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 B.D.S. @ N.W. RAIN . C.O.M

DATE	BY	REVISIONS



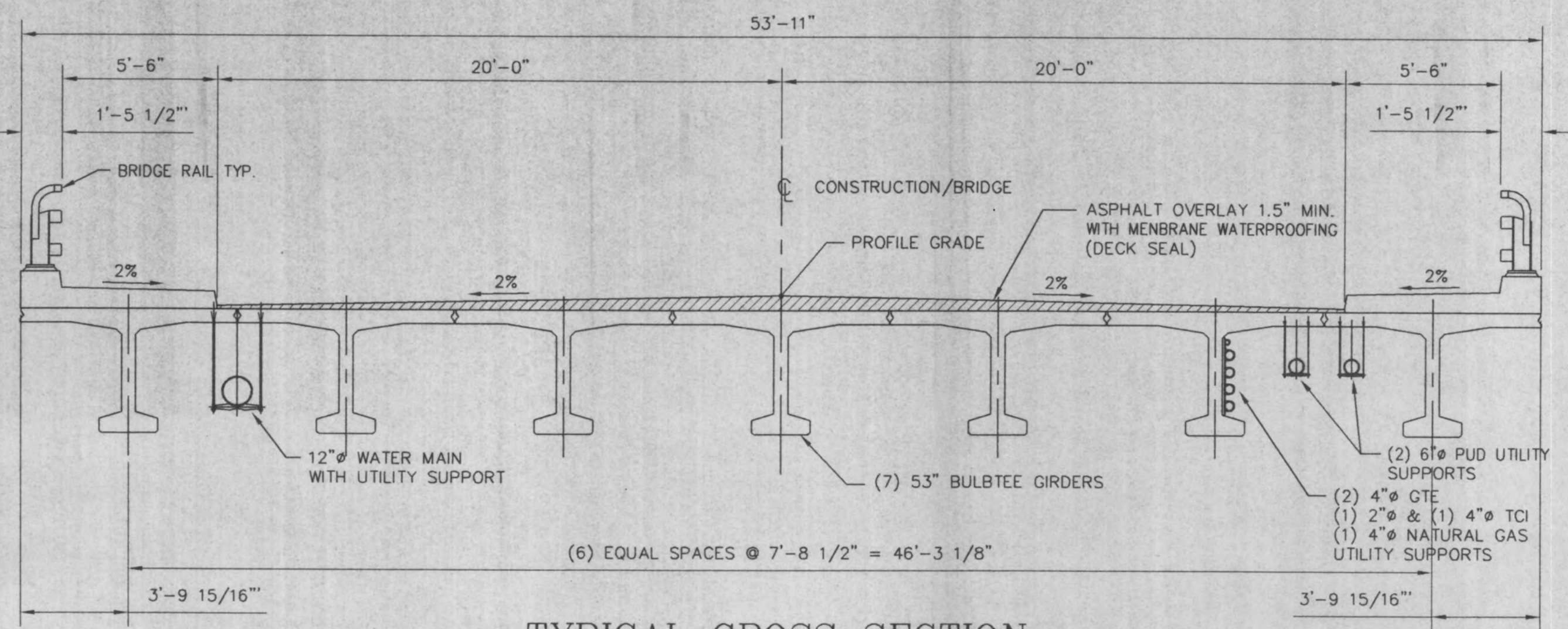
CROWN RIVER ESTATES
186th STREET BRIDGE
 STAR DEVELOPMENT, INC.
 SNOHOMISH COUNTY WASHINGTON

PLAN, ELEVATIONS & NOTES

DESIGNED	E.V.F.
DRAWN	G.W.B.
CHECKED	E.V.F.
DATE	7/27/98
PROJECT	1935
FILENAME	1935B1.DWG
PLOT AT	1 - 192
SCALE	AS NOTED

B1

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STRUCTURAL NOTES

CODE: American Association of State Highway and Transportation Officials "Standard Specifications for Highway Bridges", 16th Edition.

STANDARD SPECIFICATIONS: "1998 Standard Specifications for Road, Bridge, and Municipal Construction", prepared by the American Public Works Association, Washington State Chapter; and the Washington State Department of Transportation (WS-SS). Applies only as referenced.

STANDARD PLANS: "Standard Plans for Road, Bridge, and Municipal Construction", prepared by the American Public Works Association, Washington State Chapter; and the Washington State Department of Transportation (WS-SP). Applies only as referenced.

LOADS:
 Truck Load: ASSHTO HS 25-44
 Seismic load: A = 0.25

SOILS REPORT: Crown Ridge Estates Subdivision, prepared for Wagon Development Company by Geo Engineers, Inc., dated March 3, 1998.

FOUNDATION SOIL: 5,000 psf allowable bearing.

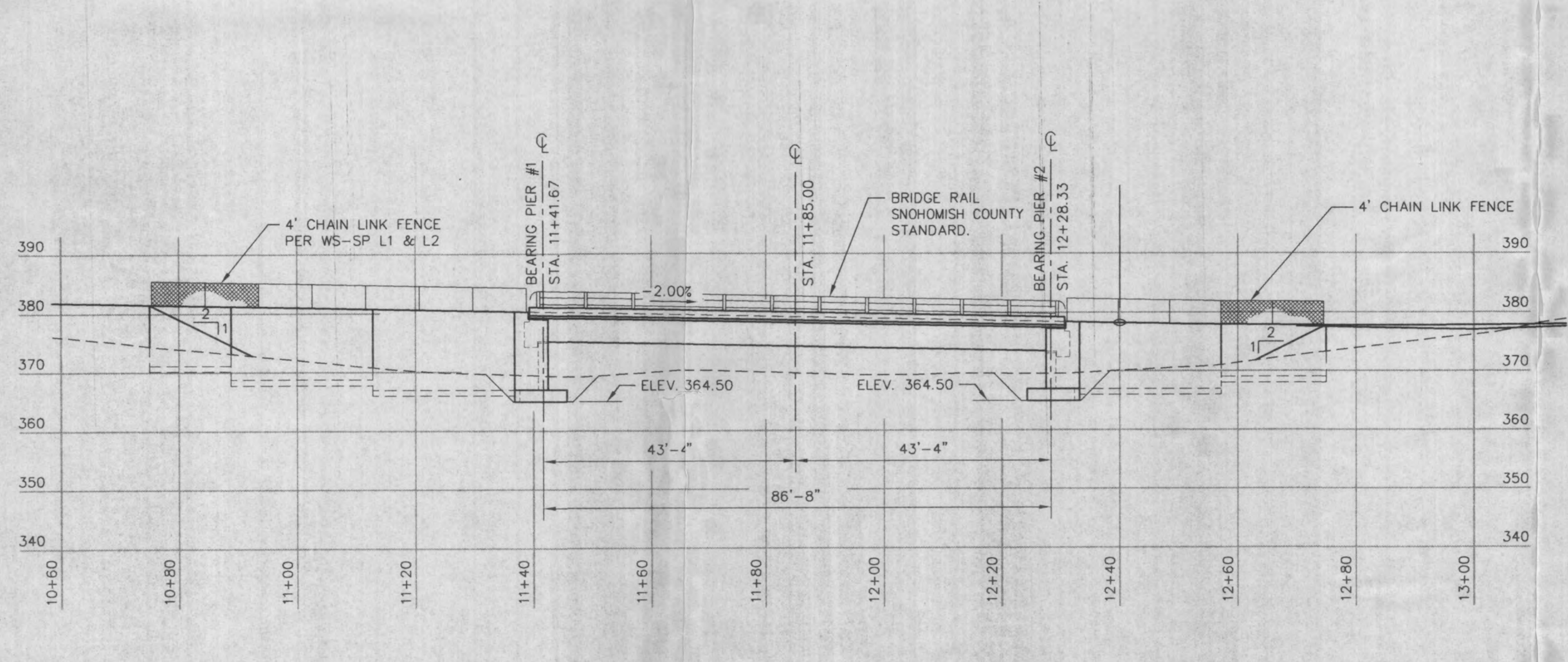
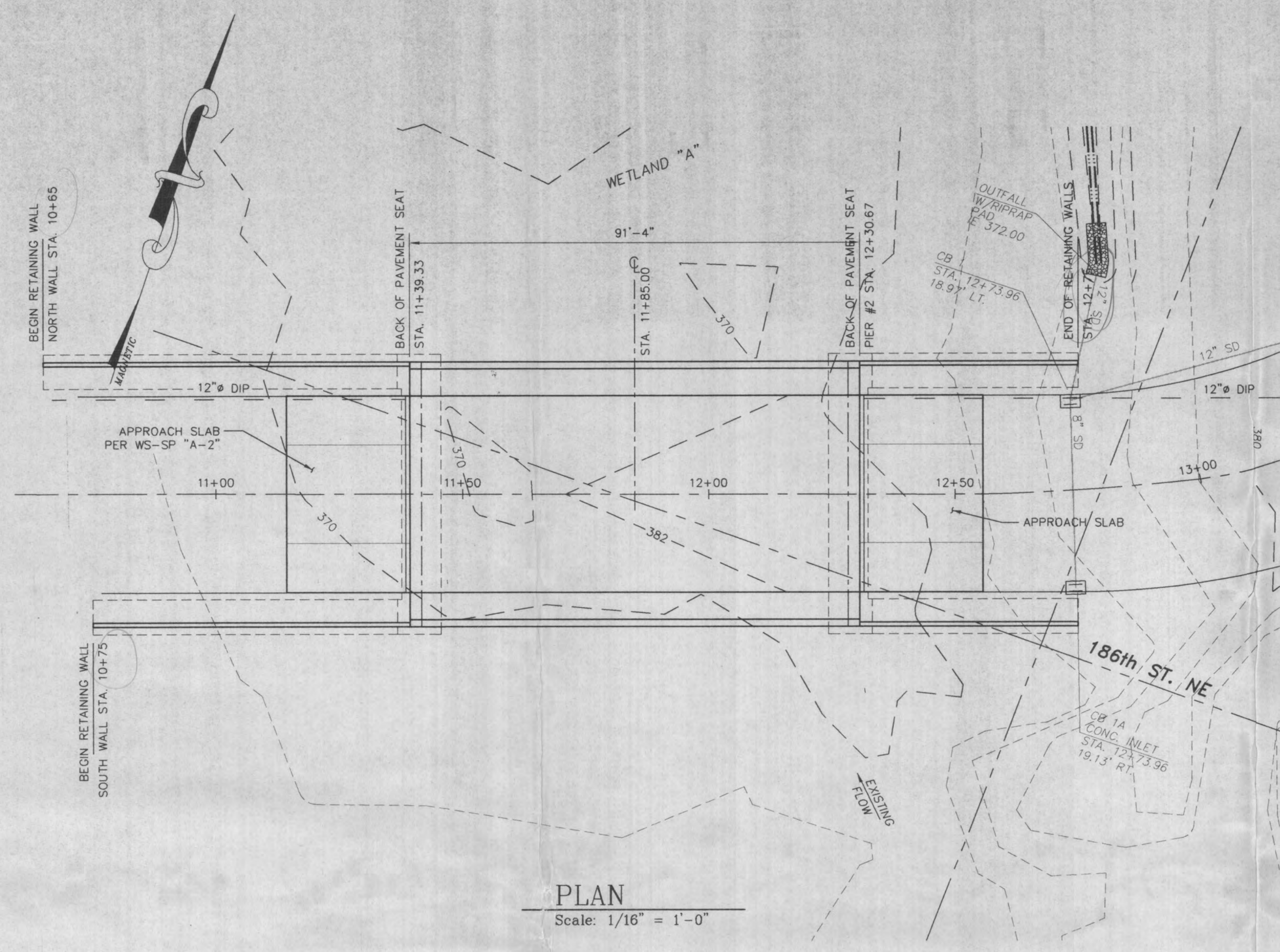
APPROVALS: "Approved" materials or methods shall be approved in writing by the engineer of record, prior to ordering, fabrication, and/or proceeding with specified work.

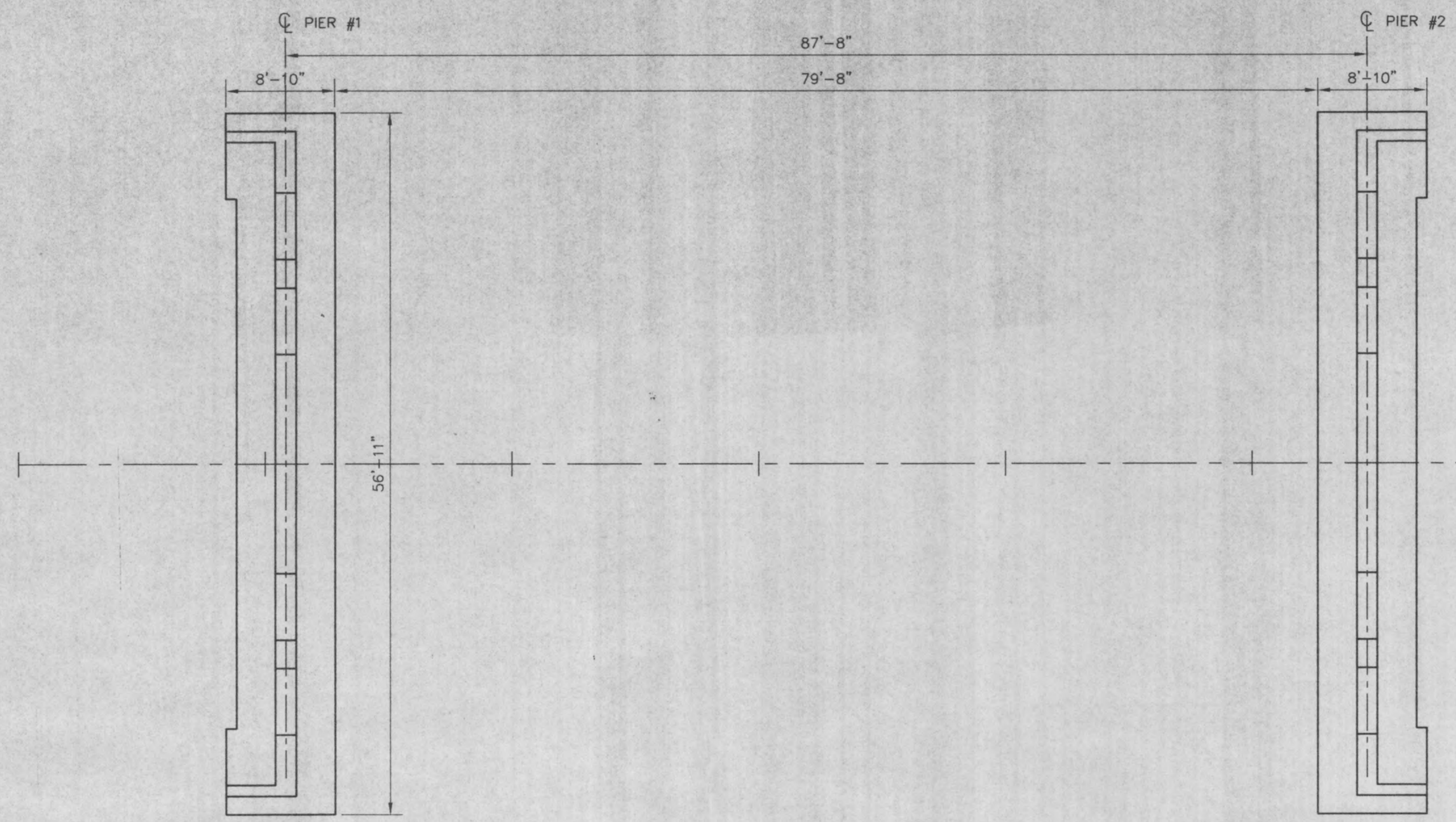
SUBMITTALS (Shop Drawings, Certifications, Test Reports, Calculations): the contractor shall submit to the engineer of record for review prior to fabrication, for the following items:
 Shop Drawings: precast concrete girders, reinforcing steel, structural steel.
 Calculations: precast concrete girders
 Certificates: concrete mix
 Test Reports: compaction, concrete mix, structural fill
 INSPECTION AND TESTING: an independent qualified testing laboratory, employed by the owner, shall perform inspection and testing for the following items:
 Compaction: moisture content: 2 daily, ASTM D-2216, field density: 2 daily, ASTM-D-1556.
 Structural Fill: gradation: 1 each material type, ASTM D-1140 and ASTM D-546, sand equivalent: 1 each material type, ASTM D-2419, moisture density relationship: 1 each material type, ASTM D-1557.
 Concrete compressive strength: four compressive strength specimens shall be made for each 100 cubic yards, or each day concrete is poured, whichever is greater. Test one specimen at 7 days, one at 14 days, two at 28 days. The samples for strength test shall be taken in accordance with ASTM C-172. Specimens shall be moulded and cured in accordance with ASTM C-31, and tested in accordance with ASTM C-39 for compressive strength.
 The inspection agency shall submit inspection and test reports to the owner and the engineer of record.

SITING WORK
 FOUNDATION: footings shall bear on firm undisturbed earth or compacted structural fill.
 EXCAVATION: excavate and dispose of topsoil, organic material, loose native material, and other deleterious material within the foundation area.
 STRUCTURAL FILL: gravel borrow. Gravel shall be placed in 8 inch maximum lifts and compacted to 95 % per ASTM D-1557.

BALLAST: WS-SS Section 9-03.12(1).
 GRAVEL BACKFILL FOR WALLS: WS-SS Section 9-03.12(2).
 CRUSHED SURFACING: WS-SS Section 9-03.9(3).
 GRAVEL BORROW: WS-SS Section 9-03.14.
 COMPACTION: % relative density per ASTM D-1557.
 CAST-IN-PLACE CONCRETE
 Concrete: mix, deliver, and place in accordance with WS-SS Section 6-02, ASTM C-94, ACI 304, ACI 305, ACI 306, and ACI 318. No aluminum (conduit, or other miscellaneous items) shall be embedded in concrete.
 Class 4000 with 5% entrained air, WS-SS Section 6-02.
 PRECAST KEYWAY GROUT: 1 part cement to 3 parts paving sand, by weight, max water content 5 gallons per sack of cement.
 WATER: Clean and potable.
 AGGREGATES: ASTM C-33.
 REINFORCING: Deformed bar ASTM A-615, Grade 60, WS-SS Section 9-07. Epoxy coated bars, WS-SS Section 9-07.3.
 AMIXTURES: Conform to ASTM C-260 or ASTM C-494 as applicable. Calcium chloride shall not be added to the concrete mix.
 FINISHING: WS-SS Section 6-02.3(14).
 CURING: Protect all freshly placed concrete from premature drying and excessive hot or cold temperature, for seven days after pourin, WS-SS Section 6-02.3(11).
 JOINT FILLER: Preformed resilient neoprene sponge rubber expansion joint, WS-SS Section 9-04.1.
 JOINT SEALER: Poured two component poured rubber joint sealer, WS-SS Section 9-04.2.
 BEARINGS: Elastomeric, 60 durometer, WSS-SS Section 9-31.
 NONSHRINK GROUT: Master Builders Set Grout. Install in accordance with the manufacturer's instructions.
 PRE-CAST CONCRETE
 CONCRETE GIRDERS: Manufacturer designed deck bulb tee girders with structural steel intermediate diaphragms, for the span and layout shown on the drawings. Manufacturer shall be a PCI-Certified Plant. Drawings and calculations shall be stamped by a Washington State licensed engineer with experience in precast prestressed concrete design. Handle, store and erect in accordance with the manufacturer's instructions.

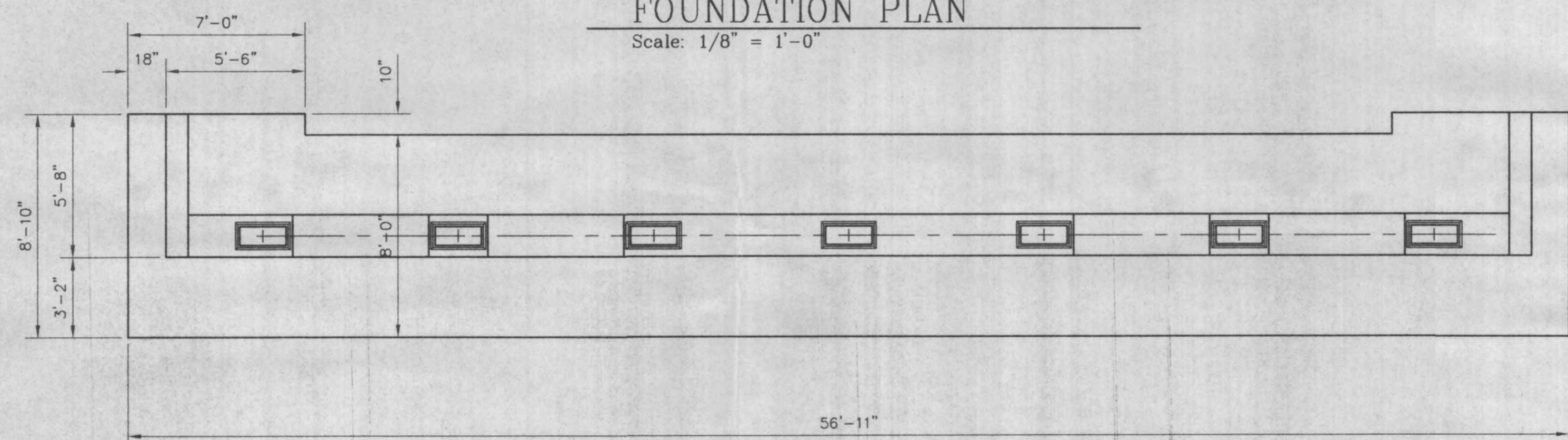
STRUCTURAL STEEL
 GENERAL: All fabrication and erection shall conform to the AISC Steel Construction Manual, 9th Edition.
 HOT ROLLED SHAPES AND PLATE: ASTM A-36, Fy = 36 KSI.
 STRUCTURAL TUBING: ASTM A-500 GRADE B, Fy = 46 KSI.
 MACHINE BOLTS, NUTS & WASHERS: ASTM A-307 GRADE A OR B (OR ASTM A-325 SNUG TIGHT) ANSI B18.2.1, ASTM A-563 GRADE A & ANSI B18.2.2, ASTM F-844.
 HIGH STRENGTH BOLTS, NUTS & WASHERS: ASTM A-325 & ANSI B18.2.1, ASTM A-563 & ANSI B18.2.2, ASTM F-463.
 WELDING: Conform to AWS D1.1. All welding shall be by WABO certified welders. E70XX electrodes.
 GALVANIZING: Shapes, plates, and fabrications ASTM A-123 and ASTM A-386; threaded fasteners ASTM A-153. Repair areas damaged by fabrication or handling with organic zinc rich paint (cold galvanizing compound) complying with DOD-P21035 or MIL-P26915, zinc-repair solder, or sprayed zinc. Minimum thickness after repair shall equal or exceed the ASTM specified thickness.





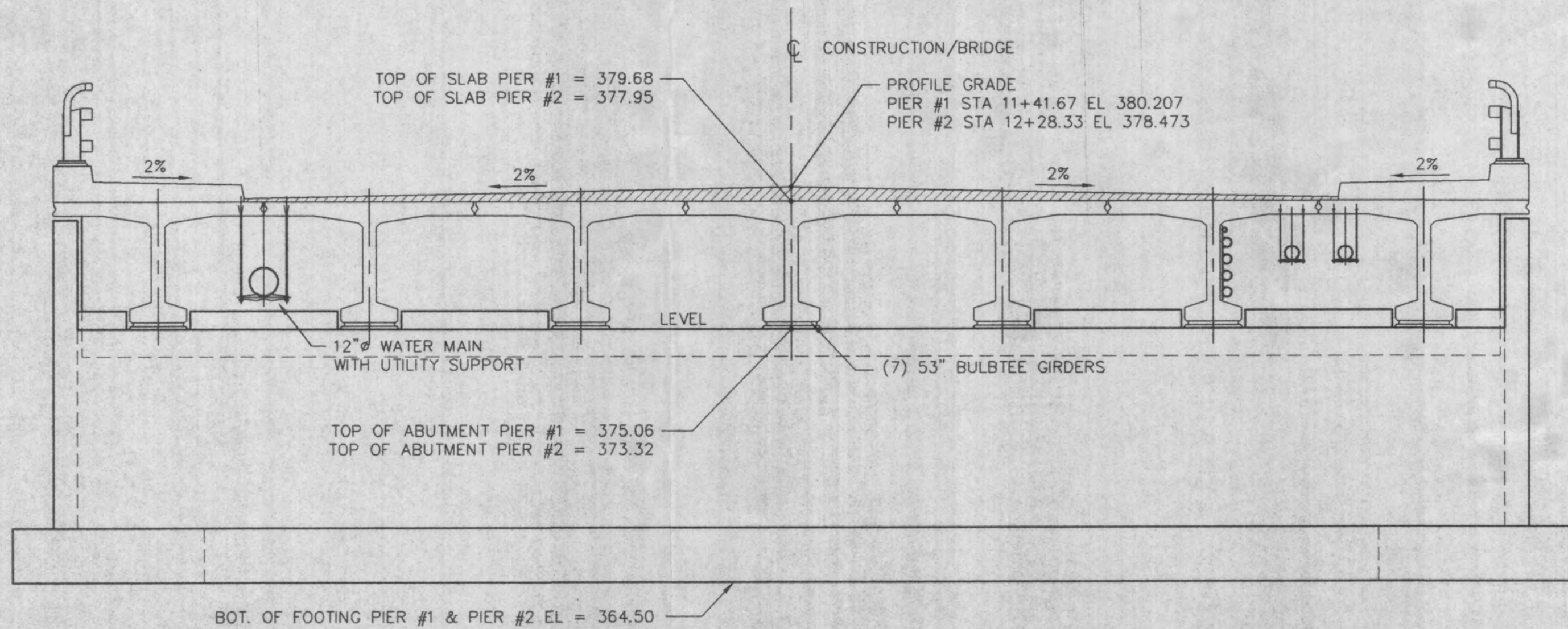
FOUNDATION PLAN

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



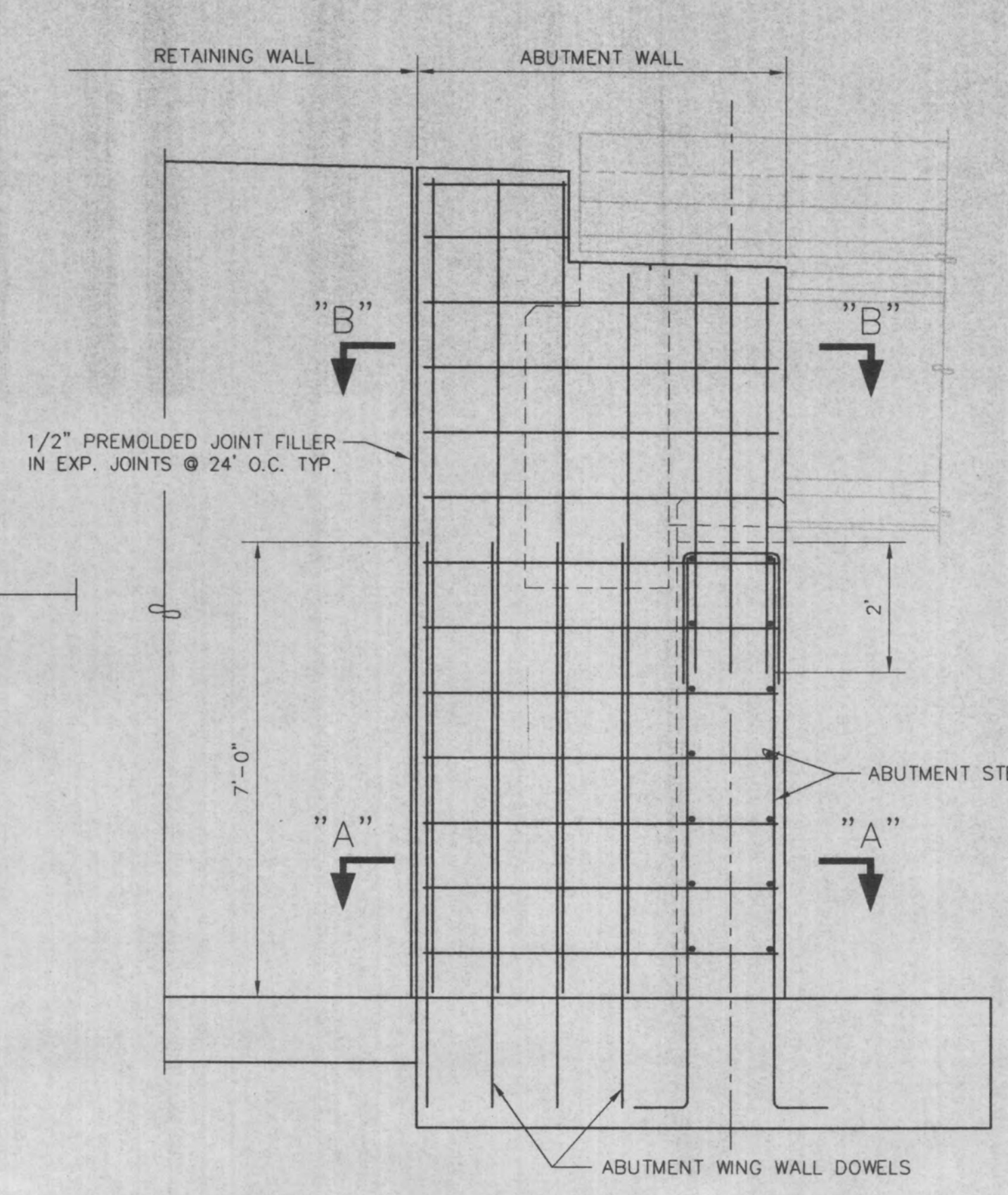
FOOTING PLAN

Scale: 1/4" = 1'-0"



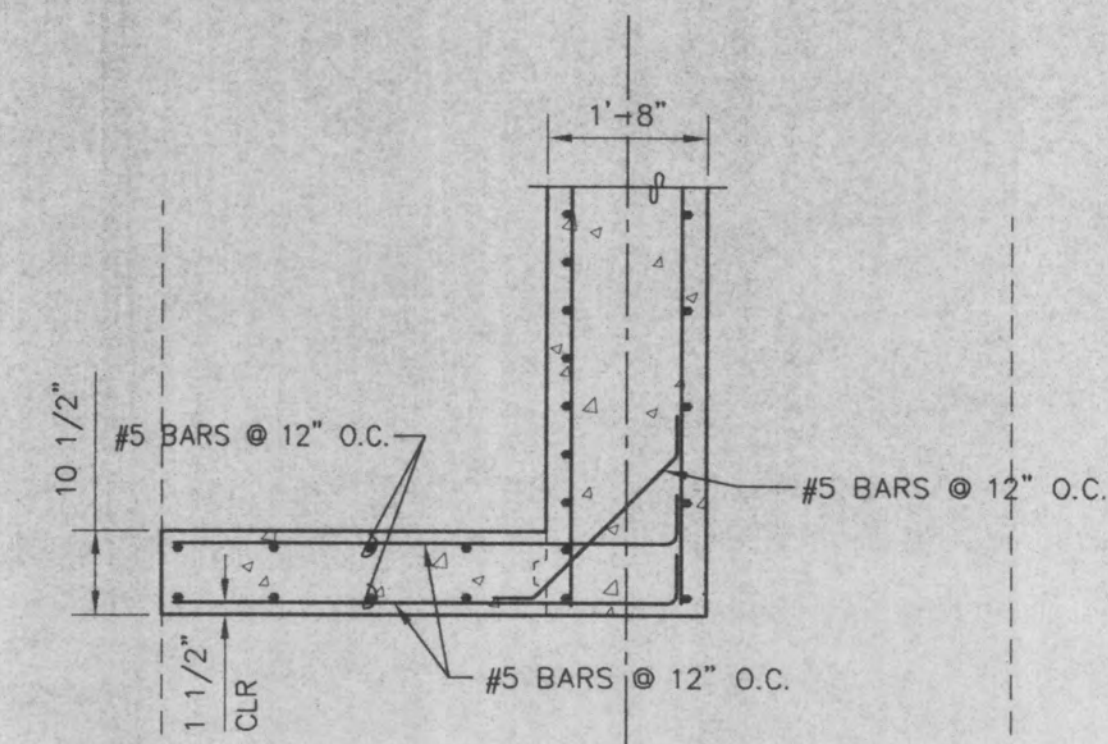
FOOTING ELEVATION

Scale: 1/4" = 1'-0"

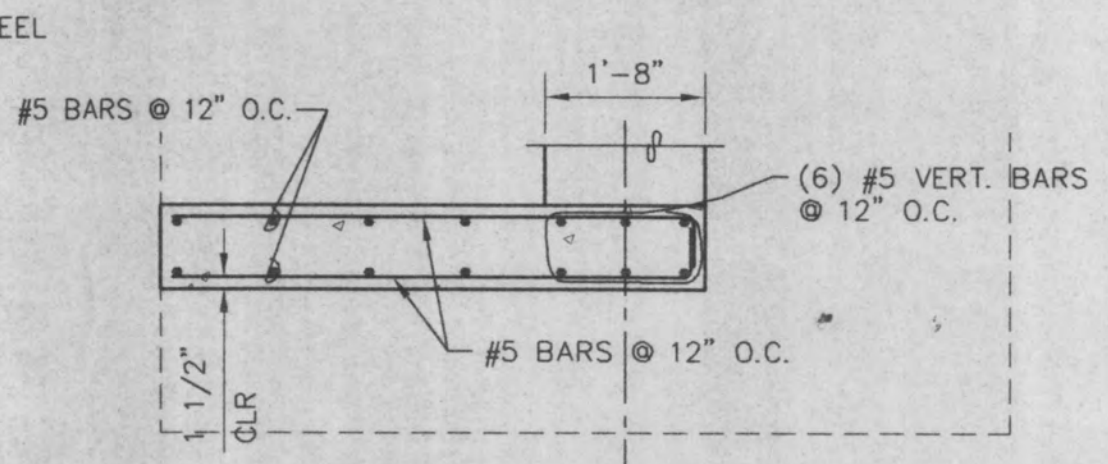


WING WALL ELEVATION

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

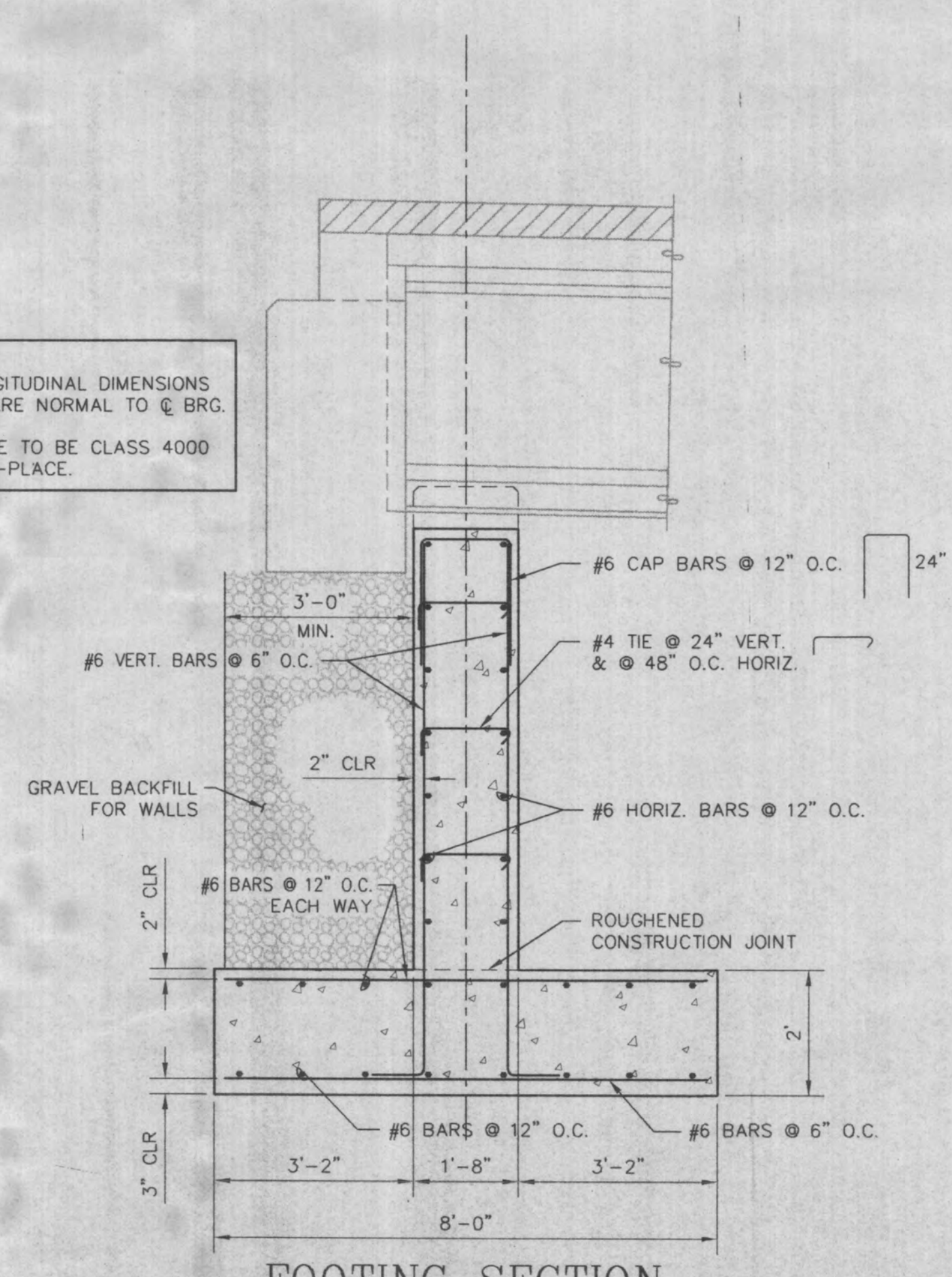


SECTION "B-B"



SECTION "A-A"

NOTE:
ALL LONGITUDINAL DIMENSIONS
SHOWN ARE NORMAL TO C. BRG.
CONCRETE TO BE CLASS 4000
CAST-IN-PLACE.



FOOTING SECTION

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

JF

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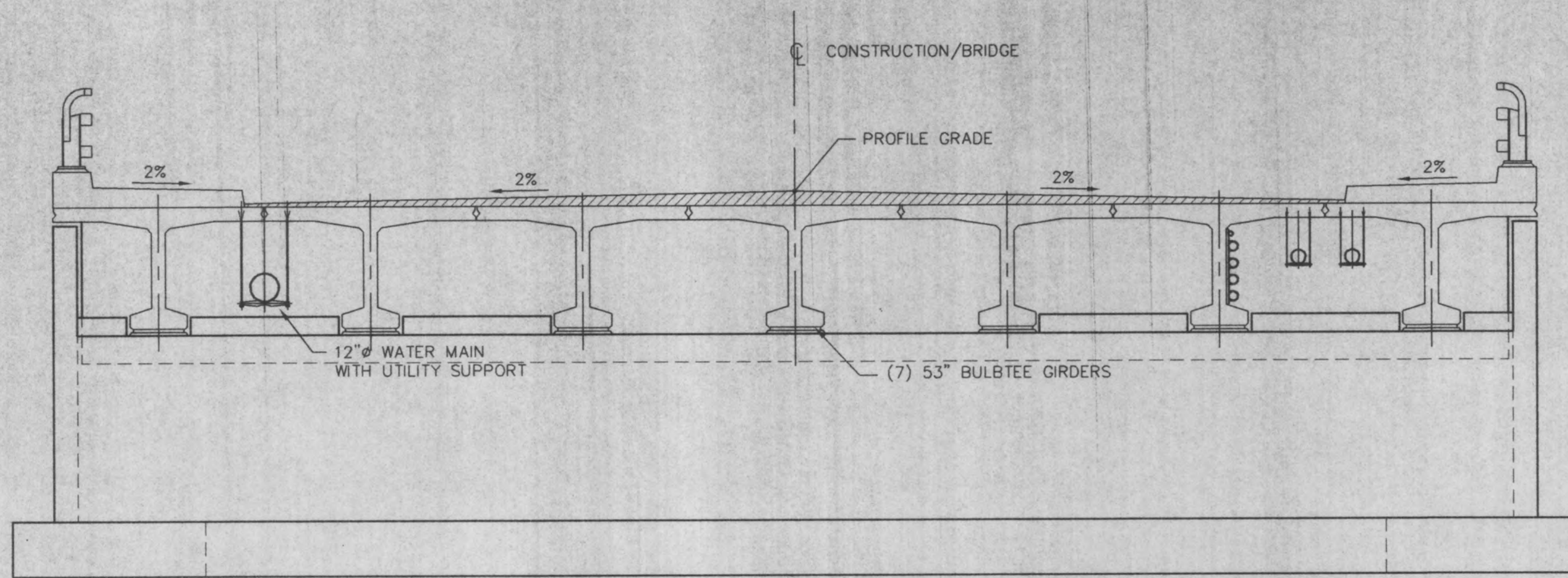
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CROWN RIVER ESTATES
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SNOWHOMISH COUNTY
WASHINGTON

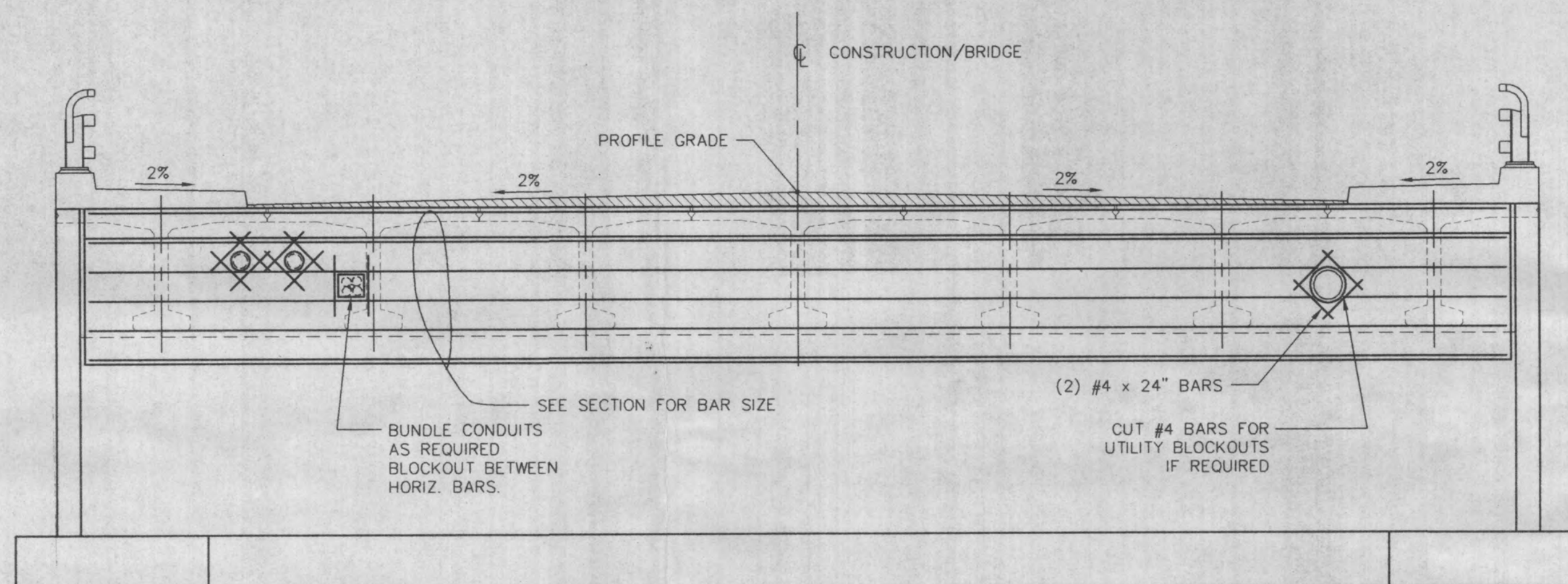
FOUNDATION PLAN

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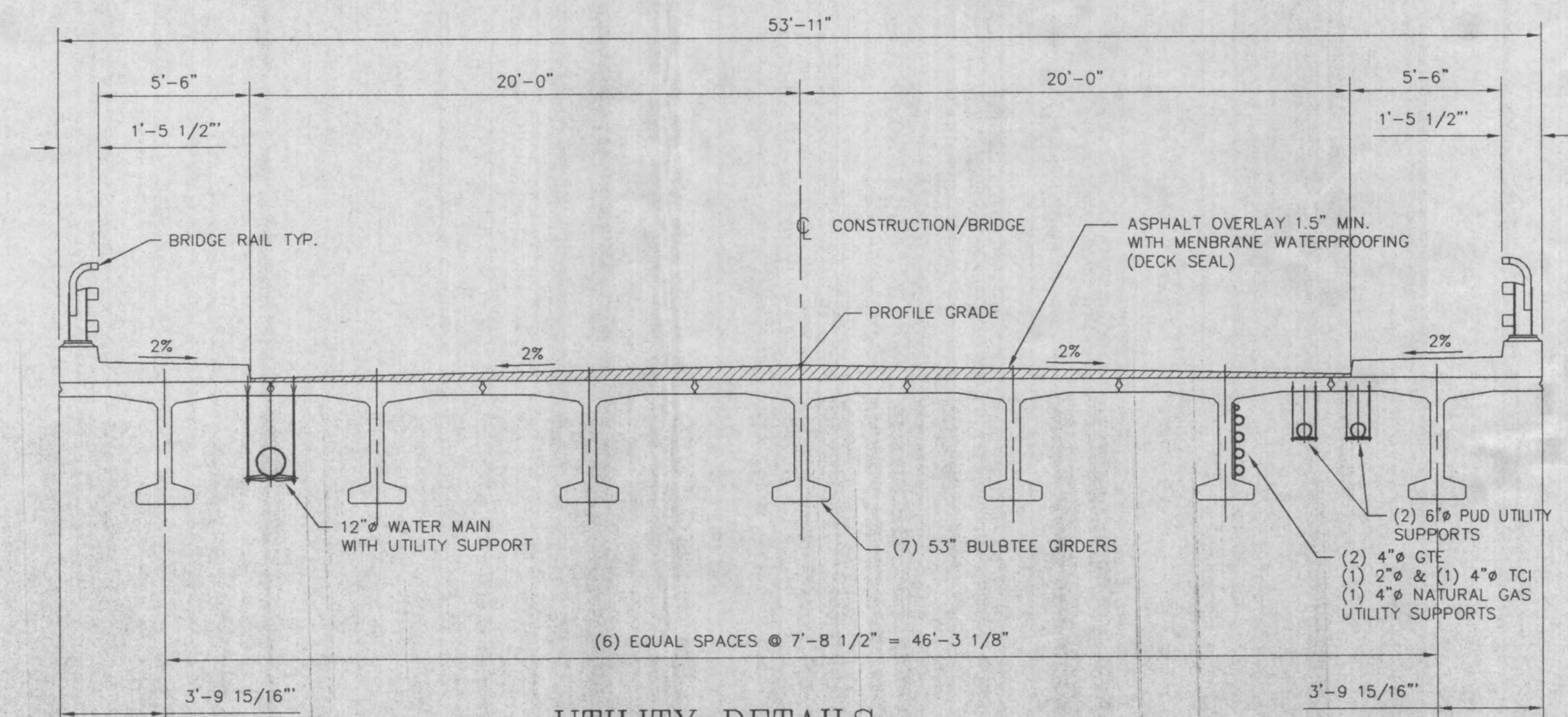
ABUTMENT FACE ELEVATION

Scale: 1/4" = 1'-0"



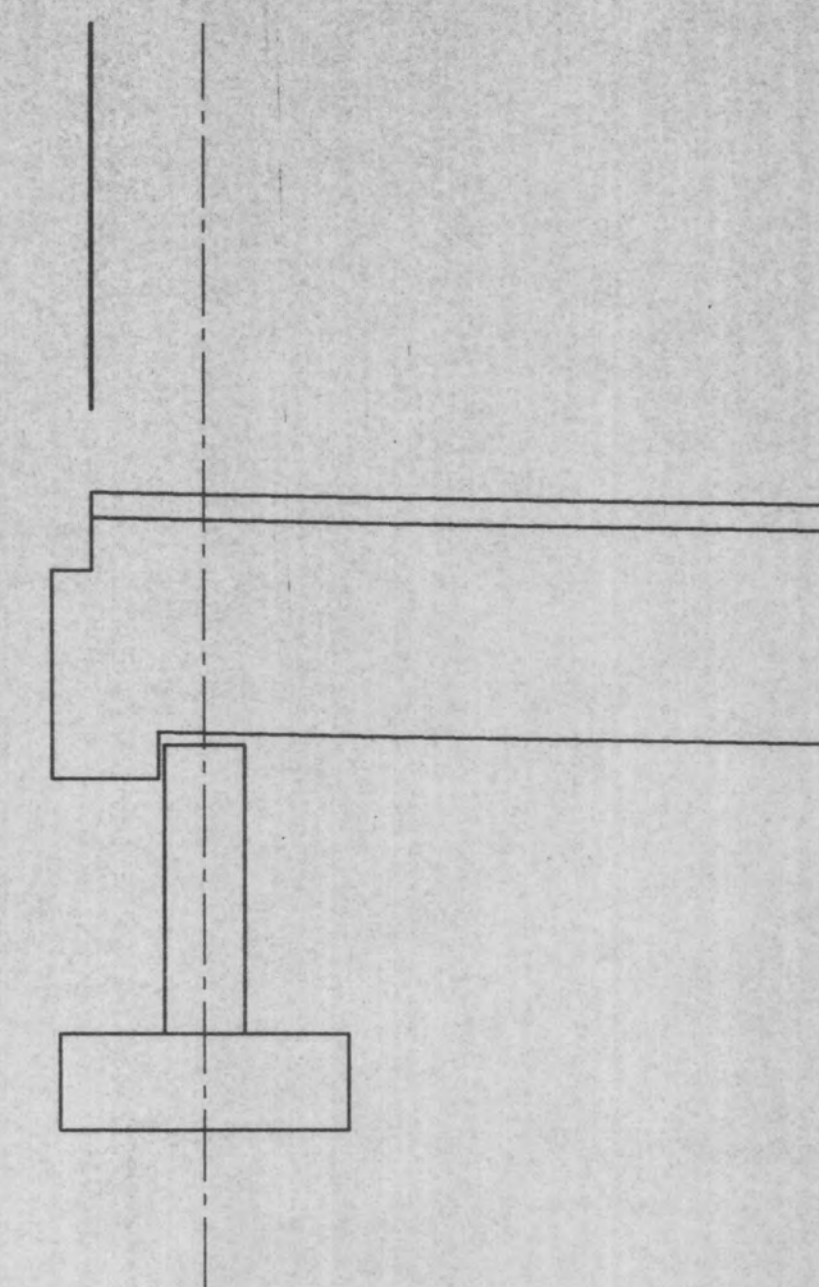
END DIAPHRAGM BACK ELEVATION

Scale: 1/4" = 1'-0"



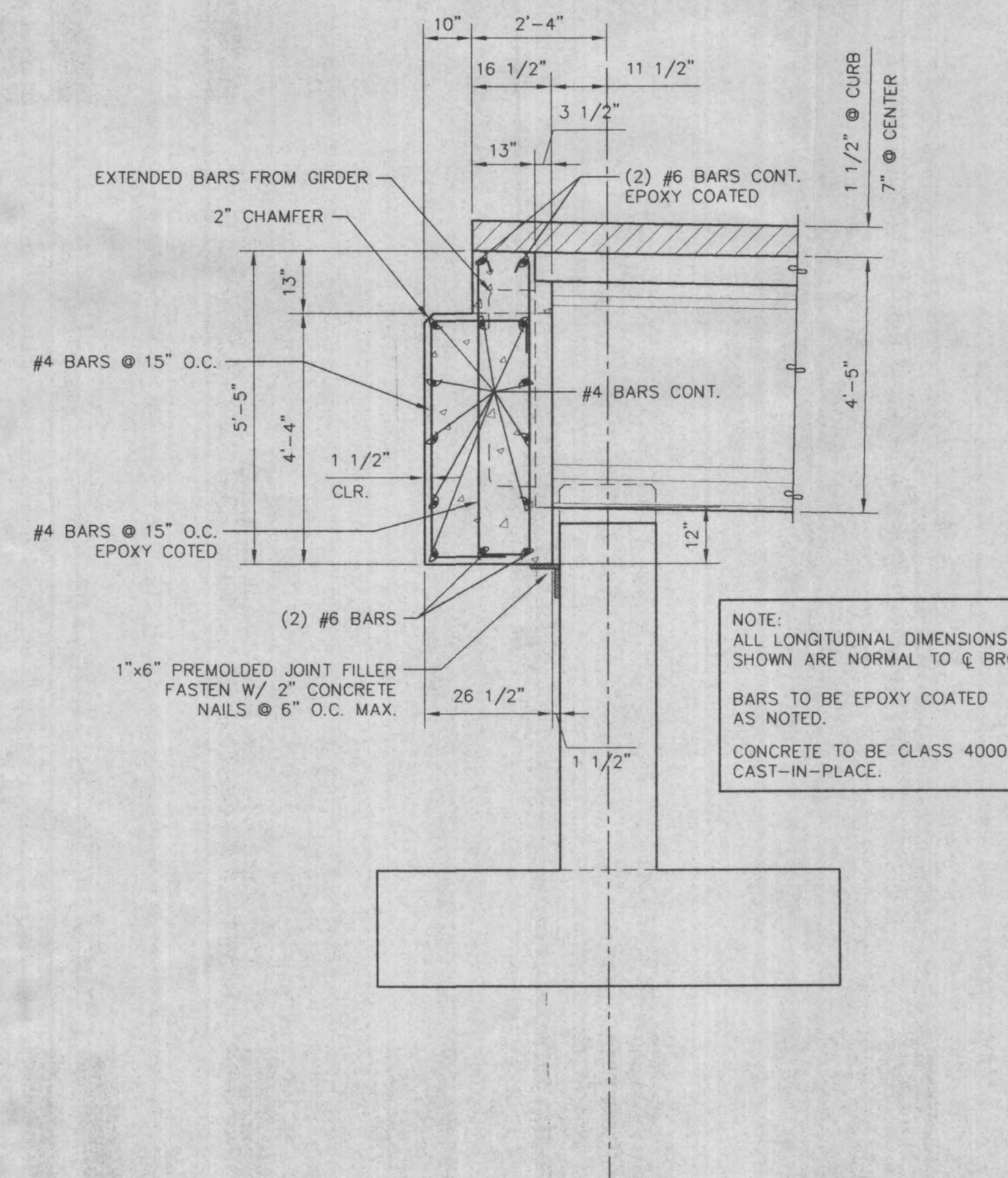
UTILITY DETAILS

Scale: 1/4" = 1'-0"



END DIAPHRAGM SECTION

Scale: 1/4" = 1'-0"



END DIAPHRAGM SECTION

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

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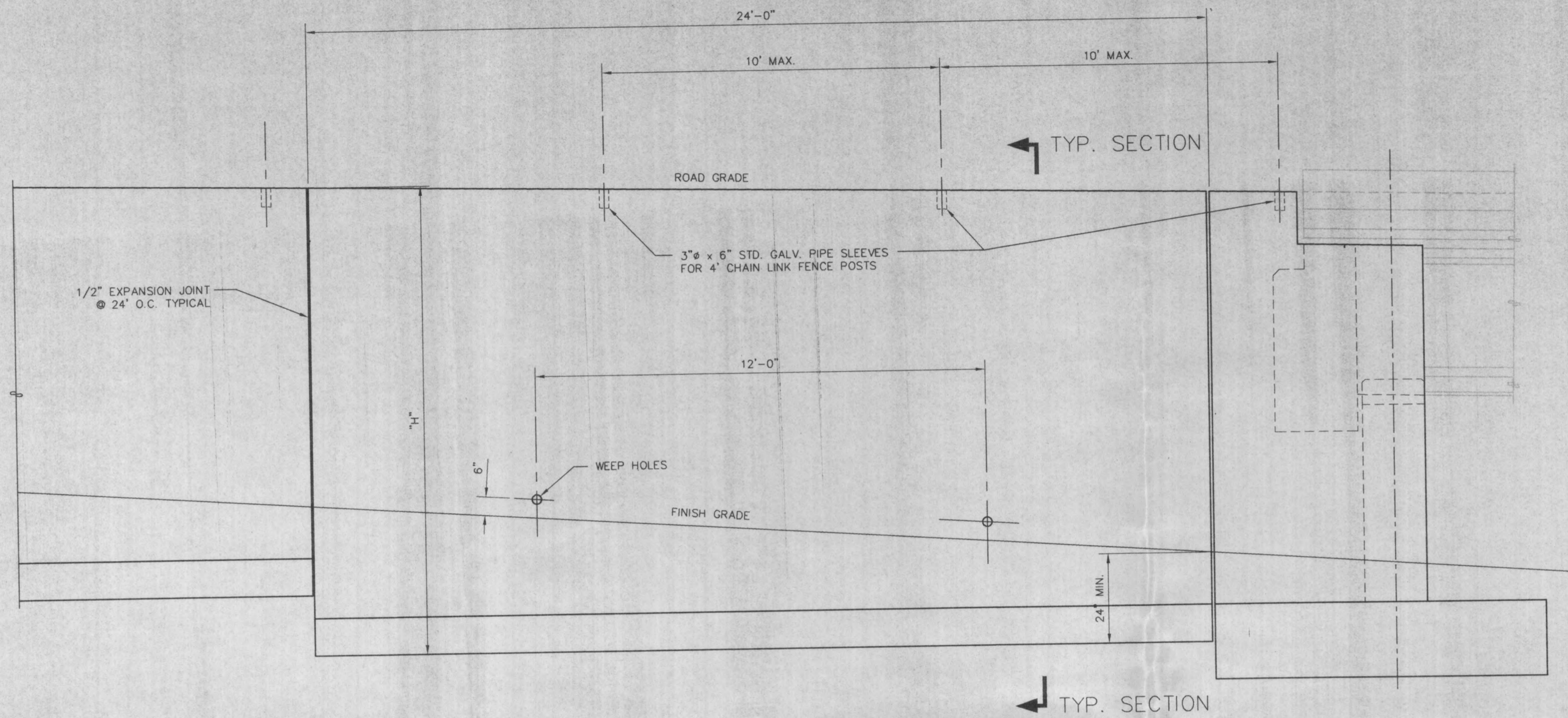
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 SNOHOMISH COUNTY WASHINGTON

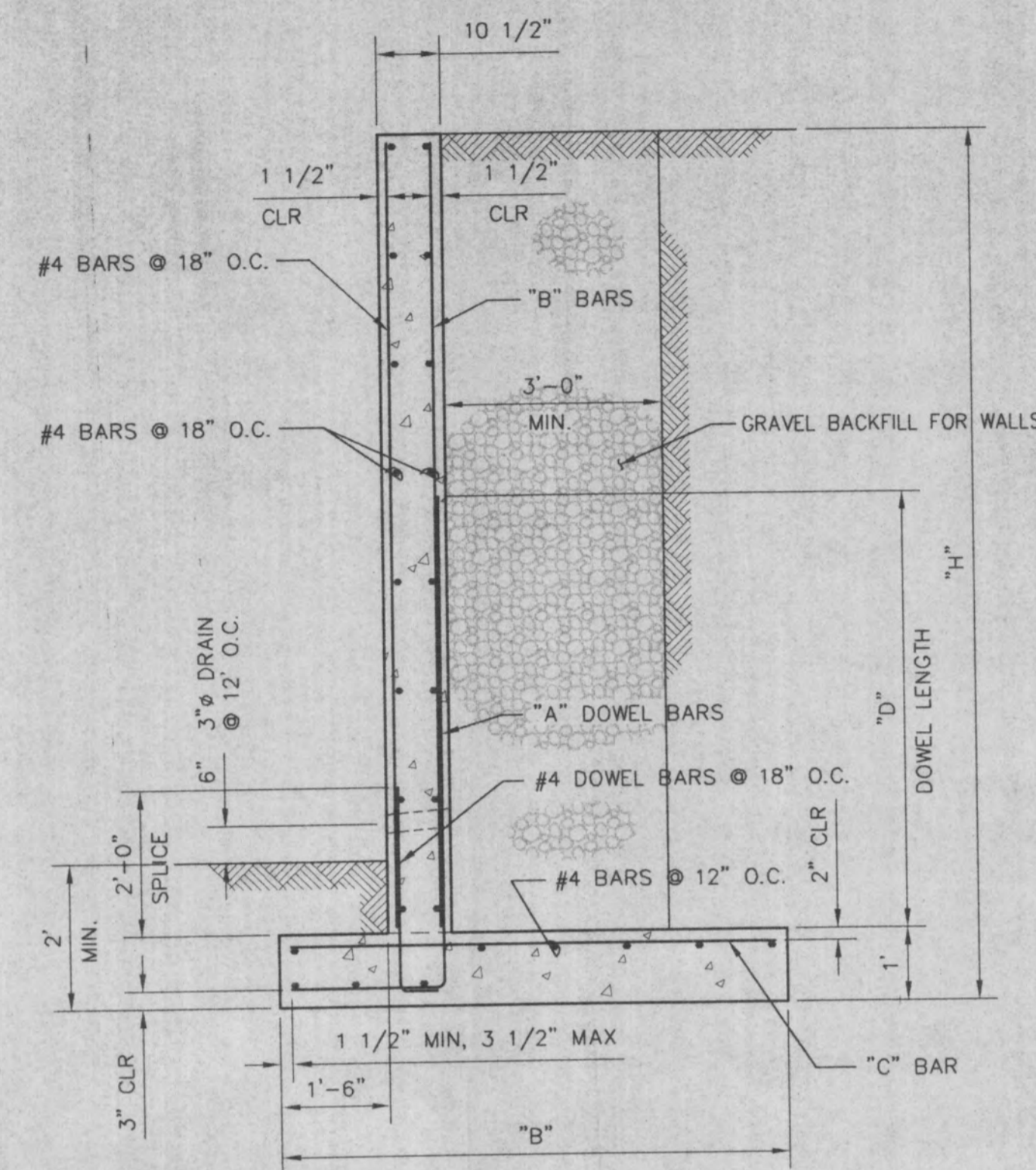
BRIDGE DIAPHRAGMS

DESIGNED	E.V.F.
DRAWN	G.W.B.
CHECKED	E.V.F.
DATE	7/27/98
PROJECT	1935
FILENAME	1935B3.DWG
PLOT AT	1 = 48
SCALE	AS NOTED



TYPICAL ELEVATION RETAINING WALLS

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



TYPICAL SECTION RETAINING WALLS

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

REINFORCING BAR SCHEDULE

"H"	DIMENSION		"A" BARS DOWELS	"B" BARS	"C" BARS
	"B"	"D"			
14'	8'	7'	#6 @ 6"	#6 @ 12"	#6 @ 12"
12'	7'	6'	#6 @ 6"	#6 @ 12"	#5 @ 12"
10'	6'	5'	#6 @ 12"	#6 @ 12"	#5 @ 12"
8'	5'	4'	#6 @ 12"	#6 @ 12"	#5 @ 12"
6'	5'-6"	4'	#6 @ 12"	#6 @ 12"	#5 @ 12"



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REVISIONS	BY	DATE
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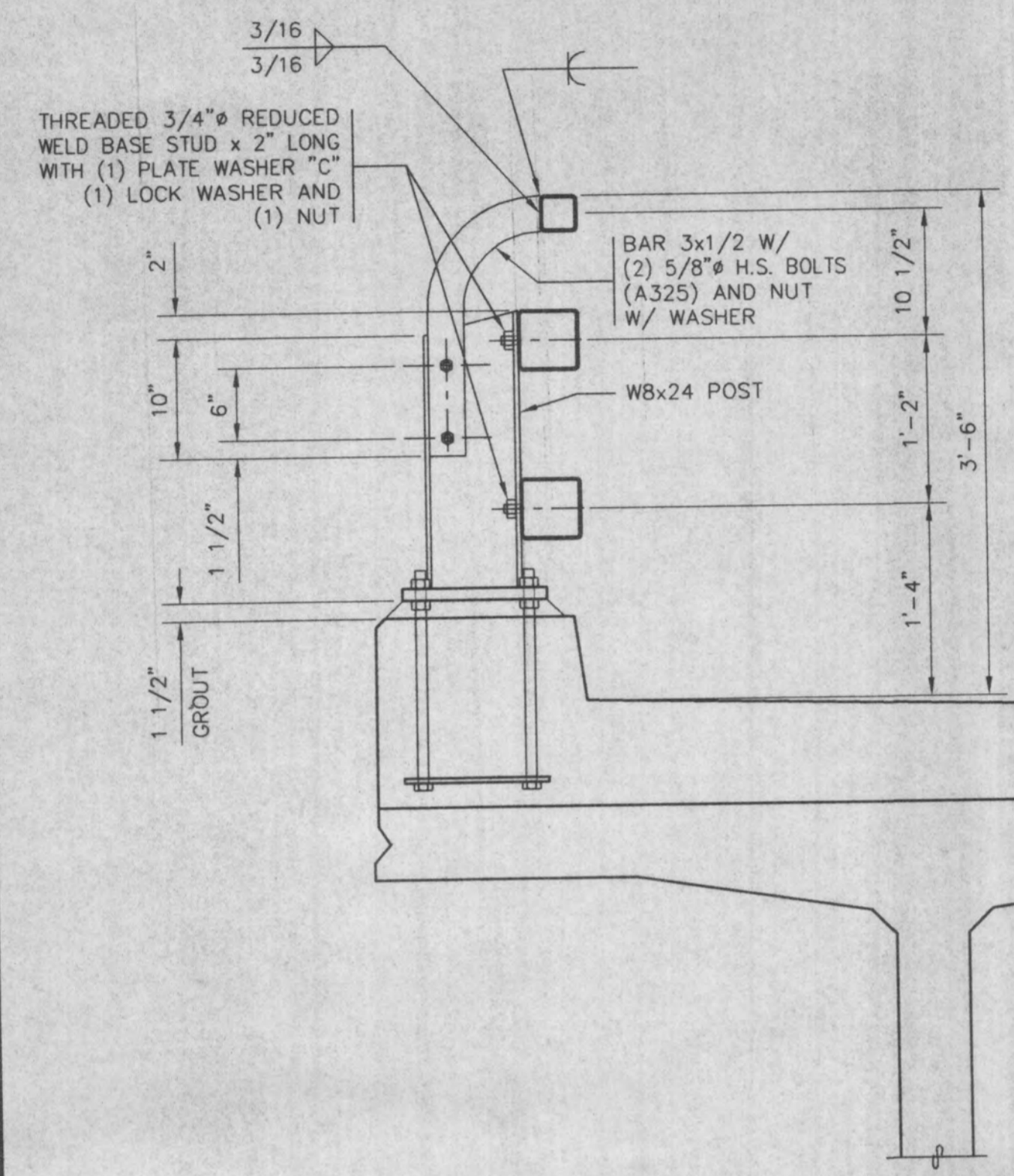
CROWN RIVER ESTATES
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 SNOHOMISH COUNTY
 WASHINGTON

REVIEW SET

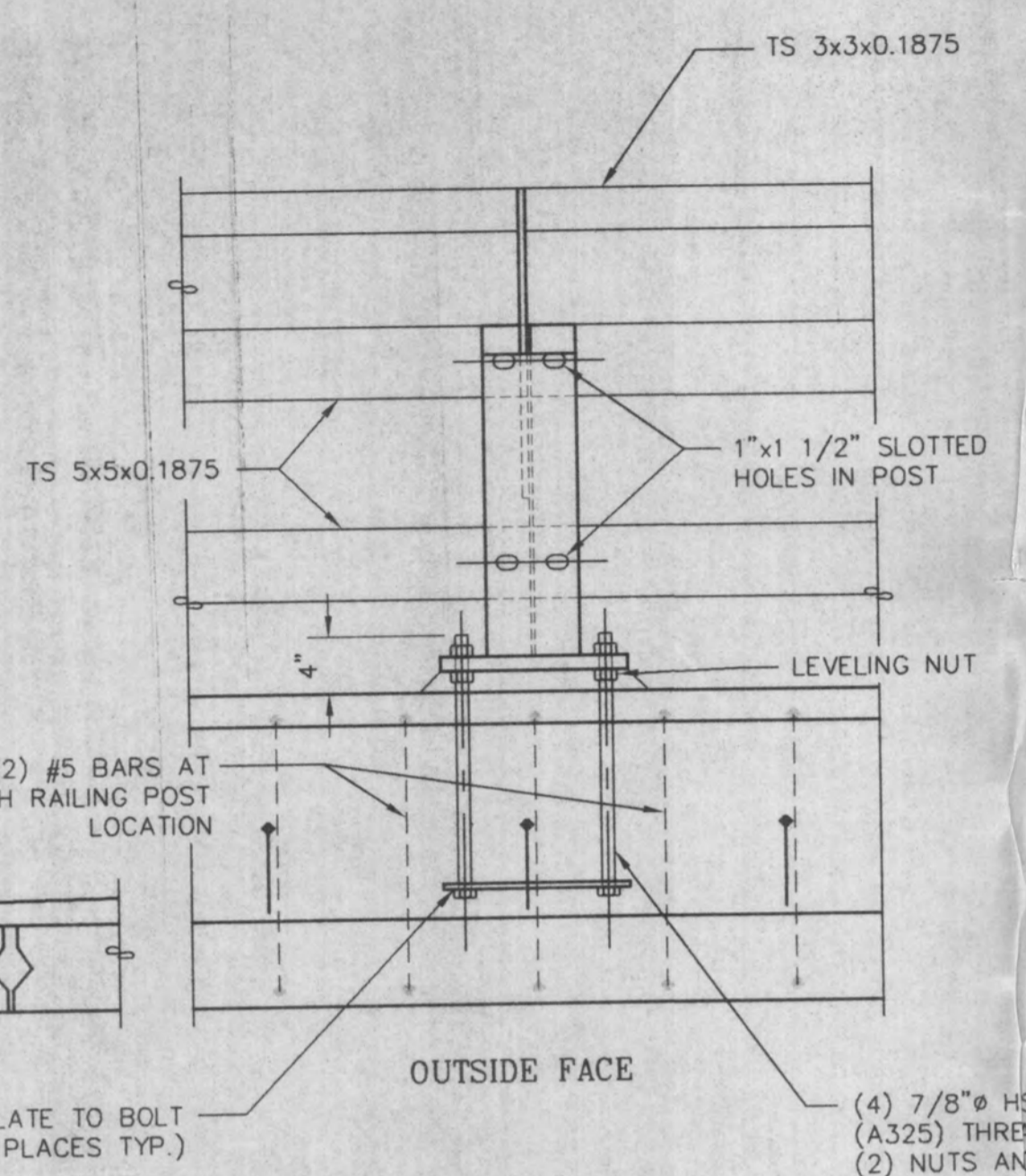
DESIGNED	E.V.F.
DRAWN	G.W.B.
CHECKED	E.V.F.
DATE	7/27/98
PROJECT	1935
FILENAME	1935B4.DWG
PLOT AT	1 = 24
SCALE	AS NOTED

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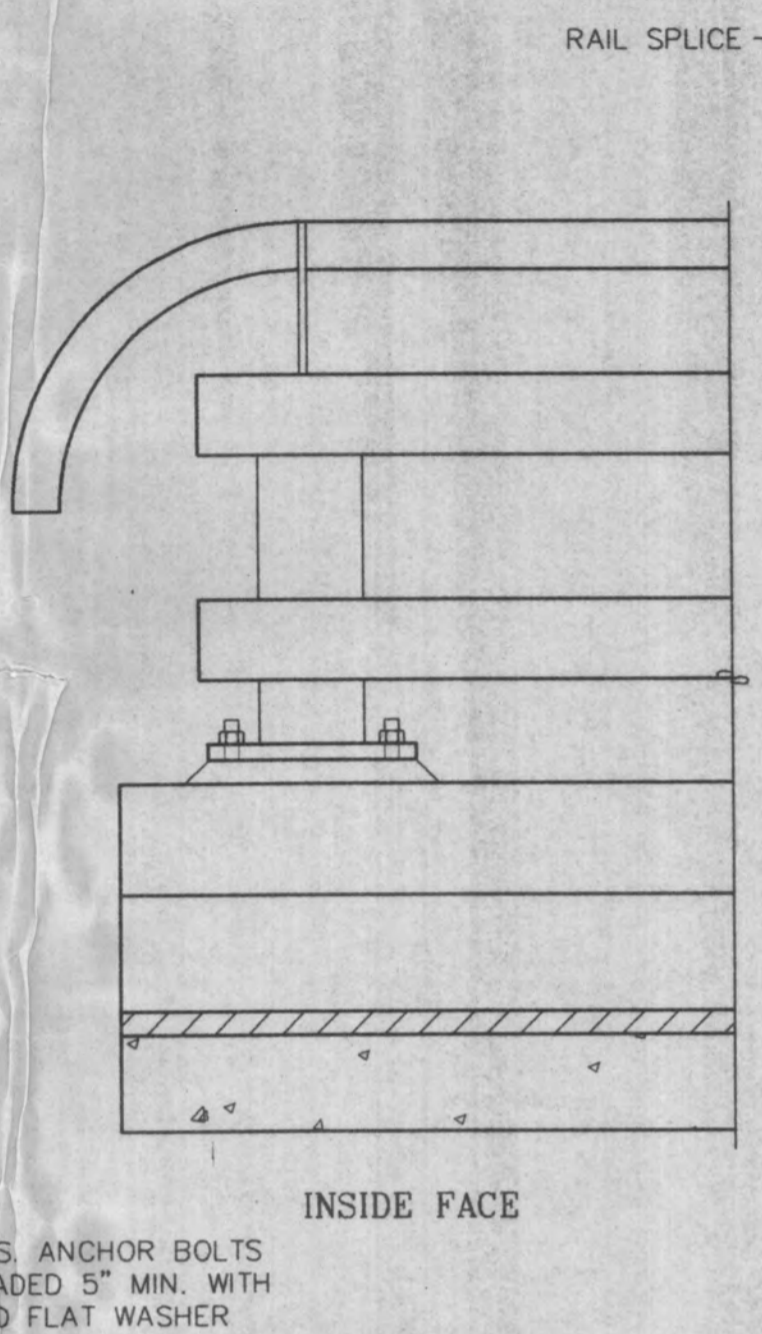
PAGE 4 OF 85



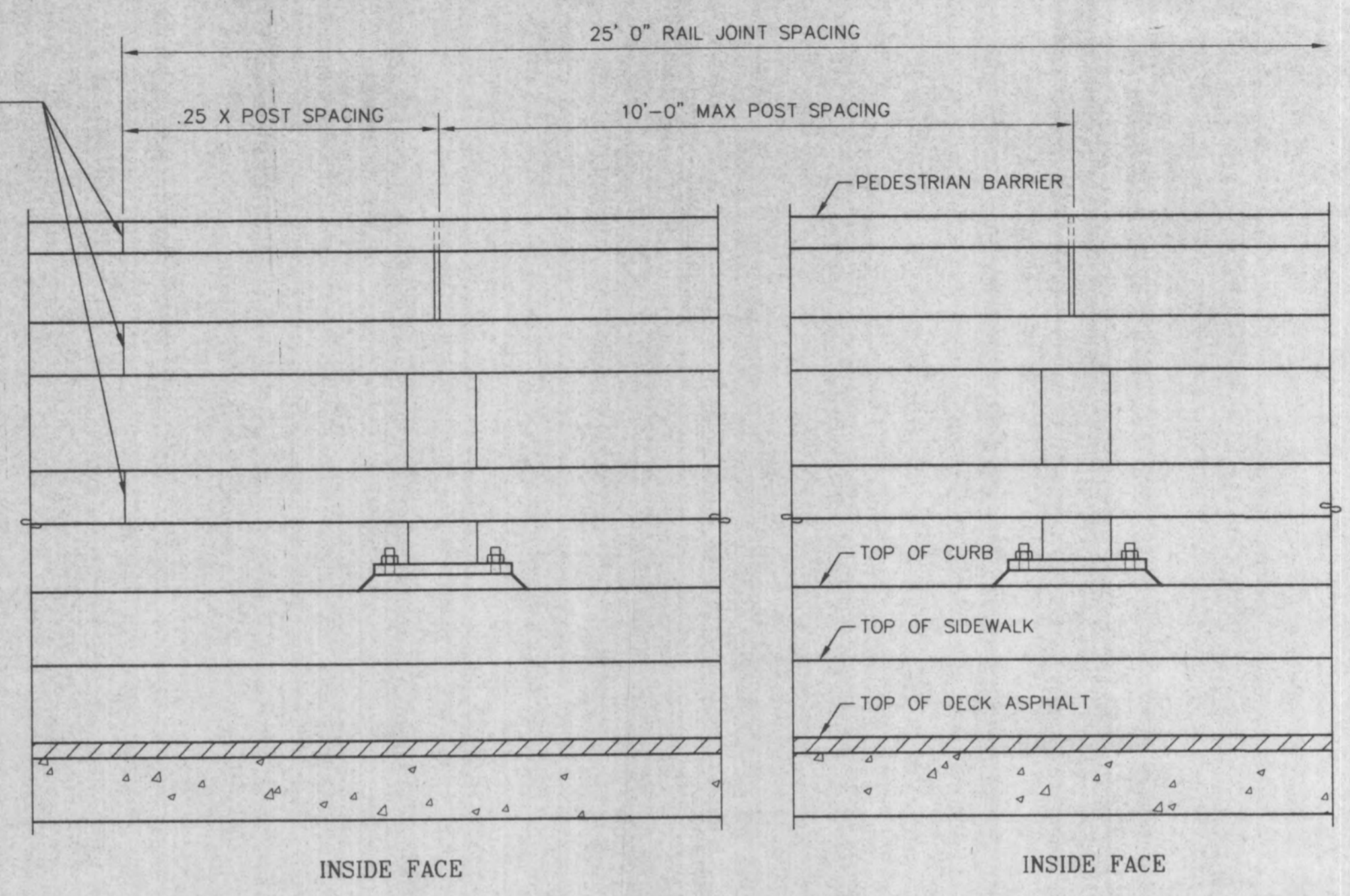
BRIDGE RAIL SECTION
 Scale: 1" = 1'-0"



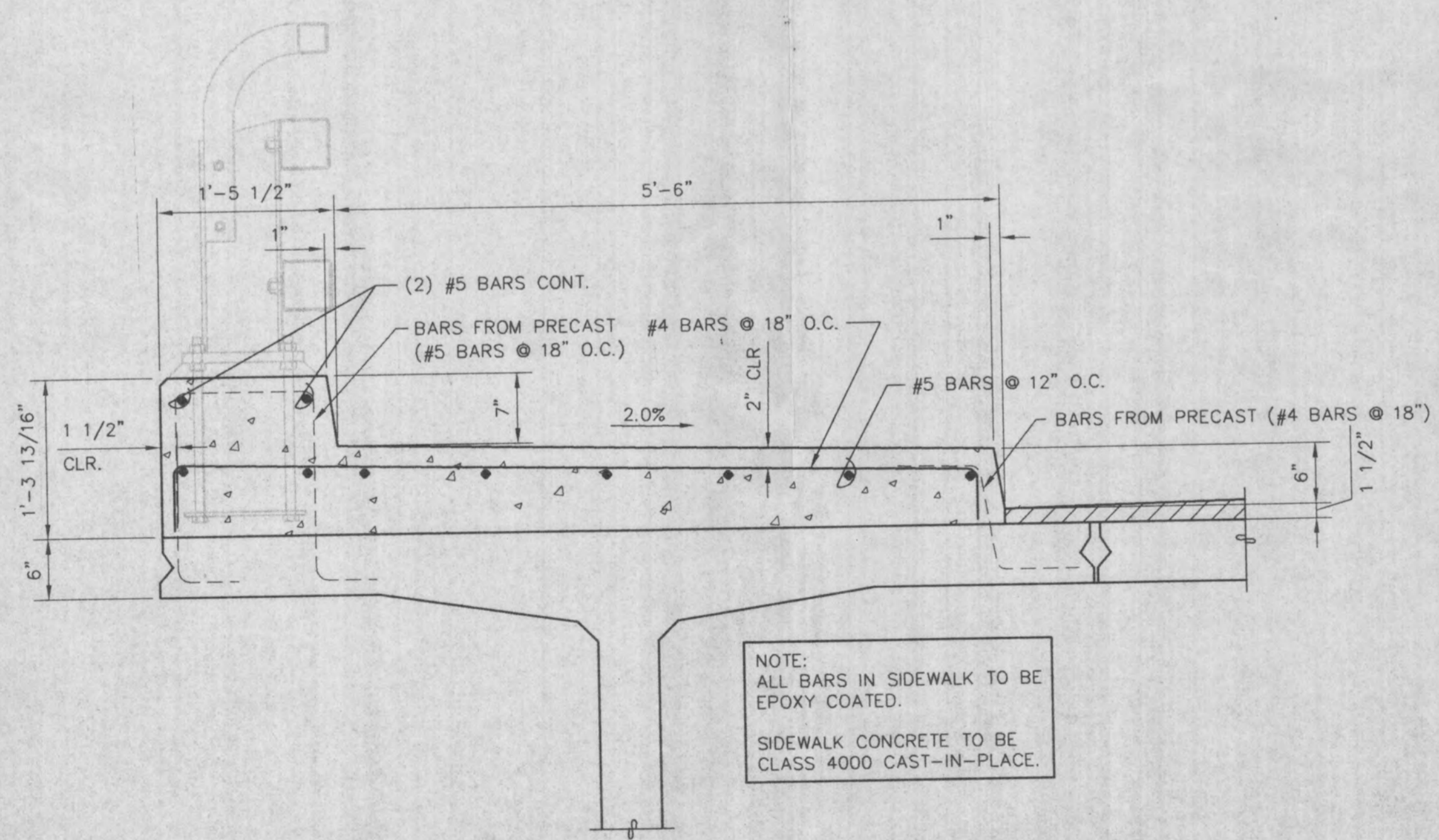
BRIDGE RAIL POST
 Scale: 1" = 1'-0"



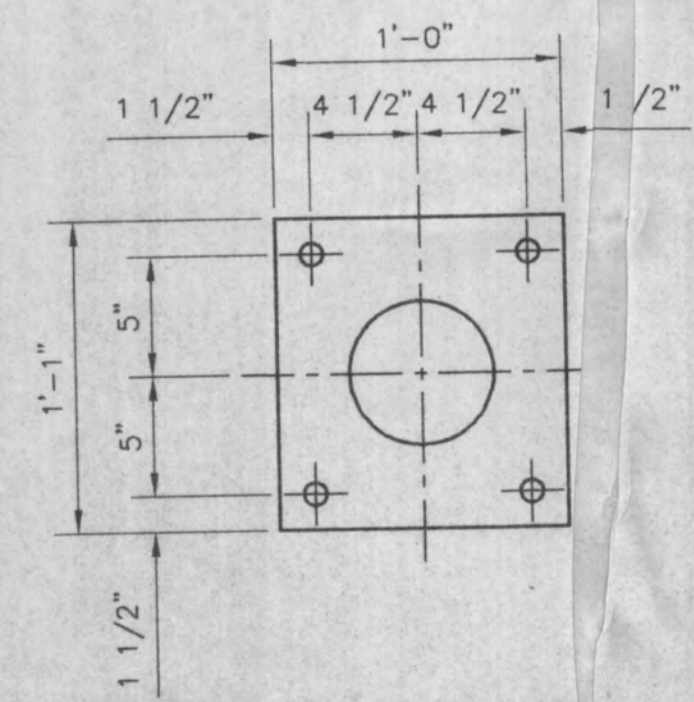
BRIDGE RAIL END
 Scale: 1" = 1'-0"



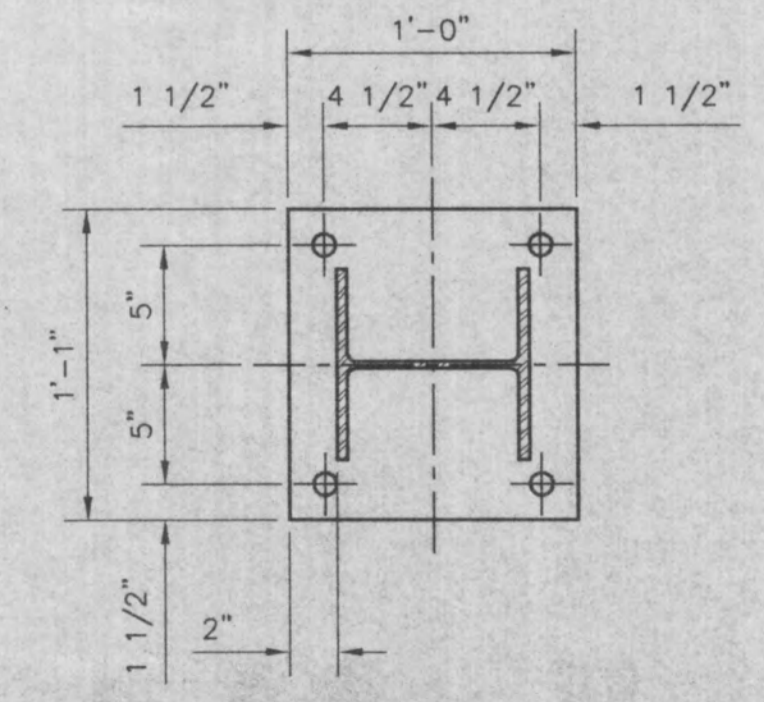
BRIDGE RAIL ELEVATION
 Scale: 1" = 1'-0"



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



ANCHOR PLATE DETAIL
 Scale: 1 1/2" = 1'-0"



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

REVISIONS	BY	DATE
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CROWN RIVER ESTATES
186th STREET BRIDGE
 STAR DEVELOPMENT, INC.
 SNOHOMISH COUNTY
 WASHINGTON
RAILINGS & MISC. DETAILS

DESIGNED	E.V.F.
DRAWN	G.W.B.
CHECKED	E.V.F.
DATE	7/27/98
PROJECT	1935
FILENAME	1935B5.DWG
PLOT AT	1 = 12
SCALE	AS NOTED