

Contract Drawings For

# FLORIDA GOVERNMENTAL UTILTIY AUTHORITY

## LEHIGH HOMESTEAD ROAD WATER AND WASTEWATER UTILITY PROJECT

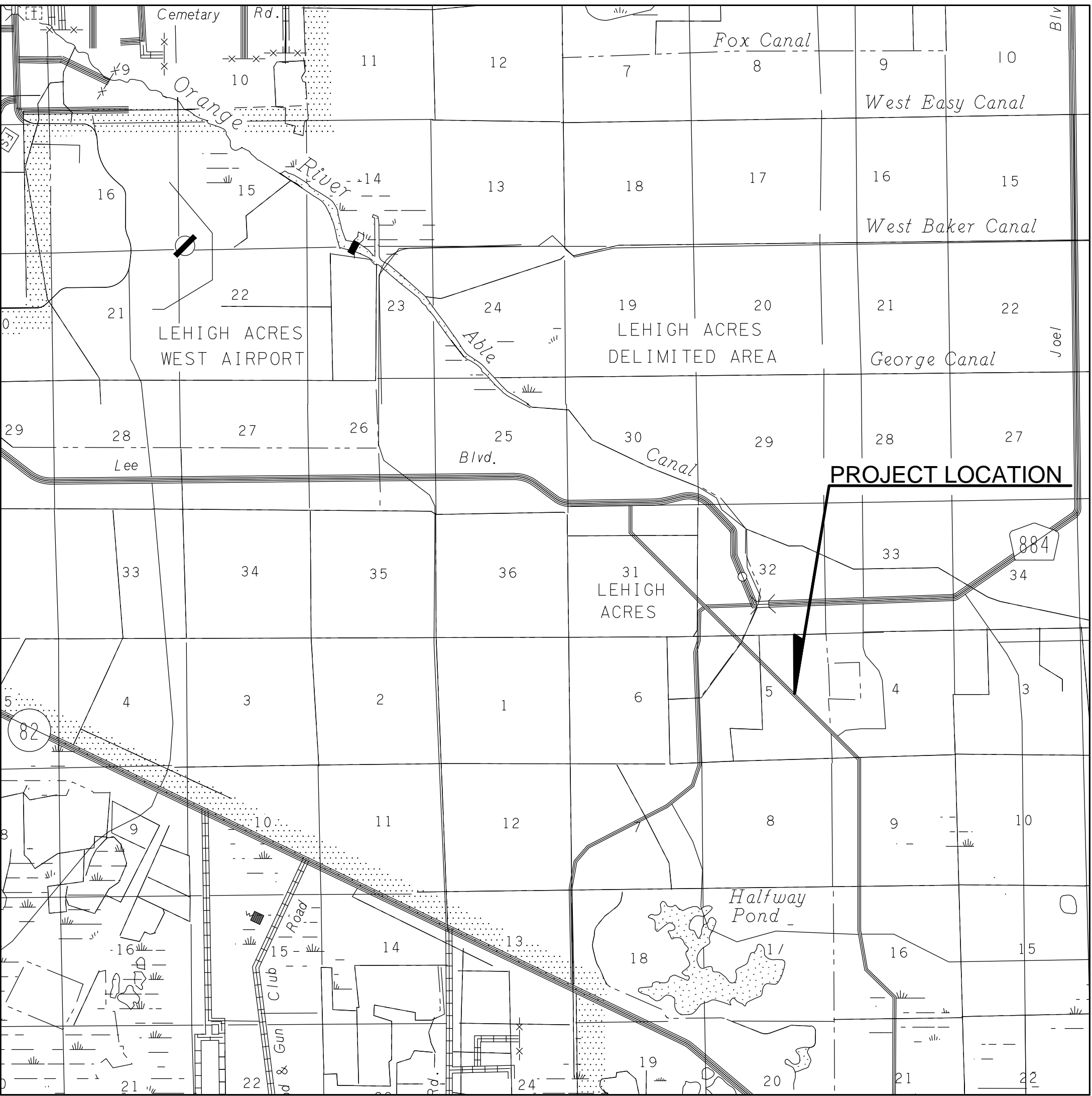
FGUA Contract No.  
CON00963641

Project No.  
250366

90% SUBMITTAL  
LEE COUNTY, FLORIDA  
02/2016

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<b>ABBREVIATIONS</b>		<b>NOTE:</b>					
A/E	ARCHITECT/ENGINEER	MAINT	MAINTENANCE	1. THESE ABBREVIATIONS APPLY TO THE ENTIRE SET OF CONTRACT DRAWINGS.			
ABAN	ABANDON	MAN	MANUAL				
ABT	ABOUT	MATL	MATERIAL				
ACK	ACKNOWLEDGE	MAX	MAXIMUM	2. LISTING OF ABBREVIATIONS DOES NOT IMPLY THAT ALL ABBREVIATIONS ARE USED IN THE CONTRACT DRAWINGS.			
AD	ADDENDUM, AREA DRAIN	MBR	MEMBER				
ADDL	ADDITIONAL	MECH	MECHANICAL				
AI	ALIGNMENT	MED	MEDIUM	3. ABBREVIATIONS SHOWN ON THIS SHEET INCLUDE VARIATIONS OF A WORD. FOR EXAMPLE, "MOD" MAY MEAN MODIFY OR MODIFICATION; "INC" MAY MEAN INCLUDED OR INCLUDING AND "REINF" MAY MEAN EITHER REINFORCE OR REINFORCING.			
APRX	APPROXIMATE	MFR	MANUFACTURER				
APVD	APPROVED	MIN	MINIMUM				
AVG	AVERAGE	MISC	MISCELLANEOUS	<b>SYMBOLS LEGEND:</b>			
BAL	BALANCE	MJ	MECHANICAL JOINT				
BE	BURIED ELECTRIC	MON	MONUMENT				
BFO	BURIED FIBER OPTIC	MT	MOUNT	⌵ = POWER POLE			
BL	BASE LINE	N	NORTH, NEUTRAL				
BLK	BLOCK	NA	NOT APPLICABLE				
BM	BENCHMARK, BEAM	NAT	NATURAL, NATIONAL	⌵ = MITERED END SECTION			
BOC	BACK OF CURB	NC	NORMALLY CLOSED				
BRG	BEARING	NEG	NEGATIVE				
BT	BURIED TELEPHONE	NIC	NOT IN CONTRACT	⊕ = SANITARY VALVE			
BTV	BURIED TELEVISION CABLE	NO	NORMALLY OPEN, NUMBER				
BTW	BETWEEN	NOM	NOMINAL				
C	CUBIC FEET (FOOT)	NPS	NOMINAL PIPE SIZE	⊕ = WATER VALVE			
CBC	CONCRETE BOX CULVERT	NTS	NOT TO SCALE				
CI	CURB INLET	NWL	NORMAL WATER LEVEL	✉ = MAILBOX			
CIP	CAST-IN-PLACE	OA	OUTSIDE AIR, OVERALL				
CL	CENTERLINE, CLASS, CLOSE	OC	ON CENTER	⚡ = SIGN			
CO	CLEANOUT, CONCRETE OPENING	OD	OUTSIDE DIAMETER				
COM	COMMON	OE	OVERHEAD ELECTRIC	*⊙ = TREE			
COMB	COMBINATION	OFCI	OWNER FURNISHED CONTRACTOR INSTALLED				
COMM	COMMUNICATION	OFOI	OWNER FURNISHED OWNER INSTALLED	⌵ = REDUCING TEE			
CONC	CONCRETE	OH	OVERHEAD				
CONN	CONNECTION	OHTV	OVERHEAD TELEVISION CABLE				
CONST	CONSTRUCT	OPNG	OPENING	⌵ = TEE			
CONT	CONTINUOUS	OPP	OPPOSITE				
COORD	COORDINATE	OPT	OPTIONAL	⌵ = 90° BEND			
CORR	CORROSION-RESISTANT LINING	OR	OUTSIDE RADIUS				
CT	CENTER	ORIG	ORIGINAL	⌵ = 22.5° BEND			
CTR	CONTROL	OT	OVERHEAD TELEPHONE				
CVT	CULVERT	OVFL	OVERFLOW	⌵ = 45° BEND			
CU	COPPER, CUBIC	OZ	OUNCE				
CW	CLOCKWISE	PA	PUBLIC ADDRESS	⌵ = GATE VALVE			
CY	CUBIC YARD	PC	PERCENT				
D	DEEP, DIFFUSER, DRAIN	PI	POINT OF INFLECTION	⌵ = PLUG			
DBL	DOUBLE	PL	PLATE, PROPERTY LINE				
DEMO	DEMOLITION	PP	POLYPROPYLENE, POWER POLE	⌵ = REDUCER			
DET	DETAIL	PRELIM	PRELIMINARY				
DIA	DIAMETER	PREP	PREPARE	⌵ = BEND UP			
DIM	DIMENSION	PRES	PRESSURE				
DISCH	DISCHARGE	PRI	PRIMARY	⌵ = BEND DOWN			
DIST	DISTANCE, DISTRIBUTION	PROP	PROPERTY, PROPOSED				
DUP	DUPLICATE	PT	POINT OF TANGENT	⌵ = FIRE HYDRANT			
DWG	DRAWING	PV	PLUG VALVE				
E	EAST	PVC	POLYVINYL CHLORIDE	<b>LINETYPE LEGEND:</b>			
EFF	EFFLUENT, EFFICIENCY	PVMT	PAVEMENT				
EL	ELBOW, ELEVATION	QTY	QUANTITY				
ENGR	ENGINEER	QUAL	QUALITY	———— FM ———— EXISTING FORCE MAIN			
EOP	EDGE OF PAVEMENT	R	RADIUS, REGISTER, RISER				
EQ	EQUAL	RCP	REINFORCED CONCRETE PIPE				
EXIST	EXISTING	RECD	RECEIVED	———— BE ———— EXISTING BURIED ELECTRIC			
EXT	EXTERIOR, EXTERNAL, EXTENSION	RED	REDUCER				
FBO	FURNISHED BY OWNER	REF	REFERENCE				
FD	FOUNDATION	REQD	REQUIRED	———— G ———— G ———— EXISTING GAS MAIN			
FG	FINISHED GRADE	REV	REVISION, REVERSE				
FIN	FINISH	RJ	RESTRAINED JOINT				
FL	FLOW, FLOW LINE	RT	RIGHT	———— CATV ———— EXISTING CABLE TELEVISION			
FLG	FLANGE	S	SOUTH, SINK				
FM	FORCE MAIN	SEC	SECONDARY, SECONDS				
FN	FENCE	SECT	SECTION	———— BFO ———— EXISTING BURIED FIBER OPTIC			
FO	FACE OF CONCRETE, FACE OF CURB	SF	SQUARE FOOT, SILT FENCE				
FT	FEET, FOOT	SHT	SHEET				
FTG	FOOTING, FITTING	SPEC	SPECIFICATION	———— BT ———— EXISTING BURIED TELEPHONE			
FUR	FURNITURE, FURNISH	STA	STATION				
FUT	FUTURE	STD	STANDARD				
FW	FORWARD	T	TEMPORARY CONSTRUCTION EASEMENT	———— OE ———— EXISTING OVERHEAD ELECTRIC			
G	GRILLE, GROUND	TEMP	TEMPORARY, TEMPERATURE				
GAL	GALLON	TOB	TOP OF BOLT, TOP OF BANK,				
GEN	GENERAL	TOC	TOP OF BEAM, TOP OF BERM	———— WM ———— EXISTING WATER MAIN			
GND	GROUND	TOPO	TOP OF CURB, TOP OF CONCRETE				
GR	GRADE	TYP	TOPOGRAPHY				
GV	GATE VALVE	UG	TYPICAL	———— SD ———— EXISTING STORM DRAIN			
H	HIGH	UNO	UNDERGROUND				
HORIZ	HORIZONTAL	UTIL	UNLESS NOTED OTHERWISE UTILITY				
HT	HEIGHT	VB	VALVE BOX	———— SD ———— EXISTING STORM DRAIN			
HWL	HIGH WATER LEVEL	VERT	VERTICAL				
ID	INSIDE DIAMETER, INTERIOR DIMENSION	W/	WITH				
IN	INCH	W/O	WITHOUT	———— SD ———— EXISTING STORM DRAIN			
INC	INCLUDE, INCANDESCENT	WL	WATER LEVEL				
INF	INFLUENT	WM	WATER MAIN				
INT	INTERIOR, INTERSECTION			———— SD ———— EXISTING STORM DRAIN			
JT	JOINT						
L	LENGTH						
LAD	LADDER			———— SD ———— EXISTING STORM DRAIN			
LATL	LATERAL						
LCEC	LEE COUNTY ELECTRICAL COMPANY						
LDR	LEADER			———— SD ———— EXISTING STORM DRAIN			
LF	LINEAR FOOT						
LG	LONG						
LIN	LINEAR			———— SD ———— EXISTING STORM DRAIN			
LNG	LONGITUDINAL						
LOC	LOCATION						
LT	LEFT			———— SD ———— EXISTING STORM DRAIN			
LTD	LIMITED						
LWL	LOW WATER LEVEL						

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PROJECT MANAGER		JEFF CRIGLER, PE.
DESIGNER		JTT
REVIEWER		TSH
PROJ. ENGINEER		HLM
PROJECT NUMBER		250366

FGUA

LEHIGH HOMESTEAD ROAD

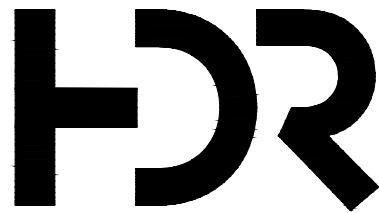
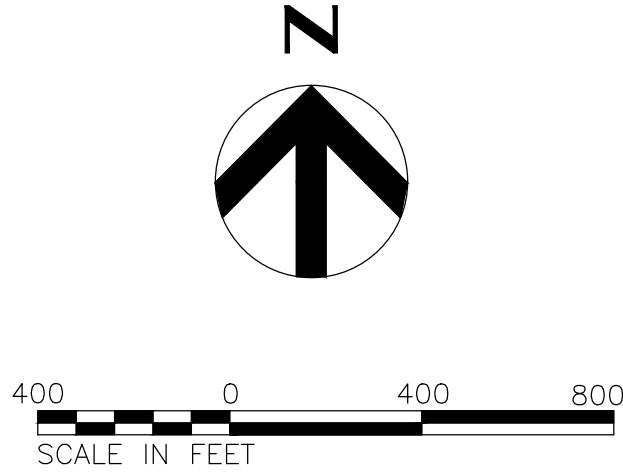
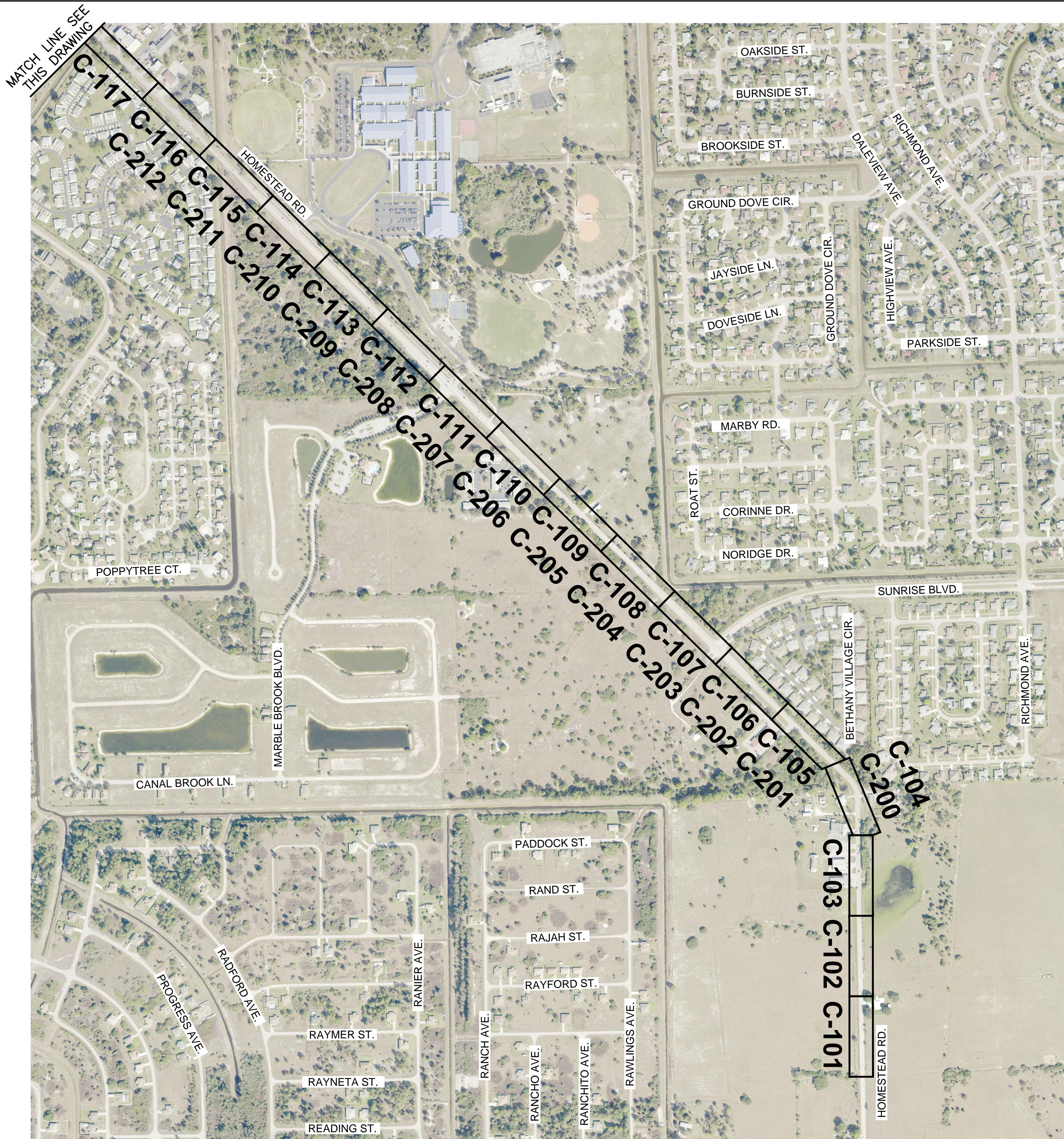
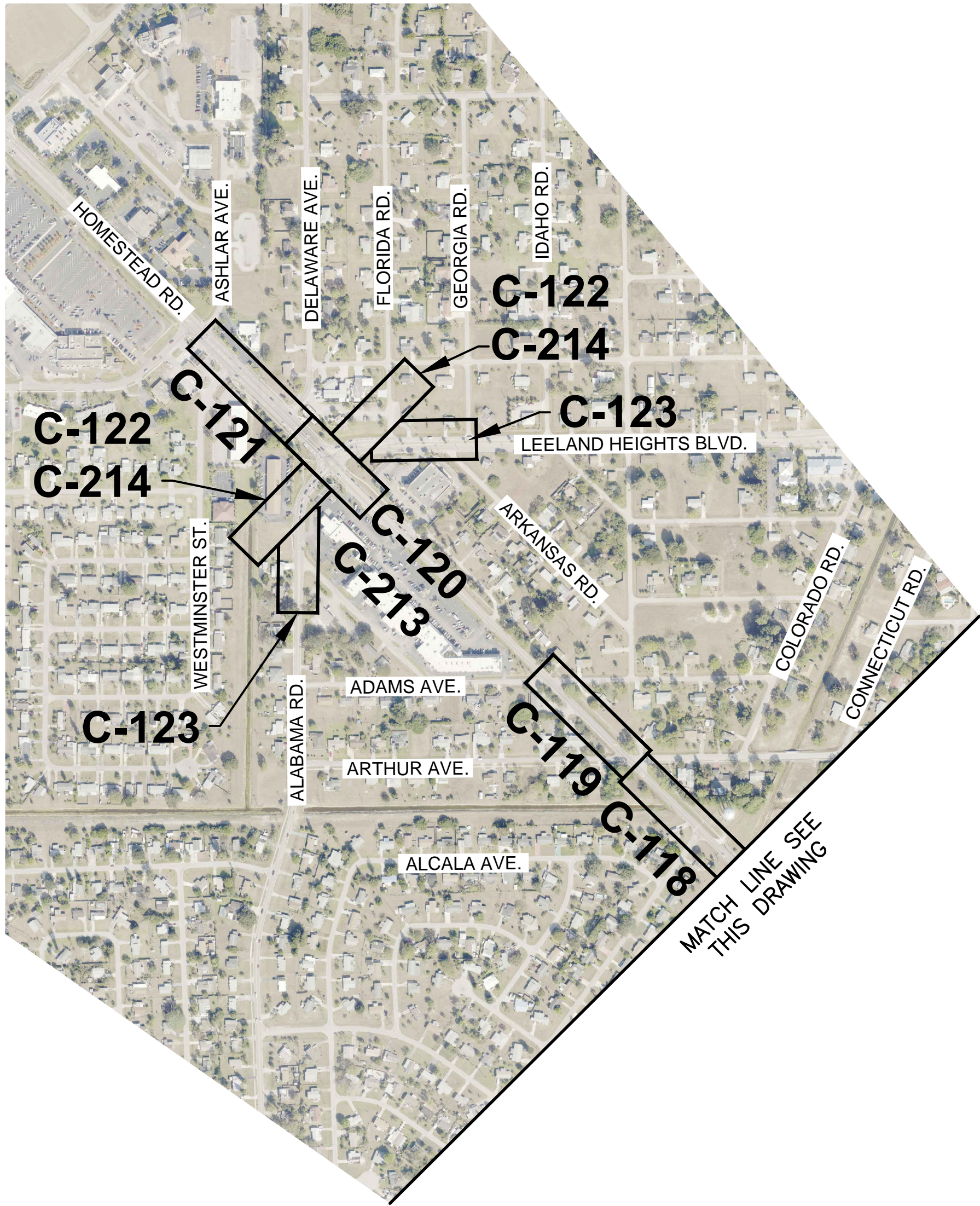
WATER AND WASTEWATER UTILITY PROJECT

GENERAL ABBREVIATIONS

& LEGEND





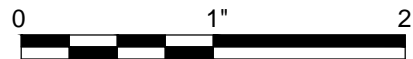


HDR ENGINEERING, INC  
2601 CATTLEMEN ROAD, STE 400  
SARASOTA, FL 34232  
CA 4213

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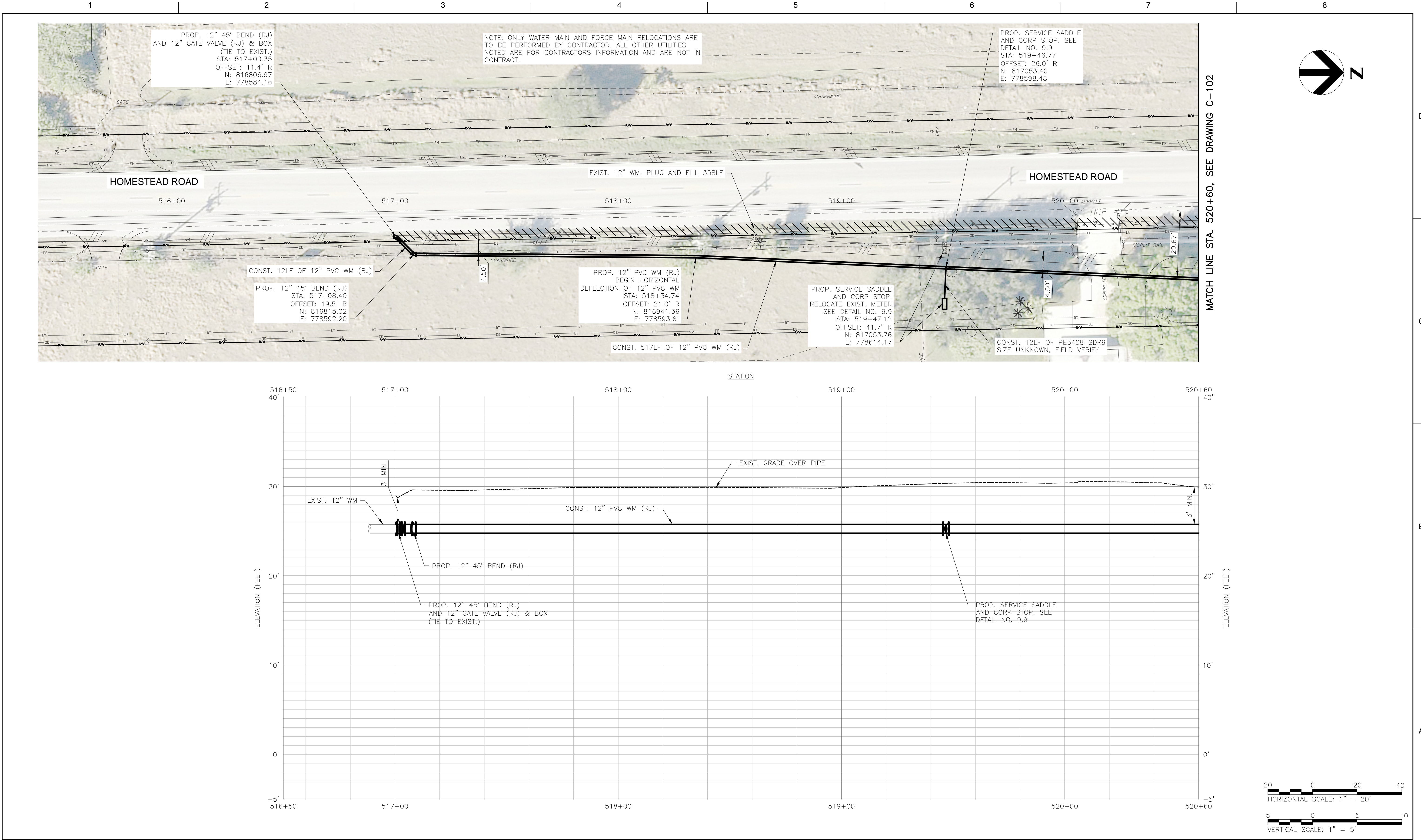


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DRAWING KEY SHEET

SHEET
G-105

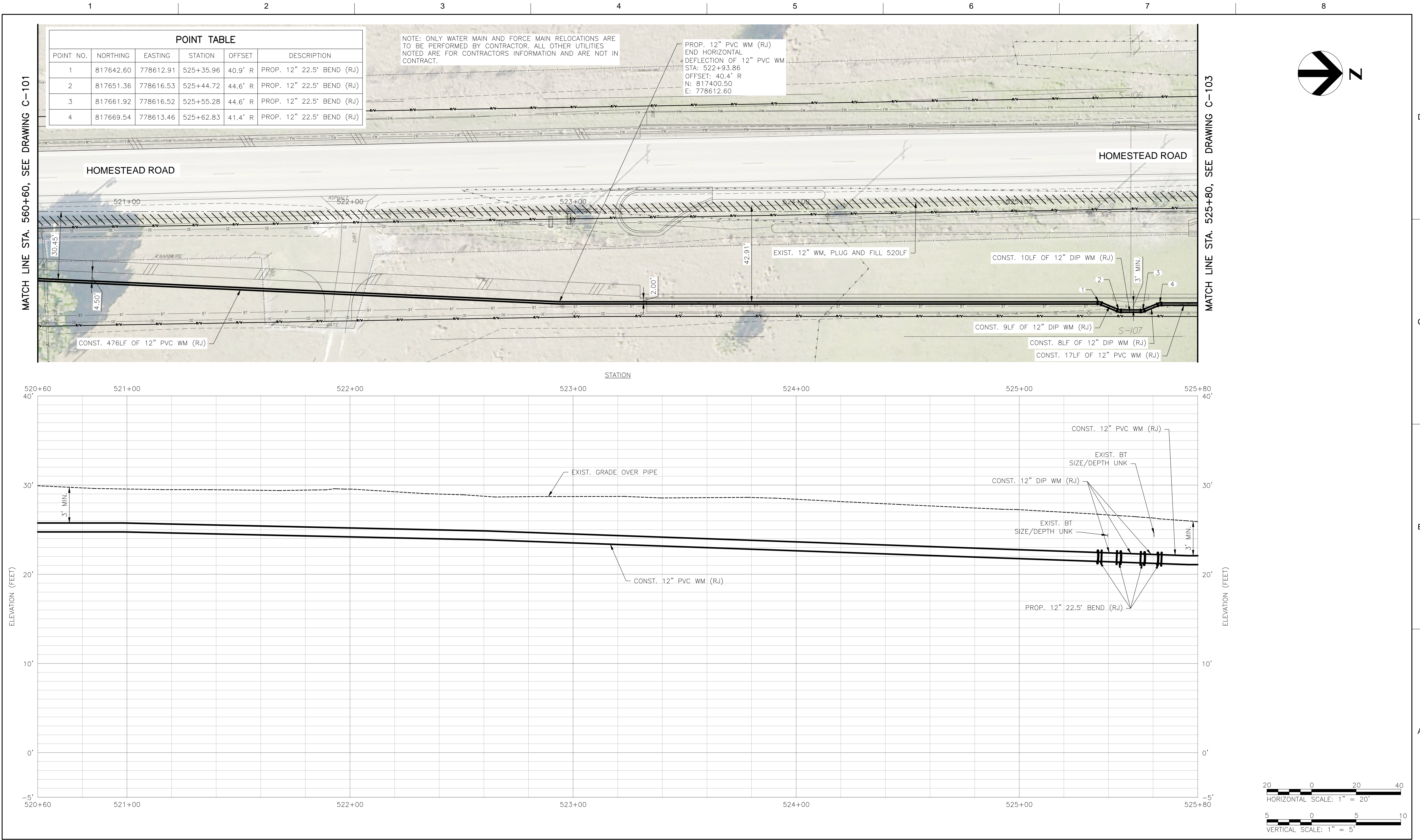




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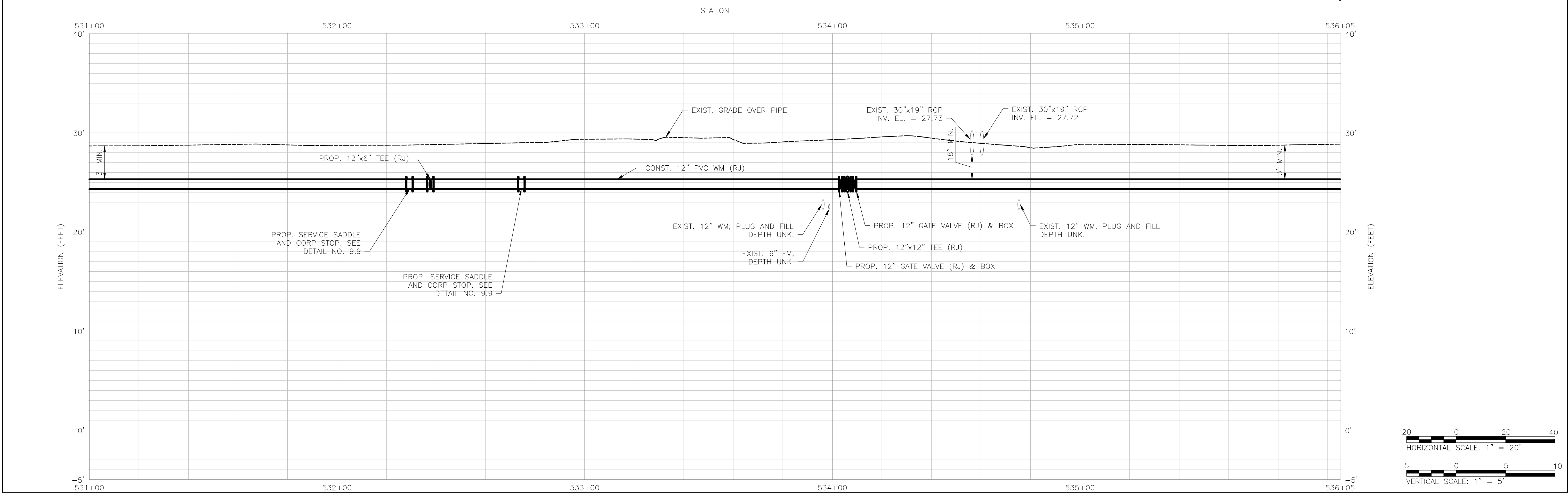
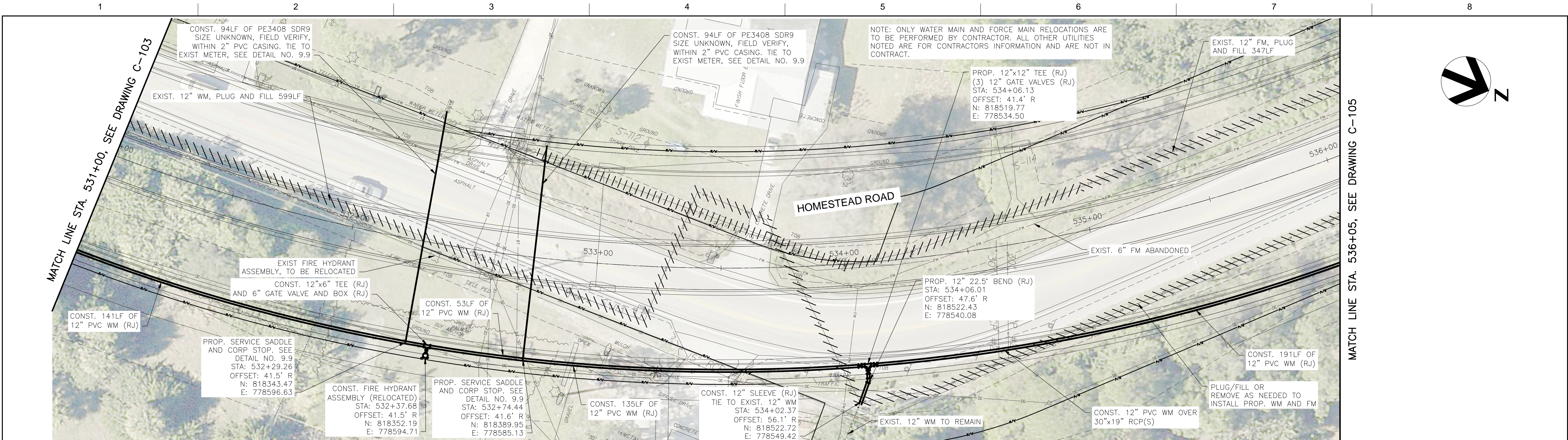
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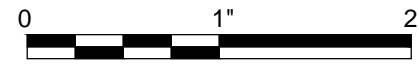
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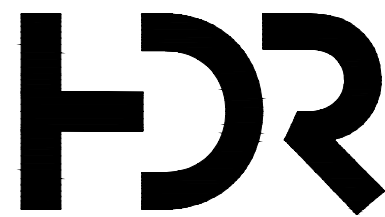
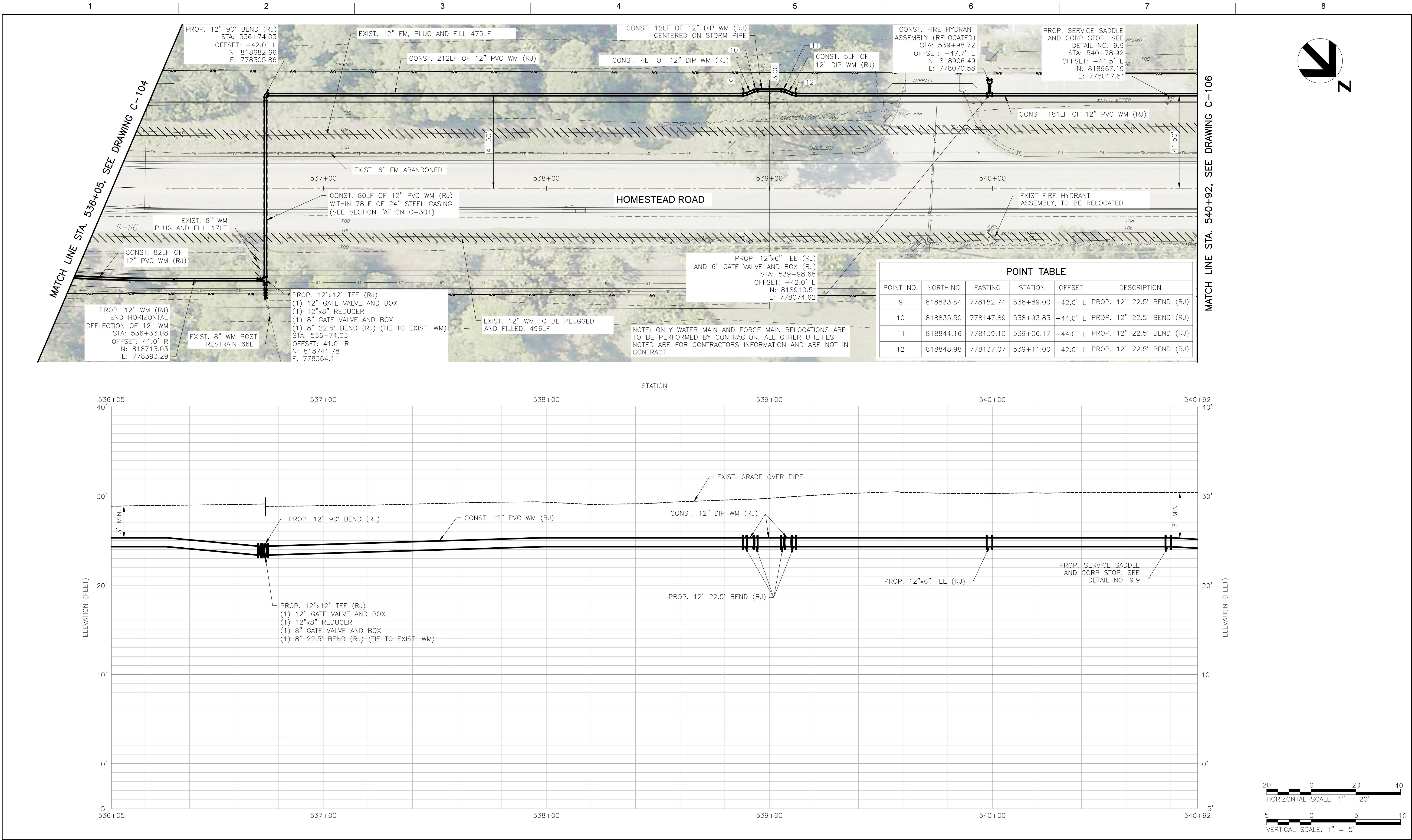
HOMESTEAD ROAD WM  
PLAN & PROFILE



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C-104





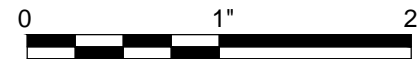
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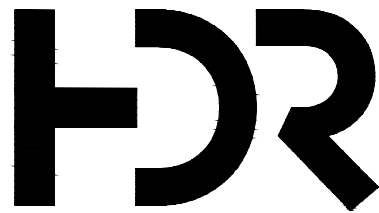
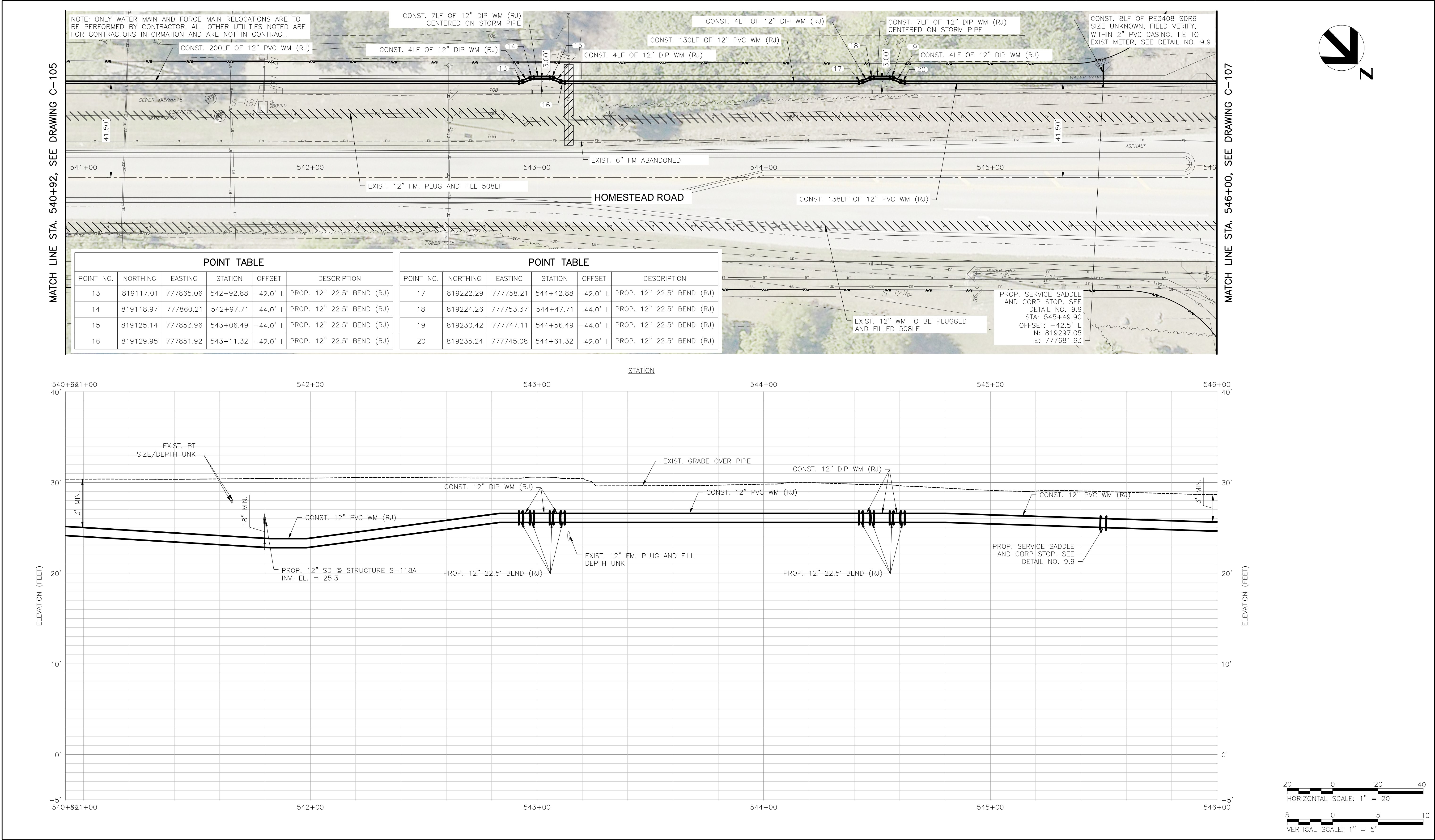
HOMESTEAD ROAD WM  
PLAN & PROFILE



FILENAME | C-105.DWG  
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SHEET  
C-105





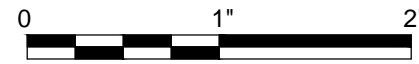
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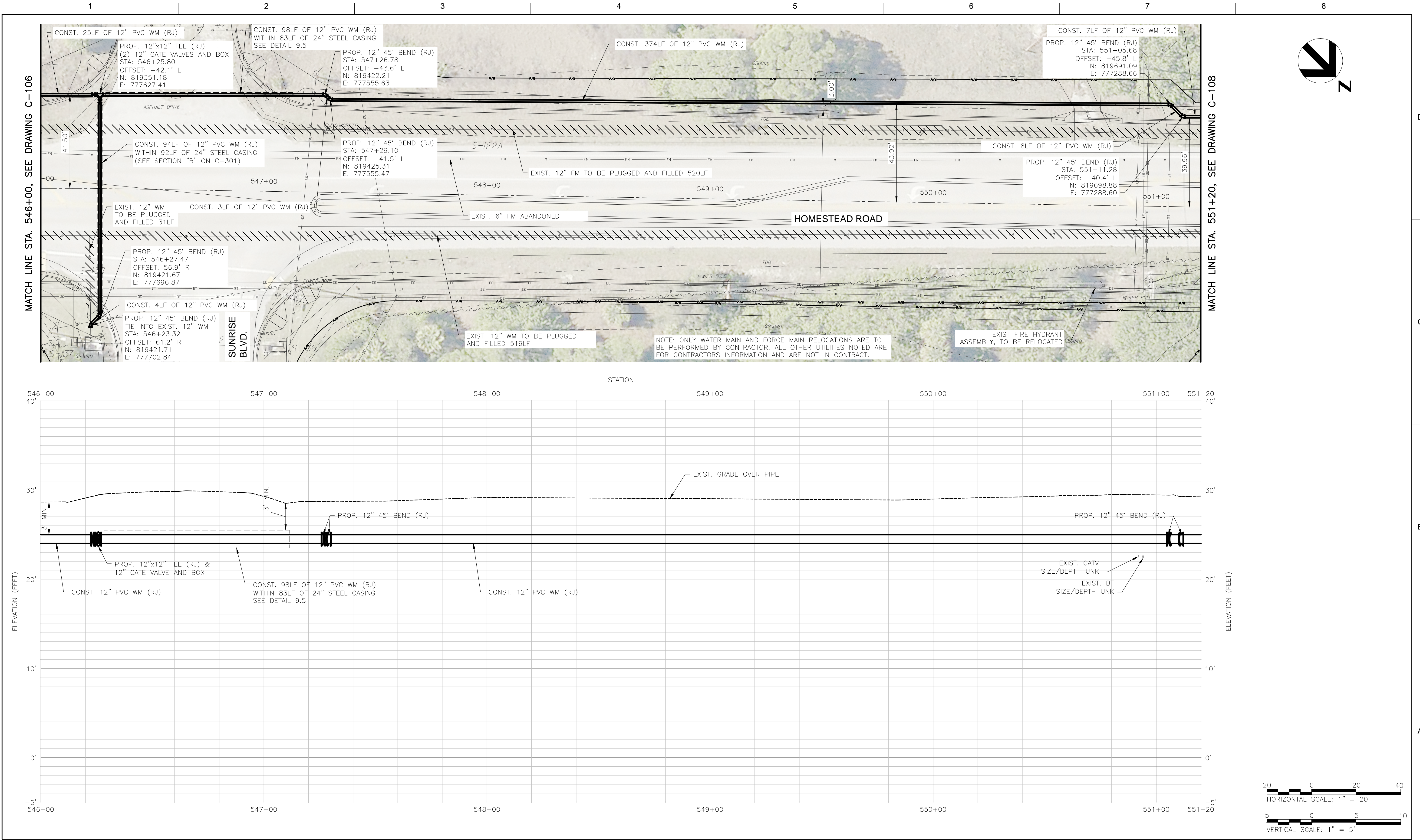
HOMESTEAD ROAD WM  
PLAN & PROFILE



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C-106





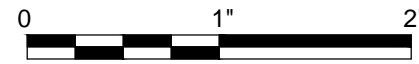
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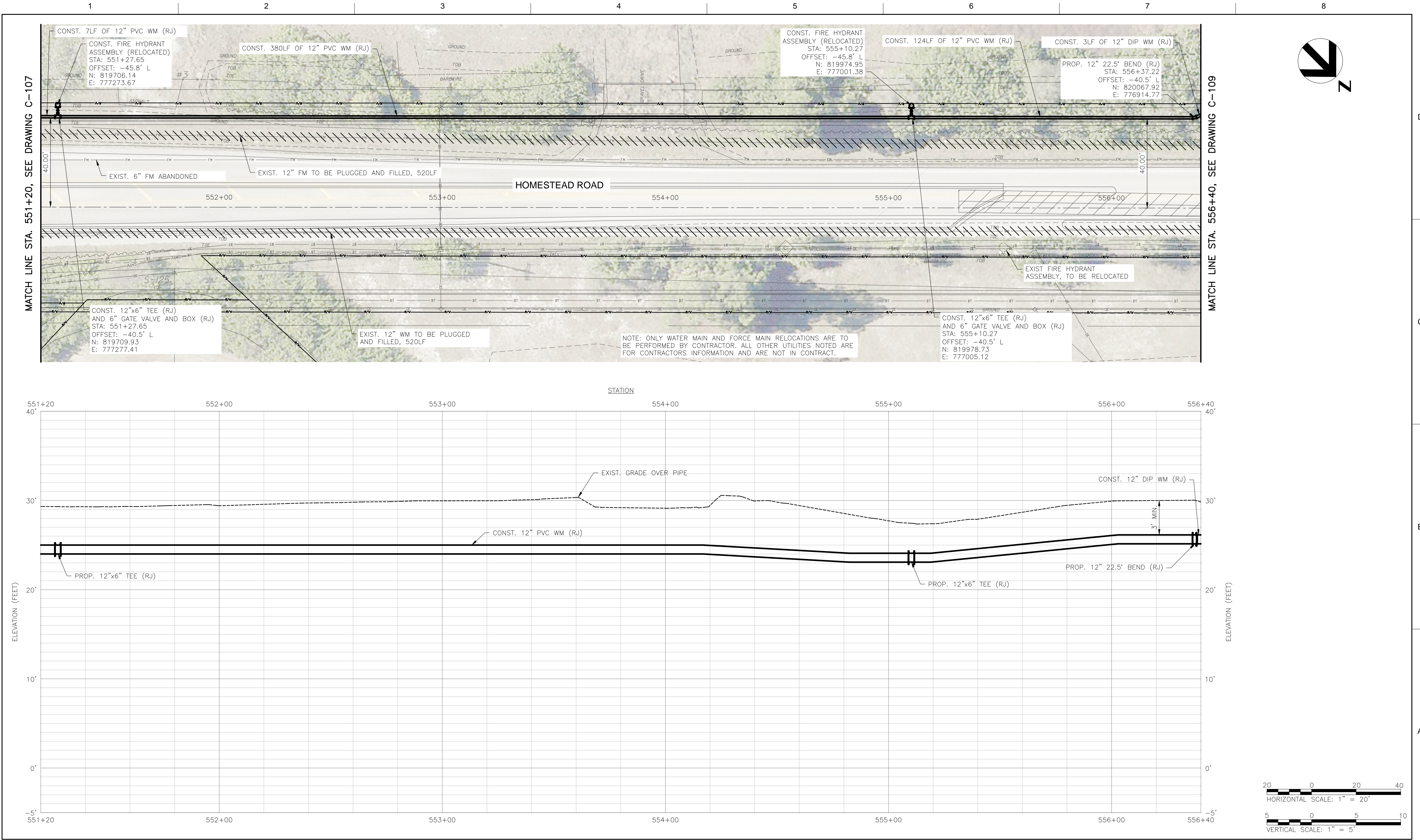
HOMESTEAD ROAD WM  
PLAN & PROFILE



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SHEET  
C-107

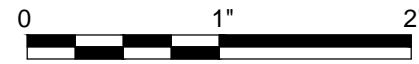




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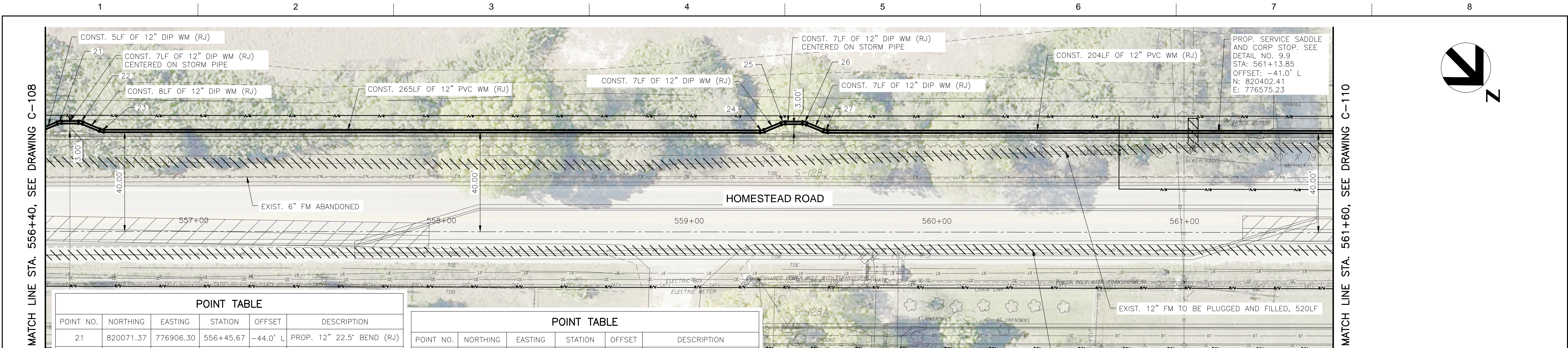


HOMESTEAD ROAD WM  
PLAN & PROFILE

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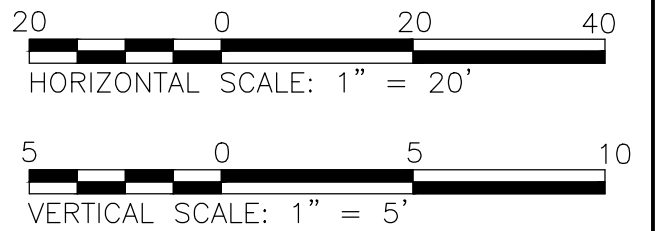
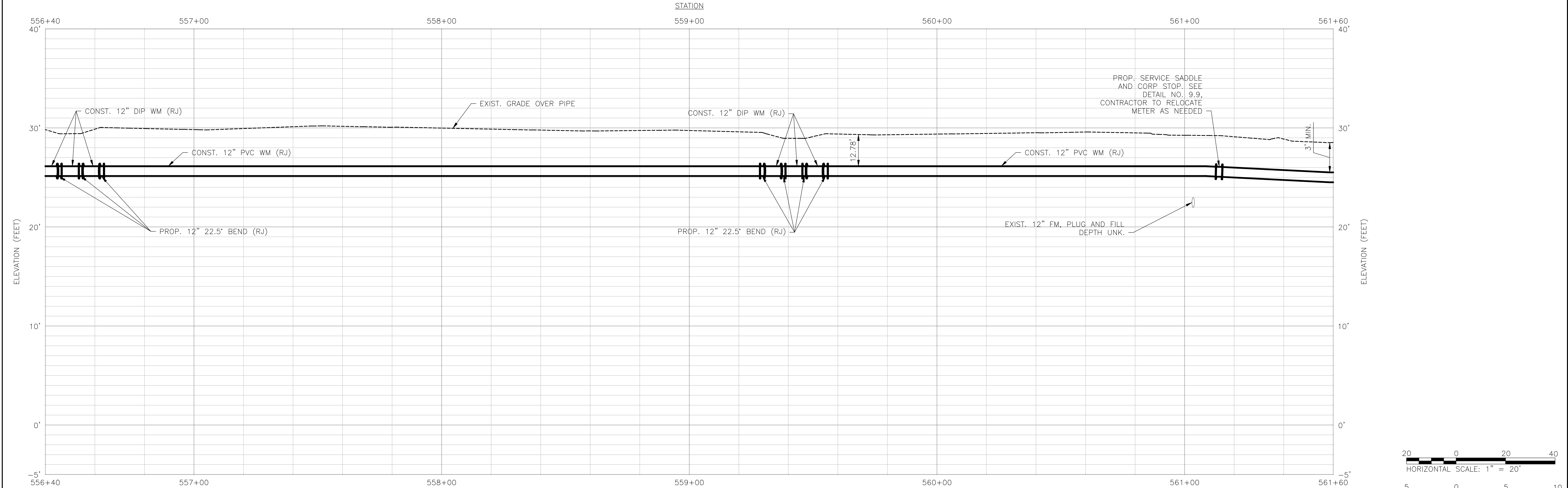
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POINT TABLE					
POINT NO.	NORTHING	EASTING	STATION	OFFSET	DESCRIPTION
21	820071.37	776906.30	556+45.67	-44.0' L	PROP. 12" 22.5' BEND (RJ)
22	820077.44	776900.14	556+54.32	-44.0' L	PROP. 12" 22.5' BEND (RJ)
23	820085.86	776896.57	556+62.78	-40.5' L	PROP. 12" 22.5' BEND (RJ)
24	820273.24	776706.79	559+29.47	-40.5' L	PROP. 12" 22.5' BEND (RJ)

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POINT NO.	NORTHING	EASTING	STATION	OFFSET	DESCRIPTION
25	820276.69	776698.32	559+37.92	-44.0' L	PROP. 12" 22.5' BEND (RJ)
26	820282.76	776692.16	559+46.58	-44.0' L	PROP. 12" 22.5' BEND (RJ)
27	820291.19	776688.59	559+55.04	-40.5' L	PROP. 12" 22.5' BEND (RJ)

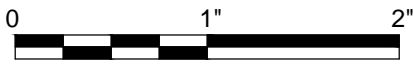


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HOMESTEAD ROAD WM  
PLAN & PROFILE



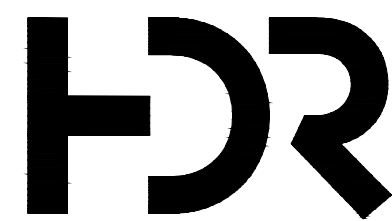
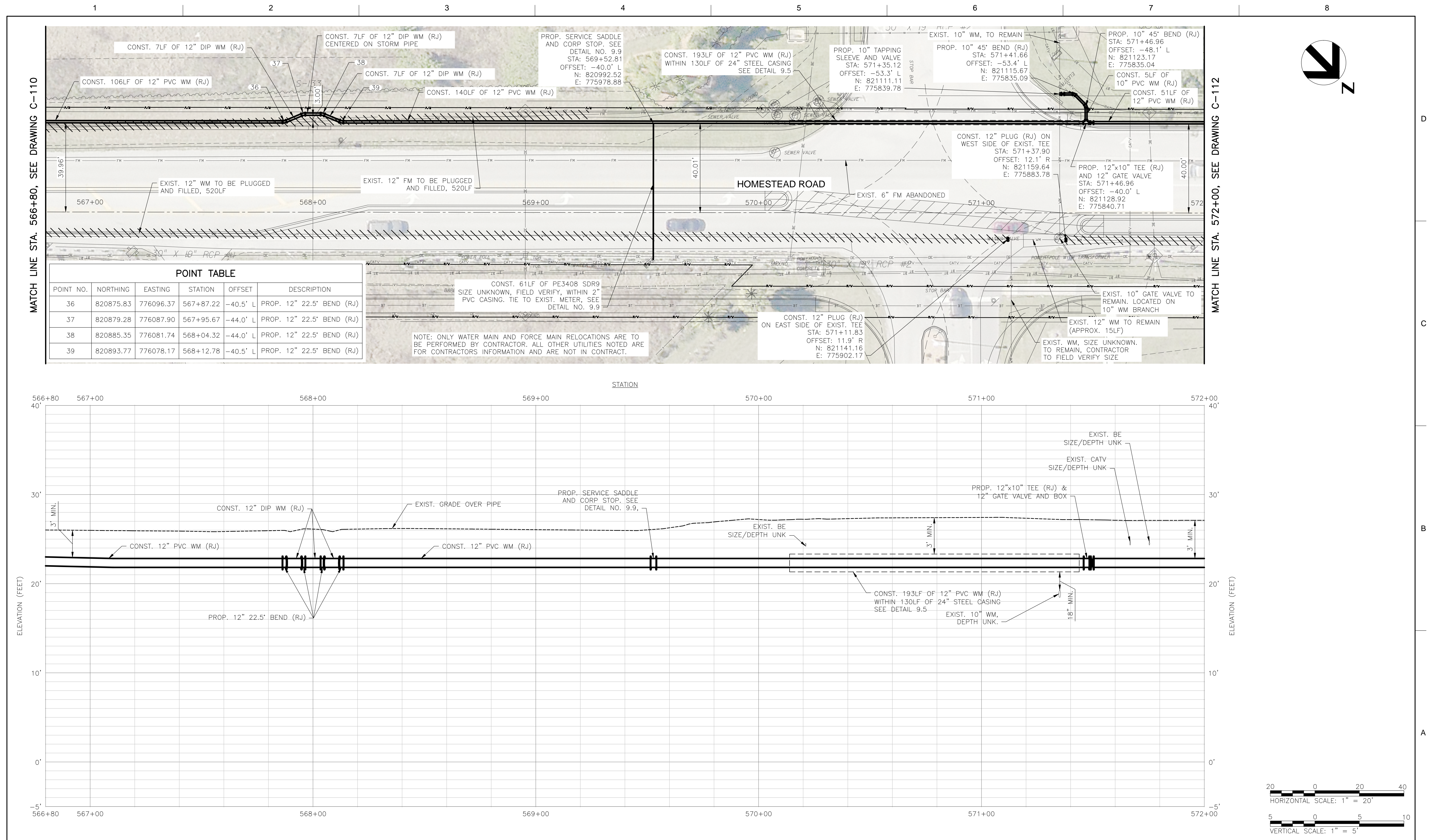
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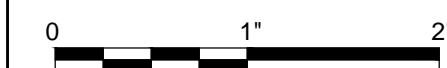


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LEHIGH HOMESTEAD ROAD  
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# HOMESTEAD ROAD WM PLAN & PROFILE

<b>FILENAME</b>	C-111.DWG
<b>SCALE</b>	AS NOTED

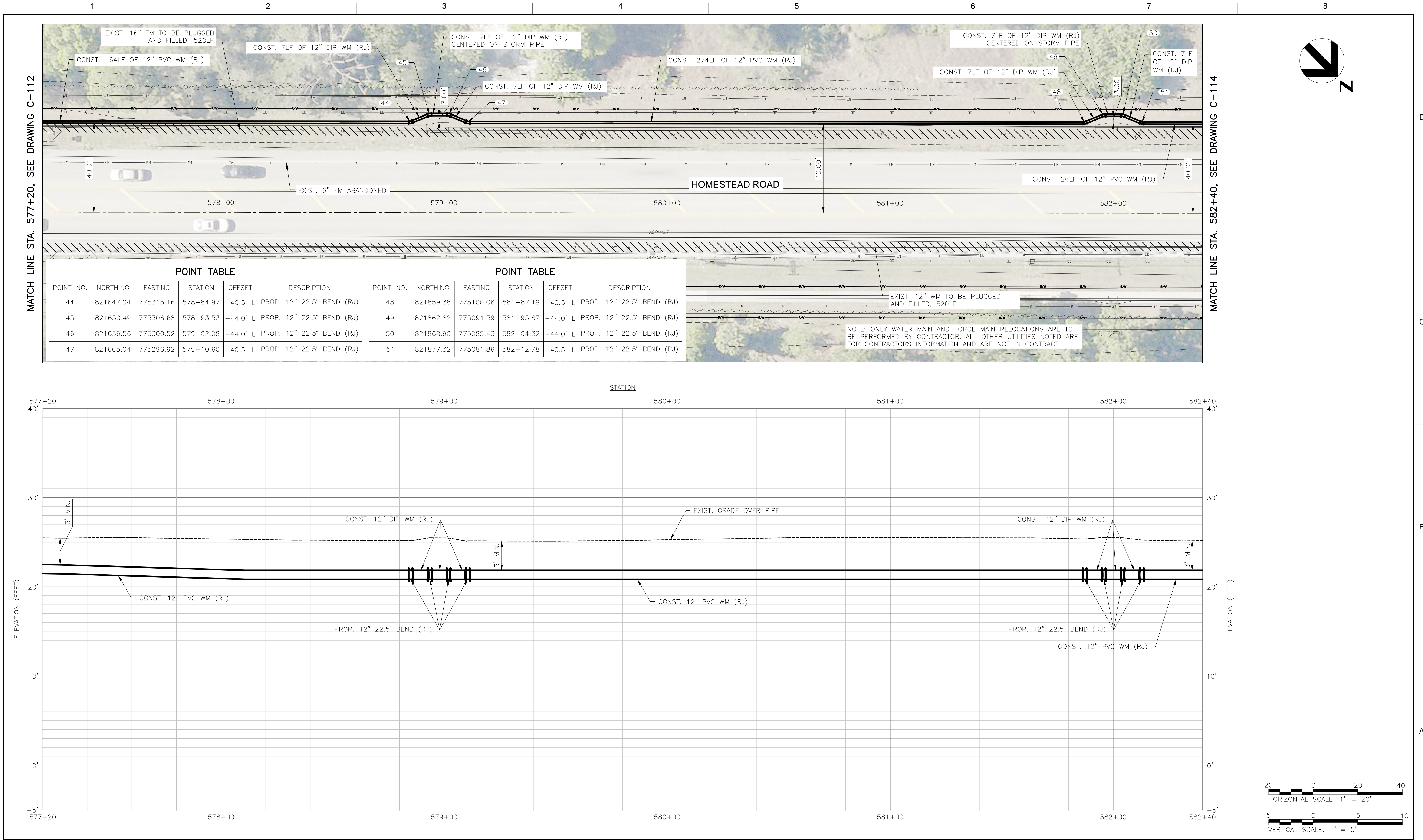
## HEET

C-111

















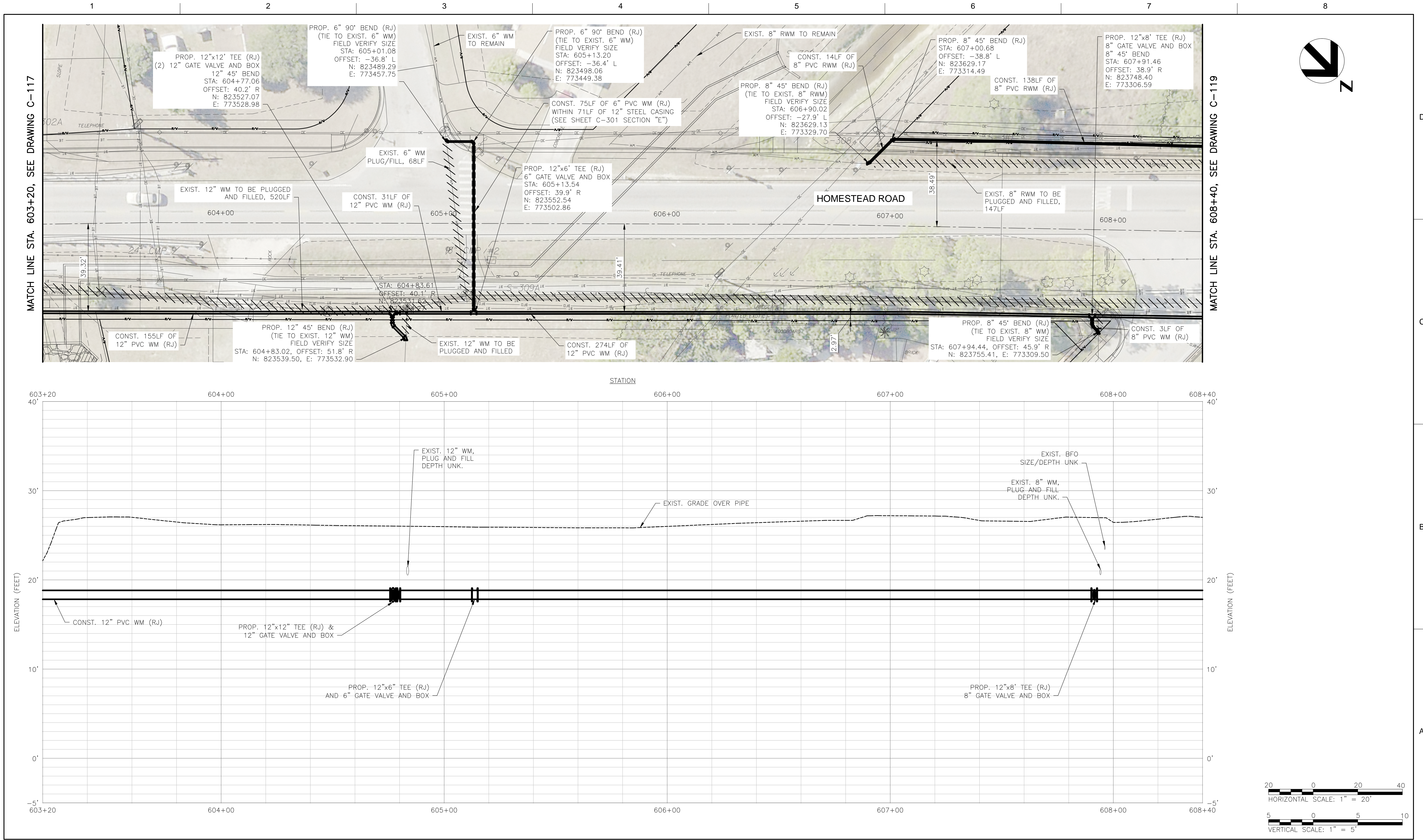












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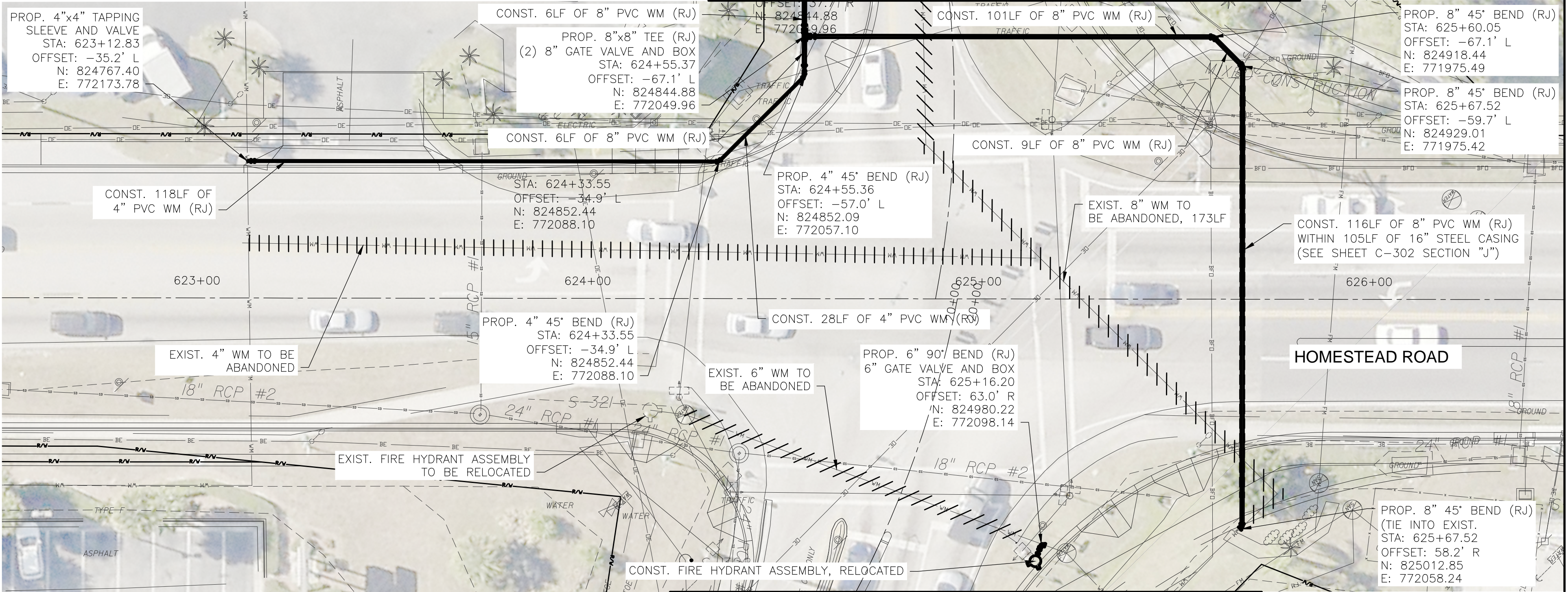
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	SCALE	AS NOTED	C-118





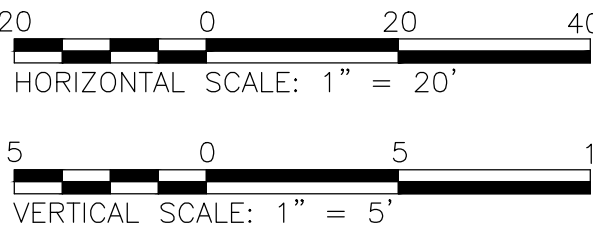
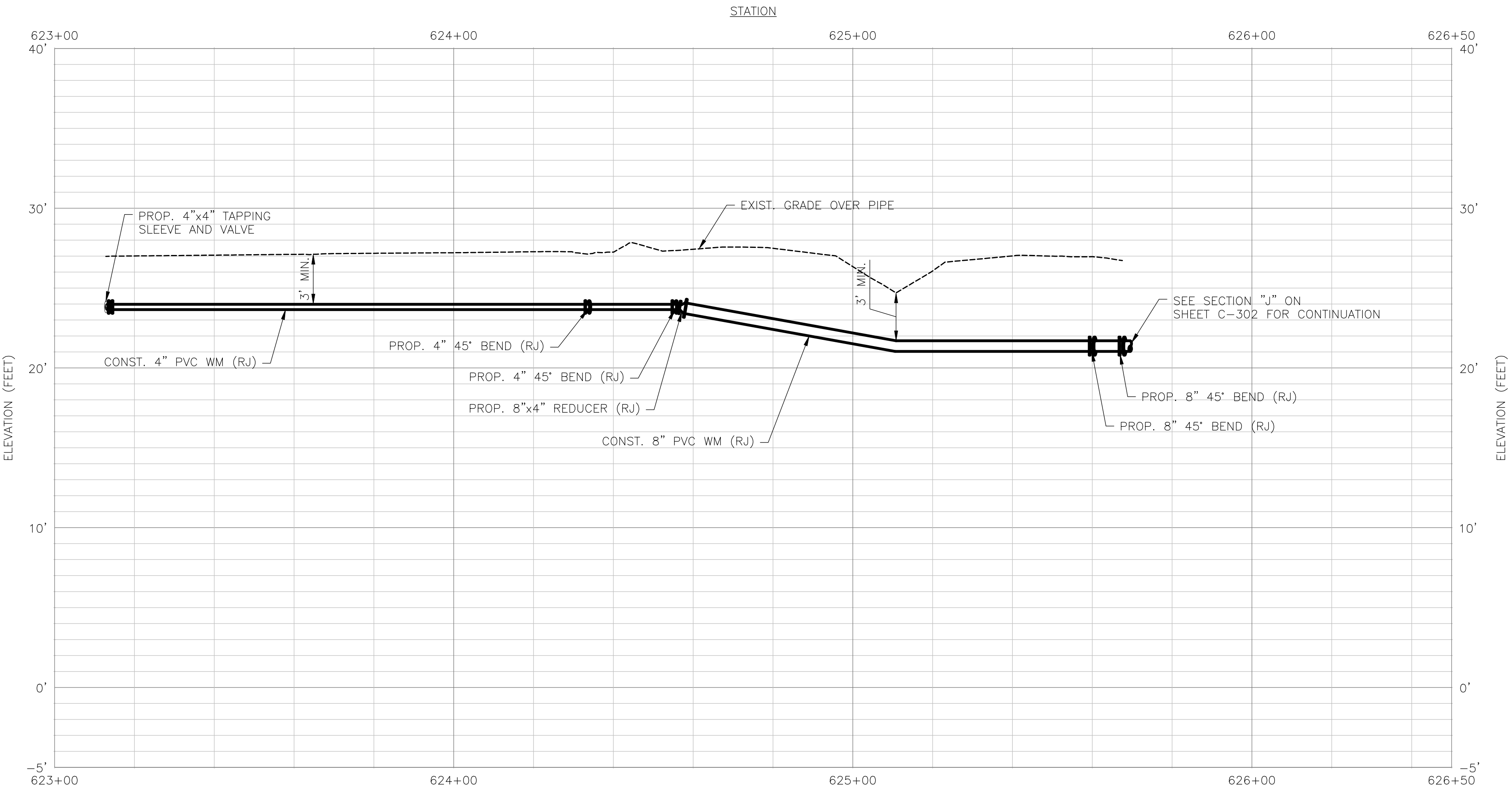


MATCH LINE, SEE DRAWING C-122



MATCH LINE STA. 626+50, SEE DRAWING C-121

MATCH LINE STA, SEE DRAWING C-122

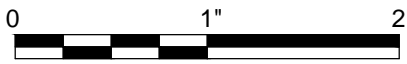


ISSUE	DATE	DESCRIPTION
1	02/2016	90% SUBMITTAL

PROJECT MANAGER	JEFF CRIGLER, PE.
DESIGNER	JTT
REVIEWER	TSH
PROJ. ENGINEER	HLM
PROJECT NUMBER	250366

FGUA  
LEHIGH HOMESTEAD ROAD  
WATER AND WASTEWATER UTILITY PROJECT

HOMESTEAD ROAD WM  
PLAN & PROFILE



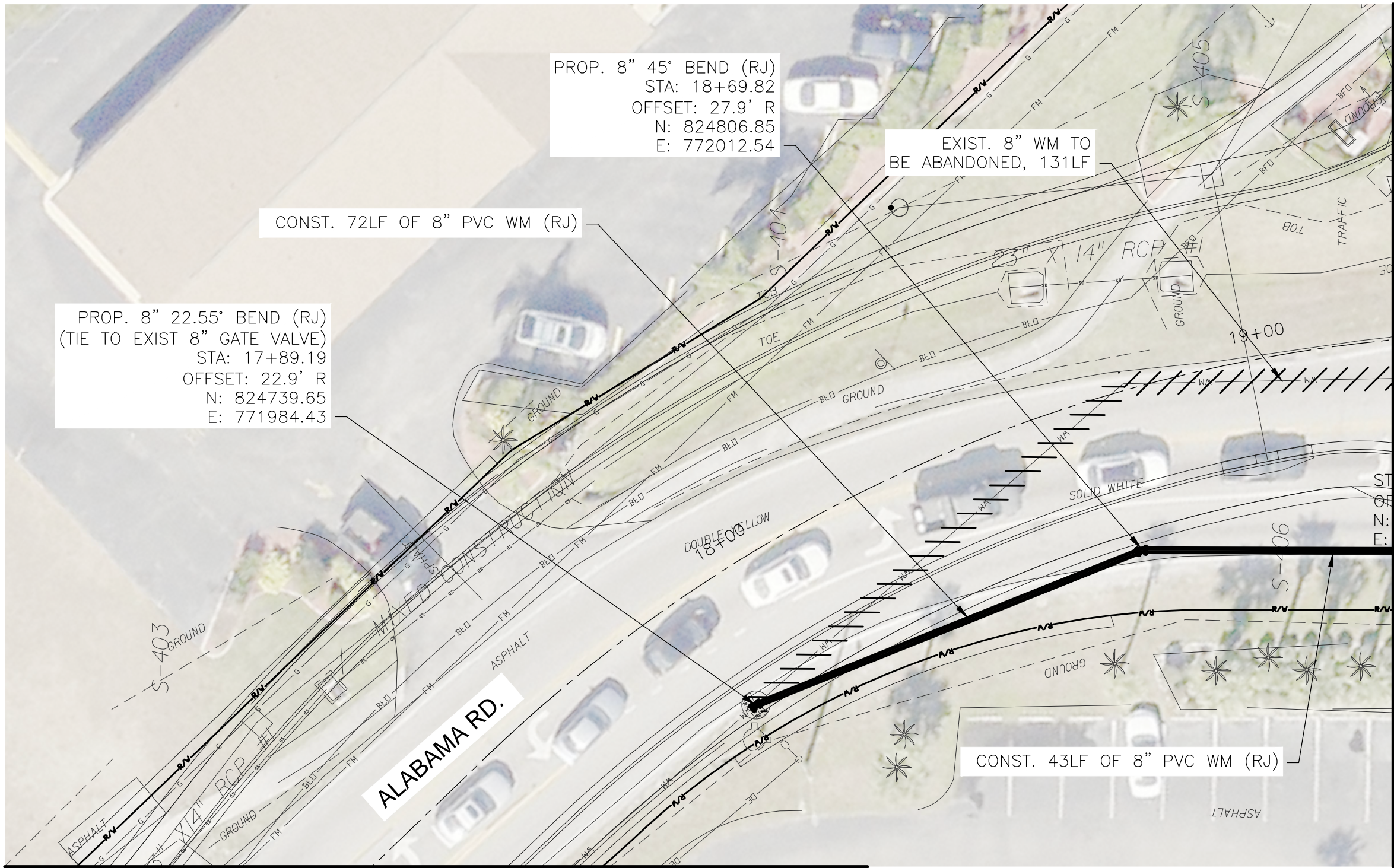
FILENAME C-120.DWG  
SCALE AS NOTED

SHEET  
C-120

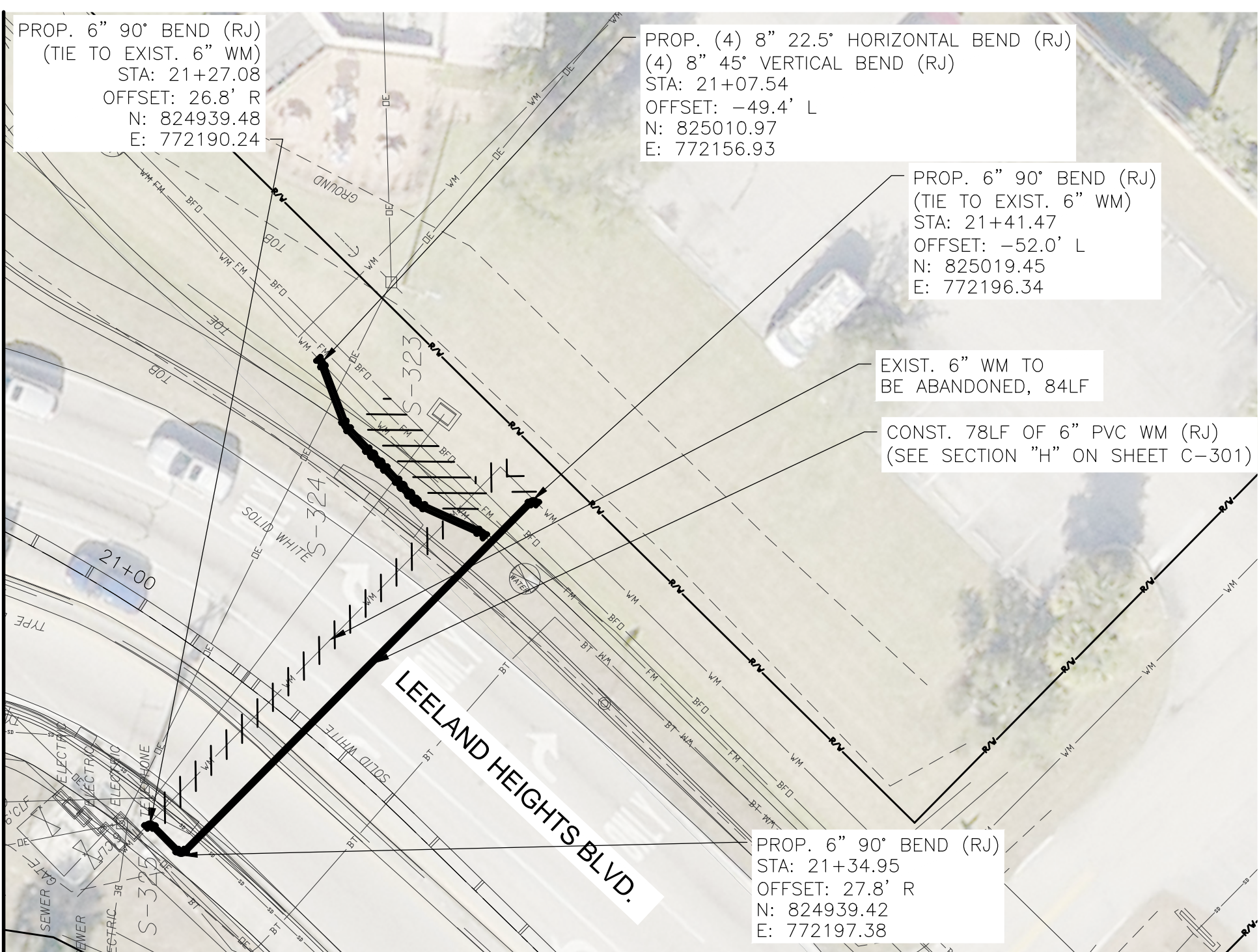
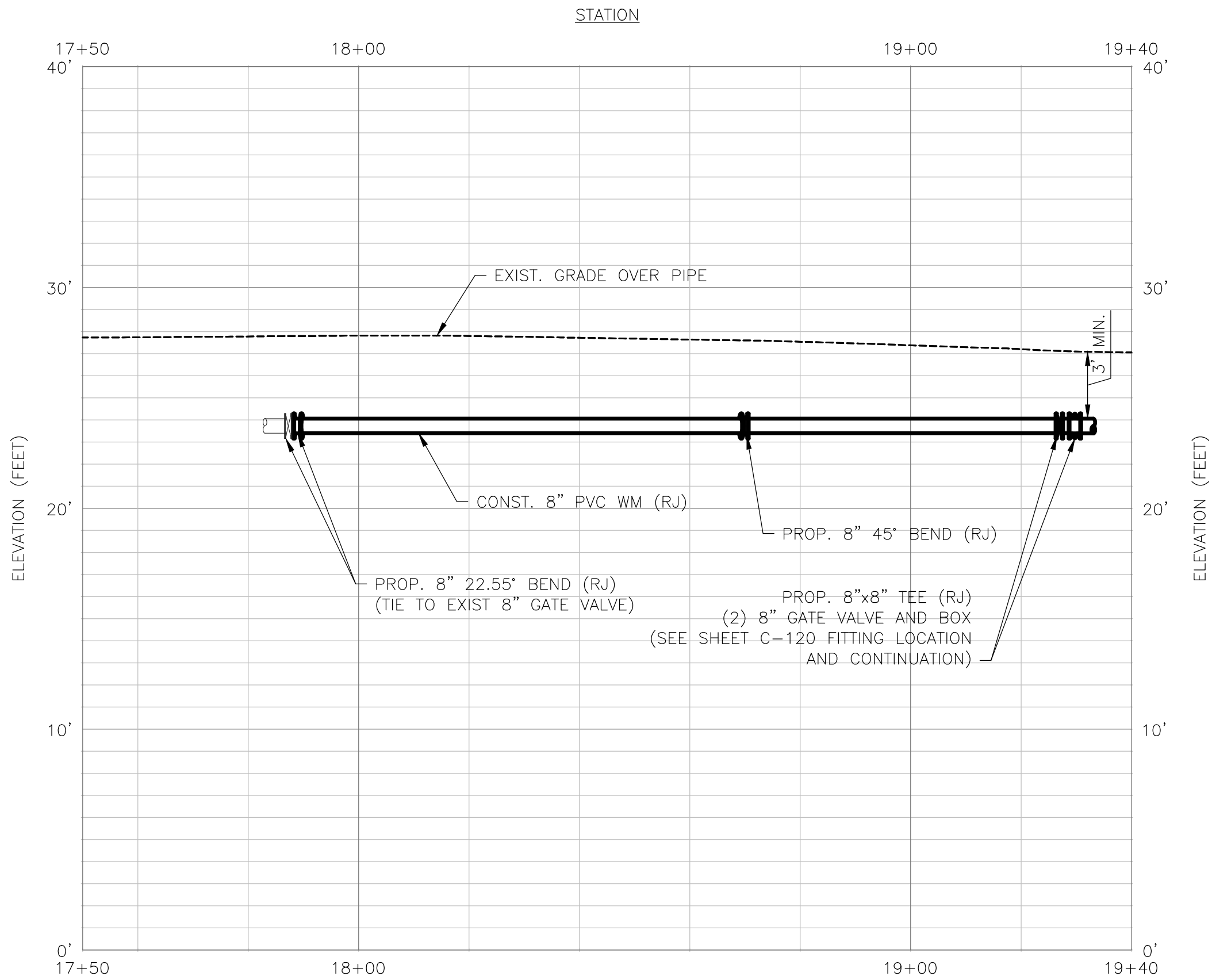




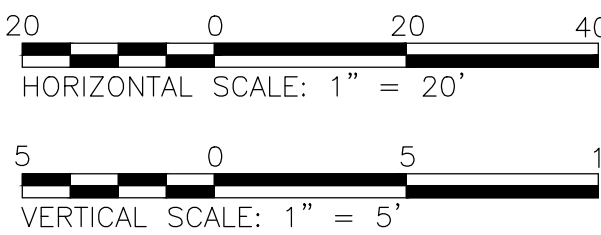
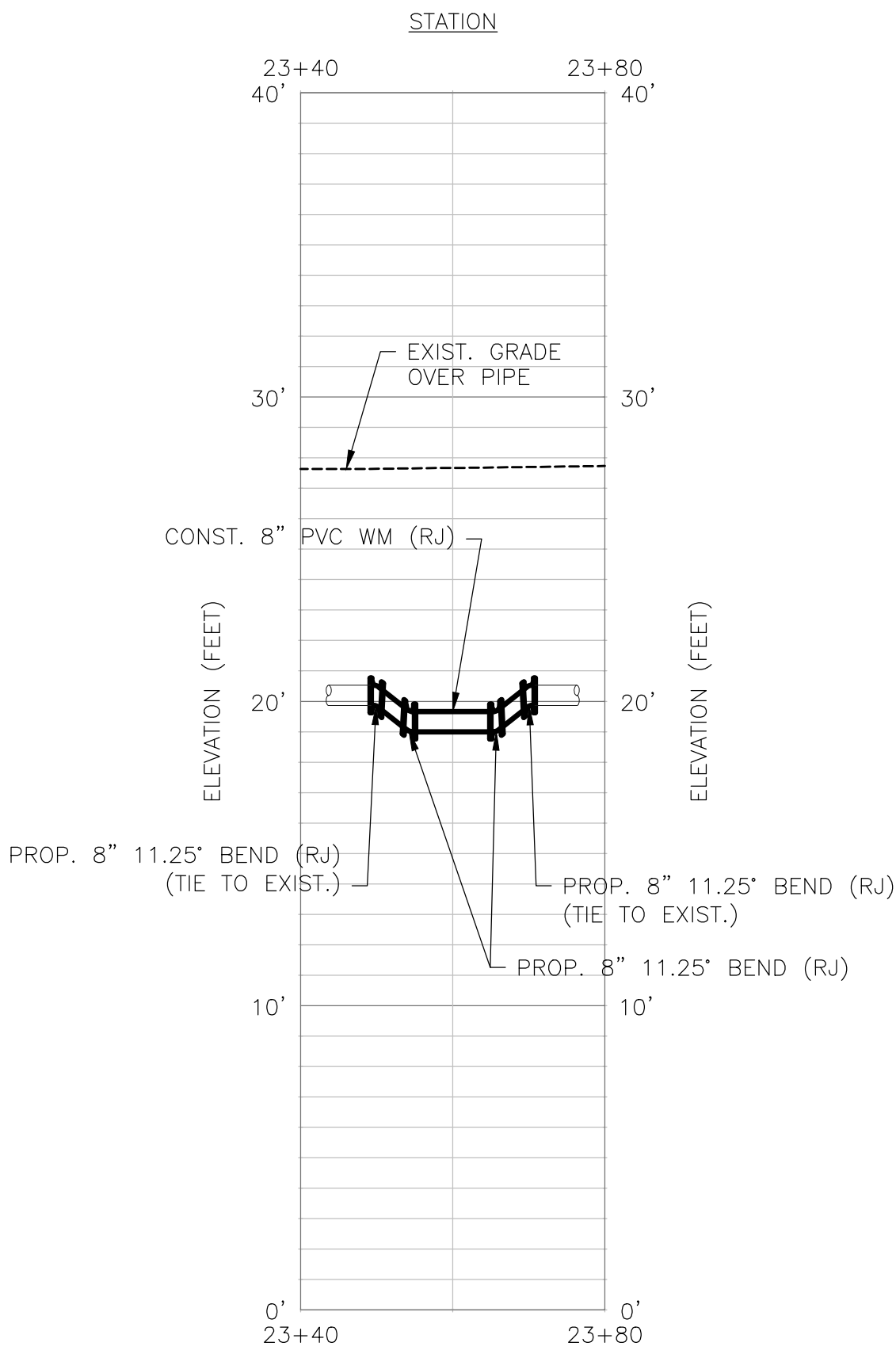




MATCH LINE, SEE DRAWING C-123



MATCH LINE, SEE DRAWING C-123



ISSUE	DATE	DESCRIPTION
1	02/2016	90% SUBMITTAL

PROJECT MANAGER	JEFF CRIGLER, PE.
DESIGNER	JTT
REVIEWER	TSH
PROJ. ENGINEER	HLM
PROJECT NUMBER	250366

FGUA  
LEHIGH HOMESTEAD ROAD  
WATER AND WASTEWATER UTILITY PROJECT

HOMESTEAD ROAD WM  
PLAN & PROFILE



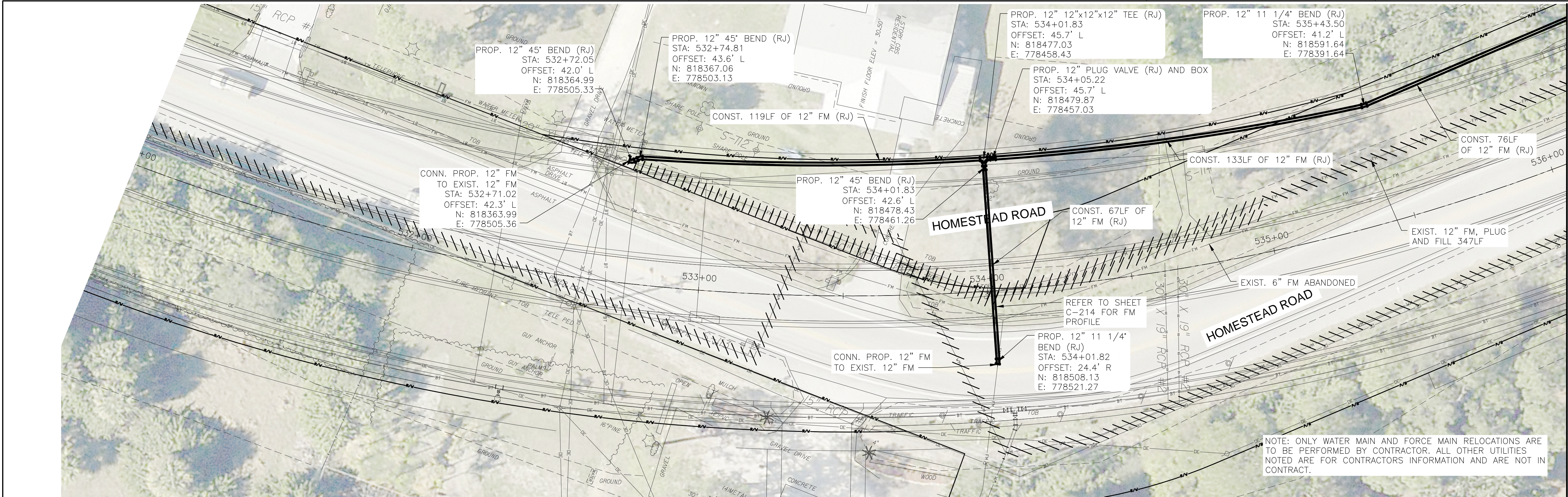
FILENAME C-122.DWG  
SCALE AS NOTED

SHEET  
C-122

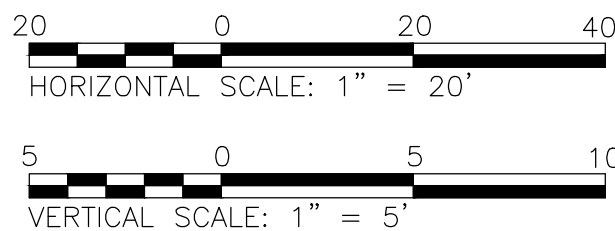
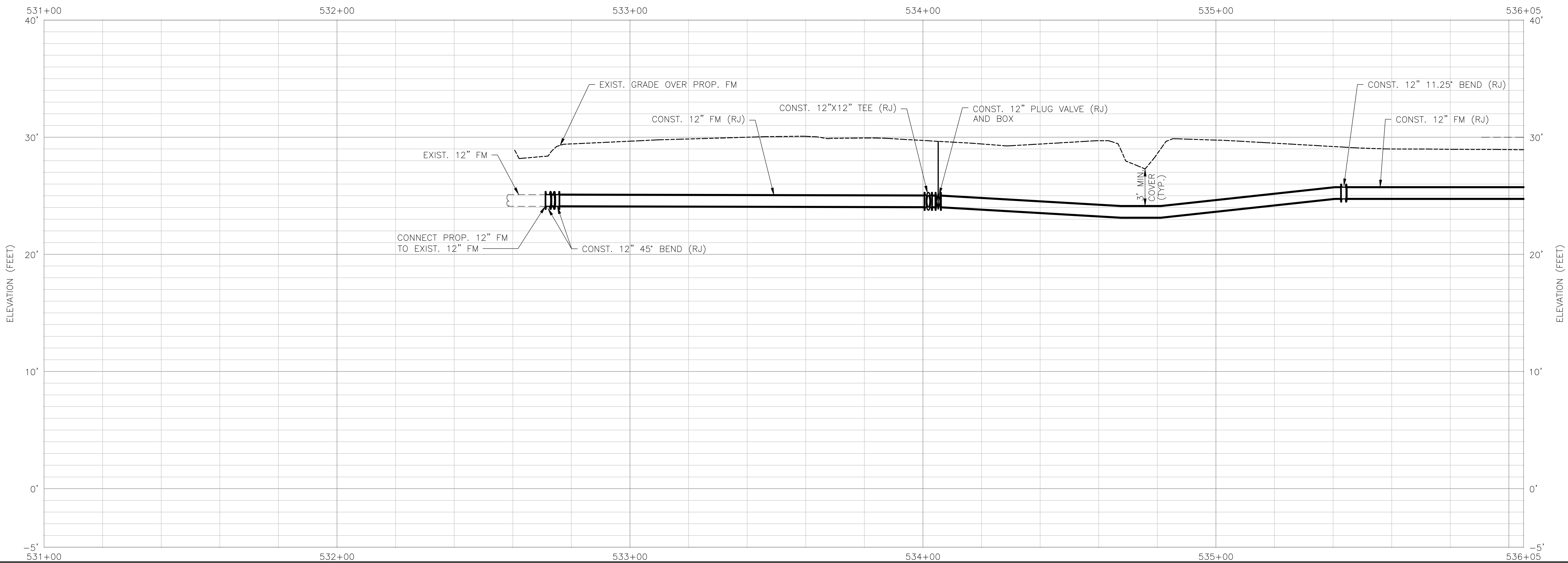
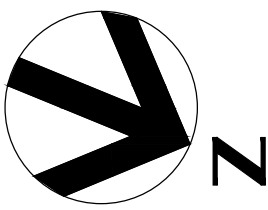








MATCH LINE STA. 536+05, SEE DRAWING C-201



ISSUE	DATE	DESCRIPTION
1	02/2016	90% SUBMITTAL

PROJECT MANAGER	JEFF CRIGLER, PE.
DESIGNER	JTT
REVIEWER	TSH
PROJ. ENGINEER	HLM
PROJECT NUMBER	250366

FGUA  
LEHIGH HOMESTEAD ROAD  
WATER AND WASTEWATER UTILITY PROJECT

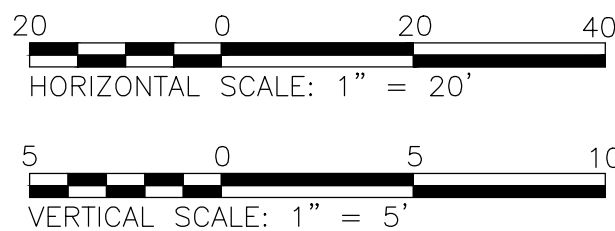
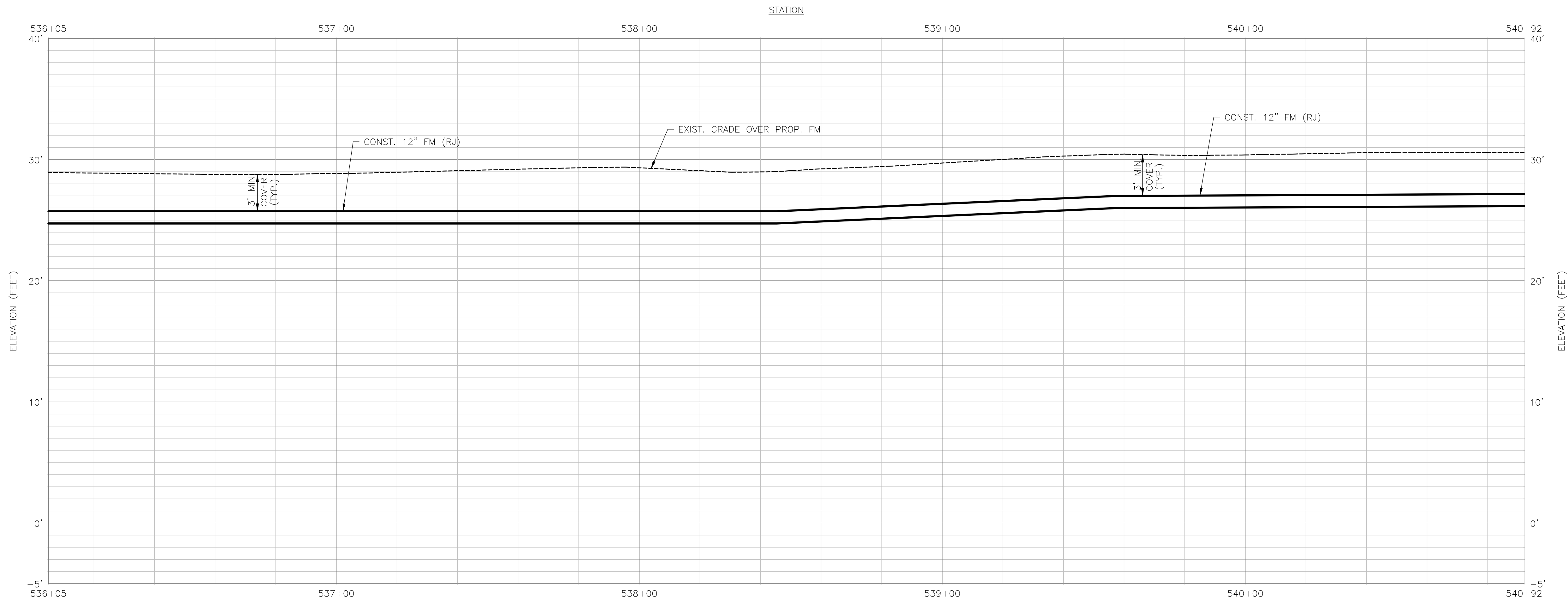
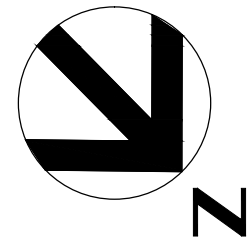
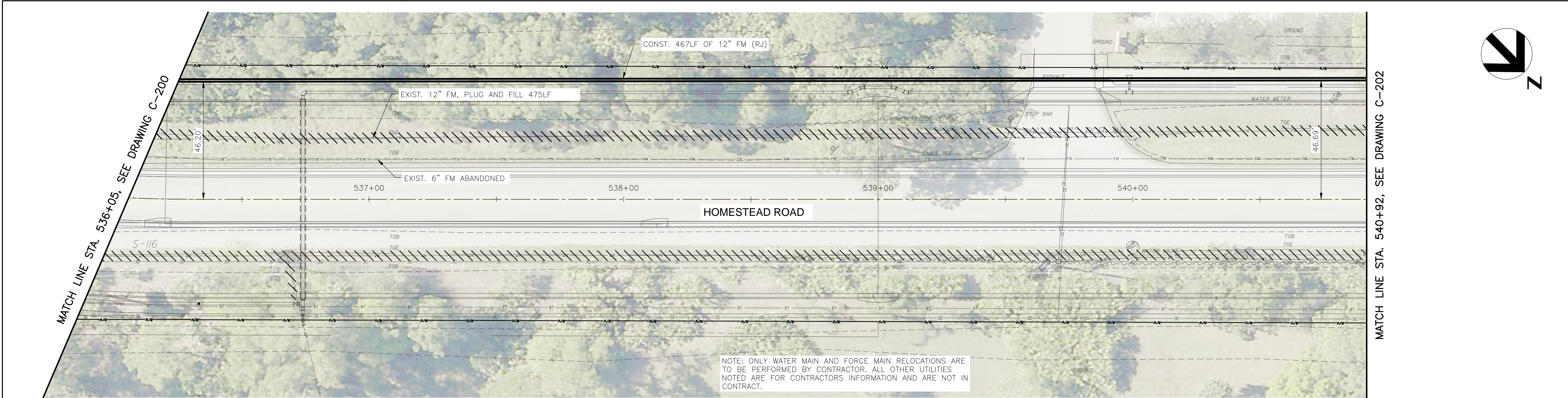
HOMESTEAD ROAD FM  
PLAN & PROFILE



FILENAME C-200.DWG  
SCALE AS NOTED

SHEET  
C-200

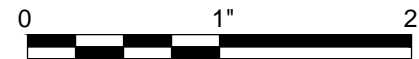




1	02/2016	90% SUBMITTAL
ISSUE	DATE	DESCRIPTION

PROJECT MANAGER	JEFF CRIGLER, PE.
DESIGNER	JTT
REVIEWER	TSH
PROJ. ENGINEER	HLM
PROJECT NUMBER	250366

FGUA  
LEHIGH HOMESTEAD ROAD  
WATER AND WASTEWATER UTILITY PROJECT



HOMESTEAD ROAD FM  
PLAN & PROFILE

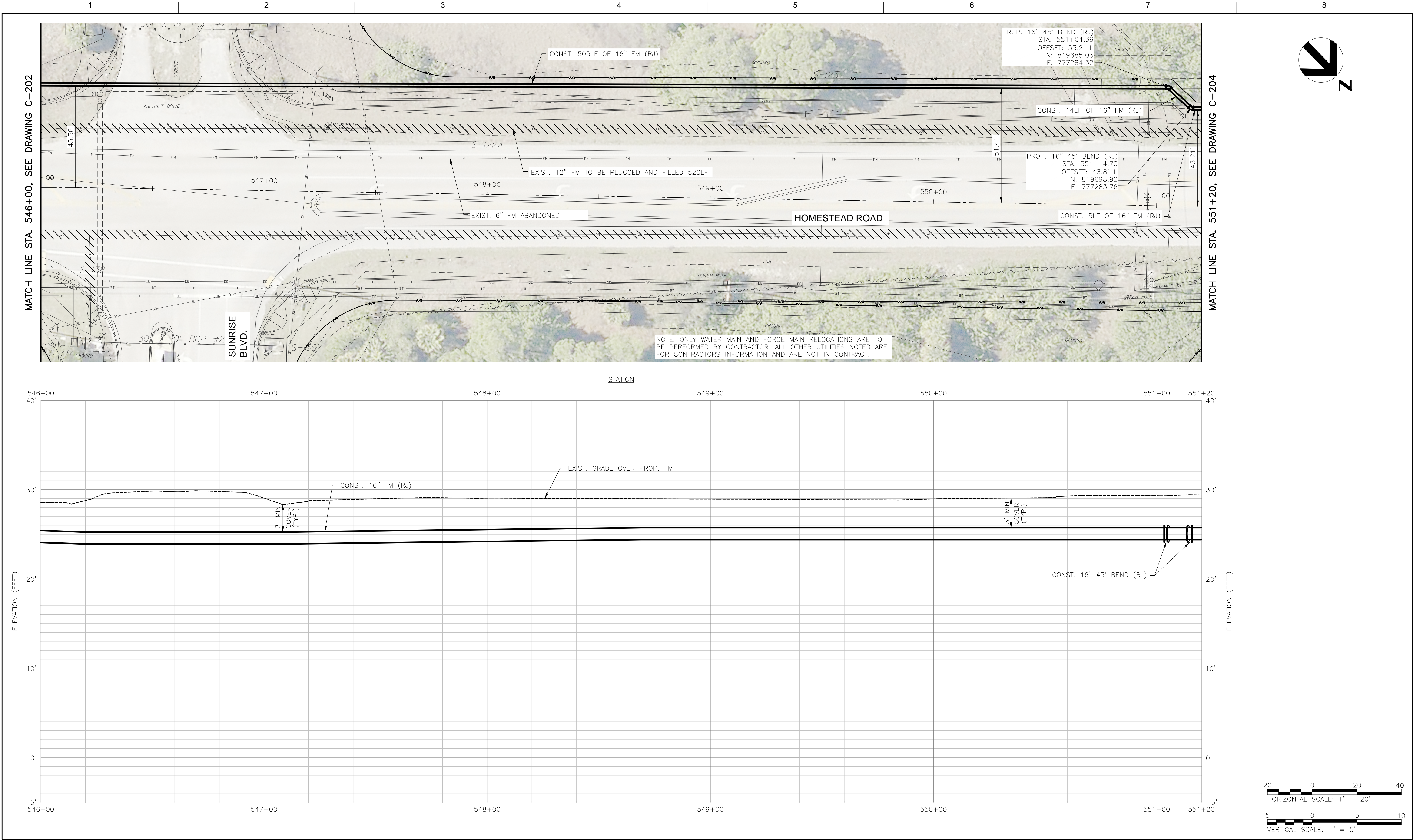
FILENAME	C-201.DWG
SCALE	AS NOTED

SHEET	C-201
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HDR ENGINEERING, INC  
2601 CATTLEMEN ROAD, STE 400  
SARASOTA, FL 34232  
CA 4213

1	02/2016	90% SUBMITTAL
ISSUE	DATE	DESCRIPTION

PROJECT MANAGER	JEFF CRIGLER, PE.
DESIGNER	JTT
REVIEWER	TSH
PROJ. ENGINEER	HLM
PROJECT NUMBER	250366

FGUA  
LEHIGH HOMESTEAD ROAD  
WATER AND WASTEWATER UTILITY PROJECT

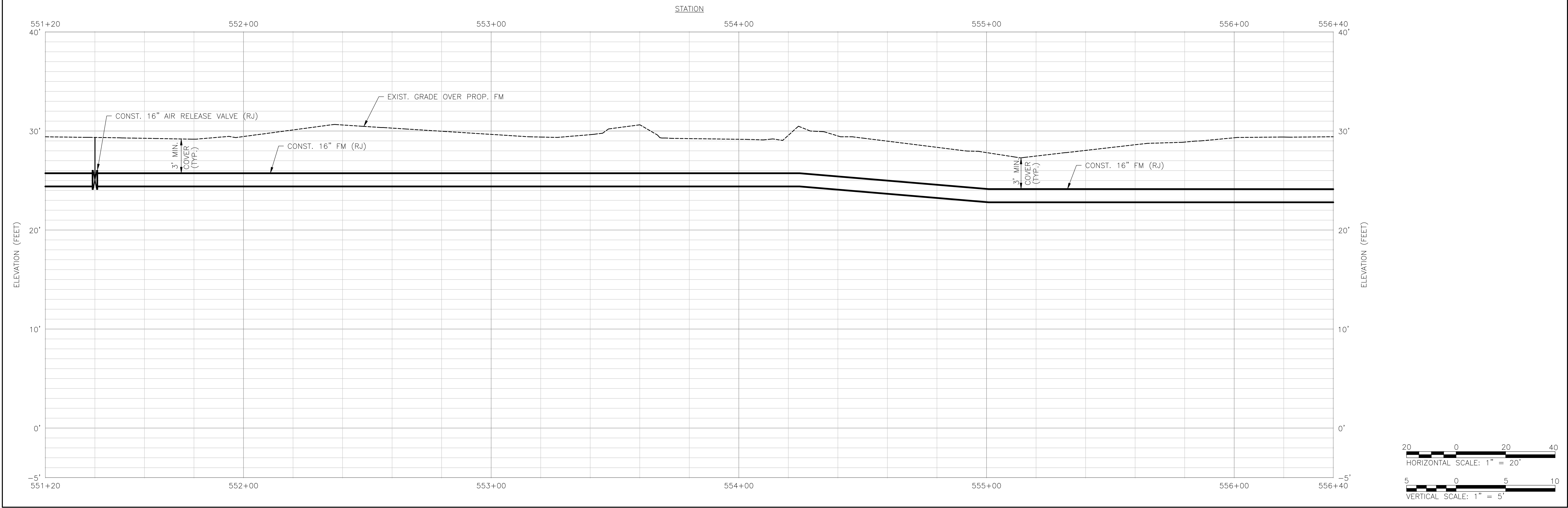
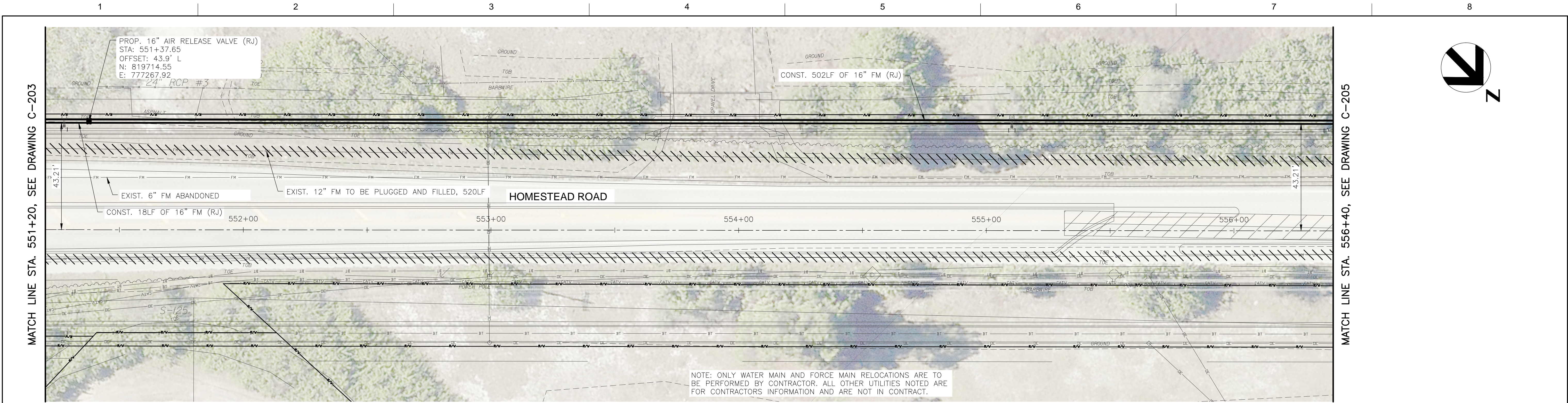


HOMESTEAD ROAD FM  
PLAN & PROFILE

FILENAME	C-203.DWG
SCALE	AS NOTED

SHEET	C-203
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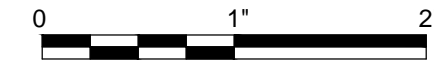


HDR ENGINEERING, INC  
2601 CATTLEMEN ROAD, STE 400  
SARASOTA, FL 34232  
CA 4213

1	02/2016	90% SUBMITTAL
ISSUE	DATE	DESCRIPTION

PROJECT MANAGER	JEFF CRIGLER, PE.
DESIGNER	JTT
REVIEWER	TSH
PROJ. ENGINEER	HLM
PROJECT NUMBER	250366

FGUA  
LEHIGH HOMESTEAD ROAD  
WATER AND WASTEWATER UTILITY PROJECT

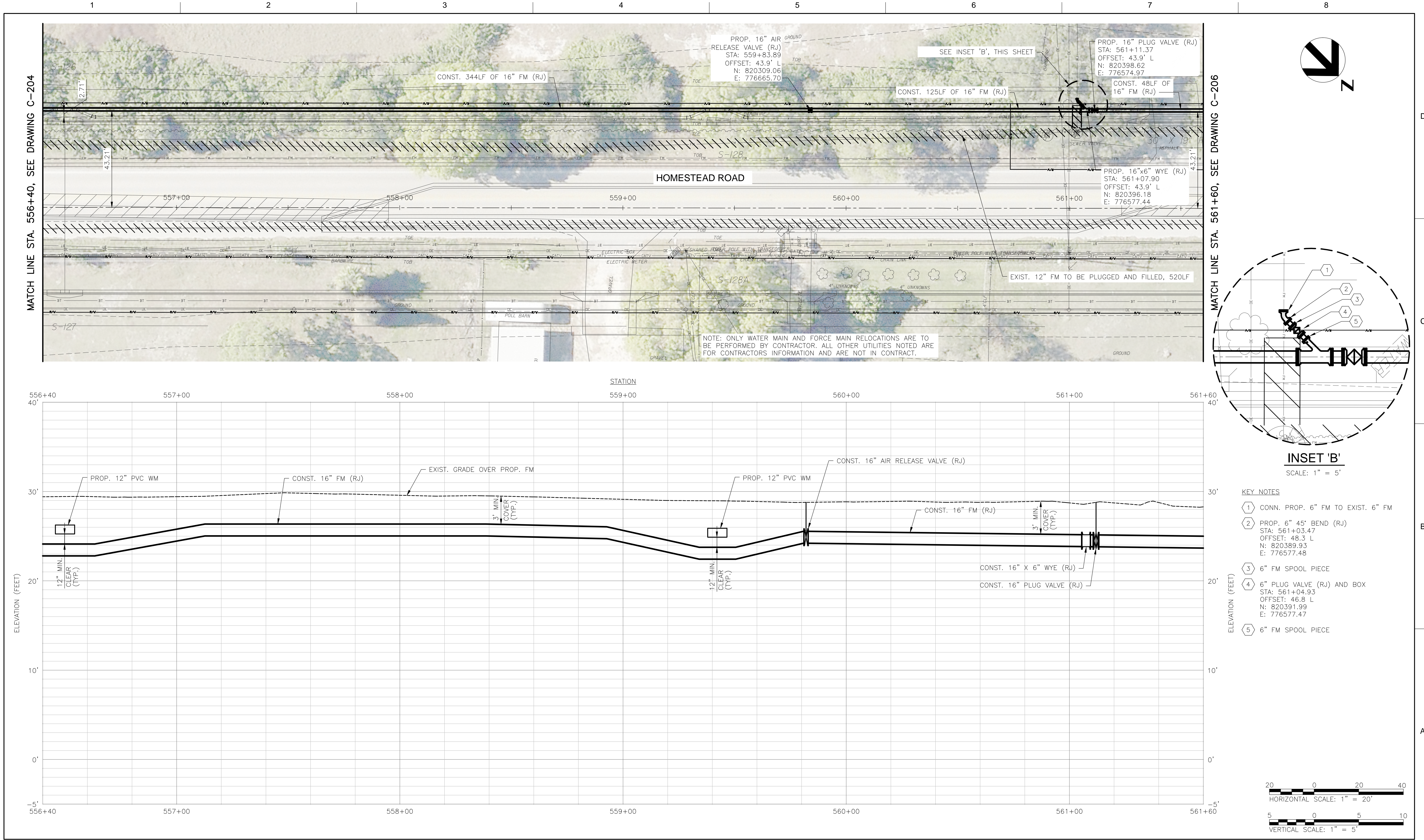


HOMESTEAD ROAD FM  
PLAN & PROFILE

FILENAME C-204.DWG  
SCALE AS NOTED

SHEET  
C-204

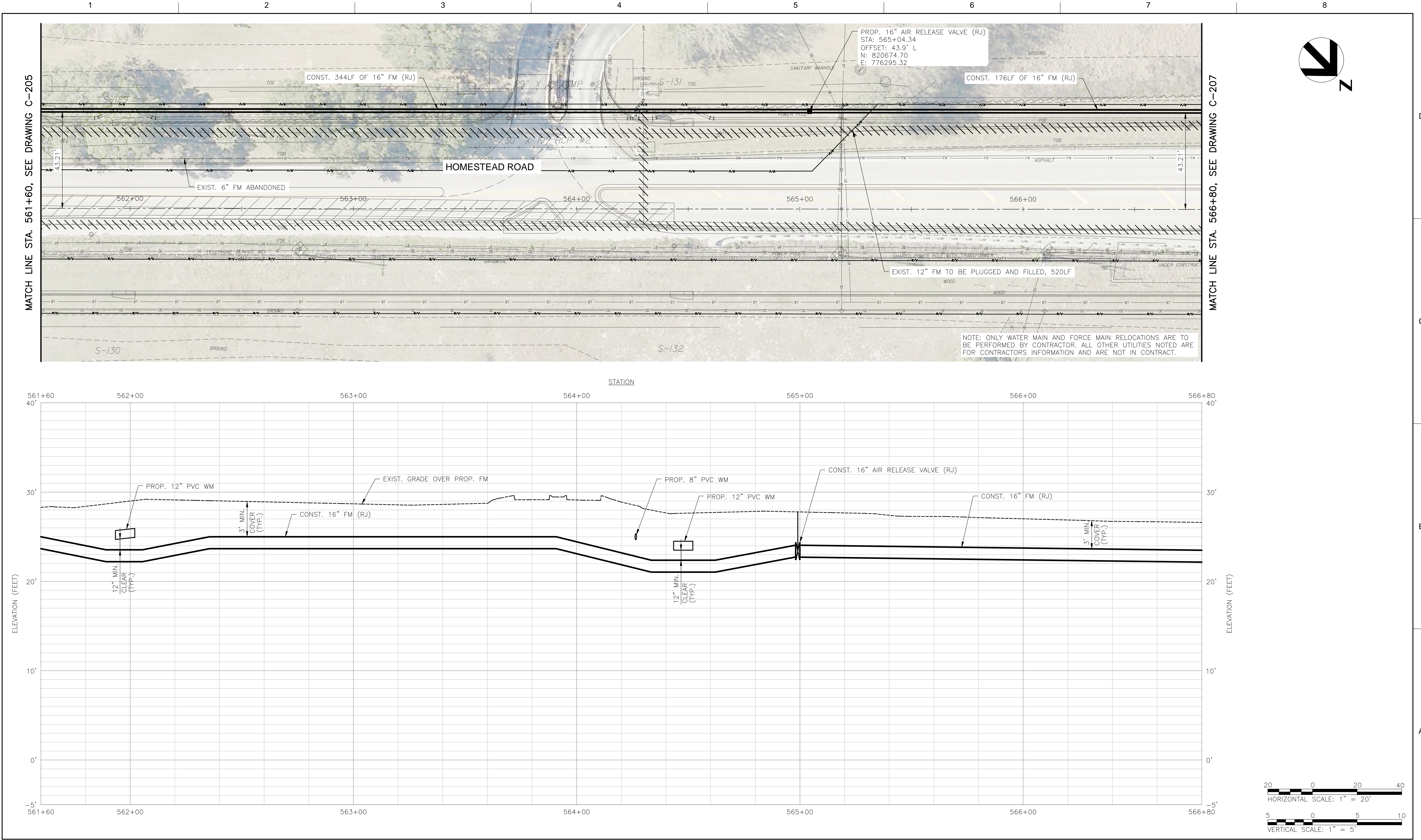




1	02/2016	90% SUBMITTAL
ISSUE	DATE	DESCRIPTION

PROJECT MANAGER	JEFF CRIGLER, PE.
DESIGNER	JTT
REVIEWER	TSH
PROJ. ENGINEER	HLM
PROJECT NUMBER	250366





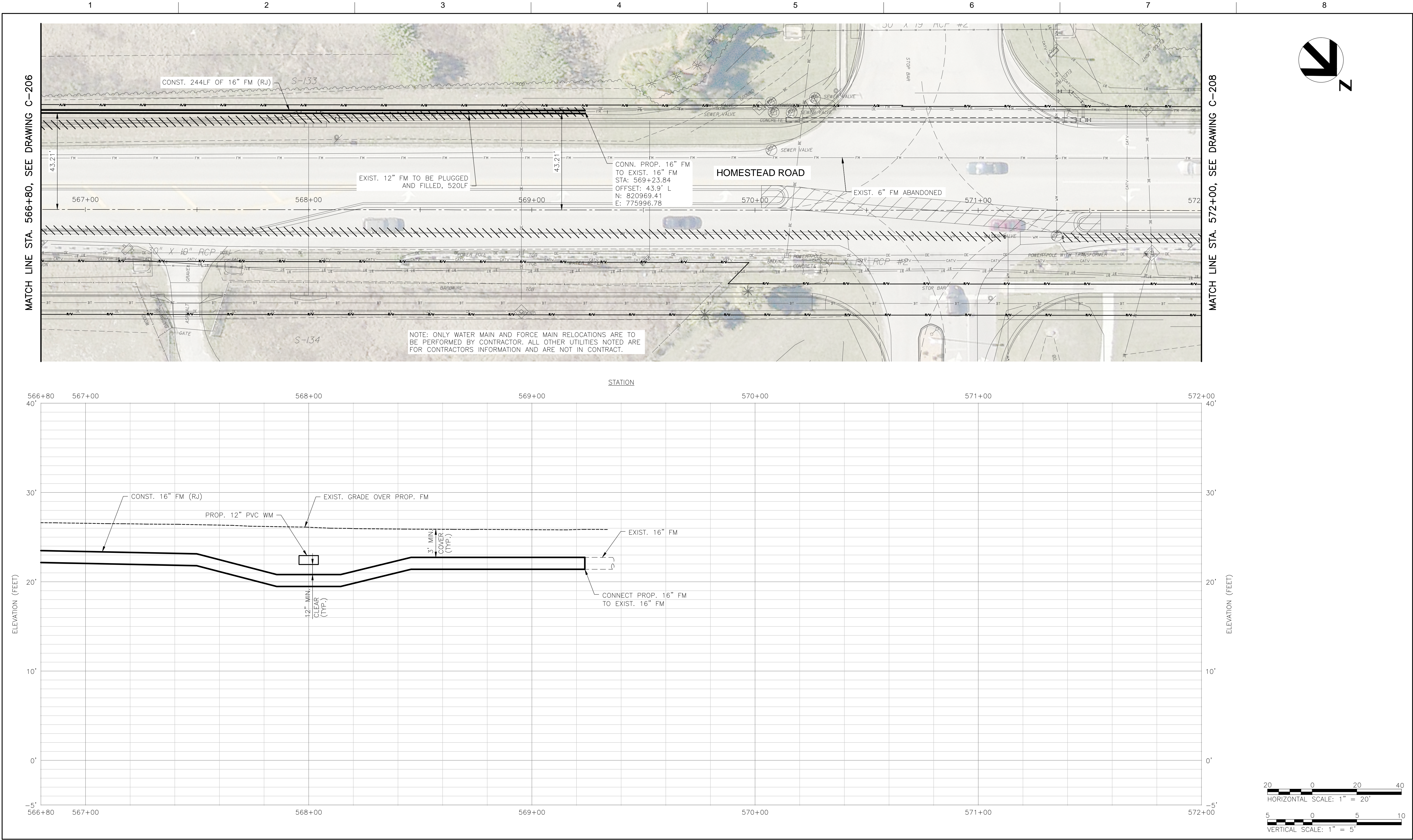
1	02/2016	90% SUBMITTAL
ISSUE	DATE	DESCRIPTION

PROJECT MANAGER	JEFF CRIGLER, PE.
DESIGNER	JTT
REVIEWER	TSH
PROJ. ENGINEER	HLM
PROJECT NUMBER	250366

FGUA  
LEHIGH HOMESTEAD ROAD  
WATER AND WASTEWATER UTILITY PROJECT

HOMESTEAD ROAD FM  
PLAN & PROFILE



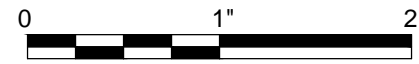


HDR ENGINEERING, INC  
2601 CATTLEMEN ROAD, STE 400  
SARASOTA, FL 34232  
CA 4213

1	02/2016	90% SUBMITTAL
ISSUE	DATE	DESCRIPTION

PROJECT MANAGER	JEFF CRIGLER, PE.
DESIGNER	JTT
REVIEWER	TSH
PROJ. ENGINEER	HLM
PROJECT NUMBER	250366

FGUA  
LEHIGH HOMESTEAD ROAD  
WATER AND WASTEWATER UTILITY PROJECT

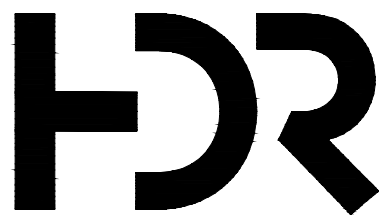
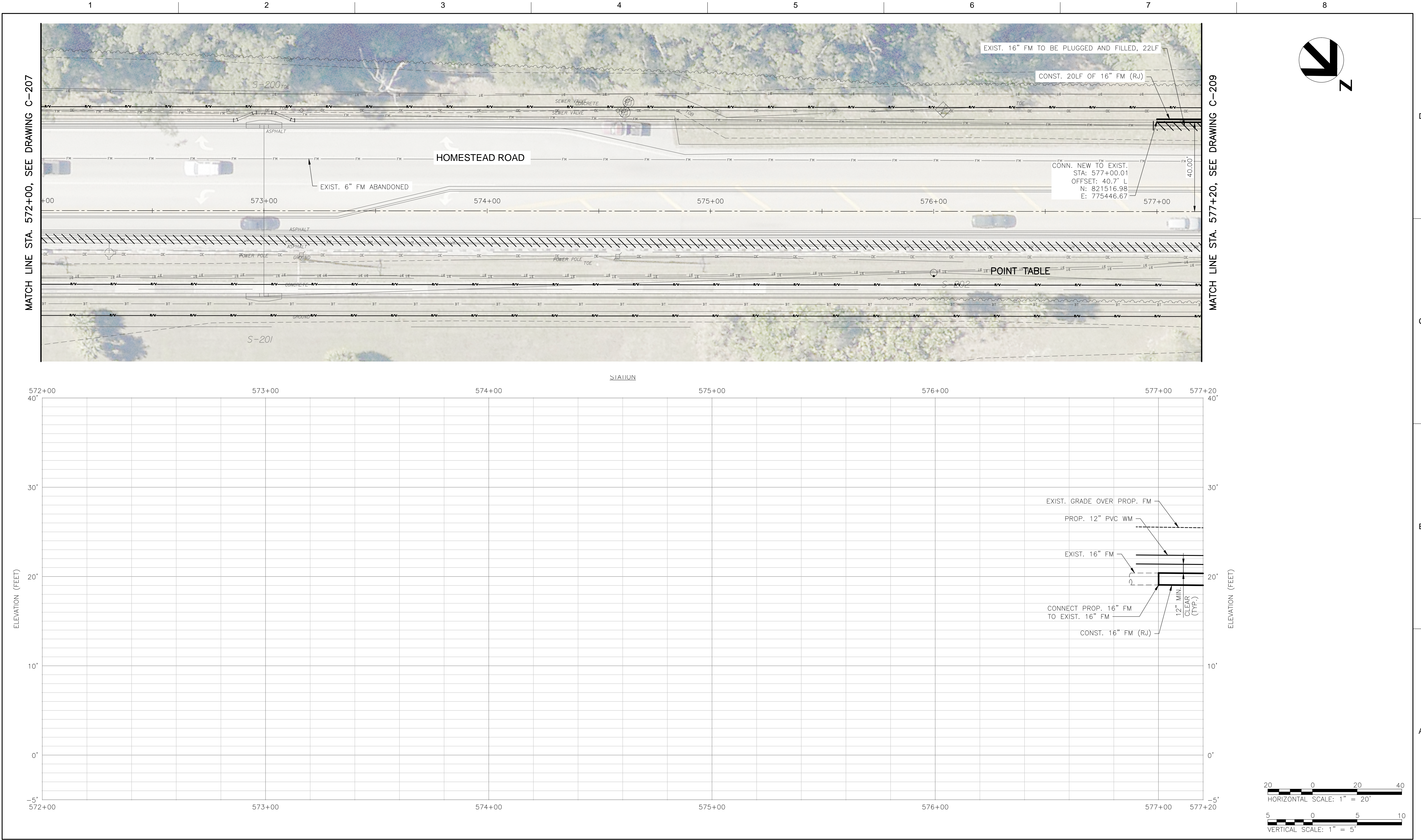


FILENAME | C-207.DWG  
SCALE | AS NOTED

HOMESTEAD ROAD FM  
PLAN & PROFILE

SHEET  
C-207





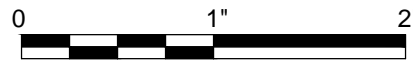
HDR ENGINEERING, INC  
2601 CATTLEMEN ROAD, STE 400  
SARASOTA, FL 34232  
CA 4213

1	02/2016	90% SUBMITTAL
ISSUE	DATE	DESCRIPTION

PROJECT MANAGER	JEFF CRIGLER, PE.
DESIGNER	JTT
REVIEWER	TSH
PROJ. ENGINEER	HLM
PROJECT NUMBER	250366

FGUA  
LEHIGH HOMESTEAD ROAD  
WATER AND WASTEWATER UTILITY PROJECT

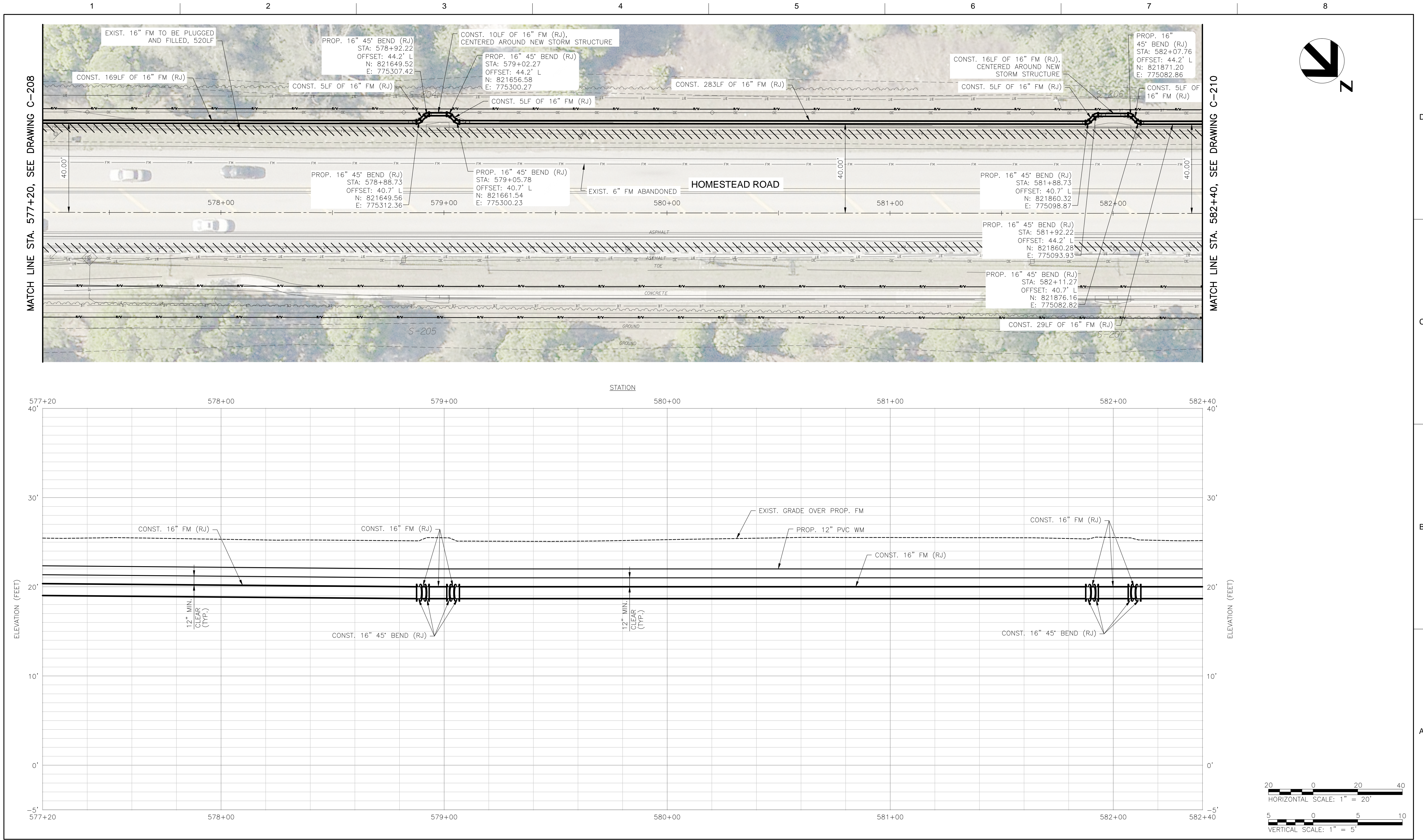
HOMESTEAD ROAD FM  
PLAN & PROFILE



FILENAME | C-208.DWG  
SCALE | AS NOTED

SHEET  
C-208





1	02/2016	90% SUBMITTAL
ISSUE	DATE	DESCRIPTION

PROJECT MANAGER	JEFF CRIGLER, PE.
DESIGNER	JTT
REVIEWER	TSH
PROJ. ENGINEER	HLM
PROJECT NUMBER	250366

FGUA  
LEHIGH HOMESTEAD ROAD  
WATER AND WASTEWATER UTILITY PROJECT

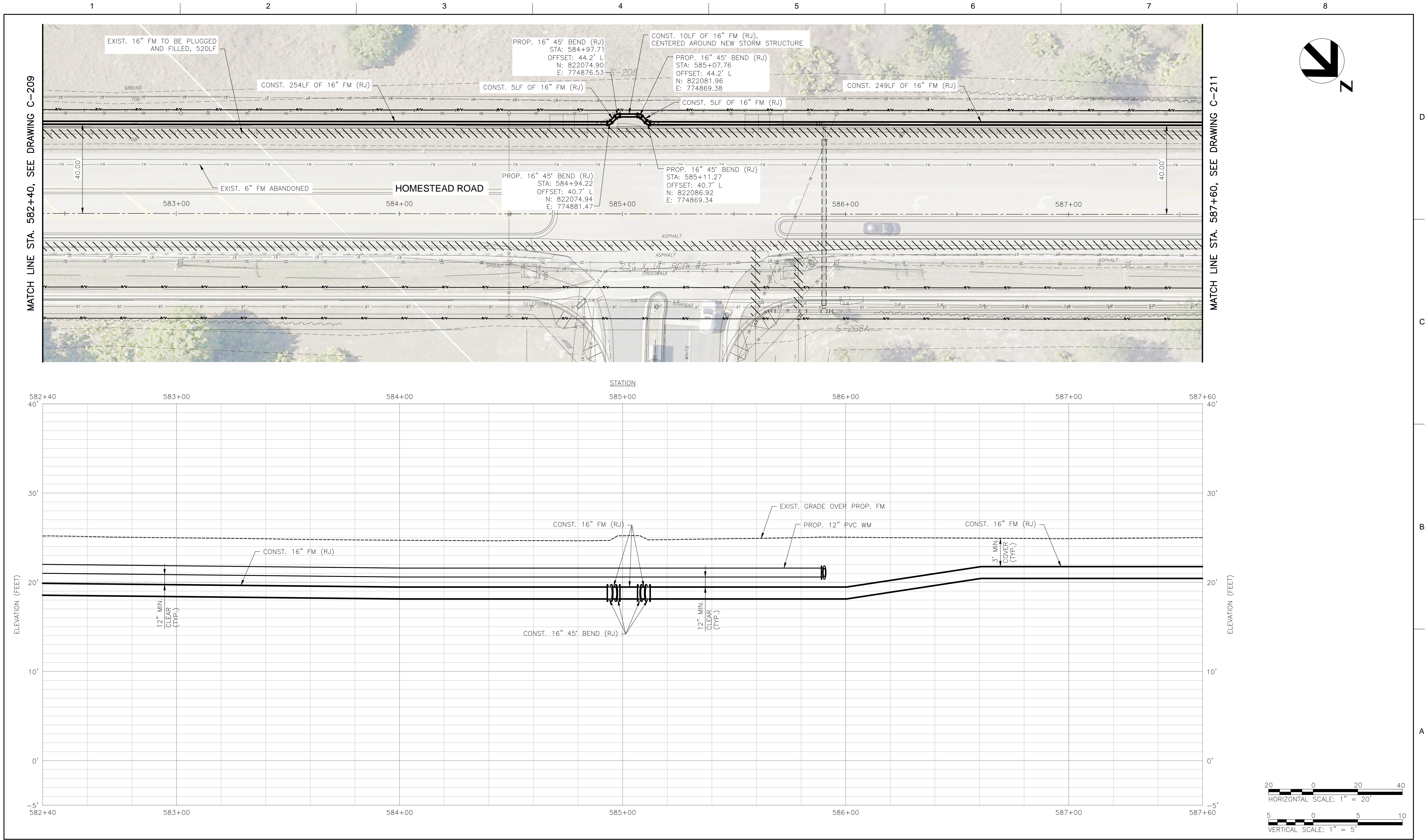
HOMESTEAD ROAD FM  
PLAN & PROFILE



FILENAME | C-209.DWG  
SCALE | AS NOTED

SHEET  
C-209





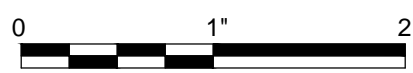
HDR ENGINEERING, INC  
2601 CATTLEMEN ROAD, STE 400  
SARASOTA, FL 34232  
CA 4213

1	02/2016	90% SUBMITTAL
ISSUE	DATE	DESCRIPTION

PROJECT MANAGER	JEFF CRIGLER, PE.
DESIGNER	JTT
REVIEWER	TSH
PROJ. ENGINEER	HLM
PROJECT NUMBER	250366

FGUA  
LEHIGH HOMESTEAD ROAD  
WATER AND WASTEWATER UTILITY PROJECT

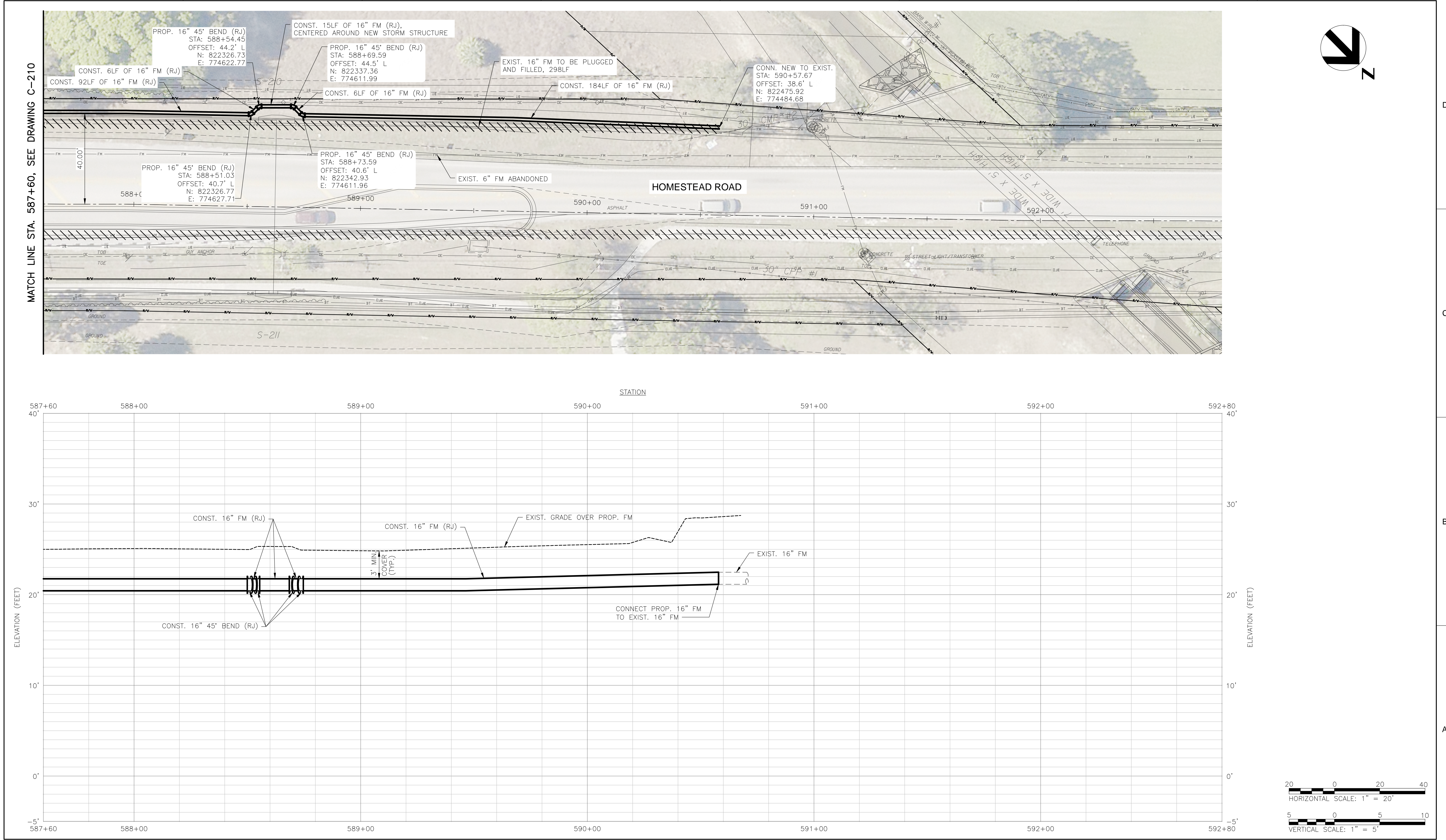
HOMESTEAD ROAD FM  
PLAN & PROFILE



FILENAME | C-210.DWG  
SCALE | AS NOTED

SHEET  
C-210





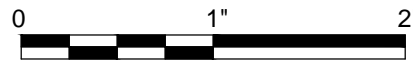
HDR ENGINEERING, INC  
2601 CATTLEMEN ROAD, STE 400  
SARASOTA, FL 34232  
CA 4213

1	02/2016	90% SUBMITTAL
ISSUE	DATE	DESCRIPTION

PROJECT MANAGER	JEFF CRIGLER, PE.
DESIGNER	JTT
REVIEWER	TSH
PROJ. ENGINEER	HLM
PROJECT NUMBER	250366

FGUA  
LEHIGH HOMESTEAD ROAD  
WATER AND WASTEWATER UTILITY PROJECT

HOMESTEAD ROAD FM  
PLAN & PROFILE



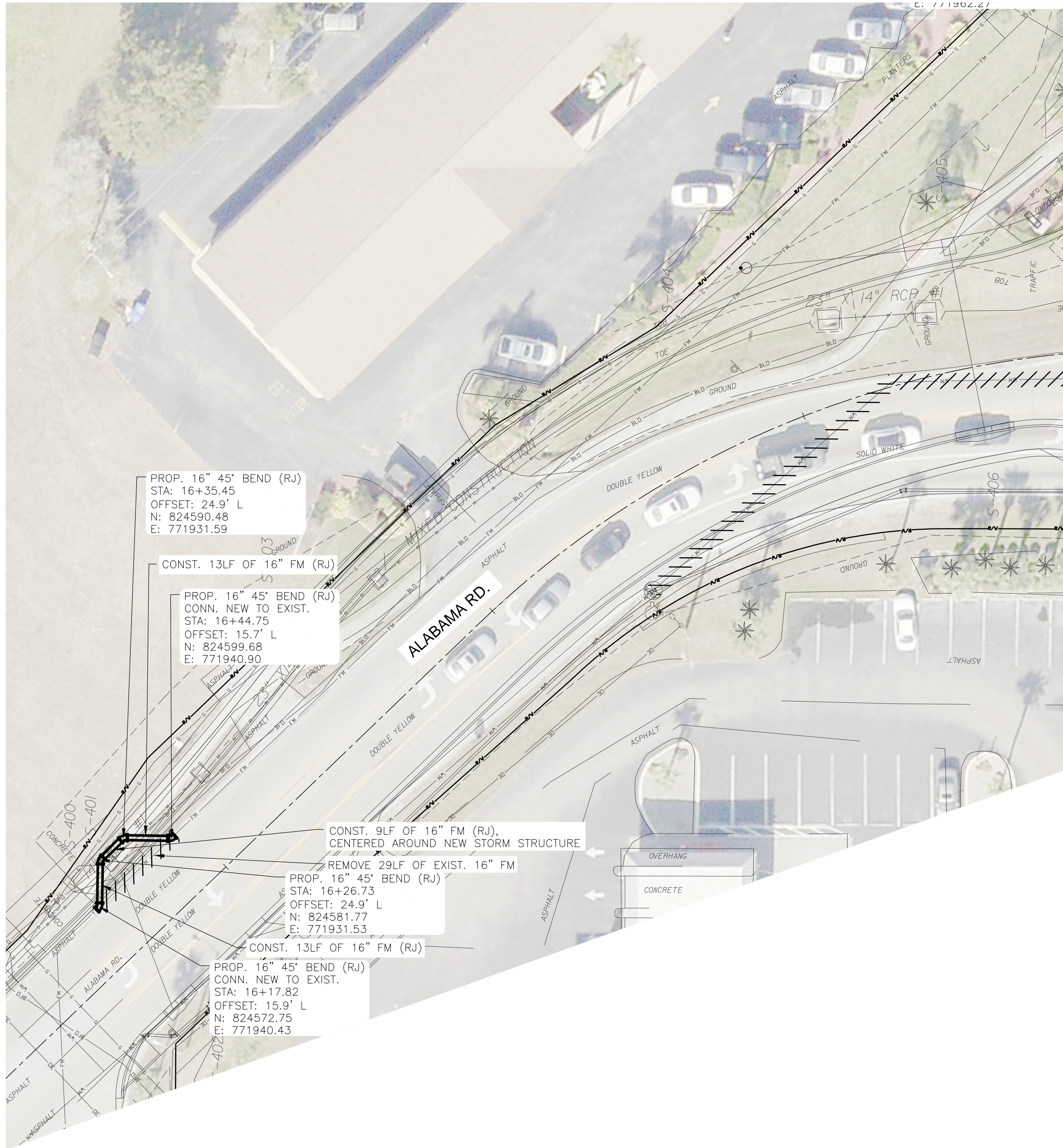
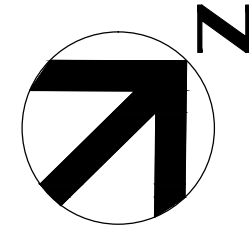
FILENAME | C-211.DWG  
SCALE | AS NOTED

SHEET  
C-211

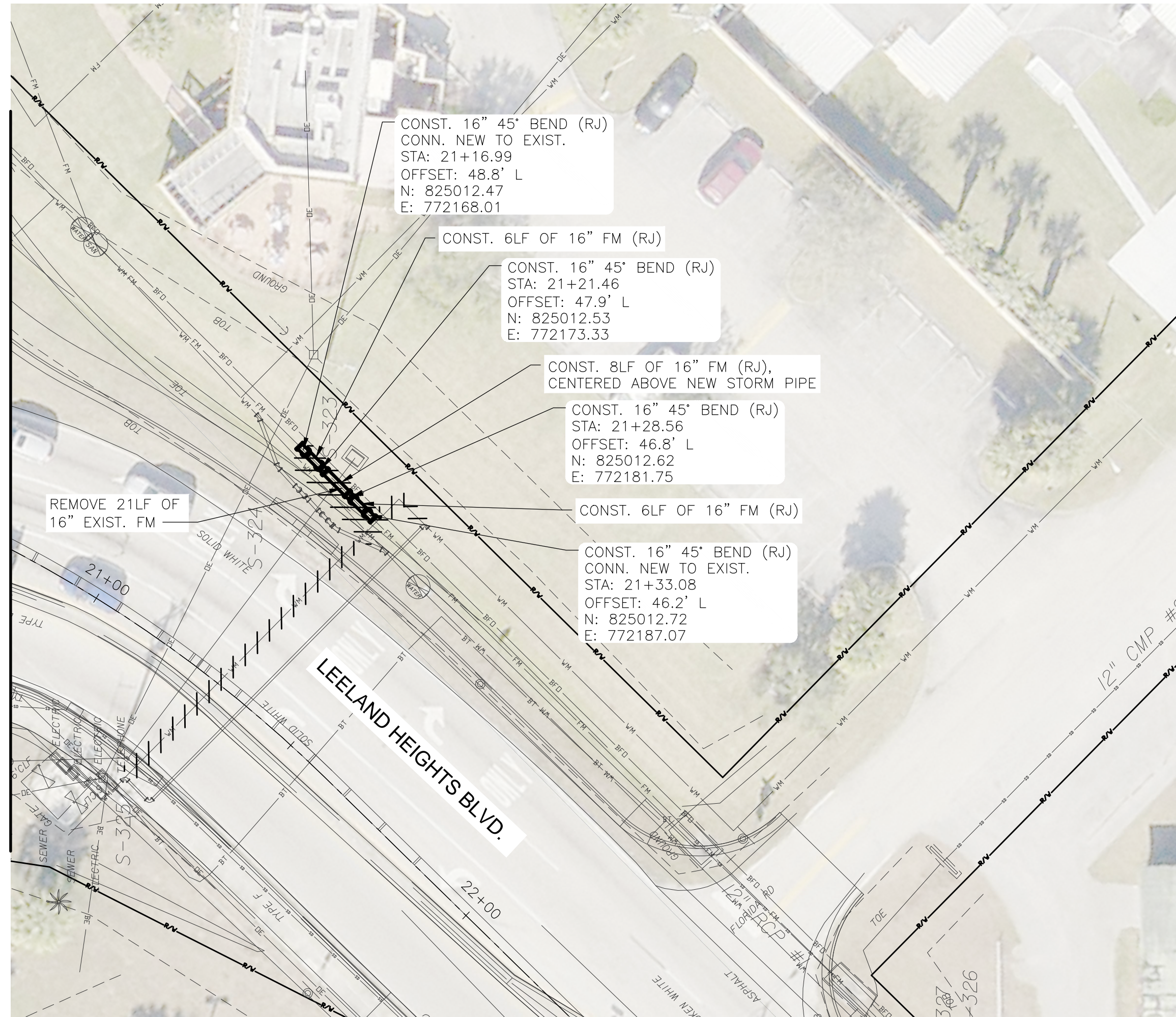
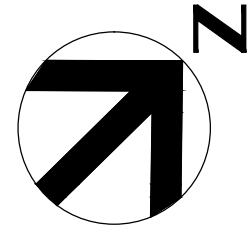




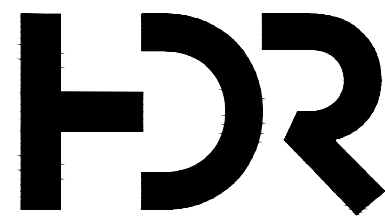
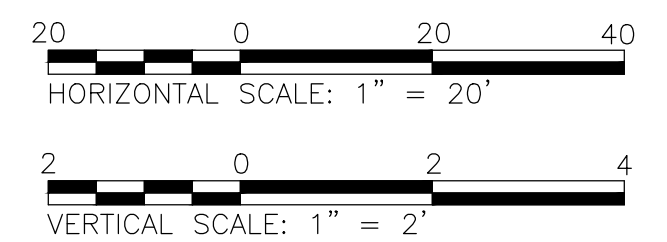




MATCH LINE, SEE DRAWING C-212



MATCH LINE, SEE DRAWING C-212



HDR ENGINEERING, INC  
2601 CATTLEMEN ROAD, STE 400  
SARASOTA, FL 34232  
CA 4213

ISSUE	DATE	DESCRIPTION
1	02/2016	90% SUBMITTAL

PROJECT MANAGER JEFF CRIGLER, PE.

DESIGNER	JTT
REVIEWER	TSH
PROJ. ENGINEER	HLM
PROJECT NUMBER	250366

FGUA  
LEHIGH HOMESTEAD ROAD  
WATER AND WASTEWATER UTILITY PROJECT

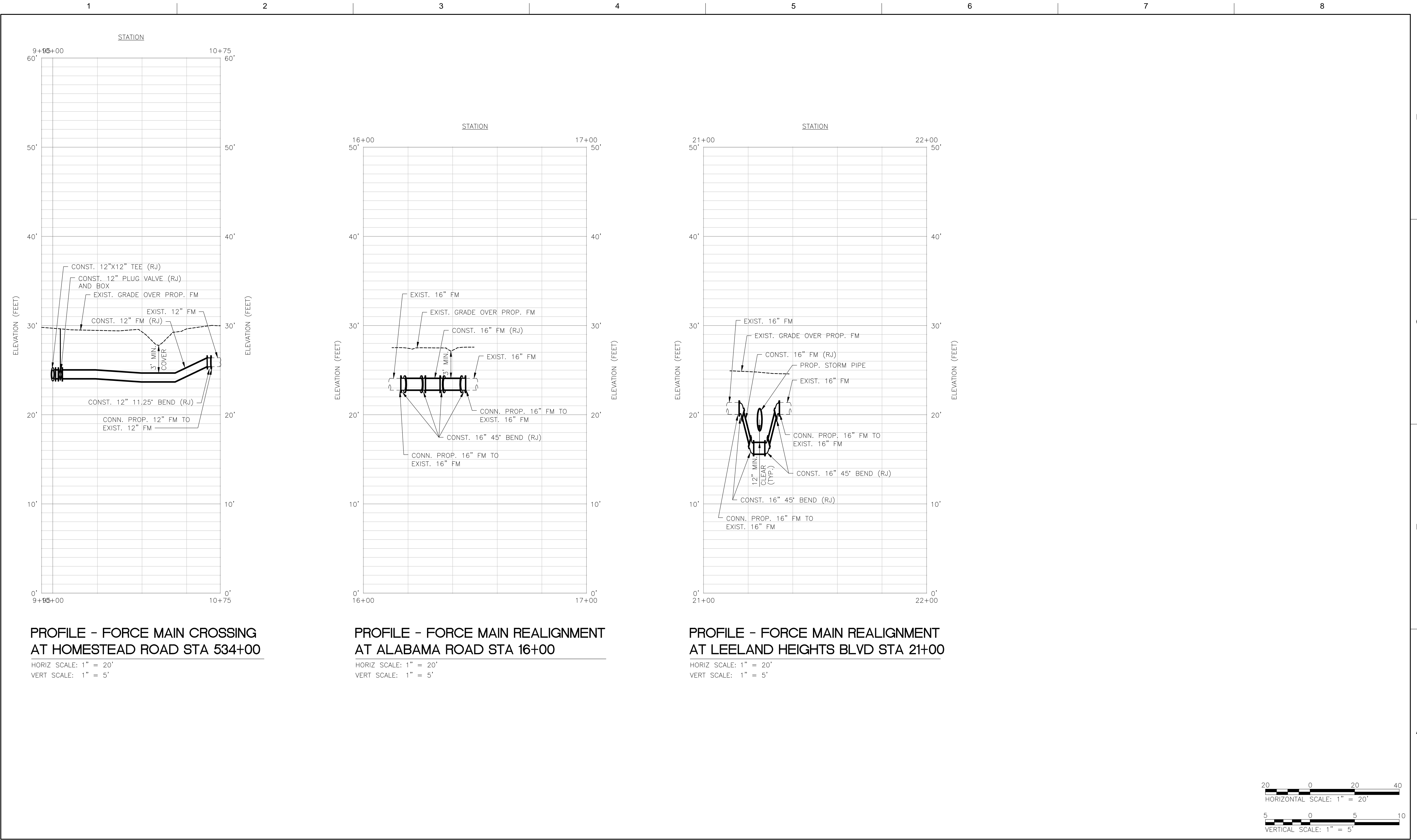
ALABAMA ROAD & LEELAND HEIGHTS BLVD FM  
PLAN & PROFILE



FILENAME C-213.DWG  
SCALE AS NOTED

SHEET  
C-213





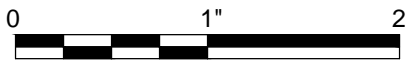
HDR ENGINEERING, INC  
2601 CATTLEMEN ROAD, STE 400  
SARASOTA, FL 34232  
CA 4213

1	02/2016	90% SUBMITTAL
ISSUE	DATE	DESCRIPTION

PROJECT MANAGER	JEFF CRIGLER, PE.
DESIGNER	JTT
REVIEWER	TSH
PROJ. ENGINEER	HLM
PROJECT NUMBER	250366

FGUA  
LEHIGH HOMESTEAD ROAD  
WATER AND WASTEWATER UTILITY PROJECT

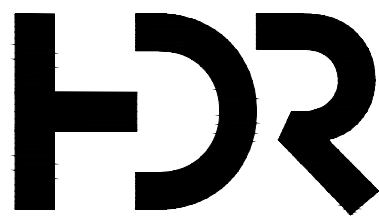
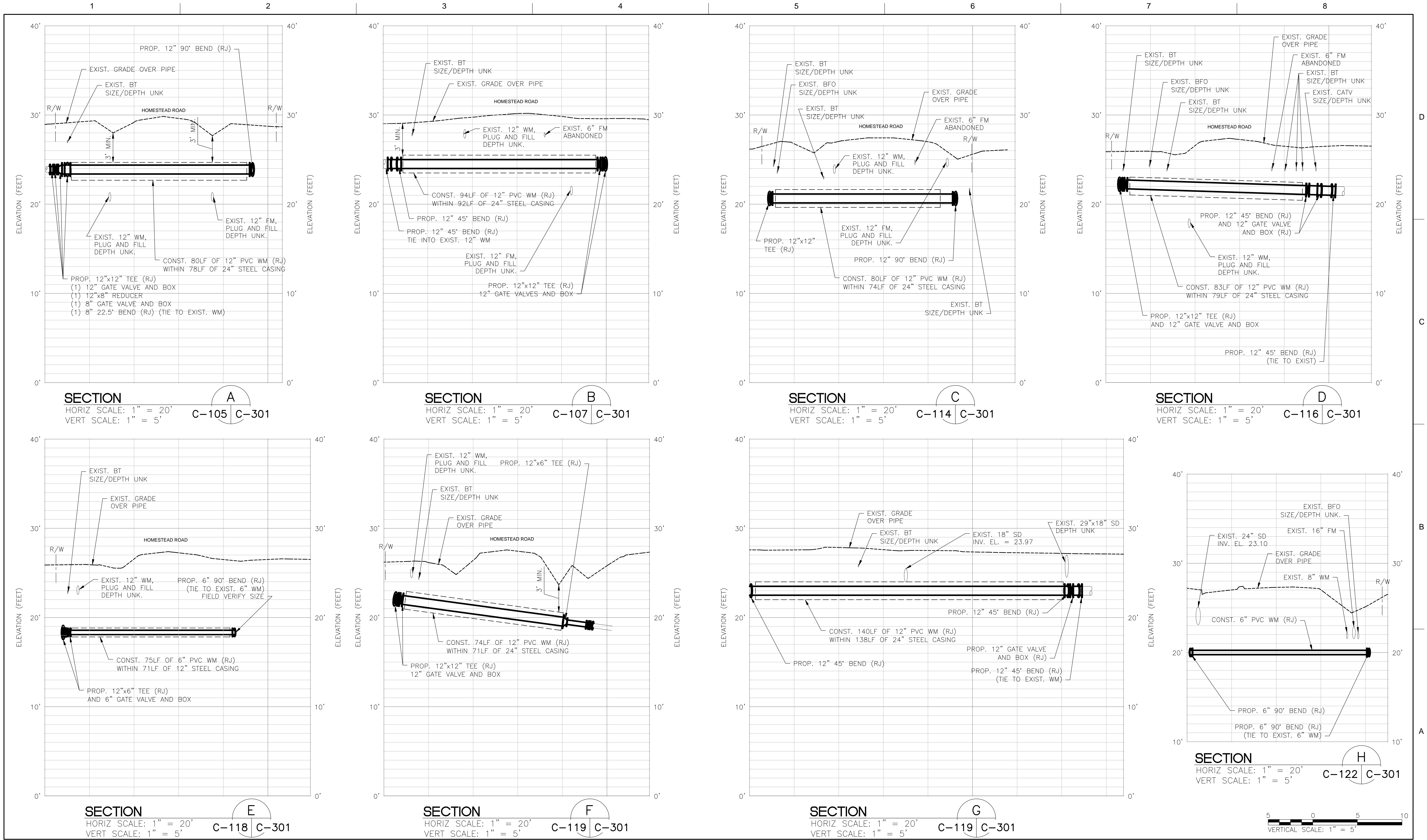
MISCELLANEOUS FM PROFILES



FILENAME | C-214.DWG  
SCALE | AS NOTED

SHEET  
C-214





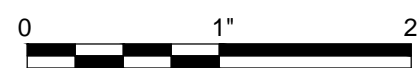
HDR ENGINEERING, INC  
2601 CATTLEMEN ROAD, STE 400  
SARASOTA, FL 34232  
CA 4213

1	02/2016	90% SUBMITTAL
ISSUE	DATE	DESCRIPTION

PROJECT MANAGER	JEFF CRIGLER, PE.
DESIGNER	JTT
REVIEWER	TSH
PROJ. ENGINEER	HLM
PROJECT NUMBER	250366

FGUA  
LEHIGH HOMESTEAD ROAD  
WATER AND WASTEWATER UTILITY PROJECT

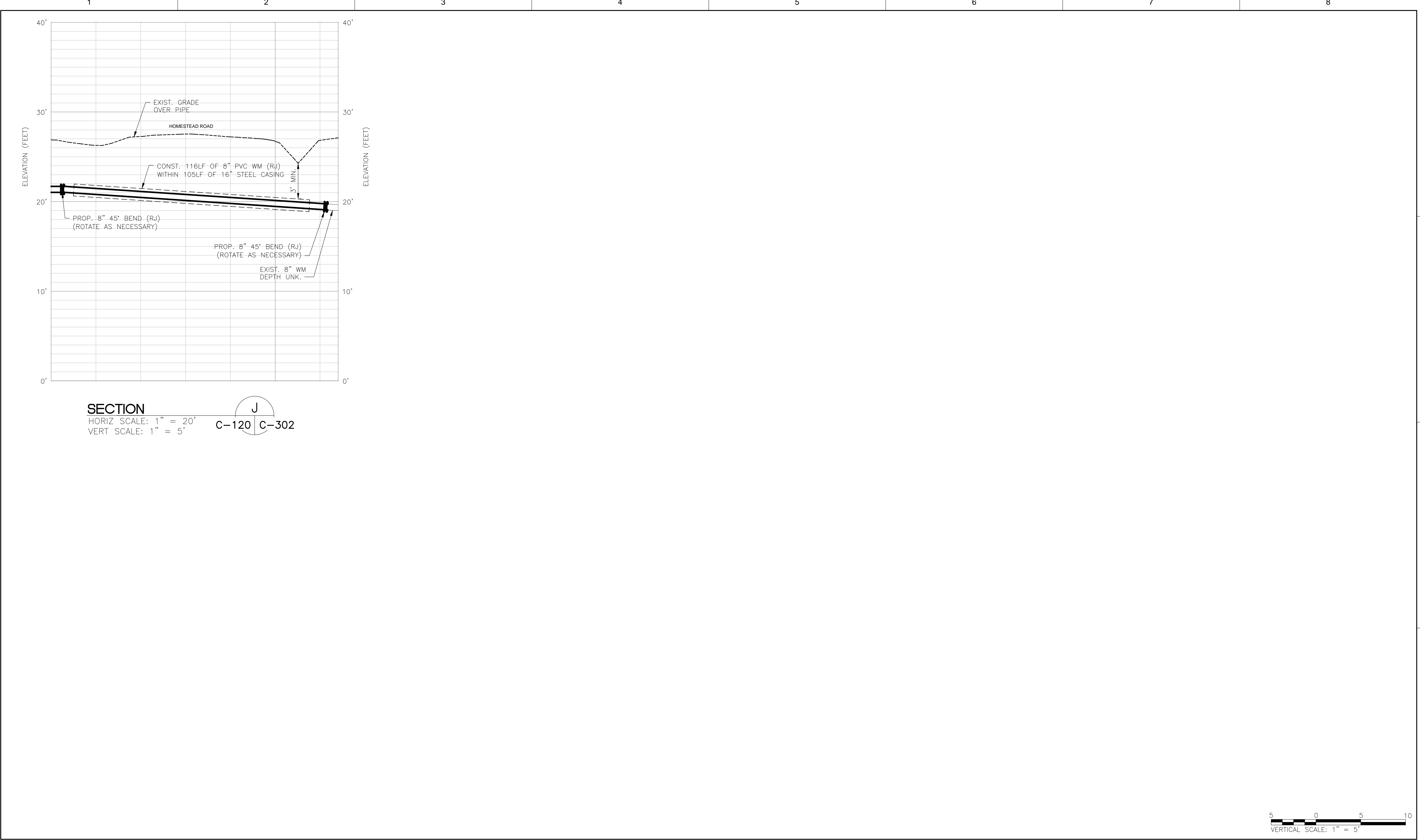
SECTIONS



FILENAME | C-301.DWG  
SCALE | AS NOTED

SHEET  
C-301

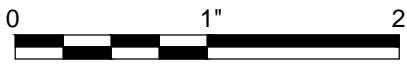




1	02/2016	90% SUBMITTAL
ISSUE	DATE	DESCRIPTION

PROJECT MANAGER	JEFF CRIGLER, PE.
DESIGNER	JTT
REVIEWER	TSH
PROJ. ENGINEER	HLM
PROJECT NUMBER	250366

FGUA  
LEHIGH HOMESTEAD ROAD  
WATER AND WASTEWATER UTILITY PROJECT



SECTIONS

FILENAME	C-302.DWG
SCALE	AS NOTED

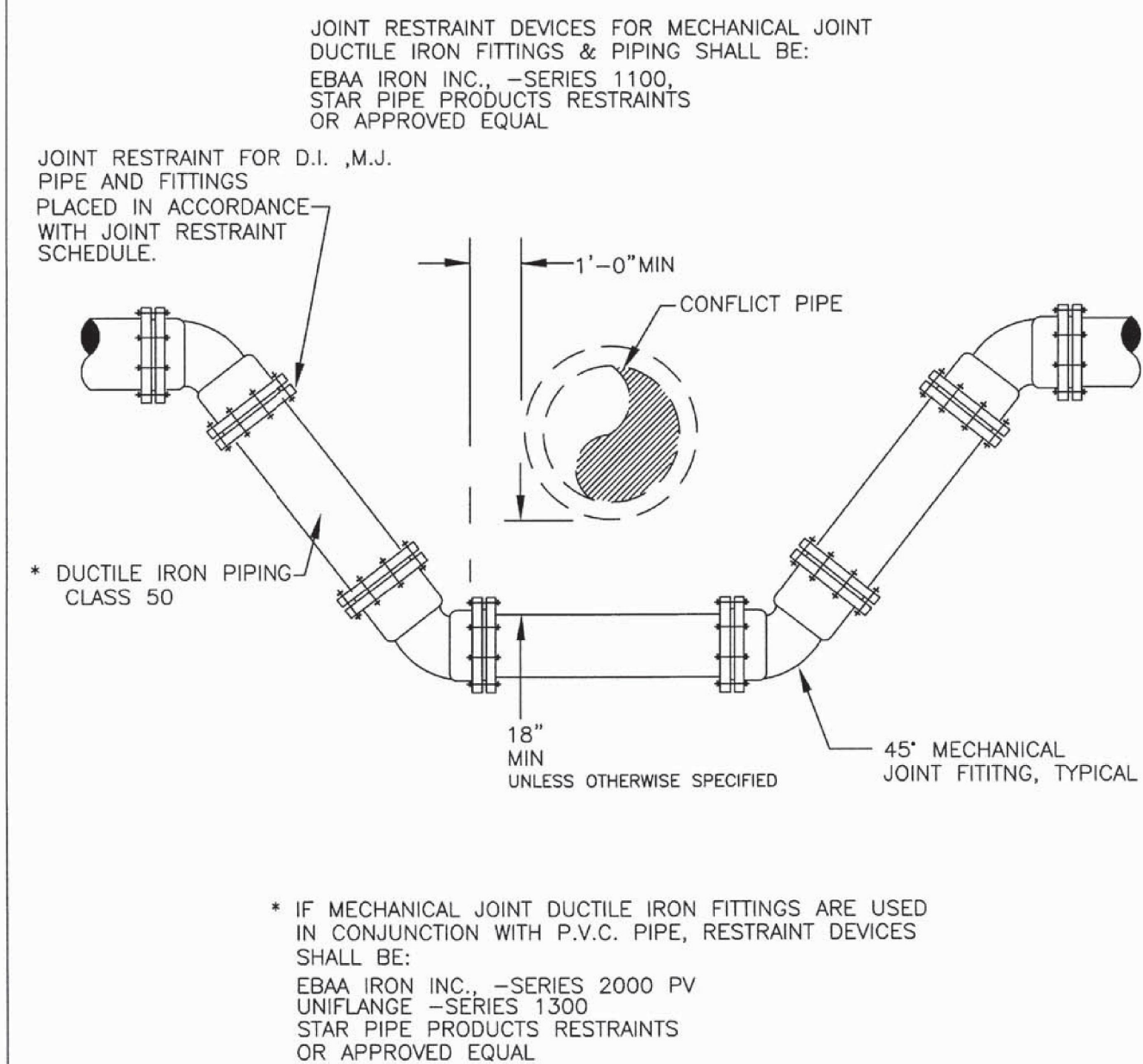
SHEET
C-302







STANDARD DETAIL NO. 9.6  
LEE COUNTY UTILITIES  
WATER PRESSURE LINE VERTICAL OFFSET  
W/ DUCTILE IRON MJ FITTINGS & PIPE

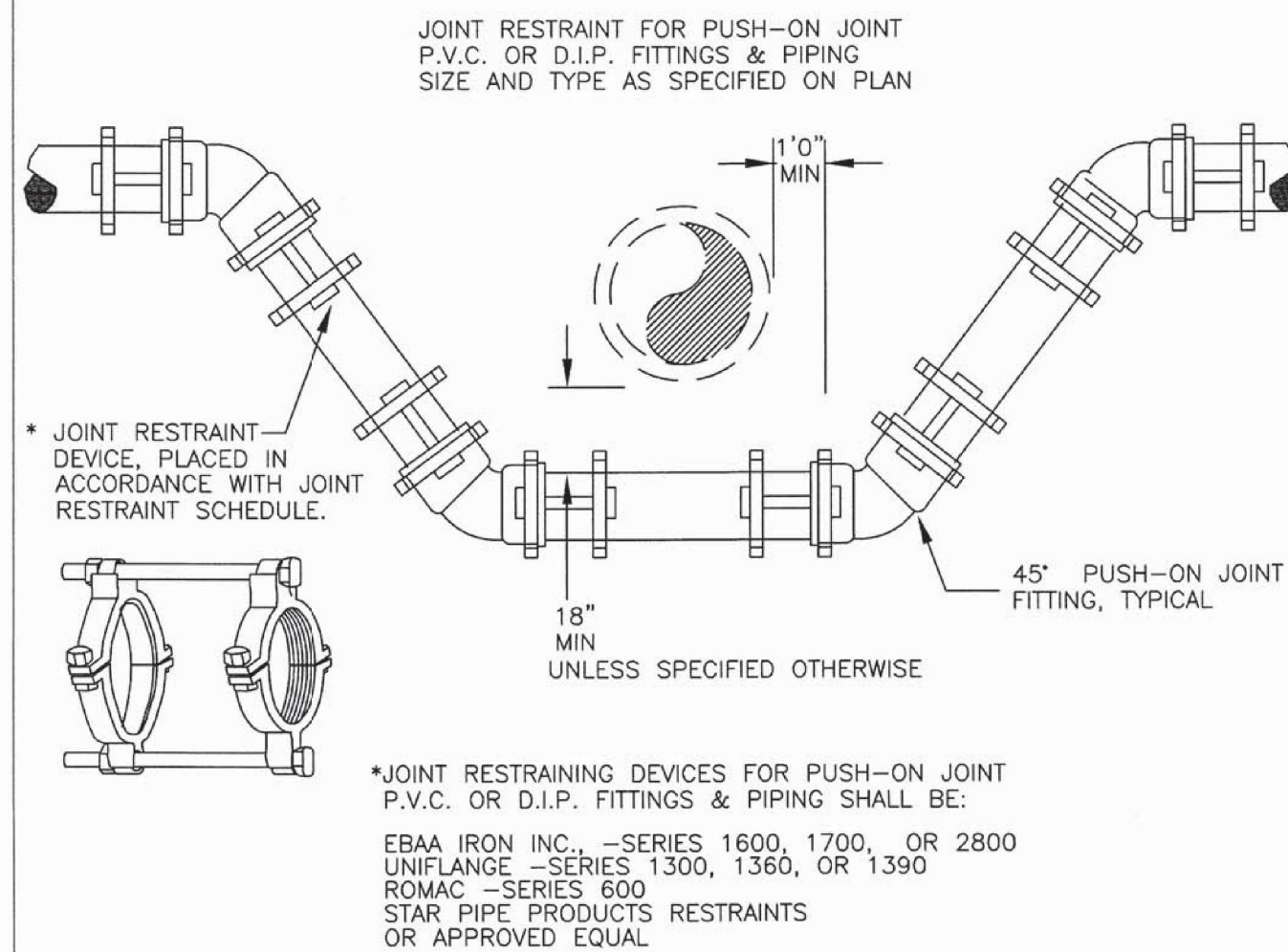


NTS

DATE: 02/22/00

S:\UTILS\ENGR\ACAD\DETAILS\6

STANDARD DETAIL NO. 9.7  
LEE COUNTY UTILITIES  
WASTE WATER FORCE MAIN VERTICAL OFFSET  
WITH FITTINGS, (P.V.C.)



NTS

DATE: 02/22/00

S:\UTILS\ENGR\ACAD\DETAILS\7

STANDARD DETAIL NO. 9.8  
LEE COUNTY UTILITIES  
RESTRAINED LENGTH SCHEDULE

DUCTILE IRON PIPE						
PIPE SIZE  (Inches)	RESTRAINED PIPE LENGTH (FEET)					
	BENDS				DEAD  END	TEE
	90°	45°	22 1/2°	11 1/4°		
4	17	7	4	2	21	0
6	23	10	5	2	32	2
8	29	12	6	3	42	6
10	35	14	7	4	53	17
12	41	17	8	4	62	26
16	51	21	11	5	81	44
24	69	29	14	7	114	75
30	81	34	17	8	140	99

PVC PIPE							
PIPE SIZE  (Inches)	RESTRAINED PIPE LENGTH (FEET)					DEAD	TEE
	BENDS						
	90°	45°	22 1/2°	11 1/4°			
4	20	8	4	2	33	2	
6	29	12	6	3	50	6	
8	36	15	8	4	66	9	
10	44	18	9	5	83	24	
12	51	21	11	5	99	39	
16	63	26	13	7	130	68	
24	87	36	18	9	183	120	
30	102	42	21	10	222	158	

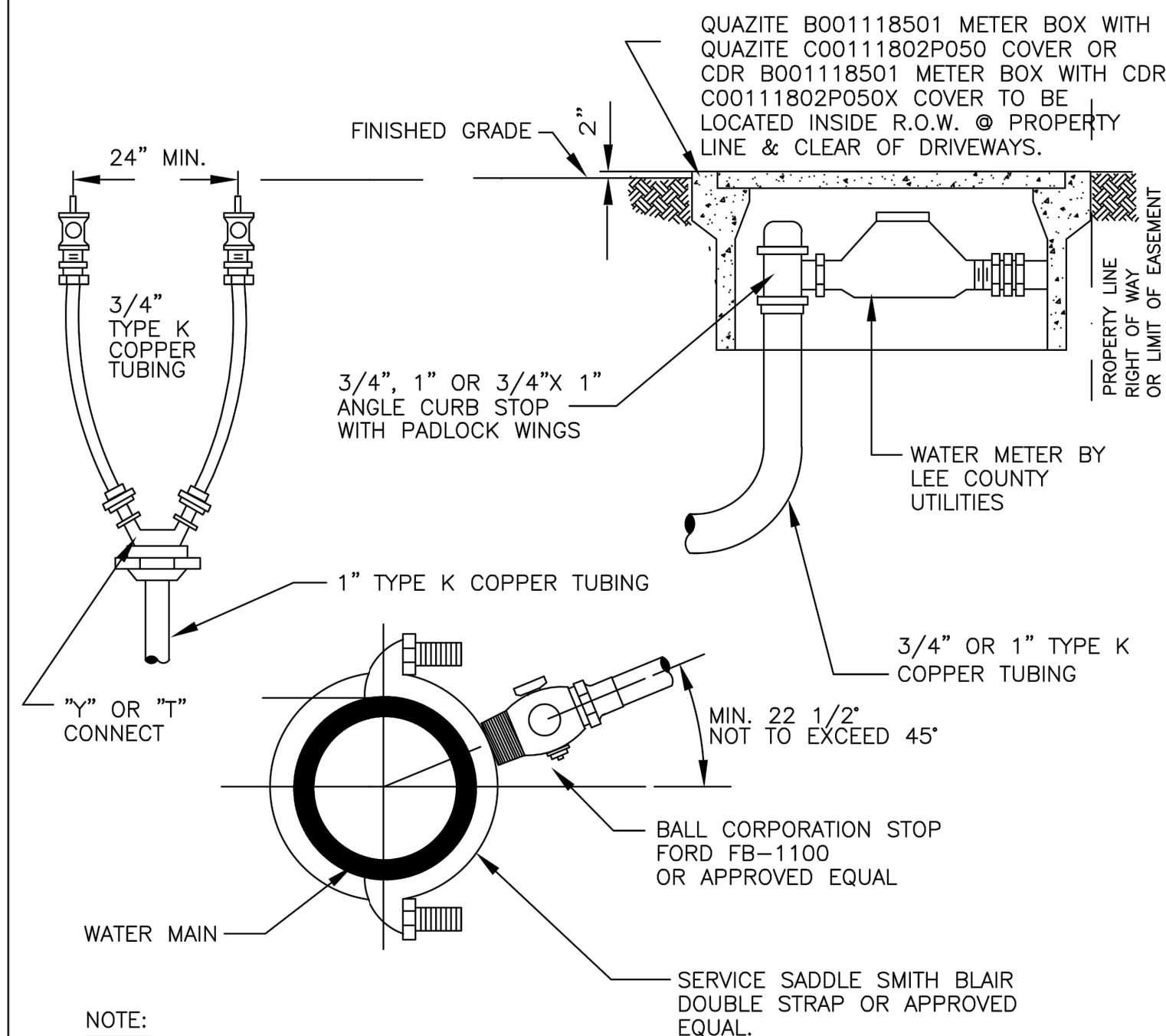
LENGTH FIGURES BASED ON FOLLOWING:

Pressure = 150 psi, FS = 1.5, trench type = 3, 30" cover  
on Bare pipe, Soil type = GP & SP

DATE: 02/22/00

S:\UTILS\ENGR\ACAD\DETAILS\8

STANDARD DETAIL NO. 9.9  
LEE COUNTY UTILITIES  
WATER SERVICE INSTALLATION  
5/8" THROUGH 1"



NOTE:

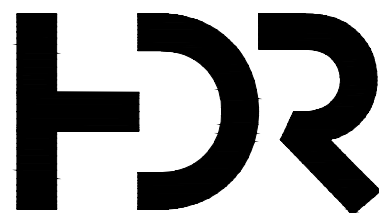
- TUBING UNDER ROADWAY SHALL BE ENCASED IN 2" P.V.C. PIPE SCHEDULE 40 MINIMUM AND EXTEND 4 FEET BEYOND THE EDGES OF PAVEMENT OR BACK OF CURB.
- CURB STOP SHALL BE FORD TYPE KV43-332W FOR 3/4", KV43-342W FOR 1" X 3/4" OR KV43-444W FOR 1" OR APPROVED EQUAL

ALTERNATIVE:

POLYETHYLENE, PE 3408 (200 PSI SDR 9, ASTM D3350), TUBING MAY BE SUBSTITUTED.  
NTS COLOR FOR WATER SHALL BE BLUE.

DATE: 08/19/15

S:\UTILS\ENGR\ACAD\DETAILS\9R



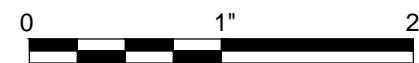
HDR ENGINEERING, INC  
2601 CATTLEMEN ROAD, STE 400  
SARASOTA, FL 34232  
CA 4213

ISSUE	DATE	DESCRIPTION
1	02/2016	90% SUBMITTAL

PROJECT MANAGER	JEFF CRIGLER, PE.
DESIGNER	JTT
REVIEWER	TSH
PROJ. ENGINEER	HLM
PROJECT NUMBER	250366

FGUA  
LEHIGH HOMESTEAD ROAD  
WATER AND WASTEWATER UTILITY PROJECT

DETAILS



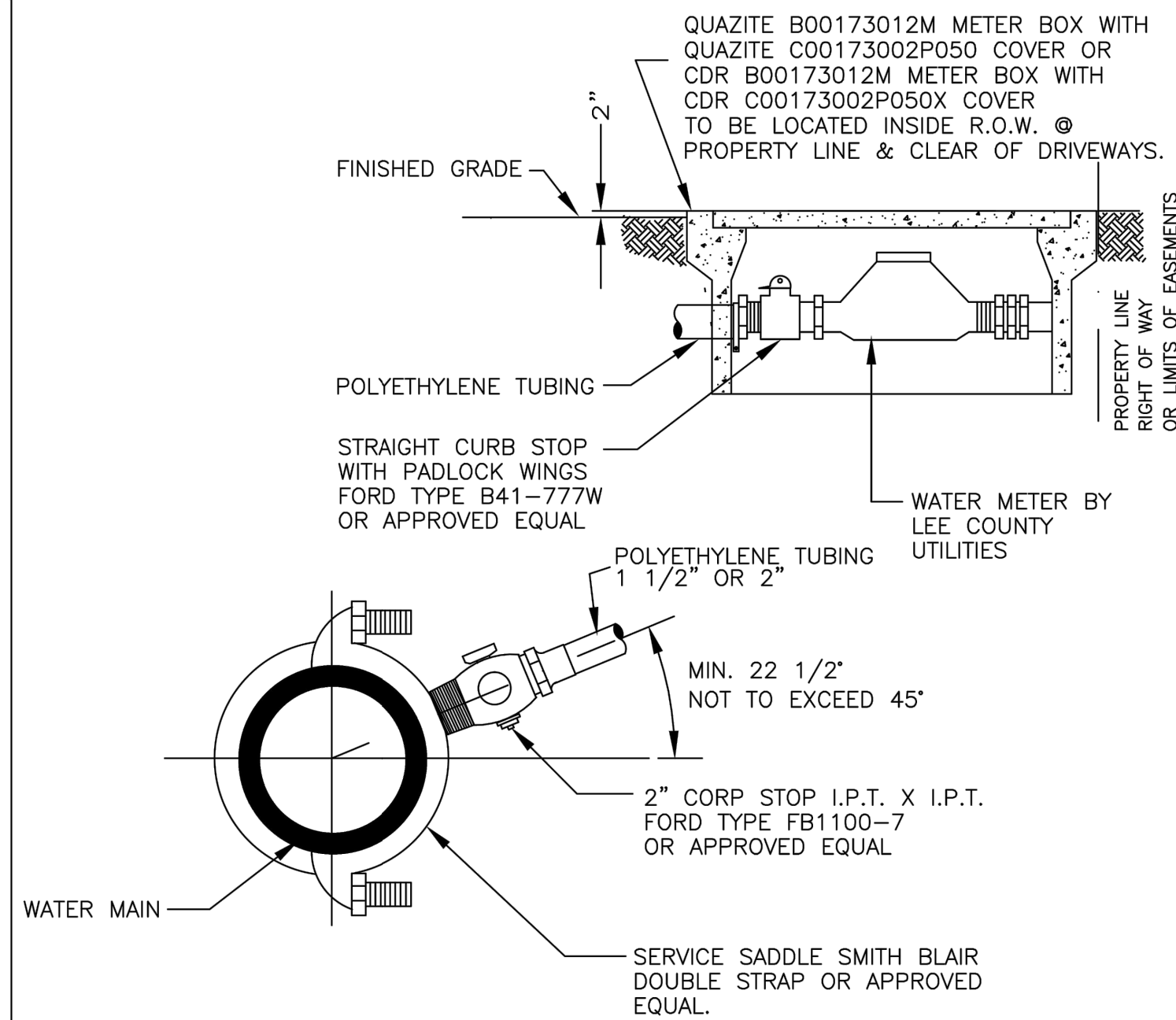
FILENAME | C-502.DWG  
SCALE | AS NOTED

SHEET

C-502



**STANDARD DETAIL NO.9.10**  
**LEE COUNTY UTILITIES**  
**WATER SERVICE INSTALLATION**  
**1 1/2" THROUGH 2"**



**NOTE:**

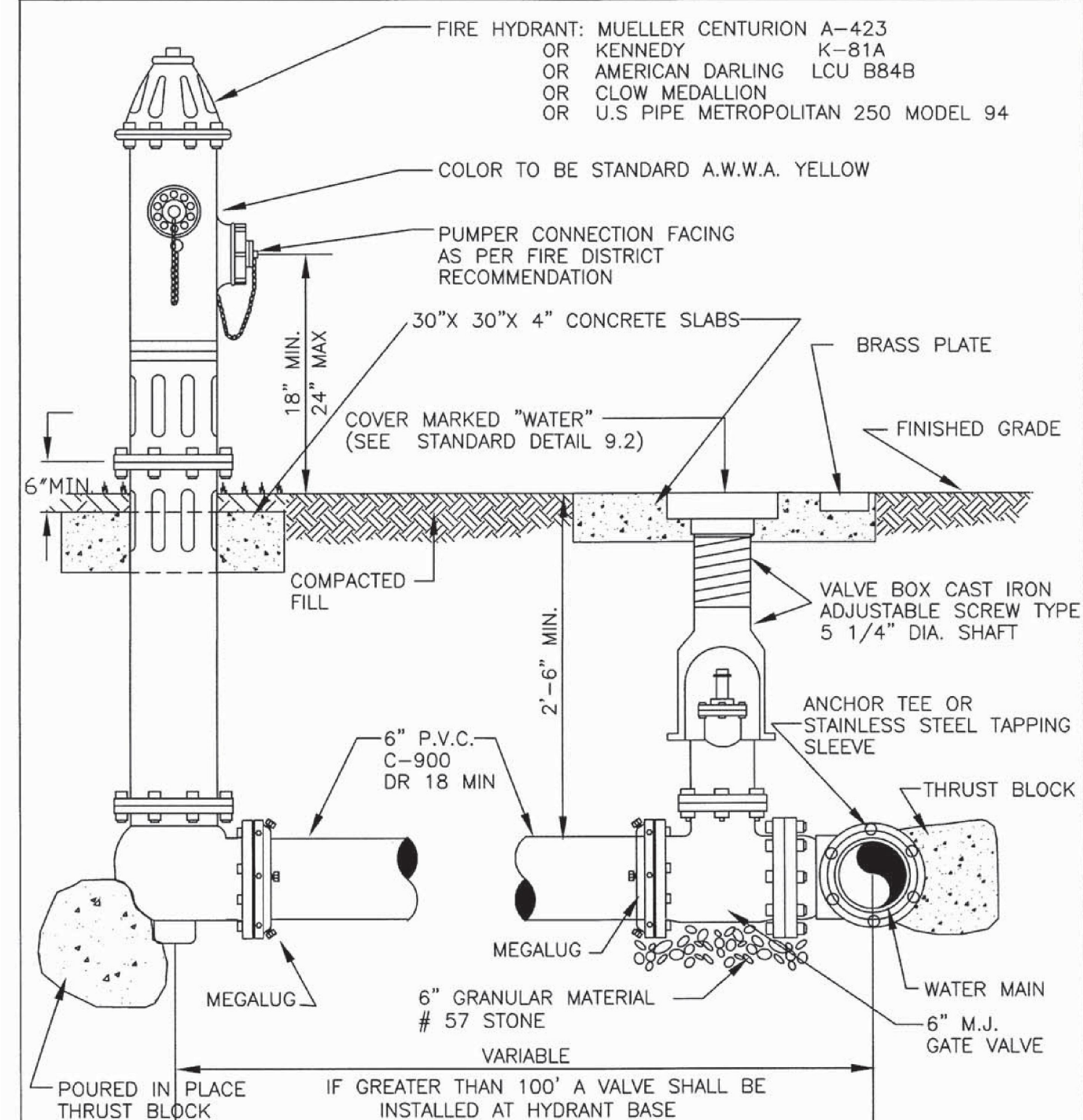
TUBING UNDER ROADWAY SHALL BE ENCASED IN 4" P.V.C. PIPE SCHEDULE 40 MINIMUM, AND EXTEND 4 FEET BEYOND THE EDGE OF PAVEMENT OR BACK OF CURB.

N.T.S.

DATE: 08/19/15

S:\UTILS\ENGR\ACAD\DETAILS\10R

**STANDARD DETAIL NO.9.14**  
**LEE COUNTY UTILITIES**  
**FIRE HYDRANT ASSEMBLY**

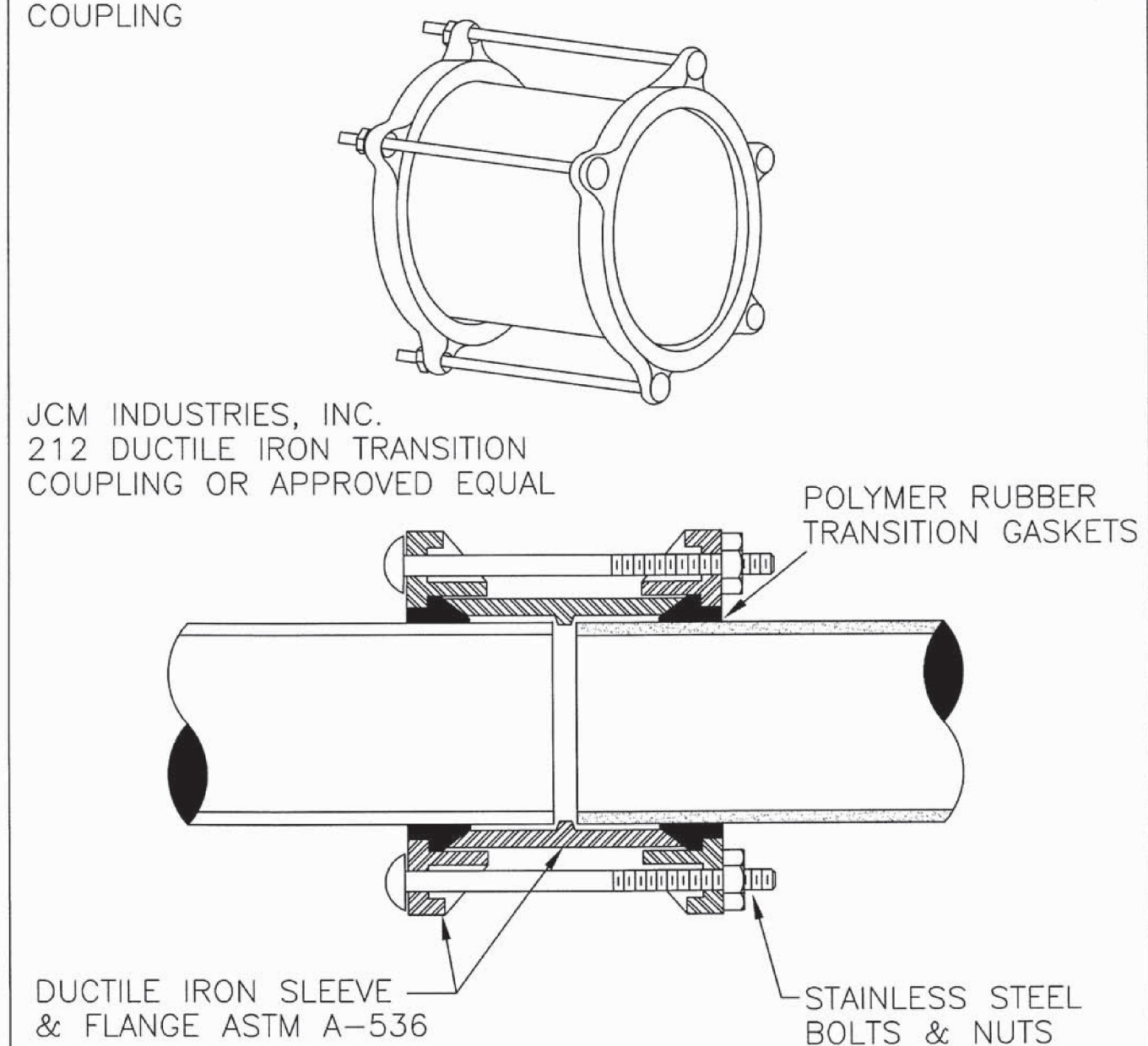


DATE: 02/22/00

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**STANDARD DETAIL NO.9.18**  
**LEE COUNTY UTILITIES**  
**DUCTILE IRON**  
**TRANSITION COUPLING**

JOINS CAST IRON, DUCTILE IRON, ASBESTOS-CEMENT, C-900 AWWA C-900 & C-905 BY MECHANICAL JOINT COMPRESSION COUPLING

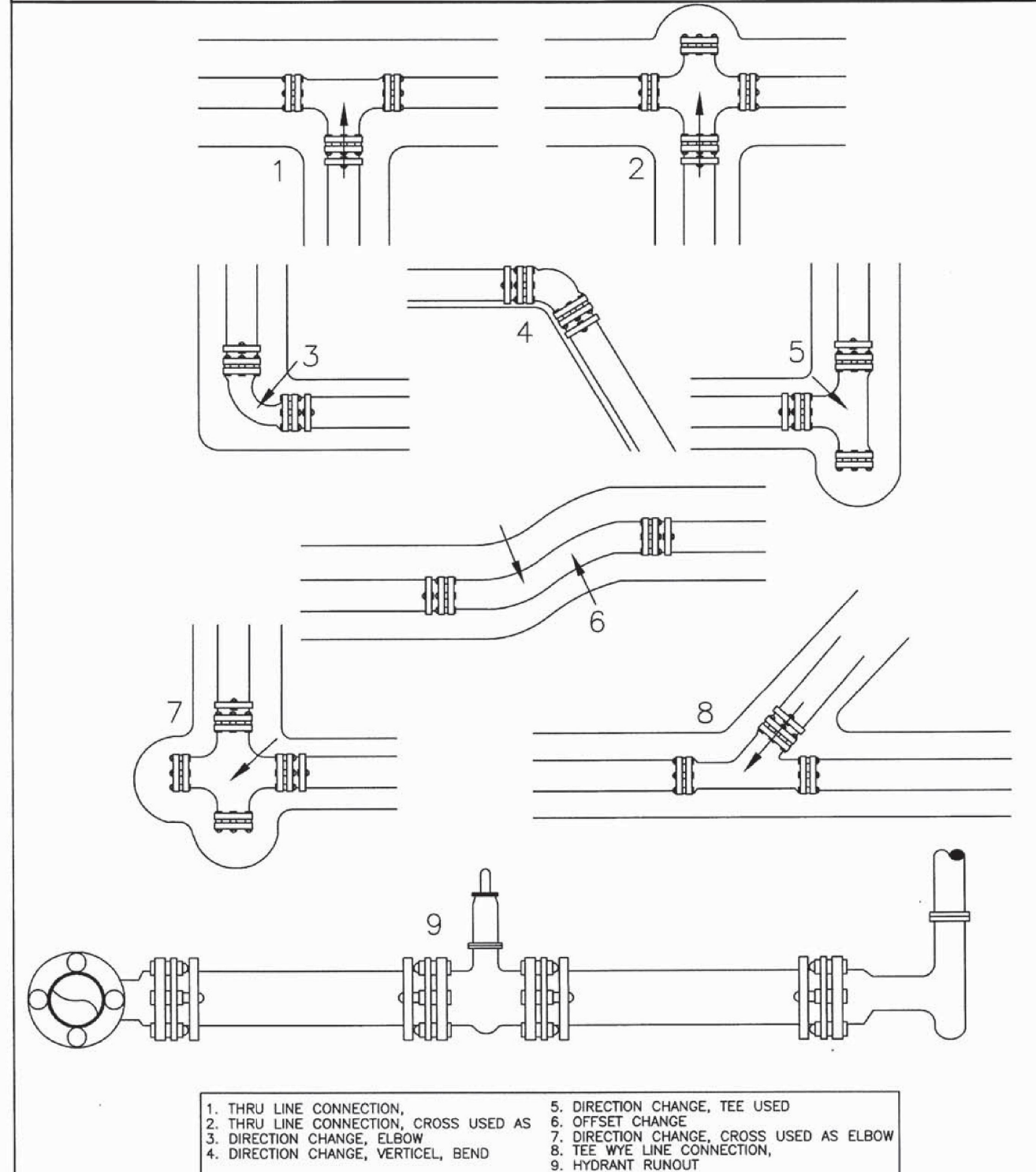


NTS

DATE: 02/22/00

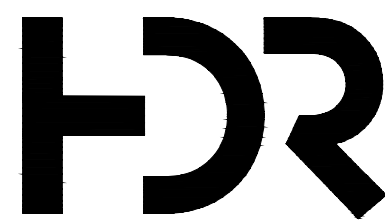
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**STANDARD DETAIL NO.9.19**  
**LEE COUNTY UTILITIES**  
**THRUST RESTRAINING**



DATE: 02/22/00

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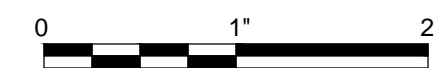
HDR ENGINEERING, INC.  
2601 CATTLEMEN ROAD, STE 400  
SARASOTA, FL 34232  
CA 4213

ISSUE	DATE	DESCRIPTION
1	02/2016	90% SUBMITTAL

PROJECT MANAGER	JEFF CRIGLER, PE.
DESIGNER	JTT
REVIEWER	TSH
PROJ. ENGINEER	HLM
PROJECT NUMBER	250366

**FGUA**  
**LEHIGH HOMESTEAD ROAD**  
**WATER AND WASTEWATER UTILITY PROJECT**

**DETAILS**

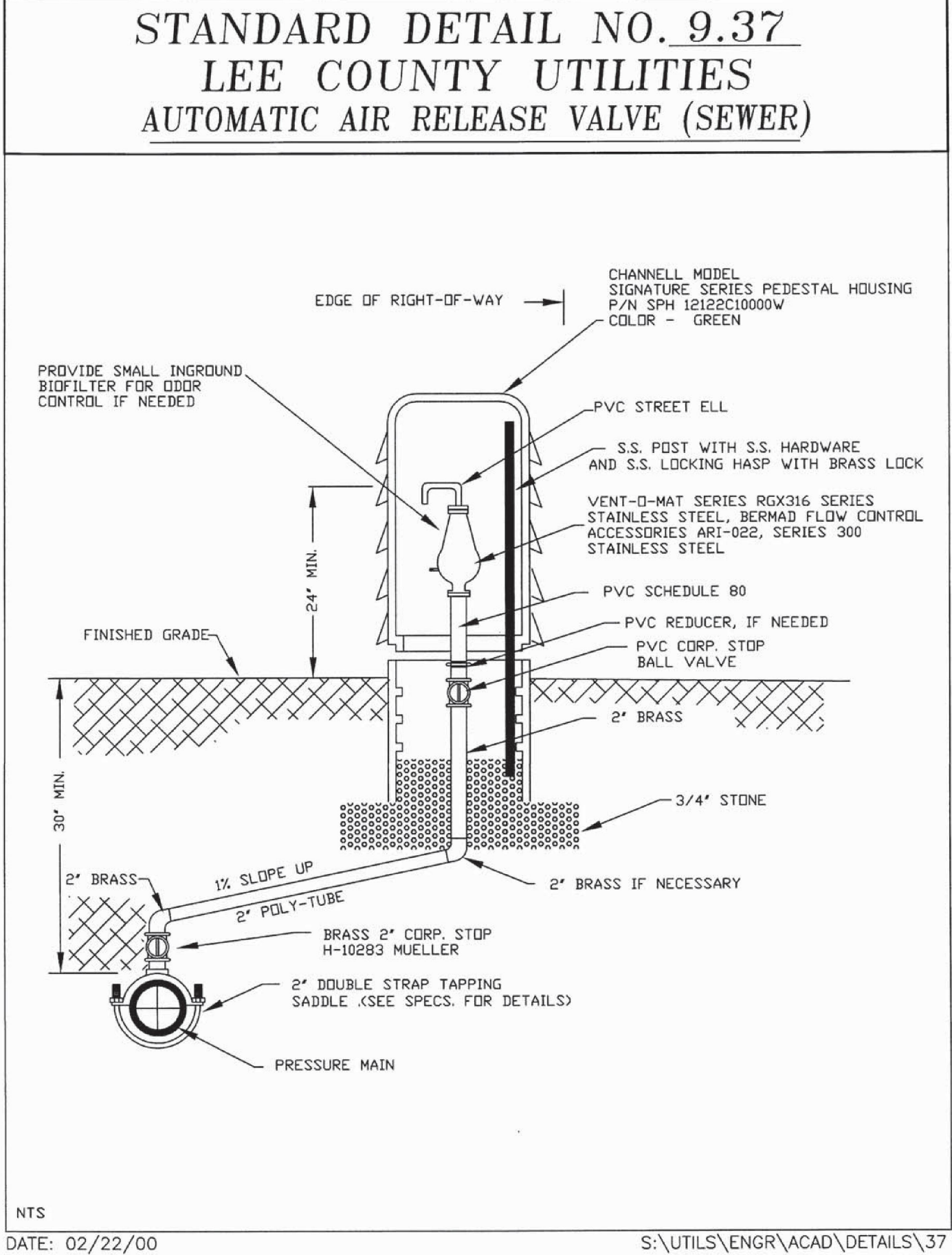
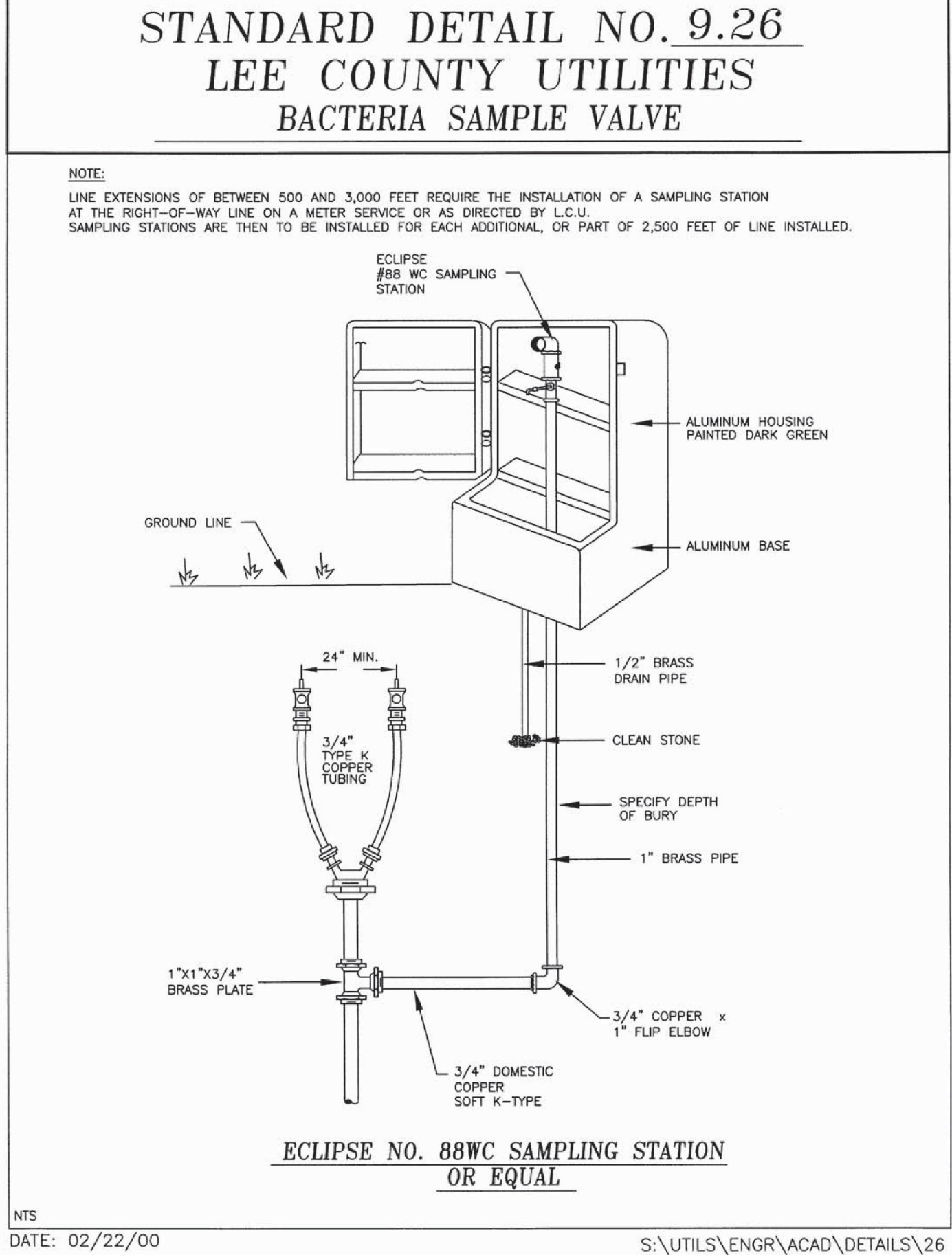
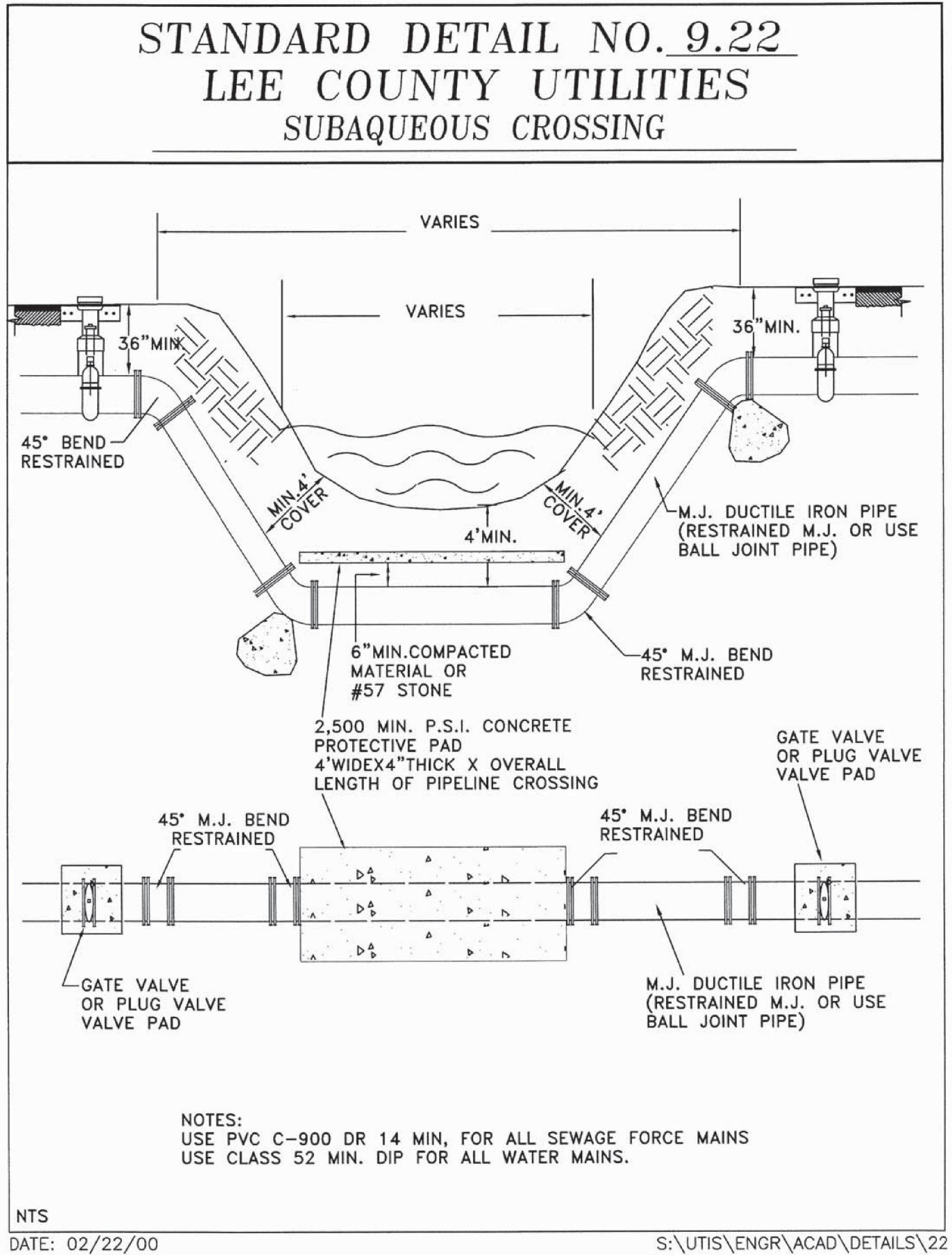
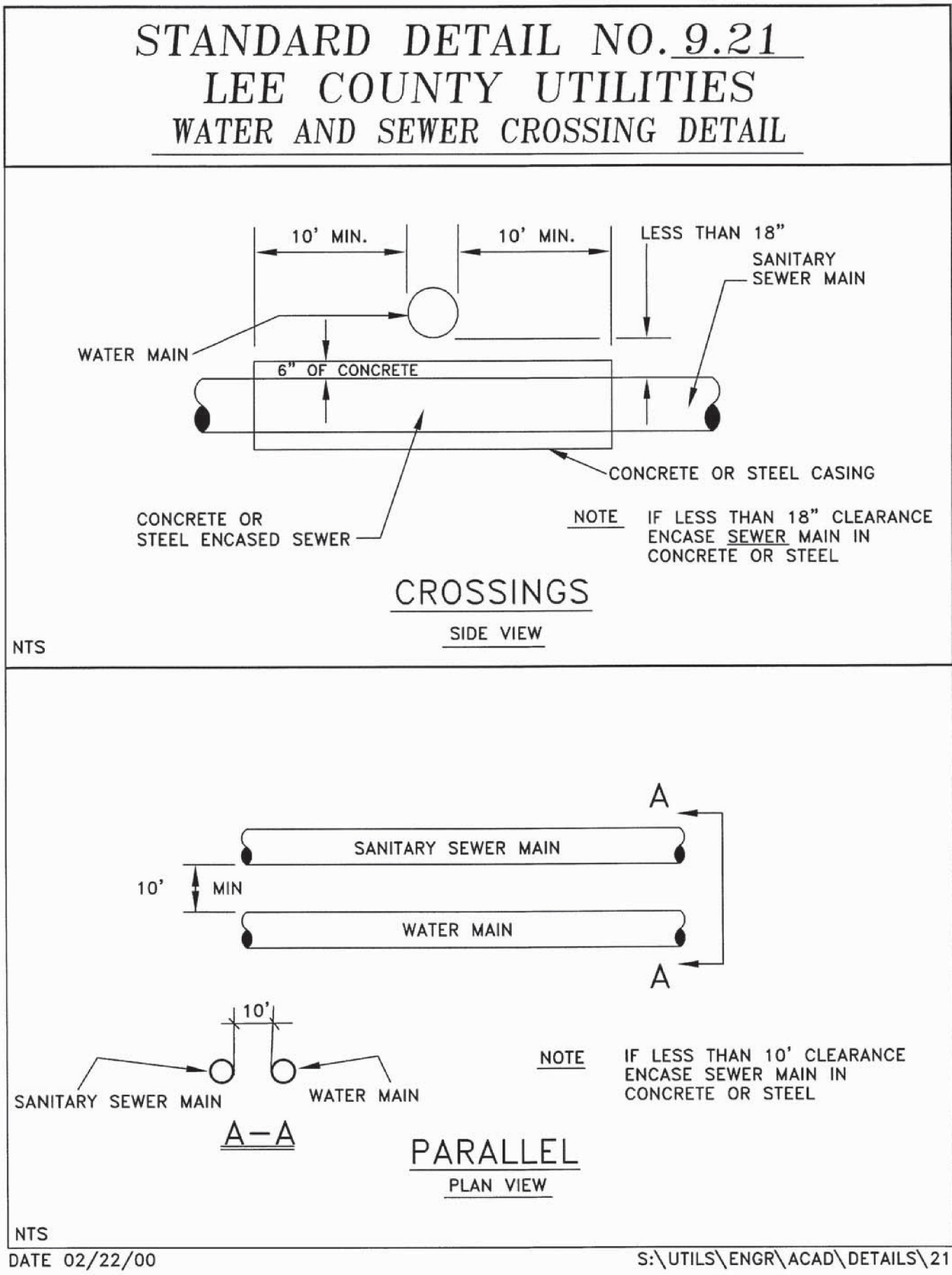


FILENAME: C-503.DWG  
SCALE: AS NOTED

SHEET

C-503





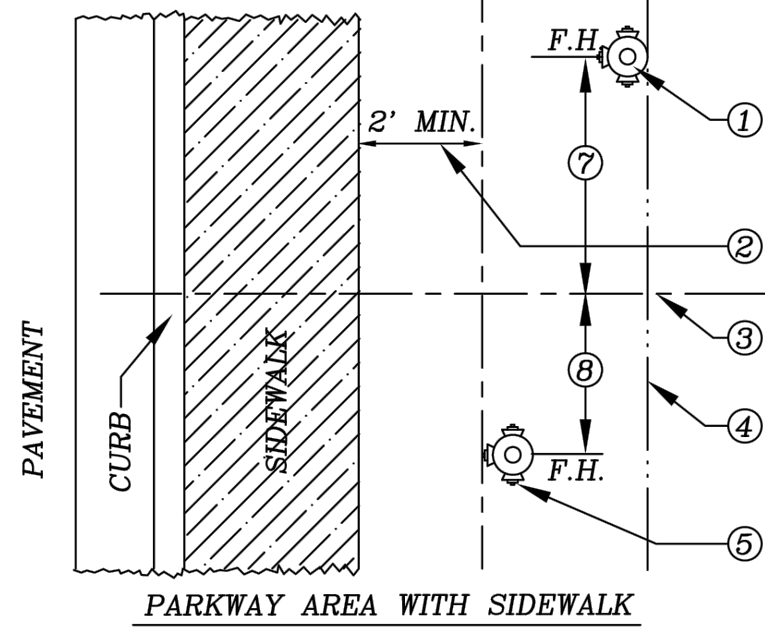
ISSUE	DATE	DESCRIPTION
1	02/2016	90% SUBMITTAL

PROJECT MANAGER	JEFF CRIGLER, PE.
DESIGNER	JTT
REVIEWER	TSH
PROJ. ENGINEER	HLM
PROJECT NUMBER	250366

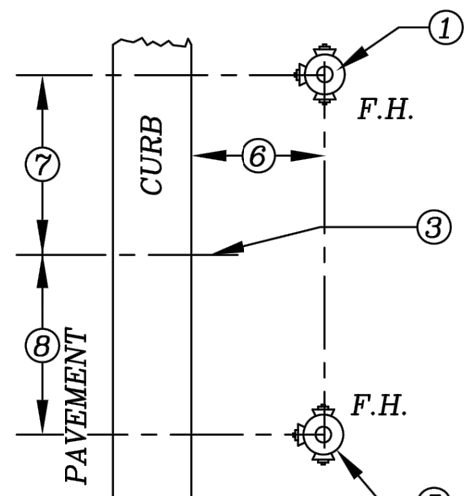


STANDARD DETAIL NO. 6.19  
LEE COUNTY UTILITIES  
FIRE HYDRANT LOCATIONS/CLEARANCE

N.T.S.



(PLAN VIEW)

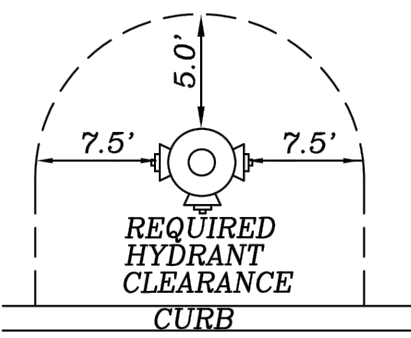


(PLAN VIEW)

NOTES

1. OBSTRUCTIONS SUCH AS UTILITY POLES, STREET SIGNS, IRRIGATION BOXES, FENCES, ETC. SHALL NOT BE PLACED BETWEEN CURB AND HYDRANT.
2. SOME LOCATIONS APPLY AT EITHER END OF CURB RETURNS.
3. DIMENSION SHOWN ON CONSTRUCTION DRAWINGS SUPERCEDE LOCATIONS SHOWN HERE.

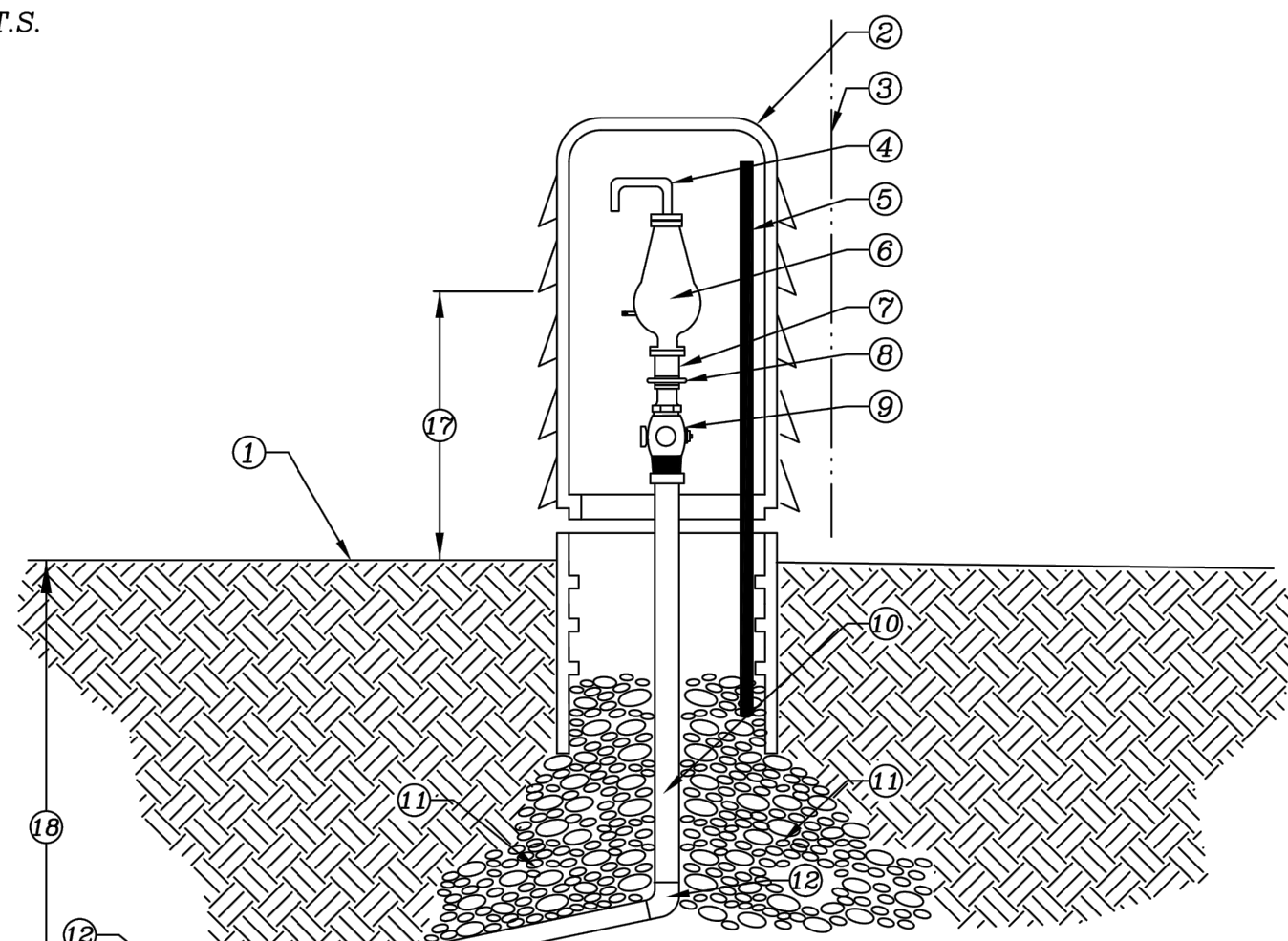
REV: 8/20/2013



(PLAN VIEW)

STANDARD DETAIL NO. 6.27  
LEE COUNTY UTILITIES  
AUTOMATIC AIR RELEASE VALVE

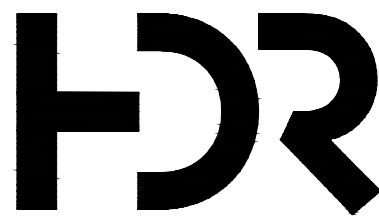
N.T.S.



SECTION

- 1 FINISHED GRADE
- 2 PEDESTAL HOUSING (SEE APPROVED MATERIAL LIST)  
COLORS: BLUE-WATER,  
GREEN-SEWER, PANTONE-REUSE
- 3 EDGE OF RIGHT-OF-WAY
- 4 PVC STREET ELL
- 5 S.S. POST WITH S.S. HARDWARE  
AND S.S. LOCKING HASP WITH  
BRASS LOCK
- 6 SHORT BODY AUTOMATIC AIR RELEASE  
VALVE (SEE APPROVED MATERIAL LIST)  
ALL INTERNAL WORKING PARTS SHALL  
BE 300 SERIES STAINLESS STEEL
- 7 PVC SCHEDULE 80
- 8 PVC REDUCER IF NEEDED
- 9 BRASS BALL CORP. STOP
- 10 2" POLY-TUBE
- 11 3/4" GRANULAR MATERIAL, #57 STONE
- 12 2" BRASS FITTING IF NECESSARY
- 13 1% MIN. SLOPE UP, 2" POLY-TUBE
- 14 TAP AT CROWN OF PIPE
- 15 2" DOUBLE STRAP TAPPING SADDLE  
(SEE APPROVED MATERIAL LIST)
- 16 EXISTING PRESSURE MAIN
- 17 24"
- 18 30" MIN.

REV: 8/20/2013



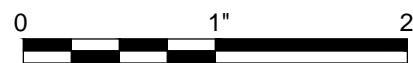
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PROJ. ENGINEER	HLM
PROJECT NUMBER	250366

FGUA  
LEHIGH HOMESTEAD ROAD  
WATER AND WASTEWATER UTILITY PROJECT

DETAILS



FILENAME C-505.DWG  
SCALE AS NOTED

SHEET  
C-505