

PART 1 - GENERAL

1.01 Intent of Document

The information included in this section is intended to identify the **SPECIFIC ITEMS** required by Oklahoma State University in the design and construction of facilities on the campus. Items of "normal, code, industry or standard construction practice" are not included in this section.

PART 2 - MATERIALS

2.01 Pipe

Piping materials, including pipe, fittings, valves, and other accessories shall be as described in individual sections of these standards.

2.02 Trace Wire/Warning Tape

- A. Trace Wire - Wire shall be #12 type UF or USE solid copper. Insulation color shall match Oklahoma One-Call (OKIE) color coding schedule for the particular utility.
- B. Splice Kits - Splice connections shall be made using prepackaged gel-filled insulator tubes - 3M Direct Bury Splice Kit, DBR-6, or OSU approved equal.
- C. Warning Tape - Warning tape shall be plastic, manufactured for this specific use. Tape shall call out the specific utility being marked. Tape color shall match OKIE color coding schedule for the particular utility.

PART 3 - INSTALLATION AND ACCEPTANCE

3.01 Pipe

Piping installation, including pipe, fittings, valves, and other accessories shall be as described in individual sections of these standards.

3.02 Trace Wire/Warning Tape

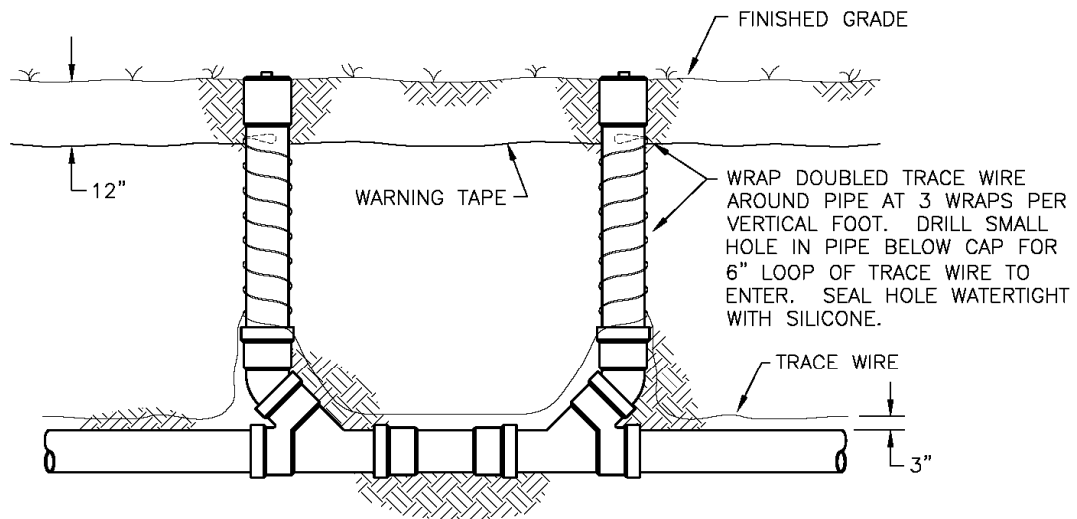
- A. Trace Wire - Wire shall be installed directly above all new utilities with 3" of specified backfill between the wire and the pipe. The wire is not to come in contact with the pipe. Continuous runs of trace wire without splices are preferred. If the wire needs to tie into existing trace wire, or if lengths of trace wire need to be extended or repaired, use appropriate splice kits. Install in accordance with manufacturer's instructions. If any existing trace wire is cut or damaged during construction, it must be spliced back together using a splice kit. The trace wire is to end in a suitable aboveground location where locating equipment can be easily connected. See applicable OSU Building Design Standards. Trace wire shall be tested for continuity before backfilling and retested for continuity after backfilling.
- B. Warning Tape - Underground warning tape shall be installed directly above the utility approximately 12" below final finished grade. Tape shall be labeled "Caution XXX Buried Directly Below," or similar wording, where "XXX" refers to the specific utility.

- C. Documentation - As-built drawings are required with dimensions shown to locate all utilities installed by the Contractor. As-built drawings shall be provided to the Owner prior to final payment. Take measurements to the centerlines of all pipes, fittings, bends, valves, and other appurtenances. Indicate or show depth of buried utilities from final grade to top of pipe. All crossed existing utilities that are exposed during construction shall be measured and labeled on as-built drawings. The color red shall be used to indicate as-built/as-is information on the drawings.
- D. Call OKIE - The Contractor must call the OKIE notification center at least 48 hours before any excavation to request field locations of utilities. The request must clearly describe the area of excavation by using physical landmarks such as buildings and streets. The phone number for OKIE is 1-800-522-6543.

3.03 Piping Abandonment

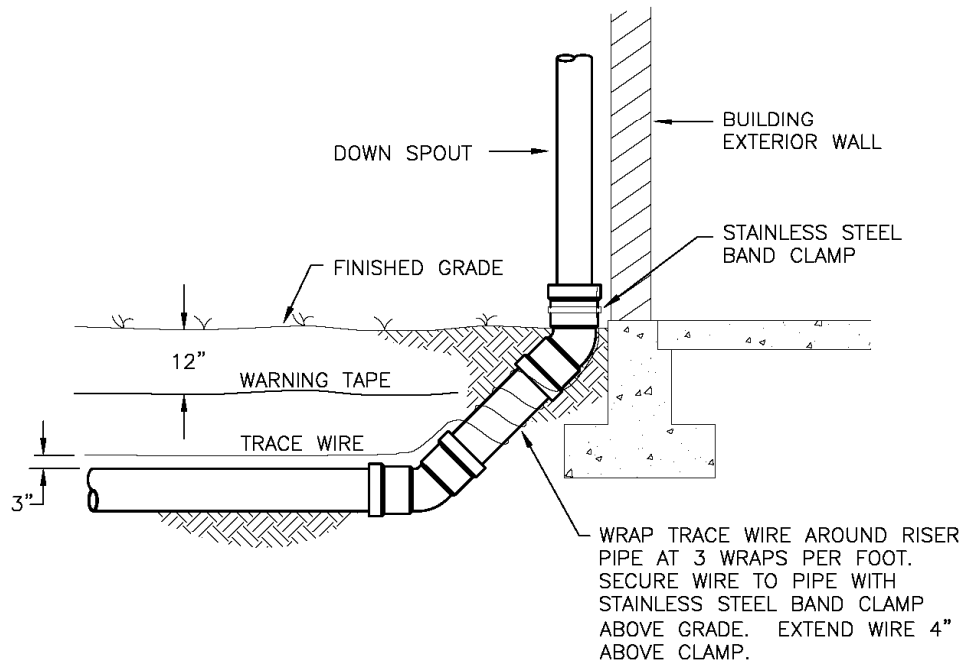
- A. Under and Within 5 ft. of Proposed Building Slab Footprint
 - 1. If any part of pipe is within 3 ft. of existing, native grade, pipe shall be removed regardless of size.
 - 2. Pipes of 6" diameter or greater, below depth identified in Item 1., shall be either removed, or filled with flowable fill and ends capped.
 - 3. Pipes of less than 6" diameter, below depth identified in Item 1., shall be removed, or filled with flowable fill and ends capped, or simply capped on both ends.
- B. All Other Areas
 - 1. If any part of pipe is within 18 in. of existing grade, pipe shall be removed regardless of size.
 - 2. Pipes of 6" diameter or greater, below depth identified in Item 1., shall be either removed, or filled with flowable fill and ends capped.
 - 3. Pipes of less than 6" diameter, below depth identified in Item 1., shall be removed, or filled with flowable fill and ends capped, or simply capped on both ends.





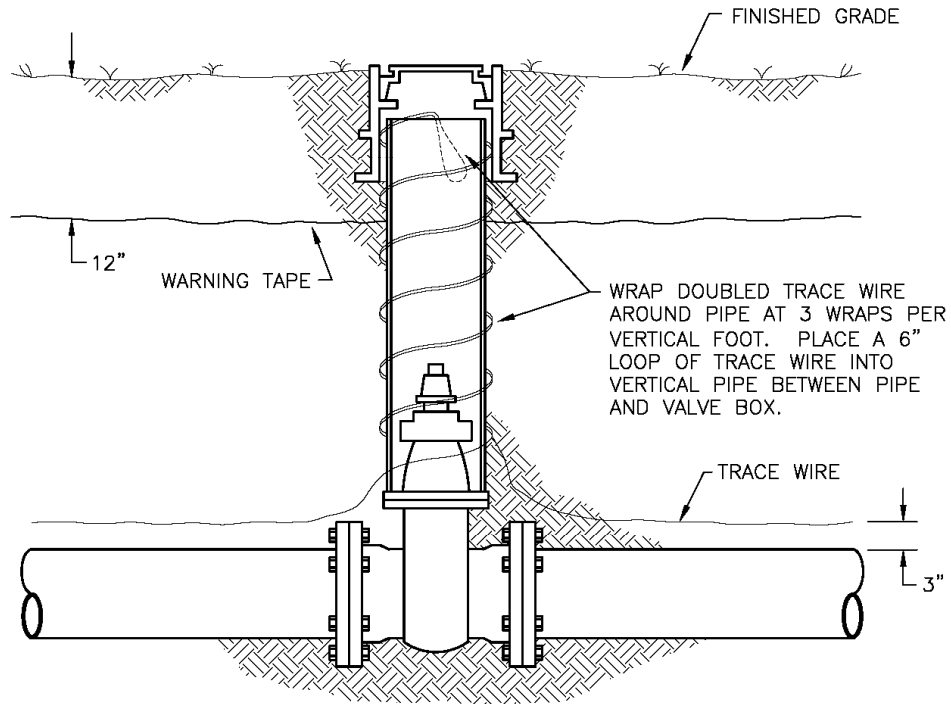
PROVIDE #12 TYPE "UF" OR "USE" SOLID COPPER TRACE WIRE INSTALLED 3" ABOVE PIPE. INSULATION COLOR TO MATCH THE OKIE UTILITY COLOR CODING. EXTEND TRACE WIRE UP AND INTO CLEANOUTS AS SHOWN. USE DIRECT BURY SPLICE KITS TO CONNECT TO EXISTING TRACE WIRE. INSTALL UNDERGROUND WARNING TAPE LABELED "CAUTION SEWER LINE BURIED BELOW," OR SIMILAR WORDING, DIRECTLY ABOVE SEWER LINE 12" BELOW FINISHED GRADE.

SEWER CLEANOUT TRACE WIRE DETAIL



PROVIDE #12 TYPE "UF" OR "USE" SOLID COPPER TRACE WIRE INSTALLED 3" ABOVE PIPE. INSULATION COLOR TO MATCH THE OKIE UTILITY COLOR CODING. EXTEND TRACE WIRE UP THE SIDE OF RISER PIPE AS SHOWN. USE DIRECT BURY SPLICE KITS TO CONNECT TO EXISTING TRACE WIRE. INSTALL UNDERGROUND WARNING TAPE LABELED "CAUTION SEWER LINE BURIED BELOW," OR SIMILAR WORDING, DIRECTLY ABOVE SEWER LINE 12" BELOW FINISHED GRADE.

ROOF DRAIN TRACE WIRE DETAIL



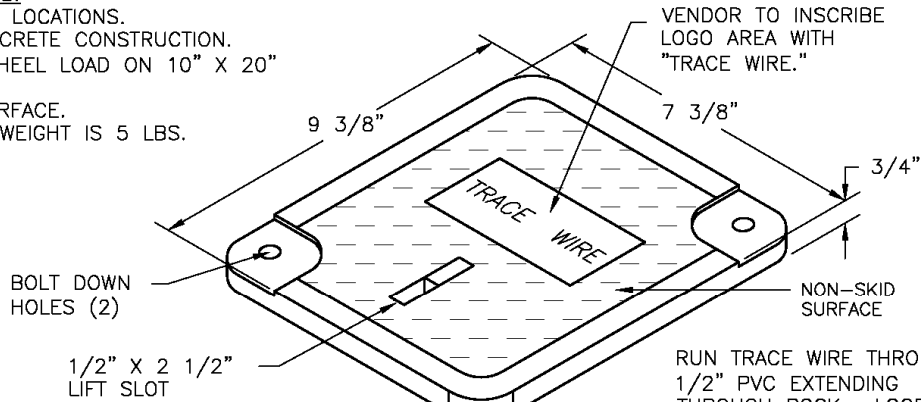
PROVIDE #12 TYPE "UF" OR "USE" SOLID COPPER TRACE WIRE INSTALLED 3" ABOVE PIPE. INSULATION COLOR TO MATCH THE OKIE UTILITY COLOR CODING. EXTEND TRACE WIRE UP AND INTO VALVE BOX AS SHOWN. USE DIRECT BURY SPLICE KITS TO CONNECT TO EXISTING TRACE WIRE. INSTALL UNDERGROUND WARNING TAPE LABELED "CAUTION [*SPECIFIC UTILITY NAMED HERE*] LINE BURIED BELOW," OR SIMILAR WORDING, DIRECTLY ABOVE UTILITY LINE 12" BELOW FINISHED GRADE.

NOTE: THIS DETAIL IS TYPICAL FOR ALL VALVE BOXES.

VALVE BOX TRACE WIRE DETAIL

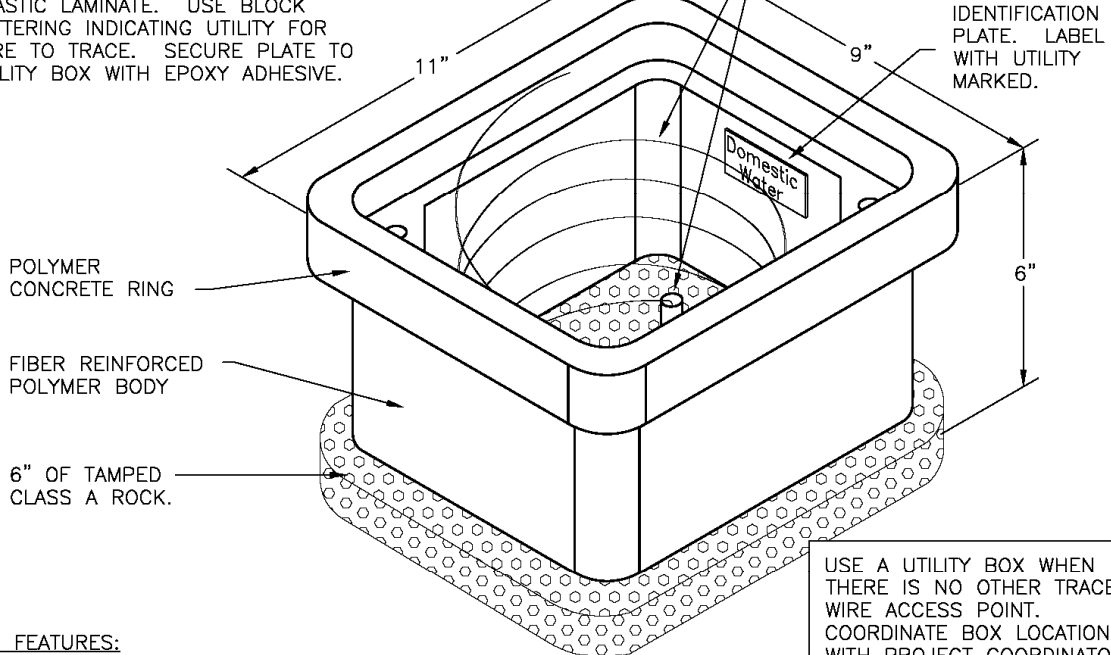
COVER FEATURES:

- 2 BOLT DOWN LOCATIONS.
- POLYMER CONCRETE CONSTRUCTION.
- 20,800 LB. WHEEL LOAD ON 10" X 20" PLATE.
- NON-SKID SURFACE.
- APPROXIMATE WEIGHT IS 5 LBS.



IDENTIFICATION PLATE:

4"x2" WHITE ON BLACK 1/8" OUTDOOR PLASTIC LAMINATE. USE BLOCK LETTERING INDICATING UTILITY FOR WIRE TO TRACE. SECURE PLATE TO UTILITY BOX WITH EPOXY ADHESIVE.

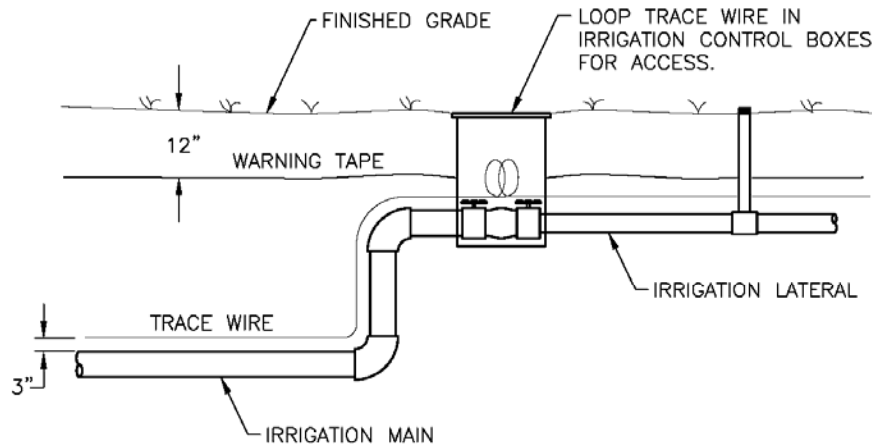


BOX FEATURES:

- POLYMER CONCRETE RING.
- FIBER REINFORCED POLYMER BODY.
- APPROXIMATE WEIGHT IS 7 LBS.

USE A UTILITY BOX WHEN THERE IS NO OTHER TRACE WIRE ACCESS POINT. COORDINATE BOX LOCATION WITH PROJECT COORDINATOR FROM ARCHITECTURE SERVICES OR ENGINEERING AND UTILITIES SERVICES.

UTILITY BOX FOR TRACE WIRE



PROVIDE #12 TYPE "UF" OR "USE" SOLID COPPER TRACE WIRE INSTALLED 3" ABOVE IRRIGATION MAIN AND LATERAL PIPES. INSULATION COLOR TO MATCH THE OKIE UTILITY COLOR CODING. EXTEND TRACE WIRE INTO CONTROL BOXES AS SHOWN. USE DIRECT BURY SPLICE KITS TO CONNECT TO EXISTING TRACE WIRE. INSTALL UNDERGROUND WARNING TAPE LABELED "CAUTION IRRIGATION LINE BURIED BELOW," OR SIMILAR WORDING, DIRECTLY ABOVE IRRIGATION LINE 12" BELOW FINISHED GRADE.

IRRIGATION TRACE WIRE DETAIL