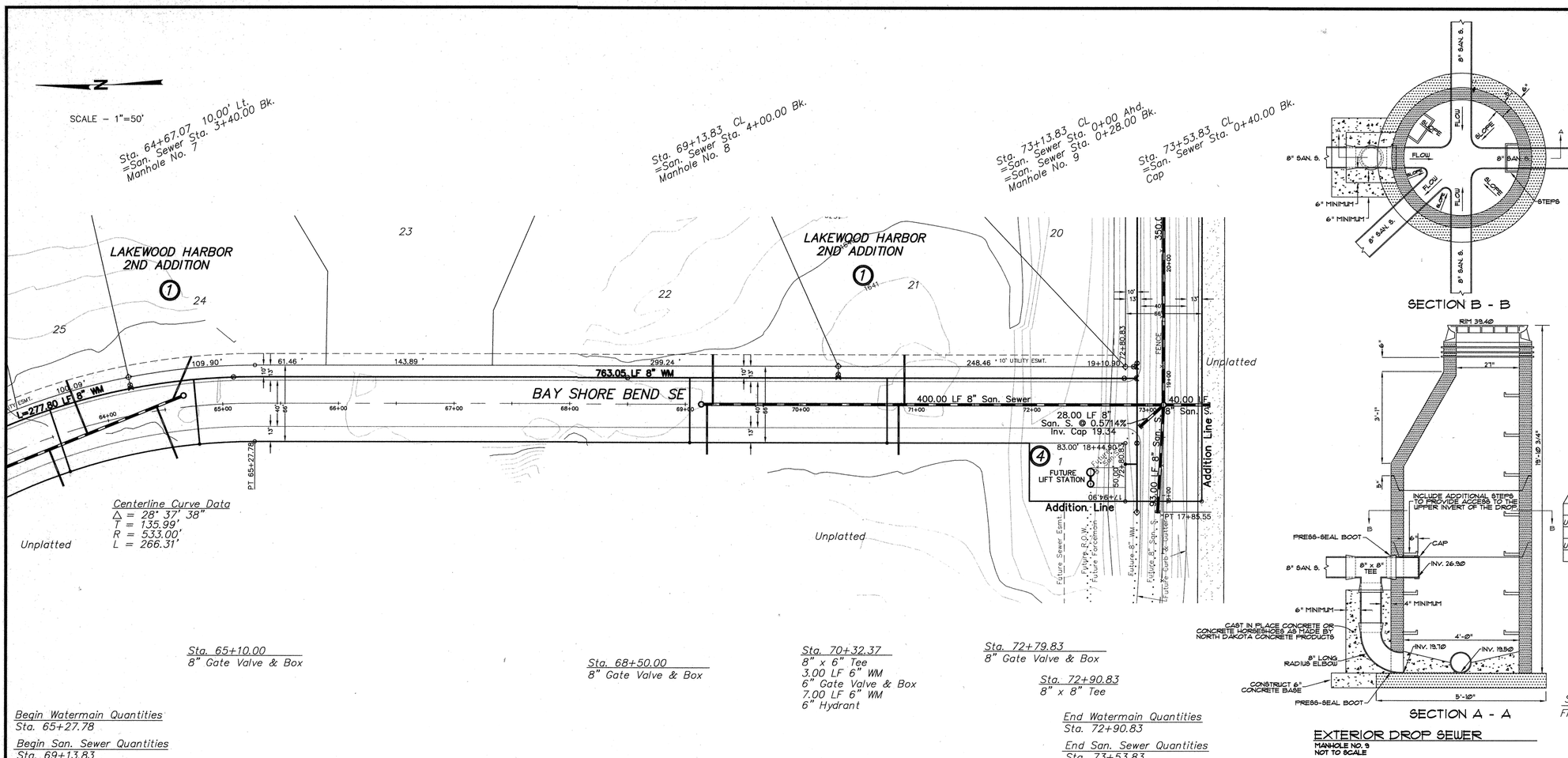


SECTION B - B

SECTION A - A

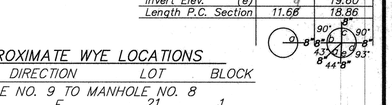
EXTERIOR DROP SEWER
MANHOLE NO. 9
NOT TO SCALE

CONSTRUCTION NOTES (THIS SHEET)

1. BACKFILL SHALL BE CLASS 'A'.
2. GRADING SHALL BE BY OTHERS, PRIOR TO CONSTRUCTION.
3. 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.
4. THE STORM SEWER IS NOT PART OF THIS CONTRACT.
5. PROTECT ALL SURVEY MONUMENTS. MONUMENTS DISTURBED OR DESTROYED SHALL BE REPLACED BY THE OWNER'S REPRESENTATIVE AT THE CONTRACTOR'S EXPENSE.
6. THE LIFT STATION IS NOT PART OF THIS PROJECT.
7. THE EXISTING CONTOURS ARE SHOWN ALONG LAKEWOOD DRIVE SE. THESE CONTOURS WILL REMAIN LIKE THIS THROUGH THE DURATION OF THIS PROJECT. THIS MATERIAL WILL BE MOVED BY OTHERS TO BUILD UP LAKEWOOD DRIVE AT THE COMPLETION OF THIS PROJECT.
8. MAINTAIN ACCESS TO JETTY BEACH AT ALL TIMES. THE CONTRACTOR SHALL PROVIDE ALL SIGNAGE AND TRAFFIC CONTROL AS NECESSARY TO CONSTRUCT THE SANITARY SEWER. SALVAGE THE GRAVEL ON JETTY BEACH ROAD AS REQUIRED TO CONSTRUCT THE SANITARY SEWER. REPLACE GRAVEL TO ORIGINAL CONDITION AS SOON AS POSSIBLE AFTER CONSTRUCTING THE SANITARY SEWER THAT EXTENDS INTO JETTY BEACH ROAD. SAID WORK SHALL BE CONSIDERED INCIDENTAL TO OTHER BID ITEMS.
9. REMOVE AND DISPOSE OF OFFSITE BARB WIRE FENCE ALONG LAKEWOOD DRIVE SE AS REQUIRED TO CONSTRUCT THE PROPOSED IMPROVEMENTS INCIDENTAL TO THE "8" SANITARY SEWER" BID ITEM.

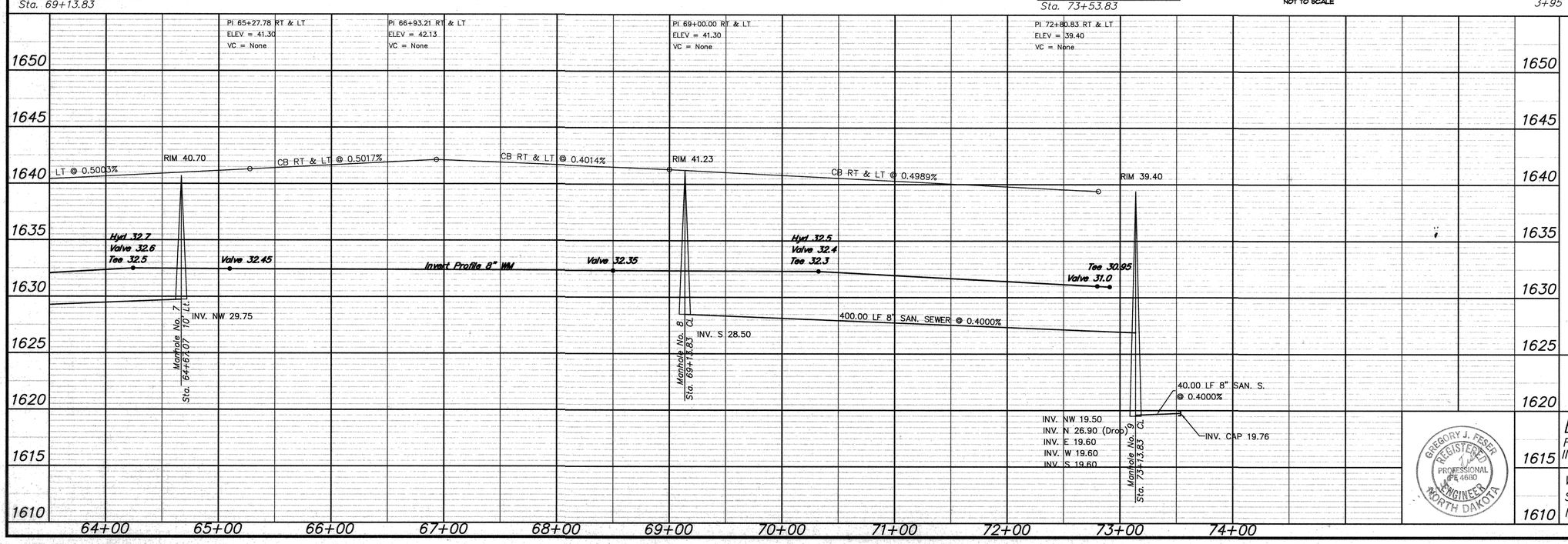
Lot	Block	4" Sewer Service	4" 45° Bend	8" x 4" Wye Branch	Sewer Service Invert At The Cap	1" Copper Water Service Pipe	1" Water Service Connection	1" Ball Valve Curb Stop & 1 1/2" Box
21	1	43	1	1	28.54	--	--	--
UNPLATTED		43	1	1	28.56	56	1	1
22	1	43	1	1	29.20	--	--	--
UNPLATTED		43	1	1	29.22	56	1	1
TOTAL		172	4	4	NA	112	2	2

Manhole Number	8	9
Casting Elev.	41.23	39.40
Top P.C. Section	40.19	38.36
Invert Elev. (a)	28.50	19.50
Invert Elev. (b)		26.90
Invert Elev. (c)		19.60
Invert Elev. (d)		19.60
Invert Elev. (e)		19.60
Length P.C. Section	11.68	18.86



APPROXIMATE WYE LOCATIONS

STATION	DIRECTION	LOT	BLOCK
FROM MANHOLE NO. 9 TO MANHOLE NO. 8			
2+24	E	21	1
2+29	W	UNPLATTED	
3+90	E	22	1
3+95	W	UNPLATTED	



APPROXIMATE QUANTITIES

San. Sewer Items	Quantity
8" Sanitary Sewer	468 LF
8" x 4" Wye Branch	4 EA
Subcut Gravel	30 TON
Concrete Manhole	1 EA
Concrete Drop Manhole	1 EA
4" Sewer Service Pipe	172 LF
4" 45° Bend	4 EA

Watermain Items	Quantity
6" PVC Watermain	10 LF
8" PVC Watermain	763 LF
6" Hydrant	1 EA
6" Gate Valve & Box	1 EA
8" Gate Valve & Box	2 EA
Ductile Iron Fittings	(incidental)
1" Water Copper Serv. Pipe	112 LF
1" Water Serv. Connection	2 EA
1" Ball Valve Curb Stop And 1 1/2" Box	2 EA

SWENSON, HAGEN & CO. P.C.
PLANNING CIVIL ENGINEERING SURVEYING
SITE DESIGN CONSTRUCTION MANAGEMENT
909 BASIN AVE P.O. BOX 1135 (701) 223-2600
BISMARCK, N.D. 58504 FAX (701) 223-2606
E-mail: sheng@swensonhagen.com

GREGORY J. FESER REGISTERED PROFESSIONAL ENGINEER PE 4680 NORTH DAKOTA

BAYSHORE BEND SE

FROM STA. 65+27.78 SOUTH TO THE INTERSECTION WITH LAKEWOOD DRIVE SE

WATER AND SEWER IMPROVEMENT PROJECT 2002-15

SHEET NO. 5 OF 8

MANDAN, ND APRIL 25, 2003

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