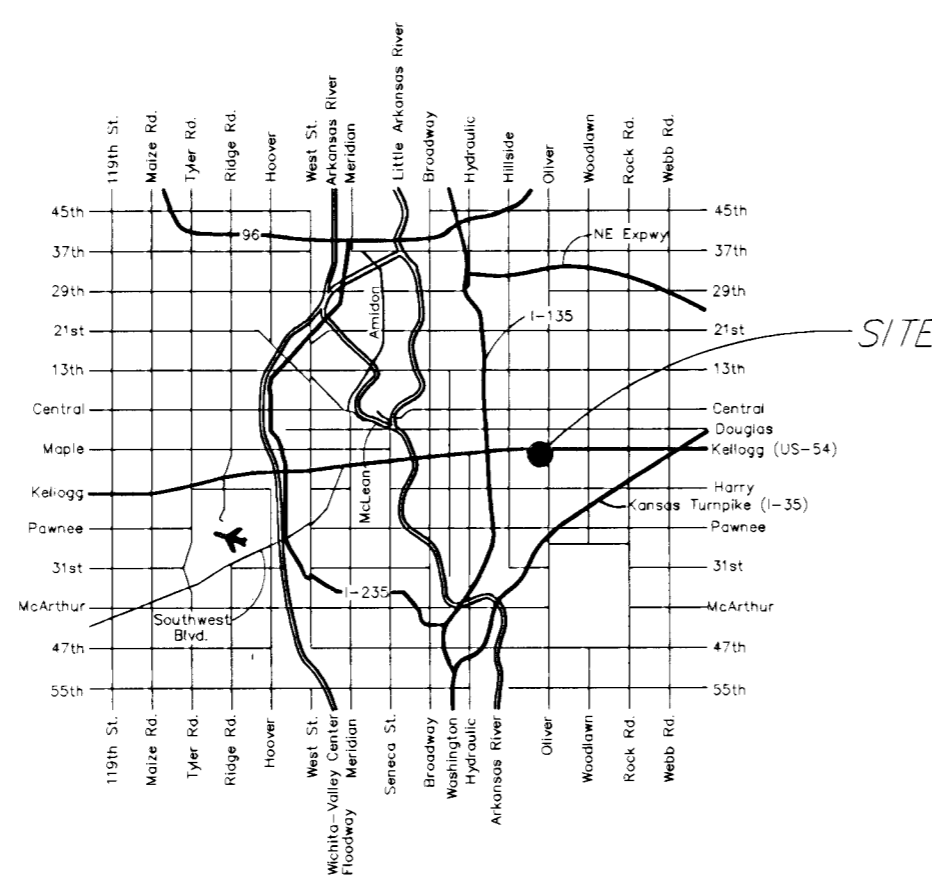
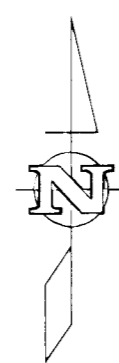


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2. Typical Section - Pavement Details
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6. Sanitary Sewer Plan & Profile
7. Valley Gutter Details
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9. Reinforced Concrete Manhole Details
10. Standard Manhole Details
11. Manhole Adjustment Details
12. Typical Section - Rip-Rap & Gabion Details
13. Triple 10x9' RCBC
14. Wingwall Details
15. Auxiliary Box Details
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- 21-23. Street Cross-Sections



LOCATION MAP

**ORME STREET PHASE I
STREET IMPROVEMENTS**

Phase I

Project Number

472-83229 OCA 702314

CITY OF WICHITA, KANSAS

Michael E. Lindebak, P. E., City Engineer

GENERAL NOTES

Contractor will be required to provide notice to utility companies a minimum of twenty-four (24) hours prior to any excavation, as follows:

Kansas One-Call

The Contractor must notify the following in case of an emergency:

Cablevision	262-4270 or 263-2061
K.P.L. Gas Service Company	383-8650
Kansas Gas & Electric Company	383-8600
Arkla Gas Company	942-8350
Southwestern Bell Telephone Company	1-571-2611
City of Wichita Water Department	268-4908
City of Wichita Sewer Department	268-4071
Kansas Gas Service	832-3168 or 832-3167
Peoples Natural Gas	942-8811 or 1-800-303-0357

2. Existing utilities and their locations, as shown on the plans, represent the best information obtainable for design. Location information has been obtained from the various utility companies and is either from company record drawings or company-provided field locations. The Contractor will be required to work around existing utilities which do not conflict with proposed construction.

3. The Contractor to verify utility locations prior to construction of this project.

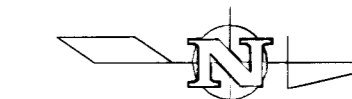
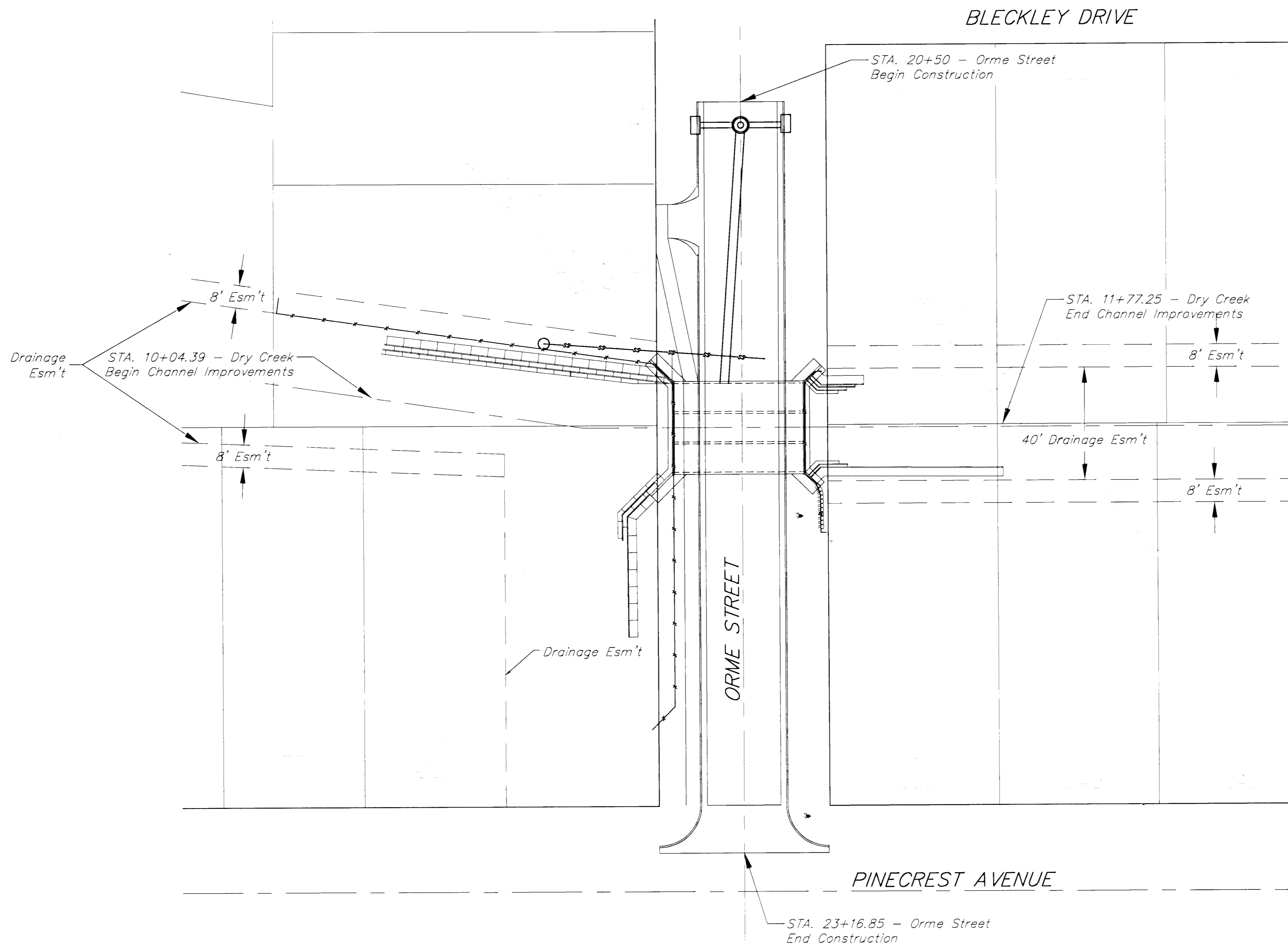
4. Utility service and installation shall be coordinated with the respective utility owners. Contacts are:

Kansas Gas Service - James Stoltz	831-3122
K.G.E. - Russ Chitwood	261-6251
Peoples Natural Gas - John Stark	942-8811
Wichita Water - Paul Bryant, Bill Perkins	268-4555
Southwestern Bell - Jim Tobin	268-2759
Multimedia Cablevision - Mark Anaya	262-4270

5. All lawn/turf areas disturbed by construction of proposed improvements shall be restored with sod. All sodding work shall be in accordance with the City of Wichita standard specifications and the City of Wichita administrative regulation No. AR7B which governs cleanup and replacement following construction. All costs for this work shall be subsidiary to the lump sum price bid for "Site Restoration".

6. Traffic affected by the construction of this project shall be handled in accordance with the latest edition of the Manual on Uniform Traffic Control Devices.

7. The Contractor shall be responsible for preserving property irons. The Contractor will be required to re-establish any property irons which are damaged or destroyed by their construction operations. Such irons shall be re-established by a licensed land surveyor in accordance with state law.

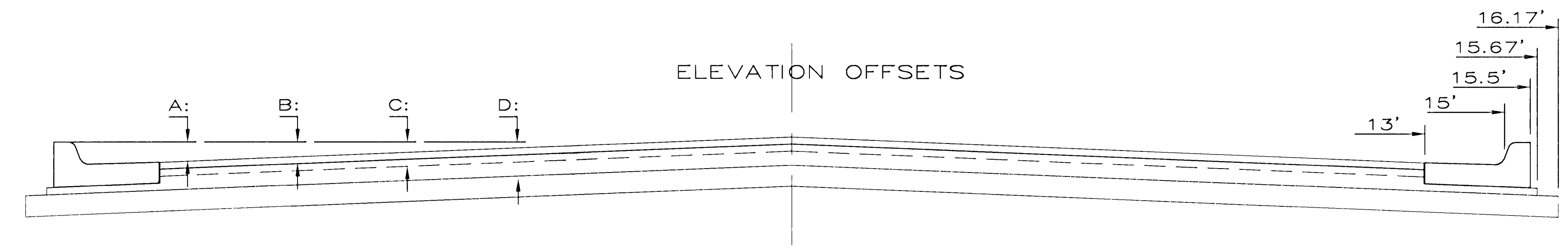
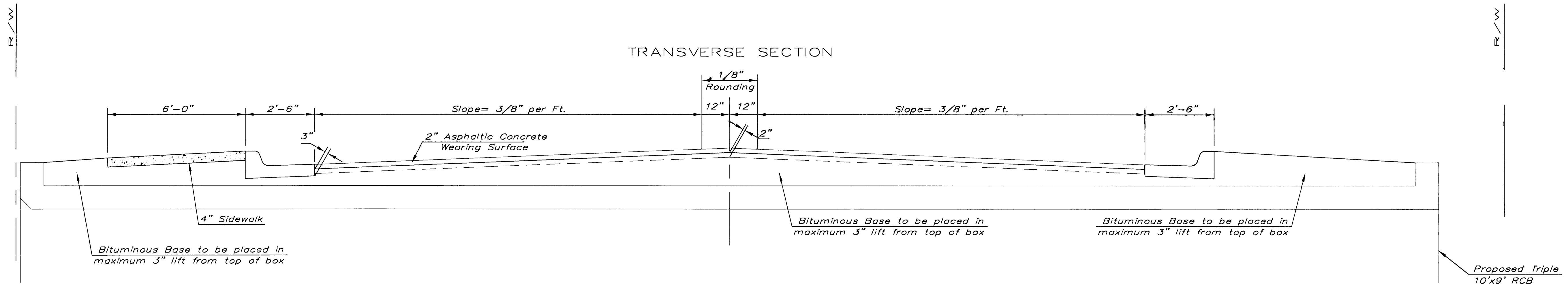
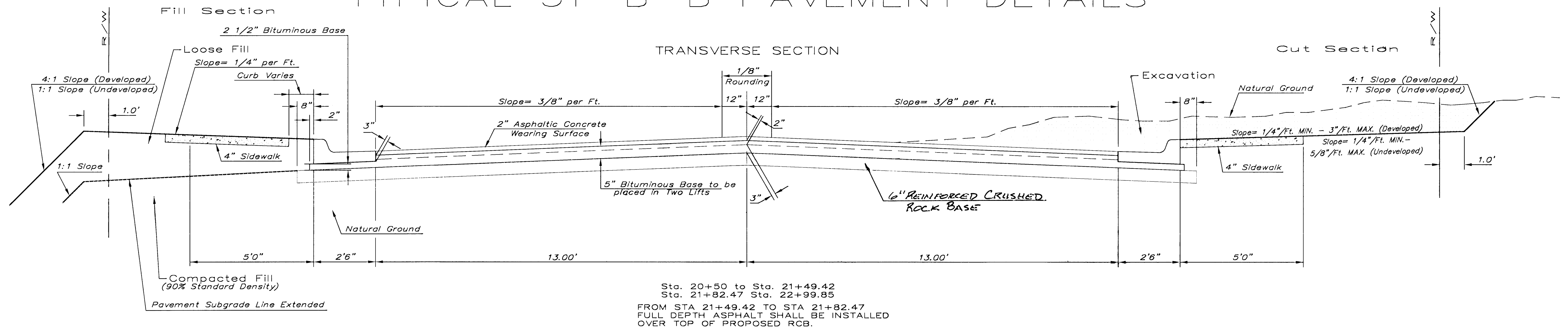


Michael E. Lindebak
City Engineer

AUSTIN P.A.
ENGINEERING SERVICES
355 N. Waco, Suite 200 Wichita, KS 67202
316/262-1281 fax: 316/262-6773

© Austin, Makoz, P. A.

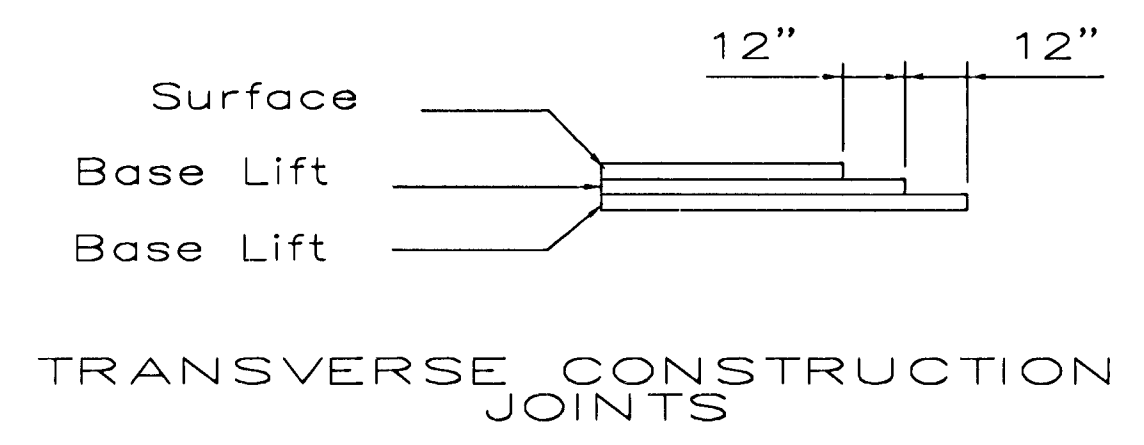
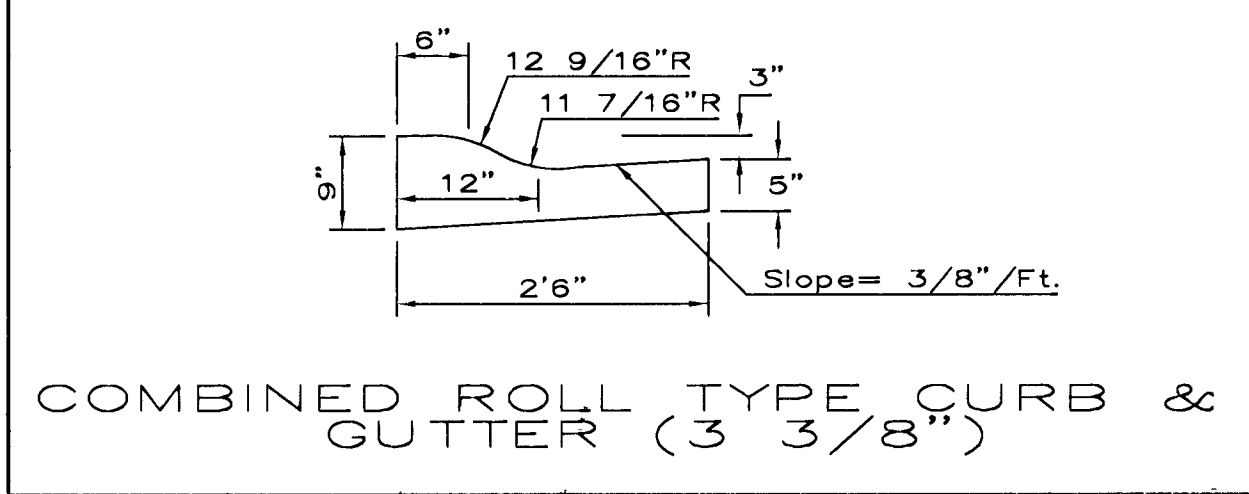
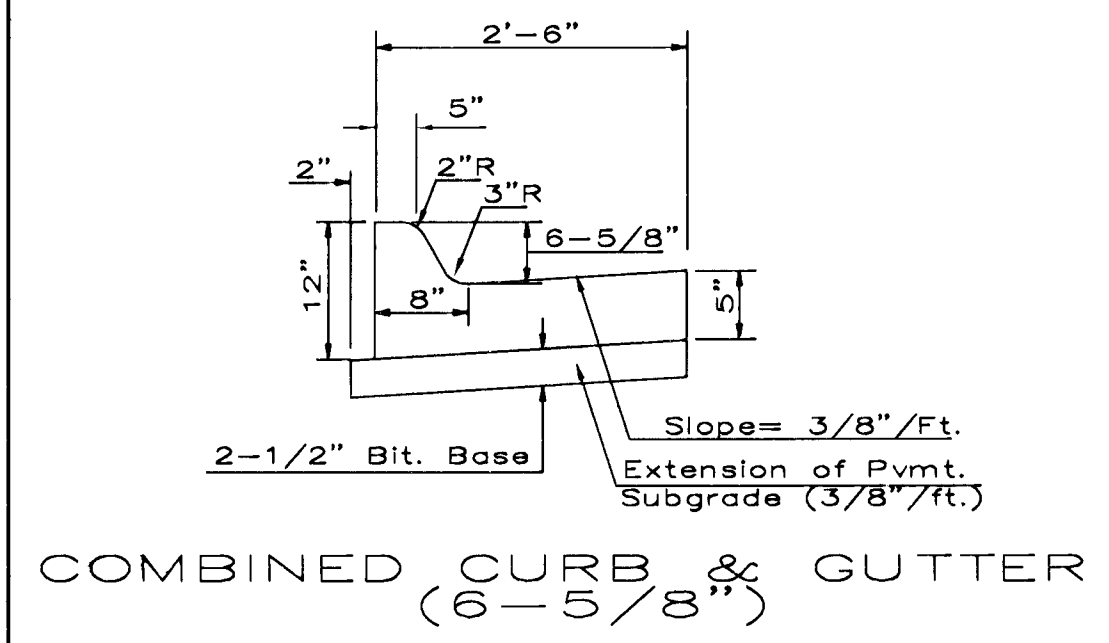
TYPICAL 31' B-B PAVEMENT DETAILS



	DISTANCE FROM CENTERLINE (LT. & RT.)												
	0'	2'	4'	6'	7.5'	10'	12'	13'	15'	15.5'	15.67'	16.17'	
A: Top of Curbs to Top of Surface Lift	0.10	0.14	0.21	0.27	0.32	0.39	0.46	0.49	-	-	-	-	
B: Top of Curbs to Top of Upper Base Lift	0.27	0.31	0.38	0.44	0.49	0.56	0.63	0.66	-	-	-	-	
C: Top of Curbs to Top of Lower Base Lift	0.44	0.49	0.57	0.64	0.70	0.79	0.87	0.90	0.98	1.00	1.00	-	
D: Top of Curbs to Top of Subgrade	0.69	0.73	0.80	0.87	0.93	1.01	1.08	1.12	1.19	1.21	1.21	1.23	

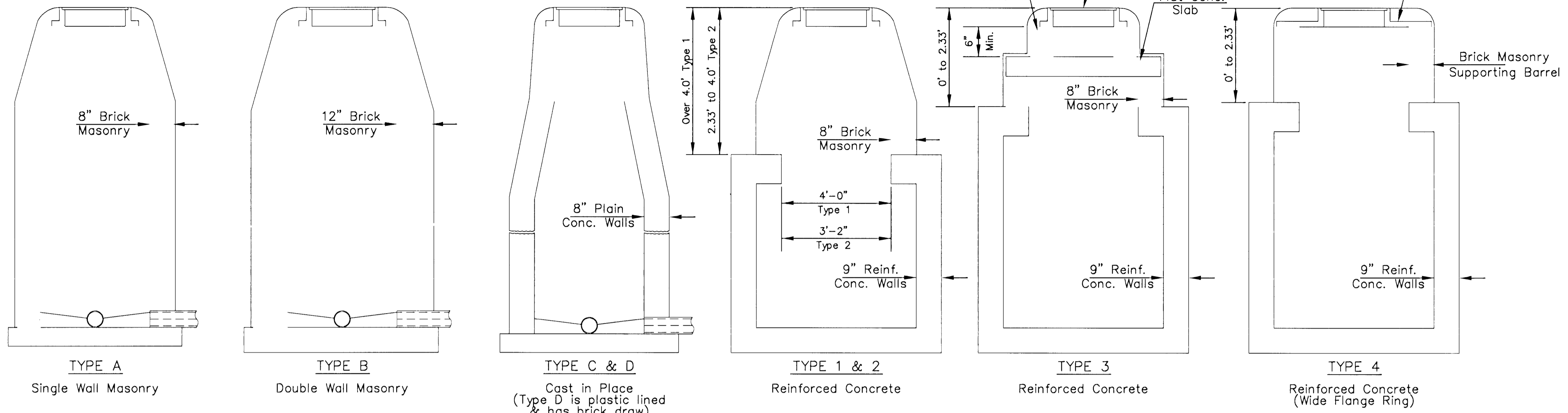
General Notes

- THE ASPHALTIC CONCRETE PAVEMENT BETWEEN THE COMBINED CURB AND GUTTER SHALL BE PAID AS SQUARE YARDS OF 7" ASPHALTIC CONCRETE W/ (5" BITUMINOUS BASE.)
- THE BITUMINOUS BASE UNDER AND BEHIND THE COMB. CURB AND GUTTER SHALL BE PAID AS SQUARE YARDS OF 2 1/2" BITUMINOUS BASE.
- A TACK COAT OF EMULSIFIED ASPHALT (SC-1H OR CSS-1H) SHALL BE APPLIED AT AN APPROXIMATE RATE OF 0.05 GALLONS PER SQUARE YARD BETWEEN EACH LIFT OF ASPHALTIC MATERIAL.
- BITUMINOUS BASE AND ASPHALTIC CONCRETE WEARING SURFACE SHALL BE PLACED WITH A LAYDOWN MACHINE HAVING AUTOMATIC CONTROLS FOR LINE AND GRADE.
- CONSTRUCTION JOINTS IN EACH LIFT SHALL BE STAGGERED A MINIMUM DISTANCE OF ONE (1) FOOT FROM JOINTS IN PRECEDING LIFTS AND PLACED SO THAT A JOINT WILL BE CONSTRUCTED ON THE CENTERLINE OF THE TOP LIFT.
- CONTRACTOR TO BID ONLY ONE SUBGRADE TREATMENT ALTERNATE WHEN ALTERNATES ARE PROVIDED IN THE PROPOSAL AND CONTRACT. THE ALTERNATE CHOSEN BY THE SUCCESSFUL BIDDER SHALL BE USED IN CONSTRUCTING THIS PROJECT.

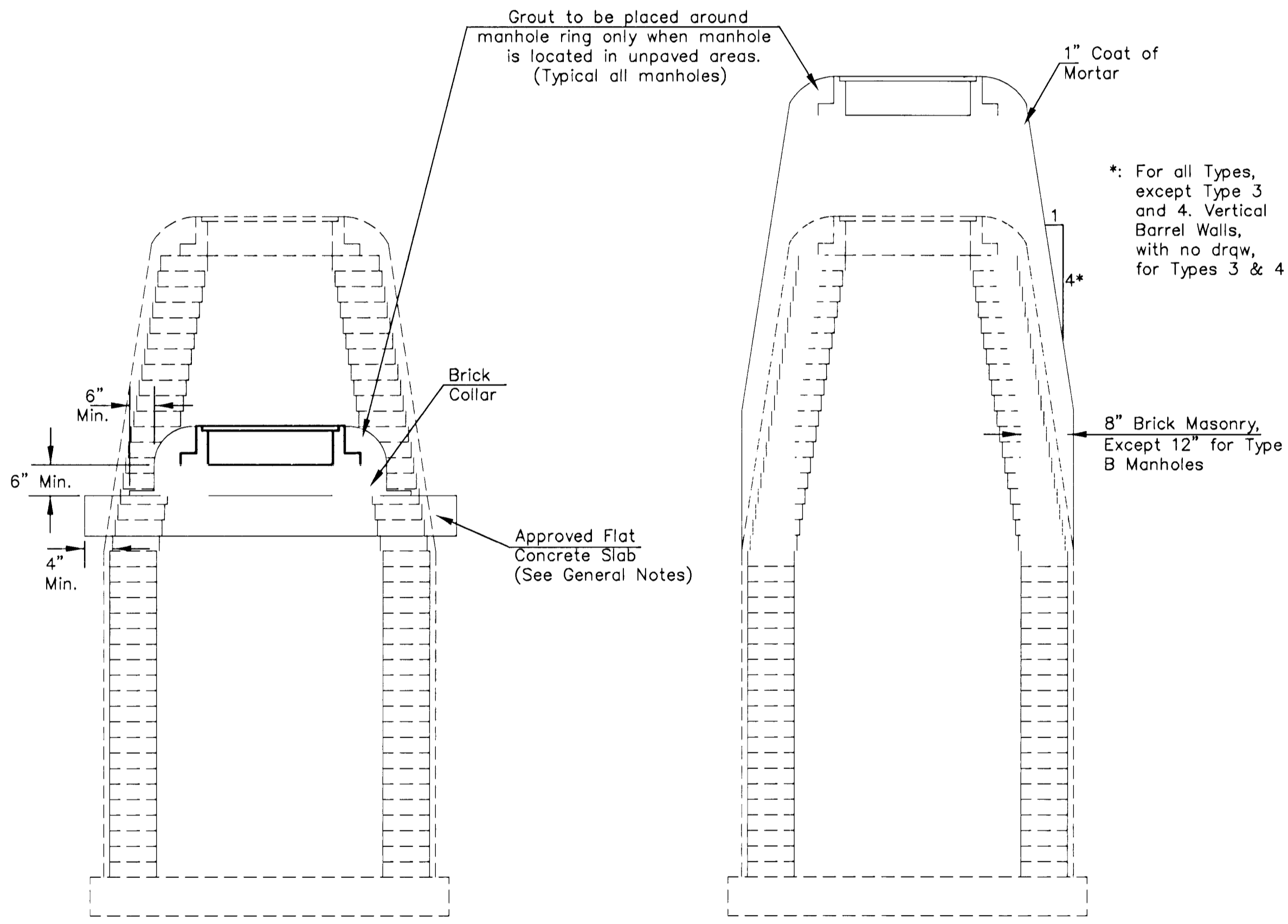


Transverse construction joints shall be constructed in flexible base pavements at locations where pavement joints existing flexible base pavement as shown by the detail. All costs associated with the construction of the transverse joint shall be included in the bid price for Square Yards 7" ASPHALTIC CONCRETE (5" BITUMINOUS BASE).

PROJECT NUMBER 472-83229				AM NO. 00101	Orme Street Phase 1 TYPICAL SECTION Wichita, Kansas	SHEET 2
DESIGN	DRAWN	FILE 60-31	DATE	SCALE N.S.		OF 23



DEFINITION SKETCHES - CITY OF WICHITA STANDARD MANHOLES



DOWNWARD ADJUSTMENT
(GREATER THAN 12")

UPWARD ADJUSTMENT
(GREATER THAN 12")

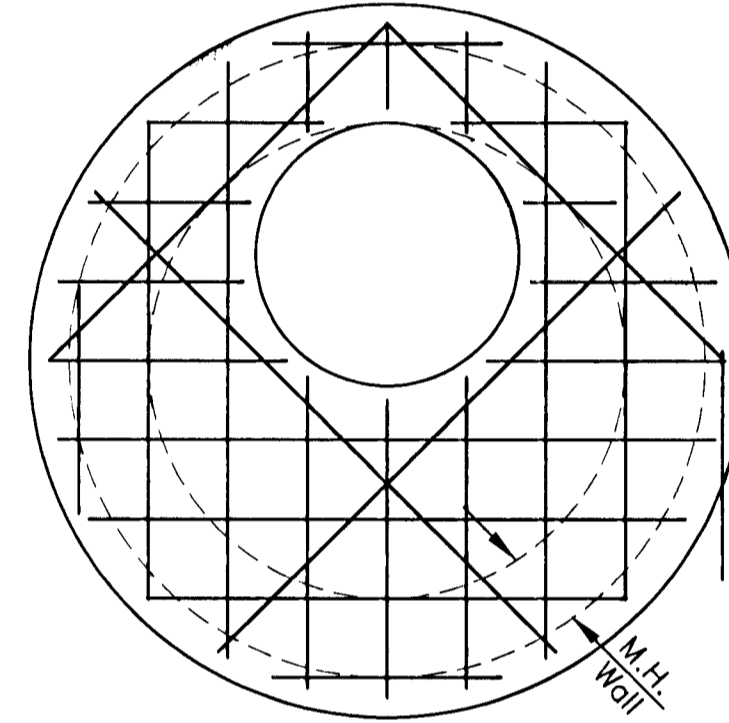
All Types

All Types

THE APPROPRIATE PORTIONS OF THE DRAW AND BARREL OF TYPE A, B, C, D, 1 AND 2 MANHOLES SHALL BE REMOVED. A FLAT CONCRETE SLAB SHALL BE PLACED AND THE RING AND COVER RESET. ALL WORK AND MATERIALS SHALL CONFORM TO THE DETAILS SHOWN AND THE GENERAL NOTES.

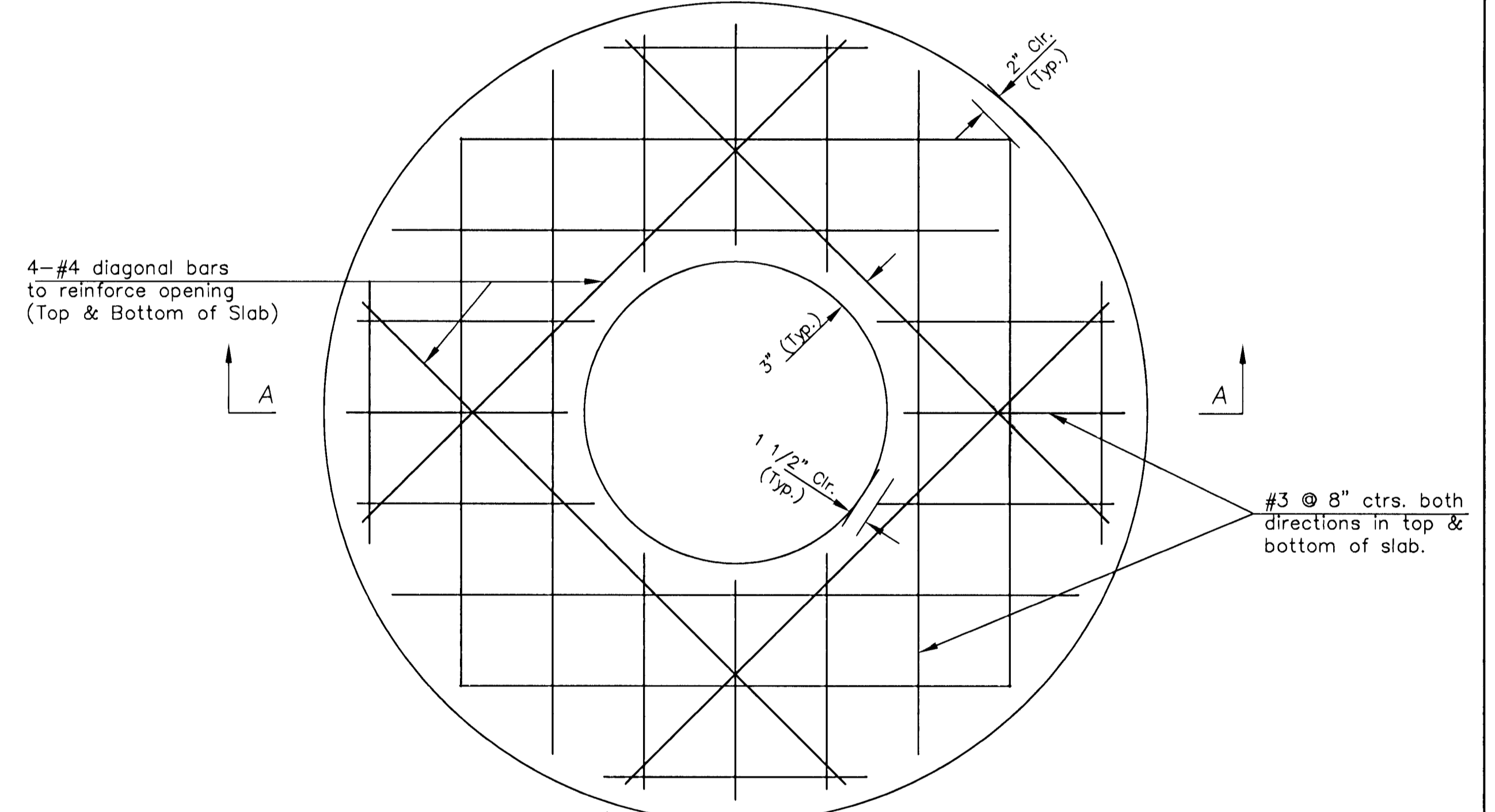
COURSES OF BRICK BARREL SUPPORTING THE WIDE FLANGE RING FOR TYPE 4 MANHOLES AND FLAT CONCRETE SLAB FOR TYPE 3 MANHOLES SHALL BE REMOVED AS NECESSARY PRIOR TO RESETTING THE WIDE FLANGE RING OR FLAT CONCRETE SLAB AND RING. ALL WORK AND MATERIALS SHALL CONFORM TO THE DETAILS SHOWN AND THE GENERAL NOTES.

THE ENTIRE DRAW OF TYPES A, B, C, D, 1 AND 2 MANHOLES SHALL BE REMOVED, THE MANHOLE BARREL RAISED THE APPROPRIATE AMOUNT, A NEW DRAW CONSTRUCTED, AND THE RING AND COVER RESET. THE UPPER PORTION OF TYPE 3 MANHOLES SHALL BE REMOVED TO THE BOTTOM OF THE FLAT CONCRETE SLAB, THE BRICK MASONRY BARREL SUPPORTING THE SLAB SHALL BE RAISED THE APPROPRIATE AMOUNT, AND THE SLAB AND RING AND COVER RESET. THE WIDE FLANGE RING AND COVER OF TYPE 4 MANHOLES SHALL BE REMOVED, THE BRICK MASONRY BARREL SUPPORTING THE RING SHALL BE RAISED THE APPROPRIATE AMOUNT AND THE RING AND COVER RESET. ALL WORK REQUIRED FOR A GREATER THAN TWELVE INCH (12") UPWARD ADJUSTMENT OF ANY MANHOLE SHALL BE ACCOMPLISHED WITH BRICK MASONRY IN ACCORDANCE WITH THE DETAILS SHOWN AND THE GENERAL NOTES.

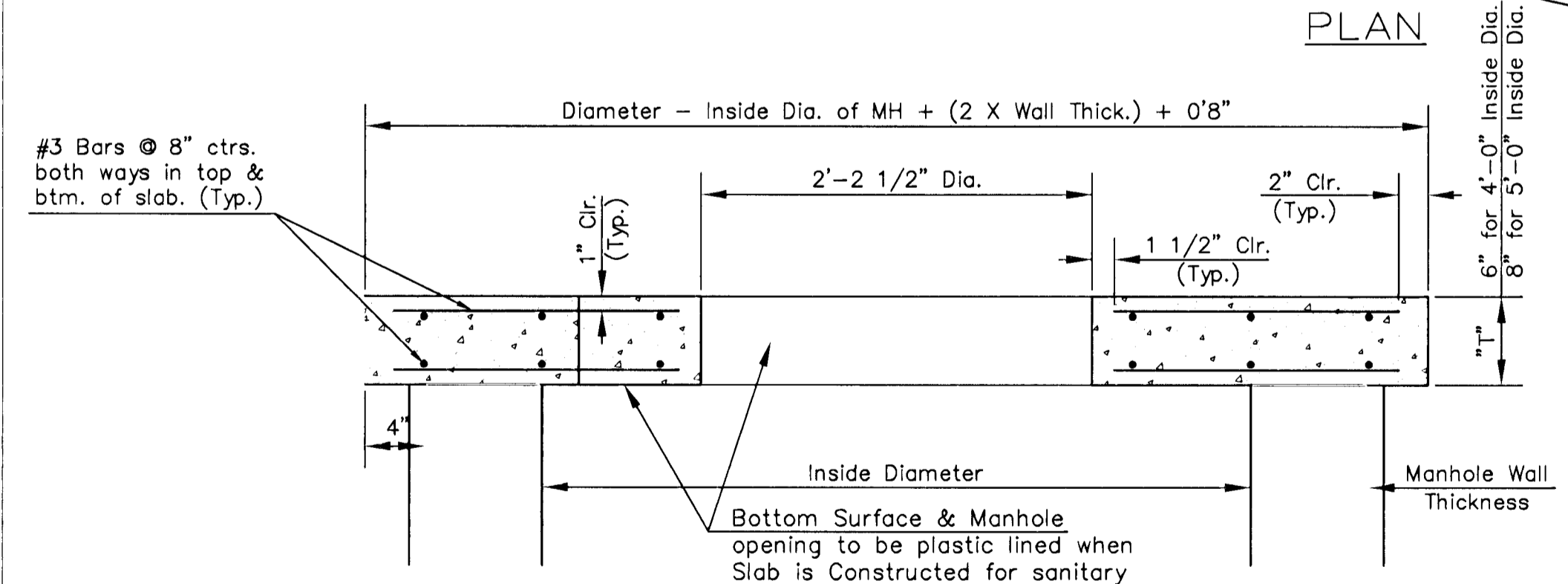


* PLAN
ALTERNATE OPENING
LOCATION

*: To be used only if necessary to keep ring and cover from conflicting with curb or combined curb and gutter. Flat concrete slab shall be rotated on existing manhole to position ring and cover in pavement or behind curb.

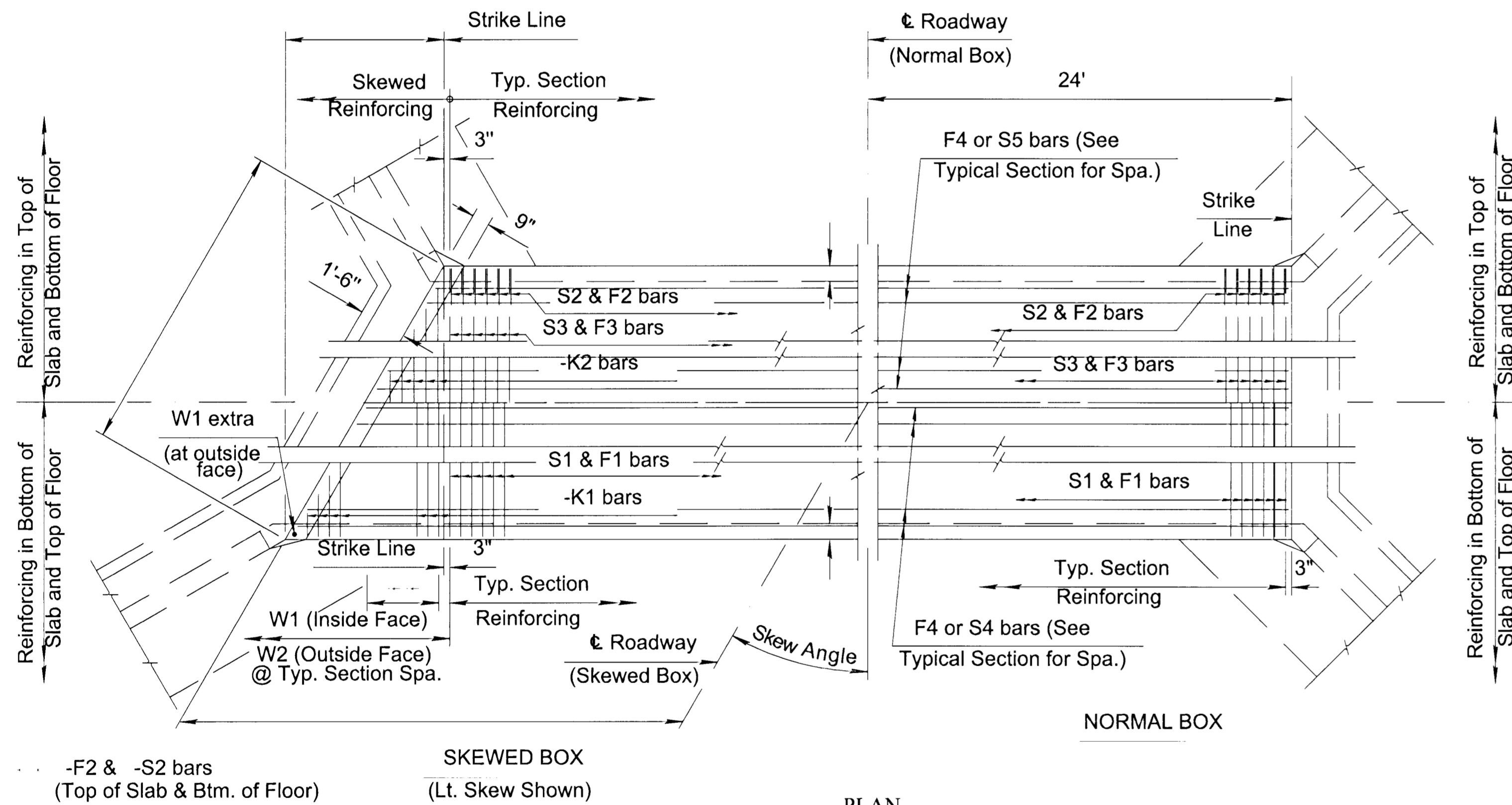
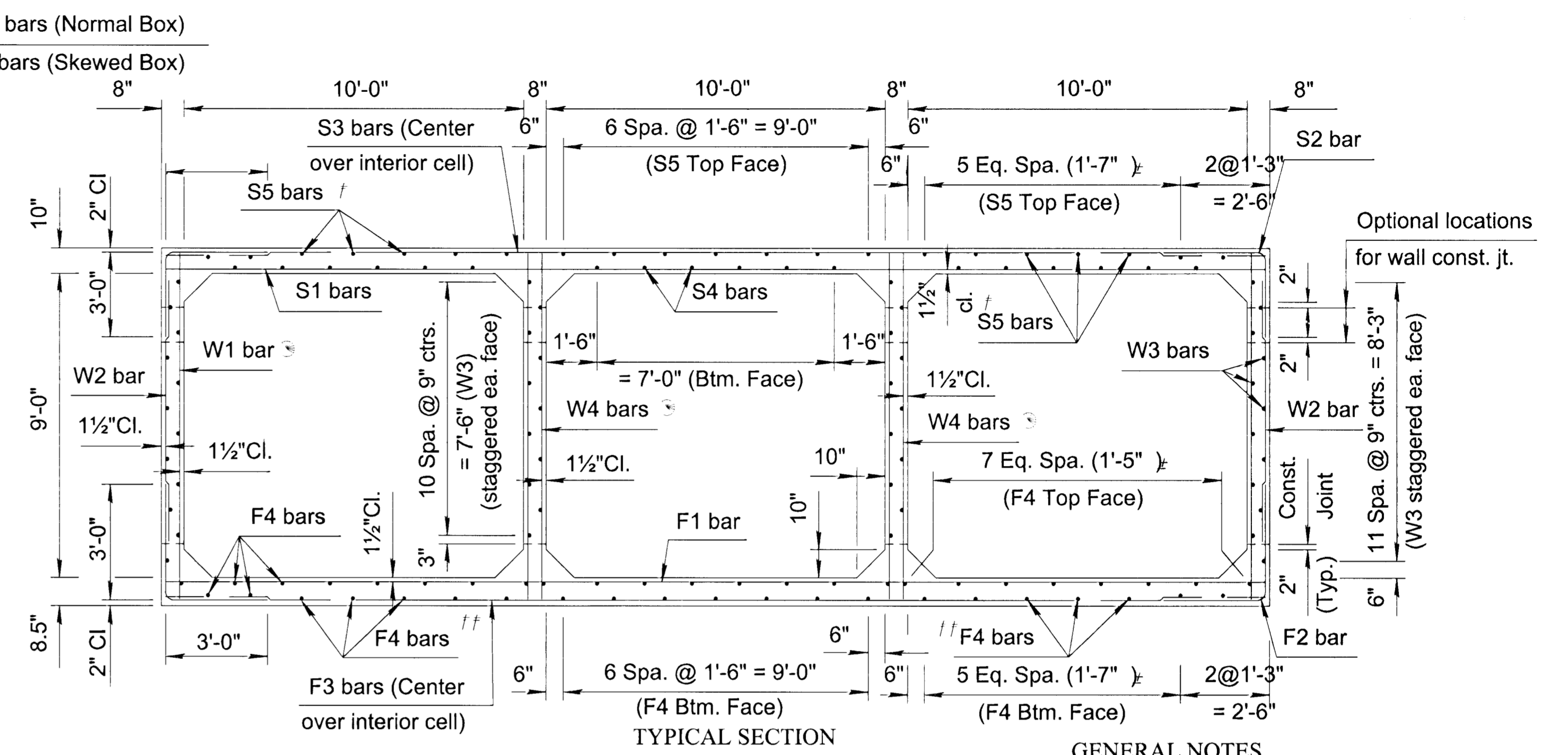
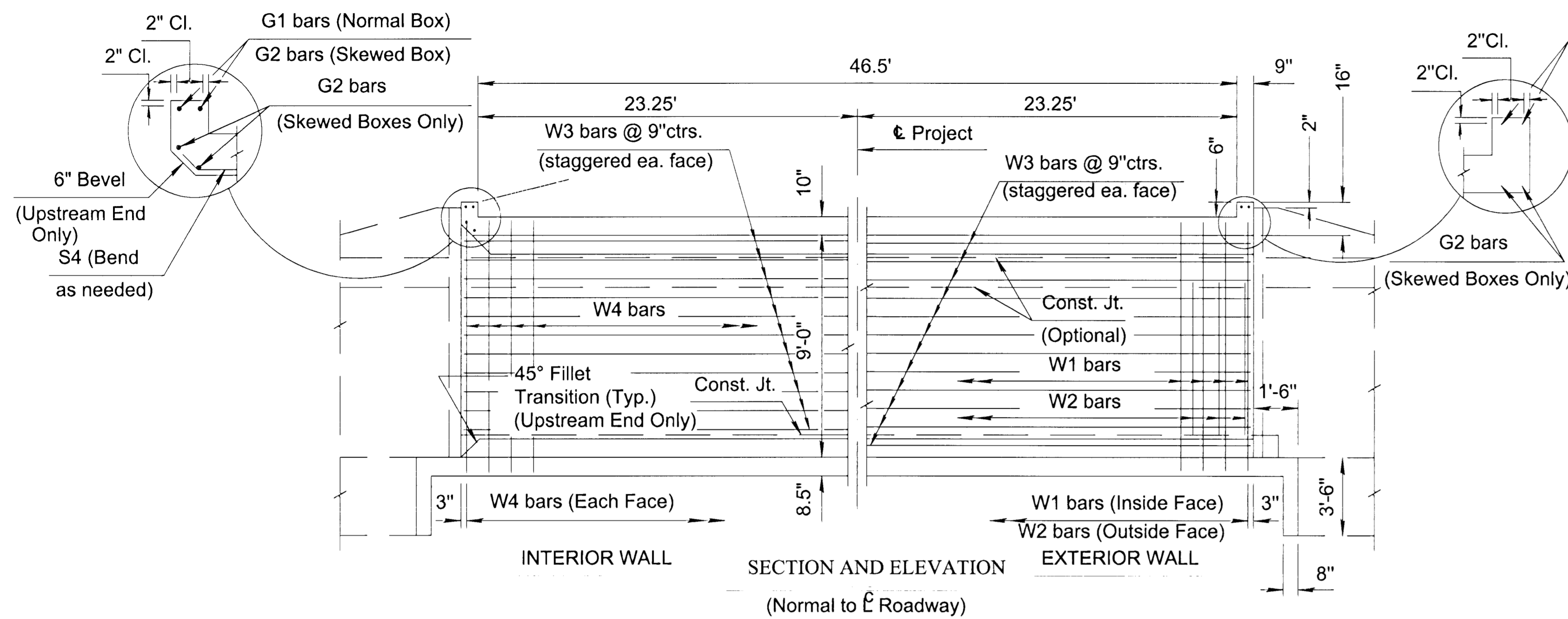


PLAN

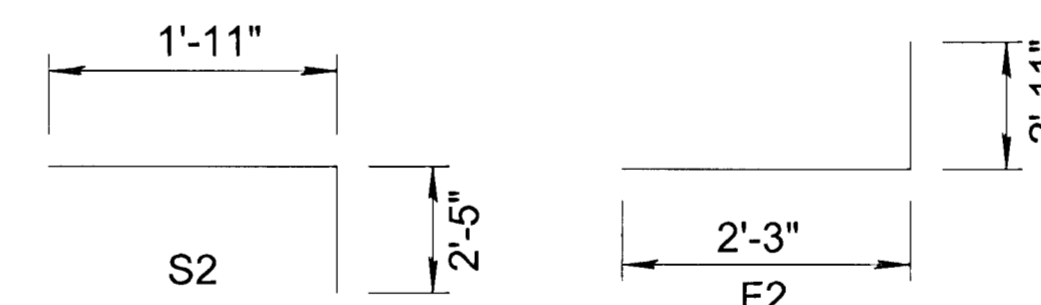


SECTION A-A
FLAT CONCRETE SLAB DETAILS

	PROJECT NUMBER 472-83229	AW NO. 00101	Orme Street Phase I Manhole Adjustment Wichita, Kansas	SHEET 11
	DESIGN	FILE 00101Mhadj		SCALE N.S.
DATE	DATE	DATE	DATE	DATE 6/14/01



- f See RCB Auxiliary Details for Optional Splice.
- f Place when S3 bar extends to exterior walls.
- ff Place when F3 bar extends to exterior walls.



BENDING DIAGRAM
All Dimensions are out to out of bars.

- GENERAL NOTES**
- LOADING:** HS20-44 AASHTO Specifications, 1983 Edition.
UNIT STRESSES: Class AAA Concrete; $f_c = 4,000$ p.s.i.
 Reinforcing Steel; $f_y = 60,000$ p.s.i.
- FILL HEIGHT:** Unless otherwise noted, the Design Fill Height is measured from the riding surface at the culvert and shall include the surfacing.
- CONCRETE:** Class AAA Concrete shall be used throughout. Bevel all exposed edges with a finch triangular moulding. Where Class AAA Concrete (AE) is specified, it shall be placed in the top slab above the Construction Joint.
- REINFORCING:** All reinforcing shall conform to ASTM A615, Grade 60. All dimensions relative to reinforcing steel shall be to centerline of bar unless otherwise noted.
- EXCAVATION:** Excavation for culverts less than bridge length shall not be paid for directly but shall be subsidiary to Class AAA Concrete. Excavation for RCB Bridges shall be paid for as Class III Excavation.
- SEAL COURSE:** A Seal Course may be required by the Engineer. The Seal Course shall be unreinforced Concrete (Commercial Grade) to a minimum depth of 3 inches or as determined by the Engineer. Concrete for the seal course shall be paid for at the unit price set for Concrete for Seal Course.
- FOUNDATION STABILIZATION:** Foundation Stabilization may be required as directed by the Engineer. The depth of Foundation Stabilization shall be determined by the Engineer. Foundation Stabilization shall be paid for at the determined Unit Price set for Foundation Stabilization. See Auxiliary Details.
- QUANTITIES:** The quantities shown in the Culvert Summary include apron and/or soil saver quantities when their construction is required by the plans. Payment for additional quantities that result from including seal course and/or floating apron, as a change in original plans, shall be made at the Unit Price bid for the various items involved.
- GRANULAR BACKFILL (WINGWALLS):** Special backfill procedures may be required at the direction of the Engineer. See Auxiliary Details Sheet.
- STRIKE LINE:** Wingwalls and that portion of the RCB outside the Strike Line shall be constructed level. Footing for wingwalls shall be constructed with the culvert floor. See wingwall detail sheet.

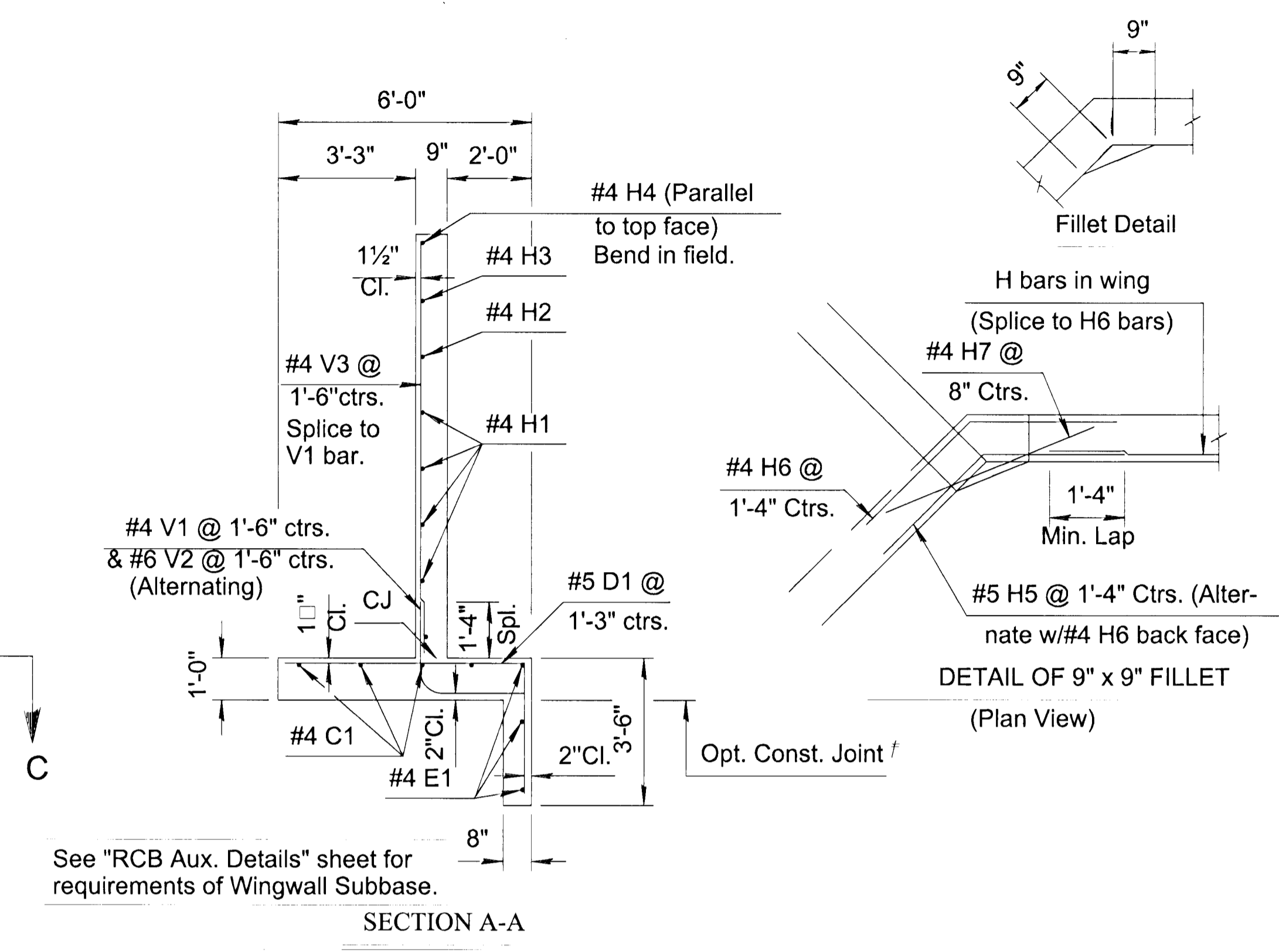
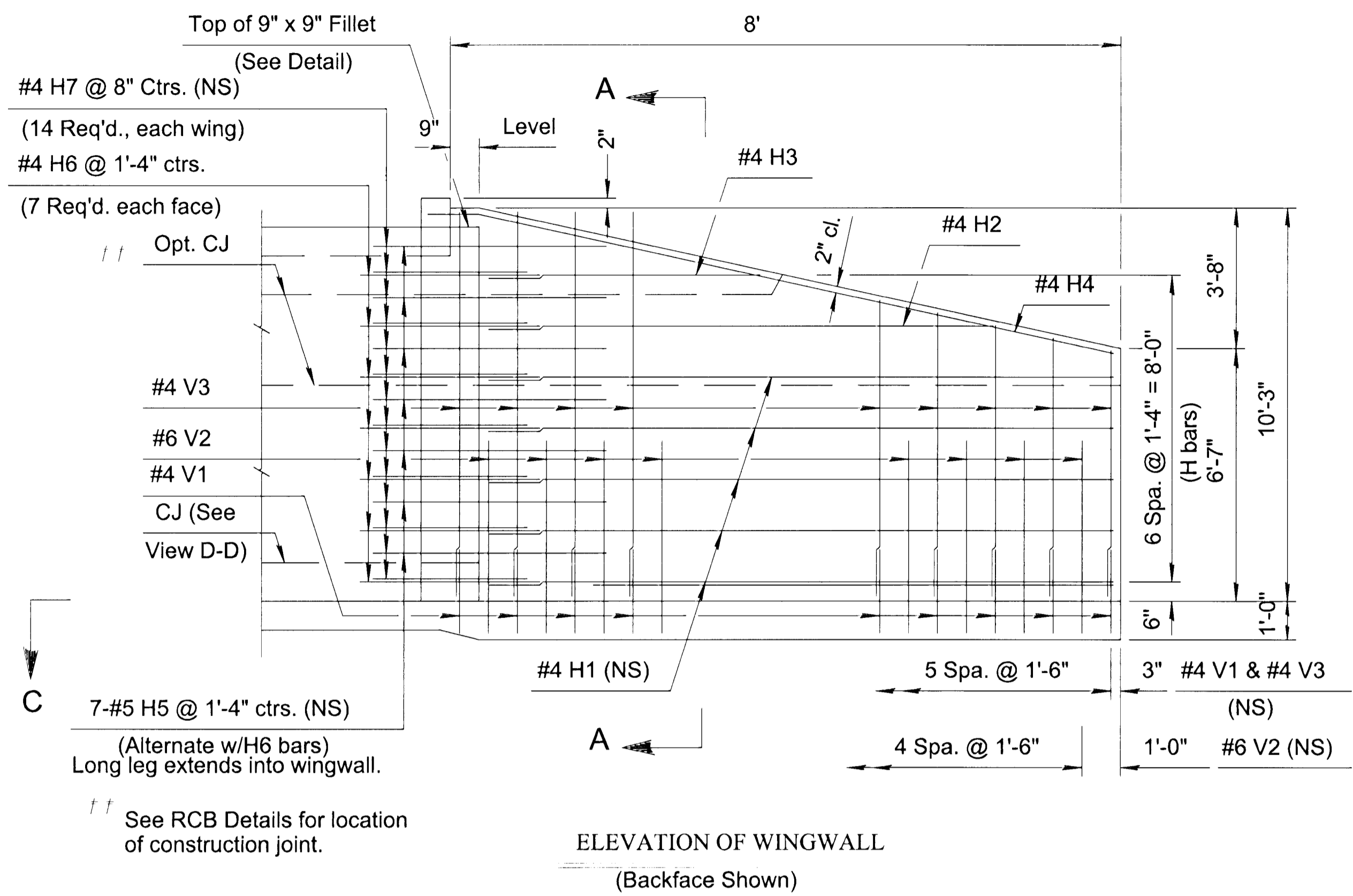
CULVERT SUMMARY															
Flow Line Elev. Lt.	Flow Line Elev. Rt.	Crown Gr. Elev.	Design Fill Ht.	Skew	Left Wings	Right Wings	Scour Apron	Soil Saver	Granular Backfill	Concrete			Reinf. Steel (Gr. 60)		
										Barrel (Cu.Yds.)	Wings (Cu.Yds.)	Total (Cu.Yds.)	Barrel (Lbs.)	Wings (Lbs.)	Total (Lbs.)
1328.38	1328.38	1339.26	1.13	0.0	FLARED	FLARED	YES	NO		82.57	46.08	140.43	14957.60	3171.45	18287.00

BAR SCHEDULE																																																
F1				F2				F3				F4				S1				S2				S3				S4				S5																
Size	Spa.	No.	Length	Size	Spa.	No.	Length	Size	Spa.	No.	Length	Size	Spa.	No.	Length	Size	Spa.	No.	Length	Size	Spa.	No.	Length	Size	Spa.	No.	Length	Size	Spa.	No.	Length	Size	Spa.	No.	Length	Size	Spa.	No.	Length									
4	5"	115	32'-4"	6	7"	164	5'-2"	6	7"	82	32'-4"	4	90	24'-6"	5	5"	115	32'-4"	5	7"	164	4'-4"	4	54	24'-6"	4	42	24'-6"																				
K1				K2				W1				W2				W3				W4				G1				G2																				
Size	Spa.	No.	Length	Size	Spa.	No.	Length	Size	Spa.	No.	Length	Size	Spa.	No.	Length	Size	Spa.	No.	Length	Size	Spa.	No.	Length	Size	Spa.	No.	Length	Size	Spa.	No.	Length	Size	Spa.	No.	Length	Size	Spa.	No.	Length									
								4	10"	116	10'-3"	4	7"	164	7'-7"	4	92	24'-6"	5	10"	232	10'-3"	5	4	32'-4"	0	0	32'-4"																				

Minimum Splice Lengths	
#4	1'-4"
#5	1'-8"
#6	2'-0"

SUMMARY OF QUANTITIES	
Class AAA Concrete	140.430 C.Y.
Class AAA Concrete (AE)	58.049 C.Y.
Reinforcing Steel (Gr. 60)	18287.006 Lbs.
Reinforcing Steel (Epoxy Coated)	10172.747 Lbs.
Class III Excavation	C.Y.
Foundation Stabilization (Set)	1 C.Y.
Concrete for Seal Course (Set)	1 C.Y.
Granular Backfill (Wingwalls) (Set)	1 C.Y.

BR



GENERAL NOTES

LOADING: HS20-44 AASHTO Specifications, 1983 Edition.
 UNIT STRESSES: Class AAA Concrete; $f_c = 4,000$ p.s.i.
 Reinforcing Steel; $f_y = 60,000$ p.s.i.

FILL HEIGHT: Unless otherwise noted, the Design Fill Height is measured from the riding surface at the culvert and shall include the surfacing.

CONCRETE: Class AAA Concrete shall be used throughout. Bevel all exposed edges with a finch triangular moulding. Where Class AAA Concrete (AE) is specified, it shall be placed in the top slab above the Construction Joint.

REINFORCING: All reinforcing shall conform to ASTM A615, Grade 60. All dimensions relative to reinforcing steel shall be to centerline of bar unless otherwise noted.

EXCAVATION: Excavation for culverts less than bridge length shall not be paid for directly but shall be subsidiary to Class AAA Concrete. Excavation for RCB Bridges shall be paid for as Class III Excavation.

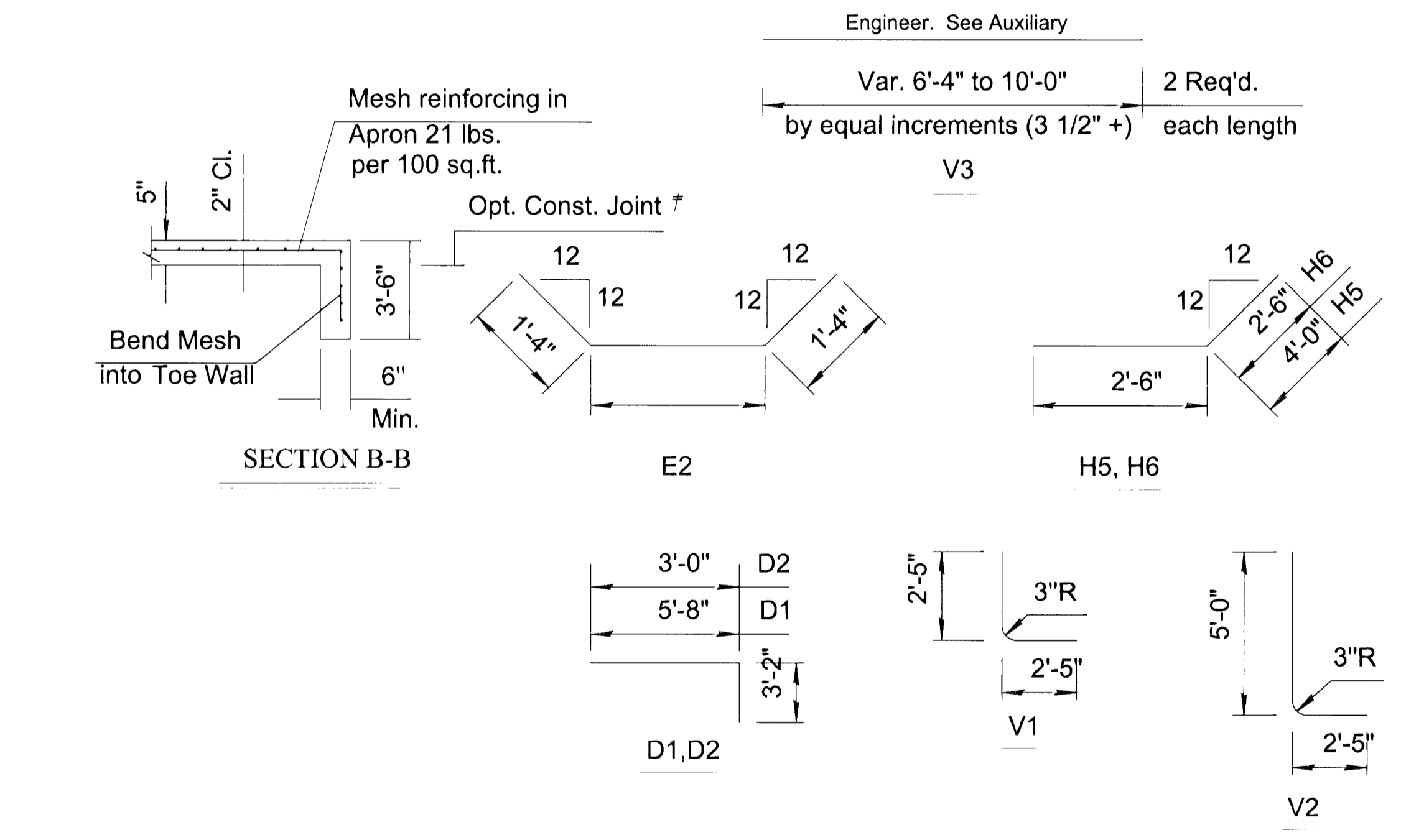
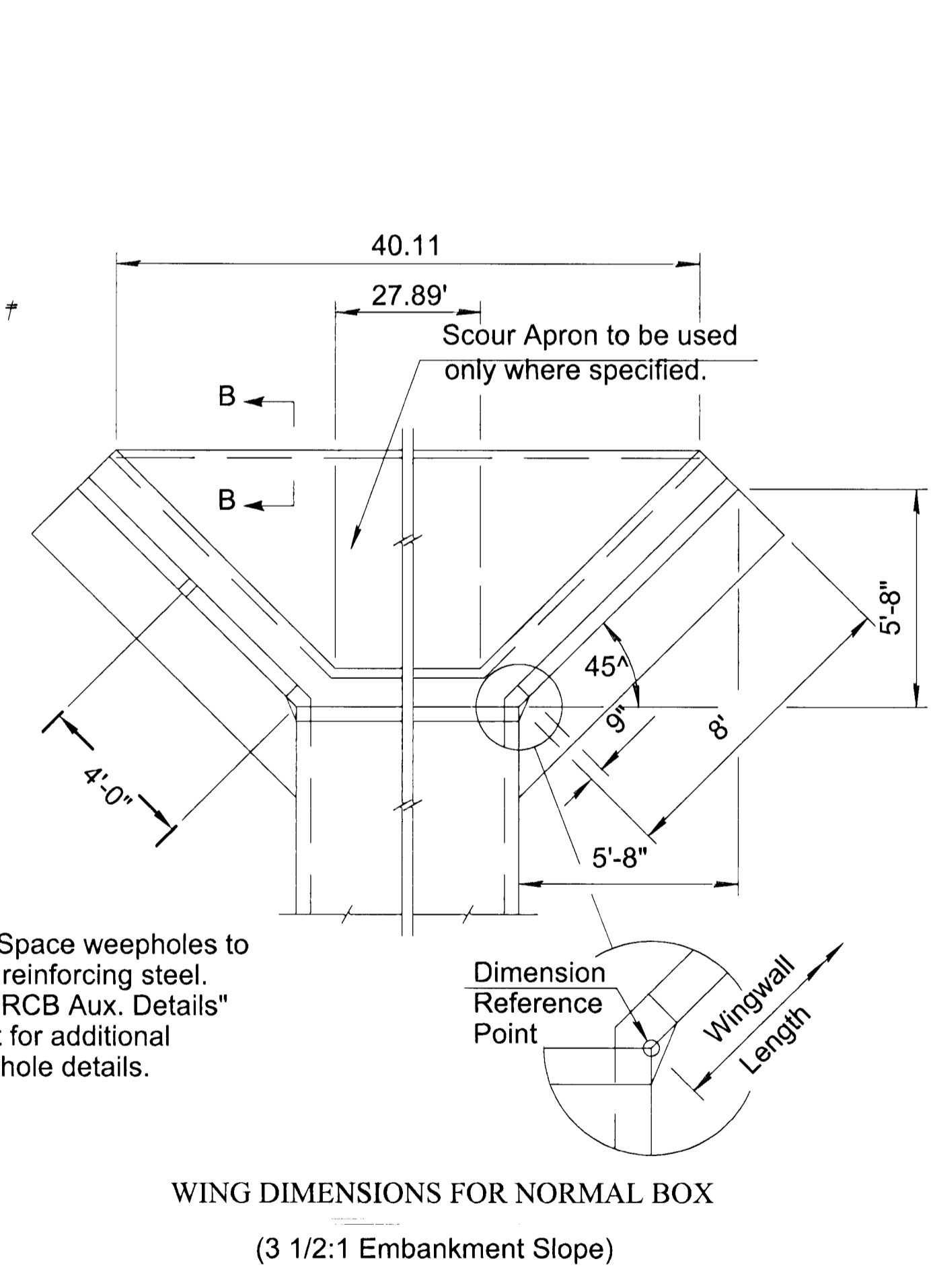
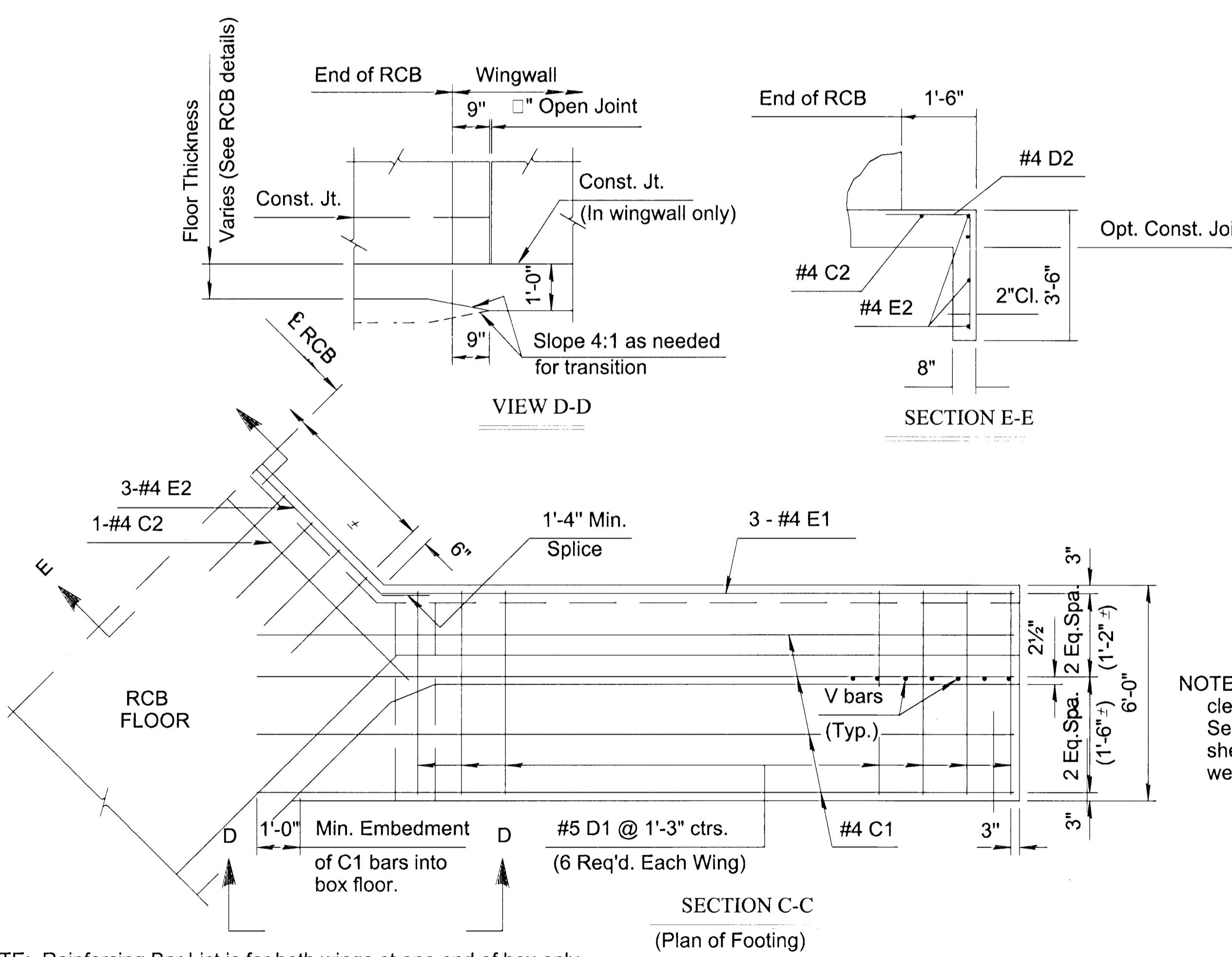
SEAL COURSE: A Seal Course may be required by the Engineer. The Seal Course shall be unreinforced Concrete (Commercial Grade) to a minimum depth of 3 inches or as determined by the Engineer. Concrete for the seal course shall be paid for at the unit price set for Concrete for Seal Course.

FOUNDATION STABILIZATION: Foundation Stabilization may be required as directed by the Engineer. The depth of Foundation Stabilization shall be determined by the Engineer. Foundation Stabilization shall be paid for at the determined Unit Price set for Foundation Stabilization. See Auxiliary Details.

QUANTITIES: The quantities shown in the Culvert Summary include apron and/or soil saver quantities when their construction is required by the plans. Payment for additional quantities that result from including seal course and/or floating apron, as a change in original plans, shall be made at the Unit Price bid for the various items involved.

GRANULAR BACKFILL (WINGWALLS): Special backfill procedures may be required at the direction of the Details Sheet.

STRIKE LINE: Wingwalls and that portion of the RCB outside the Strike Line shall be constructed level. Footing for wingwalls shall be constructed with the culvert floor. See wingwall detail sheet.

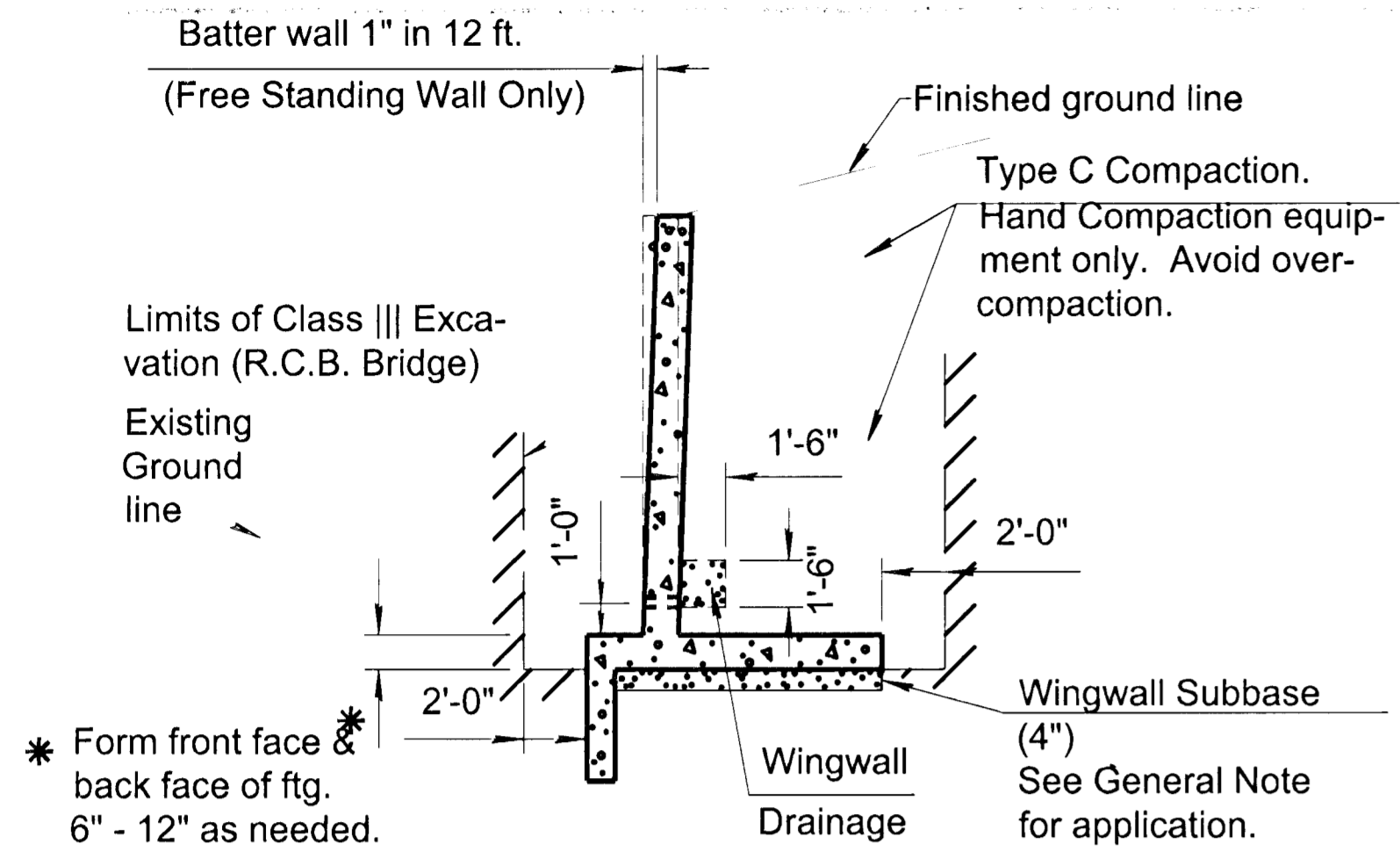


Minimum Splice Lengths	
#4	1'-4"
#5	1'-8"
#6	2'-0"

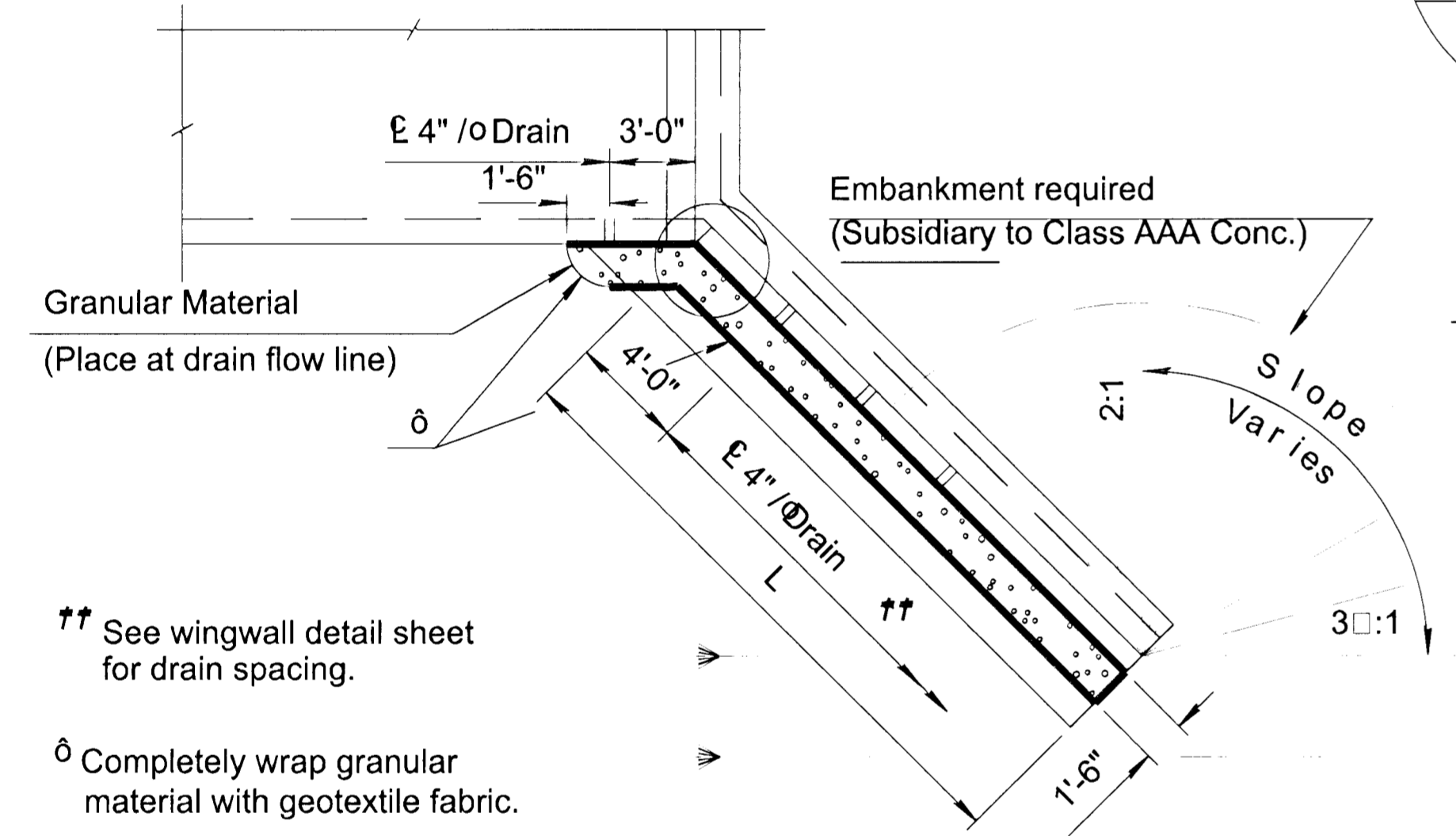
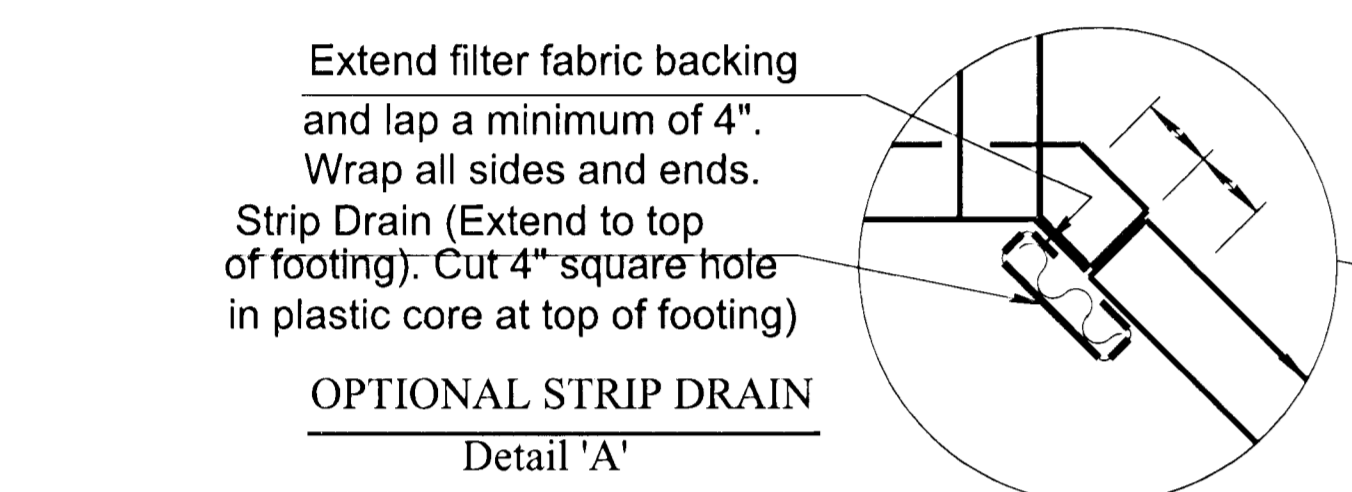
NOTE: Reinforcing Bar List is for both wings at one end of box only.

0° Skew	Mark	#4C1	#5D1	#4E1	#4C2	#4D2	#4E2	#4V1	#6V2	#4V3	#4H1	#4H2	#4H3	#4H4	#5H5	#4H6	#4H7
	Number	8	12	6	1	23	3	12	10	12	10	2	2	2	14	28	28
	Length	22'-3"	8'-10"	8'-6"	32'-4"	6'-2"	30'-10"	4'-10"	7'-5"		6'-10"	6'-10"	4'-6"	8'-9"	6'-6"	5'-0"	3'-6"

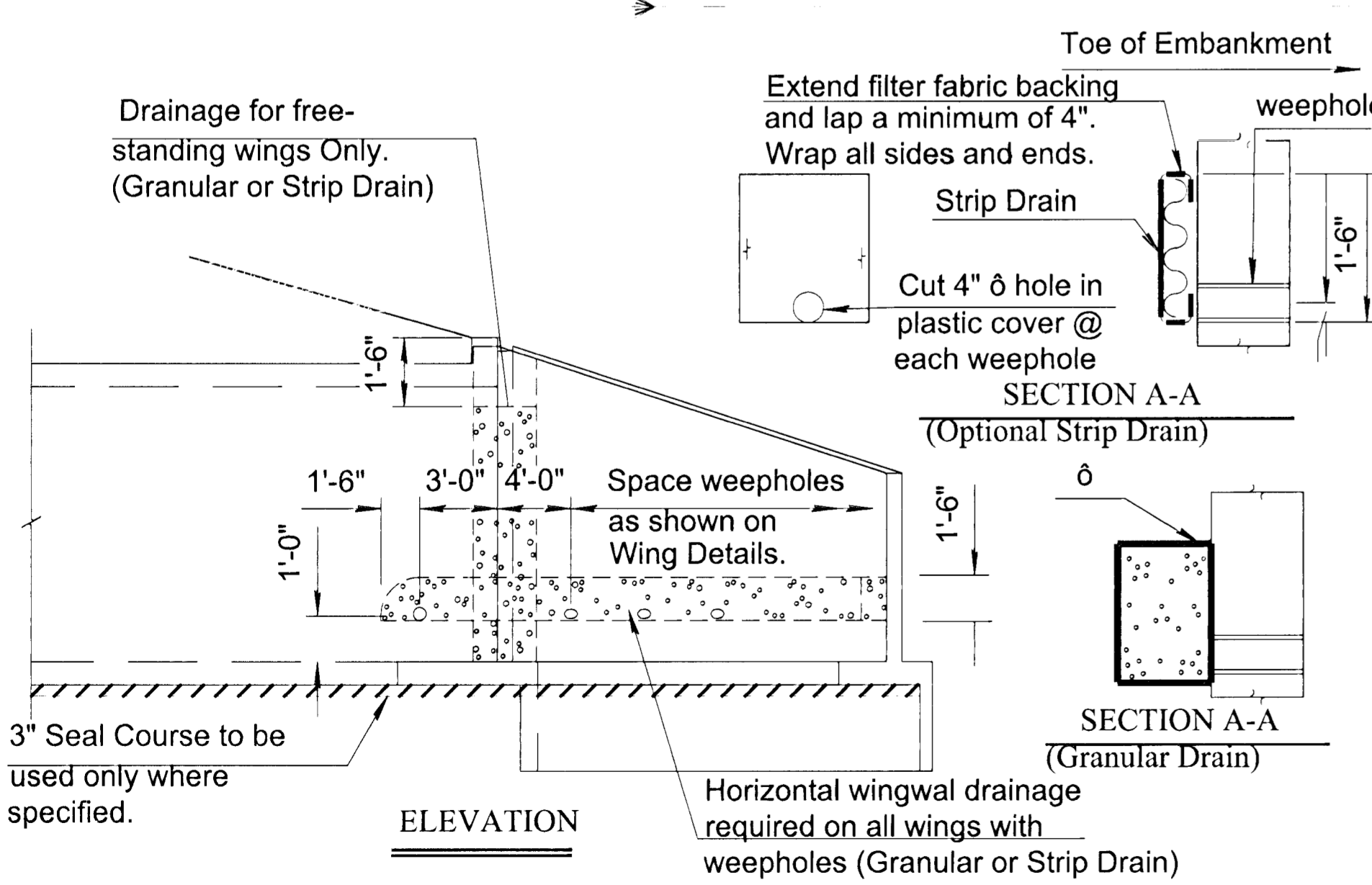
BR



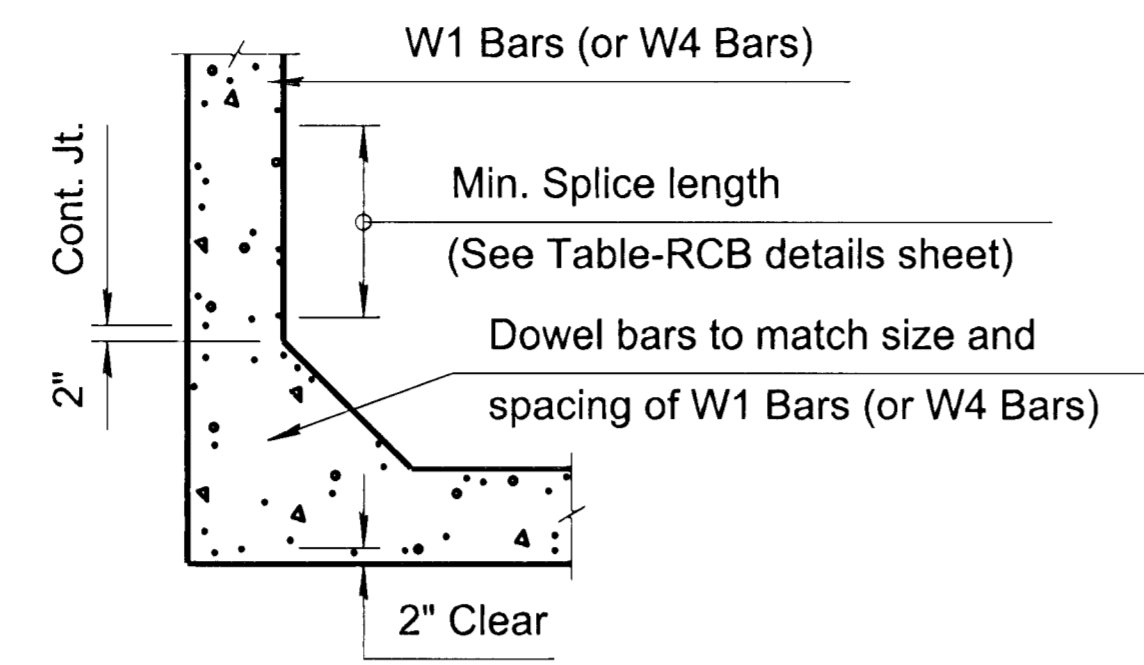
SECTION THRU WINGWALL



WINGWALL PLAN

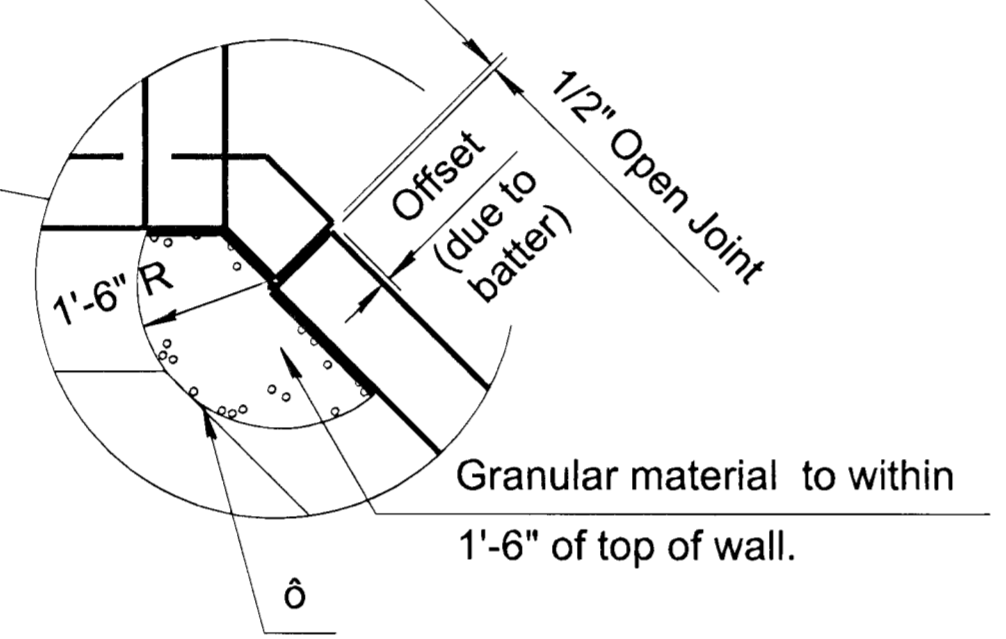


ELEVATION



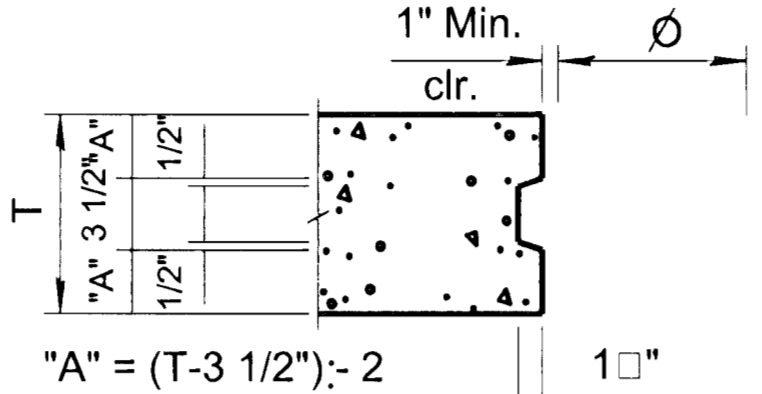
OPTIONAL BAR DETAIL

The Contractor shall have the option of using Dowel Bars to match vertical wall bars as shown, however no allowance will be made for additional steel required for bar laps.



VERTICAL WINGWALL DRAINAGE FOR FREE-STANDING WINGWALLS ONLY (RCB Rise 12 ft. & over)

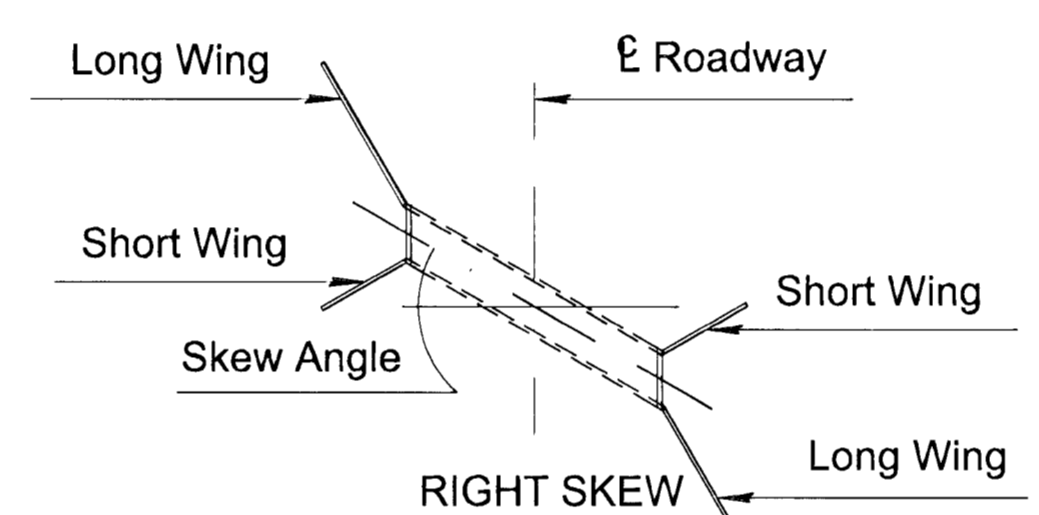
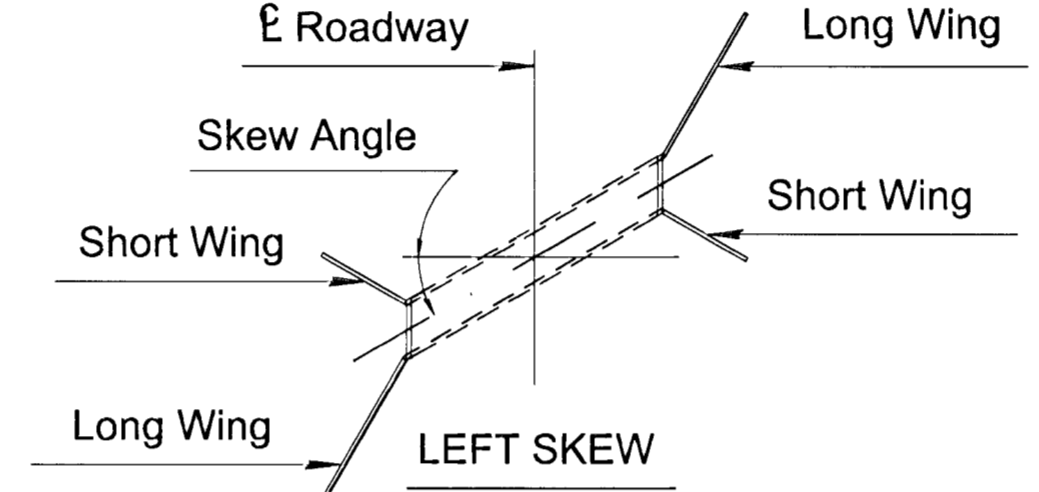
Longitudinal bars shall extend through the joint to provide a minimum lap equal to the required splice length. See RCB Details Sh. for required splice length.



VERTICAL CONSTRUCTION JOINTS

NOTE: Vertical construction joints shall be perpendicular to the longitudinal axis of the RCB and shall be placed at any location as needed for construction and as approved by the Engineer.

NOTE: Horizontal construction joints shall be a roughened finish.



PLAN VIEW SKEWED R.C.B.

GENERAL NOTES

Wingwall Drainage:

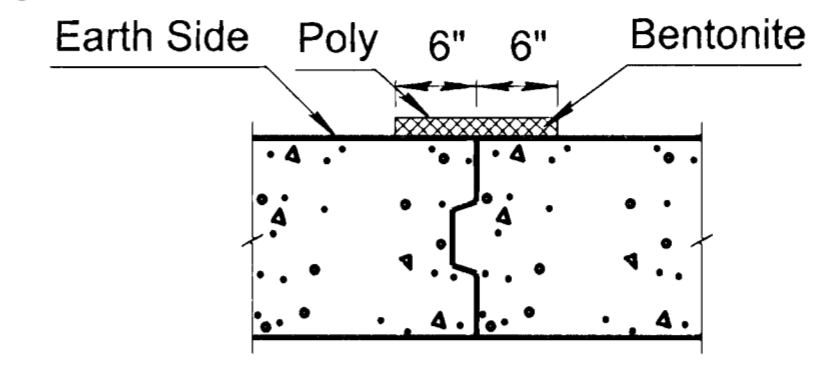
- All wingwalls with weepholes shall have horizontal wingwall drainage as shown. Free-standing wingwalls shall also have the vertical wingwall drainage. Strip drains may be used in lieu of aggregate. See KDOT Specifications for "Abutment Strip Drains" for strip drain requirements.
- Construction and materials for wingwall drainage, including weepholes, geotextile fabric, granular material, and strip drain shall be subsidiary to the bid item, "Class AAA Concrete". Granular material for wingwall drainage shall conform to the requirements of UD-1. Weepholes may be a formed opening or corrugated polyethylene tubing.

Wingwall Subbase:

- Wingwall subbase shall be constructed at all wingwall footings to assure the assumed coefficient of friction between the concrete footing and the foundation, with the following exceptions;
 - Wingwall subbase will not be required for footings on RCB's 6 feet or less in height unless otherwise determined by the Engineer.
 - The subbase will also not be required for footings founded on rock or clean, granular material as determined by the Engineer.
- Subbase shall consist of 4" compacted granular material consisting of commercial grade clean sand or UD-1 material. All excavation, material and labor necessary to construct the wingwall subbase shall be subsidiary to "Class AAA Concrete".

Seal Course:

- Seal Course consisting of 3" min. of Commercial Grade Concrete shall be constructed to the limits directed by the Engineer. No reinforcing in the floor of the slab or wall footing shall be placed until the Seal Course has gained sufficient strength to permit working upon it without injury.



NOTE: Barrel Construction Joints located in a median with less than 5 ft. of fill or at locations specified by the Engineer, shall be protected by a bentonite based system as shown. Place the bentonite on the exterior walls and top slab. See requirements for bentonite in the KDOT Specifications for "Bridge Backwall Protection System". Material and installation of the bentonite system shall be subsidiary to the bid item "Class AAA Concrete".

NOTE: Vertical construction joints shall be perpendicular to the longitudinal axis of the RCB and shall be placed at any location as needed for construction and as approved by the Engineer.

NOTE: Horizontal construction joints shall be a roughened finish.

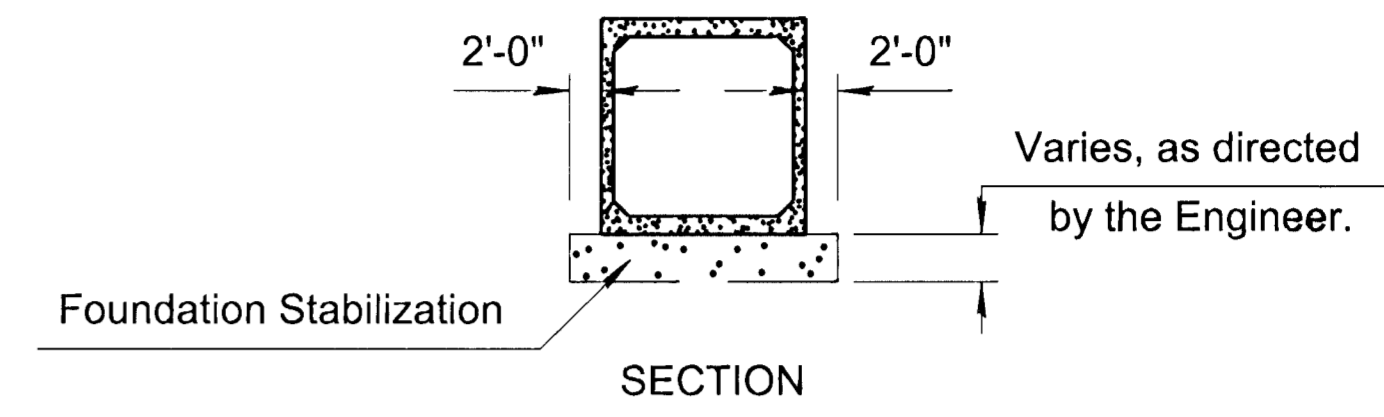
GENERAL NOTES

Foundation Stabilization:

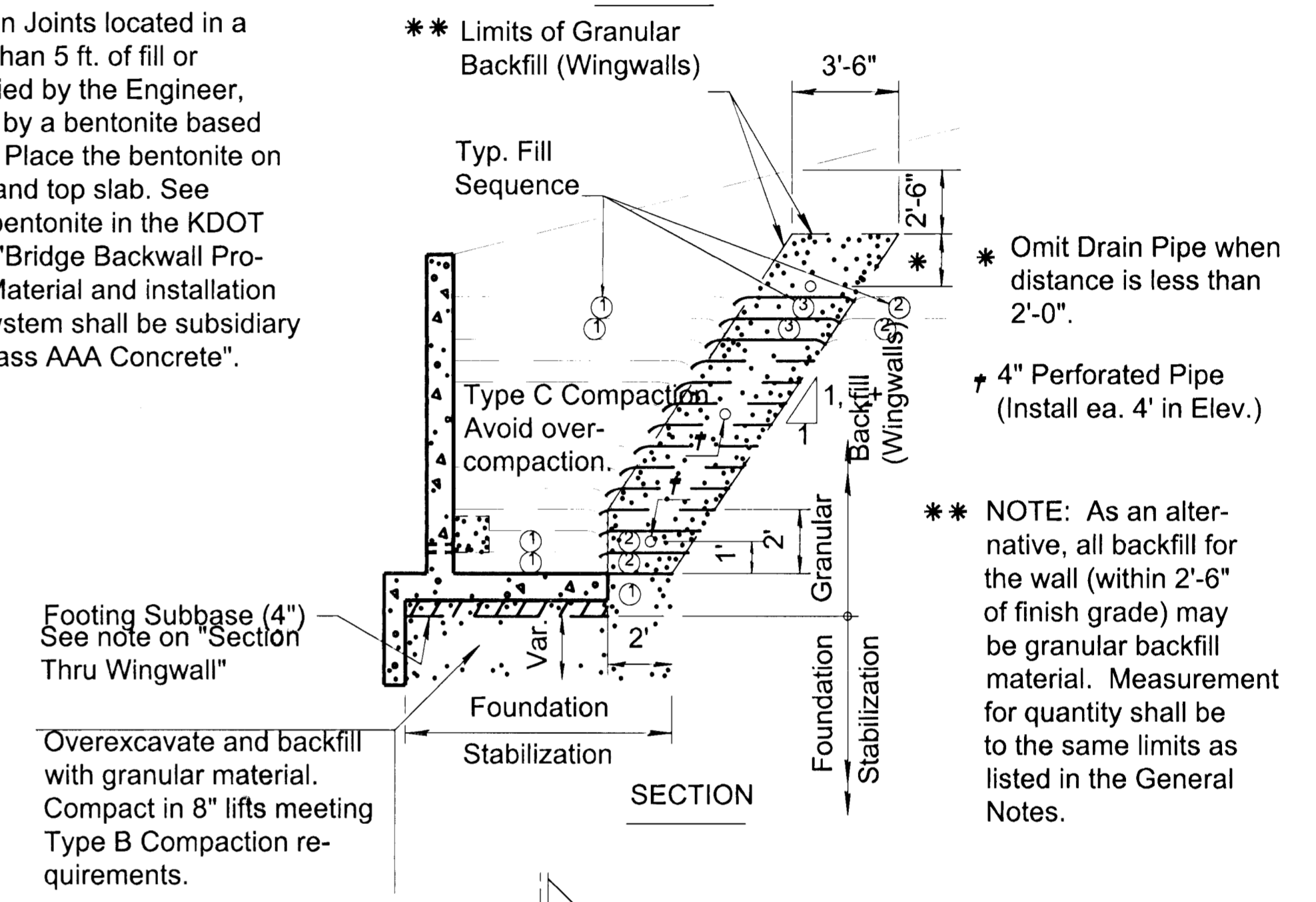
- At sites where the wingwall footing or culvert floor is located within the limits of an existing streambed or is founded on unsuitable material, the Engineer will determine the depth of Foundation Stabilization.
- Foundation Stabilization may be required under the box and/or wingwalls as directed by the Engineer. The granular material placed for foundation stabilization shall be measured and paid for at the contract price per cubic yard for "Foundation Stabilization". Material for Foundation Stabilization shall be suitable backfill material as approved by the Engineer. The excavation for the placement of granular material shall be subsidiary to the bid item, "Foundation Stabilization".

Granular Backfill (Wingwalls):

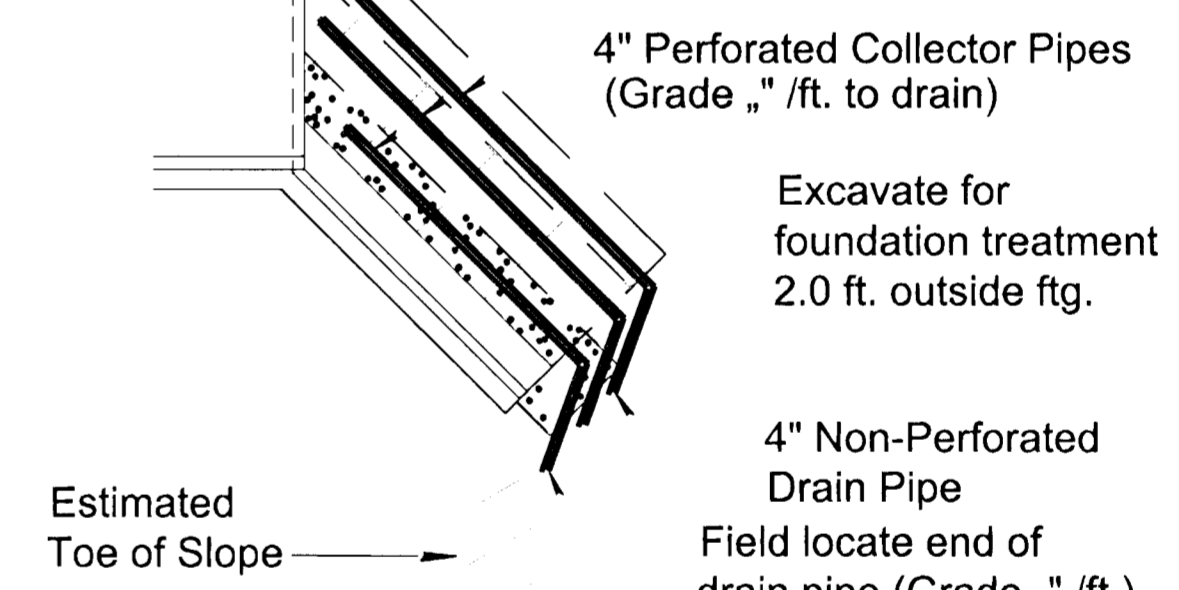
- In locations where the material behind the wingwall consist of soils judged as high plasticity clays, fat clays, expansive clays or organic clays, Granular Backfill (Wingwalls) shall be used. Granular Backfill construction may be used separately or combined with Foundation Stabilization as directed by the Engineer. Measurement for the bid item, "Granular Backfill (Wingwalls)", shall be measured in Cubic Yards to the theoretical limits as shown. Drainage pipe, rodent screens, and excavation shall be subsidiary to the bid item, "Granular Backfill (Wingwalls)".
- Material for Granular Backfill (Wingwalls) shall conform to the requirements of UD-1 or BD-1. Drainage Pipe shall be corrugated polyethylene tubing conforming to KDOT Specifications.



SECTION



SECTION

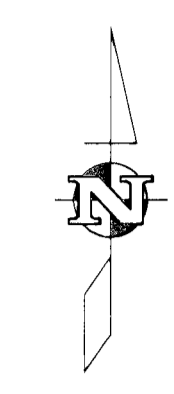


PLAN

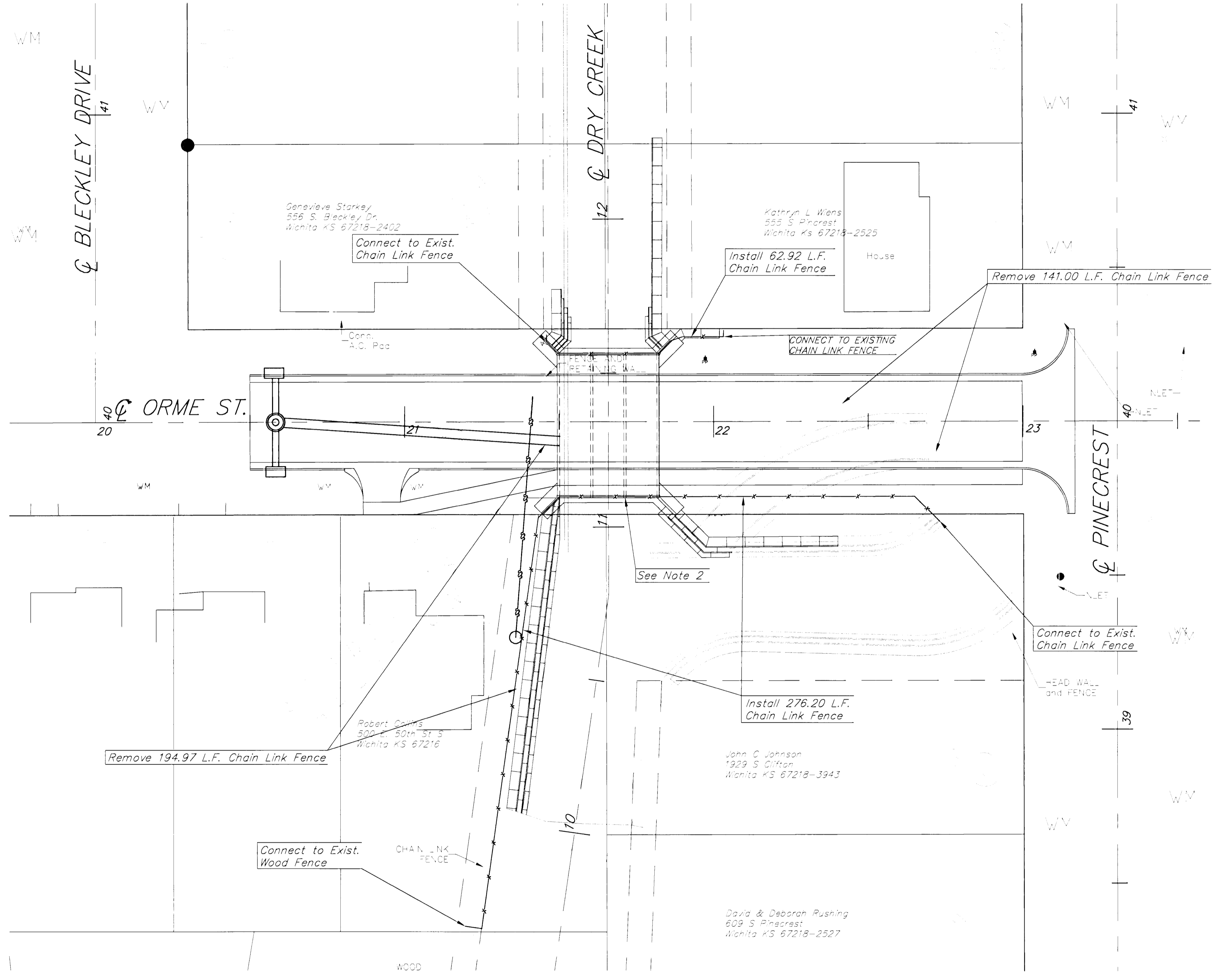
GRANULAR BACKFILL AND FOUNDATION STABILIZATION

3	3-28-97	Wrap granular drains	RAM	KFH
2	9-20-96	Strip drain & bentonite at joint	RAM	KFH
1	10-2-91	Change drainage details	RAM	KFH

RCB AUXILIARY DETAILS

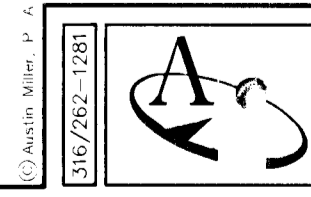


SCALE



NOTES:

- 1. Existing Chain Link Fence may need to be removed. May be reused if in good condition, and approved by the Engineer.
- 2. Contractor to submit shop drawings to Engineer for review and approval on method of post attachment to box curb or rcb.

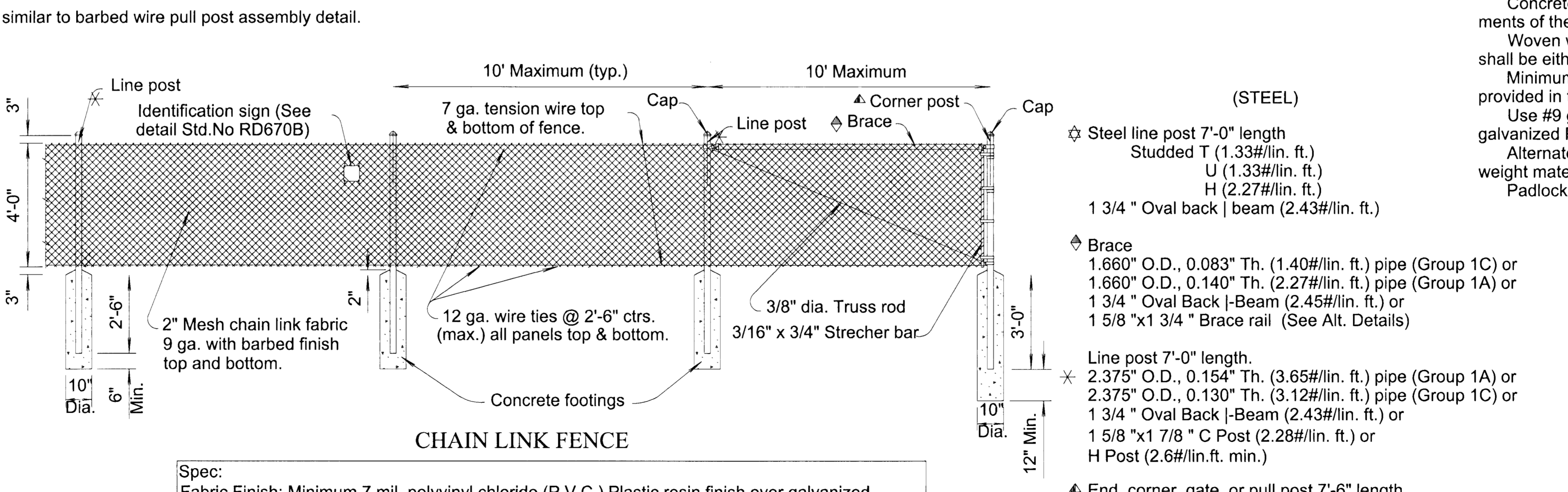
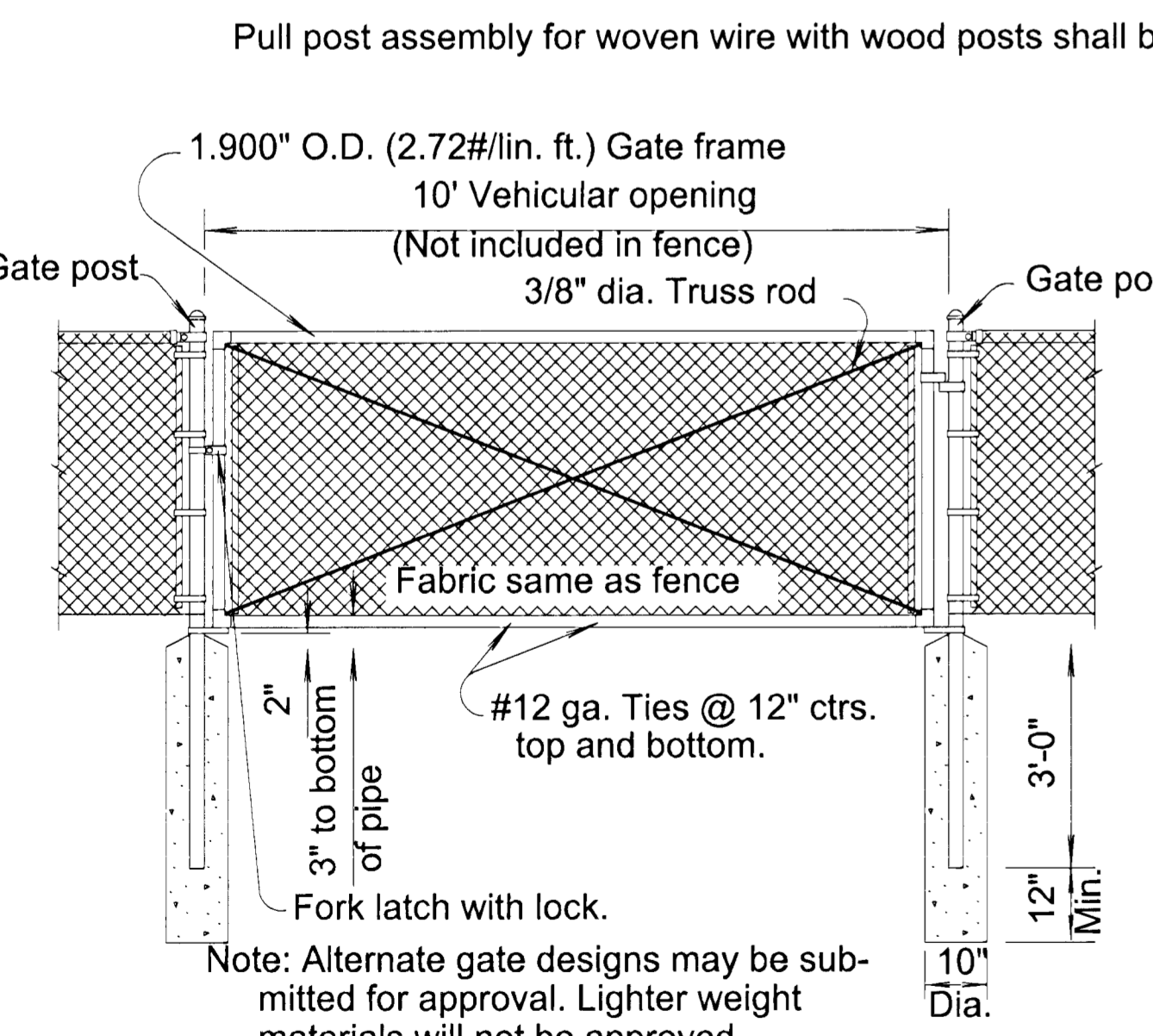
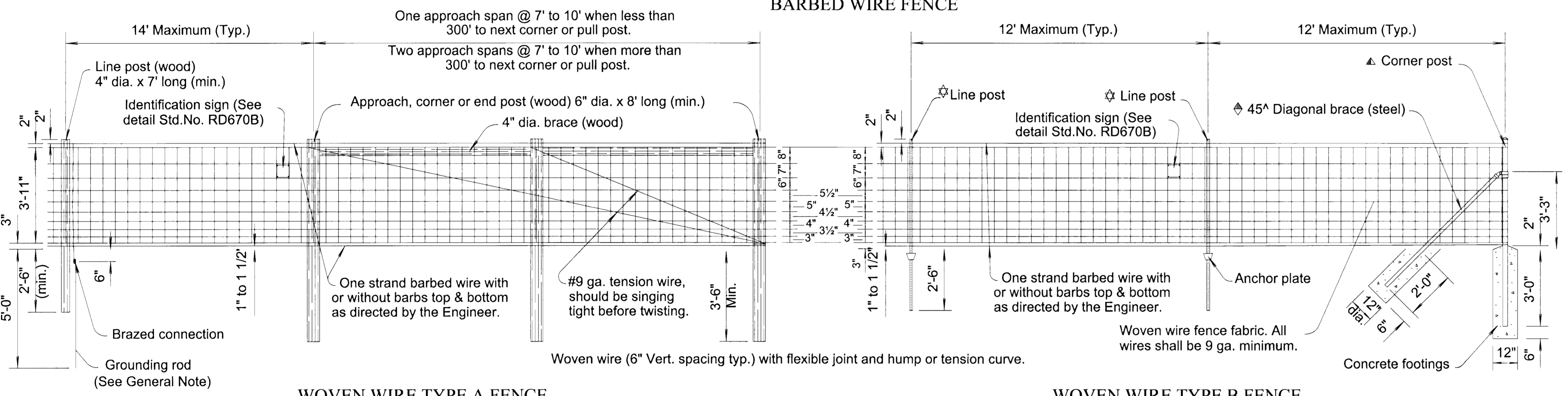
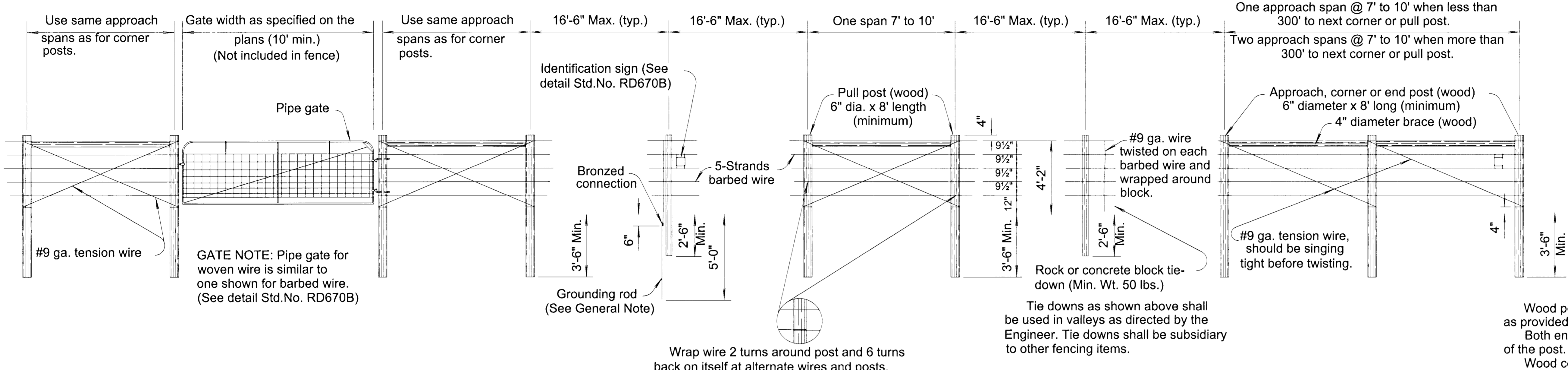


PROJECT NUMBER				Alt. NO.
DESIGN	DRAWN	FILE	DATE	00101
ok	mp	fence		
SCALE				1"=20'

Orme Street Improvements
Fencing Plan
 Wichita, Kansas

SHEET	16
OF	23
REVISED	

FHWA REGION NO.	STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
7	KANSAS		2001	17	23



GENERAL NOTE

Wood posts and braces shall be given a preservative treatment as provided in the K.D.O.T. Standard Specifications. Both ends of all wood posts shall be cut normal to the axis of the post. Pointed posts will not be permitted. Wood corner, end, pull and approach posts shall be notched to support ends of wood braces. Wood braces shall be toenailed to the posts with 2-10d nails in each end of the brace. When wood posts are used, both ends of all tension wires shall be wrapped around the posts twice and stapled in place. When wood posts are used the fence shall be grounded by a 5/8" diameter galvanized or copper coated rod five feet long, driven vertically until the top is six inches below the ground surface. A #6 solid copper conductor shall be securely fastened to each element of the fence by use of clamps or other suitable device. Grounding rod shall be installed at intervals of 175' maximum. In lieu of using the galvanized or copper coated rod as described above the contractor may, at his option, use a steel line post at intervals not to exceed each eighth post. The galvanized or copper coated rod shall be used where power lines pass over the fence. All steel posts, braces, fittings, and gate frames shall be galvanized and/or coated in accordance with KDOT Standard Spec. Steel posts shall be provided with fasteners to prevent slippage of the wire strands. Outside diameters shown for tubular steel posts, bracing and gate frames are nominal. Weight tolerances shall be as shown in the K.D.O.T. Standard Specifications. Posts may be set by driving or digging. If by digging, the posts shall be set in the center of the hole and the soil tamped securely on all sides. Pull post assembly shall be used at sharp breaks in vertical grade or at approximately 330' centers (Woven & Chain link) or 1320' centers (Barbed wire) on straight runs or as directed by the Engineer. Concrete used in fence installation shall conform to the requirements of the K.D.O.T. Standard Specifications. Woven wire, chain link fabric, barbed wire and tension wire shall be either zinc coated (galvanized) or aluminum coated. Minimum strength of barbed wire and tension wire shall be as provided in the K.D.O.T. Standard Specifications. Use #9 gauge galvanized staples 1 1/2" to 1 1/2" long, or #9 gauge galvanized Ring-shank staples 1 1/2" to 1 1/2" long. Alternate gate designs may be submitted for approval. Lighter weight materials will not be approved. Padlocks for gates shall be furnished by the State.

NO.	DATE	REVISIONS	BY	APP'D
5	1-12-98	Rev. line post and end post listing	R.J.S.	J.O.B.
4	3-26-96	Rev. woven wire cor., end, & pull post	R.J.S.	J.O.B.
3	10-19-94	Revised notes on galvanization	R.J.S.	J.O.B.
2	3-24-93	Added tie-down location note	R.J.S.	J.O.B.

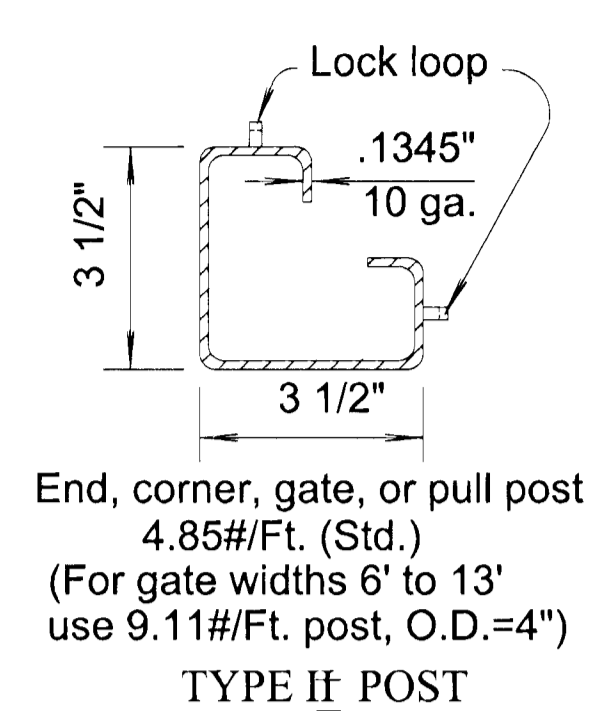
KANSAS DEPARTMENT OF TRANSPORTATION

**HIGHWAY FENCE
BARBED, WOVEN, & CHAIN LINK**

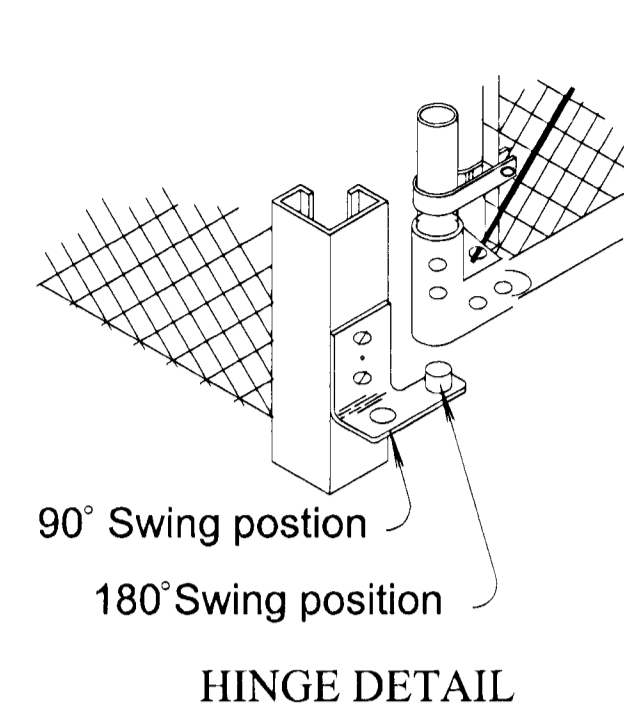
RD670A

FHWA APPROVAL	2-9-98	APP'D. James O. Brewer
DESIGNED	DETAILED	QUANTITIES
DESIGN CK.	DETAIL CK.	TRACE CK.

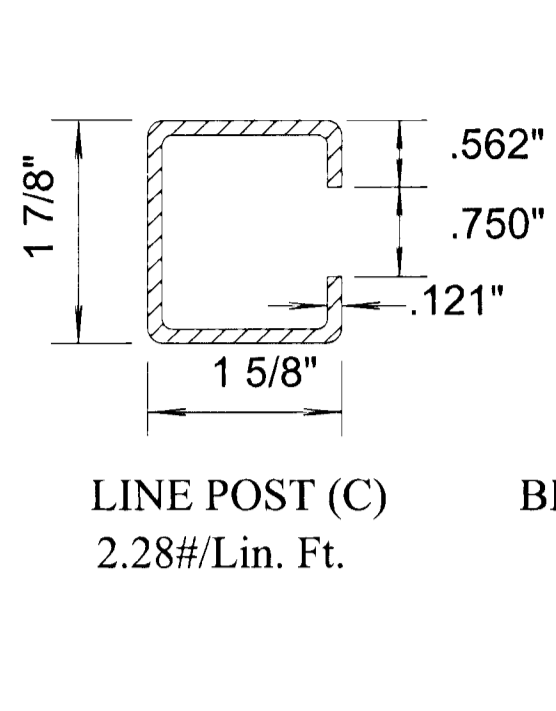
FHWA REGION NO.	STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
7	KANSAS		2001	18	23



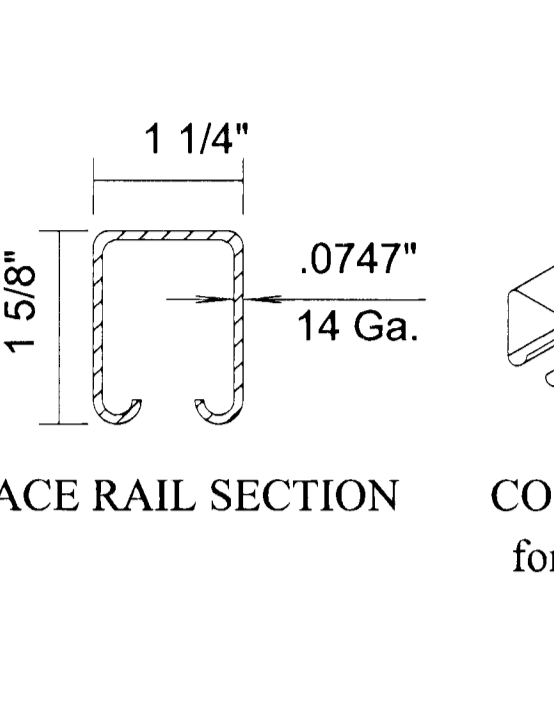
End, corner, gate, or pull post
4.85#/Ft. (Std.)
(For gate widths 6' to 13'
use 9.11#/Ft. post, O.D.=4")
TYPE II POST



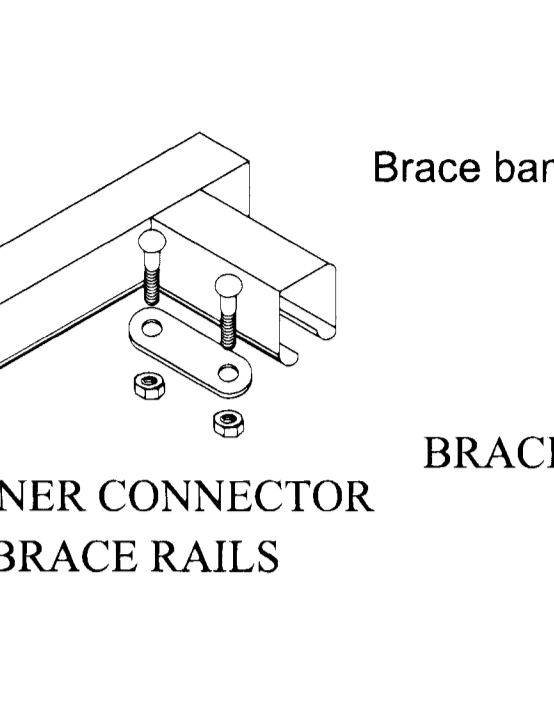
90° Swing position
180° Swing position
HINGE DETAIL



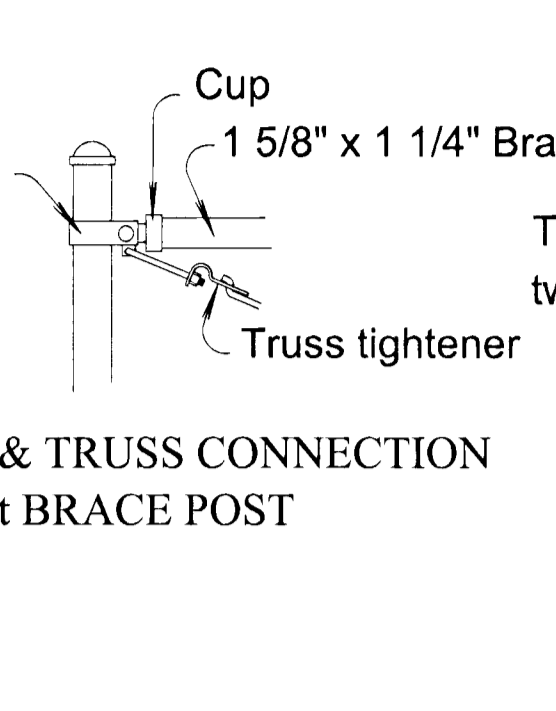
LINE POST (C)
2.28#/Lin. Ft.



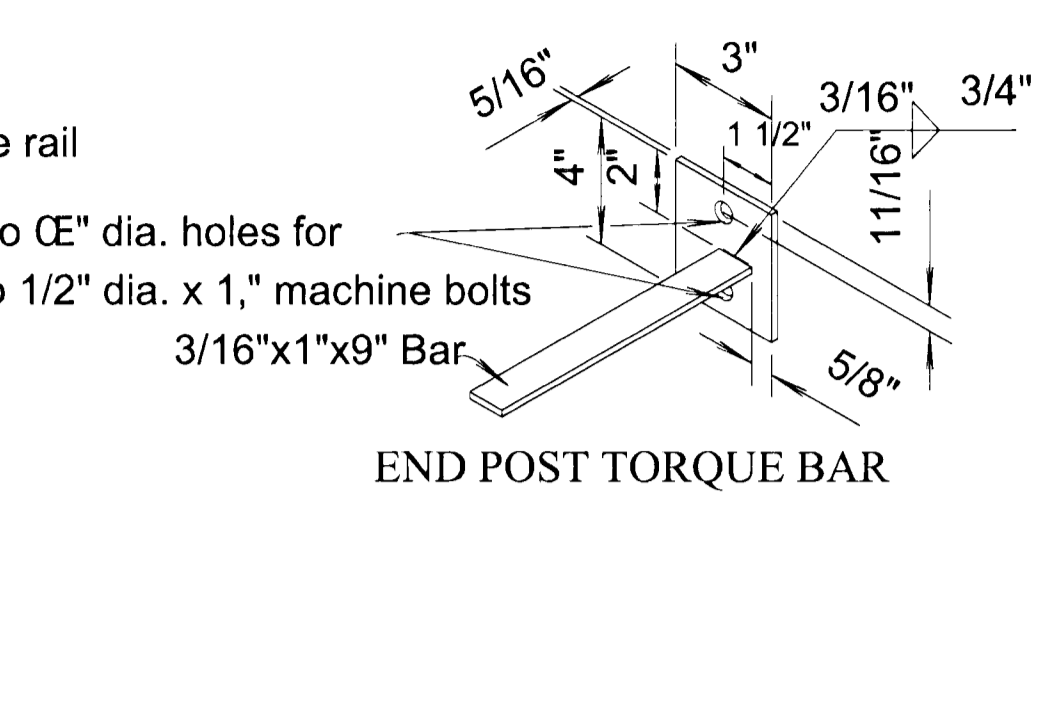
BRACE RAIL SECTION
14 Ga.



CORNER CONNECTOR
for BRACE RAILS

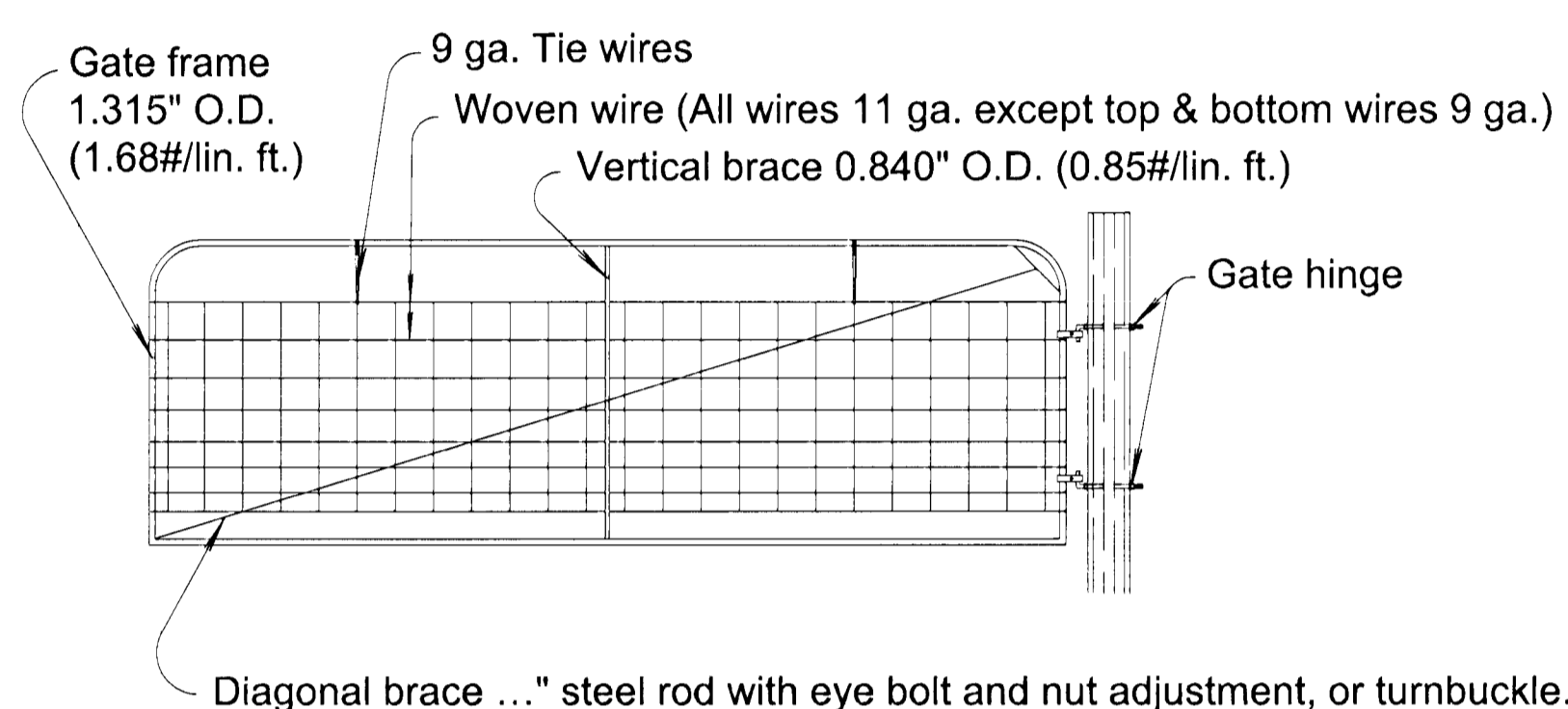


BRACE & TRUSS CONNECTION
at BRACE POST

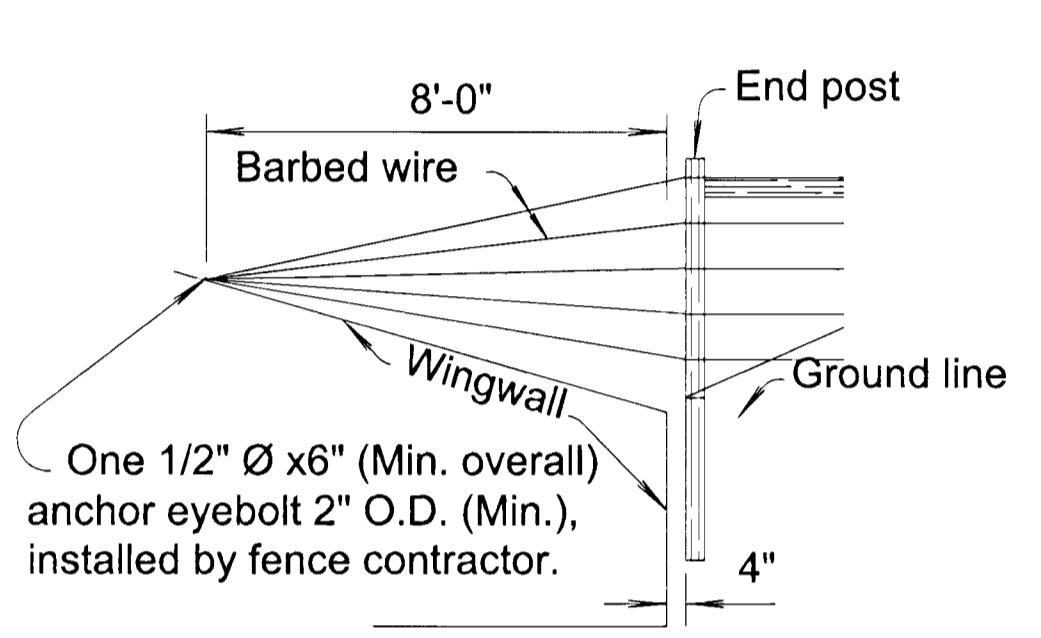


END POST TORQUE BAR

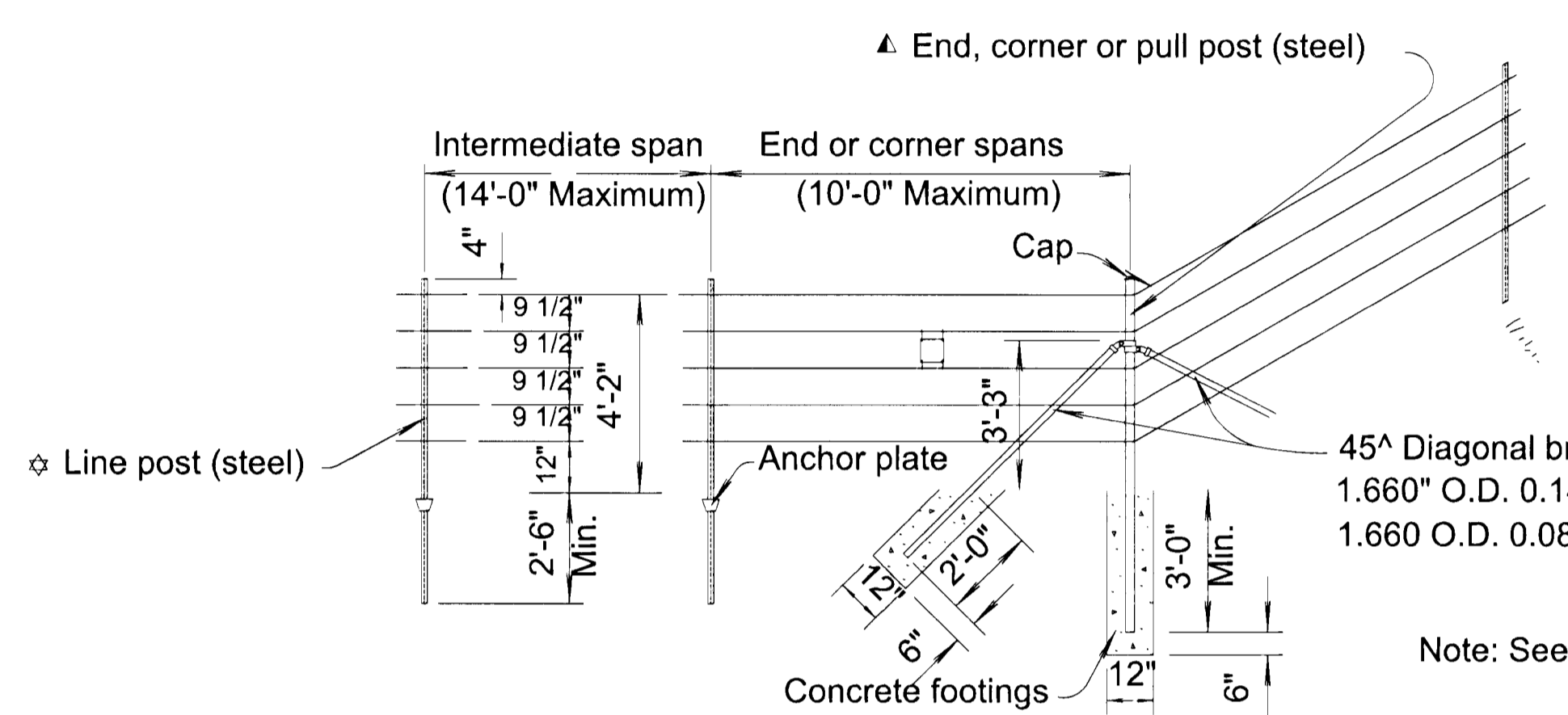
ALTERNATE CHAIN LINK DETAILS



DETAIL of GATE, HINGE & SPECIFICATIONS
(for Barbed & Woven Fence)

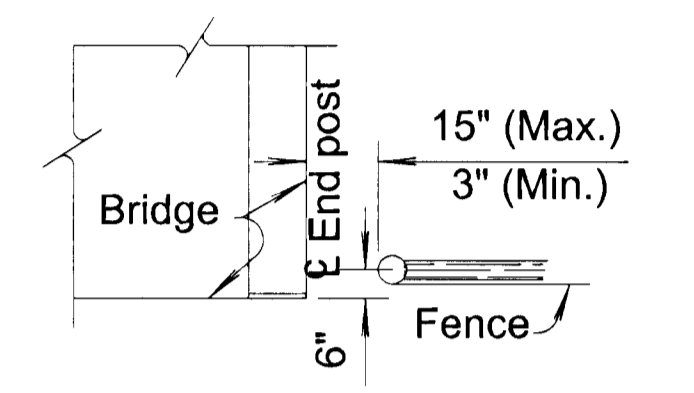


FENCE DETAILS
AT DRAINAGE STRUCTURES
(Type A, B, or Barbed wire fence.)

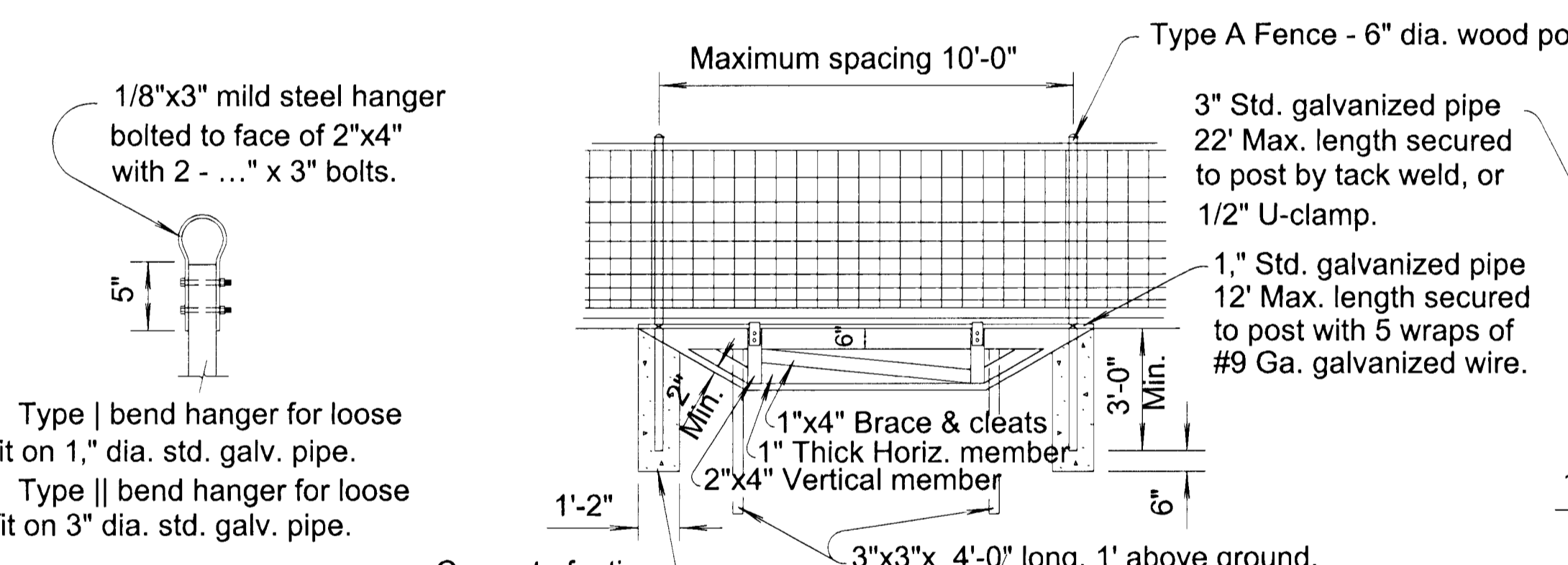


BARBED WIRE FENCE
STEEL POST (ALTERNATE)
Steel posts may be used in lieu of wood posts as shown above.

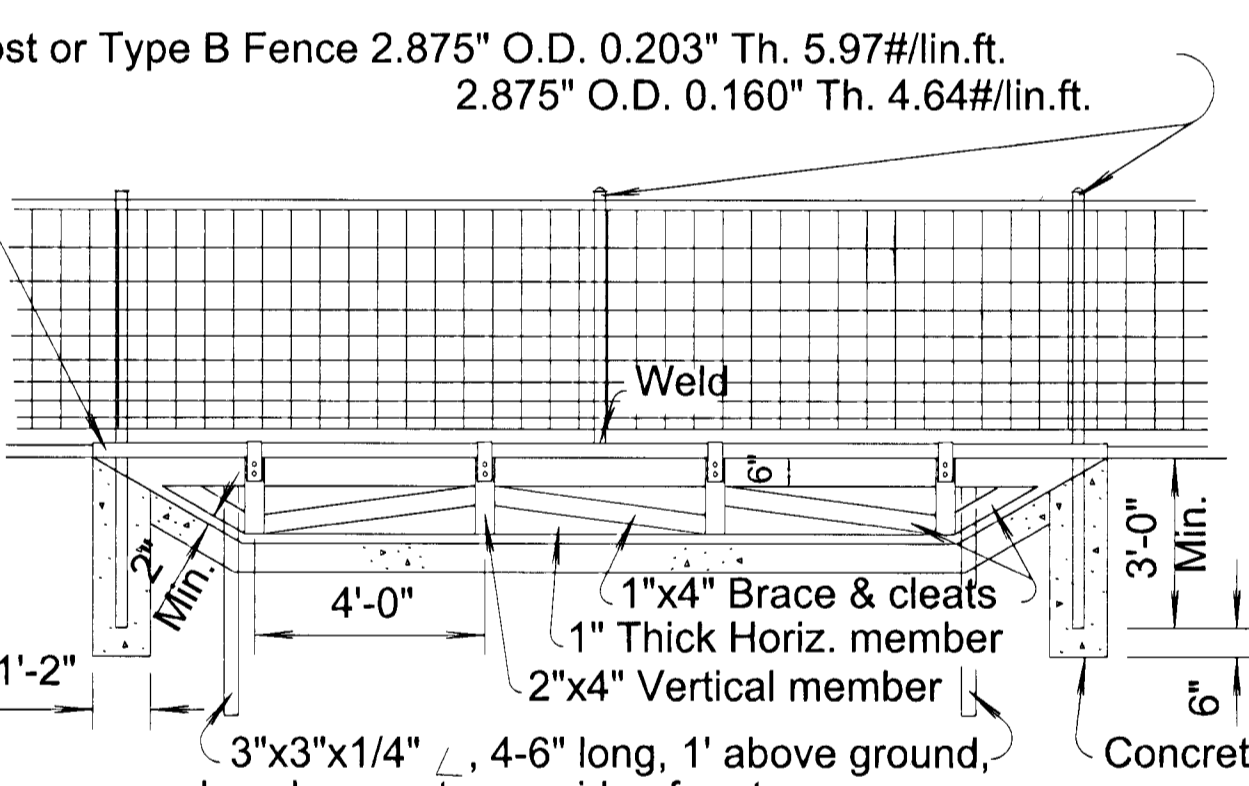
GENERAL NOTE
A line post shall be used at each cross fence, and the contractor shall make a temporary connection. This work shall be subsidiary to other bid items.
In general, where needed, use small channel crossing as shown, Type I and Type II Floodgates will be used very seldom.



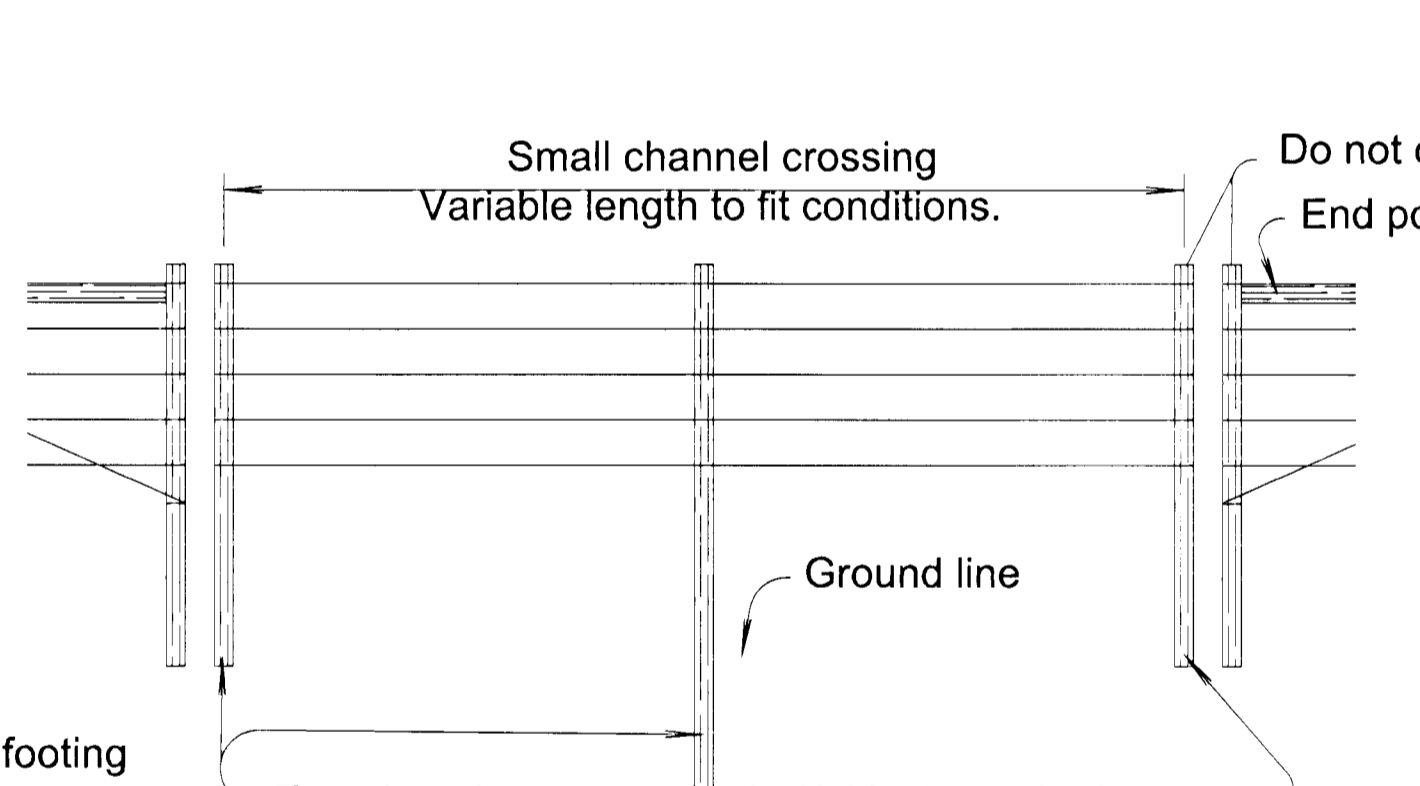
FENCE DETAILS
AT BRIDGE ABUTMENTS
(Use appropriate post and brace for fence type, dimensions are common for all fence types.)



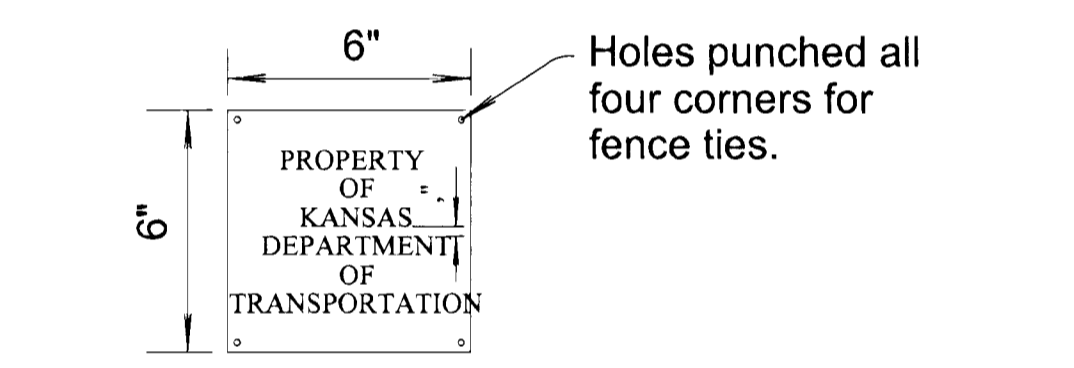
FLOODGATE
HANGER DETAIL



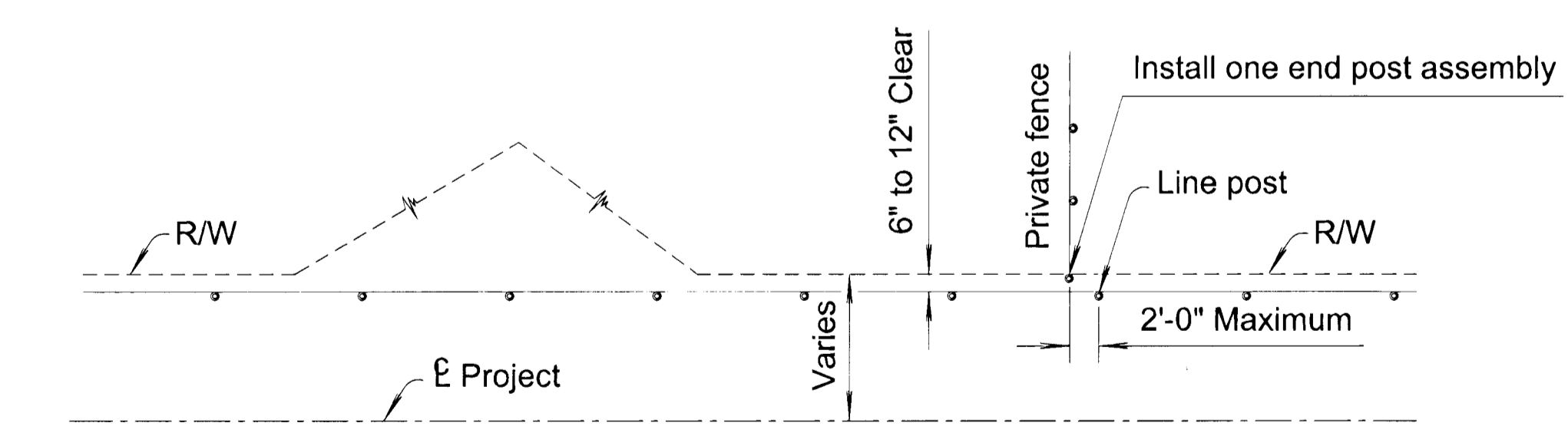
TYPE II FLOODGATE
(Grouted stone or concrete lined ditch.)



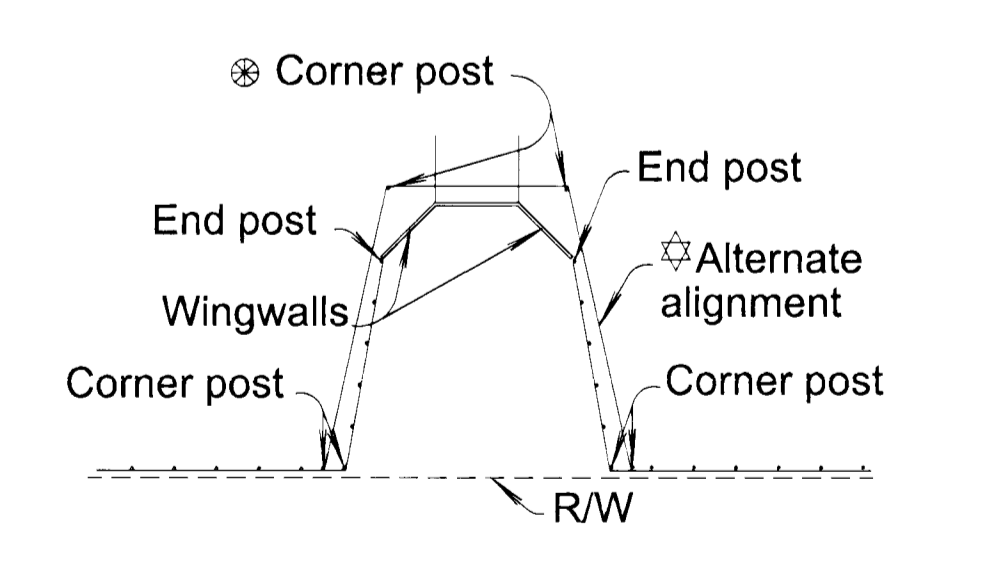
SMALL CHANNEL CROSSING



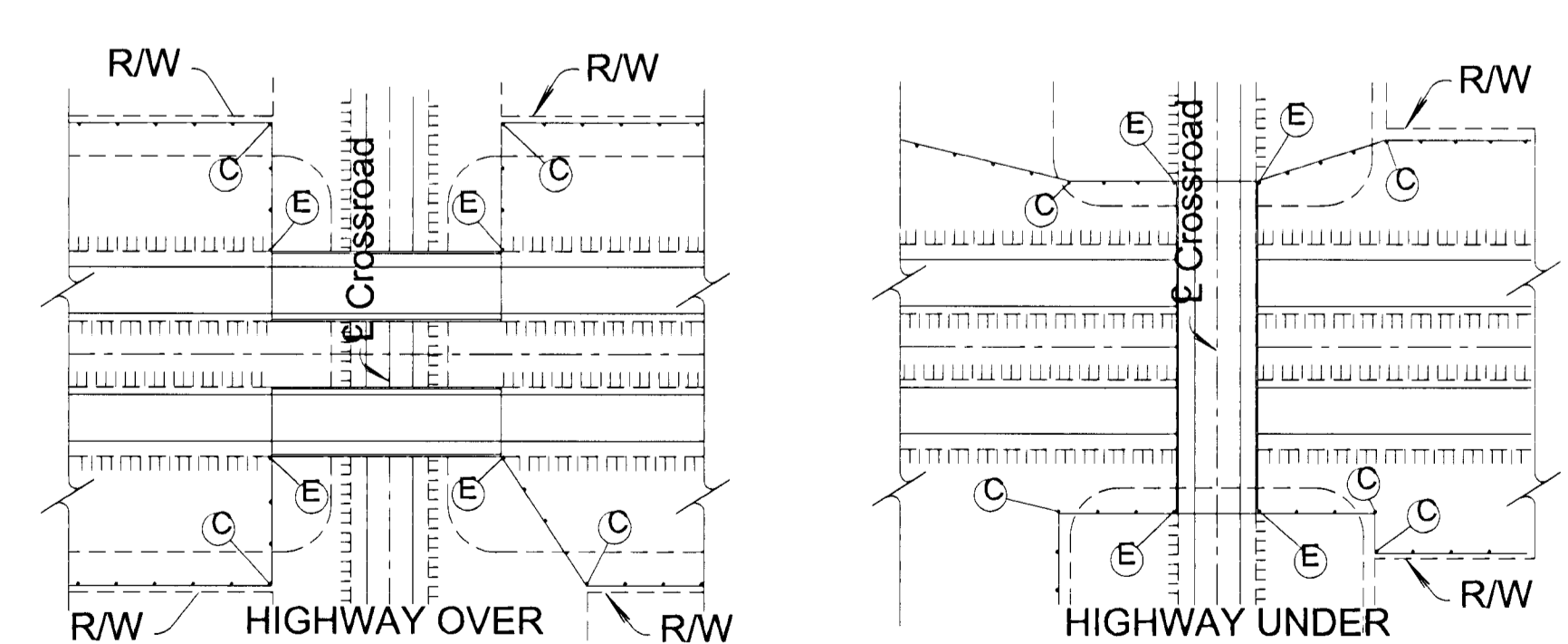
IDENTIFICATION SIGN
(20 ga. Metal)
Front and back of Identification Sign to be painted white. 1/2 inch Block Lettering as shown in sketch to be applied on the white background in black color on both sides of the sign.
This sign is to be tied to the fence with twisted wire at each corner of the sign as shown and shall be placed at 300' to 500' intervals along the line of fence.



TYPICAL INSTALLATION DIAGRAM



FENCE ALIGNMENT
AT UNDERPASS OR
BOX DRAINAGE STRUCTURE



FENCE ALIGNMENT AT BRIDGE ABUTMENTS

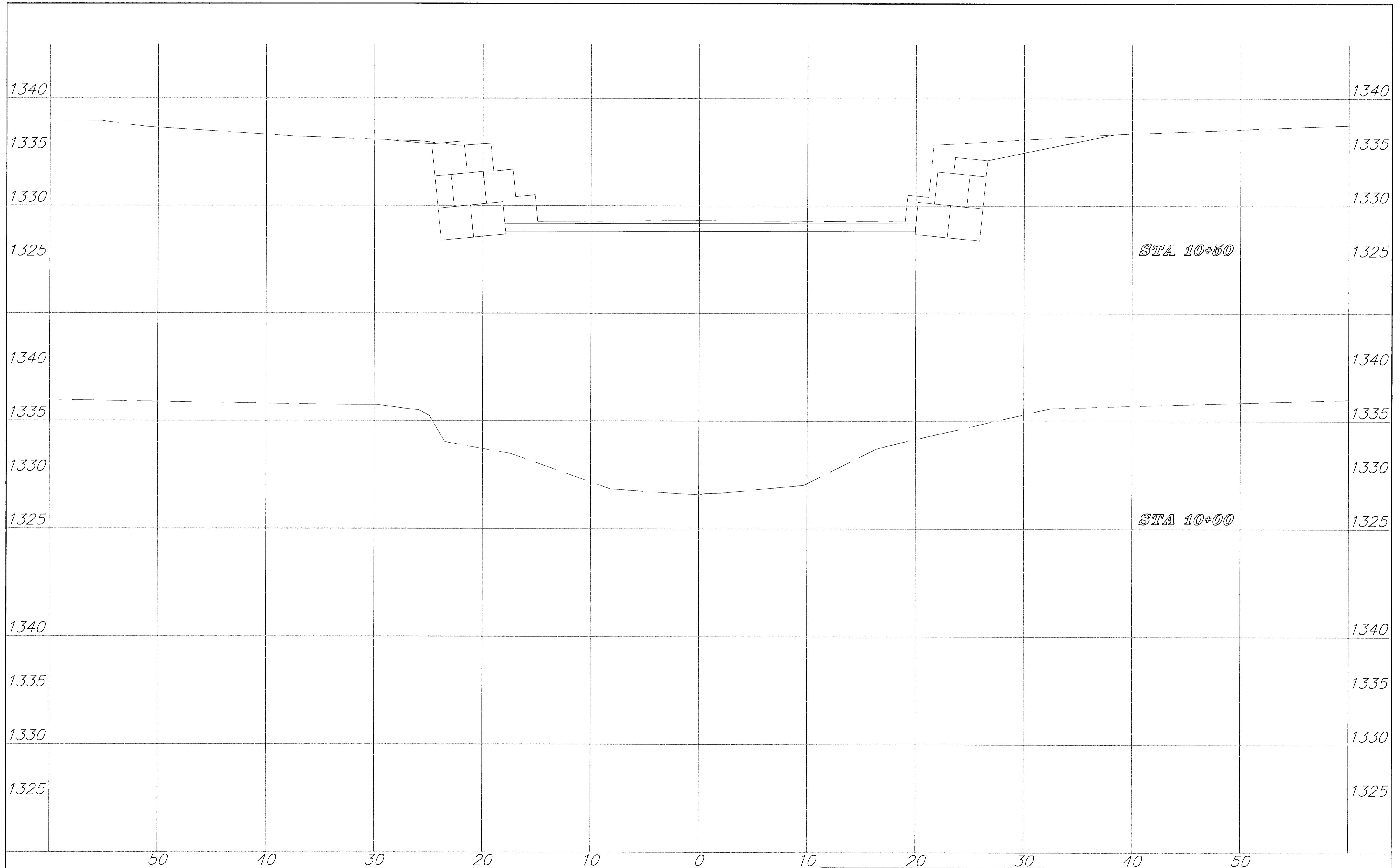
Where fence installation over a drainage structure is located within the clear zone, horizontal bracing at the corner posts will not be permitted. An alternate design utilizing diagonal bracing shall be provided.


Note: Right of Way fence shall generally be set parallel to and 6" to 12" clear from the Right of Way line.
The alignment layouts as shown are typical, but are not representative of all situations that may occur. Construction may be varied, as required to meet field conditions and/or as directed by the Engineer.
The access control fence shall be attached to the private fence end post assembly using leader wires or staples.

NO.	DATE	REVISIONS	BY	APPD
4	12-30-97	Connect to Private Fence End Post	R.J.S.	J.O.B.
3	7-9-97	R/W Clearance & Pvt. Fc. End Post	R.J.S.	J.O.B.
2	4-30-97	Bracing at Drainage Structure	R.J.S.	J.O.B.
1	4-5-96	Steel Post Reference	R.J.S.	J.O.B.

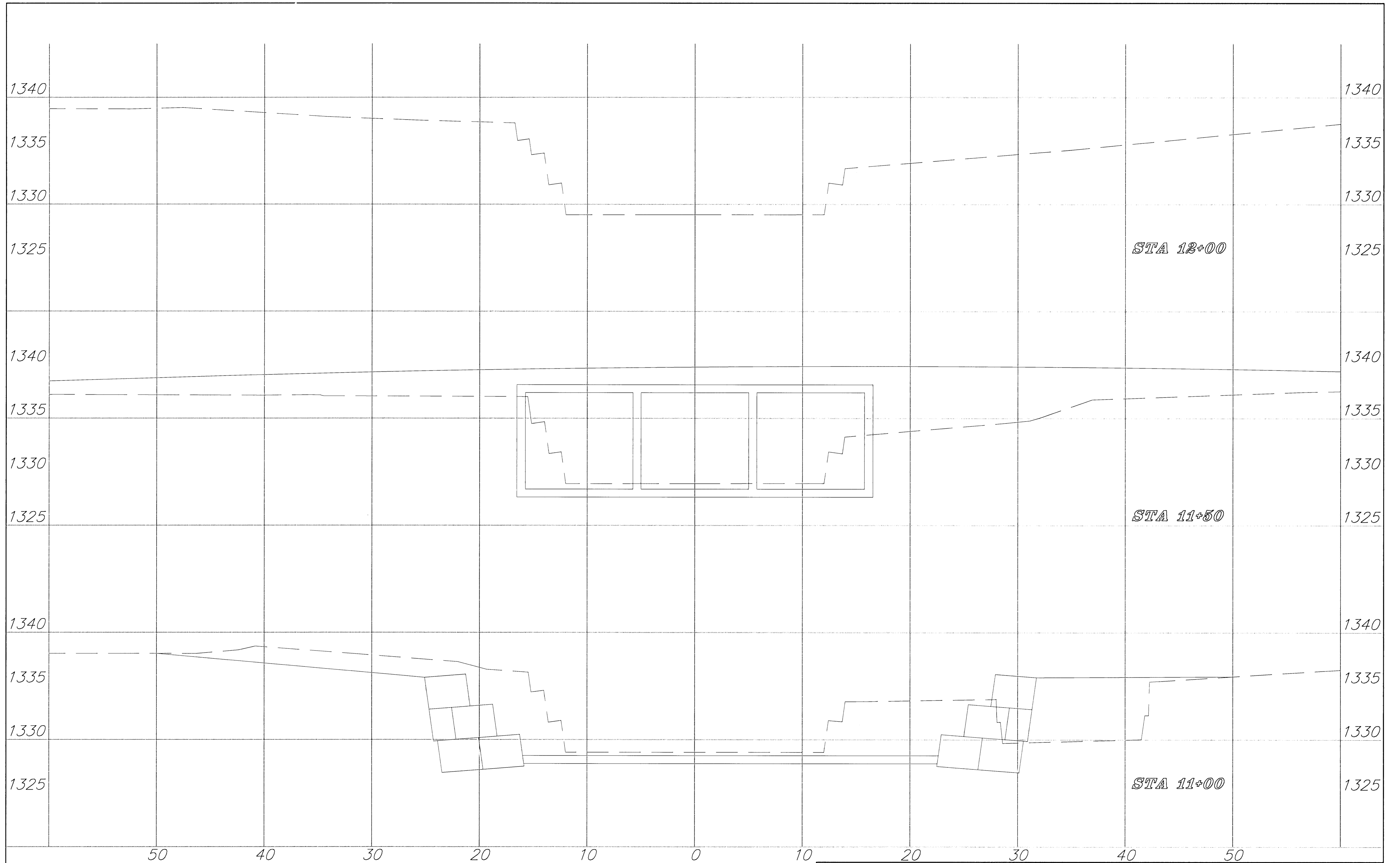
KANSAS DEPARTMENT OF TRANSPORTATION
INSTALLATION DETAILS
BARBED, WOVEN, & CHAIN LINK
RD670B

FHWA APPROVAL	2-2-98	APPD	James O. Brewer
DESIGNED	DETAIL	QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.	QUAN. CK.	TRACE CK.

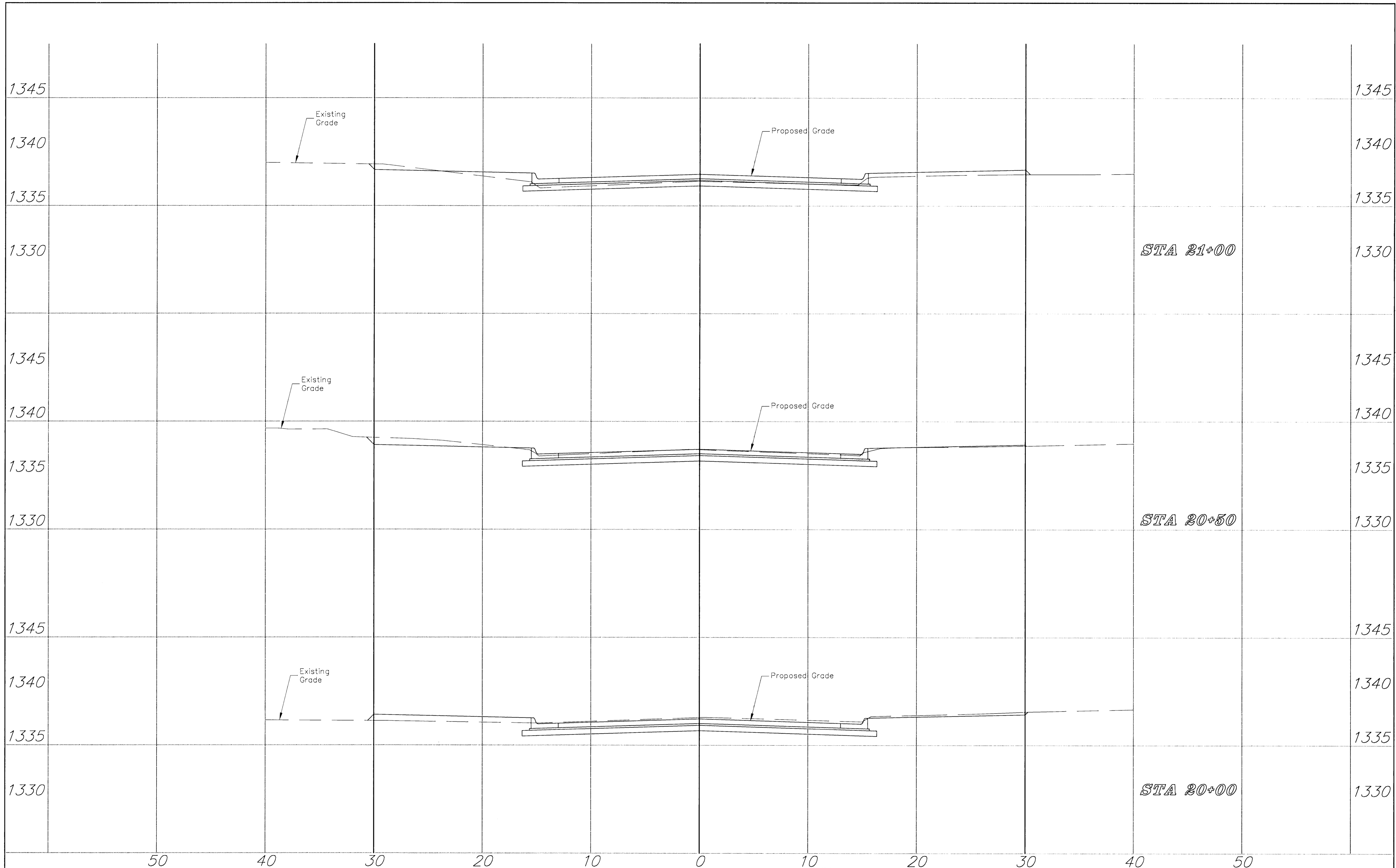



	PROJECT NUMBER 472-83229		AM. NO. 20101	SHEET 19 OF 23 REVISED 07/19/01
	DESIGN pb	DRAWN pb	FILE section	

Dry Creek Channel Improvement
Sta 9+50 to 10+50
 Wichita, Kansas

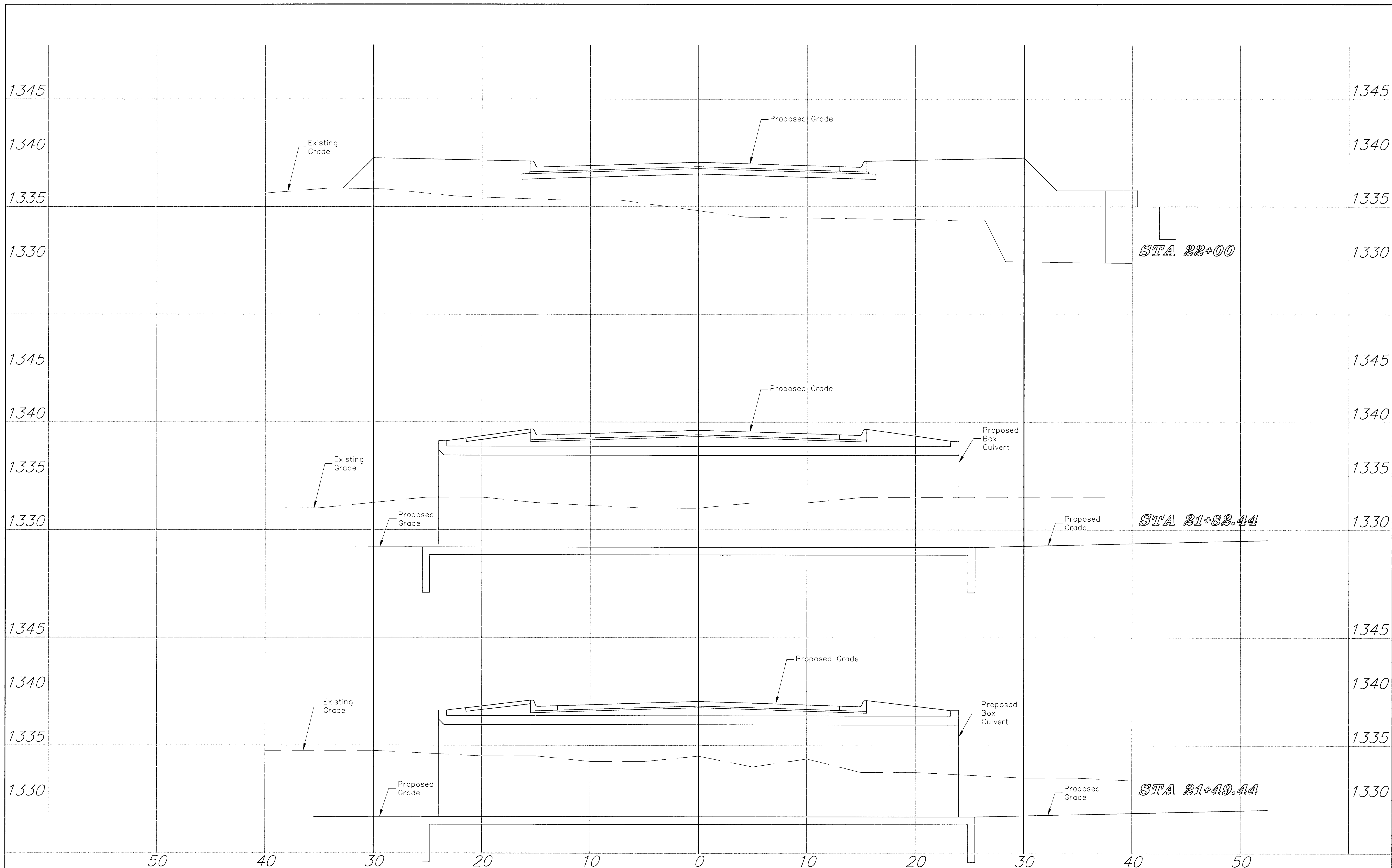



	PROJECT NUMBER 472-83229				AM. NO. 00101	Dry Creek Channel Improvement Sta 11+00 to 12+00 Wichita, Kansas	SHEET 20 OF 23	REVISION 6/14/01
	DESIGN pb	DRAWN pb	FILE section	DATE 11/00	SCALE 1" = 4'			

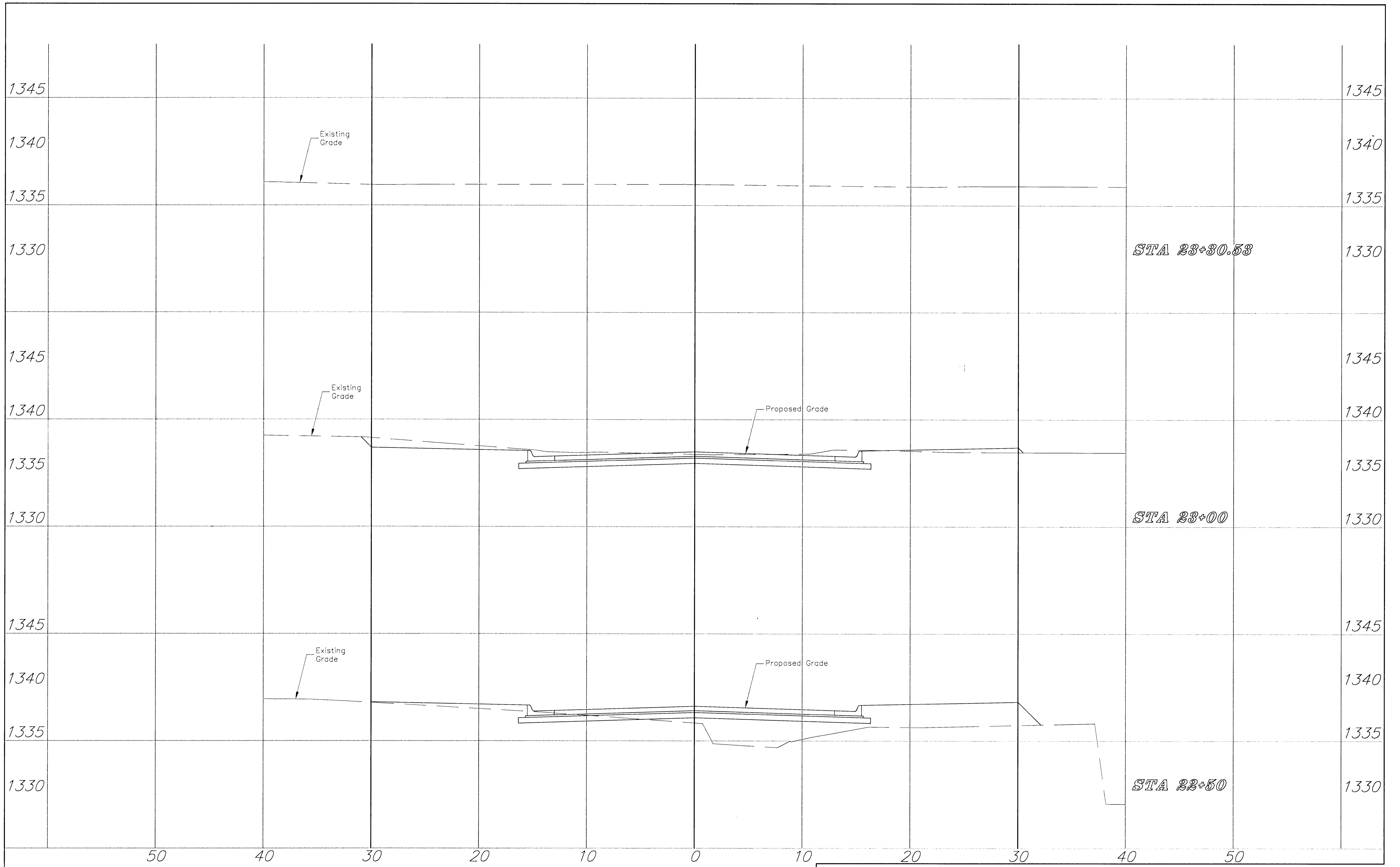


	PROJECT NUMBER 472-83229		AM. NO. 03/01	SHEET 21 OF 23 REVISED 07/17/01
	DESIGN my	DRAWN oe	FILE xsections	

Orme Street
Sta 20+00 to 21+00
Wichita, Kansas

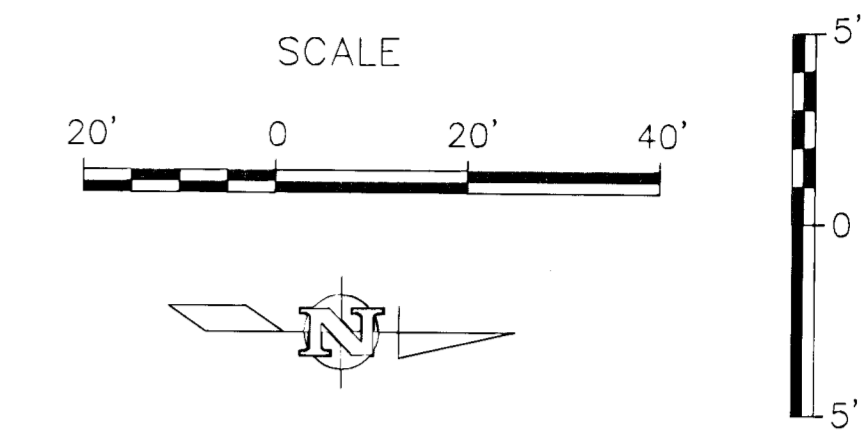
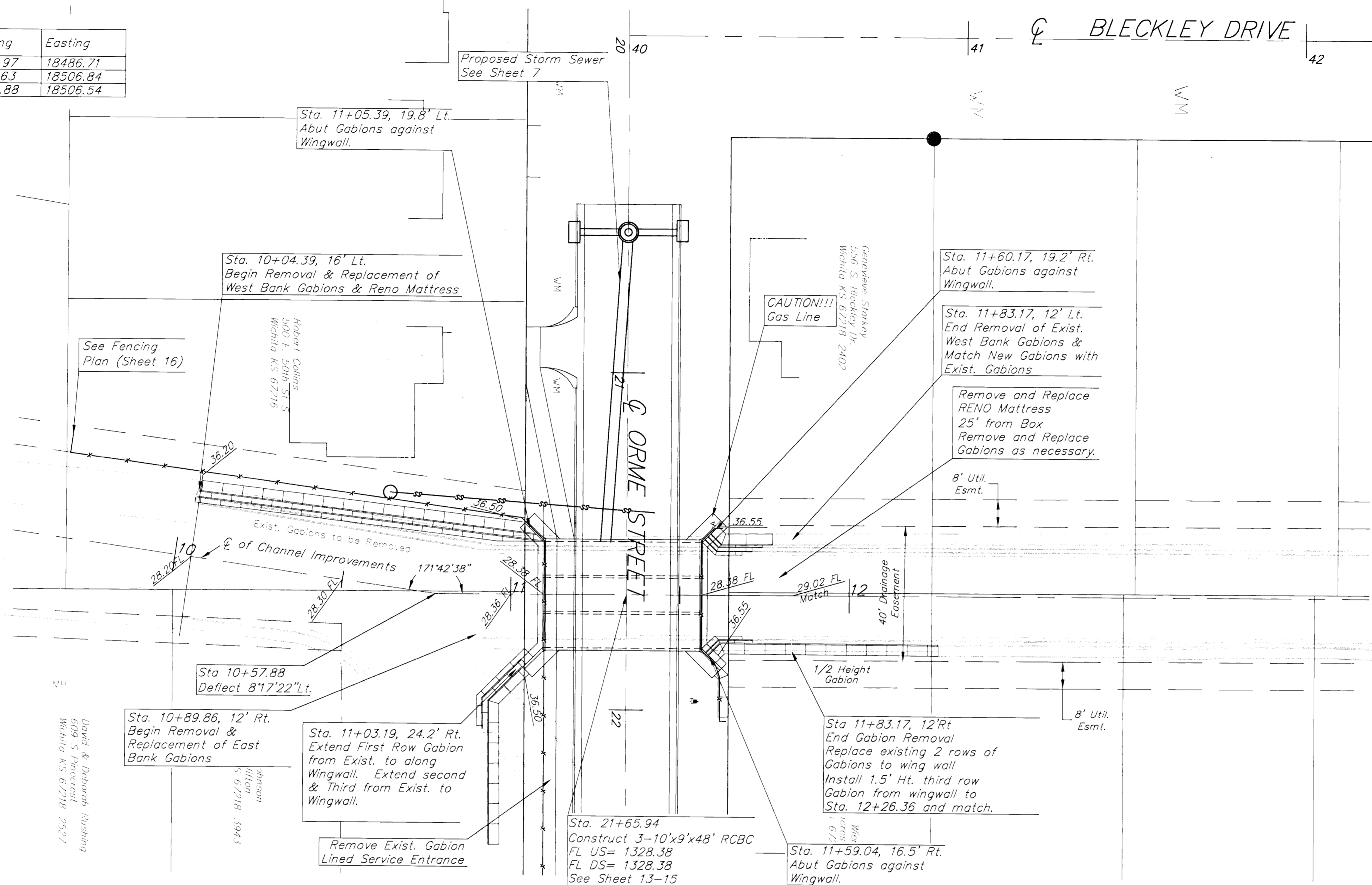


	PROJECT NUMBER 472-83229				AM NO. 00101	Sta 21+50 to 22+50 Orme Street Wichita, Kansas	SHEET 22
	DESIGN my	DRAWN oe	FILE xsections	DATE 08/03/01	SCALE 1" = 4'		OF 23



	PROJECT NUMBER 472-83229		SHEET NO. 00101		Sta 23+00 to 23+30.53 Orme Street Wichita, Kansas	SHEET 23 OF 23	REVISION 6/14/01
	DESIGN <i>my</i>	DRAWN <i>ae</i>	FILE <i>xsections</i>	DATE 08/03/01			

Station	Northing	Easting
9+35.78	21790.97	18486.71
10+77.88	21931.63	18506.84
12+00	22053.88	18506.54



BENCHMARK:

BM #1 "□" CUT NE COR INLET CL ORME W SIDE PINECREST EL=1336.95 (MSL)

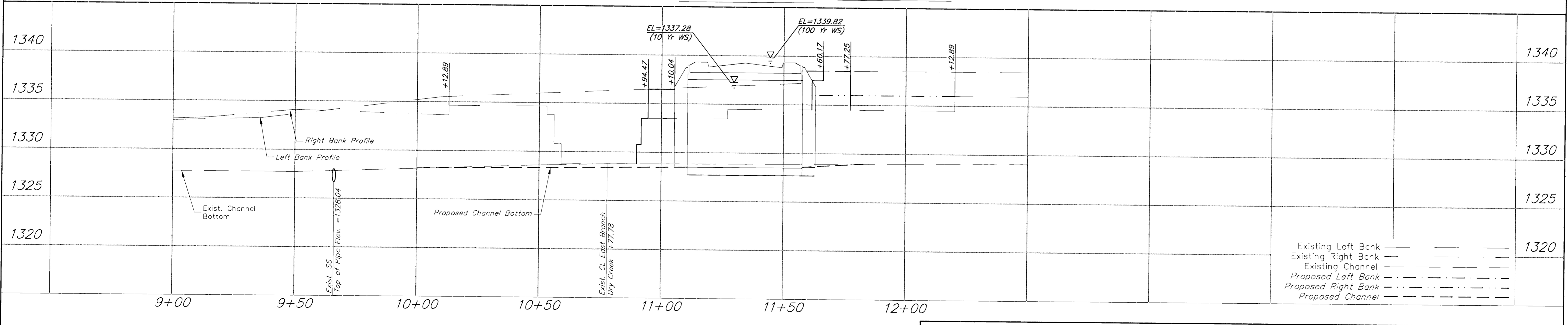
BM #2 "□" CUT TC N RET W SIDE BLECKLY & ORME EL=1337.56 (MSL)

RCB DESIGN DATA

DRAIN AREA= 1.53 Sq. Mi.
DESIGN FREQUENCY= 100 Yr
DESIGN DISCHARGE= 2260 c.f.s.

OVERTOPPING ELEVATION= 1339.26
OVERTOPPING DISCHARGE= 2015
OVERTOPPING FREQUENCY= 50+

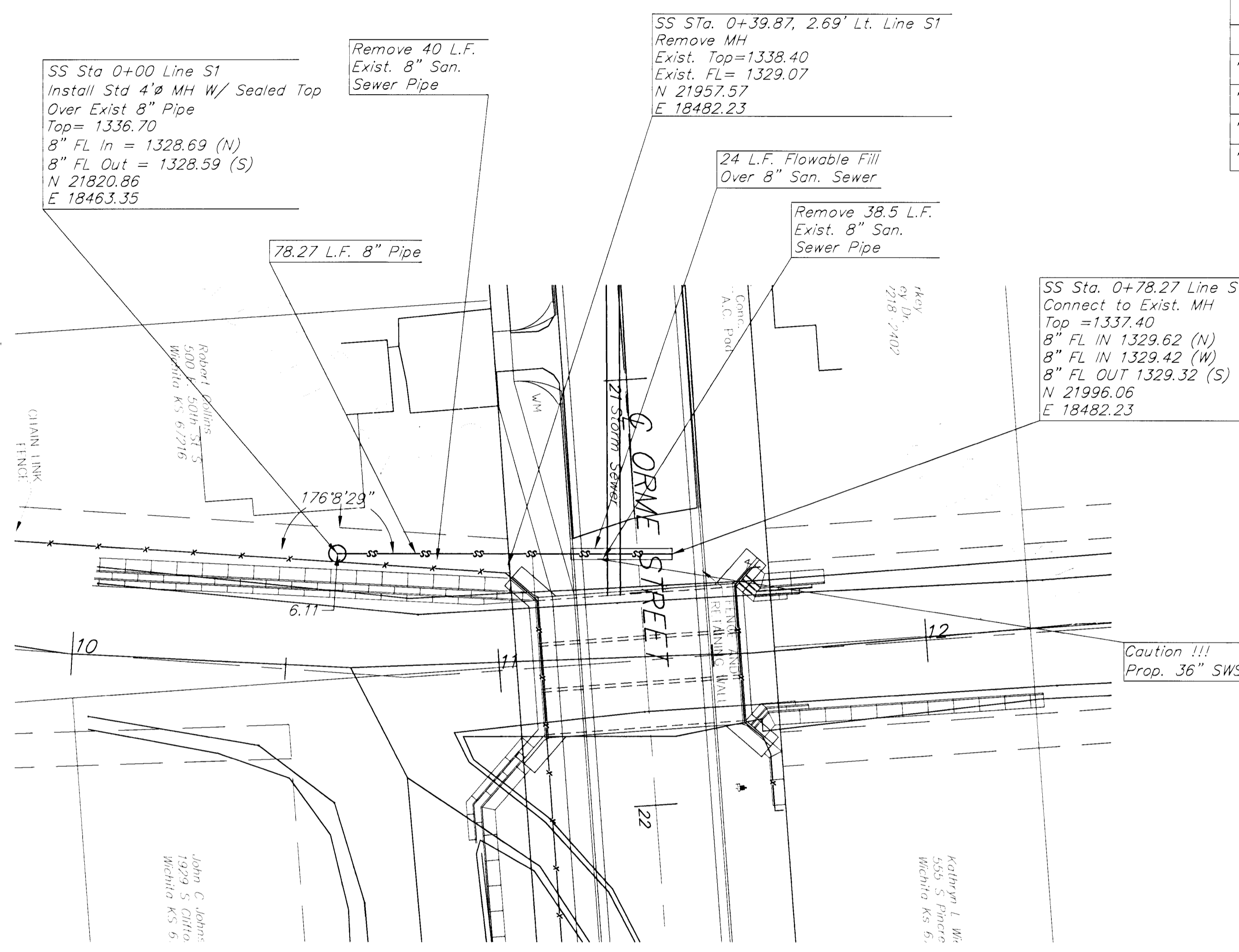
HIGH WATER ELEVATION @ Q100=1339.82
HIGH WATER ELEVATION @ Q50 =1339.14
HIGH WATER ELEVATION @ Q10 =1337.28



PROJECT NUMBER 472-83229				AM NO. 00101	Orme Street Improvements Channel Plan Wichita, Kansas	SHEET 4
DESIGN pb	DRAWN pb	FILE channel	DATE 11/00	SCALE 1"=20'		OF 23

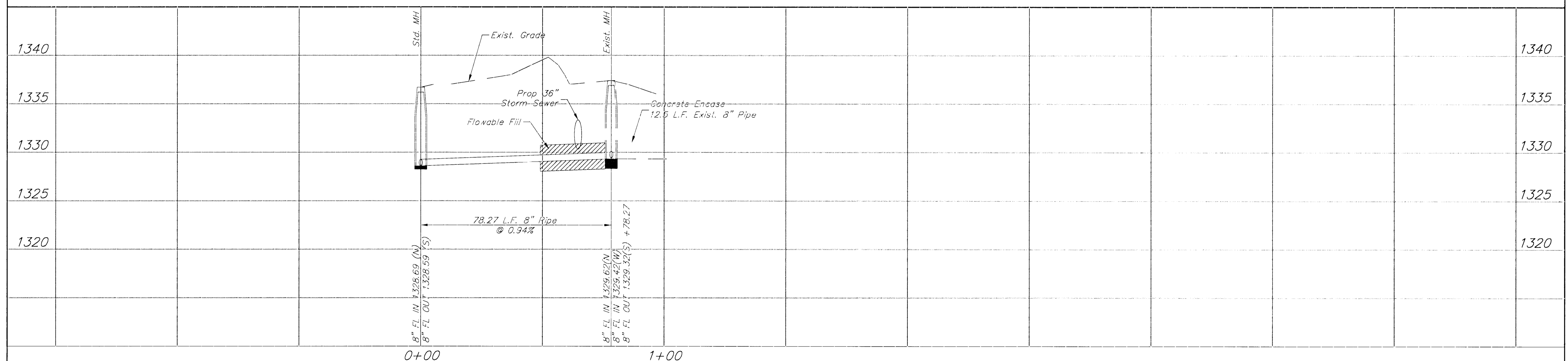
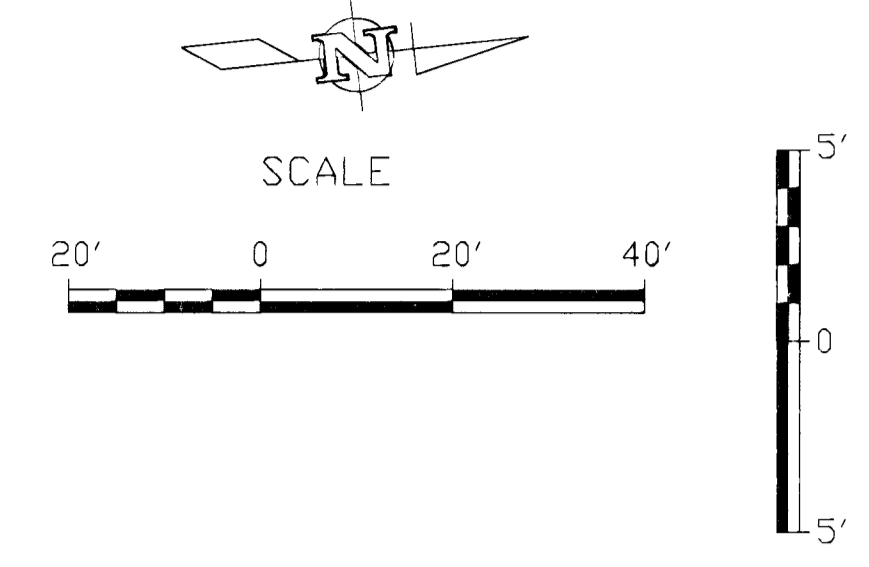
310/262-1381

6/14/01

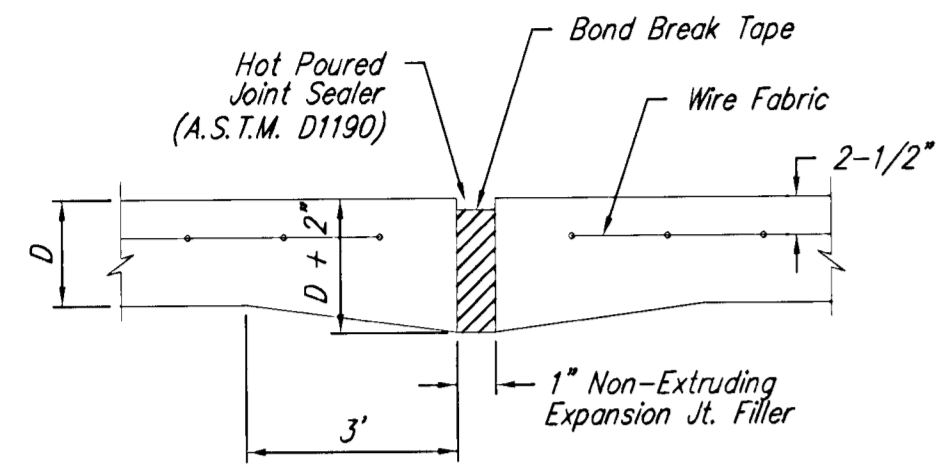


CONTROL POINTS		
DESCRIPTION	NORTHING	EASTING
"3/4" Pinch Iron NE of Gilbert Ct.	21472.46	18402.07
"+" Cut Center of Bleckley Ct.	21677.58	18356.70
"1/2" Prop. Iron SE Cor orme & Pinecrest	21985.54	18700.75
"+" Cut Center Line Intersection of Bleckley Drive and Bleckley Ct	22033.88	18506.54

BENCHMARK:
 BM #1 "□" CUT NE COR INLET CL ORME W SIDE PINECREST EL=1336.95 MSL
 BM #2 "□" CUT TO N RET W SIDE BLECKLY & ORME EL=1337.56 MSL

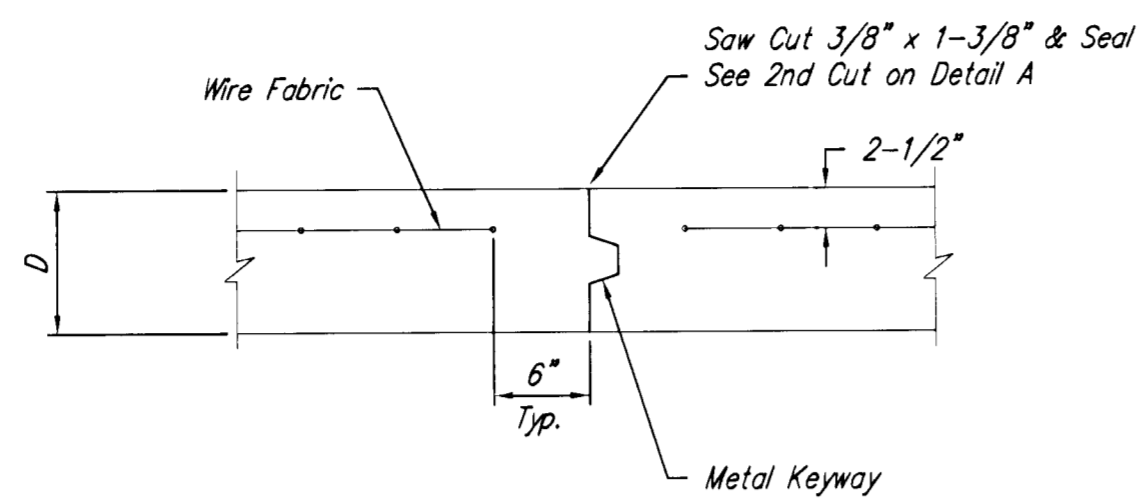


	PROJECT NUMBER 472-83229		AM. NO. 00101	ORME STREET PHASE I SANITARY SEWER WICHITA, KANSAS	SHEET 6
	DESIGN PB	DRAWN AE	FILE 00101-SS		DATE 01/28/01

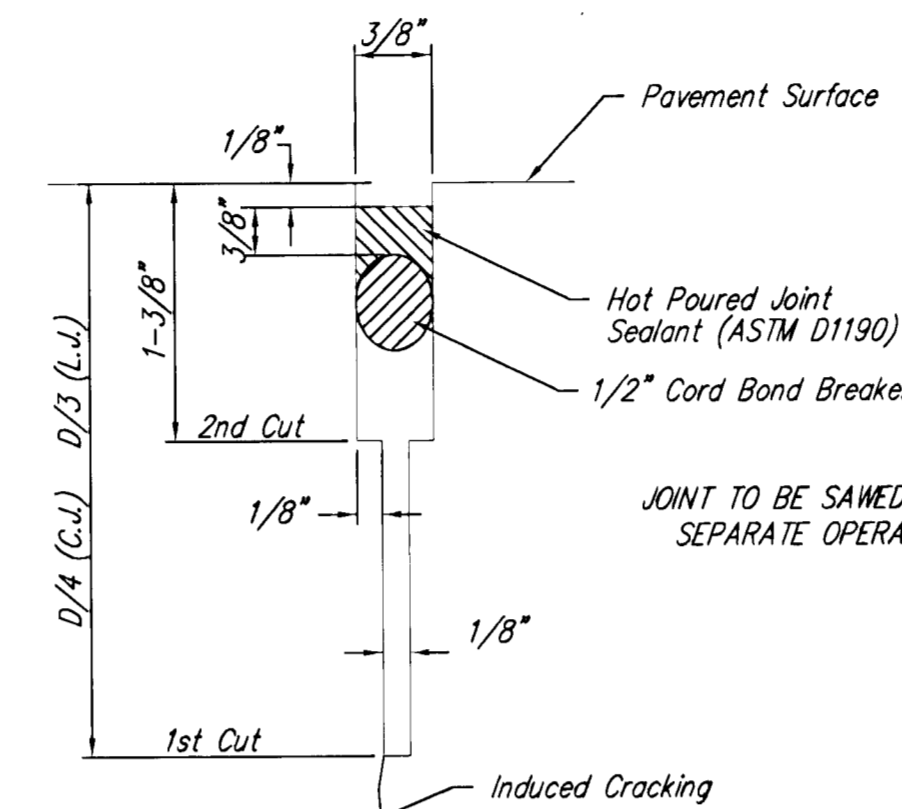


EXPANSION JOINT

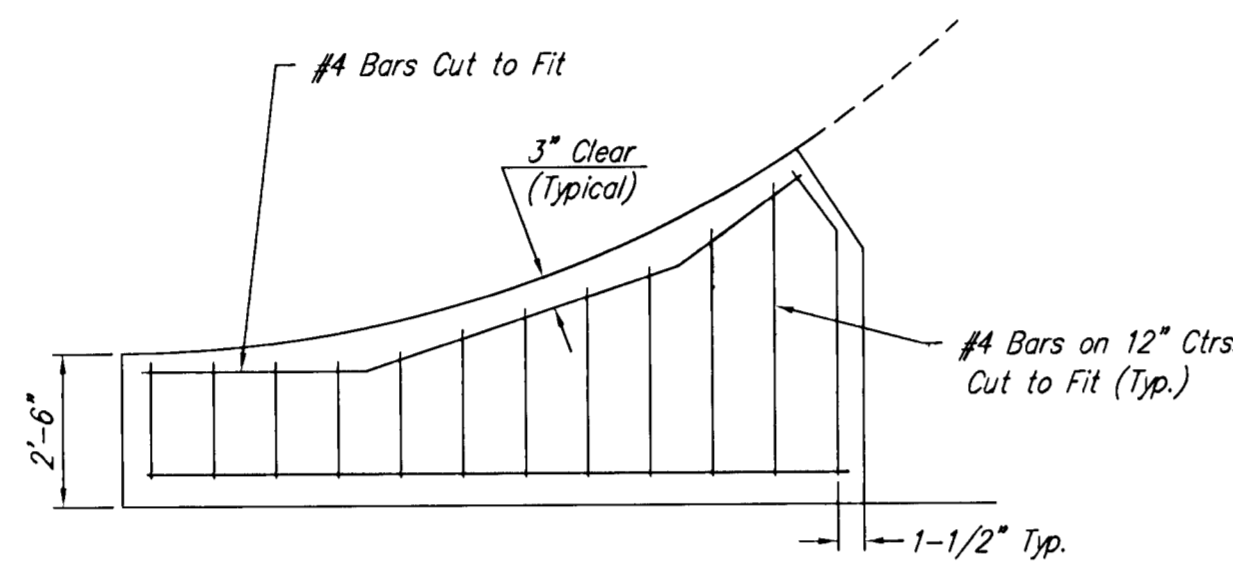
NOTE: Extra Thickness to be Subsidiary to Price of Square Yards Pavement



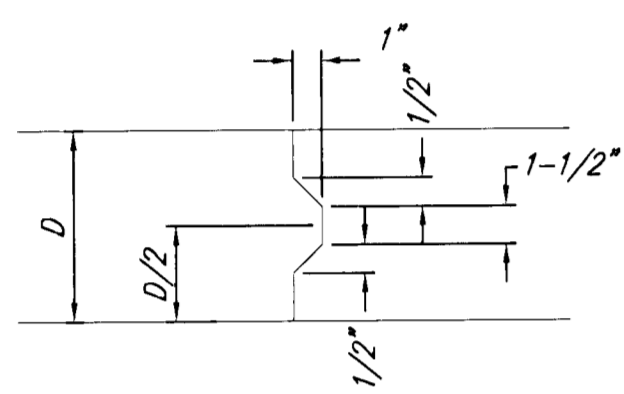
OPTIONAL CONTRACTION JOINT



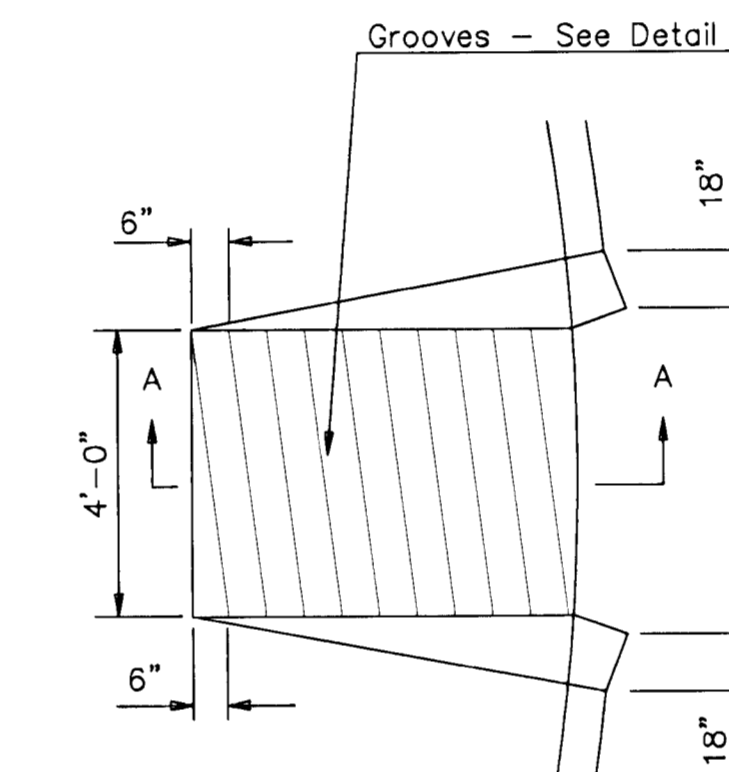
SAW JOINT DETAIL



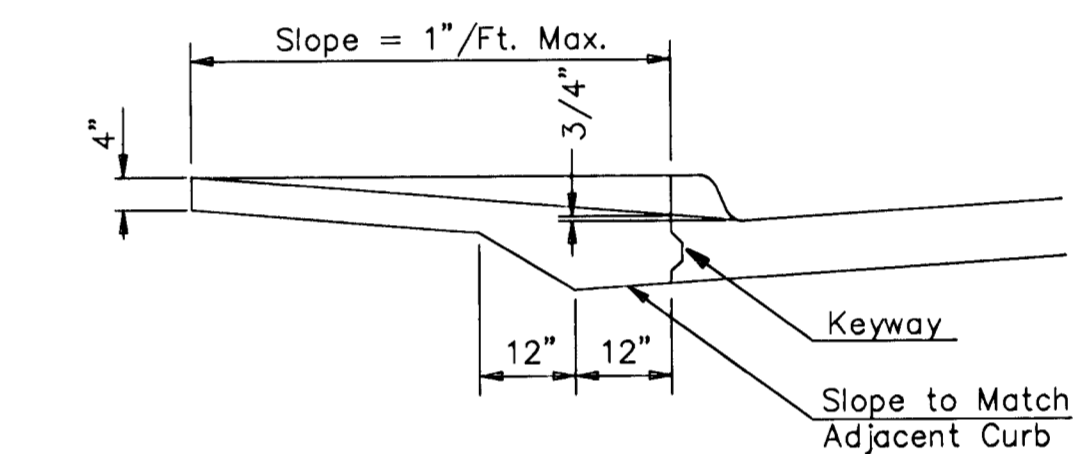
WING REINFORCING DETAIL



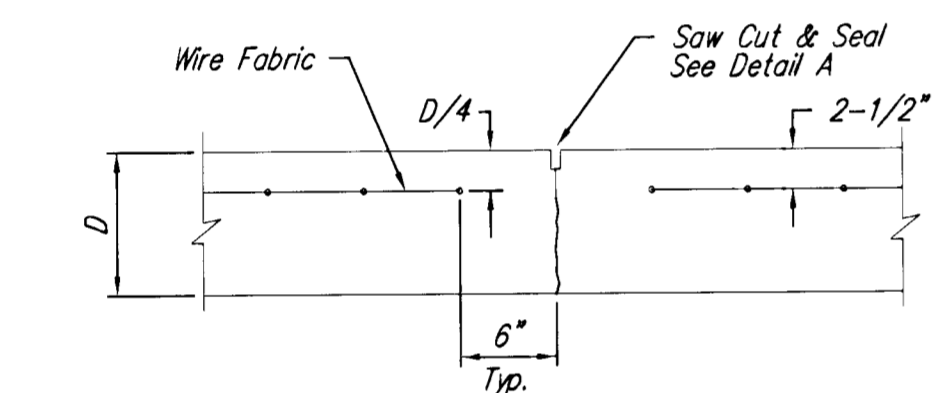
KEYWAY DETAIL



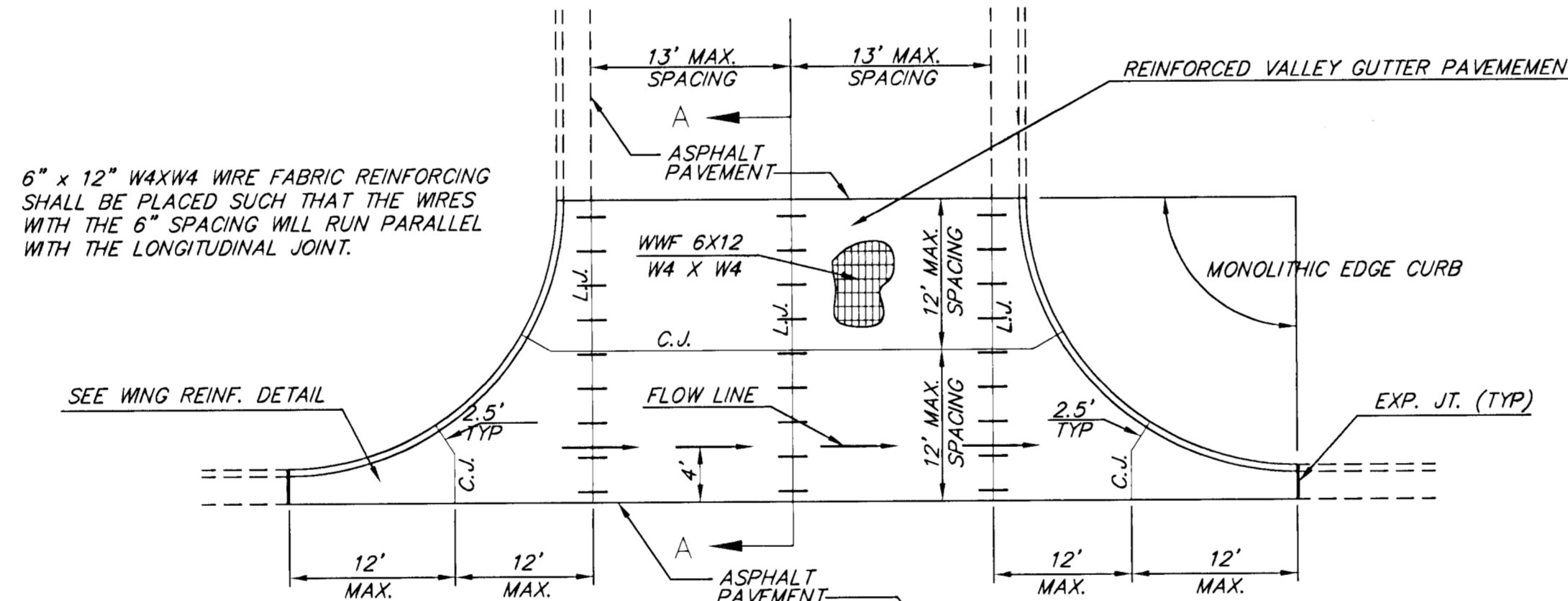
WHEELCHAIR RAMP PLAN VIEW



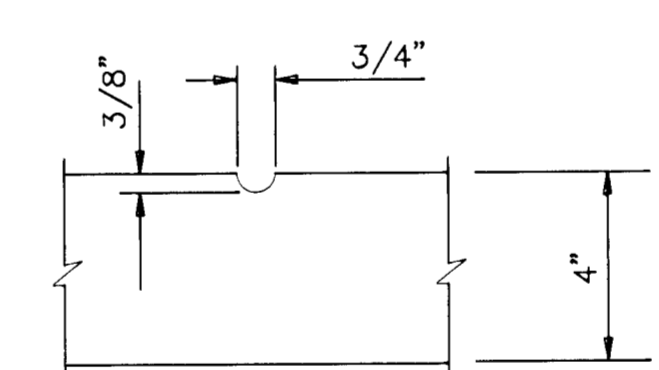
SECTION A-A



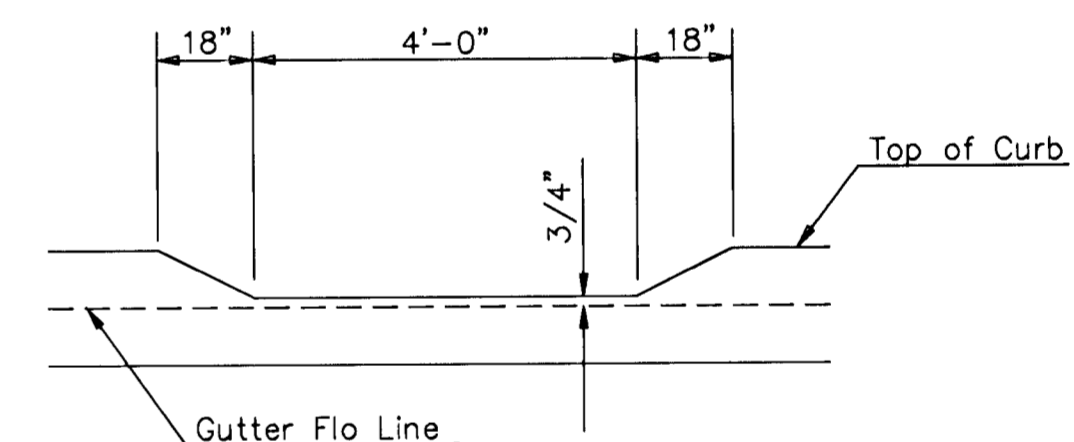
CONTRACTION JOINT DETAIL (C.J.)



PLAN

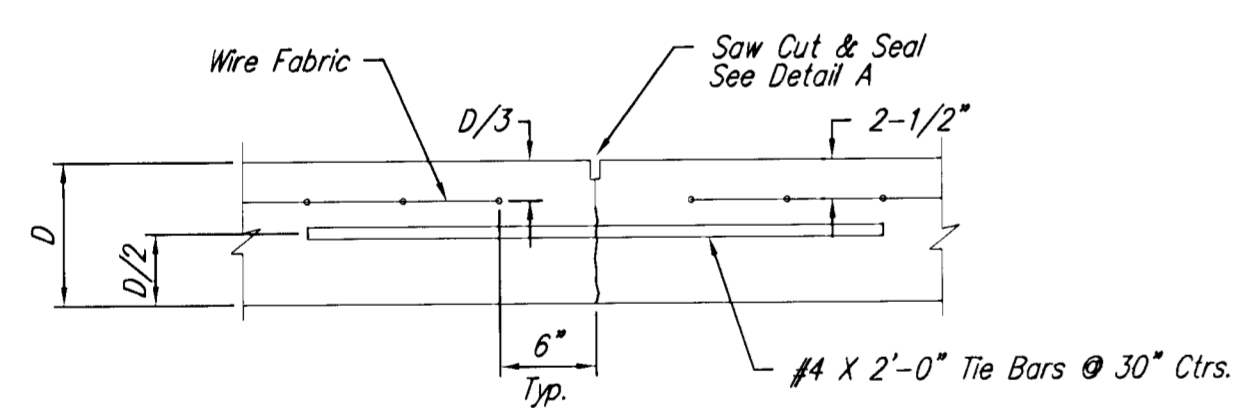


GROOVE DETAIL

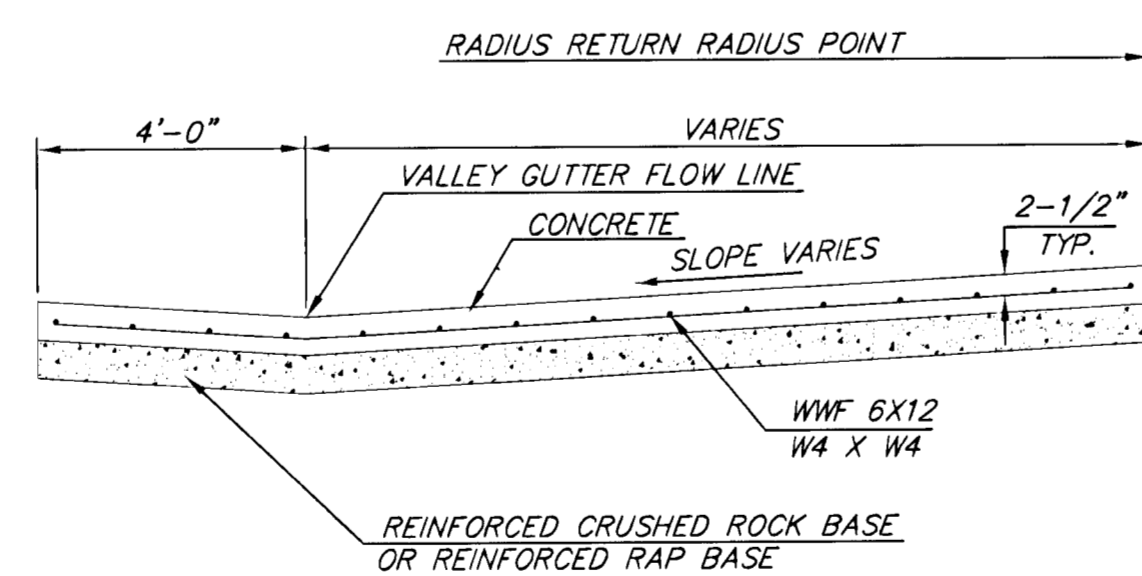


DEPRESSED CURB DETAIL

WHEELCHAIR RAMP DETAIL

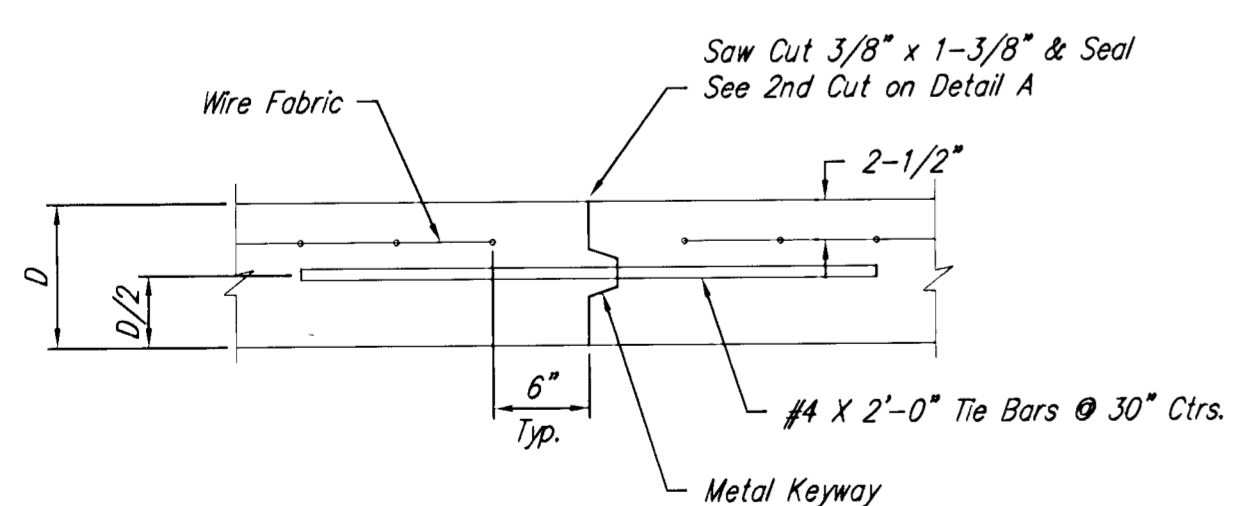


LONGITUDINAL JOINT DETAIL (L.J.)



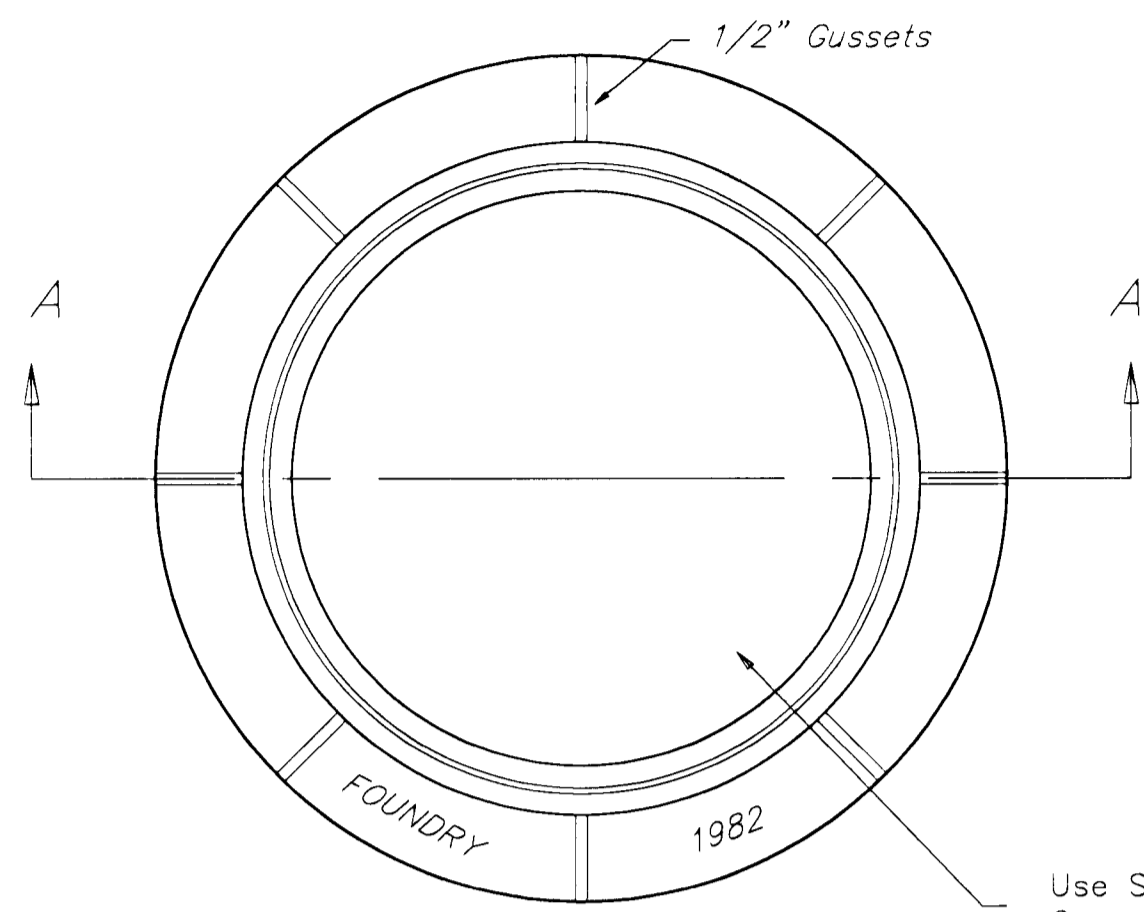
SECTION A-A

REINFORCED VALLEY GUTTER DETAIL



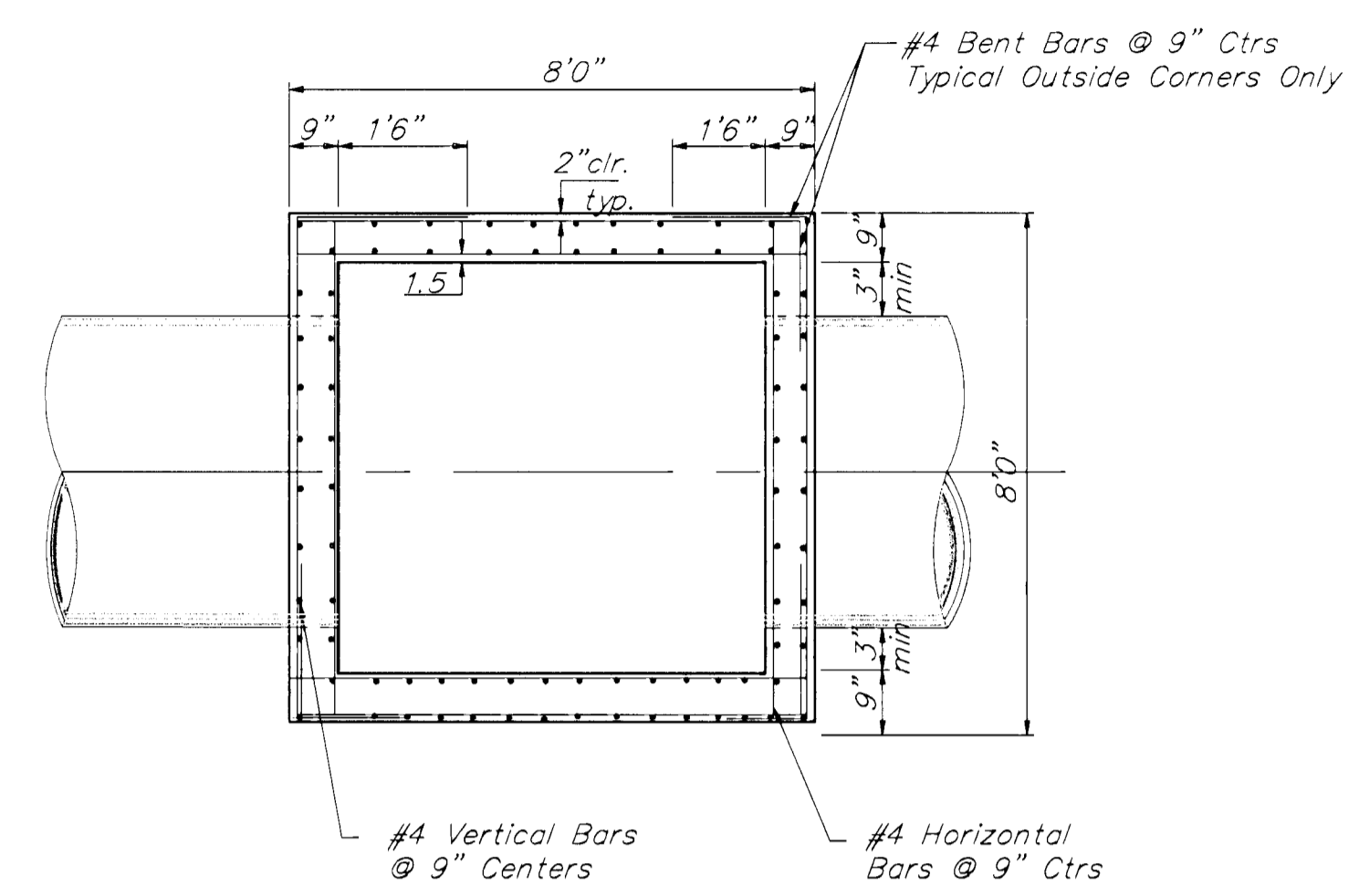
OPTIONAL LONGITUDINAL JOINT DETAIL (L.J.)

	PROJECT NUMBER				AM. NO. 00101	Orme Street Phase 1 Valley Gutter Details Wichita, Kansas	SHEET 7 OF 23	REVISION 6/14/01
	DESIGN	DRAWN	FILE valgut	DATE	SCALE N.S.			



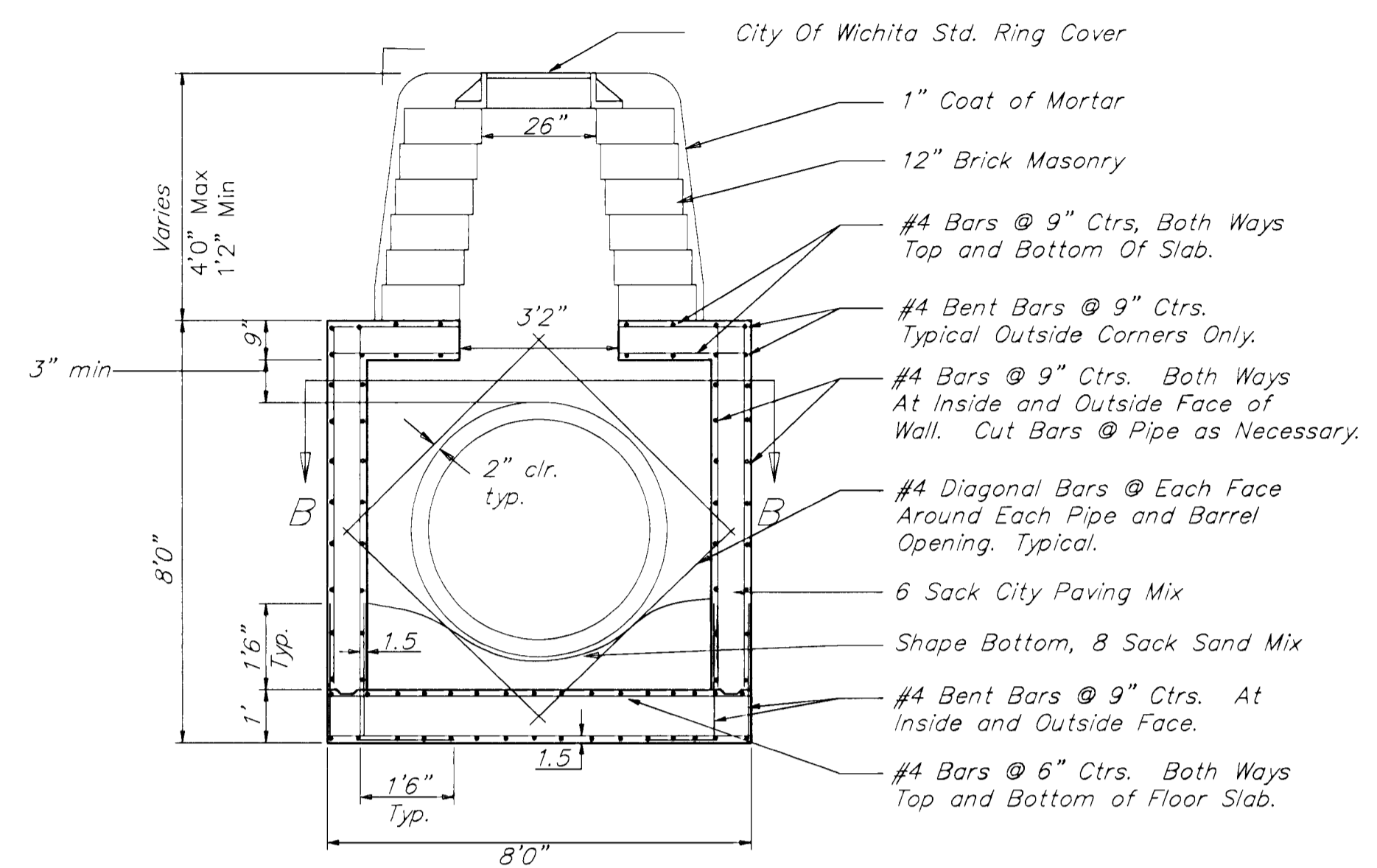
TOP VIEW

Use Standard City Of Wichita Cover (Weight: 180 lbs)

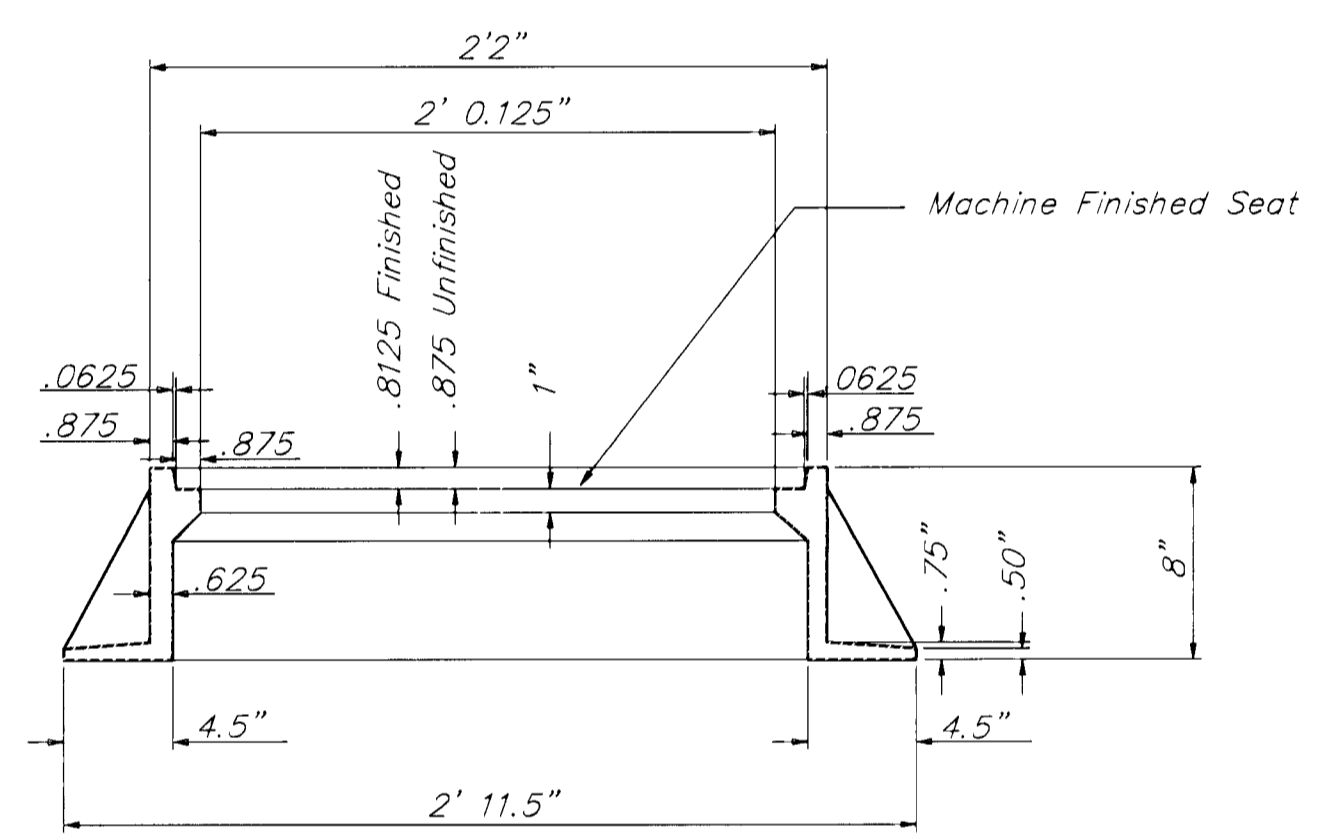


NOTE:
Bend Bars Not More Than 8" to Clear Pipes, or Cut Bars 2" Clear of Pipe, as Necessary.

SECTION B-B



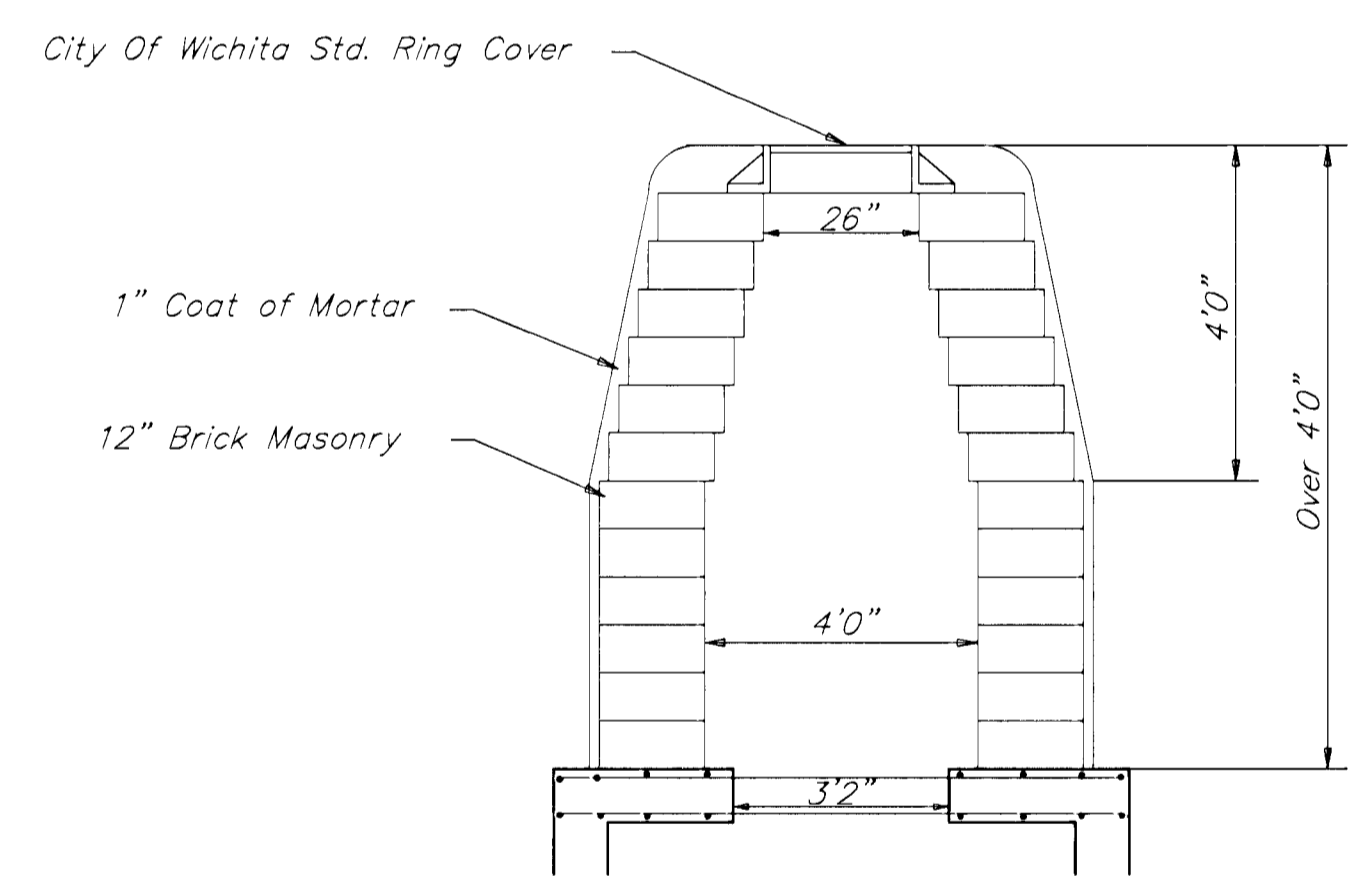
REINFORCED CONCRETE MANHOLE STACK 2.33' TO 4'0"



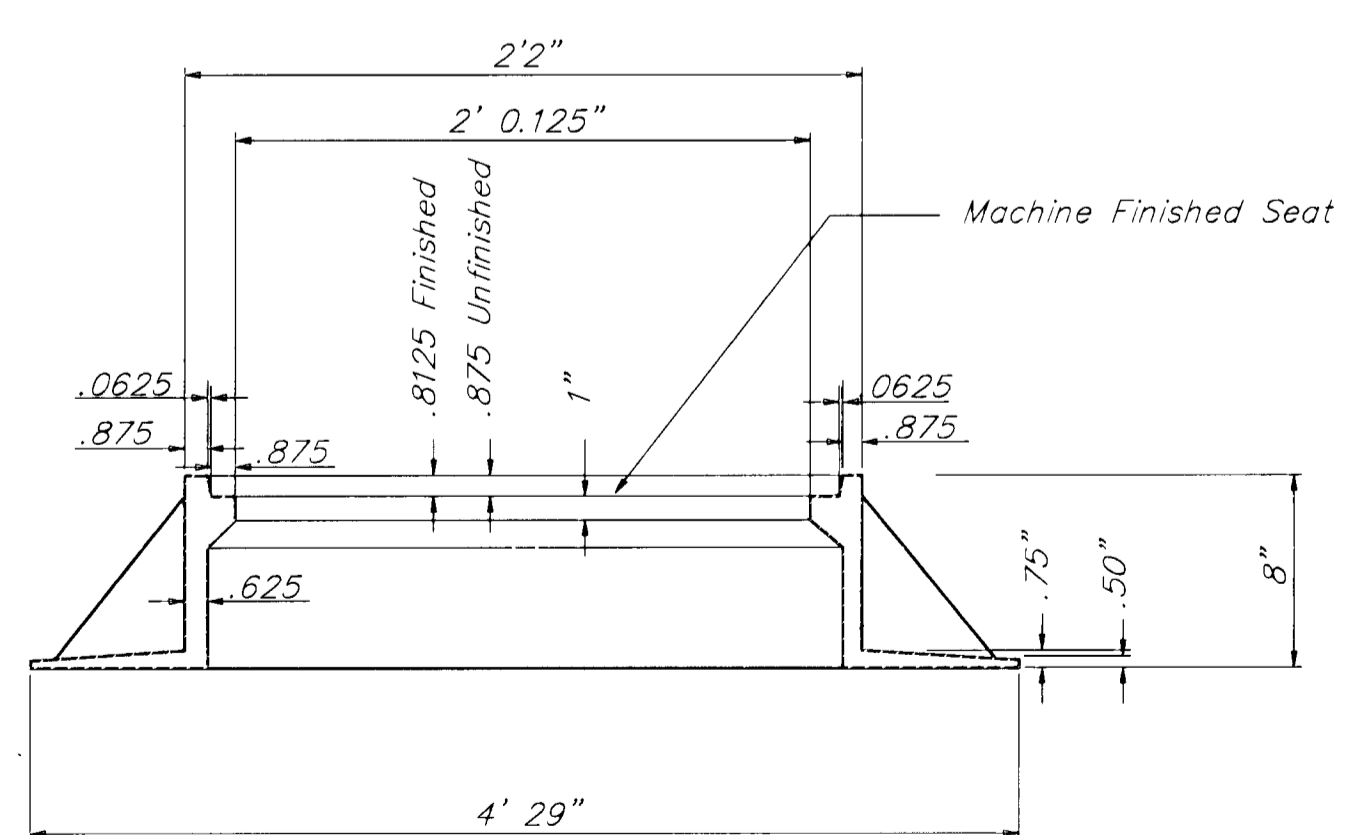
SECTION A-A

MANHOLE FRAME
Weight: 240 Lbs.

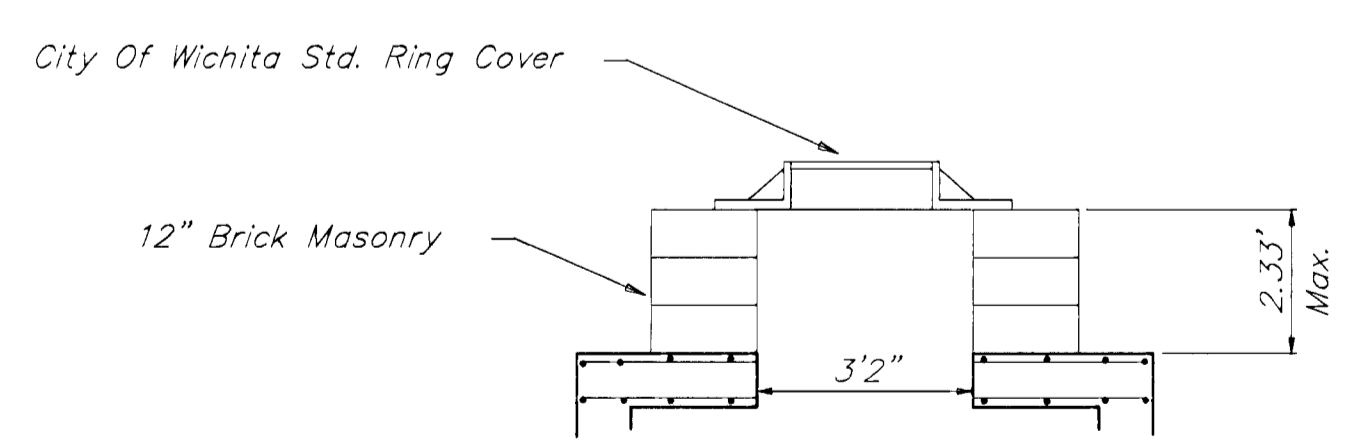
- GENERAL NOTES:
- MORTAR USED IN MASONRY CONSTRUCTION SHALL CONTAIN 8 SACKS OF CEMENT PER CUBIC YARD. CONCRETE USED IN MANHOLE WALLS AND BASES SHALL CONFORM TO THE REQUIREMENTS FOR CONCRETE PAVEMENT CONSTRUCTION AS SPECIFIED IN THE CITY STANDARD PAVING SPECIFICATIONS, USING CITY CONCRETE PAVEMENT MIX WITHOUT AIR ENTRAINING ADMIXTURE. MORTAR SHALL BE PLACED AROUND THE MANHOLE RING AS SHOWN ON THE DRAWINGS WHEN MANHOLES ARE CONSTRUCTED IN UNPAVED AREAS. COMPLETED MANHOLE SHALL BE WITHOUT LEAKS AND WATER TIGHT.
 - THE FLOORS OF ALL MANHOLES SHALL BE SHAPED WITH FLOW CHANNELS SUCH THAT THE MANHOLES WILL BE SELF CLEANING. USING 8-SACK SAND MIX CONCRETE. FLOW CHANNELS SHALL BE FORMED TO MATCH THE BOTTOM HALVES OF THE INFLOWING PIPES AND THE OUTFLOWING PIPE. MANHOLE FLOORS SHALL HAVE SLOPES OF 3 INCHES PER FOOT IN THE AREAS OUTSIDE OF THE FLOW CHANNELS SLOPED TOWARD THE FLOW CHANNELS.
 - MANHOLE COVER CASTINGS AND MANHOLE FRAME CASTINGS SHALL CONFORM TO THE REQUIREMENTS AS INDICATED IN THE STANDARD SPECIFICATIONS AND AS SHOWN IN THE STANDARD DETAIL DRAWING.
 - THE ENDS OF ALL PIPES IN MANHOLES SHALL BE CUT OFF FLUSH WITH THE INSIDE FACE OF MANHOLE WALL.



MANHOLE STACK OVER 4'0"



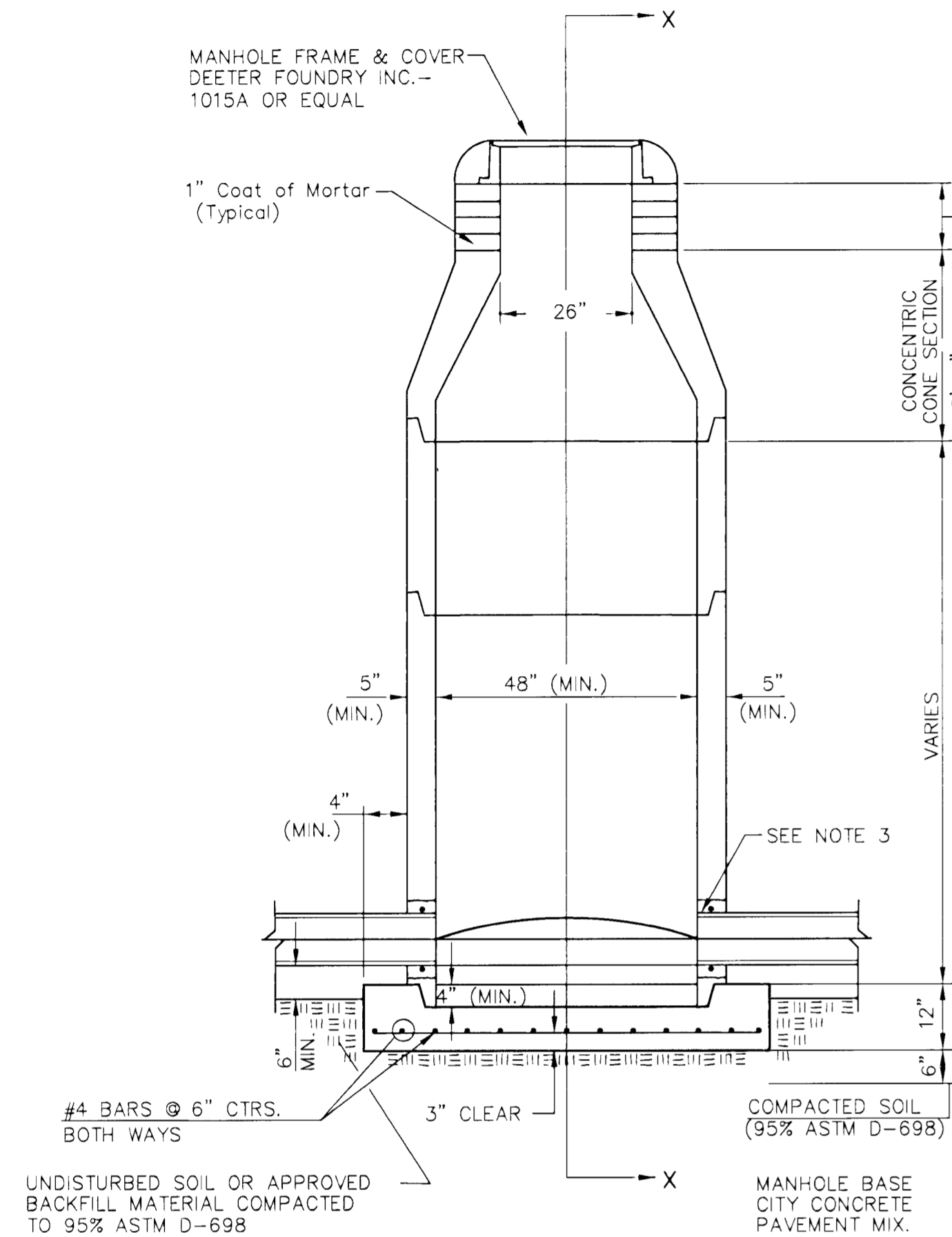
WIDE FLANGE RING
Weight: 705 Lbs.



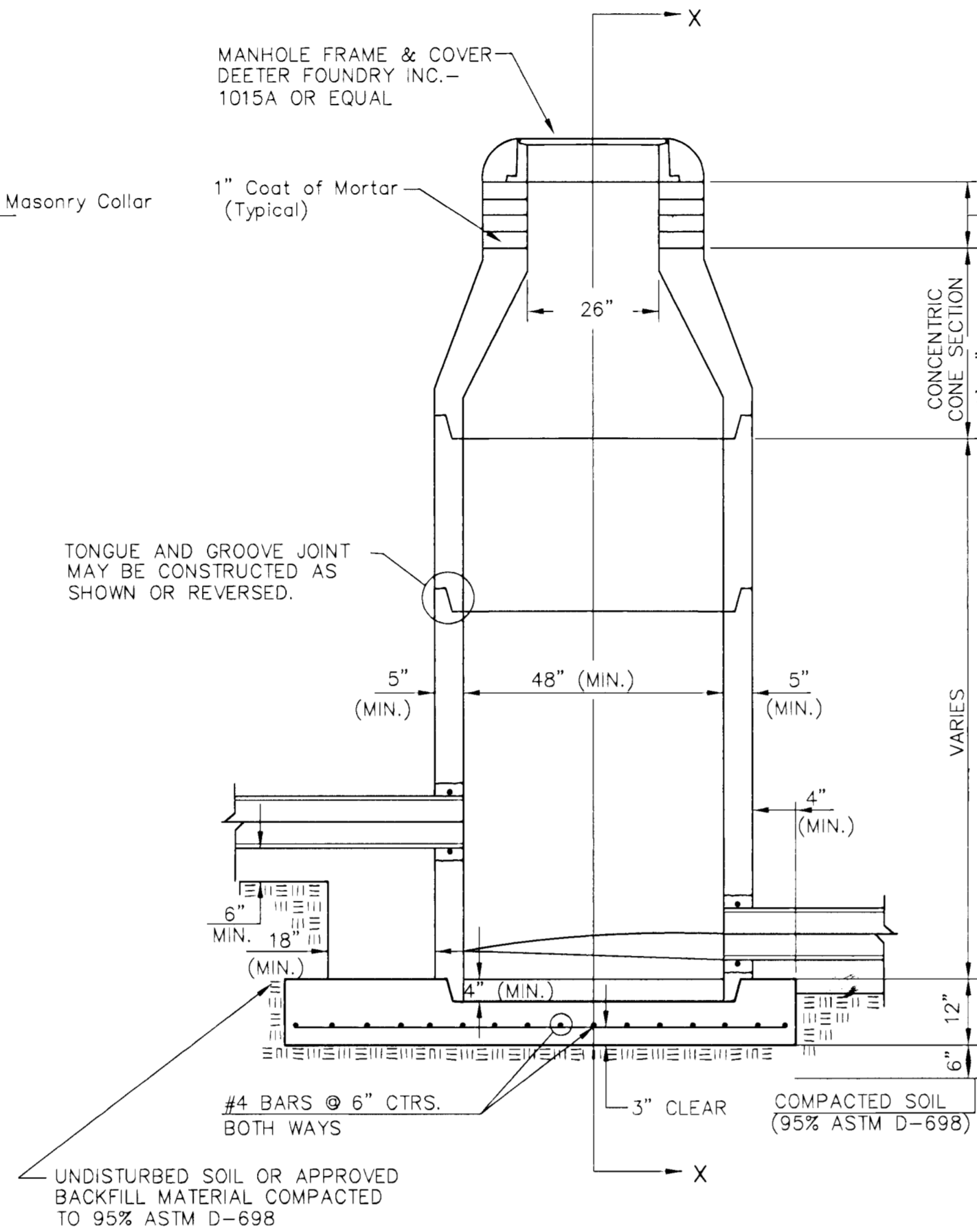
MANHOLE STACK LESS THAN 2.33'

	PROJECT NUMBER 472-83229		AM. NO. 00701	ORME STREET PHASE I REINFORCED CONCRETE MANHOLE CITY OF WICHITA	SHEET 9
	DESIGN	DRAWN	FILE 00701Ssdatt		DATE
				REVISED 07/16/01	

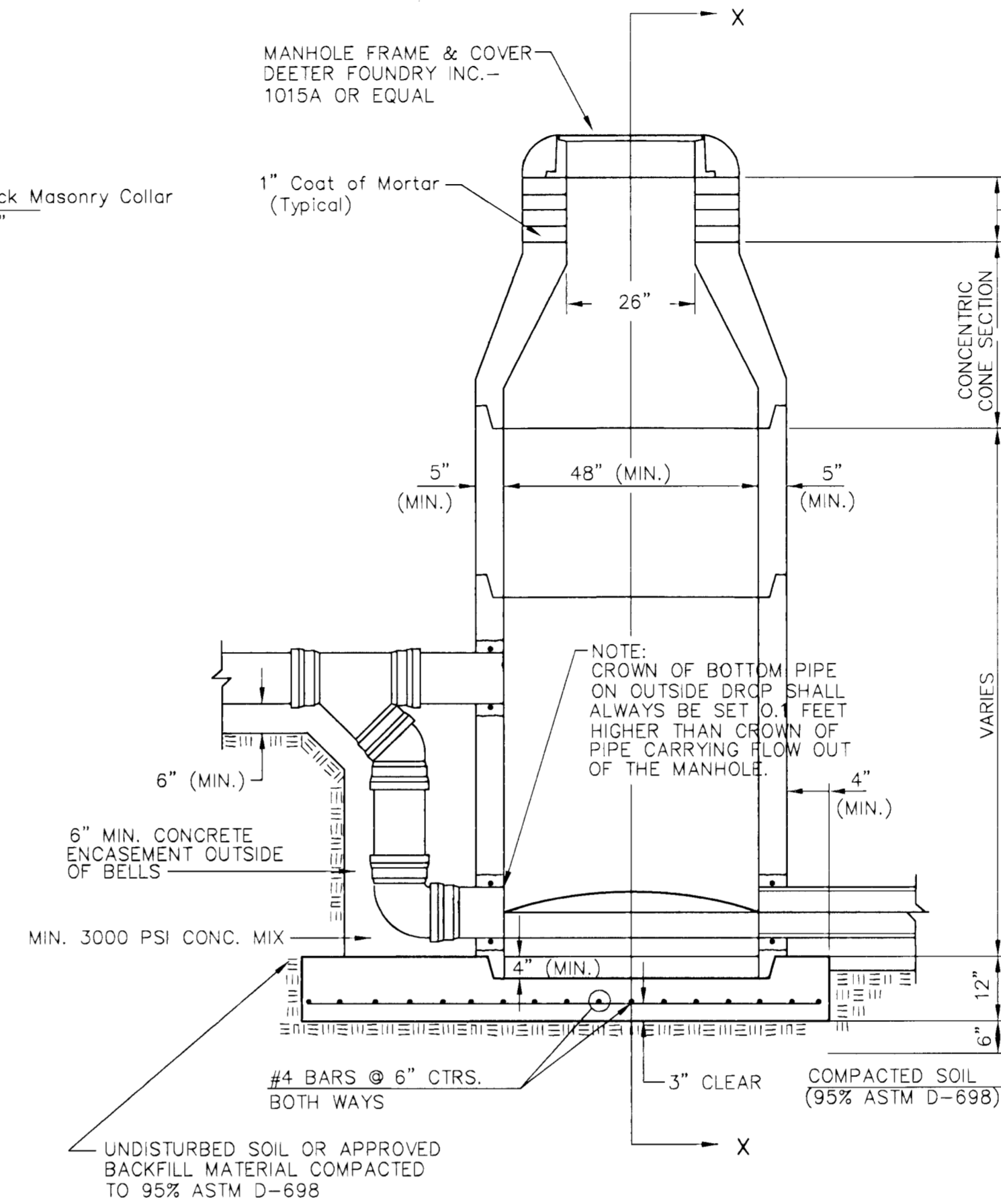
SEWER APPURTENANCES DETAILS



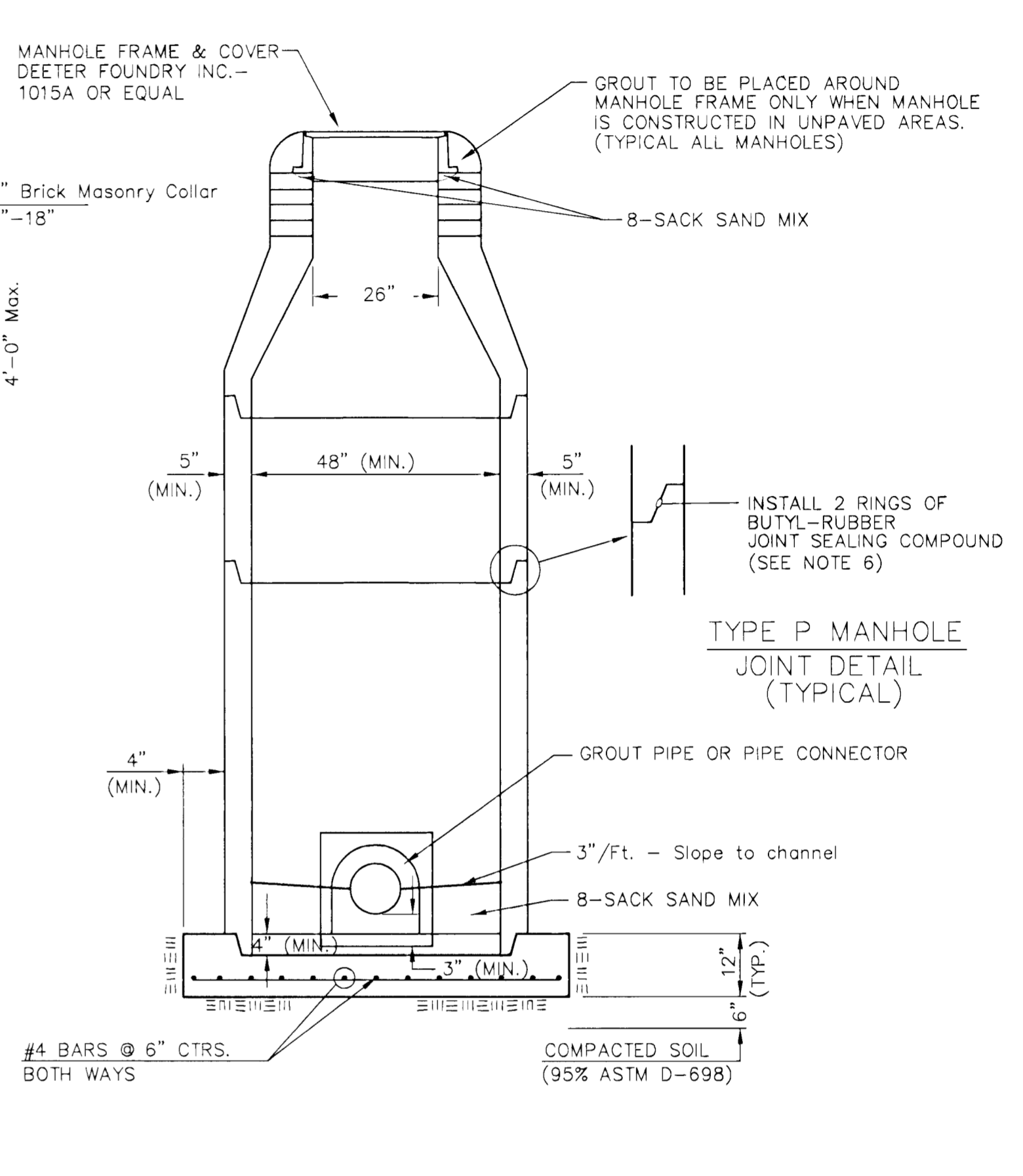
**TYPE P
STANDARD MANHOLE**



**TYPE P
INSIDE DROP MANHOLE**



**TYPE P
OUTSIDE DROP MANHOLE**



**SECTION X
(TYPICAL)**

**GENERAL NOTES
PRECAST MANHOLE NOTES**

- ALL PRECAST CONCRETE MANHOLE SECTIONS SHALL CONFORM TO THE LATEST REVISIONS OF A.S.T.M. C478 AS MODIFIED BY THE SPECIFICATIONS.
- NON-SHRINK GROUT SHALL BE NON-METALLIC TYPE.
- APPROVED FLEXIBLE WATERSTOP GASKETS SHALL BE INSTALLED TO JOIN THE SEWER TO THE MANHOLE WALL WHEN A.B.S. COMPOSITE PIPE OR P.V.C. PIPE IS USED. FOR OTHER TYPES OF PIPE THE SEWER SHALL BE GROUTED IN PLACE WITH NON-SHRINK GROUT. THE SEWER PIPE SHALL BE SUPPORTED WITH CONCRETE ENCASEMENT A MINIMUM OF 3 FEET FROM THE MANHOLE WALL AND TO THE FIRST JOINT FOR V.C.P. SUCH THAT THE JOINT REMAINS FLEXIBLE.
- ALL INSIDE SURFACES OF THE CONCRETE MANHOLE WHICH WOULD BE EXPOSED TO SEWER GAS SHALL BE COATED WITH 2 COATS TNEVEC SERIES 66 HI-BUILD EPOXOLINE, DRY THICKNESS OF 8 MILS (MIN.)
- EXTERIOR MANHOLE WALLS SHALL BE COATED WITH 1 COAT MOBILARMA 633 BITUMINOUS COATING.
- JOINT SEALING COMPOUND SHALL BE KENT SEAL NO. 2 OR APPROVED EQUAL.
- PRECAST MANHOLES SHALL BE SET AT LEAST 4 INCHES INTO THE MANHOLE BASE.
- TOP OF MANHOLE FLOOR SLAB SHALL BE AT LEAST 3 INCHES BELOW THE FLOW LINE OF THE OUTLET PIPE TO INSURE SUFFICIENT MINIMUM THICKNESS OF SHAPED INVERT.
- LIFTING HOLES SHALL BE FILLED WITH NON-SHRINK GROUT AND THE INTERIOR SURFACE COATED AS SPECIFIED.
- MORTAR USED IN MASONRY CONSTRUCTION SHALL CONTAIN 8 SACKS OF CEMENT PER CUBIC YARD. CONCRETE USED IN MANHOLE BASES SHALL CONFORM TO THE REQUIREMENTS OF CONCRETE FOR CONCRETE PAVEMENT CONSTRUCTION AS SPECIFIED IN THE CITY STANDARD PAVING SPECIFICATIONS USING CITY CONCRETE PAVEMENT MIX WITHOUT AIR ENTRAINING ADMIXTURE. MORTAR SHALL BE PLACED AROUND THE MANHOLE RING AS SHOWN ON THE DRAWINGS WHEN MANHOLES ARE CONSTRUCTED IN UNPAVED AREAS. MANHOLES CONSTRUCTED WHERE PIPE SIZES ARE SMALLER THAN 24" SHALL HAVE AN INSIDE DIAMETER OF 4". MANHOLES CONSTRUCTED WHERE PIPE SIZES ARE 24" OR LARGER SHALL HAVE AN INSIDE DIAMETER OF 5". COMPLETED MANHOLE SHALL BE WITHOUT LEAKS AND WATER TIGHT.

- REINFORCING STEEL SHALL BE INSTALLED IN THE MANHOLE BASES AND SHALL CONSIST OF NO. 4 BARS PLACED ON 6" CENTERS IN BOTH DIRECTIONS. THE MANHOLE BASE REINFORCEMENT SHALL BE PLACED AT LEAST 3" ABOVE THE BOTTOM OF THE MANHOLE BASE. ALL COSTS FOR FURNISHING AND INSTALLING REINFORCING STEEL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE MANHOLE.
- OPENINGS SHALL BE CUT INTO THE MANHOLE WALL WHEN OUTSIDE DROPS ARE CONSTRUCTED ON EXISTING MANHOLES. SUCH OPENINGS CUT INTO EXISTING MANHOLES SHALL BE AS SMALL AS PRACTICAL TO FACILITATE INSTALLING AND GROUTING THE NEW PIPE IN PLACE. WATERSTOP GASKETS SHALL BE USED WITH P.V.C. AND A.B.S. COMPOSITE PIPE. THE NEW PIPE SHALL BE GROUTED INTO THE OPENING USING AN APPROVED NONSHRINK GROUT FOR THE FULL MANHOLE WALL THICKNESS. THE EXTERIOR OF THE COMPLETED CONNECTION SHALL BE SEALED WITH AN APPROVED BITUMINOUS COATING SUCH THAT THE CONNECTION WILL BE WATER TIGHT. FLOOR OF MANHOLE SHALL BE MODIFIED TO FORM NEW FLOW CHANNEL FOR THE NEW CONNECTION AS INDICATED BY THE DRAWING. THIS WORK, INCLUDING MODIFICATION OF MANHOLE FLOOR, SHALL BE PAID FOR AT THE UNIT PRICE BID FOR OUTSIDE DROP STACK CONSTRUCTED ON EXISTING MANHOLE.
- THE FLOORS OF ALL MANHOLES SHALL BE SHAPED WITH FLOW CHANNELS SUCH THAT THE MANHOLES WILL BE SELF CLEANING AND FREE OF AREAS WHERE SOLIDS COULD BE DEPOSITED AS SEWAGE FLOWS THROUGH THE MANHOLE FROM ALL INLET PIPES TO THE OUTLET PIPE. FLOW CHANNELS SHALL BE FORMED TO MATCH THE BOTTOM HALVES OF THE INFLOWING PIPES AND THE OUTFLOWING PIPE AS SHOWN BY THE DRAWINGS EXCEPT FOR INSIDE DROP MANHOLES. FLOW CHANNELS FOR INSIDE DROP MANHOLES SHALL BE CONSTRUCTED AS INDICATED BY THE DRAWING. MANHOLE FLOORS SHALL HAVE SLOPES OF 3 INCHES PER FOOT IN THE AREAS OUTSIDE OF THE FLOW CHANNELS SLOPED TOWARD THE FLOW CHANNELS. PIPES LAID THROUGH MANHOLES SHALL HAVE THE TOP HALF REMOVED TO NEAT LINES FOR THE FULL INSIDE DIAMETER OF THE MANHOLE. MANHOLE FLOORS SHALL THEN BE SHAPED AROUND THE BOTTOM HALF OF THE PIPE WHICH FORMS THE FLOW CHANNEL.
- PIPES INSTALLED WITHIN THE EXCAVATION MADE FOR THE MANHOLE SHALL BE CRADLED WITH CONCRETE TO THE LIMITS OF THE MANHOLE EXCAVATION. WHEN CLAY PIPE IS USED, THE CRADLE SHALL EXTEND TO THE FIRST JOINT OUTSIDE THE MAHOLE. THE CRADLE SHALL BE TERMINATED AT THE CLAY PIPE JOINT IN A MANNER WHICH WILL MAINTAIN THE FLEXIBILITY OF THE JOINT. COST OF CRADLE WITHIN MANHOLE EXCAVATION OR TO CLAY PIPE JOINTS ADJACENT TO MANHOLE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE MANHOLE.

- MANHOLE COVER CASTINGS AND MANHOLE FRAME CASTINGS SHALL CONFORM TO THE REQUIREMENTS AS INDICATED IN THE STANDARD SPECIFICATIONS AND AS SHOWN IN THE STANDARD DETAIL DRAWING.
- THE VERTICAL DROP IN INSIDE DROP MANHOLES SHALL NOT EXCEED 2' FOR INFLOWING PIPES SIZED 12" OR SMALLER AND 2' FOR INFLOWING PIPES LARGER THAN 12". THE CROWNS OF INFLOWING PIPES SHALL NEVER BE SET LOWER THAN THE CROWN OF THE OUTFLOWING PIPE.
- STANDARD MANHOLES AND STANDARD INSIDE DROP MANHOLES SHALL BE BID AS STANDARD MANHOLES FOR THE TYPE AND DIAMETER INDICATED. OUTSIDE DROP MANHOLES SHALL BE BID AS STANDARD OUTSIDE DROP MANHOLES FOR THE TYPE AND DIAMETER INDICATED. ALL MANHOLE DIAMETERS WILL BE 4' UNLESS INDICATED OTHERWISE.
- A BRICK MASONRY COLLAR SHALL BE INSTALLED BETWEEN THE CAST IRON FRAME AND THE CONCENTRIC CONE. THE COLLAR WILL HAVE 8" WALLS AND A VERTICAL HEIGHT OF 6" MINIMUM AND 18" MAXIMUM. A 1" COAT OF MORTAR WILL BE PLASTERED ON THE OUTSIDE OF THE COLLAR. THE USE OF PRE-CAST CONCRETE SPACERS FOR MANHOLE TOP ADJUSTMENT IS ALSO ALLOWED.

	PROJECT NUMBER	AM. NO.	Orme Street Phase 1 Manhole Details Wichita, Kansas	SHEET 10 OF 23 REVISION 6/14/01
	472-83229	00101		
DESIGN	DRAWN	FILE	DATE	SCALE
		mh-details		N.S.