

SCALE - 1"=50'

Lot	Block	6" Sewer Service	12" x 6" Wye Branch	Sewer Service At The Curb	2" Copper Water Service Pipe	2" Water Service Pipe	2" Ball Valve	2" Water Service Invert At The Curb	2" Box
5	1	23.8	1	25.00	35.0	7	7	26.70	
6	1	56.2	1	23.00					
7	1	25.7	1	23.00	35.0	7	7	28.30	
1	1	54.4	1	24.50	45.0	7	7	28.70	
2	1	53.2	1	23.00	45.0	7	7	28.40	
7	1	24.6	1	23.00	35.0	7	7	28.30	
TOTALS		239.9	6	195.0	5	5	5		

APPROXIMATE WYE LOCATIONS

STATION	DIRECTION	LOT	BLOCK
FROM EX. MANHOLE 2 TO EXISTING MANHOLE 3			
1+12	N	5	1
1+33	N	8	1
4+20	N	6	1
FROM EX. MANHOLE 3 TO EXISTING MANHOLE 4			
0+23	S	1	1
3+05	S	2	1
3+30	N	7	1

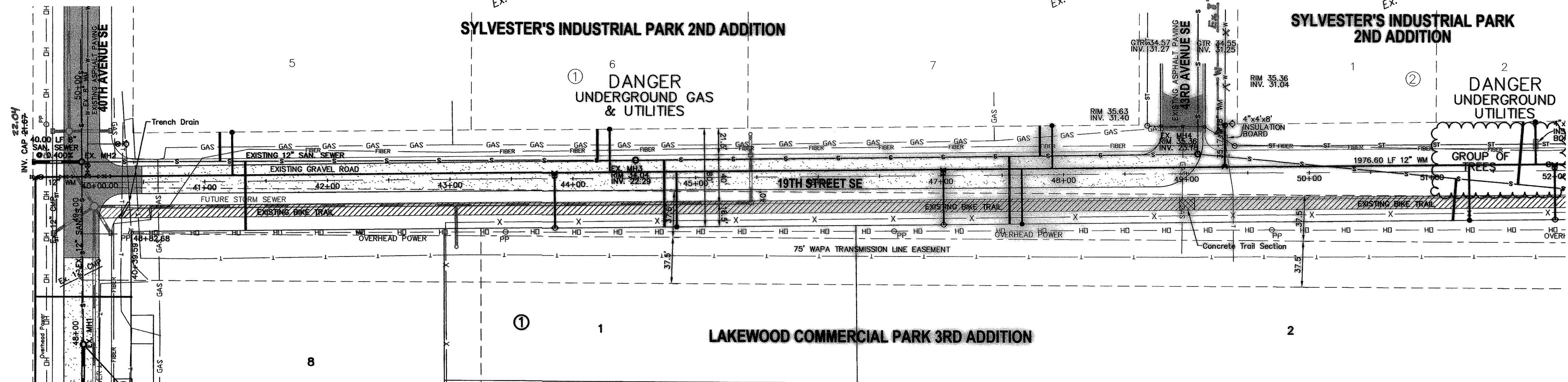
- CONSTRUCTION NOTES (THIS SHEET)**
- BACKFILL SHALL BE CLASS 'A'.
 - THE CONTRACTOR SHALL CLOSE 19TH STREET SE AND 43RD AVENUE SE AS REQUIRED TO CONSTRUCT THE IMPROVEMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING SIGNAGE, TRAFFIC CONTROL AND NOTIFICATION TO THE APPROPRIATE AGENCIES. TYPE III "ROAD CLOSED" BARRICADES AT THE SOUTH END OF 43RD AVENUE SE SHALL BE MAINTAINED UNTIL THE PAVING CONTRACTOR TAKES OVER CONTROL OF THE SITE. SAID WORK SHALL BE CONSIDERED INCIDENTAL TO THE "12" PVC WATERMAIN" BID ITEM.
 - THE EXISTING GROUND PROFILE FOR THE CENTER OF THE ROAD IS SHOWN TO REPRESENT THE EXISTING GROUND ELEVATION AT THE TIME OF CONSTRUCTION. THE STREETS WILL BE BUILT UP TO FINISHED GRADE BY THE PAVING CONTRACTOR AFTER THE COMPLETION OF THIS PROJECT.
 - 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.
 - PROTECT EXISTING UTILITIES AND MINIMIZE AREAS DISTURBED.
 - REMOVE AND DISPOSE OF OFFSITE THE BARB WIRE FENCE ON THE SOUTH SIDE OF 19TH STREET SE AS REQUIRED TO CONSTRUCT THE IMPROVEMENTS. SAID WORK SHALL BE CONSIDERED INCIDENTAL TO THE "12" PVC WATERMAIN" BID ITEM.
 - THE CONTRACTOR SHALL PAY SPECIAL ATTENTION TO THE CONSTRUCTION OF THE 12" WATERMAIN THAT CROSSES 40TH AVENUE SE AT APPROXIMATELY STA. 49+27. RESTRAIN ALL OF THE BENDS (STA. 39+62.05 TO STA. 40+21.00) AND THE PIPE SECTIONS BETWEEN THE BENDS. THIS ALSO INCLUDES FITTINGS AND PIPE CONNECTING THE EXISTING 8" WATERMAIN ON 40TH AVENUE SE. SAID WORK SHALL BE CONSIDERED INCIDENTAL TO THE "12" PVC WATERMAIN" AND "8" PVC WATERMAIN" BID ITEMS RESPECTIVELY.
 - REMOVE AND DISPOSE OF OFFSITE THE ASPHALT BIKE TRAIL, RECYCLED ASPHALT BASE AND SECTION OF CONCRETE TRAIL AS REQUIRED TO CONSTRUCT THE 12" WATERMAIN AND ANY OF THE SERVICE LINES. AT THE TIME THAT DISRUPTION TO THE BIKE TRAIL BEGINS THE CONTRACTOR SHALL SET "BIKE PATH CLOSED" SIGNS AT BOTH ENDS OF THE PROJECT AND SHALL NOTIFY THE MANDAN PARKS AND RECREATION DISTRICT. REMOVE AND SALVAGE THE EXISTING SIGNS ALONG THE BIKE TRAIL. A LOCATION TO STORE THEM THROUGHOUT THE DURATION OF THE PROJECT WILL BE DETERMINED DURING CONSTRUCTION.
 - THE CONTRACTOR SHALL COORDINATE WORK AROUND THE EXISTING POWER POLES ON THE SOUTH SIDE OF 19TH STREET SE WITH THE APPROPRIATE UTILITY COMPANY. ALL EXPENSES INCURRED FROM PROTECTING AND TEMPORARILY SUPPORTING THE POWER POLES IF REQUIRED SHALL BE BORNE BY THE CONTRACTOR.
 - THE CONTRACTOR SHALL REMOVE AND STOCKPILE ANY TOPSOIL ALONG 40TH AVENUE SE AND 19TH STREET SE IN AREAS TO BE DISTURBED. TWO STOCKPILE LOCATIONS WILL BE ALLOWED ON THE WEST SIDE OF 40TH AVENUE SE AND WILL BE DETERMINED AT THE TIME OF CONSTRUCTION. THE TOPSOIL WILL BE REPLACED BY THE PAVING CONTRACTOR.
 - THE 12" x 6" WYES TO BE CONSTRUCTED ALONG 19TH STREET SE SHALL BE A STRAP ON SADDLE TYPE WITH A MINIMUM OF 2 STAINLESS STEEL MOUNTING STRAPS. VERIFY THE LOCATION AND ELEVATION OF THE EXISTING 8" WATERMAIN AT STA. 49+31.24. ALLOW THE ENGINEER 48 HOURS TO REVIEW THE LOCATION TO DETERMINE IF ANY ADJUSTMENTS WILL BE NEEDED TO THE WATERMAIN.
 - CONSTRUCT A 4" x 4" x 8" INSULATION BOARD 6" ABOVE THE TOP OF THE 8" WATERMAIN AT THE CROSSING OF THE EXISTING STORM SEWER ON THE NORTH SIDE OF 19TH STREET SE.
 - REMOVE AND DISPOSE OF OFFSITE ALL TREES WITHIN THE RIGHT OF WAY OF 19TH STREET SE FROM 40TH AVENUE SE TO 46TH AVENUE SE.
 - THE CONTRACTOR SHALL MAINTAIN ACCESS TO THE GRAY OIL COMPANY AT ALL TIMES.

Sta. 40+00.00 16.95 Lt. 0+00 And.
=San. Sewer Sta. 2
Ex. Manhole No. 2

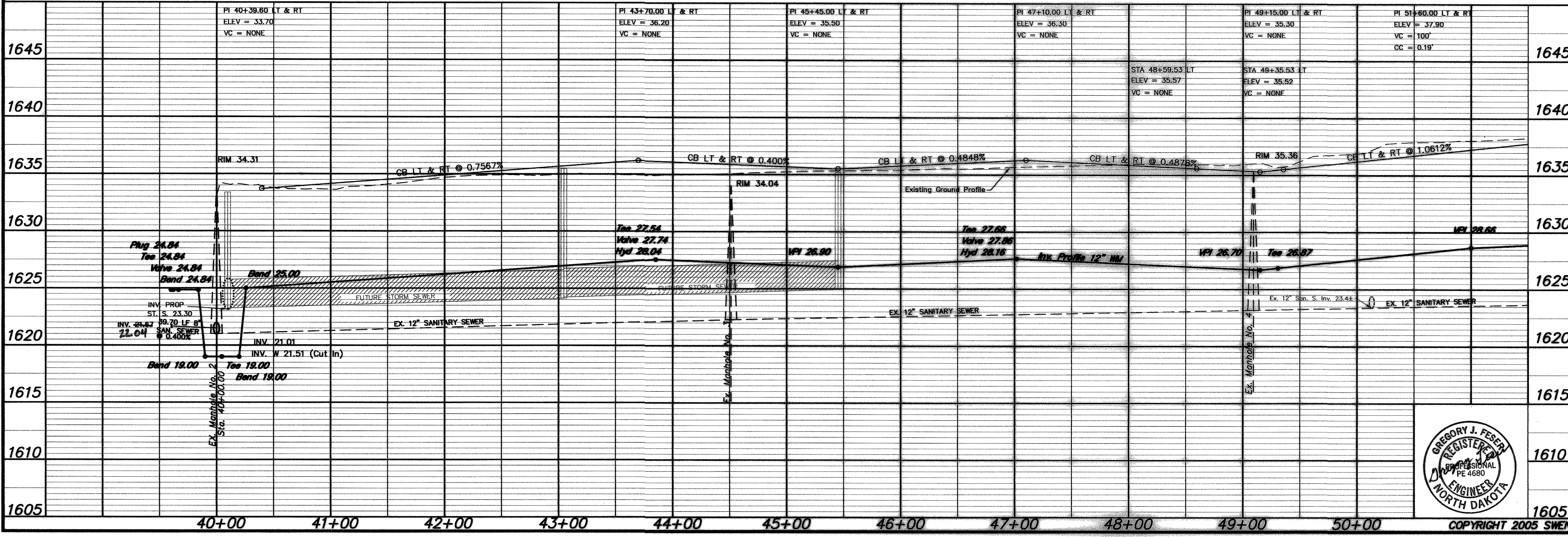
Sta. 44+51.22 14.61 Lt. 4+51.35 Bk. 0+00 And.
=San. Sewer Sta. 3
Ex. Manhole No. 3

Sta. 49+09.31 12.78 Lt. 4+58.09 Bk. 0+00 And.
=San. Sewer Sta. 4
Ex. Manhole No. 4

Sta. 52+49.53 18.92 Rt. 3+41.69 Bk. 0+00 And.
=San. Sewer Sta. 5
Ex. Manhole No. 5



Station	Description	Station	Description	Station	Description	Station	Description	Station	Description
Sta. 39+60.05	12" Plug	Sta. 40+04.62	12" x 8" Tee	Sta. 43+85.00	12" x 8" Tee	Sta. 47+02.00	12" x 8" Tee	Sta. 49+31.24	12" x 8" Tee
Sta. 39+62.05	12" Tee	Sta. 39+66.55	12" Gate Valve & Box	Sta. 40+15.00	12" 45" Vertical Bend	Sta. 47+02.00	3.00 LF 8" WM	Sta. 49+31.24	35.17 LF 8" WM
Sta. 39+62.05	Begin Watermain Quantities	Sta. 39+66.55	12" Gate Valve & Box	Sta. 40+15.00	12" 45" Vertical Bend	Sta. 47+02.00	8" Gate Valve	Sta. 49+31.24	8" Gate Valve
Sta. 39+62.05	Begin San. Sewer Quantities	Sta. 39+66.55	12" Gate Valve & Box	Sta. 40+15.00	12" 45" Vertical Bend	Sta. 47+02.00	42.00 LF 8" WM	Sta. 49+31.24	8" Gate Valve & Box
Sta. 40+00.00	12" 45" Vertical Bend	Sta. 39+84.00	12" 45" Vertical Bend	Sta. 40+15.00	12" 45" Vertical Bend	Sta. 47+02.00	8" Hydrant	Sta. 49+31.24	Connect/Verify
Sta. 40+00.00	12" 45" Vertical Bend	Sta. 39+90.00	12" 45" Vertical Bend	Sta. 40+21.00	12" 45" Vertical Bend	Sta. 47+02.00	8" Hydrant	Sta. 49+31.24	End Watermain Quantities
		Sta. 39+90.00	12" 45" Vertical Bend	Sta. 40+21.00	12" 45" Vertical Bend	Sta. 47+02.00	8" Hydrant	Sta. 49+31.24	End San. Sewer Quantities
		Sta. 40+00.00	12" 45" Vertical Bend	Sta. 40+21.00	12" 45" Vertical Bend	Sta. 47+02.00	8" Hydrant	Sta. 49+31.24	Sta. 51+00.00



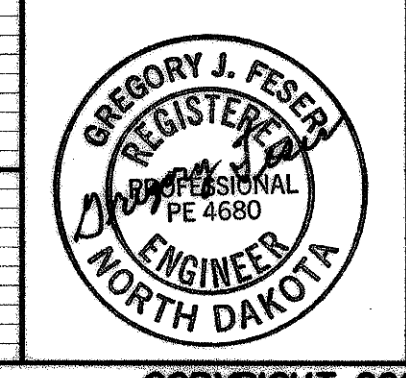
APPROXIMATE QUANTITIES

San. Sewer Items	Quantity
8" Sanitary Sewer	40 LF
12" x 6" Wye Branch	6 EA
Subcut Gravel	100 TON
6" Sewer Service Pipe	240 LF
6" 45" Bend	6 EA

Watermain Items	Quantity
12" PVC Watermain	1140 LF
8" PVC Watermain	134 LF
8" Hydrant	2 EA
12" Gate Valve & Box	1 EA
8" Gate Valve & Box	4 EA
Ductile Iron Fittings	(incidental)
2" Water Copper Serv. Pipe	195 LF
2" Water Serv. Connection	5 EA
2" Ball Valve Curb Stop	5 EA
And 2" Box	
4" Insulation Board	32 SF
Remove Bike Trail	12127 SF
Remove & Stockpile Topsoil	1 LS

SWENSON, HAGEN & COMPANY P.C.
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 Land Planning
 Civil Engineering
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19TH STREET SE
 FROM 40TH AVENUE SE EAST TO
 300' EAST OF 43RD AVENUE SE

WATER AND SEWER IMPROVEMENT DISTRICT 47
 SHEET NO. 5 OF 6 PROJECT 2005-14
 MANDAN, ND MAY 11, 2005 (JUNE 9, 2005)

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