DRAINAGE IN CONNECTION WITH

STREETS IN COMOTARA INDUSTRIAL PARK

FIFTH ADDITION

PROJECT NO.

472-76-245-80786-000-000-002

CITY OF WICHITA, KANSAS

R.W. LINN CITY ENGINEER

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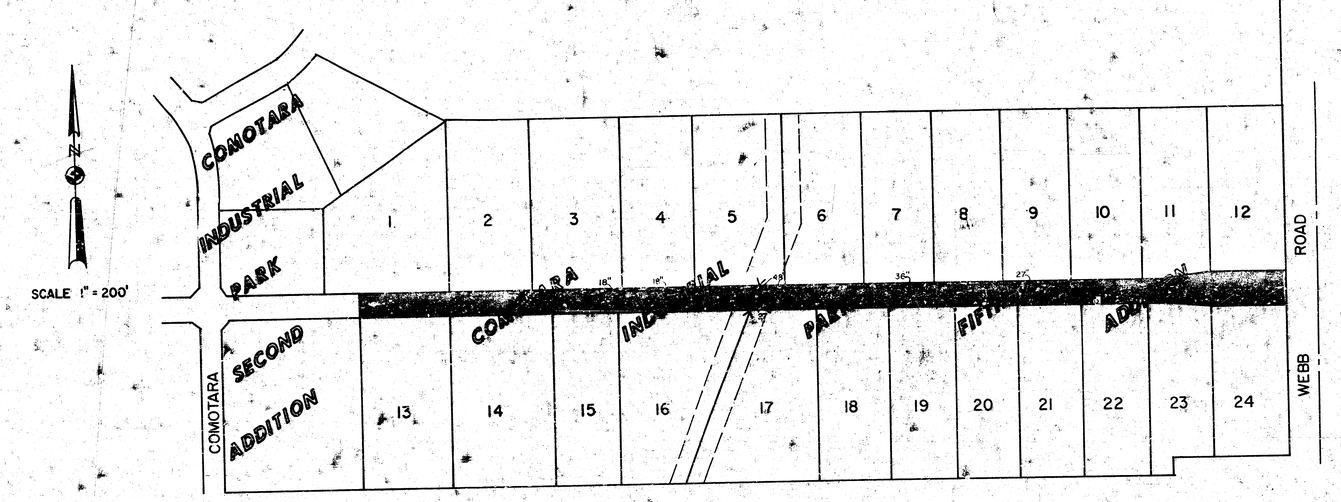


As Built 2/21/80

VAN DOREN - HAZARD - STALLINGS
ARCHITECTS - ENGINEERS - PLANNERS
WICHITA, KANSAS

SHEET 1 OF 7

1/7

22x36

Note: Type 3 Rip Rap, 12" Rip Rap on 6" sand and gravel bedding. Size range for 12" Rip Rap shall be a max. of 1 cubic ft and a min. of 1½". 6" bedding shall be of sand and gravel or sand and crushed rock reasonably well graded to a max. size of 1½".

Sta 11+30.9-Line C
Sta 0+00.0-Line EA
Const Std Type 1A inlet
W= 6'-0" Sta 17+89.00-Lt
34th St N

Sta 11+38.9-Line C
Const Std Type 1A inlet
W= 6'-0" Sta 17+98.00-Lt
34th St N

Sta 11+46.4-Line C
Const Std Type 1A inlet
W= 6'-0" Sta 18+00.00-Lt
34th St N.

Lot 6

Scale:
1"=20' Horiz.
1"=5' Vert.

Lot 7

6'-8" Sq. Encasement

4'-0" (O.D. Pipe)

#4 Bands

18" Min.

#4

Plan

Type 3 Rip Rap

77.05'

Sta 10+95.00-Line I
Sta 0+68.90-Line C

48"

36"

860.00'

34 TH STREET NORTH

Sta 0+68.90-Line I
Sta 17+18.32 - E 34th St N.

17 18 19 20 21

Line EA
See Sht 14

Const 8'x5' RCB
See Sht 17

12"W

12"W

12"W

800.00'

830.00'

8'

Type 3 Rip Rap

Sta 0+00-Line I

20' Utility Esmt

100' Drainage Esmt

Lot 17

18

Const Std Type 1A inlet
W=7'-0"

Const Std Type 1A inlet
W=6'-0"

60.1a
68 LF 48" RCP @ 0.66% or
68 LF 48" CMP @ 0.44%
(Fully Paved & Full Asphalt coated)

15
90 LF 36" RCP @ 0.60% or
90 LF 36" CMP @ 0.40%
(Fully Paved & Full Asphalt coated)

30
90 LF 36" RCP @ 0.60% or
90 LF 36" CMP @ 0.60%
(Fully Paved & Full Asphalt coated)

52a-4
340 LF 36" RCP @ 0.60% or
340 LF 36" CMP @ 0.60%
(Fully Paved & Asphalt coated)

Const 81 LF of 8'x5' Reinf. Conc. Box Culvert

Type 3 Rip Rap

Type 3 Rip Rap

Type 3 Rip Rap

A

B-#4 4 E.F.

B-#4 4 E.F.

E=822.74

3-#4

7'1"

A

Elevation - 48" RCP Outlet

#4

12"

48" RCP

9"

#4

Section A-A

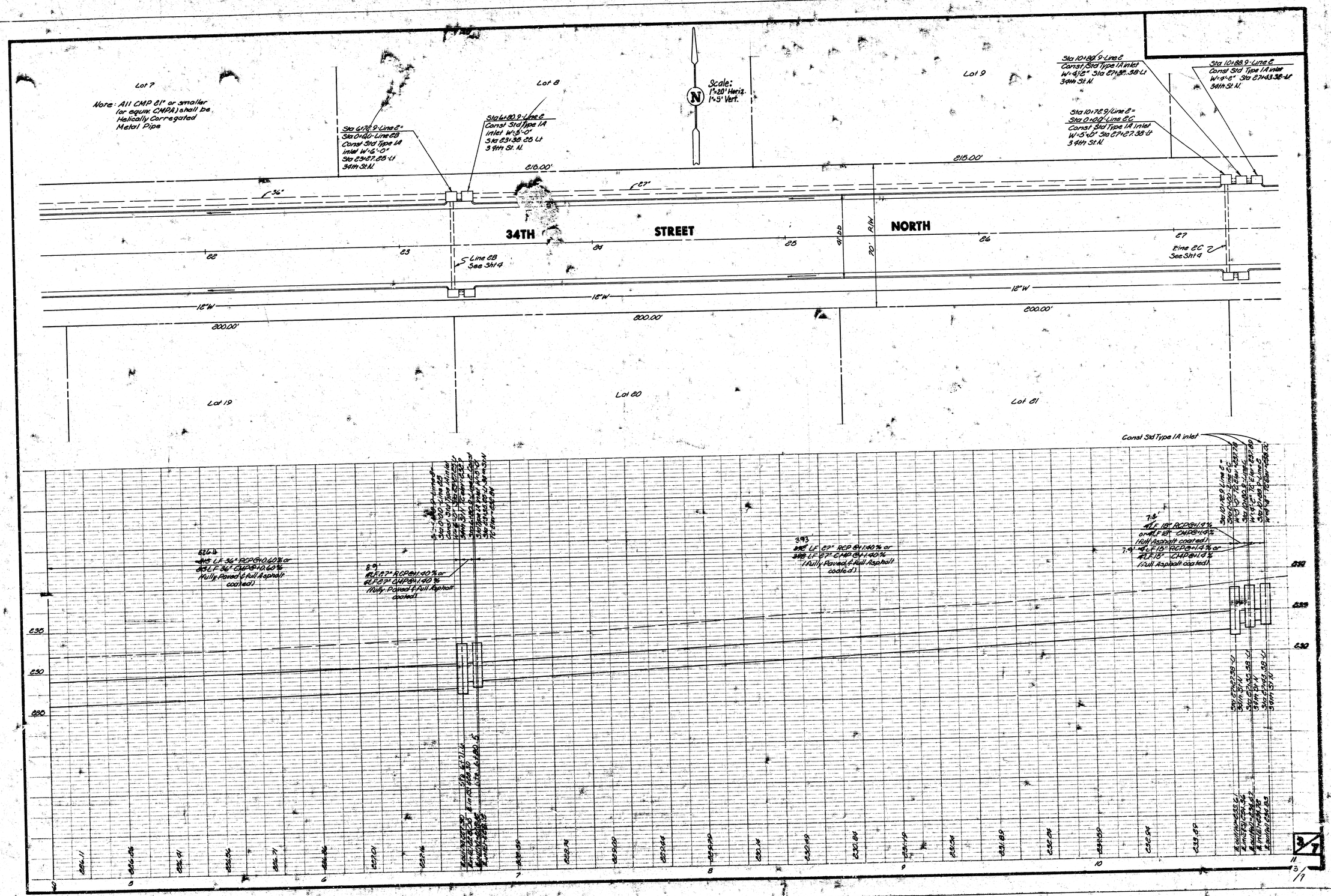
NO SCALE

B.M. Top of iron 60' E of SW cor Lot 2 C.I.P. 8th Elev = 837.06

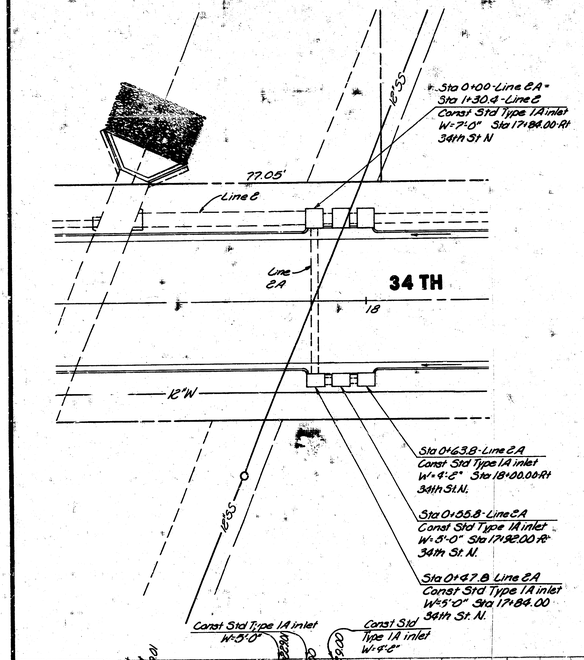
B.M. 2: Step Spike NW face PP 610' N 29' E of E cor E¼ Sec Sec 35-T24 S-R2E Elev = 848.90

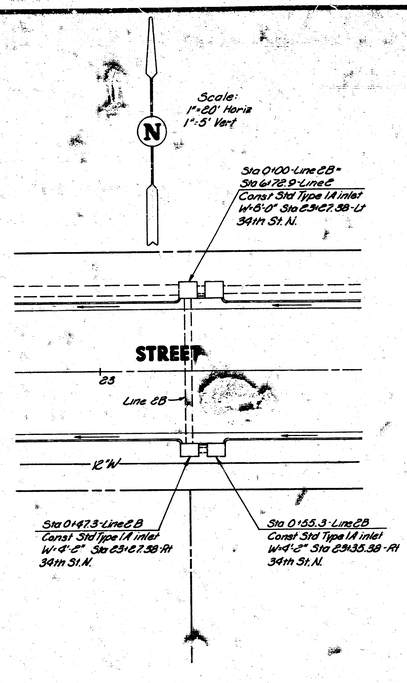
B.M. 3: Top of iron SE cor Lot 3 C.I.P. 8th Elev = 829.02

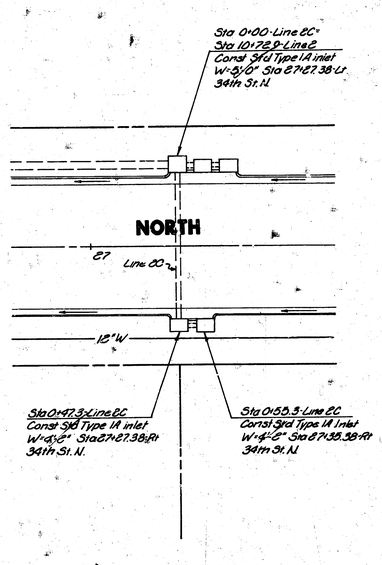
E Headwall 822.44
E Inv 822.44
822.46
822.53
822.59
E Inv SW 822.60
E Headwall 822.60
E RCP 822.67 W Inv 818.9
E Inv E 822.79
822.99
E Inv NW 822.95
E Inv SE 822.95
E Inv NE 822.95
E Inv SW 822.95

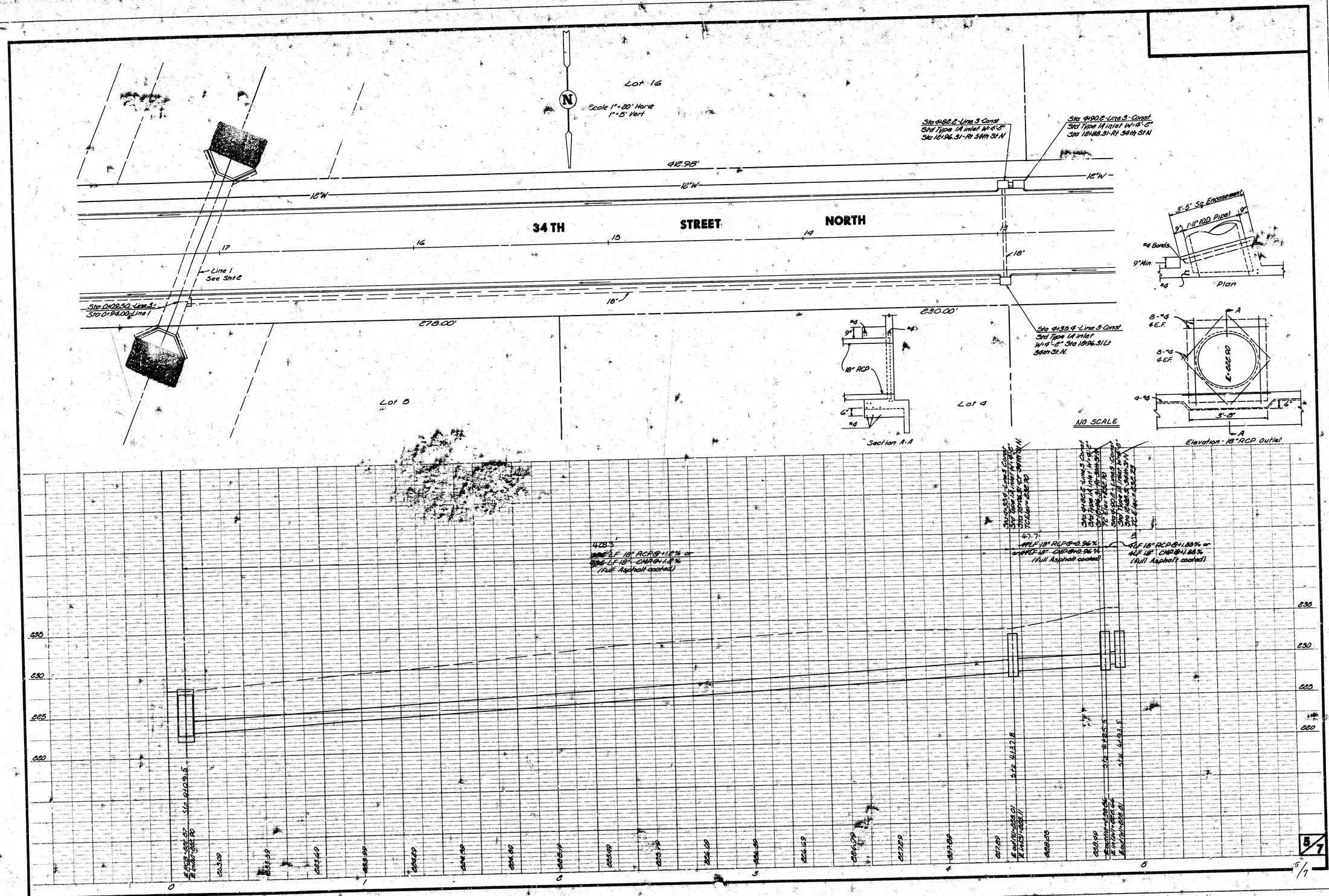


Lot 7
Note: All CMP 21" or smaller (or equiv. CMPA) shall be Helically Corregated Metal Pipe
Lot 8
Lot 9
Scale: 1"=20' Horiz. 1"=5' Vert.
Sta 6+72.9-Line 2= Sta 0+00-Line 2B Const Std Type 1A inlet W=6'-0" Sta 23+27.25-Lt 34th St.N.
Sta 6+80.9-Line 2 Const Std Type 1A inlet W=5'-0" Sta 23+35.25 Lt 34th St. N.
Sta 10+80.9-Line 2 Const Std Type 1A inlet W=4'-2" Sta 27+35.38-Lt 34th St.N.
Sta 10+88.9-Line 2 Const Std Type 1A inlet W=4'-2" Sta 27+43.38-Lt 34th St.N.
Sta 10+72.9/Line 2= Sta 0+00-Line 2C Const Std Type 1A inlet W=5'-0" Sta 27+27.38-Lt 34th St.N.
215.00'
36"
27"
34TH STREET NORTH
22
23
24
25
26
27
41' bb
70' R/W
Line 2B See Sht 4
Line 2C See Sht 4
12"W
200.00'
Lot 19
Lot 20
Lot 21
Const Std Type 1A inlet
LF 36" RCP@+0.60% or LF 36" CMP@+0.60% (Fully Paved & Full Asphalt coated)
LF 27" RCP@+1.40% or LF 27" CMP@+1.40% (Fully Paved & Full Asphalt coated)
LF 27" RCP@+1.40% or LF 27" CMP@+1.40% (Fully Paved & Full Asphalt coated)
LF 18" RCP@+1.4% or LF 18" CMP@+1.4% (Full Asphalt coated)
LF 15" RCP@+1.4% or LF 15" CMP@+1.4% (Full Asphalt coated)
235
230
225

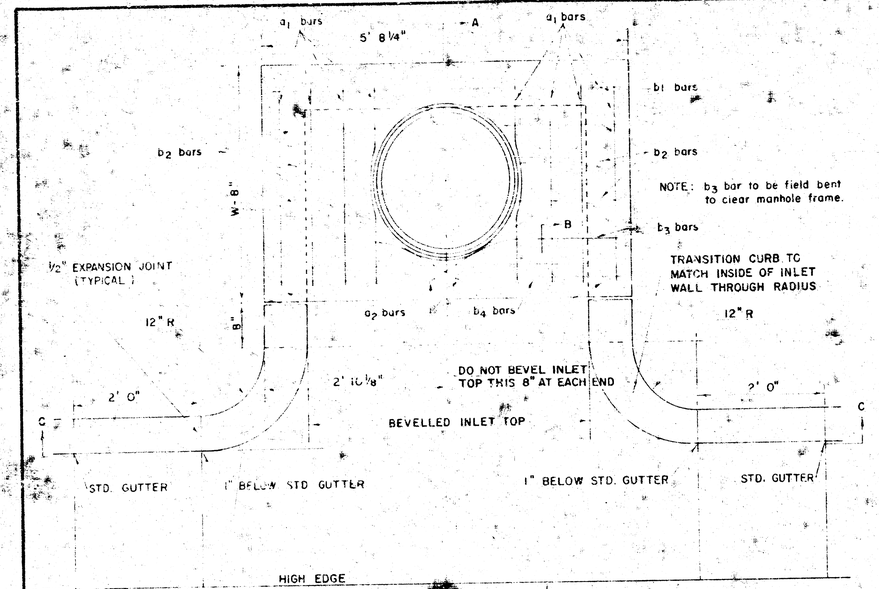

Sta 0+00 Line CA =
Sta 1+30.4 Line C
Const Std Type 1A inlet
W=7'-0" Sta 17+84.00 Rt
34th St N
77.05'
Line C
Line CA
34 TH
18
12'W
Sta 0+63.8 Line CA
Const Std Type 1A inlet
W=4'-2" Sta 18+00.00 Rt
34th St N.
Sta 0+55.8 Line CA
Const Std Type 1A inlet
W=5'-0" Sta 17+92.00 Rt
34th St. N.
Sta 0+47.8 Line CA
Const Std Type 1A inlet
W=5'-0" Sta 17+84.00
34th St. N.
Const Std Type 1A inlet
W=5'-0"
Const Std
Type 1A inlet
W=4'-6"
Sta 0+00 Line CA
Sta 0+30.4 Line C
Const Std Type 1A inlet
W=7'-0" Sta 17+84.00 Rt
34th St. N.
Sta 0+47.8 Line CA
Const Std Type 1A inlet
W=5'-0" Sta 17+84.00
34th St. N.
Sta 0+55.8 Line CA
Const Std Type 1A inlet
W=5'-0" Sta 17+92.00 Rt
34th St. N.
Sta 0+63.8 Line CA
Const Std Type 1A inlet
W=4'-2" Sta 18+00.00 Rt
34th St. N.
49.1'
49 LF 24" RCP @ 10.30% or
48 LF 24" CMP @ 10.30%
(Fully Paved & Full Asphalt coated)
8:1
8:1
9 LF 24" RCP @ 10.30% or
9 LF 24" CMP @ 10.30%
(Fully Paved & Full Asphalt coated)
9 LF 18" RCP @ 10.30% or
9 LF 18" CMP @ 10.30%
(Full Asphalt coated)
Sta 0+00 Line CA
Sta 1+30.4 Line C
Const Std Type 1A inlet
W=7'-0" Sta 17+84.00 Rt
34th St. N.
Sta 0+47.8 Line CA
Const Std Type 1A inlet
W=5'-0" Sta 17+84.00
34th St. N.
Sta 0+55.8 Line CA
Const Std Type 1A inlet
W=5'-0" Sta 17+92.00 Rt
34th St. N.
Sta 0+63.8 Line CA
Const Std Type 1A inlet
W=4'-2" Sta 18+00.00 Rt
34th St. N.
Equiv. Sta 0+22.86
Elev. 234.59
Equiv. Sta 0+34.44
Elev. 234.41
Equiv. Sta 0+45.94
Elev. 234.05
Equiv. Sta 0+57.50
Elev. 233.90
Sta 0+00
Elev. 234.32
Const Std Type 1A inlet
W=4'-6"
Sta 0+00 Line CA
Sta 0+47.8 Line CA
Const Std Type 1A inlet
W=5'-0" Sta 17+84.00
34th St. N.
Sta 0+55.8 Line CA
Const Std Type 1A inlet
W=5'-0" Sta 17+92.00 Rt
34th St. N.
Sta 0+63.8 Line CA
Const Std Type 1A inlet
W=4'-2" Sta 18+00.00 Rt
34th St. N.
Equiv. Sta 0+22.86
Elev. 234.59
Equiv. Sta 0+34.44
Elev. 234.41
Equiv. Sta 0+45.94
Elev. 234.05
Equiv. Sta 0+57.50
Elev. 233.90
Sta 0+00
Elev. 234.32
230
225
220
0


Scale:
1"=20' Horiz
1"=5' Vert
N
Sta 0+00 Line CB =
Sta 6+72.9 Line C
Const Std Type 1A inlet
W=5'-0" Sta 23+27.38 Lt
34th St. N.
STREET
23
Line CB
12'W
Sta 0+47.3 Line CB
Const Std Type 1A inlet
W=4'-2" Sta 23+27.38 Rt
34th St. N.
Sta 0+55.3 Line CB
Const Std Type 1A inlet
W=4'-2" Sta 23+35.38 Rt
34th St. N.
Sta 0+00 Line CB
Sta 6+72.9 Line C
Const Std Type 1A inlet
W=5'-0" Sta 23+27.38 Lt
34th St. N.
Sta 0+47.3 Line CB
Const Std Type 1A inlet
W=4'-2" Sta 23+27.38 Rt
34th St. N.
Sta 0+55.3 Line CB
Const Std Type 1A inlet
W=4'-2" Sta 23+35.38 Rt
34th St. N.
48.7'
47 LF 24" RCP @ 10.30%
or 47 LF 24" CMP @ 10.30%
(Fully Paved & Full Asphalt coated)
47 LF 18" RCP @ 11.0% or
47 LF 18" CMP @ 11.0%
(Full Asphalt coated)
Sta 0+00 Line CB
Sta 6+72.9 Line C
Const Std Type 1A inlet
W=5'-0" Sta 23+27.38 Lt
34th St. N.
Sta 0+47.3 Line CB
Const Std Type 1A inlet
W=4'-2" Sta 23+27.38 Rt
34th St. N.
Sta 0+55.3 Line CB
Const Std Type 1A inlet
W=4'-2" Sta 23+35.38 Rt
34th St. N.
Equiv. Sta 0+22.86
Elev. 234.32
Equiv. Sta 0+34.44
Elev. 234.16
Equiv. Sta 0+45.94
Elev. 233.80
Sta 0+00
Elev. 234.44
235
230
225
0


Sta 0+00 Line CC =
Sta 10+72.9 Line C
Const Std Type 1A inlet
W=5'-0" Sta 27+27.38 Lt
34th St. N.
NORTH
27
Line CC
12'W
Sta 0+47.3 Line CC
Const Std Type 1A inlet
W=4'-2" Sta 27+27.38 Rt
34th St. N.
Sta 0+55.3 Line CC
Const Std Type 1A inlet
W=4'-2" Sta 27+35.38 Rt
34th St. N.
48.3'
47 LF 18" RCP @ 10.50% or
47 LF 18" CMP @ 10.50%
(Full Asphalt coated)
47 LF 15" RCP @ 1.0% or
47 LF 15" CMP @ 1.0%
(Full Asphalt coated)
Sta 0+00 Line CC
Sta 10+72.9 Line C
Const Std Type 1A inlet
W=5'-0" Sta 27+27.38 Lt
34th St. N.
Sta 0+47.3 Line CC
Const Std Type 1A inlet
W=4'-2" Sta 27+27.38 Rt
34th St. N.
Sta 0+55.3 Line CC
Const Std Type 1A inlet
W=4'-2" Sta 27+35.38 Rt
34th St. N.
Equiv. Sta 0+22.86
Elev. 234.32
Equiv. Sta 0+34.44
Elev. 234.16
Equiv. Sta 0+45.94
Elev. 233.80
Sta 0+00
Elev. 234.44
235
230
225
0



Lot 16
Scale 1"=20' Horiz
1"=5' Vert
N
Sta 4+82.2-Line 3-Const
Std Type 1A inlet W=4'-2"
Sta 12+96.31-Rt 34th St N
Sta 4+90.2-Line 3-Const
Std Type 1A inlet W=4'-2"
Sta 12+88.31-Rt 34th St N
412.98'
12"W
34 TH
STREET
NORTH
17
16
15
14
13
18'
Line 1
See Sht 2
Sta 0+09.50-Line 3=
Sta 0+94.00-Line 1
278.00'
230.00'
Sta 4+33.4-Line 3-Const
Std Type 1A inlet
W=4'-2" Sta 12+96.31 Lt
34th St. N.
Lot 5
Lot 4
18" RCP
Section A-A
3'-5" Sq Encasement
#4 Bands
9" Min.
Plan
8-#4
4 E.F.
4-#4
3'-8"
Elevation - 18" RCP Outlet
NO SCALE
428.3'
LF 18" RCP @ +1.2% or
LF 18" CMP @ +1.2%
(Full Asphalt coated)
47.7'
LF 18" RCP @ +0.96%
or LF 18" CMP @ +0.96%
(Full Asphalt coated)
LF 18" RCP @ +1.88% or
LF 18" CMP @ +1.88%
(Full Asphalt coated)
235
230
225
220
0
1
2
3
4
5
5/7

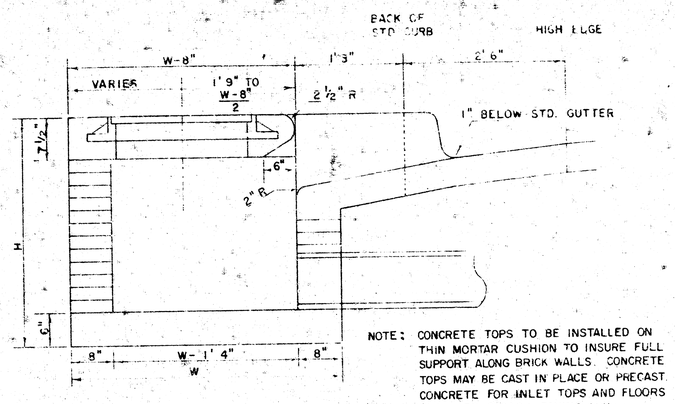


NOTE: b_3 bar to be field bent to clear manhole frame.

TRANSITION CURB TO MATCH INSIDE OF INLET WALL THROUGH RADIUS

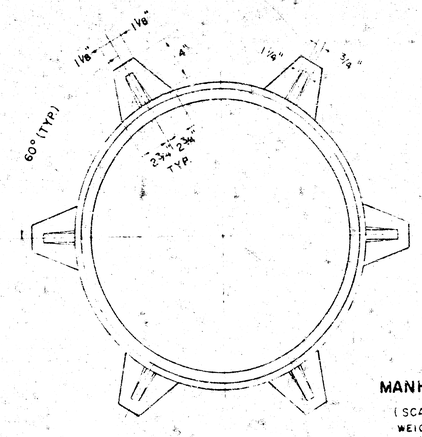
12" R

PLAN (SCALE 1" = 1'0")

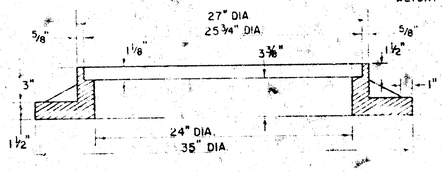


SECTION A-A
(SCALE 1" = 1'0")

NOTE: CONCRETE TOPS TO BE INSTALLED ON THIN MORTAR CUSHION TO INSURE FULL SUPPORT ALONG BRICK WALLS. CONCRETE TOPS MAY BE CAST IN PLACE OR PRECAST. CONCRETE FOR INLET TOPS AND FLOORS SHALL BE 6-SACK PAVING MIX.



MANHOLE FRAME
(SCALE 1" = 6")
WEIGHT = 180 LBS.

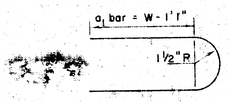


STEEL SCHEDULE

BAR	a_1	a_2*	b_1 W=4'2"	W=5'0"	W=6'0"	W=7'0"	W=8'0"	b_2	b_3	b_4	WT. LBS.
NUMBER	8	2	1	3	5	7	9	6	1	1	
SIZE	#4	#4	#4	#4	#4	#4	#4	#4	#4	#6	
LENGTH W=4'2"	6'5"	3'4"	5'5"	–	–	–	–	1'5"	5'6"	5'5"	60#
LENGTH W=5'0"	8'1"	4'4"	–	5'5"	–	–	–	1'5"	5'6"	5'5"	77#
LENGTH W=6'0"	10'1"	5'4"	–	–	5'5"	–	–	1'5"	5'6"	5'5"	97#
LENGTH W=7'0"	11'1"	6'4"	–	–	–	5'5"	–	1'5"	5'6"	5'5"	111#
LENGTH W=8'0"	12'1"	7'4"	–	–	–	–	5'5"	1'5"	5'6"	5'5"	124#

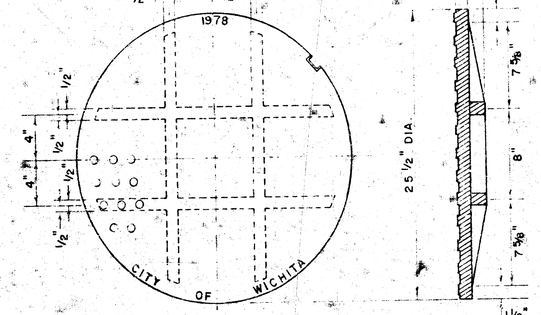
* NOTE: a_2 BARS TO BE PLACED APPROX. 2" BELOW TOP OF INLET COVER

BENDING DIAGRAM

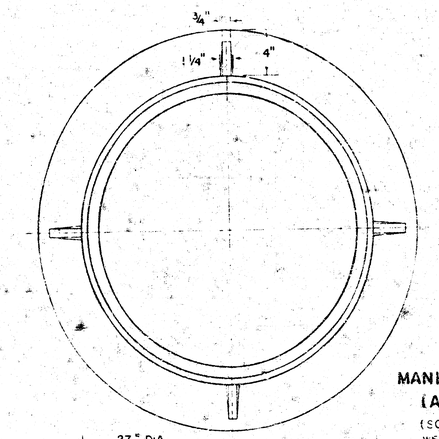


STANDARD CURB INLET PRECAST TOPS			
W	PRE-CAST TOP SIZE	PIPE SIZE	CU. YD. CONC.
4' 2"	3'6"x5'8 1/4"x7 1/2"	21" & SMALLER	0.46 *
5' 0"	4'4"x5'8 1/4"x7 1/2"	24" & 30"	0.57 *
6' 0"	5'4"x5'8 1/4"x7 1/2"	36" & 42"	0.71 *
7' 0"	6'4"x5'8 1/4"x7 1/2"	48" & 54"	0.84 *
8' 0"	7'4"x5'3 1/4"x7 1/2"	60" & 66"	0.97 *

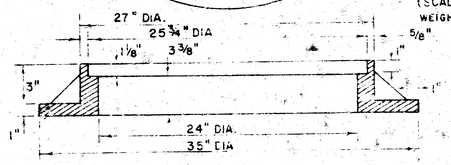
* GROSS VOLUME

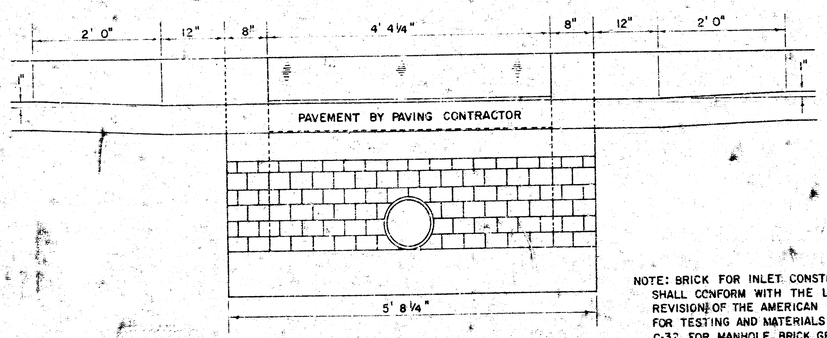


MANHOLE COVER
(SCALE 1" = 6")
WEIGHT = 170 LBS.



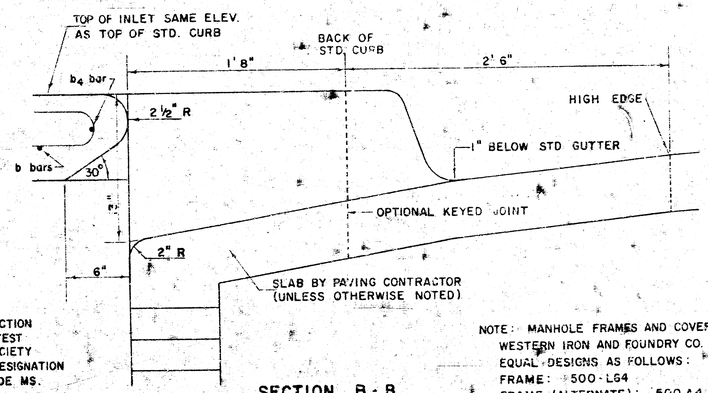
MANHOLE FRAME (ALTERNATE)
(SCALE 1" = 6")
WEIGHT = 180 LBS.





SECTION C-C
(SCALE 1" = 1'0")

NOTE: BRICK FOR INLET CONSTRUCTION SHALL CONFORM WITH THE LATEST REVISION OF THE AMERICAN SOCIETY FOR TESTING AND MATERIALS DESIGNATION C-32 FOR MANHOLE BRICK GRADE MS.



SECTION B-B
(SCALE 1" = 6")

NOTE: MANHOLE FRAMES AND COVER ARE WESTERN IRON AND FOUNDRY CO. INC. OR EQUAL. DESIGNS AS FOLLOWS:
FRAME: 500-LG4
FRAME (ALTERNATE): 500 A4
COVER: 222 S4 "NOBBY"

DETAIL STANDARD TYPE IA CURB INLET

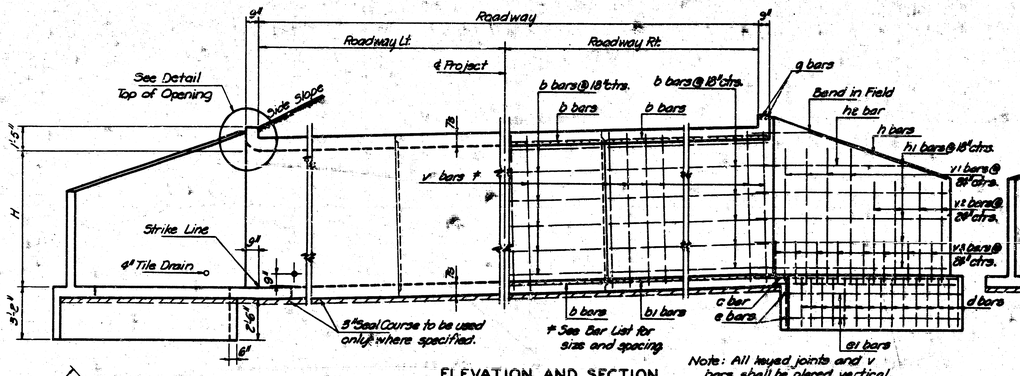
CITY OF WICHITA, KANSAS

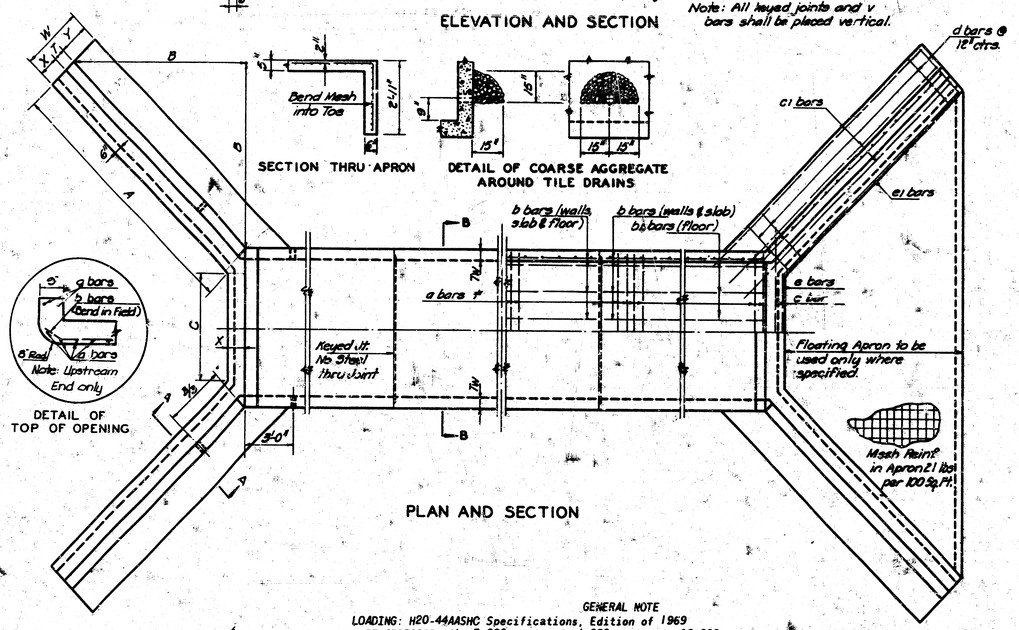
R. W. LINN – CITY ENGINEER

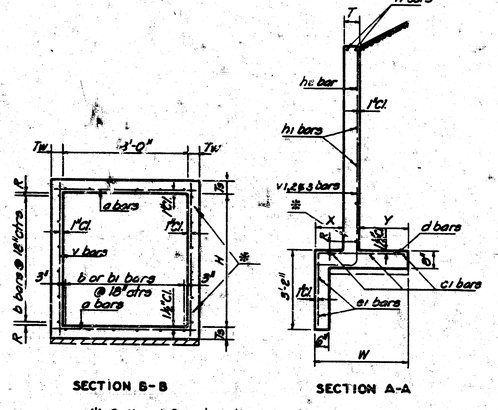
OCTOBER 1978

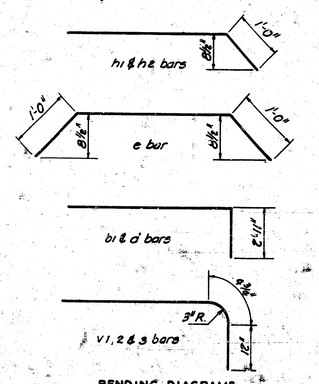
6/7

FHWA REGION NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KANSAS				









GENERAL NOTE

LOADING: H20-44AASHC Specifications, Edition of 1969

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

Class A Concrete shall be used throughout. Bevel all exposed edges with a 3/4" 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.

The Contractor may, at his option, substitute No. 4 steel reinforcing bars for the keyed construction joints. Rebars are to be a minimum of thirty (30) inches in length, set so the joint divides the bar equally and these extra rebars will be required in each plane of steel in the culvert. The extra steel required will not be paid for directly but will be considered subsidiary to other items in the contract.

Project No. 472-76-245-80786-000-000-002

LIST OF BARS AND DIMENSIONS

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	bi	c	ci	d	e	ei	g	h	hi	he		v	v1	v2	v3								
Number				12	2	12		4	8	4	8															
Size			#4	#4	#4	#4	#3	#8	#8	#5	#5	#4	#4		#4	#4	#6									
Length				11'0"																						

8'x 4'x

Apron Steel (One)		32 Lbs	Seal Course							C.Y.	Hdwl. Concrete (Two)															9.11 C.Y.
Apron Concrete (One)		2.553 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	10-3	7-3	6-3		4'0"	6"	6"				2'-6"	1'-0"	1'-0"	Space												
Bar	a		b	bi	c	ci	d	e	ei	g	h	hi	he		v	v1	v2									
Number				12	2	12	44	4	8	4	8	8	8			12	12									
Size			#4	#4	#6	#4	#6	#4	#4	#5	#5	#6	#8		#4	#4	#4									
Length				1'10"	12'-3	3'-2"	9'-0"	10'-3"	8'0"	11'-3	11'-6	8'-8"			5'-11"	12'-8										

8'x 5'x 8'

Apron Steel (One)		40 Lbs	Seal Course							C.Y.	Hdwl. Concrete (Two)															11.67 C.Y.
Apron Concrete (One)		3.181 C.Y.	Apron Seal Course							C.Y.	Concrete Per Ft. of Box															0.630 C.Y.
Letter	A	B	C		H	R	T	Ts	Tw	W	X	Y		Bar	a	v										
Dimension	12-3	9-3	8-3		5'-0"	3"	6"	3"	6"	8'-3"	1'-0"	1'-3"		Space	6 1/8"	18"										
Bar	a		b	bi	c	ci	d	e	ei	g	h	hi	he		v	v1	v2									
Number	200		48	12	2	12	52	4	8	4	8	12	4		110	16	12									
Size	#6		#8	#8	#4	#4	#4	#4	#4	#4	#5	#5	#4		#4	#4	#4									
Length	8'-9"		26'-9"	29'-8"	11'0"	14'-3"	5'-3"	9'-0"	12'-3"	8'-3"	1'-3"	5'-6"	7'-6"		6'-1"	6'-3"	5'-9"									

8'x 6'x

Apron Steel (One)		50 Lbs	Seal Course							C.Y.	Hdwl. Concrete (Two)															15.079 C.Y.
Apron Concrete (One)		3.878 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	11-3	9-3		6'-0"	9"	6"			9'-0"	1'0"	1'-3"		Space												
Bar	a		b	bi	c	ci	d	e	ei	g	h	hi	he		v	v1	v2	v3								
Number				12	2	12	60	4	8	4	8	12	4			20	12	28								
Size			#8	#8	#4	#4	#4	#4	#4	#5	#5	#6	#6		#8	#8	#8	#4								
Length				1'10"	17'-3	3'-8"	9'0"	14'-3	8'-0"	16'-0	18'-6	10'-0"			8'-0"-5"	3'-6"										

8'x 7'x

Apron Steel (One)		60 Lbs	Seal Course							C.Y.	Hdwl. Concrete (Two)															19.459 C.Y.
Apron Concrete (One)		4.638 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	13-3	11-3		7'-0"	3"	7"			8'-3"	1'-0"	1'-3"		Space												
Bar	a		b	bi	c	ci	d	e	ei	g	h	hi	he		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	#6	#6		#4	#4	#4	#4								
Length				1'10"	19'-6	6'-4"	8'-4"	16'-3	8'-8"	18'-3	17'-7	8'-10"			8'-1"	6'-5"	3'-5"									

8'x 8'x

Apron Steel (One)		70 Lbs	Seal Course							C.Y.	Hdwl. Concrete (Two)															24.583 C.Y.
Apron Concrete (One)		5.408 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	18-3	15-3	13-3		8'-0"	3"	7"			9'-3"	1'-0"	1'-3"		Space												
Bar	a		b	bi	c	ci	d	e	ei	g	h	hi	he		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	#6	#6		#4	#4	#4	#4								
Length				1'10"	22'-0	6'-8"	8'-10"	18'-3	9'0"	20'-8	19'-6	11'-3"			9'-1"	7'-0"	6'-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	bi	c	ci	d	e	ei	g	h	hi	he		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				1'10"																						

CULVERT SUMMARY

Station	Size	Crown Gr. Elev.	Flowline Elev. Lt.	Flowline Elev. Rt.	Rdwy. Horiz. Lt.	Rdwy. Horiz. Rt.	Lgth along Box Lt.	Lgth along Box Rt.	Sections No.	Sections Length	Apron	Soil Saver	Design Fill Ft.	CI A Conc. Cu. Yds.	Reinf. Steel Lbs

NO.	DATE	REVISIONS	BY	APP'D
5	4-5-79	Steel & Conc. Quant., Fence Bolt	W.L.H.	L.R.P.
4	9-26-77	Keyed Joint Option	W.L.H.	L.R.P.
3	9-10-75	Wire Reinf. Mesh Changed to W1.4	W.L.H.	K.G.L.

KANSAS DEPARTMENT OF TRANSPORTATION

R.C. BOX CULVERT
8 FT. SPAN

STD. NO. 315.2

7/7

SHEET NO.	OF	SCALE	APP'D K. W. Klaassen Jr.
DESIGNED Norton		DETAILED Richards	QUANTITIES Richards	TRACED Booth
DESIGN CK. Lothorn		DETAIL CK. Schwerdt	QUAN. CK. Clayton	TRACE CK. Hecht

CALCULATED BY _____ DATE _____
CHECKED BY _____ DATE _____