Jones & Henry
ENGINEERS, LTD.

City Of Carmel
West Ground Storage Tank Booster Pump Station

ADDENDUM 5

November 26, 2024

Planholders on the City of Carmel Ground Storage Tank Booster Pump Station project are hereby notified of the following amendments to the Contract Documents. This Addendum is hereby made a part of the Contract Documents.

GENERAL NOTES

DRAWINGS

Replace the following drawings with their attached counterparts. Changes have been clouded.

C-2

G-3

A-0.1

S-0.2

S-1.3

SPECIFICATIONS

In Section 11223, peristaltic pumps may also be furnished by Watson-Marlow or ProMinent.

In Section 11600 paragraph 1.03-B, Air Master Systems cabinets as supplied by Harry J. Kloeppel & Associates is an accepted equal.

In Section 15250, the plug valves may be supplied by *GA* Industries.

The following attached Specifications shall be added to the Contract Documents

01021 – Allowances

(note that allowances are to be included in the base bid)

07200 - Wall and Ceiling Insulation

07413 - Metal Panel Systems

07460 - Vinyl Siding and Soffit Materials

07600 - Flashing and Sheet Metal Work

07630 - Gutters and Downspouts

07900 - Caulking and Sealants

09250 - Gypsum Drywall Construction

SECTION 01021
ALLOWANCES

PART 1 GENERAL

1.01 SCOPE

A. This Section includes the allowances which are to be furnished by the Contractor per Paragraph GC-13.02 of the General Conditions.

B. The Contractor shall include in the Contract Price all allowances stated in the Contract Documents. These allowances shall cover the net cost of the materials and equipment delivered and unloaded at the Site, and all applicable taxes.

C. The Contractor's handling costs on the Site, labor installation costs, overhead, profit and other expenses contemplated for the original allowance shall be included in the Contract Price and not in the allowance.

D. The Contractor shall cause the Work covered by these allowances to be performed for such amounts and by such persons as the Engineer may direct, but he will not be required to employ persons against whom he makes a reasonable objection.

E. If the cost, when determined, is more than or less than the allowance, the Contract Price shall be adjusted accordingly by Change Order.

1.02 SUBMITTALS

A. Submittals shall be in accordance with the requirements of Section 01300 and shall include:

1. Shop Drawings for Review:

    a. Contractor shall prepare and submit proposals for the Owner to select the items included in allowance.

2. Information for the Record:

    a. Operation and maintenance manuals as may be required for items included in allowance.

    b. Invoices and delivery slips, for items provided under the allowance, shall be submitted to the resident project representative or Engineer.

1.03 PRODUCT HANDLING

A. The Contractor shall provide all labor, material and equipment to insure the safe delivery, handling and storage of goods until acceptance by Owner and Engineer.

1.04 GUARANTEE

A. Contractor shall provide manufacturer's warranties to the Owner for all goods provided.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

3.01 COORDINATION

A. Contractor shall advise Owner and Engineer of, and include in the schedule, the timing of the selection, Shop Drawing review and procurement of the goods or services required in the allowance.

B. Contractor shall be responsible for the coordination, of all allowance item(s) provided, with the remainder of the contract work.

3.02 ERECTION, INSTALLATION AND APPLICATION

A. Contractor shall assemble, install or apply all goods as may be required to complete the requirements of the allowance.

3.03 PROTECTION

A. Contractor shall examine all goods on delivery. All damaged or defective goods shall be returned to the manufacturer for replacement.

PART 4 SPECIAL PROVISIONS

4.01 LIST OF ALLOWANCES

		Allowance
1.	Natural gas and electrical service installation and connection	$40,000
2.	Controls Integration	$30,000

4.02 DEFINITION OF ALLOWANCE

A. Allowance 1 shall be for fees paid to natural gas and electric utilities to provide natural gas and electricity to the site. Utility installation shall be in accordance with the specification, as shown on the Drawings and as directed.

B. Allowance 2 shall be for programing and controls integration. This includes SCADA, programing, screen development, and controls integration. This includes start-up support for loop checks, calibration checks, and functionality checks. Instruments, panels, and termination of field wires are not included in the scope of the allowance.

END OF SECTION

SECTION 07200
WALL AND CEILING INSULATION

PART 1 GENERAL

1.01 SCOPE

A. This Section includes thermal insulation for buildings excluding roof insulation.

1.02 SUBMITTALS

A. Submittals shall be in accordance with the requirements of Section 01300 and shall include:

1. Shop Drawings for Review:

a. Product literature.

b. Two samples of each type and thickness of insulation. Samples shall be minimum 8-inch by 8-inch.

2. Information for the Record:

a. Manufacturer's certification.

b. Manufacturer's installation instructions.

PART 2 PRODUCTS

2.01 MATERIALS

A. Insulation shall be of type and thickness shown or specified.

B. Insulation shall not rot, disintegrate, slump, or leave uninsulated voids and shall not provide sustenance to vermin, rodents, insects, bacteria, or fungi. Insulation shall not react with or accelerate corrosion of steel, aluminum, or copper. Insulation shall be odorless.

C. Combustible insulation shall be treated with fire retardant.

D. Insulation shall retain thermal capacity for minimum of 20 years.

E. Production of insulation shall not utilize chemicals banned by the Montreal Accord.

2.02 TYPES

A. Type A - Fiberglass Insulation:

1. Manufacturers: Owens Corning, Johns Manville, Knauf Insulation, or equal.

2. Kraft Paper Faced Description: Pre-formed fiberglass or mineral fiber thermal and acoustical insulation, batt or roll form, kraft paper faced vapor barrier, complying with ASTM C665, Type II, Class C, Category 1.

3. Construction: Fiberglass insulation batts or rolls are bonded with thermosetting resin and adhered to a kraft paper vapor barrier.

4. Unfaced Description: Pre-formed fiberglass or mineral fiber thermal and acoustical insulation, batt or roll form, unfaced, complying with ASTM C665, Type I, ASTM E136.

5. Construction: Fiberglass insulation batts or rolls are bonded with thermosetting resin.

6. Physical Properties:

Physical Property	Test Method	Specification
Thermal Resistance (Thickness: R-Value) Min., degrees F-Sqft-Hr/BTU	ASTM C518	3-1/2": R-13 6-1/4": R-19 9-1/2": R-30
Critical Radiant Flux, W/Sqcm	ASTM E970	0.12 or greater
Water Vapor Sorption, Min., Percent by Weight	ASTM C1104	Less than 5
Water Vapor Permeance Kraft Faced, Min., Perms	ASTM E96	1.0
Surface Burning Characteristics, Flame Spread/Smoke Developed, Index Unfaced Kraft Faced	ASTM E94	 25/50 NR/NR

B. Type B Rigid Polyisoncyanurate Foam Board:

1. Manufacturers: Johns Manville, AP Foil-Faced Rigid Foam Sheathing, RMax, or equal.

2. Description: Foil-faced, rigid foam insulating sheathing product for exterior applications and concealment in cavity wall construction, complying with ASTM C1289, Type 1, Class 1.

3. Construction: Foam bonded on both sides in the manufacturing process to foil facers. Both sides printed with one side reflective foil facer and the other non-reflective foil facer.

4. Foam: Closed cell polyisocyanurate, CFC and HCFC free.

5. Physical Properties:

Physical Property	Test Method	Specification
Thermal Resistance per Nominal 1 inch Thickness Min., degrees F-Sqft-Hr/BTU	ASTM C518	6.0
Compressive Strength, Min. psi	ASTM D1621	16 or greater
Flexural Strength, Min. psi	ASTM C203	40 or greater
Water Absorption, Min., Percent by Volume	ASTM C209	0.1
Water Vapor Permeance, Min., Perms	ASTM E96	0.05
Surface Burning Characteristics, Flame Spread, Index	ASTM E84	25 or less
Surface Burning Characteristics, Smoke Developed, Index	ASTM E84	450 or less
Service Temperature, degrees F		-100 to 250

Physical Property	Test Method	Specification

6. Board Size: 48 inches wide by 96, 108, or 120 inches in length. Refer to the Drawings for required thickness.

7. Accessories:

   a. Insulation Flashing Tape: JM Ultrafast Flashing Tape, 3M All Weather Flashing Tape 8067, or equal.

   b. Wall Penetration Sealant: Tremco Spectrem 1, or equal.

   c. Insulation Fasteners: JM Ultrafast CI Plates and JM Ultrafast CI Philips screws, or equal. For masonry cavity walls refer to the masonry specification for insulation retainers.

C. Extruded Polystyrene Rigid Foam Insulation:

1. Manufacturers: Owens Corning Foamular, Dupont Styrofoam Brand SM, Dow, or equal.

2. Description: Rigid foam insulated sheathing for exterior applications complying with ASTM C578, Type IV.

3. Construction: Extruded polystyrene, closed-cell, moisture-resistant rigid foam boards.

4. Physical Properties:

Physical Property	Test Method	Specification
Thermal Resistance Min., R-Value, degrees F-Sqft-Hr/BTU @75 degrees F Mean Temperature	ASTM C518	5.0
Compressive Strength, Min. psi	ASTM D1621	25
Flexural Strength, Min. psi	ASTM C203	50
Water Absorption, Max., Percent by Volume	ASTM C272	0.3
Water Vapor Permeance, Max., Perms	ASTM E96	1.5
Dimensional Stability, Max % by Volume	ASTM D2126	2.0
Surface Burning Characteristics, Flame Spread, Index	ASTM E84	10
Surface Burning Characteristics, Smoke Developed, Index	ASTM E84	175
Service Temperature, Max. degrees F		165

PART 3 EXECUTION

3.01 PREPARATION

A. Contractor shall examine surfaces to receive insulation prior to installation. Surfaces shall be dry, free of dirt, dust, and debris.

B. Unacceptable conditions shall be reported to Engineer.

3.02 INSTALLATION

A. Insulation shall be installed and secured in locations shown. Installation shall be in accordance with manufacturer's instructions.

B. For ceilings provide Type A insulation between the joist/rafter/truss ceiling construction. Provide Kraft paper vapor barrier faced insulation where covered by drywall or other interior building wall system. Kraft paper is installed towards the interior of the building just behind the wall or ceiling board. Where second layer of insulation is required provide unfaced insulation perpendicular and on top of the faced insulation that is installed between the ceiling members to give the proper thickness and R-Value required by the energy code.

C. For masonry cavity walls provide Type B insulation between the veneer masonry and the structural backup masonry and shall be secured with insulation retainers. The insulation shall be placed against the interior face of the structural backup masonry. Provide or cut the board height to match the vertical spacing between veneer ties.

D. For foundations provide Type C insulation around the inside face of foundation walls. Adhere the insulation to the foundation.

3.03 APPLICATION OF SPRAY POLYURETHANE FOAM INSULATION

A. The foam shall be applied uniformly over the entire surface with a tolerance of plus 1/4-inch, per inch of thickness, minus zero except where variations are required to ensure proper drainage or to complete a feathered edge.

B. The spray-applied foam shall be applied in uniform pass thicknesses from 2-inch to 3/4-inch.

C. Foam used in masonry block cores shall fill the entire core. Foam shall not be used in reinforced cores.

3.04 PROTECTION

A. Insulation shall be protected from moisture and inclement weather. Exposed insulation shall be covered at end of each work day or at onset of inclement weather.

B. Damaged or wet insulation shall be removed and replaced with new material.

PART 4 SPECIAL PROVISIONS

Not used.

END OF SECTION

SECTION 07413
METAL PANEL SYSTEMS

PART 1 GENERAL

1.01 SCOPE

A. This Section includes the furnishing of all materials, equipment and labor required to install the following:

1. Roof panels.

1.02 SUBMITTALS

A. Submittals shall be in accordance with the requirements of Section 01300 and Section 01410 and shall include:

1. Shop Drawings for Review:

a. Submit product data including, but not limited to, construction details, material descriptions, dimensions of individual components and profiles, and finishes for each type metal system components:

b. Submit drawings for the following metal system components. Including, but not limited to, plans, elevations, sections, details, and attachments to other Work.

1) Panel layout drawings shall show layout of panels on support framing, details of edge conditions, joints, panel profiles, corners, custom profiles, supports, anchorages, trim, flashings, closures, and special details.

2. Information for the Record:

a. Samples and color charts showing the full range of colors available for each type of panel and accessory products with factory-applied color finishes:

b. Product Certificates, signed by manufacturers certifying that products furnished comply with requirements.

c. Warranties as specified herein.

1.03 QUALITY ASSURANCE

A. Manufacturer shall be a firm experienced in manufacturing metal systems similar to those indicated for this Project and with a record of successful in-service performance.

1. Member of Metal Buildings Manufacturers Association (MBMA).

B. The design fabrication and erection shall be in accordance with the following standards:

1. AISI SG-671 - Specification for the Design of Cold-Formed Steel Structural Members.
2. AISI SG-911 - Load and Resistance Facet Design Specification for Steel Structural Members.

1.04 PROJECT HANDLING

A. Deliver components, sheets, panels, and other manufactured items so as not to be damaged or deformed. Package roof and wall panels for protection during transportation and handling.

B. Handling - Unload, store, and erect panels to prevent bending, warping, twisting, and surface damage.

C. Stack materials on platforms or pallets, covered with tarpaulins or other suitable weathertight and ventilated covering. Store panels to ensure dryness. Do not store panels in contact with other materials that might cause staining, denting, or other surface damage.

1.05 GUARANTEE

A. Special warranties specified shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.

B. Warranty on panels shall be executed by manufacturer for repair or replacement of panels that fail in materials or workmanship within 20 years from date of Substantial Completion. Warranty shall include the labor required for the repair or replacement.

C. Warranty on panel finishes shall be executed by the manufacturer for repair of finish or replacement of metal panels that show evidence of deterioration of factory-applied finishes within specified warranty period. Deterioration of finish includes, but is not limited to, color fade, chalking, cracking, peeling, and loss of film integrity.

1. Warranty Period for all panels shall be 20 years from date of Substantial Completion.

D. Warranty on standing-seam roof panel shall be executed by manufacturer agreeing to repair or replace standing-seam roof panel assemblies that fail to remain weathertight within three years from date of Substantial Completion.

PART 2 PRODUCTS

2.01 MATERIALS

A. Available Manufacturers - Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include the following:

1. American Buildings Company.

2. Centria Building Products.
3. United Structures of America, Inc. (USA).
4. Butler Manufacturing Company.
5. Ceco Building Systems.
6. Nucor Building Systems.
7. Varco-Pruden Buildings; a United Dominion Company.
8. Or equal.

2.02 PERFORMANCE REQUIREMENTS

A. Provide a complete, integrated set of mutually dependent components and assemblies that form a system which is capable of withstanding wind and other loads, thermally induced movement, and exposure to weather without failure or infiltration of water into building interior.

B. Structural Performance - Provide metal panel systems capable of withstanding the effects of dead loads and the following loads within limits and under conditions indicated:

1. Design Loads Criteria:
    a. Indiana Building Code
    b. Building Category: III (per building code)
    c. Ground Snow Load: 20 psf
    d. Snow Exposure Factor, Ce: 1.00
    e. Snow Importance Factor: 1.10
    f. Snow Thermal Factor: Ct=1.0
    g. Roof Live Load: 20 psf (minimum)
    h. Basic Wind Speed: 115 mph
    i. Wind Exposure Category: C
2. Wind Loads - Include horizontal and vertical loads induced by a basic wind speed corresponding to a 50-year mean-recurrence interval at the Site to develop both stress and deflection calculations.

C. Engineer assemblies to withstand design loads with deflections no greater than the 1/180 of span.

D. Provide panel systems that allow for thermal movements by preventing buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects.

E. Provide panel assemblies with permanent resistance to air leakage through assembly.

F. Provide panel assemblies with no water penetration.

G. Provide panel assemblies that meet requirements of UL 580 for Class 90 wind-uplift resistance:

H. Panels shall be class one as approved by Factory Mutual.

2.03 ROOF PANELS

A. Standing-seam roof panels shall be manufacturer's standard with vertical-ribs and flat-pan panels fabricated from metallic-coated steel sheets pre-painted with coil coating, factory formed to provide 12-inch to 16-inch coverage; with 1 inch to 3-inch high, inverted-L, vertical ribs at panel edges. Design panels for mechanical attachment to roof using concealed clips and fasteners inside lap splices. Factory apply sealant at each interlocking joint. Roof panels shall be as follows:

1. Material: Aluminum-zinc alloy-coated steel (Galvalume), ASTM A792, Type AZ50 Coating, minimum.
2. Yield Strength: 50 ksi
3. Metal Thickness (Minimum): 0.0239 inch (24 Gage).
4. Joint Type: As standard with manufacturer
5. Clip System: Fixed, or floating when required to provide for thermal movement.

B. Roof panel accessories shall be components required for a complete roof panel assembly including trim, copings, fascia, corner units, ridge closures, clips, seam covers, battens, flashings, gutters, sealants, gaskets, fillers, closure strips, and similar items. Match materials and finishes of roof panels, unless otherwise indicated.

1. Closures at eave and ridge shall be fabricated of same metal as roof panels.
2. Clips shall be a minimum 0.0625-inch thick, stainless-steel panel clips designed to withstand negative-load requirements.
3. Cleats shall be mechanically seamed cleats formed from minimum 0.0250-inch thick, stainless-steel or nylon-coated aluminum sheet.

C. Apply the following coil coating to roof panels and accessories:

1. Fluoropolymer two-coat system (Kynar 500) shall be manufacturer's standard two-coat, thermocured system consisting of specially formulated inhibitive primer and fluoropolymer color topcoat containing not less than 70% polyvinylidene fluoride resin by weight, with a total minimum dry film thickness of 1 mil and 30% reflective gloss when tested according to ASTM D523.
    a. Provide coating field tested under normal range of weather conditions for a minimum of 20 years without significant peel, blister, flake, chip, crack, or check in finish; without chalking in excess of a chalk rating of 8 according to ASTM D4214; and without fading in excess of five Hunter units.

2. Colors, textures, and glosses shall be selected by Owner from manufacturer's full range for these characteristics.

D. Concealed Finish - Apply pretreatment and manufacturer's standard white or light-colored backer finish, consisting of prime coat and wash coat with a total minimum dry film thickness of 0.5 mil.

2.04 UNDERLAYMENT

A. Underlayment shall be unperforated 15-pound felt and shall meet ASTM D226.

B. Ice and water barrier shall be WeatherWatch by GAF, or equal, and shall comply with ASTM D1970. Barrier shall extend from the lowest edges of the roof surfaces to a point at least 24 inches inside the exterior wall line of the building.

2.05 RESERVED

2.06 TRIM PANELS

A. Fascia panels shall be the manufacturer's standard panels.

B. Soffit panels shall be the manufacturer's standard panels.

C. All other trim and accessory panel shall be the manufacturer's standard panel.

2.07 ACCESSORIES

A. Fasteners including self-tapping screws, bolts, nuts, self-locking rivets and bolts, end-welded studs, and other suitable fasteners shall be designed to withstand design loads. Provide fasteners with heads matching color of roof or wall sheets by means of plastic caps or factory-applied coating. Comply with the following:

1. Fasteners for roof panels shall be self-drilling or self-tapping 410 stainless or zinc-alloy steel hex washer head, with EPDM or PVC washer under heads of fasteners bearing on weather side of panels.

B. Closure accessories shall include but not be limited to eaves, rakes, corners, bases, framed openings, ridges, fascia, fillers, soffit, trim, and flashing as may be standard with the manufacturer's metal building system.

1. Provide closure accessories as required to seal against weather and to provide finished appearance.

2. Closure accessories shall be 0.0179-inch thick, zinc-coated (galvanized) steel sheet or aluminum-zinc alloy-coated steel sheet pre-painted with coil coating.

3. Finish flashing and trim with same finish system as adjacent roof or wall panels.

C. Snow guards shall be prefabricated, noncorrosive units designed to be installed without penetrating roof panel, and complete with predrilled holes, clamps, or hooks for anchoring.

1. Metal-type guard shall be of aluminum or stainless-steel rods or bars held in place by supports clamped to vertical ribs of standing-seam roof.
2. Place over all personnel doors and where indicated on Drawings.

2.08 FABRICATION

A. General - Design components and field connections required for erection to permit easy assembly and disassembly.

1. Fabricate components in a manner that once assembled in the shop, they may be disassembled, repackaged, and reassembled in the field.
2. Mark each piece and part of the assembly to correspond with previously prepared erection drawings, diagrams, and instruction manuals.

2.09 SOURCE QUALITY CONTROL

A. Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are not acceptable.

B. Variations in appearance of other components are acceptable if they are within the range of approved samples and are assembled or installed to minimize contrast.

PART 3 EXECUTION

3.01 COORDINATION

A. Coordinate installation of roof curbs, equipment supports, and roof penetrations, which are specified in Section 07800.

3.02 PREPARATION

A. Clean substrates of substances, including oil, grease, rolling compounds, incompatible primers, and loose mill scale that impair bond of erection materials.

B. Surface Preparation - Clean and prepare surfaces to be painted according to manufacturer’s written instructions for each particular substrate condition and as specified.

3.03 ERECTION AND INSTALLATION

A. Align and adjust framing members before permanently fastening. Before assembly, clean bearing surfaces and other surfaces that will be in permanent contact. Make adjustments to compensate for discrepancies in elevations and alignment.

1. Level and plumb individual members of structure.

3.04 ROOF PANEL INSTALLATION

A. General - Provide roof panels of full length from eave to ridge when possible.

1. Field cutting by torch is not permitted.
2. Rigidly fasten eave end of roof panels and allow ridge end free movement due to thermal expansion and contraction. Predrill panels.
3. Provide weatherseal under ridge cap.
4. Flash and seal roof panels with weather closures at eaves, rakes, and at perimeter of all openings. Fasten with self-tapping screws.
5. Install screw fasteners with power tools having controlled torque adjusted to compress neoprene washer tightly without damage to washer, screw threads, or panels. Install screws in predrilled holes.
6. Use aluminum or stainless-steel fasteners for exterior applications and galvanized fasteners for interior applications.
7. Locate and space fastenings in true vertical and horizontal alignment.
8. Install ridge caps as roof panel work proceeds.
9. Locate panel splices over, but not attached to, structural supports. Stagger panel splices to avoid a four-panel lap splice condition.

B. Standing-Seam Roof Panels - Fasten roof panels to sheathing with concealed clips at each standing-seam joint. Install clips over top of insulation at location and spacing determined by manufacturer.

1. Install clips to supports with self-drilling fasteners.
2. Crimp standing seams with manufacturer-approved motorized seamer tool so clip, panel, and factory-applied side-lap sealant are completely engaged.

C. At panel splices, nest panels with minimum 6-inch end lap, sealed with butyl sealant and fastened together by interlocking clamping plates.

3.05 RESERVED

3.06 ACCESSORY INSTALLATION

A. General - Install gutters, downspouts, ventilators, and other accessories according to manufacturer’s written instructions, with positive anchorage to building and weathertight mounting. Coordinate installation with flashings and other components.

B. Flashing and Trim - Comply with performance requirements, manufacturer’s written installation instructions, and SMACNA’s “Architectural Sheet Metal Manual.” Provide for thermal expansion of metal units; conceal fasteners where possible, and set units true to line and level as indicated. Install Work with laps, joints, and seams that will be permanently watertight and weather resistant.

1. Install exposed flashing and trim that is without excessive oil canning, buckling, and tool marks and that is true to line and levels indicated, with exposed edges folded back to form hems. Install sheet metal flashing and trim to fit substrates and to result in waterproof and weather-resistant performance.

2. Expansion Provisions - Provide for thermal expansion of exposed flashing and trim. Space movement joints at a maximum of 10 feet with no joints allowed within 24-inches of corner or intersection. Where lapped or bayonet-type expansion provisions cannot be used or would not be sufficiently weather resistant and waterproof, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with mastic sealant (concealed within joints).

C. Gutters - Join sections with riveted and soldered or lapped and sealed joints. Attach gutters to eaves with gutter hangers spaced not more than 4 feet OC using manufacturer's standard fasteners. Provide end closures and seal watertight with sealant. Provide for thermal expansion.

D. Downspouts - Join sections with 1 1/2-inch telescoping joints. Provide fasteners designed to hold downspouts securely 1-inch away from walls; locate fasteners at top and bottom and at approximately 60-inches OC in between.

1. Provide elbow at base of downspout to direct water away from building unless noted to be tie to underground drainage system.

2. Tie downspouts to underground drainage system indicated.

E. Pipe Flashing - Form flashing around pipe penetration and roof panels. Fasten and seal to roof panel as recommended by manufacturer.

3.07 ERECTION TOLERANCES

A. Roof Panel Installation Tolerances - Shim and align units within installed tolerance of 1/4-inch in 20 feet on slope and location lines as indicated and within 1/8-inch offset of adjoining faces and of alignment of matching profiles.

B. Wall Panel Installation Tolerances - Shim and align units within installed tolerance of 1/4-inch on level, plumb, and location lines as indicated and within 1/8-inch offset of adjoining faces and of alignment of matching profiles.

3.08 PROTECTION

A. Immediately after erection, clean, prepare, and prime or re-prime welds, bolted connections, and abraded surfaces of prime-painted primary and secondary framing, accessories, and bearing plates.

1. Clean and prepare surfaces by hand-tool cleaning, SSPC-SP 2, or power-tool cleaning, SSPC-SP 3.

2. Apply compatible primer of same type as shop primer used on adjacent surfaces.

B. Repair damaged galvanized coatings on exposed surfaces with galvanized repair paint according to ASTM A780 and manufacturer's written instructions.

C. Remove temporary protective coverings and strippable films, if any, as soon as each panel is installed. On completion of panel installation, clean finished surfaces as recommended by panel manufacturer and maintain in a clean condition during construction.

D. Replace panels that have been damaged or have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

PART 4 SPECIAL PROVISIONS

Not used.

END OF SECTION

SECTION 07460
VINYL SIDING AND SOFFIT MATERIALS

PART 1 GENERAL

1.01 SCOPE

A. This Section includes furnishing and installing vinyl siding and soffit material.

B. All Work performed under this Section shall comply with and be in accordance with approved trade practices and manufacturers' recommendations.

1.02 SUBMITTALS

A. Submittals shall be in accordance with the requirements of Section 01300 and shall include:

1. Shop Drawings for Review:

a. Manufacturer's literature.

2. Information for the Record:

a. Samples as requested by Engineer.

PART 2 PRODUCTS

2.01 MATERIALS

A. The vinyl siding, soffit material, and accessories shall conform to the following requirements as a minimum:

1. ASTM D3679 Rigid PVC Siding.

2. ASTM D635 Rate of Burning.

3. ASTM D638 Tensile Properties.

4. ASTM D696 Coefficient of Linear Thermal Expansion.

B. Siding shall be 100% PVC single beaded lab horizontal clapboard siding with smooth finish, 6-1/2-inch exposure nominal thickness 0.044-inch. Siding shall be "Somerset" by Georgia-Pacific, or equal.

C. Soffit material shall be 100% PVC triple 4-inch strips with center strip vented with perforations having a matte finish. Soffit material shall be "Easy Care T/4 Soffit" by Georgia-Pacific, or equal.

D. Installation components including fascia strips, starter strips, corner posts, trim, and molding shall be 100% PVC material provided by the manufacturer of the PVC siding and soffit material.

E. Color selection shall be by the Owner.

PART 3 EXECUTION

3.01 INSTALLATION

A. Installation shall be complete and in accordance with the manufacturer's recommendations, the Engineer's instructions, and the Contract Documents.

B. Nails shall be galvanized steel or aluminum roofing-type nails with a head diameter of 3/8-inch. The nail shank shall be 1/8-inch and long enough to penetrate at least 3/4-inch.

C. Siding shall be nailed to lath strips. Lath strips shall be at 12-inch center and all edges and openings shall be continuously frames with the same lath. Siding shall be nails to allow expansion and contraction to occur without restriction. Allow 1/4-inch gap for expansion wherever siding butts accessories.

PART 4 SPECIAL PROVISIONS

Not used.

END OF SECTION

SECTION 07600
FLASHING AND SHEET METAL WORKS

PART 1 GENERAL

1.01 SCOPE

A. This Section includes furnishing and installing metal flashing, except through-wall flashing for masonry construction.

1.02 SUBMITTALS

A. Submittals shall be in accordance with the requirements of Section 01300 and shall include:

1. Shop Drawings for Review:

a. Manufacturer's product literature.

PART 2 PRODUCTS

2.01 ALUMINUM SHEET

A. Alloy and temper of sheet shall be 3003-H14.

B. Thickness of sheet shall be 0.032-inch.

C. Sheet shall conform to standards published by the Aluminum Association.

2.02 SPECIAL FINISHES

A. Anodic coating shall be Architectural Class I. Color will be selected by Owner.

B. Paint shall be a fluorocarbon coating containing polyvinylidene fluoride resin (Kynar® or equal). Color will be selected by Owner.

2.03 FASTENERS

A. Cleats shall be aluminum of same alloy, temper, and thickness of sheet being fastened, and shall not be less than 2-inch wide.

B. Nails shall be aluminum alloy 6061 conforming to FS FF-N-105B, Type II, Style 20.

C. Screws, bolts, nuts, and washers shall be aluminum alloy 6061-T6. Washers shall not be less than 0.040-inch thick.

2.04 FABRICATION

A. Flashing shall be formed of aluminum sheet not longer than 10 feet.

B. Mechanical seams and joints shall be flat-lap or lock seams. Seams and end joints shall not be riveted or fastened to restrict thermal movement. Sealant-filled controlled slip joints shall be used to allow thermal movement.

C. Brazing of aluminum sheet shall be permitted only under shop conditions. Filler alloy 4047 shall be used for brazing and flux residue shall be completely removed.

D. Field welding of aluminum sheet shall be permitted only when done with gas tungsten-arc (TIG) or gas metal-arc (MIG) welding processes. Filler alloy 4043 or 1100 shall be used.

E. Oxyfuel-gas welding of aluminum sheet shall be permitted only under shop conditions. Filler alloy 4043 or 1100 shall be used and flux residue shall be completely removed.

F. Soldering of aluminum shall not be permitted.

2.05 BITUMINOUS PAINT

A. Bituminous paint shall be of the cutback type conforming to Specification MIL-C B (1).

PART 3 EXECUTION

3.01 COORDINATION

A. Contractor shall examine the roofing manufacturer's details and coordinate Work between trades before sheet metal is installed.

3.02 PREPARATION

A. Surfaces receiving aluminum sheet shall be smooth, dry, and free of small projections and hollows.

B. Aluminum sheet surfaces to be in contact with concrete or masonry shall be coated with bituminous paint.

C. Anodizing shall be done subsequent to forming and fabricating.

3.03 INSTALLATION

A. Apron Flashing:

1. The ends of each length of apron flashing shall be lapped not less than 4-inch, or alternatively, a 2-inch sealant filled "S" lock shall be formed at one end of the flashing sheet to receive the end of the adjacent sheet.

2. Where sloping roof meets vertical wall, the flashing shall extend up the wall face not less than 4-inch and shall be counter-flashed. The flashing shall extend over the roofing not less than 5-inch. The lower edge shall be hemmed and secured by blind cleats spaced at 24-inch centers.

B. Counter Flashing:

1. Counter flashing shall be installed over base flashings where shown on the Drawings.

2. On masonry walls, the mortar joint to receive counter flashing shall be raked out to a depth of 1-inch. The counter flashing shall extend into the raked-out joint with the inner edge bent back to form a hook dam. The counter flashing shall be secured by aluminum wedges not more than 8-inch apart and the joint shall be filled with sealant, as specified in Section 07900.

3. The counter flashing shall overlap the base flashing by not less than 3-inch, and the ends of adjacent lengths shall overlap not less than 3-inch.

C. Miscellaneous:

1. Aluminum cap flashing shall be provided for curbs, roof hatches, etc., as required by roofing manufacturer's details.

D. Drip edge, soffit, and fascia shall be installed where shown on the Drawings.

PART 4 SPECIAL PROVISIONS

4.01 SHEET METAL SCHEDULE

Type	Location	Finish
Apron	Edge of roof	Anodized and Painted
Drip edge, soffit, and fascia	Edge of roof	Anodized and Painted

END OF SECTION

SECTION 07630
GUTTERS AND DOWNSPOUTS

PART 1 GENERAL

1.01 SCOPE

A. This Section includes furnishing and installing gutters and downspouts.

B. All work performed under this Section shall comply with and be in accordance with all approved trade practices and manufacturers' recommendations.

1.02 SUBMITTALS

A. Submittals shall be in accordance with the requirements of Section 01300 and shall include:

1. Shop Drawings for Review:

   a. Manufacturer's literature.

2. Information for the Record:

   a. Samples as requested by Engineer.

PART 2 PRODUCTS

2.01 ALUMINUM GUTTERS AND DOWNSPOUTS

A. Aluminum gutter and downspout system shall meet the following thicknesses:

Gutters	0.032-inch
Downspouts	0.024-inch
Roof Apron	0.027-inch
End Caps	0.027-inch

B. Sealing material shall be Alcoa Gutterseal, Reynolds Aluminum, or equal.

C. Expansion joints shall be aluminum neoprene.

D. Downspout anchors shall be aluminum die casting and spaced no greater than 30 inches apart.

E. Finishes shall be baked enamel; color selected by the Owner from manufacturer's standards.

2.02 RESERVED

PART 3 EXECUTION

3.01 INSTALLATION

A. Installation shall be complete and in accordance with the manufacturer's recommendations, the Engineer's instructions, and the Contract Documents.

B. Gutters and downspouts shall be installed in accordance with the International Building Code Chapter 15 and the International Plumbing Code Chapter 11.

3.02 ALUMINUM INSTALLATION

A. Sealing joints and final cleaning shall be in accordance with Alcoa Architectural Aluminum Care During Construction, latest edition.

3.03 PVC INSTALLATION

A. Joints shall be cement welded per manufacturer's recommendations.

PART 4 SPECIAL PROVISIONS

4.01 GUTTER SCHEDULE

Gutter Size	Downspout Size	Material	Location
5"K – Style	3" x 4"	Aluminum	Pump Station

END OF SECTION

SECTION 07900
CAULKING AND SEALANTS

PART 1 GENERAL

1.01 SCOPE

A. This Section includes caulking and sealants.

1.02 SUBMITTALS

A. Submittal shall be in accordance with the requirements of Section 01300 and shall include:

1. Shop Drawings for Review:

a. Contractor shall indicate variances from requirements of Contract Documents.

b. Product literature.

c. Manufacturer's standard color chart.

2. Information for the Record:

a. Manufacturer's surface preparation and installation instructions.

b. Written guarantee.

1.03 QUALITY ASSURANCE

A. Contractor shall have minimum of five years experience installing sealants.

1.04 GUARANTEES

A. Contractor shall guarantee sealant joints against adhesive and cohesive failure of sealant and against water penetration through joint for five years.

PART 2 PRODUCTS

2.01 CAULKING AND SEALANTS

A. Type A:

1. Sealant shall be two component polyurethane sealant, conforming to ASTM C920, Type M, Class 25, Type I, and either Grade NS or Grade P as appropriate. Sealant shall have Shore A hardness of 20-40 and minimum elongation of 500%.

2. Sealant shall be suitable for continuous immersion service in water and sewage.

3. Sealant shall be Sika Corporation "Sikaflex-2c NS/SL", Polymeric Systems, Inc. "PSI 501/551", or equal.

B. Type B:

1. Sealant shall be one component neutral or acetoxy cure silicone sealant conforming to ASTM C920, Type S, Class 25, Grade NS with Shore A hardness of 25-30.

C. Type C:

1. Sealant shall be one component, non-sag mildew resistant silicone sealant conforming to ASTM C920, Type S, Class 25, Grade NS, with Shore A hardness of 25-30.

D. Type D:

1. Sealant shall be one component acrylic latex caulk conforming to ASTM C834. Material shall be suitable for painting.

E. Type E:

1. Two component, coal-tar extended, fuel resistant polyurethane sealant conforming to ASTM C920, Type M, Class 25, Grade NS or Grade P as appropriate, with Shore A hardness of 15-35.

2.02 ACCESSORIES

A. Primer shall be sealant manufacturer's recommended primer for intended substrates and intended service conditions. Primer shall be non-staining.

B. Backer rod shall be closed cell polyethylene or polyurethane as recommended by sealant manufacturer. Materials impregnated with oils, asphalt, or solvents are not acceptable. Backer rod shall be minimum of 33% oversized.

C. Bond breaker tape shall be polyethylene or similar type material which does not bond to sealant.

PART 3 EXECUTION

3.01 COORDINATION

A. Manufacturer's recommendations for proper temperature and humidity conditions for installation shall be followed. Sealants shall not be installed when the ambient temperature is below 40 degrees F.

B. Substrate surface shall be inspected to ensure that no bond breaking materials contaminate surfaces to which sealant is to adhere.

C. Joint dimensions shall be verified prior to installing sealant to ensure that dimensions are within tolerances specified in sealant manufacturer's literature.

3.02 PREPARATION

A. Surfaces shall be prepared in accordance with manufacturer's recommendations to ensure maximum adhesion. Surfaces shall be dry, sound, and free of oil, grease, dust,

dirt, curing agents, temporary protective coatings, and other materials deleterious to bond.

B. Adjacent surfaces which are not to receive sealant shall be masked before primer and sealant is applied. Masking shall be removed immediately after sealant has been installed and tooled.

C. Primer shall be applied prior to installation of backer rod or bond breaker tape.

3.03 INSTALLATION

A. Backer rod shall be installed using only blunt or rounded tools designed to ensure uniform depth of backer rod without puncturing the material. Backer rod shall not be stretched, twisted or braided.

B. Where joint depth does not permit use of backer rod, bond breaker tape shall be installed to prevent three-sided adhesion.

C. Sealants shall be prepared, mixed, and installed in accordance with manufacturer's instructions using equipment recommended by sealant manufacturer. Sealant shall be installed as shown.

D. Sealants shall be tooled to uniformly smooth, slightly concave surface as shown on Drawings.

3.04 SCHEDULE

A. Unless shown or specified otherwise, sealant types shall be as follows:

Joint Type or Use	Sealant Type
Expansion joints, control joints, isolation joints, precast concrete joints.	A
Door, window, and other wall penetrations in exterior walls.	A
Joints in liquid-retaining structures	A
Structural or non-structural glazing	B
General building-interior use in bathrooms, kitchens, locker rooms, and other wet or humid areas.	C
General building use in areas other than those specified above.	D

B. Sealant color will be selected by the Owner.

PART 4 SPECIAL PROVISIONS

Not used.

END OF SECTION

SECTION 09250
GYPSUM DRYWALL CONSTRUCTION

PART 1 GENERAL

1.01 SCOPE

A. This Section includes light gauge metal framing, bracing, tracks, bridging, fasteners, gypsum board panels, tapes and joint systems, metal trim, and accessories.

B. Additional product requirements are specified in Section 01350.

1.02 SUBMITTALS

A. Submittals shall be in accordance with the requirements of Section 01300 and shall include:

1. Shop Drawings for Review:

a. The Contractor shall indicate all variances from the requirements of the Contract Documents.

b. Manufacturer's literature.

PART 2 PRODUCTS

2.01 METAL FRAMING AND CEILING BOARD CONSTRUCTION

A. Metal framing shall be 18-gauge minimum, spaced at 16-inch on center, and be of screw stud type system. Use Type "S-12" drywall screws to secure panels to framing.

B. Gypsum Board (Fire Rated) - Fire-rated gypsum wallboard, 5/8-inch thick. Fire-rated gypsum wallboard shall comply with ASTM C36 and FS SS-L-30D, Type 111, Grade X, Class 1, with a paper-face surface suitable to receive decorated finish. Edges shall be tapered to receive manufacturer's standard joint treatment, unless otherwise shown.

C. Provide drywall materials, including wallboard, accessories, fasteners, and finishing materials produced by US Gypsum, National Gypsum, or equal.

D. Provide durable and moisture resistant fiberglass finish board with Class A fire rating to underside of all ceilings. Finish to be smooth or embossed. Glasbord Fire-X FXE supplied by Crane composites, Inc. or approved equal.

PART 3 EXECUTION

3.01 INSTALLATION

A. Provide all joint tape and joint compound for a complete joint installation. All joints shall be invisible after painting. Taping and sanding shall be by the Contractor.

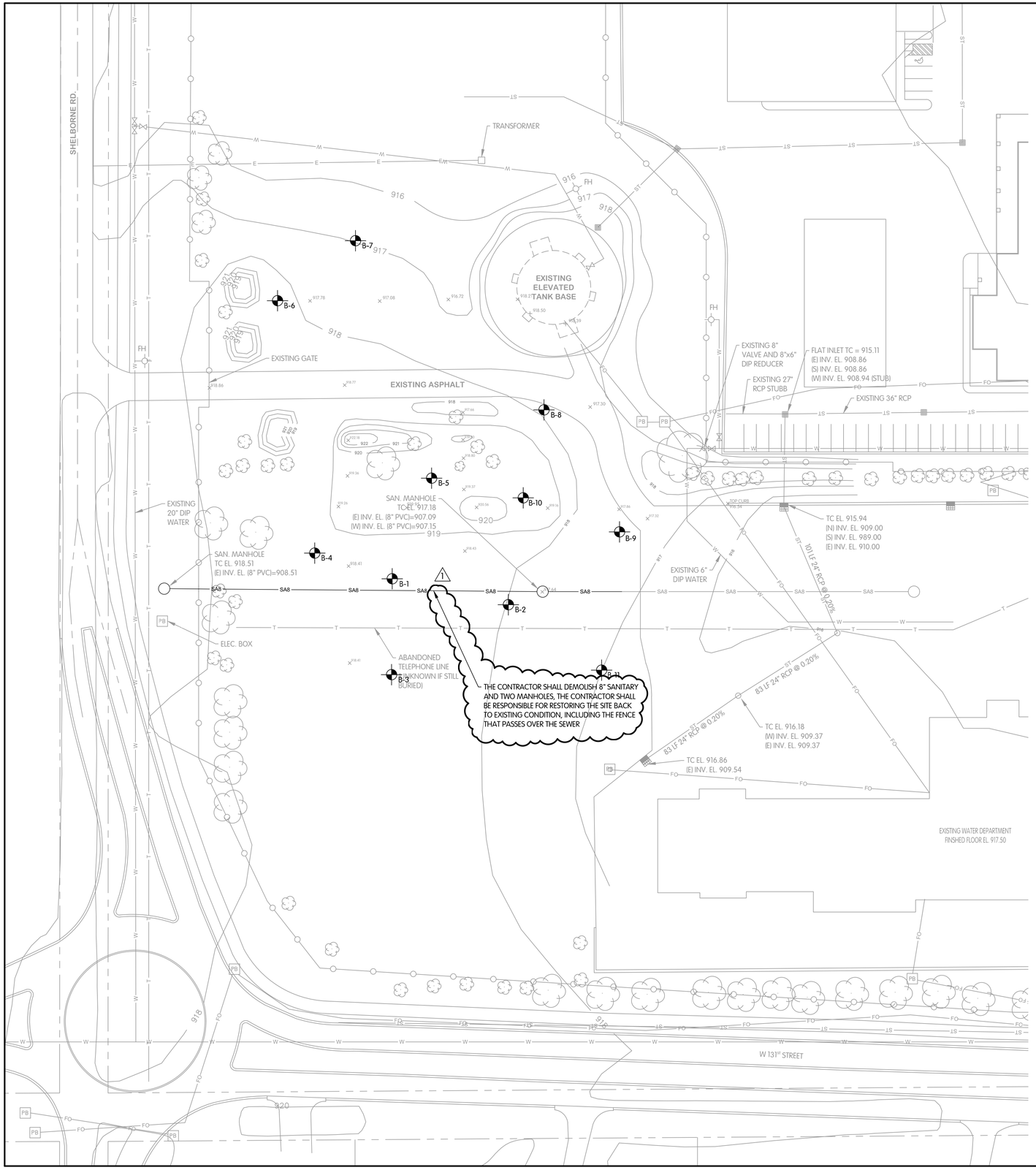
B. All materials shall be installed in accordance with the manufacturer's recommendations and specifications. Materials as supplied by National Gypsum Co., US Gypsum Co., or equal.

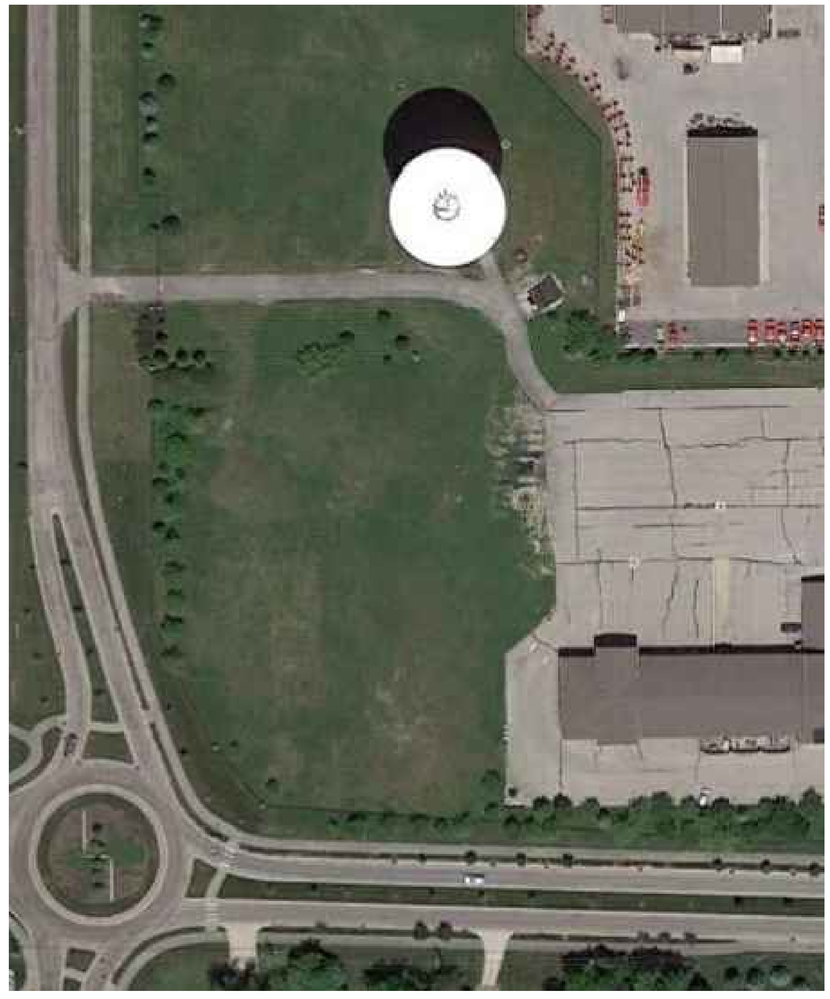
C. Provide all required blocking or steel plate reinforcement construction to receive all items that depend on ceiling hung type of construction.

D. Mastic to apply gypsum wallboard to other wallboards, concrete block walls, or insulation surface shall be "Gold Bond" modified contact adhesive.

E. Installation shall be complete and in accordance with the manufacturer's recommendations, the Engineer's instructions, and the Contract Documents.

END OF SECTION





AERIAL VIEW
NTS

PHILIP DAVID TEAGUE
REGISTERED
No. 12000434
STATE OF
INDIANA
PROFESSIONAL ENGINEER

CITY OF CARMEL
A PARTNERSHIP
INDIANA

GENERAL EXISTING SITE PLAN

WEST GROUND STORAGE TANK BOOSTER PUMP STATION
CITY OF CARMEL, INDIANA

NO.	DATE	REVISIONS AFTER ISSUED FOR BID	BY
5	11-26-24	ADDENDUM 5	JDM
4			
3			
2			
1			

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JOB NO. 451-7893.001

SCALE 1"=40'

THIS LINE SCALES 1" WHEN PLOTTED TO NOTED SCALE

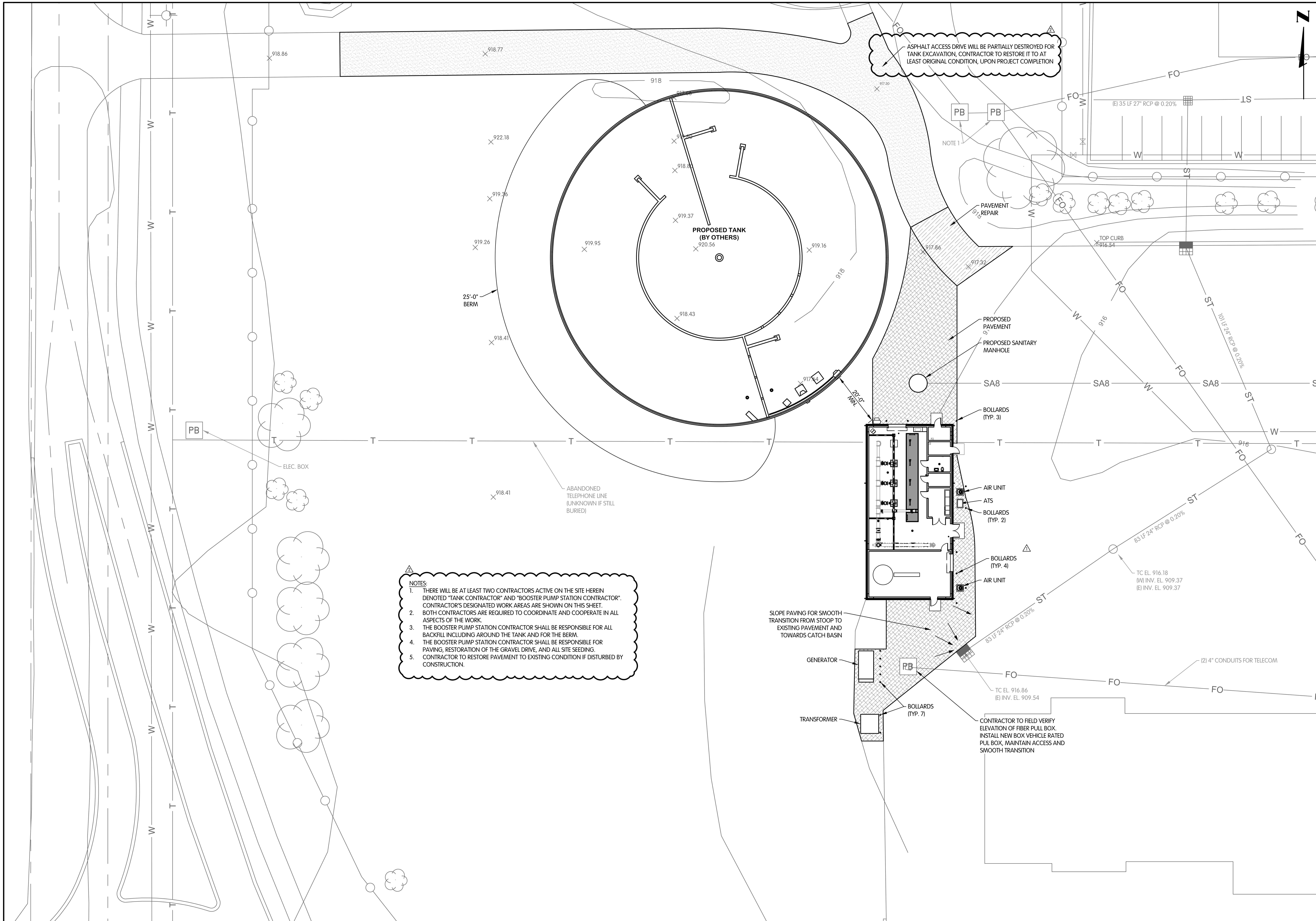
DESIGNED	DRAWN	CHECKED
JDM	TJG	JDM

STATUS: ISSUED FOR BID

DATE: SEPTEMBER 2024

SHEET NO.
G-3
3 OF 50

TOL-7893000G03-G-5 EXISTING SITE PLAN
11/26/2024, 1:58 PM - RWORLEY
11/26/2024, 1:16 PM



NOTES:

1. THERE WILL BE AT LEAST TWO CONTRACTORS ACTIVE ON THE SITE HEREIN DENOTED "TANK CONTRACTOR" AND "BOOSTER PUMP STATION CONTRACTOR". CONTRACTOR'S DESIGNATED WORK AREAS ARE SHOWN ON THIS SHEET.
2. BOTH CONTRACTORS ARE REQUIRED TO COORDINATE AND COOPERATE IN ALL ASPECTS OF THE WORK.
3. THE BOOSTER PUMP STATION CONTRACTOR SHALL BE RESPONSIBLE FOR ALL BACKFILL INCLUDING AROUND THE TANK AND FOR THE BERM.
4. THE BOOSTER PUMP STATION CONTRACTOR SHALL BE RESPONSIBLE FOR PAVING, RESTORATION OF THE GRAVEL DRIVE, AND ALL SITE SEEDING.
5. CONTRACTOR TO RESTORE PAVEMENT TO EXISTING CONDITION IF DISTURBED BY CONSTRUCTION.

PHILIP DAVID TEAGUE REGISTERED No. 12000434 STATE OF INDIANA PROFESSIONAL ENGINEER

CITY OF CARMEL A PARTNERSHIP FOR TOMORROW INDIANA

PAVEMENT AND GRADING CIVIL PLAN

WEST GROUND STORAGE TANK BOOSTER PUMP STATION
CITY OF CARMEL, INDIANA

NO.	DATE	REVISIONS AFTER ISSUED FOR BID	BY
1	10-29-24	ADDENDUM 1	JDM
2	11-26-24	ADDENDUM 5	JDM
3			
4			
5			

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DESIGNED	DRAWN	CHECKED
JDM	LKB	JDM

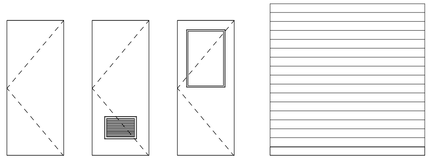
STATUS: ISSUED FOR BID
DATE: SEPTEMBER 2024

SHEET NO.
C-2
5 OF 50

TOL-789300\C02-C-2 PAVEMENT PLAN
11/26/2024 12:51 PM - RWORLEY
11/26/2024 3:16 PM

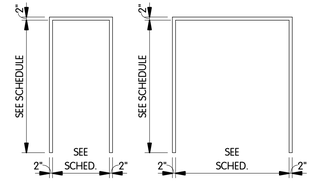
DOOR SCHEDULE

TAG / ID	QNTY.	DOOR WIDTH	DOOR HEIGHT	DOOR THICKNESS	DOOR TYPE	DESCRIPTION	DOOR MATERIAL	DETAILS HEAD	DETAILS JAMB	DETAILS THRESHOLD	FRAME MATERIAL	UL LABEL	REMARKS
PUMP STATION													
D-1-1	1	6' - 0"	7' - 2"	1 3/4"	HL	DOUBLE LEAF DOOR	ALUM	H-1	J-1	T-1	ALUM	N/A	
D-1-2	1	3' - 0"	7' - 2"	1 3/4"	HL	SINGLE LEAF DOOR	ALUM	H-1	J-1	T-1	ALUM	N/A	
D-1-3	1	3' - 0"	7' - 2"	1 3/4"	HL	SINGLE LEAF DOOR	ALUM	H-1	J-1	T-1	ALUM	N/A	
D-1-4	1	8' - 0"	10' - 0"	1 1/2"	RO	ROLL UP DOOR	ALUM	H-2	J-2	T-2	GALV	N/A	
D-1-5	1	3' - 0"	7' - 2"	1 3/4"	F	SINGLE LEAF DOOR	ALUM	H-3	J-3	T-1	ALUM	N/A	
D-1-6	1	3' - 0"	7' - 2"	1 3/4"	F	SINGLE LEAF DOOR	ALUM	H-3	J-3	T-1	ALUM	N/A	
D-1-7	1	6' - 0"	7' - 2"	1 3/4"	F	DOUBLE LEAF DOOR	ALUM	H-3	J-3	T-1	ALUM	N/A	PANIC HARDWARE PER NEC, 90 MINUTE FIRE RATING
D-1-8	1	8' - 0"	10' - 0"	1 1/2"	RO	ROLL UP DOOR	ALUM	H-2	J-2	T-2	GALV	N/A	
D-1-9	1	3' - 0"	7' - 2"	1 3/4"	HL	SINGLE LEAF DOOR	ALUM	H-1	J-1	T-1	ALUM	N/A	
D-1-10	1	3' - 0"	7' - 2"	1 3/4"	F	SINGLE LEAF DOOR	ALUM	H-3	J-3	T-1	ALUM	N/A	
D-1-11	1	3' - 0"	7' - 2"	1 3/4"	HL	SINGLE LEAF DOOR	ALUM	H-3	J-3	T-1	ALUM	N/A	PANIC HARDWARE PER NEC, 90 MINUTE FIRE RATING



DOOR TYPES

NTS



DOOR FRAME TYPES

1/4" = 1'-0"

WINDOW SCHEDULE

TAG / ID	QNTY	WINDOW WIDTH	WINDOW HEIGHT	WINDOW TYPE	DESCRIPTION	DETAILS HEAD	DETAILS JAMB	DETAILS SILL	FRAME MATERIAL	HARDWARE SET	REMARKS
PUMP STATION											
W-1-1	1	2' - 0"	2' - 8"	F	FIXED WINDOW	WH-1	WJ-1	WS-1	ALUM		
W-1-2	1	2' - 0"	2' - 8"	F	FIXED WINDOW	WH-1	WJ-1	WS-1	ALUM		
W-1-3	1	2' - 0"	2' - 8"	F	FIXED WINDOW	WH-1	WJ-1	WS-1	ALUM		

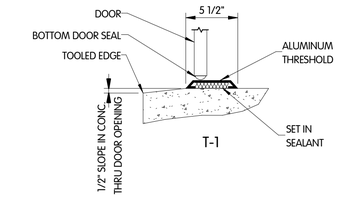
F

WINDOW TYPES

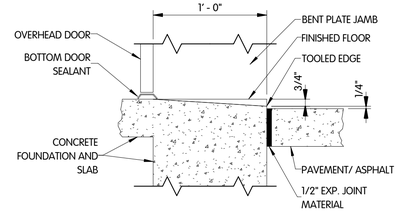
1/4" = 1'-0"

ARCHITECTURAL ABBREVIATIONS

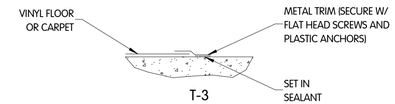
ALUM	ALUMINUM
B	BOTTOM
BLDG	BUILDING
C/C	CENTER TO CENTER
CJ	CONTROL JOINT
DIA	DIAMTER
DEG	DEGREES
DIAG	DIAGONAL
EL	ELEVATION
EMB	EMBEDMENT
EXPJT	EXPANSION JOINT
EXT	EXTERIOR
EXIST	EXISTING
FRB	FIBERGLASS
GALV	GALVANIZED STEEL
HORIZ	HORIZONTAL
INT	INTERIOR
NTS	NOT TO SCALE
O/O	OUT TO OUT
SS	STAINLESS STEEL
STD	STANDARD
T	TOP
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
VERT	VERTICAL



T-1



T-2



T-3

THRESHOLD TYPES

1 1/2" = 1'-0"

NOTE:
SCHEDULES ARE NOT GUARANTEED TO BE COMPLETE. ALL ITEMS SHOWN ON THE DRAWINGS OR SPECIFIED SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR WHETHER OR NOT LISTED IN THE FOLLOWING SCHEDULE.

PHILIP DAVID TEAGUE REGISTERED No. 12000434 STATE OF INDIANA PROFESSIONAL ENGINEER

CITY OF CARMEL A PARTNERSHIP FOR HOMETOWNS INDIANA

PUMP BUILDING
ARCHITECTURAL
NOTES, ABBREVIATIONS, SCHEDULES AND DETAILS

WEST GROUND STORAGE TANK BOOSTER PUMP STATION
CITY OF CARMEL, INDIANA

NO.	DATE	REVISIONS AFTER ISSUED FOR BID	BY
3	11-26-24	ADDENDUM 5	JDM
2	11-15-24	ADDENDUM 4	JDM

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JOB NO.:	451-7893.001
SCALE:	AS INDICATED
	THIS LINE SCALES 1" WHEN PLOTTED TO NOTED SCALE
DESIGNED	JDM
DRAWN	RGW
CHECKED	JDM
STATUS:	ISSUED FOR BID
DATE:	SEPTEMBER 2024
SHEET NO.	A-0.1
	11 OF 50

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11/26/2024 3:19:54 PM

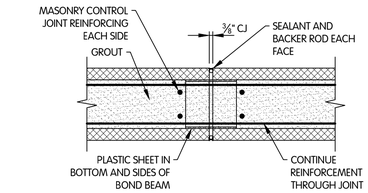
TYPICAL MASONRY LINTEL SCHEDULE FOR 4", 8" & 12" UNITS

MASONRY OPENING	ANGLE SIZE	BEARING EACH END
LESS THAN 4'-0"	L 3½"x 3½"x 5/16"	4"
4'-0" TO 6'-6"	L 5"x 3½"x 5/16"	6"
6'-6" TO 8'-6"	L 6"x 3½"x 5/16"	8"

NOTES:
1. USE THIS SCHEDULE FOR MASONRY OPENING LINTELS, UNLESS NOTED OTHERWISE
2. LINTELS SHALL HAVE AN ANGLE FOR EACH FOUR INCHES OF WALL THICKNESS. PLACE EVERY TWO ANGLES BACK TO BACK AND WELD TOGETHER.
3. ALL EXTERIOR WALL LINTELS SHALL BE GALVANIZED, PRIMED AND PAINTED. ALL INTERIOR WALL LINTELS SHALL BE PRIMED AND PAINTED.

STANDARD MASONRY NOTES:

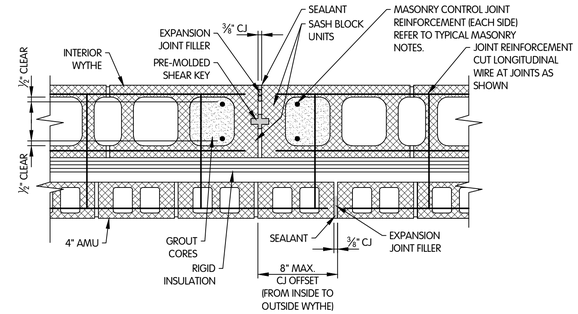
1. MASONRY BLOCK WALLS SHALL BE VERTICALLY REINFORCED WITH #5@48" C/C.
2. ALL WALL CORNERS, ENDS, CONTROL JOINTS AND JAMBS OF OPENINGS GREATER THAN 2'-10" SHALL BE REINFORCED VERTICALLY FOR FULL HEIGHT OF FLOOR AS FOLLOWS: 8" WALLS SHALL BE REINFORCED WITH (1) #5, 12" WALLS SHALL BE REINFORCED WITH (2) #5.
3. ALL VERTICAL WALL REINFORCEMENT SHALL SPAN FROM FOOTING TO PARAPET IN SOLID GROUTED CELLS, WITH 48 BAR DIAMETER LAPS. DOWEL WALLS TO FOOTING WITH MATCHING REINFORCEMENT, UNLESS NOTED OTHERWISE. STRAIGHT DOWELS SHALL BE EMBEDDED 36 BAR DIAMETERS AND HOOKED DOWELS SHALL BE EMBEDDED 12 BAR DIAMETERS.
4. MASONRY BLOCK WALLS SHALL BE HORIZONTALLY REINFORCED AS SHOWN BY SECTIONS AND WITH 9 GAGE, LADDER TYPE, JOINT REINFORCING AT 16" C/C. PROVIDE CORNER BARS AT HORIZONTAL REINFORCEMENT WITH 48 BAR DIA. LAPS. RUN ROOF BEARING ELEVATION AND TOP OF WALL BOND BEAM REINFORCING THROUGH MASONRY CONTROL JOINTS, UNLESS NOTED OTHERWISE.
5. ALL MASONRY WALL OPENINGS GREATER THAN 12" REQUIRE A LINTEL. REFER TO MECHANICAL DRAWINGS FOR MECHANICAL OPENINGS. PROVIDE WINDOW LINTEL HEAD H-5, JAMB J-5 AND SILL S-5 FOR MECHANICAL OPENINGS.
6. VERTICAL MASONRY CONTROL JOINTS SHALL BE SPACED @ 20'-0" ON CENTER, MAXIMUM. THE JOINT SPACING SHALL INCLUDE THE DISTANCE MEASURED AROUND BUILDING CORNERS TO THE NEXT JOINT.



NOTE:
1. THIS DETAIL ONLY APPLIES TO BOND BEAMS AT ROOF BEARING AND TOP OF WALL ELEVATIONS. REFER TO OTHER TYPICAL WALL CONTROL JOINT DETAILS FOR BOND BEAMS AT OTHER ELEVATIONS.

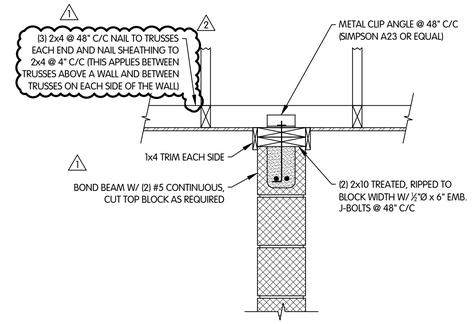
TYPICAL ROOF BEARING AND TOP OF WALL BOND BEAM CONTROL JOINT DETAIL

1½"=1'-0"



TYPICAL WALL CONTROL JOINT (CJ)

CAVITY WALL CONSTRUCTION 1½"=1'-0"



TYPICAL WALL CONNECTION TO PARALLEL TRUSSES DETAIL

MASONRY WALL DETAILS

NTS

PHILIP DAVID TEAGUE REGISTERED No. 12000434 STATE OF INDIANA PROFESSIONAL ENGINEER

CITY OF CARMEL A PARTNERSHIP FOR HOMETOWN LIVING INDIANA

STRUCTURAL
MASONRY NOTES AND DETAILS

WEST GROUND STORAGE TANK BOOSTER PUMP STATION
CITY OF CARMEL, INDIANA

NO.	DATE	REVISIONS AFTER ISSUED FOR BID	BY
5	11-04-24	ADDENDUM 5	JDM
4	11-04-24	ADDENDUM 4	JDM

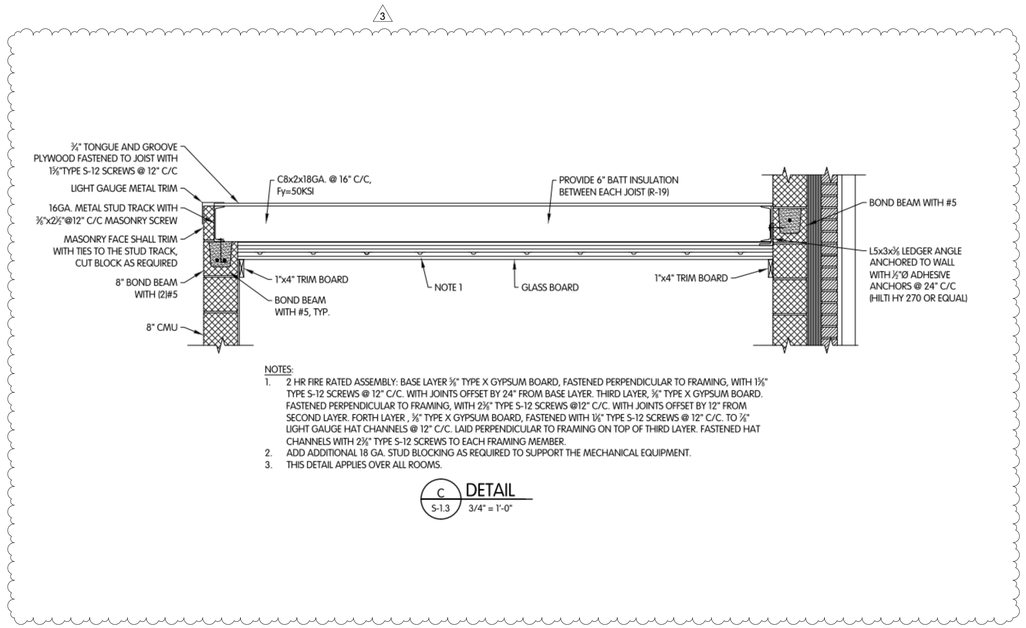
Jones & Henry Engineers, Ltd.
Fluid thinking®.
www.JHeng.com

JOB NO. 451-7893.001
SCALE AS SHOWN
THIS LINE SCALES 1" WHEN PLOTTED TO NOTED SCALE

DESIGNED	DRAWN	CHECKED
JDM	LKB	JDM

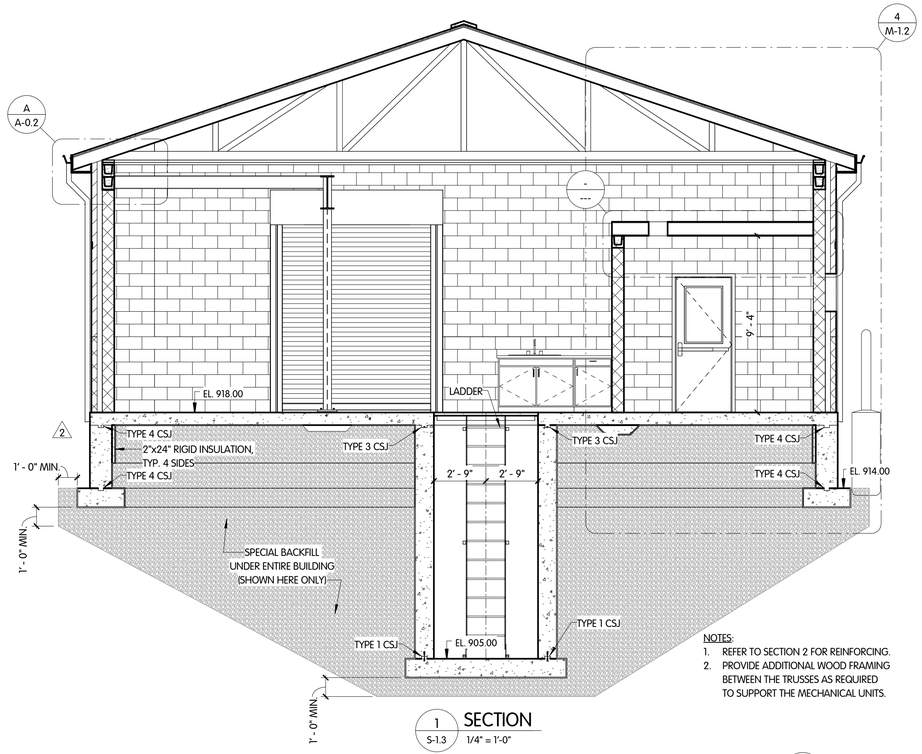
STATUS: ISSUED FOR BID
DATE: SEPTEMBER 2024
SHEET NO.
S-0.2
17 OF 50

TQL-7893001S01-MASONRY NOTES AND DETAILS
11/26/2024 3:17 PM - RWORLEY
11/26/2024 3:17 PM

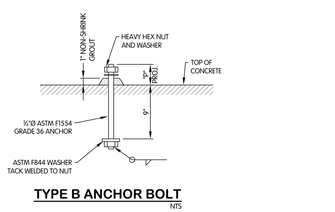


NOTES:
1. 2 HR FIRE RATED ASSEMBLY: BASE LAYER ⅝" TYPE X GYPSUM BOARD, FASTENED PERPENDICULAR TO FRAMING, WITH 1⅝" TYPE S-12 SCREWS @ 12" C/C. WITH JOINTS OFFSET BY 24" FROM BASE LAYER. THIRD LAYER, ⅝" TYPE X GYPSUM BOARD. FASTENED PERPENDICULAR TO FRAMING, WITH 2⅜" TYPE S-12 SCREWS @12" C/C. WITH JOINTS OFFSET BY 12" FROM SECOND LAYER. FORTH LAYER , ⅝" TYPE X GYPSUM BOARD, FASTENED WITH 1⅝" TYPE S-12 SCREWS @ 12" C/C. TO ⅞" LIGHT GAUGE HAT CHANNELS @ 12" C/C. LAID PERPENDICULAR TO FRAMING ON TOP OF THIRD LAYER. FASTENED HAT CHANNELS WITH 2⅜" TYPE S-12 SCREWS TO EACH FRAMING MEMBER.
2. ADD ADDITIONAL 18 GA. STUD BLOCKING AS REQUIRED TO SUPPORT THE MECHANICAL EQUIPMENT.
3. THIS DETAIL APPLIES OVER ALL ROOMS.

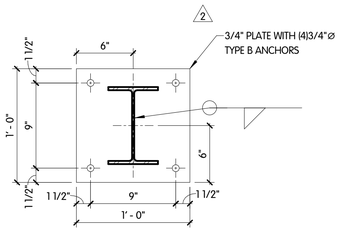
C / S-1.3 DETAIL 3/4" = 1'-0"



1 / S-1.3 SECTION 1/4" = 1'-0"

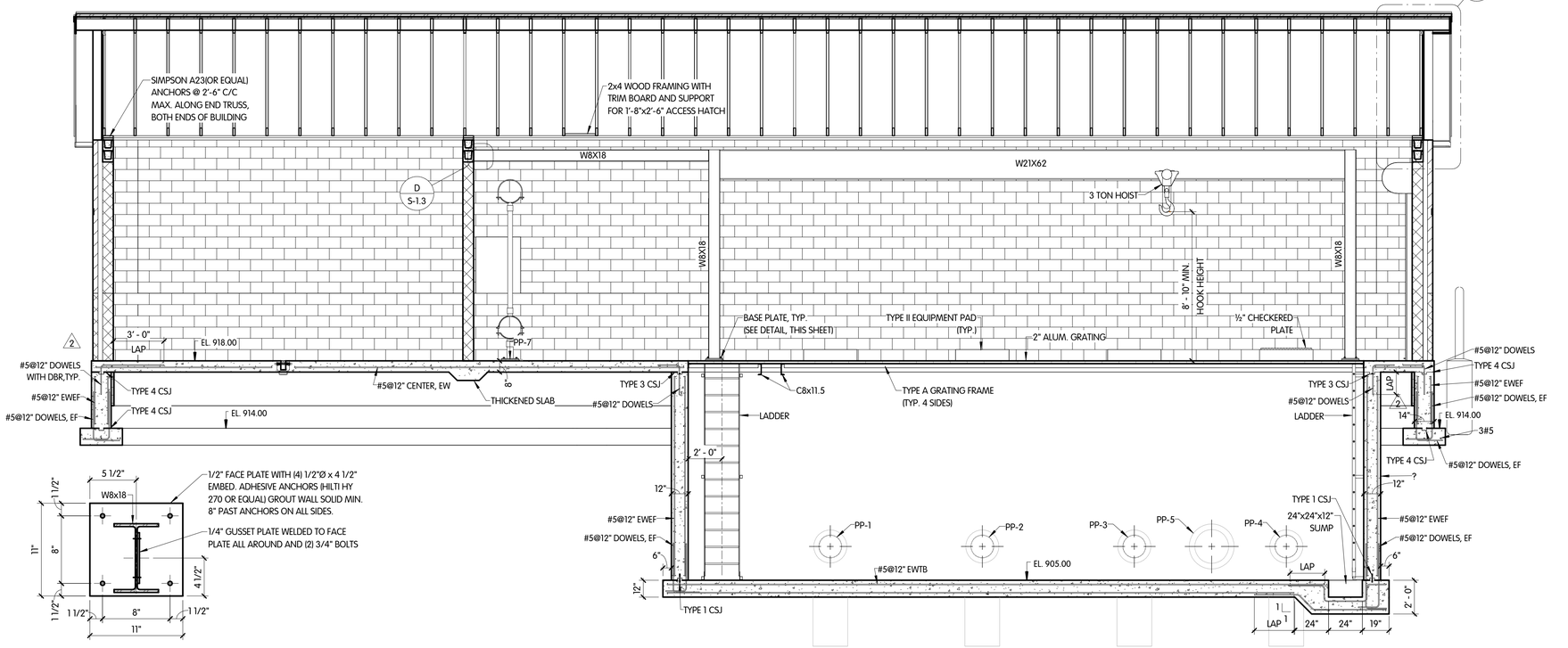


TYPE B ANCHOR BOLT
NTS



BASE PLATE DETAIL
1 1/2" = 1'-0"

D / S-1.3 DETAIL 1 1/2" = 1'-0"



2 / S-1.3 SECTION 1/4" = 1'-0"

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PUMP BUILDING STRUCTURAL SECTIONS AND DETAILS

WEST GROUND STORAGE TANK BOOSTER PUMP STATION
CITY OF CARMEL, INDIANA

NO.	DATE	REVISIONS AFTER ISSUED FOR BID	BY
3	11-26-24	ADDENDUM 5	JDM
4	11-26-24	ADDENDUM 6	JDM

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