

STATE OF NORTH DAKOTA

UTILITY COMPANIES

GAS:

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

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

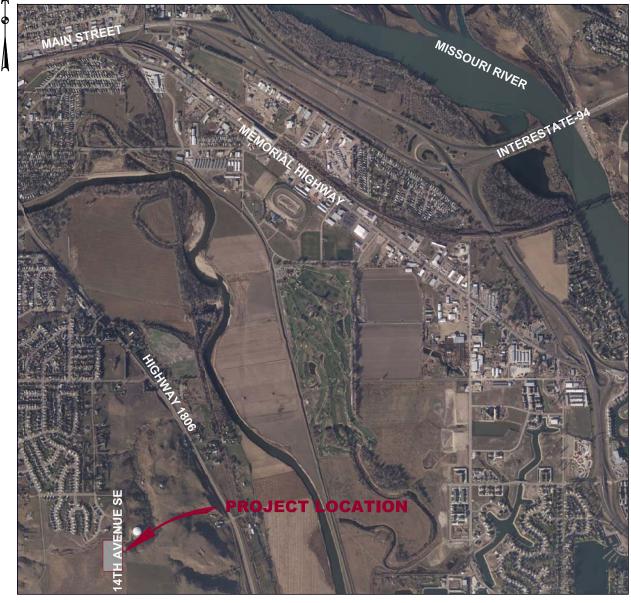
CABLE: MIDCONTINENT COMMUNICATIONS 719 MEMORIAL HIGHWAY BISMARCK, ND 58501 1-800-888-1300

PHONE: CENTURYLINK 1101 16TH STREET NE MANDAN, ND 58554 701-222-6820 CITY OF MANDAN PUBLIC WORKS DEPARTMENT 411 6TH AVENUE SW MANDAN, ND 58554 PH: 701-667-3240 JEFF WRIGHT

PLAINVIEW HEIGHTS 13TH ADDITION WATER & SEWER IMPROVEMENTS MANDAN, NORTH DAKOTA

AUGUST 2012

MANDAN, NORTH DAKOTA



VICINITY MAP NO SCALE

ONE CALL BEFORE DIGGING 1-800-795-0555

BASIS OF SURVEY

ALL CONTOURS AND ELEVATIONS FOR THE PROJECT ARE BASED ON DATUM NAVD 29.

MITZEL BUILDE 2401 46TH AV MANDAN, ND PH: 701.224.

INDEX OF SHEETS

- 1 COVER SHEET
- 2 LEGEND, ALIGNMENT & CONTROL POINT TABLES
- 3 BASIS OF ESTIMATE & ESTIMATED QUANTITIES
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- 9-10 14TH AVENUE SW PLAN & PROFILE
- 11 14TH AVENUE SW STORM SEWER PLAN & PROFILE
- 12 SHIRES DRIVE SE PLAN & PROFILE
- 13 SUFFOLK DRIVE SE PLAN & PROFILE

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: .
issued an Mohsenza Number P 2012 a document Kadrmas, Bismarck, media sho	ment(s) was originally ad sealed by Ahmad adeh, Registration E-8103 on August 21, and the original as are stored at Lee & Jackson, North Dakota. This puld not be considered document.	
RS, INC. VE SE 58554 .8083	128 SOO LINE DRIVE BISMARCK, ND 58501 PH: 701.355.8400 FAX: 701.355.8781 www.kljeng.com KL&J PROJECT NO. 1612153	Kadrmas Lee & Jackson Engineers Surveyors Planners

LEGEND

LEGEND				
EXISTING	ITEM	PROPOSED		
w	WATER MAIN	w		
4	FIRE HYDRANT	-		
\otimes	GATE VALVE	8		
×	CURB STOP	×		
Ŋ	BEND	>		
\mathbb{X}	TEE			
×	CROSS	×		
X	REDUCER			
	WATER MANHOLE	())		
Ø	SPRINKLER HEAD	8		
Ŵ	WATER METER			
s	SANITARY SEWER MAIN	>		
S	SANITARY MANHOLE			
•	CLEANOUT	•		
ST	STORM SEWER MAIN	>		
(ST)	STORM SEWER MANHOLE	ஏ		
	CURB INLET			
	CATCH BASIN			
Е	UNDER GROUND ELECTRIC			
E(0)	OVERHEAD ELECTRIC			
-0-	POWER POLE	-		
 	GUY WIRE	<u> </u>		
` ☆	LIGHT POLE	¥		
	ELECTRICAL JUNCTION BOX	<u> </u>		
Ē	ELECTRICAL METER	- D		
	ELECTRICAL OUTLET/PLUG-IN	•		
T	UNDERGROUND TELEPHONE			
Ū	TELEPHONE MANHOLE			
 	TELEPHONE PEDESTAL			
F0	UNDERGROUND FIBER OPTIC	—		
	UNDERGROUND CABLE TV			
	CABLE TV PEDESTAL			
<u> </u>				
G	GAS LINE			
G	NATURAL GAS LINE			
FUEL	FUEL LINE			
© =======	GAS METER	©		
	CONCRETE CURB & GUTTER			
	EDGE OF ASPHALT SURFACE			
	EDGE OF GRAVEL SURFACE			
	BITUMINOUS/CONCRETE SURFACE			
	BUILDING			
	CHAIN LINK FENCE	o		
	WOOD FENCE			
<u> </u>	BARB WIRE FENCE	X		
*	TREES CONIFEROUS/ DECIDUOUS			
£	BUSH	٤3		
DE = = = = = = = = =	CULVERT			
~~	DRAINAGE DIRECTION			
þ	SIGN	여		
	MAIL BOX			
۲	PROPERTY PIN	Ø		
+	CONTROL POINT			

BOUNDARY/PROPERTY LEGEND

P-RIGHT-OF-WAY OR BLOCK LINE

P-LOT-DIM

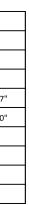
– – — – – P-CL-DIM

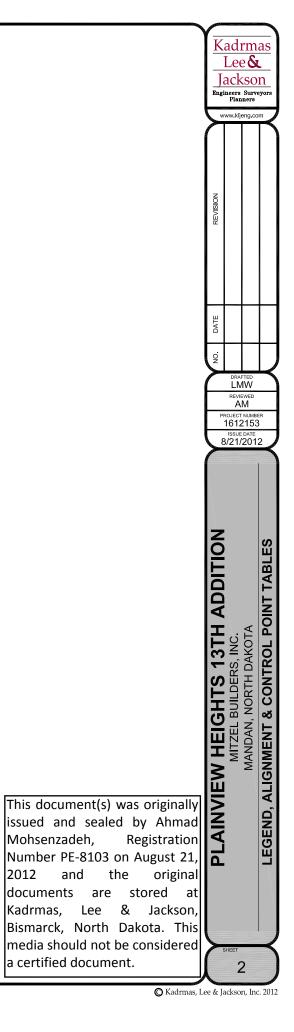
P-EASEMENT

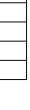
HORIZONTAL ALIGNMENT						
PNT	STATION	NORTHING	EASTING	BEARING		
	14TH AVENUE SE					
BP	38+00.00	412519.791	1875679.739	N01° 00' 57.96"E		
EP	49+00.00	411419.956	1875698.899	NOI 00 37.30 E		
		SHIRES DR	IVE SE			
BP-PC	20+00.00	412056.729	1875156.123	N28° 52' 45.11"E		
PI1	22+70.19	412293.320	1875286.616	N28 52 45.11 E		
РТ	24+89.90	412298.112	1875556.765	N88° 59' 02.04"E		
EP	26+16.62	412298.112	1875556.765	1188 39 02.04 E		
	-					
SUFFOLK DRIVE SE						
BP	30+00.00	411738.042	1875320.683	N75° 34' 12.81"E		
PC	32+53.83	411801.294	1875566.505	N75 54 12.81 E		
PI2	33+00.70	411812.974	1875611.897			
РТ	33+47.15	411813.844	1875658.760	N88° 56' 12.26"E		
EP	33+83.77	411814.524	1875695.381			

ALIGNMENT CURVE DATA				
ARC DEFINITION				
	C1	C2		
PI STA	22+70.19	32+86.17		
DELTA	60° 06' 16.9301"	13° 25' 17.2357"		
DA	12° 16' 08.0531"	14° 19' 26.2020"		
R	467	400		
т	270.192	74.065		
L	489.895	93.699		
LC	467.739	93.485		

	SURVEY CONTROL POINTS			
PNT	NORTHING	EASTING	ELEV	DESCRIPTION
19000	413482.779	1875845.271	1780.153	CSEC CENTER SEC 2IN PIPE
19001	410851.66	1875892.041	1839.714	SQCOR 2IN PIPE
19002	410799.647	1873249.89	1822.68	SWSEC 1IN PIPE







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

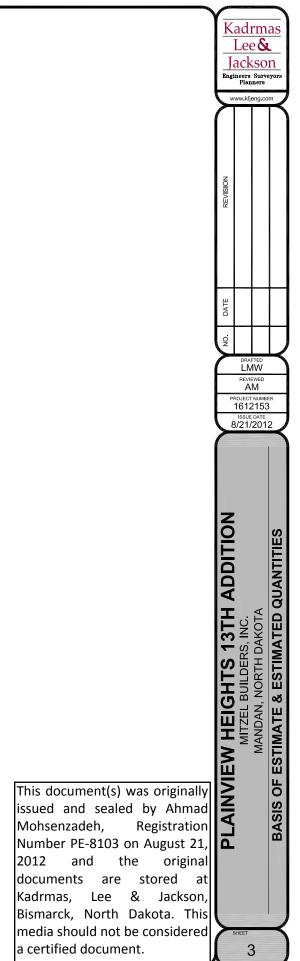
8" SANITARY SEWER = 0.138 TONS/LF

SUBCUT GRAVEL:

0.020 TON/LF OF PIPE

ESTIMATED QUANTITIES

Item	Spec.			
No.	No.	ltem	Unit	Quantity
1	SP	MOBILIZATION	LS	1
2	801	PIPE BEDDING	TON	959
3	801	SUBCUT GRAVEL	TON	111
4	801	8" SDR-35 PVC SANITARY SEWER	LF	2,026
5	801	8" SANITARY SEWER CAP	EA	3
6	801	TELEVISE SEWER MAIN	LF	2,026
7	900	6" PVC C-900 HYDRANT LEAD	LF	101
8	900	8" PVC C-900 WATER MAIN	LF	1,696
9	900	REMOVE & REPLACE 6" HYDRANT	EA	1
10	900	6" FIRE HYDRANT	EA	6
11	900	8" X 6" REDUCER	EA	3
12	900	6" GATE VALVE AND BOX	EA	4
13	900	8" GATE VALVE AND BOX	EA	5
14	1205	48" SANITARY SEWER MANHOLES	EA	8
15	1209	4" SDR-35 PVC SEWER SERVICE	LF	834
16	1209	8" X 4" SEWER SERVICE CONNECTION	EA	25
17	1209	1" WATER SERVICE	LF	894
18	1209	1" CURB STOP AND BOX	EA	25
19	1209	8" X 1" WATER SERVICE CONNECTION	EA	25
20	1211	TRAFFIC CONTROL	LS	1



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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 PLAINVIEW 13TH 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.
- THESE NOTES ARE FOR GENERAL REFERENCE IN CONJUNCTION WITH AND AS A SUPPLEMENT TO THE WRITTEN SPECIFICATIONS, 3. 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.
- THIS PLAN SET HAS A LIST OF GENERAL ABBREVIATIONS AND SYMBOLS AND MATERIALS LEGENDS LISTED ON IT. SOME SYMBOLS, 7. MATERIALS AND ABBREVIATIONS MAY NOT BE UTILIZED ON THIS SPECIFIC PROJECT.
- THE CONTRACTOR SHALL PROVIDE A ONE (1) WEEK NOTICE TO THE ENGINEER, OWNER AND THE CITY OF MANDAN PRIOR TO 8. BEGINNING ANY CONSTRUCTION
- ALL DITCH GRADES, CONTOURS AND CROSS SECTIONS REPRESENT THE FINISHED GRADE (TOP OF THE TOPSOIL). IN AREAS 9. WHERE TOPSOIL IS TO BE PLACED, THE GRADING SHALL BE COMPLETED BY CUTTING OR FILLING EARTHWORK TO A POINT 7 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. 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.
- 17. IF EXCESS FILL MATERIAL IS PRESENT FOLLOWING APPROVAL OF EMBANKMENT COMPACTION THE CONTRACTOR SHALL CONTACT THE ENGINEER TO DETERMINE A SUITABLE LOCATION FOR EXCESS FUL DISPOSAL
- 18. ALL UTILITY TRENCHES ARE TO BE BACKFILLED & COMPACTED TO THE PROPOSED GRADE.

WATER AND SEWER

19. 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 Kadrmas USE PROPER FITTINGS TO SUIT THE ACTUAL CONDITIONS ENCOUNTERED. FITTINGS NECESSARY TO MAKE ALL CONNECTIONS Lee & SHALL BE INCIDENTAL. Jackson 20. THE CONTRACTOR IS TO PROVIDE AND MAINTAIN ADEQUATE DEWATERING EQUIPMENT TO REMOVE AND DISPOSE OF ANY ngineers Survey Planners 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 www.kliena 21. ALL SEWER MANHOLES SHALL HAVE A MONOLITHIC BASE WITH PRECAST INVERTS. 22. 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 23. 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 SPECIFICATIONS. DEFLECTED JOINTS SHALL NOT EXCEED THE PIPE MANUFACTURERS RECOMMENDATION. 24. 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 25. THE CONTRACTOR SHALL MAINTAIN TEMPORARY DETOUR ROADS UNTIL DETOUR IS NO LONGER NECESSARY. MAINTENANCE 26. THE CONTRACTOR SHALL FOLLOW THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) STANDARDS AND GUIDES FOR LMW 27. THE CONTRACTOR SHALL FOLLOW NORTH DAKOTA DEPARTMENT OF TRANSPORTATION STANDARD DRAWINGS WHEN SETTING UP THE TRAFFIC CONTROL DEVICES. 1612153 ISSUE DATE 8/21/2012 28. 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 29. THE CONTRACTOR SHALL NOT DISTURB EXISTING SILT FENCE AND WEIGHTED FIBER ROLL. IF SILT FENCE OR WEIGHTED FIBER ROLL HAS BEEN DISTURBED OR HAS DETERIORATED THE CONTRACTOR IS RESPONSIBLE FOR REPLACEMENT. THE COST OF REPLACING SILT FENCE AND WEIGHTED FIBER ROLL SHALL BE INCIDENTAL TO THE CONTRACT. HEIGHTS 13TH ADDITION AITZEL BUILDERS, INC. ANDAN, NORTH DAKOTA 30. THE CONTRACTOR IS RESPONSIBLE FOR MINIMIZING TRACKING OF SOIL AND DEBRIS ONTO ADJACENT PROPERTIES AND 31. THE CONTRACTOR SHALL BE REQUIRED TO CLEAN STREETS AND SIDEWALKS AND REPAIR TO THE CONDITION THEY WERE IN PRIOR 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 ≥ E AINVI This document(s) was originally issued and sealed by Ahmad Mohsenzadeh, Registration Number PE-8103 on August 21, ۵ 2012 and the original documents are stored at Kadrmas, Lee & Jackson Bismarck, North Dakota. This media should not be considered a certified document.

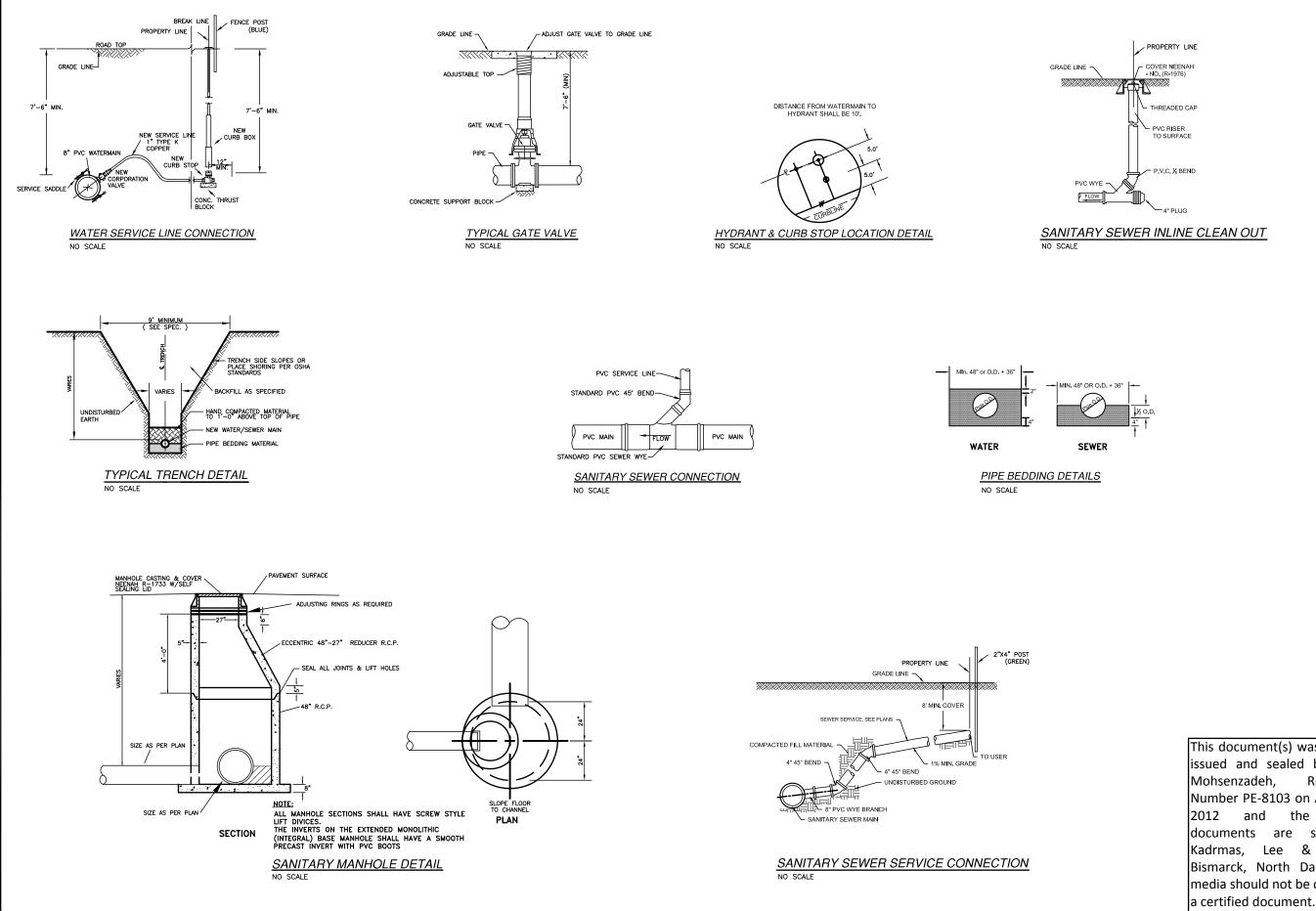
- OBTAINED BY THE CONTRACTOR.
- SPECIFIED SEPARATIONS.

TRAFFIC CONTROL AND SIGNAGE

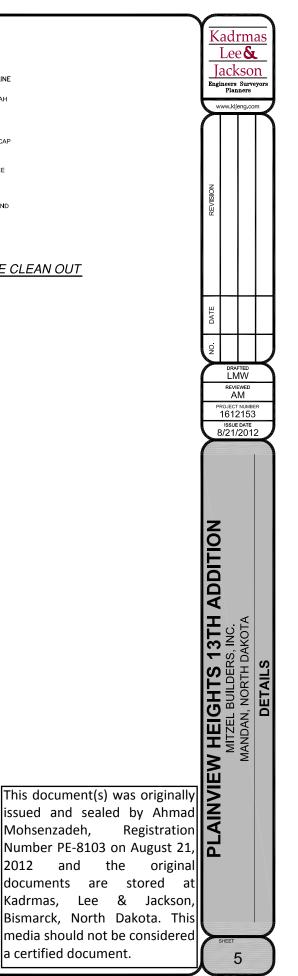
- MINIMUM.
- COSTS SHALL BE INCIDENTAL TO THE CONTRACT.
- TRAFFIC CONTROL FOR STREET AND HIGHWAY CONSTRUCTION.

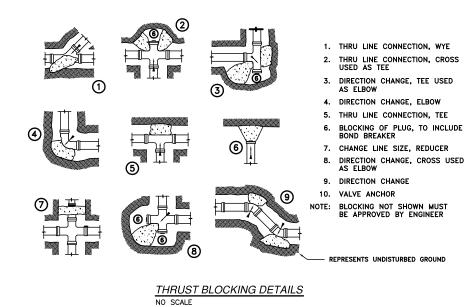
STORM WATER POLLUTION PREVENTION

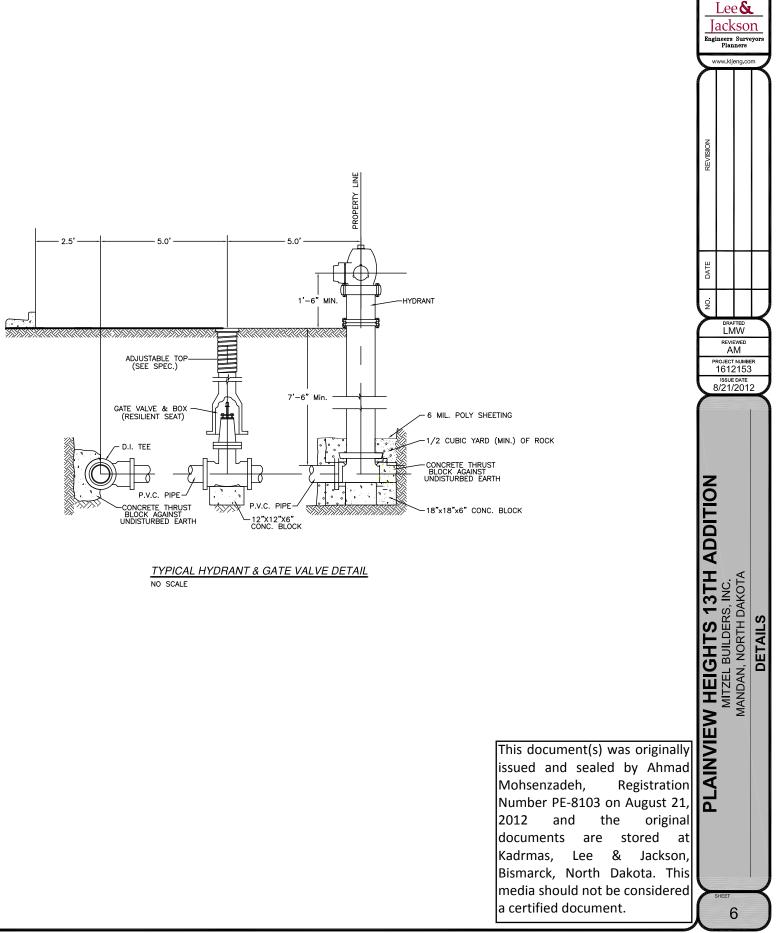
- THE NORTH DAKOTA DEPARTMENT OF HEALTH AT 701-328-5210.
- ROADWAYS. TRACKING MUST BE REMOVED BY THE END OF EACH DAY.
- TO THE START OF CONSTRUCTION BEFORE OPENING UP TO TRAFFIC.
- WATER COLLECTION SYSTEM.



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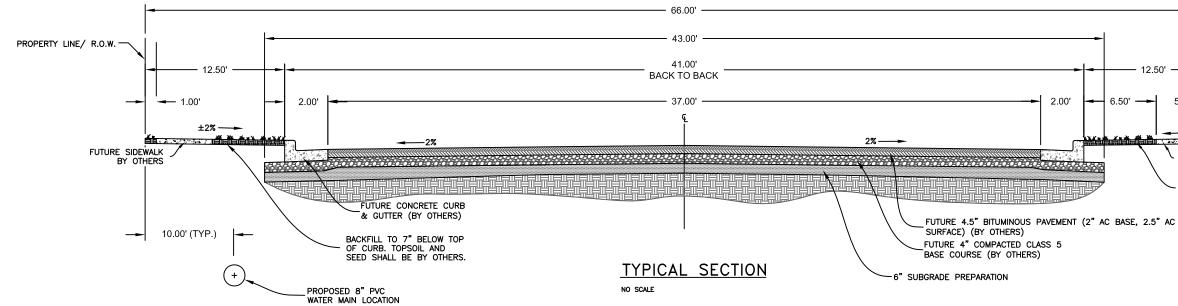


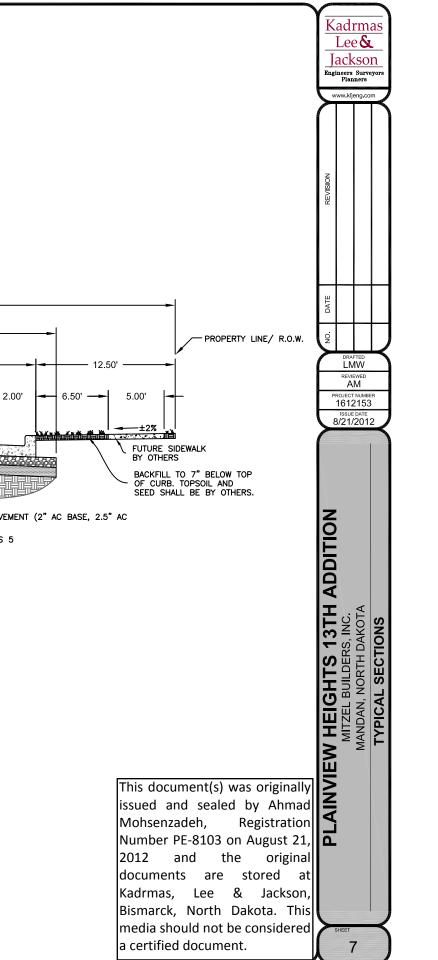


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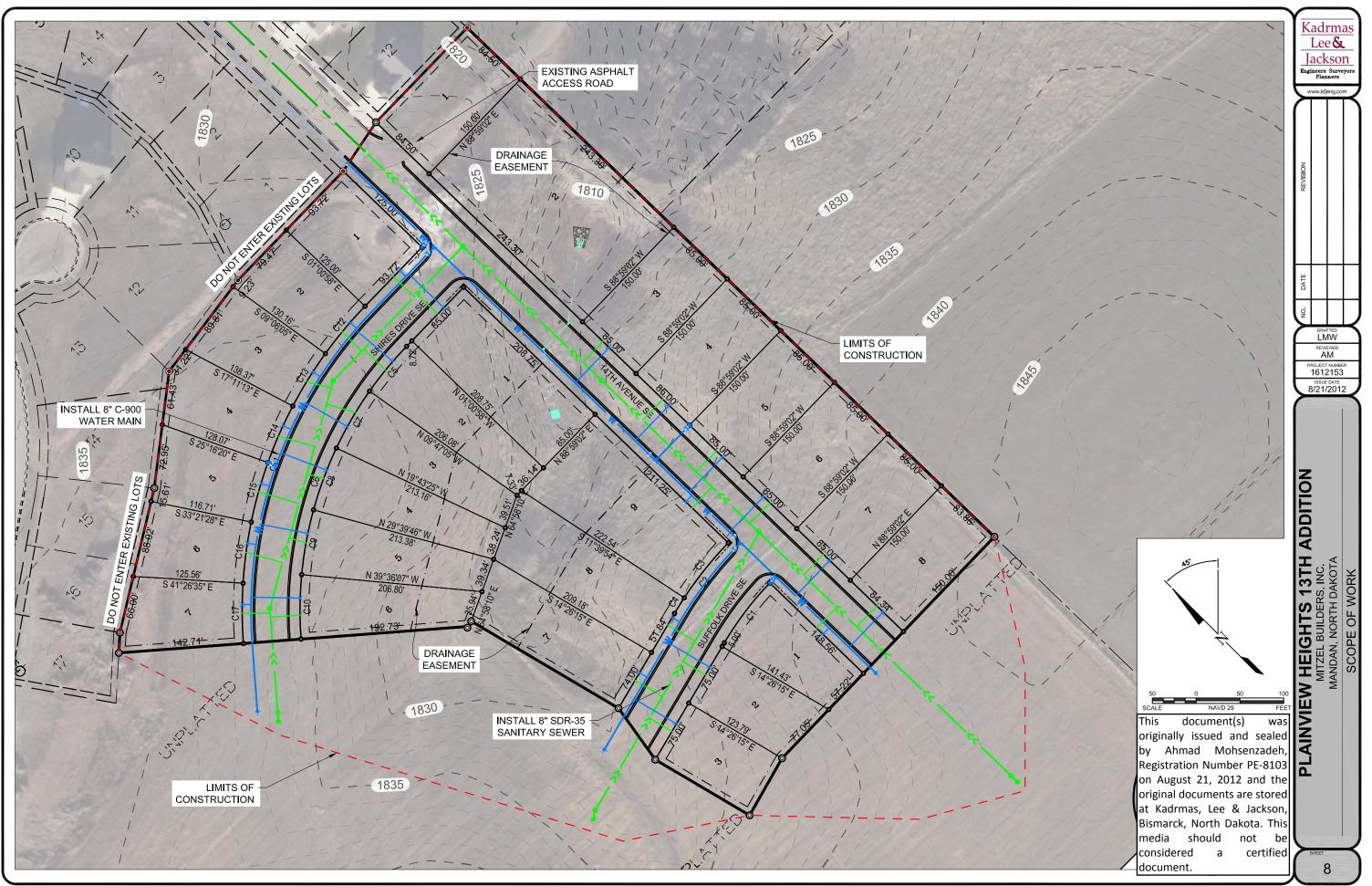
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Kadrmas

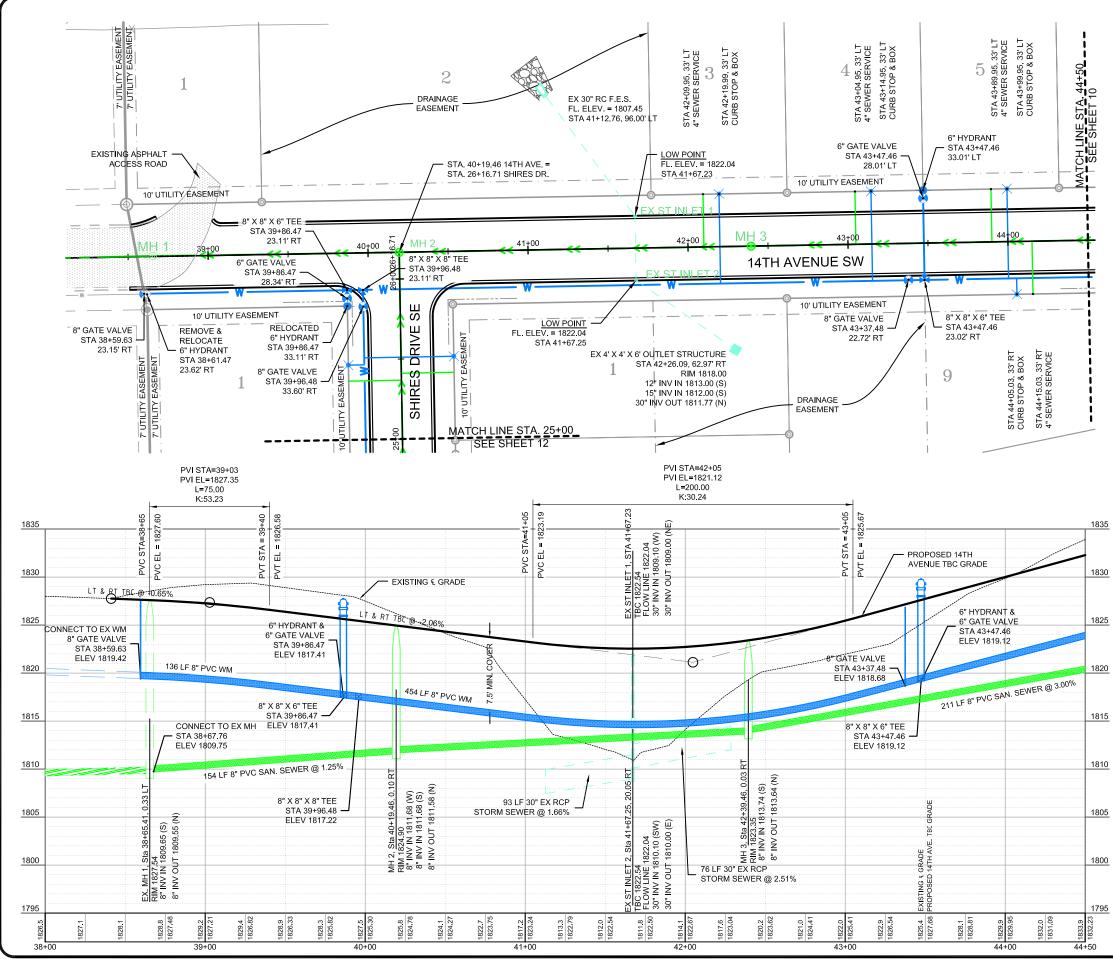




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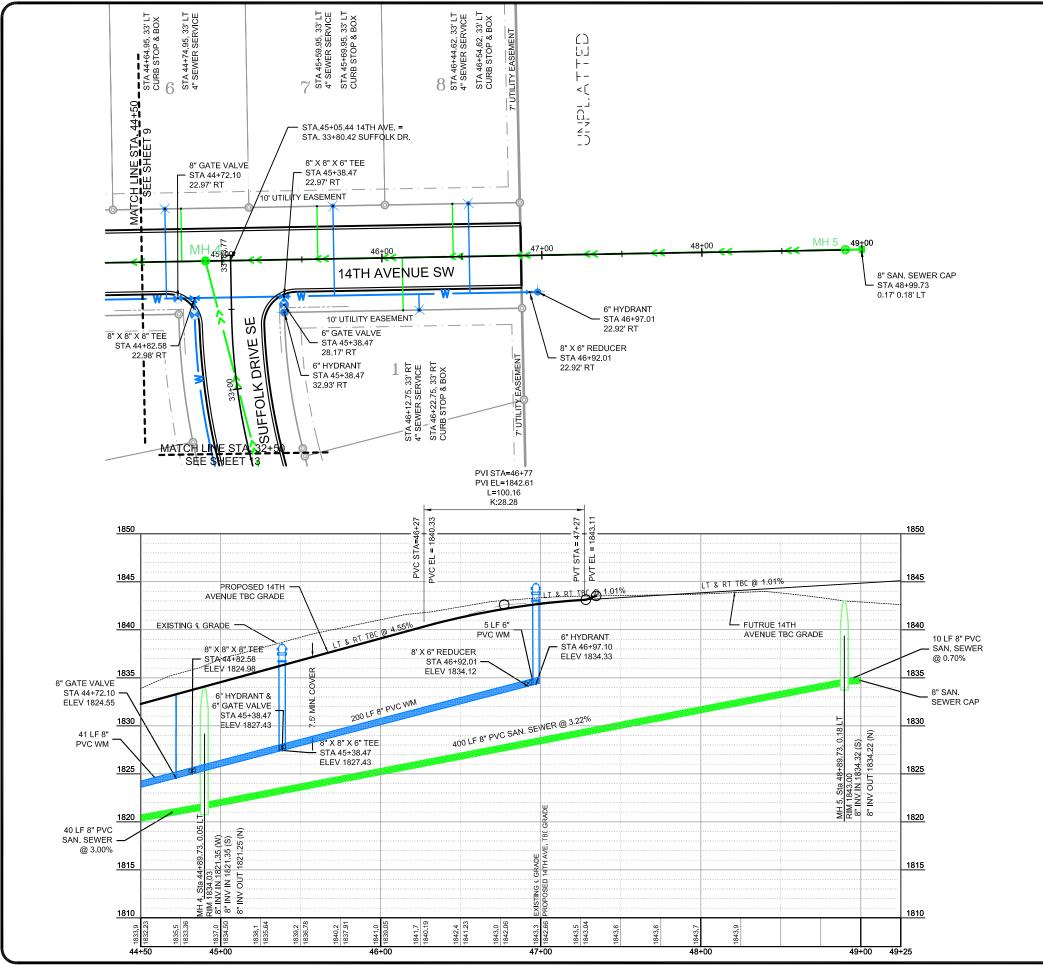


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		V
QUANTITIES THIS SHEET		Kadrmas
	-	Lee&
8" X 8" X 6" TEE	2 EA	Jackson
8" X 8" X 8" TEE	1 EA	Engineers Surveyor Planners
		www.kljeng.com
6" PVC C-900 HYDRANT LEAD	66 LF	
8" PVC C-900 WATER MAIN	590 LF	
REMOVE & RELOCATE HYDRANT	1 EA	
6" FIRE HYDRANT	1 EA	
6" GATE VALVE & BOX	2 EA	z
8" GATE VALVE & BOX	2 EA	REVISION
1" WATER SERVICE	178 LF	8
1" CURB STOP & BOX	4 EA	
8" X 1" WATER SERVICE CONNECTION	4 EA	
SANITARY SEWER		
48" SANITARY SEWER MANHOLE	2 EA	
8" SDR-35 PVC SANITARY SEWER	585 LF	$\mathbf{H} \rightarrow \mathbf{H}$
4" SDR-35 PVC SEWER SERVICE	132 LF	DATE
8" X 4" SEWER SERVICE CONNECTION	4 EA	
		oz
		DRAFTED
		LMW
		PROJECT NUMBER 1612153
		ISSUE DATE 8/21/2012
		0/21/2012
NOTE:		
1. ALL STORM SEWER PIPES AND		
STRUCTURES ARE EXISTING.		
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QUANTITIES THIS SHEET	and the second se	$\sqrt{-}$		and the second second
DUCTILE IRON WATERMAIN FITTINGS		Kad		
B" X 8" X 6" TEE	– 1 EA		е &	_
8" X 8" X 8" TEE	1 EA		kso	
3" X 6" REDUCER	1 EA	Engineer Pla	s Surve nners	eyors
		www.k	ljeng.co	m
6" PVC C-900 HYDRANT LEAD	15 LF			
3" PVC C-900 WATER MAIN	241 LF			
6" FIRE HYDRANT	2 EA			
6" GATE VALVE & BOX	1 EA			
3" GATE VALVE & BOX	1 EA	NOIS		
" WATER SERVICE	178 LF	REVISION		
" CURB STOP & BOX	4 EA			
3" X 1" WATER SERVICE CONNECTION	4 EA			
SANITARY SEWER				
48" SANITARY SEWER MANHOLE	2 EA			
3" SDR-35 PVC SANITARY SEWER	450 LF			
3" SANITARY SEWER CAP	1 EA	DATE		
4" SDR-35 PVC SEWER SERVICE	132 LF	DA		
3" X 4" SEWER SERVICE CONNECTION	4 EA	ġ		
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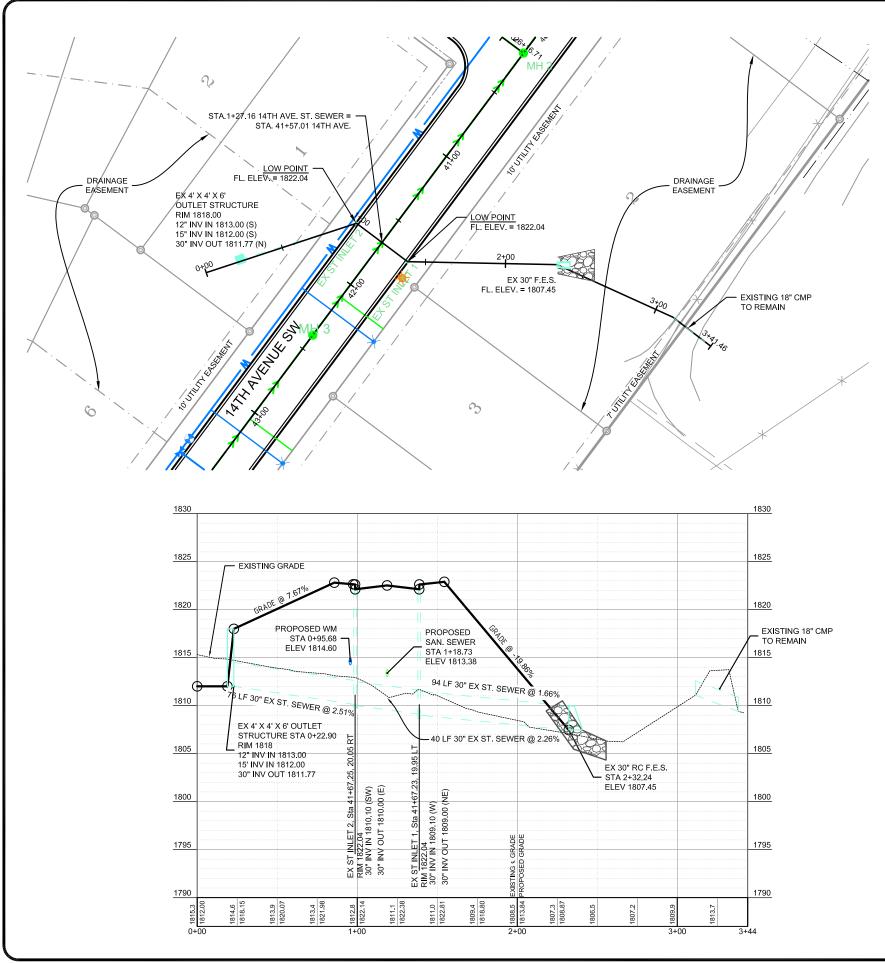
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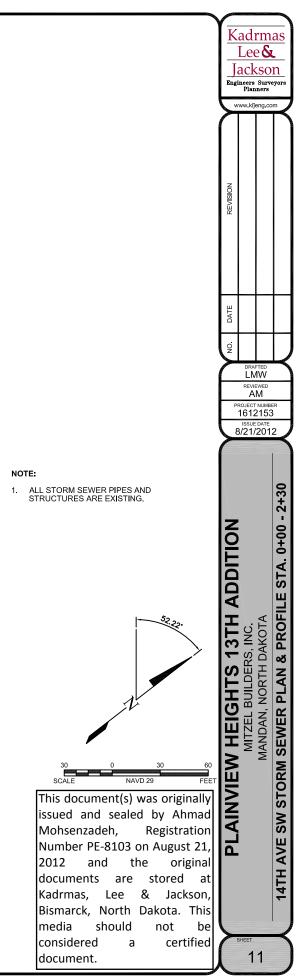
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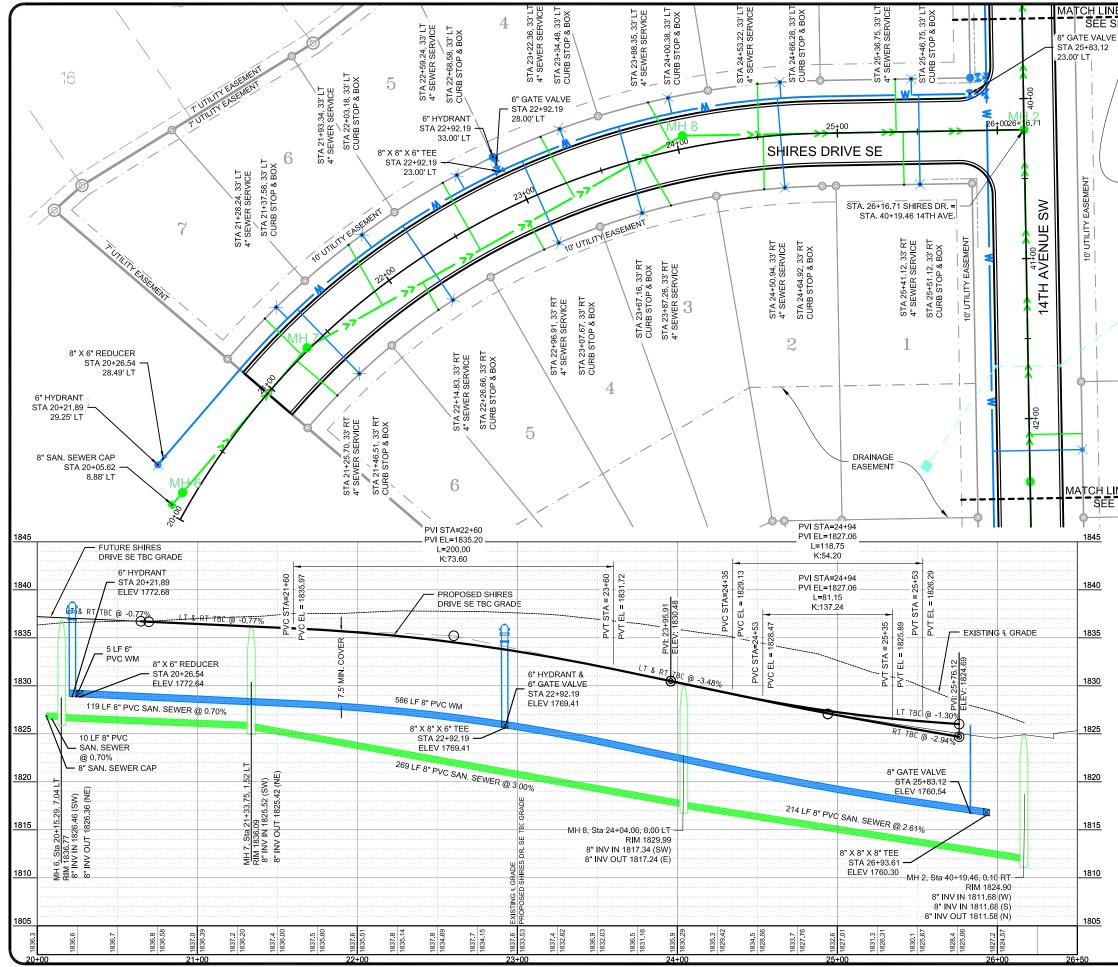
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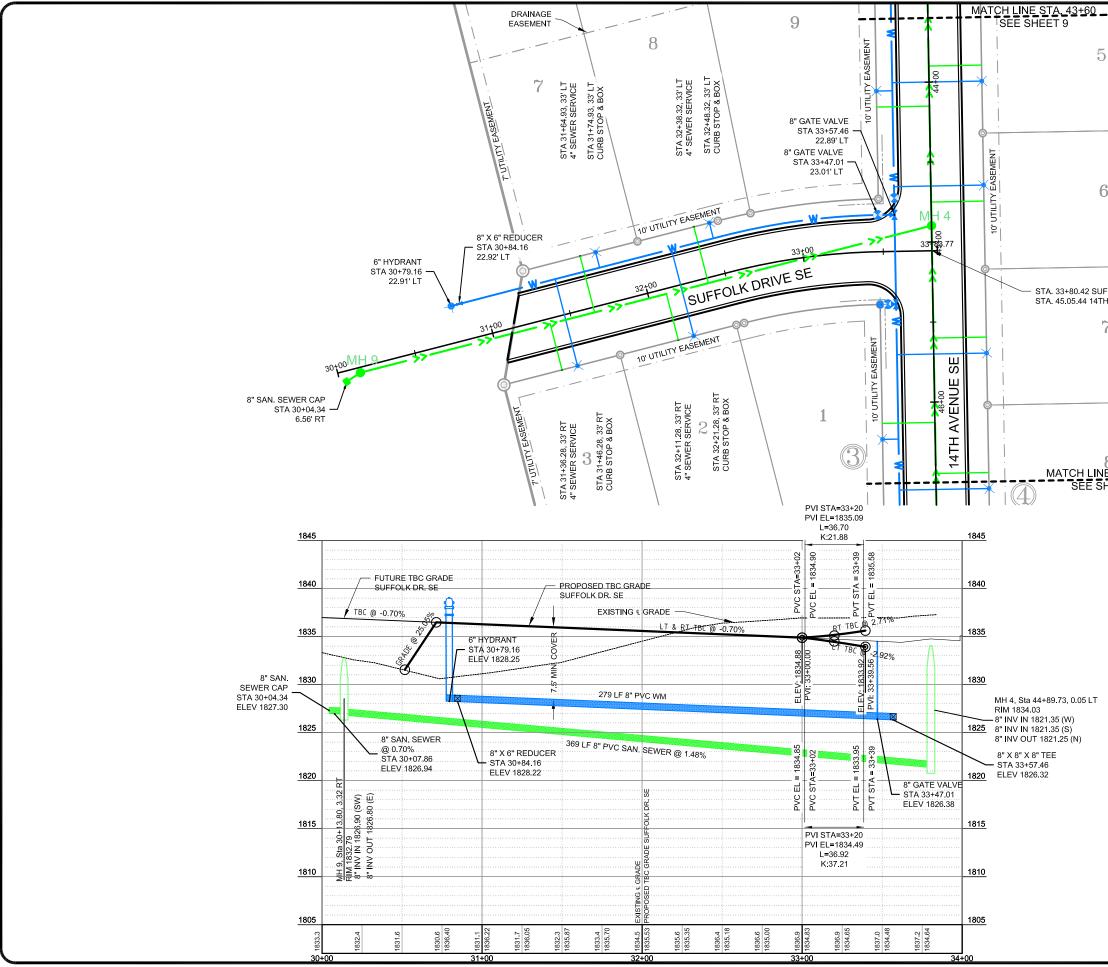
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SHEET 9	DUCTILE IRON WATERMAIN FITTINGS	_		rmas
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	8" X 6" REDUCER	1 EA	Jac	<u>kson</u>
/		-	Engineer Pla	s Surveyors inners
/	6" PVC C-900 HYDRANT LEAD	15 LF	www.k	ljeng.com
	8" PVC C-900 WATER MAIN	586 LF	$(\top$	\Box
	6" FIRE HYDRANT	2 EA		
	6" GATE VALVE & BOX	1 EA		
	8" GATE VALVE & BOX	1 EA		
_ drainage _ 2	1" WATER SERVICE	406 LF	N	
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	8" X 1" WATER SERVICE CONNECTION	13 EA	R	
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	48" SANITARY SEWER MANHOLE	3 EA		
	8" SDR-35 PVC SANITARY SEWER	612 LF		
Bart	8" SANITARY SEWER CAP	1 EA		┼┼┨
	4" SDR-35 PVC SEWER SERVICE	438 LF	DATE	
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	6" PVC C-900 HYDRANT LEAD	5 LF	Planners
	8" PVC C-900 WATER MAIN	279 LF	www.kljeng.com
	6" FIRE HYDRANT	1 EA	()
	8" GATE VALVE & BOX	1 EA	
	1" WATER SERVICE	132 LF	
	1" CURB STOP & BOX	4 EA	
6	8" X 1" WATER SERVICE CONNECTION	4 EA	REVISION
0	SANITARY SEWER		REV
	48" SANITARY SEWER MANHOLE	1 EA	
	8" SDR-35 PVC SANITARY SEWER	379 LF	
	8" SANITARY SEWER CAP	1 EA	
	4" SDR-35 PVC SEWER SERVICE	132 LF	
	8" X 4" SEWER SERVICE CONNECTION	4 EA	
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