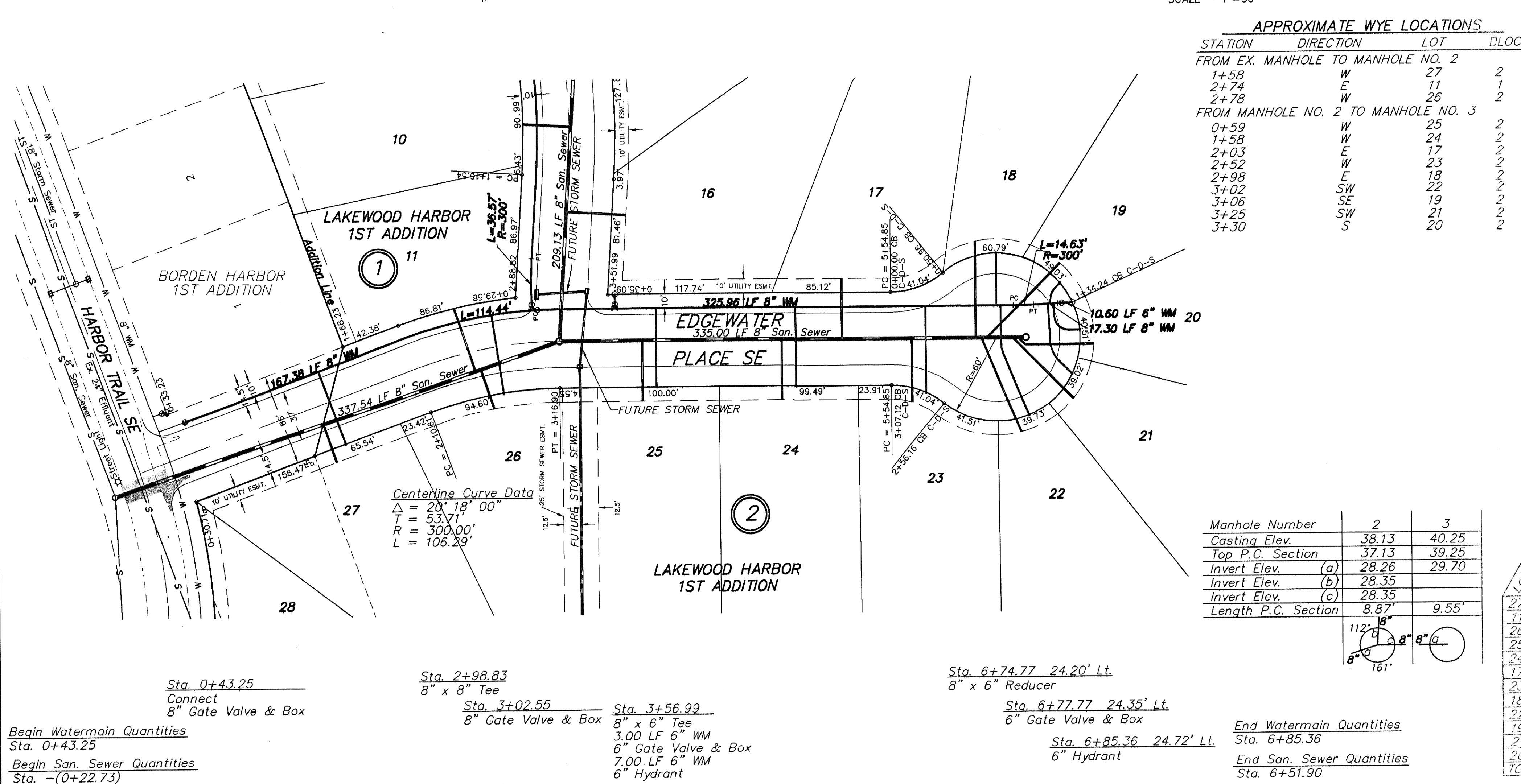


Sta. - (0+22.73) 9.57' Rt.
=San. Sewer Sta. 0+00 Ahd.
Ex. Manhole

Sta. 3+16.90 Cl.
=San. Sewer Sta. 0+00 Ahd.
=San. Sewer Sta. 3+37.54 Bk.
Manhole No. 2

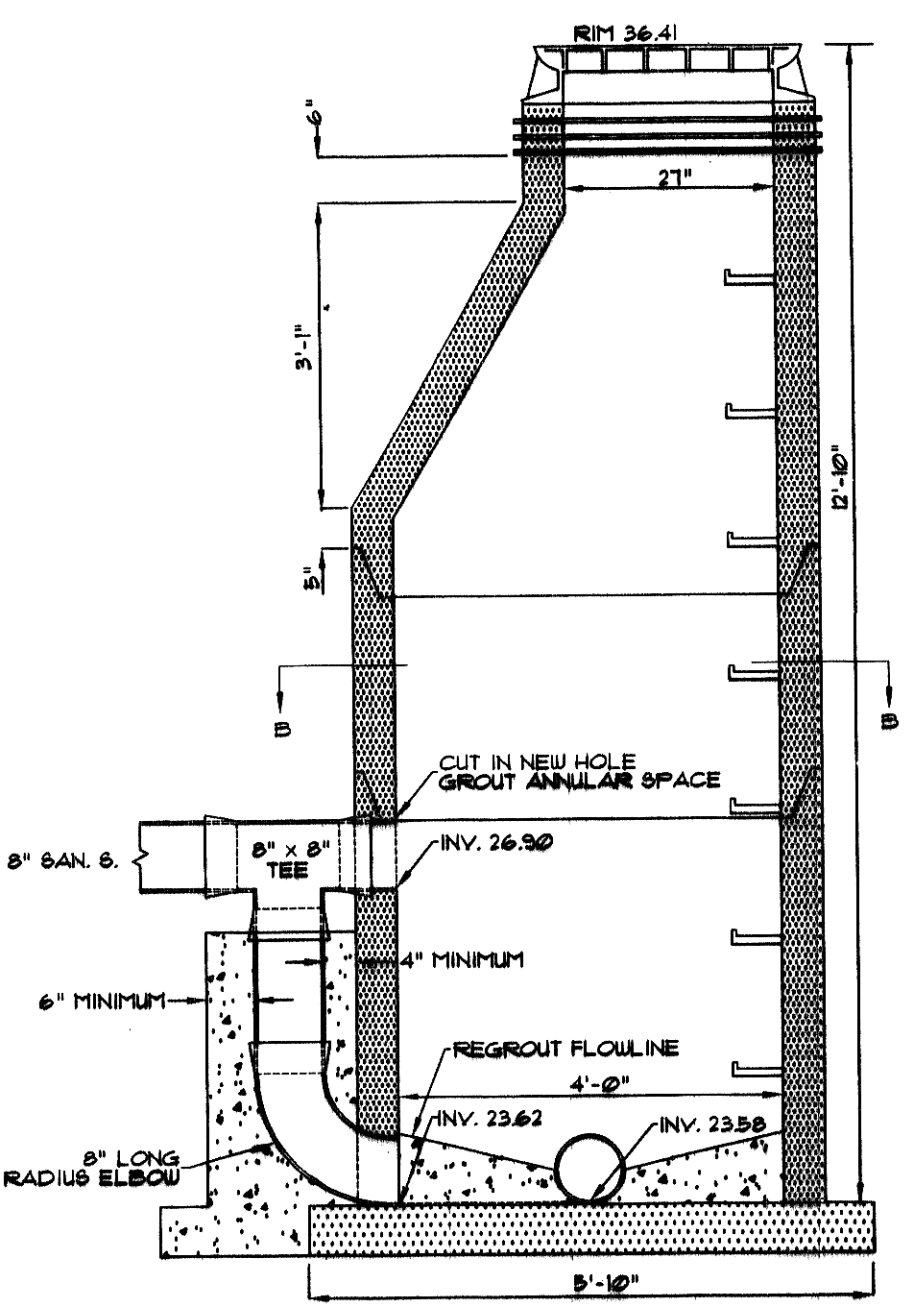
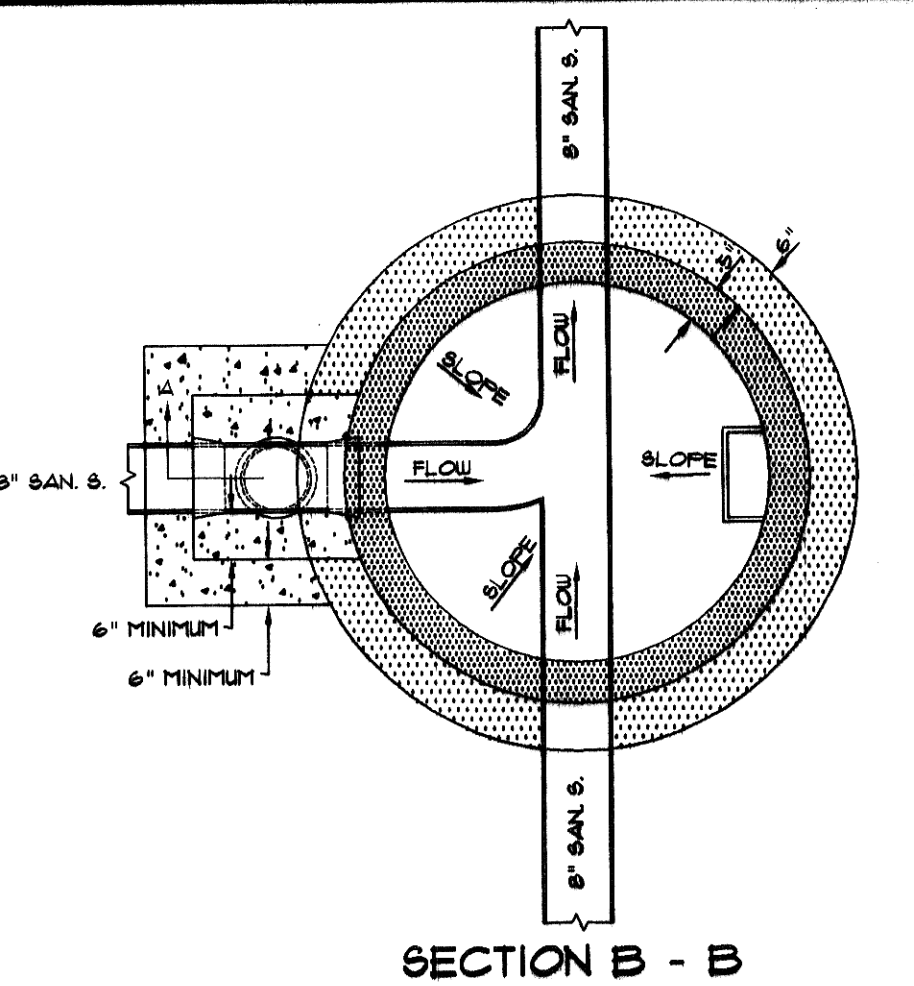
Sta. 6+51.90 Cl.
=San. Sewer Sta. 3+35.00 Bk.
Manhole No. 3

SCALE - 1"=50'



CONSTRUCTION NOTES (THIS SHEET)

- BACKFILL SHALL BE CLASS 'A'.
- GRADING SHALL BE BY OTHERS, PRIOR TO CONSTRUCTION.
- THE CONTRACTOR SHALL REMOVE AND DISPOSE OF OFFSITE ALL ASPHALT AND CURB AND GUTTER AS REQUIRED TO MAKE CONNECTIONS OF THE EXISTING UTILITIES. CONTRACTOR SHALL USE A TRENCH BOX TO MINIMIZE THE AMOUNT OF PAVEMENT REMOVED. THE ASPHALT PAVEMENT SHALL BE SAW CUT OR WHEEL CUT IN ORDER TO PROVIDE A VERTICAL EDGE. REMOVE THE ENTIRE CONCRETE RADIUS ON THE WEST SIDE OF THE VALLEY GUTTER. CONTRACTOR SHALL CONSTRUCT AND MAINTAIN A TEMPORARY GRAVEL SURFACE WHERE THE PAVEMENTS HAVE BEEN REMOVED UNTIL THE STREET IMPROVEMENT CONTRACTOR TAKES OVER THE SITE OR 30 DAYS AFTER COMPLETION OF THIS PROJECT, WHICHEVER IS LESS. REMOVAL OF CURB AND GUTTER, ASPHALT AND VALLEY GUTTER AND CONSTRUCTING A TEMPORARY GRAVEL SURFACE SHALL BE CONSIDERED INCIDENTAL TO THE "REMOVE PAVEMENT" BID ITEM.
- 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 CONTRACTOR SHALL CONSTRUCT AN EXTERIOR DROP BESIDE THE EXISTING MANHOLE AS SHOWN IN THE DETAIL ON THIS SHEET. SAID WORK SHALL BE CONSIDERED INCIDENTAL TO THE "EXTERIOR DROP SEWER" BID ITEM.
- THE CONTRACTOR SHALL EXPOSE THE 24" RCP EFFLUENT LINE AND THE 8" WATERMAIN ON HARBOR TRAIL SE AT THE CROSSING OF THE 8" SANITARY SEWER IN ORDER TO VERIFY THE LOCATION AND ELEVATIONS OF EACH LINE. THE CONTRACTOR SHALL EXPOSE THE LINES AT THE BEGINNING OF THE PROJECT AND ALLOW THE ENGINEER A MINIMUM OF 24 HOURS TO MAKE CHANGES TO THE PLANS IF REQUIRED.
- THE STORM SEWER IS NOT PART OF THIS CONTRACT.
- THE HYDRANT AT STA. 6+85.36 SHALL HAVE A 9.0' BURY DEPTH.
- EXERCISE CAUTION WHEN CROSSING THE SEWER SERVICES WITH THE WATERMAIN OR CROSSING THE WATERMAIN WITH THE SEWER SERVICES.



Manhole Number	2	3
Casting Elev.	38.13	40.25
Top P.C. Section	37.13	39.25
Invert Elev. (a)	28.26	29.70
Invert Elev. (b)	28.35	
Invert Elev. (c)	28.35	
Length P.C. Section	8.87'	9.55'

Lot	Block	4" Sewer Service	4" 45' Bend	4" 22 1/2' Bend	8" x 4" Wye Branch At Tee Cap	1" Copper Water Service Invert Connection	1" Water Service Pipe	1" Ball Valve Curb Stop	1 1/4" Box
27	2	29	1	1	28.10	56	1	1	
11	1	47	1	1	28.80				
26	2	30	1	1	28.60	56	1	1	
25	2	43	1	1	29.33	56	1	1	
24	2	43	1	1	29.73	56	1	1	
17	2	43	1	1	29.91				
23	2	45	1	1	30.13	61	1	1	
18	2	68	1	1	30.61	37	1	1	
22	2	73	1	1	30.68	82	1	1	
19	2	75	1	1	30.73	17	1	1	
21	2	61	1	1	30.63	56	1	1	
20	2	56	1	1	30.60	33	1	1	
TOTAL		613	9	12	NA	510	10	10	

Sta. 0+43.25
Connect
8" Gate Valve & Box

Sta. 2+98.83
8" x 8" Tee

Sta. 3+02.55
8" Gate Valve & Box

Sta. 3+56.99
8" x 6" Tee
3.00 LF 6" WM
6" Gate Valve & Box
7.00 LF 6" WM
6" Hydrant

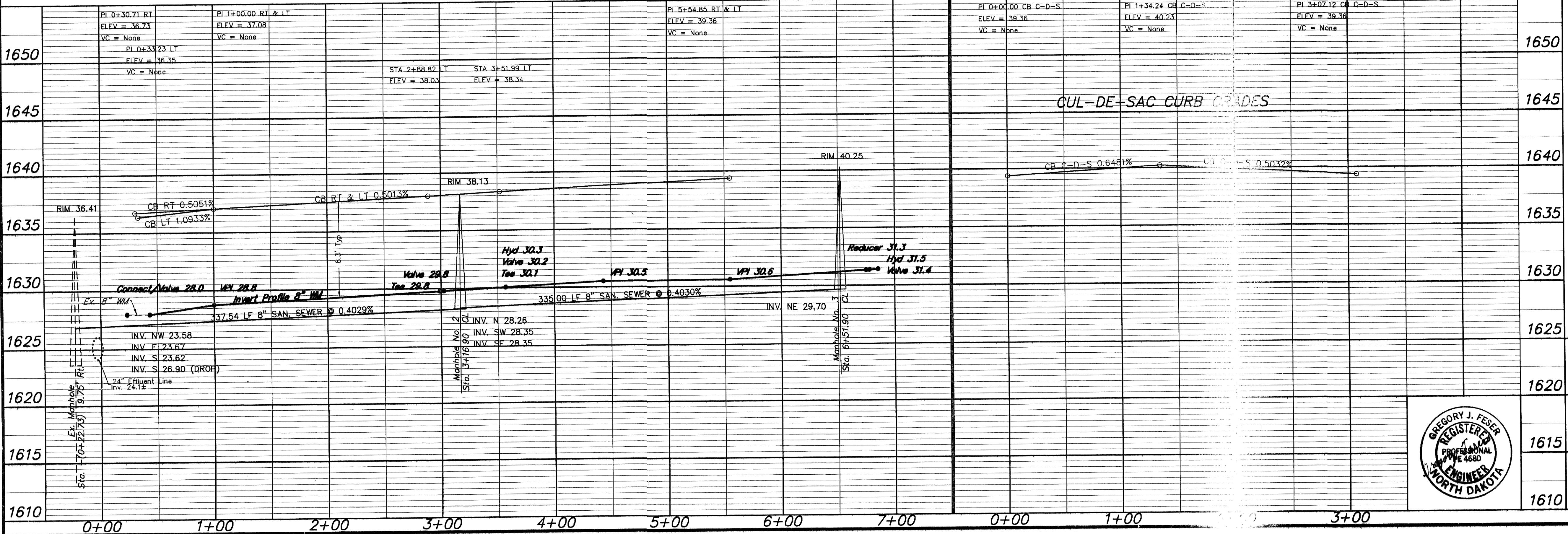
Sta. 6+74.77 24.20' Lt.
8" x 6" Reducer

Sta. 6+77.77 24.35' Lt.
6" Gate Valve & Box

Sta. 6+85.36 24.72' Lt.
6" Hydrant

End Watermain Quantities
Sta. 6+85.36

End San. Sewer Quantities
Sta. 6+51.90

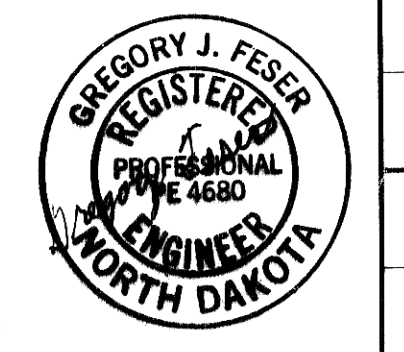


APPROXIMATE QUANTITIES

San. Sewer Items	Quantity
8" Sanitary Sewer	673 LF
8" x 4" Wye Branch	12 EA
Pitrun Gravel	5 TON
Subcut Gravel	5 TON
Concrete Manhole	2 EA
4" Sewer Service Pipe	613 LF
4" 45' Bend	9 EA
4" 22 1/2' Bend	1 EA
Exterior Drop Sewer	1 LS
Remove Pavement	1 LS

Watermain Items	Quantity
Pitrun Gravel	5 TON
6" PVC Watermain	21 LF
8" PVC Watermain	640 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	510 LF
1" Water Serv. Connection	10 EA
1" Ball Valve Curb Stop	10 EA
And 1 1/4" Box	

SWENSON, HAGEN & CO. P.C.
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 BISMARCK, N.D. 58504 FAX (701) 228-8800
 E-mail: shagen@swensenhagen.com



EDGEWATER PLACE SE
 FROM THE INTERSECTION WITH HARBOR TRAIL SE
 SOUTH TO THE CUL-DE-SAC

1615

WATER AND SEWER IMPROVEMENT PROJECT 2002-04
 SHEET NO. 3 OF 5
 MANDAN, ND MAY 5, 2002
 Record Drawing - July 2002