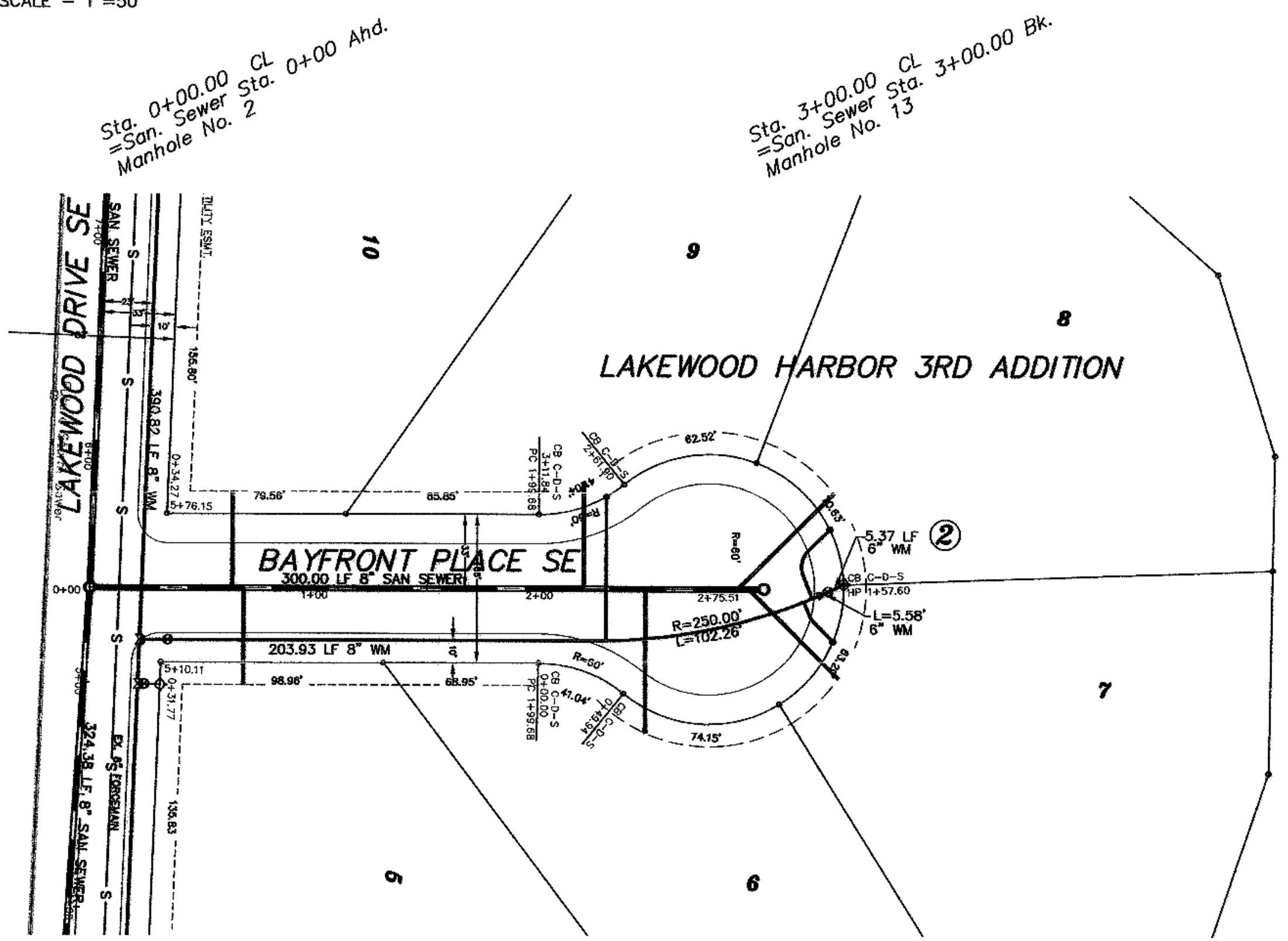


SCALE - 1"=50'



Sta. 0+22.15
8" x 8" Tee

Sta. 0+34.77
8" Gate Valve & Box

Sta. 3+25.50 2.38' Rt.
8" x 6" Reducer from Salvage

Sta. 3+28.50 1.05' Rt.
6" Gate Valve & Box

Sta. 3+35.47 2.14' Lt.
6" Hydrant from Salvage

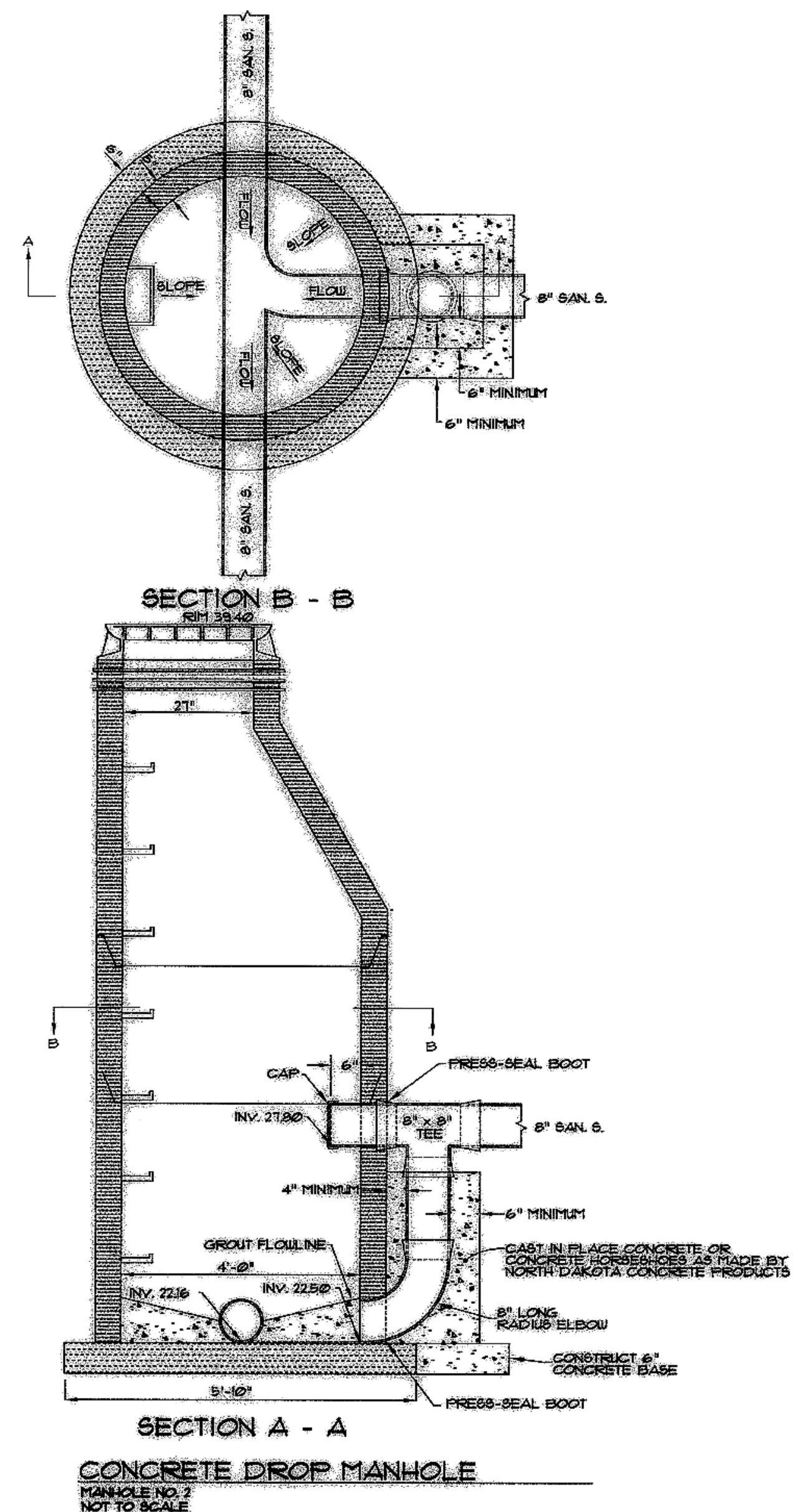
Begin Watermain Quantities
Sta. 0+22.15

Begin San. Sewer Quantities
Sta. 0+00.00

End Watermain Quantities
Sta. 3+35.47

End San. Sewer Quantities
Sta. 3+00.00

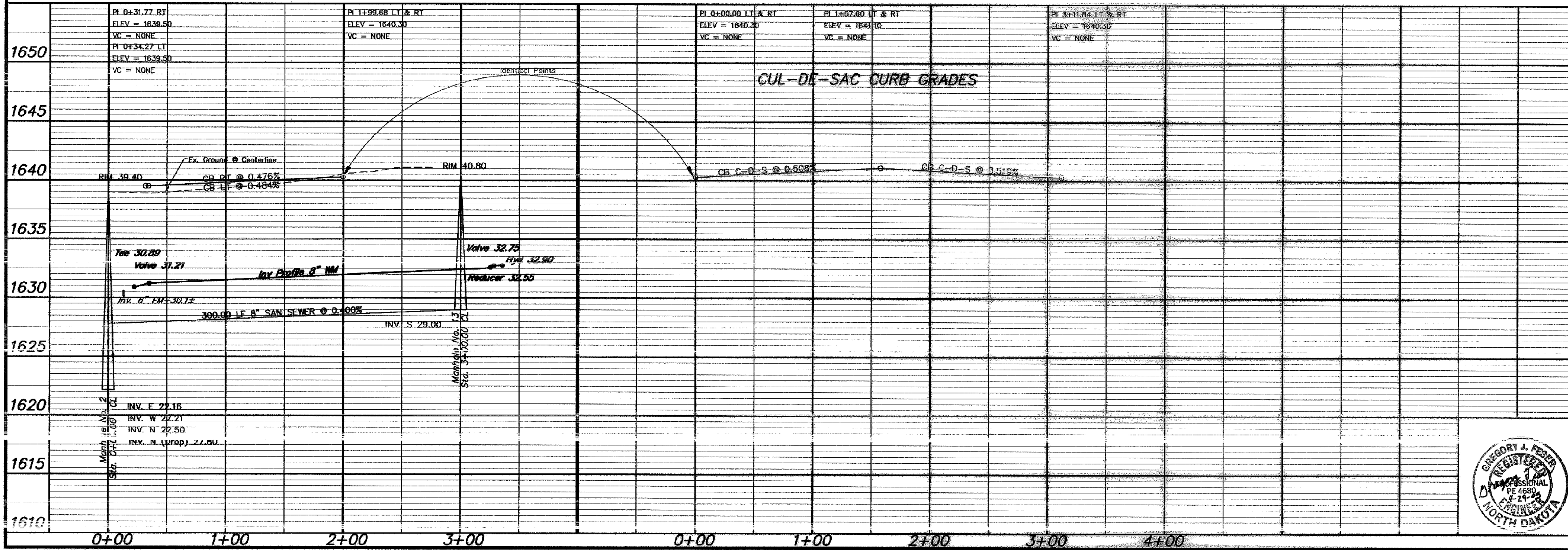
NOTE:
ALL WATER MAIN IS 24.00' RIGHT OF CENTERLINE UNLESS OTHERWISE STATED



Manhole Number	13
Casting Elev.	40.80
Top P.C. Section	39.76
Invert Elev.	(a) 29.00
Length P.C. Section	10.76

APPROXIMATE WYE LOCATIONS			
STATION	DIRECTION	LOT	BLOCK
FROM MANHOLE 2 TO MANHOLE NO. 13			
0+6.3	W	10	2
0+68	E	9	2
2+20	W	9	2
2+47	E	8	2
2+88	NW	8	2
2+93	NE	7	2

Lot	Block	8" Sanitary Sewer	6" x 4" Wye Branch	4" Sewer Service Pipe	4" 45° Bend	6" x 4" Wye Branch	6" Water Service Invert	1" Copper Water Service Pipe	1" Ball Valve	1" Ball Valve Curb Stop	1" Water Service Invert
10	2	43.0	1	1	28.80	1	28.80	1	1	33.40	1
5	2	43.0	1	1	28.81	1	28.81	1	1	33.40	1
9	2	47.2	1	1	28.46	64.0	1	1	1	33.00	1
6	2	64.0	1	1	28.73	1	1	1	1	33.40	1
8	2	60.4	1	1	28.86	36.5	1	1	1	33.40	1
7	2	56.3	1	1	28.84	22.3	1	1	1	33.40	1
TOTAL		313.9	4	6	122.8	3	3				



APPROXIMATE QUANTITIES	
San. Sewer Items	Quantity
8" Sanitary Sewer	300 LF
8" x 4" Wye Branch	6 EA
Concrete Manhole	1 EA
4" Sewer Service Pipe	314 LF
4" 45° Bend	4 EA

Watermain Items	
Watermain Items	Quantity
8" PVC Watermain	306 LF
6" PVC Watermain	11 LF
6" Hydrant From Salvage	1 EA
6" Gate Valve & Box	2 EA
Ductile Iron Fittings	(incidental)
1" Water Copper Serv. Pipe	123 LF
1" Water Serv. Connection	3 EA
1" Ball Valve Curb Stop	3 EA
And 1 1/2" Box	

SWENSON, HAGEN & COMPANY P.C.
 309 Basin Avenue P.O. Box 1153
 Bismarck, North Dakota 58104
 Phone (701) 223-3600
 Fax (701) 223-9606
 shc@swensonhagen.com



BAYFRONT PLACE SE
 FROM THE INTERSECTION OF LAKEWOOD DRIVE SE
 NORTH TO THE CUL-DE-SAC

WATER AND SEWER IMPROVEMENT PROJECT 2005-17
 SHEET NO. 6 OF 8
 MANDAN, ND APRIL 22, 2005