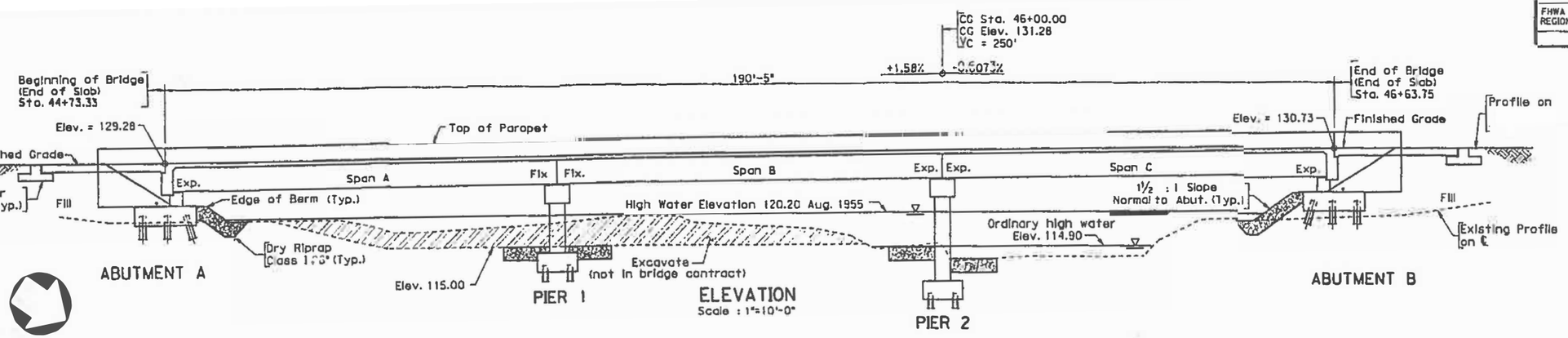
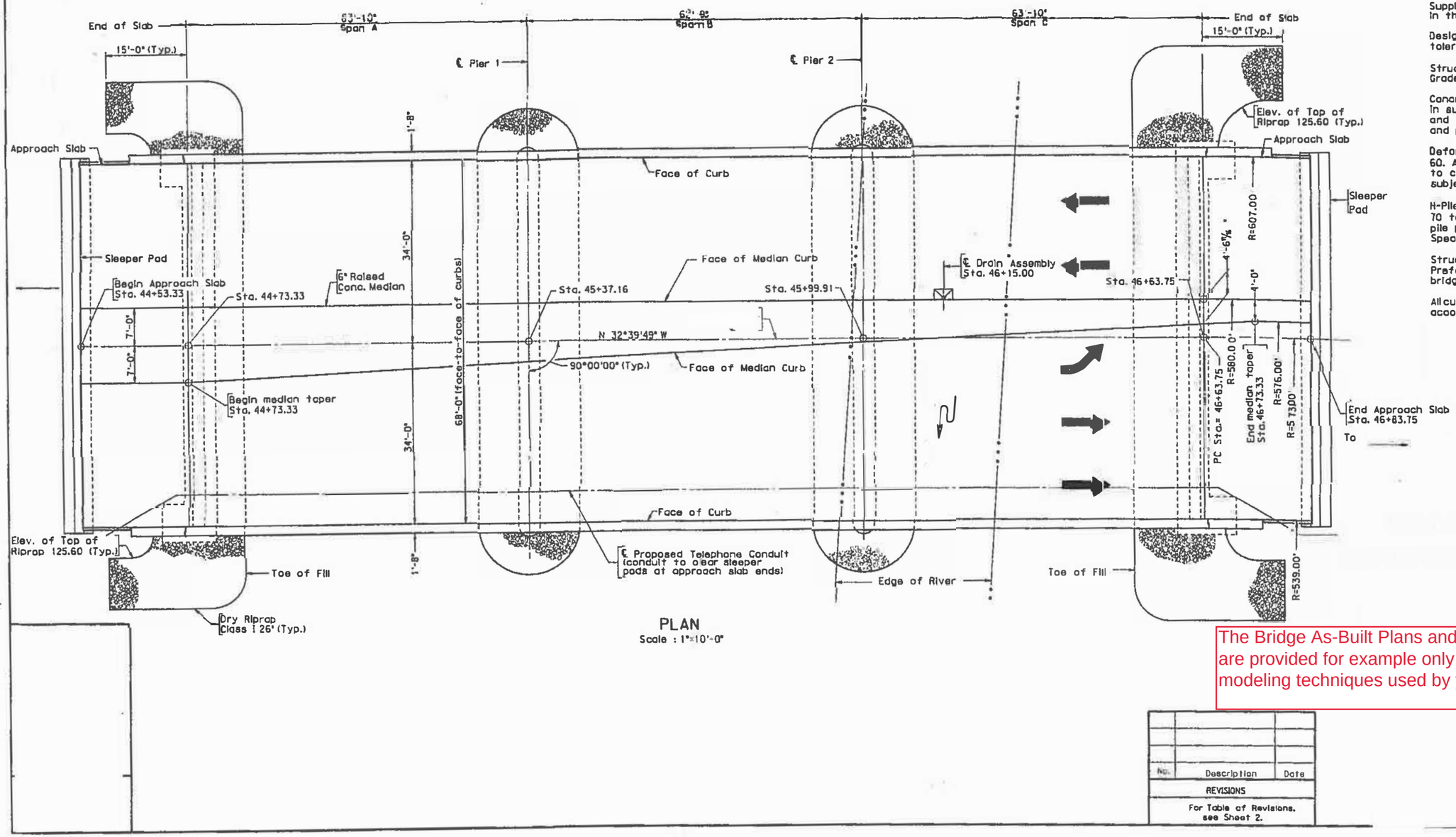
FHWA REGION	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT





PLAN
Scale : 1"=10'-0"

GENERAL NOTE:

Widths: 27'-0" roadway, variable median from 14'-0" variable roadway from 27'-0" to 36'-5⅝". Overall width 68'-0" face-to-face of curb

Span Layout: 64'-63'-64' prestressed concrete ty spans made continuous for live loa

Capacity: HS20-44 loading and alternate military

Drainage area: 36 sq. mi.

Specifications:

1996; 1997, 1998 and 1999 Interim Specifica Modifications.

These plans are incomplete unless accompanied b Supplemental Specifications and Special Provisions in the contract documents.

Design loading includes 20 p.s.f. allowance for co tolerances and construction methods.

Structural steel in bearings and sole plates shall Grade 36. Anchor bolts for bearings shall be galv

Concrete in prestressed members shall be Class . in superstructure, including parapets, terminal wall and integral abutment backwalls shall be Class A4 and piers, Class A3.

Deformed reinforcing bars shall conform to ASTM 60. All reinforcing bar dimensions on the detailed to centers of bars except where otherwise not subject to fabrication and construction toleran

H-Piles in abutments and piers have a design ca 70 tons per pile and shall be driven to refusal. I pile penetration shall conform to Sec. 403.06 (d) & Specifications.

Structural approach slabs, including sleeper pads Preformed Elastomeric Joint Sealer, are not inclu bridge contract.

All curves are to be superelevated and transition accordance with Standard TC-5U. See Road Plans.

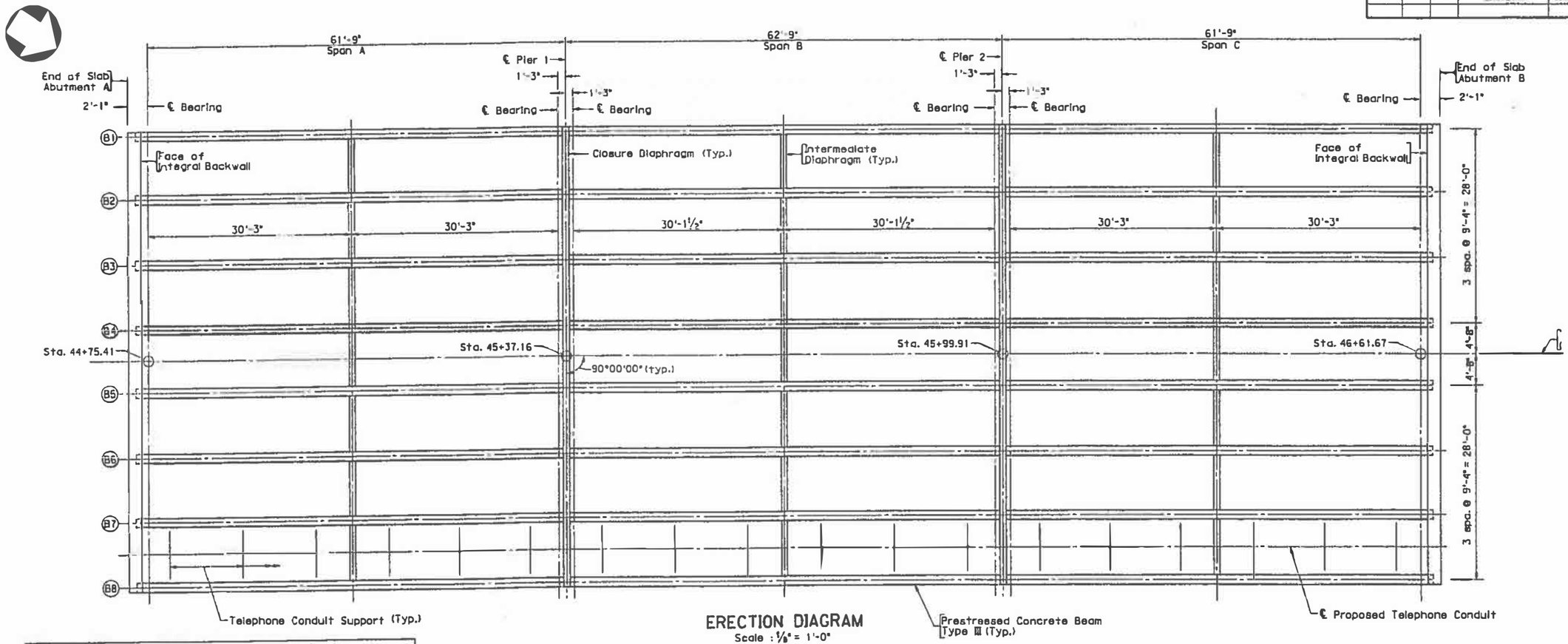
No.	Description	Date

REVISIONS

For Table of Revisions, see Sheet 2.

The Bridge As-Built Plans and corresponding BrDR Models are provided for example only and may not represent the modeling techniques used by your agency.

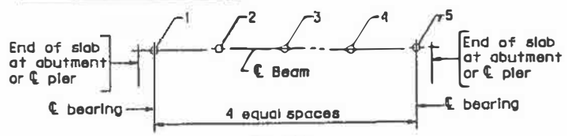
REGION	STATE	ROUTE	PROJECT	ROUTE	PROJECT



ERECTION DIAGRAM
Scale : 1/8" = 1'-0"

TOP OF SLAB ELEVATIONS ALONG ℄ BEAMS

Span	Beam	Points 1	2	3	4	5
Span A	1	128.65	129.00	129.34	129.65	129.94
	2	128.84	129.16	129.45	129.73	129.98
	3	129.03	129.31	129.57	129.81	130.03
	4	129.22	129.46	129.69	129.90	130.08
	5	129.21	129.44	129.65	129.84	130.01
	6	129.02	129.25	129.46	129.65	129.81
	7	128.83	129.05	129.26	129.45	129.62
	8	128.63	128.86	129.07	129.26	129.43
Span B	1	129.98	130.25	130.50	130.72	130.93
	2	130.03	130.26	130.47	130.66	130.83
	3	130.07	130.26	130.44	130.60	130.74
	4	130.11	130.27	130.41	130.54	130.64
	5	130.03	130.18	130.30	130.41	130.49
	6	129.84	129.98	130.11	130.21	130.30
	7	129.65	129.79	129.91	130.02	130.10
	8	129.45	129.60	129.72	129.83	129.91
Span C	1	130.96	131.15	131.32	131.46	131.59
	2	130.86	131.01	131.14	131.25	131.34
	3	130.76	130.87	130.97	131.04	131.10
	4	130.65	130.73	130.79	130.83	130.85
	5	130.51	130.57	130.61	130.62	130.61
	6	130.31	130.37	130.41	130.41	130.36
	7	130.12	130.18	130.22	130.20	130.12
	8	129.92	129.98	130.03	129.99	129.87



PLAN
Showing points of top of slab elevations

TABLE OF MOMENTS, SHEARS AND STRESSES

Location		Live Load + I (Service Load) Max. M k-ft	Max. V k	Non-Composite DL (Service Load) Max. M k-ft	Max. V k	Composite DL (Service Load) Max. M k-ft	Max. V k	Release Stress at 0.4 L Top psi	Bottom psi	Final Stress (Pos. Mom.) •• P/S+DL+LL Top psi	Bottom psi	P/S+DL Top psi	Bottom psi	Final Stress (Neg. Mom.) P/S+DL+LL Top psi	Bottom psi	P/S+DL Top psi	Bottom psi
Span A & C								-286.2	2092.5								
CL Brg. Abut A	Interior Beam	72.8	58.4	0.0	54.0	12.4	9.8	———	———	-60.8	626.5	-77.8	707.4	-242.2	1489.3	-118.4	900.4
	Exterior Beam	52.1	41.8	0.0	47.3	10.2	8.0	———	———	-61.9	644.5	-77.1	703.6	-229.4	1295.9	-118.7	865.5
Midspan •	Interior Beam	682.3	33.7	840.4	1.5	116.3	2.9	———	———	1358.8	-210.1	1199.5	547.7	1157.6	746.7	1199.5	547.7
	Exterior Beam	488.2	24.1	726.4	0.7	95.5	2.3	———	———	1079.6	216.5	937.2	770.3	899.7	915.8	937.2	770.3
CL Brg. Pier 1	Interior Beam	-530.3	69.5	0.0	56.1	-161.3	15.5	———	———	-60.8	626.5	-77.8	707.4	-242.2	1489.3	-118.4	900.4
	Exterior Beam	-379.5	49.8	0.0	48.3	-132.4	12.7	———	———	-61.9	644.5	-77.1	703.6	-229.4	1295.9	-118.7	865.5
Span B								-291.2	2096.4								
CL Brg. Pier 1	Interior Beam	-480.6	63.3	0.0	53.9	-145.2	12.6	———	———	-94.0	783.2	-114.4	880.0	-226.6	1413.9	-114.4	880.0
	Exterior Beam	-343.9	45.3	0.0	47.1	-119.3	10.3	———	———	-96.5	777.6	-114.6	848.3	-215.0	1238.5	-114.6	848.3
Midspan	Interior Beam	588.5	26.7	833.7	1.5	43.8	0.0	———	———	1307.0	-20.9	1169.6	632.7	1117.9	878.5	1169.6	632.7
	Exterior Beam	421.1	19.1	720.5	0.8	36.0	0.0	———	———	1031.2	364.4	908.4	842.1	862.2	1021.7	908.4	842.1
CL Brg. Pier 2	Interior Beam	-480.8	63.3	0.0	53.9	-145.2	12.6	———	———	-94.0	783.2	-114.4	880.0	-226.6	1413.9	-114.4	880.0
	Exterior Beam	-344.0	45.3	0.0	47.2	-119.3	10.3	———	———	-96.5	777.6	-114.6	848.3	-215.0	1238.5	-114.6	848.3

• Maximum Moments at End Spans may not be at midspan.
•• Positive Moment does not include creep and shrinkage.

Note:

Spacing of supports for the telephone conduit system is not shown. See telephone conduit plan for actual spacing.

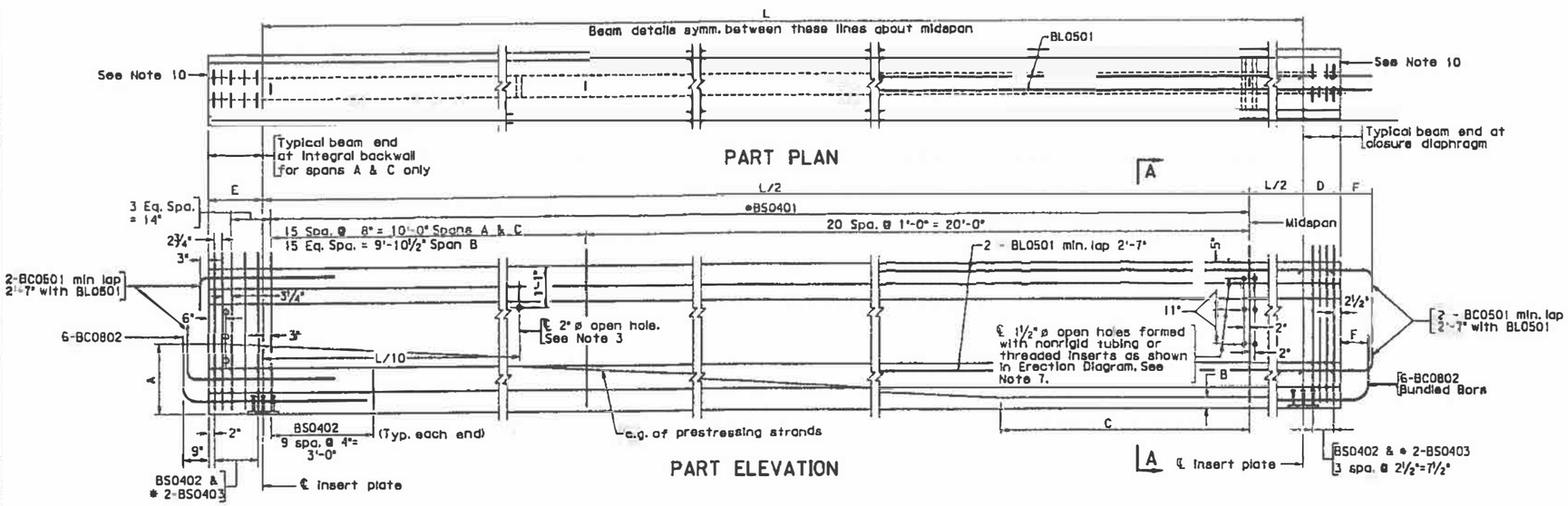
References:

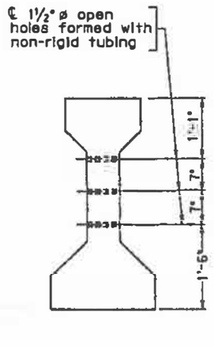
1. For prestressed girder details, see sheet
2. For diaphragm details, see sheet 10.
3. For bearing details, see sheet 11.
4. For integral backwall details, see sheets 6
5. For telephone conduit details, see sheet

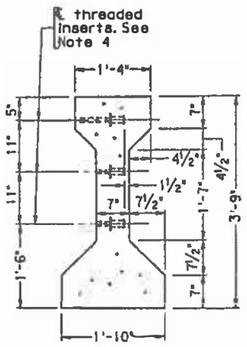
No.	Description	Date
	Revisions	

ERECTION DIAGR

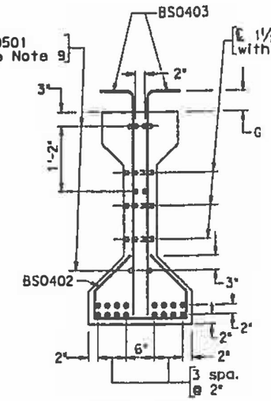
Date	Plan N

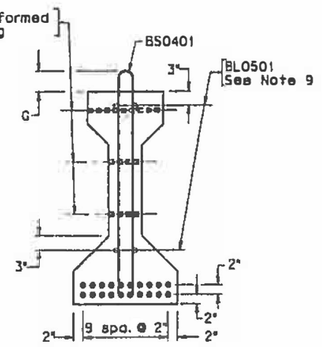




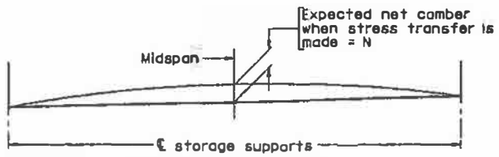


EXTERIOR BEAM
See Note 2

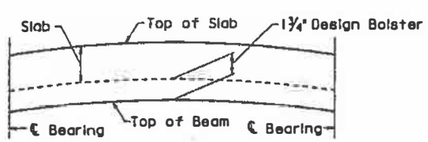




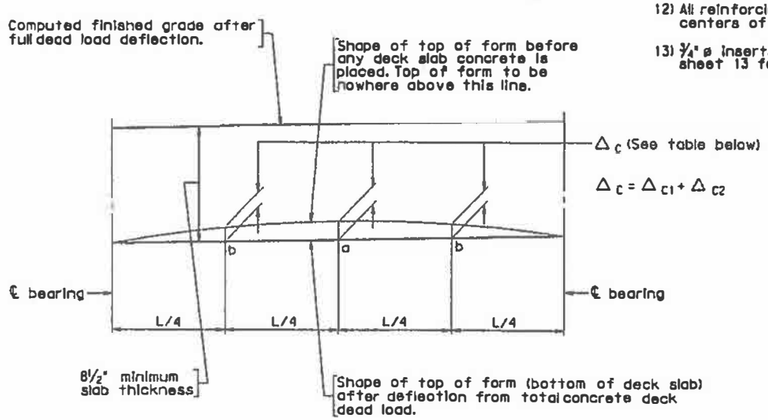
INTERIOR BEAM
For dimensions not shown, see Exterior Beam.
For placement of BC Series bars see sheet 10.



CAMBER DIAGRAM



BOLSTER DETAIL



Adjustment of deck slab forms to correct for dead load deflections shall be made by varying thickness of concrete bolster between slab and beam without alteration of slab thickness. Longitudinal screed should be set above final finished grade by amounts = Δ C2

Δ C1 = Deflection of beam from dead load of concrete deck slab, bolsters and diaphragms and does not include the deflection of the beam from its own weight.

Δ C2 = Deflection of composite section from dead load (e.g. parapet and curb added after deck slab is cast).

ANTICIPATED DEAD LOAD DEFLECTION**

	Beams	At a		At b	
		Δ C1	Δ C2	Δ C1	Δ C2
Spans A & C	Beams 2 thru 7	3/16"	1/16"	3/16"	1/16"
	Beams 1 & 8	3/16"	1/16"	1/16"	1/16"
Span B	Beams 2 thru 7	1/16"	0	3/16"	0
	Beams 1 & 8	3/16"	0	1/16"	0

DEAD LOAD DEFLECTION DIAGRAM

** Deflection shown are actual deflections without multipliers.

Notes:

1) At end diaphragm use 1" deep recesses around locals groups with 2" minimum edge clearances and fill with p applied mortar immediately after clipping strands. An e oxy mortar covering the ends of strands with a mini ness of 1/8" may be used as an alternate. Strands sha before mortar is applied. After mortar is allowed to a entire end of beam shall be covered with epoxy type

2) For reinforcing steel, prestressing strands and dimens shown in the exterior beam, see interior beam.

3) Beams shall have 2" ø open holes formed with nonrigid on stream crossings. Holes may be slightly shifted to forcing bars and strands.

4) Threaded insert, when embedded shall develop full stren 1/8" ø threaded bolt (ASTM A307).

5) All prestressing strands shall be low-relaxation, grade 2 uncoated.

6) For details of insert plate, see sheet 11.

7) For location of closure and intermediate diaphragms, Diagram on sheet 8.

8) The Contractor, after a written approval from the En use different prestressing strand arrangement provi the total prestressing force and its e.g. are the sam on the plans.

9) 2 - 1/2" ø strands stressed to 1000 lbs. may be substi 2 - #5 bars.

10) At closure diaphragm and integral backwall, end strand 1"± from beam after clipping. End of beam shall be ro accordance with Section 405.05 of the Road and Brid Specifications.

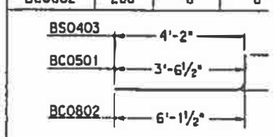
11) Top of beam to be roughened to a full amplitude of

12) All reinforcing bar dimensions except for bending diag centers of bars.

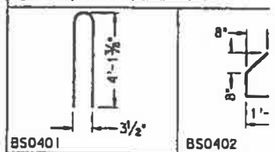
13) 3/4" ø inserts for telephone conduit supports not sha sheet 13 for details.

REINFORCING STEEL S

Mark	No.	Size	Len
BS0401	1704	#4	8'
BS0402	688	#4	4'
BS0403	416	#4	4'
BL0501	192	#5	32
BC0501	192	#5	4'
BC0802	288	#8	8'



BS0403, BC0501, & BC0802



BS0401 BS0402

Dimensions in Bending Diagrams of bars.

Reinforcing bars shown on the are for beams shown on this sh

#BS0401 or BS0403 may be slight directed by the Engineer to cle inserts.

Reinforcing bars BS0401 and BS0 galvanized. All other reinforcing epoxy coated except all BC seri non-epoxy coated.

DIMENSION TABLE

Beam	Prestr. force per strand lb.	No. and size of stranda/beam	Net camber N in.	A ft.-in.	B in.	C ft.-in.	D in.	E in.	F in.	G in.	L ft.-in.
Spans A & C	30,980	20 - 1/2" ø	7/8"	9 3/8"	3"	6'-3"	9½"	19"	8 3/8"	6¼"	60'-6"
Span B	30,980	20 - 1/2" ø	7/8"	9 3/8"	3"	6'-2"	9½"	—	8 3/8"	6¼"	60'-3"

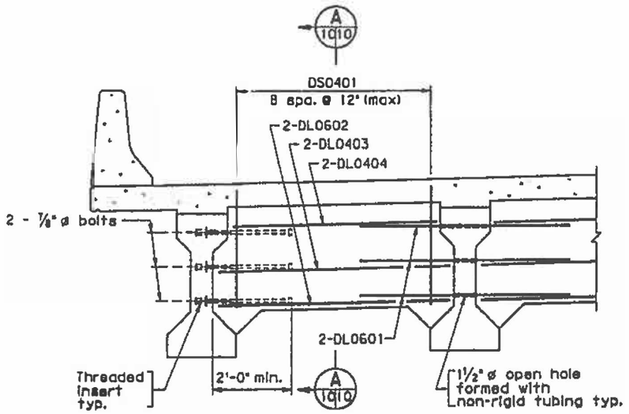
Not to Scale

No.	Description	Date
	Revisions	

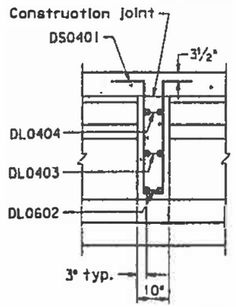
PRESTRESSED CONCRE
TYPE III

Date	Plan No.

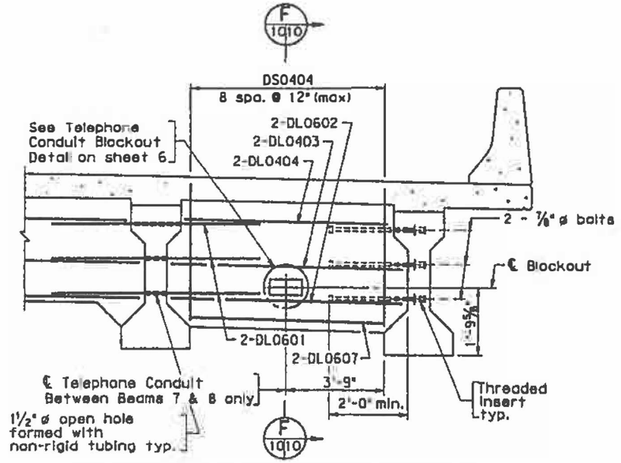
FHWA REGION	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT



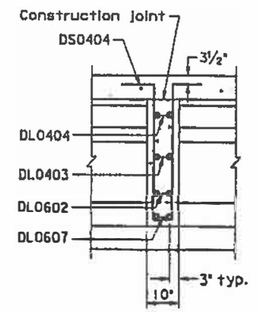
TYPICAL INTERMEDIATE DIAPHRAGM DETAILS



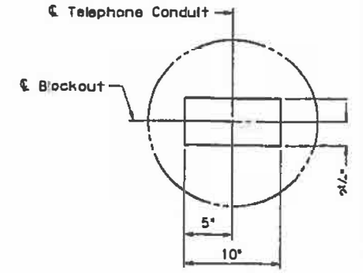
SECTION A 1010



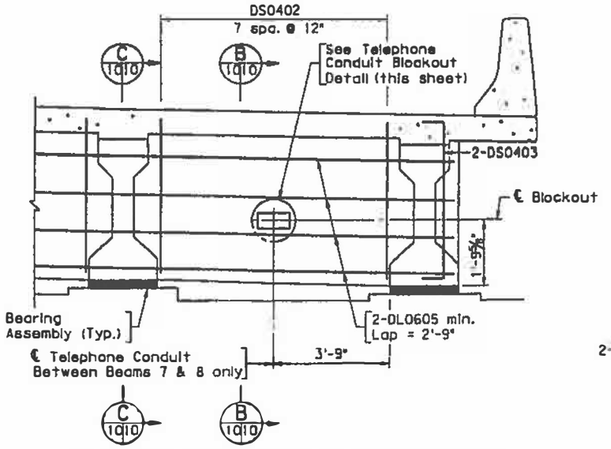
INTERMEDIATE DIAPHRAGM DETAILS
Typ. Between Beams 7 & 8 only



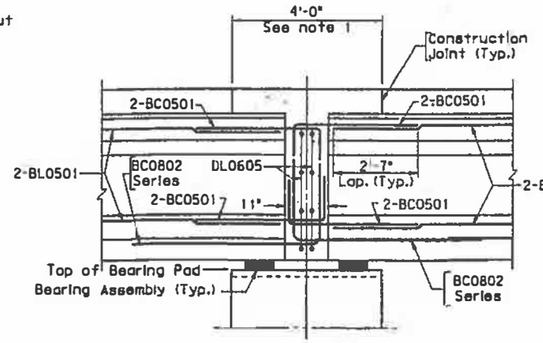
SECTION F 1010



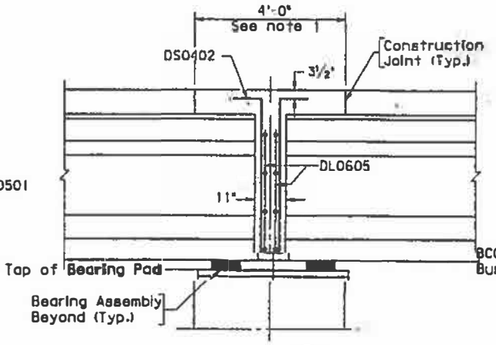
TELEPHONE CONDUIT BLOCKOUT DETAIL



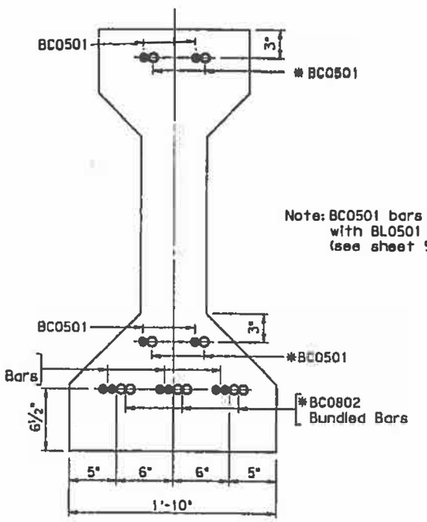
CLOSURE DIAPHRAGM, EXPANSION PIER



SECTION C 1010



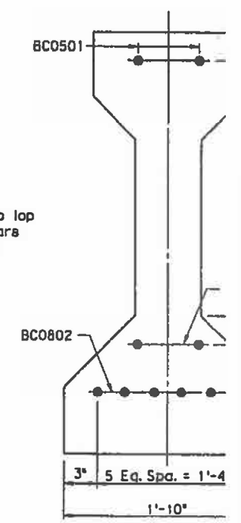
SECTION B 1010



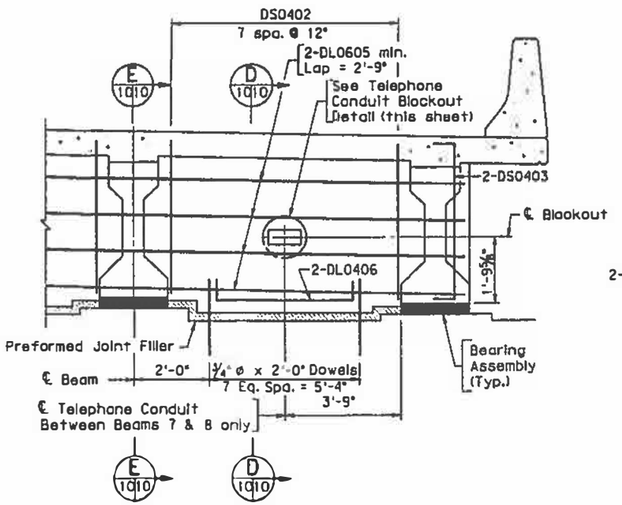
Note: BC0501 bars to lap with BL0501 bars (see sheet 9).

* O indicates BC bars from beam in adjacent span

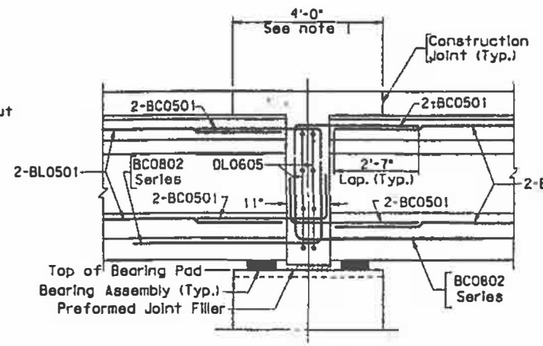
BEAM END AT CLOSURE DIAPHRAGMS



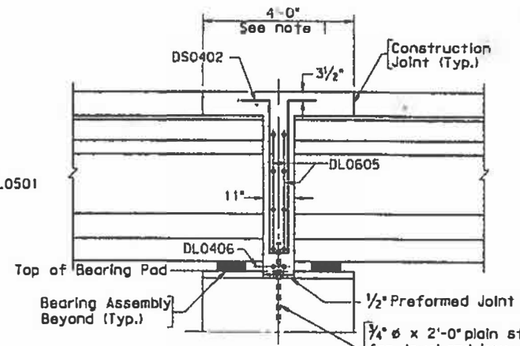
BEAM END A
INTEGRAL BACKW



CLOSURE DIAPHRAGM, FIXED PIER



SECTION E 1010



SECTION D 1010

Notes:

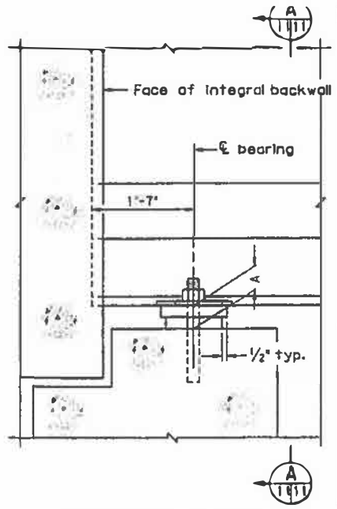
1. This portion of the slab shall be cast with the closure d
2. For details of bearing pads and bearing pad assemblies se
3. Reinforcing steel in diaphragms shall be adjusted to clear conduit blockout.

No.	Description	Date
	Revisions	

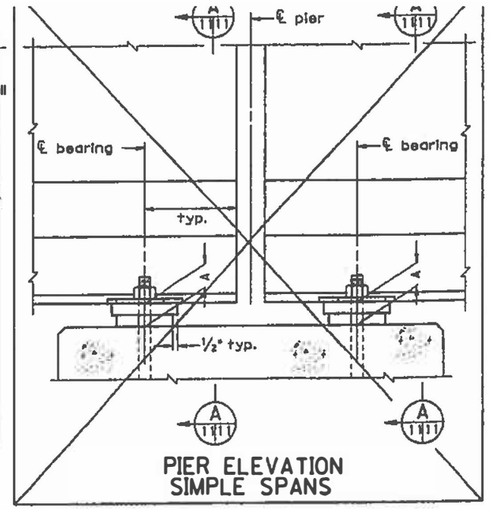
INTERMEDIATE AND CL
DIAPHRAGM DETA

Date	Plan No.

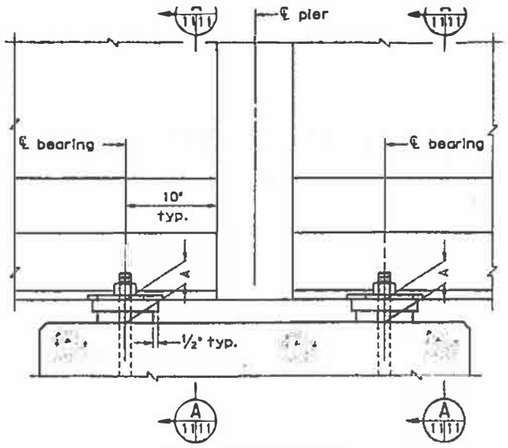
Not to Scale (unless otherwise noted)



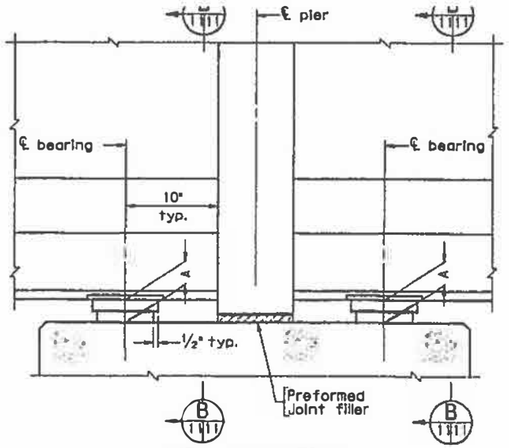
ABUTMENT ELEVATION



PIER ELEVATION
SIMPLE SPANS



PIER ELEVATION
EXPANSION BEARING
CONTINUOUS SPANS



PIER ELEVATION
FIXED BEARING
CONTINUOUS SPANS

REGION		ROUTE	PROJECT	ROUTE	PROJECT
3	VA.				

Notes:

Material: Elastomer - 50 durometer hardness.
Shim - ASTM A36 or A570 mild steel.

Elastomeric bearings shall be molded as a single unit.

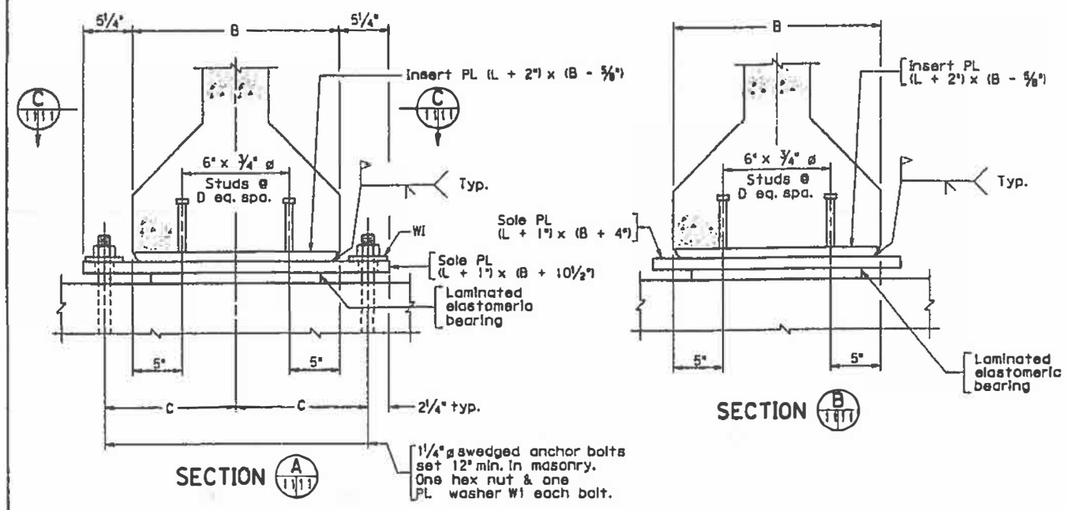
Bevel sole plates to grade. Minimum ¾" thickness.

Insert plate shall provide uniform bearing over its entir area. Insert plate is 1" wider than sole plate.

In welding insert plate to sole plate, ample time shall be between weld passes to prevent heat damage to the sole plate and elastomeric pad. Elastomer shall not be s to temperatures higher than 400 ° F.

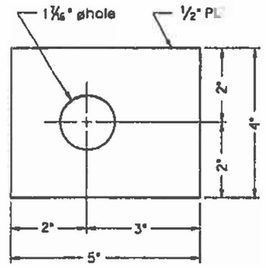
For closure diaphragm details, see sheet 10.

For designation of fixed or expansion bearings, see ele on front sheet.

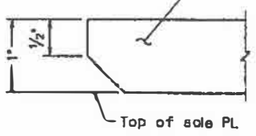


SECTION (A)

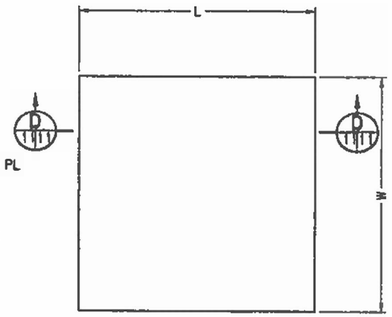
SECTION (B)



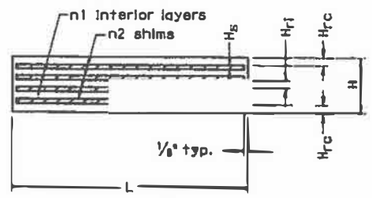
WASHER WI



CHAMFER DETAIL

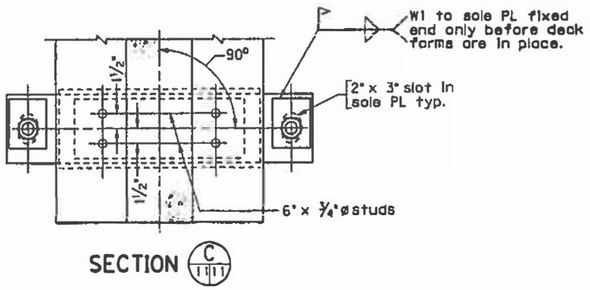


Beam Type	B	C	D
II	1'-6"	1'-0"	1
III	1'-10"	1'-2"	1
IV	2'-2"	1'-4"	2
V	2'-4"	1'-5"	3
VI	2'-4"	1'-5"	3



SECTION (D)

LAMINATED ELASTOMERIC BEARING



SECTION (C)

Span	Abut.	Pier	Beam Type	A	Laminated Elastomeric Bearing						Grade %
					W	L	H	H_{rc}	n1 @ H_{ri}	n2 @ H_s	
A	A	——	III	2 1/16"	16	11	1 5/16"	0.2500	2 @ 0.3519	3 @ 0.1196	1.6
A	——	1	III	2 3/16"	16	11	1 3/16"	0.2500	2 @ 0.3519	3 @ 0.1196	1.0
B	——	1	III	2 3/16"	16	11	1 3/16"	0.2500	2 @ 0.3519	3 @ 0.1196	1.0
B	——	2	III	2 7/16"	17	10	2 1/16"	0.2500	3 @ 0.3614	4 @ 0.1196	0.5
C	——	2	III	2 7/16"	17	10	2 1/16"	0.2500	3 @ 0.3614	4 @ 0.1196	0.5
C	B	——	III	3 1/16"	17	11	2 11/16"	0.2693	4 @ 0.3877	5 @ 0.1196	0

All dimensions in table are in inches.

7-15-96

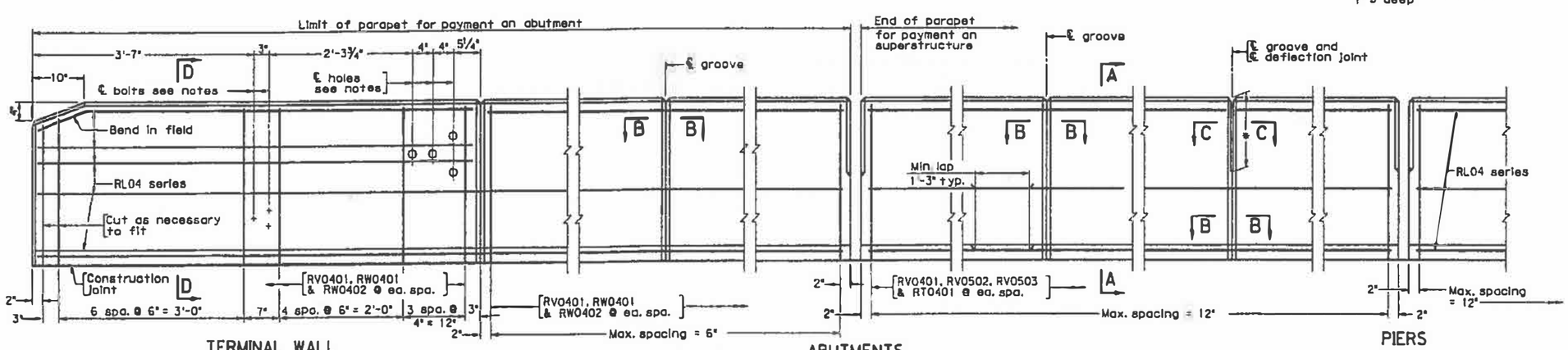
BBD-8

No.	Description	Date
Revisions		

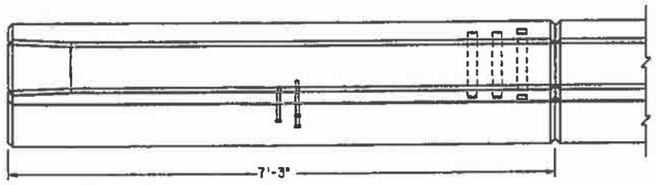
PRESTRESSED CONCRE BEARING DETAIL

Designed: .	Date	Plan No
Drawn:		
Checked: .		

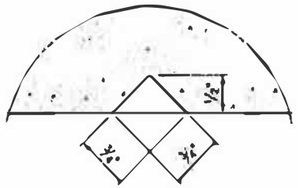
REGION	ROUTE	PROJECT	ROUTE	PROJECT



ELEVATION
Scale: 1" = 1'-0"

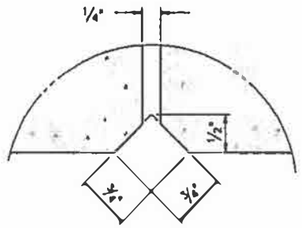


PART PLAN
Scale: 1" = 1'-0"



SECTION B-B
Full Scale

Groove detail for both sides of parapet



SECTION C-C
Full Scale

Deflection joint detail for both sides of parapet

NOTES:

Rounded edges with 1" radius may be used in lieu of be top of parapet.

Reinforcing bars RV0502 and RV0503 shall be galvanized. A reinforcing bars shall be epoxy coated.

Detail shown at pier is applicable when joint is in slab. Wh is continuous over pier, use groove and deflection joint

Spacing of grooves to be approximately 8'-0". If lighting is used (see Bridge Conduit System), groove shall be loca proximately 4'-0" from ℄ light standard. Spacing of defle joints shall not exceed three groove spaces.

Barrier delineator size, color, and spacing to be in accor with the Specifications. Cost of delineator to be includ price bid for parapet. Reflective surface of barrier deli all instances, to be facing oncoming traffic.

The Contractor shall determine all dimensions and details sary for installation.

All concrete shall be Class A4.

For details of wingwall below construction joint, see abu sheet(s).

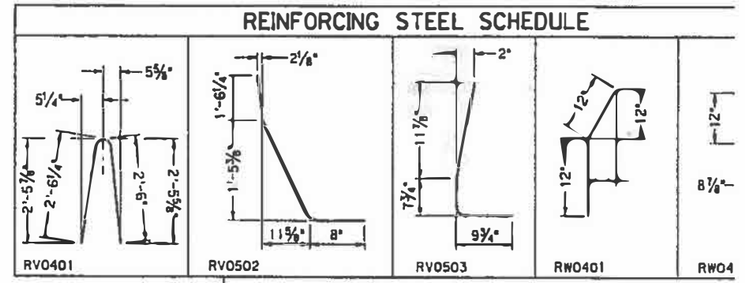
Terminal walls are detailed to take guardrail attachment

Holes, where shown, shall be formed with sleeves of 1½" d nal pipe.

Bolts, where shown, shall be ⅝" dia. expansion anchor bolts to be drilled and installed when rub rail is attached.

For extruded parapets: During extrusion, open joints at and piers shall be formed by the use of lubricated plat other means so that uniformity of the opening and ch maintained. Dimension of 1" (as shown in Section thru Jo Extrusion Only) is additional deck slab that shall be cast tractor's expense. Dimension(s) to face of curb shall not duced.

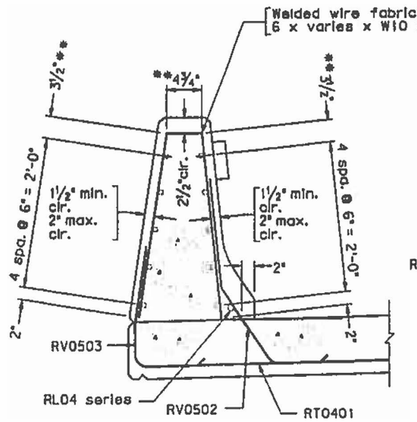
REINFORCING STEEL SCHEDULE



Dimensions in bending diagram are out to out of bars, except as shown.

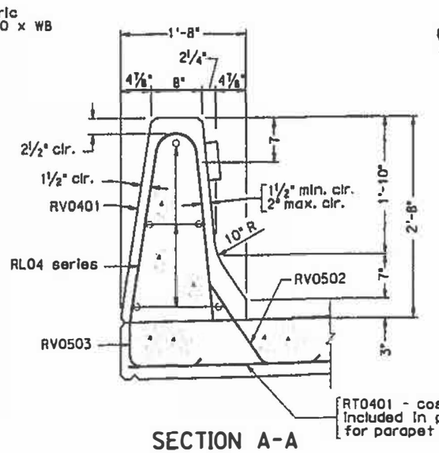
Mark	No.	Size	Length	Pin ø	Loca
RT0401		#4	3'-0"	—	Slab
RV0401		#4	5'-2"	4½"	Parapet
RV0502		#5	3'-10"	3¾"	Parapet
RV0503		#5	2'-4"	3¾"	Parapet
RW0401		#4	2'-0"	3"	Terminal W
RW0402		#4	2'-5"	3"	Terminal W
RL04		#4		—	Parapet

Cost of all bars listed in schedule to be included in price bid f



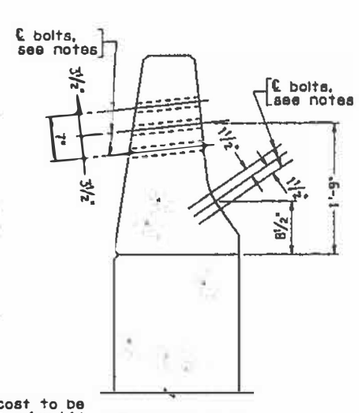
**Dimensions are out-to-out of wires.

SECTION A-A
ALTERNATE REINFORCING STEEL
Scale 1" = 1'-0"



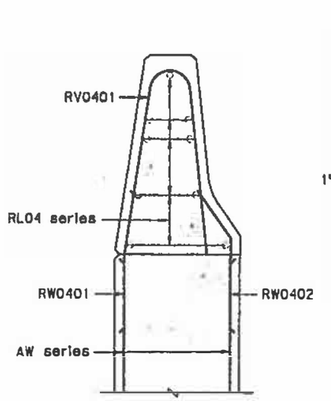
SECTION A-A
Scale: 1" = 1'-0"

Gross concrete quantities (C.Y.) = Lin. ft. x 0.105
All concrete above roadway slab



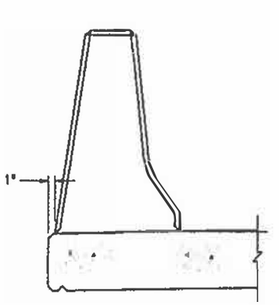
SECTION D-D
Scale: 1" = 1'-0"

Reinforcing steel not shown



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

Holes and bolts not shown. For details not shown, see Section A-A.



SECTION THRU JOINTS FOR EXTRUSION ONLY
Scale: 1" = 1'-0"

No.	Description	Date
	Revisions	

Designed:
Drawn: ....
Checked:

Date

Plan No.

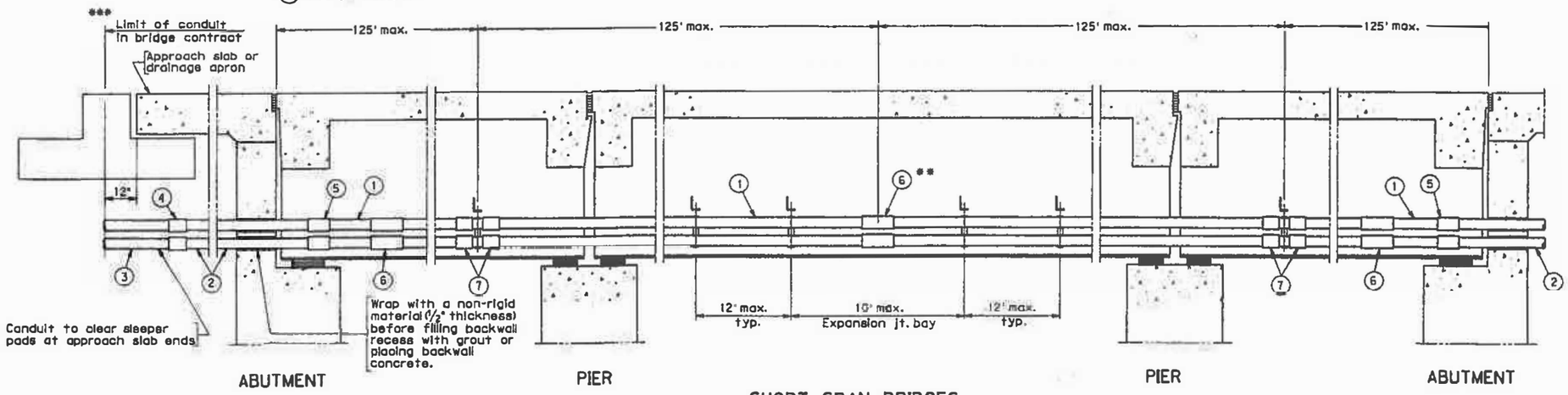
CAST-IN-PLACE CONCRETE PARAPET (F

CADD BPB-3A 2-01-99

REGION	STATE	ROUTE	PROJECT	ROUTE	PROJECT
-	-				

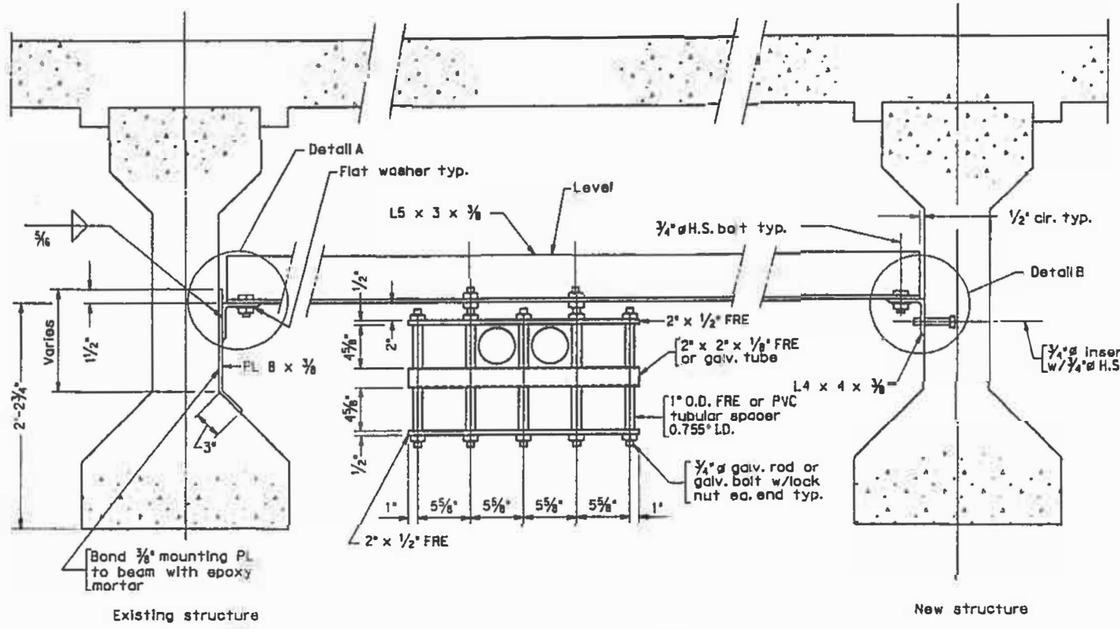
(1) 4" ø FRE duct
(2) 4" ø galv. steel duct
(3) 4" ø PVC-B duct
(4) PVC-galv. adaptor
(5) Galv.-FRE adaptor
(6) FRE exp. joint
(7) FRE lock ring

*** Limit of telephone conduit in bridge contract when approach slabs or drainage aprons are not used shall be the extension of the conduit a minimum of one foot behind back of backwall.

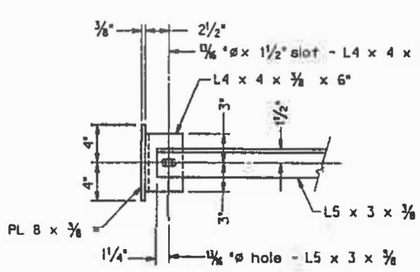


SHORT SPAN BRIDGES

Max. span L = 200'

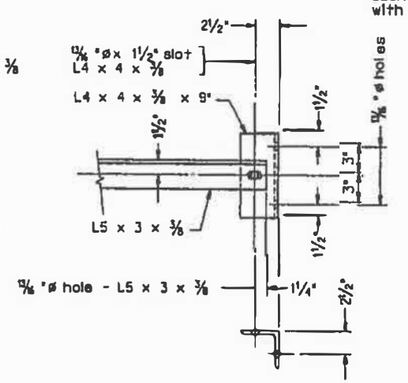


TYPICAL SUPPORT DETAIL



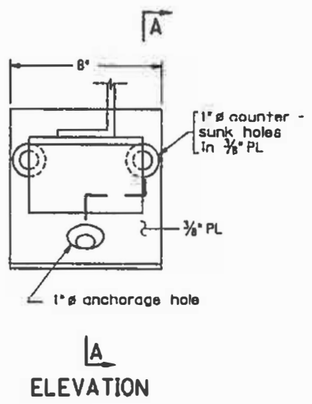
DETAIL A

Existing structure

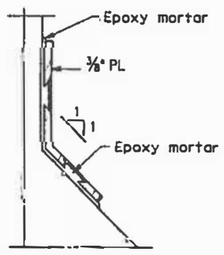


DETAIL B

New structure



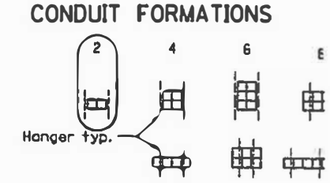
ELEVATION



SECTION A-A

MOUNTING PLATE DETAIL

CONDUIT FORMATIONS



NOTES:

Glass fiber reinforced epoxy (FRE) duct shall comply with D2310 and ASTM D2996, and shall be RTRP-11AD-111, except fied herein.

Inside diameter shall be 4.00" minimum, wall thickness shal minimum.

Duct performance shall not be impaired by exposure to let radiation. Duct shall have fire resistance which equ ceeds requirements of U.L. 651 - Section 17.

Joints shall be positive locking, (threaded bell and spigo sive bonded bell and spigot, or driven tapered bell spigo

Expansion joints shall be sliding sleeve type, with or wi o'rings, with provision for minimum of 6" expansion trav

Lock rings shall be split FRE duct, minimum of 3" long, .0 mum thickness, glued in place after installation of con

Threaded couplings shall be used on steel conduit.

Steel fittings and rods shall be galvanized in accordanc ASTM A153.

Support angles shall be galvanized in accordance with A

Hanger details shown are designed to support as many duits. Dead loads used were as follows: Cables = 8.5 lbs./ conduit, Conduit = 0.8 lbs./ft.

Underground installation of PVC-B duct shall be in acco Road and Bridge Standards EC1-1 except the minimum sp tween ducts shall be ¾".

Contractor shall space supports for the telephone conc such that the ¾"ø inserts for the H.S. bolts will not in with the draped strands in the prestressed concrete

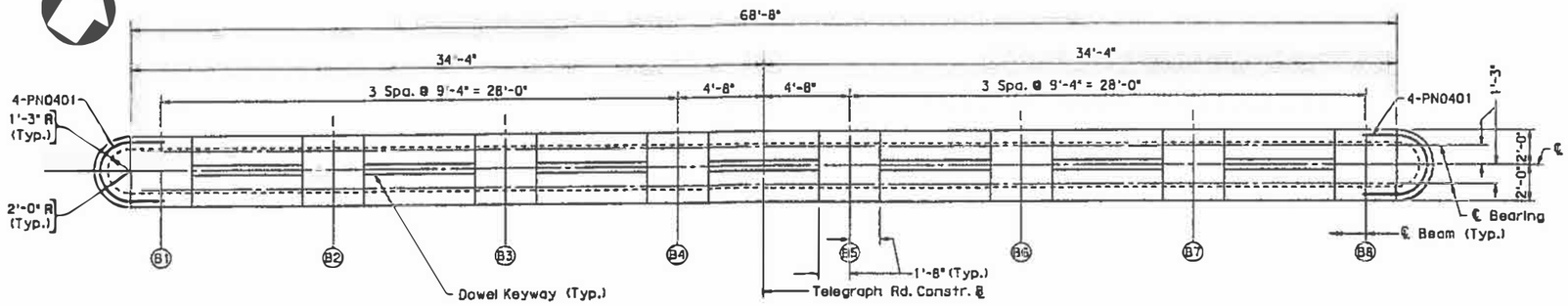
CADD BTC-7 MOD. 7-1-93

No.	Description	Date
	Revisions	

TELEPHONE CONDUIT

G. Henderson
Designed:
Drawn: ...
Checked:
Date
Plan No.

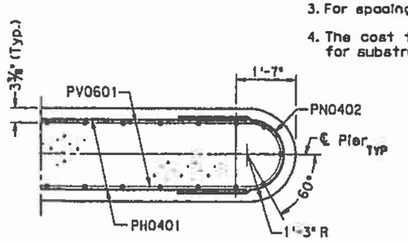
FHWA REGION	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT
-					



PLAN OF CAP

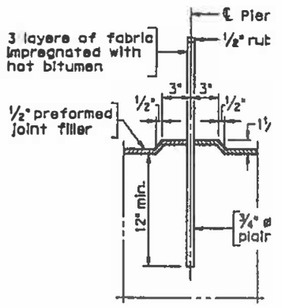
Notes:

1. When finishing concrete between and beyond pc surface to drain from ℄ pier to edge of cap.
2. Piles to be driven to depths in accordance with Specifications 403.06 (e).
3. For spacing of dowel bars, see sheet 10.
4. The cost for dowel bars shall be included in the for substructure concrete.



SECTION B 1414

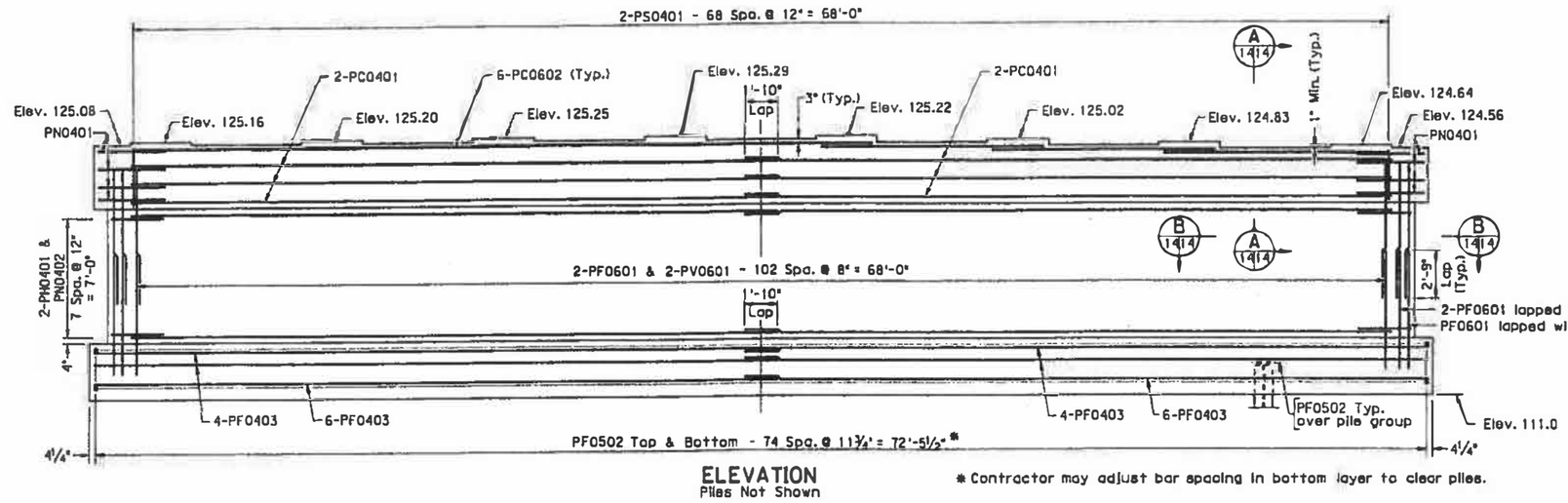
Scale: ½" = 1'-0"



DOWEL DETAIL

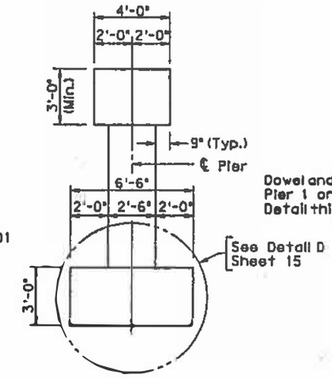
Pier 1 Only - Typ. between

Scale: 1½" = 1'-0"

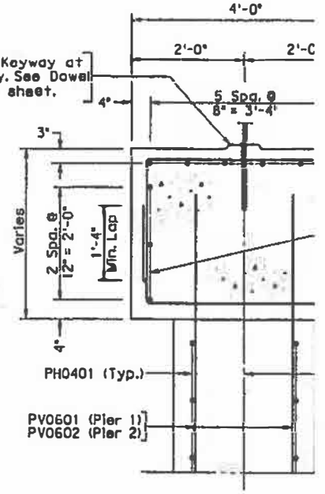


ELEVATION
Piles Not Shown

* Contractor may adjust bar spacing in bottom layer to clear piles.

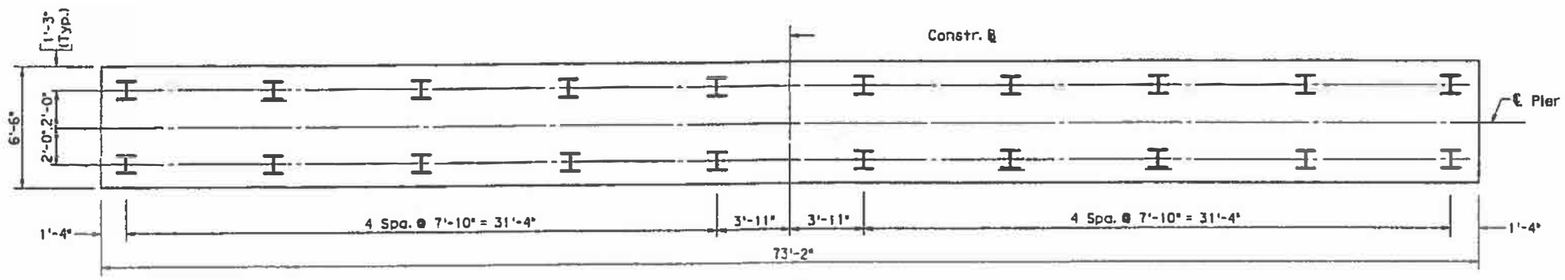


END VIEW
Piles Not Shown



SECTION A 1414

Scale: ¾" = 1'-0"



PILE PLAN

No.	Description	Date
	Revisions	

PIER 1

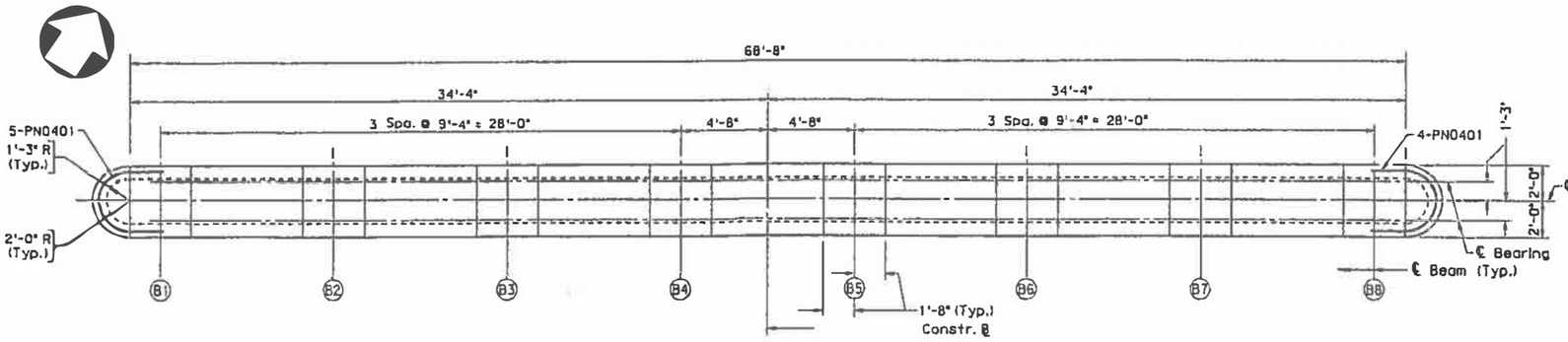
Designed:
Drawn:
Checked:

Date

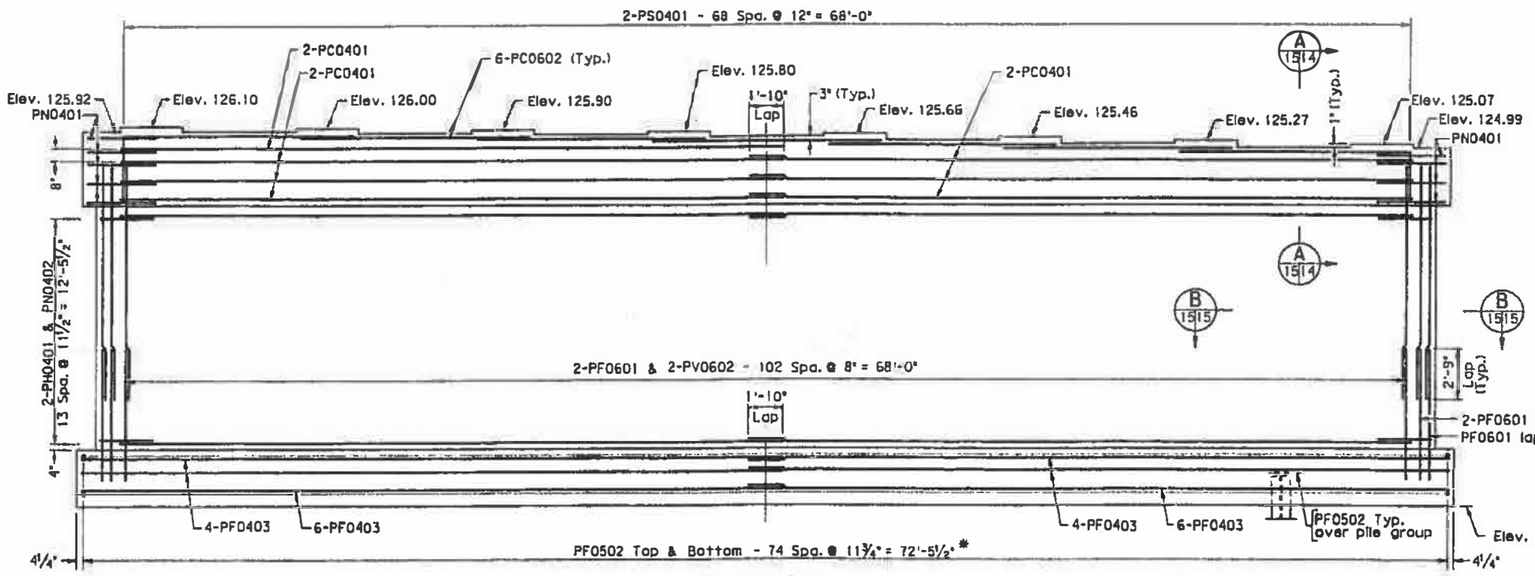
Plan N

Scale: ¼" = 1'-0" unless otherwise noted

FHWA REGION	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT
--	---				

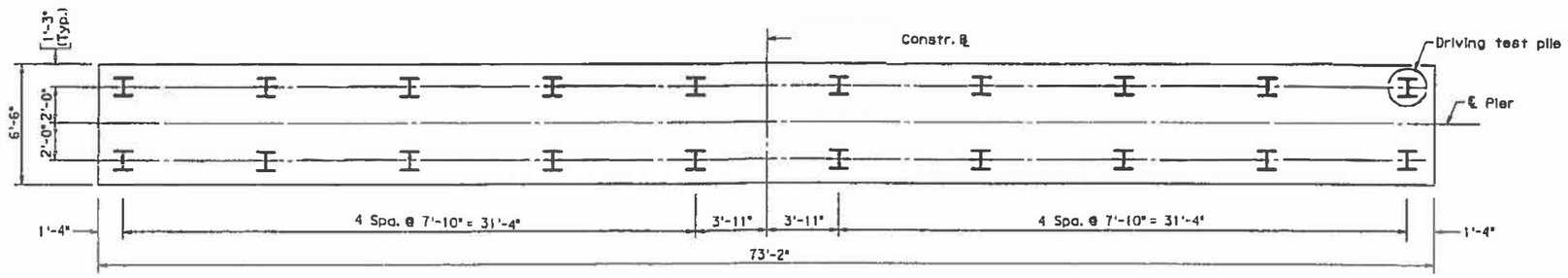


PLAN OF CAP



ELEVATION
Piles Not Shown

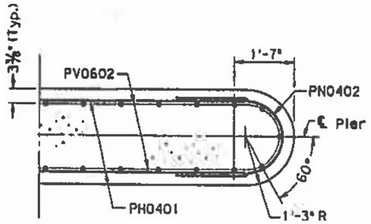
* Contractor may adjust bar spacing in bottom layer to clear piles.



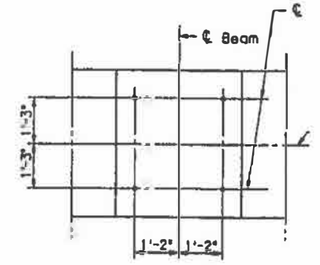
PILE PLAN

Notes:

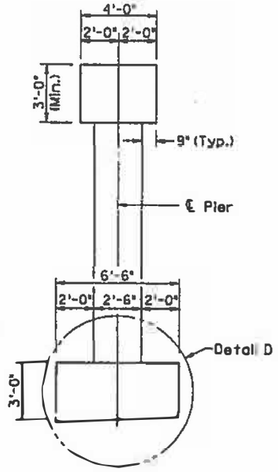
1. When finishing concrete between and beyond pc surface to drain from ℄ pier to edge of cap.
2. Piles to be driven to depths in accordance with Specifications 403.06 (a).



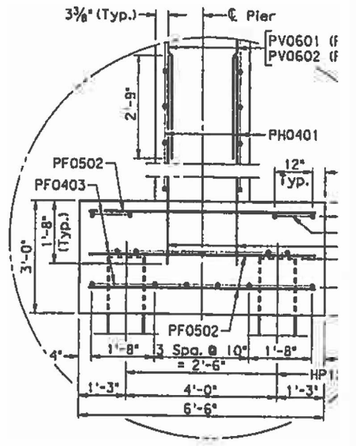
SECTION B 19|15
Scale: ½" = 1'-0"



TYPICAL ANCHOR BOLT LA
Scale: ½" = 1'-0"



END VIEW
Piles Not Shown



DETAIL D
Scale: ½" = 1'-0"

Scale: ¼" = 1'-0" unless otherwise noted

No.	Description	Date
	Revisions	

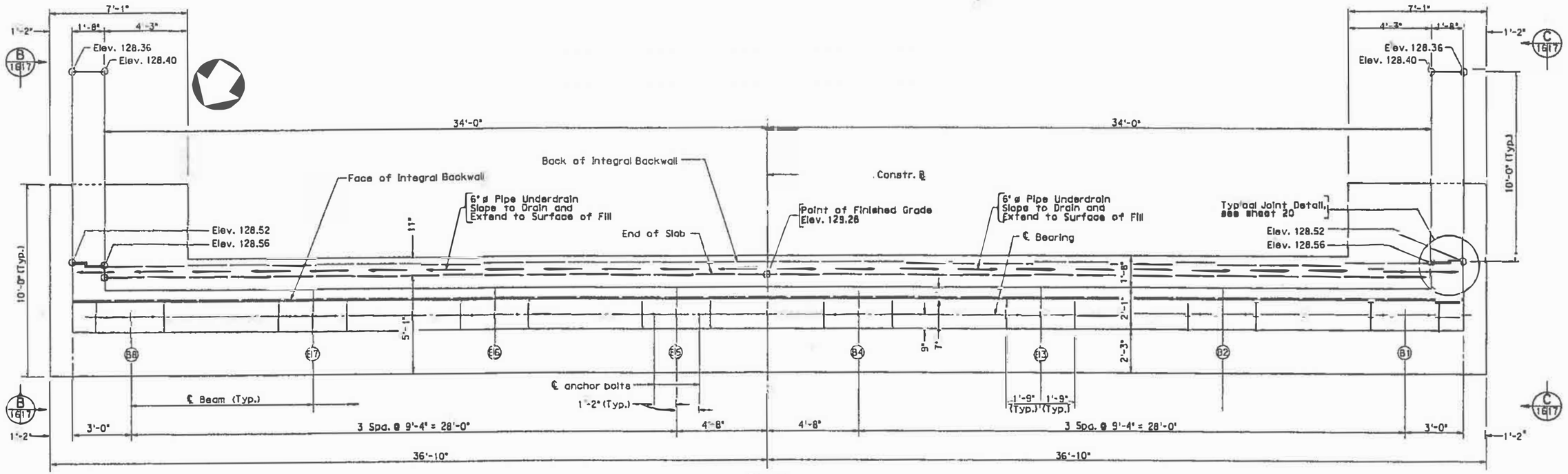
Designed:
Drawn:
Checked:

Date

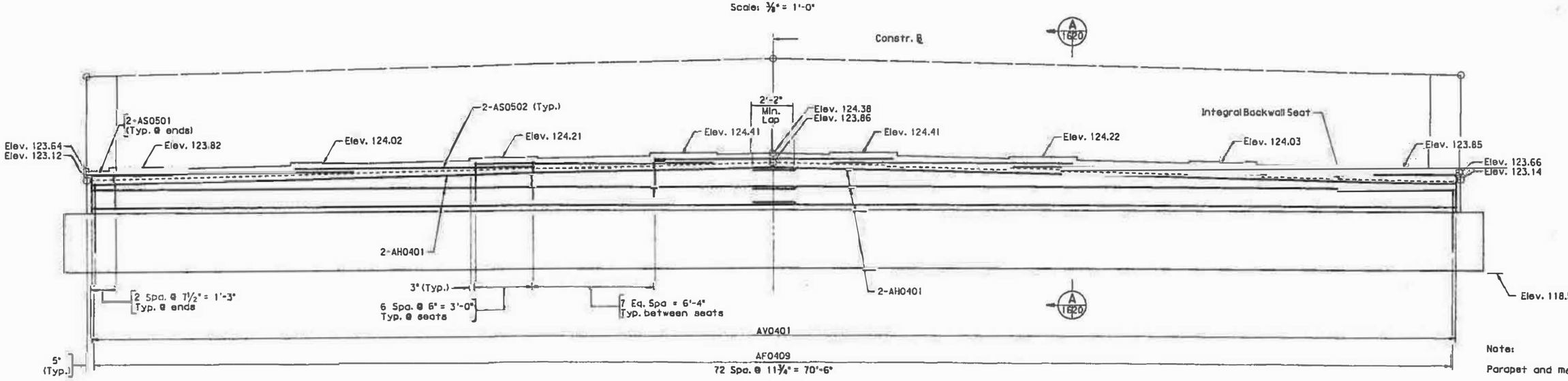
Plan No

PIER 2

REGION	STATE	ROUTE	PROJECT	ROUTE	PROJECT



PLAN
Scale: ⅜" = 1'-0"



ELEVATION
Footing reinforcement and piles not shown
Scale: ⅜" = 1'-0"

Note:

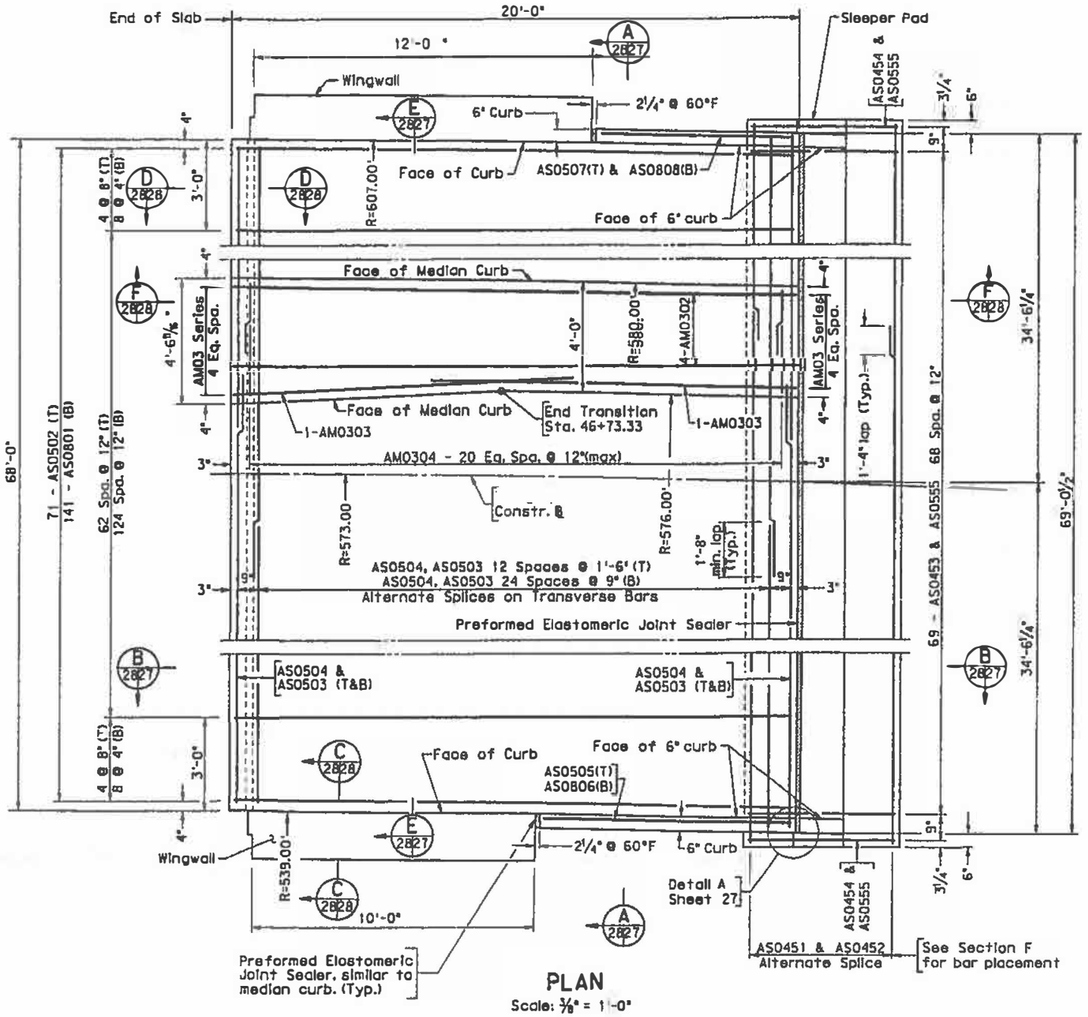
Parapet and median re

ABUTMENT A
PLAN & ELEVATI

No.	Description	Date
	Revisions	

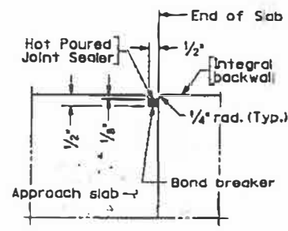
Designed:
Drawn:
Checked:

Date	Plan No.



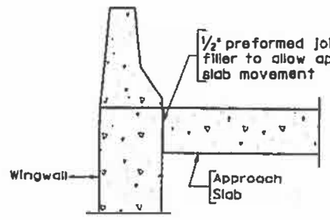
PLAN

Scale: ⅜" = 1'-0"



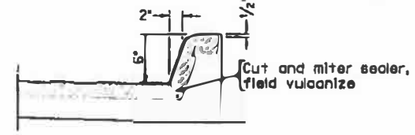
SECTION D/2728 D/2828

Scale: 3" = 1'-0"



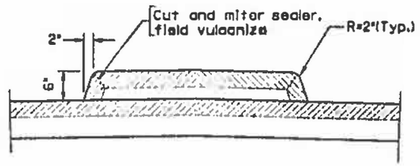
SECTION C/2728 C/2828

Typical Each Wingwall
Not To Scale



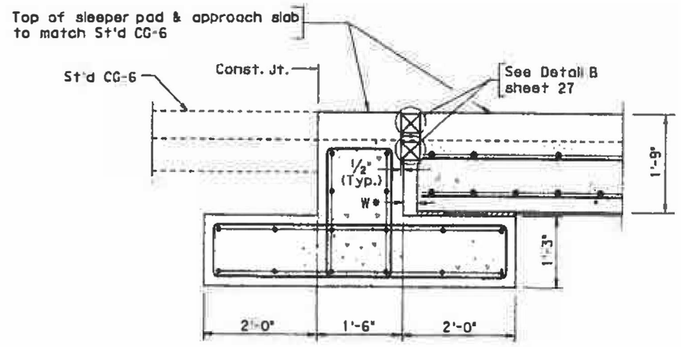
ELASTOMERIC JOINT AT CURBS

Scale: ¾" = 1'-0"



ELASTOMERIC JOINT AT MEDIAN

Not to Scale

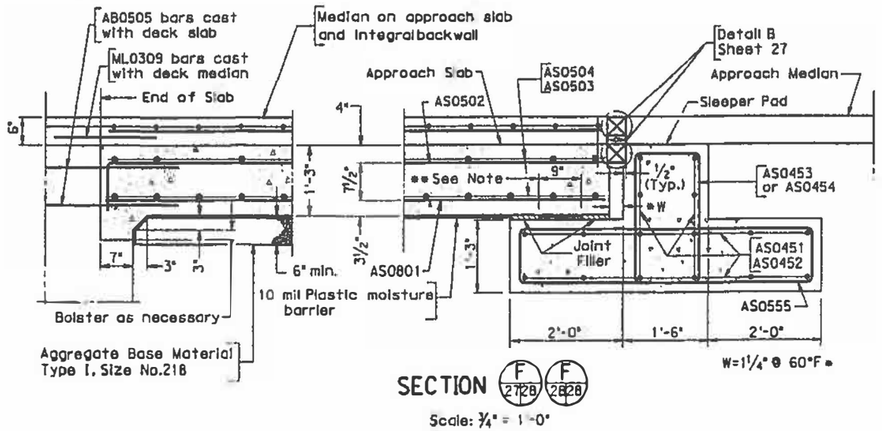


• W=1¼"=60°F

For reinforcing details, see Section B, sheet 27.

CURB DETAIL AT SLEEPER SLAB

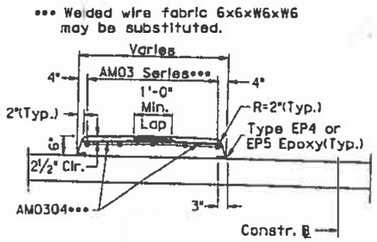
Scale: ¾" = 1'-0"



SECTION F/2728 F/2828

Scale: ¾" = 1'-0"

••• Welded wire fabric 6x6xW6xW6 may be substituted.



MEDIAN DETAIL

Scale: ½" = 1'-0"

FHWA REGION	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT

Notes:

Capacity: HS20-44 loading and alternate military loading.

All joints that are to be sealed shall be free of crack spalled areas and their faces shall be free of all foreig ter, curing compound, oils, greases and dirt. All faces mu sandblasted or brushed with a mechanical rotary wire b prior to sealing, the joint shall be blown out with all-fr compressed air.

Preformed sealer shown is for heavy-duty structural ty and may vary slightly depending on manufacturer. Seal installed in one continuous piece.

Joint width, W (1¼"), is the final joint width of the cur when placed at 60° F. All joint widths at Abutment B a shall be increased or decreased for every 10° F temper or rise respectively by ⅛".

Deformed reinforcing bars shall conform to ASTM A615, All reinforcing bar dimensions except for bending diagra centers of bars.

The cost for the aggregate material and moisture barr the approach slab will be included in the price bid for for the approach slab and no additional compensation w

Structural approach slabs, including sleeper pads and 3½ Elastomeric Joint Sealer, are not included in the bridge

Prime aggregate base material with 0.35 gal. per sq. yd. L Asphalt Material Type RC-70, RC-250 or MC-250 if aggrega base is exposed for more than 2 weeks.

•• 2-⅛" X 9" preformed bedding material pads conforming to full length of sleeper pad seat. Between the pads use powdered graphite lubricant or Molykote 321 by Dow Co Mantek Dri-guard. Cost to be included in other bid iten

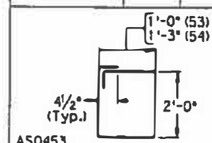
T & B denote Top & Bottom.

½" preformed joint filler to be included with cost of ap

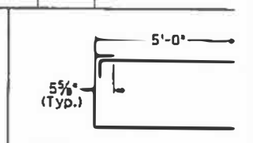
For details of preformed elastomeric joint sealer, see s

REINFORCING STEEL SCHEDULE

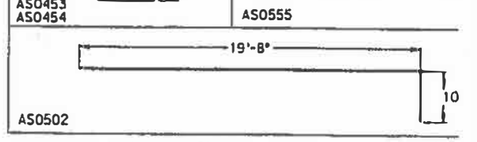
Mark	No.	Length	Pin ø	Location
AS0801	141	19'-8"	——	Bottom longitud
AS0502	71	20'-4⅜"	3¾"	Top longitudinal
AS0503	42	40'-0"	——	Top & bot. trans
AS0504	42	30'-2"	——	Top & bot. trans
AS0505	1	8'-6"	——	Top longitudinal
AS0806	1	8'-6"	——	Bottom longitud
AS0507	1	6'-6"	——	Top longitudinal
AS0808	1	6'-6"	——	Bottom longitud
AS0451	16	40'-0"	——	Sleeper Pad Tran
AS0452	16	30'-10"	——	Sleeper Pad Tran
AS0453	69	6'-4"	2"	Sleeper Pad stirr
AS0454	2	6'-10"	2"	Sleeper Pad stirr
AS0555	71	11'-11"	2½"	Sleeper Pad stirr
AM0302	4	19'-8"	——	Median longitudir
AM0303	2	11'-2"	——	Median longitudir
AM0304	42	2'-6"	——	Median transver



AS0453
AS0454



AS0555



AS0502

Dimensions in Bending Diagram are to out-to-out of b

No.	Description	Date
	Revisions	

Designed:
Drawn:
Checked:

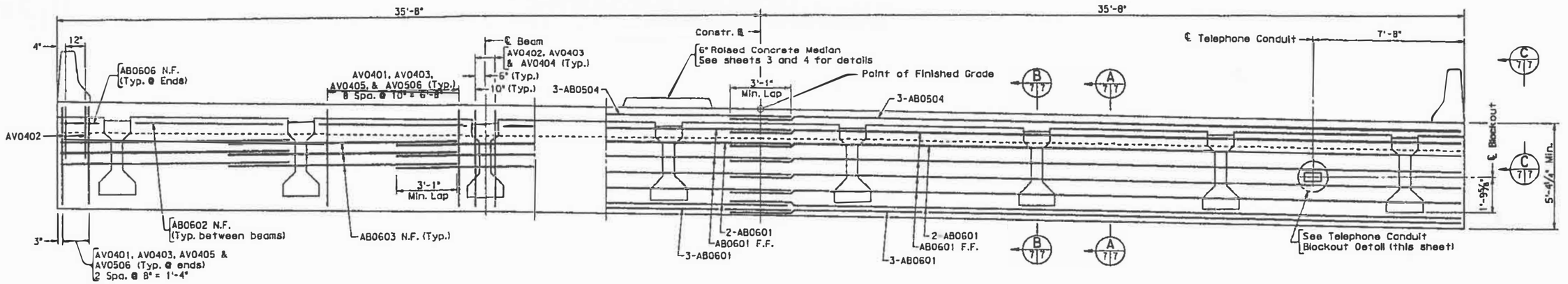
Date

Plan No

APPROACH SLAI
ABUTMENT B

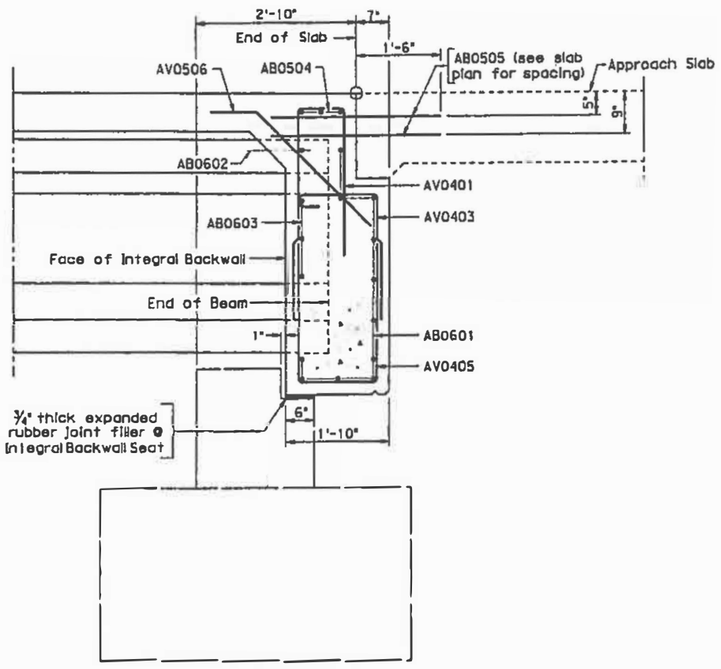
CADD BAS-11 MOD 6-20-96

FHWA REGION	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT



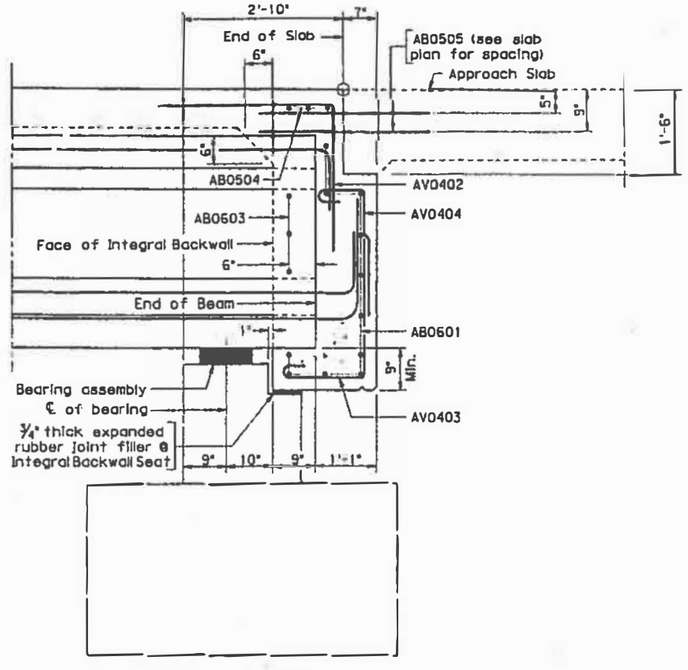
ELEVATION - INTEGRAL BACKWALL

Looking Ahead
Scale: ⅜" = 1'-0"



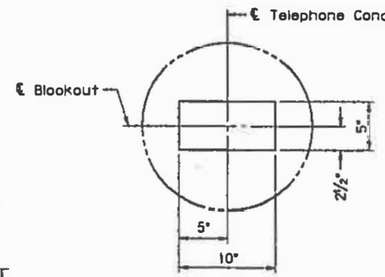
SECTION A 7|7

Scale: ¾" = 1'-0"



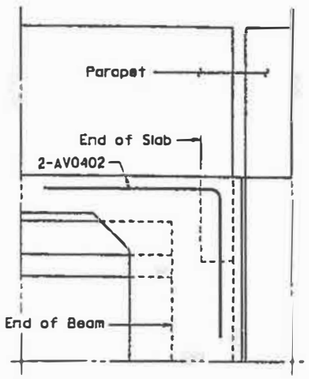
SECTION B 7|7

Scale: ¾" = 1'-0"



TELEPHONE CONDUIT BLOCKOUT DETAIL

Not to Scale



VIEW C 7|7

Scale: ¾" = 1'-0"
For additional reinforcement, see Section A 7|7

Note:

Reinforcing steel in backwall shall be adjusted to clear tele conduit blockout.

Legend:

N.F. - Near Face

F.F. - Far Face

No.	Description	Date
	Revisions	

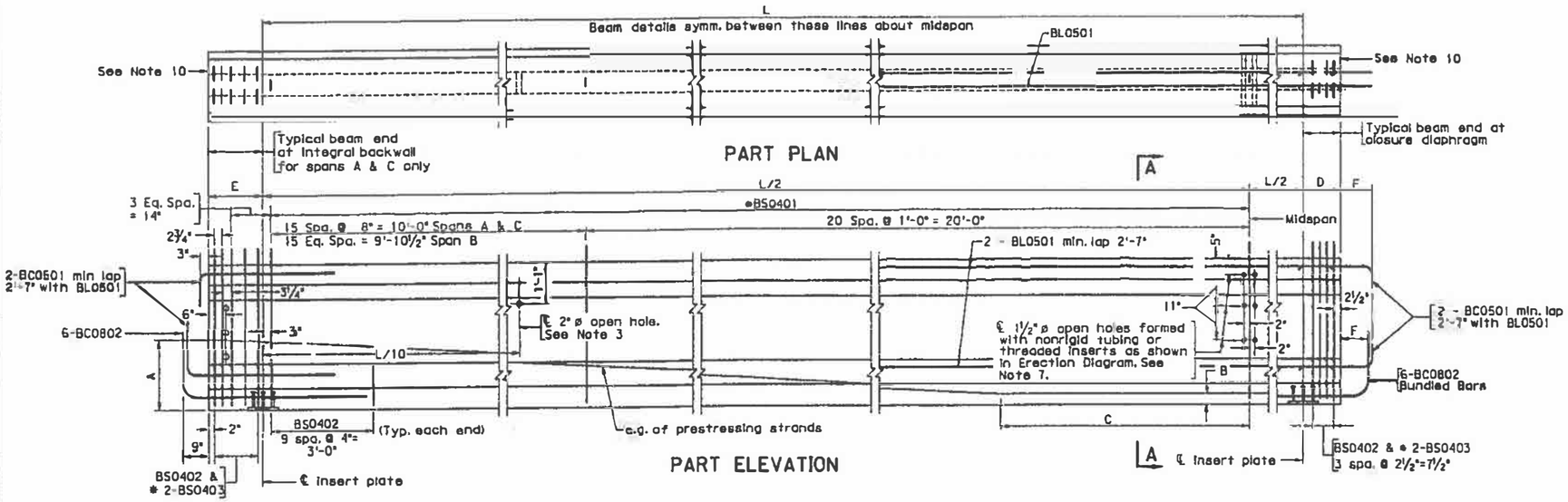
Designed:
Drawn:
Checked:

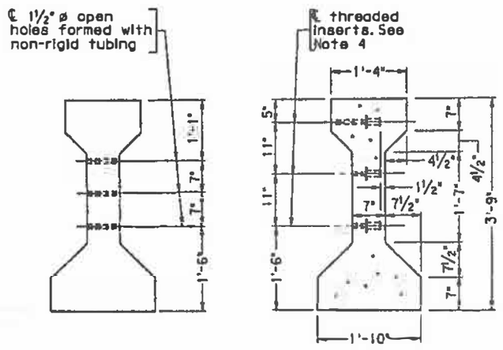
Date

Plan No.

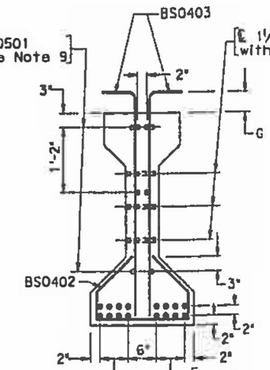
BACKWALL DETAIL
ABUTMENT B

E-M/NTELT CARD SYSTEM

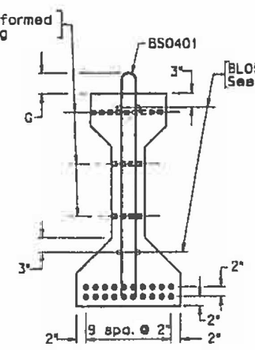




EXTERIOR BEAM
See Note 2

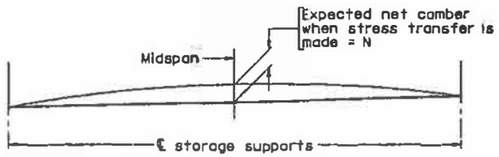


END VIEW

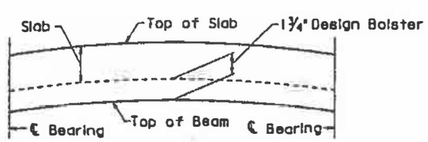


SECTION A-A

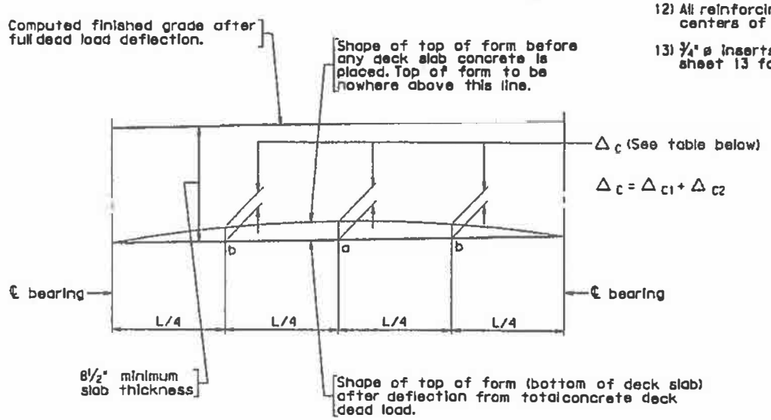
INTERIOR BEAM
For dimensions not shown, see Exterior Beam.
For placement of BC Series bars see sheet 10.



CAMBER DIAGRAM



BOLSTER DETAIL



Adjustment of deck slab forms to correct for dead load deflections shall be made by varying thickness of concrete bolster between slab and beam without alteration of slab thickness. Longitudinal screed should be set above final finished grade by amounts = △C2

△C1 = Deflection of beam from dead load of concrete deck slab, bolsters and diaphragms and does not include the deflection of the beam from its own weight.

△C2 = Deflection of composite section from dead load (e.g. parapet and curb added after deck slab is cast).

ANTICIPATED DEAD LOAD DEFLECTION**

	Beams	At a		At b	
		△C1	△C2	△C1	△C2
Spans A & C	Beams 2 thru 7	5/16"	1/16"	5/16"	1/16"
	Beams 1 & 8	5/16"	1/16"	7/16"	1/16"
Span B	Beams 2 thru 7	5/16"	0	5/16"	0
	Beams 1 & 8	5/16"	0	7/16"	0

DEAD LOAD DEFLECTION DIAGRAM

** Deflection shown are actual deflections without multipliers.

Notes:

1) At end diaphragm use 1" deep recesses around local s groups with 2" minimum edge clearances and fill with p applied mortar immediately after clipping strands. An e oxy mortar covering the ends of strands with a mini ness of 1/8" may be used as an alternate. Strands sho before mortar is applied. After mortar is allowed to a entire end of beam shall be covered with epoxy type

2) For reinforcing steel, prestressing strands and dimens shown in the exterior beam, see interior beam.

3) Beams shall have 2" ø open holes formed with nonrigid on stream crossings. Holes may be slightly shifted to forcing bars and strands.

4) Threaded insert, when embedded shall develop full stren 1/8" ø threaded bolt (ASTM A307).

5) All prestressing strands shall be low-relaxation, grade 2 uncoated.

6) For details of insert plate, see sheet 11.

7) For location of closure and intermediate diaphragms, Diagram on sheet 8.

8) The Contractor, after a written approval from the En use different prestressing strand arrangement provi the total prestressing force and its c.g. are the sam on the plans.

9) 2 - 1/2" ø strands stressed to 1000 lbs. may be substi 2 - #5 bars.

10) At closure diaphragm and integral backwall, end strand 1"± from beam after clipping. End of beam shall be ro accordance with Section 405.05 of the Road and Brid Specifications.

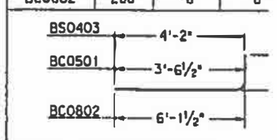
11) Top of beam to be roughened to a full amplitude of

12) All reinforcing bar dimensions except for bending diag centers of bars.

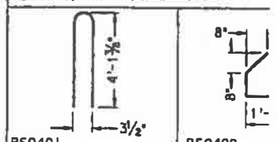
13) 3/4" ø inserts for telephone conduit supports not sho sheet 13 for details.

REINFORCING STEEL S

Mark	No.	Size	Len
BS0401	1704	#4	8'
BS0402	688	#4	4'
BS0403	416	#4	4'
BL0501	192	#5	32
BC0501	192	#5	4'
BC0802	288	#8	8'



BS0403, BC0501, & BC0802



BS0401 BS0402

Dimensions in Bending Diagrams of bars.

Reinforcing bars shown on the are for beams shown on this sh

#BS0401 or BS0403 may be slight directed by the Engineer to cle inserts.

Reinforcing bars BS0401 and BS0 galvanized. All other reinforcing epoxy coated except all BC seri non-epoxy coated.

DIMENSION TABLE

Beam	Prestr. force per strand lb.	No. and size of stranda/beam	Net camber N in.	A ft.-in.	B in.	C ft.-in.	D in.	E in.	F in.	G in.	L ft.-in.
Spans A & C	30,980	20 - 1/2" ø	7/8"	9 3/8"	3"	6'-3"	9½"	19"	8 3/8"	6¼"	60'-6"
Span B	30,980	20 - 1/2" ø	7/8"	9 3/8"	3"	6'-2"	9½"	—	8 3/8"	6¼"	60'-3"

Not to Scale

No.	Description	Date
	Revisions	

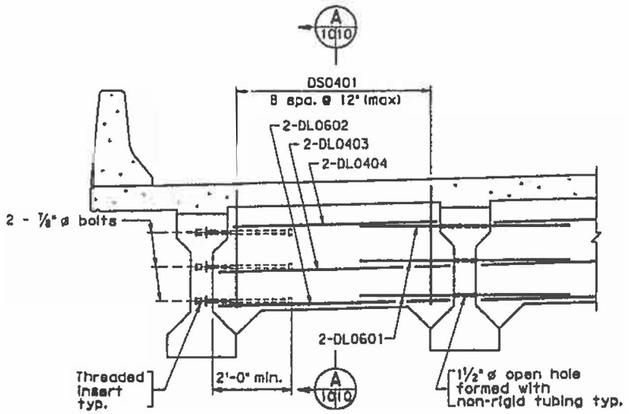
Designed:
Drawn:
Checked:

PRESTRESSED CONCRE
TYPE III

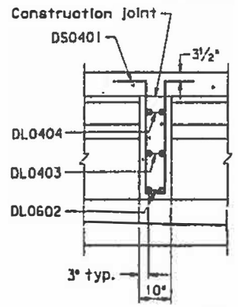
Date	Plan No.

CADD PCB-3C MOD. 11-21-96

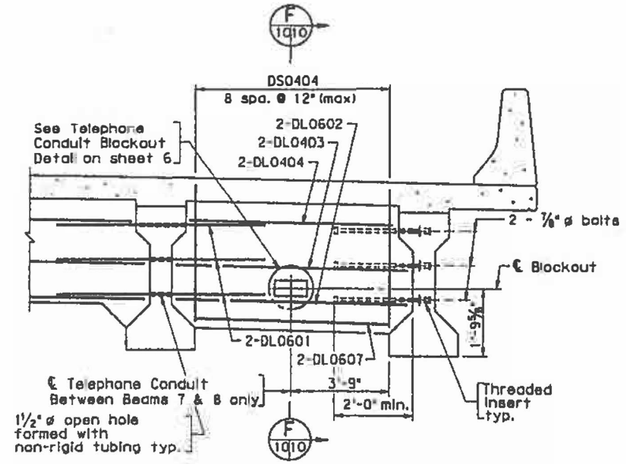
FHWA REGION	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT



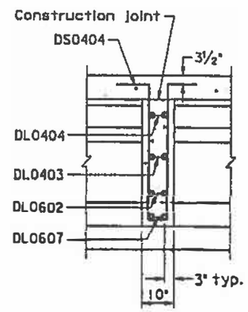
TYPICAL INTERMEDIATE DIAPHRAGM DETAILS



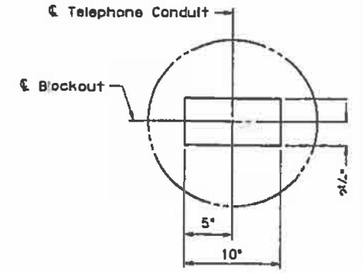
SECTION A 10 10



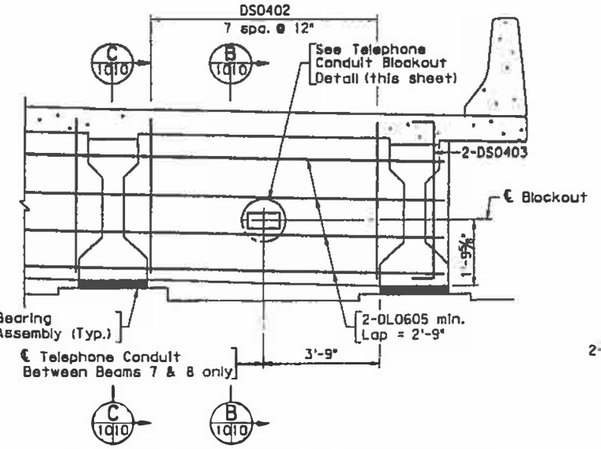
INTERMEDIATE DIAPHRAGM DETAILS
Typ. Between Beams 7 & 8 only



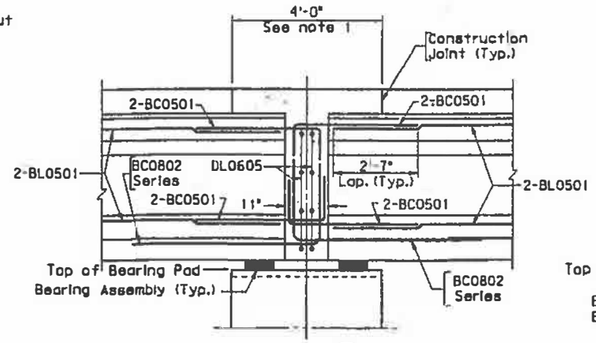
SECTION F 10 10



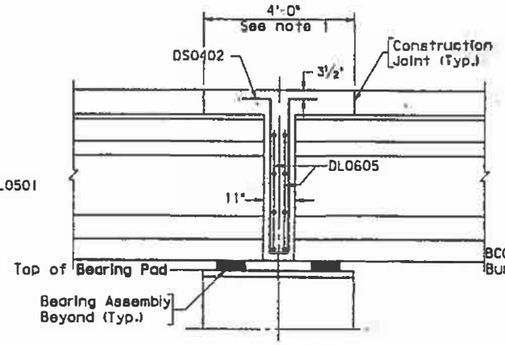
TELEPHONE CONDUIT BLOCKOUT DETAIL



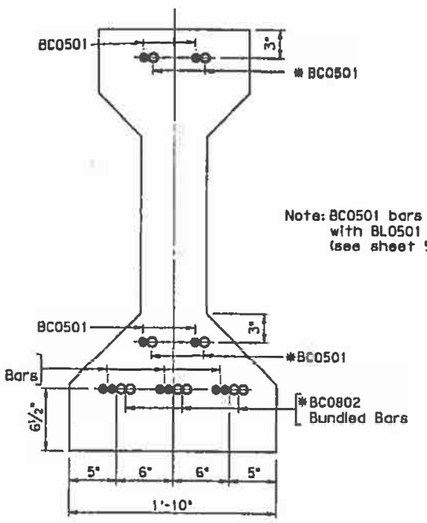
CLOSURE DIAPHRAGM, EXPANSION PIER



SECTION C 10 10

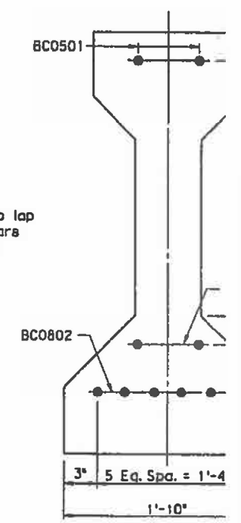


SECTION B 10 10

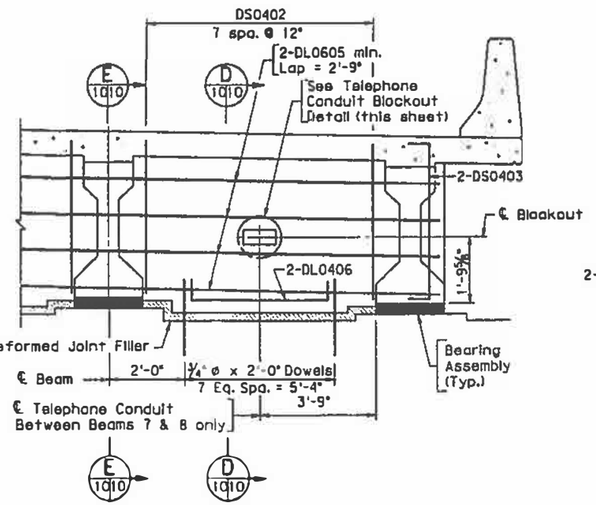


* O indicates BC bars from beam in adjacent span

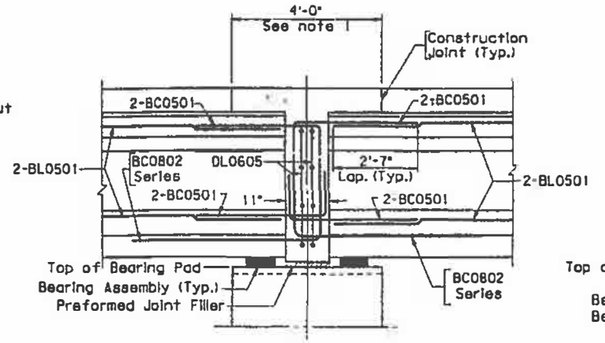
BEAM END AT CLOSURE DIAPHRAGMS



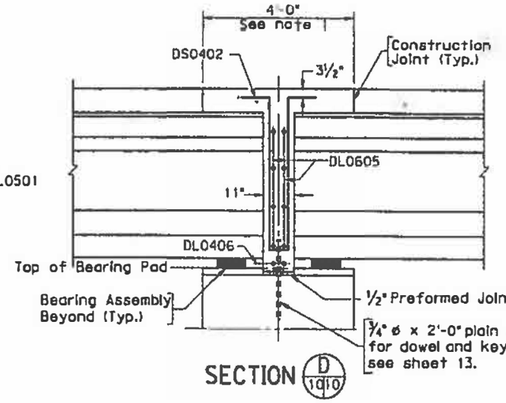
BEAM END A
INTEGRAL BACKW



CLOSURE DIAPHRAGM, FIXED PIER



SECTION E 10 10



SECTION D 10 10

Notes:

1. This portion of the slab shall be cast with the closure d
2. For details of bearing pads and bearing pad assemblies se
3. Reinforcing steel in diaphragms shall be adjusted to clear conduit blockout.

Not to Scale (unless otherwise noted)

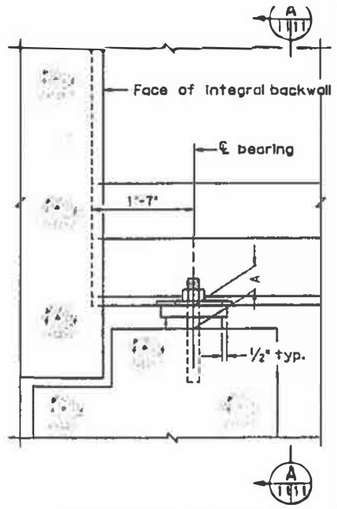
No.	Description	Date
	Revisions	

Designed:
Drawn:
Checked:

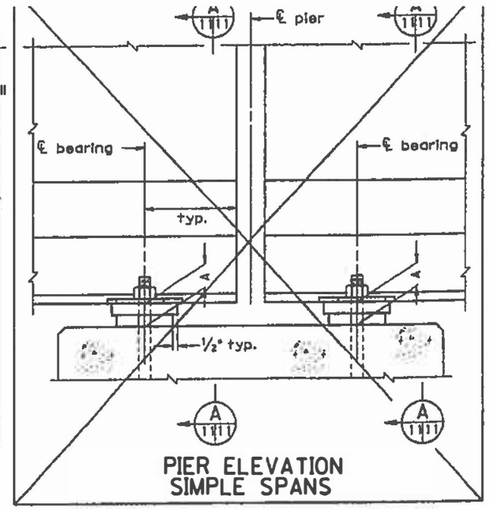
Date

Plan No.

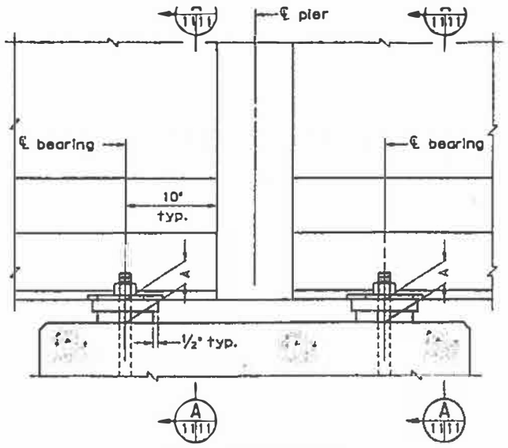
INTERMEDIATE AND CL
DIAPHRAGM DETA



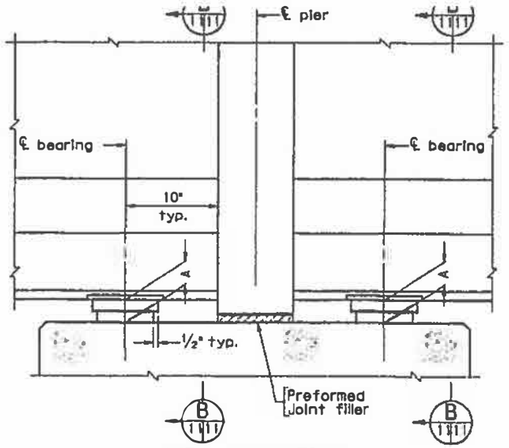
ABUTMENT ELEVATION



PIER ELEVATION
SIMPLE SPANS



PIER ELEVATION
EXPANSION BEARING
CONTINUOUS SPANS



PIER ELEVATION
FIXED BEARING
CONTINUOUS SPANS

REGION	ROUTE	PROJECT	ROUTE	PROJECT

Notes:

Material: Elastomer - 50 durometer hardness.
Shim - ASTM A36 or A570 mild steel.

Elastomeric bearings shall be molded as a single unit.

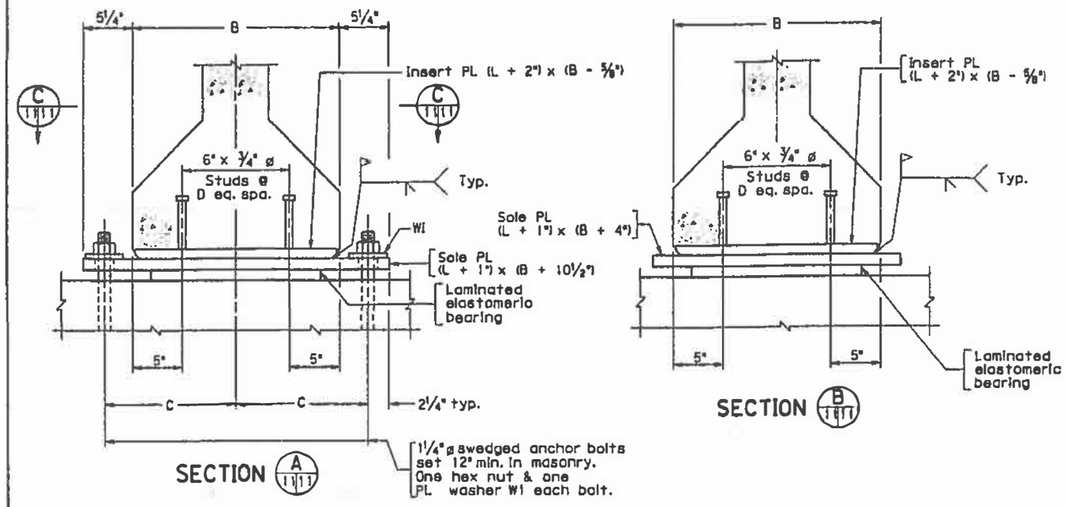
Bevel sole plates to grade. Minimum ¾" thickness.

Insert plate shall provide uniform bearing over its entir area. Insert plate is 1" wider than sole plate.

In welding insert plate to sole plate, ample time shall be between weld passes to prevent heat damage to the sole plate and elastomeric pad. Elastomer shall not be s to temperatures higher than 400 ° F.

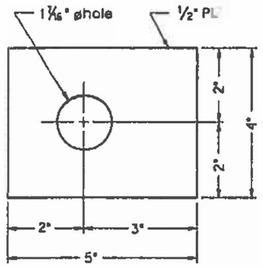
For closure diaphragm details, see sheet 10.

For designation of fixed or expansion bearings, see ele on front sheet.

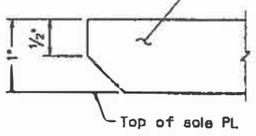


SECTION (A)

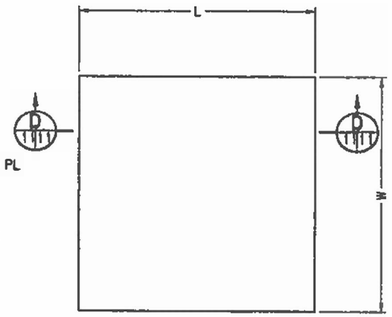
SECTION (B)



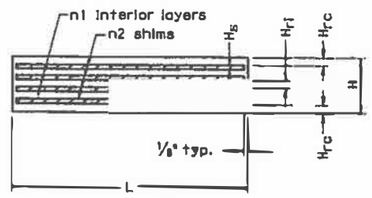
WASHER WI



CHAMFER DETAIL

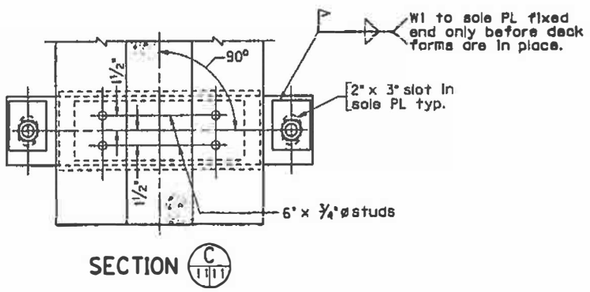


Beam Type	B	C	D
II	1'-6"	1'-0"	1
III	1'-10"	1'-2"	1
IV	2'-2"	1'-4"	2
V	2'-4"	1'-5"	3
VI	2'-4"	1'-5"	3



SECTION (D)

LAMINATED ELASTOMERIC BEARING



SECTION (C)

Span	Abut.	Pier	Beam Type	A	Laminated Elastomeric Bearing						Grade %
					W	L	H	H_{rc}	n1 @ H_{ri}	n2 @ H_s	
A	A	——	III	2 1/16"	16	11	1 5/16"	0.2500	2 @ 0.3519	3 @ 0.1196	1.6
A	——	1	III	2 3/16"	16	11	1 3/16"	0.2500	2 @ 0.3519	3 @ 0.1196	1.0
B	——	1	III	2 3/16"	16	11	1 3/16"	0.2500	2 @ 0.3519	3 @ 0.1196	1.0
B	——	2	III	2 7/16"	17	10	2 1/16"	0.2500	3 @ 0.3614	4 @ 0.1196	0.5
C	——	2	III	2 7/16"	17	10	2 1/16"	0.2500	3 @ 0.3614	4 @ 0.1196	0.5
C	B	——	III	3 1/16"	17	11	2 11/16"	0.2693	4 @ 0.3877	5 @ 0.1196	0

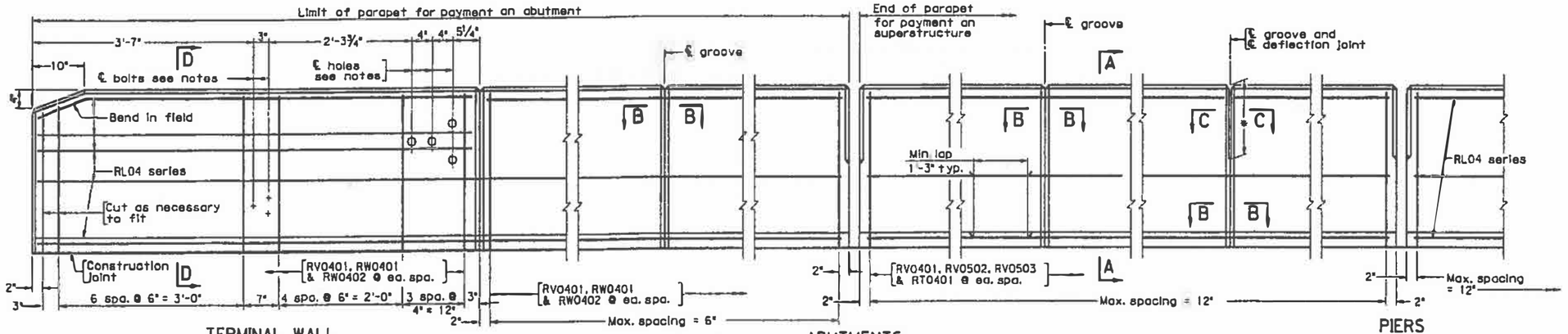
All dimensions in table are in inches.

BBD-8 MOD 7-15-96

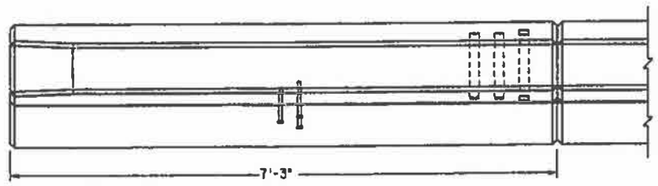
No.	Description	Date
Revisions		

PRESTRESSED CONCRE
BEARING DETAIL

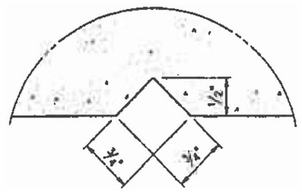
Designed:	Date	Plan No
Drawn:		
Checked: .		



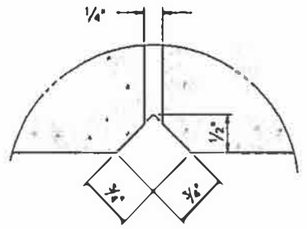
ELEVATION
Scale: 1" = 1'-0"



PART PLAN
Scale: 1" = 1'-0"



SECTION B-B
Full Scale
Groove detail for both sides of parapet



SECTION C-C
Full Scale
Deflection joint detail for both sides of parapet

NOTES:

Rounded edges with 1" radius may be used in lieu of be top of parapet.

Reinforcing bars RV0502 and RV0503 shall be galvanized. A reinforcing bars shall be epoxy coated.

Detail shown at pier is applicable when joint is in slab. Wh is continuous over pier, use groove and deflection joint

Spacing of grooves to be approximately 8'-0". If lighting is used (see Bridge Conduit System), groove shall be loca proximately 4'-0" from ℄ light standard. Spacing of defle joints shall not exceed three groove spaces.

Barrier delineator size, color, and spacing to be in accor with the Specifications. Cost of delineator to be includ price bid for parapet. Reflective surface of barrier deli all instances, to be facing oncoming traffic.

The Contractor shall determine all dimensions and details sary for installation.

All concrete shall be Class A4.

For details of wingwall below construction joint, see abu sheet(s).

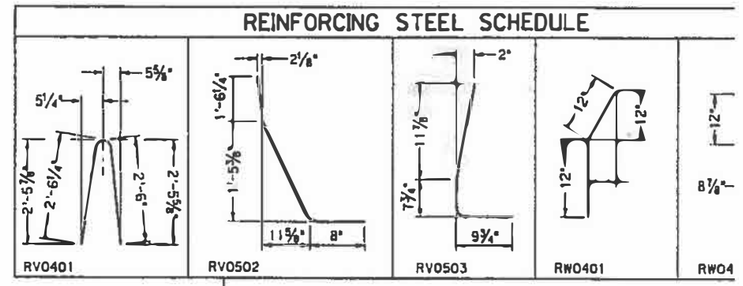
Terminal walls are detailed to take guardrail attachment

Holes, where shown, shall be formed with sleeves of 1½" d nal pipe.

Bolts, where shown, shall be ⅞" dia. expansion anchor bolts to be drilled and installed when rub rail is attached.

For extruded parapets: During extrusion, open joints at and piers shall be formed by the use of lubricated plat other means so that uniformity of the opening and ch maintained. Dimension of 1" (as shown in Section thru Jo Extrusion Only) is additional deck slab that shall be cast tractor's expense. Dimension(s) to face of curb shall not duced.

REINFORCING STEEL SCHEDULE

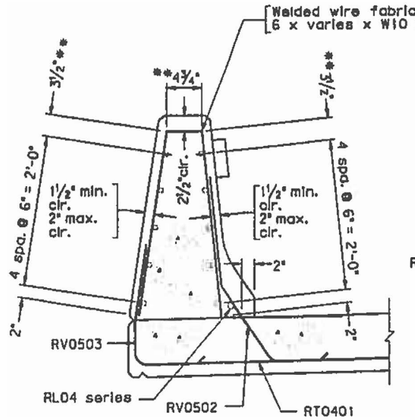


RV0401 RV0502 RV0503 RW0401 RW04

Dimensions in bending diagram are out to out of bars, except as shown.

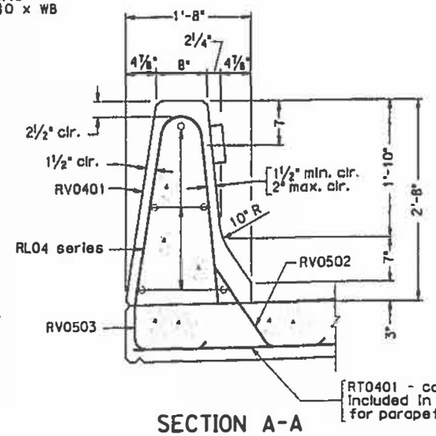
Mark	No.	Size	Length	Pin ø	Loca
RT0401		#4	3'-0"	—	Slab
RV0401		#4	5'-2"	4½"	Parapet
RV0502		#5	3'-10"	3¾"	Parapet
RV0503		#5	2'-4"	3¾"	Parapet
RW0401		#4	2'-0"	3"	Terminal W
RW0402		#4	2'-5"	3"	Terminal W
RL04		#4		—	Parapet

Cost of all bars listed in schedule to be included in price bid f



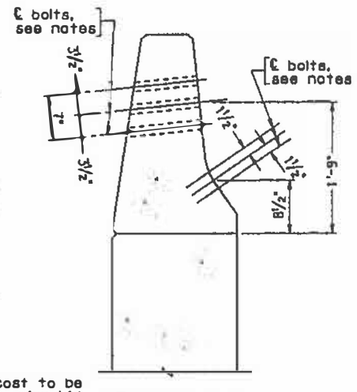
**Dimensions are out-to-out of wires.

SECTION A-A
ALTERNATE REINFORCING STEEL
Scale 1" = 1'-0"



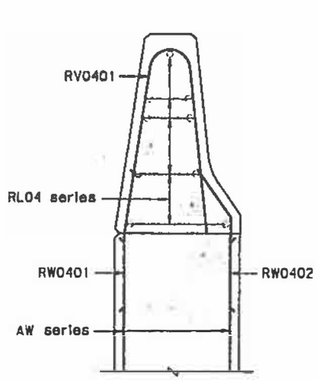
SECTION A-A
Scale: 1" = 1'-0"

Gross concrete quantities (C.Y.) = Lin. ft. x 0.105
All concrete above roadway slab



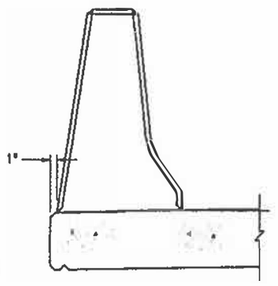
SECTION D-D
Scale: 1" = 1'-0"

Reinforcing steel not shown



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

Holes and bolts not shown. For details not shown, see Section A-A.



SECTION THRU JOINTS FOR EXTRUSION ONLY
Scale: 1" = 1'-0"

No.	Description	Date
	Revisions	

CAST-IN-PLACE CONCRETE PARAPET (F

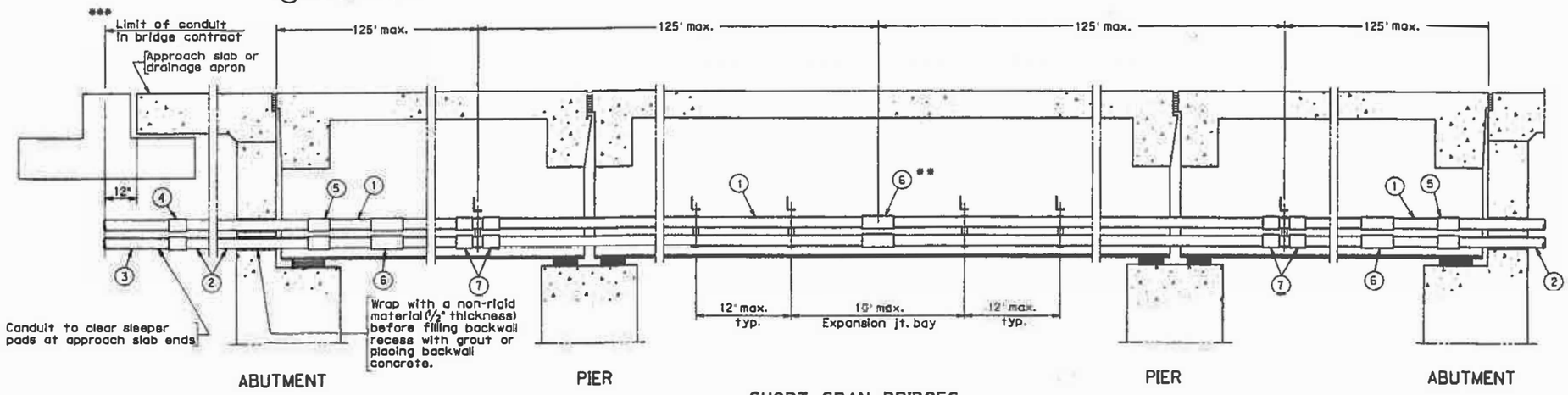
Designed
Drawn: ....
Checked:
Date
Plan No.

CADD BPB-3A 2-01-99

REGION	STATE	ROUTE	PROJECT	ROUTE	PROJECT

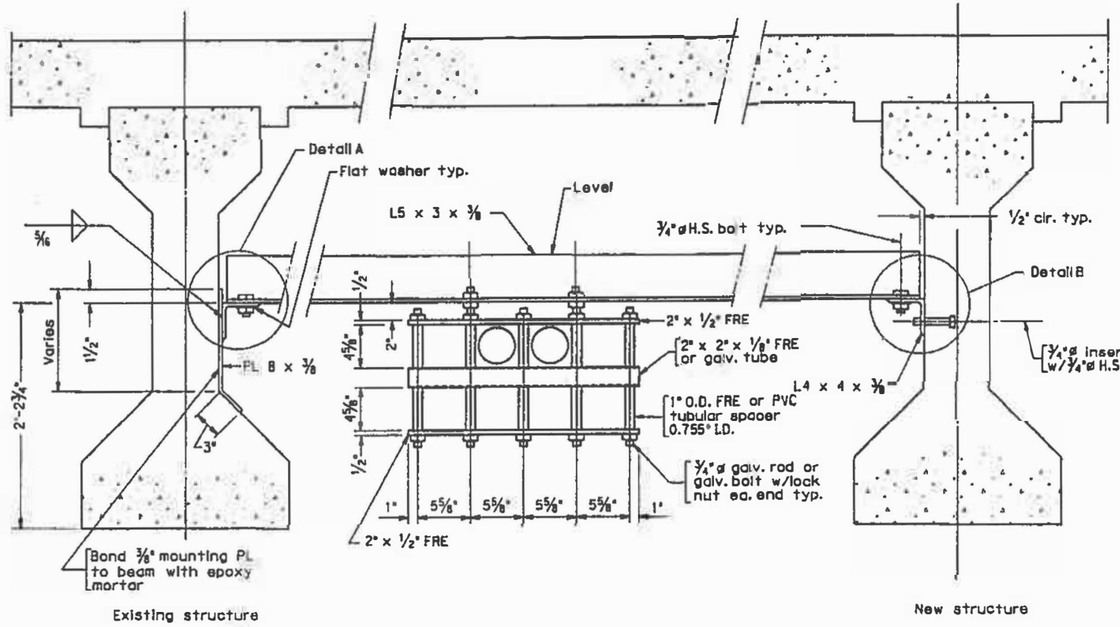
(1) 4" ø FRE duct
(2) 4" ø galv. steel duct
(3) 4" ø PVC-B duct
(4) PVC-galv. adaptor
(5) Galv.-FRE adaptor
(6) FRE exp. joint
(7) FRE lock ring

*** Limit of telephone conduit in bridge contract when approach slabs or drainage aprons are not used shall be the extension of the conduit a minimum of one foot behind back of backwall.

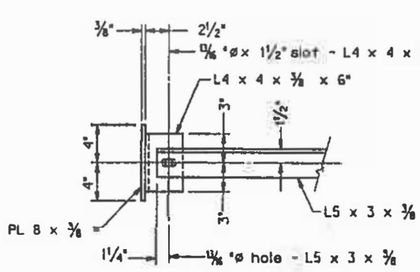


SHORT SPAN BRIDGES

Max. span L = 200'

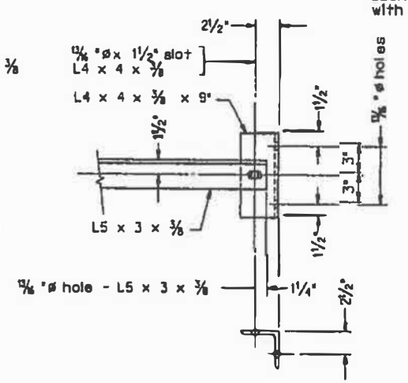


TYPICAL SUPPORT DETAIL



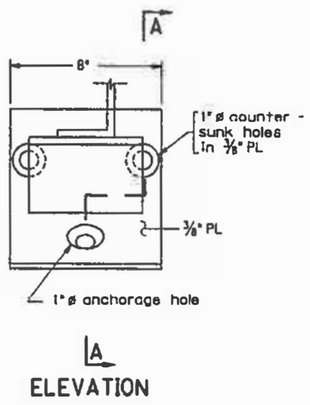
DETAIL A

Existing structure

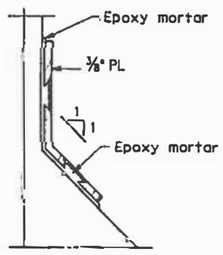


DETAIL B

New structure



ELEVATION



SECTION A-A

MOUNTING PLATE DETAIL

NOTES:

Glass fiber reinforced epoxy (FRE) duct shall comply with D2310 and ASTM D2996, and shall be RTRP-11AD-111, except fied herein.

Inside diameter shall be 4.00" minimum, wall thickness shal minimum.

Duct performance shall not be impaired by exposure to let radiation. Duct shall have fire resistance which equ ceeds requirements of U.L. 651 - Section 17.

Joints shall be positive locking, (threaded bell and spigo sive bonded bell and spigot, or driven tapered bell spigo

Expansion joints shall be sliding sleeve type, with or wi o'rings, with provision for minimum of 6" expansion trav

Lock rings shall be split FRE duct, minimum of 3" long, .0 mum thickness, glued in place after installation of con

Threaded couplings shall be used on steel conduit.

Steel fittings and rods shall be galvanized in accordanc ASTM A153.

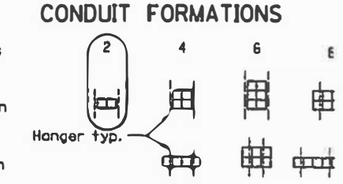
Support angles shall be galvanized in accordance with A

Hanger details shown are designed to support as many d uits. Dead loads used were as follows: Cables = 8.5 lbs./ conduit, Conduit = 0.8 lbs./ft.

Underground installation of PVC-B duct shall be in acco Road and Bridge Standards ECI-1 except the minimum sp tween ducts shall be ¾".

Contractor shall space supports for the telephone conc such that the ¾"ø inserts for the H.S. bolts will not in with the draped strands in the prestressed concrete

CONDUIT FORMATIONS



CADD BTC-7 MOD. 7-1-93

No.	Description	Date
	Revisions	

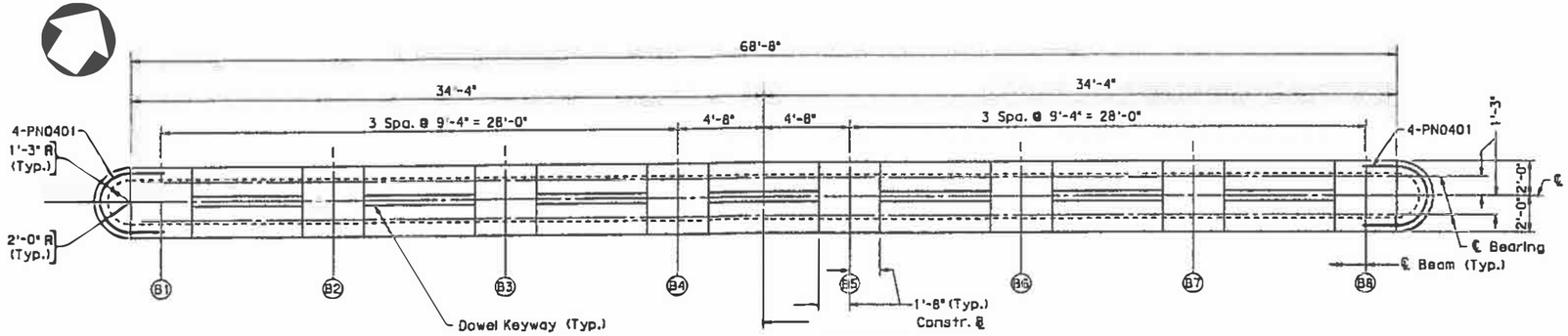
TELEPHONE CONDUIT

Designed: G. Henderson
Drawn: ....
Checked: .

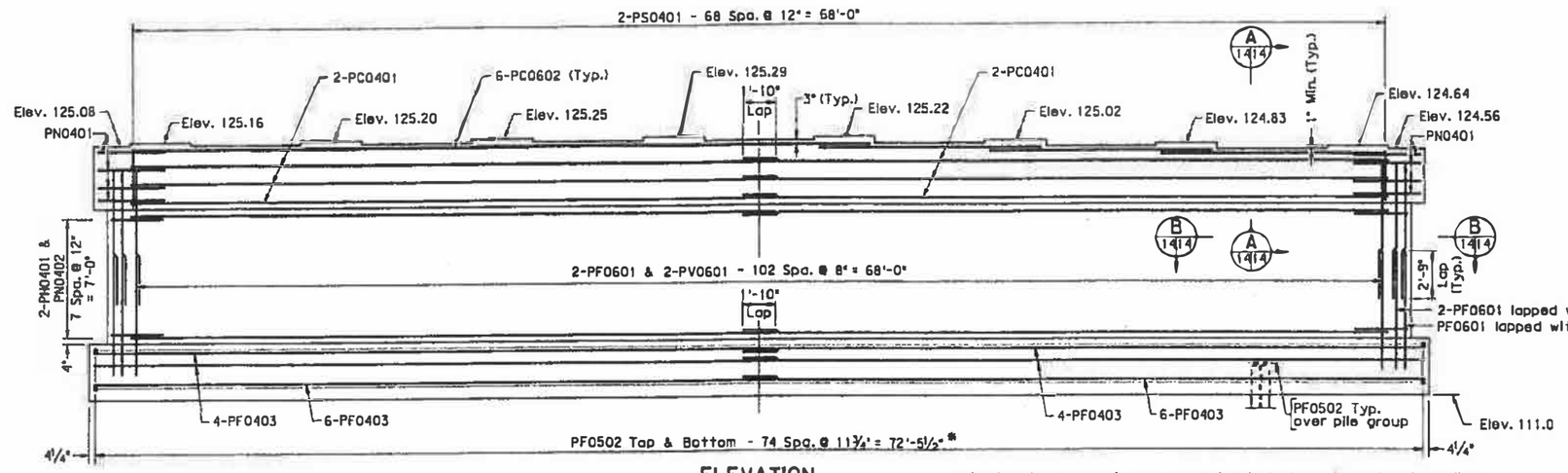
Date

Plan No.

FHWA REGION	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT

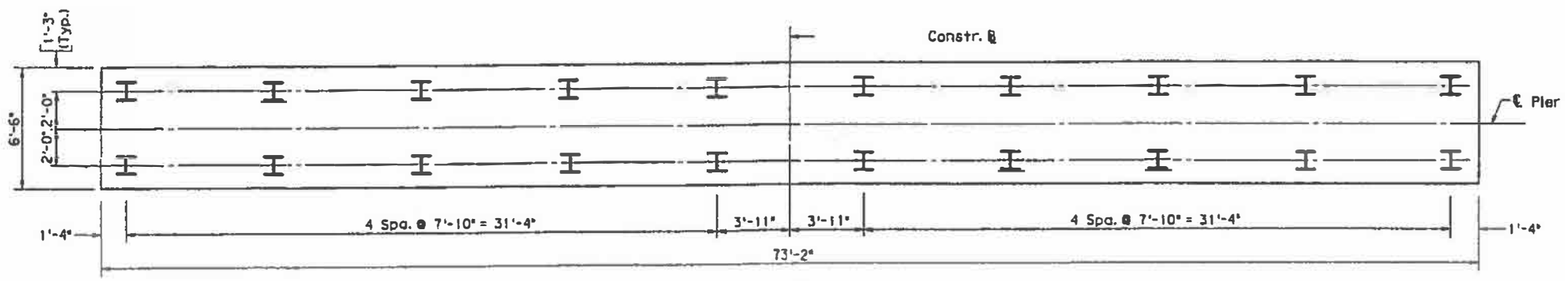


PLAN OF CAP

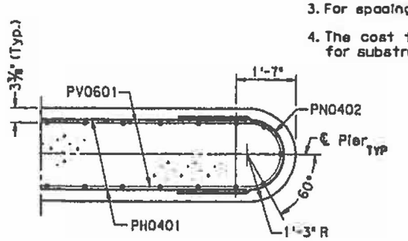


ELEVATION
Piles Not Shown

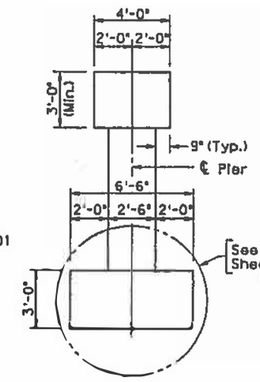
* Contractor may adjust bar spacing in bottom layer to clear piles.



PILE PLAN



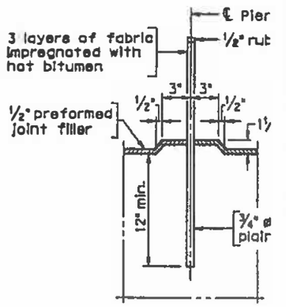
SECTION B 1414
Scale: ½" = 1'-0"



END VIEW
Piles Not Shown

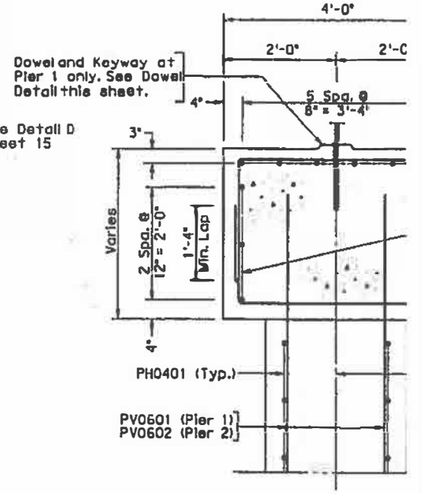
Notes:

1. When finishing concrete between and beyond pc surface to drain from ℄ pier to edge of cap.
2. Piles to be driven to depths in accordance with Specifications 403.06 (e).
3. For spacing of dowel bars, see sheet 10.
4. The cost for dowel bars shall be included in the for substructure concrete.



DOWEL DETAIL

Pier 1 Only - Typ. between
Scale: 1½" = 1'-0"



SECTION A 1414
Scale: ¾" = 1'-0"

Scale: ¼" = 1'-0" unless otherwise noted

No.	Description	Date
	Revisions	

Designed:
Drawn:
Checked:

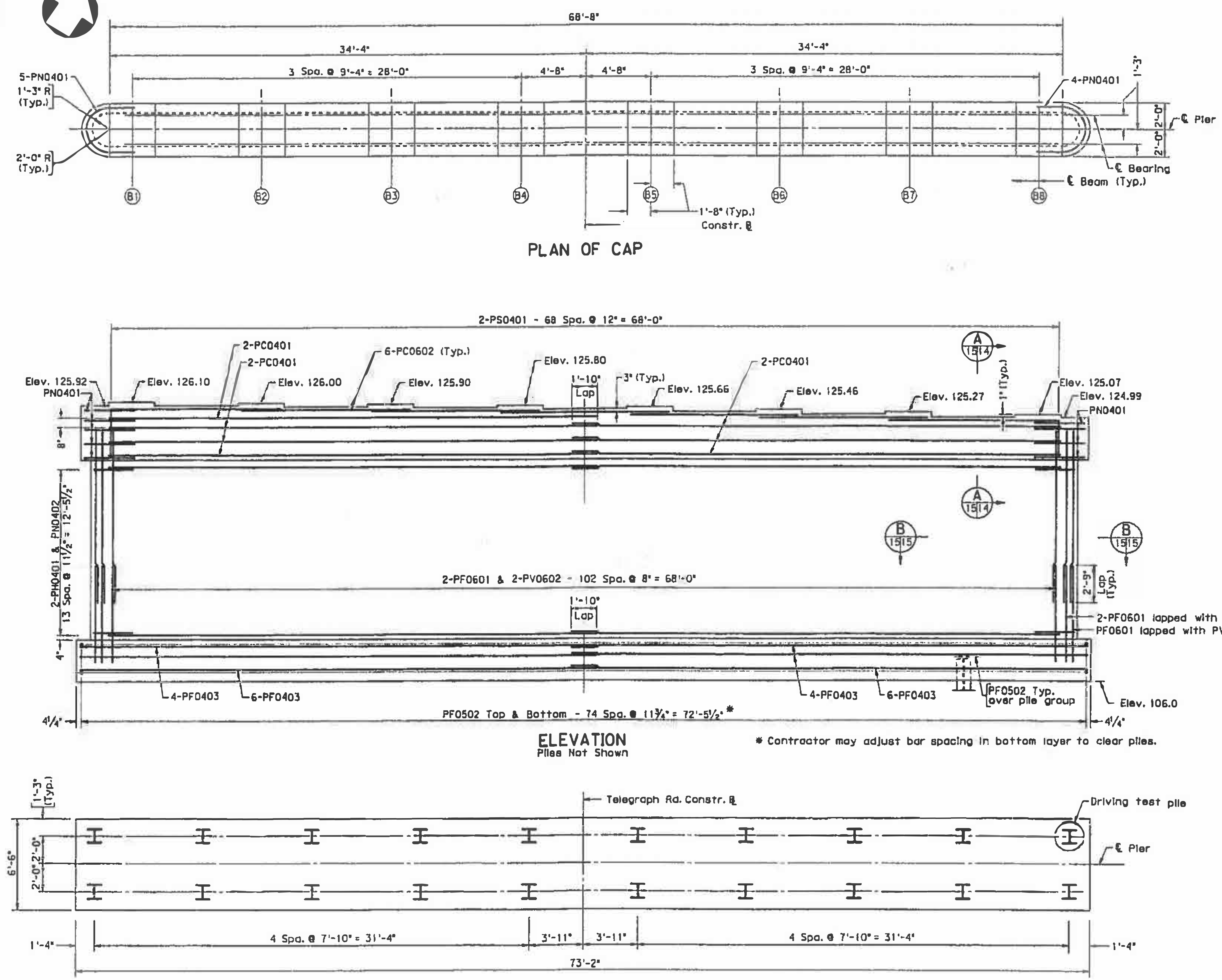
Date | Plan N

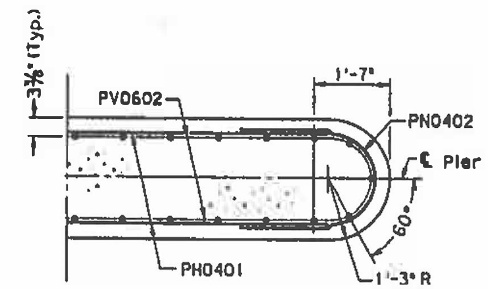
PIER 1

FHWA REGION	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT

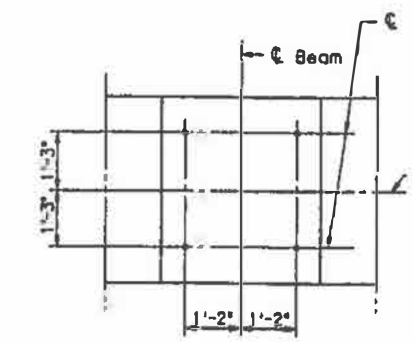
Notes:

1. When finishing concrete between and beyond pc surface to drain from ℄ pier to edge of cap.
2. Piles to be driven to depths in accordance witl Specifications 403.06 (e).

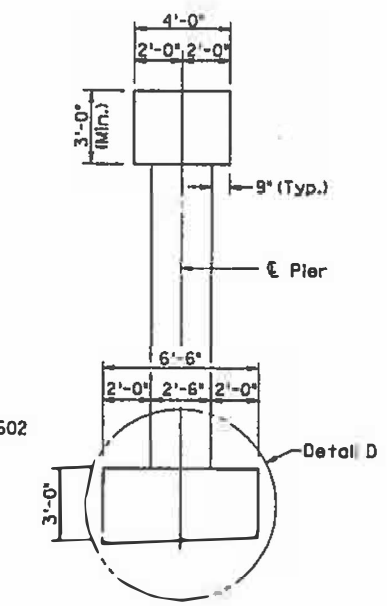




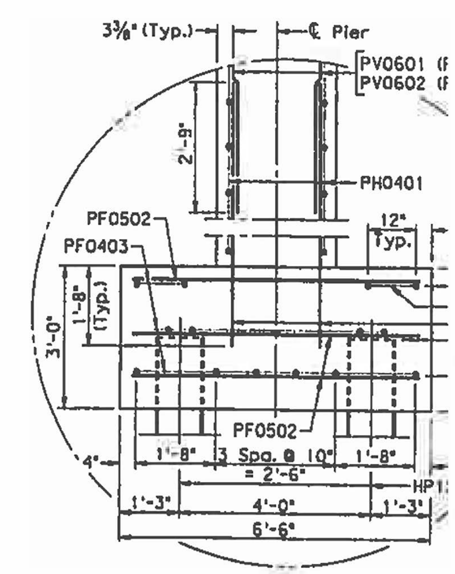
SECTION B 15|15
Scale: ½" = 1'-0"



TYPICAL ANCHOR BOLT LA
Scale: ½" = 1'-0"



END VIEW
Piles Not Shown



DETAIL D

No.	Description	Date
	Revisions	

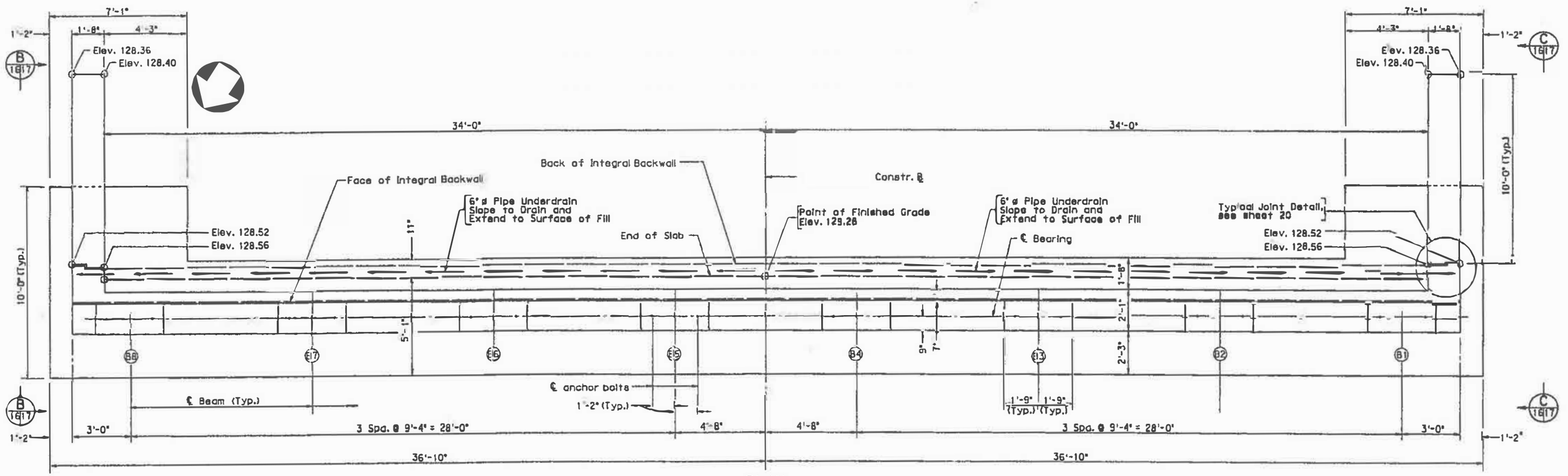
Designed:
Drawn:
Checked:

Date | Plan No

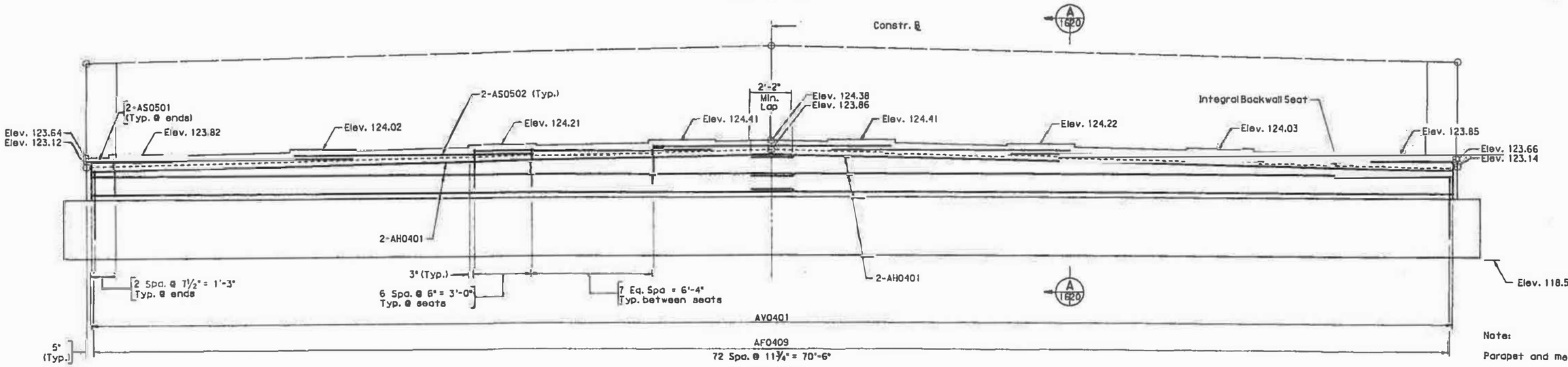
PIER 2

Scale: ¼" = 1'-0" unless otherwise noted

REGION	STATE	ROUTE	PROJECT	ROUTE	PROJECT



PLAN
Scale: ⅜" = 1'-0"



ELEVATION
Footing reinforcement and piles not shown
Scale: ⅜" = 1'-0"

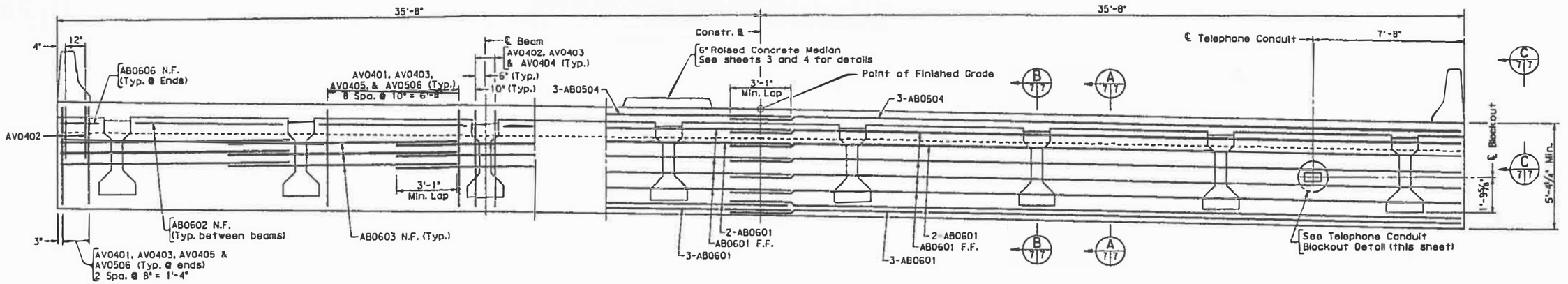
No.	Description	Date
	Revisions	

Designed:
Drawn:
Checked:

Date | Plan No.

ABUTMENT A
PLAN & ELEVATI

FHWA REGION	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT



ELEVATION - INTEGRAL BACKWALL

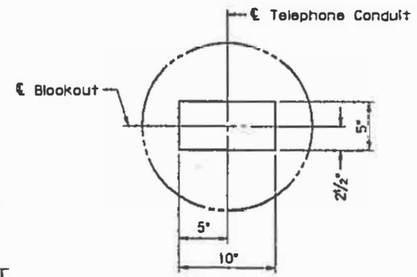
Looking Ahead
Scale: ⅜" = 1'-0"

SECTION A 7|7

Scale: ¾" = 1'-0"

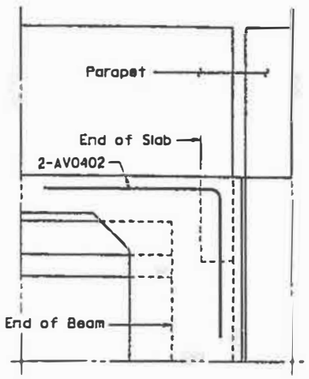
SECTION B 7|7

Scale: ¾" = 1'-0"



TELEPHONE CONDUIT BLOCKOUT DETAIL

Not to Scale



VIEW C 7|7

Scale: ¾" = 1'-0"
For additional reinforcement, see Section A 7|7

Note:

Reinforcing steel in backwall shall be adjusted to clear tele conduit blockout.

Legend:

N.F. - Near Face

F.F. - Far Face

No.	Description	Date
	Revisions	

Designed:
Drawn:
Checked:

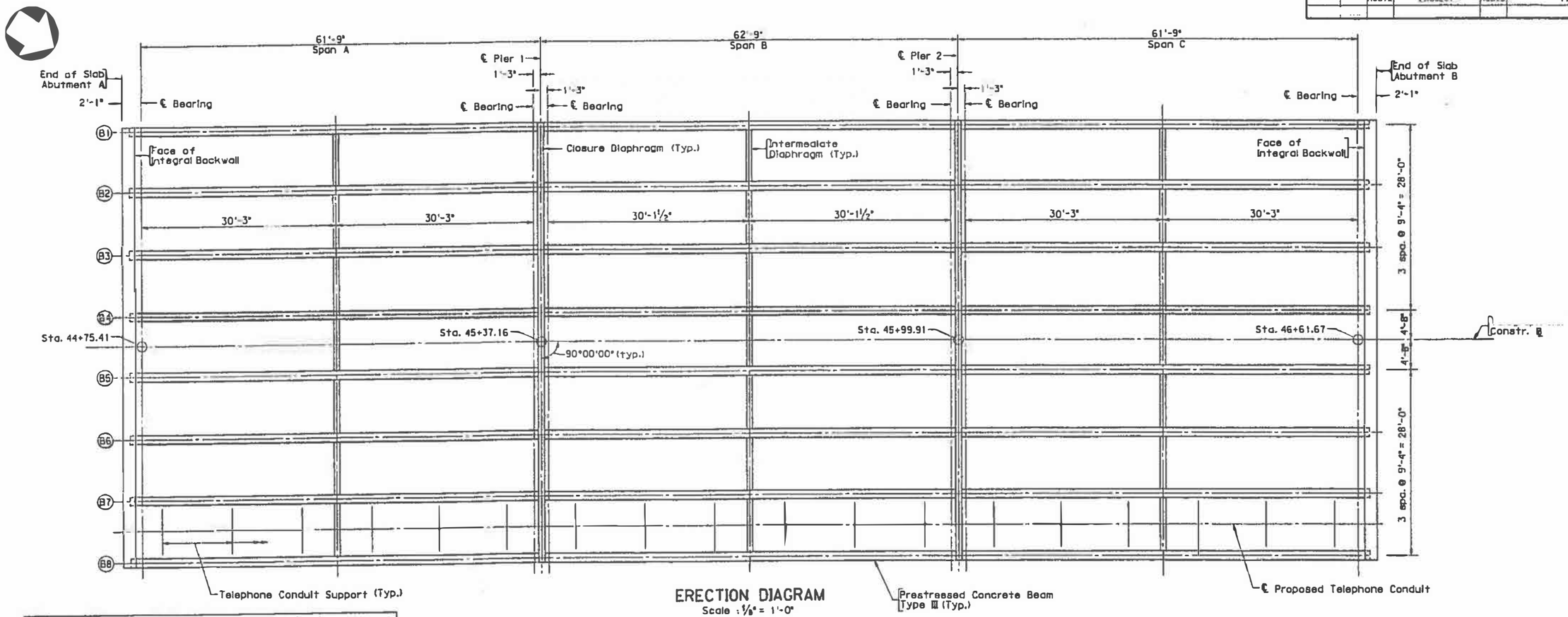
Date

Plan No.

BACKWALL DETAIL
ABUTMENT B

E-MANTEL CAD SYSTEM

REGION	STATE	ROUTE	PROJECT	ROUTE	PROJECT

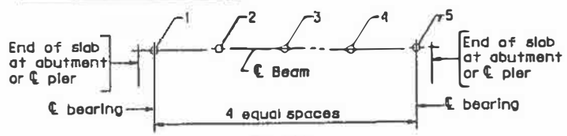


ERECTION DIAGRAM

Scale : ⅛" = 1'-0"

TOP OF SLAB ELEVATIONS ALONG ℄ BEAMS

Span	Beam	Points 1	2	3	4	5
Span A	1	128.65	129.00	129.34	129.65	129.94
	2	128.84	129.16	129.45	129.73	129.98
	3	129.03	129.31	129.57	129.81	130.03
	4	129.22	129.46	129.69	129.90	130.08
	5	129.21	129.44	129.65	129.84	130.01
	6	129.02	129.25	129.46	129.65	129.81
	7	128.83	129.05	129.26	129.45	129.62
	8	128.63	128.86	129.07	129.26	129.43
Span B	1	129.98	130.25	130.50	130.72	130.93
	2	130.03	130.26	130.47	130.66	130.83
	3	130.07	130.26	130.44	130.60	130.74
	4	130.11	130.27	130.41	130.54	130.64
	5	130.03	130.18	130.30	130.41	130.49
	6	129.84	129.98	130.11	130.21	130.30
	7	129.65	129.79	129.91	130.02	130.10
	8	129.45	129.60	129.72	129.83	129.91
Span C	1	130.96	131.15	131.32	131.46	131.59
	2	130.86	131.01	131.14	131.25	131.34
	3	130.76	130.87	130.97	131.04	131.10
	4	130.65	130.73	130.79	130.83	130.85
	5	130.51	130.57	130.61	130.62	130.61
	6	130.31	130.37	130.41	130.41	130.36
	7	130.12	130.18	130.22	130.20	130.12
	8	129.92	129.98	130.03	129.99	129.87



PLAN

Showing points of top of slab elevations

TABLE OF MOMENTS, SHEARS AND STRESSES

Location		Live Load + I (Service Load) Max. M k-ft	Max. V k	Non-Composite DL (Service Load) Max. M k-ft	Max. V k	Composite DL (Service Load) Max. M k-ft	Max. V k	Release Stress at 0.4 L Top psi	Bottom psi	Final Stress (Pos. Mom.) •• P/S+DL+LL Top psi	Bottom psi	P/S+DL Top psi	Bottom psi	Final Stress (Neg. Mom.) P/S+DL+LL Top psi	Bottom psi	P/S+DL Top psi	Bottom psi
Span A & C								-286.2	2092.5								
CL Brg. Abut A	Interior Beam	72.8	58.4	0.0	54.0	12.4	9.8	———	———	-60.8	626.5	-77.8	707.4	-242.2	1489.3	-118.4	900.4
	Exterior Beam	52.1	41.8	0.0	47.3	10.2	8.0	———	———	-61.9	644.5	-77.1	703.6	-229.4	1295.9	-118.7	865.5
Midspan •	Interior Beam	682.3	33.7	840.4	1.5	116.3	2.9	———	———	1358.8	-210.1	1199.5	547.7	1157.6	746.7	1199.5	547.7
	Exterior Beam	488.2	24.1	726.4	0.7	95.5	2.3	———	———	1079.6	216.5	937.2	770.3	899.7	915.8	937.2	770.3
CL Brg. Pier 1	Interior Beam	-530.3	69.5	0.0	56.1	-161.3	15.5	———	———	-60.8	626.5	-77.8	707.4	-242.2	1489.3	-118.4	900.4
	Exterior Beam	-379.5	49.8	0.0	48.3	-132.4	12.7	———	———	-61.9	644.5	-77.1	703.6	-229.4	1295.9	-118.7	865.5
Span B								-291.2	2096.4								
CL Brg. Pier 1	Interior Beam	-480.6	63.3	0.0	53.9	-145.2	12.6	———	———	-94.0	783.2	-114.4	880.0	-226.6	1413.9	-114.4	880.0
	Exterior Beam	-343.9	45.3	0.0	47.1	-119.3	10.3	———	———	-96.5	777.6	-114.6	848.3	-215.0	1238.5	-114.6	848.3
Midspan	Interior Beam	588.5	26.7	833.7	1.5	43.8	0.0	———	———	1307.0	-20.9	1169.6	632.7	1117.9	878.5	1169.6	632.7
	Exterior Beam	421.1	19.1	720.5	0.8	36.0	0.0	———	———	1031.2	364.4	908.4	842.1	862.2	1021.7	908.4	842.1
CL Brg. Pier 2	Interior Beam	-480.8	63.3	0.0	53.9	-145.2	12.6	———	———	-94.0	783.2	-114.4	880.0	-226.6	1413.9	-114.4	880.0
	Exterior Beam	-344.0	45.3	0.0	47.2	-119.3	10.3	———	———	-96.5	777.6	-114.6	848.3	-215.0	1238.5	-114.6	848.3

• Maximum Moments at End Spans may not be at midspan.
•• Positive Moment does not include creep and shrinkage.

Note:

Spacing of supports for the telephone conduit system is not shown. See telephone conduit plan for actual spacing.

References:

1. For prestressed girder details, see sheet
2. For diaphragm details, see sheet 10.
3. For bearing details, see sheet 11.
4. For integral backwall details, see sheets 6
5. For telephone conduit details, see sheet

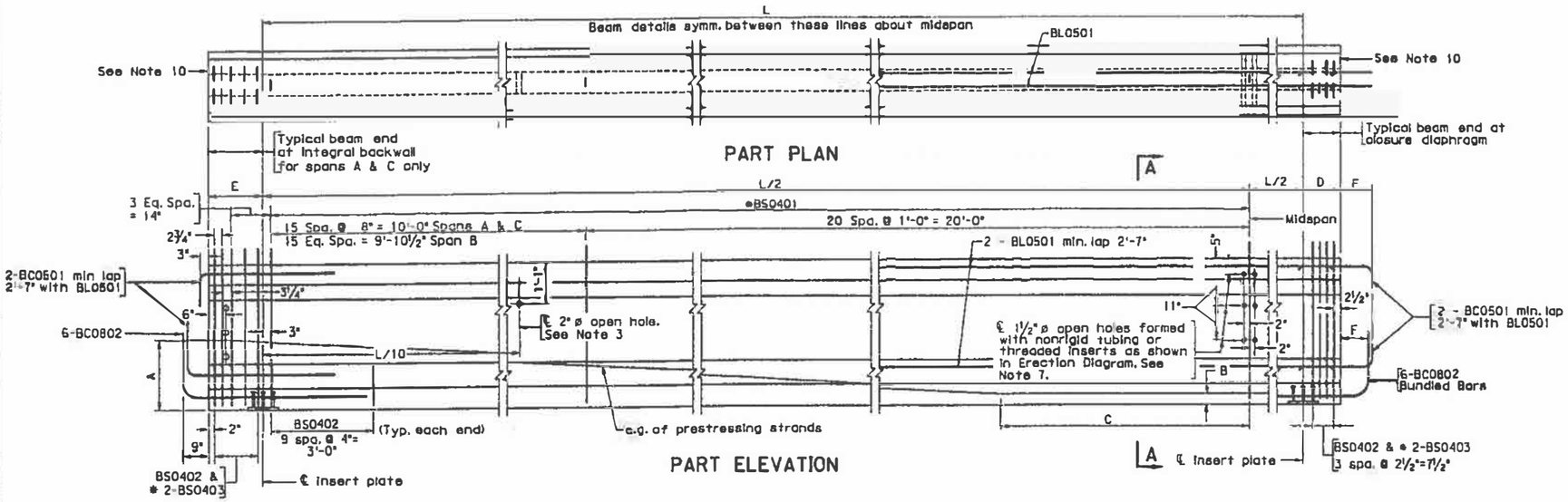
No.	Description	Date
	Revisions	

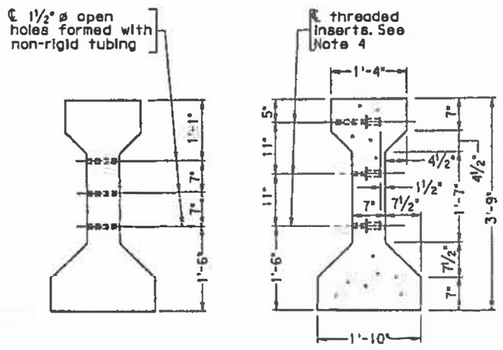
Designed
Drawn
Checked

Date

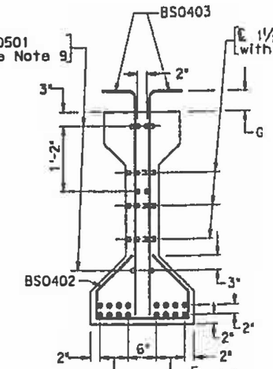
Plan No.

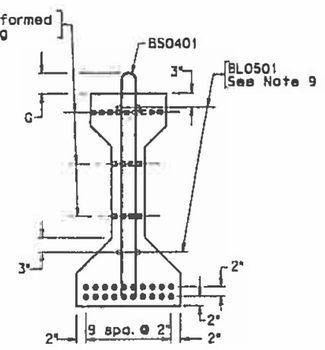
ERECTION DIAGRAM



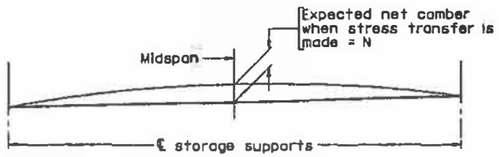


EXTERIOR BEAM
See Note 2

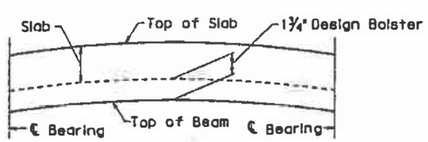




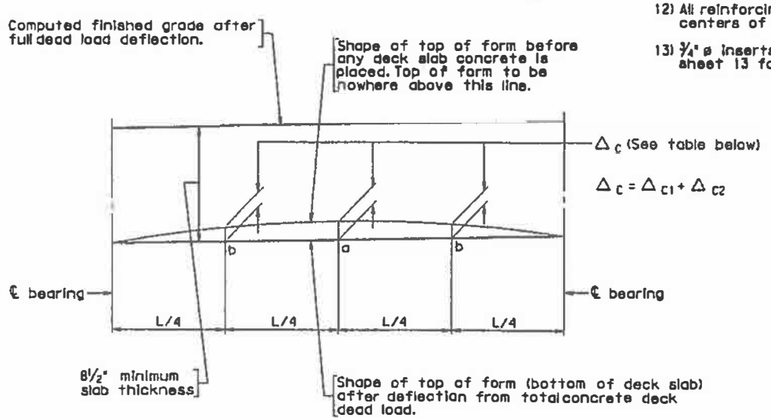
INTERIOR BEAM
For dimensions not shown, see Exterior Beam.
For placement of BC Series bars see sheet 10.



CAMBER DIAGRAM



BOLSTER DETAIL



Adjustment of deck slab forms to correct for dead load deflections shall be made by varying thickness of concrete bolster between slab and beam without alteration of slab thickness. Longitudinal screed should be set above final finished grade by amounts = Δ C2

Δ C1 = Deflection of beam from dead load of concrete deck slab, bolsters and diaphragms and does not include the deflection of the beam from its own weight.

Δ C2 = Deflection of composite section from dead load (e.g. parapet and curb added after deck slab is cast).

ANTICIPATED DEAD LOAD DEFLECTION**

	Beams	At a		At b	
		Δ C1	Δ C2	Δ C1	Δ C2
Spans A & C	Beams 2 thru 7	3/16"	1/16"	3/16"	1/16"
	Beams 1 & 8	3/16"	1/16"	1/16"	1/16"
Span B	Beams 2 thru 7	1/16"	0	3/16"	0
	Beams 1 & 8	3/16"	0	1/16"	0

DEAD LOAD DEFLECTION DIAGRAM

** Deflection shown are actual deflections without multipliers.

Notes:

1) At end diaphragm use 1" deep recesses around local groups with 2" minimum edge clearances and fill with p applied mortar immediately after clipping strands. An e oxy mortar covering the ends of strands with a mini ness of 1/8" may be used as an alternate. Strands sho before mortar is applied. After mortar is allowed to a entire end of beam shall be covered with epoxy type

2) For reinforcing steel, prestressing strands and dimens shown in the exterior beam, see interior beam.

3) Beams shall have 2" ø open holes formed with nonrigid on stream crossings. Holes may be slightly shifted to forcing bars and strands.

4) Threaded insert, when embedded shall develop full stren 1/8" ø threaded bolt (ASTM A307).

5) All prestressing strands shall be low-relaxation, grade 2 uncoated.

6) For details of insert plate, see sheet 11.

7) For location of closure and intermediate diaphragms, Diagram on sheet 8.

8) The Contractor, after a written approval from the En use different prestressing strand arrangement provi the total prestressing force and its e.g. are the sam on the plans.

9) 2 - 1/2" ø strands stressed to 1000 lbs. may be substi 2 - #5 bars.

10) At closure diaphragm and integral backwall, end strand 1"± from beam after clipping. End of beam shall be ro accordance with Section 405.05 of the Road and Brid Specifications.

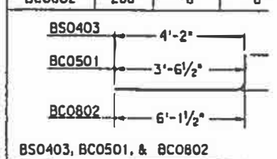
11) Top of beam to be roughened to a full amplitude of

12) All reinforcing bar dimensions except for bending diag centers of bars.

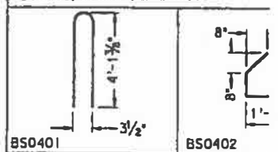
13) 3/4" ø inserts for telephone conduit supports not sho sheet 13 for details.

REINFORCING STEEL S

Mark	No.	Size	Len
BS0401	1704	#4	8'
BS0402	688	#4	4'
BS0403	416	#4	4'
BL0501	192	#5	32
BC0501	192	#5	4'
BC0802	288	#8	8'



BS0403, BC0501, & BC0802



BS0401 BS0402

Dimensions in Bending Diagrams of bars.

Reinforcing bars shown on the are for beams shown on this sh

#BS0401 or BS0403 may be slight directed by the Engineer to cle inserts.

Reinforcing bars BS0401 and BS0 galvanized. All other reinforcing epoxy coated except all BC seri non-epoxy coated.

DIMENSION TABLE

Beam	Prestr. force per strand lb.	No. and size of stranda/beam	Net camber N in.	A ft.-in.	B in.	C ft.-in.	D in.	E in.	F in.	G in.	L ft.-in.
Spans A & C	30,980	20 - 1/2" ø	7/8"	9 3/8"	3"	6'-3"	9½"	19"	8 3/8"	6¼"	60'-6"
Span B	30,980	20 - 1/2" ø	7/8"	9 3/8"	3"	6'-2"	9½"	—	8 3/8"	6¼"	60'-3"

Not to Scale

No.	Description	Date
	Revisions	

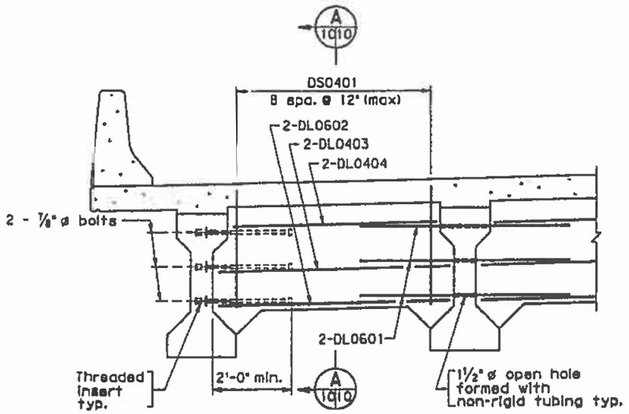
Designed:
Drawn:
Checked:

PRESTRESSED CONCRE
TYPE III

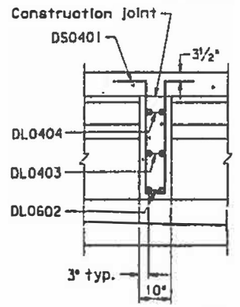
Date
Plan No.

CADD
PCB-3C MOD. 11-21-96

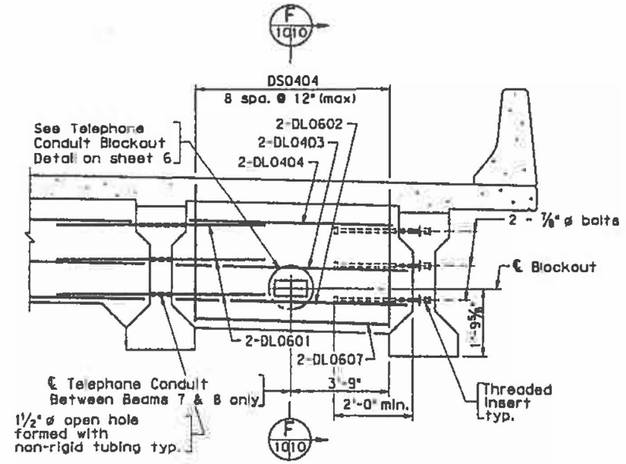
FHWA REGION	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT



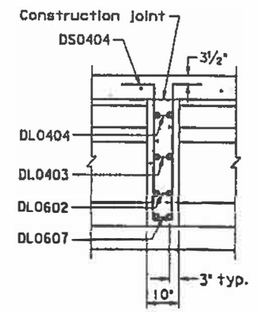
TYPICAL INTERMEDIATE DIAPHRAGM DETAILS



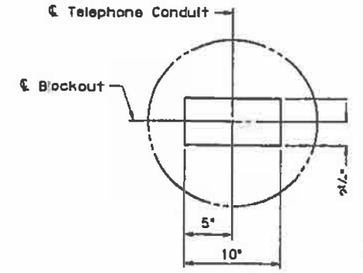
SECTION A 10 10



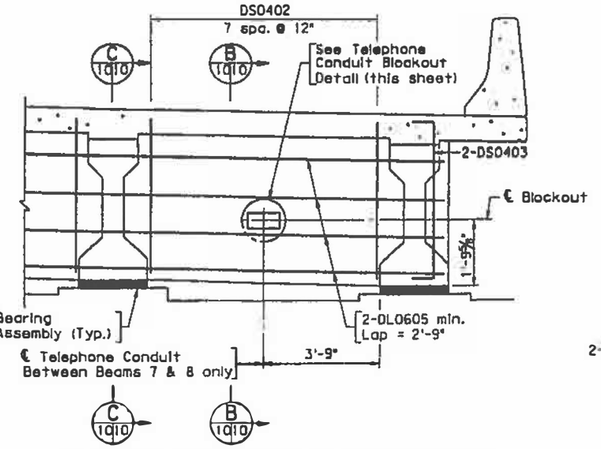
INTERMEDIATE DIAPHRAGM DETAILS
Typ. Between Beams 7 & 8 only



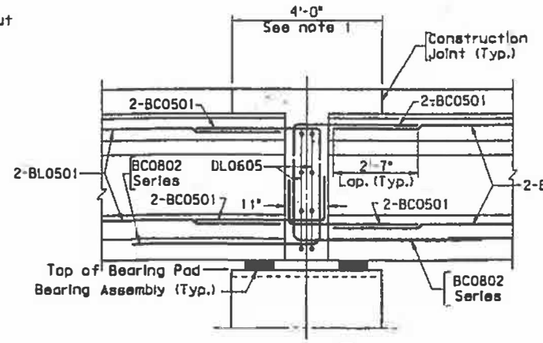
SECTION F 10 10



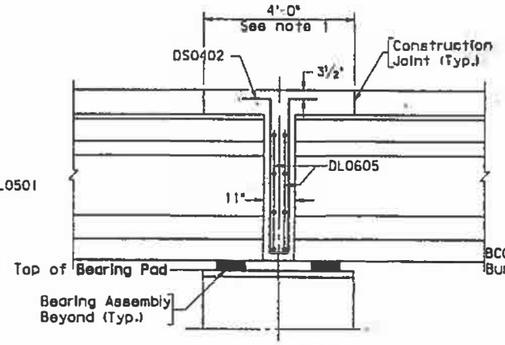
TELEPHONE CONDUIT BLOCKOUT DETAIL



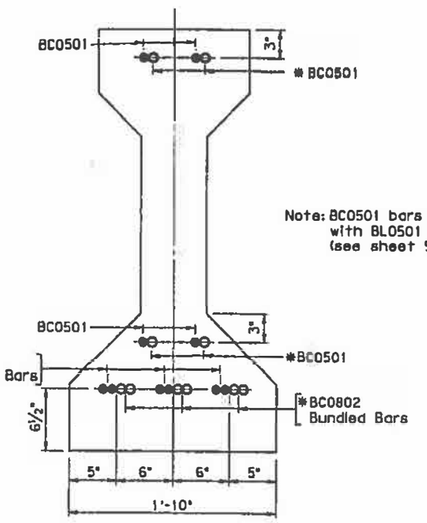
CLOSURE DIAPHRAGM, EXPANSION PIER



SECTION C 10 10

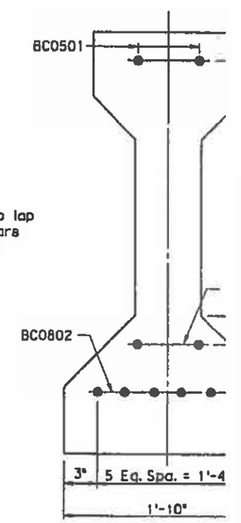


SECTION B 10 10

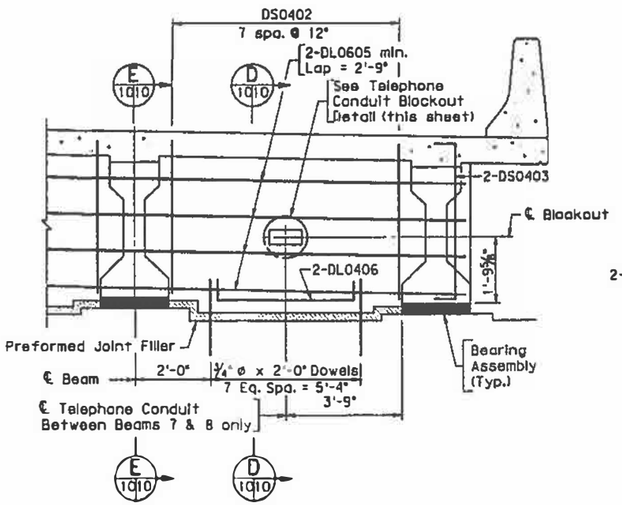


* O indicates BC bars from beam in adjacent span

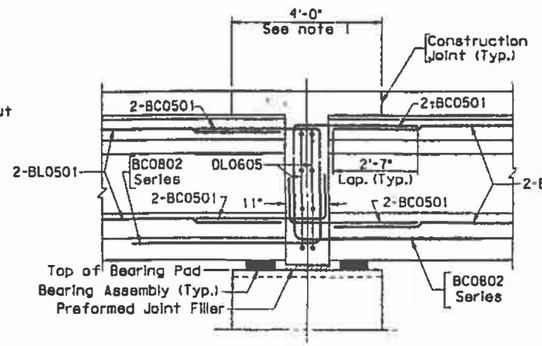
BEAM END AT CLOSURE DIAPHRAGMS



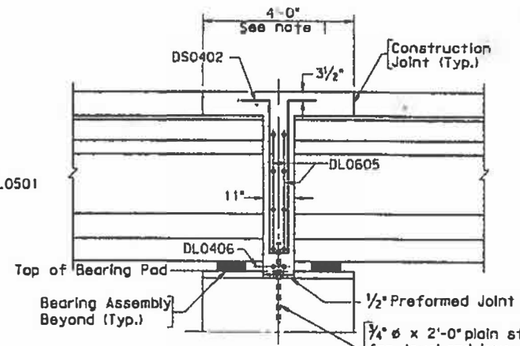
BEAM END A
INTEGRAL BACKW



CLOSURE DIAPHRAGM, FIXED PIER



SECTION E 10 10



SECTION D 10 10

Notes:

1. This portion of the slab shall be cast with the closure d
2. For details of bearing pads and bearing pad assemblies se
3. Reinforcing steel in diaphragms shall be adjusted to clear conduit blockout.

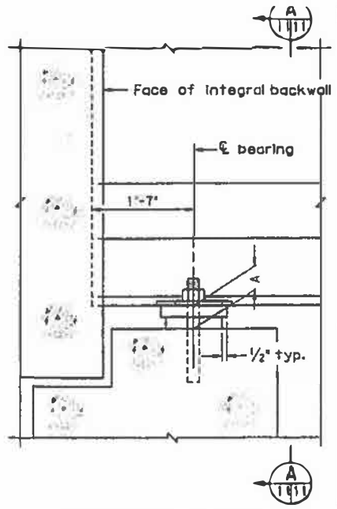
No.	Description	Date
	Revisions	

INTERMEDIATE AND CL
DIAPHRAGM DETA

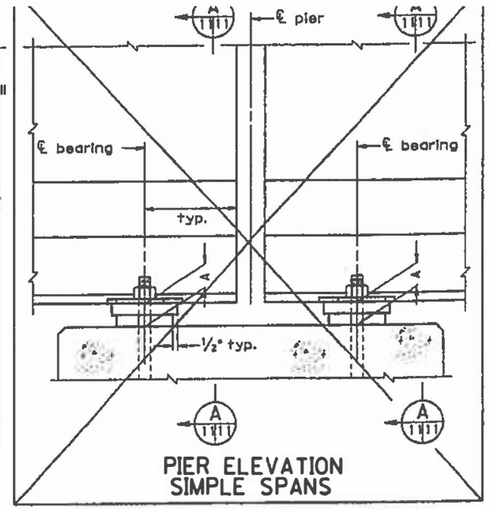
Designed:
Drawn:
Checked:

Date	Plan No.

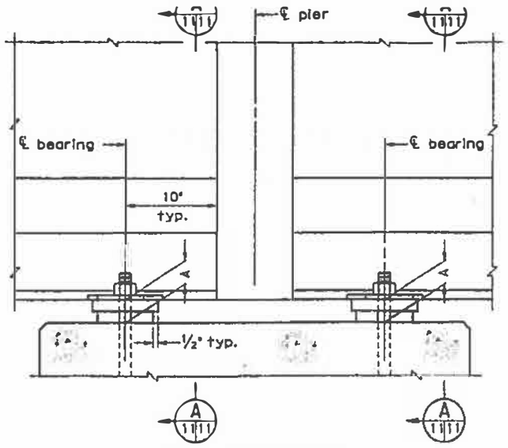
Not to Scale (unless otherwise noted)



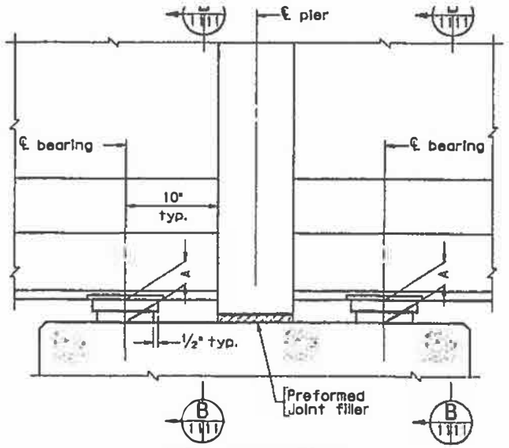
ABUTMENT ELEVATION



PIER ELEVATION
SIMPLE SPANS



PIER ELEVATION
EXPANSION BEARING
CONTINUOUS SPANS



PIER ELEVATION
FIXED BEARING
CONTINUOUS SPANS

REGION	ROUTE	PROJECT	ROUTE	PROJECT

Notes:

Material: Elastomer - 50 durometer hardness.
Shim - ASTM A36 or A570 mild steel.

Elastomeric bearings shall be molded as a single unit.

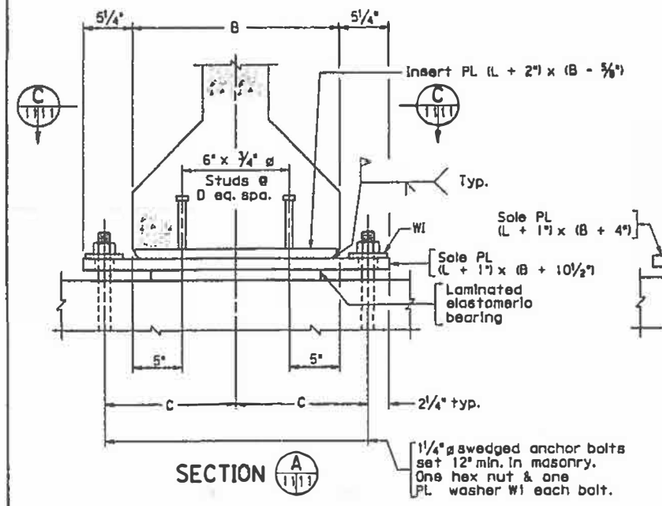
Bevel sole plates to grade. Minimum ¾" thickness.

Insert plate shall provide uniform bearing over its entir area. Insert plate is 1" wider than sole plate.

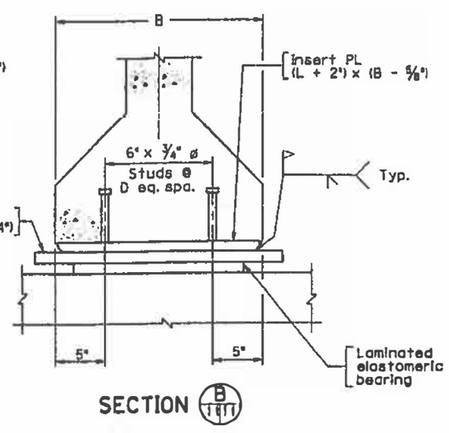
In welding insert plate to sole plate, ample time shall be between weld passes to prevent heat damage to the sole plate and elastomeric pad. Elastomer shall not be a to temperatures higher than 400 ° F.

For closure diaphragm details, see sheet 10.

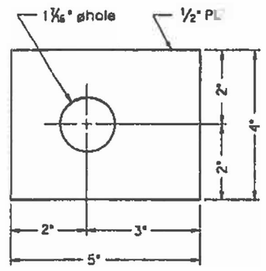
For designation of fixed or expansion bearings, see ele on front sheet.



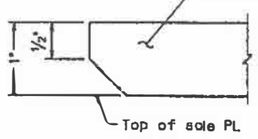
SECTION (A)



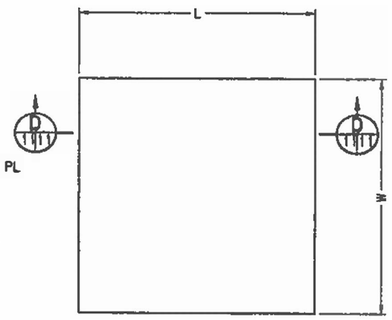
SECTION (B)



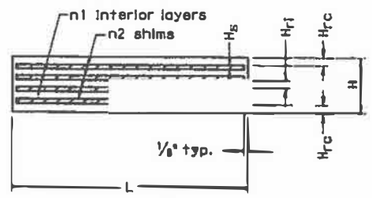
WASHER WI



CHAMFER DETAIL

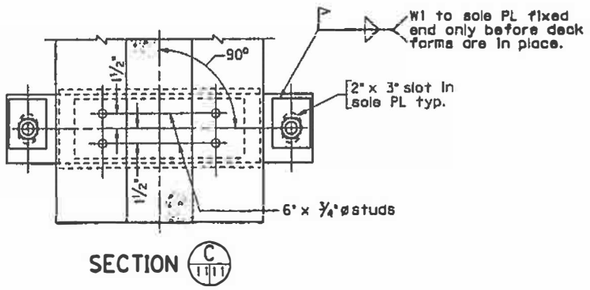


Beam Type	B	C	D
II	1'-6"	1'-0"	1
III	1'-10"	1'-2"	1
IV	2'-2"	1'-4"	2
V	2'-4"	1'-5"	3
VI	2'-4"	1'-5"	3



SECTION (D)

LAMINATED ELASTOMERIC BEARING



SECTION (C)

Span	Abut.	Pier	Beam Type	A	Laminated Elastomeric Bearing						Grade %
					W	L	H	H_{rc}	n1 @ H_{ri}	n2 @ H_s	
A	A	——	III	2 1/16"	16	11	1 5/16"	0.2500	2 @ 0.3519	3 @ 0.1196	1.6
A	——	1	III	2 3/8"	16	11	1 5/16"	0.2500	2 @ 0.3519	3 @ 0.1196	1.0
B	——	1	III	2 3/8"	16	11	1 5/16"	0.2500	2 @ 0.3519	3 @ 0.1196	1.0
B	——	2	III	2 7/8"	17	10	2 1/16"	0.2500	3 @ 0.3614	4 @ 0.1196	0.5
C	——	2	III	2 7/8"	17	10	2 1/16"	0.2500	3 @ 0.3614	4 @ 0.1196	0.5
C	B	——	III	3 1/16"	17	11	2 11/16"	0.2693	4 @ 0.3877	5 @ 0.1196	0

All dimensions in table are in inches.

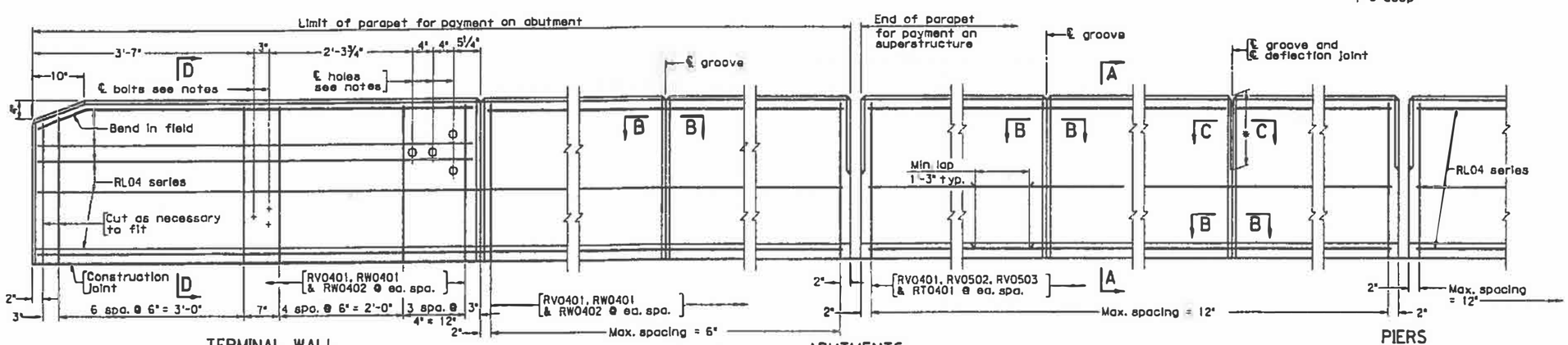
BBD-8 MOD 7-15-96

No.	Description	Date
	Revisions	

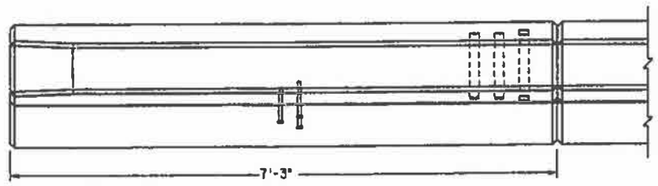
PRESTRESSED CONCRE
BEARING DETAIL

Designed:	Date	Plan No
Drawn:		
Checked:		

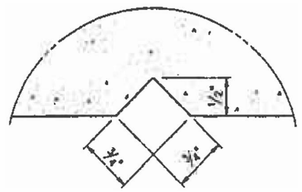
REGION	ROUTE	PROJECT	ROUTE	PROJECT



ELEVATION
Scale: 1" = 1'-0"

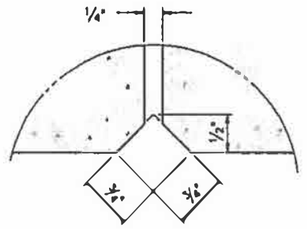


PART PLAN
Scale: 1" = 1'-0"



SECTION B-B
Full Scale

Groove detail for both sides of parapet



SECTION C-C
Full Scale

Deflection joint detail for both sides of parapet

NOTES:

Rounded edges with 1" radius may be used in lieu of be top of parapet.

Reinforcing bars RV0502 and RV0503 shall be galvanized. A reinforcing bars shall be epoxy coated.

Detail shown at pier is applicable when joint is in slab. Wh is continuous over pier, use groove and deflection joint

Spacing of grooves to be approximately 8'-0". If lighting is used (see Bridge Conduit System), groove shall be loca proximately 4'-0" from ℄ light standard. Spacing of defle joints shall not exceed three groove spaces.

Barrier delineator size, color, and spacing to be in accor with the Specifications. Cost of delineator to be includ price bid for parapet. Reflective surface of barrier deli all instances, to be facing oncoming traffic.

The Contractor shall determine all dimensions and details sary for installation.

All concrete shall be Class A4.

For details of wingwall below construction joint, see abu sheet(s).

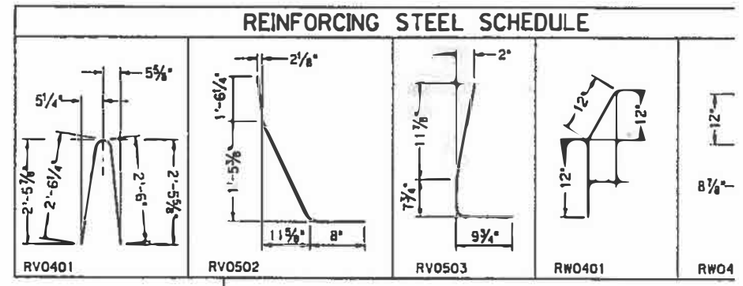
Terminal walls are detailed to take guardrail attachment

Holes, where shown, shall be formed with sleeves of 1½" d nal pipe.

Bolts, where shown, shall be ⅝" dia. expansion anchor bolts to be drilled and installed when rub rail is attached.

For extruded parapets: During extrusion, open joints at and piers shall be formed by the use of lubricated plat other means so that uniformity of the opening and ch maintained. Dimension of 1" (as shown in Section thru Jo Extrusion Only) is additional deck slab that shall be cast tractor's expense. Dimension(s) to face of curb shall not duced.

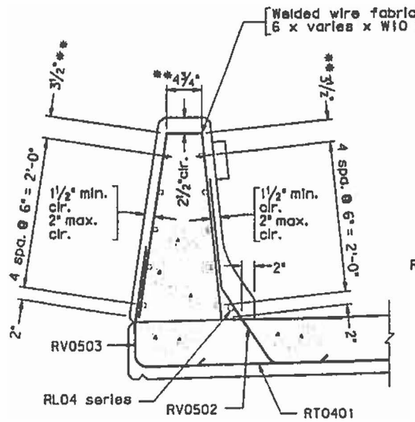
REINFORCING STEEL SCHEDULE



Dimensions in bending diagram are out to out of bars, except as shown.

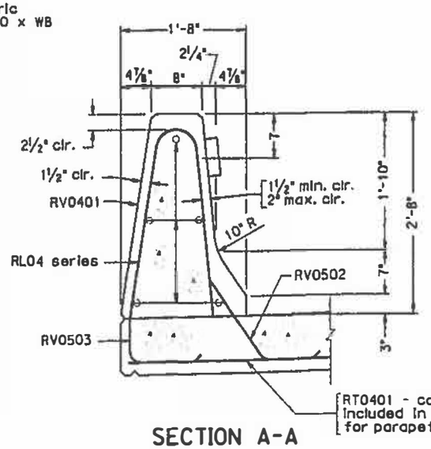
Mark	No.	Size	Length	Pin ø	Loca
RT0401		#4	3'-0"	—	Slab
RV0401		#4	5'-2"	4½"	Parapet
RV0502		#5	3'-10"	3¾"	Parapet
RV0503		#5	2'-4"	3¾"	Parapet
RW0401		#4	2'-0"	3"	Terminal W
RW0402		#4	2'-5"	3"	Terminal W
RL04		#4		—	Parapet

Cost of all bars listed in schedule to be included in price bid f



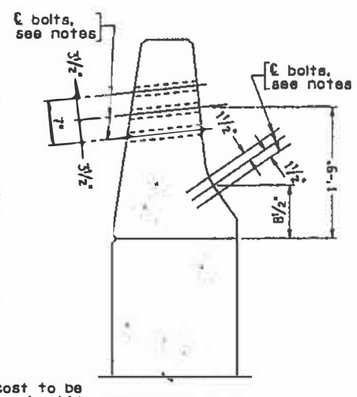
**Dimensions are out-to-out of wires.

SECTION A-A
ALTERNATE REINFORCING STEEL
Scale 1" = 1'-0"



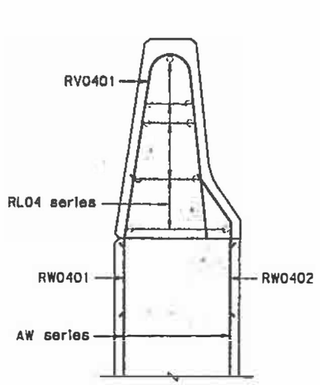
SECTION A-A
Scale: 1" = 1'-0"

Gross concrete quantities (C.Y.) = Lin. ft. x 0.105
All concrete above roadway slab



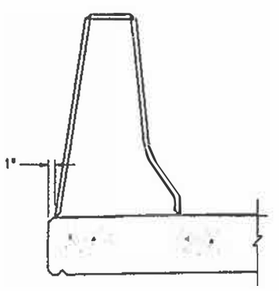
SECTION D-D
Scale: 1" = 1'-0"

Reinforcing steel not shown



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

Holes and bolts not shown. For details not shown, see Section A-A.



SECTION THRU JOINTS FOR EXTRUSION ONLY
Scale: 1" = 1'-0"

No.	Description	Date
	Revisions	

Designed
Drawn: ....
Checked:

Date

Plan No.

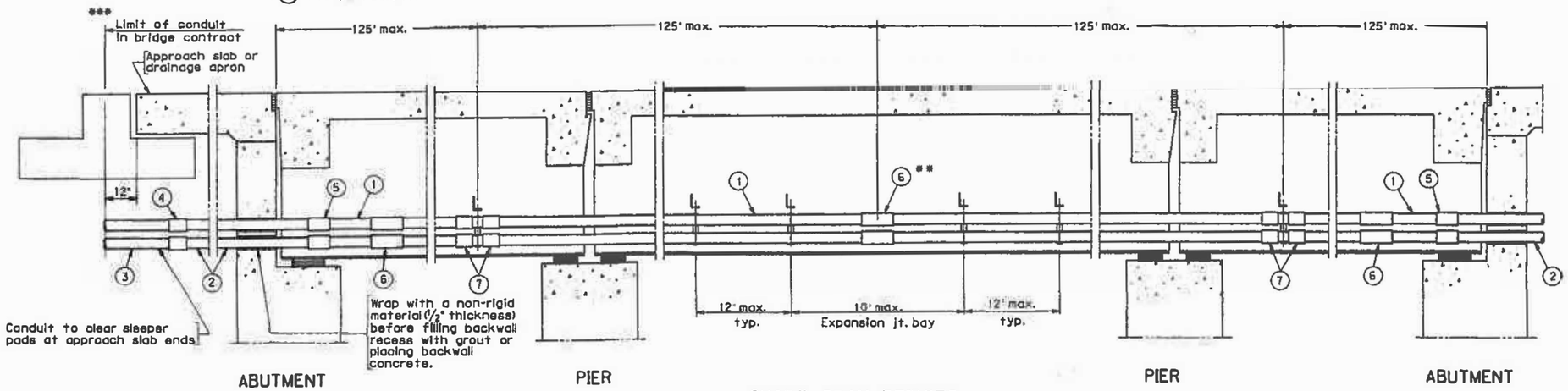
CAST-IN-PLACE CONCRETE PARAPET (F

CADD BPB-3A 2-01-99

REGION	STATE	ROUTE	PROJECT	ROUTE	PROJECT

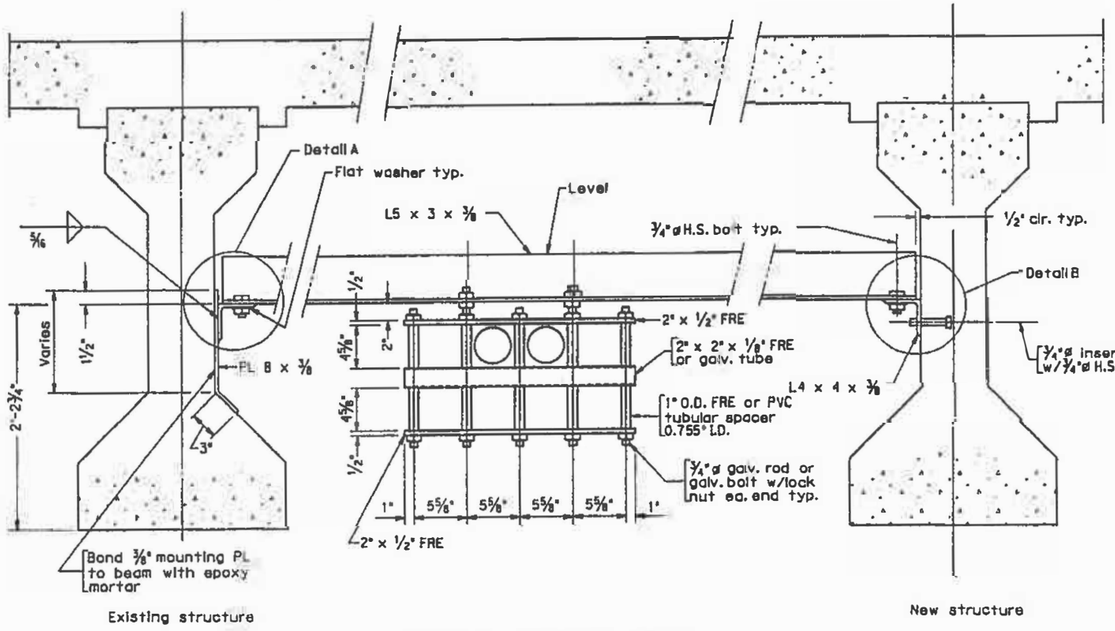
(1) 4" ø FRE duct
(2) 4" ø galv. steel duct
(3) 4" ø PVC-B duct
(4) PVC-galv. adaptor
(5) Galv.-FRE adaptor
(6) FRE exp. joint
(7) FRE look ring

*** Limit of telephone conduit in bridge contract when approach slabs or drainage aprons are not used shall be the extension of the conduit a minimum of one foot behind back of backwall.

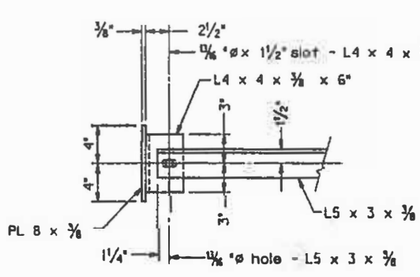


SHORT SPAN BRIDGES

Max. span L = 200'

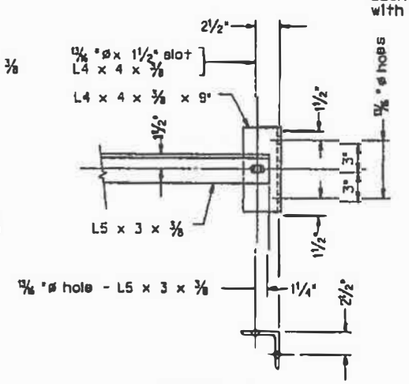


TYPICAL SUPPORT DETAIL



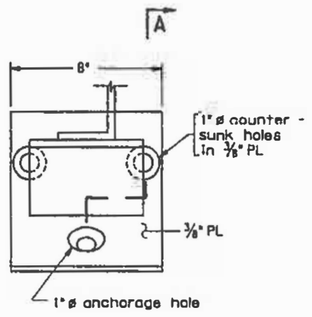
DETAIL A

Existing structure

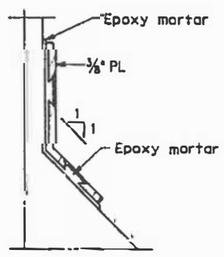


DETAIL B

New structure



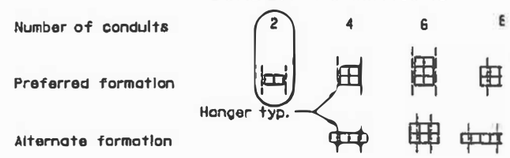
ELEVATION



SECTION A-A

MOUNTING PLATE DETAIL

CONDUIT FORMATIONS



NOTES:

Glass fiber reinforced epoxy (FRE) duct shall comply with D2310 and ASTM D2996, and shall be RTRP-11AD-III, except fied herein.

Inside diameter shall be 4.00" minimum, wall thickness shal minimum.

Duct performance shall not be impaired by exposure to let radiation. Duct shall have fire resistance which equ ceeds requirements of U.L. 651 - Section 17.

Joints shall be positive locking, (threaded bell and spigo sive bonded bell and spigot, or driven tapered bell spigo

Expansion joints shall be sliding sleeve type, with or wi o'rings, with provision for minimum of 6" expansion trav

Lock rings shall be split FRE duct, minimum of 3" long, .0 mum thickness, glued in place after installation of con

Threaded couplings shall be used on steel conduit.

Steel fittings and rods shall be galvanized in accordanc ASTM A153.

Support angles shall be galvanized in accordance with A

Hanger details shown are designed to support as many d uits. Dead loads used were as follows: Cables = 8.5 lbs./ conduit, Conduit = 0.8 lbs./ft.

Underground installation of PVC-B duct shall be in acco Road and Bridge Standards EC1-1 except the minimum sp tween ducts shall be ¾".

Contractor shall space supports for the telephone conc such that the ¾"ø inserts for the H.S. bolts will not in with the draped strands in the prestressed concrete

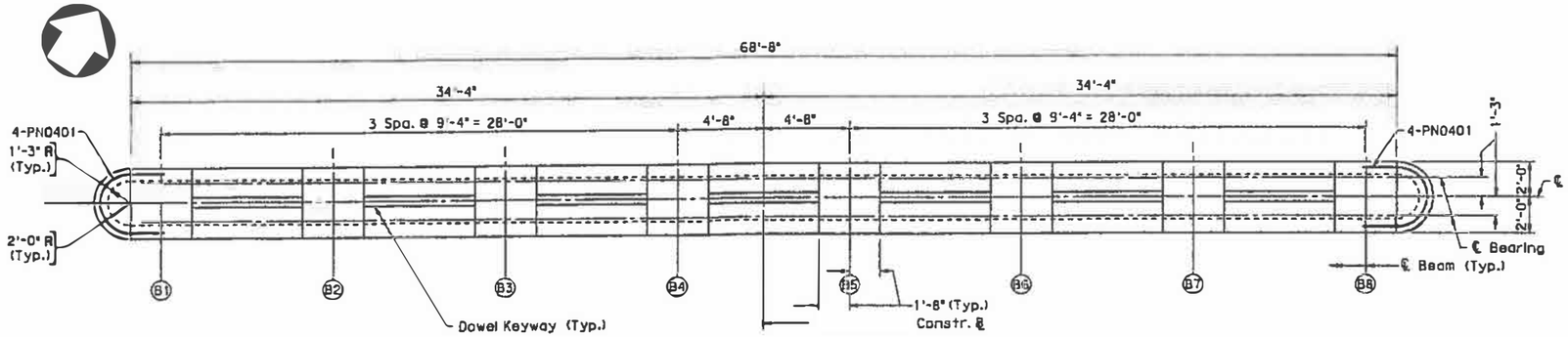
CADD BTC-7 MOD. 7-1-93

No.	Description	Date
Revisions		

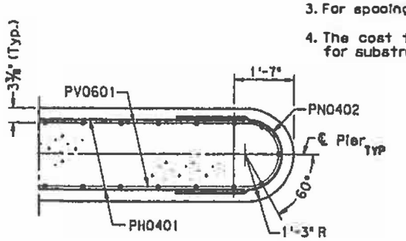
TELEPHONE CONDUIT

Designed: G. Henderson
Drawn: ....
Checked:
Date
Plan No.

FHWA REGION	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT



PLAN OF CAP

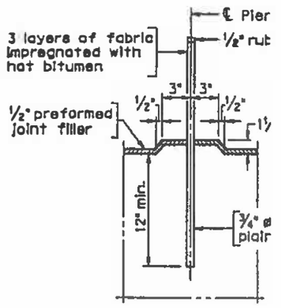


SECTION B 1414

Scale: ½" = 1'-0"

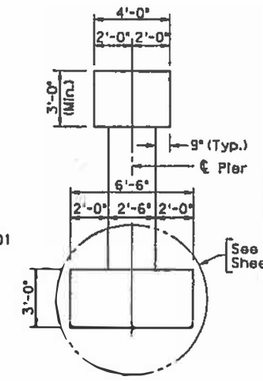
Notes:

1. When finishing concrete between and beyond pc surface to drain from ℄ pier to edge of cap.
2. Piles to be driven to depths in accordance with Specifications 403.06 (e).
3. For spacing of dowel bars, see sheet 10.
4. The cost for dowel bars shall be included in the for substructure concrete.

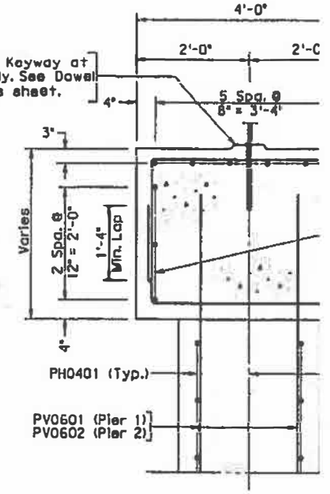


DOWEL DETAIL

Pier 1 Only - Typ. between
Scale: 1½" = 1'-0"

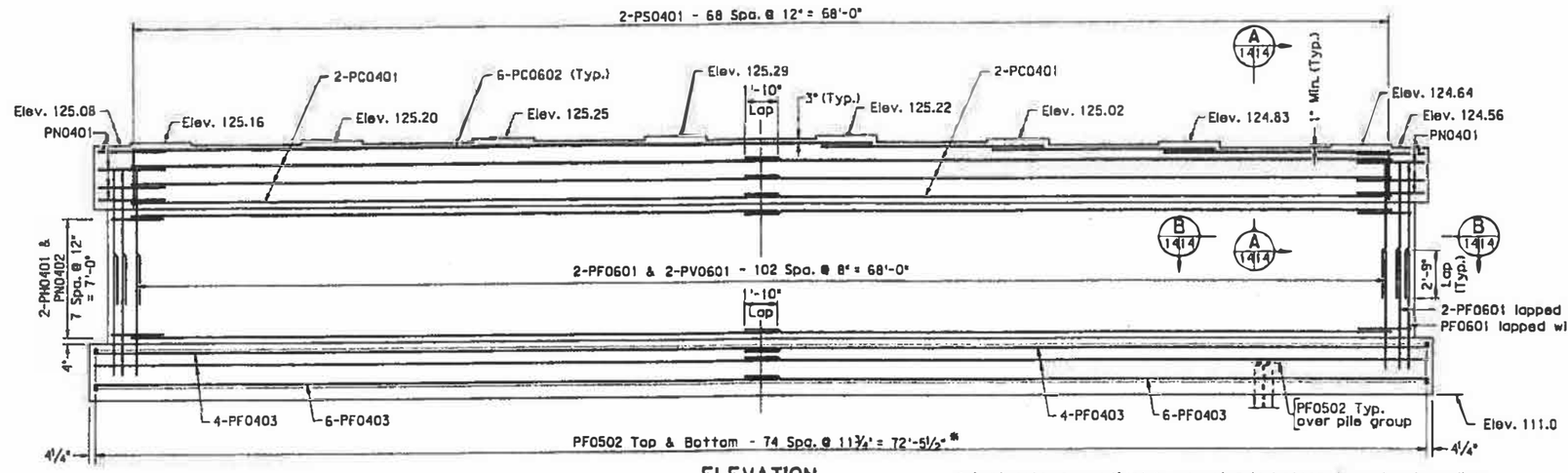


END VIEW
Piles Not Shown



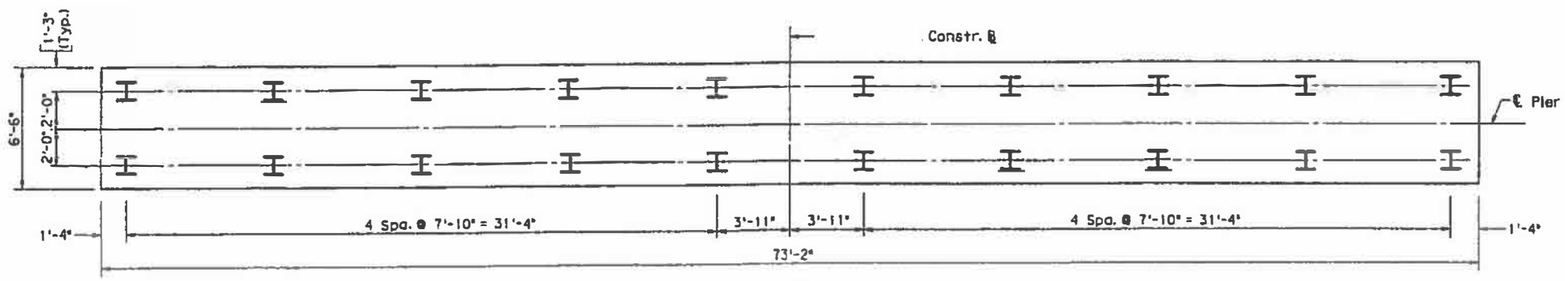
SECTION A 1414

Scale: ¾" = 1'-0"



ELEVATION
Piles Not Shown

* Contractor may adjust bar spacing in bottom layer to clear piles.



PILE PLAN

No.	Description	Date
	Revisions	

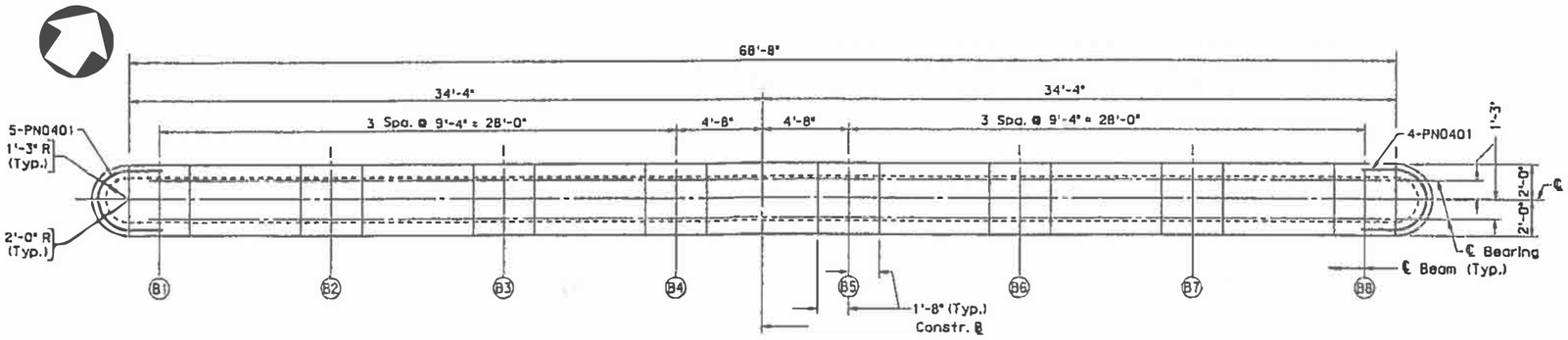
Designed:
Drawn:
Checked:

Date | Plan N

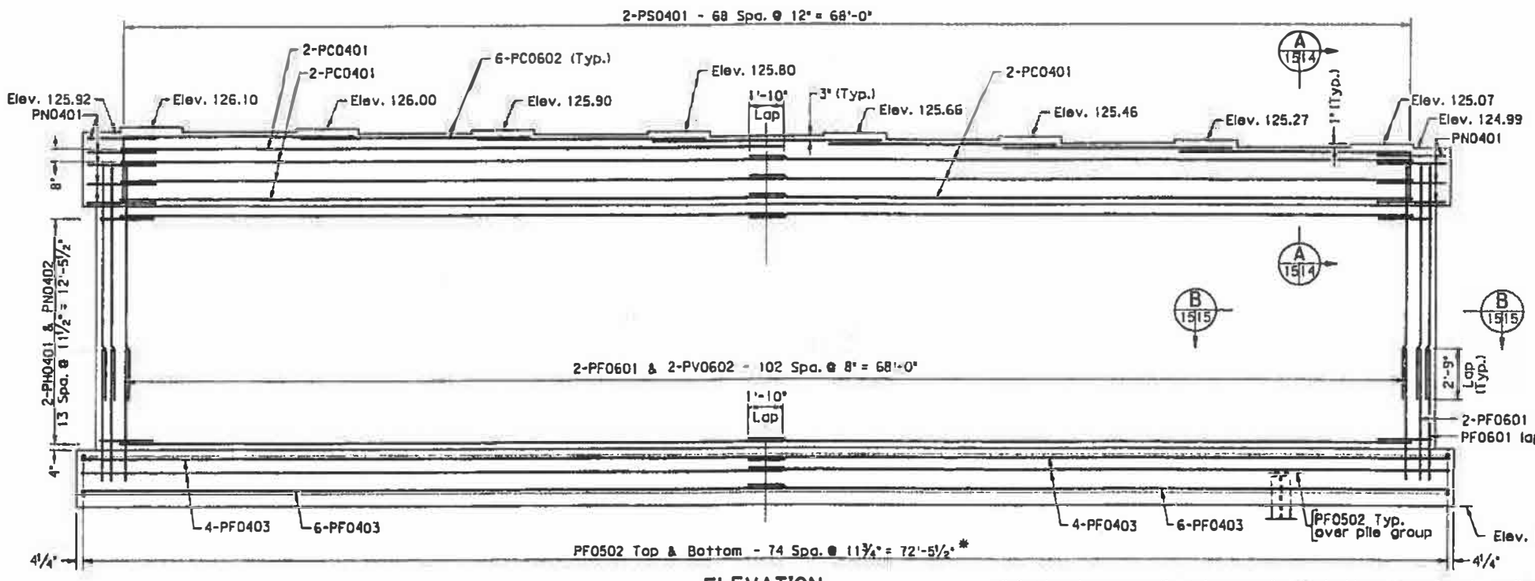
PIER 1

Scale: ¼" = 1'-0" unless otherwise noted

FHWA REGION	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT

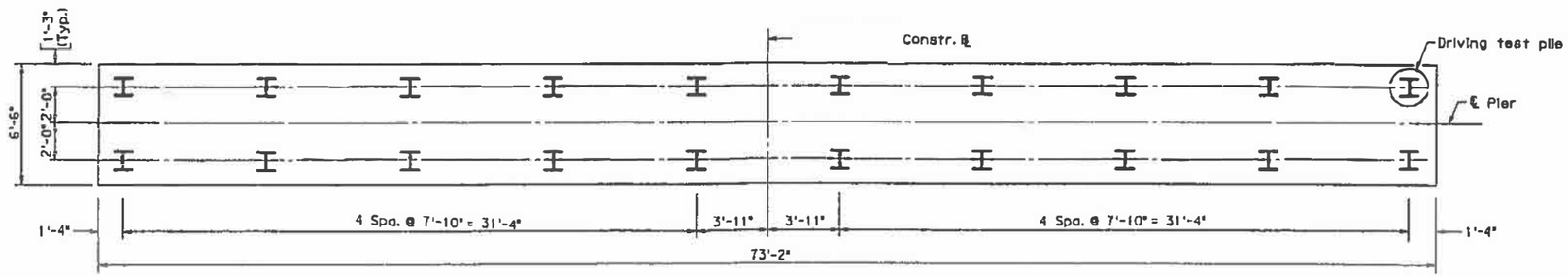


PLAN OF CAP



ELEVATION
Piles Not Shown

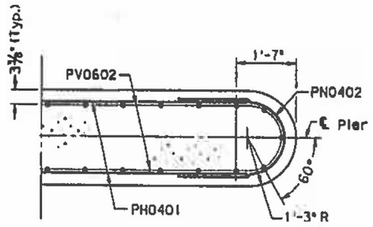
* Contractor may adjust bar spacing in bottom layer to clear piles.



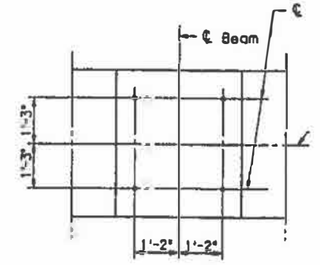
PILE PLAN

Notes:

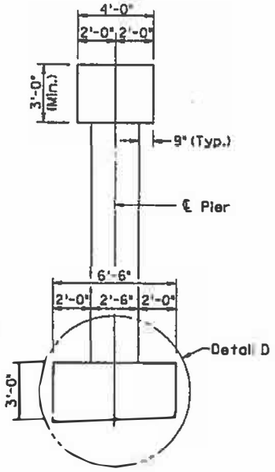
1. When finishing concrete between and beyond pc surface to drain from ℄ pier to edge of cap.
2. Piles to be driven to depths in accordance with Specifications 403.06 (a).



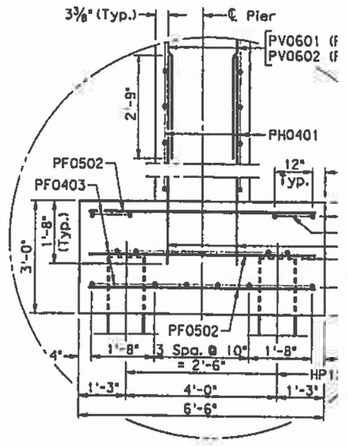
SECTION B 19|15
Scale: ½" = 1'-0"



TYPICAL ANCHOR BOLT LA
Scale: ½" = 1'-0"



END VIEW
Piles Not Shown



Scale: ¼" = 1'-0" unless otherwise noted

No.	Description	Date
	Revisions	

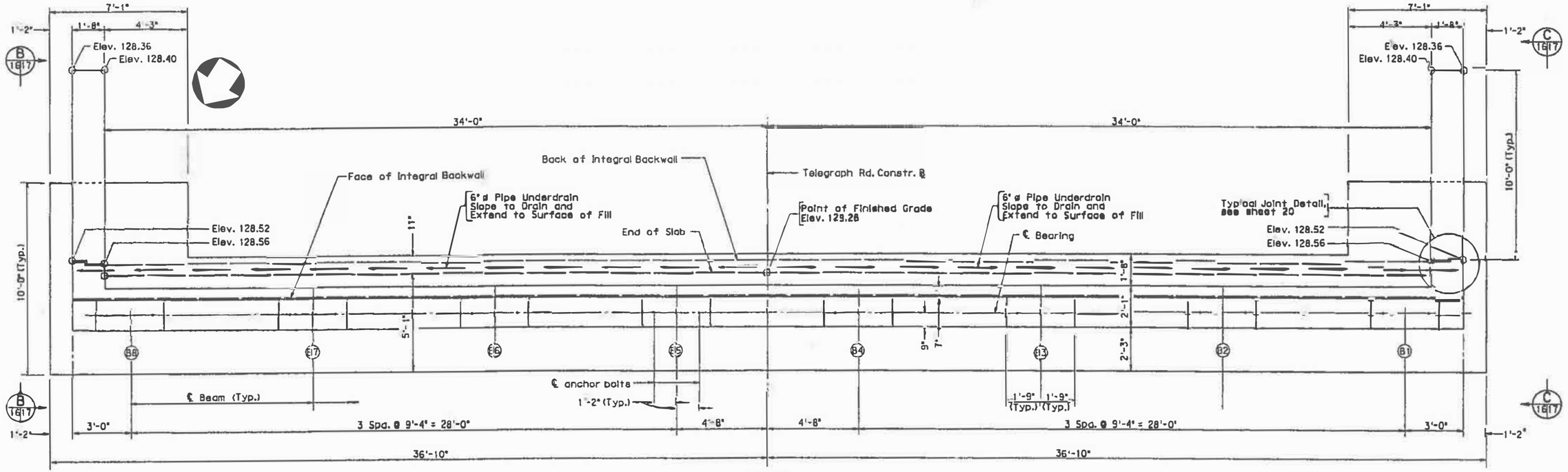
Designed:
Drawn:
Checked:

Date

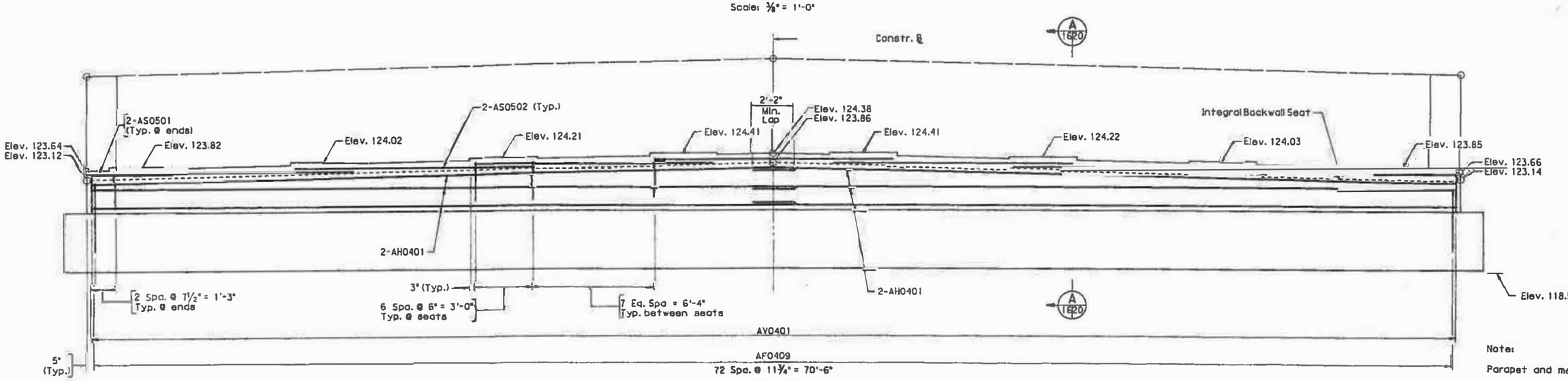
Plan No

PIER 2

REGION	STATE	ROUTE	PROJECT	ROUTE	PROJECT



PLAN
Scale: ⅜" = 1'-0"



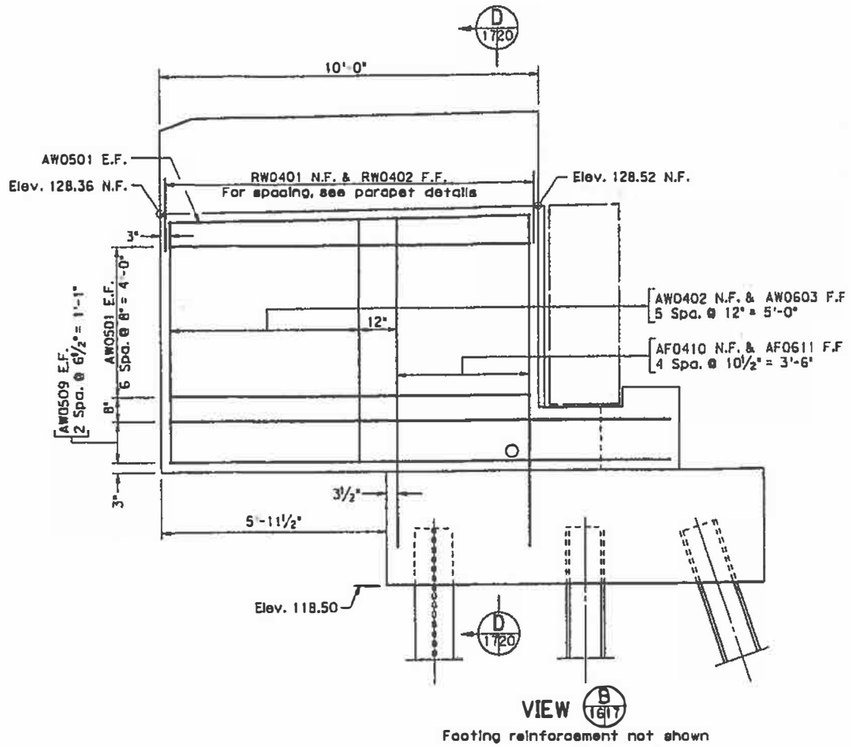
ELEVATION
Footing reinforcement and piles not shown
Scale: ⅜" = 1'-0"

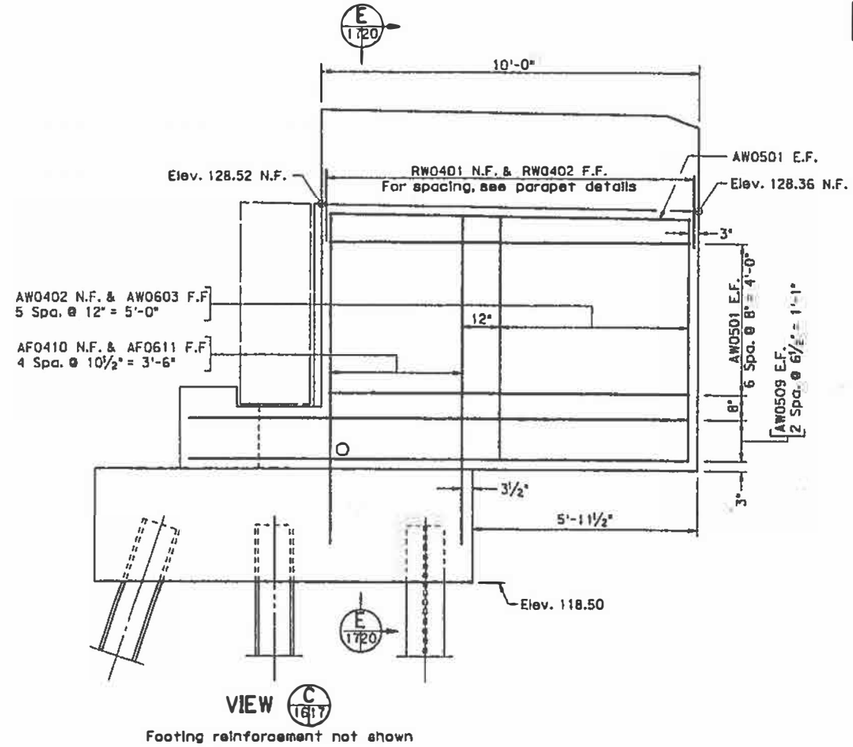
Note:

Parapet and median re

No.	Description	Date	Designed: . Drawn: .. Checked: ..	Date	Plan No
Revisions					

REGION	STATE	ROUTE	PROJECT	ROUTE	PROJECT



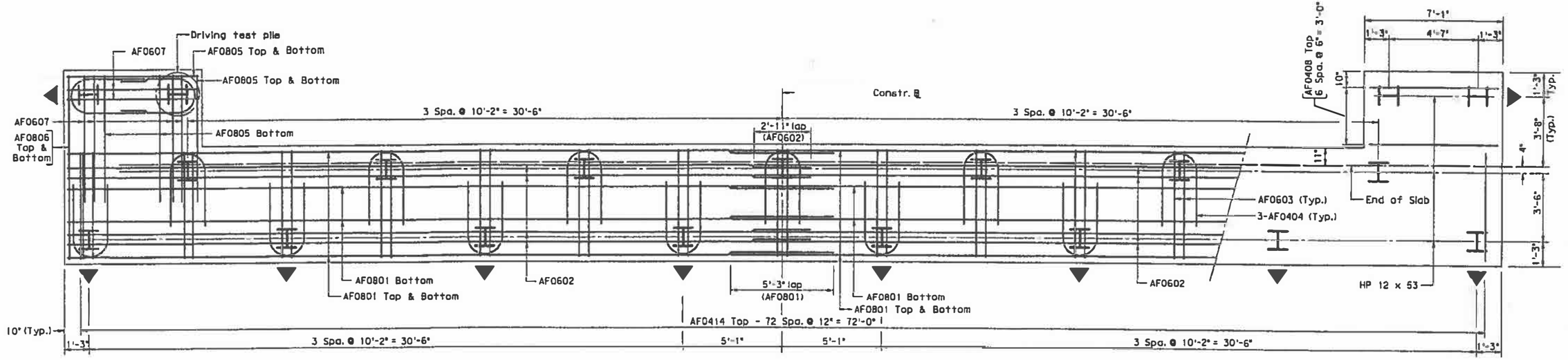


Legend:

F.F. - Far Face

N.F. - Near Face

E.F. - Each Face



PILE PLAN

Scale: ⅜" = 1'-0"

Note:

1. Piles to be driven to depths in accordance with VDOT Specifications 403.06 (e).

Scale: ½" = 1'-0" (unless otherwise shown)

No.	Description	Date
	Revisions	

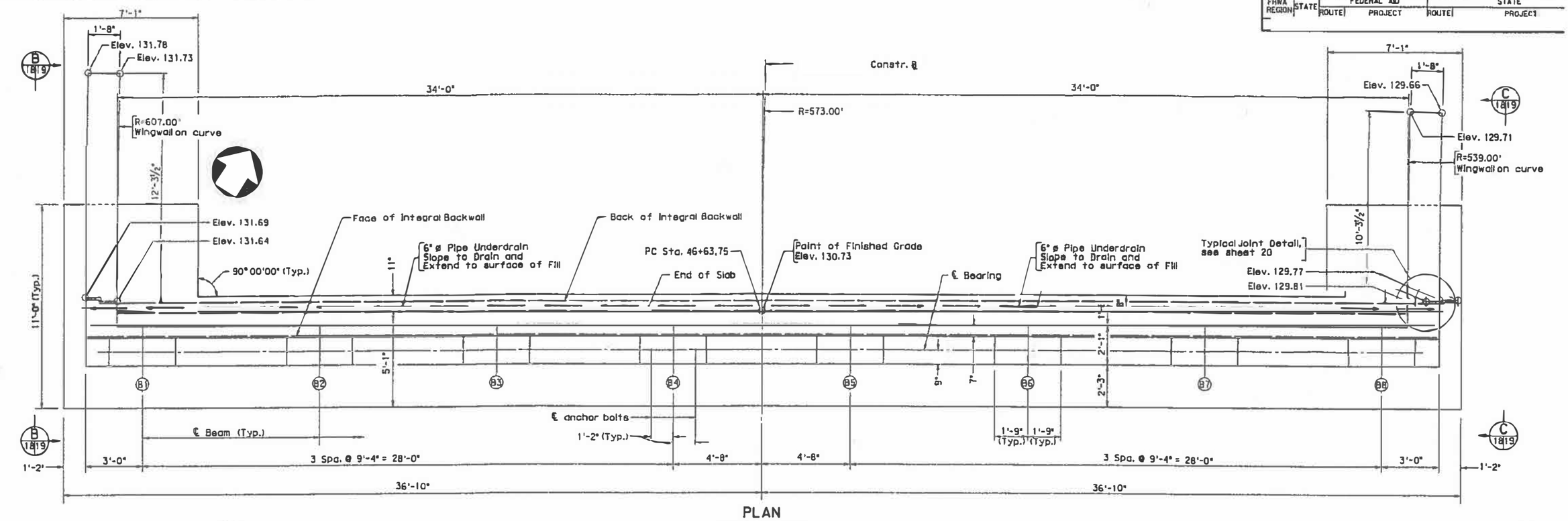
Designed:
Drawn:
Checked:

Date

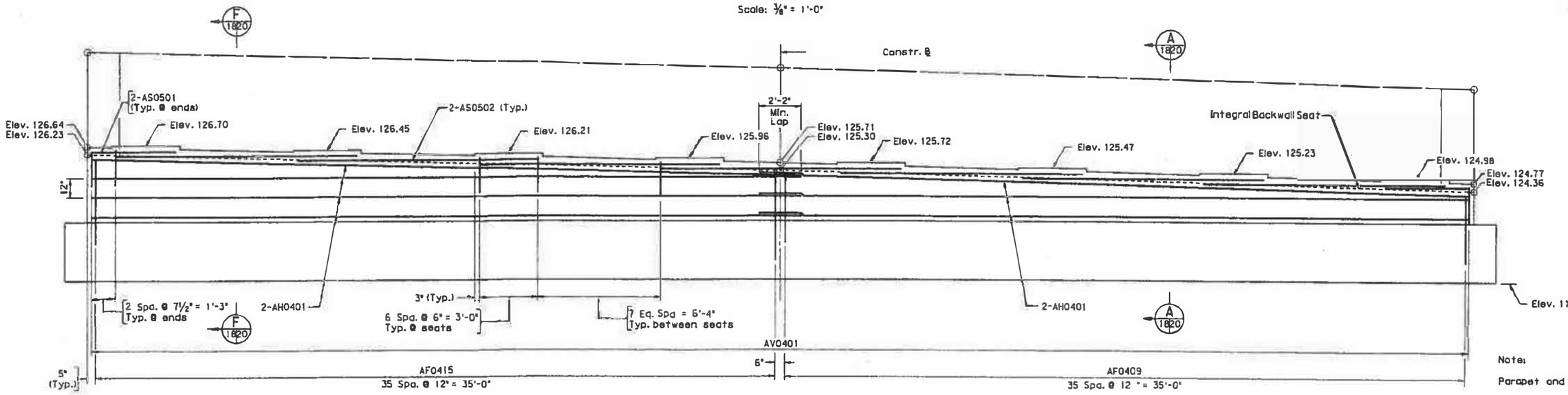
Plan No

ABUTMENT A
PILE PLAN & WINGWALL

FHWA REGION	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT



PLAN
Scale: ⅜" = 1'-0"



ELEVATION
Footing reinforcement and piles not shown
Scale: ⅜" = 1'-0"

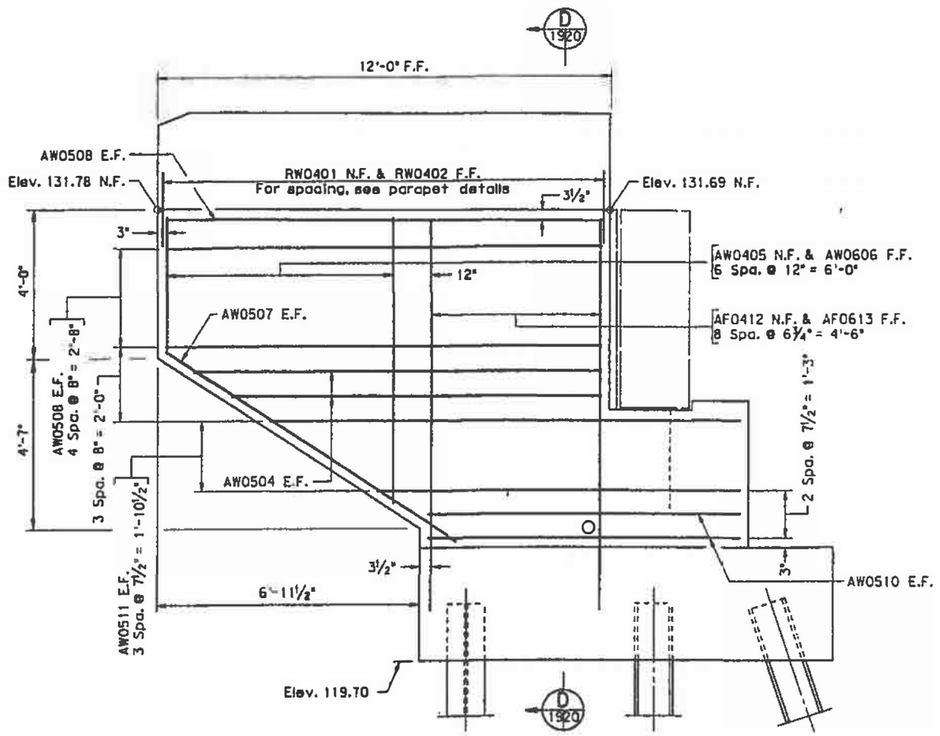
Note:
Parapet and median

No.	Description	Date
	Revisions	

Designed:
Drawn:
Checked:

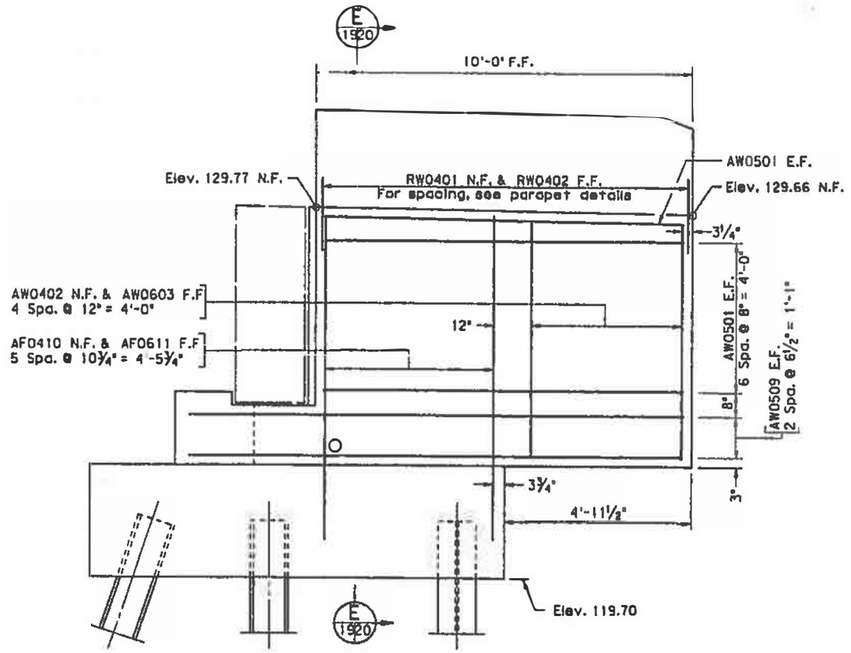
Date | Plan

ABUTMENT E
PLAN & ELEVA



VIEW B 1819

Footing reinforcement not shown



VIEW C 1819

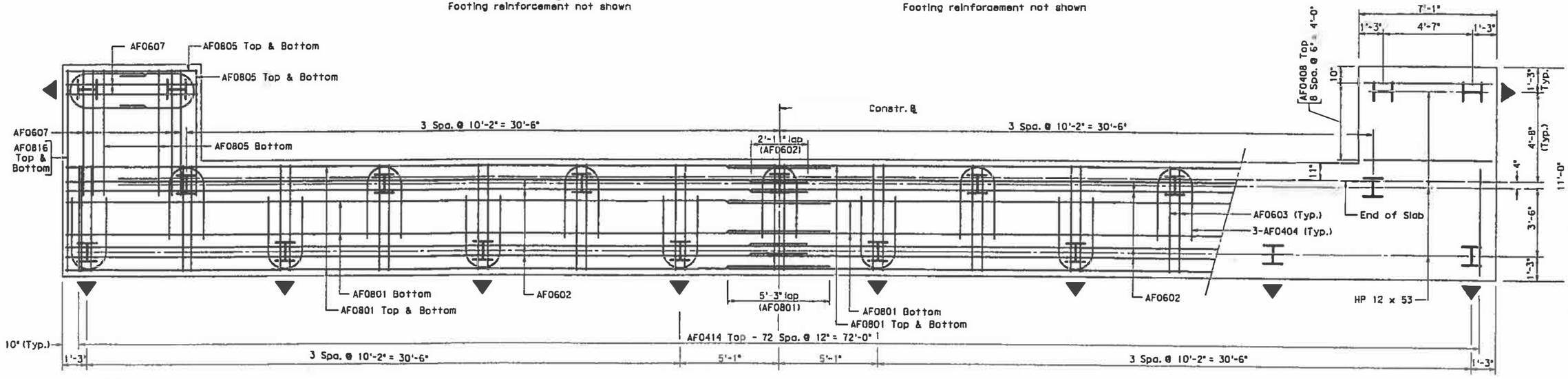
Footing reinforcement not shown

Legend:

F.F. - Far Face

N.F. - Near Face

E.F. - Each Face



▼ Indicates direction of pile batter

PILE PLAN

Scale: ⅜" = 1'-0"

Note:

1. Piles to be driven to depths in accordance with VDOT Specifications 403.06 (e).

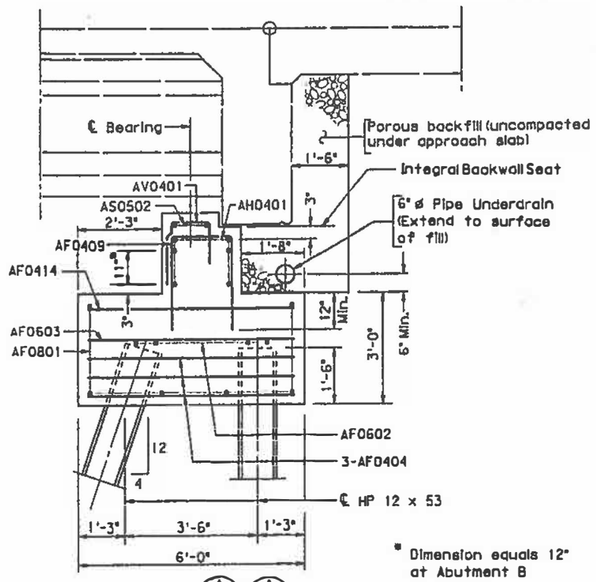
Scale: ½" = 1'-0" (unless otherwise shown)

No.	Description	Date
Revisions		

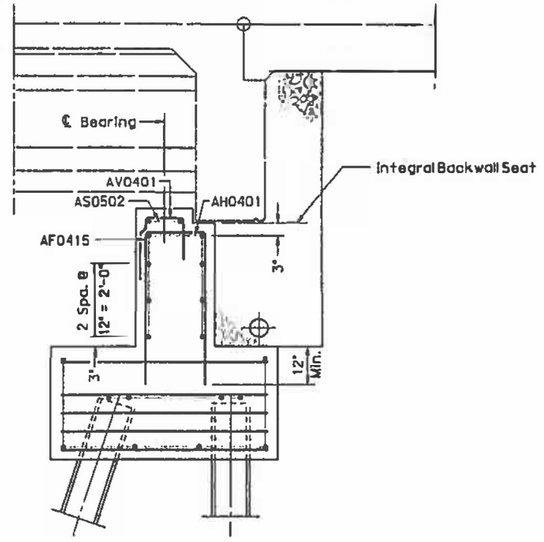
Designed:
Drawn:
Checked:
Date
Plan No

ABUTMENT B
PILE PLAN & WINGWALL

FHWA REGION	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT

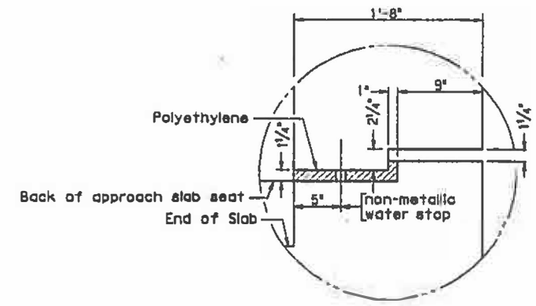


SECTION A/A 1820



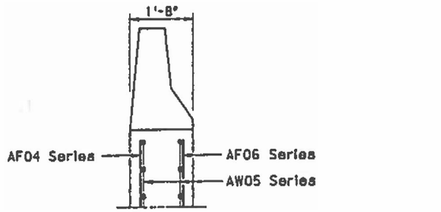
SECTION F 1820

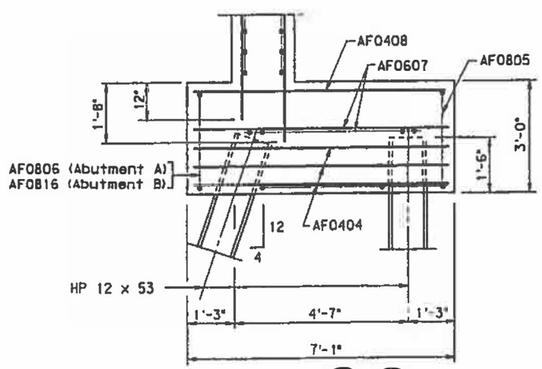
See Section A-A for additional details



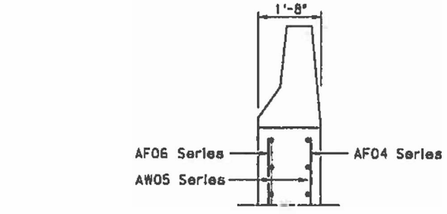
TYPICAL JOINT DETAIL

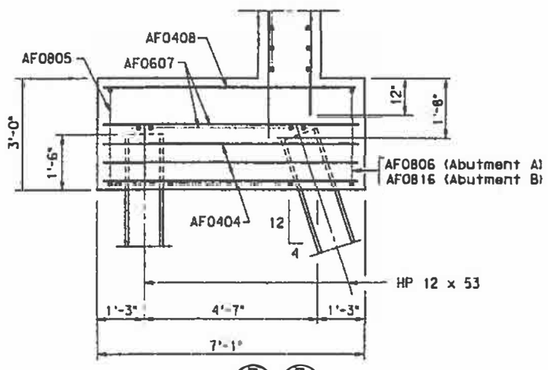
Scale: 1½" = 1'-0"





SECTION D 1720 D 1920





SECTION E 1720 E 1920

Scale: ½" = 1'-0" (unless otherwise shown)

No.	Description	Date
	Revisions	

STRUCTURE AND BRIDGE DIV

ABUTMENTS A &
SECTIONS & DETA

Designed:
Drawn:
Checked:

Date

Plan No

FHWA REGION	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT

REINFORCING STEEL SCHEDULE

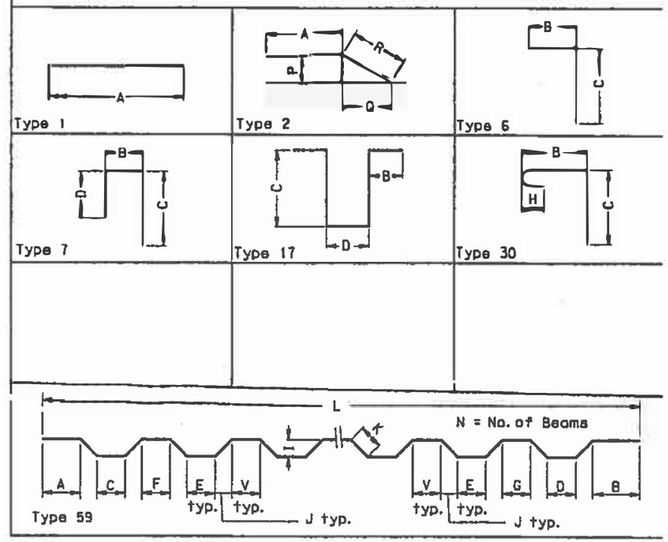
MARK	NO.	SIZE	PIN DIA IN.	LENGTH FT.- IN.	WT. LBS.	LOCATION
				SUPERSTRUCTURE		
				EPOXY COATED		
AB0601	44	6		37 - 0	2445	Int. Backwalls
AB0602	14	6		7 - 6	158	Int. Backwalls
AB0603	48	6		11 - 7	835	Int. Backwalls
AB0504	12	5		37 - 0	463	Int. Backwalls
AB0505	276	5		3 - 0	864	Int. Backwalls
AB0606	4	6		1 - 11	12	Int. Backwalls
AV0401	138	4	2	7 - 5	683	Int. Backwalls
AV0402	40	4	2	6 - 0	160	Int. Backwalls
AV0403	170	4	3	4 - 4	492	Int. Backwalls
AV0404	32	4	3	3 - 9	80	Int. Backwalls
AV0405	138	4	2	6 - 3	576	Int. Backwalls
AV0506	138	5	3 3/4	4 - 3	612	Int. Backwalls
SB0501	188	5	3 3/4	43 - 3	8481	Slab
SB0502	188	5	3 3/4	31 - 4 1/2	6153	Slab
SC0501	378	5		42 - 3	16657	Slab
SC0502	378	5		30 - 7	12058	Slab
SL0401	184	4		49 - 8	6105	Slab
SL0602	296	6		34 - 0	15116	Slab
SL0403	92	4		34 - 9	2136	Slab
SL0404	424	4		48 - 9	13808	Slab
DL0601	108	6		7 - 8	1244	Diaphragm
DL0602	42	6		8 - 5	531	Diaphragm
DL0403	42	4		8 - 5	236	Diaphragm
DL0404	42	4		7 - 8	215	Diaphragm
DL0605	32	6		35 - 0	1682	Diaphragm
DL0406	14	4	2	6 - 10	64	Diaphragm
DL0607	6	6		7 - 6	68	Diaphragm
DS0401	162	4	2	7 - 7	821	Diaphragm
DS0402	112	4	2	10 - 1	755	Diaphragm
DS0403	8	4	2	6 - 0	32	Diaphragm
DS0404	27	4	2	8 - 9	158	Diaphragm
ML0301	37	3		48 - 6	675	Median
ML0302	1	3		19 - 0	7	Median
ML0303	1	3		38 - 0	14	Median
ML0304	3	3		9 - 9 TO 47 - 9	32	Median
ML0305	1	3		19 - 6	7	Median
ML0306	1	3		38 - 6	14	Median
ML0307	1	3		10 - 3	4	Median
ML0308	1	3		29 - 3	11	Median
ML0309	20	3		2 - 0	15	Median
MT0301	192	3		3 - 10 TO 13 - 4	620	Median
				TOTAL EPOXY COATED	95100	

DIMENSION TABLE

MARK	TYPE	A FT.- IN.	B FT.- IN.	C FT.- IN.	D FT.- IN.	E P FT.- IN.	F Q FT.- IN.	G R FT.- IN.	H FT.- IN.	I S FT.- IN.	J T FT.- IN.	K U FT.- IN.	L FT.- IN.	V FT.- IN.	N
AB0601	1	37 -0													
AB0602	1	7 - 6													
AB0603	1	11 - 7													
AB0504	1	37 -0													
AB0505	1	3 - 0													
AB0606	1	1 - 11													
AV0401	7		0 -10	2 - 9	4 - 0										
AV0402	6		3 - 4	2 - 9											
AV0403	30		1 - 5	2 - 6 1/4					0 - 4 1/2						
AV0404	30		0 -10	2 - 6 1/4					0 - 4 1/2						
AV0405	7		1 - 5	2 - 6	2 - 6										
AV0506	2	2 - 9 3/4				1 - 3/8	1 - 3/8	1 - 5 1/2							
SB0501	59	4 -10 5/8	4 - 2 3/8	4 - 5 5/8	4 - 5 5/8	4 - 5 5/8	4 - 2 3/8	4 - 2 3/8		0 - 4 7/8	0 - 4	0 - 6 1/4		4 - 2 3/8	5
SB0502	59	1 - 11	4 -10 5/8	4 - 5 5/8	4 - 5 5/8	4 - 5 5/8	4 - 2 3/8	4 - 2 3/8		0 - 4 7/8	0 - 4	0 - 6 1/4			4
SC0501	1	42 - 3													
SC0502	1	30 - 7													
SL0401	1	49 - 8													
SL0602	1	34 -0													
SL0403	1	34 - 9													
SL0404	1	48 - 9													
DL0601	1	7 - 8													
DL0602	1	8 - 5													
DL0403	1	8 - 5													
DL0404	1	7 - 8													
DL0605	1	35 -0													
DL0406	7		5 - 0	1 - 0	1 - 0										
DL0607	1	7 - 6													
DS0401	17		0 - 9 1/8	2 - 11 1/2	0 - 6										
DS0402	17		0 - 9 1/8	4 - 2	0 - 7										
DS0403	7		4 - 2	1 - 0	1 - 0										
DS0404	17		0 - 9 1/8	3 - 6 1/2	0 - 6										
ML0301	1	48 - 6													
ML0302	1	19 -0													
ML0303	1	38 -0													
ML0304	1	V A R Y													
ML0305	1	19 -6													
ML0306	1	38 -6													
ML0307	1	10 -3													
ML0308	1	29 -3													
ML0309	1	2 -0													
MT0301	1	V A R Y													

DIMENSION VARIATION TABLE

MARK	NO. EA. LEN.	DIM.	FROM FT.- IN	TO FT.- IN	VARY BY FT.- IN	DIM.	FROM FT.- IN	TO FT.- IN
ML0304	1	A	9 - 9	47 - 9	19 - 0			
MT0301	2	A	3 -10	13 - 4	0 - 1 3/16			



Notes:

1. Dimensions in bending diagram are out-to-out of bars.
2. Full length straight bars (top and bottom) may be substituted for truss bars (SB Series) in the deck superstructure at no extra co to the State.

No.	Description	Date
	Revisions	

STRUCTURE AND BRIDGE DIV

REINFORCING STE
SCHEDULE I

Designed:
Drawn:
Checked:
Date
Plan No

27833016 980918

MicroStation CADD System

FHWA REGION	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT

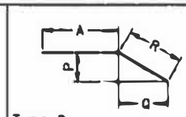
REINFORCING STEEL SCHEDULE

MARK	NO.	SIZE	PIN DIA IN.	LENGTH FT.- IN.	WT. LBS.	LOCATION	MARK	TYPE	A FT.- IN.	B FT.- IN.	C FT.- IN.	D FT.- IN.	E P FT.- IN.	F Q FT.- IN.	G R FT.- IN.	H FT.- IN.	I S FT.- IN.	J T FT.- IN.	K U FT.- IN.	L FT.- IN.	V FT.- IN.	N
				ABUTMENT A - UNCOATED																		
AF0801	12	8		39 - 3	1258	Footing	AF0801	1	39 - 3													
AF0602	8	6		38 - 1	458	Footing	AF0602	1	38 - 1													
AF0603	30	6		5 - 6	248	Footing	AF0603	1	5 - 6													
AF0404	57	4	21	8 - 8	330	Footing	AF0404	45	3 - 10 1/8	3 - 10 1/8												
AF0805	12	8		6 - 7	211	Footing	AF0805	1	6 - 7													
AF0806	4	8		9 - 6	101	Footing	AF0806	1	9 - 6													
AF0607	12	6		6 - 7	119	Footing	AF0607	1	6 - 7													
AF0408	14	4		6 - 7	62	Footing	AF0408	1	6 - 7													
AF0409	73	4	2	8 - 6	414	Footing	AF0409	7		1 - 8	3 - 6	3 - 6										
AF0410	10	4		7 - 9	52	Footing	AF0410	1	7 - 9													
AF0611	10	6		8 - 5	126	Footing	AF0611	1	8 - 5													
AF0414	73	4		5 - 6	268	Footing	AF0414	1	5 - 6													
				TOTAL UNCOATED	3650																	
				EPOXY COATED																		
AH0401	12	4		36 - 6	293	Abut. Stem	AHD401	1	36 - 6													
AS0501	4	5		4 - 3	18	Abut. Stem	AS0501	1	4 - 3													
AS0502	14	5		12 - 4	180	Abut. Stem	AS0502	1	12 - 4													
AV0401	102	4	2	4 - 6	306	Abut. Stem	AV0401	7		1 - 0	1 - 10	1 - 10										
AW0501	32	5		9 - 6	317	Wingwall	AW0501	1	9 - 6													
AW0402	12	4		6 - 5	51	Wingwall	AW0402	1	6 - 5													
AW0603	12	6		6 - 5	116	Wingwall	AW0603	1	6 - 5													
AW0509	12	5		13 - 3	166	Wingwall / Stem	AW0509	1	13 - 3													
				TOTAL EPOXY COATED	1450																	
				ABUTMENT B - UNCOATED																		
AF0801	12	8		39 - 3	1258	Footing	AF0801	1	39 - 3													
AF0602	8	6		38 - 1	458	Footing	AF0602	1	38 - 1													
AF0603	30	6		5 - 6	248	Footing	AF0603	1	5 - 6													
AF0404	57	4	21	8 - 8	330	Footing	AF0404	45	3 - 10 1/8	3 - 10 1/8												
AF0805	12	8		6 - 7	211	Footing	AF0805	1	6 - 7													
AF0607	12	6		6 - 7	119	Footing	AF0607	1	6 - 7													
AF0408	18	4		6 - 7	79	Footing	AF0408	1	6 - 7													
AF0409	36	4	2	8 - 6	204	Footing	AF0409	7		1 - 8	3 - 6	3 - 6										
AF0410	6	4		7 - 9	31	Footing	AF0410	1	7 - 9													
AF0611	6	6		8 - 5	76	Footing	AF0611	1	8 - 5													
AF0412	9	4		9 - 9	59	Footing	AF0412	1	9 - 9													
AF0613	9	6		10 - 5	141	Footing	AF0613	1	10 - 5													
AF0414	73	4		5 - 6	268	Footing	AF0414	1	5 - 6													
AF0415	36	4	2	10 - 4	248	Footing	AF0415	7		1 - 8	4 - 5	4 - 5										
AF0816	4	8		10 - 6	112	Footing	AF0816	1	10 - 6													
				TOTAL UNCOATED	3840																	
				EPOXY COATED																		
AH0401	14	4		36 - 6	341	Abut. Stem	AHD401	1	36 - 6													
AS0501	4	5		4 - 3	18	Abut. Stem	AS0501	1	4 - 3													
AS0502	14	5		12 - 4	180	Abut. Stem	AS0502	1	12 - 4													
AV0401	102	4	2	4 - 6	306	Abut. Stem	AV0401	7		1 - 0	1 - 10	1 - 10										
AW0501	16	5		9 - 6	159	Wingwall	AW0501	1	9 - 6													
AW0402	5	4		6 - 5	21	Wingwall	AW0402	1	6 - 5													
AW0603	5	6		6 - 5	48	Wingwall	AW0603	1	6 - 5													
AW0504	4	5		9 - 9 TO 10 - 9	43	Wingwall	AW0504	1	V A R Y													
AW0405	14	4		3 - 7 TO 7 - 7	52	Wingwall	AW0405	1	V A R Y													
AW0606	14	6		3 - 7 TO 7 - 7	117	Wingwall	AW0606	1	V A R Y													
AW0507	2	5		9 - 3	19	Wingwall	AW0507	1	9 - 3													
AW0508	12	5		11 - 6	144	Wingwall	AW0508	1	11 - 6													
AW0509	6	5		13 - 3	83	Wingwall / Stem	AW0509	1	13 - 3													
AW0510	4	5		8 - 3	34	Wingwall / Stem	AW0510	1	8 - 3													
AW0511	8	5		9 - 8 TO 12 - 5	92	Wingwall / Stem	AW0511	1	V A R Y													
				TOTAL EPOXY COATED	1660																	

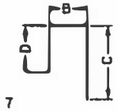
DIMENSION VARIATION TABLE

MARK	NO. EA. LEN.	DIM.	FROM FT.- IN	TO FT.- IN	VARY BY FT.- IN	DIM.	FROM FT.- IN	TO FT.- IN
AW0504	2	A	9 - 9	10 -9	1 - 0			
AW0405	2	A	3 - 7	7 - 7	0 - 8			
AW0606	2	A	3 - 7	7 - 7	0 - 8			
AW0511	2	A	9 - 8	12 -5	0 -11			

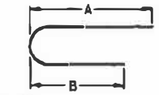
Type 1



Type 2



Type 7



Type 45

Note:
1. Dimensions in bending diagram are out-to-out of bar.

No.	Description	Date
	Revisions	

STRUCTURE AND BRIDGE DI

REINFORCING STE

SCHEDULE II

Designed:
Drawn:
Checked:

Date

Plan N

27833016 980918

FHWA REGION	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT

REINFORCING STEEL SCHEDULE

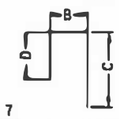
DIMENSION TABLE

MARK	NO.	SIZE	PIN DIA IN.	LENGTH FT.- IN.	WT. LBS.	LOCATION	MARK	TYPE	A FT.- IN.	B FT.- IN.	C FT.- IN.	D FT.- IN.	E P FT.- IN.	F Q FT.- IN.	G R FT.- IN.	H FT.- IN.	I S FT.- IN.	J T FT.- IN.	K U FT.- IN.	L FT.- IN.	V FT.- IN.	N
				PIER 1																		
				UNCOATED																		
PC0401	12	4		35 - 3	283	Cap	PC0401	1	35 - 3													
PC0602	42	6		12 - 2	768	Cap	PC0602	1	12 - 2													
PF0601	212	6		6 - 7	2096	Footing	PF0601	1	6 - 7													
PF0502	170	5		6 - 0	1064	Footing	PF0502	1	6 - 0													
PF0403	28	4		37 - 3	697	Footing	PF0403	1	37 - 3													
PH0401	32	4		35 - 3	754	Stem	PH0401	1	35 - 3													
PN0401	8	4	39	9 - 4	50	Cap	PN0401	45	3 - 9	3 - 9												
PN0402	16	4	24	7 - 2	77	Stem	PN0402	45	3 - 1/4	3 - 1/4												
PS0401	138	4	2	8 - 5	775	Cap	PS0401	7		3 - 7	2 - 6	2 - 6										
PV0601	212	6		7 - 9	2468	Stem	PV0601	1	7 - 9													
				TOTAL PIER 1	9030																	
				PIER 2																		
				UNCOATED																		
PC0401	14	4		35 - 3	330	Cap	PC0401	1	35 - 3													
PC0602	42	6		12 - 2	768	Cap	PC0602	1	12 - 2													
PF0601	212	6		6 - 7	2096	Footing	PF0601	1	6 - 7													
PF0502	170	5		6 - 0	1064	Footing	PF0502	1	6 - 0													
PF0403	28	4		37 - 3	697	Footing	PF0403	1	37 - 3													
PH0401	56	4		35 - 3	1319	Stem	PH0401	1	35 - 3													
PN0401	9	4	39	9 - 4	56	Cap	PN0401	45	3 - 9	3 - 9												
PN0402	28	4	24	7 - 2	134	Stem	PN0402	45	3 - 1/4	3 - 1/4												
PS0401	138	4	2	8 - 5	775	Cap	PS0401	7		3 - 7	2 - 6	2 - 6										
PV0602	212	6		13 - 2	4193	Stem	PV0602	1	13 - 2													
				TOTAL PIER 2	11430																	

DIMENSION VARIATION TABLE

MARK	NO. EA. LEN.	DIM.	FROM FT.- IN	TO FT.- IN	VARY BY FT.- IN	DIM.	FROM FT.- IN	TO FT.- IN

Type 1



Type 7

Type 45

Note:
1. Dimensions in bending diagram are out-to-out of bar.

No.	Description	Date
	Revisions	

STRUCTURE AND BRIDGE DIVIS

REINFORCING STEE
SCHEDULE III

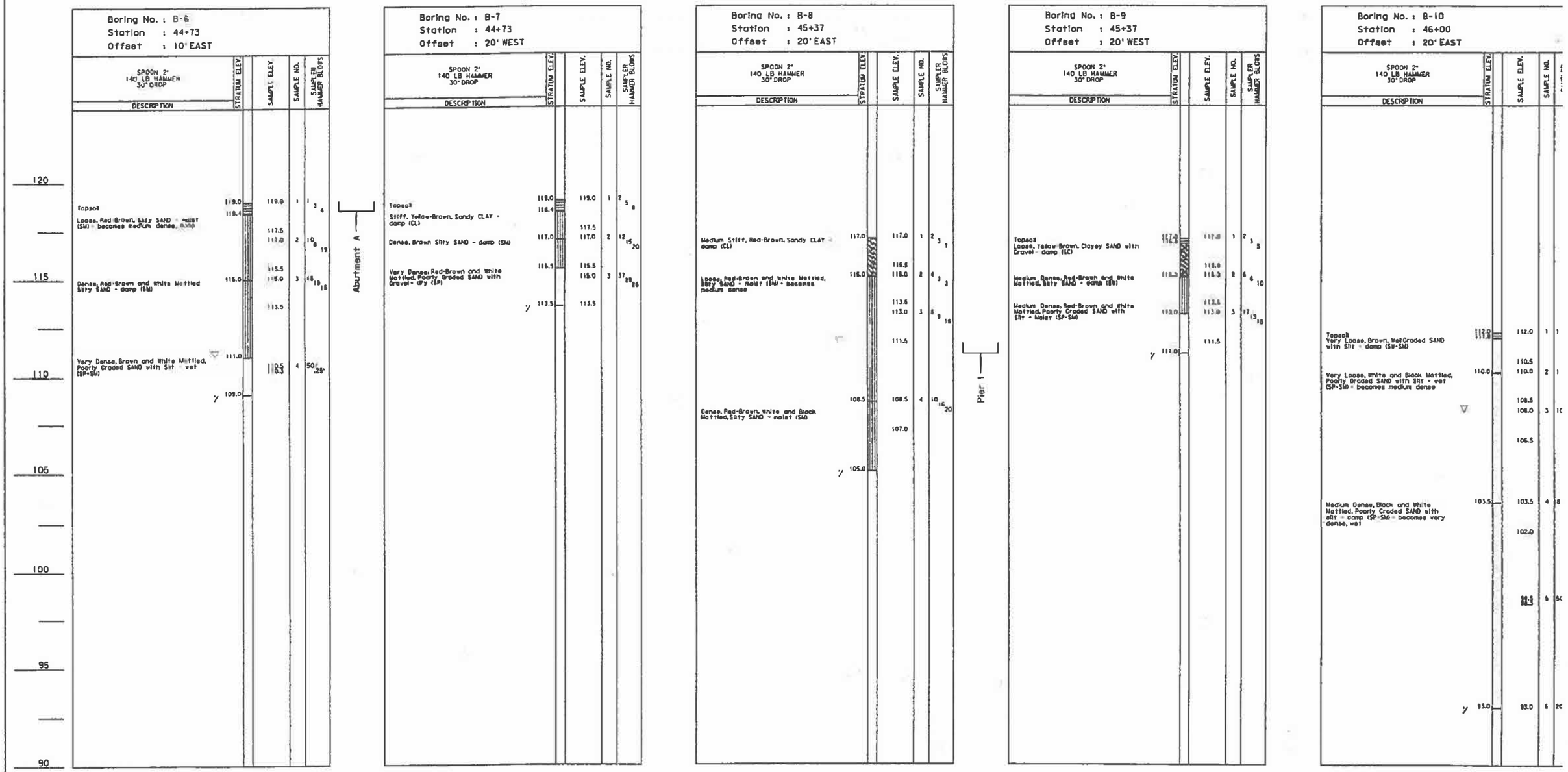
Designed:
Drawn:
Checked:

Date

Plan No.

27833016 980918

FHWA REGION	STATE	FEDERAL AID ROUTE	PROJECT	STATE ROUTE	PROJECT



GEOLOGIC SECTION

Scale: 1" = 2.5'

SUBSURFACE INFORMATION - Boring Logs

This subsurface information shown on the boring logs in these plans was obtained with reasonable care and recorded in good faith solely for use by the Department in establishing design controls for the project. The Department has no reason to suspect that such information is not reasonably accurate as an approximate indication of the subsurface conditions at the sites where the borings were taken. The Department does not in any way warrant or guarantee that such data can be projected as indicative of conditions beyond the limits of the borings shown; and any such projections by bidders are purely interpretive and altogether speculative. Further, the Department does not in any way guarantee, either expressly or by implication, the sufficiency of the information for bid purposes.

The boring logs are made available to bidders in order that they may have access to subsurface data identical to that which is possessed by the Department, and are not intended as a substitute for personal investigation, interpretation and judgment by the bidders.

∇ ELEVATION OF GROUNDWATER
ELEVATION OF CAVE-IN
▼ ELEVATION AT BOTTOM OF DRILL HOLE
EQUIPMENT -
CB = CORE BARREL

No.	Description	Date
	Revisions	

STRUCTURE AND BRIDGE DIV

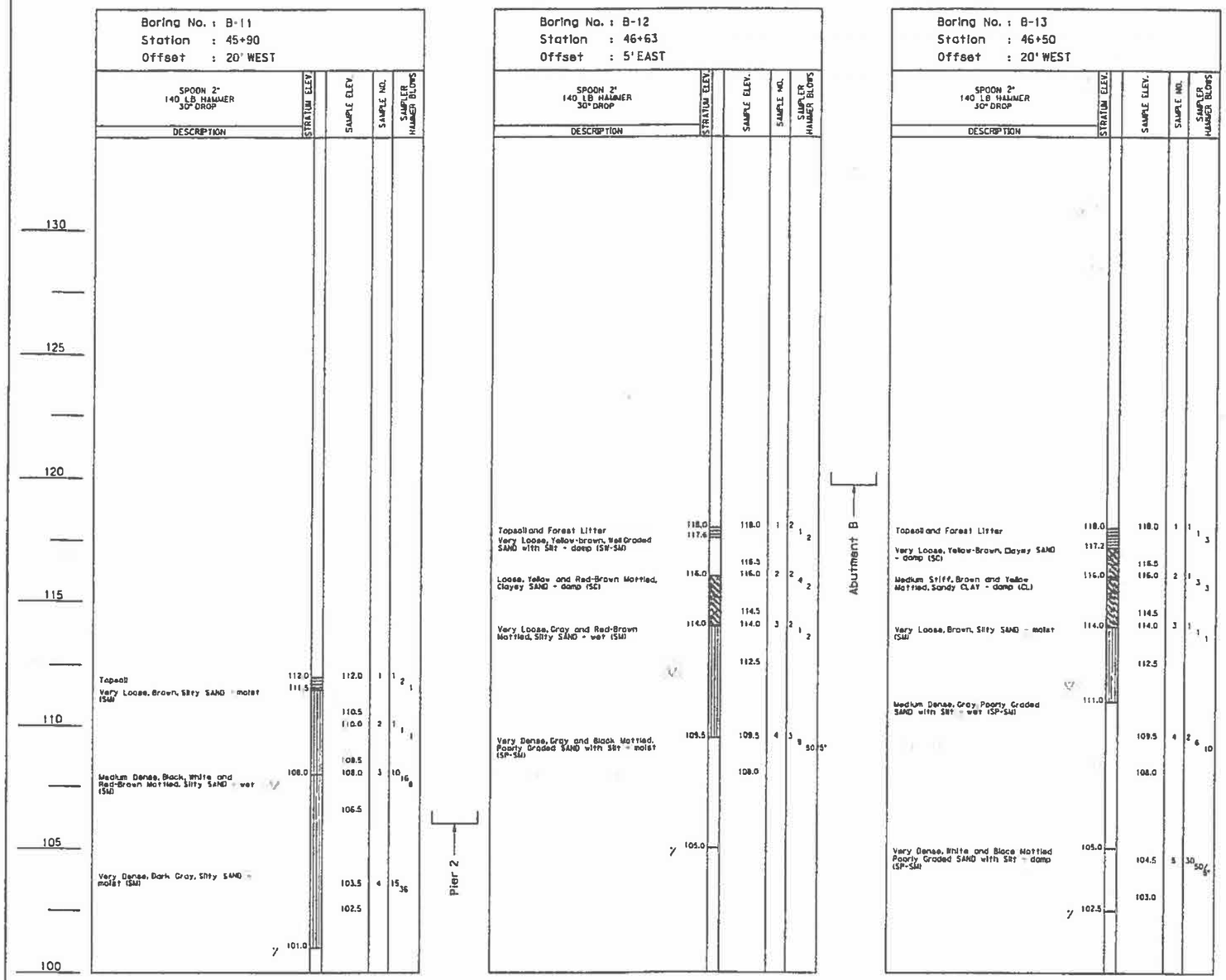
ENGINEERING GEOLO

Designed:
Drawn:
Checked:

Date

Plan No.

FHWA REGION	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT



GEOLOGIC SECTION

Scale: 1" = 2.5'

SUBSURFACE INFORMATION - Boring Logs

This subsurface information shown on the boring logs in these plans was obtained with reasonable care and recorded in good faith solely for use by the Department in establishing design controls for the project. The Department has no reason to suspect that such information is not reasonably accurate as an approximate indication of the subsurface conditions at the sites where the borings were taken. The Department does not in any way warrant or guarantee that such data can be projected as indicative of conditions beyond the limits of the borings shown; and any such projections by bidders are purely interpretive and altogether speculative. Further, the Department does not in any way guarantee, either expressly or by implication, the sufficiency of the information for bid purposes.

The boring logs are made available to bidders in order that they may have access to subsurface data identical to that which is possessed by the Department, and are not intended as a substitute for personal investigation, interpretation and judgment by the bidders.

V ELEVATION OF GROUNDWATER
E ELEVATION OF CAVE-IN
▼ ELEVATION AT BOTTOM OF DRILL HOLE
EQUIPMENT -
CB = CORE BARREL

No.	Description	Date
	Revisions	

C
STRUCTURE AND BRIDGE DIV

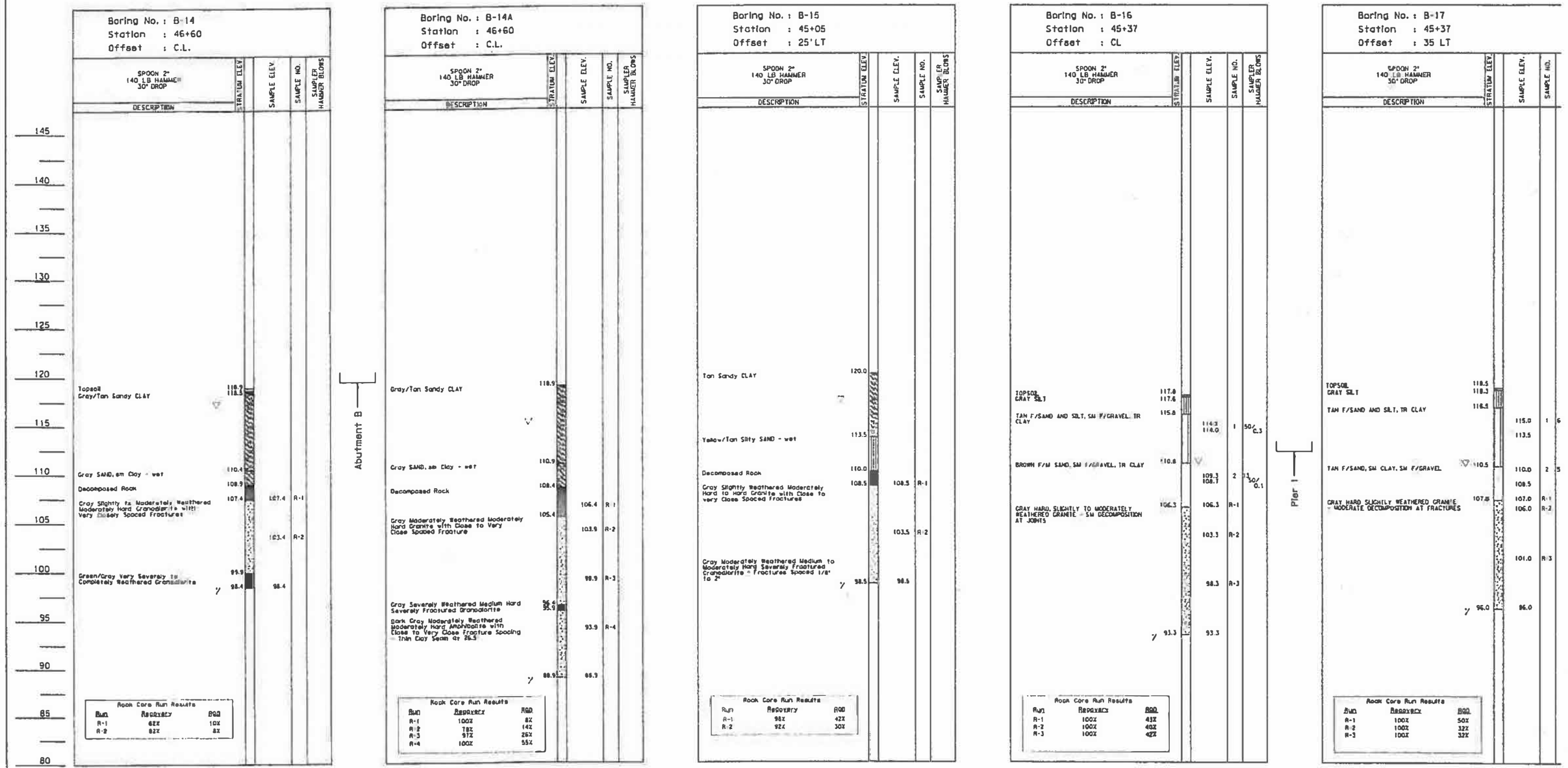
ENGINEERING GEOLO

Designed:
Drawn:
Checked:

Date

Plan No

FHWA REGION	STATE	FEDERAL AID ROUTE	PROJECT	STATE ROUTE	PROJECT



GEOLOGIC SECTION

Scale: 1" = 5.0'

SUBSURFACE INFORMATION - Boring Logs

This subsurface information shown on the boring logs in these plans was obtained with reasonable care and recorded in good faith solely for use by the Department in establishing design controls for the project. The Department has no reason to suspect that such information is not reasonably accurate as an approximate indication of the subsurface conditions at the sites where the borings were taken. The Department does not in any way warrant or guarantee that such data can be projected as indicative of conditions beyond the limits of the borings shown, and any such projections by bidders are purely interpretive and altogether speculative. Further, the Department does not in any way guarantee, either expressly or by implication, the sufficiency of the information for bid purposes.

The boring logs are made available to bidders in order that they may have access to subsurface data identical to that which is possessed by the Department, and are not intended as a substitute for personal investigation, interpretation and judgment by the bidders.

▽ ELEVATION OF GROUNDWATER
| ELEVATION OF CAVE-IN
▼ ELEVATION AT BOTTOM OF DRILL HOLE
EQUIPMENT -
CB - CORE BARREL

▓ INDICATES WEATHERED ROCK

No.	Description	Date
	Revisions	

STRUCTURE AND BRIDGE DI

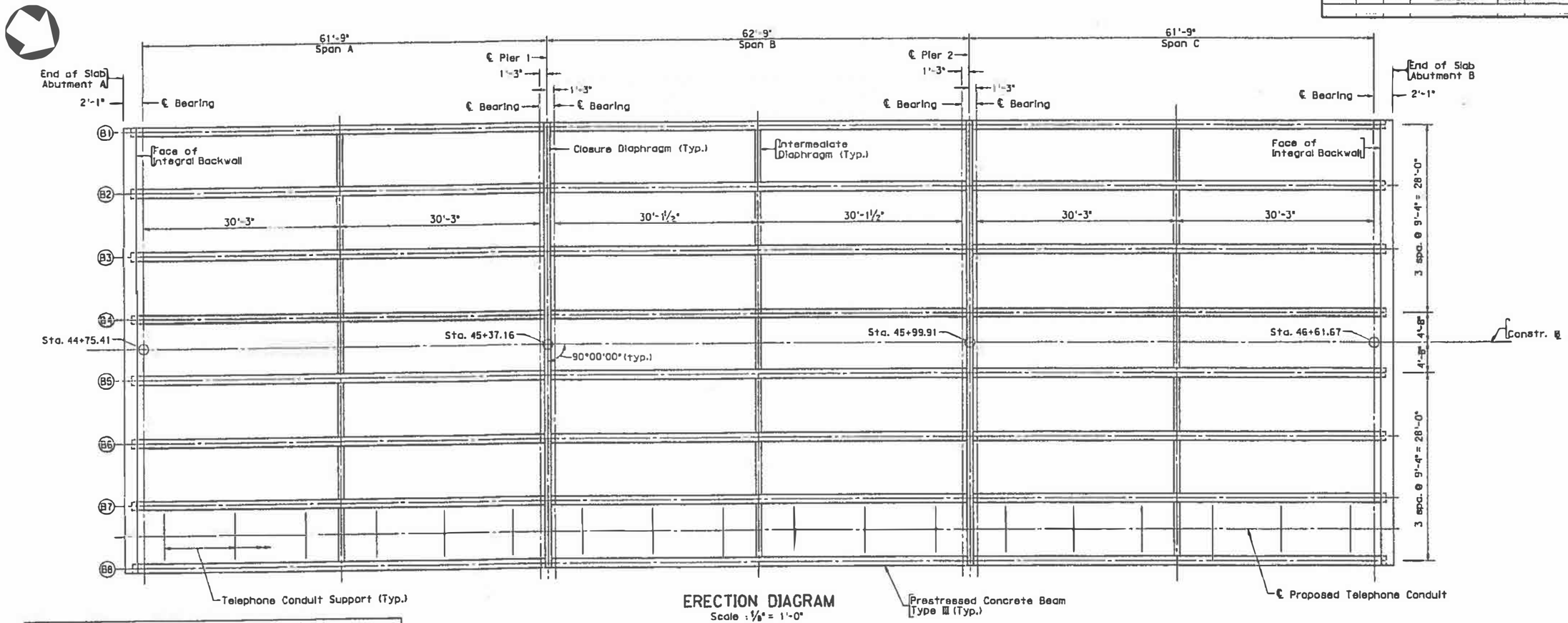
ENGINEERING GEOLO

Designed:
Drawn:
Checked:

Date

Plan N

REGION	STATE	ROUTE	PROJECT	ROUTE	PROJECT

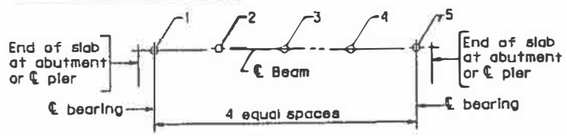


ERECTION DIAGRAM

Scale : ⅛" = 1'-0"

TOP OF SLAB ELEVATIONS ALONG ℄ BEAMS

Span	Beam	Points 1	2	3	4	5
Span A	1	128.65	129.00	129.34	129.65	129.94
	2	128.84	129.16	129.45	129.73	129.98
	3	129.03	129.31	129.57	129.81	130.03
	4	129.22	129.46	129.69	129.90	130.08
	5	129.21	129.44	129.65	129.84	130.01
	6	129.02	129.25	129.46	129.65	129.81
	7	128.83	129.05	129.26	129.45	129.62
	8	128.63	128.86	129.07	129.26	129.43
Span B	1	129.98	130.25	130.50	130.72	130.93
	2	130.03	130.26	130.47	130.66	130.83
	3	130.07	130.26	130.44	130.60	130.74
	4	130.11	130.27	130.41	130.54	130.64
	5	130.03	130.18	130.30	130.41	130.49
	6	129.84	129.98	130.11	130.21	130.30
	7	129.65	129.79	129.91	130.02	130.10
	8	129.45	129.60	129.72	129.83	129.91
Span C	1	130.96	131.15	131.32	131.46	131.59
	2	130.86	131.01	131.14	131.25	131.34
	3	130.76	130.87	130.97	131.04	131.10
	4	130.65	130.73	130.79	130.83	130.85
	5	130.51	130.57	130.61	130.62	130.61
	6	130.31	130.37	130.41	130.41	130.36
	7	130.12	130.18	130.22	130.20	130.12
	8	129.92	129.98	130.03	129.99	129.87



PLAN

Showing points of top of slab elevations

TABLE OF MOMENTS, SHEARS AND STRESSES

Location		Live Load + I (Service Load) Max. M k-ft	Max. V k	Non-Composite DL (Service Load) Max. M k-ft	Max. V k	Composite DL (Service Load) Max. M k-ft	Max. V k	Release Stress at 0.4 L Top psi	Bottom psi	Final Stress (Pos. Mom.) •• P/S+DL+LL Top psi	Bottom psi	P/S+DL Top psi	Bottom psi	Final Stress (Neg. Mom.) P/S+DL+LL Top psi	Bottom psi	P/S+DL Top psi	Bottom psi
Span A & C								-286.2	2092.5								
CL Brg. Abut A	Interior Beam	72.8	58.4	0.0	54.0	12.4	9.8	———	———	-60.8	626.5	-77.8	707.4	-242.2	1489.3	-118.4	900.4
	Exterior Beam	52.1	41.8	0.0	47.3	10.2	8.0	———	———	-61.9	644.5	-77.1	703.6	-229.4	1295.9	-118.7	865.5
Midspan •	Interior Beam	682.3	33.7	840.4	1.5	116.3	2.9	———	———	1358.8	-210.1	1199.5	547.7	1157.6	746.7	1199.5	547.7
	Exterior Beam	488.2	24.1	726.4	0.7	95.5	2.3	———	———	1079.6	216.5	937.2	770.3	899.7	915.8	937.2	770.3
CL Brg. Pier 1	Interior Beam	-530.3	69.5	0.0	56.1	-161.3	15.5	———	———	-60.8	626.5	-77.8	707.4	-242.2	1489.3	-118.4	900.4
	Exterior Beam	-379.5	49.8	0.0	48.3	-132.4	12.7	———	———	-61.9	644.5	-77.1	703.6	-229.4	1295.9	-118.7	865.5
Span B								-291.2	2096.4								
CL Brg. Pier 1	Interior Beam	-480.6	63.3	0.0	53.9	-145.2	12.6	———	———	-94.0	783.2	-114.4	880.0	-226.6	1413.9	-114.4	880.0
	Exterior Beam	-343.9	45.3	0.0	47.1	-119.3	10.3	———	———	-96.5	777.6	-114.6	848.3	-215.0	1238.5	-114.6	848.3
Midspan	Interior Beam	588.5	26.7	833.7	1.5	43.8	0.0	———	———	1307.0	-20.9	1169.6	632.7	1117.9	878.5	1169.6	632.7
	Exterior Beam	421.1	19.1	720.5	0.8	36.0	0.0	———	———	1031.2	364.4	908.4	842.1	862.2	1021.7	908.4	842.1
CL Brg. Pier 2	Interior Beam	-480.8	63.3	0.0	53.9	-145.2	12.6	———	———	-94.0	783.2	-114.4	880.0	-226.6	1413.9	-114.4	880.0
	Exterior Beam	-344.0	45.3	0.0	47.2	-119.3	10.3	———	———	-96.5	777.6	-114.6	848.3	-215.0	1238.5	-114.6	848.3

• Maximum Moments at End Spans may not be at midspan.
•• Positive Moment does not include creep and shrinkage.

Note:

Spacing of supports for the telephone conduit system is not shown. See telephone conduit plan for actual spacing.

References:

1. For prestressed girder details, see sheet
2. For diaphragm details, see sheet 10.
3. For bearing details, see sheet 11.
4. For integral backwall details, see sheets 6
5. For telephone conduit details, see sheet

No.	Description	Date
	Revisions	

Designed:
Drawn:
Checked:
Date
Plan No.

STRUCTURE AND BRIDGE DIV.

ERECTION DIAGRAM