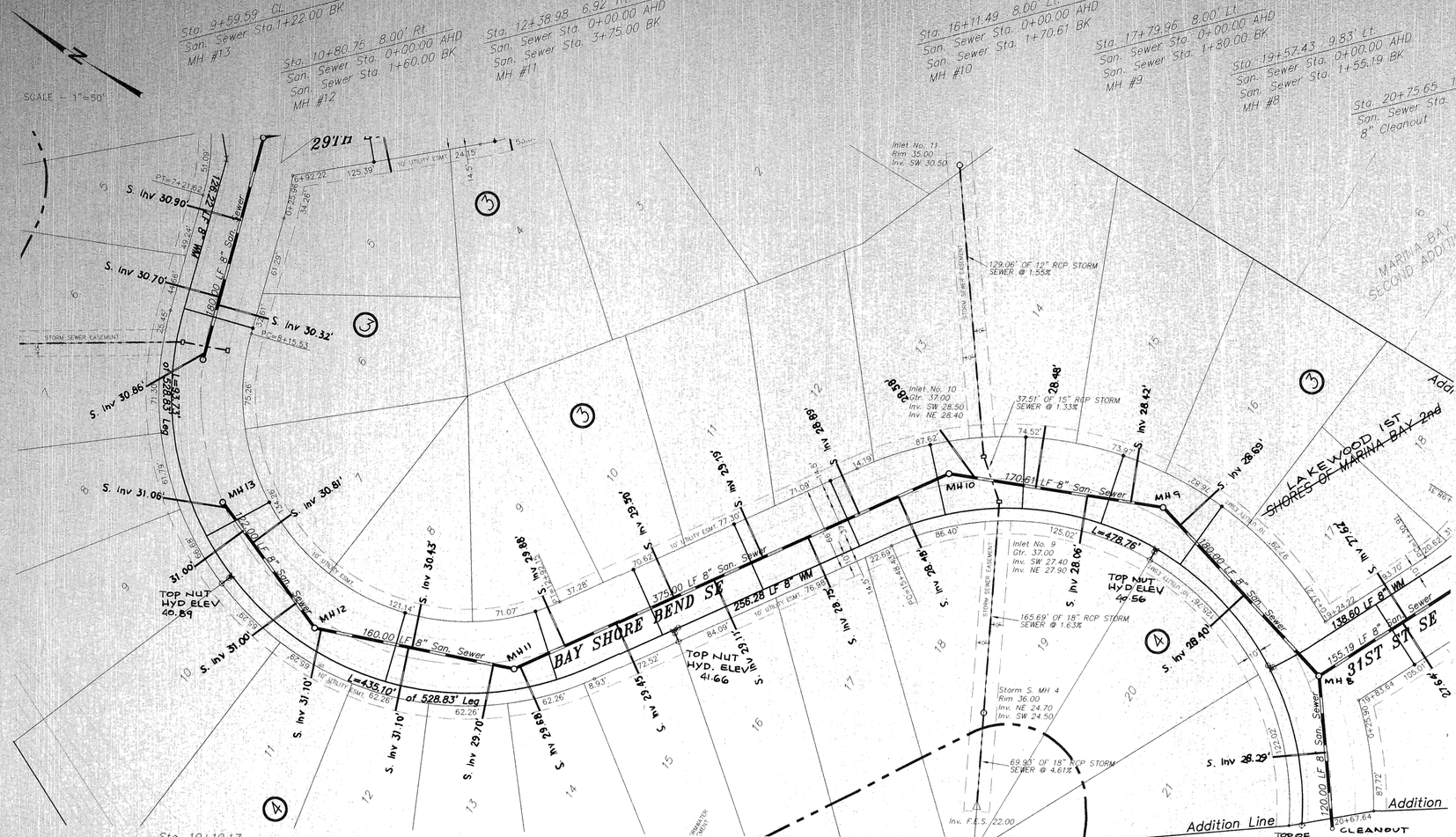
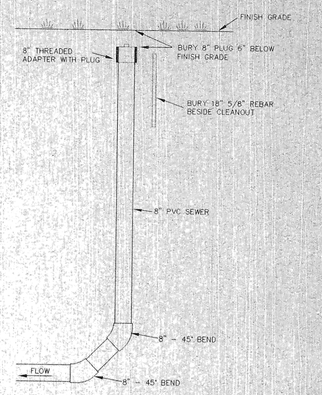


CONSTRUCTION NOTES (THIS SHEET)

1. BACKFILL SHALL BE CLASS 'A' WITHIN THE RIGHT OF WAY AND CLASS 'B' OUTSIDE OF THE RIGHT OF WAY.
2. GRADING SHALL BE BY OTHERS. PRIOR TO CONSTRUCTION FOR 29TH STREET SE, MCKENZIE DRIVE SE AND BAY SHORE BEND SE FROM STA. 0+00 TO STA. 9+00, 31ST STREET SE AND BAY SHORE BEND SE FROM STA. 9+00 TO STA. 20+80 WILL BE GRADED AFTER THE SANITARY SEWER IS INSTALLED AND BEFORE THE WATER AND STORM SEWER ARE INSTALLED. WATER AND SEWER CONTRACTOR SHALL COORDINATE CONSTRUCTION WITH THE EARTHWORK CONTRACTOR.
3. SUPPLIERS SHALL SUBMIT MANHOLE SHOP DRAWINGS TO THE CITY OF MANDAN ENGINEERING DEPARTMENT FOR APPROVAL.
4. CONTRACTOR SHALL PROTECT ALL SURVEY MONUMENTS. MONUMENTS DISTURBED OR DESTROYED SHALL BE REPLACED BY THE OWNER'S REPRESENTATIVE AT THE CONTRACTOR'S EXPENSE.
5. CONTRACTOR SHALL INSTALL AN ADDITIONAL BEND ON THE SEWER SERVICES FOR LOTS 8, 9, 10, 11, AND 12 OF BLOCK 4 IN ORDER TO CROSS OVER THE TOP OF THE 8" WATERMAIN.
6. CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY THE GROUND WATER ELEVATION. THE CONTRACTOR SHALL DEWATER AS NECESSARY TO CONSTRUCT THE SANITARY SEWER AND WATERMAIN. ALL COSTS ASSOCIATED WITH DEWATERING SHALL BE CONSIDERED INCIDENTAL TO OTHER BID ITEMS.
7. STORM SEWER TO BE CONSTRUCTED BY OTHERS.
8. CONTRACTOR SHALL INSTALL 6" HYDRANT EXTENSION FOR HYDRANT AT STA. 10+10.17. SAID WORK SHALL BE CONSIDERED INCIDENTAL TO THE "6" HYDRANT" BID ITEM.
9. ALL SANITARY SEWER SHALL HAVE INTEGRAL BASES WITH BOOTS.

Lot	Block	4" Sewer Service	4" x 45° Bend	8" x 4" Wye Branch	1" Copper Water Service Pipe	1" Water Service Connection	1" Ball Valve Curb Stop & 1 1/4" Box
20	4	36	1	1	---	---	---
16	3	42	1	1	56	1	1
15	3	43	1	1	56	1	1
19	4	38	1	1	---	---	---
14	3	39	1	1	56	1	1
13	3	40	1	1	56	1	1
18	4	44	1	1	---	---	---
12	3	43	1	1	56	1	1
17	4	43	1	1	---	---	---
11	3	43	1	1	56	1	1
16	4	43	1	1	---	---	---
10	3	43	1	1	56	1	1
15	4	43	1	1	---	---	---
9	3	43	1	1	56	1	1
14	4	38	1	1	---	---	---
13	4	43	1	1	---	---	---
8	3	36	1	1	56	1	1
12	4	51	2	1	---	---	---
11	4	39	2	1	---	---	---
10	4	43	2	1	---	---	---
7	3	38	1	1	56	1	1
9	4	48	2	1	---	---	---
8	4	51	2	1	---	---	---
21	4	42	1	1	---	---	---
TOTAL		1027	27	24	560	10	10



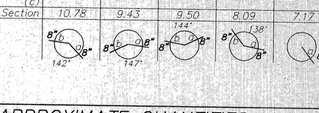
APPROXIMATE WYE LOCATIONS

STATION	DIRECTION	LOT	BLOCK
FROM MANHOLE NO. 8 TO MANHOLE NO. 9			
0+87	W	20	4
1+61	E	16	3
FROM MANHOLE NO. 9 TO MANHOLE NO. 10			
0+26	NE	15	3
0+61	SW	19	4
1+01	NE	14	3
1+50	N	13	3
FROM MANHOLE NO. 10 TO MANHOLE NO. 11			
0+44	SW	18	4
0+77	NE	12	3
1+22	SW	17	4
1+61	NE	11	3
2+03	SW	16	4
2+37	NE	10	3
2+87	SW	15	4
3+31	NE	9	3
3+70	SW	14	4
FROM MANHOLE NO. 11 TO MANHOLE NO. 12			
0+17	W	13	4
0+81	E	8	3
0+84	W	12	4
1+55	W	11	4
FROM MANHOLE NO. 12 TO MANHOLE NO. 13			
0+24	W	10	4
0+83	E	7	3
0+95	W	9	4
1+17	NW	8	4
FROM MANHOLE NO. 8 TO CLEANOUT			
0+60	NW	21	4

CLEANOUT DETAIL

NOT TO SCALE

Manhole Number	9	10	11	12	13
Casting Elev.	37.96	37.40	39.07	38.40	38.07
Top P.C. Section	36.92	36.36	35.03	37.36	37.03
Invert Elev. (a)	26.14	26.93	28.53	29.27	29.86
Invert Elev. (b)	26.24	27.03	28.63	29.37	
Invert Elev. (c)					
Length P.C. Section	10.78	9.43	9.50	8.09	7.17



Begin Watermain Quantities
Sta. 9+00.00

Begin San. Sewer Quantities
Sta. 9+59.59

Sta. 10+10.17
8" x 6" Tee - PI
3.00 LF 6" WM
6" Gate Valve & Box w/ROD WATEROUS
7.00 LF 6" WM
6" Hydrant AFC
6" Hydrant Extension

Sta. 13+64.67
8" x 6" Tee - PI
3.00 LF 6" WM
6" Gate Valve & Box w/ROD, WATEROUS
7.00 LF 6" WM
6" Hydrant - AFC

Sta. 13+69.00
8" Gate Valve & Box w/ROD, W.

Sta. 17+91.29
8" x 6" Tee - PI
3.00 LF 6" WM
6" Gate Valve & Box w/2OD, W.
7.00 LF 6" WM
6" Hydrant AFC

Sta. 19+35.68
8" x 8" Tee

Sta. 20+74.66
8" x 6" Reducer
2.00 LF 6" WM
6" Hydrant - AFC

Sta. 19+32.39
8" Gate Valve & Box w/ROD - WATEROUS

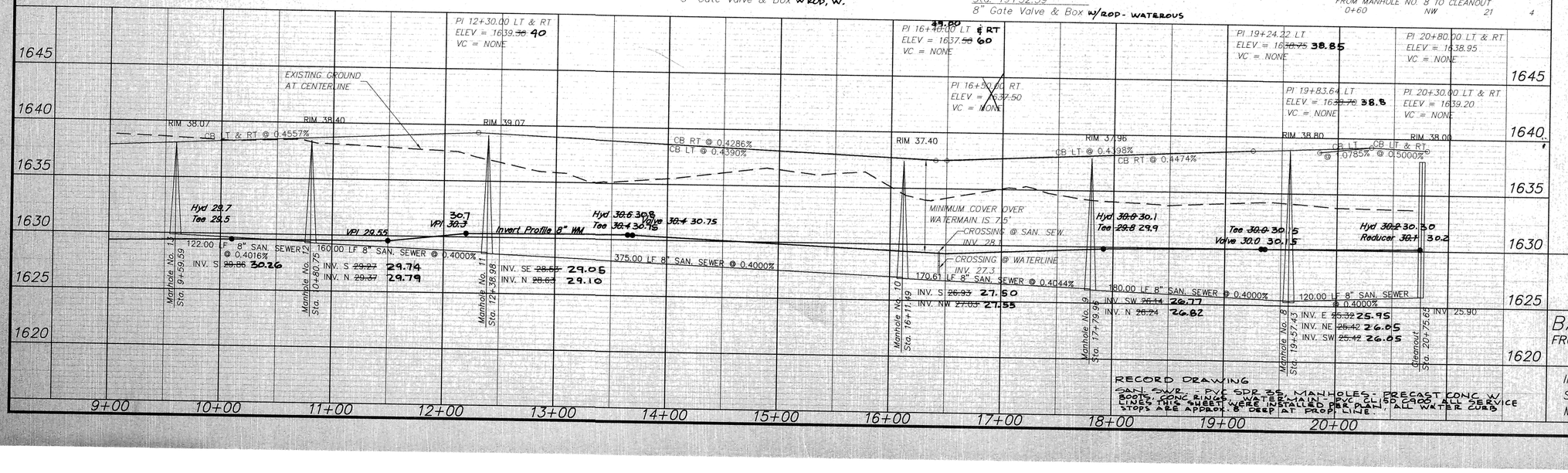
End Watermain Quantities
Sta. 20+74.66

End San. Sewer Quantities
Sta. 20+75.65

APPROXIMATE QUANTITIES

San. Sewer Items	Quantity
8" San. Sewer	1128 LF
8" x 4" Wye Branch	24 EA
Pitrun Gravel	300 TON
Subcut Gravel	40 TON
Rock Excavation	5 CY
Concrete Manhole	5 EA
4" Sewer Service Pipe	1027 LF
4" 45° Bend	27 EA
8" Cleanout	1 EA

Watermain Items	Quantity
Pitrun Gravel	320 TON
Subcut Gravel	30 TON
Rock Excavation	5 CY
6" PVC Watermain	32 LF
8" PVC Watermain	1169 LF
6" Hydrant	4 EA
6" Gate Valve & Box	3 EA
8" Gate Valve & Box	2 EA
Ductile Iron Fittings	(incidental)
1" Water Copper Serv. Pipe	560 LF
1" Water Serv. Connection	10 EA
1" Ball Valve Curb Stop And 1 1/4" Box	10 EA



RECORD DRAWING
SANITARY SEWER - PVC SDR 35, MANHOLES - PRECAST CONC W BOOTS, CONC BASES, WATERMAIN - PVC CL150 C900, ALL SERVICE LINES THIS SHEET WERE INSTALLED PER PLAN. ALL WATER CURB STOPS ARE APPROX. 8' DEEP AT PROP. LINE.

SWENSON, HAGEN & CO. P.C.
PLANNING CIVIL ENGINEERING SURVEYING
SITE DESIGN CONSTRUCTION MANAGEMENT
909 BASIN AVE P.O. BOX 1135 (701) 223-2600
BISMARCK, N.D. 58504 FAX (701) 223-2606
E-mail: shengr@btigate.com

BAY SHORE BEND SE

FROM STA. 12+00.00 TO STA. 20+67.64

IMPROVEMENT PROJECT 2000-32
SHEET NO. 5 OF 6
MANDAN, ND NOVEMBER 8, 2000

LONNIE K. ROMSAA REGISTERED PROFESSIONAL ENGINEER 1983 NORTH DAKOTA

P:\Mandan\Shores 1st Mar\dgn\Shores 2nd wtg.dwg Tue Nov 07 10:16:25 2000