

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 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.
- CONNECTION TO THE EXISTING 8" SANITARY SEWER LINE SHALL BE CONSIDERED INCIDENTAL TO THE "8" SANITARY SEWER BID" BID ITEM
- THE LOCATION OF THE EXISTING 8" WATERMAIN IS APPROXIMATE AND IS RECOMMENDED THAT THE CONTRACTOR VERIFY ITS LOCATION PRIOR TO START OF CONSTRUCTION. THE CONTRACTOR SHALL LIMIT THE DOWN TIME ON THE EXISTING 8" WATERMAIN WHICH PROVIDES SERVICE TO THE CITY OF MANDAN WASTE WATER TREATMENT PLANT TO ONE (1) DAY. THE CONTRACTOR MAY ELECT TO USE RESTRAINED JOINT FITTINGS TO AID IN TESTING AND TURNING ON THE WATER SOONER. THE NEW WATERMAIN SHALL BE PRESSURE TESTED AND CHLORINATED PRIOR TO MAKING THE CONNECTIONS. THE CONTRACTOR SHALL PROVIDE 48 HOURS NOTICE TO THE CITY OF MANDAN WASTE WATER TREATMENT PLANT PRIOR TO SHUTTING DOWN THE WATER. CONNECTIONS TO THE EXISTING 8" WATERMAIN SHALL BE CONSIDERED INCIDENTAL TO THE "8" PVC WATERMAIN" BID ITEM.
- EXERCISE CAUTION WHEN CROSSING THE SEWER SERVICES WITH THE 8" WATERMAIN OR CROSSING THE WATERMAIN WITH THE SEWER SERVICES.
- THE STORM SEWER IS NOT PART OF THIS CONTRACT.
- EXISTING CONTOURS AND SURVEY POINTS ARE SHOWN. NO ADDITIONAL GRADING WILL BE COMPLETED PRIOR TO THE START OF THE WATER/SEWER PROJECT. THE CONTRACTOR DOES NOT HAVE TO SALVAGE GRAVEL ON SOUTH BAY DRIVE SE OR RESTORE THE ROADWAY AND DITCHES AT COMPLETION OF THIS PROJECT.
- THERE ARE TWO DEAD TREE PILES WITHIN THE CONSTRUCTION SITE THAT WILL BE IN THE WAY FOR CONSTRUCTION OF WATERMAIN AND SEWER SERVICES AS SHOWN ON THE PLANS. THE CONTRACTOR SHALL MOVE THE TREE PILES AS REQUIRED TO CONSTRUCT THE PROPOSED UTILITIES. MOVE THE TREES TO THE SIDE OF THE PILE SO THAT THEY ARE OUT OF THE WAY FOR CONSTRUCTION AND DO NOT INTERFERE WITH OTHER WORK. SAID WORK SHALL BE CONSIDERED INCIDENTAL TO THE LUMP SUM BID FOR "MOVE TREES".

Lot	Block	4" Sewer Service	4" 45' Bend	4" 22 1/2' Bend	8" x 4" Wye Branch At The Cap	Water Service Invert	1" Water Service Pipe Connection	1" Ball Valve	1" Curb Stop & 1 1/4" Box
34	3	33	1	---	1	28.00	---	---	---
23	2	33	1	---	1	28.00	56	1	1
22	2	32	---	1	1	28.00	56	1	1
21	2	38	1	---	1	28.00	56	1	1
32	3	25	1	---	1	28.00	---	---	---
20	2	41	1	---	1	28.00	56	1	1
31	3	40	1	---	1	28.00	---	---	---
19	2	28	1	---	1	28.00	56	1	1
18	2	35	1	---	1	28.00	56	1	1
30	3	25	1	---	1	28.00	56	1	1
17	2	41	1	---	1	28.00	56	1	1
16	2	35	---	1	1	28.00	56	1	1
TOTAL	406	10	2	12	---	448	8	8	8

Manhole Number	3	4	5
Casting Elev.	37.97	37.48	38.42
Top P.C. Section	36.93	36.44	37.38
Invert Elev. (a)	24.72	23.59	26.38
Invert Elev. (b)	24.82	25.69	26.48
Length P.C. Section	12.21	10.85	11.00

SCALE - 1"=50'

Sta. 45+32.99 Cl. 0+55.00 Bk. =San. Sewer Sta. 8" Cap
 Sta. 44+77.99 Cl. 0+00 Ahd. =San. Sewer Sta. 3+12.49 Bk. MH #2
 Sta. 42+97.26 4.82' Lt. =San. Sewer Sta. 0+00 Ahd. 1+81.30 Bk. MH #3
 Sta. 41+08.20 8.50' Lt. =San. Sewer Sta. 0+00 Ahd. 1+90.11 Bk. MH #4
 Sta. 39+36.56 Cl. 0+00 Ahd. =San. Sewer Sta. 1+71.90 Bk. MH #5

Centerline Curve Data
 Δ = 85° 00' 00"
 T = 274.90'
 R = 300.00'
 L = 445.06'

APPROXIMATE WYE LOCATIONS

STATION	DIRECTION	LOT	BLOCK
FROM MANHOLE NO. 2 TO MANHOLE NO. 3			
0+78	W	34	N.S.
0+88	E	23	N.S.
1+57	NE	22	N.S.
FROM MANHOLE NO. 3 TO MANHOLE NO. 4			
0+44	NE	21	N.S.
0+72	SW	20	N.S.
1+11	NE	20	N.S.
1+78	SW	31	N.S.
1+83	SE	19	N.S.
FROM MANHOLE NO. 4 TO MANHOLE NO. 5			
0+38	NE	18	N.S.
1+06	SW	30	N.S.
1+11	NE	17	N.S.
1+66	NE	16	N.S.

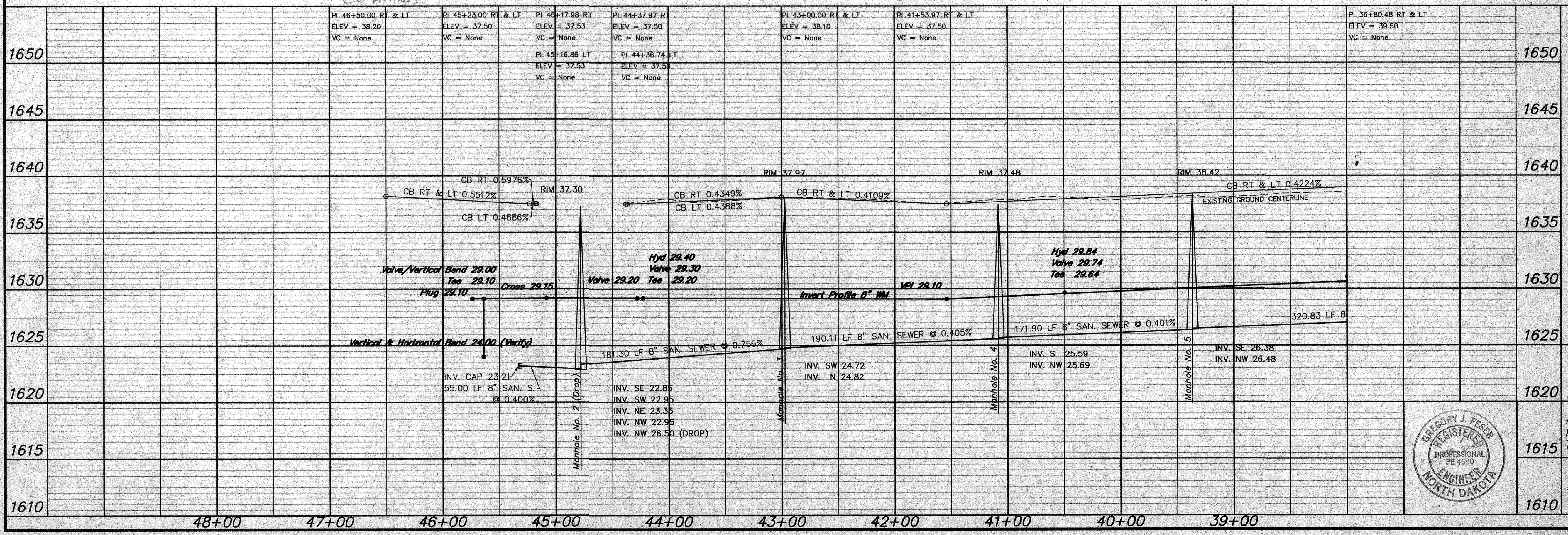
Begin Watermain Quantities
 Sta. 45+73.81
 Begin San. Sewer Quantities
 Sta. 44+90.99

Sta. 45+63.81
 8" x 8" Tee
 3.00 LF 8" WM
 8" Gate Valve & Box
 8" Vertical Bend
 9.01 LF 8" WM
 8" Vertical Bend
 8" 1 1/4" Horizontal Bend
 (C.R.T. Fittings)

Sta. 44+25.97
 8" Gate Valve & Box
 Sta. 44+22.97
 8" x 6" Tee
 3.00 LF 6" WM
 6" Gate Valve & Box
 7.00 LF 6" WM
 6" Hydrant

Sta. 40+49.52
 8" x 6" Tee
 3.00 LF 6" WM
 6" Gate Valve & Box
 7.00 LF 6" WM
 6" Hydrant

End Watermain Quantities
 Sta. 39+05.61
 End San. Sewer Quantities
 Sta. 39+36.56



APPROXIMATE QUANTITIES

San. Sewer Items	Quantity
8" Sanitary Sewer	598 LF
8" x 4" Wye Branch	12 EA
Subcut Gravel	275 TON
Concrete Manhole	3 EA
4" Sewer Service Pipe	406 LF

Watermain Items

Watermain Items	Quantity
Move Trees	1 LS
6" PVC Watermain	20 LF
6" PVC Watermain	645 LF
6" Hydrant	2 EA
6" Gate Valve & Box	2 EA
8" Gate Valve & Box	2 EA
Ductile Iron Fittings	(incidental)
1" Water Copper Serv. Pipe	448 LF
1" Water Serv. Connection	8 EA
1" Ball Valve Curb Stop And 1 1/4" Box	8 EA

SWENSON, HAGEN & CO. P.C.
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 BISMARCK, N.D. 58504 FAX (701) 223-8608
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BAY SHORE BEND
 FROM STA. 39+36.56 TO THE SOUTH BOUNDARY LINE

1615 WATER AND SEWER IMPROVEMENT PROJECT 2004-09
 SHEET NO. 3 OF 4
 1610 MANDAN, ND MARCH 26, 2004

Record Drawing