

Sta. 0+00.00 Cl. 0+00 Ahd. 3+37.54 Bk.  
 =San. Sewer Sta. 3+37.54 Bk.  
 Manhole No. 2

Sta. 2+08.09 8.50' Rt. 0+00 Ahd. 2+09.13 Bk.  
 =San. Sewer Sta. 2+09.13 Bk.  
 Manhole No. 4

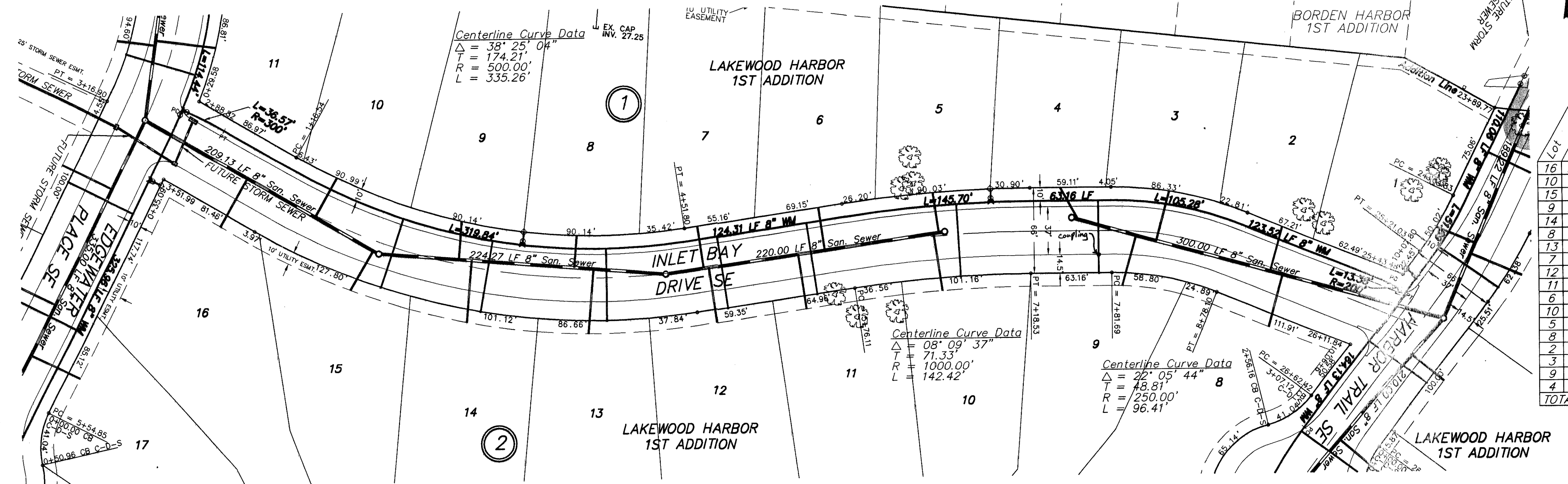
Sta. 4+32.12 0.39' Rt. 0+00 Ahd. 2+24.27 Bk.  
 =San. Sewer Sta. 2+24.27 Bk.  
 Manhole No. 5

Sta. 6+51.97 2.88' Lt. 2+20.00 Bk.  
 =San. Sewer Sta. 2+20.00 Bk.  
 Manhole No. 6

Sta. 7+50.88 10.11' Lt. 3+00.00 Bk.  
 =San. Sewer Sta. 3+00.00 Bk.  
 Manhole No. 8

Sta. 10+49.81 13.09' Lt. 0+00 Ahd. 3+84.83 Bk.  
 =San. Sewer Sta. 3+84.83 Bk.  
 Manhole No. 7

- 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                                | S         | 16  | 2     |
| 1+52                                | N         | 10  | 1     |
| 2+04                                | S         | 15  | 2     |
| FROM MANHOLE NO. 4 TO MANHOLE NO. 5 |           |     |       |
| 0+63                                | N         | 9   | 1     |
| 0+73                                | N         | 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                                | N         | 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         | 2   | 1     |
| 2+31                                | N         | 3   | 2     |
| 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' |

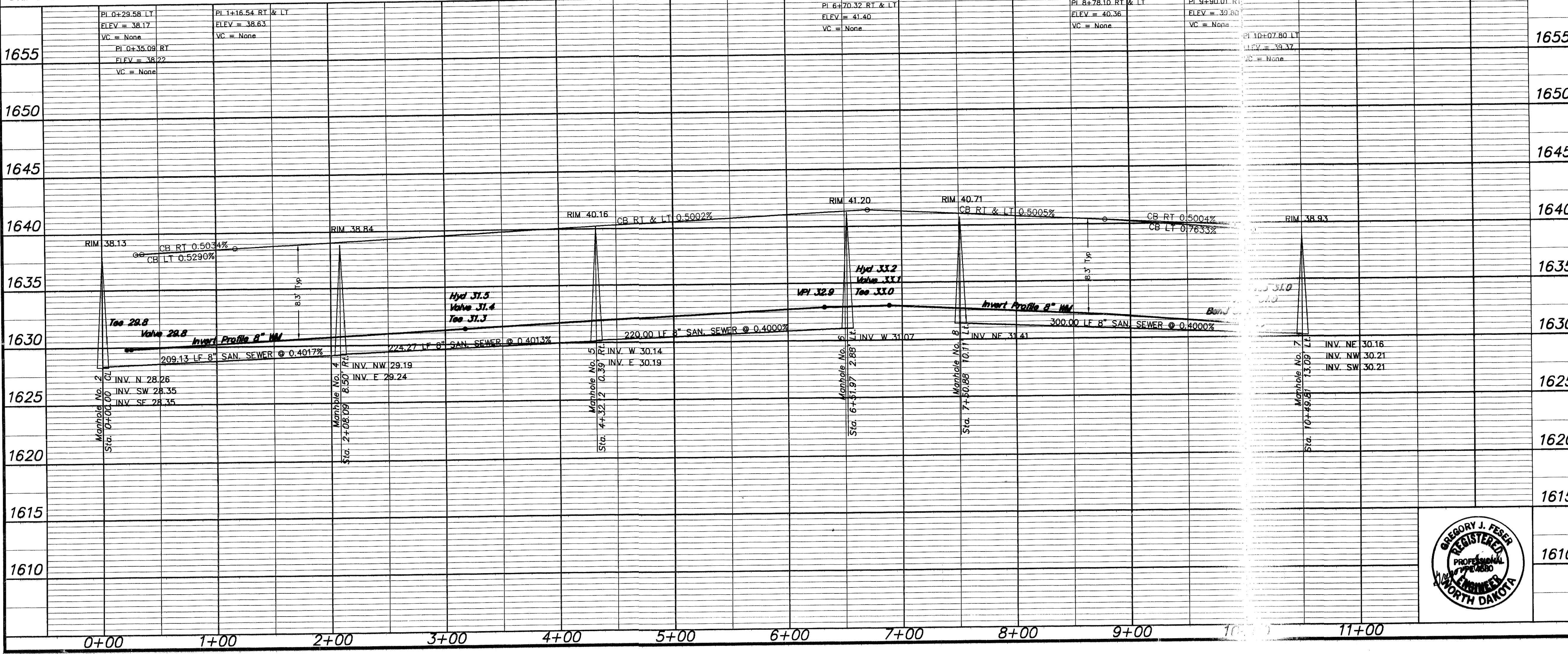
Begin Watermain Quantities Sta. 0+21.18  
 8" x 8" Tee  
 Sta. 0+25.16 21.23' Lt.  
 8" Gate Valve & Box

Begin San. Sewer Quantities Sta. 0+00.00  
 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.**  
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**INLET BAY DRIVE SE**  
 FROM THE INTERSECTION WITH EDGEWATER PLACE SE  
 EAST TO THE INTERSECTION WITH HARBOR TRAIL SE

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

Record Drawing - July 2002