ADDENDUM

Project: Wolf Trap Meetinghouse Oakton VA Stake | Project No.: 500900715010601 | Addendum No.: 2

Project Address: 1632 Crowell Road, Vienna VA 22182 | Date: 04 December 2018

Owner: Corporation of the Presiding Bishop of The Church of Jesus Christ of Latter-day Saints, a Utah corporation sole

From (Architect): L2M Architects

Instructions to Prospective Bidders:

This Addendum forms a part of the Contract Documents and modifies the original Bidding Documents and/or prior Addenda as noted below. All conditions, requirements, materials and workmanship are to be as described in the Contract Documents unless specifically stated otherwise. This Addendum consists of 1 page and specification attachments as outlined below.

1. Changes to prior Addenda:
   a. N/A
2. Changes to Bidding Requirements:
   a. N/A
3. Changes to Conditions of the Contract:
   a. N/A
4. Changes to Specifications:
   a. The following specifications sections are added to the specifications / project in their entirety as attached; 33-3313, 33-3633.
   b. Section 32 8000 Irrigation shall be deleted from the Table of Contents in its entirety.
   c. Section 04 2113 Part 2, 2.1 b.2.c shall be revised to Redland Brick; Royal Plum Full Range (Rocky Ridge – 750), Burgundy. Grout shall be as indicated in specifications.
   d. Section 01 1100 , part 1.3 Work By Owner, shall be revised to include:
      f. Accordion Folding Partitions
5. Changes to Drawings:
   a. On Sheet E-101, Chapel light fixtures labeled as (7) F4 & (7) F11 shall be fixture type F12. Also, In Vestibules 108, 121, & 137, light fixtures labeled as F4 or F4E shall be fixture F12 or F12E, respectively. F12 “E” shall denote emergency type fixture. In Cultural Hall, fixtures (4) F2 shown with shaded hatch shall denote emergency type fixture.
6. Clarifications:
   a. Meetinghouse facility fuel piping design shown correctly as designed for Natural Gas, however Fuel Type provided shall be propane. Reference section 23 1123 for propane fuel type information.

End of Addendum

SECTION 33 3313

SANITARY UTILITY SEWERAGE

PART 1 - GENERAL

1.1 SUMMARY

A. Includes But Not Limited To:
   1. Perform excavating and backfilling required for work of this Section.
   2. Furnish and install sanitary sewage system as described in Contract Documents beginning at 5 feet (1.50 meter) from where it enters building and connecting to serving sewer system.

B. Related Requirements:
   1. Section 03 3111: 'Cast-In-Place Structural Concrete' for:
      a. Pre-installation conference held jointly with concrete specifications.
   2. Section 22 1313: 'Facility Sanitary Sewers' for sanitary sewage system within building and within 5 feet (1.50 meter) of building.
   3. Section 31 0501: 'Common Earthwork Requirements' for:
      a. Pre-installation conference held jointly with other common earthwork related sections.
   4. Section 31 2316: 'Excavation' for criteria for performance of excavation.
   5. Section 31 2323: 'Fill' for criteria for performance of backfill and compaction.

1.2 ADMINISTRATIVE REQUIREMENTS

A. Pre-Installation Conferences:
   1. Participate in pre-installation conference as specified in Section 03 3111.
   2. Participate in pre-installation conference as specified in Section 31 0501.

1.3 REFERENCES

A. Reference Standards:
   1. ASTM International:
      a. ASTM A74-16, 'Standard Specification for Cast Iron Soil Pipe and Fittings'.
      b. ASTM A888-15, 'Standard Specification for Hubless Cast Iron Soil Pipe and Fittings for Sanitary and Storm Drain, Waste, and Vent Piping Applications'.
      c. ASTM C564-14, 'Standard Specification for Rubber Gaskets for Cast Iron Soil Pipe and Fittings'.
      d. ASTM C1277-15, 'Standard Specification for Shielded Couplings Joining Hubless Cast Iron Soil Pipe and Fittings'.
      e. ASTM D2235-04(2011), 'Standard Specification for Solvent Cement for Acrylonitrile-Butadiene-Styrene (ABS) Plastic Pipe and Fittings'.
      f. ASTM D2321-14, 'Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications'.
      g. ASTM D2564-12, 'Standard Specification for Solvent Cements for Poly (Vinyl Chloride) (PVC) Plastic Piping Systems'.
      h. ASTM D2661-14, 'Standard Specification for Acrylonitrile-Butadiene-Styrene (ABS) Schedule 40 Plastic Drain, Waste, and Vent Pipe and Fittings'.
      i. ASTM D2665-12, 'Standard Specification for Poly (Vinyl Chloride) (PVC) Plastic Drain, Waste, and Vent Pipe and Fittings'.
      j. ASTM D3034-15, 'Standard Specification for Type PSM Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings'.
      k. ASTM F656-15, 'Standard Specification for Primers for Use in Solvent Cement Joints of Poly (Vinyl Chloride) (PVC) Plastic Pipe and Fittings'.
   2. Cast Iron Soil Pipe Institute:

a. CISPI 301-12, 'Standard Specification for Hubless Cast Iron Soil Pipe and Fittings for Sanitary and Storm Drain, Waste and Vent Piping Applications.
b. CISPI 310-12, 'Standard Specification for Couplings for use in connection with Hubless Cast Iron Soil Pipe and Fittings for Sanitary and Storm Drain, Waste, and Vent Piping Applications.
c. CISPI Handbook. 'Cast Iron Soil Pipe and Fittings Handbook' (2006).

3. International Code Council:
   a. ICC IPC-2015, 'International Plumbing Code'.

1.4 QUALITY ASSURANCE

A. Regulatory Agency Sustainability Approvals
   1. Install cleanouts in accordance with local governing authority and State codes.

PART 2 - PRODUCTS

2.1 COMPONENTS

A. ABS:
   1. ABS Schedule 40 solid wall plastic pipe and fittings meeting requirements of ASTM D2661 joined with pipe cement meeting requirements of ASTM D2235.

B. Cast Iron Soil Pipe And Fittings:
   1. Meet requirements of ASTM A74, Service Grade:
      a. Cast iron for bell and spigot fittings.
      b. Cast iron for no-hub joints.
   2. Approved Joint Material And Manufacturers:
      a. For Bell And Spigot Pipe: Rubber gaskets meeting requirements of ASTM C564 and compatible with pipe used.
      b. For No-Hub Pipe:
         1) Category Four Approved Products. See Section 01 6200 for definitions of Categories:
            a) SuperGrip 304 American Brass & Iron (AB&I), Oakland, CA www.abifoundry.com.
            b) Husky SD 4000 coupling by Anaco-Husky, Corona, CA www.anaco-husky.com.
            c) Neoprene gaskets with type 304 stainless steel clamp and 24 ga type 304 stainless steel housing by Clamp-All Corp, Haverhill, MA www.clampall.com.
            d) MG Coupling by MG Piping Products Co, Stanton, CA www.mgcoupling.com.

C. PVC:
   1. Schedule 40 solid wall plastic pipe and fittings meeting requirements of ASTM D2665 joined using cement primer meeting requirements of ASTM F656 and pipe cement meeting requirements of ASTM D2564.
   2. Gasket joint gravity sewer pipe and fittings meeting requirements of ASTM D3034. Joints shall be integral wall and elastomeric gasket.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verification Of Conditions:
   1. Before installation, inspect pipe for defects and cracks.
   2. Do not use defective, damaged, or unsound pipe.

3.2 PREPARATION

A. Excavate and backfill as specified in Sections 31 2316 and Section 31 2323 with following additional requirements:
   1. Runs shall be as close as possible to those shown on Contract Drawings.
   2. Excavate to required depth and grade to obtain fall required.
   3. Bottom of trenches shall be hard. Tamp as required.
   4. Remove debris from trench before laying pipe.
   5. Do not cut trenches near footings without consulting Architect/Engineer.
   6. Excavate trenches so outside pipe will be 12 inches (300 mm) minimum below frost line or 18 inches (450 mm) minimum below finish grade, whichever is deeper.

3.3 INSTALLATION

A. General:
   1. When work is not in progress, close open ends of pipe and fittings so no trench water, soil, or other substances will enter pipes or fittings.
   2. Keep trenches free from water until pipe jointing material has set. Do not lay pipe when condition of trench or weather is unsuitable for such work.
   3. Trench width at top of pipe:
      a. Minimum: 18 inches (450 mm) or diameter of pipe plus one foot (305 mm), whichever is greater.
      b. Maximum: Outside diameter of pipe plus two feet (610 mm).

B. Placing And Laying of Underground Pipe:
   1. Deflections from straight line or grade, as required by vertical curves, horizontal curves, or offsets, shall not exceed 6/D inches per linear foot (12 500/D mm per m) of pipe where D represents nominal diameter of pipe expressed in inches mm
   2. Deflections to be determined between center lines extended of two connecting pipes.
   3. If alignment requires deflection in excess of these limitations, provide special bends or sufficient number of shorter lengths of pipe to provide angular deflections within limits approved by Architect.
   4. Laying:
      a. Pipe laying shall proceed up-grade with spigot ends of bell-and-spigot pipe pointing in direction of flow.
      b. Lay each pipe true to line and grade and in such manner as to form close concentric joint with adjoining pipe and to prevent sudden offsets of flow line.
      c. As work progresses, clear interior of pipe of dirt and superfluous materials. Where cleaning after laying is difficult because of small pipe, keep suitable swab or drag in pipe and pull forward past each joint immediately after jointing has been completed.
   5. Make joints between cast iron pipe and other types of pipe with standard manufactured cast-iron adapters and fittings.
   6. Valve, plug, or cap, as directed by Architect, where pipe ends are left for future connections.

C. Cast Iron Pipe And Fittings:
   1. Shape trench bottom to give substantially uniform circumferential support to lower third of each pipe. Provide depression under bell of each joint to maintain even bearing of sewer pipe.
   2. Connect to street main as required by local authorities.
   3. Use jacks to make-up gasketed joints.

D. Thermoplastic Pipe And Fittings:
   1. Install in accordance with Manufacturer's recommendations and ASTM D2321.
   2. Stabilize unstable trench bottoms.
   3. Bed pipe true to line and grade with continuous support from firm base.
      a. Bedding depth: 4 to 6 inches (100 to 150 mm).
      b. Material and compaction to meet ASTM standard noted above.
   4. Excavate bell holes into bedding material so pipe is uniformly supported along its entire length. Blocking to grade pipe is forbidden.

5. Piping and joints shall be clean and installed according to Manufacturer's recommendations. Break down contaminated joints, clean seats and gaskets and reinstall.
6. Do not use back hoe or power equipment to assemble pipe.
7. Initial backfill shall be 12 inches (305 mm) above top of pipe with material specified in referenced ASTM standard.
8. Minimum cover over top of pipe:
   a. 36 inches (915 mm) before allowing vehicular traffic over pipe.
   b. 48 inches (1 200 mm) before use of compaction equipment other than hand or impact tampers.

3.4 FIELD QUALITY CONTROL

A. Non-Conforming Work:
   1. Failure to install joints properly shall be cause for rejection and replacement of piping system at no additional cost to Owner.

END OF SECTION

SECTION 33 3633

UTILITY SEPTIC TANK DRAINAGE FIELD

PART 1 - GENERAL

1.1 SUMMARY

A. Includes But Not Limited To:
   1. Perform excavating and backfilling required for work of this Section.
   2. Furnish and install sewage disposal system as described in Contract Documents.

B. Related Requirements:
   1. Section 03 1113: 'Structural Cast-In-Place Concrete Forming' for concrete formwork requirements.
   2. Section 03 3111: 'Cast-In-Place Structural Concrete' for Type 2 concrete.
   3. Section 22 1313: ‘Facility Sanitary Sewers’ for sanitary sewage system lines within 5 feet (1.50 meter) of outside building line.
   4. Section 31 2316: ‘Excavation’ for procedure and quality of excavating.
   5. Section 31 2323: ‘Fill’ for procedure and quality of backfilling and compacting.

1.2 REFERENCES

A. Reference Standards:
   1. ASTM International:
      a. ASTM A74-15, ‘Standard Specification for Cast Iron Soil Pipe and Fittings'.
      b. ASTM A615/A615M-15, ‘Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement'.
      c. ASTM C564-14, ‘Standard Specification for Rubber Gaskets for Cast Iron Soil Pipe and Fittings'.
      d. ASTM C836/C836M-15, 'Standard Specification for High Solids Content, Cold Liquid-Applied Elastomeric Waterproofing Membrane for Use with Separate Wearing Course'.
      e. ASTM D2321-14, ‘Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications'.
      f. ASTM D3034-15, ‘Standard Specification for Type PSM Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings'.
      g. ASTM D5034–09(2013), ‘Standard Test Method for Breaking Strength and Elongation of Textile Fabrics (Grab Test)'.
      h. ASTM D5035-11(2015), ‘Standard Test Method for Breaking Force and Elongation of Textile Fabrics (Strip Method)'.

PART 2 - PRODUCTS

2.1 SYSTEM

A. Components:
   1. Septic Tanks And Distribution Boxes:
      1) Single compartment with wall thickness of 4 inches (100 mm) minimum.
      2) Apply waterproofing coating to septic tanks and distribution boxes inside and out.
      3) Liquid level, measured from tank bottom to invert of outlet pipe, shall be 48 inches (1 200 mm) minimum. Liquid level greater than 78 inches (1 981 mm) shall not be considered in determining tank capacity.
      4) Vent septic tank. Venting through inlet pipe to main building stack is acceptable.
      5) Manhole Lid:

a) General:
(1) Provide access over inlet and outlet piping tees through 24 inch (600 mm) gastight manhole lids.
(2) Bring lids to finish grade with concrete adjusting rings.
b) Design Criteria:
(1) Cast iron (fiberglass or plastic lids not approved for safety hazard).
(2) Watertight manhole frame.
(3) Gasket sealed and bolted lid (stainless steel bolts).
c) Type One Acceptable Product:
(1) R-1916-F by Neenah Enterprises, Inc., Neenah, WI www.nfco.com.
(2) Equal as approved by Architect before bidding. See Section 01 6200.
6) Concrete Formwork: Comply with requirements of Section 03 1113.
7) Concrete: Comply with requirements of Section 03 3111 for Type 2 concrete.
8) Reinforcing Steel: Comply with requirements of Section 03 2100.
9) Baffles: Redwood.

2. Sewer Pipe:
a. Use one of following:
1) Cast Iron Soil Pipe And Fittings:
a) Meet requirements of ASTM A74, Service Grade designed for bell and spigot fittings.
b) Joint Material: Rubber gaskets meeting requirements of ASTM C564 and compatible with pipe used.
2) PVC Pipe And Fittings:
a) Gasket-joint gravity sewer pipe and fittings meeting requirements of ASTM D3034 SDR-35.
b) Joints shall be integral wall bell and elastomeric gasket.
3. Drainage Lines: Equal to specified sewer pipe except with perforations.
4. Drain Field Gravel: Washed, hard durable gravel ranging uniformly from 100 percent passing 2-1/2 inch (12.7 mm) sieve to 0 percent passing 3/4 inch (19 mm) sieve.
5. Cover Fabric:
a. Designed to retain soil particles larger than No. 70 sieve (0.21 mm) but allow for unimpeded flow of water through fabric.
b. Non-biodegradable fabric inert to most soil chemicals, acids, and alkalis over pH range of 3 to 12.
c. Fabric shall have minimum tensile strength of 200 lbs (90 kg) when tested in accordance with ASTM D5034 and ASTM D5035.

2.2 ACCESSORIES

A. Waterproofing:
1. Description:
a. Single component, bitumen modified, polyurethane based waterproofing membrane.
b. Protects structures from water penetration while remaining flexible to handle nominal expansion and contraction of substrates.
2. Design Criteria:
a. Liquid, cold-applied elastomeric, exterior, below grade concrete waterproofing membrane.
b. Resist bacterial attack and salts found in ground waters.
c. Meet ASTM C836/C836M requirements.
3. Type Two Acceptable Products:
a. MasterSeal HLM 5000 by BASF Master Builders Solutions www.ap.cc.basf.com.
b. Equal as approved by Architect before installation. See Section 01 6200.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verification Of Conditions:
   1. Before installation, inspect pipe for defects and cracks.
   2. Do not use defective, damaged, or unsound pipe.

3.2 PREPARATION

A. Excavate and backfill as specified in Sections 31 2316 and 2323 with following additional requirements:
   1. Location of system elements shall be as close as possible to locations shown on Contract Drawings.
   2. Excavate to required depth and grade to obtain fall required. Set trenches for perforated drain tile level.
   3. Bottom of trenches for sewer pipe shall be hard. Tamp as required.
   4. Remove debris from excavations before laying pipe or installing tanks and boxes.
   5. Do not excavate near footings without consulting Architect.
   6. Excavate so all elements of system will be 12 inches (300 mm) minimum below frost line or 18 inches (450 mm) minimum below finish grade, whichever is deeper.
   7. Pipe: Width of trench at and below top of pipe shall be such that clear space between barrel of pipe and trench wall shall be between 6 and 12 inches (150 mm and 300 mm) on both sides of pipe.
   8. Tanks And Boxes:
      a. Excavation for tanks and boxes shall be sufficient to leave 12 inches (300 mm) minimum in clear between their outer surfaces and embankment or timber used to hold and protect banks.
      b. Over depth excavation below tanks and boxes that has not been directed by Architect shall be considered unauthorized and be filled with sand, gravel, or concrete, as directed by Architect, and at no additional cost to Owner.

3.3 INSTALLATION

A. General: When work is not in progress, close open ends of pipe and fittings so no trench water, soil, or other substances will enter pipes or fittings.

B. Septic Tanks:
   1. Place on level grade at depth that provides adequate gravity flow to tank. Compact backfill in layers to 95 percent minimum of maximum dry density at optimum.
   2. Cast-in-place Septic Tanks And Distribution Boxes:
      a. Follow specifications for concrete under Section 03 3111.
      b. Follow specifications for reinforcing steel under Section 03 2100.
   3. Do not disturb septic tank from proper alignment nor damage tank's protective coating during backfilling.

C. Distribution Boxes:
   1. Set box on undisturbed soil or compacted gravel to maintain level and stable installation.
   2. Provide rubber gasket between box wall and lid.
   3. Provide lifting box on lid for distribution inspection.

D. Sewer Lines:
   1. Lay sewer line with uniform slope of 1/8 inch (3 mm) per foot towards septic tank.
   2. Deflections from straight line or grade, as required by vertical curves, horizontal curves, or offsets, shall not exceed 6/D inches per linear foot (12 500/D mm per m) of pipe where D represents nominal diameter of pipe expressed in inches (mm).

a. Determine deflections between extended center lines of two (2) connecting pipes.
b. If alignment requires deflection in excess of these limitations, provide special bends or sufficient number of shorter lengths of pipe to provide angular deflections within limits approved by Architect.

3. Laying:
   a. Shape trench bottom to give substantially uniform circumferential support to lower third of each pipe.
   b. Pipe laying shall proceed up-grade with spigot ends of bell-and-spigot pipe pointing in direction of flow.
   c. Lay each pipe true to line and grade and in such manner as to form close concentric joint with adjoining pipe and to prevent sudden offsets of flow line.
   d. As work progresses, clear interior of pipe of dirt and superfluous materials. Where cleaning after laying is difficult because of small pipe, keep suitable swab or drag in pipe and pull forward past each joint immediately after jointing has been completed.
4. Make joints between cast iron pipe and other types of pipe with standard manufactured cast-iron adapters and fittings.
5. Valve, plug, or cap, as directed by Architect, where pipe ends are left for future connections.
6. Cast Iron Pipe And Fittings:
   a. Provide depression under bell of each joint to maintain even bearing of sewer pipe.
   b. Connect to street main as required by local authorities.
   c. Use jacks to make-up gasketed joints.
7. Thermoplastic Pipe And Fittings:
   a. Install in accordance with Manufacturer's recommendations and ASTM D2321.
   b. Stabilize unstable trench bottoms.
   c. Bed pipe true to line and grade with continuous support from firm base:
      1) Bedding depth: 4 to 6 inches (100 to 150 mm).
      2) Material and compaction to meet ASTM standard noted above.
   d. Excavate bell holes into bedding material so pipe is uniformly supported along its entire length. Blocking to grade pipe is forbidden.
   e. Trench width at top of pipe:
      1) Minimum: 18 inches 450 mm or diameter of pipe plus one foot (300 mm), whichever is greater.
      2) Maximum: Outside diameter of pipe plus two feet (600 mm).
   f. Piping and joints shall be clean and installed according to Manufacturer's recommendations. Break down contaminated joints, clean seats and gaskets and reinstall.
   g. Do not use back hoe or power equipment to assemble pipe.
   h. Initial backfill shall be 12 inches (300 mm) above top of pipe with material specified in referenced ASTM standard.
   i. Minimum cover over top of pipe:
      1) 36 inches (900 mm) before allowing vehicular traffic over pipe
      2) 48 inches (1 200 mm) before use of compaction equipment other than hand or impact tampers.

E. Drain Field:
1. Lay piping between distribution boxes and drain field on undisturbed soil or soil bedded and compacted as specified for sewer pipe.
2. Do not drive on trench bottoms or beds intended to receive drain piping. Operate equipment only on undisturbed soil.
3. Cover excavation bottoms and sidewalls prior to end of each day's operation. Do not perform trench excavation and installation when soil moisture content is high.
4. Before installing drain piping, rake bottom and sides of trench to break up smeared, compacted surfaces.
5. Set perforated drain tile level and with holes pointing downward. Place cover fabric on top of drain field gravel with 3 inch (75 mm) fabric overlap.
6. Maintain maximum tolerance of 1/4 inch (6 mm) from level for distribution lines out of distribution boxes. Lay drain lines with maximum tolerance from level of plus or minus one inch (25 mm) over total length of drain tile run.

F. Pipe Penetrations Through Structures:
1. Pipe penetrations through structures shall be watertight.

2. Use PVC waterstop tightly fitted around pipe and grout with non-shrink grout to seal concrete wall penetrations.

G. Waterproofing:
1. Apply waterproofing coating to septic tanks and distribution boxes inside and out:
a. Follow manufacturers written instructions for horizontal and vertical application at recommended application rates and thickness including but not limited to:
1) Remove dust, dirt and other contaminants just before or during application.
2) Surfaces must be dry at time of application.
3) Air-void pockmarks or honeycombs must be opened up to allow waterproofing to fill cavities completely.
4) Joints and cracks filled and sealed with sealant as recommended by manufacture.
5) Verify applied thickness with wet film gauge as work progresses.
6) For protection during backfill only, install protection board.

3.4 FIELD QUALITY CONTROL

A. Field Tests And Inspections:
1. Test watertightness of tanks and boxes before backfilling by plugging inlet and outlet openings and filling with clear water to access holes.
2. Plug leaks.

B. Non-Conforming Work:
1. Failure to install joints properly shall be cause for rejection and replacement of piping system at no cost to Owner.

3.5 CLEANING

A. Remove excess earth from site or place as directed by Architect.

END OF SECTION