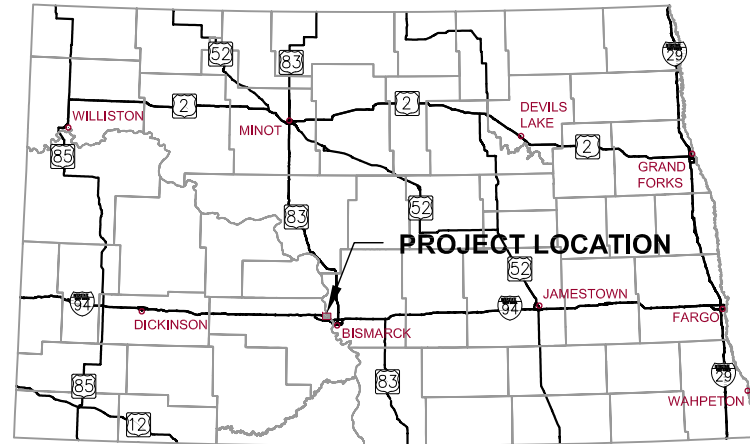


RECORD DRAWINGS FOR MEADOWS 5TH ADDITION WATER & SEWER IMPROVEMENTS MANDAN, NORTH DAKOTA JULY 2012 (RECORD DRAWINGS - DECEMBER 2012)



STATE OF NORTH DAKOTA

UTILITY COMPANIES

GAS:
MONTANA-DAKOTA UTILITIES CO.
308 1ST STREET NW
MANDAN, ND 58554
PH: 701-663-8713

CITY OF MANDAN
PUBLIC WORKS DEPARTMENT
411 6TH AVENUE SW
MANDAN, ND 58554
PH: 701-667-3240
JEFF WRIGHT

GAS:
WILLISTON BASIN PIPELINE
1250 WEST CENTURY AVENUE
BISMARCK, ND 58503
PH: 406-359-7223
KEITH SEIFERT

ELECTRIC:
MOR-GRAN-SOU ELECTRIC COOP. INC.
2816 37TH ST. NW
MANDAN, ND 58554
701-663-0297

CABLE:
MIDCONTINENT COMMUNICATIONS
719 MEMORIAL HIGHWAY
BISMARCK, ND 58501
1-800-888-1300

PHONE:
CENTURYLINK
1101 16TH STREET NE
MANDAN, ND 58554
701-222-6820

ONE CALL
BEFORE DIGGING
1-800-795-0555



MANDAN, NORTH DAKOTA



VICINITY MAP

NO SCALE

BASIS OF SURVEY

THE VERTICAL DATUM USED FOR THIS PROJECT IS A LOCAL SYSTEM AND IS LISTED AS SHOWN ON THE PLANS.

INDEX OF SHEETS

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- 9 39TH AVENUE NW PLAN & PROFILE STA. 1+50 - 8+50
- 10 39TH AVENUE NW PLAN & PROFILE STA. 8+50 - 15+00
- 11 WILDRYE STREET PLAN & PROFILE STA. 15+50 - 19+00
- 12 WILDRYE STREET PLAN & PROFILE STA. 23+50 - 27+00
- 13 EROSION CONTROL PLAN

CERTIFICATION

I HEREBY CERTIFY THAT THE ATTACHED PLANS WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF NORTH DAKOTA.

DATE: _____

RECORD DRAWINGS

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MITZEL BUILDERS, INC.
2401 46TH AVE. SE
MANDAN, ND 58554
PH: 701.224.8083

128 SOO LINE DRIVE
BISMARCK, ND 58501
PH: 701.355.8400
FAX: 701.355.8781
www.kljeng.com



KLJ PROJECT NO. 1612195

LEGEND

EXISTING	ITEM	PROPOSED
	WATER MAIN	
	FIRE HYDRANT	
	GATE VALVE	
	CURB STOP	
	BEND	
	TEE	
	CROSS	
	REDUCER	
	WATER MANHOLE	
	SPRINKLER HEAD	
	WATER METER	
	SANITARY SEWER MAIN	
	SANITARY MANHOLE	
	CLEANOUT	
	STORM SEWER MAIN	
	STORM SEWER MANHOLE	
	CURB INLET	
	CATCH BASIN	
	UNDER GROUND ELECTRIC	
	OVERHEAD ELECTRIC	
	POWER POLE	
	GUY WIRE	
	LIGHT POLE	
	ELECTRICAL JUNCTION BOX	
	ELECTRICAL METER	
	ELECTRICAL OUTLET/PLUG-IN	
	UNDERGROUND TELEPHONE	
	TELEPHONE MANHOLE	
	TELEPHONE PEDESTAL	
	UNDERGROUND CABLE TV	
	CABLE TV PEDESTAL	
	GAS LINE	
	NATURAL GAS LINE	
	FUEL LINE	
	GAS METER	
	CONCRETE CURB & GUTTER	
	EDGE OF ASPHALT SURFACE	
	EDGE OF GRAVEL SURFACE	
	BITUMINOUS/CONCRETE SURFACE	
	BUILDING	
	CHAIN LINK FENCE	
	WOOD FENCE	
	BARB WIRE FENCE	
	TREES CONIFEROUS/ DECIDUOUS	
	BUSH	
	CULVERT	
	DRAINAGE DIRECTION	
	SIGN	
	MAIL BOX	
	PROPERTY PIN	
	CONTROL POINT	

HORIZONTAL ALIGNMENT

PNT	STATION	NORTHING	EASTING	BEARING
39TH AVENUE NW				
BP	0+00.00	438877.717	1857674.735	N00° 41' 04.61"W
PC	1+80.10	439057.808	1857672.583	
PI1	3+11.36	439189.055	1857671.015	N83° 37' 08.56"E
PT	3+93.45	439203.642	1857801.457	
PC	9+05.74	439203.640	1857801.457	
PI2	10+03.71	439271.466	1858407.937	N31° 25' 10.44"E
PT	10+87.95	439355.077	1858459.012	
PC	13+13.78	439547.800	1858576.741	
PI3	13+57.36	439584.992	1858599.460	N0° 58' 58.52"W
PT	13+98.61	439628.568	1858598.713	
EP	15+00.00	439729.9423	1858596.973	

PNT	STATION	NORTHING	EASTING	BEARING
WILDRYE STREET				
BP	16+00.00	439170.623	1857956.085	N6° 22' 51.44"W
PC	17+98.00	439367.396	1857934.080	
PI4	19+50.67	439519.124	1857917.112	N84° 37' 51.67"E
PT	20+36.27	439533.409	1858069.115	
PC	22+67.11	439555.008	1858298.942	
PI5	23+18.65	439559.831	1858350.260	S58° 34' 49.59"E
PT	23+66.63	439532.961	1858394.246	
EP	27+00.00	439359.175	1858678.735	

SURVEY CONTROL POINTS

PNT	NORTHING	EASTING	ELEV	DESCRIPTION
1	438242.167	1858825.791	1961.868	PROPERTY CORNER 39145
2	437772.079	1858709.344	1951.336	PROPERTY CORNER 39366

ALIGNMENT CURVE DATA

ARC DEFINITION		
	C1	C2
PI STA	3+11.36	10+03.71
DELTA	84° 18' 13.1703"	52° 11' 57.8489"
DA	41° 28' 01.9775"	57° 31' 09.6383"
R	145	200
T	131.256	97.978
L	213.35	182.21
LC	194.618	175.974

	C3	C4
PI STA	13+57.36	19+50.67
DELTA	32° 24' 08.5540"	91° 00' 43.0775"
DA	15° 13' 05.8645"	39° 07' 30.1355"
R	150	150
T	43.582	152.673
L	84.829	238.269
LC	83.703	213.997

	C5
PI STA	23+18.65
DELTA	36° 47' 18.7393"
DA	76° 58' 28.9561"
R	155
T	51.544
L	99.523
LC	97.822

NOTE

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RECORD DRAWINGS

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NO.	DATE	REVISION
1	12-12-2012	MADE REDLINE RECORD DRAWING COMMENTS

DRAFTED	LMW
REVIEWED	AM
PROJECT NUMBER	1612195
ISSUE DATE	7/31/2012

MEADOWS 5TH ADDITION
 MITZEL BUILDERS, INC.
 MANDAN, ND
LEGEND, ALIGNMENT & CONTROL POINT TABLES

BASIS OF ESTIMATE

PIPE BEDDING:

8" WATER MAIN = 0.2616 TONS/LF
 HYDRANT = 2.5 TONS/EA
 WATER SERVICE LINE = 0.1000 TONS/LF
 MANHOLES = 5.0 TONS/EA
 4" SEWER SERVICE = 0.108 TONS/LF
 8" SANITARY SEWER = 0.138 TONS/LF

SUBCUT GRAVEL:

0.020 TONS/LF OF PIPE

ESTIMATED QUANTITIES

Item No.	Spec. No.	Item	Unit	Quantity
1	SP	MOBILIZATION	LS	1
2	205	WEIGHTED FIBER ROLL 9" FIBER ROLLS	LF	60 24
3	801	PIPE BEDDING	TON	800 968.49
4	801	SUBCUT GRAVEL	TON	405 0
5	801	8" SDR-35 PVC SANITARY SEWER	LF	4,397 1,744
6	801	8" SANITARY SEWER CAP	EA	2
7	801	TELEWISE SEWER MAIN	LF	4,397 1,744
8	802	18" RCP STORM SEWER	LF	142
9	900	6" PVC C-900 HYDRANT LEAD	LF	45
10	900	8" PVC C-900 WATER MAIN	LF	1,744
11	900	6" HYDRANT RELOCATE	EA	2
12	900	6" FIRE HYDRANT	EA	4
13	900	8" X 6" REDUCER	EA	3
14	900	6" GATE VALVE AND BOX	EA	3
15	900	8" GATE VALVE AND BOX	EA	5
16	1205	TYPE 24" INLET- STORM SEWER	EA	2
17	1205	48" SANITARY SEWER MANHOLES	EA	6 7
18	1209	4" SDR-35 PVC SEWER SERVICE	LF	953
19	1209	8" X 4" SEWER SERVICE CONNECTION	EA	29
20	1209	1" WATER SERVICE LINE	LF	974
21	1209	1" CURB STOP AND BOX	EA	29
22	1209	8" X 1" WATER SERVICE CONNECTION	EA	29
23	1210	TRAFFIC CONTROL	LS	1
24	802	24" RCP STORM SEWER	LF	36
25	1205	48" STORM SEWER MANHOLE	EA	1



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MEADOWS 5TH ADDITION
 MITZEL BUILDERS, INC.
 MANDAN, ND
BASIS OF ESTIMATE & ESTIMATED QUANTITIES

RECORD DRAWINGS

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GENERAL

1. ALL CONSTRUCTION SHALL MEET THE REQUIREMENTS OF THE APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS; THE CITY OF MANDAN STANDARD SPECIFICATIONS AND DETAILS; AND THE CONSTRUCTION DOCUMENTS TITLED MEADOWS 5TH ADDITION WATER & SEWER IMPROVEMENTS, MANDAN, NORTH DAKOTA.
2. THESE NOTES APPLY TO THE ENTIRE PROJECT EXCEPT AS INDICATED OTHERWISE. CONTRACTOR SHOULD NOTE THAT ADDITIONAL CONSTRUCTION NOTES ARE INCLUDED ON INDIVIDUAL DRAWINGS.
3. THESE NOTES ARE FOR GENERAL REFERENCE IN CONJUNCTION WITH AND AS A SUPPLEMENT TO THE WRITTEN SPECIFICATIONS, DETAILS, ADDENDA AND CHANGE ORDERS ASSOCIATED WITH THE CONTRACT DOCUMENTS.
4. REQUESTS BY THE CONTRACTOR OR OWNER SHALL BE APPROVED IN WRITING BY THE ENGINEER AND CITY PRIOR TO IMPLEMENTATION.
5. ANY ERRORS OR OMISSIONS DISCOVERED BY THE CONTRACTOR IN THE PLAN SET SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER WHEN DISCOVERED. THE CONTRACTOR SHALL ALLOW TIME FOR CLARIFICATION.
6. ITEMS NOT INCLUDED IN THE PLANS AS A PAY ITEM BUT INCLUDED ELSEWHERE IN THE PLANS SHALL BE PROVIDED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER AND SHALL BE CONSIDERED INCIDENTAL ITEMS.
7. THIS PLAN SET HAS A LIST OF GENERAL ABBREVIATIONS AND SYMBOLS AND MATERIALS LEGENDS LISTED ON IT. SOME SYMBOLS, MATERIALS AND ABBREVIATIONS MAY NOT BE UTILIZED ON THIS SPECIFIC PROJECT.
8. THE CONTRACTOR SHALL PROVIDE A ONE (1) WEEK NOTICE TO THE ENGINEER, OWNER AND THE CITY OF MANDAN PRIOR TO BEGINNING ANY CONSTRUCTION.
9. ALL DITCH GRADES, CONTOURS AND CROSS SECTIONS REPRESENT THE FINISHED GRADE (TOP OF THE TOPSOIL). IN AREAS WHERE TOPSOIL IS TO BE PLACED, THE GRADING SHALL BE COMPLETED BY CUTTING OR FILLING EARTHWORK TO A POINT 10 INCHES BELOW THE FINAL GRADE; WITH TOPSOIL BRINGING THE GRADING TEMPLATE TO FINISHED GRADE ELEVATIONS. THE EARTHWORK SHALL BE CONSTRUCTED TO THE LINES AND GRADES AS SHOWN ON THE PLANS.

PROTECTION OF EXISTING UTILITIES AND MONUMENTS

10. THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR IT'S REPRESENTATIVES, THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. UNDERGROUND LOCATES MAY BE MADE USING THE "ONE CALL" NUMBER 1-800-795-0555 OR 811.
11. WHERE EXISTING UTILITY WIRES (TELEPHONE, ELECTRIC) ARE LOCATED ADJACENT TO OR ABOVE THE PROPOSED WATER OR SEWER MAIN, THE CONTRACTOR SHALL TEMPORARILY SUPPORT EXISTING WIRES AND INSTALL MAIN PIPING UNDER EXISTING WIRES. ANY DECISION TO HAVE THE EXISTING UTILITIES MOVED WILL BE AT THE CONTRACTORS EXPENSE.
12. THE CONTRACTOR SHALL PROTECT ALL SURVEY MONUMENTS. MONUMENTS DISTURBED OR DESTROYED SHALL BE REPLACED BY THE OWNER'S REPRESENTATIVE AT THE CONTRACTOR'S EXPENSE.

REMOVALS

13. MISCELLANEOUS ITEMS SUCH AS AND NOT LIMITED TO: MAILBOXES, STREET LIGHTS, TRAFFIC LIGHTS, SIGNS, FENCES, POLES, ETC. SHALL BE PROTECTED OR REMOVED AND REINSTALLED BY THE CONTRACTOR WITH THE OWNER'S AND PROPERTY OWNER'S PERMISSION, AND THIS WORK SHALL BE INCIDENTAL TO THE CONTRACT.
14. ANY EXISTING STRUCTURES DISTURBED BY CONSTRUCTION ARE TO BE RESTORED TO THEIR ORIGINAL LOCATION AND CONDITION. ALL STRUCTURES SUCH AS CURB AND GUTTER, CONCRETE AND BITUMINOUS SIDEWALKS, PAVING BRICKS, FENCING, RETAINING WALLS, ETC., CROSSED BY THE PROPOSED WATER, SEWER, CULVERTS AND ROADWAYS MAY NOT BE INDICATED.
15. EXCESS EXCAVATED MATERIAL INCLUDING PIPE, STUMPS, ROOTS, SOIL MATERIALS AND ANY OTHER ITEMS THE OWNER DOES NOT WISH TO SALVAGE SHALL BECOME THE CONTRACTOR'S PROPERTY AND SHALL BE REMOVED FROM THE SITE AND DISPOSED OF PROPERLY, INCIDENTAL TO THE CONTRACT. ASPHALT AND CONCRETE SHALL BE DISPOSED OF OFFSITE AT A LICENSED LANDFILL, INCIDENTAL TO THE CONTRACT.

GRADING NOTES

16. TOPSOIL SHALL BE FULLY REMOVED FROM AREAS TO BE EXCAVATED OR FILLED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING TOPSOIL STOCKPILE LOCATIONS.
17. SILT FENCING OR APPROPRIATE EROSION CONTROL MEASURES SHALL BE INSTALLED ON DOWNSTREAM SIDES OF STOCKPILES TO PROTECT RECEIVING WATERS FROM SEDIMENTATION. TOPSOIL STOCKPILES THAT WILL REMAIN FOR PERIODS IN EXCESS OF 60 DAYS SHOULD BE STABILIZED WITH TEMPORARY VEGETATION.
18. IF EXCESS FILL MATERIAL IS PRESENT FOLLOWING APPROVAL OF EMBANKMENT COMPACTION THE CONTRACTOR SHALL CONTACT THE ENGINEER TO DETERMINE A SUITABLE LOCATION FOR EXCESS FILL DISPOSAL.
19. ALL UTILITY TRENCHES ARE TO BE BACKFILLED TO THE PROPOSED GRADE.

WATER AND SEWER

20. PRIOR TO ANY CONSTRUCTION, THE CONTRACTOR SHALL FIELD VERIFY THE LOCATION, ELEVATION, MATERIAL AND SIZE OF THE EXISTING WATER AND SEWER MAIN AT THE POINTS OF CONNECTION. CONNECTIONS BETWEEN NEW AND EXISTING PIPES SHALL USE PROPER FITTINGS TO SUIT THE ACTUAL CONDITIONS ENCOUNTERED. FITTINGS NECESSARY TO MAKE ALL CONNECTIONS SHALL BE INCIDENTAL.
21. THE CONTRACTOR IS TO PROVIDE AND MAINTAIN ADEQUATE DEWATERING EQUIPMENT TO REMOVE AND DISPOSE OF ANY SURFACE AND GROUNDWATER ENTERING THE TRENCH. ALL COSTS ASSOCIATED WITH WELLPOINT DEWATERING, AND OTHER PUMP SYSTEMS, SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT. PERMITS REQUIRED FOR DEWATERING SHALL BE OBTAINED BY THE CONTRACTOR.
22. ALL SEWER MANHOLES SHALL HAVE A MONOLITHIC BASE WITH PRECAST INVERTS.
23. DEPTH OF COVER FOR ALL WATERLINES SHALL BE A MINIMUM OF 7 FEET 6 INCHES MEASURED FROM THE GROUND SURFACE TO THE TOP OF PIPE. MAINS SHALL BE LOWERED, AS REQUIRED, TO AVOID CONFLICTS WITH EXISTING UTILITIES AND TO MAINTAIN SPECIFIED SEPARATIONS.
24. WATER MAIN DEFLECTIONS FROM A STRAIGHT LINE OR GRADE ARE TO BE MADE WITH FITTINGS, DEFLECTED JOINTS, SHORTER PIPE SECTIONS OR A COMBINATION OF THESE METHODS TO CONFORM TO THE ALIGNMENT AND PROFILE INDICATED ON THE DRAWINGS AND SPECIFIED. DEFLECTED JOINTS SHALL NOT EXCEED THE PIPE MANUFACTURERS RECOMMENDATION.

TRAFFIC CONTROL AND SIGNAGE

25. THE CONTRACTOR SHALL MAINTAIN INGRESS/EGRESS ACCESS TO INDIVIDUAL PROPERTY OWNERS AT ALL TIMES. THE CONTRACTOR SHALL COORDINATE DETOURS AND ANY TEMPORARY CLOSURES WITH EACH PROPERTY OWNER AND THE CITY OF MANDAN ENGINEERING DEPARTMENT. THE CONTRACTOR SHALL KEEP THE DURATION OF ALL CLOSURES AND DETOURS TO A MINIMUM.
26. THE CONTRACTOR SHALL MAINTAIN TEMPORARY DETOUR ROADS UNTIL DETOUR IS NO LONGER NECESSARY. MAINTENANCE COSTS SHALL BE INCIDENTAL TO THE CONTRACT.
27. THE CONTRACTOR SHALL FOLLOW THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) STANDARDS AND GUIDES FOR TRAFFIC CONTROL FOR STREET AND HIGHWAY CONSTRUCTION.
28. THE CONTRACTOR SHALL FOLLOW NORTH DAKOTA DEPARTMENT OF TRANSPORTATION STANDARD DRAWINGS WHEN SETTING UP THE TRAFFIC CONTROL DEVICES.

STORM WATER POLLUTION PREVENTION

29. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A GENERAL PERMIT (NPDES) FROM THE NORTH DAKOTA DEPARTMENT OF HEALTH. AN APPLICATION PACKAGE WITH ALL RELATED AND SUBSEQUENT REQUIREMENTS MAY BE ACQUIRED BY CONTACTING THE NORTH DAKOTA DEPARTMENT OF HEALTH AT 701-328-5210.
30. THE CONTRACTOR IS RESPONSIBLE FOR MINIMIZING TRACKING OF SOIL AND DEBRIS ONTO ADJACENT PROPERTIES AND ROADWAYS. TRACKING MUST BE REMOVED BY THE END OF EACH DAY.
31. THE CONTRACTOR SHALL BE REQUIRED TO CLEAN STREETS AND SIDEWALKS AND REPAIR TO THE CONDITION THEY WERE IN PRIOR TO THE START OF CONSTRUCTION BEFORE OPENING UP TO TRAFFIC.
32. THE CONTRACTOR SHALL INSTALL A CENTRAL CONCRETE WASHOUT LOCATION AND PROVIDE A SIGN TO IDENTIFY THE CONCRETE WASHOUT AREA. THE CONTRACTOR SHALL CONSTRUCT A PIT TO PREVENT WASHOUT WATER FROM FLOWING TO THE STORM WATER COLLECTION SYSTEM.

RECORD DRAWINGS

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REVISION	MADE	RELINE	RECORD	DRAWING	COMMENTS
NO.	DATE				
1	12-12-2012				

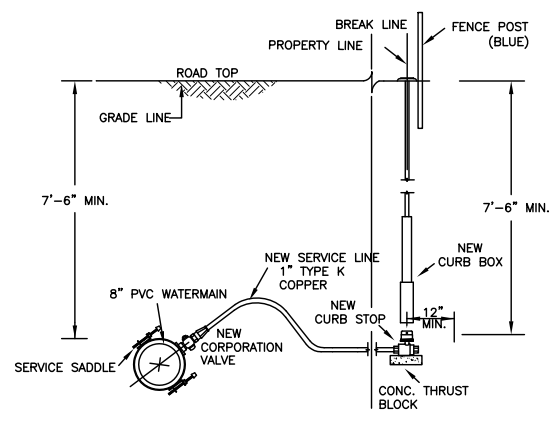
DRAFTED	LMW
REVIEWED	AM
PROJECT NUMBER	1612195
ISSUE DATE	7/31/2012

MEADOWS 5TH ADDITION
 MITZEL BUILDERS, INC.
 MANDAN, ND
GENERAL NOTES

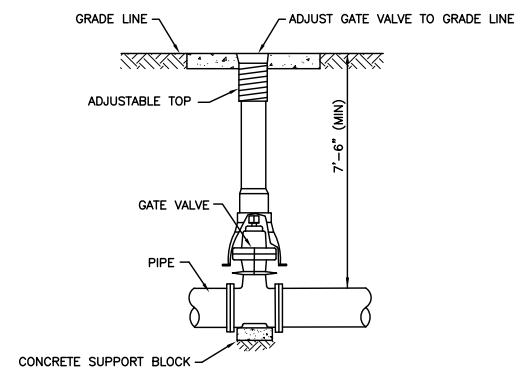
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1	12-12-2012	MADE REDLINE RECORD DRAWING COMMENTS

DRAFTED	LMW
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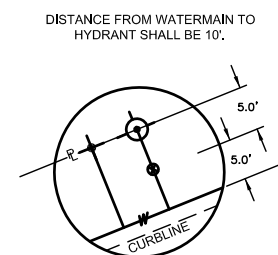
MEADOWS 5TH ADDITION
 MITZEL BUILDERS, INC.
 MANDAN, ND
DETAILS



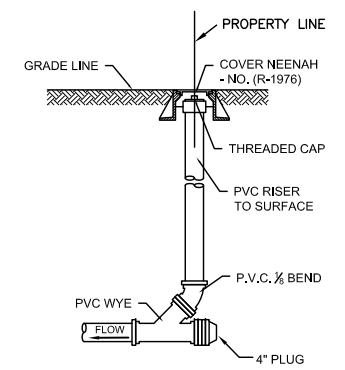
WATER SERVICE LINE CONNECTION
NO SCALE



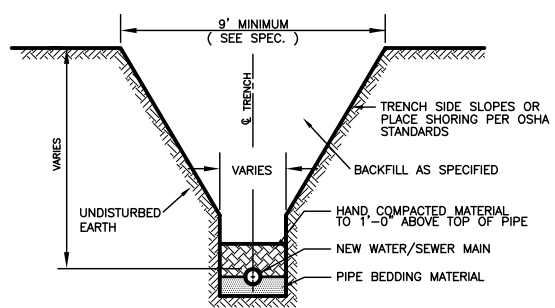
TYPICAL GATE VALVE
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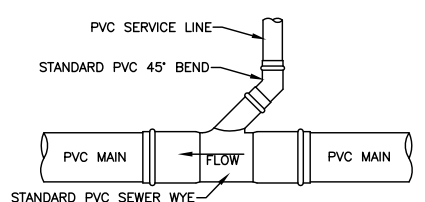
HYDRANT & CURB STOP LOCATION DETAIL
NO SCALE



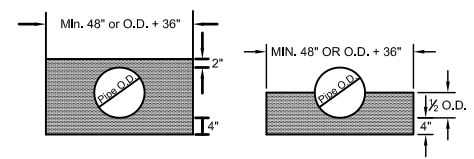
SANITARY SEWER INLINE CLEAN OUT
NO SCALE



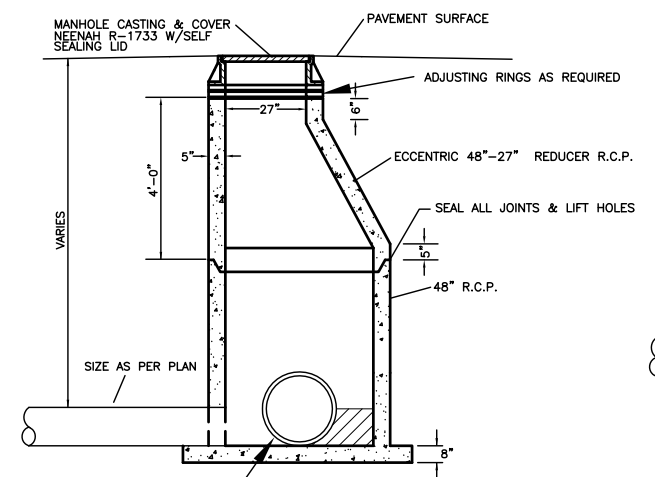
TYPICAL TRENCH DETAIL
NO SCALE



SANITARY SEWER CONNECTION
NO SCALE

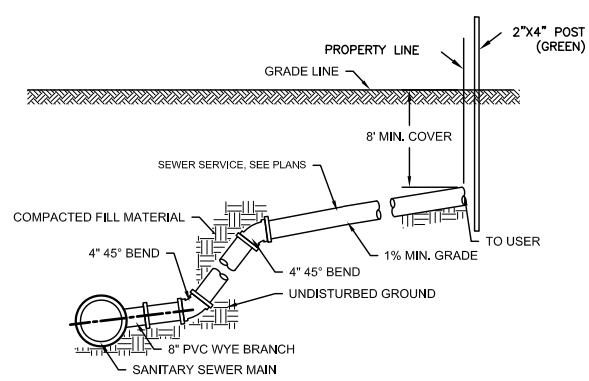
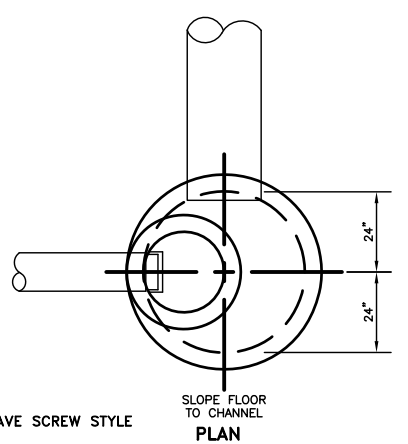


PIPE BEDDING DETAILS
NO SCALE



NOTE:
 ALL MANHOLE SECTIONS SHALL HAVE SCREW STYLE LIFT DEVICES.
 THE INVERTS ON THE EXTENDED MONOLITHIC (INTEGRAL) BASE MANHOLE SHALL HAVE A SMOOTH PRECAST INVERT WITH PVC BOOTS

SANITARY MANHOLE DETAIL
NO SCALE

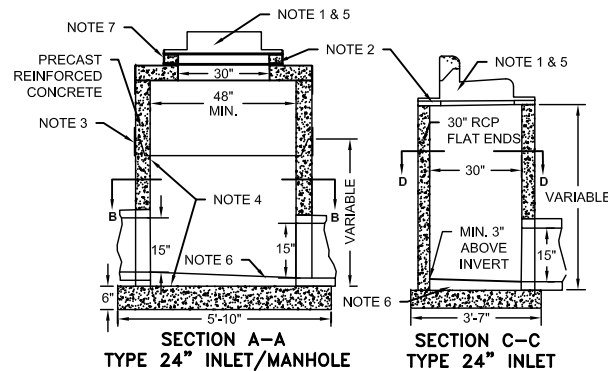
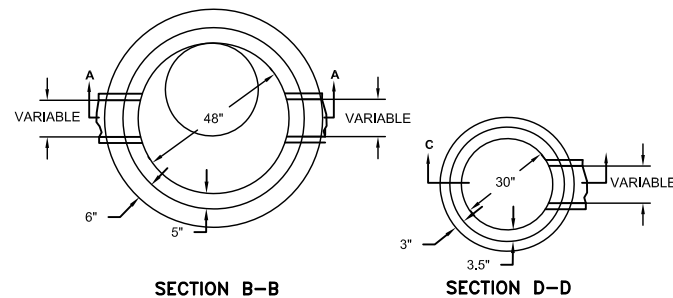


SANITARY SEWER SERVICE CONNECTION
NO SCALE

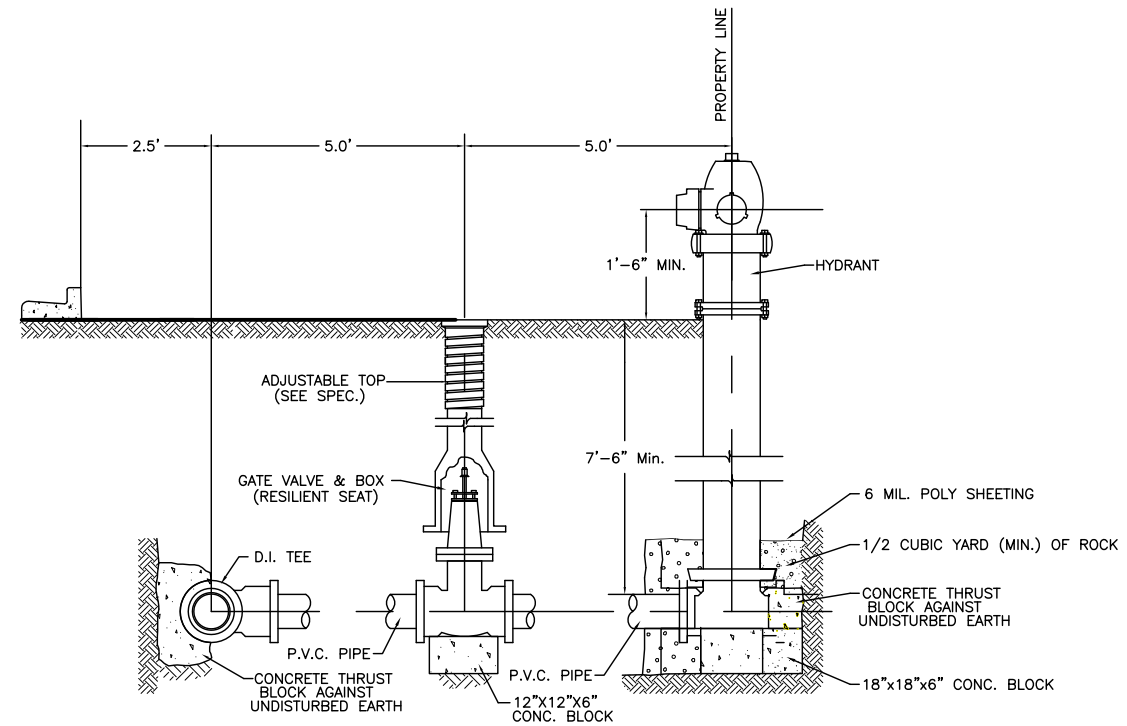
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NOTES:

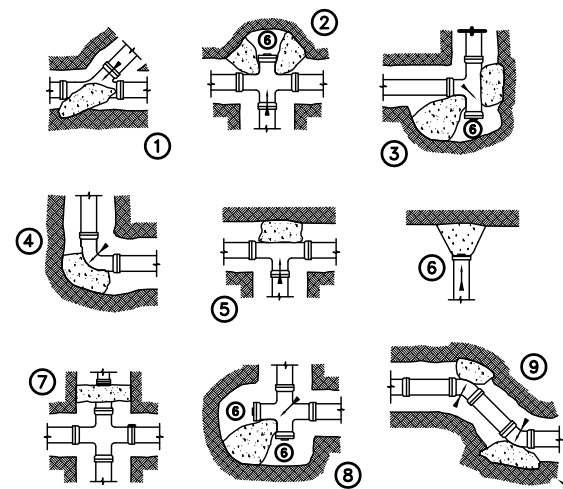
1. INLET CASTING SHALL BE AS DEFINED IN SECTION 1205-2.6.
2. ALLOWANCE FOR ADJUSTMENT SHALL BE 1 1/2" MINIMUM TO 3" MAXIMUM. SEE STANDARD DETAIL NO.1206-1.
3. CRETEX P2 GASKETED JOINT FOR 48" MANHOLES, CRETEX CX-4 JOINT FOR ALL OTHER SIZES OF MANHOLES OR EXTERIOR SEAL BY PRESS-SEAL GASKET CORP. EZ WRAP AND EZ STIK NO. 4 PRIMER, CRETEX SPECIALTY PRODUCTS "MAC WRAP", OR AN APPROVED EQUAL IF SPECIFIED.
4. USE PRECAST SECTION FOR THREE PIPES OR LESS UP TO 15" DIAMETER. FOR MORE THAN THREE PIPES OR FOR LARGER PIPES, A SECTION SHALL BE POURED IN PLACE ALLOWING A MINIMUM OF 3" FROM THE BOTTOM OF THE ROOF SLAB TO THE LARGEST OR HIGHEST PIPE. SEE STANDARD DETAIL NO. 1205-4 FOR ROOF SLAB, BASE & OTHER DIMENSIONS.
5. BOLTS FOR CASTING SHALL BE TEMPER FINISH, DOUBLE HEAT TREATED-1038 S.A.E. GRADE 5, WITH CAD-DICHROMATE PLATING.
6. SLOPE FLOOR TO INVERT OF LOWEST PIPE.
7. EXTERNAL MANHOLE CHIMNEY SEAL AS MANUFACTURED BY CRETEX OR AN APPROVED EQUAL, IF SPECIFIED.
8. STEPS SHALL NOT BE PLACED IN SANITARY SEWER, STORM SEWER OR AIR RELEASE MANHOLES OR INLETS UNLESS SPECIFIED. IF SPECIFIED, THE MANHOLE STEPS SHALL BE DELTA SUREFOOT OR APPROVED EQUAL. STEPS SHALL BE SPACED 16" ON CENTER.



TYPE 24" INLETS
NO SCALE



TYPICAL HYDRANT & GATE VALVE DETAIL
NO SCALE



THRUST BLOCKING DETAILS
NO SCALE

1. THRU LINE CONNECTION, WYE
 2. THRU LINE CONNECTION, CROSS USED AS TEE
 3. DIRECTION CHANGE, TEE USED AS ELBOW
 4. DIRECTION CHANGE, ELBOW
 5. THRU LINE CONNECTION, TEE
 6. BLOCKING OF PLUG, TO INCLUDE BOND BREAKER
 7. CHANGE LINE SIZE, REDUCER
 8. DIRECTION CHANGE, CROSS USED AS ELBOW
 9. DIRECTION CHANGE
 10. VALVE ANCHOR
- NOTE: BLOCKING NOT SHOWN MUST BE APPROVED BY ENGINEER

RECORD DRAWINGS

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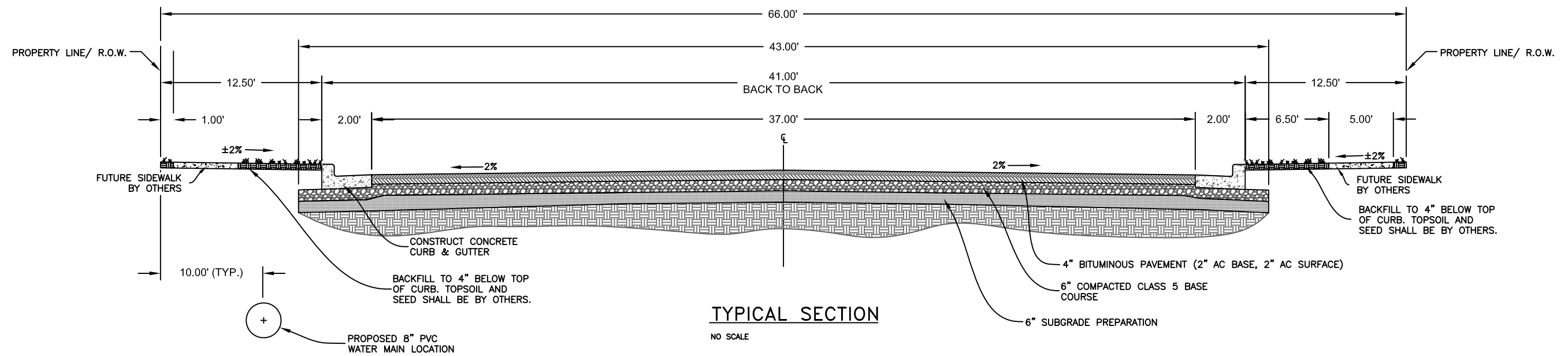
NO.	DATE	REVISION
1	12-12-2012	MADE REDLINE RECORD DRAWING COMMENTS

DRAFTED	LMW
REVIEWED	AM
PROJECT NUMBER	1612195
ISSUE DATE	7/26/2012

MEADOWS 5TH ADDITION
MITZEL BUILDERS, INC.
MANDAN, ND
DETAILS

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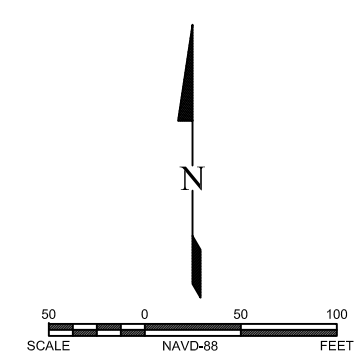
MEADOWS 5TH ADDITION
MITZEL BUILDERS, INC.
MANDAN, ND
TYPICAL SECTION

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MEADOWS 5TH ADDITION
MITZEL BUILDERS, INC.
MANDAN, ND

SCOPE OF WORK



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1	7/31/2012	ISSUE DATE

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QUANTITIES THIS SHEET

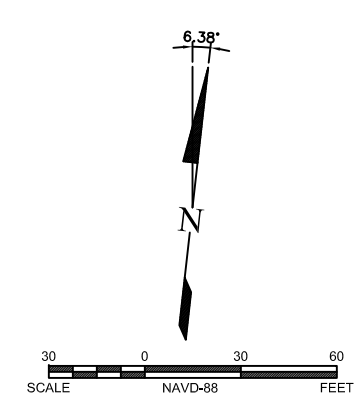
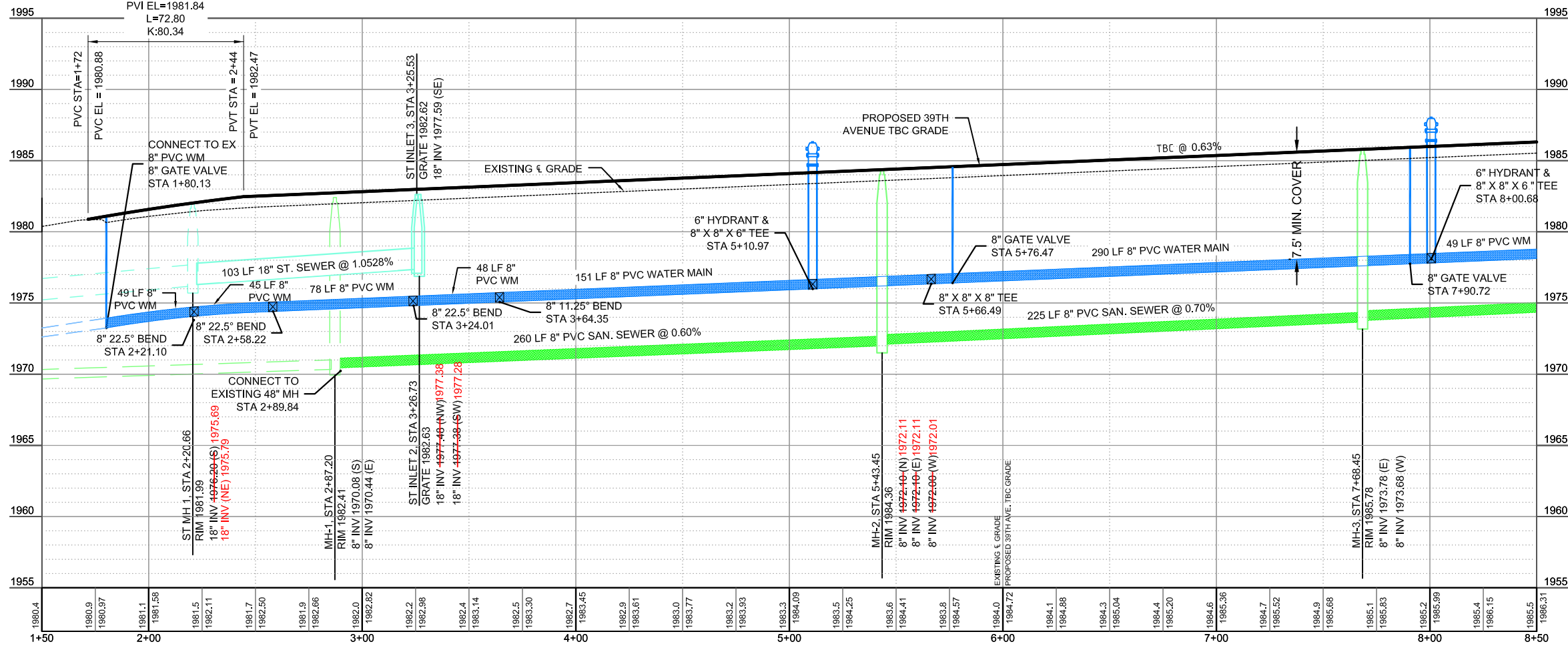
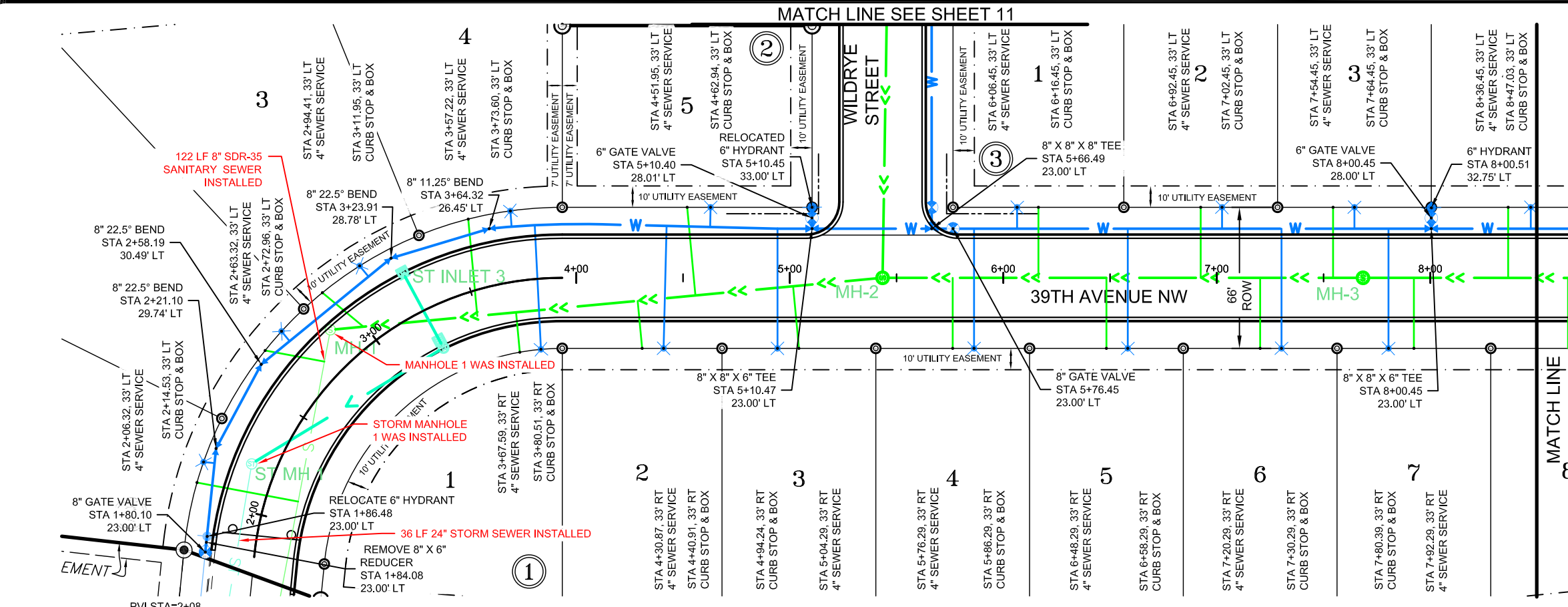
DUCTILE IRON WATERMAIN FITTINGS	
8" X 8" X 6" TEE	2 EA
8" X 8" X 8" TEE	1 EA

WATERMAIN	
6" PVC C-900 HYDRANT LEAD	20 LF
8" PVC C-900 WATER MAIN	710 LF
6" HYDRANT RELOCATE	1 EA
6" FIRE HYDRANT	1 EA
6" GATE VALVE & BOX	2 EA
8" GATE VALVE & BOX	2 EA
1" WATER SERVICE	469 LF
1" CURB STOP & BOX	16 EA
8" X 1" WATER SERVICE CONNECTION	16 EA

SANITARY SEWER	
48" SANITARY SEWER MANHOLE	3 EA - 2 EA
8" SDR-35 PVC SANITARY SEWER	689 LF - 507 LF
4" SDR-35 PVC SEWER SERVICE	522 LF
8" X 4" SEWER SERVICE CONNECTION	16 EA

STORM SEWER	
TYPE 24" INLET STORM SEWER	2 EA
18" RCP STORM SEWER PIPE	142 LF
24" RCP STORM SEWER PIPE	36 LF
48" STORM SEWER MANHOLE	1 EA

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MEADOWS 5TH ADDITION
 MITZEL BUILDERS, INC.
 MANDAN, ND

39TH AVENUE NW PLAN & PROFILE STA. 1+50 - 8+50

SHEET 9



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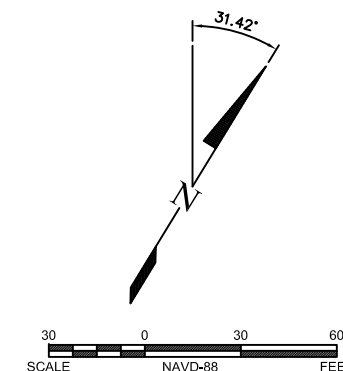
DUCTILE IRON WATER MAIN FITTINGS	
8" X 8" X 6" TEE	1 EA
WATER MAIN	
6" PVC C-900 HYDRANT LEAD	15 LF
8" PVC C-900 WATER MAIN	597 LF
6" FIRE HYDRANT	2 EA
8" X 6" REDUCER	1 EA
6" GATE VALVE & BOX	1 EA
1" WATER SERVICE	505 LF
1" CURB STOP & BOX	13 EA
8" X 1" WATER SERVICE CONNECTION	13 EA
SANITARY SEWER	
48" SANITARY SEWER MANHOLE	3 EA
8" SDR-35 PVC SANITARY SEWER	595 LF
4" SDR-35 PVC SEWER SERVICE	431 LF
8" X 4" SEWER SERVICE CONNECTION	13 EA

WILLISTON BASIN INTERSTATE PIPELINE NOTES:

- NO FENCING, TREES OR SHRUBS SHALL BE ALLOWED WITHIN 25' OF THE PIPELINE FACILITIES.
- NO UTILITY OR OTHER PARALLEL ENCROACHMENTS ARE ALLOWED WITHIN 25' OF THE PIPELINE FACILITIES.
- NO STRUCTURE, EITHER PERMANENT OR TEMPORARY ARE ALLOWED WITHIN 25' OF THE PIPELINE FACILITIES.
- ANY PROPOSED GRADING OR GROUND DISTURBANCE WITHIN 25' OF THE PIPELINE FACILITIES MUST HAVE PRIOR APPROVAL OF WILLISTON BASIN INTERSTATE PIPELINE COMPANY.

NOTE

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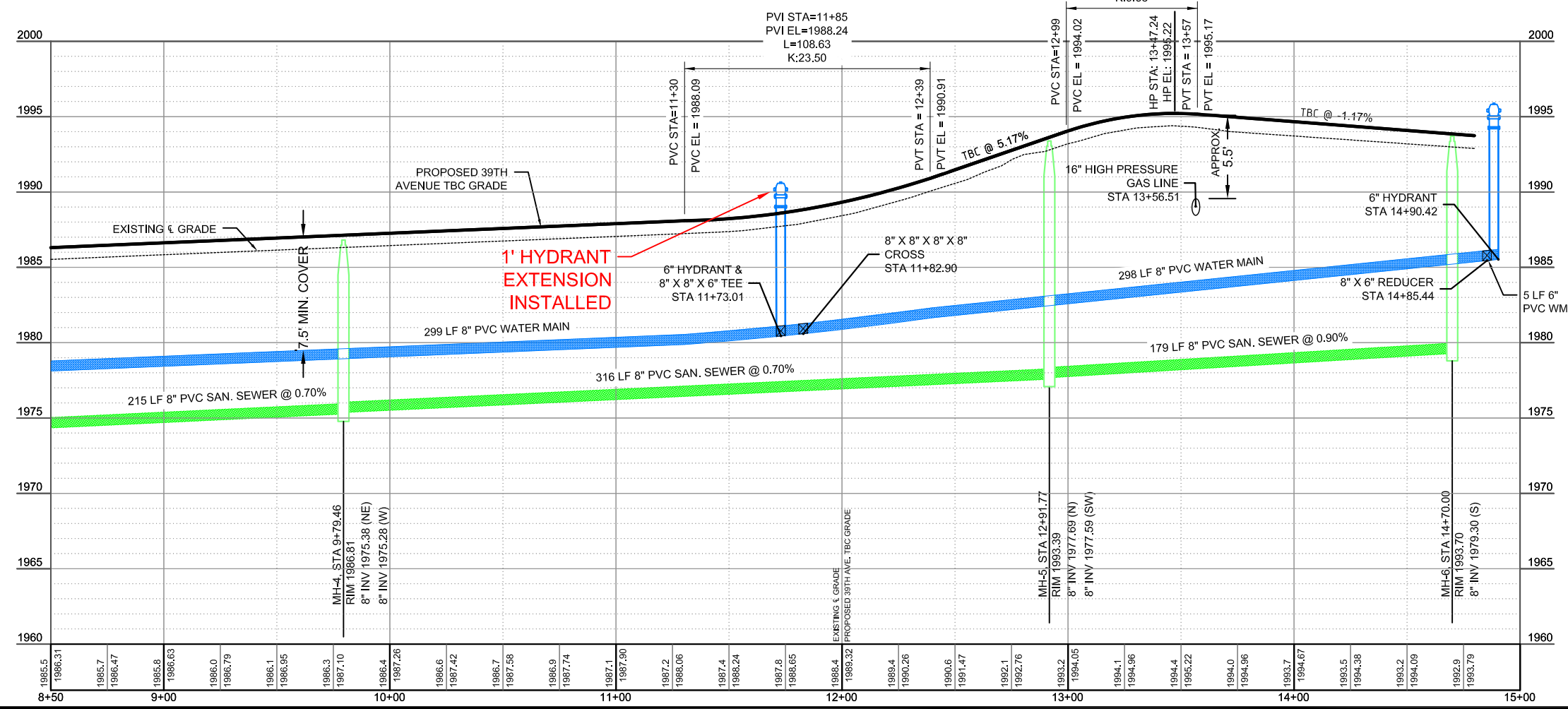
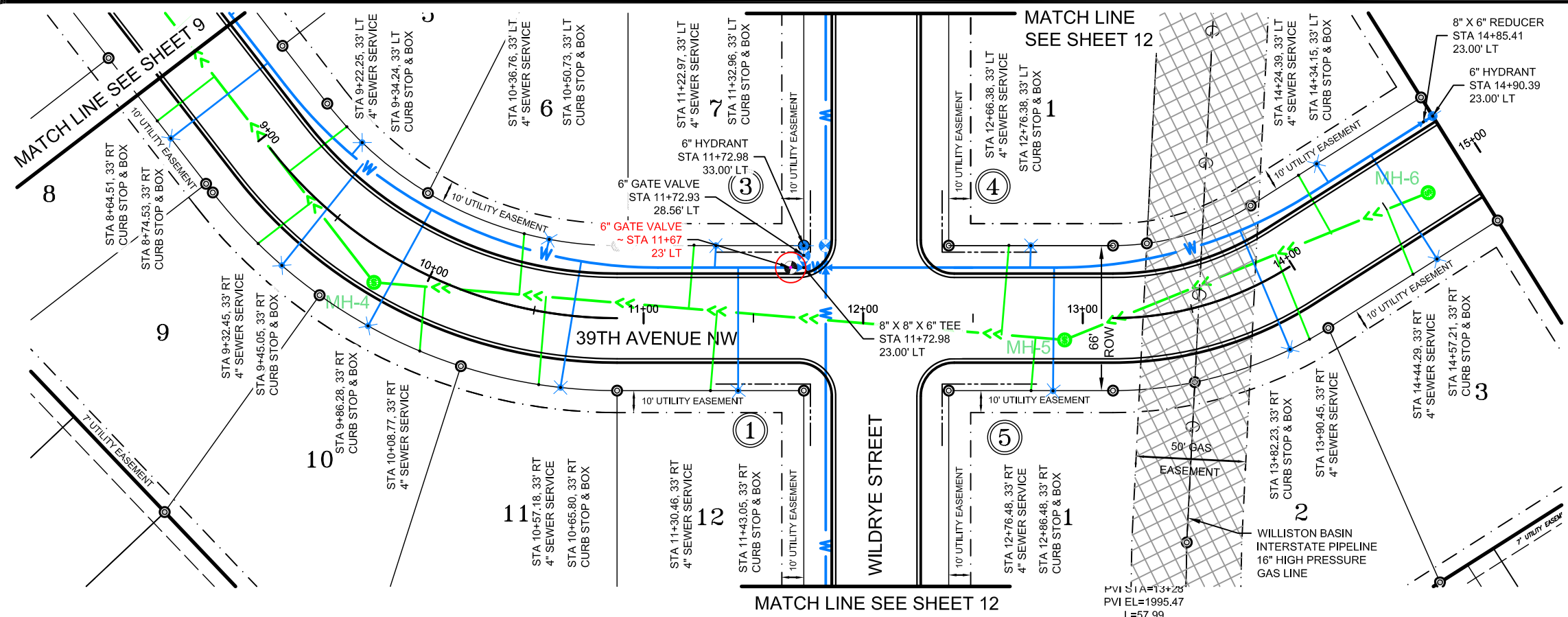
RECORD DRAWINGS

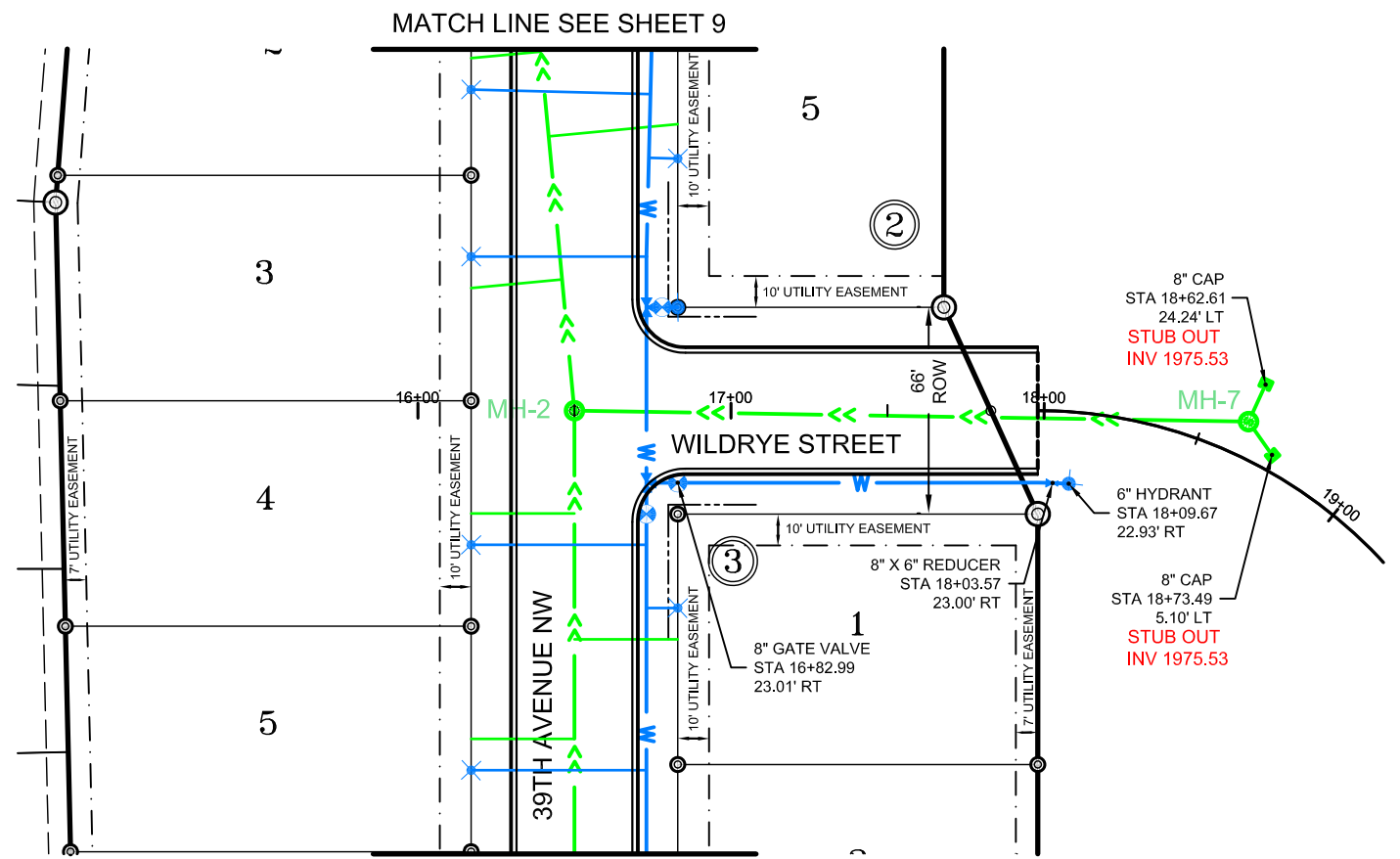
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MEADOWS 5TH ADDITION
MITZEL BUILDERS, INC.
MANDAN, ND

39TH AVENUE NW PLAN & PROFILE STA. 8+50 - 15+00

SHEET
10

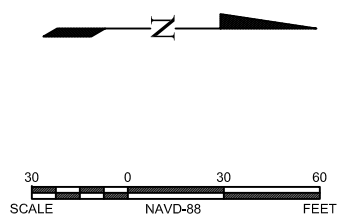
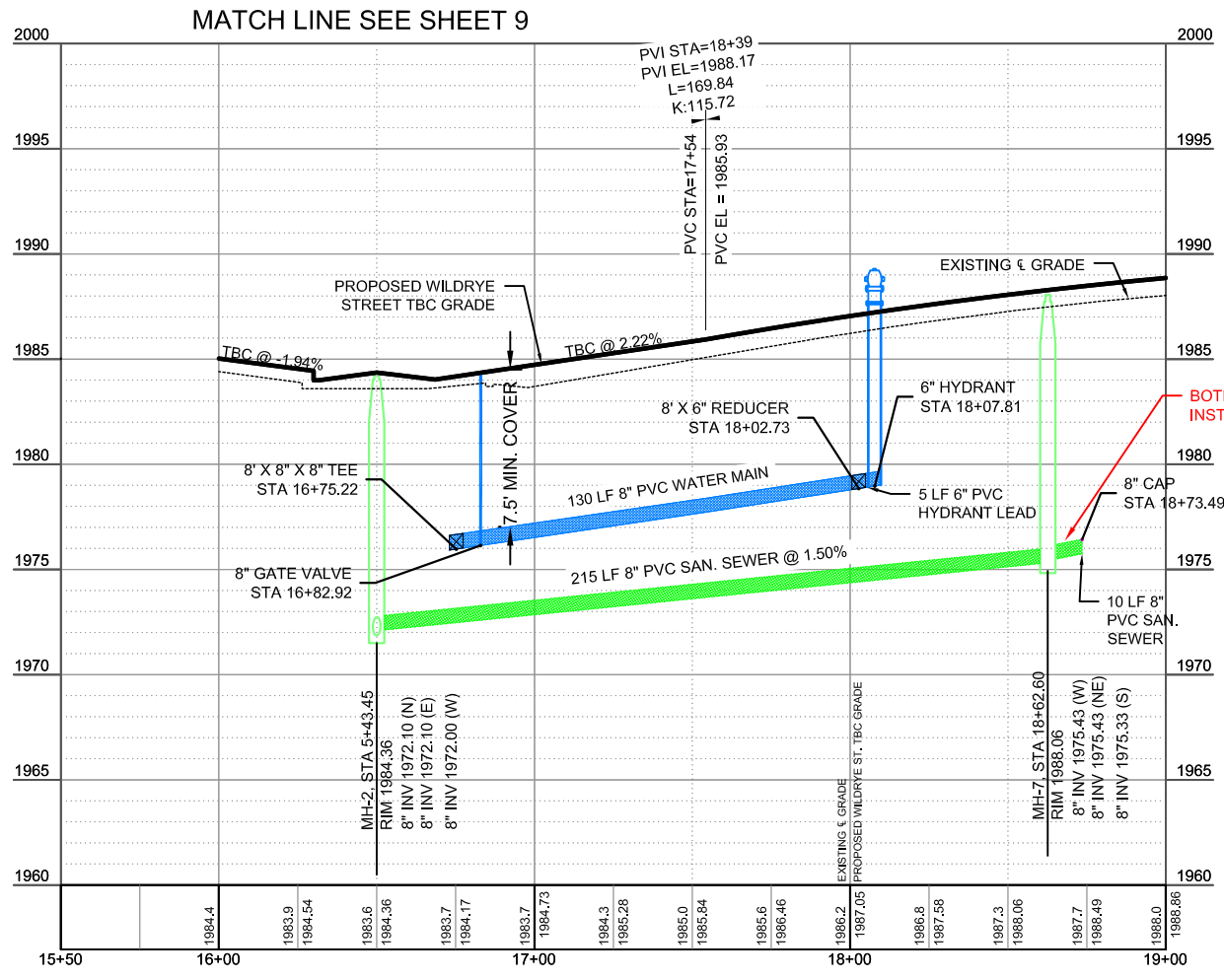




QUANTITIES THIS SHEET


WATER MAIN	
6" PVC C-900 HYDRANT LEAD	5 LF
8" PVC C-900 WATER MAIN	130 LF
8" X 6" REDUCER	1 EA
6" FIRE HYDRANT	1 EA
8" GATE VALVE & BOX	1 EA
SANITARY SEWER	
48" SANITARY SEWER MANHOLE	1 EA
8" SDR-35 PVC SANITARY SEWER	235 LF
8" SANITARY SEWER CAP	2 EA

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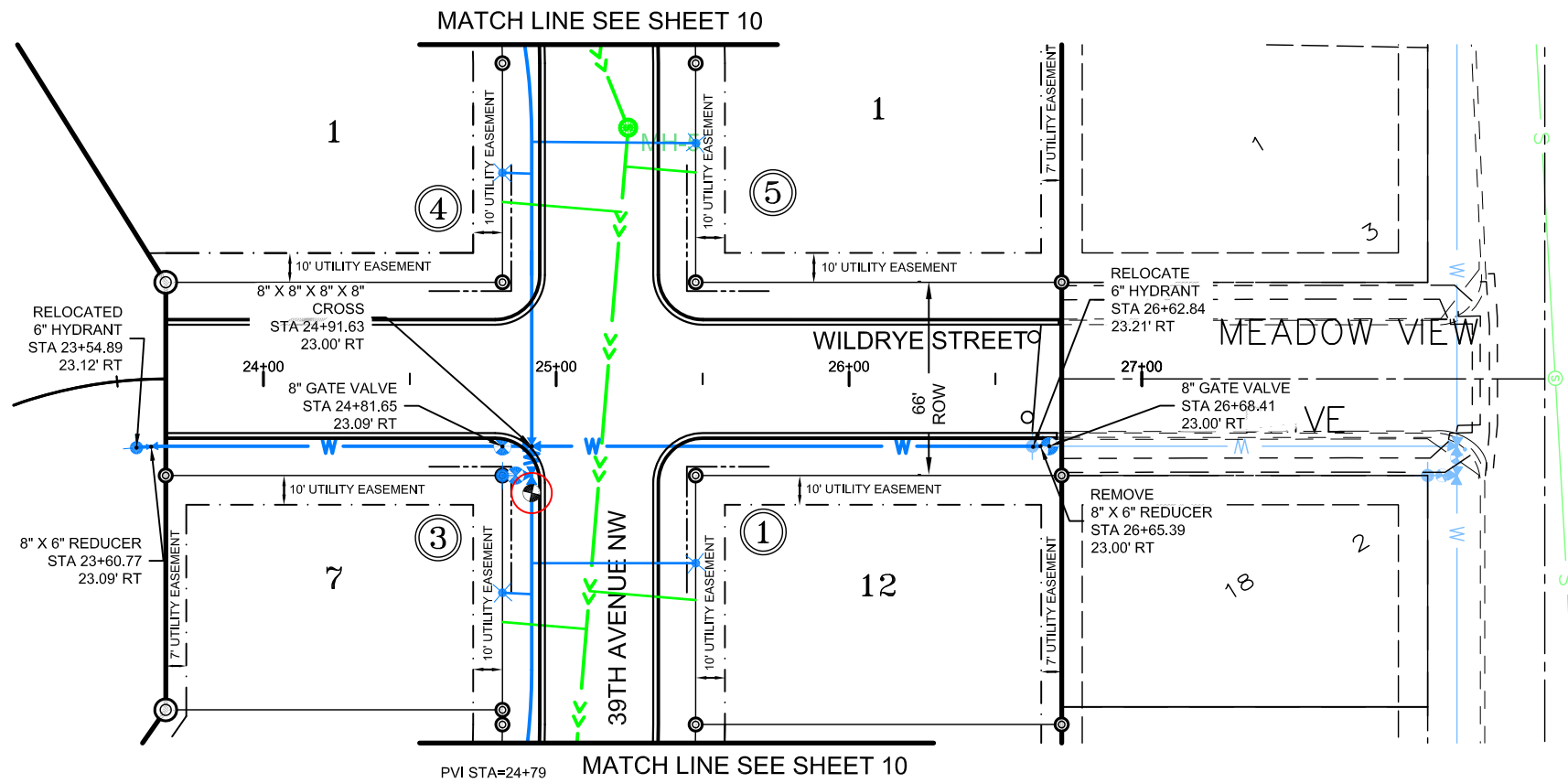
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MANDAN, ND

WILDRYE STREET PLAN & PROFILE STA. 15+50 - 19+00

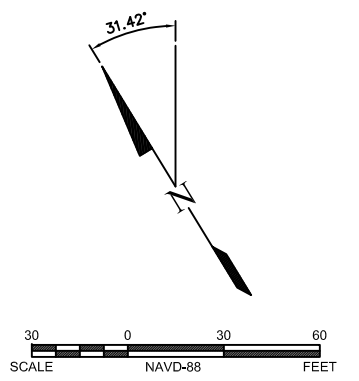
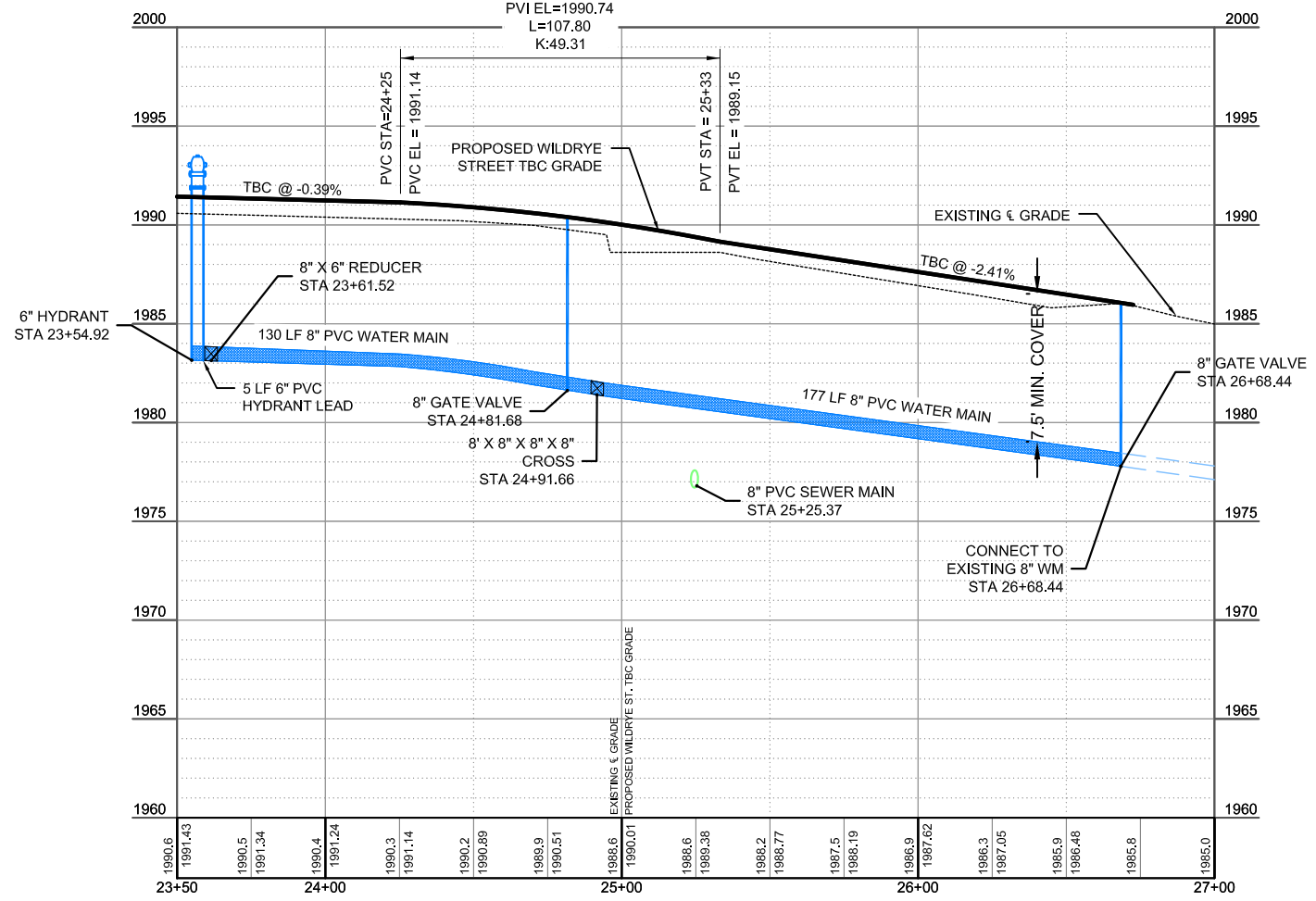
SHEET
11



QUANTITIES THIS SHEET


DUCTILE IRON WATER MAIN FITTINGS	
8" X 8" X 8" X 8" CROSS	1 EA
WATER MAIN	
6" PVC C-900 HYDRANT LEAD	5 LF
8" PVC C-900 WATER MAIN	307 LF
8" X 6" REDUCER	1 EA
6" FIRE HYDRANT	1 EA
8" GATE VALVE & BOX	2 EA

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MANDAN, ND

WILDRYE STREET PLAN & PROFILE STA. 23+50 - 27+00

SHEET
12

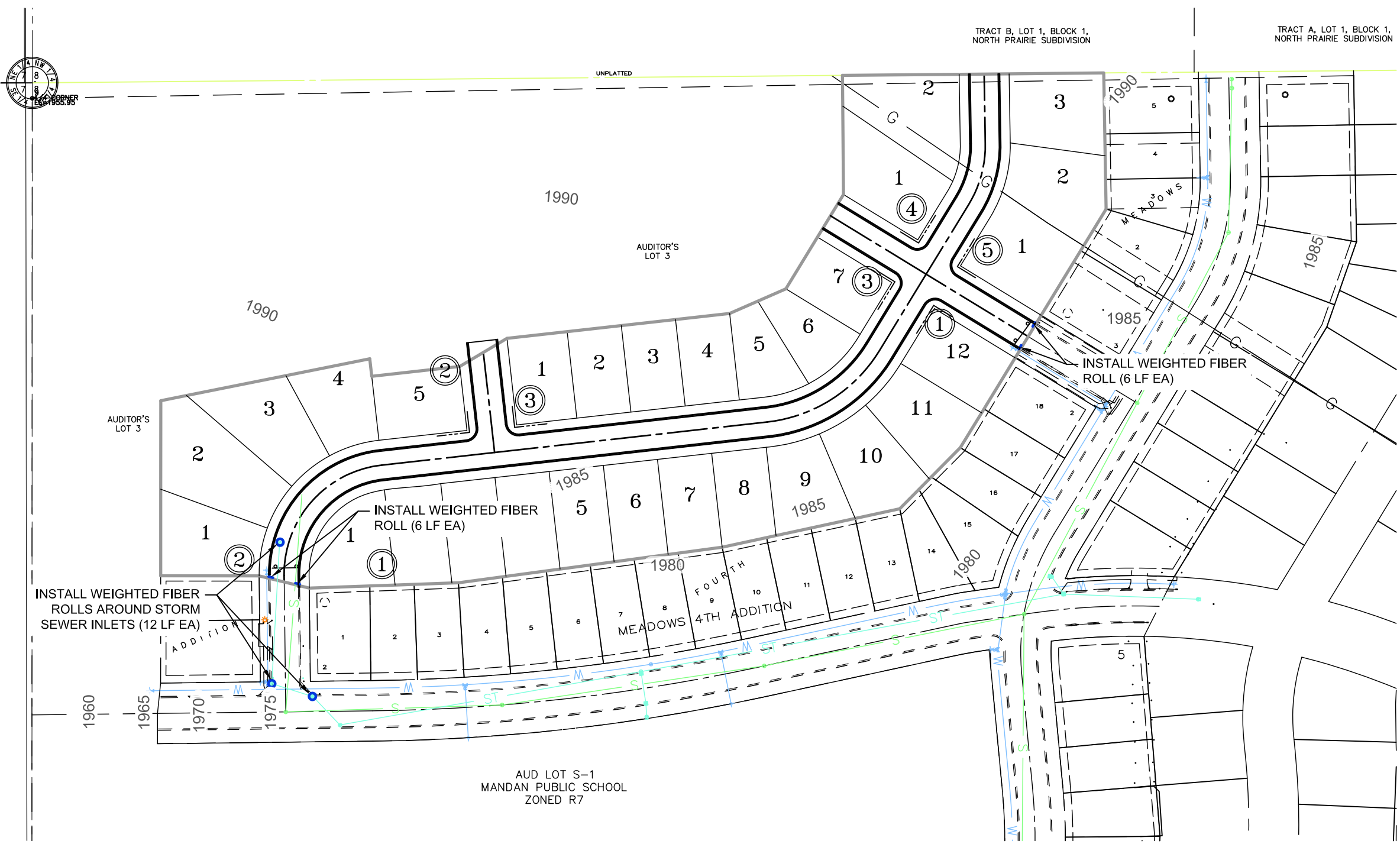


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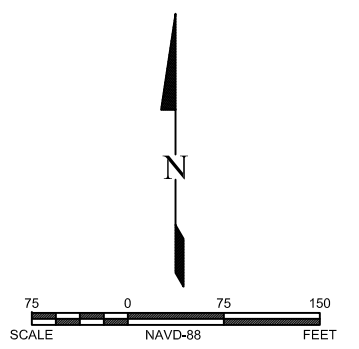
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MEADOWS 5TH ADDITION
MITZEL BUILDERS, INC.
MANDAN, ND
EROSION CONTROL PLAN



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