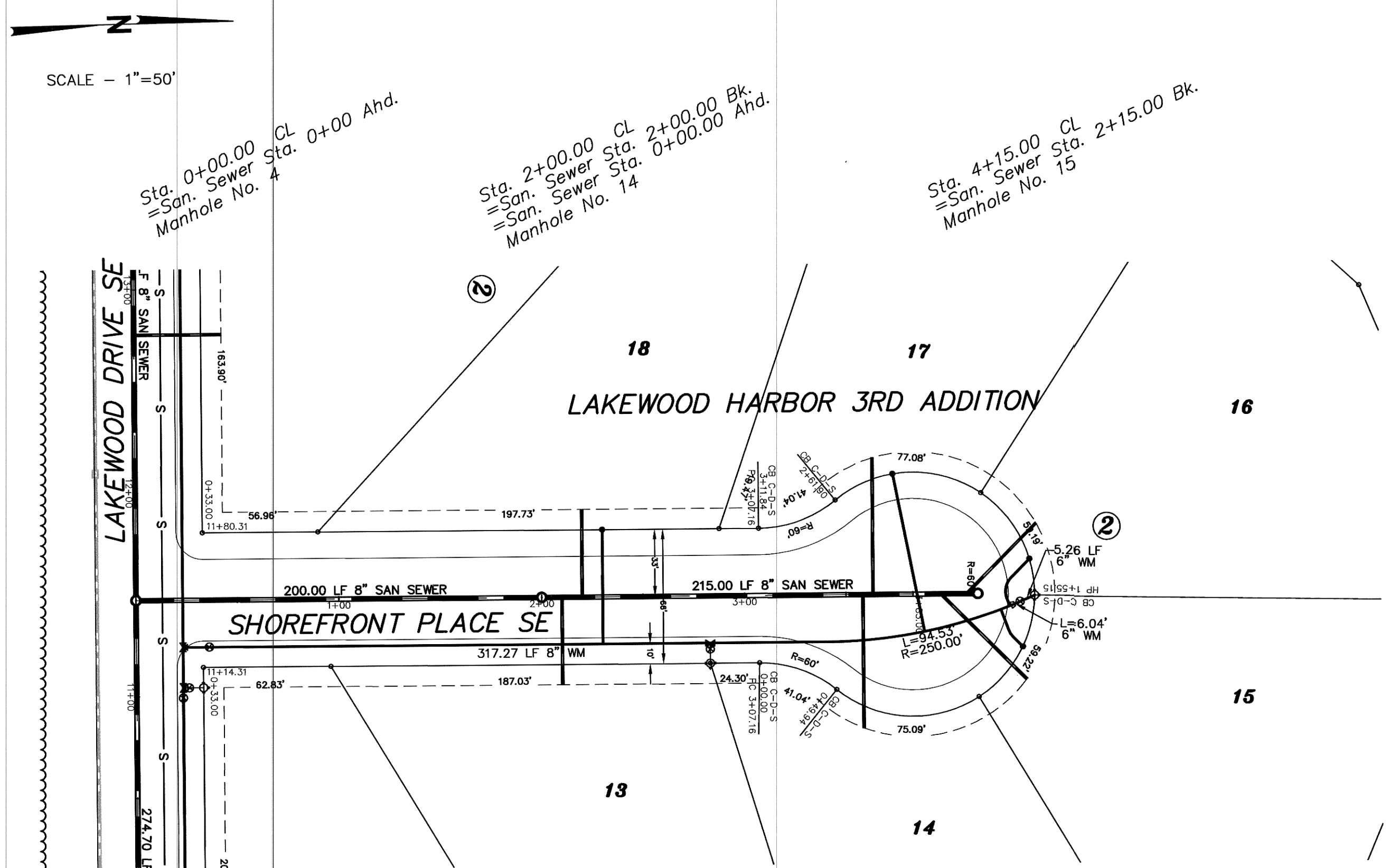


CONSTRUCTION NOTES (THIS SHEET)

- BACKFILL SHALL BE CLASS 'A'.
- THE PROFILE SHOWS THE EXISTING GROUND CENTERLINE OF THE STREETS. THE PLAN VIEW SHOWS THE EXISTING GROUND CONTOURS. THIS WILL BE THE CONDITION AT THE TIME OF CONSTRUCTION. UPON COMPLETION OF THE CONSTRUCTION OF THE WATER/SEWER THE EARTHWORK CONTRACTOR WILL BUILD THE STREETS UP TO THE PROPOSED CURB GRADES.
- 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 SUBCUT GRAVEL) OF THE CONSTRUCTION SITE AS REQUIRED TO INSTALL THE PROPOSED UTILITIES. IT IS EXPECTED THAT DEWATERING WILL BE REQUIRED TO STABILIZE THE TRENCH FOR THE CONSTRUCTION OF THE DEEPER PORTIONS OF THE SEWERMAINS.
- THE STORM SEWER IS NOT PART OF THIS CONTRACT.
- PROTECT ALL SURVEY MONUMENTS. MONUMENTS DISTURBED OR DESTROYED SHALL BE REPLACED BY THE OWNER'S REPRESENTATIVE AT THE CONTRACTOR'S EXPENSE.
- ALL HYDRANTS SHALL HAVE 8.5' BURY DEPTH AND THE HYDRANT NOZZLE SHALL BE 18" ABOVE THE FINAL PLAN GROUND ELEVATION.
- THERE ARE A NUMBER OF CROSSINGS OF THE EXISTING 6" SANITARY SEWER FORCEMAIN. PROVIDE ADDITIONAL CAUTION NOT TO DAMAGE THIS LINE.



APPROXIMATE WYE LOCATIONS

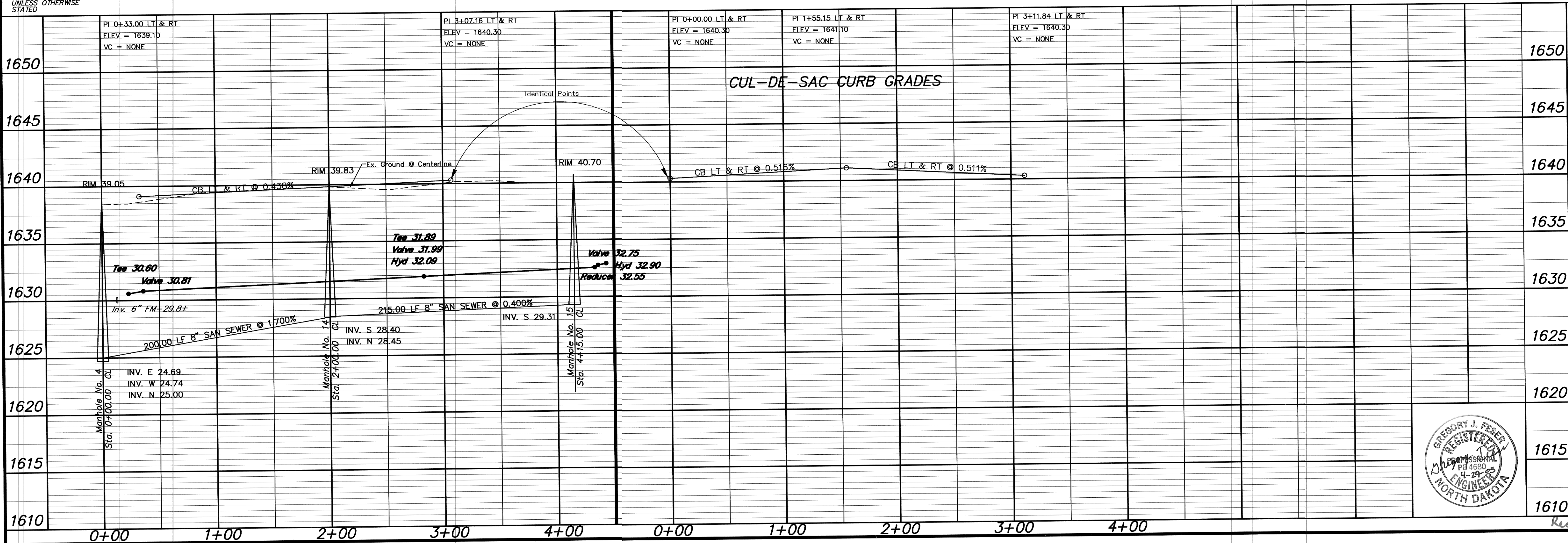
STATION	DIRECTION	LOT	BLOCK
FROM MANHOLE NO. 14 TO MANHOLE NO. 15			
0+10	E	13	N N N N N N N N N
0+20	W	18	
1+58	E	14	
1+63	W	17	
1+97	NE	15	
2+09	NW	16	

Manhole Number	14	15
Casting Elev.	39.83	40.70
Top P.C. Section	38.79	39.66
Invert Elev. (a)	28.40	29.31
Invert Elev. (b)	28.45	—
Length P.C. Section	10.39	10.35

Lot	Block	4" Sewer Service	4" 22 1/2" Bend	4" 45" Bend	8" x 4" Wye Branch At The Curb	1" Copper Water Serv. Connection	1" Water Serv. Pipe	1" Ball Valve Curb Stop	1" Water Serv. Invert At The Curb Stop
13	2	43.0	—	1	1	29.22	—	—	—
18	2	43.0	—	1	1	29.26	56.0	1	1
14	2	65.5	—	1	1	30.05	—	—	—
17	2	67.2	—	1	1	30.08	79.0	1	1
15	2	59.6	—	—	1	30.14	21.7	1	4
16	2	48.7	—	—	1	30.09	27.8	1	1
TOTAL		327.0	—	4	6	184.5	4	4	—

- Sta. 0+23.00 8" x 8" Tee
- Sta. 0+36.00 8" Gate Valve & Box
- Sta. 2+82.86 8" x 6" Tee, 3.00 LF 6" WM, 6" Gate Valve & Box, 7.00 LF 6" WM, 6" Hydrant
- Sta. 4+43.00 0.98' Rt. 6" Hydrant
- Sta. 4+35.85 4.05' Rt. 6" Gate Valve & Box
- Sta. 4+42.85 5.34' Rt. 8" x 6" Reducer
- End Watermain Quantities Sta. 4+43.00 0.98' Rt.
- End San. Sewer Quantities Sta. 4+15.00
- Begin Watermain Quantities Sta. 0+23.00
- Begin San. Sewer Quantities Sta. 0+00.00

NOTE: ALL WATER MAINS IS 33.00' RIGHT OF CENTERLINE UNLESS OTHERWISE STATED



APPROXIMATE QUANTITIES

San. Sewer Items	Quantity
8" Sanitary Sewer	415 LF
8" x 4" Wye Branch	6 EA
Concrete Manhole	2 EA
4" Sewer Service Pipe	327 LF
4" 45" Bend	4 EA

Watermain Items	Quantity
6" PVC Watermain	21 LF
8" PVC Watermain	412 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	185 LF
1" Water Serv. Connection	4 EA
1" Ball Valve Curb Stop	4 EA
And 1 1/2" Box	

SWENSON, HAGEN & COMPANY P.C.
 909 Basin Avenue P.O. Box 1135
 Bismarck, North Dakota 58504
 sheng@swensonhagen.com
 Phone (701) 225-2600
 Fax (701) 223-2606
 Surveying, Hydrology, Land Planning, Civil Engineering, Landscape & Site Design, Construction Management



SHOREFRONT PLACE SE
 FROM THE INTERSECTION OF LAKEWOOD DRIVE SE NORTH TO THE CUL-DE-SAC

WATER AND SEWER IMPROVEMENT PROJECT 2005-17
 SHEET NO. 7 OF 8
 MANDAN, ND APRIL 22, 2005
 Record Drawing COPYRIGHT 2005 SWENSON, HAGEN & CO.