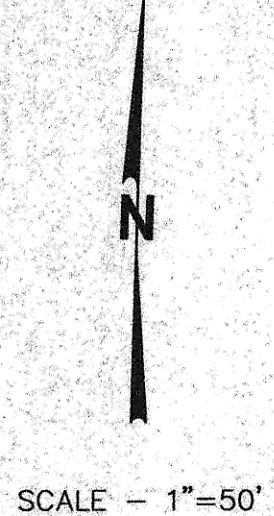


CONSTRUCTION NOTES (THIS SHEET)

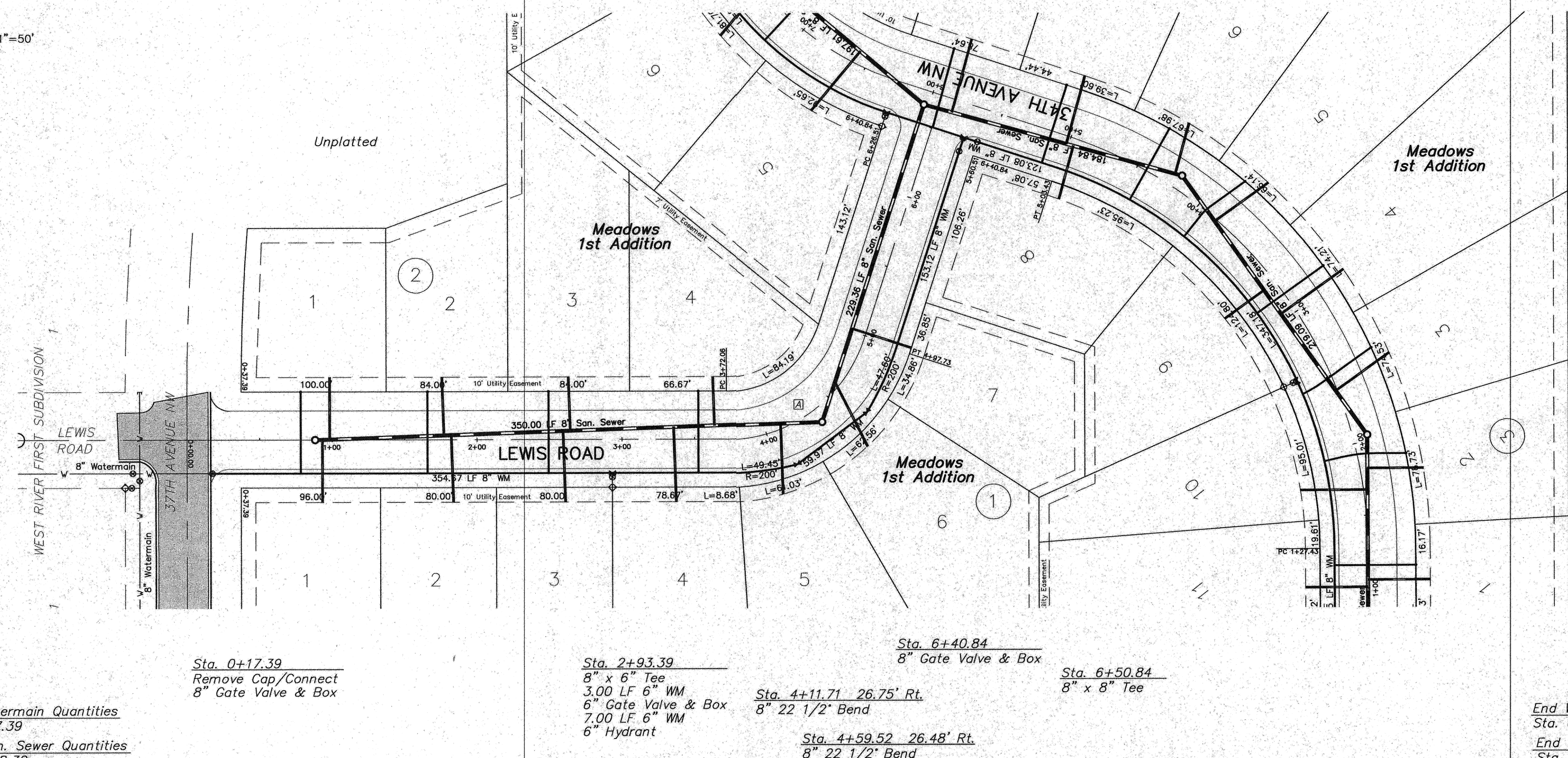
- BACKFILL SHALL BE CLASS 'A'.
- GRADING SHALL BE BY OTHERS, PRIOR TO CONSTRUCTION.
- THE CONTRACTOR SHALL REMOVE, DISPOSE OF OFFSITE THE ASPHALT AND CURB AND GUTTER AS REQUIRED TO MAKE THE CONNECTION TO THE EXISTING 8" WATERMAIN AT 37TH AVENUE NW. THE CONTRACTOR SHALL REPLACE THE ASPHALT. THE CURB AND GUTTER IS NOT REQUIRED TO BE REPLACED.



Sta. 0+88.32 CL
=San. Sewer Sta. 3+50.00 BK
Manhole No. 6

Sta. 4+36.47 10.00' Rt.
=San. Sewer Sta. 0+00.00 Ahd.
Manhole No. 5

Sta. 6+63.84 10.00' Lt.
=San. Sewer Sta. 0+00.00 Ahd.
Manhole No. 3



| Lot | Block | 4" Sewer Service | 4" 45° Bend | 8" x 4" Wye Branch | Sewer Service Invert At The Cop | 1" Copper Water Service Pipe | 7" Water Service Pipe Connection | 1" Ball Valve | Curb Stop & 1 1/2" Box |
|--------------|-------|------------------|-------------|--------------------|---------------------------------|------------------------------|----------------------------------|---------------|------------------------|
| 7 | 1 | 53 | 1 | 1 | 52.53 | | | | |
| 6 | 1 | 50 | | 1 | 53.05 | | | | |
| 5 | 1 | 49 | 1 | 1 | 54.16 | | | | |
| 4 | 2 | 34 | 1 | 1 | 54.74 | 56.0 | 1 | 1 | |
| 4 | 1 | 52 | 1 | 1 | 55.53 | | | | |
| 3 | 2 | 37 | 1 | 1 | 56.59 | 56.0 | 1 | 1 | |
| 3 | 1 | 49 | 1 | 1 | 56.61 | | | | |
| 2 | 1 | 46 | 1 | 1 | 57.97 | | | | |
| 2 | 2 | 40 | 1 | 1 | 58.20 | 56.0 | 1 | 1 | |
| 1 | 2 | 43 | 1 | 1 | 59.67 | 56.0 | 1 | 1 | |
| 1 | 1 | 43 | 1 | 1 | 59.76 | | | | |
| TOTAL | | 496 | 10 | 11 | | 224 | 4 | 4 | |

APPROXIMATE WYE LOCATIONS

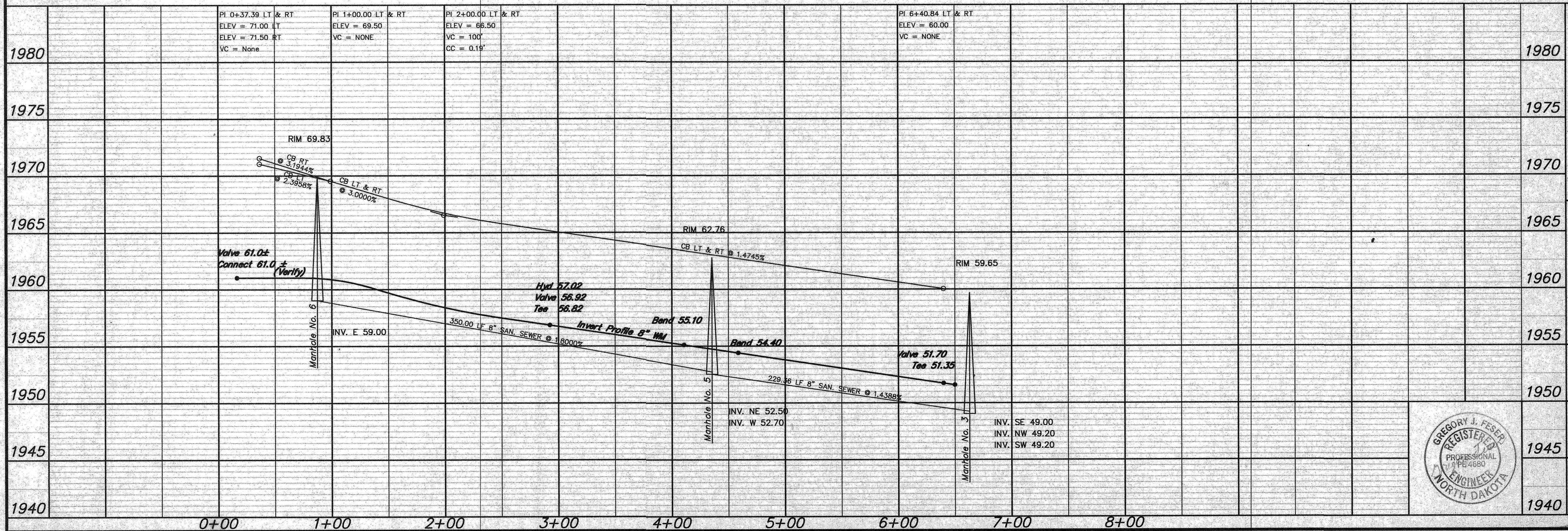
| STATION | DIRECTION | LOT | BLOCK |
|-------------------------------------|-----------|-----|-------|
| FROM MANHOLE NO. 3 TO MANHOLE NO. 5 | | | |
| 1+62 | SE | 7 | 1 |
| 2+01 | SE | 6 | 1 |
| FROM MANHOLE NO. 5 TO MANHOLE NO. 6 | | | |
| 0+29 | S | 5 | 1 |
| 0+74 | N | 4 | 2 |
| 1+03 | S | 4 | 1 |
| 1+74 | N | 3 | 2 |
| 1+79 | S | 3 | 1 |
| 2+56 | S | 2 | 1 |
| 2+61 | N | 2 | 2 |
| 3+40 | N | 1 | 2 |
| 3+45 | S | 1 | 1 |

| Manhole Number | 6 | 5 |
|---------------------|-------|-------|
| Castina Elev. | 69.83 | 62.76 |
| Top P.C. Section | 68.79 | 61.72 |
| Invert Elev. (a) | 59.00 | 52.50 |
| Invert Elev. (b) | - | 52.70 |
| Length P.C. Section | 9.61 | 9.22 |

CURVE DATA

| CURVE | DELTA | LENGTH | TANGENT | RADIUS |
|-------|-----------|--------|---------|---------|
| A | 72°00'00" | 125.66 | 72.65' | 100.00' |

Sta. 0+17.39 Remove Cap/Connect 8" Gate Valve & Box
 Sta. 2+93.39 8" x 6" Tee, 3.00 LF 6" WM, 6" Gate Valve & Box, 7.00 LF 6" WM, 6" Hydrant
 Sta. 4+11.71 26.75' Rt., 8" 22 1/2" Bend
 Sta. 4+59.52 26.48' Rt., 8" 22 1/2" Bend
 Sta. 6+40.84 8" Gate Valve & Box
 Sta. 6+50.84 8" x 8" Tee
 Begin Watermain Quantities Sta. 0+17.39
 Begin San. Sewer Quantities Sta. 0+88.32
 End Watermain Quantities Sta. 6+50.84
 End San. Sewer Quantities Sta. 6+63.84



APPROXIMATE QUANTITIES

| Item | Quantity |
|----------------------------------|--------------|
| San. Sewer Items | |
| 8" Sanitary Sewer | 579 LF |
| 8" x 4" Wye Branch | 11 EA |
| Subcut Gravel | 10 TON |
| Pitrun Gravel | 140 TON |
| Concrete Manhole | 2 EA |
| 4" Sewer Service Pipe | 496 LF |
| Rock Excavation | 10 CY |
| Watermain Items | |
| 6" PVC Watermain | 10 LF |
| 8" PVC Watermain | 665 LF |
| 6" Hydrant | 1 EA |
| 6" Gate Valve & Box | 1 EA |
| 8" Gate Valve & Box | 2 EA |
| Pitrun Gravel | 200 TON |
| Rock Excavation | 10 CY |
| Ductile Iron Fittings | (incidental) |
| 1" Water Copper Serv. Pipe | 224 LF |
| 1" Water Serv. Connection | 4 EA |
| 1" Ball Valve Curb Stop | 4 EA |
| And 1 1/2" Box | |
| Remove & Replace Asphalt - Water | 1 LS |

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 BISMARCK, N.D. 58504 FAX (701) 223-2806
 E-mail: shc@swensonhagen.com



LEWIS ROAD
 FROM 37TH AVENUE NW
 TO 34TH AVENUE NW
 WATER AND SEWER IMPROVEMENT PROJECT 2004-07
 SHEET NO. 3 OF 3
 MANDAN, ND APRIL 21, 2004
 Record Drawing