

APPROVED FOR THE CITY OF MANDAN, NORTH DAKOTA
 MARK S. SWENSON
 REGISTERED PROFESSIONAL ENGINEER
 P.E. 3624
 DATE: 5-20-99

APPROVAL OF CITY ENGINEER
 I, TOM LITTLE, CITY ENGINEER FOR THE CITY OF MANDAN, NORTH DAKOTA, HEREBY APPROVE THIS PLAN FOR SEWER AND WATER IMPROVEMENT PROJECT 99-14 MANDAN, NORTH DAKOTA, AS SHOWN.

THOMAS LITTLE
 REGISTERED PROFESSIONAL ENGINEER
 P.E. 1530
 REGISTERED PROFESSIONAL ENGINEER
 CITY ENGINEER
 MANDAN, NORTH DAKOTA
 DATE:

WARRANTY/DISCLAIMER
 THE DESIGNS REPRESENTED IN THESE PLANS ARE IN ACCORDANCE WITH ESTABLISHED PRACTICES OF CIVIL ENGINEERING. HOWEVER, NEITHER SWENSON, HAGEN & CO. NOR ITS PERSONNEL CAN OR DO WE WARRANT THESE PLANS AS CONSTRUCTED EXCEPT IN THE SPECIFIC CASES WHERE SWENSON, HAGEN & CO. PERSONNEL INSPECT AND CONTROL THE PHYSICAL CONSTRUCTION ON A FULL TIME BASIS.

SAFETY NOTICE TO CONTRACTOR
 IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES THE CONTRACTOR WILL BE SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITIONS OF THE JOB SITE INCLUDING THE SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK. THIS REQUIREMENT WILL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL BUSINESS HOURS.

NOTICE TO CONTRACTOR
 THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVES. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREE TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES. UNDERGROUND LOCATES CAN BE MADE BY USING THE "ONE CALL" NUMBER 1-800-785-0555.

CONSTRUCTION NOTES
 -GRADING SHALL BE DONE BY OTHERS PRIOR TO CONSTRUCTION
 -BACKFILL SHALL BE CLASS "A"
 -INSTALL CURB STOPS ON PROPERTY LINE
 -CONNECTION TO EXISTING WATER & SEWER MAINS SHALL BE CONSIDERED INCIDENTAL TO OTHER BID ITEMS
 -SIX INCH WATERMAIN SHALL BE CONSIDERED INCIDENTAL TO THE "SIX INCH HYDRANT" BID ITEM
 -ALL FUTURE IMPROVEMENTS ARE TENTATIVE
 -LEAVE BREAKOUT IN MANHOLE #2 FOR FUTURE. BRICK AND GROUT SHUT BREAKOUT
 -THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS INCIDENTAL TO OTHER BID ITEMS
 -SPECIAL NOTE: THE CONTRACTOR SHALL PRESERVE AND PROTECT ALL SURVEY MONUMENTS. SURVEY MONUMENTS DISTURBED BY THE CONTRACTOR SHALL BE RESET BY THE CONTRACTOR SHALL BE RESET BY A LICENSED PROFESSIONAL SURVEYOR AT THE CONTRACTOR'S EXPENSE

FINAL APPROXIMATE WYE LOCATIONS

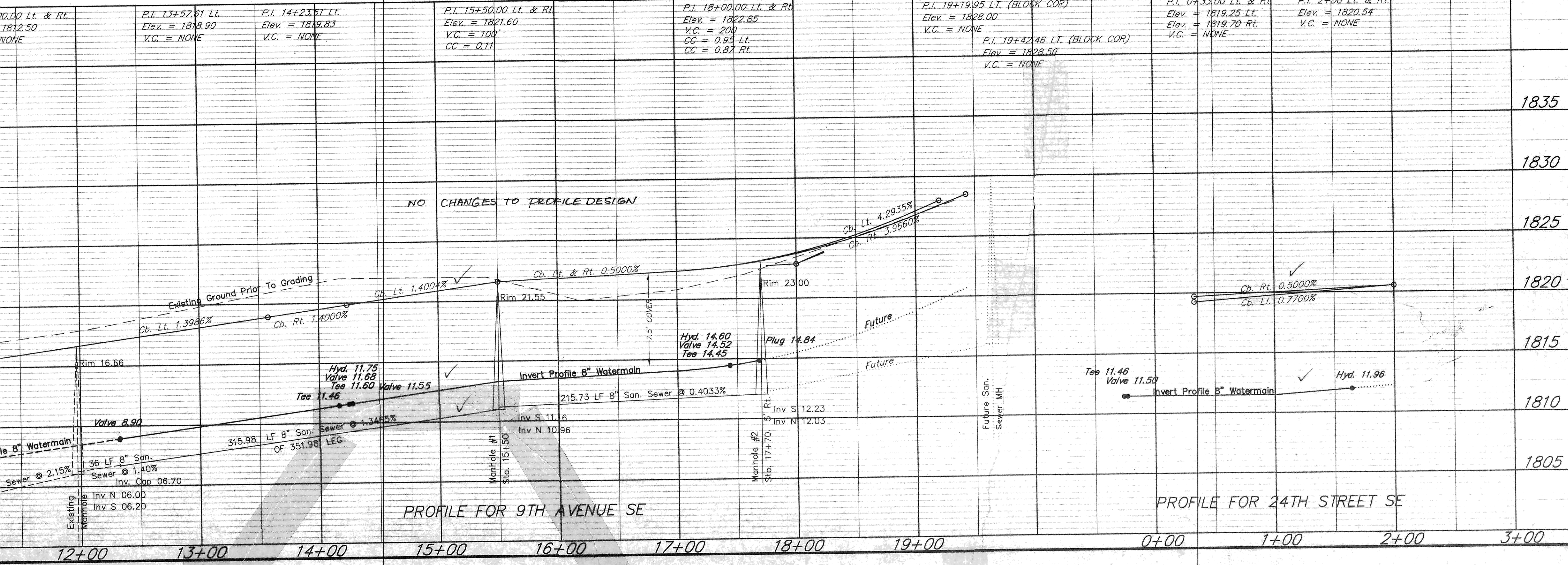
STATION	DIRECTION	LOT	BLOCK
EXISTING MANHOLE TO MANHOLE #1			
0+50	W	1	1
1+09	E	2	7
1+30	W	1	7
1+86	W	2	1
2+55	W	4	1
2+66	E	1	3
3+24	W	1	3
3+51	E	1	3
MANHOLE #1 TO MANHOLE #2			
0+28	SW	6	3
0+98	SW	7	3
1+03	NE	1	3
1+50	SW	8	1

ALL LOTS ARE FULL BASEMENT CAPABLE

Quantities

Sta. 12+32.61 Remove and Salvage 8" Hyd 8" Gate Valve & Box - APC SLIP JOINT W/ ROD	Sta. 14+16.61 Box - CAST IRON	Sta. 14+24.67 8" x 8" Tee 8" Gate Valve & Box w/ ROD SLIP JOINT	Sta. 14+27.67 8" x 6" Tee D.I. SJ 3.5 LF 6" WM C900 6" Gate Valve & Box - APC SLIP JOINT	Sta. 17+43.55 8" x 6" Tee D.I. SJ 3.5 LF 6" WM C900 6" Gate Valve & Box - APC SLIP JOINT W/ ROD	Sta. 17+68.49 8" Plug D1
			3.5 LF 6" WM C900 6" Hydrant WATEROUS		

RECORD DRAWING 6-22-99
 CONTRACTOR: MARKWED EX.
 FOREMAN: DAVE MARKWED
 ENGINEERING REVIEW: MARK SWENSON P.E.



FINAL APPROXIMATE QUANTITIES

Watermain Items	Quantity
Pitrun Gravel	50 TON
Subcut Gravel	5 TON
Rock Excavation	30 CY
8" Watermain	737 LF
8" Gate Valve & Box	✓3 EA
6" Gate Valve & Box	✓2 EA
6" Hydrant	2 EA
Reset 8" Hydrant	✓1 EA
Ductile Iron Fittings	(incidental)
1" Copper Water Serv. Pipe	✓236 LF
1" Water Service Connection	✓4 EA
1" Curb Stop & 1 1/4" Box	✓4 EA

Sanitary Sewer Items

Sanitary Sewer Items	Quantity
Pitrun Gravel	50 TON
Subcut Gravel	5 TON
Rock Excavation	30 CY
8" Sanitary Sewer	✓532 LF
4" Sanitary Sewer	✓421 LF
Concrete Manhole	✓2 EA
8" x 4" Wye Branch	✓12 EA
4" 45" Bend	✓12 EA

SWENSON, HAGEN & CO. P.C.
 PLANNING CIVIL ENGINEERING SURVEYING
 SITE DESIGN CONSTRUCTION MANAGEMENT
 909 BASIN AVE P.O. BOX 1185 (701) 223-2600
 BISMARCK, N.D. 58504 FAX (701) 223-2600
 E-mail: shag@shagc.com

Plainview Heights 5th Addition
 From the North to South Addition
 Boundary Lines
 24th Street SE From 9th Ave. SE to
 the East Addition Boundary Line

SEWER AND WATER IMPROVEMENT
 PROJECT NO. 99-14
 SHEET NO. 1 OF 1 SHEETS
 MANDAN, ND APRIL 30, 1999
 DESIGN: MARK SWENSON DRAFT: JASON GERVING