

SPECIFICATIONS

DESIGN

AASHTO Standard Specifications For Highway Bridges 1989
And Interim Specifications.

CONTRACT

State of Maine, Department of Transportation Standard Specifications, Highways
And Bridges, Revision of October 1990.

DESIGN LOADING

LIVE LOAD

HS20 500,000 Cycles

FOUNDATIONS

Abutments - HP10x42
Pier - HP12x53

MATERIALS

CONCRETE

Superstructure Slab Concrete Shall Be Class AAA.
All Other Concrete Shall Be Class A.

REINFORCING STEEL

ASTM-A615 Grade 60. (Epoxy Coated And Non-Epoxy
Coated Bars. See Reinforcing Schedules).

STRUCTURAL STEEL

Bearing Shoes-See Standard Details BD 101-89
High Strength Bolts To Be ASTM A325.
All Other Structural Steel Shall Be ASTM A709,
Grade 36.

BASIC ALLOWABLE STRESSES

CONCRETE

$f_c = 1,800$ psi $n=8$ (Superstructure Slab)
 $f_c = 1,600$ psi $n=8$ (All Other)

REINFORCING STEEL

$f_b = 24,000$ psi

STRUCTURAL STEEL

A709 Grade 36, $f_b = 20,000$ psi
A709 Grade 50, $f_b = 27,000$ psi

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16	GENERAL PLAN AND FOOTING PLAN
17	ABUTMENT DETAILS I
18	ABUTMENT DETAILS II
19	ABUTMENT JOINT DETAILS
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20A	PIER 2 SB DETAILS
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25	MISCELLANEOUS DETAILS
26	REINFORCING SCHEDULE I
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STANDARD DETAIL SHEETS	
SHEET NO	TITLE
BD 101-89	BEARING PEDESTALS
BD 111-89	BEAM SPLICES: ROLLED BEAMS
BD 112-89	DIAPHRAGMS & CROSSFRAMES
BD 201-89	CONCRETE END POSTS
BD 401-89	ALUMINUM BRIDGE RAILING: 2 BAR
BD 501-89	SUBSTRUCTURE DETAILS

GENERAL NOTES

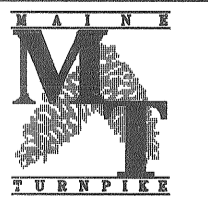
- Reinforcing Steel To Have A Clear Cover Of 2", Unless Otherwise Specified.
- Chamfer All Exposed Edges 1" Unless Otherwise Noted.
- Plans of Existing Bridges Are Available At The Authority's Office At 430
Riverside St., Portland, Maine.
- Shielding Required During Concrete Removal Shall Not Project Below The
Bottom Flanges Of The Stringers. The Estimated Quantity Of Shielding Is The
Minimum Required And Is Based On The Following Limits:
 - Normal To ϕ Bridge: As Shown On Plans
 - Parallel To ϕ Bridge: Abutment To Abutment
- The Authority's Personnel Will Profile The Tops Of All Stringers Before The
Form Work Is Started And Supply The Contractor With Final Bottom Of Slab
Elevations.

SUPERSTRUCTURE NOTES

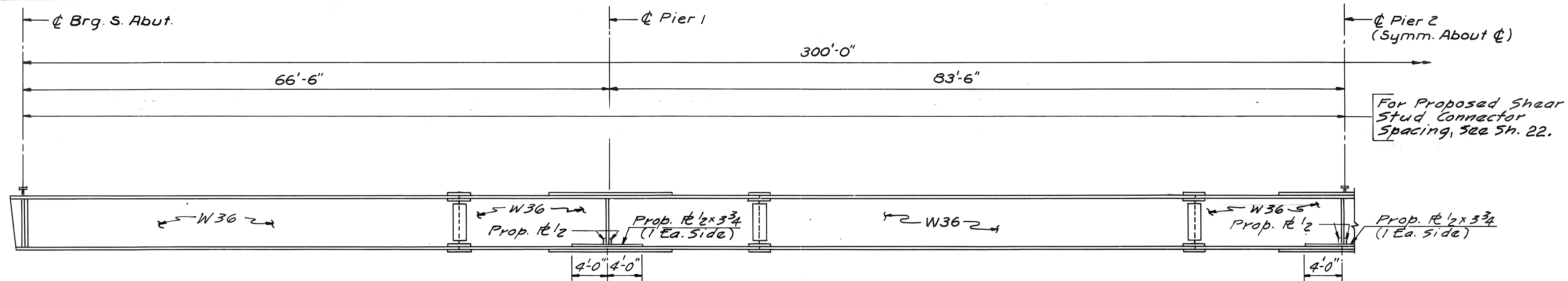
- All Brush Curb, End Post And Top Pour Of Wingwall Concrete
Shall Contain A Silica Fume Additive.
- Longitudinal Reinforcement Shown In Deck Plan Is
Symmetrical About ϕ Bridge.
- Mortar For Bedding And For Joints In The Granite Curb Shall
Contain A Non-shrink Additive.
- The Superstructure Slab Concrete Shall Be Placed
In One Continuous Operation And Shall Be Kept Plastic
One Complete Span Behind The Span Being Placed.
- If The Slab Placement Has To Be Terminated, The Termination
Point Must Be At The Points Indicated In The Placement
Details, Shown On The Superstructure Detail Sheet.
- Adjust Reinforcing Steel To Fit Around The Scuppers In A Manner
Approved By The Engineer. Do Not Cut Transverse Re-steel.
- Depress 1" ϕ Drains $\frac{3}{8}$ " Below Top Of Slab. Do Not Cover
Drains With Membrane. Provide 23 Gauge Galvanized Screens ($\frac{1}{8}$ " Mesh)
Over Drains.
- Seal Membrane At Deck Joints, Along Curb, And All Drains.
Allow $\frac{1}{4}$ " For Thickness.
- Locate Scupper In Field To Discharge Into Drainage Trough.
For Scupper Details, See Sheet 25.
- Protective Coating For Concrete Surfaces Shall Be Used At The
Following Areas: Top Of Concrete Curb, Fascia, Down To Drip
Notch, And All Exposed Concrete Surfaces On The End Posts.

QUANTITY ITEMS AND UNITS				
ITEM NO.	DESCRIPTION	QUANTITY		UNIT
		NB	SB	
202.10	Removing Existing Superstructure - Property of Contractor (1010 SY Each Deck)*	ONE		LS
202.12	Removing Existing Structural Concrete	22	22	CY
202.14	Removing Existing Railing - Property Of Contractor	606	606	LF
202.20	Protective Shield	1335	1335	SY
203.25	Granular Borrow	36	36	CY
206.082	Structural Earth Excavation - Major Structures	130	130	CY
206.10	Structural Earth Excavation - Piers	315	310	CY
403.08	Hot Bituminous Pavement, Grading C	115	115	Ton
501.212	Steel H-Beam Piles 42 Lb./Ft.	390	390	LF
501.214	Steel H-Beam Piles 53 Lb./Ft.	345	520	LF
502.21	Structural Concrete Abutments & Retaining Walls	56	56	CY
502.23	Structural Concrete Piers	152	170	CY
502.26	Structural Concrete Roadway & Sidewalk Slabs On Steel Bridges (353 CY Each Deck)*	ONE		LS
502.4712	Silica Fume Additive	1400	1400	Lbs.
502.48	Pier Preparation	165	200	SF
502.60	Backwall Repair - Surface Repair - Section II	0	15	SF
502.62	Abutment and Bridge Seat Repair - Section II	5	5	SF
502.63	Pier Repairs	35	30	SF
503.12	Reinforcing Steel, Fabricated And Delivered	16636	20850	Lbs.
503.13	Reinforcing Steel, Placing	16636	20850	Lbs.
503.14	Epoxy-Coated Reinforcing Steel, Fabricated & Delivered	107575	107575	Lbs.
503.15	Epoxy-Coated Reinforcing Steel, Placing	107575	107575	Lbs.
504.701	Structural Steel Fabricated & Delivered, Rolled (65500 Lbs, Grade 36 Ea. Deck, 1200 Lbs, Grade 50 Ea. Deck)*	ONE		LS
504.71	Structural Steel Erection (66700 Lbs. Each Deck)*	ONE		LS
504.72	Steel Beam Modifications	720	720	Lbs.
504.73	Structural Steel Repairs	200	200	Lbs.
505.08	Shear Connectors (3792 Units Each Deck)*	ONE		LS
506.30	Shop Coating of Structural Steel (34 Ton Ea. Deck)*	ONE		LS
506.31	Field Repair of Damaged Coating (3 Ton Ea. Deck)*	ONE		LS
507.092	Aluminum Bridge Railing, 2 Bar	644	644	LF
508.13	Membrane Waterproofing (1275 SY Each Deck)*	ONE		LS
511.071	Cofferdam Pier 1 (Median)	1		LS
511.072	Cofferdam Pier 1 (Fascia)	1		LS
511.073	Cofferdam Pier 1 (Median)		1	LS
511.074	Cofferdam Pier 1 (Fascia)		1	LS
511.075	Cofferdam Pier 2 (Median)	1		LS
511.076	Cofferdam Pier 2 (Fascia)	1		LS
511.077	Cofferdam Pier 2 (Median)		1	LS
511.078	Cofferdam Pier 2 (Fascia)		1	LS
514.06	Curing Box For Concrete Cylinders	ONE		Each
515.20	Protective Coating for Concrete Surfaces	300	300	SY
515.22	Thoroseal Coating for Concrete Surfaces	10	10	SY
520.221	Expansion Device Extension - Compression Seal	2	2	Each
609.131	Vertical Bridge Curb - Type IA	50	50	LF
609.132	Vertical Bridge Curb - Type IB	604	604	LF

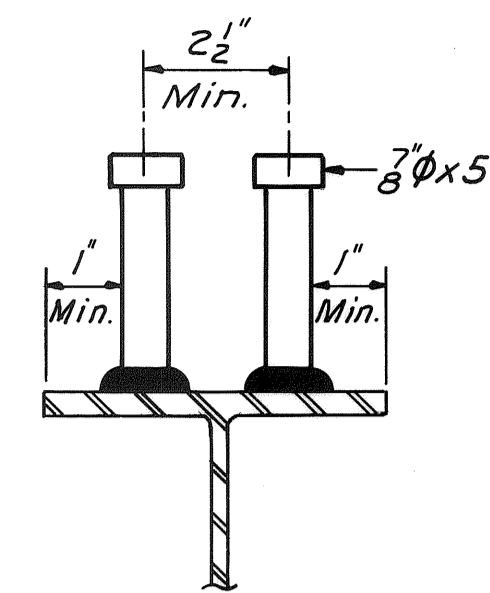
* Quantities For Estimating Purposes Only

Maine Turnpike Authority Maine Turnpike	
	STROUDWATER RIVER INDEX, QUANTITIES, AND NOTES
HNTB HOWARD NEEDLES TAMMEN & BERGENDOFF ARCHITECTS ENGINEERS PLANNERS	
Contract 92.8	Sheet No. 15 of 34

By: Date:	Designed	SHR	1/91
By: Date:	Drawn	LS	1/91
By: Date:	Checked	IS	12/91
No. Revision	By: Date:	In charge of:	RAL

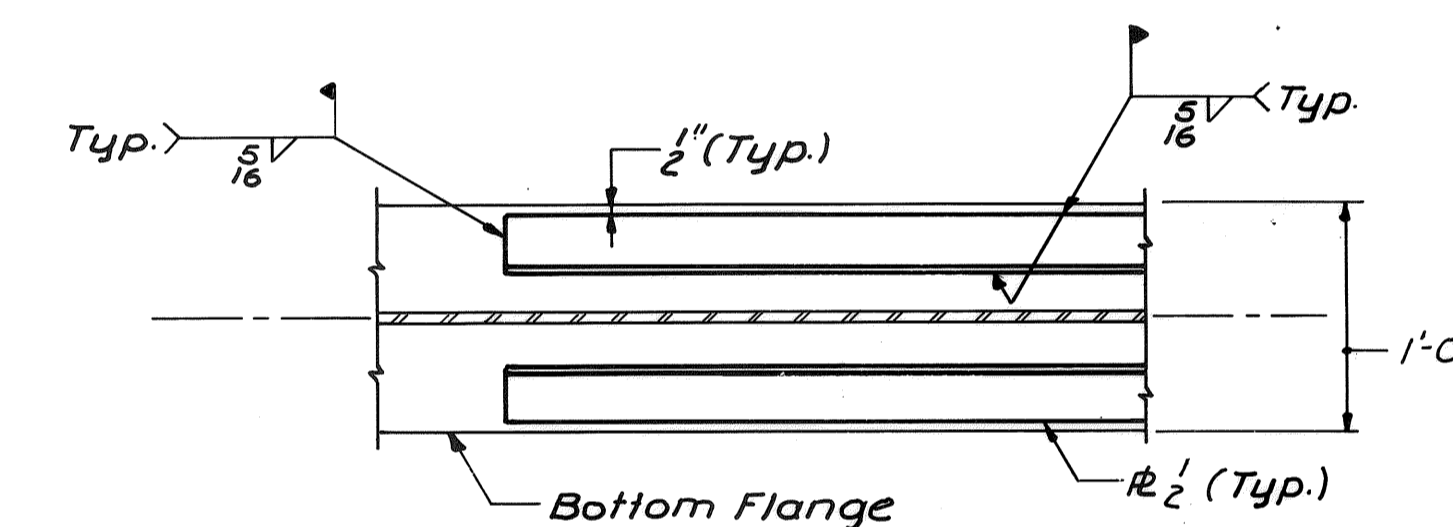


STRINGER ELEVATION
 EXISTING FASCIA STRINGER
 4 Locations
 No Scale



SHEAR STUD CONNECTOR
 3" = 1'-0"

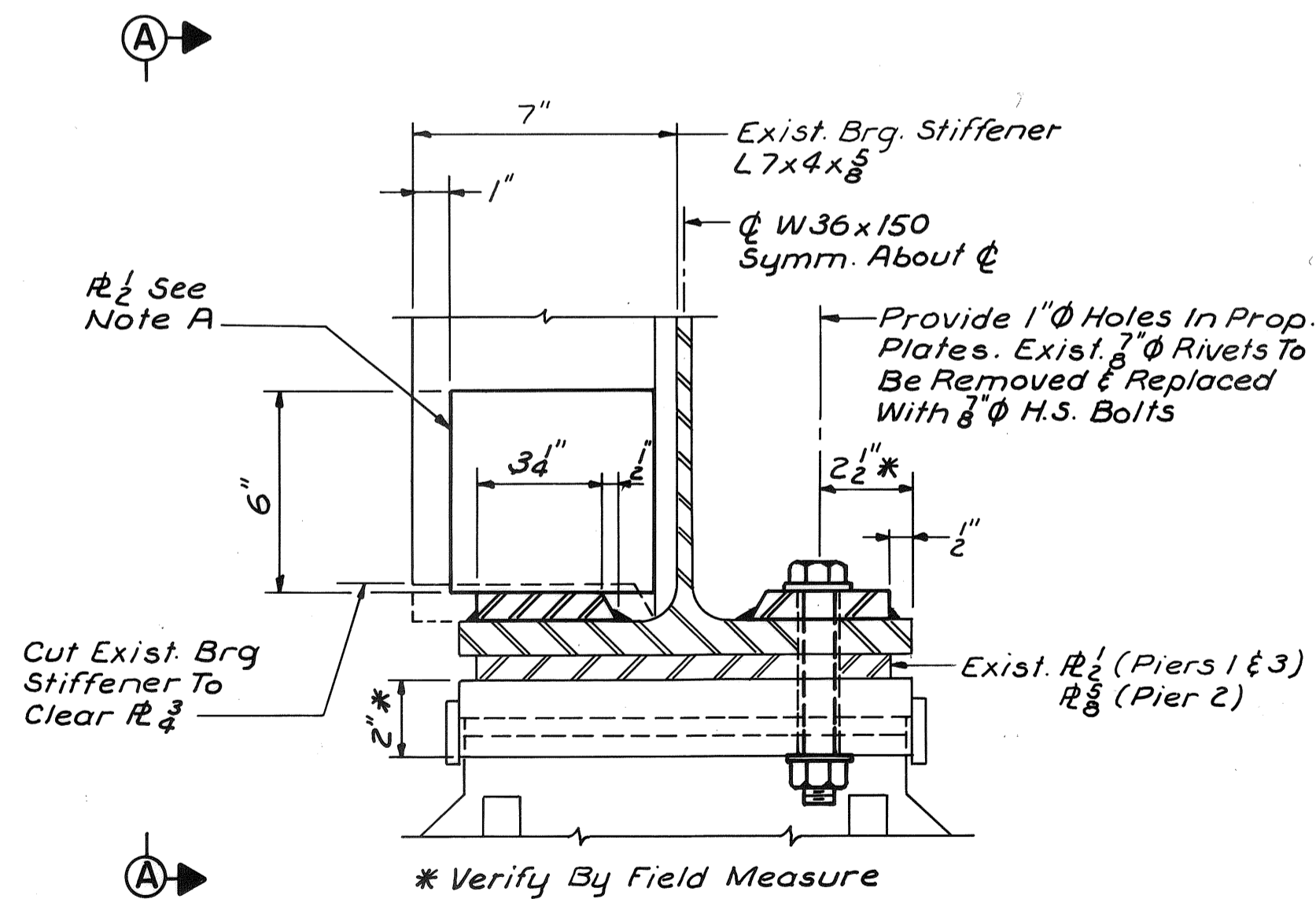
Note
 At Beam Splices The Stud Spacing May Be Varied To Clear Splice Fasteners Providing The Same Total Number Of Studs Is Maintained In A 5'-0" Length Of Beam.



COVER PLATE DETAIL
 No Scale

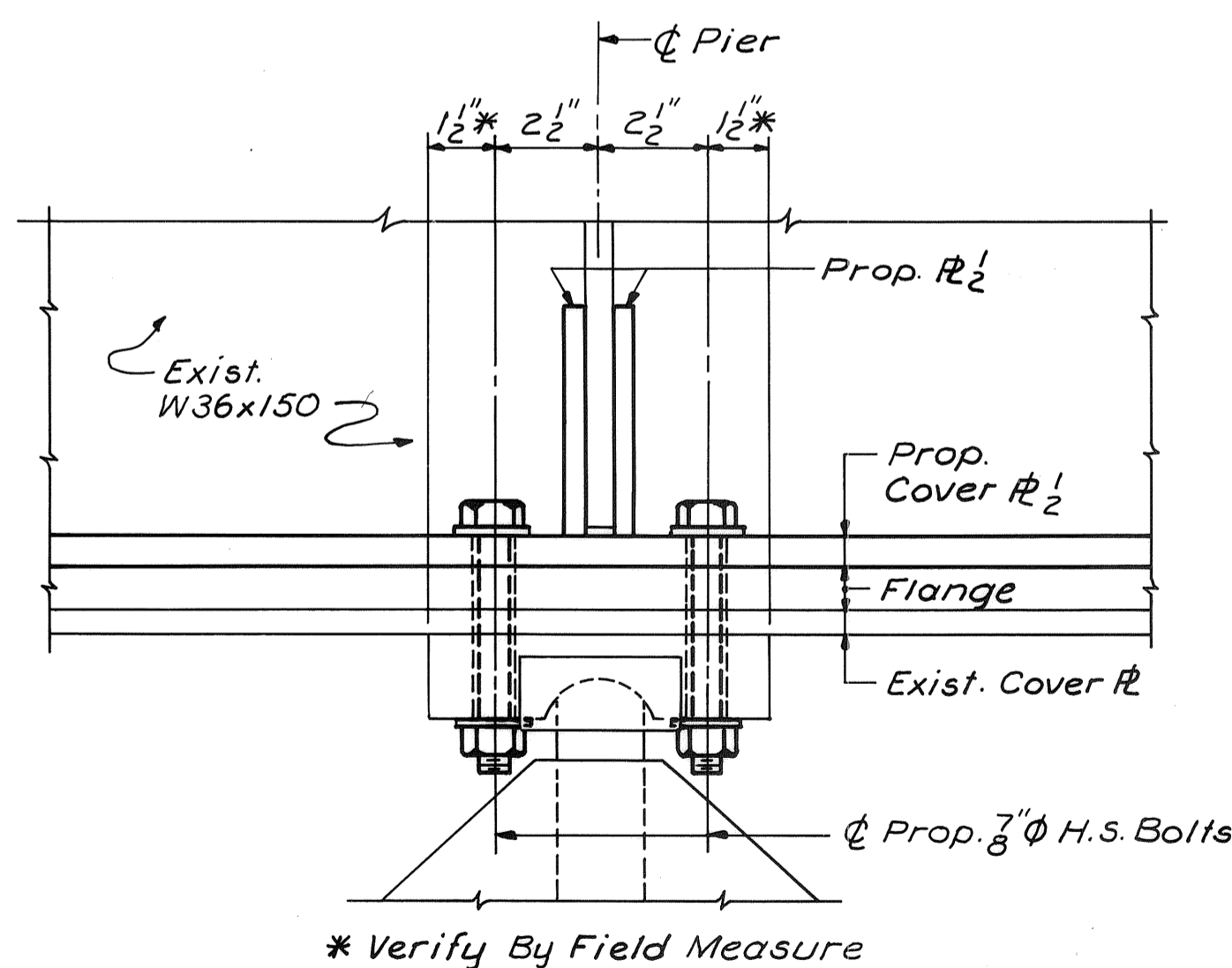
NOTES

1. All Proposed Plates To Conform To ASTM A709 Grade 36.
2. Proposed Cover Plates Shall Be Welded To Existing Beams After The Slab And Brackets Have Been Removed And Before The Forms Are In Place. The Contractors Attention Is Directed To The Need To Remove And Replace The Shielding.

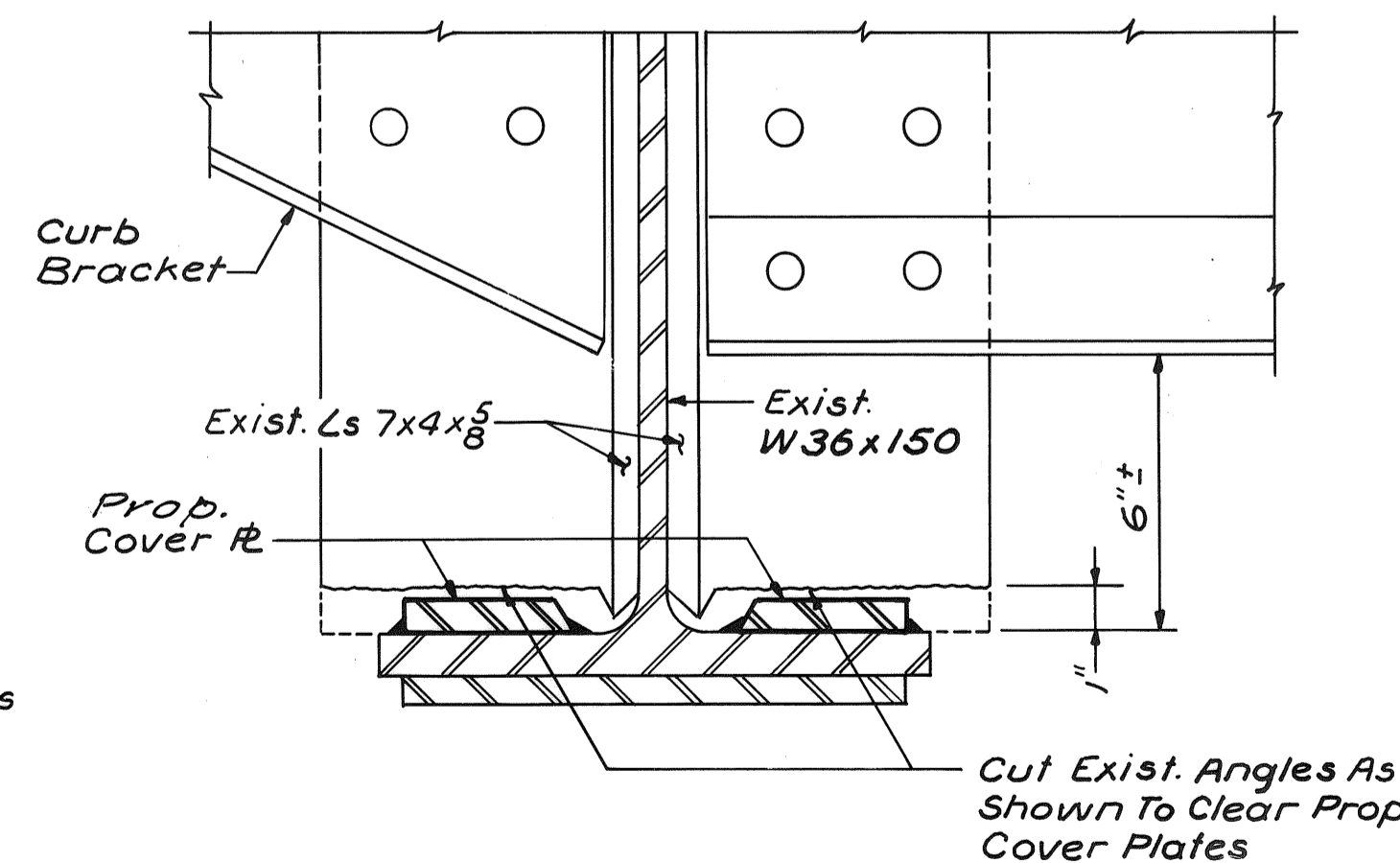


Note A
 Provide 1" Plates As Shown On Each Side Of The Outstanding Leg Of All Bearing Stiffeners At The Piers. Grind To Fit L7x4. Fillet Radius And Weld With 5/16" Fillet On Three Sides. Mill To Bear On 3/4" R At Bottom.

DETAIL AT PIER
 3" = 1'-0"



ELEVATION A-A
 3" = 1'-0"



DETAIL AT DIAPHRAGM AND CURB BRACKET
 3" = 1'-0"

No.	Revision	By:	Date:
		Designed	J.S. 1-91
		Drawn	R.S.J. 1-91
		Checked	R.U.R. 12-91
		In charge of:	R.A.L.

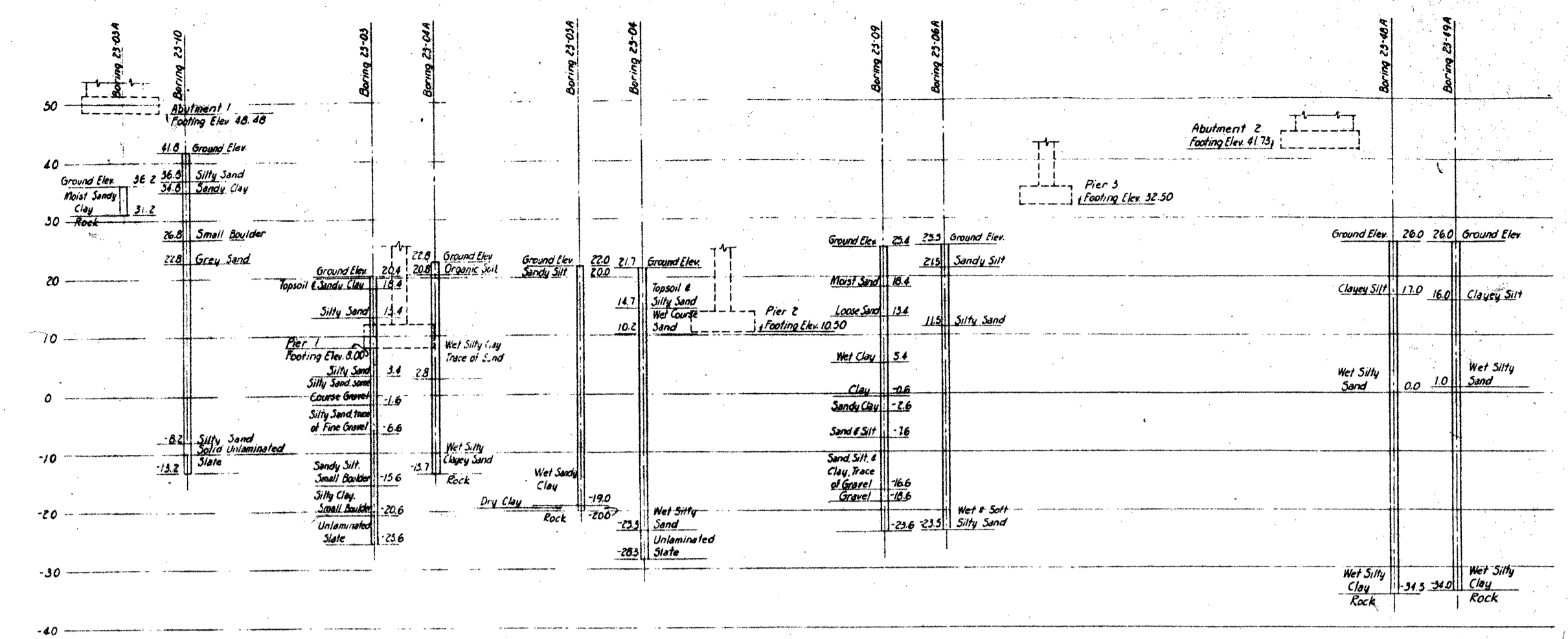
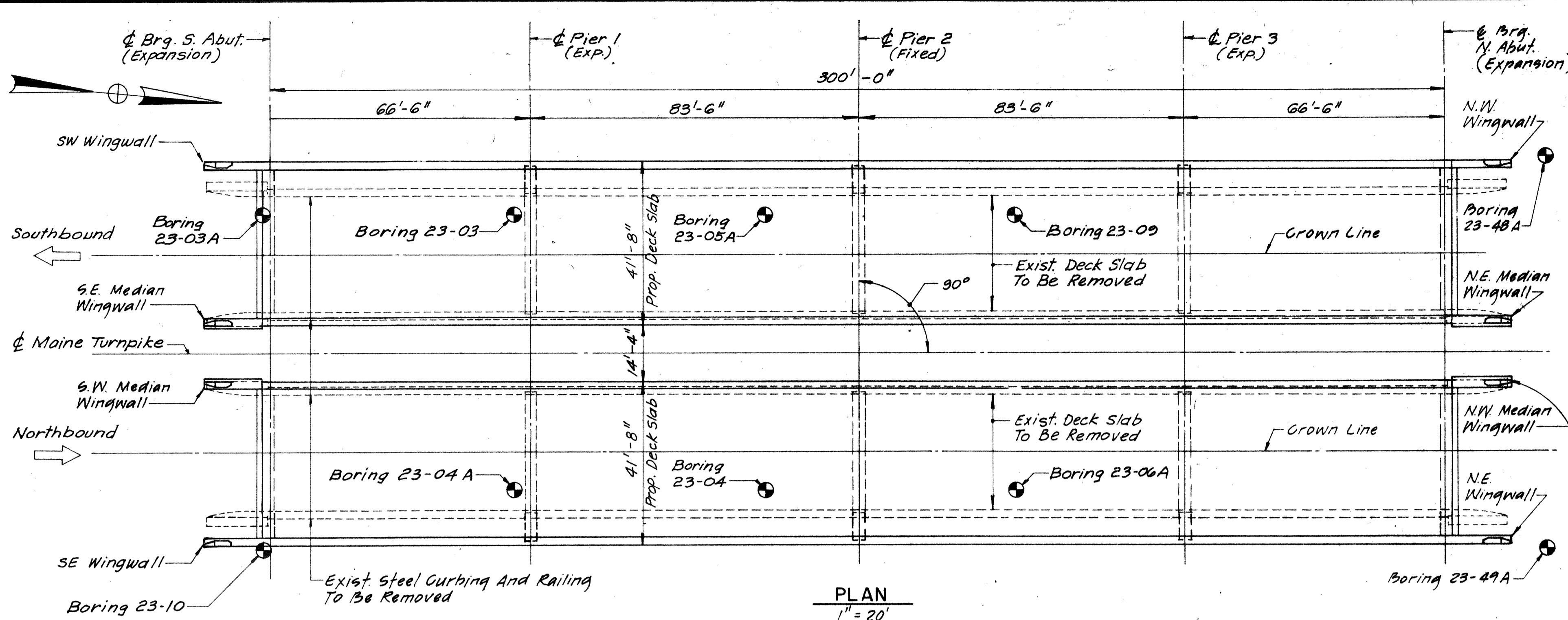
Maine Turnpike Authority
Maine Turnpike
 STRUDWATER RIVER
 STRUCTURAL STEEL DETAILS

MT
 TURNPIKE

HNTB HOWARD NEEDLES TAMMEN & BERGENDOFF
 ARCHITECTS ENGINEERS PLANNERS

Contract 92.8

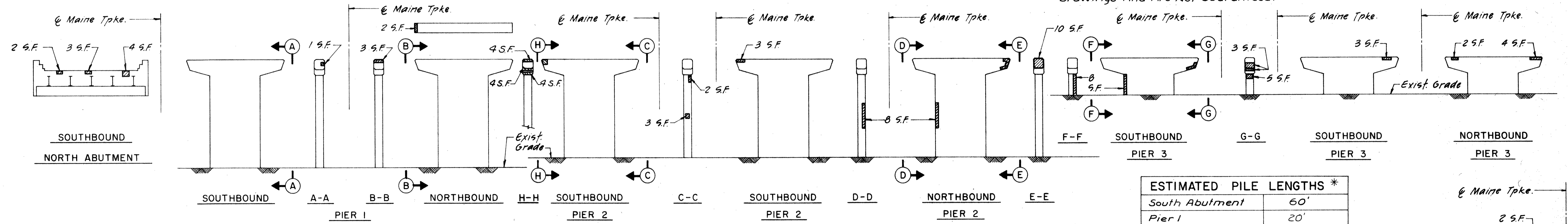
Sheet No. 23 of 34



BORING LOG

BORING NOTES

- The Borings Shown Were Taken For Original Construction. The Borings Were Taken For Design Purposes, And Show Conditions At The Boring Locations Only. They Do Not Necessarily Show The Nature Of Materials To Be Encountered During Construction.
- Datum Correction: Based On 1991 Survey Information, Add 37.7 Ft. To Elevations Shown On Boring Log.
- Estimated Pile Lengths Are Taken From The Original Construction Drawings And Are Not Guaranteed.



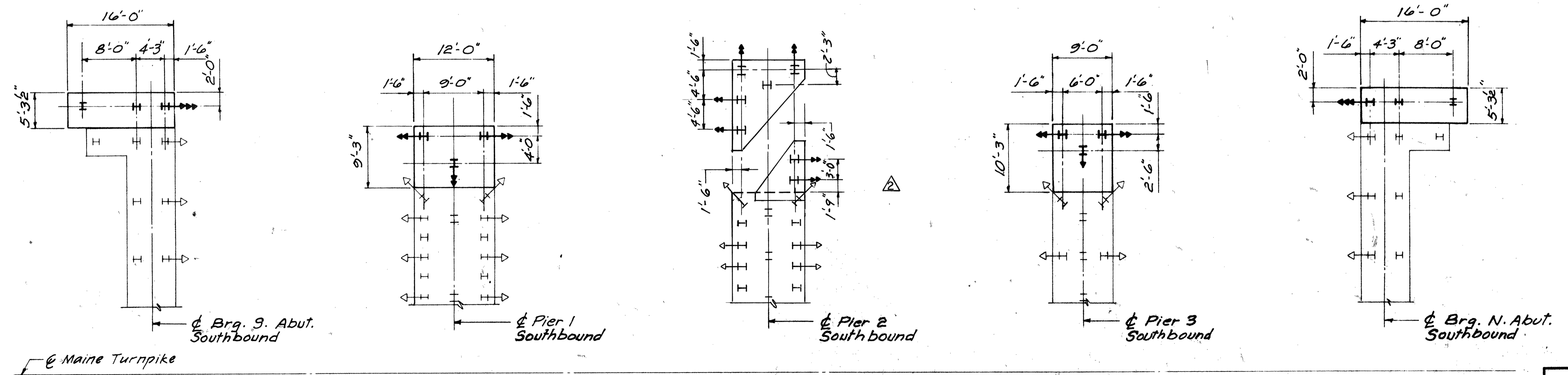
SUBSTRUCTURE REPAIRS TO EXISTING STRUCTURE
No Scale

ESTIMATED PILE LENGTHS *	
South Abutment	60'
Pier 1	20'
Pier 2	35'
Pier 3	60'
North Abutment	70'

* See Note 3

LEGEND

- H Existing Pile (Vertical)
- H Existing Pile (Batter 3"/Ft.)
- H Proposed Pile HP 10x42 (Vertical)
- H Proposed Pile HP 12x53 (Batter 1"/Ft.)
- H Proposed Pile HP 12x53 (Batter 2"/Ft.)
- H Proposed Pile HP 10x42 (Batter 3"/Ft.)
- ⊙ Existing Boring



PARTIAL FOOTING PLAN

(SOUTHBOUND-FOOTING SHOWN, NORTHBOUND SIMILAR EXCEPT
PIER 1 - SEE SH. 20 OF 34 FOR DETAIL) ⚠
PIER 2 - SEE SH. 20 OF 34 FOR DETAIL) ⚠

Maine Turnpike Authority
Maine Turnpike

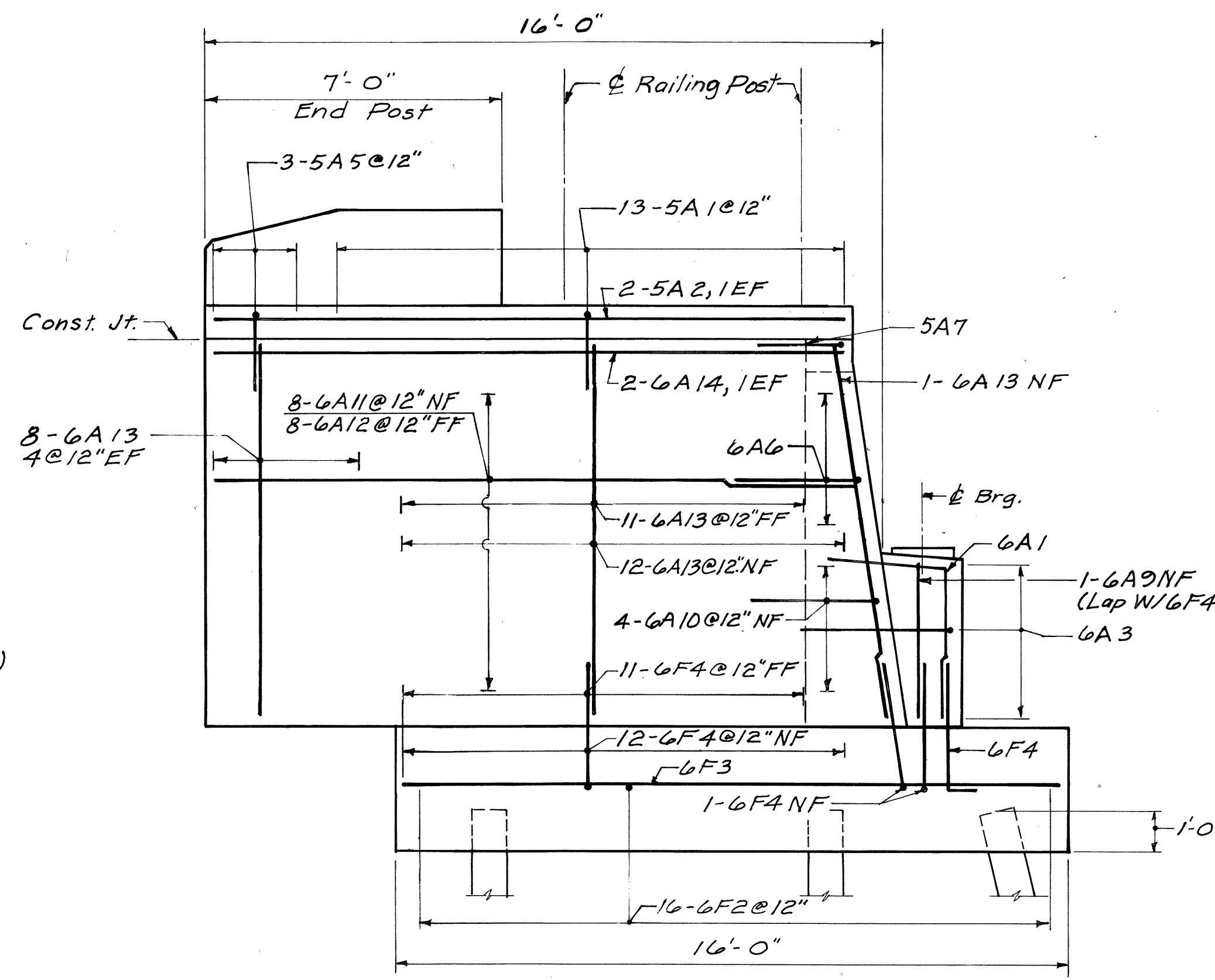
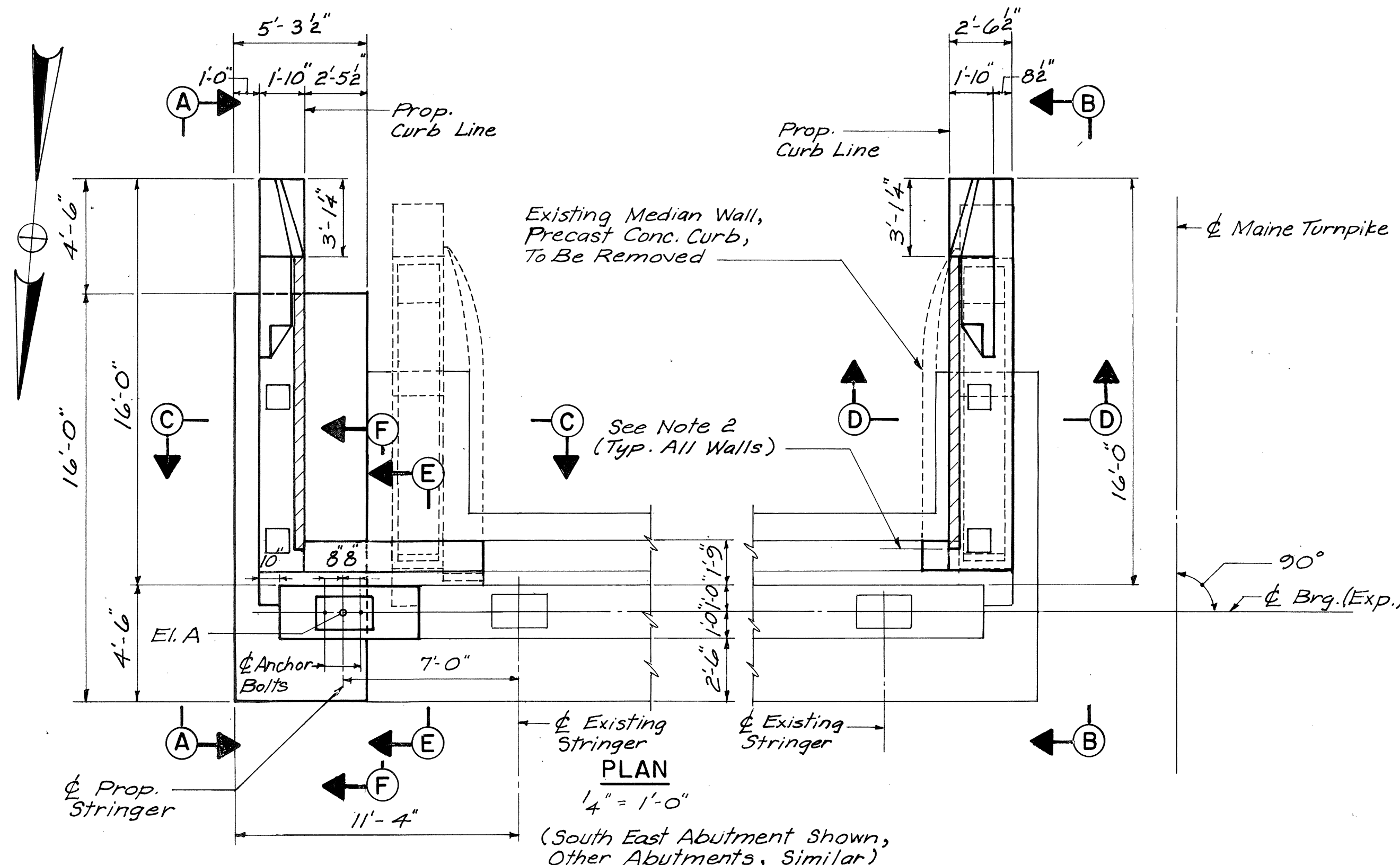
STROUDWATER RIVER
GENERAL PLAN
& FOOTING PLAN

HNTB HOWARD NEEDLES TAMMEN & BERGENDOFF
ARCHITECTS ENGINEERS & PLANNERS

By: I.S.	Date: 12-91
Designed: I.S.	2-93
Drawn: R.S.J.	1-91
Checked: S.H.R.	1-92
In charge of: R.A.L.	

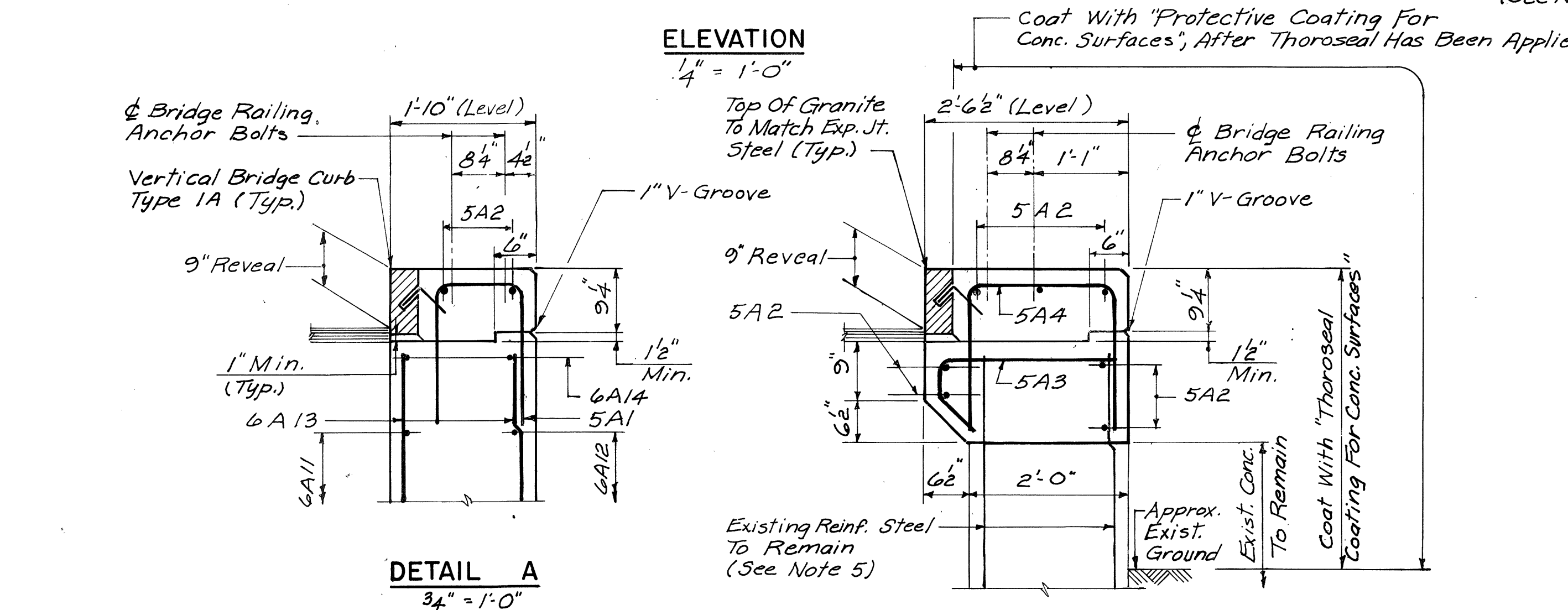
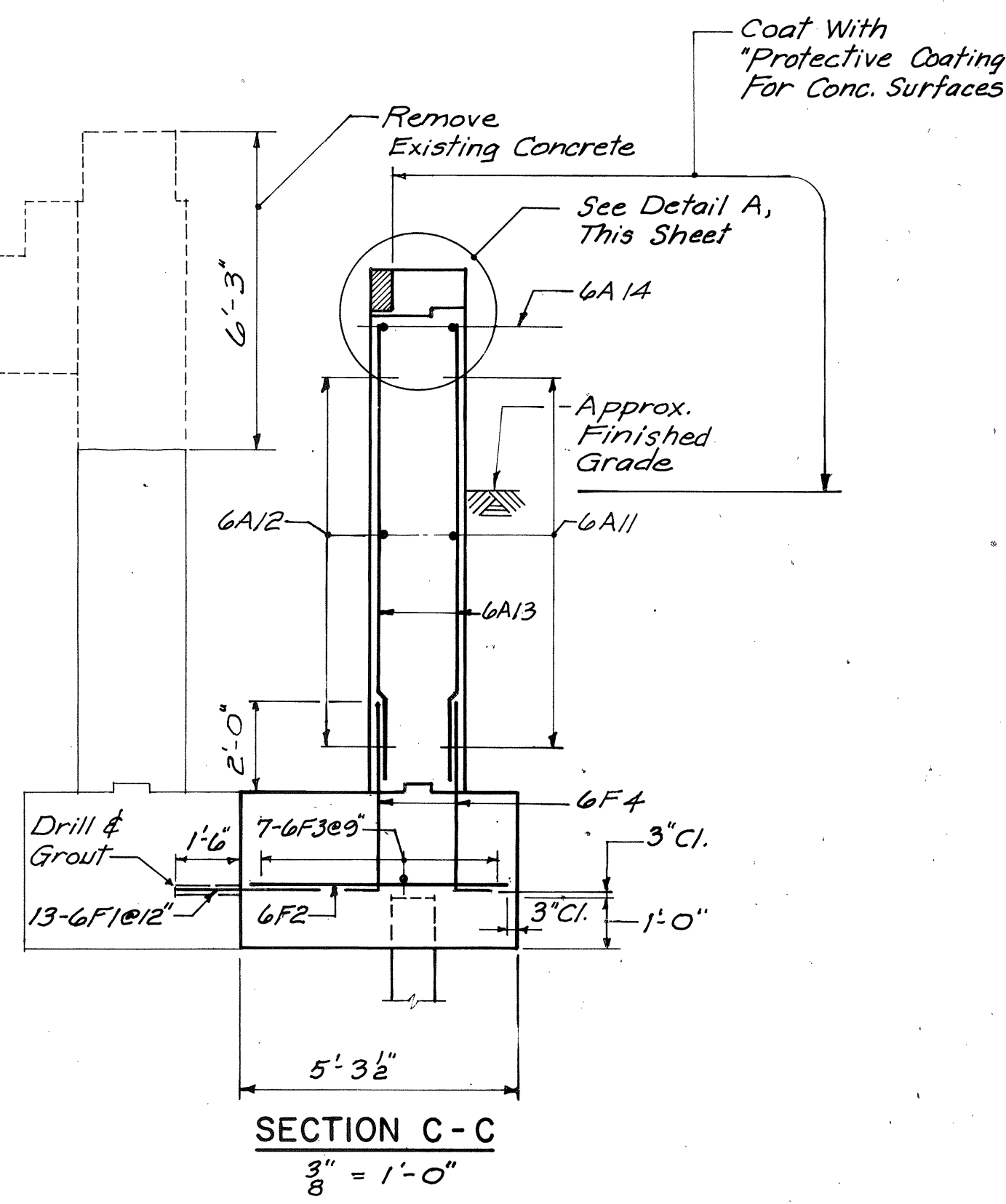
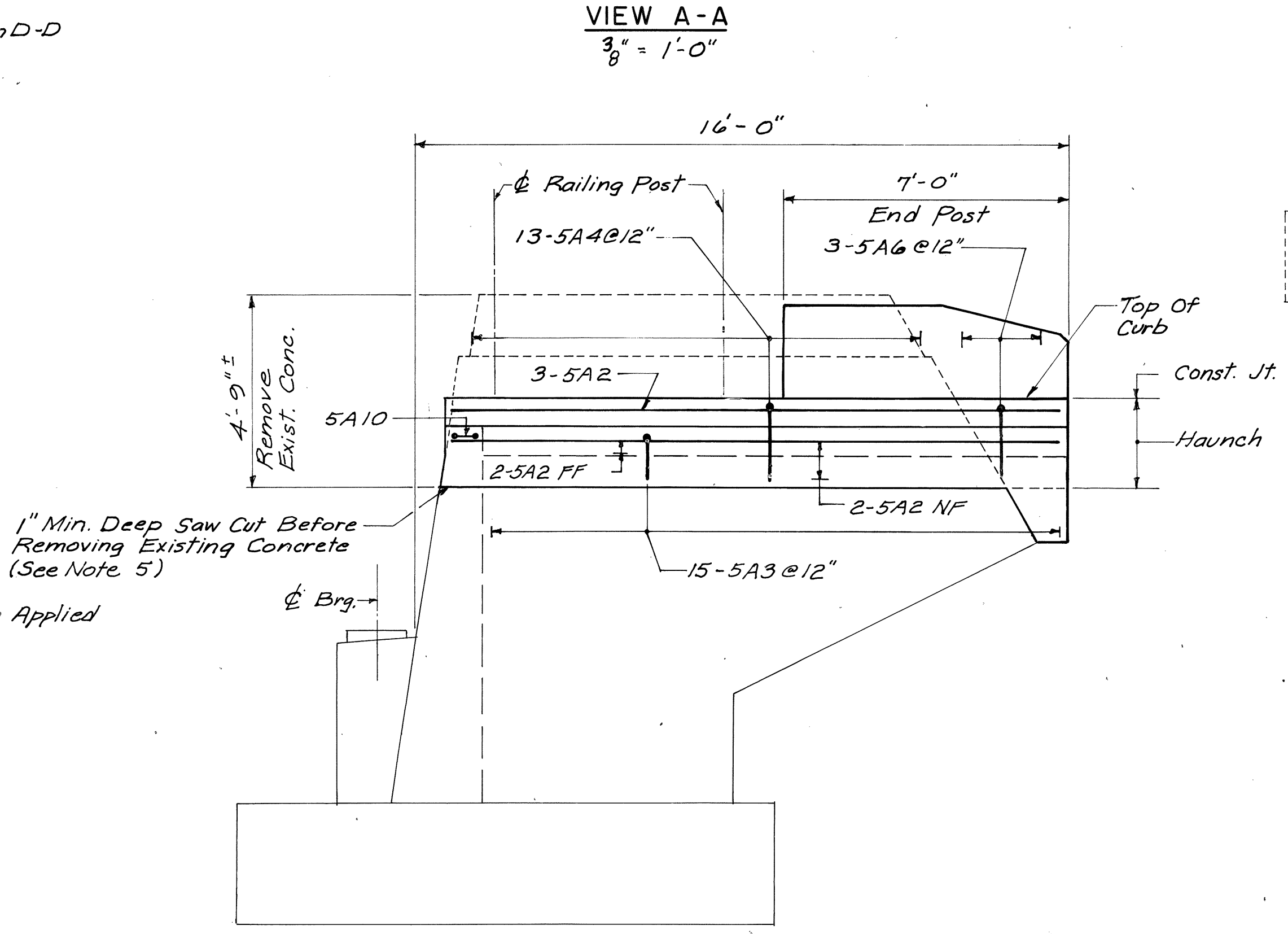
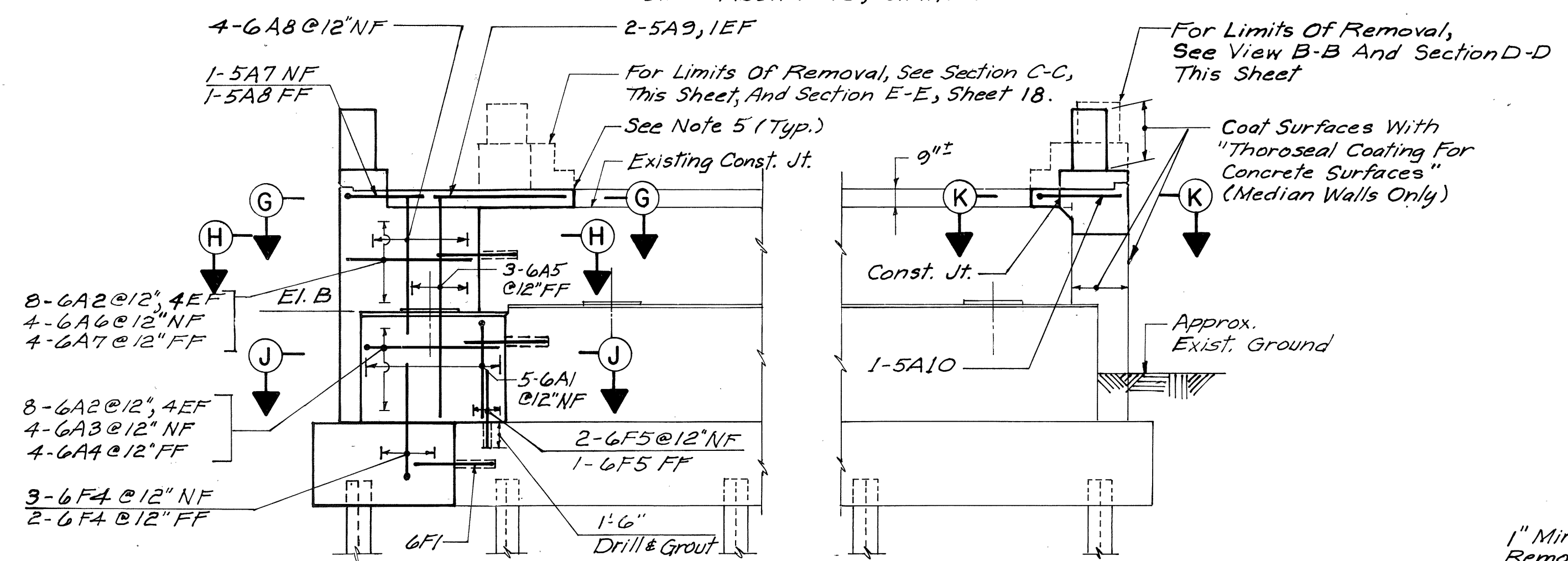
Contract 92.8

Sheet No. **16** of **34**



ELEVATIONS		
LOCATION	A	B
S. E. Abut.	93.19	93.11
S. W. Abut.	93.21	93.13
N. W. Abut.	86.36	86.33
N. E. Abut.	86.18	86.15

- NOTES**
1. Tops Of Wall To Be Constructed Parallel To Roadway.
 2. For Limits Of Granite Curb, See Sheet 19.
 3. For Sections E-E, F-F, G-G, H-H, J-J, And K-K; See Sh. 18.
 4. For End Post Reinforcing, See Standard Detail BD 201-89.
 5. Cut And Clean Exist. Reinf. Steel To Provide A Min. 12" Lap With Prop. Reinf. The Contractor Will Be Required To Dowel Into Exist. Conc. When, As Determined By The Engineer, The Exist. Steel Is Unusable Or Missing. The Work Involved In Drilling And Grouting Will Be Considered Incidental.



Maine Turnpike Authority
Maine Turnpike

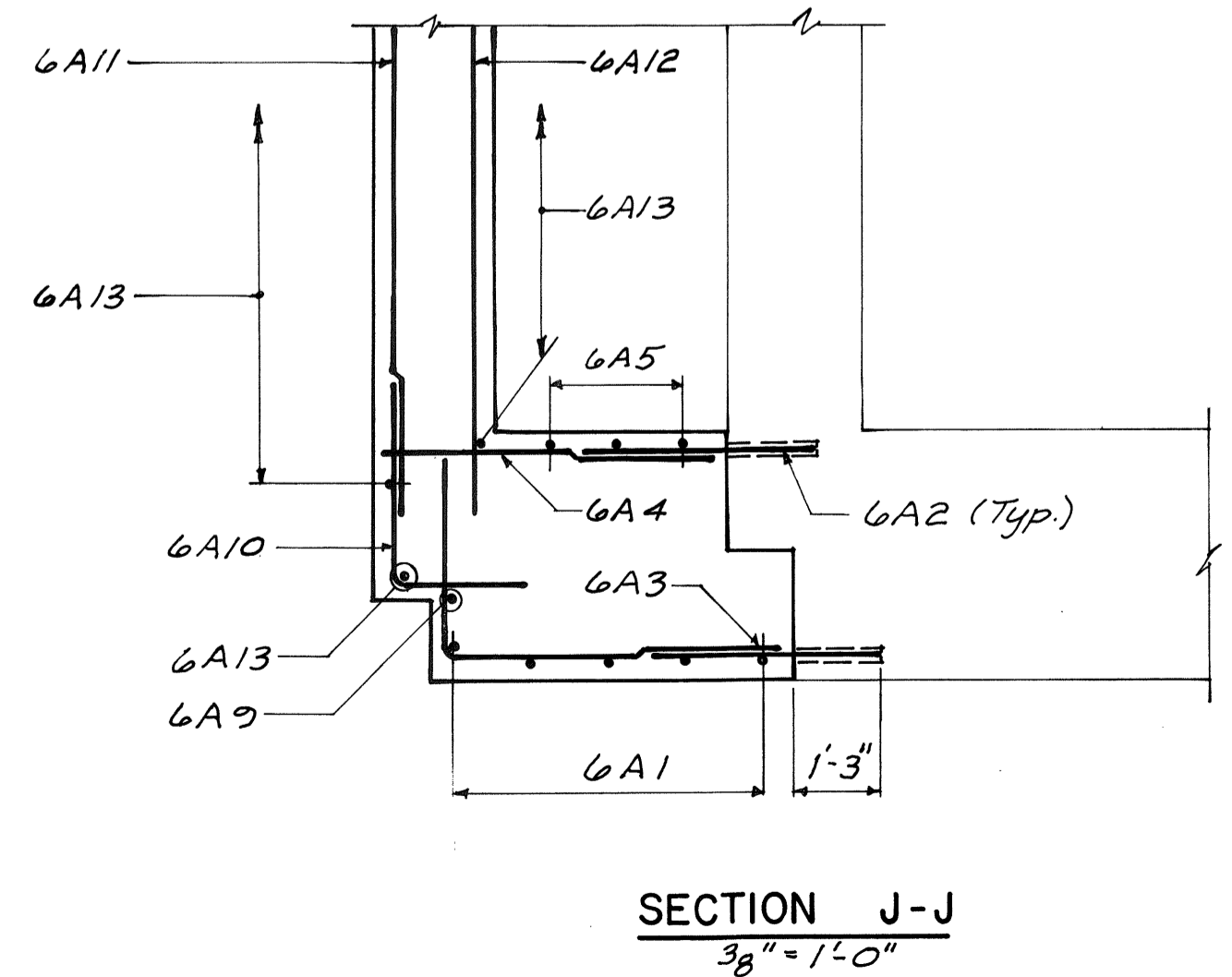
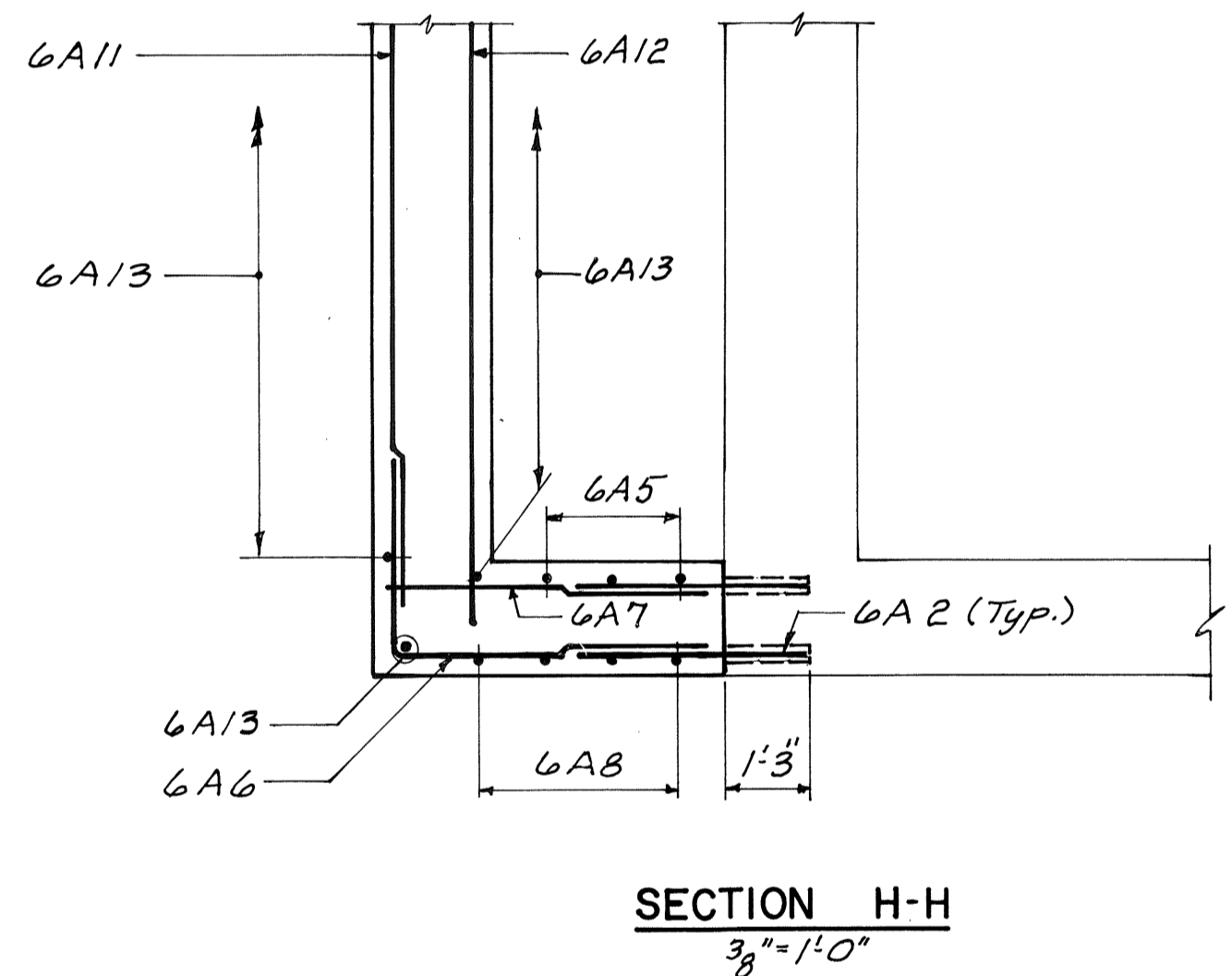
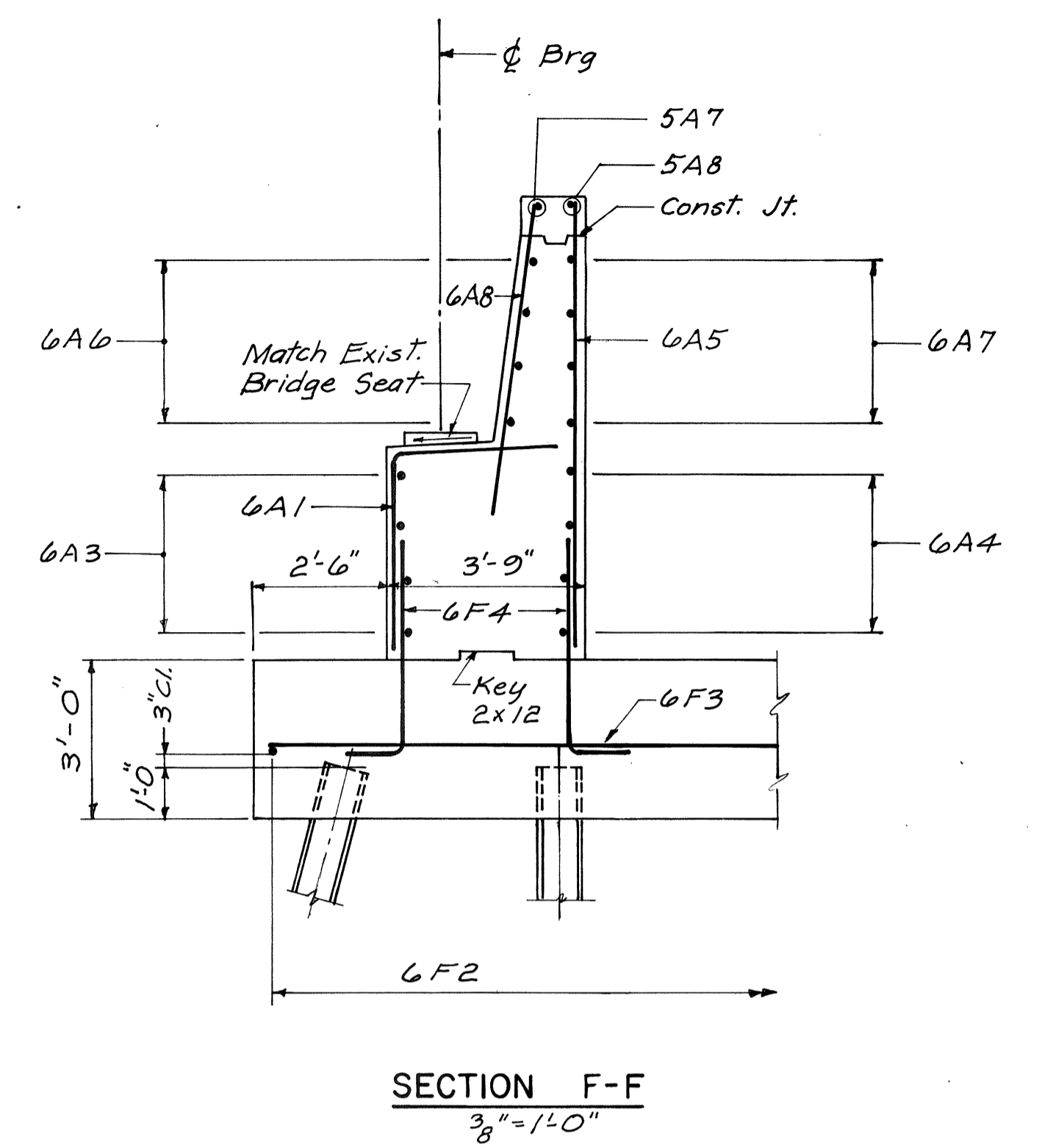
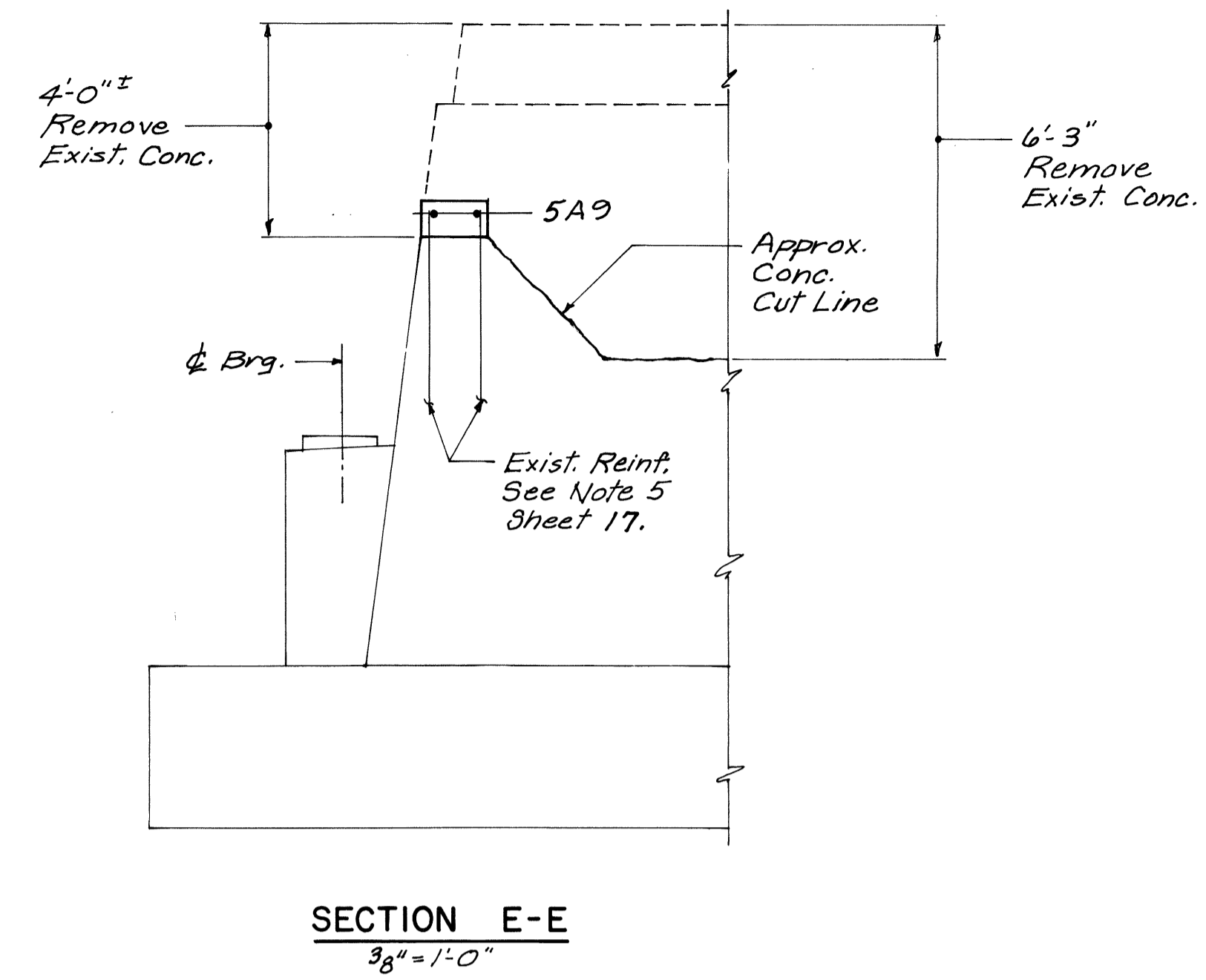
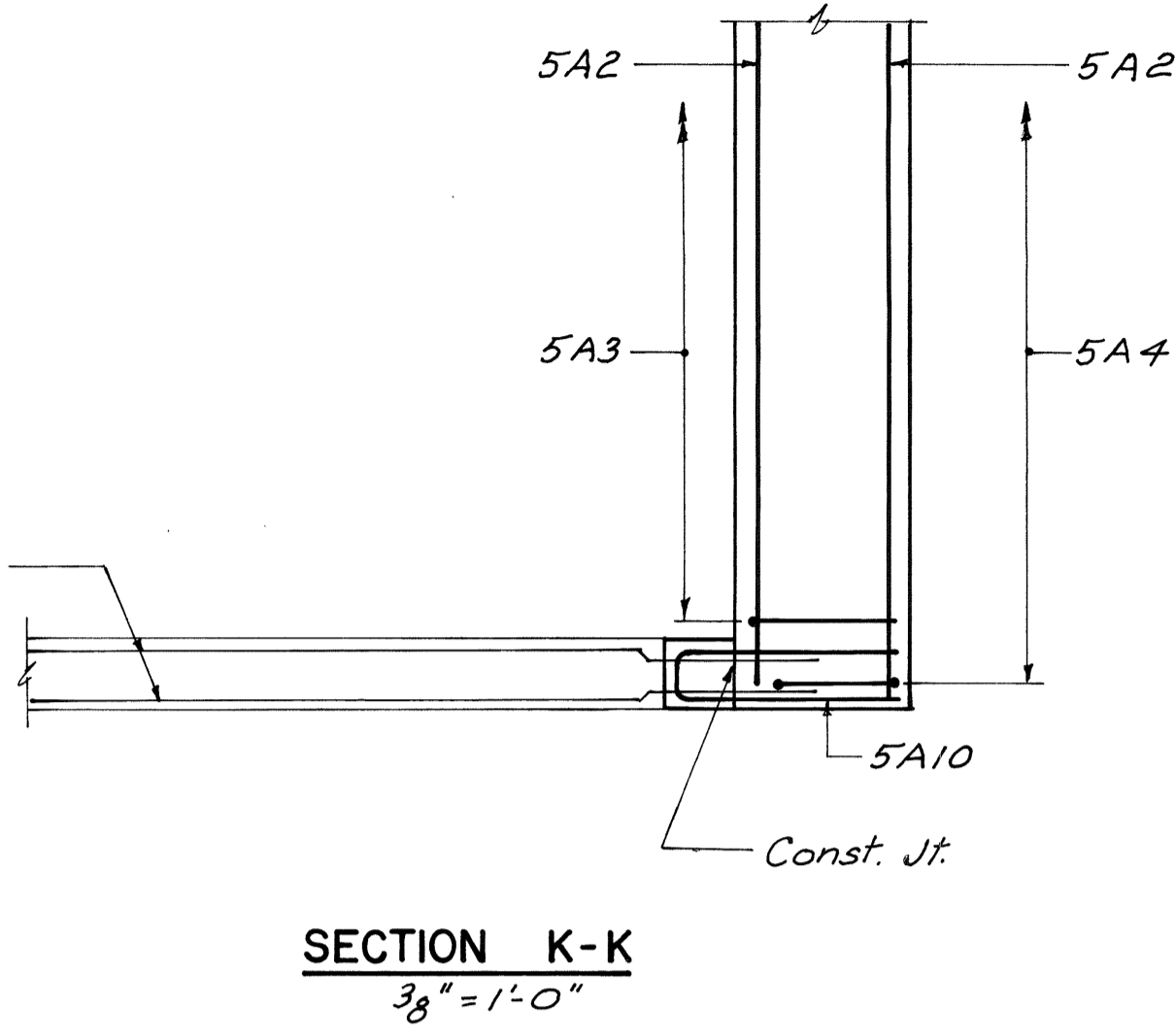
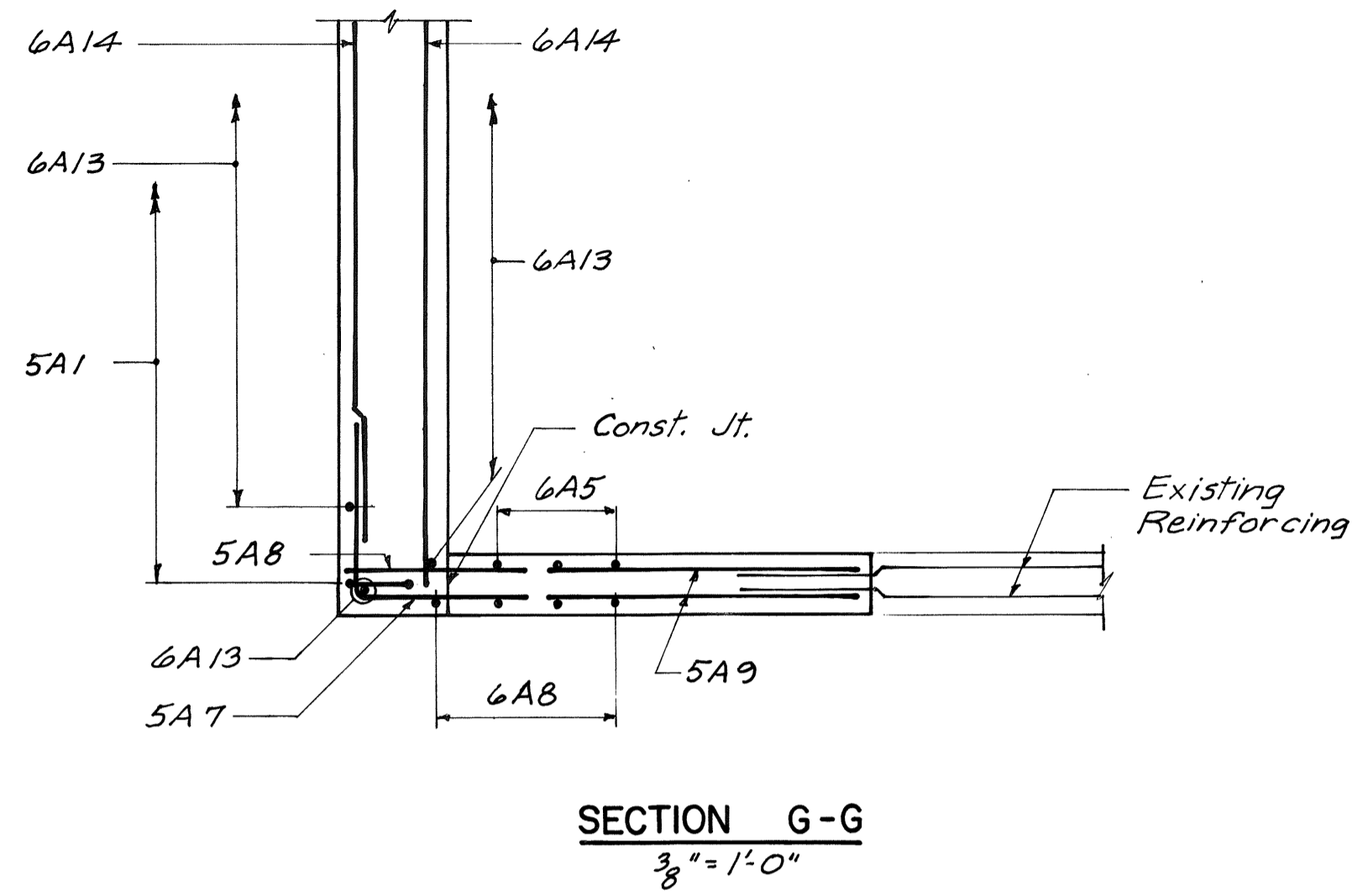
STROUDWATER RIVER
 ABUTMENT DETAILS I

HNTB HOWARD NEEDLES TAMMEN & BERGENOFF ARCHITECTS ENGINEERS PLANNERS

Contract 92.8 Sheet No. 17 of 34

By: Date:	R.J.R. 11-91
Designed:	R.S.J. 11-91
Drawn:	R.A.L. 12-91
Checked:	R.A.L.
In charge of:	R.A.L.

12/89



NOTE
 1. For Location Of Sections E-E Thru K-K, See Sheet 17.

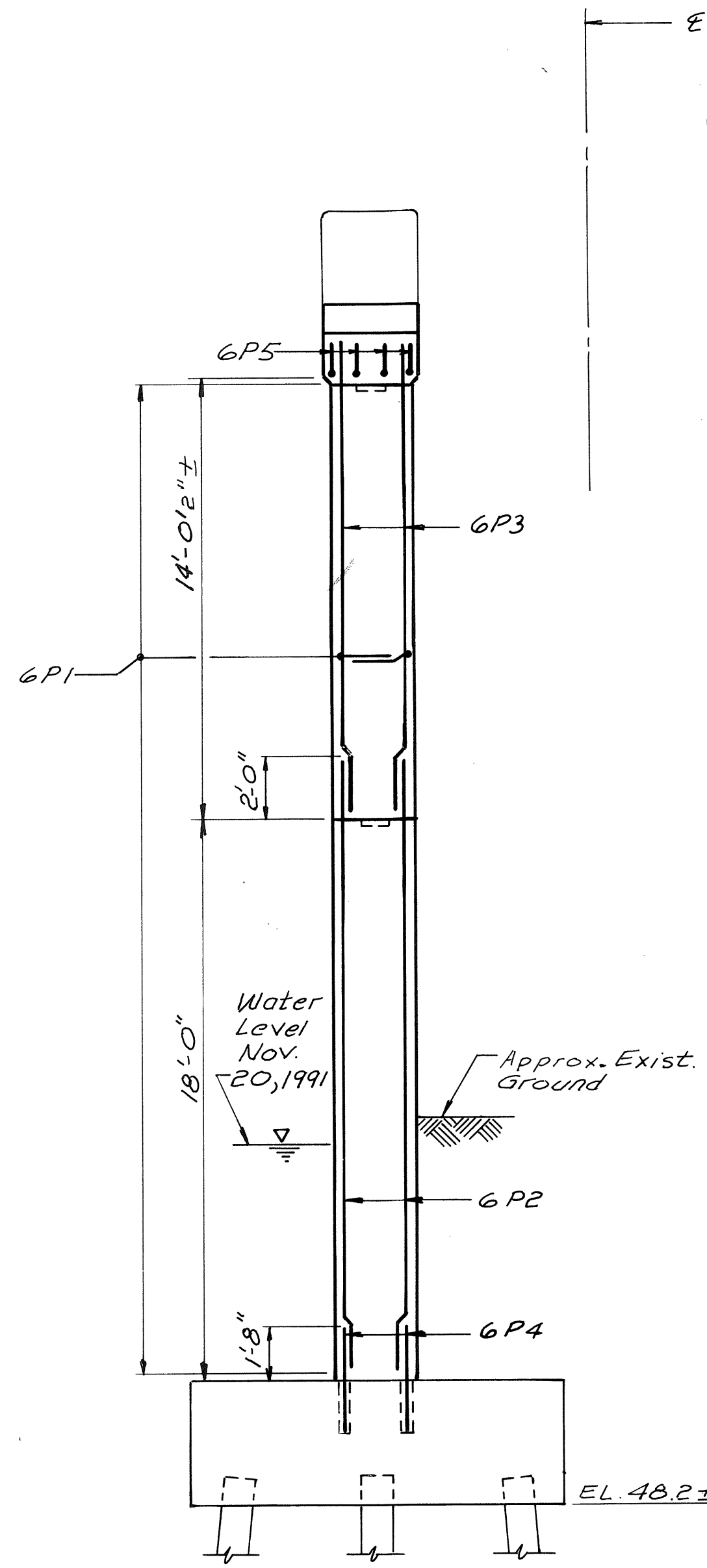
By:	Date:
Designed	R.J.R. 12-91
Drawn	R.S.J. 12-91
Checked	R.A.L. 12-91
In charge of:	R.A.L.

Maine Turnpike Authority
Maine Turnpike

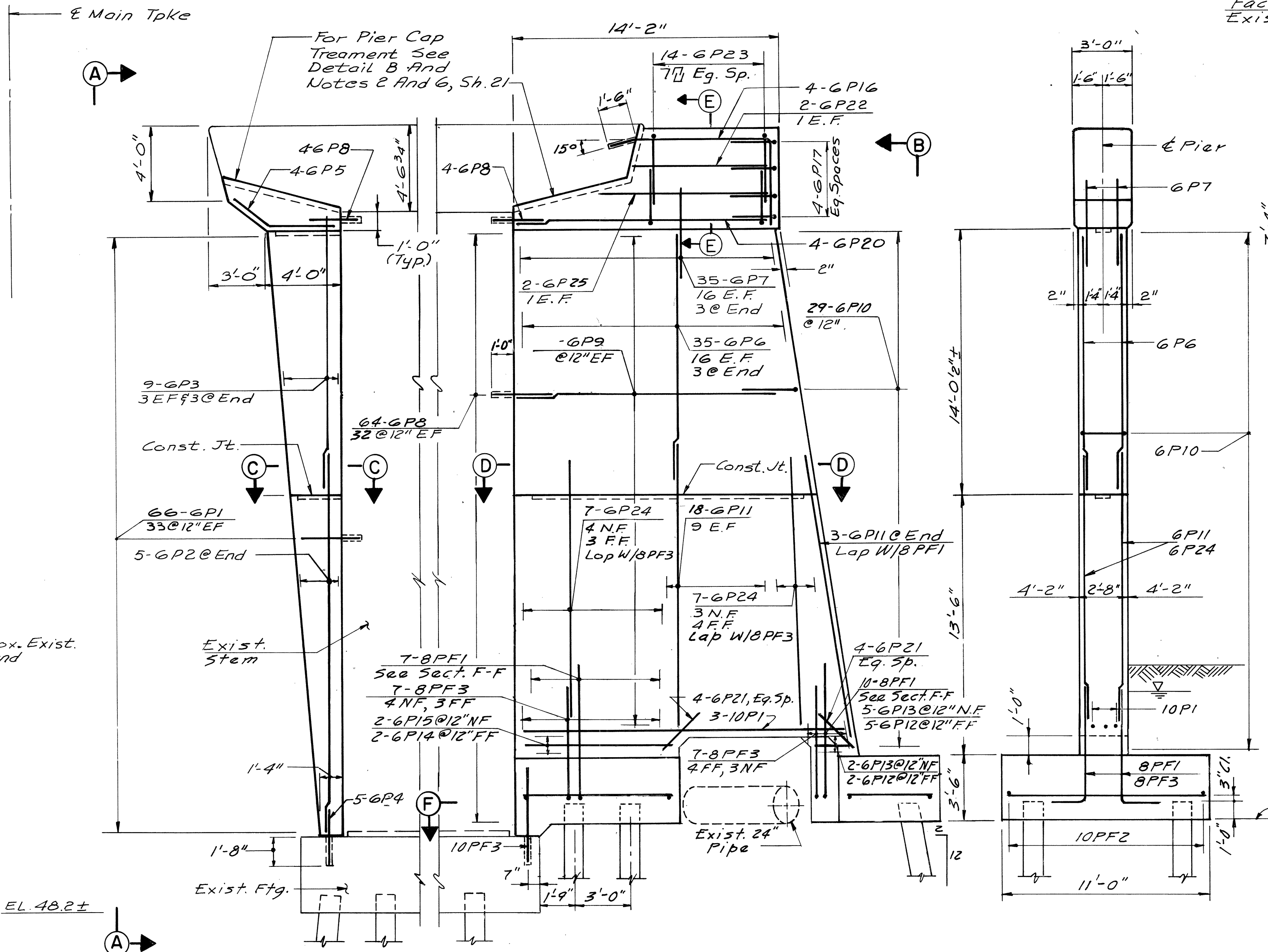
STROUDWATER RIVER
 ABUTMENT DETAILS II

HNTB HOWARD NEEDLES TAMMEN & BERGENOFF
 ARCHITECTS ENGINEERS PLANNERS

Contract **92.8** Sheet No. **18** of **34**

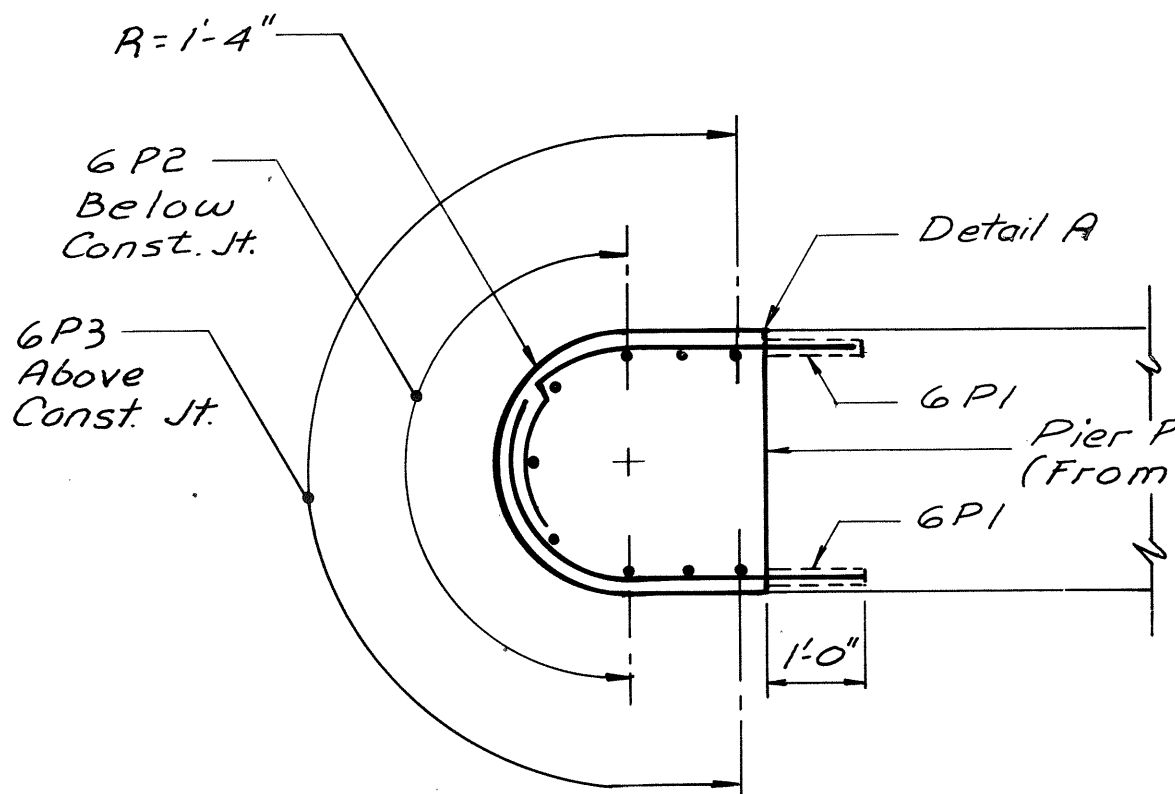


VIEW A-A
1/4" = 1'-0"

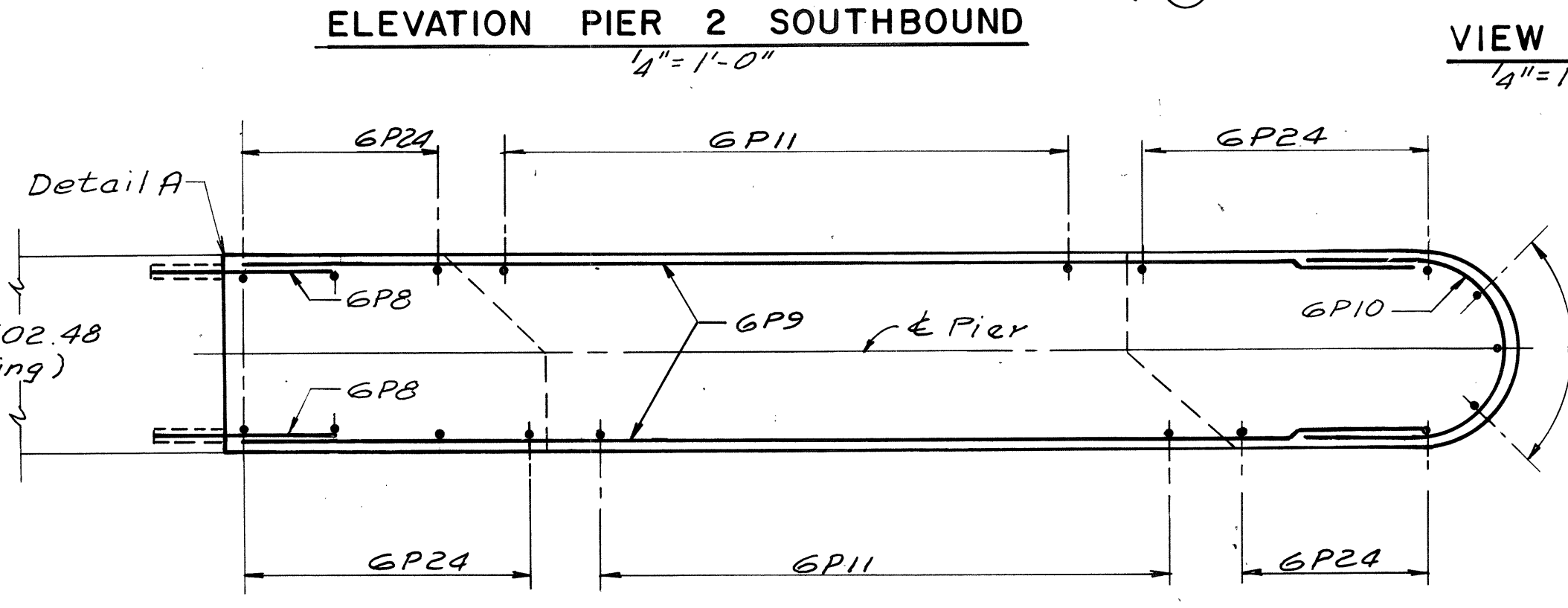


ELEVATION PIER 2 SOUTHBOUND
1/4" = 1'-0"

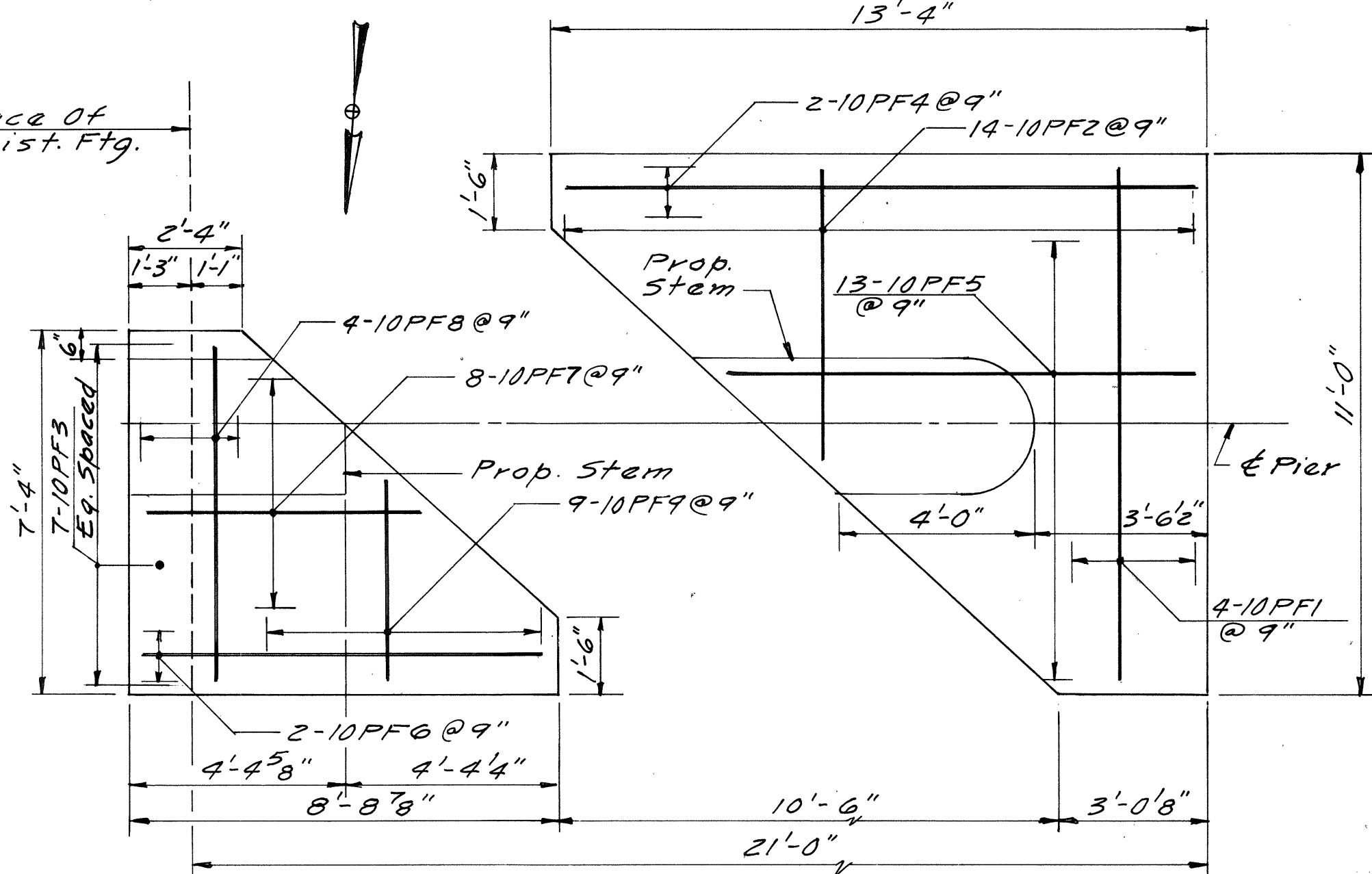
VIEW B-B
1/2" = 1'-0"



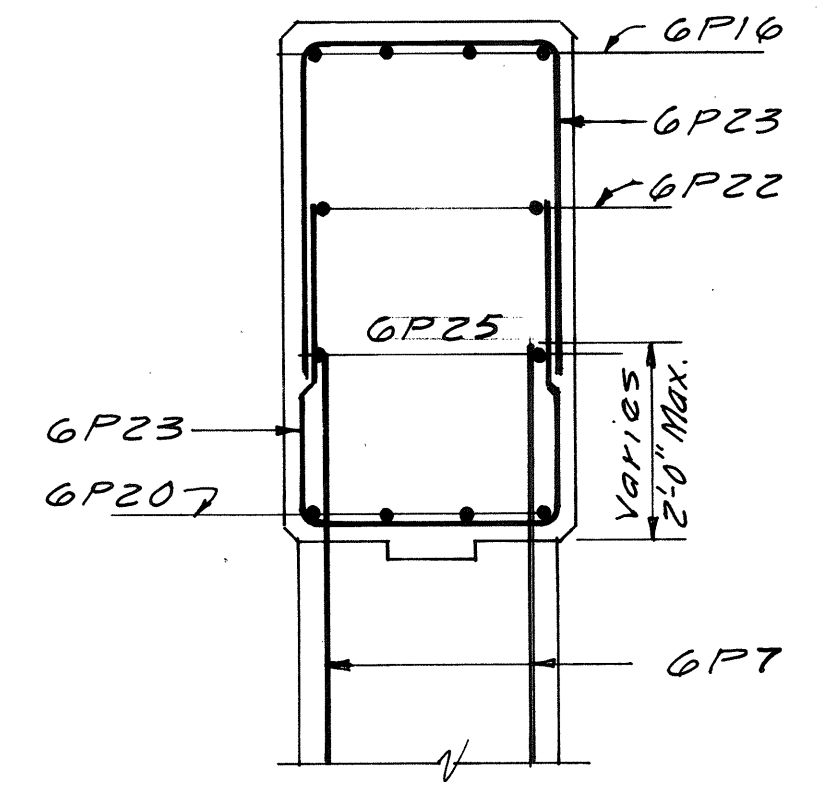
SECTION C-C
1/2" = 1'-0"



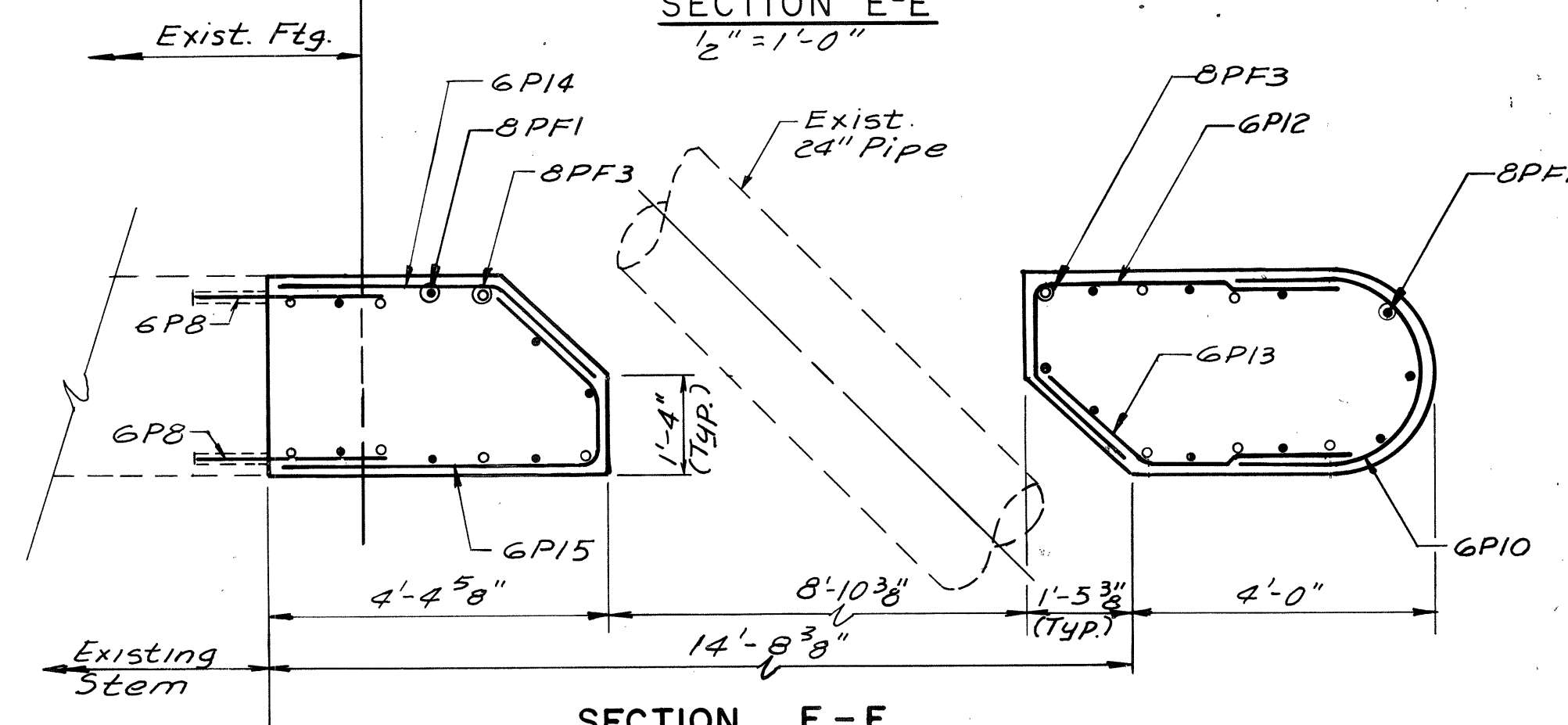
SECTION D-D
1/2" = 1'-0"



FOOTING PLAN
PIER NO. 2 SOUTHBOUND
3/8" = 1'-0"



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



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

- NOTES**
1. For Elevations, Details, And Notes, See Sheet 20.
 2. For Pay Limits (Item 206.10) See Sheet 20.

Maine Turnpike Authority
Maine Turnpike

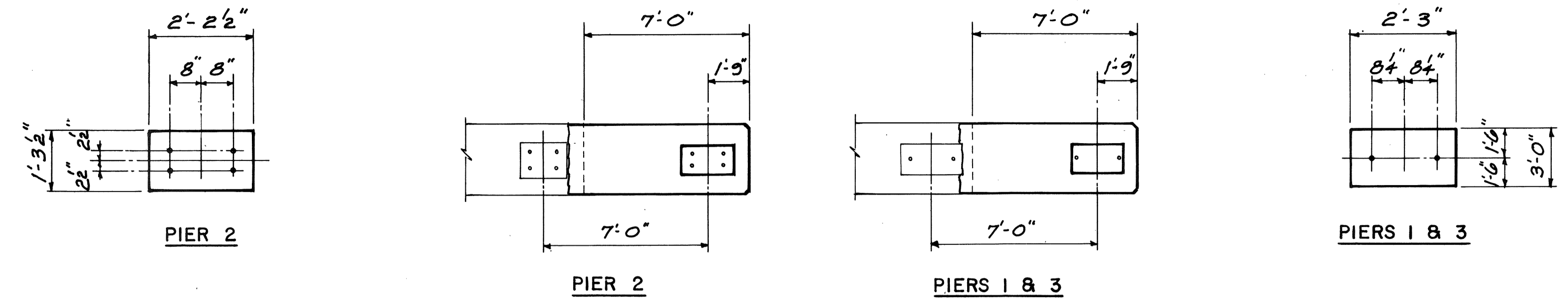
STROUDWATER RIVER
PIER 2 S.B.

Contract 92.8

Sheet No. 20A of 34

By: Date: I.S. 2-93
Designed: I.S. 2-93
Drawn: M.J.M. 2-93
Checked: S.H.R. 2-93
In charge of: RAL

HNTB HOWARD NEEDLES TAMMEN & BERGENDOFF ARCHITECTS ENGINEERS PLANNERS

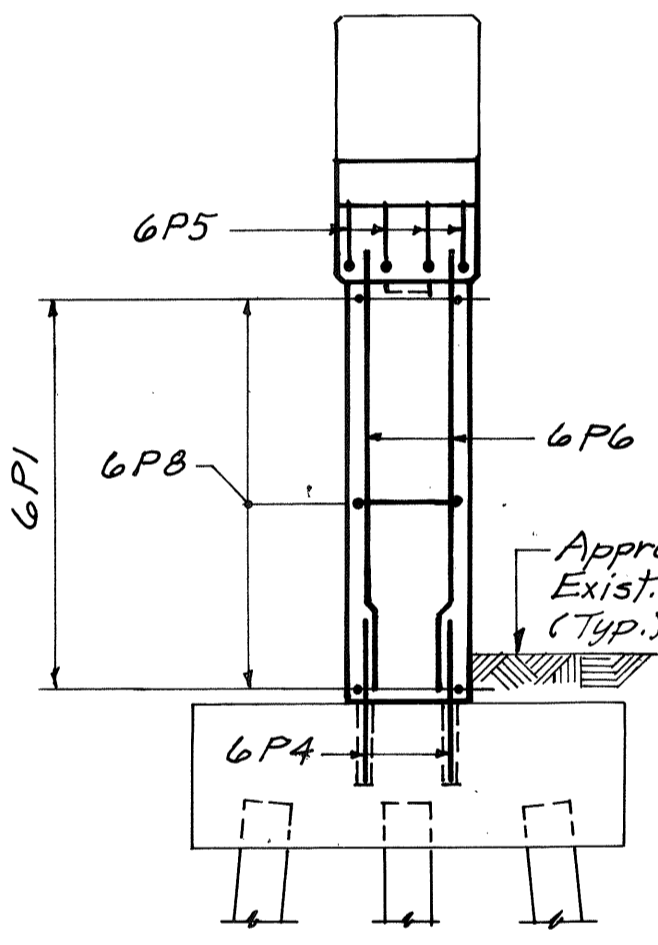
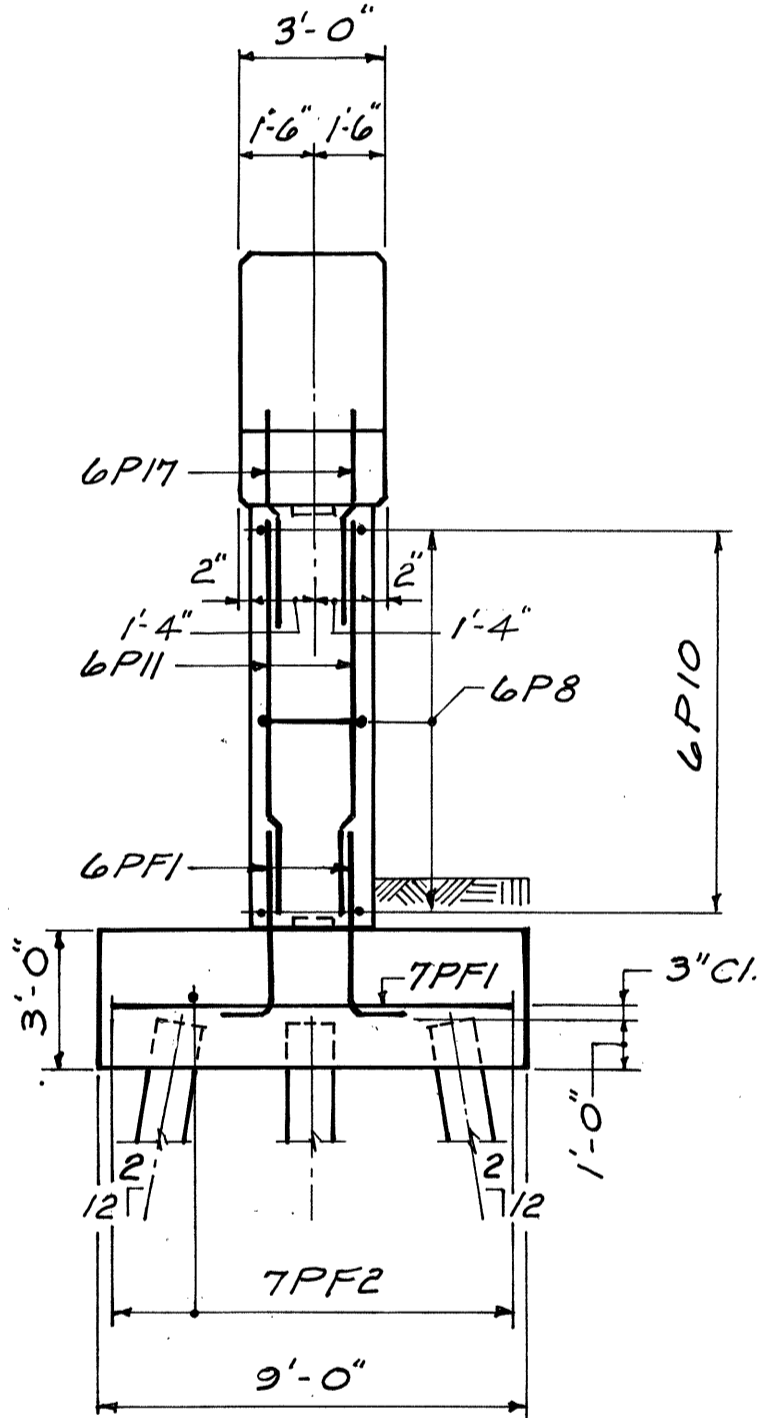
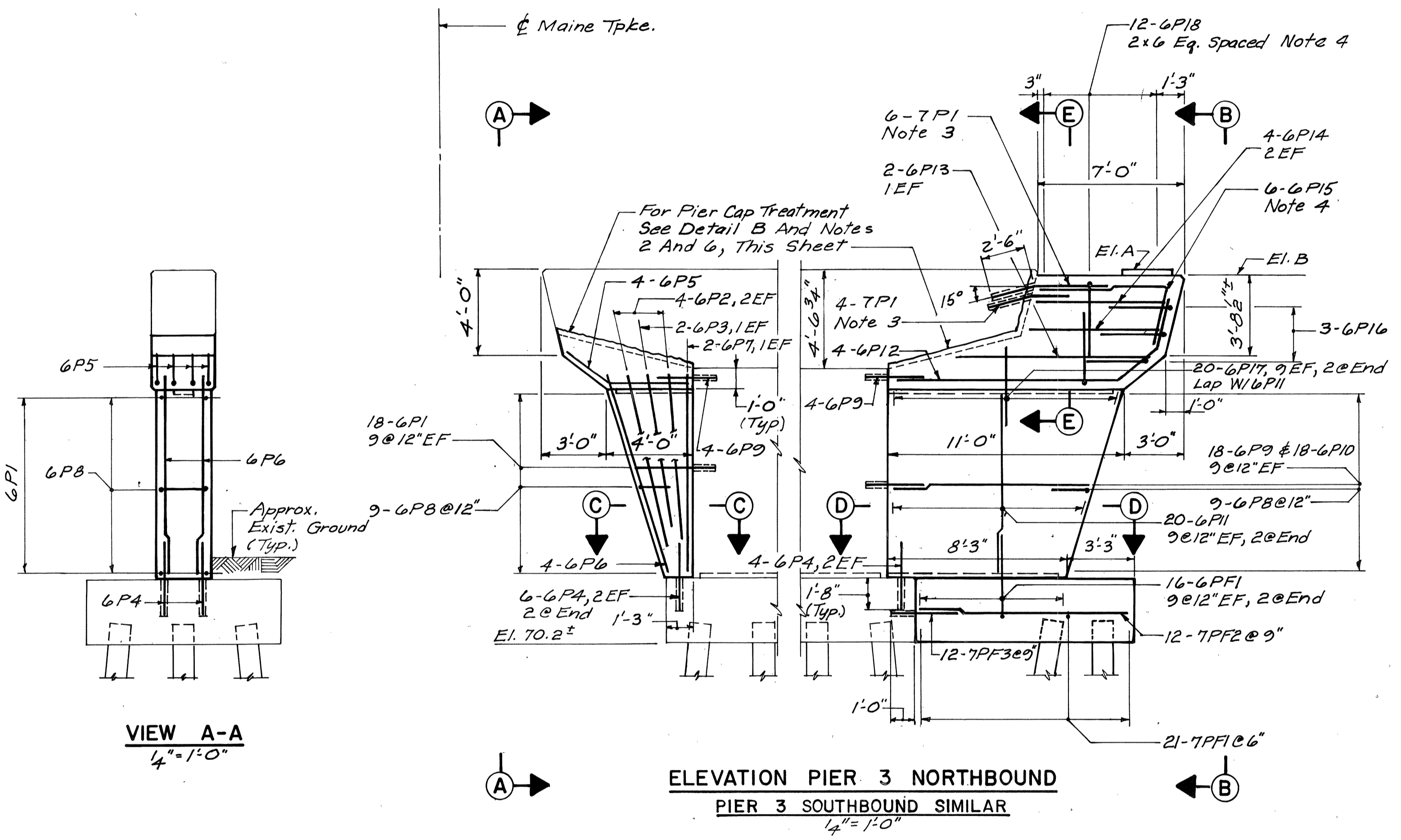
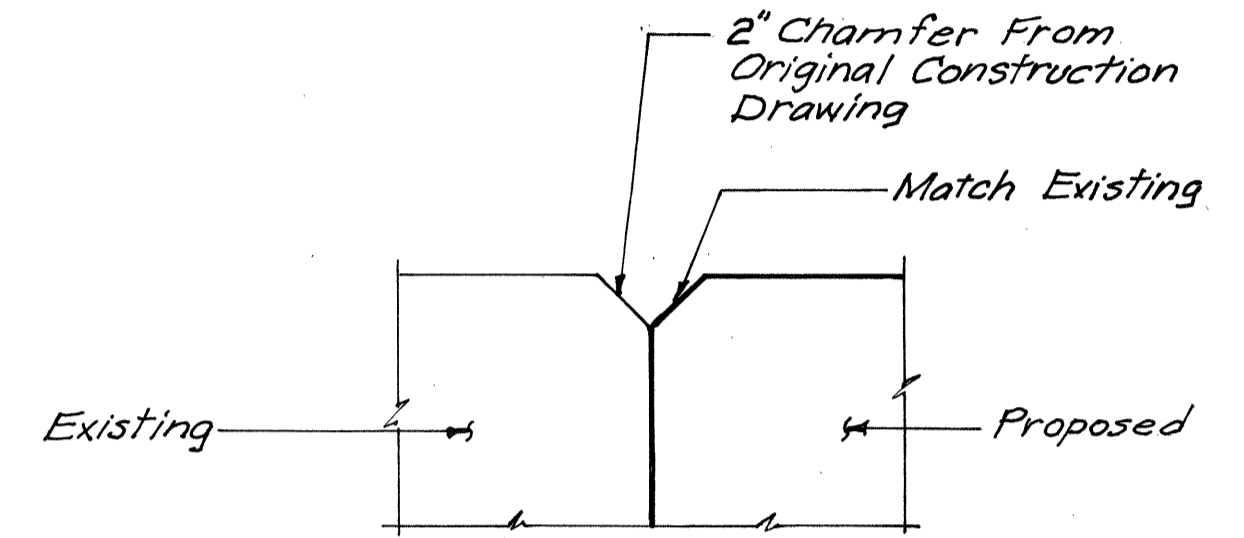
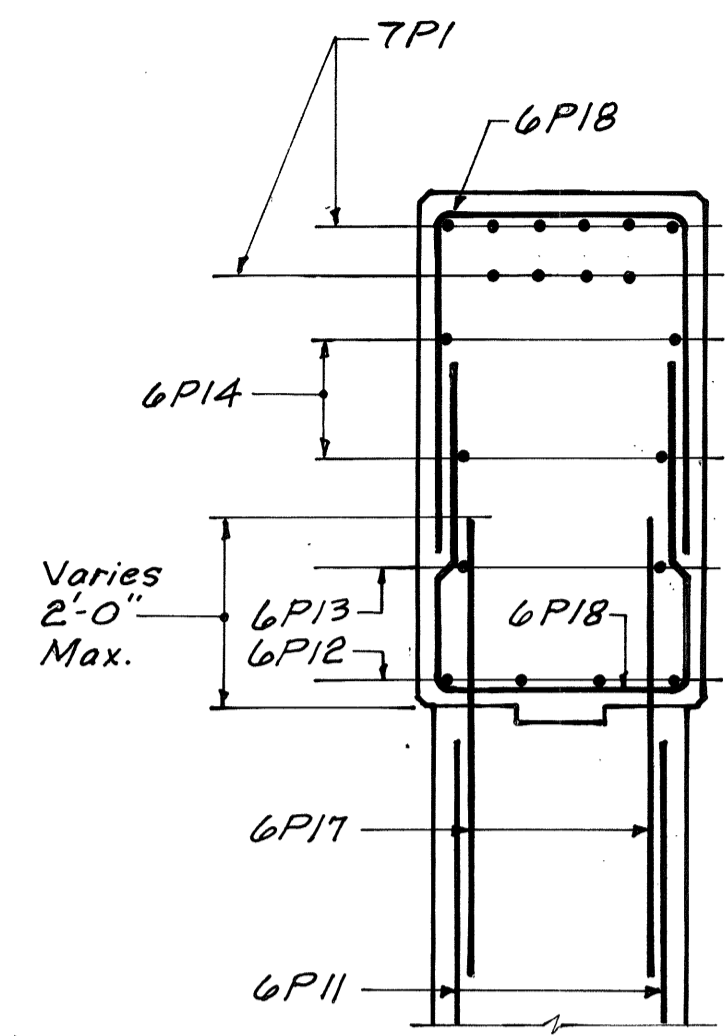


CONCRETE PAD
Anchor Bolt Locations
2" = 1'-0"

PIER EXTENSIONS
2" = 1'-0"

CONCRETE PAD
Anchor Bolt Locations
2" = 1'-0"

ELEVATIONS		
LOCATION	A	B
Pier 1 N.B.	90.89	90.84
Pier 2 N.B.	89.03	88.98
Pier 3 N.B.	87.02	86.97
Pier 1 S.B.	90.87	90.82
Pier 2 S.B.	89.00	88.95
Pier 3 S.B.	87.03	86.98

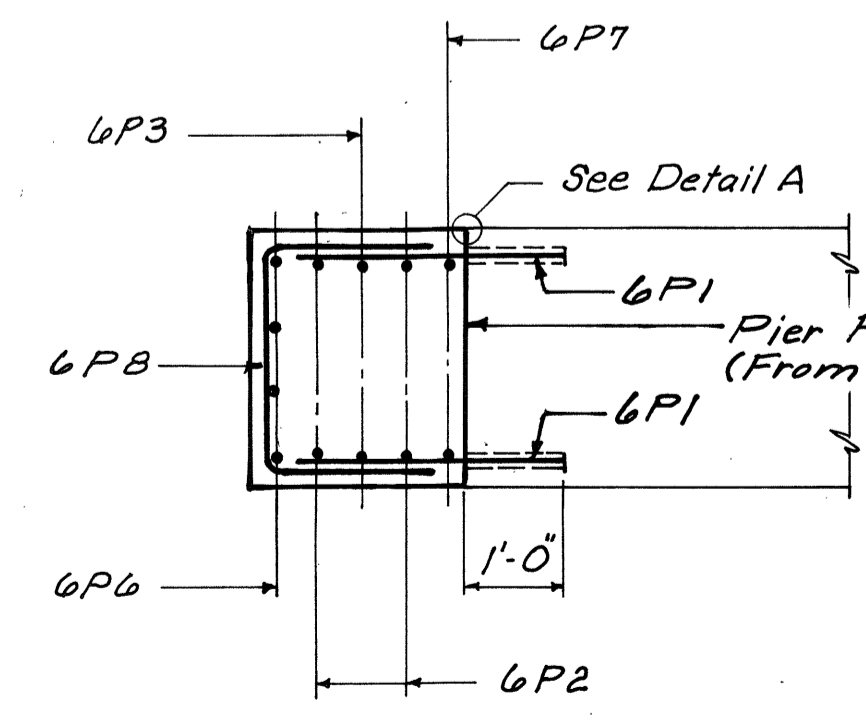


VIEW A-A
1/4" = 1'-0"

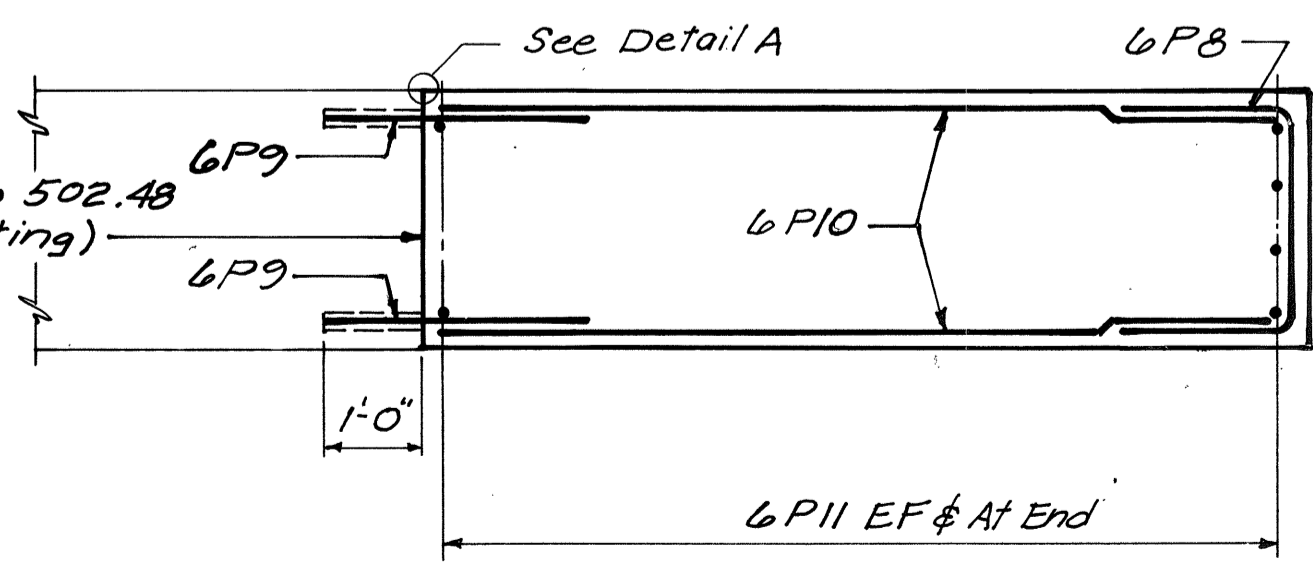
VIEW B-B
1/4" = 1'-0"

NOTES

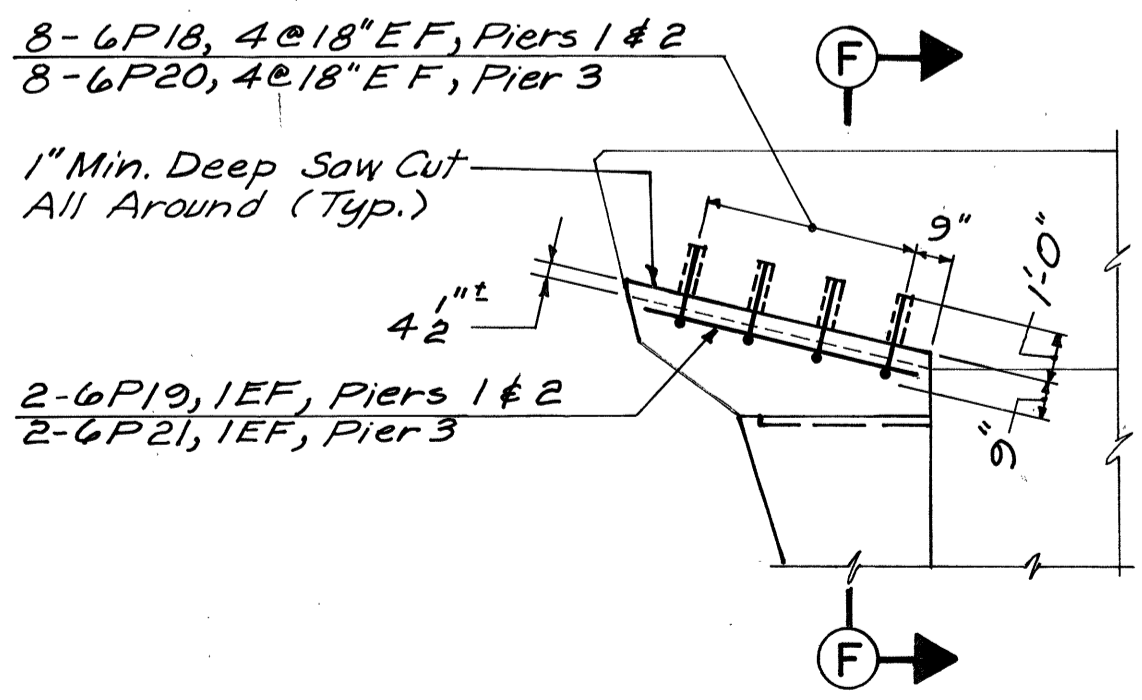
- Two Inch Chamfer On All Exposed Edges.
- Remove Existing Concrete To A Depth Of One Inch Below Existing Reinforcing Steel Or To Sound Concrete (Pier Cap Only).
- Drill And Grout Bars TPI To Clear Exposed Reinforcing Steel And Existing Bearing Shoes Anchor Bolts.
- Set Reinf. Steel To Clear Proposed Bearing Shoe Anchor Bolts.
- Reinforcing Bars Doweled Into The Existing Pier Cap Shall Be Grouted In Place With An Epoxy Grout. A Non-Shrink Cementitious Grout Shall Be Used On All Other Dowels.
- The Surface Of The Excavated Area And The Exposed Reinforcing Steel Shall Be Sand Blasted Free Of Dust, Loose Particles, Rust And Other Foreign Materials.



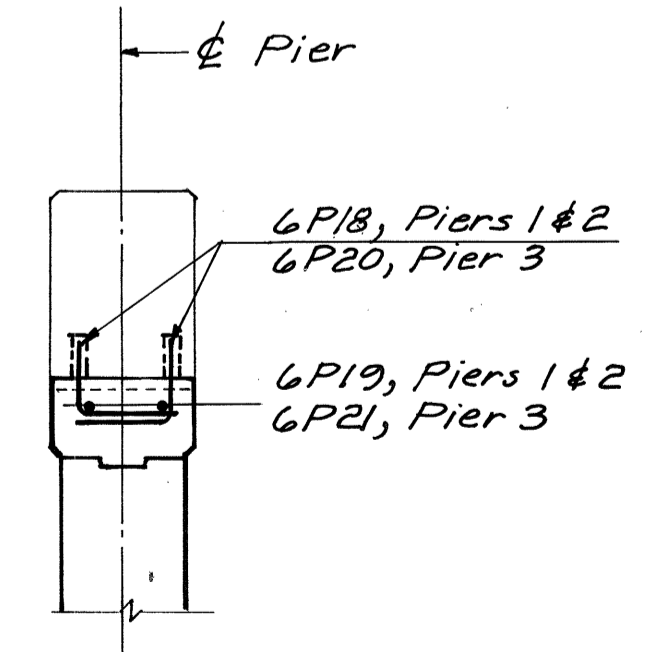
SECTION C-C
1/2" = 1'-0"



SECTION D-D
2" = 1'-0"



DETAIL B
1/4" = 1'-0"



SECTION F-F
1/4" = 1'-0"

Maine Turnpike Authority
Maine Turnpike

STROUDWATER RIVER
PIER 3 DETAILS

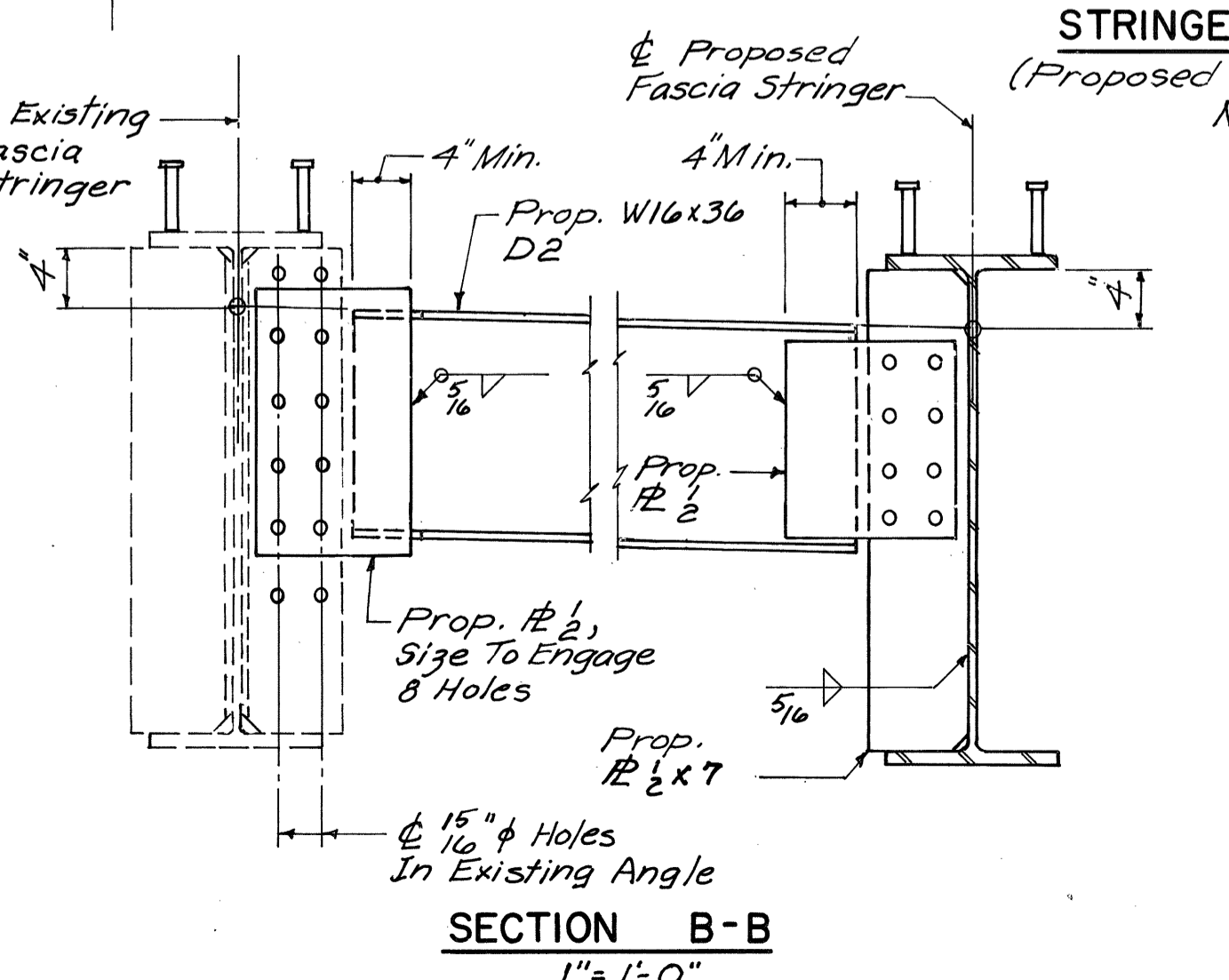
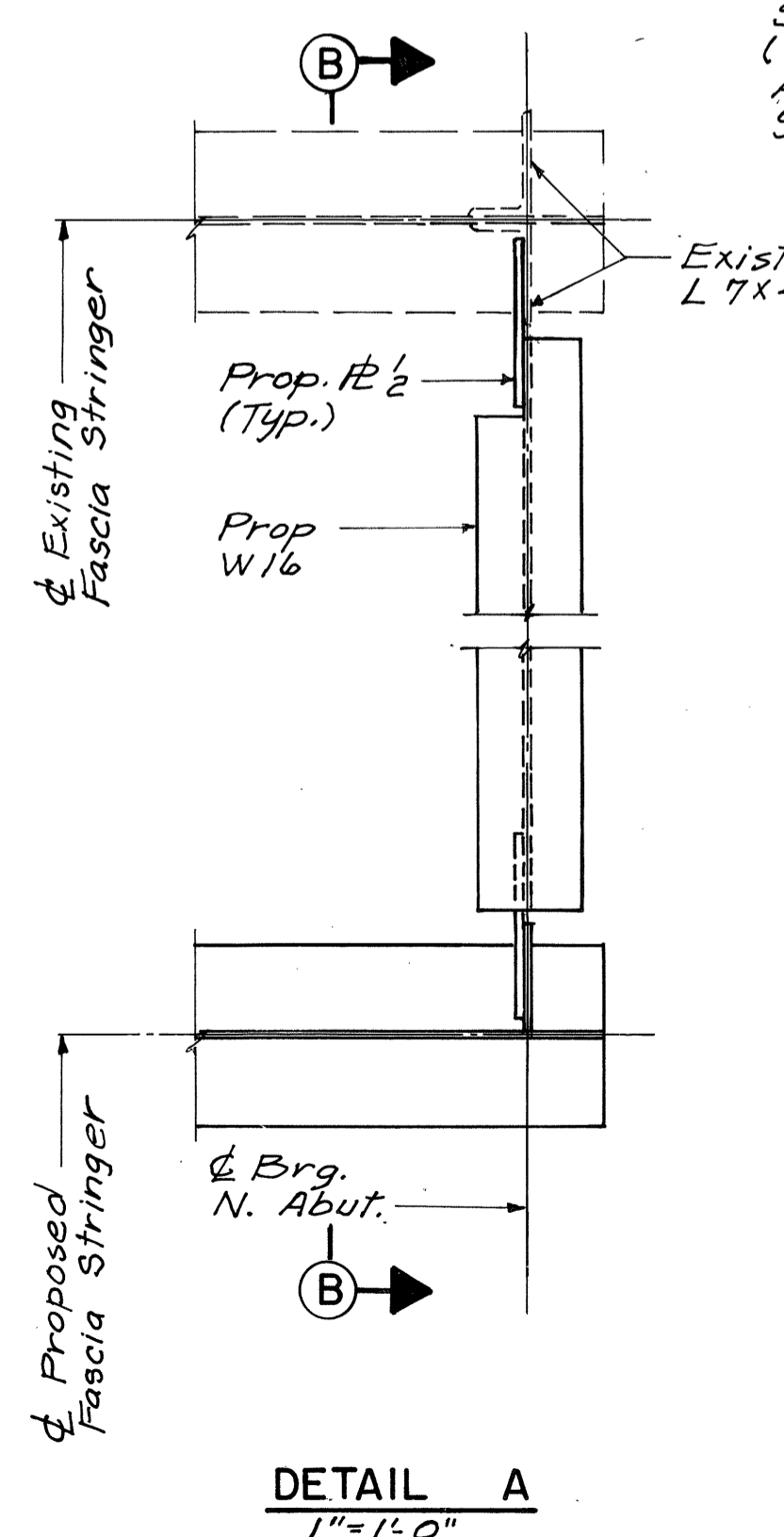
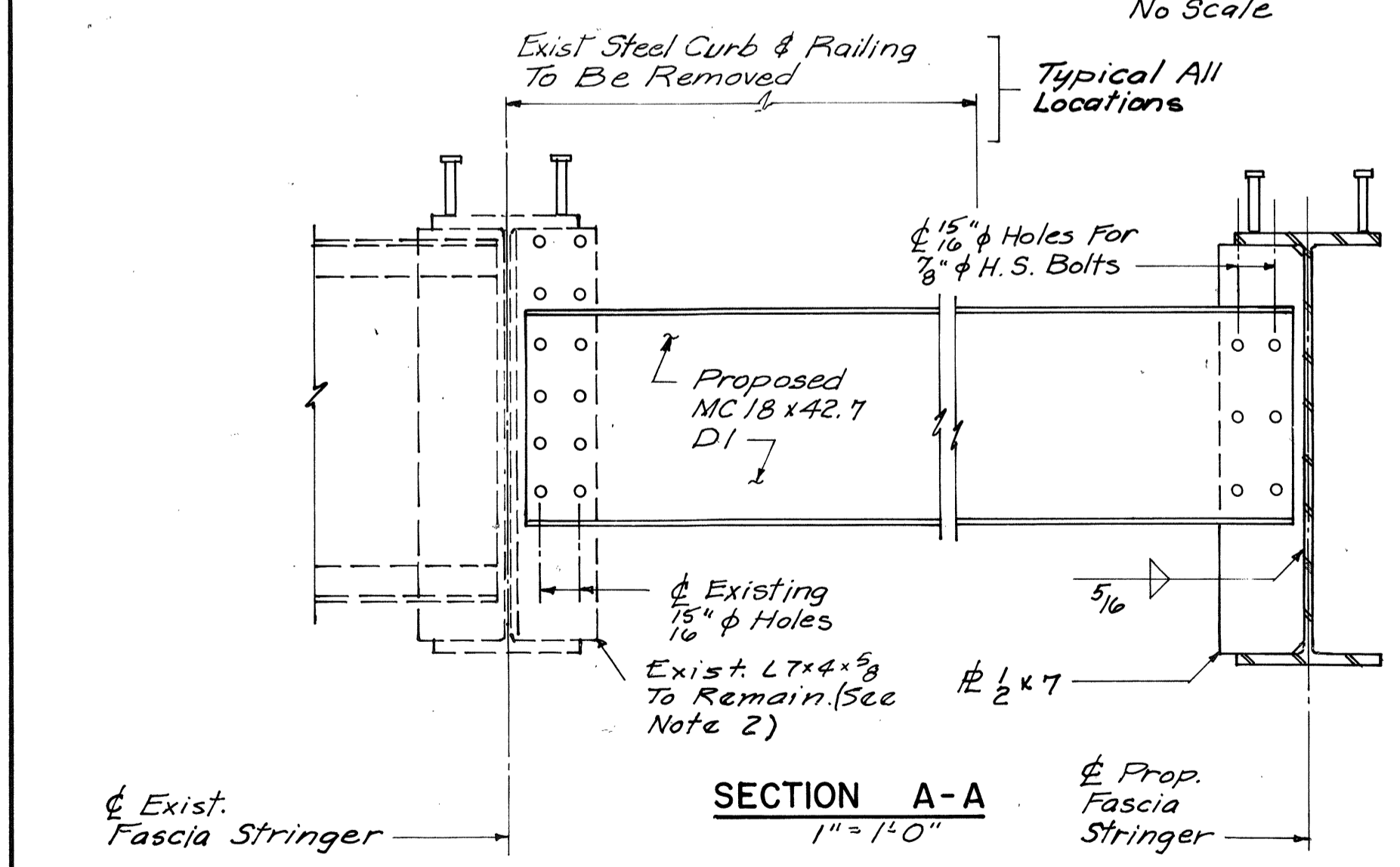
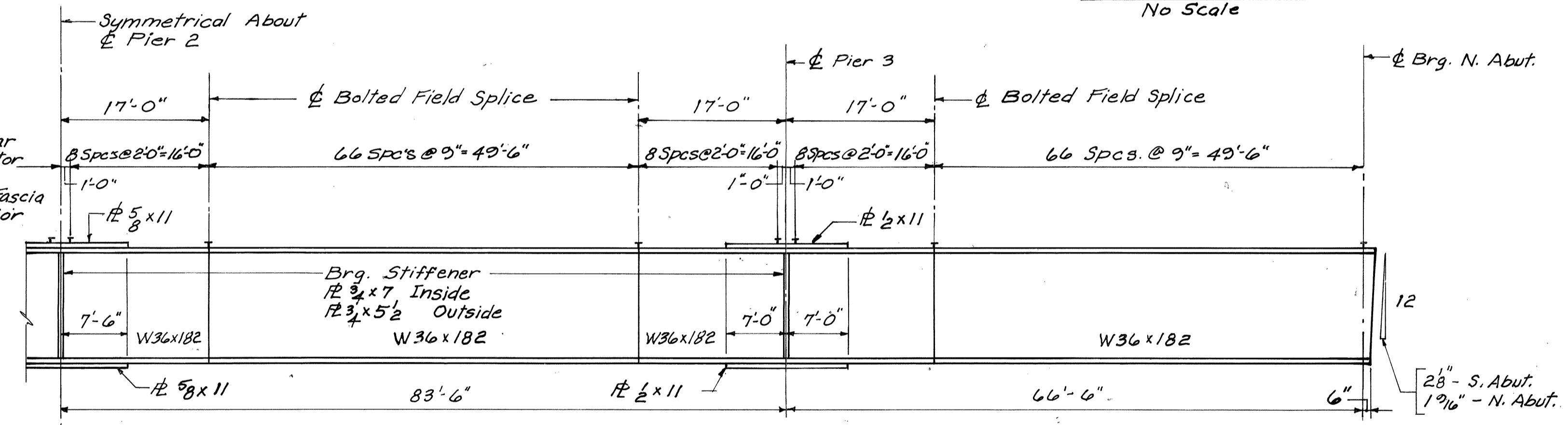
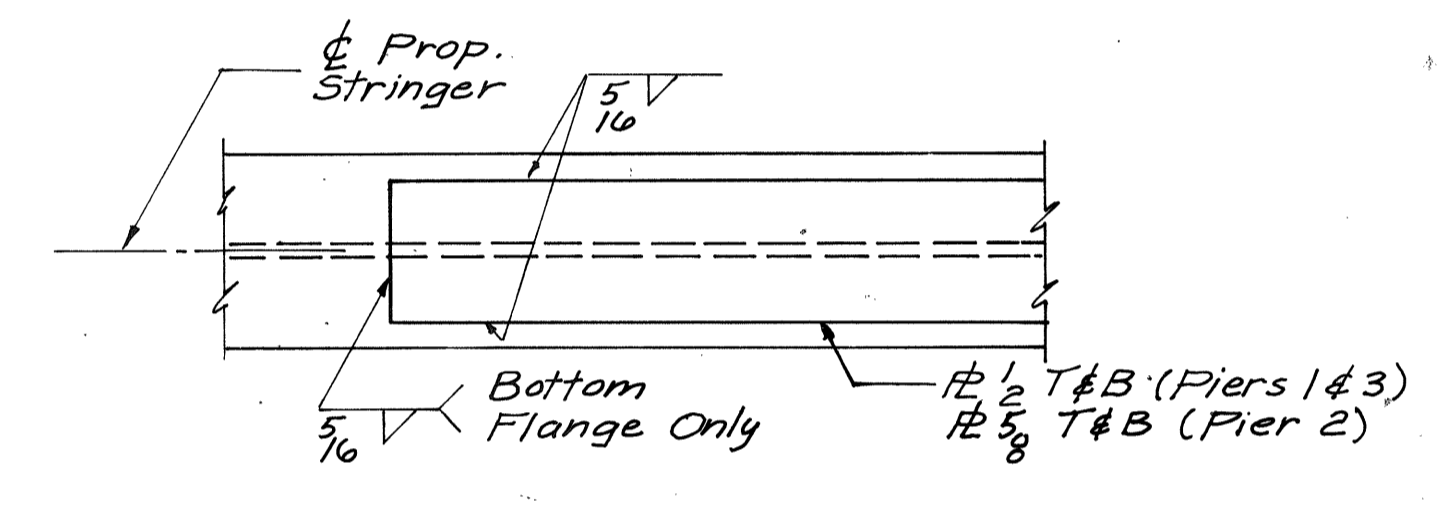
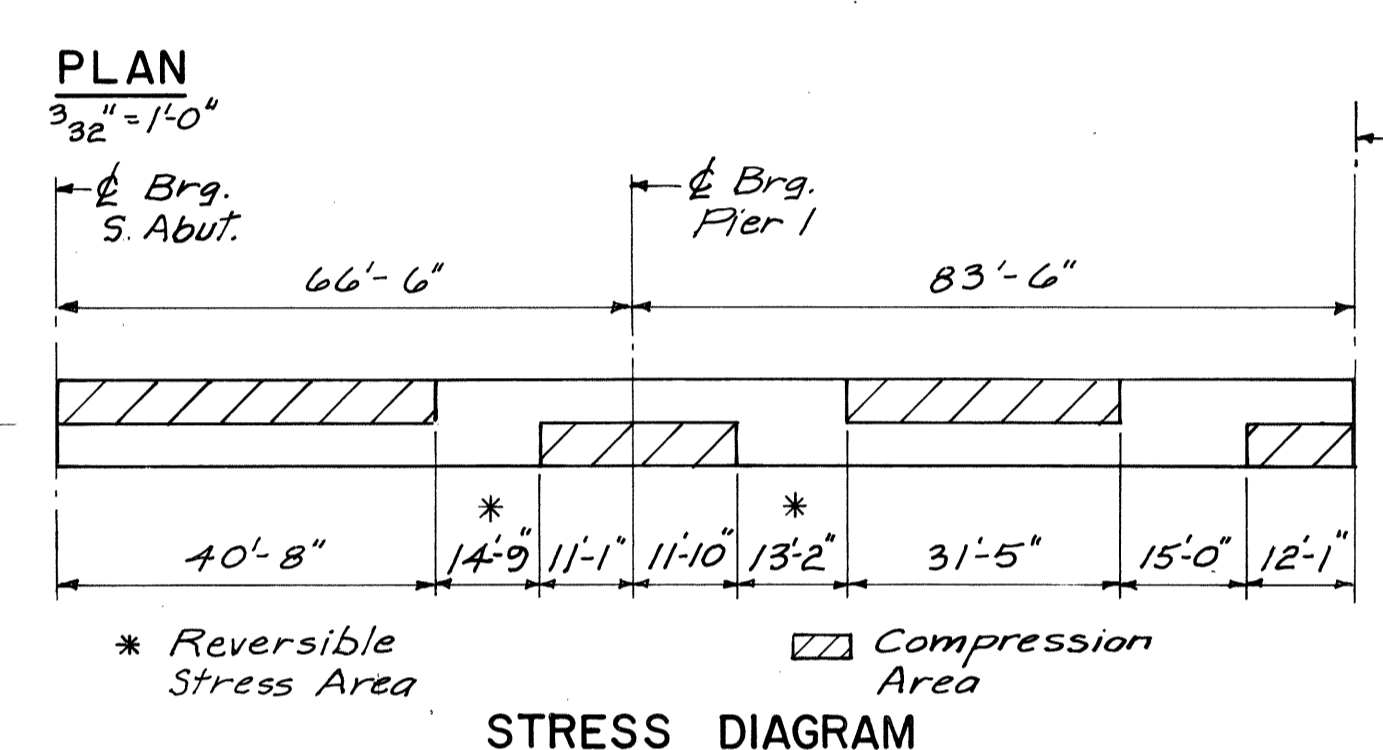
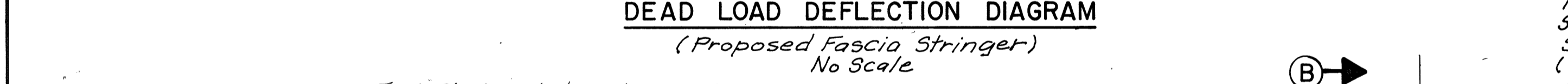
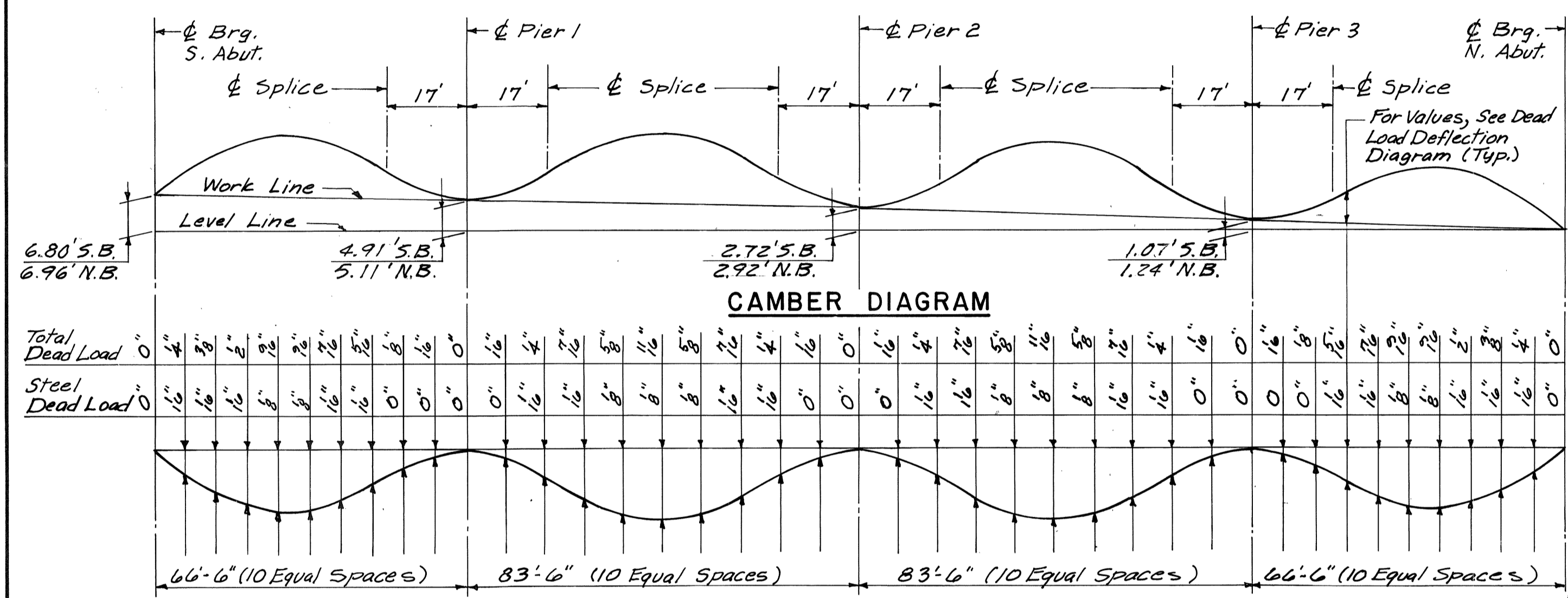
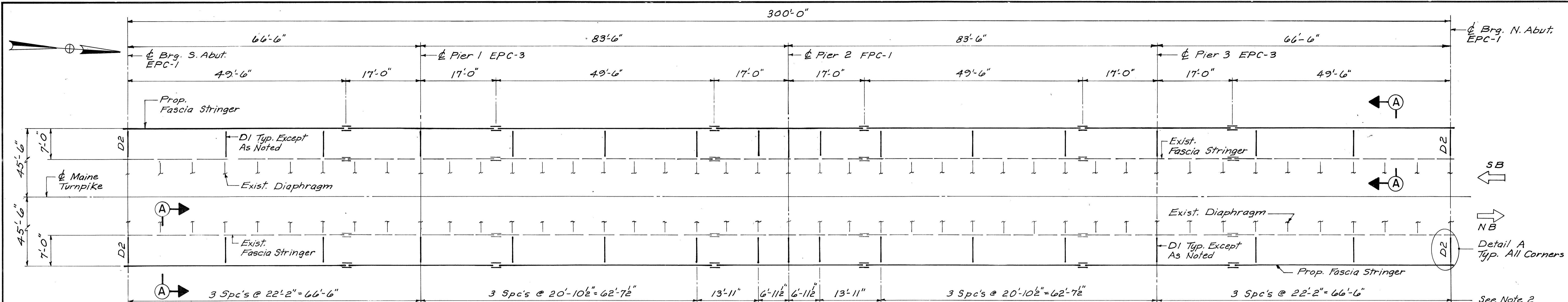
MT TURNPIKE

HOWARD NEEDLES TAMMEN & BERGENOFF
ARCHITECTS ENGINEERS PLANNERS

By:	Date:
Designed:	I.S. 11-91
Drawn:	R.S.J. 11-91
Checked:	S.H.R. 1-92
In charge of:	R.A.L.

Contract 92.8

Sheet No. 21 of 34



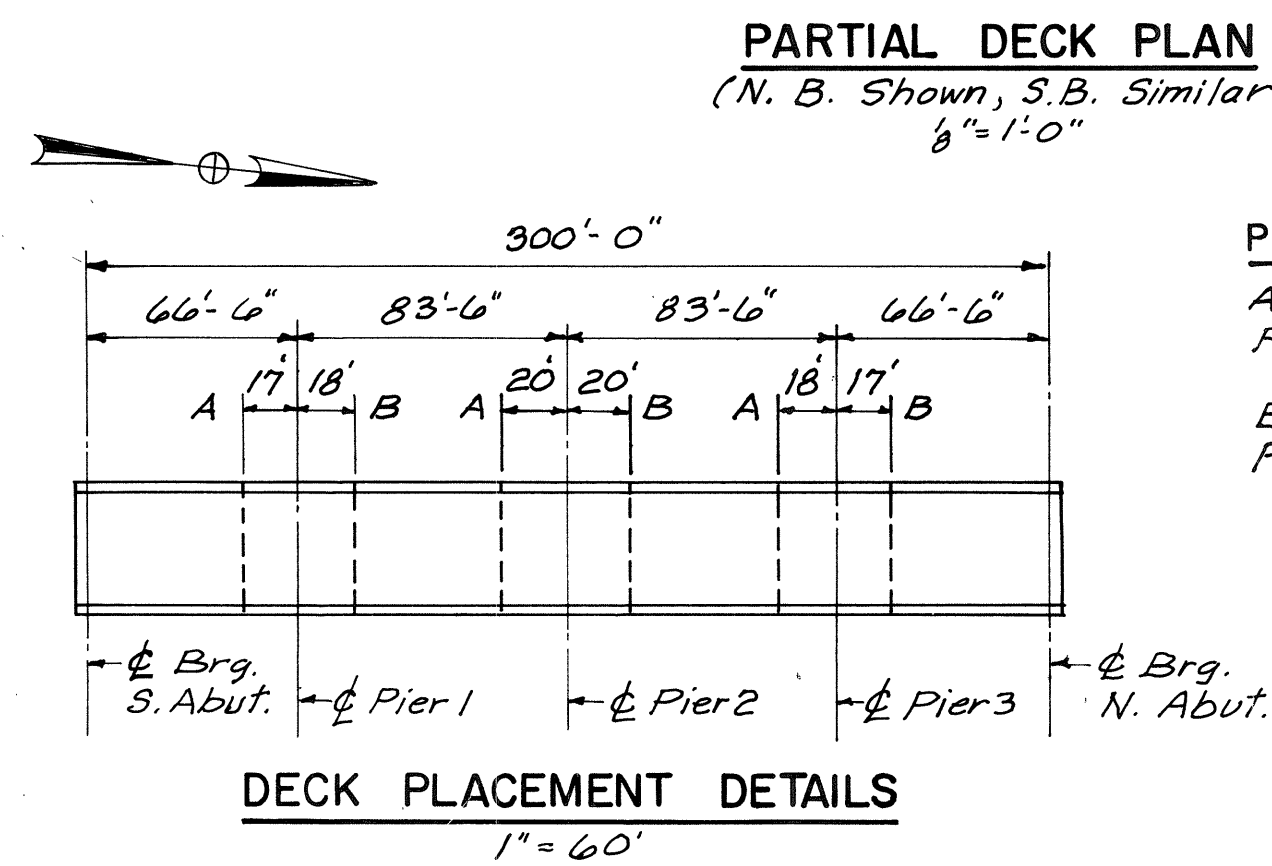
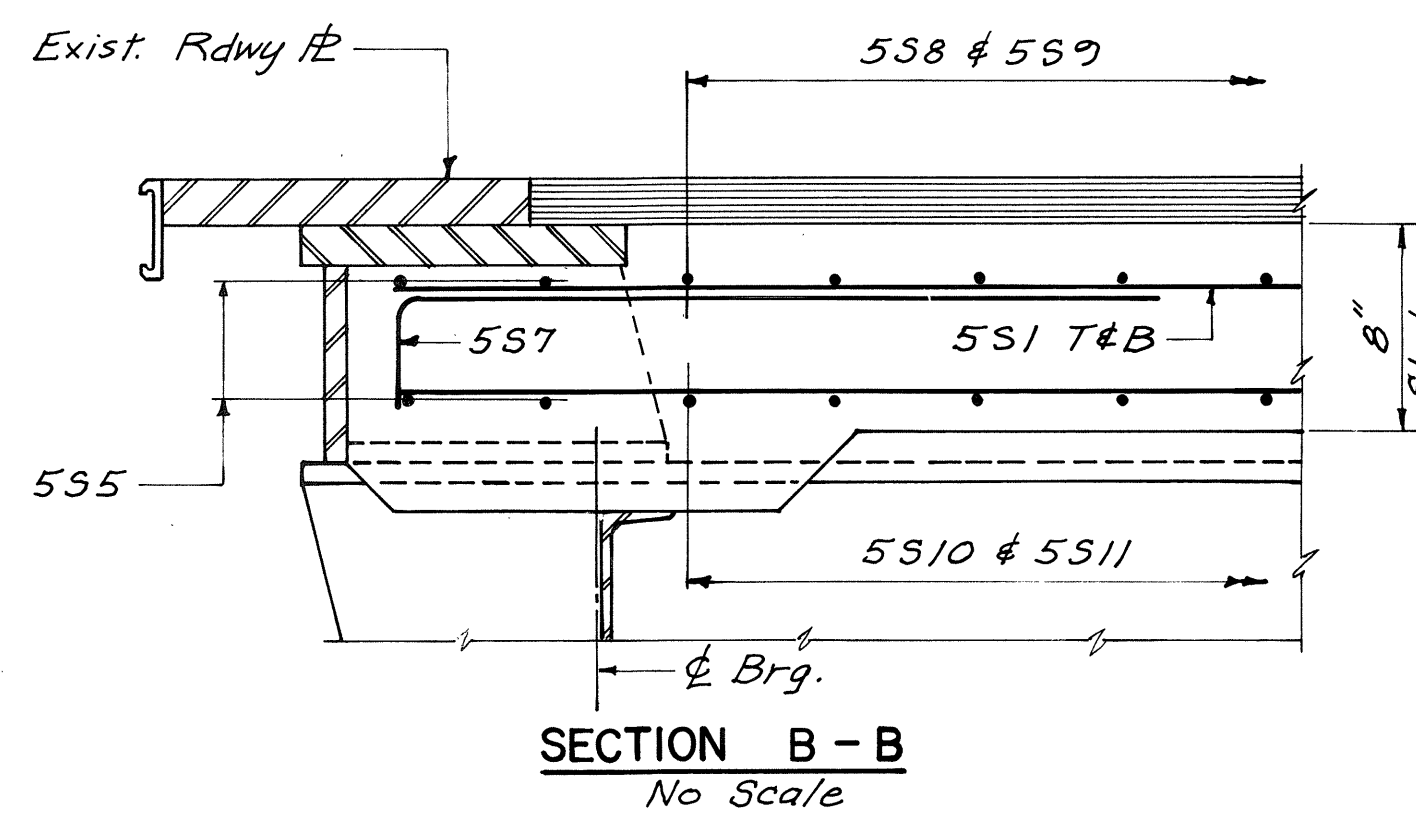
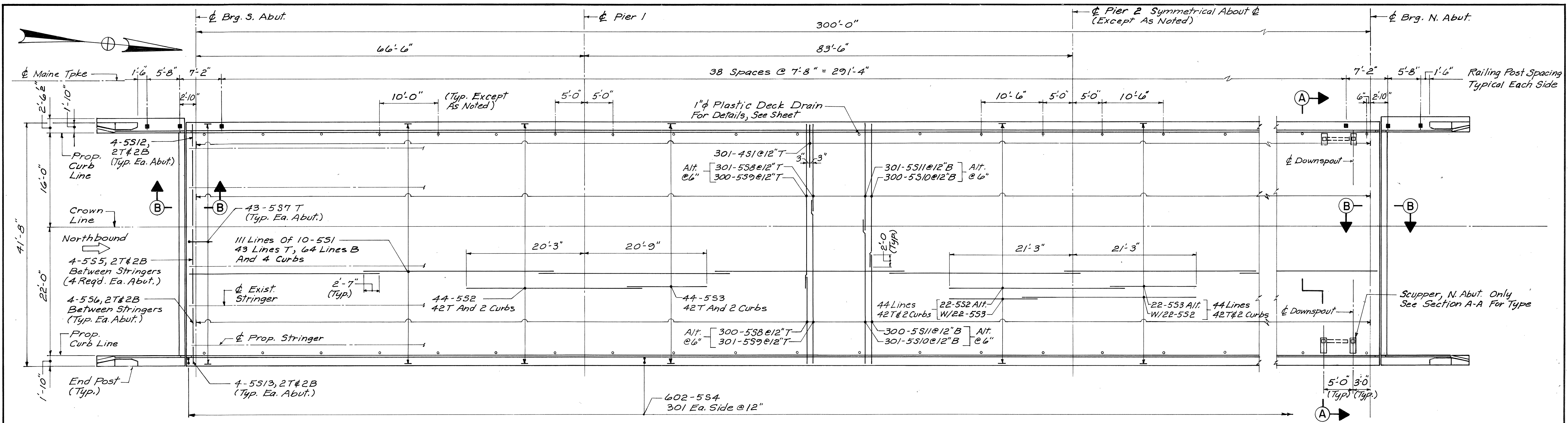
- NOTES**
- Field Measure Location Of Existing Holes In L7x4. Locate Proposed DI To Engage 8 Holes As Shown. The Fabricator Has The Option Of Providing 1/2" Plate As Shown In Section B-B This Sheet.
 - Diaphragm Spacing And Holes In L7x4 Is As Shown On The Original Construction Drawings And Is Not Guaranteed. Verify By Field Measurement.
 - See BD 111-89 For Bolted Splice Details.
 - See BD 112-89 For Diaphragm Details.

Maine Turnpike Authority
Maine Turnpike
 STROUDWATER RIVER
 FRAMING PLAN

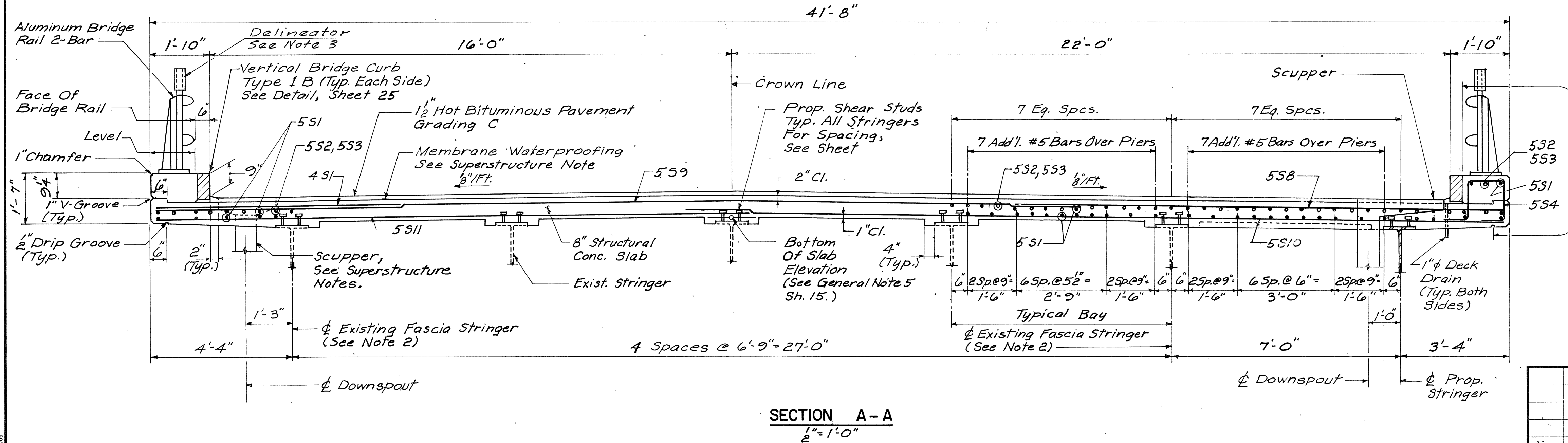
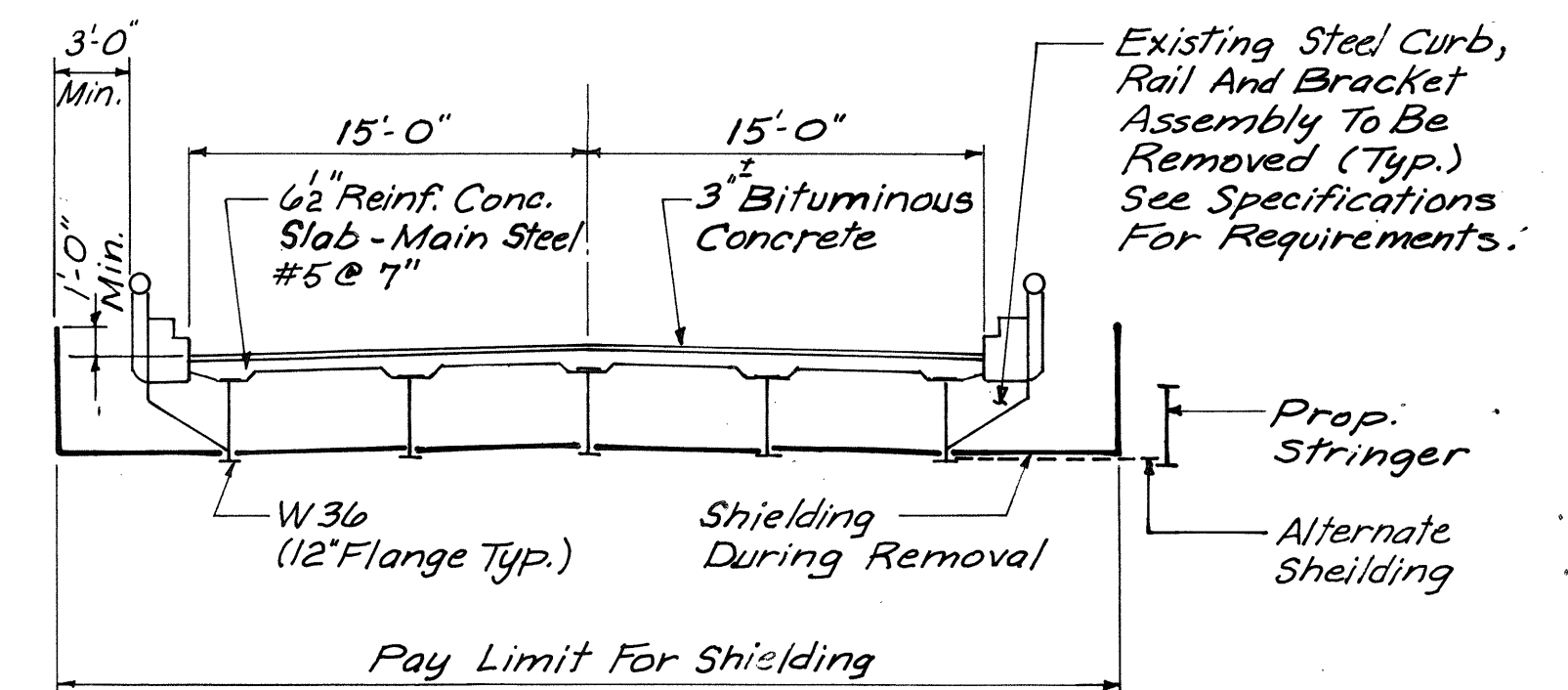
Contract 92.8
 Sheet No. 22 of 34

By: Date:
 Designed: I.S. 12-91
 Drawn: R.S.J. 12-91
 Checked: R.J.R. 1-92
 In charge of: R.A.L.

HNTB
 HOWARD NEEDLES TAMMEN & BERGENOFF
 ARCHITECTS ENGINEERS PLANNERS



PLACEMENT NOTES
 A = Termination Points When Placement Starts At South Abut.
 B = Termination Points When Placement Starts At North Abut.



EXISTING DECK REMOVAL
No Scale

- NOTES**
- For Superstructure Notes, See Sheet 15.
 - For Modifications To Existing Fascia Stringers, See Sheet 23.
 - Delineators Shall Not Exceed A 60 Foot Spacing On The Bridge. Delineators Shall Be A White Reflective Sheathing Type II Placed On Both Sides Of The Bridge. (Highway Item)
- Coat With "Protective Coating For Concrete Surfaces" (Typ.)

Maine Turnpike Authority Maine Turnpike		STROUDWATER RIVER SUPERSTRUCTURE DETAILS	
Howard Needles Tammen & Bergendoff ARCHITECTS ENGINEERS PLANNERS		Contract 92.8	
By: Date: Designed: R.J.R. 11-91 Drawn: R.S.J. 11-91 Checked: R.A.L. 12-91 In charge of: R.A.L.		Sheet No. 24 of 34	