



SCALE - 1"=50'

Lot	Block	4" Sewer Service	4" x 22 1/2" Bend	4" x 45" Bend	8" x 4" Wye Branch	Sewer Service Invert	At The Cap	1" Copper	1" Water Service Pipe	1" Ball Valve	Curb Stop & 1 1/2" Box
3	1	43.0	1	1	29.43	---	---	---	---	---	---
13	1	43.0	1	1	29.45	56.0	1	1	---	---	---
4	1	42.6	1	1	29.89	---	---	---	---	---	---
12	1	43.0	1	1	30.18	56.0	1	1	---	---	---
5	1	43.0	1	1	30.29	---	---	---	---	---	---
11	1	43.0	1	1	30.65	56.0	1	1	---	---	---
6	1	43.1	1	1	30.73	11.0	1	1	---	---	---
7	1	74.8	1	---	31.27	10.5	1	1	---	---	---
10	1	70.0	1	1	31.31	95.0	1	1	---	---	---
9	1	48.9	---	1	31.19	68.3	1	1	---	---	---
8	1	44.9	---	1	31.16	28.8	1	1	---	---	---
TOTAL	539.3	1	8	11	381.6	8	8	---	---	---	---

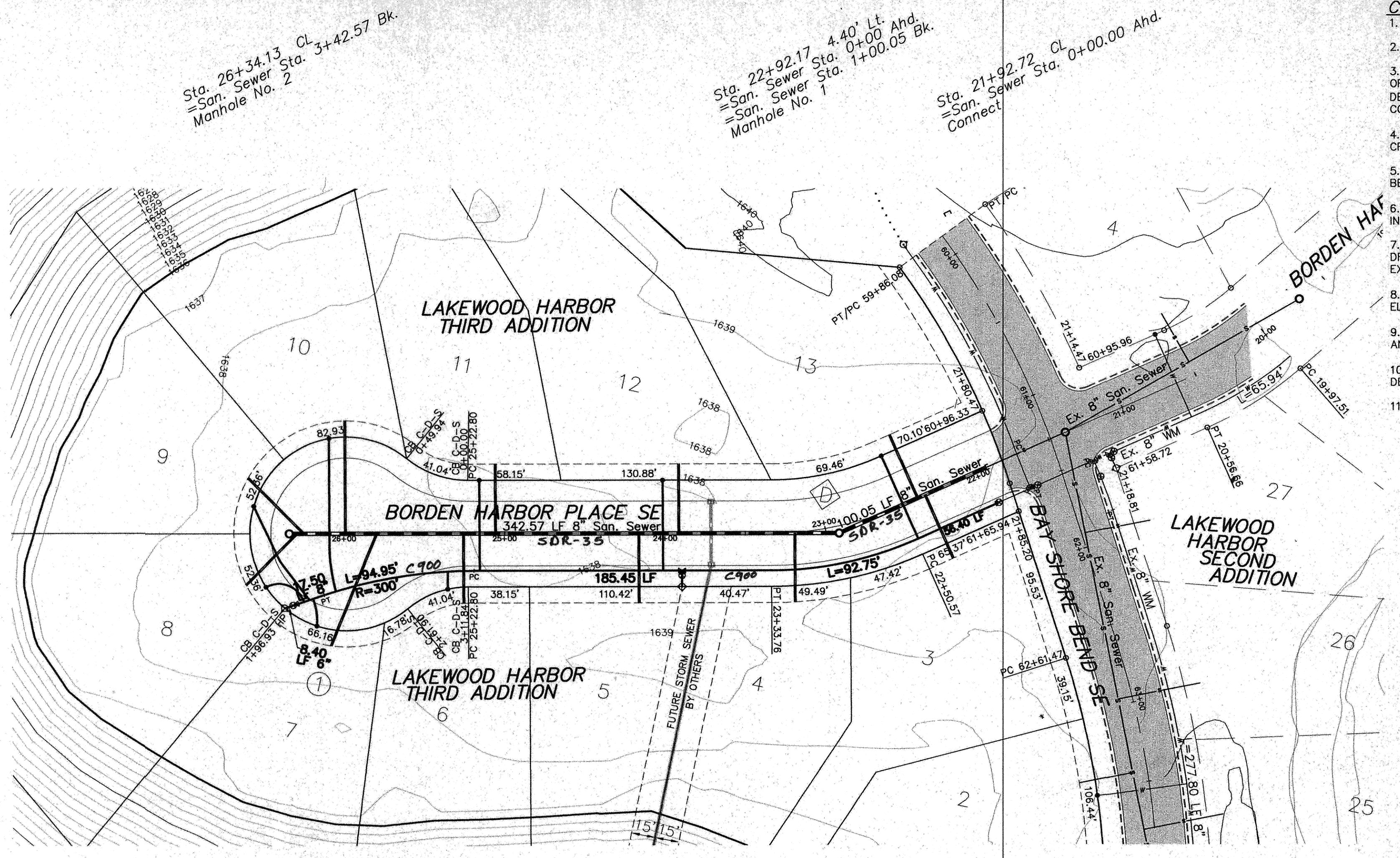
APPROXIMATE WYE LOCATIONS

STATION	DIRECTION	LOT	BLOCK
FROM EX. PLUG TO MANHOLE NO. 1			
0+42	NW	3	1
0+47	SE	13	1
FROM MANHOLE NO. 1 TO MANHOLE NO. 2			
0+28	S	4	1
1+00	N	12	1
1+25	S	5	1
2+14	N	11	1
2+34	S	6	1
2+88	SW	7	1
3+08	N	10	1
3+33	NW	9	1
3+38	SW	8	1

Manhole Number	1	2
Casting Elev.	38.14	38.87
Top P.C. Section	37.10	37.83
Invert Elev. (a)	29.00	30.50
Invert Elev. (b)	29.10	---
Length P.C. Section	8.10	7.33

CURVE DATA

CURVE	RADIUS	LENGTH	TANGENT	DELTA
D	200.00'	83.19'	42.20'	23°49'53"



- CONSTRUCTION NOTES (THIS SHEET)**
- BACKFILL SHALL BE CLASS 'A'.
 - GRADING SHALL BE BY OTHERS, PRIOR TO CONSTRUCTION.
 - 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 SUBJECT GRAVEL) OF THE CONSTRUCTION SITE AS REQUIRED TO INSTALL THE PROPOSED UTILITIES.
 - EXERCISE CAUTION WHEN CROSSING THE SEWER SERVICES WITH THE 8" WATERMAIN OR CROSSING THE WATERMAIN WITH THE SEWER SERVICES.
 - PROTECT THE EXISTING PAVEMENT AND CURB AND GUTTER. THE CONTRACTOR SHALL BE RESPONSIBLE TO REPAIR ANY DAMAGES.
 - REMOVE, SALVAGE AND RESET THE "ROAD CLOSED" TYPE 3 BARRICADE AT THE INTERSECTION OF BORDEN HARBOR PLACE SE AND BAYSHORE BEND SE.
 - DURING THE CONSTRUCTION OF THE PROJECT THE CONTRACTOR SHALL MAINTAIN DRAINAGE OF THE INTERSECTION TO THE WEST SO THAT WATER IS NOT BACKED UP ON THE EXISTING STREET.
 - REMOVE THE CAP ON THE EXISTING 8" SANITARY SEWER LINE, VERIFY LOCATION AND ELEVATION AND CONNECT THE NEW SEWER LINE.
 - REMOVE THE PLUG ON THE EXISTING 8" WATERMAIN, VERIFY LOCATION AND ELEVATION AND CONNECT THE NEW SEWER LINE.
 - THE HYDRANT AT STA. 23+89.57 & STA. 26+37.19 SHALL BOTH HAVE A 9.0' BURY DEPTH.
 - THE STORM SEWER IS NOT PART OF THIS CONTRACT.

Sta. 26+34.13 Cl. 4+42.57 Bk.
=San. Sewer Sta. 3+42.57 Bk.
Manhole No. 2

Sta. 22+92.17 4.40' Lt.
=San. Sewer Sta. 0+00 Ahd.
=San. Sewer Sta. 1+00.05 Bk.
Manhole No. 1

Sta. 21+92.72 Cl. 0+00.00 Ahd.
=San. Sewer Sta. 0+00.00 Ahd.
Connect

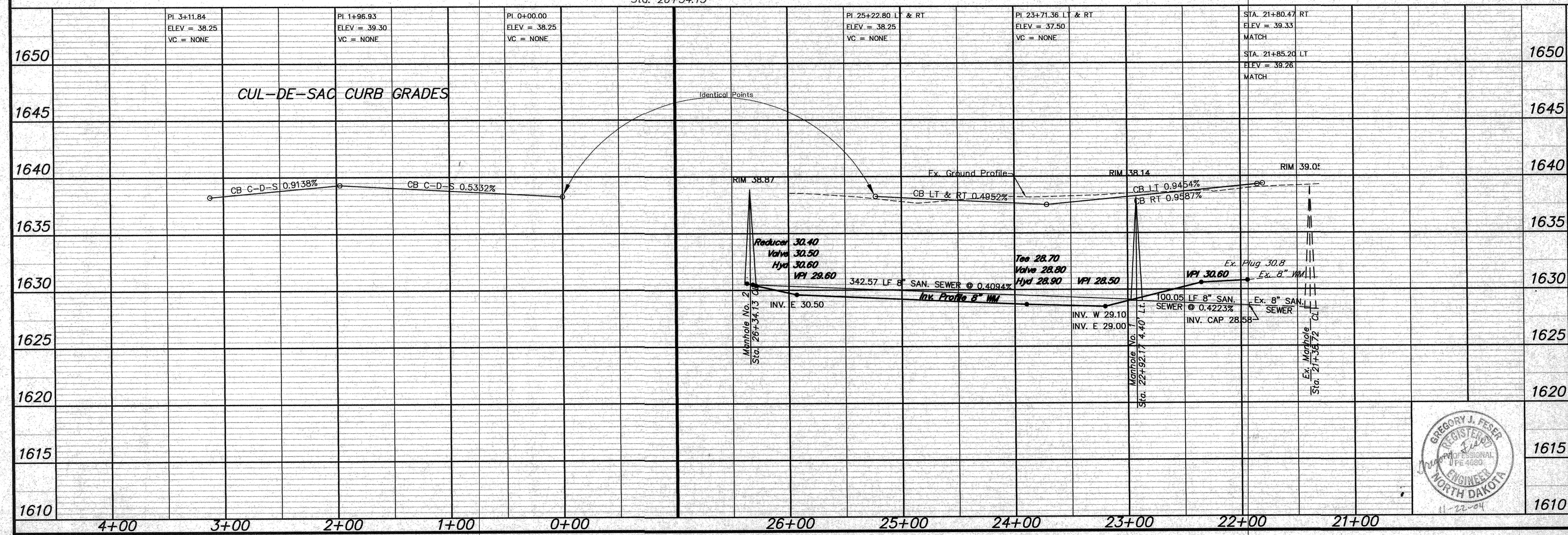
Sta. 26+29.15 43.33' Lt.
8" x 6" Reducer
Sta. 26+32.00 44.26' Lt.
6" Gate Valve & Box
Sta. 26+37.19 45.96' Lt.
6" Hydrant - *Watercons*

Sta. 23+89.57
8" x 6" Tee
3.00 LF 6" WM
6" Gate Valve & Box
7.00 LF 6" WM
6" Hydrant - *Watercons*

Sta. 21+94.17
Remove Plug/Connect
8" Gate Valve & Box

Begin Watermain Quantities
Sta. 21+94.17

Begin San. Sewer Quantities
Sta. 21+92.72



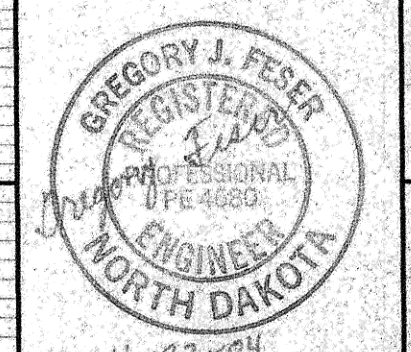
APPROXIMATE QUANTITIES

San. Sewer Items	Quantity
8" Sanitary Sewer	443 LF
8" x 4" Wye Branch	11 EA
Subcut Gravel	10 TON
Concrete Manhole	2 EA
4" Sewer Service Pipe	539 LF
4" 45" Bend	8 EA
4" 22 1/2" Bend	1 EA

Watermain Items

Watermain Items	Quantity
6" PVC Watermain	18 LF
8" PVC Watermain	447 LF
6" Hydrant	2 EA
6" Gate Valve & Box	2 EA
8" Gate Valve & Box	1 EA
Ductile Iron Fittings (incidental)	---
1" Water Copper Serv. Pipe	382 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
908 BASIN AVE. P.O. BOX 1195 (701) 228-8800
BISMARCK, N.D. 58504 FAX (701) 228-8800
E-mail: shagen@swensonhagen.com



BORDEN HARBOR PLACE SE
FROM BAYSHORE BEND SE
WEST TO THE CUL-DE-SAC

1615 WATER AND SEWER IMPROVEMENT PROJECT 2005-07
SHEET NO. 2 OF 2

1610 MANDAN, ND NOVEMBER 19, 2004

Record Drawing