ADDENDUM NO. 2
MIAMI WELL FIELD EXPANSION, PH. 1 REBID
5% MBE PARTICIPATION

APRIL 4, 2025

TO ALL BIDDERS:

This addendum is issued to modify the specifications and contract documents for the titled project. This addendum, including all articles and corrections listed below, shall be taken into account in preparing the "Proposals" and shall become part of the Contract.

All bidders are requested to attach this Addendum to the Bid Form and return to the City. This Addendum No. 2 includes:

- Pages: AD2-1 through AD2-7 and attachments.

CLARIFICAITON TO CONTRACTOR QUESTIONS

Question:

1. It does not appear the 8" PVC pond sensor pipe material is specified. Please advise.
   Response:
   8" PVC pond sensor pipe material is to be the same as the piping specified in Section 02610.

Question:

2. We assume the 36" x 16" Flanged tee on D-102 is supposed to be a MJ ductile tee. Please advise.
   Response:
   The 36"x16" FLG tee on sheet D-102 is intended to be a MJ Ductile tee.

Question:

3. I-602 gives a pipe specification table that contradicts what is listed in the specifications and general notes. We assume C900 PVC is to be DR14, 200 psi based on the 02610 spec and ductile pipe is to be CL 51 as shown on G-002, but please clarify.
   Response:
   PVC is to be as specified in section 02610.

   Ductile pipe is to be as specified in Item 824 "DUCTILE IRON WATER PIPE" of the City of Dayton Construction and Materials Specifications.

Question:

4. Can a flanged piping specification be provided?
   Response:
   See revised Specification 01000.

Question:

5. Is the GC to hire and pay for all testing?
   Response:
   Special inspections to be performed by the City of Dayton. Refer to Sheet S-003, Specification 02300, Section 3.05B, and Specification 03300, Section 3.14 A. Contractor is responsible for quality assurance testing of materials/work and pipeline testing in accordance with Item 802 of the City of Dayton Construction and Materials Specifications.

Question:

6. Please confirm we can use hydro seeding to replace any grasses damaged during construction?
   Response:
   Yes, this is acceptable.

Question:

7. Is there a rough NTP date?
   Response:
   Currently anticipated in June 2025.

Question:

8. Please clarify the Minority requirements for this project, is it just 5% MBE?
   Response:
   In summary, the following participation goals are established for this project:
   - *5% MBE (1.3% must be Certified with the UCP; 3.7% must be either Certified with the UCP or be from the PEP Certification List)*
   - *1% WBE (all 1.0% must be Certified with the UCP)*

Question:

9. On pages C-502, C-503, and C-504 there are option 1 and option 2 shown for the design of the ponds. Can the contractors pick either one of these designs to follow?
   Response:
   When presented with options for the section of a proposed pond, the contractor may select one of the two design options.

Question:

10. Please clarify that these additional forms are to be uploaded with the PEP forms;
    a. Contractor Equal Employment Opportunity Certification Form
    b. Certification Regarding Debarment Form
    c. DBE 6100-3
    d. DBE 6100-4
    e. DBE 6100-2 (form is not applicable until contract, but it says to submit with bid)
    f. Build America Form
    g. American Iron Form

    Response:
    In addition to the two PEP forms (HRC PEP Certified Participation and PEP Participation Commitment or Waiver Request), the above forms are required to be submitted with the bid proposal.

Question:

11. Can you confirm which is correct, the drawing or the spec? It's conflicting. Drawing shows a 6" thick insulated metal roof panel system fastened directly to the existing PEMB structure. Spec call for a traditional standing seam roof over underlayment, coverboard, insulation, vapor retarder, substrate board, over a solid deck/roof liner – which I am assuming would be metal deck installed to the existing PEMB structure.
Response:
The drawings are correct. Specification 07420 has been added.

Question:

12. Can new control vault boxes be precast concrete?
Response:
No, proposed control vaults are to be cast-in-place.

Question:

13. Is the following statement correct?
    a. In summary, the following participation goals are established for this project:
        i. 5% MBE (1.3% must be certified with the UCP; 3.7% must be either certified with the UCP or be from the PEP certification list)
        ii. 1% WBE (all 1.0% must be certified with the UCP)

Response:
Yes, that statement is correct.

Question:

14. Spec 07410 mentions standing seam roof panels, substrate board, vapor retarder, (2) 2 ½" layers of polyiso board insulation, cover board, and felt underlayment. The roof details on sheet A-301 show metal roof liner, 6" thick roof panels, and vapor barrier below the 6" thick roof panels. Please clarify the roof system.
Response:
Drawing detail is correct. Specification 07420 has been added.

Question:

15. *Can a spec be issued for the "Roof Lifeline System" noted on A-101 (note #12)?*
Response:
See Addendum 2 – attached specification Section 11240 – Fall Protection Equipment.

Question:

16. The scales for Pond P11 seem to be off from page to page. We are getting different measurements from page to page. Please clarify details and lengths of pond P11. C-208 (244') seems to be correct based on 8-in PVC pipe for the sensor mh, but the detail sheet C-503 (146.18) seems to be incorrect. See exhibits below.
Response:
See Addendum 2.

Question:

17. No tapping valve is called out on the drawings. Do we need tapping valves?
Response:
Yes, tapping valve shall be included with the tapping sleeve. See Addendum 2 for modifications to the tapping sleeve specification to include tapping valves.

Question:

18. Is there a head wall at the ends of the Recharge Line, no details but there appears to be some sort of end treatment on the piping, see highlighted in red below.
Response:
New Recharge Lines are to receive a concrete end treatment as shown on Sheet C-509. Sensor Manhole Lines are to receive a concrete end treatment as shown on Sheet C-510.

Question:

19. The as-built documents show a valve at upstream of each of the existing control vaults that could be used to isolate each pond (see example below). Can you confirm our understanding is correct and that these valves are operable?
Response:
The existing isolation valves (valves outside the valve vault) shown on the V-sheets are operable.

Question:

20. Note 1 on C-502 – Are we to include a 1500' by 8" thick of gravel road restoration in our base bid and then any road that needs restored beyond that will be pulled from the allowance?
Response:
Note 1 states that the Contractor shall include 1,500 lineal feet of gravel road to be restored for the construction of each proposed pond. The Base Bid Pond 9 will include 1,500 lineal feet of gravel road in the cost, Alternate Pond 10 will include 1,500 lineal feet of gravel road in the cost, Alternate Pond 11 will include 1,500 lineal feet of gravel road in the cost, and Alternate Pond 12 will include 1,500 lineal feet of gravel road in the cost. See Addendum 2 for modification of Sheet C-502, Note 1 to include a width of road.

DRAWINGS

21. Drawing Sheets C-502, C-503, and C-504

    Replace Sheets C-502, C-503, and C-504 with the attached Sheets C-502A, C-503A, and C-504A.

SPECIFICATIONS

22. SPECIFICATION SECTION 01000 – SUPPLIMENTARY CONDITIONS

    Article 1.03 – Summary; add the following:

"O. SC-824.02 Ductile Iron Water Pipe, Materials

Add the following immediately following the last paragraph of 824.02 – Materials, in its entirety:

"Flanged ductile iron pipe shall conform to the latest revisions of ANSI/AWWA C115/A 21.15. Bolt pattern of flange shall be in accordance with ANSI/AWWA C115/A 21.15 (which is equivalent to ASME/ANSI B16.1, Class 125 flange bolt pattern). Pipe shall have pressure class 250 rating. Gaskets shall be synthetic rubber ring gaskets with a thickness of 1/8 inch. Nuts and bolts shall be in accordance with ASME/ANSI B18.2.1, ASME/ANSI B18.2.2, ASME/ANSI B1.1, and ASTM A307.

Flanged fittings shall conform to the latest revisions of ANSI/AWWA C110/A 21.10 or ANSI/AWWA C153/A 21.53 (compact fittings). Gaskets shall be in accordance with ANSI/AWWA C111/A 21.11. Fittings shall have pressure class rating of 250 psi. Bolt pattern of flange shall be in accordance with ANSI/AWWA C115/A 21.15 (which is equivalent to ASME/ANSI B16.1, class 125 flange bolt pattern)."

23. SPECIFICATION SECTION 01010 – SUMMARY OF WORK

Add the attached Specification Section 01010 – Summary of Work in its entirety.

24. SPECIFICATION SECTION 01270 – MEASUREMENT AND PAYMENT

Add the attached Specification Section 01270 – Measurement and Payment, in its entirety.

25. SPECIFICATION SECTION 02642 – TAPPING SLEEVES – RECHARGE LINE

Article 2.02 – Tapping Valves

Add the following immediately following Article 2.01 in its entirety:

"2.02 Tapping Valves

A. All tapping sleeves shall be installed with a tapping valve. All tapping valves shall be of the resilient seat, gate valve type in accordance with the latest revision of AWWA C509 (2-inch thru 12-inch) or AWWA C515 (14-inch thru 54 inch) Standard. The valve body, bonnet, and gate castings shall be cast iron. The valve shall have a non-rising stem (NRS), fully bronze mounted with O-ring seals. Valve body and bonnet, inside and out, shall be fully coated with fusion bonded epoxy coating in accordance with AWWA C550 Standard. Valves shall have a rated working pressure of 250 psi.

B. Valve shall be furnished with ANSI B16.1 flanged end with centering ring on tapping side. Outlet side shall be mechanical joint in accordance with AWWA C111. All valves shall mate all tapping sleeves through regardless of manufacturer.

C. All cast iron shall conform to ASTM A-126, Class B. Castings shall be clean and sound without defects that will impair their service. No plugging or welding of such defects will be allowed. Bolts shall be stainless steel, type 316.

D. Stems shall be manganese bronze in accordance with ASTM B138 Alloy C67600 (2-inch thru 16-inch valve) or bronze in accordance with ASTM B584 Alloy C86400 (18-inch thru 54-inch valve). NRS stem collars shall be cast integral with them and machined to size. The housing for the valve stem collar shall be machined. All thrust bearing shall be incorporated, as required, to optimize operating torques. NRS valves shall be furnished with two (2) O-ring stem seals located above the thrust collar and one (1) below. O-rings shall be set in grooves in the stem.

Gates for valve shall be totally encapsulated in rubber (SBR, ASTM D2000 and provide a dual seal on the mating body seat. Valve shall be capable of installation in any position with rated sealing in both directions. Rubber sets of specially compounded SBR materials shall be utilized and be capable of sealing even under conditions of normal wear. The valve body shall have integral guide engaging lugs in the gate in a tongue-and-groove manner, supporting the gate throughout the entire open/close travel.

E. Tapping valves shall be capable of making taps by using any cutter not less than 1/4 inch smaller than nominal pipe size.

F. All tapping valves shall have the name or monogram of the manufacturer, the year the valve casting was made, the size of the valve, and the working pressure cast on the body of the valve.

G. Tapping valves shall be provided with a 2-inch square operating nut and shall be opened by turning to the left counterclockwise.

H. Tapping valves shall be installed in a vertical position with valve box. They shall be set vertically and properly adjusted so that the cover will be in the same plane as the finished surface of the ground or street.

I. Valves shall be those manufactured by Mueller, M & H Valve Company, American, or approved equal.

2.03 Valves Boxes

A. Each buried stop and valve shall be provided with a suitable valve box. Boxes shall be of the adjustable, telescoping, slide type heavy-pattern type with the lower and upper parts of cast iron. They shall be so designed and constructed as to prevent the direct transmission of traffic loads to the pipe or valve.

B. The upper or sliding section of the box shall be provided with a flange having sufficient bearing area to prevent undue settlement. The lower section of the box shall be designed to enclose the operating nut and stuffing box of the valve and rest on the valve bonnet.

C. The boxes shall be adjustable through at least six (6) inches vertically without reduction of the lap between sections to less than four (4) inches.

D. The inside diameter of boxes for valves shall be at least 4½ inches, and the lengths shall be as necessary for the depths of the valves or stops with which the boxes are to be used.

E. Covers for valves shall be close fitting and substantially dirt-tight and marked "WATER."

F. The top of the cover shall be flush with the top of the box rim."

26. SPECIFICATION SECTION 07410 – STANDING-SEAM METAL ROOF PANELS

Delete Section 07410 – Standing-Seam Metal Roof Panels and Replace with the attached Section 07420 – Insulated Metal Roof Panels, in its entirety.

27. SPECIFICATION SECTION 11240 – FALL PROTECTION EQUIPMENT

Add the attached Specification Section 11240 – Fall Protection Equipment, in its entirety.

SECTION 01010

SUMMARY OF WORK

PART 1 - GENERAL

1.01 SCOPE OF WORK

A. These Specifications and the accompanying Drawings describe the Work to be done and materials to be furnished for the Miami Well Field Expansion project.

B. Major Work items in this Contract include:

1. Process
   a. Installation of one (1) 4,900 GPM vertical turbine pump and appurtenances.
   b. Installation of one (1) 16" Rosemount Magnetic Flowmeter.
   c. Installation of one (1) Pump Control Valve and appurtenances.
   d. 16" ductile iron raw waterlines and tie-ins to existing system.
   e. Electrical system, motor control, and telemetry system.
   f. All other necessary appurtenances and connections.

2. Proposed Pond Construction
   a. Bulk excavation and relocation of soil on-site to designated spoil areas
   b. Installation of new recharge line and tie-ins to existing recharge line
   c. Installation of monitoring manholes
   d. Filling of designated trench areas with stone as seen in the Details
   e. Installation of tapping sleeves and valve as necessary
   f. Installation of recharge valve vault, accompanying piping, and gate valves

3. Instrumentation and Control – Recharge Pump Station
   g. The main control panel and abandoned-in-place panels will be demolished and replaced with new panel housing control components and a network rack. Control of the pump station equipment and pond equipment will be done through a Rockwell ControlLogix PLC. All components will be Rockwell PlantPAx compliant in conformance with City of Dayton Department of Water SCADA standards. The network rack will serve as the fiber optic network hub for the Miami Well Field.
   h. The GE Motor Managers on the existing five pumps will be replaced with Rockwell E-300 smart motor overloads with an Ethernet connection to the PLC. An E-300 will also be provided for the new pump.
   i. A magnetic flowmeter will be provided for the discharge from the new pump.
   j. All programming and software configurations of PLCs, switches, and motor overloads will be the responsibility of the Owner's SCADA Services provider.

4. Instrumentation and Control – Ponds
   a. The inlet valve to all ponds, both existing and new, will be equipped with a modulating Rotork actuator with an Ethernet IP communication module.
   b. All ponds, both existing and new, will be monitored and controlled via a new remote I/O panel. Monitoring signals will be sent to the pump station PLC and control commands will emanate from the pump station PLC. Control panels at the existing ponds will be demolished and replaced with a new I/O panel adjacent to the valve vault.
   c. All ponds, both existing and new, will be instrumented with a radar level sensor and capacitance level probe to indicate high-level shutoff.
   d. Both level measurements will be wired to the remote I/O panel. The valve actuator will be connected to the remote I/O panel via Ethernet Cat6 cable.
   e. Single-mode fiber optic cable will be installed to link the pond remote I/O panels to the PLC in the Recharge Pump Station.
   f. All programming and software configuration of remote I/O modules and switches will be the responsibility of the Owner's SCADA Services provider.

1.02 CONTINUOUS OPERATIONS

The existing system must be maintained in continuous operation in such a manner that it meets all local, state, and federal requirements. The Contractor is responsible not to deactivate any system until a temporary or new system has been installed and is operational. The Contractor is responsible for payment of all fines resulting from any action or inaction on his part or the part of his subcontractors during performance of the Work that is illegal.

1.03 PERMITS

Obtain any permits related or required by the Work in this Contract.

1.04 CODES

Comply with applicable codes and regulations of authorities having jurisdiction. Submit copies of inspection reports, notices, citations, and similar communication to the Owner.

1.05 EXISTING CONDITIONS AND DIMENSIONS

A. The Work in this Contract will primarily be performed in or around existing facilities of which a portion must remain functional. The Contractor must maintain the required items and/or systems functional without additional effort by the Owner's personnel and at no extra costs to the Owner.

B. The Contractor is responsible for verifying all existing conditions, elevations, dimensions, etc., and providing his finished Work to facilitate existing conditions.

PART 2 – PRODUCTS – NOT USED

PART 3 – EXECUTION – NOT USED

END OF SECTION

SECTION 01270

MEASUREMENT AND PAYMENT

PART 1 GENERAL

1.01 DESCRIPTION OF WORK

A. This Section defines the method that will be used to determine the quantities of Work performed or materials supplied and establish the basis upon which payment will be made for the Miami Well Field Expansion (Project).

1.02 ADMINISTRATIVE SUBMITTALS

A. Schedule of Values: Submit schedule on Contractor's standard form. (Refer to paragraph 1.05 of this for additional requirements.)

B. Schedule of Estimated Progress Payments (Refer to paragraph 1.06 of this Section for additional requirements):

1. Submit with initially acceptable Schedule of Values.
2. Submit adjustments thereto with Application for Payment.

C. Application for Payment

D. Final Application for Payment

1.03 RELATED WORK

A. City of Dayton Construction and Material Specifications, most recent edition.

1.04 PRICE

A. Required items of Work and incidentals necessary for the satisfactory completion of the Project shall be considered incidental to the specified Work required under this contract and shall be considered as included in the unit prices for the various proposal items. The Contractor shall prepare their Proposal accordingly to allow for such items:

1. Not specifically listed in the Proposal.
2. Not specified in this section to be measured or to be included in one of the items listed in the Proposal.
3. To include Contractor's overhead and profit.

B. Work includes the furnishing of all labor, materials, equipment, tools, and related items for performing all operations required to complete the Project satisfactorily in place, as specified by the Contract Documents.

1.05 SCHEDULE OF VALUES

A. Prepare a separate Schedule of Values for each phase of Work under the Agreement.

B. Use line items in the proposal as line items in the Schedule. Provide adequate detail to allow easy determination of the percentage of work completed for each item.

C. Lump Sum Work.

1. Reflect Schedule of Values format included in conformed Bid Form, specified allowances, alternates, and equipment selected by Owner, as applicable.
2. List bonds and insurance premiums, mobilization, demobilization, facility startup, and contract closeout separately.
3. Separate product costs and installation costs. Break down by Division 2 through 17 for each of the Project facilities.
    a. Product costs include cost for product, delivery and unloading, royalties and patent fees, taxes, and other cost paid directly to the supplier or vendor.
    b. Installation costs include cost for the supervision, labor and supervision, labor and equipment for field fabrication, erection, installation, start-up, initial operation and Contractor's overhead and profit.
4. Divide principal subcontract amounts into an adequate number of line items to allow determination of the percentage of work completed for each item. These line items may be used to establish the value of work to be added or deleted from the project.

D. An unbalanced or front-end loaded schedule will not be acceptable.

E. Summation of the complete Schedule of Values representing all Work shall equal the Contract Price.

1.06 SCHEDULE OF ESTIMATED PROGRESS PAYMENTS

A. Show estimated payment requests throughout Contract Times aggregating initial Contract Price.

B. Base estimated progress payments on initially acceptable progress schedule. Adjust to reflect subsequent adjustments in progress schedule and Contract Price as reflected by modifications to the Contract Documents.

1.07 APPLICATION FOR PAYMENT

A. Reference Item 114 of the City of Dayton Construction and Material Specifications, most recent edition.

B. Transmittal Summary Form: Attach one Summary Form with each detailed Application for Payment for each schedule and include Request for Payment of Materials and Equipment on Hand as applicable. Execute certification by authorized officer of Contractor. Provide separate form for each schedule as applicable.

C. Preparation:

1. Round values to nearest dollar.
2. List each Change Order and Written Amendment executed prior to date of submission as separate line item. Totals to equal those shown on the Transmittal Summary Form for each schedule as applicable.

3. Submit Application for Payment, including a Transmittal Summary Form and detailed Application for Payment Form(s) for each schedule as applicable, a listing of materials on hand for each schedule as applicable and such supporting data as may be requested by Owner.

D. Include accepted Schedule of Values for each schedule or portion of Work, the unit price breakdown for Work to be paid on unit price basis, a listing of Owner-selected equipment if applicable, and allowances, as appropriate.

1.08 MEASUREMENT – GENERAL

A. Weighing, measuring, and metering devices used to measure quantity of materials for Work shall be suitable for purpose intended and conform to tolerances and specifications as specified in National Institute of Standards and Technology, Handbook 44.

B. Whenever pay quantities of material are determined by weight, the material shall be weighed on scales furnished by Contractor and certified accurate by the state agency responsible. A weight or load slip shall be obtained from the weigh facility and delivered to the Owner's representative at the point of delivery of the material.

C. If material is shipped by rail, the car weights will be accepted provided that actual weight of material only will be paid for and not minimum car weight used for assessing freight tariff and provided further that car weights will not be acceptable for material to be passed through mixing plants.

D. Vehicles used to haul material being paid for by weight shall be weighed empty daily and at such additional times as required by Owner. Each vehicle shall bear a plainly legible identification mark.

E. All materials that are specified for measurement by the cubic yard measured in the vehicle shall be hauled in vehicles of such type and size that the actual contents may be readily and accurately determined. Unless all vehicles are of uniform capacity, each vehicle must bear a plainly legible identification mark indicating its water level capacity. All vehicles shall be loaded to at least their water level capacity. Loads hauled in vehicles not meeting the above requirements or loads of a quantity less than the capacity of the vehicle, measured after being leveled off as above provided, will be subject to rejection, and no compensation will be allowed for such material.

F. Where measurement of quantities depends on elevation of existing ground, elevations obtained during construction will be compared with those shown on Drawings. Variations of 1 foot or less will be ignored, and profiles shown on Drawings will be used for determining quantities. Quantities will be based on ground profiles shown.

G. Units of measure shown on the Schedule of Values shall be as follows unless specified otherwise.

Item	Method of Measurement
AC	Acre-Field Measure by Owner
CY	Cubic Yard-Field Measure by Owner within the limits specified or shown
CY-VM	Cubic Yard-Measured in the Vehicle by Volume
EA	Each-Field Count by Owner
GAL	Gallon-Field Measure by Owner
HR	Hour
LB	Pound(s)-Weight Measure by Scale
LF	Linear Foot-Field Measure by Owner
LS	Lump Sum-Unit is one; no measurement will be made
MFBM	Thousand Foot Board Measure-Delivery Invoice
SF	Square Foot
SY	Square Yard
TON	Ton-Weight Measure by Scale (2,000 pounds)

1.09 PAYMENT

A. Reference Item 114 of the City of Dayton Construction and Material Specifications, most recent edition.

B. General:

1. The date for Contractor's submission of monthly Application for Payment shall be established at the Pre-Construction Conference.

C. Payment for all Work shown or specified in the Contract Documents is included in the Contract Price. No measurement or payment will be made for individual items.

D. The Owner will make payments for acceptable Work in place and materials properly stored on-site. The value of payment shall be as established on the approved construction schedule and Application for Payment, EXCEPT the Owner will retain ten percent (10%) of the Work in place and a percentage as hereinafter listed for items properly stored or untested. Quantities on plans are approximate.

E. No payment will be made for stored materials unless an invoice from the supplier is attached to the pay request. Furthermore, no payment for stored materials will be made if the value of the stored materials does not exceed $10,000.00.

F. Allowable Payments

1. Payment for all work will be based on the percent complete (as approved by the Engineer) at end of period for application for payment. Payment shall be limited to ninety percent (90%) of their scheduled value until they are ready for operation, have been certified by manufacturer, and accepted by the Engineer. Ninety percent (90%) payment shall be contingent on proper on-site storage and proper routine maintenance as recommended by manufacturer or Engineer.

2. No final payment will be made until materials, equipment, and installation have been tested and accepted by the Engineer.

G. Water Costs

1. Costs to the Owner of all water from the existing distribution system or other approved sources used in the process of testing, sterilizing, and flushing pipe shall be borne by the Owner. Water costs due to incorrect construction, taps, breaks, etc., caused by Contractor shall be borne by the Contractor.

H. The Owner may reduce the percent of retainage once the Project has achieved satisfactory progress and is at the fifty percent (50%) construction status. The dollar amount of retainage for work-in-place will not be reduced but will remain constant following the fifty percent (50%) constructed status.

I. Additionally, the Owner may reinstate the retainage to a full ten percent (10%) of the scheduled value of work-in-place should the Owner, at their discretion, determine that the Contractor is not making satisfactory progress or there is other specific cause for such withholding.

1.10 NONPAYMENT FOR REJECTED OR UNUSED PRODUCTS

A. Payment will not be made for following:

1. Loading, hauling, and disposing of rejected material.
2. Quantities of material wasted or disposed of in manner not called for under Contract Documents.
3. Rejected loads of material, including material rejected after it has been placed by reason of failure of Contractor to conform to provisions of Contract Documents.
4. Material not unloaded from transporting vehicle.
5. Defective Work not accepted by Owner.
6. Material remaining on hand after completion of Work.

1.11 PARTIAL PAYMENT FOR STORED MATERIALS AND EQUIPMENT

A. Partial payment for stored materials and equipment shall be in accordance with Item 114.05 of the City of Dayton Construction and Material Specifications, most recent edition.

1.12 ALLOWANCES

A. It is understood that Contractor shall include in the Contract Price all allowances so named in this Specification to be performed for such sums and by such persons or entities as may be acceptable to Owner and Engineer.

B. Cash Allowances

1. Contractor agrees that:

i. Cash allowances include the cost to Contractor (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and,

ii. Contractor's costs for unloading and handling, labor, installation, overhead, profit, and other expenses incurrent for the cash allowances shall be included in the Contract Price and not in the allowances. Any requests for additional payment on any of the foregoing is not valid.

C. Prior to final payment, the Owner shall issue appropriate Change Order as recommended by Engineer to reflect actual amounts due to Contractor on account of Work covered by the allowances and shall correspondingly adjust the Contract Price.

1.13 PRICE PROPOSAL ITEMS

A. Respondent will complete the Work for the following listed Work items for the prices listed on the Price Proposal:

Item No. 1: Mobilization and Demobilization

1. Description – Work item shall include mobilization, demobilization, permitting, bonds, and insurance costs associated with the Project. This shall include furnishing all labor, materials, tools, equipment and incidentals required to mobilize, demobilize, bond and insure the Work for the Project in accordance with the Contract Documents, complete in place.
2. Measurement - Measurement of Item No.1 will be by lump sum.
3. Payment – Partial payments of the lump sum proposal for General Conditions will be as follows:
   a. The Schedule of Values shall include separate line items for Mobilization, Insurance and Bonds, and Demobilization.
   b. When 1% of the adjusted contract amount for construction items (which is defined as the total contract amount less the lump sum proposal for mobilization) is earned, 50% of the mobilization lump sum proposal will be paid.
   c. When 5% of the adjusted contract amount for construction items is earned, 75% of the mobilization lump sum proposal or 10% of the total contract amount, whichever is less will be paid.
   d. When 10% of the adjusted contract amount for construction items is earned, 75% of the mobilization lump sum proposal or 15% of the total contract amount, whichever is less will be paid.
   e. Insurance and Bonds will be paid on the initial request for payment. Receipts or other proof of payment for the full amount of compensation requested for "Insurance and Bonds" shall be provided to the Owner with the request for payment.
   f. No payments for this line item will be made until said documents are submitted and approved by the Owner:
      i. Safety Plan,
      ii. Quality Control / Quality Assurance Plan,
      iii. Pre-Construction Video, and
      iv. Construction Schedule

g. Upon completion of all work under this contract, payment for the remainder of the lump sum proposal for mobilization will be made.

Item No. 2: Retrofitting Existing Ponds

1. Description

a. Retrofitting of all existing ponds, including but not limited to:

i. Demolition of existing valves, actuators, piping, and control panels

ii. Installation of new ductile iron piping, new gate valves, new actuators, and pond level control mechanisms including communications, wiring, cabling, terminations, equipment, and instruments

iii. Installation of new control panels and associated wiring

iv. Installation of conduit and fiber from the pump station to at least existing recharge ponds (27), proposed recharge ponds (12), existing production wells (16), and future production wells (8)

v. Calibration of installed instruments and any associated electrical work

b. Contractor is NOT to provide PLC or HMI programming services. All PLC and HMI programming shall be provided by the City of Dayton's SCADA Systems Integrator.

c. All appurtenances and miscellaneous improvements for a complete and working installation.

d. All excavation is unclassified.

2. Measurement – Measurement of Item No. 2 will be on a lump sum basis.

3. Payment of the full unit price shall be paid for the work performed and in accordance with the Schedule of Values. Payment shall constitute full compensation to the Contractor for furnishing all: labor, equipment, tools, and materials; and for performing all operations required to furnish to the Owner the project, complete in place, as specified and as indicated on the Contract Drawings and Specifications.

Item No. 3: Pump Station I&C

1. Description

a. All additions and modifications to the existing Pump Station to incorporate automation for the wells and the five existing pumps, including but not limited to:

i. Demolition of existing fiber panel, existing PLC panel, abandoned-in-place panels, and existing pump motor manager equipment.

ii. Installation of new E300 motor control equipment for the five existing pumps

iii. Installation of a new control panel consisting of PLC control components, power distribution equipment, and network equipment

iv. Installation of a new 480V circuit to power the new control panel

v. Installation of communication cabling and conduit from the new control panel to the new E300 motor control equipment

vi. Termination of fiber from the new well control panels to the new control panel network equipment

vii. Rerouting and retermination of existing fiber from the demolished fiber panel to the new control panel network equipment

viii. Rerouting and retermination of existing system I/O wiring from the demolished PLC panel to the new control panel PLC terminal blocks

b. Contractor is NOT to provide PLC or HMI programming services. All PLC and HMI programming shall be provided by the City of Dayton's SCADA Systems Integrator.

c. All other necessary appurtenances and connections for a complete and working installation, meeting specified flow requirements.

d. All excavation is unclassified.

2. Measurement – Measurement of Item No. 3 will be on a lump sum basis.

3. Payment of the full unit price shall be paid for the work performed and in accordance with the Schedule of Values. Payment shall constitute full compensation to the Contractor for furnishing all: labor, equipment, tools, and materials; and for performing all operations required to furnish to the Owner the project, complete in place, as specified and as indicated on the Contract Drawings and Specifications.

Item No. 4: Construction of Pond P9

4. Description

a. This work item includes the construction of Pond P9, including but not limited to:

i. Bulk excavation of the trench and pond

ii. Relocation of excavated soil to designated spoil areas

iii. Installation of new monitoring manhole

iv. Installation of level control mechanisms including communications, wiring, cabling, terminations, equipment and instruments

v. Installation of new piping

vi. Filling of trench with stone as specified in the Details

vii. Installation of a tapping sleeve and valve

viii. Installation of new recharge valve vault and accessories

ix. Installation of the access ramps

x. Installation of headwalls/end treatments

xi. Installation of instrumentation conduit, wiring, control panel, and associated connections to equipment

xii. Calibration of installed instruments

xiii. Any associated electrical work

b. Contractor is not to provide PLC or HMI programming services. All PLC and HMI programming shall be provided by the City of Dayton's SCADA Systems Integrator.

c. All other necessary appurtenances and connections for a complete and working installation, meeting specified flow requirements.

d. All excavation is unclassified.

5. Measurement – Measurement of Item No. 4 will be on a lump sum basis.

6. Payment of the full unit price shall be paid for the work performed and in accordance with the Schedule of Values. Payment shall constitute full compensation to the Contractor for furnishing all: labor, equipment, tools, and materials; and for performing all operations required to furnish to the Owner the project, complete in place, as specified and as indicated on the Contract Drawings and Specifications.

Item No. A-1: ALTERNATE #1: Pond P10

1. Description

a. Construction of pond P10, including but not limited to:

i. Bulk excavation of the trench and pond

ii. Relocation of excavated soil to designated spoil areas

iii. Installation of new monitoring manhole

iv. Installation of level control mechanisms including communications, wiring, cabling, terminations, equipment, and instruments

v. Installation of new piping

vi. Filling of trench with stone as specified in the Details

vii. Installation of a tapping sleeve and valve

viii. Installation of new recharge valve vault and accessories

ix. Installation of the access ramps

x. Installation of headwalls/end treatments

xi. Installation of instrumentation conduit, wiring, control panel, and associated connections to equipment

xii. Calibration of installed instruments

xiii. Any associated electrical work

b. Contractor is NOT to provide PLC or HMI programming services. All PLC and HMI programming shall be provided by the City of Dayton's SCADA Systems Integrator.

c. All appurtenances and miscellaneous improvements for a complete and working installation.

d. All excavation is unclassified.

2. Measurement – Measurement of Item No. A-1 will be on a lump sum basis.

3. Payment of the full unit price shall be paid for the work performed and in accordance with the Schedule of Values. Payment shall constitute full compensation to the Contractor for furnishing all: labor, equipment, tools, and materials; and for performing all operations required to furnish to the Owner the project, complete in place, as specified and as indicated on the Contract Drawings and Specifications.

Item No. A-2: ALTERNATE #2: Pond P11

1. Description

a. Construction of pond P11, including but not limited to:

i. Bulk excavation of the trench and pond

ii. Relocation of excavated soil to designated spoil areas

iii. Installation of a new monitoring manhole

iv. Installation of level control mechanisms including communications, wiring, cabling, terminations, equipment, and instruments

v. Installation of new piping

vi. Filling of trench with stone as specified in the Details

vii. Installation of a tapping sleeve and valve

viii. Installation of new recharge valve vault and accessories

ix. Installation of the access ramps

x. Installation of headwalls/end treatments

xi. Installation of instrumentation conduit, wiring, control panel and associated connections to equipment

xii. Calibration of installed instruments

xiii. Any associated electrical work

b. Contractor is NOT to provide PLC or HMI programming services. All PLC and HMI programming shall be provided by the City of Dayton's SCADA Systems Integrator.

c. All appurtenances and miscellaneous improvements for a complete and working installation.

d. All excavation is unclassified.

2. Measurement – Measurement of Item No. A-2 will be on a lump sum basis.

3. Payment of the full unit price shall be paid for the work performed and in accordance with the Schedule of Values. Payment shall constitute full compensation to the Contractor for furnishing all: labor, equipment, tools, and materials; and for performing all operations required to furnish

to the Owner the project, complete in place, as specified and as indicated on the Contract Drawings and Specifications.

Item No. A-3: ALTERNATE #3: Pond P12

4. Description

a. Construction of pond P12, including but not limited to:

i. Bulk excavation of the trench and pond

ii. Relocation of excavated soil to designated spoil areas

iii. Installation of new monitoring manhole

iv. Installation of level control mechanisms including communications, wiring, cabling, terminations, equipment and instruments

v. Installation of new piping

vi. Filling of trench with stone as specified in the Details

vii. Installation of a tapping sleeve and valve

viii. Installation of new recharge valve vault and accessories

ix. Installation of the access ramps

x. Installation of headwalls/end treatments

xi. Installation of instrumentation conduit, wiring, control panel and associated connections to equipment

xii. Calibration of installed instruments

xiii. Any associated electrical work

e. Contractor is NOT to provide PLC or HMI programming services. All PLC and HMI programming shall be provided by the City of Dayton's SCADA Systems Integrator.

f. All appurtenances and miscellaneous improvements for a complete and working installation.

g. All excavation is unclassified.

5. Measurement – Measurement of Item No. A-3 will be on a lump sum basis.

6. Payment of the full unit price shall be paid for the work performed and in accordance with the Schedule of Values. Payment shall constitute full compensation to the Contractor for furnishing all: labor, equipment, tools, and materials; and for performing all operations required to furnish to the Owner the project, complete in place, as specified and as indicated on the Contract Drawings and Specifications.

Item No. A-4: ALTERNATE #4: Pump Station Rehab

7. Description

a. All modifications to the existing Pump Station, including but not limited to:

i. Installation of a new vertical turbine pump including supports and wiring

ii. Installation of a new magnetic flowmeter including supports and wiring

iii. Installation of a new pump control valve including supports and wiring

iv. Installation of new raw water lines including supports and tie-ins to the existing system

v. Demolition of existing louvers, exhaust fans, and unit heaters

vi. Installation of new exhaust fans including supports, controls, and wiring

vii. Installation of vertical electric unit heaters including supports, controls, and wiring

viii. Demolition of existing standing seam metal roof system, sheeting, insulation, skylights, curb, flashing, linear lighting system, gutters, and downspouts

ix. Installation of a new standing seam metal roof with gutters and downspouts

x. Installation of a thermal insulation vapor barrier, sheeting, and coverboard roof system

xi. Installation of new snow guards

xii. Installation of roof fall protection

xiii. Installation of skylights, curb, and flashing

xiv. Installation of roof liner panels

xv. Installation of fire extinguishers

xvi. Modifications to the existing mixing chamber

b. Contractor is NOT to provide PLC or HMI programming services. All PLC and HMI programming shall be provided by the City of Dayton's SCADA Systems Integrator.

c. All appurtenances and miscellaneous improvements for a complete and working installation.

d. All excavation is unclassified.

8. Measurement – Measurement of Item No. A-4 will be on a lump sum basis.

9. Payment of the full unit price shall be paid for the work performed and in accordance with the Schedule of Values. Payment shall constitute full compensation to the Contractor for furnishing all: labor, equipment, tools, and materials; and for performing all operations required to furnish to the Owner the project, complete in place, as specified and as indicated on the Contract Drawings and Specifications.

Item No. A-5: ALTERNATE #5: Contingency Allowance (10%)

1. Description – This item shall be reserved as a contingency for use during construction of the Project. Use of the contingency allowance shall only be authorized by the Owner for the changes in the Work following the

procedures for change orders in accordance with the City of Dayton Construction and Material Specifications, most recent edition. The contingency shall be applied to all base bid items as well as Alternate No.1, Alternate No.2, Alternate No.3, and Alternate No.4. For contractor award the amount of this "Contingency Allowance" shall be ten percent (10%) of the Contractor's total base bid including those alternates (Alternate No.1, Alternate No.2, Alternate No.3 and/or Alternate No.4) the City elects to include.

1.14 OWNER RESPONSE TO PRICE PROPOSAL

A. The Owner reserves the right to approve and deny work items based on what is deemed to be in the best interest of the Owner.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION – NOT USED

END OF SECTION

SECTION 07420

INSULATED METAL ROOF PANELS

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes:

1. Standing-seam-profile, foamed-insulation-core metal roof panels.

1.02 ACTION SUBMITTALS

A. Product data.

B. Shop drawings.

C. Samples: Manufacturer's standard color charts, showing full range of available colors for each type of exposed finish.

1.03 INFORMATIONAL SUBMITTALS

A. Product test reports.

B. Qualification statements.

C. Sample warranties.

1.04 CLOSEOUT SUBMITTALS

A. Maintenance data.

1.05 QUALITY ASSURANCE

A. Qualifications: Roof Installers: Entity that employs a supervisor who is an NRCA ProCertified Roofing Foreman or installers who are NRCA ProCertified Metal Panel Roof Systems Installers.

1.06 WARRANTY

A. Special Warranty: Manufacturer agrees to repair or replace components of insulated metal roof panel systems that fail in materials or workmanship within specified warranty period.

1. Warranty Period: Two years from date of Substantial Completion.

B. Special Warranty on Panel Finishes: Manufacturer's standard form in which manufacturer agrees to repair finish or replace insulated metal roof panels that show evidence of deterioration of factory-applied finishes within specified warranty period.

1. Finish Warranty Period: 20 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.01 PERFORMANCE REQUIREMENTS

A. Structural Performance: Provide insulated metal roof panel systems capable of withstanding the effects of the following loads, based on testing in accordance with ASTM E72:

1. Wind Loads: As indicated on Drawings.
2. Other Design Loads: As indicated on Drawings.
3. Deflection Limits: For wind loads, no greater than 1/180 of the span.

B. Air Infiltration: Air leakage of not more than 0.06 cfm/sq. ft. when tested in accordance with ASTM E1680 or ASTM E283/283M at the following test-pressure difference:

1. Test-Pressure Difference: 1.57 lbf/sq. ft.

C. Water Penetration under Static Pressure: No water penetration when tested in accordance with ASTM E1646 or ASTM E331 at the following test-pressure difference:

1. Test-Pressure Difference: 2.86 lbf/sq. ft

D. Watertightness: No water penetration when tested in accordance with ASTM E2140 for hydrostatic-head resistance.

E. Wind-Uplift Resistance: Provide metal roof panel assemblies that comply with UL 580 for wind-uplift-resistance class indicated.

1. Uplift Rating: UL 30

F. FM Approvals Listing: Provide insulated metal roof panels and component materials that comply with requirements in FM Approvals 4471 as part of a panel roofing system and that are listed in FM's "Approval Guide" for Class 1 or noncombustible construction, as applicable. Identify materials with FM Global markings.

1. Fire/Windstorm Classification: Class 1A-60
2. Hail Resistance: MH

G. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes.

1. Temperature Change (Range): 120 deg F.

H. Energy Performance:

1. Provide roof panels according to one of the following when tested in accordance with CRRC-1:

    a. Three-year, aged solar reflectance of not less than 0.55 and emissivity of not less than 0.75.
    b. Three-year, aged Solar Reflectance Index of not less than 64 when calculated in accordance with ASTM E1980.

2.02 INSULATED METAL ROOF PANELS, GENERAL

A. Provide factory-formed metal roof panels fabricated from two sheets of metal with insulation core foamed in place during fabrication with joints between panels designed to form weathertight seals. Include accessories required for weathertight installation.

1. Panel Performance:

    a. Flatwise Tensile Strength: 30 psi when tested in accordance with ASTM C297/C297M.
    b. Humid Aging: Volume increase not greater than 6.0 percent and no delamination or metal corrosion when tested for seven days at 140 deg F and 100 percent relative humidity in accordance with ASTM D2126.
    c. Heat Aging: Volume increase not greater than 2.0 percent and no delamination, surface blistering, or permanent bowing when tested for seven days at 200 deg F in accordance with ASTM D2126.
    d. Cold Aging: Volume decrease not more than 1.0 percent and no delamination, surface blistering, or permanent bowing when tested for seven days at minus 20 deg F in accordance with ASTM D2126.
    e. Fatigue: No evidence of delamination, core cracking, or permanent bowing when tested to a 20 lbf/sq. ft. positive and negative wind load and with deflection of L/180 for 2 million cycles.
    f. Autoclave: No delamination when exposed to 2 psi pressure at a temperature of 212 deg F for 2-1/2 hours.
    g. Fire-Test-Response Characteristics: Class A in accordance with ASTM E108.

2. Insulation Core Foam: Foam using a non-CFC blowing agent, with maximum flame-spread and smoke-developed indexes of 25 and 450, respectively.

    a. Closed-Cell Content: 90 percent when tested in accordance with ASTM D6226.
    b. Density: 2.0 to 2.6 lb/cu. ft. when tested in accordance with ASTM D1622.
    c. Compressive Strength: Minimum 20 psi when tested in accordance with ASTM D1621.
    d. Shear Strength: 26 psi when tested in accordance with ASTM C273/273M.

2.03 STANDING-SEAM-PROFILE, FOAMED-INSULATION-CORE METAL ROOF PANELS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
    a. METL-SPAN
    b. Nucor Building Systems

c. RAYCORE

B. Panels: Vertical ribs along one side of exterior face sheets are mechanically seamed on-site with vertical ribs of adjacent exterior face sheets. Concealed clips in the seams are anchored to supports by screws through the interior face sheet. Interior face sheets provide a tongue-and-groove interlock at joints.

1. Panel Coverage: 36 inches.
2. Panel Thickness: 6 inches
3. Exterior Face Sheet:

a. Material: Metallic-coated steel sheet.
b. Nominal Thickness: 0.022 inch .
c. Texture: Smooth.
d. Finish: Three-coat fluoropolymer.
e. Color: As selected by Architect from manufacturer's full range.

4. Interior Face Sheet:

a. Material: Metallic-coated steel sheet.
b. Nominal Thickness: 0.022 inch.
c. Texture: Smooth.
d. Finish: Siliconized polyester.
e. Color: As selected by Architect from manufacturer's full range.

5. Insulation Core: Polyisocyanurate foam.
6. Thermal-Resistance Value (R-Value): R 30ci in accordance with ASTM C1363.
7. Clips: Manufacturer's standard clips to accommodate thermal movement.

a. Clip Size and Spacing: As indicated on approved Shop Drawings

2.04 PANEL FACING MATERIALS

A. Metallic-Coated Steel Sheet: Facings of zinc-coated (galvanized) steel sheet complying with ASTM A653/A653M, G90 (Z275) coating designation, or aluminum-zinc alloy-coated steel sheet complying with ASTM A792/A792M, Class AZ50 (Class AZM150) coating designation; structural quality. Prepainted by the coil-coating process to comply with ASTM A755/A755M.

2.05 MISCELLANEOUS MATERIALS

A. Miscellaneous Metal Subframing and Furring: ASTM C645, cold-formed, metallic-coated steel sheet, minimum ASTM A653/A653M, G90 coating designation or ASTM A792/A792M, Class AZ50 coating designation. Provide manufacturer's standard sections as required for support and alignment of insulated metal roof panel system.

B. Panel Accessories: Provide components required for a complete, weathertight panel system, including trim, copings, fasciae, mullions, sills, corner units, clips, flashings, sealants, gaskets, fillers, closure strips, and similar items. Match material and finish of insulated metal roof panels unless otherwise indicated.

1. Closures: Provide closures at eaves and ridges, fabricated of same metal as insulated metal roof panels.
2. Backing Plates: Provide metal backing plates at panel end splices, fabricated from material recommended by manufacturer.
3. Closure Strips: Closed-cell, expanded, cellular, rubber or crosslinked, polyolefin-foam or closed-cell laminated polyethylene; minimum 1-inch- thick, flexible closure strips; cut or premolded to match insulated metal roof panel profile. Provide closure strips where indicated or necessary to ensure weathertight construction.

C. Flashing and Trim: Provide flashing and trim formed from same material as exterior facings of insulated metal roof panels as required to seal against weather and to provide finished appearance. Locations include, but are not limited to, eaves, rakes, corners, bases, framed openings, ridges, fasciae, and fillers. Finish flashing and trim with same finish system as adjacent insulated metal roof panels.

D. Gutters: Formed from same material, finish, and color as exterior facings of panels, complete with end pieces, outlet tubes, and other special pieces as required. Fabricate in minimum 96-inch- long sections, of size and metal thickness in accordance with manufacturer's recommendations. Furnish gutter supports spaced a maximum of 36 inches o.c., fabricated from same metal as gutters. Provide wire ball strainers of compatible metal at outlets. Finish gutters to match metal roof panels and roof fascia and rake trim.

E. Downspouts: Formed from same material, finish, and color as exterior facings of roof panels. Fabricate in 10 ft.- long sections, complete with formed elbows and offsets, of size and metal thickness in accordance with manufacturer's recommendations. Finish downspouts to match gutters.

F. Roof Curbs: Fabricated from same material, finish, and color as exterior facings of roof panels, 0.048-inch nominal thickness; with bottom of skirt profiled to match roof panel profiles and with welded top box and integral full-length cricket. Fabricate curb subframing of 0.060-inch-nominal thickness, angle-, C-, or Z-shaped steel sheet. Fabricate curb and subframing to withstand indicated loads of size and height indicated. Finish roof curbs to match metal roof panels.

1. Insulate roof curb with 1-inch- thick, rigid insulation.

G. Panel Fasteners: Self-tapping screws designed to withstand design loads. Provide EPDM or PVC sealing washers for exposed fasteners.

1. Galvanized-Steel Fasteners: Provide exposed fasteners with heads matching color of insulated metal roof panels by means of plastic caps or factory-applied coating.

H. Panel Sealants: Provide sealant types recommended by manufacturer that are compatible with panel materials, are nonstaining, and do not damage panel finish.

1. Sealant Tape: Pressure-sensitive, 100 percent solids, gray polyisobutylene compound sealant tape with release-paper backing. Provide permanently elastic, nonsag, nontoxic, nonstaining tape 1/2 inch wide and 1/8 inch thick.
2. Joint Sealant: ASTM C920; elastomeric polyurethane or silicone sealant; of type, grade, class, and use classifications required to seal joints in insulated metal roof panels and

remain weathertight; and as recommended in writing by insulated metal roof panel manufacturer.

3. Butyl-Rubber-Based, Solvent-Release Sealant: ASTM C1311.

2.06 FABRICATION

A. Fabricate and finish insulated metal roof panels and accessories at the factory, by manufacturer's standard procedures and processes, as necessary to fulfill indicated performance requirements demonstrated by laboratory testing. Comply with indicated profiles and with dimensional and structural requirements.

B. Provide panel profile, including major ribs and intermediate stiffening ribs, if any, for full length of panel.

C. Fabricate insulated metal roof panel joints with factory-installed captive gaskets or separator strips that provide a weathertight seal and prevent metal-to-metal contact, and that minimize noise from movements.

D. Sheet Metal Flashing and Trim: Fabricate flashing and trim to comply with manufacturer's recommendations.

1. Form exposed sheet metal accessories that are without excessive oil canning, buckling, and tool marks and that are true to line and levels indicated, with exposed edges folded back to form hems.
2. Seams: Fabricate nonmoving seams in accessories with flat-lock seams. Tin edges to be seamed, form seams, and solder.
3. Sealed Joints: Form nonexpansion, but movable, joints in metal to accommodate sealant and to comply with manufacturer's recommendations.
4. Conceal fasteners and expansion provisions where possible. Exposed fasteners are not allowed on faces of accessories exposed to view.
5. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal recommended in writing by insulated metal roof panel manufacturer.

    a. Size: As recommended by insulated metal roof panel manufacturer for application but not less than thickness of metal being secured.

2.07 FINISHES

A. Protect mechanical and painted finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

B. Appearance of Finished Work: 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 same piece are unacceptable. 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.

C. Exterior Facings and Accessories:

1. Three-Coat Fluoropolymer: Fluoropolymer finish containing not less than 70 percent PVDF resin by weight in both color coat and clear topcoat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.

D. Interior Facings:

1. Siliconized Polyester: Epoxy primer and silicone-modified, polyester-enamel topcoat; with a dry film thickness of not less than 0.2 mil for primer and 0.8 mil for topcoat.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances, insulated metal roof panel supports, and other conditions affecting performance of the Work.

1. Examine primary and secondary roof framing to verify that rafters, purlins, angles, channels, and other structural panel support members and anchorages have been installed within alignment tolerances required by metal roof panel manufacturer.

B. Examine roughing-in for components and systems penetrating insulated metal roof panels to verify actual locations of penetrations relative to seam locations of insulated metal roof panels before installation.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 PREPARATION

A. Miscellaneous Supports: Install subframing, furring, and other miscellaneous panel support members and anchorages in accordance with ASTM C754 and insulated metal roof panel manufacturer's written recommendations.

3.03 INSTALLATION OF INSULATED METAL ROOF PANELS

A. General: Install insulated metal roof panels in accordance with manufacturer's written instructions and approved Shop Drawings in orientation, sizes, and locations indicated on Drawings. Anchor insulated metal roof panels and other components of the Work securely in place, with provisions for thermal and structural movement.

1. Apply continuous ribbon of sealant to panel joint on concealed side of insulated metal roof panels as vapor seal; apply sealant to panel joint on exposed side of panels for weather seal.
2. Shim or otherwise plumb substrates receiving insulated metal roof panels.

3. Flash and seal insulated metal roof panels at perimeter of all openings. Fasten with self-tapping screws. Do not begin installation until air- or water-resistive barriers and flashings that will be concealed by insulated metal roof panels are installed.
4. Install screw fasteners in predrilled holes.
5. Locate and space fastenings in uniform vertical and horizontal alignment.
6. Install flashing and trim as insulated metal roof panel work proceeds.
7. Locate panel splices over, but not attached to, structural supports. Stagger panel splices and end laps to avoid a four-panel lap splice condition.
8. Align bottoms of insulated metal roof panels and fasten with blind rivets, bolts, or self-tapping screws. Fasten flashings and trim around openings and similar elements with self-tapping screws.
9. Provide weathertight escutcheons for pipe- and conduit-penetrating panels.

B. Fasteners: Use stainless steel fasteners for surfaces exposed to the exterior; use galvanized-steel fasteners for surfaces exposed to the interior.

C. Anchor Clips: Anchor insulated metal roof panels and other components of the Work securely in place, using manufacturer's approved fasteners according to manufacturers' written instructions.

D. Metal Protection: Where dissimilar metals contact each other or corrosive substrates, protect against galvanic action as recommended in writing by insulated metal roof panel manufacturer.

E. Lap-Seam, Foamed-Insulation-Core Metal Roof Panels: Fasten insulated metal roof panels to supports with fasteners at each lapped joint at location and spacing recommended by manufacturer.

1. Lap ribbed or fluted sheets one full-rib corrugation. Apply panels and associated items for neat and weathertight enclosure. Avoid "panel creep" or applications not true to line.
2. Provide metal-backed washers under heads of exposed fasteners bearing on weather side of insulated metal roof panels.
3. Locate and space exposed fasteners in uniform vertical and horizontal alignment. Use proper tools to obtain controlled uniform compression for positive seal without rupture of washer.
4. Provide sealant tape at lapped joints of insulated metal roof panels and between panels and protruding equipment, vents, and accessories.
5. Apply a continuous ribbon of sealant tape to panel side laps and elsewhere as needed to weatherproof panels.

F. Standing-Seam, Foamed-Insulation-Core Metal Roof Panels: Fasten insulated metal roof panels to supports with concealed clips at each standing-seam joint at location, spacing, and with fasteners recommended in writing by manufacturer.

1. Install clips to supports with self-tapping fasteners.
2. Seamed Joint: Crimp standing seams with manufacturer-approved, motorized seamer tool so cleat, insulated metal roof panel, and factory-applied side-lap sealant are completely engaged.

G. Accessory Installation: Install accessories with positive anchorage to building and weathertight mounting and provide for thermal expansion. Coordinate installation with flashings and other components.

1. Install components required for a complete insulated metal roof panel system including trim, copings, corners, seam covers, flashings, sealants, gaskets, fillers, closure strips, and similar items. Provide types indicated by insulated metal panel manufacturers; or, if not indicated, provide types recommended in writing by metal roof panel manufacturer.

H. Flashing and Trim: Comply with performance requirements and manufacturer's written installation instructions. Provide concealed fasteners where possible and set units true to line and level. Install work with laps, joints, and seams that are permanently watertight and weather resistant.

1. Install exposed flashing and trim that is without 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 achieve waterproof performance.
2. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at a maximum of 10 ft. with no joints allowed within 24 inches of corner or intersection. Where lapped expansion provisions cannot be used or would not be sufficiently waterproof, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with mastic sealant (concealed within joints).

I. Gutters: Join sections with riveted and soldered or lapped and sealed joints. Attach gutters to eave with gutter hangers spaced not more than 36 inches o.c. using manufacturer's standard fasteners. Provide end closures and seal watertight with sealant. Provide for thermal expansion.

J. Downspouts: Join sections with 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 o.c. in between.

1. Provide elbows at base of downspouts to direct water away from building.

K. Roof Curbs: Install flashing around bases where they meet metal roof panels.

L. Pipe and Conduit Penetrations: Fasten and seal to metal roof panels as recommended by manufacturer.

3.04 CLEANING AND PROTECTION

A. Remove temporary protective coverings and strippable films, if any, as insulated metal roof panels are installed, unless otherwise indicated in manufacturer's written installation instructions. On completion of insulated metal roof panel installation, clean finished surfaces as recommended by insulated metal roof panel manufacturer. Maintain in a clean condition during construction.

B. Replace insulated metal roof panels that have been damaged or have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION

SECTION 11240

FALL PROTECTION EQUIPMENT

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Suspended maintenance and fall protection equipment including delegated design.

1.02 RELATED SECTIONS

A. Section 06100 - Rough Carpentry.

B. Section 07720 - Roof Accessories.

1.03 REFERENCES

A. ANSI/ASSE Z359 - Safety Requirements for Fall Arrest Systems, Subsystems & Components.

1. American Institute of Steel Construction (AISC): Steel Construction Manual, 14th Edition.

2. American Society of Mechanical Engineers (ASME): A120.1 - Safety Requirements for Powered Platforms and Traveling Ladders and Gantries for Building Maintenance

B. US Occupational Health and Safety Administration (OSHA):

1. OSHA 29 CFR 1910, Subpart D - Safety and Health Regulations for Walking and Working Surfaces.

2. OSHA 29 CFR 1910.6, Appendix C - Safety and Health Regulations for Personal Fall Arrest Systems.

4. OSHA 29 CFR 1926, Subpart M - Fall Protection.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Coordinate selection of roofing materials adjacent to anchorages. The roofing warranty shall be maintained. Flexible boots are required at roofing penetrations to allow for temporary deflection during testing and use.

B. Coordinate topcoat finishes applied over materials supplied under this specification section. Comply with paint and coating manufacturer's written recommendations for compatibility.

1.05 SUBMITTALS

A. Submit in accordance with Contract Specifications.

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:

1. Manufacturer's Engineering Services: Manufacturer shall provide product information in appropriate file format to facilitate the design process and incorporate system solutions into project documents.

2. Provide project specific, scaled, engineered stamped shop drawings and calculations including layout, dimensions, loading and structural requirements.

3. Include analytical structural calculations of the connection and the supporting structure's capacity including service / fatigue design, testing, and ultimate / failure load combinations for each type of anchorage.

4. Roof plans with maintenance drop locations showing routing of temporary equipment supplied by the maintenance contractor such as ropes and counterweight beams.

5. Elevations indicating intermittent stabilization anchors.

6. Sections at each attachment to the primary structural system.

7. Details of each fastener.

8. Include applicable information of adjacent supporting structure.

D. Certifications:

1. Include a letter certified by an engineer registered in the project's state noting that the primary structural system has adequate capacity to support the transient equipment loading when combined with the applicable dead and live loads.

2. Manufacturer Insurance Certificate(s): Include product liability specifically for suspended maintenance and fall protection equipment.

3. Installer Insurance Certificate(s): Include workmen's compensation, comprehensive general liability, and comprehensive automobile liability.

E. Closeout Submittals:

1. Submit in accordance with Contract Specifications.

2. Log Book including record shop drawings indicating the constructed condition with a completed initial testing log, yearly inspection log to be filled out by others, a 10-year retest log to be filled out by others, and an appendix containing the Preconstruction Submittals.

a. Log book shall include the statement: Systems users to inspect all equipment prior to each use, including all visible attachment points, locks, and pins to ensure all equipment is in safe working order. All users shall be trained on proper

use of the equipment, as well as knowing and complying with OSHA, ANSI, and other pertinent life safety regulations. All equipment shall be annually inspected by a qualified person and also re-certified within 10 years under direct supervision of a licensed engineer.

3. Laminated placards noting the log book location and showing the system layout for each permanent roof access location.

4. Operations and Maintenance Data.

5. Laminated placards noting the log book location and showing the system layout for each permanent roof access location.

1.06 QUALITY ASSURANCE

A. Products shall meet or exceed OSHA and ASME A120.1 standards, and be tested and certified by professional engineers.

B. Installer Qualifications: Approved by the manufacturer and with minimum three similar completed projects.

C. Welder Qualifications:

1. AWS D1.1 for structural steel.

2. AWS D1.2 for aluminum.

3. AWS D1.6 for stainless steel.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Provide packaging that will allow products to be stored outdoors or clearly mark packaging to indicate that products must be protected from the elements.

B. Deliver and store products in manufacturer's unopened packaging bearing the brand name and manufacturer's identification until ready for installation. Handle materials to avoid damage.

1.08 PROJECT CONDITIONS

A. Do not install products under environmental conditions outside manufacturer's recommended temperature limits.

1.09 WARRANTY

A. Warranty: Provide manufacturer's standard limited warranty for parts for a term of 1 year on finish and structural capacity.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Acceptable Manufacturers:
   1. Engineered Supply LLC
   2. Simplified Safety
   3. MSA, The Safety Company

B. Requests for substitutions will be considered in accordance with Specifications.

2.02 SYSTEM DESIGN REQUIREMENTS

A. Design and anchorage layout to comply with OSHA, ANSI, IWCA, applicable state regulatory requirements, and other project requirements as necessary.

B. Provide graphical design indicating areas of the building to be serviced. Provide complete coverage for the type of service required and service methods.

C. Fall Protection Anchorages:

1. Capable of sustaining a minimum ultimate load of 5,000 pound force in any direction the load may be applied for fall arrest.

D. Horizontal Lifelines:

1. Capable of sustaining a 1,800 pound force impact service load in any direction the load may be applied when two users are attached to the system with shock absorbing lanyards limiting the force applied to the system to 900 pounds force for each user.

2. Maintain a minimum factor of safety from service loads to elastic material limits of 2:1.

3. Capable of sustaining a minimum ultimate load of 5,000 pound force in any direction the load may be applied under the plastic limits of the materials.

4. All components of the system shall be directly specified and supplied including manufacturer, make, and model in the design. No replacement components or equals are allowed.

2.03 PRODUCT REQUIREMENTS

A. Anchors shall be completely free of sharp edges or abrasive surfaces.

B. Specifically deburr hoops after hot dip galvanizing process.

C. All exposed portions of carbon steel anchors shall be hot dipped galvanized or aluminum thermal sprayed.

D. Vent holes to accommodate the hot dip galvanizing process shall be permanently sealed.

1. Provide a minimum of 3/4" diameter attachment hoop. Attachment hoop shall be capable of sustaining 5,000 pound force in any direction the load may be applied under the plastic limits of the materials.

2. Inside radius shall be a minimum of 1.625 inches.

2.04 MATERIALS

A. Steel Shapes: ASTM A36.

B. W Shapes: ASTM A572, Grade 50.

C. HSS Tube and Pipe: ASTM A500, Grade B.

D. Stainless Steel Shapes: ASTM A276, 304.

E. Aluminum: 6061 or 6063 with appropriate temper.

F. Welding Rods and Bare Electrodes: Per AWS requirements.

G. Galvanizing Repair Paint: High zinc dust content paint compatible with surfaces to be coated.

H. Exposed Fasteners: Galvanized steel or stainless steel.

I. Concealed Fasters: Stainless steel.

2.05 FlNlSHES

A. Stainless steel, no applied finish.

B. Galvanized steel, no applied finish.

C. Galvanized steel with powder coat finish.

D. Galvanized steel with epoxy finish.

2.06 ACCESSORIES

A. Thermal Insulation: Load bearing thermal insulation separation material.

1. Thickness: 1/4 inch.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Verify substrates match the recommendations of the manufacturer and the project specific shop drawings.

B. Verify bearing surfaces are even, plumb, and true. Uneven bearing surfaces may lead to loosening of anchorages during load testing and rejection of anchorage.

C. Do not begin installation until substrates have been properly prepared.

D. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.02 INSTALLATION

A. Sequence and coordinate with other ongoing work, allowing appropriate notice to other trades and inspectors.

B. Install anchors and fasteners in strict accordance to manufacturer requirements.

C. Torque fasteners with a calibrated torque wrench in strict accordance to manufacturer requirements.

D. Fasteners shall be vibration proof through the use of permanent thread locking compound, deformed thread nuts, or damaged threads. Split ring lock washers are not acceptable without additional retention as noted.

E. Coordinate installation with the Roofing Contractor and General Contractor to verify installation will result in a warrantable building envelope.

H. Prevent galvanic action and other forms of corrosion by insulating metals from direct contact with incompatible materials.

I. Prepare and touch up blemishes and carbon steel field welds with cold galvanizing compound.

3.03 FIELD QUALITY CONTROL

A. Load test, 100 percent of adhesive anchors shall be tensioned tested to an equivalent of the maximum anchor test load with a calibrated scale or calibrated hydraulic test apparatus.

B. Adhesive anchors shall be inspected in accordance with the requirements of the manufacturer.

C. Equipment shall be initially load tested under the direct supervision of a licensed engineer in accordance with ANSI, OSHA, and IWCA requirements.

D. Each anchor shall be inspected for conformance to manufacturer requirements, building envelope, looseness, and signs of permanent deflection during load testing.

3.04 DEMONSTRATION AND TRAINING

A. Provide on-site instruction by manufacturer technician for Owner's representative in proper use, maintenance, and inspection requirements of the system.

3.05 PROTECTION

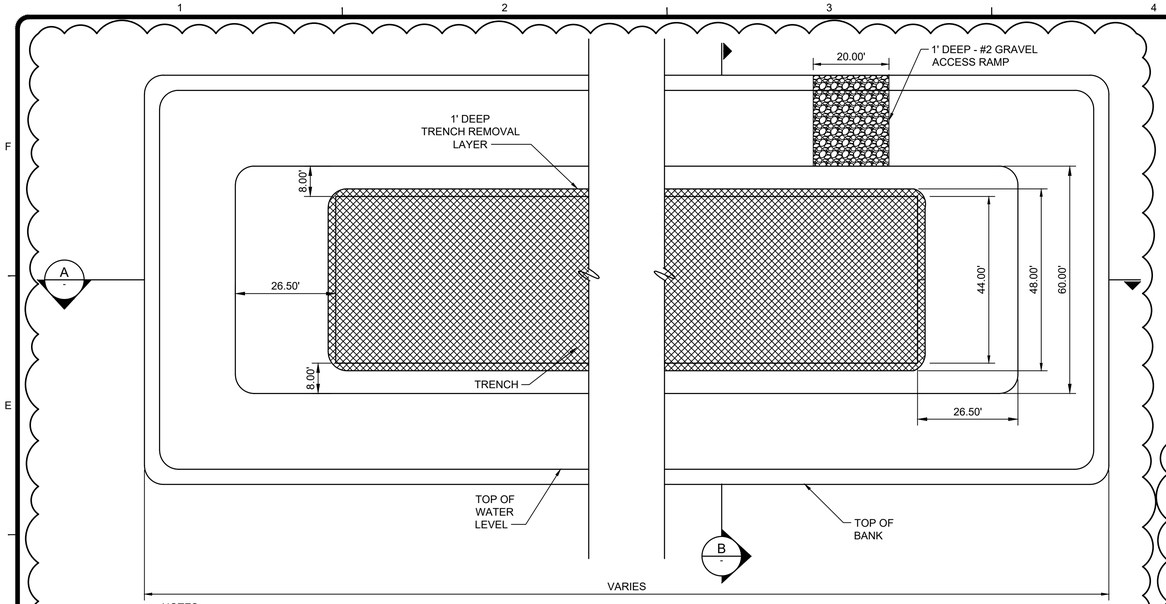
A. Protect installed products until completion of project.

B. Repair or replace non-conforming and damaged products and inspect as necessary to supply a complete, useable system.

3.06 MAINTENANCE

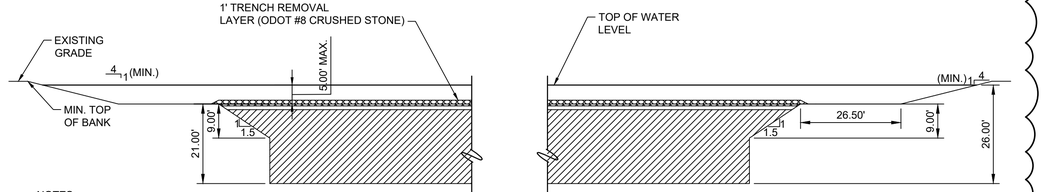
A. OSHA and ANSI/IWCA I-14.1 require that anchors first be certified and subsequently inspected on an annual basis. Coordinate with the manufacturer and local inspectors as required to maintain compliance.

END OF SECTION



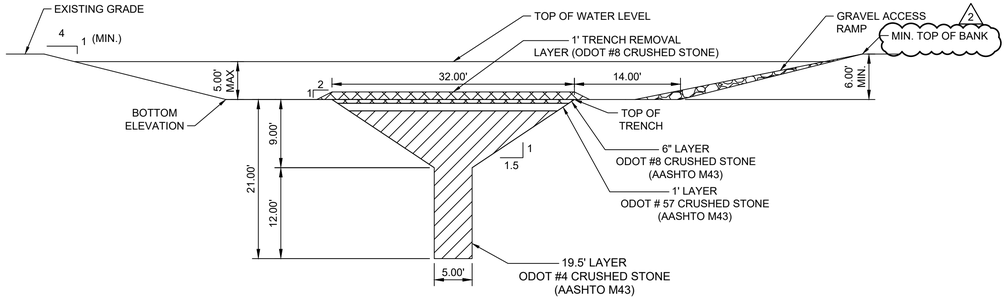
NOTES:
- REFER TO TABLE ON SHEET C-502 FOR TRENCH LENGTHS.
- FOR POND LAYOUT REFER TO SHEET C-209.
- OPTION 2 WIDTH SHOWN ABOVE; OPTION 1 WIDTH - TRENCH 32'; WITH TRENCH REMOVAL LAYER 36'.

1 C-502 POND P9 - PROPOSED POND DETAIL
SCALE: 1" = 20'

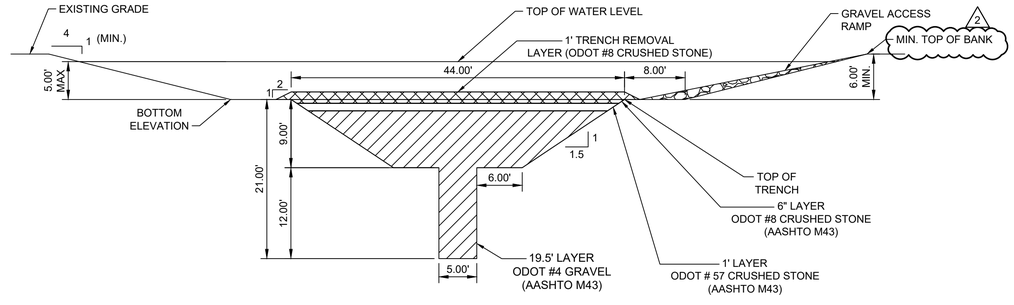


NOTES:
- REFER TO TABLE ON SHEET C-502 FOR TRENCH LENGTHS.

A - SECTION
SCALE: 1" = 20'



B - POND P9 - SECTION OPTION 1
SCALE: 1" = 10'



B - POND P9 - SECTION OPTION 2
SCALE: 1" = 10'

POND #	PHASING	MINIMUM TOP OF BANK EL.	BOTTOM EL.	WATER EL.	TOP OF TRENCH EL.	BOTTOM OF TRENCH EL.
P-1	FUTURE PHASES	764.3	757.7	762.7	757.3	732.3
P-2	FUTURE PHASES	763.4	757.1	762.1	756.8	731.8
P-3	FUTURE PHASES	763.6	757.6	762.6	757.2	732.2
P-4	FUTURE PHASES	761.4	755.3	760.3	754.9	729.9
P-5	FUTURE PHASES	766.4	759.8	764.8	759.4	734.4
P-6	FUTURE PHASES	763.0	756.8	761.8	756.4	731.4
P-7	FUTURE PHASES	763.9	757.9	762.9	757.7	732.7
P-8	FUTURE PHASES	763.5	757.5	762.5	757.2	732.2
P-9	PHASE I	763.8	757.7	762.7	757.4	736.4
P-10	PHASE I	755.6	749.6	754.6	749.4	734.4
P-11	PHASE I	756.0	750.0	755.0	749.9	741.9
P-12	PHASE I	756.5	750.0	755.0	749.6	724.6

POND #	CENTERLINE (CL) TRENCH LENGTH (FT)	CL LENGTH POND TOE OF SLOPE TO TOE OF SLOPE (FT)	CL LENGTH POND TOP OF SLOPE TO TOP OF SLOPE (FT)
P-9	247.0	300.0	359.7
P-10	341.0	400.0	459.8
P-11	244.0	300.0	355.4
P-12	909.0	950.0	1051.5

2

1. CONTRACTOR IS TO COORDINATE WITH OWNER TO DETERMINE WHICH GRAVEL ROADS NEED RESTORATION. GRAVEL ROADS SHALL BE RESTORED TO THEIR ORIGINAL CONDITION WITH A MINIMUM THICKNESS OF ODOT 304 OR 411 OF EIGHT (8) INCHES. THE CONTRACTOR SHALL INCLUDE UP TO 1500 LINEAL FEET OF GRAVEL ROAD WITH A 10 FOOT WIDTH TO BE RESTORED FOR THE CONSTRUCTION OF EACH PROPOSED POND, P1 THROUGH P12.
2. ALL SAND FROM SAND TRAPS ENCOUNTERED ALONG THE WALLS OR FLOOR OF THE PROPOSED PONDS IS TO BE REMOVED BY THE CONTRACTOR DURING PROPOSED POND CONSTRUCTION TO PREVENT THE EROSION OF SAND ALONG THE PROPOSED POND SLOPE.
3. REFER TO THE MOST RECENT EDITION OF THE CITY OF DAYTON'S CONSTRUCTION AND MATERIAL SPECIFICATIONS FOR ANY REQUIRED TREE REMOVAL.
4. BURIED UTILITIES THAT ARE DAMAGED DURING CONSTRUCTION ACTIVITIES, INCLUDING ELECTRICAL, STORM, AND WATER LINES, SHALL BE RESTORED TO THEIR ORIGINAL CONDITION WITH NEW MATERIAL, AT NO ADDITIONAL COST TO THE OWNER. ALL BREAKS SHALL BE REPORTED TO THE PROJECT MANAGER.
5. EXCAVATED SOIL NOT USED IS TO BE STOCKPILED ON-SITE AT PRE-DETERMINED "SPOIL AREAS". SPOIL AREAS WILL NOT COVER, OBSTRUCT, OR INTERFERE WITH EXISTING VALVES, VAULTS AND MANHOLES.
6. LOCATION OF GRAVEL ACCESS RAMPS VARY DEPENDING ON POND. REFER TO PLAN AND PROFILE SHEETS.
7. GRAVEL ACCESS RAMP LOCATION VARIES. REFER TO AND COORDINATE WITH ENLARGED SITE AND GRADING PLANS FOR GRAVEL ACCESS RAMP LOCATIONS AND SLOPES.

TETRA TECH
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PHONE: (513) 333-3676 FAX: (513) 241-0354

BID DOCUMENTS

STATE OF OHIO — HERBERT R. LEMASTER — E-77200 — REGISTERED PROFESSIONAL ENGINEER — 4-2-2025

MARK	DATE	DESCRIPTION	BY
2	04/03/25	ADDENDUM 2	KAG

CITY OF DAYTON, OHIO
DAYTON MIAMI WELL FIELD EXPANSION
PHASE I
DETAILS

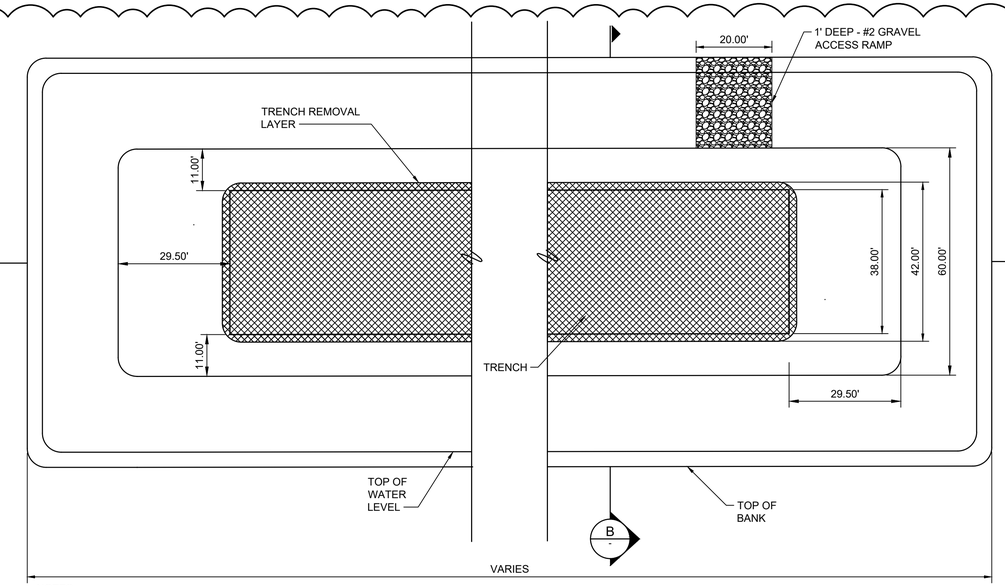
Project No.:	200-23773-23002
Designed By:	KAG
Drawn By:	WDV
Checked By:	HRL

C-502A

SCALE: 1" = 10'

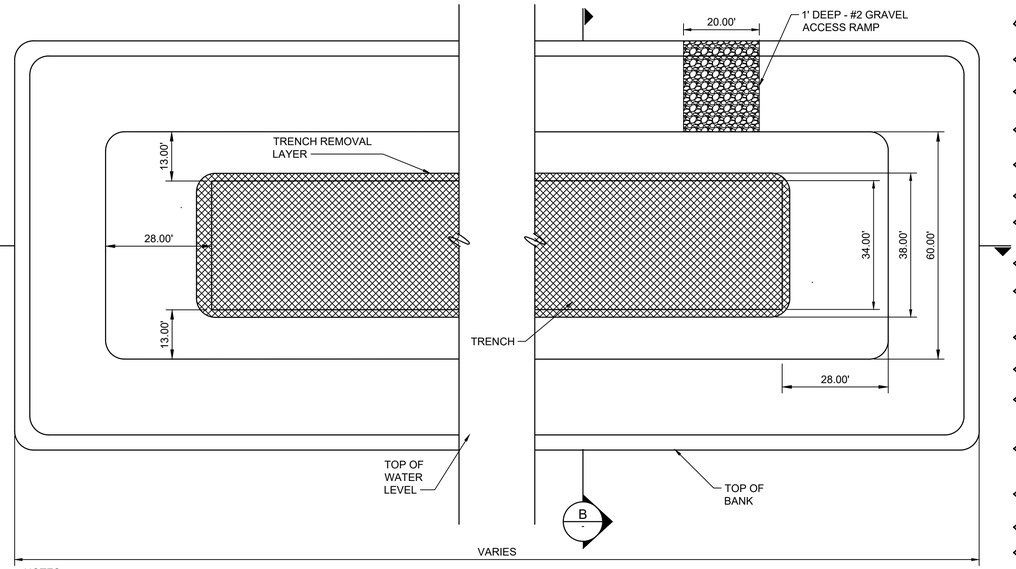
SCALE: 1" = 20'

Bar Measures 1 inch



NOTES:
- REFER TO TABLE ON SHEET C-502 FOR TRENCH LENGTHS.
- FOR POND LAYOUT REFER TO SHEET C-208.

1 C-503 POND P10 - PROPOSED POND DETAIL
SCALE: 1" = 20'



NOTES:
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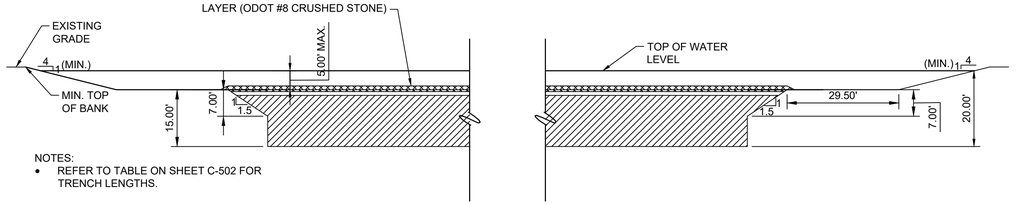
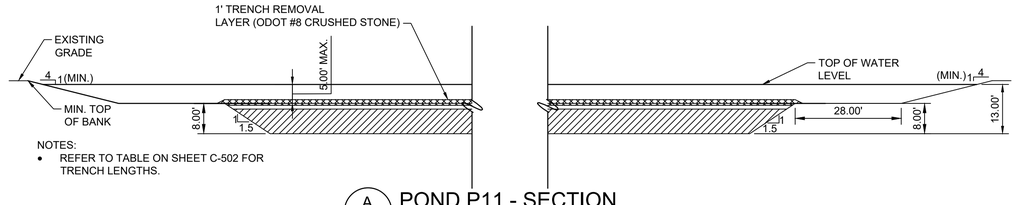
- FOR POND LAYOUT REFER TO SHEET C-208.

2 C-503 POND P11 - PROPOSED POND DETAIL
SCALE: 1" = 20'



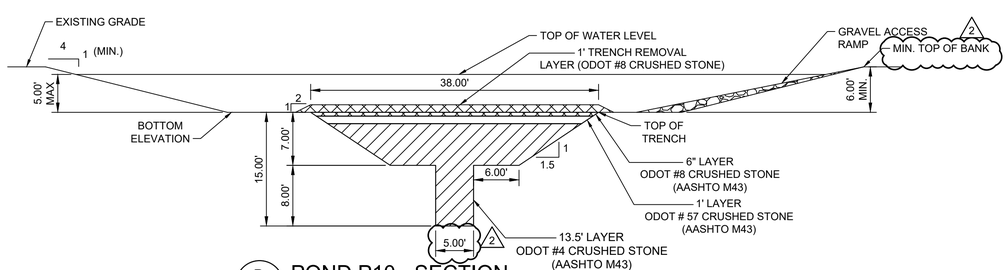
NOTES:
- REFER TO TABLE ON SHEET C-502 FOR TRENCH LENGTHS.

A POND P10 - SECTION
SCALE: 1" = 20'

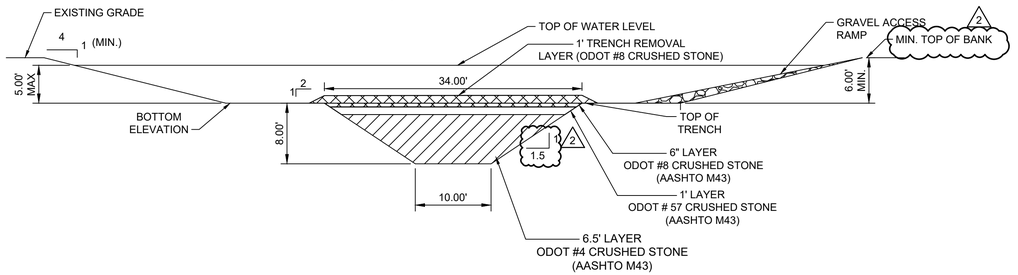


NOTES:
- REFER TO TABLE ON SHEET C-502 FOR TRENCH LENGTHS.

A POND P11 - SECTION
SCALE: 1" = 20'



B POND P10 - SECTION
SCALE: 1" = 10'



B POND P11 - SECTION
SCALE: 1" = 10'

NOTE:
- REFER TO NOTES AND TABLE ON SHEET C-502 FOR ADDITIONAL INFORMATION.

0 5' 10' 20'
SCALE: 1" = 10'

0 10' 20' 40'
SCALE: 1" = 20'

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BID DOCUMENTS

STATE OF OHIO
HERBERT R. LEMASTER
E-77200
REGISTERED PROFESSIONAL ENGINEER
4-2-2025

MARK	DATE	DESCRIPTION	BY
2	04/03/25	ADDENDUM 2	KAG

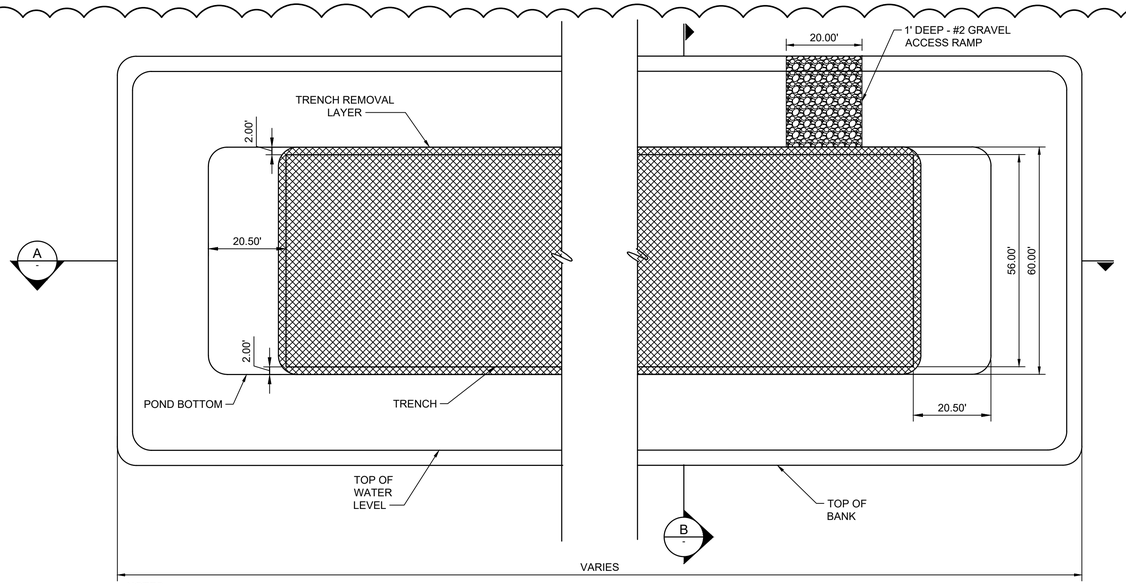
CITY OF DAYTON, OHIO
DAYTON MIAMI WELL FIELD EXPANSION
PHASE I

DETAILS

Project No.:	200-23773-23002
Designed By:	KAG
Drawn By:	WDV
Checked By:	HRL

C-503A

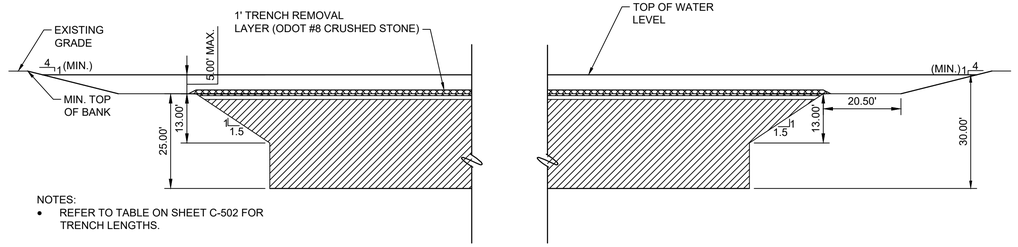
Bar Measures 1 inch



NOTES:
- REFER TO TABLE ON SHEET C-502 FOR TRENCH LENGTHS.
- FOR POND LAYOUT REFER TO SHEET C-209.
- OPTION 2 WIDTH SHOWN ABOVE; OPTION 1 WIDTH - TRENCH 45.5'; WITH TRENCH REMOVAL LAYER 49.5'.

1 / C-504 POND P12 - PROPOSED POND DETAIL

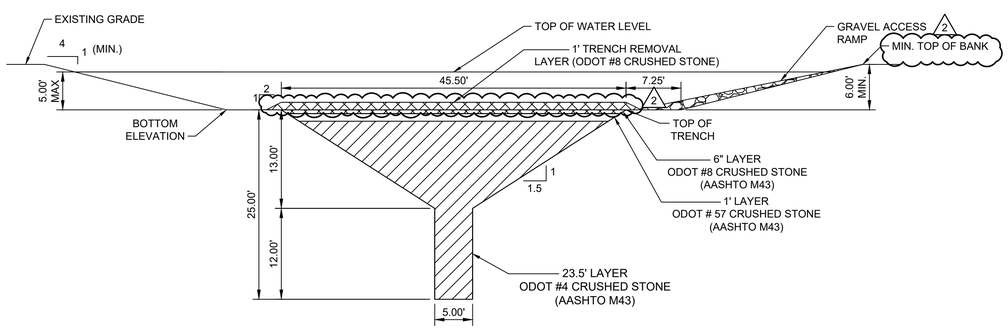
SCALE: 1" = 20'



NOTES:
- REFER TO TABLE ON SHEET C-502 FOR TRENCH LENGTHS.

A - POND P12 - SECTION

SCALE: 1" = 20'



B - POND P12 - SECTION OPTION 1

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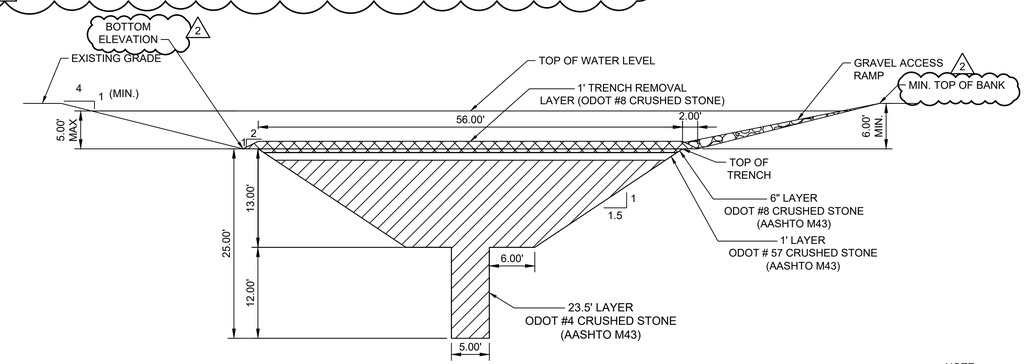

B - POND P12 - SECTION OPTION 2

SCALE: 1" = 10'

NOTE:
- REFER TO NOTES AND TABLE ON SHEET C-502 FOR ADDITIONAL INFORMATION.

0 5' 10' 20'
SCALE: 1" = 10'

0 10' 20' 40'
SCALE: 1" = 20'

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BID DOCUMENTS

STATE OF OHIO
HERBERT R. EMASTER E-77200 REGISTERED PROFESSIONAL ENGINEER
4-2-2025

MARK	DATE	DESCRIPTION	BY
2	04/03/25	ADDENDUM 2	KAG

CITY OF DAYTON, OHIO
DAYTON MIAMI WELL FIELD EXPANSION PHASE I

DETAILS

Project No.:	200-23773-23002
Designed By:	KAG
Drawn By:	WDV
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C-504A

Bar Measures 1 inch