

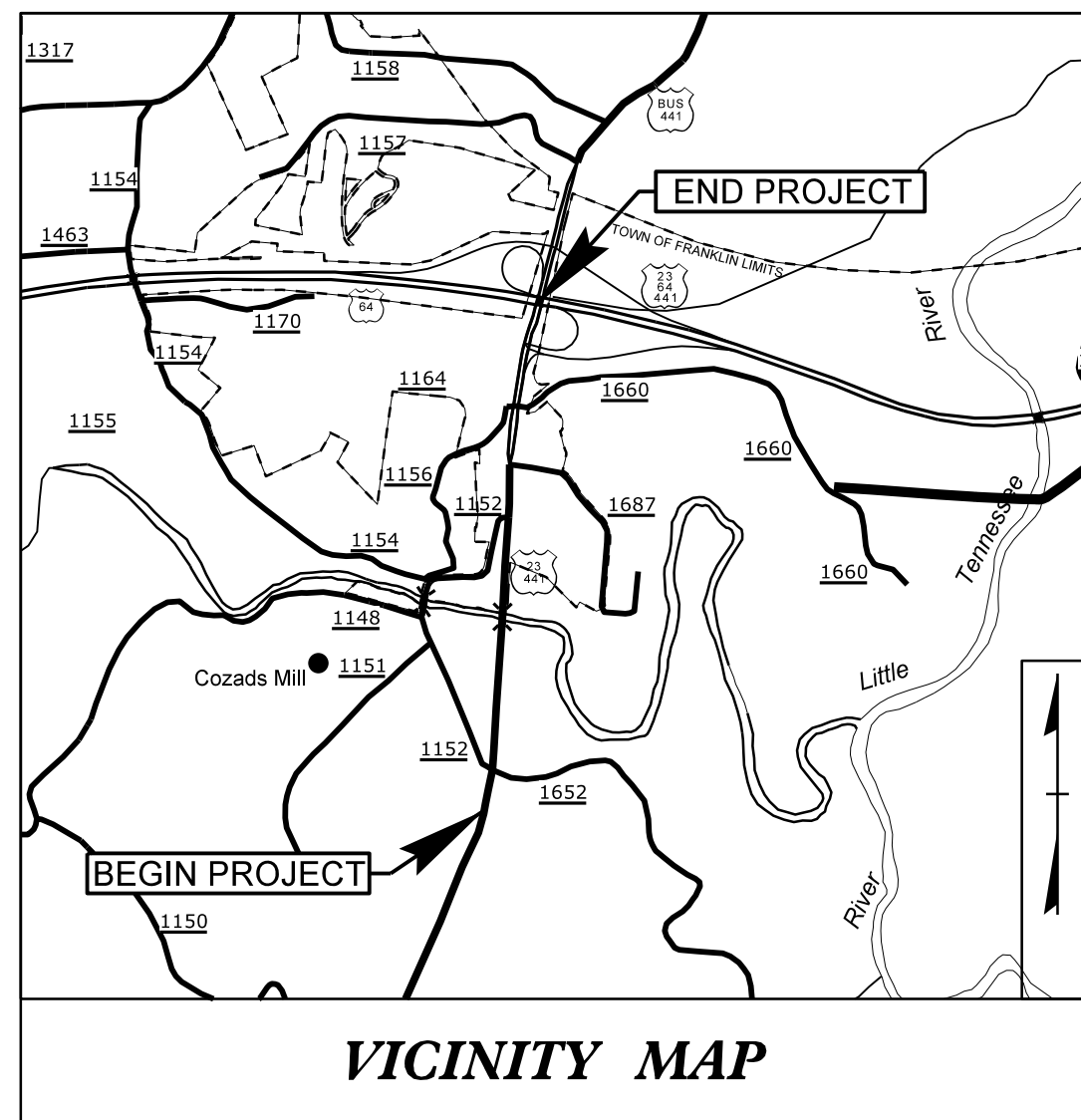
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T.I.P. NO.	SHEET NO.
R-5734A	UC-01

TIP PROJECT: R-5734A



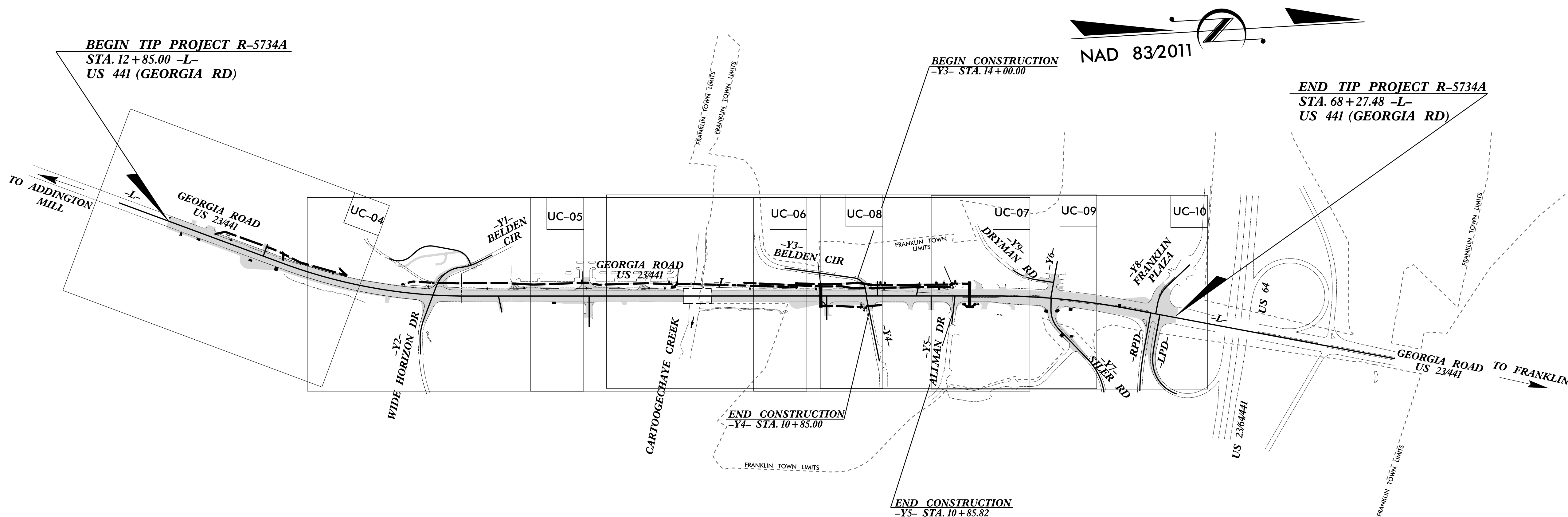
100% PLANS SUBMITTAL

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

**UTILITY CONSTRUCTION PLANS
MACON COUNTY**



LOCATION: US 441 (GEORGIA ROAD) FROM SR 1652 (WIDE HORIZON DR.)/ SR 1152 (BELDEN CIRCLE) TO US 64
TYPE OF WORK: UTILITY RELOCATES FOR GRAVITY SANITARY SEWER AND WATER



PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL
UNTIL ALL SIGNATURES ARE COMPLETED

GRAPHIC SCALES
VARIES PER SHEET
SEE SCALES EACH SHEET

INDEX OF SHEETS

SHEET NO.	DESCRIPTION:
UC-01	TITLE SHEET
UC-02	UTILITY SYMBOLOGY
UC-03	NOTES
UC-03A-F	DETAILS
UC-04	GRAVITY SAN SEWER PLAN AND PROFILE
UC-05	GRAVITY SAN SEWER PLAN AND PROFILE
UC-06	GRAVITY SAN SEWER PLAN AND PROFILE
UC-07	GRAVITY SAN SEWER PLAN AND PROFILE
UC-08	WATER PLAN AND PROFILE
UC-09	WATER PLAN AND PROFILE
UC-10	WATER PLAN

UTILITY OWNER
**GRAVITY SANITARY SEWER
AND WATER**

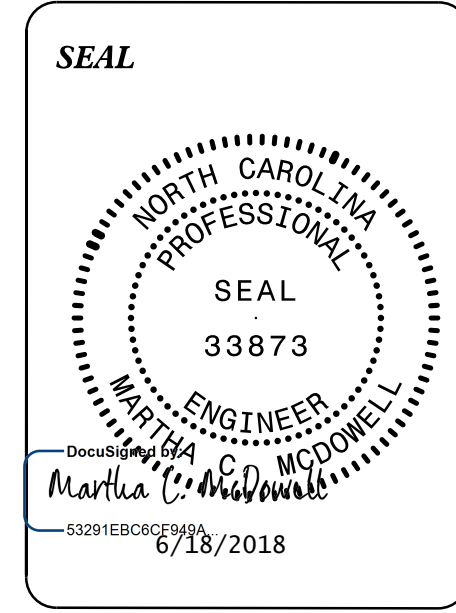
TOWN OF FRANKLIN
95 E MAIN STREET
FRANKLIN, NC 28734

PREPARED IN THE OFFICE OF

Stantec

STANTEC CONSULTING SERVICES INC.
801 JONES FRANKLIN ROAD,
SUITE 300
RALEIGH, NC 27686
TEL: (919) 851-6865
FAX: (919) 851-7024
www.stantec.com
License No.: F-0672

STEVE SMALLWOOD CONSULTANT CONTACT #1
CAROL MCDOWELL CONSULTANT CONTACT #2
LINDA PASS CONSULTANT CONTACT #3



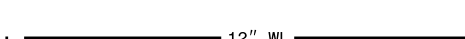























**DIVISION OF HIGHWAYS
UTILITIES UNIT**
1555 MAIL SERVICES CENTER
RALEIGH NC 27699-1555
PHONE (919) 707-6690
FAX (919) 250-4151

MICHAEL BRIGHT UTILITIES REGIONAL ENGINEER
BOB GOLDING UTILITIES ENGINEER
AMY G. DUPREE UTILITIES AREA COORDINATOR
STEVE C. TREXLER UTILITIES COORDINATOR

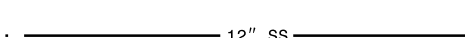



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

UTILITIES PLAN SHEET SYMBOLS









PROPOSED WATER SYMBOLS









Water Line (Sized as Shown)	
11¼ Degree Bend	
22½ 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	





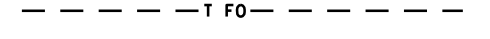
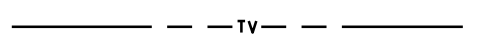




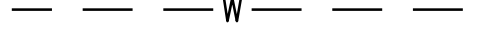
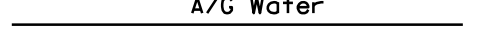
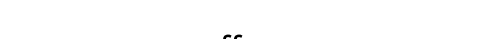






PROPOSED MISCELLANEOUS UTILITIES SYMBOLS

Power Pole	
Telephone Pole	
Joint Use Pole	
Telephone Pedestal	
Utility Line by Others	
Trenchless Installation	
Encasement by Open Cut	
Encasement	

Thrust Block	
Air Release Valve	
Utility Vault	
Abandon Utility (Sized as Shown)	
Concrete Pier	
Steel Pier	
Plan Note	
Pay Item Note	

EXISTING UTILITIES SYMBOLS

Power Pole	
Telephone Pole	
Joint Use Pole	
Utility Pole	
Utility Pole with Base	
H-Frame Pole	
Power Transmission Line Tower	
Water Manhole	
Power Manhole	
Telephone Manhole	
Sanitary Sewer Manhole	
Hand Hole for Cable	
Power Transformer	
Telephone Pedestal	
CATV Pedestal	
Gas Valve	
Gas Meter	
Located Miscellaneous Utility Object	
Abandoned According to Utility Records	AATUR
End of Information	E.O.I.

*Underground Power Line	
Aboveground Power	
*Underground Telephone Conduit	
*Underground Fiber Optics Telephone Cable	
*Underground TV Cable	
*Underground Fiber Optics TV Cable	
*Underground Gas Main Pipeline	
Aboveground Gas Main Pipeline	
*Underground Water Line	
Aboveground Water Line	
*Underground Gravity Sanitary Sewer Line	
*Aboveground Gravity Sanitary Sewer Line	
*Underground SS Forced Main Line	
*Underground Unknown Utility Line	
SUE Test Hole	
Water Meter	
Water Valve	
Fire Hydrant	
Sanitary Sewer Cleanout	

*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 FRANKLIN, NC.
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 OWNER'S 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.


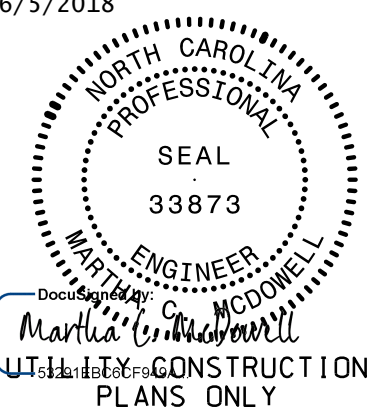
STANDARD DETAIL DRAWINGS

1. STANDARD DETAILS ARE PROVIDED FOR THE PROJECT. TOWN OF FRANKLIN STANDARD DETAILS ARE TO BE USED WHEN APPLICABLE. A COPY OF TOWN STANDARD DETAILS ARE AVAILABLE ON LINE: www.franklinnc.com
2. IF NO STANDARD DETAILS ARE PROVIDED IN DRAWINGS OR BY TOWN, THEN USE NCDOT STANDARD SPECIFICATIONS, DIVISION 15 STANDARD DETAILS FOR UTILITY CONSTRUCTION.

PROJECT SPECIFIC NOTES:

1. ALL NEW WATER LINE SHALL BE D.I.R.J. (DUCTILE IRON RESTRAINED JOINT) PIPE UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
2. WATER MAINS OR SEWER LINES CROSSING UNDER STORM DRAIN PIPE SHALL HAVE 18" MINIMUM VERTICAL CLEARANCE UNLESS SPECIFIED ON THE PLAN/PROFILE DRAWINGS.
3. CONTRACTOR'S ATTENTION IS DIRECTED TO SECTIONS 102, 107, AND 1550 OF THE STANDARD SPECIFICATIONS CONCERNING TRENCHLESS INSTALLATION. IT IS CONTRACTOR'S RESPONSIBILITY TO HAVE BORE DESIGNED AND SEALED BY A LICENSED NORTH CAROLINA PROFESSIONAL ENGINEER. NO DAMAGE IS ALLOWED TO RIVER, WETLANDS, OR BUFFER ZONES.

REFER TO SHEETS UC-07 AND UC-09 FOR THE SEWER LINE AND WATER LINE BORE LOCATIONS.
4. REFER TO DRAWING UC-03F FOR STREAM CROSSING DETAILS . WATER LINE TO BE CONSTRUCTED PER STANDARD DETAILS IN ACCORDANCE WITH PERMIT.
5. IF HDPE PIPE IS INSTALLED BY DIRECTIONAL DRILL. IT SHALL BE FILLED WITH WATER AND NOT BE CONNECTED TO ANY OTHER PIPE OR FITTINGS FOR ONE WEEK FROM THE TIME OF INSTALLATION.
6. ALL MATERIALS AND CONSTRUCTION PERTAINING TO WATER AND SEWER LINE CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF TOWN OF FRANKLIN.
7. CONTRACTOR SHALL OBTAIN THE LATEST STANDARDS, SPECIFICATIONS, AND STANDARD DETAILS DRAWINGS OF TOWN OF FRANKLIN AND NCDOT.

	PROJECT REFERENCE NO.	SHEET NO.
	R-5734A	UC-03
Stantec Consulting Services Inc. 801 Jones Franklin Road Suite 300 Raleigh, NC 27606 Tel. (919) 851-6866 Fax. (919) 851-7024 www.stantec.com License No. F-0672	DESIGNED BY: WMH	6/5/2018
	DRAWN BY: RGR/WMH	
	CHECKED BY: MCM	
	APPROVED BY:	
	REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151		UTILITY CONSTRUCTION PLANS ONLY
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UTILITY CONSTRUCTION

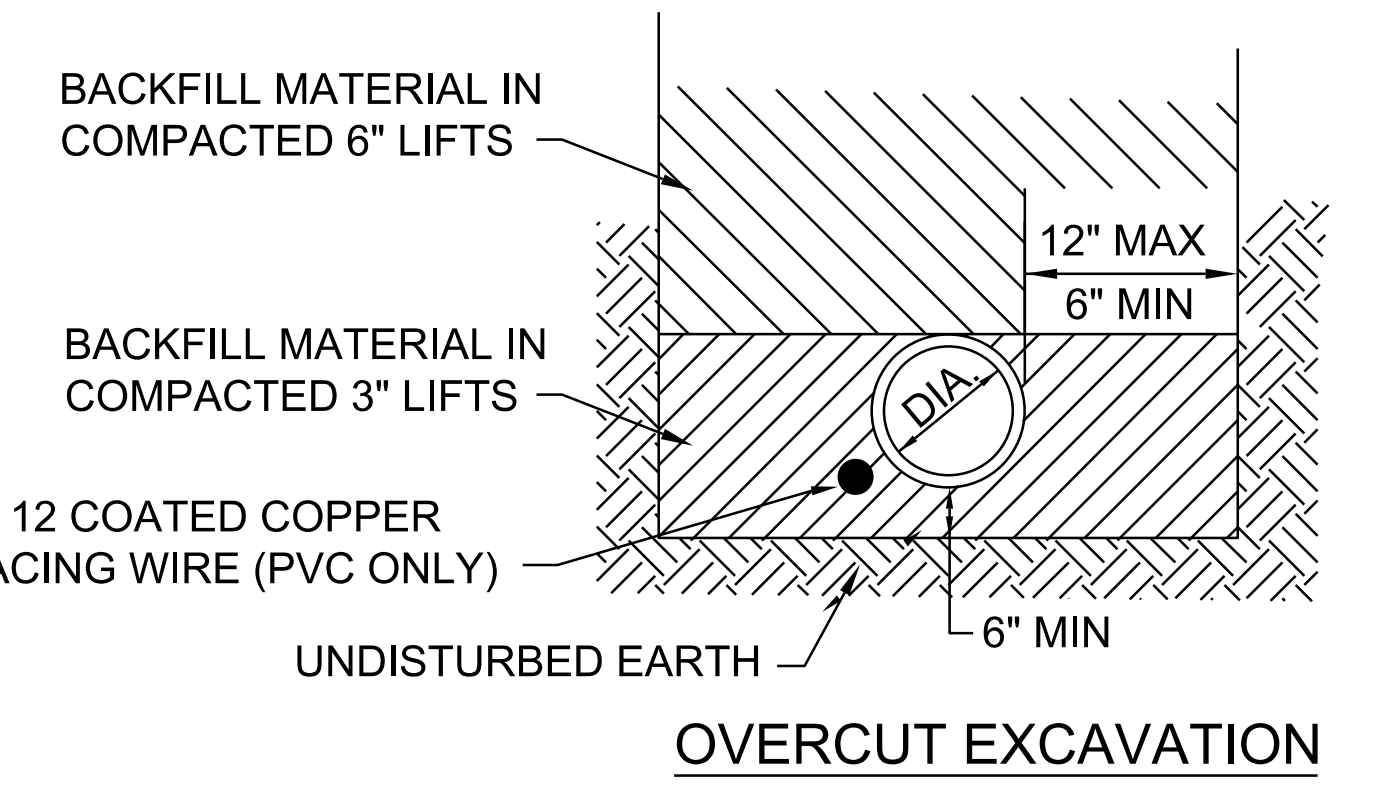
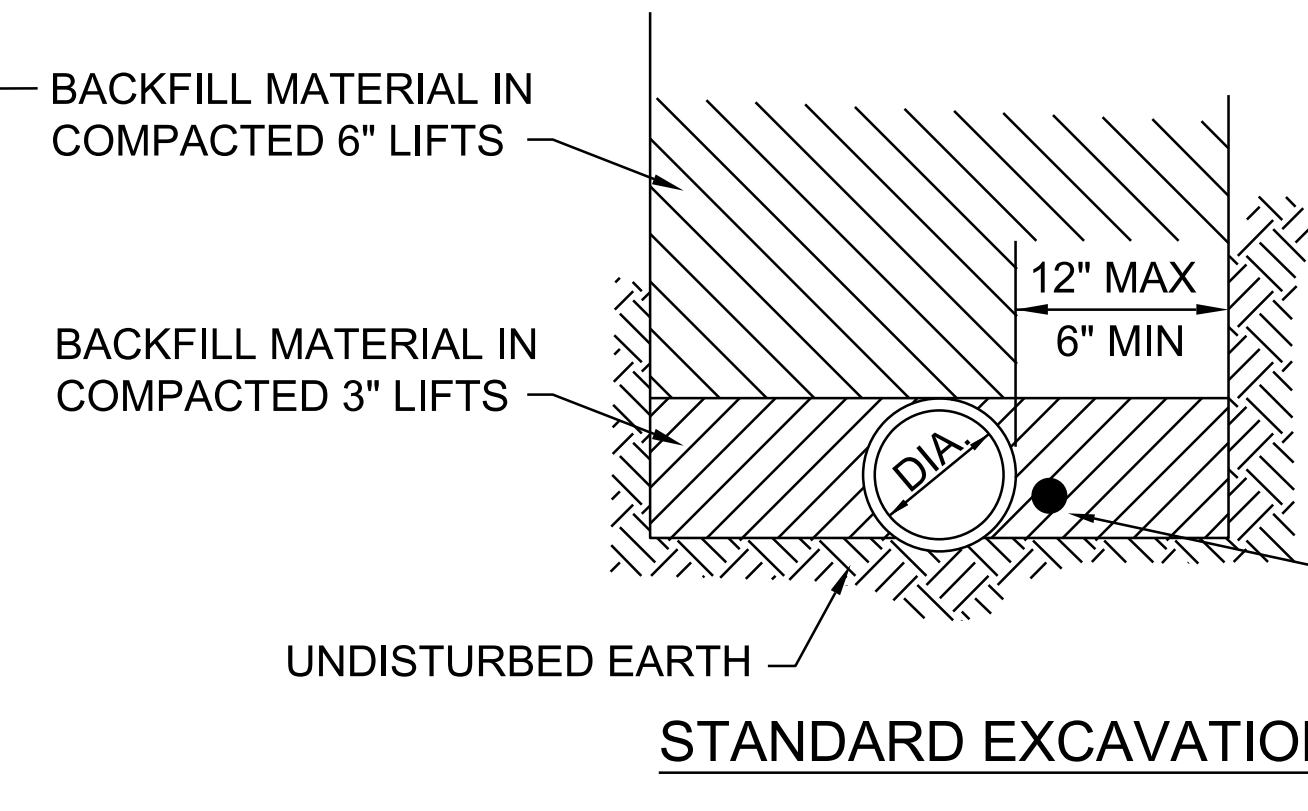
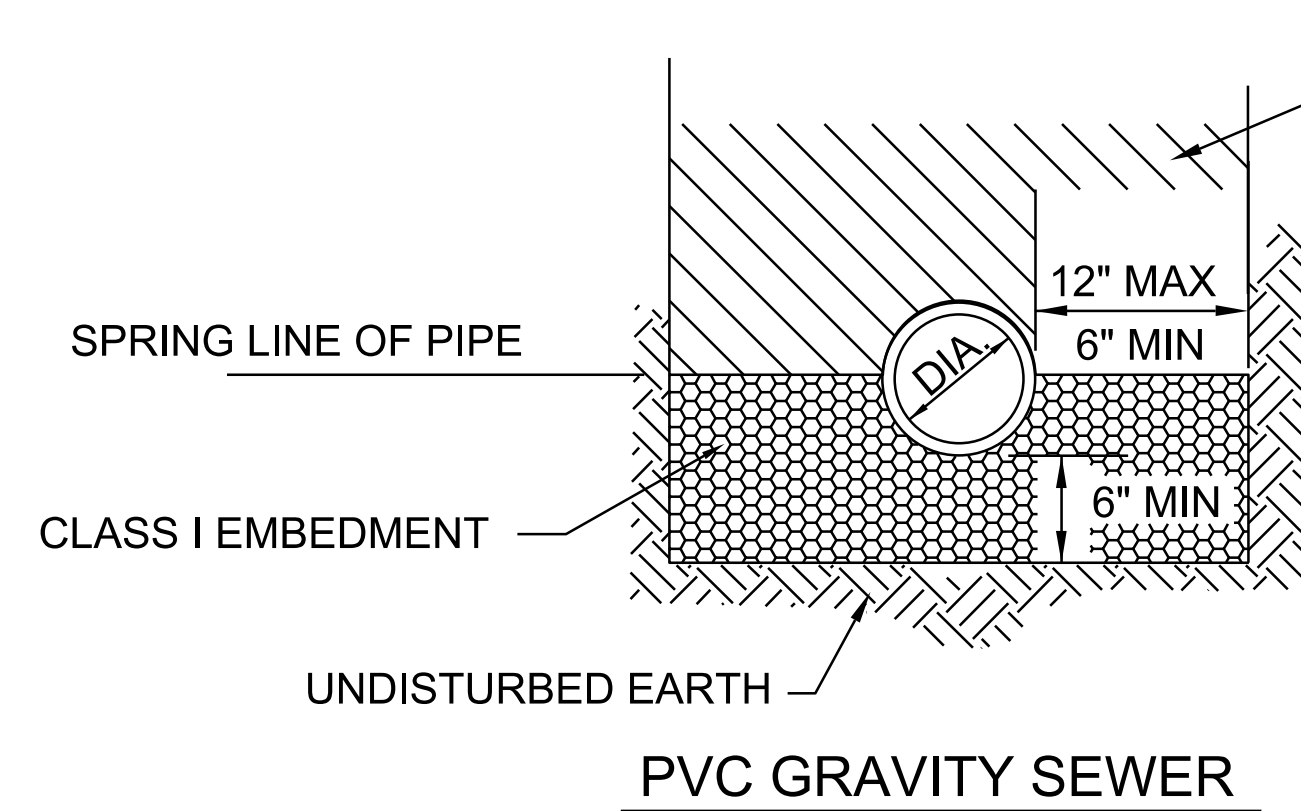
PROJECT TYPICAL DETAILS

NOTES:

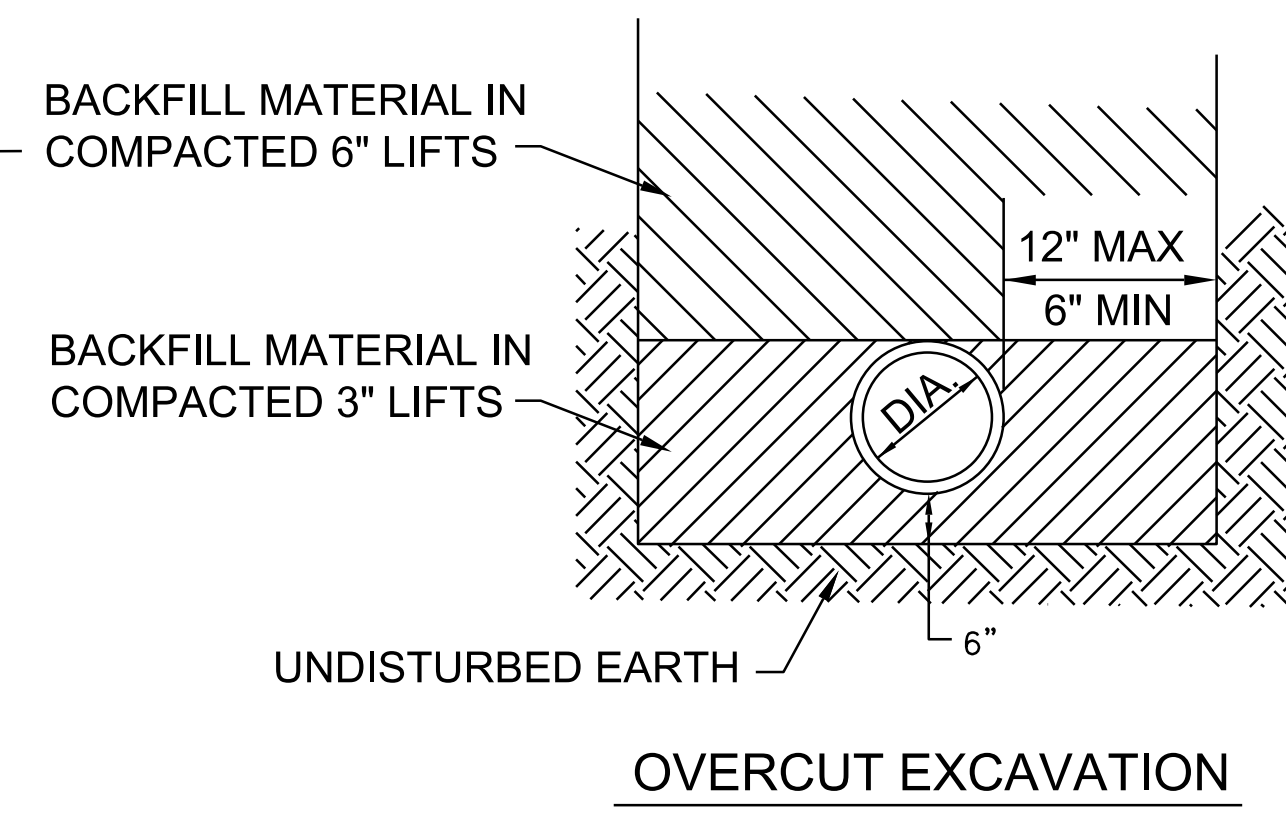
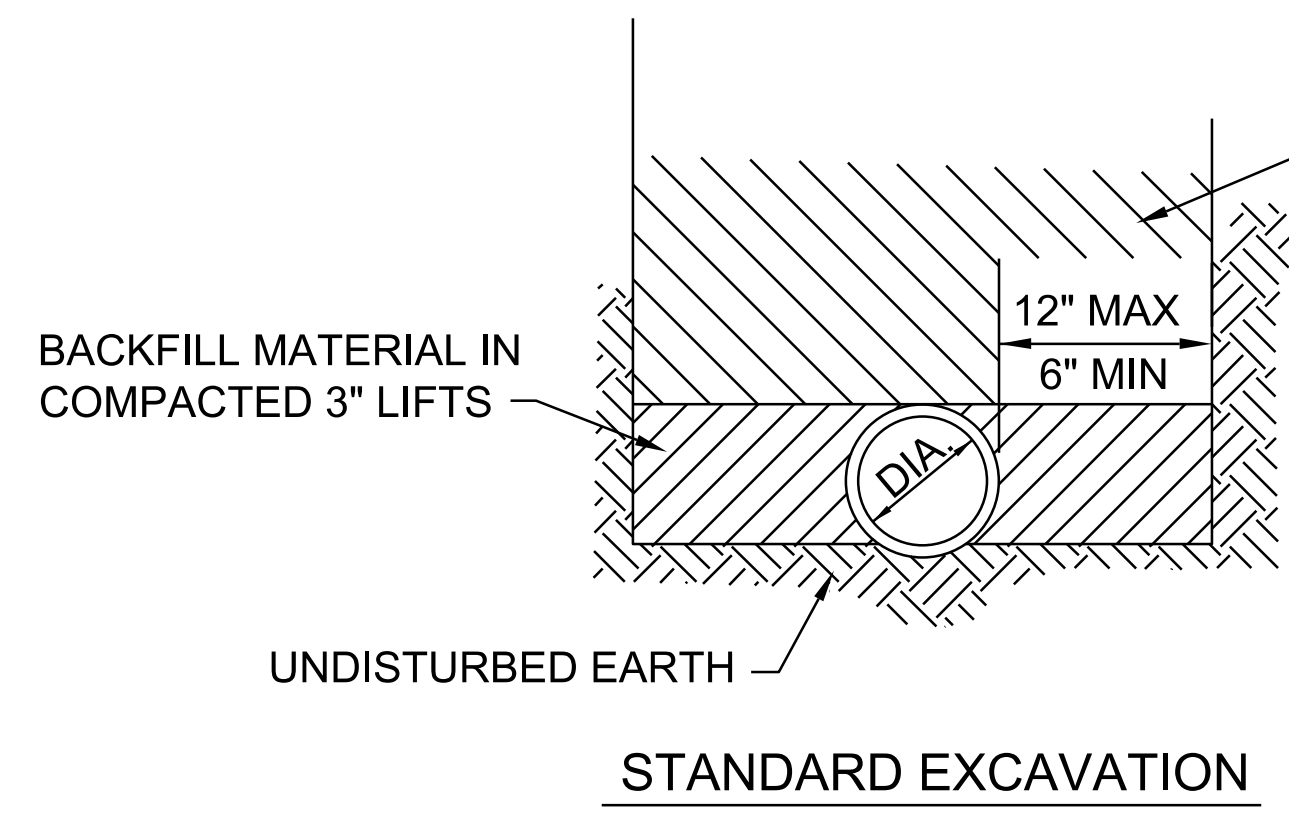
1. CONSTRUCTION OF TRENCHES WILL COMPLY WITH ALL FEDERAL, STATE, AND LOCAL SAFETY AND HEALTH REGULATIONS WHICH HAVE JURISDICTION AT THE PROJECT SITE. IT IS THE CONTRACTORS RESPONSIBILITY TO BE FAMILIAR WITH THE APPLICABLE REGULATION AND FOLLOW THEM ACCORDINGLY.
2. PAYMENT FOR ROCK EXCAVATION AND SELECT BACKFILL IN TRENCH WILL BE FOR ACTUAL QUANTITIES AND WILL NOT EXCEED THE WIDTH OF TRENCH SHOWN IN THE DETAILS.
3. PVC PIPE INSTALLTION: CONTRACTOR WILL FURNISH AND INSTALL METALLIC WIRING TAPE 24-INCHES ABOVE THE PIPE AND COPPER TRACING WIRE.
4. CLASS I EMBEDMENT WILL BE NCDOT STANDARD #57 STONE OR APPROVED EQUAL.
5. FOUNDATION STONE WILL BE NCDOT STANDARD #57 STONE.
6. BELL HOLES NOT SHOWN.

 <p>Stantec Consulting Services Inc. 801 Jones Franklin Road Suite 300 Raleigh, NC 27606 Tel. (919) 851-6866 Fax. (919) 851-7024 www.stantec.com License No. F-0672</p>	PROJECT REFERENCE NO. R-5734A	SHEET NO. UC-03A
	DESIGNED BY: MCM	6/5/2018
	DRAWN BY: RGR/MCM	
	CHECKED BY: MCM	
	APPROVED BY:	
	REVISD:	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151		NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  MARSHA C. MAXWELL ENGINEER NORTH CAROLINA PLANS ONLY
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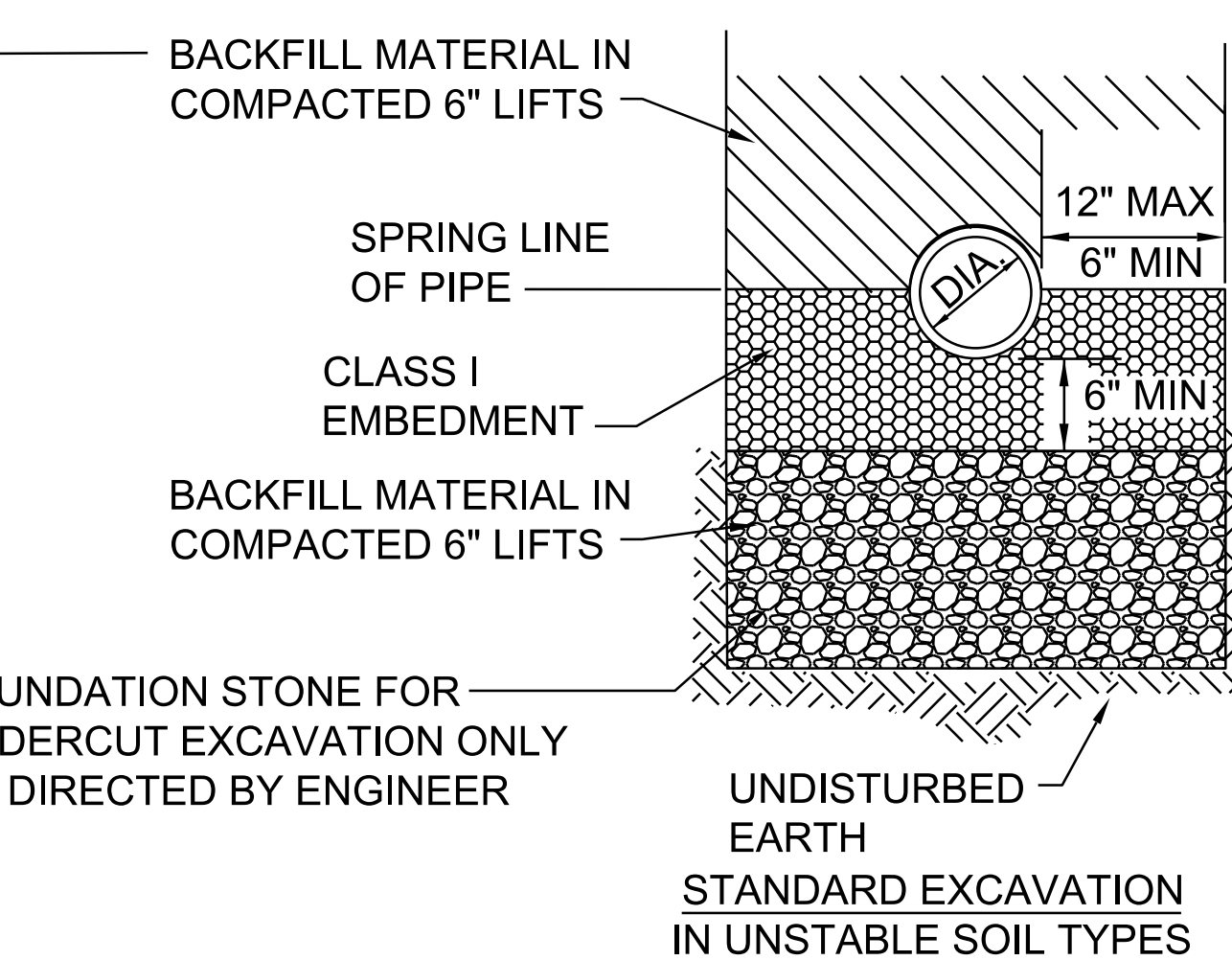
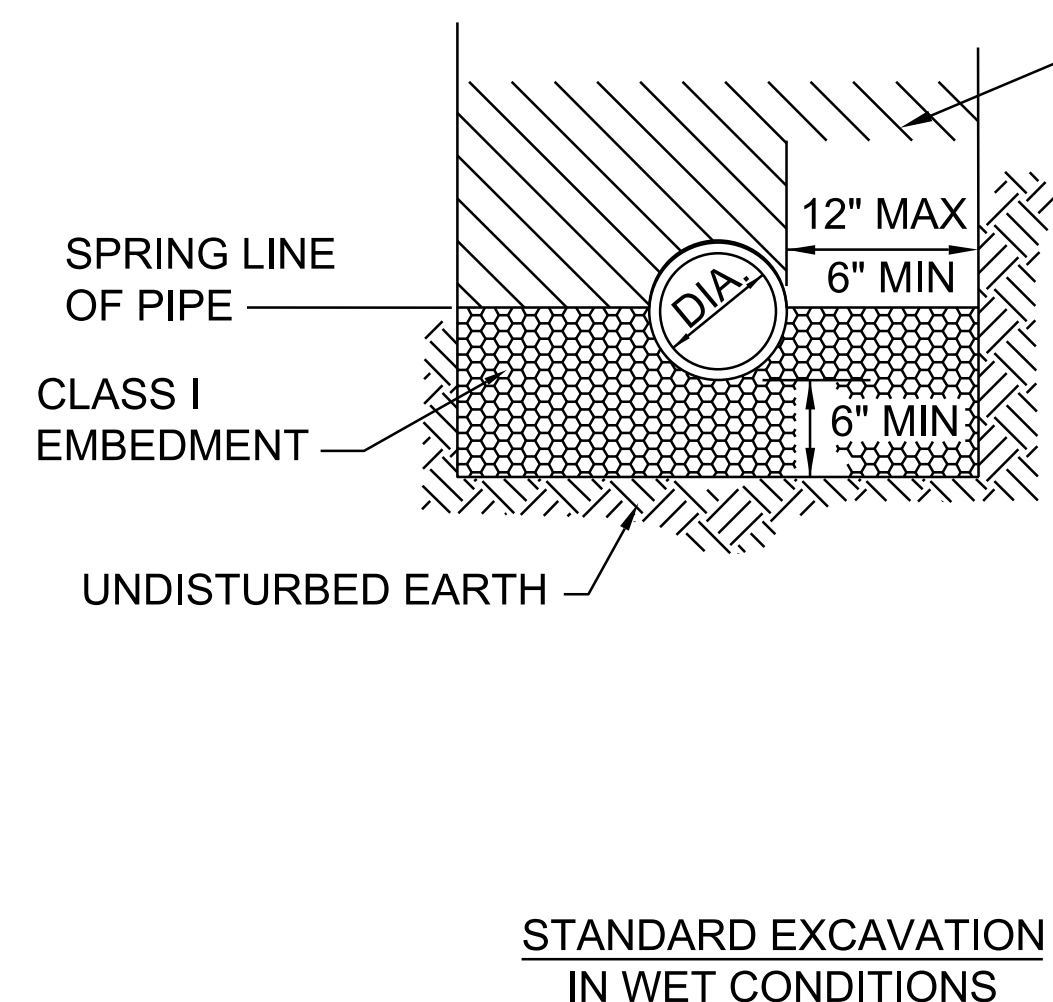
UTILITY CONSTRUCTION



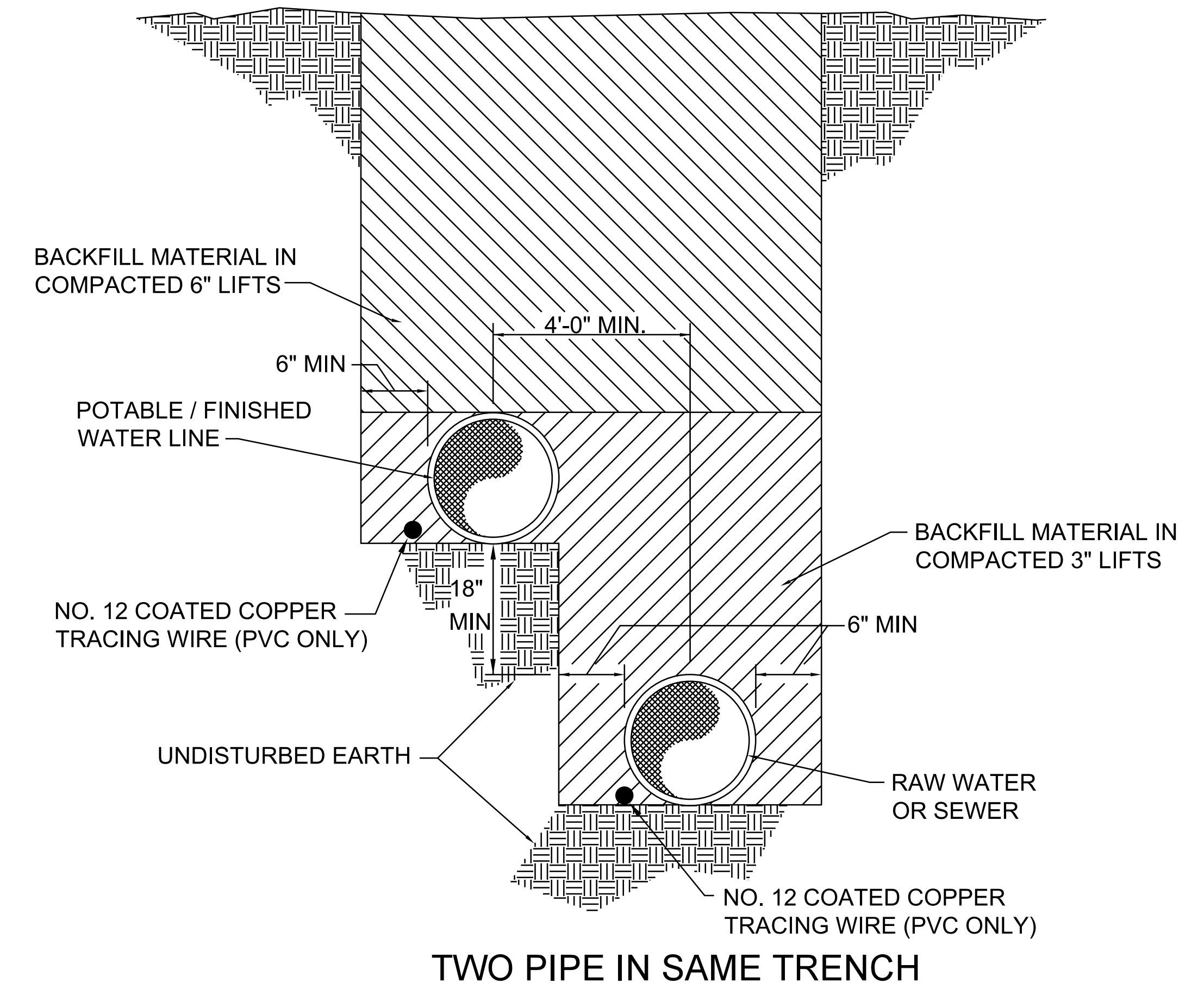
WATER LINES



DUCTILE IRON GRAVITY SEWER



PIPE IN WET OR UNSTABLE CONDITIONS ALL PIPE TYPES (AS DIRECTED BY TOWN OF FRANKLIN)



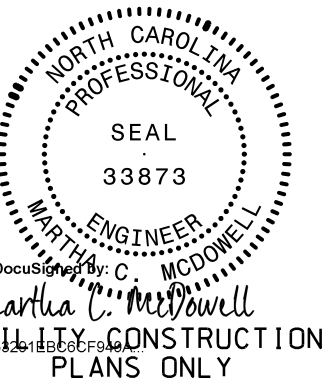
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PROJECT TYPICAL DETAILS



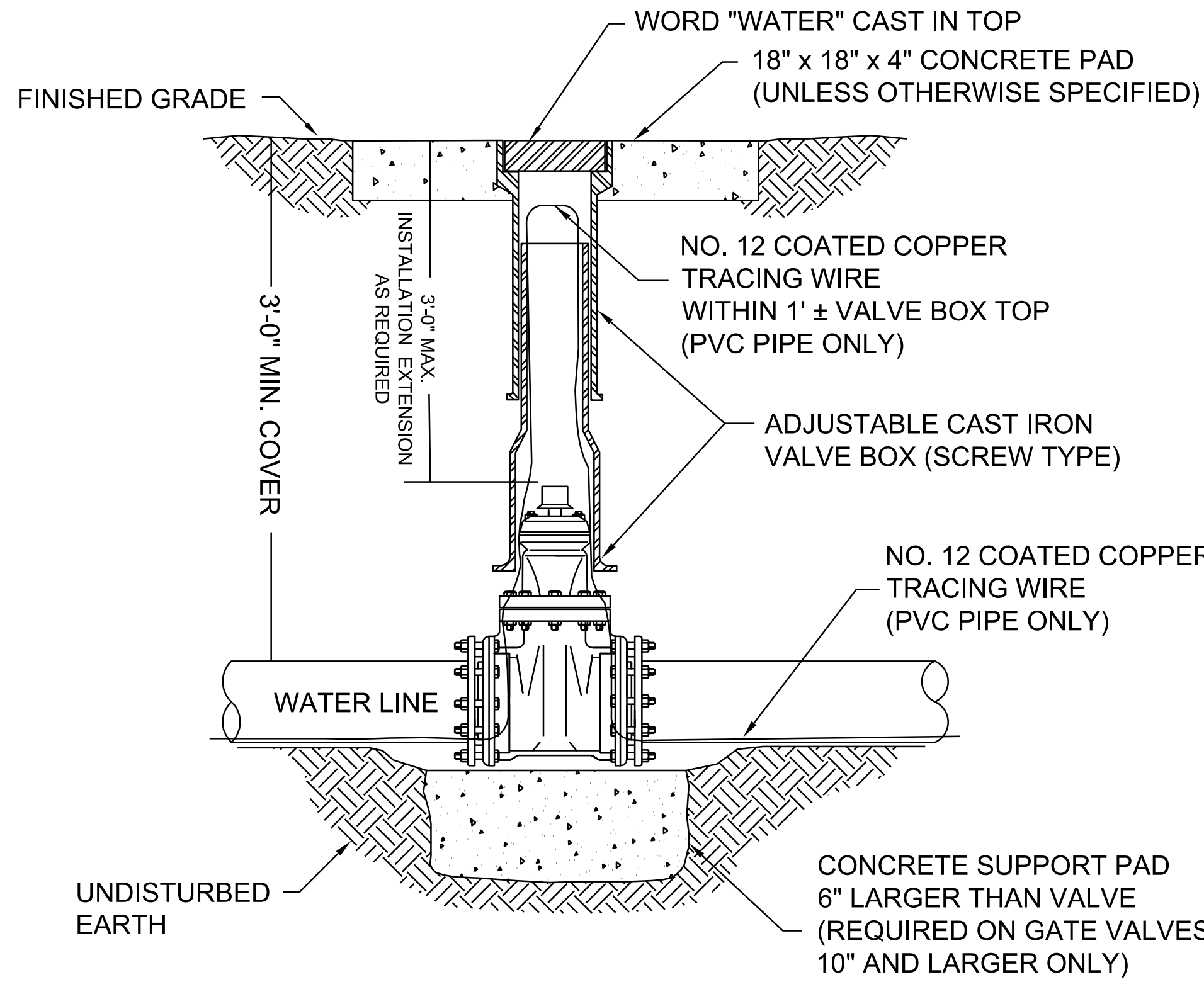
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801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
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PROJECT REFERENCE NO. R-5734A	SHEET NO. UC-03B
DESIGNED BY: MCM	6/5/2018
DRAWN BY: RGR/MCM	
CHECKED BY: MCM	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	

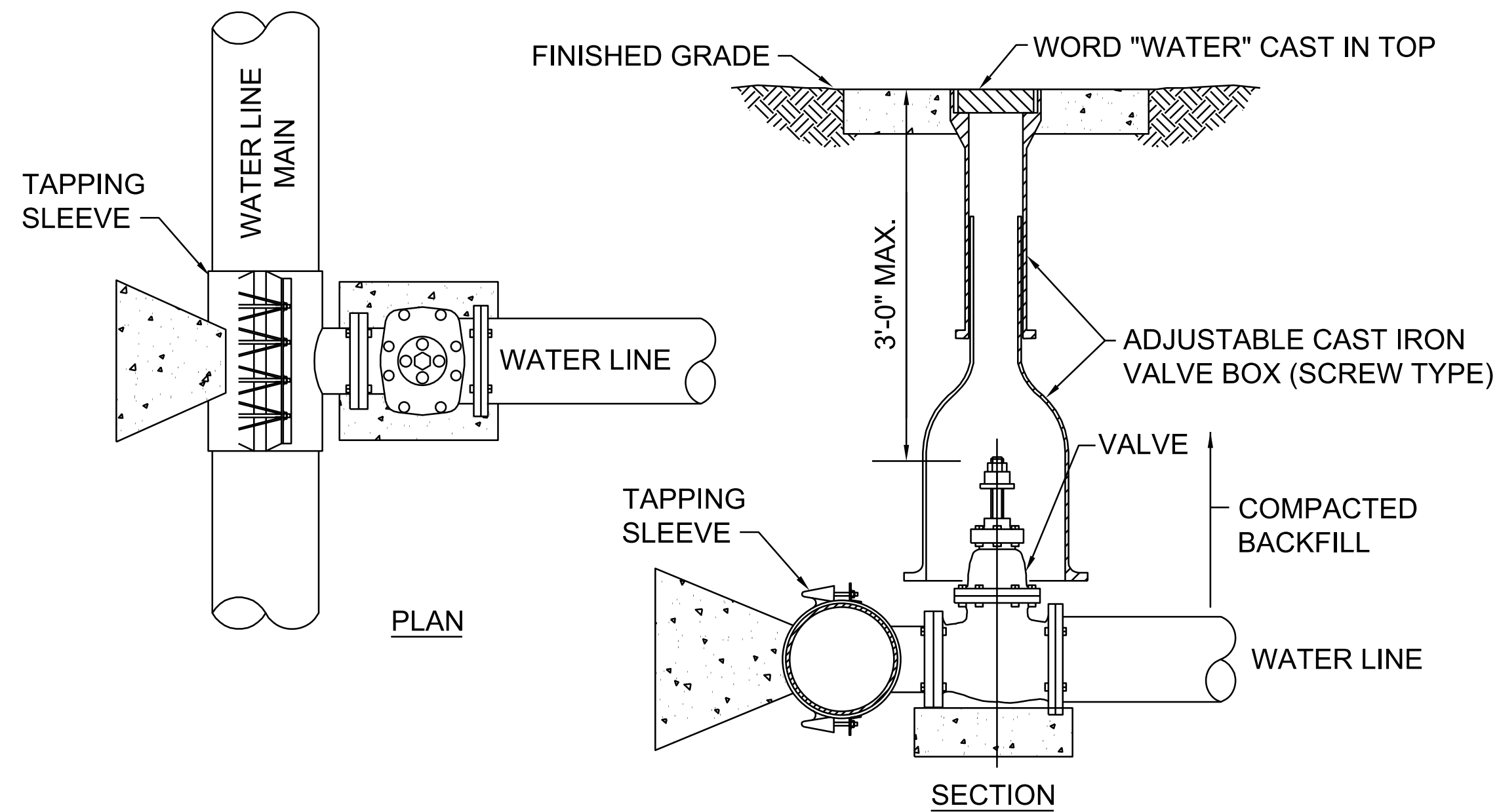


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UTILITY CONSTRUCTION

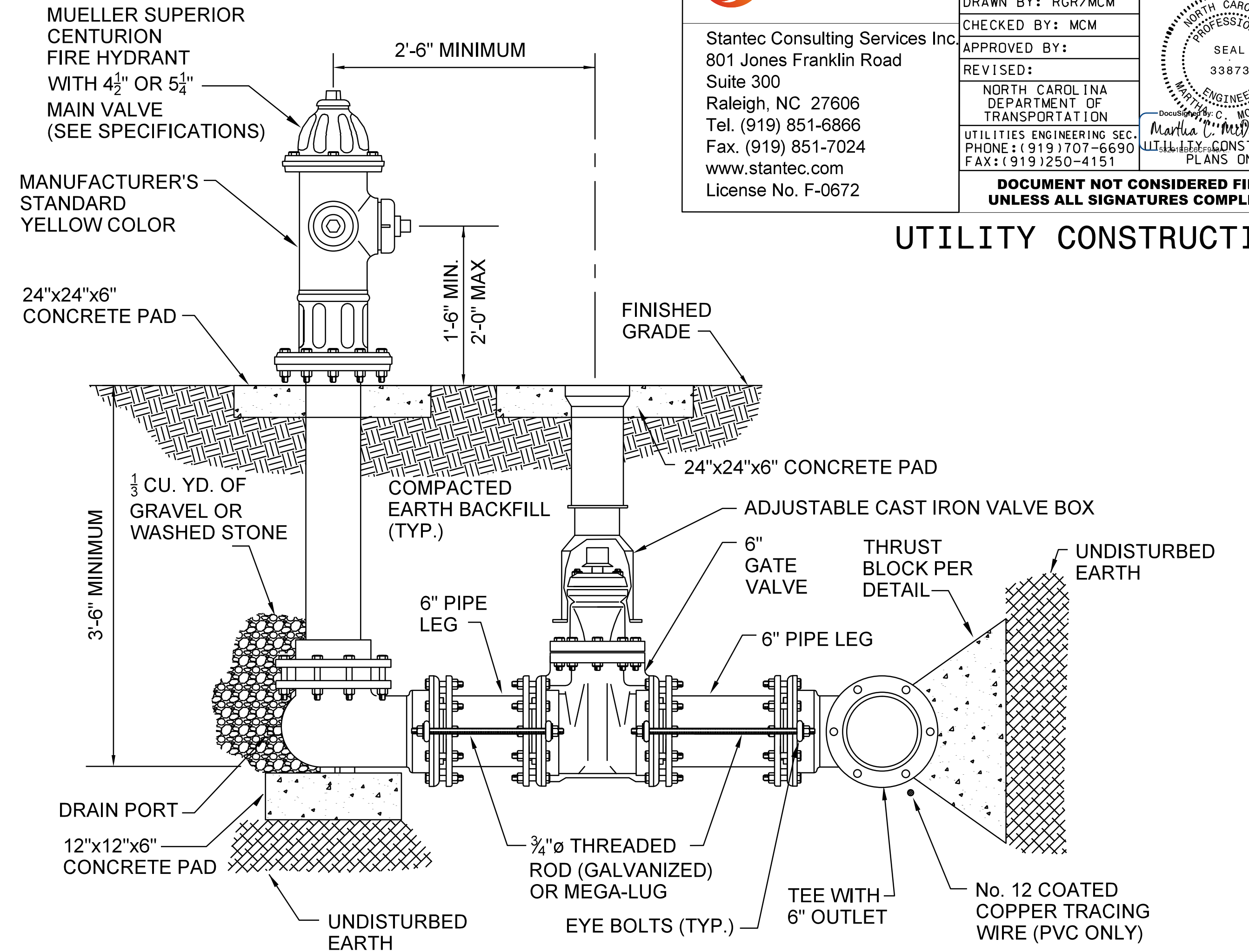


GATE VALVE INSTALLATION DETAIL

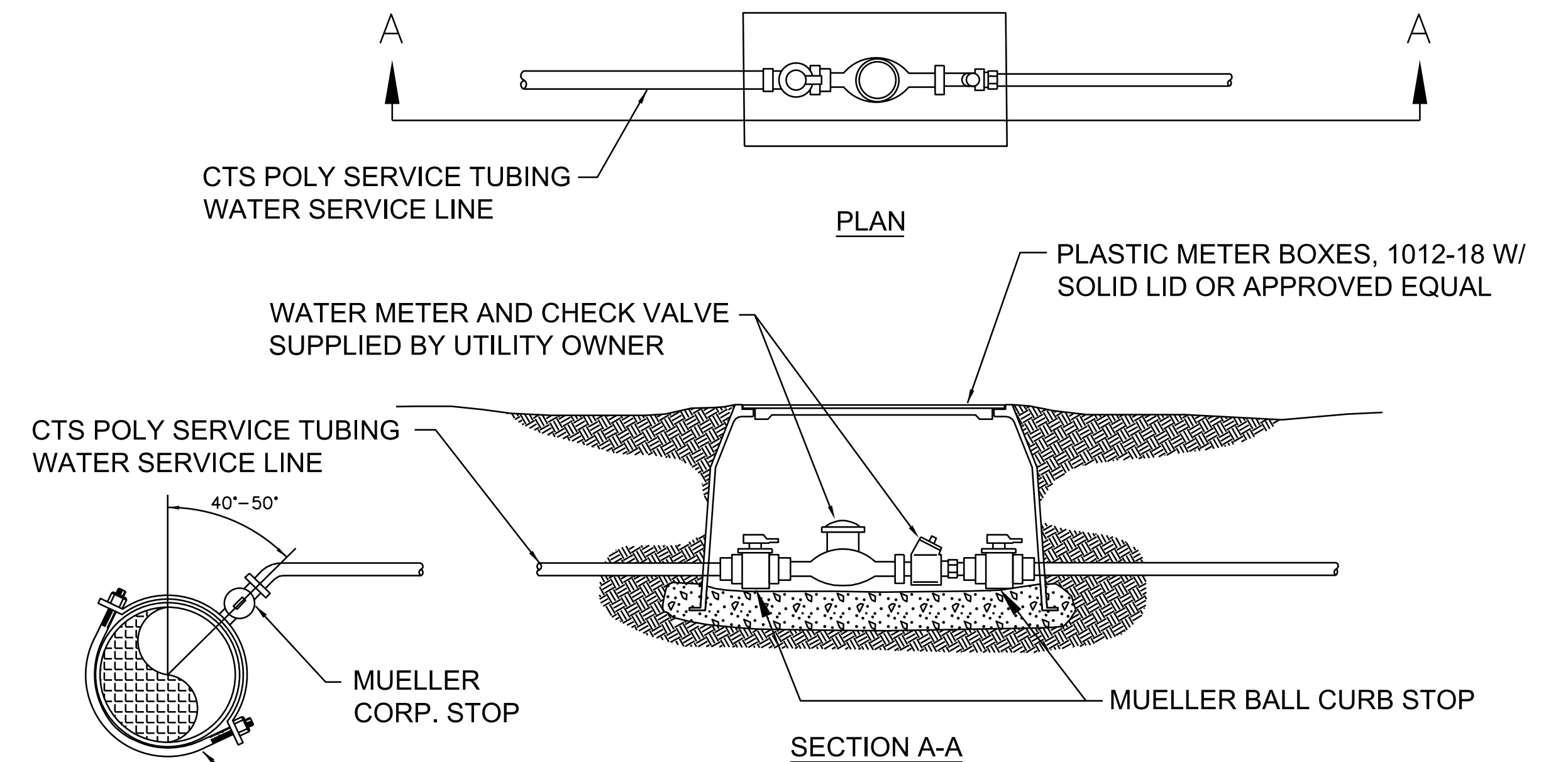


- NOTES:**
1. TAPPING SLEEVE WILL BE MUELLER OR SMITH BLAIR.
 2. TAPPING VALVE WILL BE MUELLER.
 3. USE SOLID CONCRETE OR BRICK BLOCKING FOR DUCTILE IRON PIPE. 3000 PSI CONCRETE REQUIRED FOR PVC PIPE.
 4. CONCRETE WILL NOT CONTACT BOLTS OR ENDS OF MECHANICAL JOINT FITTINGS.
 5. REFER TO APPROPRIATE STANDARD DETAILS FOR THRUST BLOCK DIMENSIONS.
 6. COVER FITTINGS WITH POLYETHYLENE PLASTIC PRIOR TO POURING THRUST BLOCK.

TAPPING SLEEVE AND VALVE DETAIL



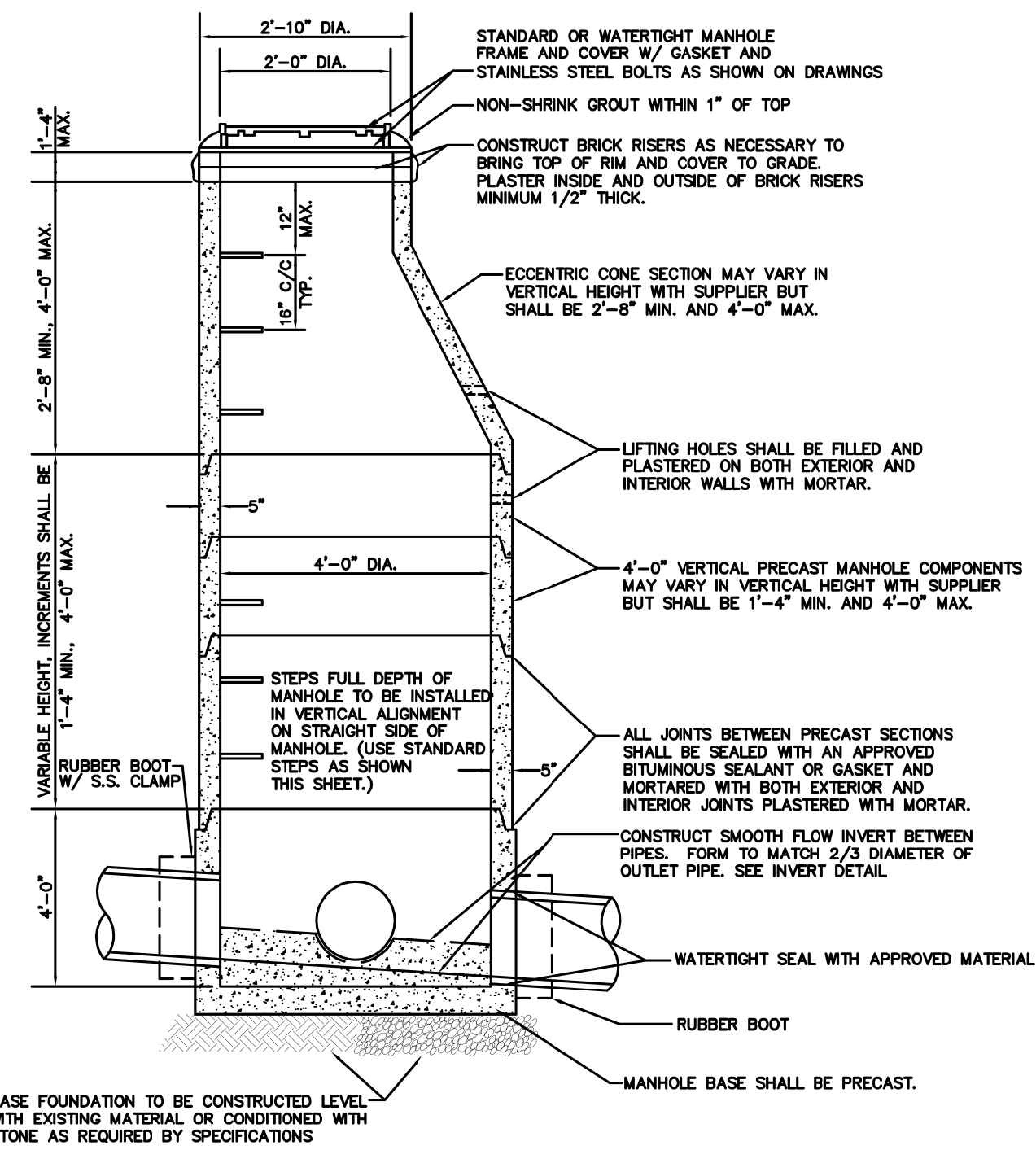
TYPICAL FIRE HYDRANT ASSEMBLY DETAIL



5/8" WATER METER BOX DETAIL

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728\transo\5/22/2018\Design\Utilities\proj\RE734A_ut..dtl_UC03b.dgn

PROJECT TYPICAL DETAILS

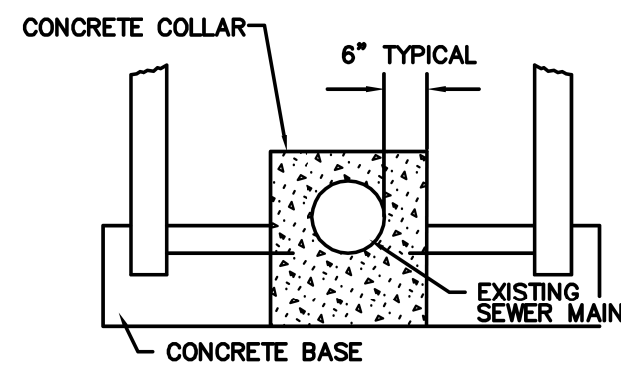


ELEVATION VIEW

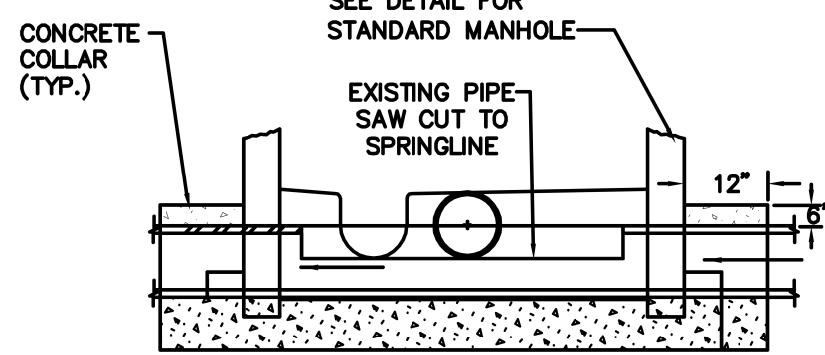
PRECAST MANHOLE NOTES:

1. ALL PRECAST MANHOLE COMPONENTS SHALL MEET REQUIREMENTS OF ASTM C-478, LATEST REVISION.
2. ALL MANHOLES SHALL BE CONSTRUCTED PLUMB
3. ALL MANHOLE GRADES SHOWN ON THE PLANS ARE FOR THE INVERT OF THE MANHOLE CENTER.
4. IF MANHOLE IS SET IN LOCATION OF HIGH WATER TABLE OR UNDERGROUND WATER IS ENCOUNTERED, THE CONTRACTOR SHALL INSTALL STOREROCKS AND STONE AS DIRECTED IN THE FIELD BY THE ENGINEER.
5. STEPS SHALL BE INSTALLED ON STRAIGHT SIDE OF MANHOLE.

PRECAST CONCRETE MANHOLE



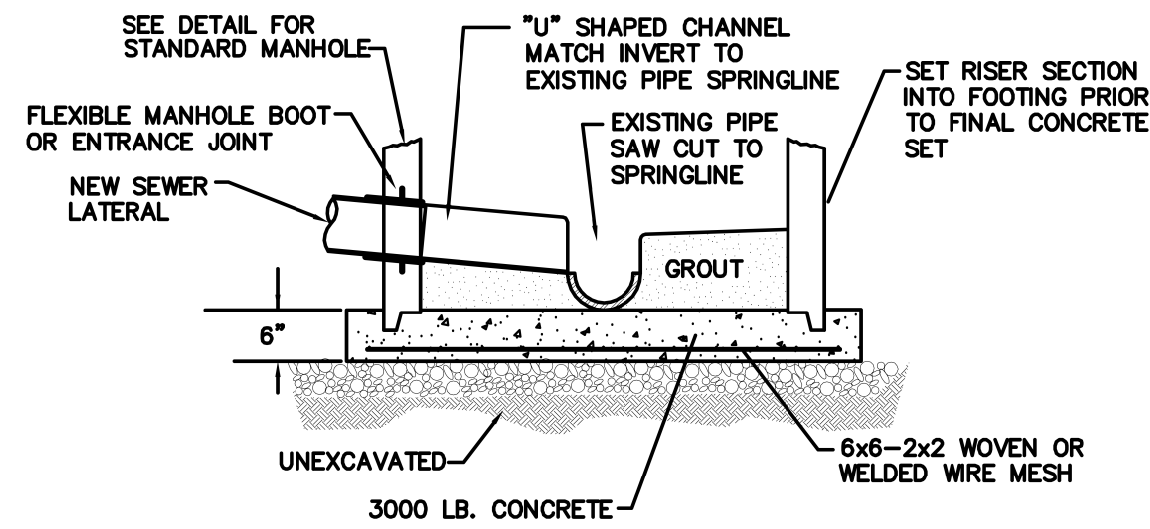
SECTION "C - C"



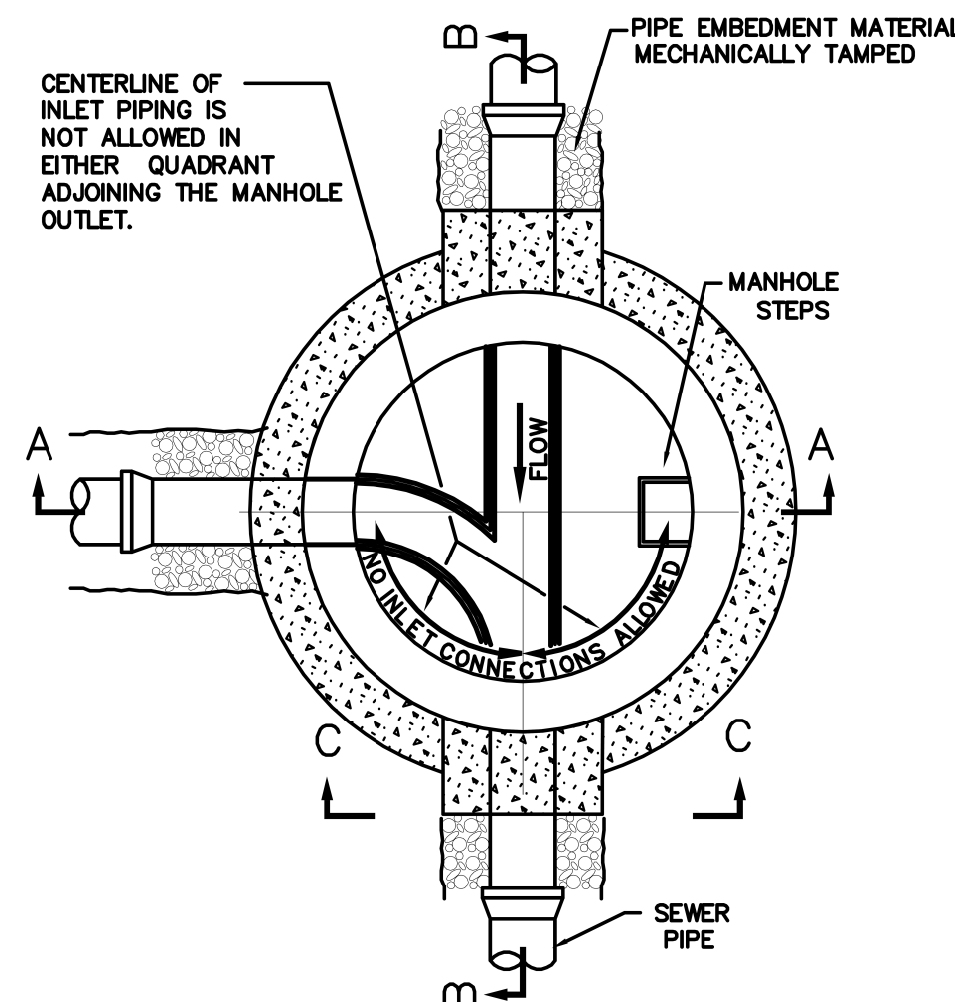
SECTION "B - B"

- NOTES:**
1. THIS DETAIL MUST BE USED FOR CONSTRUCTION OF ALL MANHOLES OVER EXISTING SEWER MAINS.
 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.

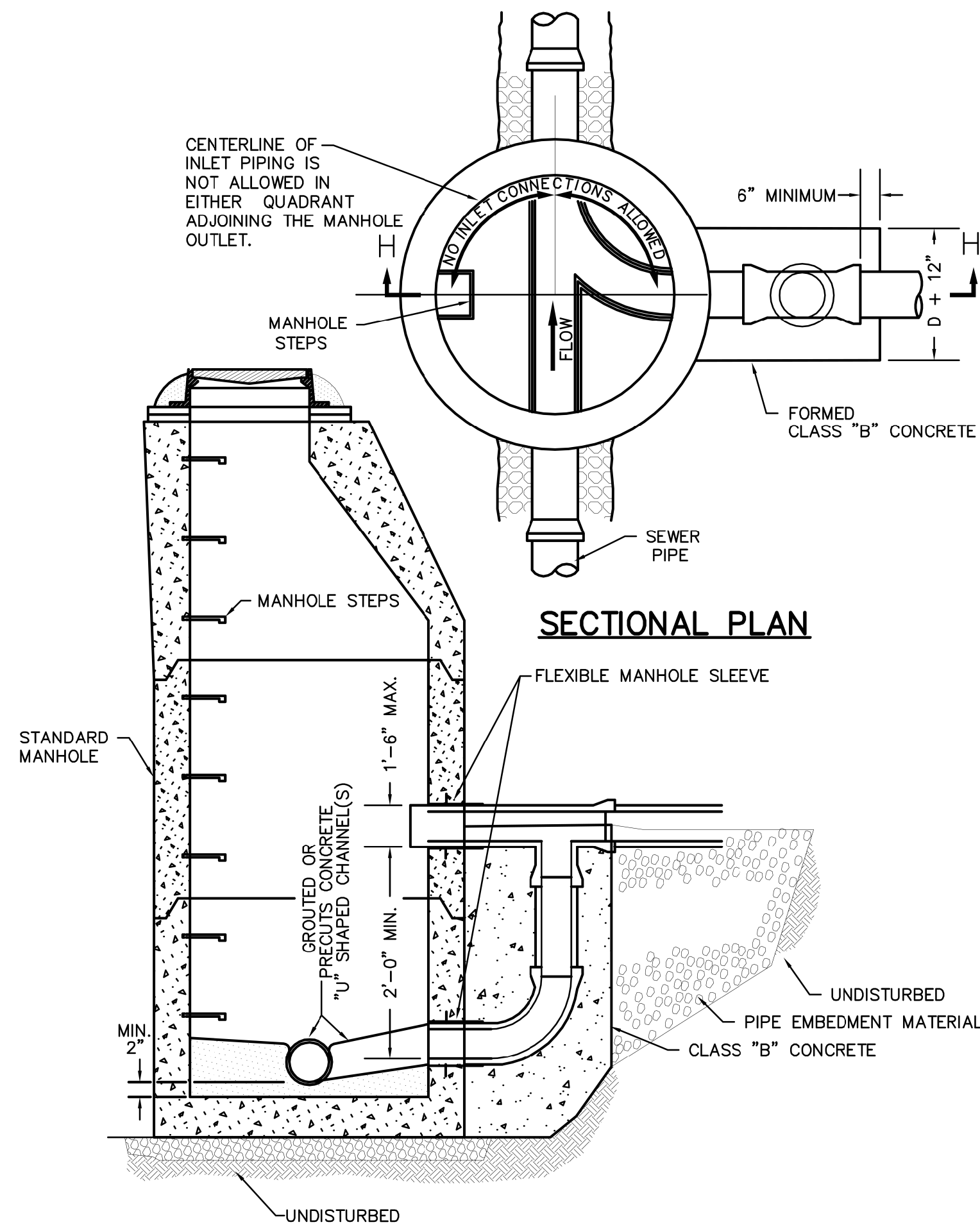
MANHOLE OVER EXISTING SEWER LINE



SECTION "A - A"



SECTIONAL PLAN



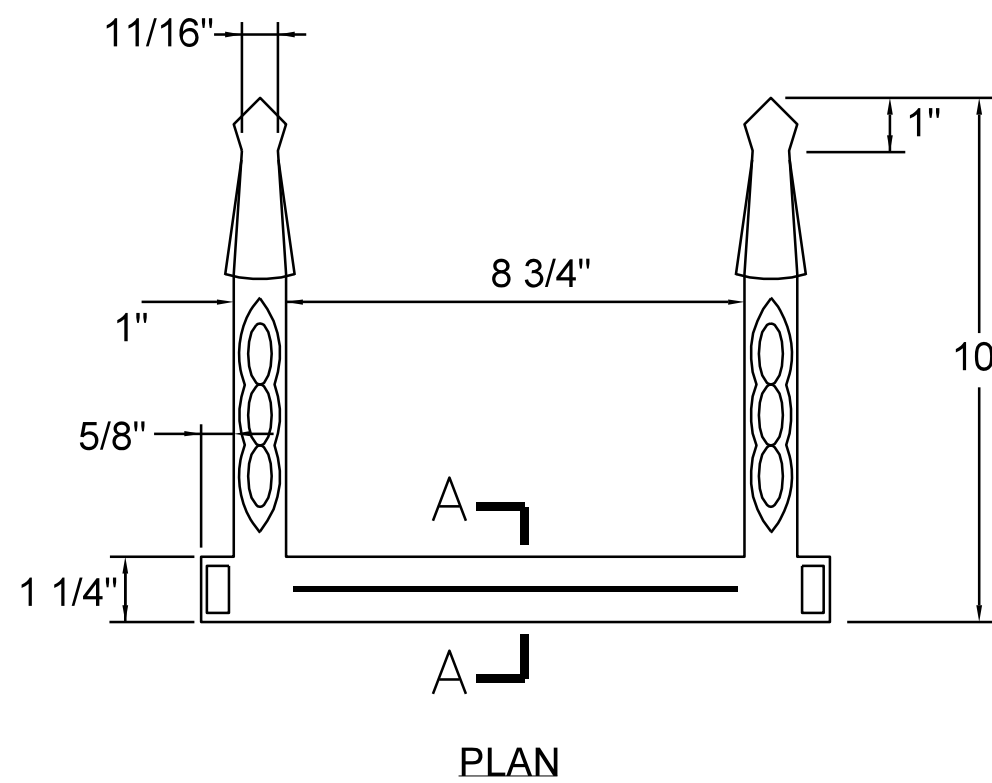
SECTIONAL PLAN

SECTION H-H

NOTE:

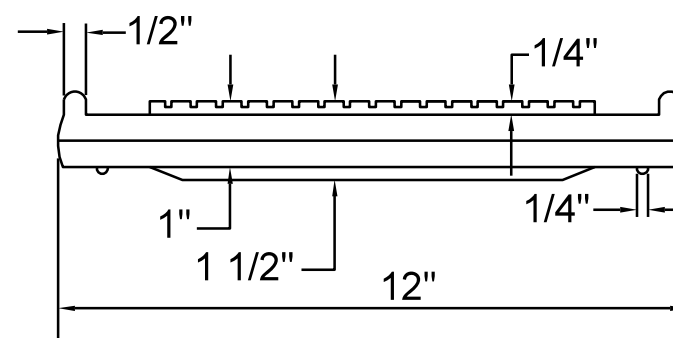
1. DROP CONNECTION IS NOT PERMITTED FOR HIGH VELOCITY SEWER MAINS MAINTAIN MINIMUM OF 8" OF CLEARANCE BETWEEN DROP CONNECTION AND MANHOLE STEPS.
2. BASE FOUNDATION TO CONSTRUCTED LEVEL WITH EXISTING MATERIAL OR WITH STONE AS REQUIRED BY SPECIFICATIONS

DROP MANHOLE DETAIL

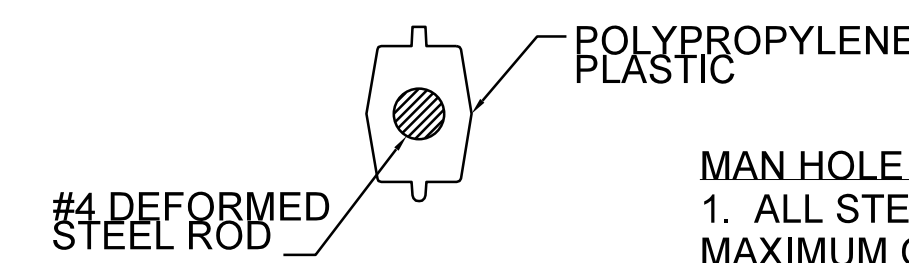


PLAN

SIDE ELEVATION



ELEVATION



SECTION A-A

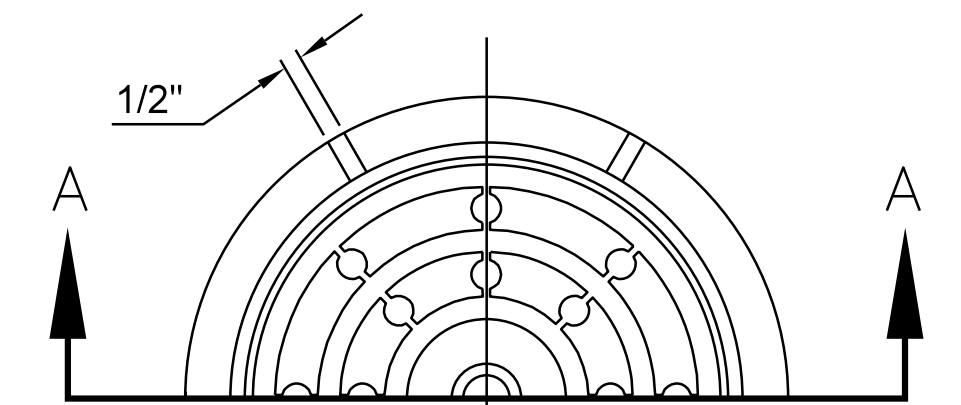
MANHOLE STEPS



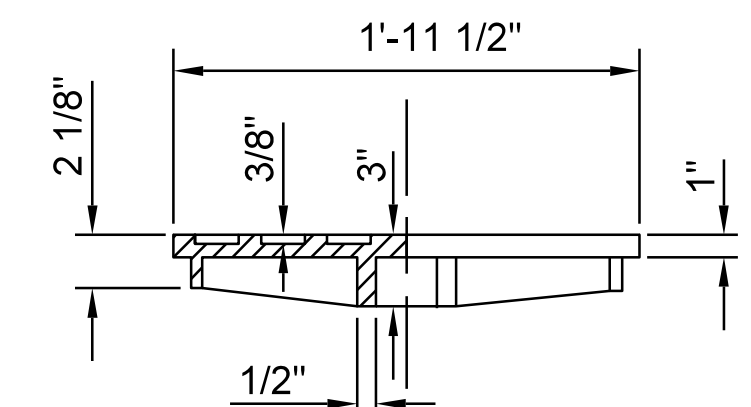
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PROJECT REFERENCE NO. R-5734A	SHEET NO. UC-03C
DESIGNED BY: MCM	6/5/2018
DRAWN BY: RGR/MCM	
CHECKED BY: MCM	
APPROVED BY:	
REVISED:	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
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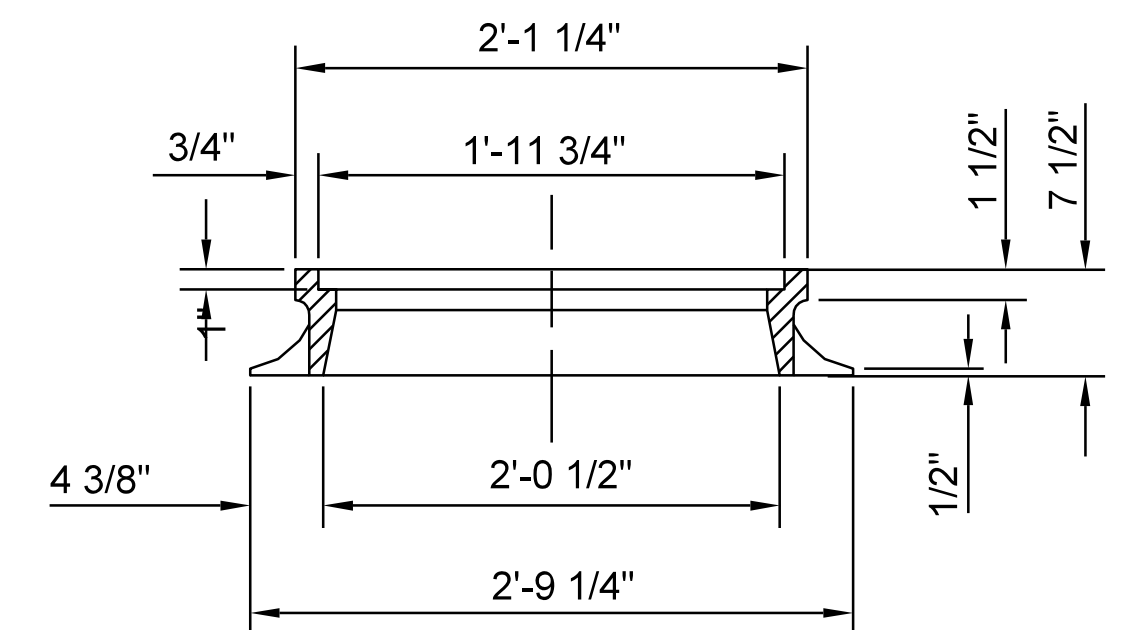
UTILITY CONSTRUCTION



HALF PLAN OF MANHOLE RING AND COVER



SECTION A-A MANHOLE COVER



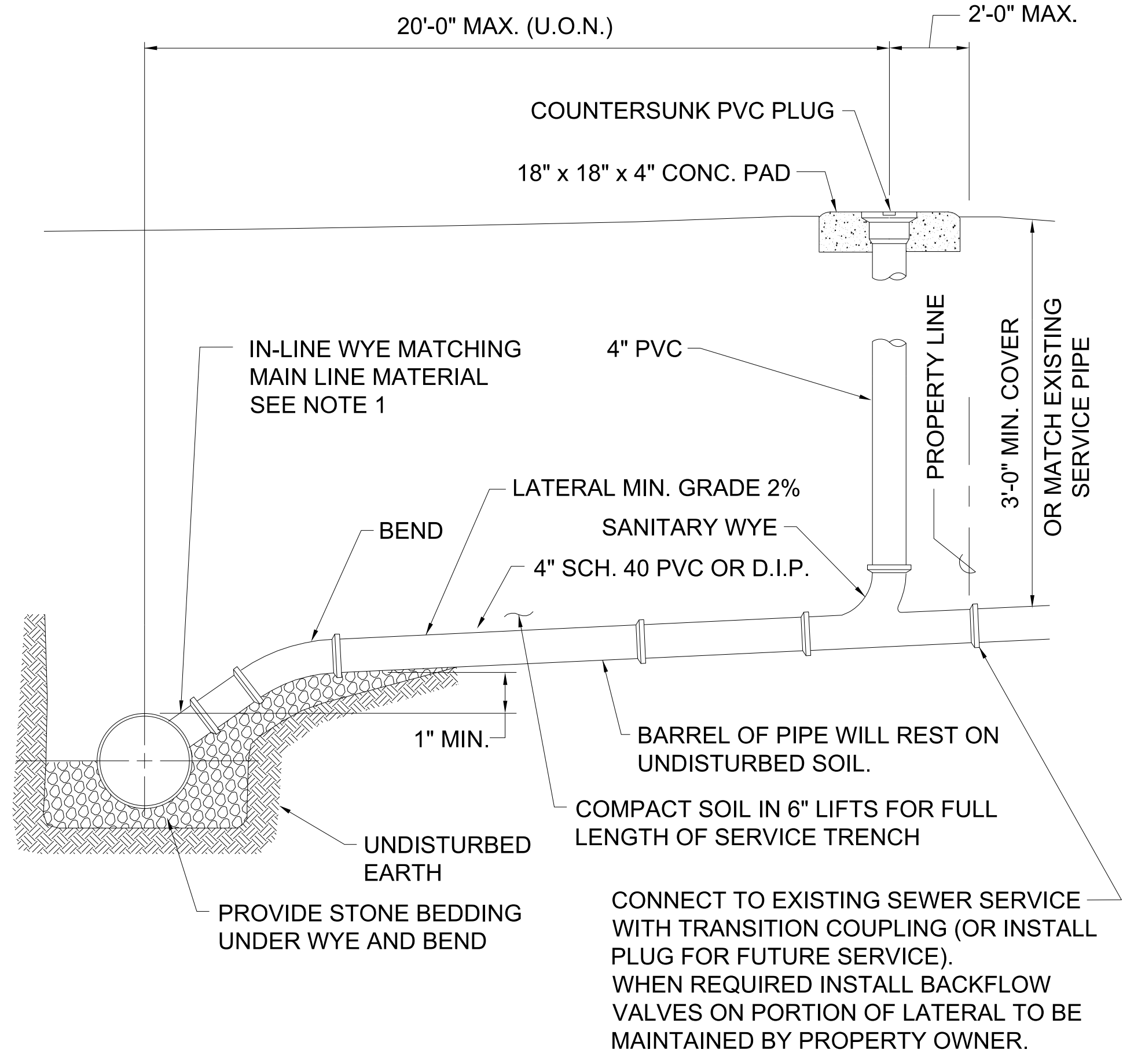
SECTION A-A MANHOLE RING

- NOTES:**
1. TRAFFIC BEARING RING AND COVER.
 2. MINIMUM WEIGHT 315 POUNDS.

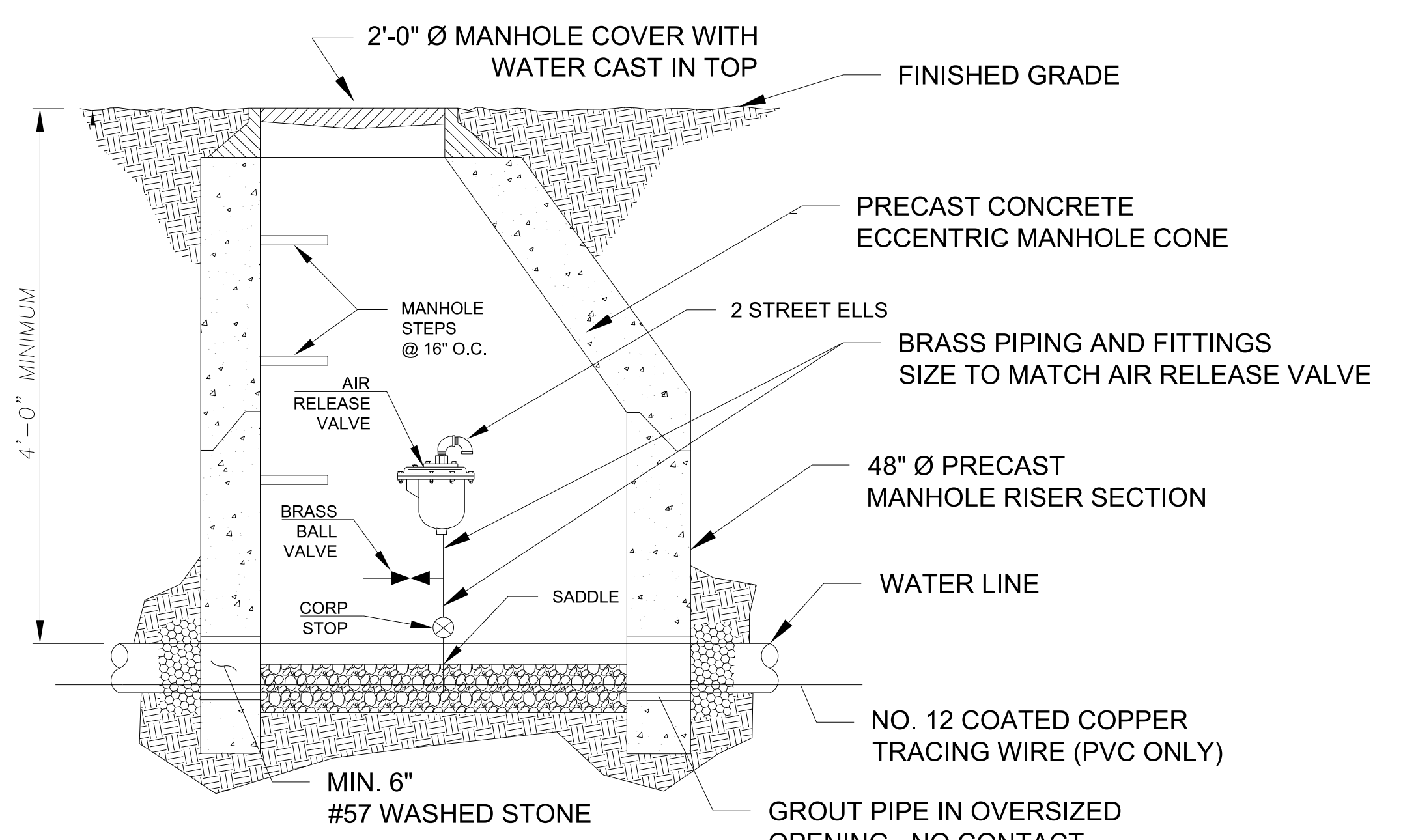
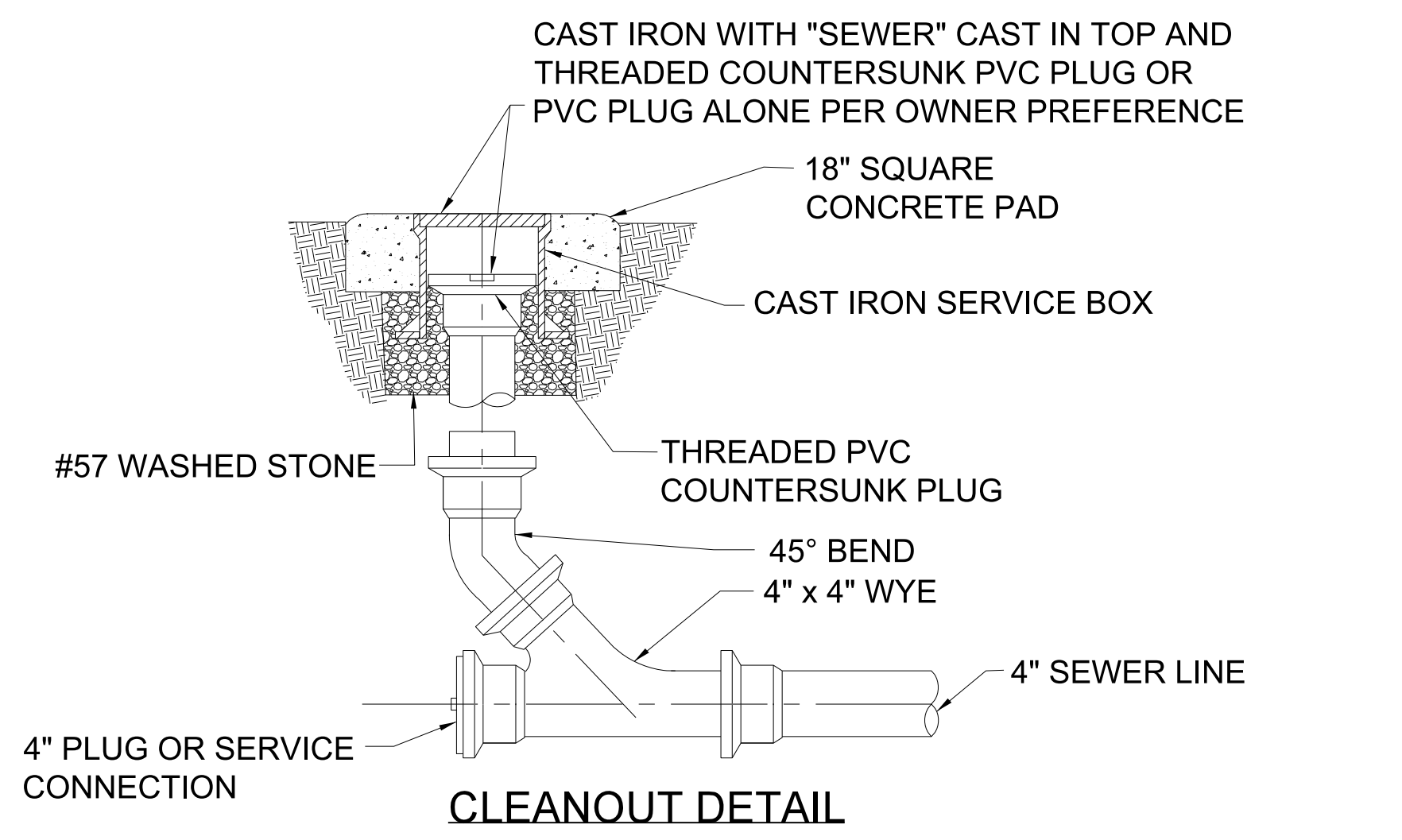
MANHOLE RING AND COVER

5/22/2018 Design\Utilities\proj\RE734A_ut..dtl..UC03c.dgn
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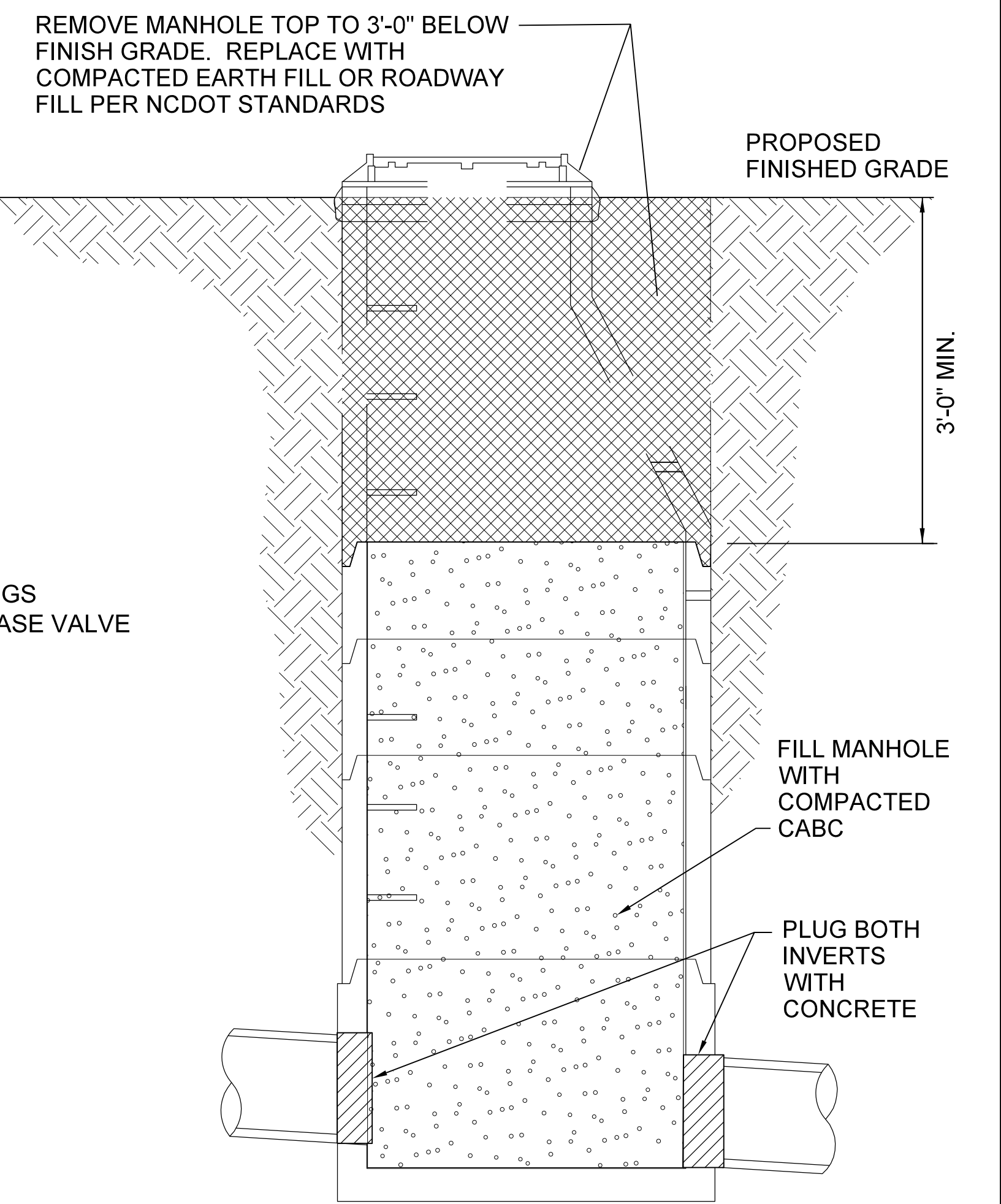
PROJECT TYPICAL DETAILS



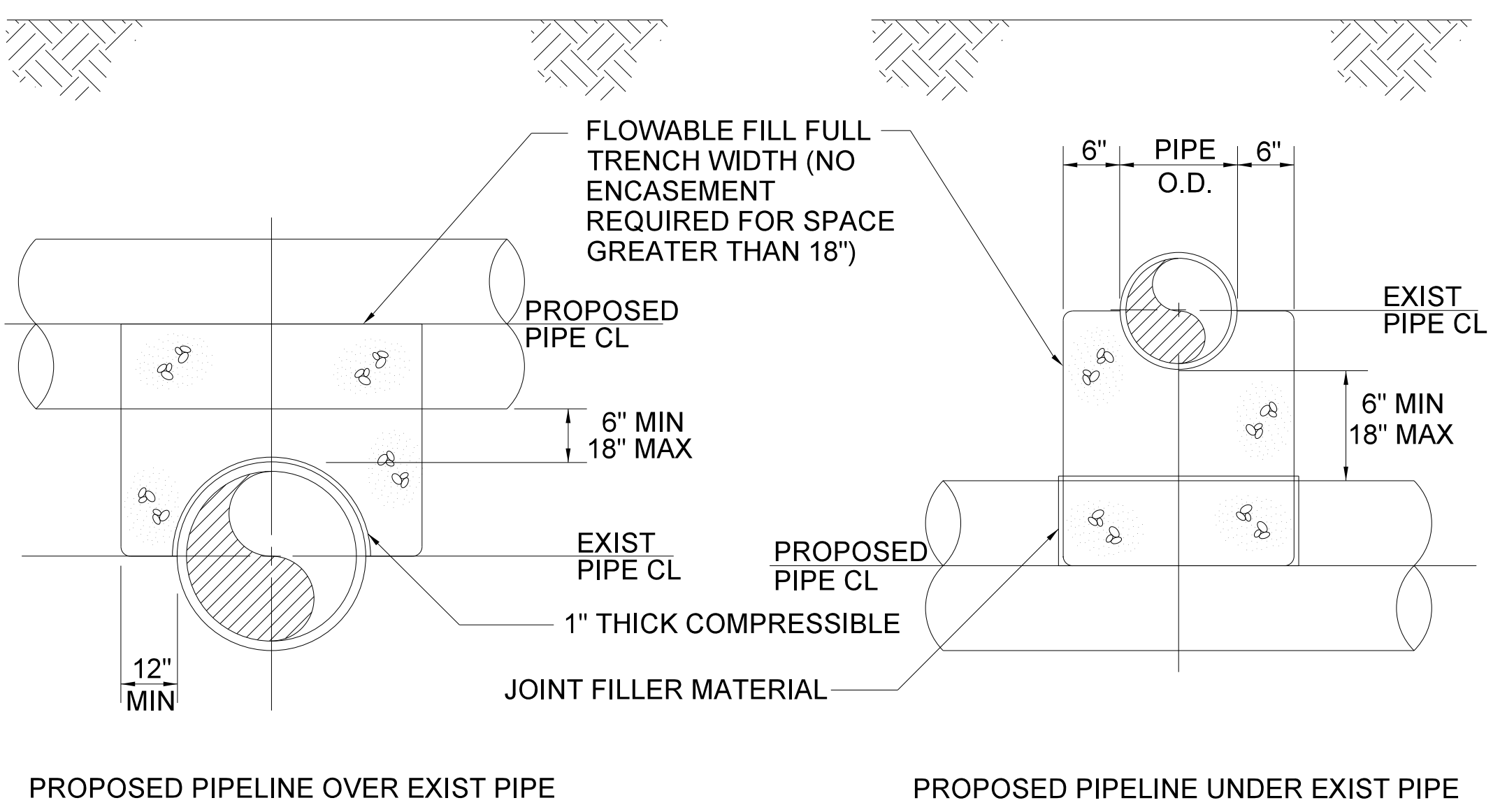
SANITARY SEWER SERVICE DETAIL



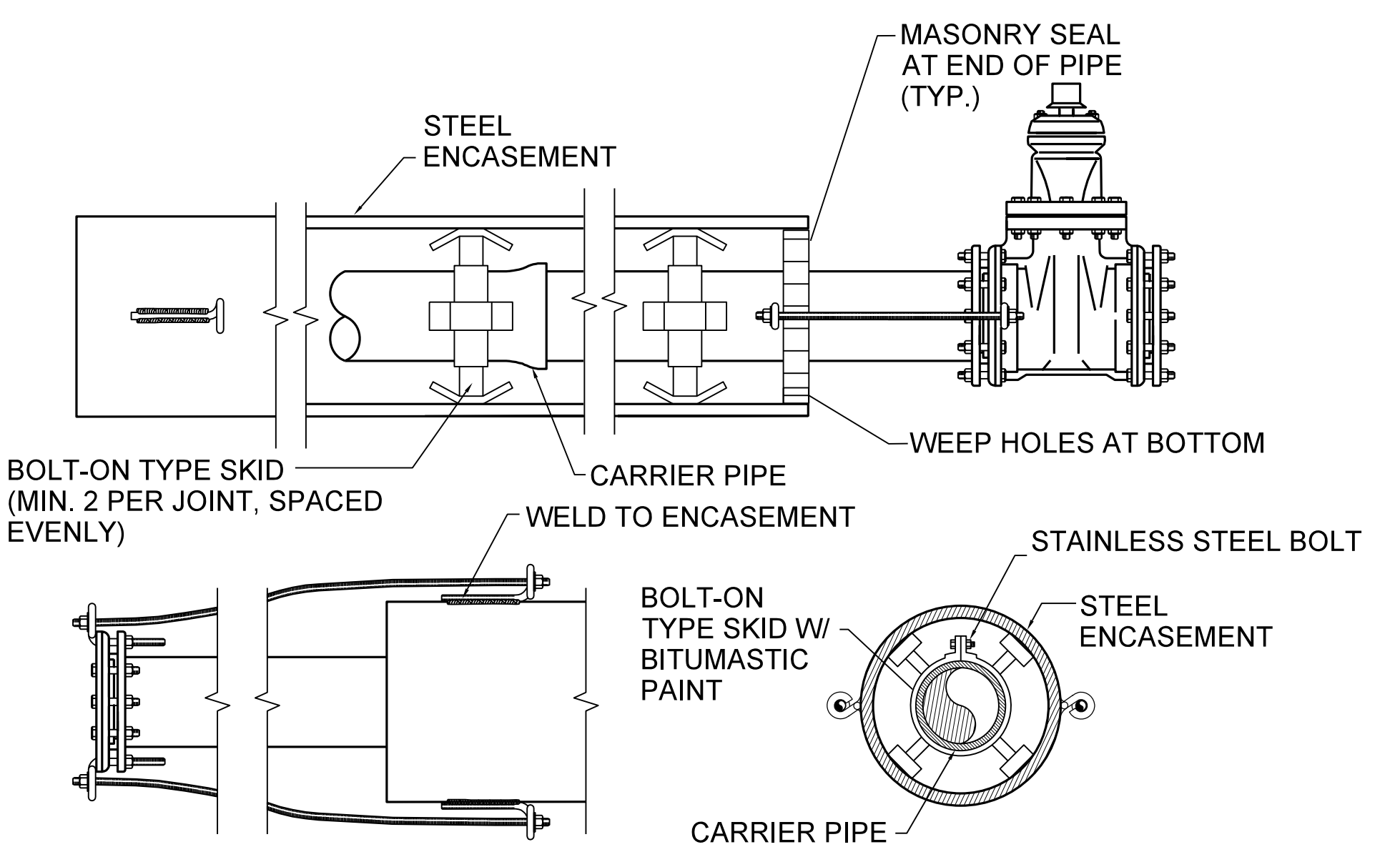
TYPICAL AIR RELEASE VALVE INSTALLATION



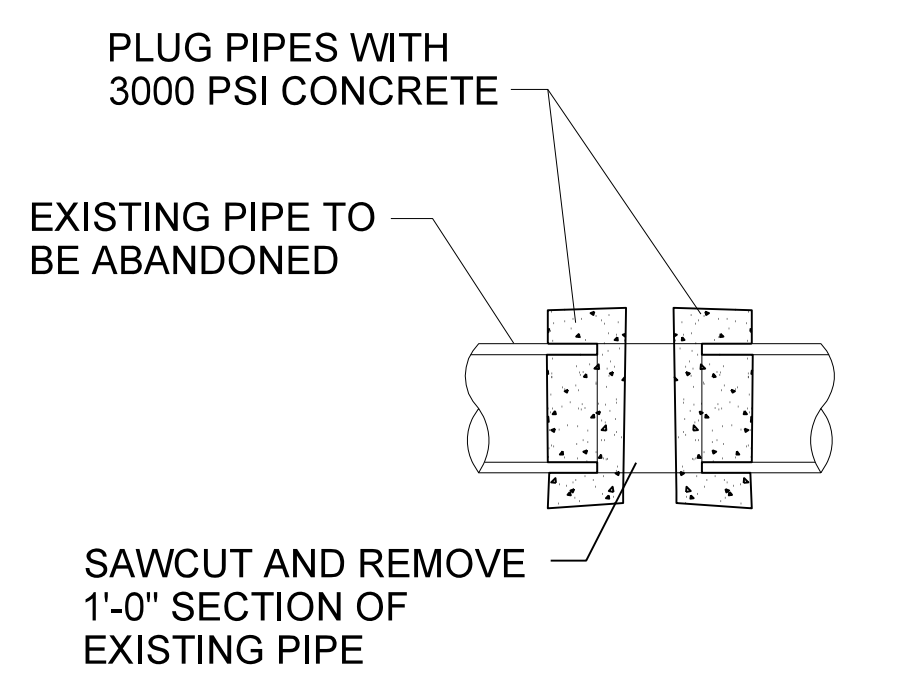
MANHOLE DEMOLITION AND ABANDONMENT



PIPE OVER PIPE DETAIL



ENCASEMENT DETAIL



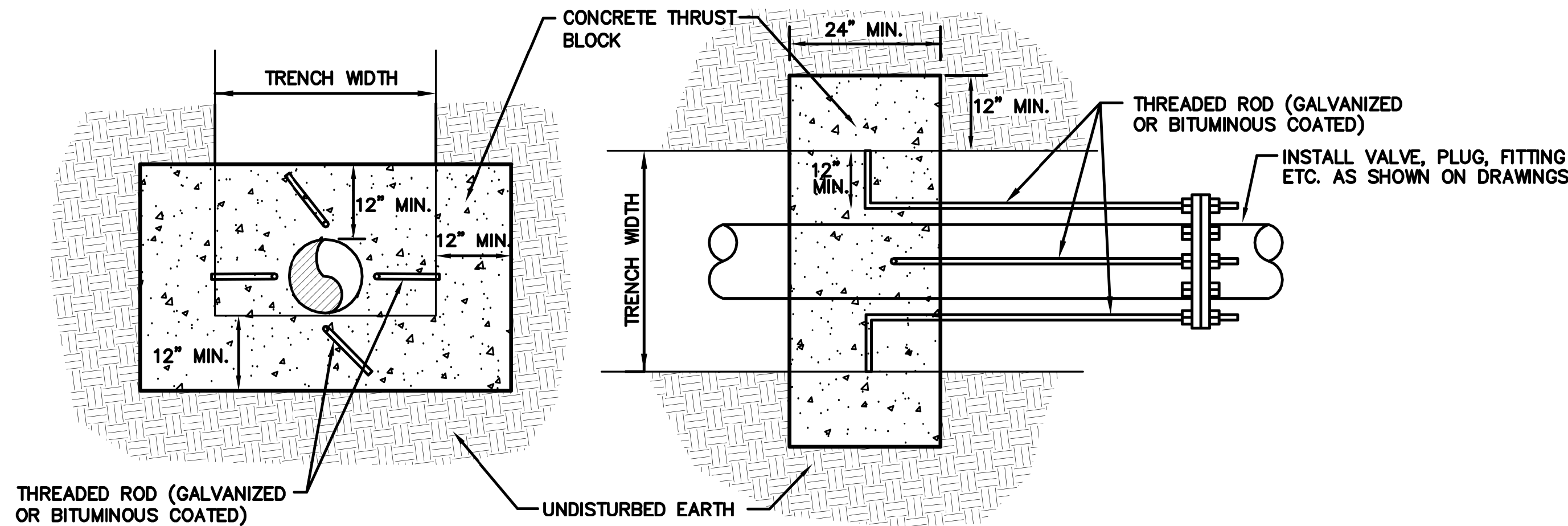
SEWER LINE ABANDONMENT

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	R-5734A	UC-03D	
	DESIGNED BY: MCM		
	DRAWN BY: RGR/MCM		
	CHECKED BY: MCM		
	APPROVED BY:		
	REVISED:	UTILITIES ENGINEERING SEC.	UTILITY CONSTRUCTION PLANS ONLY
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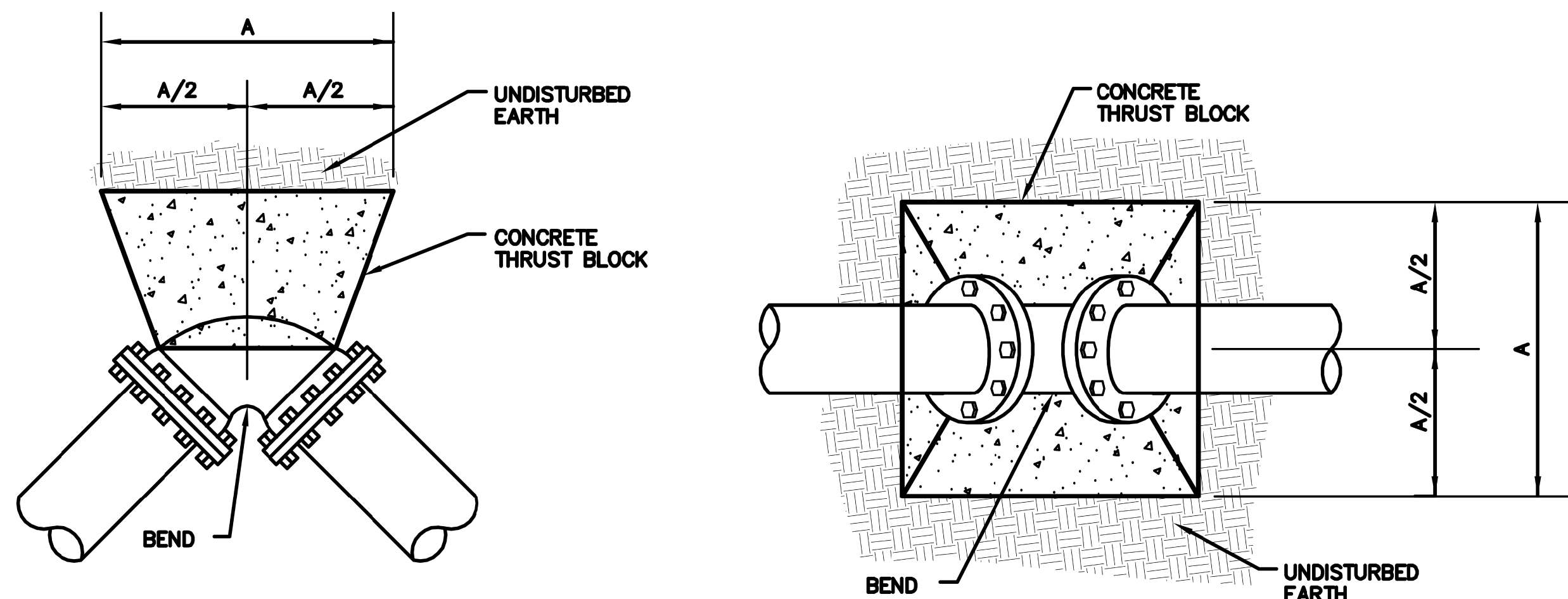
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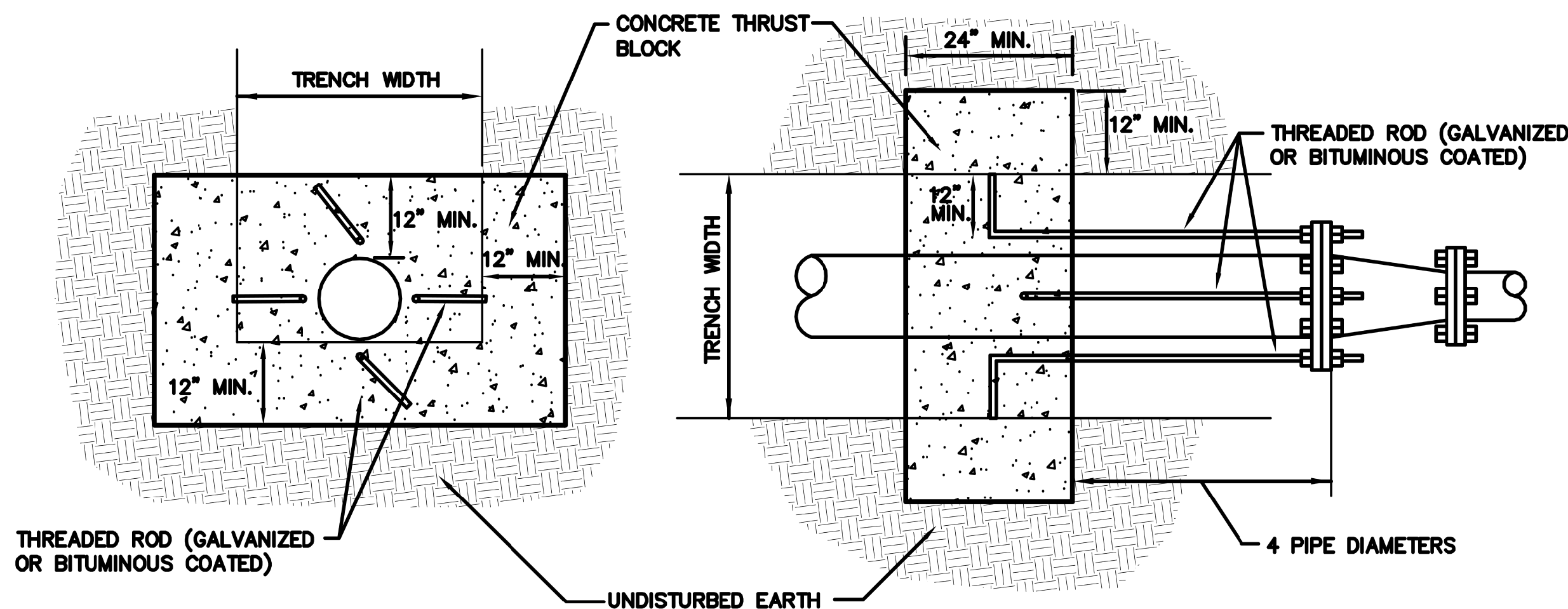
TYPICAL THRUST BLOCK DETAILS



TYPICAL DEADMAN THRUST BLOCK



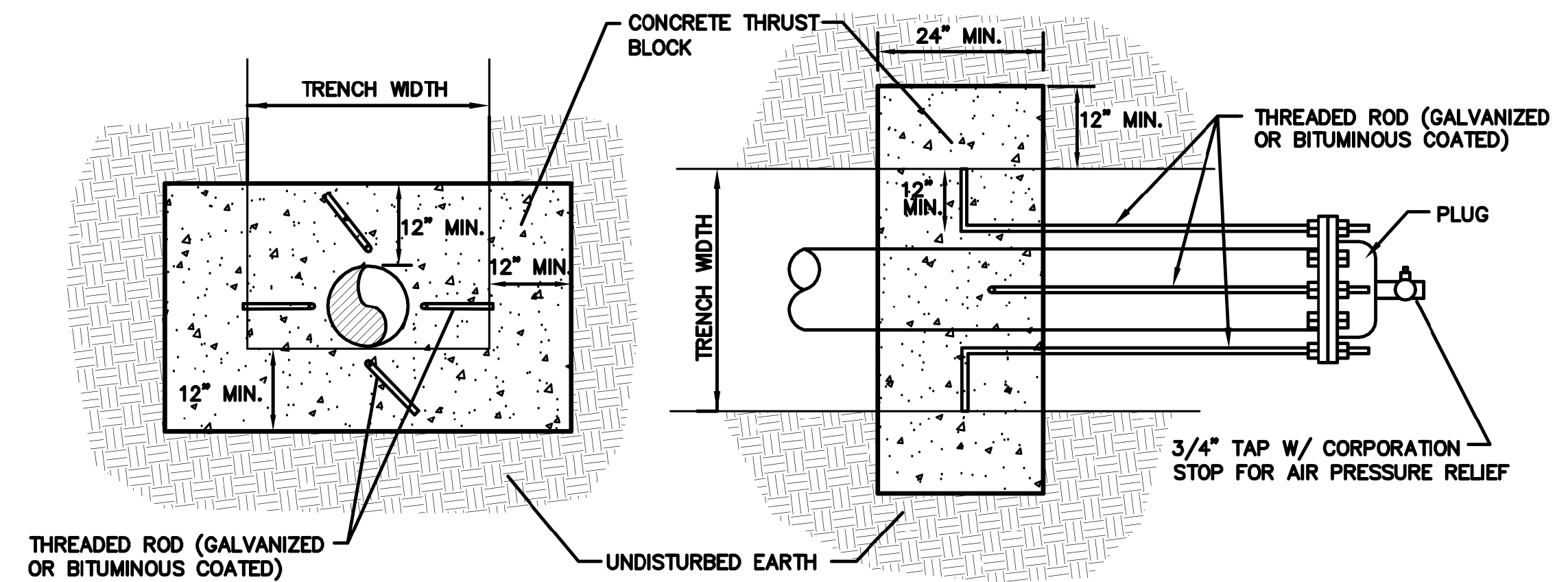
TYPICAL THRUST BLOCKS FOR BENDS



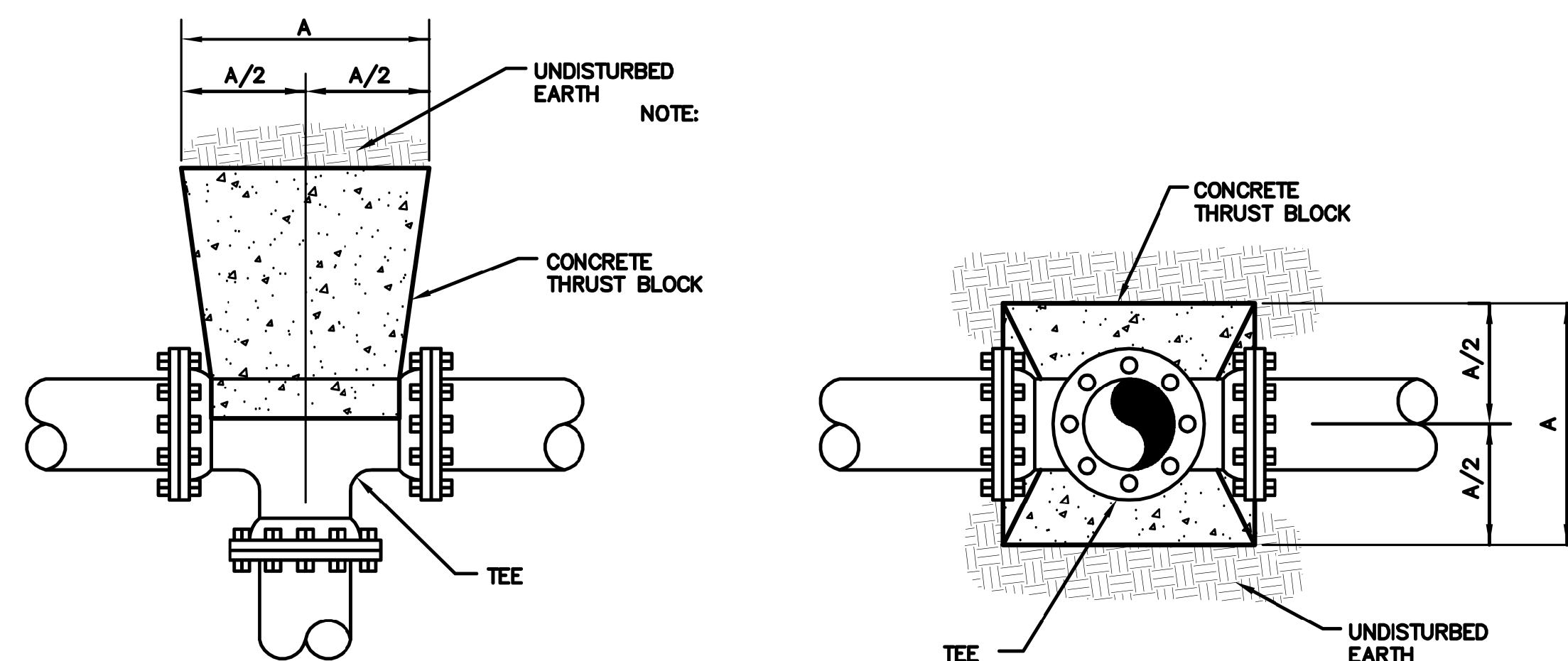
TYPICAL THRUST BLOCK FOR REDUCER

THRUST BLOCK NOTES:

1. 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.
2. ROD AND EYE BOLT DIAMETER SHALL BE MINIMUM OF 3/4" AND SHALL MATCH THE SIZE OF THE BOLT PROVIDED WITH THE FITTING.
3. CONTRACTOR SHALL REPLACE FITTING BOLTS WITH THREADED ROD FOR 1/2 OF THE BOLTS SUPPLIED WITH EACH FITTING. RODS SHALL BE EQUALLY SPACED.



TYPICAL THRUST BLOCK FOR PLUGS



TYPICAL THRUST BLOCK DETAILS

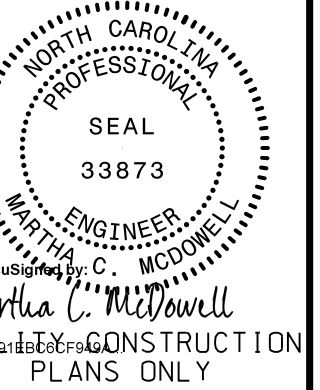
SIZE	TYPE					
	11-1/4' BEND	22-1/2' BEND	45' BEND	90' BEND	TEE	PLUG
2-6	12	12	12	16	16	14
8	12	12	16	22	22	18
10	12	14	20	28	28	22
12	12	18	24	32	32	28
14	14	20	28	38	38	32
16	16	22	32	42	42	36
18	18	26	36	48	48	40
20	20	28	40	52	52	44
24	24	34	46	64	64	54
30	30	42	58	78	78	66
36	36	50	70	94	94	80
42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

THRUST BLOCK DIMENSION "A"



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801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
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PROJECT REFERENCE NO. R-5734A	SHEET NO. UC-03E
DESIGNED BY: MCM	6/5/2018
DRAWN BY: RGR/MCM	
CHECKED BY: MCM	
APPROVED BY:	
REVISED:	
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UTILITY CONSTRUCTION

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PROJECT TYPICAL DETAILS

COFFER DAM CONSTRUCTION NOTES:

GENERAL:

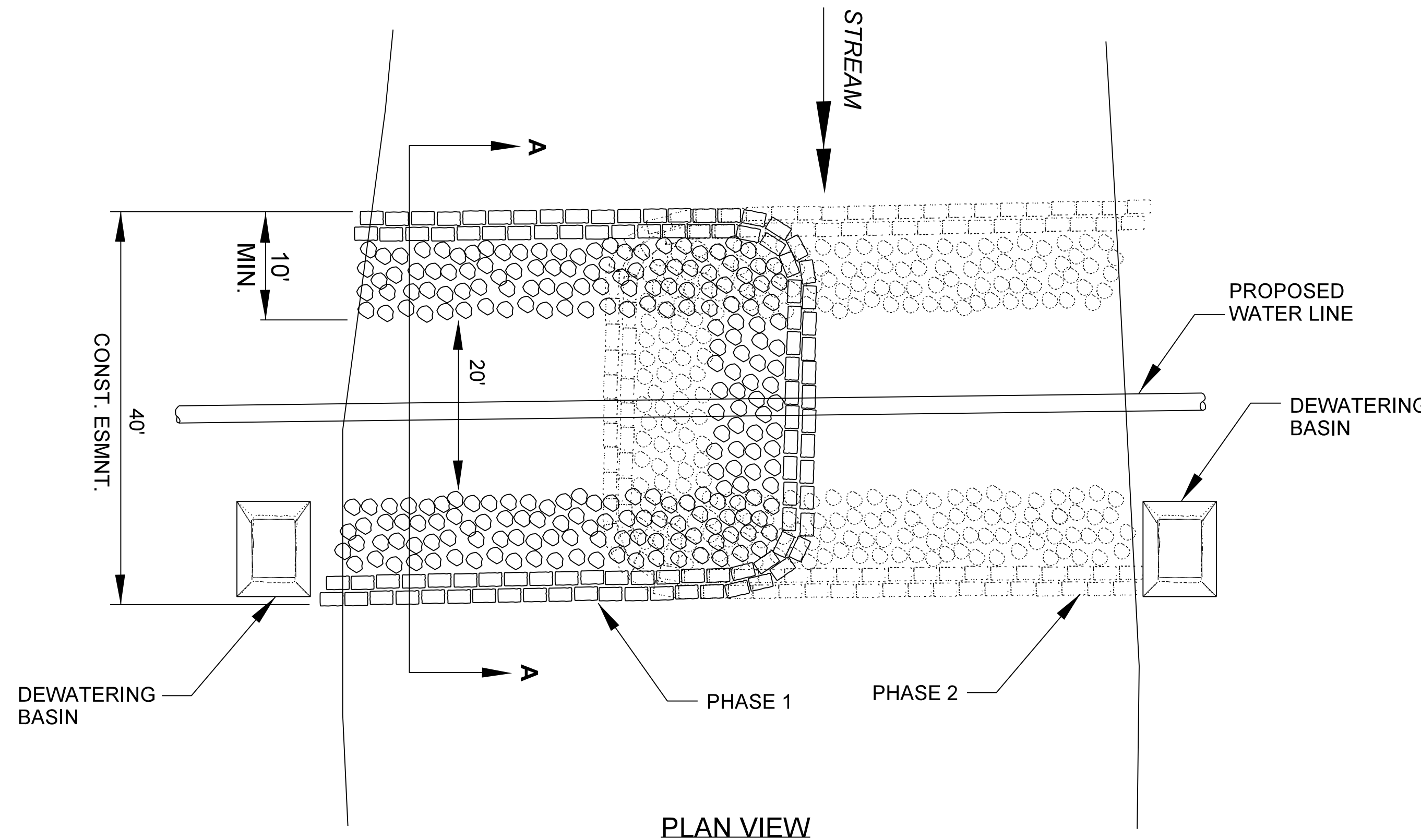
1. MATERIAL FROM THE STREAM BED WILL NOT BE USED FOR THE COFFER DAM.
2. NO EARTHEN MATERIAL WILL BE USED FOR THE COFFER DAM OR PLACED IN THE STREAM FOR ANY REASON.
3. DISTURBANCE OF THE STREAM BED IS TO BE LIMITED TO THE CONSTRUCTION OF THE WATER LINE WORK AND RESTORED TO ORIGINAL CONTOURS WHEN WORK IS COMPLETED.
4. COFFER DAM MATERIAL IS TO BE APPROVED BY ENGINEER.

PHASE 1

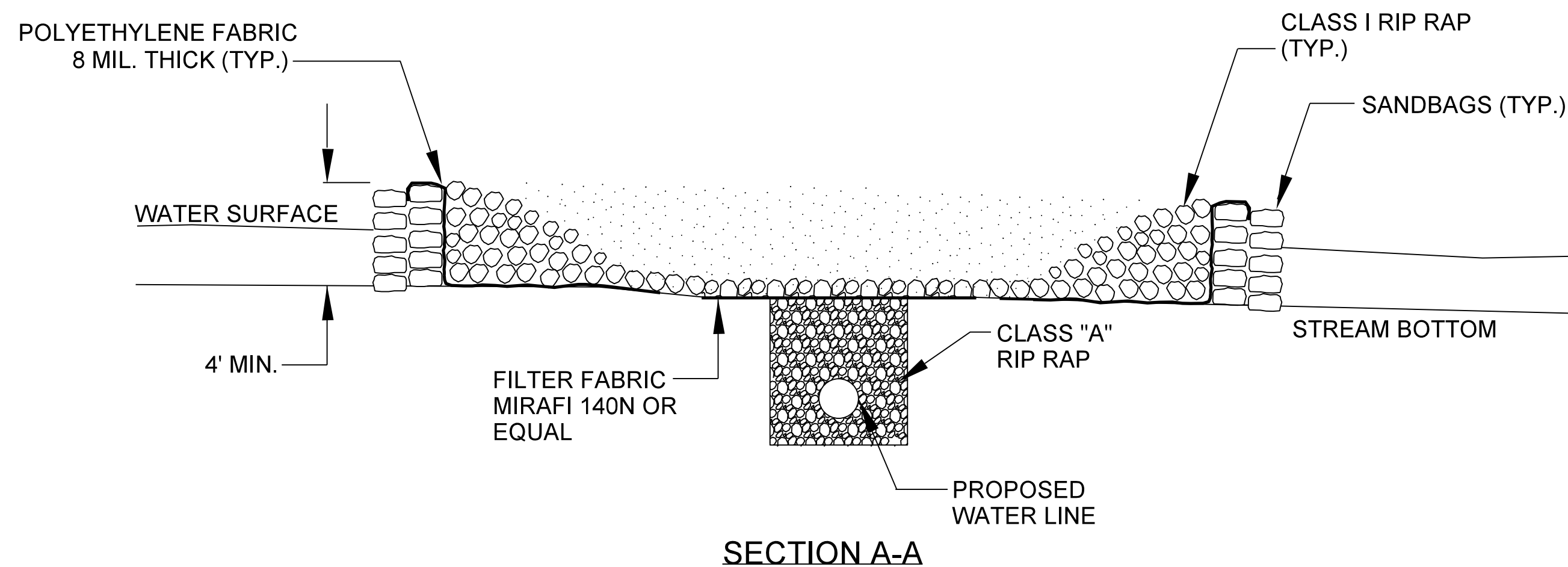
1. CONSTRUCT COFFER DAM TO CENTERLINE OF STREAM. ONE-HALF (1/2) OF THE STREAM CHANNEL IS TO BE OPEN AT ALL TIMES.
2. UTILIZE DEWATERING BASIN TO DRAIN WORK AREA.
3. INSTALL PROPOSED WATERLINE TO END OF COFFER DAM.
4. CONTAMINATION TO THE STREAM FROM WORK TO BE AVOIDED.
5. REMOVE COFFER DAM.

PHASE 2

1. CONSTRUCT COFFER DAM TO ENCOMPASS END OF WATER LINE CONSTRUCTED IN PHASE 1. ONE-HALF (1/2) OF THE STREAM CHANNEL IS TO BE OPEN AT ALL TIMES.
2. UTILIZE DEWATERING BASIN TO DRAIN WORK AREA.
3. INSTALL REMAINING PROPOSED WATER LINE.
4. CONTAMINATION TO THE STREAM FROM WORK TO BE AVOIDED.
5. REMOVE COFFER DAM.

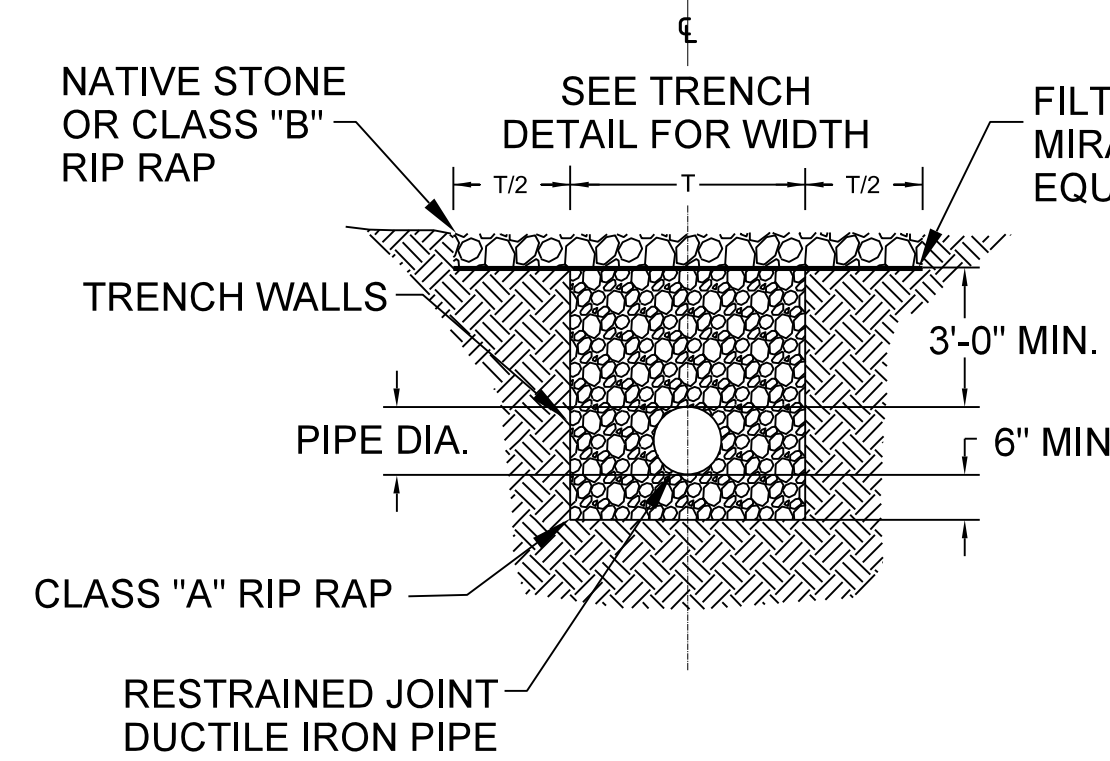
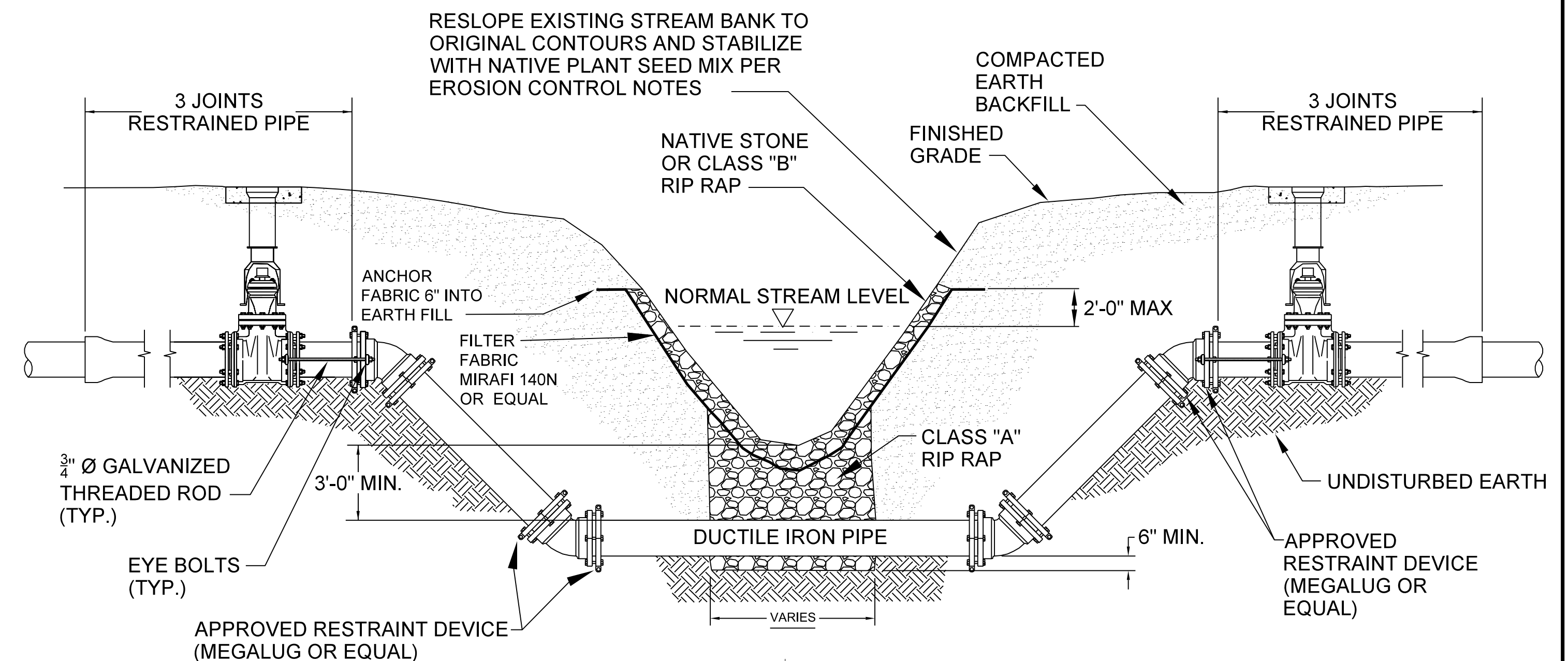


PLAN VIEW



SECTION A-A

COFFER DAM DETAIL



WATER LINE CREEK CROSSING DETAIL

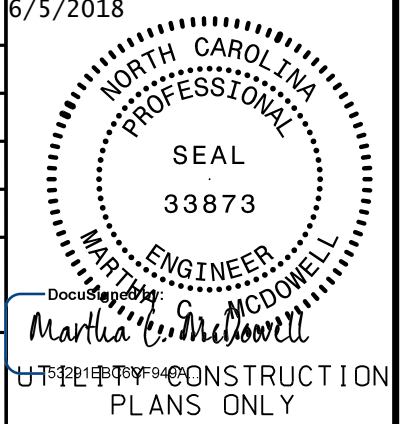
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INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION



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Fax. (919) 851-7024
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PROJECT REFERENCE NO.	SHEET NO.
R-5734A	UC-03F
DESIGNED BY: MCM	6/5/2018
DRAWN BY: RGR	
CHECKED BY: MCM	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
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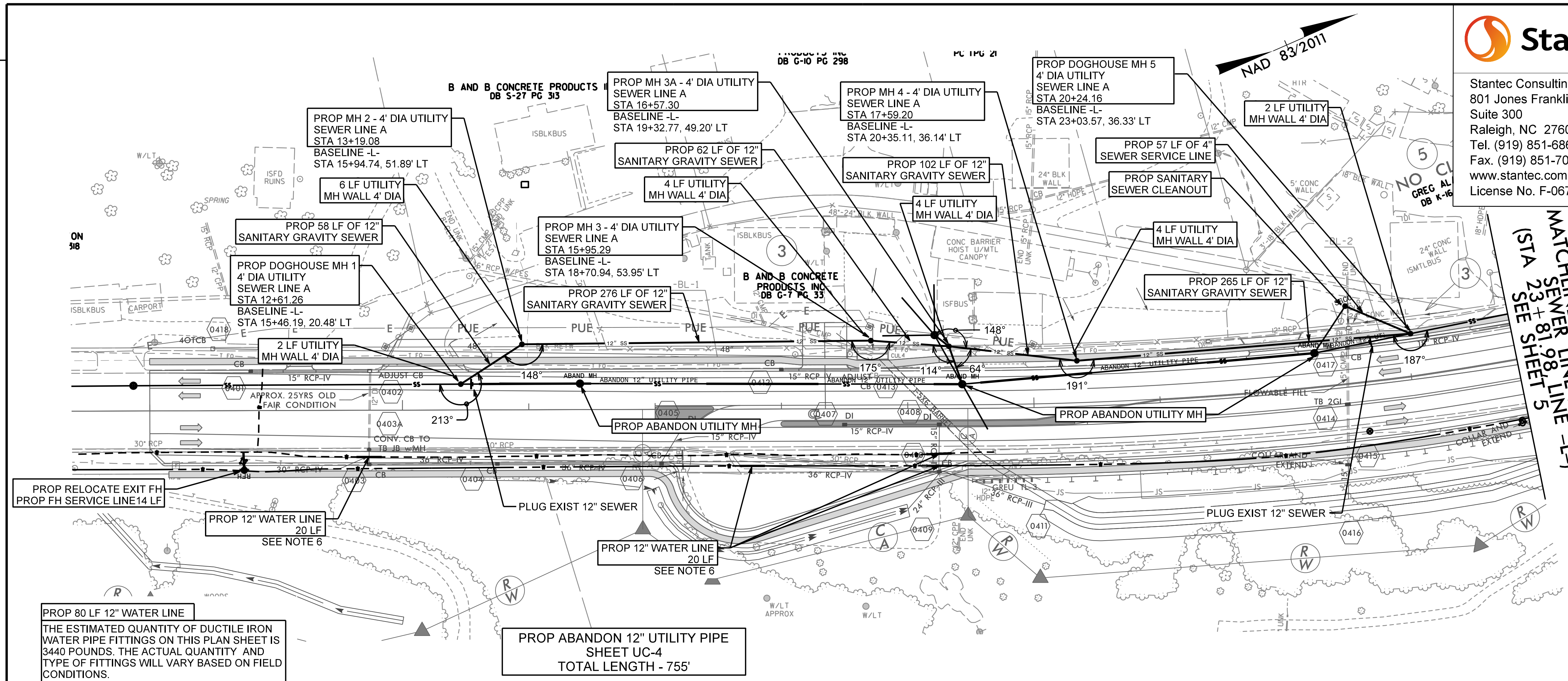
- ### WATER LINE CREEK CROSSING NOTES:
1. CONTRACTOR WILL RESTRAIN 3 JOINTS PAST THE LAST FITTING AT THE TOP OF THE BANK OR AS SPECIFIED BY THE TOWN OF FRANKLIN.
 2. APPROVED RESTRAINING DEVICES INCLUDE RESTRAINING GLANDS (MEGALUGS), OR FIELD LOCK GASKETS AND RESTRAINT SYSTEM WILL BE PROVIDED BY APPROVED PIPE MANUFACTURERS.
 3. SEE TRENCH DETAIL FOR ACTUAL TRENCH WIDTH.
 4. NO FERTILIZER TO BE USED WITHIN 10'-0" OF STREAM BANK.

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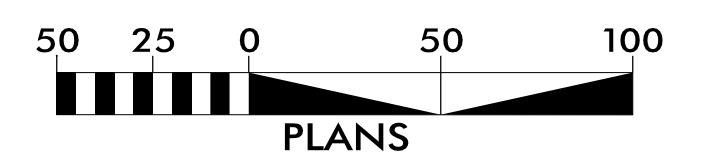


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Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
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License No. F-0672

PROJECT REFERENCE NO. R-5734A	SHEET NO. UC-04
DESIGNED BY: WMH	
DRAWN BY: RGR/MCM	
CHECKED BY: MCM	
APPROVED BY:	
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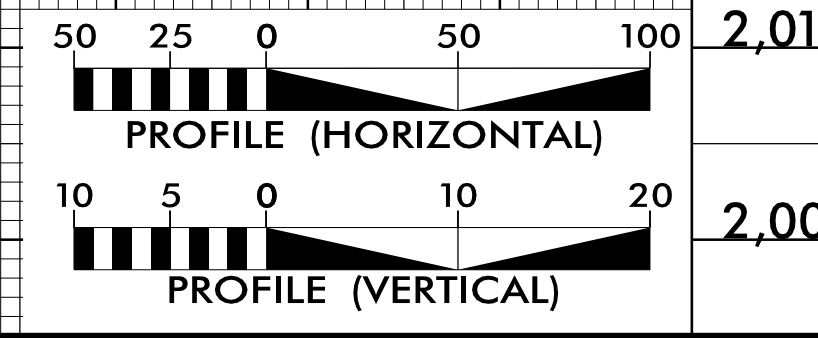
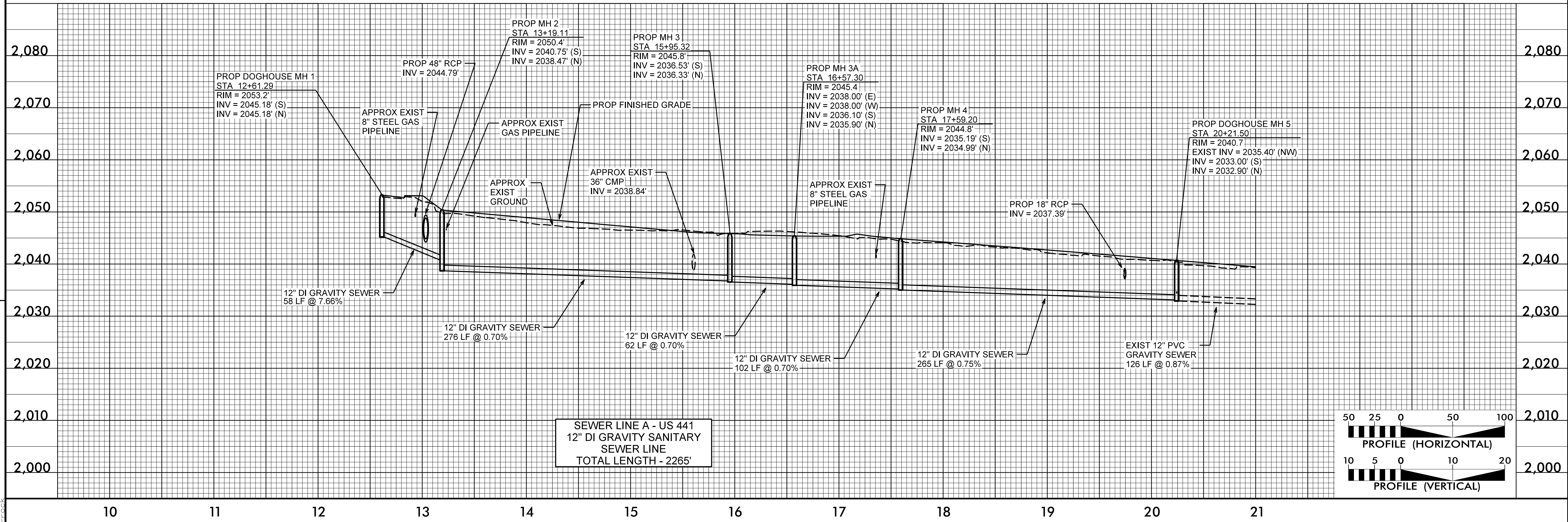


UTILITY CONSTRUCTION



NOTES:

1. MAINTAIN MINIMUM 24" COVER BELOW FINISHED GRADE FOR ALL SEWER LINES.
2. ALL THE LOCATIONS WHERE PROPOSED SEWER CROSSES DRAINAGE SYSTEM PROVIDE 18" MINIMUM VERTICAL CLEARANCE.
3. RELOCATE ALL SEWER SERVICES ON EXISTING SEWER (TO BE ABANDONED) TO NEW SEWER LINE.
4. ABANDON SEWER LINE IN LOCATIONS SHOWN. ABANDONMENTS INCLUDE ALL FITTINGS AND APPURTENANCES. ABANDONMENT OF THE SEWER LINE TO BE IN ACCORDANCE WITH THE TOWN OF FRANKLIN'S REQUIREMENTS.
5. ALL ABANDONED LINES 8" OR LARGER FILLED WITH CDF.
6. REPLACE EXISTING WATER FOUND TO BE IN CONFLICT WITH THE PROPOSED STORM SEWER. REPLACE EXISTING PIPE WITH PROP DUCTILE IRON RESTRAINED JOINT PIPE CENTERED OVER THE PROPOSED STORM SEWER PIPE AND INCLUDE FOUR PROP 12" 45 DEGREE BENDS AS NECESSARY TO MAINTAIN 18 INCH CLEARANCE.
7. MAINTAIN MINIMUM 36" COVER BELOW FINISHED GRADE FOR ALL WATER LINES.



REVISIONS

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PROP 20 LF 8" WATER LINE
PROP 20 LF 12" WATER LINE

THE ESTIMATED QUANTITY OF DUCTILE IRON WATER PIPE FITTINGS ON THIS PLAN SHEET IS 1300 POUNDS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON FIELD CONDITIONS.

8 LF UTILITY MH WALL 4' DIA

PROP 62 LF OF 12" SANITARY GRAVITY SEWER

EXIST MH 3 - 4' DIA UTILITY SEWER LINE A STA 23+25.63 BASELINE -L- STA 26+08.26, 41.12' LT

EXIST MH 2 - 4' DIA UTILITY SEWER LINE A STA 21+49.77 BASELINE -L- STA 24+29.77, 42.65' LT

PROP MH 6 - 4' DIA UTILITY SEWER LINE A STA 23+87.31 BASELINE -L- STA 26+66.52, 64.23' LT

PROP 101 LF OF 12" SANITARY GRAVITY SEWER

PROP MH 7 - 4' DIA UTILITY SEWER LINE A STA 24+88.35 BASELINE -L- STA 27+69.90, 66.22' LT

PROP 101 LF OF 12" SANITARY GRAVITY SEWER

PROP MH 8 - 4' DIA UTILITY SEWER LINE A STA 26+25.84 BASELINE -L- STA 29+10.69, 68.74' LT

PROP MH 9 - 4' DIA UTILITY SEWER LINE A STA 28+72.75 BASELINE -L- STA 31+58.82, 71.21' LT

1 LF UTILITY MH WALL 4' DIA

PROP 247 LF OF 12" SANITARY GRAVITY SEWER

2 LF UTILITY MH WALL 4' DIA

PROP MH 10 - 4' DIA UTILITY SEWER LINE A STA 30+43.16 BASELINE -L- STA 33+28.98, 61.89' LT

PROP 170 LF OF 12" SANITARY GRAVITY SEWER

PROP DROP MH 11 4' DIA UTILITY SEWER LINE A STA 33+30.47 BASELINE -L- STA 36+16.10, 72.53' LT

4 LF UTILITY MH WALL 4' DIA

PROP 287 LF OF 12" SANITARY GRAVITY SEWER

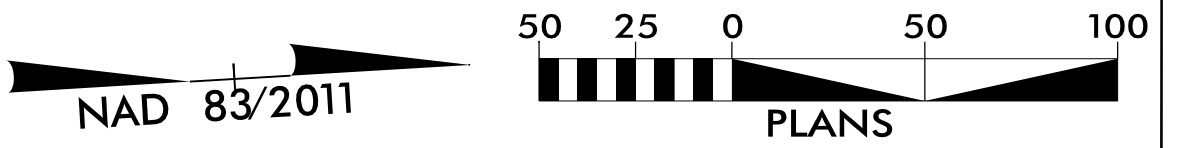
PROP 14 LF OF 4" SEWER SERVICE LINE

8 LF UTILITY MH WALL 4' DIA

OUTSIDE DROP FOR CONNECTION TO EXIST SERVICE

MATCHLINE STA 21+00.00, SEWER LINE A (STA 23+81.98, LINE -L-) SEE SHEET 4

MATCHLINE STA 33+50.00, LINE A (STA 36+38.50, LINE -L-) SEE SHEET 6



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Raleigh, NC 27606
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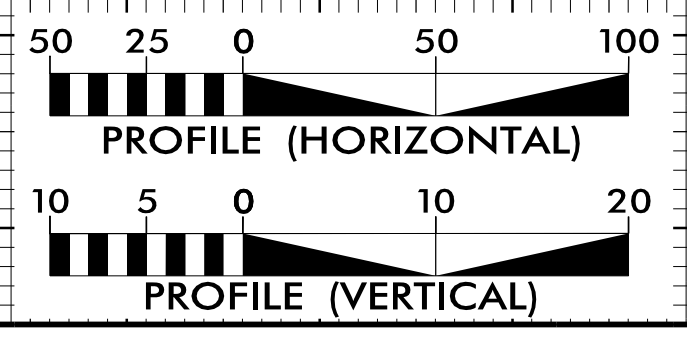
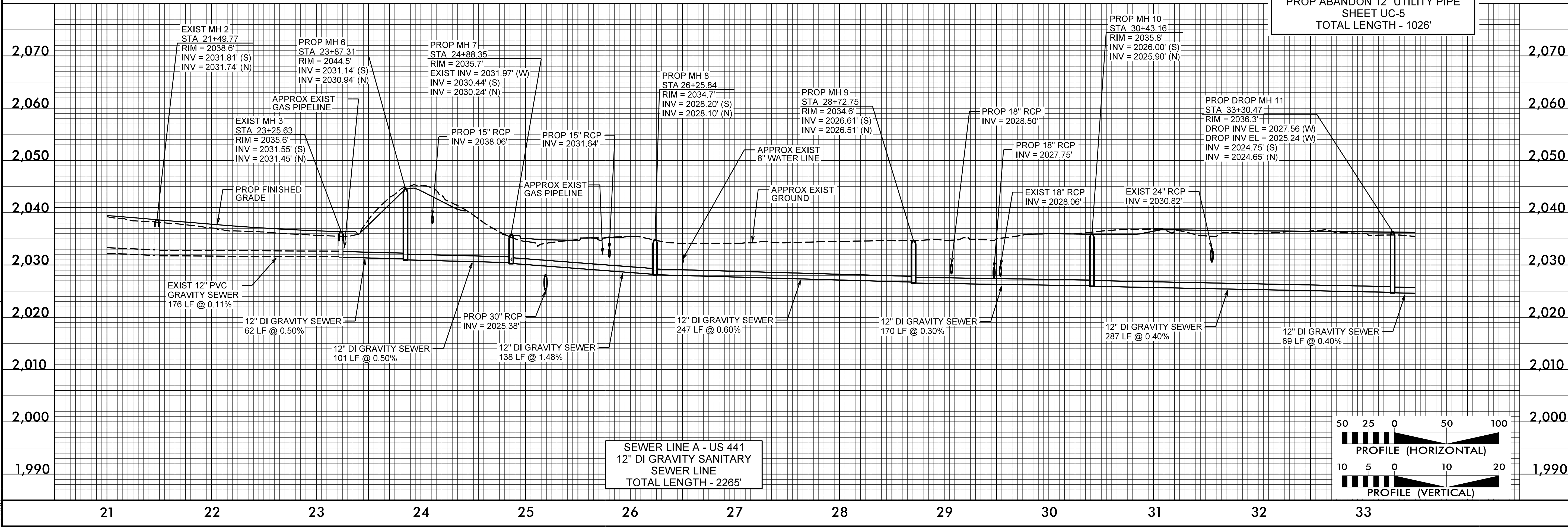
PROJECT REFERENCE NO.	R-5734A
SHEET NO.	UC-05
DESIGNED BY:	WMH
DRAWN BY:	RGR/MCM
CHECKED BY:	MCM
APPROVED BY:	
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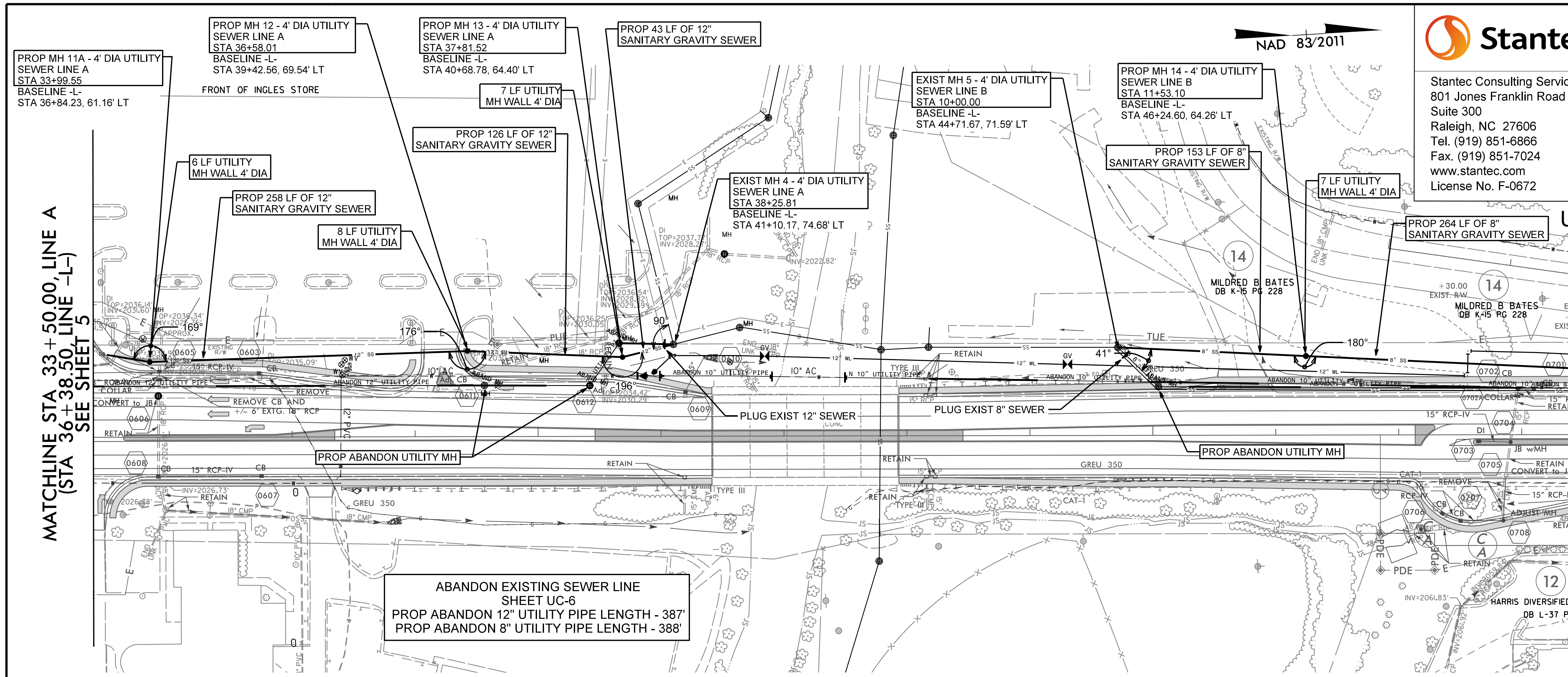
NOTES:

1. MAINTAIN MINIMUM 24" COVER BELOW FINISHED GRADE FOR ALL SEWER LINES.
2. ALL THE LOCATIONS WHERE PROPOSED SEWER CROSSES DRAINAGE SYSTEM PROVIDE 18" MINIMUM VERTICAL CLEARANCE.
3. RELOCATE ALL SEWER SERVICES ON EXISTING SEWER (TO BE ABANDONED) TO NEW SEWER LINE.
4. ABANDON SEWER LINE IN LOCATIONS SHOWN. ABANDONMENTS INCLUDES ALL FITTINGS AND APPURTENANCES. ABANDONMENT OF THE SEWER LINE TO BE IN ACCORDANCE WITH THE TOWN OF FRANKLIN'S REQUIREMENTS.
5. ALL ABANDONED LINES 8" OR LARGER FILLED WITH CDF.
6. REPLACE EXISTING WATER FOUND TO BE IN CONFLICT WITH THE PROPOSED STORM SEWER. REPLACE EXISTING PIPE WITH PROP 12" DUCTILE IRON RESTRAINED JOINT PIPE CENTERED OVER THE PROPOSED STORM SEWER PIPE AND INCLUDE FOUR NEW 45 DEGREE BENDS AS NECESSARY TO MAINTAIN 18 INCH CLEARANCE.
7. PROP 12" WATER LINE, TYP 1 LOCATION. PROP 8" WATER LINE, TYP 1 LOCATION.
8. MAINTAIN MINIMUM 36" COVER BELOW FINISHED GRADE FOR ALL WATER LINES.



REVISIONS

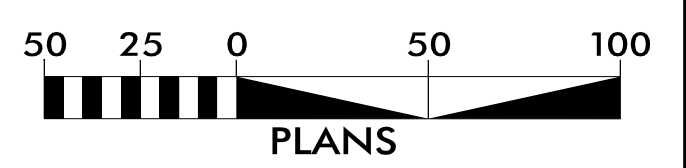
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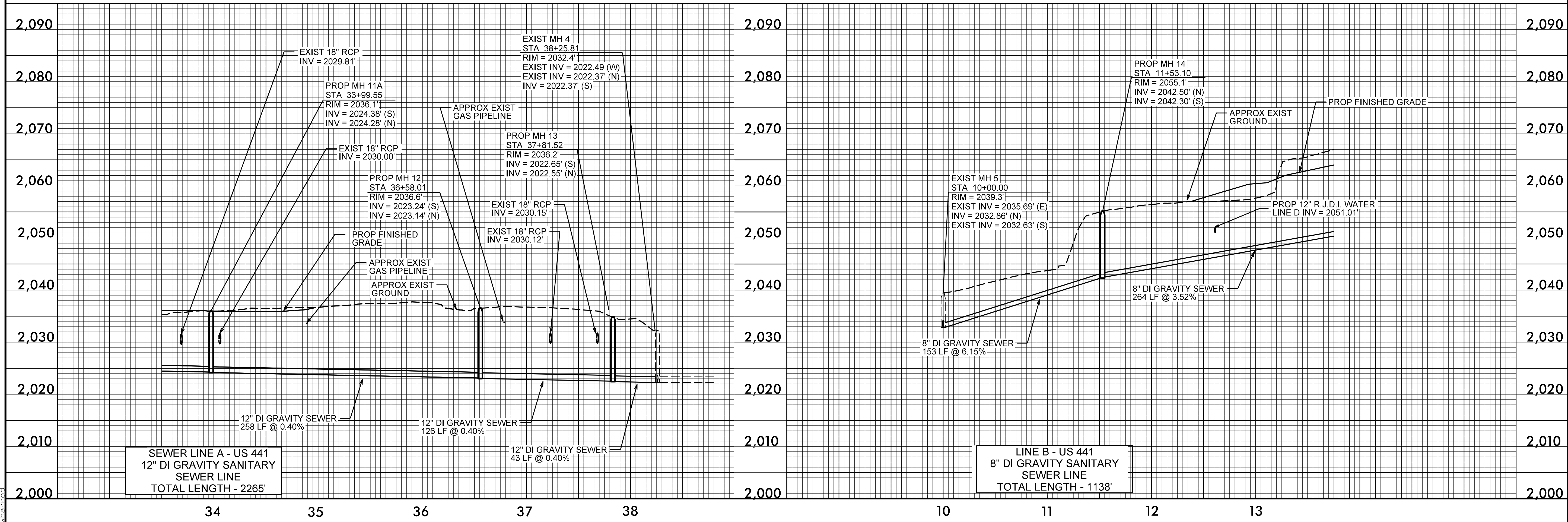
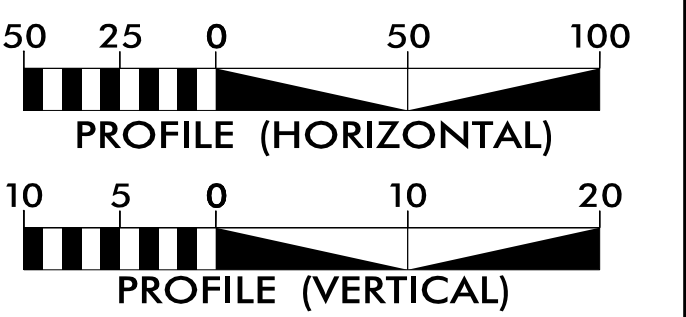
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 Suite 300
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 Fax. (919) 851-7024
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PROJECT REFERENCE NO. R-5734A	SHEET NO. UC-06
DESIGNED BY: WMH	
DRAWN BY: RGR/MCM	
CHECKED BY: MCM	
APPROVED BY:	
REVISED:	NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151

UTILITY CONSTRUCTION



- NOTES:
1. MAINTAIN MINIMUM 24" COVER BELOW FINISHED GRADE FOR ALL SEWER LINES.
 2. ALL THE LOCATIONS WHERE PROPOSED SEWER CROSSES DRAINAGE SYSTEM PROVIDE 18" MINIMUM VERTICAL CLEARANCE.
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 5. ALL ABANDONED LINES 8" OR LARGER FILLED WITH CDF.



5/25/2018
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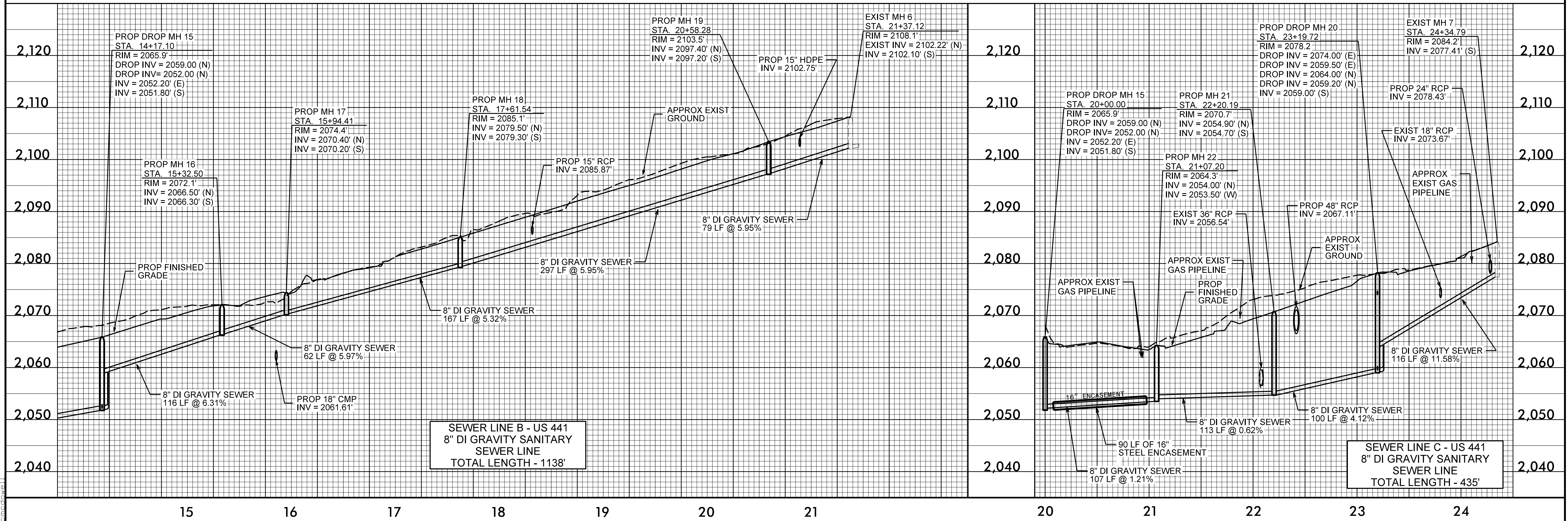
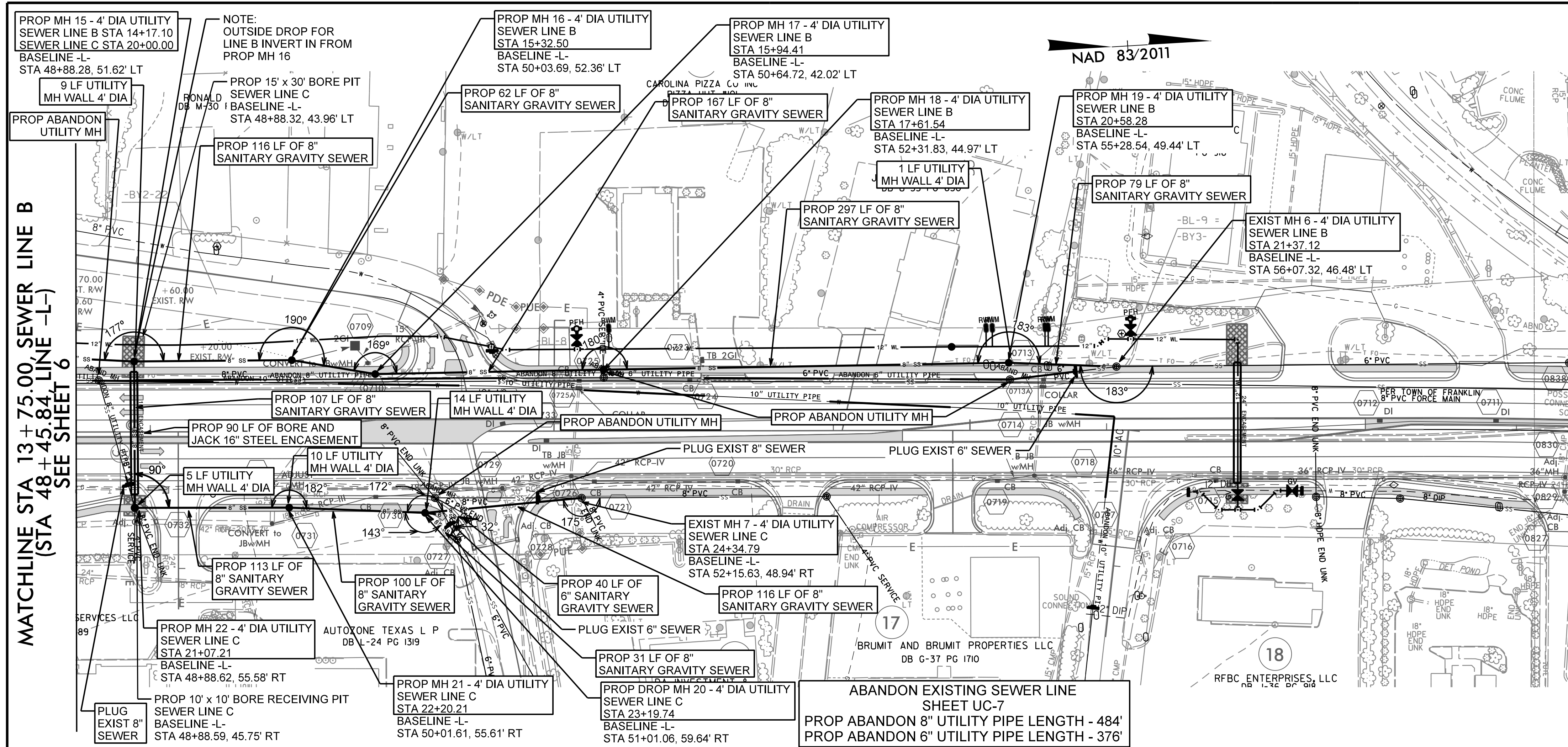
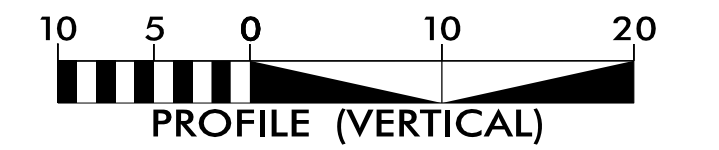
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DESIGNED BY: WMH DRAWN BY: RGR/MCM	6/18/2018 NORTH CAROLINA PROFESSIONAL SEAL 33873
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NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

UTILITY CONSTRUCTION



NOTES:

1. MAINTAIN MINIMUM 24" COVER BELOW FINISHED GRADE FOR ALL SEWER LINES.
2. ALL THE LOCATIONS WHERE PROPOSED SEWER CROSSES DRAINAGE SYSTEM PROVIDE 18" MINIMUM VERTICAL CLEARANCE.
3. RELOCATE ALL SEWER SERVICES ON EXISTING SEWER (TO BE ABANDONED) TO NEW SEWER LINE.
4. ABANDON SEWER LINE IN LOCATIONS SHOWN. ABANDONMENTS INCLUDE ALL FITTINGS AND APPURTENANCES. ABANDONMENT OF THE SEWER LINE TO BE IN ACCORDANCE WITH THE TOWN OF FRANKLIN'S REQUIREMENTS.
5. ALL ABANDONED LINES 8" OR LARGER FILLED WITH CDF.
6. 8" PVC FORCED SANITARY SEWER LINE IS ABANDONED PER TOWN OF FRANKLIN.



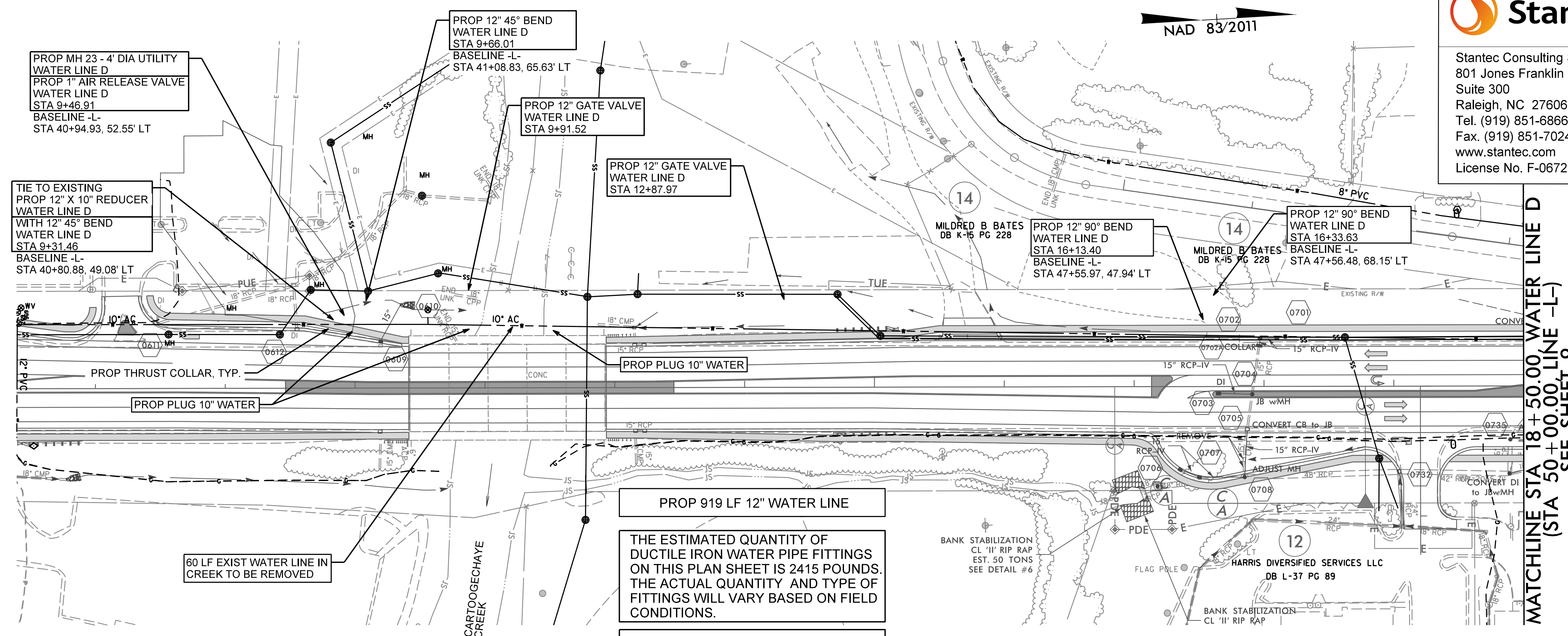
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NAD 83/2011

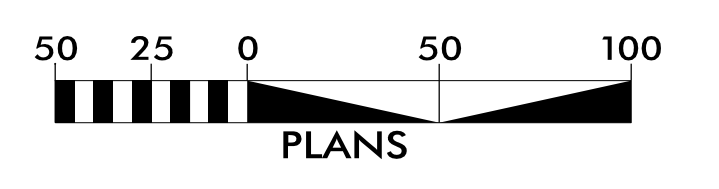


Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

PROJECT REFERENCE NO. R-5734A	SHEET NO. UC-08
DESIGNED BY: WMH	
DRAWN BY: RGR/MCM	
CHECKED BY: MCM	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	10/17/2018 4:58:25 PM PDT
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	UTILITY CONSTRUCTION PLANS ONLY
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



UTILITY CONSTRUCTION



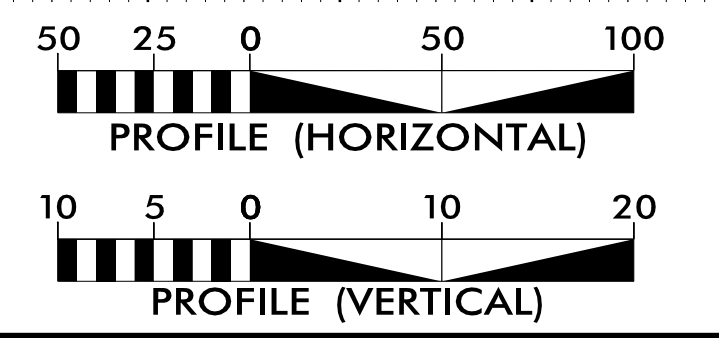
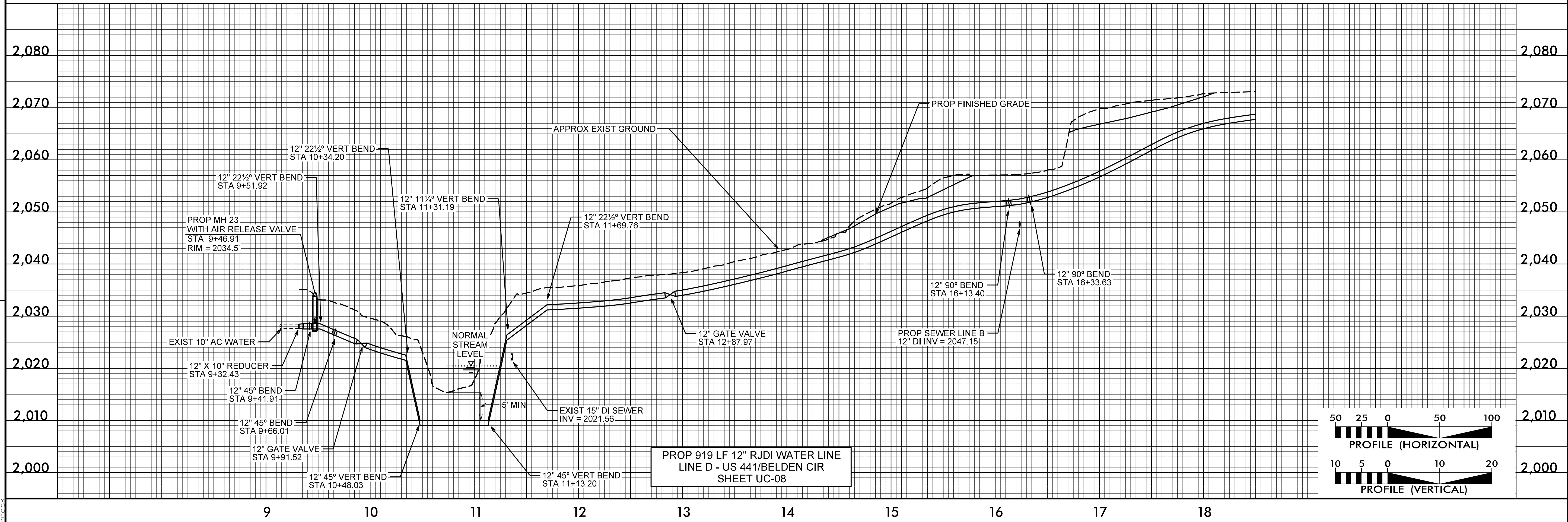
- NOTES:
1. RELOCATE ALL EXISTING WATER LINE SERVICES TO THE NEW WATER LINE. FOLLOW TOWN OF FRANKLIN STANDARD SERVICE CONNECTION DETAILS. COORDINATE SERVICE TIE OVER WITH PROPERTY OWNER AND TOWN OF FRANKLIN.
 2. MAINTAIN MINIMUM 36" COVER BELOW FINISHED GRADE FOR ALL WATER LINES.
 3. ALL THE LOCATIONS WHERE PROPOSED WATER CROSSES DRAINAGE SYSTEM PROVIDE 18" MINIMUM VERTICAL CLEARANCE.
 4. RELOCATE ALL WATER SERVICES ON EXISTING WATER (TO BE ABANDONED) TO NEW WATER LINE.
 5. ABANDON WATER LINE IN LOCATIONS SHOWN. ABANDONMENTS INCLUDES ALL FITTINGS AND APPURTENANCES. ABANDONMENT OF THE WATER LINE TO BE IN ACCORDANCE WITH THE TOWN OF FRANKLIN'S REQUIREMENTS.
 6. ALL ABANDONED LINES 8" OR LARGER FILLED WITH CDF.

MATCHLINE STA 18+50.00 WATER LINE D (STA 50+00.00 LINE -L-) SEE SHEET 9

PROP 919 LF 12" WATER LINE

THE ESTIMATED QUANTITY OF DUCTILE IRON WATER PIPE FITTINGS ON THIS PLAN SHEET IS 2415 POUNDS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON FIELD CONDITIONS.

ABANDON EXIST 10" WATER LINE SHEET UC-8 TOTAL LENGTH - 842'



REVISIONS

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PROJECT REFERENCE NO.		SHEET NO.
R-5734A		UC-10
DESIGNED BY: WMH	DRAWN BY: RGR/WMH	
CHECKED BY: MCM	APPROVED BY:	
REVISI:	NORTH CAROLINA PROFESSIONAL ENGINEER <i>C. L. BEAL</i> No. 29500	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	10/17/2018	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	UTILITY CONSTRUCTION PLANS ONLY	

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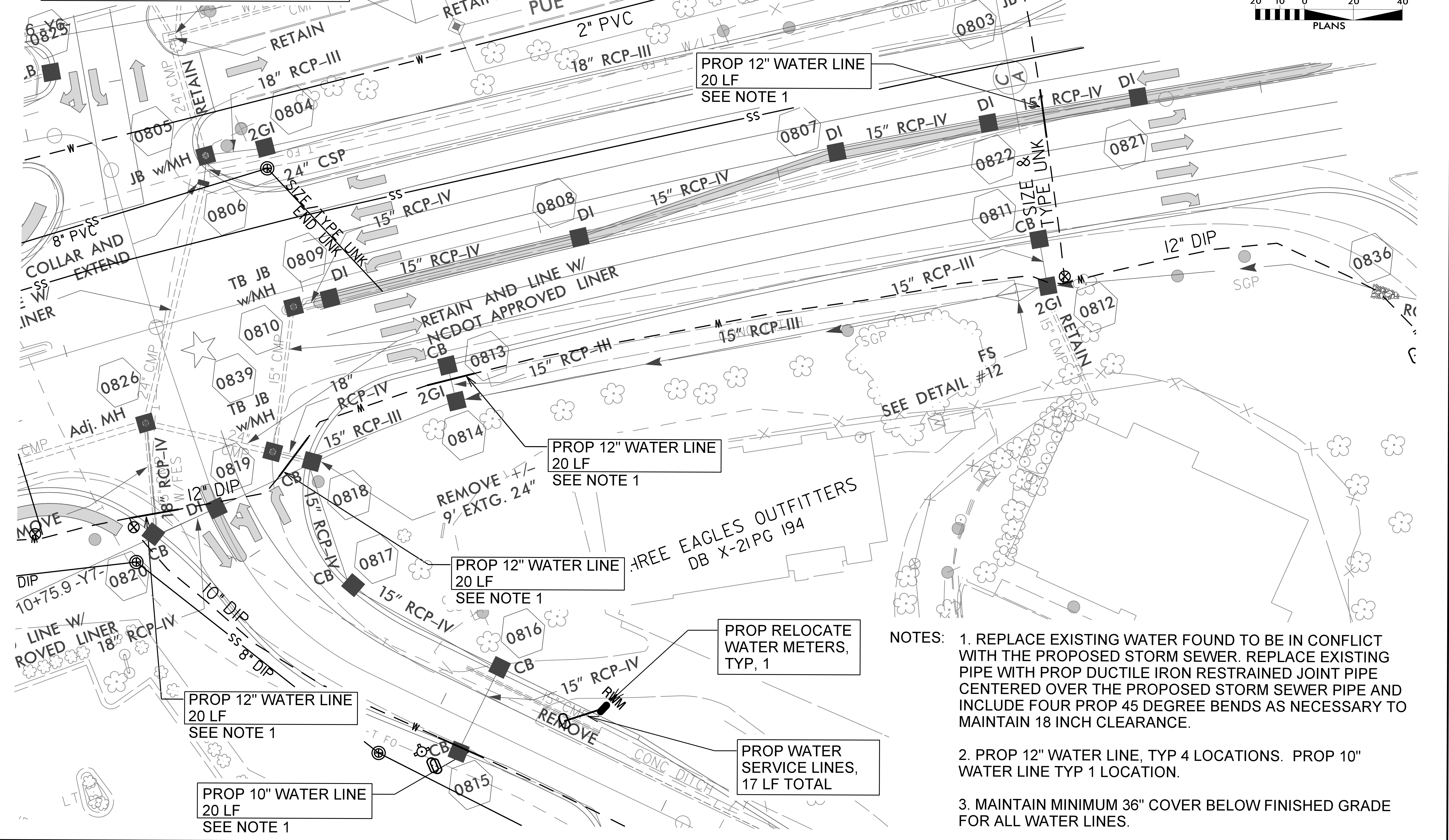
UTILITY CONSTRUCTION

20 10 0 20 40
PLANS

PROP 20 LF 10" WATER LINE
PROP 80 LF 12" WATER LINE

THE ESTIMATED QUANTITY OF DUCTILE IRON WATER PIPE FITTINGS ON THIS PLAN SHEET IS 3750 POUNDS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON FIELD CONDITIONS.

NAD 83/2011



PROP 12" WATER LINE
20 LF
SEE NOTE 1

PROP 12" WATER LINE
20 LF
SEE NOTE 1

PROP 12" WATER LINE
20 LF
SEE NOTE 1

PROP 10" WATER LINE
20 LF
SEE NOTE 1

PROP RELOCATE
WATER METERS,
TYP, 1

PROP WATER
SERVICE LINES,
17 LF TOTAL

- NOTES:**
- 1. REPLACE EXISTING WATER FOUND TO BE IN CONFLICT WITH THE PROPOSED STORM SEWER. REPLACE EXISTING PIPE WITH PROP DUCTILE IRON RESTRAINED JOINT PIPE CENTERED OVER THE PROPOSED STORM SEWER PIPE AND INCLUDE FOUR PROP 45 DEGREE BENDS AS NECESSARY TO MAINTAIN 18 INCH CLEARANCE.
 - 2. PROP 12" WATER LINE, TYP 4 LOCATIONS. PROP 10" WATER LINE TYP 1 LOCATION.
 - 3. MAINTAIN MINIMUM 36" COVER BELOW FINISHED GRADE FOR ALL WATER LINES.

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