




minimum (uality re(uirements' esign Professionals are encouraged to identify and include equivalent #roducts and/or manufacturers offering comparable #roducts to facilitate open bidding environments'



level of effort acceptable to the Designer and Design Professional. The Contractor shall exercise precautionary measures to minimize dust emissions which will include, but shall not be limited to, periodic watering or wetting of the site. The Contractor has the option of using a dust abatement Storm Water Pollution Prevention Plan (SWPPP). The Texas Tech Storm Water Pollution Prevention Program requires preparation of a Storm Water Pollution Prevention Plan (SWPP) for any project that causes a disturbance of soil on any campus of the Texas Tech University System. The plan will incorporate measures in response to and ensure compliance with the terms of the Texas Pollution Discharge Elimination System (TPDES) General Permit for Storm Discharges from Construction Activities.

**Notification concerning an Application for Utilities**

The Contractor shall call Texas 5925 (toll-free) or 575-236-5352 (local) 7 days prior to the start of any excavation or construction activity. The Contractor shall also call Texas 5925 (toll-free) or 575-236-5352 (local) 7 days prior to the start of any excavation or construction activity.

The Design Professional shall specify backfill requirements based on geotechnical surveys. The Contractor shall perform all excavation to the depths shown on the drawings or as specified during excavation, materials suitable for backfilling shall be placed a sufficient distance from the banks of the excavation to avoid overloading and to prevent slides and cave-ins. Excavated materials not suitable or required for fill or backfill shall be removed from the site.

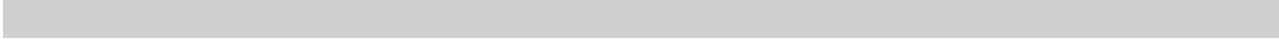
All excavation shall be made by open cut. No tunneling shall be done unless shown on the drawings. All excavations are to be performed in strict accordance with 3S+ regulations.

Before commencing any trench excavation that will exceed a depth of five feet, Contractor shall provide to Texas Tech a copy of any geotechnical investigations used for preparation of detailed drawings and Specifications regarding the safety systems to be utilized. The Contractor shall submit a trenching plan that is approved and sealed by a professional engineer registered in the State of Texas and employed by the Contractor. Said engineer cannot be anyone who is employed on this Project by Texas Tech. Receipt of the plan is a prerequisite to the start of trenching. It is the Contractor's responsibility to comply with any additional requirements resulting from any pre-bid conference relating to coordination of geotechnical investigation subjects.

Minimum cover requirements to top of pipe or insulation for utilities:

|                            |                                     |
|----------------------------|-------------------------------------|
| Low pressure gas ounces    | 90 inches                           |
| High pressure gas pounds   | 120 inches                          |
| * Alarm systems            | 18 inches                           |
| Security systems           | 18 inches                           |
| Domestic water             | 90 inches                           |
| Irrigation mains           | 18 inches                           |
| Irrigation laterals        | 12 inches                           |
| Communication              | 18 inches                           |
| Electrical primary voltage | 18 inches including concrete casing |

grade' Provide a minimum of 161gauge tracer wire for all below grade nonmetallic #i#ing









Dielectric Fittings.

\* ssembly o! co##er alloy and !errous materials or !errous material body ) ith se#arating nonconductive insulating material suitable !or system !luid, #ressure, and tem#erature'

Slee(es.

=alvani4ed1Steel Sheet Sleeves> 8'869A1inch minimum thic/ness! round tube closed ) ith ) elded longitudinal joint'

/rout.

\*ST " C 118; , =rade 2, non1shrin/ and nonmetallic, dry hydraulic1cement grout'

Flo! able Fill.

Fo) 1strength1concrete, !lo) able1slurry mix' Cement #er \*ST " C 1D8, Ty#e -, Portland )ith aggregates #er \*ST " C 99, natural sand, !ine and crushed gravel, or stone, coarse' @ater, com#ly )ith \*ST " C A:0C A: " ' Strength> 1,688 #si at 67 days'

Piping an #0uip%ent Installation.

-nstall #i#ing and sleeves according to the !ollo) ing re(uirements and utilities Sections s#eci)ying #i#ing systems' Sho# ra) ings are to indicate exact locations and arrangements of #i#ing systems and are to be used to si4e #i#es and calculate !riction loss, ex#ansion, #um# si4ing, and other design considerations' -nstall #i#ing as indicated unless deviations to layout are a##roved on the Coordination ra) ings by , ngine

Final connection to each piece of equipment

6% - Install flanges, in piping EPS 61106 inches and larger, adjacent to flanged valves and at final connection to each piece of equipment

9% - Install dielectric fittings at connections of dissimilar metals

- Install equipment level and flange, unless otherwise indicated - Install equipment to facilitate service, maintenance, and repair or replacement of components - Connect equipment for ease of disconnecting, with minimum interference with other installations - Extend grease fittings to an



do not interrupt storm water drainage service to facilities occupied by 3 )ner or others unless permitted only after arranging to provide temporary service' Eotily 3 )ner no le )er than t )o

Polyvinyl Chloride Pipe and Fittings Cellular Core, Schedule 40, Series, PS D8 minimum stiffness, cellular core with plain ends for solvent cemented joints. Fittings in compliance with ASTM 989, S. 9D, PVC socket type fittings.

Profile Series Series Pipe: A, PVC profile, gravity series with bell and sigot ends for gas/eted joints. Fittings, ASTM 989, PVC with bell ends =as/ets, ASTM F : ; ;, elastomeric seals.

Gravity Series Pipe: A, Schedule 40 wall thickness, PVC gravity series with bell and sigot ends and with integral ASTM F : ; ;, elastomeric seals for gas/eted joints.

Pressure Pipe: A, PVC with bell and sigot ends for gas/eted joints. Fittings, ASTM CA88, PVC with bell ends =as/ets, ASTM F : ; ;, elastomeric seals.

Concrete Pipe and Fittings Reinforced Concrete Series Pipe and Fittings, C ; C \$ \* ST " C ; C " % Tongue and groove ends and gas/eted joints with \* ST " C : : 9 \$ \* ST " C : : 9 " %, rubber gas/ets, with \* ST " C AA8 \$ \* ST " C AA8 " %, bitumen or butyl rubber sealant.

Manholes \* ST " C : ; 7 \$ \* ST " C : ; 7 " %, #recast, reinforced concrete, or depth indicated, with provision for sealant joints: 7 inches minimum unless otherwise indicated. Base section C1inch

3il -nterce#tors> Polymer1concrete body ) ith interior ba!!le and !our steel su##ort channels and t) o 10:1inch1 thic/, steel1#late covers' Steel1#late covers, ca#acity as s#eci!ied'

Sediment -nterce#tors> Polymer1concrete body, ) ith outlets in ( uantities and si4es indicated, s(uare, gray1iron !rame, and slotted grate'

Storm) ater -nlets> Concrete curb, gutter, and combination inlets ) ith heavy duty galvani4ed steel !rames and cast1iron grates'

Pi#e 3 utlets> +ead @alls, cast1in1#lace rein!orced

saturated organic silt

-! subdrainage is required for landscaping, locate and mark existing utilities, underground structures, and aboveground obstructions before beginning installation and avoid disruption and damage to services. Verify that drainage panels installed as part of foundation wall waterproofing is properly positioned to drain into subdrainage system. Proceed with installation only after unsatisfactory conditions have been corrected.

-Install P, warning tape or detectable warning tape over errors. -Install detectable warning tape over non-errors and over edge of