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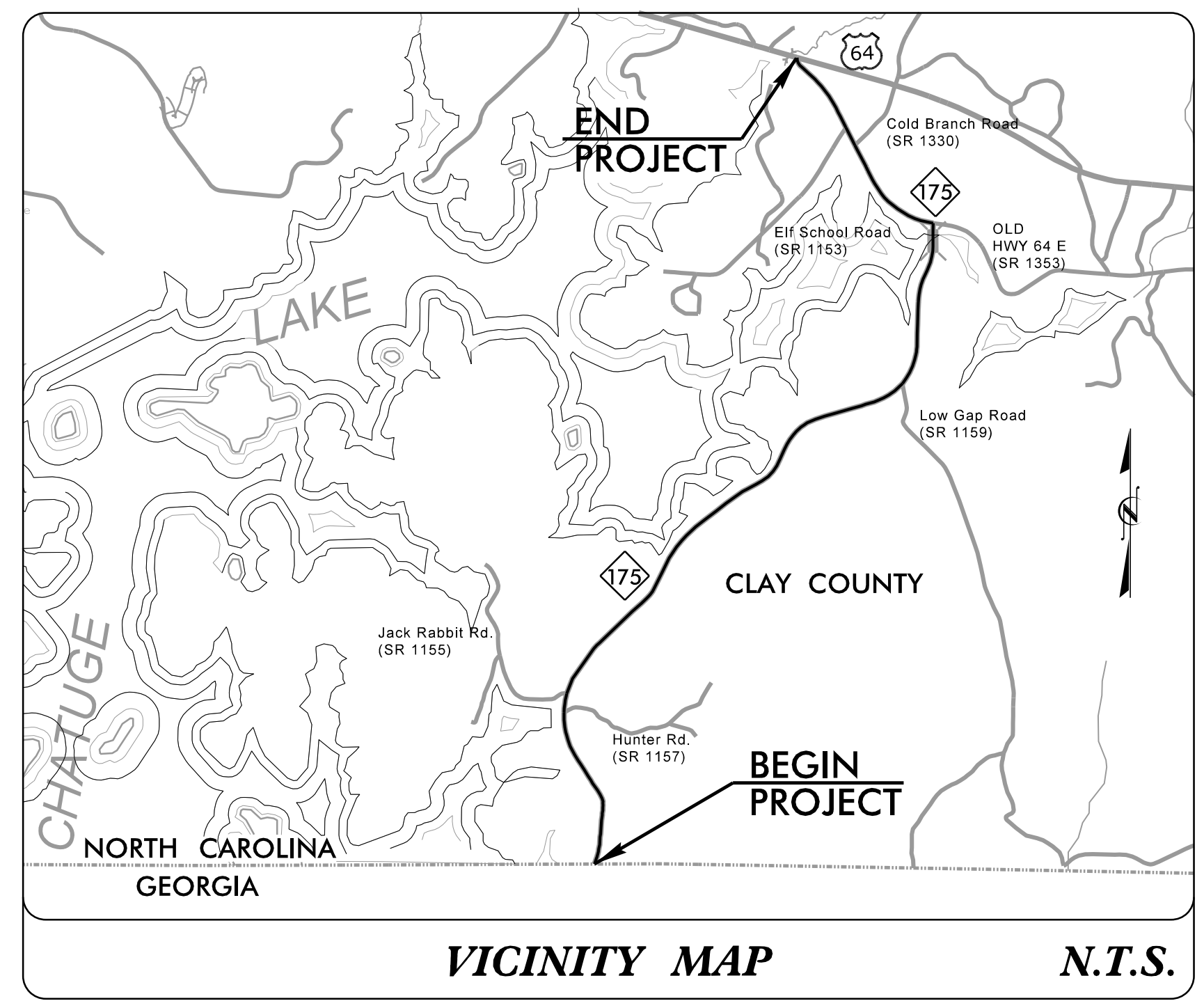
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09.08/2018

TIP PROJECT: R-5742

11/8/2018 R:\Utilities\Rdy_Ut\Pro\Bidding_Plans\R5742_ut_tsh_UC01_psh.dgn mpxydt



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

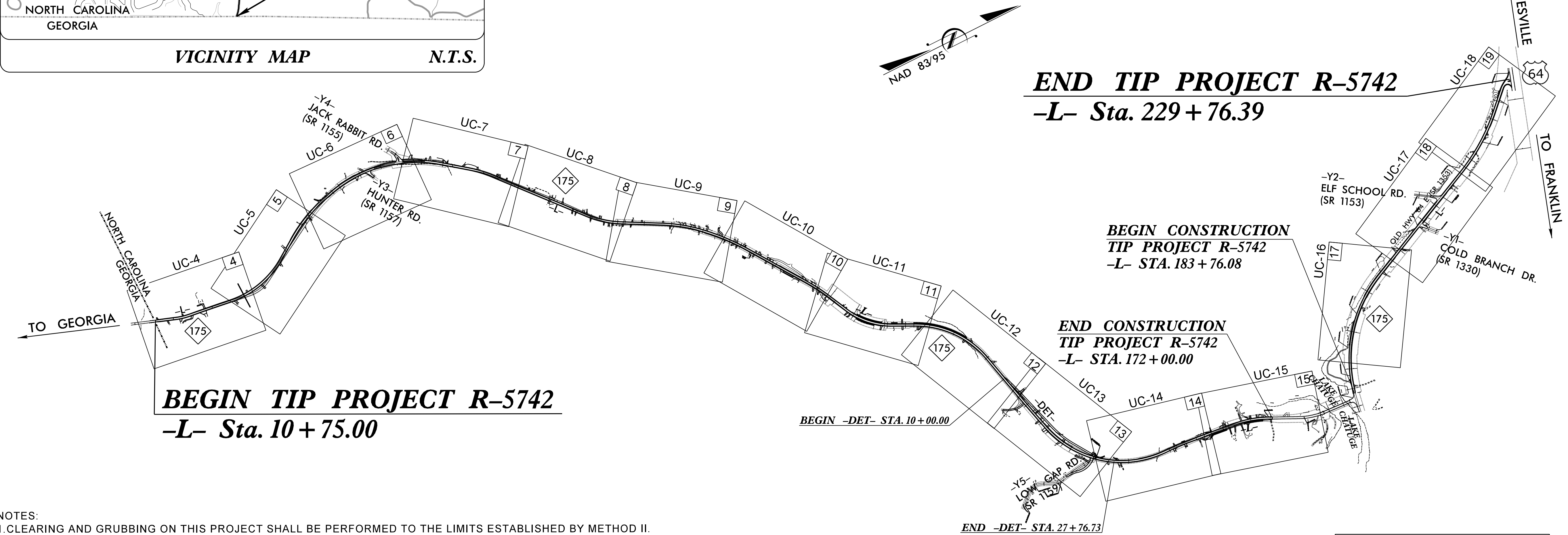
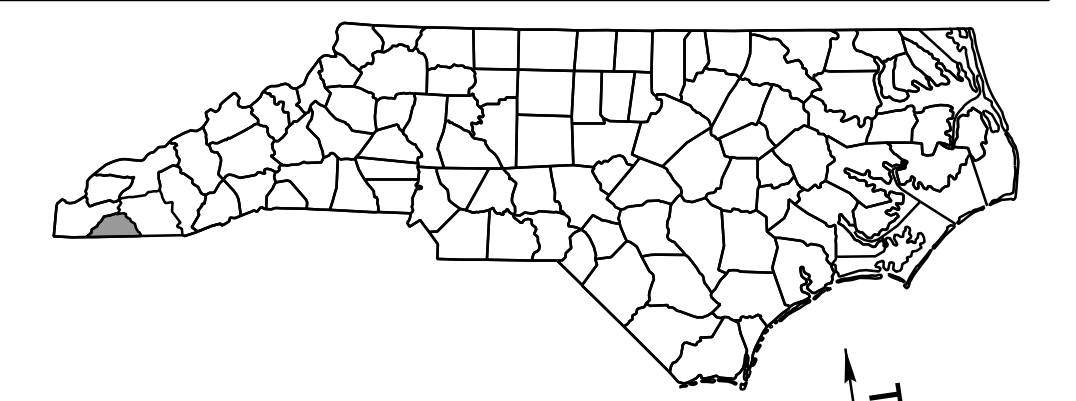
**UTILITY CONSTRUCTION PLANS
CLAY COUNTY**

**LOCATION: NC 175 FROM GEORGIA STATE LINE
LINE TO US 64**
TYPE OF WORK: WATER /SEWER RELOCATION

T.I.P. NO.	SHEET NO.
R-5742	UC-1

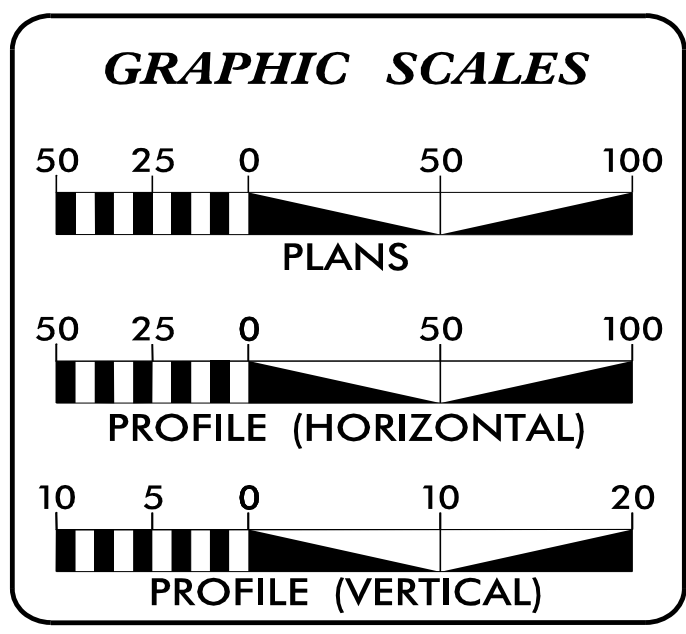
BIDDING PLANS

PLANS FOR BIDDING ONLY
RFC PLANS TO BE ISSUED UPON
RECEIPT OF AUTHORIZATION
TO CONSTRUCT (WATER AND
SANITARY SEWER) FROM NCDEQ



- NOTES:
1. CLEARING AND GRUBBING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.
2. THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.

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UNTIL ALL SIGNATURES ARE COMPLETED



INDEX OF SHEETS

SHEET NO.:	DESCRIPTION:
UC-1	TITLE SHEET
UC-2	UTILITY SYMBOLOGY
UC-3	NOTES
UC-3A THRU UC-3C	WATER /SEWER DETAILS
UC-4 THRU UC-18	UTILITY CONSTRUCTION SHEETS
UC-19 THRU UC-26	PROFILE SHEETS

WATER AND SEWER OWNERS ON PROJECT

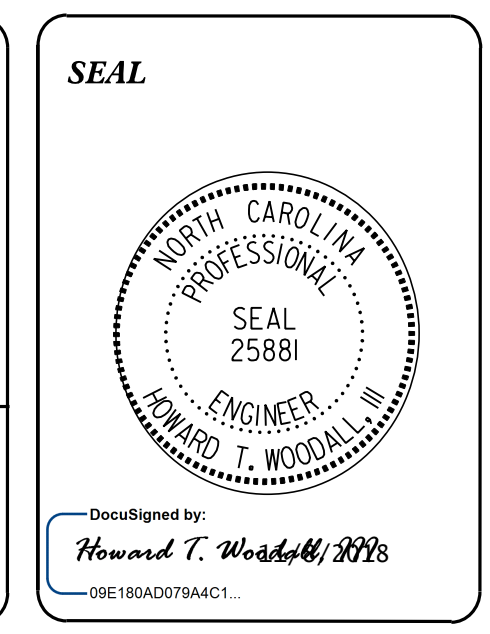
(A) WATER - CITY OF HIWASSEE, GA.
(B) SANITARY SEWER - CLAY COUNTY WATER AND SEWER DISTRICT, NC.

PREPARED IN THE OFFICE OF

RK&K
RUMMEL KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE, SUITE 350
RALEIGH, NORTH CAROLINA 27609
NC LICENSE NO. F-0112
1-888-521-4455 OR 919-878-9560

FOR
DIVISION OF HIGHWAYS

HOWARD WOODALL, P.E. CONSULTANT CONTACT #1
BRYAN BADEY, P.E. CONSULTANT CONTACT #2
MONICA SARNA, P.E. 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
BILL GREEN UTILITIES COORDINATOR

5/14/09

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

UTILITIES PLAN SHEET SYMBOLS

PROJECT REFERENCE NO. R-5742	SHEET NO. UC-2
DESIGNED BY: MSS	
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APPROVED BY: HTW	
REVISED: XXX	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
UTILITY CONSTRUCTION PLANS ONLY	

UTILITY CONSTRUCTION

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PROPOSED WATER SYMBOLS

Water Line (Sized as Shown)	----- 12" WL -----
11¼ Degree Bend	----- ++
22½ Degree Bend	----- +X
45 Degree Bend	----- +X
90 Degree Bend	----- +
Plug	-----
Tee	----- +
Cross	----- +
Reducer	----- ▶
Gate Valve	----- GV
Butterfly Valve	----- BV
Tapping Valve	----- TGV
Line Stop	----- LS
Line Stop with Bypass	----- LS/BP
Blow Off	----- BO
Fire Hydrant	----- PFH
Relocate Fire Hydrant	----- RFH
Remove Fire Hydrant	----- REM FH
Water Meter	----- PWM
Relocate Water Meter	----- RWM
Remove Water Meter	----- REM WM
Water Pump Station	----- PST(W)
RPZ Backflow Preventer	----- PRPZ
DCV Backflow Preventer	----- DBFP
Relocate RPZ Backflow Preventer	----- RRPZ
Relocate DCV Backflow Preventer	----- RDBFP

PROPOSED SEWER SYMBOLS

Gravity Sewer Line (Sized as Shown)	----- 12" SS -----
Force Main Sewer Line (Sized as Shown)	----- 12" FSS -----
Manhole (Sized per Note)	----- •
Sewer Pump Station	----- PST(SS)

PROPOSED MISCELLANEOUS UTILITIES SYMBOLS

Power Pole	----- 0
Telephone Pole	----- 0
Joint Use Pole	----- 0
Telephone Pedestal	----- TEL PED 0
Utility Line by Others (Type as Shown)	----- PROP. O/H POW LINES -----
Trenchless Installation	----- 12" TL INSTALL -----
Encasement by Open Cut	----- 24" ENCAS. BY OC -----
Encasement	----- 24" ENCASEMENT -----

Thrust Block	-----
Air Release Valve	----- AR •
Utility Vault	----- UV
Concrete Pier	----- CP
Steel Pier	----- SP
Plan Note	----- NOTE
Pay Item Note	----- PAY ITEM

EXISTING UTILITIES SYMBOLS

Power Pole	----- •
Telephone Pole	----- •
Joint Use Pole	----- •
Utility Pole	----- •
Utility Pole with Base	----- □
H-Frame Pole	----- •
Power Transmission Line Tower	----- X
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	----- 0
Abandoned According to Utility Records	----- AATUR
End of Information	----- E.O.I.

*Underground Power Line	----- P -----
*Underground Telephone Cable	----- T -----
*Underground Telephone Conduit	----- TC -----
*Underground Fiber Optics Telephone Cable	----- T FO -----
*Underground TV Cable	----- TV -----
*Underground Fiber Optics TV Cable	----- TV FO -----
*Underground Gas Pipeline	----- G -----
Aboveground Gas Pipeline	----- A/G Gas -----
*Underground Water Line	----- W -----
Aboveground Water Line	----- A/G Water -----
*Underground Gravity Sanitary Sewer Line	----- SS -----
Aboveground Gravity Sanitary Sewer Line	----- A/G Sanitary Sewer -----
*Underground SS Forced Main Line	----- FSS -----
Underground Unknown Utility Line	----- ?UTL -----
SUE Test Hole	----- •
Water Meter	----- ⊖
Water Valve	----- ⊖
Fire Hydrant	----- ◇
Sanitary Sewer Cleanout	----- ⊗

**PLANS FOR BIDDING ONLY
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*For Existing Utilities
Utility Line Drawn from Record (Type as Shown) ----- w -----
Designated Utility Line (Type as Shown) ----- w -----

PLANS PREPARED BY :
RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0112 • (919) 878-9560

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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 WATER SYSTEM OWNER IS THE CITY OF HIAWASSEE, GEORGIA. THE CONTACT PERSON IS MR. DONALD BAKER, EMI, AT 1-770-962-1387. THE EXISTING SEWER SYSTEM OWNER IS CLAY COUNTY WATER AND SEWER DISTRICT, NC. THE CONTACT PERSON IS MR. DAKOTA INGRAM AT 1-828-389-1361.
- 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. ANY AREAS OR PHYSICAL FEATURES (DRIVEWAYS, SIGNS ETC.) DISTURBED BY UTILITY CONSTRUCTION, SHALL BE RETURNED TO EXISTING CONDITIONS, WITH COMPATIBLE MATERIALS, AND DEPTHS OF INSTALLATION, ETC.
 - 2. CONTRACTOR IS ADVISED THAT COORDINATION OF CONSTRUCTION IS REQUIRED TO MAINTAIN OPERATION OF WATER AND SEWER SYSTEMS TO BE RELOCATED ON THIS PROJECT. DESIGNER HAS ATTEMPTED TO IDENTIFY AND NOTE LOCATIONS REQUIRED ON THE PLANS AND PROFILES. CONTRACTOR IS RESPONSIBLE FOR VERIFICATION AND MODIFICATIONS DUE TO ACTUAL FIELD CONDITIONS AND SHALL COORDINATE WITH UTILITY OWNERS AND NCDOT PERSONNEL FOR SHUTDOWNS OR BYPASSES.
- THE FOLLOWING SENARIOS ARE NOTED ON THE PLANS:
- A. CONTRACTOR SHALL COORDINATE WITH OWNER AND NCDOT DIVISION PERSONNEL FOR TEMPORARY SHUT DOWN OF EXISTING MAIN WHERE REQUIRED TO FACILITATE INSTALLATION OF NEW MAIN.
 - B. CONTRACTOR TO PROVIDE BYPASS OPERATIONS NECESSARY TO MAINTAIN EXISTING SYSTEM AND INSTALL NEW MAIN. COORDINATE ALL ACTIVITIES WITH NCDOT DIVISION PERSONNEL AND UTILITY OWNER.
 - C. CONTRACTOR SHALL COORDINATE EMBANKMENT PLACEMENT PRIOR TO NEW MAIN INSTALLATION.

PROJECT REFERENCE NO. R-5742	SHEET NO. UC-3
DESIGNED BY: MSS	
DRAWN BY: MSS	
CHECKED BY: BMB	
APPROVED BY: HTW	
REVISED: XXX	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	

UTILITY CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PLANS FOR BIDDING ONLY
RFC PLANS TO BE ISSUED UPON
RECEIPT OF AUTHORIZATION
TO CONSTRUCT (WATER AND
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PLANS PREPARED BY :

RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0112 • (919) 878-9560

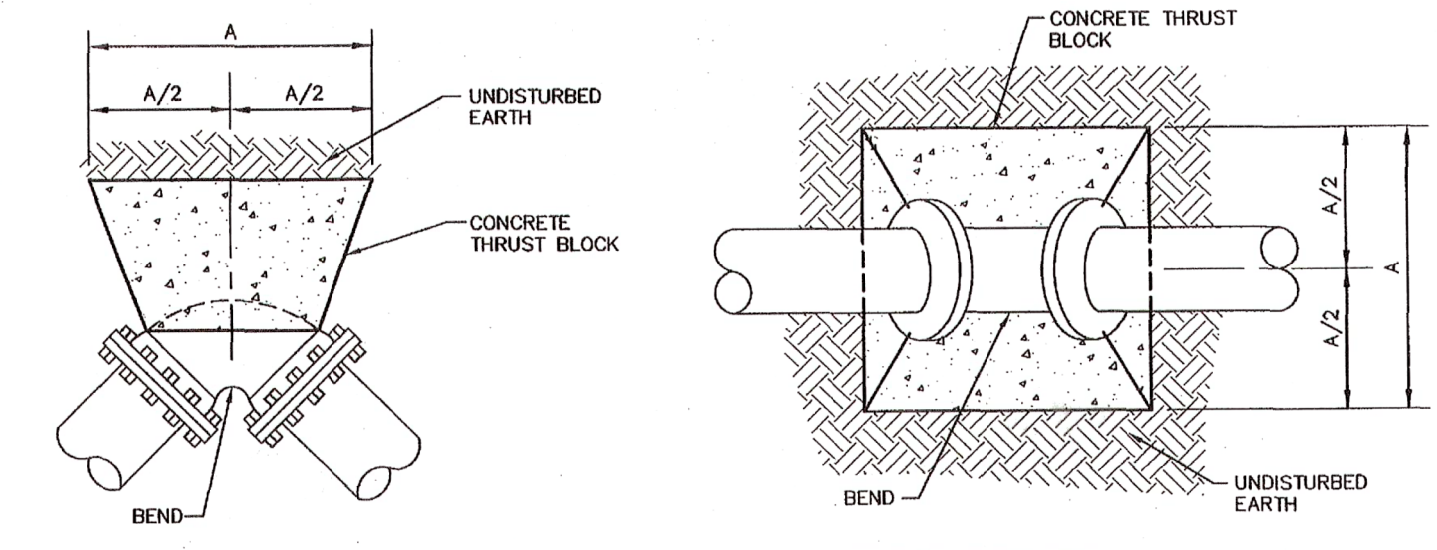
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UTILITY CONSTRUCTION PLANS ONLY	

PROJECT DETAILS

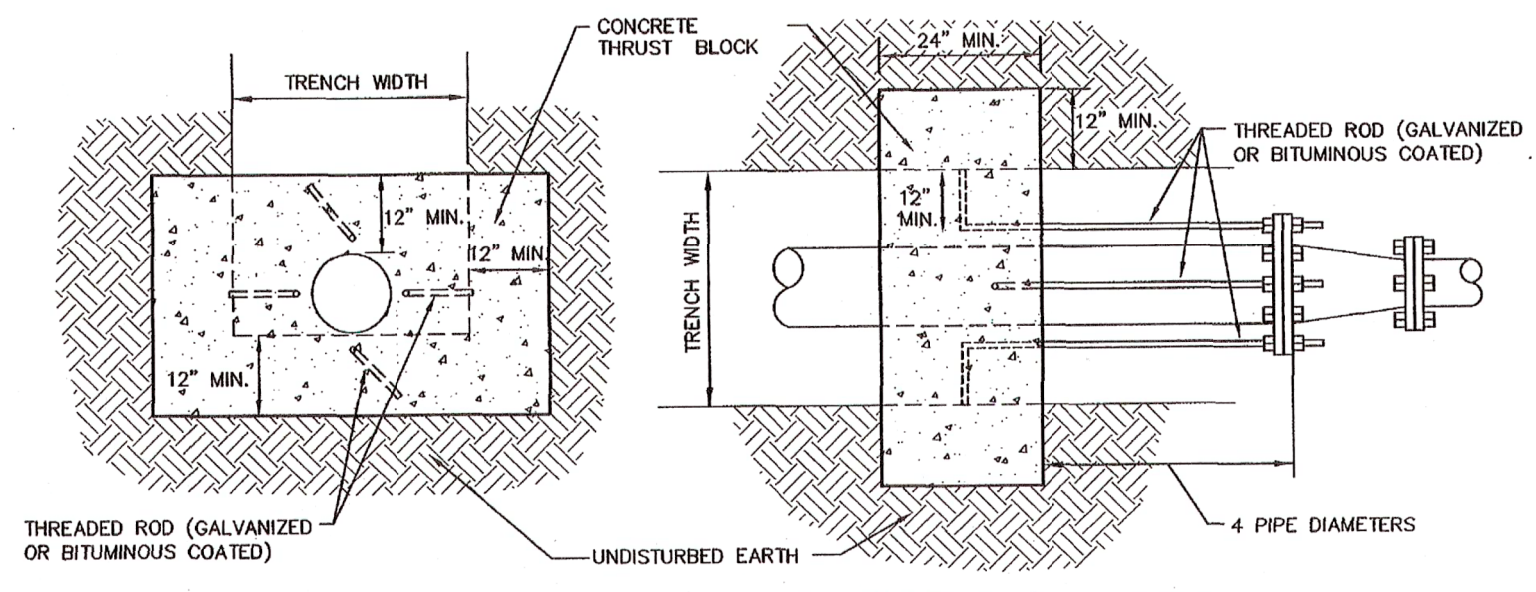
UTILITY CONSTRUCTION

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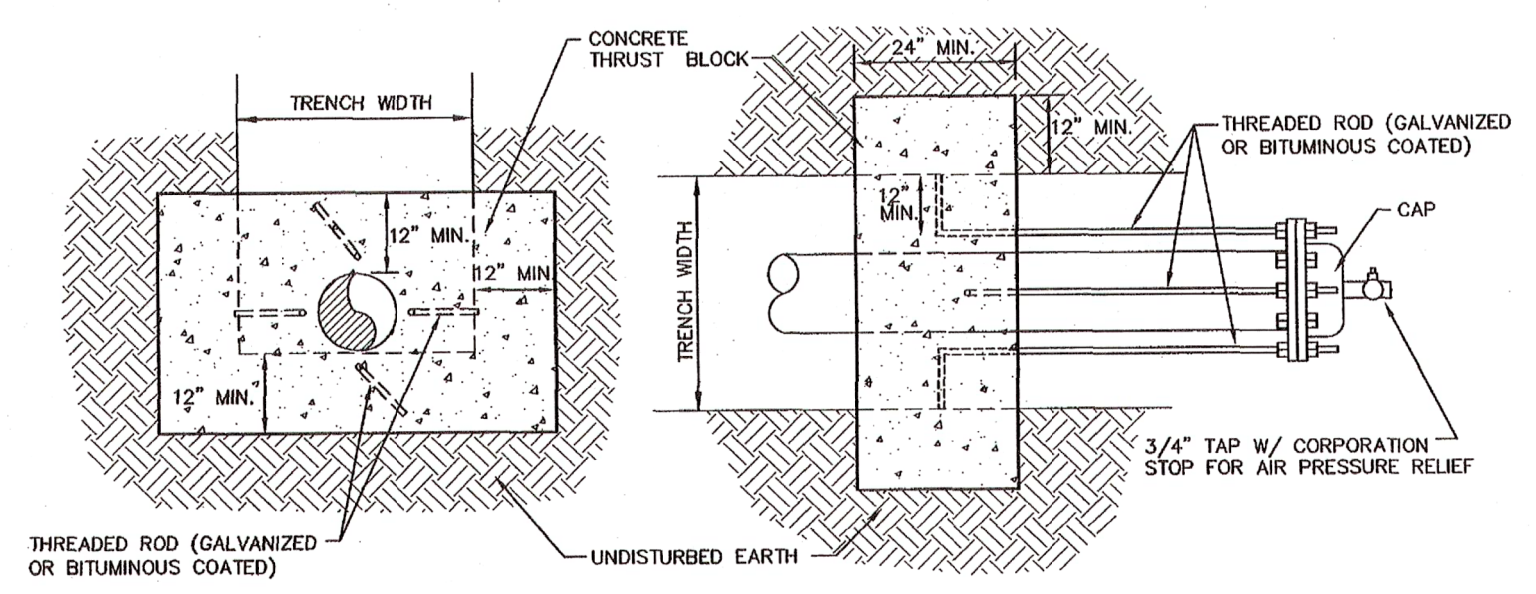
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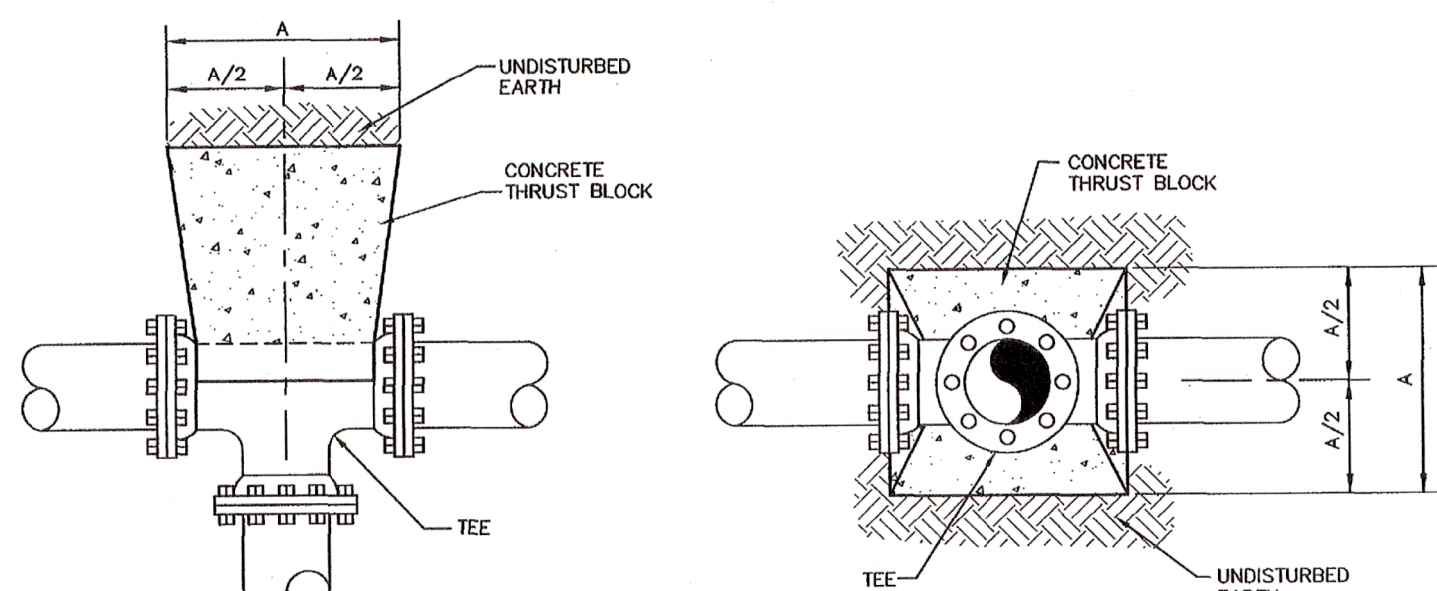
TYPICAL THRUST BLOCKS FOR BENDS
REVISION DATE - NOVEMBER 3, 2008



TYPICAL THRUST BLOCK FOR REDUCERS
REVISION DATE - NOVEMBER 3, 2008



TYPICAL THRUST BLOCK FOR PLUGS
REVISION DATE - NOVEMBER 3, 2008

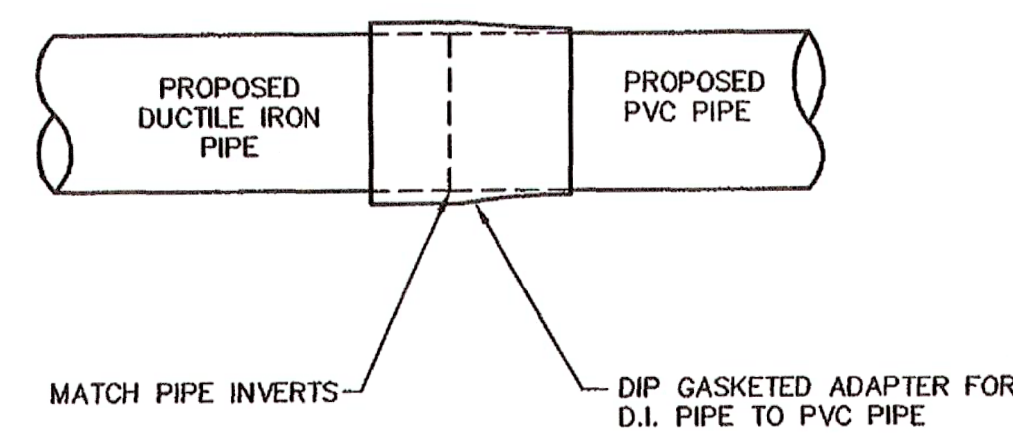


TYPICAL THRUST BLOCKS FOR TEES
REVISION DATE - NOVEMBER 3, 2008

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 A 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.

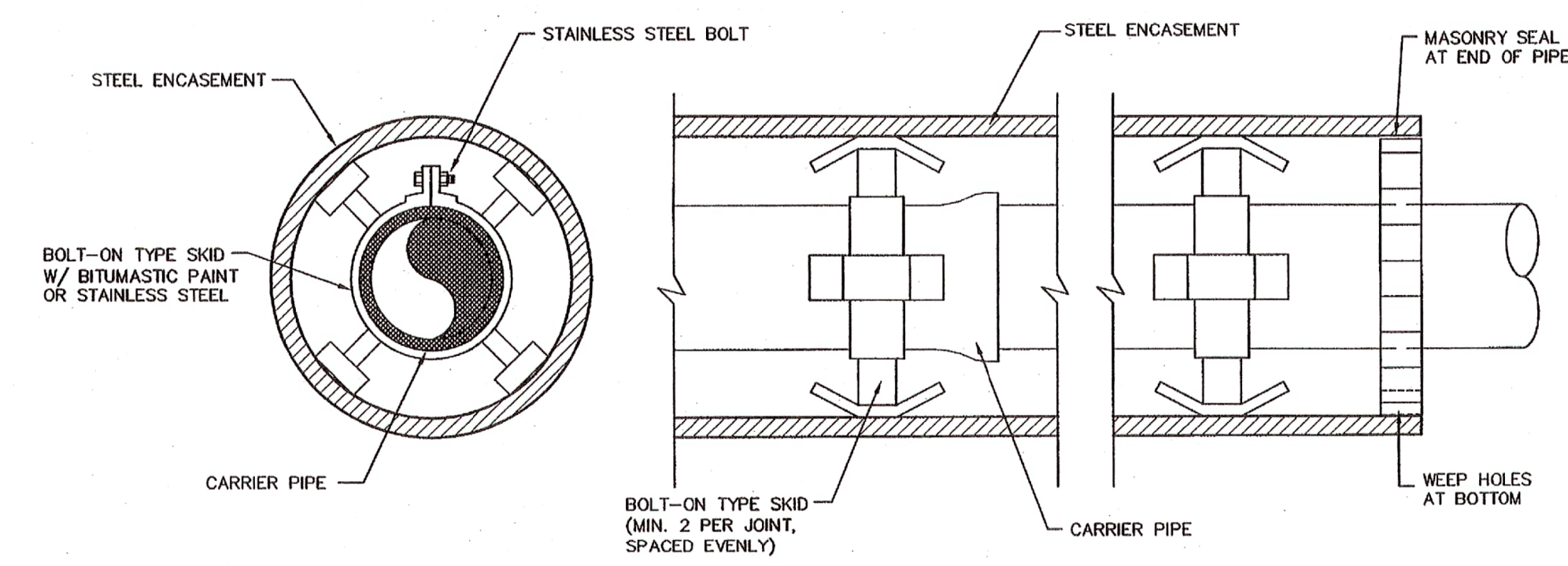
SIZE	TYPE					
	11-1/4" BEND	22-1/2" BEND	45" BEND	90" BEND	TEE	PLUG
2-6	12	12	12	12	16	14
8	12	12	16	22	22	18
10	12	14	20	28	28	22
12	12	18	24	32	32	28
14	14	20	28	36	36	32
16	16	22	32	42	42	36
18	18	26	36	48	48	40
20	20	28	40	52	52	44
24	24	34	46	64	64	54
30	30	42	58	78	78	66
36	36	50	70	94	94	80
42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

THRUST BLOCK DIMENSION "A"
REVISION DATE - NOVEMBER 3, 2008



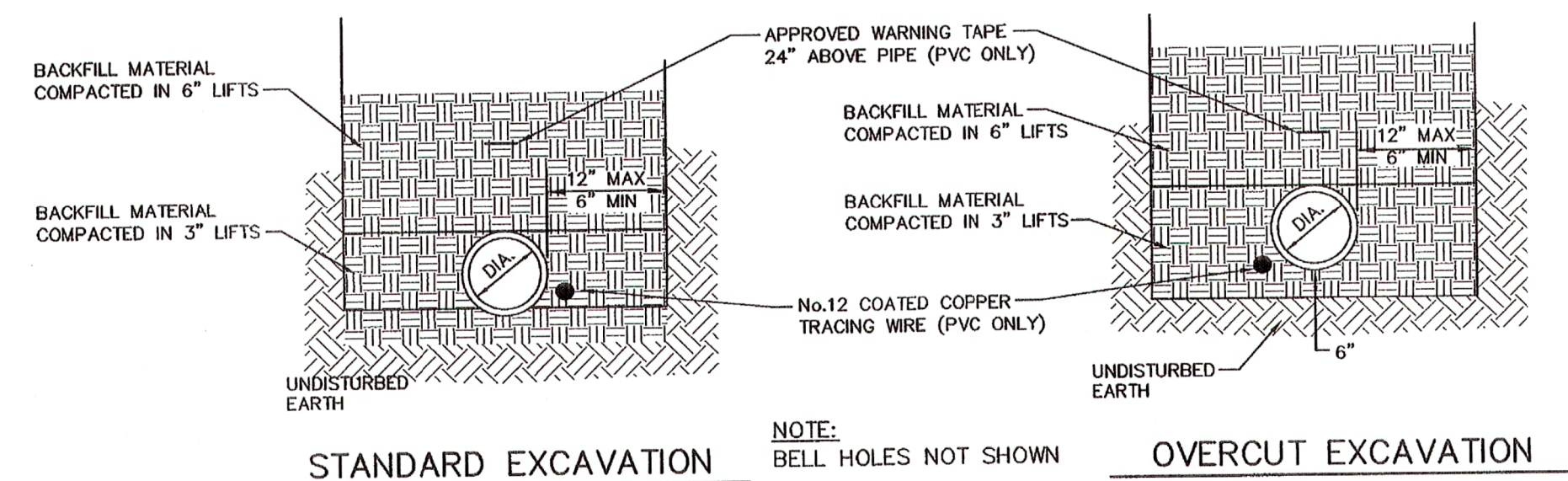
TRANSITION ADAPTER DIP TO PVC

REVISION DATE - NOVEMBER 3, 2008



ENCASEMENT DETAIL

REVISION DATE - NOVEMBER 3, 2008

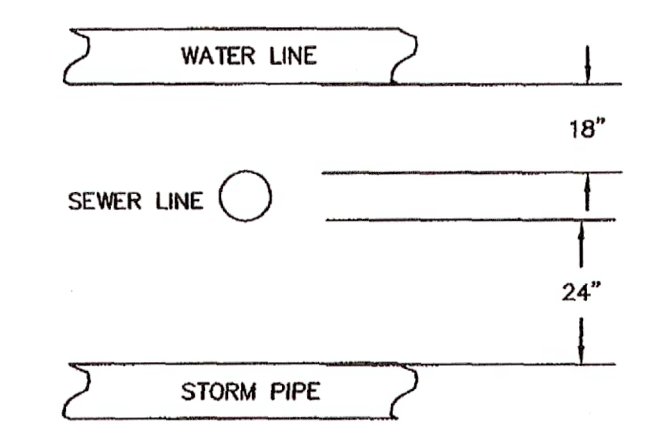


NOTE:
1. CONSTRUCTION OF TRENCHES SHALL COMPLY WITH ALL FEDERAL, STATE AND LOCAL SAFETY AND HEALTH REGULATIONS WHICH HAVE JURISDICTION AT THE PROJECT SITE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO BE FAMILIAR WITH THE APPLICABLE REGULATIONS AND FOLLOW THEM ACCORDINGLY.

2. 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.

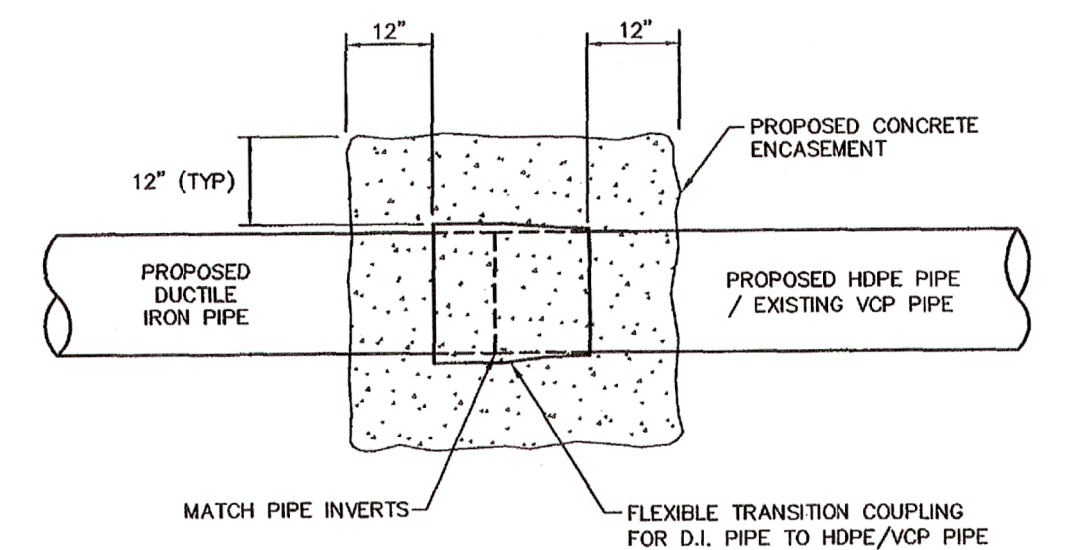
TYPICAL TRENCHING DETAILS

SEWER FORCE MAIN
REVISION DATE - NOVEMBER 3, 2008



SEWER CROSSING WATER AND STORM PIPE

REVISION DATE - JANUARY 2, 2007



TRANSITION COUPLING

DISSIMILAR MATERIAL PIPES
REVISION DATE - NOVEMBER 3, 2008

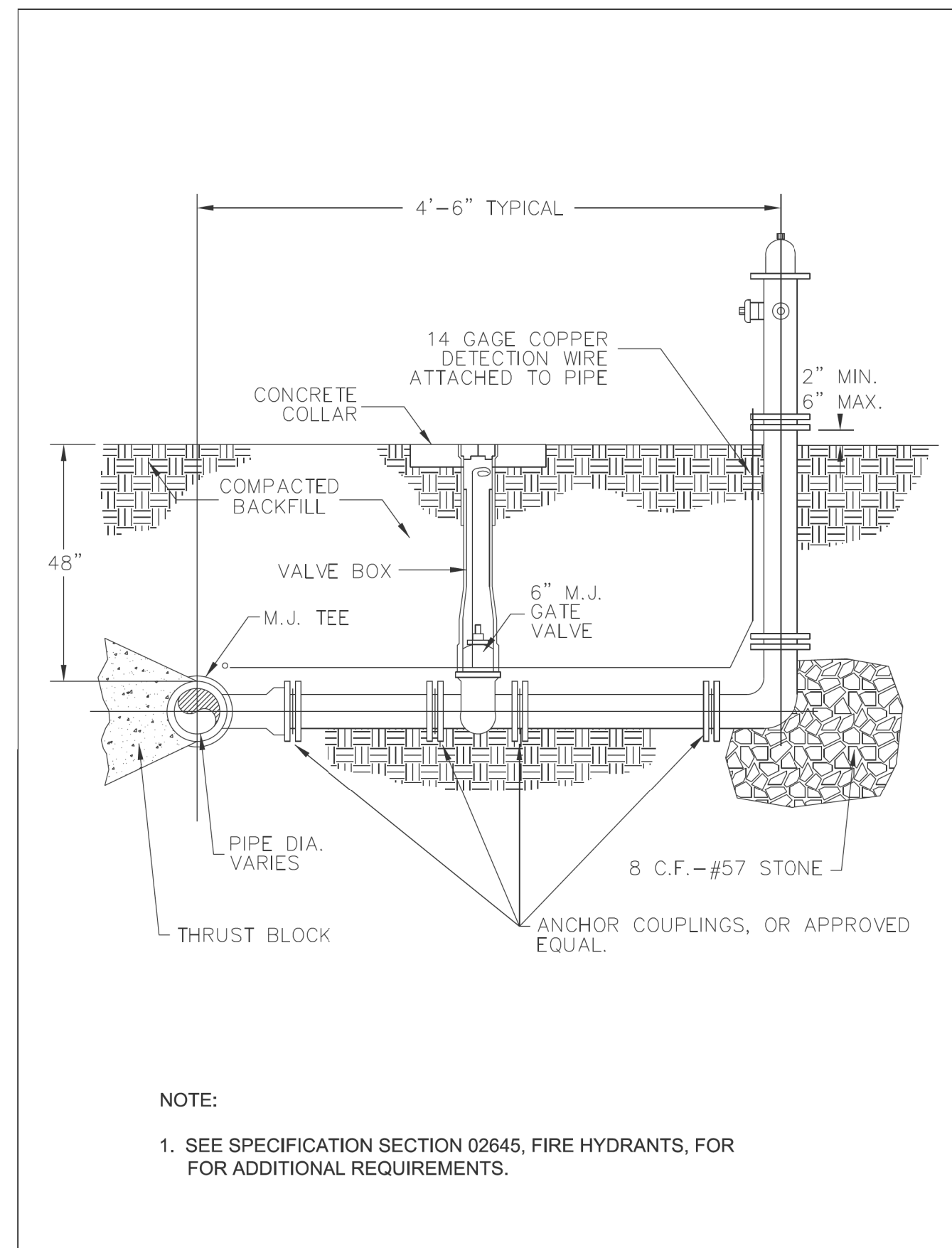
PLANS PREPARED BY:

RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
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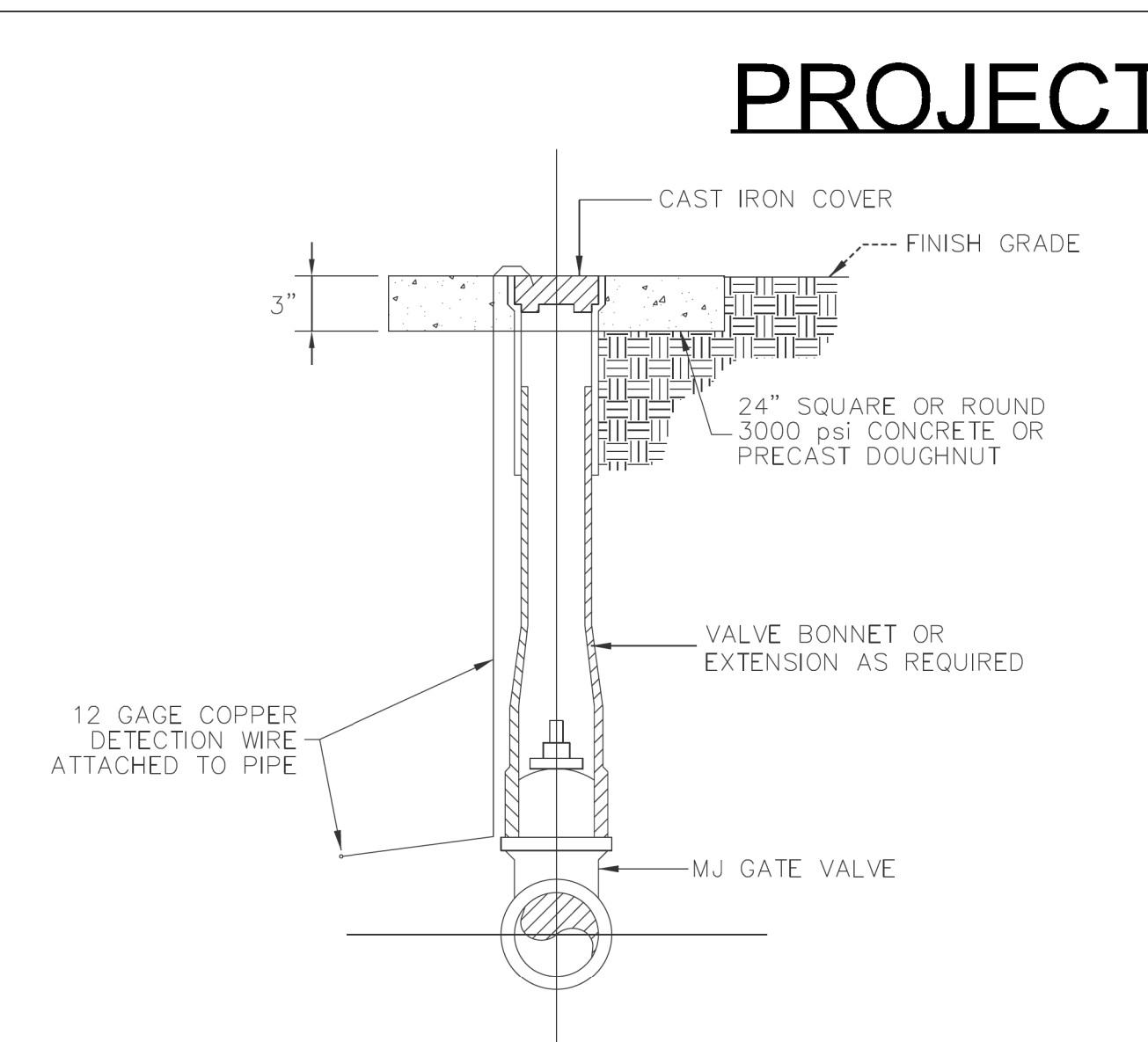
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DESIGNED BY: MSS	
DRAWN BY: MSS	
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UTILITY CONSTRUCTION PLANS ONLY	

PROJECT DETAILS



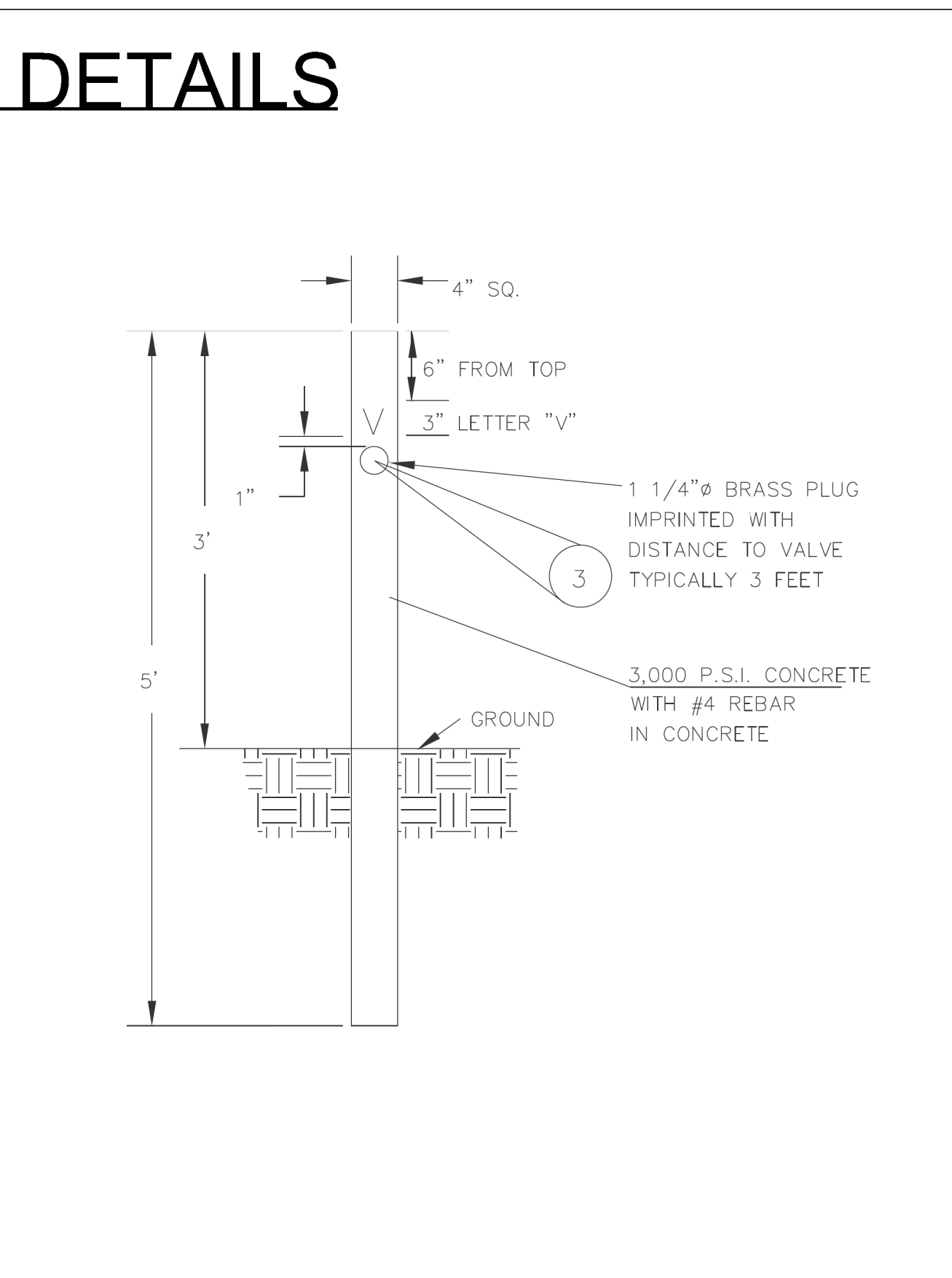
NOTE:
1. SEE SPECIFICATION SECTION 02645, FIRE HYDRANTS, FOR ADDITIONAL REQUIREMENTS.

FIRE HYDRANT	DETAIL NO. W-1	REV. NO. 1	BY RB	DATE 06-28-06
SCALE: N.T.S.				

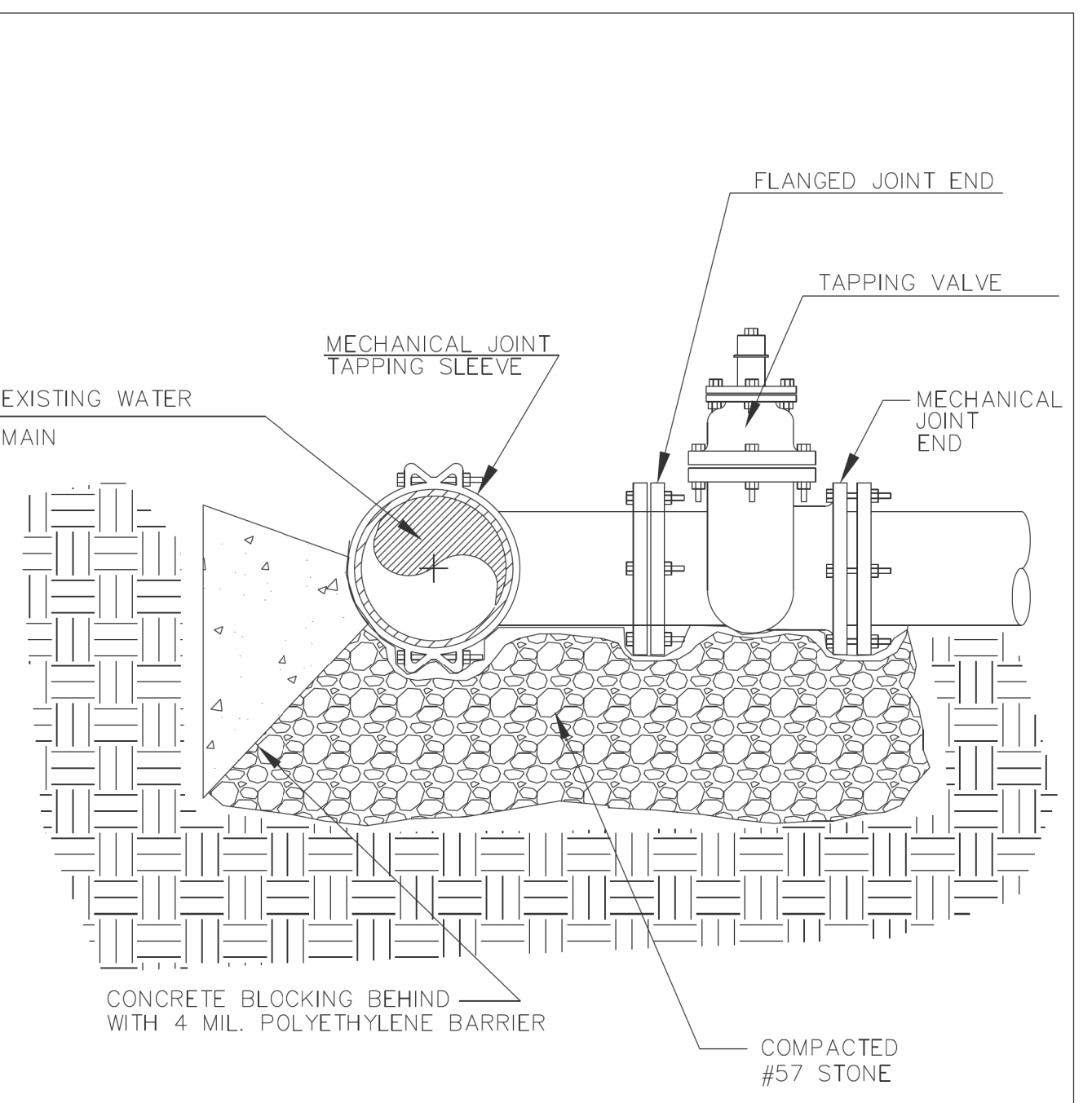


NOTES:
1. CAST IRON COVER TO BE STAMPED "WATER" FOR WATERLINE VALVES, "REUSE" FOR REUSELINE VALVES, AND "SEWER" FOR FORCEMAIN VALVES
2. SEE SPECIFICATION SECTION 02660, WATER DISTRIBUTION SYSTEMS, FOR ADDITIONAL REQUIREMENTS.

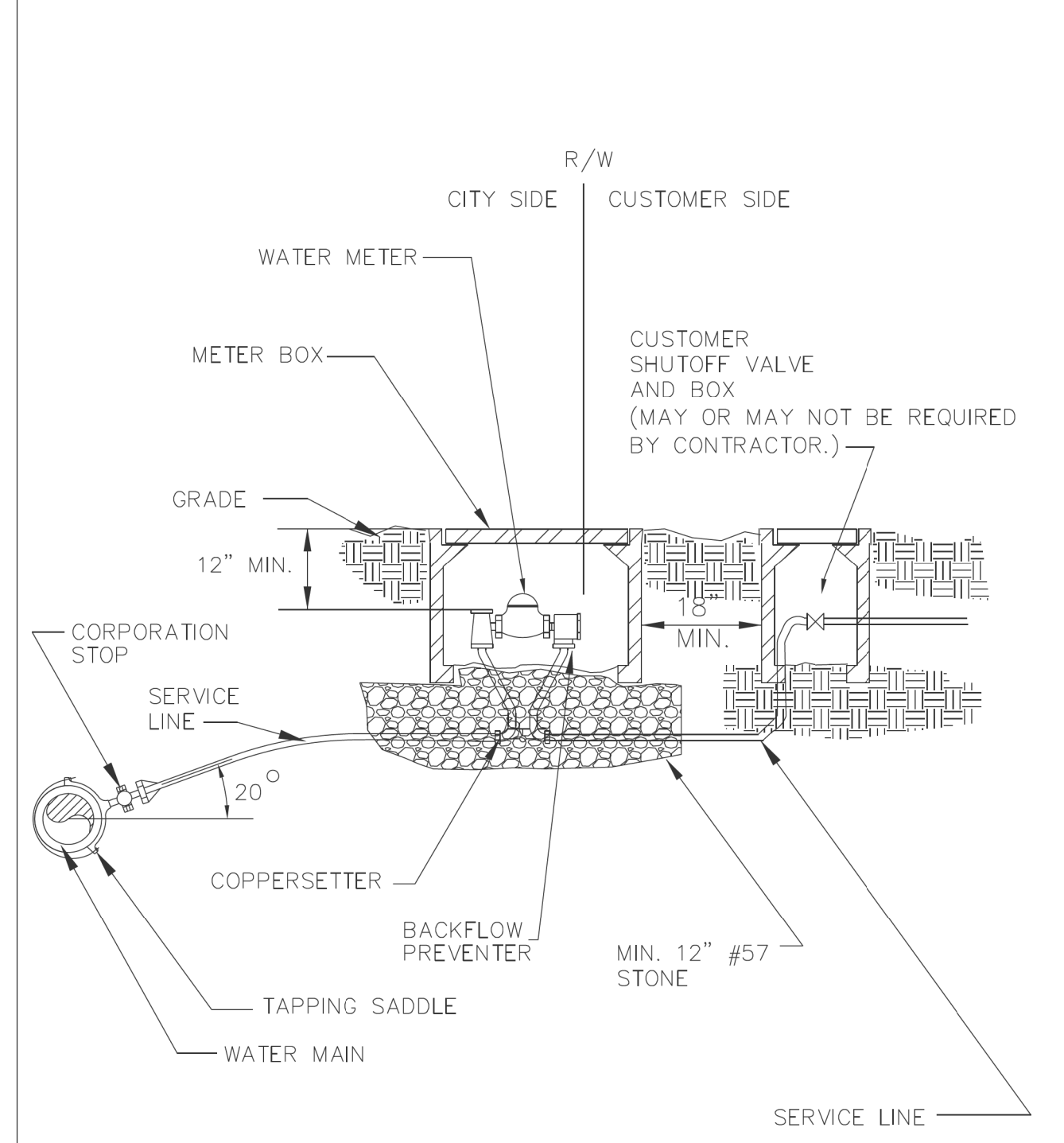
VALVE BOX	DETAIL NO. W-2	REV. NO. 1	BY RB	DATE 06-28-06
SCALE: N.T.S.				



VALVE MARKER CONCRETE	DETAIL NO. W-4	REV. NO. 1	BY RB	DATE 06-28-06
SCALE: N.T.S.				

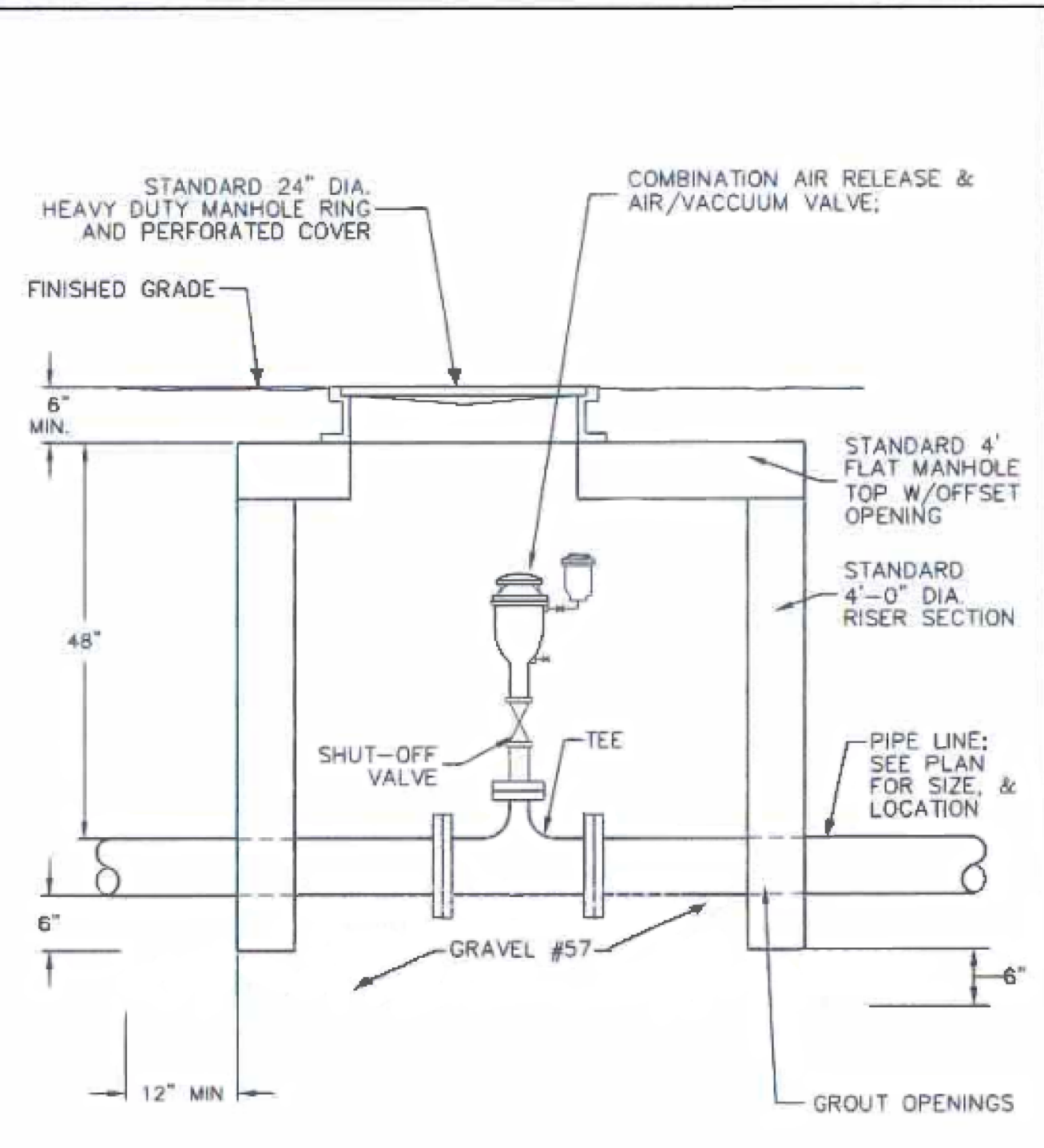


TAPPING SLEEVE & VALVE	DETAIL NO. W-5	REV. NO. 1	BY RB	DATE 06-28-06
SCALE: N.T.S.				



IF SERVICE IS FOUND

RESIDENTIAL SERVICE CONNECTION WITH METER	DETAIL NO. W-9	REV. NO. 1	BY RB	DATE 06-28-06
SCALE: N.T.S.				



NOTE:
1. SEE SPECIFICATIONS SECTION 02660, WATER DISTRIBUTION SYSTEMS, FOR TYPE, SIZE, AND ADDITIONAL REQUIREMENTS.

COMBINATION AIR RELEASE/VACUUM VALVE	DETAIL NO. W-7	REV. NO. 1	BY RB	DATE 06-28-06
SCALE: N.T.S.				

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 900 RIDGEFIELD DRIVE SUITE 350
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 NC LICENSE NO. F-0112 • (919) 878-9560

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