

# STREET IMPROVEMENT DISTRICT NO. 81 MANDAN, NORTH DAKOTA

(CITY NO. 89-5)

## INDEX

### BOARD OF CITY COMMISSIONERS MANDAN, NORTH DAKOTA

ROBERT DYKSHORN, PRESIDENT  
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BRUCE BOEHM, COMMISSIONER  
TONY ENGELHARDT, COMMISSIONER  
GENEVIEVE HUTMACHER, COMMISSIONER  
LYNN LANDER, AUDITOR  
THOMAS LITTLE, CITY ENGINEER

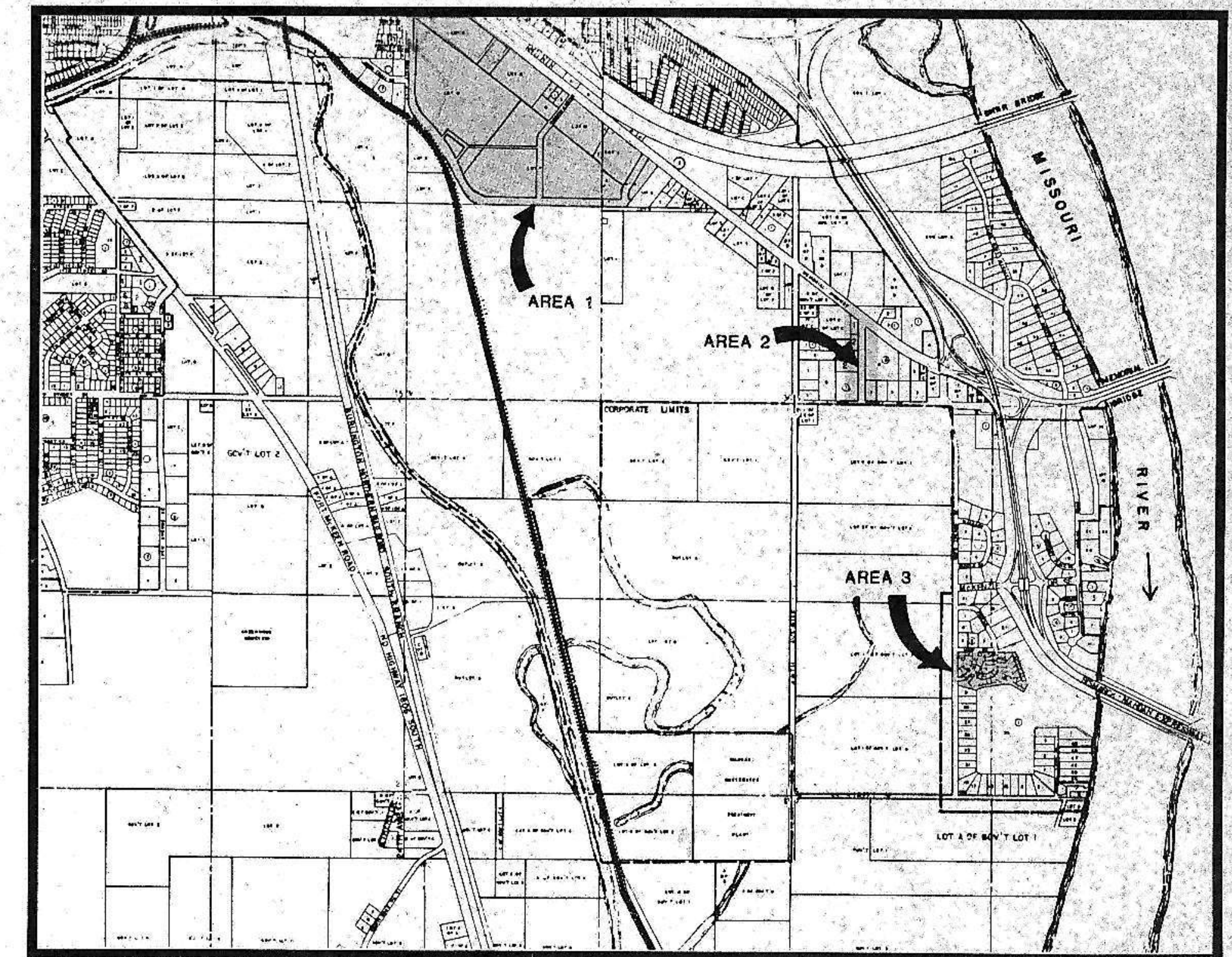
W/SID # 21 Site # 4

SID 81 - Project 89-5 #  
File # 2

~~SID # 21 Project # 2000~~

Sylvestre's Industrial  
Park 2nd

SHEET NO.	DESCRIPTION
AREA 1	
1.	24th AVE. S.E. BETWEEN MEMORIAL HIGHWAY AND LONGSPUR TRAIL S.E.
2.	LONGSPUR TRAIL S.E. BETWEEN 24th AVE. S.E. AND STATION 31+97.99
3.	LONGSPUR TRAIL S.E. BETWEEN STATION 31+97.99 AND REDWING DRIVE AND REDWING DRIVE BETWEEN MEMORIAL HIGHWAY AND LONGSPUR TRAIL S.E.
4.	RACE TRACK & RODEO ARENA STORM SEWER PLAN & PROFILE
15.	LIFT STATION AND FORCEMAIN LAYOUT AND DETAILS
AREA 2	
6.	43rd AVE. S.E. BETWEEN MEMORIAL HIGHWAY AND 19th STREET S.E. REMOVAL AND RELOCATION DETAILS
7.	43rd AVE. S.E. BETWEEN MEMORIAL HIGHWAY AND 19th STREET S.E.
8.	19th STREET S.E. STORM SEWER PLAN & PROFILE PINTAIL LOOP GRADING PLAN & PROFILE (PART OF AREA 3)
AREA 3	
9.	BAYSIDE DRIVE S.E. BETWEEN PINTAIL LOOP S.E. AND 46th AVE. S.E.
10.	NORTH SHORE LOOP BETWEEN PINTAIL LOOP S.E. AND BAYSIDE DRIVE S.E.
11.	DETAIL SHEET
ELECTRICAL SHEETS	
E1.	AREA 1
E2.	AREA 2 & AREA 3
E3.	DETAILS



APPROVED: Thomas Little DATE: 5-20-1989  
THOMAS LITTLE, R.P.E. CITY ENGINEER, MANDAN, NORTH DAKOTA

AS-BUILT



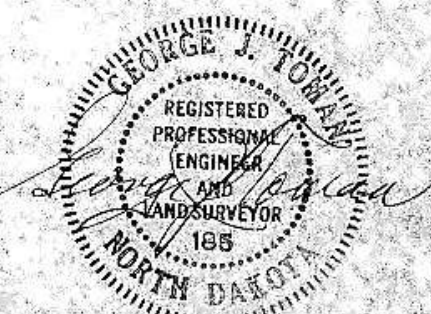
PREPARED BY:

TOMAN ENGINEERING CO. ★ CONSULTING ENGINEERS ★ MANDAN, NORTH DAKOTA

D 89-5

D 81

GEORGE J. TOMAN, R.P.E. 185  
SENIOR ENGINEER



7

2

24TH AVE. S.E.

AREA I



SCALE:  
HOR. 1" = 50'  
VERT. 1" = 2'

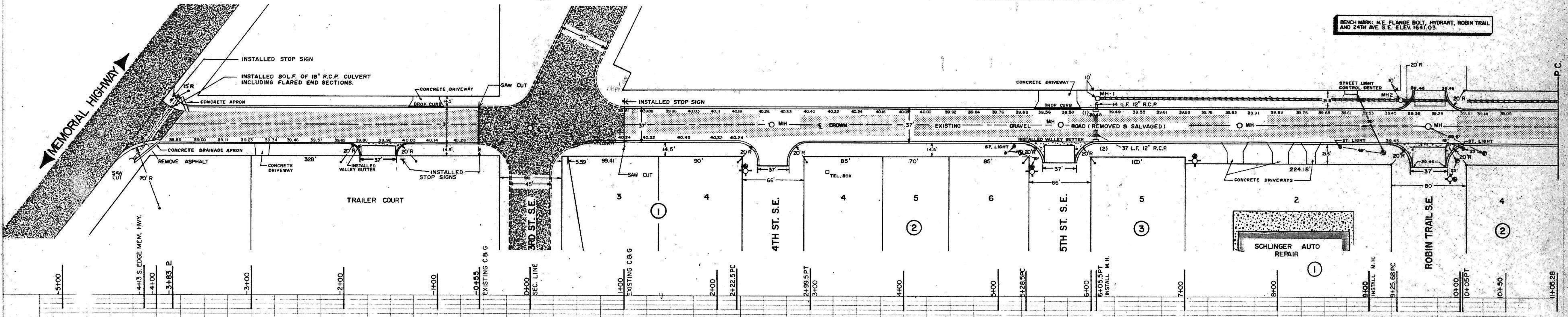
BENCH MARK: TOP OF IRON PIPE, N.W. CORNER,  
SECTION 36, ELEV. 1640.17

CONSTRUCTION NOTES  
1. CATCH BASIN ADJUSTMENT TO BE  
INCIDENTAL TO CURB & GUTTER  
INSTALLATION.  
2. GRAVEL TO BE REMOVED & SALVAGED.

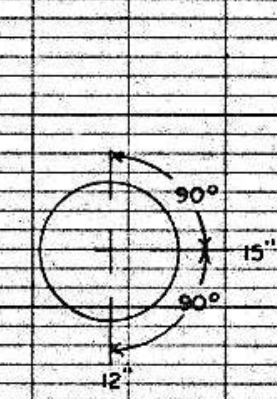
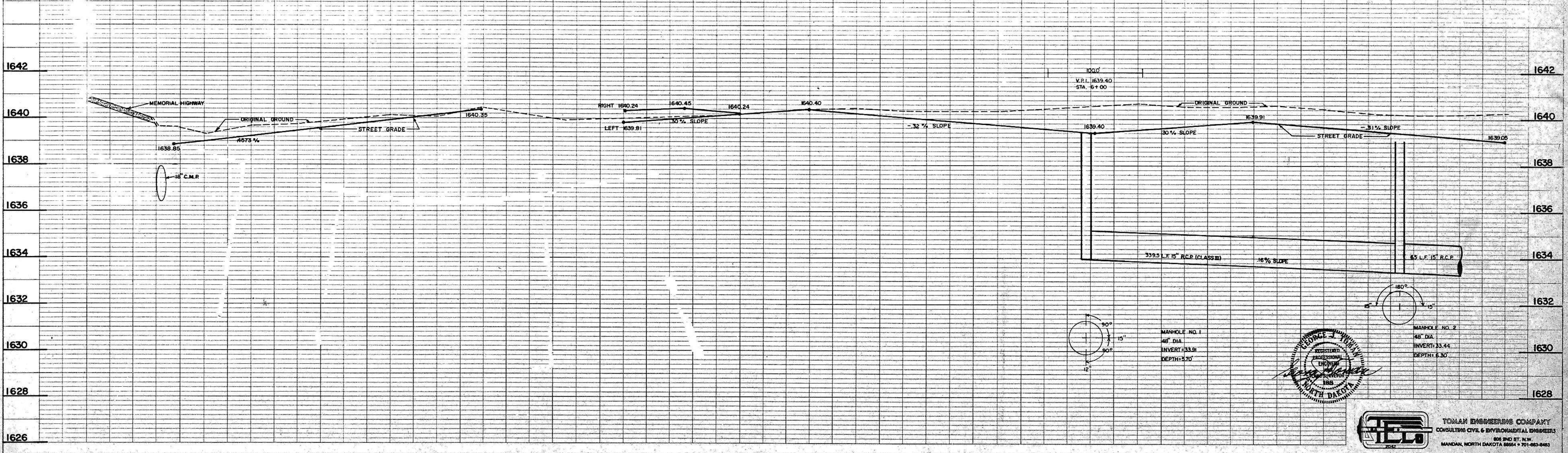
BENCH MARK: N.E. FLANGE BOLT, HYDRANT, 5TH ST.  
AND 24TH AVE. S.E. ELEV. 1641.34

BENCH MARK: N.E. FLANGE BOLT, HYDRANT, ROBIN TRAIL  
AND 24TH AVE. S.E. ELEV. 1641.03

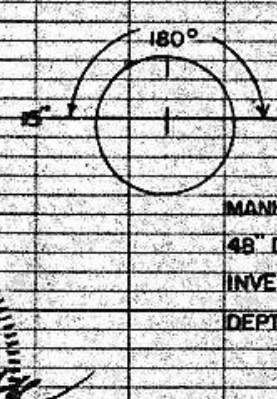
PLAN  
AS-BUILT CORRECTIONS  
JRH



PROFILE  
NOTE: NO. 1  
NO. 2



MANHOLE NO. 1  
48" DIA.  
INVERT: 33.91  
DEPTH: 5.70'



MANHOLE NO. 2  
48" DIA.  
INVERT: 33.44  
DEPTH: 5.30'



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CONSULTING CIVIL & ENVIRONMENTAL ENGINEERS  
806 2ND ST. N.W.  
MANDAK, NORTH DAKOTA 58554 • 701-663-0463

# NORTH SHORE LOOP SE

AREA 3

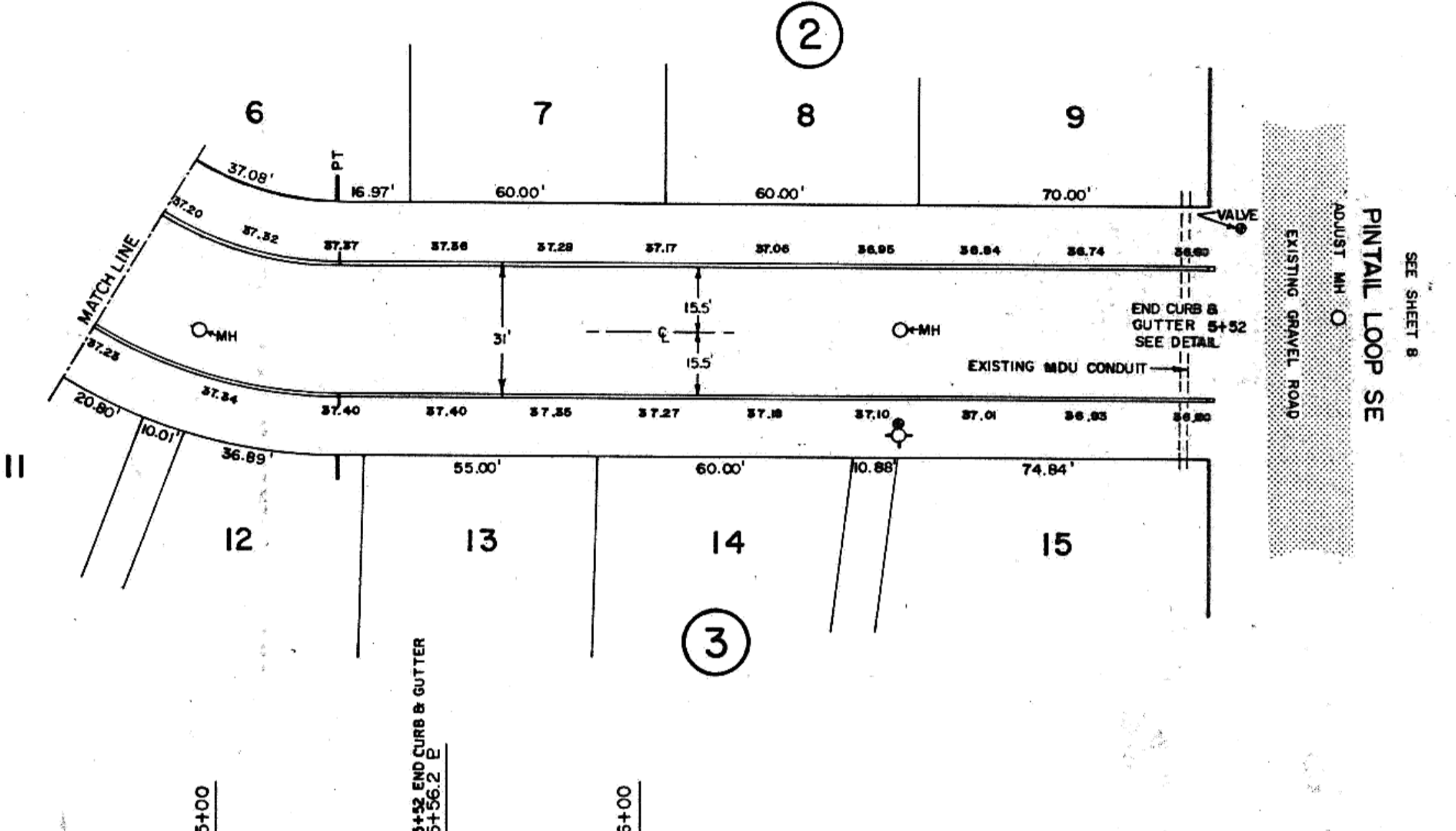
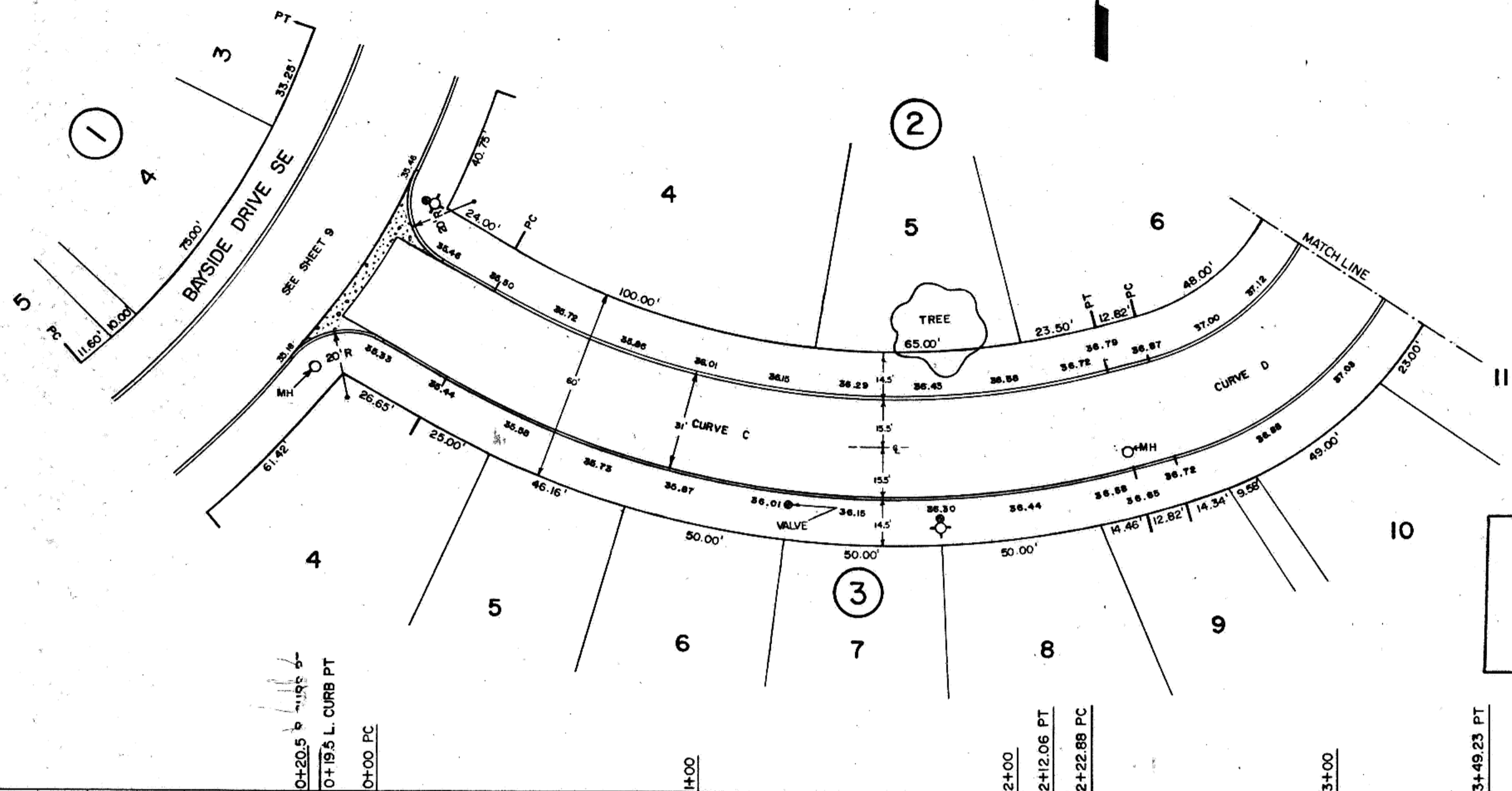
SCALE:  
HOR. 1"=30'  
VERT. 1"=2'

CONSTRUCTION NOTES  
1. ALL STATIONING IS TO CENTERLINE OF STREET.

R.M. - NE FLANGE BOLT, HYDRANT; W SIDE PAVTAL LOOP SE.  
ACROSS FROM LOT 1, BACKSHORES OF MARINA BAY, 1637.70

C CURVE DATA

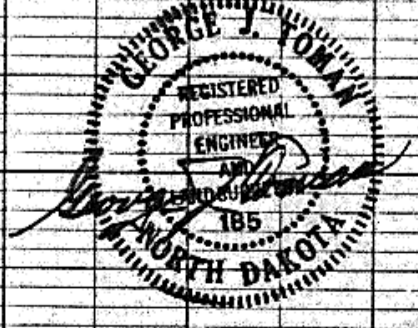
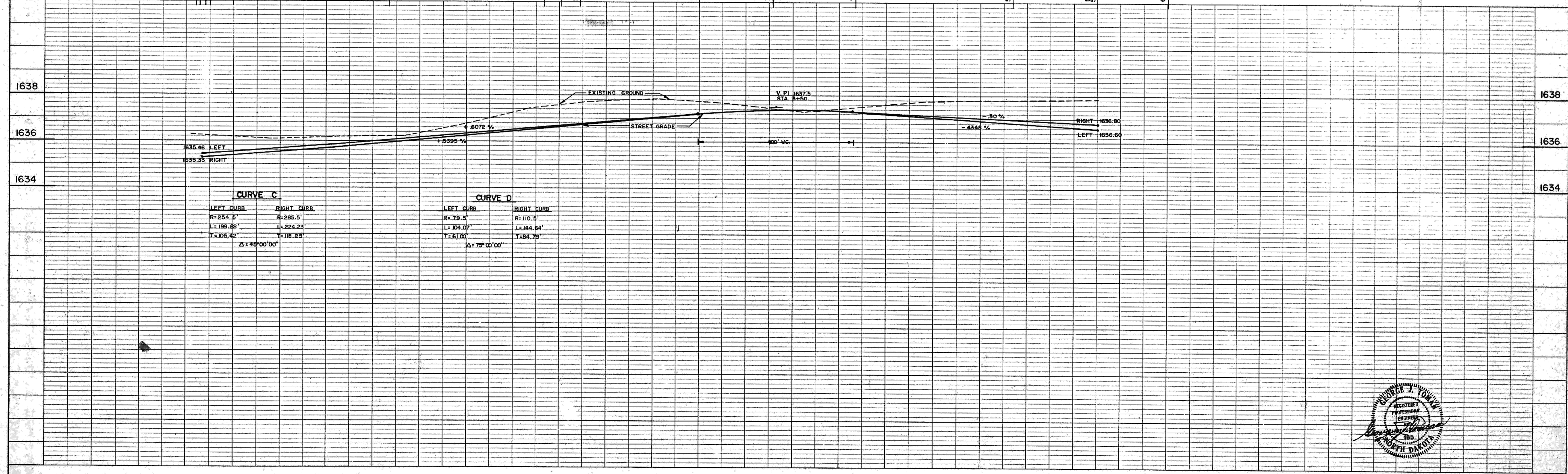
	Δ	T	L	R
C	45°00'00"	111.84	212.06	270.00
D	75°00'00"	72.90	124.95	95.00'

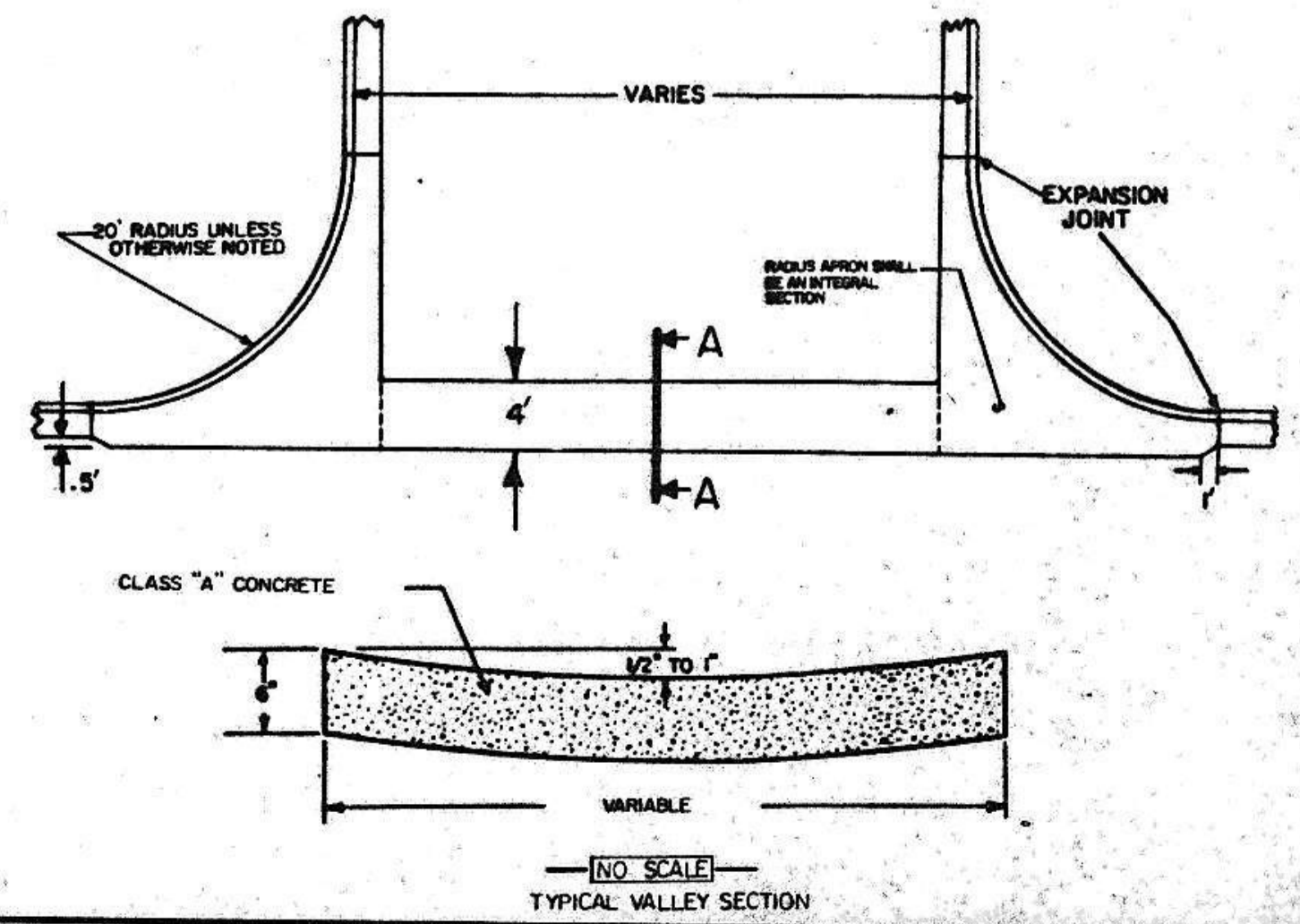
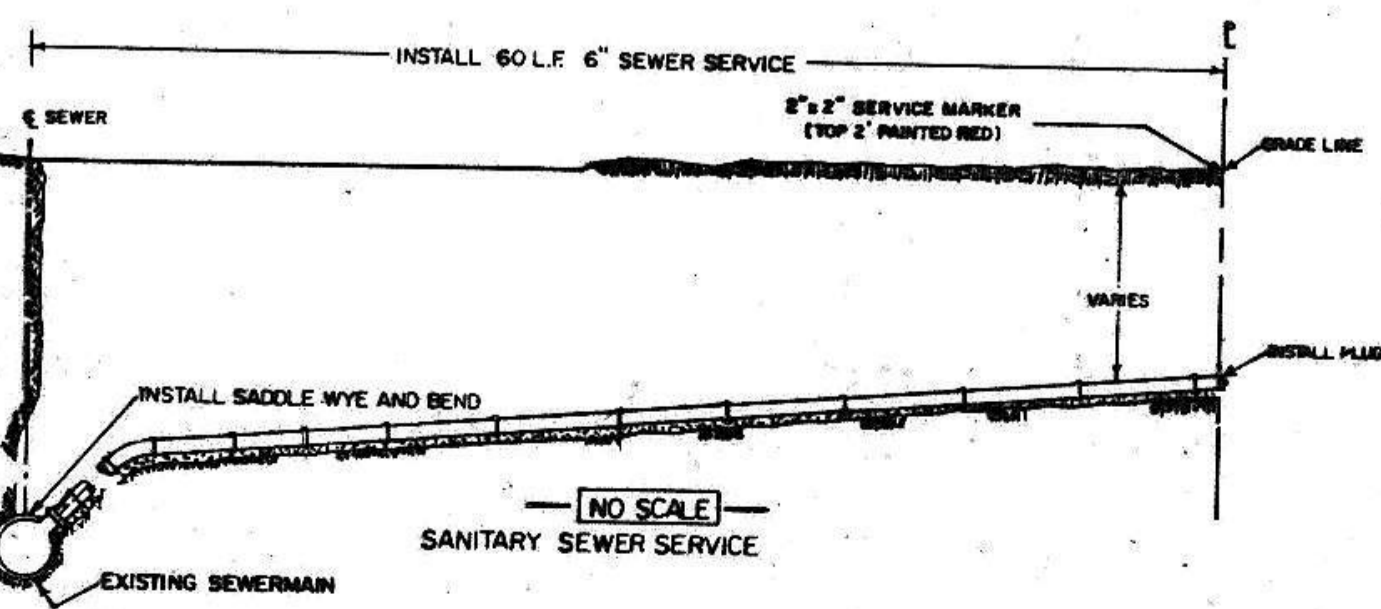
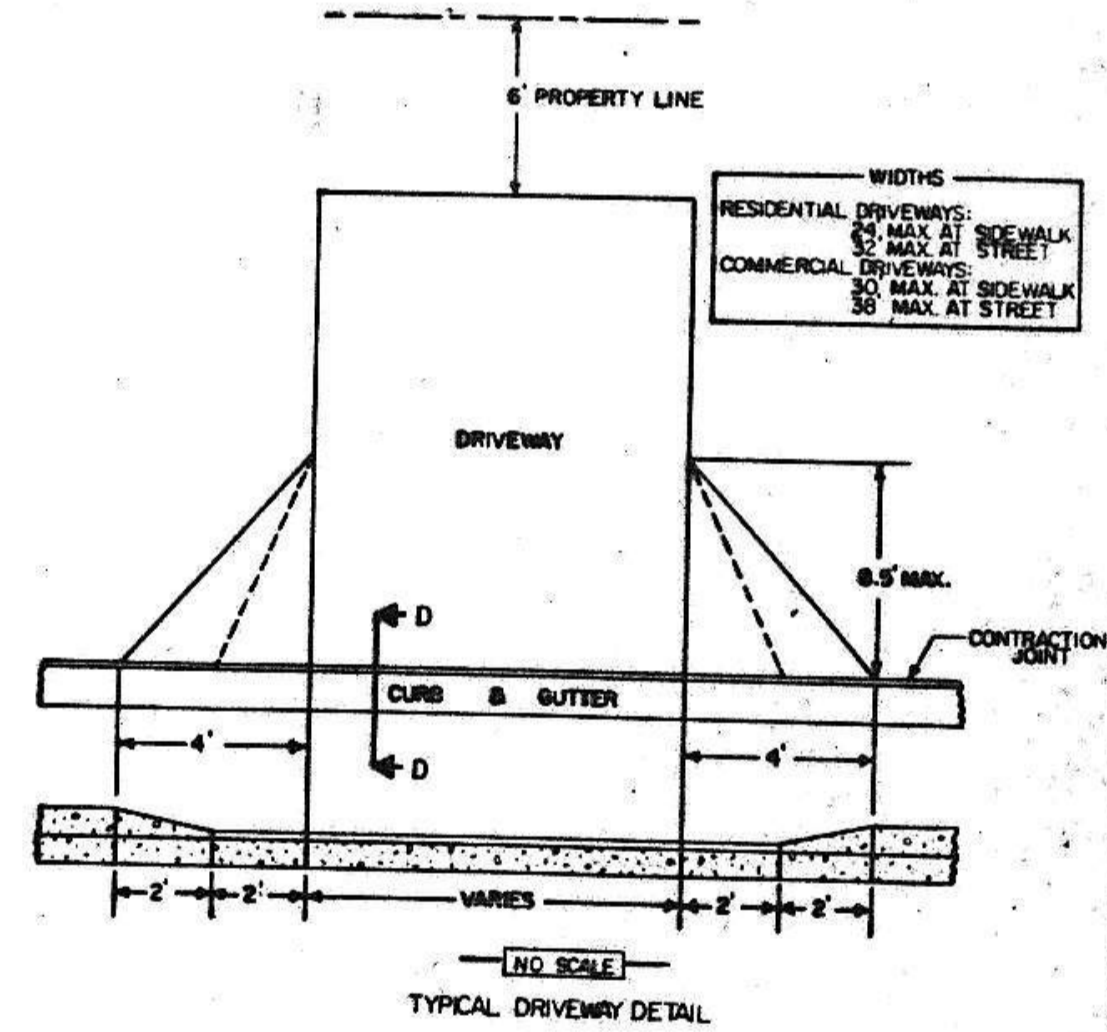
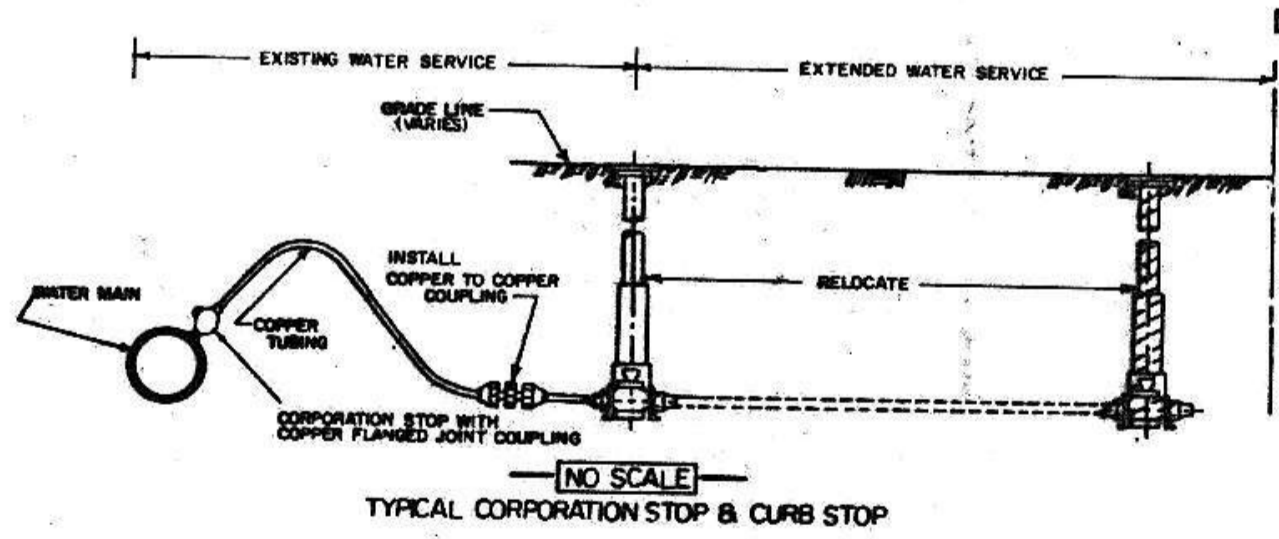
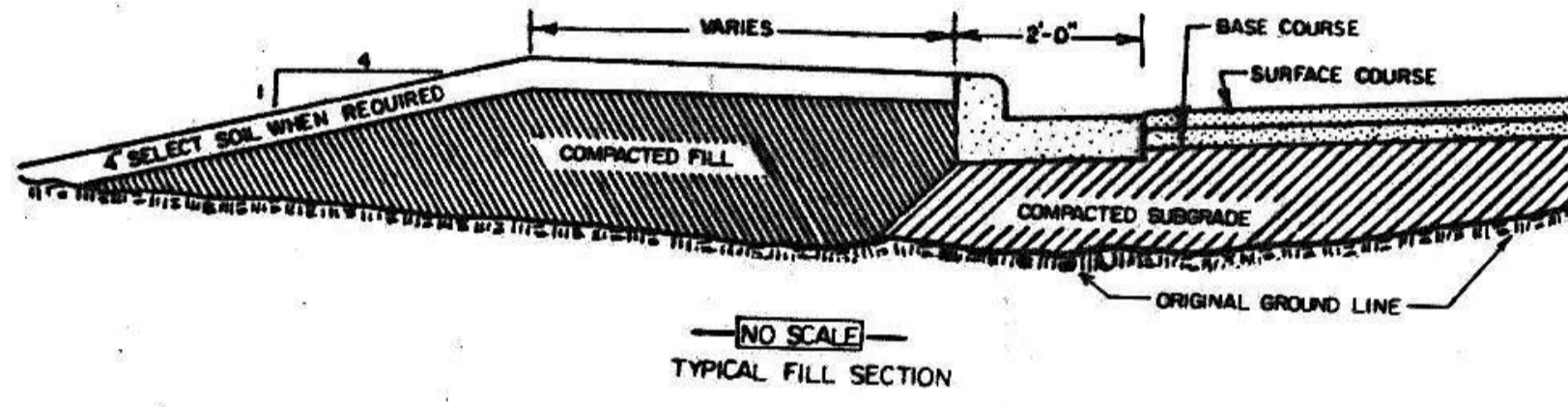
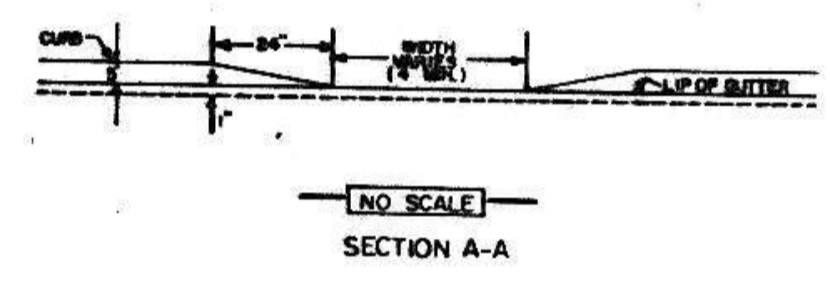
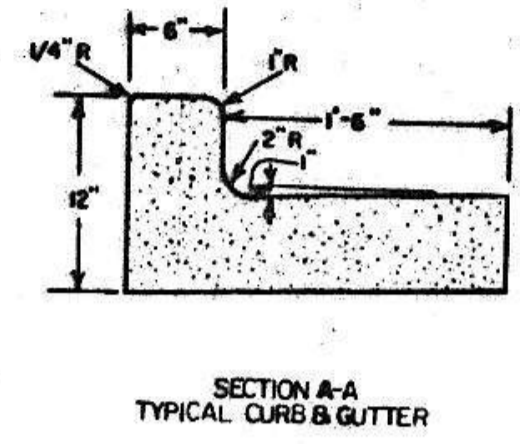
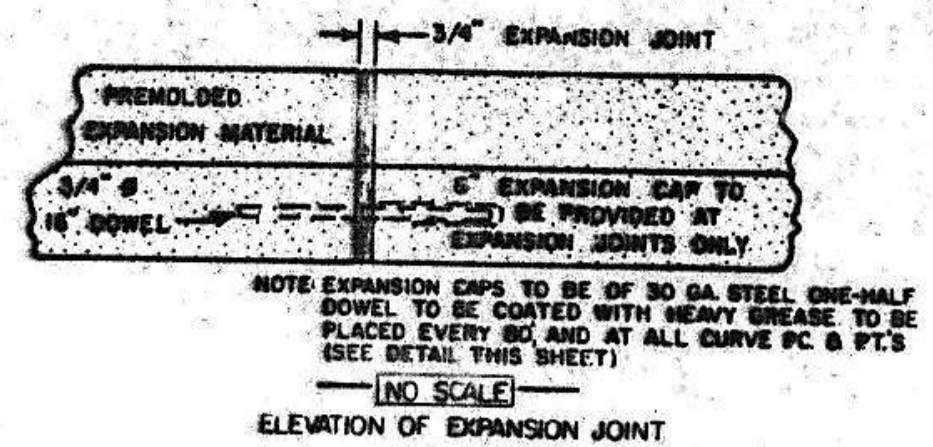
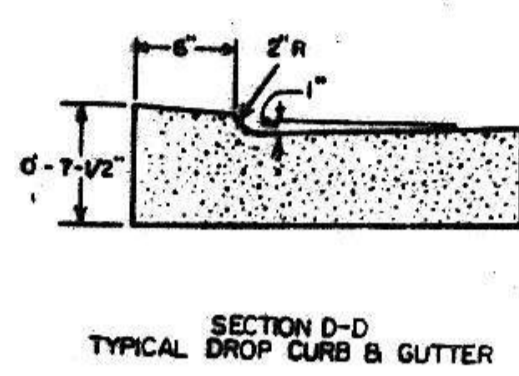
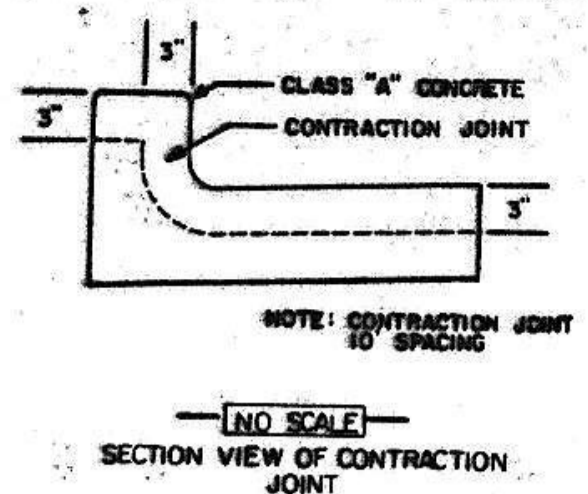
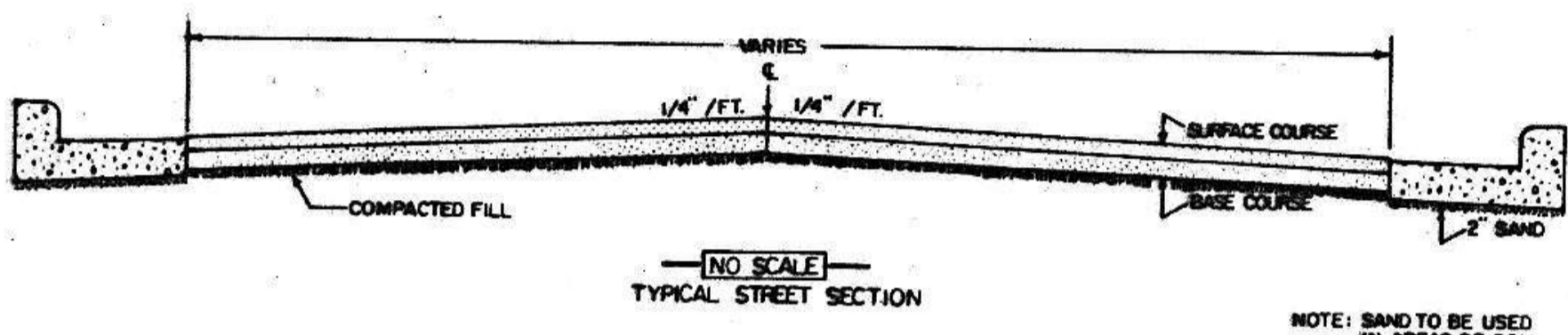
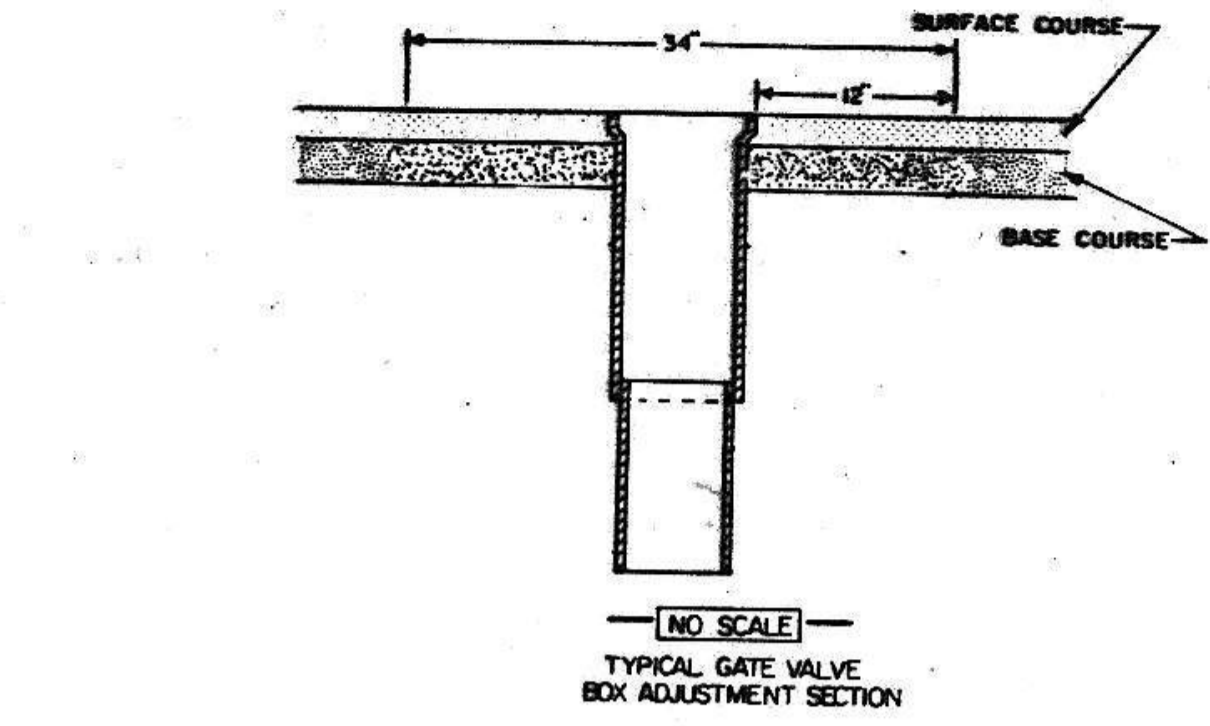
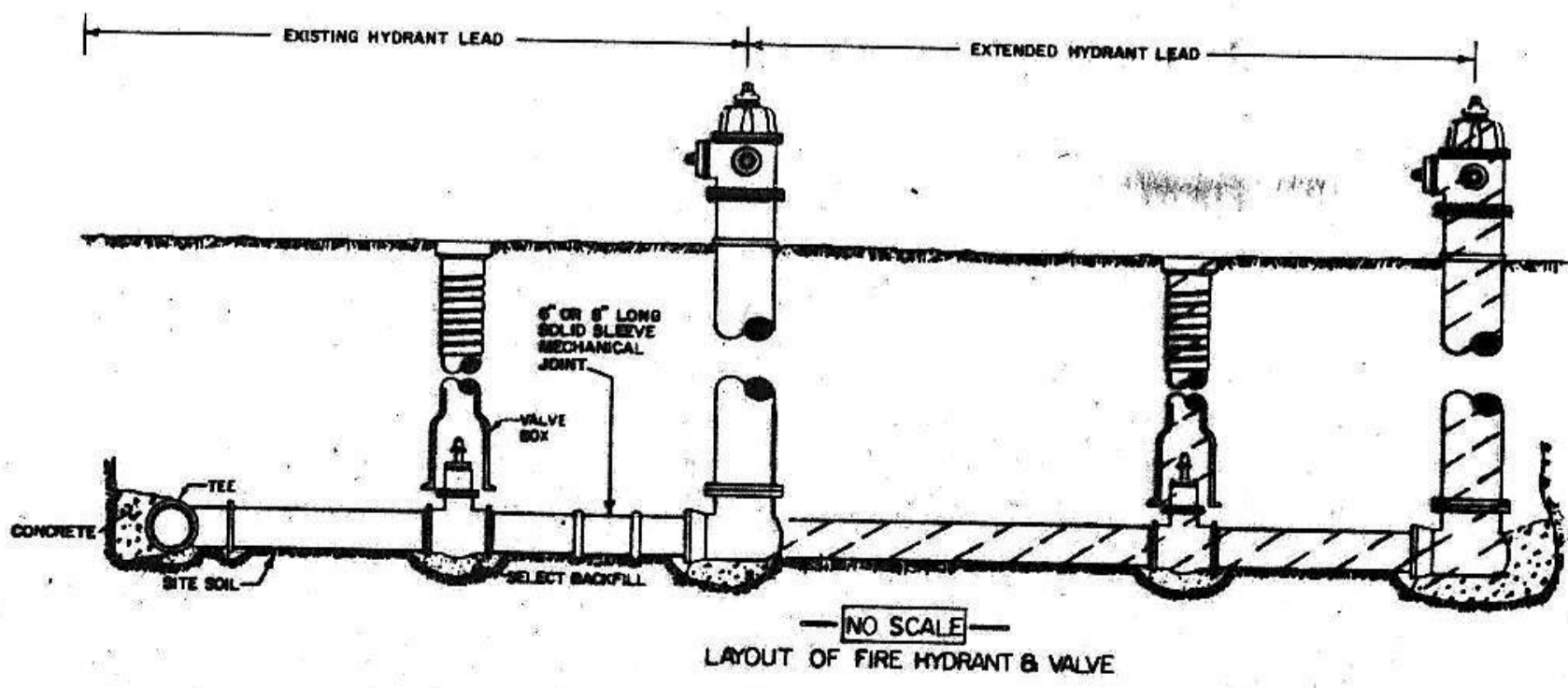
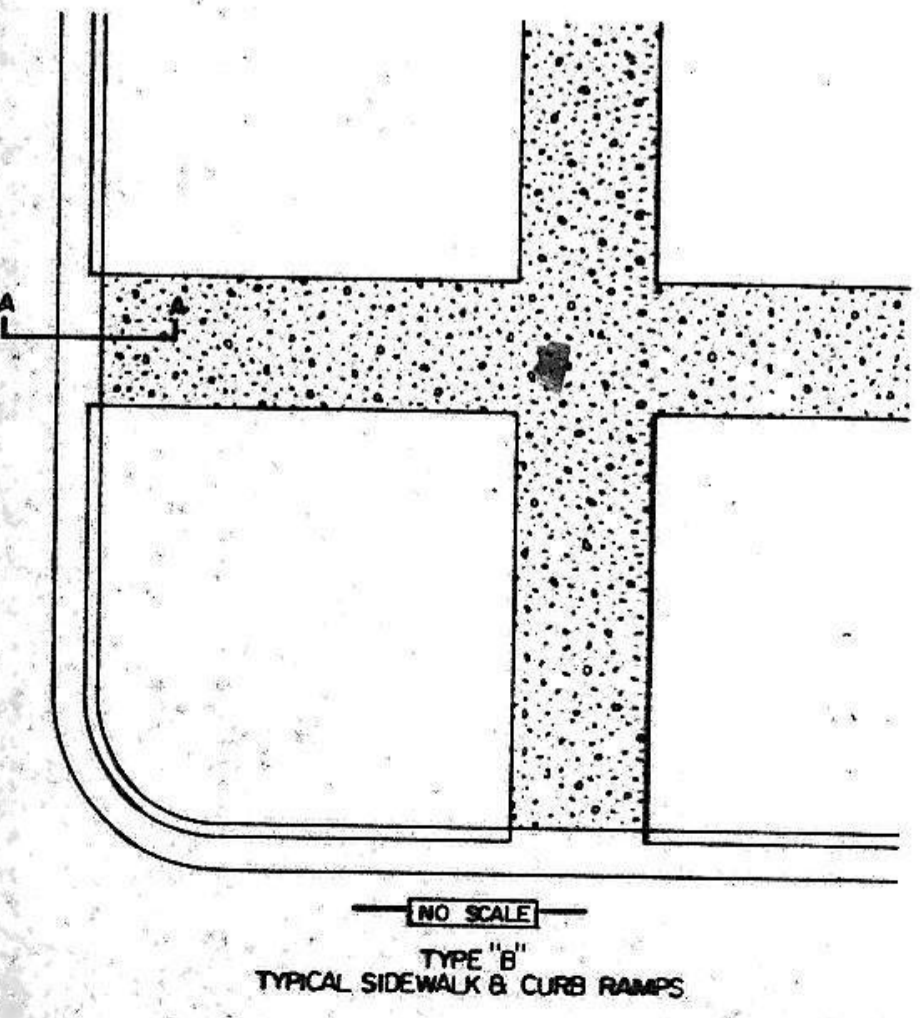
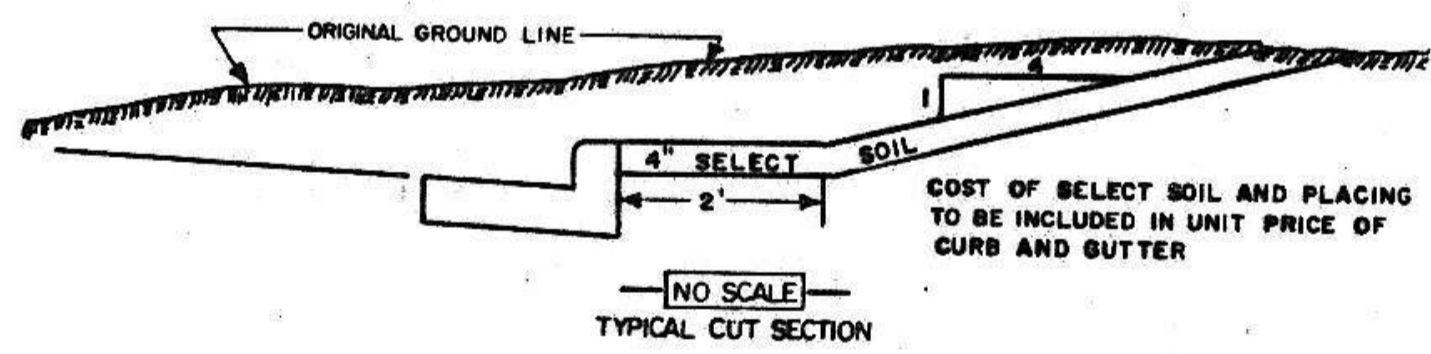
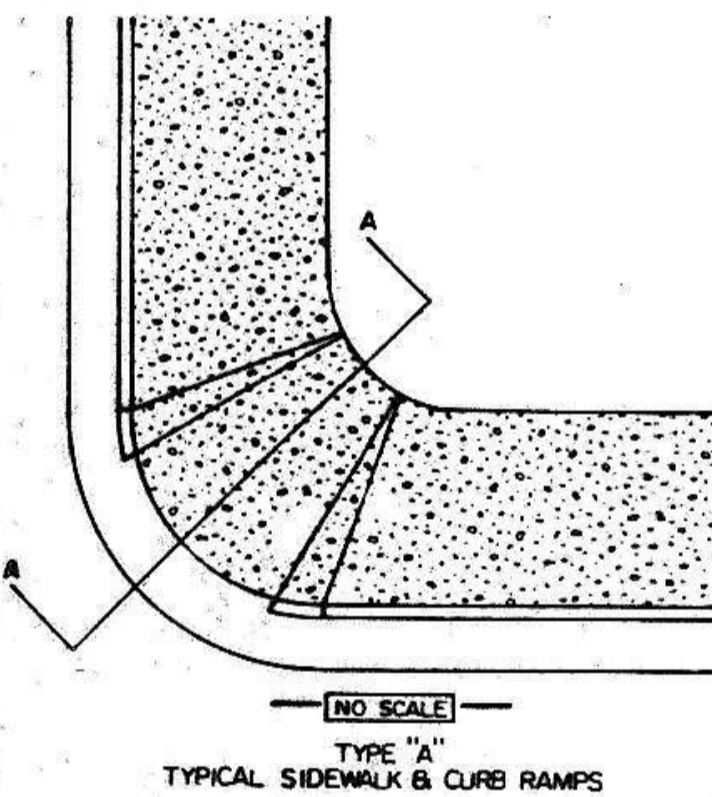
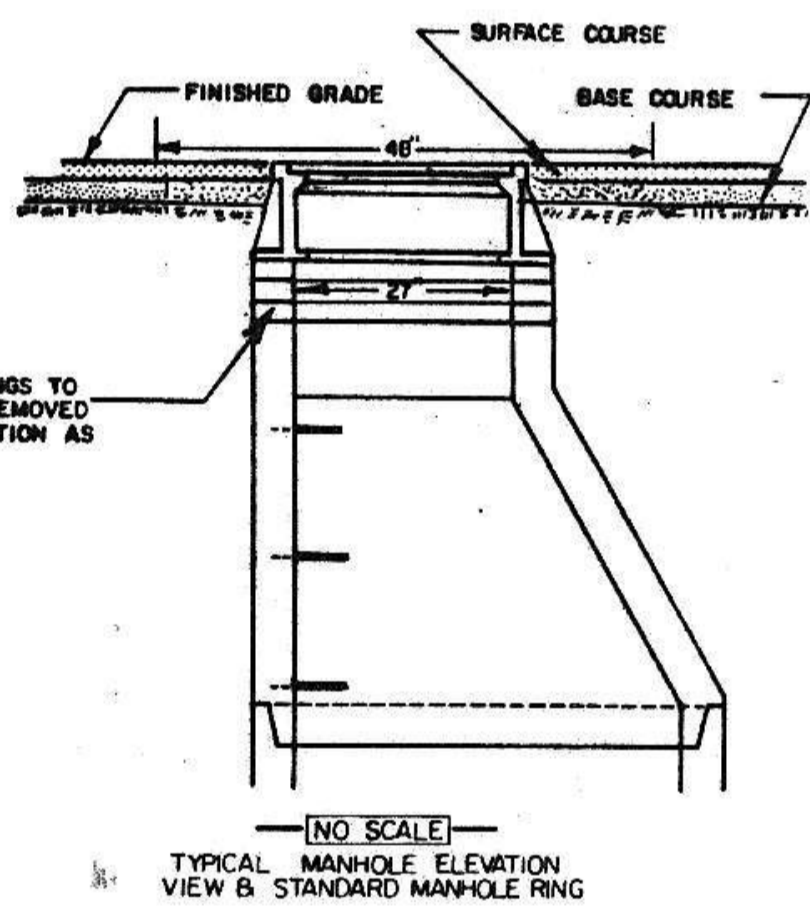
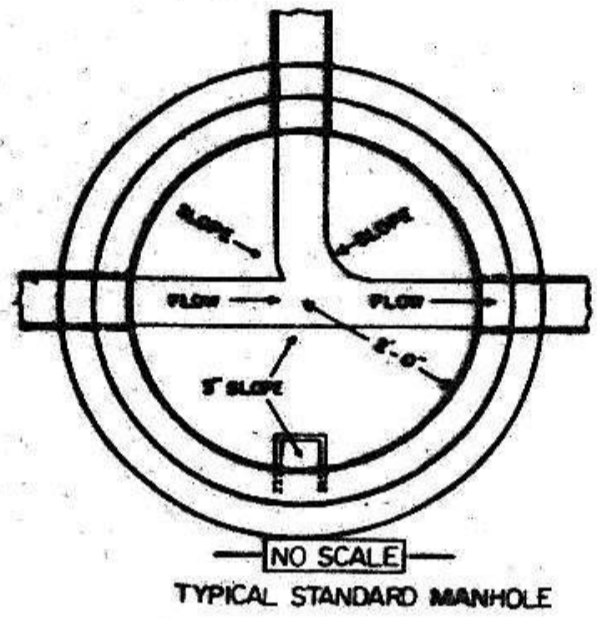
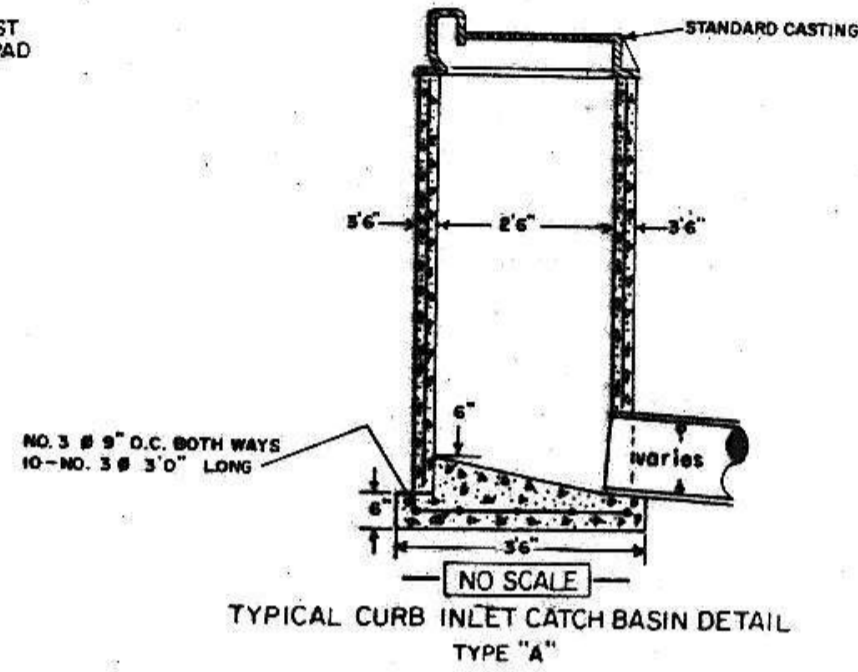
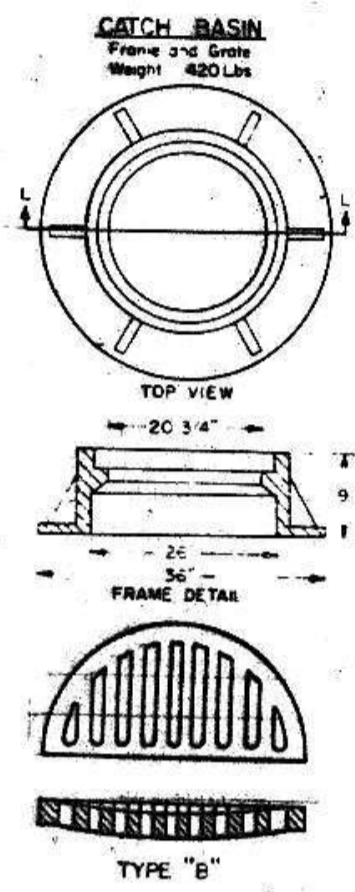
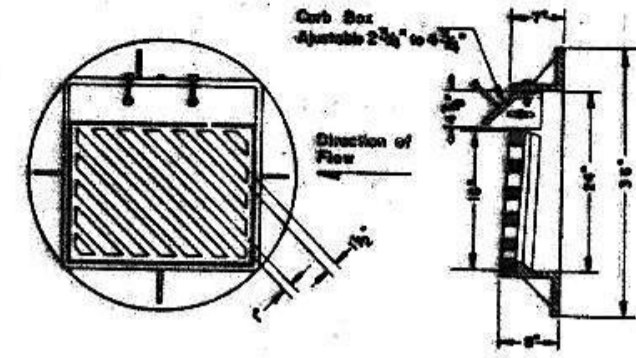
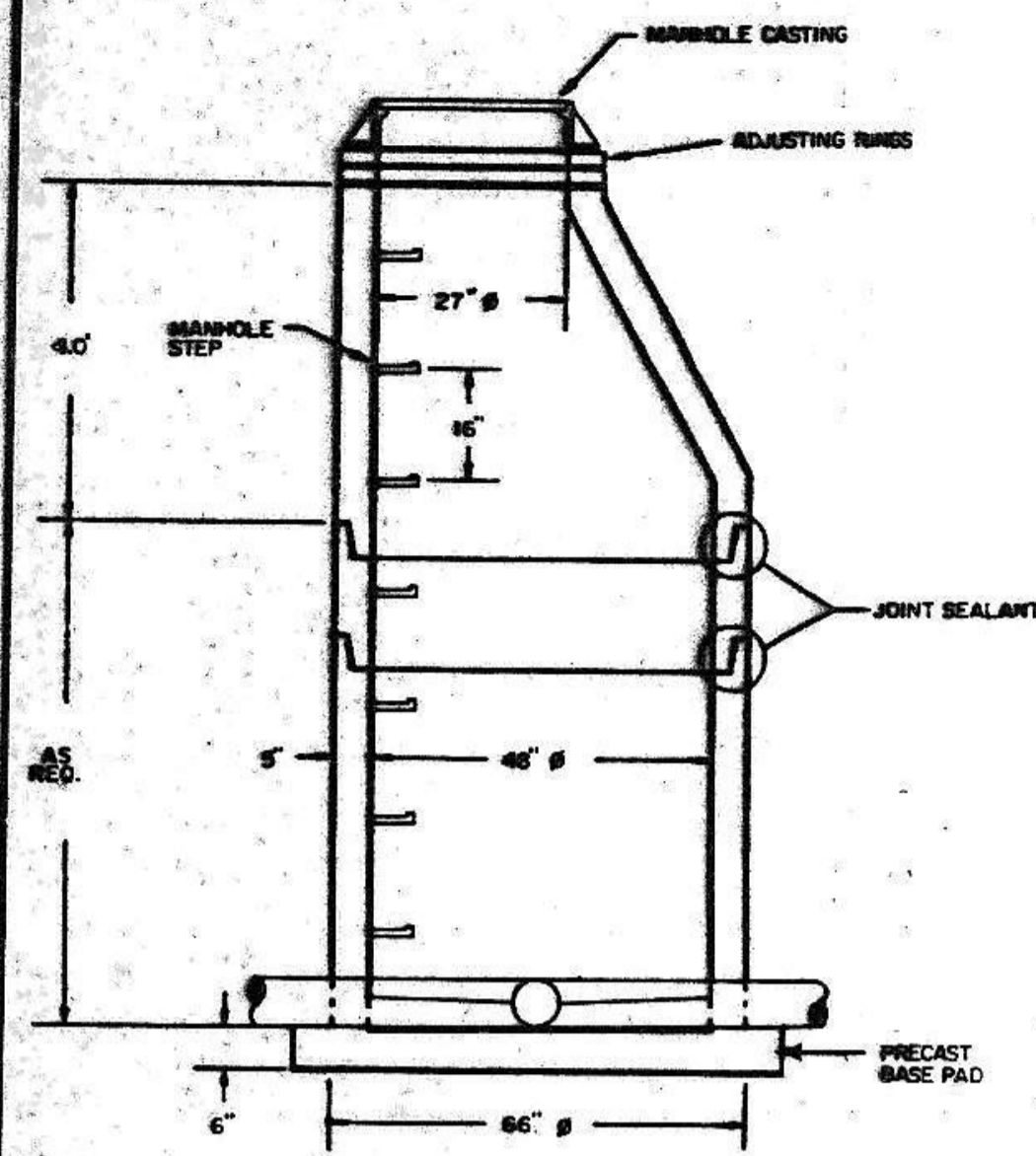


**CAUTION**  
LOCATE ALL BURIED  
UTILITIES BEFORE DIGGING.  
**OVER HEAD POWER**

PLAN  
 SURVEYED, AS-BUILT, CORRECTIONS BY JPH  
 NOTE BOOK ALIGNED, CHECKED  
 RT. OF WAY CHECKED  
 NO.

PROFILE  
 DATE  
 BY  
 CHECKED  
 GRADES CHECKED  
 B. M. NOTED  
 NO.





TOMAH ENGINEERING COMPANY  
CONSULTING CIVIL & ENVIRONMENTAL ENGINEERS  
Mandan, North Dakota 58554

PROJECT: STREET IMPROVEMENT DISTRICT NO. 81 MANDAN, NORTH DAKOTA

NO.	DATE	BY	REVISIONS

TITLE: DETAIL SHEET  
SHEET NUMBER: OF SHEETS

**LONGSPUR TRAIL S. E.**

AREA I

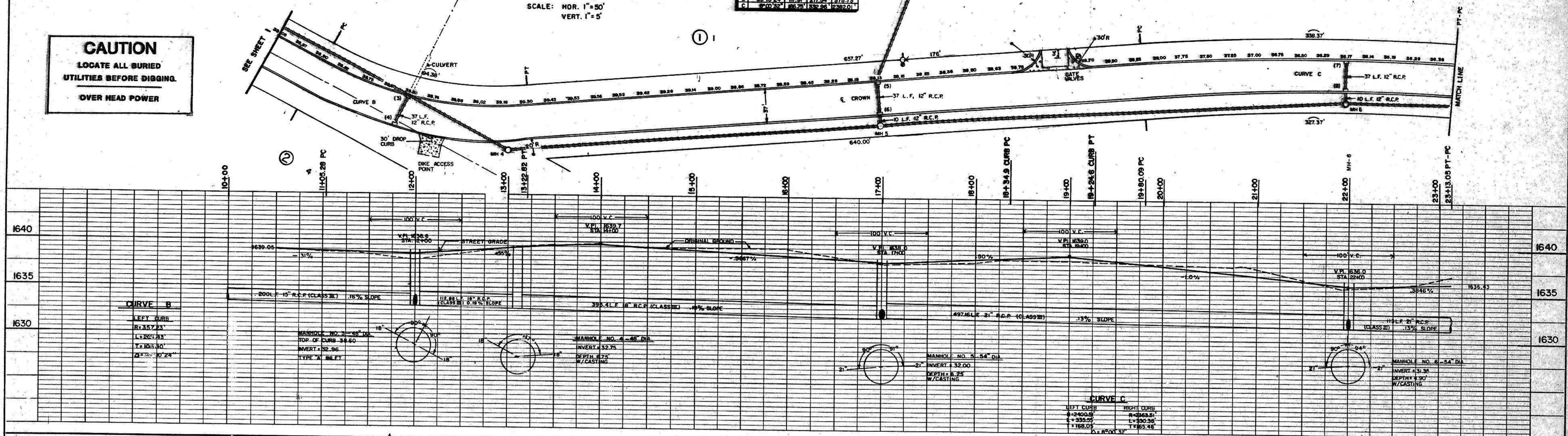
☉ CURVE DATA

Curve	A	B	C	D	E	F	G	H
B	33°10'24"	111.91'	217.54'	375.73'				
C	8°40'52"	105.71'	159.25'	232.01'				

SCALE: HOR. 1"=50'  
VERT. 1"=5'

**CAUTION**  
LOCATE ALL BURIED UTILITIES BEFORE DIGGING.  
OVER HEAD POWER

DATE: 1-9-11  
BY: [Signature]  
REVISIONS:  
NO. 1: AS-BUILT CORRECTIONS  
NO. 2: ALIGNMENT CHECKED  
NO. 3: UTILITY NOTES CHECKED



**CURVE B**

LEFT CURB	R=357.23'
RIGHT CURB	R=357.23'
LC BEG. STA.	11+405.28 PC
LC END. STA.	12+405.28 PC
LC CHORD BEG. STA.	11+405.28 PC
LC CHORD END. STA.	12+405.28 PC

**CURVE C**

LEFT CURB	R=2400.00'
RIGHT CURB	R=2400.00'
LC BEG. STA.	17+000.00 PC
LC END. STA.	18+400.00 PC
LC CHORD BEG. STA.	17+000.00 PC
LC CHORD END. STA.	18+400.00 PC

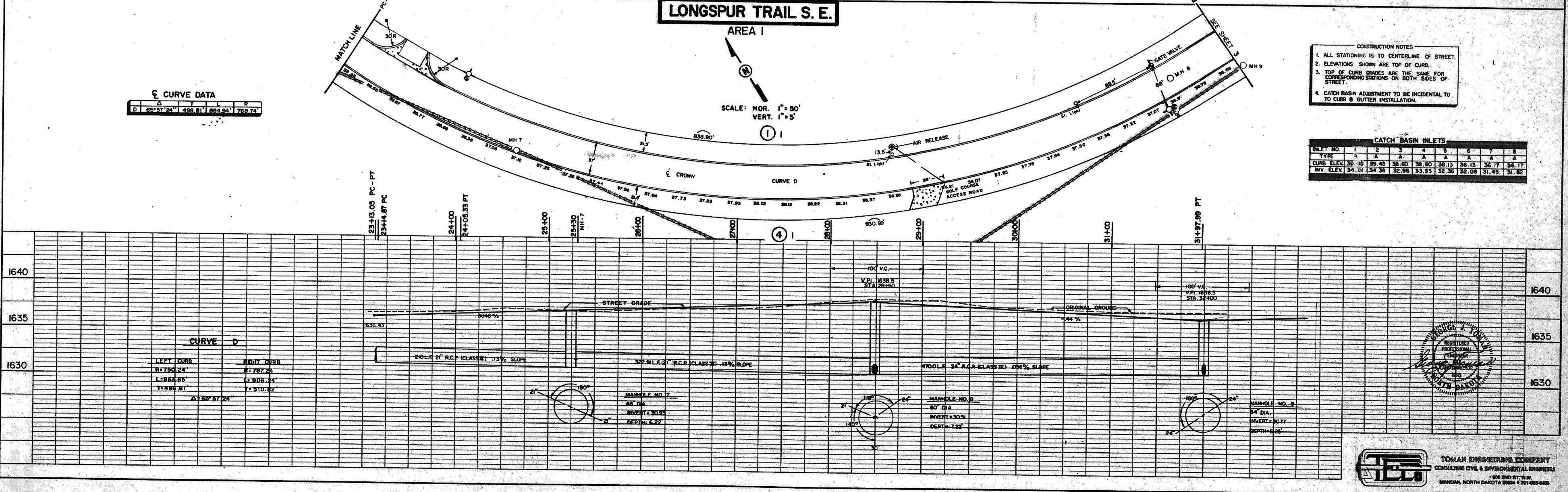
**LONGSPUR TRAIL S. E.**

AREA I

SCALE: HOR. 1"=50'  
VERT. 1"=5'

- CONSTRUCTION NOTES
1. ALL STATIONING IS TO CENTERLINE OF STREET.
  2. ELEVATIONS SHOWN ARE TOP OF CURB.
  3. TOP OF CURB GRADES ARE THE SAME FOR CORRESPONDING STATIONS ON BOTH SIDES OF STREET.
  4. CATCH BASIN ADJUSTMENT TO BE INCIDENTAL TO CURB & GUTTER INSTALLATION.

DATE: 1-9-11  
BY: [Signature]  
REVISIONS:  
NO. 1: AS-BUILT CORRECTIONS  
NO. 2: ALIGNMENT CHECKED  
NO. 3: UTILITY NOTES CHECKED



☉ CURVE DATA

Curve	A	B	C	D	E	F	G	H
D	65°57'24"	498.81'	884.94'	758.74'				

**CURVE D**

LEFT CURB	R=750.24'
RIGHT CURB	R=750.24'
LC BEG. STA.	23+13.05 PC-PT
LC END. STA.	24+403.33 PT
LC CHORD BEG. STA.	23+13.05 PC-PT
LC CHORD END. STA.	24+403.33 PT

CATCH BASIN INLETS

Inlet No.	1	2	3	4	5	6	7	8
TYPE	A	A	A	A	A	A	A	A
CURB ELEV.	36.33	39.48	38.60	38.80	38.13	38.13	36.17	35.11
INV. ELEV.	34.01	34.38	32.96	33.33	32.36	32.08	31.45	31.82



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**LONGSPUR TRAIL S.E.**

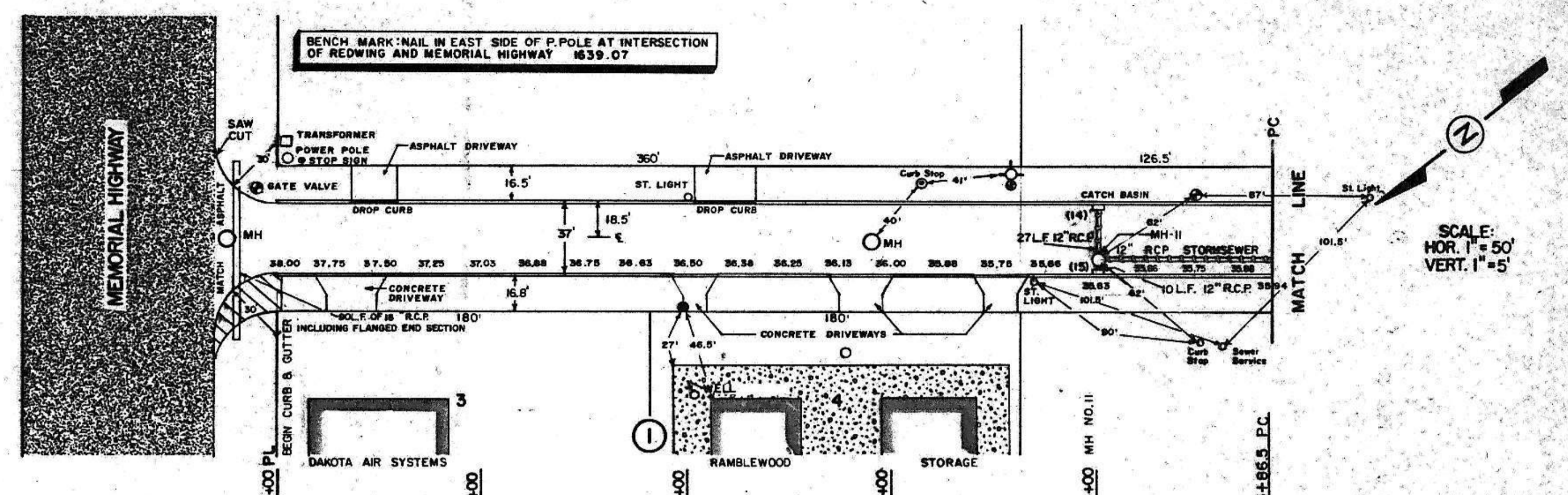
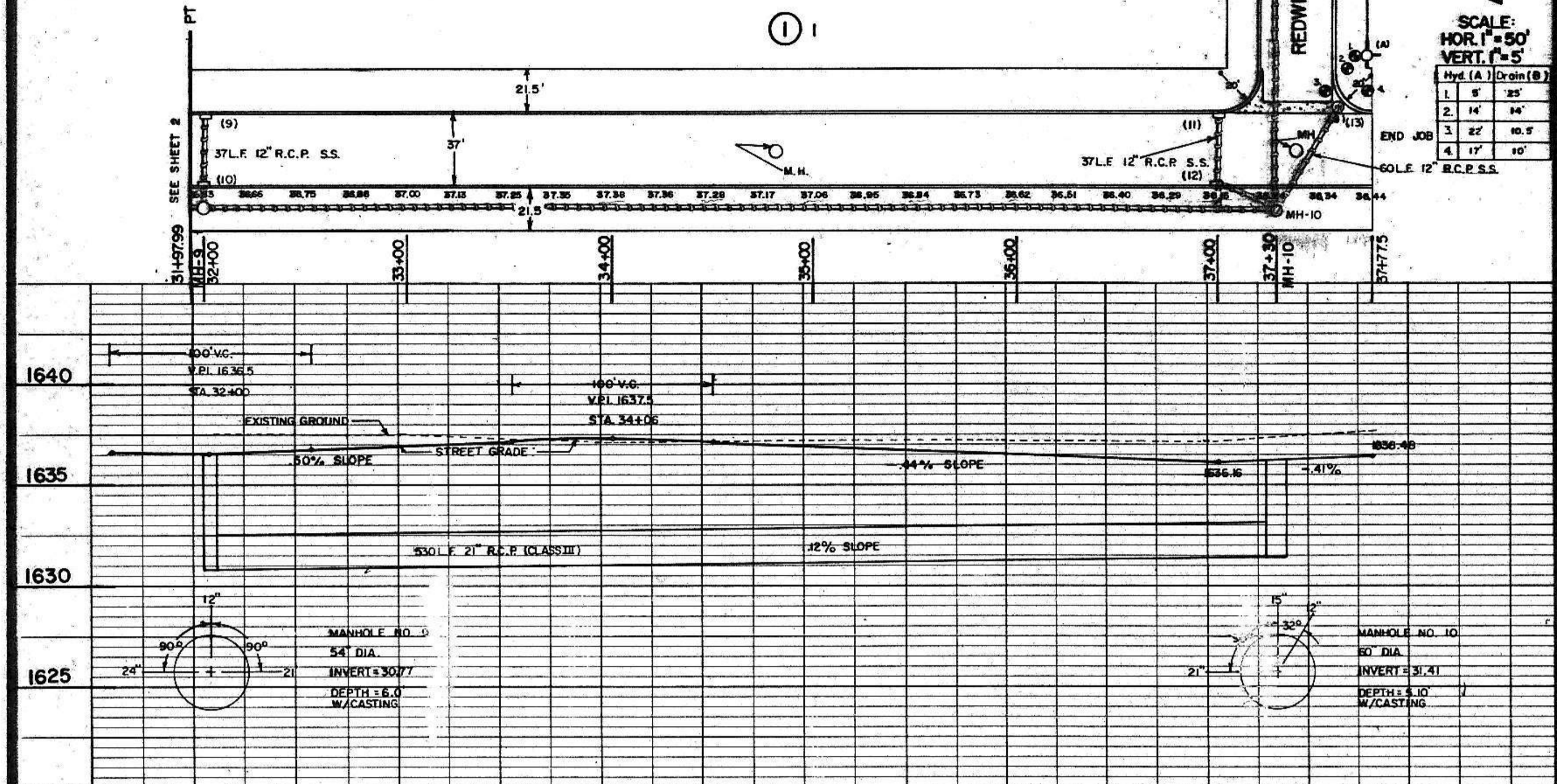
**REDWING DRIVE S.E.**

**CONSTRUCTION NOTES**  
 1. ALL STATIONING IS TO CENTERLINE OF STREET.  
 2. ELEVATIONS SHOWN ARE TOP OF CURB GRADES.  
 3. EXISTING CULVERT TO BE REMOVED AND REMAIN PROPERTY OF OWNER.

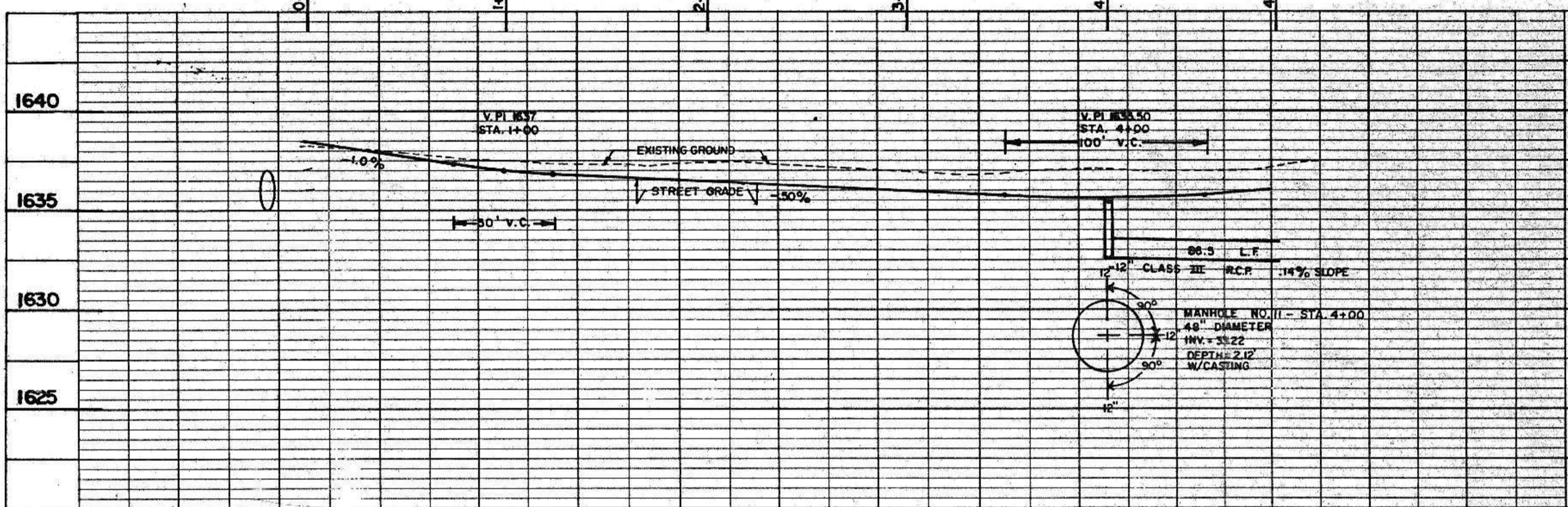
SEE THIS SHEET

SCALE: HOR. 1" = 50'  
 VERT. 1" = 5'

1	5'	25'
2	14'	34'
3	22'	10.7'
4	17'	10.7'



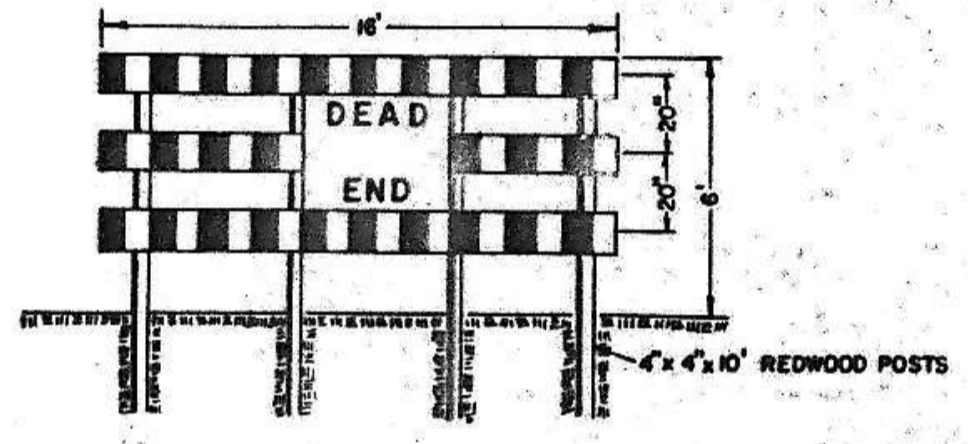
SCALE: HOR. 1" = 50'  
 VERT. 1" = 5'



**REDWING DRIVE S.E.**

**CAUTION**  
 LOCATE ALL BURIED UTILITIES BEFORE DIGGING.  
 OVER HEAD POWER

BENCH MARK: NORTH MOST FLANGE BOLT, HYDRANT AT INTERSECTION OF REDWING DR. AND LONGSPUR TRAIL 1636.33



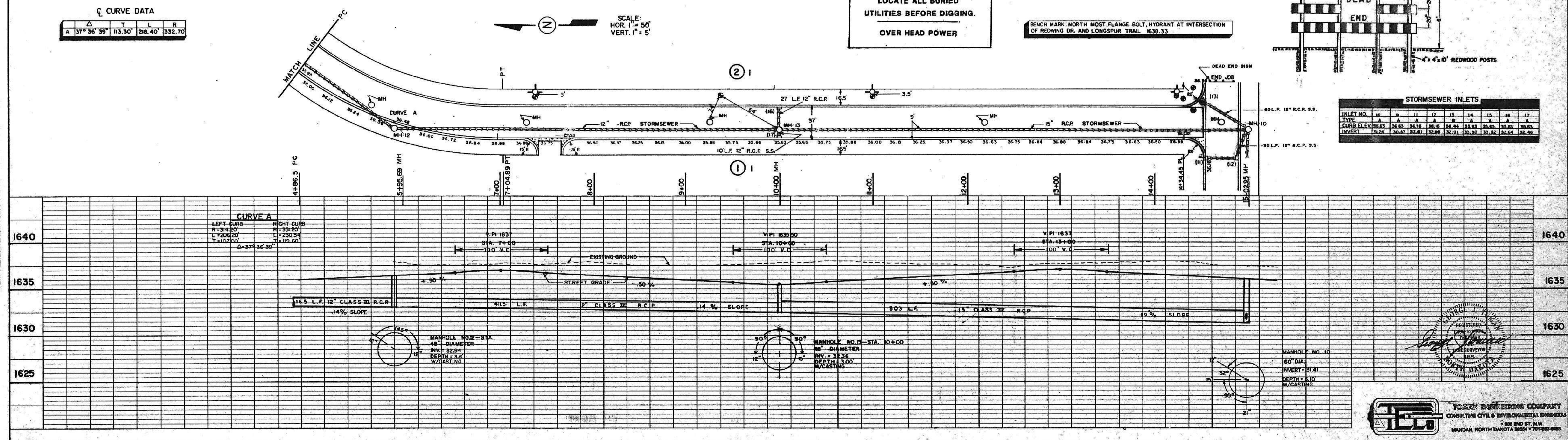
**STORMSEWER INLETS**

INLET NO.	TYPE	10	11	12	13	14	15	16	17
	A	A	A	A	A	A	A	A	A
		26.83	26.83	26.16	26.16	26.44	25.83	25.83	25.83
		30.24	30.67	32.61	32.98	32.01	33.30	33.32	32.64

**Q CURVE DATA**

Δ	T	L	R
A	37° 36' 39"	113.30'	288.40' 332.70'

SCALE: HOR. 1" = 50'  
 VERT. 1" = 5'



PLAN  
 SURVEYED, AS-BUILT CORRECTIONS, BY [ ]  
 ALIGNMENT CHECKED, BY [ ]  
 ST. OF WAY CHECKED, BY [ ]

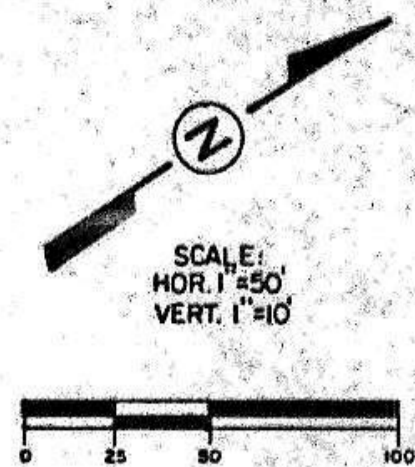
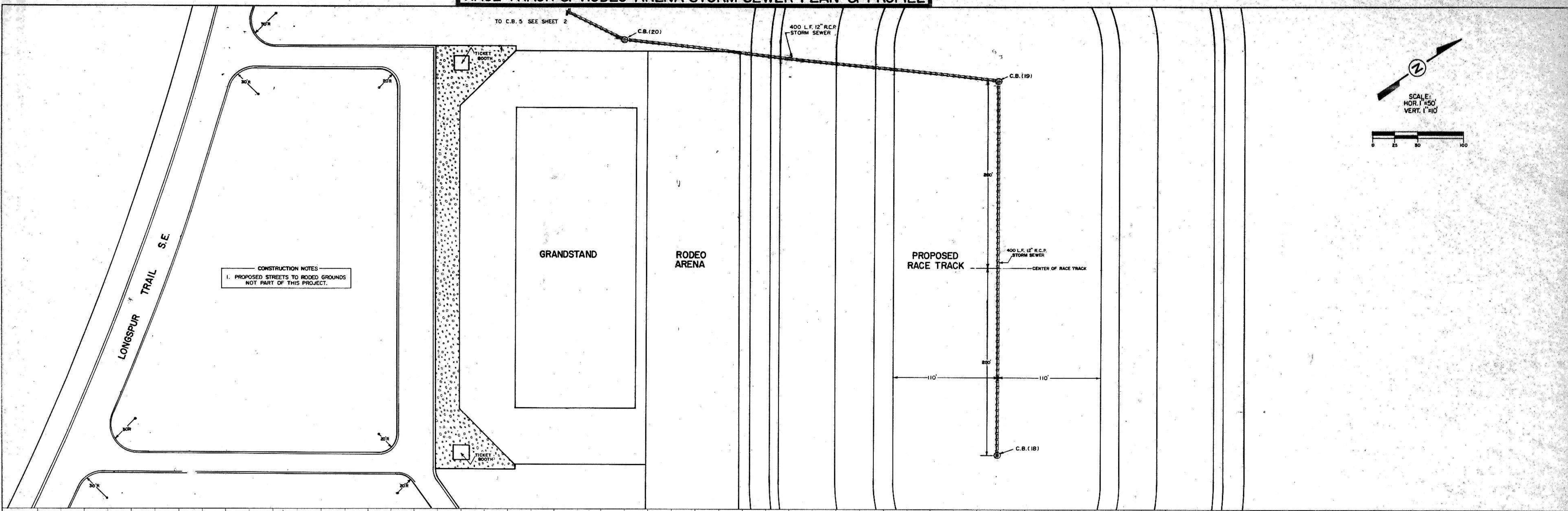
PROFILE  
 SURVEYED, AS-BUILT CORRECTIONS, BY [ ]  
 GRADES CHECKED, BY [ ]  
 STRUCTURE INSTALLATIONS CHECKED, BY [ ]



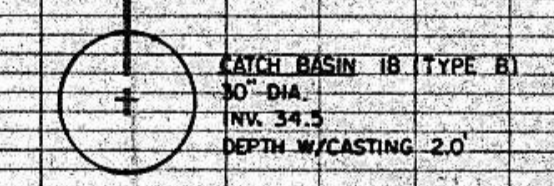
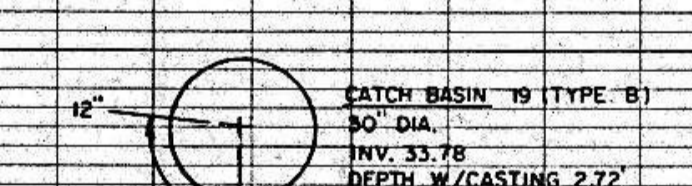
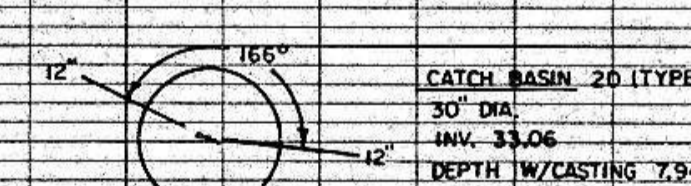
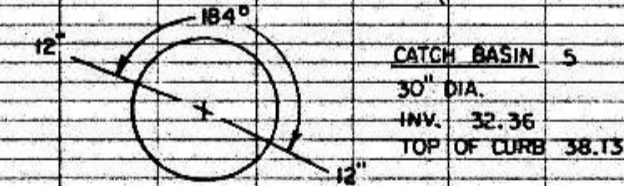
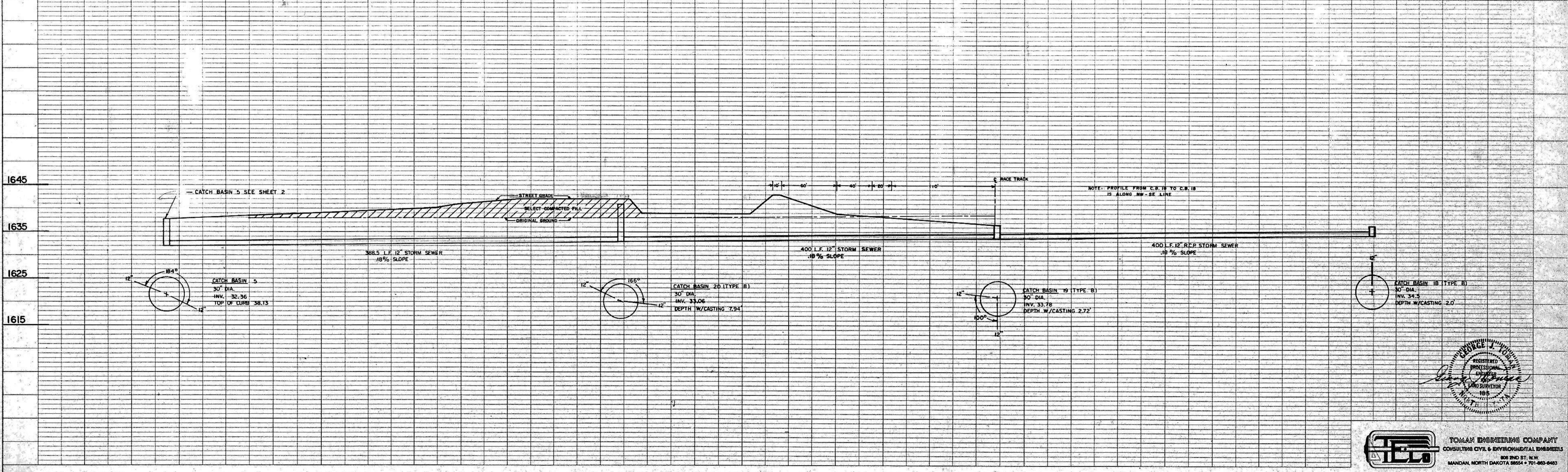
**RACE TRACK & RODEO ARENA STORM SEWER PLAN & PROFILE**

PLAN  
 REVISED AS-BUILT CORRECTIONS  
 DATE: 1-91  
 BY: JRM

PROFILE  
 REVISED AS-BUILT CORRECTIONS  
 DATE: 1-91  
 BY: JRM



CONSTRUCTION NOTES  
 1. PROPOSED STREETS TO RODEO GROUNDS NOT PART OF THIS PROJECT.

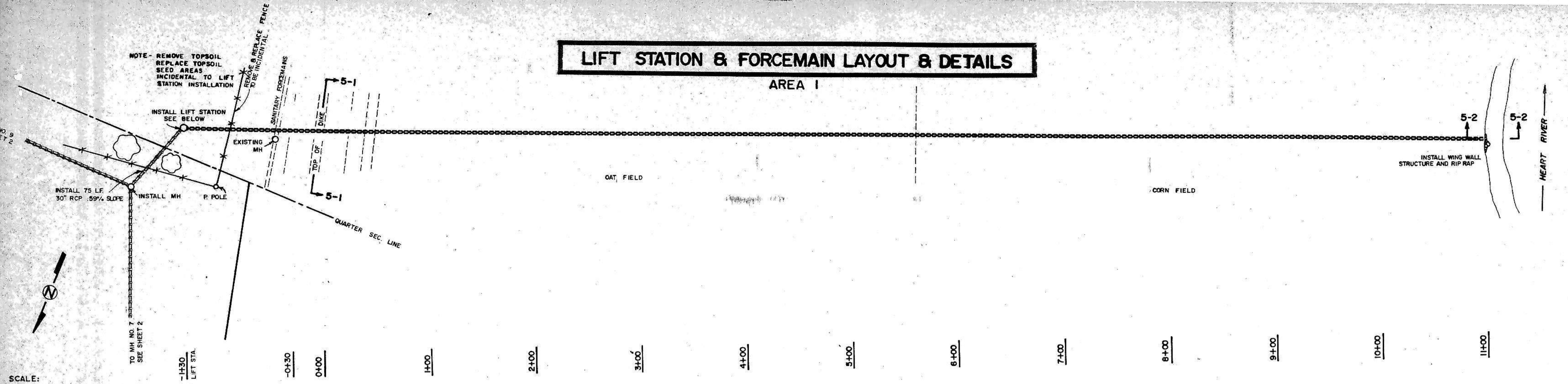


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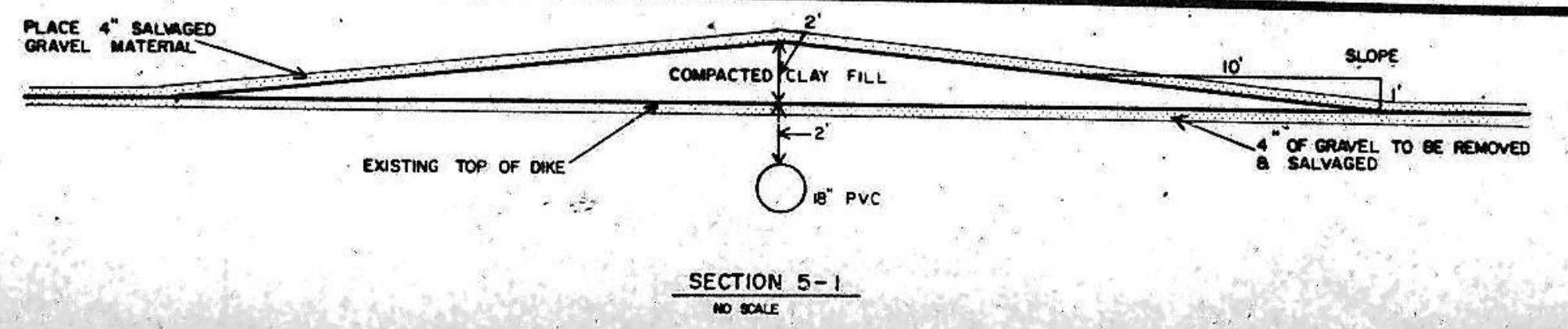
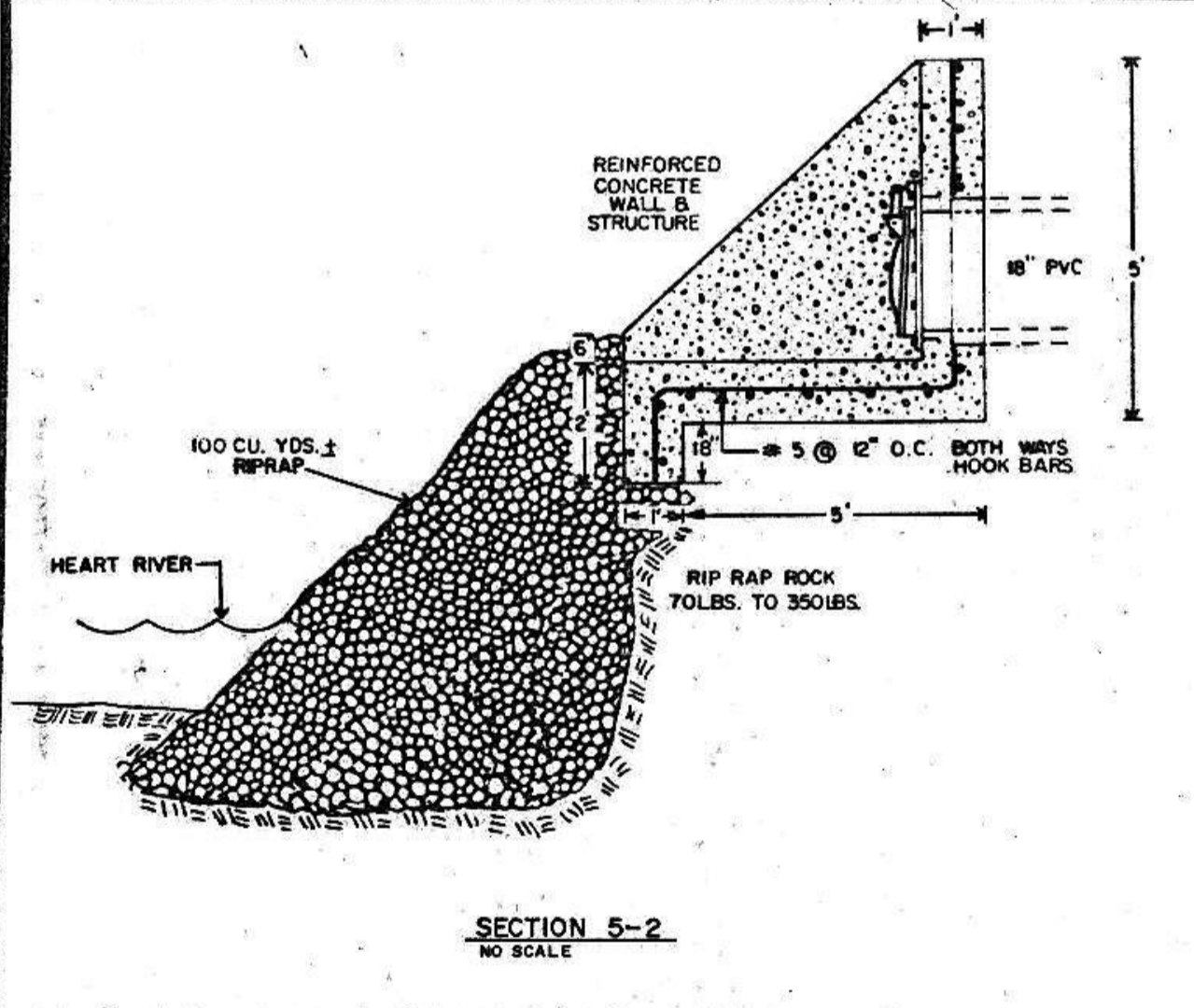
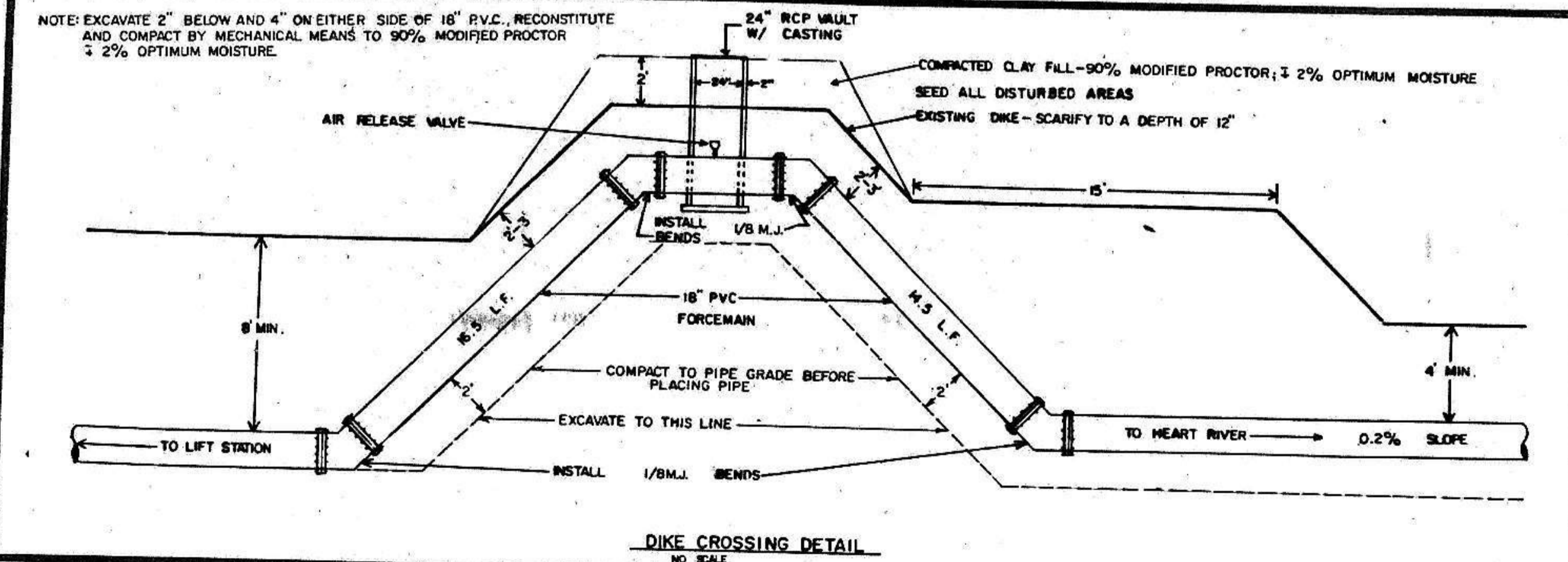
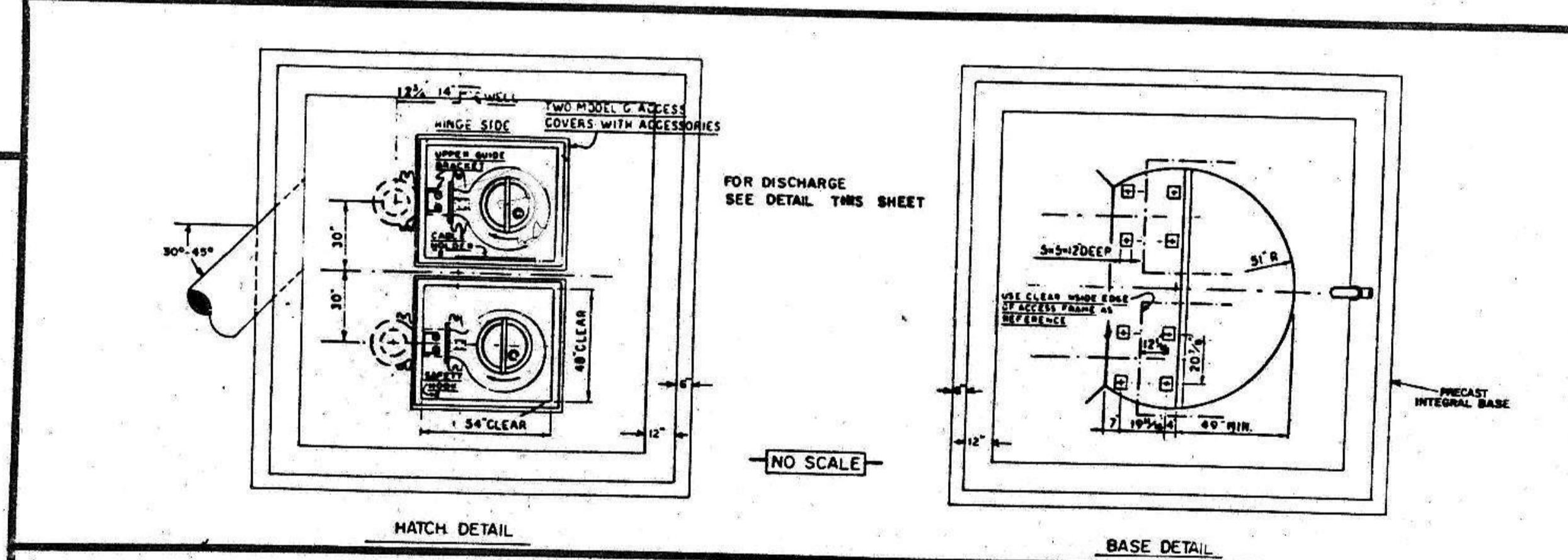
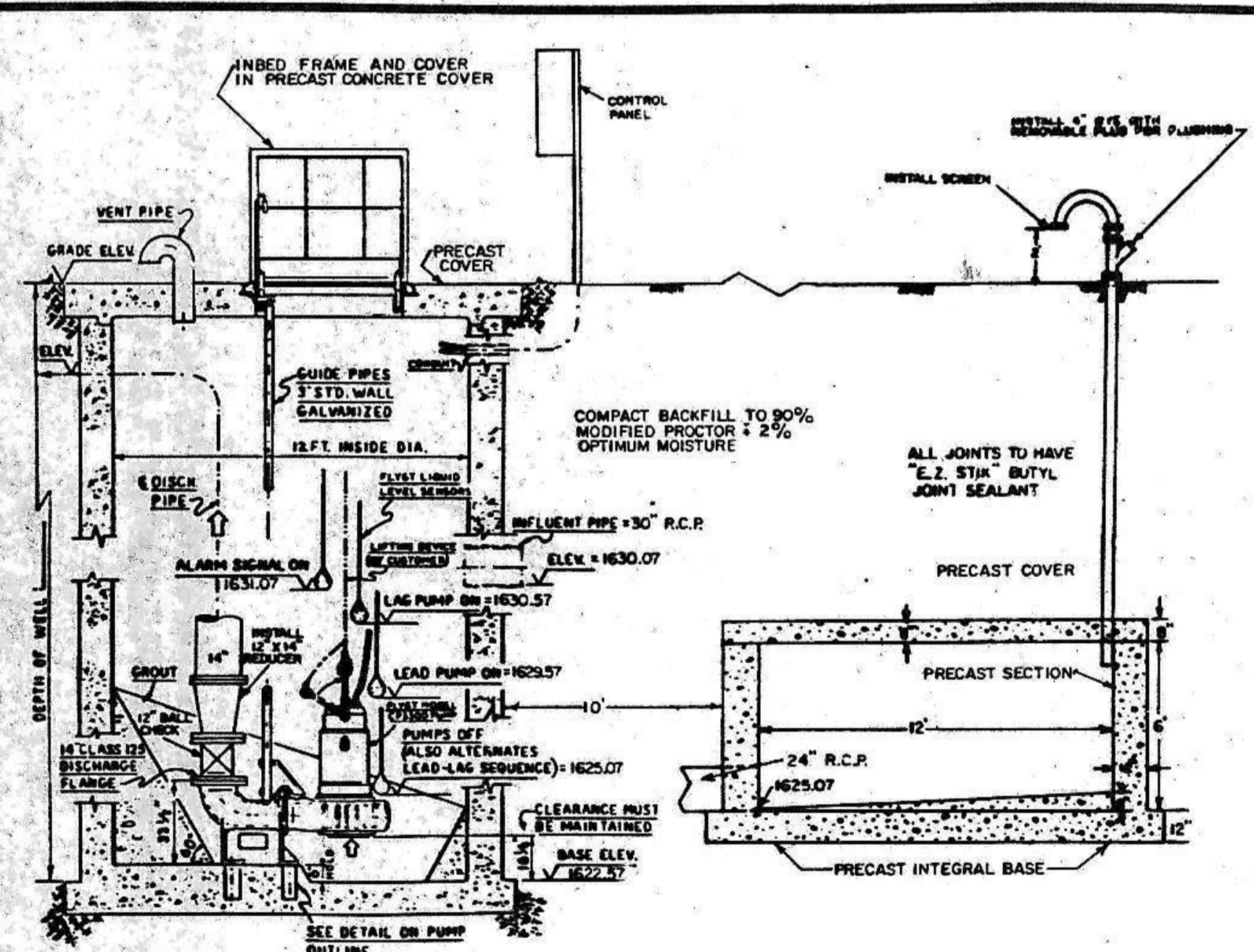
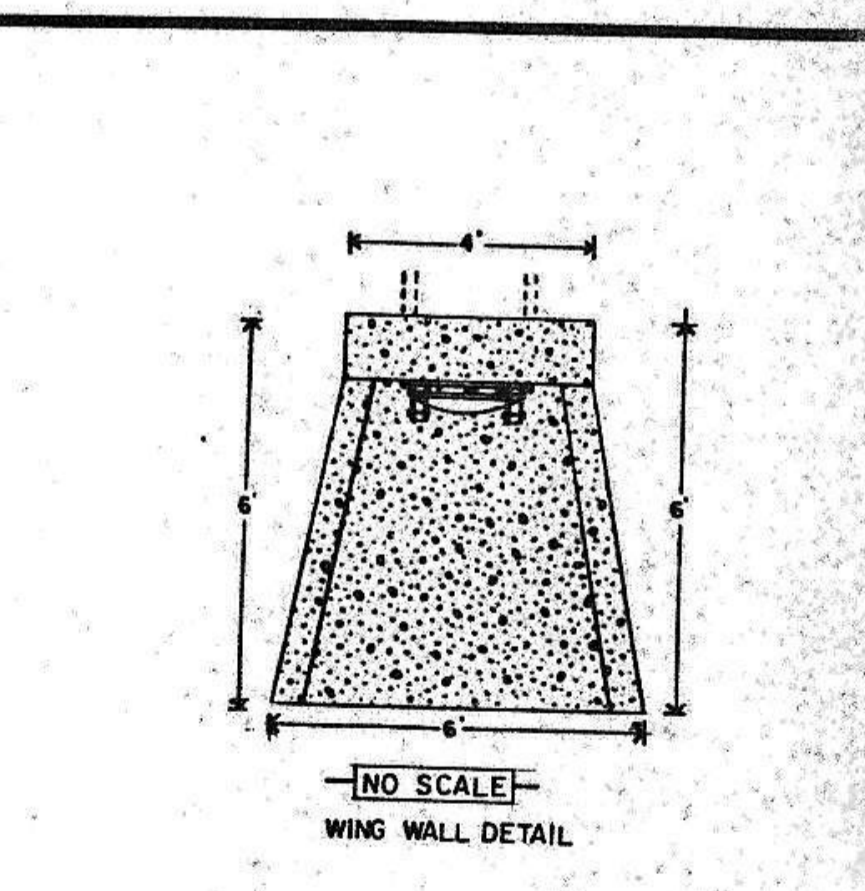
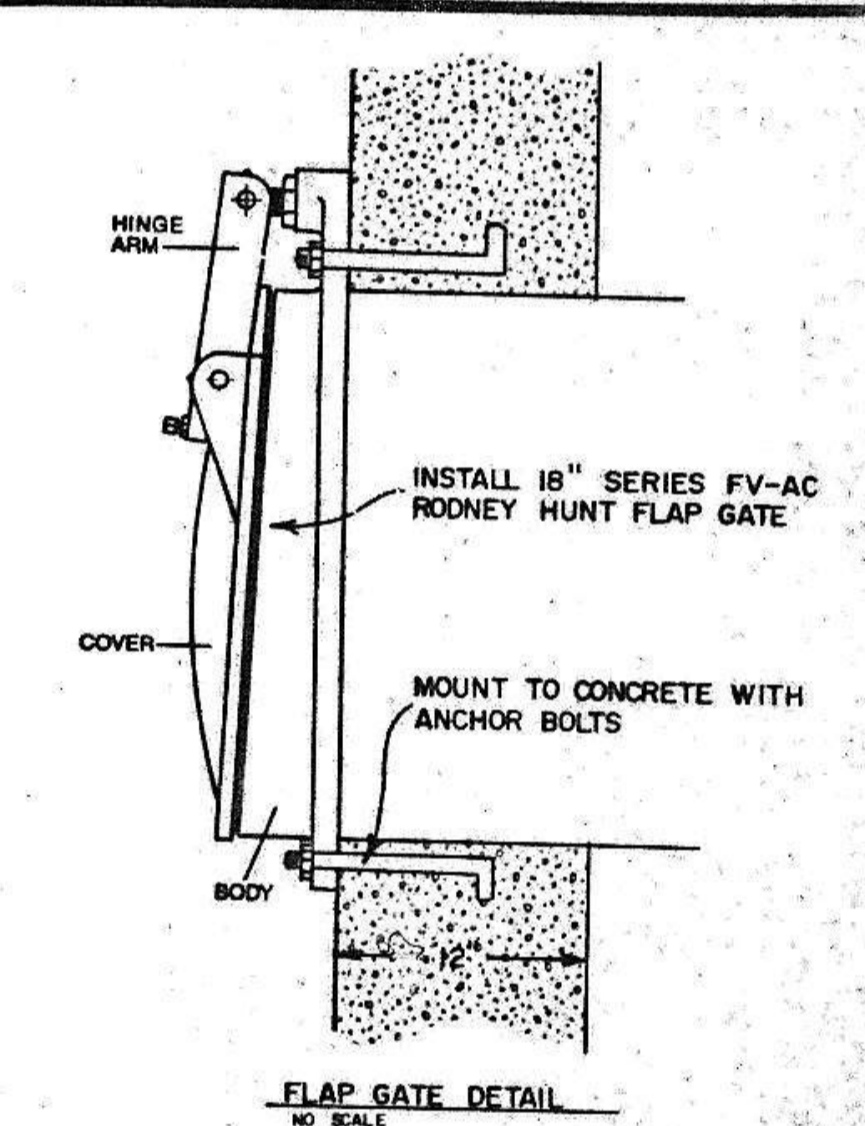
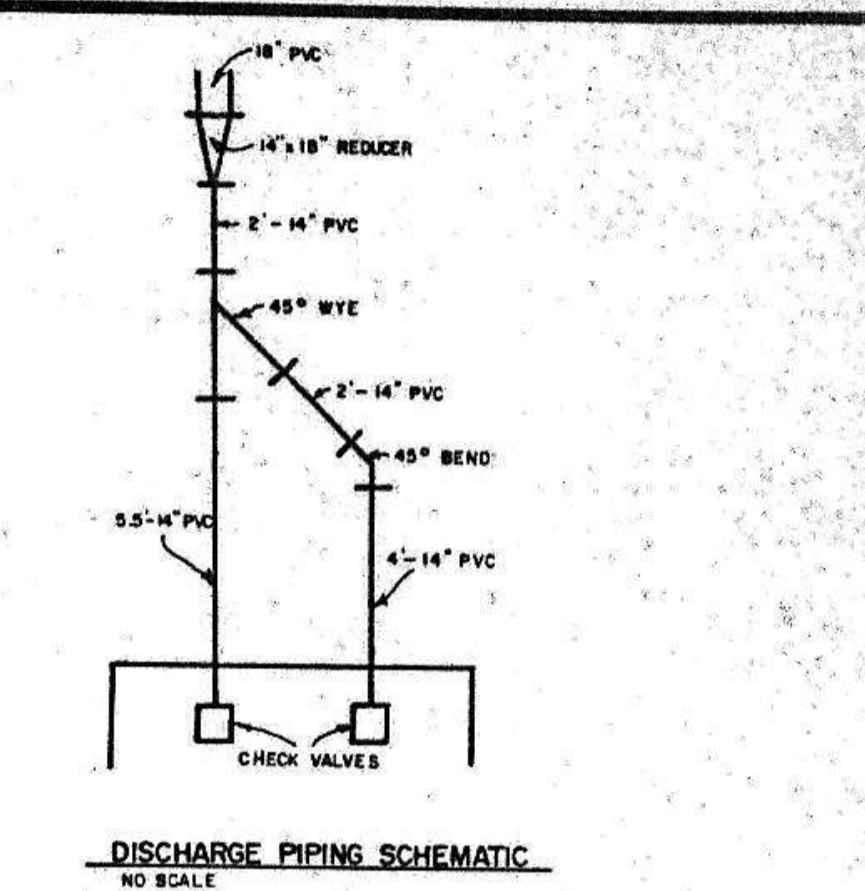
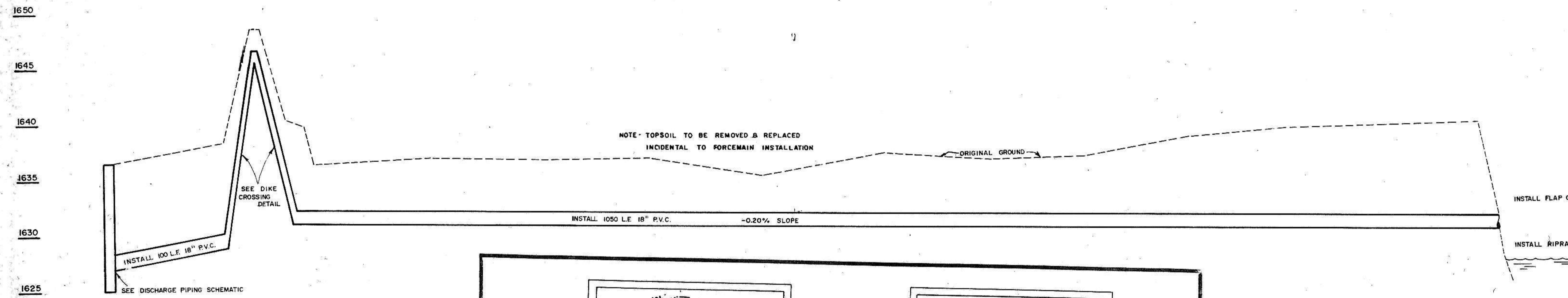
# LIFT STATION & FORCEMAIN LAYOUT & DETAILS

AREA I

**CAUTION**  
 LOCATE ALL BURIED UTILITIES BEFORE DIGGING.  
 OVER HEAD POWER



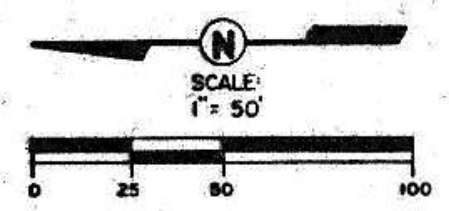
SCALE:  
 HOR. 1" = 50'  
 VERT. 1" = 5'



**TOMAN ENGINEERING COMPANY**  
 CONSULTING CIVIL & ENVIRONMENTAL ENGINEERS  
 P.O. BOX 708 • 808 2ND ST. N.W.  
 GRAND FORK, NORTH DAKOTA 58004 • 701-783-6483

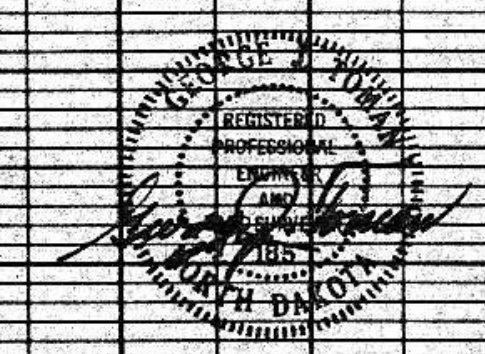
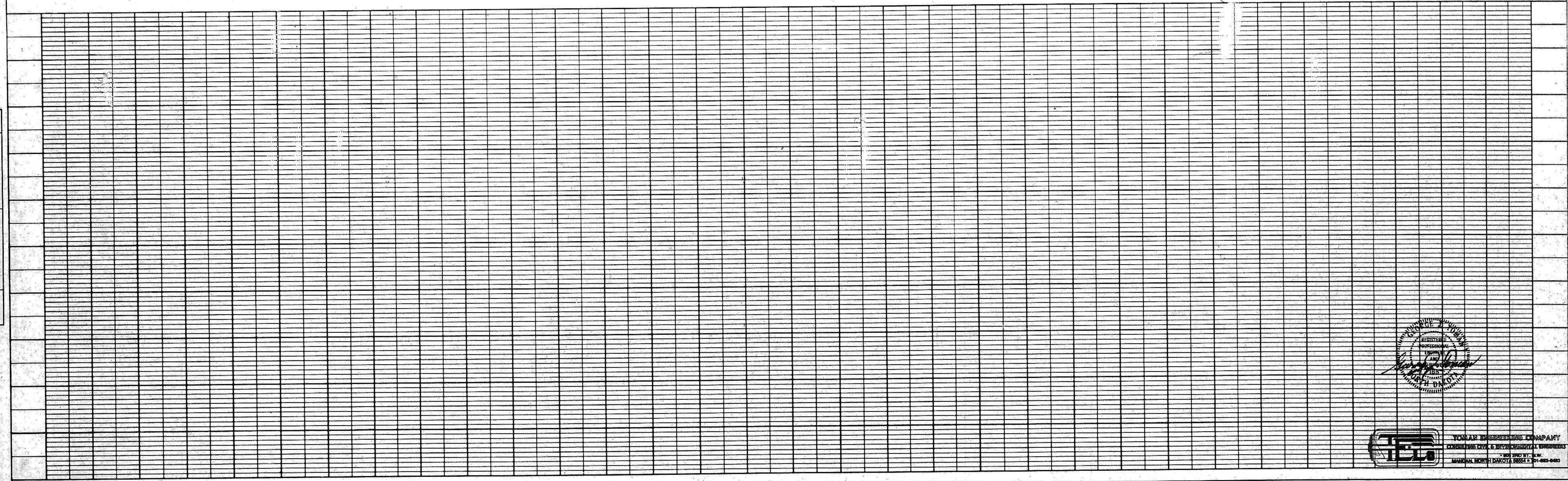
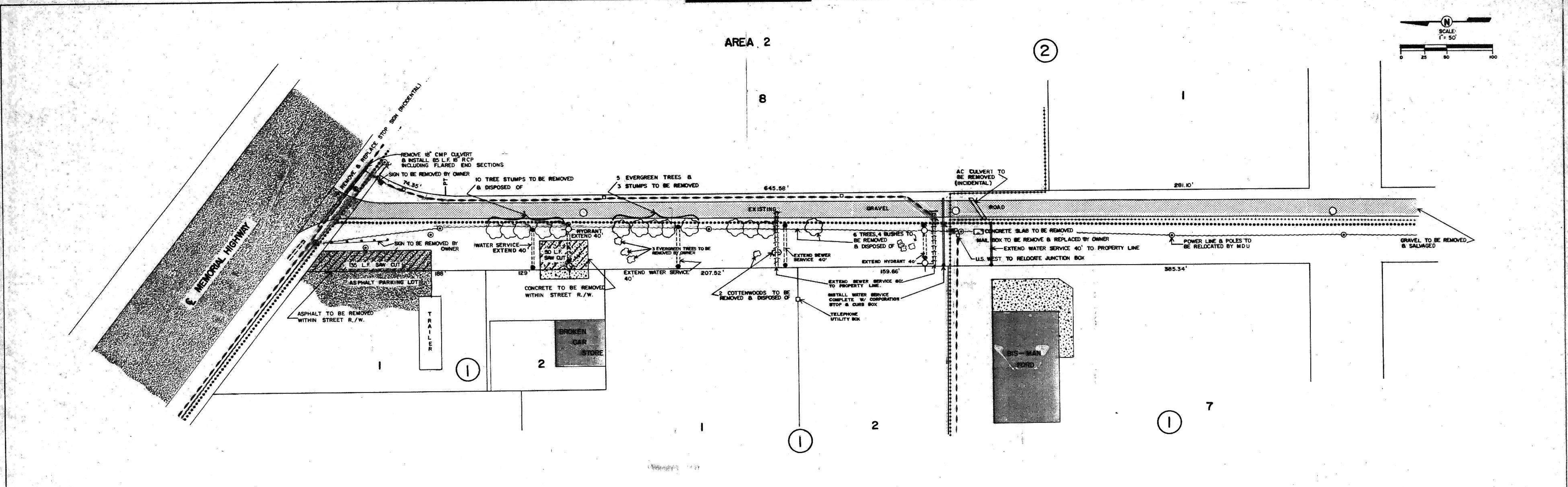


43RD AVE. S.E.



DATE	BY
APPROVED AS-BUILT CORRECTIONS	JRH
PLAN	
NOTE BOOK	
NO. OF MAY CHECKED	
NO.	

DATE	BY
APPROVED AS-BUILT CORRECTIONS	JRH
PROFILE	
NOTE BOOK	
NO. OF MAY CHECKED	
NO.	



**TEC** TOLAN ENGINEERING COMPANY  
 LICENSED PROFESSIONAL ENGINEERS  
 1000 15TH ST. S.W.  
 MINNEAPOLIS, MINN. 55415

43RD AVE. S.E.

AREA 2

**CAUTION**  
LOCATE ALL BURIED UTILITIES BEFORE DIGGING.  
OVER HEAD POWER

**Q CURVE DATA**

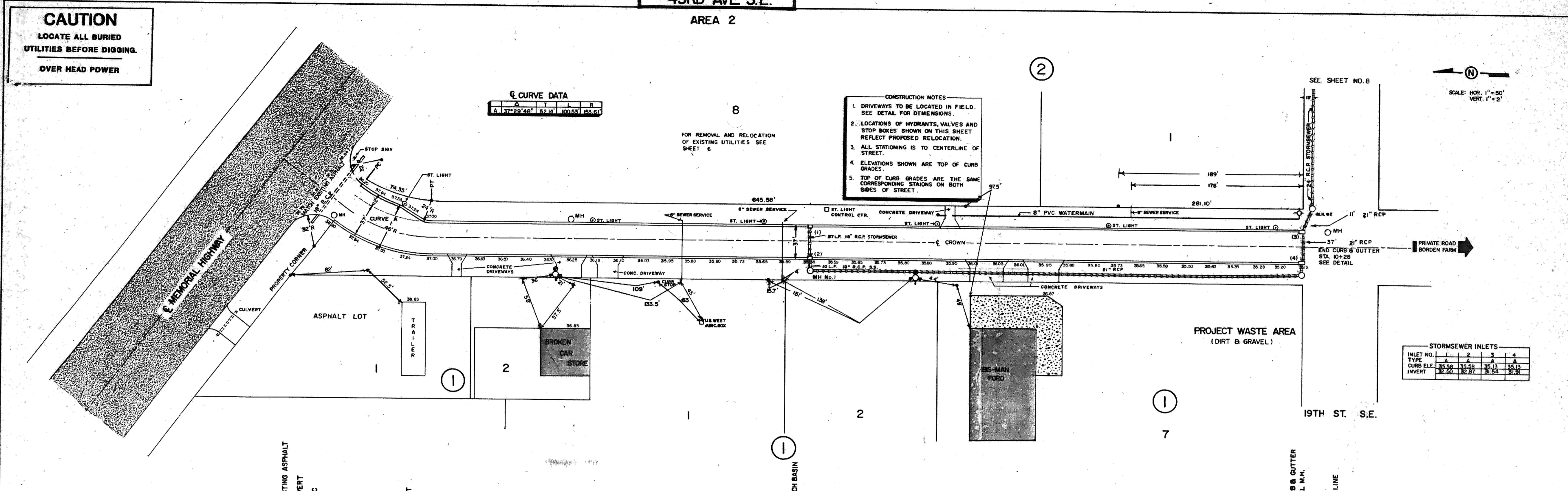
A	Z	R
37°29'48"	52.14'	100.45'

- CONSTRUCTION NOTES**
1. DRIVEWAYS TO BE LOCATED IN FIELD. SEE DETAIL FOR DIMENSIONS.
  2. LOCATIONS OF HYDRANTS, VALVES AND STOP SIGNS SHOWN ON THIS SHEET REFLECT PROPOSED RELOCATION.
  3. ALL STATIONING IS TO CENTERLINE OF STREET.
  4. ELEVATIONS SHOWN ARE TOP OF CURB GRADES.
  5. TOP OF CURB GRADES ARE THE SAME CORRESPONDING STATIONS ON BOTH SIDES OF STREET.

SCALE: HOR. 1" = 80'  
VERT. 1" = 2'

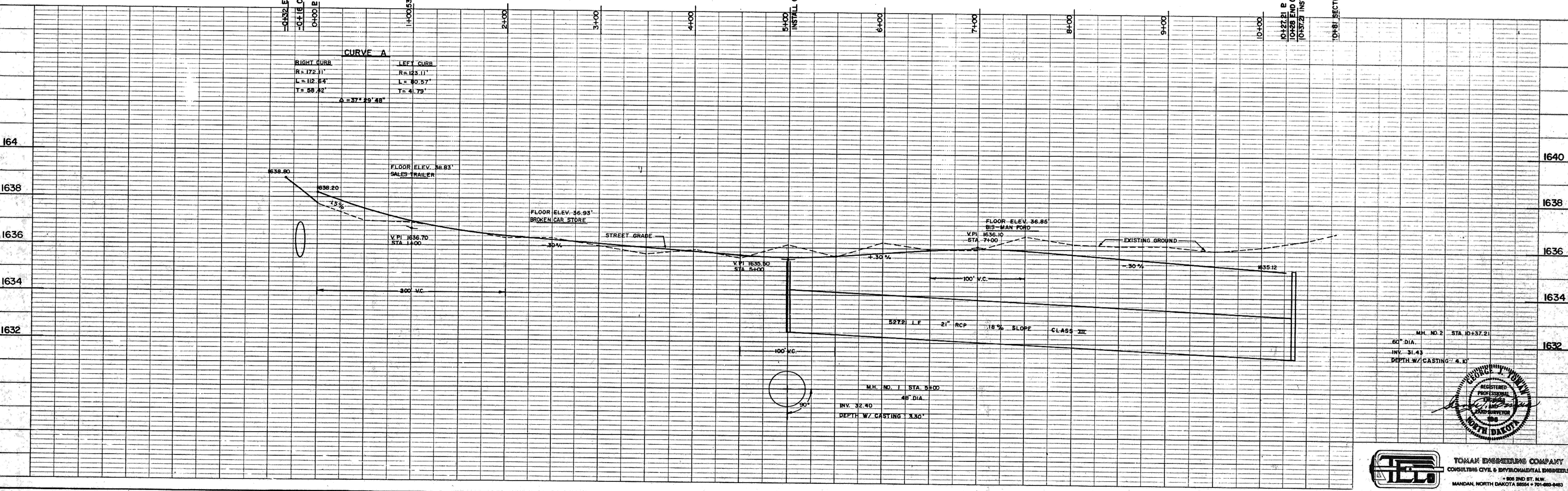
**PLAN**  
SURVEYED, AS-BUILT, CORRECTIONS  
NOTE BOOK, ALIGNMENT CHECKED, BT, OF WM CHECKED.  
NO.

**PROFILE**  
SURVEYED, PLOTTED, GRADES CHECKED, STRUCTURE NOTATION(S) CH'D  
NOTE BOOK, GRADES CHECKED, STRUCTURE NOTATION(S) CH'D  
NO.

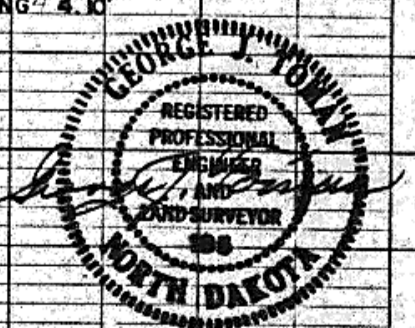


**STORMSEWER INLETS**

INLET NO.	1	2	3	4
TYPE	A	A	A	A
CURB ELE.	35.58	35.58	35.13	35.13
INVERT	32.50	32.87	32.54	31.91



M.H. NO. 2 STA. 10+37.21  
60" DIA.  
INV. -31.43  
DEPTH W/ CASTING 4.0'



**TOMAR ENGINEERING COMPANY**  
CONSULTING CIVIL & ENVIRONMENTAL ENGINEERS  
803 2ND ST. N.W.  
MANDAN, NORTH DAKOTA 58544 • 701-663-9465

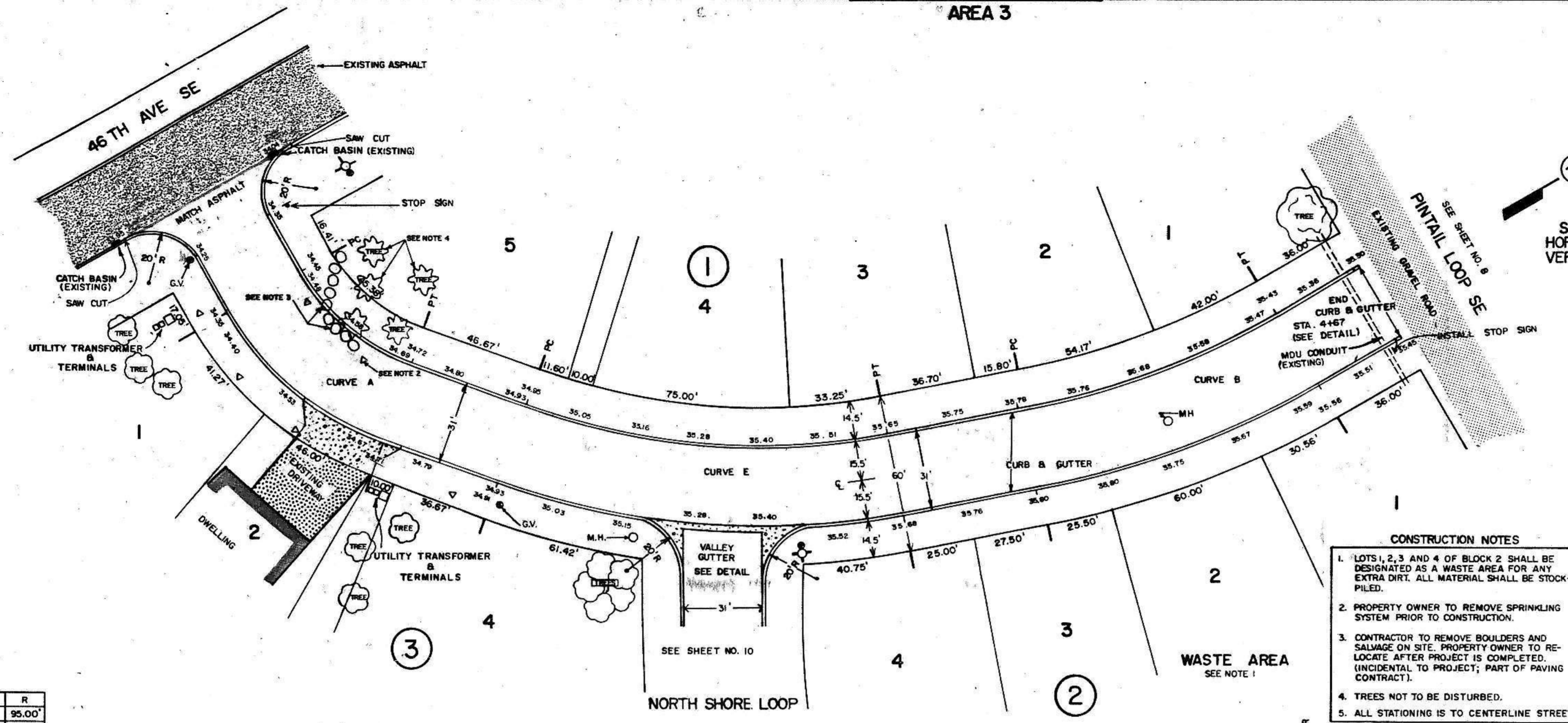


**BAYSIDE DRIVE S. E.**

AREA 3

**CAUTION**  
LOCATE ALL BURIED UTILITIES BEFORE DIGGING.  
OVER HEAD POWER

SCALE:  
HOR. 1" = 30'  
VERT. 1" = 2'



**☉ CURVE DATA**

	Δ	T	L	R
A	40° 00' 00"	34.56'	66.32'	95.00'
B	19° 00' 00"	53.55'	106.12'	320.00'
E	31° 00' 00"	74.88'	146.08'	270.00'

**CONSTRUCTION NOTES**

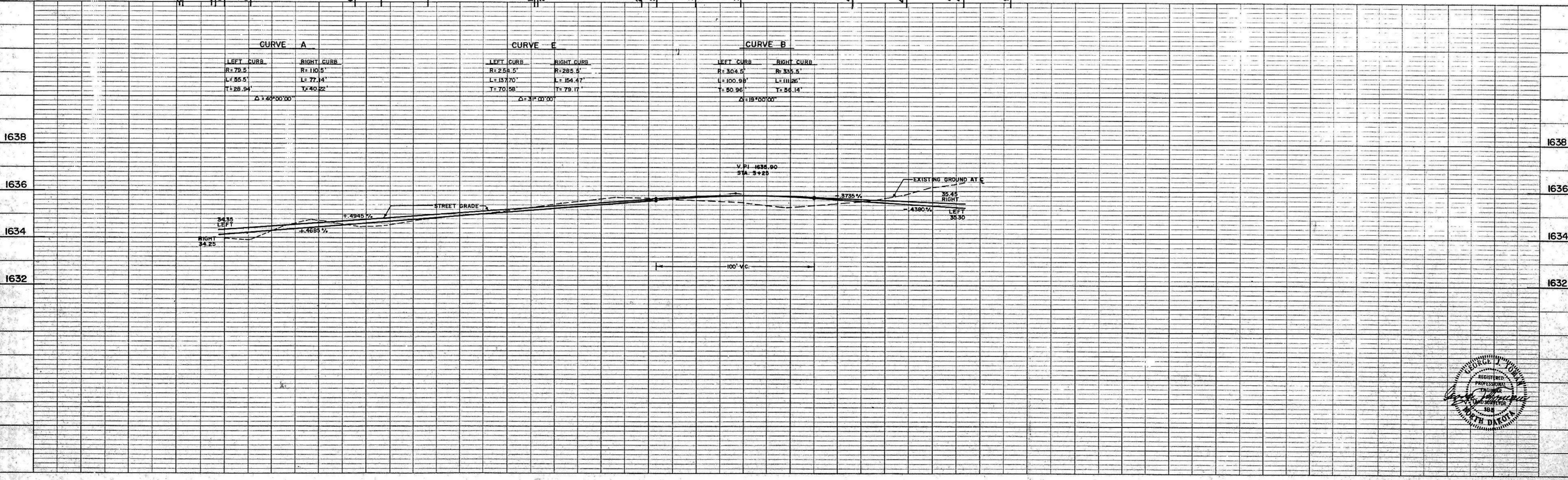
- LOTS 1, 2, 3 AND 4 OF BLOCK 2 SHALL BE DESIGNATED AS A WASTE AREA FOR ANY EXTRA DIRT. ALL MATERIAL SHALL BE STOCK-PILED.
- PROPERTY OWNER TO REMOVE SPRINKLING SYSTEM PRIOR TO CONSTRUCTION.
- CONTRACTOR TO REMOVE BOULDERS AND SALVAGE ON SITE. PROPERTY OWNER TO RE-LOCATE AFTER PROJECT IS COMPLETED. (INCIDENTAL TO PROJECT; PART OF PAVING CONTRACT).
- TREES NOT TO BE DISTURBED.
- ALL STATIONING IS TO CENTERLINE STREET.

**LEGEND**

- GATE VALVE
- TREES
- EVERGREEN TREES
- EXISTING ASPHALT
- EXISTING GRAVEL ROAD
- CONCRETE
- MANHOLE
- BOULDERS
- UTILITY TRANSFORMER
- UTILITY TERMINAL
- EXISTING CATCH BASIN
- SPRINKLER SYSTEM
- INLET
- STORM SEWER
- HYDRANT
- EXISTING DRIVEWAY
- STREET LIGHT
- M.D.U. GAS LINE
- BURIED TELEPHONE CABLE
- BURIED CABLE T.V.
- BUILDING
- OVERHEAD M.D.U. POWER LINE
- CURB STOP
- PROPOSED CATCH BASIN
- FENCE

**PLAN**  
SURVEYED, AS-BUILT CORRECTIONS, PLOTTED, ALIGNED, CHECKED, NO. OF WAYS CHECKED.

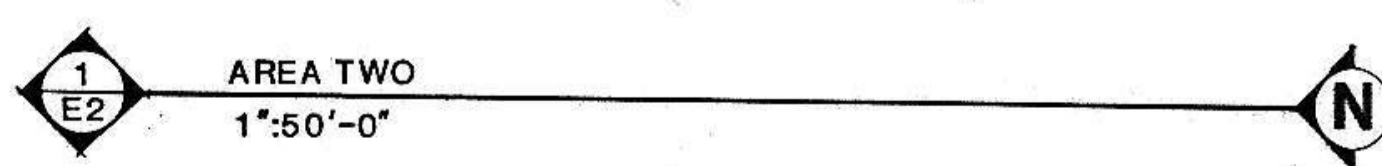
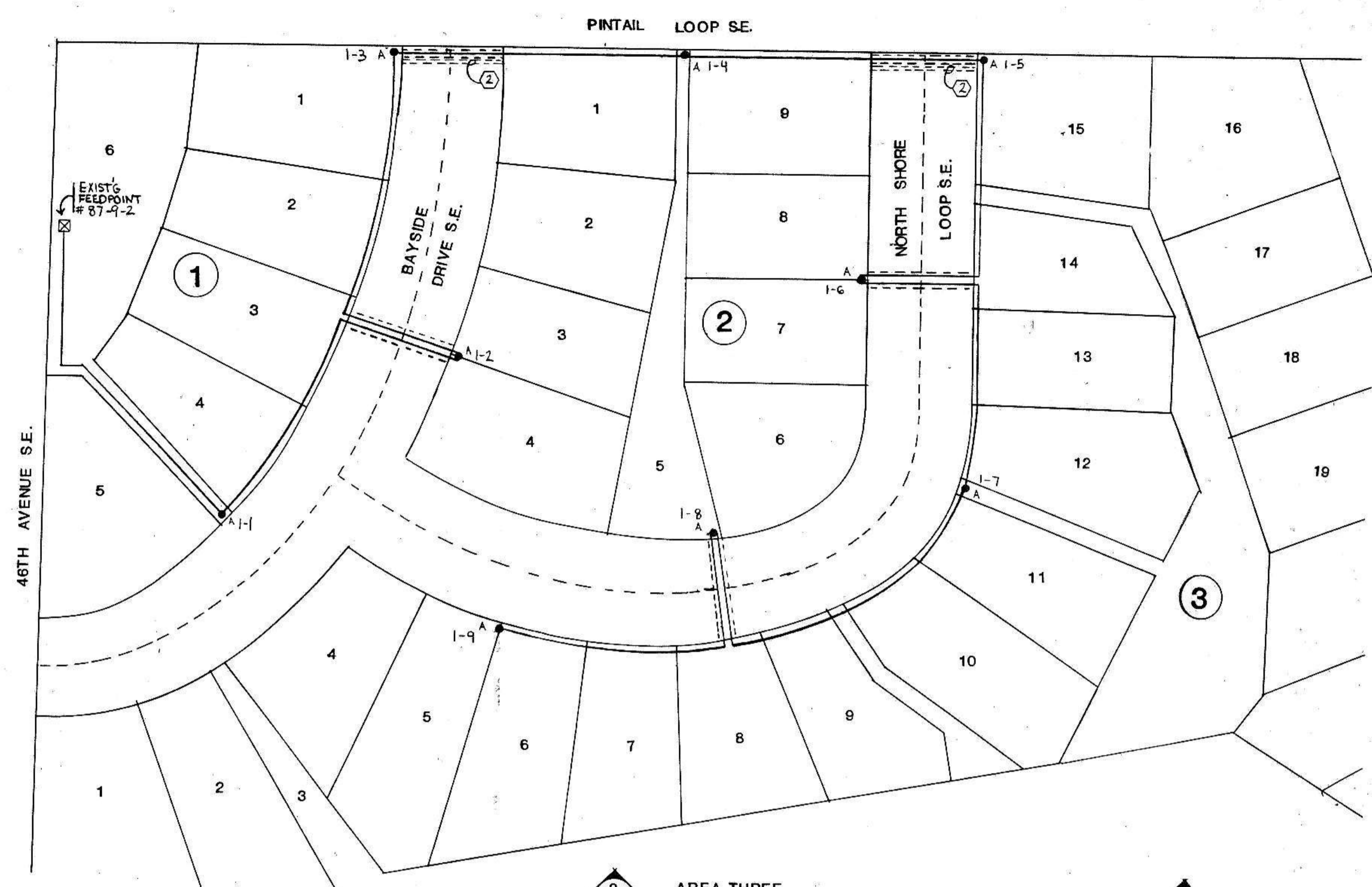
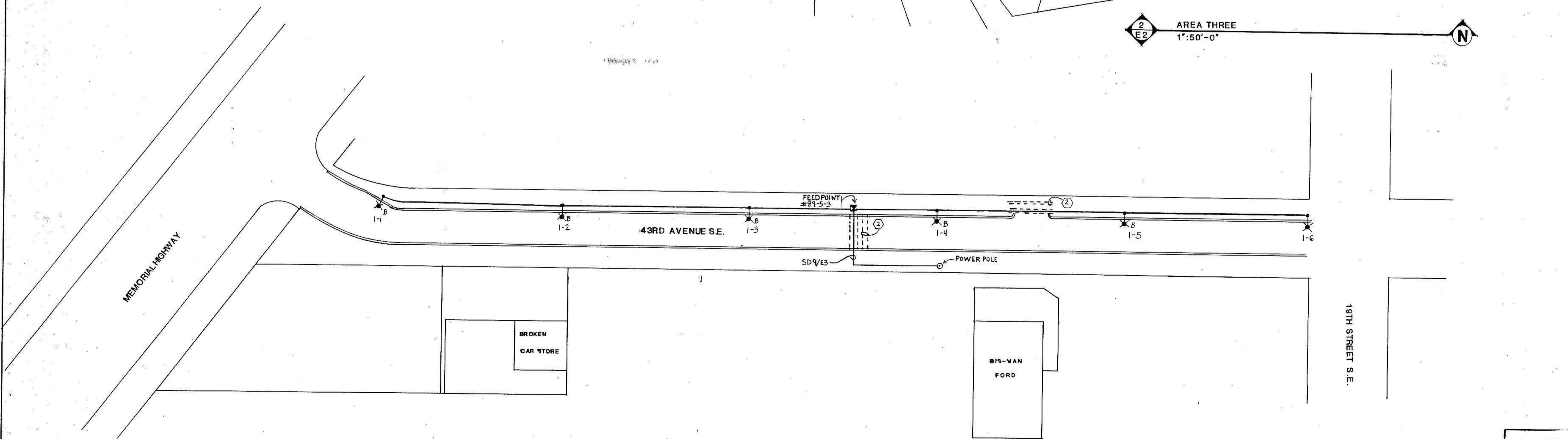
**PROFILE**  
SURVEYED, GRADES CHECKED, PLOTTED, GRADES CHECKED, STRUCTURE NOTATIONS OK.



**TOMAN ENGINEERING COMPANY**  
CONSULTING CIVIL & ENVIRONMENTAL ENGINEERS  
MANDAN, NORTH DAKOTA 58554 • 701-683-6483

**SHEET 9 OF 11 SHEETS**  
**AS-BUILT**



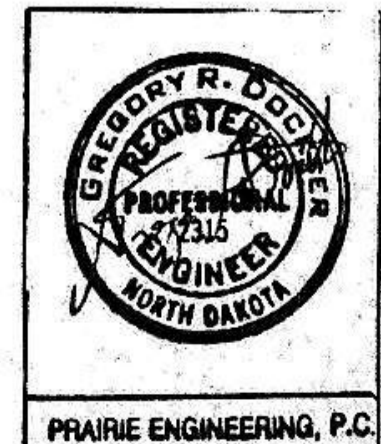


NOTES: DETAILS 1/E2 & 2/E2

1. ALL LOT AND STREET LAYOUT INFORMATION OBTAINED FROM CITY PLATS. LOT DIMENSIONS SHOWN ARE USED IN LOCATING STREET LIGHTS ONLY. VERIFY FOR OTHER USES.
2. PROVIDE EMPTY CONDUIT FOR FUTURE USE.



TOMAM ENGINEERING COMPANY  
CONSULTING CIVIL & ENVIRONMENTAL ENGINEERS  
800 2ND ST. N.W.  
MANDAN, NORTH DAKOTA 58554 • 701-683-6483



PRAIRIE ENGINEERING, P.C.

AREAS NO. 2&3  
2-48RD AVENUE S.E.  
3-MARINA BAY

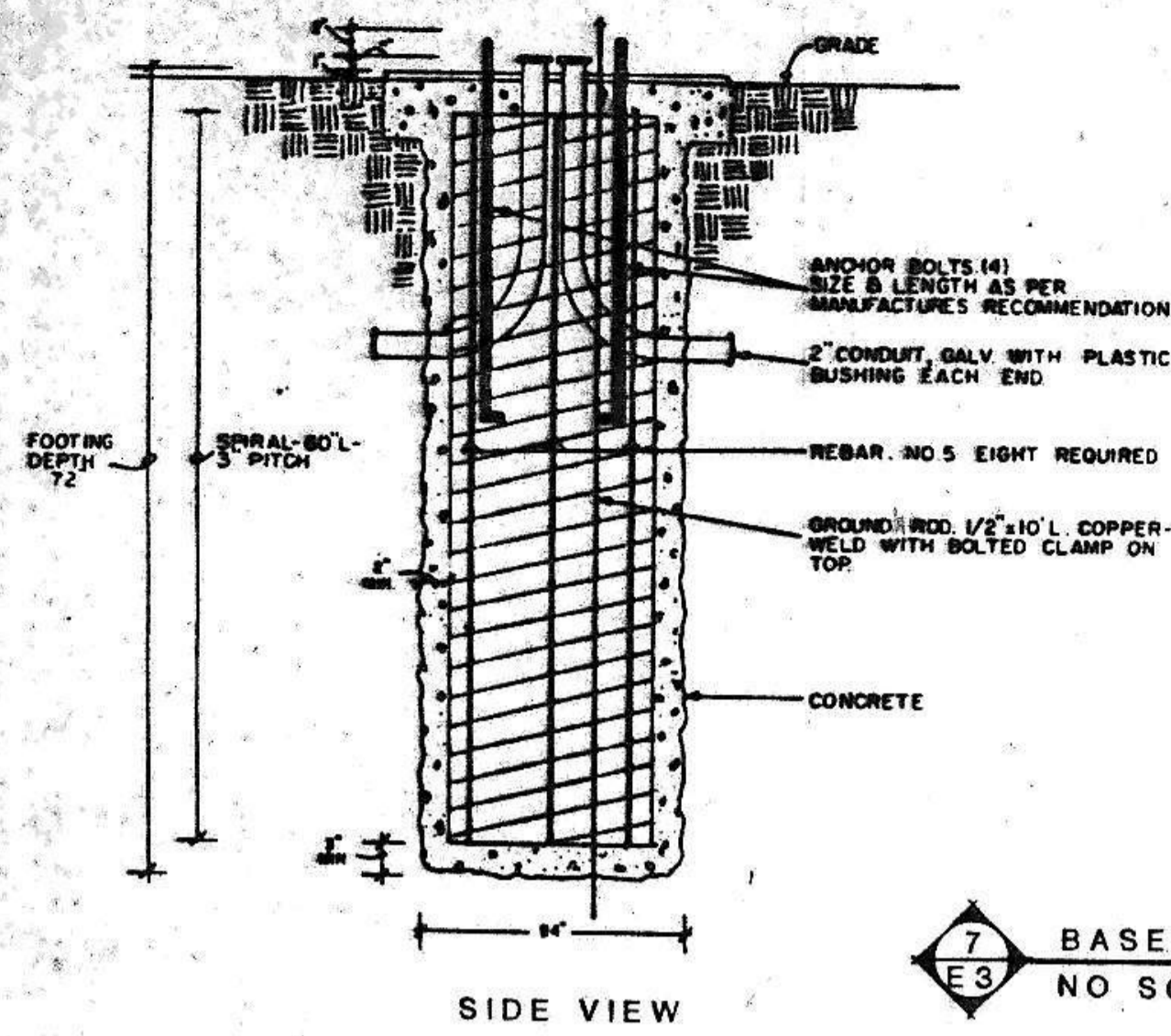
STREET IMPROVEMENT  
DISTRICT NO. 81  
MANDAN NORTH DAKOTA

PRAIRIE ENGINEERING, P.C.  
PROFESSIONAL CONSULTING ENGINEERS  
MINOT AND BISMARCK, NORTH DAKOTA

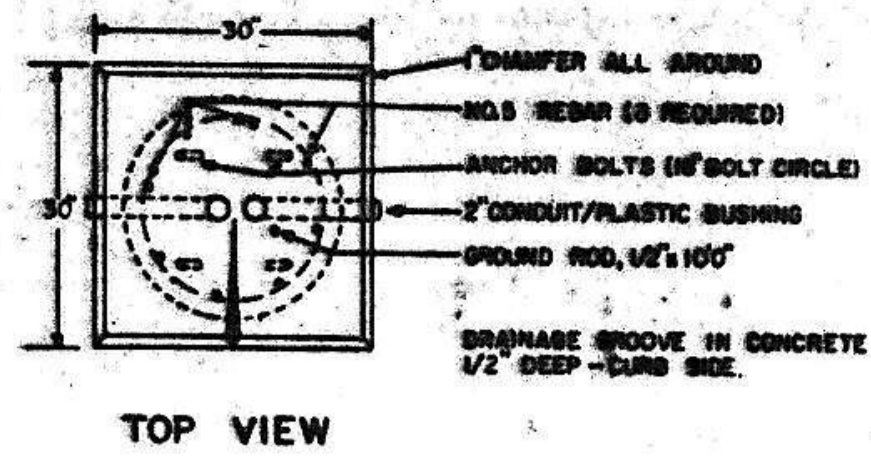
Drawn By MED  
Checked By GRD  
Job No. M 664

Date  
JUL 7, 89

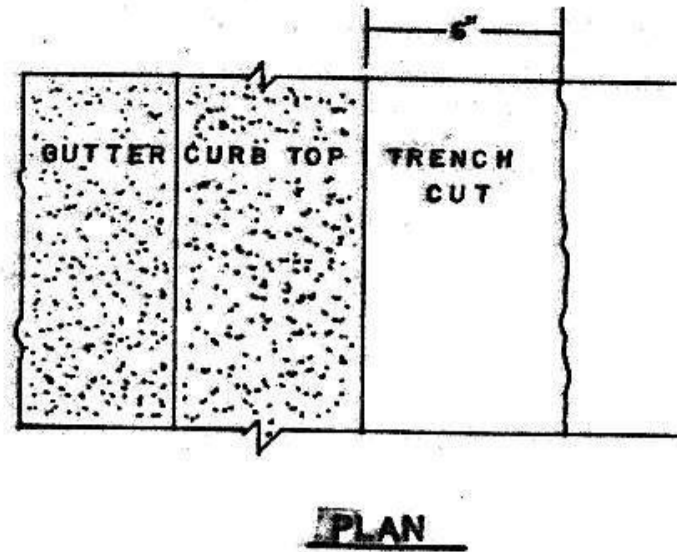
Sheet  
E2  
of  
3



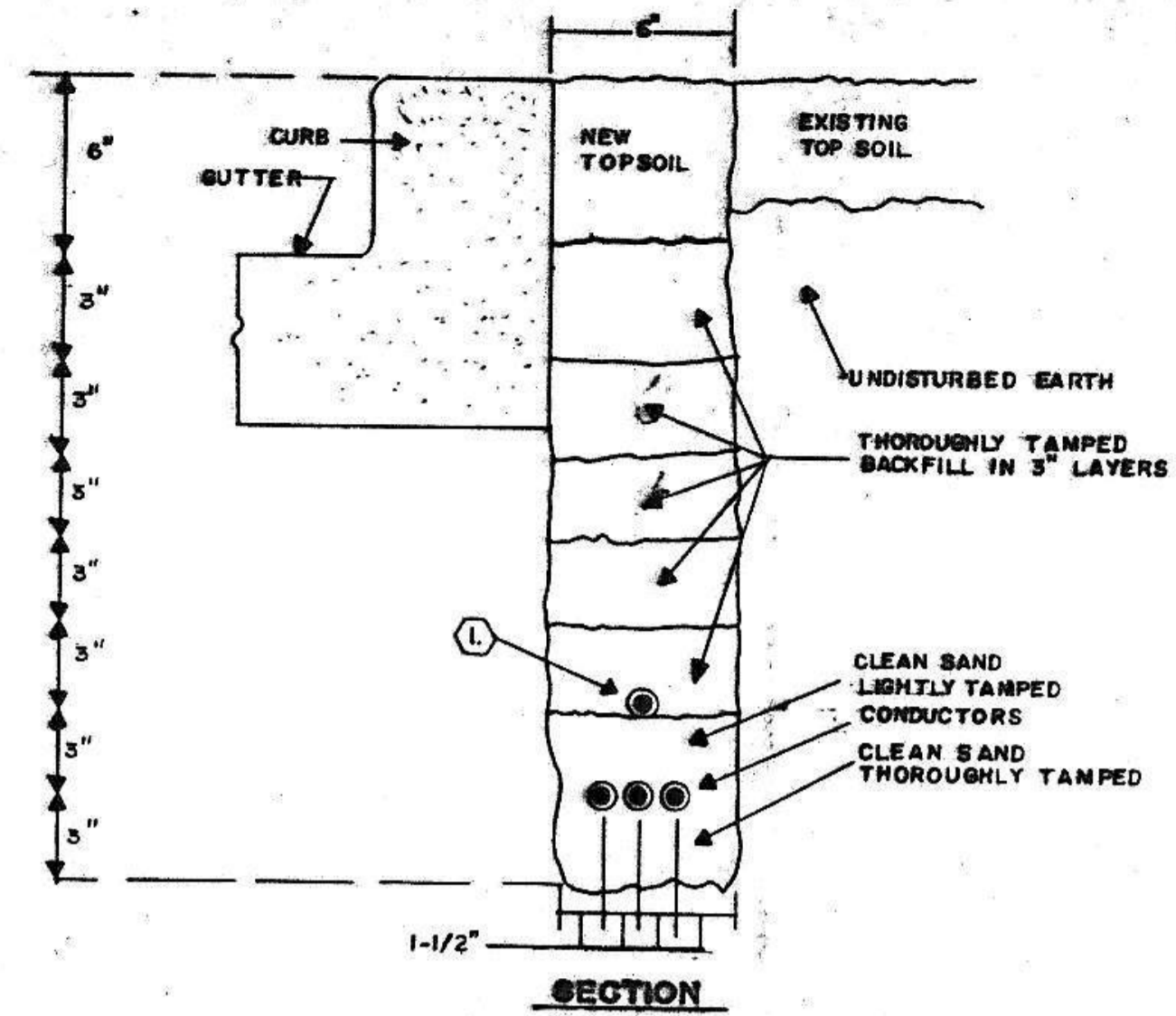
7  
E3  
BASE DETAIL  
NO SCALE



TOP VIEW



PLAN

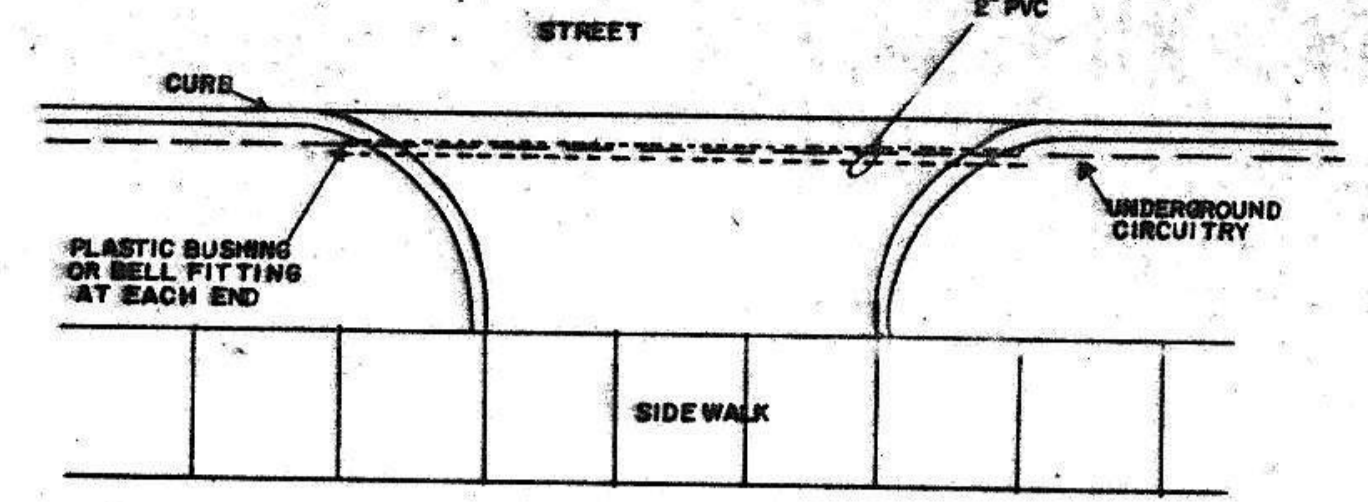


SECTION

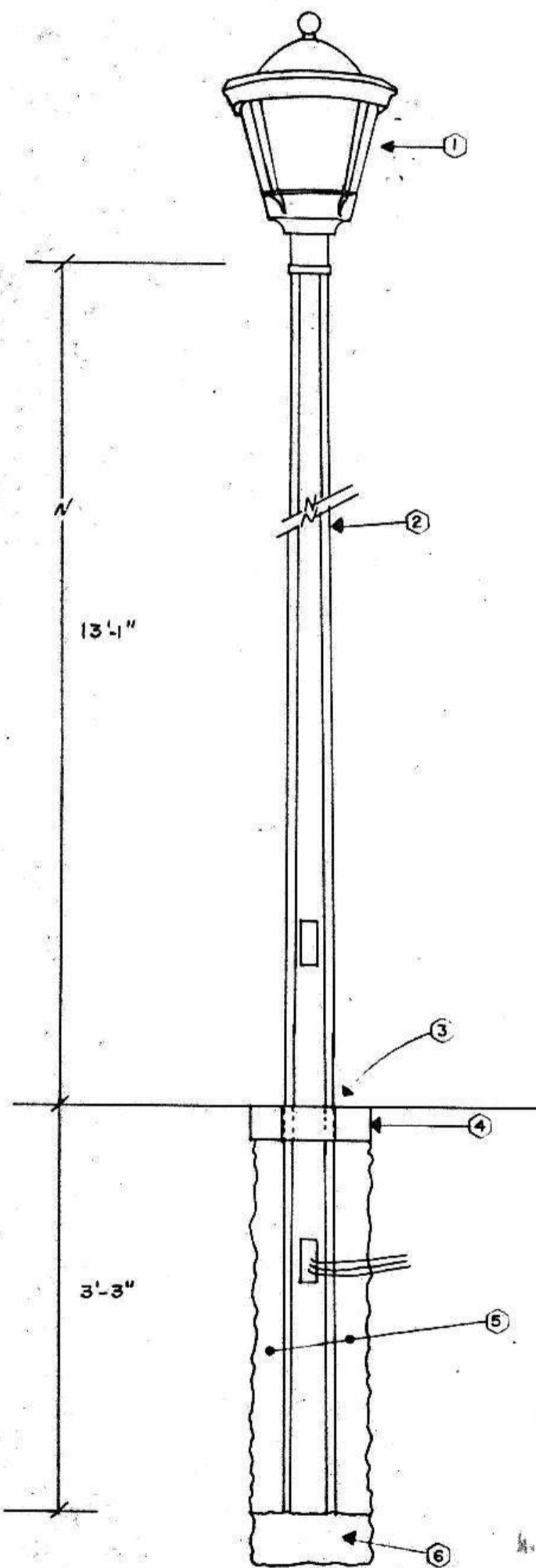
NOTES: DETAIL 3/E3

1. PROVIDE #8 GROUNDING CONDUCTOR FOR METAL STREET LIGHT STANDARDS AS PER NCC 24-02-01-06-2A. INSTALL AT 24" BELOW FINISH GRADE, 3" ABOVE CIRCUIT CONDUCTORS. (CIRCUIT CONDUCTORS TO BE 27" BELOW FINISH GRADE.)

3  
E3  
UNDERGROUND CABLE INSTALLATION  
NO SCALE



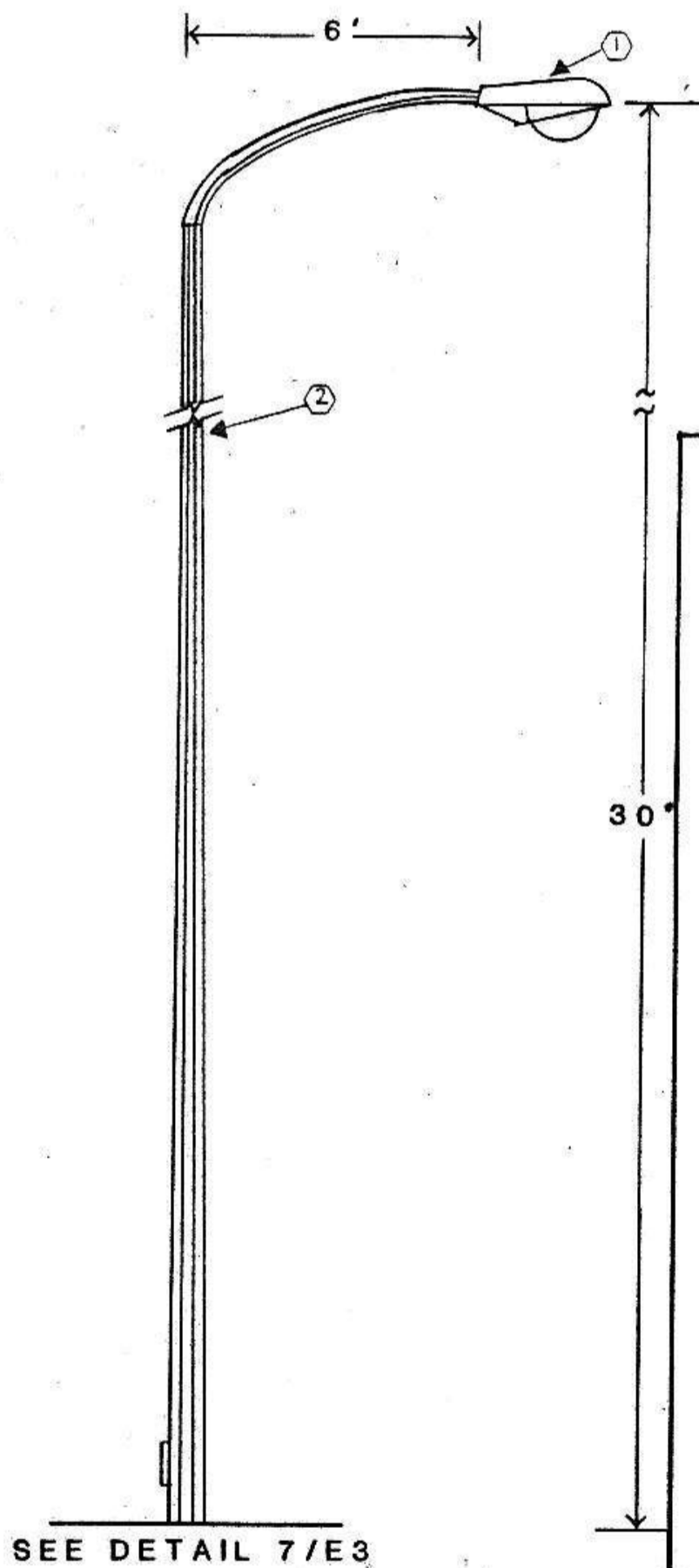
4  
E3  
DRIVEWAY DETAIL  
NO SCALE



2  
E3  
TYPE A LIGHT DETAIL  
NO SCALE

NOTES: DETAIL 2/E3

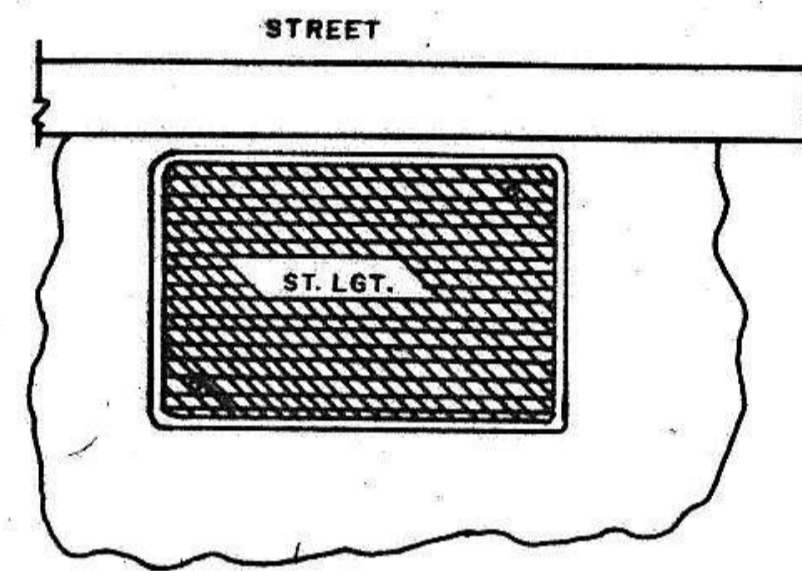
1. SEE SPECIFICATION 16.10 A2.
2. SEE SPECIFICATION 16.10 A1 AND 16.11.
3. SEE SPECIFICATION 16.09 B.
4. SEE SPECIFICATION 16.09 A.
5. SEE SPECIFICATION 16.09 C.
6. SEE SPECIFICATION 16.09 D.



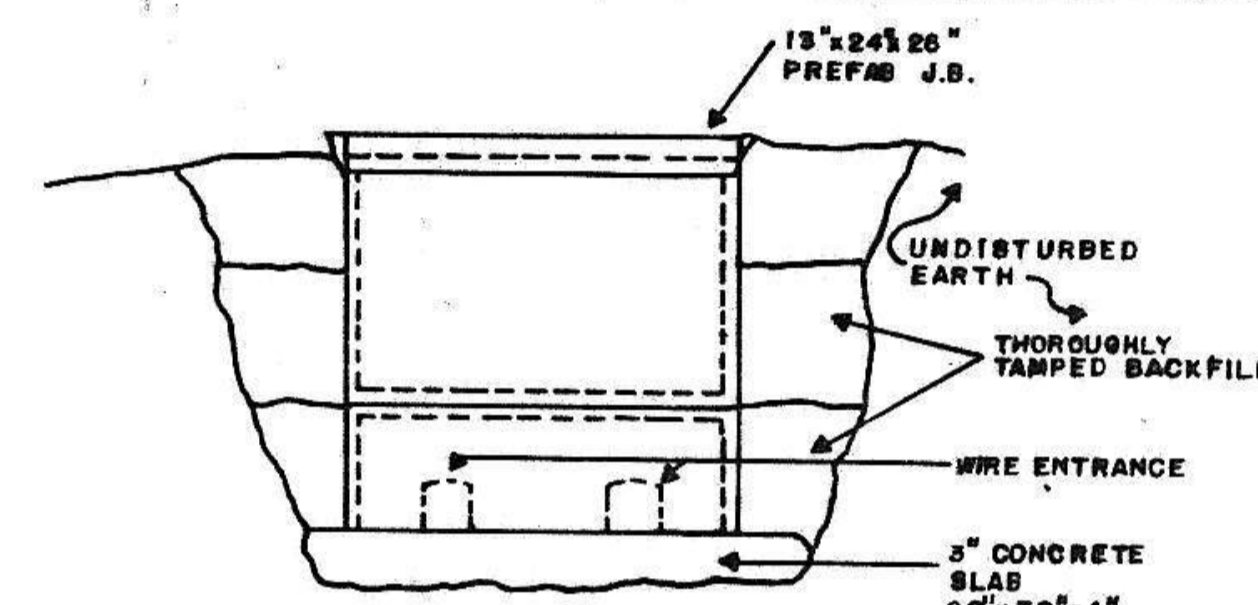
1  
E3  
TYPE B LIGHT DETAIL  
NO SCALE

NOTES: DETAIL 1/E3

1. SEE SPECIFICATION 16.10 B2.
2. SEE SPECIFICATION 16.10 B1.

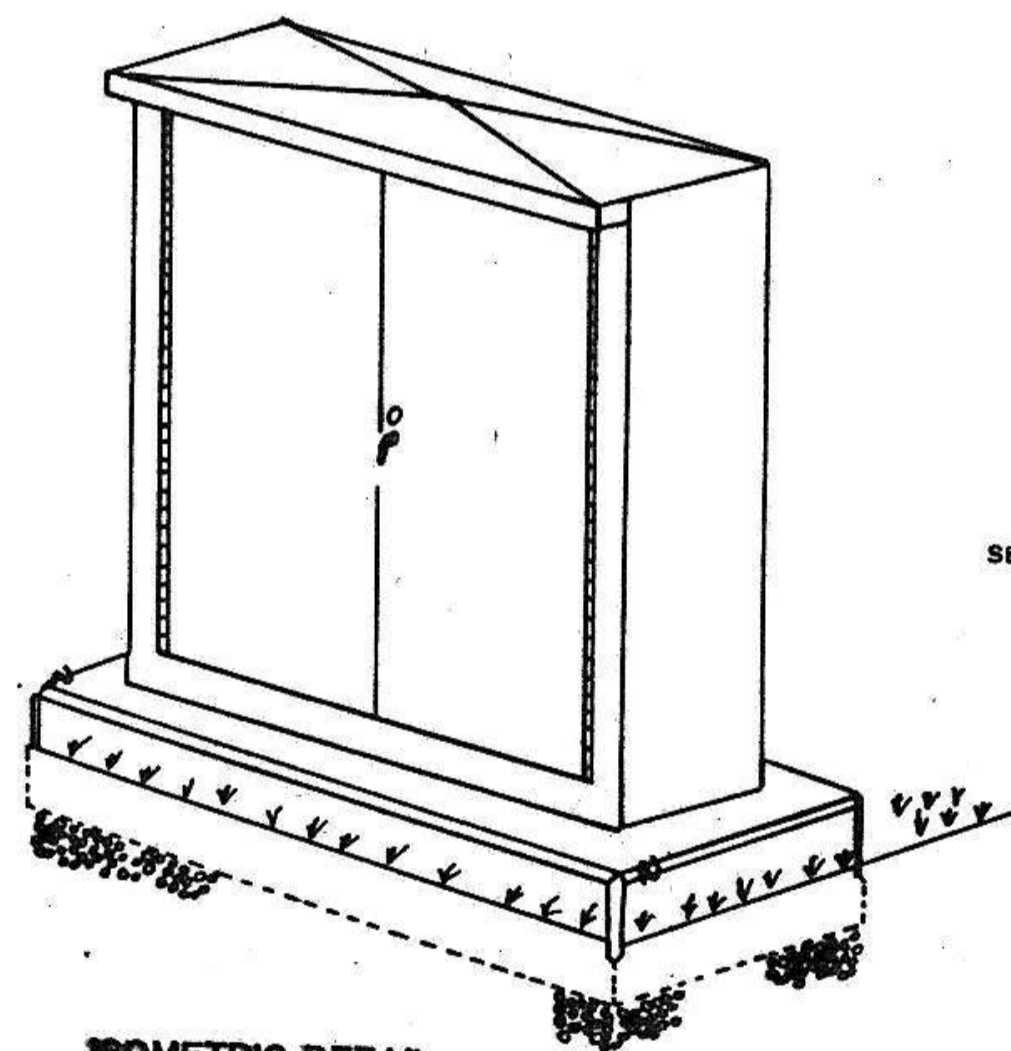


PLAN

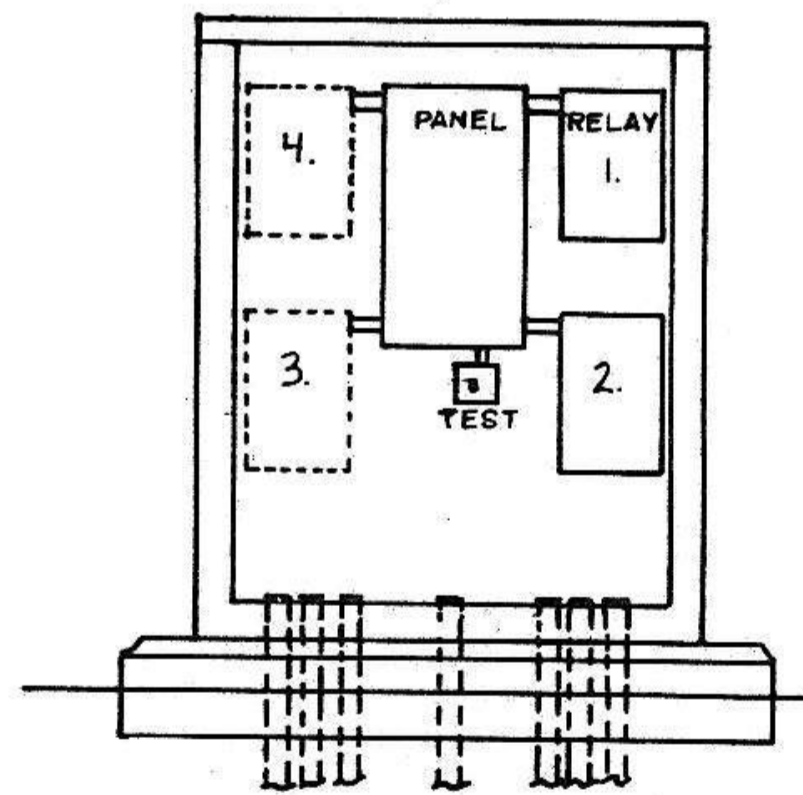


SECTION

5  
E3  
JUNCTION BOX DETAIL  
NO SCALE

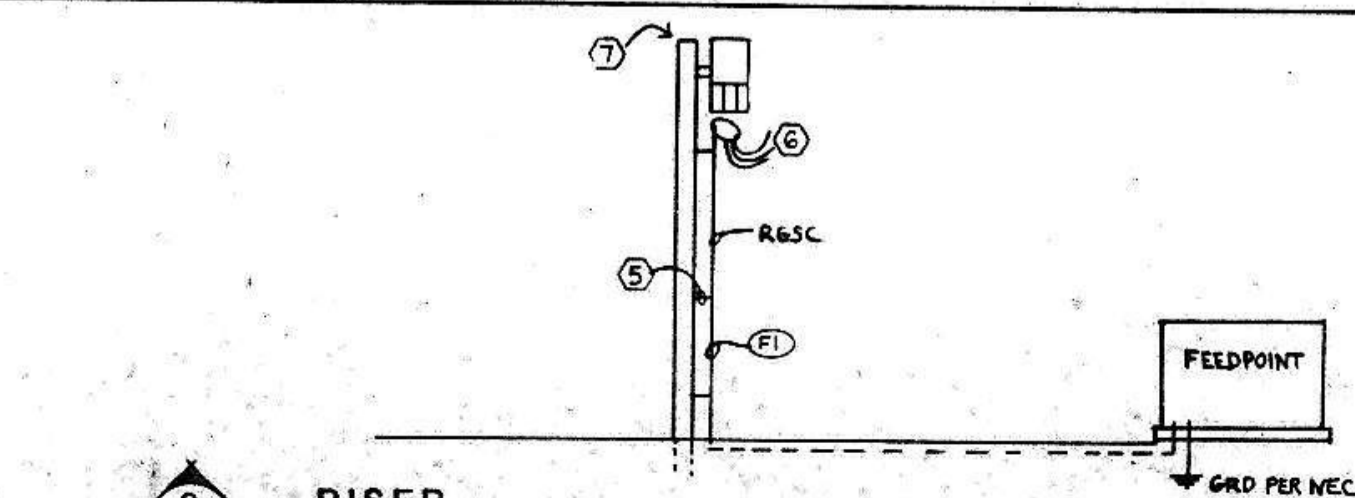


ISOMETRIC DETAIL



ELEVATION

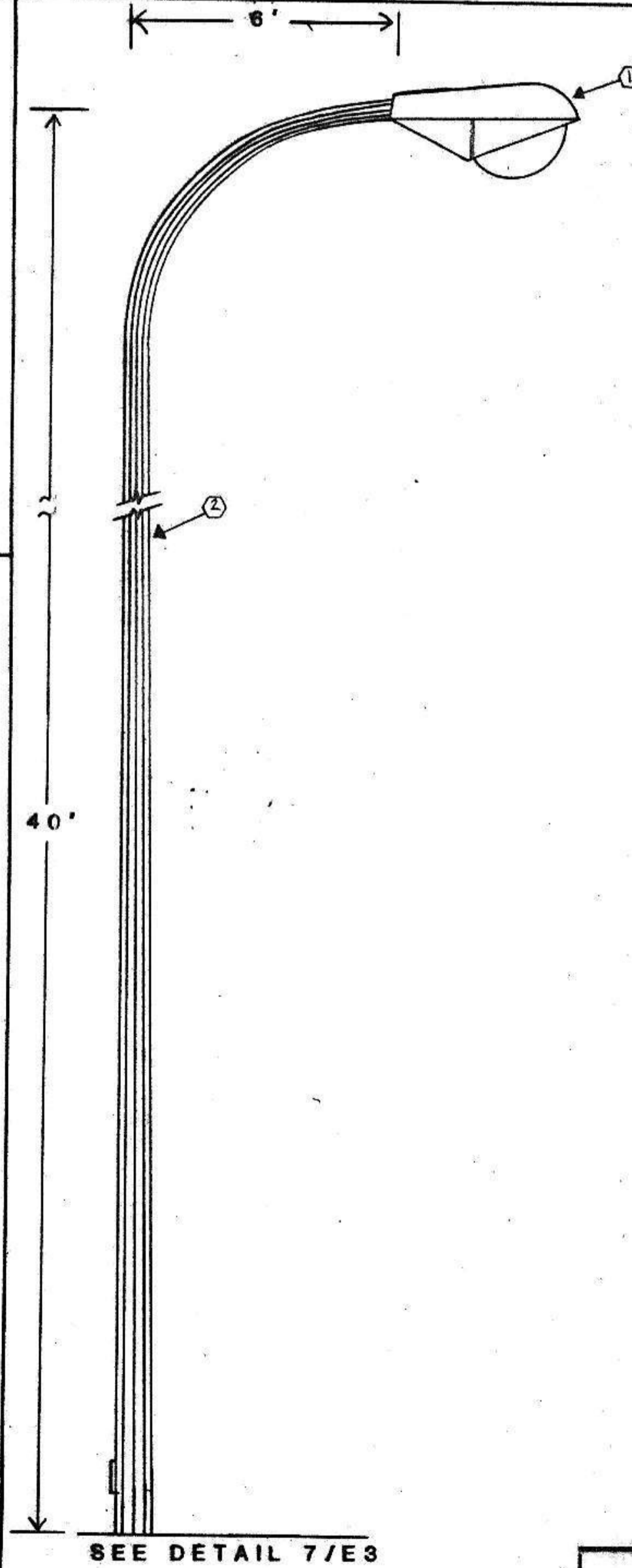
6  
E3  
FEED POINT  
NO SCALE



9  
E3  
RISER  
NO SCALE

NO.	DESCRIPTION	QUANTITY	UNIT	PRICE	TOTAL
1	10' TALL STREET LIGHT	1	EA	100.00	100.00
2	6' TALL STREET LIGHT	1	EA	60.00	60.00
3	3' TALL STREET LIGHT	1	EA	30.00	30.00
4	15' x 24' x 25" PREFAB J.B.	1	EA	150.00	150.00
5	3" CONCRETE SLAB 20' x 30' x 4"	1	EA	100.00	100.00
6	1" x 1/2" GALV. STEEL	1	EA	50.00	50.00
7	1" x 1/2" GALV. STEEL	1	EA	50.00	50.00
8	1" x 1/2" GALV. STEEL	1	EA	50.00	50.00
9	1" x 1/2" GALV. STEEL	1	EA	50.00	50.00
10	1" x 1/2" GALV. STEEL	1	EA	50.00	50.00
11	1" x 1/2" GALV. STEEL	1	EA	50.00	50.00
12	1" x 1/2" GALV. STEEL	1	EA	50.00	50.00
13	1" x 1/2" GALV. STEEL	1	EA	50.00	50.00
14	1" x 1/2" GALV. STEEL	1	EA	50.00	50.00
15	1" x 1/2" GALV. STEEL	1	EA	50.00	50.00
16	1" x 1/2" GALV. STEEL	1	EA	50.00	50.00
17	1" x 1/2" GALV. STEEL	1	EA	50.00	50.00
18	1" x 1/2" GALV. STEEL	1	EA	50.00	50.00
19	1" x 1/2" GALV. STEEL	1	EA	50.00	50.00
20	1" x 1/2" GALV. STEEL	1	EA	50.00	50.00
21	1" x 1/2" GALV. STEEL	1	EA	50.00	50.00
22	1" x 1/2" GALV. STEEL	1	EA	50.00	50.00
23	1" x 1/2" GALV. STEEL	1	EA	50.00	50.00
24	1" x 1/2" GALV. STEEL	1	EA	50.00	50.00
25	1" x 1/2" GALV. STEEL	1	EA	50.00	50.00
26	1" x 1/2" GALV. STEEL	1	EA	50.00	50.00
27	1" x 1/2" GALV. STEEL	1	EA	50.00	50.00
28	1" x 1/2" GALV. STEEL	1	EA	50.00	50.00
29	1" x 1/2" GALV. STEEL	1	EA	50.00	50.00
30	1" x 1/2" GALV. STEEL	1	EA	50.00	50.00
31	1" x 1/2" GALV. STEEL	1	EA	50.00	50.00
32	1" x 1/2" GALV. STEEL	1	EA	50.00	50.00
33	1" x 1/2" GALV. STEEL	1	EA	50.00	50.00
34	1" x 1/2" GALV. STEEL	1	EA	50.00	50.00
35	1" x 1/2" GALV. STEEL	1	EA	50.00	50.00
36	1" x 1/2" GALV. STEEL	1	EA	50.00	50.00
37	1" x 1/2" GALV. STEEL	1	EA	50.00	50.00
38	1" x 1/2" GALV. STEEL	1	EA	50.00	50.00
39	1" x 1/2" GALV. STEEL	1	EA	50.00	50.00
40	1" x 1/2" GALV. STEEL	1	EA	50.00	50.00
41	1" x 1/2" GALV. STEEL	1	EA	50.00	50.00
42	1" x 1/2" GALV. STEEL	1	EA	50.00	50.00
43	1" x 1/2" GALV. STEEL	1	EA	50.00	50.00
44	1" x 1/2" GALV. STEEL	1	EA	50.00	50.00
45	1" x 1/2" GALV. STEEL	1	EA	50.00	50.00
46	1" x 1/2" GALV. STEEL	1	EA	50.00	50.00
47	1" x 1/2" GALV. STEEL	1	EA	50.00	50.00
48	1" x 1/2" GALV. STEEL	1	EA	50.00	50.00
49	1" x 1/2" GALV. STEEL	1	EA	50.00	50.00
50	1" x 1/2" GALV. STEEL	1	EA	50.00	50.00

1. THESE RISERS ARE METALLIC ONLY, AND NOT EXTENDED TO COVER LUG ARRANGEMENTS.
2. SEE SPECIFICATION FOR GROUNDING REQUIREMENTS AND AVAILABLE PVC BRACKETS.
3. AVAILABLE FAULT CURRENT AT UTILITY COMPANY ENGINEER'S DISCRETION TO BE FOUND BY APPROVAL. SIZE ESTIMATING BASED ON ALL AVAILABLE SERVICES IN ACCORDANCE WITH AVAILABLE FAULT CURRENT AS PER SEC 210-2. (UNLESS OTHERWISE NOTED OTHERWISE ACCEPTABLE.)
4. EQUIPMENT GROUNDING CONDUCTOR.
5. PROVIDE 4" BRASS STAND-OFF SUPPORTS FOR SERVICE BAY. (TYPICAL.)
6. PROVIDE CIRCUITRY LENGTH AS REQUIRED TO MATCH TRANSFORMER EQUIPMENT TERMINALS.
7. FIELD VERIFY EXACT LOCATION OF UTILITY COMPANY'S POWER POLE.



8  
E3  
TYPE C LIGHT DETAIL  
NO SCALE

1. SEE SPECIFICATION 16.10 C2.
2. SEE SPECIFICATION 16.10 C1.



PRairie ENGINEERING, P.C.  
MANDAN, NORTH DAKOTA  
TOMAN ENGINEERS COMPANY  
CONSULTING CIVIL & ENVIRONMENTAL ENGINEERS  
100 8TH ST. S.W.  
MANDAN, NORTH DAKOTA 58541 • 701-533-0400

PRairie ENGINEERING, P.C.  
PROFESSIONAL CONSULTING ENGINEERS  
MINOT AND BISMARCK, NORTH DAKOTA

STREET IMPROVEMENT  
DISTRICT NO. 81  
MANDAN, NORTH DAKOTA

DETAILS

Sheet  
E3  
of 3

Date  
JULY 88

Drawn By: MED  
Checked By: GRD  
Job No. 14064