STATE OF NORTH CAROLINA

17BP.14.R.212

STATE PROJECT NO.

UC-1

SHEET NO.

UTILITY CONSTRUCTION PLANS JACKSON COUNTY

LOCATION: SR 1336 (MONTEITH GAP ROAD) FROM NORTH OF SR 1002 (OLD CULLOWHEE ROAD) TO NORTH OF SR 1337 (LEDBETTER ROAD)

TYPE OF WORK: WATER & SEWER LINE CONSTRUCTION

UC-4A UC-4B NAD 83/95 END BRIDGE -L- STA. 20+27.13 -DR2-TRACER LANE BEGIN BRIDGE _L_ STA. 19 + 54.88 LEDBETTER RD. SR 1337

END CONSTRUCTION PROJECT 17BP.14.R.212 -L-STA. 28+00.00

> DOCUMENT NOT CONSIDERED FINAL UNTIL ALL SIGNATURES ARE COMPLETED

GRAPHIC SCALES PLANS *UC-3* UC-3A thru UC-3C PROFILE (HORIZONTAL) *UC-4 UC-4A* PROFILE (VERTICAL)

INDEX OF SHEETS SHEET NO. **DESCRIPTION** TITLE SHEET *UC-2*

-L-STA.11+14.45

TIE TO TIP PROJECT

B-4159 -YI- STA. 11 + 20.00

PROJECT

Cullowhee/

VICINITY MAP (NOT TO SCALE)

BEGIN CONSTRUCTION PROJECT 17BP.14.R.212

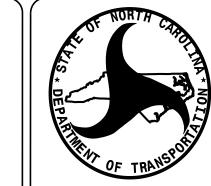
UTILITY SYMBOLOGY UTILITY CONSTRUCTION NOTES UTILITY DETAILS UTILITY PLAN SHEET (WATER)
-WL-1-, -WL-2- & -WL-3-UTILITY PROFILE SHEET (WATER)
-WL-1-, -WL-2-& -WL-3-UTILITY PLAN & PROFILE SHEET (SEWER)-SL-1- & -SL-2(1) WATER & SEWER - TUCKASEIGEE WATER & SEWER AUTHORITY (TWSA)



(828) 253-2796 6/6/2023 PROJECT UTILITY ENGINEER

Reece Schuler, P.E. James Montgomery David Dawson

PROJECT UTILITY COORDINATOR PROJECT UTILITY DESIGNER



NORTH CAROLINA DEPARTMENT OF TRANSPORTATION -DIVISION 14

253 WEBSTER ROAD SYLVA NC 28779 WANDA H. AUSTIN, P.E. DIVISION ENGINEER PHONE (828) 586–2141

Zach Shuler, P.E. Robert Golding Lynn Kieselhorst

PROJECT TEAM LEAD **DIVISION UTILITIEY ENGINEER** DIVISION UTILITIES COORDINATOR

17BP.14.R.212 UC-2

STATE OF NORTH CAROLINA

UTILITIES PLAN SHEET SYMBOLS

PROPOSED WATER SYMBOLS

Water Line (Sized as Shown) 11½ 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 REM FH Remove Fire Hydrant Water Meter Relocate Water Meter Remove Water Meter 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

PROPOSED MISCELLANOUS UTILITIES SYMBOLS

Power Pole ····································	Thrust Block
Telephone Pole	Air Release Valve ····································
Joint Use Pole	Utility Vault
Telephone Pedestal	Concrete Pier
Jtility Line by Others (Type as Shown)	Steel Pier
renchless Installation	Plan Note
Encasement by Open Cut	Pay Item Note
encasement	PAY TIEM

	EXISTING UTIL	ITIES 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	T	Aboveground Water Line
Sanitary Sewer Manhole	📵	*Underground Gravity Sanitary Sewer Liness
Hand Hole for Cable	5	Aboveground Gravity Sanitary Sewer Line
Power Transformer	M	*Underground SS Forced Main Line
Telephone Pedestal	T	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
Designated Utility Line

(Sized per Note)

Sewer Pump Station

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 TUCKASEIGEE WATER AND SEWER AUTHORITY (TWSA). PLEASE CONTACT MR. DANIEL MANRING, 1246 WEST MAIN STREET SYLVA, NC 28779, (828) 586-5189, dmanring@twsanc.us
- 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 ENVIRONMENTAL 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 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 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:

WATER CONSTRUCTION NOTES:

- 1. ALL FITTINGS SHALL BE DUCTILE IRON MECHANICAL JOINT USING GRIP RINGS. NO GLUE OR PUSH-ON FITTINGS ARE ALLOWED. THRUST BLOCKING IS REQUIRED.
- 2. 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 SHALL BE ALLOWED TO RIVER, WETLANDS OR BUFFER ZONES.
- 3. IF HDPE PIPE IS INSTALLED BY DIRECTIONAL DRILL. IT SHALL BE FILLED WITH WATER AND NOT BE CONNECTED TO ANY OTHER PIPE OR FITTING FOR ONE WEEK FROM THE TIME OF INSTALLATION.

- 4. NEW WATER LINES MUST BE PRESSURE TESTED AT 200 PSI OR 1.5 TIMES AVERAGE STATIC PRESSURE IN PROJECT AREA, WHICHEVER IS MORE FOR 2 HOURS. TEST TO BE OBSERVED BY TUCKASEIGEE WATER AND SEWER REPRESENTATIVE.
- 5. SERVICE INTERRUPTIONS SHALL BE SCHEDULED WITH TUCKASEIGEE WATER AND SEWER AUTHORITY AND SHALL BE COMPLETED DURING OFF-PEAK HOURS-**BEGINNING AFTER 9 PM AND BE COMPLETED** BY 4 AM, UNLESS AUTHORIZED BY TUCKASEIGEE WATER AND SEWER AUTHORITY. INTERRUPTION SHALL NOT **EXCEED 8 HOURS. THE CONTRACTOR SHALL** BE RESPONSIBLE FOR PROVIDING TEMPORARY POTABLE WATER SUPPLIES TO ANY CUSTOMER UPON REQUEST BY TWSA AND/OR WHEN DURATION OF THE WATER SERVICE LOSS OR DISRUPTION EXCEEDS 4 HOURS.
- 6. ALL NC DEQ-DWR-PWS AND LOCAL TESTING MUST BE COMPLETED AND APPROVED PRIOR TO CONNECTING THE NEW CONSTRUCTION TO THE EXISTING WATER LINES.
- 7. THE PROFESSIONAL ENGINEER (PE) SHALL OBTAIN AND PROVIDE THE NC DEQ "AUTHORIZATION TO CONSTRUCT" PERMIT TO THE UTILITY CONTRACTOR BEFORE THE CONSTRUCTION OF THE WATER LINE SHALL BEGIN. THE UTILITY CONTRACTOR MUST POST A COPY OF THE NC DEQ "AUTHORIZATION TO CONSTRUCT" PERMIT ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY ON SITE PRIOR TO THE START OF CONSTRUCTION. THE PERMIT MUST BE MAINTAINED ON SITE THROUGHOUT THE ENTIRE CONSTRUCTION PROCESS OF THE PROPOSED WATER LINES THAT WILL SERVE THIS PROJECT.
- 8. HDPE PRESSURE PIPE FOR POTABLE WATER SHALL MEET THE REQUIREMENTS OF NSF 61.
- 9. ANY NECESSARY CONNECTIONS FOR TESTING AND FILLING THE INSTALLED WATER MAIN WILL BE REQUIRED AND CONSIDERED INCIDENTAL TO THE WATER MAIN CONSTRUCTION.

JACKSON COUNTY

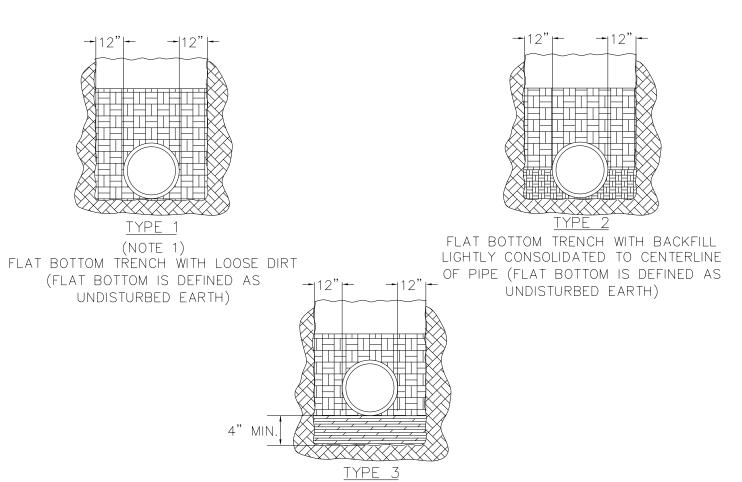
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UTILITY CONSTRUCTION

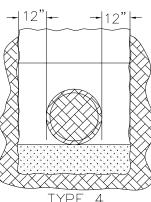
SEWER CONSTRUCTION NOTES:

- 1. CONTRACTOR IS REQUIRED TO PROVIDE TWSA AND ENGINEER A SEWER BY-PASS PLAN PRIOR TO BEGINNING ANY SEWER WORK.
- 2. CONTRACTOR WILL BE REQUIRED TO TELEVISE SANITARY SEWER LINE PRE & POST CONSTRUCTION OF EXISTING 12" TERRACOTTA LINE .
- 3. CONTRACTOR WILL BE REQUIRED TO COMPLETE A SPOT REPAIR AT THE LOCATION OF THE OFFSET JOINT THAT PREVENTS CAMERA TO PASS THROUGH.
- 4. CONTRACTOR SHALL CONFORM TO SPECIAL PROVISIONS.

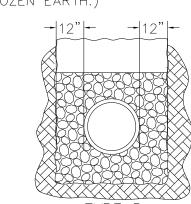




PIPE BEDDED IN 4" MINIMUM LOOSE SOIL WITH BACKFILL LIGHTLY CONSOLIDATED TO TOP OF PIPE (LOOSE SOIL IS DEFINED AS NATIVE SOIL EXCAVATED FROM THE TRENCH, FREE OF ROCK, ORGANIC MATERIAL, FOREIGN MATERIALS AND FROZEN EARTH.)



PIPE BEDDED IN SAND, GRAVEL, OR CRUSHED STONE TO A DEPTH OF 1/8 PIPE DIAMETER, 4" MINIMUM WITH BACKFILL COMPACTED TO TOP OF PIPE. (APPROXIMATELY 80 PERCENT STANDARD PROCTOR, AASHTO T-99)

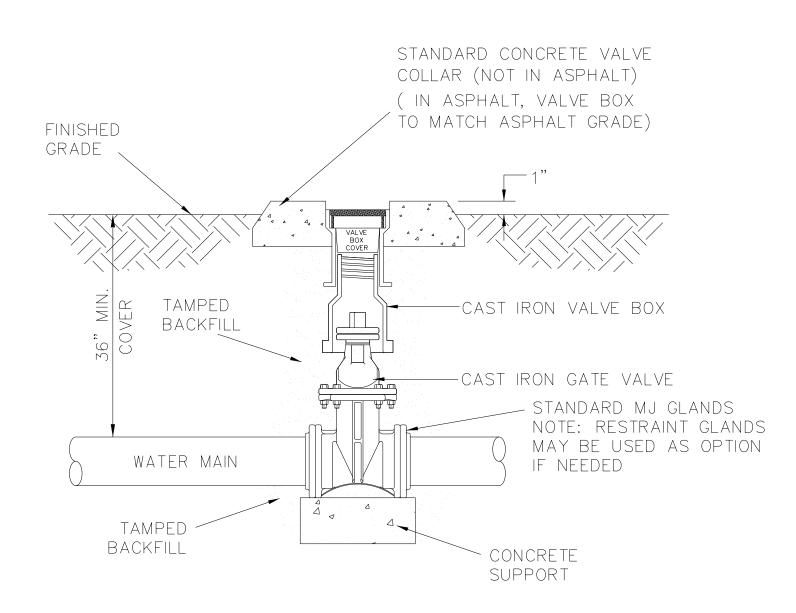


PIPE BEDDED TO IT'S CENTERLINE IN COMPACTED GRANULAR MATERIAL, 4" MINIMUM UNDER PIPE. COMPACTED GRANULAR OR SELECT MATERIAL TO TOP OF PIPE (APPROXIMATELY 90 PERCENT STANDARD PROCTOR, AASTO T-99) (SELECT MATERIAL IS DEFINED AS NATIVE SOIL EXCAVATED FROM THE TRENCH, FREE OF ROCKS, ORGANIC MATERIAL, FOREIGN MATERIALS AND FROZEN EARTH)

- 1. FOR NORMAL PIPE SIZES 14 INCH AND LARGER, CONSIDERATION SHOULD BE GIVEN TO THE USE OF LAYING CONDITIONS OTHER THAN TYPE 1.
- 2. CONSIDERATION OF THE PIPE-ZONE EMBEDMENT CONDITIONS INCLUDED IN THIS FIGURE MAY BE INFLUENCED BY FACTORS OTHER THAN PIPE STRENGTH. FOR ADDITIONAL INFORMATION ON PIPE BEDDING AND BACKFILL, SEE ANSI/AWWA C600.

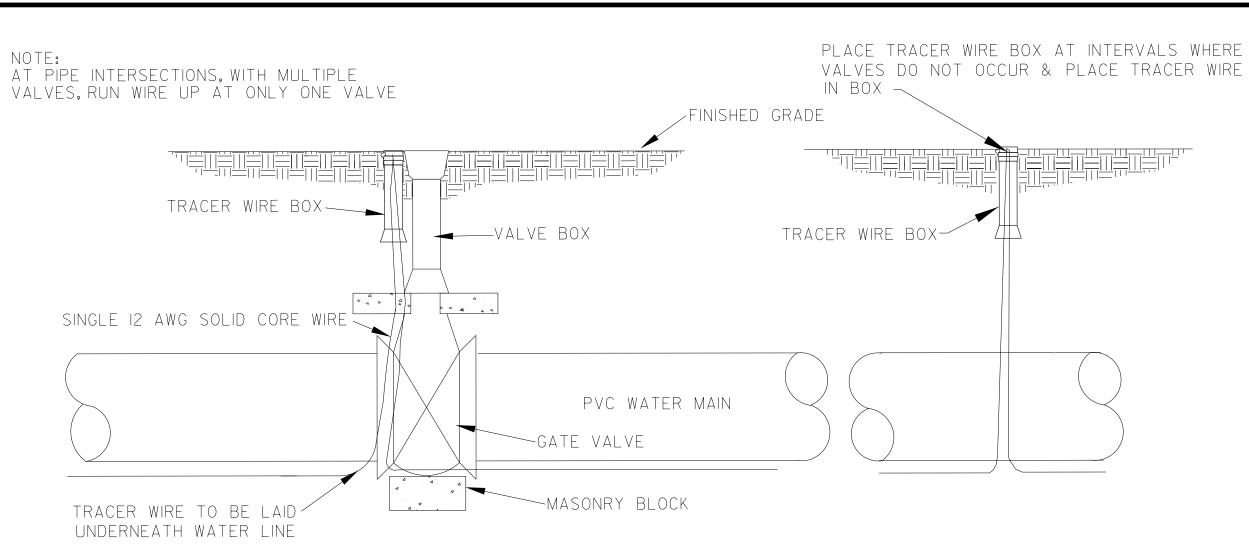
WATER MAIN EMBEDMENT DETAILS

NOT TO SCALE



INLINE VALVE DETAIL

NOT TO SCALE



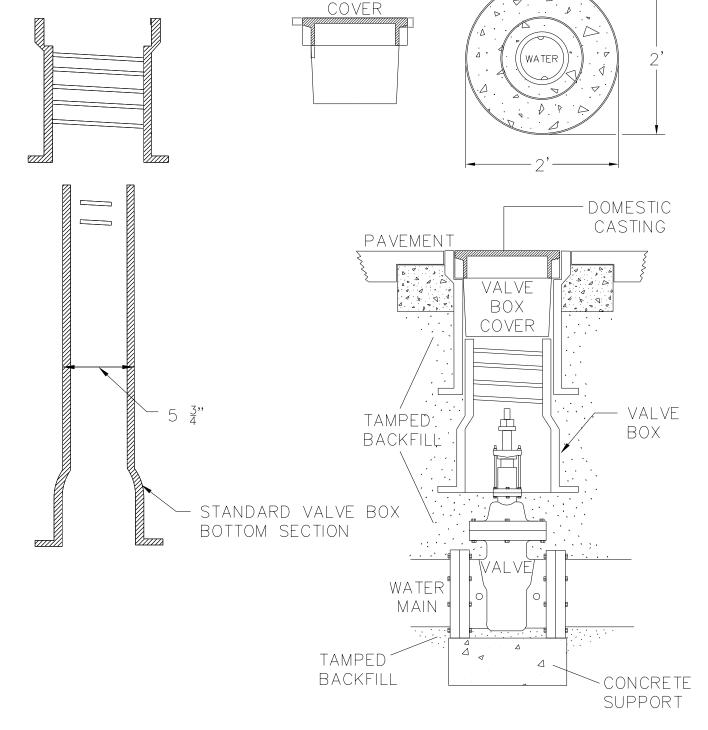
NOTES:

- I. PLACE TRACER WIRE IN TRACER WIRE BOX AS SHOWN.
- 2.NO UNDERGROUND SPLICING WILL BE ALLOWED. DO NOT SPLICE WIRE WHEN BEGINNING A NEW SPOOL, INSTEAD INSTALL A TRACER WIRE BOX AND ATTACH EACH WIRE TO THE BOX.

TYPICAL TRACER WIRE INSTALLATION DETAIL

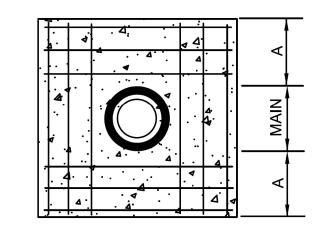
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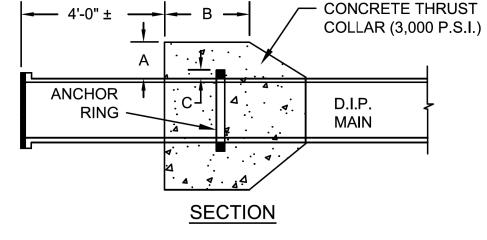


NOTE: VALVE BOX SHALL BE PER OWNER'S SPECIFICATIONS.

VALVE BOX INSTALLATION NOT TO SCALE



REINFORCING



PROJECT REFERENCE NO.

17BP.14.R.212

DESIGNED BY: DRD

APPROVED BY: RMS

NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION

UTILITIES ENGINEERING SEC.

PHONE: (919)707-6690 UTILITY CONSTRUCTION FAX: (919)250-4151 PLANS ONLY

DOCUMENT NOT CONSIDERED FINAL UNTIL ALL SIGNATURES ARE COMPLETED

UTILITY CONSTRUCTION

DRAWN BY:

REVISED:

CHECKED BY:

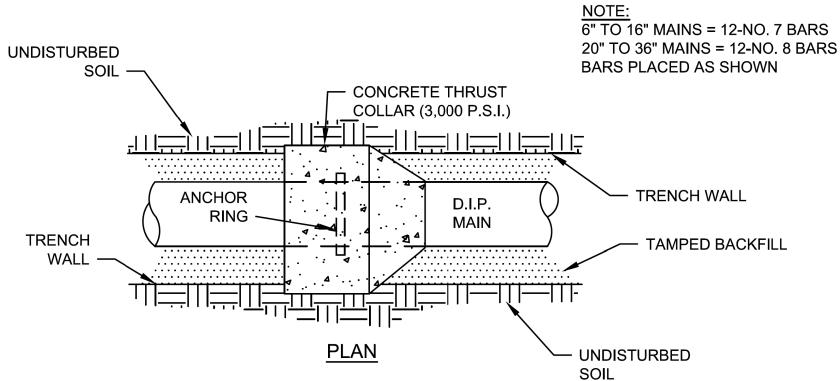
SHEET NO.

UC-3A

26960

Rest MC Notation

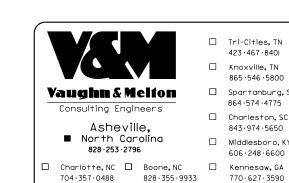
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	SCHEDULE				
PIPE DIAMETER	CONCRETE T	CONCRETE THRUST COLLAR		RINGS REQUIRED	
	Α	В	С		
6",8",12"	1'-0"	1'-0"	2"	ONE	
16"	1'-4"	1'-0"	2"	ONE	
20"	1'-4"	1-0"	3"	ONE	
24"	1'-4"	1'-0"	3"	TWO	
30"	1'-4"	1'-2"	4"	TWO	
36"	1'-4"	1'-4"	4"	TWO	

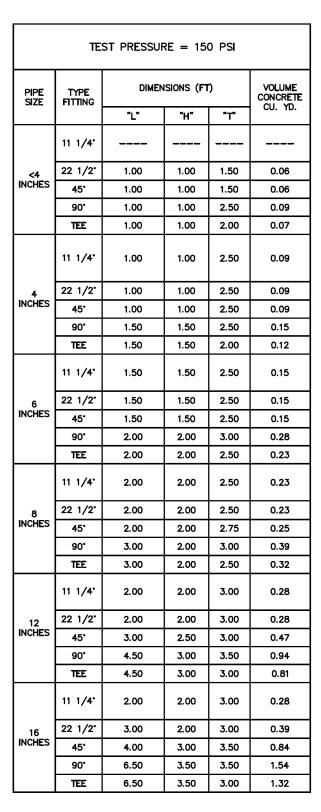
THRUST COLLAR INSTALLATION

NOT TO SCALE



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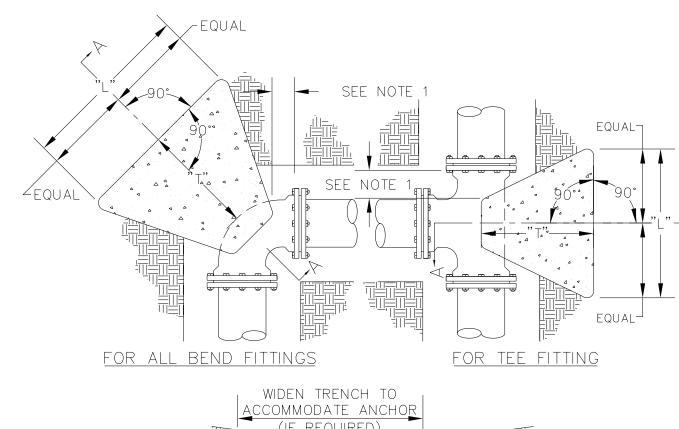
JACKSON COUNTY

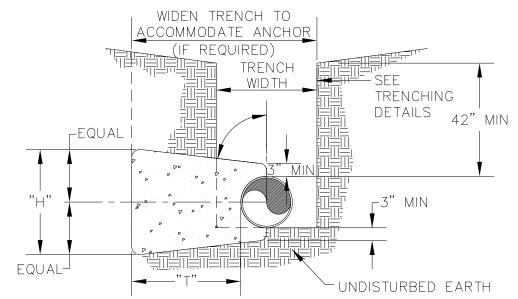


TEST PRESSURE = 200 PSI					
PIPE SIZE	TYPE FITTING	DIMEN	VOLUME CONCRETE		
	11111110	"L"	"H"	"T"	CU. YD.
<4	11 1/4*	1.00	1.00	1.00	0.04
	22 1/2*	1.00	1.00	1.50	0.06
INCHES	45°	1.00	1.00	1.50	0.06
	90.	1.50	1.50	2.50	0.15
	TEE	1.50	1.50	2.00	0.12
	11 1/4*	1.00	1.00	2.50	0.09
4	22 1/2*	1.00	1.00	2.50	0.09
INCHES	45°	1.50	1.50	2.50	0.15
	90.	1.50	1.50	2.50	0.15
	TEE	1.50	1.50	2.00	0.12
	11 1/4*	1.50	1.50	2.50	0.15
6	22 1/2*	1.50	1.50	2.50	0.15
INCHES	45°	1.50	1.50	2.50	0.15
	90.	2.50	2.00	3.00	0.33
	TEE	2.50	2.00	2.50	0.28
	11 1/4	2.00	2.00	2.50	0.23
8	22 1/2*	2.00	2.00	2.50	0.23
INCHES	45°	2.00	2.00	2.75	0.23
	90.	4.00	2.00	3.00	0.50
	TEE	4.00	2.00	2.50	0.42
	11 1/4*	2.00	2.00	3.00	0.28
12	22 1/2*	3.00	2.00	3.00	0.39
INCHES	45°	4.00	2.50	3.00	0.61
	90.	5.50	3.00	3.50	1.13
	TEE	5.50	3.00	3.00	0.97
	11 1/4*	2.00	2.00	3.00	0.28
16	22 1/2*	4.00	2.00	3.00	0.50
INCHES	45°	5.50	3.00	3.50	1.13
	90.	7.50	4.00	3.50	2.01
	TEE	7.50	4.00	3.00	1.72

- 1. IF BLOCKING EXCAVATION IS IN LIGHTLY COMPACTED FILL AREAS, OR IN AREAS WHERE BOULDERS OR STUMPS HAVE BEEN REMOVED, BLOCKING SIZE MUST BE RE-SIZED FOR FLATTOP-THE SPECIFIC LOCATION/CIRCUMSTANCE BY A NC LICENSED PROFESSIONAL ENGINEER.
- 2. BLOCKING SIZES SHOWN IN THESE TABLES ASSUME THE FOLLOWING: a. BLOCKING IS CONSTRUCTED IN RESIDUAL SOILS AS SHOWN IN DETAIL
- b. SOIL BEARING PRESSURE = 2000 PSF
- c. VELOCITY OF FLOW = 15 FPS
- 3. THIS DETAIL NOT APPLICABLE TO REDUCING BENDS.
- 4. NEITHER THE WEIGHT OF THE CONCRETE BLOCKING NOR FRICTION BETWEEN CONCRETE BLOCKING AND SOIL WAS ADDED INTO BLOCKING SIZES COMPUTATION. THEREFORE, BLOCKING SIZE IS CONSERVATIVE.

THRUST BLOCKING TABLE NOT TO SCALE



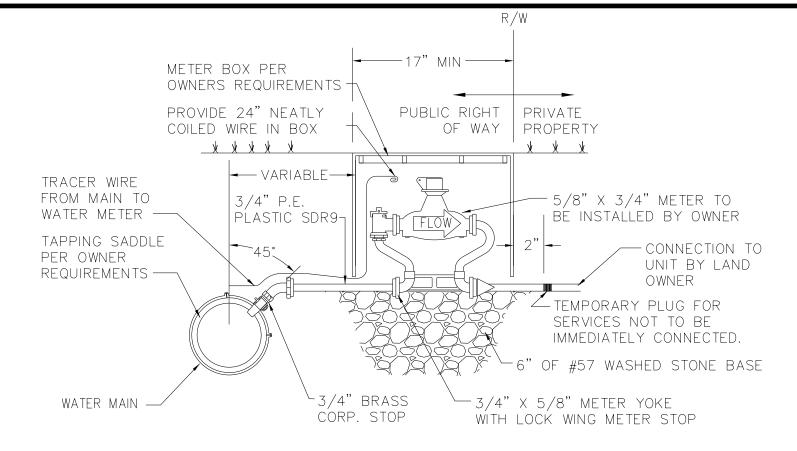


1. CONCRETE BLOCKING IS TO BE FORMED TO ENSURE ACCESSIBILITY TO FITTINGS AND POURED AGAINST

SECTION A-A

- UNDISTURBED EARTH. 2. ALL FITTINGS SHALL BE WRAPPED IN POLYETHYLENE TO PREVENT CONCRETE FROM CONTACTING FITTINGS, BOLTS OR ENDS OF MECHANICAL JOINT BENDS.
- 3. CONCRETE TO BE MINIMUM 3,000 PSI @ 28 DAYS. 4. WHEN SACKRETE IS TO BE USED, IT SHALL BE PROPERLY MIXED PER MANUFACTURER SPECIFICATIONS. 5. FOR REQUIRED DIMENSIONS, SEE THRUST BLOCKING TABLE.

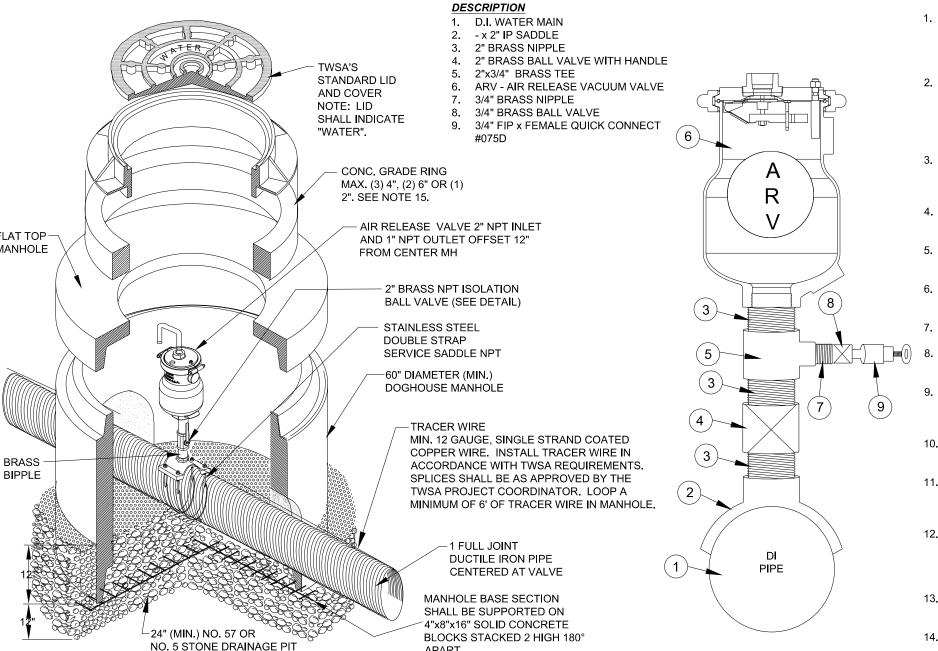
THRUST BLOCKING NOT TO SCALE



NOTE: METER BOX TO BE SUPPORTED ON BRICK OR BLOCK

3/4" TO 1" SERVICE **CONNECTION AND METER**

NOT TO SCALE



PRECAST CONCRETE

PROTECTION RING

AS SHOWN

ON PLANS

8" WATER LINE—

NOTE:

6" HYDRANT TEE

2. MECHANICAL JOINTS WITH MEGALUGS OR APPROVED EQUAL.

I. TIE HYDRANT TO MAIN LINE

WITH TIE RODS AND BLOCKING.

EDGE

ROAD

- 1. AIR RELEASE VALVES SHALL BE OF THE SINGLE HOUSING STYLE THAT HAS THE OPERATING FEATURES OF AN AIR RELEASE VALVE.
- 2. THE AIR RELEASE VALVE SHALL HAVE 2" NPT INLET AND 1" NPT OUTLET CONNECTIONS AND A 3/16 INCH DIAMETER ORIFICE (OR ORIFICE SHALL BE DETERMINED BY THE ENGINEER) FOR A MAXIMUM 200PSI WORKING
- 3. ALL MATERIALS SHALL MEET THE STANDARDS AND SPECIFICATIONS OF THE TUCKASEIGEE WATER & SEWER
- 4. MANHOLE, FRAME, AND COVER SHALL BE IN ACCORDANCE WITH TWSA STANDARD DETAILS.
- 5. 2" TAPPING SADDLE SHALL BE DUCTILE IRON WITH
- STAINLESS STEEL STRAPS, BOLTS, NUTS, AND WASHERS.
- 6. SADDLES FOR PIPE SIZES 8" THRU 24" SHALL BE DOUBLE
- 7. ALL INTERNAL PARTS SHALL BE 316 STAINLESS STEEL.
- 8. THE AIR RELEASE VALVE SHALL HAVE A SINGLE FLOAT DESIGN.
- 9. ALL AIR RELEASE VALVES SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS.

MODEL UX20, ARI D-020, OR APPROVED EQUAL.

- 10. ALL COMBINATION AIR RELEASE VALVES SHALL BE CRISPIN
- 11. AIR RELEASE VALVE SHALL BE CENTERED IN MANHOLE. OFFSET THE RING AND COVER TO ALLOW
- 12. TOP OF FORCE MAIN SHALL BE A MINIMUM 4' DEEP AT AIR RELEASE VALVE, UNLESS OTHERWISE REQUIRED DUE TO FORCE MAIN AND/OR AIR RELEASE VALVE
- 13. AIR RELEASE VALVE BODIES SHALL BE MADE OF STAINLESS STEEL OR REINFORCED NYLON
- 14. THE MANHOLE SHALL BE CAST WITH AN ANTI-MICROBIAL

ADDITIVE (CON-SHIELD OR APPROVED EQUAL.)

15. CONCRETE GRADE RINGS SHALL NOT BE USED FOR ABOVE GRADE ADJUSTMENTS (IE: OUTFALL AREAS). USE OF GRADE RINGS ARE ALLOWABLE IN YARD AREAS AND PAVEMENT, WHERE THE RING AND COVER ARE AT GROUND LEVEL.

ASPHALT 2" MIN. OR MATCH EXISTING -S9.5 SURFACE COURSE MIN. 8" COMPACTED ABC AGGREGATE BASE COMPACTED BACKFILL | VARIES -PIPE WIDTH+

TAPPING SLEEVE

MAXIMUM PAYMENT WIDTH

SAW CUT EXISTING

- 1. THE PAVEMENT SHALL BE DEFINED BY A STRAIGHT EDGE, PREFERABLY A MACHINED SAW CUT.
- 2. THE TRENCH SUBGRADE MATERIAL SHALL BE BACKFILLED WITH DRY SOIL OR ABC STONE TO THE BOTTOM OF THE PROPOSED SUBGRADE. THE BACKFILL SHALL BE PLACED AND COMPACTED IN ACCORDANCE WITH THE PROJECT
- 3. WITHIN ROADS MAINTAINED BY NCDOT, THE TRENCH SHALL BE BACKFILLED AND
- COMPACTED IN ACCORDANCE WITH NCDOT STANDARDS. 4. THE ENTIRE THICKNESS/VERTICAL EDGE OF THE CUT SHALL BE TACKED.
- . THE SAME DEPTH OF PAVEMENT MATERIAL WHICH EXISTS SHALL BE
- REINSTALLED, BUT IN NO CASE SHALL THE ASPHALT BE LESS THAN 2" THICK
- 6. THE ASPHALT PAVEMENT MATERIAL SHALL BE INSTALLED AND COMPACTED THOROUGHLY TO ACHIEVE A SMOOTH LEVEL PATCH.

NOT TO SCALE

STANDARD PAVEMENT CUT AND PATCH DETAILS



☐ Charleston, SC 843 • 974 • 5650 ■ North Carolina 828 - 253 - 2796 Charlotte, NC 🔲 Boone, NC 🔲 Kennesaw. GA

423 • 467 • 8401

865 • 546 • 5800

☐ Knoxville, TN

□ Spartanburg,

864 - 574 - 4775

SHEET NO.

UC-3B

SEAL

Kara MC Strutor

26960

PROJECT REFERENCE NO.

17BP.14.R.212

DESIGNED BY: DRD

APPROVED BY: RMS

NORTH CAROLINA

DEPARTMENT OF

TRANSPORTATION

TOP VIEW

FLANGE -

SIDE VIEW

CONCRETE SHALL NOT CONTACT GLANDS, BOLTS OR ENDS OF MECHANICAL

SEE STANDARD THRUST BLOCK TABLE FOR AREA OF CONCRETE REQUIRED.

BOLTS, OR ENDS OF MECHANICAL JOINT FITTINGS. TAPPING SLEEVE AND

BOTTOM OF VALVE SHALL BE WRAPPED IN POLYETHYLENE.

TAPPING SLEEVE SHALL BE TESTED IN ACCORDANCE WITH OWNER

4. TAPS ON EXISTING PIPE SHALL REQUIRE LONG SS TAPPING SLEEVES.

4" AND LARGER TAPPING SLEEVE

AND VALVE ASSEMBLY

NOT TO SCALE

UTILITIES ENGINEERING SEC.

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UNTIL ALL SIGNATURES ARE COMPLETED

UTILITY CONSTRUCTION

- TAPPING VALVE

∠M.J. GLAND

-CONCRETE SUPPORT

DRAWN BY:

REVISED:

CHECKED BY:

JACKSON COUNTY

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TYPICAL FIRE HYDRANT INSTALLATION DETAIL

NOT TO SCALE

4-3/4" 304 STAINLESS STEEL

TIE RODS WITH BRACKETS

- MASONRY BLOCK

AIR RELEASE VALVE

MANHOLE

NOT TO SCALE

STEAMER

CONNECTION

2 1/2" HOSE

CONNECTION -

BACKFILL -

STONE -

CONC.

BLOCKING

(SEE THRUST BLOCKING

TABLE THIS SHEET)

-WEEP HOLE TO

REMAIN OPEN

(7 C.F. MIN.)

UTILITY CONSTRUCTION

INSTALL CAST IRON BOX OVER -CLEANOUT WITH "CO" ON LID -10' FROM EDGE OF PAVEMENT OR TO PLUG LINE 4" BELOW GRADE — R/W. WHICHEVER IS CLOSER ONE PIECE DWV SANITARY SEWER —— SERVICE COMBINATION WYE-TEE ADAPTER COULPING GRAVITY BEND SEWER LINE STUB OUT 1' PAST SEWER TEE AND INSTALL TEST CAP — SCH 40 PVC DMV SEWER SERVICE PIPE AT 1% MIN. - INLINE WYE INSTALL IN ACCORDANCE

NOTE:

1. REFER TO SPECIFICATIONS FOR BEDDING, BACKFILLING AND COMPACTION REQUIREMENTS.

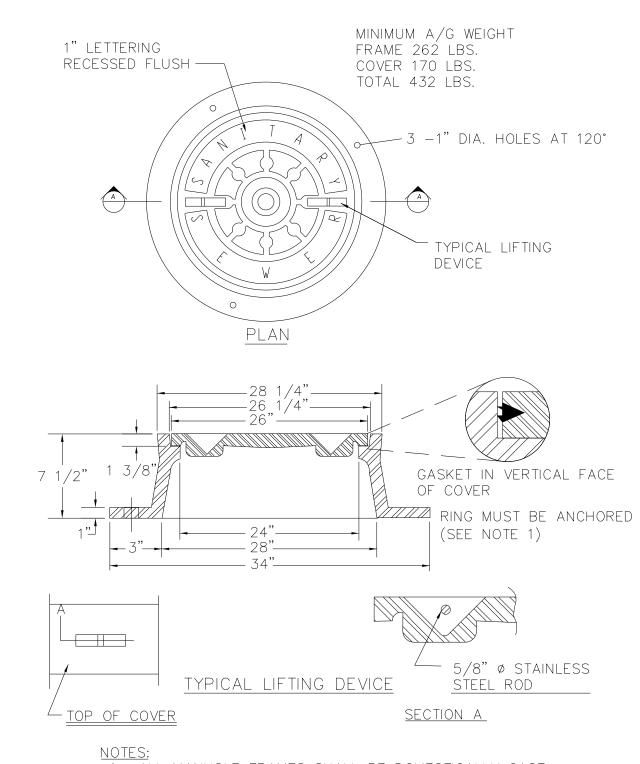
WITH MANUF. RECOMMENDATION. MIN.

4" #57 STONE BEDDING UNDER WYE

SEE NOTE -

TYPICAL SANITARY SEWER LATERAL CONNECTION

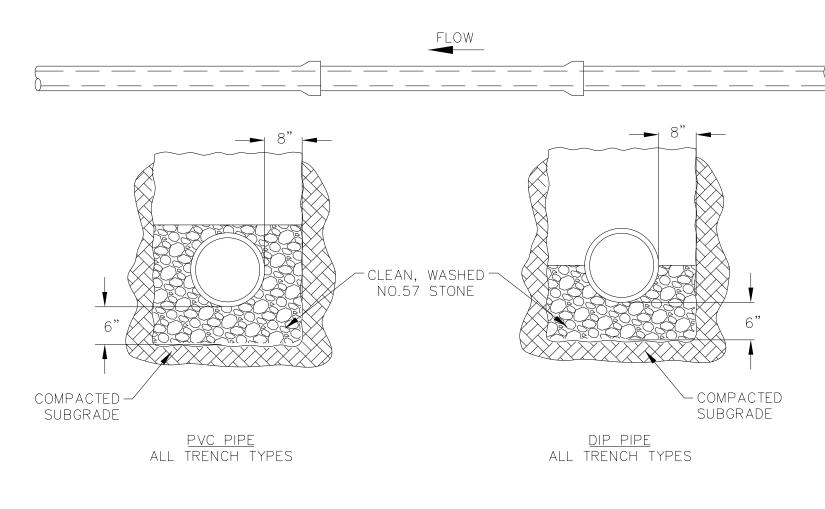
NOT TO SCALE



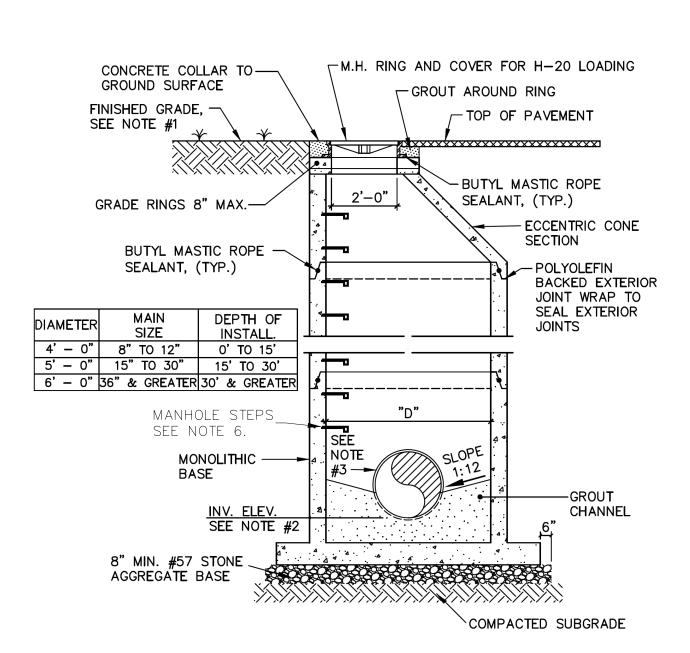
- 1. ALL MANHOLE FRAMES SHALL BE DOMESTICALLY CAST. 2. FRAME SHALL BE A MINIMUM WEIGHT OF 182 LBS.
- 3. COVER SHALL WEIGH A MIN. OF 120 LBS.
- 4. MANHOLES WITHIN PAVED SURFACES SHALL BE
- CONSTRUCTED IN ACCORDANCE WITH DETAIL. 5. CONSEAL SHALL BE USED BETWEEN RING AND CONE.

MANHOLE FRAME AND WATERTIGHT COVER

NOT TO SCALE



GRAVITY SEWER EMBEDMENT DETAIL NOT TO SCALE



- 1. THE DISTANCE FROM THE TOP OF M.H. RING AND COVER MAY VARY WIDELY. SEE
- GRADING PLAN, AND/OR MANHOLE SCHEDULE. 2. INVERT ELEV. SHOWN ON THE PLANS OR MANHOLE SCHEDULE ARE AT THE INLET AND OUTLET OF MANHOLE UNLESS OTHERWISE NOTED.
- 3. CARRIER PIPE TO MANHOLE CONNECTIONS SHALL BE RUBBER SLEEVE WITH DUAL
- 4. ALL MANHOLES ARE TO BE EXTENDED BASE. 5. ALL INTERIOR JOINTS AND LIFTING POINTS SHALL BE SEALED WITH GROUT.
- 6. MANHOLE STEPS SHALL BE M.A. IND. PS-1-PF REINFORCED PLASTIC STEPS OR APPROVED EQUAL.

STANDARD PRECAST SANITARY SEWER MANHOLE (ECCENTRIC)

Asheville, ■ North Carolina

□ Spartanburg,S 864 - 574 - 4775 ☐ Charleston, SC 843 • 974 • 5650 828 - 253 - 2796

423 • 467 • 8401 ☐ Knoxville, TN

865 • 546 • 5800

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NOT TO SCALE

