

SCALE - 1"=50'

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Sta. 0+08.63 CL 0+00 Ahd.
=San. Sewer Sta. 1+02.44 Bk.
Manhole No. 2

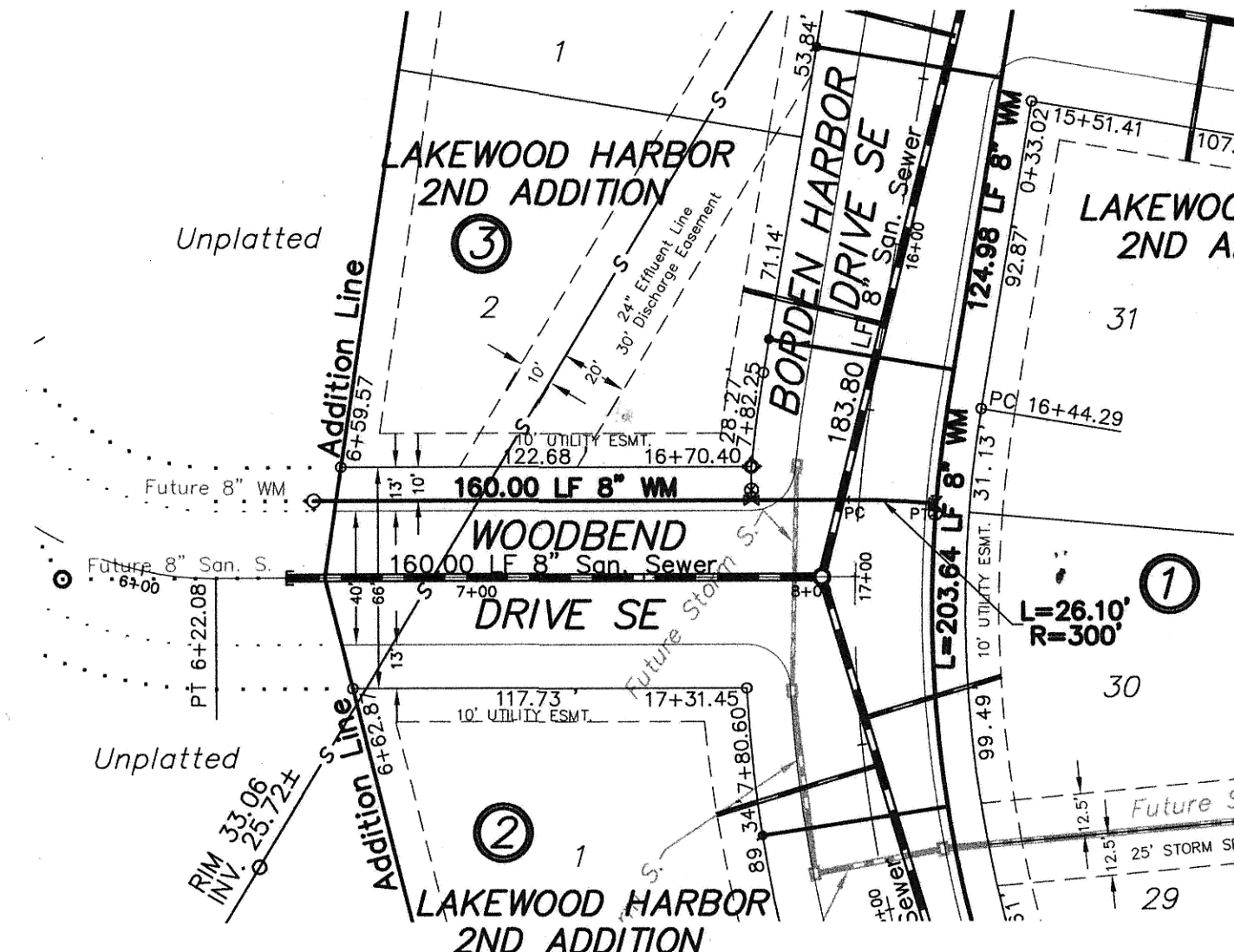
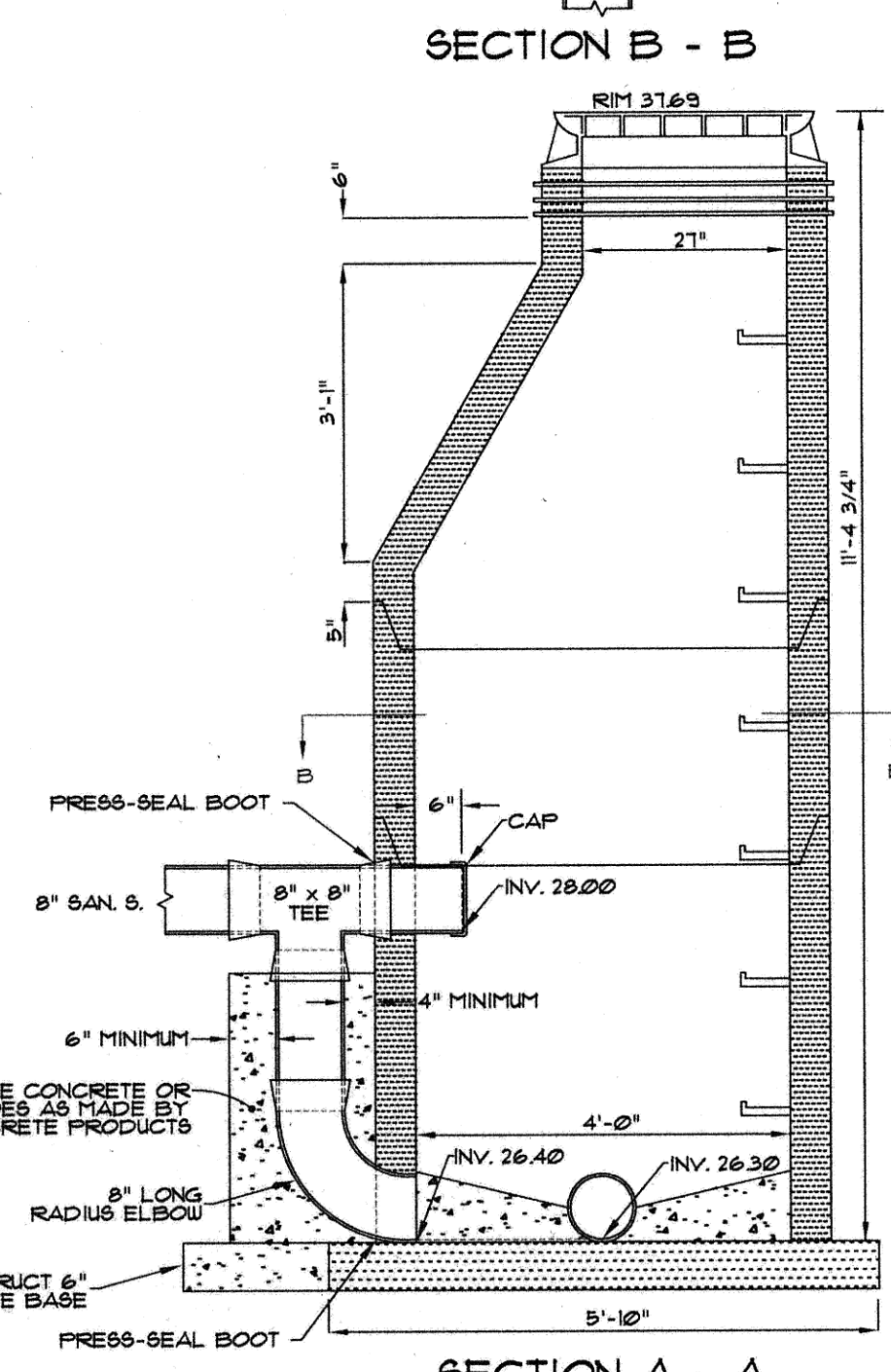
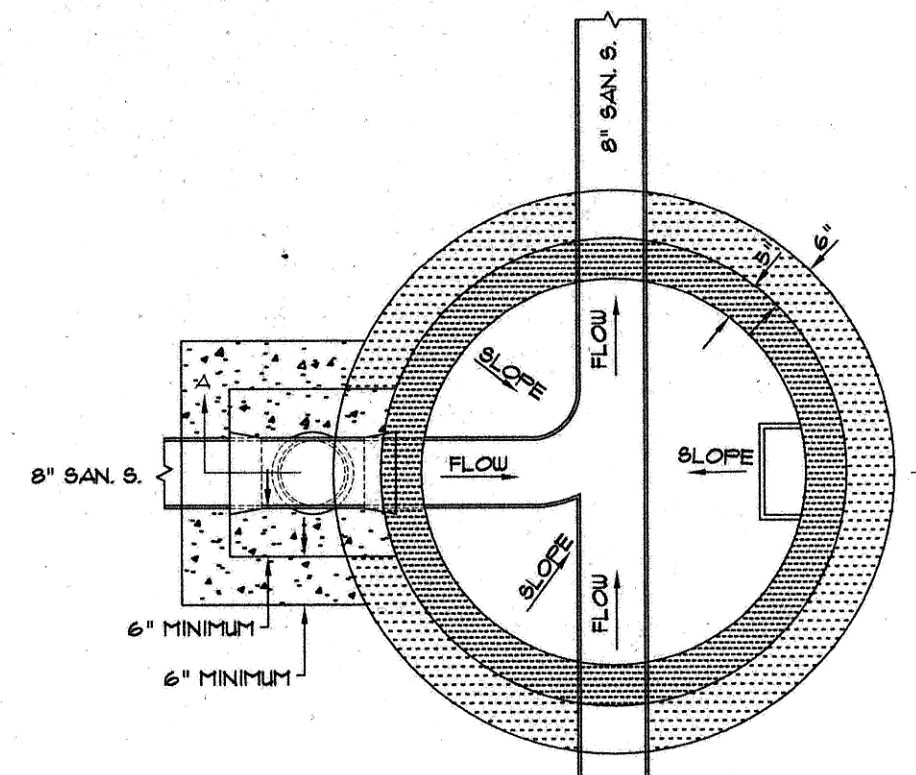
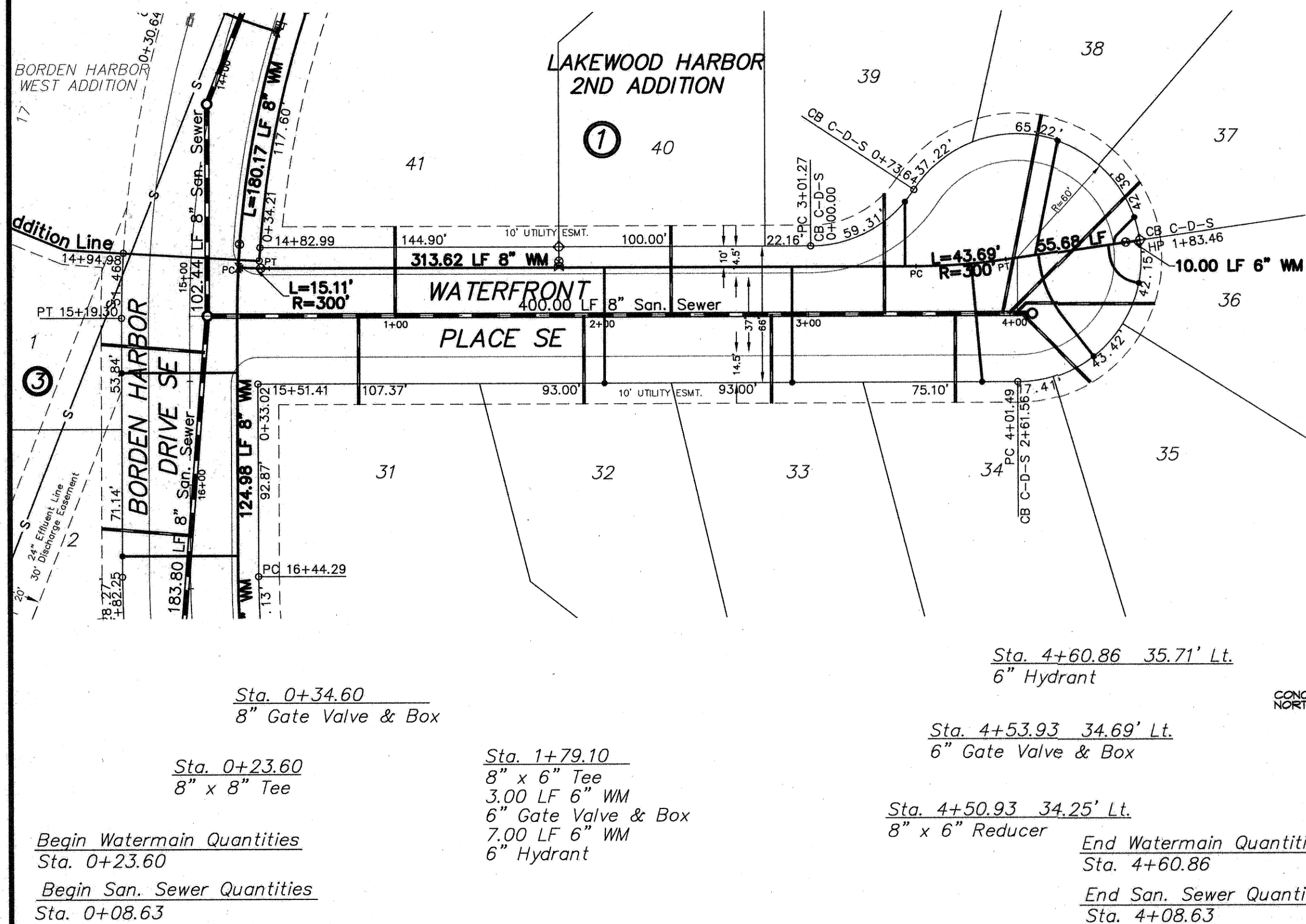
Sta. 4+08.63 CL 4+00.00 Bk.
=San. Sewer Sta. 4+00.00 Bk.
Manhole No. 6

Sta. 6+43.17 CL 1+60.00 Bk.
=San. Sewer Sta. 1+60.00 Bk.
Cap

Sta. 8+03.17 CL 0+00 Ahd.
=San. Sewer Sta. 1+83.80 Bk.
Manhole No. 3 (Drop)

CONSTRUCTION NOTES (THIS SHEET)

- BACKFILL SHALL BE CLASS 'A'.
- GRADING SHALL BE BY OTHERS, PRIOR TO CONSTRUCTION.
- THE CONTRACTOR SHALL TAKE ALL APPROPRIATE PROTECTIVE MEASURES WHEN CROSSING AND EXCAVATING ADJACENT TO THE EXISTING 24" RCP SANITARY SEWER EFFLUENT LINE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGES AND ASSOCIATED REPAIR TO THE EFFLUENT LINE AT THE CONTRACTOR'S EXPENSE.
- THE CONTRACTOR SHALL VERIFY THE ELEVATION OF THE GROUND WATER AT THE TIME OF CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL DEWATERING OR SOIL STABILIZATION (OTHER THAN USING SUBCUT GRAVEL) OF THE CONSTRUCTION SITE AS REQUIRED TO INSTALL THE PROPOSED UTILITIES.
- PROTECT ALL SURVEY MONUMENTS. MONUMENTS DISTURBED OR DESTROYED SHALL BE REPLACED BY THE OWNER'S REPRESENTATIVE AT THE CONTRACTOR'S EXPENSE.
- THE STORM SEWER IS NOT PART OF THIS CONTRACT.
- THE HYDRANT AT STA. 4+60.86 SHALL HAVE A 9.0' BURY.

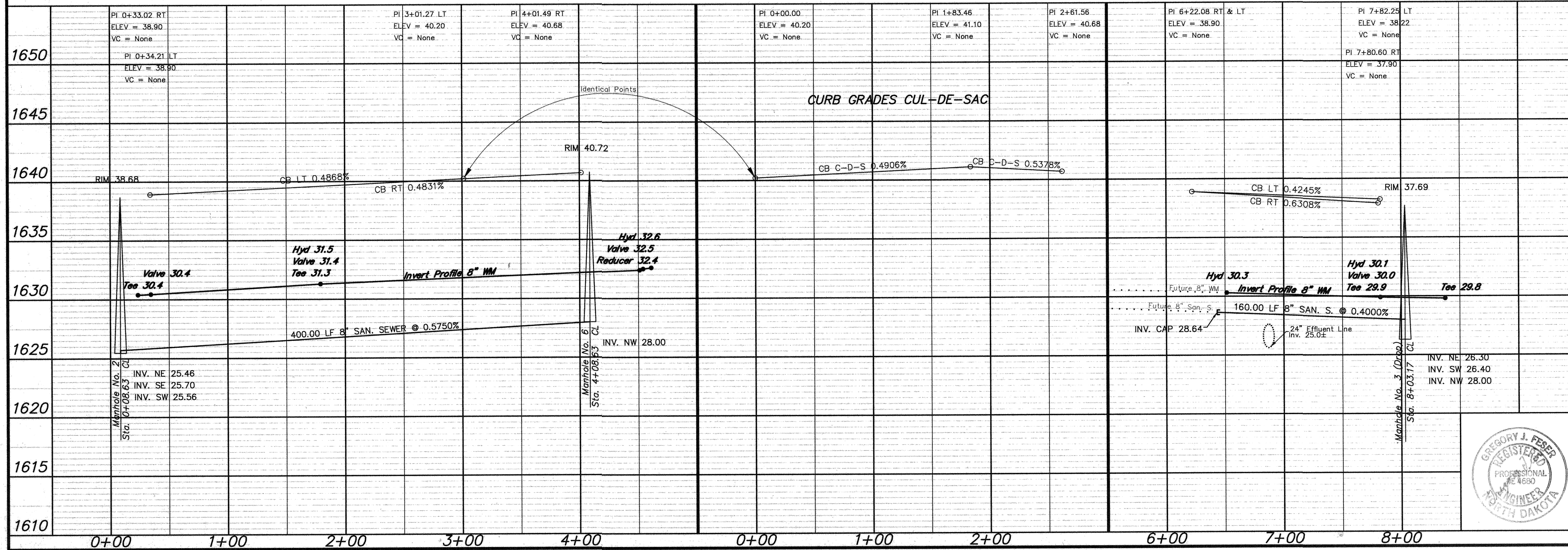


Lot	Block	4" Sewer Service	4" 45° Bend	4" 11 1/4" Bend	4" 22 1/2" Bend	8" x 4" Wye Branch	Sewer Service Invert At The Cap	1" Copper Water Service Pipe Connection	7" Ball Valve Curb Stop & 1 1/2" Box
31	1	4.3	1			1	28.00		
41	1	4.3	1			1	28.00		
32	1	4.3	1			1	28.00	56	1
40	1	4.3	1			1	28.00		
33	1	4.3	1			1	28.02	56	1
39	1	5.8	1			1	28.52	31	1
34	1	4.3	1			1	28.52	57	1
38	1	9.8	1	1	1	1	29.50	57	1
37	1	9.0	1			1	29.27	17	1
36	1	7.0	1			1	29.04	56	1
35	1	4.7	1			1	28.78	57	1
TOTAL	621	8	1	1	1	11		387	8

APPROXIMATE WYE LOCATIONS

STATION	DIRECTION	LOT	BLOCK
0+73	SW	31	1
0+92	NE	41	1
1+82	SW	32	1
2+25	NE	40	1
2+74	SW	33	1
3+28	NE	39	1
3+62	SW	34	1
3+85	E	38	1
3+89	SE	37	1
3+92	SE	36	1
3+95	SW	35	1

Manhole Number	Quantity
6	6
40.72	40.72
39.68	39.68
28.00	28.00
(a)	
(b)	
11.68	11.68



APPROXIMATE QUANTITIES

San. Sewer Items	Quantity
8" Sanitary Sewer	560 LF
8" x 4" Wye Branch	11 EA
Subcut Gravel	20 TON
Concrete Manhole	1 EA
4" Sewer Service Pipe	621 LF
4" 11 1/4" Bend	1 EA
4" 22 1/2" Bend	1 EA
4" 45° Bend	8 EA

Watermain Items	Quantity
6" PVC Watermain	31.30 LF
8" PVC Watermain	614 LF
6" Hydrant	3 EA
6" Gate Valve & Box	3 EA
8" Gate Valve & Box	1 EA
Ductile Iron Fittings	(incidental)
1" Water Copper Serv. Pipe	387 LF
1" Water Serv. Connection	8 EA
1" Ball Valve Curb Stop And 1 1/2" Box	8 EA

SWENSON, HAGEN & CO. P.C.
 PLANNING CIVIL ENGINEERING SURVEYING
 SITE DESIGN CONSTRUCTION MANAGEMENT
 909 BASIN AVE P.O. BOX 1185
 BISMARCK, N.D. 58504 FAX (701) 228-2600
 E-mail: shagen@swensonhagen.com



1620 WATERFRONT PLACE SE
FROM BORDEN HARBOR DRIVE SE SOUTH TO THE CUL-DE-SAC

1615 WOODBEND DRIVE SE
FROM BORDEN HARBOR DRIVE SE WEST TO THE ADDITION LINE

1610 WATER AND SEWER IMPROVEMENT PROJECT 2002-15
SHEET NO. 3 OF 8
MANDAN, ND APRIL 25, 2003