

- 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.
  - THE STORM SEWER IS NOT PART OF THIS CONTRACT.
  - EXERCISE CAUTION WHEN CROSSING THE SEWER SERVICES WITH THE WATERMAIN OR CROSSING THE WATERMAIN WITH THE SEWER SERVICES.

**APPROXIMATE WYE LOCATIONS**

STATION	DIRECTION	LOT	BLOCK
FROM MANHOLE NO. 2 TO MANHOLE NO. 4			
0+91	N	16	2
1+52	S	10	1
2+04	S	15	2
FROM MANHOLE NO. 4 TO MANHOLE NO. 5			
0+63	N	9	1
0+73	S	14	2
1+53	N	8	1
1+69	S	13	2
FROM MANHOLE NO. 5 TO MANHOLE NO. 6			
0+30	N	7	1
0+34	S	12	2
1+04	S	11	2
1+25	N	6	1
2+12	S	10	2
2+16	N	5	1
FROM MANHOLE NO. 7 TO MANHOLE NO. 8			
1+30	S	8	2
1+40	N	3	1
2+31	N	3	1
2+47	S	9	2
2+95	NW	4	1

Manhole Number	4	5	6	7	8
Casting Elev.	38.84	40.16	41.20	38.93	40.71
Top P.C. Section	37.84	39.16	40.20	37.93	39.71
Invert Elev. (a)	29.19	30.14	31.07	30.16	31.41
Invert Elev. (b)	29.24	30.19		30.21	
Invert Elev. (c)				30.21	
Length P.C. Section	8.65'	9.02'	9.13'	7.77'	8.30'

Begin Watermain Quantities  
 Sta. 0+21.18  
 Begin San. Sewer Quantities  
 Sta. 0+00.00

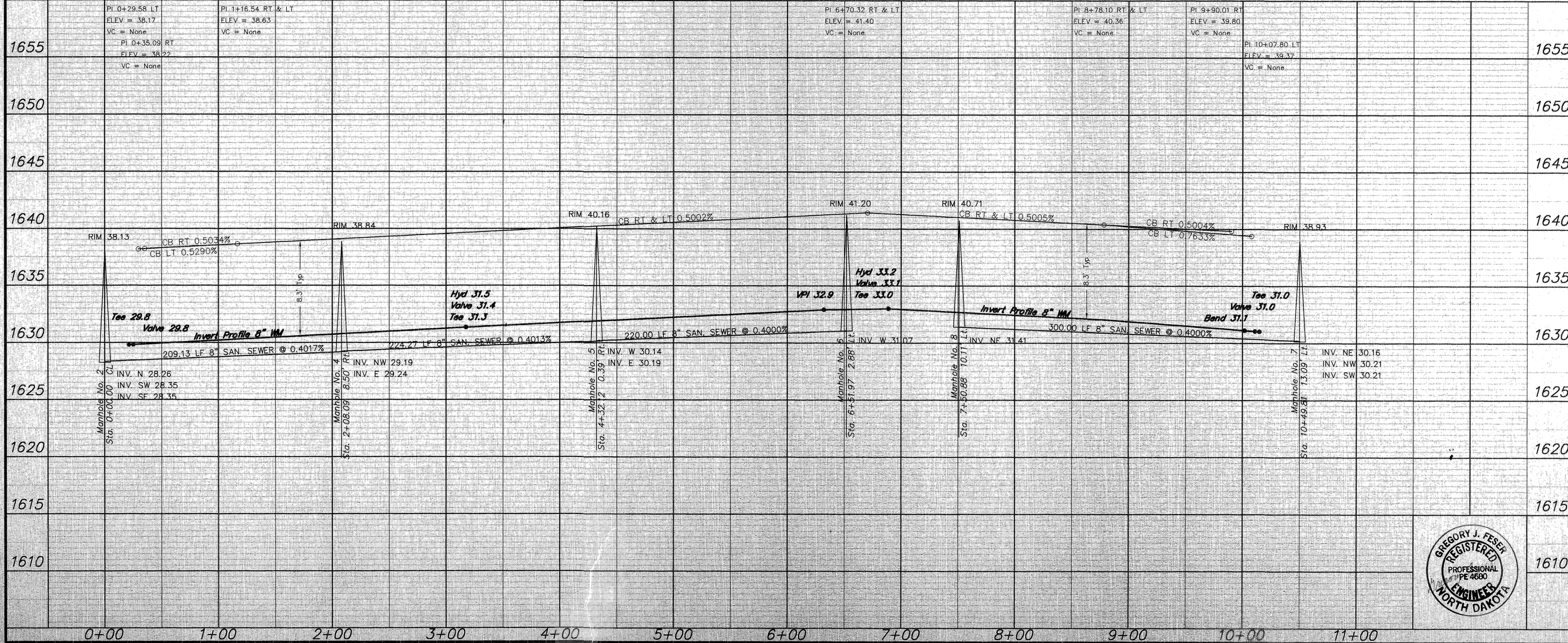
Sta. 0+21.18 20.77' Lt.  
 8" x 8" Tee  
 Sta. 0+25.16 21.23' Lt.  
 8" Gate Valve & Box

Sta. 3+17.37  
 8" x 6" Tee  
 3.00 LF 6" WM  
 6" Gate Valve & Box  
 7.00 LF 6" WM  
 6" Hydrant

Sta. 6+88.62  
 8" x 6" Tee  
 3.00 LF 6" WM  
 6" Gate Valve & Box  
 7.00 LF 6" WM  
 6" Hydrant

Sta. 10+01.62  
 8" 11 1/4" Bend  
 Sta. 10+10.77 20.96' Lt.  
 8" Gate Valve & Box

End Watermain Quantities  
 Sta. 10+14.64  
 End San. Sewer Quantities  
 Sta. 10+49.81



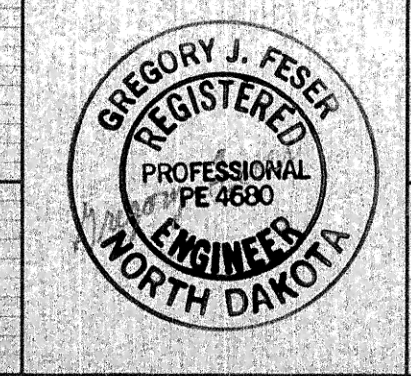
**APPROXIMATE QUANTITIES**

San. Sewer Items	Quantity
8" Sanitary Sewer	953 LF
8" x 4" Wye Branch	18 EA
Pitrun Gravel	5 TON
Subcut Gravel	5 TON
Concrete Manhole	5 EA
4" Sewer Service Pipe	679 LF
4" 45° Bend	17 EA

Watermain Items	Quantity
Pitrun Gravel	5 TON
6" PVC Watermain	20 LF
8" PVC Watermain	932 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	392 LF
1" Water Serv. Connection	7 EA
1" Ball Valve Curb Stop And 1 1/4" Box	7 EA

SWENSON, HAGEN & CO. P.C.  
 PLANNING CIVIL ENGINEERING SURVEYING  
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**INLET BAY DRIVE SE**  
 FROM THE INTERSECTION WITH EDGEWATER PLACE SE  
 EAST TO THE INTERSECTION WITH HARBOR TRAIL SE

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WATER AND SEWER IMPROVEMENT PROJECT 2002-04  
 SHEET NO. 4 OF 5  
 MANDAN, ND MAY 5, 2002