SECTION 02621

FOUNDATION DRAINAGE PIPING

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PART 1 GENERAL

1.1 SECTION INCLUDES

A. Foundation Drainage System.
B. Perimeter Radon Gas Evacuation System.

1.2 RELATED SECTIONS

A. Section 02300 - Earthwork: Excavating for site subdrainage system piping, surrounding filter aggregate and filter fabric.
B. Section 02630 - Storm Drainage: Connection to drainage system.
C. Section 03300 - Cast-In-Place Concrete: Concrete for foundations and footings.
D. Section ______ - _________________: Vertical Stack piping for radon vent.

1.3 REFERENCES

D. EPA 402R94009 - Model Standards and Techniques for Control of Radon in New Buildings; Environmental Protection Agency.

1.4 DESIGN / PERFORMANCE REQUIREMENTS

A. Perimeter Radon Evacuation System: Provide products that can be assembled into system that meets requirements of:
   1. EPA 402R94009.
   2. Provide test reports from independent testing laboratory supporting compliance.
1.5 SUBMITTALS

A. Submit under provisions of Section 01300.

B. [Product Data]: Manufacturer’s data sheets on each product to be used, including:
   1. Preparation instructions and recommendations.
   2. Storage and handling requirements and recommendations.
   3. Installation methods.

C. Shop Drawings: Indicate layout of system; include all components specified in manufacturer’s descriptive literature or installation instructions, and components indicated on the Drawings.

D. Manufacturer’s Certificates: Certify products meet or exceed specified requirements.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Store products horizontally with slotted sides down, on pallets off the ground in manufacturer’s unopened packaging until ready for installation.

B. Do not store in direct sunlight or in high heat environment exceeding 150 degrees F (66 degrees C).

C. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer: CertainTeed Corp., Foundation and Pipe Products, which is located at: 750 E. Swedesford Rd. P. O. Box 860; Valley Forge, PA 19482; Toll Free Tel: 800-233-8990; Fax: 610-341-7940; Email: request info; Web: www.certainteed.com/CertainTeed/Undefined/Foundations

B. Substitutions: Not permitted.

C. Requests for substitutions will be considered in accordance with provisions of Section 01600.

D. Unless otherwise specified for an individual product or material, supply all products specified in this section from the same manufacturer.

2.2 COMPONENTS

A. Linear Components: Polyvinyl chloride (PVC) containing post-consumer recycled plastic materials, extruded in closed-channel cross-section, with slot perforations along length to permit moisture migration, 12 foot (3.65 m) lengths.
   1. Load Deflection and Impact Resistance: Comply with requirements of ASTM F 891 for Type PS 25 PVC pipe.
   2. Flow Characteristics: Meet or exceed the flow characteristics of 4 inch (100 mm) diameter corrugated polyethylene slotted pipe conforming to ASTM F 405, when subjected to 30-7/8 inch (770 mm) pressure head.
   3. Type: Form-A-Drain Part LN124, size 2-1/4 inches (57 mm) wide by 4 inches (101 mm) deep, single-channel.
   4. Type: Form-A-Drain Part LN126, size 2-1/4 inches (57 mm) wide by 6 inches (152 mm) deep, dual-channel.
5. Type: Form-A-Drain Part LN128, size 2-1/4 inches (57 mm) wide by 8 inches (203 mm) deep, dual-channel.
6. Type: Form-A-Drain Part LN1210, size 1-1/2 inches (38 mm) wide by 10 inches (254 mm) deep, dual-channel.

B. Fittings:
1. Material: Extruded polyvinyl chloride (PVC) or molded polypropylene (PP) in profiles and shapes as follows:
   b. Coupling with hole: Molded PP, Form-A-Drain Part COUPx.
   c. 90-degree corner coupling: Molded PP, Form-A-Drain Part CN90x.
   d. 45-degree corner coupling: Extruded PVC, Form-A-Drain Part CN45x.
   e. Outlet, 4 inch diameter stub: Extruded PVC base with molded PP outlet, Form-A-Drain Part OUT4x.
   f. Double outlet, 4 inch diameter stubs: Extruded PVC base with molded PP outlets, Form-A-Drain Part DOF4x.
   g. 90-degree vertical “L”: Extruded PVC, Form-A-Drain Part VL90x.
   h. 90-degree vertical “T”: Extruded PVC, Form-A-Drain Part VTEEx.
2. Size: As required for linear components specified.

C. Accessories:
2. Grade stake: Form-A-Drain Part GS030, length 30 inches (762 mm).
10. Reinforcing bar: Deformed steel of diameter specified in manufacturer’s installation instructions.

D. Piping connecting foundation drains to sump pit outlets: PVC, ASTM D 2729, of diameter required.

E. Piping connecting foundation drains to stack vents: PVC, ASTM D 2729, of diameter required.

F. Filter aggregate, bedding materials and filter fabric as specified in Section 02300.

PART 3 EXECUTION

3.1 EXAMINATION
A. Verify trench cut is ready to receive work and excavations, dimensions, and elevations are as indicated on Drawings.
B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION
A. Hand trim excavations to required elevations. Correct over excavation
B. Remove large stones or other hard matter which could damage drainage system or
impede consistent backfilling or compaction.

3.3 INSTALLATION

A. Install products in accordance with manufacturer's instructions.

B. Lay out system to footing footprint indicated on Drawings; locate fittings in accordance with manufacturer's instructions and as indicated.

C. Maintain indicated footing widths by installing spacer straps; locate in accordance with manufacturer's instructions and as indicated.

D. Raise top of system to indicated top-of-footing elevations, using reinforcing bars driven through holes in corner couplings into soil; maintain elevations by using grade stakes, located in accordance with manufacturer's instructions and as indicated, driven into soil and screw-fastened to system.

E. Ensure that all required and indicated components are in place, and system is level at indicated top-of-footing elevations, before beginning installation of cast-in-place concrete footings.

F. Installation of cast-in-place concrete footings is specified in Section 03300.

G. Placement of stone fill and filter fabric, specified in Section 02300. Do not displace or damage pipe when compacting.

H. Connection to drainage system as specified in Section 02630.

3.4 FIELD QUALITY CONTROL

A. Request inspection prior to and immediately after placing concrete footings and/or after placing aggregate cover and filter fabric over pipe.

3.5 PROTECTION

A. Protect installed products until completion of project.

B. Protect system and aggregate cover from damage or displacement until backfilling operations begin.

END OF SECTION