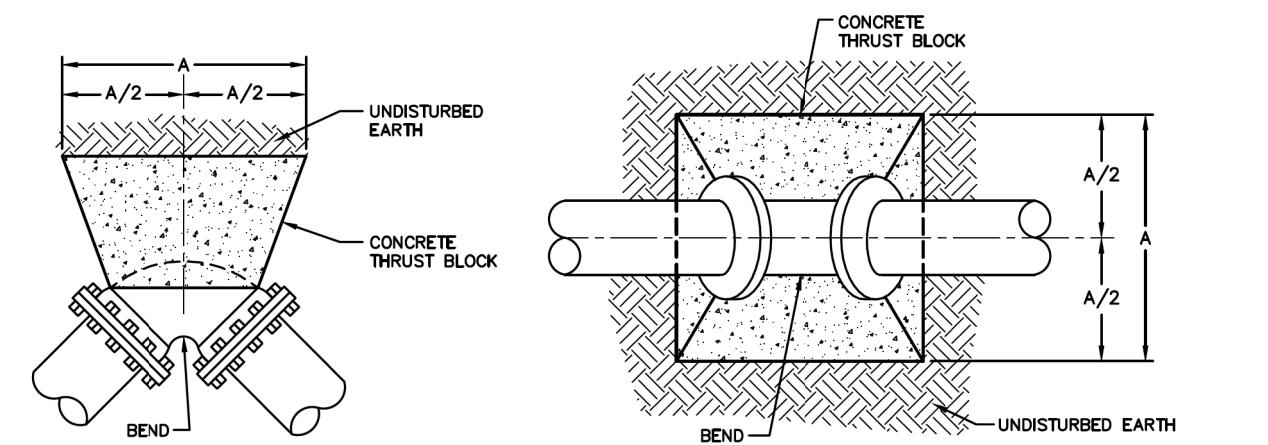


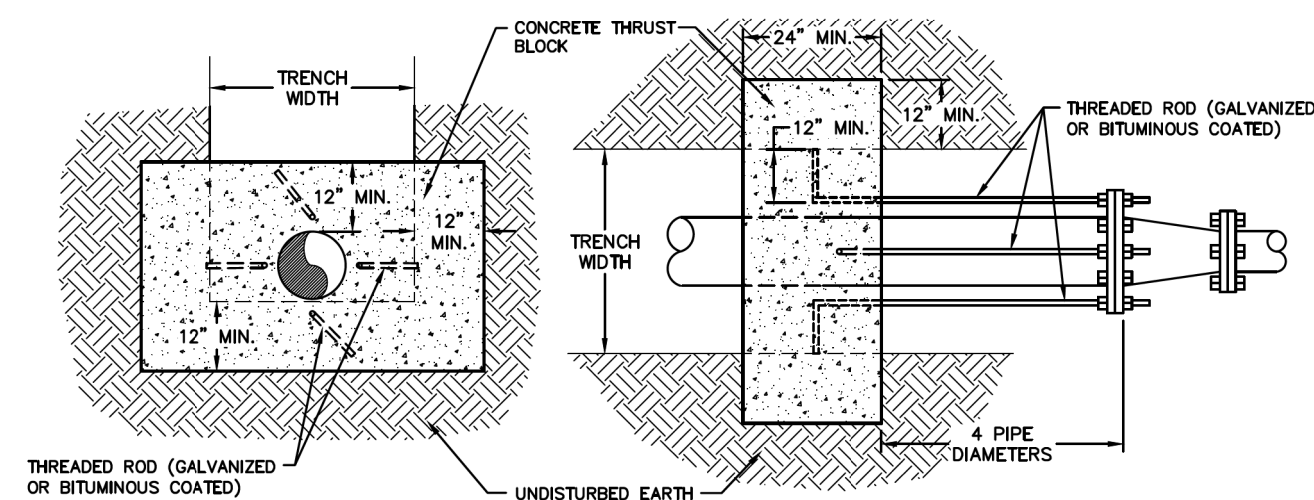
# PROJECT TYPICAL DETAILS CLEVELAND COUNTY WATER

## UTILITY CONSTRUCTION

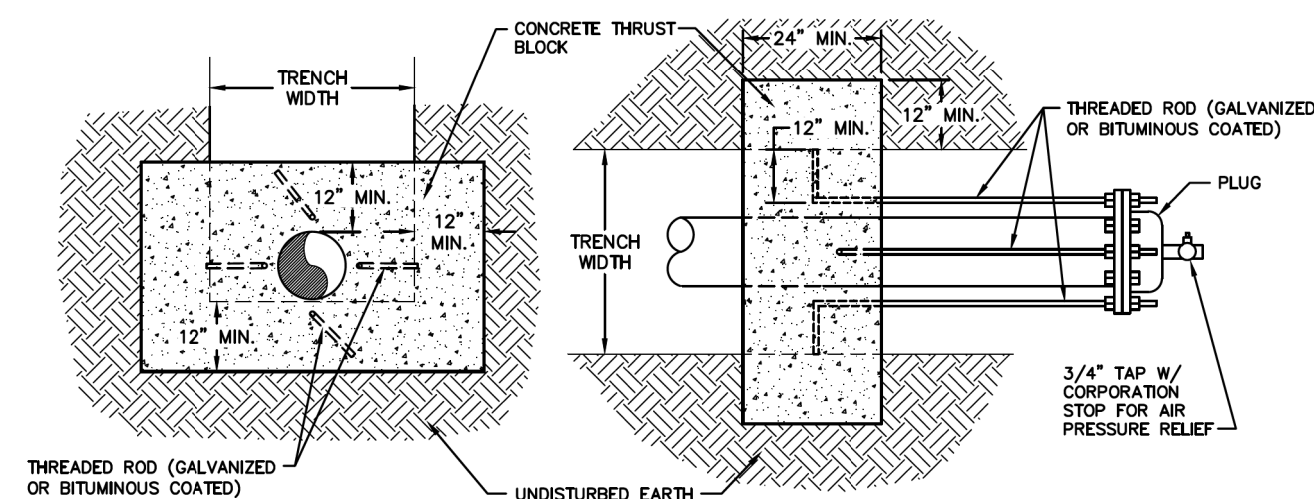
PROJECT REFERENCE NO.	R-2707C	SHEET NO.	UC-3A
DESIGNED BY:	VW		
DRAWN BY:	VW		
CHECKED BY:	MJW		
APPROVED BY:	MJW		
REVISED:	1/30/17		
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION		UTILITY CONSTRUCTION PLANS ONLY	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151			



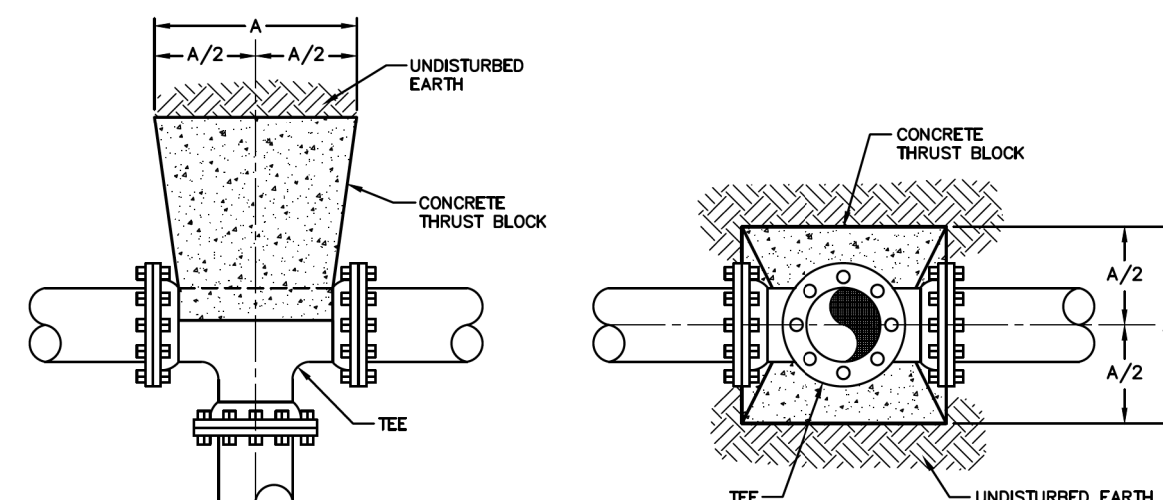
TYPICAL THRUST BLOCKS FOR BENDS



TYPICAL THRUST BLOCK FOR REDUCERS



TYPICAL THRUST BLOCK FOR PLUGS



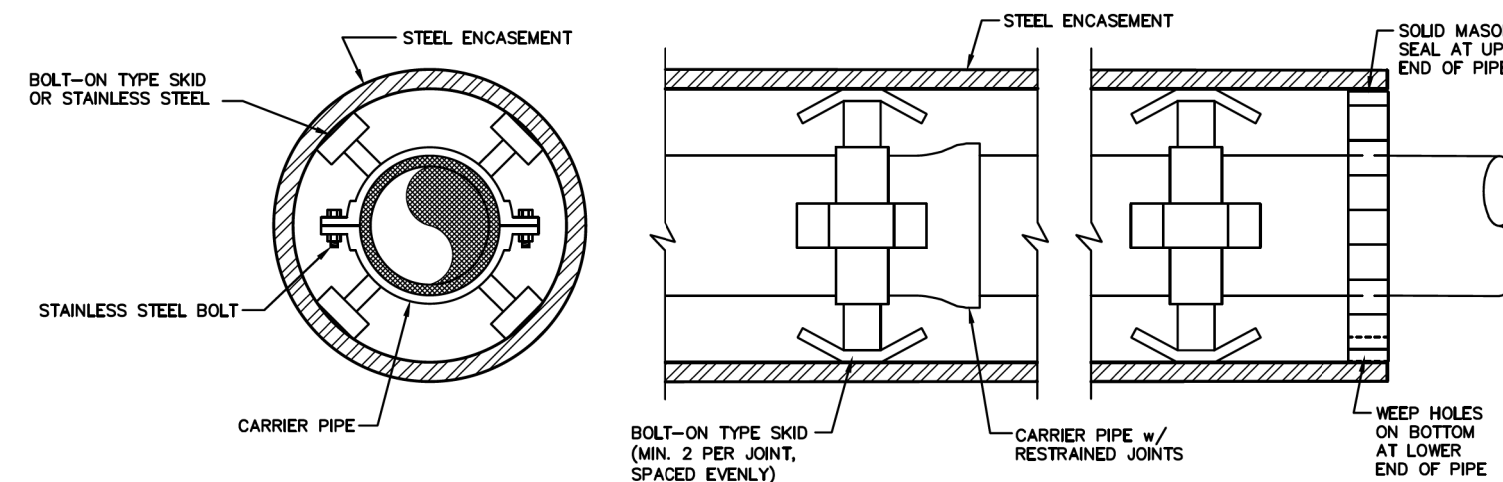
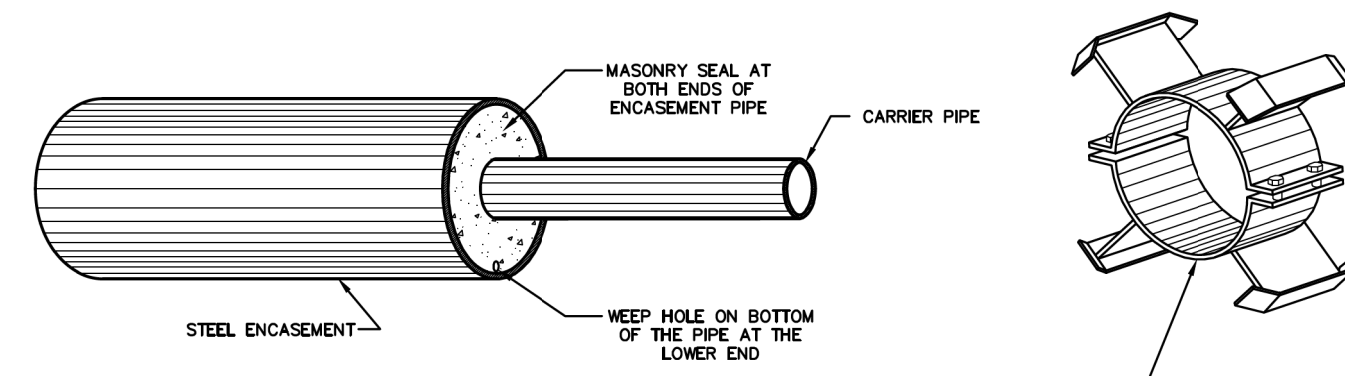
TYPICAL THRUST BLOCKS FOR TEES

- 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	12	16	16	14
8	12	12	18	22	22	18
10	12	14	20	26	26	22
12	12	18	24	32	32	28
14	14	20	28	38	38	32
16	16	24	32	42	42	36
18	18	26	36	48	48	40
20	20	28	40	52	52	44
24	24	34	48	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"

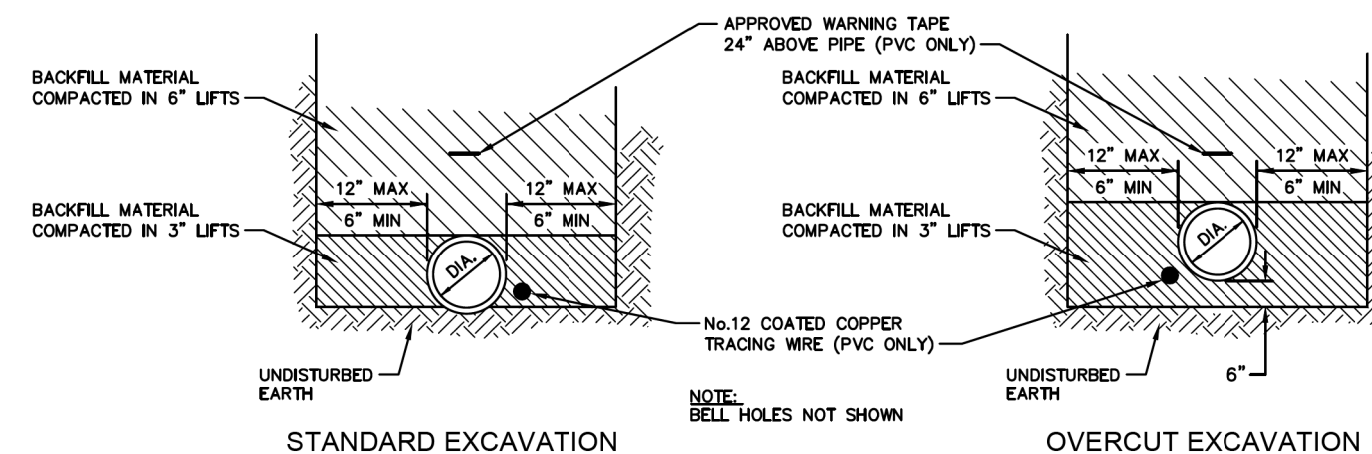
THRUST BLOCKING - ALL  
MODIFIED FOR THIS PROJECT



NOTE: FOR PRESSURE CARRIER PIPES, IF SUITABLE UNDISTURBED EARTH IS NOT AVAILABLE FOR THRUST BLOCKS DUE TO EXCAVATION, CONTRACTOR SHALL ATTACH THREADED RODS AS SPECIFIED IN THRUST BLOCK DETAILS TO THE ENCASEMENT AND ROD FITTINGS DIRECTLY TO THE ENCASEMENT PIPE. ATTACHMENT OF THE RODS SHALL BE BY WELDING DIRECTLY TO THE ENCASEMENT PIPE OR BY WELDING EYE BOLTS TO THE ENCASEMENT FOR ATTACHMENT OF THREADED RODS WITH NUTS. MINIMUM OF THREE RODS REQUIRED PER FITTING.

ENCASEMENT DETAIL - STANDARD

MODIFIED FOR THIS PROJECT



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.

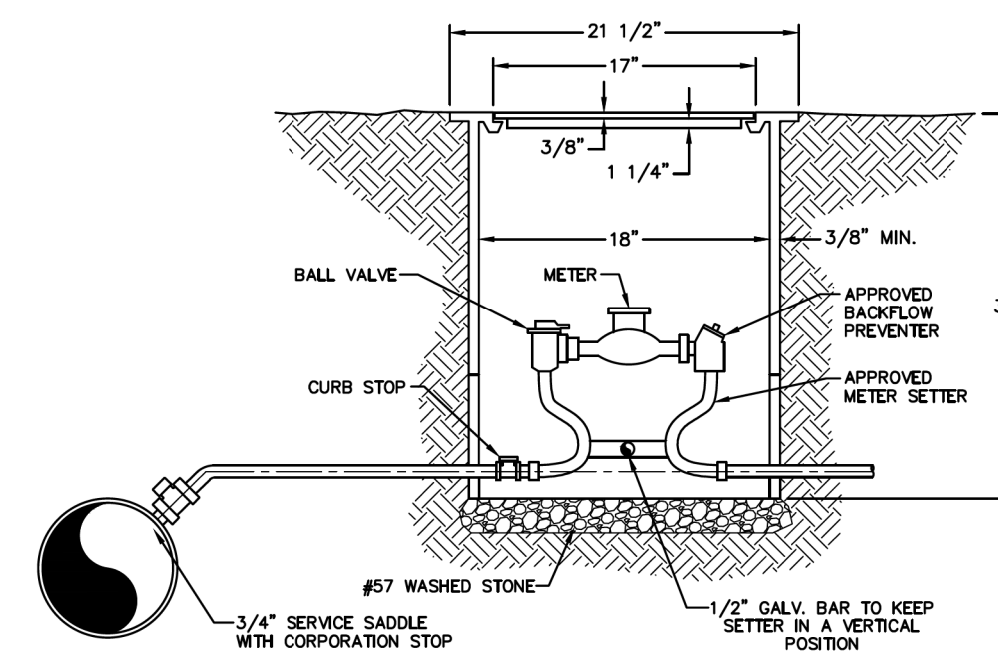
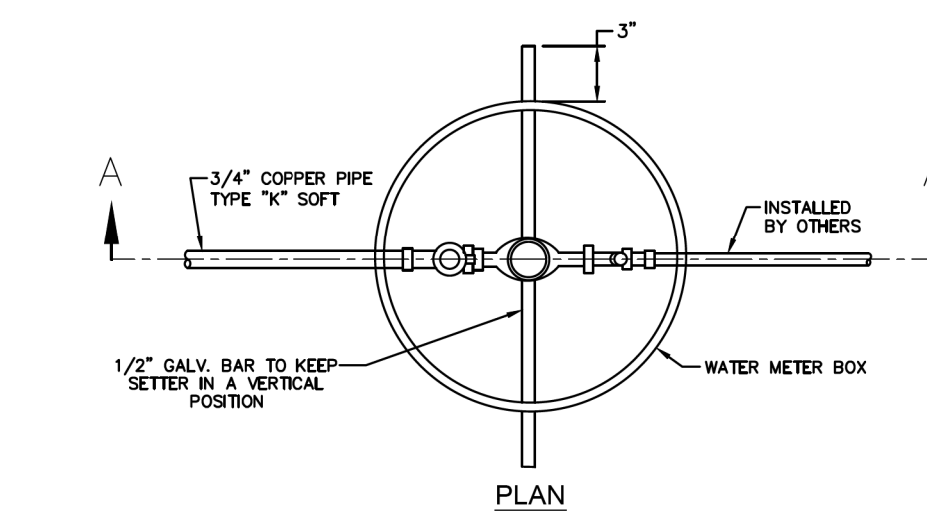
WATER LINE TRENCHING

MODIFIED FOR THIS PROJECT

### GENERAL WATER NOTES

MODIFIED FOR THIS PROJECT

- ALL CONSTRUCTION SHALL TAKE PLACE WITHIN THE NCDOT RIGHT-OF-WAYS SHOWN.
- CONTRACTOR SHALL REPAIR ALL DISTURBED AREAS TO EQUAL OR BETTER CONDITION THAN THE ORIGINAL SITE, OR AS NOTED.
- LOCATIONS OF EXISTING UTILITIES AS SHOWN ARE APPROXIMATE ONLY. EXACT LOCATIONS ARE TO BE VERIFIED IN THE FIELD BY THE CONTRACTOR AT LEAST THREE DAYS PRIOR TO CONSTRUCTION. CONTRACTOR MUST NOTIFY EXISTING UTILITY OWNERS, CALL 811 BEFORE YOU DIG.
- ALL WORK NEAR AND AROUND WATERWAYS MUST CONFORM TO THE RULES OF THE STATE OF NORTH CAROLINA.
- CONTRACTOR MUST PROVIDE EROSION CONTROL DEVICES TO CONTROL RUNOFF FROM THE CONSTRUCTION SITE. CONTRACTOR WILL BE RESPONSIBLE FOR ANY FINES THAT MAY BE LEVIED DUE TO POLLUTION CREATED DURING CONSTRUCTION.
- CONTRACTOR SHALL FOLLOW ALL FEDERAL, STATE AND LOCAL HEALTH AND SAFETY REGULATIONS PERTAINING TO CONSTRUCTION OPERATIONS.
- WATER LINES SHALL HAVE 3'-0" MINIMUM COVER UNLESS OTHERWISE SHOWN ON THE DRAWINGS.
- WATER AND SEWER LINES SHALL HAVE A MINIMUM 10' HORIZONTAL SEPARATION OR A MINIMUM 18" VERTICAL SEPARATION WITH THE WATER OVER SEWER, OR BOTH WATER AND SEWER LINES SHALL BE DUCTILE IRON PIPE 10' EITHER SIDE OF THE CROSSING.
- WATER AND STORM SEWER LINES SHALL HAVE A MINIMUM 18" SEPARATION EXCEPT UNDER NCDOT STORM DRAINS WHICH SHALL HAVE 24" VERTICAL SEPARATION. IF SEPARATION IS NOT OBTAINABLE, DUCTILE IRON PIPE SHALL BE USED FOR THE WATER LINE OR A SUPPORTING MATERIAL SUCH AS FLOWABLE FILL SHALL BE INSTALLED BETWEEN THE PIPES.
- SEE PROJECT SPECIFICATIONS FOR ADDITIONAL INFORMATION.
- LEGAL DESCRIPTIONS FOR PROPOSED EASEMENTS BY OTHERS.
- CONTRACTOR SHALL NOTIFY THE PROPER LOCAL AUTHORITIES 24 HOURS PRIOR TO ANY ROAD BEING CLOSED FOR CONSTRUCTION, INCLUDING BUT NOT LIMITED TO LOCAL NEWSPAPER, RADIO STATION, FIRE DEPARTMENT, COUNTY SHERIFF'S DEPARTMENT, AMBULANCE, AND COUNTY EMERGENCY AGENCY. ALL TRAFFIC CONTROL SHALL CONFORM TO THE REQUIREMENTS OF THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION.
- CONTRACTOR SHALL NOTIFY THE ENGINEER AFTER EXISTING BURIED UTILITIES HAVE BEEN LOCATED AND 24 HOURS PRIOR TO CONSTRUCTION.
- ALL FENCE DAMAGED DURING CONSTRUCTION SHALL BE REPLACED WITH LIKE MATERIALS IN A WORKMANLIKE MANNER AND IN ACCORDANCE WITH STANDARD FENCE CONSTRUCTION PRACTICES AT THE CONTRACTOR'S EXPENSE.
- CONTRACTOR SHALL FIELD LOCATE ALL BURIED TELEPHONE LINE IN CONFLICT WITH THE PROPOSED WATER LINE. WHERE NECESSARY, EXISTING BURIED TELEPHONE LINE SHALL BE TEMPORARILY MOVED DURING CONSTRUCTION OF THE PROPOSED WATER LINE AND RE-LAID AT NO ADDITIONAL COST TO THE OWNER.
- CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO EXISTING ROADS DURING CONSTRUCTION AND SHALL REPAIR ROADS PER REQUIREMENTS OF THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION. NO OPEN CUTS OF EXISTING ROADS SHALL BE ALLOWED EXCEPT WHERE INDICATED ON THE DRAWINGS OR WHERE SPECIFIC PERMISSION IS GRANTED BY THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION. SAND OR A SIMILAR MATERIAL APPROVED BY THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION SHALL BE PLACED ON THE ROAD TO AID IN THE CLEAN UP AFTER CONSTRUCTION. A MINIMUM OF 2" OF SAND SHALL BE PLACED ON THE ROAD PRIOR TO STOCKPILING SPOIL MATERIAL ON THE ROAD SURFACE TO FACILITATE CLEANUP.



WATER METER BOX DETAIL

MODIFIED FOR THIS PROJECT