STORM WATER SEWER NO. 146

PART I

GENERAL NOTES

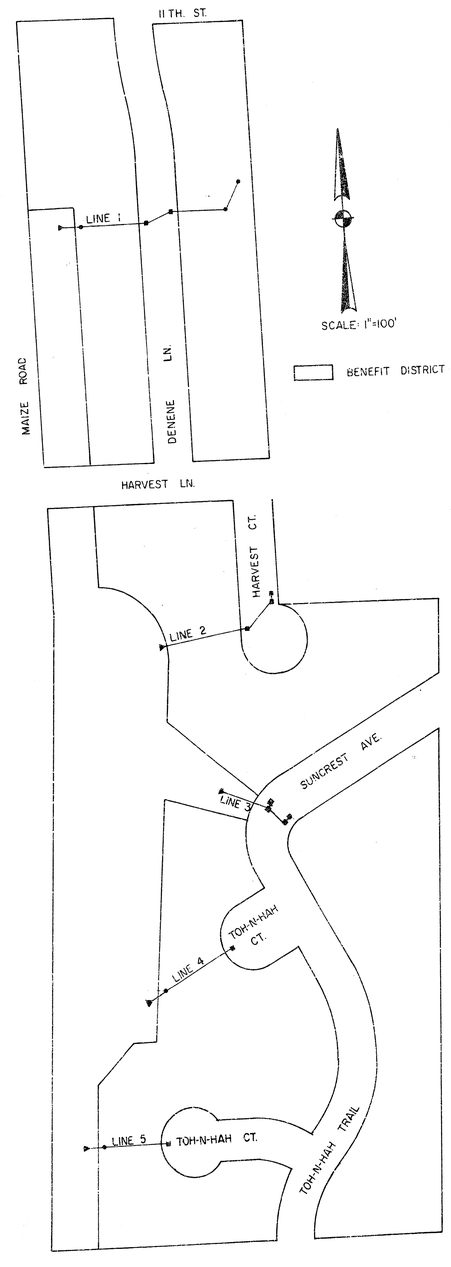
1. FOR ADDITIONAL LAYOUT INFORMATION, SEE WESTLINK LAKES ESTATE PLAT AND THE STREET PAVING PLANS.

2. LOCATE CURB INLETS TO CORRESPOND WITH BACK OF CURBS AS SHOWN ON STREET PAVING PLANS.

3. FIELD ENGINEER SHALL TAKE TIES ON IRONS WHICH MAY BE DISTURBED DURING CONSTRUCTION. SUCH ALTERED IRONS SHALL BE REPLACED TO ORIGINAL LOCATION BY FIELD ENGINEER.

4. THE RIP-RAP SHALL BE TYPE 3. THE TYPE 3 RIP-RAP SHALL BE 12" RIP-RAP ON 6" SAND AND GRAVEL BEDDING. THE ROCK FOR RIP-RAP AND GRAVEL PROTECTION SHALL BE HARD, DENSE, DURABLE AND SHALL BE REASONABLY WELL GRADED. THE SIZE RANGE OF ROCK USED FOR RIP-RAP SHALL HAVE A MAXIMUM SIZE OF ONE CUBIC FOOT AND A MINIMUM SIZE OF 1½ INCH. THE 6 INCH SAND AND GRAVEL BEDDING SHALL BE A CONTINUOUS LAYER OF SAND AND GRAVEL OR SAND AND CRUSHED ROCK, REASONABLY WELL GRADED.

5. END SECTIONS AT PIPE OUTFALL SHALL BE CONSTRUCTED TO ALIGN WITH THE SLOPE OF BANK IN ORDER THAT END SECTION PROTRUSION IS MINIMUM. WHERE SUCH PROTRUSION CANNOT BE AVOIDED, FILL AROUND THE END SECTIONS AT APPROXIMATELY 3:1 SIDE SLOPED SO END SECTION APPEARS ENTIRELY RECESSED.



CITY OF WICHITA, KANSAS

R. W. LINN, CITY ENGINEER

PROJECT NO. 468-76-245-80649-000-000-001

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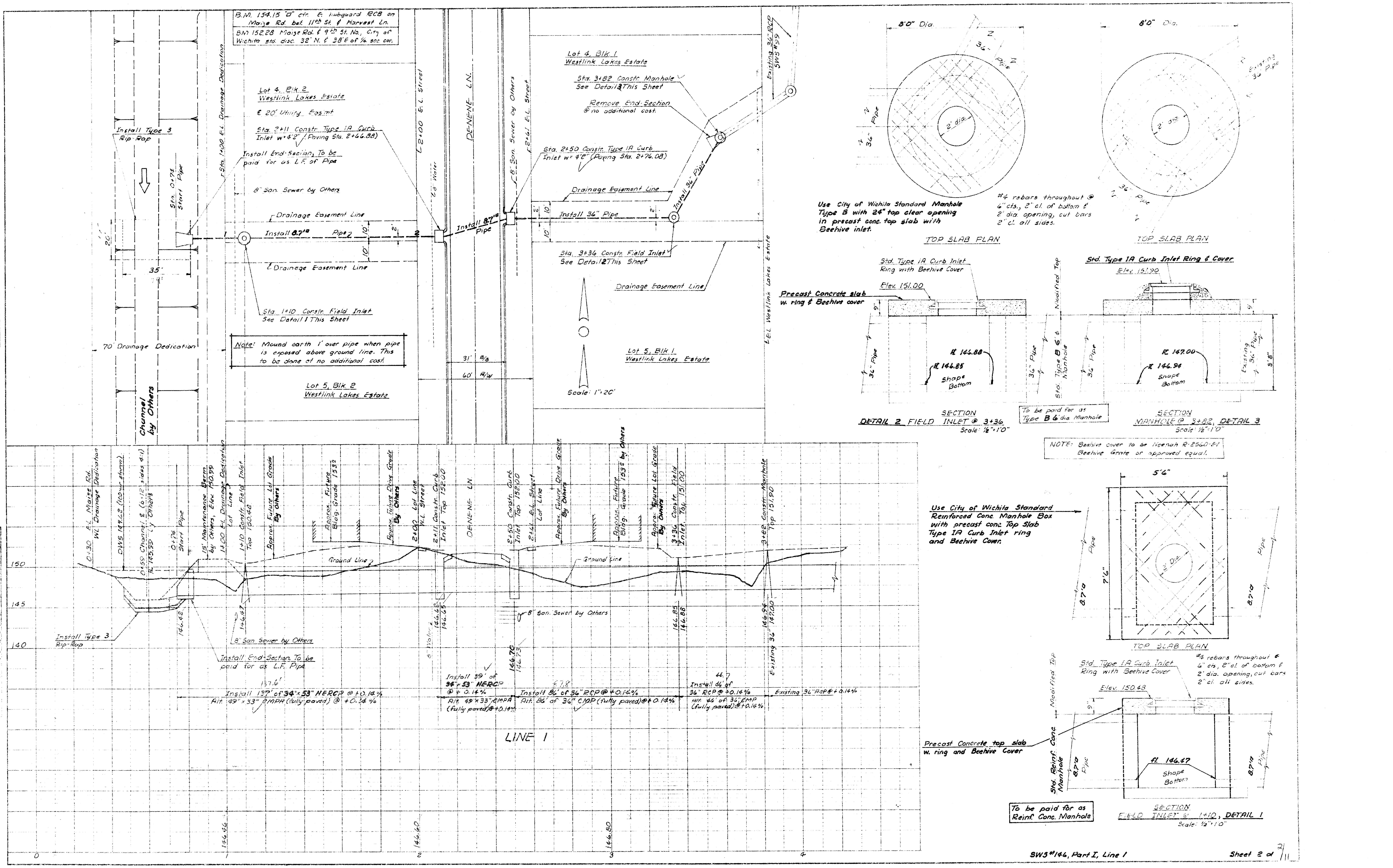
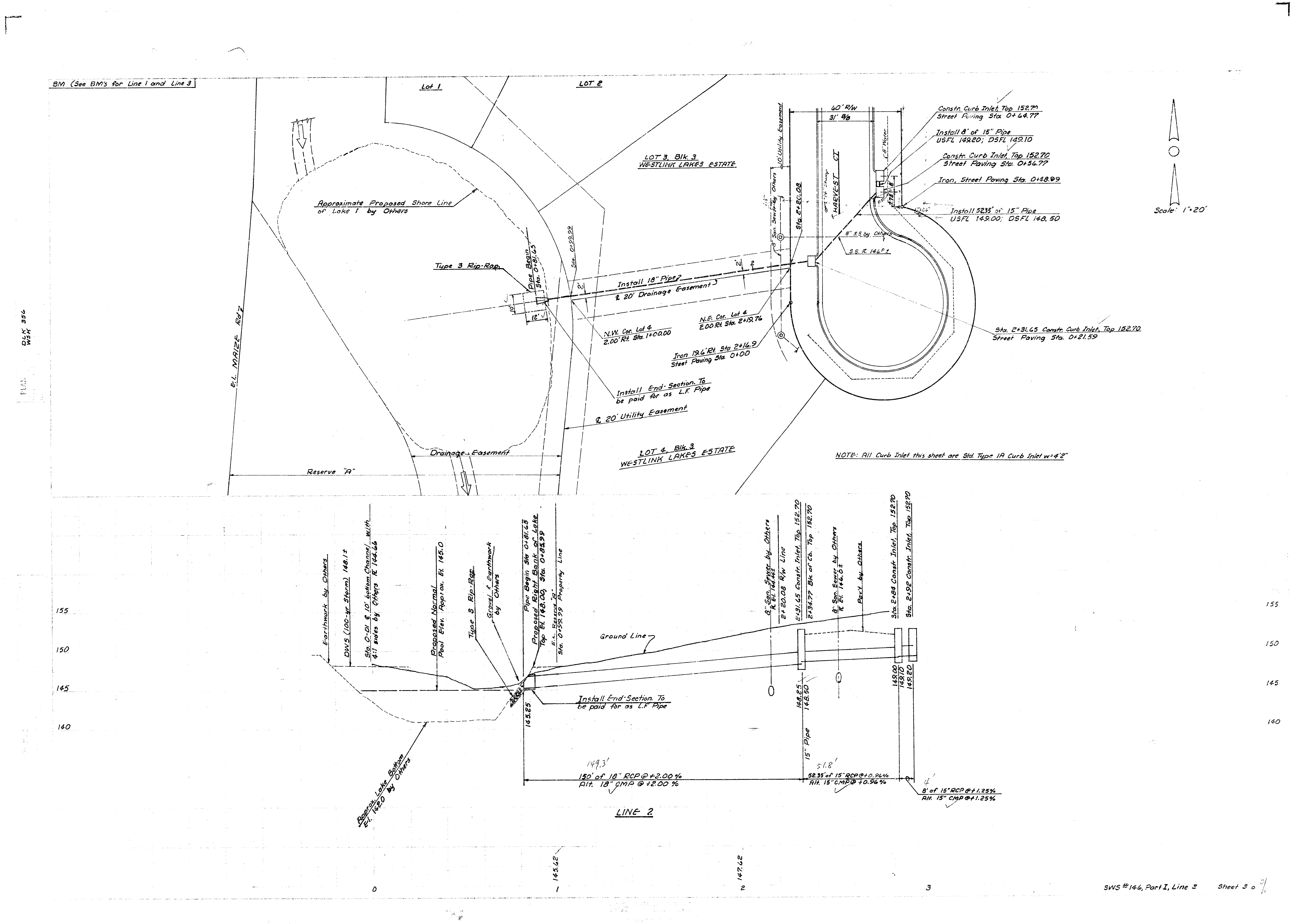


K+E PLATE 1, PLAN-PROFILE KEUFFEL & ESSER CO.



SWS #146, Part I, Line 2 Sheet 3 of 11

BM 171.19 NE Cor. Conc. Porch No.# 10119 Suncrest

@ 10 Channel, & all sides, by Others. See Flood Control Plans

LOT 4

Constr. Curb Inlet, Top 159.63
Street Paving Sta. 7+86.87

Install 4' of 15" Pipe
USFL 153.00; DSFL 152.90

Constr. Curb Inlet, Top 159.63
See General Note 2, Sheet 1

LOT 5, Blk 3
WESTLINK LAKES ESTATE

Install End-Section. To be paid for as L.F. Pipe

Sta. 1+94 Start Pipe

Type 3 Rip-Rap

℄ B.L.

℄ B.L.

Utility Eas'mt

57.82'

Reserve "A"

Drainage Easement

Pipeline Eas'mt

Phillips Pipelines

LOT 1, Blk 4
WESTLINK LAKES ESTATE

70' R/W

27' B/B

SUNCREST AVE.

6" Water

Constr. Curb Inlet, Top 159.61
Street Paving Sta. 7+92.38

Install 4' of 15" Pipe
USFL 154.00; DSFL 153.90

Constr. Curb Inlet, Top 159.61
See General Note 2, Sheet 1

Install 34' of 18" Pipe
USFL 154.40; DSFL 153.20

222.4'

31' B/B
60' R/W

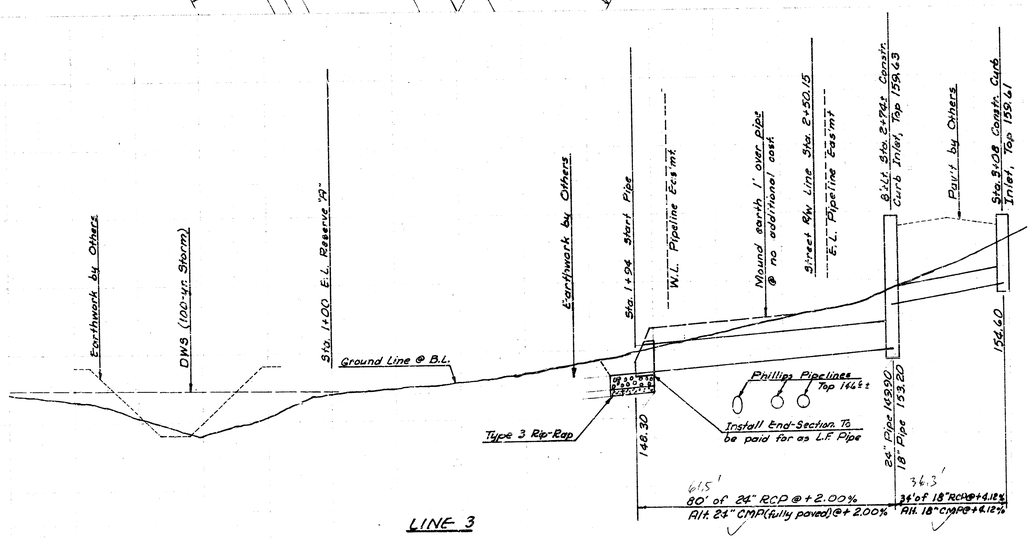
TOH-N-HAH TRAIL

All Curb Inlets this sheet are Type 1A Curb Inlets, W = 4'2"

Sc. 1"LE: 1"=20'

DLK 356
WSA

PLAN



LINE 3

SWS # 146, Part I, Line 3 Sheet 4 of 11

BM (See BM's for Line 3 and Line 5

NOTE:
PROPOSED FINISH GRADE ON STORM SEWER MAY BE HIGHER THAN EXISTING GROUND. FOR CHANNEL PORTION, CONTRACTOR SHALL CONTACT DEVELOPER, MR. CHARLES BRODIE, PH: 262-0031, ABOUT INSTALLING DUMPED RIP-RAP ON CHANNEL BOTTOM AND SLOPES. RIP-RAP ON LAKE SHORE SLOPE SHALL EXTEND AT LEAST 2.0 FEET BELOW THE NORMAL LAKE ELEVATION.

Reserve "A"

Drainage Easement

Proposed Approximate Shore Line of Lake 2 by Others

Lot 2, Blk 4 Westlink Lakes Estate

℄ 20' Utility Easement

8" San. Sewer by Others

Constr. 15" Pipe @ ℝ ℄ 20' Drainage Easement

8" Water

Location

Blk. of Cb. @ Sta. 2+40.03, For See general note 2, Sheet 1

Sta. 0+75 Begin Pipe

Type 3 Rip-Rap

B.L. J

40'

18'

16'

B.L. J

2

Sta. 2+25.53

Sta. 1+06 Constr. Field Inlet
See Detail this sheet

B.L. Sta. 1+00

Sta. 2+36.95 Constr. Type 1A Curb Inlet, w=6'2"

E.L. Norse Rd.

TOH-N-HAH CT

Lot 3, Blk. 4 Westlink Lakes Estate

TOH-N-HAH TRAIL

SCALE: 1"=20'

SCALE: 1"=20'

PLAN

DLK 376
WS K

Normal Water Surface Lake 2 Approx. 149.0

D.W.S. 146.20 (100 yr. Storm)

Install Type 3 Rip-Rap up to 2.0' below approximate normal pool El. Sta. 0+75 Begin Pipe

Install End Section To be paid for as L.F. Pipe

E.L. Reserve A Sta. 1+06 Constr. Field Inlet Top 148.8

Sta. 2+25.53 Property Line R/W Line, Toh-N-Hah Ct.

Sta. 2+36.95 Type 1A Curb Inlet Top 132.96

Sta. 2+40.03 Blk. of Cb. Top 151.36

Proposed Street by Others

Ground Line

8" Water

132.76

144.84

145.40

149.50

130.2'

130.95' of 15" RCP @ +4.00%
Alt. 15" CMP @ +4.00%

39.3'

31' of 15" RCP @ +1.81%
Alt. 15" CMP @ +1.81%

3:1

Approx. Earthwork Line & Lake bottom El. 139.0 by Others

8" San. Sewer by Others
℞ El. 136.5±

LINE 4

140
135
150
165
140

145.89

151.86

0
1
2

May use brick structure with precast top. See Sheet 2

54" Dia.

15" Pipe

2' Dia.

15" Pipe

To be paid for as Type A 4' dia. Manhole

TOP SLAB PLAN

Use #4 rebars throughout @ 6" cts., 2" cl. of bottom & 2' dia. opening; cut bars 2" cl. all sides.

Std. Type 1A Curb Inlet Ring with Beehive Cover

Modified Top

Elev. 149.8

9"

Std. Type A 4'ø Manhole

3'10"

15" Pipe

℞ 149.50

℞ 145.40 Shape Bottom

15" Pipe

SECTION

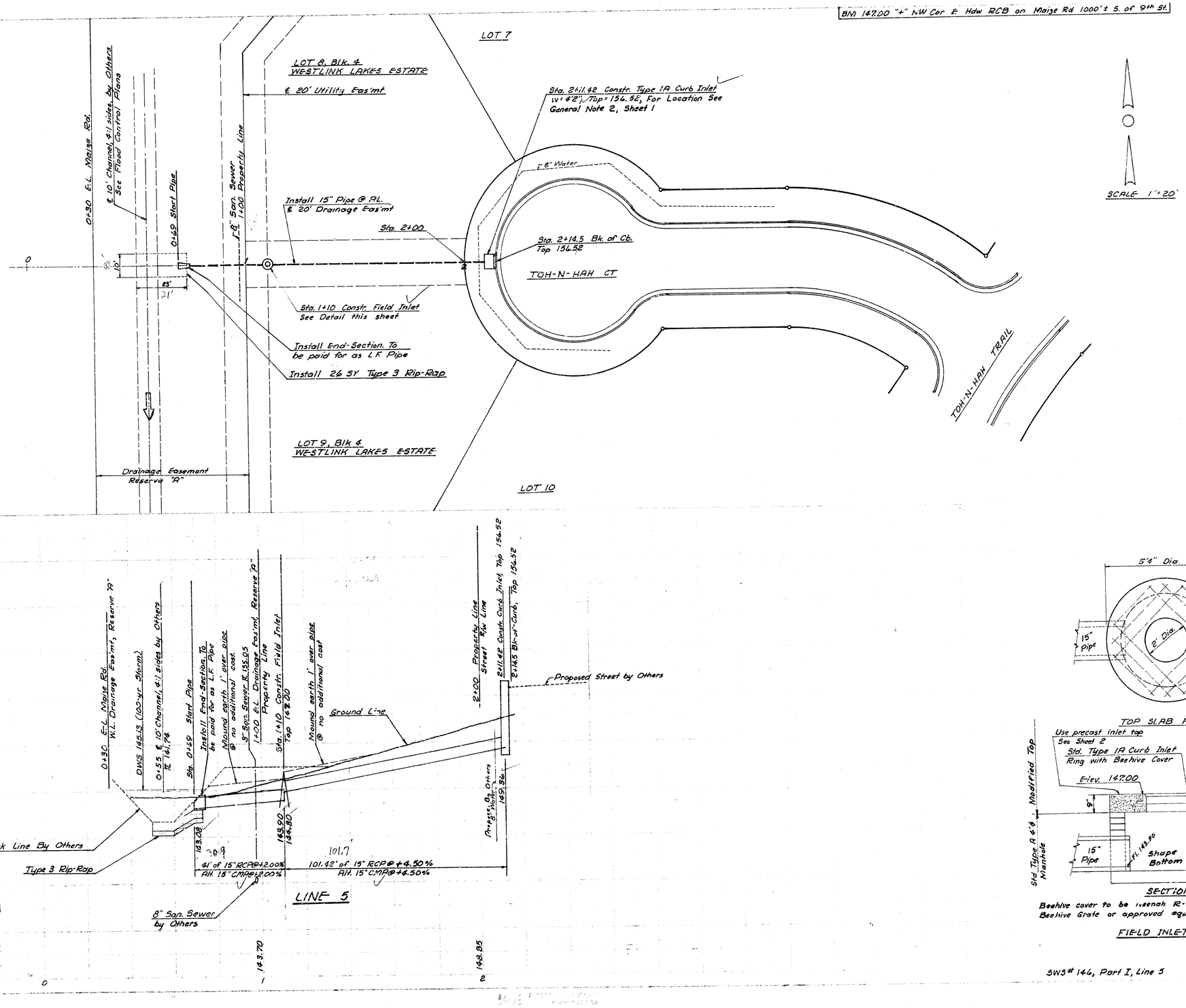
Beehive cover to be Neenah R-2560-E1 Beehive grate or approved equal.

FIELD INLET @ 1+06

Scale: 1/2" = 1'0"

SWS #144, Part I, Line 4 Sheet 5 of 31

BM 147.00 "+" NW Cor E. Hdw RCB on Maize Rd 1000'± S. of 9th St.



To be paid for as Type A 4' dia. Manhole

TOP SLAB PLAN

Use precast inlet top
See Sheet 2
Std. Type 1A Curb Inlet
Ring with Beehive Cover

Use #4 rebars throughout @ 4" cts, 2" cl. of bottom & 2" dia. opening, cut bar 2" cl. all sides.

SECTION

Beehive cover to be Iveenah R-2560-E1 Beehive Grate or approved equal.

FIELD INLET @ 1+10
Scale: ½" = 1'0"

SWS # 146, Part I, Line 5

Sheet 6 of 6/11

STORM WATER SEWER NO. 146

PART II

2—6'x4.5' R.C.B.C.

WESTLINK LAKES ESTATE

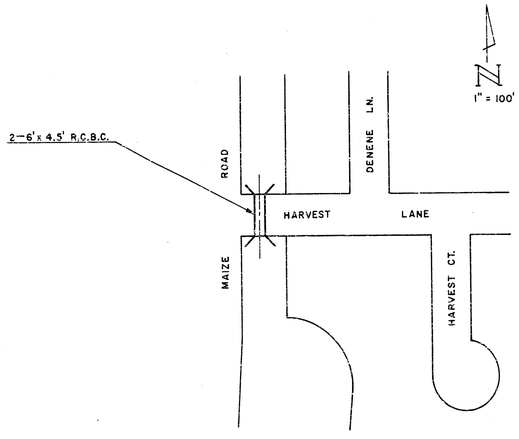
HARVEST LANE AT MAIZE RD.

CITY OF WICHITA, KANSAS

R.W. LINN CITY ENGINEER

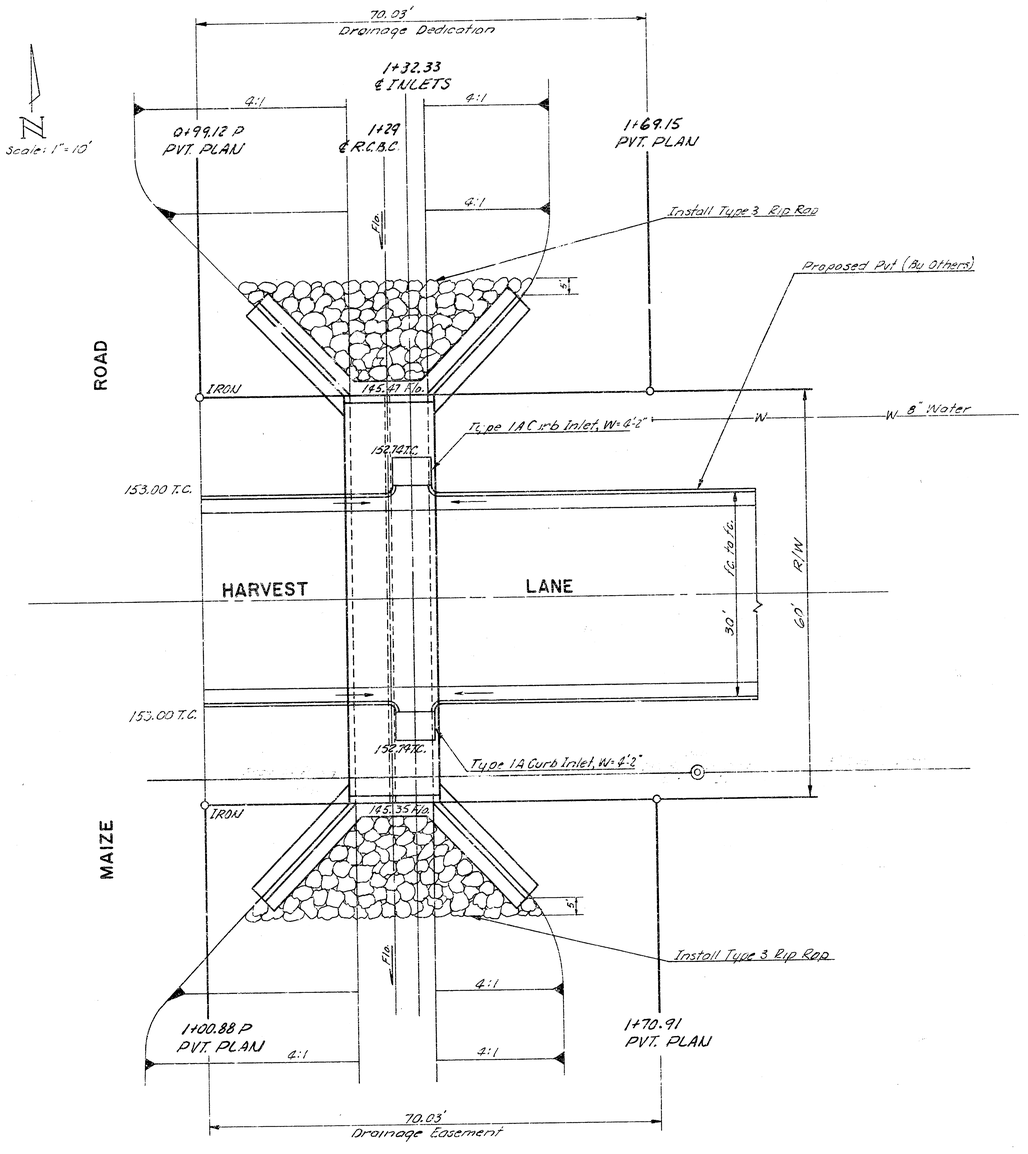
PROJ. NO. 468 76 245 80649 000 000 001

DATE:



9/11

B.M. 1511.67 R.R. SPK E. face P.P. N.E. Corner Harvest Lane & Maize Rd., 18' N. of N.L. Harvest Lane

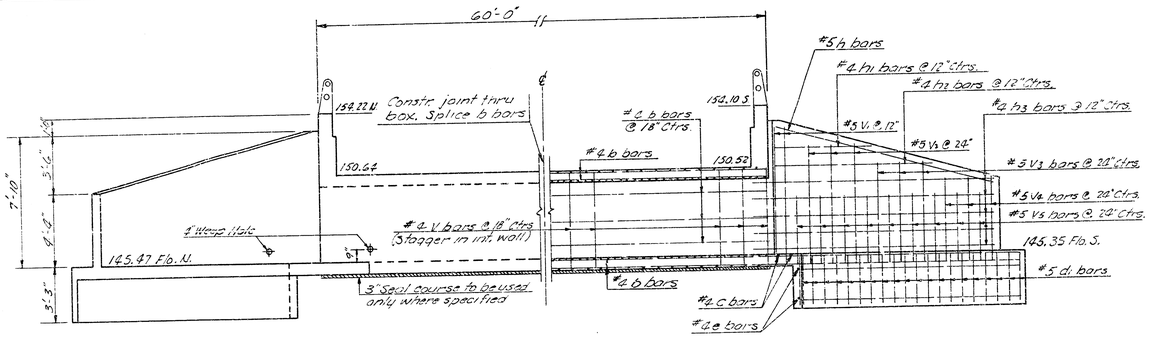


STORM WATER SEWER NO. 146
PART II
2 – 6'x 4.5' R.C.B.C.
WESTLINK LAKES ESTATE
HARVEST LANE AT MAIZE RD.
CITY OF WICHITA, KANSAS

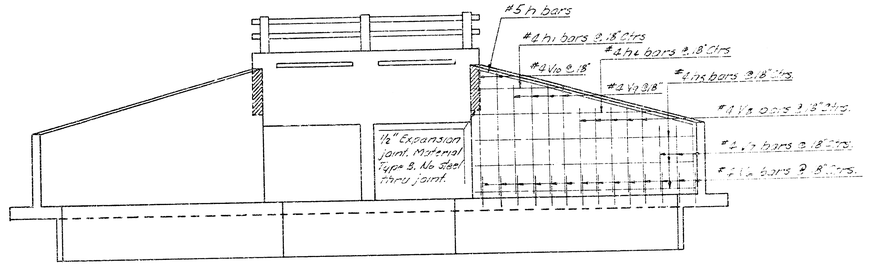
R.W. LINN CITY ENGINEER

DATE 10/13

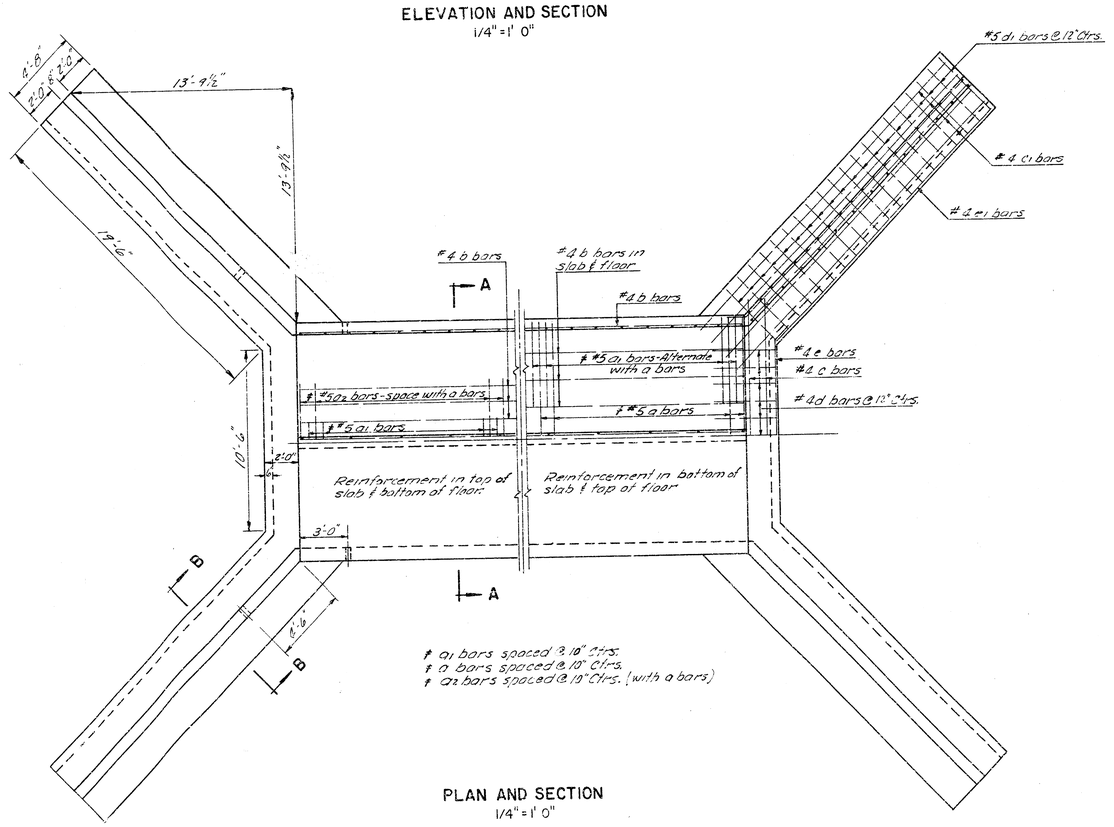
PROJ. NO. 468 76 245 80549 000 000 001



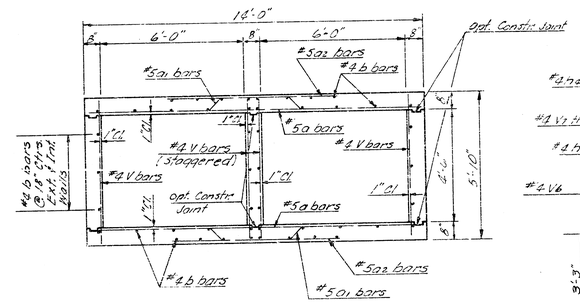
ELEVATION AND SECTION
1/4" = 1' 0"



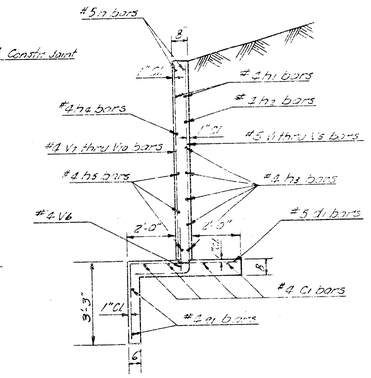
ELEVATION AND SECTION
1/4" = 1' 0"



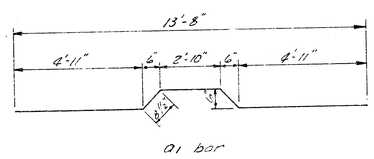
PLAN AND SECTION
1/4" = 1' 0"

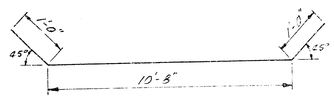


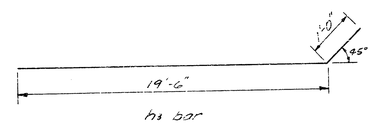
SECTION A–A
3/8" = 1' 0"

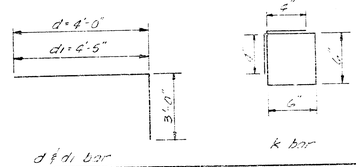


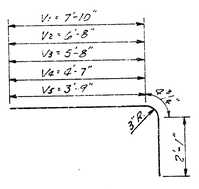
SECTION B–B
3/8" = 1' 0"

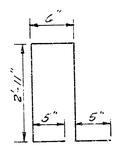


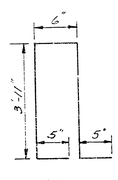










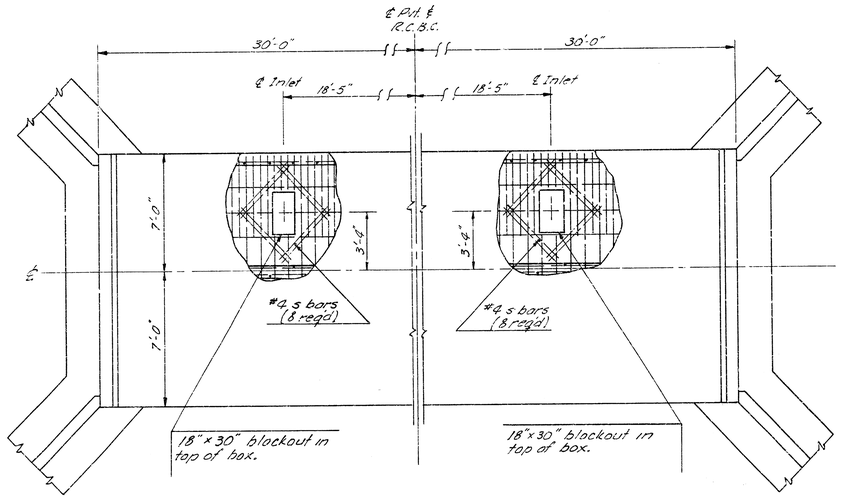


BENDING DIAGRAMS No Scale
All dimensions out to out of bars

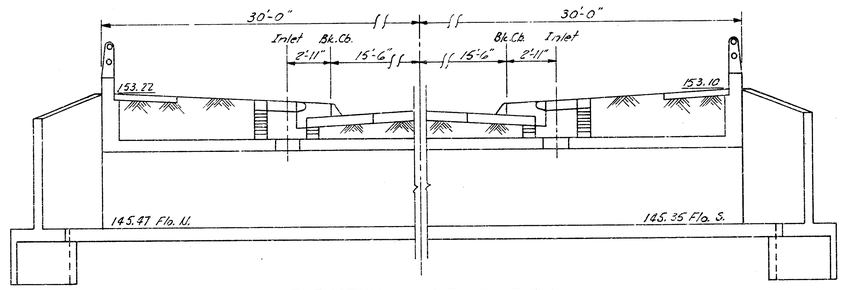
STORM WATER SEWER NO. 146
PART II
2 - 6'x4.5' R.C.B.C
WESTLINK LAKES ESTATE
HARVEST LANE AT MAIZE RD.
CITY OF WICHITA, KANSAS
R.W. LINN CITY ENGINEER
DATE
PROJ. NO. 468 76 245 80649 000 000 001

11/13

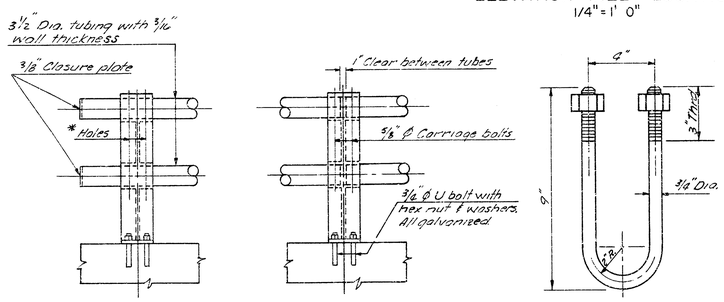
9/



PLAN—INLET LOCATION
1/4"=1' 0"



ELEVATION—INLET LOCATION
1/4"=1' 0"



* Holes: 11/16" square holes in post under head and 11/16" round holes under nuts for 5/8" Ø x 5½" carriage bolts with hex nuts.

DETAIL—ALUMINUM RAILING
No Scale

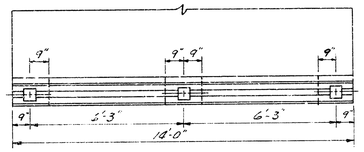
Note: Aluminum Handrail

Aluminum posts shall be Reynolds Aluminum Highway Products Bridge Railing System No 2R19A or equal.

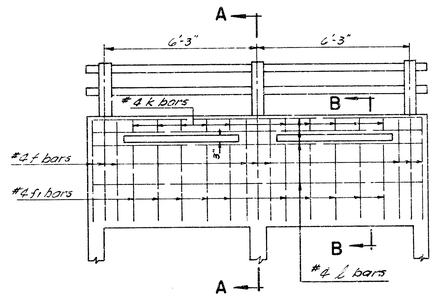
Top & bottom rails shall be 3½" O.D. x 3/16" wall tube of 6063-T6 Aluminum.

Aluminum shims between concrete and post base may be used. The space below posts shall be thoroughly caulked with Alumilastic compound or other approved material.

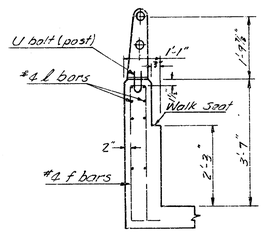
GALVANIZED U BOLT
No Scale



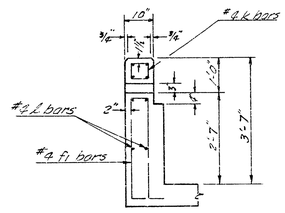
PLAN—RAILING
3/8"=1' 0"



SECTION—RAILING
3/8"=1' 0"



SECTION A—A
1/2"=1' 0"



SECTION B—B
1/2"=1' 0"

Revised No. & Wt. 7-26-79
" " " " " "
" " " " " "

BAR SCHEDULE

BAR	SIZE	LENGTH	NO.	SHAPE	WEIGHT
a	#5	13'9"	144	—	2065.14
a1	#5	14'1"	144	⌒	2114.79
a2	#5	7'0"	149	—	1045.38
b	#4	31'0"	88	—	1822.80
c	#4	10'3"	4	—	42.75
c1	#4	22'3"	14	—	233.14
d	#4	7'0"	22	⌐¬	102.87
d1	#5	7'5"	60	⌐¬	277.12
e	#4	1'8"	4	⌐¬	33.85
e1	#4	1'9"	6	—	17.76
f	#4	9'2"	18	⊓	110.16
f1	#4	7'2"	20	⊓	75.19
h	#5	11'2"	8	—	104.11
h1	#4	7'7"	8	—	47.51
h2	#4	13'5"	6	—	34.09
h2	#4	20'6"	20	⌐¬	273.85
h4	#4	14'7"	4	—	42.15
h5	#4	19'3"	12	—	156.91
k	#4	2'5"	20	□	35.27
ℓ	#4	13'9"	16	—	146.91
s	#6	6'1"	16	—	98.10
V	#4	5'7"	163	—	607.57
V1	#5	10'3½"	6	—	81.03
V2	#5	7'1¾"	12	⌐¬	114.21
V3	#5	8'1½"	12	⌐¬	132.71
V4	#5	7'0½"	12	⌐¬	95.34
V5	#5	4'-2½"	36	—	233.73
V6	#4	11'9"	36	—	155.84
V7	#4	8'3"	12	—	82.14
V8	#4	5'0"	20	—	66.85
V9	#4	2'4"	16	—	62.44
V10	#4	7'2"	8	—	38.17

GENERAL NOTES

1. CLASS A-AE - CONCRETE SHALL BE USED THROUGHOUT ON THE STRUCTURE. ALL REINFORCING STEEL SHALL CONFORM TO A.S.T.M. SPECIFICATIONS.
2. EARTHWORK - ALL EARTHWORK SHALL BE CONSIDERED AS "COMMON EXCAVATION" EXCEPT FOR THE TOEWALL. ALL EXCAVATION SHALL BE INCLUDED IN "LUMP SUM BID".
3. BACKFILL - ALL BACKFILL AND EXCAVATION TO EXTEND TO (2') BEYOND SIDES OF BOX AND WING-WALLS.
4. BEVEL - ALL EXPOSED EDGES OF CONCRETE WITH 3/4" TRIANGULAR MOULDING.
5. WEEPHOLES - COURSE AGGREGATE SHALL BE DEPOSITED BEHIND EACH WEEPHOLE TO OCCUPY A SPACE EXTENDING (15") IN ALL DIRECTIONS ABOVE WEEPHOLE FLOW LINE. THIS WORK SHALL NOT BE PAID FOR DIRECTLY, BUT SHALL BE CONSIDERED A PART OF THE EXCAVATION WORK.
6. SEAL COURSE - A SEAL COURSE CONSISTING OF 3" 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 DAMAGE.
7. BUILDING OF CULVERT - THE CULVERT SHALL BE BID AS A "LUMP SUM BID".
8. THE QUANTITIES SHOWN IN THE "BILL OF MATERIALS OR ITEMS" WHICH ARE INCLUDED IN THE "LUMP SUM BID" OF THE CULVERT ARE FOR "INFORMATION PURPOSES ONLY". THE CONTRACTOR MUST SATISFY HIMSELF AS TO THE "QUANTITIES" AND THE ENGINEER ASSUMES NO RESPONSIBILITIES FOR THEIR ACCURACY. THE CONTRACTOR WILL HAVE THE FULL RESPONSIBILITY FOR PROVIDING ALL MATERIALS ON THE DETAILED PLANS NECESSARY TO COMPLETE THE PROJECT.

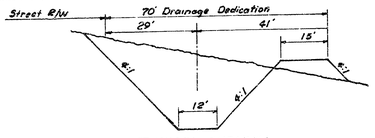
BILL OF MATERIALS

ITEMS	QUANTITY	UNIT
Class A-AE Concrete	92.3	C.Y.
Reinforcing Steel	10,839.7	LB.S
Hand Excavation	14.3	C.Y.
Aluminum Handrail	28.0	L.F.
Class A Concrete - Seal Course	7.8	C.Y.
Excavation	472.5	C.Y.
Compacted Fill	35.1	C.Y.

Revised quantity 7-26-79

12/13

STORM WATER SEWER NO. 146
PART II
2-6'x4.5' R.C.B.C.
WESTLINK LAKES ESTATE
HARVEST LANE AT MAIZE RD.
CITY OF WICHITA, KANSAS
R.W. LINN CITY ENGINEER
DATE
PROJ. NO. 4-8 75 245 80649 000 000 001



TYPICAL CHANNEL
No Scale

THE RIP-RAP ON THIS PROJECT SHALL BE TYPE 4. THE TYPE 4 RIP-RAP SHALL BE 18" RIP-RAP ON 6" SAND AND GRAVEL BEDDING. THE ROCK FOR RIP-RAP AND GRAVEL PROTECTION SHALL BE HARD, DENSE, DURABLE AND SHALL BE REASONABLY WELL GRADED. THE SIZE RANGE OF ROCK USED SHALL HAVE A MAXIMUM SIZE OF 1/3 CUBIC YARD AND A MINIMUM SIZE OF 1/10 CUBIC FOOT. THE 6 INCH SAND AND GRAVEL BEDDING FOR RIP-RAP SHALL BE A CONTINUOUS LAYER OF SAND AND GRAVEL OR SAND AND CRUSHED ROCK, REASONABLY WELL GRADED TO A MAXIMUM OF 1½ INCHES IN SIZE.

Scale: 1"=20'

B.M. 154.20 'D' in center of east haml. RCBC
350' N. of ¼ corner of Sec. 7-27-1W.

MAIZE ROAD
Future 49' B/B Street

50' R/W
Future Bk. of Curb
Future Walk
Earthwork Limit Line
20'
12
13
70' Drainage Dedication
41'
Double 6'x4½' RCB By Others
HARVEST LANE
14
15
16
15' Maintenance Berm
10' Utility Easement
Earthwork Limit Line
Lot 1, Blk 3
Westlink Lake Estates
Lot 7
Lot 6, Blk 1
Westlink Lake Estates
Lot 5
20' Drainage Easement
SWS by Others
Lot 4
10' Utility Easement
Lot 3
See Flood Control Plan
Drainage Dedication
Utility Easement

CHANNEL CONSTRUCTION IN RIP RAP AREA SHALL BE PERFORMED TO ALIGN WITH EXISTING CONDITIONS OF CHANNEL. ALIGNMENT SHOWN IS APPROXIMATE BASED ON JUDGMENT.

R 147.20
4.6'x3.0'
6.1'x3.0'
4.0'x3.0'
Existing RCB to Remain
4.6'x3.0'
R 147.18
B.M.
Install 180 SY Type 4 Rip-Rap
17+00

11+56± End 10' Channel
Start 12' Channel
12+00 PVI
13+07 R/W Line
Harvest Lane
13+69 R/W Line
18+00 PVI
Existing & Maize Rd.
Proposed Top of Rd. Curb
Ground Line @ Channel ℄
Install Rip-Rap, Type 4
155
150
145
150
145
140

See Flood Control Plan
Channel (b=10', sides 4:1) @0.37%
144.96
144.96
145.13
145.13
145.35
145.35
145.47
145.47
146.13
11+56
12+00
13+09
13+69
17+00
Double 6'x4½' RCB by Others
44'± of Channel (b=12', side 4:1) @ +0.37%
109' of Channel (b=12', sides 4:1) @ +0.20%
60' of RCB @ +0.20%
331' of Channel (b=12', sides 4:1) @ +0.20%

145.13 12
145.93 13
145.53 14
145.73 15
145.93 16
146.13 17

ATTACHMENT TO STORM WATER SEWER #146, WESTLINK LAKES ESTATE
Drainage Channel Details Constructed Privately
CITY OF WICHITA, KANSAS
R.W. LINN, CITY ENGINEER

sheet 1

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Flood Control Plan
WSK