

PLANS OF IMPROVEMENTS FOR:

2016

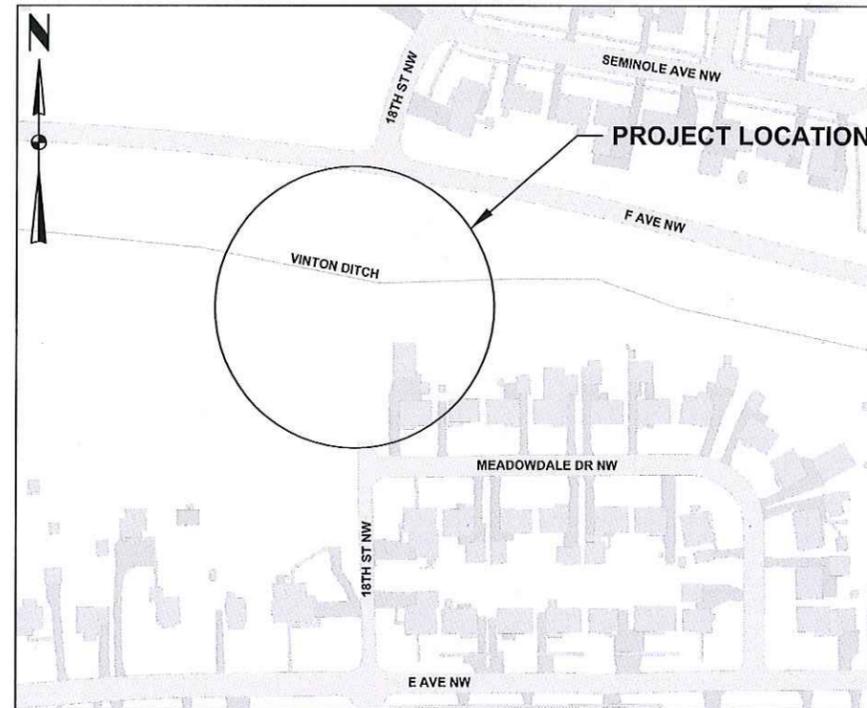
F AVENUE NW TRANSMISSION MAIN REPAIR

CITY OF CEDAR RAPIDS, IOWA

625884

2016097-01

UTILITY AND EMERGENCY PHONE NUMBERS	
Agency	Contact Number
City of Cedar Rapids, Iowa	
Public Works:	(319) 286-5802
Engineering	
Traffic Engineering	
Sewer Maintenance Program	
Utilities Department	
Water Division	(319) 286-5910
Police Department	
Business	(319) 286-5491
Emergency	911
Fire Department	
Business	(319) 286-5200
Emergency	911
Iowa One Call (Utilities)	(800) 292-8989
MidAmerican Energy	
Business	(319) 286-5162
Emergency	(800) 595-5325
Centurylink	
Engineer	(319) 399-7600
Alliant (Electric, Steam)	
Business	(319) 398-4406
Locates	(800) 292-8989
Mediacom	
Business	(319) 395-9699
Locates	(800) 292-8989
AT&T (Telephone)	(319) 364-6111
ImOn Communications	
Business	(319) 261-4640
Emergency	(800) 298-6484
Linn County REC	
Business	(319) 377-1587
(Leave Message After Hours)	



LOCATION MAP

NOT TO SCALE

INDEX OF SHEETS	
SHEET No.	DESCRIPTION
A. 1	TITLE SHEET
A. 2	GENERAL PLAN, LEGEND AND NOTES
C. 1	ESTIMATE OF QUANTITIES AND REFERENCE INFORMATION
C. 2	QUANTITY TABULATIONS
C. 3	EROSION CONTROL AND REMOVALS PLAN
M. 1 - M. 3	WATER MAIN PLAN AND PROFILE

NOTE:
THE PROPOSED IMPROVEMENTS INCLUDED IN THESE DRAWINGS HAVE BEEN DESIGNED IN ACCORDANCE WITH THE CEDAR RAPIDS METROPOLITAN AREA DESIGN STANDARDS MANUAL (LATEST EDITION) WITH NO EXCEPTIONS.

CITY OF CEDAR RAPIDS	
THIS ENGINEERING DOCUMENT IS RECOMMENDED FOR FILING WITH THE CITY CLERK	
<i>Dave Wolke</i> CITY ENGINEER OR DESIGNEE	8/25/16 DATE
<i>Bruce A. Jacob</i> UTILITIES ENGINEER OR DESIGNEE	8/24/16 DATE
<i>Matthew C. Myers</i> CITY TRAFFIC ENGINEER OR DESIGNEE	8/25/2016 DATE



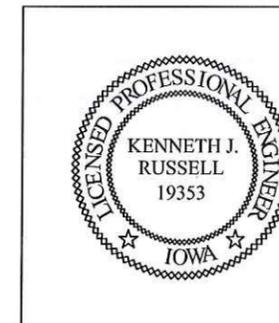
PLANS PREPARED BY:
**CITY OF CEDAR RAPIDS
UTILITIES - WATER ENGINEERING**
1111 SHAVER RD NE, CEDAR RAPIDS, IA 52402
PHONE: 319-286-5950

PLANS PREPARED FOR:



CEDAR RAPIDS
City of Five Seasons

CITY COUNCIL:
MAYOR: RON CORBETT
AT LARGE: SUSIE WEINACHT
AT LARGE: ANN POE
AT LARGE: RALPH RUSSELL
DISTRICT 1: KRIS GULICK
DISTRICT 2: SCOTT OVERLAND
DISTRICT 3: PAT SHEY
DISTRICT 4: SCOTT OLSON
DISTRICT 5: JUSTIN SHIELDS



I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF IOWA.

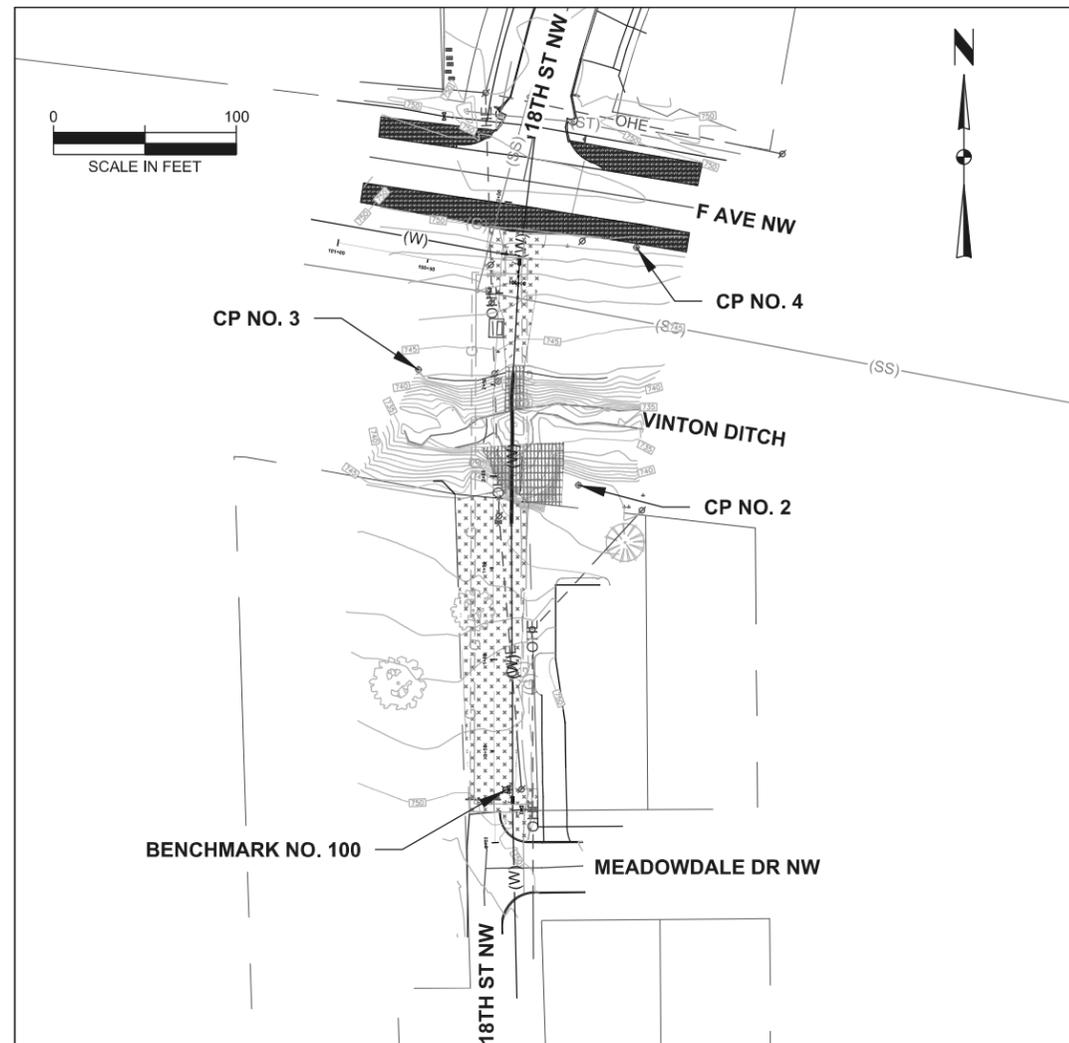
Kenneth J. Russell 8.24.2016
KENNETH J. RUSSELL, P.E. & L.S. DATE
LICENSE NUMBER: 19353
MY LICENSE RENEWAL DATE IS: DECEMBER 31, 2016

PAGES OR SHEETS COVERED BY THIS SEAL: ALL

LEGEND

EXISTING		PROPOSED (AS-BUILT)
—(SS)—	SANITARY SEWER	—SS—
—(ST)—	STORM SEWER	—ST—
—(W)—	WATER	—W—
—(G)—	GAS	—G—
—OHE—	ELECTRICAL - OVERHEAD	—OHE—
	SILT FENCE	—X—X—
	CLEARING AND GRUBBING	▣
⊙	LIGHT POLE W/O MAST	⊙
⊙	FIRE HYDRANT	⊙
⊙	UTILITY POLE	⊙
→	GUY ANCHOR	→
⊙	MANHOLE	⊙
⊗	VALVE, WATER OR GAS	⊗
⊗	UTILITY/CONTROL CABINET	⊗

UTILITY QUALITY SERVICE LEVELS
 QUALITY LEVELS OF UTILITIES SHOWN ON THESE PLANS ARE LEVEL "C". THE QUALITY LEVELS ARE BASED ON THE CI / ASCE 38-02 STANDARD.



GENERAL NOTES:

1. THIS PROJECT SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CEDAR RAPIDS METROPOLITAN AREA STANDARD SPECIFICATIONS AND DETAILS FOR PUBLIC IMPROVEMENTS, LATEST EDITIONS.
2. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROTECT ALL EXISTING UTILITIES AND PAVED AREAS, INCLUDING ANY NOT SHOWN ON THESE DRAWINGS. THE CONTRACTOR SHALL VERIFY ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION AND NOTIFY THE ENGINEER IF ANY CONFLICTS WITH THE DRAWINGS OCCUR. ANY DAMAGE TO EXISTING UTILITIES, SOD, LANDSCAPE AND/OR PAVED AREAS CAUSED BY TRENCHING, GRADING, AND PAVING OPERATIONS NOT IDENTIFIED FOR REPLACEMENT SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE. EXISTING UTILITY LOCATIONS SHOWN ON THESE DRAWINGS ARE APPROXIMATE.
3. PROVIDE POSITIVE DRAINAGE AT ALL TIMES WITHIN THE CONSTRUCTION AREAS. DO NOT ALLOW WATER TO DRAIN OR TO POND ONTO ADJOINING PROPERTY OR PUBLIC RIGHT-OF-WAY.
4. ALL DEBRIS RESULTING FROM CONSTRUCTION OPERATIONS SHALL BE PROPERLY DISPOSED OF OFF-SITE.
5. RESTORE LANDSCAPING, LAWN AREAS, AND FENCING DISTURBED DURING CONSTRUCTION TO AS GOOD OR BETTER THAN THEIR ORIGINAL CONDITION UPON COMPLETION OF CONSTRUCTION.
6. ALL WORK TO BE COMPLETED WITHIN EASEMENTS AND PUBLIC RIGHT-OF-WAY.
7. WORK ITEMS NOT SPECIFICALLY CALLED OUT FOR PAYMENT SHALL BE INCIDENTAL TO CONTRACT ITEMS.

CONTROL POINT DATA

No.	NORTHING	EASTING	ELEV.	DESC.
2	3460786.919	5411609.007	743.590	1/2 IRON ROD
3	3460849.870	5411521.492	744.287	1/2 IRON ROD
4	3460916.585	5411640.772	749.526	1/2 IRON ROD
100	3460620.250	5411569.155	752.193	BENCH MARK

WATER NOTES:

1. CONTACT CEDAR RAPIDS UTILITIES DEPARTMENT WATER ENGINEERING OFFICE (319) 286-5950 FOR THE FOLLOWING SERVICES SEVEN (7) DAYS PRIOR TO SCHEDULED WORK:
 - A. OBTAIN A "START WORK" ORDER 24 HOURS PRIOR TO BEGINNING CONSTRUCTION OF WATER MAIN SYSTEM IMPROVEMENTS
 - B. WATER SHUT DOWN
 - C. TAP
 - D. FLUSH AND FILL
 - E. SAMPLING
 - F. OTHER WATER SYSTEM RELATED SERVICES
2. CONTRACTOR SHALL NOTIFY RESIDENTS WHOSE WATER SUPPLY IS AFFECTED BY A WATER MAIN SHUT DOWN, A MINIMUM OF 48 HOURS PRIOR TO A WATER MAIN SHUT DOWN AND NOTIFY RESIDENTS A MINIMUM OF 24 HOURS IN ADVANCE OF ALL OTHER WATER SERVICE INTERRUPTIONS. RESIDENTS SHALL BE NOTIFIED OF THE START TIME AND EXPECTED DURATION OF A WATER SERVICE INTERRUPTION.
3. INSPECTION OF WATER MAIN INSTALLATION WILL BE PROVIDED BY CEDAR RAPIDS WATER DIVISION PERSONNEL.
4. CEDAR RAPIDS WATER DIVISION PERSONNEL SHALL OPERATE ALL SYSTEM VALVES.
5. THE UTILITY CANNOT GUARANTEE THAT A SHUT DOWN WILL BE COMPLETE WITHOUT LEAK-THROUGH OR OCCUR WITHIN A SPECIFIED TIME FRAME. CONTRACTORS COST FOR PERSONNEL, EQUIPMENT OR WORKING DAYS WHILE WAITING ON SHUT DOWN IS CONSIDERED INCIDENTAL.
6. THE CONTRACTOR MAY NEED TO ACCOMMODATE MEDICAL, COMMERCIAL OR INDUSTRIAL CUSTOMERS BY SCHEDULING SERVICE DISRUPTIONS FOR "AFTER-HOURS", EARLY MORNING, LATE AFTERNOON, EVENING OR OVERNIGHT. AFTER-HOURS WORK WILL BE CONSIDERED INCIDENTAL.
7. WHERE WATER LINES CROSS UNDER SEWERS AND THE MINIMUM CLEARANCE CANNOT BE MAINTAINED, THE WATER MAIN MUST UTILIZE NITRILE GASKETS AND SANITARY SEWER MUST BE CONSTRUCTED OF WATER MAIN GRADE AWWA C-900 SDR-18 PVC OR DUCTILE IRON PIPE WITH COMPRESSION FITTINGS OR MECHANICAL JOINTS IF WITHIN 10 FEET OF THE WATER MAIN. RCP STORM SEWERS SHALL HAVE "O" RING GASKETS.
8. WATER MAINS AND LARGE SERVICES (3" OR LARGER) OVER 20 FEET IN LENGTH ARE REQUIRED TO BE DISINFECTED, FLUSHED, FILLED AND PRESSURE TESTED, IN ACCORDANCE WITH SECTION 01110.
9. HEAVILY CHLORINATED WATER SHALL NOT REMAIN IN THE PIPELINE FOR MORE THAN 48 HOURS. FLUSH HEAVILY CHLORINATED WATER THOROUGHLY FROM THE PIPELINE, UNTIL THE REPLACEMENT WATER THROUGHOUT ITS LENGTH IS EQUAL IN QUALITY TO PERMANENT SOURCE OF SUPPLY. NEUTRALIZE CHLORINATED WATER BY TREATING WITH SODIUM BISULFITE, SODIUM SULFITE, SODIUM THIOSULFATE OR EQUAL APPROVED CHEMICAL BEFORE DISPOSAL.
10. TO PREVENT DAMAGE TO PIPE LINING AND VALVE COMPONENTS FROM DRY POWDER OR TABLE CHLORINE, IF THE CONTRACTOR UTILIZES POWDER OR TABLE CHLORINE IN THE WATER MAIN DURING CONSTRUCTION, THE MAIN MUST BE FILLED WITHIN 48 HOURS.

PREPARED BY:
 CITY OF CEDAR RAPIDS
 UTILITIES - WATER ENGINEERING
 1111 SHAVER RD NE, CEDAR RAPIDS, IA 52402
 PHONE: 319-286-5950

No.	REVISION DESCRIPTION	APPROVED	DATE



Date: 8/9/16
 Drawn By: MDZ
 Approved By: KJR
 CIP No: 2016097-01

F AVENUE NW TRANSMISSION MAIN REPAIR

GENERAL PLAN, LEGEND AND NOTES

SHEET No.
A.2

ESTIMATED PROJECT QUANTITIES				
No.	Item No.	Bid Item	Unit	QTY
1.	01100-01	Mobilization	LS	1.0
2.	01110-01	Trench Compaction Testing	LS	1.0
3.	01300-10	Silt Fence	LF	125.4 *
4.	01400-01	Clearing and Grubbing	LS	1.0
5.	01400-61	Removal of Valves	EA	2.0
6.	01400-62	Removal of Existing Water Main	LS	1.0
7.	02000-01	Unclassified Excavation and Embankment	CY	26.0 *
8.	02000-30	Borrow	CY	135.0 **
9.	02100-60	Special Backfill, Class B Pipe Bedding	CY	25.0
10.	02500-01	Installation of Owner-Supplied 24-Inch, Mechanical Joint Water Main	LF	96.0
11.	02500-21	Installation of Owner-Supplied 16-Inch Butterfly Valve and Box	EA	1.0
12.	02500-21	Installation of Owner-Supplied 24-Inch Butterfly Valves and Boxes	EA	2.0
13.	02500-30	Installation of Owner-Supplied Fittings for Water Distribution Systems	LB	3172.0
14.	02500-60	Disinfection and Hydrostatic Testing	LS	1.0
15.	02900-01	Imported Topsoil	CY	137.0 **
16.	02900-03	Watering, 4,730 Gallons per Application	EA	10.0
17.	02900-10	Seeding, Fertilizing, and Mulching	SY	890.0 *
18.	02900-12	Hydroseeding with Liquid Mulch Binder, Permanent Erosion Control Mix	SY	161.0 *
19.	02900-40	Wood Excelsior Mat	SY	161.0 *

Includes 5% Contingency (Added to Plan Quantity) = *
Includes 45% Shrinkage Factor (Added to Plan Quantity) = **

ESTIMATE REFERENCE INFORMATION		
No.	Item No.	Description
1.	01100-01	Mobilization A. No additional payment will be made if Contractor is required to re-mobilize during high wind conditions (see note on Sheet M.1).
2.	01110-01	Trench Compaction Testing A. Trench backfill shall be tested for compaction. A minimum of three tests at varying depths shall be provided. Compaction testing shall be in accordance with ASTM D698.
3.	01300-10	Silt Fence A. See Sheets C.2 and C.3 for locations. B. Refer to Standard Detail 1300-020.
4.	01400-01	Clearing and Grubbing A. See Sheet C.3 for locations
5.	01400-61	Removal of Valves A. See Sheets C.2 and C.3 for locations. B. Trench excavation and backfill is incidental.
6.	01400-62	Removal of Existing Water Main A. See Sheets C.2 and C.3 for locations.
7.	02000-01	Unclassified Excavation and Embankment A. All waste shall become property of the Contractor and disposed of properly and/or re-used as warranted.
8.	02000-30	Borrow A. Item includes material, hauling and placing of material to extend south Vinton Ditch bank slope to match existing conditions prior to water main break.
9.	02100-60	Special Backfill, Class B Pipe Bedding A. Depth of bedding material below pipe to be 4-inches minimum. B. Top of bedding material to be at one half the pipe diameter minimum. C. Refer to Standard Detail 2200-020.
10.	02500-01	Installation of Owner-Supplied 24-Inch, Mechanical Joint Water Main A. See Sheet C.2 and M Sheets for locations. B. All gaskets to be Nitrile. C. Trench excavation and backfill above pipe bedding is incidental. D. Owner to furnish polywrap and tracer wire. E. Temporary stream diversion is incidental. F. Refer to Standard Details 02500-21, 02500-022, 02500-023, and 02500-063.
11.	02500-21	Installation of Owner-Supplied 16-Inch Butterfly Valve and Box A. See Sheet C.2 and M Sheets for location. B. All gaskets to be Nitrile. C. Trench excavation and backfill is incidental. D. Refer to Standard Details 02500-21, 02500-022, 02500-023, and 02500-063. E. Valve nut extensions required when water main is deeper than 7 feet. Refer to Standard Detail 2500-051.
12.	02500-21	Installation of Owner-Supplied 24-Inch Butterfly Valves and Boxes A. See Sheet C.2 and M Sheets for locations. B. All gaskets to be Nitrile. C. Trench excavation and backfill is incidental. D. Refer to Standard Details 02500-21, 02500-022, 02500-023, and 02500-063. E. Valve nut extensions required when water main is deeper than 7 feet. Refer to Standard Detail 2500-051.
13.	02500-30	Installation of Owner-Supplied Fittings for Water Distribution Systems A. All fittings listed on Sheet C.2 to be furnished by Owner. B. Fittings not listed on Sheet C.2 to be furnished by Contractor. C. All gaskets to be Nitrile. D. Refer to Standard Details 02500-21, 02500-022, 02500-023, and 02500-063.
14.	02500-60	Disinfection and Hydrostatic Testing
15.	02900-01	Imported Topsoil A. Contractor to provide one cubic yard of topsoil per 100 square feet of lawn restoration.
16.	02900-03	Watering, 4,730 Gallons per Application A. Each watering requires an average of 50 gallons of water per 100 square feet (5.5 gallons per square yard) of lawn restoration.
17.	02900-10	Seeding, Fertilizing, and Mulching A. See M Sheets for locations.
18.	02900-12	Hydroseeding with Liquid Mulch Binder, Permanent Erosion Control Mix A. See M Sheets for locations.
19.	02900-40	Wood Excelsior Mat A. See M Sheets for locations. B. Refer to Standard Detail 1300-030.

Includes 5% Contingency (Added to Plan Quantity) = *
Includes 45% Shrinkage Factor (Added to Plan Quantity) = **

PREPARED BY: CITY OF CEDAR RAPIDS
UTILITIES - WATER ENGINEERING
1111 SHAVER RD NE, CEDAR RAPIDS, IA 52402
PHONE: 319-286-5950

No.	REVISION DESCRIPTION	APPROVED	DATE



Date: 8/25/16
Drawn By: MDZ
Approved By: KJR
CIP No: 2016097-01

F AVENUE NW TRANSMISSION MAIN REPAIR

ESTIMATE OF QUANTITIES AND REFERENCE INFORMATION

SHEET No. C.1

SILT FENCE INSTALLATION					
FROM		TO		LENGTH (FT)	REMARKS
STATION	OFFSET	STATION	OFFSET		
1+90.01	21.00 L	1+87.76	5.23 R	26.3	
1+86.24	15.32 R	1+85.84	19.18 R	3.9	
2+51.67	36.59 L	2+56.91	6.00 R	43.5	
2+57.86	16.16 R	2+57.37	61.59 R	45.7	

SUBTOTAL 119.4
 5% CONTINGENCY 6.0
 TOTAL 125.4

VALVE INSTALLATION				
NO.	STATION	OFFSET	SIZE (IN.)	REMARKS
1	0+22.03	7.94 R	24	ASSET ID 2328D-32
2	3+16.51	7.99 R	24	ASSET ID 2328D-33
3	100+08.46	10.00 R	16	ASSET ID 2328D-15

WATER MAIN INSTALLATION						
FROM		TO		SIZE (IN)	LENGTH (FT)	REMARKS
STATION	OFFSET	STATION	OFFSET			
0+23.02	9.94 R	0+25.03	10.00 R	24	2.0	
1+74.11	10.00 R	2+57.14	10.01 R	24	92.0	
3+17.48	10.01 R	3+19.49	9.99 R	24	2.0	
100+08.62	10.01 R	100+11.45	10.00 R	16	2.0	16-INCH WATER MAIN INSTALLATION IS INCIDENTAL TO 16-INCH VALVE INSTALLATION

TOTAL 98.0

VALVE REMOVALS				
NO.	STATION	OFFSET	SIZE (IN.)	REMARKS
1	0+22.03	7.94 R	24	ASSET ID 2328D-32 DELIVER TO WATER DIVISION
2	100+08.46	10.00 R	16	ASSET ID 2328D-15

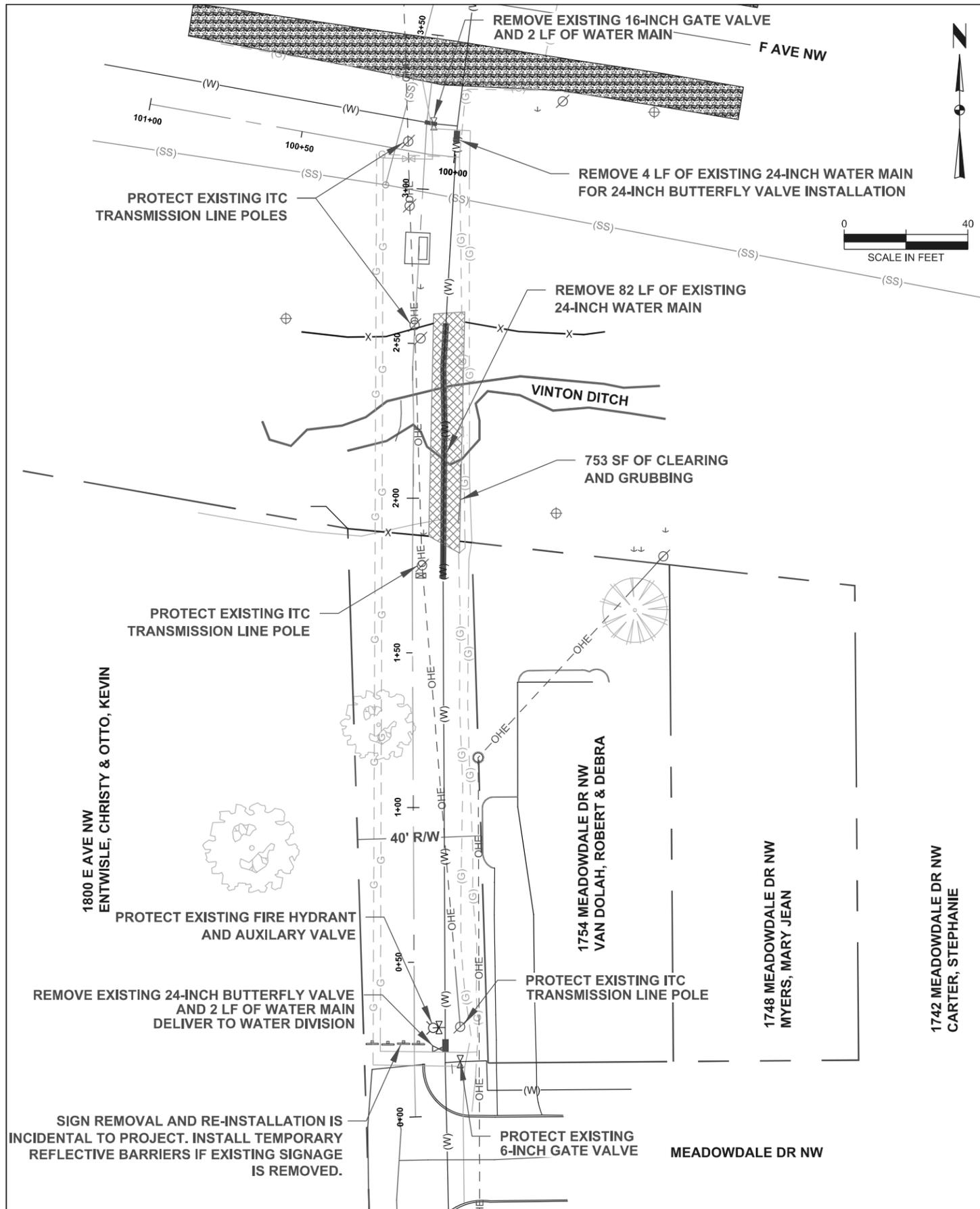
WATER MAIN FITTING INSTALLATION					
STATION	OFFSET	SIZE (IN.)	TYPE	WEIGHT (LBS)	REMARKS
0+24.03	10.00 R	24	SOLID SLEEVE	335	SOUTH 24-INCH VALVE REPLACEMENT
1+75.11	10.00 R	24	SOLID SLEEVE	335	REMOVE REDUCERS AND FLUSHING HYDRANT AFTER FLUSHING AND INSTALL SLEEVE
1+75.11	10.00 R	12 x 6	REDUCER	58	
1+74.11	10.00 R	24 x 12	REDUCER	305	
1+77.04	10.00 R	24	22.5 DEG. BEND	412	WATER MAIN REPLACEMENT AT VINTON DITCH
1+95.94	10.00 R	24	22.5 DEG. BEND	412	
2+46.65	10.00 R	24	45 DEG. BEND	405	
2+54.48	10.00 R	24	45 DEG. BEND	405	
3+20.49	9.99 R	24	SOLID SLEEVE	335	NORTH 24-INCH VALVE INSTALLATION
100+10.45	10.00 R	16	SOLID SLEEVE	170	NORTH 16-INCH VALVE REPLACEMENT

TOTAL 3172

WATER MAIN REMOVALS						
FROM		TO		SIZE (IN)	LENGTH (FT)	REMARKS
STATION	OFFSET	STATION	OFFSET			
0+23.02	9.94 R	0+25.03	10.00 R	24	2.0	
1+74.11	10.00 R	2+57.14	10.01 R	24	82.0	
3+15.48	10.01 R	3+19.49	9.99 R	24	4.0	
100+08.62	10.01 R	100+11.45	10.00 R	16	2.0	

TOTAL 90.0

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EROSION CONTROL NOTES:

1. THIS PROJECT SHALL BE CONSTRUCTED IN COMPLIANCE WITH THE LATEST EDITION OF MUNICIPAL CODE CHAPTER 71 "EROSION AND SEDIMENT CONTROL FOR CONSTRUCTION SITES" AND CHAPTER 72 "STORM WATER MANAGEMENT".
2. THE EROSION AND SEDIMENT CONTROL MEASURES INDICATED ON THE PLAN ARE THE MINIMUM REQUIRED. ADDITIONAL OR CORRECTIVE MEASURES MAY BE REQUIRED AS DIRECTED BY THE ENGINEER. SEDIMENT CONTROL MEASURES SHALL BE INSTALLED PRIOR TO THE START OF ANY LAND DISTURBING ACTIVITIES.
3. ALL EROSION AND SEDIMENT CONTROL MEASURES MUST BE MAINTAINED AND REPAIRED AS NEEDED. THE CONTRACTOR WILL BE RESPONSIBLE FOR PERMITTING, INSPECTION, AND REPAIR OF EROSION AND SEDIMENT CONTROL MEASURES DURING CONSTRUCTION.
4. PRESERVE EXISTING VEGETATION WHEN POSSIBLE BY MINIMIZING THE DISTURBED AREA DURING CONSTRUCTION.
5. ALL TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED AND PROPERLY DISPOSED OF AFTER PERMANENT VEGETATION HAS BEEN ESTABLISHED ON UP-SLOPE AREAS.



PREPARED BY:
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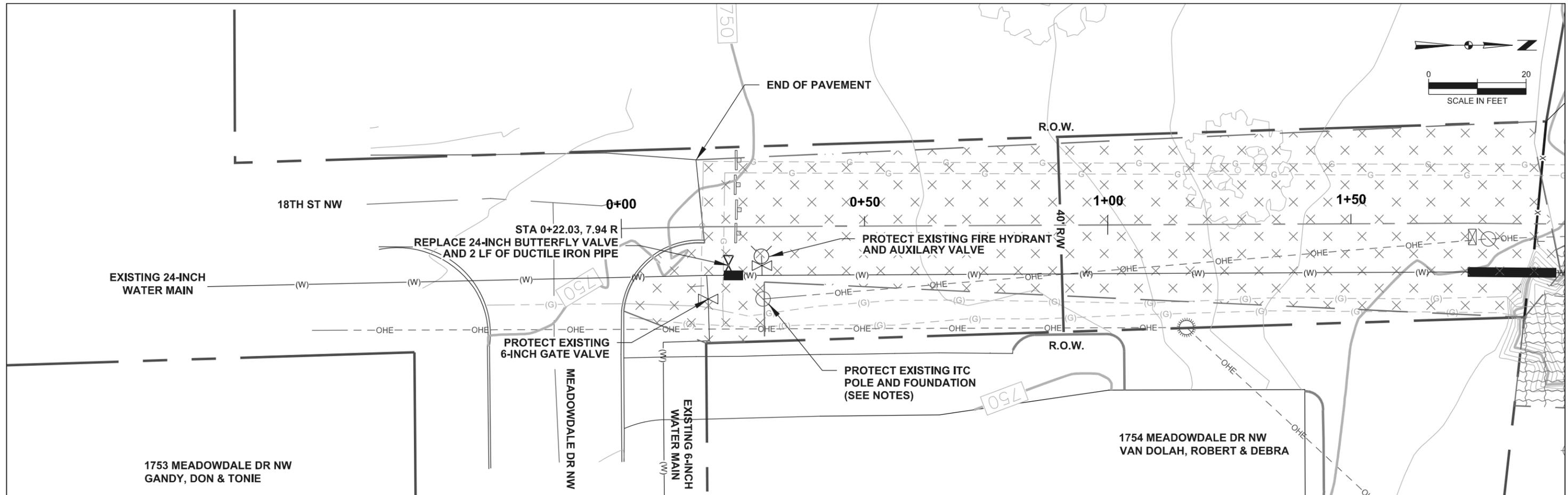


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F AVENUE NW TRANSMISSION MAIN REPAIR

EROSION CONTROL AND REMOVALS PLAN

SHEET No.
C.3



NOTE: CONTRACTOR TO VERIFY EXISTING WATER MAIN DEPTH AND LOCATION

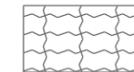
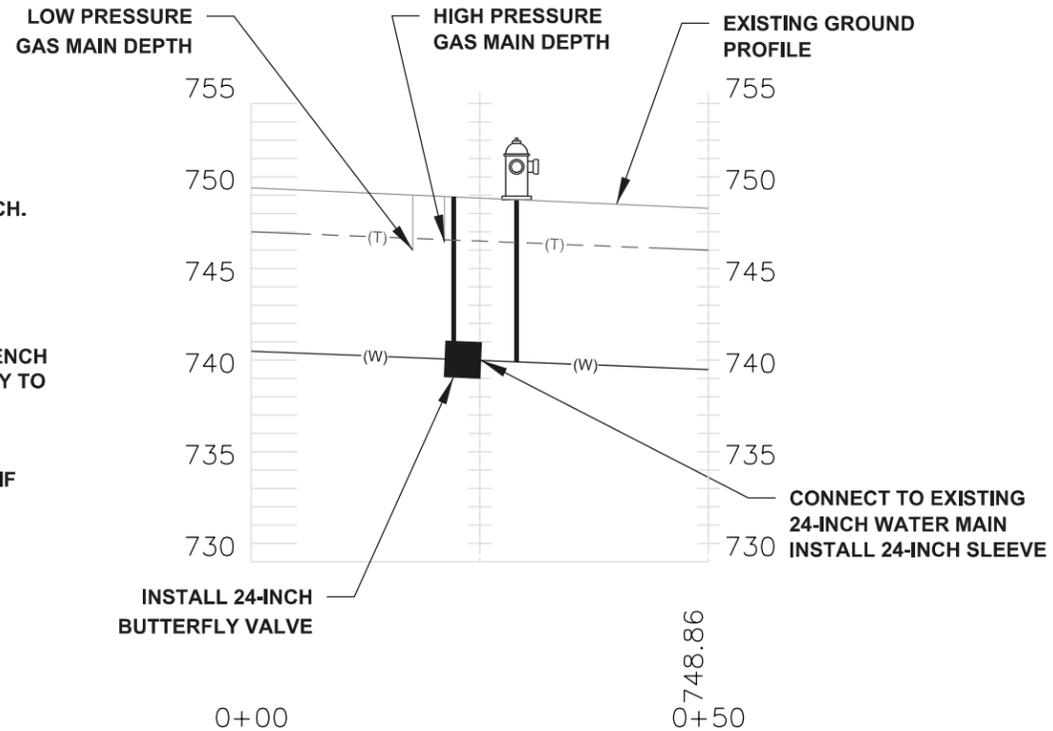
NOTE: CONTRACTOR TO VERIFY EXISTING GAS MAIN DEPTH AND LOCATION

NOTE: ITC SHALL BE NOTIFIED 3 WEEKS PRIOR TO THE COMMENCEMENT OF ANY EXCAVATION. NOTIFICATION SHALL INCLUDE EXPECTED DURATION OF OPEN TRENCH.

ATTN: DON KELCHEN, FIELD COORDINATOR
 PHONE: (319) 389-4756
 E-MAIL: DKELCHEN@ITCTRANSCO.COM

SHOULD ANY DAMAGE TAKE PLACE TO THE POLE FROM SWINGING EQUIPMENT, TRENCH BOX, OR OTHER APPARATUS, ITC WILL NEED TO ASSESS DAMAGE AND HAVE ABILITY TO REPAIR PRIOR TO BACKFILL.

IF HIGH WINDS ARE EXPECTED (> 20 MPH), ITC REQUESTS CONSTRUCTION BE RESCHEDULED TO DAY WITH LESS WIND. NO ADDITIONAL PAYMENT WILL BE MADE IF CONTRACTOR IS REQUIRED TO RE-MOBILIZE DURING HIGH WIND CONDITIONS.

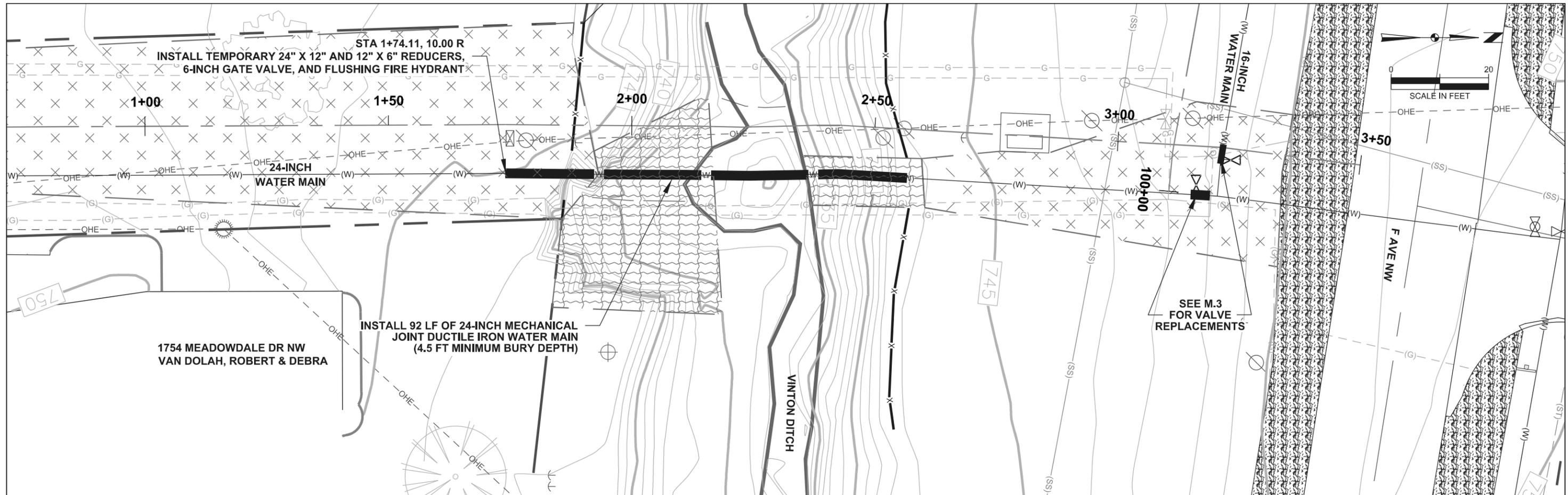


WOOD EXCELSIOR MAT AND PERMANENT EROSION CONTROL MIX

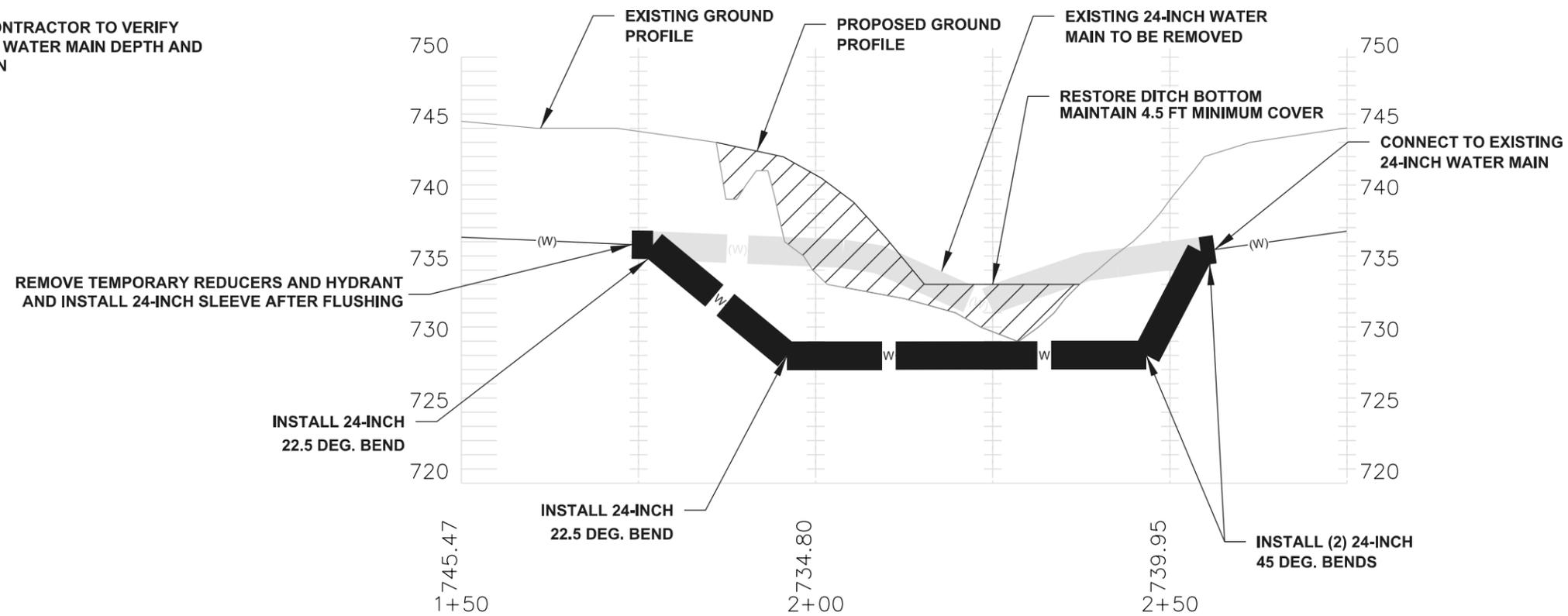


SEEDING, FERTILIZING AND MULCHING

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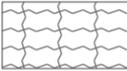
NOTE: CONTRACTOR TO VERIFY EXISTING WATER MAIN DEPTH AND LOCATION



NOTE: TEMPORARY STREAM DIVERSION FOR UTILITY STREAM CROSSING IS INCIDENTAL TO WATER MAIN CONSTRUCTION.

- THE TEMPORARY STREAM DIVERSION SHALL CONSIST OF THE FOLLOWING METHOD AND ITEMS OR APPROVED EQUAL:
1. IMPERVIOUS DIKE UPSTREAM FROM WORK AREA.
 2. IMPERVIOUS DIKE DOWNSTREAM FROM WORK AREA.
 3. BYPASS PUMP UPSTREAM FROM FROM WORK AREA, WITH BYPASS HOSE DIVERTING FLOW FROM UPSTREAM TO DOWN STREAM OF WORK AREA. BYPASS HOSE SHALL HAVE TEMPORARY ENERGY DISSIPATION MATERIAL AT THE DOWNSTREAM DISCHARGE.
 4. TRENCH DEWATERING PUMP HOSES MUST DISCHARGE INTO A DEWATERING DEVICE.

REFER TO IOWA DOT STANDARD DETAIL EW-402: TEMPORARY STREAM DIVERSION

-  WOOD EXCELSIOR MAT AND PERMANENT EROSION CONTROL MIX
-  SEEDING, FERTILIZING AND MULCHING

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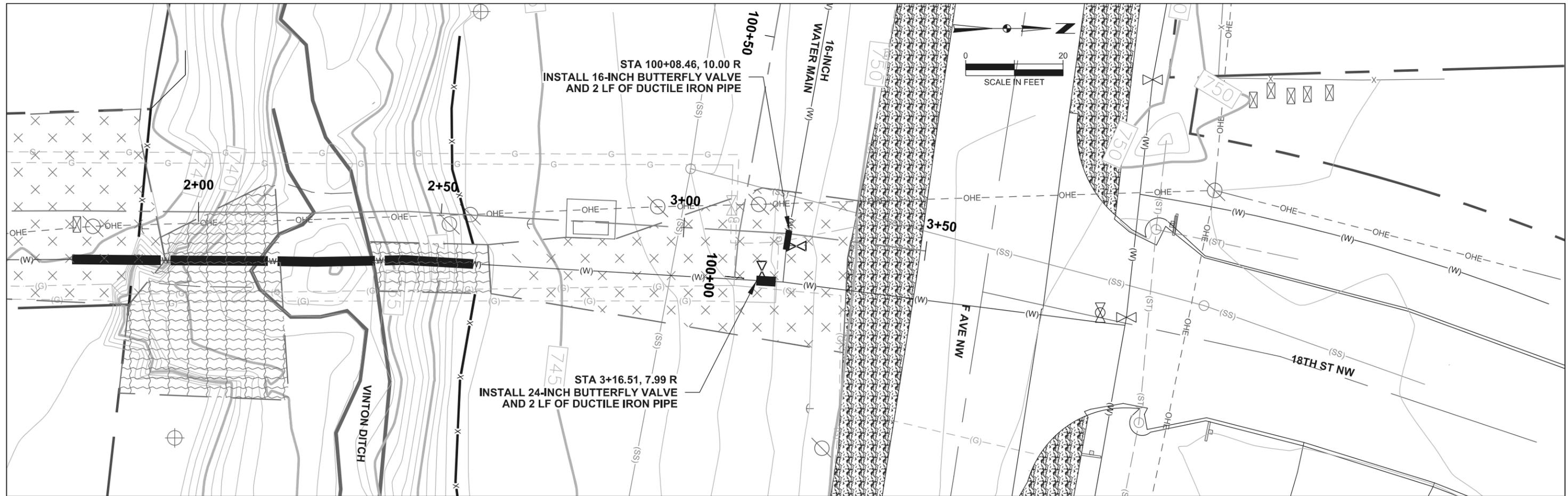


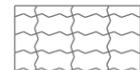
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Approved By: KJR
CIP No: 2016097-01

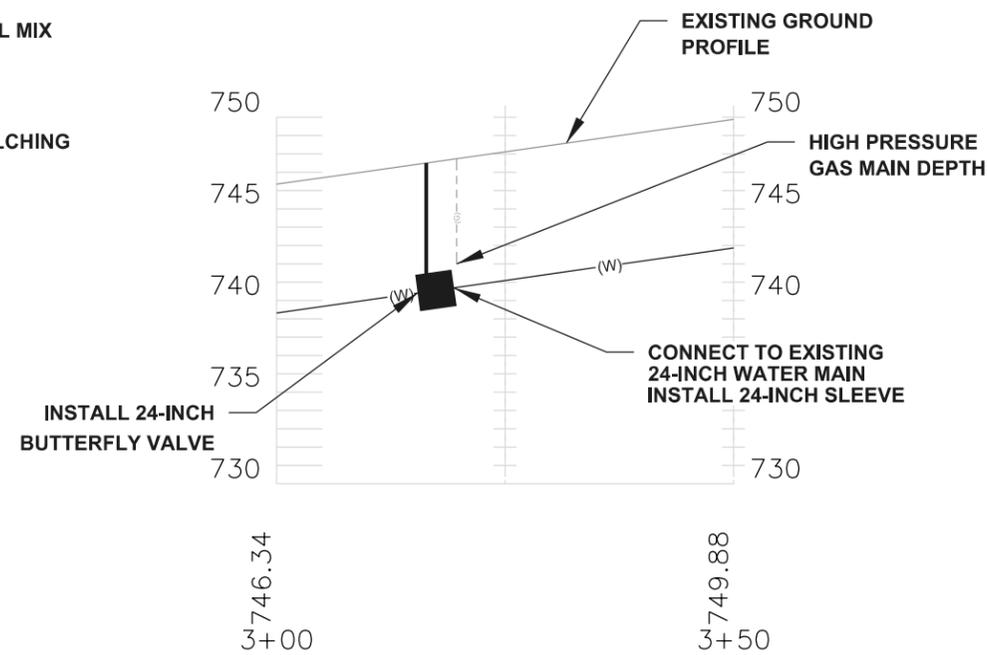
F AVENUE NW TRANSMISSION MAIN REPAIR

WATER MAIN PLAN AND PROFILE

SHEET No.
M.2

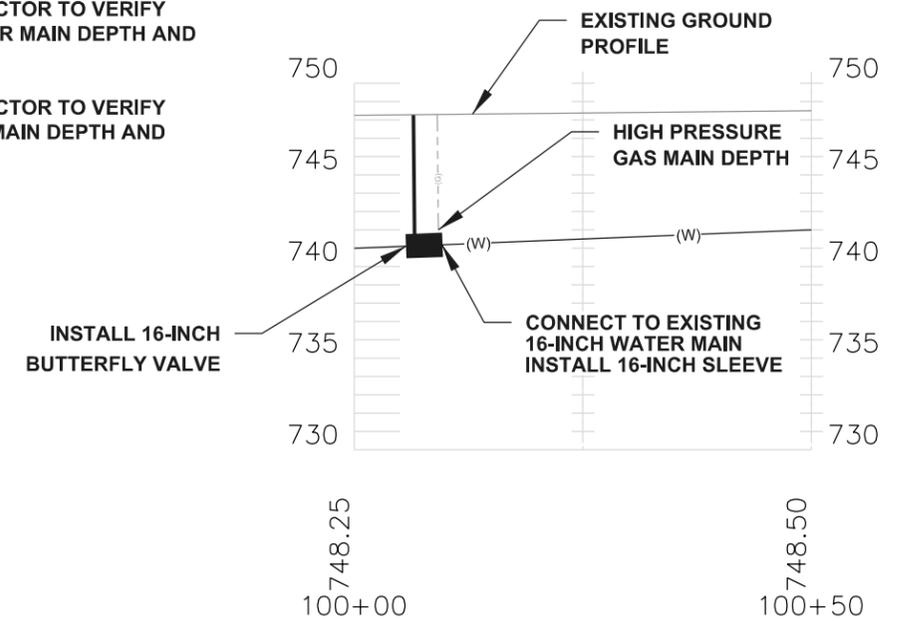


-  WOOD EXCELSIOR MAT AND PERMANENT EROSION CONTROL MIX
-  SEEDING, FERTILIZING AND MULCHING



NOTE: CONTRACTOR TO VERIFY EXISTING WATER MAIN DEPTH AND LOCATION

NOTE: CONTRACTOR TO VERIFY EXISTING GAS MAIN DEPTH AND LOCATION



PREPARED BY:
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No.	REVISION DESCRIPTION	APPROVED	DATE



Date: 8/9/16
Drawn By: MDZ
Approved By: KJR
CIP No: 2016097-01

F AVENUE NW TRANSMISSION MAIN REPAIR

WATER MAIN PLAN AND PROFILE

SHEET No.
M.3