

SCALE = 1"=50'

CONSTRUCTION NOTES (THIS SHEET)

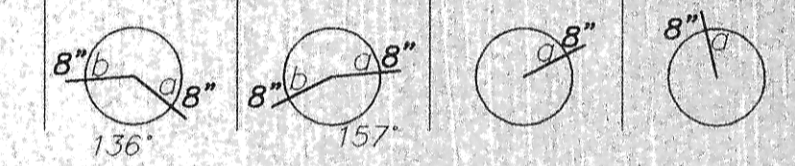
- BACKFILL SHALL BE CLASS 'A' WITHIN THE STREET RIGHT OF WAY AND CLASS 'B' OUTSIDE OF THE RIGHT OF WAY.
- GRADING SHALL BE BY OTHERS, PRIOR TO CONSTRUCTION FOR 29TH STREET SE, MCKENZIE DRIVE SE AND BAY SHORE BEND SE FROM STA. 0+00 TO STA. 9+00. 31ST STREET SE AND BAY SHORE BEND SE FROM STA. 9+00 TO STA. 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.
- SUPPLIERS SHALL SUBMIT MANHOLE SHOP DRAWINGS TO THE CITY OF MANDAN ENGINEERING DEPARTMENT FOR APPROVAL.
- CONTRACTOR SHALL PROTECT ALL SURVEY MONUMENTS. MONUMENTS DISTURBED OR DESTROYED SHALL BE REPLACED BY THE OWNER'S REPRESENTATIVE AT THE CONTRACTOR'S EXPENSE.
- CONTRACTOR SHALL INSTALL AN ADDITIONAL BEND ON THE SEWER SERVICES FOR LOTS 3, 4, 5, 6, AND 7 OF BLOCK 4 IN ORDER TO CROSS OVER THE TOP OF THE 8" WATERMAIN.
- 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.
- STORM SEWER TO BE CONSTRUCTED BY OTHERS.
- ALL SANITARY SEWER MANHOLES SHALL HAVE INTEGRAL BASES WITH BOOTS.

Lot	Block	4" Sewer Service	6" Sewer Service	4" 45" Bend	6" 45" Bend	8" x 4" Wye Branch	8" x 6" Wye Branch	1" Copper Water Service Pipe	2" Copper Water Service Pipe	1" Water Service Pipe Connection	2" Water Service Pipe Connection	2" Ball Valve	2" Ball Valve & 1 1/4" Box	2" Ball Valve & 1 1/4" Box
4	4	36	1	1	1	1	1	1	1	1	1	1	1	1
6	2	46	1	1	1	1	1	1	1	1	1	1	1	1
5	2	39	1	1	1	1	1	1	1	1	1	1	1	1
3	4	41	2	1	1	1	1	1	1	1	1	1	1	1
4	2	49	1	1	1	1	1	1	1	1	1	1	1	1
3	2	42	1	1	1	1	1	1	1	1	1	1	1	1
2	4	33	2	1	1	1	1	1	1	1	1	1	1	1
1	4	48	1	1	1	1	1	1	1	1	1	1	1	1
2	2	56	1	1	1	1	1	1	1	1	1	1	1	1
5	4	44	1	1	1	1	1	1	1	1	1	1	1	1
6	4	45	2	1	1	1	1	1	1	1	1	1	1	1
6	3	41	1	1	1	1	1	1	1	1	1	1	1	1
7	4	53	1	1	1	1	1	1	1	1	1	1	1	1
TOTAL		469	104	16	1	11	2	283	67	5	1	5	1	1

APPROXIMATE WYE LOCATIONS

STATION	DIRECTION	LOT	BLOCK
FROM MANHOLE NO. 2 TO MANHOLE NO. 3			
0+60	NW	4	4
1+29	SE	6	2
FROM MANHOLE NO. 3 TO MANHOLE NO. 4			
0+06	E	3	2
0+41	W	3	4
0+72	E	4	2
FROM MANHOLE NO. 4 TO MANHOLE NO. 5			
0+07	NE	3	2
0+35	SW	2	4
1+82	NW	1	4
1+84	NE	2	2
FROM MANHOLE NO. 2 TO MANHOLE NO. 6			
0+67	NW	5	4
1+30	NW	6	4
1+36	SE	6	3
1+75	NW	7	4

Manhole Number	3	4	5	6
Costing Elev.	38.18	37.77	37.40	37.55
Top P.C. Section	37.14	36.73	35.86	36.51
Invert Elev. (a)	29.74	30.36	31.22	29.82
Invert Elev. (b)	29.84	30.46		
Invert Elev. (c)				
Length P.C. Section	7.40	6.37	4.64	6.69



* TYPE II CONCRETE COVER

APPROXIMATE QUANTITIES

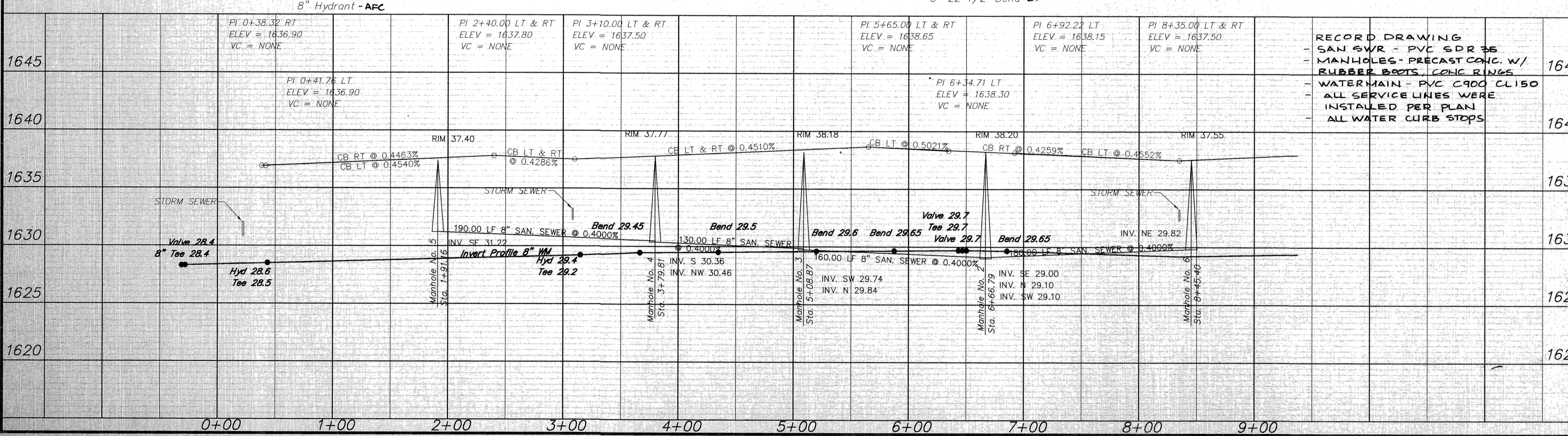
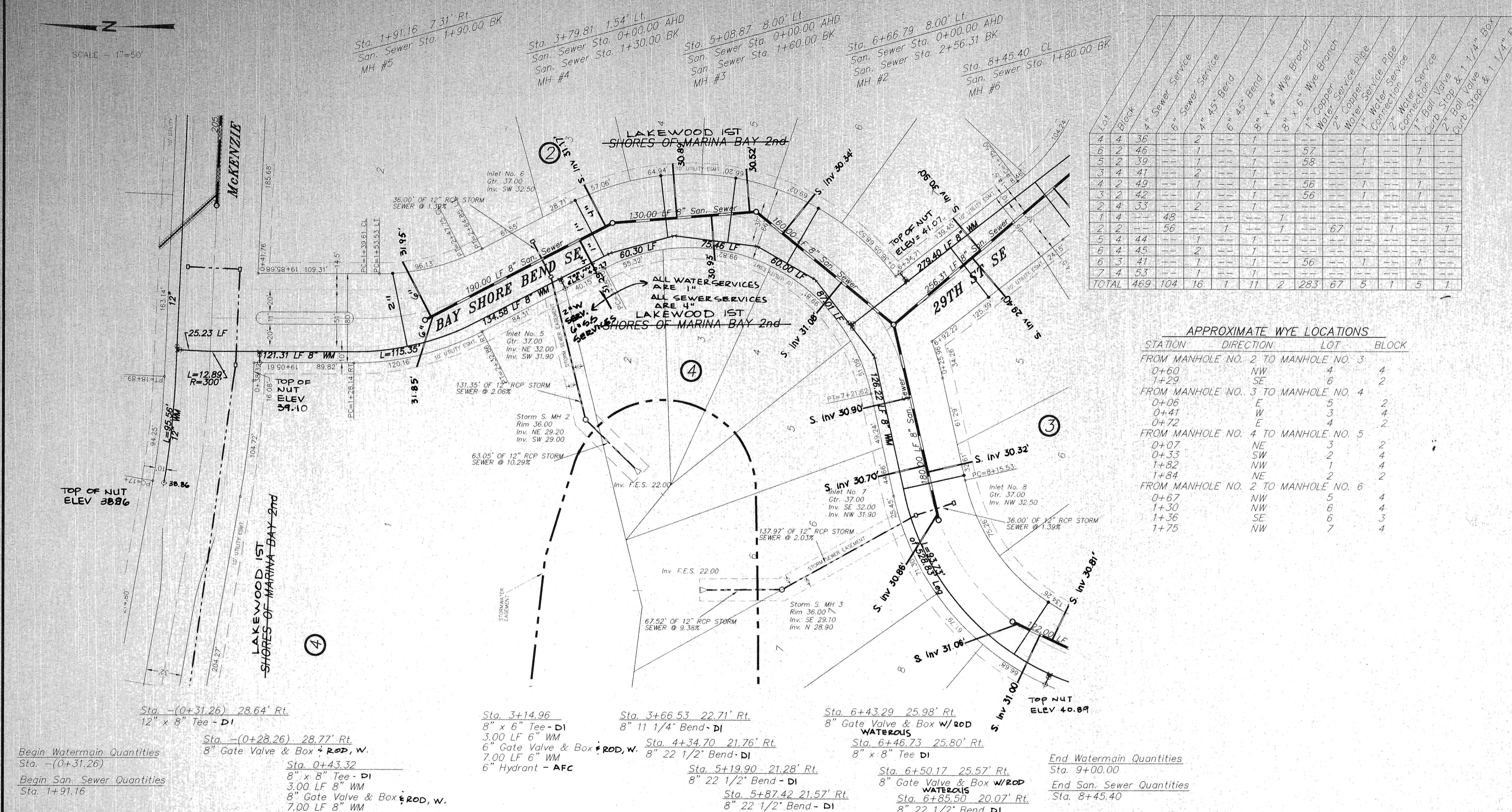
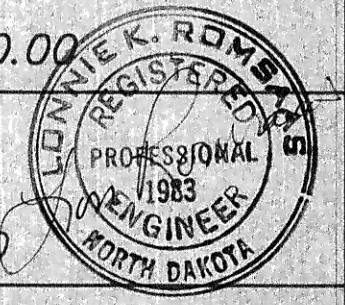
San. Sewer Items	Quantity
8" San. Sewer	660 LF
8" x 4" Wye Branch	11 EA
8" x 6" Wye Branch	2 EA
Pitrun Gravel	175 TON
Subcut Gravel	15 TON
Rock Excavation	5 CY
Concrete Manhole	4 EA
4" Sewer Service Pipe	469 LF
4" 45" Bend	16 EA
6" Sewer Service Pipe	104 LF
6" 45" Bend	1 EA

Watermain Items	Quantity
Pitrun Gravel	290 TON
Subcut Gravel	15 TON
Rock Excavation	5 CY
6" PVC Watermain	10 LF
6" PVC Watermain	922 LF
6" Hydrant	1 EA
8" Hydrant	1 EA
6" Gate Valve & Box	1 EA
8" Gate Valve & Box	4 EA
Ductile Iron Fittings	(incidental)
1" Water Copper Serv. Pipe	283 LF
1" Water Serv. Connection	5 EA
1" Ball Valve Curb Stop	5 EA
And 1 1/4" Box	
2" Water Copper Serv. Pipe	67 LF
2" Water Serv. Connection	1 EA
2" Ball Valve Curb Stop	1 EA
And 1 1/4" Box	

SWENSON, HAGEN & CO. P.C.
 PLANNING CIVIL ENGINEERING SURVEYING
 SITE DESIGN CONSTRUCTION MANAGEMENT
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 BISMARCK, N.D. 58504 FAX (701) 223-2606
 E-mail: sheng@hgate.com

BAY SHORE BEND SE
 MCKENZIE DRIVE-SOUTH
 FROM STA. 0+00.00 TO STA. 12+00.00

IMPROVEMENT PROJECT 2000-32
 SHEET NO. 3 OF 6
 MANDAN, ND NOVEMBER 8, 2000



Begin Watermain Quantities
 Sta. -(0+31.26)
 Begin San Sewer Quantities
 Sta. 1+91.16

Sta. 0+43.32
 8" x 8" Tee - DI
 3.00 LF 8" WM
 8" Gate Valve & Box w/ROD, W.
 7.00 LF 8" WM
 8" Hydrant - AFC

Sta. 3+14.96
 8" x 6" Tee - DI
 3.00 LF 6" WM
 6" Gate Valve & Box w/ROD, W.
 7.00 LF 6" WM
 6" Hydrant - AFC

Sta. 5+19.90
 8" 22 1/2" Bend - DI

Sta. 6+50.17
 8" Gate Valve & Box w/ROD
 WATERLOUS
 8" x 8" Tee DI

End Watermain Quantities
 Sta. 9+00.00

End San Sewer Quantities
 Sta. 8+45.40

RECORD DRAWING
 - SAN SWR - PVC SDR 35
 - MANHOLES - PRECAST CONC. W/ RUBBER BOOTS, CONC RINGS
 - WATERMAIN - PVC C900 CL150
 - ALL SERVICE LINES WERE INSTALLED PER PLAN
 - ALL WATER CURB STOPS

C:\p\mandan\shores of mckenzie drive-south.dwg Tue Nov 07 16:42:55 2000. CUP