BRIDGE FILE: - I-80-5-7828



DESIGNED: C.K.D.
DRAWN: JDC 12/10/92 C.K.D. MHW 6/16/93
TRACED: C.K.D.

DWG FILE: C:\PT\144\87144S14
PLOT SCALE: 1:1,000
PLOT ORIGIN: 0.00,0.00

SPELLING: 08/02/98
EDIT DATE: 08/02/98
EDIT 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: - May 29, 1998

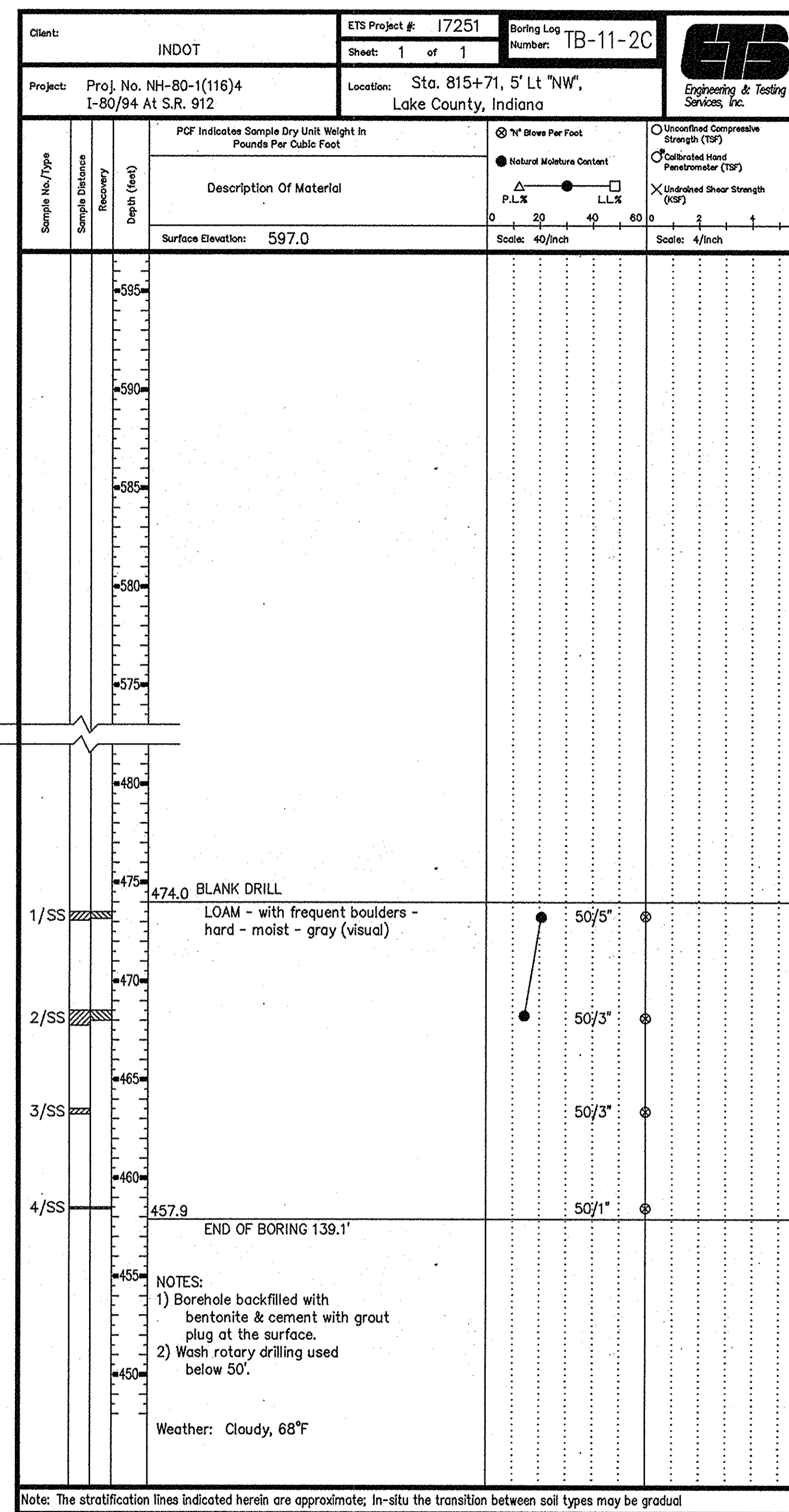
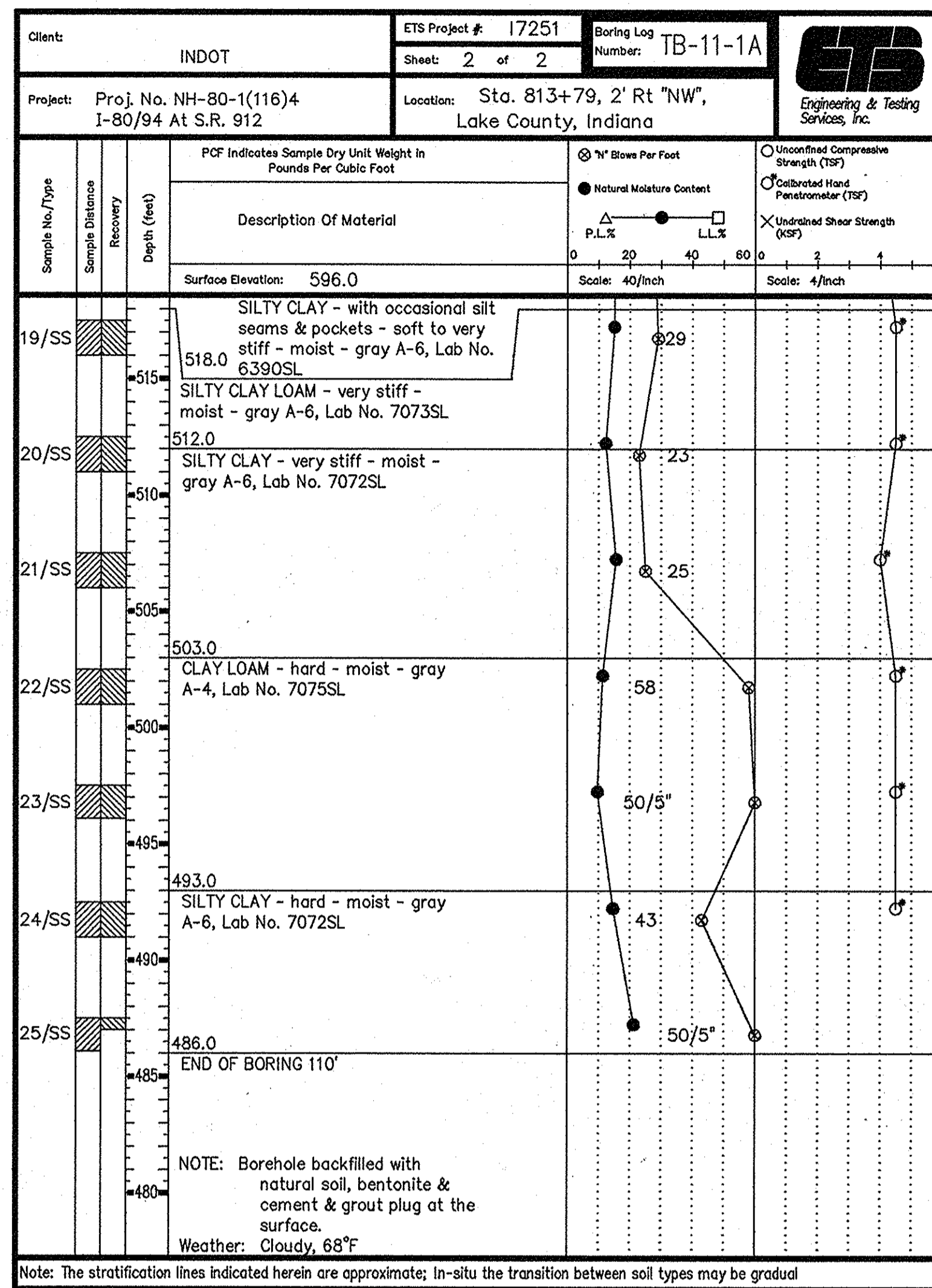
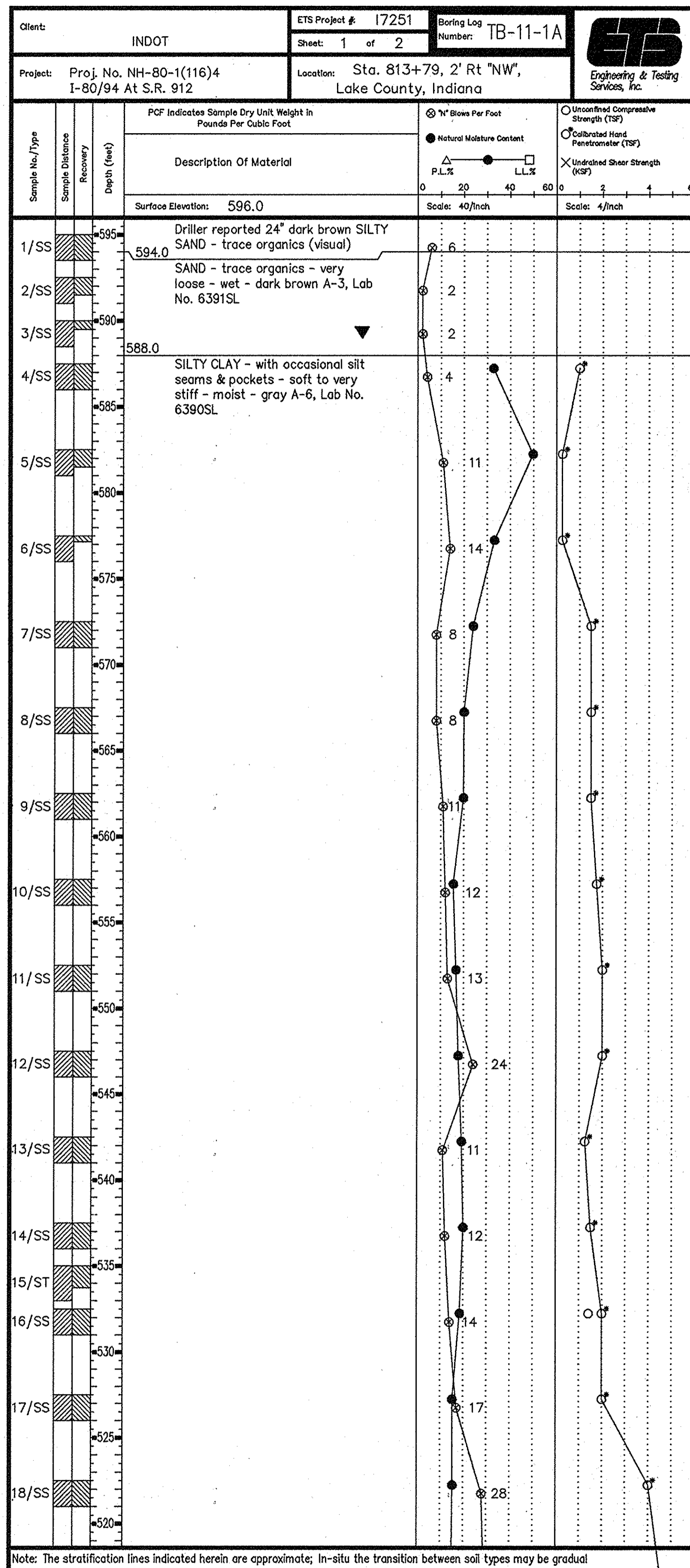
SUBMITTED FOR APPROVAL *Michael H. Demany*

DRAWING: - OF SHEET: - 15 OF 65
PROJECT: - IM-80-1 (143)4
CONTRACT NO. R-23808
BRIDGE FILE: - I-80-5-7828



DESIGNED: _____ CK'D: _____
DRAWN: DDG 1/20/94 CK'D: MHW 1/21/94
TRACED: _____ CK'D: _____

DRG FILE: C:\971\44\97144515 SPELLOK: 06/02/88
PLOT SCALE: 1:1000 EDIT DATE:
PLOT ORIGIN: 0.00,0.00 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: - July 9, 1998

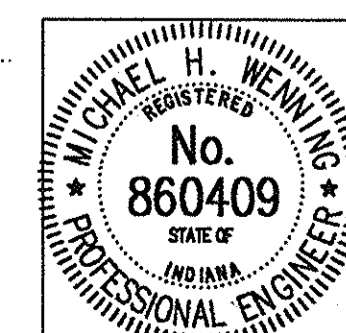
SUBMITTED FOR APPROVAL *M. H. W. [Signature]*

DRAWING: - OF SHEET: - 15A OF 65

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

CONTRACT NO. R-23808

BRIDGE FILE: - I-80-5-7828



DESIGNED: _____ C.K'D _____

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

TRACED: _____ C.K'D _____

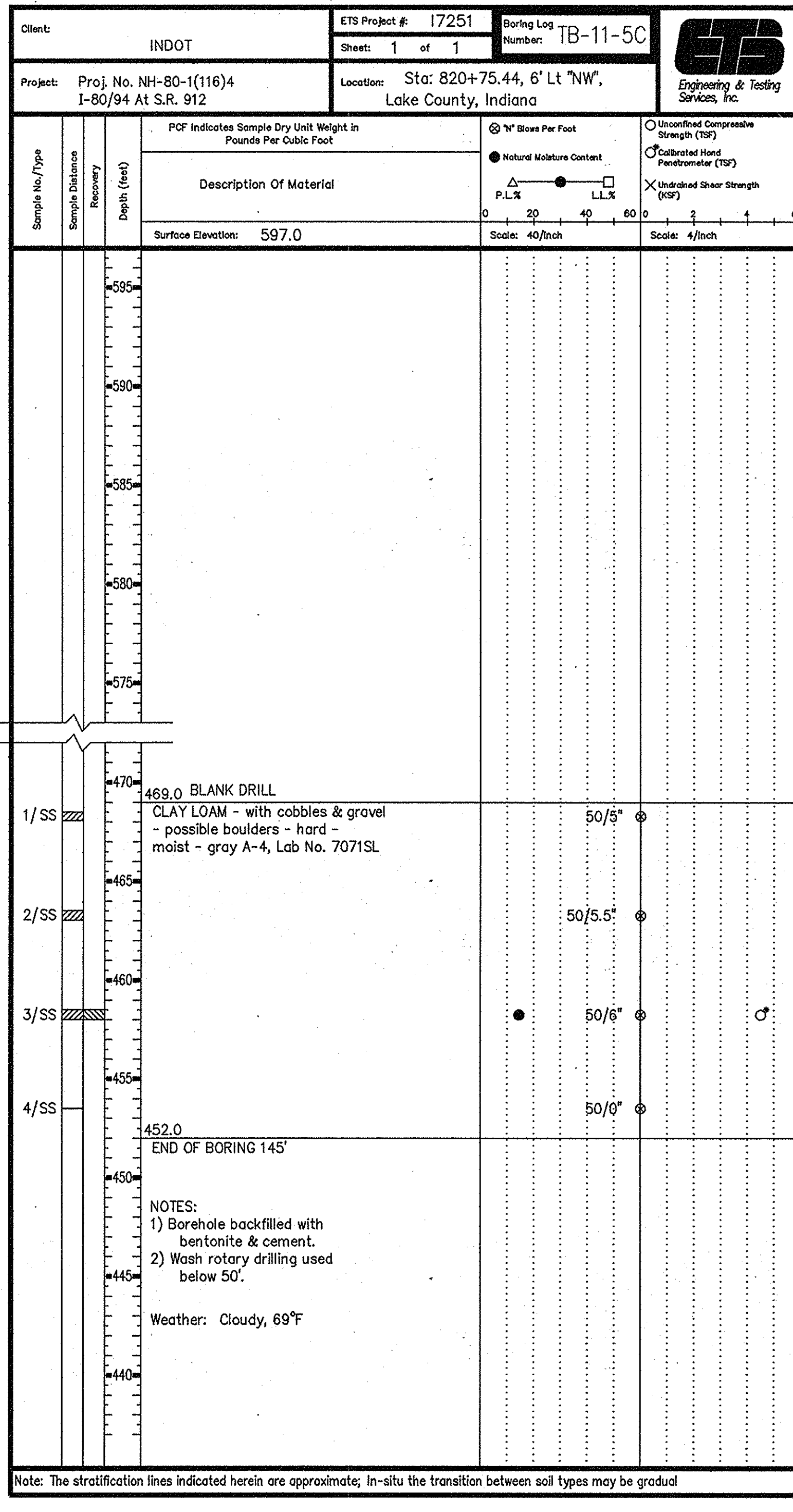
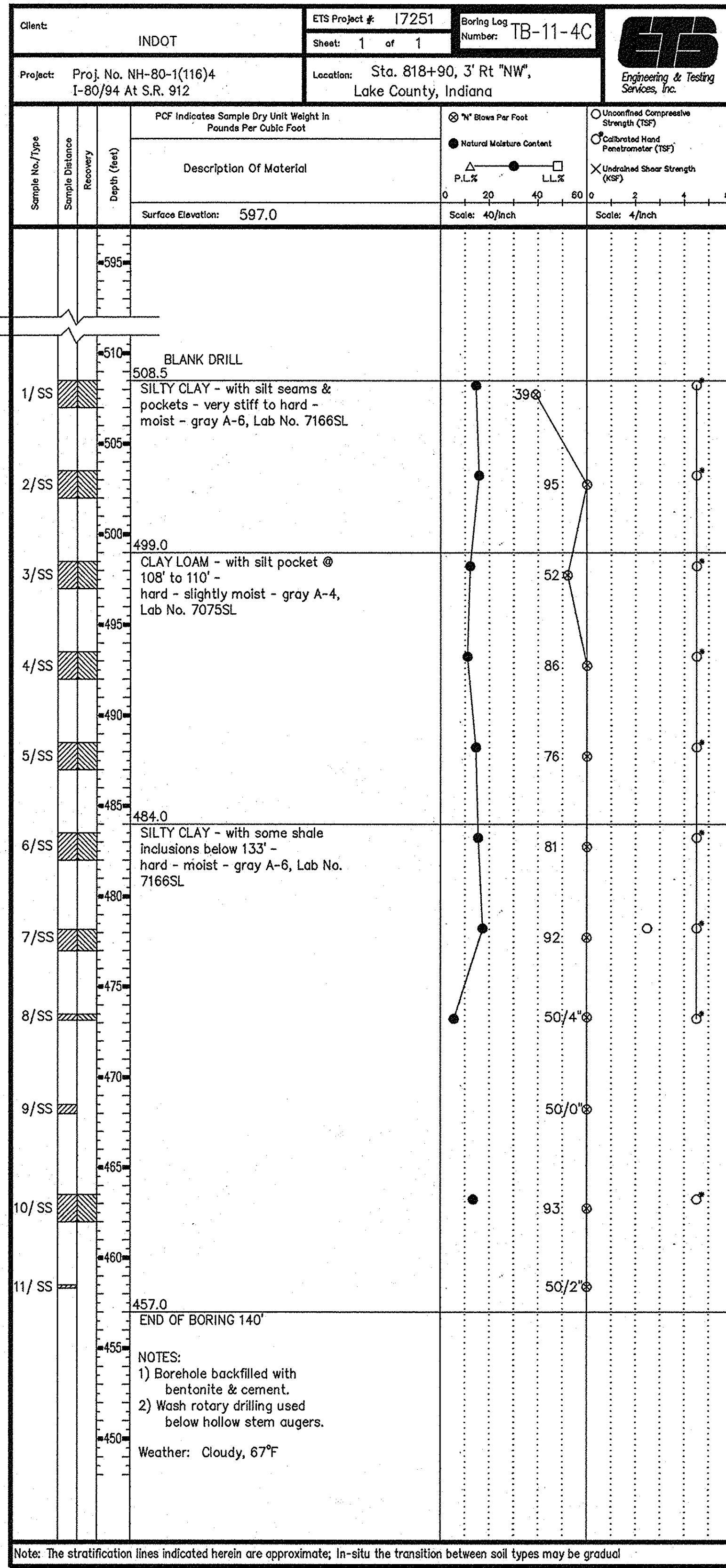
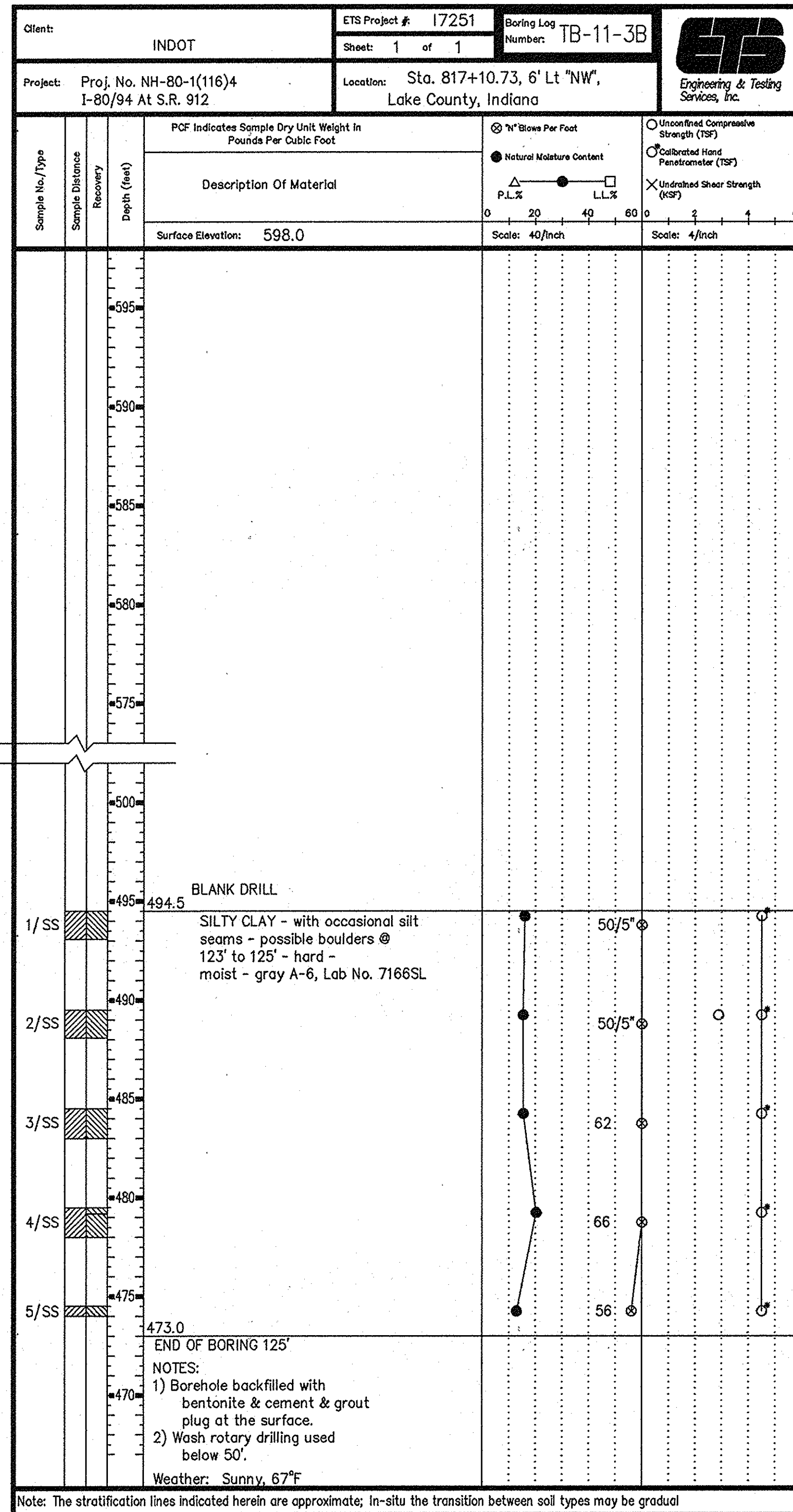
DWG FILE: C:\V1\144\97144516

PLOT SCALE: 1:1,000

PLOT ORIGIN: 0,000,00

SHEET NO: 07/09/98 13:26:21

EDIT DATE: DSH - 991



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: C'KD
 DRAWN: DSH 7/6/98 C'KD MHW 7/8/98
 TRACED: C'KD

DWG FILE: C:\97144\97144517
 PLOT SCALE: 1:1,000
 PLOT ORIGIN: 0.00,0.00

SPELCHK: 07/10/98 13:27:25
 EDIT DATE: DSH - 581

SOIL BORINGS

INDIANA DEPARTMENT OF TRANSPORTATION

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

DATE: - July 9, 1998

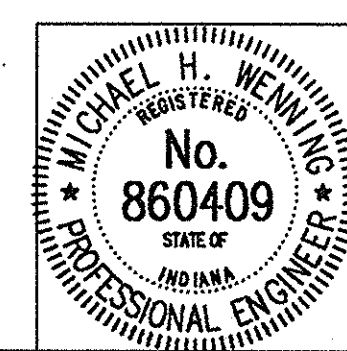
SUBMITTED FOR APPROVAL: *[Signature]*

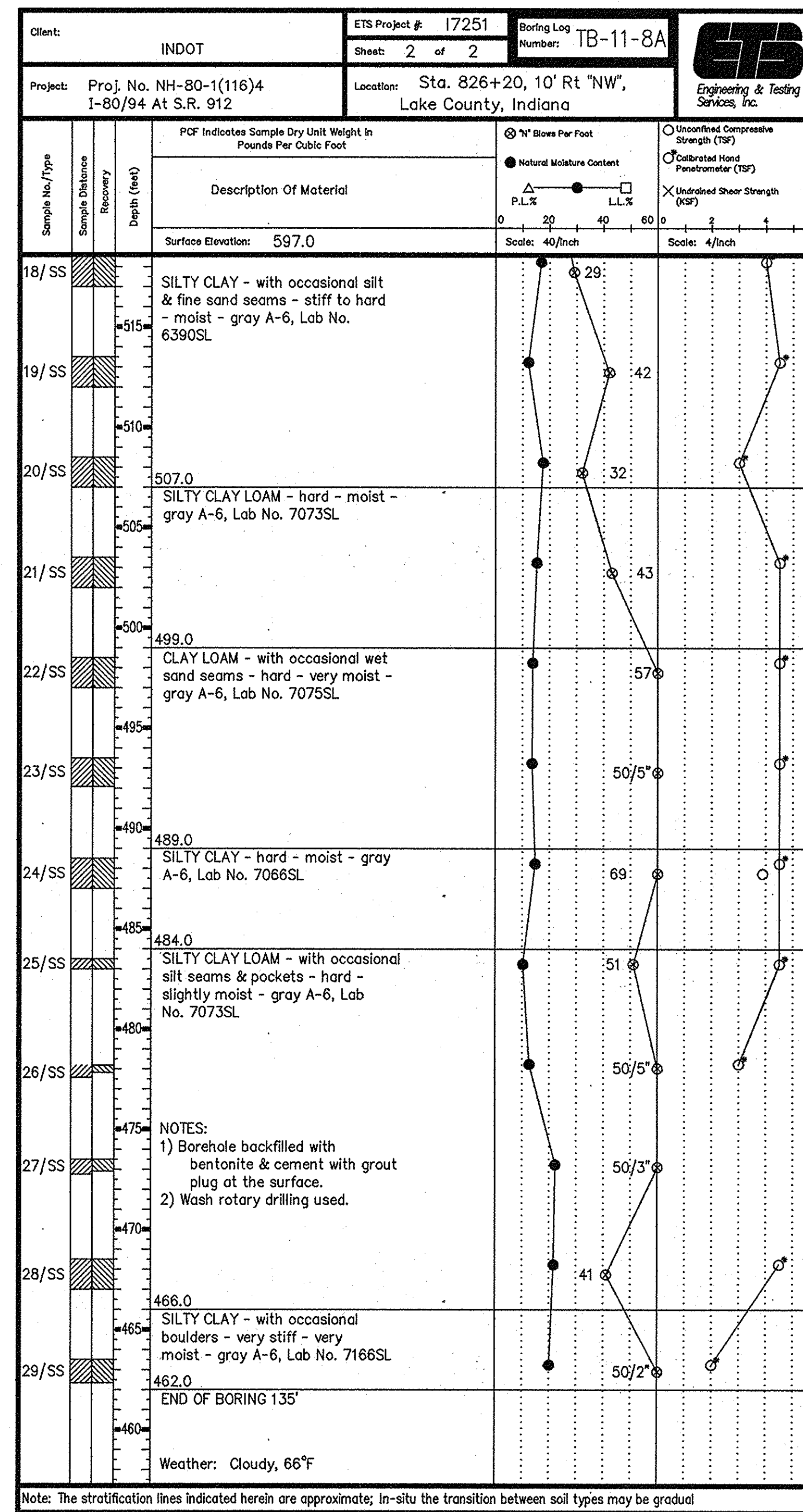
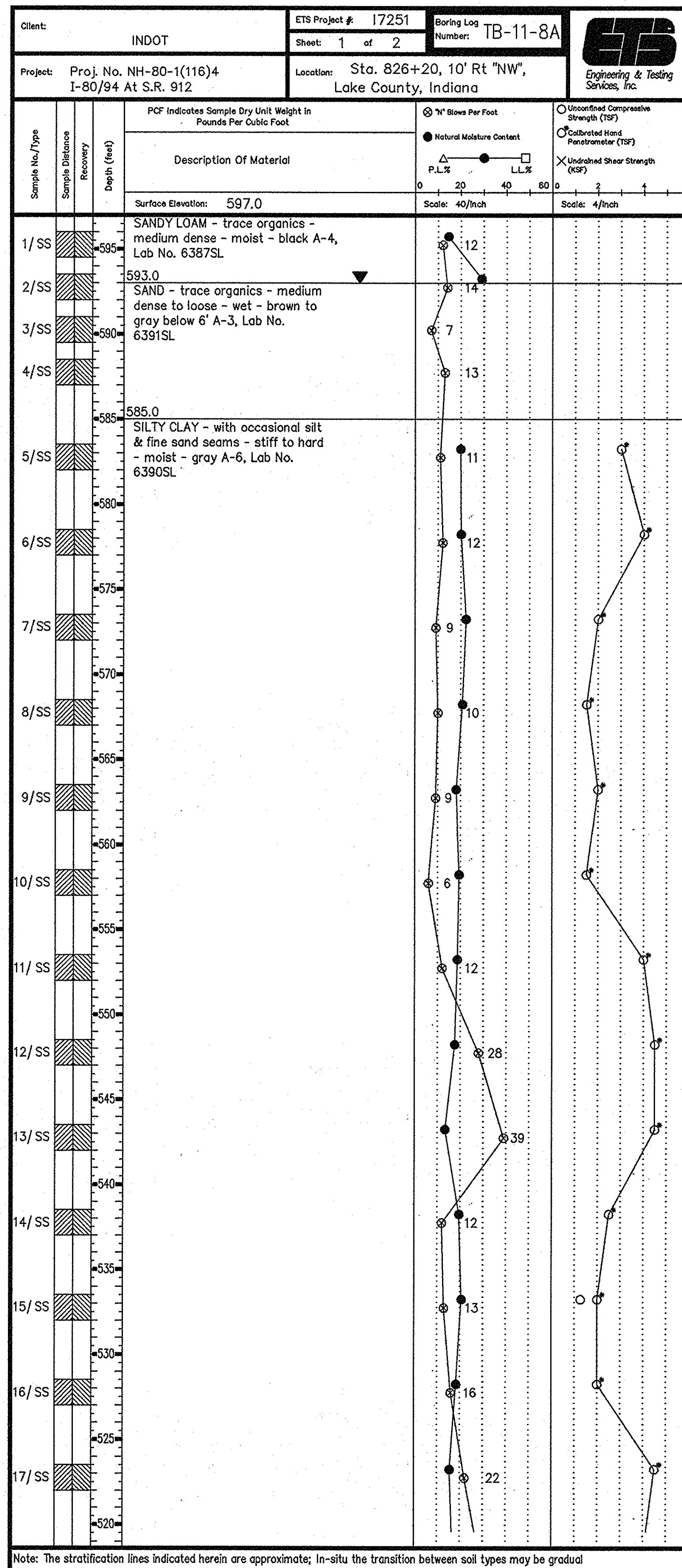
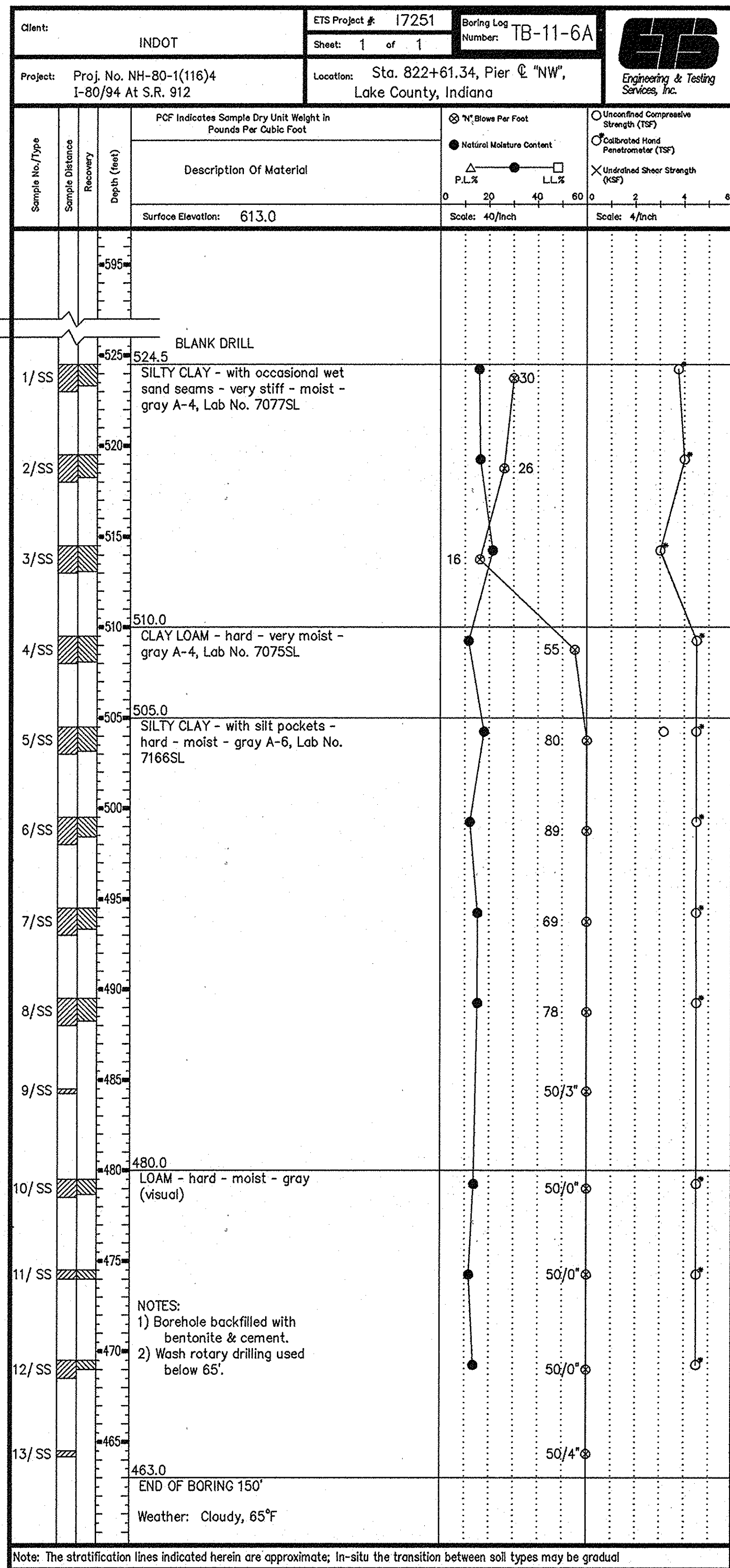
DRAWING: - OF SHEET: - 15B OF 65

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

CONTRACT NO. R-23808

BRIDGE FILE: - I-80-5-7828





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

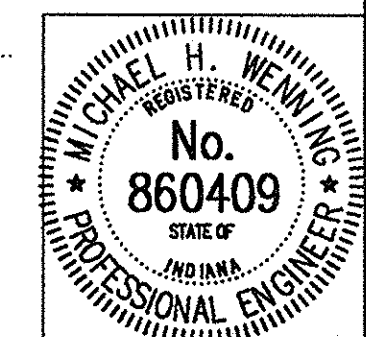
SUBMITTED FOR APPROVAL *Michael H. Weaving*

DRAWING: - OF SHEET: - 15C OF 65

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

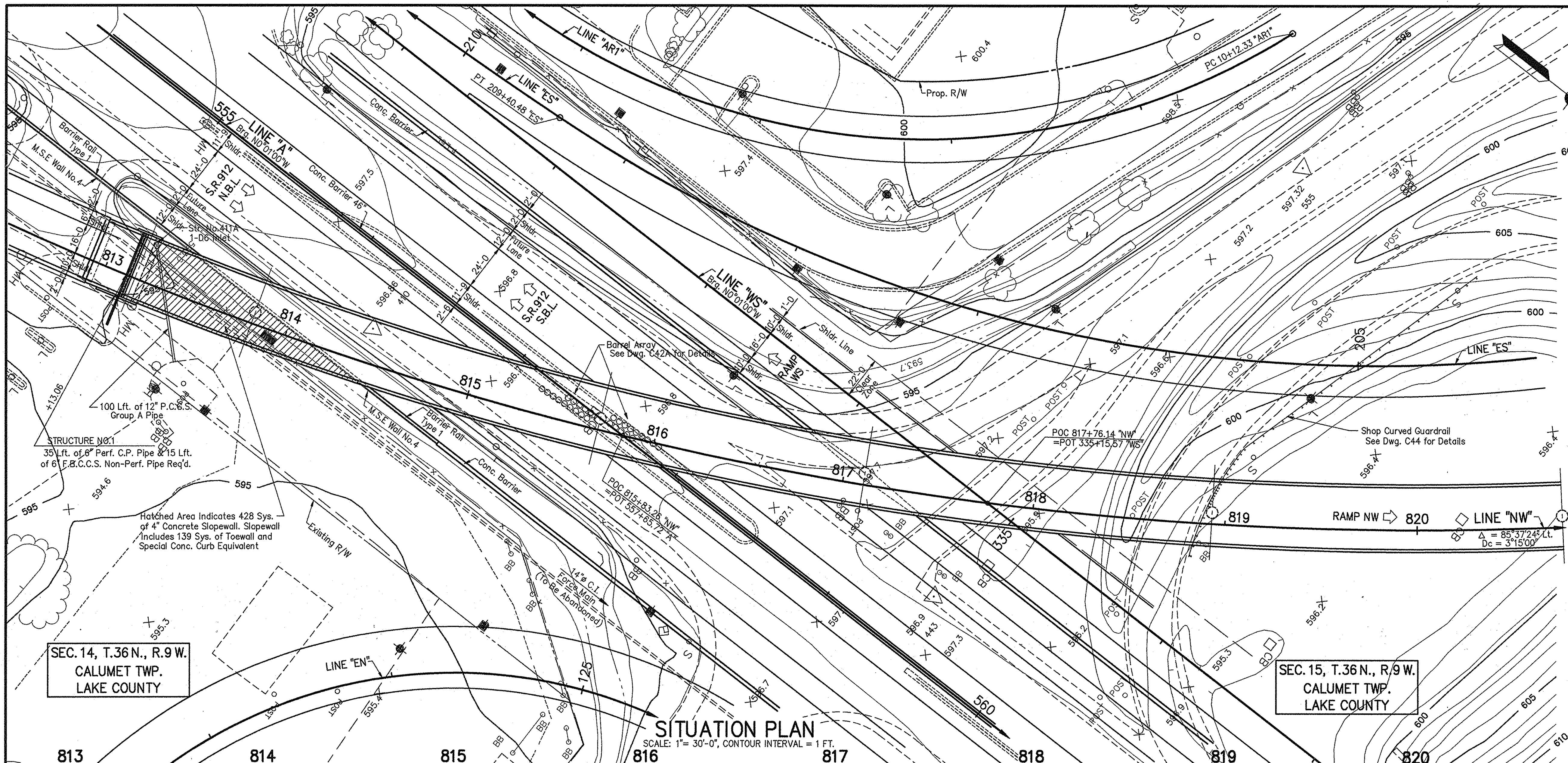
CONTRACT NO. R-23808

BRIDGE FILE: - I-80-5-7828



DESIGNED: CK'D
DRAWN: DSH 7/6/98 CK'D MHW 7/8/98
TRACED: CK'D

DATE PLOTTED: 07/10/98 13:28:38
EDIT DATE: 07/10/98 13:28:38
EDITED BY: DSH - 591

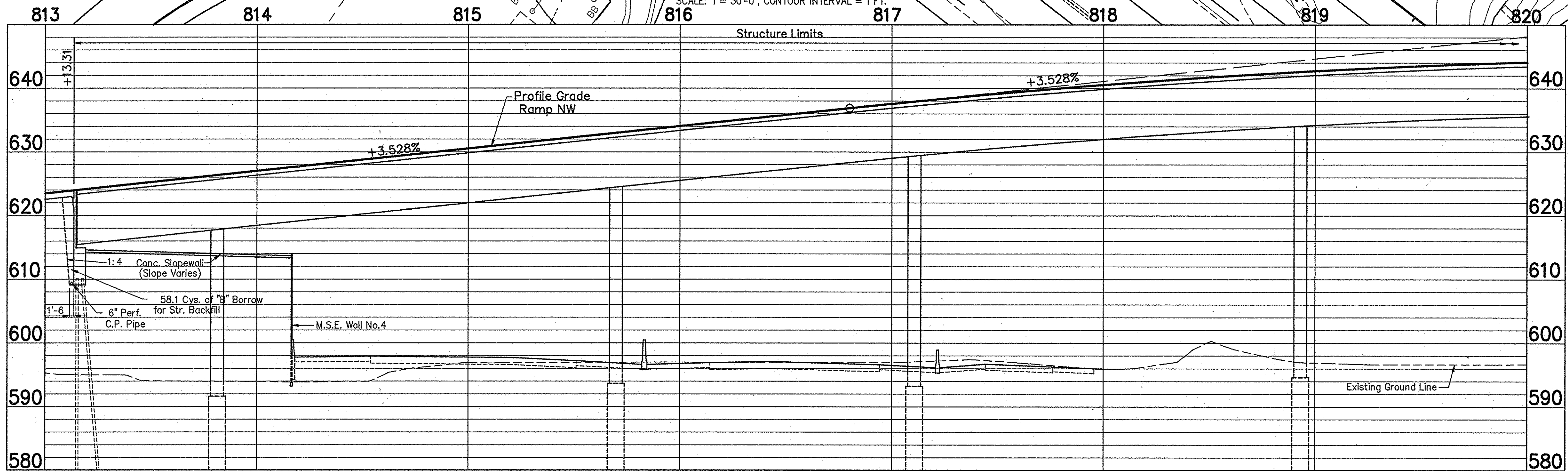


CURVE DATA
 P.I. 821+41.04 "NW"
 =O.P.O.T. 563+19.90 "A",
 427.08' Rt.
 $\Delta = 85^{\circ}37'24"$ LT.
 $D = 3^{\circ}15'00"$
 $R = 1762.95'$
 $T = 1633.17'$
 $L = 2634.56'$
 $E = 640.22'$
 $Se = 5.3\%$

SEC. 14, T.36 N., R.9 W.
 CALUMET TWP.
 LAKE COUNTY

SEC. 15, T.36 N., R.9 W.
 CALUMET TWP.
 LAKE COUNTY

SITUATION PLAN
 SCALE: 1" = 30'-0", CONTOUR INTERVAL = 1 FT.



P.V.I. STA. 822+10
 EL. = 655.58
 V.C. = 1060'

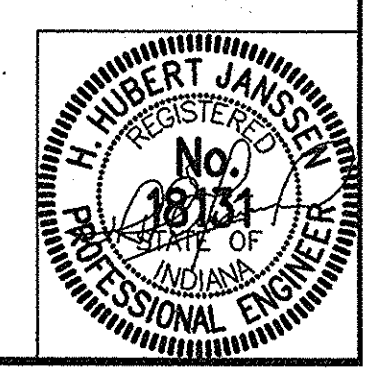
NOTES:
 For Utility Owners, see Sheet No.10.
 For Alignment References, and Bench Marks See Road
 Plan And Profile Sheets No.
 * Indicates Road Item.

LAYOUT
 CONTINUOUS POST-TENSIONED CONCRETE BOX GIRDER BRIDGE
 9 SPANS: 65'-0", 188'-6 1/2", 140'-10 9/16", 182'-4 5/16", 182'-4 3/16"
 185'-10 13/16", 148'-2 7/8", 203'-8 1/16", 65'-0" SKEW: VARIES
 32'-0 CLEAR ROADWAY
 RAMP NW OVER RAMP SE
 S.R.912 AND I-80/94
INDIANA DEPARTMENT OF TRANSPORTATION
 LAKE COUNTY

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

SUBMITTED FOR APPROVAL

DRAWING: - C1 OF C44 SHEET: - 16 OF 65
 PROJECT: - NH-80-1 () 4
 CONTRACT NO.
 BRIDGE FILE: - I-80-5-7828

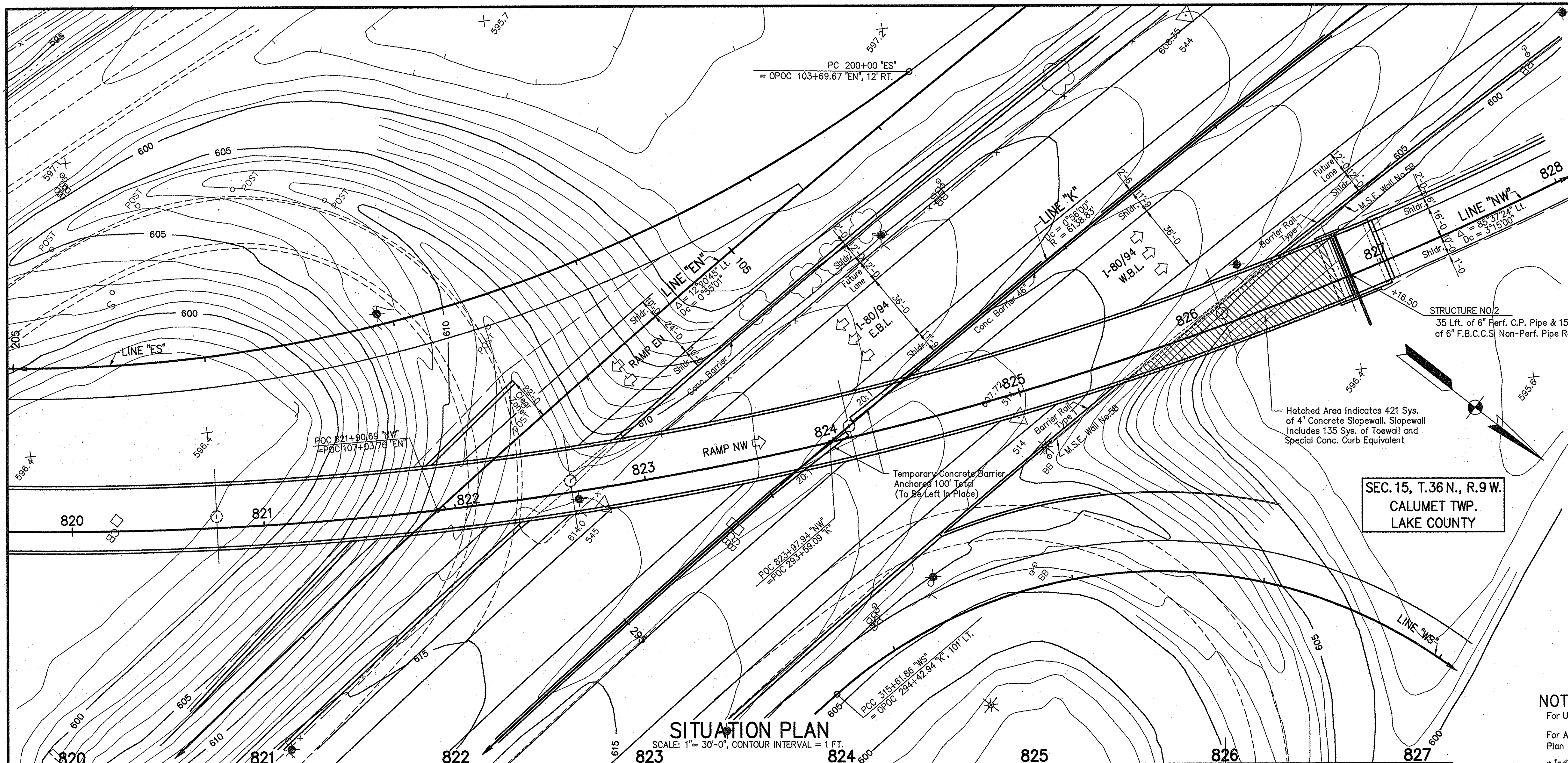


DESIGNED: RJC 6/29/93
 DRAWN: RJC 6/29/93
 TRACED: CJK
 CJK
 MHW 7/01/93

PROFILE LINE NW
 SCALES: 1" = 30'-0 Horizontal, 1" = 10'-0 Vertical

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

DWG FILE: C:\971\144\LA11-12A
 PLOT SCALE: 1"=30'-0
 PLOT ORIGIN: 13279.21,-74339.44
 SPELLING: 07/11/98 06:30:04
 EDIT DATE: 07/11/98 06:30:04
 EDITED BY: DSH - 991



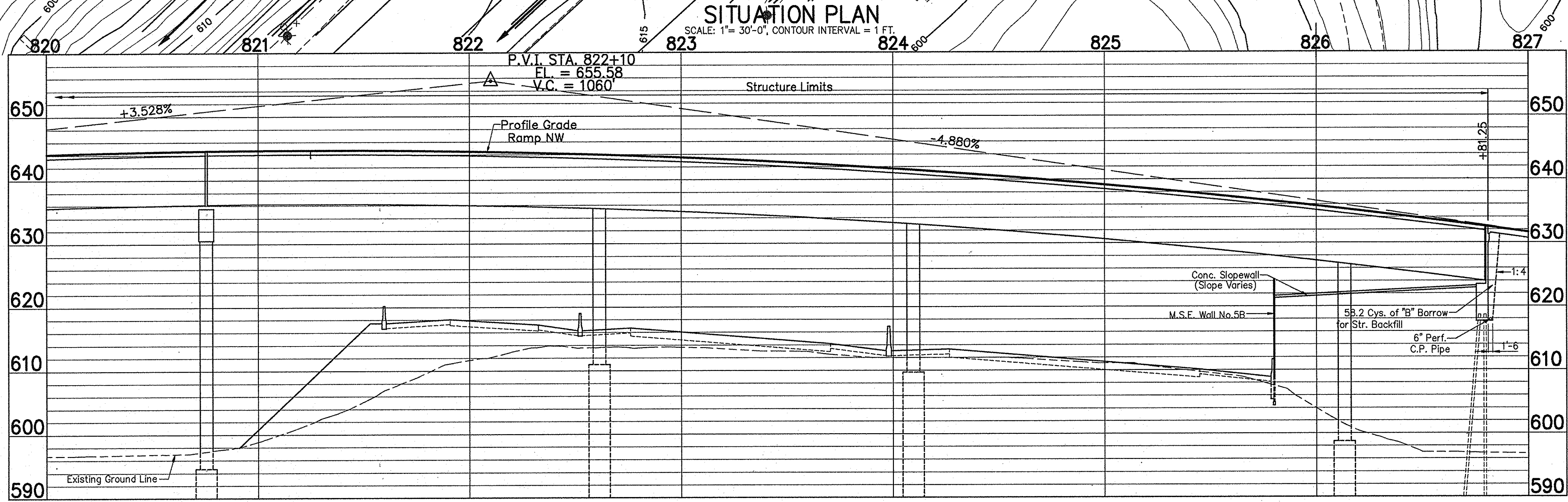
CURVE DATA		CURVE DATA	
P.I. 291+96.85 "K"	$\Delta = 26^{\circ}31'30''$ LT.	P.I. 107+07.10 "EN"	$\Delta = 13^{\circ}03'27''$ LT.
$\Delta = 26^{\circ}31'30''$ LT.	Dc = 0'56'00"	=O.P.O.T. 562+25.24 "A"	Dc = 0'55'01"
R = 6138.83'	T = 1446.92'	L = 2841.96'	R = 6247.83'
E = 168.21'	Se = 2.2%	L = 1423.86'	E = 40.78'
			Se = 2%

CURVE DATA		CURVE DATA	
P.I. 309+98.49 "WS"	$\Delta = 10^{\circ}43'25''$ Rt.	P.I. 821+41.04 "NW"	$\Delta = 85^{\circ}37'24''$ LT.
=O.P.O.T. 563+82.04 "A"	Dc = 0'56'56"	=O.P.O.T. 563+19.90 "A"	D = 3'15'00"
165.19' Rt.	R = 6037.83'	427.08' Rt.	R = 1762.95'
T = 566.68'	L = 1130.06'	T = 1633.17'	L = 2634.56'
E = 26.53'	se = 2%	E = 640.22'	Se = 5.3%

SEC. 15, T.36 N., R.9 W.
CALUMET TWP.
LAKE COUNTY

Hatched Area Indicates 421 Sys. of 4" Concrete Slope Wall. Slope Wall Includes 135 Sys. of Toewall and Special Conc. Curb Equivalent

NOTES:
For Utility Owners, see Sheet No.10.
For Alignment References, and Bench Marks See Road Plan And Profile Sheets No.
* Indicates Road Item.



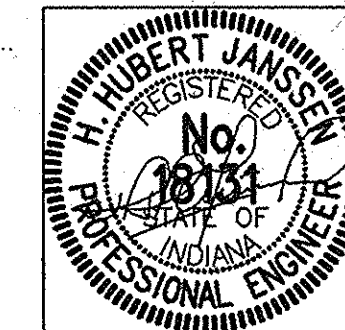
LAYOUT
CONTINUOUS POST-TENSIONED CONCRETE BOX GIRDER BRIDGE
9 SPANS: 65'-0", 188'-6 1/2", 140'-10 9/16", 182'-4 5/16", 182'-4 3/16"
185'-10 13/16", 148'-2 7/8", 203'-8 1/16", 65'-0" SKEW: VARIES
32'-0" CLEAR ROADWAY

RAMP NW 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 C44 SHEET: - 17 OF 65
PROJECT: - NH-80-1 ()
CONTRACT NO.
BRIDGE FILE: - I-80-5-7828



DESIGNED: CJK/D
DRAWN: RJC 6/30/93
TRACED: CJK/D

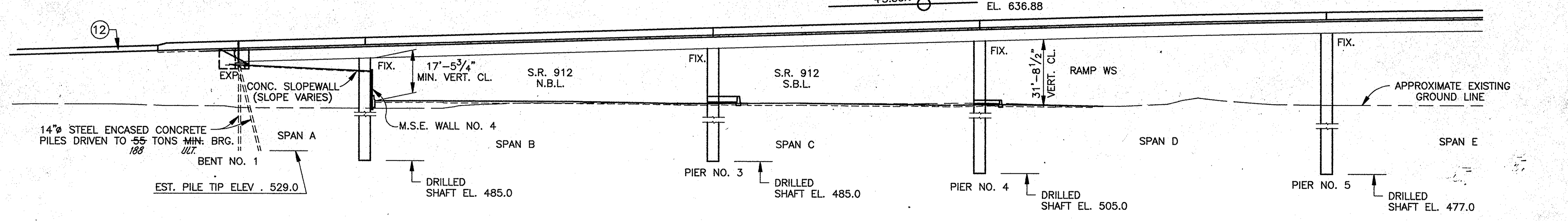
SPELCHK: 01/21/94
EXIT DATE: 07/11/98 08:38:02
EDITED BY: DSH - 591

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

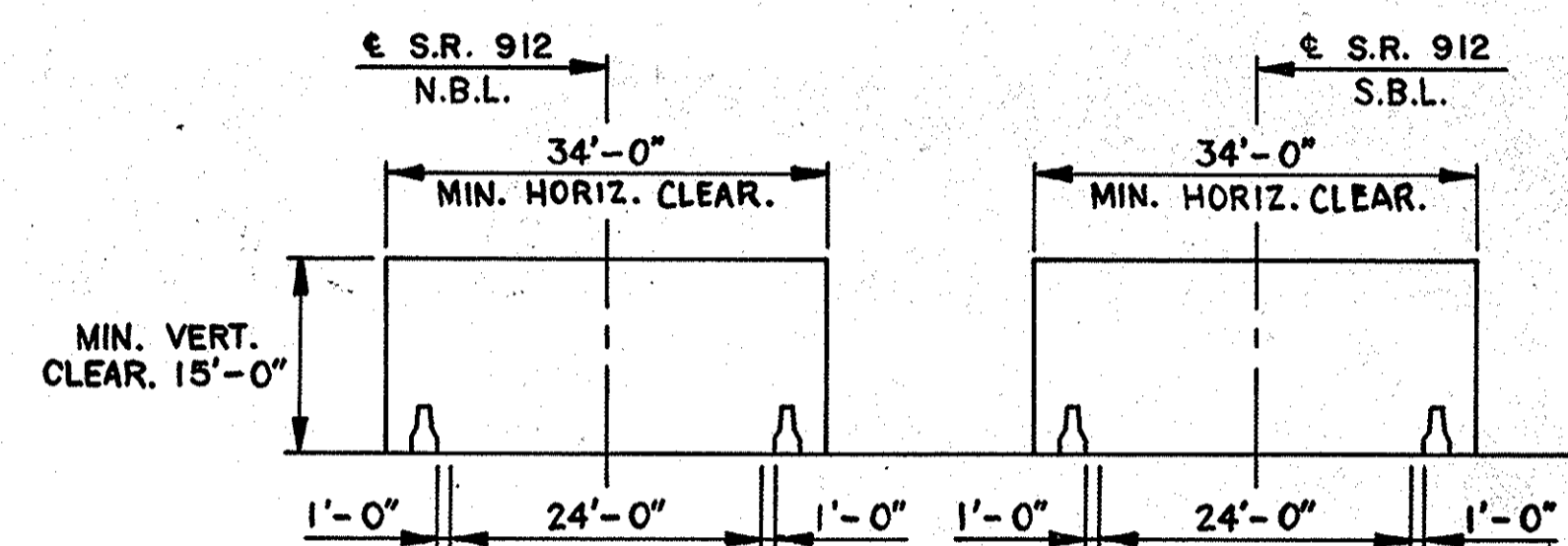
NOTE: FIELD NOTES, BOOK: 16215L1 & 16215T1

THIS PORTION OF STRUCTURE TO BE BUILT TO A +3.53% GRADE, A 1060' VERTICAL CURVE, AND A 3° 15' HORIZONTAL CURVE

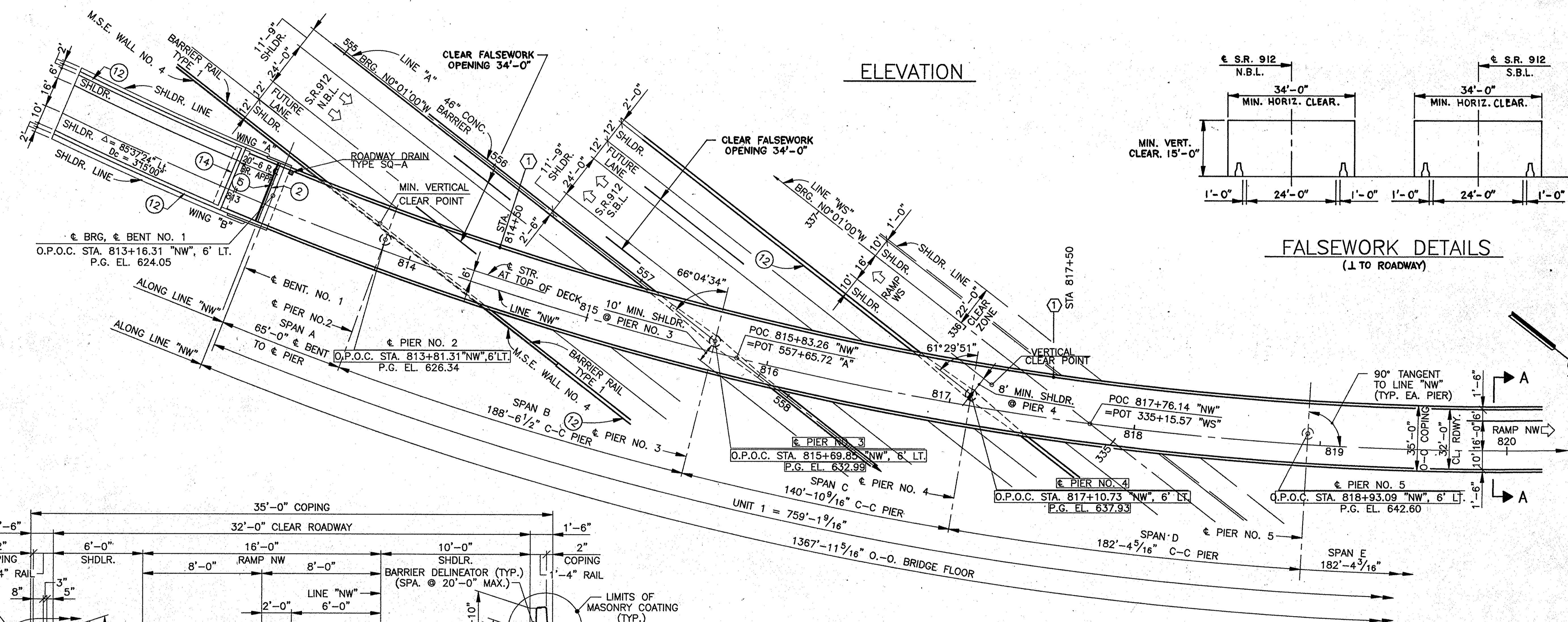
+3.53% P.V.C. 816+80
EL. 636.88



ELEVATION



FALSEWORK DETAILS
(J TO ROADWAY)



PLAN

GENERAL PLAN

CONTINUOUS POST-TENSIONED CONCRETE BOX GIRDER BRIDGE
9 SPANS: 65'-0", 188'-6 1/2", 140'-10 9/16", 182'-4 3/16", 182'-4 3/16", 185'-10 13/16", 148'-2 7/8", 203'-8 1/16", 65'-0" SKEW: VARIES

32'-0" CLEAR ROADWAY
RAMP NW 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: - C3 OF C44 SHEET: 18 OF 65

PROJECT: - NH-80-1 ()

CONTRACT NO.

BRIDGE FILE: - I-80-5-7828

NOTE:
* INDICATES ROAD ITEM

- LEGEND
- (2) EXPANSION JOINT CLASS S-S
 - (5) TYPE IA JOINT
 - (12) * CONCRETE BARRIER
 - (14) * TERMINAL JOINT
 - (1) CONDUIT PULL BOX, SEE DRAWING C21 FOR DETAILS

NOTE:
EXPANSION LENGTHS ARE NOT GIVEN. TABLE ON DRAWING C42 SHOULD BE USED FOR INITIAL SET OF S-S AND MODULAR JOINTS.

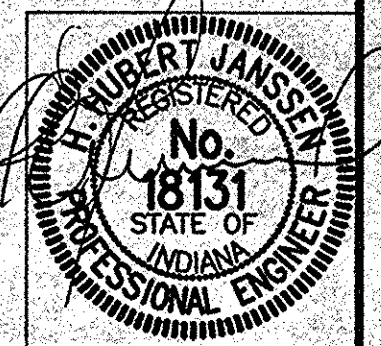
Added: Falsework Details
9-1-98 Revised: Changed End Dept. Pile Capacity.

CURVE DATA
P.I. 821+41.04 "NW"
Δ = 85° 37' 24" LT.
Dc = 3° 15' 00"
R = 1762.95'
T = 1633.17'
L = 2634.56'
E = 640.22'
Se = 5.3%

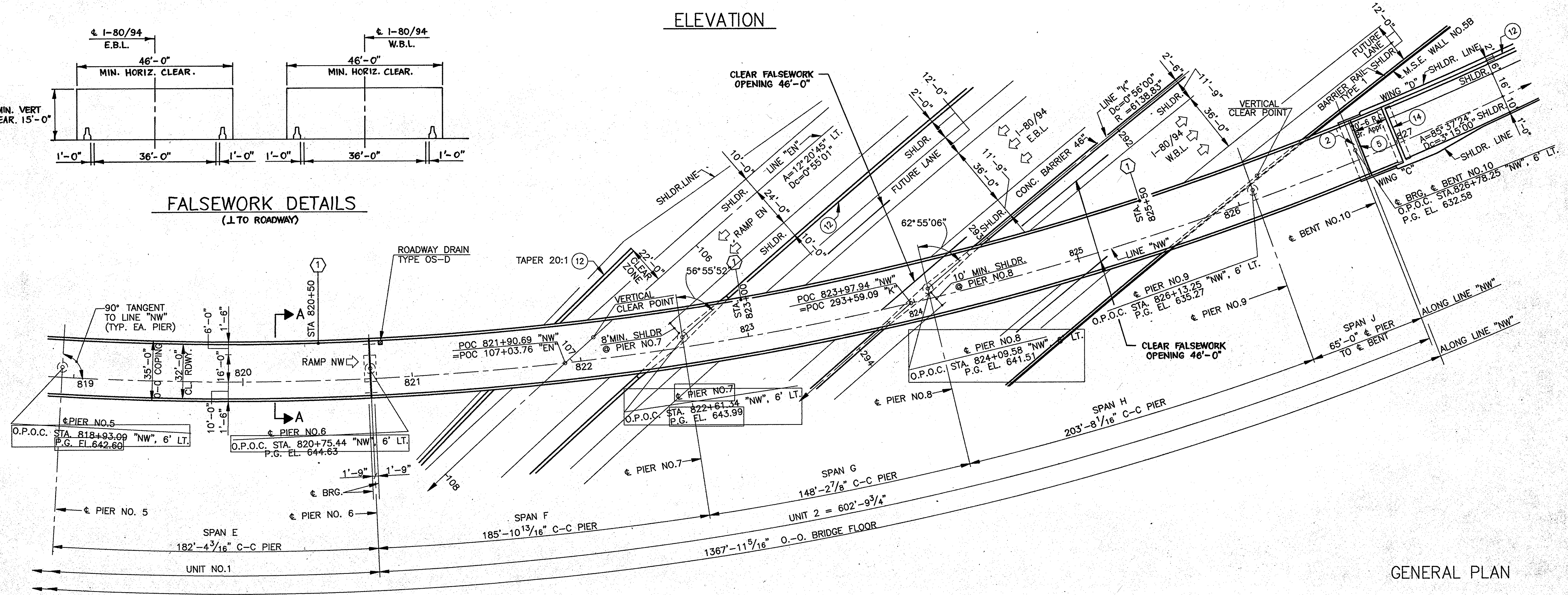
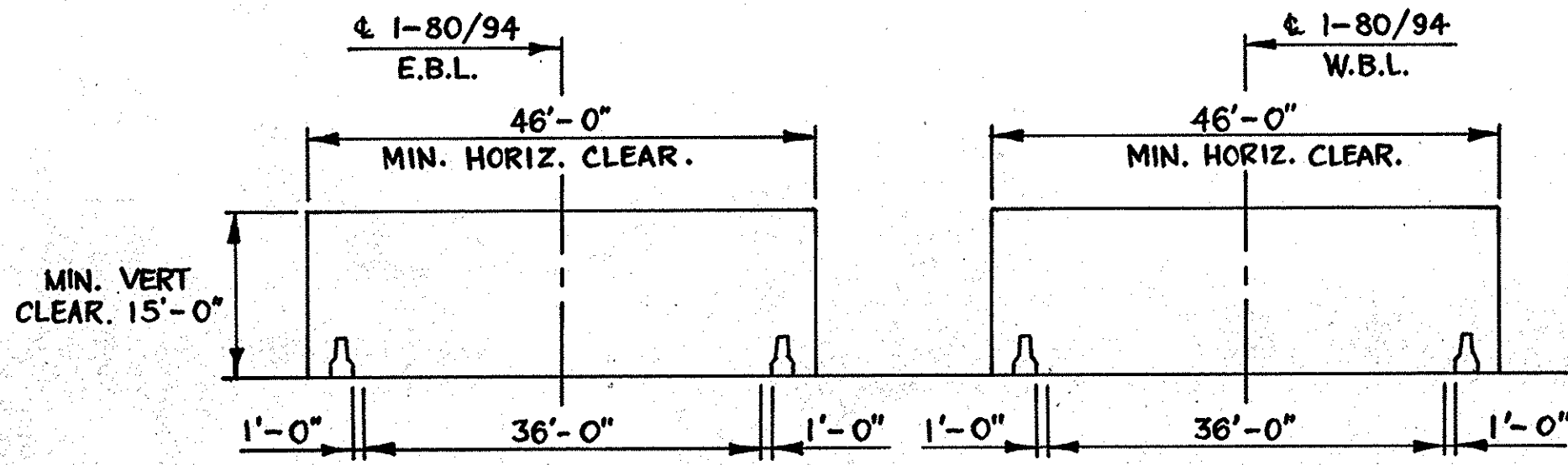
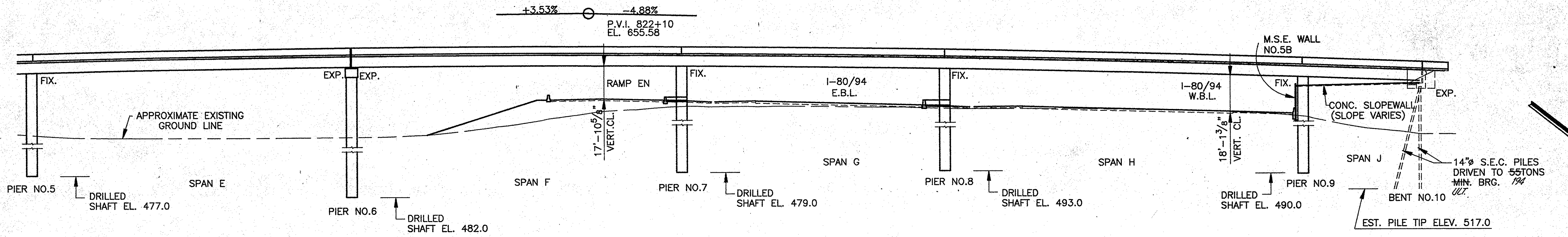
SECTION A-A
NOT TO SCALE

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

ENR/AVI-BV/ENR/PLA 05/26/97 64 1413
PLD181-350



THIS PORTION OF STRUCTURE TO BE BUILT TO A 1060' VERTICAL CURVE AND A 3°15' HORIZONTAL CURVE



CONTINUOUS POST-TENSIONED CONCRETE BOX GIRDER BRIDGE
9 SPANS: 65'-0", 188'-6 1/2", 140'-10 9/16", 182'-4 3/16", 182'-4 3/16",
185'-10 13/16", 148'-2 7/8", 203'-8 1/16", 65'-0" SKEW: VARIES
32'-0" CLEAR ROADWAY
RAMP NW OVER S.R.912 AND I-80/94

INDIANA DEPARTMENT OF TRANSPORTATION
LAKE COUNTY

SCALE: - 1"=30'-0", UNLESS NOTED DATE: - July 10, 1988

SUBMITTED FOR APPROVAL

DRAWING: - C4 OF C44 SHEET: - 19 OF 65
PROJECT: - NH-80-1 () 4
CONTRACT NO.
BRIDGE FILE: - I-80-5-7828

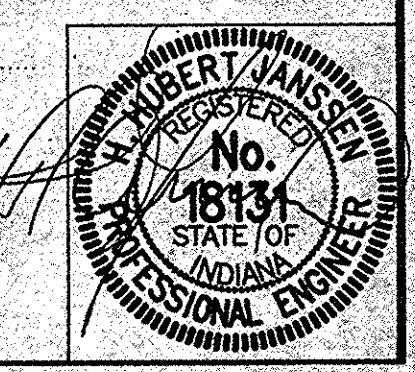
NOTE:
FOR SECTION A-A, SEE DWG C3
* INDICATES ROAD ITEM

- LEGEND
- ② EXPANSION JOINT CLASS S-S
 - ⑤ TYPE IA JOINT
 - ⑫ * CONCRETE BARRIER
 - ⑭ * TERMINAL JOINT
 - ① CONDUIT PULL BOX, SEE DWG C26 FOR DETAILS.

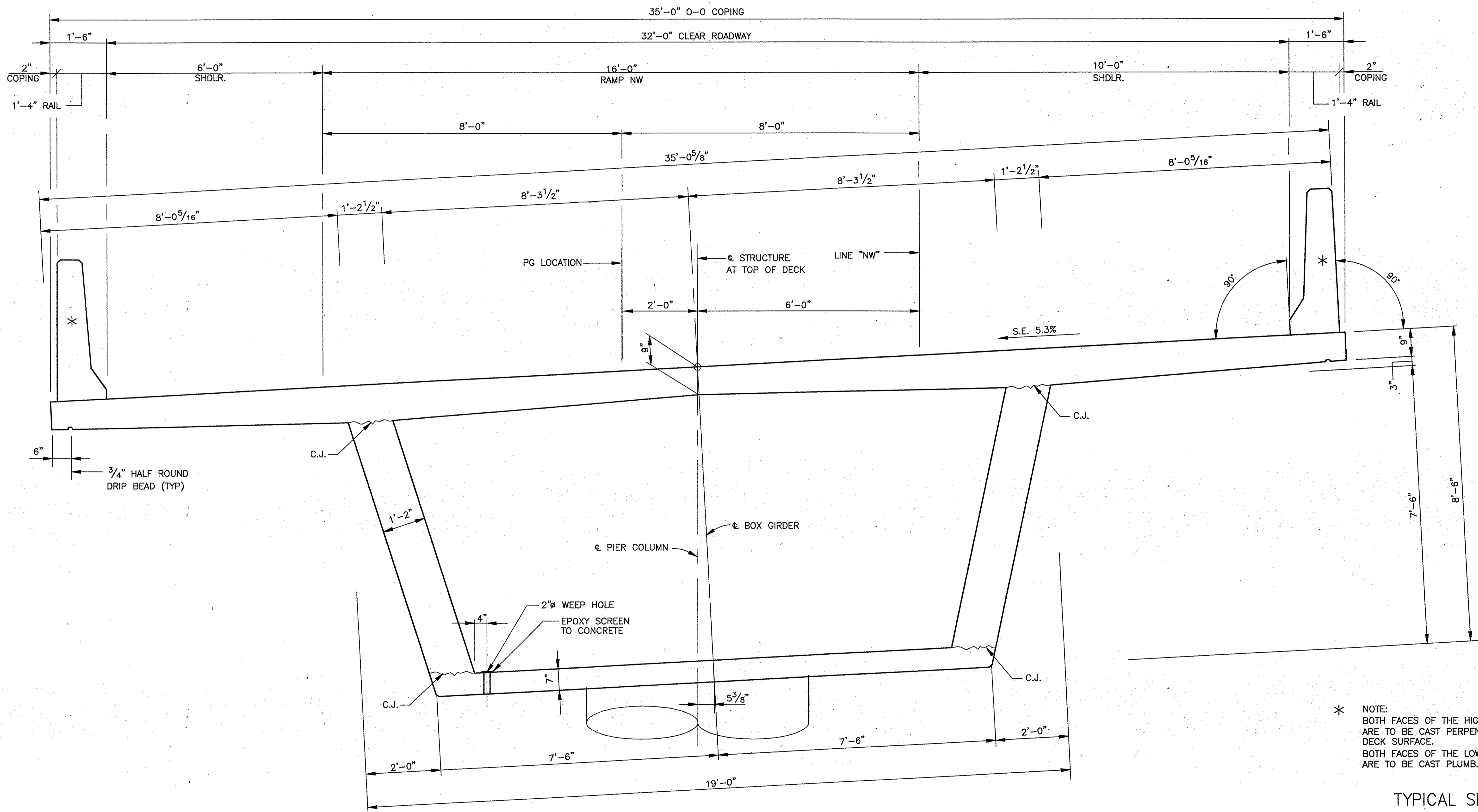
CURVE DATA	CURVE DATA	CURVE DATA
P.I. 291+96.85 "K"	P.I. 107+07.10 "EN"	P.I. 821+41.04 "NW"
A = 26°31'30" LT.	A = 13°03'27" LT.	A = 85°37'24" LT.
Dc = 0°56'00"	Dc = 0°55'01"	D = 3°15'00"
R = 6138.83'	R = 6247.83'	R = 1762.95'
T = 1446.92'	T = 715.03'	T = 1633.17'
L = 2841.96'	L = 1423.86'	L = 2634.56'
E = 168.21'	E = 40.78'	E = 640.22'
Se = 2.2%	Se = 2%	Se = 5.3%

NOTE:
EXPANSION LENGTHS ARE NOT GIVEN. TABLE ON DRAWING C42 SHOULD BE USED FOR INITIAL SET OF S-S AND MODULAR JOINTS.

DESIGNED: HHJ C'KD LS
DRAWN: TMD C'KD HHJ
TRACED: C'KD



CA/12/11-REVENUE/0.8/01/19/97 & 1028
 PLOT#14350



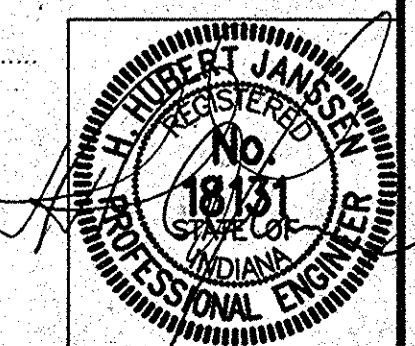
* NOTE:
 BOTH FACES OF THE HIGH SIDE BARRIER
 ARE TO BE CAST PERPENDICULAR TO THE
 DECK SURFACE.
 BOTH FACES OF THE LOW SIDE BARRIER
 ARE TO BE CAST PLUMB.

TYPICAL SECTION
 VALID FOR UNIT 1 & UNIT 2

TYPICAL SECTION
 INDIANA DEPARTMENT OF TRANSPORTATION
 LAKE COUNTY

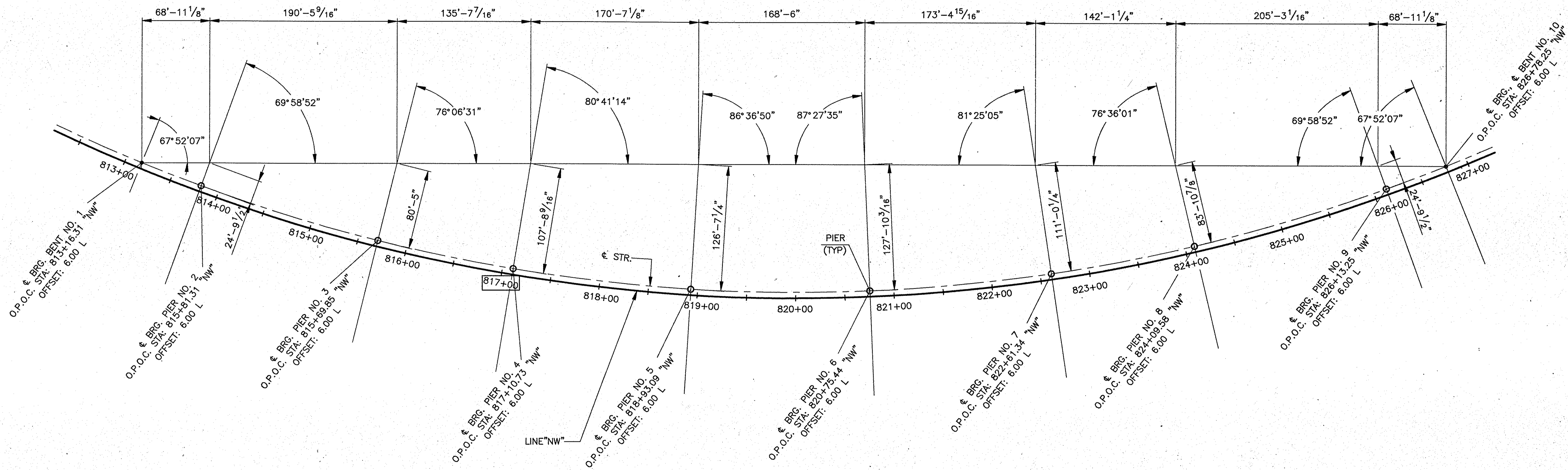
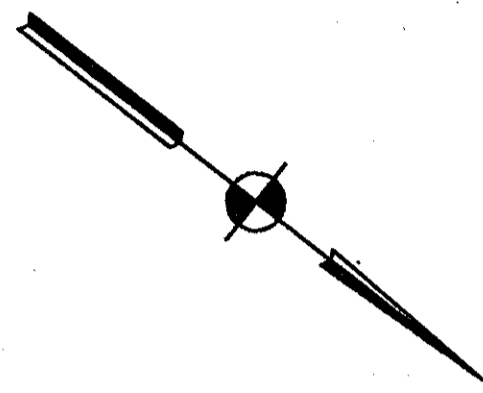
SCALE: - 3/4"=1'-0", UNLESS NOTED DATE: - 5/22/98
 SUBMITTED FOR APPROVAL

DRAWING: - C5 OF C44 SHEET: - 20 OF - 65
 PROJECT: - NH-80-1 ()
 CONTRACT NO.
 BRIDGE FILE: - I-80-5-7828



INDIANA DEPARTMENT OF TRANSPORTATION
 PL 101-16

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



TIE-UP DIAGRAM

INDIANA DEPARTMENT OF TRANSPORTATION
LAKE COUNTY

SCALE: - 1"=50'-0", UNLESS NOTED DATE: - 5/22/88

SUBMITTED FOR APPROVAL

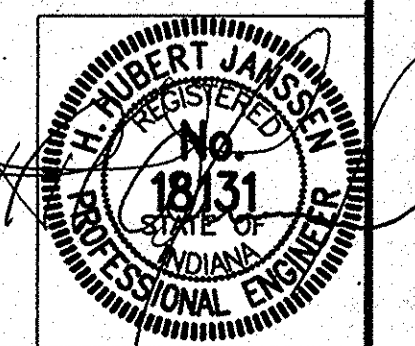
DRAWING: -06 OF C44 SHEET: -21 OF - 65

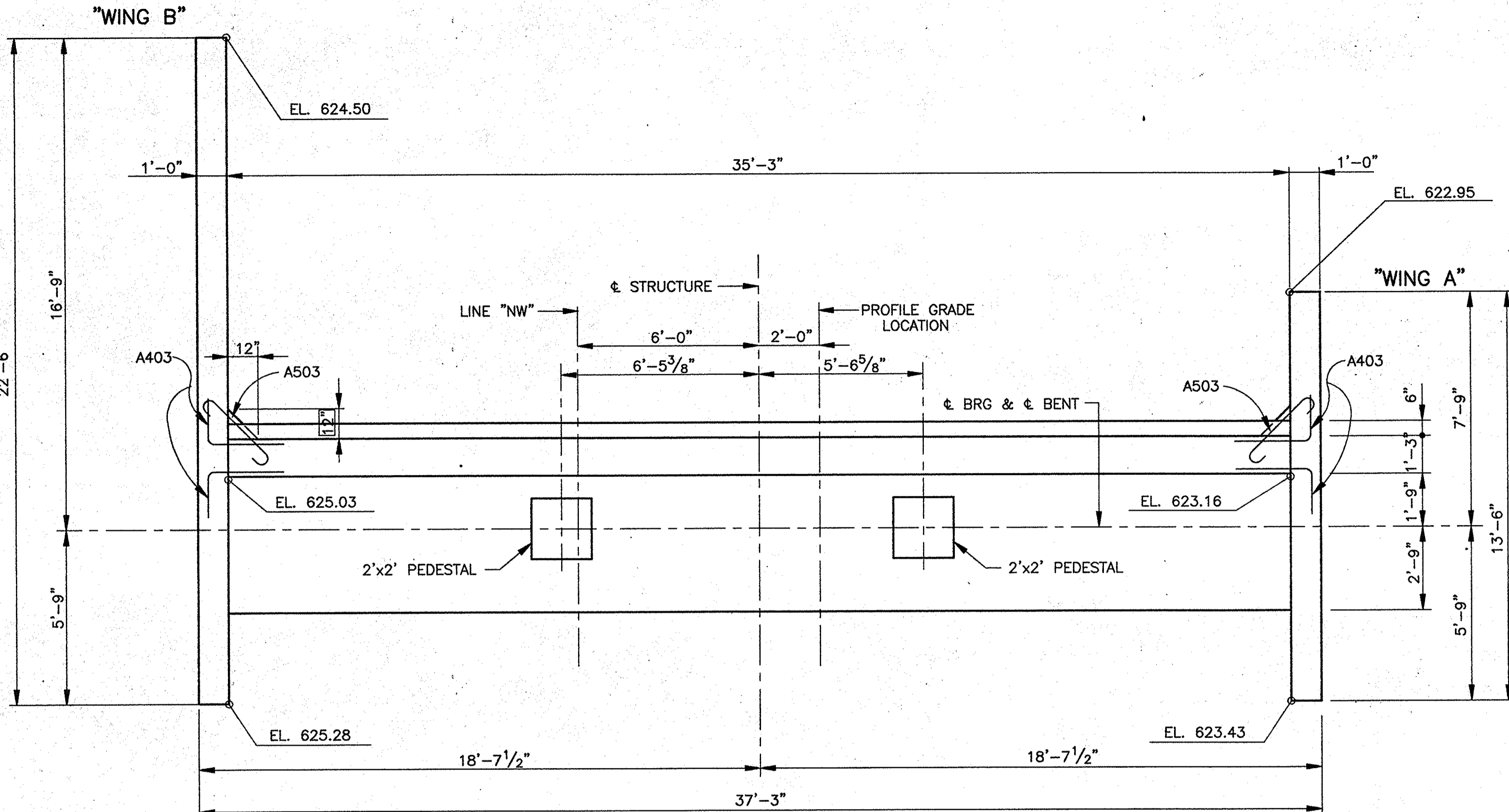
PROJECT: - - NH-80-1 ()4

CONTRACT NO.
BRIDGE FILE: - I-80-5-7828

DRAWN BY: HHJ
PLOT: 81-50

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



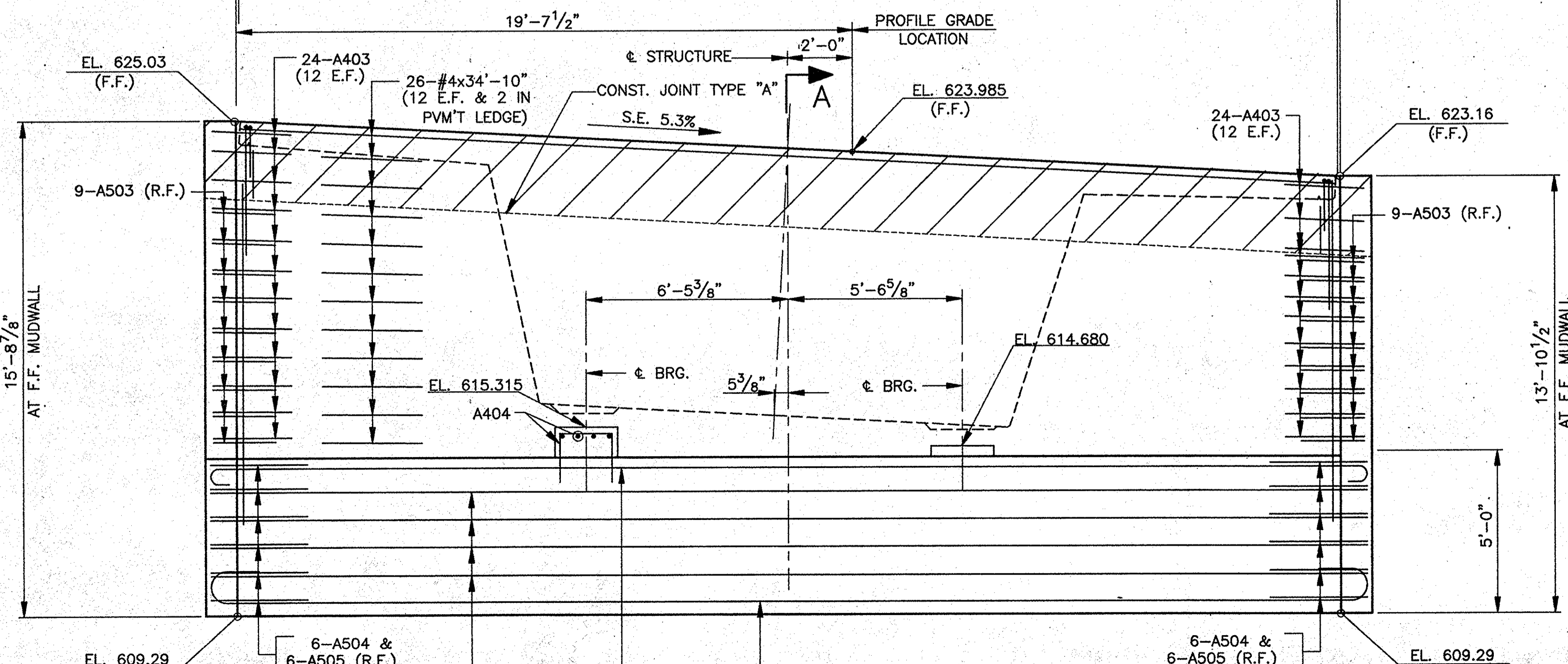


PLAN

3/8" = 1'-0"

1 1/2" 35 SPACES @ 12"± (36-A402 BARS IN PVM'T LEDGE, 36-A501 & A506 BARS & 36-#5x8'-6" & 36-#5x5'-6" IN R.F. MUDWALL) 1 1/2"

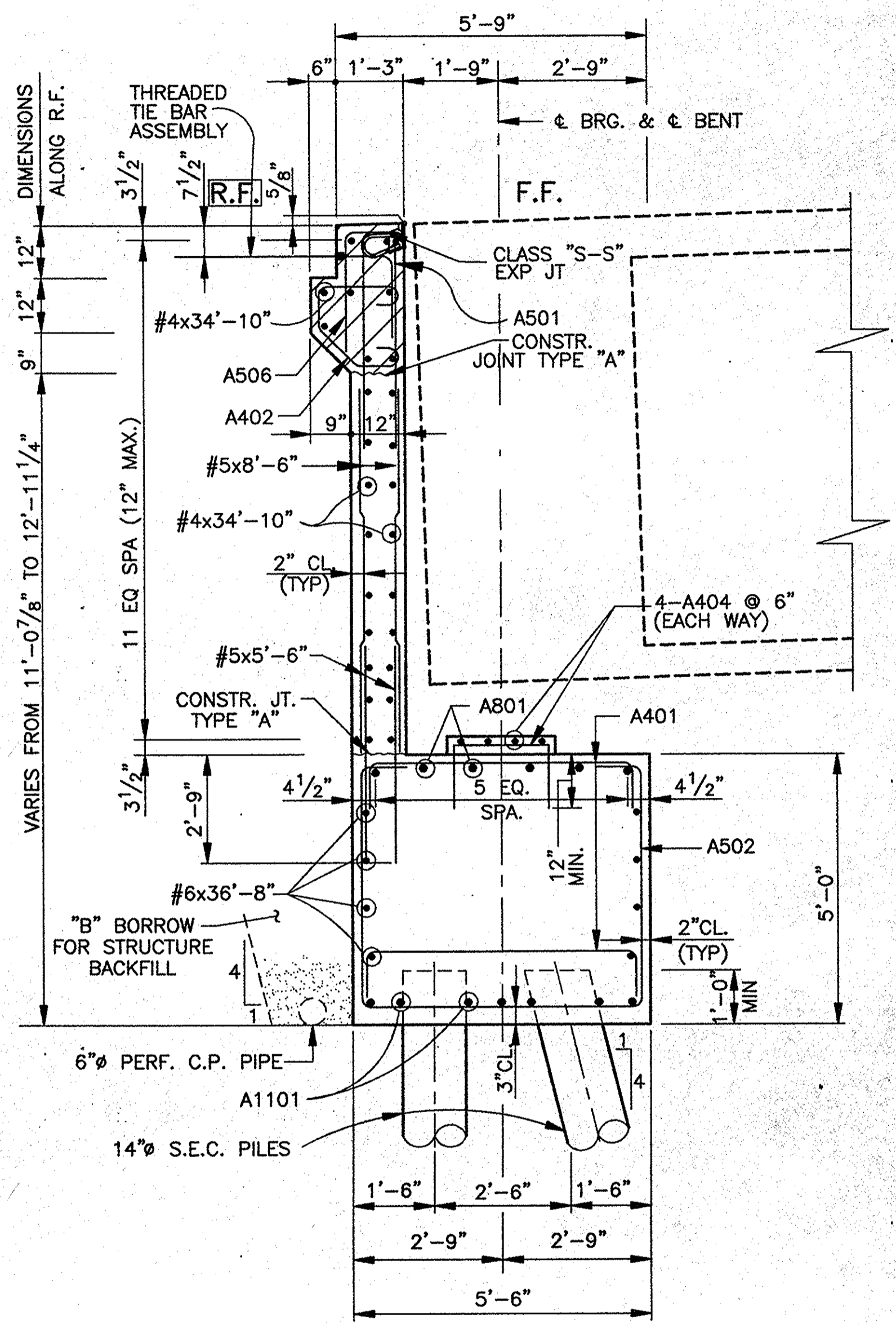
47 SPACES @ 9"± (48-MODIFIED E.C. THREADED TIE BAR ASSEMBLIES & 48-#5x8'-6" & 48-#5x5'-6" IN F.F. MUDWALL)



ELEVATION

3/8" = 1'-0"

NOTE:
HATCHED AREAS INDICATE
CONCRETE TO BE POURED
WITH SUPERSTRUCTURE



SECTION A-A

1/2" = 1'-0"

SUBSTRUCTURE DETAILS - BENT NO. 1

INDIANA DEPARTMENT OF TRANSPORTATION
LAKE COUNTY

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

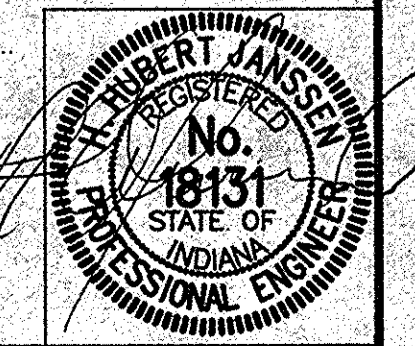
SUBMITTED FOR APPROVAL

DRAWING: - C7 OF C44 SHEET: - 22 OF 65

PROJECT: - NH-80-1 () 4

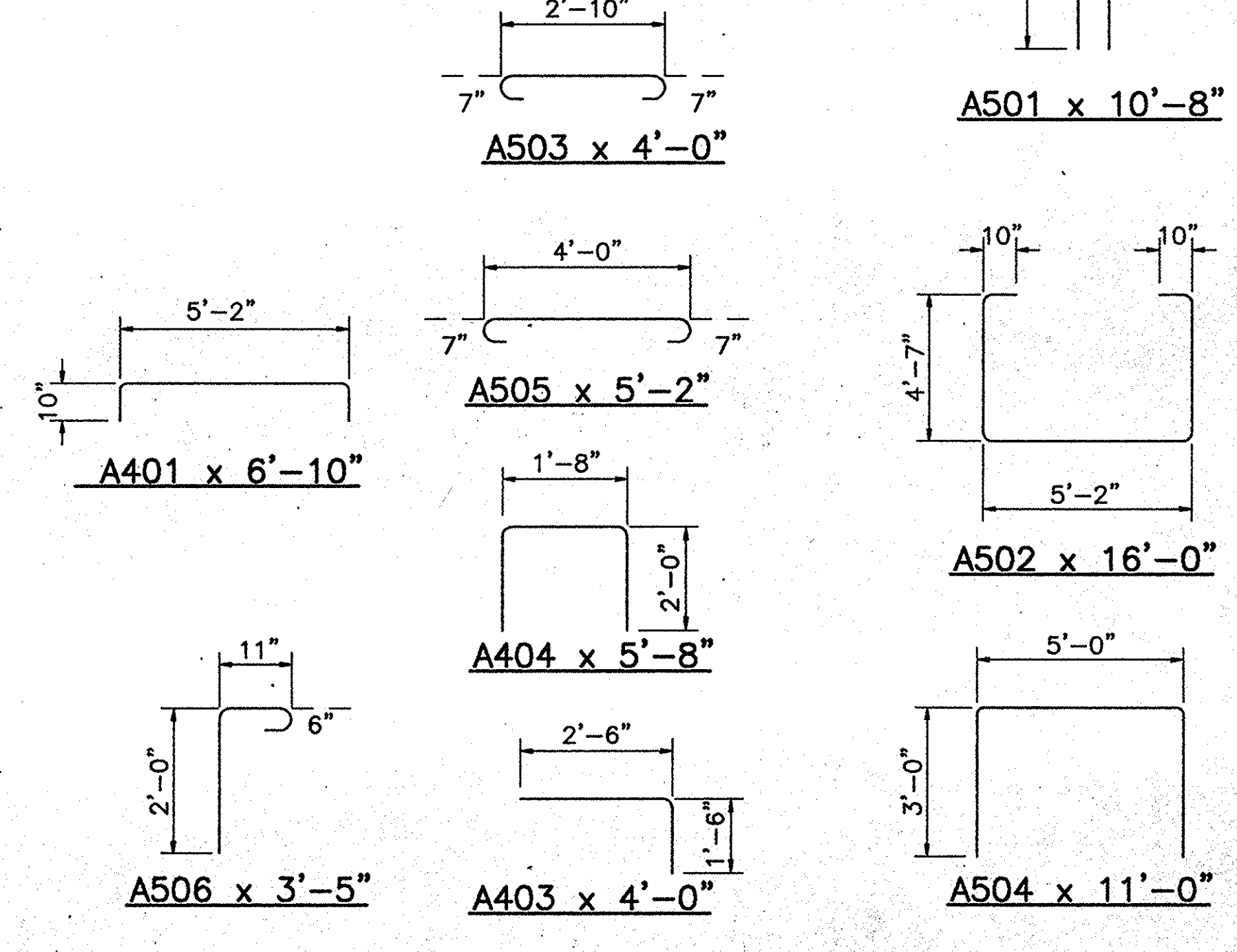
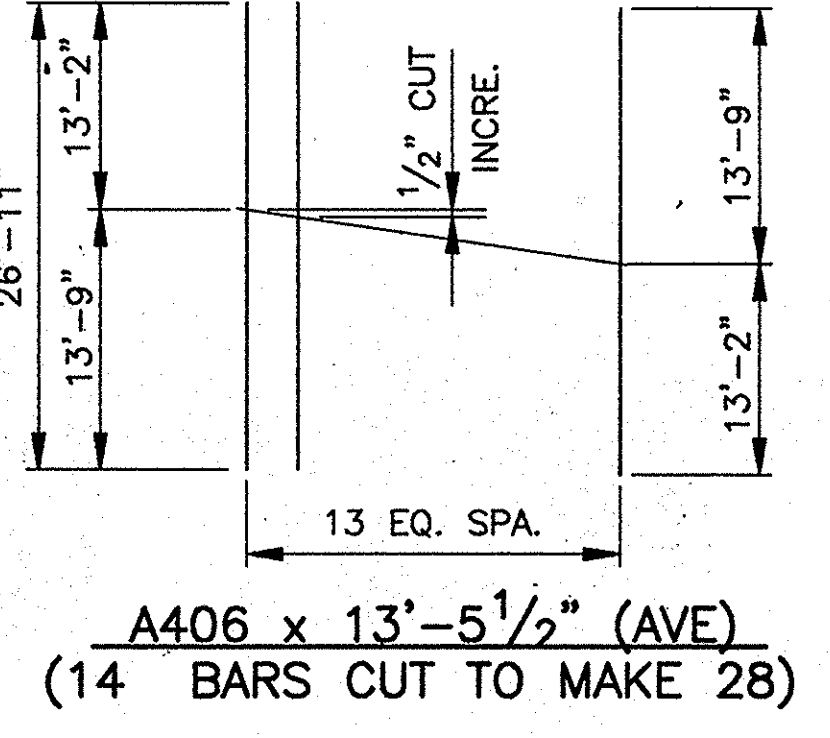
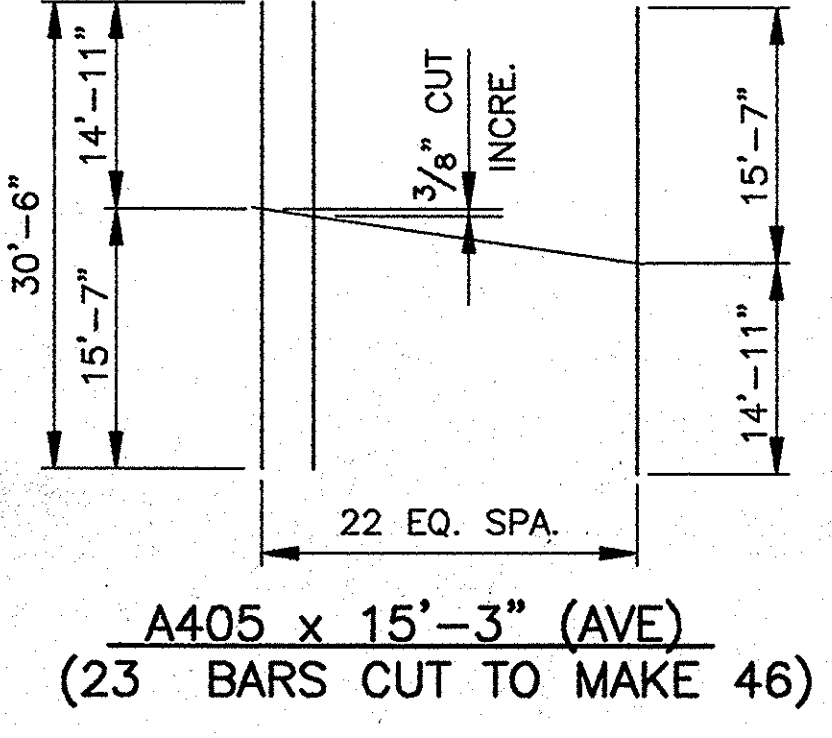
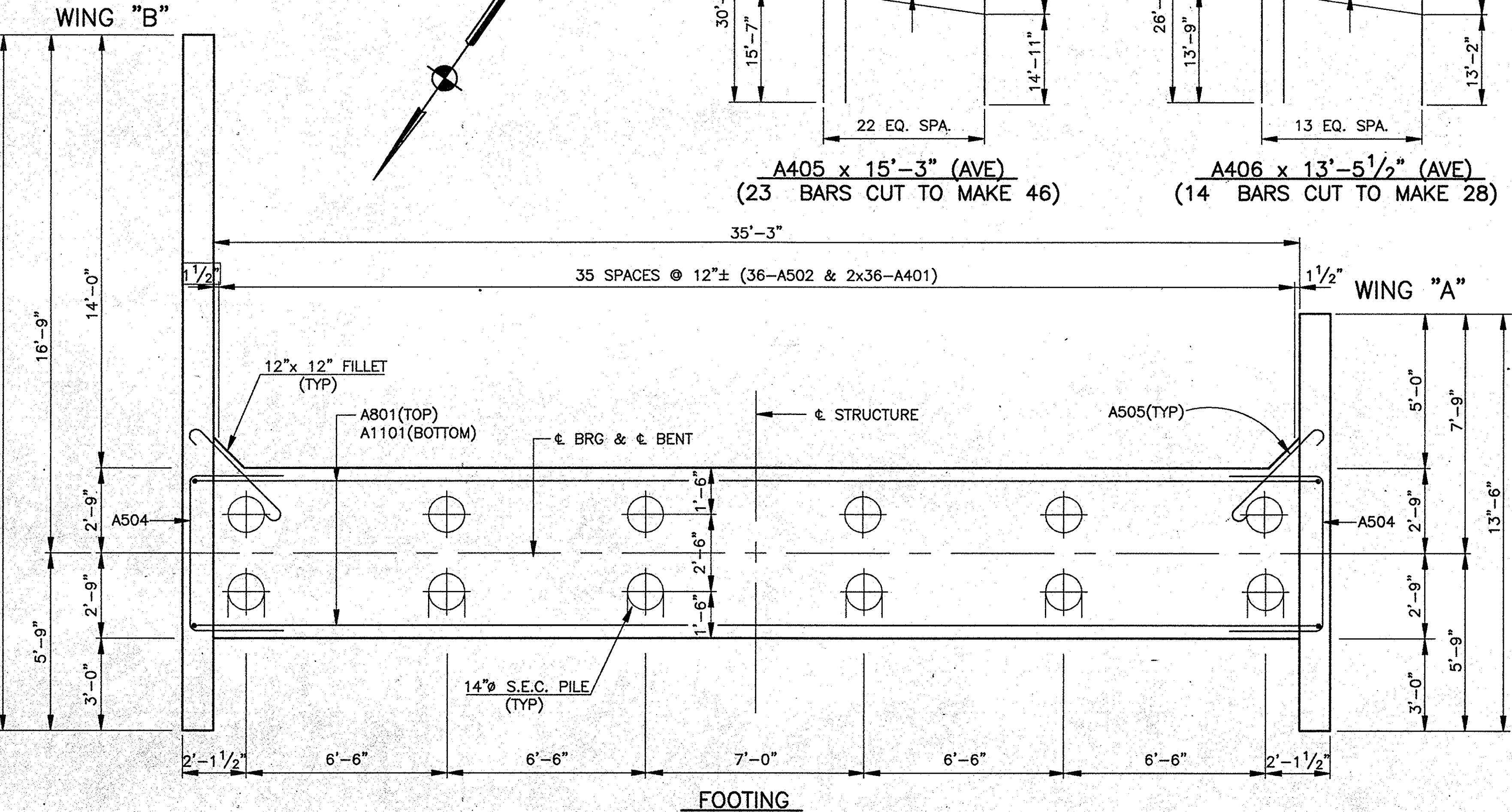
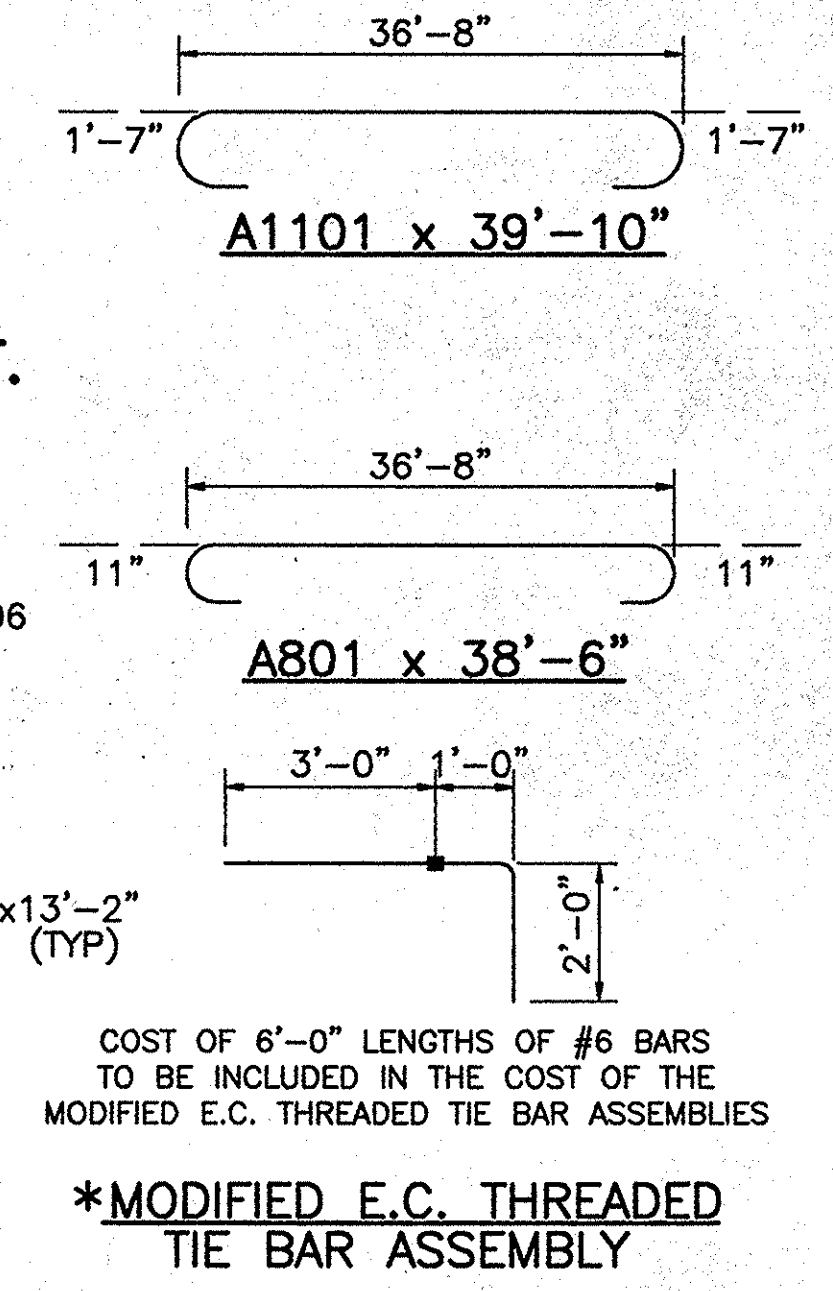
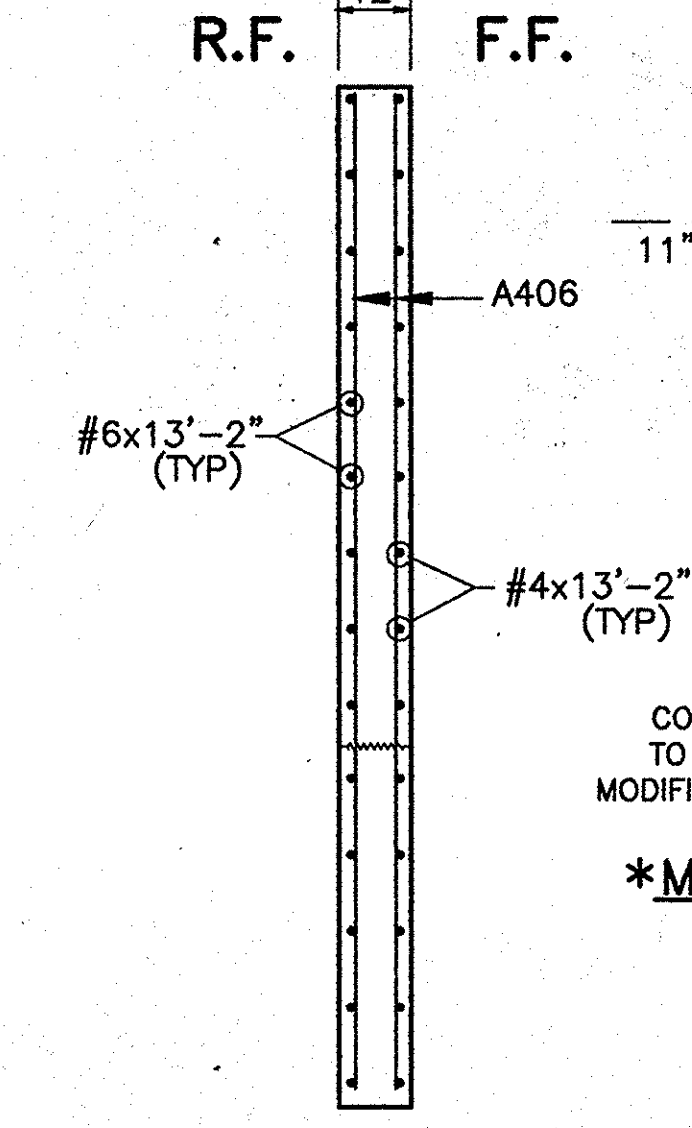
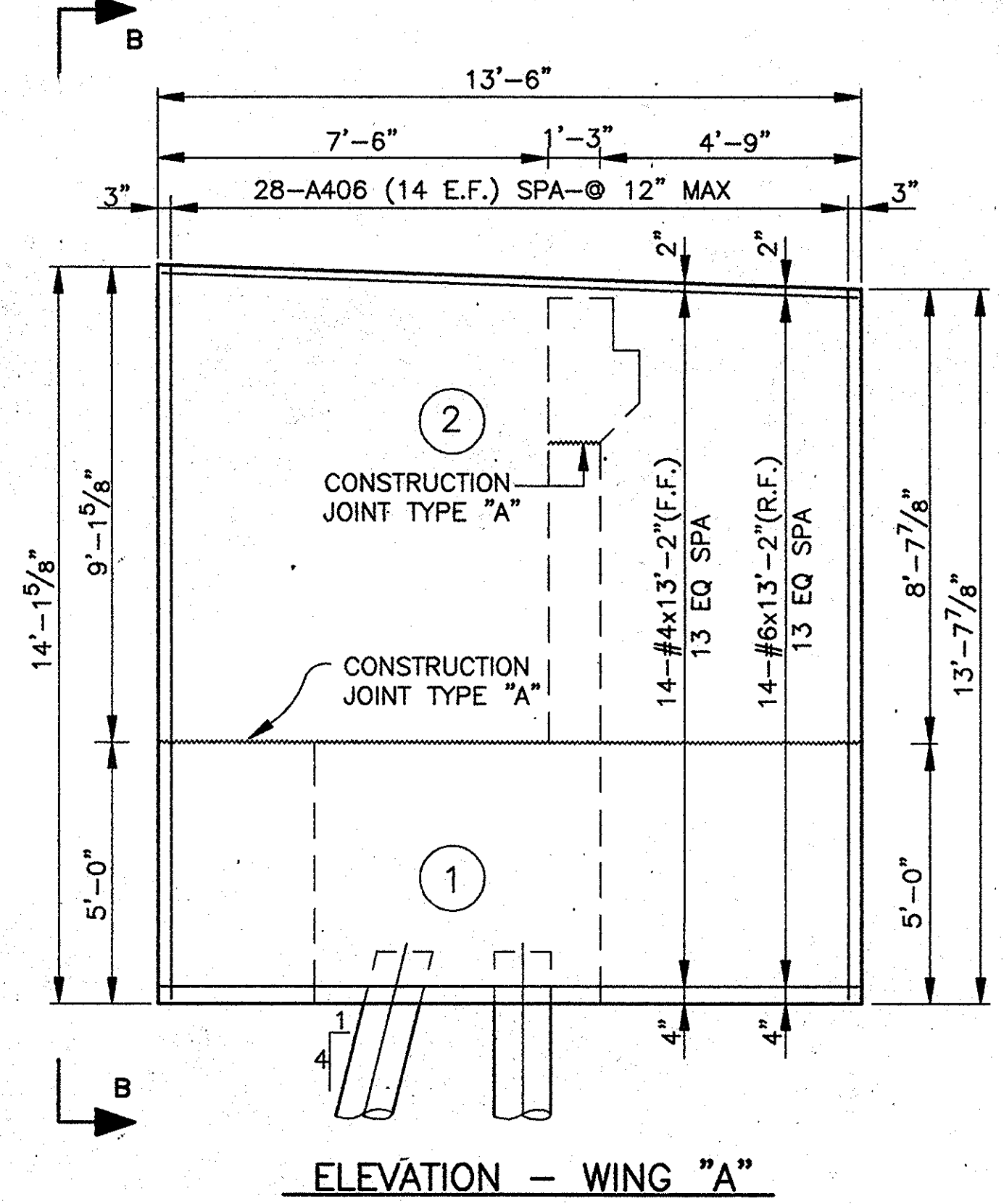
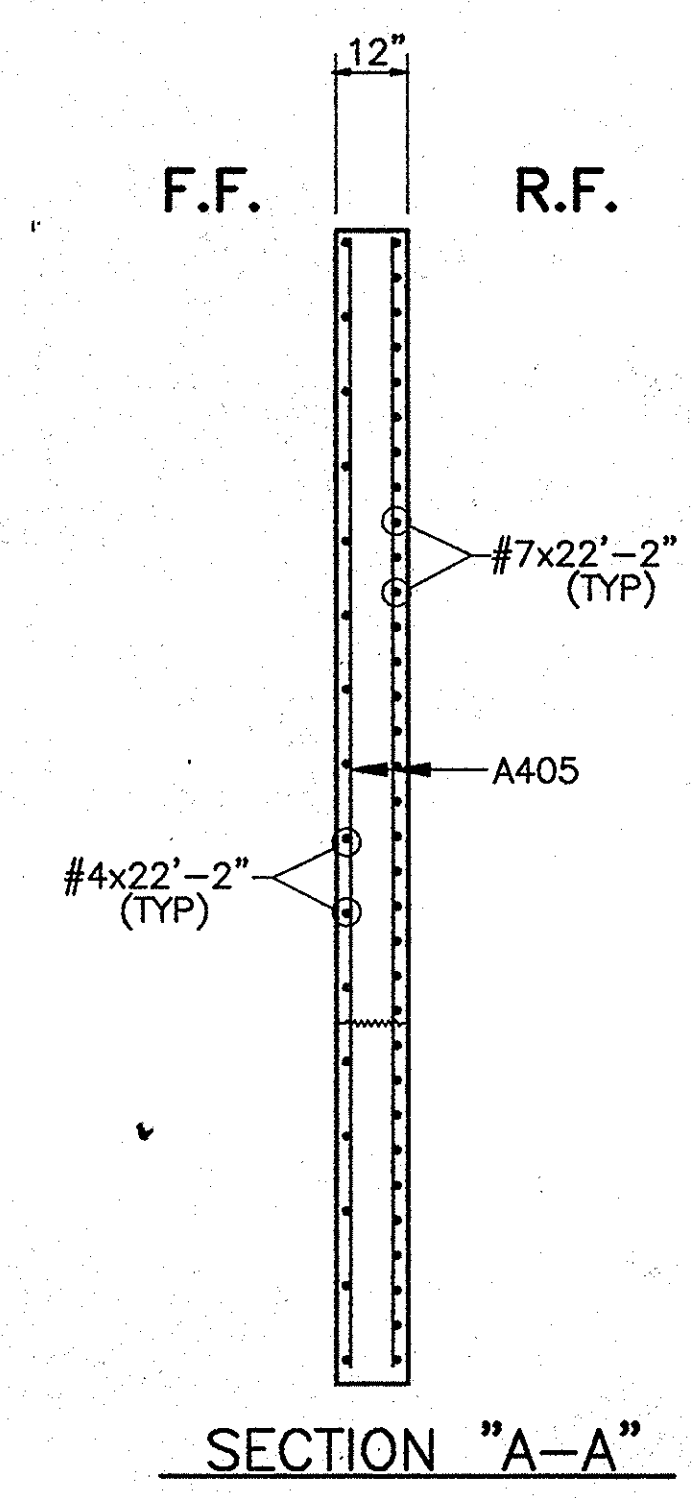
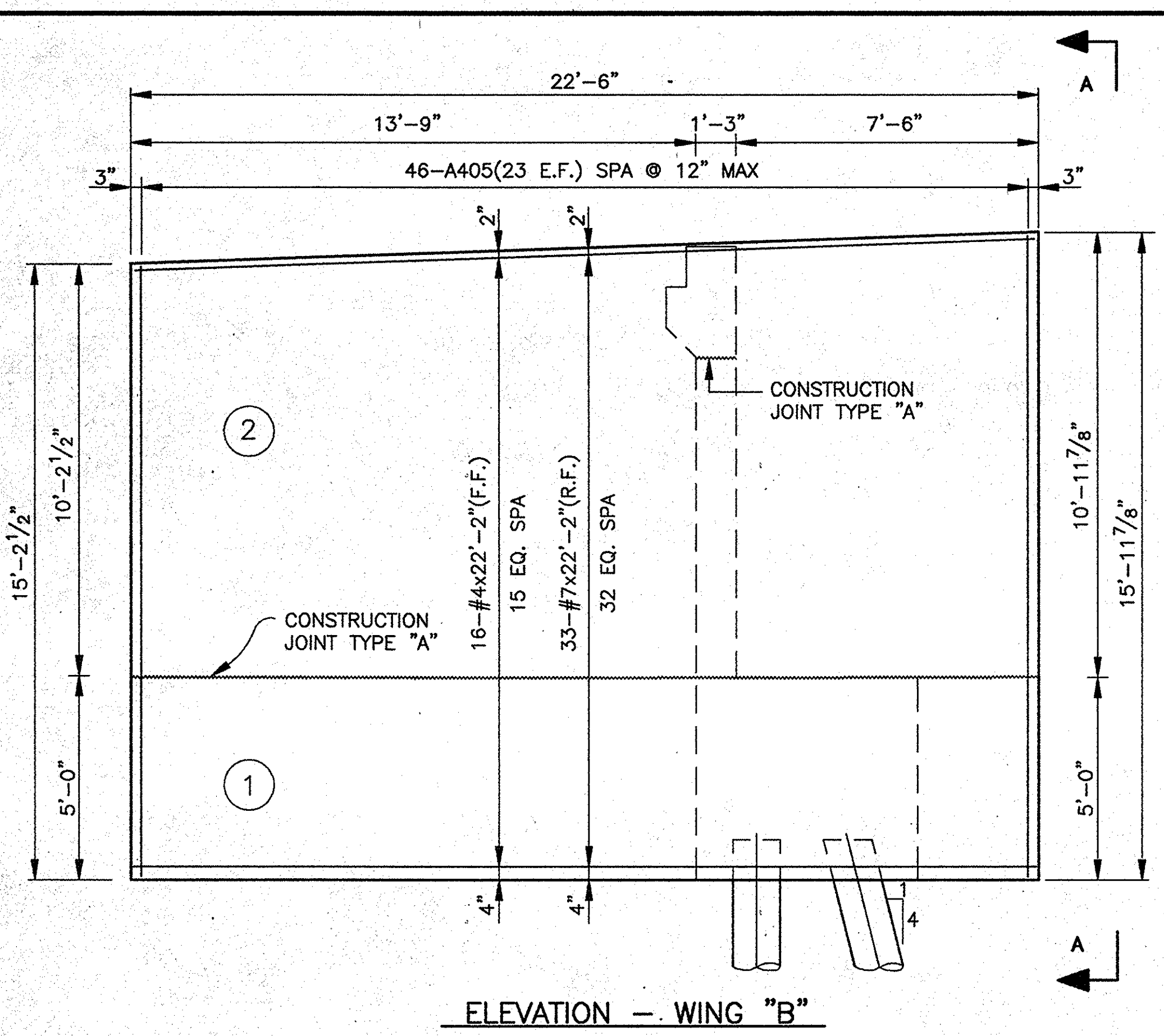
CONTRACT NO.

BRIDGE FILE: - I-80-5-7828



DIVISION OF BENTON, 09/02/97 at 0954

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



NOTES:
 # - INDICATES CONCRETE IN MUDWALL ABOVE TYPE "A" CONSTRUCTION JOINT TO BE BILLED WITH SUPERSTRUCTURE.
 (X) - INDICATES CONCRETE POUR SEQUENCE.
 TOP OF MUDWALL SHALL BE POURED CONCURRENTLY WITH OR AFTER THE BRIDGE DECK POUR.
 FOR REINFORCING BAR NOTES, SEE BR. STD. C1. SEE BR. STD C3 FOR CONSTR. JOINT TYPE "A".
 F.F. - INDICATES FRONT FACES.
 R.F. - INDICATES REAR FACES.
 E.F. - INDICATES EACH FACE.

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
A801	6	38'-6"	617
TOTAL NO.8			617
#7	33	22'-2"	1495
TOTAL NO.7			1495
#6	8	36'-8"	
#6	14	13'-2"	
TOTAL NO.6			718
#5	84	5'-6"	
#5	84	8'-6"	
A501	36	10'-8"	
A502	36	16'-0"	
A503	18	4'-0"	
A504	12	11'-0"	
A505	12	5'-2"	
A506	36	3'-5"	
TOTAL NO.5			2635
#4	26	34'-10"	
#4	16	22'-2"	
#4	14	13'-2"	
A401	72	6'-10"	
A402	36	4'-11"	
A403	48	4'-0"	
A404	16	5'-8"	
A405	46	15'-3"	
A406	28	13'-5 1/2"	
TOTAL NO.4			2322
TOTAL EPOXY COATED STEEL			9268
CONCRETE			
Class "A" Conc. in Substructure			
POUR No. 1			42.9 Cys.
Class "A" Conc. in Substructure			
POUR No. 2			23.0 Cys.
TOTAL			65.9 Cys.
Class "C" Concrete in Superstructure (4.1 Cys.)			#
MISCELLANEOUS			
Surface Seal (Estimated Quantity = 1041 Sft.)			1 L.Sum
12-14" S.E.C. PILES			979 LFT
* MODIFIED EPOXY COATED TIE BAR ASSEMBLIES			48 EACH

ALL REINFORCING STEEL IN BENT TO BE EPOXY COATED

SUBSTRUCTURE DETAILS - BENT NO. 1

INDIANA DEPARTMENT OF TRANSPORTATION
LAKE COUNTY

SCALE: - 3/8"=1'-0", UNLESS NOTED DATE: July 10, 1988

DRAWING: - C8 OF C44 SHEET: - 23 OF 65

PROJECT: - IN-80-1 () 4
CONTRACT NO.
BRIDGE FILE: - I-80-5-7828

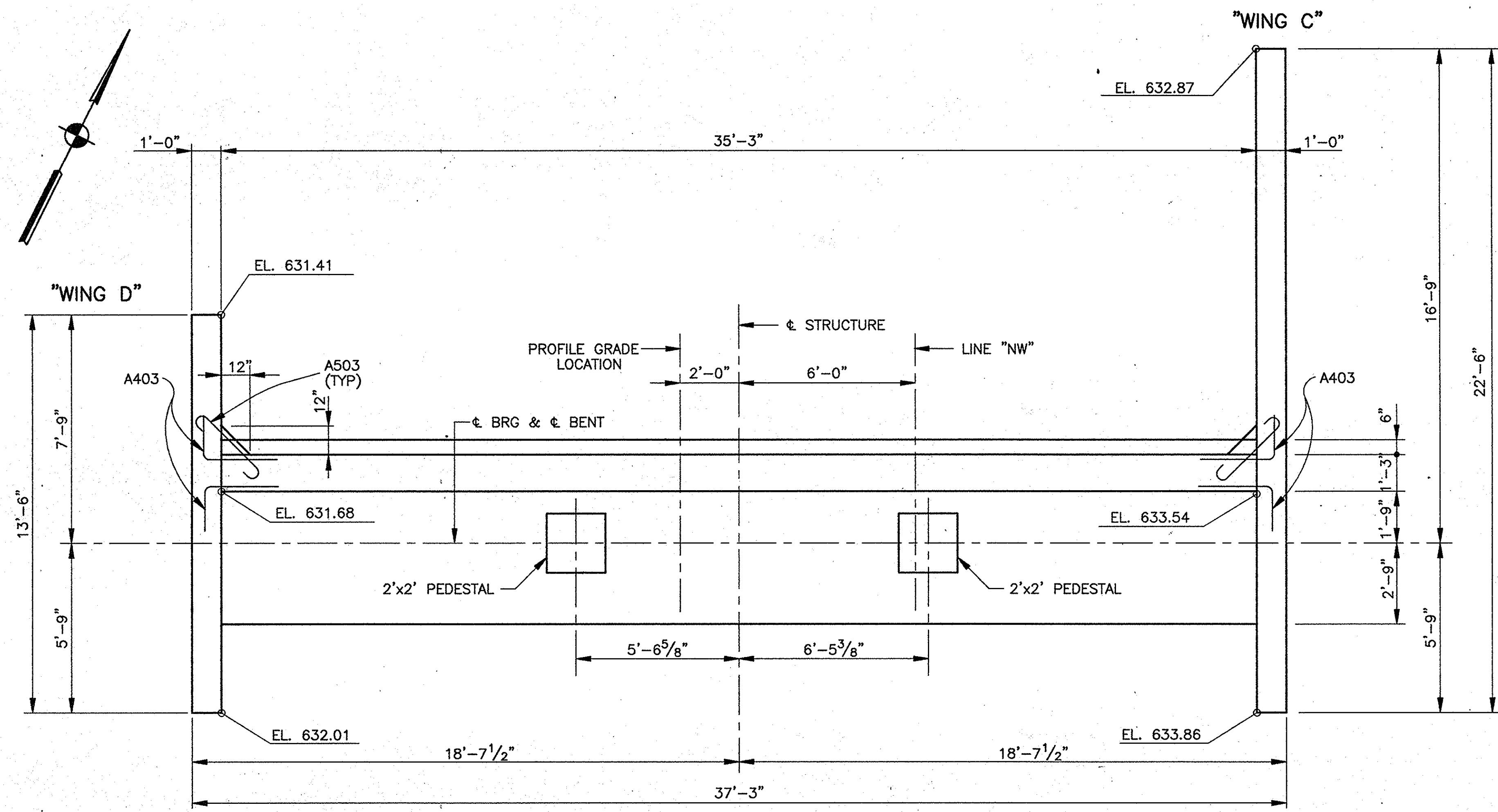


IMPORTANT POUR MUDWALL AFTER STRESSING OF LONGITUDINAL POST-TENSIONING.

9-1-98 Revised: File Quantity

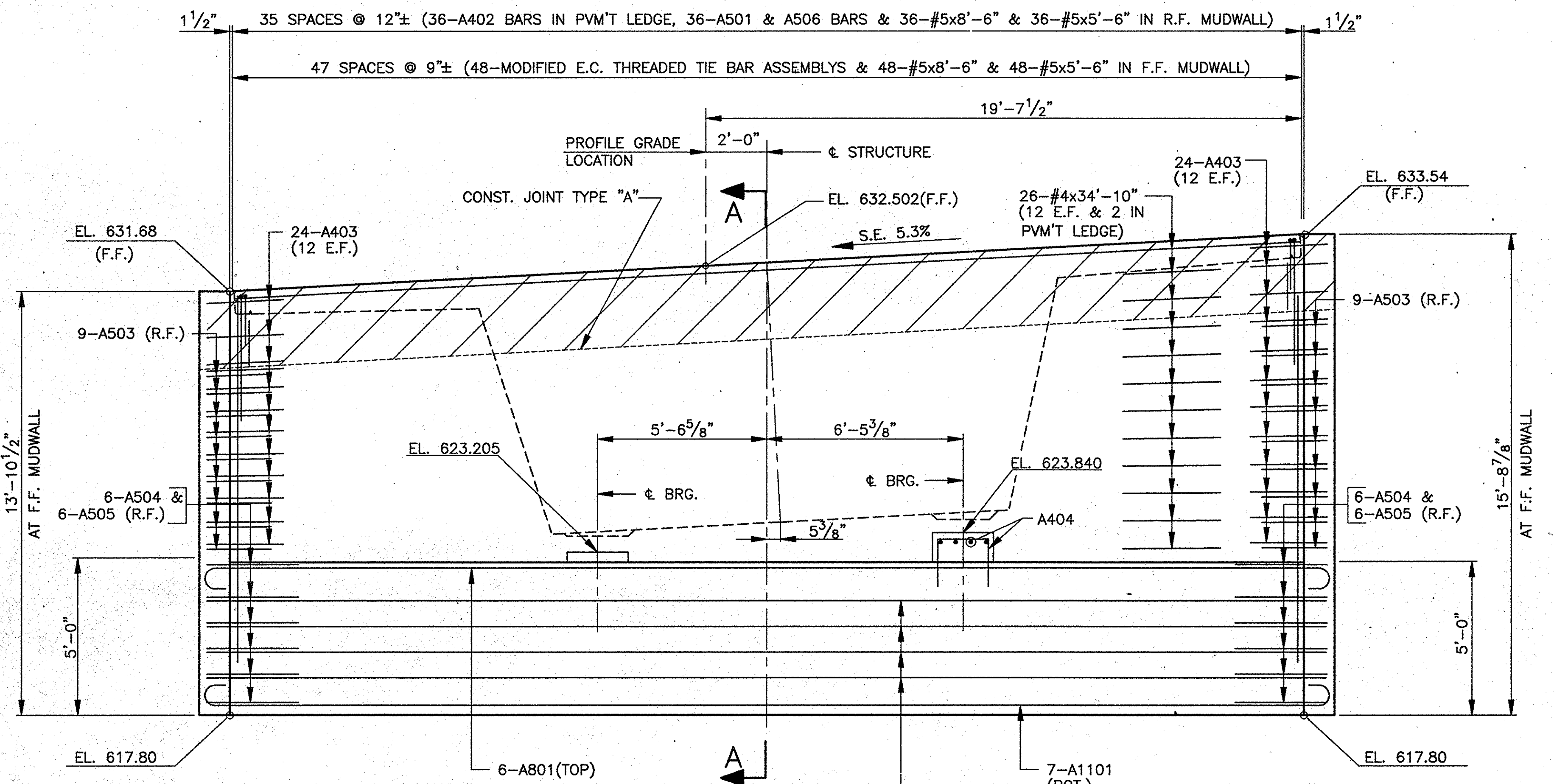
D:\NBA\115\BENTIB. 09/22/97 4: 0957

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



PLAN

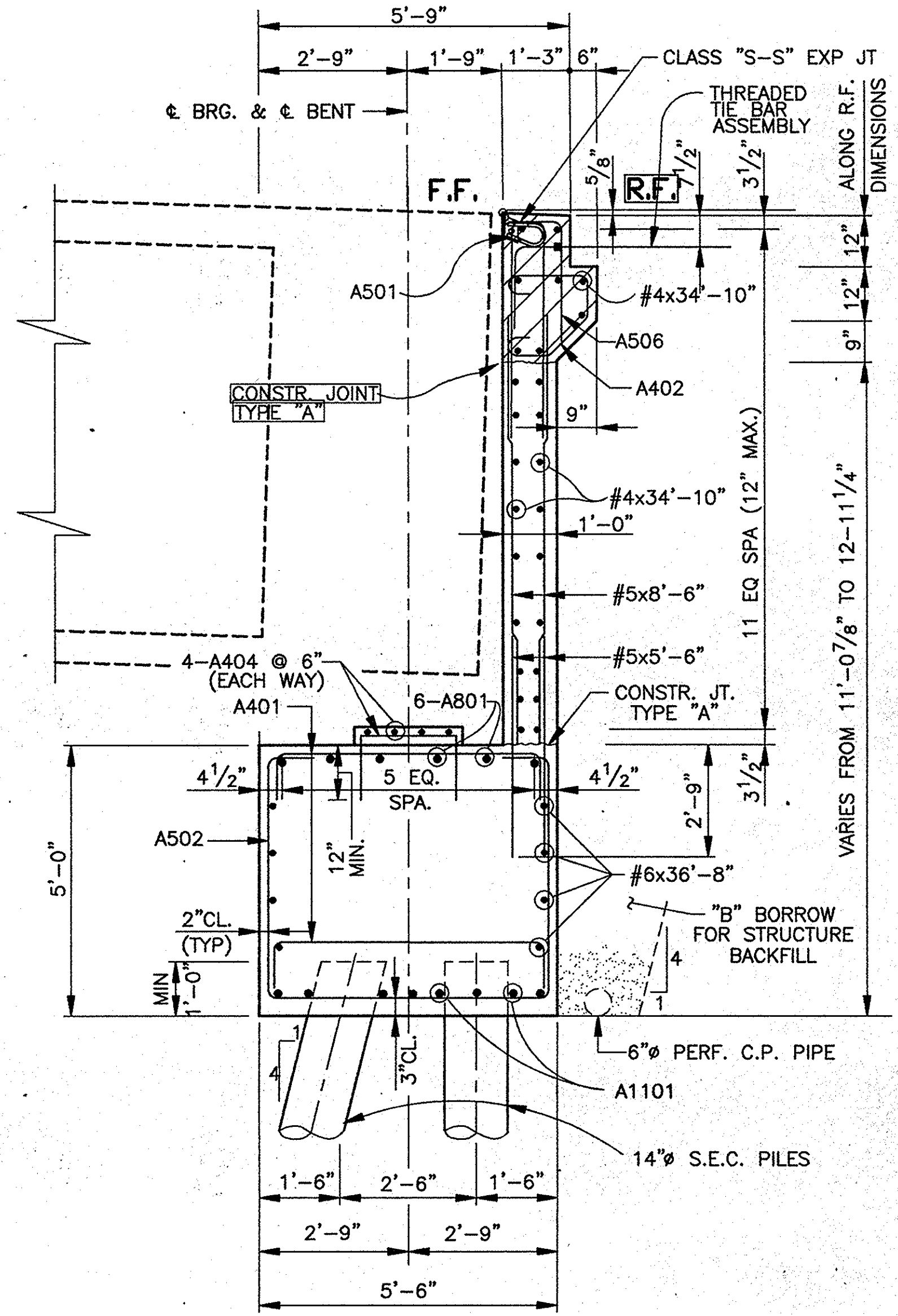
3/8" = 1'-0"



ELEVATION

3/8" = 1'-0"

NOTE:
HATCHED AREAS INDICATE
CONCRETE TO BE POURED
WITH SUPERSTRUCTURE



SECTION A-A

1/2" = 1'-0"

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: - C9 OF C44 SHEET: 24 OF 65

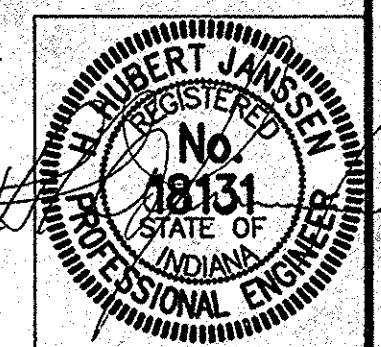
PROJECT: - NH-80-1 () 4

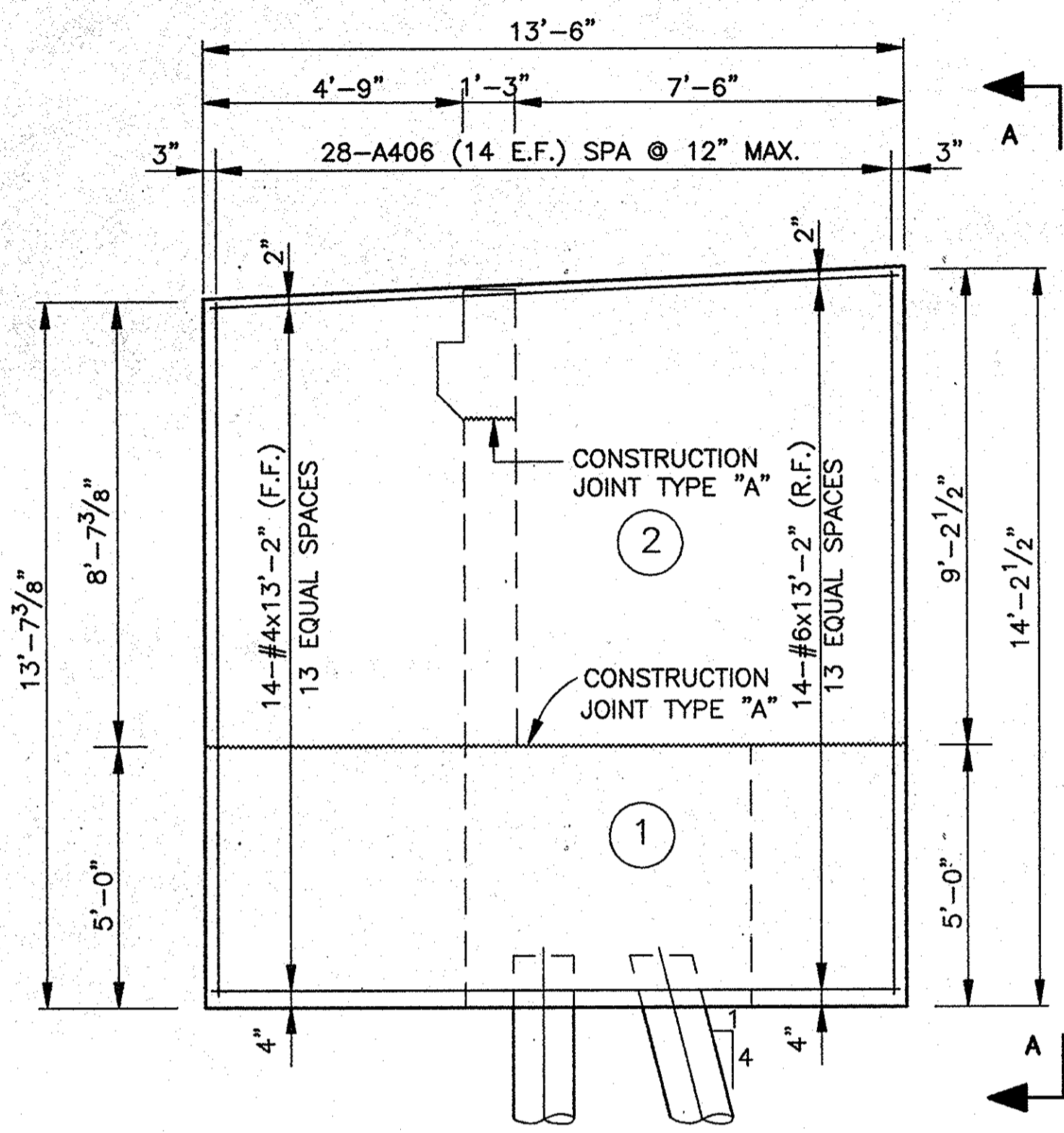
CONTRACT NO.

BRIDGE FILE: - I-80-5-7828

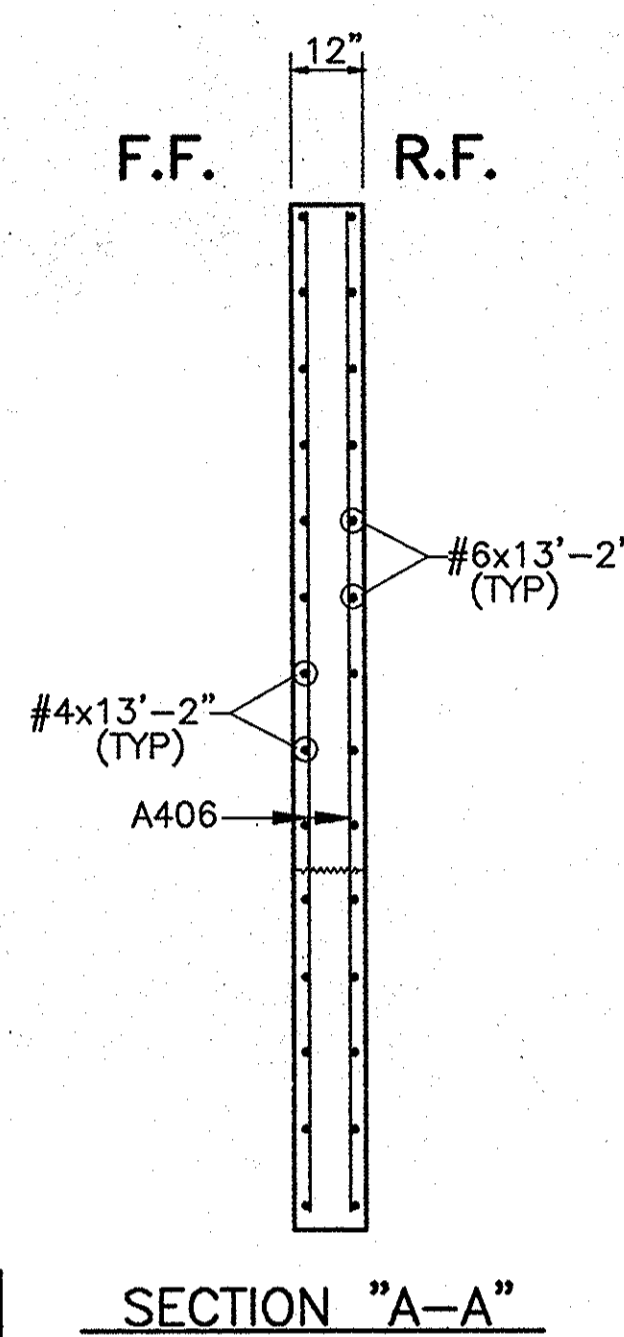
ENVIRONMENTAL 02/29/97 AT 1006

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

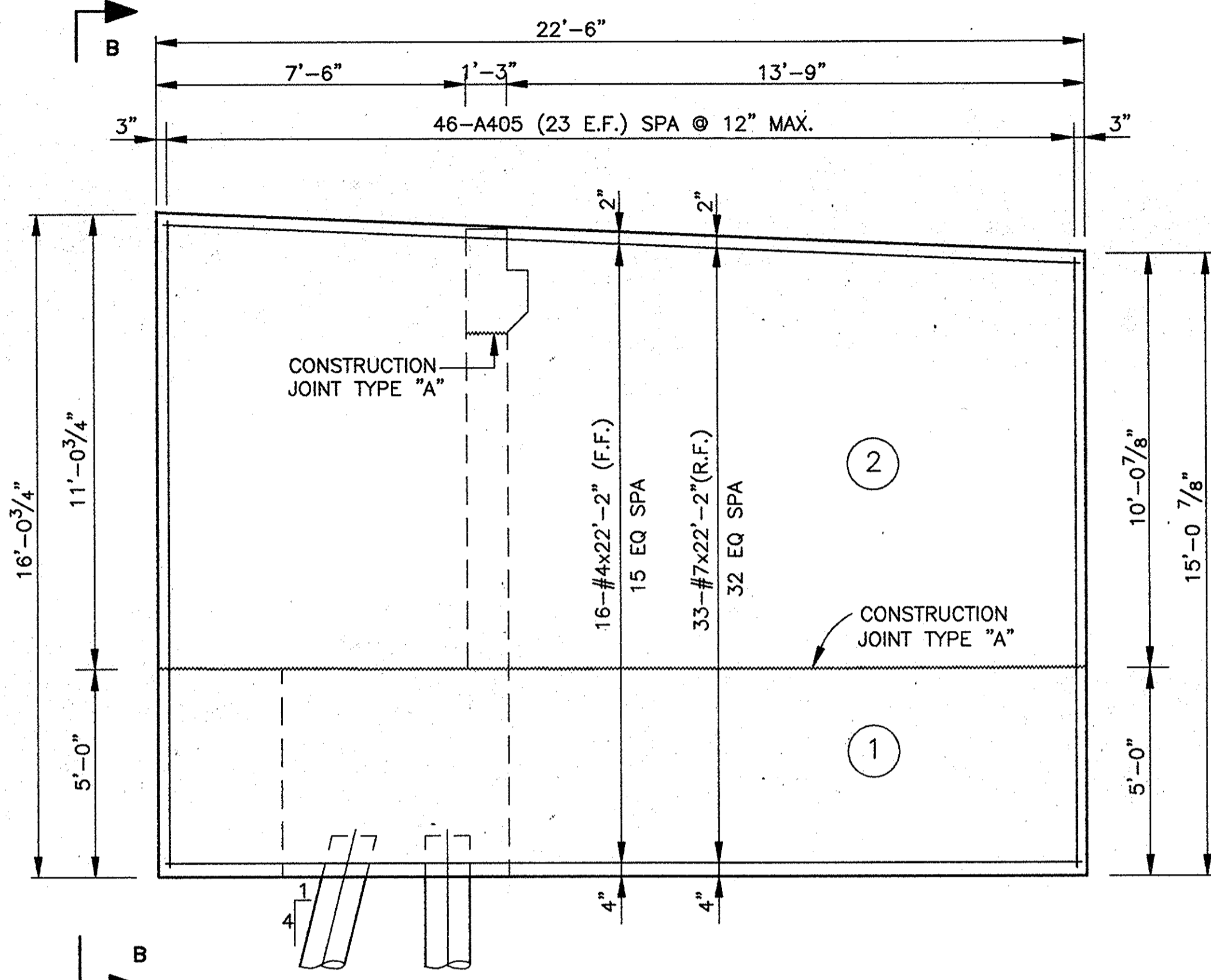




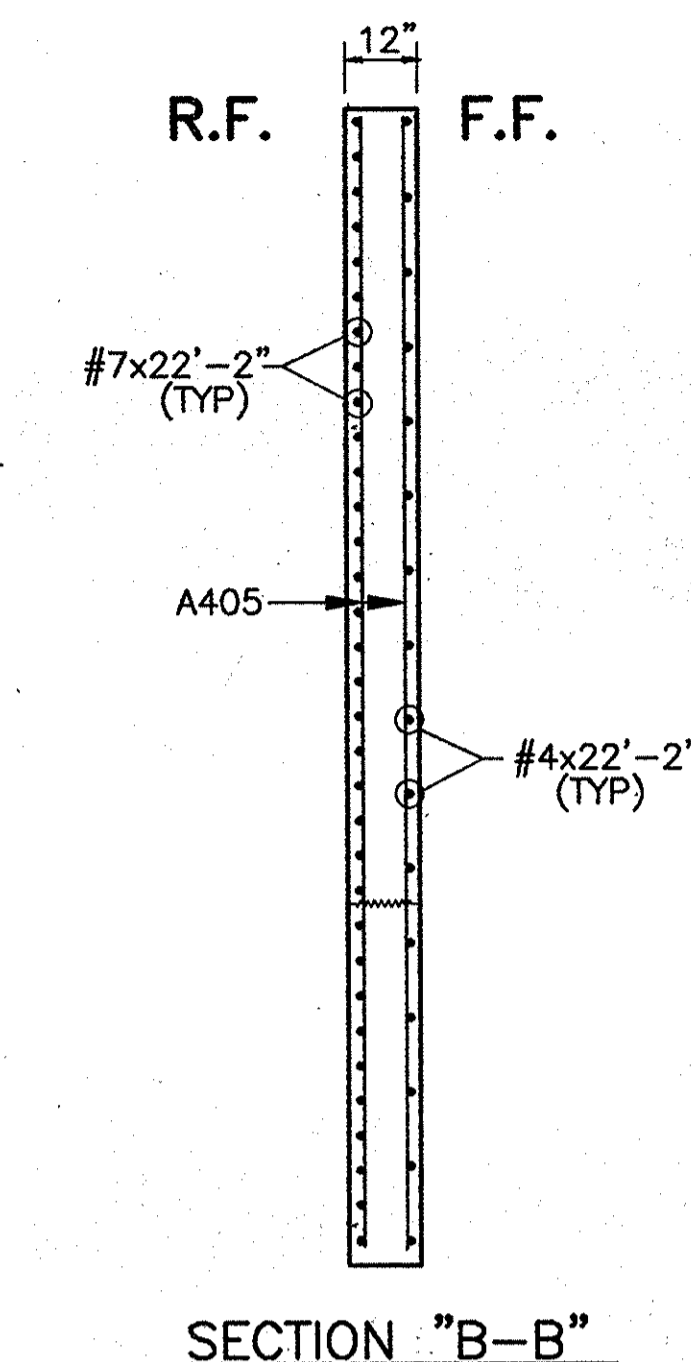
ELEVATION - WING "D"



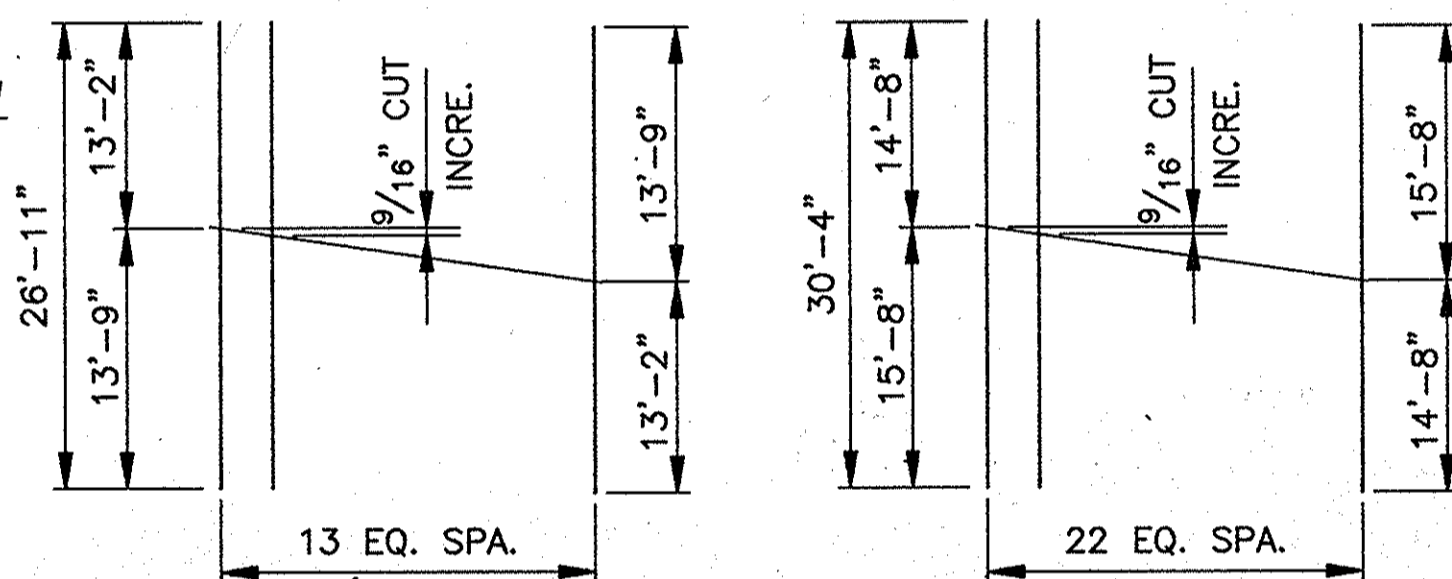
SECTION "A-A"



ELEVATION - WING "C"



SECTION "B-B"

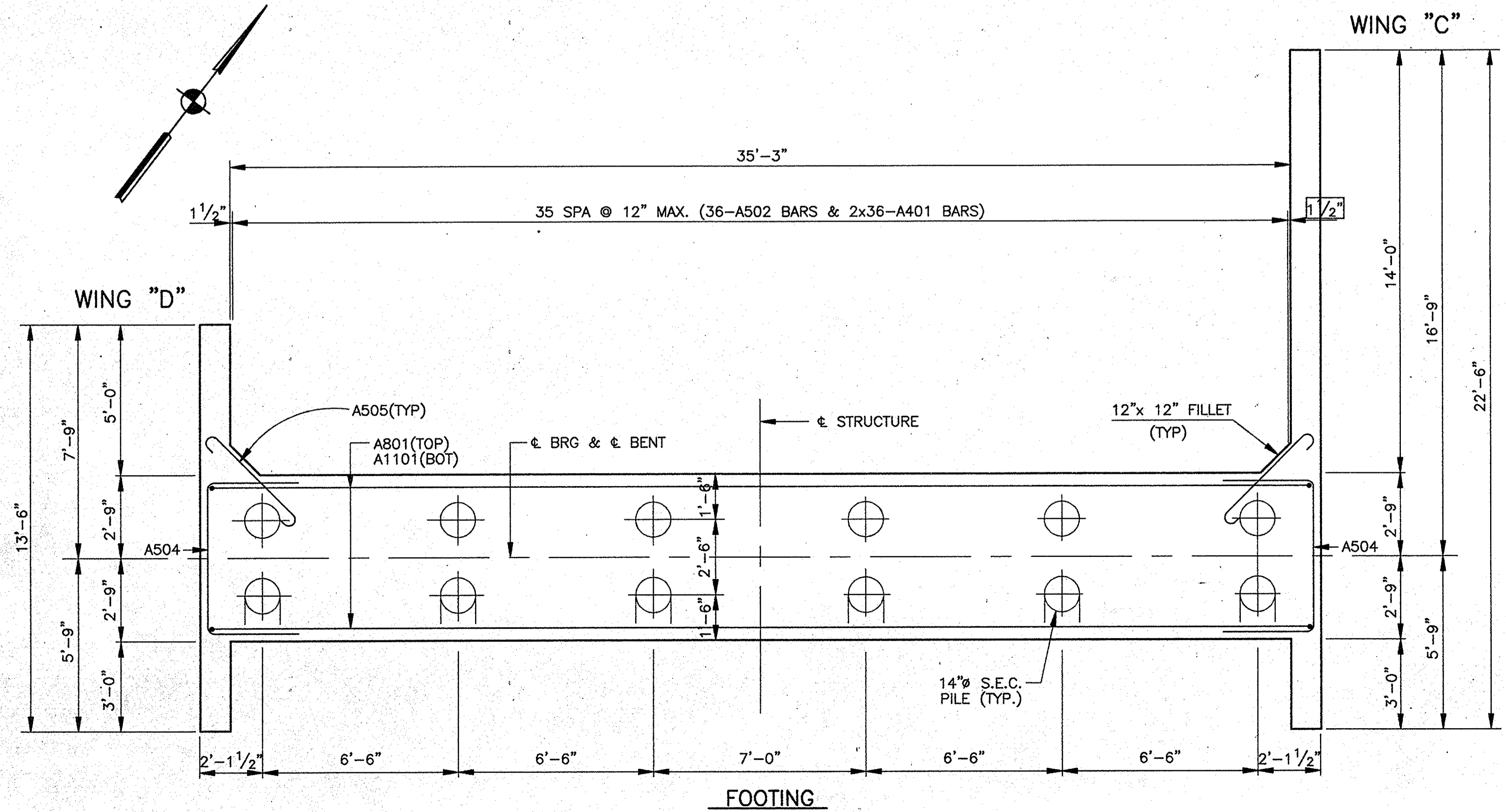


COST OF 6'-0" LENGTHS OF #6 BARS TO BE INCLUDED IN THE COST OF THE MODIFIED E.C. THREADED TIE BAR ASSEMBLY

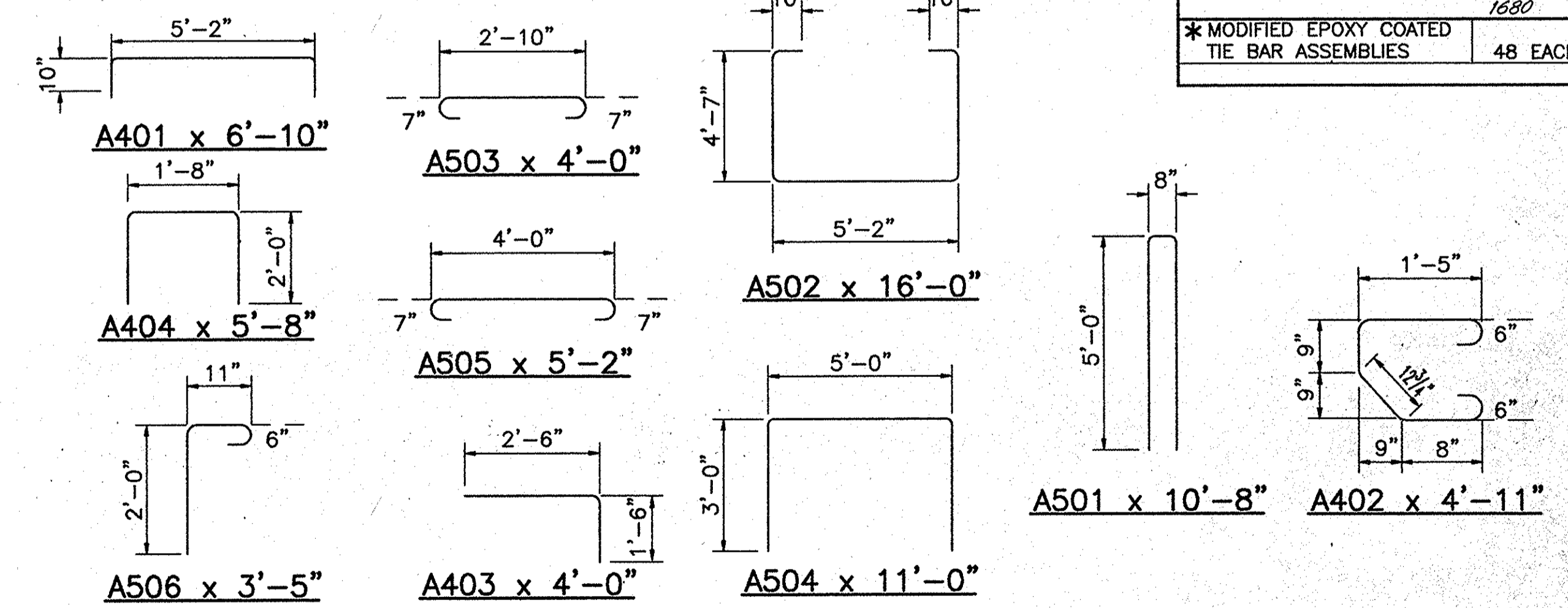
* MODIFIED E.C. THREADED TIE BAR ASSEMBLY

A406 x 13'-5 1/2" (AVE) (14 BARS CUT TO MAKE 26)
 A405 x 15'-2" (AVE) (23 BARS CUT TO MAKE 46)

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	22'-2"	1495
TOTAL NO.7			1495
#6	8	36'-8"	
#6	14	13'-2"	
TOTAL NO.6			718
#5	84	5'-6"	
#5	84	8'-6"	
A501	36	10'-8"	
A502	36	16'-0"	
A503	18	4'-0"	
A504	12	11'-0"	
A505	12	5'-2"	
A506	36	3'-5"	
TOTAL NO.5			2635
#4	26	34'-10"	
#4	16	22'-2"	
#4	14	13'-2"	
A401	72	6'-10"	
A402	36	4'-11"	
A403	48	4'-0"	
A404	16	5'-8"	
A405	46	15'-2"	
A406	28	13'-5 1/2"	
TOTAL NO.4			2319
TOTAL EPOXY COATED STEEL			9265
CONCRETE			
Class "A" Conc. in Substructure		POUR No. 1	42.9 Cys.
Class "A" Conc. in Substructure		POUR No. 2	23.0 Cys.
TOTAL			65.9 Cys.
Class "C" Concrete in Superstructure (4.1 Cys.)			#
MISCELLANEOUS			
Surface Seal (Estimated Quantity=1141 Sft.)		1680	1 L.Sum
12-14" S.E.C.PILES		1220-LFT.	
* MODIFIED EPOXY COATED TIE BAR ASSEMBLIES		48 EACH	



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.

ALL REINFORCING STEEL IN BENT TO BE EPOXY COATED

SUBSTRUCTURE DETAILS - BENT NO. 10

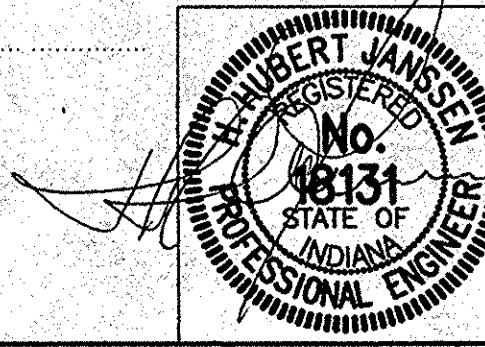
INDIANA DEPARTMENT OF TRANSPORTATION
 LAKE COUNTY

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

SUBMITTED FOR APPROVAL

DRAWING: - C10 OF C44 SHEET: - 25 OF 65

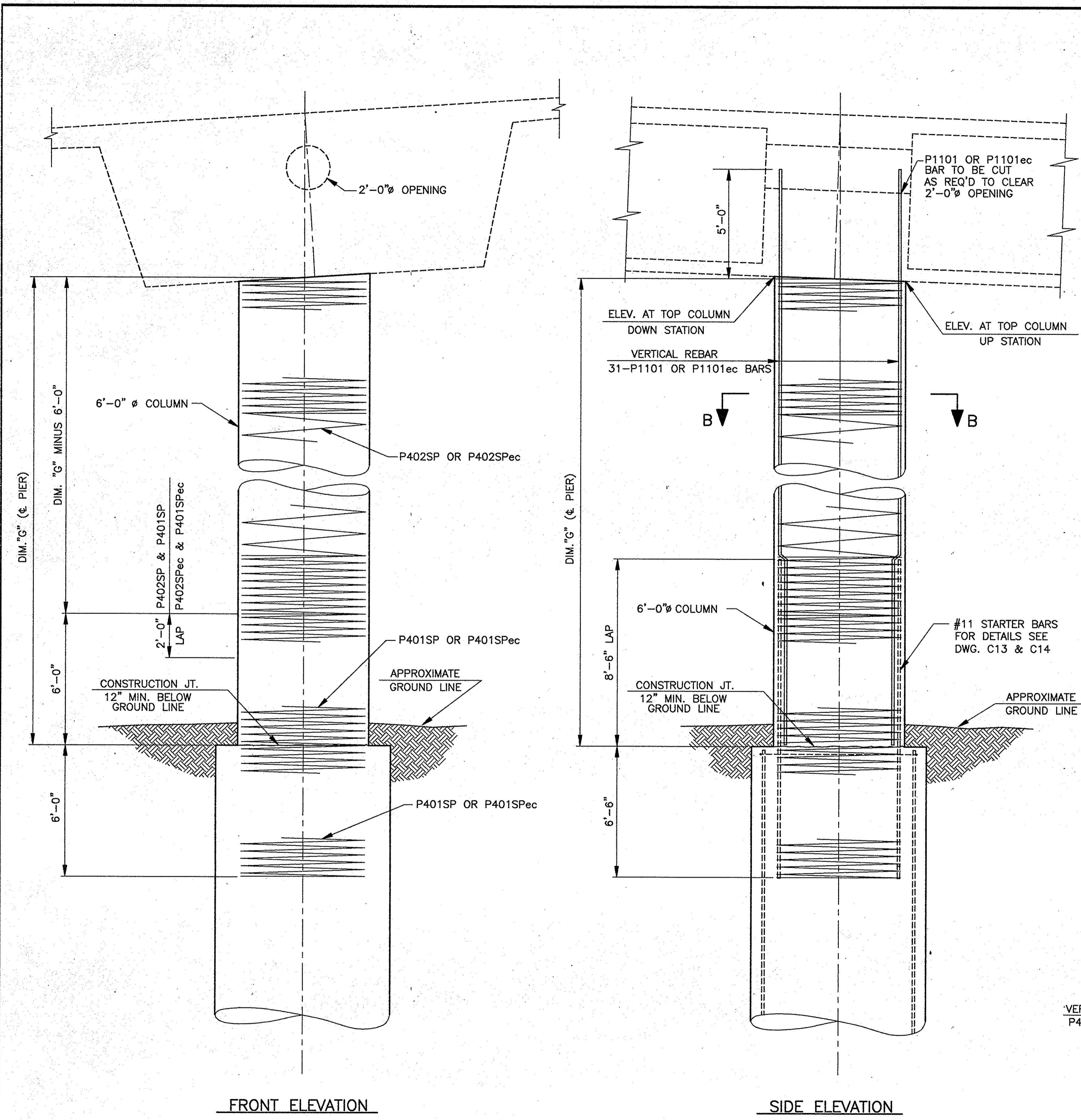
PROJECT: - NH-80-1 ()
 CONTRACT NO.
 BRIDGE FILE: - I-80-5-7828



IMPORTANT POUR MUDWALL AFTER STRESSING OF LONGITUDINAL POST-TENSIONING.

9-1-98 Revised: Pile Quantity.

INDIANA DEPARTMENT OF TRANSPORTATION
 DIVISION OF BRIDGE DESIGN
 DESIGNED: HHJ C.K.D. LS
 DRAWN: TMD C.K.D. HHJ
 TRACED: C.K.D.



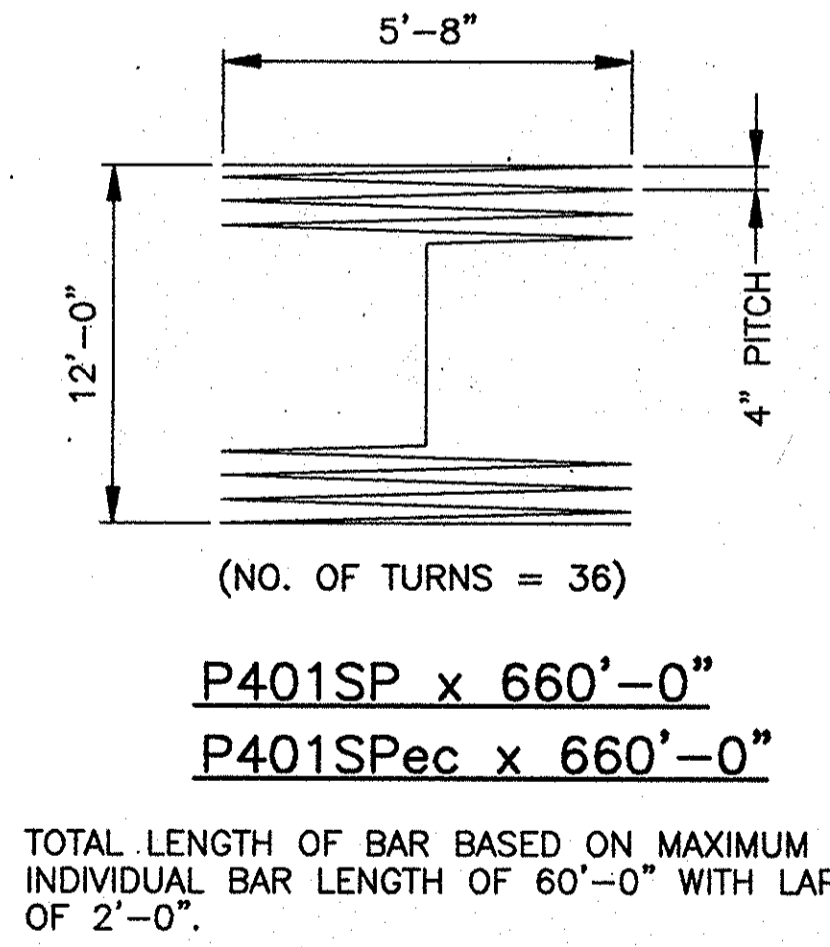
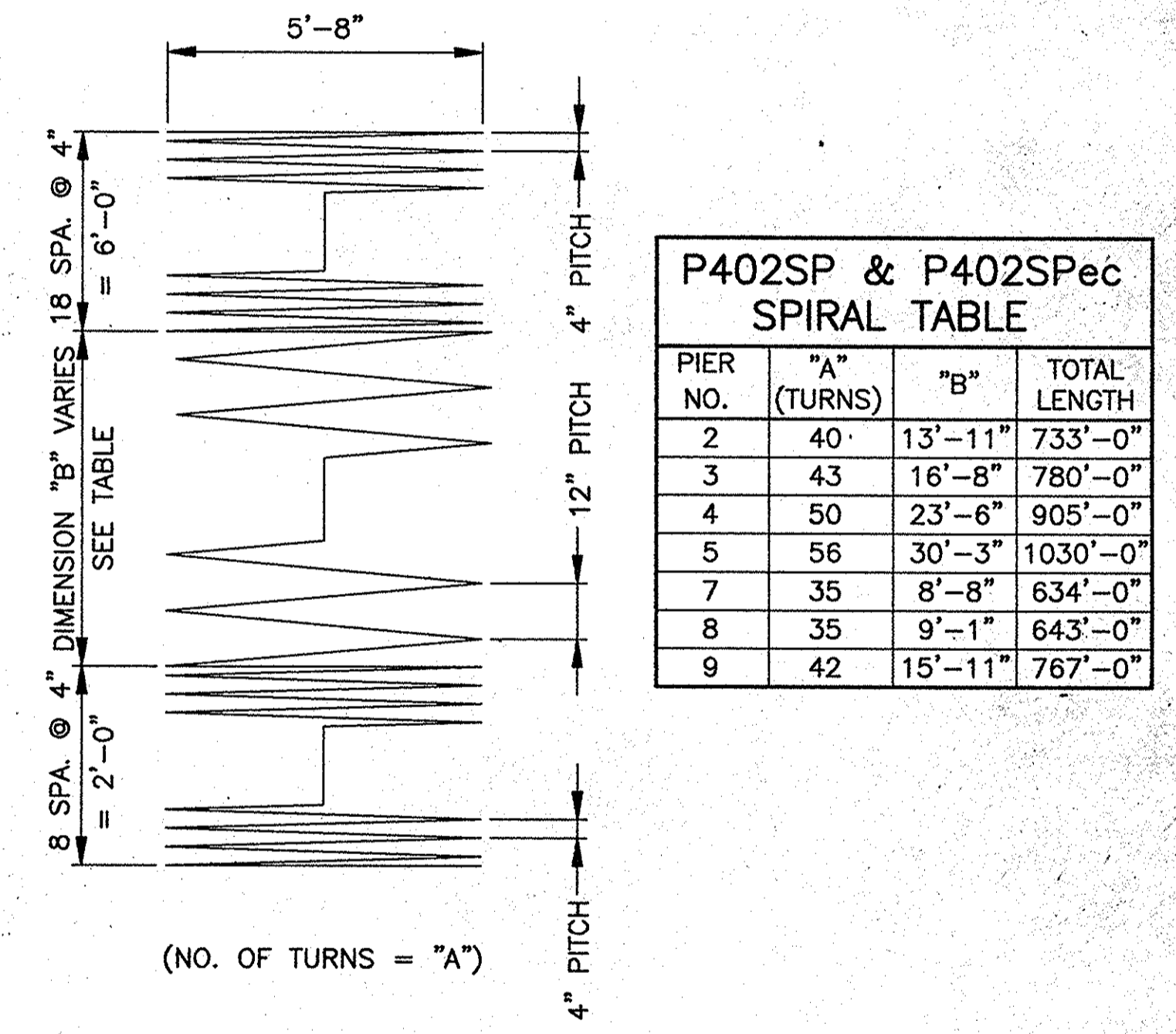
BILL OF MATERIALS

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	30'-11"	5749	P1101ec	35	33'-8"	6260	P1101ec	35	40'-6"	7531	P1101	35	47'-3"	8786
P401SP	1	660'-0"	441	P401SPec	1	660'-0"	441	P401SPec	1	660'-0"	441	P401SP	1	660'-0"	441
P402SP	1	733'-0"	490	P402SPec	1	780'-0"	521	P402SPec	1	905'-0"	605	P402SP	1	1030'-0"	688
TOTAL REINFORCING STEEL				TOTAL E.C. REINFORCING STEEL				TOTAL E.C. REINFORCING STEEL				TOTAL REINFORCING STEEL			
6680				7222				8577				9915			
CONCRETE				CONCRETE				CONCRETE				CONCRETE			
Class "A" Conc. in Substructure				Class "A" Conc. in Substructure				Class "A" Conc. in Substructure				Class "A" Conc. in Substructure			
27.2 Cys.				30.0 Cys				37.2 Cys				44.2 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	25'-8"	4773	P1101ec	35	26'-1"	4850	P1101	35	32'-11"	6121
P401SPec	1	660'-0"	441	P401SPec	1	660'-0"	441	P401SP	1	660'-0"	441
P402SPec	1	634'-0"	424	P402SPec	1	643'-0"	430	P402SP	1	767'-0"	512
TOTAL E.C. REINFORCING STEEL				TOTAL E.C. REINFORCING STEEL				TOTAL REINFORCING STEEL			
5638				5721				7074			
CONCRETE				CONCRETE				CONCRETE			
Class "A" Conc. in Substructure				Class "A" Conc. in Substructure				Class "A" Conc. in Substructure			
21.6 Cys				22.1 Cys				29.2 Cys			

TABLE OF ELEVATIONS & DIMENSIONS (FT.)

PIER NO.	ELEV. AT TOP COLUMN DOWNSTA.	ELEV. AT TOP COLUMN UPSTATION	APPROX. DIMENSIONS "G"
2	617.83	618.04	25'-11"
3	624.48	624.69	28'-8"
4	629.42	629.59	35'-6"
5	634.14	634.25	42'-3"
7	635.61	635.54	20'-8"
8	633.17	633.03	21'-1"
9	626.97	626.74	27'-11"

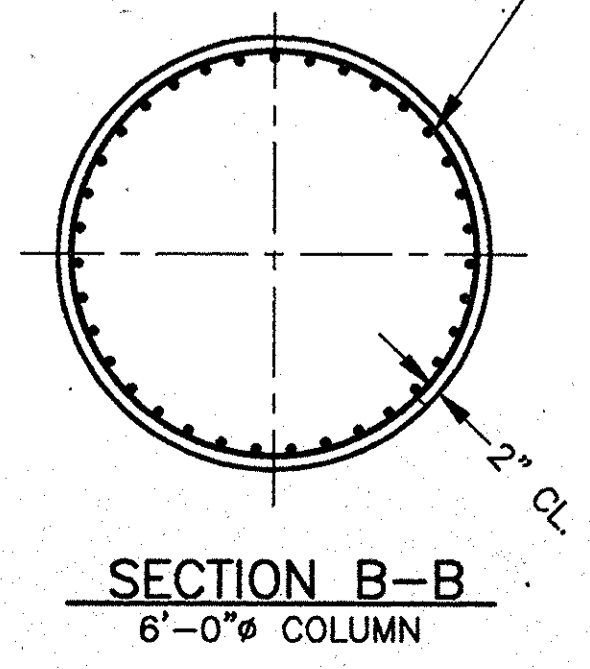


P402SP x VARIES (SEE TABLE)
P402SPec x VARIES (SEE TABLE)

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".

- 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.

VERTICAL REBAR 35-P1101 OR P1101ec BARS
P402SP OR P402SPec SPIRAL



SUBSTRUCTURE DETAILS
PIERS 2, 3, 4, 5, 7, 8 & 9

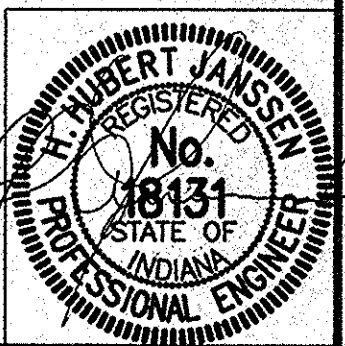
INDIANA DEPARTMENT OF TRANSPORTATION
LAKE COUNTY

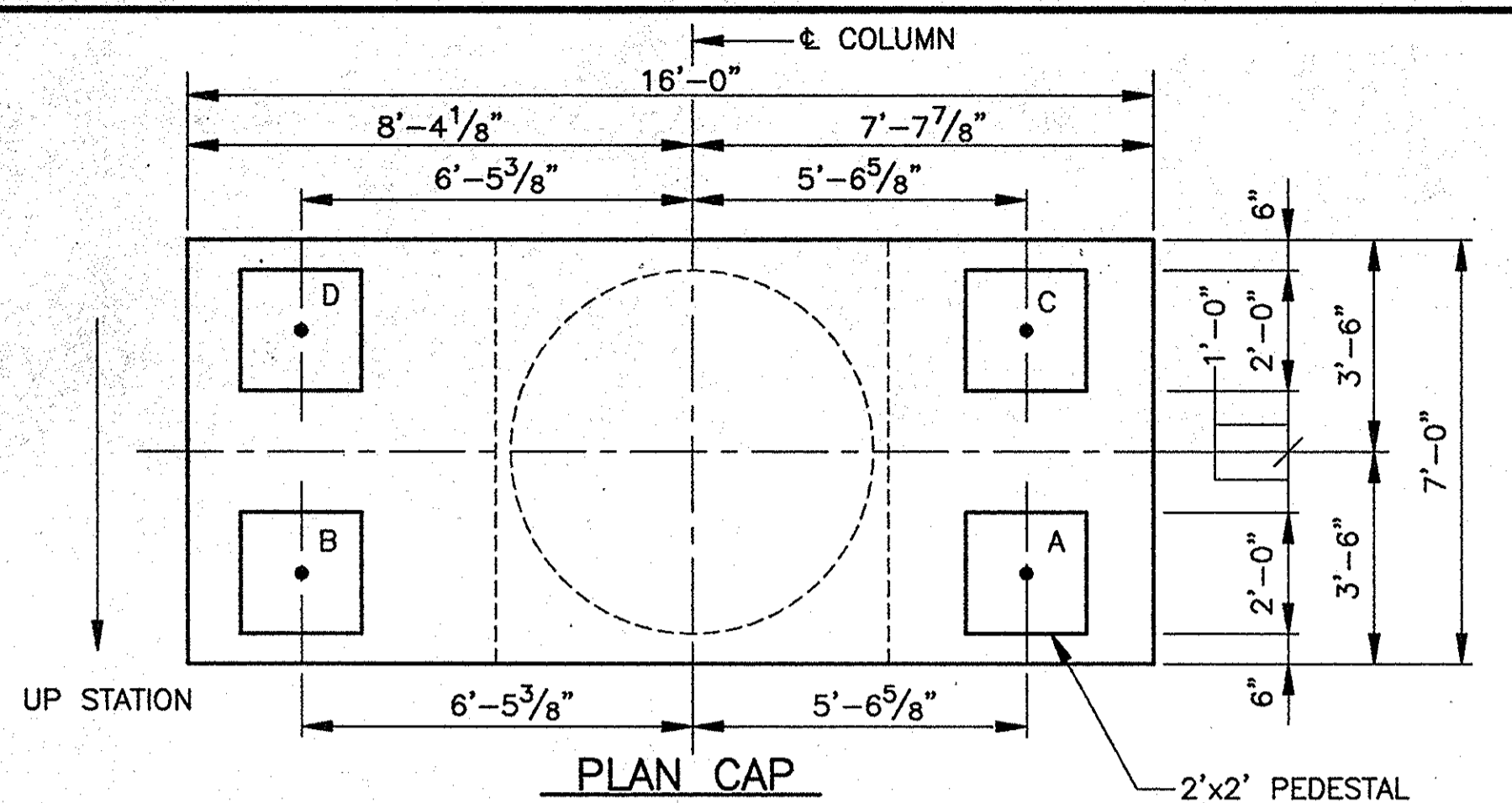
SCALE: - 3/8"=1'-0", UNLESS NOTED DATE: - July 10, 1998

SUBMITTED FOR APPROVAL

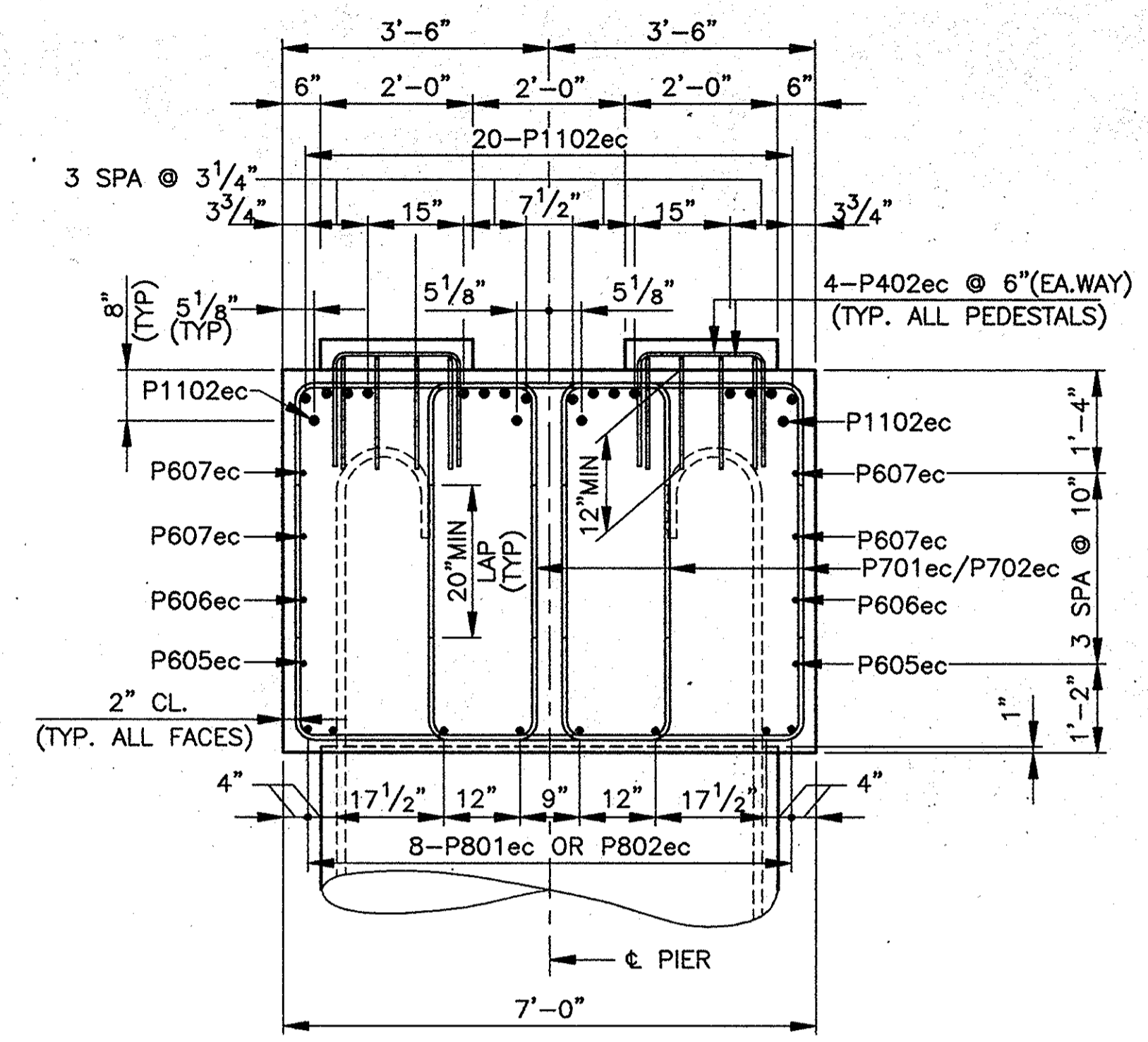
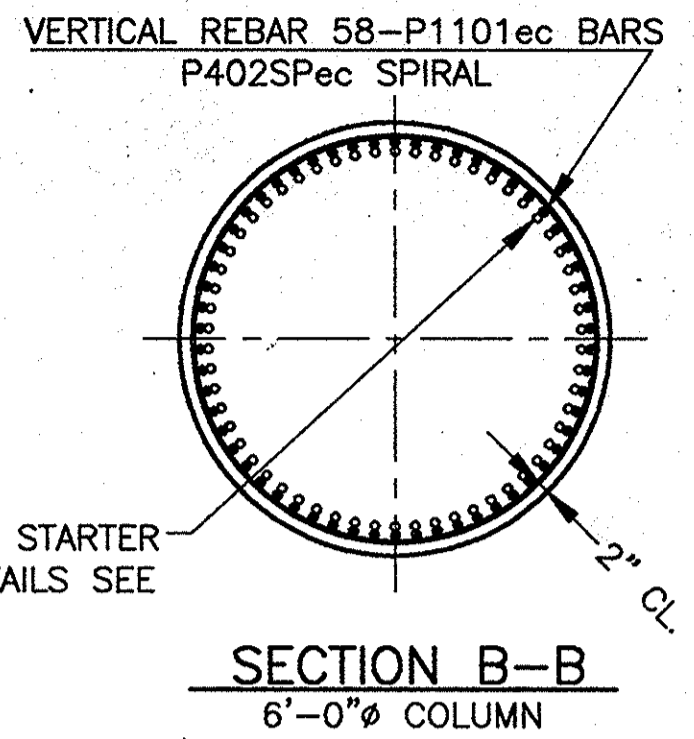
DRAWING: - C11 OF C44 SHEET: - 26 OF 65
PROJECT: - NH-80-1 (4)
CONTRACT NO.
BRIDGE FILE: - I-80-5-7828

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

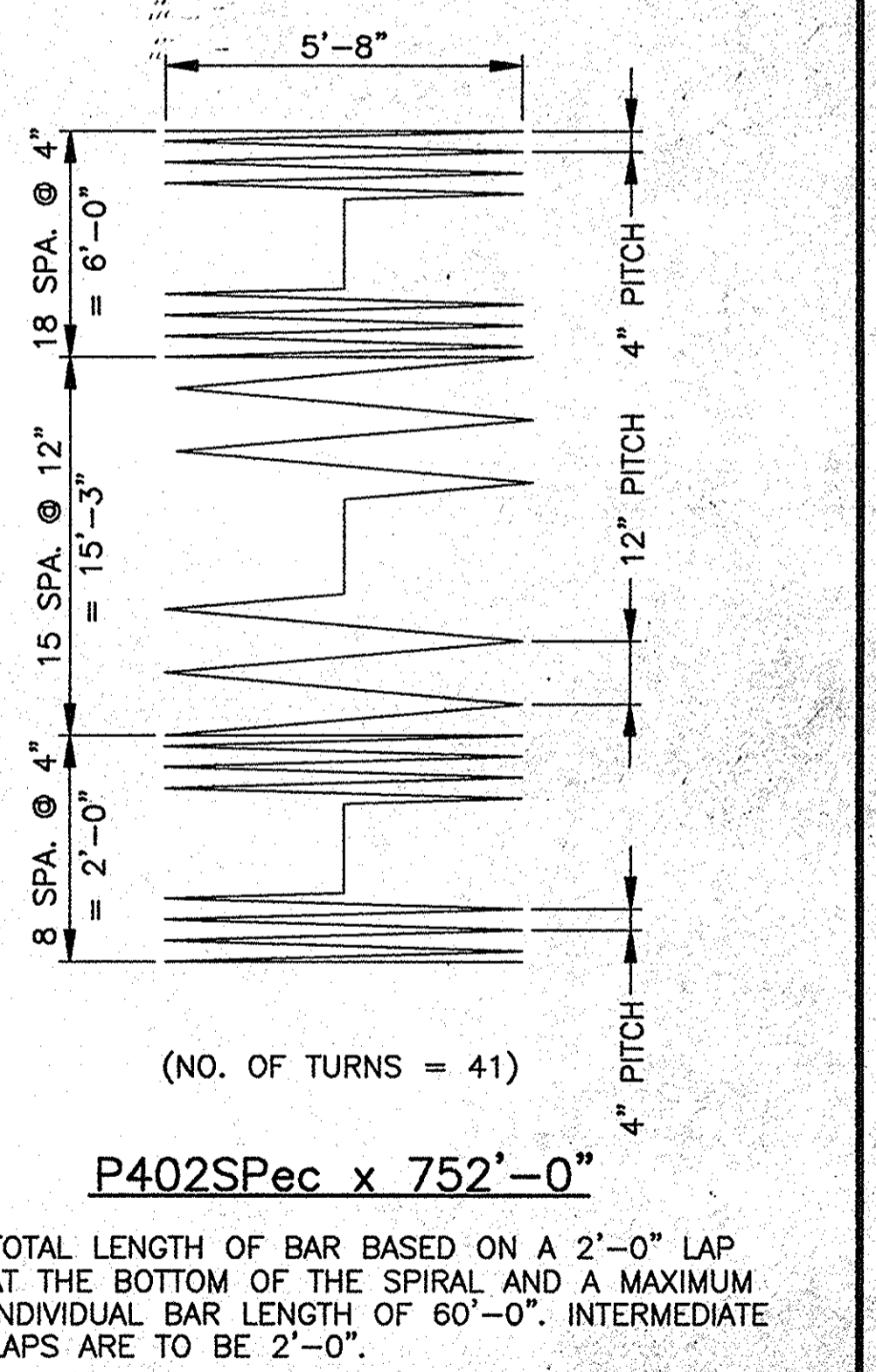
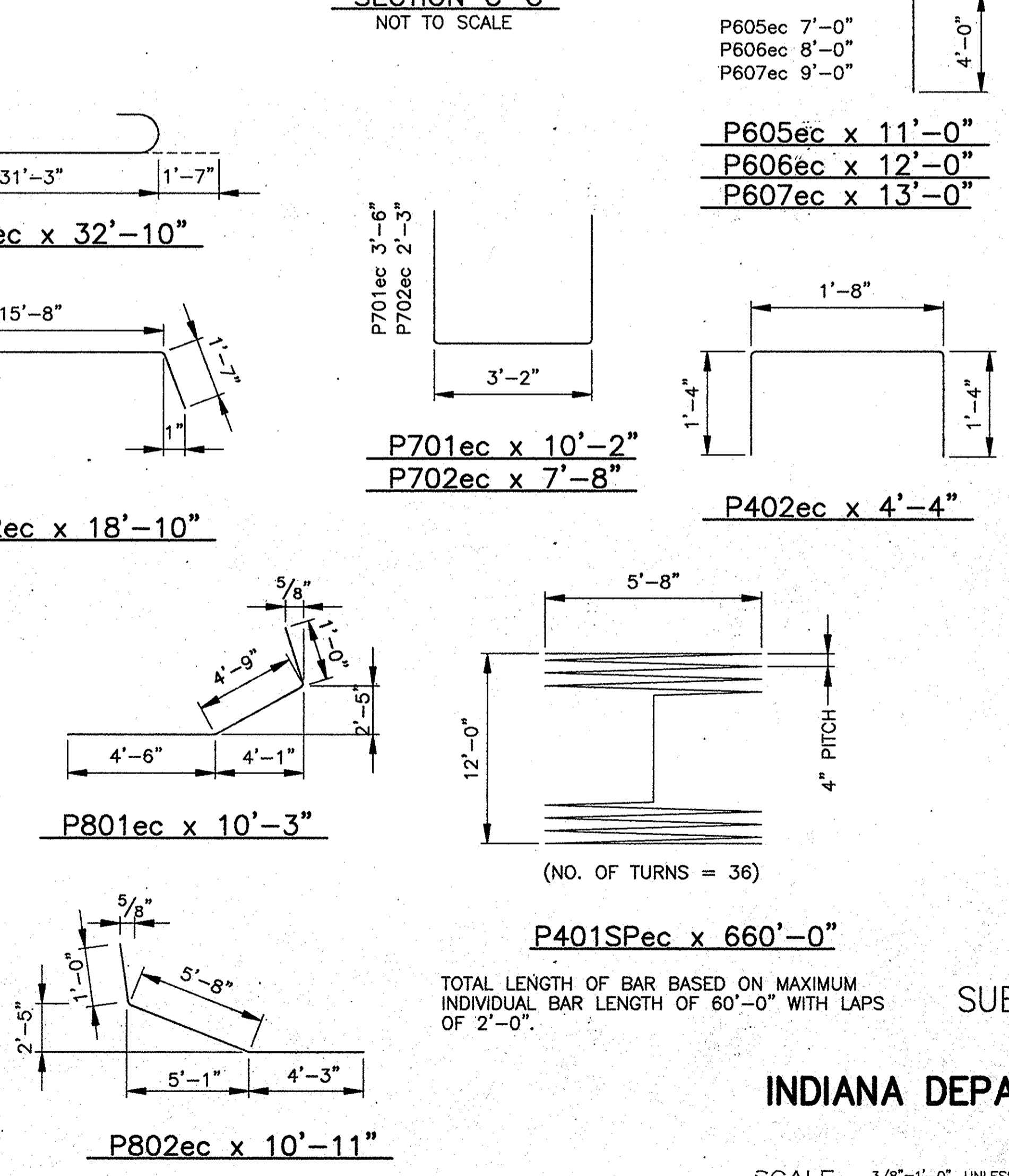
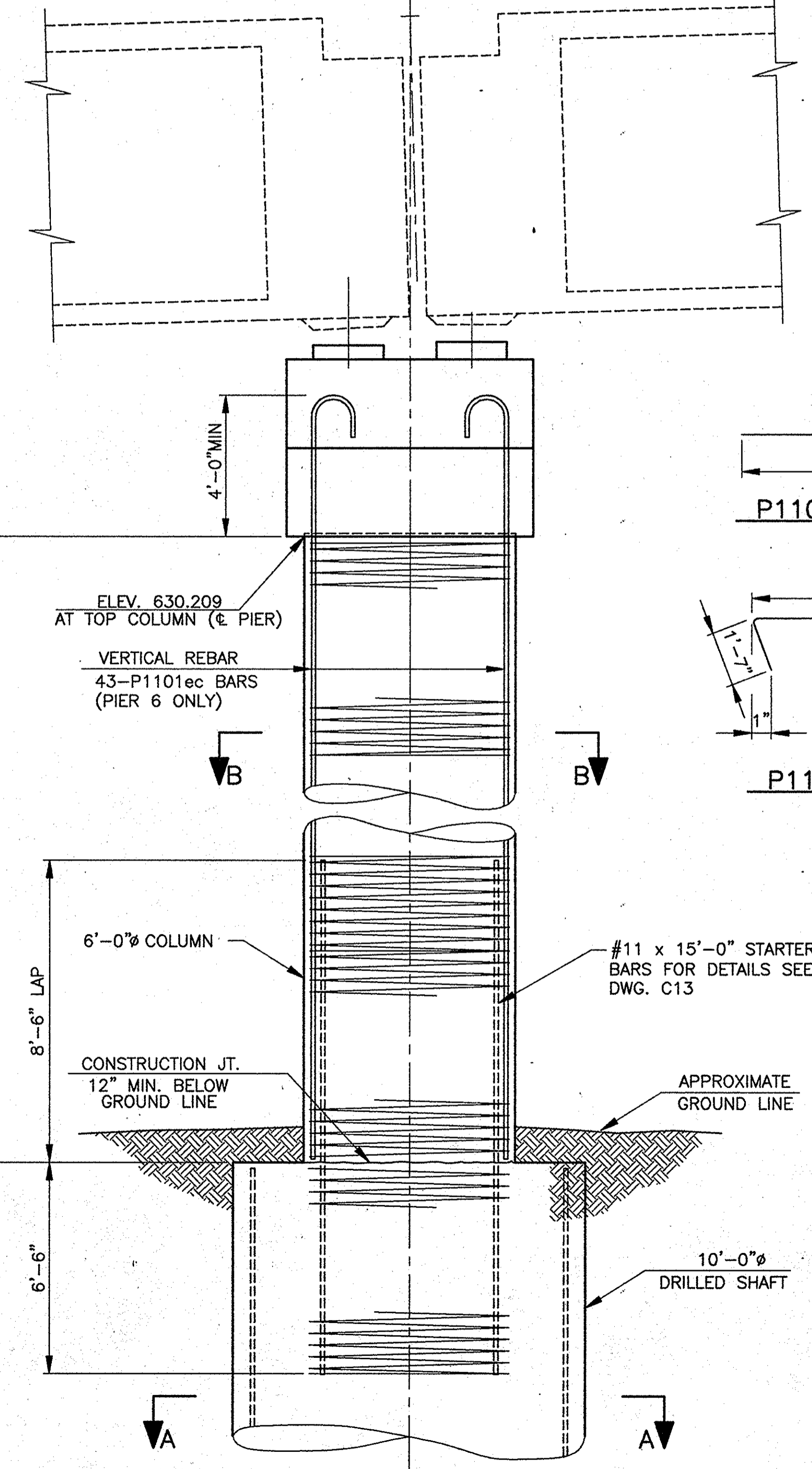
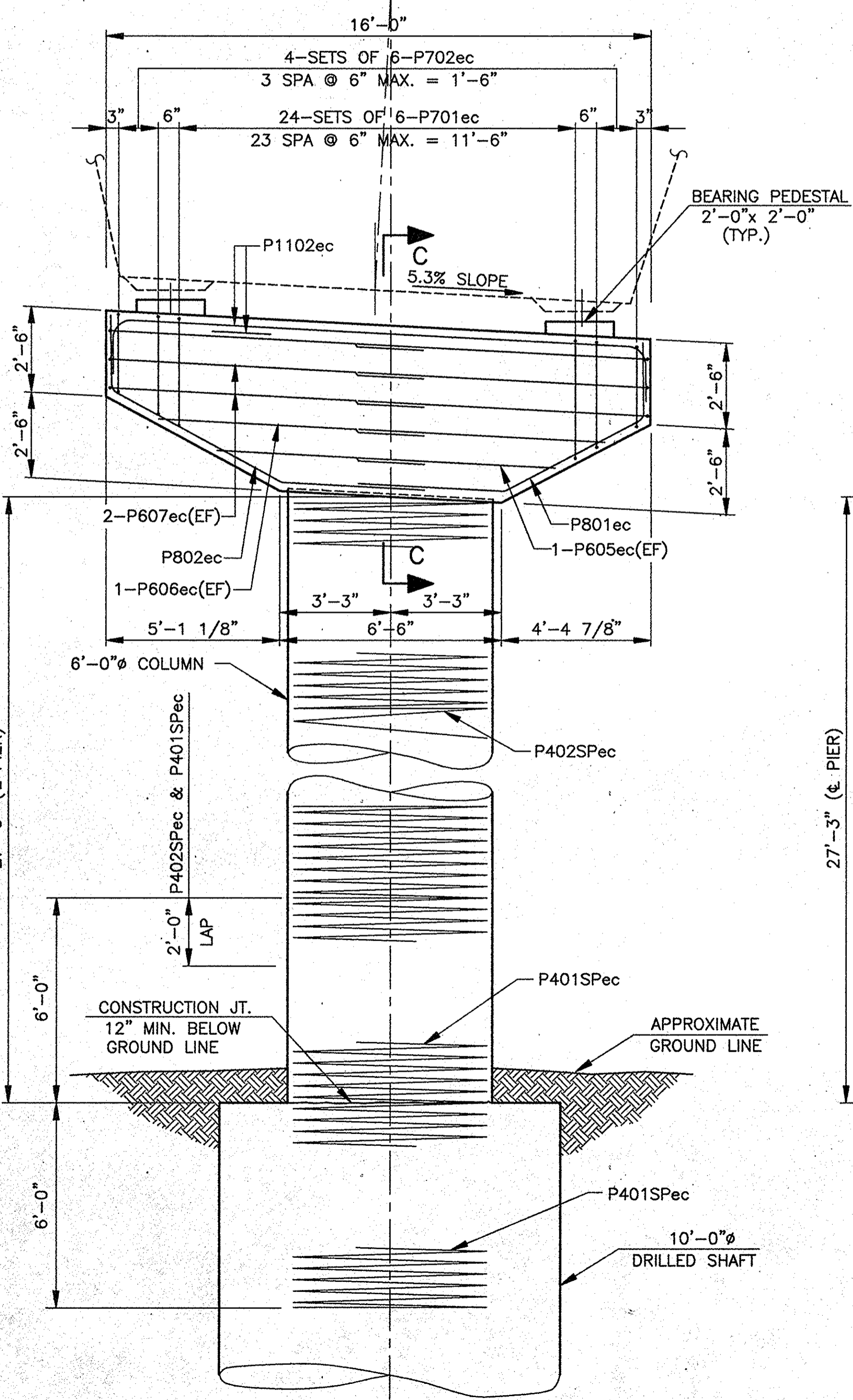




TOP OF PEDESTAL ELEVATIONS	
A	635.260
B	635.900
C	635.250
D	635.890



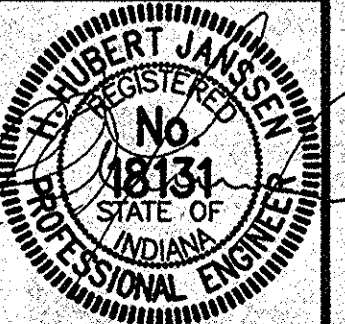
BILL OF MATERIALS PIER NO.6				
EPOXY COATED REINF. STEEL GRADE 60	Size And Mark	No. Of Bars	Length (Feet)	Weight (Lbs.)
P1101ec	58	32'-10"		
P1102ec	20	18'-10"		
TOTAL # 11				12,119
P801ec	8	10'-3"		
P802ec	8	10'-11"		
TOTAL # 8				452
P701ec	144	10'-2"		
P702ec	24	7'-8"		
TOTAL # 7				3,369
P605ec	4	11'-0"		
P606ec	4	12'-0"		
P607ec	8	13'-0"		
TOTAL # 6				294
P402ec	32	4'-4"		
P401SPec	1	660'-0"		
P402SPec	1	752'-0"		
TOTAL # 4				1,035
TOTAL E.C. REINF. STEEL				17,269
CONCRETE				
Class "A" Conc. in Substructure				
COLUMN				28.5 Cys
CAP				17.9 Cys
TOTAL CLASS "A"				46.4 Cys
MISCELLANEOUS SURFACE SEAL				
(ESTIMATED QUANTITY=112SFT)				1 LSM

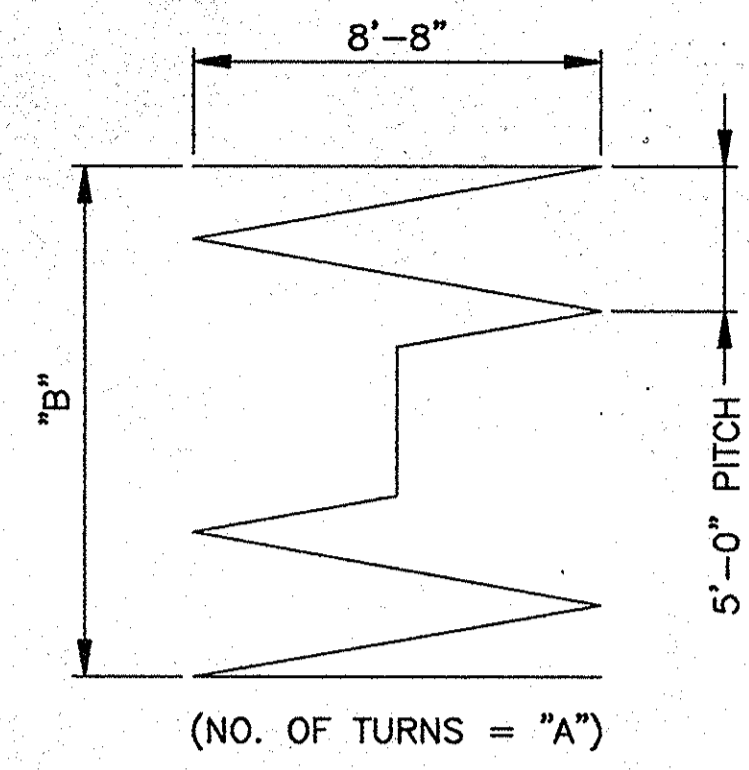


NOTE:
 1. FOR DRILLED SHAFT DETAILS SEE DWG. C13
 2. F.F. INDICATES FRONT FACE
 R.F. INDICATES REAR FACE
 E.F. INDICATES EACH FACE

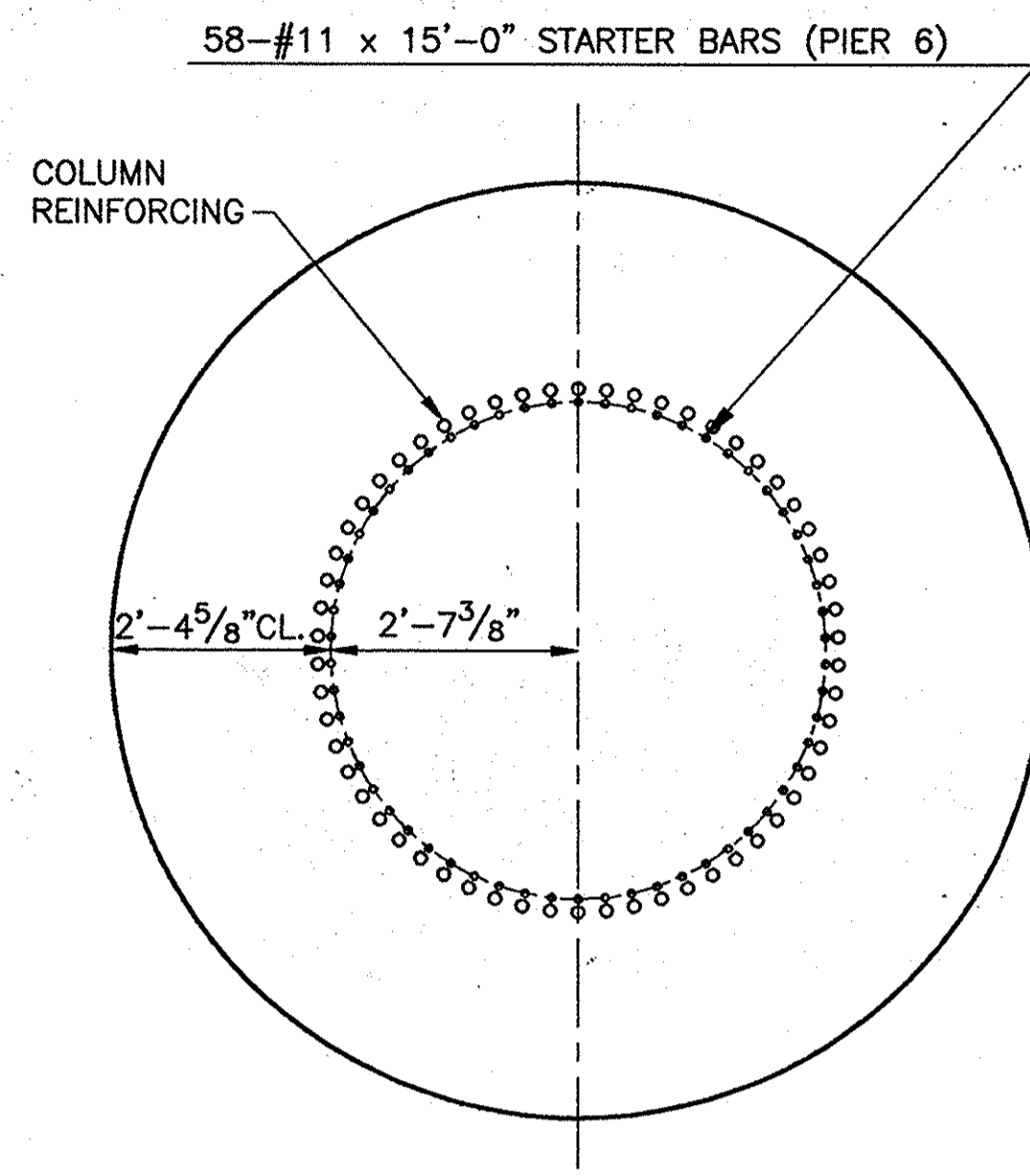
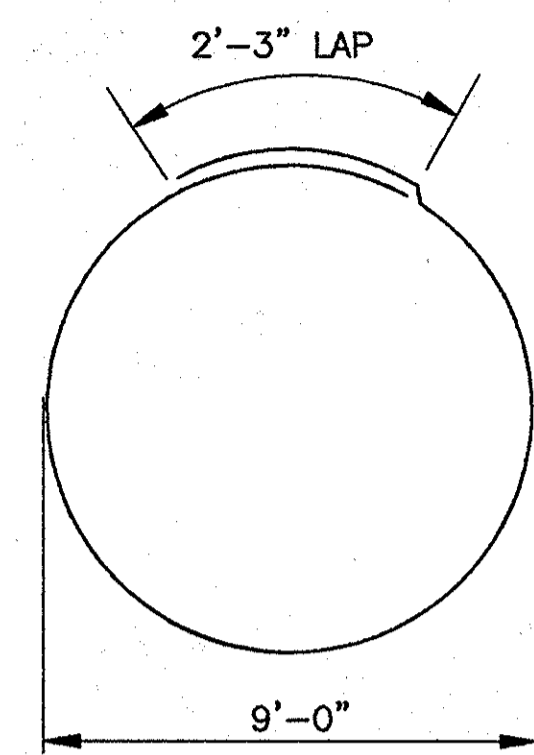
SUBSTRUCTURE DETAILS
 PIER 6
 INDIANA DEPARTMENT OF TRANSPORTATION
 LAKE COUNTY
 SCALE: - 3/8"=1'-0", UNLESS NOTED
 DATE: - July 10, 1998
 SUBMITTED FOR APPROVAL
 DRAWING: - C12 OF C44 SHEET: - 27 OF 65
 PROJECT: - NH-80-1 (4)
 CONTRACT NO.
 BRIDGE FILE: - I-80-5-7828

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

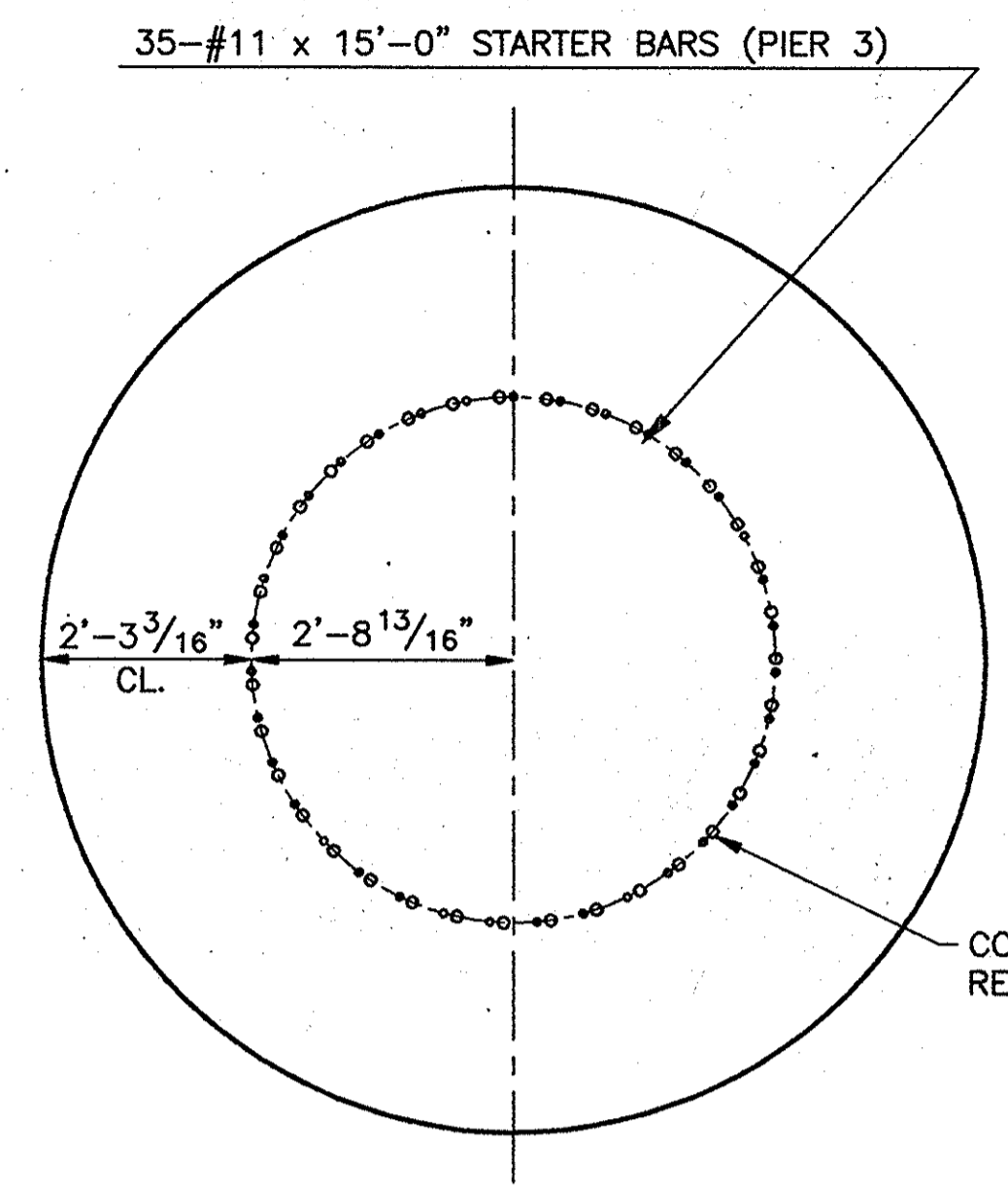




DS502 SPIRAL TABLE			
PIER NO.	"A" (TURNS)	"B"	TOTAL LENGTH
3	23	111'-0"	647'-0"
6	25	121'-0"	703'-0"



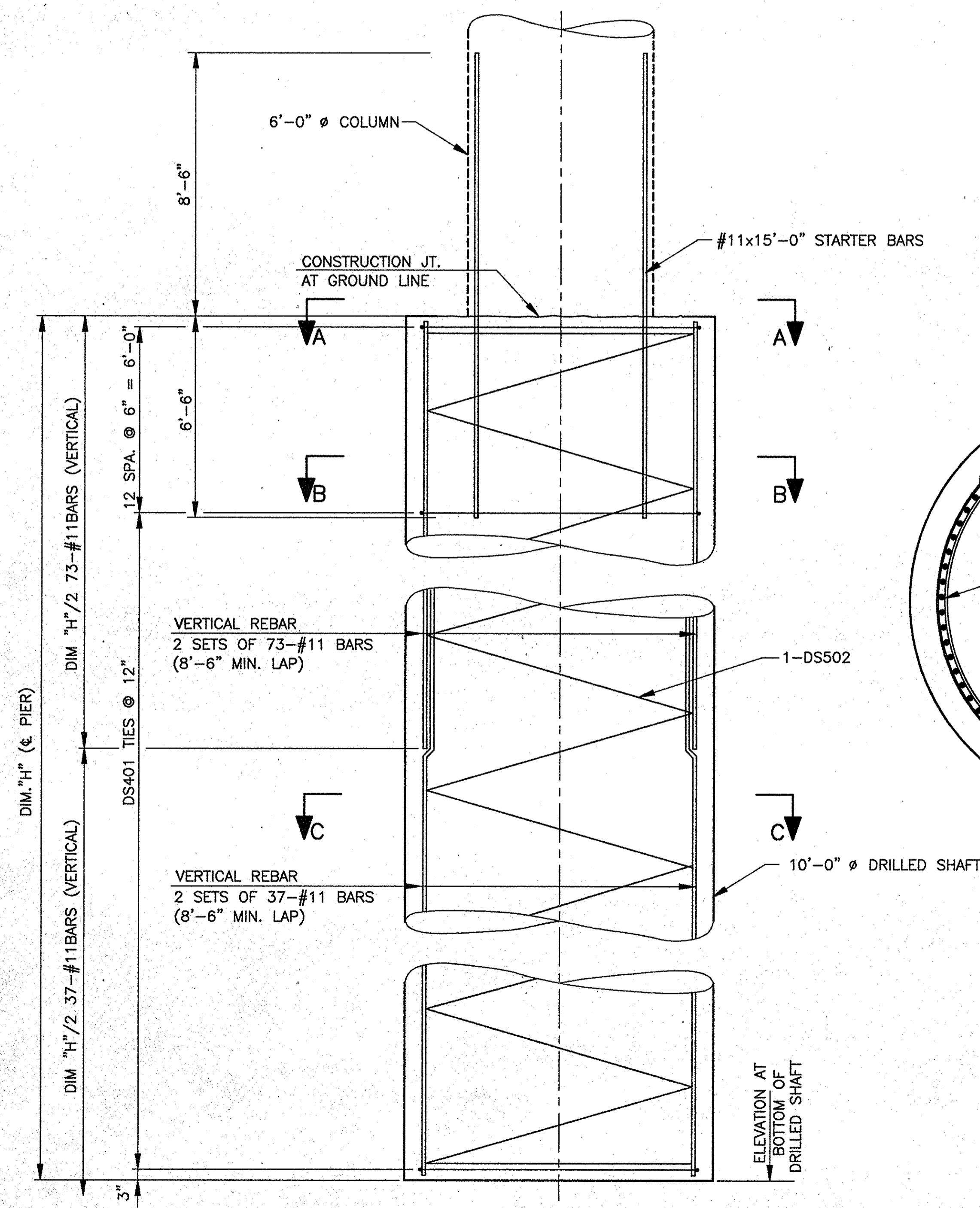
SECTION A-A - PIER 6
SCALE 1/2 = 1'-0"



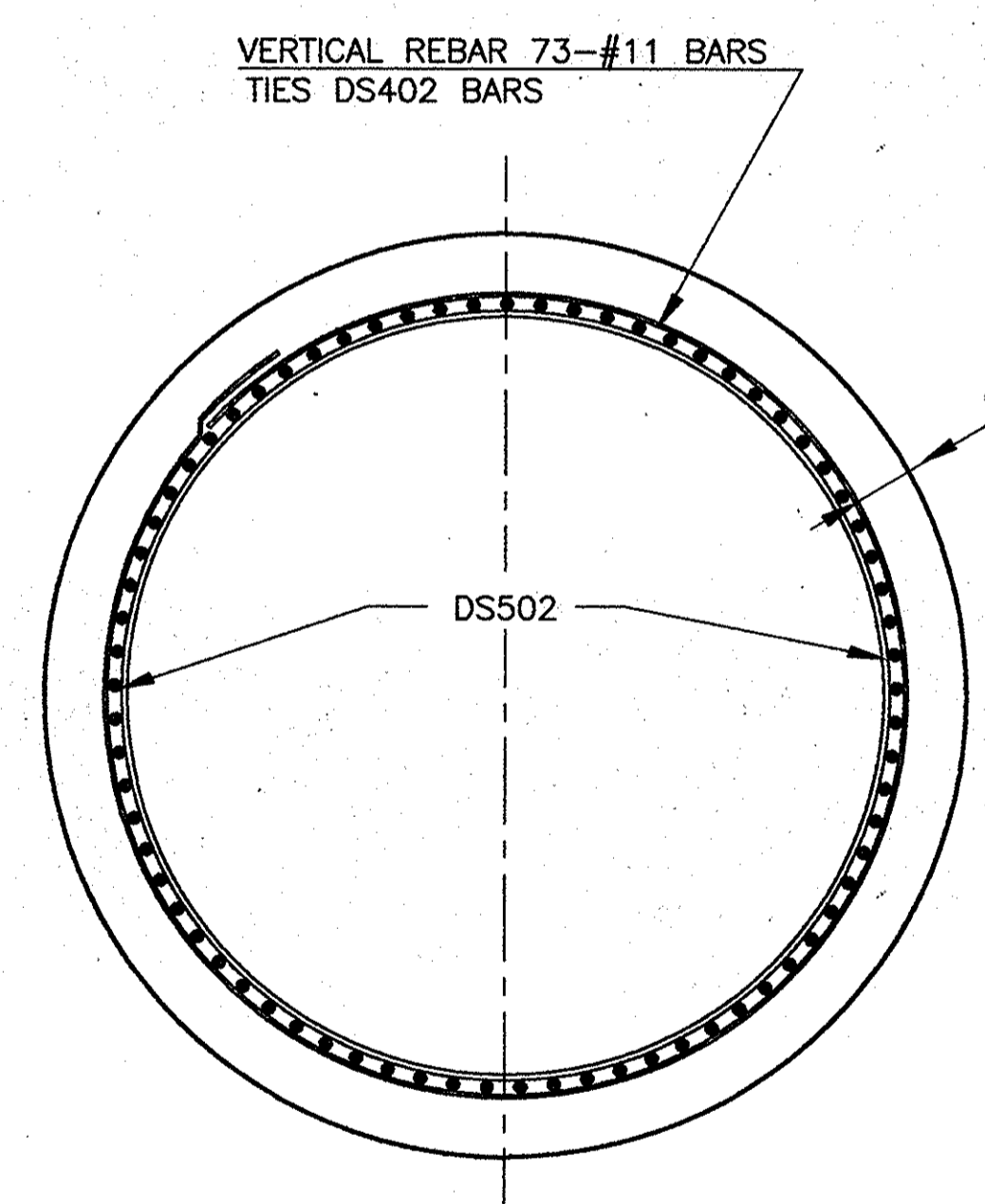
SECTION A-A - PIER 3
SCALE 1/2 = 1'-0"

BILL OF MATERIALS							
PIER NO.3				PIER NO.6			
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.)
#11	74	36'-3"		#11	74	38'-9"	
#11	146	32'-0"		#11	146	34'-6"	
#11	35	15'-0"		#11	58	15'-0"	
TOTAL #11			41,864	TOTAL #11			46,619
DS502	1	647'-0"	675	DS502	1	703'-0"	733
DS402	118	30'-6"	2404	DS402	128	30'-6"	2608
TOTAL REINFORCING STEEL			44,943	TOTAL REINFORCING STEEL			49,960
CONCRETE				CONCRETE			
Class "B" Conc. in Substructure 322.9 Cys				Class "B" Conc. in Substructure 352.0 Cys			

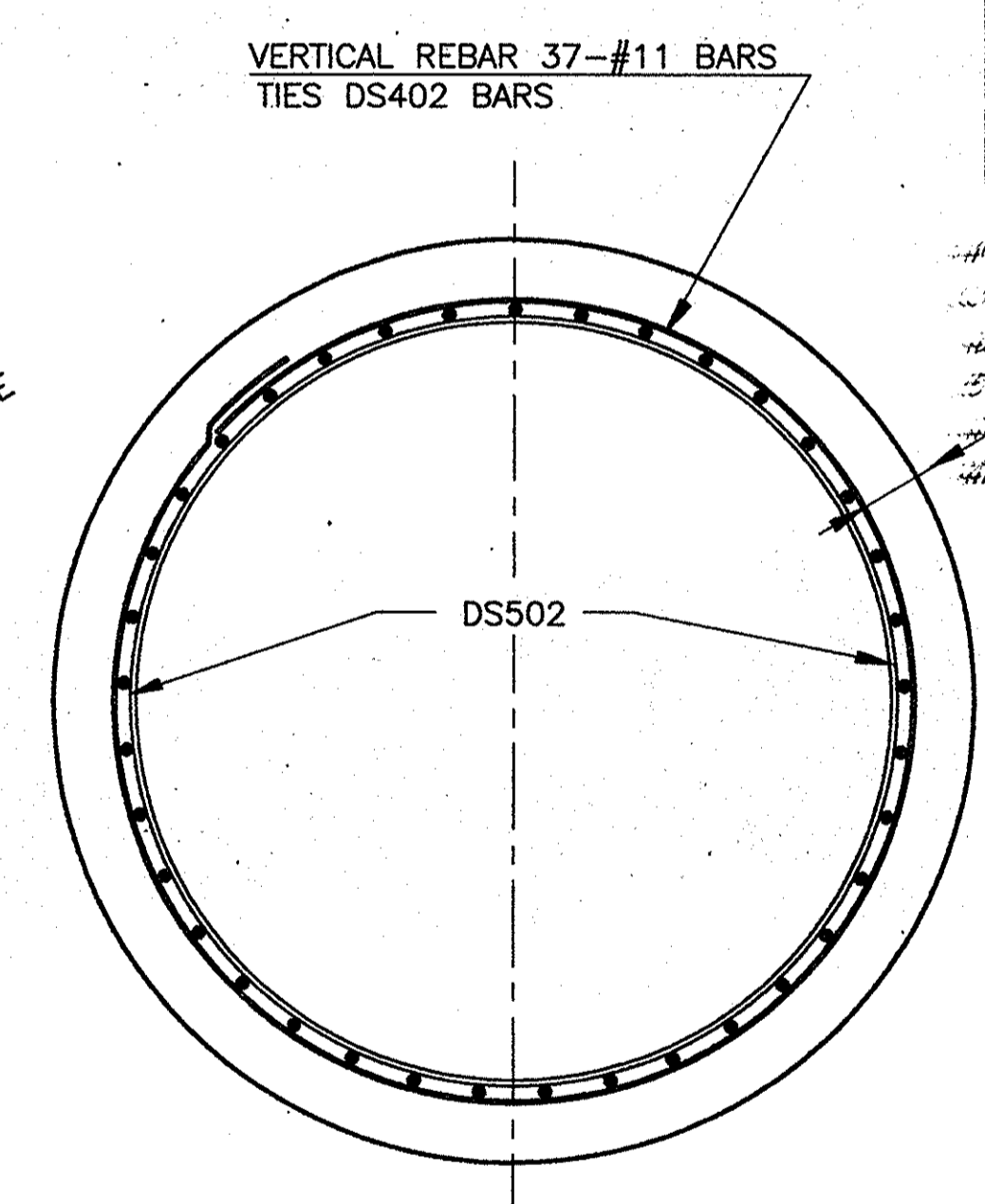
DS502
TOTAL LENGTH OF BAR BASED ON MAXIMUM INDIVIDUAL BAR LENGTH OF 60'-0" WITH LAPS OF 2'-0".



SIDE ELEVATION
10'-0" DRILLED SHAFT



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



SECTION C-C
SCALE 1/2 = 1'-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 3	120	1	654 394	918	150	1722 1462	485	111
PIER 6	120	1	713 724	1101	167	1981 1992	482	121

NOTES:

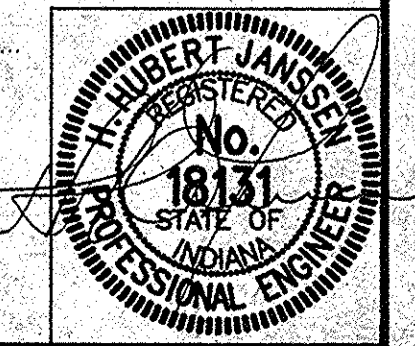
- DRILLED SHAFTS WILL BE CONSTRUCTED IN ACCORDANCE WITH THE SPECIAL PROVISIONS
- MAXIMUM AXIAL LOAD FOR AXIAL CAPACITY SHOWN IN THE TABLE CONSISTS OF DEAD LOAD + LIVE LOAD.
- CONCRETE FOR DRILLED SHAFTS SHALL BE CLASS B (DRILLED SHAFT)
- REINFORCING STEEL SHALL CONFORM TO ASTM A-615, GRADE 60, NOT EPOXY 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"
PIERS 3 & 6

INDIANA DEPARTMENT OF TRANSPORTATION
LAKE COUNTY

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

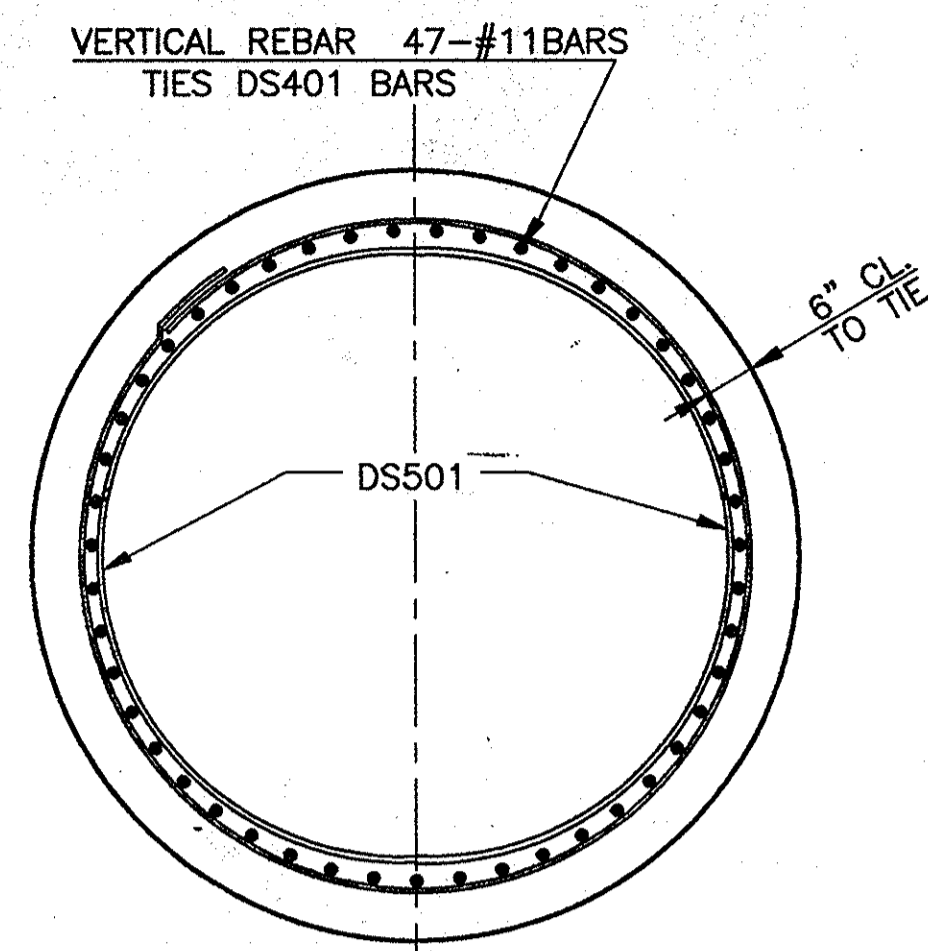
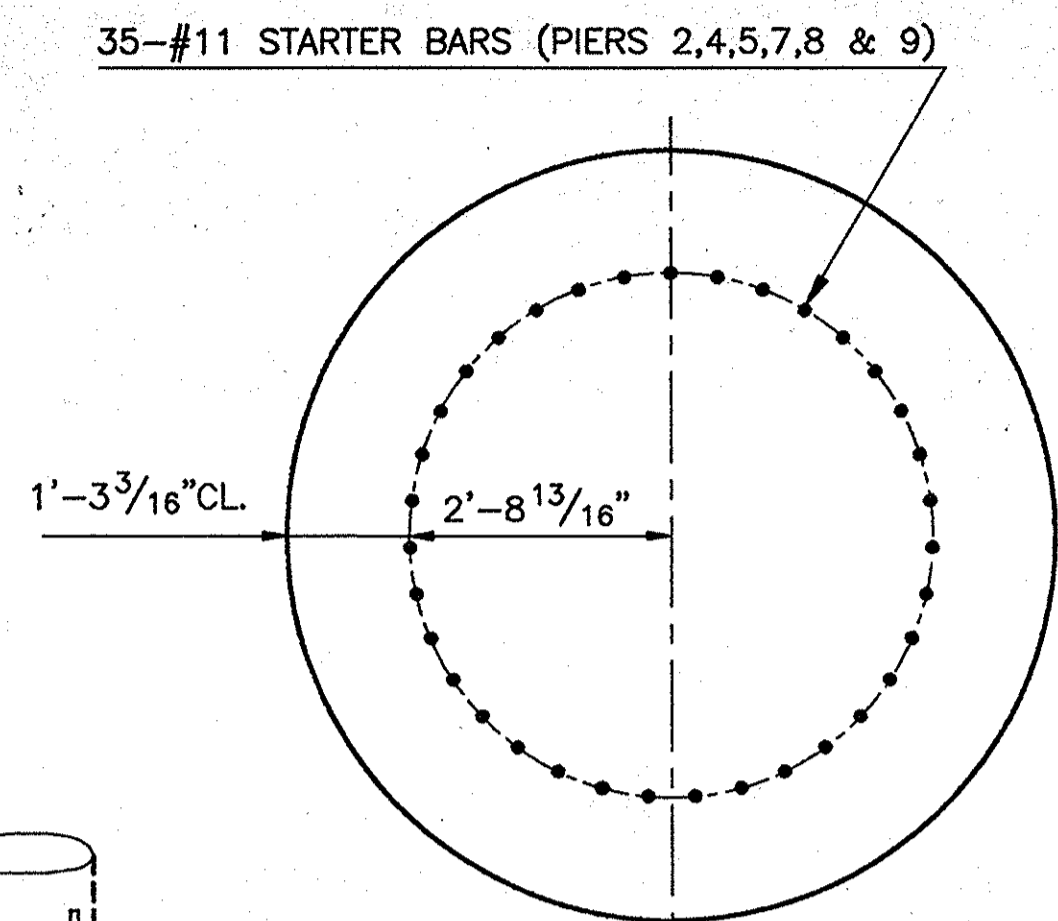
DRAWING: C13 OF C44 SHEET: 28 OF 65
PROJECT: - NH-80-1 () 4
CONTRACT NO.
BRIDGE FILE: - I-80-5-7828



DRAWING BY: DR. HUBERT JANSSEN, REGISTERED PROFESSIONAL ENGINEER, NO. 18131, STATE OF INDIANA. DATE: 08-28-97. PLOT: 1-32

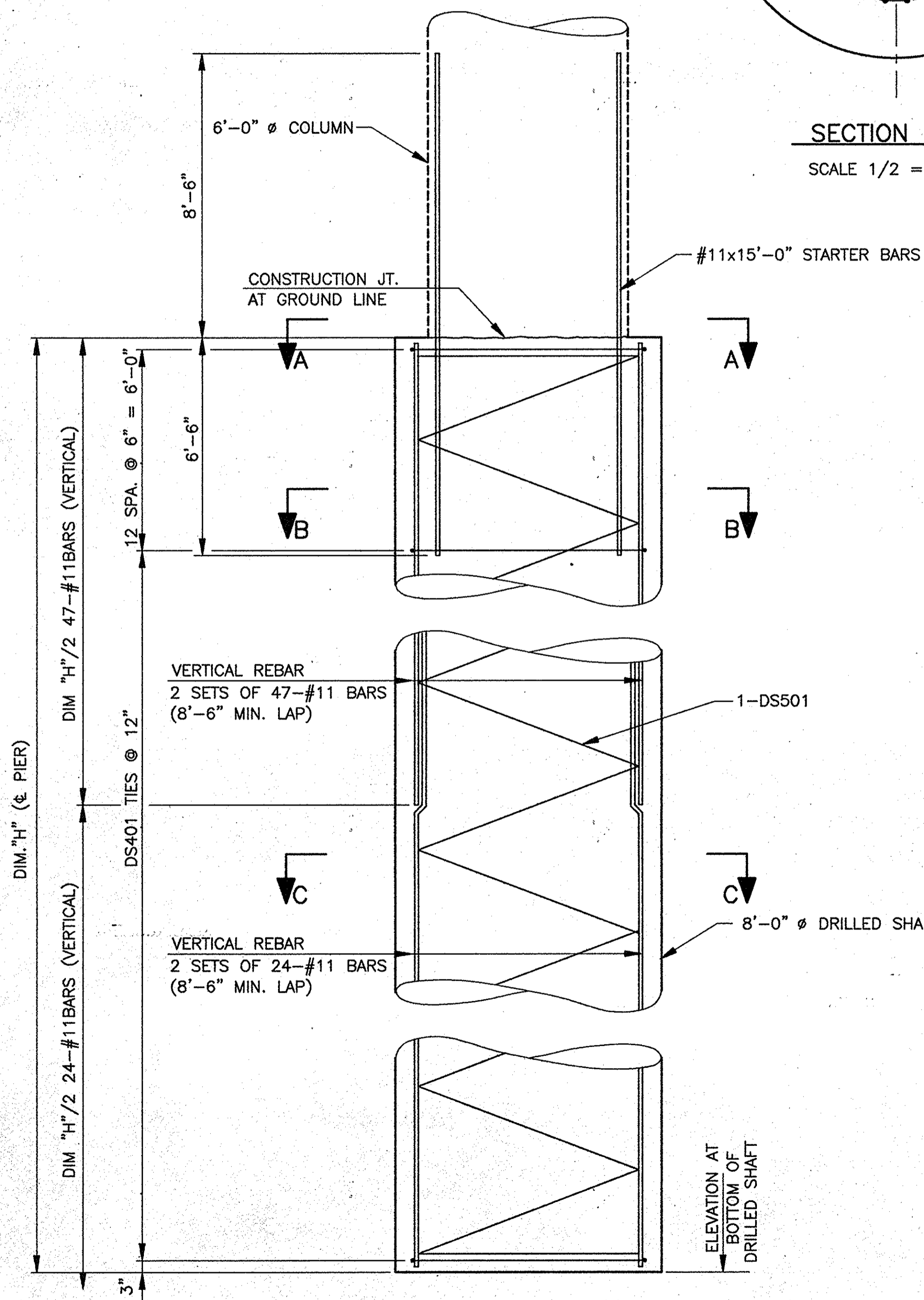
DESIGNED: HHJ C*K'D LS
DRAWN: GLH C*K'D HHJ
TRACED: C*K'D

9-1-98 Revised: Drilled Shaft Loads

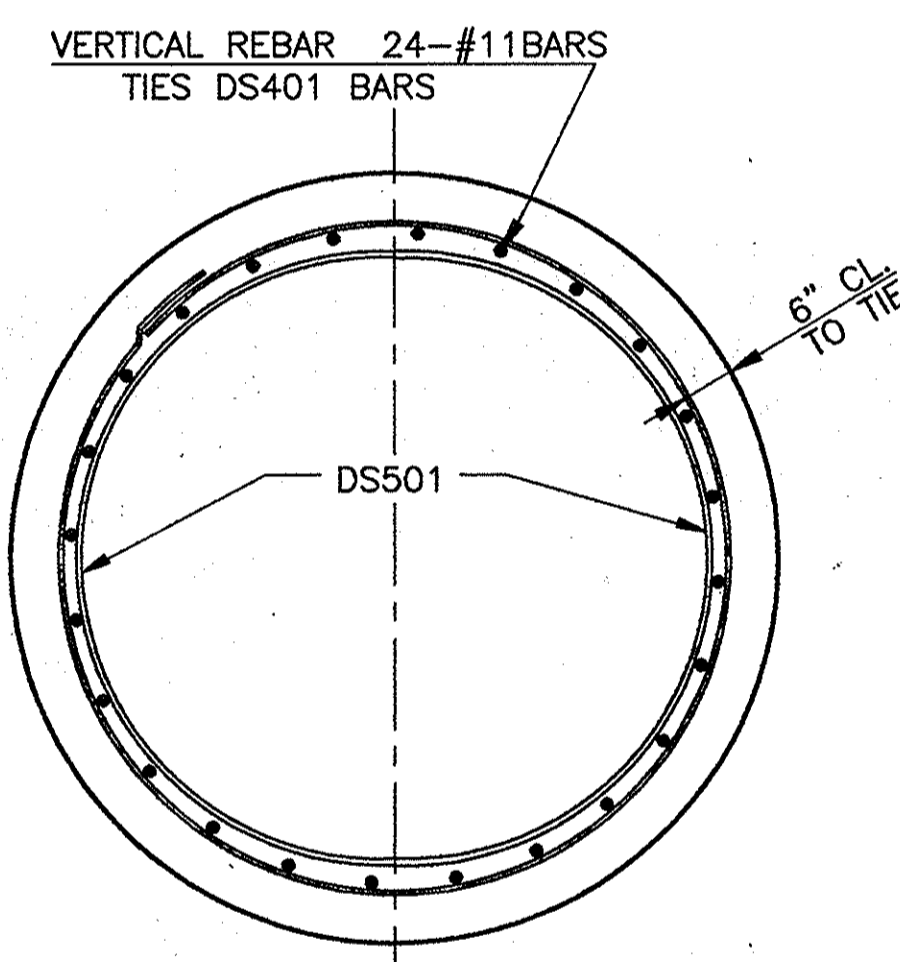


SECTION A-A
SCALE 1/2 = 1'-0"

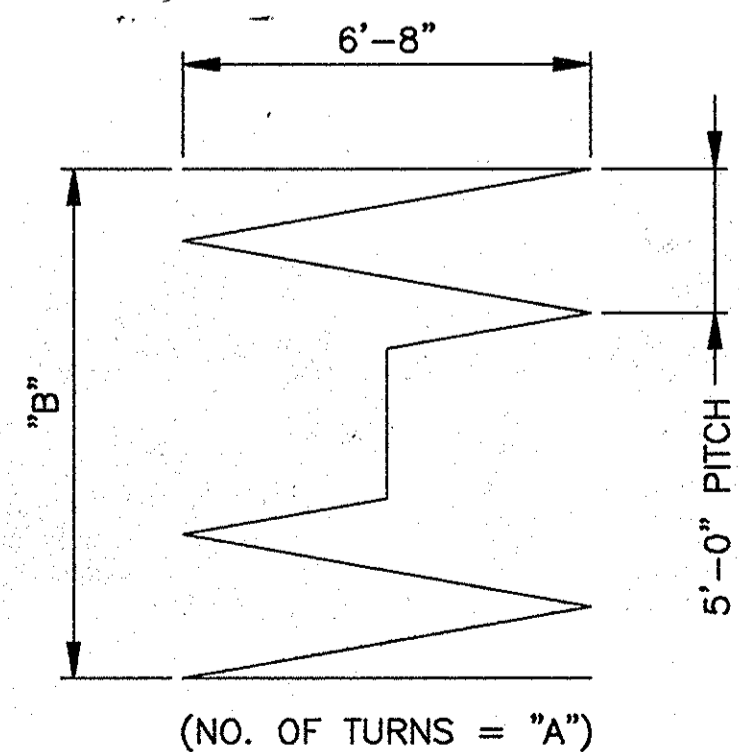
SECTION B-B
SCALE 1/2 = 1'-0"



SIDE ELEVATION
8'-0" Ø DRILLED SHAFT



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



DS501

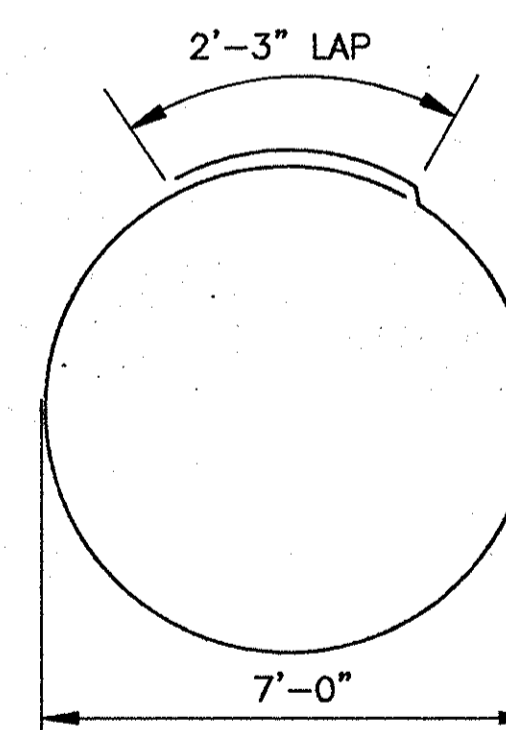
TOTAL LENGTH OF BAR BASED ON MAXIMUM INDIVIDUAL BAR LENGTH OF 60'-0" WITH LAPS OF 2'-0".

BILL OF MATERIALS															
PIER NO.2				PIER NO.4				PIER NO.5				PIER NO.7			
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	35'-3"		#11	48	30'-9"		#11	48	37'-3"		#11	48	42'-6"	
#11	94	31'-0"		#11	94	26'-6"		#11	94	33'-0"		#11	94	38'-3"	
#11	35	15'-0"		#11	35	15'-0"		#11	35	15'-0"		#11	35	15'-0"	
TOTAL #11				TOTAL #11				TOTAL #11				TOTAL #11			
27,261				23,866				28,770				32,731			
DS501	1	475'-0"	495	DS501	1	389'-0"	406	DS501	1	498'-0"	519	DS501	1	604'-0"	630
DS401	114	24'-3"	1847	DS401	96	24'-3"	1555	DS401	122	24'-3"	1976	DS401	143	24'-3"	2316
TOTAL REINFORCING STEEL				TOTAL REINFORCING STEEL				TOTAL REINFORCING STEEL				TOTAL REINFORCING STEEL			
29,603				25,827				31,265				35,677			
CONCRETE				CONCRETE				CONCRETE				CONCRETE			
Class "B" Conc. in Substructure 199.2 Cys				Class "B" Conc. in Substructure 165.7 Cys				Class "B" Conc. in Substructure 214.1 Cys				Class "B" Conc. in Substructure 253.2 Cys			
PIER NO.8				PIER NO.9											
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.)								
#11	48	38'-3"		#11	48	35'-9"									
#11	94	34'-0"		#11	94	31'-6"									
#11	35	15'-0"		#11	35	15'-0"									
TOTAL #11				TOTAL #11											
29,524				27,638											
DS501	1	519'-0"	541	DS501	1	475'-0"	495								
DS401	126	24'-3"	2041	DS401	116	24'-3"	1879								
TOTAL REINFORCING STEEL				TOTAL REINFORCING STEEL											
32,106				30,012											
CONCRETE				CONCRETE											
Class "B" Conc. in Substructure 221.5 Cys				Class "B" Conc. in Substructure 202.9 Cys											

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 (TONS)	MIN. TIP ELEV. (FT.)	APPROX. DIM. "H" (FT.)
PIER 2	96	1	403,394	918	150	407,146	485	107
PIER 4	96	1	338,748	952	159	341,859	505	89
PIER 5	96	1	434,777	1148	182	436,107	477	115
PIER 7	96	1	513,759	1101	174	515,034	479	136
PIER 8	96	1	449,350	924	161	451,435	493	119
PIER 9	96	1	411,350	924	161	413,435	490	109

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.



DS401 x 24'-3"

DS501 SPIRAL TABLE			
PIER NO.	"A" (TURNS)	"B"	TOTAL LENGTH
2	22	107'-0"	475'-0"
4	18	89'-0"	389'-0"
5	23	115'-0"	498'-0"
7	28	136'-0"	604'-0"
8	24	119'-0"	519'-0"
9	22	109'-0"	475'-0"

9-1-98 Revised: Drilled Shaft Loads.

SUBSTRUCTURE DETAILS
DRILLED SHAFT 8'-0"
PIERS 2, 4, 5, 7, 8 & 9.
INDIANA DEPARTMENT OF TRANSPORTATION
LAKE COUNTY

SCALE: - 3/8"=1'-0", UNLESS NOTED DATE: - July 16, 1998

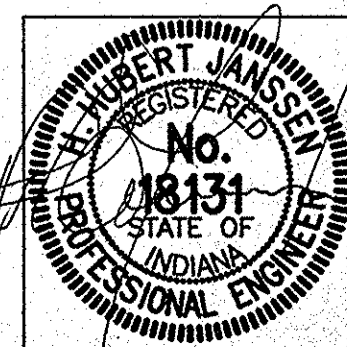
SUBMITTED FOR APPROVAL

DRAWING: - C14 OF C44 SHEET: - 29 OF 65

PROJECT: - NH-80-1 () 4

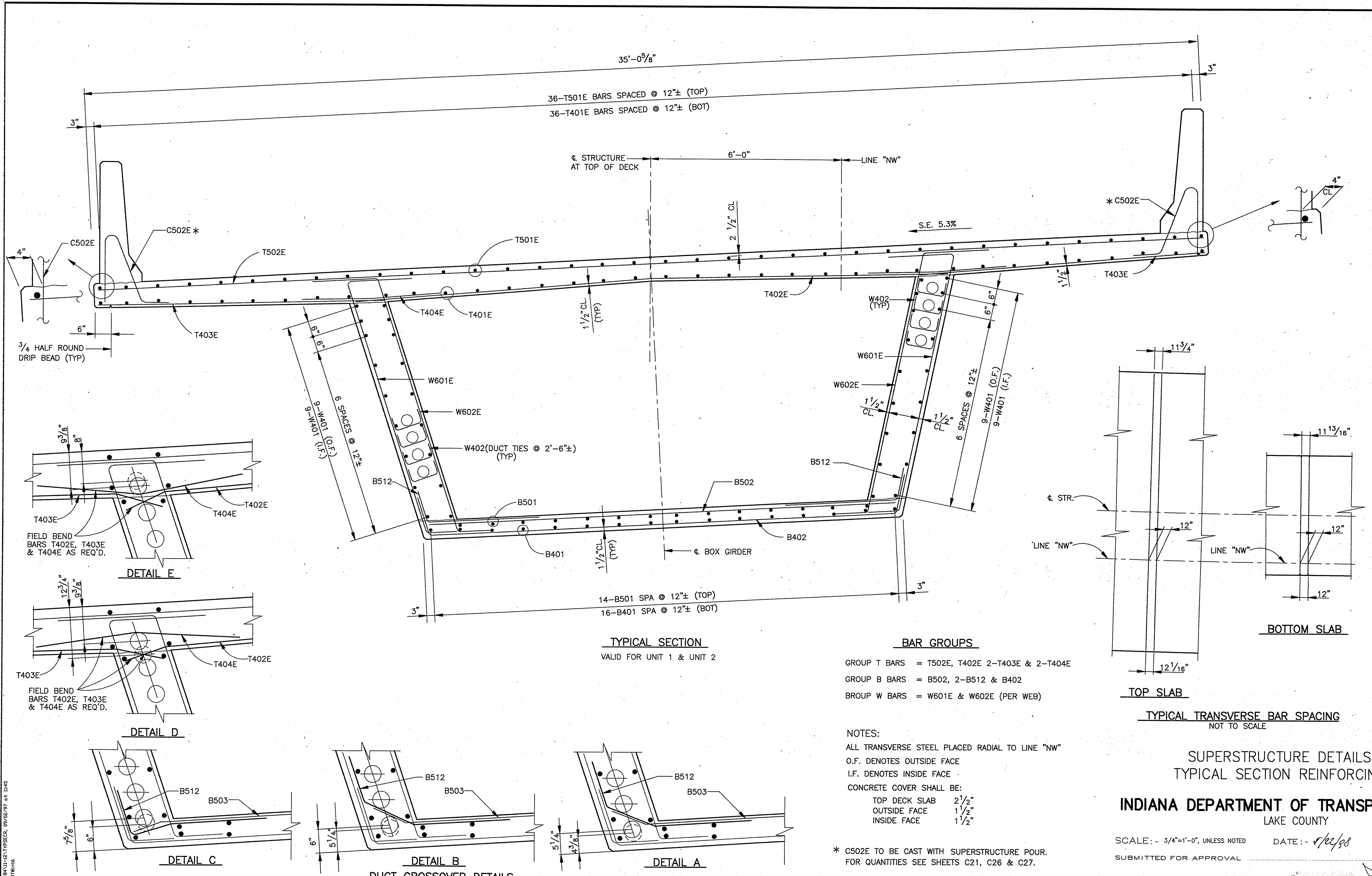
CONTRACT NO.

BRIDGE FILE: - I-80-5-7828



DR. VBA 11-12 DRILLED SHAFT (08-28-97) et. 08.37
PLOT 6 1x22

DESIGNED: HHJ c'k'd LS
DRAWN: VRC c'k'd HHJ
TRACED: c'k'd



TYPICAL SECTION
VALID FOR UNIT 1 & UNIT 2

- 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 "NW"

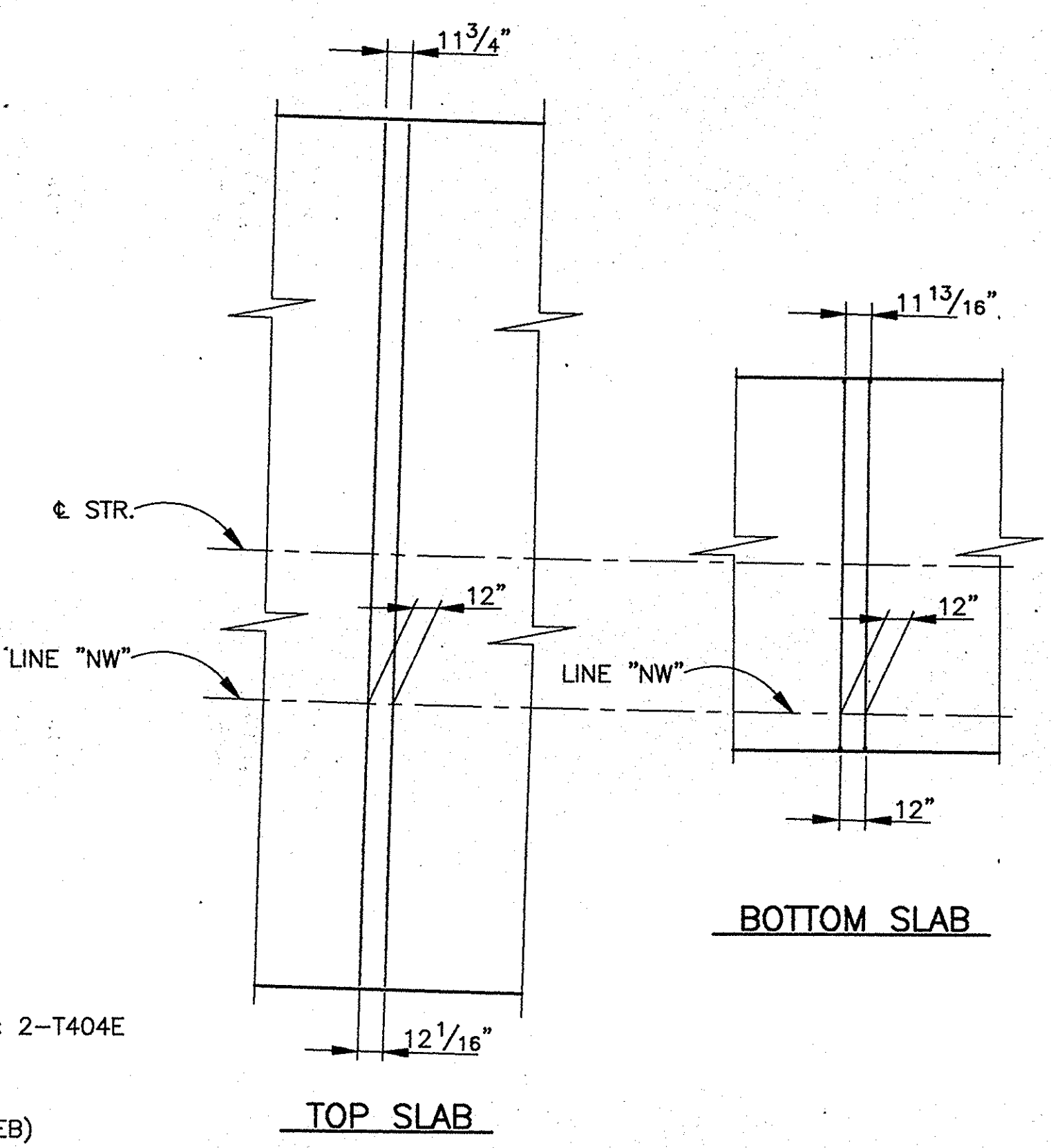
O.F. DENOTES OUTSIDE FACE

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 SHEETS C21, C26 & C27.



TYPICAL TRANSVERSE BAR SPACING
NOT TO SCALE

SUPERSTRUCTURE DETAILS
TYPICAL SECTION REINFORCING

INDIANA DEPARTMENT OF TRANSPORTATION
LAKE COUNTY

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

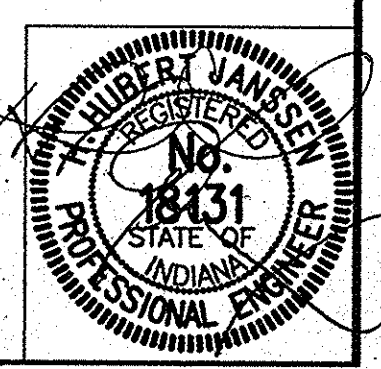
SUBMITTED FOR APPROVAL

DRAWING: - C15 OF C44 SHEET: - 30 OF - 65

PROJECT: - NH-80-1 () 4

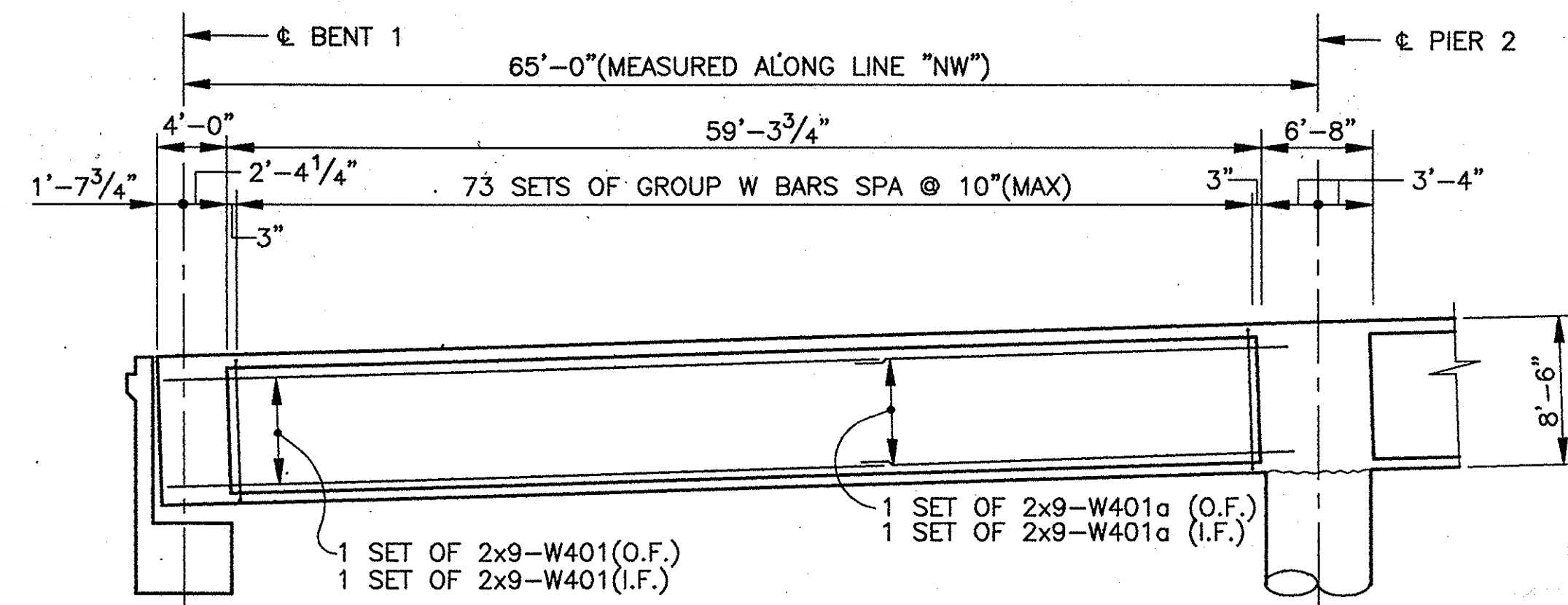
CONTRACT NO.

BRIDGE FILE: - I-80-5-7828



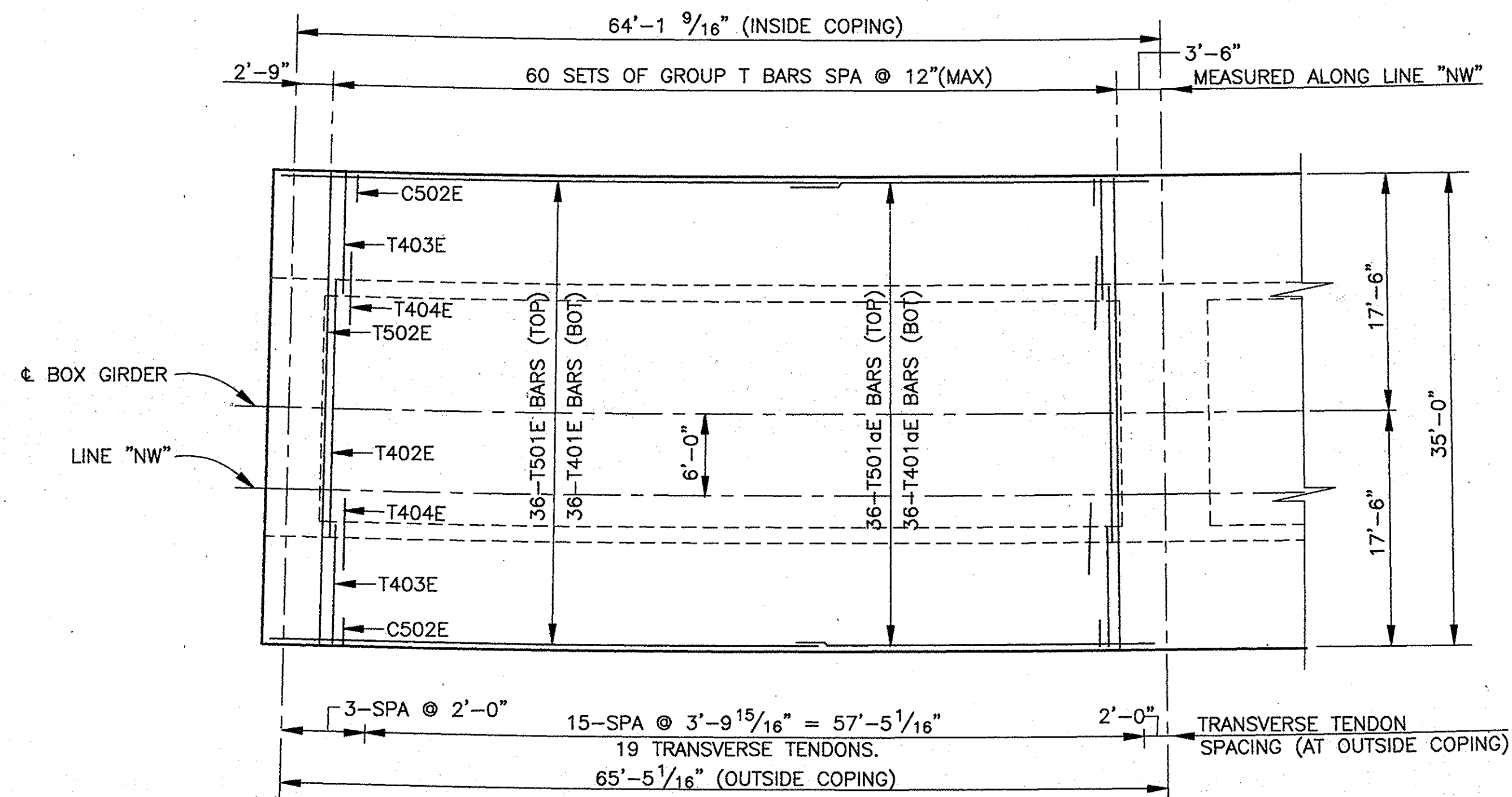
DESIGNED	HHJ	C'K'D	LS
DRAWN	TMD	C'K'D	HHJ
TRACED		C'K'D	

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

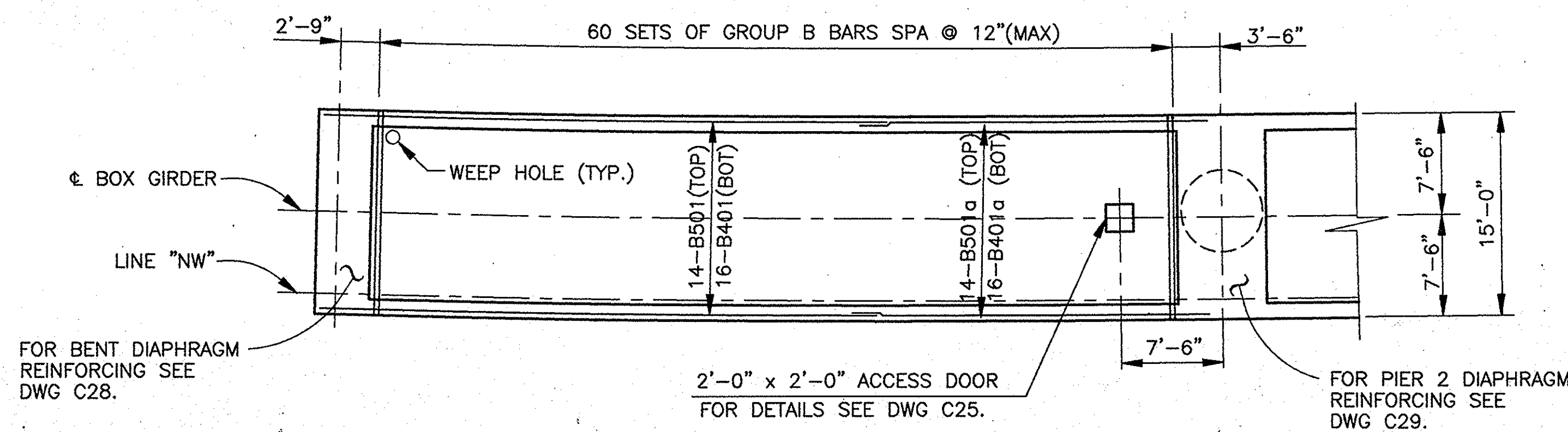


ELEVATION
(SHOWING WEB REINFORCING)

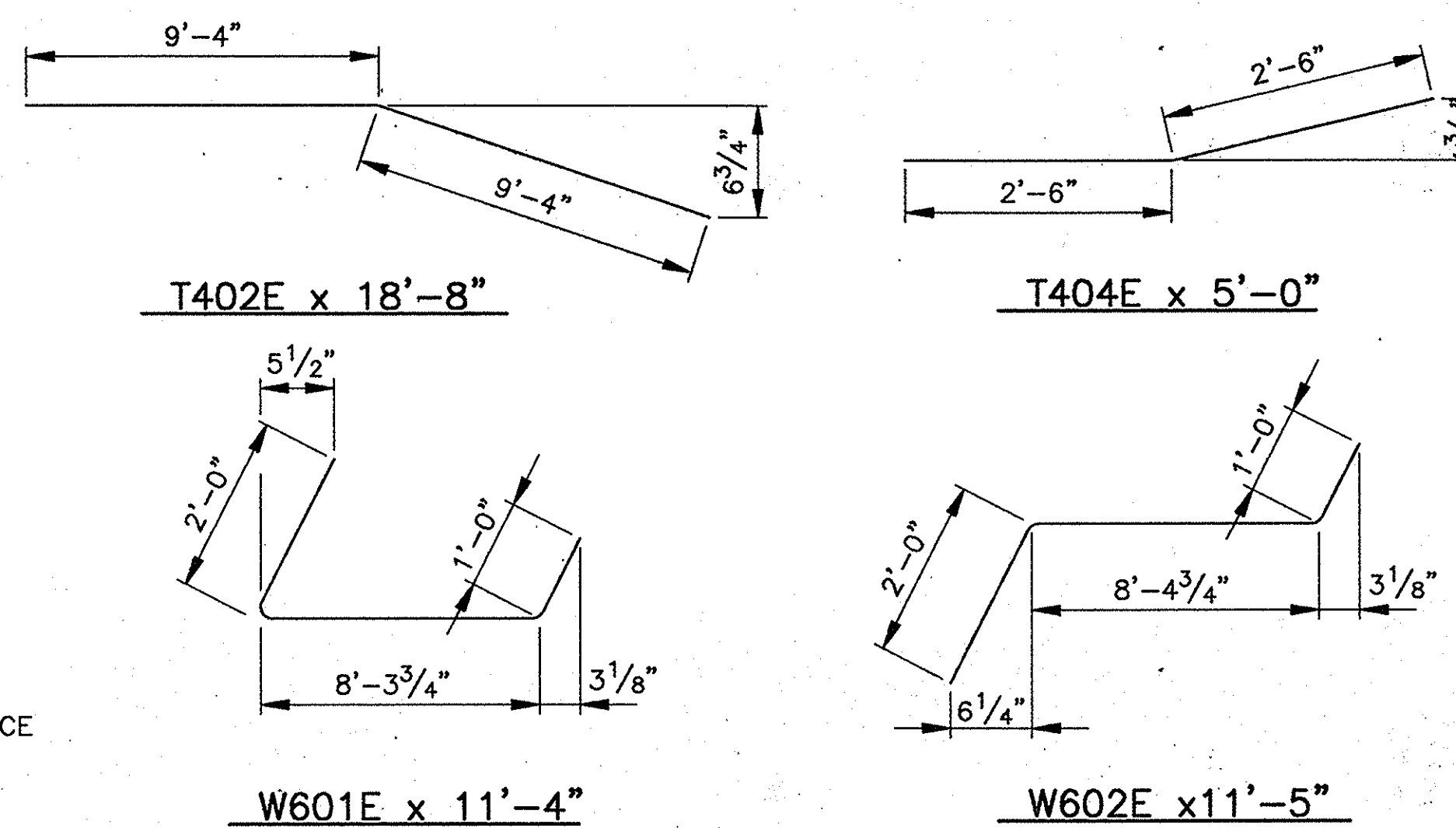
I.F. = INSIDE FACE
O.F. = OUTSIDE FACE



PLAN TOP SLAB

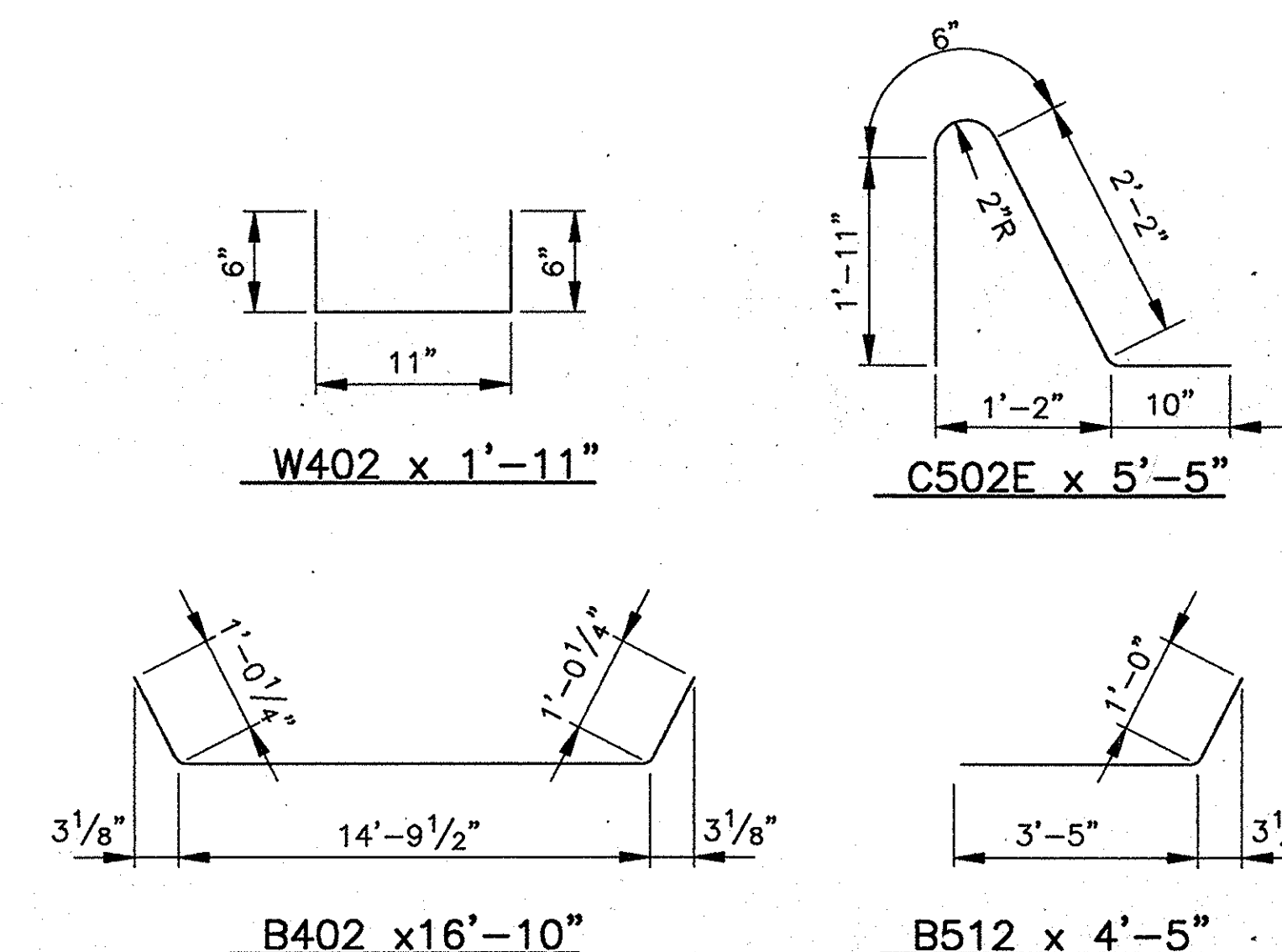


PLAN BOTTOM SLAB



STRAIGHT BARS

TRANSVERSE
T502E x 34'-9"
T403E x 8'-11"
B502 x 14'-9"



LONGITUDINAL

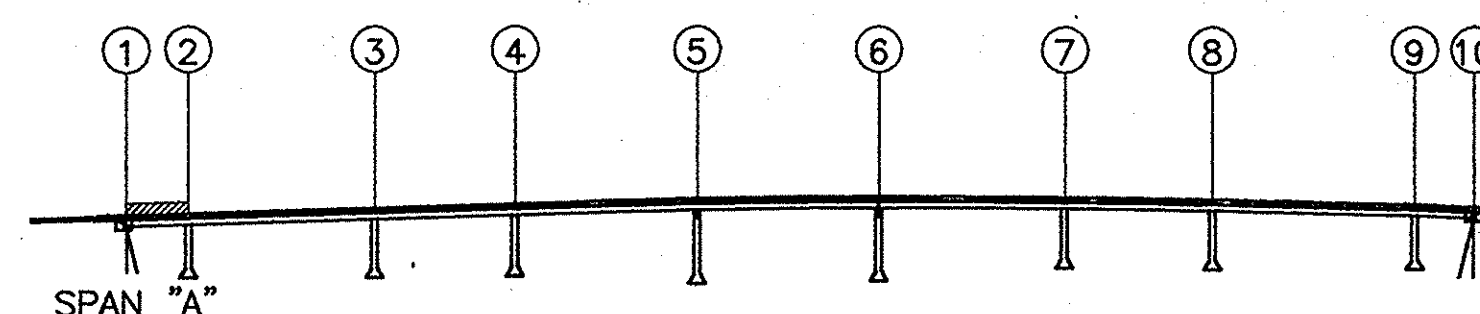
B501 & T501E x 40'-0"
B501a & T501aE x 27'-11"
B501b & T501bE x 39'-10"
B501c & T501cE x 35'-10"
B501cc & T501ccE x 35'-10"
B501d & T501dE x 33'-7"
B501e & T501eE x 33'-4"
B501f & T501fE x 36'-11"
B501g & T501gE x 39'-5"
B501h & T501hE x 17'-6"
B501j & T501jE x 27'-11"

B401 & W401 x 40'-0"
B401a & W401a x 27'-5"
B401b & W401b x 37'-10"
B401c & W401c x 35'-10"
B401cc & W401cc x 32'-0"
B401d & W401d x 31'-7"
B401e & W401e x 31'-4"
B401f & W401f x 34'-11"
B401g & W401g x 39'-5"
B401h & W401h x 15'-0"
B401j & W401j x 27'-5"

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

NOTE:

- FOR TYPICAL SECTION REINFORCING SEE SHEETS DWG C15.
- FOR TYPICAL LAP SPLICE DIMENSIONS SEE THIS SHEET.
- FOR BAR SHAPES SEE THIS SHEET.
- FOR BRIDGE RAILING DETAILS & QUANTITIES SEE DWGS C21, C26 & C27.
- FOR TRANSVERSE TENDON DETAILS & QUANTITIES SEE DWG C32.
- SPACING OF ALL TRANSVERSE BARS ARE MEASURED ALONG LINE "NW"
- FOR BAR SHAPES FOR ACCESS OPENING SEE DWG C25.



LOCATION KEY

BILL OF MATERIALS

REINFORCING STEEL GRADE 60			
Size And Mark	No. Of Bars	Length (Feet)	Weight (Lbs.)
GROUP W BARS			
W601E	146	11'-4"	
W602E	146	11'-5"	
TOTAL #6 BARS			4989
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	27'-11"	
TOTAL #5			2550
T401E	36	40'-0"	
T401aE	36	27'-5"	
TOTAL #4			1621
TOTAL EPOXY COATED REINFORCING			
			13199
GROUP B BARS			
B502	60	14'-9"	
B512	120	4'-5"	
TOTAL #5			1476
B402	60	16'-10"	675
LONGITUDINAL BARS			
B501	14	40'-0"	
B501a	14	27'-11"	
TOTAL #5			992
B401	16	40'-0"	
B401a	16	27'-5"	
W401	36	40'-0"	
W401a	36	27'-5"	
W402	208	1'-11"	
TOTAL #4			2609
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			6058
SUPERSTRUCTURE CONCRETE			167.6 cys.
MISCELLANEOUS			
SURFACE SEAL			
(ESTIMATED QUANTITY = 3409 SFT 1 LSUM)			

SUPERSTRUCTURE DETAILS - SPAN A

INDIANA DEPARTMENT OF TRANSPORTATION
LAKE COUNTY

SCALE: - 1/8"=1'-0", UNLESS NOTED

DATE: - 5/22/98

SUBMITTED FOR APPROVAL

DRAWING: - C16 OF C44 SHEET: - 31 OF - 65

PROJECT: - NH-80-1 () 4

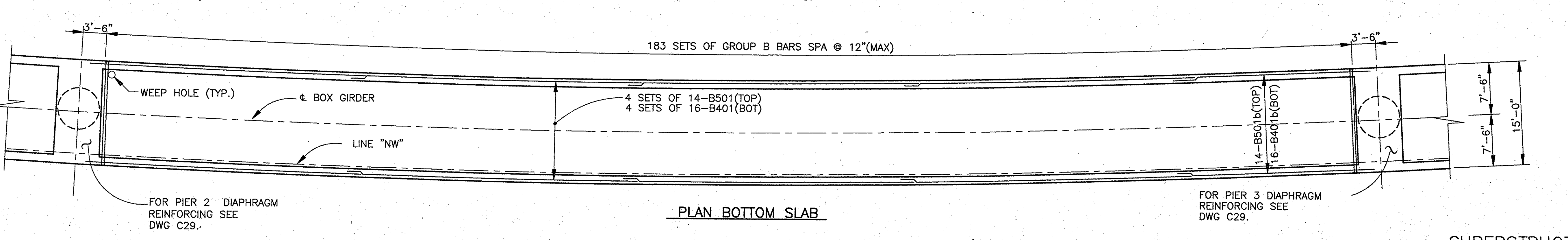
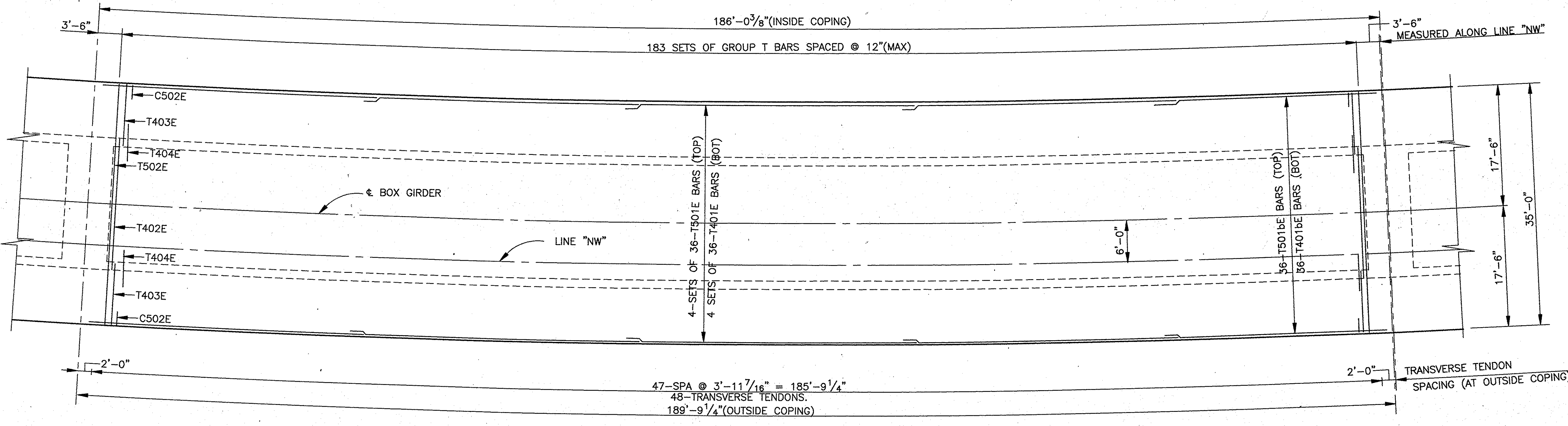
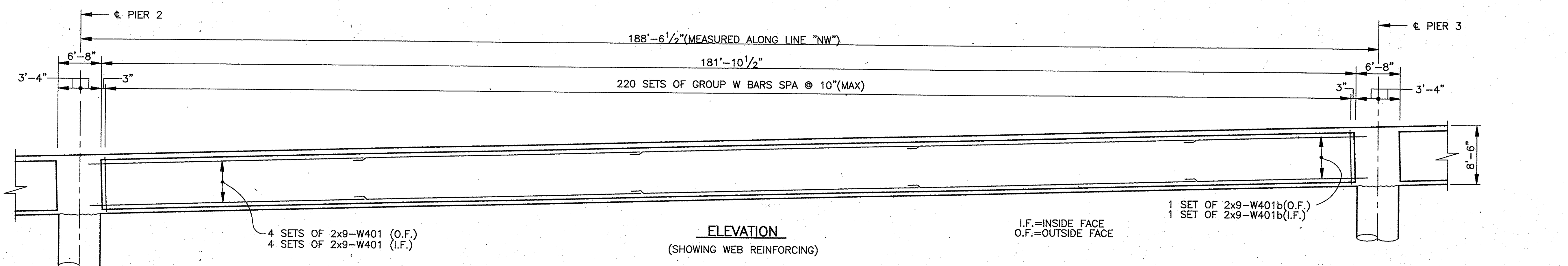
CONTRACT NO.

BRIDGE FILE: - I-80-5-7828

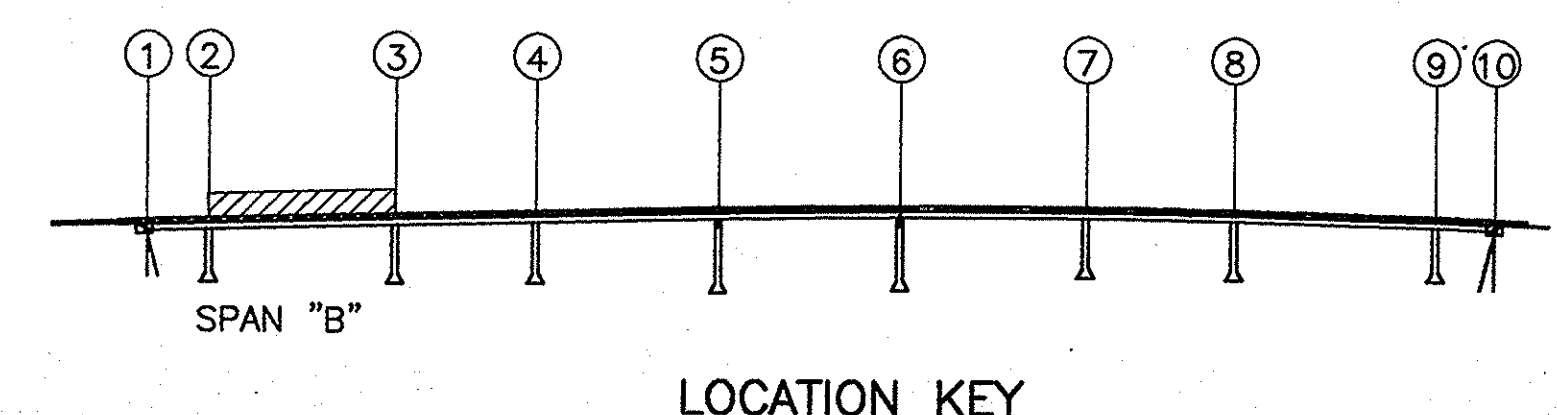


BILL OF MATERIALS

REINFORCING STEEL GRADE 60			
Size And Mark	No. Of Bars	Length (Feet)	Weight (Lbs.)
GROUP W BARS			
W601E	440	11'-4"	
W602E	440	11'-5"	
TOTAL #6			15035
GROUP T BARS			
T502E	183	34'-9"	6633
T402E	183	18'-8"	
T403E	366	8'-11"	
T404E	366	5'-0"	
TOTAL #4			5686
LONGITUDINAL BARS			
T501E	144	40'-0"	
T501bE	36	39'-10"	
TOTAL #5			7503
T401E	144	40'-0"	
T401bE	36	37'-10"	
TOTAL #4			4757
TOTAL EPOXY COATED REINFORCING			
			39614
GROUP B BARS			
B502	183	14'-9"	
B512	366	4'-5"	
TOTAL #5			4503
B402	183	16'-10"	2057
LONGITUDINAL BARS			
B501	56	40'-0"	
B501b	14	39'-10"	
TOTAL #5			2918
B401	64	40'-0"	
B401b	16	37'-10"	
W401	144	40'-0"	
W401b	36	37'-10"	
W402	608	1'-11"	
TOTAL #4			7652
TOTAL REGULAR REINFORCING			
			17130
SUPERSTRUCTURE CONCRETE			
			421.7 cys.
MISCELLANEOUS			
SURFACE SEAL			
(ESTIMATED QUANTITY = 9664 SFT			1 LSUM



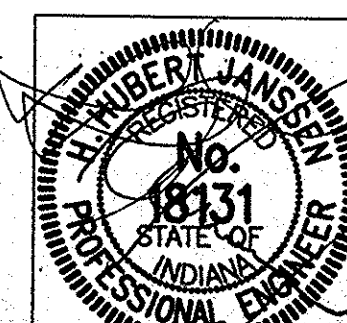
- NOTE:**
- FOR TYPICAL SECTION REINFORCING SEE DWG C15.
 - FOR TYPICAL LAP SPLICE DIMENSIONS SEE DWG C16.
 - FOR BAR SHAPES SEE DWG C16.
 - FOR BRIDGE RAILING DETAILS & QUANTITIES SEE DWGS C21, C26 & C27.
 - FOR TRANSVERSE TENDON DETAILS & QUANTITIES SEE DWG C32.
 - SPACING OF ALL TRANSVERSE BARS ARE MEASURED ALONG LINE "NW"
 - FOR BAR SHAPES FOR ACCESS OPENING SEE DWG C25.



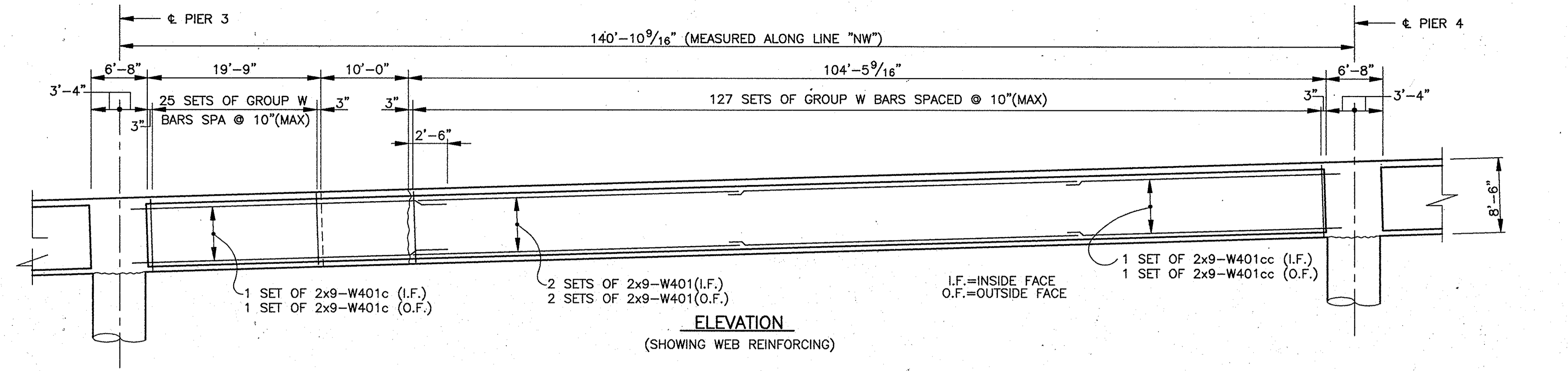
SUPERSTRUCTURE DETAILS -- SPAN B
INDIANA DEPARTMENT OF TRANSPORTATION
 LAKE COUNTY

SCALE: - 1/8"=1'-0", UNLESS NOTED
 DATE: - 1/15/08

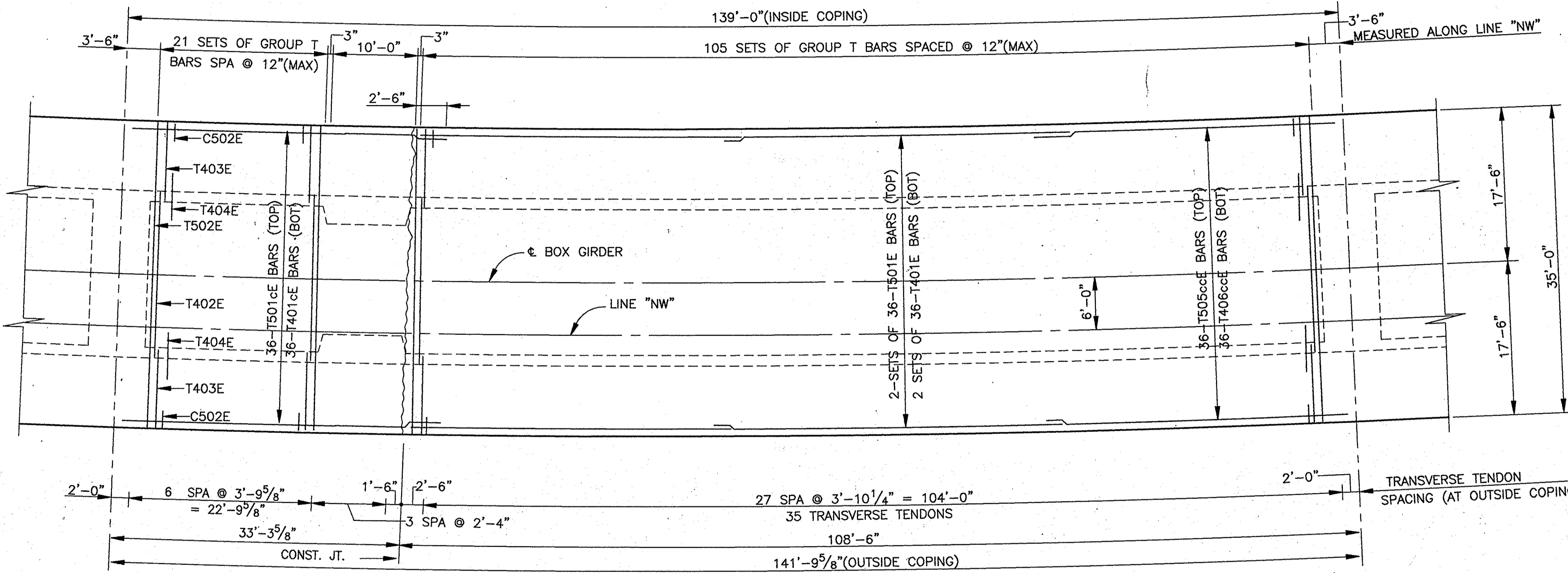
SUBMITTED FOR APPROVAL
 DRAWING: - C17 OF C44 SHEET: - 32 OF - 65
 PROJECT: - NH-80-1 () 4
 CONTRACT NO.
 BRIDGE FILE: - I-80-5-7828



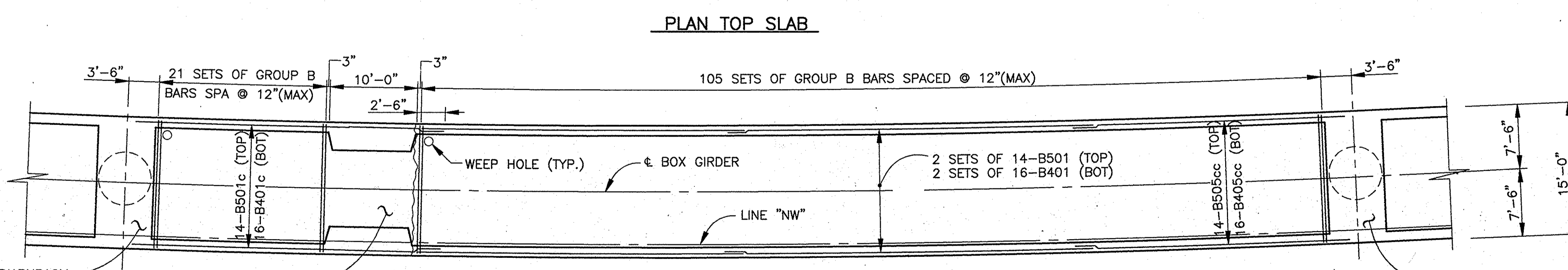
DESIGNED	HHJ	C'K'D	LS
DRAWN	TMD	C'K'D	HHJ
TRACED		C'K'D	



ELEVATION
(SHOWING WEB REINFORCING)



PLAN TOP SLAB



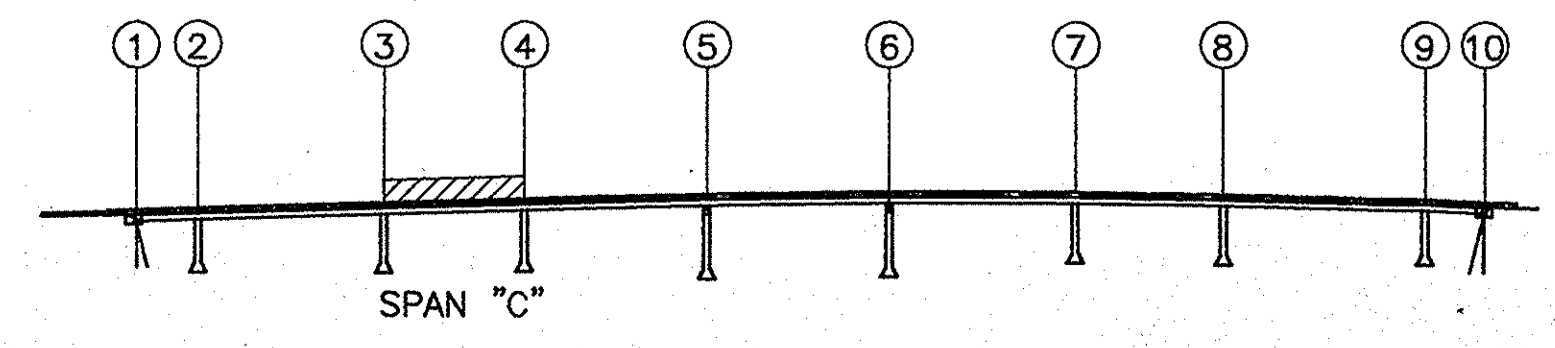
PLAN BOTTOM SLAB

FOR PIER 3 DIAPHRAGM REINFORCING SEE DWG C29.

FOR STRESSING BLOCK REINFORCING SEE DWG C31

FOR PIER 4 DIAPHRAGM REINFORCING SEE DWG C29.

- NOTE:**
1. FOR TYPICAL SECTION REINFORCING SEE DWG 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 C32.
 6. SPACING OF ALL TRANSVERSE BARS ARE MEASURED ALONG LINE "NW"
 7. FOR BAR SHAPES FOR ACCESS OPENING SEE DWG C25.



LOCATION KEY

BILL OF MATERIALS			
REINFORCING STEEL GRADE 60			
Size And Mark	No. Of Bars	Length (Feet)	Weight (Lbs.)
GROUP W BARS			
W601E	304	11'-4"	
W602E	304	11'-5"	
TOTAL #6			10388
GROUP T BARS			
T502E	126	34'-9"	4567
T402E	126	18'-8"	
T403E	252	8'-11"	
T404E	252	5'-0"	
TOTAL #4			3915
LONGITUDINAL BARS			
T501E	72	40'-0"	
T501cE	36	35'-10"	
T501ccE	36	33'-6"	
TOTAL #5			5607
T401E	72	40'-0"	
T401cE	36	35'-10"	
T401ccE	36	32'-0"	
TOTAL #4			3555
TOTAL EPOXY COATED REINFORCING			28031
GROUP B BARS			
B502	126	14'-9"	
B512	252	4'-5"	
TOTAL #5			3100
B402	126	16'-10"	1417
LONGITUDINAL BARS			
B501	28	40'-0"	
B501c	14	35'-10"	
B501cc	14	33'-6"	
TOTAL #5			2181
B401	32	40'-0"	
B401c	16	35'-10"	
B401cc	16	32'-0"	
W401	72	40'-0"	
W401c	36	35'-10"	
W401cc	36	32'-0"	
W402	456	1'-11"	
TOTAL #4			5720
TOTAL REGULAR REINFORCING			12417
SUPERSTRUCTURE CONCRETE			329.8 cys.
MISCELLANEOUS			
SURFACE SEAL			
(ESTIMATED QUANTITY = 7221 SFT 1 LSUM			

SUPERSTRUCTURE DETAILS - SPAN C

INDIANA DEPARTMENT OF TRANSPORTATION
LAKE COUNTY

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

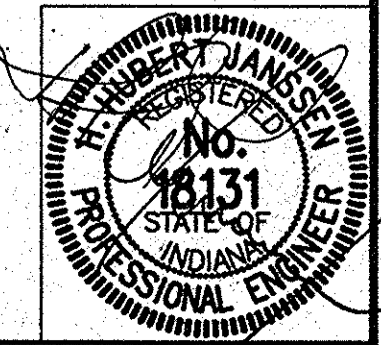
SUBMITTED FOR APPROVAL

DRAWING: - C18 OF C44 SHEET: - 33 OF - 65

PROJECT: - NH-80-1 () 4

CONTRACT NO.

BRIDGE FILE: - I-80-5-7828

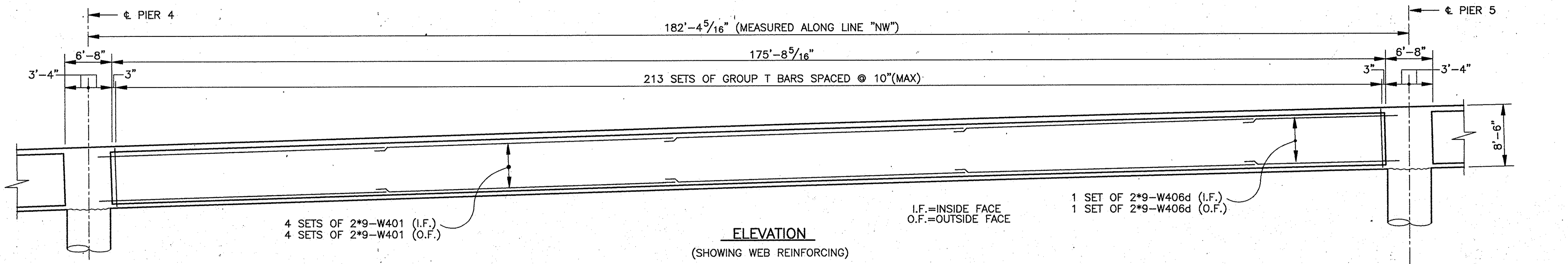


DESIGNED HHJ C'K'D LS
DRAWN TMD C'K'D HHJ
TRACED C'K'D

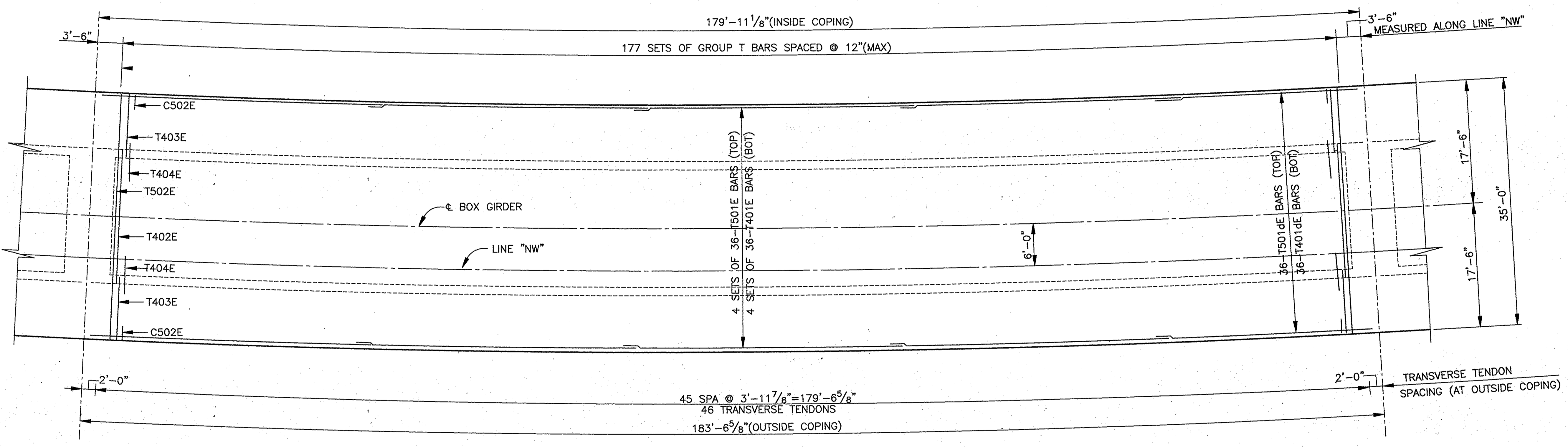
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BILL OF MATERIALS

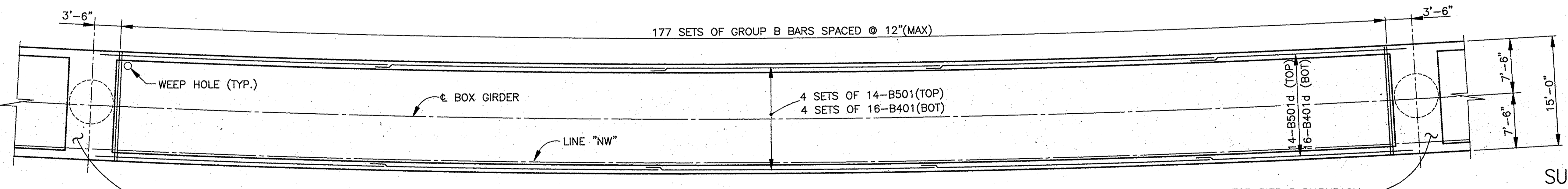
REINFORCING STEEL GRADE 60			
Size And Mark	No. Of Bars	Length (Feet)	Weight (Lbs.)
GROUP W BARS			
W601E	426	11'-4"	
W602E	426	11'-5"	
TOTAL #6			14557
GROUP T BARS			
T502E	177	34'-9"	6415
T402E	177	18'-8"	
T403E	354	8'-11"	
T404E	354	5'-0"	
TOTAL #4			5499
LONGITUDINAL BARS			
T501E	144	40'-0"	
T501dE	36	33'-7"	
TOTAL #5			7269
T401E	144	40'-0"	
T401dE	36	31'-7"	
TOTAL #4			4607
TOTAL EPOXY COATED REINFORCING			
			38347
GROUP B BARS			
B502	177	14'-9"	
B512	354	4'-5"	
TOTAL #5			4355
B402	177	16'-10"	1990
LONGITUDINAL BARS			
B501	56	40'-0"	
B501d	14	33'-7"	
TOTAL #5			2827
B401	64	40'-0"	
B401d	16	31'-7"	
W401	144	40'-0"	
W401d	36	31'-7"	
W402	592	1'-11"	
TOTAL #4			7414
TOTAL REGULAR REINFORCING			
			16586
SUPERSTRUCTURE CONCRETE			405.7 cys.
MISCELLANEOUS			
SURFACE SEAL			(ESTIMATED QUANTITY = 9348 SFT) 1 LSUM



ELEVATION
(SHOWING WEB REINFORCING)

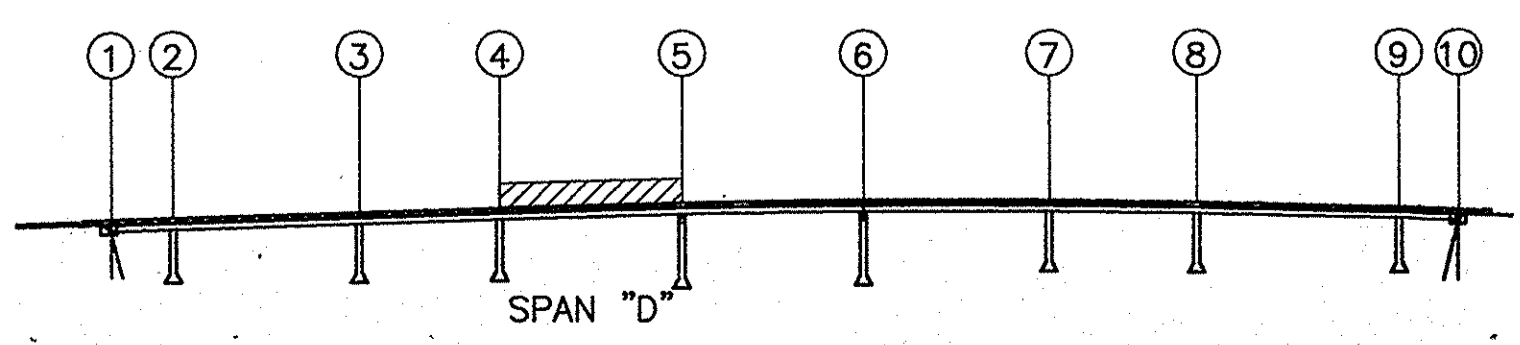


PLAN TOP SLAB



PLAN BOTTOM SLAB

- NOTE:**
- FOR TYPICAL SECTION REINFORCING SEE DWG 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 C32.
 - SPACING OF ALL TRANSVERSE BARS ARE MEASURED ALONG LINE "NW"
 - FOR BAR SHAPES FOR ACCESS OPENING SEE DWG C25.



LOCATION KEY

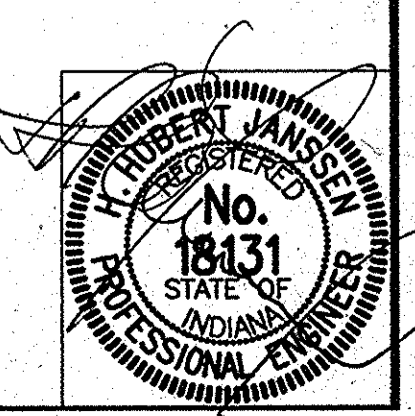
SUPERSTRUCTURE DETAILS - SPAN D

INDIANA DEPARTMENT OF TRANSPORTATION
LAKE COUNTY

SCALE: - 1/8"=1'-0", UNLESS NOTED DATE: - 1/22/88

SUBMITTED FOR APPROVAL

DRAWING: - C19 OF C44 SHEET: - 34 OF - 65
PROJECT: - NH-80-1 () 4
CONTRACT NO.
BRIDGE FILE: - I-80-5-7828

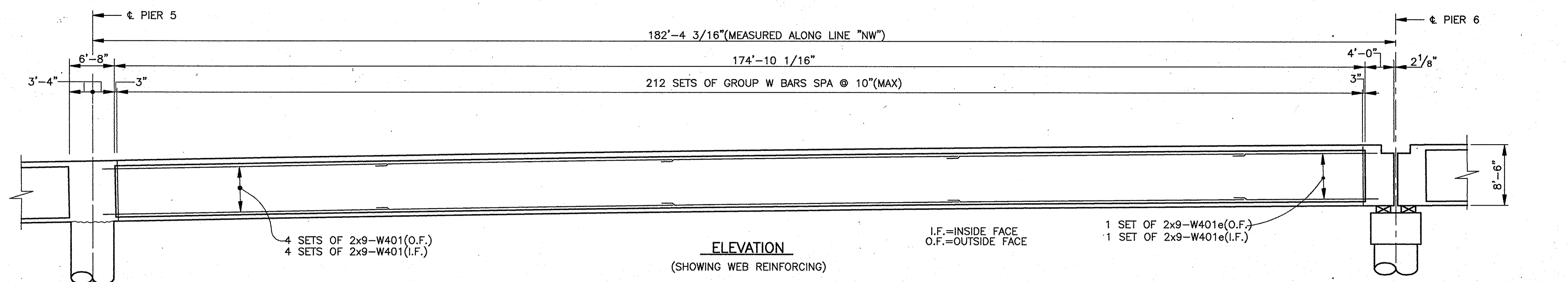


DESIGNED: HHJ C.K'D LS
DRAWN: TMD C.K'D HHJ
TRACED: C.K'D

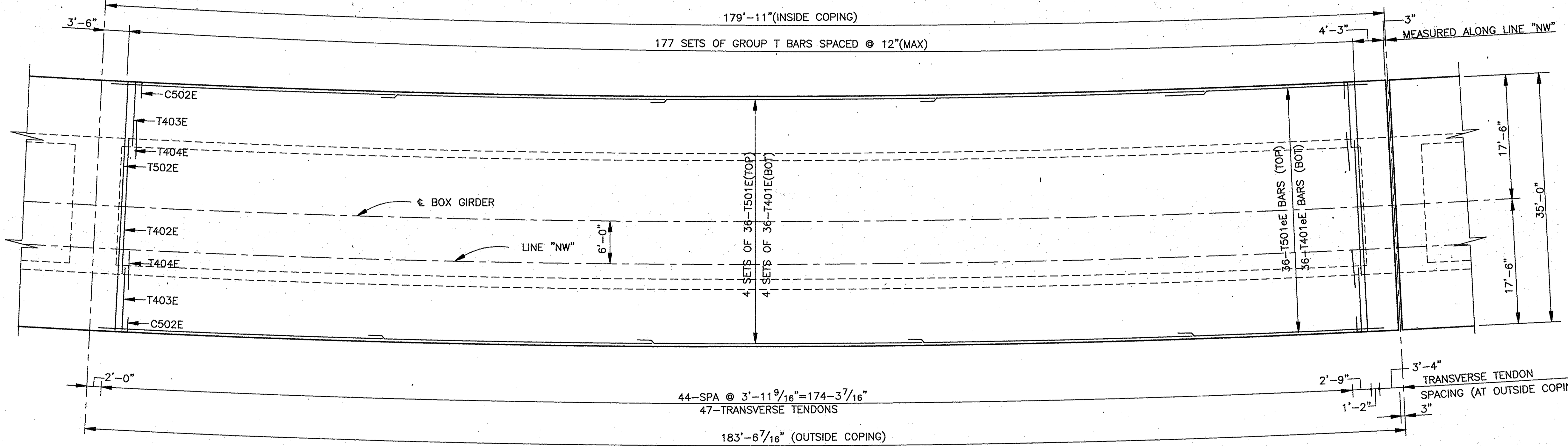
INDIANA DEPARTMENT OF TRANSPORTATION
 PROJECT: NH-80-1 () 4
 SHEET: 34 OF 65
 DATE: 1/22/88

BILL OF MATERIALS

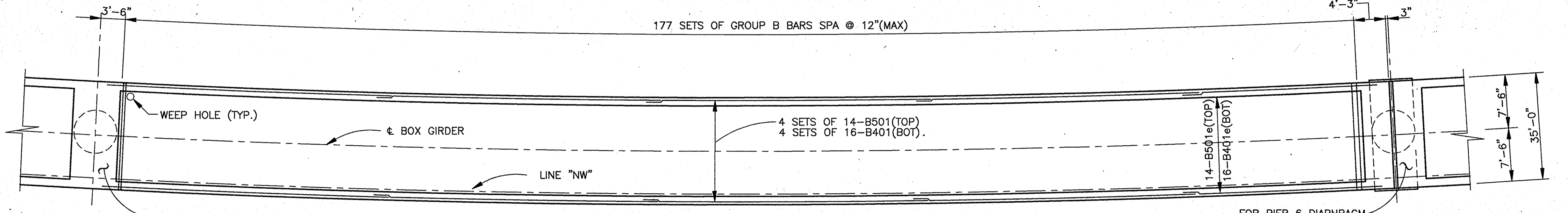
REINFORCING STEEL GRADE 60			
Size And Mark	No. Of Bars	Length (Feet)	Weight (Lbs.)
GROUP W BARS			
W601E	424	11'-4"	
W602E	424	11'-5"	
TOTAL #6			14488
GROUP T BARS			
T502E	177	34'-9"	6415
T402E	177	18'-8"	
T403E	354	8'-11"	
T404E	354	5'-0"	
TOTAL #4			5499
LONGITUDINAL BARS			
T501E	144	40'-0"	
T501eE	36	33'-4"	
TOTAL #5			7259
T401E	144	40'-0"	
T401eE	36	31'-4"	
TOTAL #4			4601
TOTAL EPOXY COATED REINFORCING			38263
GROUP B2 BARS			
B502	177	14'-9"	
B512	354	4'-5"	
TOTAL #5			4355
B402	177	16'-10"	1990
LONGITUDINAL BARS			
B501	56	40'-0"	
B501e	14	33'-4"	
TOTAL #5			2823
B401	64	40'-0"	
B401e	16	31'-4"	
W401	144	40'-0"	
W401e	36	31'-4"	
W402	592	1'-11"	
TOTAL #4			7405
TOTAL REGULAR REINFORCING			16573
SUPERSTRUCTURE CONCRETE			407.2 cys.
MISCELLANEOUS			
SURFACE SEAL			
(ESTIMATED QUANTITY = 9321 SFT 1 LSM)			



ELEVATION
(SHOWING WEB REINFORCING)

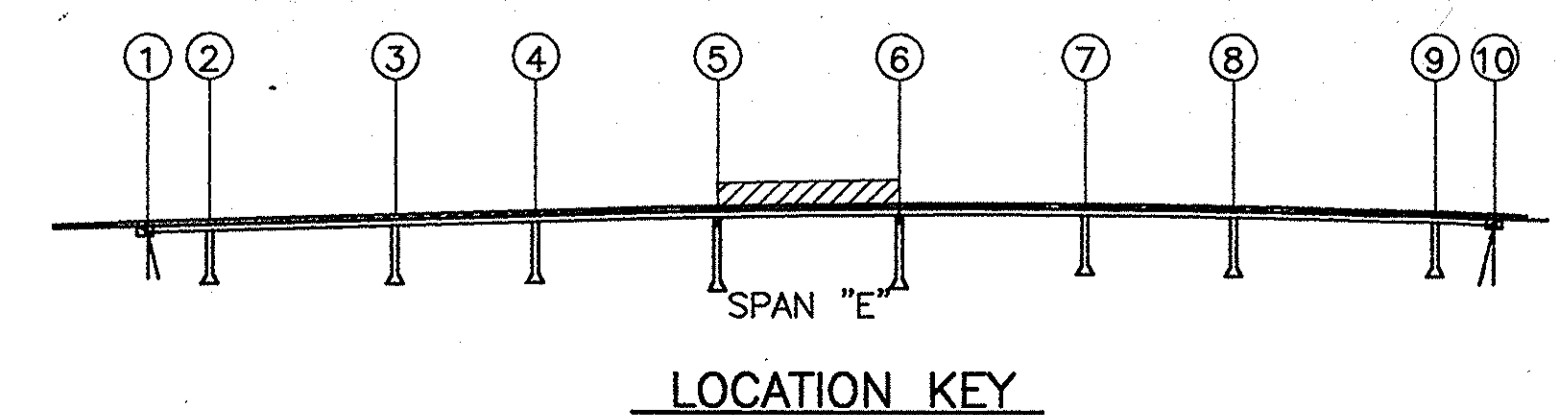


PLAN TOP SLAB



PLAN BOTTOM SLAB

- NOTE:**
1. FOR TYPICAL SECTION REINFORCING SEE DWG 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 C32.
 6. SPACING OF ALL TRANSVERSE BARS ARE MEASURED ALONG LINE "NW"
 7. FOR BAR SHAPES FOR ACCESS OPENING SEE DWG C25.



SUPERSTRUCTURE DETAILS - SPAN E

INDIANA DEPARTMENT OF TRANSPORTATION
LAKE COUNTY

SCALE: - 1/8"=1'-0", UNLESS NOTED DATE: - 1/22/08

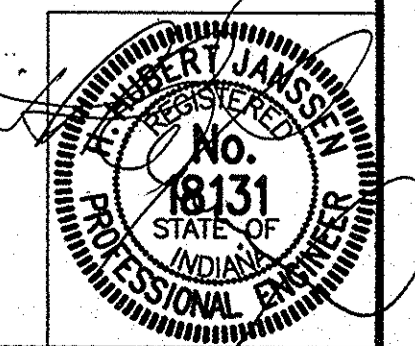
SUBMITTED FOR APPROVAL

DRAWING: - C20 OF C44 SHEET: - 35 OF - 65

PROJECT: - NH-80-1 () 4

CONTRACT NO.

BRIDGE FILE: - I-80-5-7828

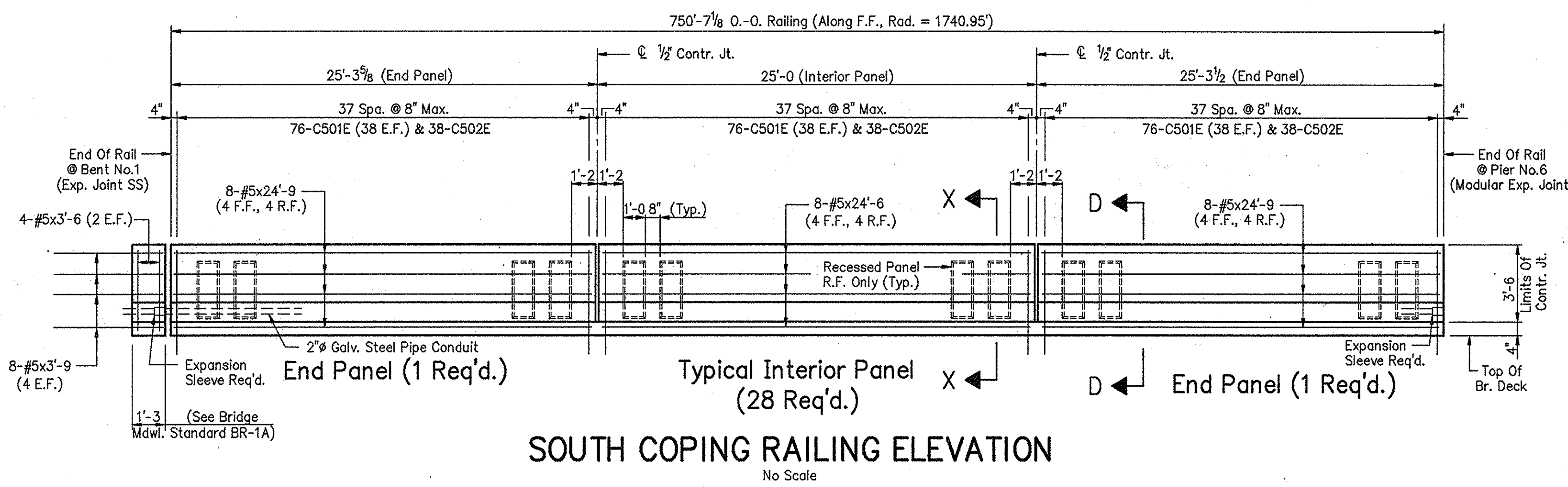


DU:BAU-12VSPAN, 08/20/97 at 10:16
PLOT:18131

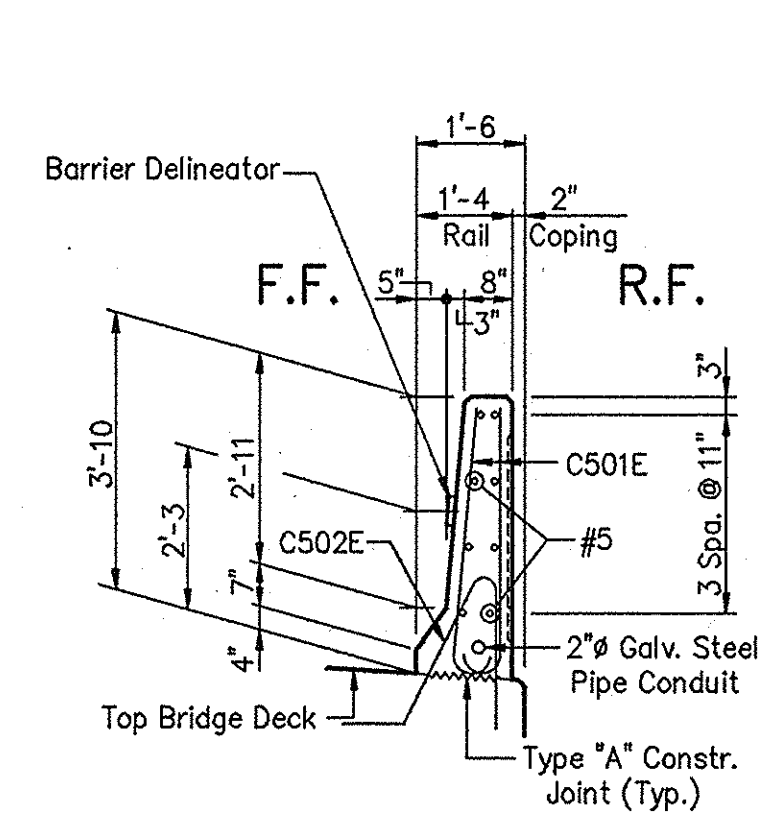
DESIGNED	HHJ	C'K'D	LS
DRAWN	TMD	C'K'D	HHJ
TRACED		C'K'D	

RAILING BILL OF MATERIALS

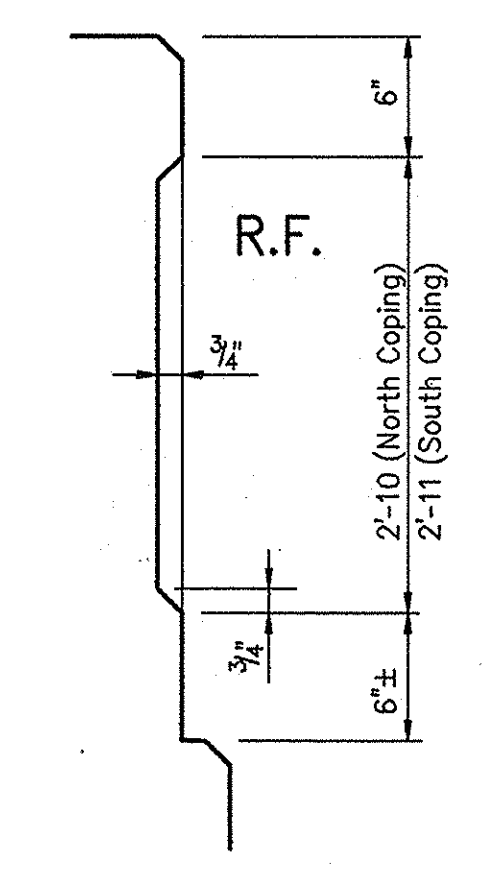
Epoxy Coated Reinforcing Steel			
Size And Mark	No. Of Bars	Length (Feet)	Weight (Lbs.)
C501E	4604	4'-1"	
C502E	2302	5'-5"	
#5	16	24'-9"	
#5	456	24'-6"	
#5	16	19'-3"	
#5	16	3'-9"	
#5	8	3'-6"	
Total Epoxy Coated Reinforcing Steel			45,092
Concrete			
Concrete Railing Class "C"			
North Coping			96.7 Cys.
South Coping			95.8 Cys.
Total Concrete Railing Class "C"			192.5 Cys.
Miscellaneous			
Masonry Coating			14,430 Sft.
Barrier Delineators			78 Each
2" Galvanized Steel Pipe Conduit			763 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"			8 Lft.



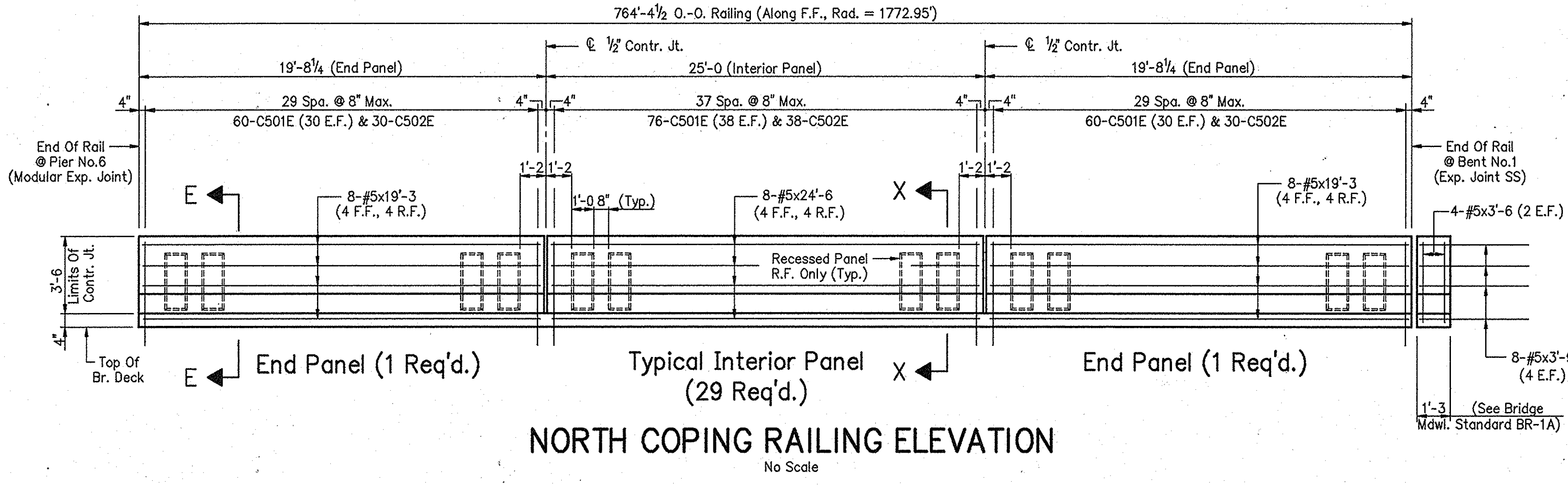
SOUTH COPING RAILING ELEVATION
No Scale



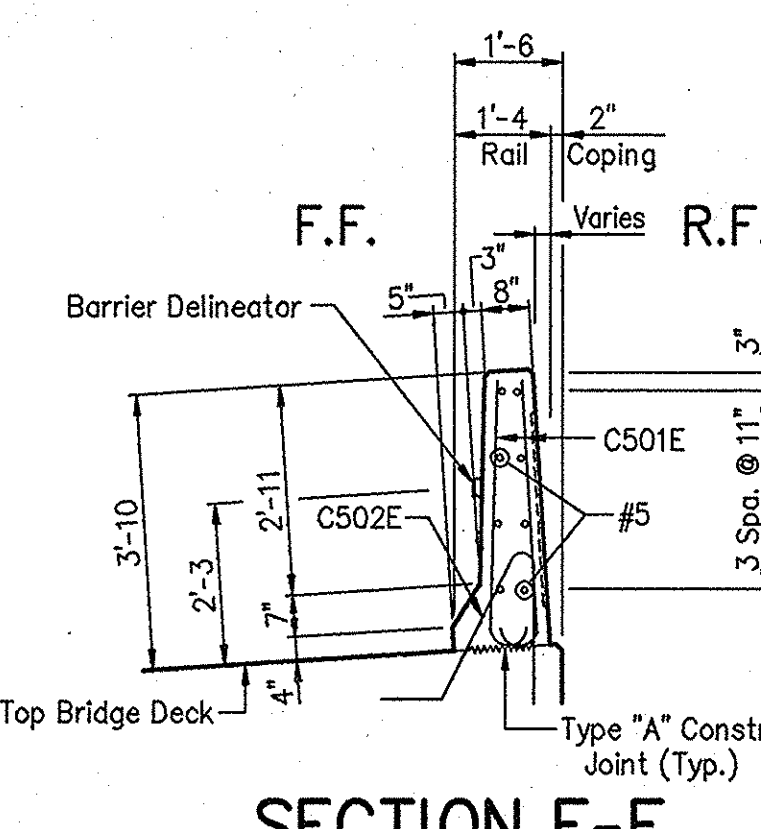
SECTION D-D



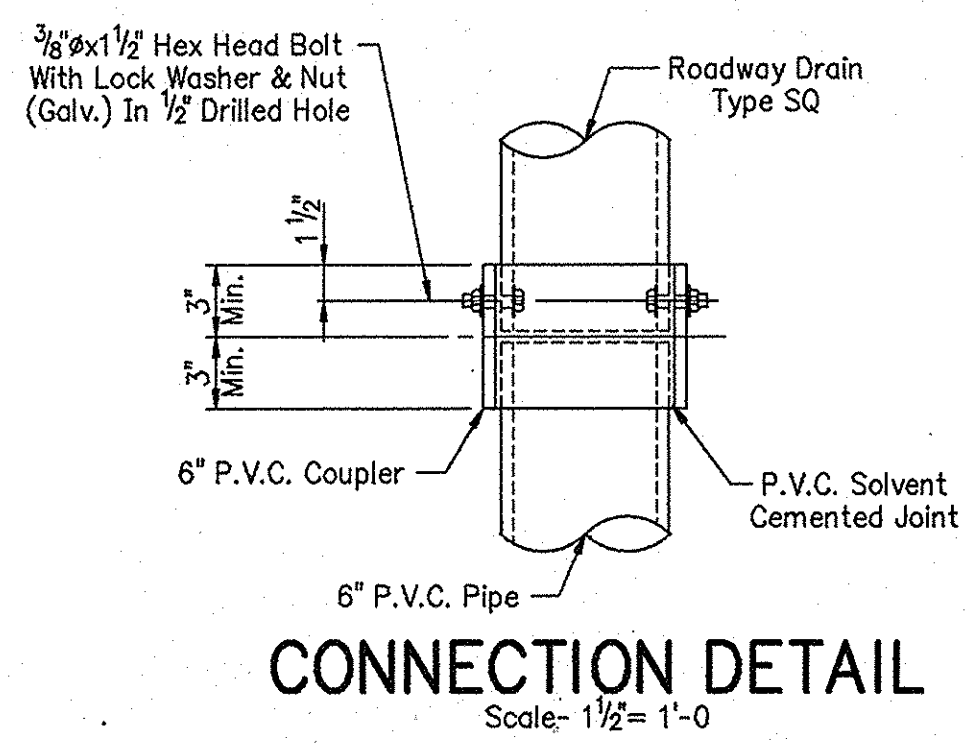
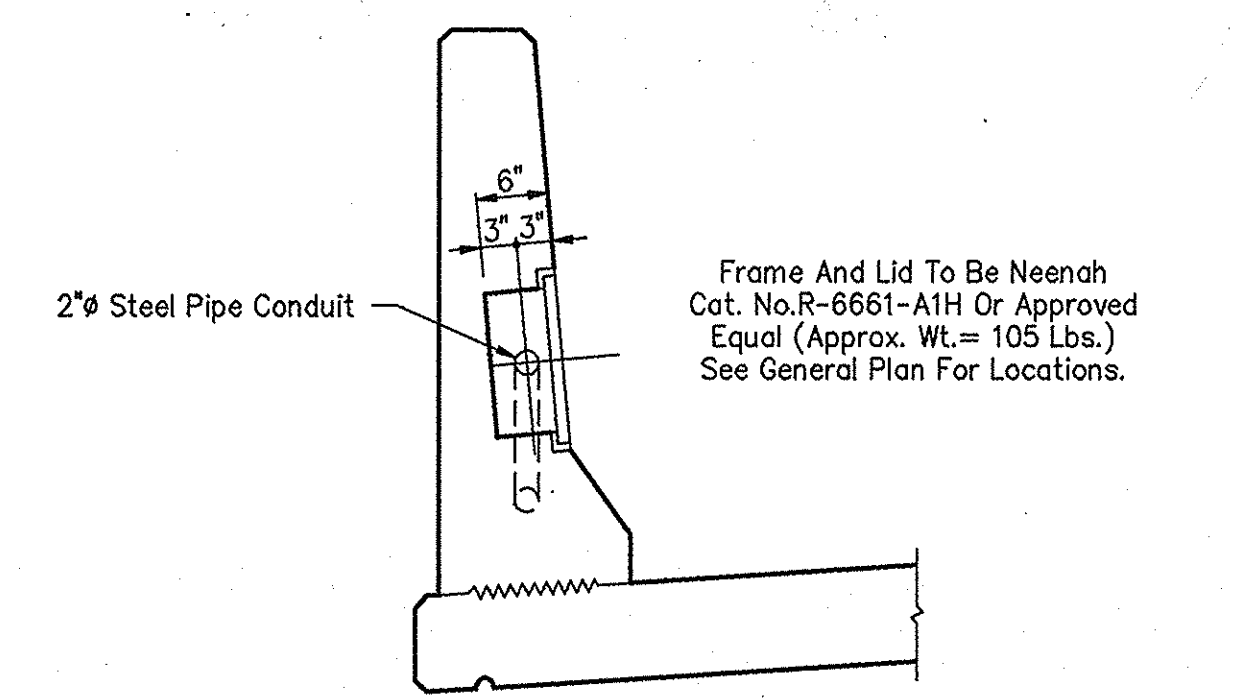
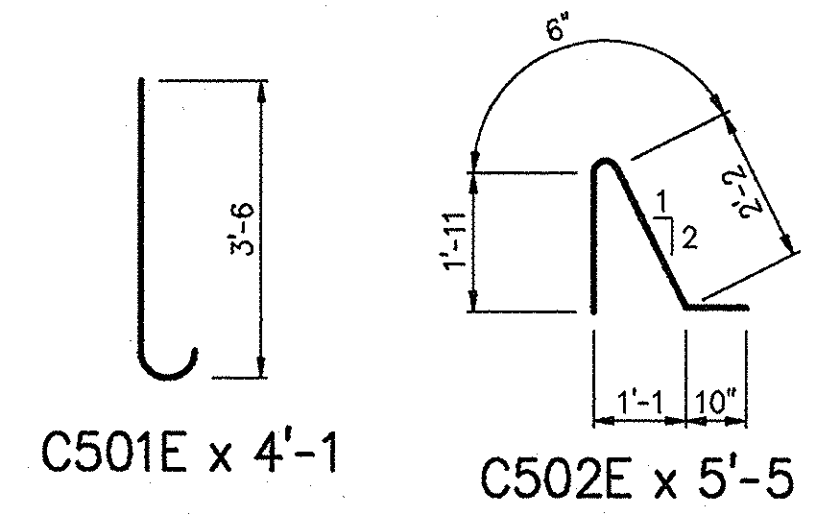
PARTIAL SECTION X-X
Showing Recessed Panel
No Scale



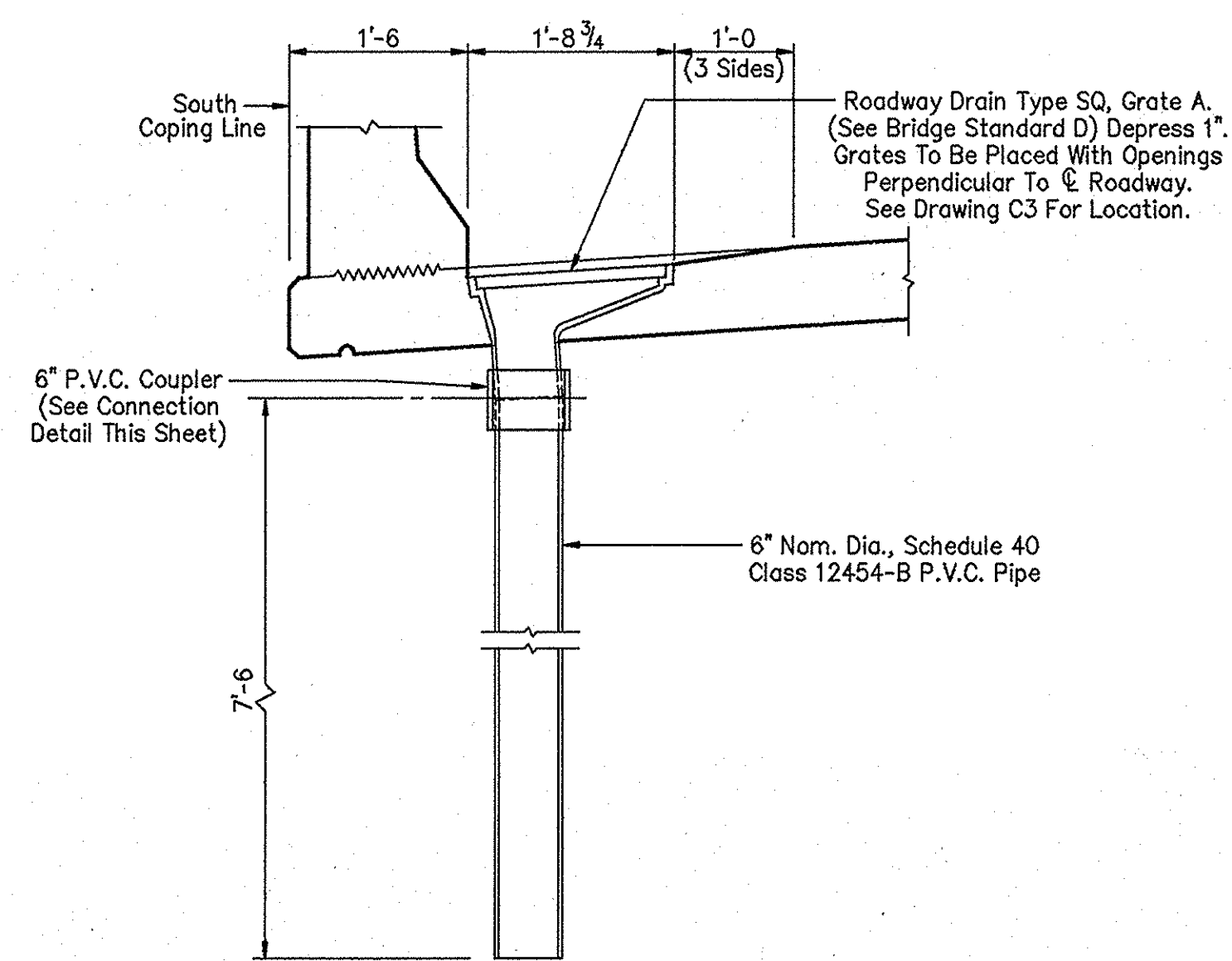
NORTH COPING RAILING ELEVATION
No Scale



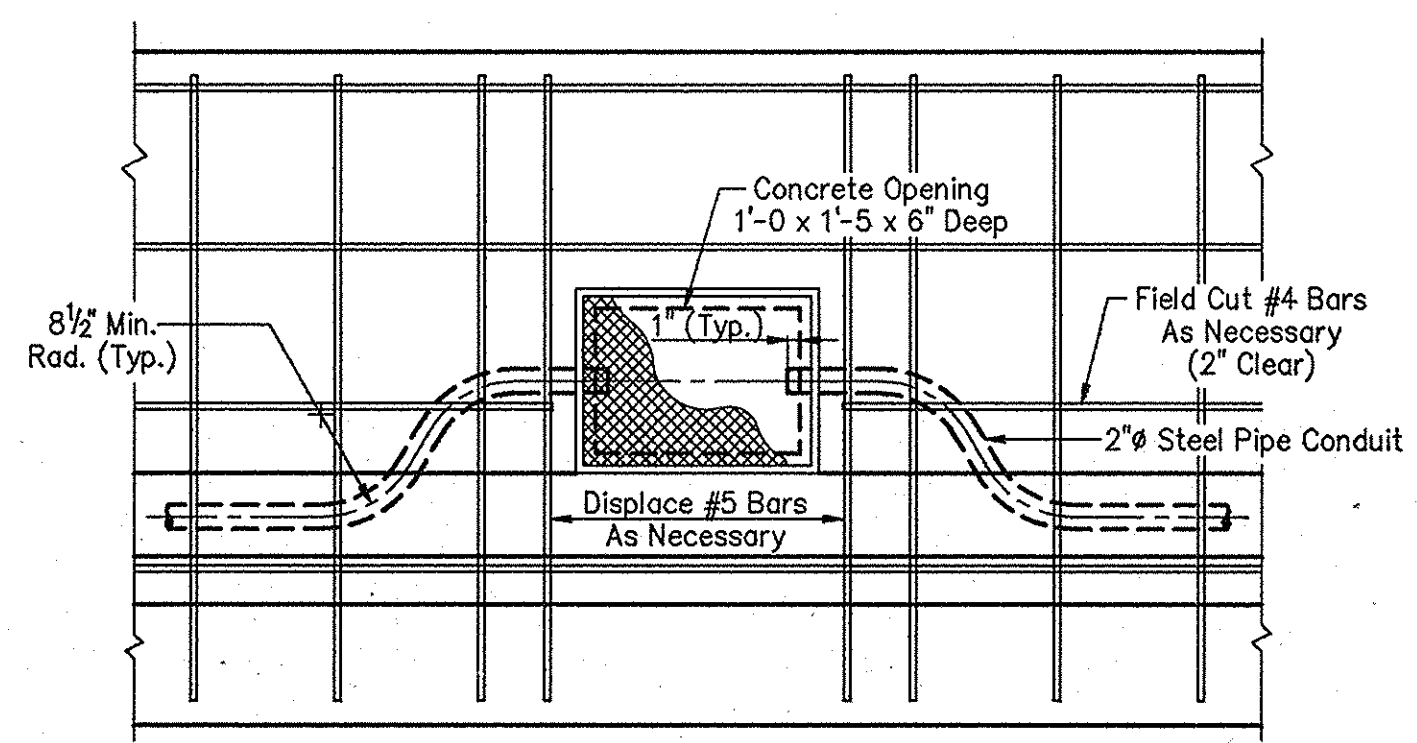
SECTION E-E



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



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

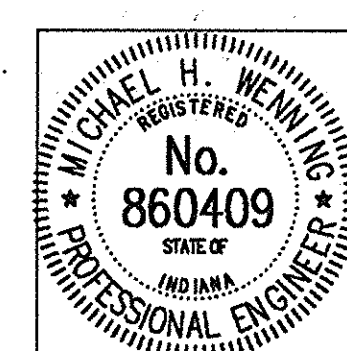


CONDUIT PULL BOX
Scale: 3/4" = 1'-0"

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

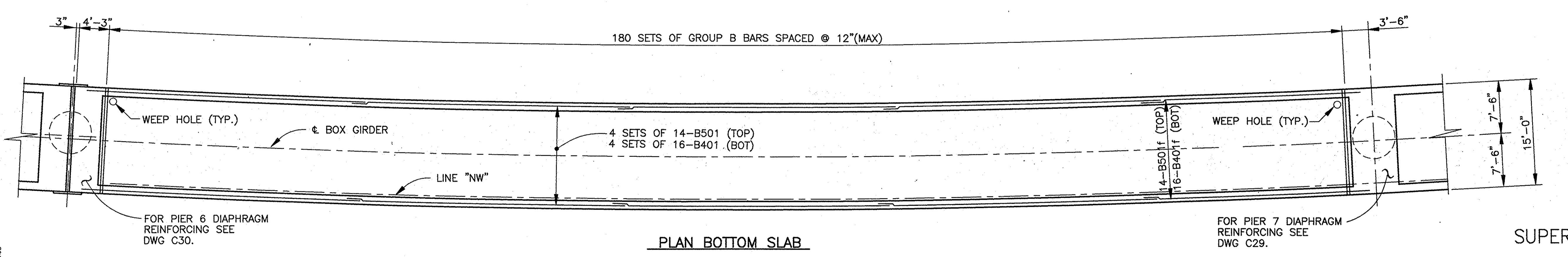
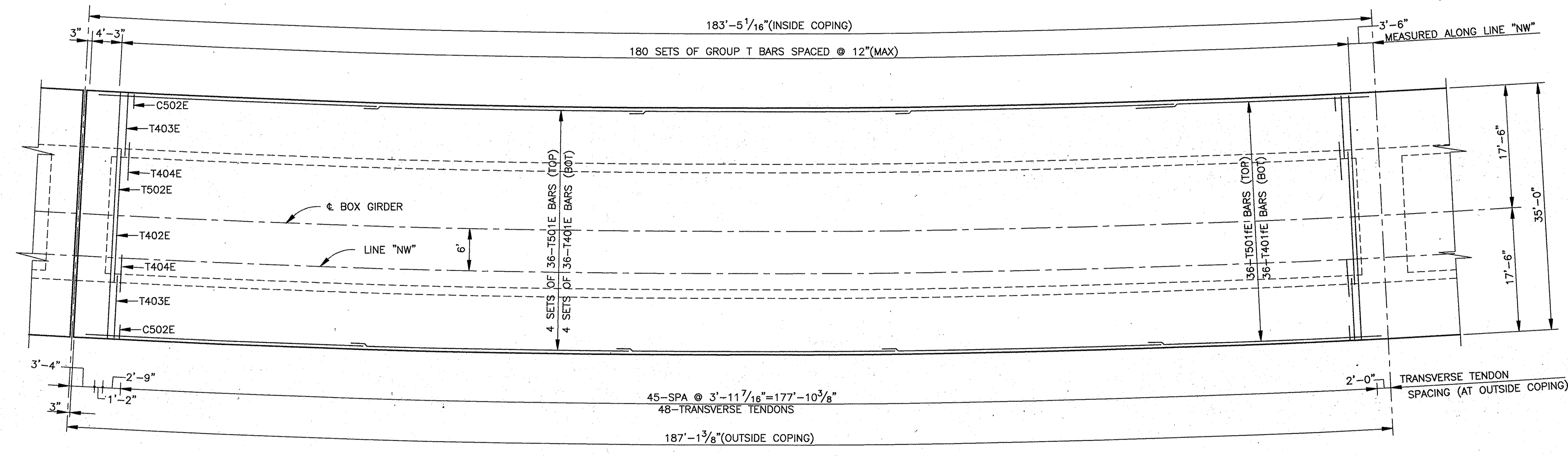
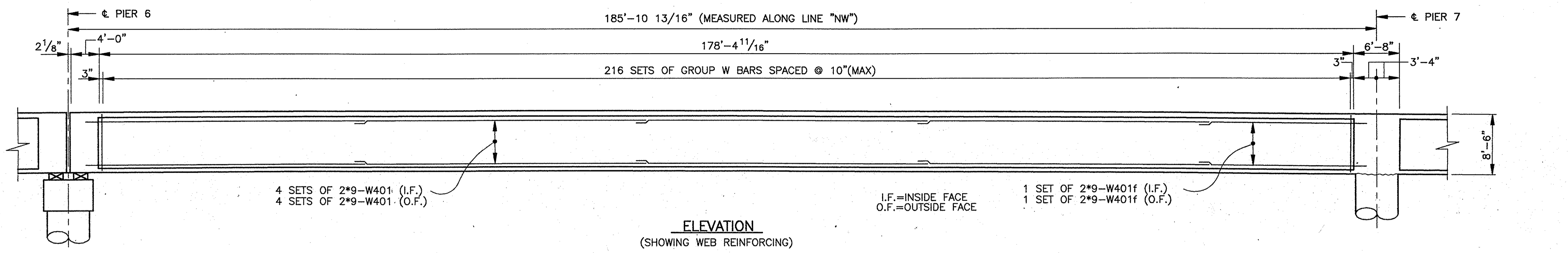
MISCELLANEOUS FLOOR DETAILS - UNIT 1
INDIANA DEPARTMENT OF TRANSPORTATION

SCALE: - 3/8" = 1'-0, Unless Noted
DATE: - July 9, 1998
SUBMITTED FOR APPROVAL: *Michael H. ...*
DRAWING: - C21 OF C44 SHEET: - 36 OF 65
PROJECT: - IM-80-1 (1434)
CONTRACT NO. - R-23808
BRIDGE FILE: - I-80-5-7828

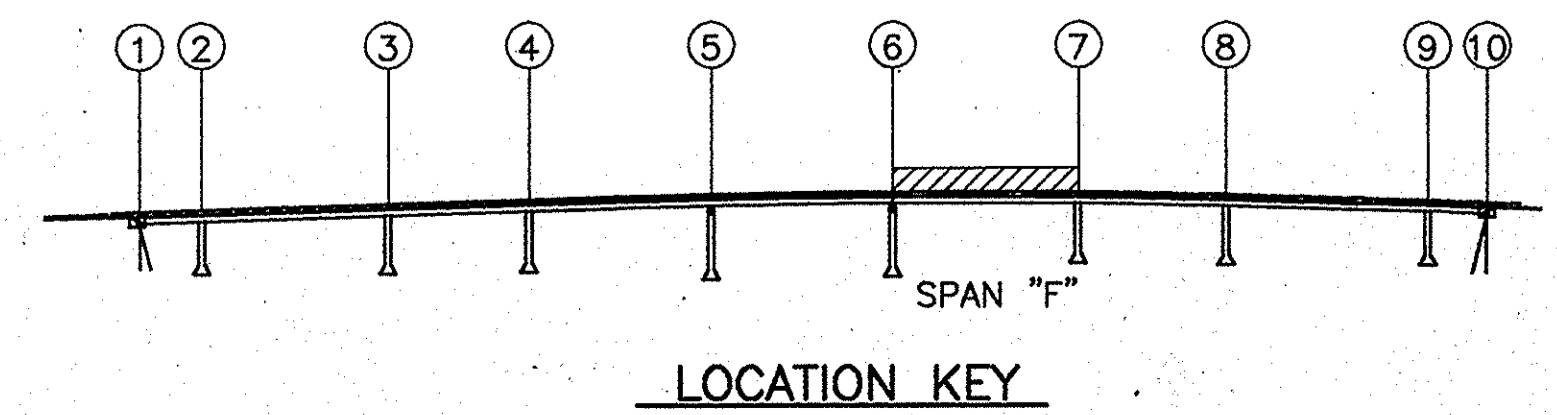


DESIGNED: _____ C.K'D.
DRAWN: DSH 2/25/98 C.K'D. MHW 5/29/98
TRACED: _____ C.K'D.

DWG FILE: 031071144\97144801
PLOT SCALE: 0.38200
PLOT ORIGIN: 0.000,0.00
SPELCHG: _____
EDIT DATE: 07/09/98 12:58:44
EDITED BY: DSH - 591



- NOTE:**
1. FOR TYPICAL SECTION REINFORCING SEE DWG 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 C32.
 6. SPACING OF ALL TRANSVERSE BARS ARE MEASURED ALONG LINE "NW"
 7. FOR BAR SHAPES FOR ACCESS OPENING SEE DWG C25.



BILL OF MATERIALS			
REINFORCING STEEL GRADE 60			
Size And Mark	No. Of Bors	Length (Feet)	Weight (Lbs.)
GROUP W BARS			
W601E	432	11'-4"	
W602E	432	11'-5"	
TOTAL #6			14762
GROUP T BARS			
T502E	180	34'-9"	6524
T402E	180	18'-8"	
T403E	360	8'-11"	
T404E	360	5'-0"	
TOTAL #4			5592
LONGITUDINAL BARS			
T501E	144	40'-0"	
T501fE	36	36'-11"	
TOTAL #5			7394
T401E	144	40'-0"	
T401fE	36	34'-11"	
TOTAL #4			4687
TOTAL EPOXY COATED REINFORCING			38959
GROUP B BARS			
B502	180	14'-9"	
B512	360	4'-5"	
TOTAL #5			4429
B402	180	16'-10"	2024
LONGITUDINAL BARS			
B501	56	40'-0"	
B501f	14	36'-11"	
TOTAL #5			2875
B401	64	40'-0"	
B401f	16	34'-11"	
W401	144	40'-0"	
W401f	36	34'-11"	
W402	600	1'-11"	
TOTAL #4			7540
TOTAL REGULAR REINFORCING			16868
SUPERSTRUCTURE CONCRETE			414.6 cys.
MISCELLANEOUS			
SURFACE SEAL			
(ESTIMATED QUANTITY = 9503 SFT)			1 LSUM

SUPERSTRUCTURE DETAILS - SPAN F

INDIANA DEPARTMENT OF TRANSPORTATION
 LAKE COUNTY

SCALE: - 1/8"=1'-0", UNLESS NOTED
 DATE: - 5/2/05

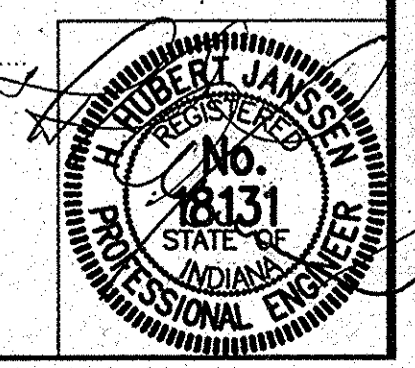
SUBMITTED FOR APPROVAL

DRAWING: - C22 OF C44 SHEET: - 37 OF - 65

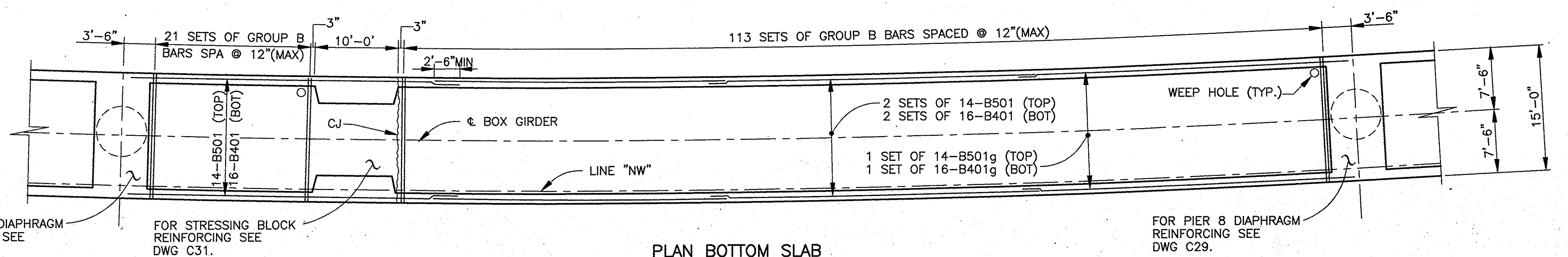
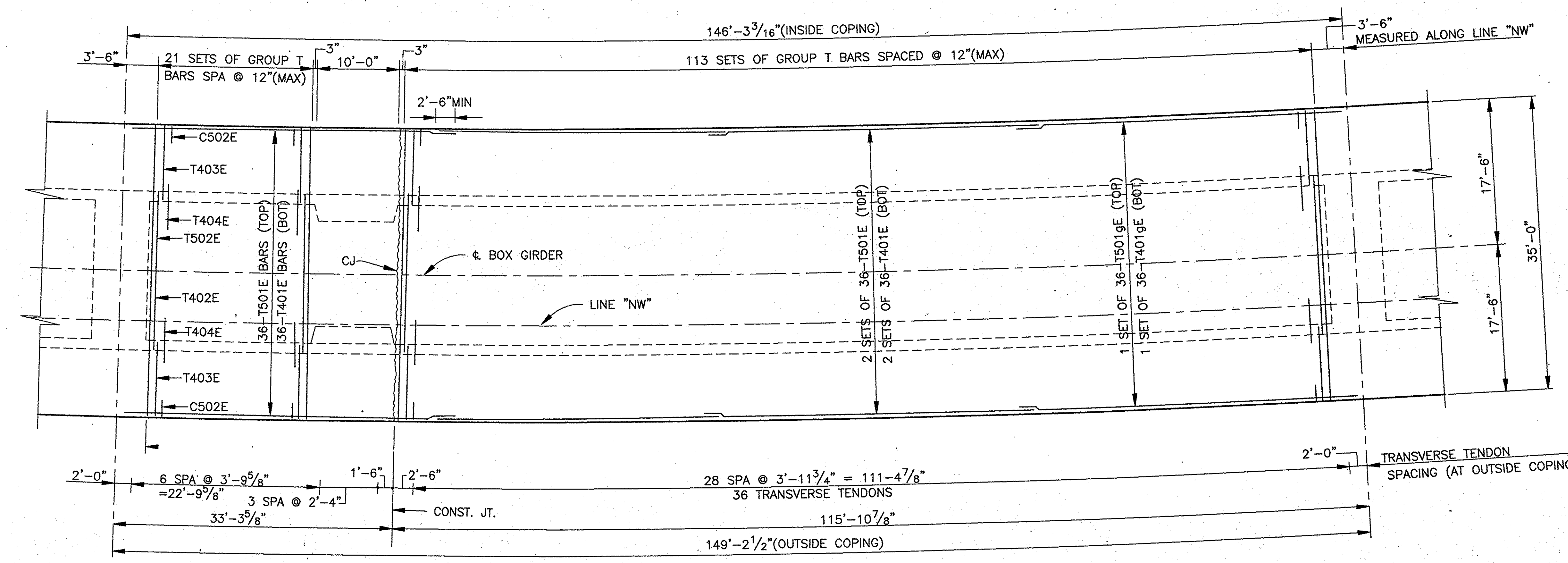
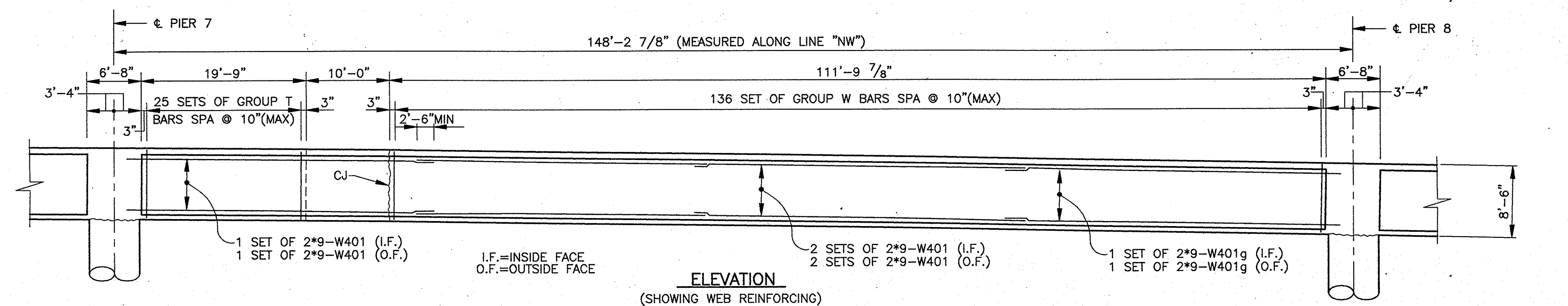
PROJECT: - NH-80-1 () 4

CONTRACT NO.

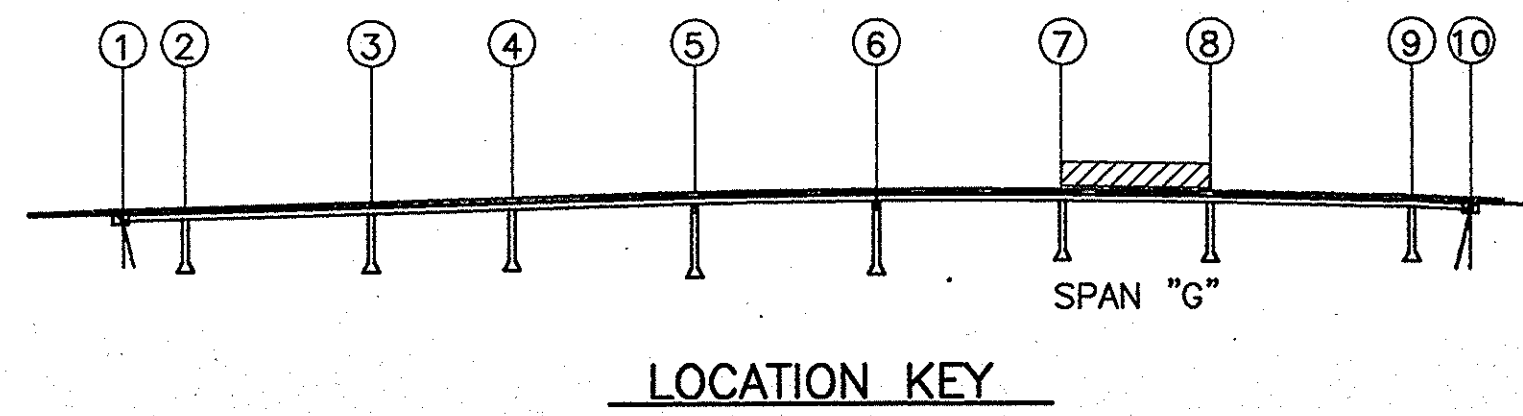
BRIDGE FILE: - I-80-5-7828



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



- NOTE:**
1. FOR TYPICAL SECTION REINFORCING SEE DWG 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 C32.
 6. SPACING OF ALL TRANSVERSE BARS ARE MEASURED ALONG LINE "NW"
 7. FOR BAR SHAPES FOR ACCESS OPENING SEE DWG C25.



BILL OF MATERIALS			
REINFORCING STEEL GRADE 60			
Size And Mark	No. Of Bars	Length (Feet)	Weight (Lbs.)
GROUP W BARS			
W601E	322	11'-4"	
W602E	322	11'-5"	
TOTAL #6			11003
GROUP T BARS			
T502E	134	34'-9"	4857
T402E	134	18'-8"	
T403E	268	8'-11"	
T404E	268	5'-0"	
TOTAL #4			4163
LONGITUDINAL BARS			
T501E	108	40'-0"	
T501gE	36	39'-5"	
TOTAL #5			5986
T401E	108	40'-0"	
T401gE	36	39'-5"	
TOTAL #4			3834
TOTAL EPOXY COATED REINFORCING			29842
GROUP B BARS			
B502	134	14'-9"	
B512	268	4'-5"	
TOTAL #5			3297
B402	134	16'-10"	1506
LONGITUDINAL BARS			
B501	42	40'-0"	
B501g	14	39'-5"	
TOTAL #5			2328
B401	48	40'-0"	
B401g	16	39'-5"	
W401	108	40'-0"	
W401g	36	39'-5"	
W402	480	1'-11"	
TOTAL #4			6153
TOTAL REGULAR REINFORCING			13285
SUPERSTRUCTURE CONCRETE			345.2 cys.
MISCELLANEOUS			
SURFACE SEAL			
(ESTIMATED QUANTITY = 7599 SFT 1 LSM)			

SUPERSTRUCTURE DETAILS - SPAN G

INDIANA DEPARTMENT OF TRANSPORTATION
LAKE COUNTY

SCALE: - 1/8"=1'-0", UNLESS NOTED DATE: - 8/16/08

SUBMITTED FOR APPROVAL

DRAWING: - C23 OF C44 SHEET: - 38 OF - 65

PROJECT: - NH-80-1 () 4

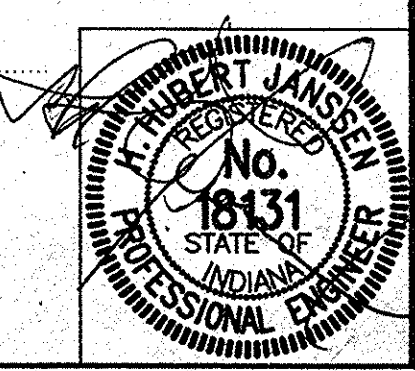
CONTRACT NO.

BRIDGE FILE: - I-80-5-78238

DESIGNED: HHJ C'K'D: LS

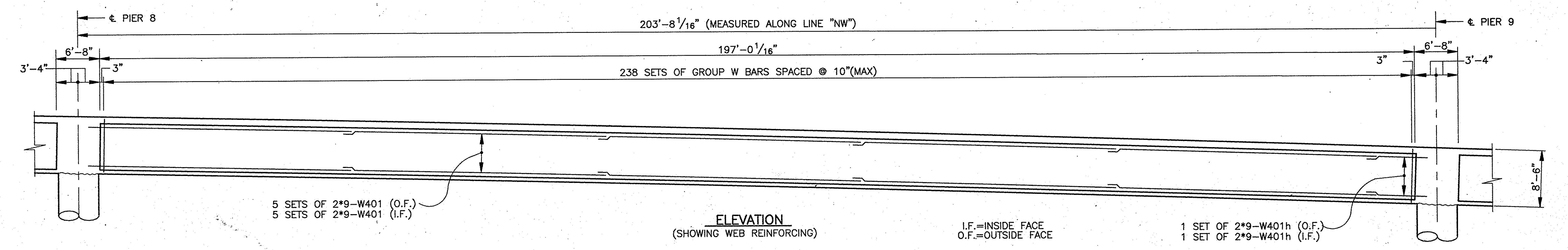
DRAWN: TMD C'K'D: HHJ

TRACED: C'K'D

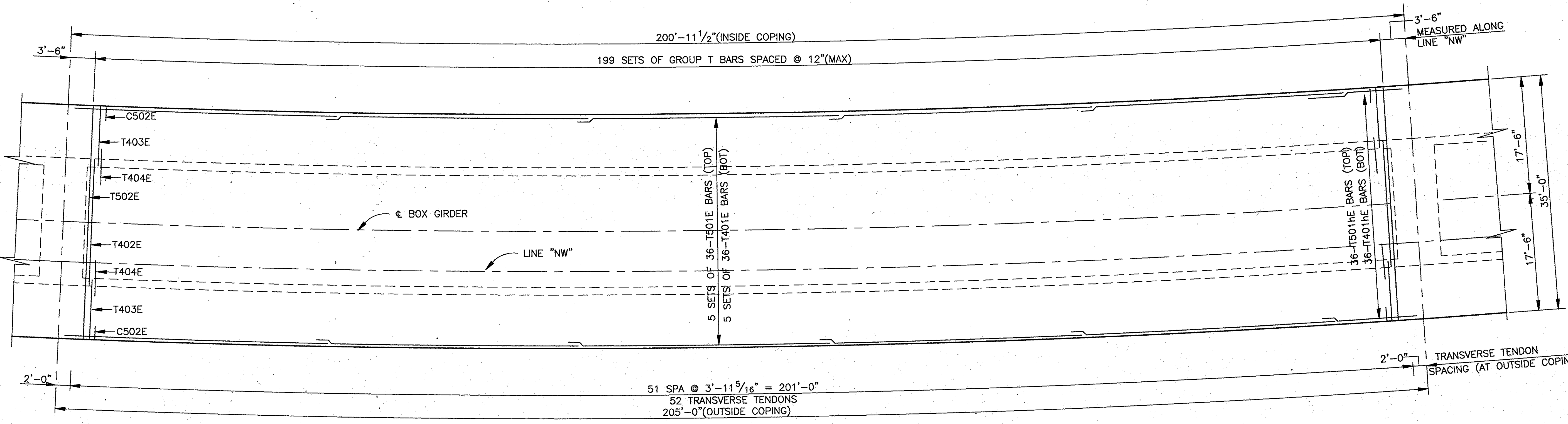


BILL OF MATERIALS

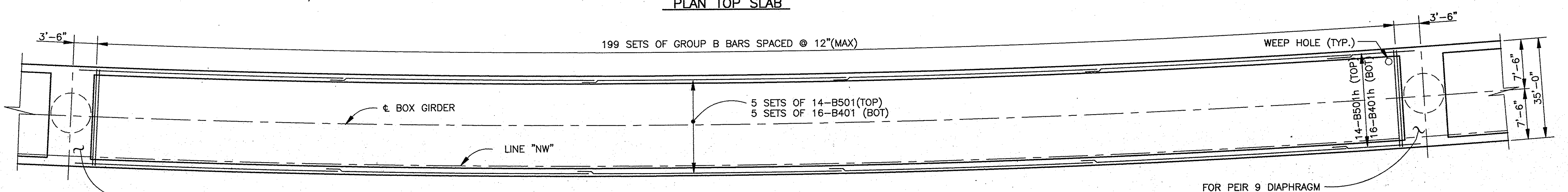
REINFORCING STEEL GRADE 60			
Size And Mark	No. Of Bars	Length (Feet)	Weight (Lbs.)
GROUP W BARS			
W601E	476	11'-4"	
W602E	476	11'-5"	
TOTAL #6			16265
GROUP T BARS			
T502E	199	34'-9"	7213
T402E	199	18'-8"	
T403E	398	8'-11"	
T404E	398	5'-0"	
TOTAL #4			6183
LONGITUDINAL BARS			
T501E	180	40'-0"	
T501hE	36	17'-6"	
TOTAL #5			8167
T401E	180	40'-0"	
T401hE	36	15'-0"	
TOTAL #4			5170
TOTAL EPOXY COATED REINFORCING			
42997			
GROUP B BARS			
B502	199	14'-9"	
B512	398	4'-5"	
TOTAL #5			4896
B402	199	16'-10"	2237
LONGITUDINAL BARS			
B501	70	40'-0"	
B501h	14	17'-6"	
TOTAL #5			3176
B401	80	40'-0"	
B401h	16	15'-0"	
W401	180	40'-0"	
W401h	36	15'-0"	
W402	656	1'-11"	
TOTAL #4			8310
TOTAL REGULAR REINFORCING			
18619			
SUPERSTRUCTURE CONCRETE			450.1 cys.
MISCELLANEOUS			
SURFACE SEAL			
(ESTIMATED QUANTITY = 10440 SFT) 1 LSUM			



ELEVATION
(SHOWING WEB REINFORCING)
I.F.=INSIDE FACE
O.F.=OUTSIDE FACE

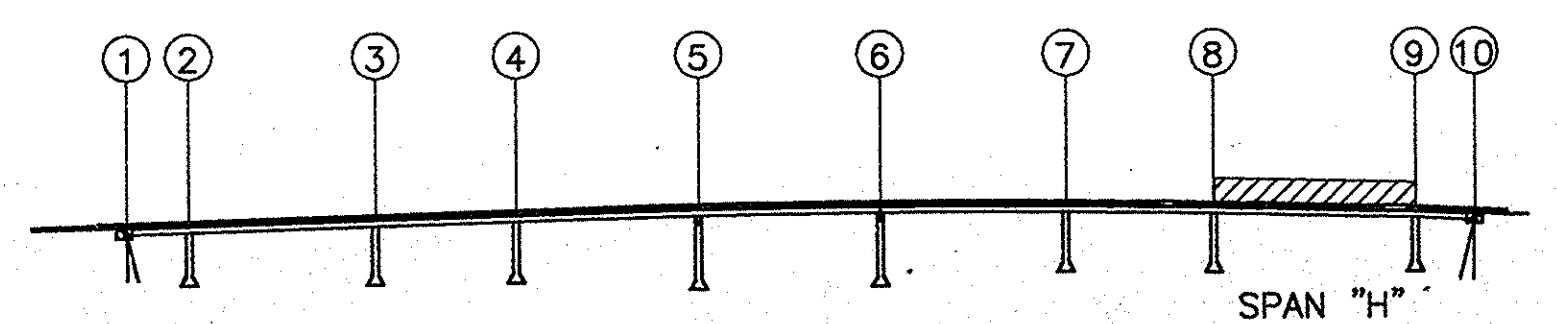


PLAN TOP SLAB



PLAN BOTTOM SLAB

- NOTE:**
- FOR TYPICAL SECTION REINFORCING SEE DWG 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 C32.
 - SPACING OF ALL TRANSVERSE BARS ARE MEASURED ALONG LINE "NW"
 - FOR BAR SHAPES FOR ACCESS OPENING SEE DWG C25.



LOCATION KEY

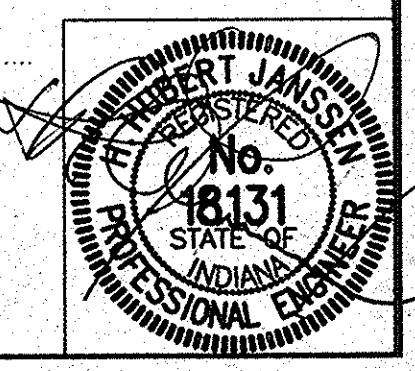
SUPERSTRUCTURE DETAILS - SPAN H

INDIANA DEPARTMENT OF TRANSPORTATION
LAKE COUNTY

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

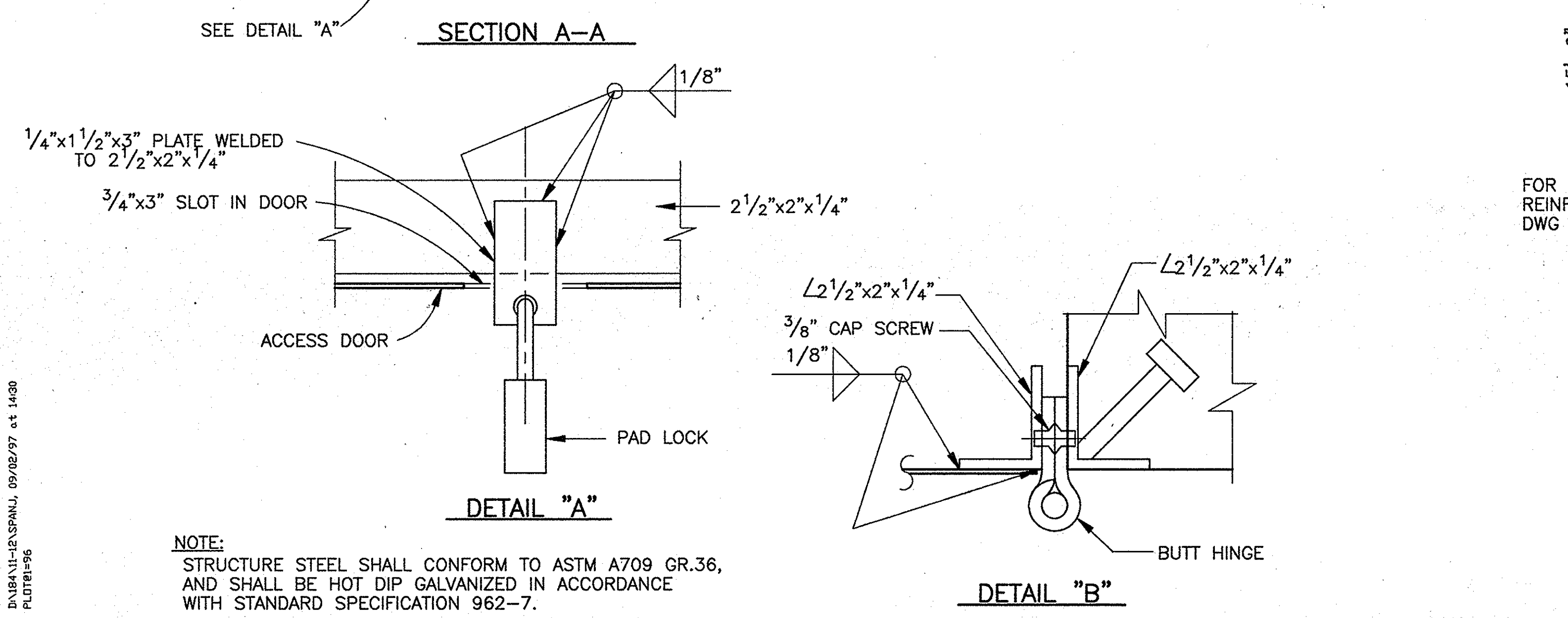
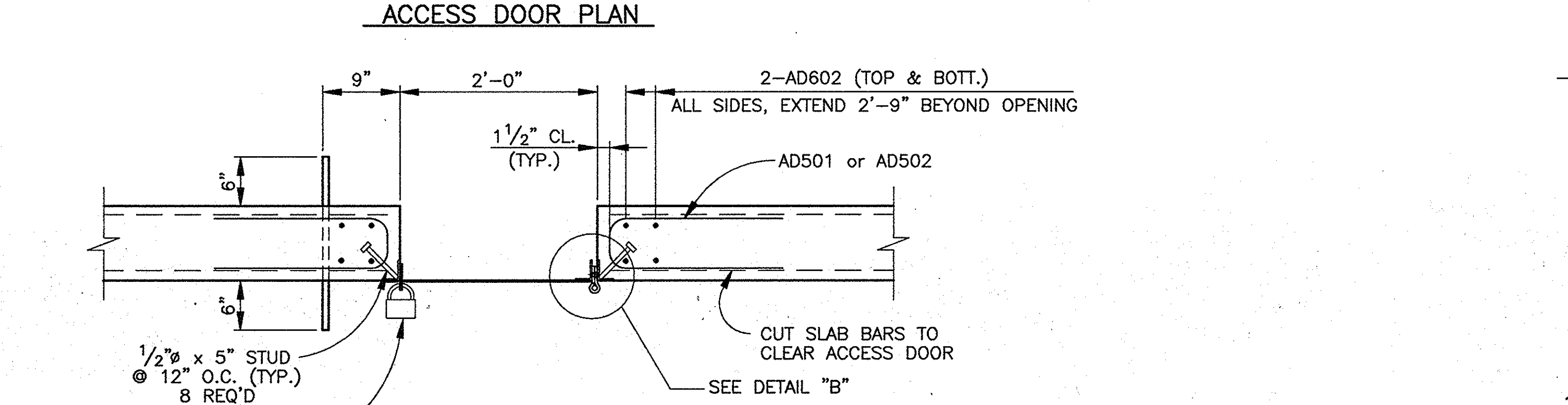
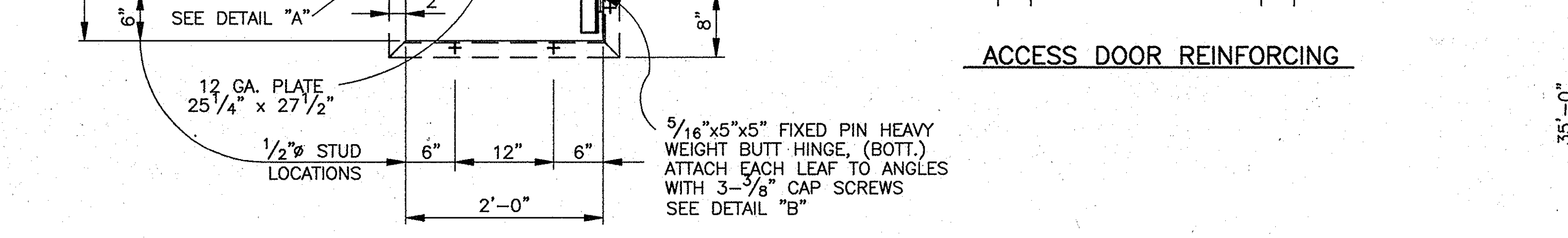
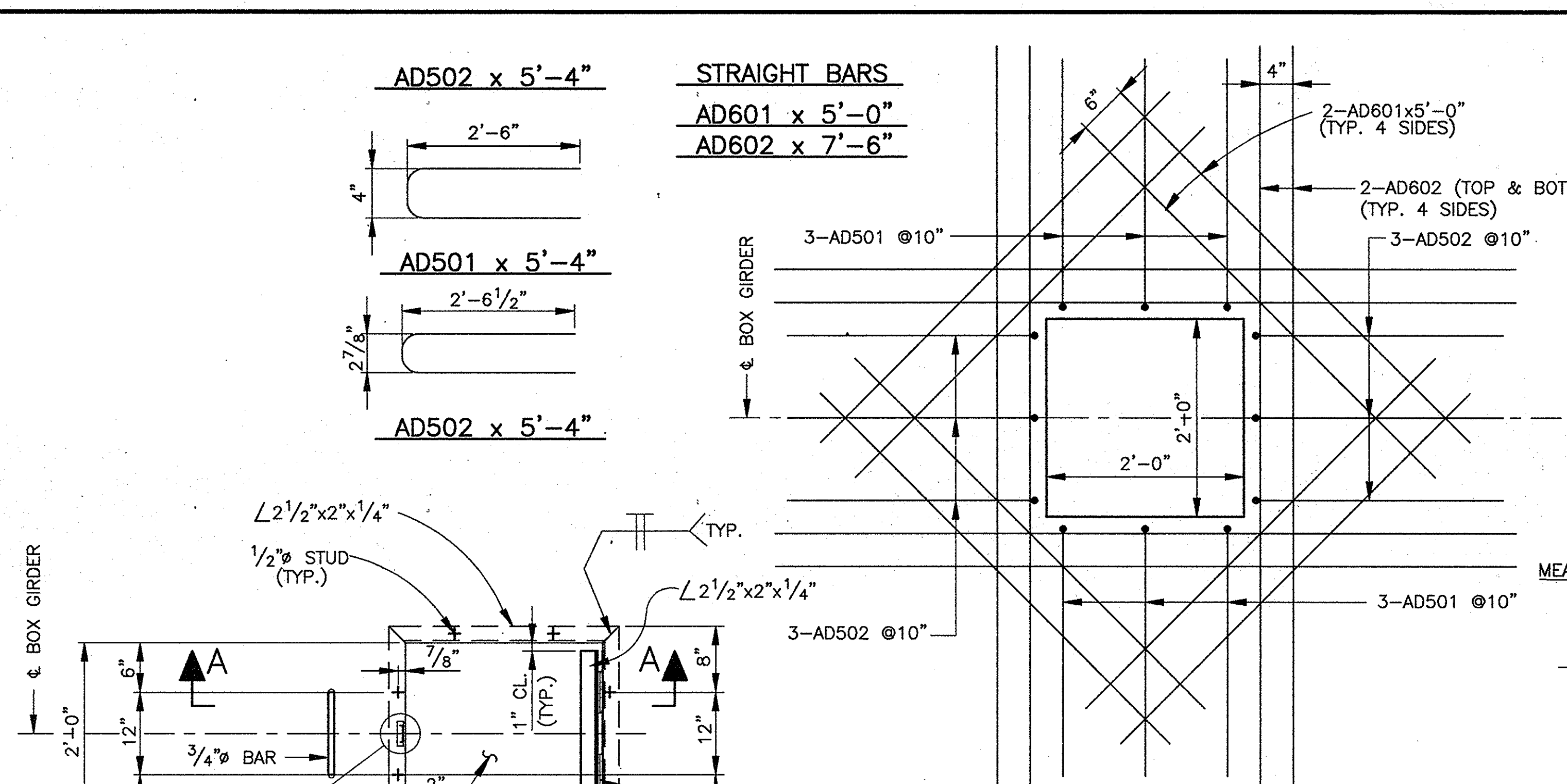
SUBMITTED FOR APPROVAL

DRAWING: - C24 OF C44 SHEET: - 39 OF - 65
PROJECT: - NH-80-1 ()
CONTRACT NO.
BRIDGE FILE: - I-80-5-7828



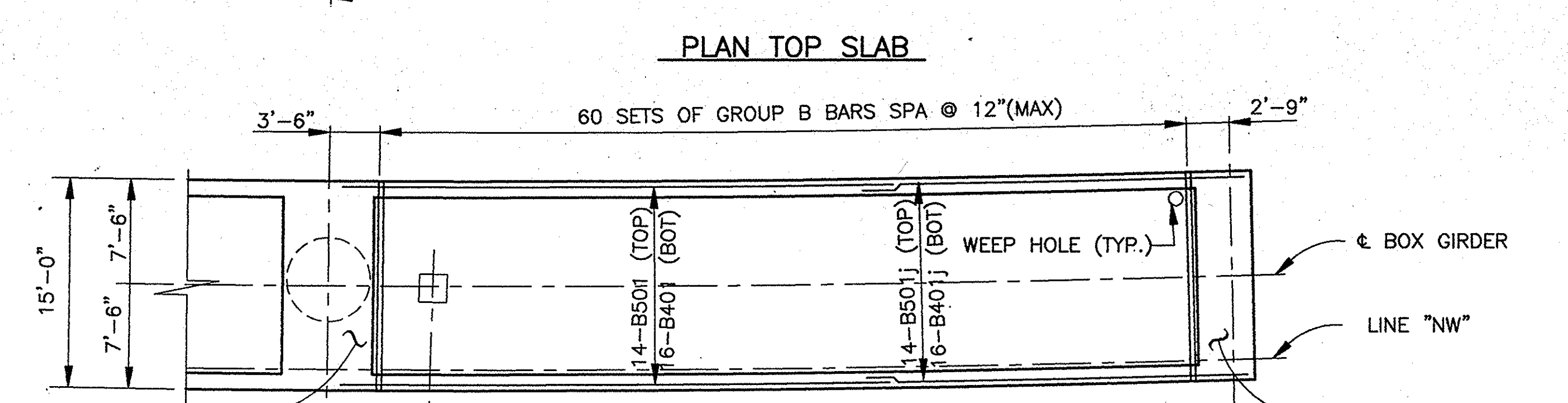
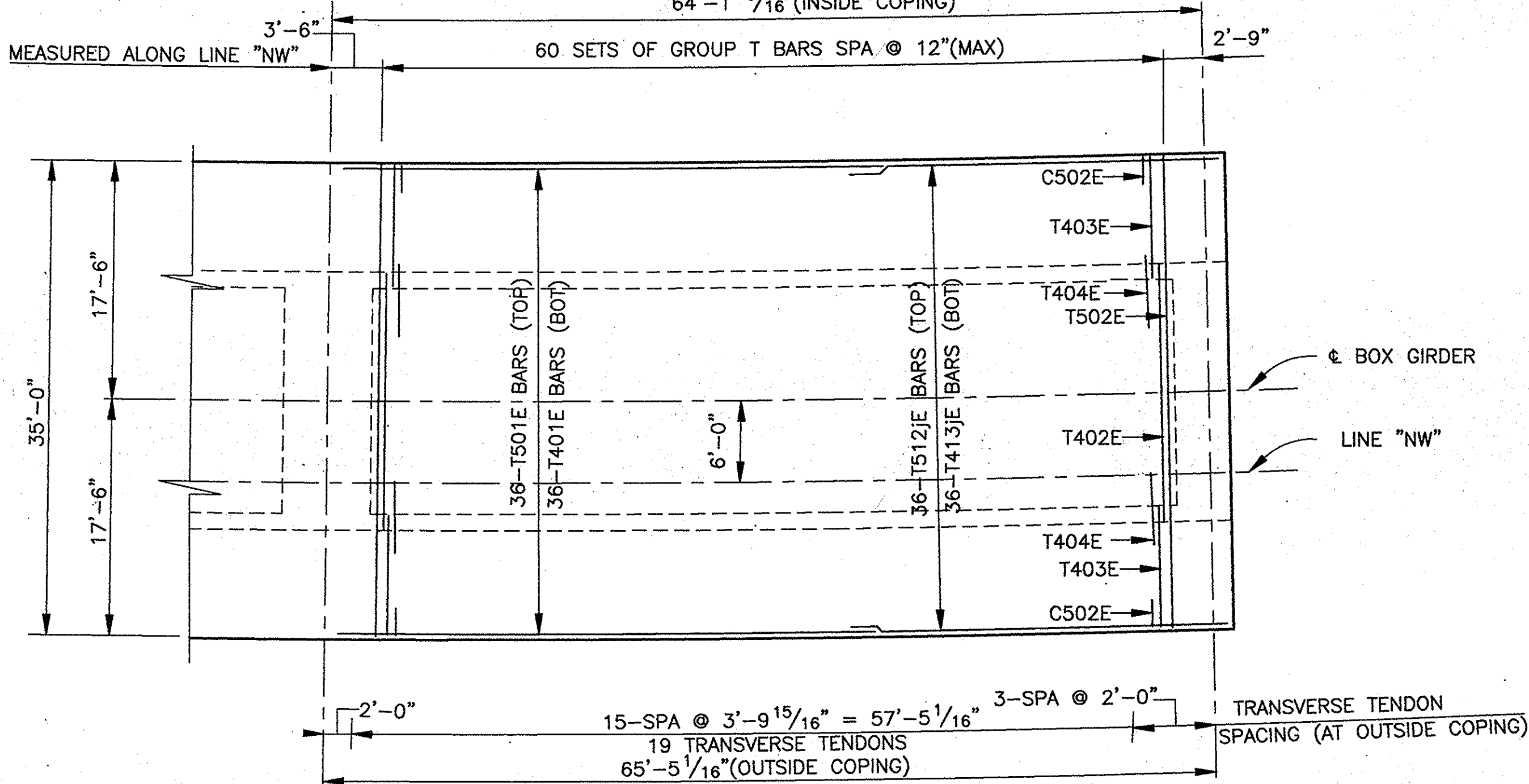
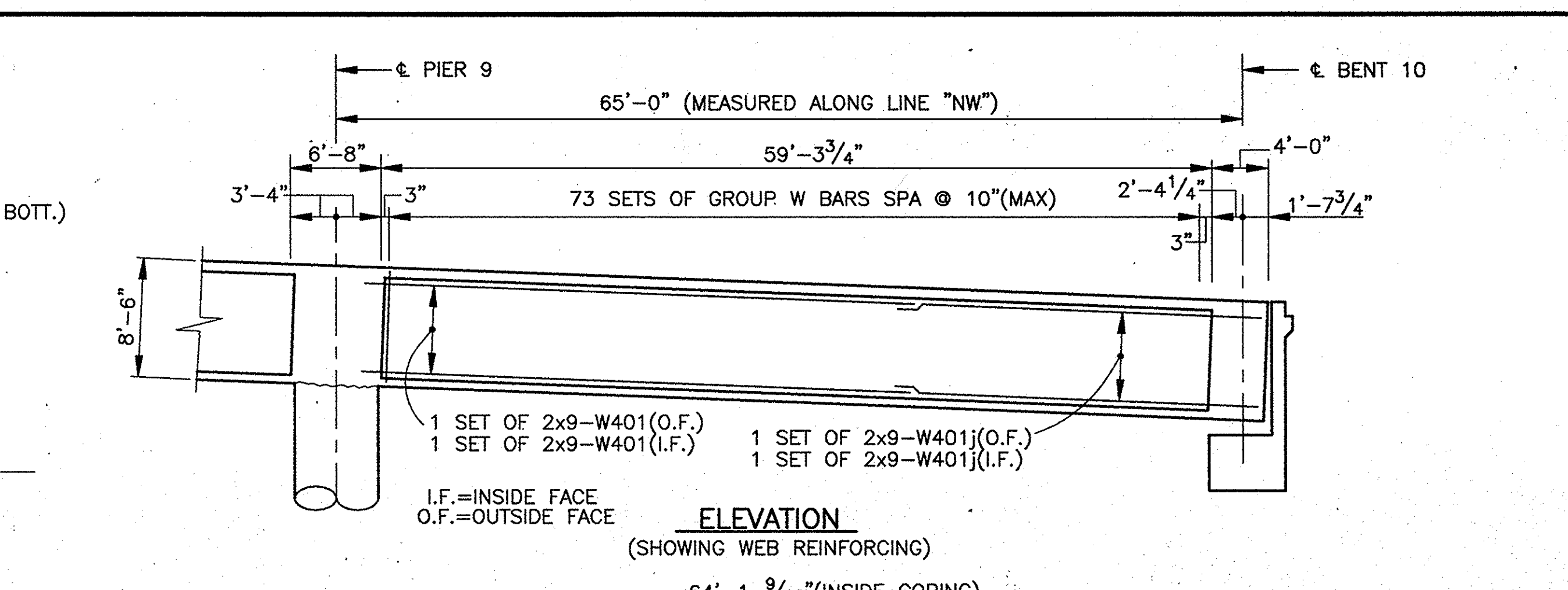
D:\BRIDGE\DESIGN\NH-80-1\98\02\97 at 1427

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



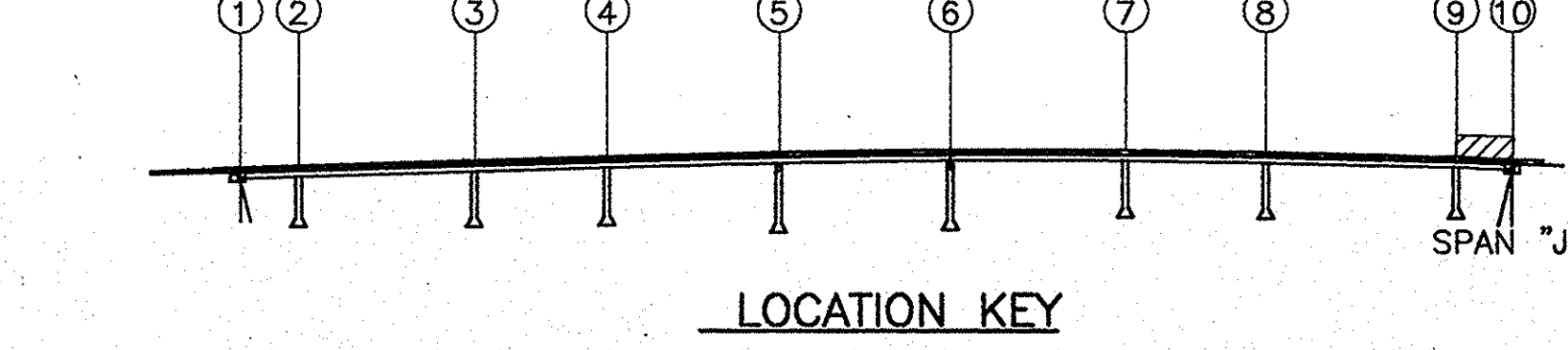
DESIGNED: HHJ C'K'D: LS
 DRAWN: TMD C'K'D: HHJ
 TRACED: C'K'D

ACCESS DOOR DETAILS



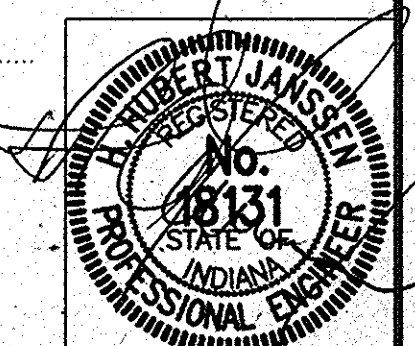
PLAN TOP SLAB
 PLAN BOTTOM SLAB

- NOTE:
1. FOR TYPICAL SECTION REINFORCING SEE DWG 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 C32.
 6. SPACING OF ALL TRANSVERSE BARS ARE MEASURED ALONG LINE "NW"
 7. FOR BAR SHAPES FOR ACCESS OPENING SEE DWG C25.



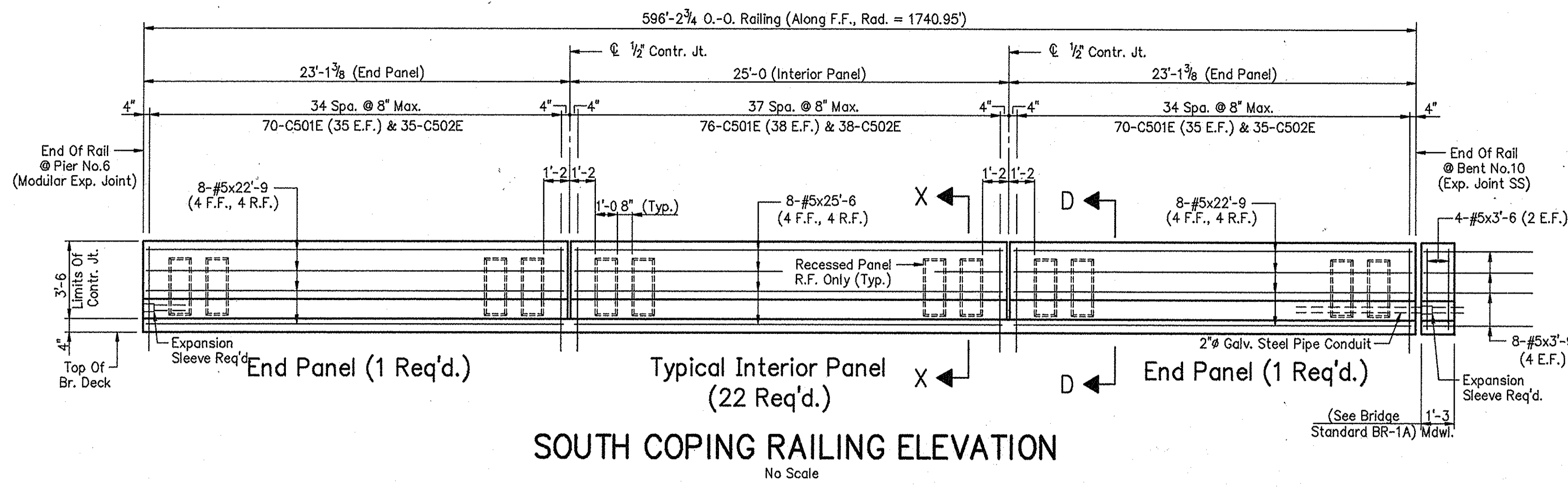
BILL OF MATERIALS			
REINFORCING STEEL GRADE 60			
Size And Mark	No. Of Bars	Length (Feet)	Weight (Lbs.)
GROUP W BARS			
W601E	146	11'-4"	
W602E	146	11'-5"	
TOTAL #6 BARS			4989
GROUP T BARS			
T502E	60	34'-9"	2175
T402E	60	18'-8"	
T403E	120	8'-11"	
T404E	120	5'-0"	
TOTAL #4			1864
LONGITUDINAL BARS			
T501E	36	40'-0"	
T501E	36	27'-11"	
TOTAL #5			2550
T401E	36	40'-0"	
T401E	36	27'-5"	
TOTAL #4			1621
TOTAL EPOXY COATED REINFORCING			
13199			
GROUP B BARS			
B502	60	14'-9"	
B512	120	4'-5"	
TOTAL #5			1476
B402	60	16'-10"	675
LONGITUDINAL BARS			
B501	14	40'-0"	
B501j	14	27'-11"	
TOTAL #5			992
B401	16	40'-0"	
B401j	16	27'-5"	
W401	36	40'-0"	
W401j	36	27'-5"	
W402	208	1'-11"	
TOTAL #4			2609
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			6058
SUPERSTRUCTURE CONCRETE			166.9 cys.
MISCELLANEOUS			
SURFACE SEAL			
(ESTIMATED QUANTITY = 3409 SFT) 1 LSUM			

INDIANA DEPARTMENT OF TRANSPORTATION
 LAKE COUNTY
 SUPERSTRUCTURE DETAILS - SPAN J
 SCALE: - 1/8"=1'-0", UNLESS NOTED
 DATE: - 5/22/85
 SUBMITTED FOR APPROVAL
 DRAWING: - C25 OF C44 SHEET: - 40 OF - 65
 PROJECT: - NH-80-1 (J)
 CONTRACT NO.
 BRIDGE FILE: - I-80-5-7828

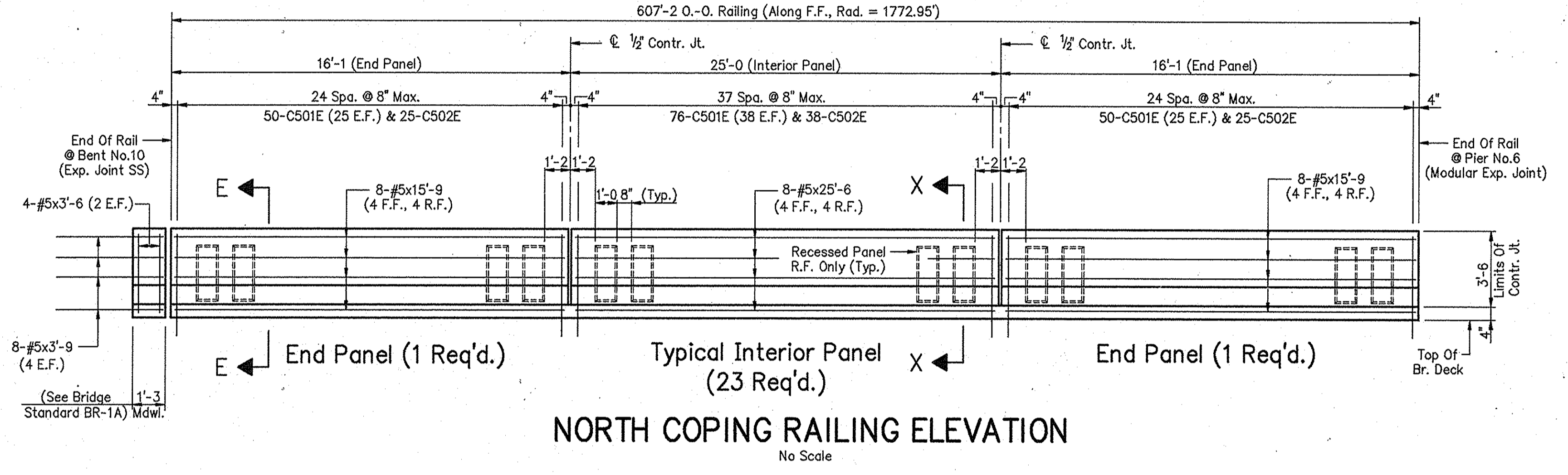


RAILING BILL OF MATERIALS

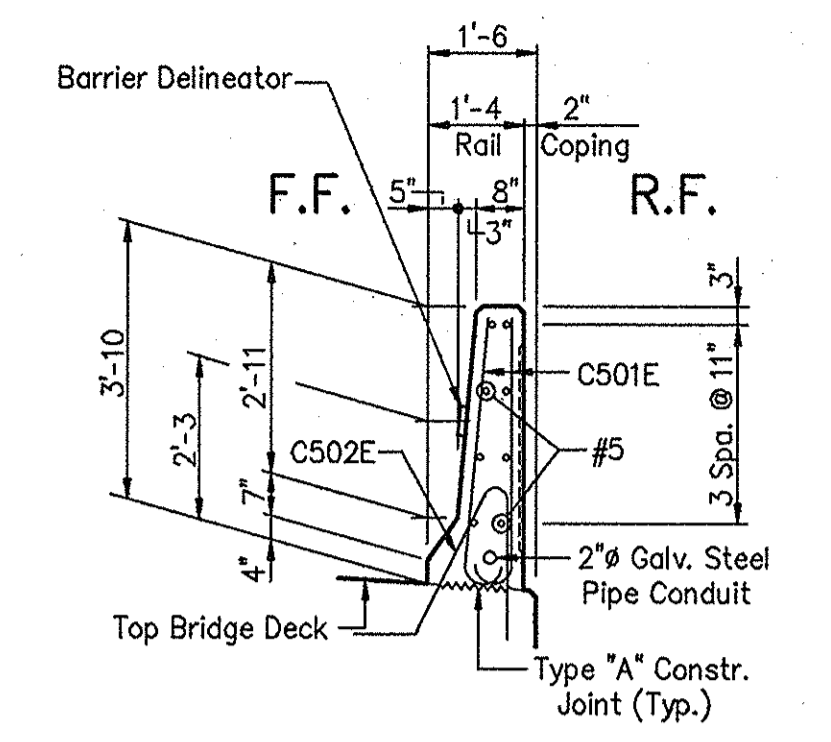
Epoxy Coated Reinforcing Steel			
Size And Mark	No. Of Bars	Length (Feet)	Weight (Lbs.)
C501E	3660	4'-1"	
C502E	1830	5'-5"	
#5	360	24'-6"	
#5	16	22'-9"	
#5	16	15'-9"	
#5	16	3'-9"	
#5	8	3'-6"	
Total Epoxy Coated Reinforcing Steel			35,860
Concrete			
Concrete Railing Class "C"			
North Coping			76.8 Cys.
South Coping			76.1 Cys.
Total Concrete Railing Class "C"			152.9 Cys.
Miscellaneous			
Masonry Coating			11,470 Sft.
Barrier Delineators			61 Each
2" Galvanized Steel Pipe Conduit			605 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.



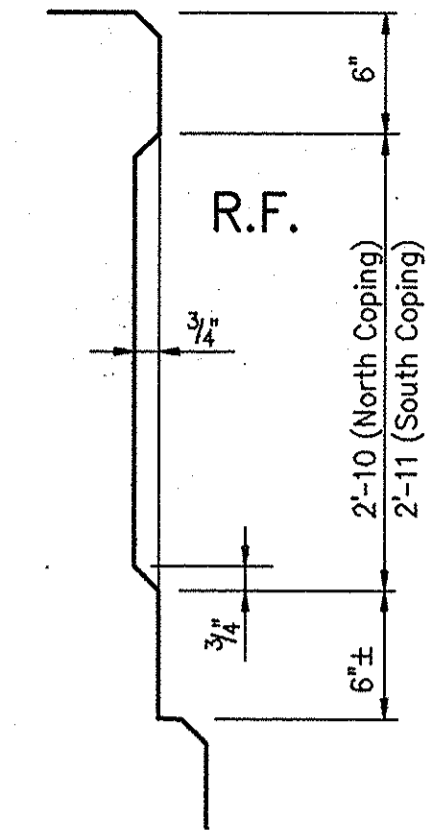
SOUTH COPING RAILING ELEVATION
No Scale



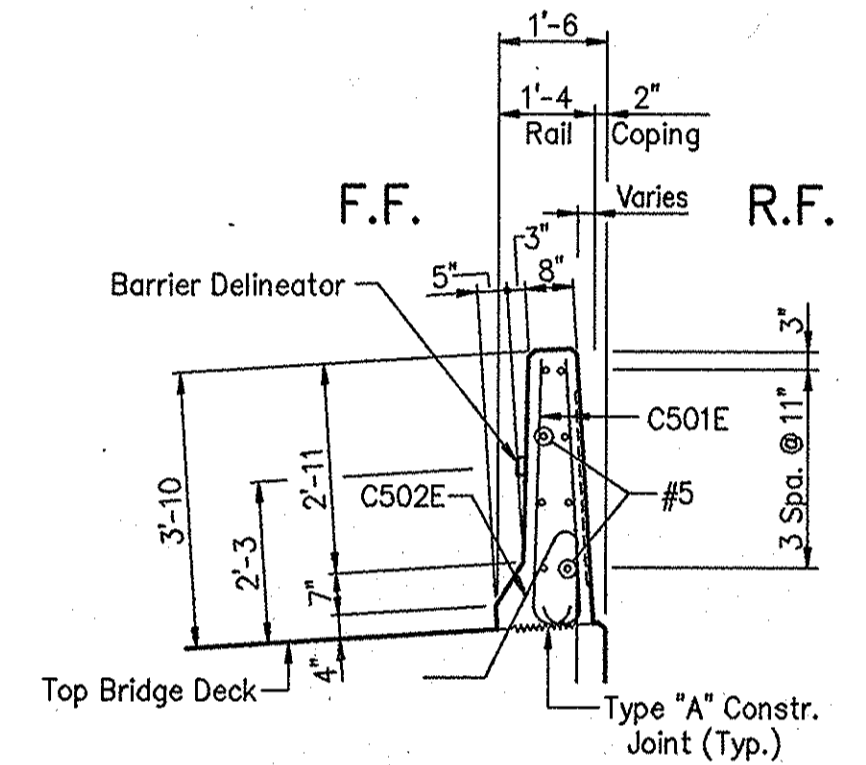
NORTH COPING RAILING ELEVATION
No Scale



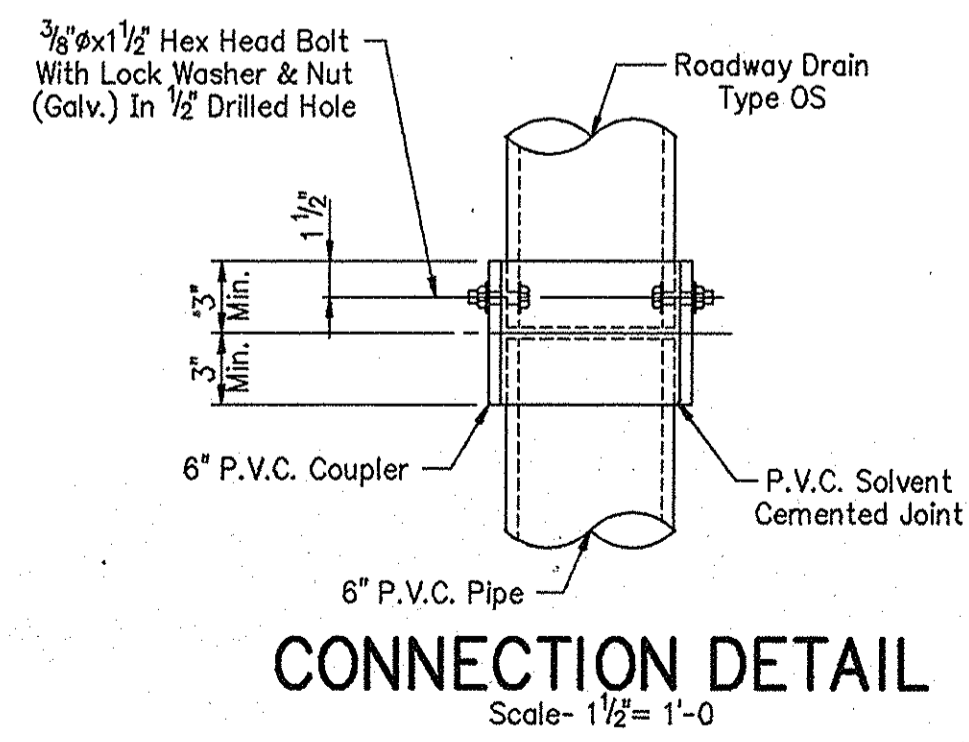
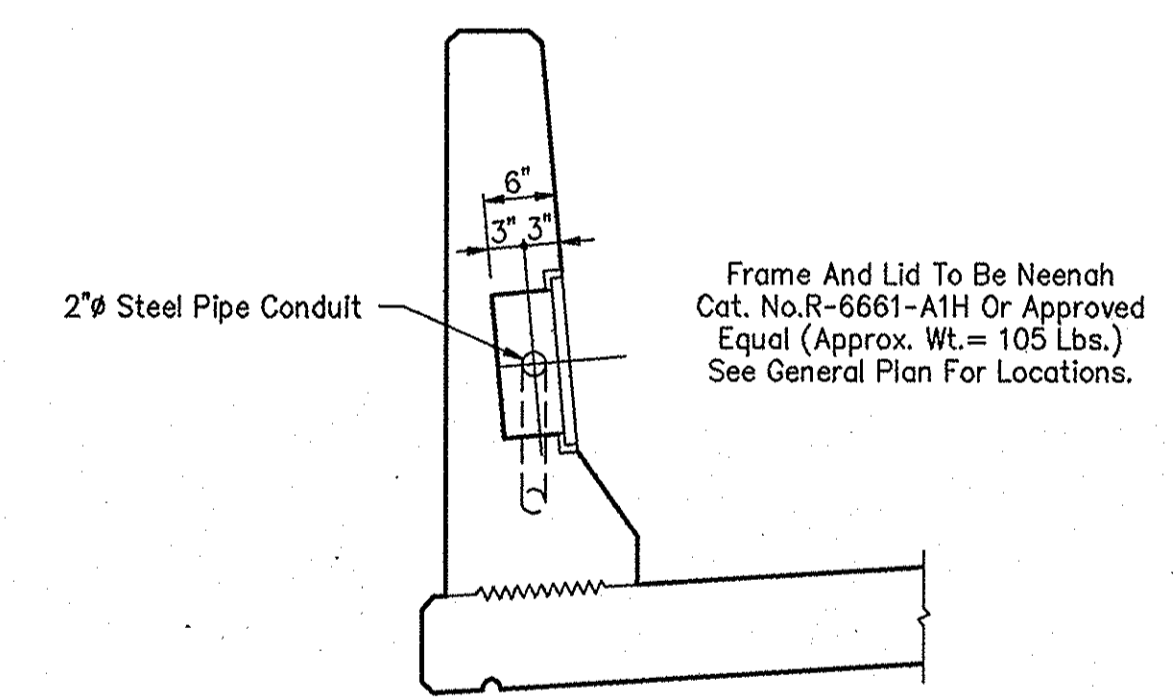
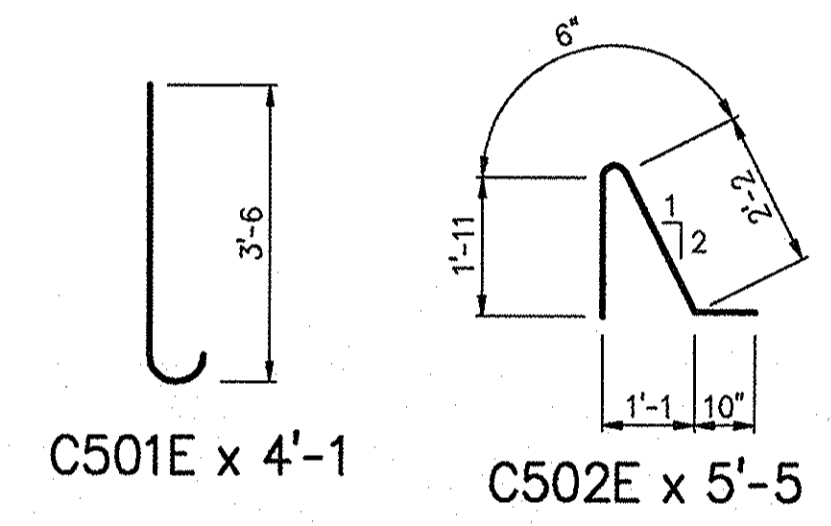
SECTION D-D



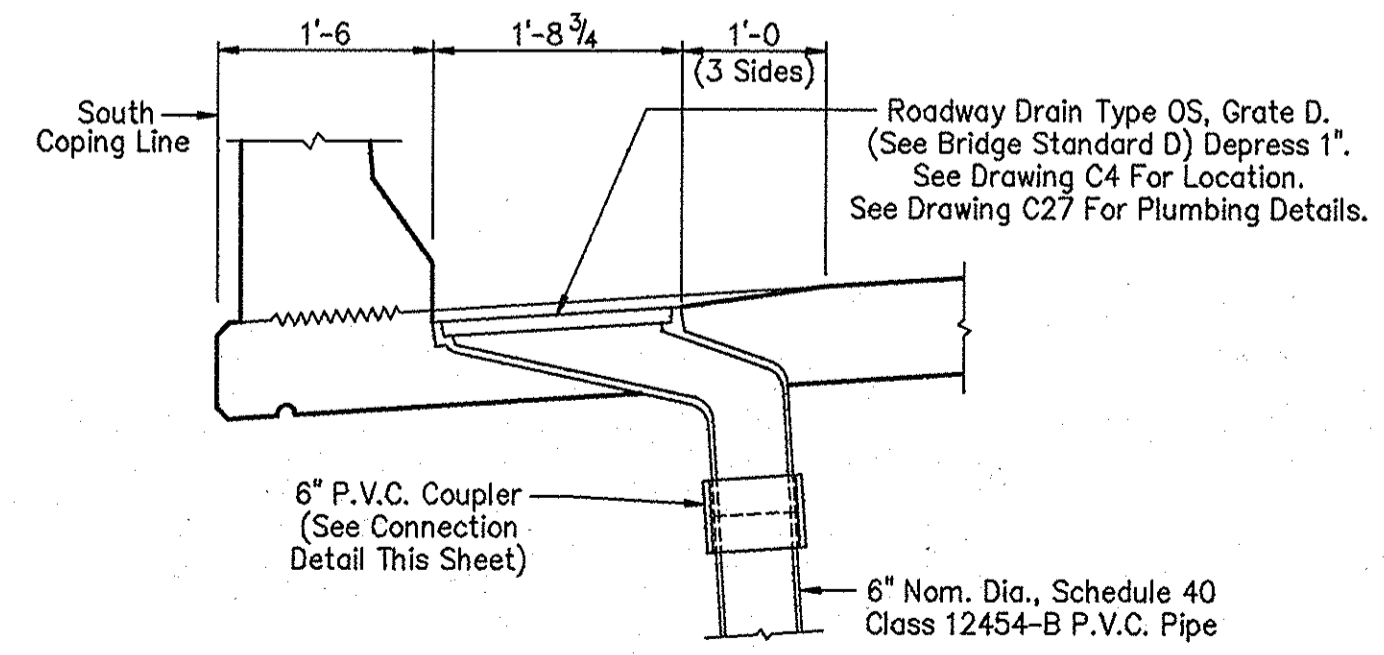
PARTIAL SECTION X-X
Showing Recessed Panel
No Scale



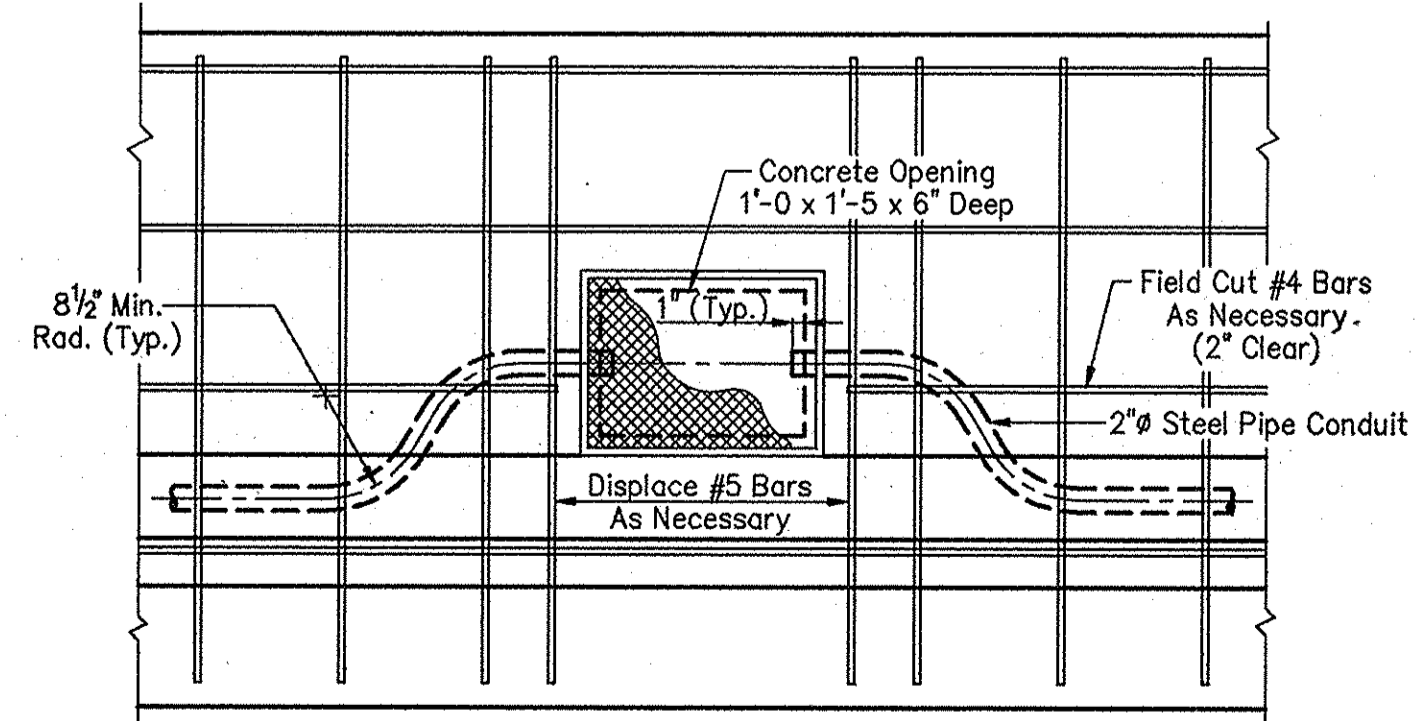
SECTION E-E



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



SECTION @ ROADWAY DRAIN TYPE OS-D
(1 REQUIRED)



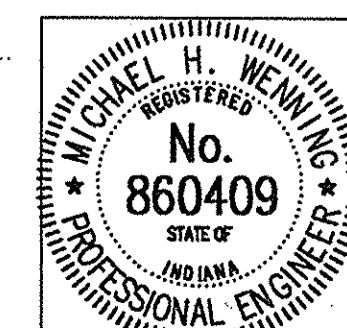
CONDUIT PULL BOX
Scale: 3/4" = 1'-0"

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

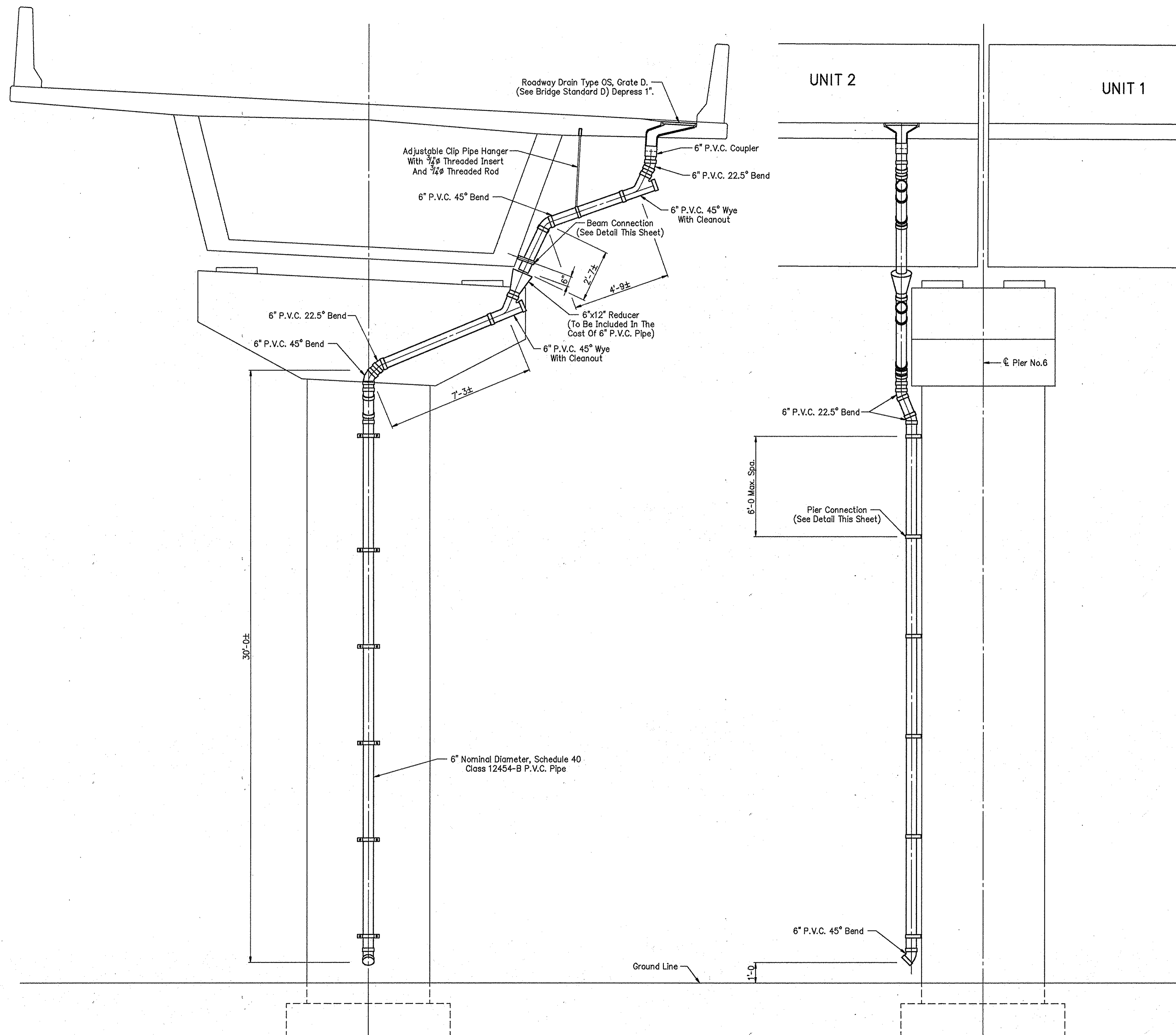
SCALE: - 3/8" = 1'-0, Unless Noted DATE: - July 9, 1998
SUBMITTED FOR APPROVAL *Michael H. Weenink*

DRAWING: - C26 OF C44 SHEET: - 41 OF 65
PROJECT: - IM-80-1 (143)4
CONTRACT NO. R-23808
BRIDGE FILE: - I-80-5-7828



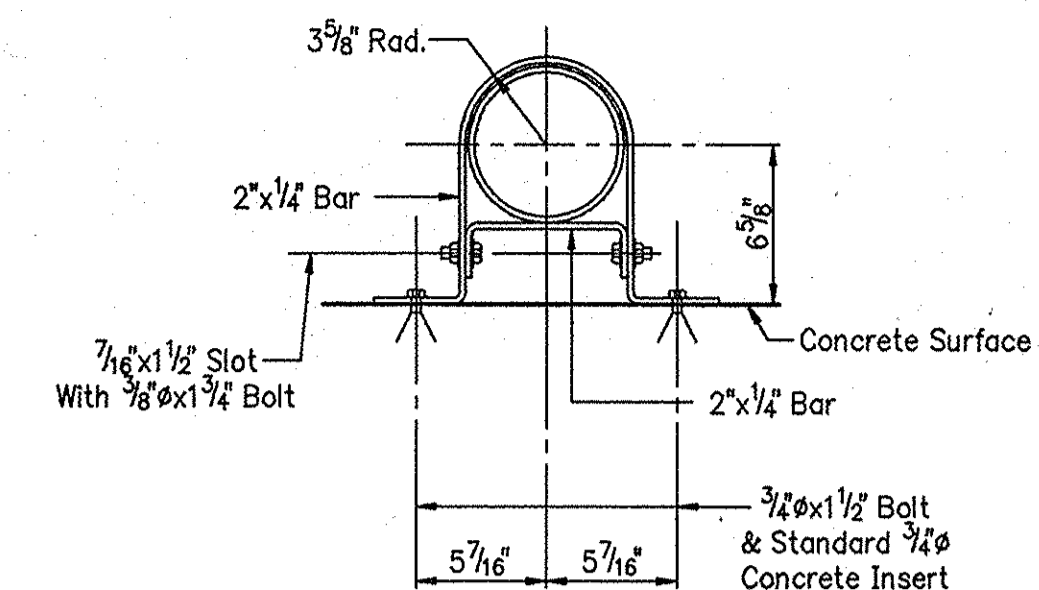
DESIGNED: _____ C'KD
DRAWN: DSH 2/25/98 C'KD MHW 5/29/98
TRACED: _____ C'KD

DWG FILE: C:\P7\44\9714802
PLOT SCALE: 1:32,000
PLOT ORIGIN: 0.00,0.00
SPELLOW: 07/10/98 13:05:59
EDIT DATE: _____
EDIT BY: DSH - 591

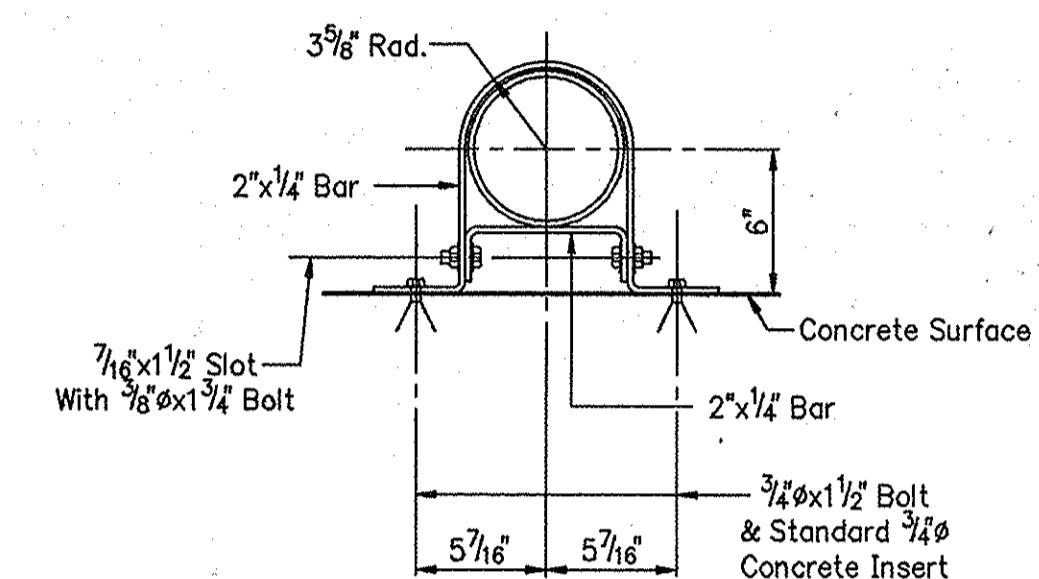


ELEVATION AT PIER NO.6
(Looking Back Stationing)

SIDE ELEVATION AT PIER NO.6



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



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

PVC PIPE SUMMARY

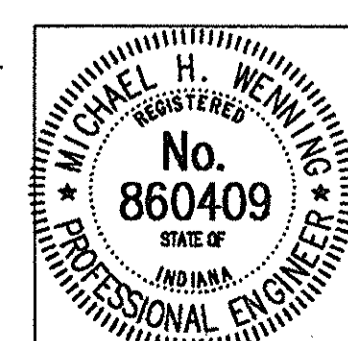
Material	Length
6" P.V.C. Pipe	45.0 Lft.
3- 45° Elbows @ 2.0 Lft.	6.0 Lft.
4- 22.5° Elbows @ 2.0 Lft.	8.0 Lft.
2- 45° Wye @ 5.0 Lft.	10.0 Lft.
1- Reducer @ 5.0 Lft.	5.0 Lft.
Total P.V.C. Pipe	74.0 Lft.

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.

BRIDGE PLUMBING DETAILS - UNIT 2
INDIANA DEPARTMENT OF TRANSPORTATION

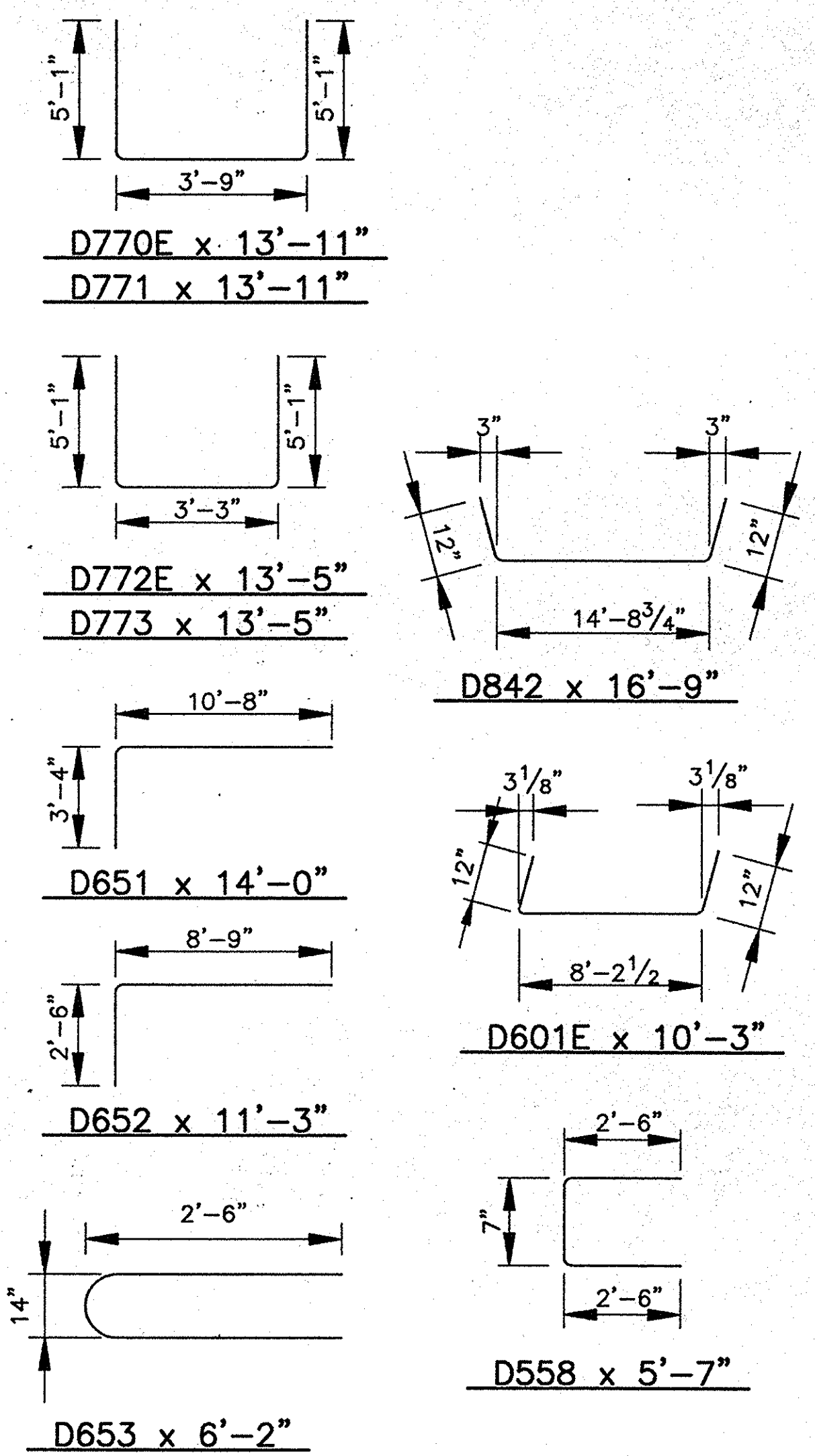
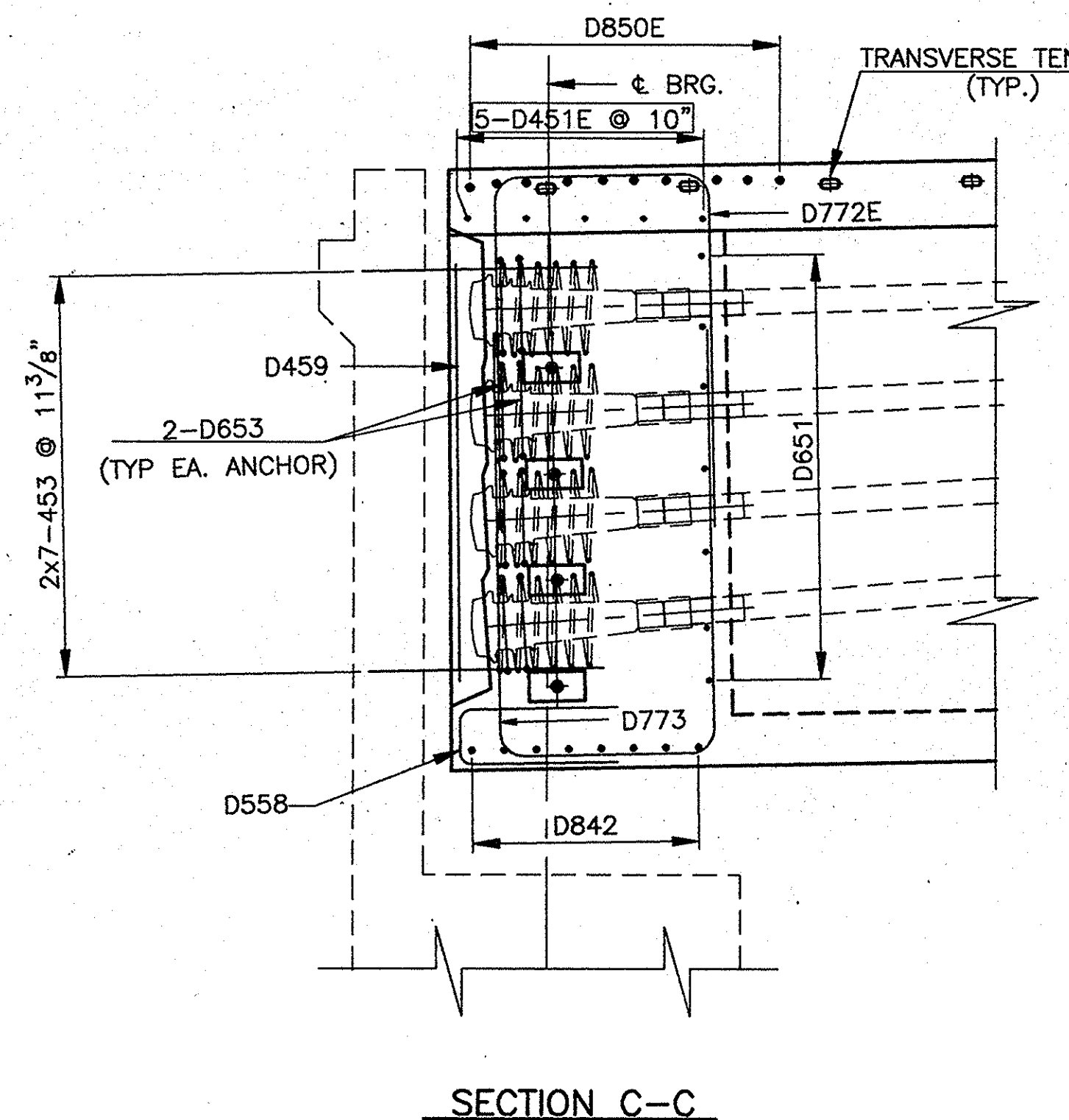
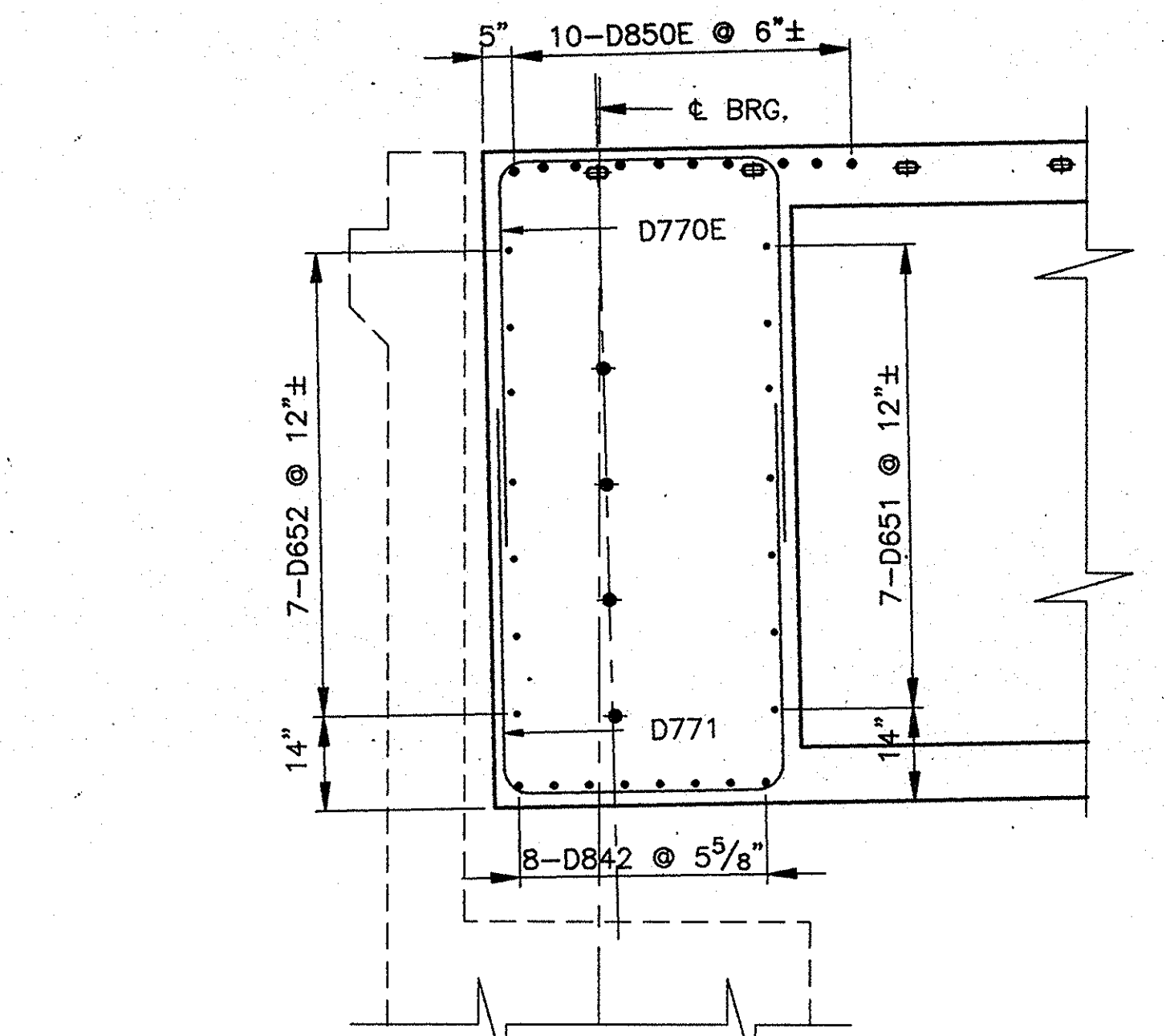
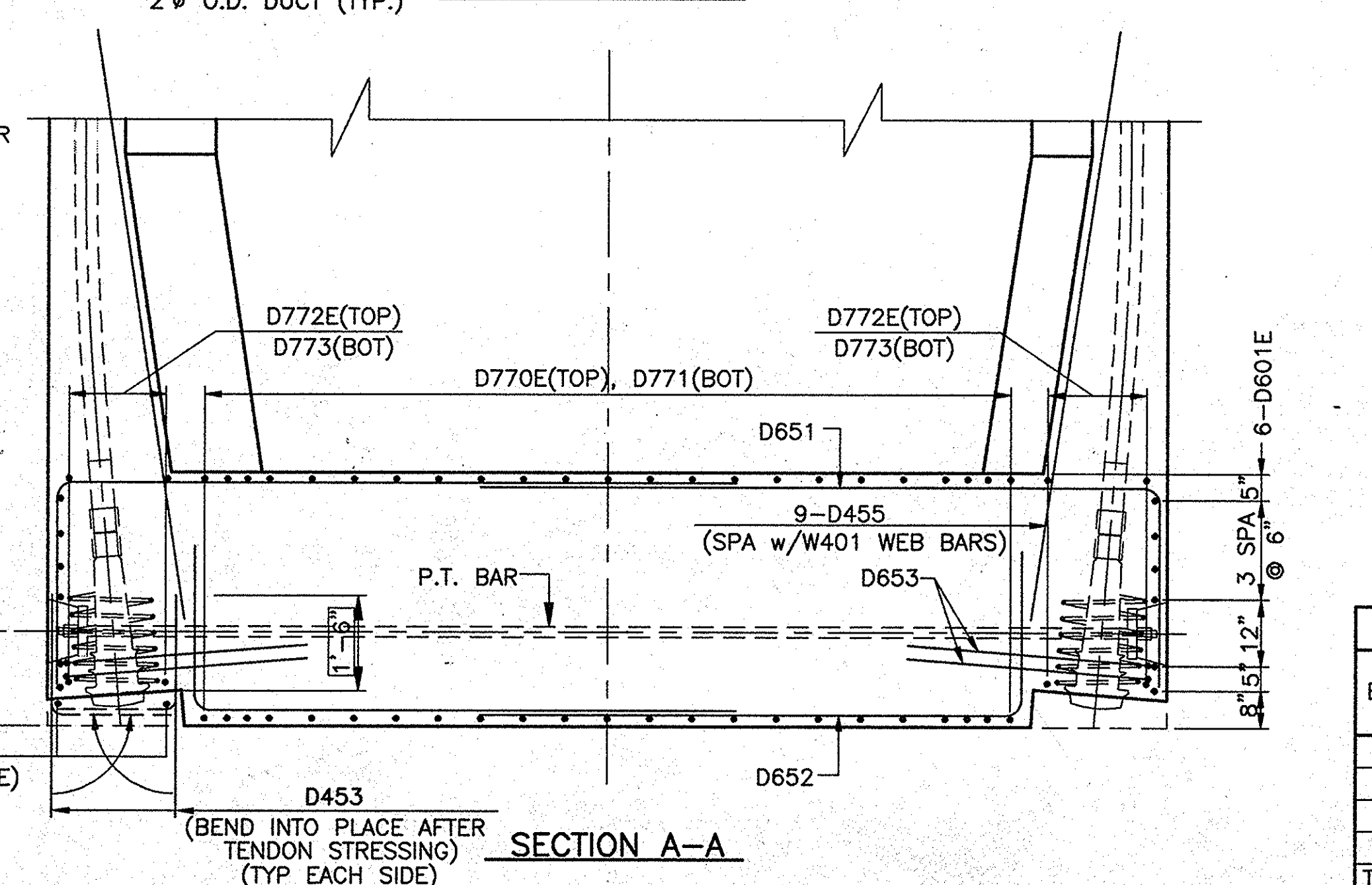
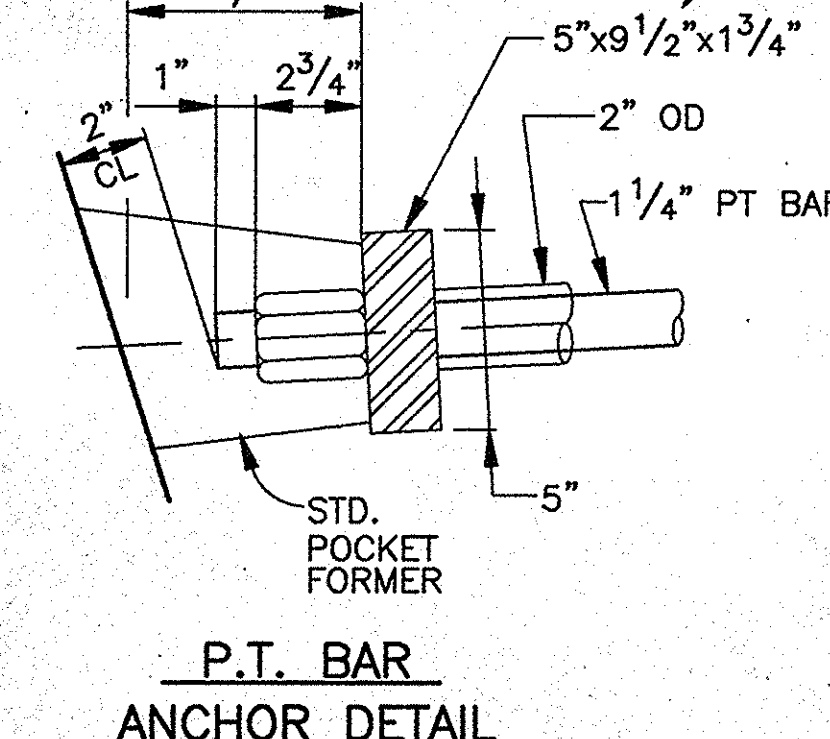
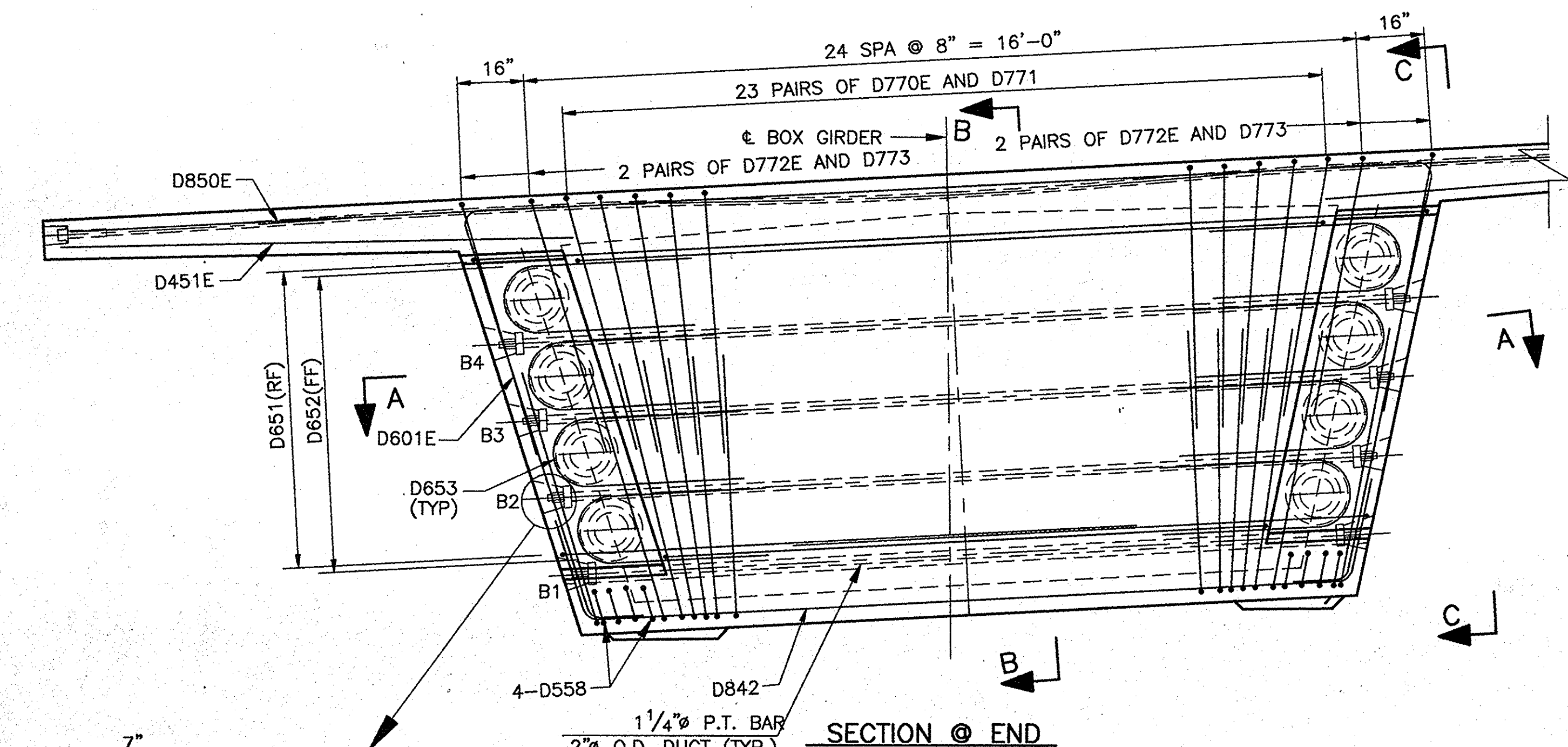
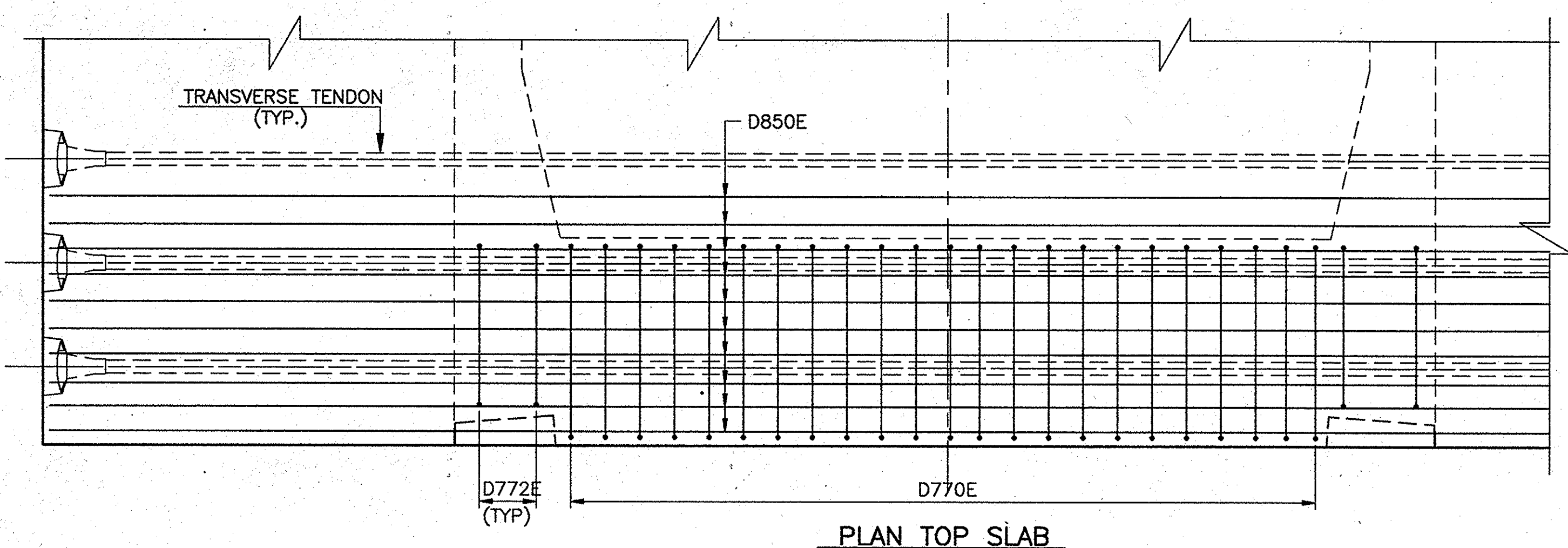
SCALE: - 3/8" = 1'-0, Unless Noted DATE: - May 29, 1998
SUBMITTED FOR APPROVAL *Michael H. Wenzel*

DRAWING: - C27 OF C44 SHEET: - 42 OF 65
PROJECT: - IM-80-1 (143)4
CONTRACT NO. - R-23808
BRIDGE FILE: - I-80-5-7828



DESIGNED: CKD
DRAWN: DSH 3/9/98 CKD: MHW 5/29/98
TRACED: CKD

DWG FILE: C:\MFA\144\9714803
PLOT SCALE: 1:22,000
PLOT ORIGIN: 0.00,0.00
SPFOLLOW: 08/01/88
EDIT DATE: 08/01/88
EDITED BY: DSH - 591



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'-7"	47
D453	28	3'-6"	
D455	18	10'-0"	
D459	4	5'-9"	
TOTAL # 4			201
TOTAL REINFORCING STEEL			2049

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

NOTES:
 1. FOR DIMENSIONS SEE DWG C33.
 2. FF INDICATES FRONT FACE, RF INDICATES REAR FACE.

STRESSING INSTRUCTIONS					
BAR	JACK FORCE (KIPS)	ELONGATION BEFORE SEATING 100 % (IN)	ELONGATION AFTER SEATING 100 % (IN)	SET (IN)	BAR LENGTH (APPROX.)
B1	142.5	.72	.66	.06	15.29
B2	142.5	.76	.70	.06	16.09
B3	142.5	.80	.73	.06	16.89
B4	142.5	.83	.77	.06	17.69
TOTAL LENGTH (FT.)					65.96

SUPERSTRUCTURE DETAILS -
 DIAPHRAGM AT BENT NO. 1
 (BENT 10 MIRROR IMAGE)

INDIANA DEPARTMENT OF TRANSPORTATION
 LAKE COUNTY

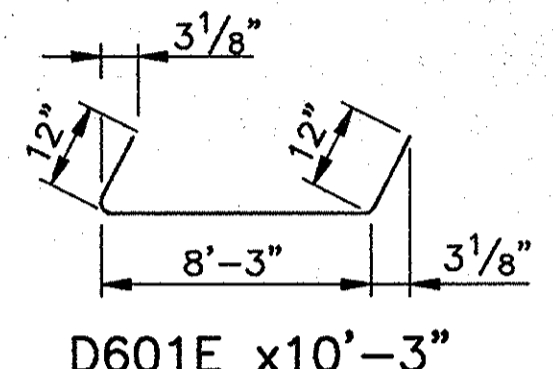
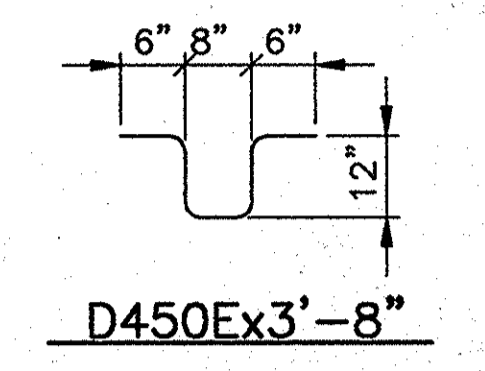
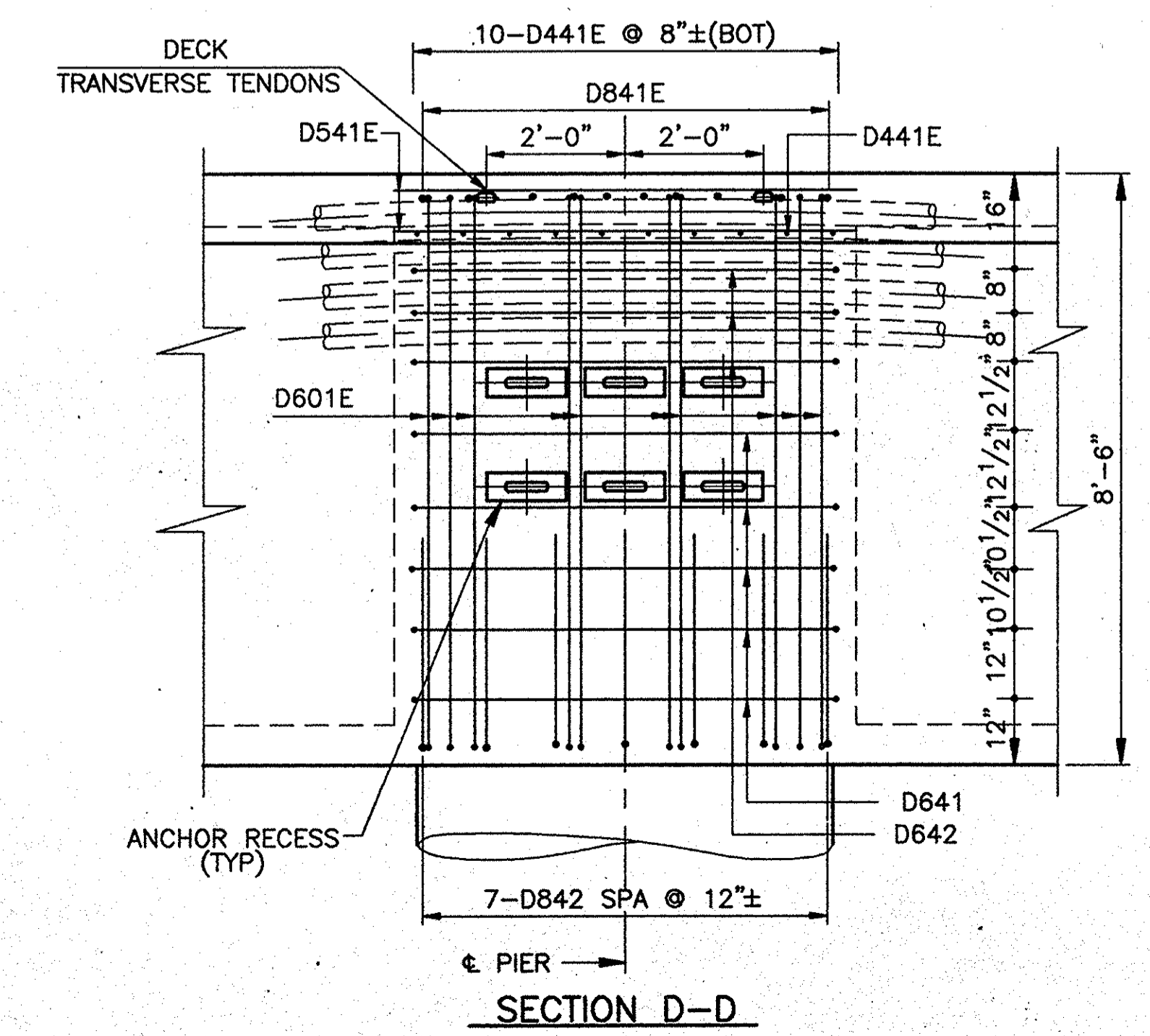
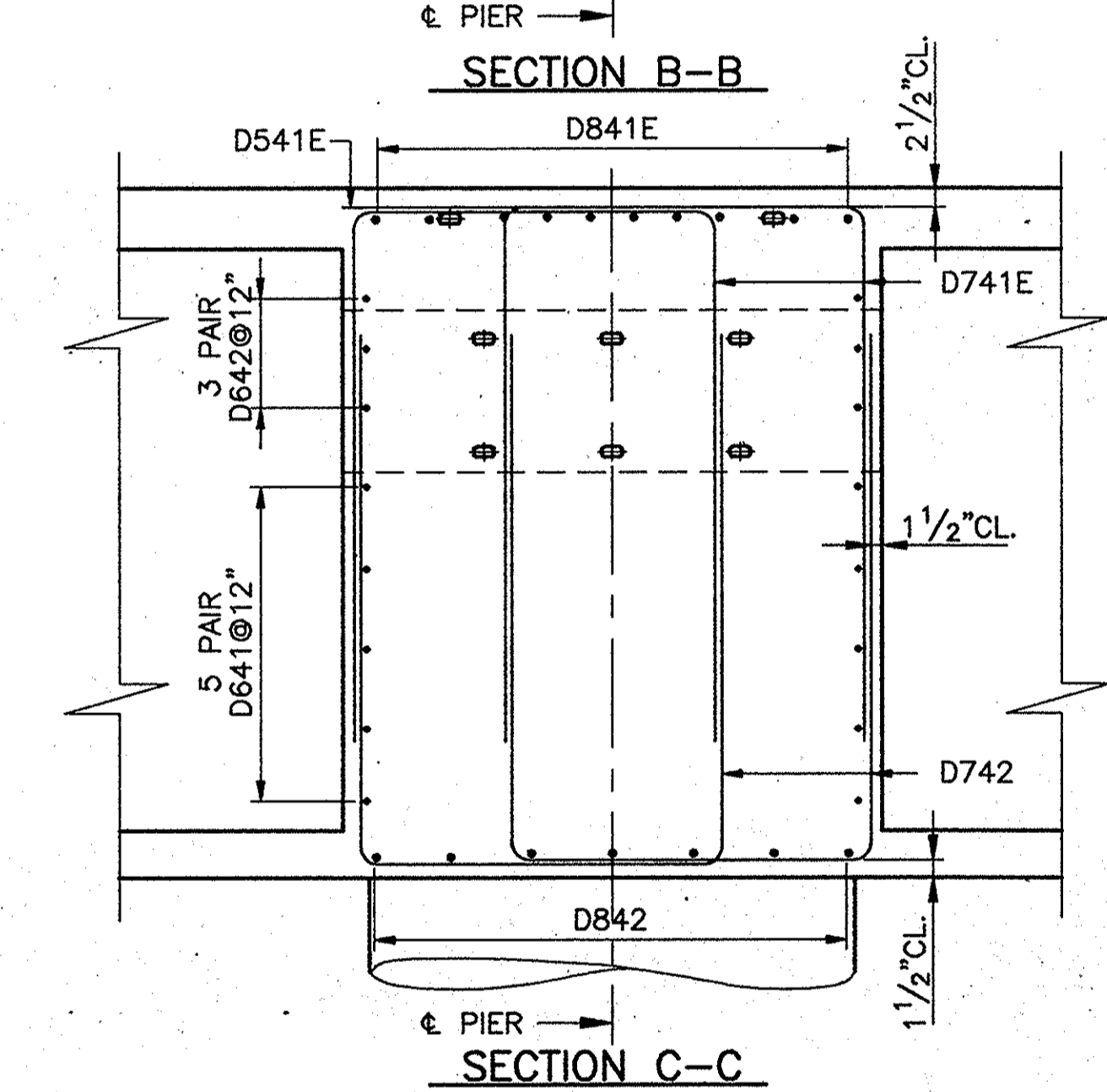
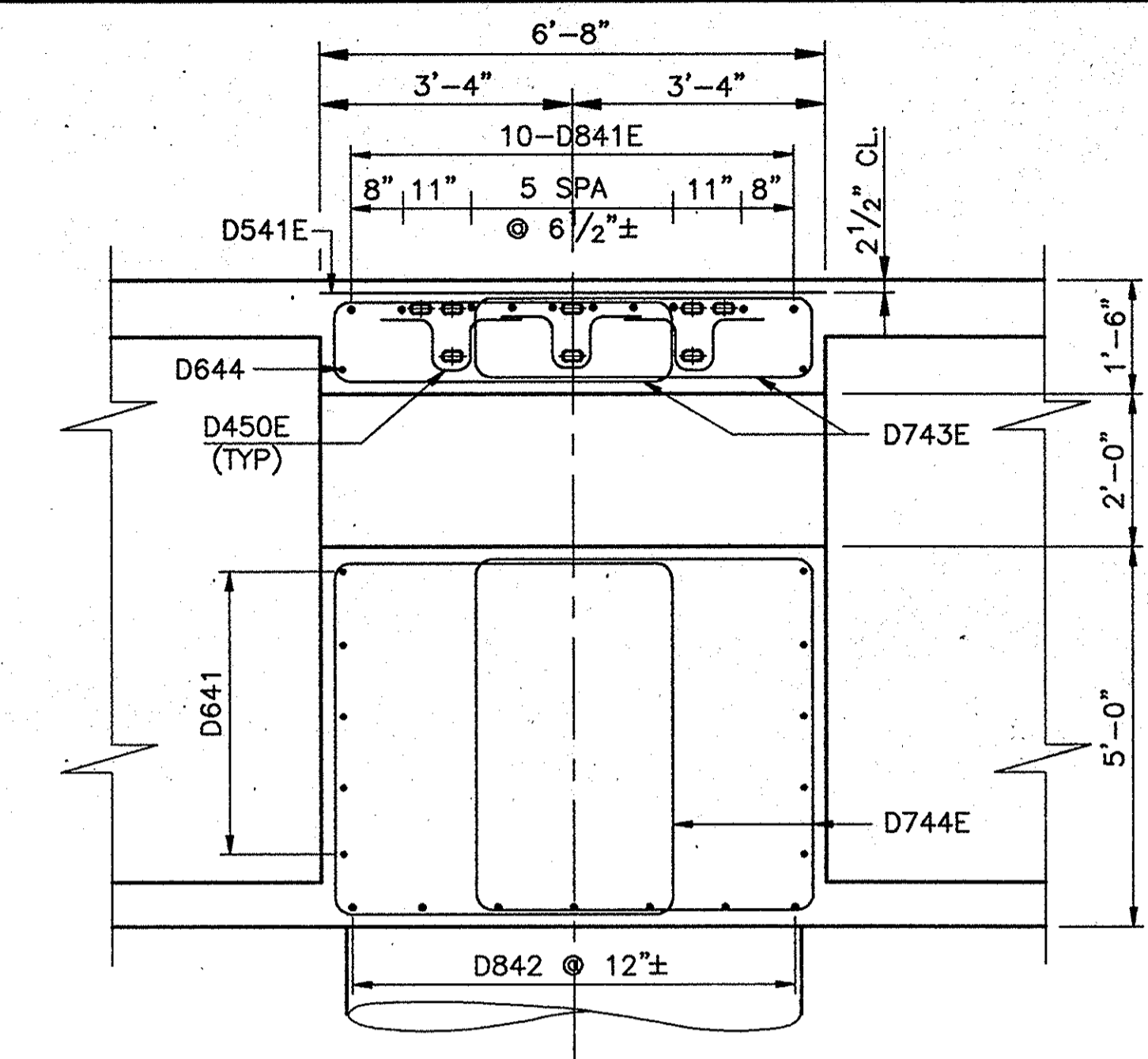
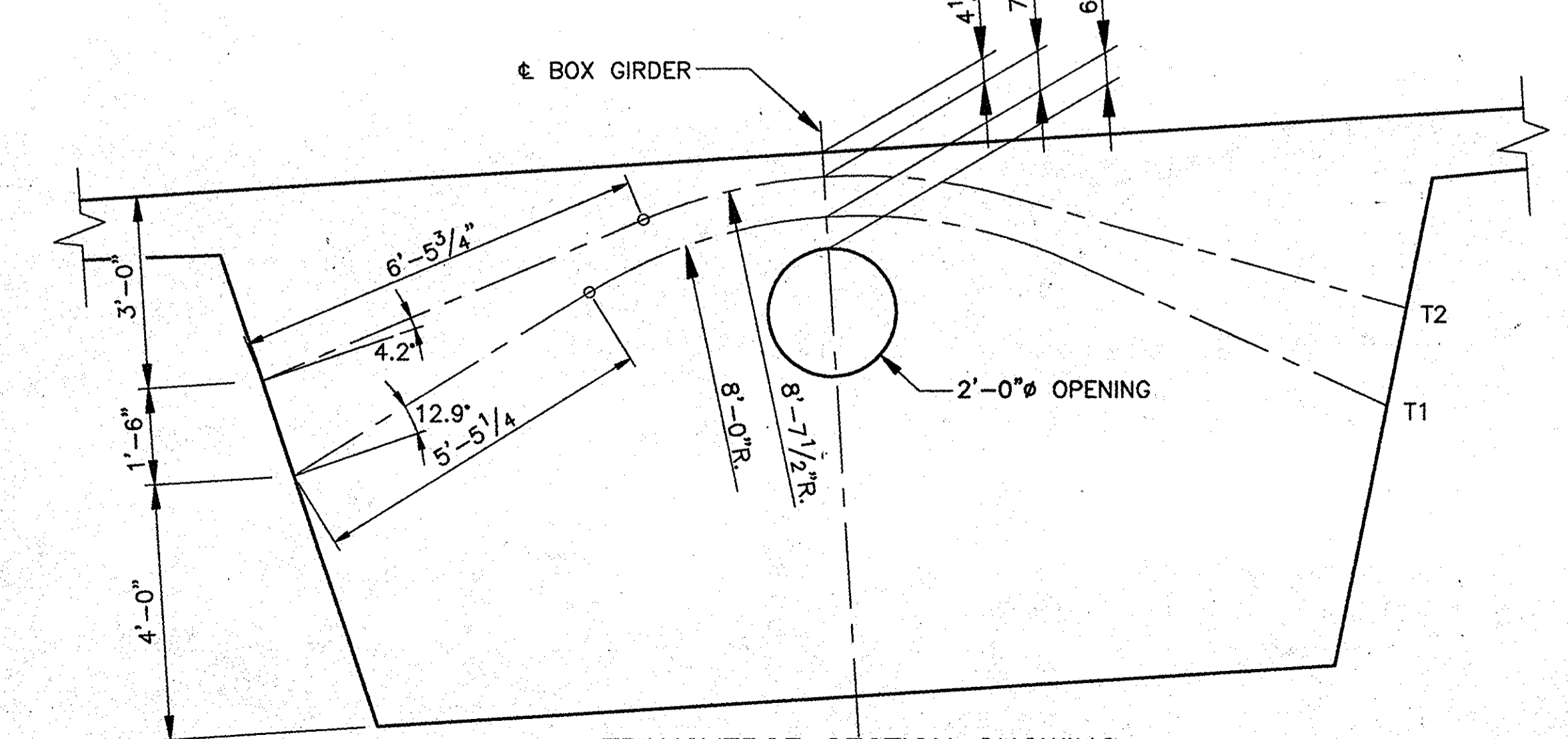
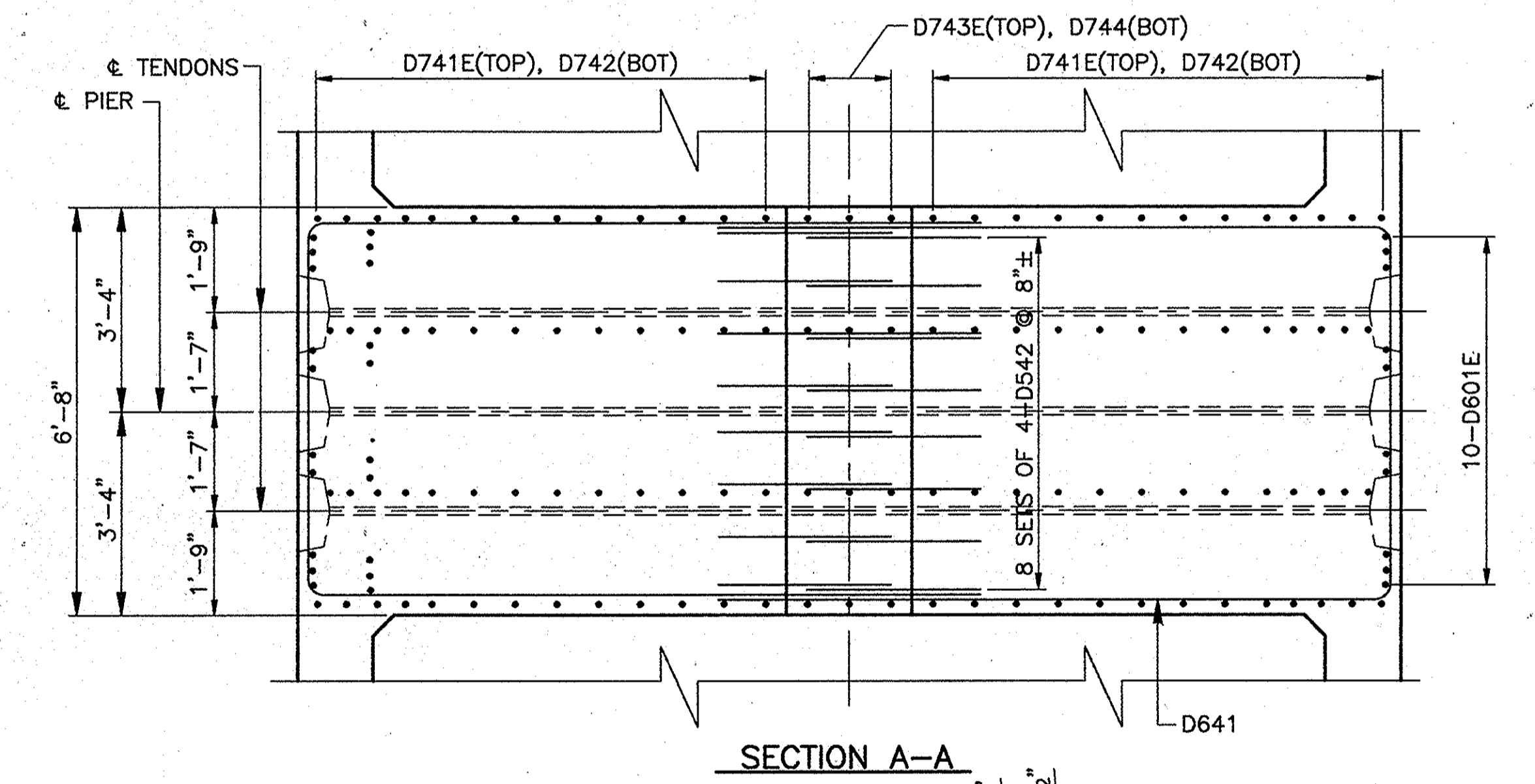
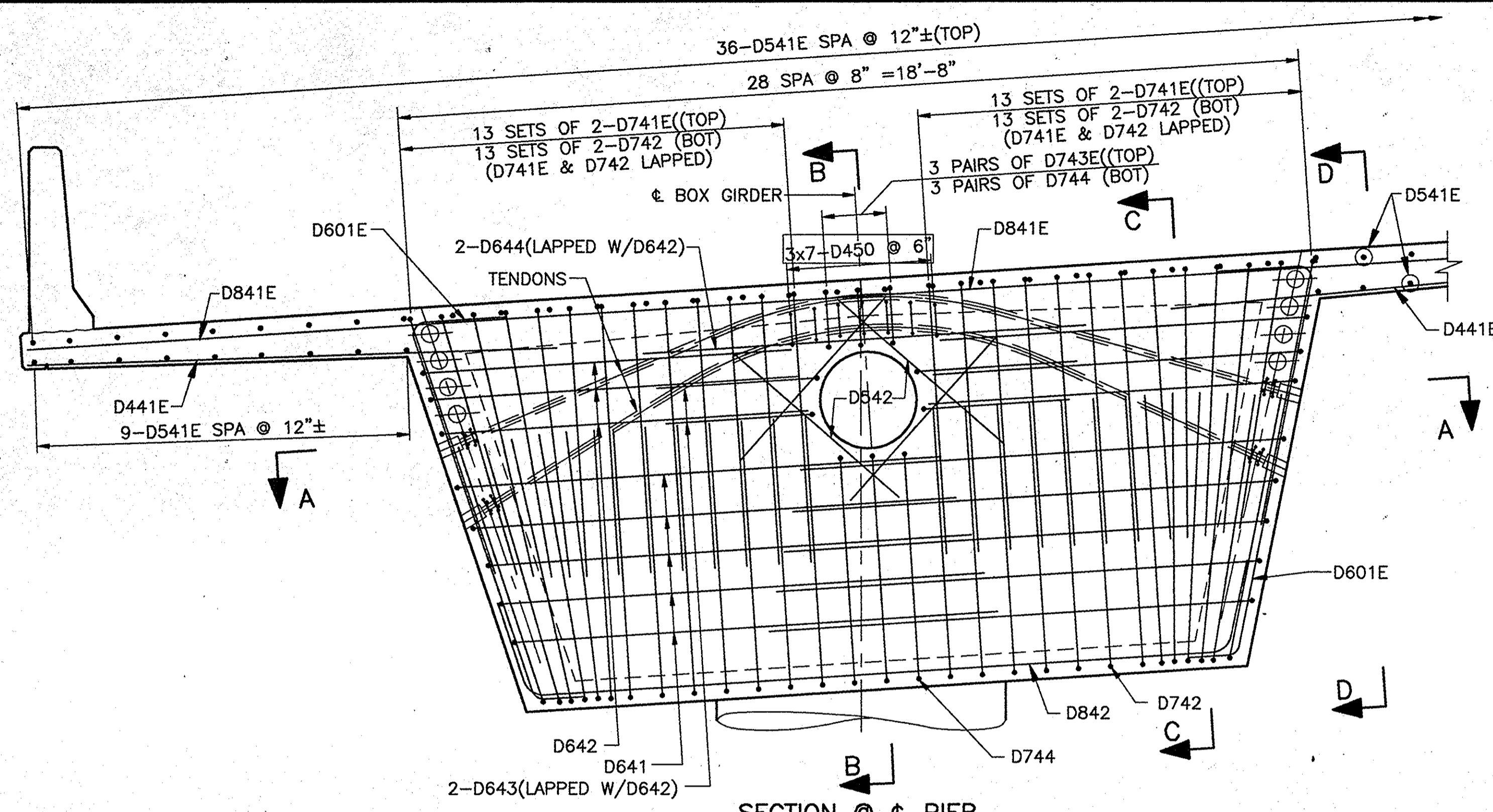
SCALE: - 1/2"=1'-0", UNLESS NOTED DATE: - July 10, 1998

SUBMITTED FOR APPROVAL

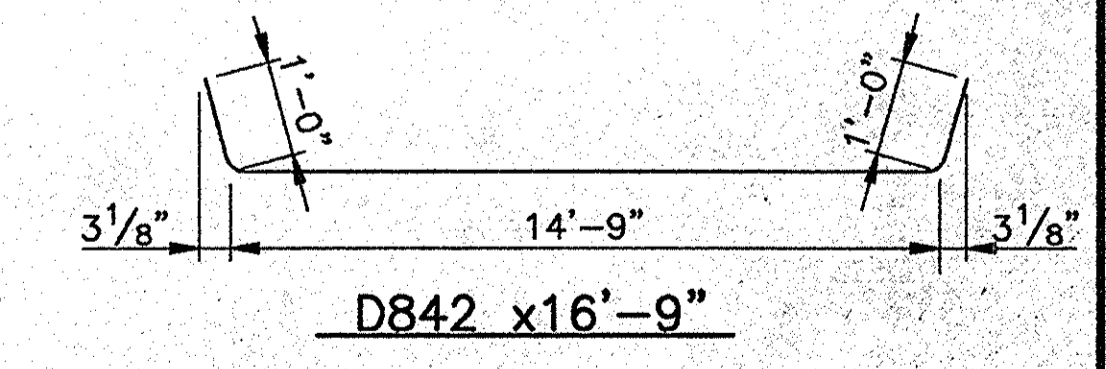
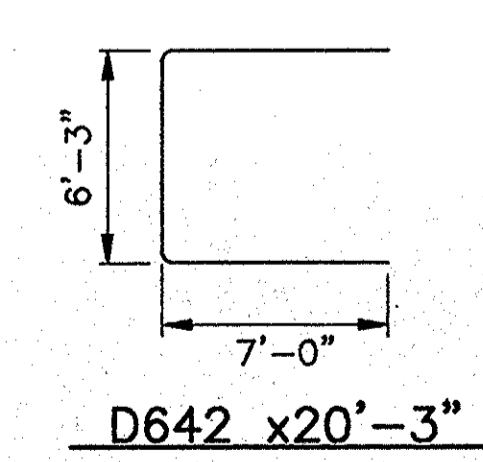
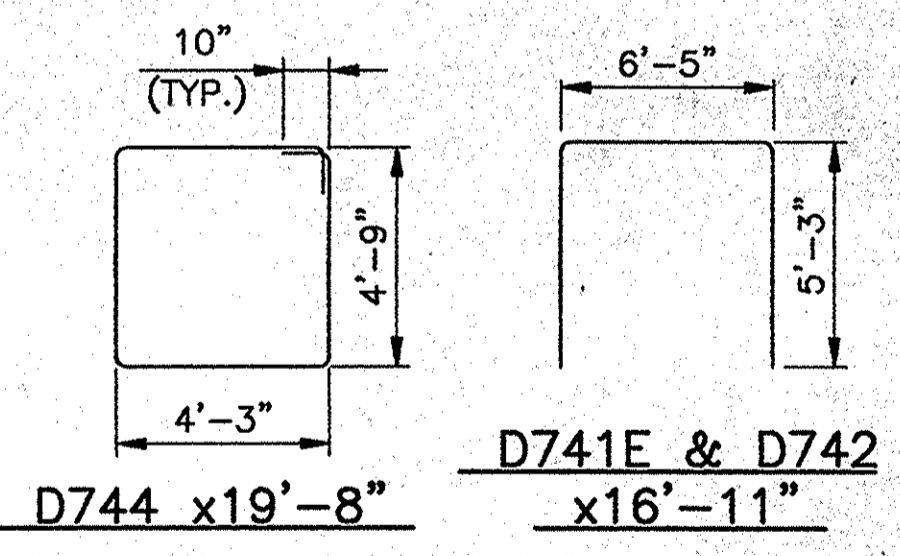
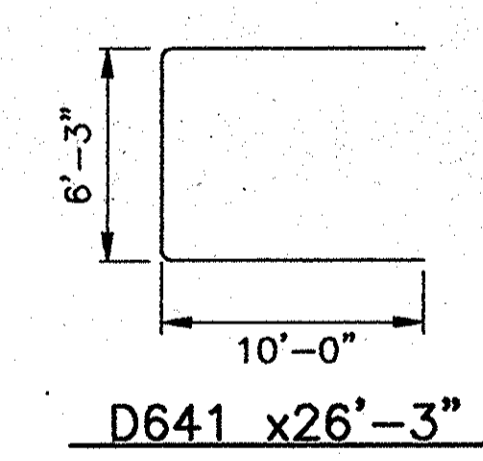
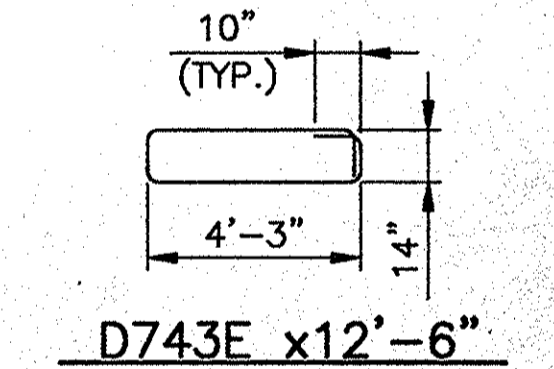
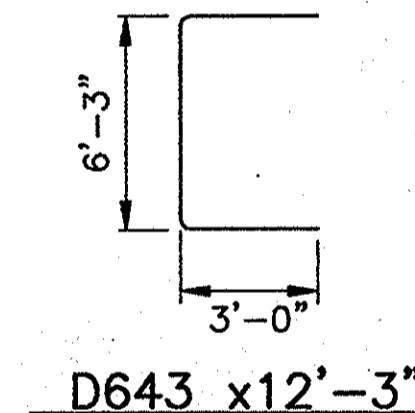
DRAWING: - C28 OF C44 SHEET: - 43 OF 65
 PROJECT: - NH-80-1 ()
 CONTRACT NO.
 BRIDGE FILE: - I-80-5-7828

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

DRAWN: HHJ 08/27/97 at 08:39
 PLOT: 11/24



- STRAIGHT BARS**
- D841E x 34'-9"
 - D541E x 6'-8"
 - D441E x 10'-0"
 - D644 x 9'-0"
 - D542 x 5'-0"



SUPERSTRUCTURE DETAILS - DIAPHRAGM AT PIERS NO. 2, 3, 4, 5, 7, 8 & 9

INDIANA DEPARTMENT OF TRANSPORTATION
LAKE COUNTY

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

SUBMITTED FOR APPROVAL

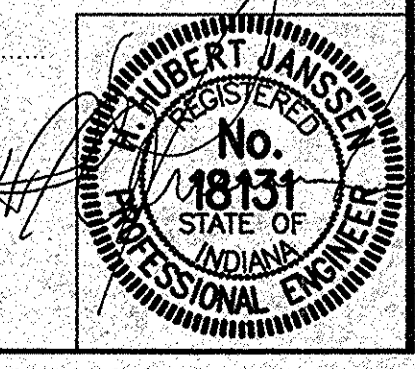
DRAWING: - C29 OF C44 SHEET: - 44 OF 65
PROJECT: - NH-80-1 () 4
CONTRACT NO.
BRIDGE FILE: - I-80-5-7828

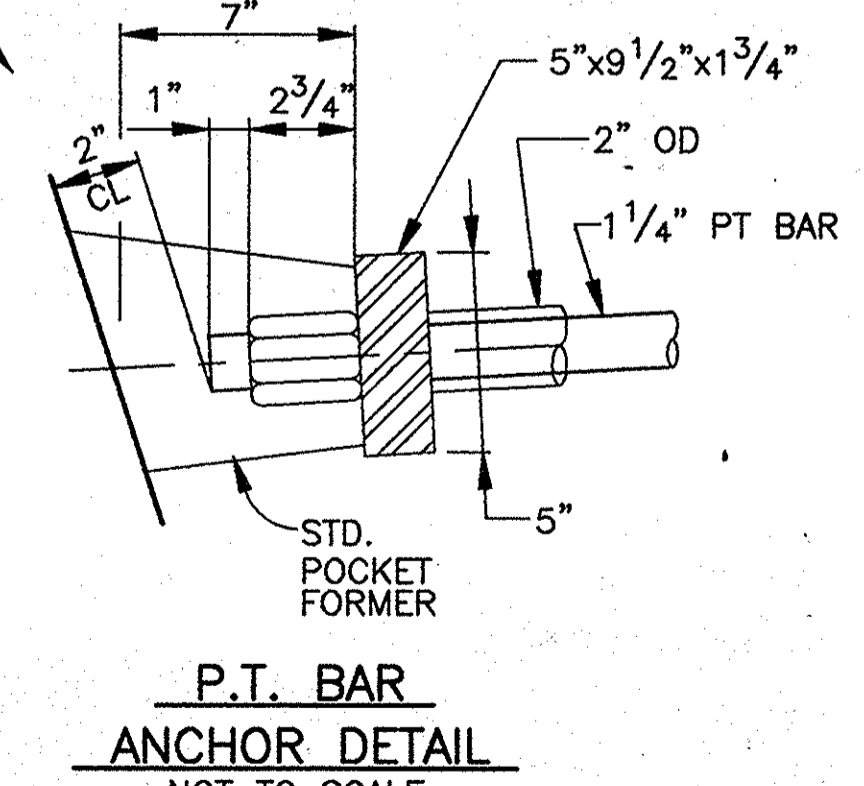
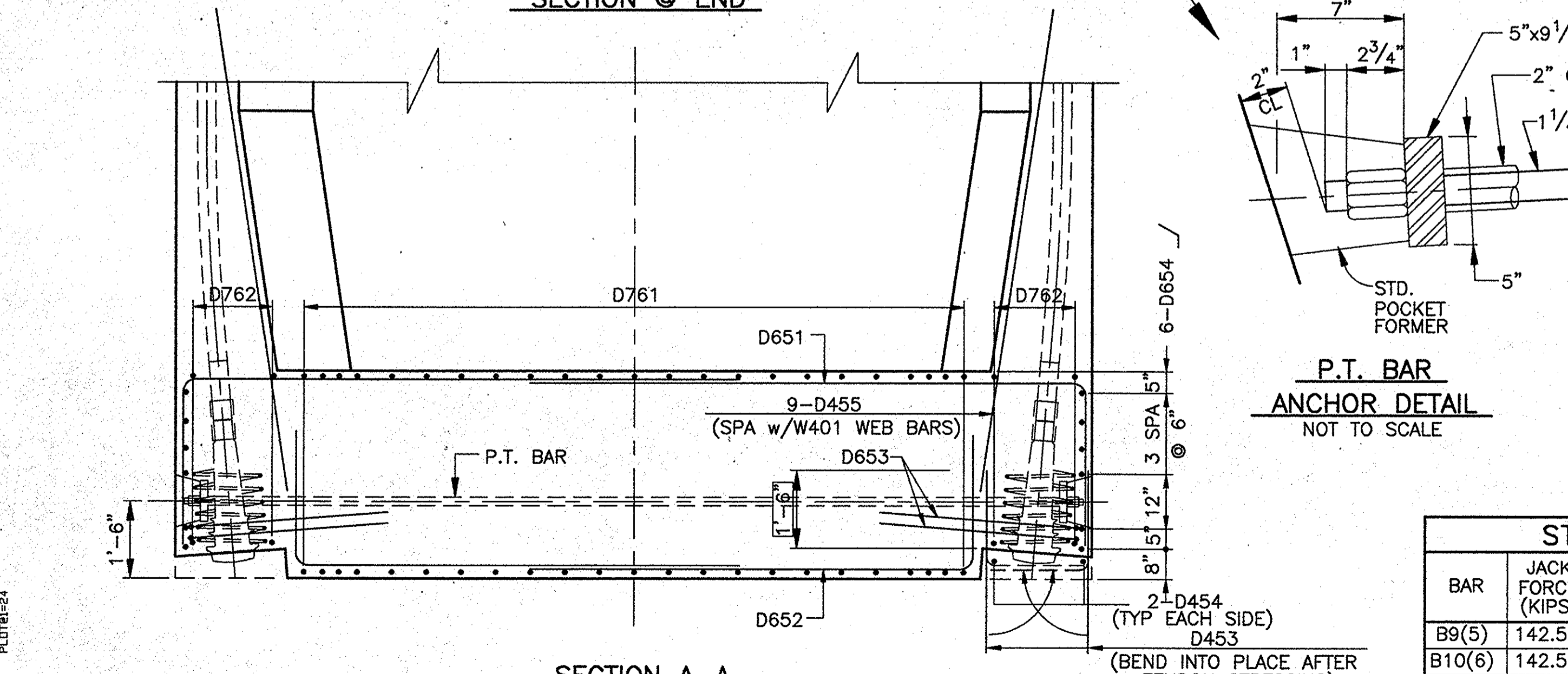
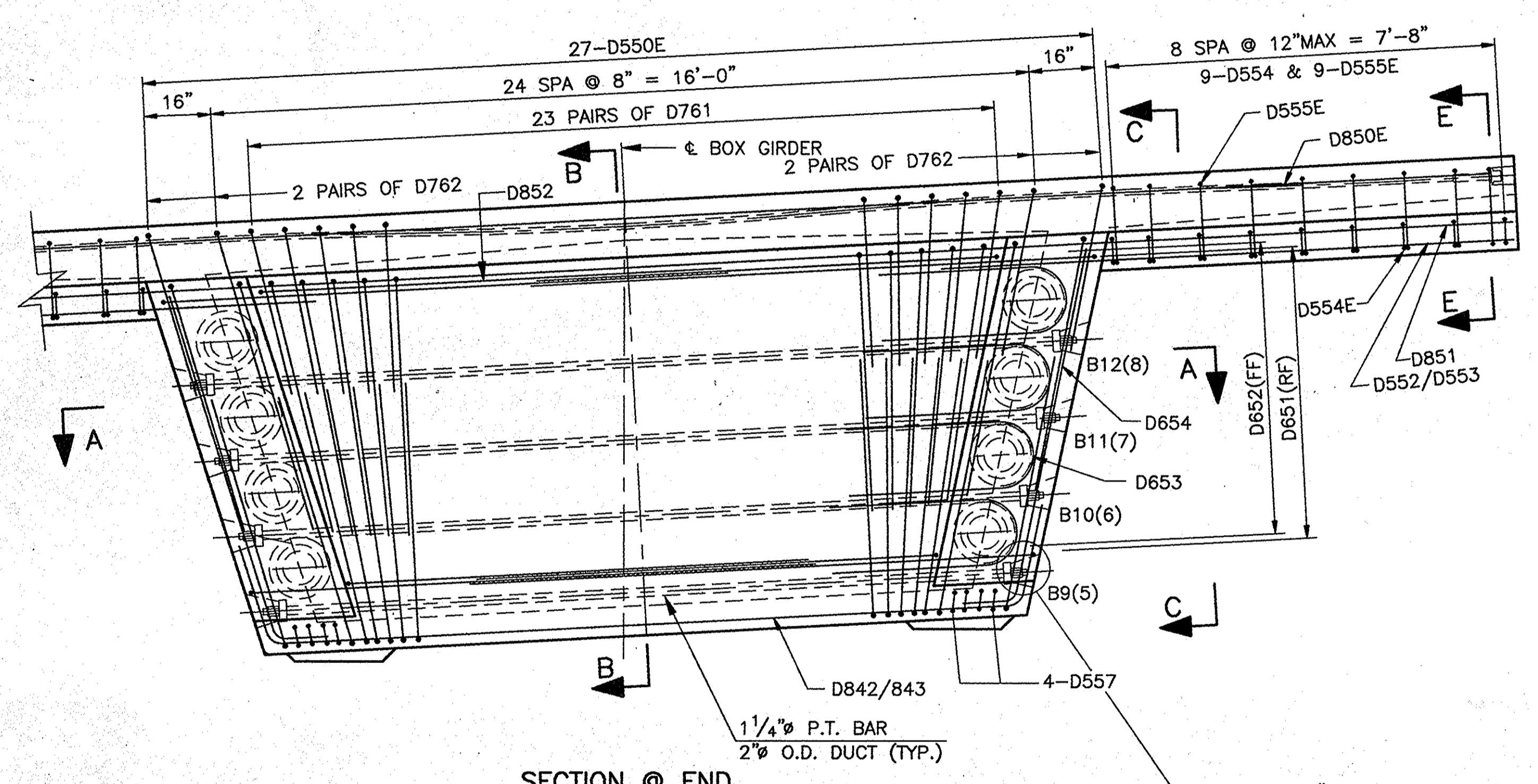
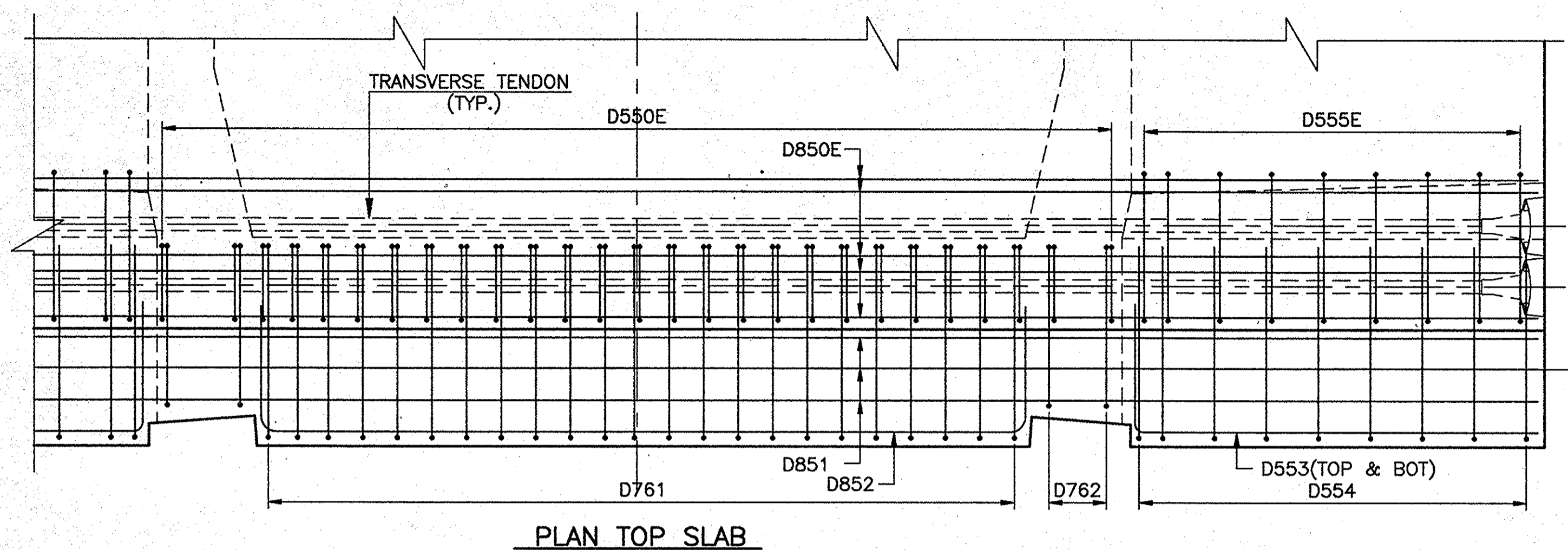
BILL OF MATERIALS			
REINFORCING STEEL GRADE 60			
Size And Mark	No. Of Bars	Length (Feet)	Weight (Lbs.)
D841E	10	34'-9"	928
D741E	52	16'-11"	
D743E	6	12'-6"	
TOTAL # 7			1951
D601E	20	10'-3"	308
D541E	54	6'-8"	375
D441E	20	10'-0"	
D450E	21	3'-8"	
TOTAL # 4			185
TOTAL EPOXY COATED REINFORCING 3747			
D842	7	16'-9"	313
D742	52	16'-11"	
D744	6	19'-8"	
TOTAL # 7			2039
TOTAL REGULAR REINFORCING 3196			
CLASS "C" IN SUPERSTRUCTURE *CYS.			

* CONCRETE BILLED WITH SUPERSTRUCTURE.

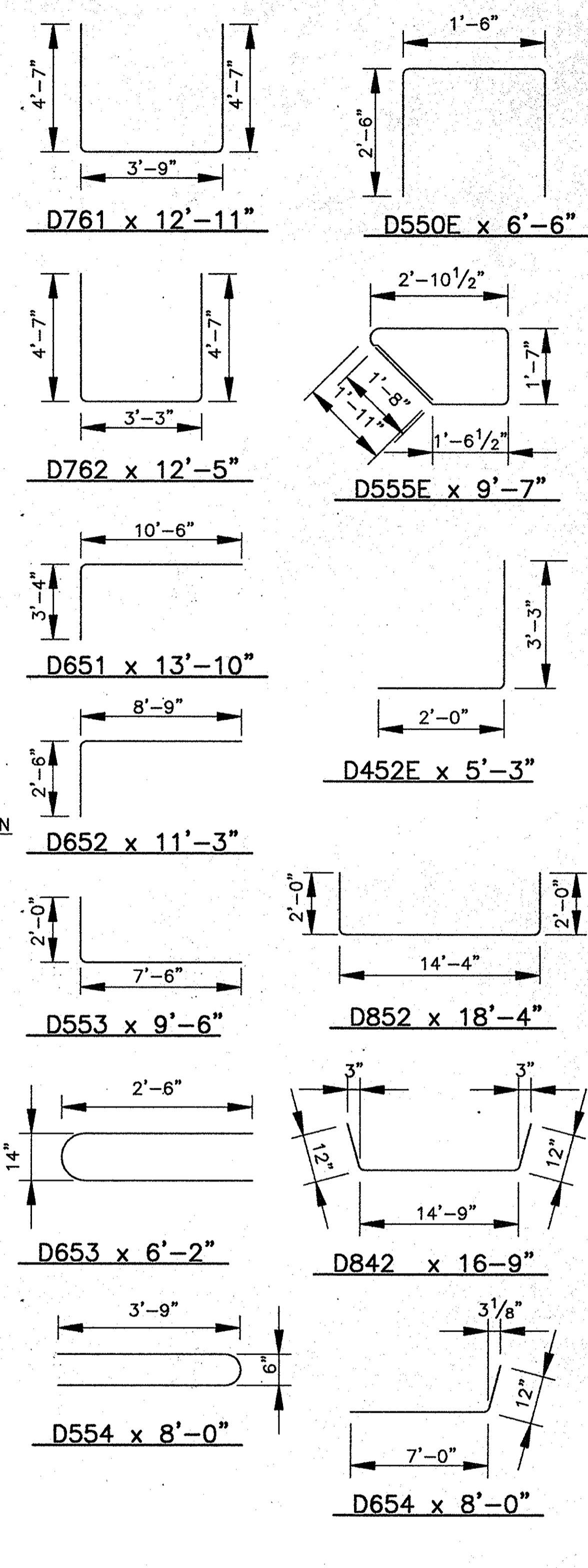
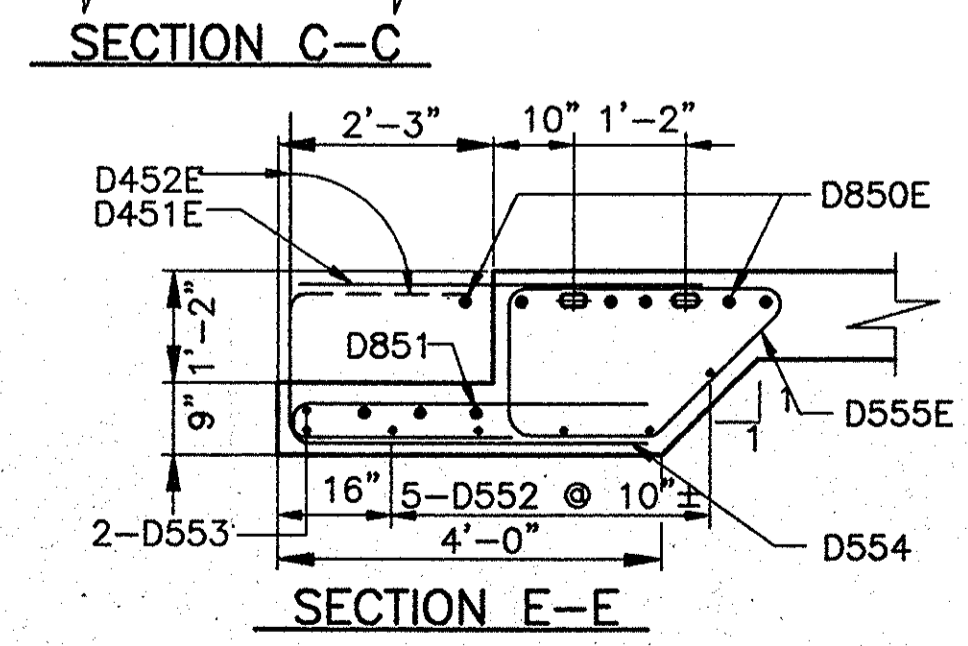
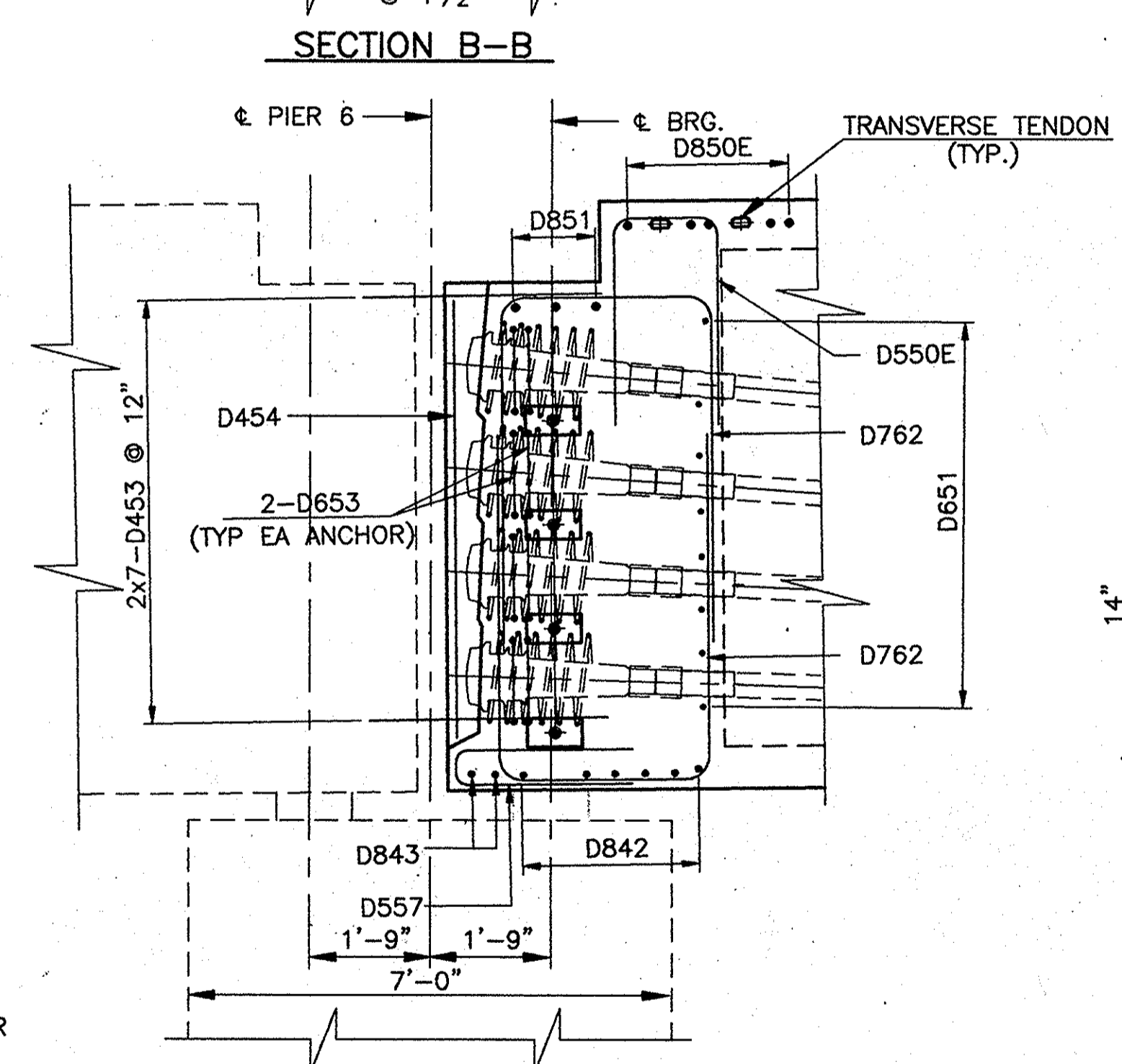
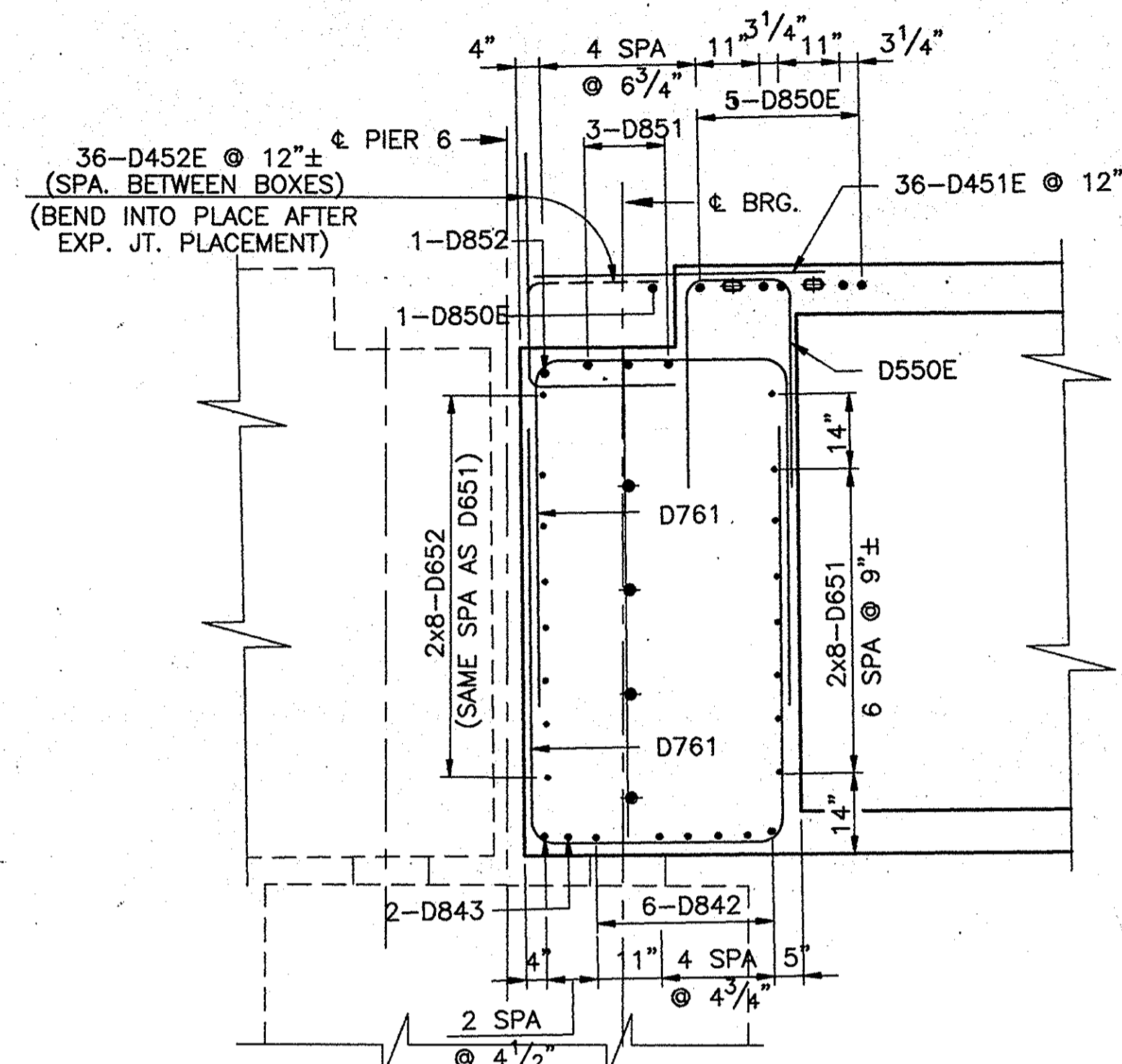
D:\BA\11-18\BIA_08/26/97 et 1548 PLOTB184

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.)
B9(5)	142.5	.71	.65	.06	15.11'
B10(6)	142.5	.75	.69	.06	15.91'
B11(7)	142.5	.79	.73	.06	16.71'
B12(8)	142.5	.83	.76	.06	17.51'
TOTAL LENGTH (FT.)					65.24



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			674
D761	46	12'-11"	
D762	8	12'-5"	
TOTAL #7			1417
D651	16	13'-10"	
D652	16	11'-3"	
D653	16	6'-2"	
D654	12	8'-0"	
TOTAL #6			894
D552	10	11'-0"	
D553	4	9'-6"	
D554	18	8'-0"	
D557	8	5'-6"	
TOTAL #5			351
D453	28	3'-6"	
D454	4	6'-4"	
D455	18	10'-0"	
TOTAL #4			203
TOTAL REINFORCING STEEL			3539

- 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"
 - D653 x 6'-2"
 - D842 x 16'-9"
 - D554 x 8'-0"
 - D654 x 8'-0"
 - D557 x 5'-6"

SUPERSTRUCTURE DETAILS -
DIAPHRAGM AT PIER NO. 6 (UNIT 2)
(UNIT 1 MIRROR IMAGE)

INDIANA DEPARTMENT OF TRANSPORTATION
LAKE COUNTY

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

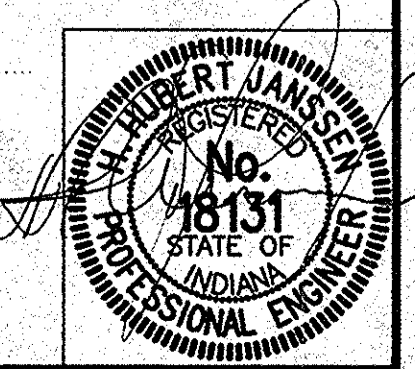
SUBMITTED FOR APPROVAL

DRAWING: C30 OF C44 SHEET: 45 OF 65

PROJECT: - NH-80-1 () 4

CONTRACT NO.

BRIDGE FILE: - I-80-5-7828

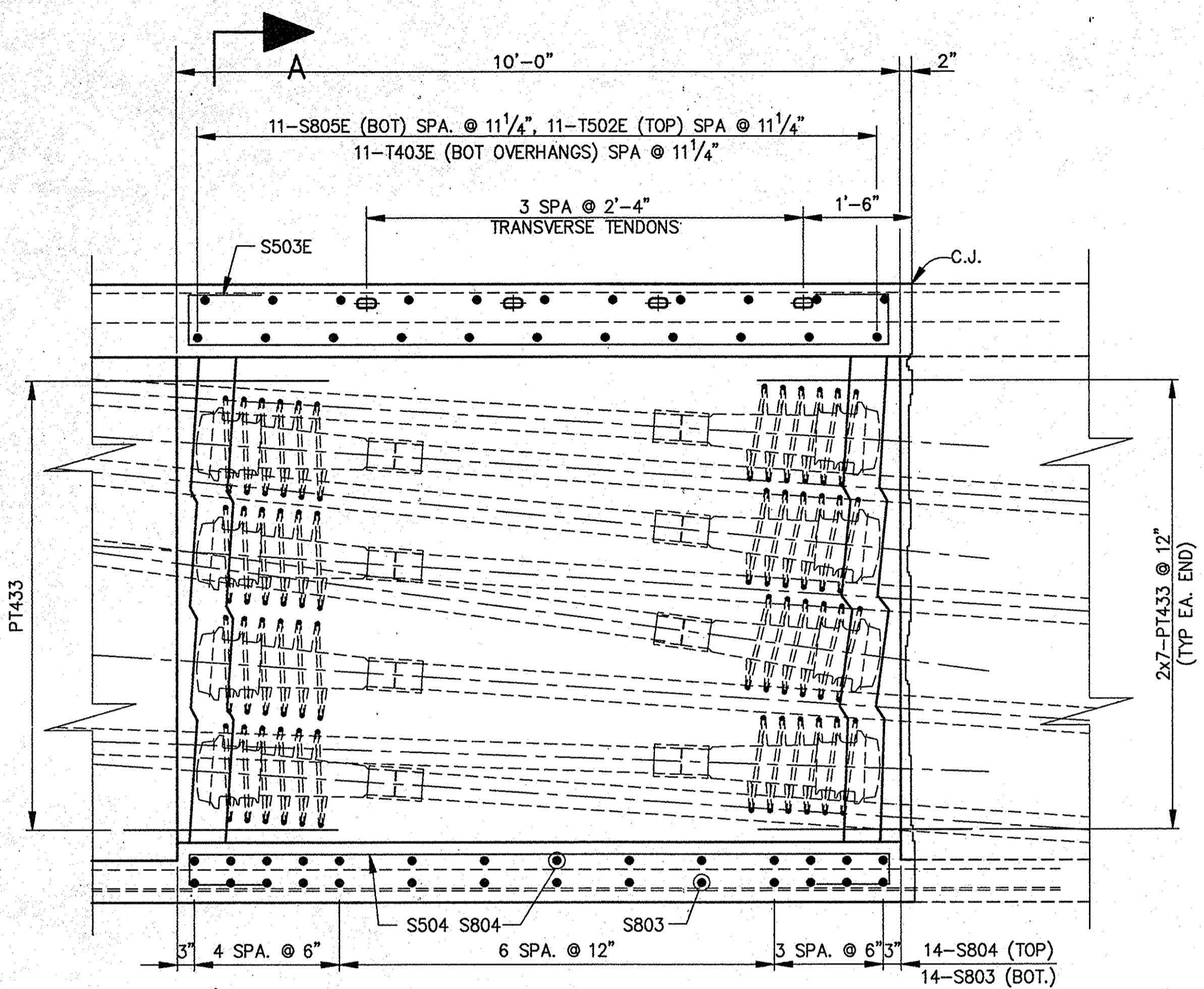


DESIGNED BY: HHJ C.K'D LS
DRAWN: TMD C.K'D HHJ
TRACED: C.K'D

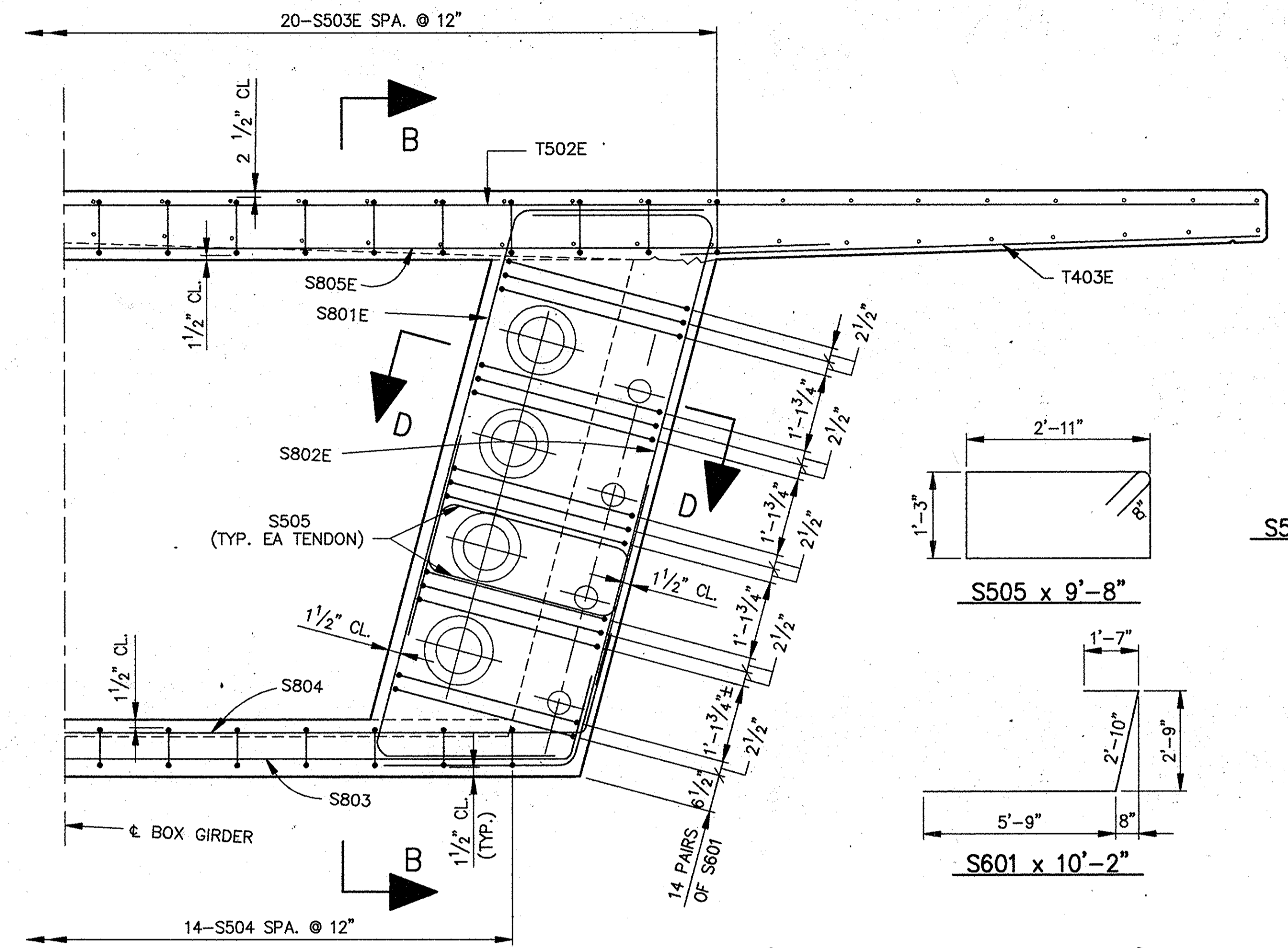
DESIGNED: HHJ C.K'D LS
DRAWN: TMD C.K'D HHJ
TRACED: C.K'D

BILL OF MATERIALS

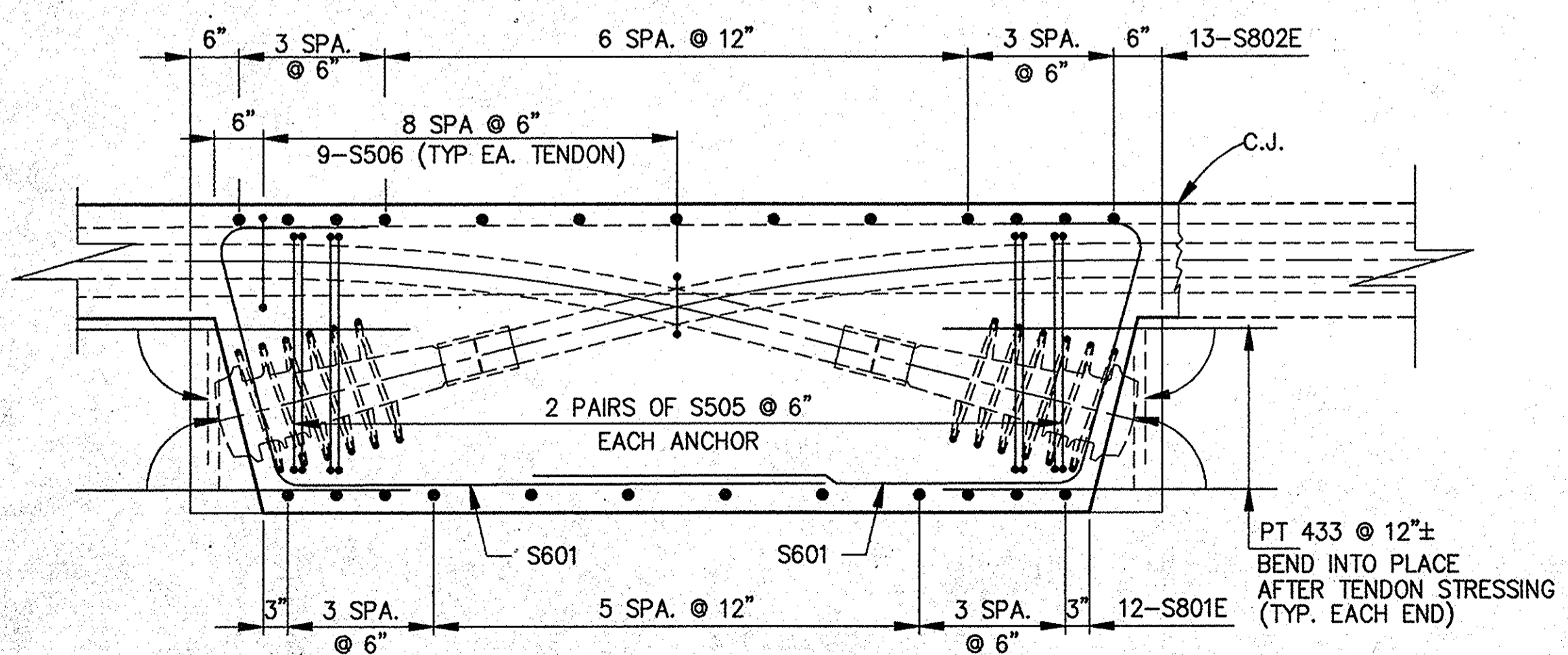
REINFORCING STEEL GRADE 60			
Size And Mark	No. Of Bars	Length (Feet)	Weight (Lbs.)
S801E	24	13'-10"	
S802E	26	13'-10"	
S805E	11	22'-4"	
TOTAL #8			2502
S502E	11	34'-9"	
S503E	20	13'-1"	
TOTAL #5			672
T403	22	8'-11"	131
TOTAL EPOXY COATED STEEL			3305
S803	14	17'-9"	
S804	14	17'-11"	
TOTAL #8			1333
S601	56	10'-2"	855
S504	14	12'-11"	
S505	64	9'-8"	
S506	144	3'-0"	
TOTAL #5			1285
PT433	28	3'-0"	56
TOTAL REGULAR REINFORCING			3529
CONCRETE			
Class "C" in Superstructure			*
* INCLUDED WITH BOX GIRDER QUANTITY			



SECTION B-B

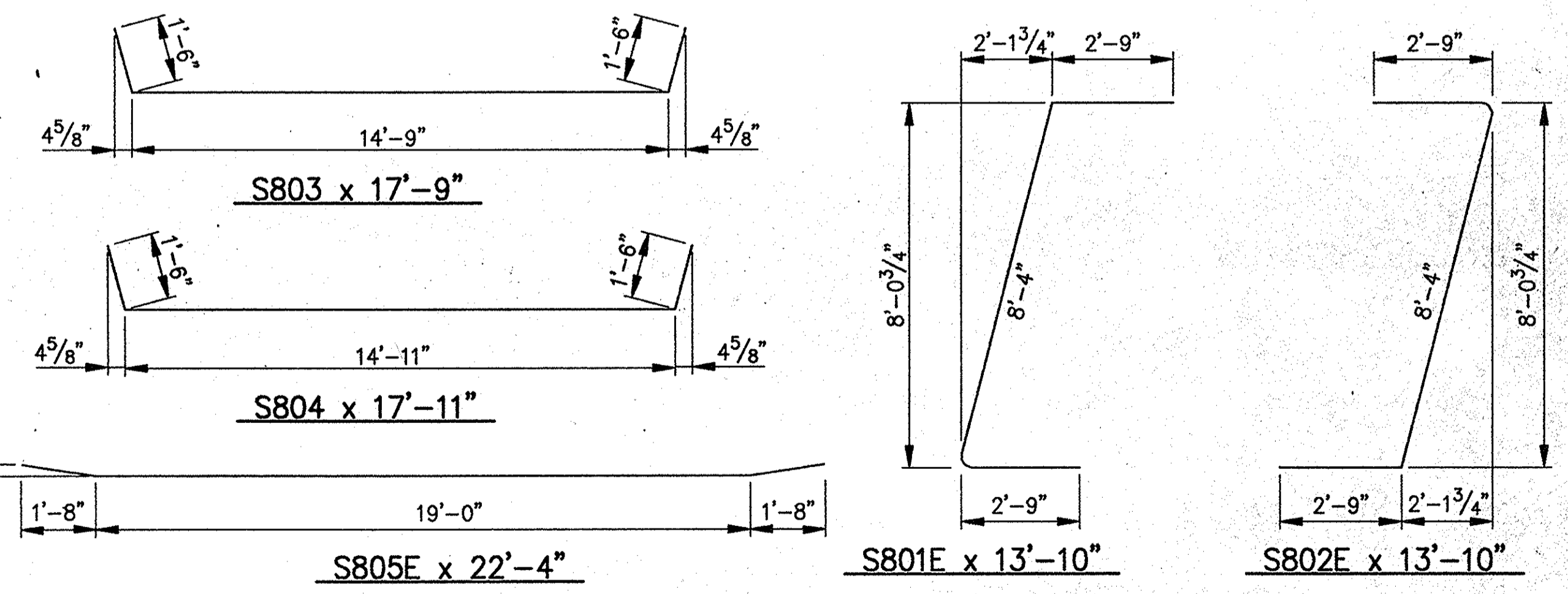


HALF SECTION A-A



SECTION D-D

NOTES:
1. FOR DIMENSIONS SEE DWG C34.



STRAIGHT BARS
T502E x 34'-9"
T403E x 8'-11"
PT433 x 3'-0"

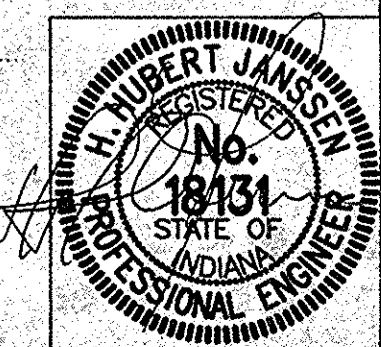
SUPERSTRUCTURE DETAILS - STRESSING BLOCK REINFORCING

INDIANA DEPARTMENT OF TRANSPORTATION
LAKE COUNTY

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

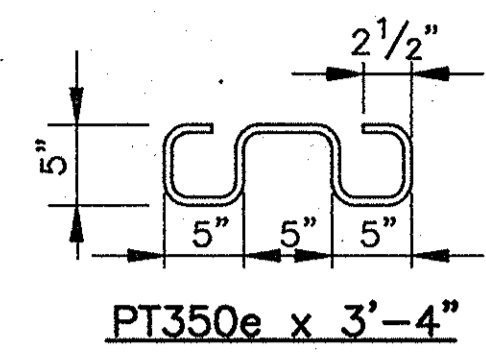
SUBMITTED FOR APPROVAL

DRAWING: - C31 OF C44 SHEET: - 46 OF 65
PROJECT: - NH-80-1 () 4
CONTRACT NO.
BRIDGE FILE: - 1-80-5-7828



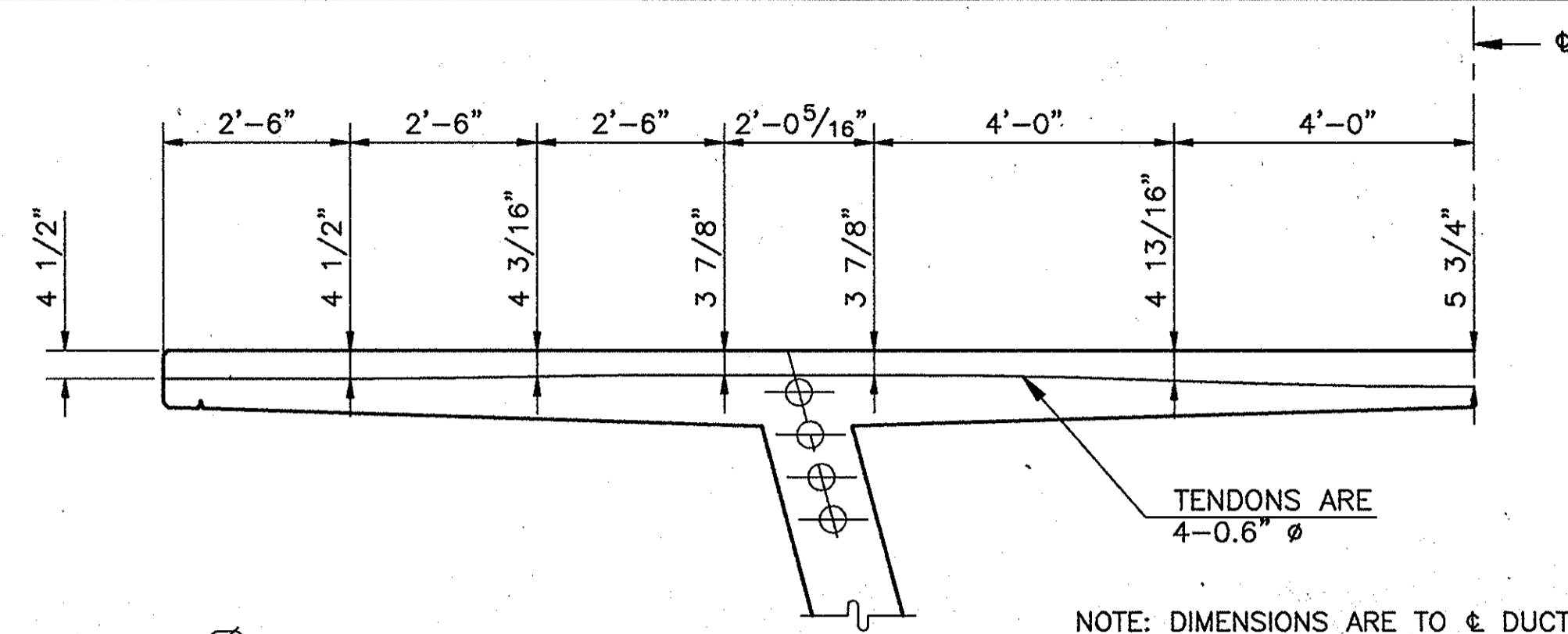
ANCHORAGE DETAILS AT STRESSING BLOCK SPAN C & SPAN G

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



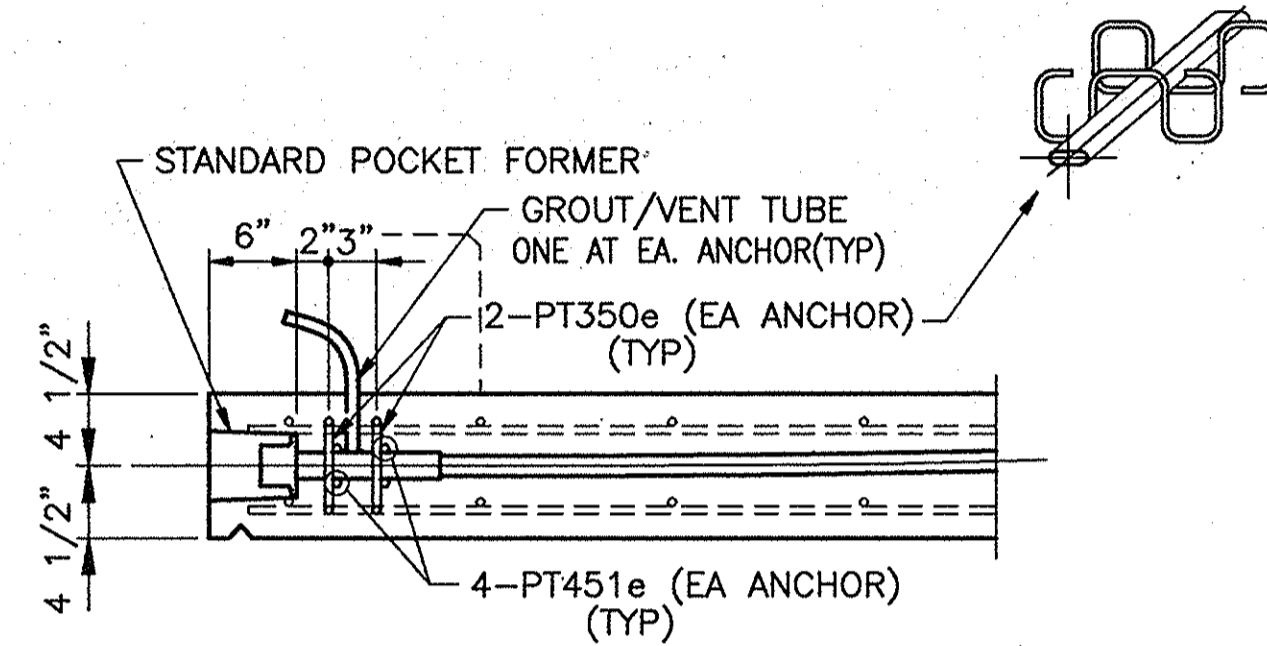
PT350e x 3'-4"

PT451e x 2'-6"

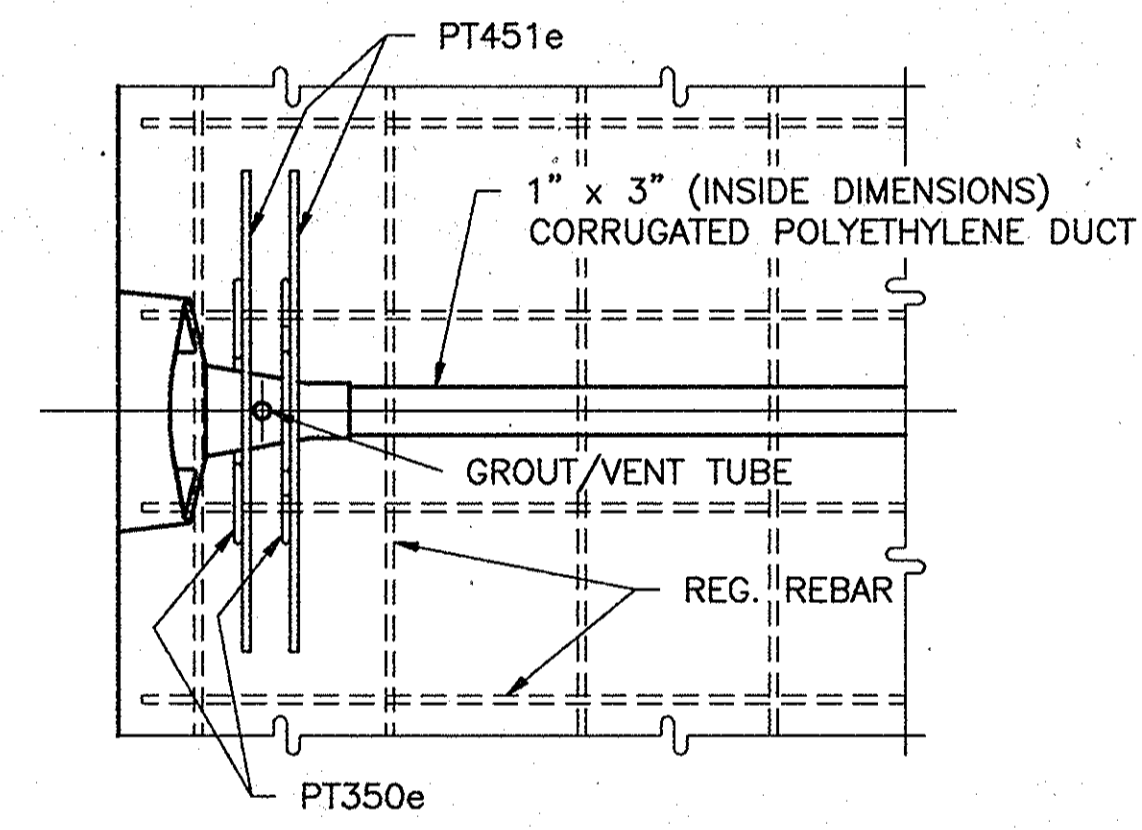


TENDON LAYOUT
(SYMM ABOUT ϵ)

NOTE: DIMENSIONS ARE TO ϵ DUCT



SECTION



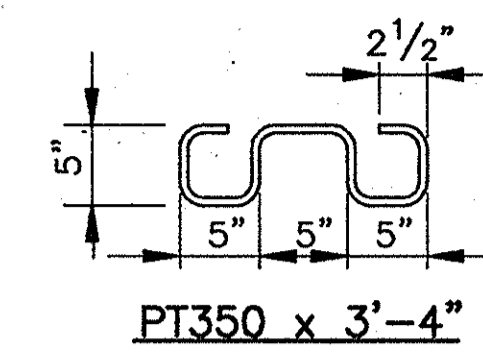
PLAN

REINFORCEMENT AT
TRANSVERSE POST-TENSIONING ANCHORS
SCALE: 1" = 1'-0"

REINFORCING STEEL			
GRADE 60 STEEL EPOXY COATED			
SIZE & MARK	NUMBER OF BARS	LENGTH	WEIGHT
PT350E	1400	3'-4"	1755
PT451E	2800	2'-6"	4676
TOTAL EPOXY COATED STEEL			6431

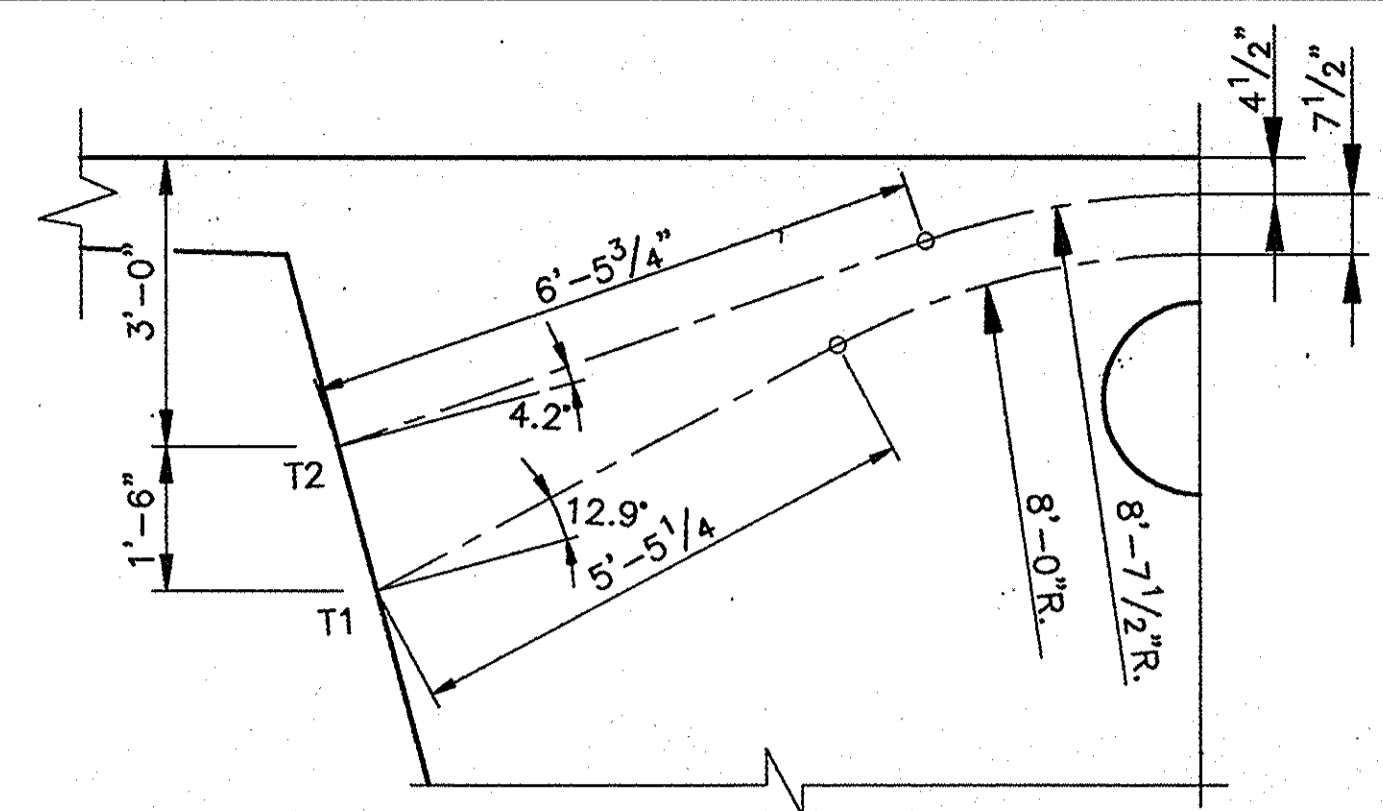
TOTAL QUANTITIES			
NO. OF TENDONS (EA)	NO. OF ANCHORS	LENGTH(NET) DUCT	0.6"Ø STRAND (NET) *
		1"x 3" LFT	(.74 LBS/LFT)
350	700	12103	35867

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



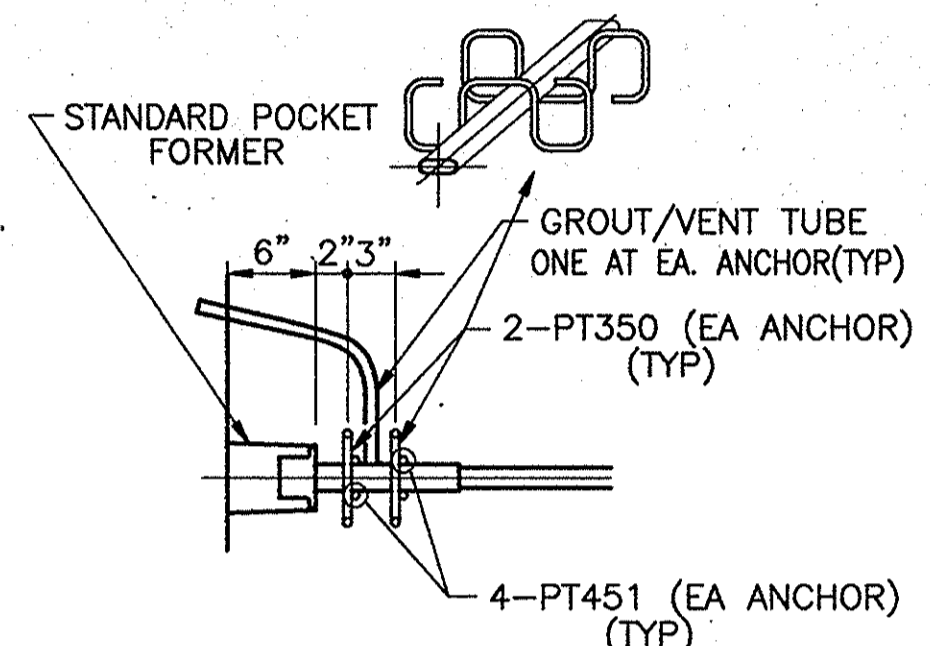
PT350 x 3'-4"

PT451 x 2'-6"

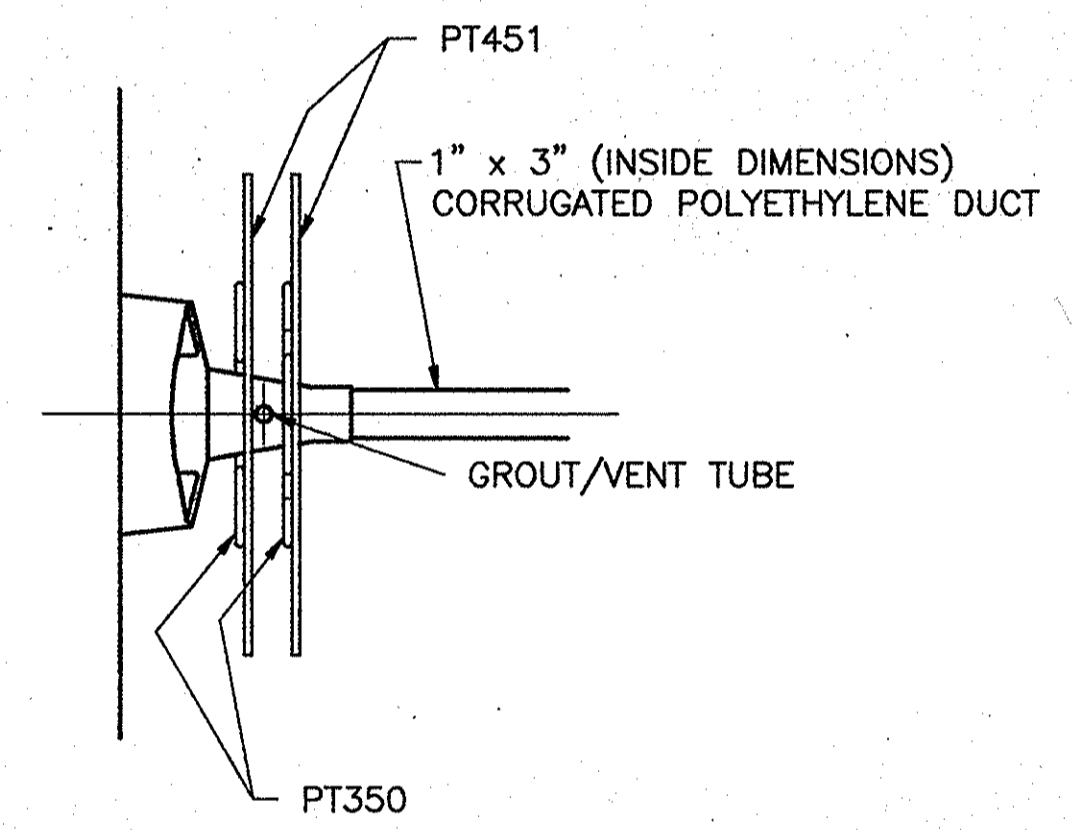


TENDON LAYOUT
(SYMM ABOUT ϵ)

NOTE: DIMENSIONS ARE TO ϵ DUCT



SECTION



PLAN

REINFORCEMENT AT
TRANSVERSE POST-TENSIONING ANCHORS
SCALE: 1" = 1'-0"

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

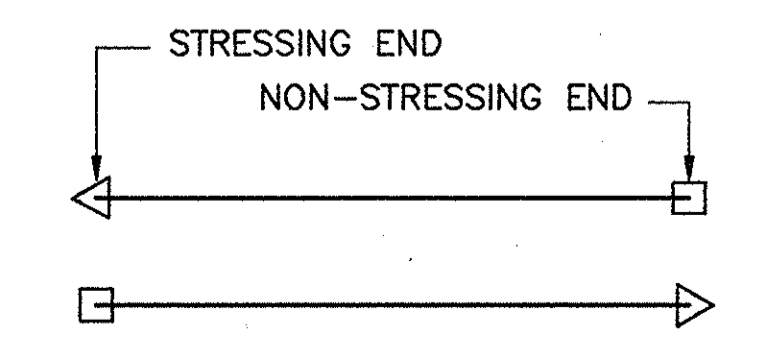
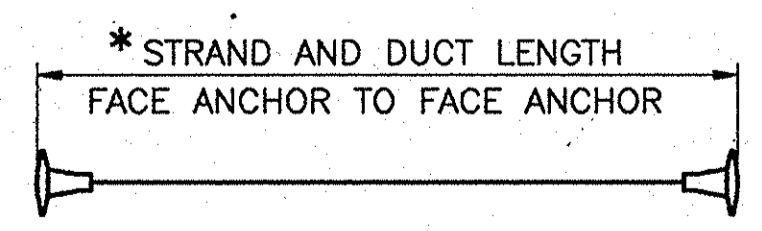
TOTAL QUANTITIES			
NO. OF TENDONS (EA)	NO. OF ANCHORS	LENGTH(NET) DUCT	0.6"Ø STRAND (NET) *
		1"x 3" LFT	(.74 LBS/LFT)
42	84	785	2323

STRESSING DATA (PER STRAND)					
TENDON	JACK FORCE (KIPS)	ELONGATION BEFORE SEATING 100 % (IN)	ELONGATION AFTER SEATING 100 % (IN)	ANCHOR SET (IN)	APPROX. LENGTH
T1	187.5	1 1/2"	1 1/8"	3/8"	18'-3 3/4"
T2	187.5	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: E_{MOD} = 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: - 8/22/98

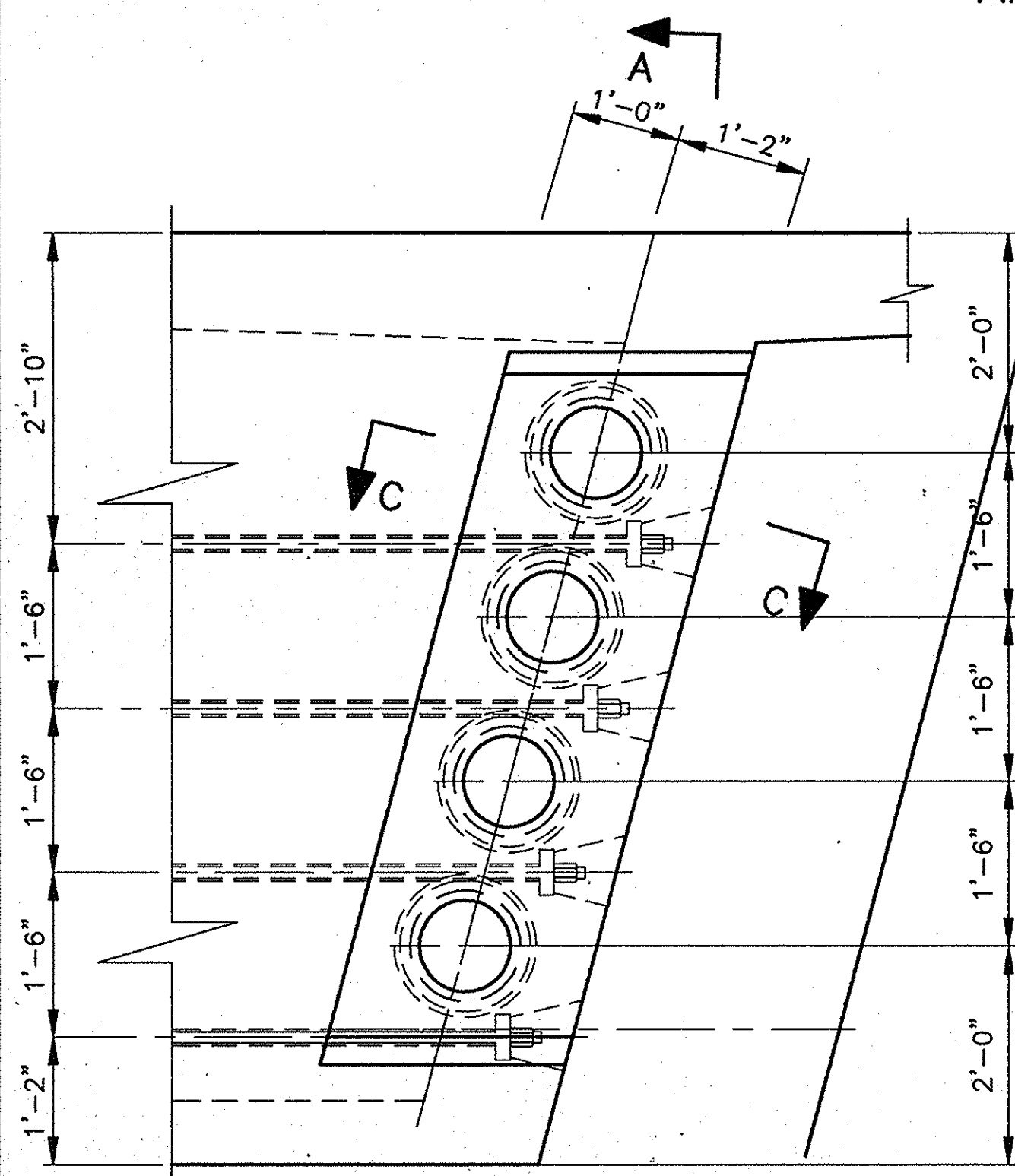
SUBMITTED FOR APPROVAL

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

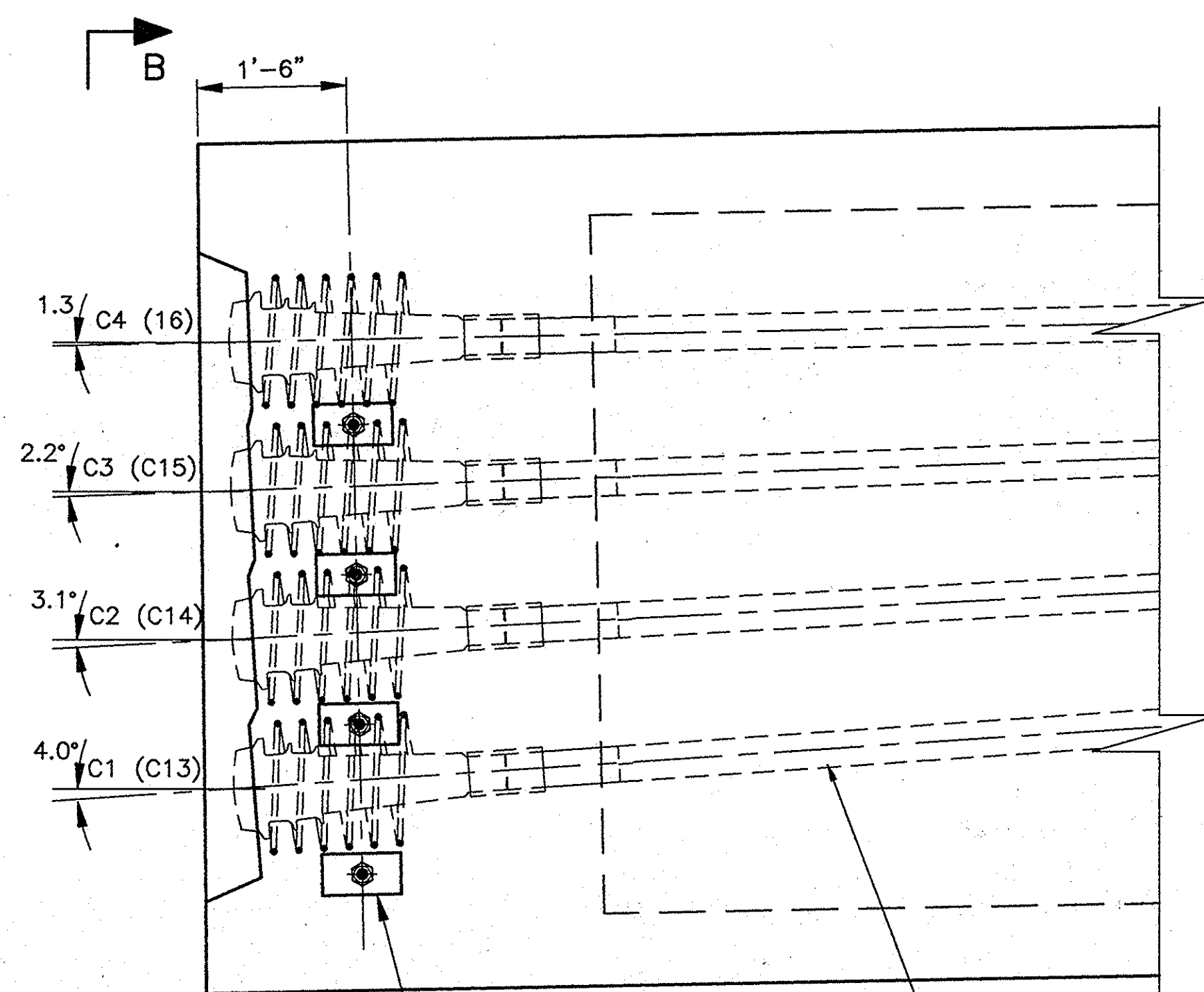
DRAWING: C32 OF C44 SHEET: 47 OF 65
PROJECT: - NH-80-1 ()
CONTRACT NO.
BRIDGE FILE: - I-80-5-7828

DRAWN BY: TMD, 09/02/97, 4:16:05

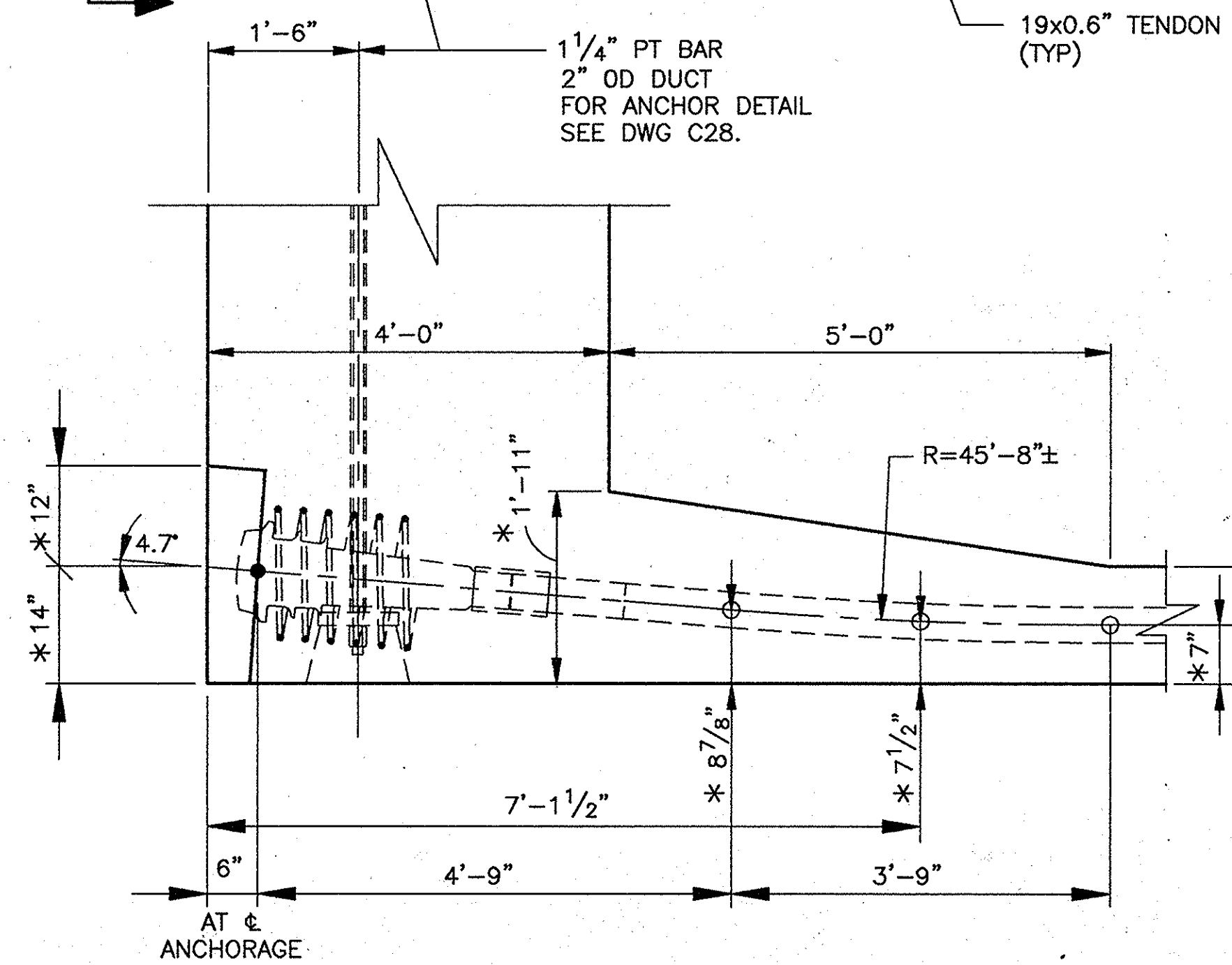
ANCHORAGE DETAILS AT BENT 1
(BENT 10 MIRROR IMAGE)



SECTION B-B

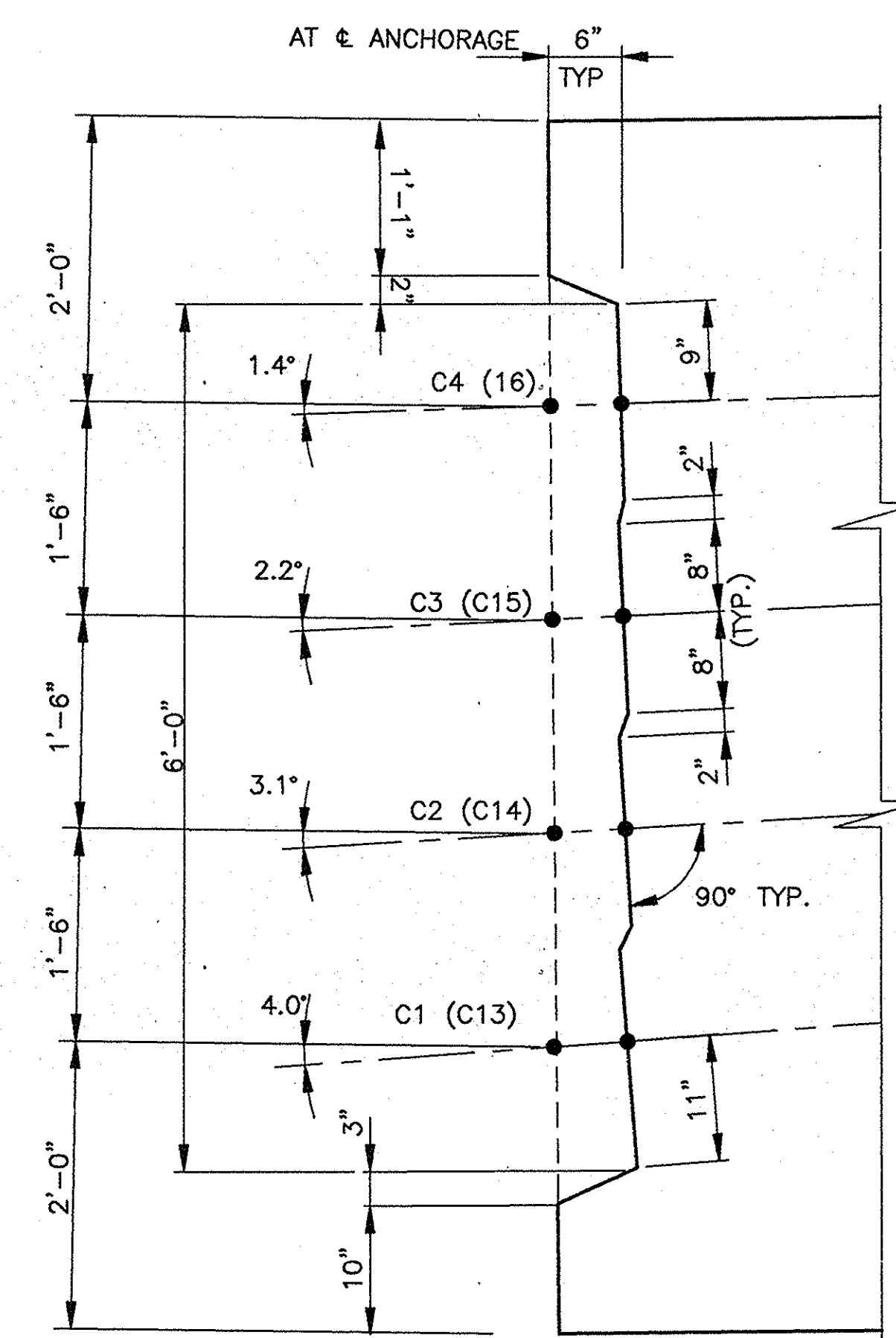


SECTION A-A



SECTION C-C

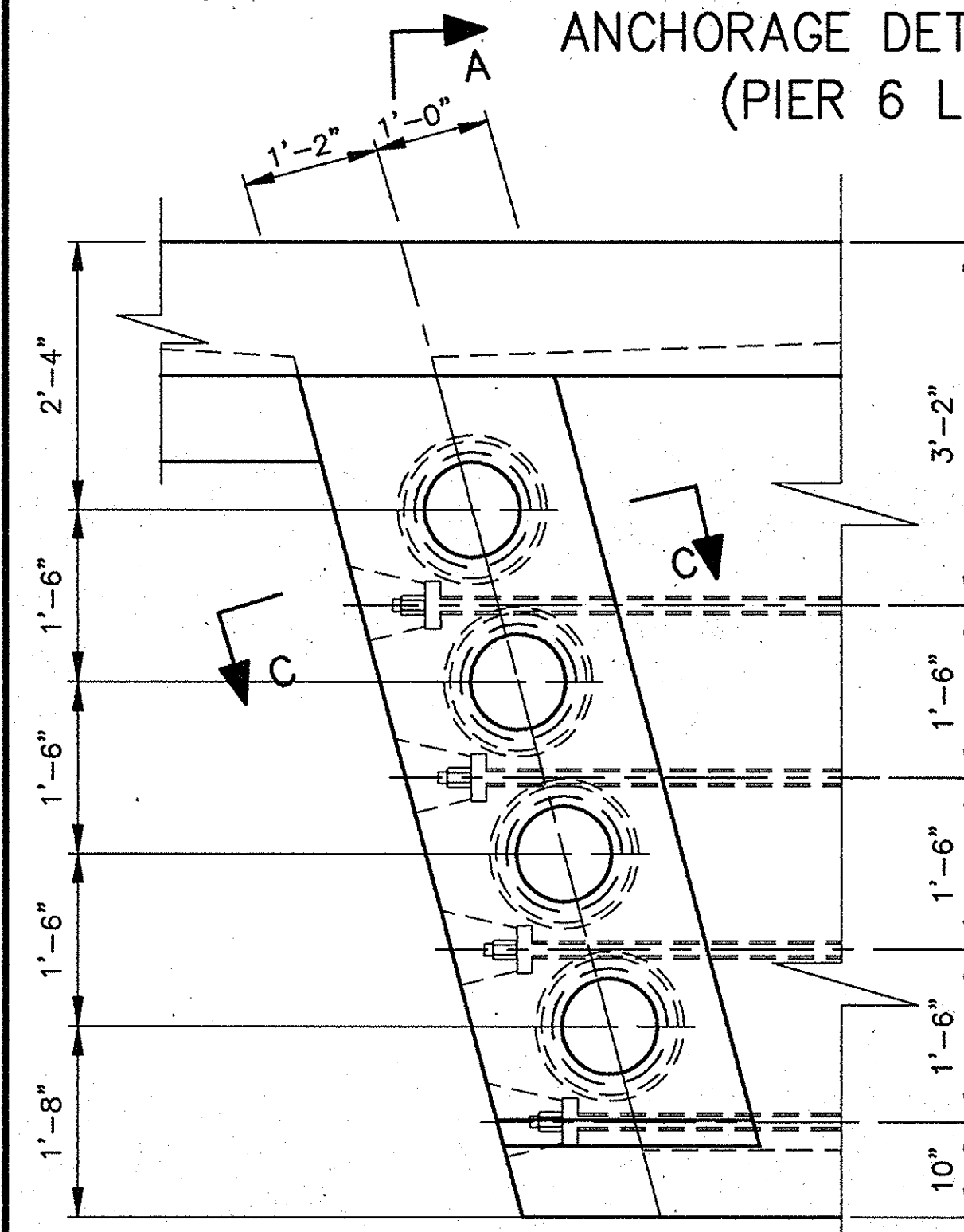
NOTE:
* THESE DIMENSIONS ARE PERPENDICULAR TO OUTSIDE FACE OF WEB.



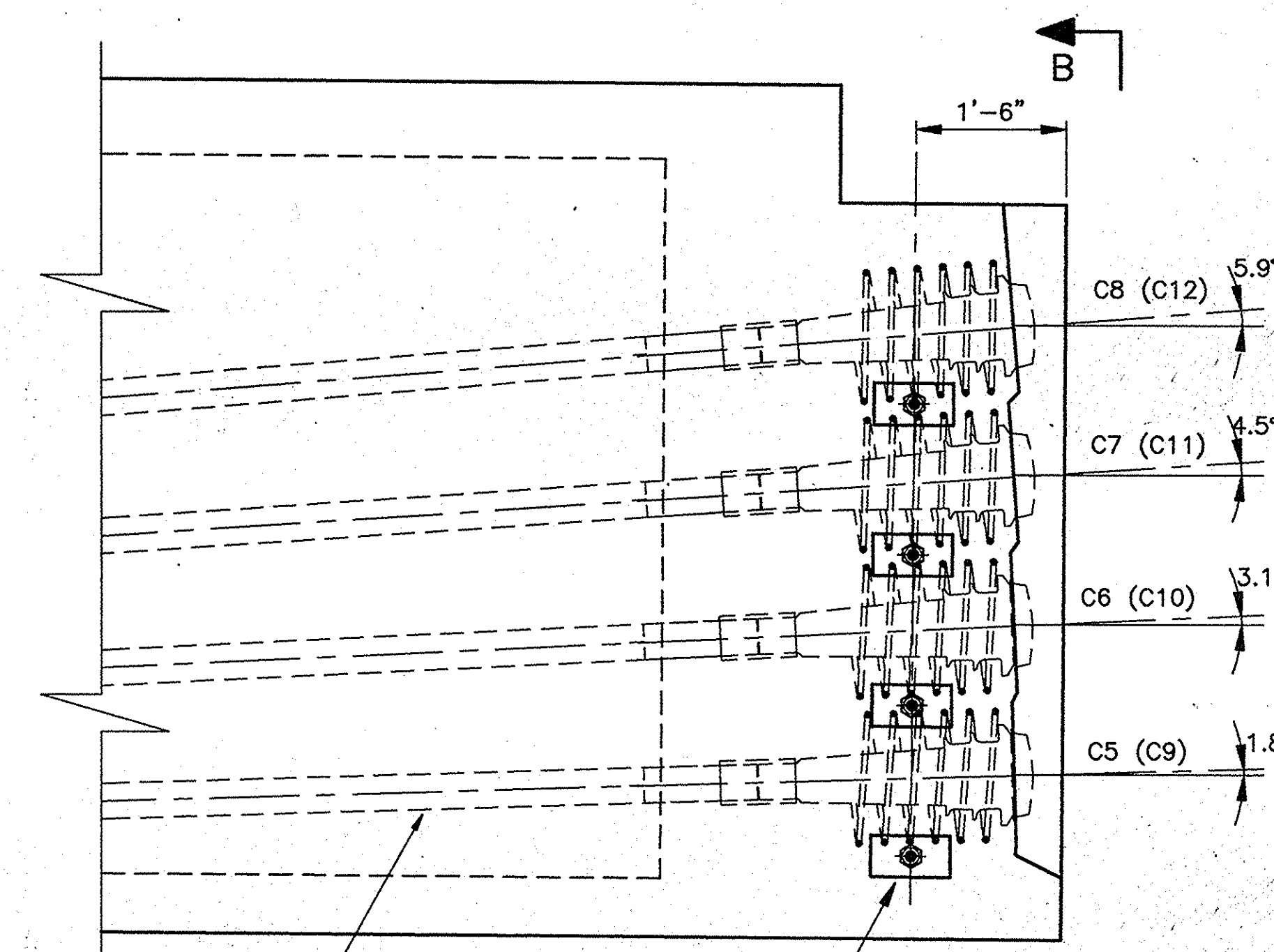
TENDON ANCHORAGE
BLOCKOUT DETAIL
(DIMENSIONS 1 TO BOTTOM SLAB)
SCALE: 1" = 1'-0"

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

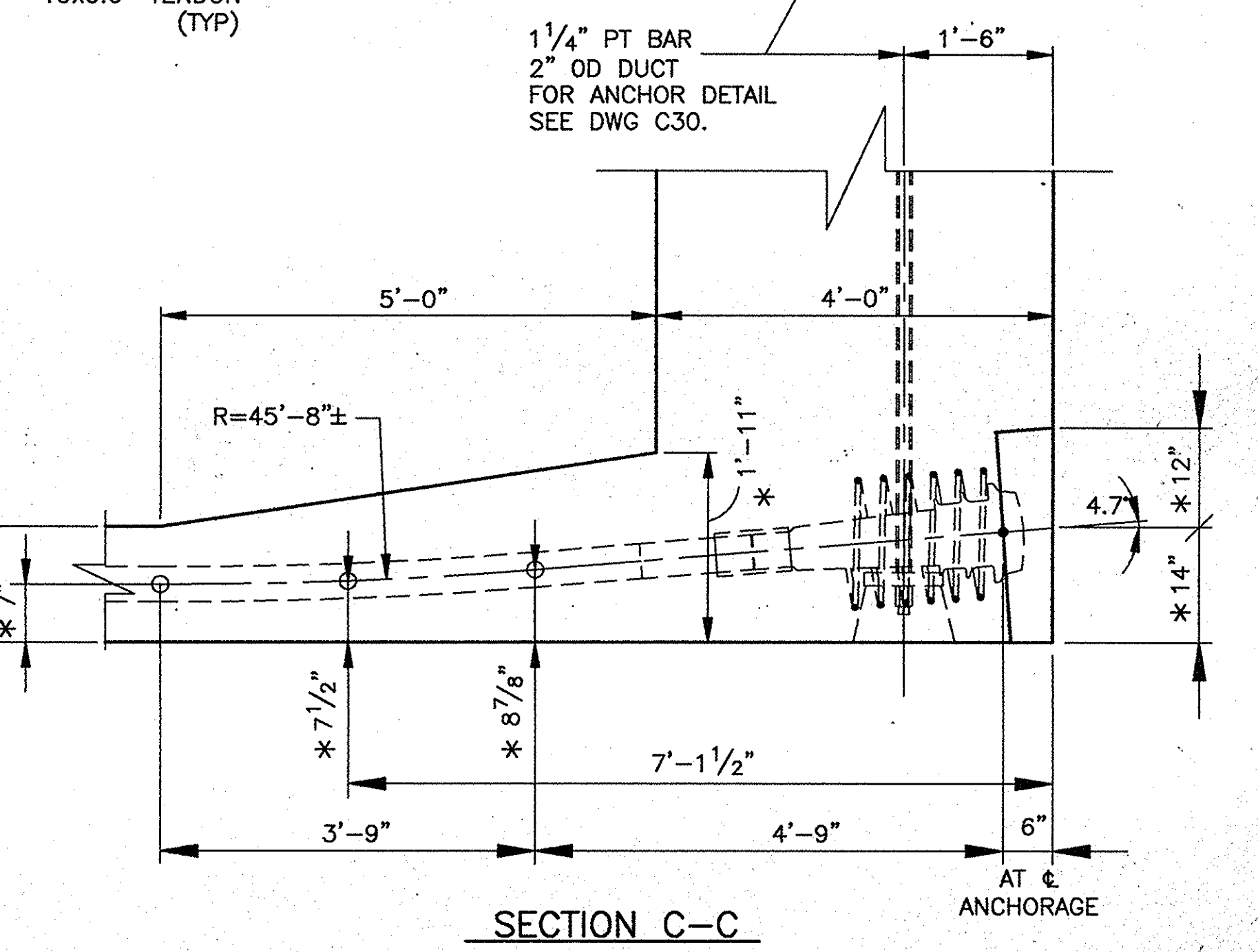
ANCHORAGE DETAILS AT PIER 6 (LOOKING DOWN STATION)
(PIER 6 LOOKING UP STATION MIRROR IMAGE)



SECTION B-B



SECTION A-A



SECTION C-C

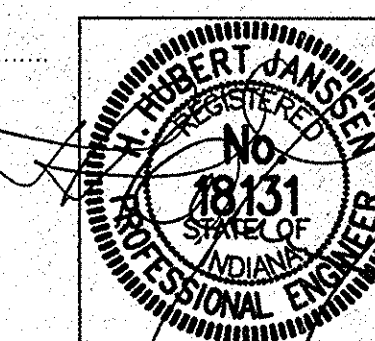
NOTE:
* THESE DIMENSIONS ARE PERPENDICULAR TO OUTSIDE FACE OF WEB.

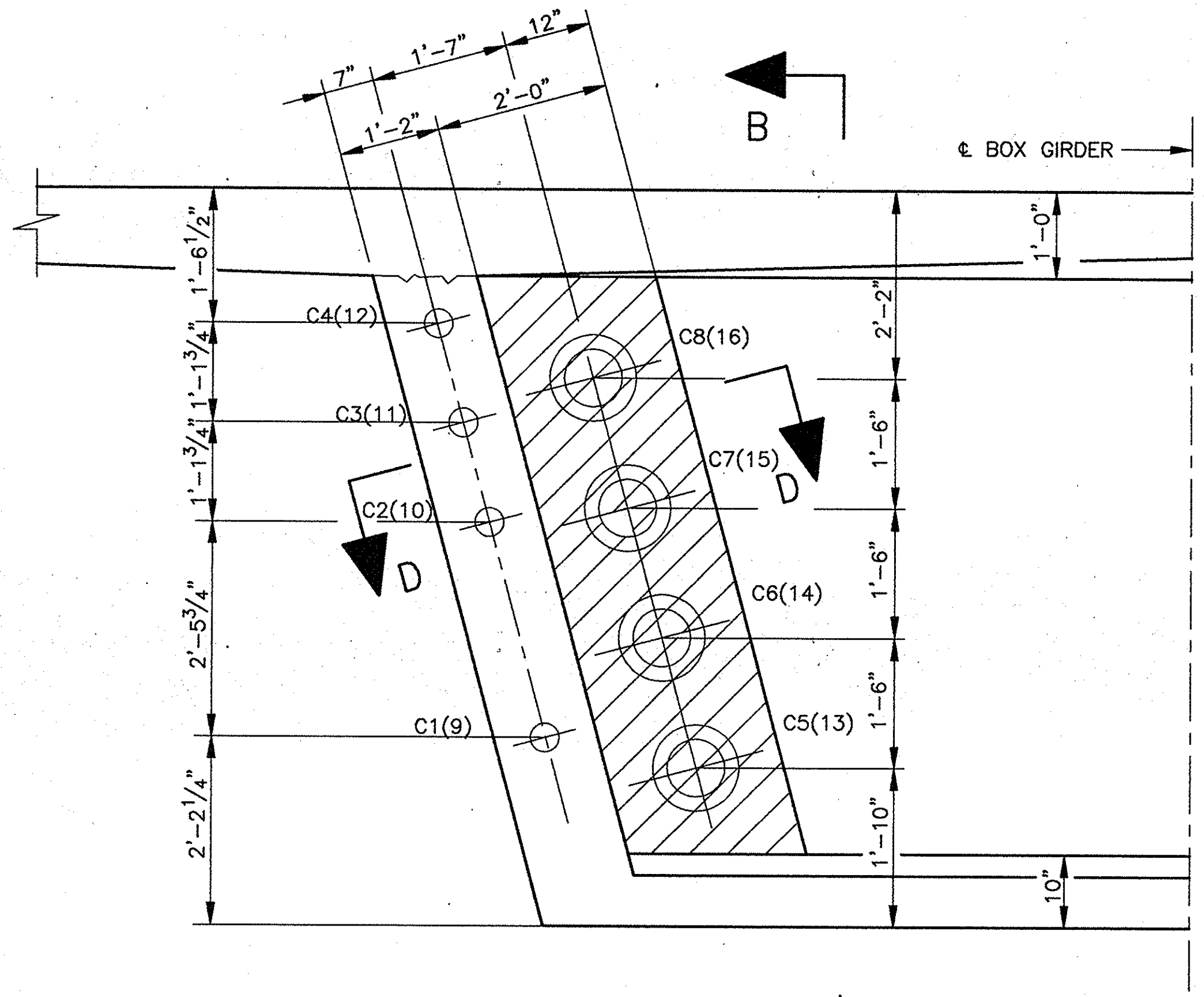
SUPERSTRUCTURE DETAILS -
DIAPHRAGM AT BENT NOS. 1 & 10
INDIANA DEPARTMENT OF TRANSPORTATION
LAKE COUNTY

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

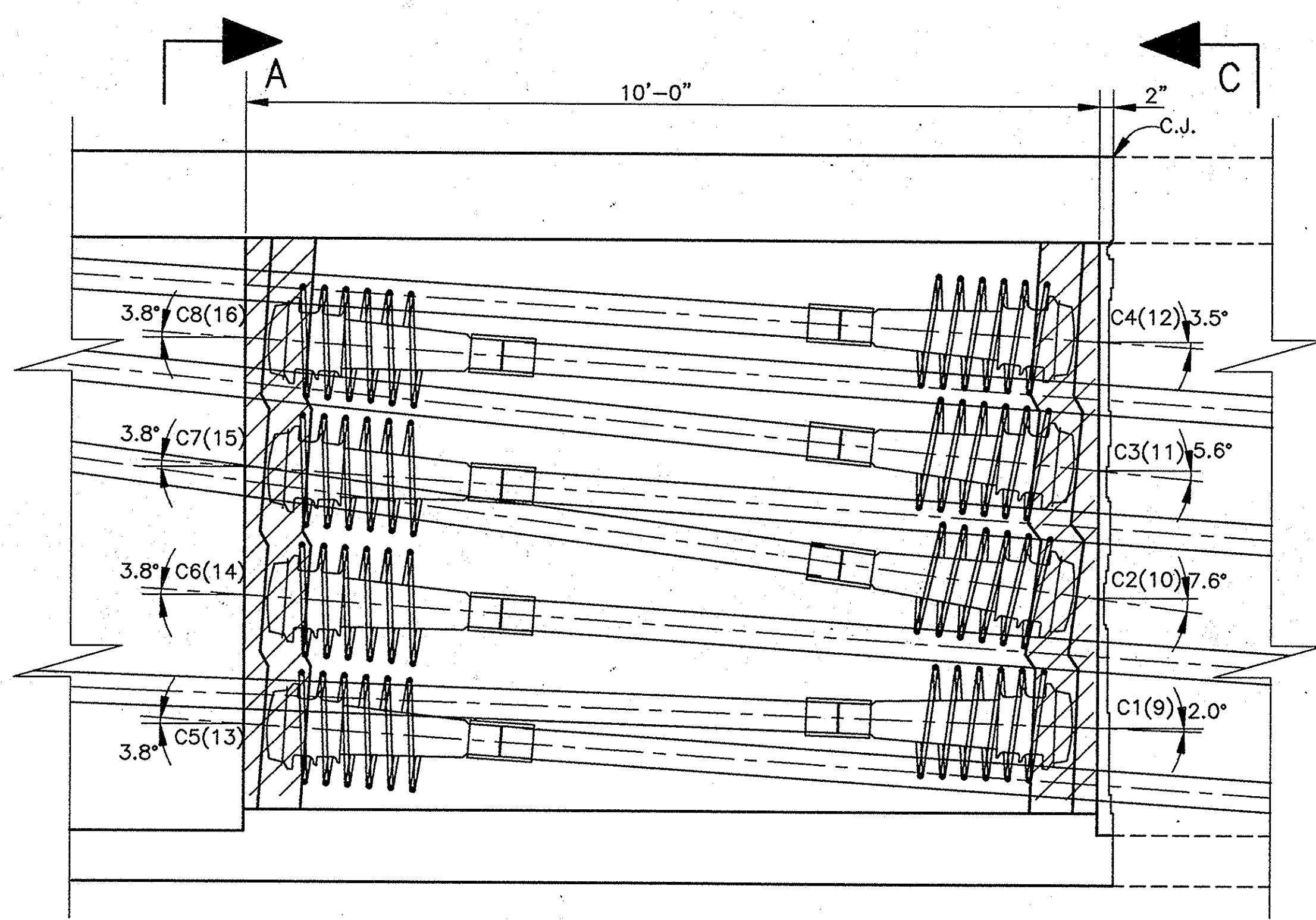
SUBMITTED FOR APPROVAL

DRAWING: - C33 OF C44 SHEET: - 48 OF - 65
PROJECT: - NH-80-1 () 4
CONTRACT NO.
BRIDGE FILE: - I-80-5-7828

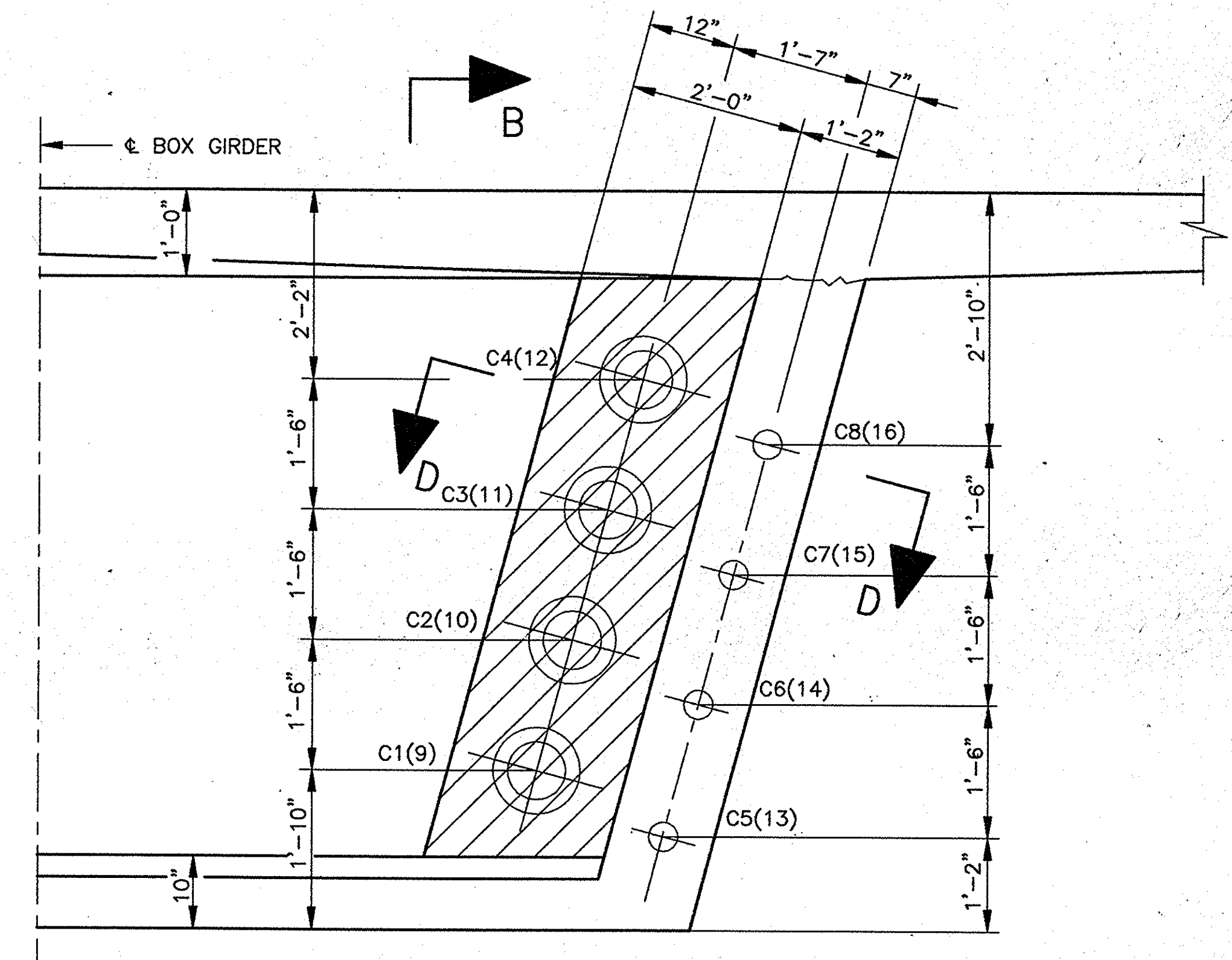




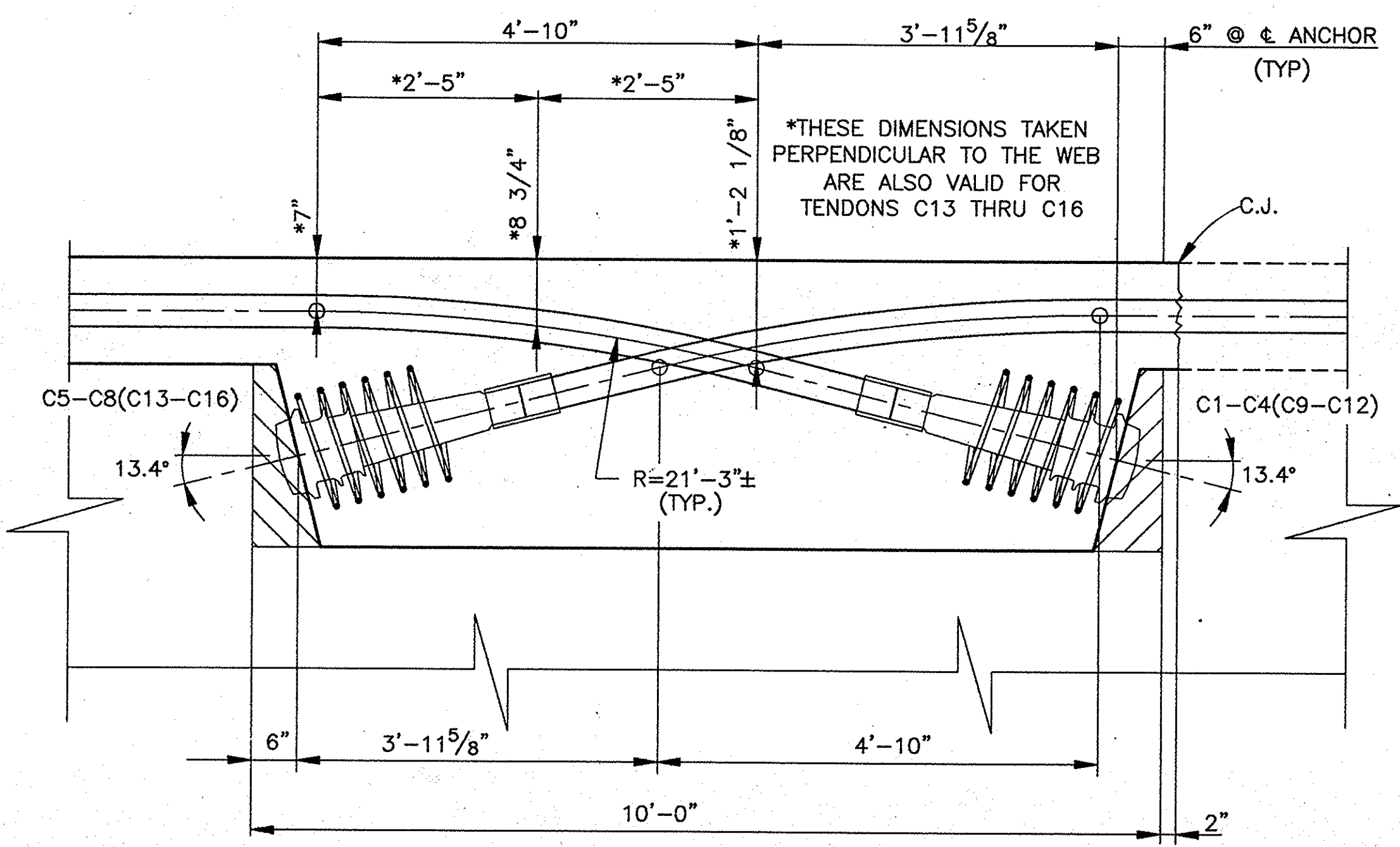
SECTION A-A



SECTION B-B



SECTION C-C



SECTION D-D

ANCHORAGE DETAILS AT STRESSING BLOCK SPAN C & SPAN G

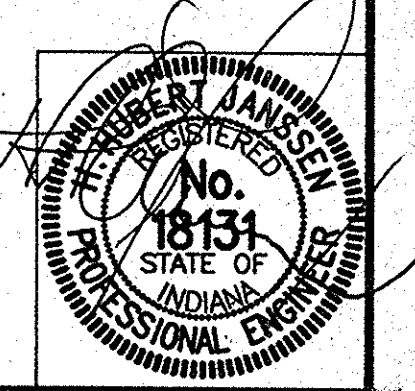
SUPERSTRUCTURE DETAILS - STRESSING BLOCK REINFORCING

INDIANA DEPARTMENT OF TRANSPORTATION
LAKE COUNTY

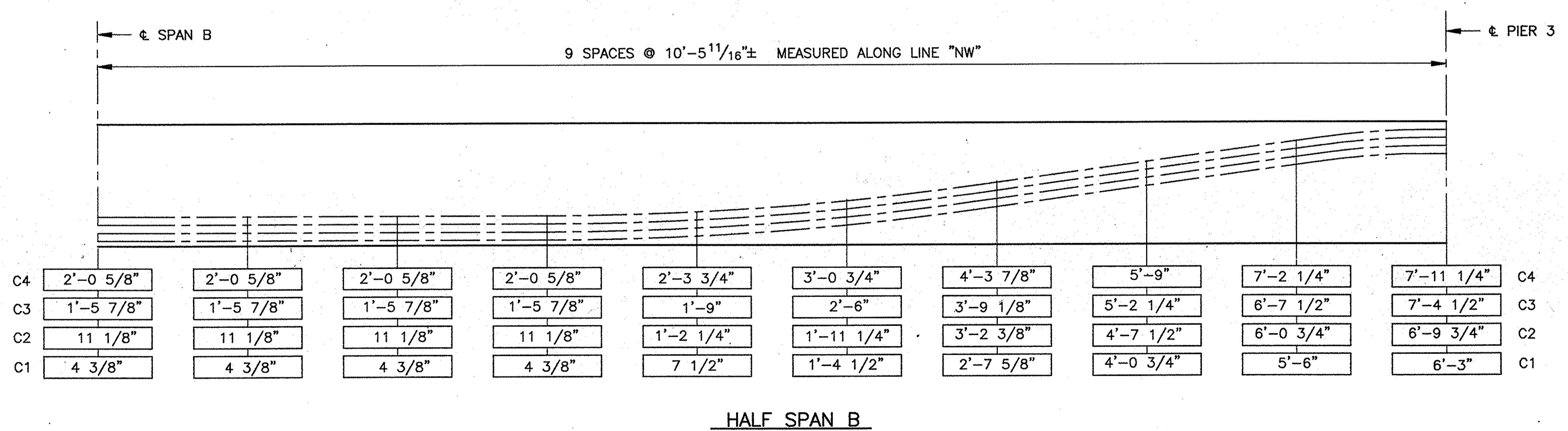
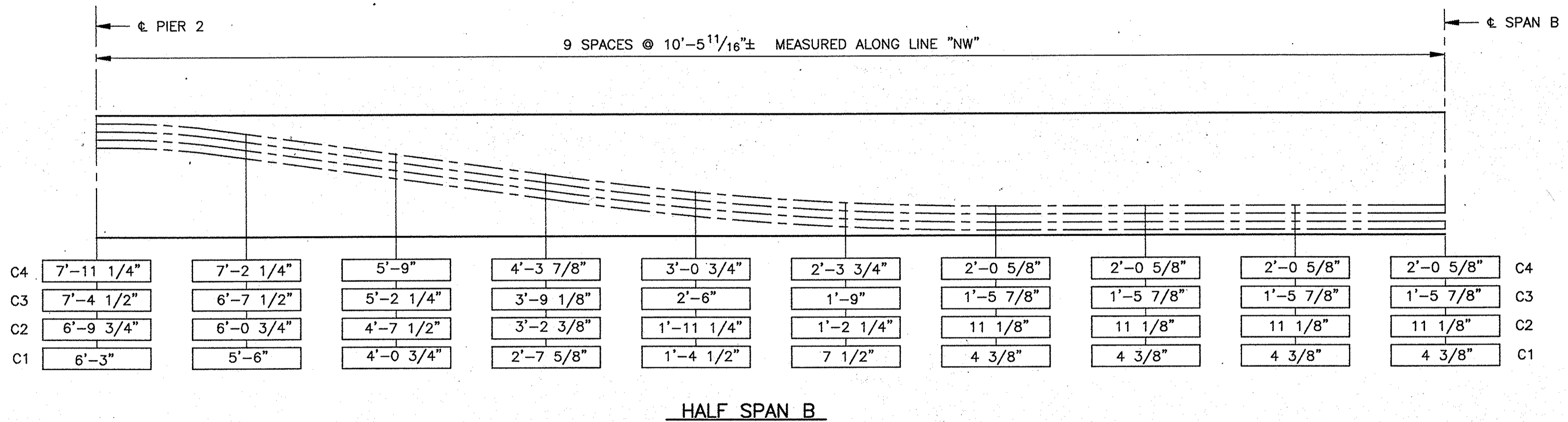
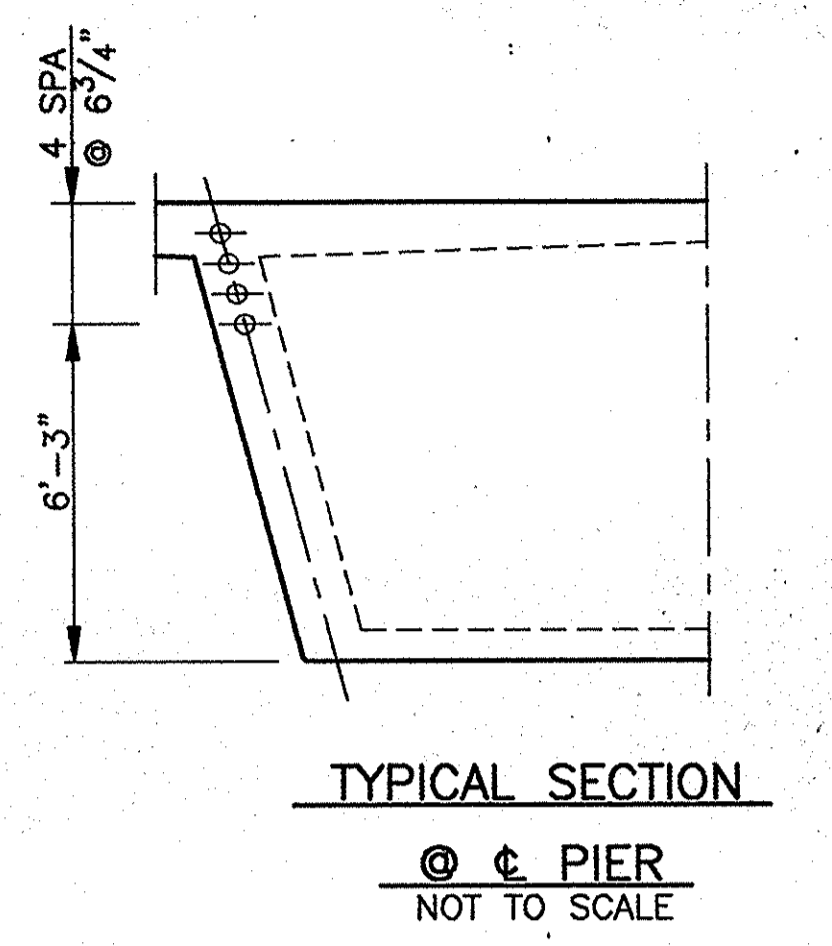
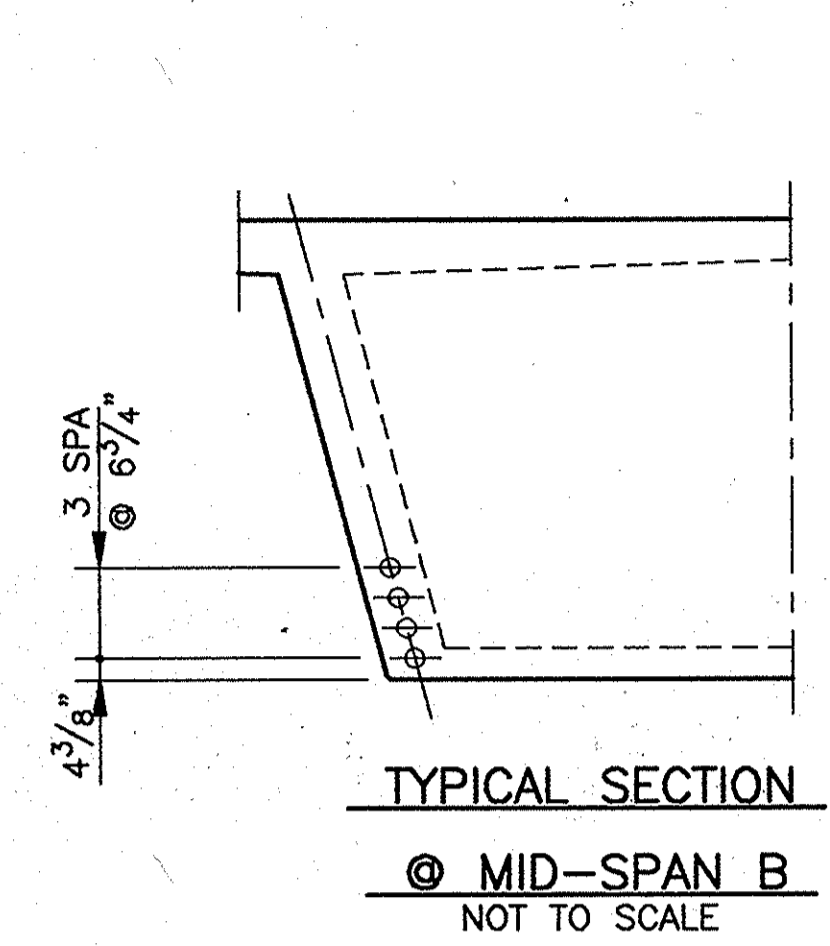
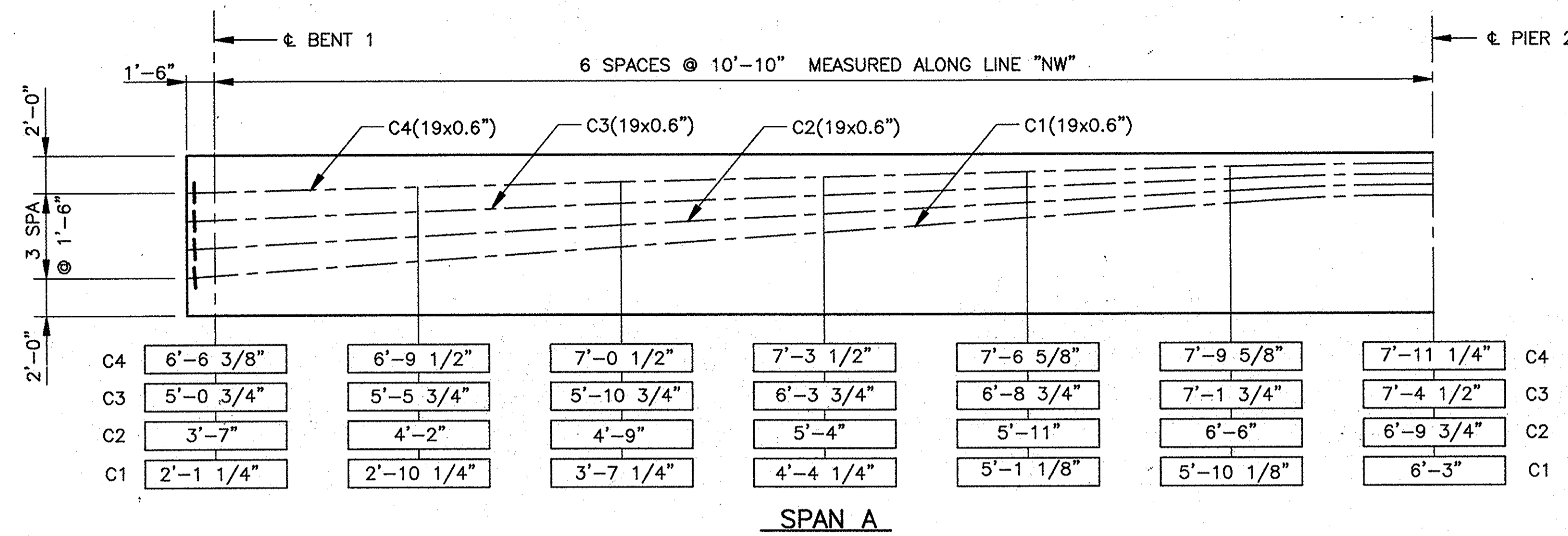
SCALE: - 3/4"=1'-0", UNLESS NOTED DATE: - 5/22/88

SUBMITTED FOR APPROVAL

DRAWING: - C34 OF C44 SHEET: - 49 OF - 65
PROJECT: - - NH-80-1 ()
CONTRACT NO.
BRIDGE FILE: - I-80-5-7828

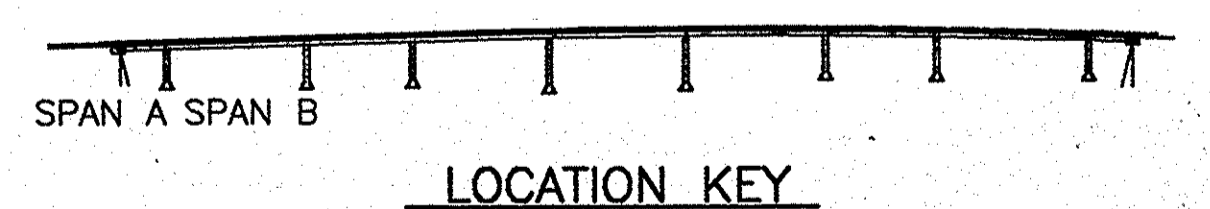


DESIGNED HHJ C'K'D LS
DRAWN TMD C'K'D HHJ
TRACED C'K'D



- TENDON DATA:
1. TENDONS 19'x0.6"
 2. $F_u = 1113.4$ 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 A & B TENDON LAYOUT

INDIANA DEPARTMENT OF TRANSPORTATION
LAKE COUNTY

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

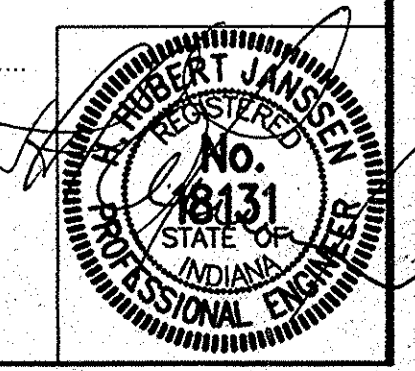
SUBMITTED FOR APPROVAL

DRAWING: - C35 OF C44 SHEET: - 50 OF - 65

PROJECT: - NH-80-1 () 4

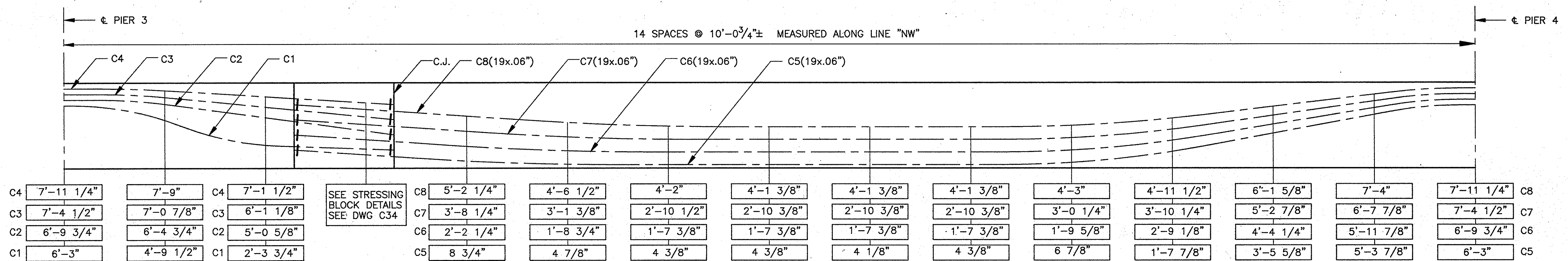
CONTRACT NO.

BRIDGE FILE: - I-80-5-7828



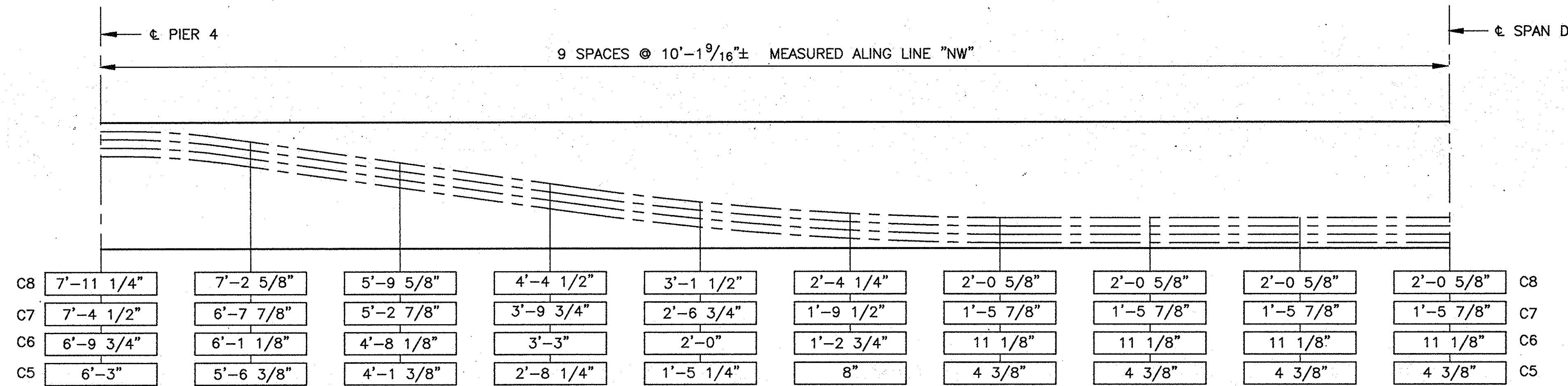
DRAWN BY: TMD, 09/02/97, et. 1455, PLOT: 81464

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



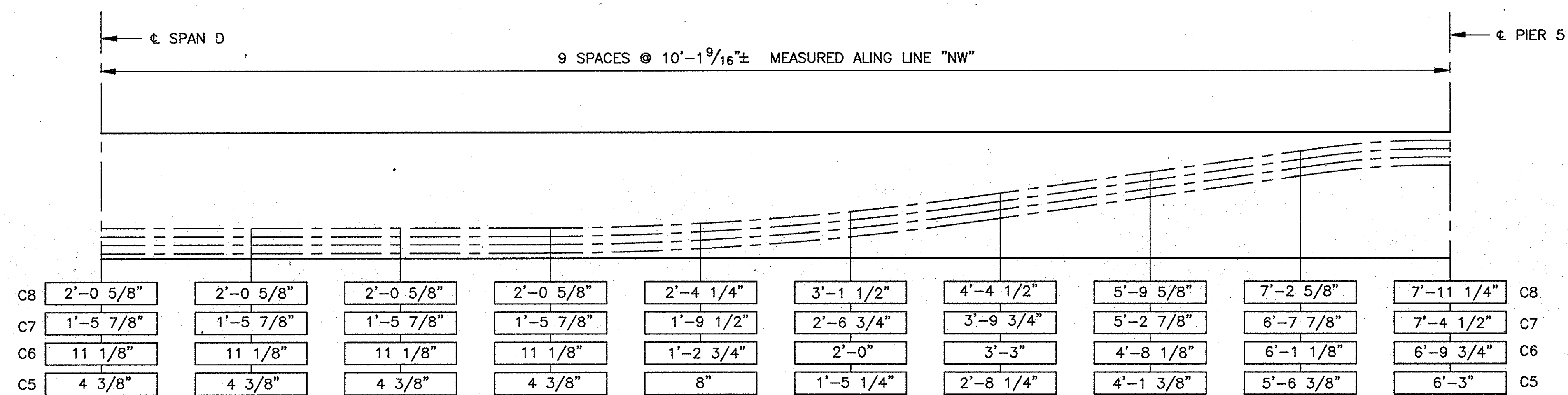
C4	7'-11 1/4"	7'-9"	C4	7'-1 1/2"	C8	5'-2 1/4"	4'-6 1/2"	4'-2"	4'-1 3/8"	4'-1 3/8"	4'-1 3/8"	4'-3"	4'-11 1/2"	6'-1 5/8"	7'-4"	7'-11 1/4"	C8
C3	7'-4 1/2"	7'-0 7/8"	C3	6'-1 1/8"	C7	3'-8 1/4"	3'-1 3/8"	2'-10 1/2"	2'-10 3/8"	2'-10 3/8"	2'-10 3/8"	3'-0 1/4"	3'-10 1/4"	5'-2 7/8"	6'-7 7/8"	7'-4 1/2"	C7
C2	6'-9 3/4"	6'-4 3/4"	C2	5'-0 5/8"	C6	2'-2 1/4"	1'-8 3/4"	1'-7 3/8"	1'-7 3/8"	1'-7 3/8"	1'-7 3/8"	1'-9 5/8"	2'-9 1/8"	4'-4 1/4"	5'-11 7/8"	6'-9 3/4"	C6
C1	6'-3"	4'-9 1/2"	C1	2'-3 3/4"	C5	8 3/4"	4 7/8"	4 3/8"	4 3/8"	4 1/8"	4 3/8"	6 7/8"	1'-7 7/8"	3'-5 5/8"	5'-3 7/8"	6'-3"	C5

SPAN C



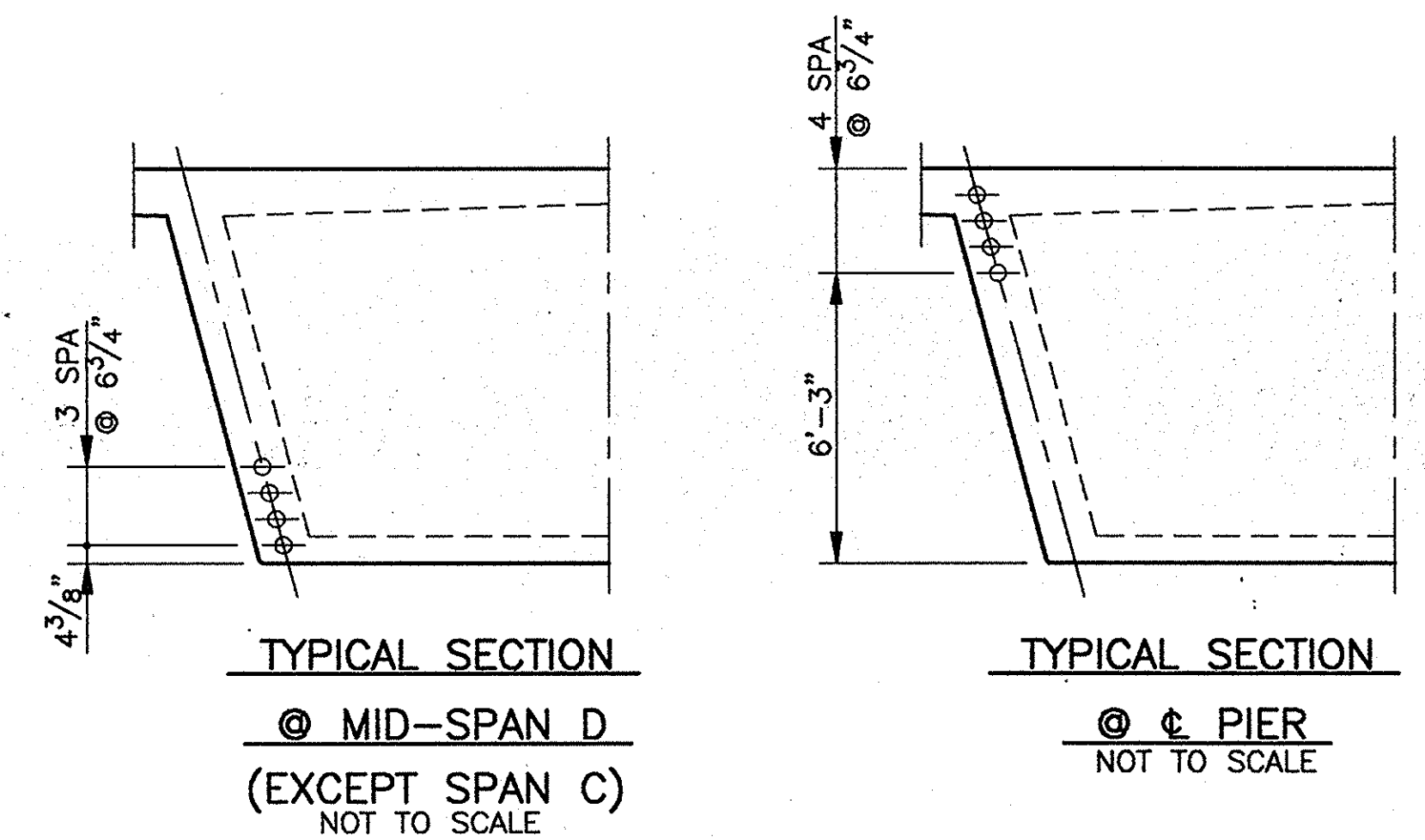
C8	7'-11 1/4"	7'-2 5/8"	5'-9 5/8"	4'-4 1/2"	3'-1 1/2"	2'-4 1/4"	2'-0 5/8"	2'-0 5/8"	2'-0 5/8"	2'-0 5/8"	C8
C7	7'-4 1/2"	6'-7 7/8"	5'-2 7/8"	3'-9 3/4"	2'-6 3/4"	1'-9 1/2"	1'-5 7/8"	1'-5 7/8"	1'-5 7/8"	1'-5 7/8"	C7
C6	6'-9 3/4"	6'-1 1/8"	4'-8 1/8"	3'-3"	2'-0"	1'-2 3/4"	11 1/8"	11 1/8"	11 1/8"	11 1/8"	C6
C5	6'-3"	5'-6 3/8"	4'-1 3/8"	2'-8 1/4"	1'-5 1/4"	8"	4 3/8"	4 3/8"	4 3/8"	4 3/8"	C5

HALF SPAN D



C8	2'-0 5/8"	2'-0 5/8"	2'-0 5/8"	2'-0 5/8"	2'-4 1/4"	3'-1 1/2"	4'-4 1/2"	5'-9 5/8"	7'-2 5/8"	7'-11 1/4"	C8
C7	1'-5 7/8"	1'-5 7/8"	1'-5 7/8"	1'-5 7/8"	1'-9 1/2"	2'-6 3/4"	3'-9 3/4"	5'-2 7/8"	6'-7 7/8"	7'-4 1/2"	C7
C6	11 1/8"	11 1/8"	11 1/8"	11 1/8"	1'-2 3/4"	2'-0"	3'-3"	4'-8 1/8"	6'-1 1/8"	6'-9 3/4"	C6
C5	4 3/8"	4 3/8"	4 3/8"	4 3/8"	8"	1'-5 1/4"	2'-8 1/4"	4'-1 3/8"	5'-6 3/8"	6'-3"	C5

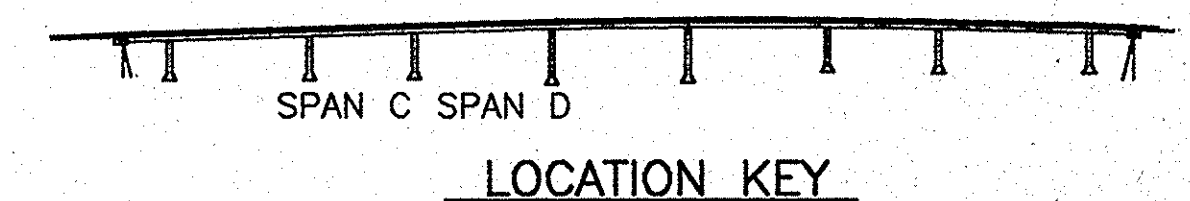
HALF SPAN D



- TENDON DATA:
- TENDONS 19'x0.6"
 - Fu=1113.4 KIPS PER TENDON
 - 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 C & D TENDON LAYOUT

INDIANA DEPARTMENT OF TRANSPORTATION
LAKE COUNTY

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

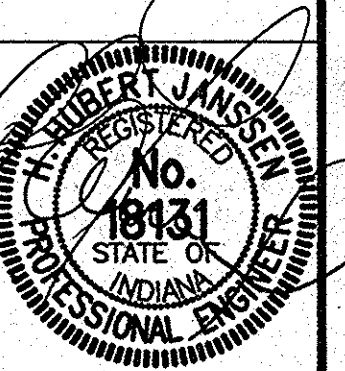
SUBMITTED FOR APPROVAL

DRAWING: - C36 OF C44 SHEET: - 51 OF - 65

PROJECT: - NH-80-1 () 4

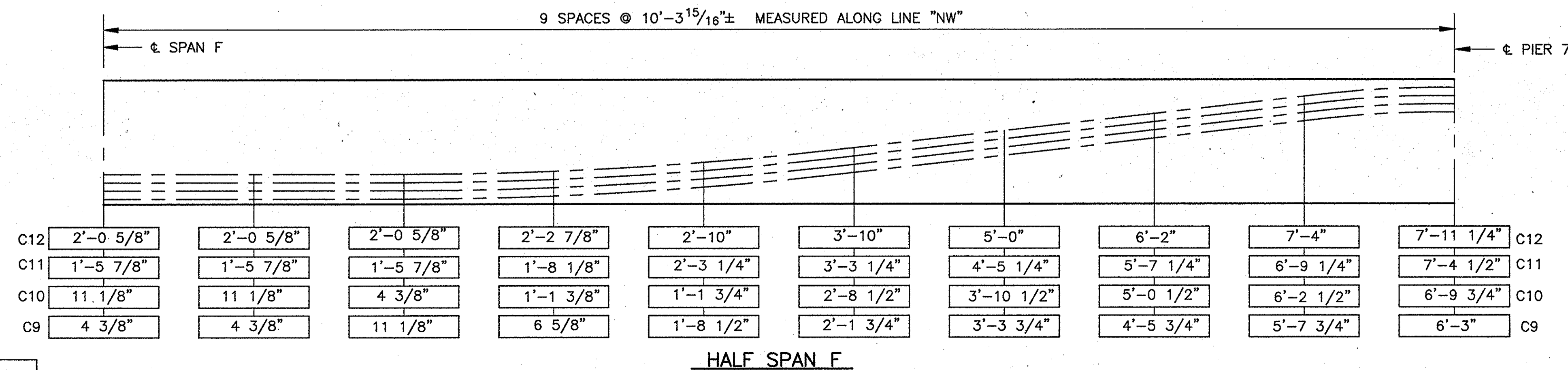
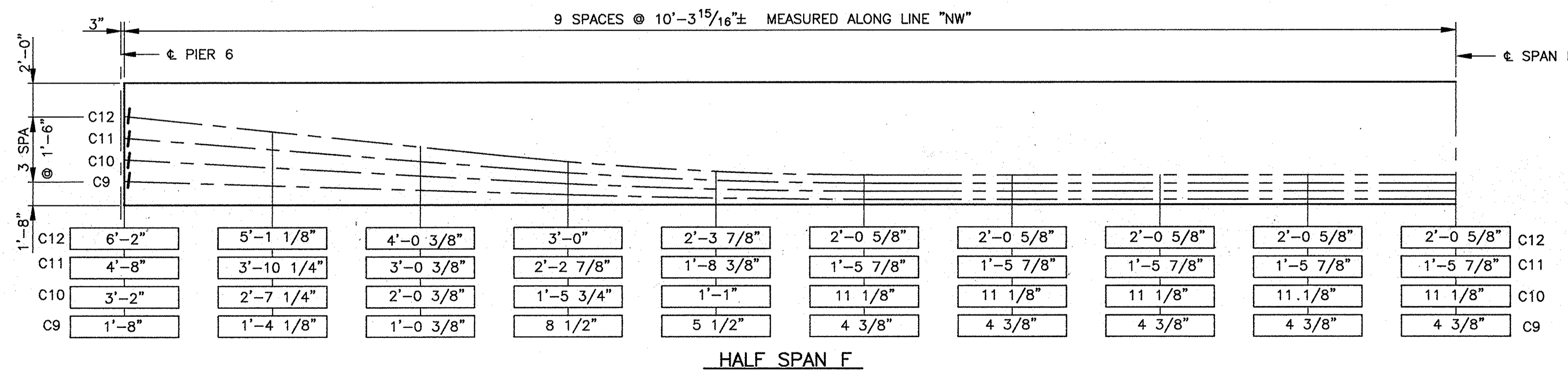
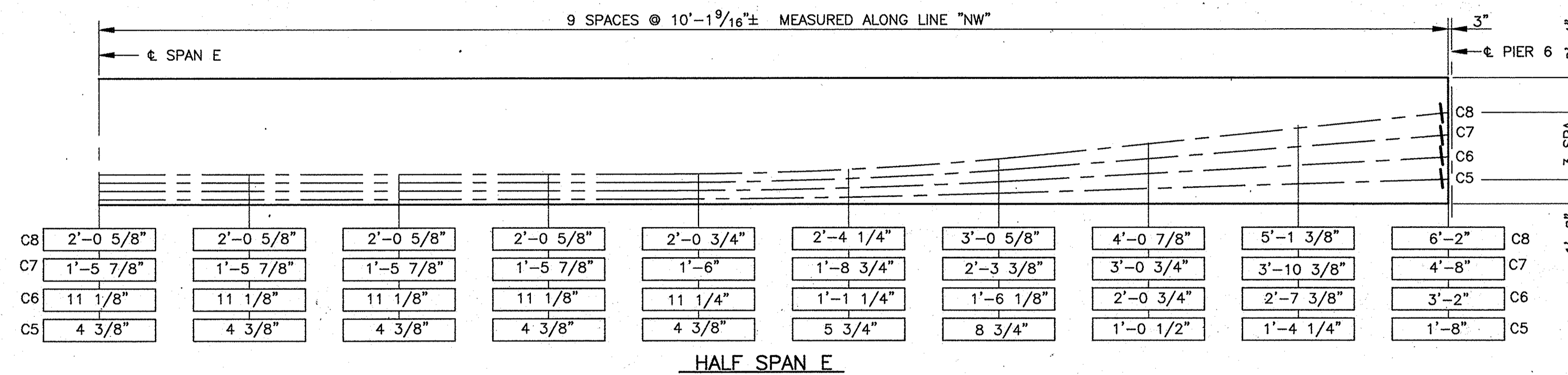
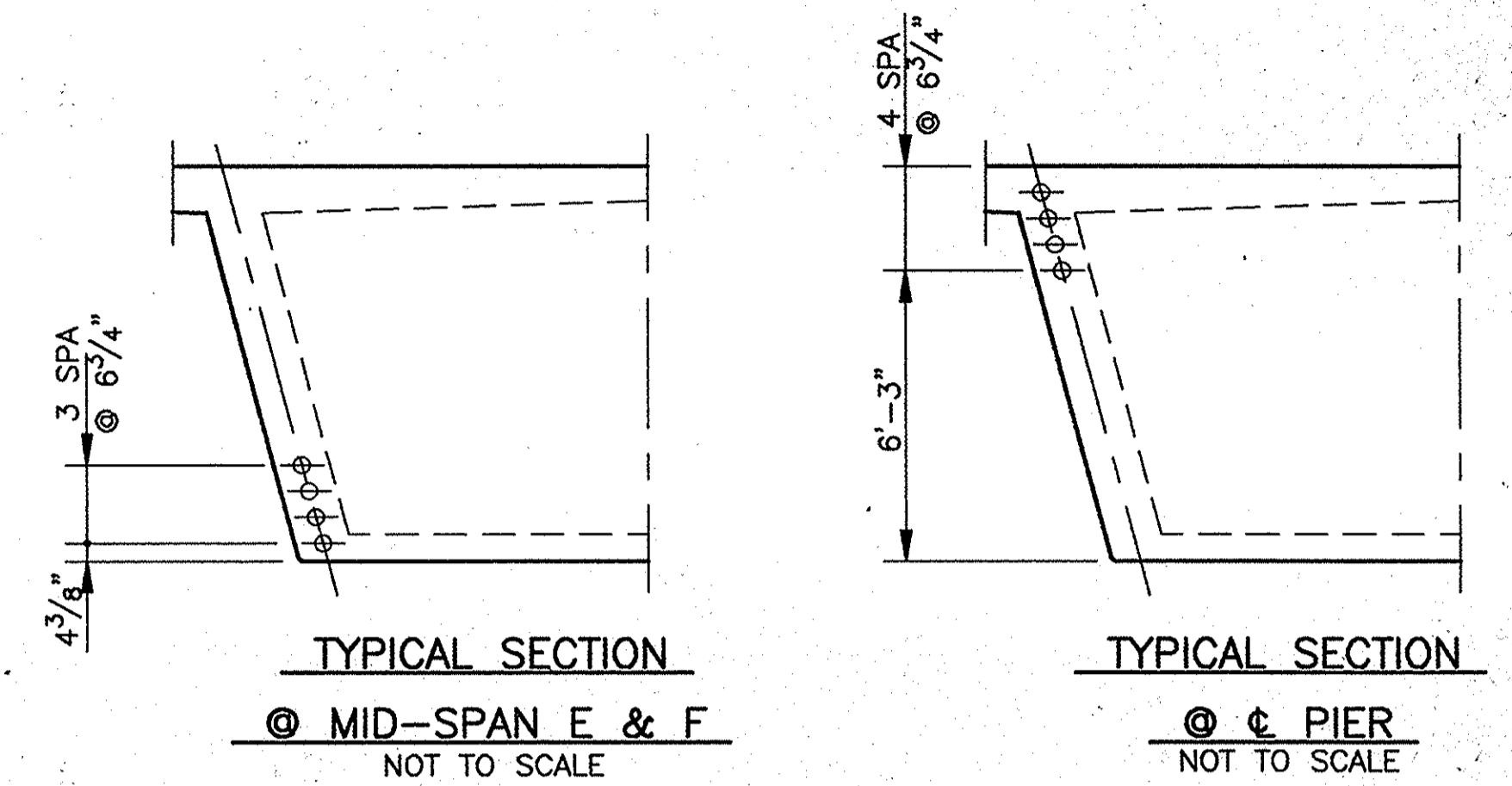
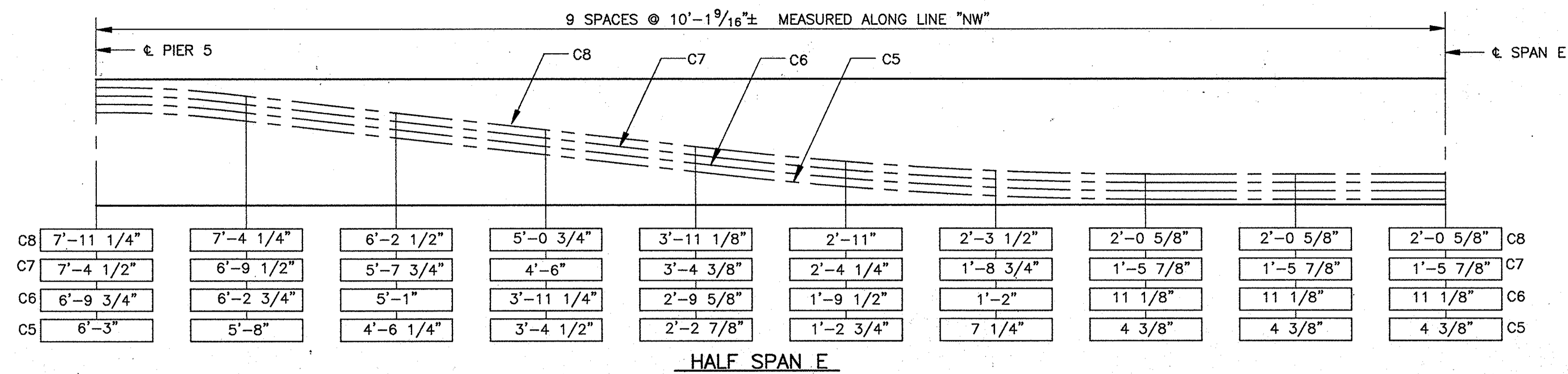
CONTRACT NO.

BRIDGE FILE: - I-80-5-7828



INDIANA DEPARTMENT OF TRANSPORTATION, 09/28/97, et. 1504, PL0101044

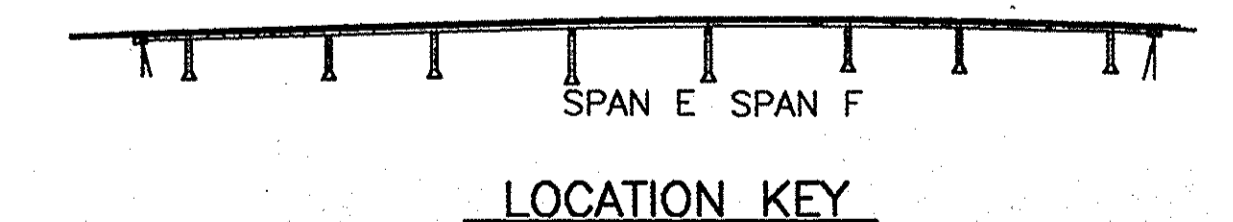
DESIGNED	HHJ	C'K'D	LS
DRAWN	TMD	C'K'D	HHJ
TRACED		C'K'D	



- TENDON DATA:
- TENDONS 19"x0.6"
 - F_u=1113.4 KIPS PER TENDON
 - 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 E & F TENDON LAYOUT

INDIANA DEPARTMENT OF TRANSPORTATION
LAKE COUNTY

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

SUBMITTED FOR APPROVAL

DRAWING: - C37 OF C44 SHEET: - 52 OF - 65

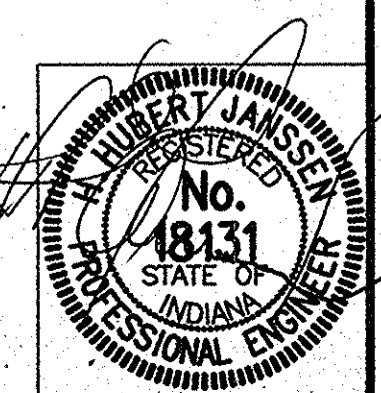
PROJECT: - NH-80-1 ()

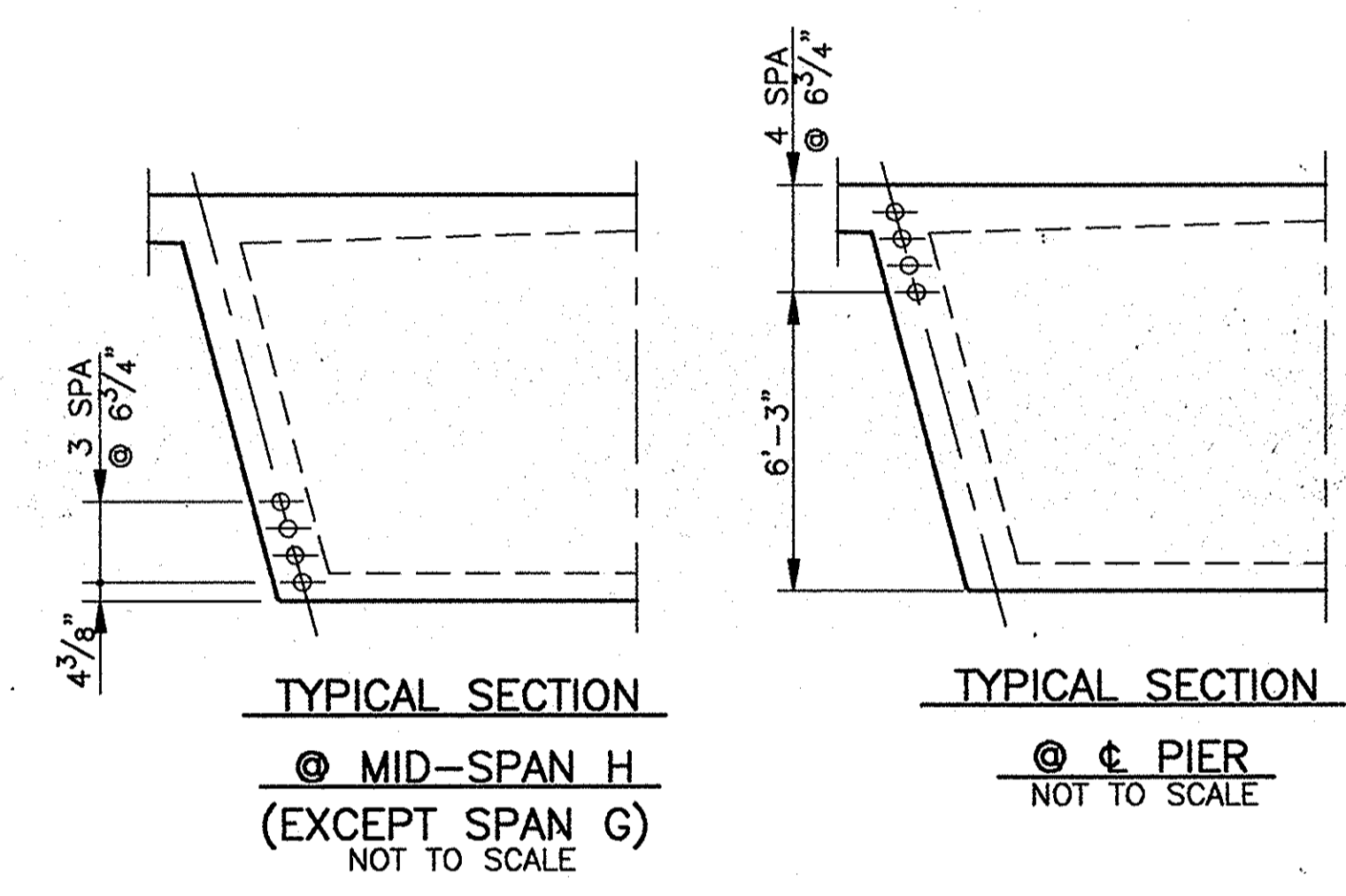
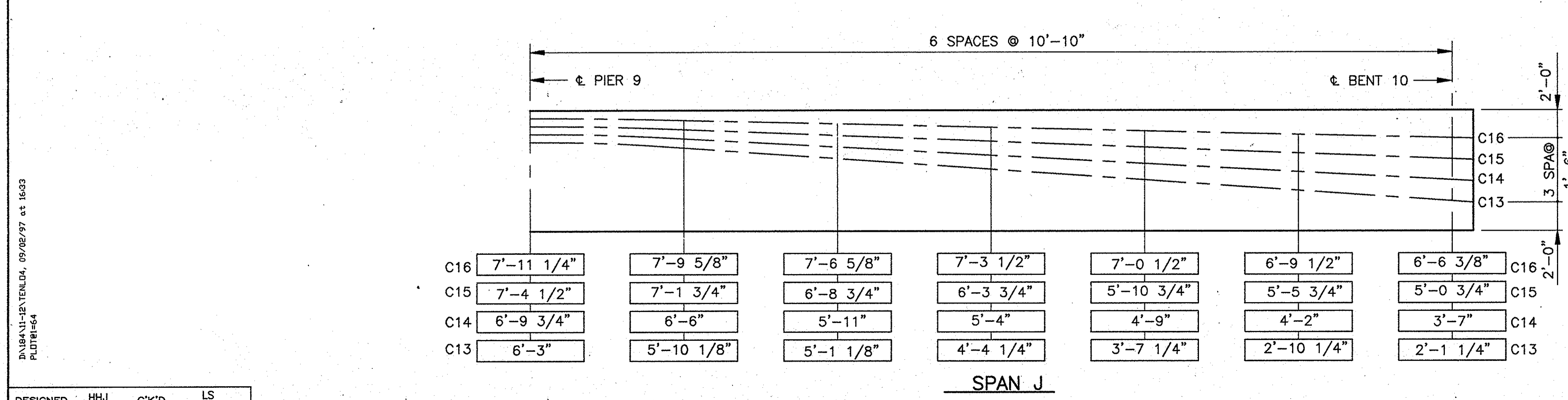
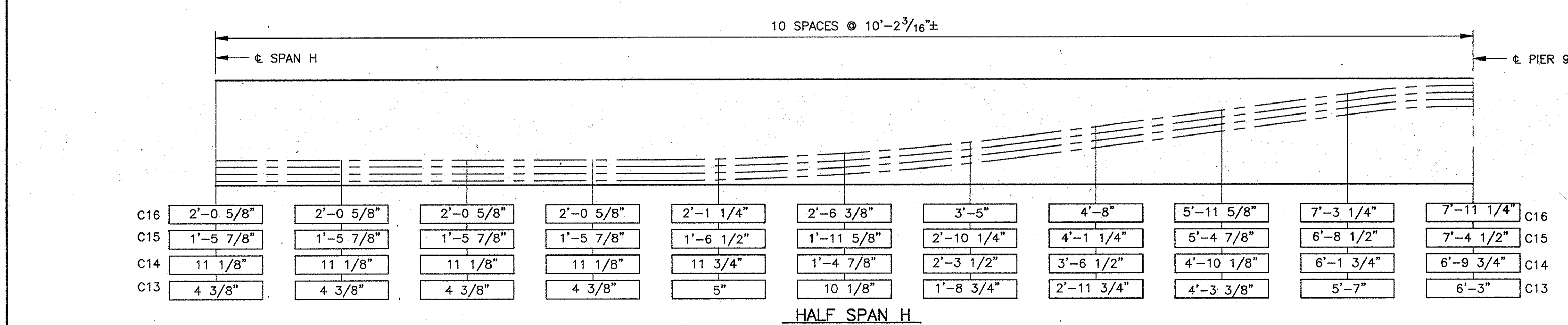
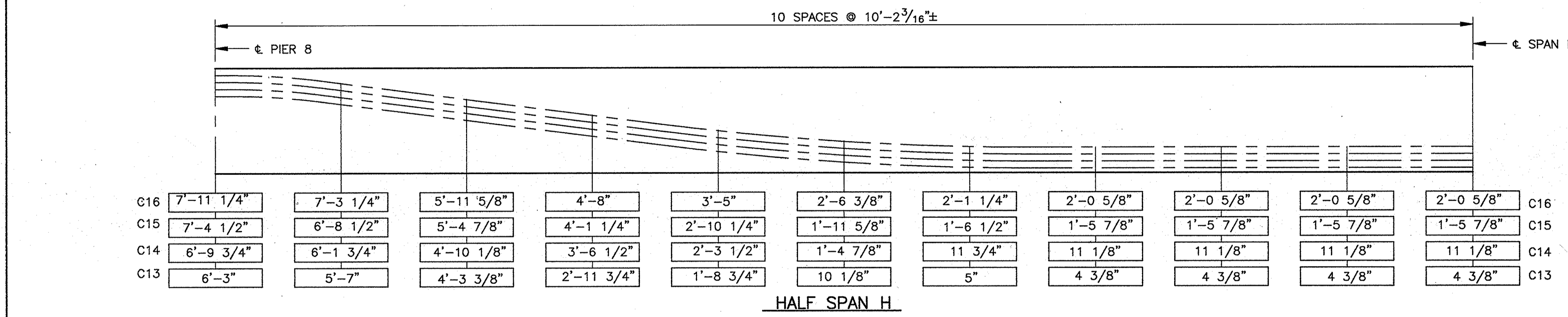
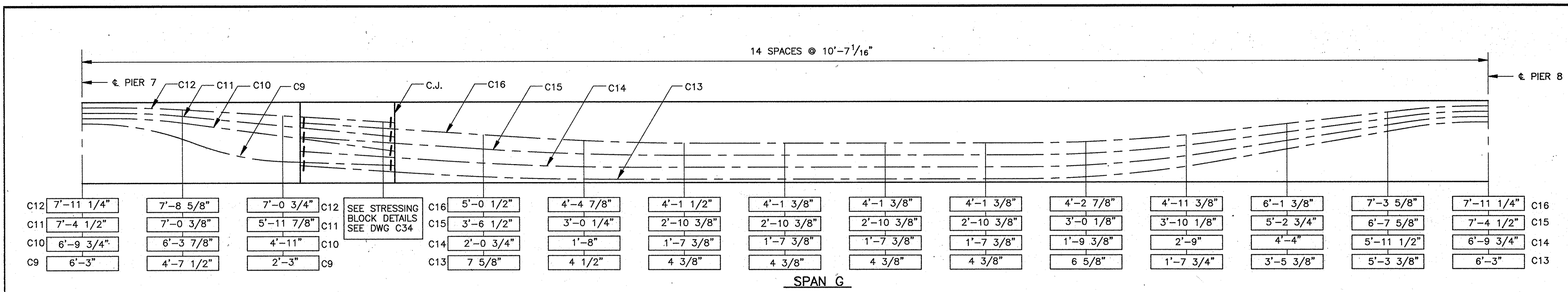
CONTRACT NO.

BRIDGE FILE: - I-80-5-7828

D:\8411-12\TENDL.D 07/02/97 at 16:25

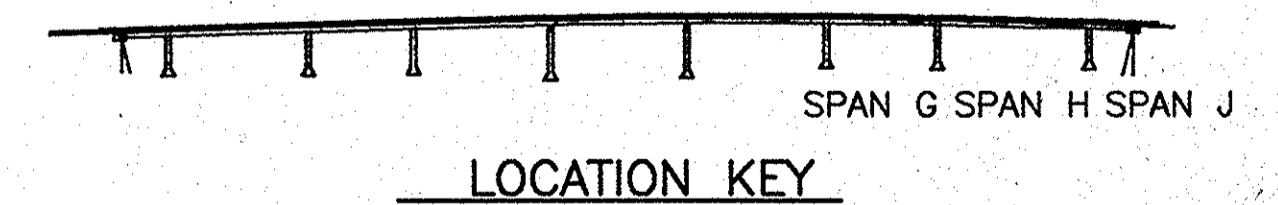
DESIGNED: HHJ C.K.D. LS
DRAWN: TMD C.K.D. HHJ
TRACED: C.K.D.





TENDON DATA:
 1. TENDONS 19"x0.6"
 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 G, H, & J TENDON LAYOUT

INDIANA DEPARTMENT OF TRANSPORTATION
 LAKE COUNTY

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

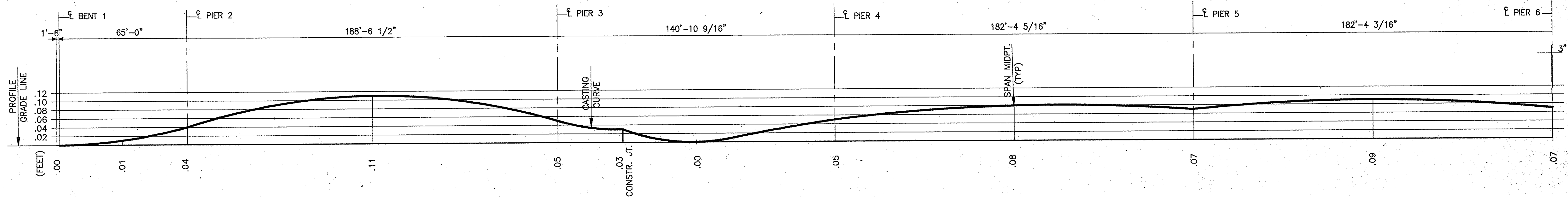
SUBMITTED FOR APPROVAL

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

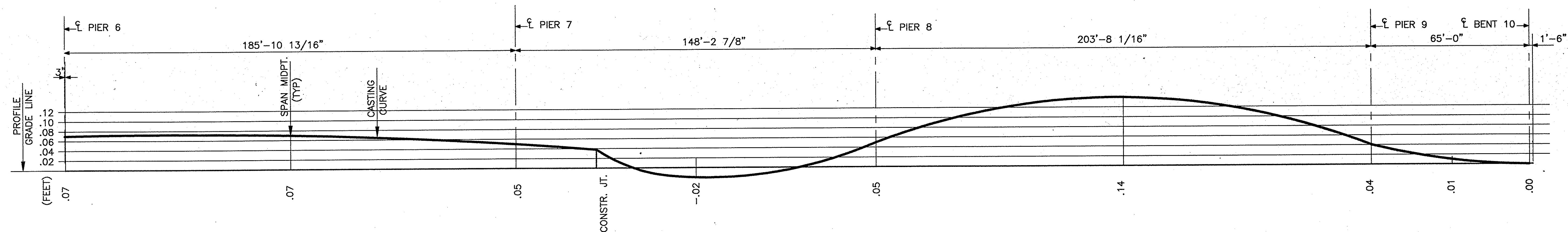
BRIDGE FILE: - I-80-5-7828

REGISTERED PROFESSIONAL ENGINEER
 No. 18131
 STATE OF INDIANA

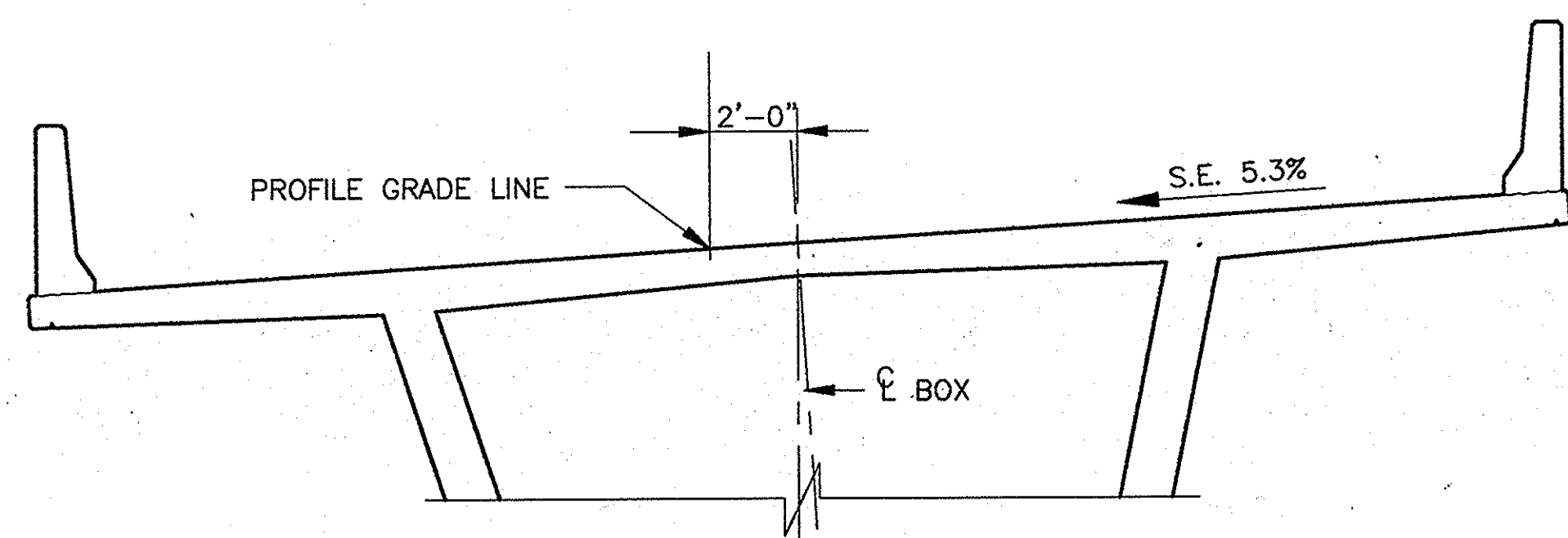
DRAWING EXTENSION, 09/26/97 at 10:53
 PLOT 04



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.

CASTING CURVES

INDIANA DEPARTMENT OF TRANSPORTATION
LAKE COUNTY

SCALE: - NOT TO SCALE

DATE: - 4/22/88

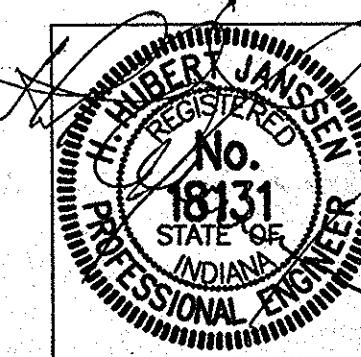
SUBMITTED FOR APPROVAL

DRAWING: - C40 OF C44 SHEET: - 55 OF - 65

PROJECT: - NH-80-1 () 4

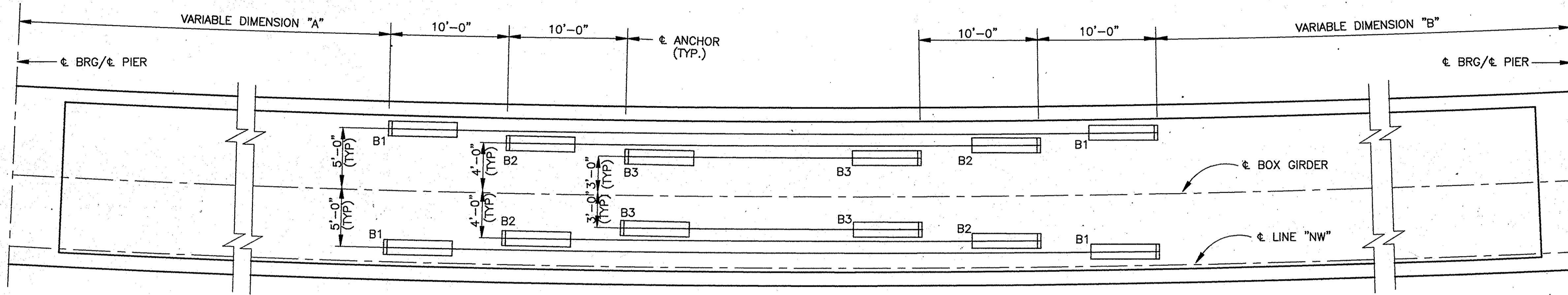
CONTRACT NO.

BRIDGE FILE: - I-80-5-7828

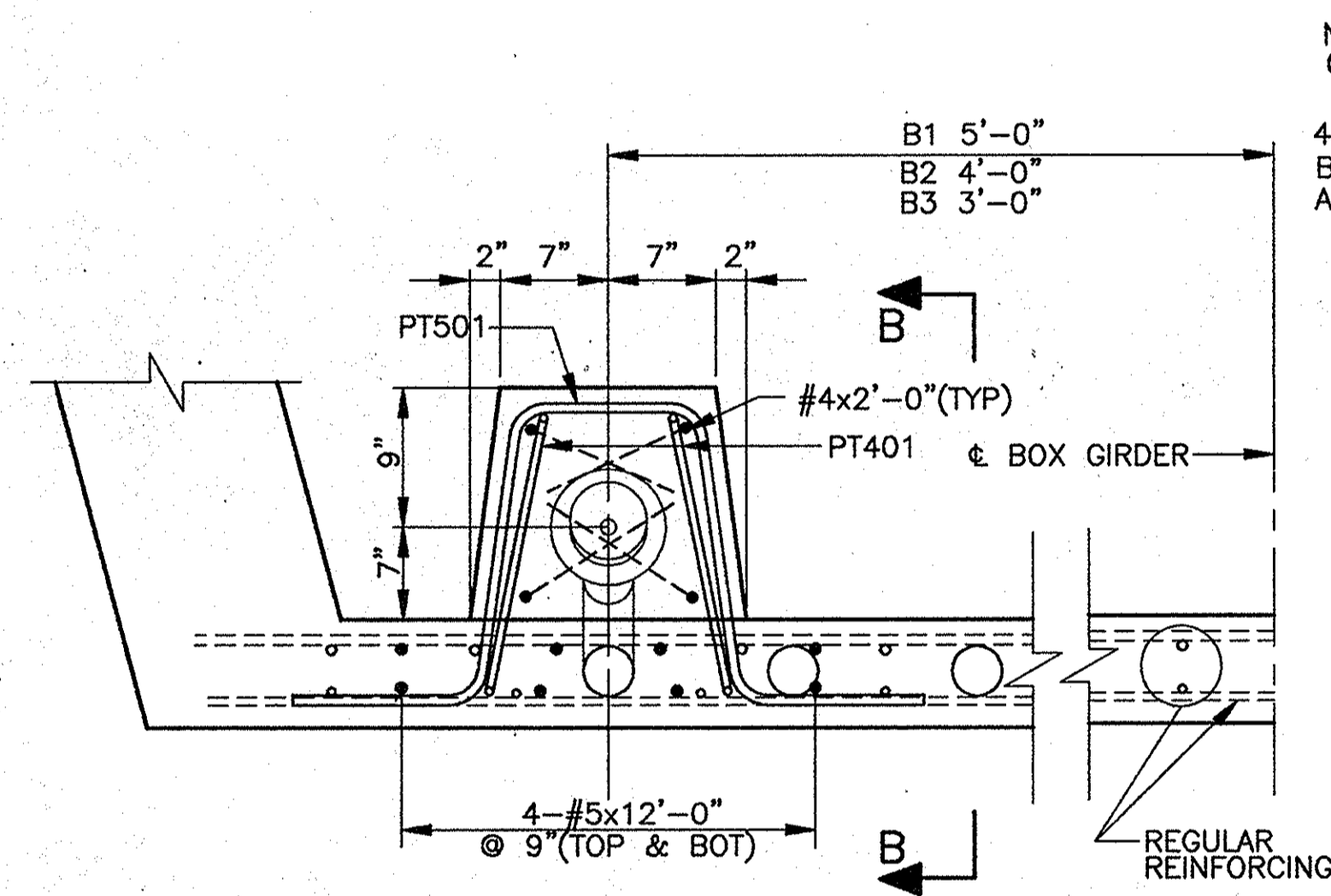


E:\BANKING\CURVE11-12_05/12/97 at 09:23

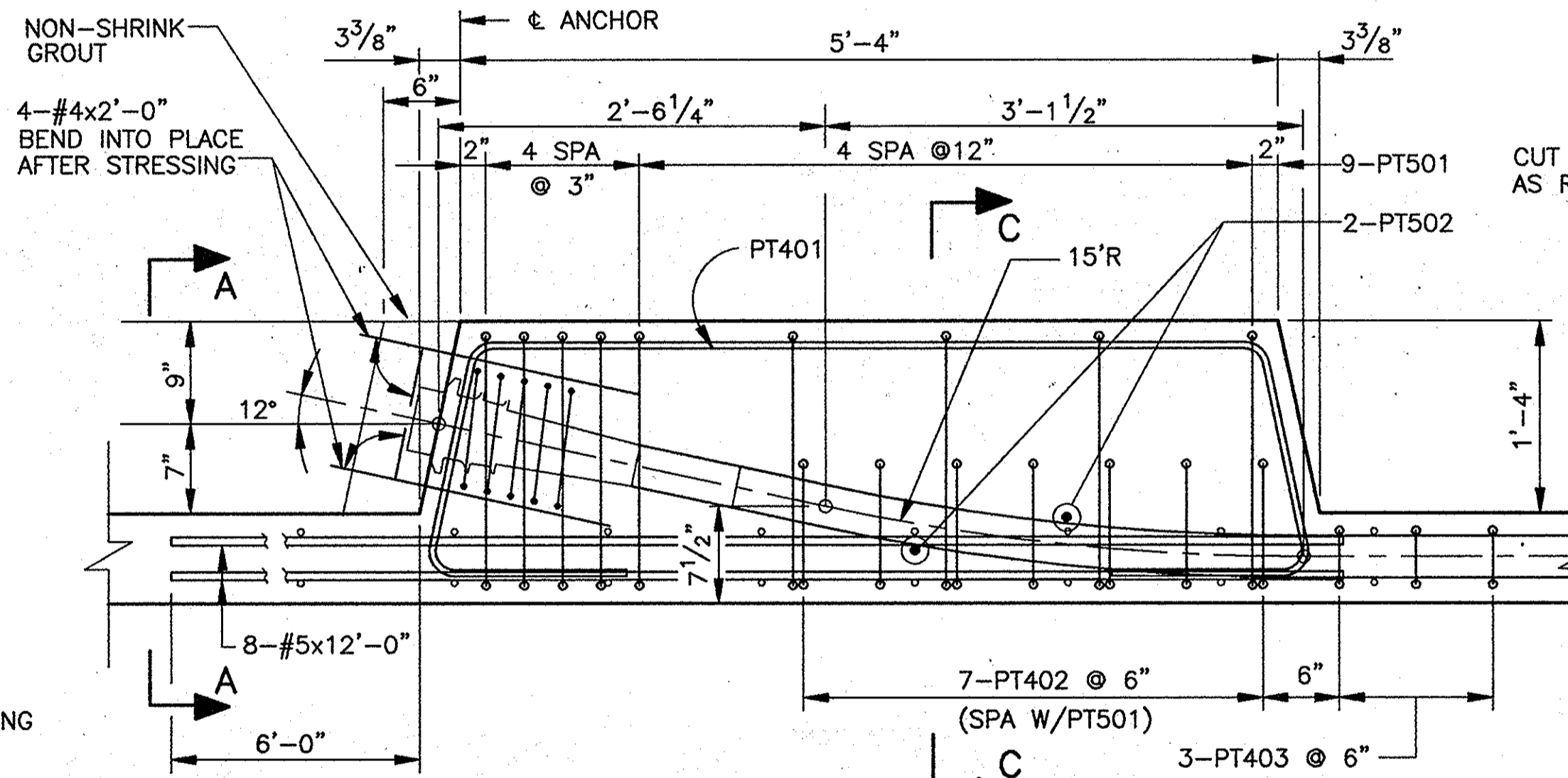
DESIGNED	HHJ	C'K'D	LS
DRAWN	JLH	C'K'D	HHJ
TRACED		C'K'D	



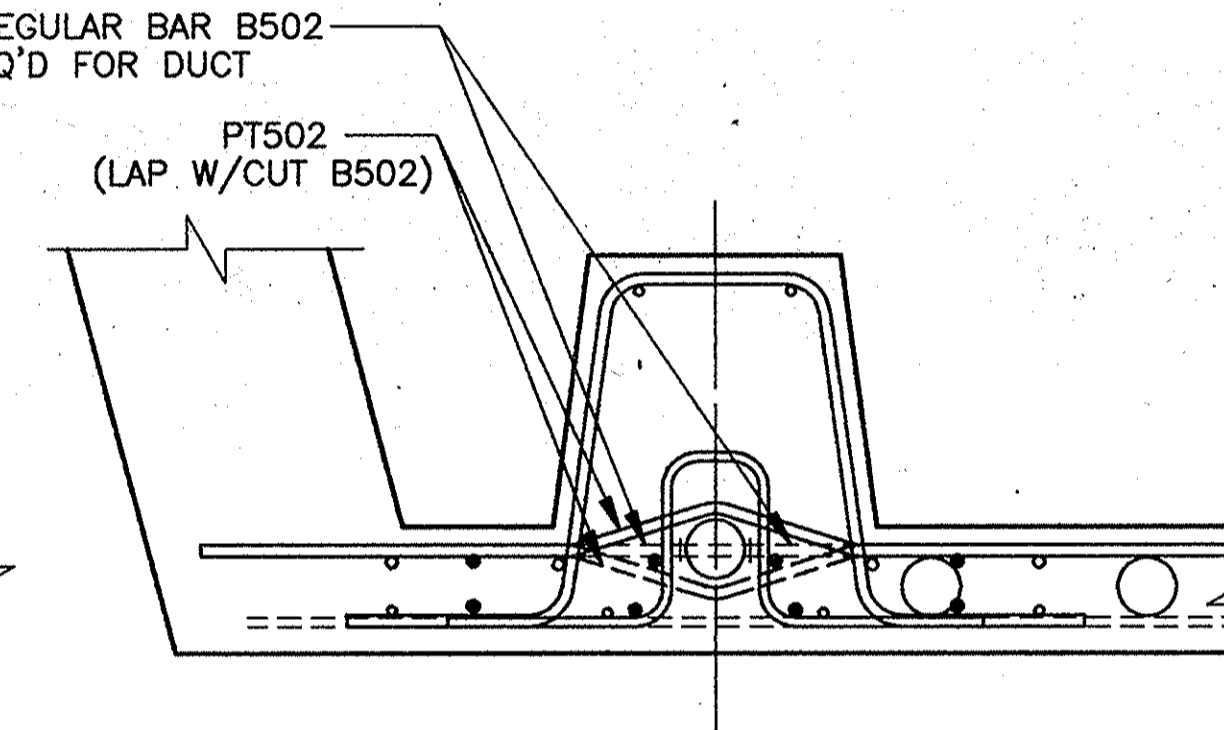
PLAN BOTTOM SLAB



SECTION A-A



SECTION B-B



SECTION C-C

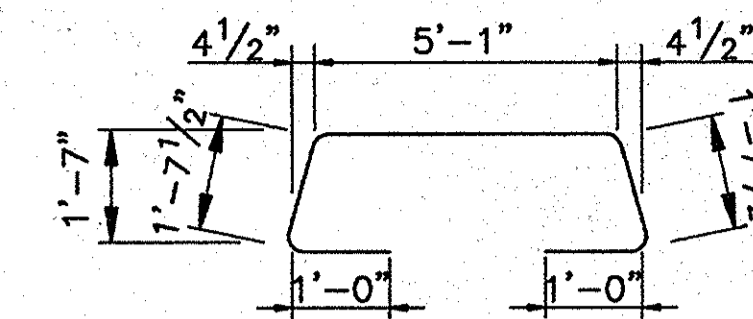
ANCHORAGE DETAILS

STRESSING INSTRUCTIONS LONGITUDINAL POST-TENSIONING								
TENDON	STRESSING END	ELONGATION BEFORE SET (FT)	ELONGATION AFTER SET (FT)	SET (FT)	JACK FORCE (KIPS)	APPROX. TENDON LENGTH (FT)	TENDON TO BE STRESSED AT	STRESSING SEQUENCE
C1	S	1'-11 7/8"	1'-11 1/8"	3/8"	862	286'-4 3/4"	BOTH ENDS	2
C2	N	1'-11 7/8"	1'-11 1/8"	3/8"	888	286'-2 3/8"	BOTH ENDS	1
C3	S	1'-11 7/8"	1'-11 1/8"	3/8"	862	286'-0"	BOTH ENDS	3
C4	N	1'-11 7/8"	1'-11 1/8"	3/8"	883	286'-0"	BOTH ENDS	4
C5	S	3'-2 1/2"	3'-1 3/4"	3/8"	868	482'-2 3/8"	BOTH ENDS	7
C6	N	3'-2 1/2"	3'-1 3/4"	3/8"	863	482'-2 3/8"	BOTH ENDS	6
C7	S	3'-2 5/8"	3'-1 7/8"	3/8"	866	482'-2 3/8"	BOTH ENDS	8
C8	N	3'-2 5/8"	3'-1 7/8"	3/8"	869	482'-2 3/8"	BOTH ENDS	9
C9	S	3'-2 3/4"	3'-2"	3/8"	863	482'-2 3/8"	BOTH ENDS	10
C10	N	3'-2 3/4"	3'-2"	3/8"	872	482'-2 3/8"	BOTH ENDS	11
B1(SPAN B)		6 3/8"	6"	3/8"	414	72'-6"	ALTERNATE ENDS	5
B1(SPAN D)		7 3/4"	7 3/8"	3/8"	410	88'-6"	ALTERNATE ENDS	10
B2(SPAN D)		6 1/4"	5 7/8"	3/8"	415	88'-8"	ALTERNATE ENDS	11
B3(SPAN D)		7"	6 5/8"	3/8"	412	79'-10 3/4"	ALTERNATE ENDS	12

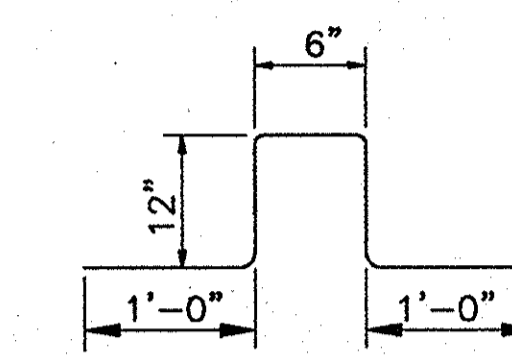
N=NORTH
S=SOUTH

STRESSING INSTRUCTIONS LONGITUDINAL POST-TENSIONING								
TENDON	STRESSING END	ELONGATION BEFORE SET (FT)	ELONGATION AFTER SET (FT)	SET (FT)	JACK FORCE (KIPS)	APPROX. TENDON LENGTH (FT)	TENDON TO BE STRESSED AT	STRESSING SEQUENCE
C9	N	1'-5 7/8"	1'-5 1/2"	3/8"	888	218'-8 3/8"	ONE END	2
C10	N	1'-5 7/8"	1'-5 1/2"	3/8"	885	218'-7 1/4"	ONE END	1
C11	N	1'-5 7/8"	1'-5 1/2"	3/8"	882	218'-7 1/4"	ONE END	3
C12	N	1'-5 7/8"	1'-5 1/2"	3/8"	878	218'-7 1/4"	ONE END	4
C13	S	2'-8"	2'-7 1/4"	3/8"	866	393'-4 3/4"	BOTH ENDS	9
C14	N	2'-8"	2'-7 1/4"	3/8"	862	393'-3 5/8"	BOTH ENDS	8
C15	S	2'-8 1/8"	2'-7 3/8"	3/8"	865	393'-1 1/4"	BOTH ENDS	10
C16	N	2'-8 1/8"	2'-7 3/8"	3/8"	862	393'-0"	BOTH ENDS	11
B1(SPAN F)		8 5/8"	8 1/4"	3/8"	408	103'-7 1/4"	ALTERNATE ENDS	5
B2(SPAN F)		7 1/8"	6 3/4"	3/8"	412	83'-7 1/4"	ALTERNATE ENDS	6
B3(SPAN F)		5 5/8"	5 1/4"	3/8"	418	63'-7 1/4"	ALTERNATE ENDS	7
B1(SPAN H)		10 1/8"	9 3/4"	3/8"	406	117'-9 5/8"	ALTERNATE ENDS	12
B2(SPAN H)		8 1/2"	8 1/8"	3/8"	408	97'-9 5/8"	ALTERNATE ENDS	13
B3(SPAN H)		6 7/8"	6 1/2"	3/8"	413	77'-9 5/8"	ALTERNATE ENDS	14

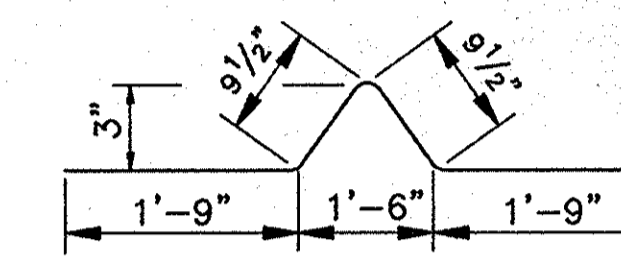
N=NORTH
S=SOUTH



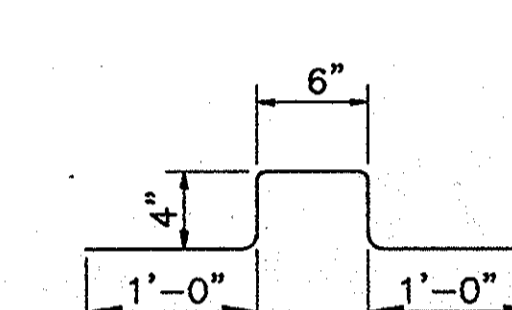
PT401 x 10'-4"



PT402 x 4'-6"



PT502 x 5'-1"



PT403 x 3'-2"

BILL OF MATERIALS

EPOXY COATED STEEL GRADE 60			
Size And Mark	No. Of Bars	Length (Feet)	Weight (Lbs.)
PT501	360	6'-4"	
PT502	80	5'-1"	
#5	320	12'-0"	
TOTAL #5			6806
PT401	80	10'-4"	
PT402	280	4'-6"	
PT403	120	3'-2"	
#4	160	2'-0"	
TOTAL #4			1862
TOTAL REINFORCING STEEL			8667
SUPERSTRUCTURE CONCRETE			
40 BLOCKS			14.7 Cy

TOTAL QUANTITIES				
TENDON	NO. OF TENDONS	NO. OF ANCHORS	LENGTH(NET) DUCT	0.6"Ø STRAND
			LFT	LBS
19 *6	32	64	23310	155242
9 *6	20	40	1707	11370

WEB TENDONS:

1. TENDONS: 19x.06" STRANDS
2. Fu = 1113.4 KIPS PER TENDON
3. DUCTS: 4" I.D. (4 1/4" O.D.)

BOTTOM SLAB TENDONS:

1. TENDONS: 9x.06" STRANDS
2. Fu = 527.4 KIPS PER TENDON
3. DUCTS: 3" I.D. (3 1/4" O.D.)

LOCATION CHART

SPAN	TENDONS STRESSED	VAR. DIM.	
		A	B
A	-	-	-
B	B1	57'-0"	68'-0"
C	-	-	-
D	B1	44'-0"	58'-0"
E	B1 B2	53'-0"	55'-0"
F	B1 B2 B3	38'-0"	57'-0"
G	-	-	-
H	B1 B2 B3	39'-0"	68'-0"
J	-	-	-

SUPERSTRUCTURE DETAILS -
BOTTOM SLAB TENDON LAYOUT

INDIANA DEPARTMENT OF TRANSPORTATION
LAKE COUNTY

SCALE: - 3/16"=1'-0", UNLESS NOTED DATE: - July 10, 1988

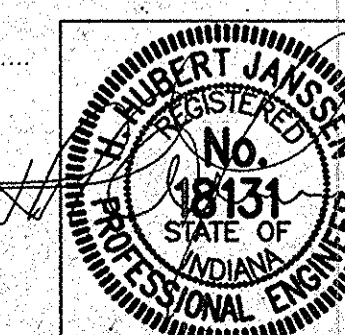
SUBMITTED FOR APPROVAL

DRAWING: - C39 OF C44 SHEET: - 54 OF 65

PROJECT: - NH-80-1 () 4

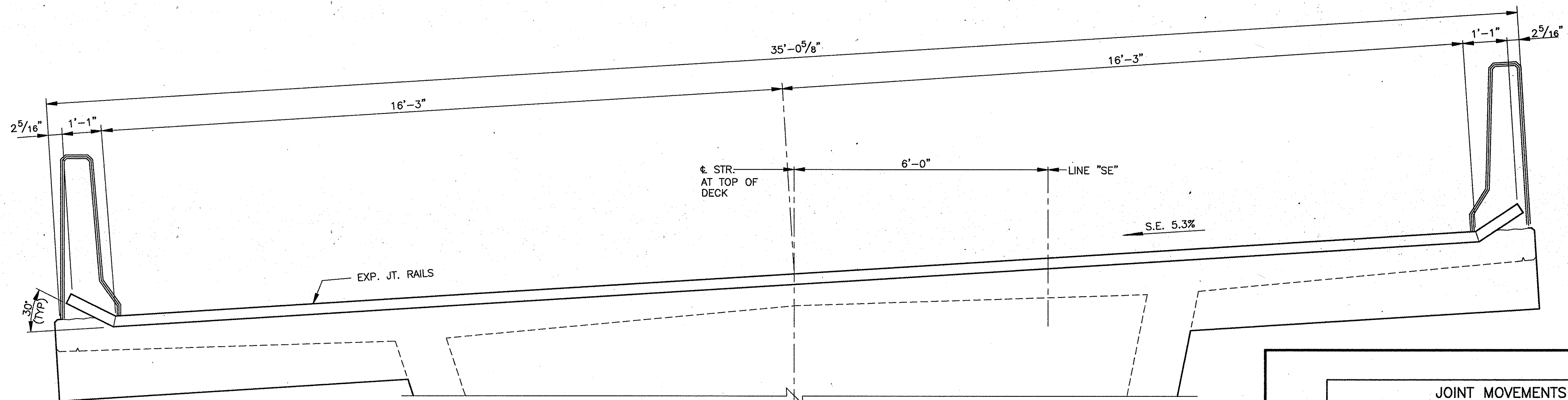
CONTRACT NO.

BRIDGE FILE: - I-80-5-7828

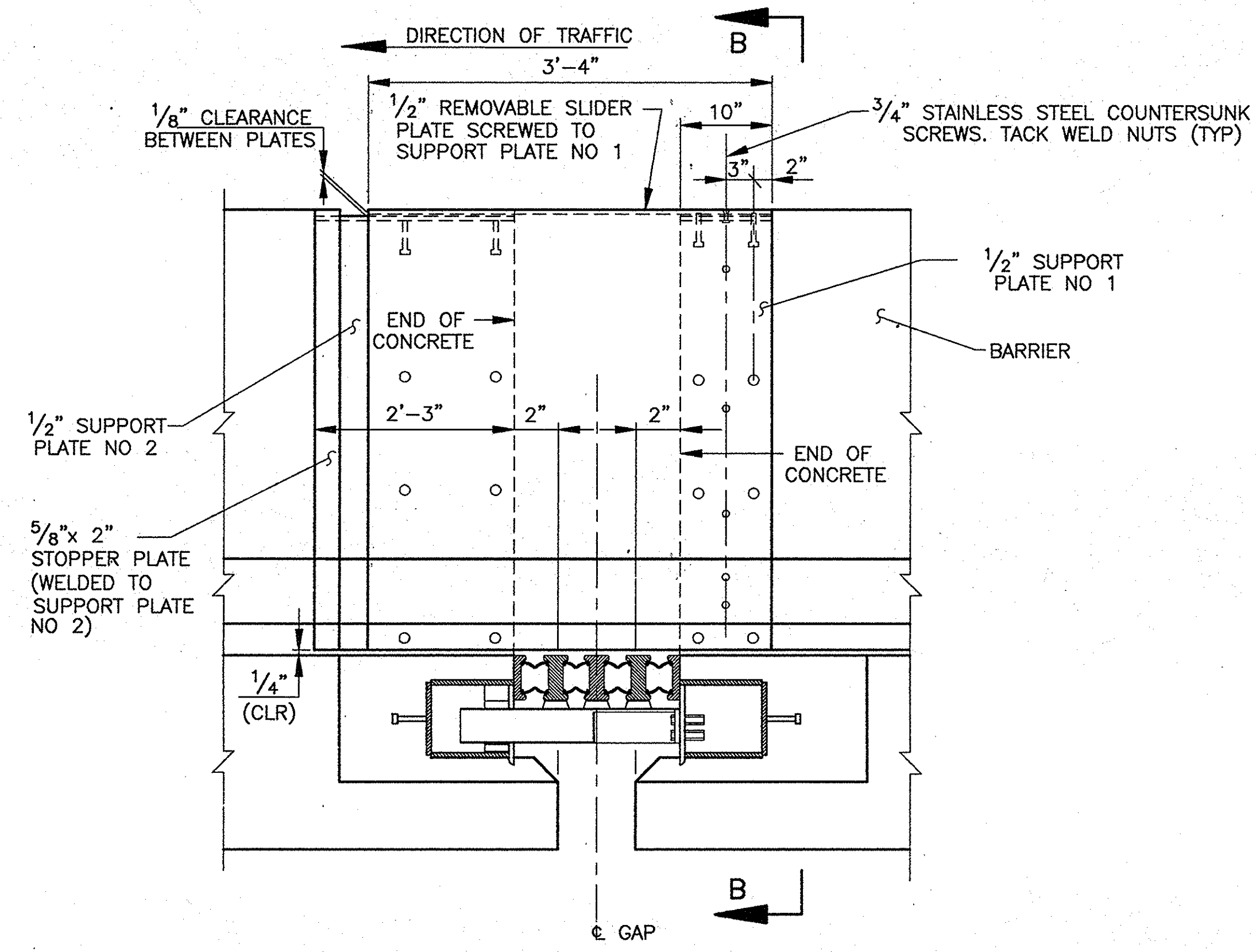


D:\AR\14-10\BOTTEN_88\25797.dwg 08/25/88

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



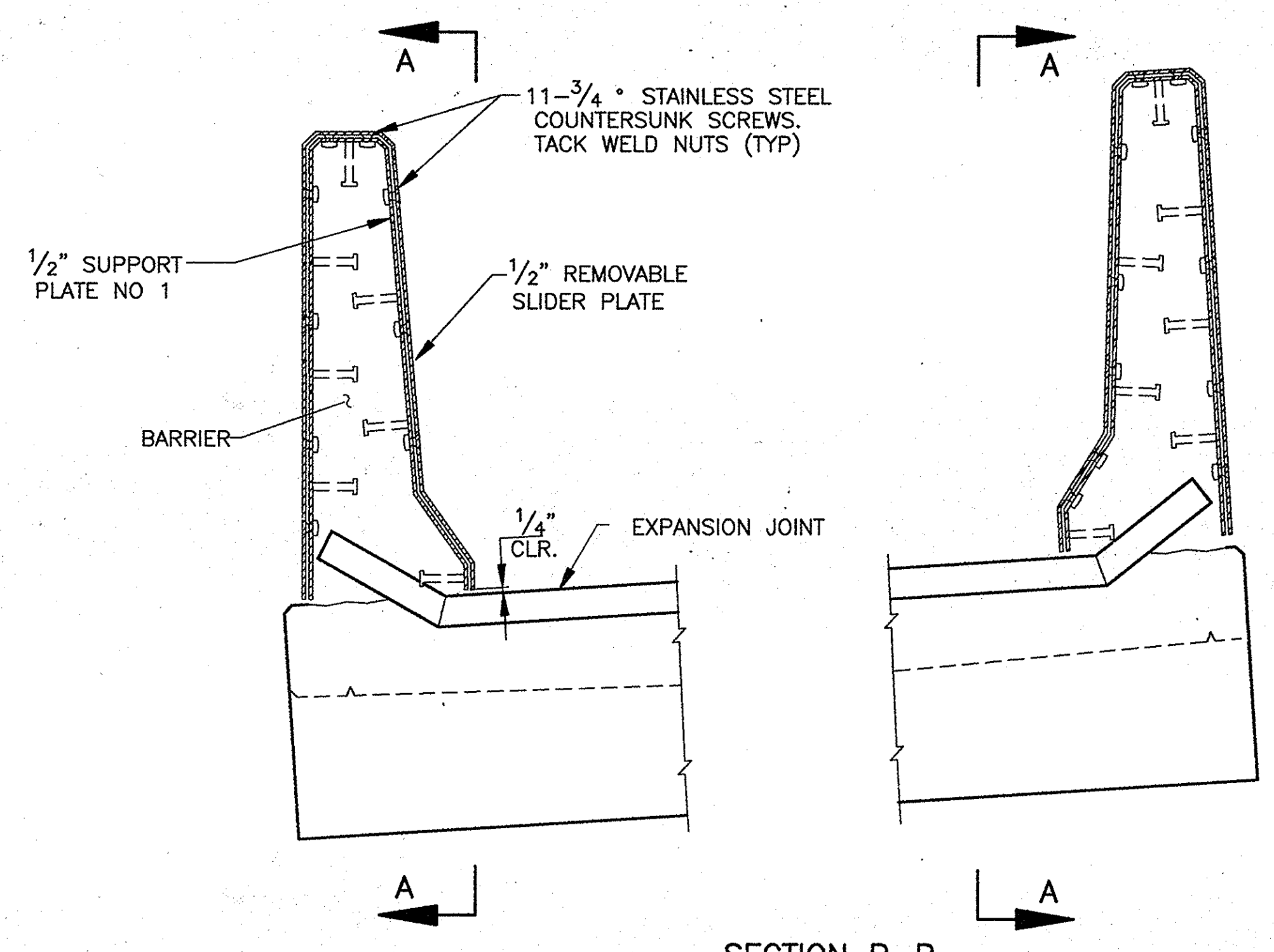
SECTION AT ϕ EXP. JT. PIER NO. 6



SECTION A-A

EXPANSION JOINT DETAIL AT PIER 6

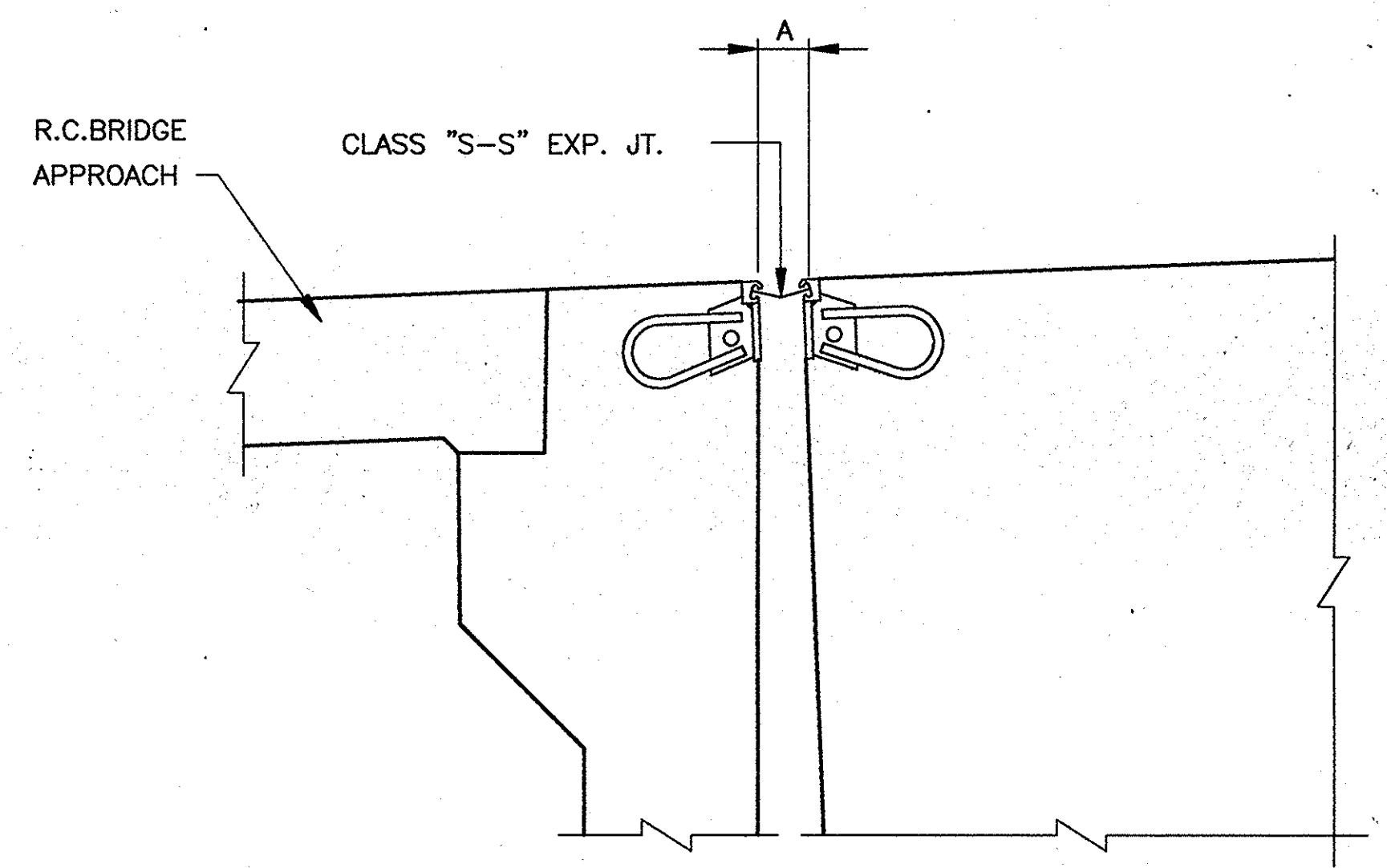
(35 LFT REQ'D)
NOT TO SCALE



SECTION B-B

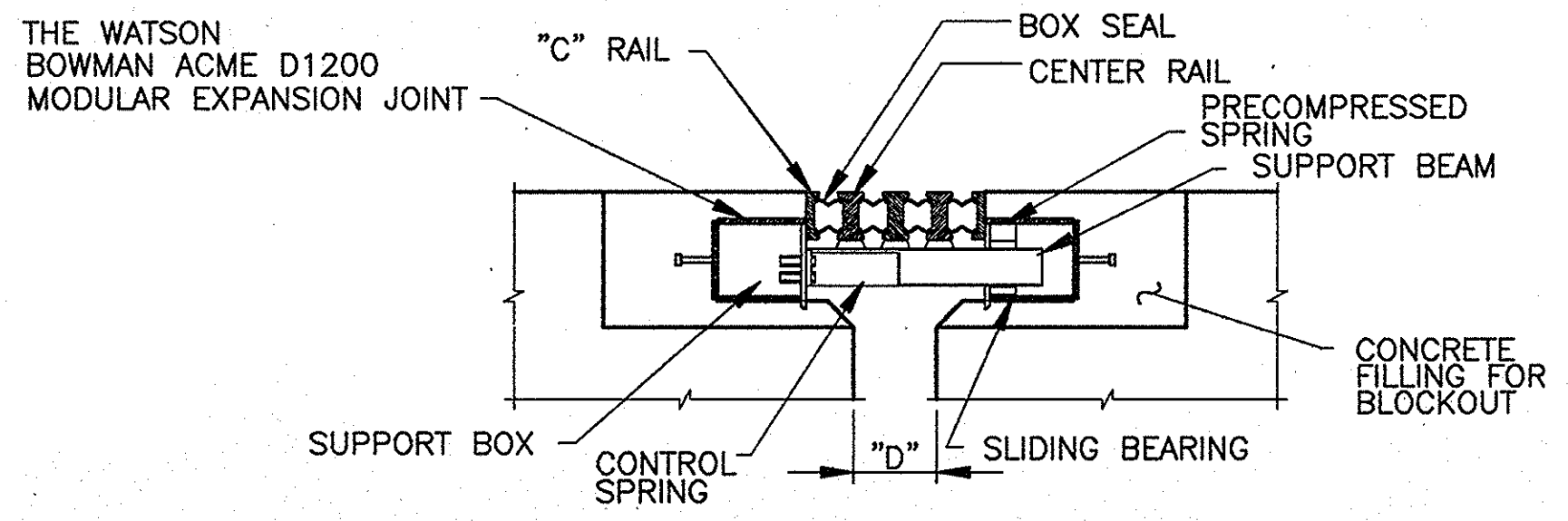
JOINT MOVEMENTS (INCHES)							
40° TEMP RISE FROM 60° MEAN	30° TEMP FALL FROM 60° MEAN	CREEP AND SHRINKAGE	TOTAL DESIGN MOVEMENT	DIMENSIONS (IN)			EXPANSION PER 10' F DEVIATION
				INITIAL SET "A"	MIN. "A"	MAX. "A"	
0.92	-0.69	-1.82	3.43	1.25	0.33	3.76	0.23

(-) SIGN DENOTES JOINT OPENING MOVEMENT



SECTION THROUGH EXP JT
EXPANSION JOINT DETAIL AT BENTS 1 & 10

(35 LFT REQ'D AT EACH JOINT)
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"	
3.17	-2.38	-5.91	11.46	4.21	1.04	12.5	0.79

(-) SIGN DENOTES JOINT OPENING MOVEMENT

SUPERSTRUCTURE DETAILS-
EXPANSION JOINTS

INDIANA DEPARTMENT OF TRANSPORTATION
LAKE COUNTY

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

SUBMITTED FOR APPROVAL

DRAWING: - C42 OF C44 SHEET: - 57 OF 65

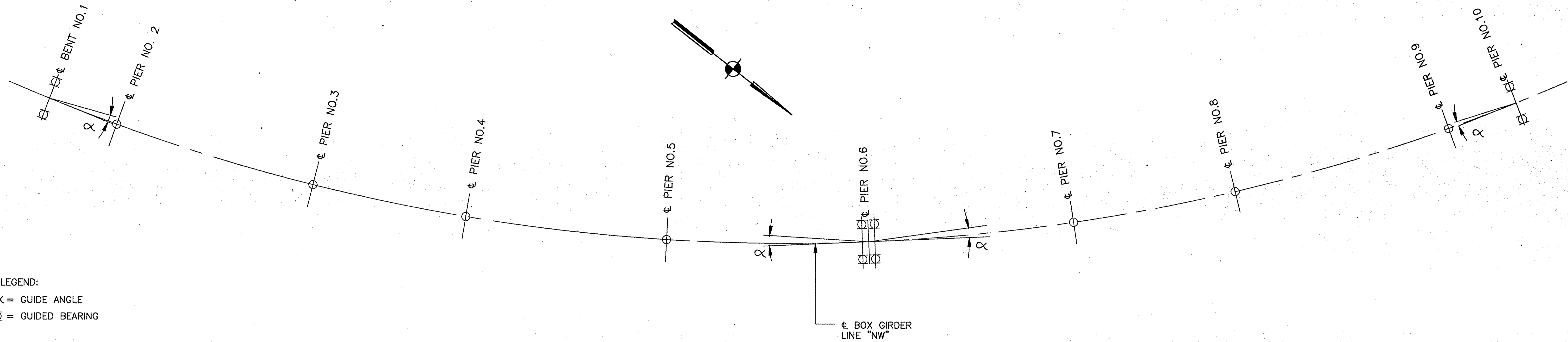
PROJECT: - - NH-80-1 ()

CONTRACT NO.

BRIDGE FILE: - I-80-5-7828

ENR 11-18-EXP. JT. 05/20/97 4 x 14 1/2

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



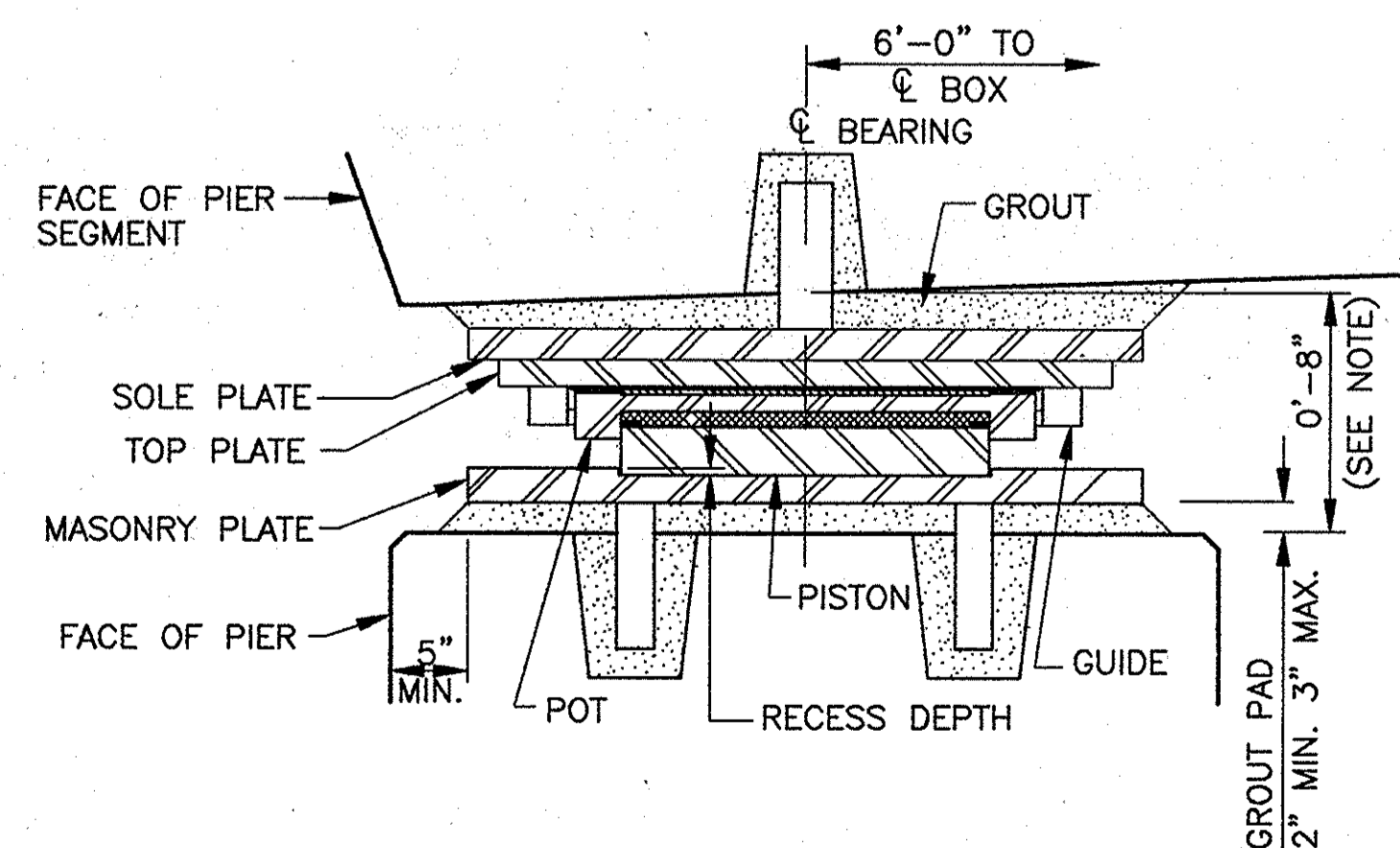
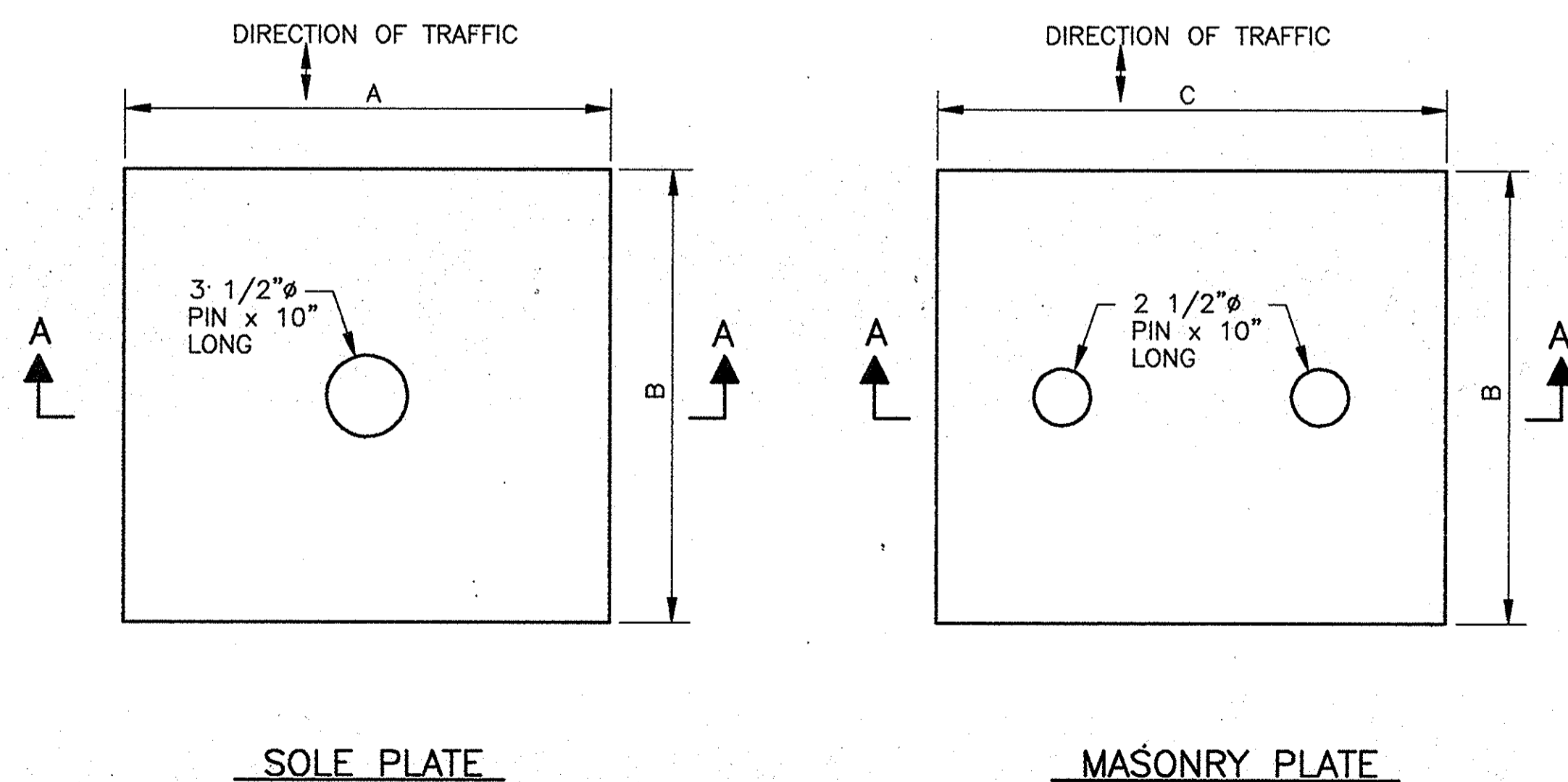
LEGEND:
 α = GUIDE ANGLE
 \square = GUIDED BEARING

BEARING VARIABLES TABLE						
LOCATION	BEARING CAPACITY		MOVEMENTS		ADJUSTMENT PER 10°F	α
	VERTICAL	HORIZONTAL	EXPANSION	CONTRACTION		
END BENT 1	300 K	60 K	1"	4"	1/4"	6.36°
PIER 6 DOWN STA.	700 K	140 K	1 3/4"	6 1/4"	5/16"	5.93°
PIER 6 UP STA.	700 K	140 K	1 3/4"	6 1/4"	5/16"	5.43°
END BENT 10	300 K	60 K	1"	4"	1/4"	4.32°

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)



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

BEARING DETAILS

INDIANA DEPARTMENT OF TRANSPORTATION
 LAKE COUNTY

SCALE: - NOT TO SCALE

DATE: - 5/22/80

SUBMITTED FOR APPROVAL

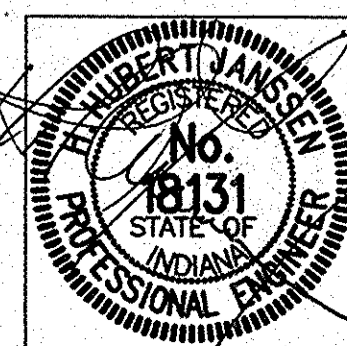
DRAWING: - C41 OF C44 SHEET: - 56 OF - 65

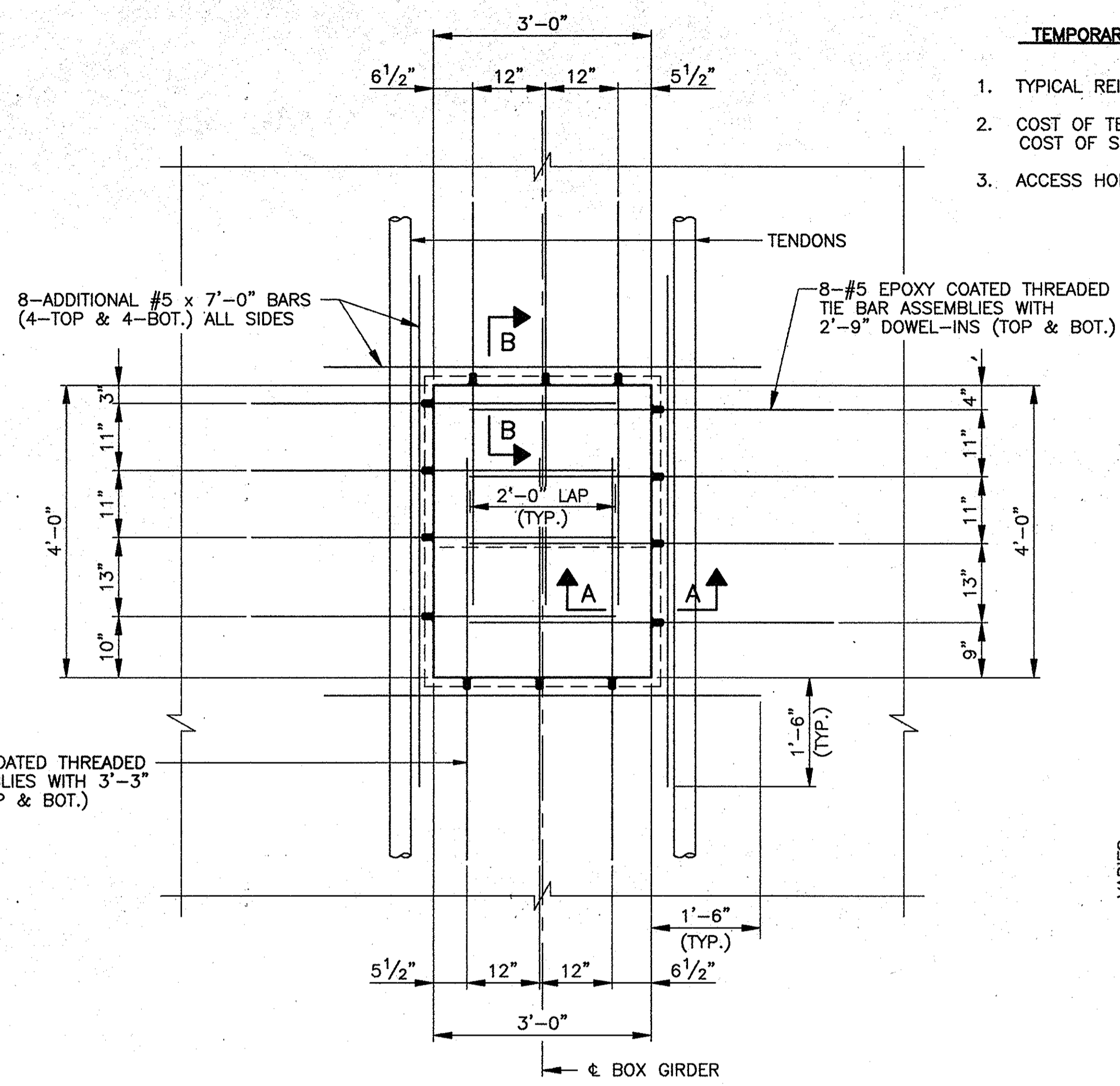
PROJECT: - - NH-80-1 () 4

CONTRACT NO.

BRIDGE FILE: - I-80-5-7828

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

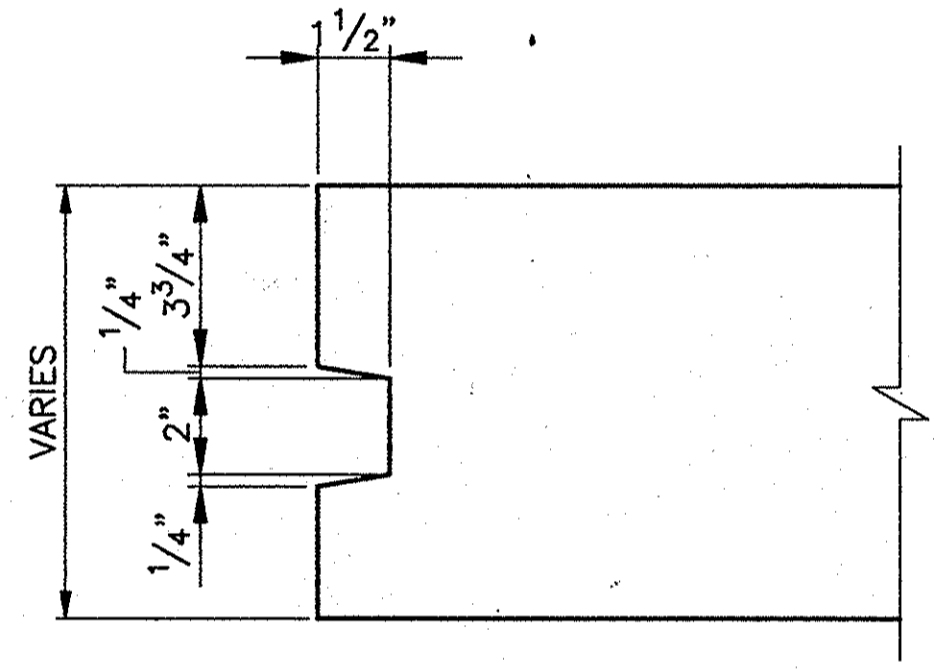




PLAN - TOP SLAB

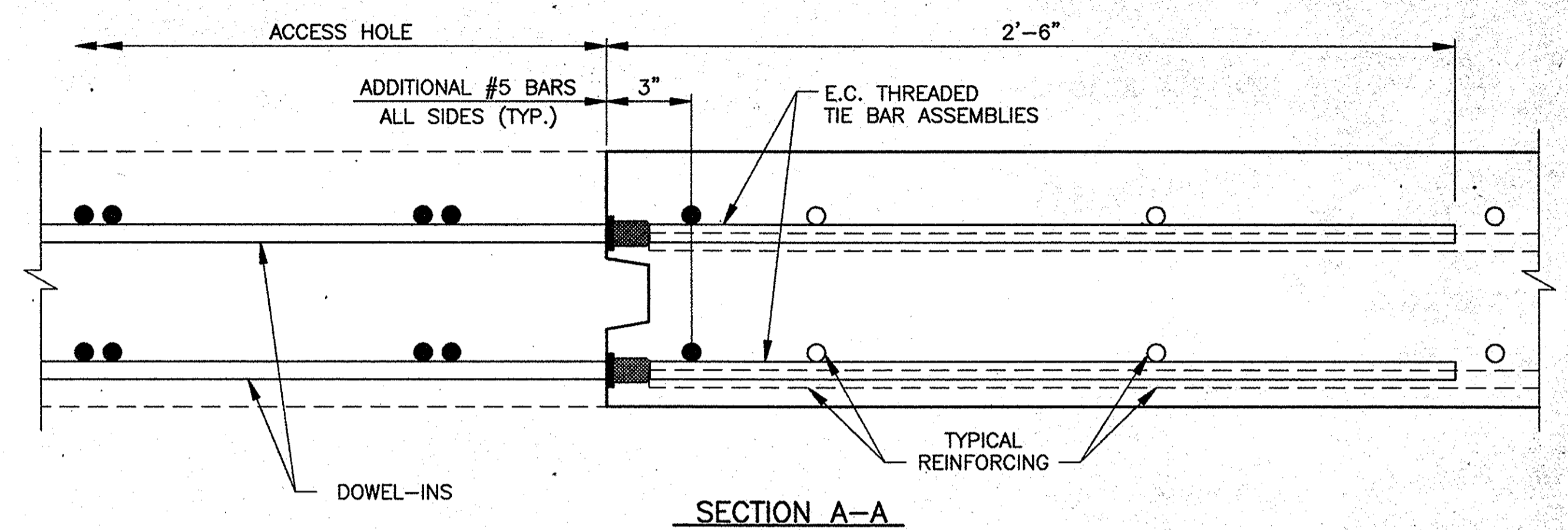
- TEMPORARY ACCESS HOLE NOTES:**
1. TYPICAL REINFORCING TO BE CUT 1 1/2" CLEAR OF ACCESS HOLE.
 2. COST OF TEMPORARY ACCESS HOLES TO BE INCLUDED IN THE COST OF SUPERSTRUCTURE CONCRETE.
 3. ACCESS HOLES SHOULD BE PLACED IN EACH SPAN.

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

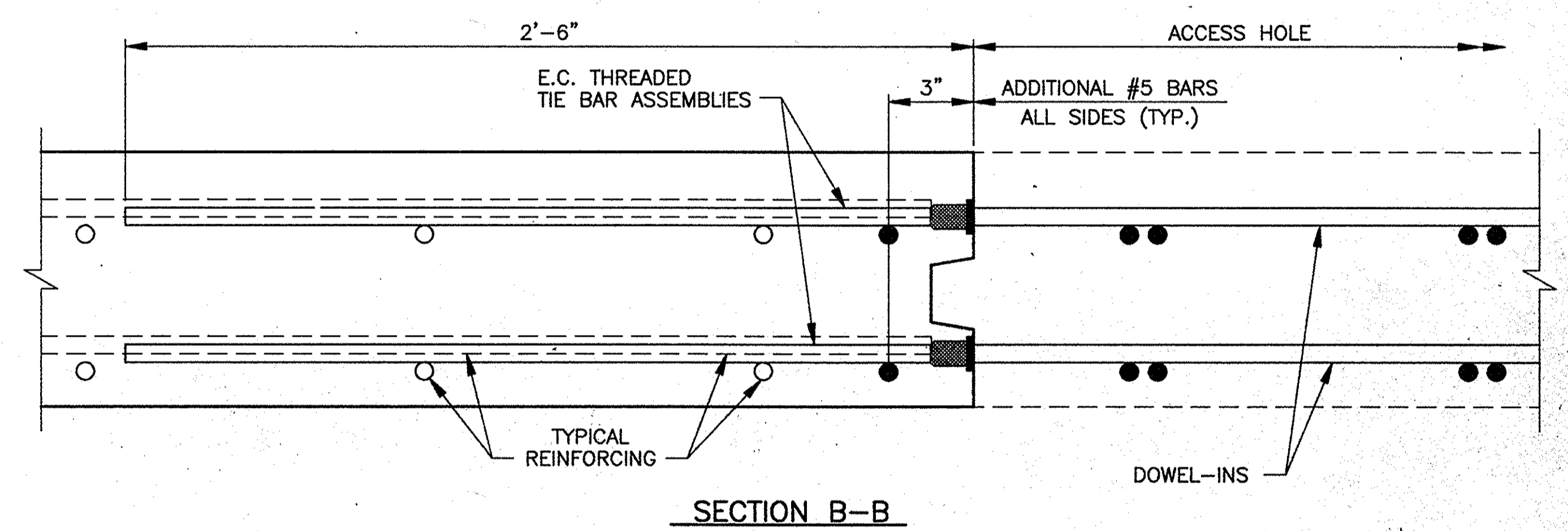


KEYWAY DETAIL

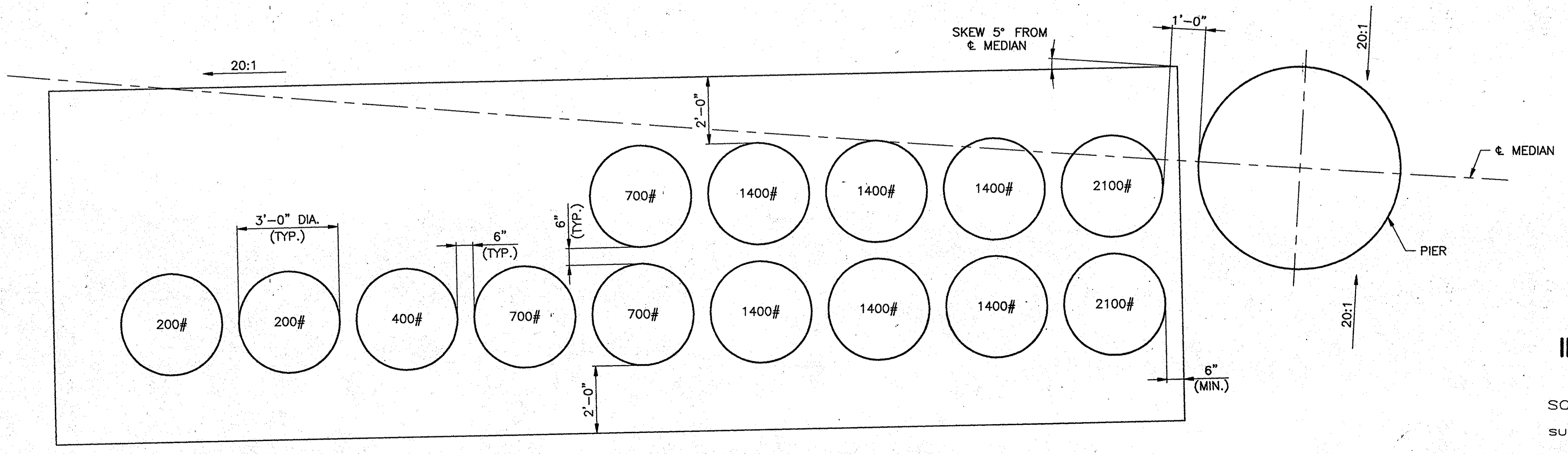
TEMPORARY ACCESS HOLE DETAILS



SECTION A-A



SECTION B-B



BARREL ARRAY DETAIL

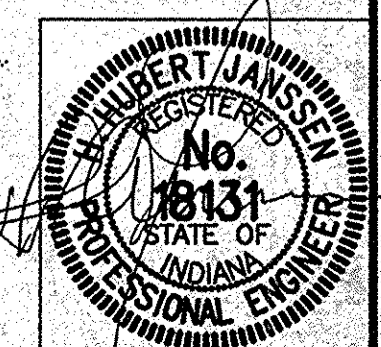
MISCELLANEOUS DETAILS
INDIANA DEPARTMENT OF TRANSPORTATION
 LAKE COUNTY

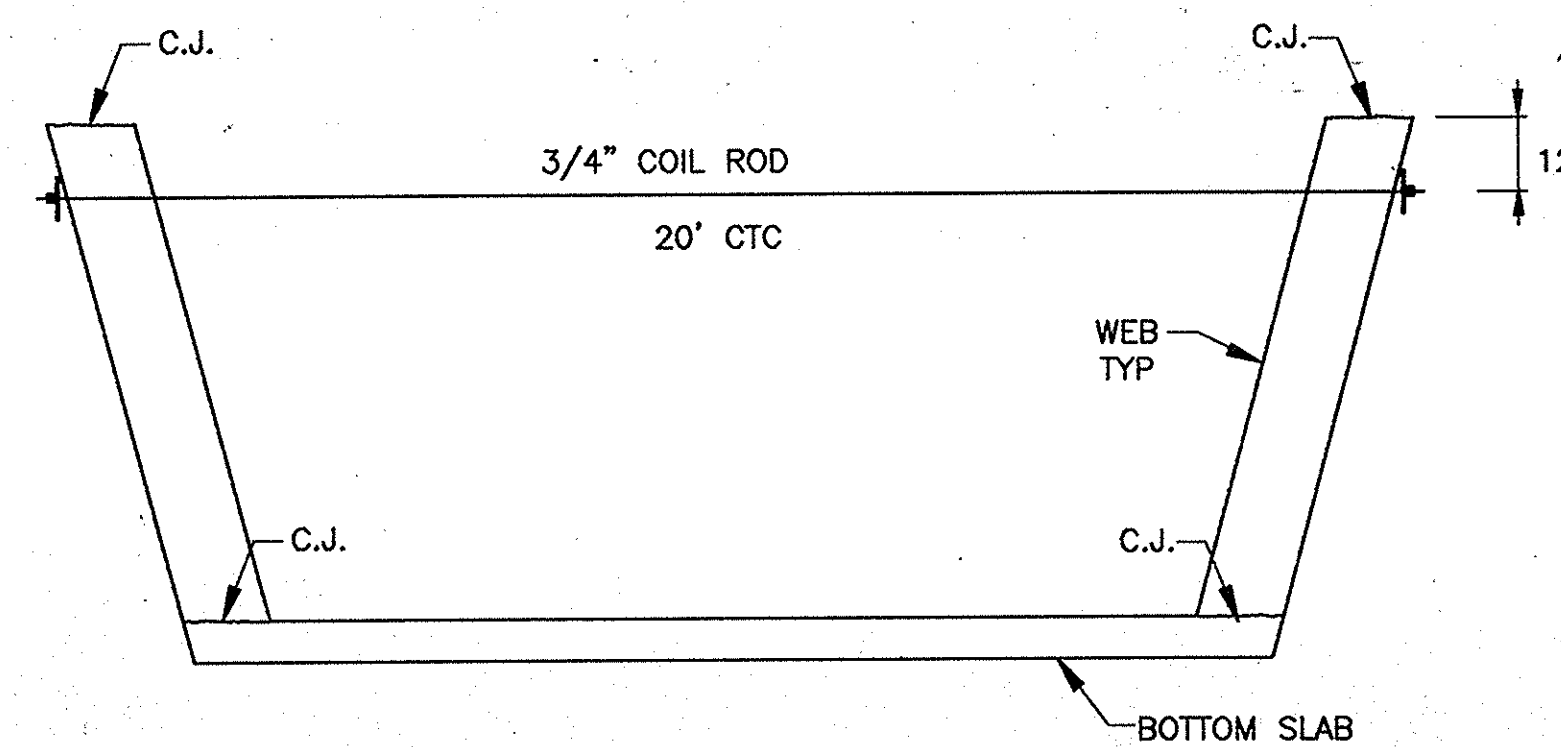
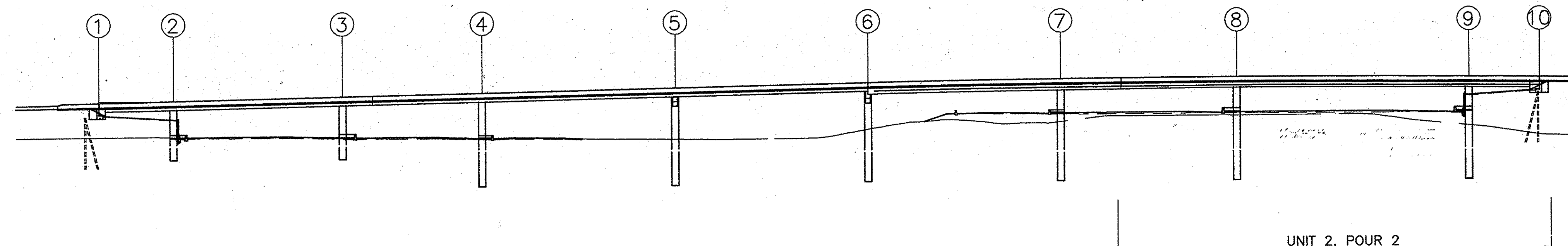
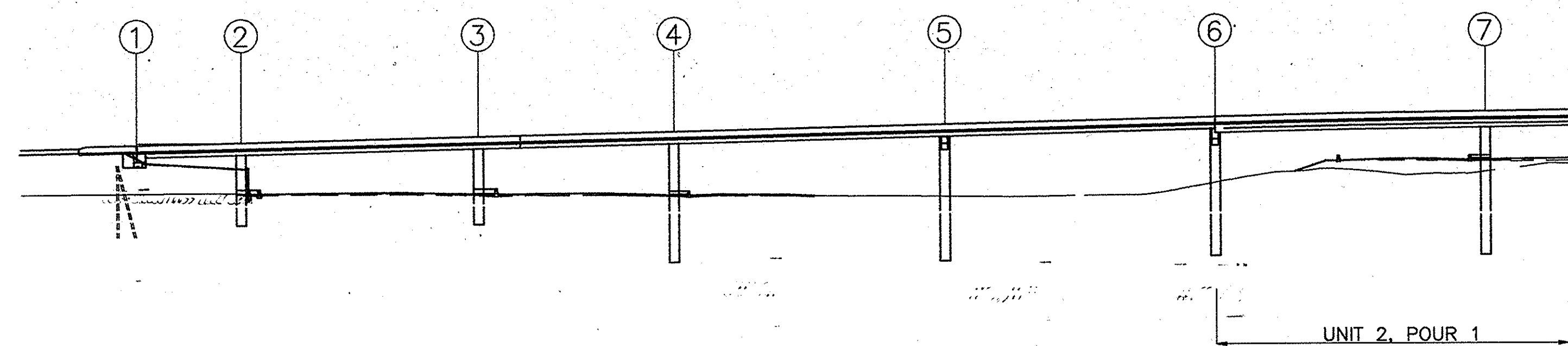
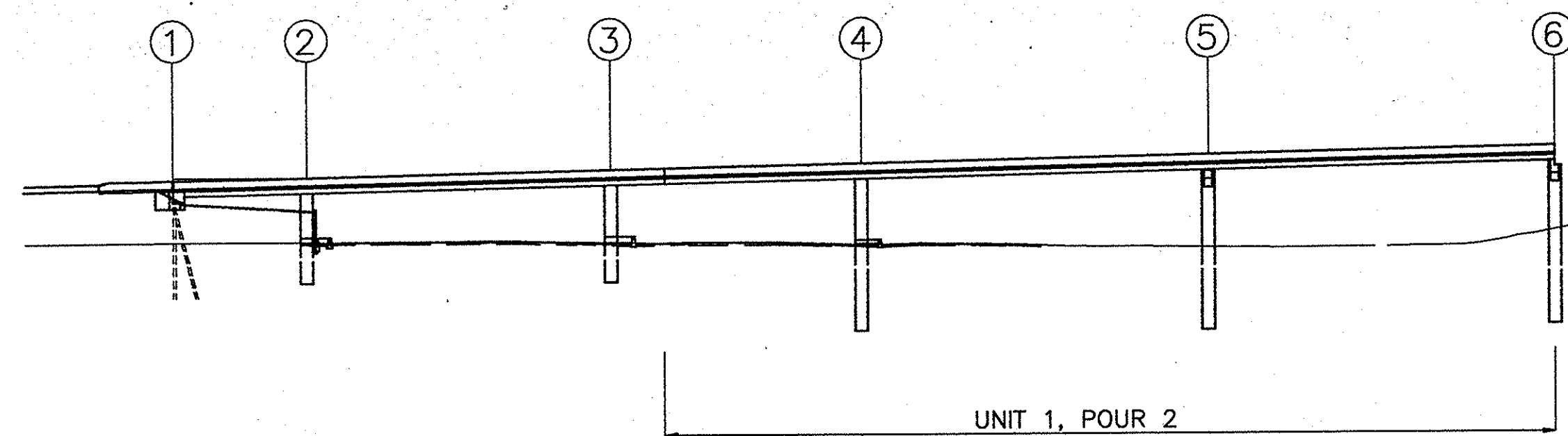
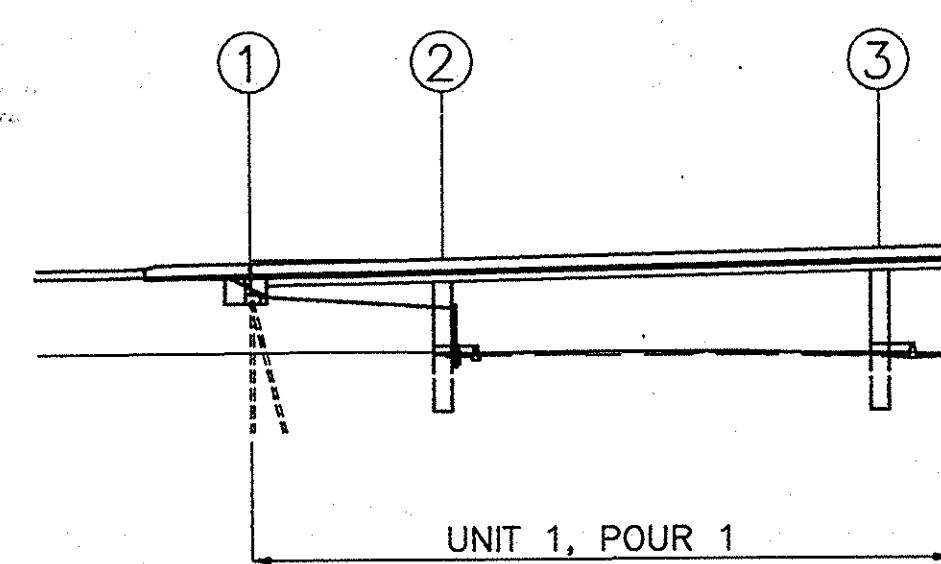
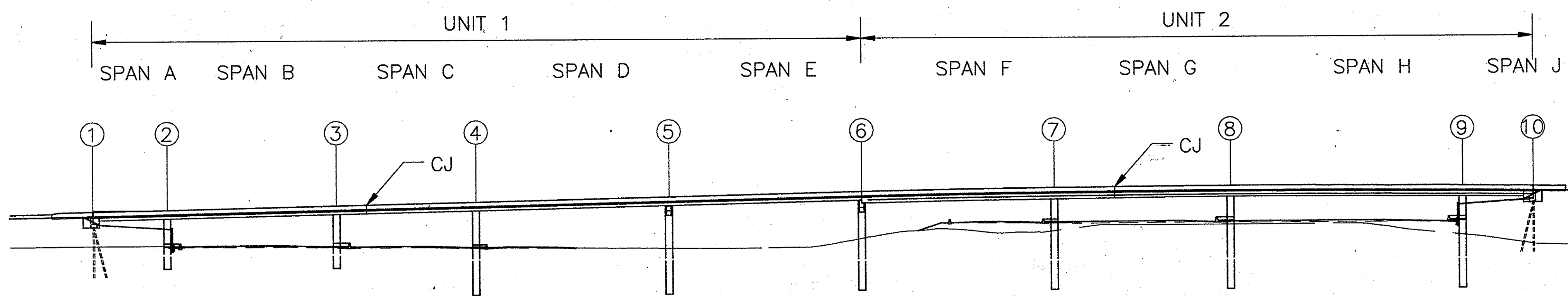
SCALE: 1/2"=1'-0", UNLESS NOTED DATE: July 10, 1998

SUBMITTED FOR APPROVAL

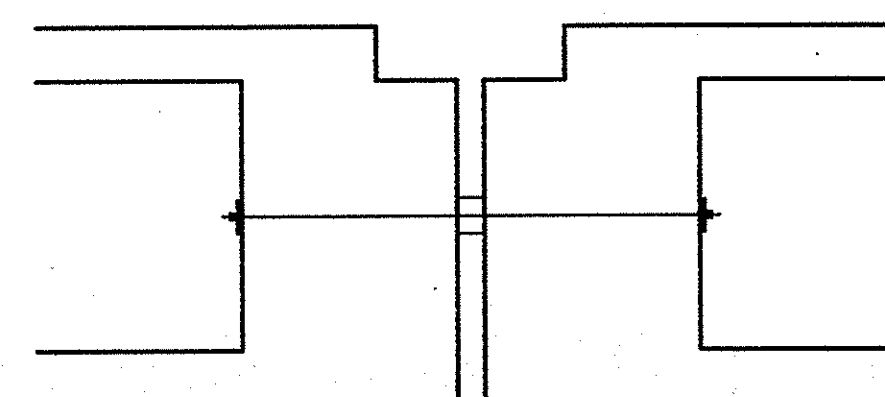
DRAWING: C42A OF C44 SHEET: 57A OF 65
 PROJECT: - NH-80-1 () 4
 CONTRACT NO.
 BRIDGE FILE: I-80-5-7828

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





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 ERRECT 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 ERRECT 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 ERRECT 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: - 5/22/80

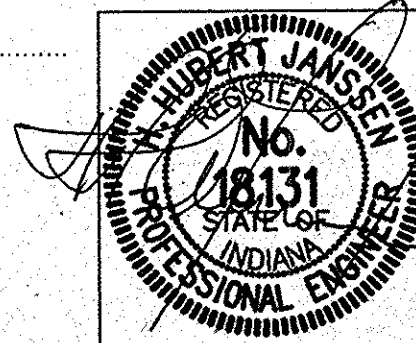
SUBMITTED FOR APPROVAL

DRAWING: - C43 OF C44 SHEET: - 58 OF - 65

PROJECT: - NH-80-1 () 4

CONTRACT NO.

BRIDGE FILE: - I-80-5-7828



DRAWN BY: VRC
 DESIGNED BY: HHJ
 CHECKED BY: LS
 DATE: 5/22/80

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

