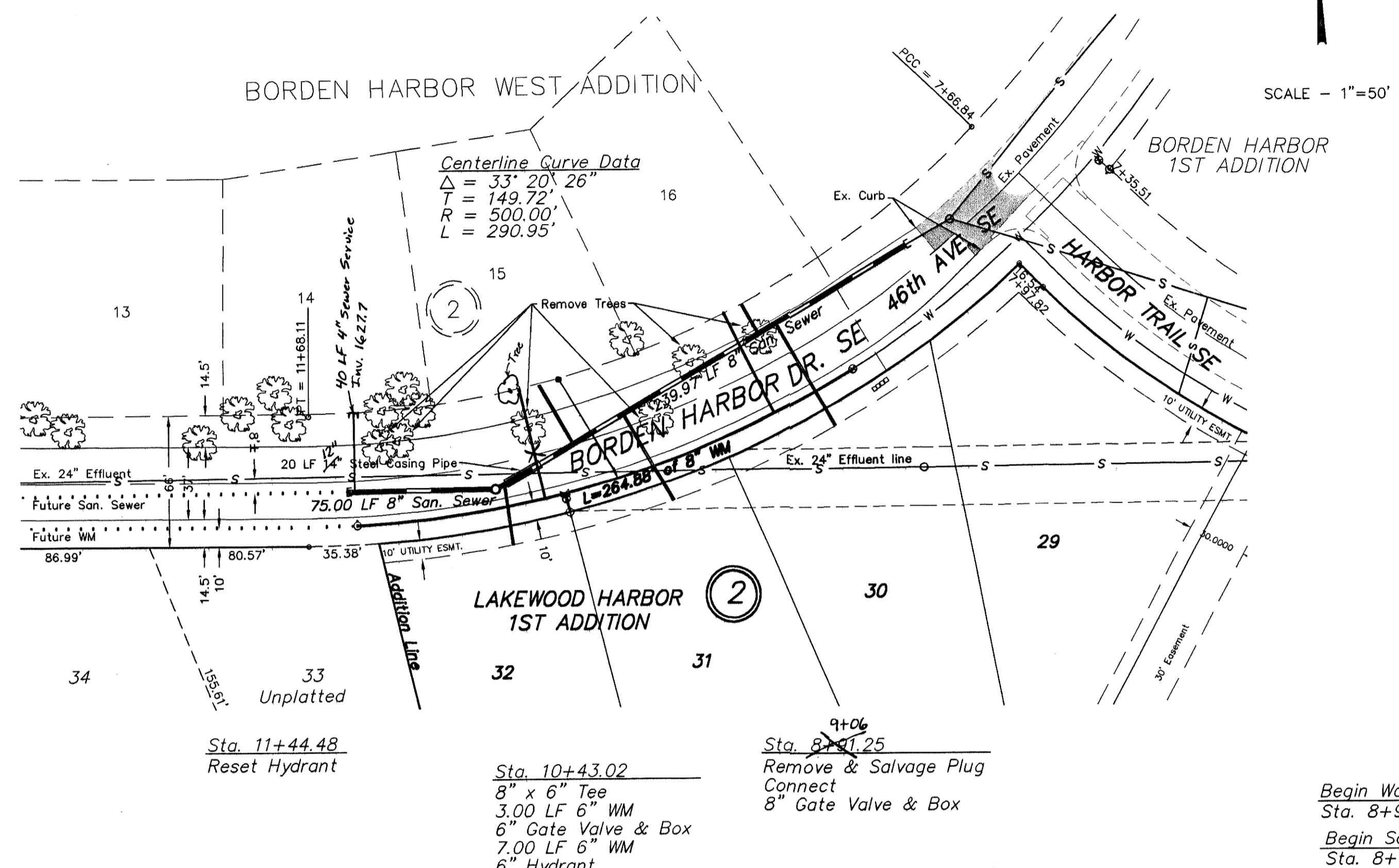


Sta. 11+48.75 5.38' Lt. Ahd.
 =San. Sewer Sta. 0+00.00 Bk.
 =San. Sewer Sta. 0+75.00 Bk.
 Sta. 10+75.42 13.00' Lt. Ahd.
 =San. Sewer Sta. 0+00.00 Bk.
 =San. Sewer Sta. 2+65.97 Bk.
 Manhole No. 1
 Sta. 8+34.63 11.77' Rt. Ahd.
 =San. Sewer Sta. 0+26.00 Bk.
 Connect
 Sta. 8+08.48 7.46' Rt. Ahd.
 =San. Sewer Sta. 0+00.00 Bk.
 Ex. Manhole

APPROXIMATE WYE LOCATIONS			
STATION	DIRECTION	LOT	BLOCK
FROM EX. MANHOLE TO MANHOLE NO. 1			
1+02	SE	30	2
1+11	NW	16	2
1+90	SE	31	2
2+19	NW	15	2
2+60	S	32	2

- 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. SAID WORK 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 SALVAGE THE 6" HYDRANT FROM STA. 23+64.77 ON THE EAST END OF HARBOR TRAIL SE AND RESET IT AT STA. 11+44.48 BORDEN HARBOR DRIVE SE AS REQUIRED. ALL WORK AND MATERIALS REQUIRED TO SALVAGE AND RESET HYDRANT SHALL BE CONSIDERED INCIDENTAL TO THE "RESET HYDRANT" BID ITEM.
 - THE CONTRACTOR SHALL EXPOSE THE 24" RCP EFFLUENT LINE AT THE CROSSING WITH THE 8" SANITARY SEWER IN ORDER TO VERIFY THE LOCATION AND ELEVATION OF THE 24" EFFLUENT LINE. THE CONTRACTOR SHALL EXPOSE THE PIPE AT THE BEGINNING OF THE PROJECT AND ALLOW THE ENGINEER A MINIMUM OF 24 HOURS TO MAKE CHANGES TO THE PLANS IF REQUIRED.

Lot	Block	4" Sewer Service	4" 45° Bend	4" 22 1/2° Bend	8" x 4" Wye Branch	Sewer Service Invert At The Cop	1" Copper Water Service Pipe Connection	1" Water Service Pipe	1" Ball Valve Curb Stop & 1 1/4" Box
30	2	60	1	1	1	27.00	---	---	---
16	2	17	1	1	1	25.50	56	1	1
31	2	51	1	1	1	27.50	---	---	---
15	2	34	1	1	1	26.50	56	1	1
32	2	32	---	1	1	26.50	---	---	---
TOTAL		194	4	1	5	112	2	2	



End Watermain Quantities
 Sta. 11+44.48
 End San. Sewer Quantities
 Sta. 11+48.75

Begin Watermain Quantities
 Sta. 8+91.25
 Begin San. Sewer Quantities
 Sta. 8+08.48

Manhole Number	Quantity
1	1
Casting Elev.	37.31
Top P.C. Section	36.31
Invert Elev. (a)	23.53
Invert Elev. (b)	23.58
Invert Elev. (c)	---
Length P.C. Section	12.78'

Station	Notes	Station	Notes
1655	PI 11+68.11 RT. & LT ELEV = 38.14 VC = None	1655	PI 8+50.00 RT & LT ELEV = 36.54 VC = None
1650		1650	PI 8+09.05 LT ELEV = 36.33 VC = None
1645		1645	PI 8+24.91 RT ELEV = 36.34 VC = None
1640		1640	
1635	RIM 37.31 @ RT & LT 0.5030% CB LT 0.5128% CB RT 0.7971%	1635	
1630	Hjd 29.4 Valve 29.3 Tee 29.2 Invert Profile 8" WM Connect Valve 27.9	1630	
1625	24" Effluent line Inv. 25.02 24" Casing Pipe 75.00 LF 8" SAN. S. FUTURE 8" SAN. S.	1625	
1620	INV. CAP 23.88 INV. NE 23.53 INV. W 23.58 239.97 LF 8" SAN. SEWER @ 0.4001% INV. EX. CAP 22.57 (VERIFY) INV. SE 22.10 INV. NE 22.23 INV. SW 22.46	1620	
1615	Manhole No. 1 Sta. 10+75.42 Sta. 8+08.48	1615	
1610		1610	

APPROXIMATE QUANTITIES	
San. Sewer Items	Quantity
8" Sanitary Sewer	315 LF
8" x 4" Wye Branch	5 EA
Pitrun Gravel	5 TON
Subcut Gravel	5 TON
Concrete Manhole	1 EA
4" Sewer Service Pipe	194 LF
4" 45° Bend	4 EA
4" 22 1/2° Bend	1 EA
12" 4" Casing Pipe	20 LF
Remove Tree	6 EA
Remove Pavement	1 LS
Watermain Items	
Watermain Items	Quantity
Pitrun Gravel	5 TON
6" PVC Watermain	10 LF
8" PVC Watermain	265 LF
6" Hydrant	1 EA
Reset Hydrant	1 EA
6" Gate Valve & Box	1 EA
8" Gate Valve & Box	1 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 1/4" Box	2 EA

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 E-mail: shamp@swensonhagen.com



BORDEN HARBOR DRIVE SE
 FROM THE INT. WITH HARBOR TRAIL SE, SOUTHWEST
 TO THE END OF LAKEWOOD HARBOR 1ST ADDITION
 WATER AND SEWER IMPROVEMENT PROJECT 2002-04
 SHEET NO. 2 OF 5
 MANDAN, ND MAY 5, 2002
 Record Drawing - July 2002