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09/08/09

**TIP PROJECT: R-5735**

**CONTRACT:**

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**UTILITY CONSTRUCTION PLANS**  
**CHEROKEE COUNTY**

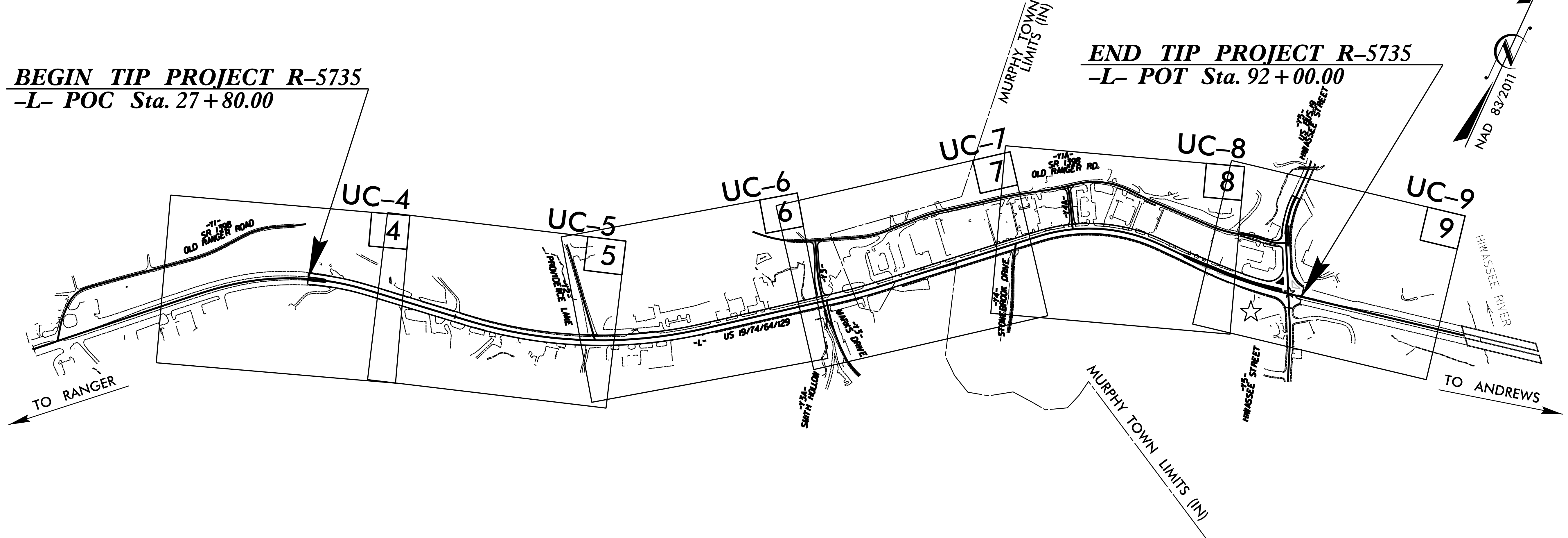
LOCATION: US 19/US 74/US 64/US 129 FROM END OF DIVIDED SECTION  
TO US 19 BUS. (HIWASSEE STREET)

TYPE OF WORK: WATER LINE, SEWER LINE AND SEWER FORCE MAIN

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-5735	UC-1	20
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
50193.1.1		PE	
50193.2.1		RW AND UTIL.	
50193.3.1		CONST.	

**BEGIN TIP PROJECT R-5735**  
-L- POC Sta. 27+80.00

**END TIP PROJECT R-5735**  
-L- POT Sta. 92+00.00

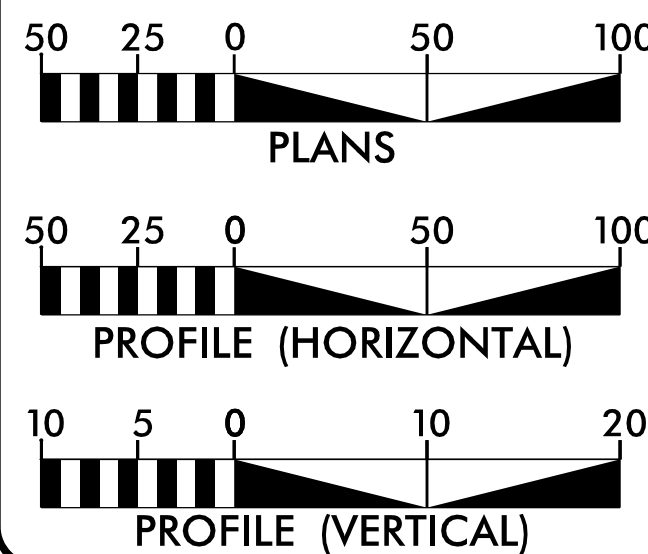


**NOTES:**

- PROJECT IS PARTIALLY LOCATED WITHIN THE MUNICIPAL BOUNDARIES OF THE TOWN OF MURPHY.
- CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

**GRAPHIC SCALES**



**INDEX OF SHEETS**

SHEET NO.:	DESCRIPTION:
UC-1	TITLE SHEET
UC-2	UTILITY SYMBOLOGY
UC-3	NOTES
UC-3A - UC-3C	DETAILS
UC-4 THRU UC-9	UTILITY CONSTRUCTION SHEETS
UC-10 THRU UC-17	PROFILE SHEETS

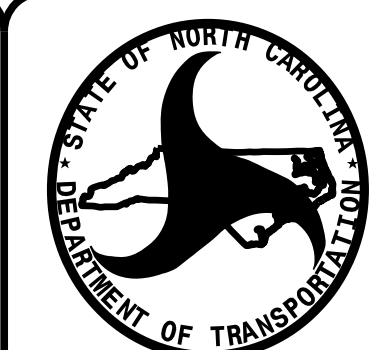
**UTILITIES OWNER**

ALL UTILITES ON PROJECT  
OWNED BY THE  
TOWN OF MURPHY

WATER, SEWER AND SEWER FORCE MAIN  
RELOCATIONS PREPARED IN THE OFFICE OF:

**McGill ASSOCIATES**  
ENGINEERING · PLANNING · FINANCE  
55 BROAD STREET ASHEVILLE, NC 28801 PH. (828) 252-0575 FIRM LICENSE # C-0459  
J. MELISKI, PE 828-252-0575 CONSULTANT CONTACT #1  
MICHAEL DOWD 828-252-0575 CONSULTANT CONTACT #2

NORTH CAROLINA  
PROFESSIONAL  
SEAL  
029887  
ENGINEER  
JOSEPH J. MELISKI  
4/5/2019  
SEAL  
JOSEPH J. MELISKI, PE  
UTILITIES ENGINEER



**DIVISION OF HIGHWAYS  
UTILITIES UNIT**

1555 MAIL SERVICES CENTER  
RALEIGH NC 27699-1555  
PHONE (919) 707-6690  
FAX (919) 250-4151

**MICHAEL BRIGHT** UTILITIES REGIONAL ENGINEER  
**BOB GOLDING** UTILITIES ENGINEER  
**AMY DUPREE** UTILITIES AREA COORDINATOR  
**BILL GREEN** UTILITIES COORDINATOR

# STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

## **UTILITIES PLAN SHEET SYMBOLS**

### PROPOSED WATER SYMBOLS

Water Line (Sized as Shown)	
11 1/4 Degree Bend	
22 1/2 Degree Bend	
45 Degree Bend	
90 Degree Bend	
Plug	
Tee	
Cross	
Reducer	
Gate Valve	
Butterfly Valve	
Tapping Valve	
Line Stop	
Line Stop with Bypass	
Blow Off	
Fire Hydrant	
Relocate Fire Hydrant	
Remove Fire Hydrant	REM FH
Water Meter	
Relocate Water Meter	
Remove Water Meter	REM WM
Water Pump Station	
RPZ Backflow Preventer	
DCV Backflow Preventer	
Relocate RPZ Backflow Preventer	
Relocate DCV Backflow Preventer	

### PROPOSED SEWER SYMBOLS

Gravity Sewer Line (Sized as Shown)	
Force Main Sewer Line (Sized as Shown)	
Manhole (Sized per Note)	
Sewer Pump Station	

### PROPOSED MISCELLANEOUS UTILITIES SYMBOLS

Power Pole	
Telephone Pole	
Joint Use Pole	
Telephone Pedestal	
Utility Line by Others (Type as Shown)	
Trenchless Installation	
Encasement by Open Cut	
Encasement	

Thrust Block	
Air Release Valve	
Utility Vault	
Concrete Pier	
Steel Pier	
Plan Note	
Pay Item Note	

NOTE  
PAY ITEM

### EXISTING UTILITIES SYMBOLS

Power Pole		*Underground Power Line	
Telephone Pole		*Underground Telephone Cable	
Joint Use Pole		*Underground Telephone Conduit	
Utility Pole		*Underground Fiber Optics Telephone Cable	
Utility Pole with Base		*Underground TV Cable	
H-Frame Pole		*Underground Fiber Optics TV Cable	
Power Transmission Line Tower		*Underground Gas Pipeline	
Water Manhole		Aboveground Gas Pipeline	
Power Manhole		*Underground Water Line	
Telephone Manhole		Aboveground Water Line	
Sanitary Sewer Manhole		*Underground Gravity Sanitary Sewer Line	
Hand Hole for Cable		Aboveground Gravity Sanitary Sewer Line	
Power Transformer		*Underground SS Forced Main Line	
Telephone Pedestal		Underground Unknown Utility Line	
CATV Pedestal		SUE Test Hole	
Gas Valve		Water Meter	
Gas Meter		Water Valve	
Located Miscellaneous Utility Object		Fire Hydrant	
Abandoned According to Utility Records	AATUR	Sanitary Sewer Cleanout	
End of Information	E.O.I.		

\*For Existing Utilities  
Utility Line Drawn from Record (Type as Shown)  
Designated Utility Line (Type as Shown)



# UTILITY CONSTRUCTION

## GENERAL NOTES:

1. THE PROPOSED UTILITY CONSTRUCTION SHALL MEET THE APPLICABLE REQUIREMENTS OF THE NC DEPARTMENT OF TRANSPORTATION'S "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" DATED JANUARY 2018.
2. THE EXISTING UTILITIES BELONG TO THE TOWN OF MURPHY
3. ALL WATER LINES TO BE INSTALLED WITHIN COMPLIANCE OF THE RULES AND REGULATIONS OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY, DIVISION OF WATER RESOURCES, PUBLIC WATER SUPPLY SECTION. ALL SEWER LINES TO BE INSTALLED WITHIN COMPLIANCE OF THE RULES AND REGULATIONS OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT QUALITY, DIVISION OF WATER RESOURCES, WATER QUALITY SECTION. PERFORM ALL WORK IN ACCORDANCE WITH THE APPLICABLE PLUMBING CODES.
4. THE UTILITY OWNER OWNS THE EXISTING UTILITY FACILITIES AND WILL OWN THE NEW UTILITY FACILITIES AFTER ACCEPTANCE BY THE DEPARTMENT. THE DEPARTMENT OWNS THE CONSTRUCTION CONTRACT AND HAS ADMINISTRATIVE AUTHORITY. COMMUNICATIONS AND DECISIONS BETWEEN THE CONTRACTOR AND UTILITY OWNER ARE NOT BINDING UPON THE DEPARTMENT OR THIS CONTRACT UNLESS AUTHORIZED BY THE ENGINEER. AGREEMENTS BETWEEN THE UTILITY OWNER AND CONTRACTOR FOR THE WORK THAT IS NOT PART OF THIS CONTRACT OR IS SECONDARY TO THIS CONTRACT ARE ALLOWED, BUT ARE NOT BINDING UPON THE DEPARTMENT.
5. PROVIDE ACCESS FOR THE DEPARTMENT PERSONNEL AND THE OWNER'S REPRESENTATIVES TO ALL PHASES OF CONSTRUCTION. NOTIFY DEPARTMENT PERSONNEL AND THE UTILITY OWNER TWO WEEKS PRIOR TO COMMENCEMENT OF ANY WORK AND ONE WEEK PRIOR TO SERVICE INTERRUPTION. KEEP UTILITY OWNERS' REPRESENTATIVES INFORMED OF WORK PROGRESS AND PROVIDE OPPORTUNITY FOR INSPECTION OF CONSTRUCTION AND TESTING.

6. THE PLANS DEPICT THE BEST AVAILABLE INFORMATION FOR THE LOCATION, SIZE, AND TYPE OF MATERIAL FOR ALL EXISTING UTILITIES. MAKE INVESTIGATIONS FOR DETERMINING THE EXACT LOCATION, SIZE, AND TYPE MATERIAL OF THE EXISTING FACILITIES AS NECESSARY FOR THE CONSTRUCTION OF THE PROPOSED UTILITIES AND FOR AVOIDING DAMAGE TO EXISTING FACILITIES. REPAIR ANY DAMAGE INCURRED TO EXISTING FACILITIES TO THE ORIGINAL OR BETTER CONDITION AT NO ADDITIONAL COST TO THE DEPARTMENT.

7. MAKE FINAL CONNECTIONS OF THE NEW WORK TO THE EXISTING SYSTEM WHERE INDICATED ON THE PLANS, AS REQUIRED TO FIT THE ACTUAL CONDITIONS, OR AS DIRECTED.

8. MAKE CONNECTIONS BETWEEN EXISTING AND PROPOSED UTILITIES AT TIMES MOST CONVENIENT TO THE PUBLIC, WITHOUT ENDANGERING THE UTILITY SERVICE, AND IN ACCORDANCE WITH THE UTILITY OWNER'S REQUIREMENTS. MAKE CONNECTIONS ON WEEKENDS, AT NIGHT, AND ON HOLIDAYS IF NECESSARY.

9. ALL UTILITY MATERIALS SHALL BE APPROVED PRIOR TO DELIVERY TO THE PROJECT. SEE 1500-7, " SUBMITTALS AND RECORDS" IN SECTION 1500 OF THE STANDARD SPECIFICATIONS.

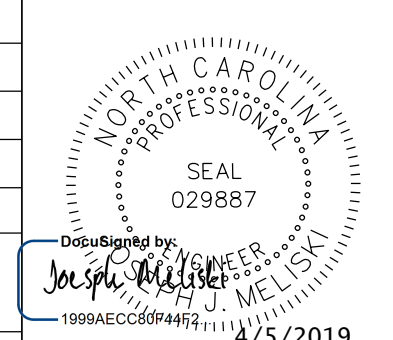
## PROJECT SPECIFIC NOTES:

1. PROPOSED WATER LINE AND SEWER LINES FOR TOWN OF MURPHY SHALL BE CLASS 350 DUCTILE IRON PIPE.

2. ALL ENCASEMENTS INSTALLED FOR THE TOWN OF MURPHY SHALL BE INSTALLED BY OPEN CUT. ENCASEMENTS SHALL EXTEND APPROXIMATELY 5' BEYOND FILL SLOPES AND DITCH LINES.

3. ALL CROSSINGS OF SEWER LINES AND WATER SHALL MAINTAIN 18" MIN. CLEARANCE BETWEEN WATER AND SEWER LINES, WITH THE SEWER LINE BELOW THE WATER LINE.

4. ALL UTILITIES SHALL BE INSTALLED SO THAT 3' MIN. COVER IS MAINTAINED FROM FINAL GRADE.

PROJECT REFERENCE NO.	SHEET NO.
R-5735	UC-3
DESIGNED BY: VW	
DRAWN BY: VW	
CHECKED BY: JM	
APPROVED BY: JM	
REVISED: 1/29/19	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION Disubscribed by: Joseph J. Melisa 1998AEC009494 11/15/2019 <b>Michael Baker Engineering, Inc.</b> <b>Michael Baker International</b> 8500 Regency Park Suite 600 Cary, NC 27518 NC License: F-1084	
UTILITY CONSTRUCTION PLANS ONLY	



## UTILITY CONSTRUCTION

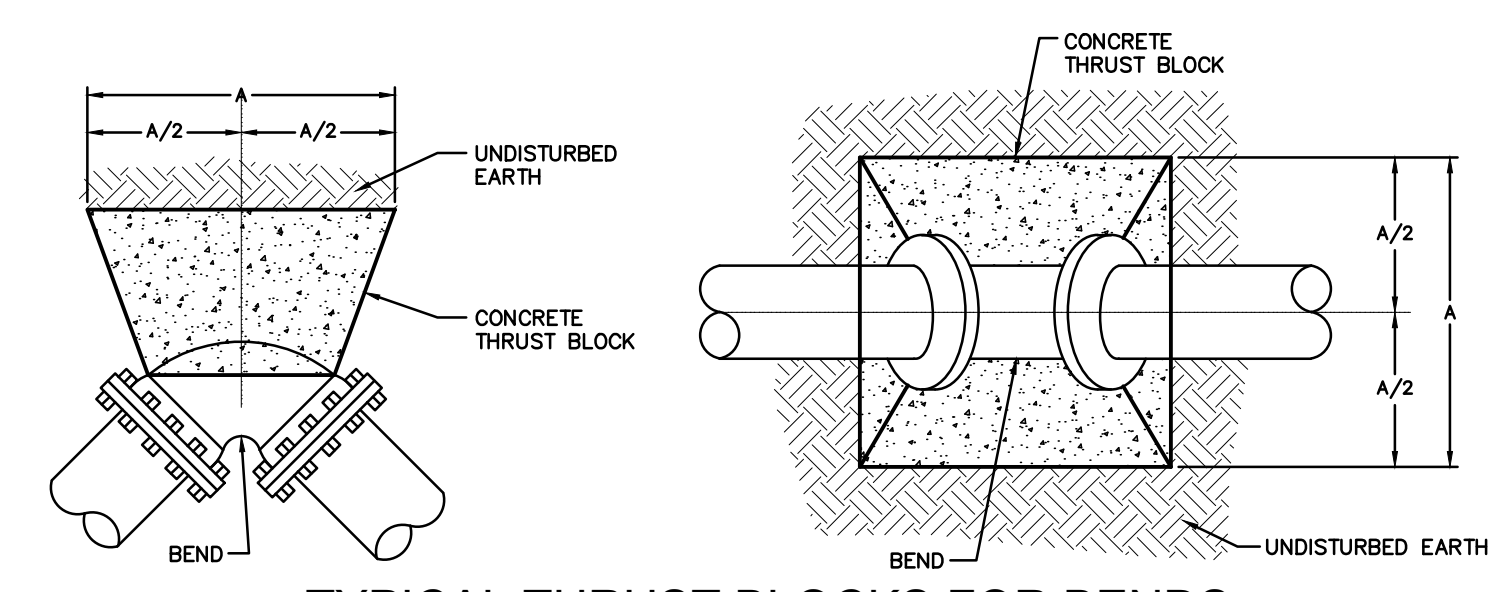


# UTILITY CONSTRUCTION

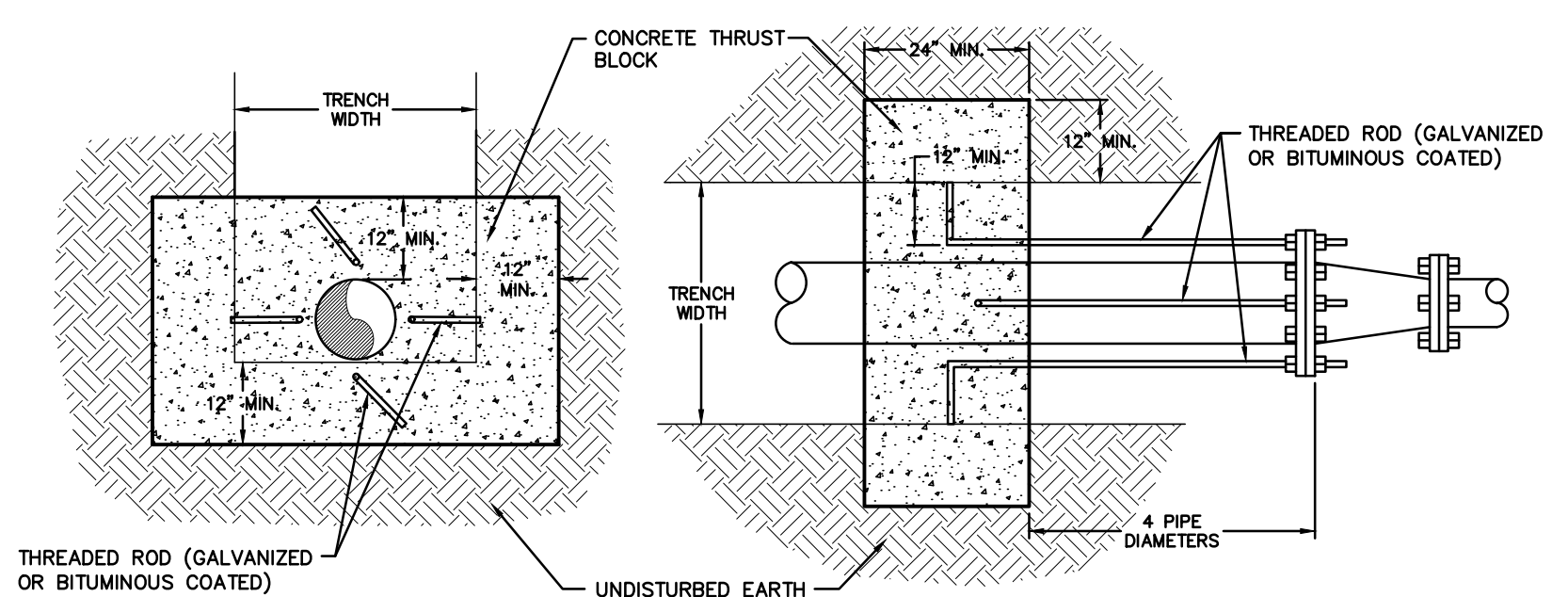
## PROJECT TYPICAL DETAILS

### TOWN OF MURPHY

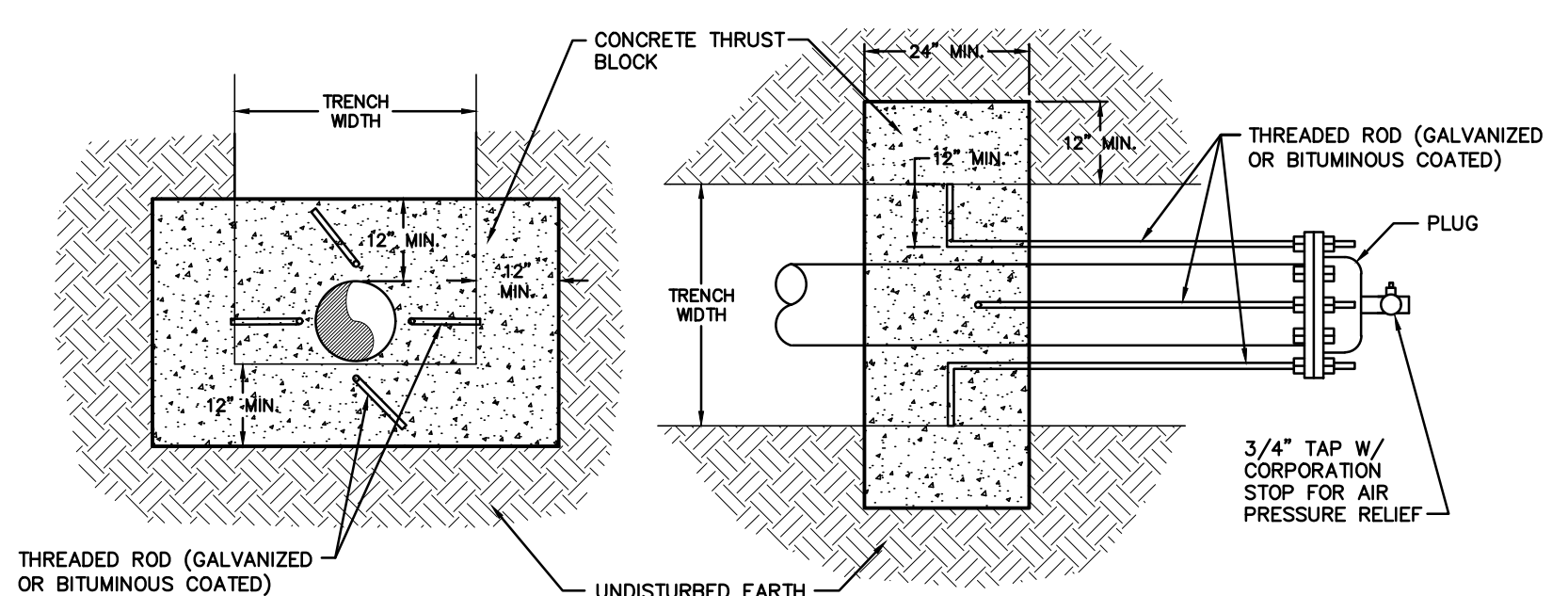
PROJECT REFERENCE NO. R-5735	SHEET NO. UC-3A
DESIGNED BY: VW	
DRAWN BY: VW	
CHECKED BY: JM	
APPROVED BY: JM	
REVISED: 1/29/19	
Michael Baker Engineering, Inc. 6000 Regency Plaza Suite 600 Cary, NC 27518 IN TERN A T I O N A L License: P-1084	
UTILITY CONSTRUCTION PLANS ONLY	



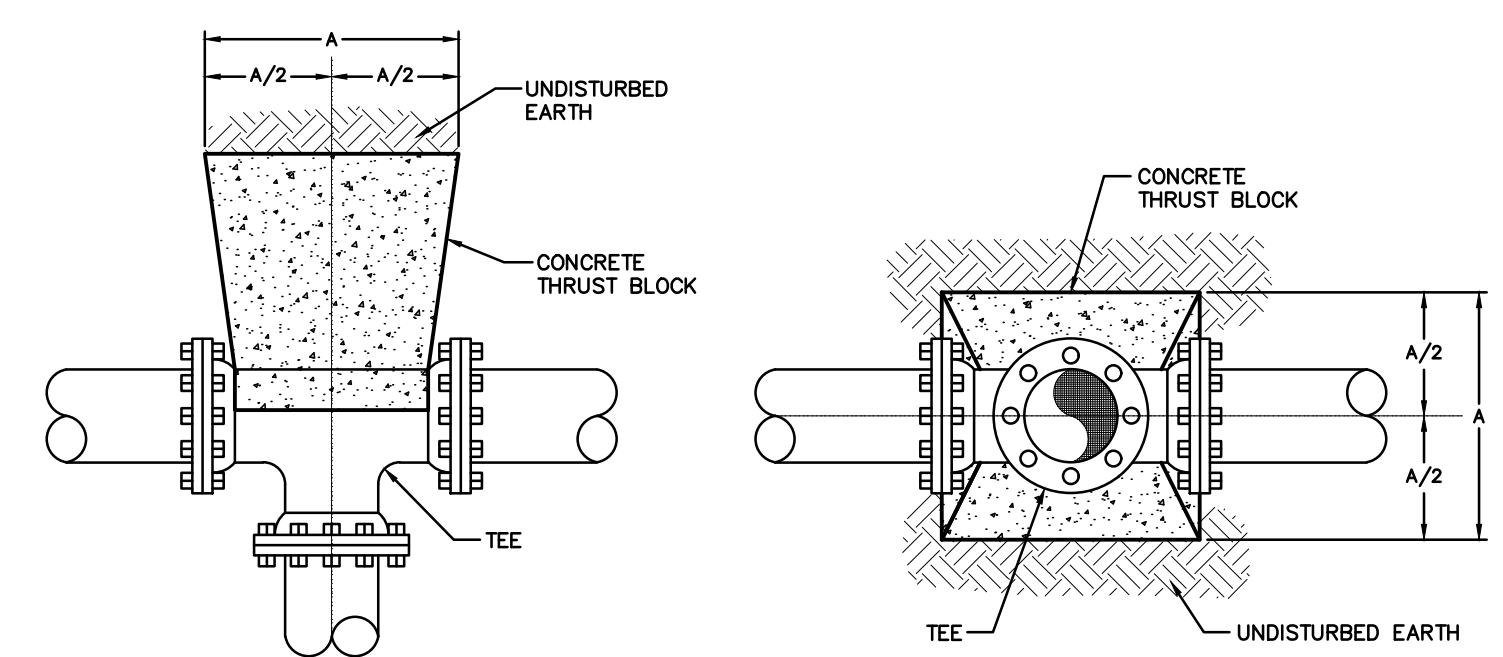
**TYPICAL THRUST BLOCKS FOR BENDS**



**TYPICAL THRUST BLOCK FOR REDUCERS**



**TYPICAL THRUST BLOCK FOR PLUGS**



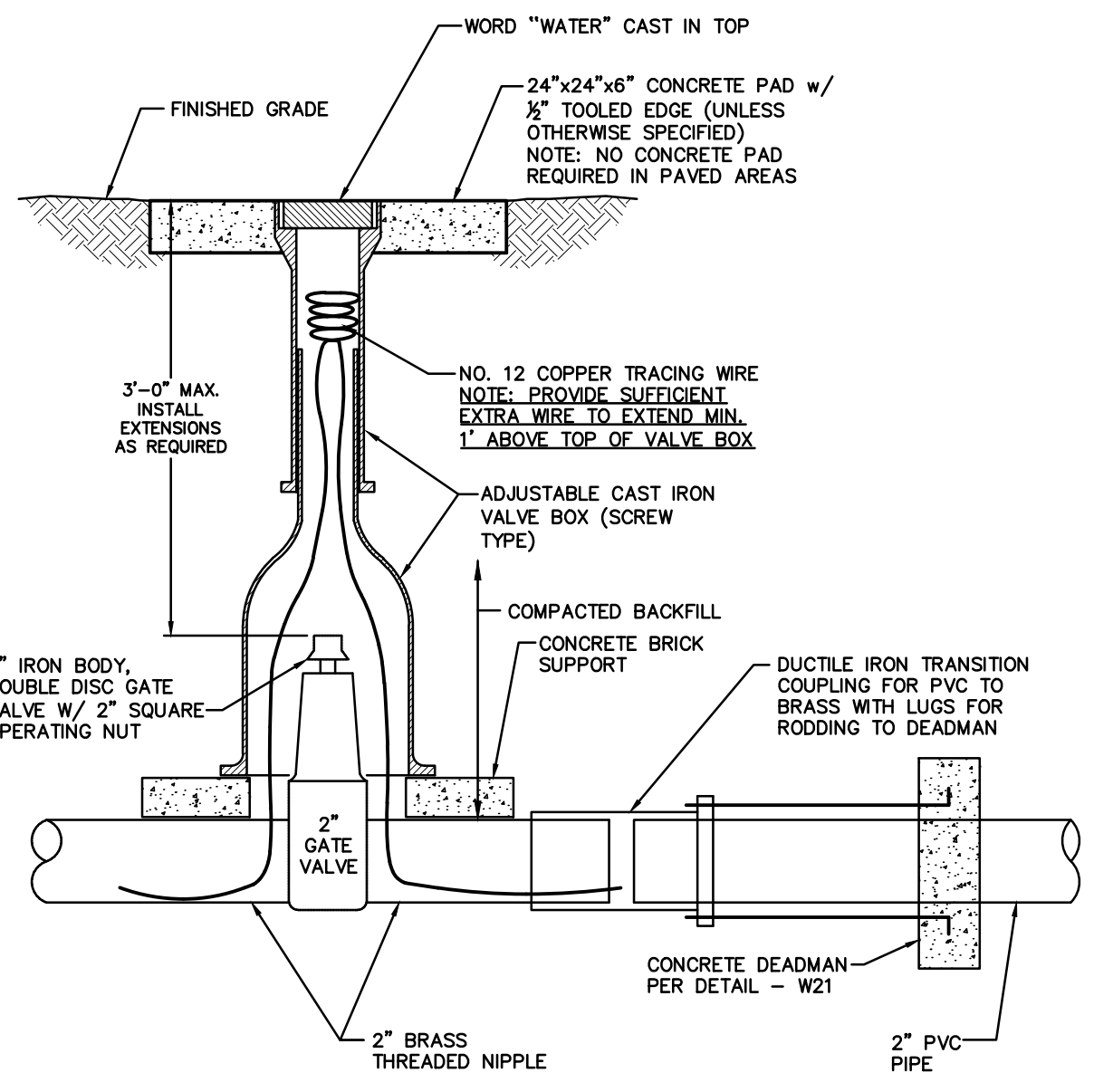
**TYPICAL THRUST BLOCKS FOR TEES**

- NOTES:**
- FITTING JOINTS SHALL NOT BE POURED IN CONCRETE OR HAVE CONCRETE SPILLED ON THE BOLTS OR NUTS. THE FITTING SHALL BE WRAPPED IN A LAYER OF POLYETHYLENE PLASTIC PRIOR TO POURING THE THRUST BLOCK.
  - ROD AND EYE BOLT DIAMETER SHALL BE A MINIMUM OF 3/4" AND SHALL MATCH THE SIZE OF THE BOLT PROVIDED WITH THE FITTING.
  - CONTRACTOR SHALL REPLACE FITTING BOLTS WITH THREADED ROD FOR 1/2 OF THE BOLTS SUPPLIED WITH EACH FITTING. RODS SHALL BE EQUALLY SPACED.
  - ALL DIMENSIONS SHOWN ARE IN INCHES.

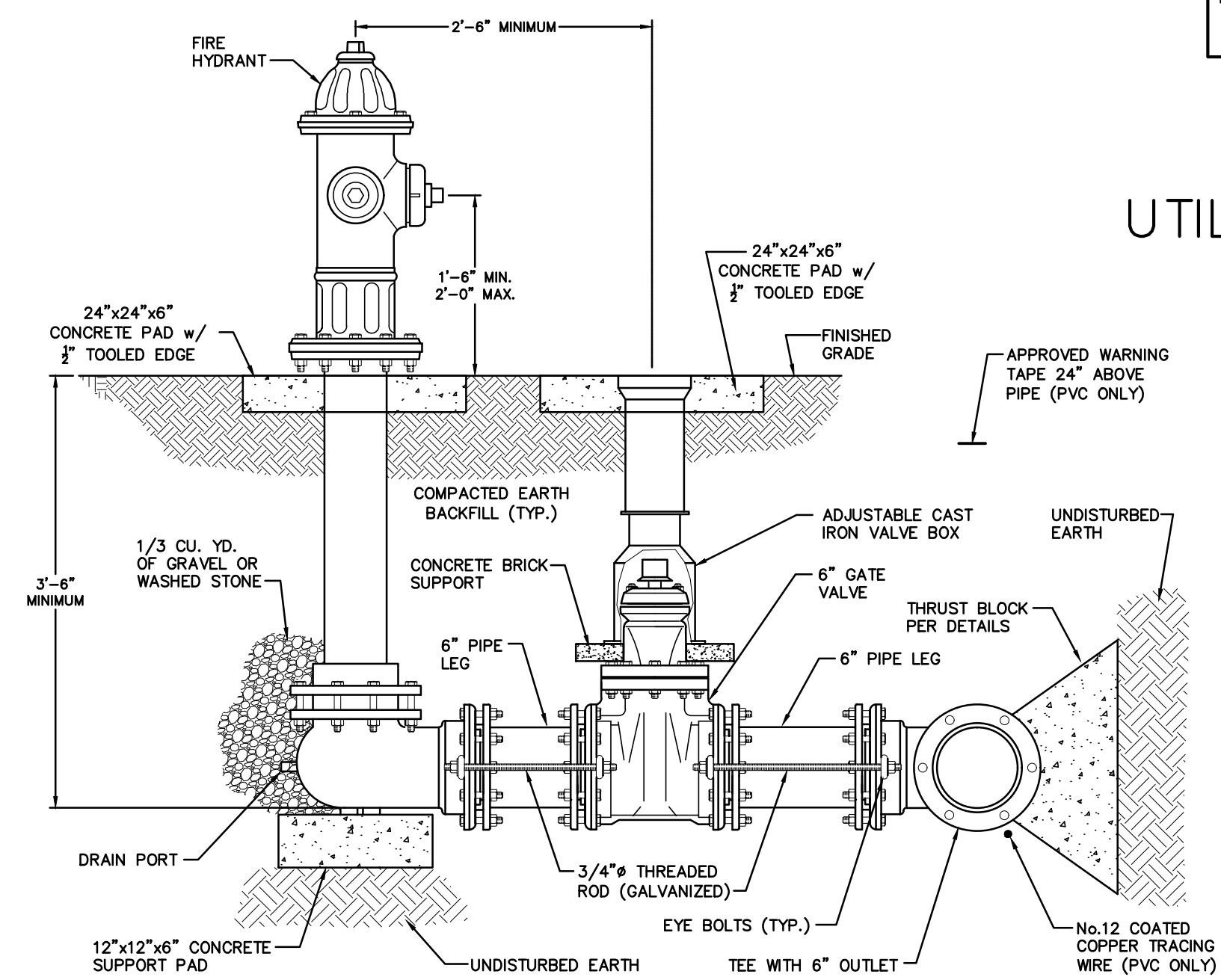
SIZE	TYPE					
	11-1/4" BEND	22-1/2" BEND	45° BEND	90° BEND	TEE	PLUG
2-6	12	12	16	16	16	14
8	12	12	16	22	22	18
10	12	14	20	28	28	22
12	12	18	24	32	32	28
14	14	20	28	38	38	32
16	16	22	32	42	42	36
18	18	26	36	48	48	40
20	20	28	40	52	52	44
24	24	34	46	64	64	54
30	30	42	58	78	78	66
36	36	50	70	94	94	80
42	40	58	80	108	108	92
48	46	66	90	124	124	104

**THRUST BLOCK DIMENSION "A"**

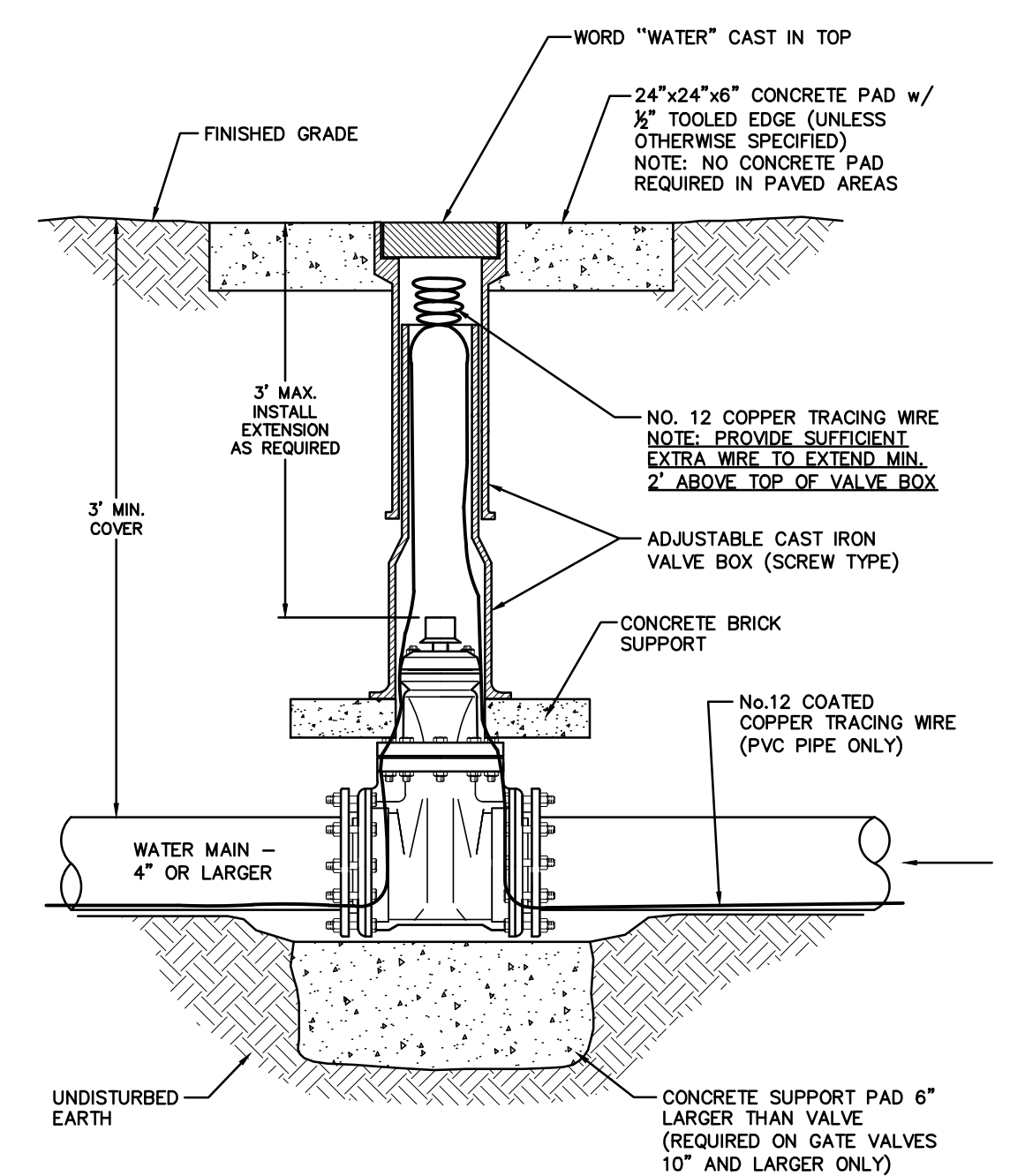
**W 6 THRUST BLOCKING - ALL**  
UPDATED MARCH, 2017  
NOT TO SCALE



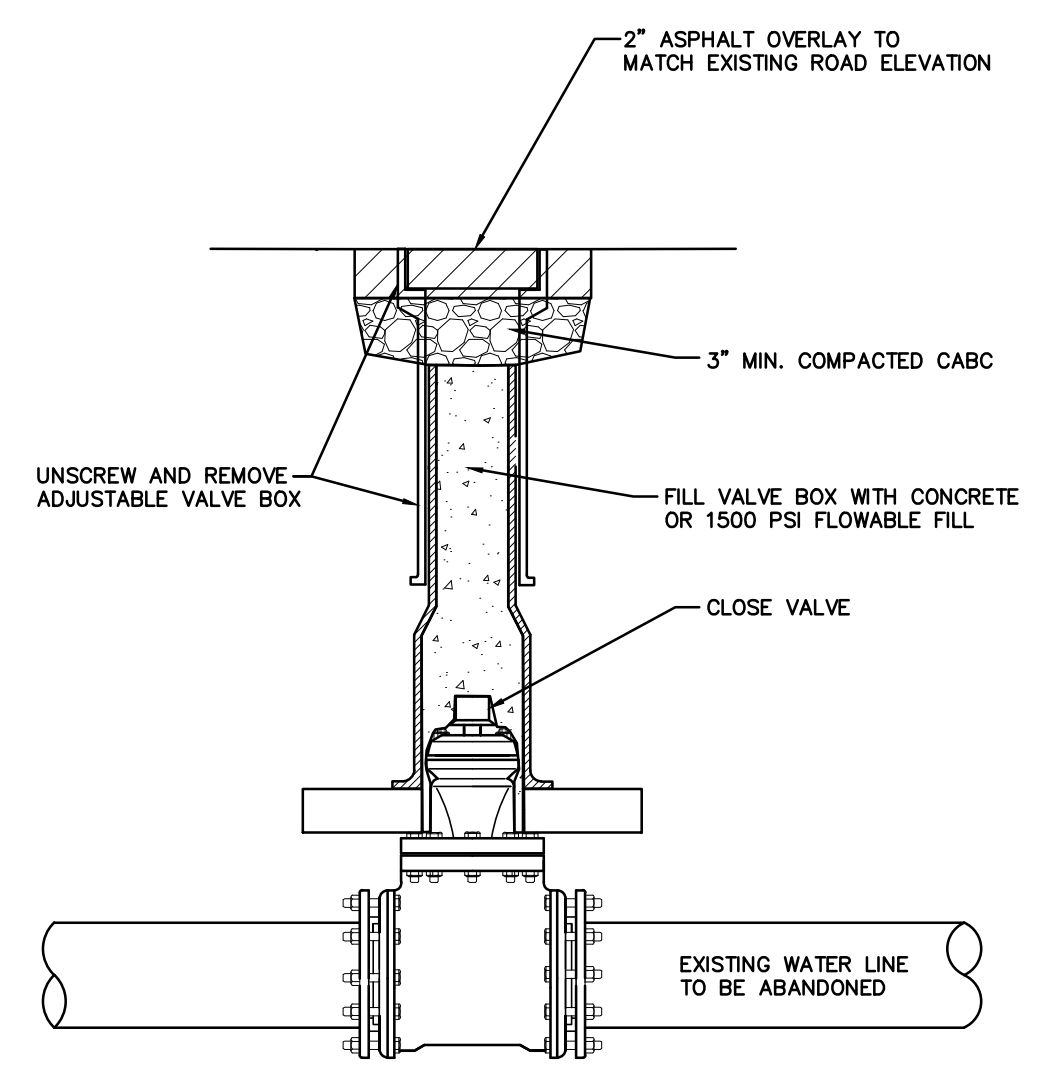
**W 11 2 INCH GATE VALVE - THREADED**  
UPDATED MARCH, 2017  
NOT TO SCALE



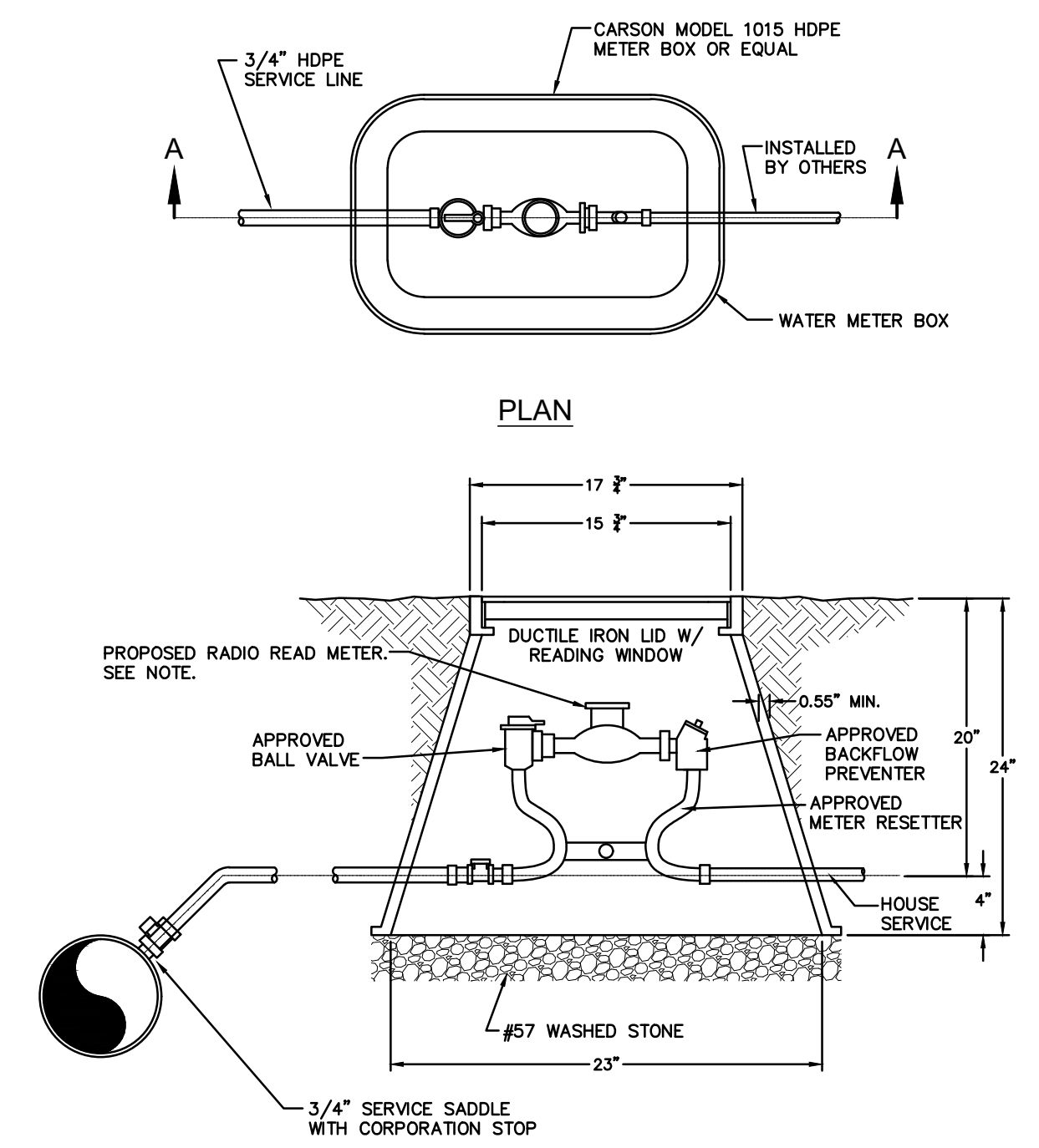
**W 7 FIRE HYDRANT ASSEMBLY**  
UPDATED MARCH, 2017  
NOT TO SCALE



**W 12 GATE VALVE - LARGE**  
UPDATED MARCH, 2017  
NOT TO SCALE



**W 99 GATE VALVE ABANDONMENT**  
CREATED FOR THIS PROJECT  
NOT TO SCALE



**W 16 WATER METER BOX DETAIL**  
MODIFIED FOR THIS PROJECT  
NOT TO SCALE

SECTION A-A

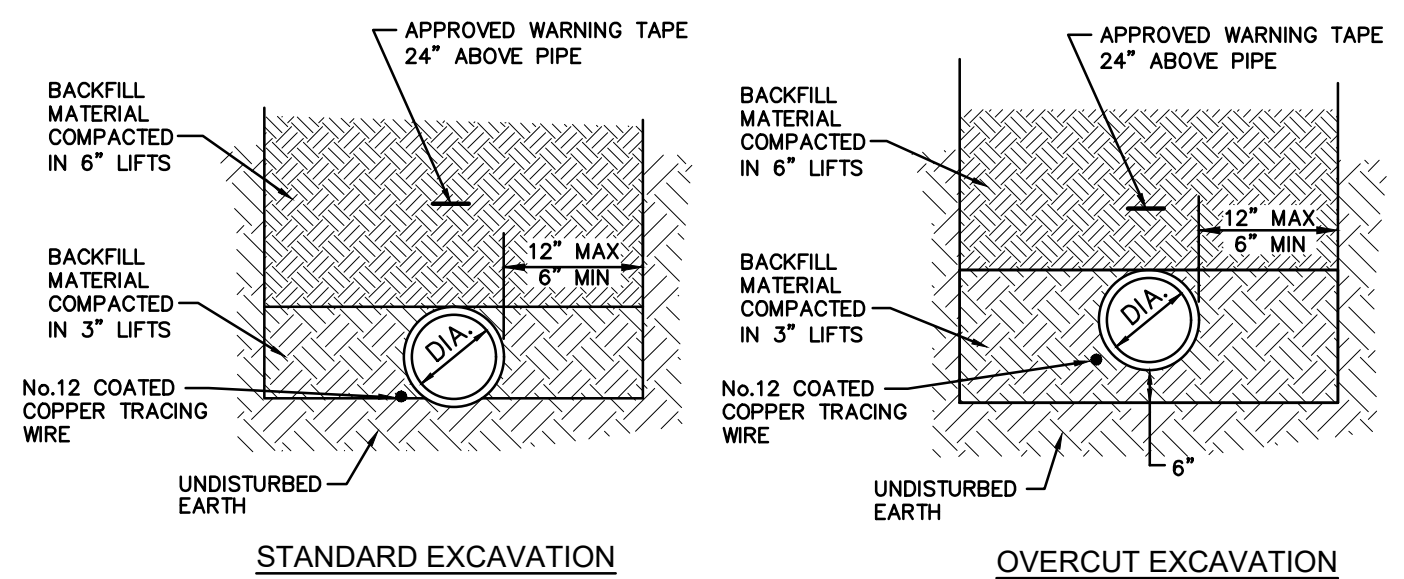


# UTILITY CONSTRUCTION

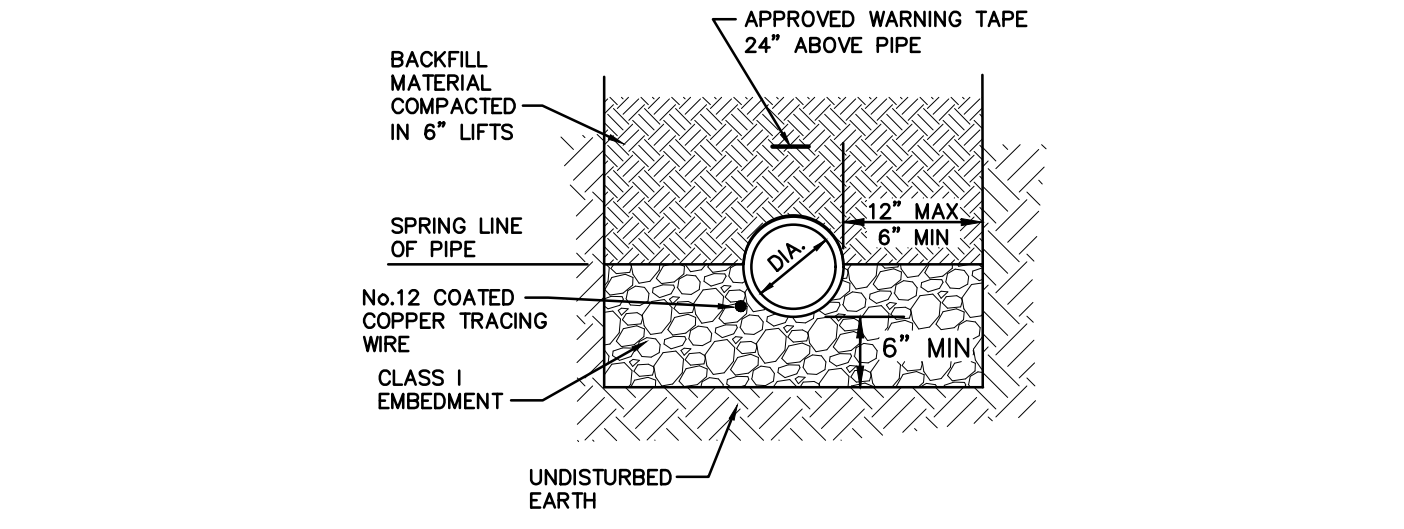
## PROJECT TYPICAL DETAILS

### TOWN OF MURPHY

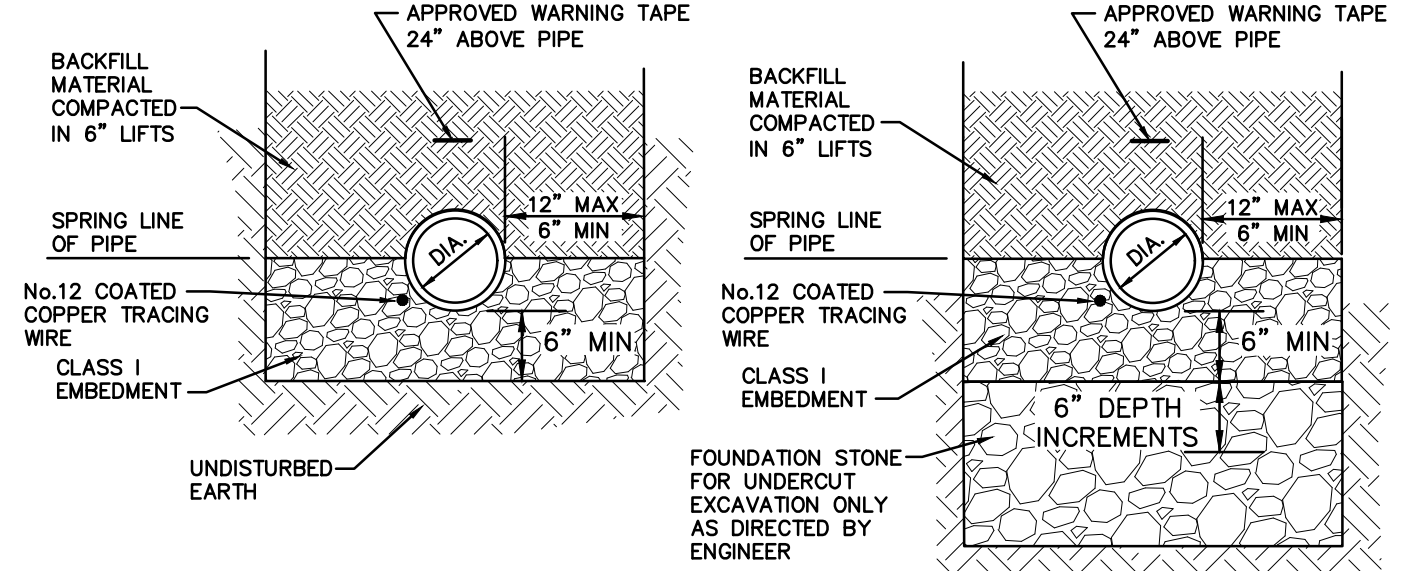
PROJECT REFERENCE NO. R-5735	SHEET NO. UC-3B
DESIGNED BY: VW	
DRAWN BY: VW	
CHECKED BY: JM	
APPROVED BY: JM	
REVISED: 1/29/19	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION <b>Michael Baker Engineering, Inc.</b> <small>8000 Regency Park, Suite 600, Charlotte, NC 27218</small> <small>INTERNATIONAL AEC License: E-11084</small>	
UTILITY CONSTRUCTION PLANS ONLY	



**DUCTILE IRON GRAVITY SEWER**



**PVC GRAVITY SEWER**

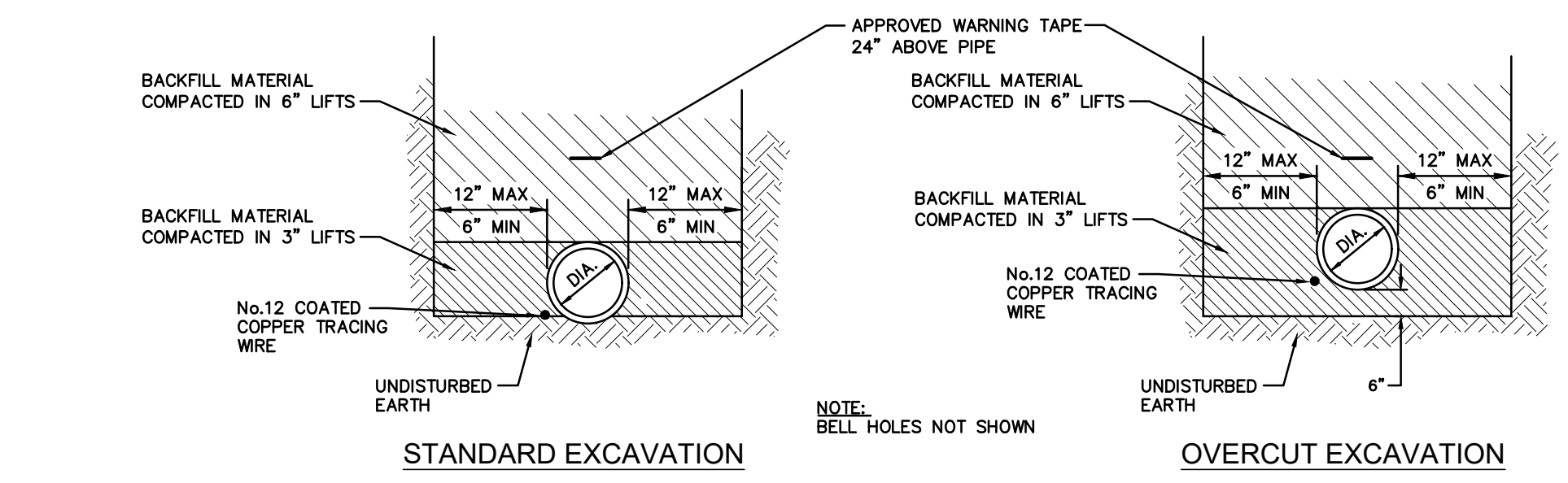


**PIPE IN WET OR UNSTABLE CONDITIONS  
ALL PIPE TYPES  
(AS DIRECTED BY ENGINEER)**

- NOTES:**
- CONSTRUCTION OF TRENCHES SHALL COMPLY WITH ALL FEDERAL, STATE AND LOCAL SAFETY AND HEALTH REGULATIONS WHICH HAVE JURISDICTION AT THE PROJECT SITE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO BE FAMILIAR WITH THE APPLICABLE REGULATIONS AND FOLLOW THEM ACCORDINGLY.
  - FOR UNIT PRICE CONTRACTS ONLY, PAYMENT FOR ROCK EXCAVATION AND SELECT BACKFILL IN TRENCH SHALL BE FOR ACTUAL QUANTITIES AND SHALL NOT EXCEED THE WIDTH OF TRENCH SHOWN ON THIS DETAIL.
  - FOR UNIT PRICE CONTRACTS ONLY, PAYMENT FOR FOUNDATION STONE UNDERCUT SHALL BE FOR THE LENGTH OF THE TRENCH REQUIRING UNDERCUT X 6" DEPTH INCREMENTS TO THE DEPTH REQUIRED.
  - CLASS I EMBEDMENT SHALL BE NCDOT STANDARD # 67 STONE OR APPROVED EQUAL. FOUNDATION STONE SHALL BE NCDOT STANDARD # 57, # 67 STONE, RAILROAD BALLAST OR APPROVED EQUAL.

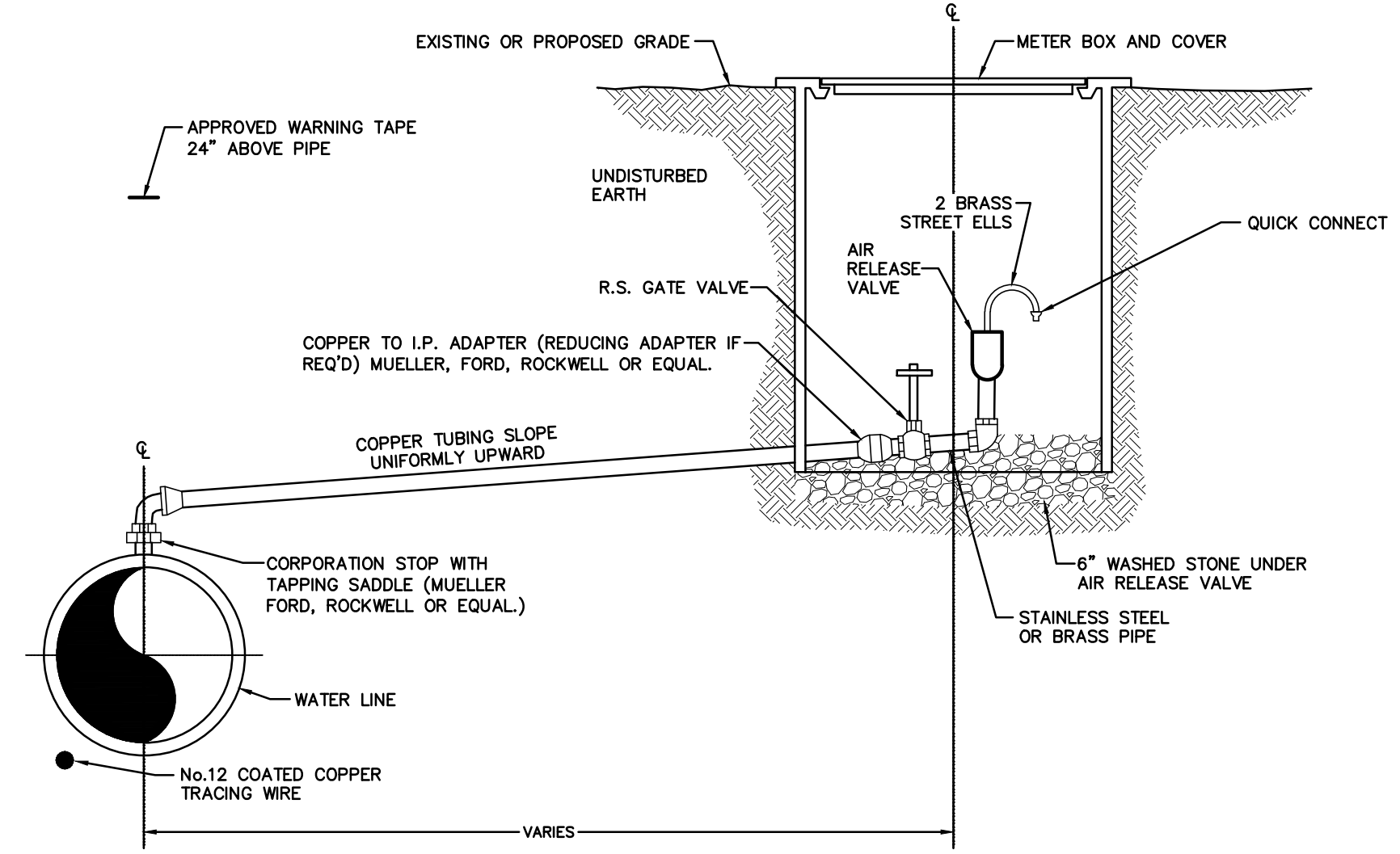
**GRAVITY SEWER TRENCHING DETAILS**

UPDATED MARCH, 2017  
NOT TO SCALE



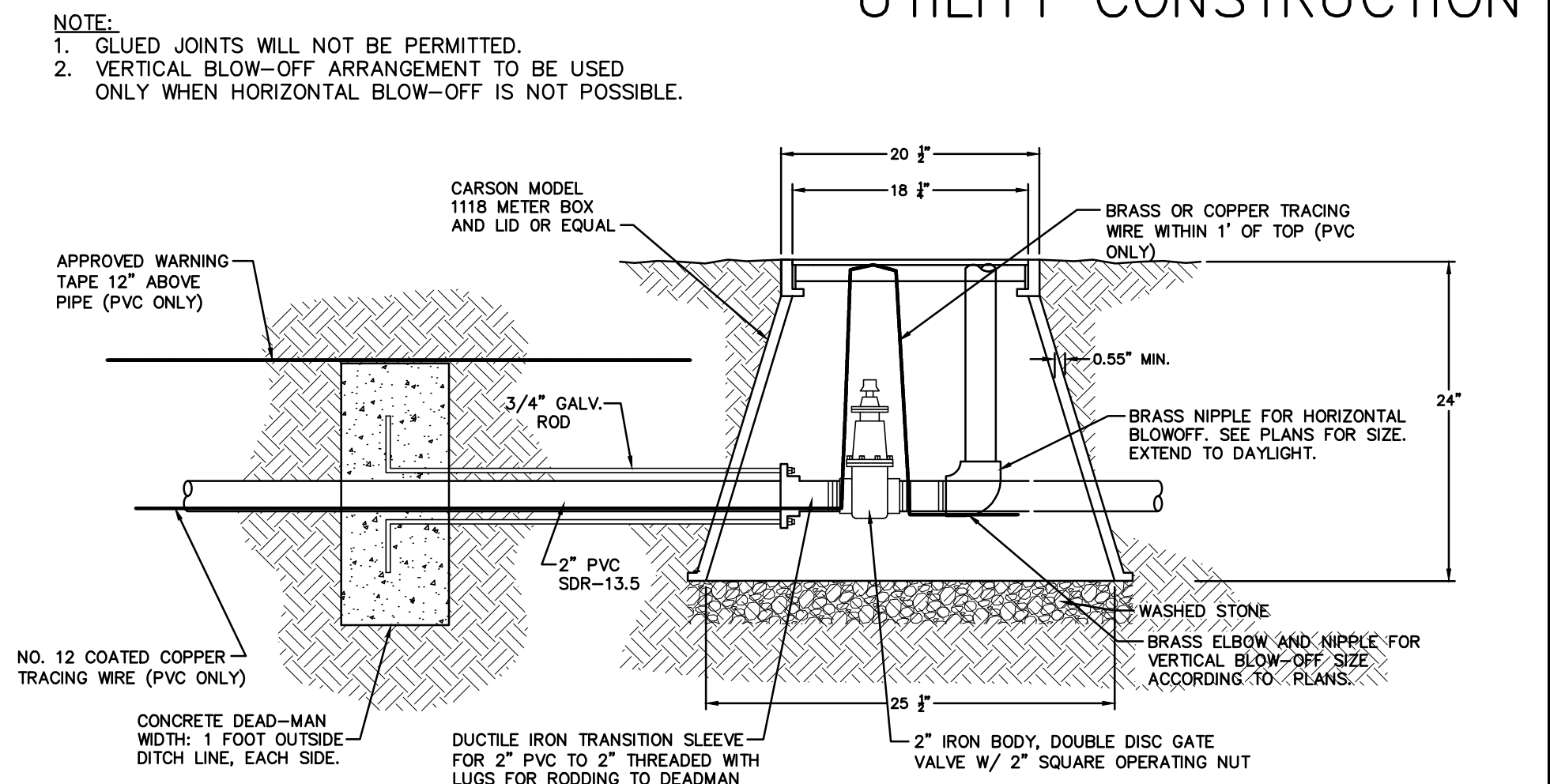
**WATER LINE TRENCHING**

UPDATED MARCH, 2017  
NOT TO SCALE



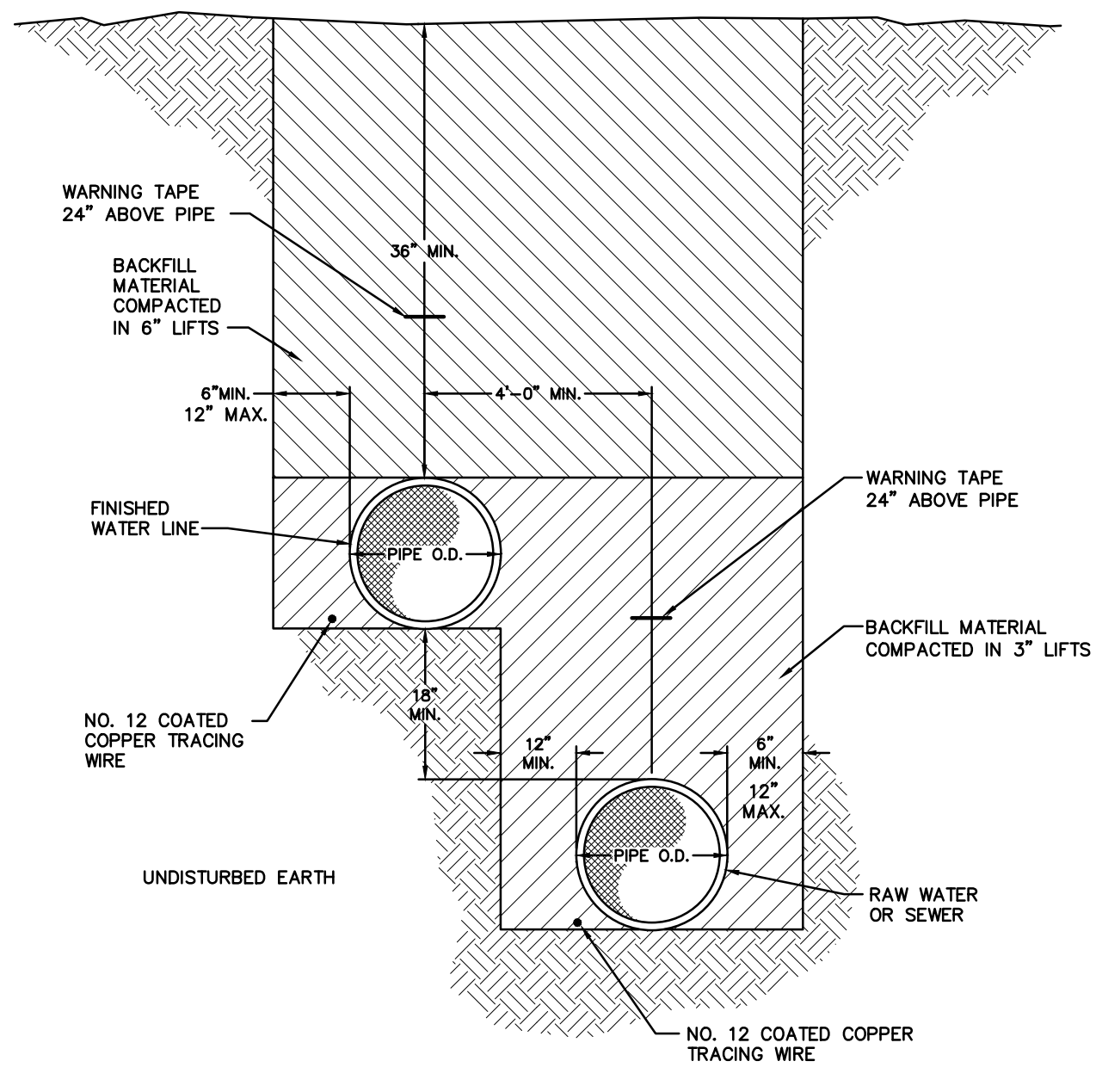
**OFFSET AIR RELEASE VALVE INSTALLATION**

UPDATED FEBRUARY, 2018  
NOT TO SCALE



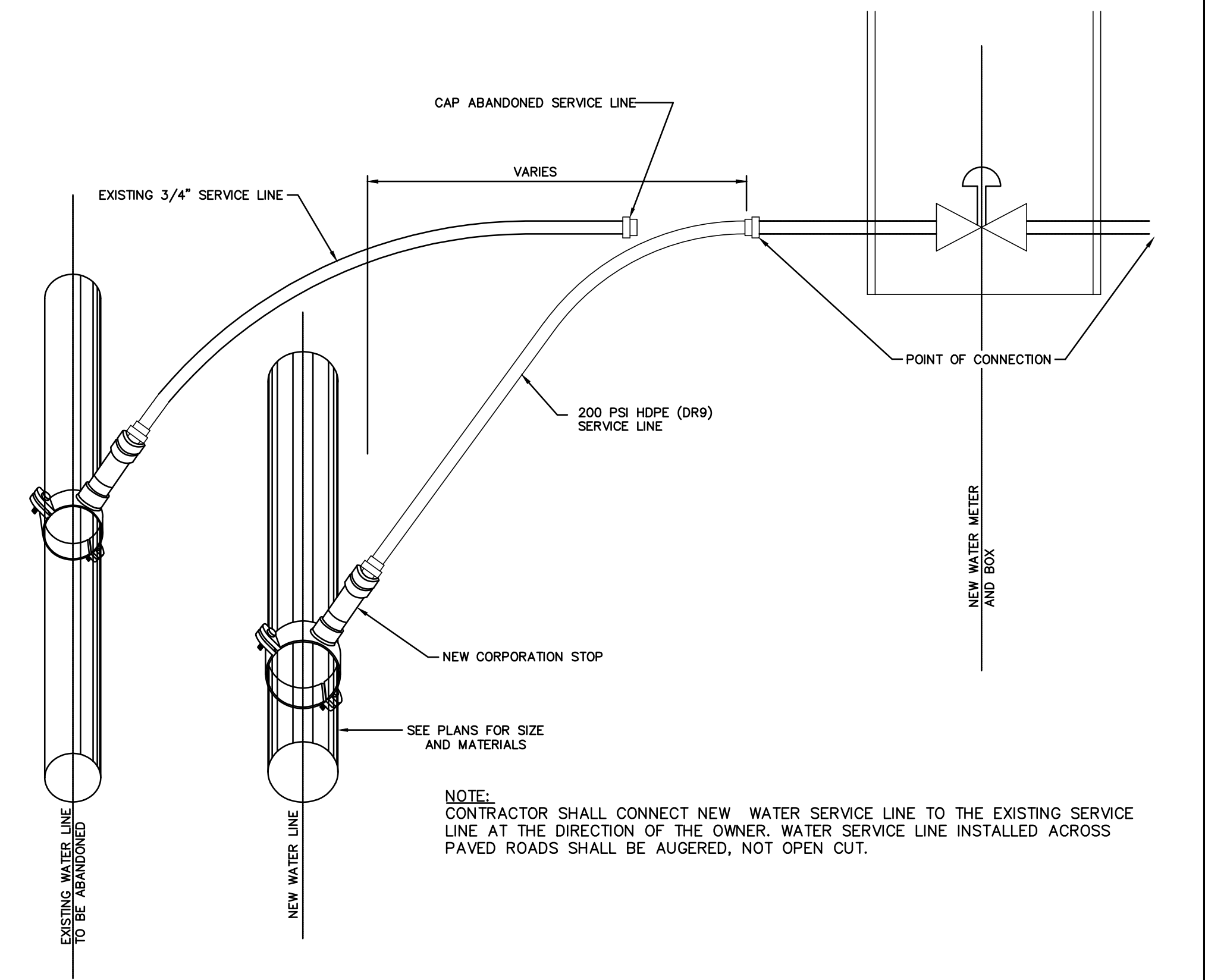
**BLOW-OFF DETAIL**

MODIFIED FOR THIS PROJECT  
NOT TO SCALE



**WATER LINE TRENCHING-TWO PIPES**

UPDATED MARCH, 2017  
NOT TO SCALE



**WATER SERVICE TRANSFER**

UPDATED MARCH, 2017  
NOT TO SCALE

- NOTES:**
- CONTRACTOR SHALL FURNISH AND INSTALL METALLIC WARNING TAPE 24" ABOVE THE PIPE AND COPPER TRACING WIRE FOR PVC PIPE INSTALLATION ONLY.
  - CONSTRUCTION OF TRENCHES SHALL COMPLY WITH ALL FEDERAL, STATE AND LOCAL SAFETY AND HEALTH REGULATIONS WHICH HAVE JURISDICTION AT THE PROJECT SITE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO BE FAMILIAR WITH THE APPLICABLE REGULATIONS AND FOLLOW THEM ACCORDINGLY.
  - PAYMENT FOR ROCK EXCAVATION AND SELECT BACKFILL IN TRENCH SHALL BE FOR ACTUAL QUANTITIES AND SHALL NOT EXCEED THE WIDTH OF TRENCH SHOWN ON THIS DETAIL.

- NOTE:**
- CONTRACTOR SHALL CONNECT NEW WATER SERVICE LINE TO THE EXISTING SERVICE LINE AT THE DIRECTION OF THE OWNER. WATER SERVICE LINE INSTALLED ACROSS PAVED ROADS SHALL BE AUGERED, NOT OPEN CUT.

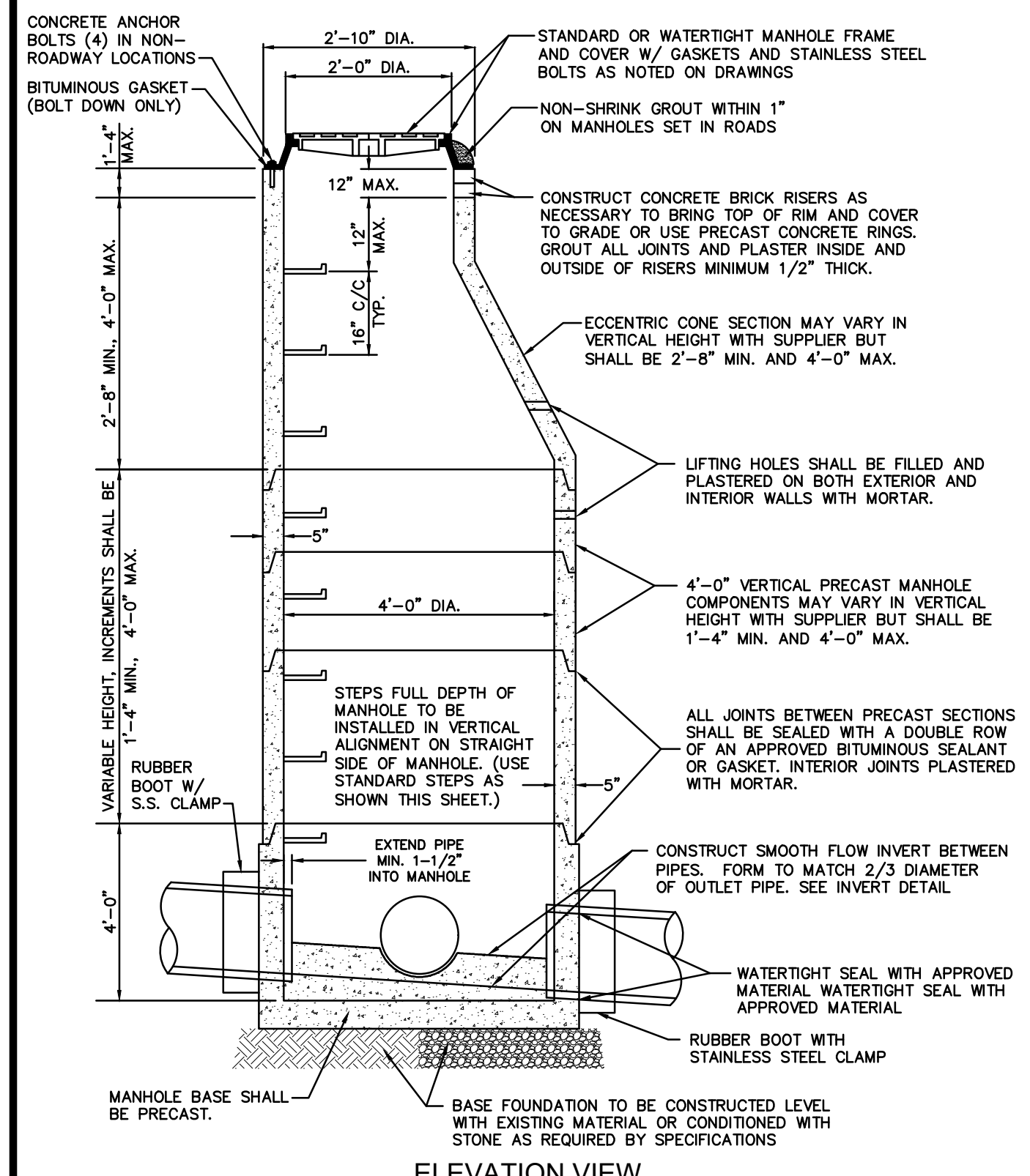


# UTILITY CONSTRUCTION

## PROJECT TYPICAL DETAILS

### TOWN OF MURPHY

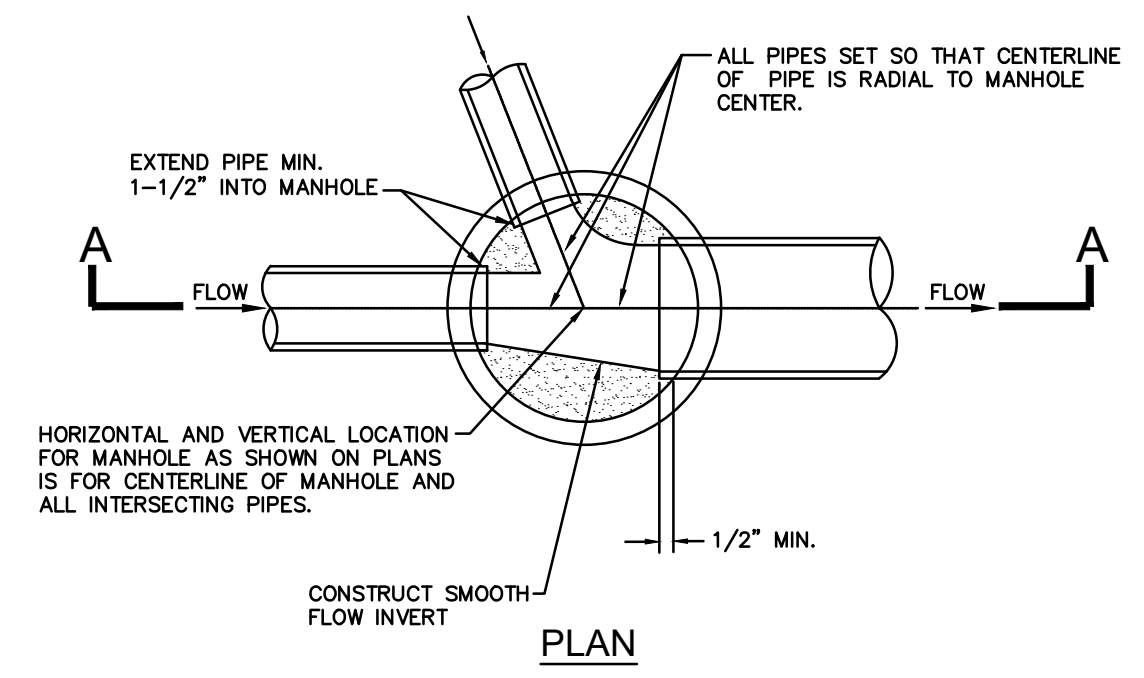
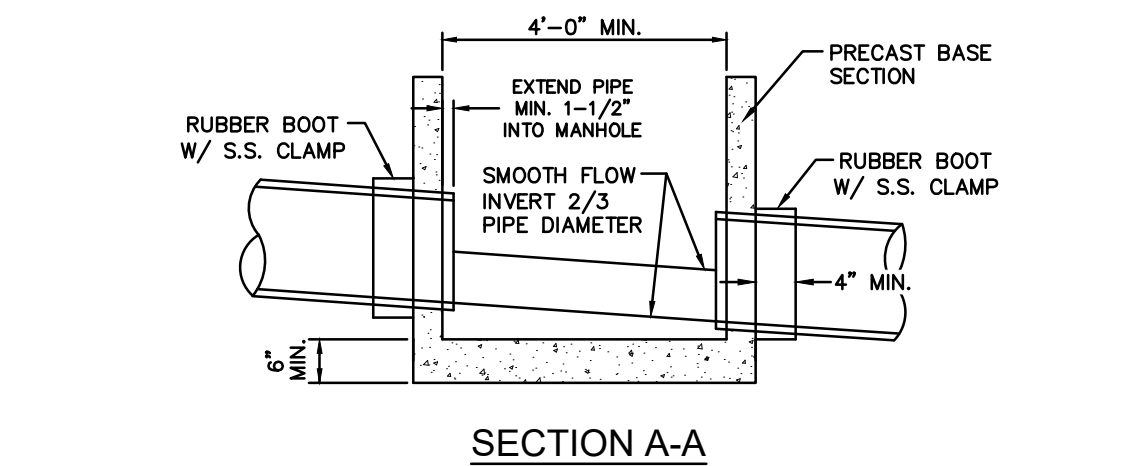
PROJECT REFERENCE NO. R-5735	SHEET NO. UC-3C
DESIGNED BY: VW	
DRAWN BY: VW	
CHECKED BY: JM	
APPROVED BY: JM	
REVISED: 1/29/19	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION Michael Baker Engineering, Inc. 8000 Research Park Suite 600, Raleigh, NC 27618 Michael Baker 476-275-1100 IN T E R N A T I O N A L License: PL-1084	
UTILITY CONSTRUCTION PLANS ONLY	



**PRECAST MANHOLE NOTES:**

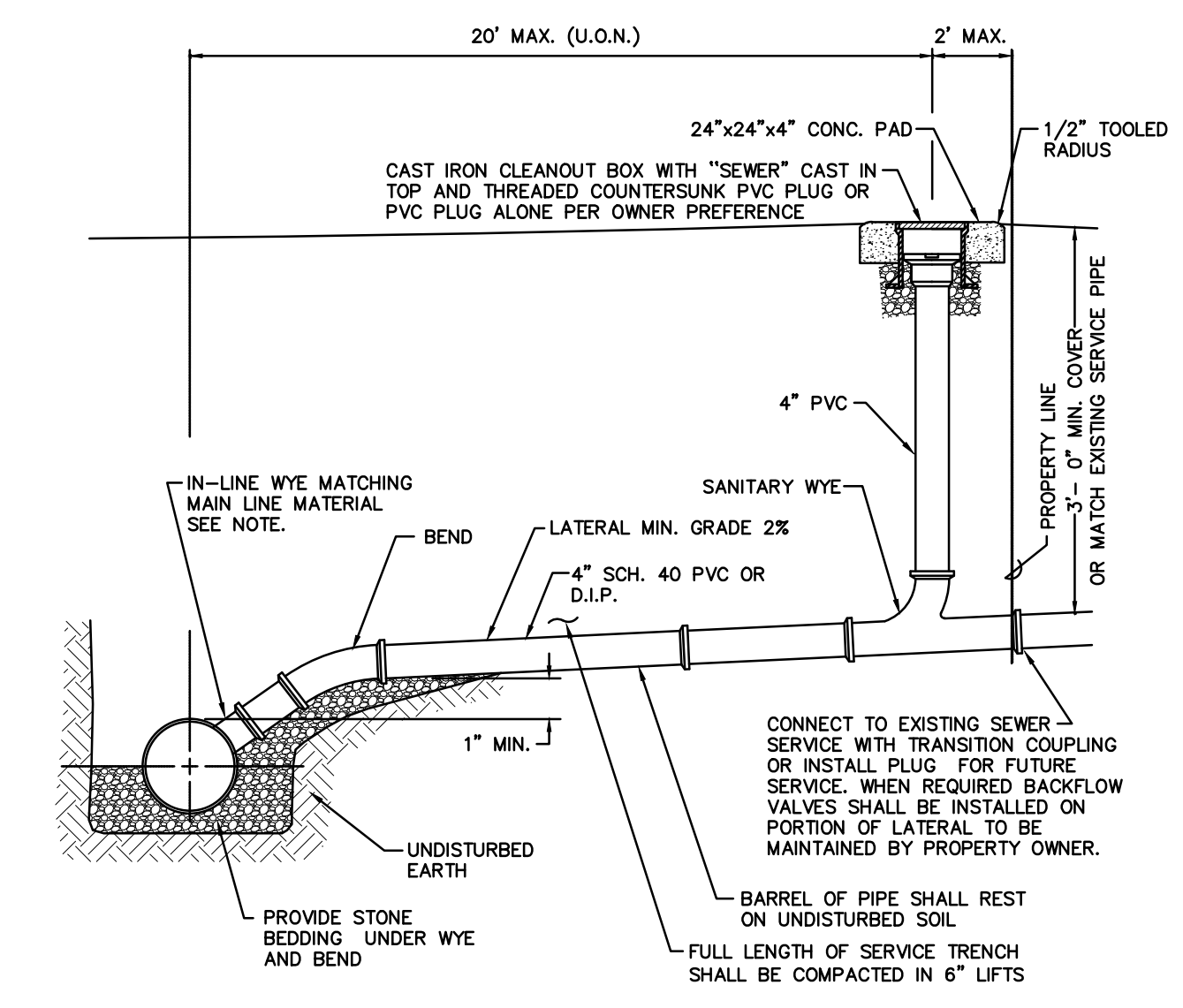
1. ALL PRECAST MANHOLE COMPONENTS SHALL MEET REQUIREMENTS OF ASTM C-478, LATEST REVISION AND ASTM C-890.
2. ALL MANHOLES SHALL BE CONSTRUCTED PLUMB
3. THE PRECAST SUPPLIER SHALL BE RESPONSIBLE FOR THE STRUCTURAL DESIGN OF THE STRUCTURE AND, WHEN REQUESTED BY THE ENGINEER, SHALL SUBMIT SHOP DRAWINGS AND DESIGN CALCULATIONS WHICH HAVE BEEN SIGNED AND SEALED BY A REGISTERED STRUCTURAL ENGINEER.
4. ALL MANHOLE GRADES SHOWN ON THE PLANS ARE FOR THE INVERT OF THE MANHOLE CENTER.
5. IF MANHOLE IS SET IN LOCATION OF HIGH WATER TABLE OR UNDERGROUND WATER IS ENCOUNTERED, THE CONTRACTOR SHALL INSTALL UNDERDRAINS AND STONE AS DIRECTED IN THE FIELD BY THE ENGINEER.
6. STEPS SHALL BE INSTALLED ON STRAIGHT SIDE OF MANHOLE.

**PRECAST CONCRETE MANHOLE**

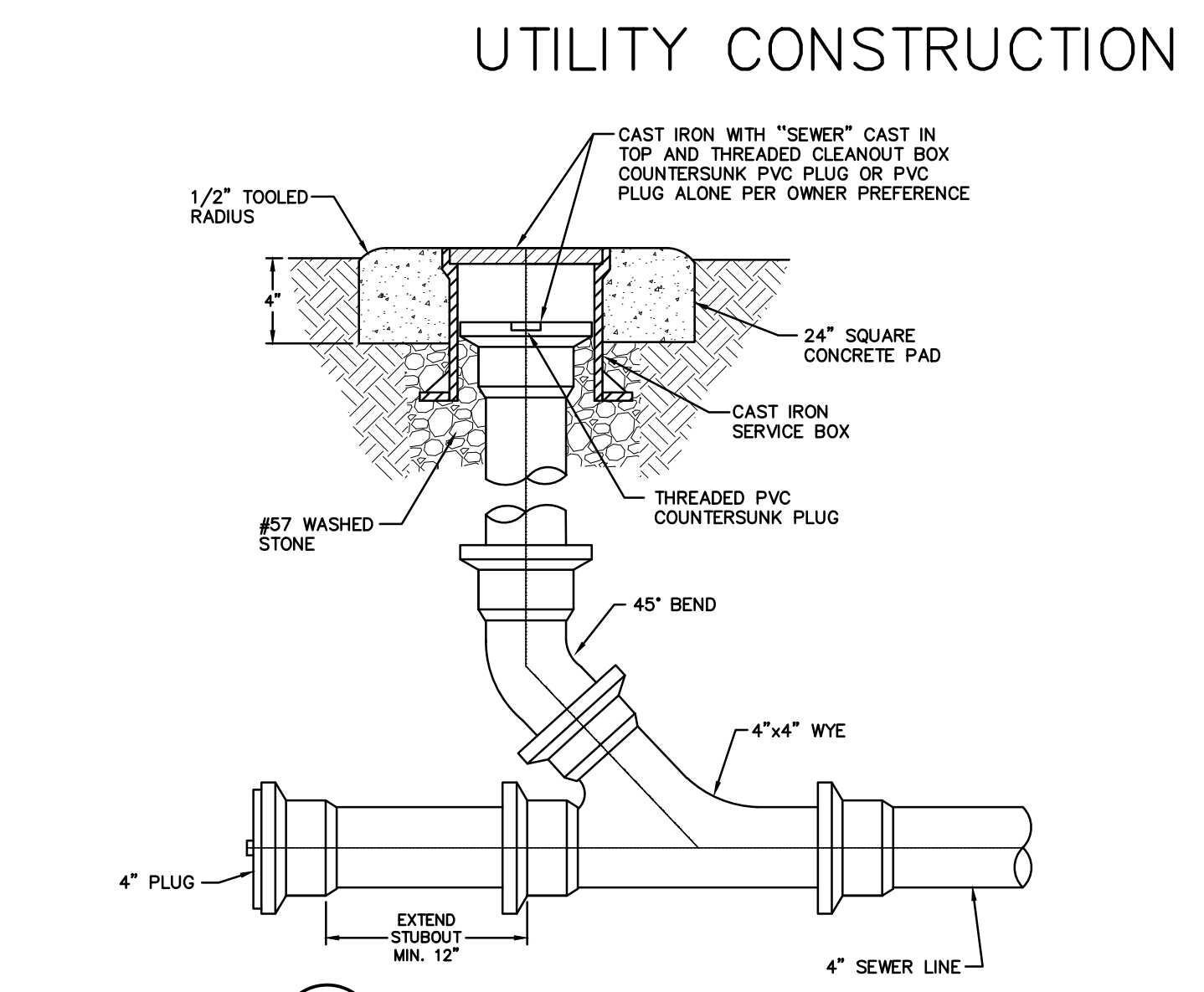


**MANHOLE INVERTS**

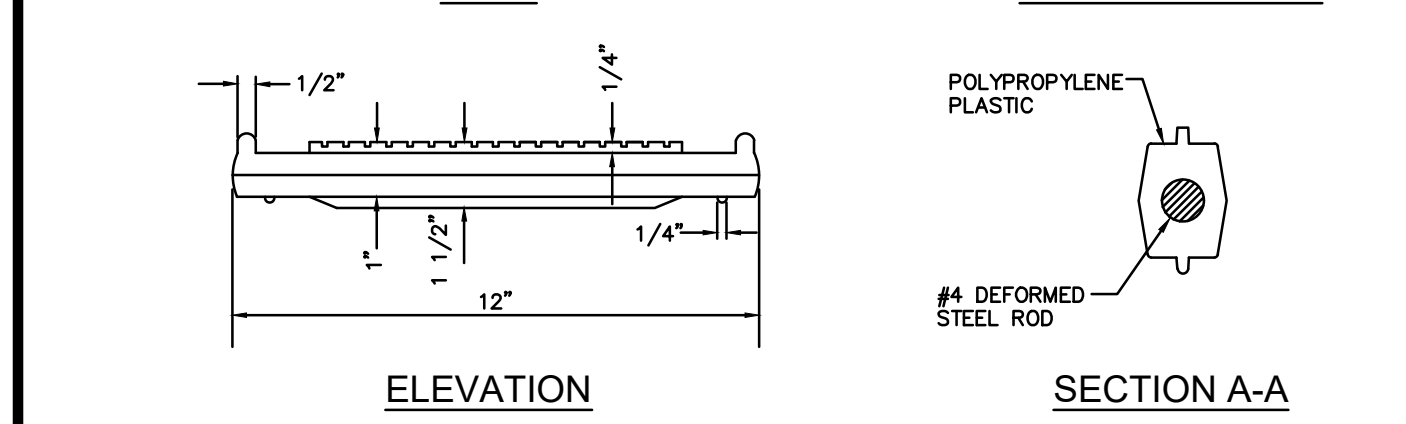
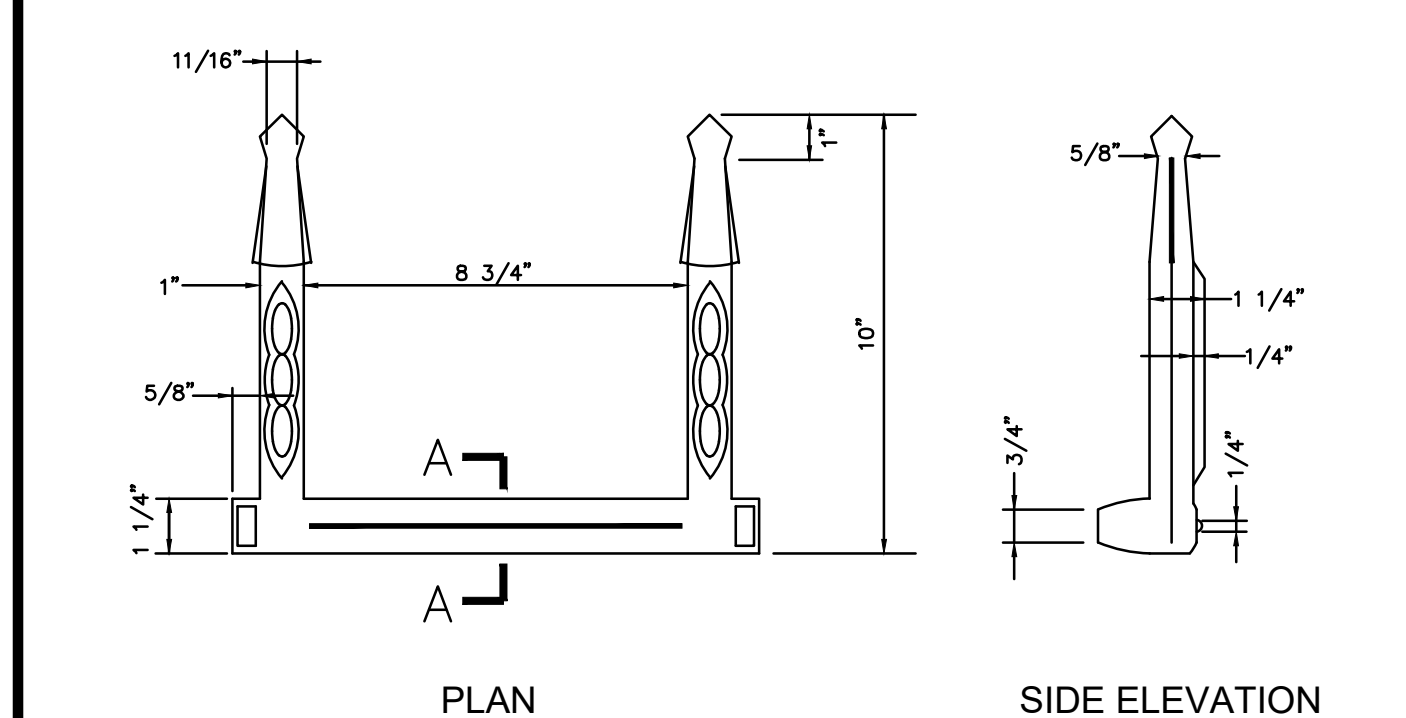
**NOTE:** MANHOLES ON PLANS NOTED AS HIGH VELOCITY MANHOLES SHALL RECEIVE TWO COATS OF SIKAGARD 62, HIGH-BUILD, EPOXY RESIN COATING OR APPROVED EQUAL ON INVERT CHANNEL.



**2** UPDATED MARCH, 2017  
NOT TO SCALE

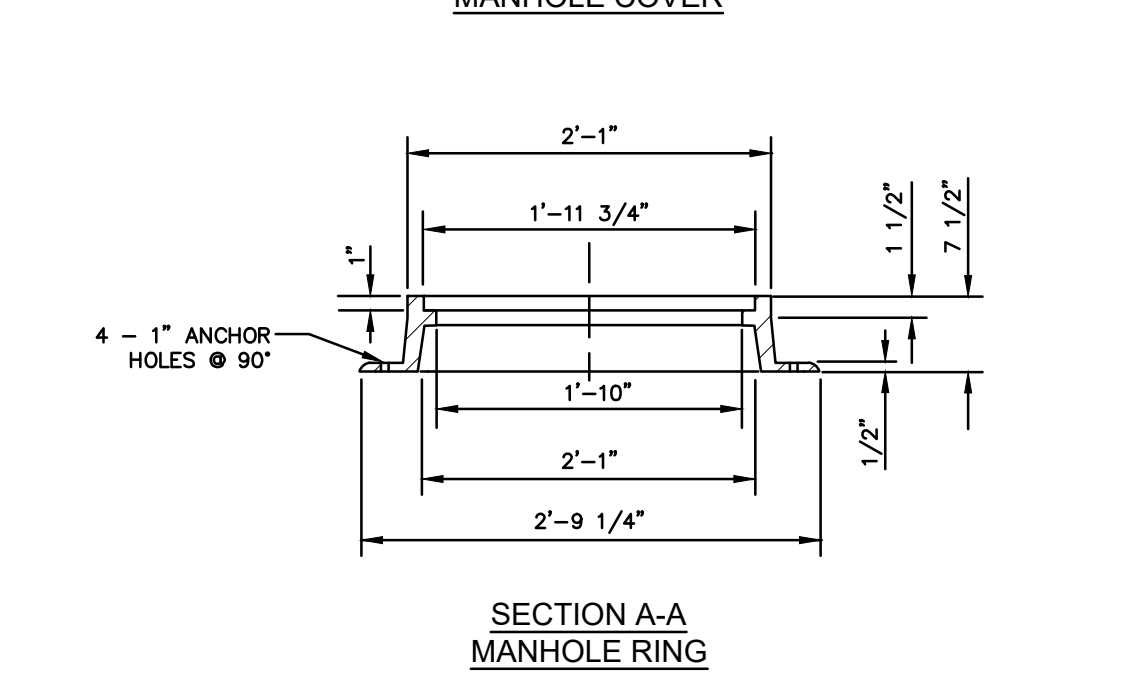
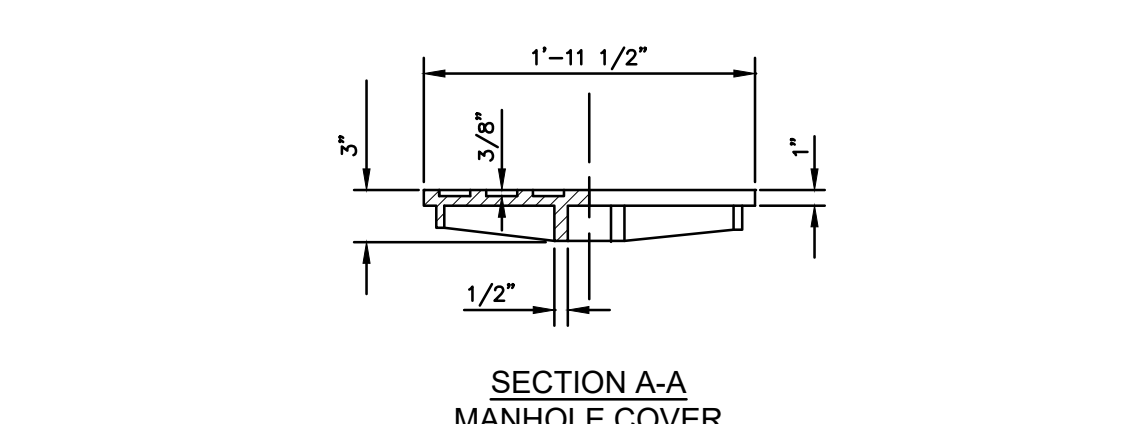
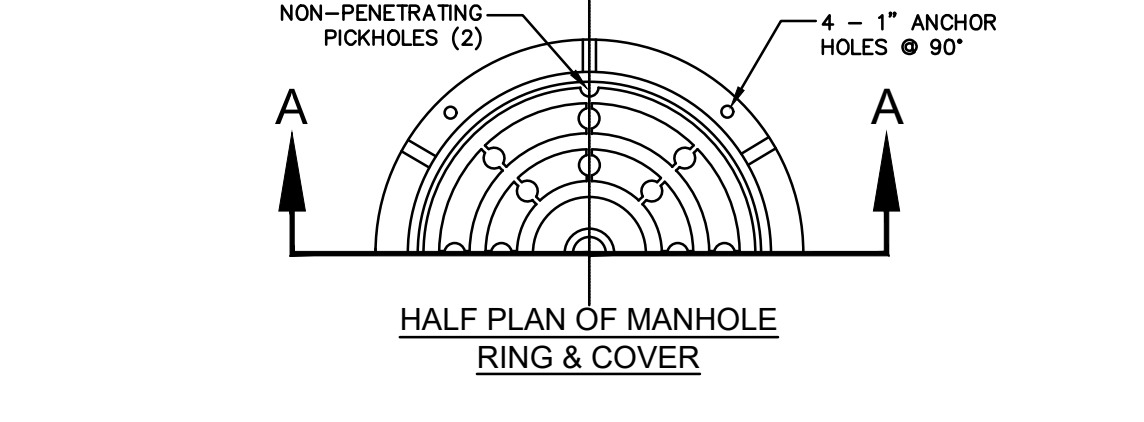


**3** UPDATED MARCH, 2017  
NOT TO SCALE



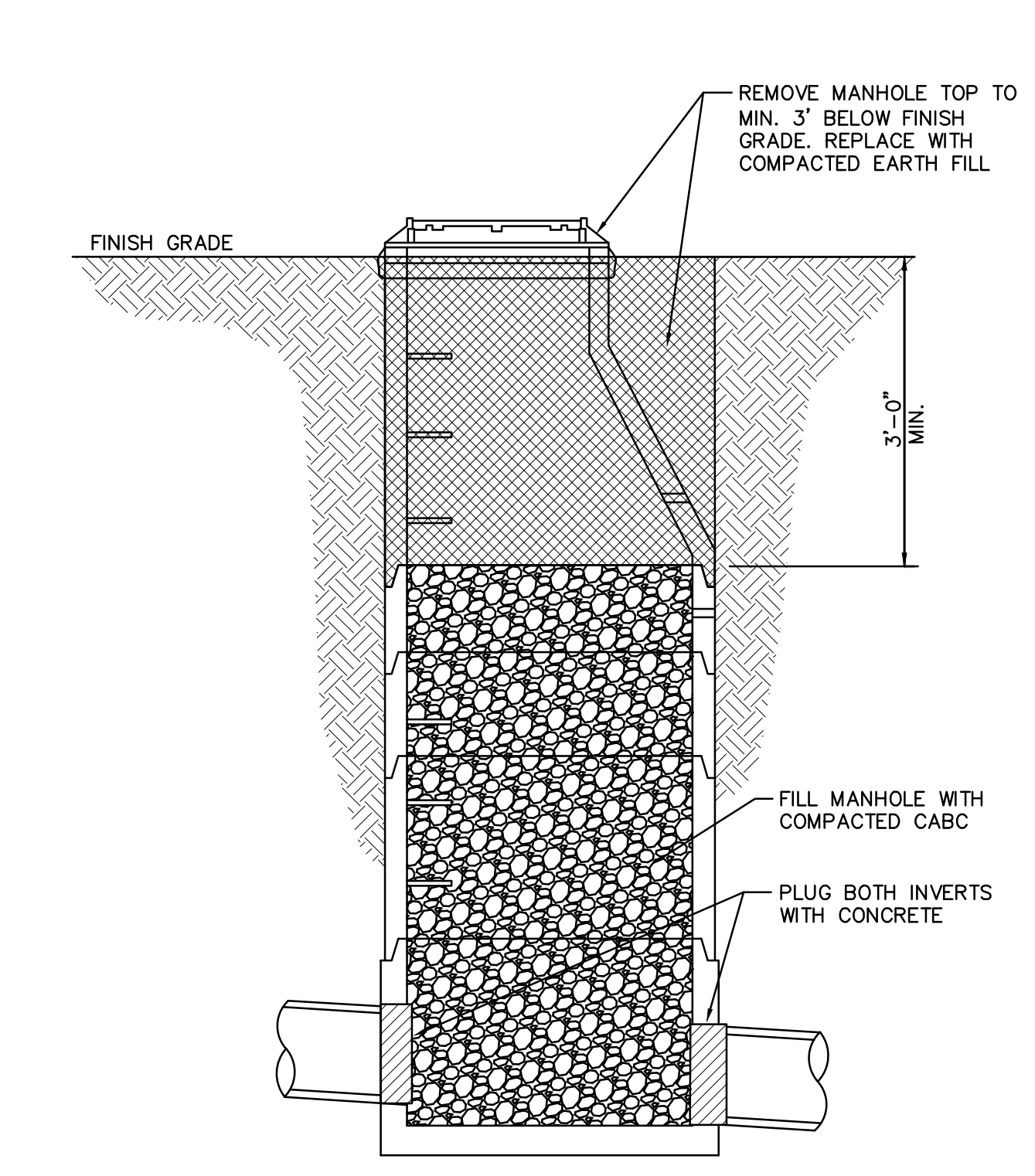
**MANHOLE STEPS**

**CONSTRUCTION NOTES:** 1. ALL STEPS SHALL PROTRUDE A MINIMUM OF 5" AND A MAXIMUM OF 7" FROM INSIDE FACE OF STRUCTURE WALL. 2. STEPS DIFFERING IN DIMENSIONS, CONFIGURATION, OR MATERIALS FROM THOSE SHOWN MAY ALSO BE USED PROVIDED THE CONTRACTOR HAS FURNISHED THE ENGINEER WITH DETAILS OF THE PROPOSED STEPS AND HAS RECEIVED PRIOR WRITTEN APPROVAL FROM THE ENGINEER FOR THE USE OF SAID STEPS.

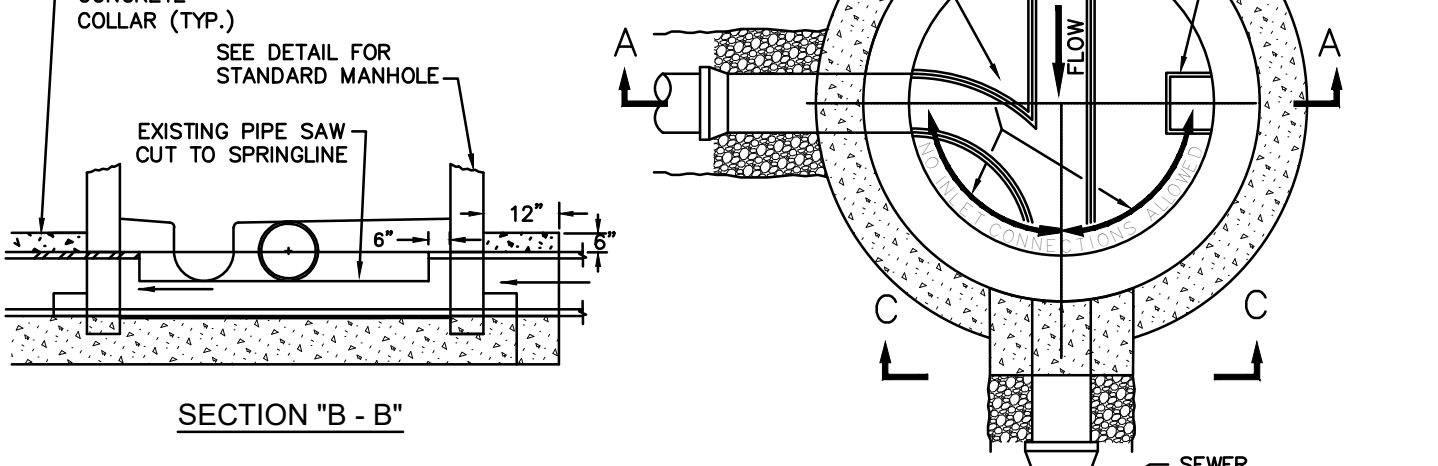
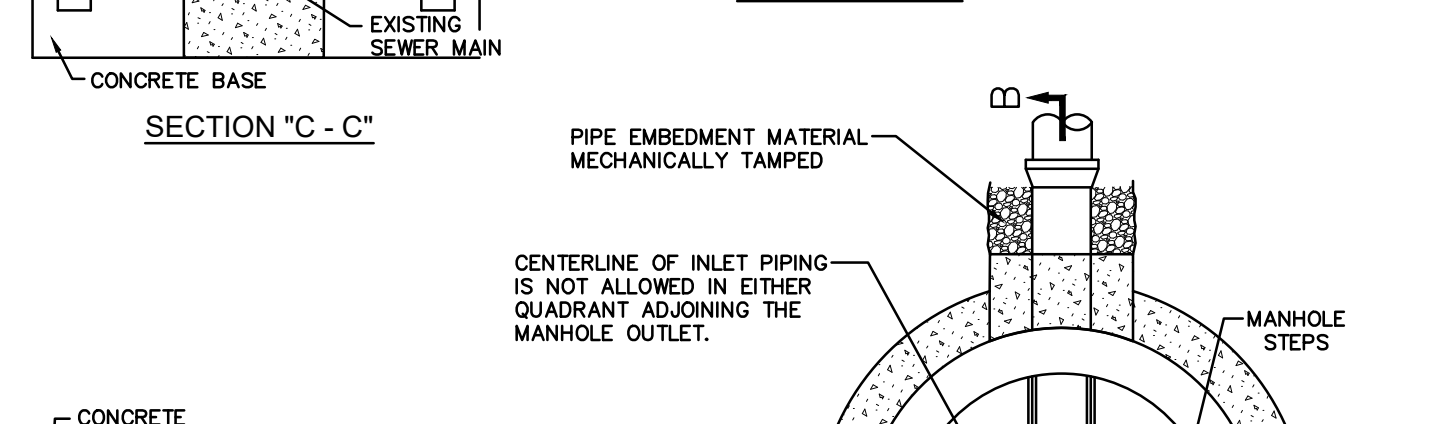
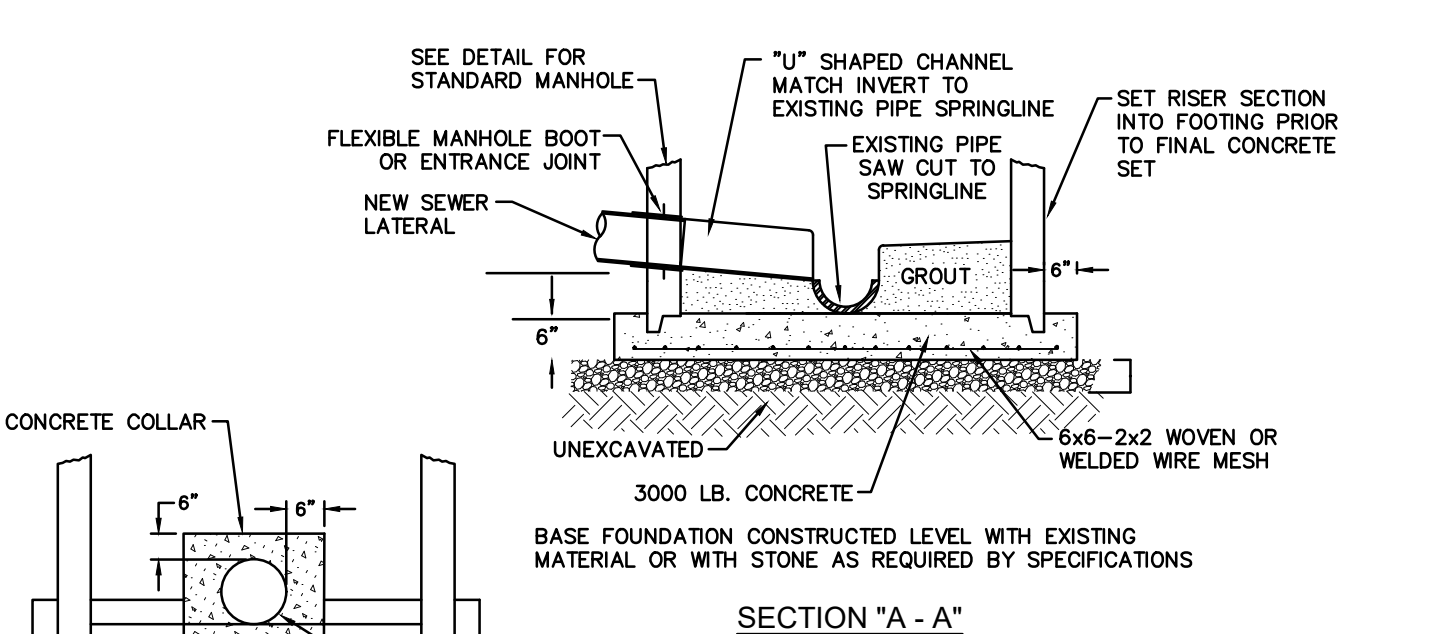


**MANHOLE RING AND COVER**

**NOTE:** TRAFFIC BEARING RING AND COVER. MINIMUM WEIGHT 315 POUNDS



**8** UPDATED MARCH, 2017  
NOT TO SCALE



**SECTIONAL PLAN**

PIPE EMBEDMENT MATERIAL MECHANICALLY TAMPED

CENTERLINE OF INLET PIPING IS NOT ALLOWED IN EITHER QUADRANT ADJOINING THE MANHOLE OUTLET.

MANHOLE STEPS

SEWER PIPE

**NOTES:**  
1. THIS DETAIL SHALL BE USED WHERE EXPLICITLY STATED ON THE PLANS OR AS DIRECTED BY THE ENGINEER ONLY.  
2. LATERALS 6" AND LARGER SHALL BE CONNECTED AT MANHOLES ONLY.  
3. FLOW SHALL BE MAINTAINED DURING CONSTRUCTION.  
4. MANHOLE BASE SHALL BE CAST IN PLACE.

**8** UPDATED MARCH, 2017  
NOT TO SCALE

**1** UPDATED MARCH, 2017  
NOT TO SCALE



8/17/19

PROJECT REFERENCE NO.	SHEET NO.
R-5735	UC-4
DESIGNED BY: VW	
DRAWN BY: VW	
CHECKED BY: JM	
APPROVED BY: JM	
REVISED: 3/13/19	McGill Associates ENGINEERING PLANNING FINANCE UTILITY CONSTRUCTION PLANS ONLY

**NOTE:**  
 THE ESTIMATED QUANTITY OF DUCTILE IRON WATER AND SEWER PIPE FITTINGS ON THIS PLAN SHEET IS 845 POUNDS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON FIELD CONDITIONS.

PROP  
 CONNECT 6" PVC SEWER SERVICE LINE TO NEW MANHOLE WITH INVERT PER DETAILS. INVERT OF 6" SHALL BE MIN. 0.2' ABOVE INVERT OUT.

PROP  
 97 LF ABANDON 6" UTILITY PIPE

PROP  
 99 LF 6" FORCE MAIN SEWER

CONNECT TO EXISTING 6" PVC FORCE MAIN W/ FITTINGS AS REQUIRED

PROP  
 CONNECT 6" FORCE MAIN TO NEW MANHOLE PER DETAIL  
 RDY STA 30+16/55.09' LT= SEWER LINE 2 MH 44+75.35

PROP  
 4' DIA UTILITY MANHOLE

PROP  
 ABANDON UTILITY MANHOLE

SEWER LINE 2  
 PROP  
 287 LF 12" SANITARY GRAVITY SEWER

PROP  
 284 LF ABANDON 12" UTILITY PIPE

UTILITIES ON THIS SHEET ARE OWNED BY TOWN OF MURPHY  
**UTILITY CONSTRUCTION**

MATCH LINE -L- STA. 33+00.00 SEE SHEET 5  
 MATCH LINE WATER LINE 2 STA. 14+58  
 MATCH LINE SEWER LINE 2 STA. 41+88.5

RDY STA 33+55.11/43' RT  
 BEGIN WATER LINE 2 PROFILE; CONNECT TO EXISTING 10" WATER LINE WITH FITTINGS AS REQUIRED

PROP  
 10" VALVE

NOTE: INSTALL WATER LINE UNDER EXISTING CULVERT

EXISTING CULVERT TO BE ABANDONED

PROP  
 RELOCATE EXISTING WATER METER

PROP  
 45 LF ABANDON 6" UTILITY PIPE

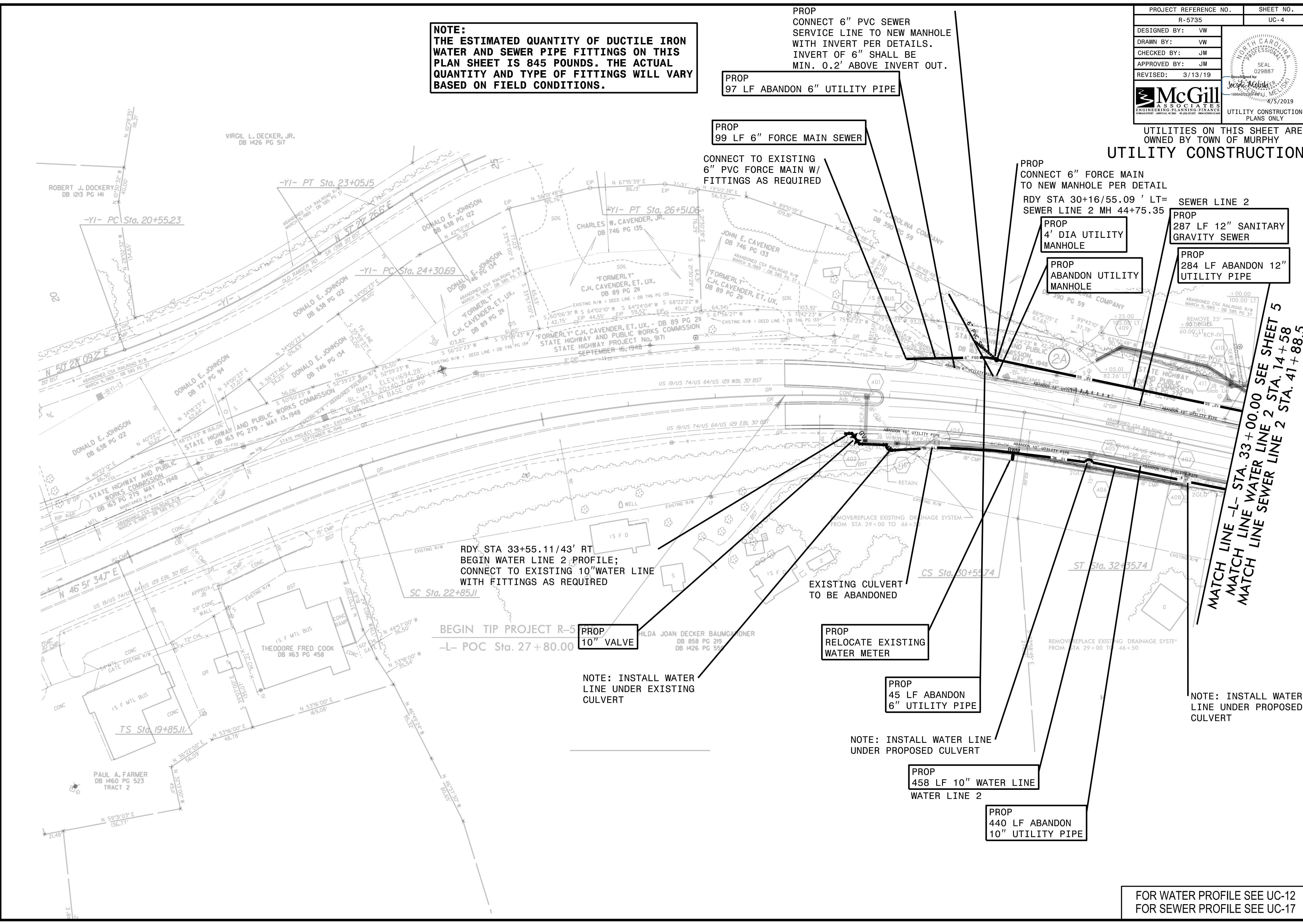
NOTE: INSTALL WATER LINE UNDER PROPOSED CULVERT

PROP  
 458 LF 10" WATER LINE WATER LINE 2

PROP  
 440 LF ABANDON 10" UTILITY PIPE

FOR WATER PROFILE SEE UC-12  
 FOR SEWER PROFILE SEE UC-17

REVISIONS

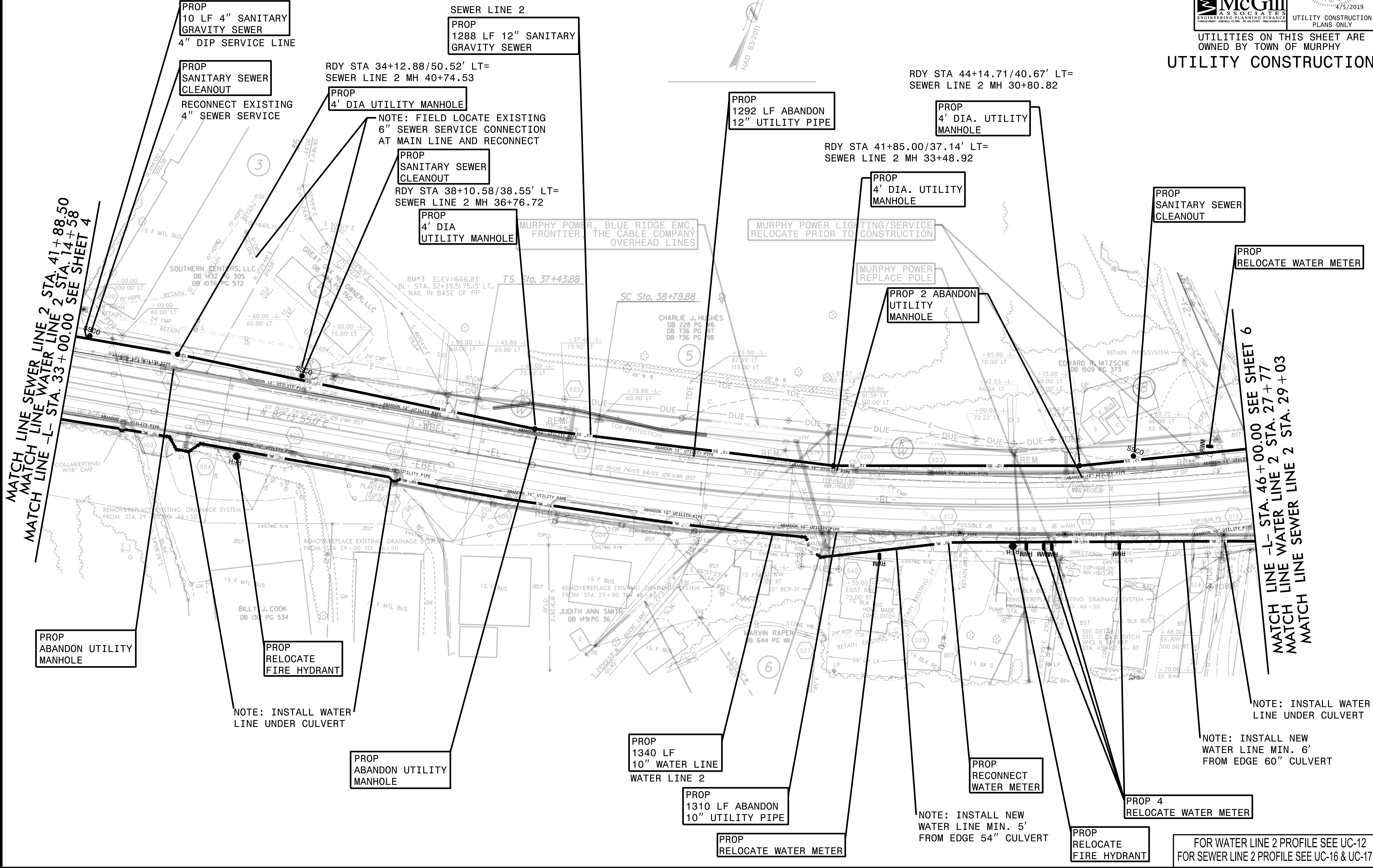




PROJECT REFERENCE NO. R-5735	SHEET NO. UC-5
DESIGNED BY: VW	
DRAWN BY: VW	
CHECKED BY: JM	
APPROVED BY: JM	
REVISED: 3/13/19	UTILITY CONSTRUCTION PLANS ONLY

**NOTE:**  
 THE ESTIMATED QUANTITY OF DUCTILE IRON  
 WATER PIPE FITTINGS ON THIS PLAN SHEET  
 IS 1395 POUNDS. THE ACTUAL QUANTITY AND  
 TYPE OF FITTINGS WILL VARY BASED ON  
 FIELD CONDITIONS.

UTILITIES ON THIS SHEET ARE  
 OWNED BY TOWN OF MURPHY  
**UTILITY CONSTRUCTION**



REVISIONS

MATCH LINE SEWER LINE 2 STA. 41+88.50  
 MATCH LINE WATER LINE 2 STA. 14+58  
 MATCH LINE -L- STA. 33+00.00 SEE SHEET 4

MATCH LINE WATER LINE 2 STA. 27+77  
 MATCH LINE SEWER LINE 2 STA. 29+03  
 MATCH LINE -L- STA. 46+00.00 SEE SHEET 6

PROP  
 ABANDON UTILITY  
 MANHOLE

PROP  
 RELOCATE  
 FIRE HYDRANT

NOTE: INSTALL WATER  
 LINE UNDER CULVERT

PROP  
 ABANDON UTILITY  
 MANHOLE

PROP  
 1340 LF  
 10" WATER LINE  
 WATER LINE 2

PROP  
 1310 LF ABANDON  
 10" UTILITY PIPE

PROP  
 RELOCATE WATER METER

PROP  
 RECONNECT  
 WATER METER

NOTE: INSTALL NEW  
 WATER LINE MIN. 5'  
 FROM EDGE 54" CULVERT

PROP 4  
 RELOCATE WATER METER

NOTE: INSTALL NEW  
 WATER LINE MIN. 6'  
 FROM EDGE 60" CULVERT

FOR WATER LINE 2 PROFILE SEE UC-12  
 FOR SEWER LINE 2 PROFILE SEE UC-16 & UC-17







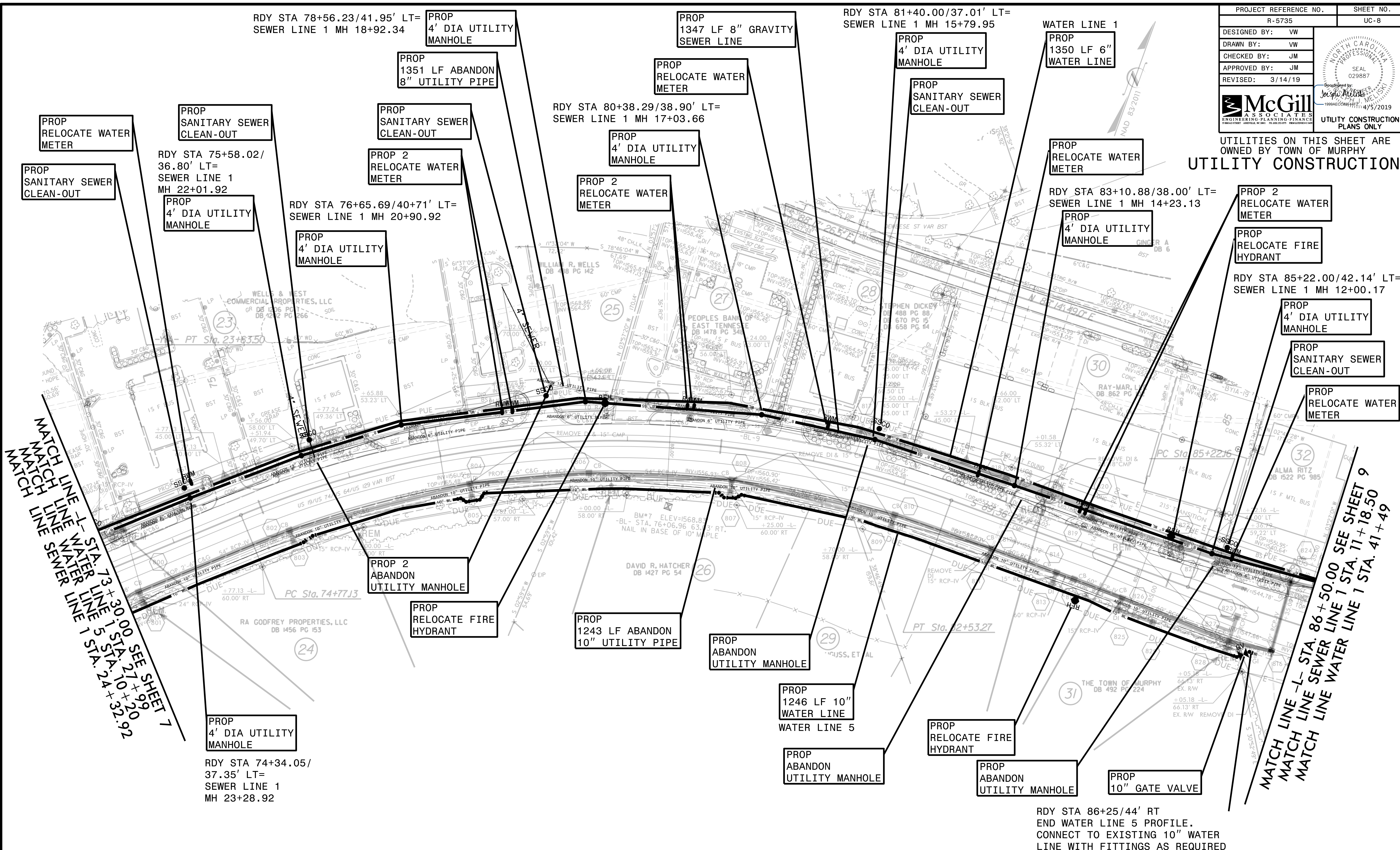




8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-5735	UC-8
DESIGNED BY: VW	
DRAWN BY: VW	
CHECKED BY: JM	
APPROVED BY: JM	
REVISED: 3/14/19	UTILITY CONSTRUCTION PLANS ONLY

UTILITIES ON THIS SHEET ARE OWNED BY TOWN OF MURPHY  
**UTILITY CONSTRUCTION**



MATCH LINE - L - STA. 73+30.00 SEE SHEET 7  
 MATCH LINE - L - WATER LINE 1 STA. 24+32.92  
 MATCH LINE - L - WATER LINE 5 STA. 10+20.00  
 MATCH LINE - L - SEWER LINE 1 STA. 21+30.00

MATCH LINE - L - STA. 86+50.00 SEE SHEET 9  
 MATCH LINE SEWER LINE 1 STA. 11+18.50  
 MATCH LINE WATER LINE 1 STA. 41+49

REVISIONS

**NOTE:**  
 THE ESTIMATED QUANTITY OF DUCTILE IRON WATER PIPE FITTINGS ON THIS PLAN SHEET IS 2310 POUNDS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON FIELD CONDITIONS.

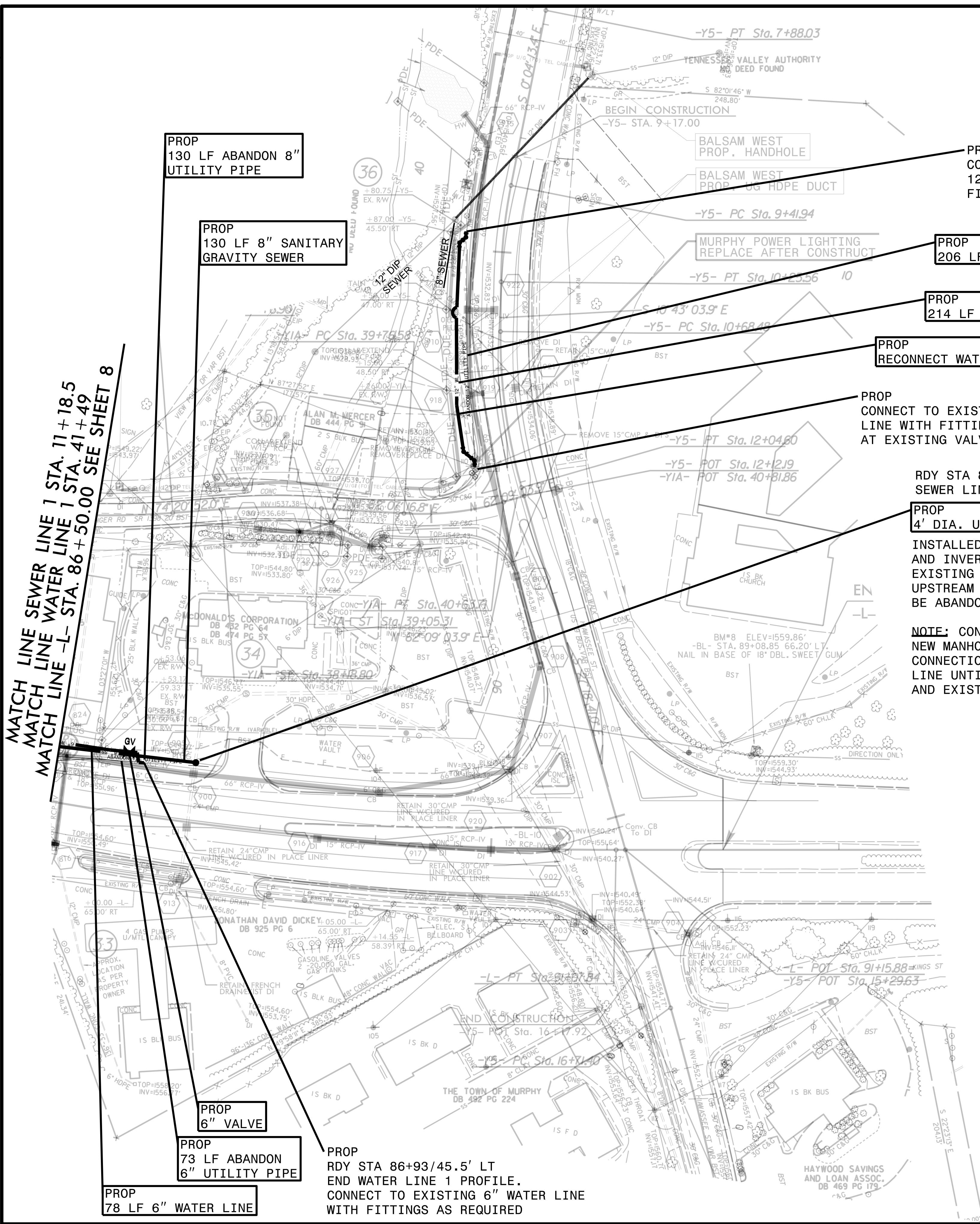
FOR SEWER LINE 1 PROFILE SEE SHEET US-15  
 FOR WATER LINE 5 PROFILE SEE SHEET US-14  
 FOR WATER LINE 1 PROFILE SEE SHEET US-11



PROJECT REFERENCE NO.	SHEET NO.
R-5735	UC-9
DESIGNED BY: VW	
DRAWN BY: VW	
CHECKED BY: JM	
APPROVED BY: JM	
REVISED: 3/14/19	UTILITY CONSTRUCTION PLANS ONLY

**NOTE:**  
 THE ESTIMATED QUANTITY OF DUCTILE IRON WATER PIPE FITTINGS ON THIS PLAN SHEET IS 1525 POUNDS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON FIELD CONDITIONS.

UTILITIES ON THIS SHEET ARE OWNED BY TOWN OF MURPHY  
**UTILITY CONSTRUCTION**



MATCH LINE SEWER LINE 1 STA. 11 + 18.5  
 MATCH LINE WATER LINE 1 STA. 41 + 49  
 MATCH LINE -L- STA. 86 + 50.00 SEE SHEET 8

PROP  
 130 LF ABANDON 8"  
 UTILITY PIPE

PROP  
 130 LF 8" SANITARY  
 GRAVITY SEWER

BALSAM WEST  
 PROP. HANDHOLE

PROP  
 CONNECT TO EXISTING  
 12" WATER LINE WITH  
 FITTINGS AS REQUIRED

PROP  
 206 LF ABANDON 12" UTILITY PIPE

PROP  
 214 LF 12" WATER LINE

PROP  
 RECONNECT WATER METER

PROP  
 CONNECT TO EXISTING 12" WATER  
 LINE WITH FITTINGS AS REQUIRED  
 AT EXISTING VALVE

RDY STA 87+37/51.41' LT  
 SEWER LINE 1 MH 10+00

PROP  
 4' DIA. UTILITY MANHOLE  
 INSTALLED AT SAME LOCATION  
 AND INVERT ELEVATION AS  
 EXISTING MANHOLE. EXISTING  
 UPSTREAM SEWER LINE SHALL  
 BE ABANDONED.

**NOTE:** CONTRACTOR MAY CHOOSE TO UTILIZE  
 NEW MANHOLE INVERT IN AS TEMPORARY PIPE  
 CONNECTION FOR EXISTING UPSTREAM SEWER  
 LINE UNTIL NEW SEWER LINE IS COMPLETE  
 AND EXISTING LINE CAN BE ABANDONED.

PROP  
 6" VALVE

PROP  
 73 LF ABANDON  
 6" UTILITY PIPE

PROP  
 RDY STA 86+93/45.5' LT  
 END WATER LINE 1 PROFILE.  
 CONNECT TO EXISTING 6" WATER LINE  
 WITH FITTINGS AS REQUIRED

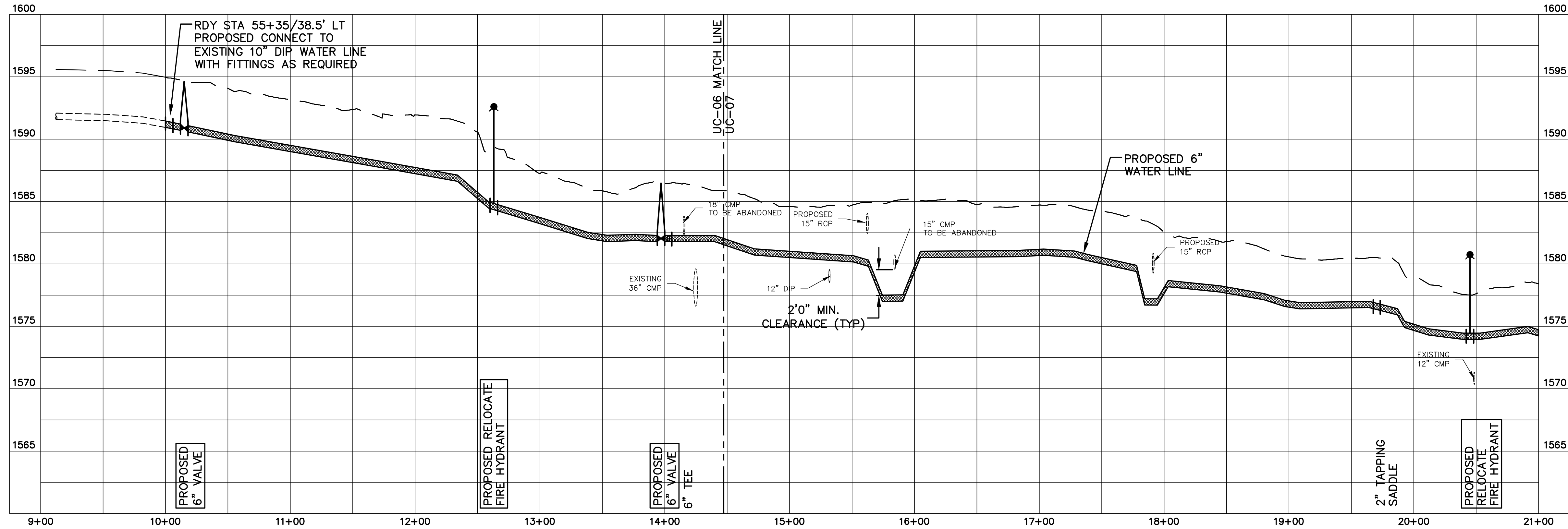
PROP  
 78 LF 6" WATER LINE

FOR SEWER LINE 1 PROFILE SEE SHEET UC-15  
 FOR WATER LINE 1 PROFILE SEE SHEET UC-11



# WATER LINE 1 - STA 10+00 - 21+00

SCALE: HORIZ. 1"= 50'  
VERT. 1"= 5'



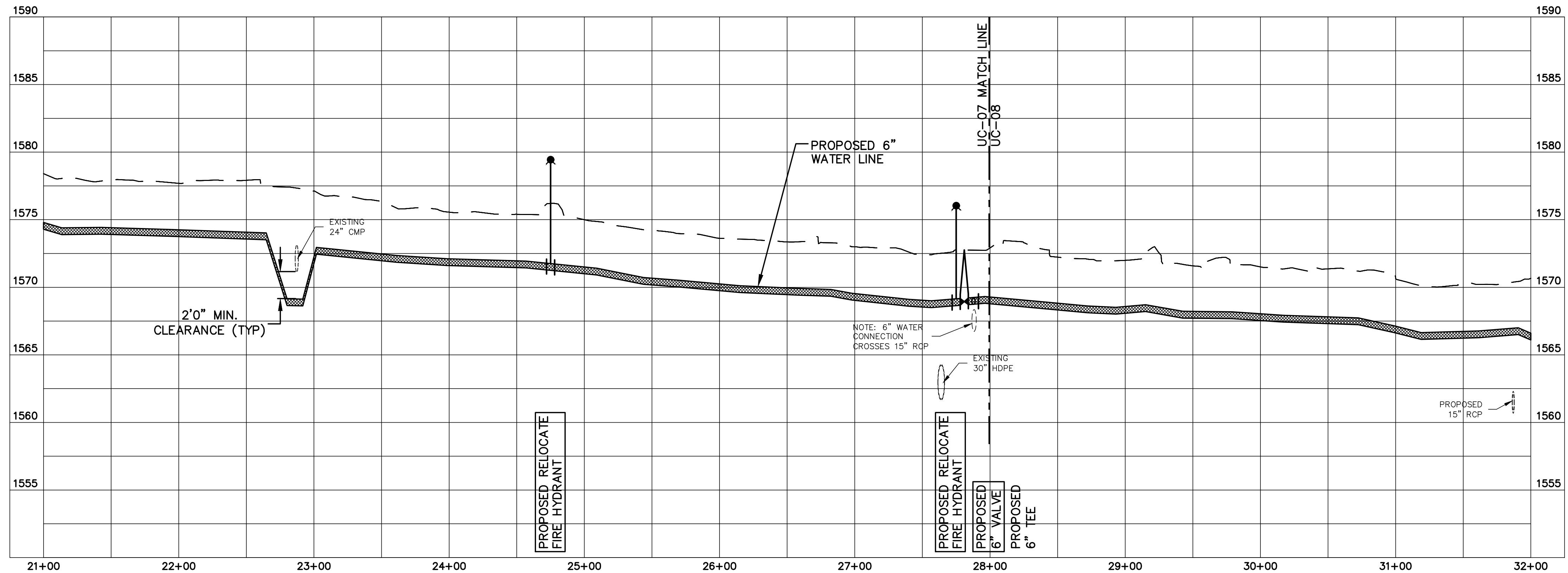
REVISIONS

PROJECT REFERENCE NO. R-5735	SHEET NO. UC-10
DESIGNED BY: VW	
DRAWN BY: VW	
CHECKED BY: JM	
APPROVED BY: JM	
REVISED: 5/11/18	
UTILITY CONSTRUCTION PLANS ONLY	

UTILITIES ON THIS SHEET ARE OWNED BY TOWN OF MURPHY  
UTILITY CONSTRUCTION  
WATER AND SEWER PROFILES

# WATER LINE 1 STA - 21+00-32+00

SCALE: HORIZ. 1"= 50'  
VERT. 1"= 5'



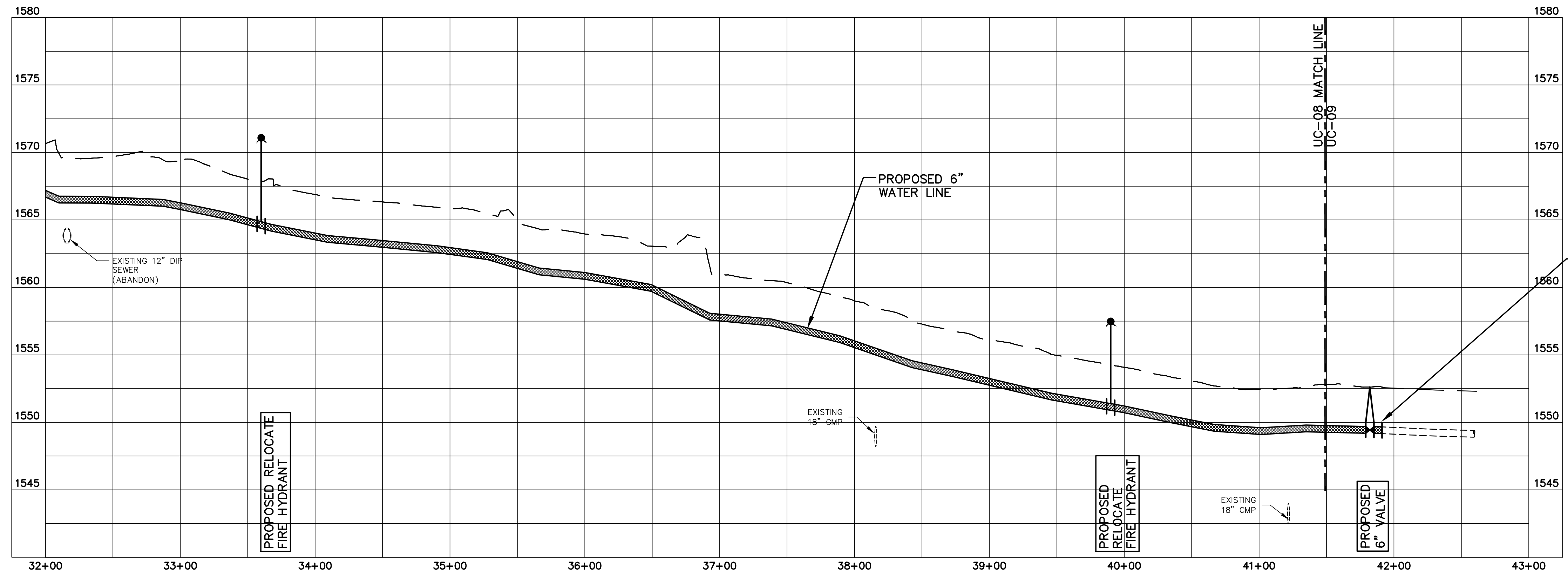


# WATER LINE 1 - STA 32+00-43+00

SCALE: HORIZ. 1"= 50'  
VERT. 1"= 5'

PROJECT REFERENCE NO.	SHEET NO.
R-5735	UC-11
DESIGNED BY: VW	
DRAWN BY: VW	
CHECKED BY: JM	
APPROVED BY: JM	
REVISED: 1/28/19	
ENGINEERING-PLANNING-FINANCE UTILITY CONSTRUCTION PLANS ONLY	

UTILITIES ON THIS SHEET ARE OWNED BY TOWN OF MURPHY  
UTILITY CONSTRUCTION  
WATER AND SEWER PROFILES

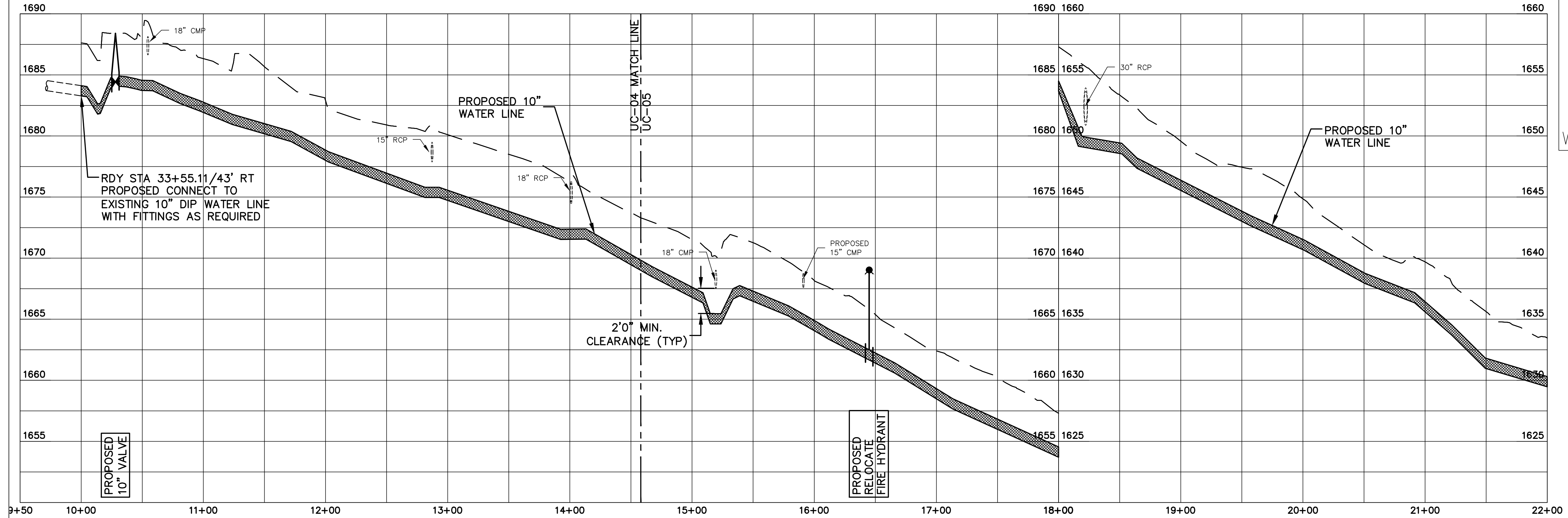


REVISIONS



# WATER LINE 2 - STA 10+00 - 22+00

SCALE: HORIZ. 1"= 50'  
VERT. 1"= 5'



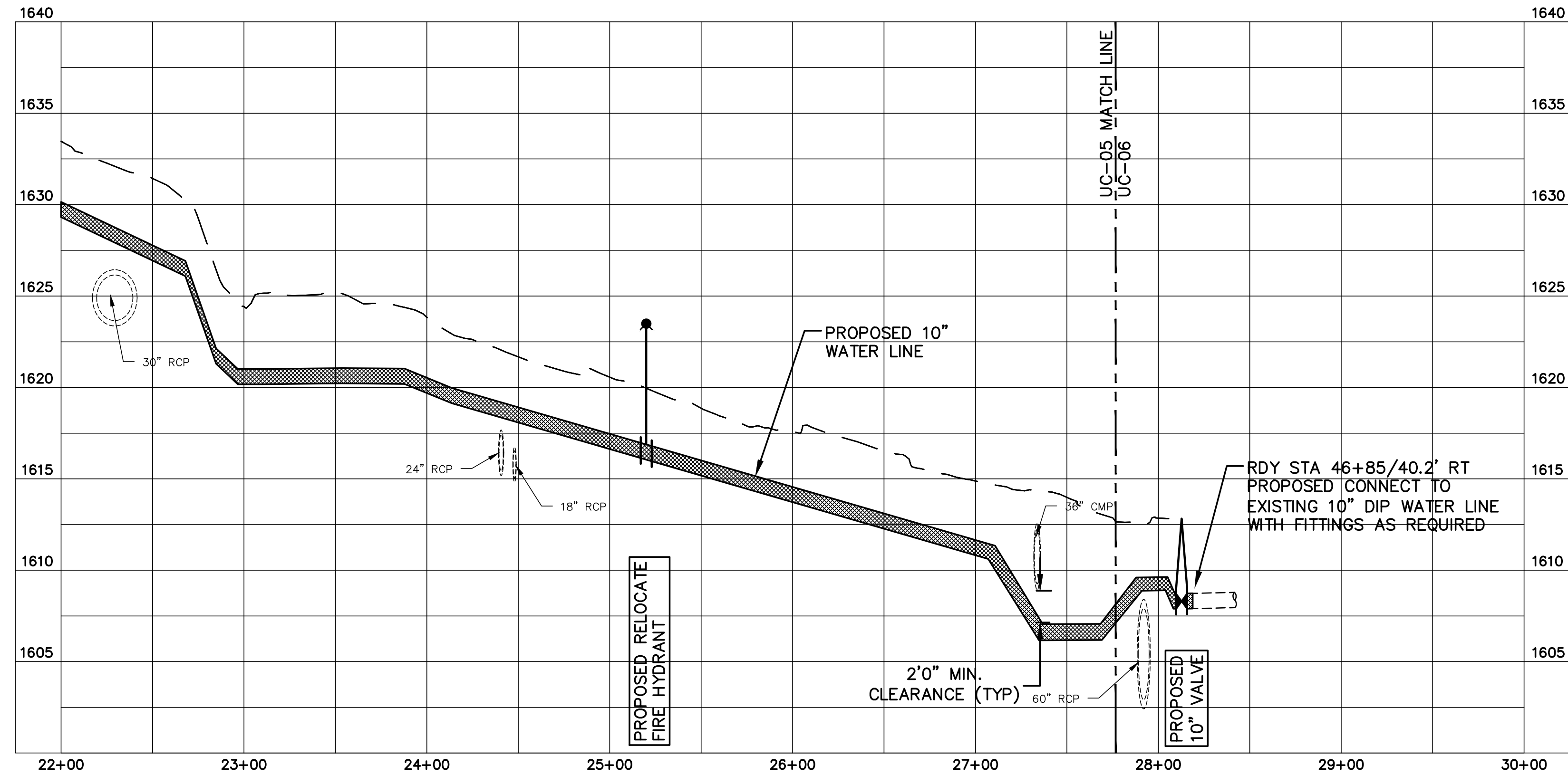
PROJECT REFERENCE NO. R-5735	SHEET NO. UC-12
DESIGNED BY: VW	
DRAWN BY: VW	
CHECKED BY: JM	
APPROVED BY: JM	
REVISED: 12/4/18	

UTILITIES ON THIS SHEET ARE OWNED BY TOWN OF MURPHY  
UTILITY CONSTRUCTION  
WATER AND SEWER PROFILES

REVISIONS

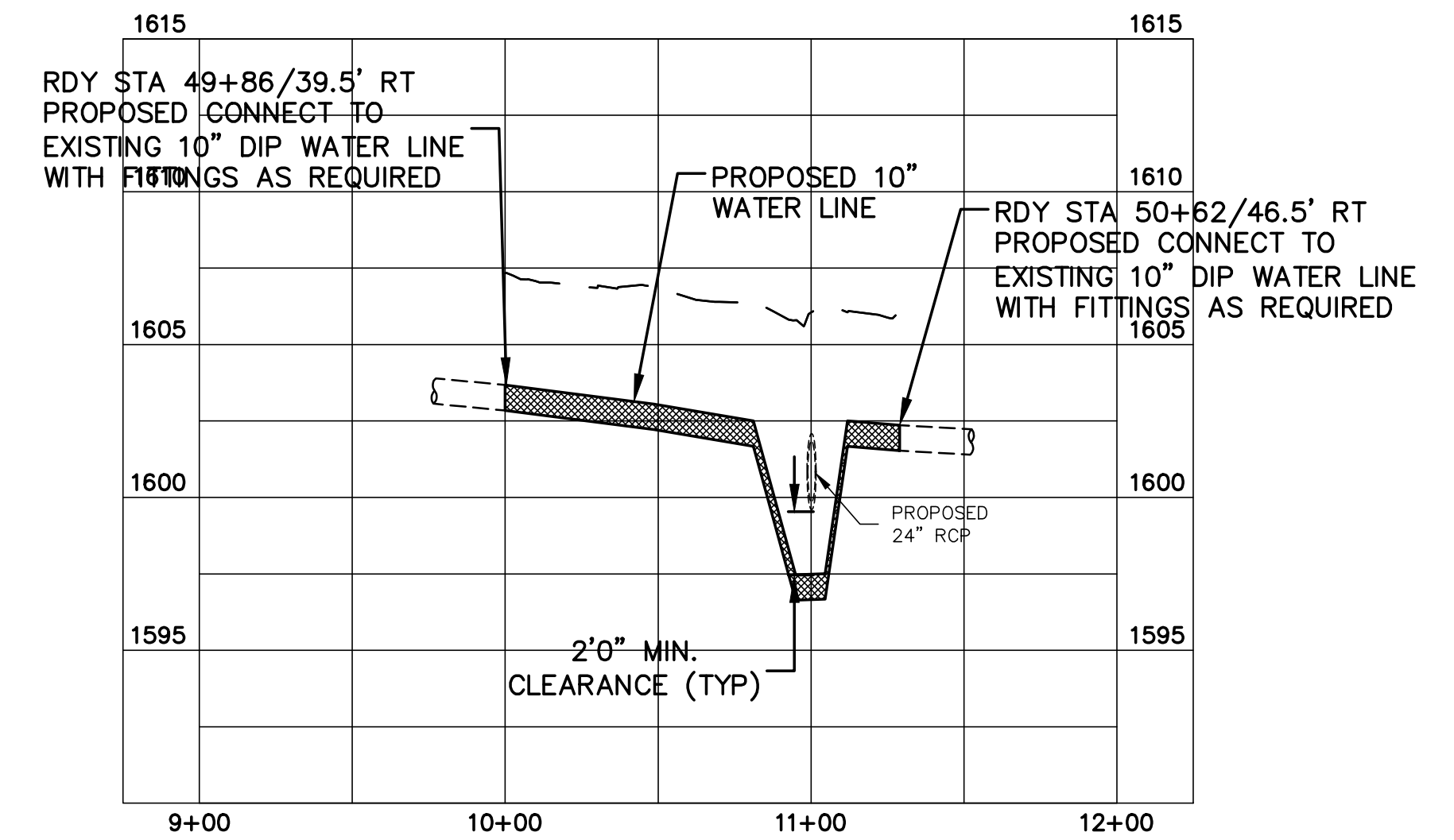
# WATER LINE 2 - STA 22+00 - 28+12.75

SCALE: HORIZ. 1"= 50'  
VERT. 1"= 5'



# WATER LINE 3 STA 10+00 - 11+01

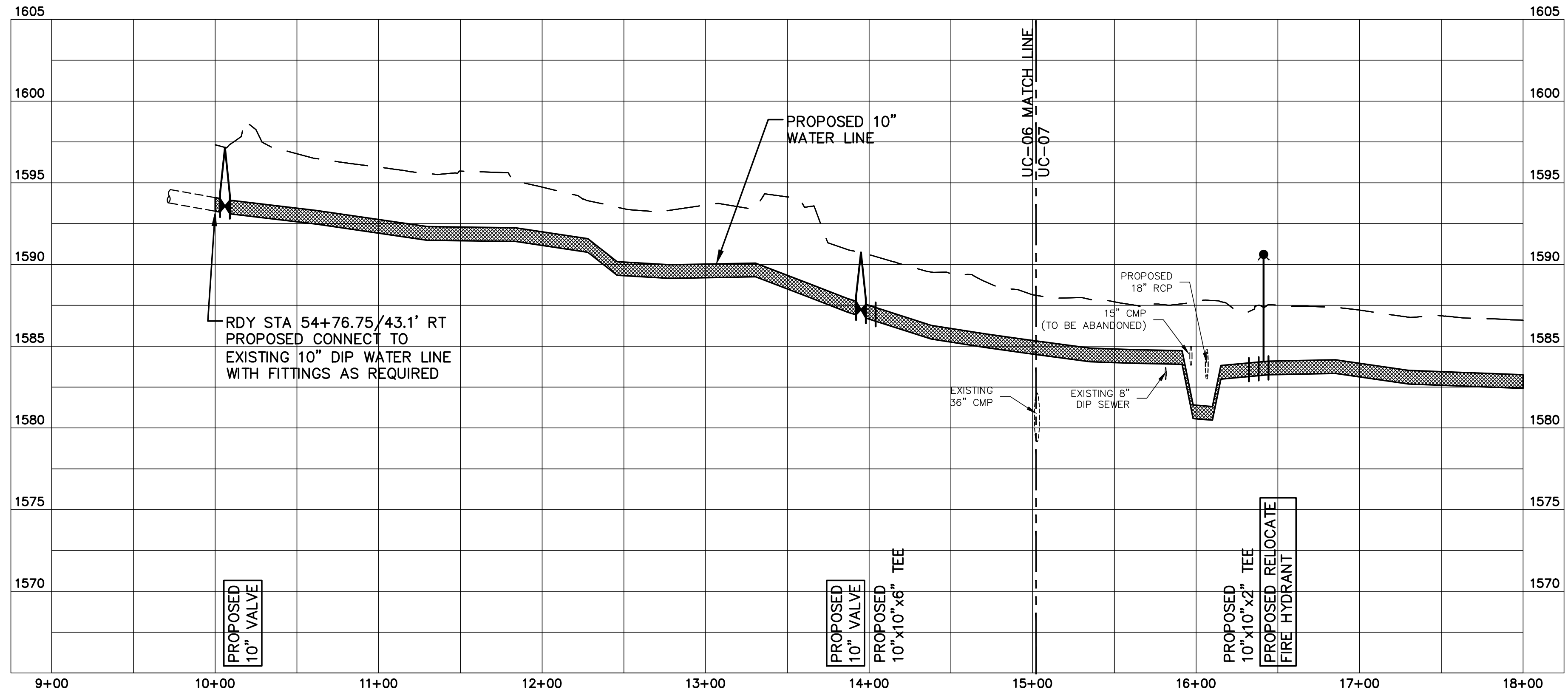
SCALE: HORIZ. 1"= 50'  
VERT. 1"= 5'





# WATER LINE 4 - STA 10+00 - 18+00

SCALE: HORIZ. 1"= 50'  
VERT. 1"= 5'

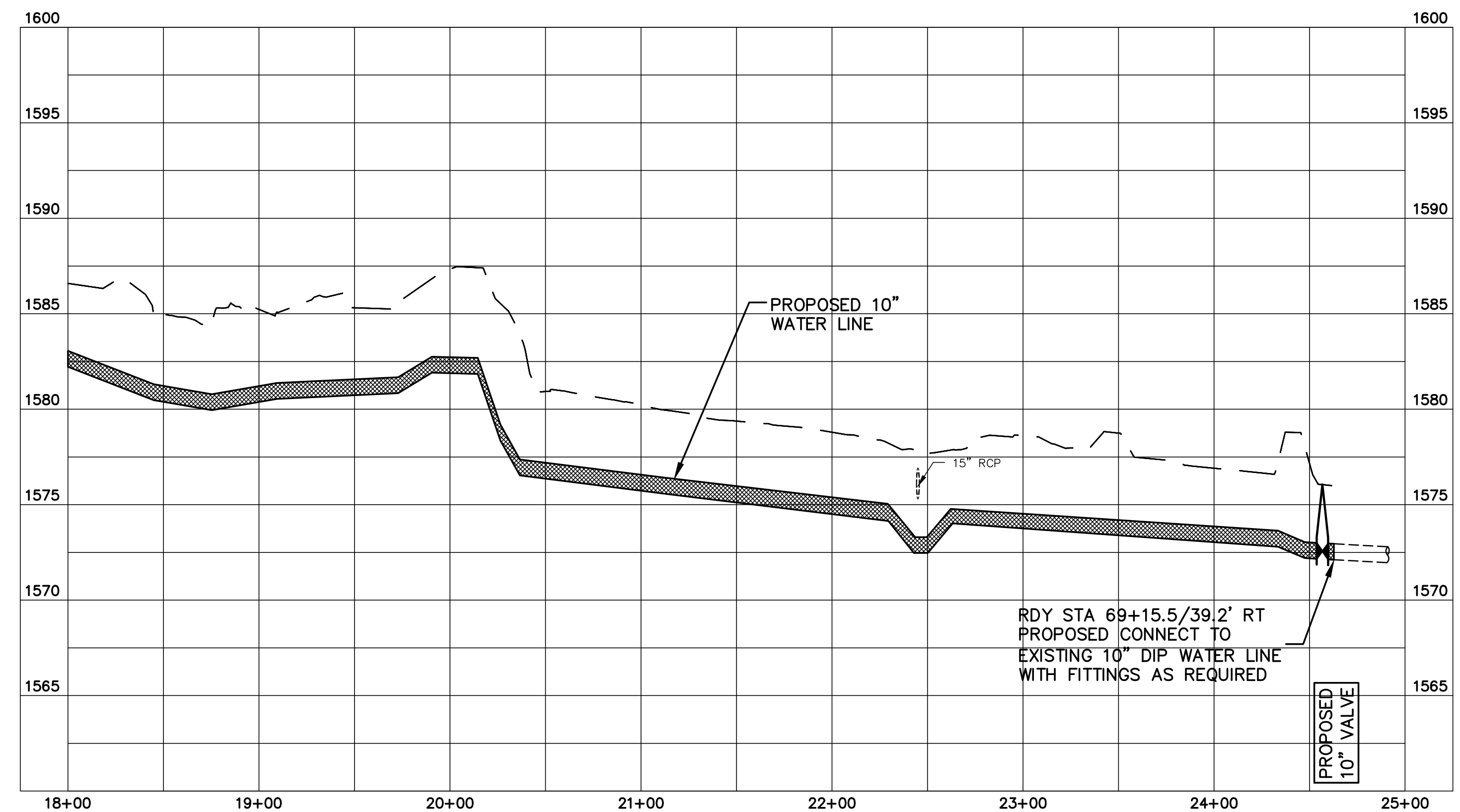


REVISIONS

PROJECT REFERENCE NO. R-5735	SHEET NO. UC-13
DESIGNED BY: VW	
DRAWN BY: VW	
CHECKED BY: JM	
APPROVED BY: JM	
REVISED: 1/29/19	
UTILITIES ON THIS SHEET ARE OWNED BY TOWN OF MURPHY UTILITY CONSTRUCTION WATER AND SEWER PROFILES	

# WATER LINE 4 - STA 18+00 - 24+59

SCALE: HORIZ. 1"= 50'  
VERT. 1"= 5'

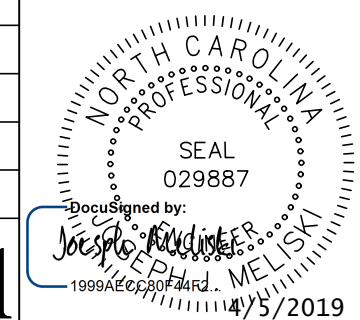





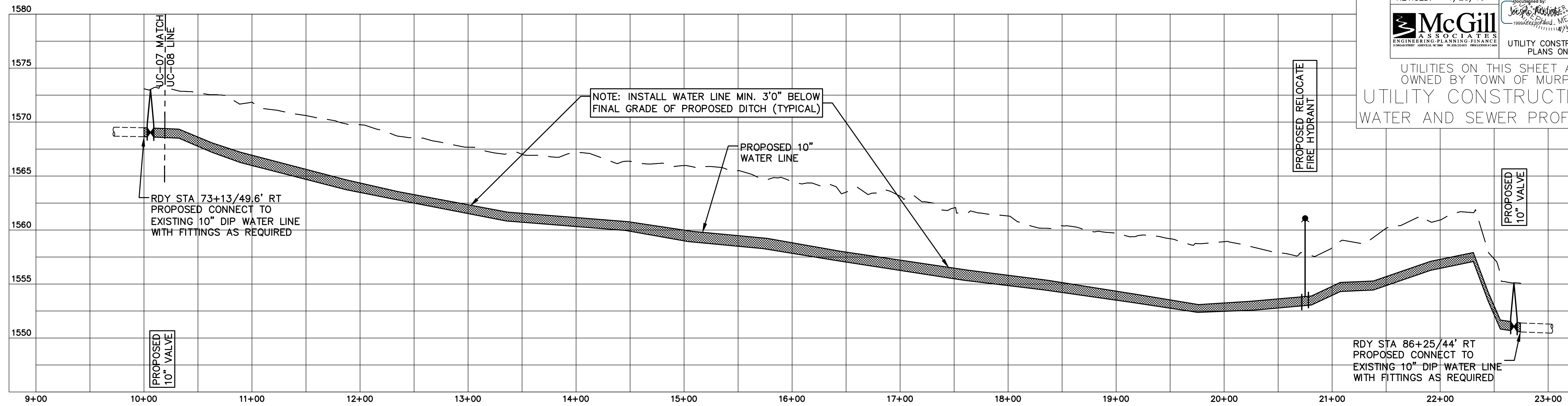
# WATER LINE 5 - STA 10+00 - 22+75

SCALE: HORIZ. 1"= 50'

VERT. 1"= 5'

PROJECT REFERENCE NO. R-5735	SHEET NO. UC-14
DESIGNED BY: VW	
DRAWN BY: VW	
CHECKED BY: JM	
APPROVED BY: JM	
REVISED: 1/28/19	 ENGINEERING-PLANNING-FINANCE UTILITY CONSTRUCTION PLANS ONLY

UTILITIES ON THIS SHEET ARE OWNED BY TOWN OF MURPHY  
 UTILITY CONSTRUCTION  
 WATER AND SEWER PROFILES



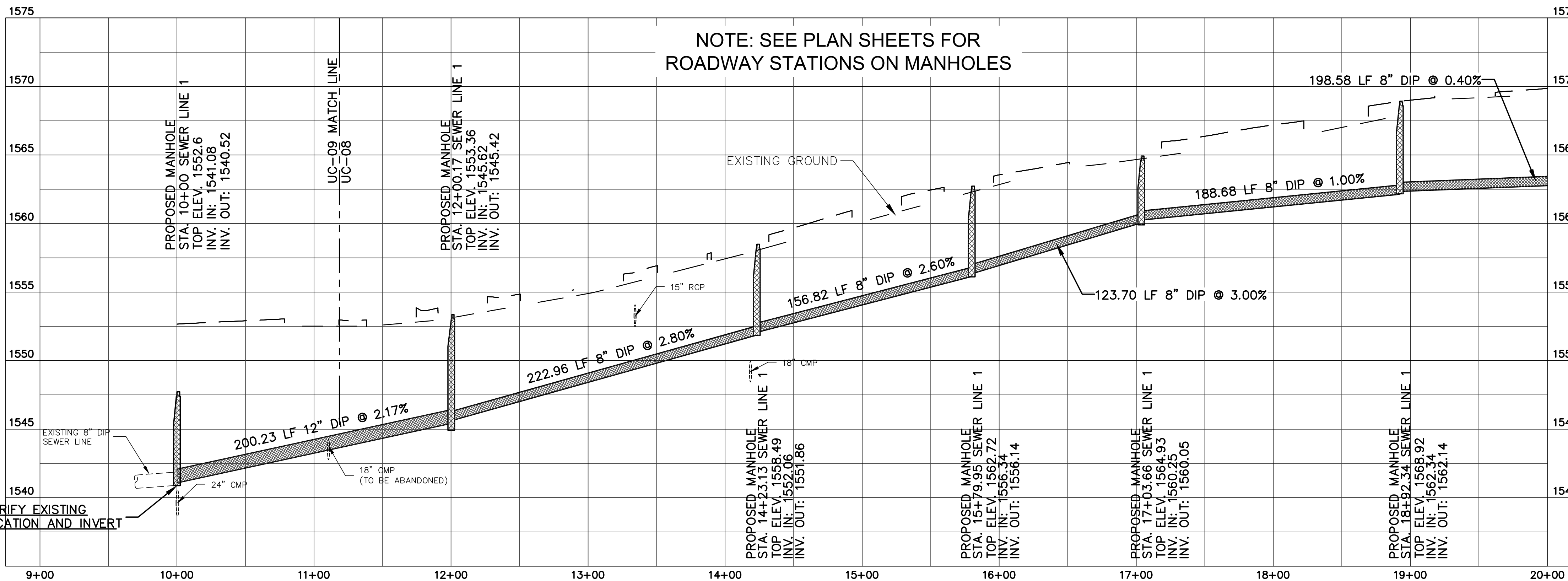
REVISIONS



# SEWER LINE 1 - STA 10+00 - 20+00

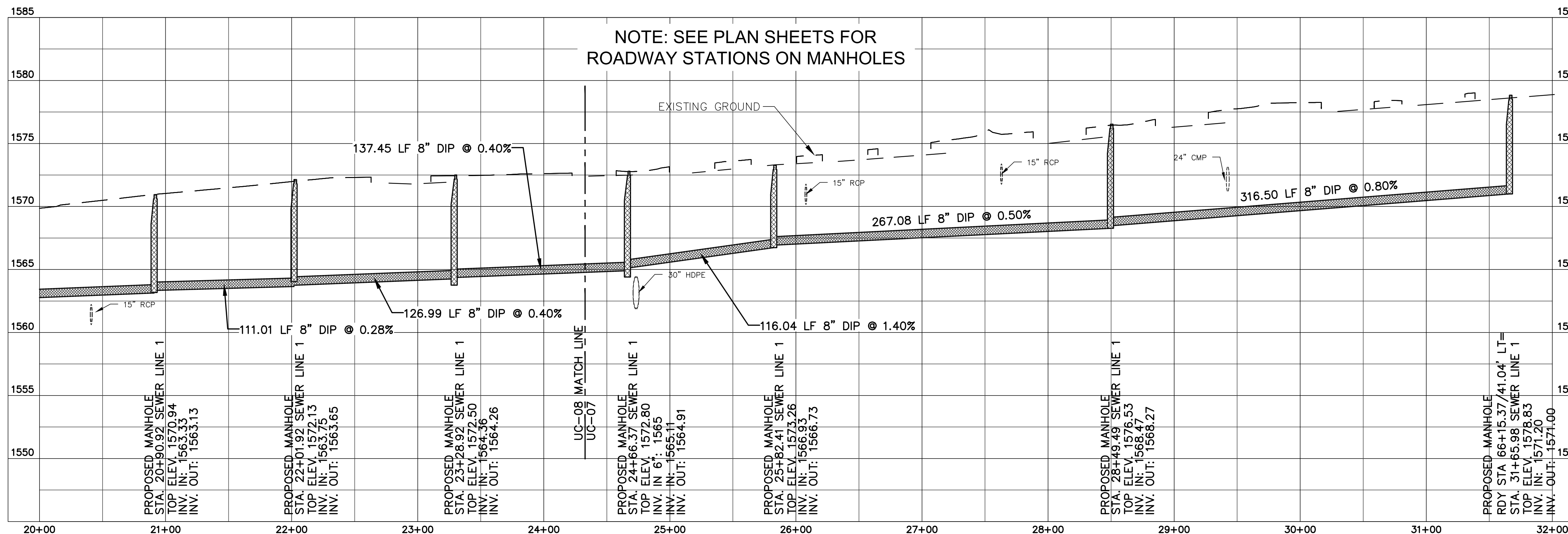
SCALE: HORIZ. 1"= 50'  
VERT. 1"= 5'

PROJECT REFERENCE NO.	SHEET NO.
R-5735	UC-15
DESIGNED BY: VW	
DRAWN BY: VW	
CHECKED BY: JM	
APPROVED BY: JM	
REVISED: 3/14/19	
UTILITY CONSTRUCTION PLANS ONLY	
UTILITIES ON THIS SHEET ARE OWNED BY TOWN OF MURPHY UTILITY CONSTRUCTION WATER AND SEWER PROFILES	



# SEWER LINE 1 - STA 20+00 - 30+90

SCALE: HORIZ. 1"= 50'  
VERT. 1"= 5'



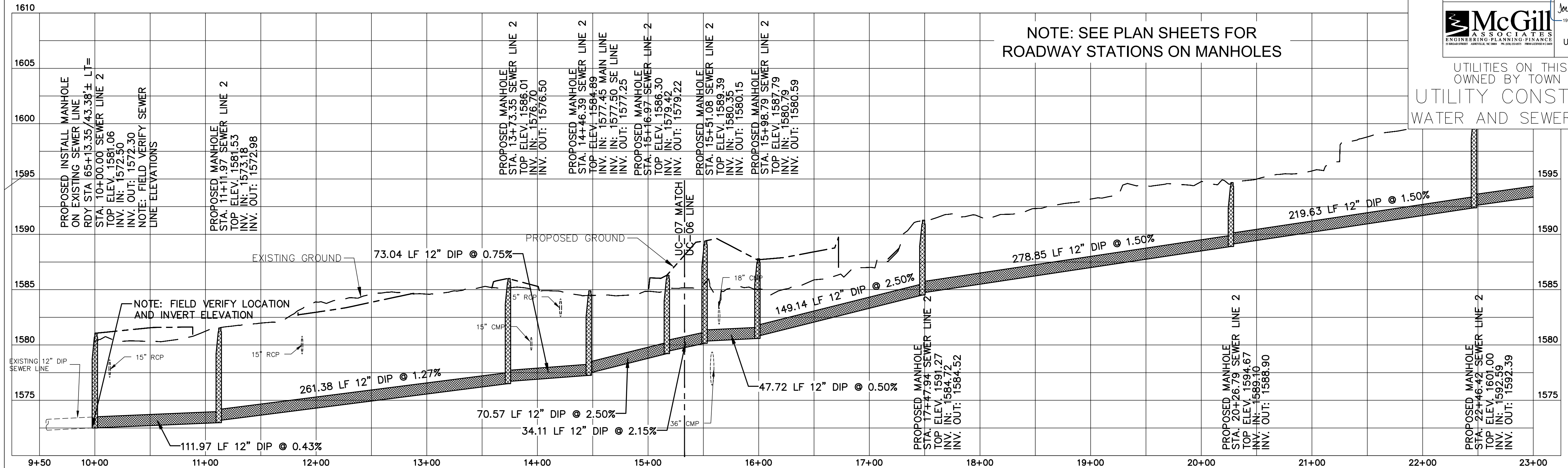


# SEWER LINE 2 - STA 10+00 - 23+00

SCALE: HORIZ. 1" = 50'  
VERT. 1" = 5'

PROJECT REFERENCE NO.	SHEET NO.
R-5735	UC-16
DESIGNED BY: VW	
DRAWN BY: VW	
CHECKED BY: JM	
APPROVED BY: JM	
REVISED: 1/24/19	

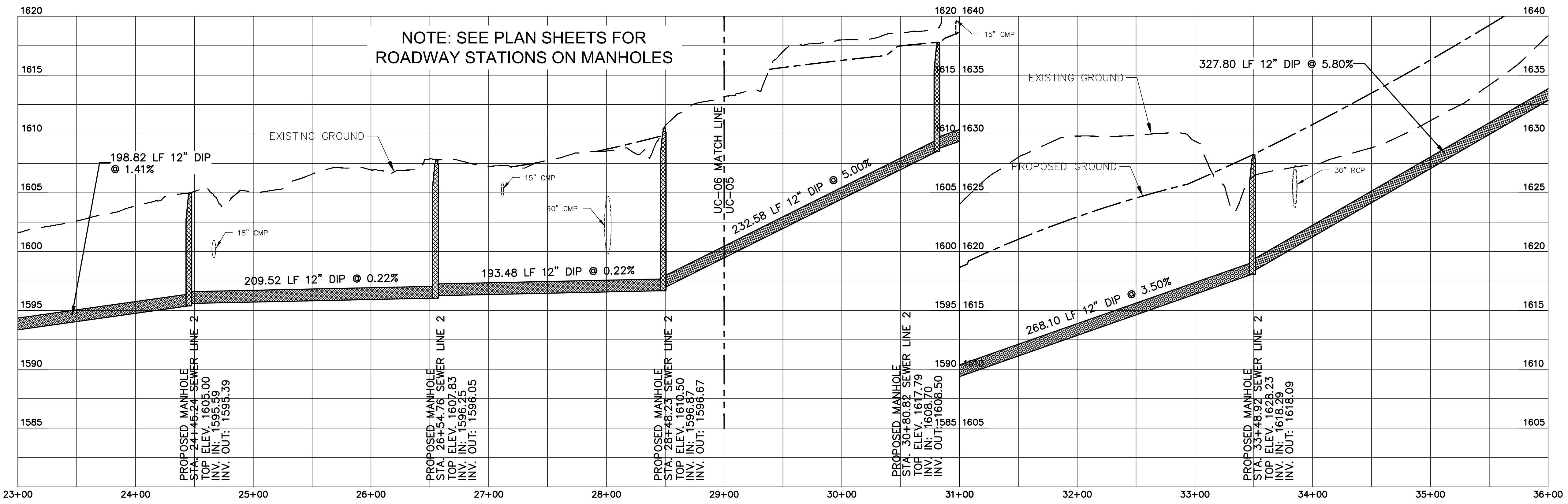
UTILITIES ON THIS SHEET ARE OWNED BY TOWN OF MURPHY  
UTILITY CONSTRUCTION  
WATER AND SEWER PROFILES



REVISIONS

# SEWER LINE 2 - STA 23+00 - 36+00

SCALE: HORIZ. 1" = 50'  
VERT. 1" = 5'



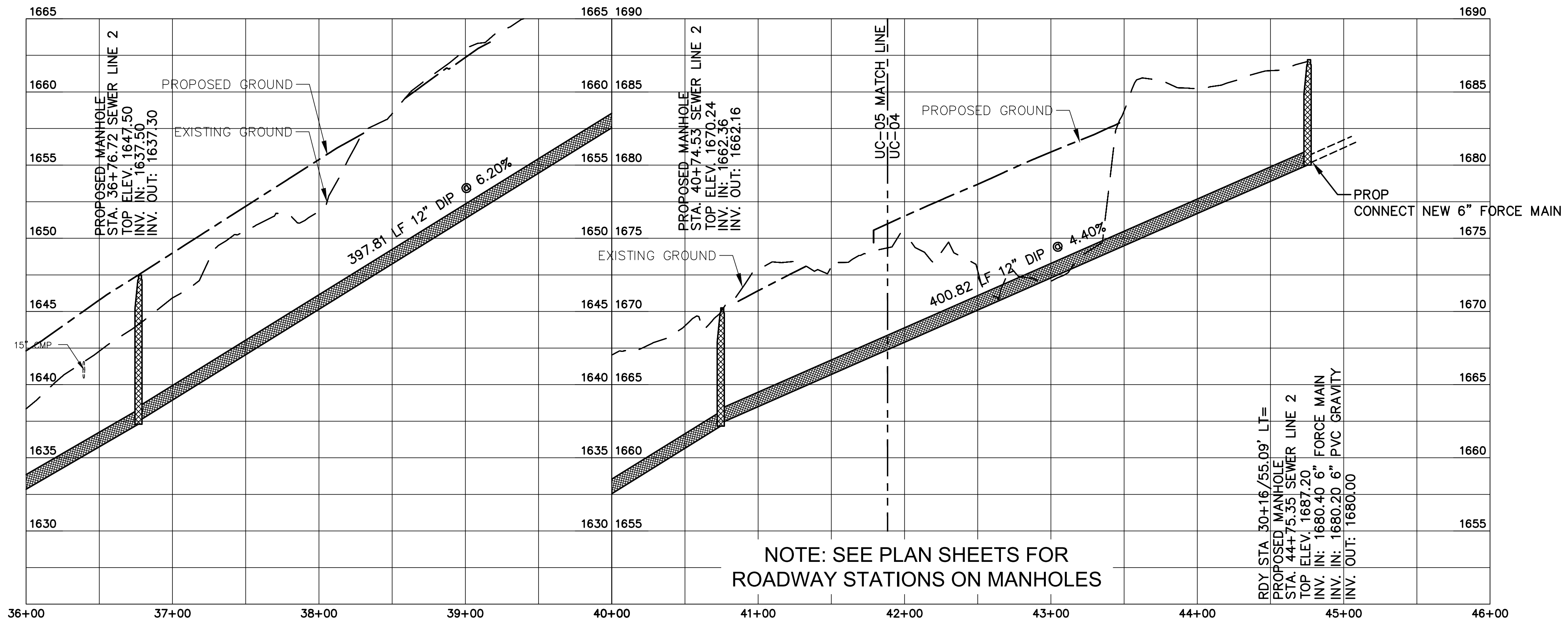


# SEWER LINE 2 - STA 36+00 - 45+46

SCALE: HORIZ. 1"= 50'  
VERT. 1"= 5'

PROJECT REFERENCE NO.	SHEET NO.
R-5735	UC-17
DESIGNED BY: VW	
DRAWN BY: VW	
CHECKED BY: JM	
APPROVED BY: JM	
REVISED: 5/30/18	
ENGINEERING-PLANNING-FINANCE 1909A/02019 J. McElroy 12/31/2019 UTILITY CONSTRUCTION PLANS ONLY	

UTILITIES ON THIS SHEET ARE OWNED BY TOWN OF MURPHY  
UTILITY CONSTRUCTION  
WATER AND SEWER PROFILES



REVISIONS