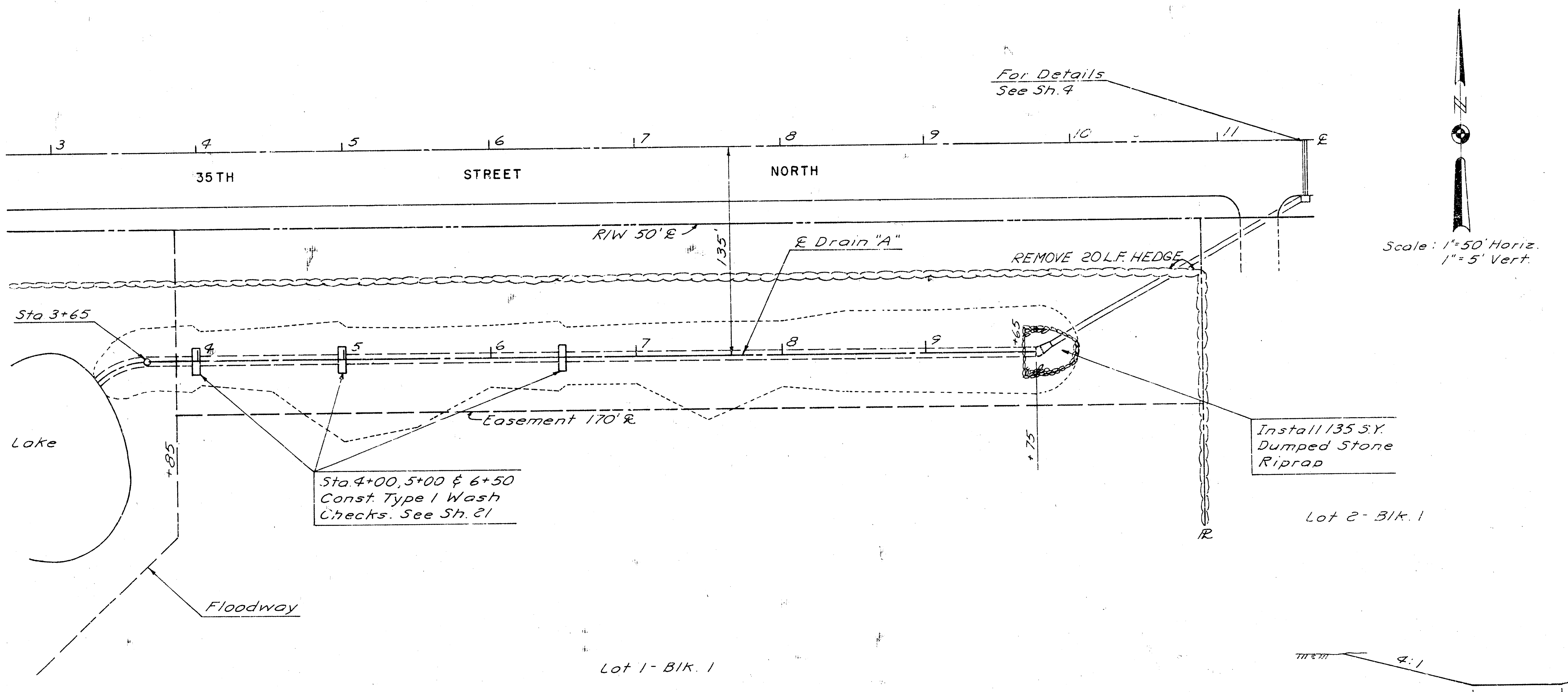
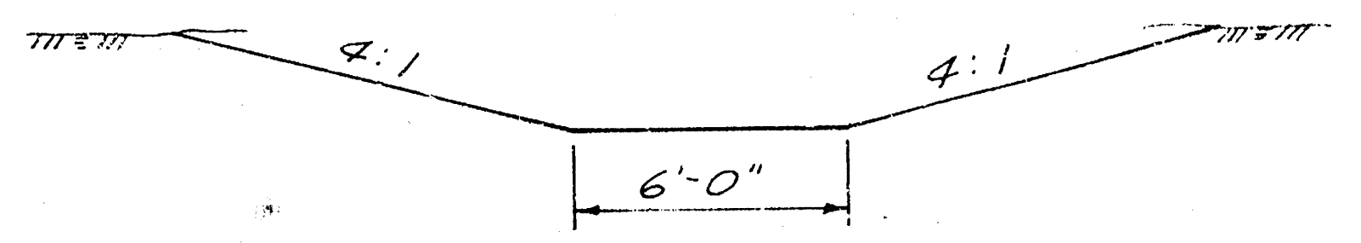
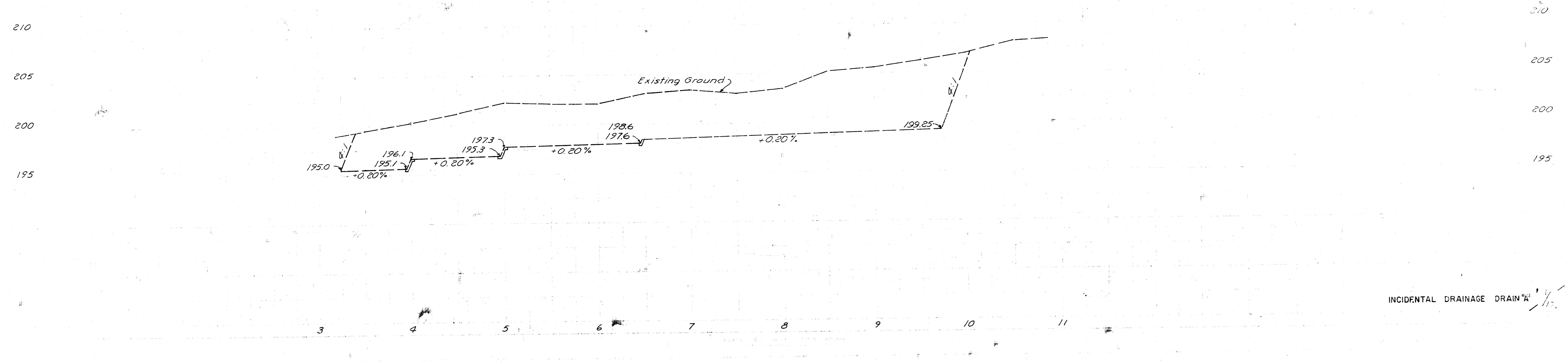
COMOTARA BUSINESS PARK
WICHITA, KS
PROJ NO DAKS
RW LINN CITY ENGINEER



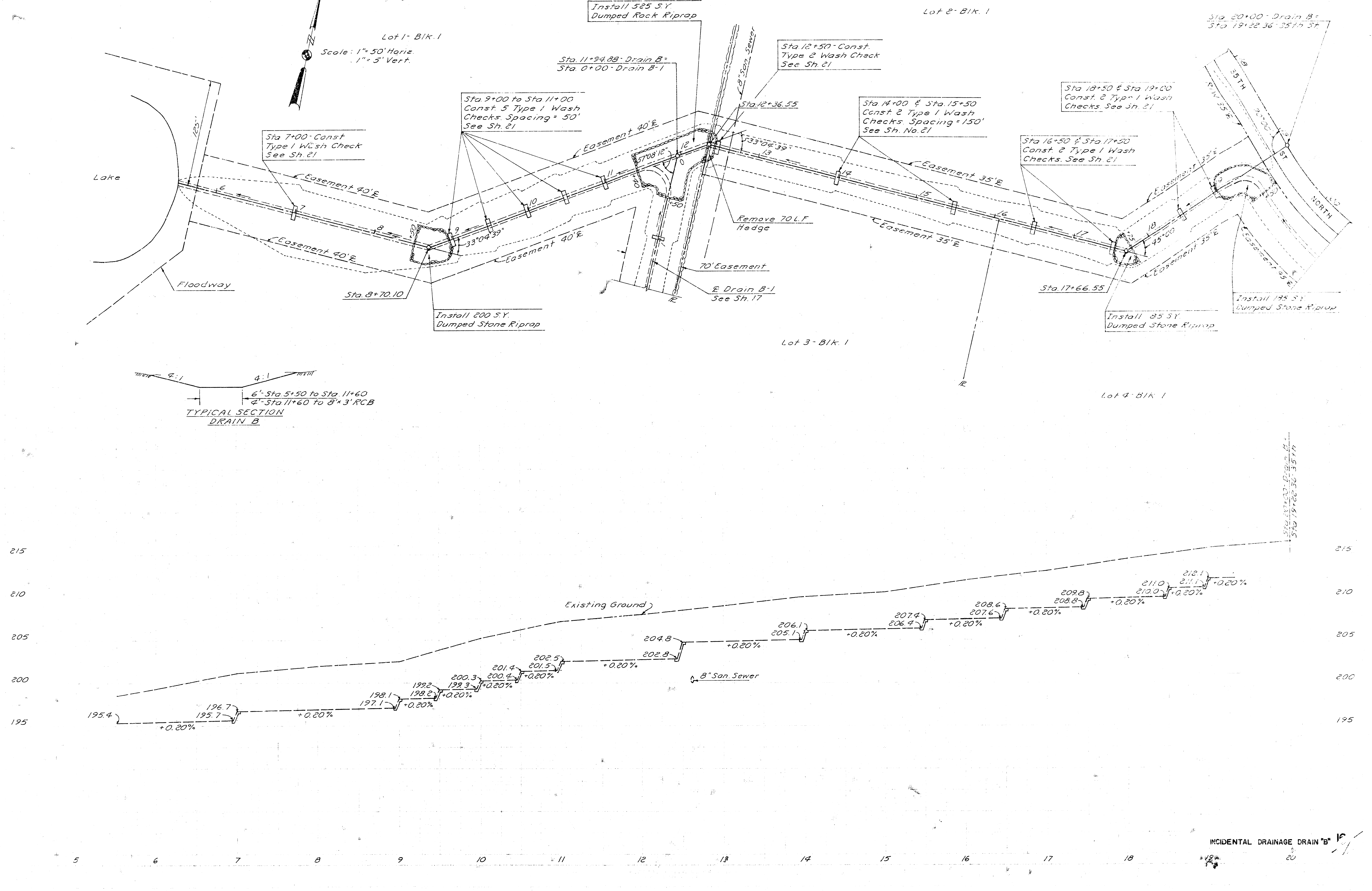


TYPICAL SECTION
DRAIN "A"



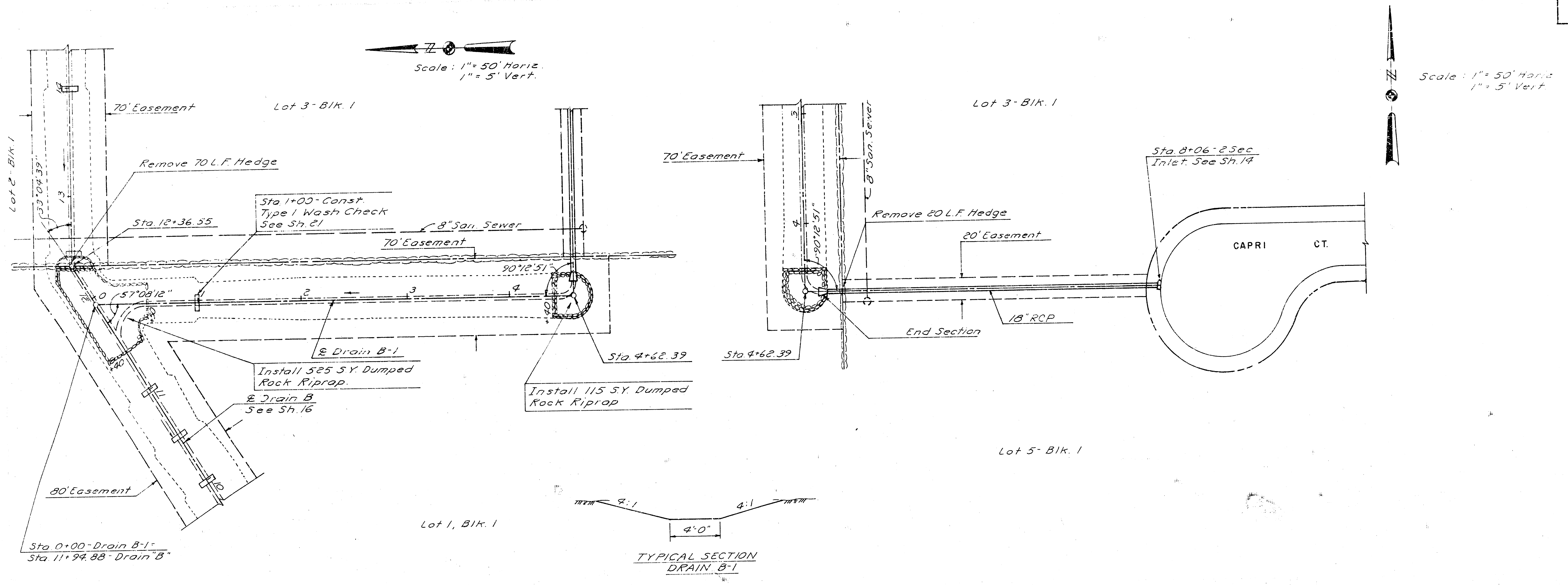
INCIDENTAL DRAINAGE DRAIN "A"

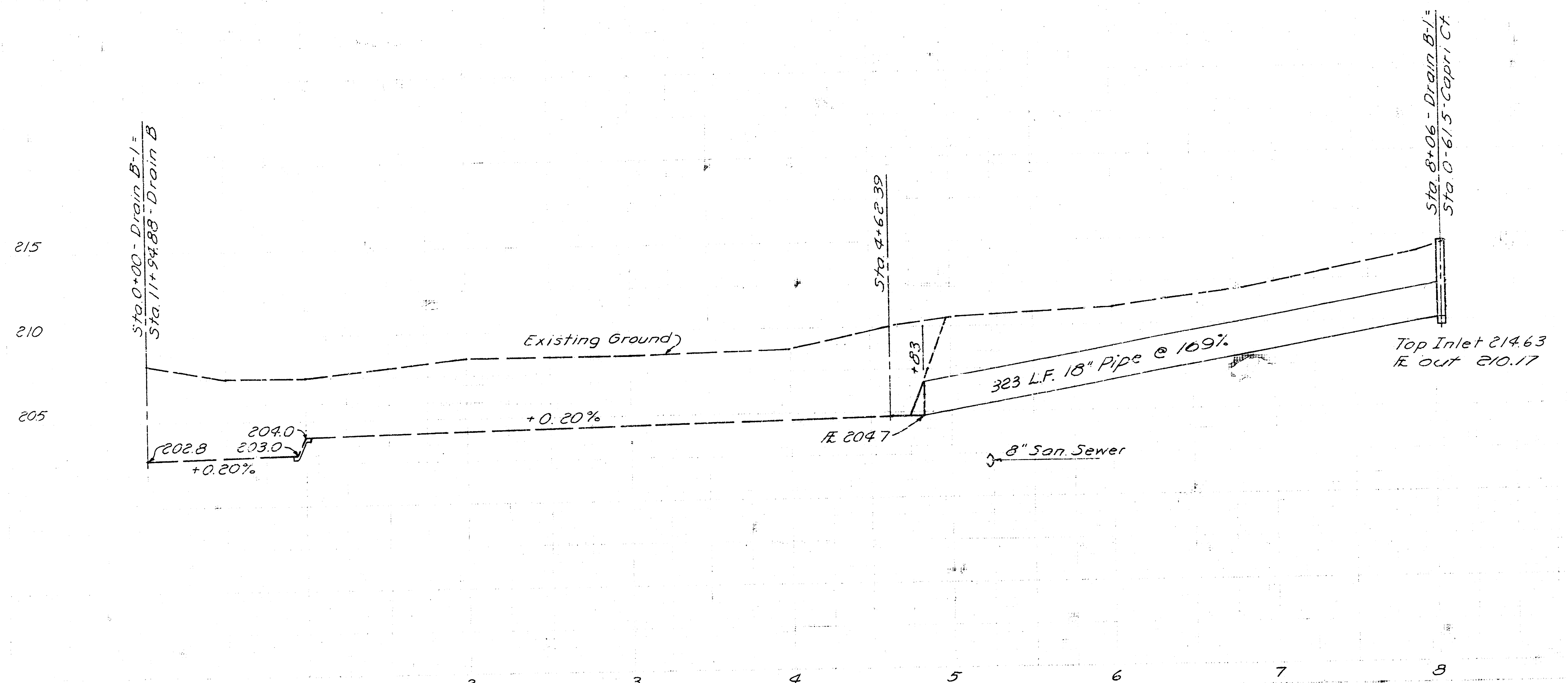
COMOTARA BUSINESS PARK
WICHITA, KS
PROJ NO OAKS
RW LINN CITY ENGINEER



INCIDENTAL DRAINAGE DRAIN "B" 16

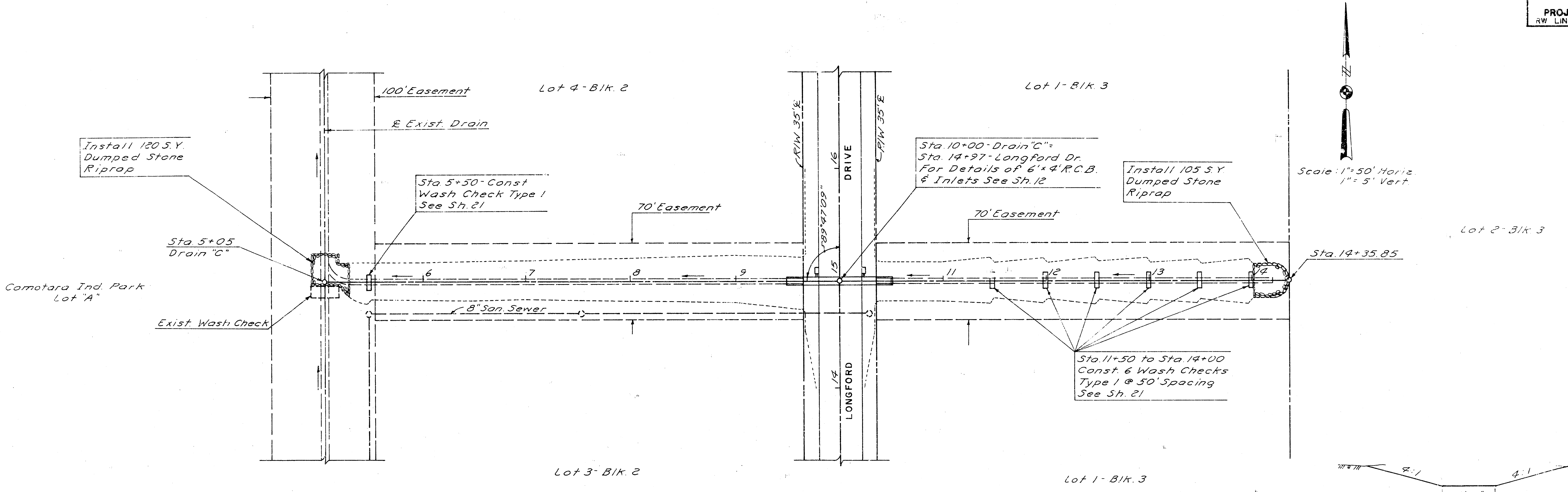
COMOTARA BUSINESS PARK
WICHITA, KS
PROJ NO DAKS
RW LINN CITY ENGINEER

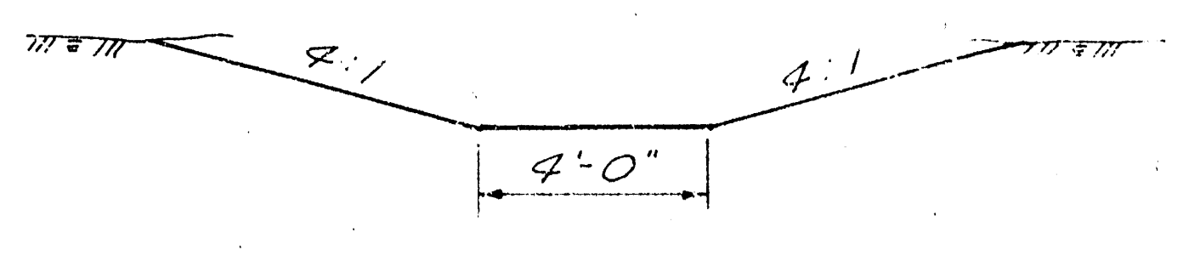




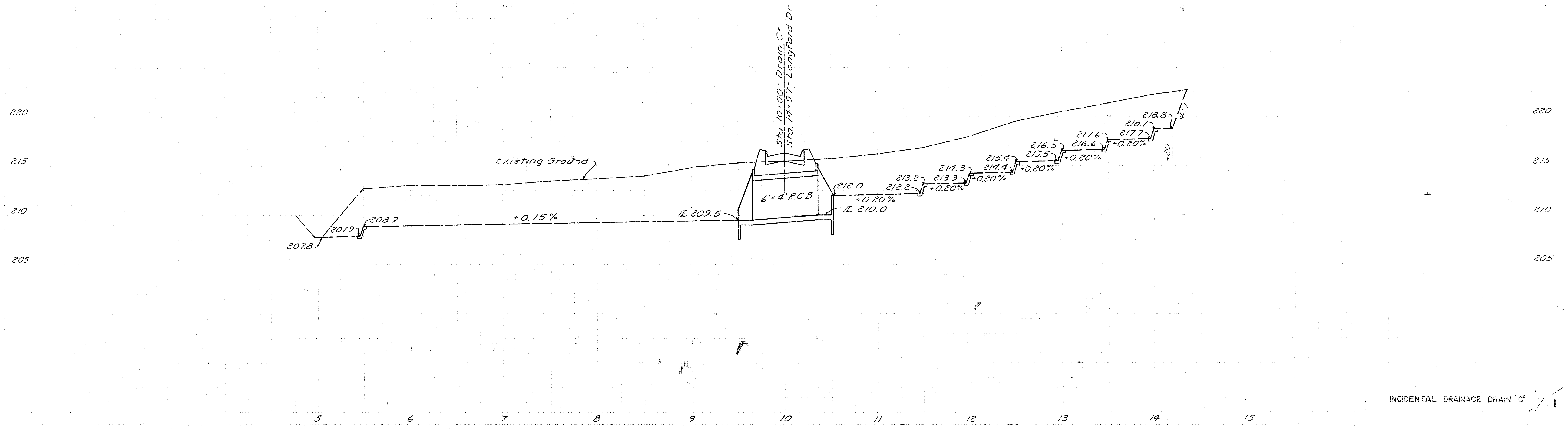
INCIDENTAL DRAINAGE DRAIN "B-1" 15

COMOTARA BUSINESS PARK
WICHITA, KS
PROJ NO DAKS
RW LINN CITY ENGINEER


Lot 4 - Blk. 2
100' Easement
℄ Exist. Drain
Install 120 S.Y. Dumped Stone Riprap
Sta 5+50 - Const Wash Check Type 1 See Sh. 21
70' Easement
Sta 5+05 Drain "C"
Comotara Ind. Park Lot "A"
Exist. Wash Check
6
7
8
9
8" San. Sewer
Lot 3 - Blk. 2
R/W 35' ℄
R/W 35' ℄
16
DRIVE
89°47'09"
15
14
LONGFORD
Lot 1 - Blk. 3
Sta. 10+00 - Drain "C" = Sta. 14+97 - Longford Dr. For Details of 6'×4' R.C.B. & Inlets See Sh. 12
70' Easement
11
12
13
14
Install 105 S.Y. Dumped Stone Riprap
Sta. 14+35.85
Sta. 11+50 to Sta. 14+00 Const. 6 Wash Checks Type 1 @ 50' Spacing See Sh. 21
Lot 1 - Blk. 3
N
Scale: 1" = 50' Horiz 1" = 5' Vert
Lot 2 - Blk. 3

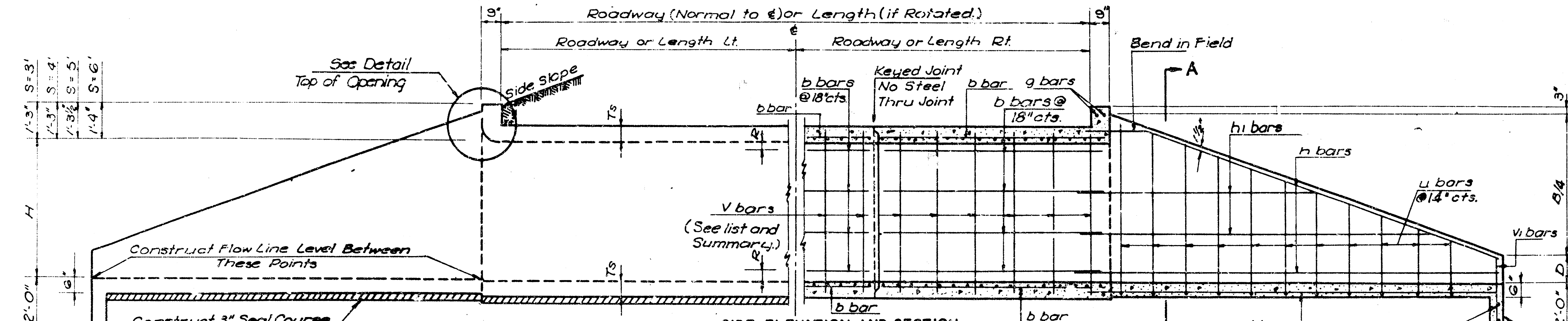


TYPICAL SECTION
DRAIN "C"



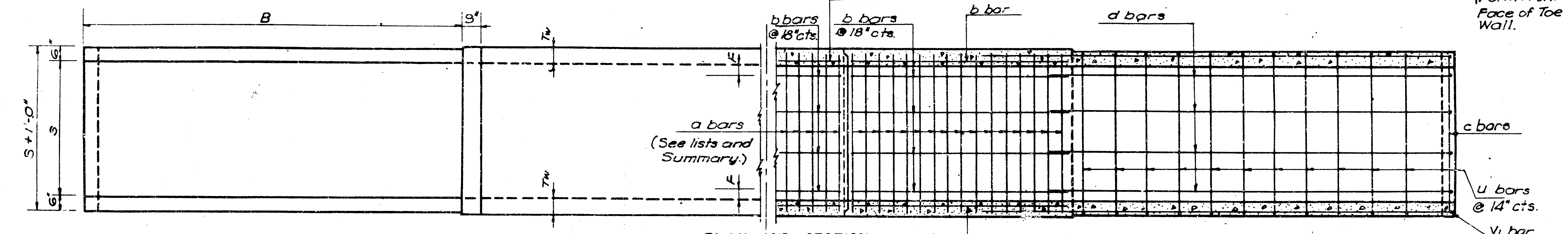
INCIDENTAL DRAINAGE DRAIN "C"

FHWA REG. NO.	STATE	PROJECT NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
7	KANSAS			19	41

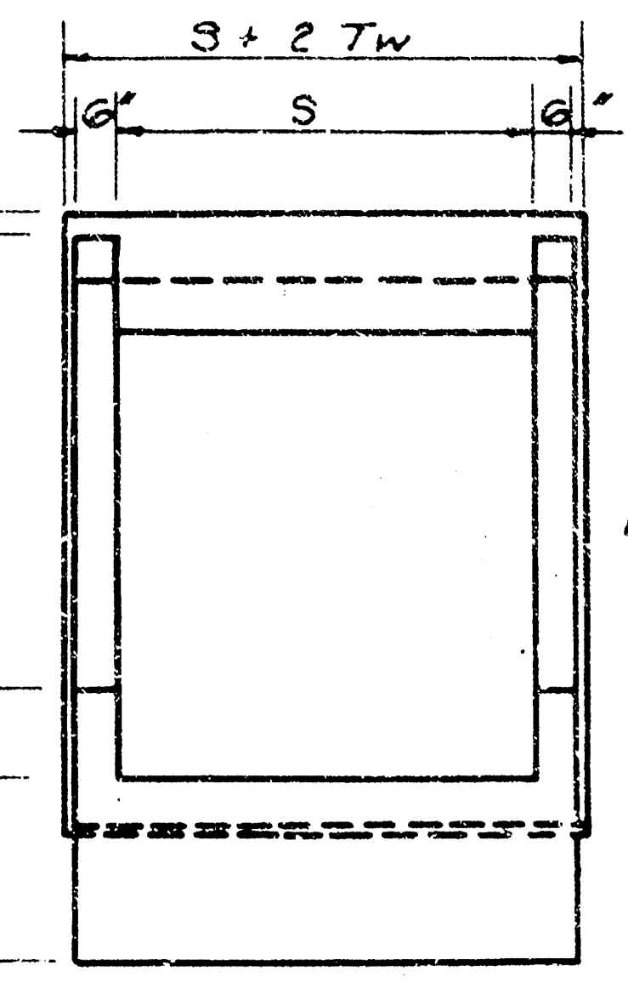


SIDE ELEVATION AND SECTION

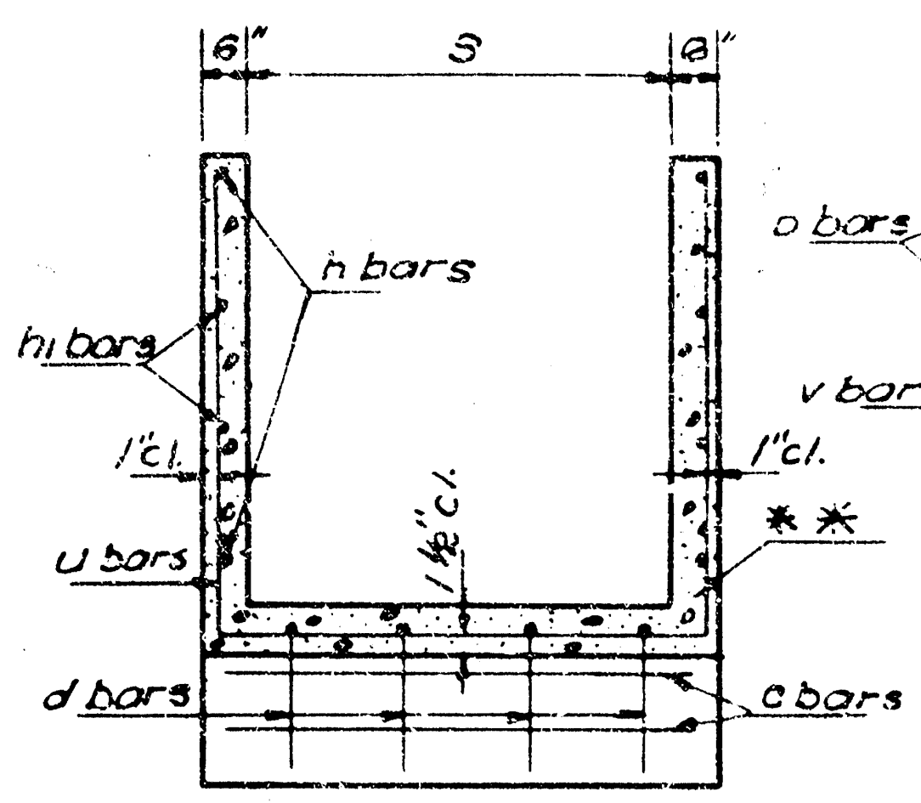
Form Front Face of Toe Wall.



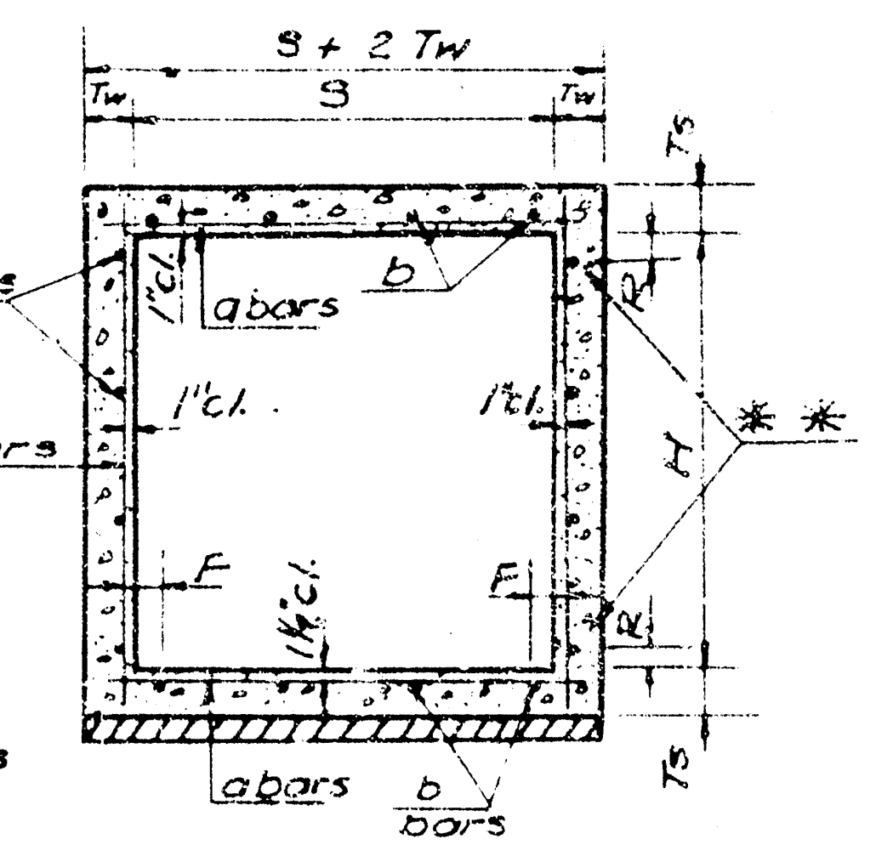
PLAN AND SECTION



END ELEVATION

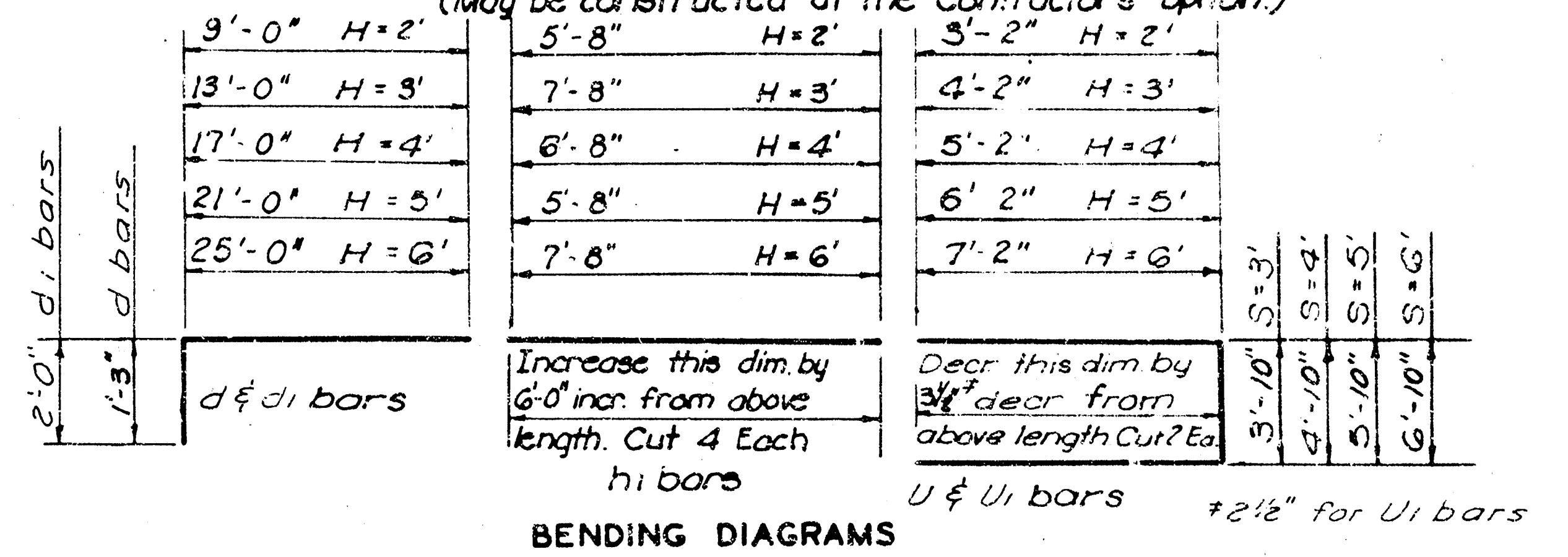


SECTION A-A



SECTION THRU BOX

✱✱ Optional Construction Joints (May be constructed at the Contractor's option.)



BENDING DIAGRAMS

All dimensions are out to out.

LIST OF BARS AND DIMENSIONS

3' x 2' Hdwl. Conc. (Two) 2.748 C.Y.

Letter	B	D	F	H	R	S	Ts	Tw		
Dimension	8'-0"	1'-0"	9"	2'-0"	3"	3'-0"	*	6"		
Bar	a	b	c	d	g	h	h1	u	v	v1
No.	*	*	4	4	4	8	4	14	*	4
Length	3'-9"	*	3'-10"	10'-3"	3'-9"	9'-0"	‡	‡	*	2'-9"

3' x 3' Hdwl. Conc. (Two) 4.578 C.Y.

Letter	B	D	F	H	R	S	Ts	Tw		
Dimension	12'-0"	1'-0"	9"	3'-0"	9"	3'-0"	*	6"		
Bar	a	b	c	d	g	h	h1	u	v	v1
No.	*	*	4	4	4	8	4	20	*	4
Length	3'-9"	*	3'-10"	14'-3"	3'-9"	13'-2"	‡	‡	*	2'-9"

4' x 2' Hdwl. Conc. (Two) 3.139 C.Y.

Letter	B	D	F	H	R	S	Ts	Tw		
Dimension	8'-0"	1'-0"	6"	2'-0"	3"	4'-0"	*	6"		
Bar	a	b	c	d	g	h	h1	u	v	v1
No.	*	*	4	6	4	8	4	14	*	4
Length	4'-9"	*	4'-10"	10'-3"	4'-9"	9'-0"	‡	‡	*	2'-9"

4' x 3' Hdwl. Conc. (Two) 4.917 C.Y.

Letter	B	D	F	H	R	S	Ts	Tw		
Dimension	12'-0"	1'-0"	6"	3'-0"	9"	4'-0"	*	6"		
Bar	a	b	c	d	g	h	h1	u	v	v1
No.	*	*	4	6	4	8	4	20	*	4
Length	4'-9"	*	4'-10"	14'-3'	4'-9"	13'-2"	‡	‡	*	2'-9"

4' x 4' Hdwl. Conc. (Two) 6.991 C.Y.

Letter	B	D	F	H	R	S	Ts	Tw		
Dimension	16'-0"	1'-0"	6"	4'-0"	6"	4'-0"	*	3"		
Bar	a	b	c	d	g	h	h1	u	v	v1
No.	*	*	4	6	4	8	8	28	*	4
Length	4'-9"	*	4'-10"	18'-3"	4'-9"	17'-4"	‡	‡	*	2'-9"

5' x 2' Hdwl. Conc. (Two) 3.553 C.Y.

Letter	B	D	F	H	R	S	Ts	Tw		
Dimension	8'-0"	1'-0½"	3"	2'-0"	3"	5'-0"	*	6"		
Bar	a	b	c	d	g	h	h1	u	v	v1
No.	*	*	4	8	4	8	4	14	*	4
Length	5'-9'	*	5'-10"	10'-3"	5'-9"	9'-0"	‡	‡	*	2'-9"

5' x 3' Hdwl. Conc. (Two) 5.431 C.Y.

Letter	B	D	F	H	R	S	Ts	Tw		
Dimension	12'-0"	1'-0½"	3"	3'-0"	9"	5'-0"	*	6"		
Bar	a	b	c	d	g	h	h1	u	v	v1
No.	*	*	4	8	4	8	4	20	*	4
Length	5'-9"	*	5'-10"	14'-3"	5'-9"	13'-2"	‡	‡	*	2'-9"

5' x 4' Hdwl. Conc. (Two) 7.726 C.Y.

Letter	B	D	F	H	R	S	Ts	Tw		
Dimension	16'-0"	1'-0½"	3"	4'-0"	6"	5'-0"	*	6"		
Bar	a	b	c	d	g	h	h1	u	v	v1
No.	*	*	4	8	4	8	8	28	*	4
Length	5'-9"	*	5'-10"	18'-3'	5'-9"	17'-4"	‡	‡	*	2'-9"

5' x 5' Hdwl. Conc. (Two) 10.257 C.Y.

Letter	B	D	F	H	R	S	Ts	Tw		
Dimension	20'-0"	1'-0½"	3"	5'-0"	3"	5'-0"	*	*		
Bar	a	b	c	d	g	h	h1	u	v	v1
No.	*	*	4	8	4	8	12	34	*	4
Length	5'-9"	*	5'-10"	22'-3"	5'-9"	21'-6"	‡	‡	*	2'-9"

6' x 2' Hdwl. Conc. (Two) 3.968 C.Y.

Letter	B	D	F	H	R	S	Ts	Tw		
Dimension	8'-0"	1'-1"	9"	2'-0"	3"	6'-0"	*	6"		
Bar	a	b	c	d	g	h	h1	u	v	v1
No.	*	*	4	8	4	8	4	14	*	4
Length	6'-9"	*	6'-10"	10'-3"	6'-9"	9'-0"	‡	‡	*	2'-9"

6' x 3' Hdwl. Conc. (Two) 6.067 C.Y.

Letter	B	D	F	H	R	S	Ts	Tw		
Dimension	12'-0"	1'-1"	9"	3'-0"	9"	6'-0"	*	6"		
Bar	a	b	c	d	g	h	h1	u	v	v1
No.	*	*	4	8	4	8	4	20	*	4
Length	6'-9"	*	6'-10"	14'-3"	6'-9"	13'-2"	‡	‡	*	2'-9"

14+97-Longford-70'x **6' x 4'** Hdwl. Conc. (Two) 8.763 C.Y.

Letter	B	D	F	H	R	S	Ts	Tw				
Dimension	16'-0"	1'-1"	9"	4'-0"	6"	6'-0"	*	6"				
Bar	a	b	c	d	g	h	h1	u	v	v1	h2	U1
No.	*	*	5	8	4	10	4	14	*	4	2	14
Length	6'-9"	*	6'-10"	18'-3"	6'-9"	17'-4"	‡	‡	*	2'-9"	10'-0"	‡

6' x 5' Hdwl. Conc. (Two) 11.153 C.Y.

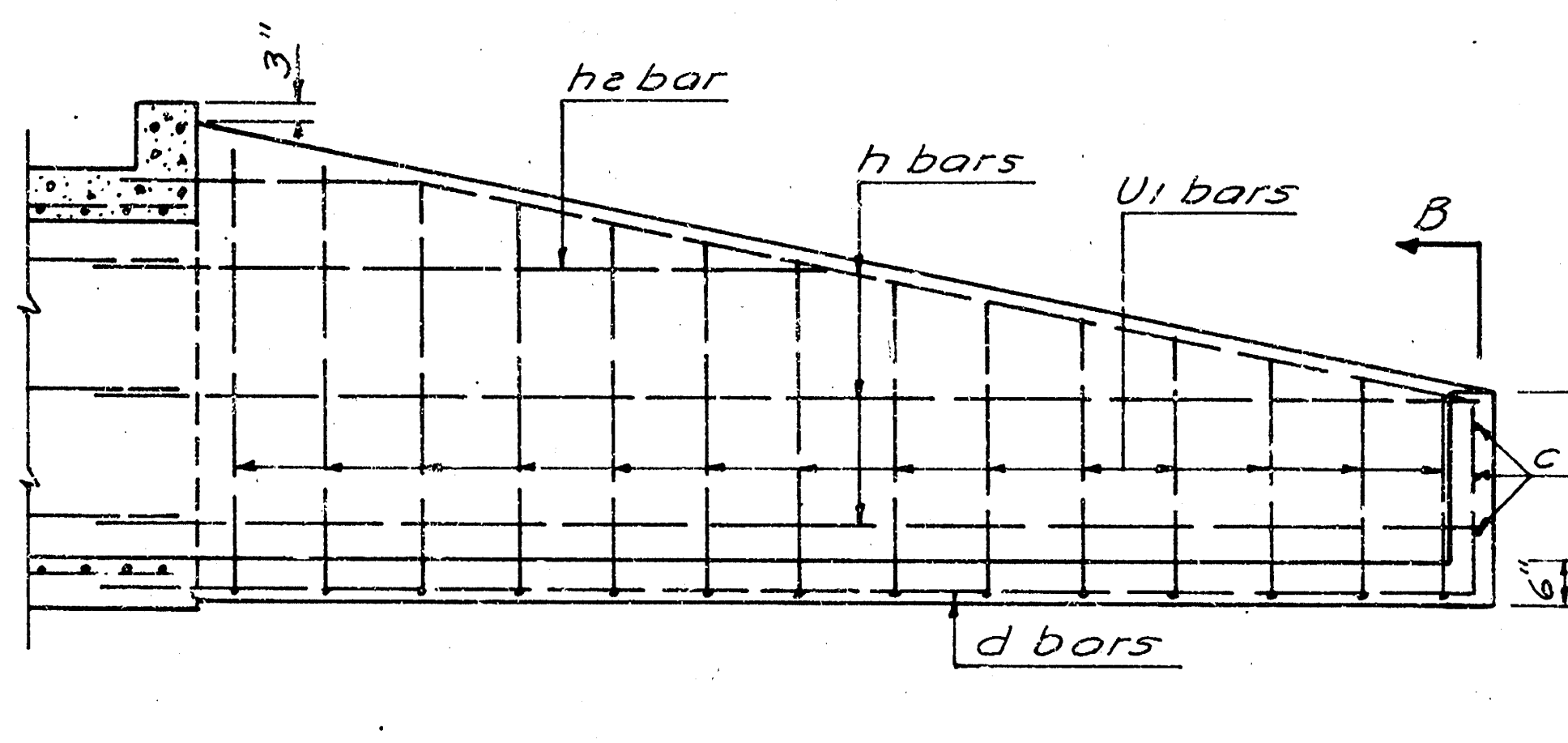
Letter	B	D	F	H	R	S	Ts	Tw		
Dimension	20'-0"	1'-1"	9"	5'-0"	3"	6'-0"	*	*		
Bar	a	b	c	d	g	h	h1	u	v	v1
No.	*	*	4	8	4	8	12	34	*	4
Length	6'-9"	*	6'-10"	22'-3"	6'-9"	21'-6"	‡	‡	*	2'-9"

6' x 6' Hdwl. Conc. (Two) 14.144 C.Y.

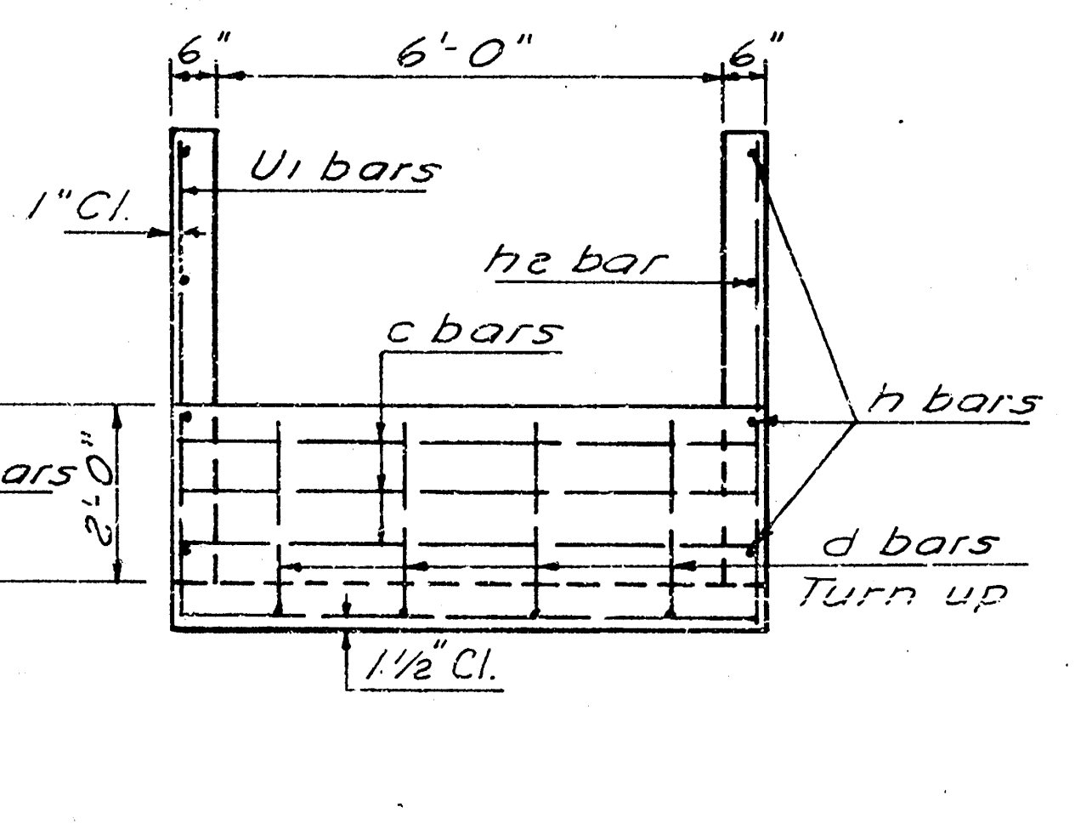
Letter	B	D	F	H	R	S	Ts	Tw		
Dimension	24'-0"	1'-1"	9"	6'-0"	9"	6'-0"	*	*		
Bar	a	b	c	d	g	h	h1	u	v	v1
No.	*	*	4	8	4	8	12	42	*	4
Length	6'-10"	*	6'-10"	26'-3	6'-10"	25'-8"	‡	‡	*	2'-9"

* See Culvert Summary for these values.

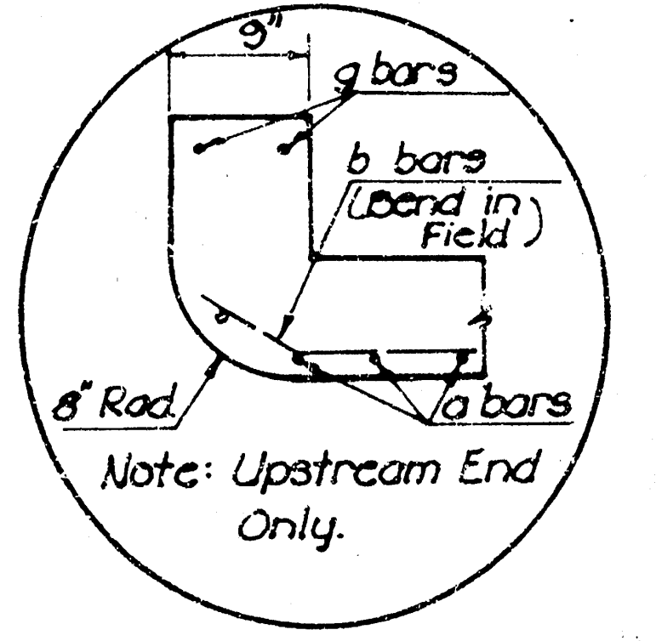
‡ See Bending Diagrams for these lengths.



HEADWALL WITH SOIL SAVER



SECTION B-B



DETAIL TOP OF OPENING

GENERAL NOTES

LOADING: H-20-'44 AASHO Specifications. Edition of 1969.

UNIT STRESSES: fc = 1200 psi; fc' = 3000 psi; fs = 20,000 psi.

Class A Concrete shall be used thruout. Bevel all exposed edges with a 3/4" triangular molding, unless otherwise noted.

All dimensions are to center-line of bar unless otherwise noted.

Keyed joint shall be provided as shown on 3', 4', 5' and 6' span culverts which are 40' or more in box length. The number of joints shall be as follows: 40' to 80' - 1 joint; 80' to 120' 2 joints; 120' to 160' - 3 joints; etc.

Seal Course consisting of 3" of Class A Concrete shall be constructed only where specified on the Plans or by the Engineer. No reinforcing shall be placed until Seal Course has gained sufficient strength to permit working upon it without injury. Payment for additional quantities, resulting from including Seal Course as a change in the original Plans, shall be made at the unit price bid for the various items involved.

See Standard No. 671.1 (Woven Wire) or Standard No. 672.1 (Barbed Wire) for details of attachment to culvert wings.

Where Soil Saver is specified, rotate d bars, omit toewall and construct weir wall on upstream end of culvert, bend v1 bars into floor.

CULVERT SUMMARY

Station	Size	Crown Grade Elev.	Flow Line		Horizontal Roadway		Degree of Rotation	Length along Box		No. of Sect.	Section Length	Ts	Tw	"a" Bars			"b" Bars		"V" Bars				Design Fill Ft.	Class A Conc. Cu. Yds.	Reinf Steel Lbs.
			Lt.	Rt.	Lt.	Rt.		Lt.	Rt.					No.	Size	Spac.	No.	Length	No.	Size	Spac.	Length			
14+97	6'x4'	216.35	209.5	210.0	34'-3"	34'-3"	90°	34'-3"	34'-3"	2	35'-0"	7"	6"	280	5	6"	28	34'-9"	96	4	18"	4'-11"	10'	*47.20	3210
(Longford Dr.)																									
																							*Incl. 6.61	Cu. Yds	for
																							Seal	Course	

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

STATE HIGHWAY COMMISSION OF KANSAS

R.C. BOX CULVERT
3'-4'-5' & 6' SPANS

STD. NO. 310 A

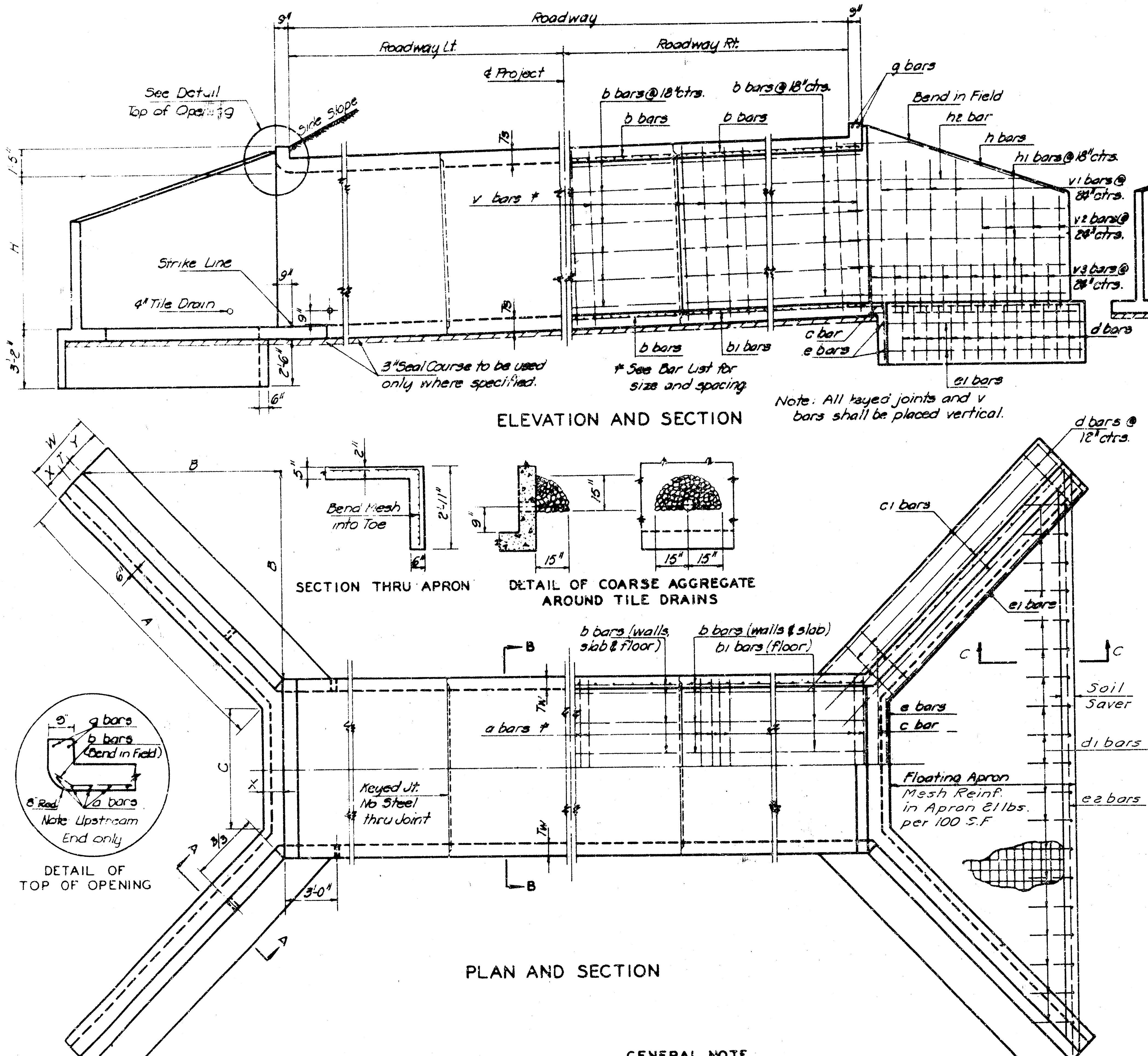
SHEET NO. OF SCALE

DESIGNED BY Richards DATE 10-70 DETAILED BY Schwartz TRACED BY P

CHECKED BY Hecht APPROVED BY K. G. Lancaster DATE 10-

19/41

FHWA Region No.	State	Project No.	Fiscal Year	Sheet No.	Total Sheets
7	Kansas			20	41



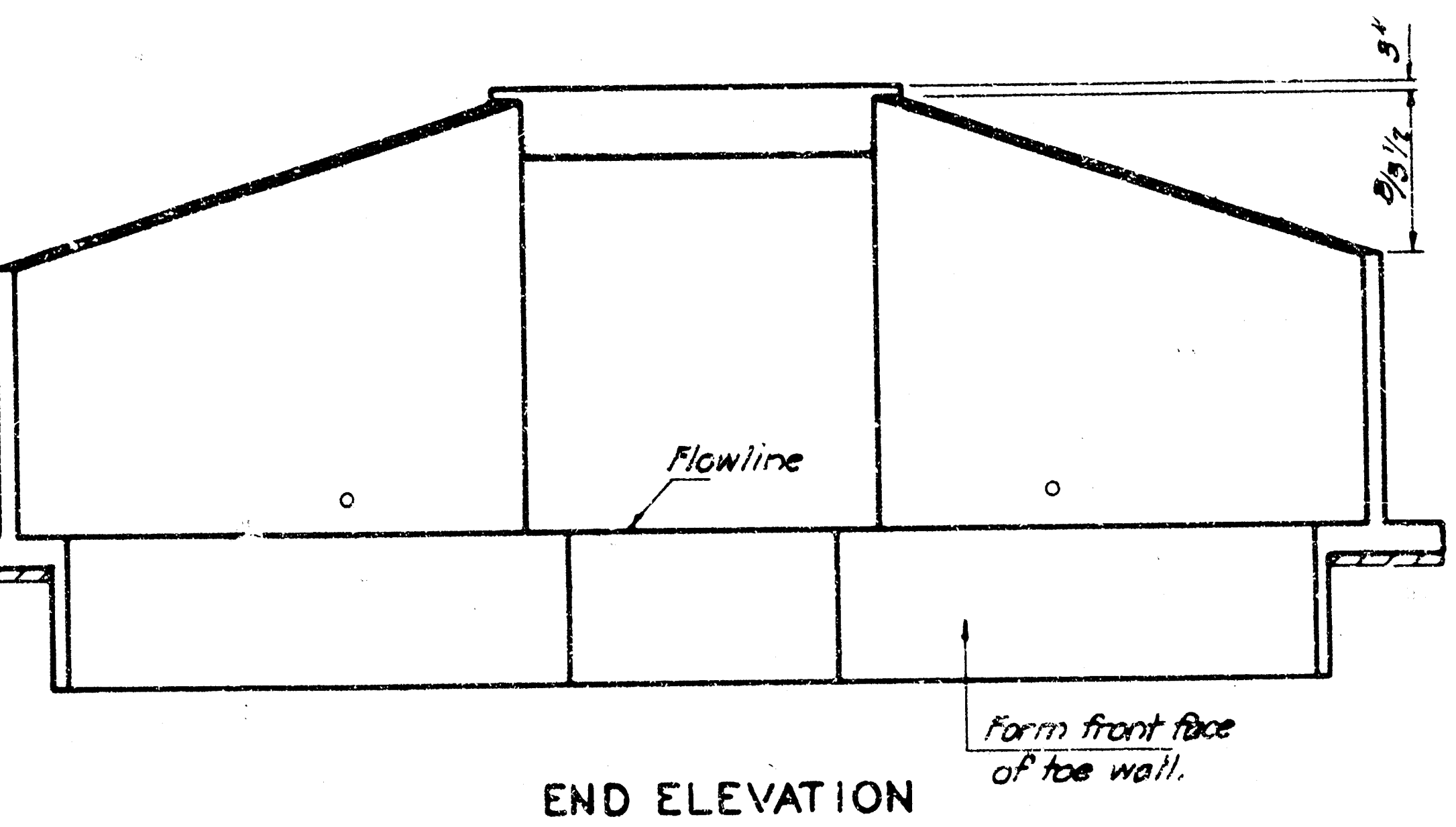
ELEVATION AND SECTION

SECTION THRU APRON

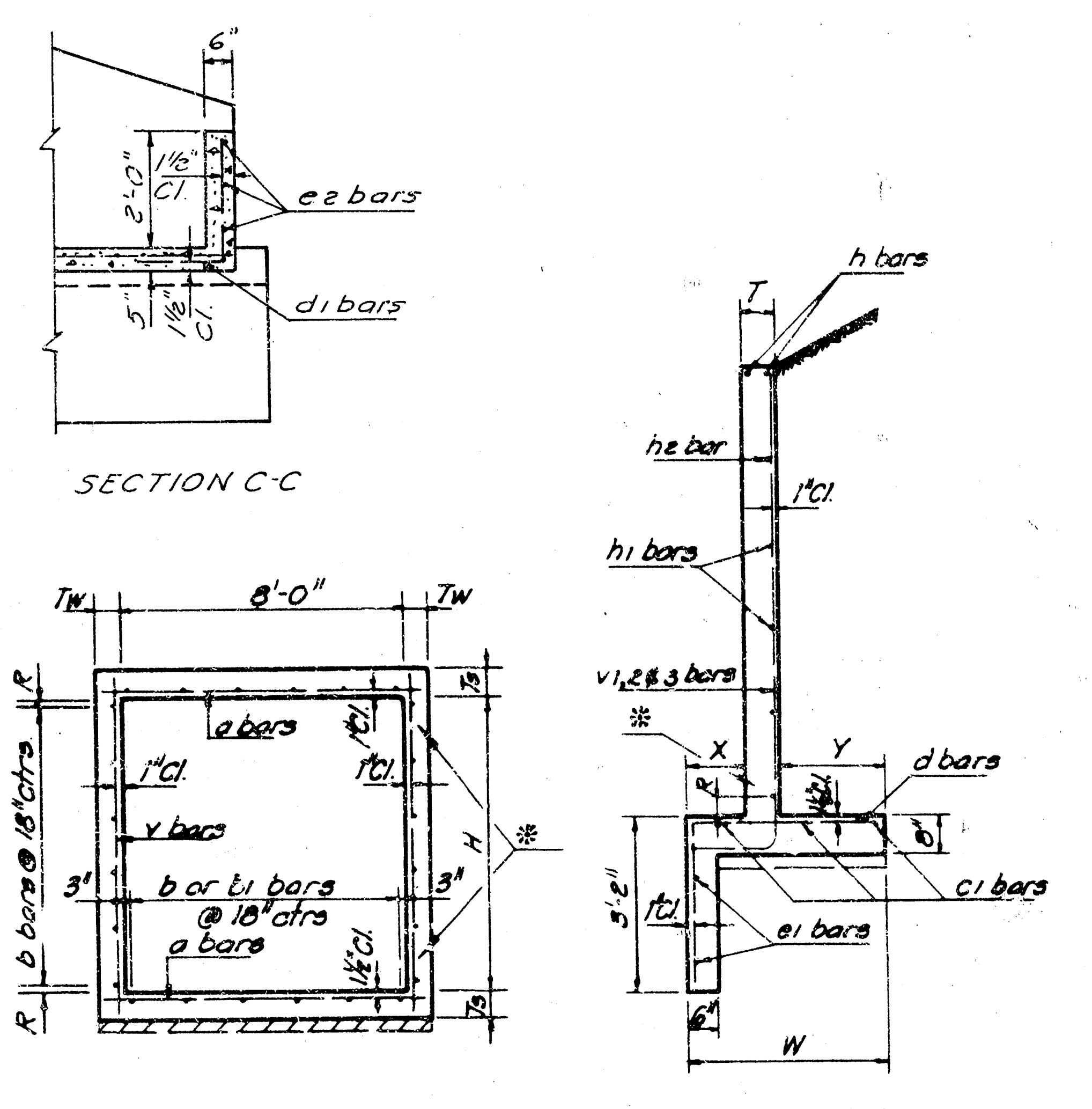
DETAIL OF COARSE AGGREGATE AROUND TILE DRAINS

DETAIL OF TOP OF OPENING

PLAN AND SECTION



END ELEVATION

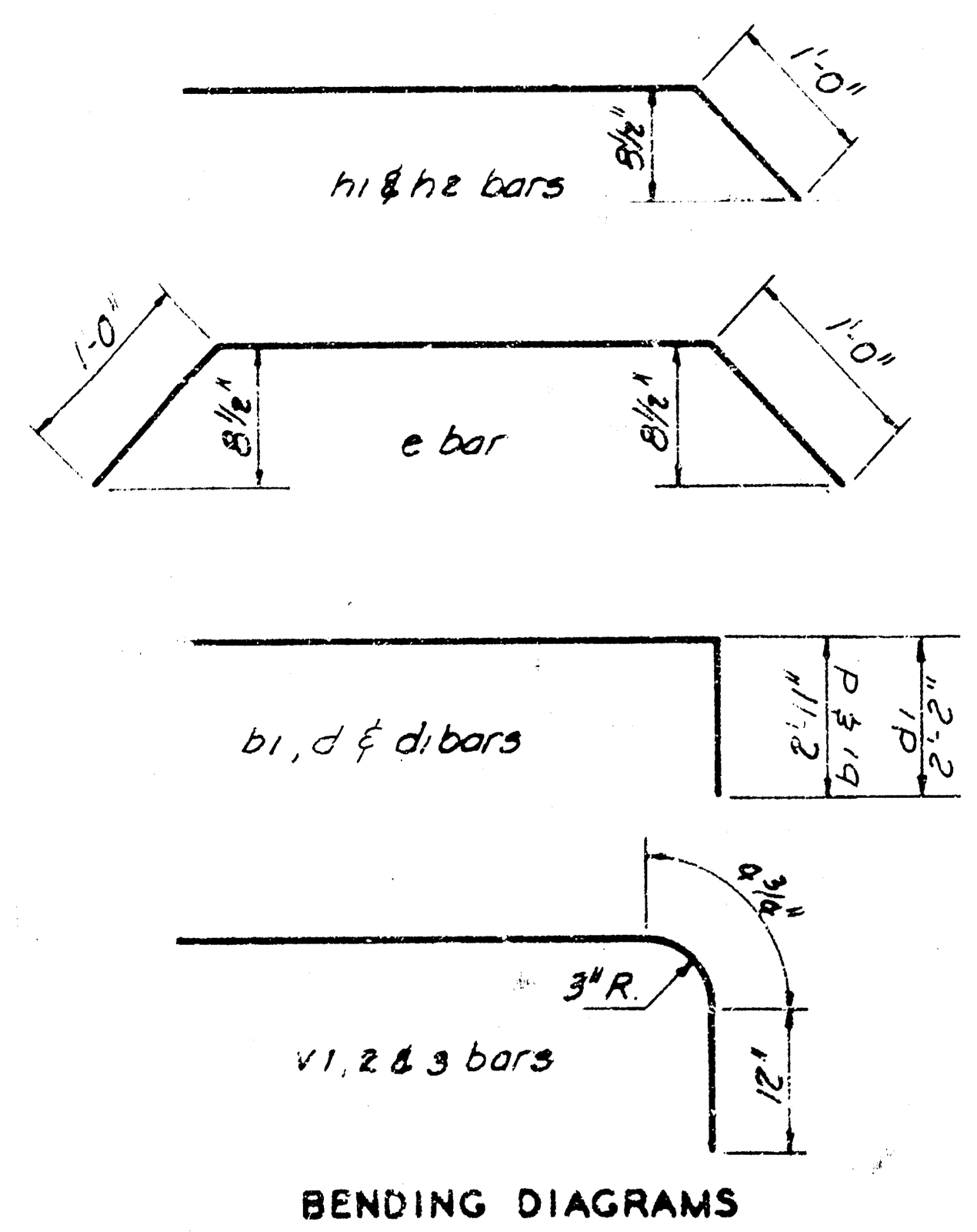


SECTION C-C

SECTION B-B

SECTION A-A

※ Optional Construction Joints
(May be constructed at the Contractor's option.)



BENDING DIAGRAMS

All dimensions are out to out of bars

Design Note Length b1 = b + X + 2'-10"

GENERAL NOTE

LOADING: H20-44 AASHO Specifications, Edition of 1969.

UNIT STRESSES: f'c=3,000 p.s.i.; fc=1,200 p.s.i.; fs=20,000 p.s.i.

Class A Concrete shall be used throughout. Bevel all exposed edges with a ¾" triangular molding unless otherwise noted.

All dimensions relative to reinforcing steel are to center line of bar unless otherwise noted.

Seal Course, consisting of 3" of Class A Concrete, shall be constructed only where specified on the Plans or by the Engineer. No reinforcing shall be placed until the Seal Course has gained sufficient strength to permit working upon it without injury.

Floating Apron shall be constructed only between downstream wings in locations subject to scour where specified on the Plans or by the Engineer.

Wire reinforcing mesh shall be electrically welded and shall be composed of No. W1.4 wire at 6" centers each way. Weight of reinforcing mesh shall be classified as pounds of reinforcing steel.

Payment for additional quantities resulting from including Seal Course and or Floating Apron as a change in the original plans, shall be made at the Unit Price bid for the various items involved.

Coarse aggregate shall be deposited behind each weephole to occupy a space extending 15" in all directions above the weephole flowline. This work shall not be paid for directly, but shall be considered a part of the excavation work.

Keyed Joints shall be provided as shown on all culverts where the box length is 40' or more. These joints shall be spaced so as to divide the box into sections of equal length. The number of joints to be used shall be as follows; 40' to 80' - 1 joint; 80' to 120' - 2 joints; 120' to 160' - 3 joints, etc.

The quantities shown in Culvert Summary include Apron and or Soil Saver quantities if they are to be constructed.

See Standard No. 671.1 (Woven Wire) or Standard No. 672.1 (Barbed Wire) for details of attachment to culvert wings.

Where Soil Saver is specified, omit toe wall on apron and construct weir wall on upstream end of culvert.

LIST OF BARS AND DIMENSIONS

Capri Lane - 20+75	8'x 3'x 70'																			
Apron Steel (One)	15 Lbs	Seal Course	5.92	C.Y.	Hdwl. Concrete (Two)	6.166	C.Y.													
Apron Concrete (One)	1.1 CY	Apron Seal Course	0.66	CY	Concrete Per Ft. of Box	0.55555	C.Y.													
Letter	A	B	C	H	R	T	Ts	Tw	W	X	Y		Bar	a	v					
Dimension	8'-3"	5'-10"	8'-9⅛"	3'-0"	9"	6"	8"	6"	2'-6"	1'-0"	1'-0"		Space	6½"	18"					
Bar	a		b	b1	c	c1	d	e	e1	g	h	h1	h2	v	v1	v2	v3	d1	e2	
Number	260		32	12	2	12	12	4	8	4	8	8	-	96	8	12	-	18	3	
Size	#6		#4	#4	#4	#4	#4	#4	#4	#5	#5	#4	#4	#4	#4	#4	#4	#4	#4	
Length	8'-9"		34'-9"	38'-7"	11'-0"	10'-0"	5'-0"	9'-0"	8'-3"	8'-3"	9'-3"	9'-6"		4'-1"	5'-0"	3'-10"		3'-8"	19'-2"	

8'x 4'x																				
Apron Steel (One)	34 Lbs	Seal Course		CY	Hdwl Concrete (Two)	9.117	C.Y.													
Apron Concrete (One)	2.553 C.Y.	Apron Seal Course		CY	Concrete Per Ft. of Box		C.Y.													
Letter	A	B	C	H	R	T	Ts	Tw	W	X	Y		Bar	a	v					
Dimension	10'-3"	7'-3"	5'-9⅛"+2Tw	4'-0"	6"	6"			2'-6"	1'-0"	1'-0"		Space							
Bar	a		b	b1	c	c1	d	e	e1	g	h	h1	h2		v	v1	v2			
Number				12	2	12	44	4	8	4	8	8	4			12	12			
Size			#4	#4	#4	#4	#4	#4	#4	#5	#5	#4	#4		#4	#4	#4			
Length					11'-0"	12'-3"	5'-2"	9'-0"	10'-3"	8'-9"	11'-9"	11'-6"	3'-8"			5'-11"	4'-8"			

8'x 5'x																				
Apron Steel (One)	43 Lbs	Seal Course		CY	Hdwl. Concrete (Two)	11.662	C.Y.													
Apron Concrete (One)	3.181 C.Y.	Apron Seal Course		CY	Concrete Per Ft. of Box		C.Y.													
Letter	A	B	C	H	R	T	Ts	Tw	W	X	Y		Bar	a	v					
Dimension	12'-3"	8'-8"	5'-9⅜"+2Tw	5'-0"	3"	6"			2'-9"	1'-0"	1'-3"		Space							
Bar	a		b	b1	c	c1	d	e	e1	g	h	h1	h2		v	v1	v2			
Number				12	2	12	52	4	8	4	8	12	4			16	12			
Size			#4	#4	#4	#4	#4	#4	#4	#5	#5	#4	#4		#4	#4	#4			
Length					11'-0"	14'-5"	5'-5"	9'-0"	12'-3"	8'-5"	13'-5"	13'-6"	7'-6"			6'-6"	5'-8"			

8'x 6'x																				
Apron Steel (One)	52 Lbs	Seal Course		C.Y.	Hdwl. Concrete (Two)	15.079	C.Y.													
Apron Concrete (One)	3.875 C.Y.	Apron Seal Course		C.Y.	Concrete Per Ft. of Box		C.Y.													
Letter	A	B	C	H	R	T	Ts	Tw	W	X	Y		Bar	a	v					
Dimension	14'-3"	10'-0⅞"	5'-7⅝"+2Tw	6'-0"	9"	6½"			3'-0"	1'-0"	1'-5½"		Space							
Bar	a		b	b1	c	c1	d	e	e1	g	h	h1	h2		v	v1	v2	v3		
Number				12	2	12	60	4	8	4	8	12	4			20	12	28		
Size			#4	#4	#4	#4	#4	#4	#4	#5	#5	#4	#4		#4	#4	#4	#4		
Length					11'-0"	17'-8"	5'-8"	9'-0"	14'-3"	8'-10"	16'-0"	15'-6"	10'-0"			7'-0"	5'-10"	3'-6"		

8'x 7'x																				
Apron Steel (One)	63 Lbs	Seal Course		C.Y.	Hdwl Concrete (Two)	19.439	C.Y.													
Apron Concrete (One)	4.639 C.Y.	Apron Seal Course		C.Y.	Concrete Per Ft of Box		C.Y.													
Letter	A	B	C	H	R	T	Ts	Tw	W	X	Y		Bar	a	v					
Dimension	16'-3"	11'-5⅞"	5'-6¼"+2Tw	7'-0"	6"	7"			3'-5"	1'-0"	1'-10"		Space							
Bar	a		b	b1	c	c1	d	e	e1	g	h	h1	h2		v	v1	v2	v3		
Number				12	2	12	68	4	8	4	8	16	4			20	16	32		
Size			#4	#4	#4	#4	#4	#4	#4	#5	#5	#4	#4			#4	#4	#4		
Length					11'-0"	19'-6"	6'-1"	8'-11"	16'-3"	8'-11"	18'-0"	17'-7"	8'-10"			8'-1"	6'-5"	3'-9"		

8'x 8'x																				
Apron Steel (One)	74 Lbs	Seal Course		C.Y.	Hdwl Concrete (Two)	24.583	C.Y.													
Apron Concrete (One)	5.404 C.Y.	Apron Seal Course		C.Y.	Concrete Per Ft. of Box		C.Y.													
Letter	A	B	C	H	R	T	Ts	Tw	W	X	Y		Bar	a	v					
Dimension	18'-5"	12'-10⅞"	5'-3¼"+2Tw	8'-0"	3"	7½"			3'-10"	1'-2"	2'-0½"		Space							
Bar	a		b	b1	c	c1	d	e	e1	g	h	h1	h2		v	v1	v2	v3		
Number				12	2	12	76	4	8	4	8	16	4			20	20	36		
Size			#4	#4	#4	#4	#4	#4	#4	#5	#5	#4	#4			#4	#4	#4		
Length					11'-0"	22'-0"	6'-6"	8'-10"	18'-3"	9'-0"	20'-0"	19'-8"	15'-3"			8'-1"	7'-0"	4'-0"		

8'x																				
Apron Steel (One)	Lbs	Seal Course		C.Y.	Hdwl Concrete (Two)		C.Y.													
Apron Concrete (One)	C.Y.	Apron Seal Course		C.Y.	Concrete Per Ft. of Box		C.Y.													
Letter	A	B	C	H	R	T	Ts	Tw	W	X	Y		Bar	a	v					
Dimension													Space							
Bar	a		b	b1	c	c1	d	e	e1	g	h	h1	h2	v	v1	v2	v3			
Number				12	2	12		4	8	4	8									
Size			#4	#4	#4	#4	#4	#4	#4	#5	#5	#4	#4		#4	#4	#4			
Length					11'-0"															

CULVERT SUMMARY

Station	Size	Crown Gr. Elev.	Flowline Elev.		Rdwy Horiz		Lgth along Box		Sections		Apron	Soil Saver	Design Fill Ft.	Cl. A Conc. Cu. Yds	Reinf. Steel Lbs
			Lt.	Rt.	Lt.	Rt.	Lt.	Rt.	No.	Length					
Capri Lane															
20+75	8'x3'x70'	218.43	213.0	212.5	34'-3"	34'-3"	34'-3"	34'-3"	2	35'-0"	1.10	0.69	8'	*47.64	5260
												* Includes		Apron,	Seal
												Course, Soil		Saver &	
												Headwalls			

20/41

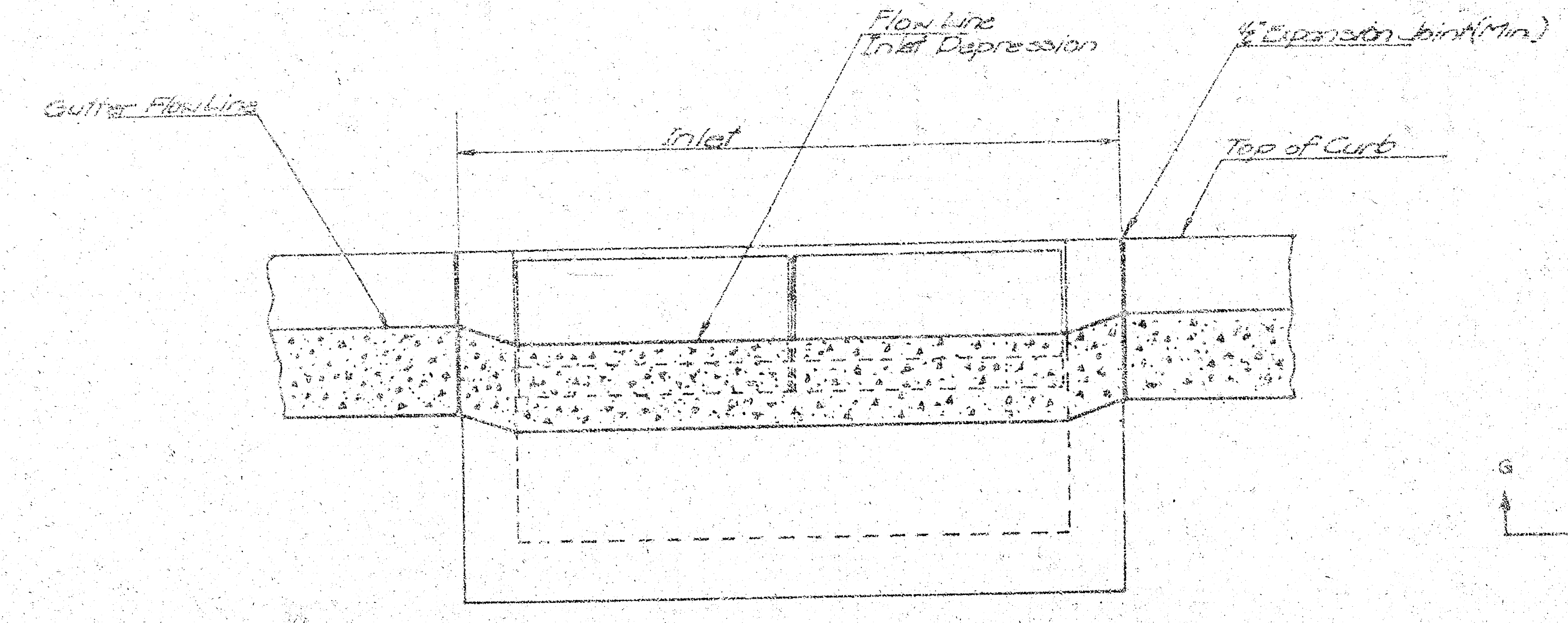
No.	Date	Revisions	By	App'd
3	9-10-73	Wire Reinf. Mesh Changed to W1.4	W.L.H.	K.G.L.
2	10-27-72	Wire Size AASHO Des. M32-72 I	W.L.H.	K.G.L.
1	5-15-72	Removed 12' Uniform Bbl. Sections	W.L.H.	K.G.L.

STATE HIGHWAY COMMISSION OF KANSAS

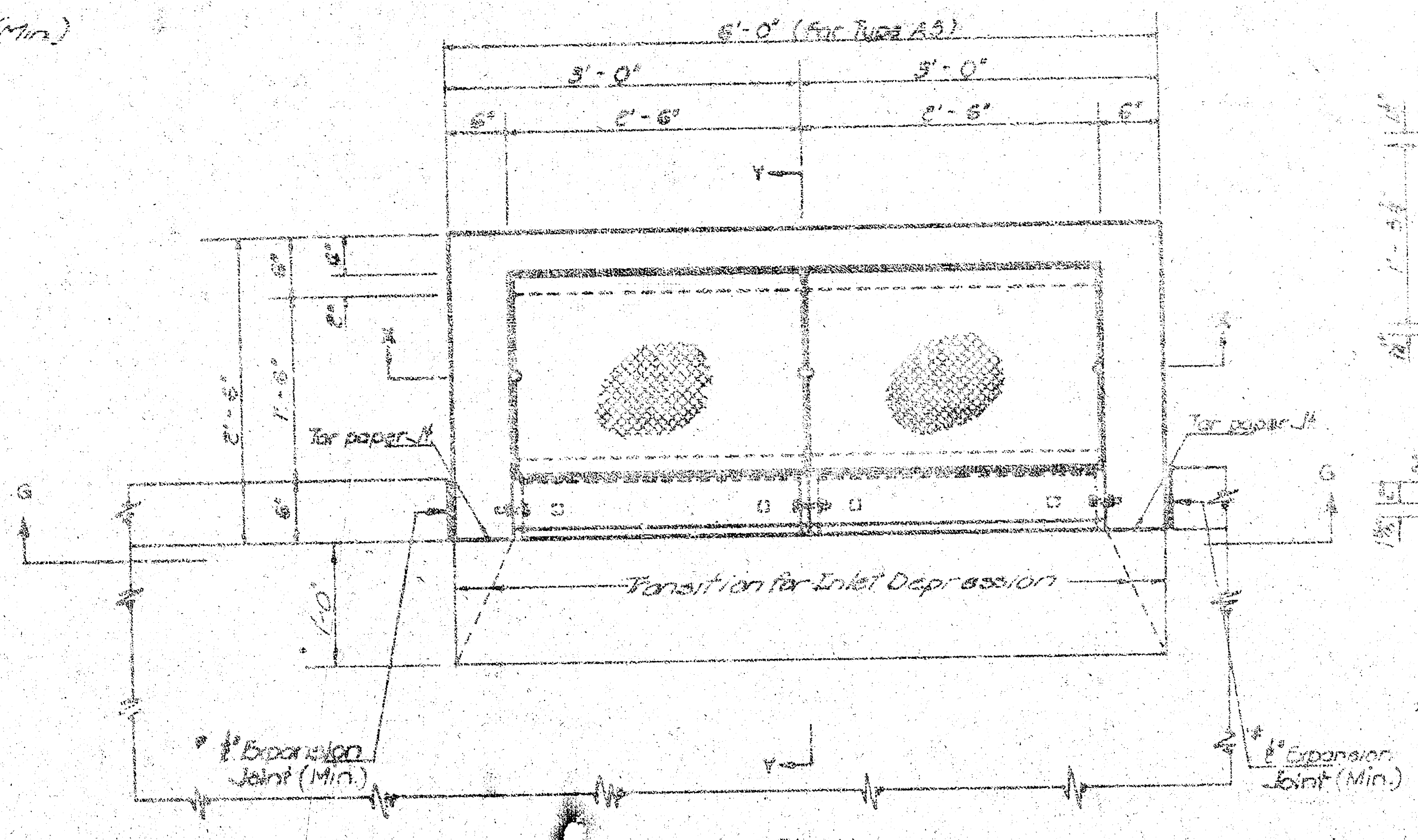
R.C. BOX CULVERT
8 FT. SPAN

STD. NO. 315.2

SHEET NO OF	SCALE	APP'D K. G. Kansas	
DESIGNED Boynton	DETAILED Richards	QUANTITIES Richards	TRACED Booth
DESIGN CK Latham	DETAIL CK Schwartz	QUAN CK Clennon	TRACE CK Hecht

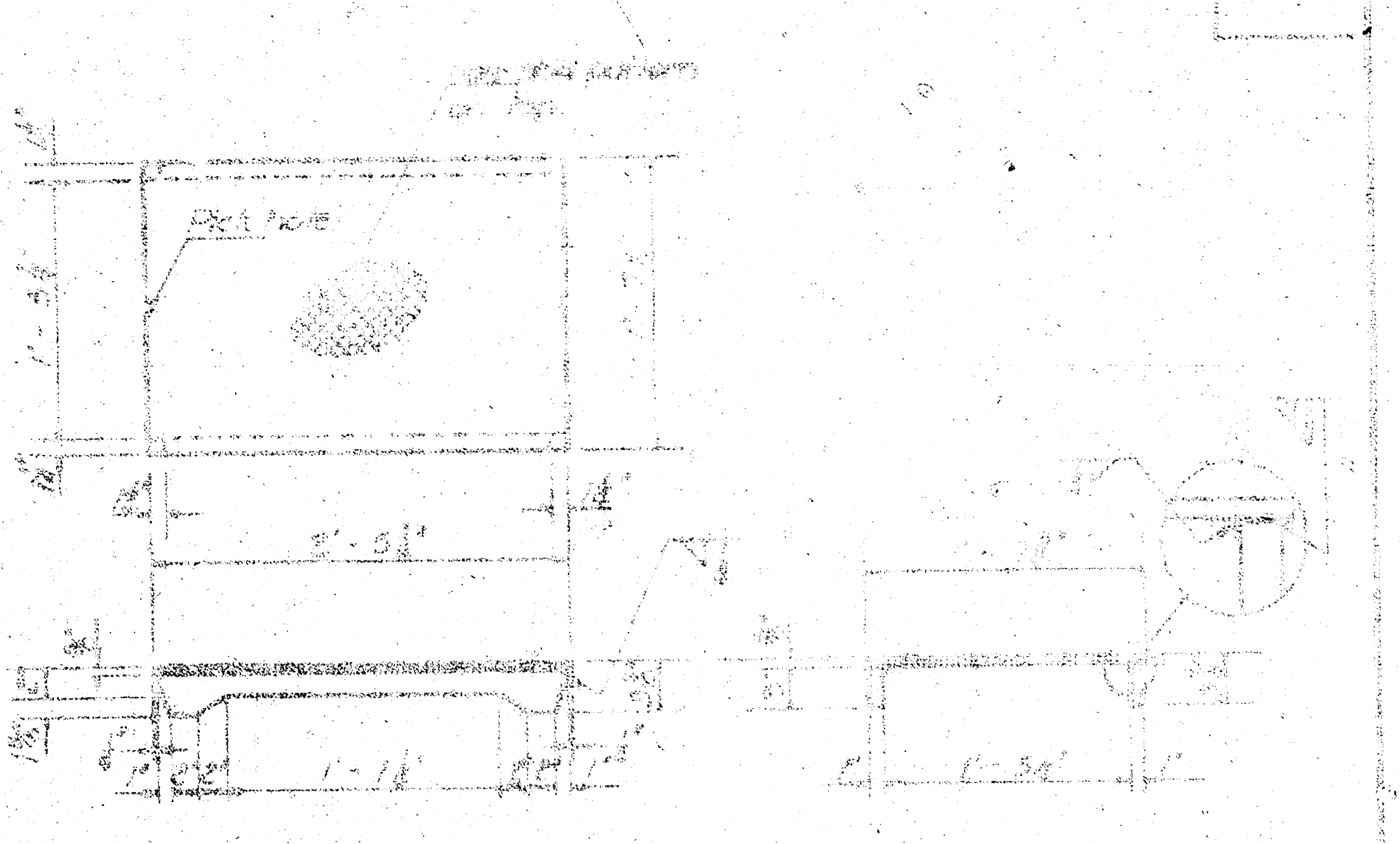


SECTION G-G


6'-0" (For Type A5)
3'-0"
3'-0"
6"
2'-6"
2'-6"
6"
Y
X
Tar paper
Tar paper
G
G
1'-0"
Transition for Inlet Depression
½" Expansion Joint (Min.)
½" Expansion Joint (Min.)
Y

PLAN

½" Hot or cold poured joint sealing compound, or Premoulded Exp. Jt. Filler (Non-extruding, Type B).



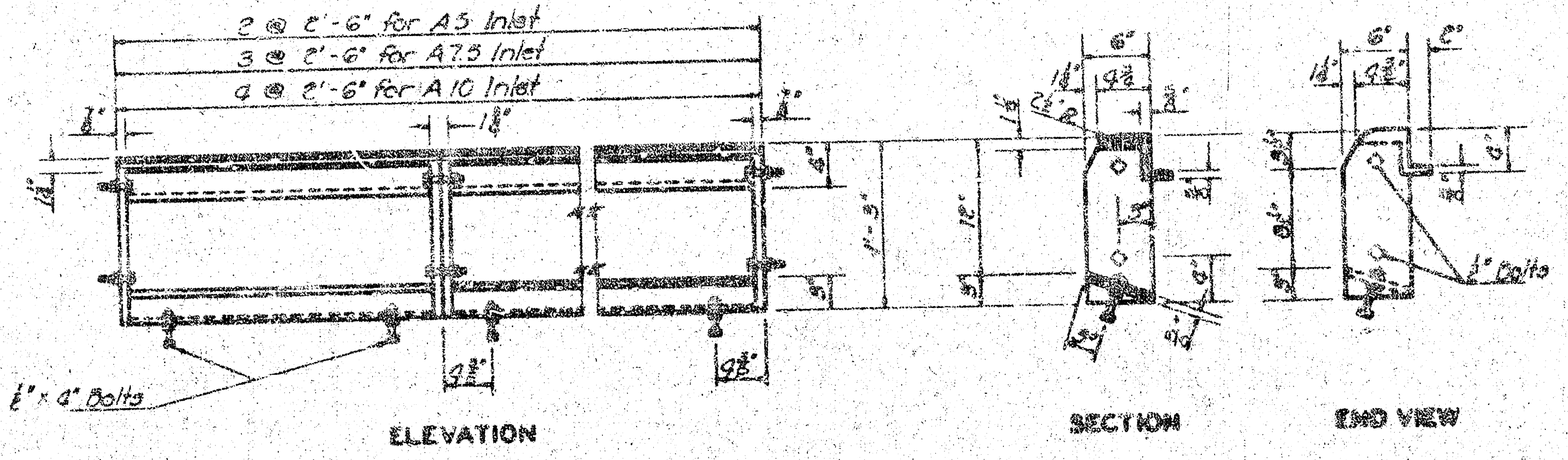
*STRUCTURAL STEEL COVER PLATE

Weight 93 Lbs Each

** At the contractors option, the supports on the cover plate may be made of 2" Stock with the "feet" portions welded to the 2" steel bars. The weld shall be ¼" full length, each side and ground smooth on the out side.

* Nonskid steel floor plate (Commercial grade), welded to steel (ASTM A-36, A-242 or A-441) bars.

DETAILS OF CURB CASTING (IRON)



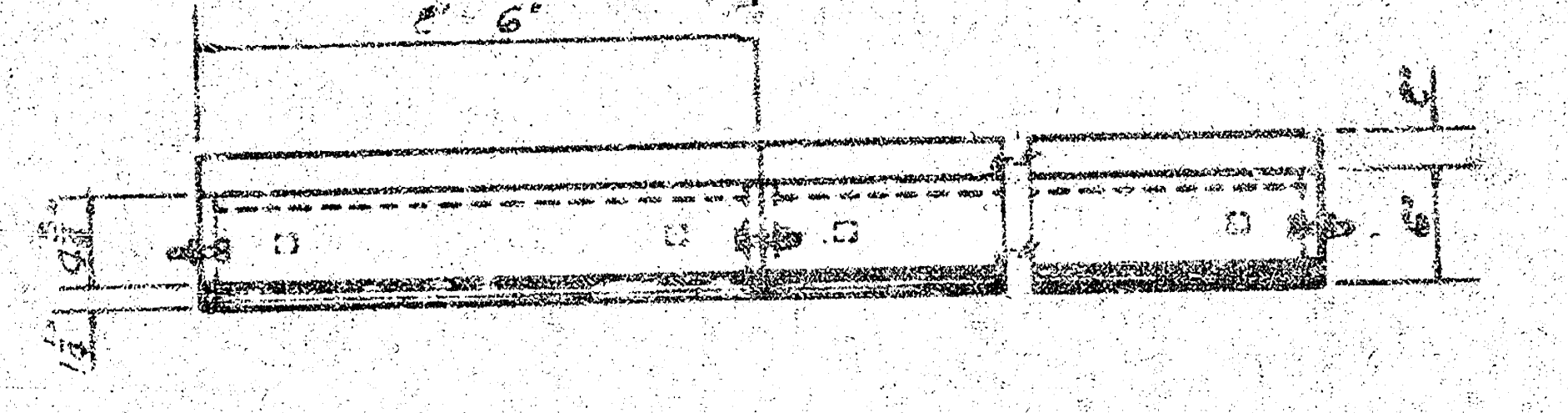
ELEVATION

TYPES A5-1, A7.5-1 & A10-1

SECTION

END VIEW

TYPES A5-1 A7.5-1 & A10-1



PLAN

TYPES A5-1, A7.5-1 & A10-1

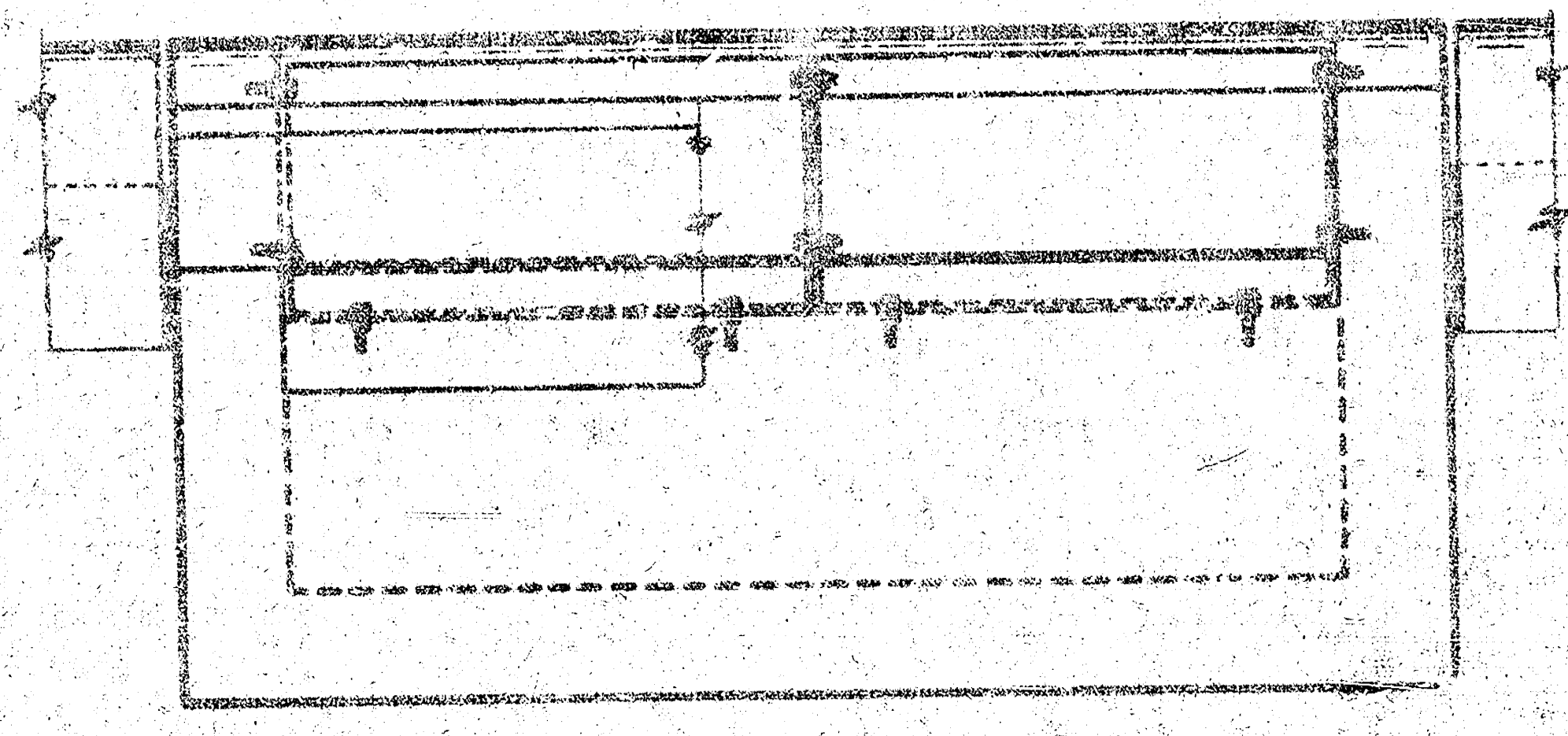
Weight = 129 Lbs. per 2'-6" section

NOTE: All bolts and nuts shall be galvanized and meet the requirements of sub-section 1006.14 of the Standard Specifications.

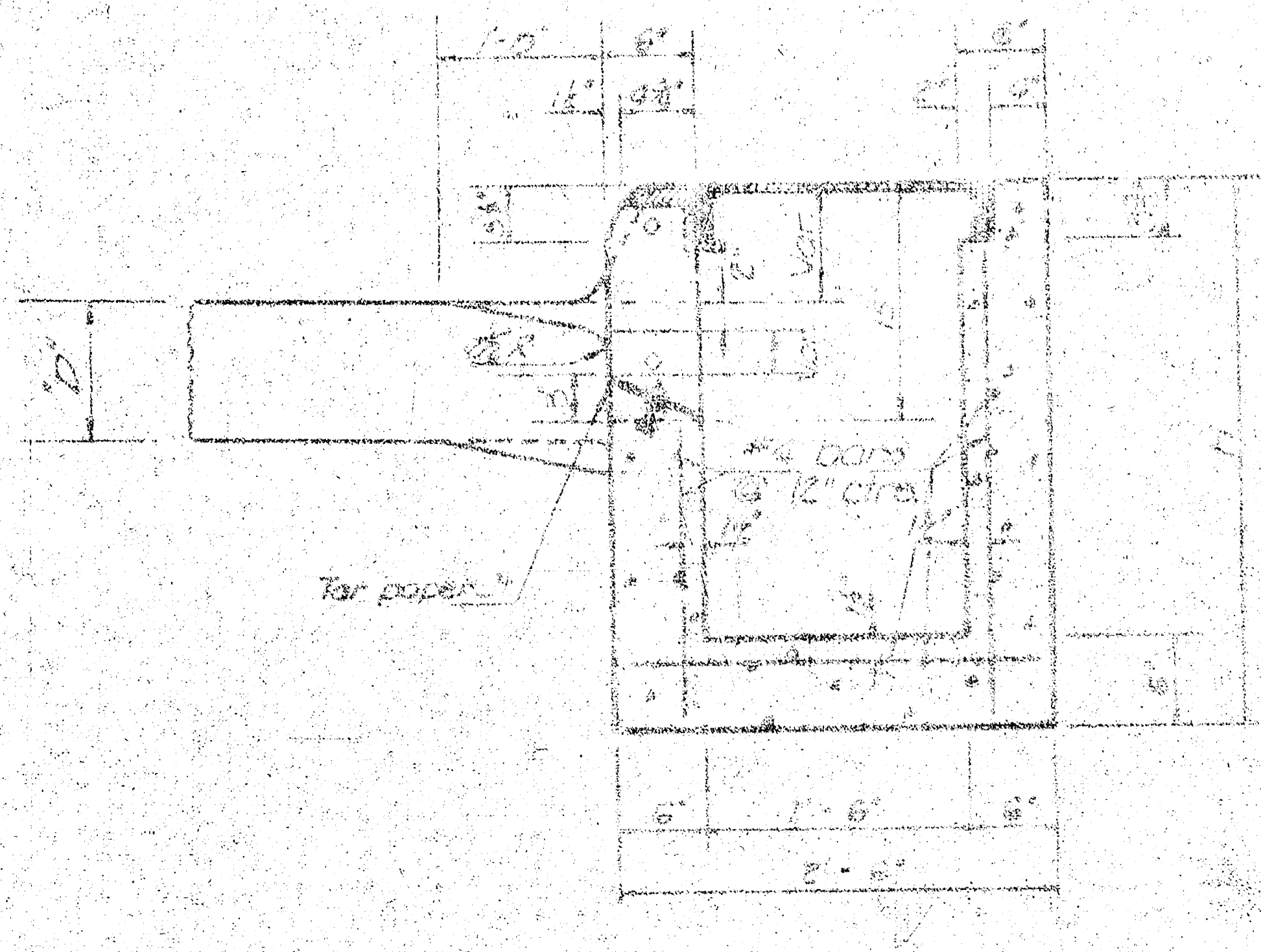
All weights of castings are calculated weights with no allowance for fillets, overruns, anchor bars and bolts.

Weights of cast iron as shown on this sheet are minimum. Heavier weights of cast iron may be used, but payment for cast iron shall be made on the weight as shown on this sheet.

Minor variations of design will be permitted on castings.



FRONT ELEVATION



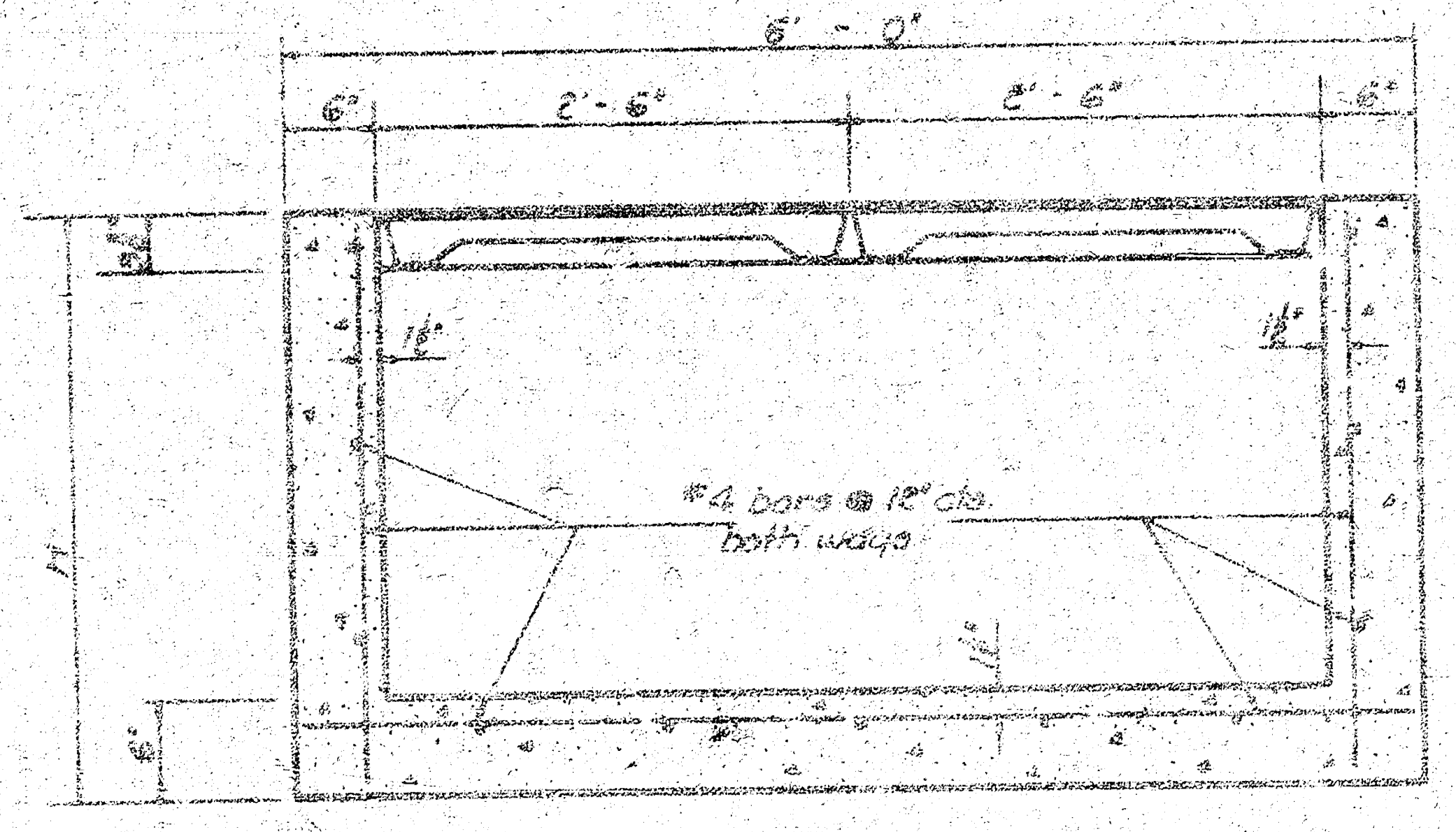
SECTION Y-Y

NOTE: See this sheet for shaping of depression at inlet. This work shall be paid for as "Concrete Pavement".

Floor of Inlet shall be shaped as shown in "EXAMPLES" on Reinforced Concrete Manhole Standard No. 55.

Concrete used for shaping shall be unreinforced Class "A" concrete.

No addition in concrete quantities shall be made for shaping floor of Inlets.



SECTION X-X

Note: All castings shall be gray iron and shall comply with ASTM A-48 Class 25.

Note: Use Class A Concrete throughout.

Bevel all exposed edges with a ¾" triangular moulding.

Reinforcing bars shall be bent around pipe.

No deductions in concrete quantities shall be made for pipe openings.

At the contractor's option Class A Concrete (AE) may be used throughout, but payment shall be made as Cu. Yds. of Class A Concrete miscellaneous.

A small opening may be required in the back of the inlet to drain a low area, if ordered by the Engineer. Reinforcing bars will extend through the opening. No deduction in concrete quantities will be made for this opening.

When so ordered by the Engineer the top of the inlet shall be sloped slightly to approximately fit the ground line or other conditions.

Structural steel cover plate and all exposed cast iron surfaces shall be painted either in the shop or in the field with one coat of a zinc dust paint, followed by two field coats of aluminum paint.

24	7-5-73	To Conform to Standard Specs.	[illegible]	[illegible]
23	8-20-73	Option to weld feet on cover supports	W.L.H.	[illegible]
22	1-31-69	Removed Type 2 Casting Allowed Minor Variation in design.	W.L.H.	K.S.L.
NO.	DATE	REVISIONS		

STATE HIGHWAY COMMISSION OF KANSAS

SPECIAL
TYPE "A" CURB INLET

22/41

7/10

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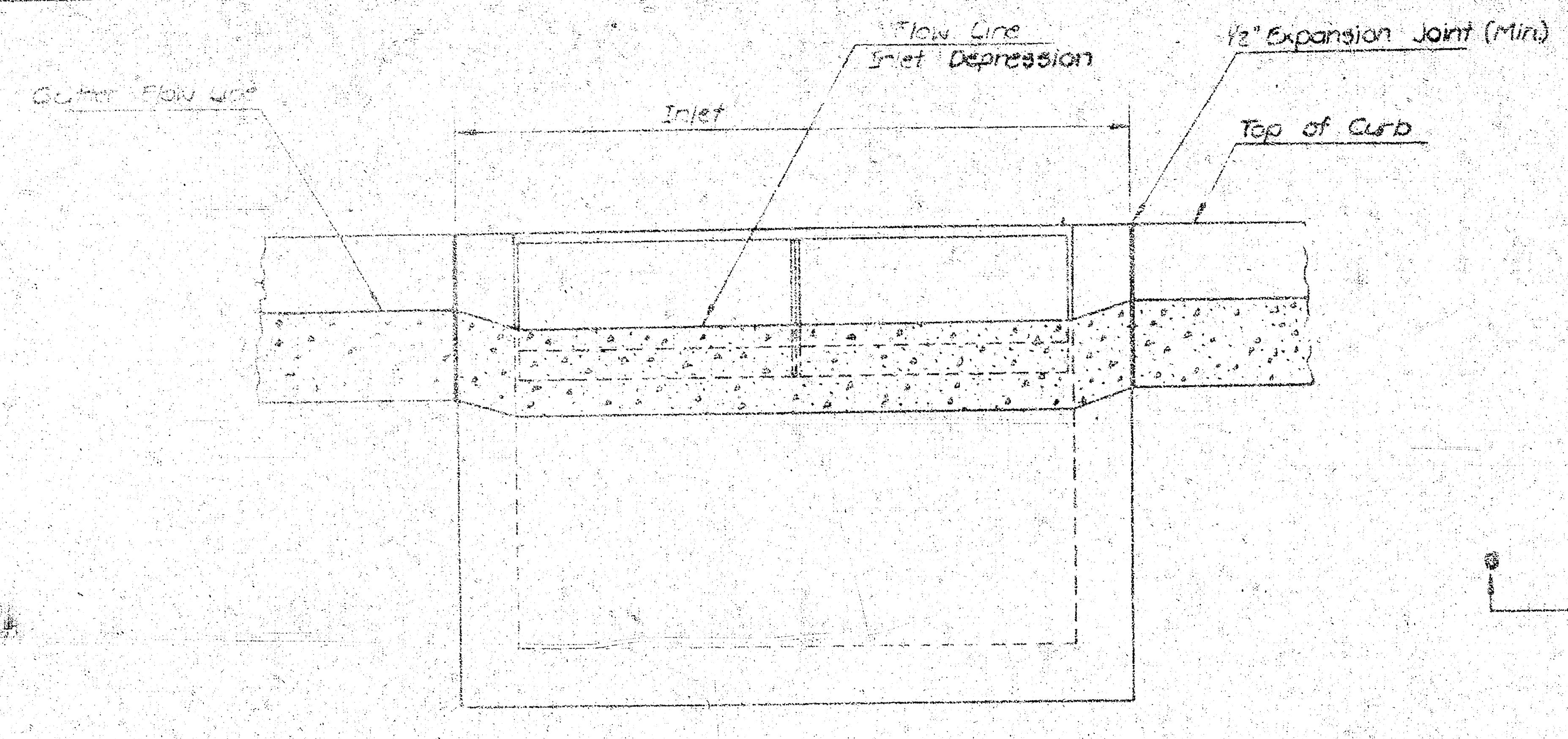
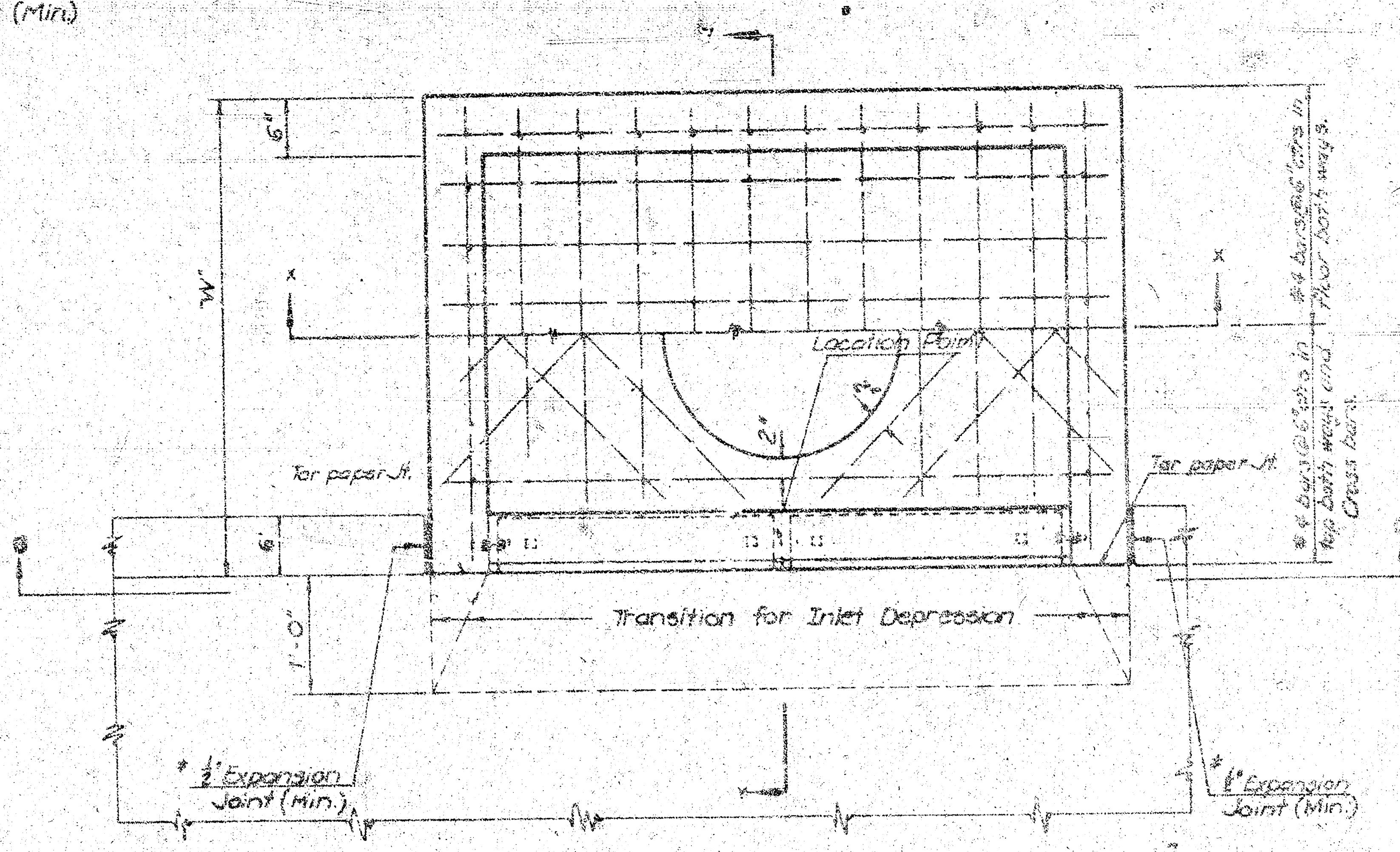


SECTION G—G

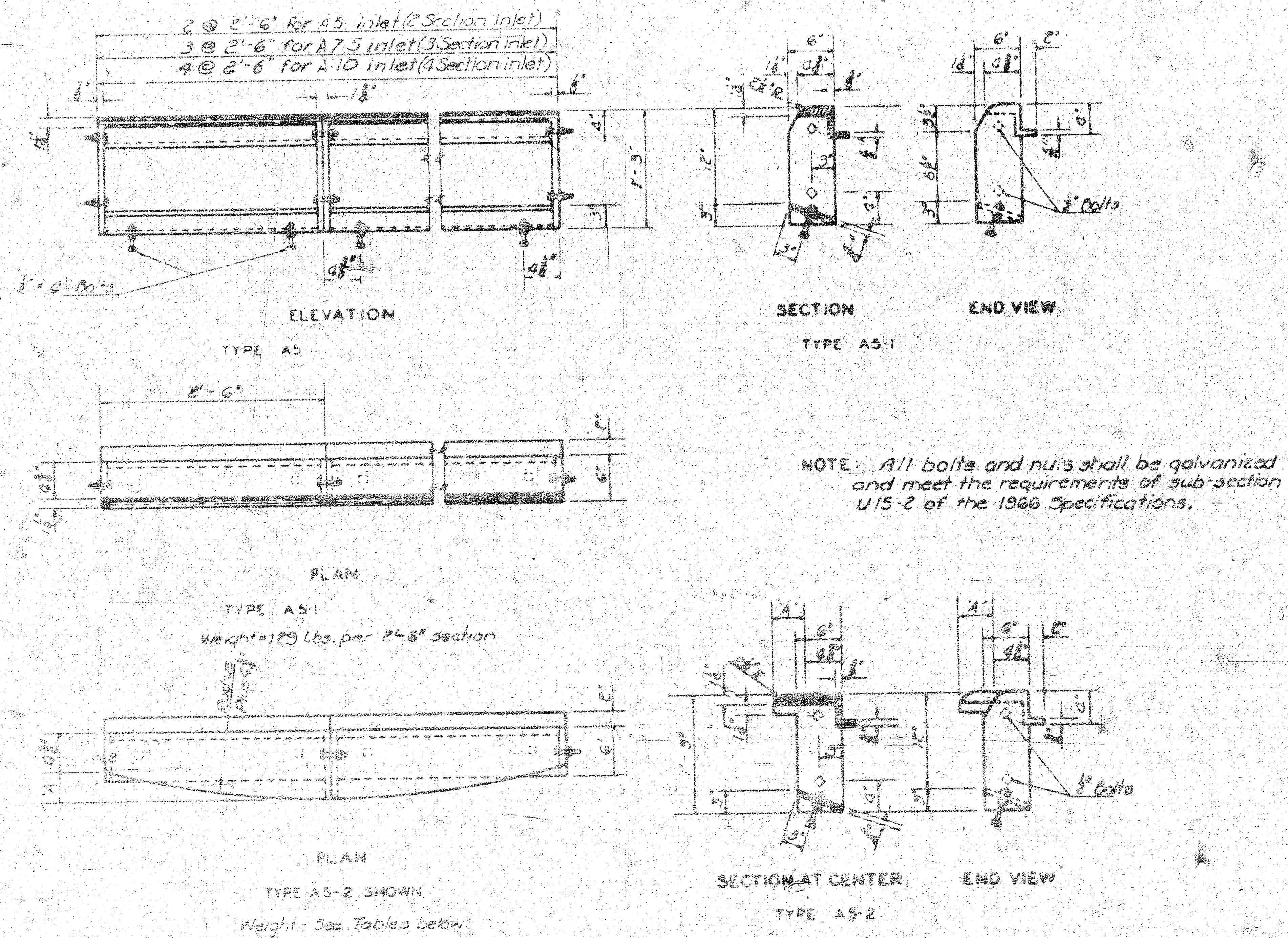

W
6"
Location Point
Tar paper Jt.
Tar paper Jt.
Transition for Inlet Depression
1'-0"
* ½" Expansion Joint (Min.)
* ½" Expansion Joint (Min.)
Cross bars

PLAN

Note: Use Class A Concrete throughout. Bevel all exposed edges with a ¾" triangular moulding.
Reinforcing bars shall be bent around pipe.
No deductions in concrete quantities shall be made for pipe openings.

At the contractor's option Class A Concrete [illegible] may be used throughout, but payment shall be made as Cu. Yds. of Class A Concrete [illegible].
A small opening may be required in the back of the inlet to drain a low area, if ordered by the Engineer. Reinforcing bars will extend through the opening. No deduction in concrete quantities will be made for this opening.
When so ordered by the Engineer the top of the inlet shall be sloped slightly to conform to the ground line or other conditions.
All exposed cast iron surfaces shall be painted either in the shop or in the field with one coat of a zinc dust paint, followed by two field coats of aluminum paint.
No substitutions of design will be permitted on castings.

* Hot or cold poured joint sealing compound, or Premoulded Exp. Jt. Filler (Nonextruding, Type B).


2 @ 2'-6" for A5 inlet (2 Section inlet)
3 @ 2'-6" for A7.5 inlet (3 Section inlet)
4 @ 2'-6" for A10 inlet (4 Section inlet)
1'-3"
ELEVATION
TYPE A5
SECTION
END VIEW
TYPE AS-1
⅝" Bolts
2'-6"
PLAN
TYPE AS-1
Weight=189 Lbs. per 2'-6" section
PLAN
TYPE AS-2 SHOWN
Weight - See Tables below
SECTION AT CENTER
END VIEW
TYPE AS-2
⅝" Bolts

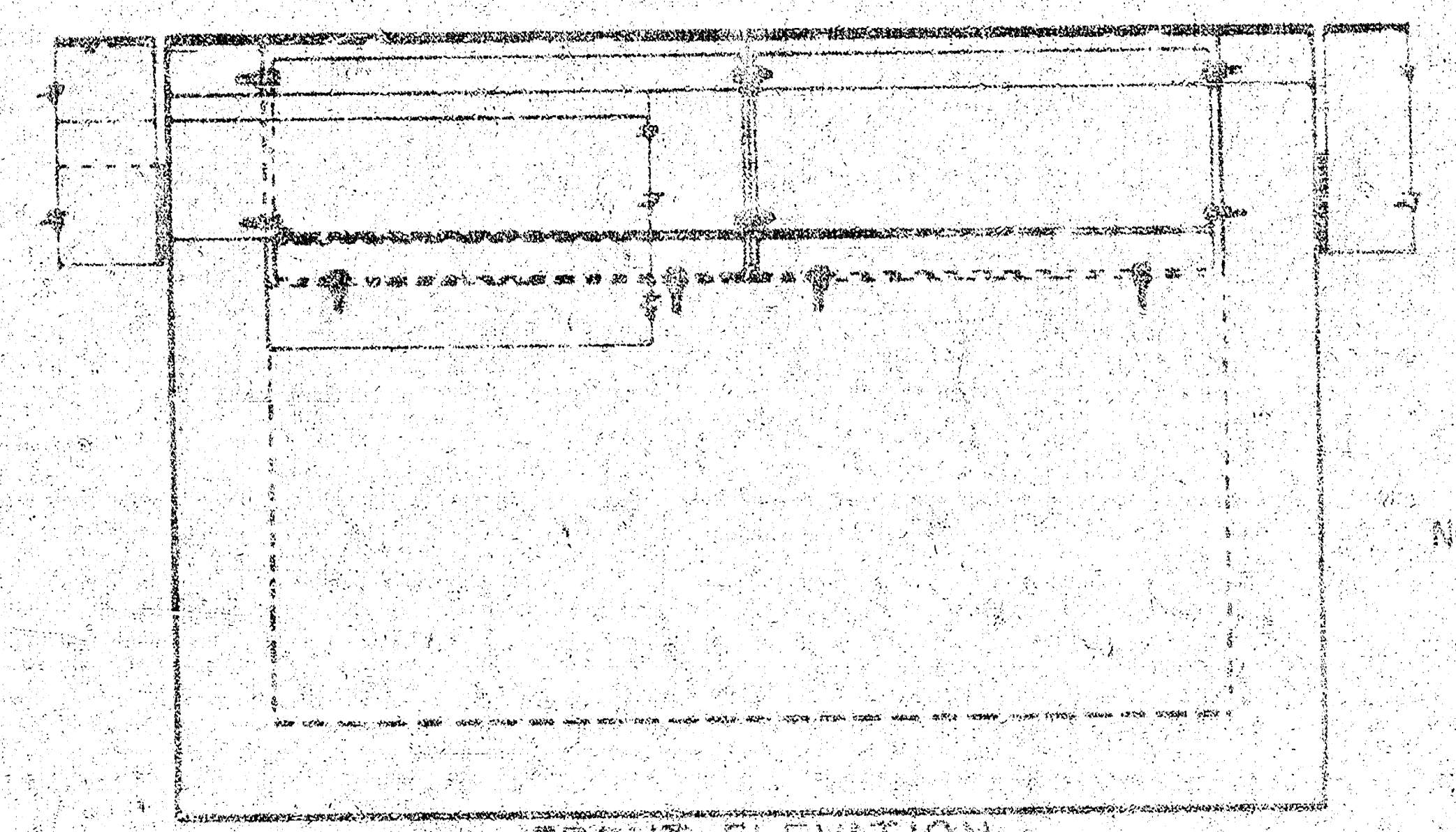
NOTE: All bolts and nuts shall be galvanized and meet the requirements of sub-section U15-2 of the 1966 Specifications.

DETAILS OF CURB CASTING (IRON)

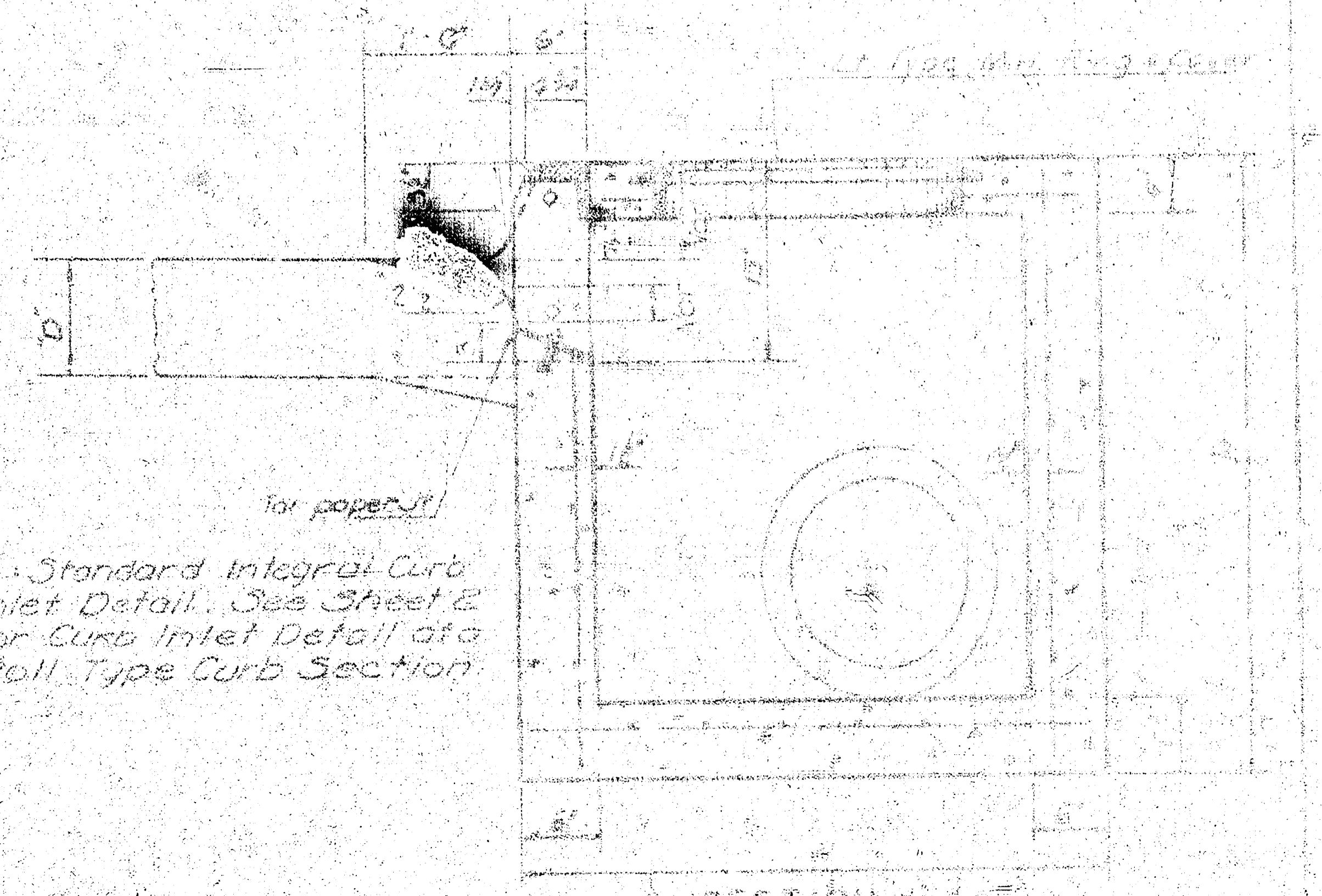
FOR TYPE AS-2 CASTINGS			
Radius	20'	25'	30'
"A"	[illegible]	[illegible]	[illegible]
Weight-Lbs.	288	278	274

Note: All castings shall be gray iron and shall comply with ASTM A-48 Class 25S.

NOTE: Weights given in tables above are total weights for Curb Castings only.
All weights of castings are calculated weights with no allowance for fillets, overruns, anchor bars and bolts.

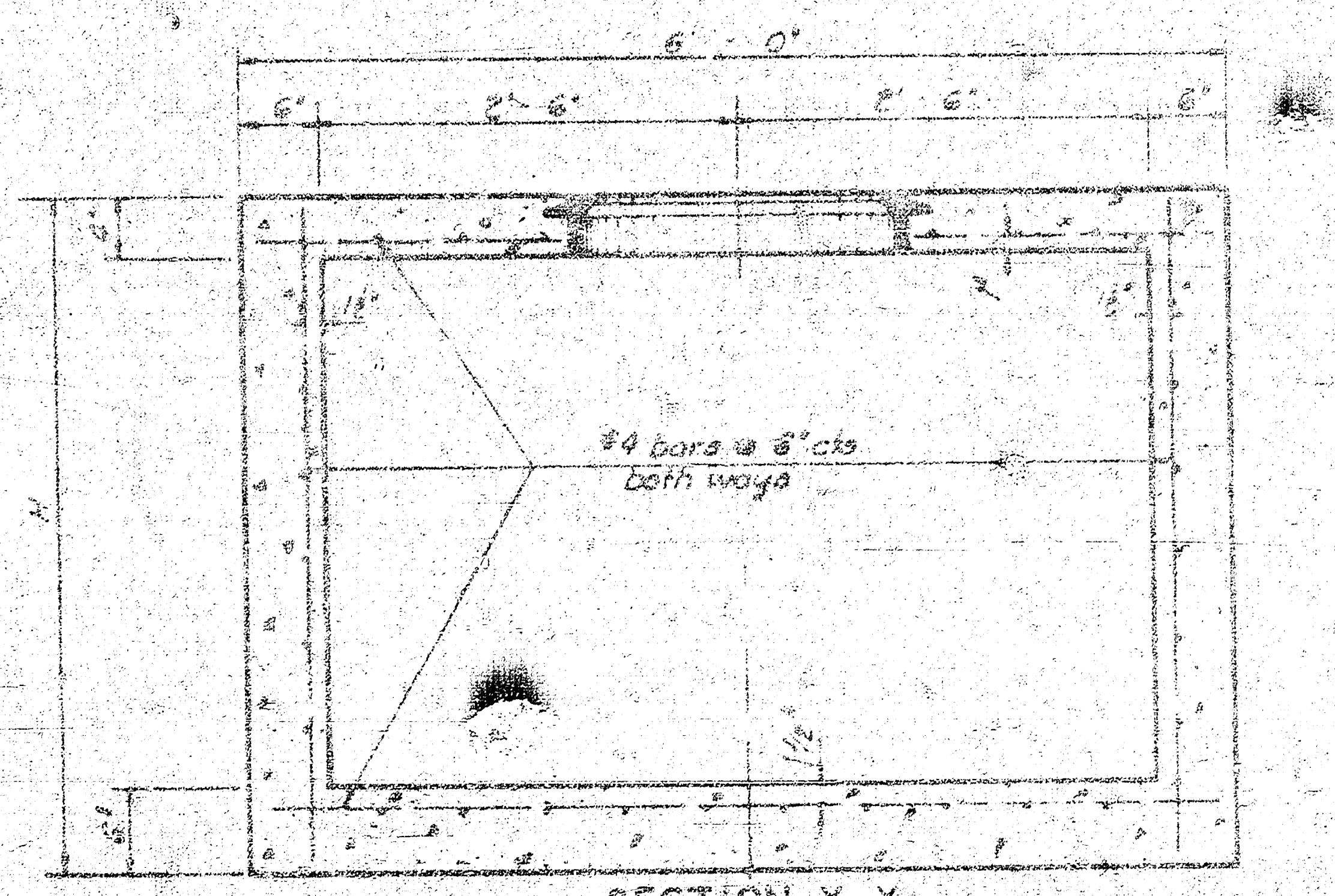


FRONT ELEVATION



NOTE: Standard Integral Curb Inlet Detail. See Sheet 8 for Curb Inlet Detail at a Roll Type Curb Section.

SECTION Y-Y



SECTION X-X

NOTE: See Standard Sheet for Concrete Pavement Auxiliary Details for shaping gutter approaching and leaving inlets. This shaping will be required at each inlet, unless otherwise noted on the plans. This work will be paid for as follows: where combined curb & gutter is used the entire length of the shaped gutter and the curb, together with the concrete under the gutter casting, shall be paid for as "Combined Curb & Gutter, Type [illegible]"; where concrete pavement and edge curb is used the shaped approaches and the edge curb, together with the concrete under the gutter casting, shall be paid for as "Concrete Pavement" and "[illegible] Edge Curb".
See Standard Sheet [illegible] for Details of Manhole Cover and Ring and Cast Iron Grate.
Floor of Inlet-Manhole shall be shaped as shown on Standard "EXAMPLES" on Reinforced Concrete Manhole Standard [illegible]. Concrete used for shaping shall be unreinforced Class A [illegible].
No addition in concrete quantities shall be made for shaping floor of Inlet-Manhole.

13	3-26-70	Class "A" miscellaneous [illegible]
12	[illegible]	[illegible]
11	[illegible]	[illegible]
10	3-66	To conform to 1966 Specs.
No.	Date	Revision

STATE HIGHWAY COMMISSION OF KANSAS

SPECIAL TYPE "A"
COMBINED INLET-MANHOLE

23/41

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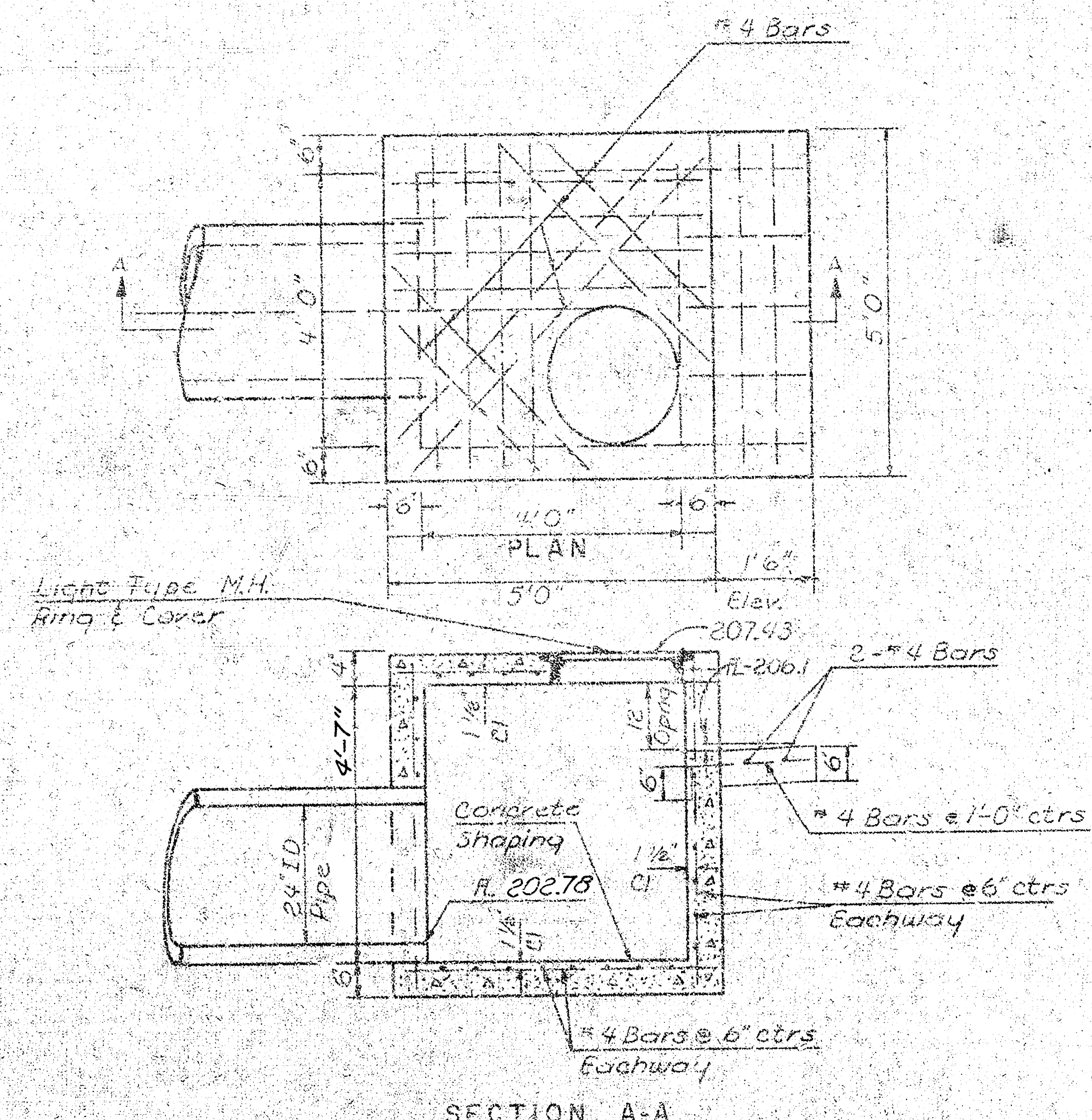
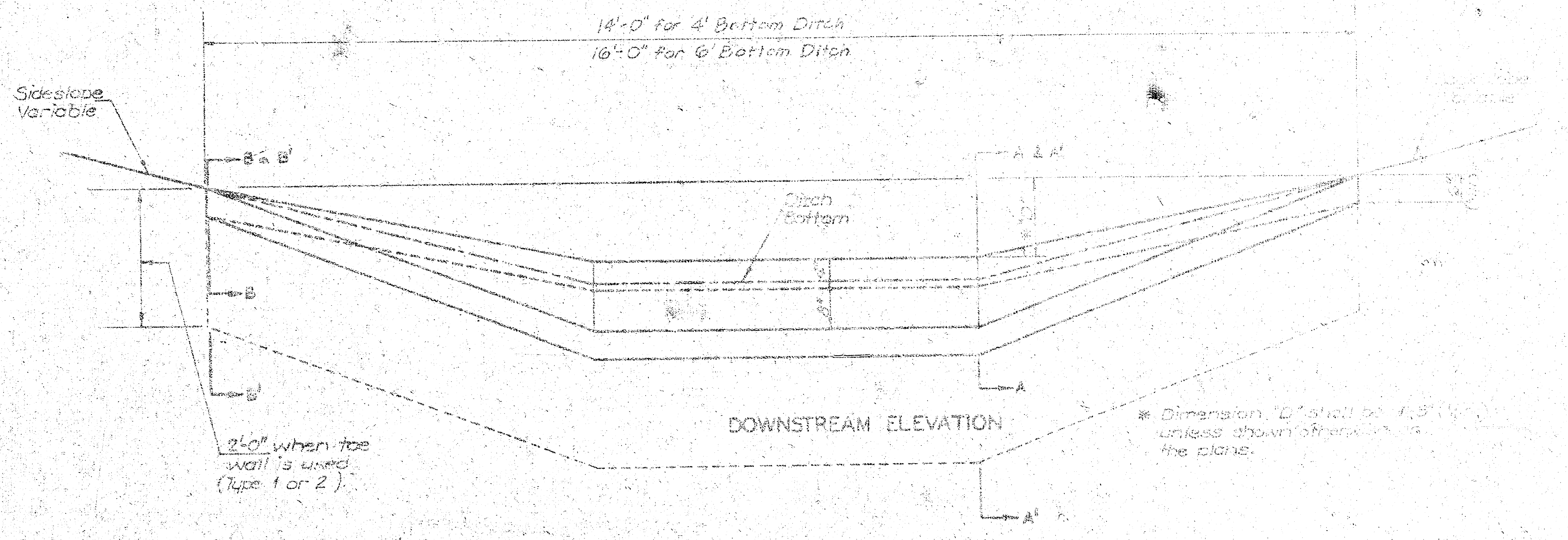
FED. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KANSAS			23	

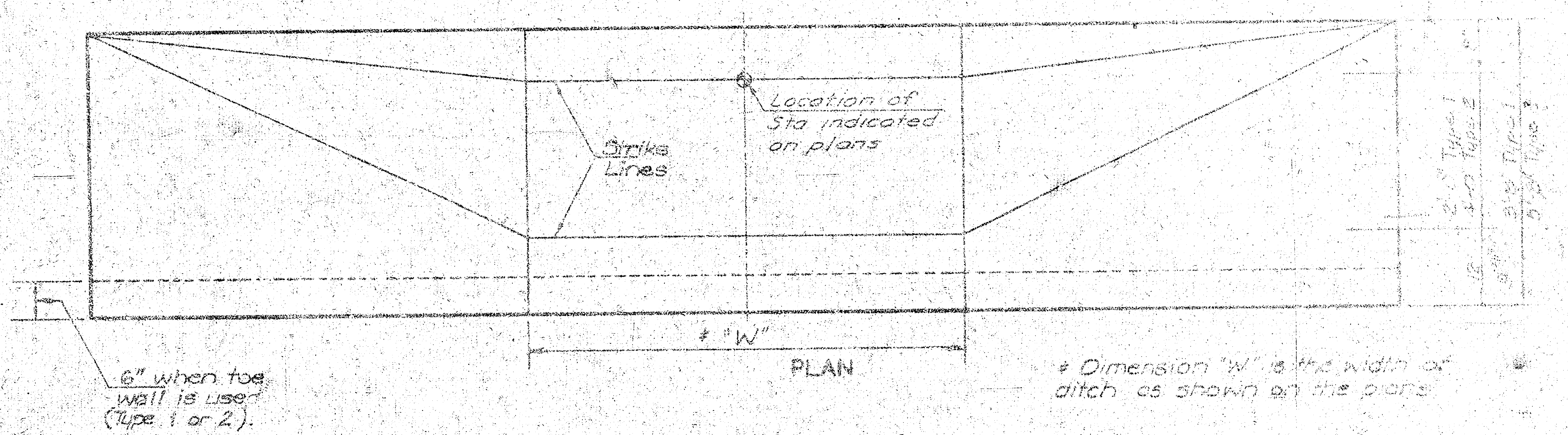


SECTION A-A

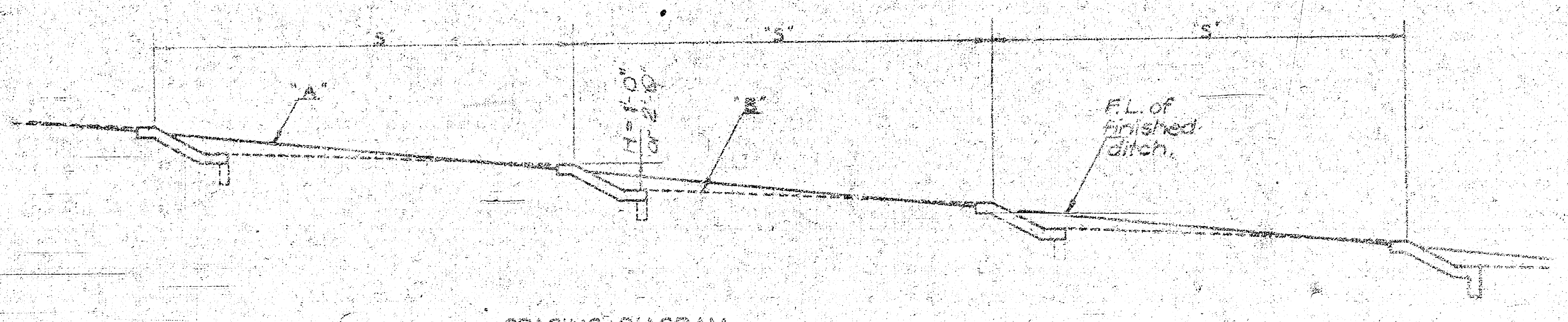
SPECIAL DITCH INLET
Scale: 1/2" = 1'-0"



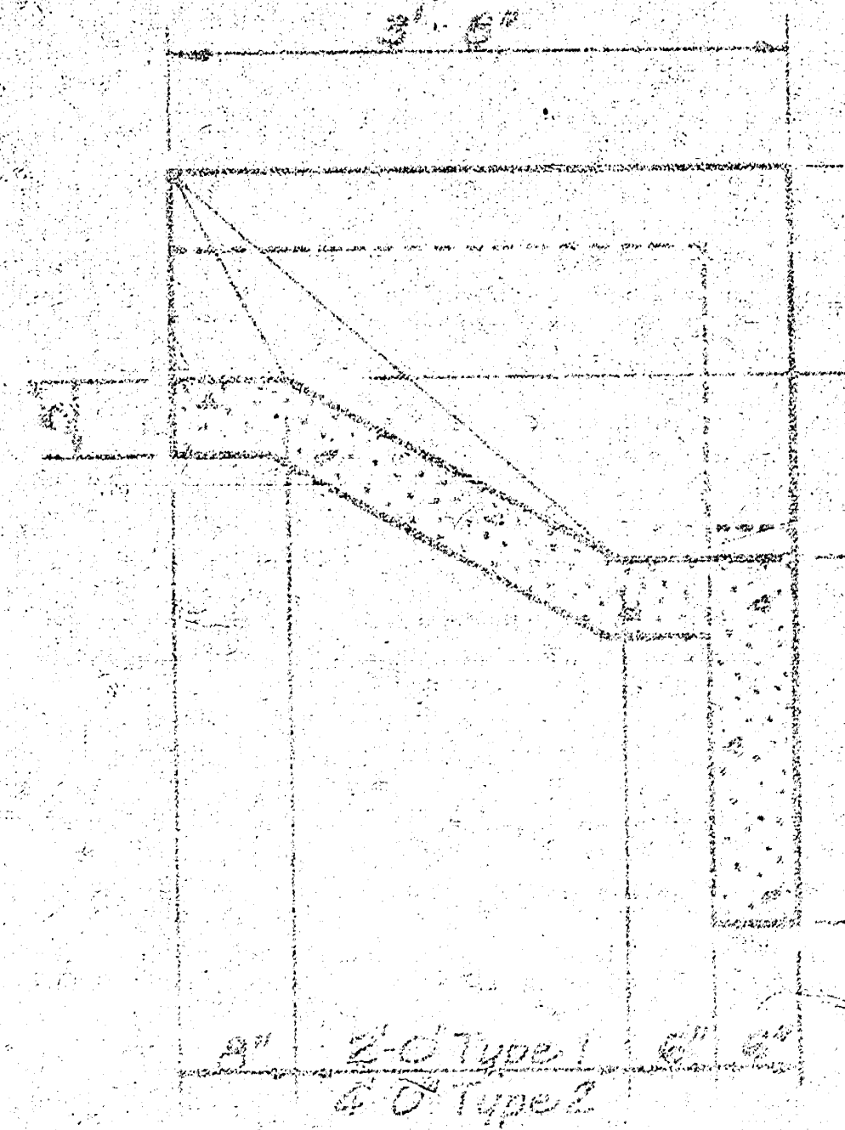
14'-0" for 4' Bottom Ditch
16'-0" for 6' Bottom Ditch
Sideslope Variable
B & B'
B
B'
A & A'
A
A'
Ditch Bottom
2'-0" when toe wall is used (Type 1 or 2).
DOWNSTREAM ELEVATION
* Dimension "D" shall be 1.5' (?) unless shown otherwise on the plans.



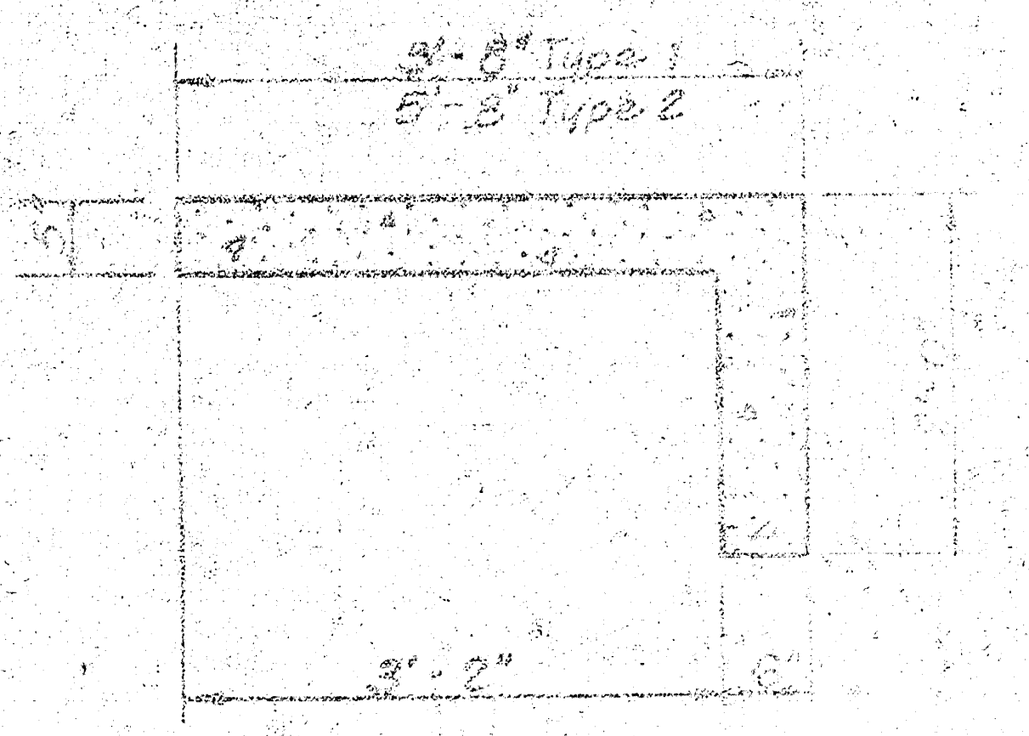
Location of Sta. indicated on plans
Strike Lines
* "W"
PLAN
6" when toe wall is used (Type 1 or 2).
2'-6" Type 1
3'-6" Type 2
* Dimension "W" is the width of ditch as shown on the plans.



SPACING DIAGRAM
Same for each type.



SECTION A'-A'
With Toe Wall
TYPE 1 or 2



SECTION B'-B'
With Toe Wall
TYPE 1 or 2

NO.	DATE	REVISIONS	BY	APP'D

STATE HIGHWAY COMMISSION OF KANSAS

WASH CHECKS TYPE 1 & 2
SPECIAL DITCH INLET

STD. NO. 068

SHEET NO. OF | SCALE AS SHOWN | DESIGNED | DETAILED | QUANTITIES | CHECKED | DESIGN CK. E.A.K. | TRACED

21/33

9/10

R

FILMED FROM THE BEST

35th St. North - Sta.11+88 to Sta.16+79.18 - Lt. Curb
Δ = 54°22'46" R = To BK.Cb. T = 281.16' L = 519.45'

Curve Data Based on 547.31'R. Δ/2 = 27°11'23"

℄ Sta.	℄ Arc	Chord Length		Deflection	Total Deflection
		7.5'Lt.B.C.			
11+88					
12+00	12.00	13.00		0°40'18"	0°40'18"
12+25	25.00	27.09		1°23'58"	2°04'16"
12+50	25.00	27.09		1°23'58"	3°28'13"
12+75	25.00	27.09		1°23'58	4°52'11"
13+00	25.00	27.09		1°23'58"	6°16'09"
13+25	25.00	27.09		1°23'58"	7°40'06"
13+50	25.00	27.09		1°23'58"	9°04'04"
13+75	25.00	27.09		1°23'58"	10°28'01"
14+00	25.00	27.09		1°23'58"	11°51'29
14+25	25.00	27.09		1°23'58"	13°15'57"
14+50	25.00	27.09		1°23'58"	14°39'54"
14+75	25.00	27.09		1°23'58"	16°03'52"
15+00	25.00	27.09		1°23'58"	17°27'50"
15+25	25.00	27.09		1°23'58"	18°51'47"
15+37	12.00	13.0		0°40'18"	19°32'05"
15+50	13.00	14.09		0°43'40"	20°15'45"
15+75	25.00	27.09		1°23'58"	21°39'43"
16+00	25.00	27.09		1°23'58"	23°03'40"
16+25	25.00	27.09		1°23'58"	24°27'38"
16+50	25.00	27.09		1°23'58"	25°51'35"
16+73.76	23.76	25.75		1°19'48"	27°11'23"

35th St. North - Sta.11+88 to Sta.15+37.16 - Rt. Curb
Δ = 39°05'14" R = To BK.Cb. T = 169.08' L = 324.94'

Curve Data Based on 476.31'R Δ/2 = 19°32'37"

℄ Sta.	℄ Arc	Chord Length		Deflection	Total Deflection
			7.5'Rt.B.C.		
11+88					
12+00	12.00		10.99	0°40'18"	0°40'18"
12+25	25.00		22.89	1°23'58"	2°04'16"
12+50	25.00		22.89	1°23'58"	3°28'13"
12+75	25.00		22.89	1°23'58"	4°52'11"
13+00	25.00		22.89	1°23'58"	6°16'09"
13+25	25.00		22.89	1°23'58"	7°40'06"
13+50	25.00		22.89	1°23'58"	9°04'04"
13+75	25.00		22.89	1°23'58"	10°28'01"
14+00	25.00		22.89	1°23'58"	11°51'29"
14+25	25.00		22.89	1°23'58"	13°15'57"
14+50	25.00		22.89	1°23'58"	14°39'54"
14+75	25.00		22.89	1°23'58"	16°03'52"
15+00	25.00		22.89	1°23'58"	17°27'50"
15+25	25.00		22.89	1°23'58"	18°51'47"
15+37.16	12.16		11.13	0°40'50"	19°32'37"

35th St. North - Sta.16+80.96 to Sta.17+39.97 - Rt. Curb
Δ = 5°54'47" R = To BK.Cb. T = 29.59' L = 59.13'

Curve Data Based on 572.96'R. Δ/2 = 2°57'23.5"

BK.Cb. Sta.	BK.Cb Arc	Chord Length		Deflection	Total Deflection
			7.5'Rt.B.C.		
16+80.84					
17+00	19.16		18.90'	0°57'29"	0°57'29"
17+25	25.00		24.67	1°15'00"	2°12'29"
17+39.97	14.97		14.77	0°44'55"	2°57'23.5"

35th St. North - Sta.16+79.18 to Sta.17+72.58 - Lt. Curb
Δ = 9°52'55" R = To BK.Cb. T = 49.53' L = 98.82'

Curve Data Based on 572.96'R. Δ/2 = 4°56'27.5"

BK.Cb. Sta.	BK.Cb. Arc	Chord Length		Deflection	Total Deflection
		7.5'Lt.B.C.			
16+73.76					
16+75	1.24	1.22		0°03'43"	0°03'43"
17+00	25.00	24.67		1°15'00"	1°18'43"
17+25	25.00	24.67		1°15'00"	2°33'43"
17+50	25.00	24.67		1°15'00"	3°48'43"
17+72.58	22.58	22.28		1°07'44"	4°56'27.5"

~~35th St. North - Longford Dr. to East~~
~~Δ = 8°21'04" ℄R = 1432.40 T = 104.37 L = 208.78'~~

Curve Data Based on 1432.40'R. Δ/2 = 4°10'32"

℄ Sta.	℄ Arc	Chord Length		Deflection	Total Deflection
		7.5'Lt.B.C.	7.5'Rt.B.C.		
1+67.02					
1+75	7.98	7.82	8.13	0°09'35"	0°09'35"
2+00	25.00	24.51	25.48	0°30'00"	0°39'35"
2+25	25.00	24.51	25.48	0°30'00"	1°09'35"
2+50	25.00	24.51	25.48	0°30'00"	1°39'35"
2+75	25.00	24.51	25.48	0°30'00"	2°09'35"
3+00	25.00	24.51	25.48	0°30'00"	2°39'35"
3+25	25.00	24.51	25.48	0°30'00"	3°09'35"
3+50	25.00	24.51	25.48	0°30'00"	3°39'35"
3+75	25.00	24.51	25.48	0°30'00"	4°09'35"
3+75.80	0.80	0.79	0.79	0°00'57"	4°10'32"

Capri Lane
Δ = 44°47'09" ℄R = 358.10 T = 147.55' L = 279.91'

Curve Data Based on 358.10'R Δ/2 = 22°23'34.5"

℄ Sta.	℄ Arc	Chord Length		Deflection	Total Deflection
		7.5'Lt.B.C.	7.5'Rt.B.C.		
19+22.36					
19+25	2.64	2.84	2.43	0°12'40"	0°12'40"
19+50	25.00	26.94	23.04	2°00'00"	2°12'40"
19+73.18	23.18	24.98	21.35	1°51'16"	4°03'56"
19+75	1.82	1.96	1.68	0°08'44"	4°12'40"
20+00	25.00	24.98	23.04	2°00'00"	6°12'40"
20+25	25.00	24.98	23.04	2°00'00"	8°12'40"
20+50	25.00	24.98	23.04	2°00'00"	10°12'40"
20+75	25.00	24.98	23.04	2°00'00"	12°12'40"
20+91.53	16.53	17.82	15.22	1°19'21"	13°32'01"
21+00	8.47	9.13	7.81	0°40'39"	14°12'40"
21+25	25.00	24.98	23.04	2°00'00"	16°12'40"
21+50	25.00	24.98	23.04	2°00'00"	18°12'40"
21+75	25.00	24.98	23.04	2°00'00"	20°12'40"
22+00	25.00	24.98	23.04	2°00'00"	22°12'40"
22+02.27	2.27	2.45	2.09	0°10'05"	22°23'34.5"

Longford Drive
Δ = 62°48'51" ℄R = 200.00' T = 122.11 L = 219.26'

Curve Data Based on 200.00'R. Δ/2 = 31°24'25.5"

℄ Sta.	℄ Arc	Chord Length		Deflection	Total Deflection
		7.5'Lt.B.C.	7.5'Rt.B.C.		
3+24.34					
3+25	0.66	0.56	0.75	0°05'40"	0°05'40"
3+50	25.00	21.48	28.48	3°34'52"	3°40'32"
3+75	25.00	21.48	28.48	3°34'52"	7°15'23"
4+00	25.00	21.48	28.48	3°34'52"	10°50'15"
4+25	25.00	21.48	28.48	3°34'52"	14°25'07"
4+50	25.00	21.48	28.48	3°34'52"	17°59'58"
4+60.96	10.96	9.42	12.49	1°34'12"	19°34'10"
4+75	14.04	12.06	15.99	2°00'40"	21°34'50"
5+00	25.00	21.48	28.48	3°34'52"	25°09'41"
5+25	25.00	21.48	28.48	3°34'52"	28°44'33"
5+43.60	18.60	15.98	21.19	2°19'53"	31°24'25.5"

DESIGN
DR. BY
CK. BY
DATE
JOB NO

COMOTARA BUSINESS PARK
WICHITA, KANSAS

CURVE STAKING
INFORMATION

VAN DOREN-HAZARD-STALLINGS-SCHNACKE
ENGINEERS-ARCHITECTS · · · TOPEKA, KANSAS

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OF

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