DOCUMENT 00910

ADDENDUM NUMBER 2

DATE: December 5, 2024

PROJECT: Water Reclamation Facility Improvements

PROJECT NUMBER: R954719170
CWSRF Project No. CS011086-01

OWNER: City of Springville

ENGINEER: CDG, Inc.
1962 West Main Street
Dothan, Alabama 36301

TO: Prospective Bidders

This Addendum forms a part of the Contract Documents and modifies the Bidding Documents dated November 14, 2024.

Acknowledge receipt of this Addendum in the space provided in the Bid Form. Failure to do so may disqualify the Bidder.

This Addendum consists of fifty-one (51) pages.

ITEMS DISCUSSED AT PRE-BID CONFERENCE:

1. Contractor will be required to obtain a Building Permit through the City, but the fee will be waived.
2. Relocation of existing OHE lines being coordinated by City.
3. Cost for OHE line relocation and service upgrade, if required, being covered by City.
4. City providing 6-inch waterline to approximate location shown on Sheet C-303 with 3-inch meter; Contractor's scope of work begins downstream of 3-inch meter
5. AIS required for project. Project received BABA waiver.
6. Excess fill can be spread on site at location directed by City.
7. City completing field location and flagging of existing influent forcemain.
8. There is no order of preference for a company or product listed in the specifications. Products will still be required to meet the design requirements of the project.

CLARIFICATIONS:

1. Question – "*Please confirm if wall sleeves are to be stainless Steel or Hot Dipped Galvanized?*"
    a. Response – Wall sleeves should be stainless steel.

2. Question – "*Is all piping inside SBR to be Stainless steel? And transition to DIP outside of structure walls?*"
    a. Response – The only stainless-steel piping related to the SBR is for the above-grade air lines.

3. Question – "*Clarify if owner will install water meter and contractor picks up on effluent side of meter.*"

a. Response – City providing 6-inch waterline to approximate location shown on Sheet C-303 with 3-inch meter; Contractor's scope of work begins downstream of 3-inch meter.

4. Question – "*Can that waterstop be installed in structure slab? Rebar can be fabricated with bend so that waterstop maintains a 2"-3" clearance between rebar and waterstop.*"
    a. Response – It is acceptable to bend reinforcing at waterstops if clearance and cover are maintained.

5. Question – "*Plans show pouring SBR walls in 2 lifts. Can we pour walls full height? We have completed projects in past 2 years where we poured walls full height up to 30' tall without any issues and will provide a significant cost savings to owner pouring in one shot.*"
    a. Response – Wall to be poured in 2 pours.

6. Question – "*Is it an option to pour wet well as box opposed to circular cast in place structure?*"
    a. Response – The headworks lift station needs to stay circular. Squaring it off at the corners would create a large mass of concrete at the corners and the reinforcing would likely need to be revised.

7. Question – "*Do you have specifications on doors, roll up doors, windows, etc?*"
    a. Response – While no manufacturer has been specified on the plans, materials and style are as per design standard; see door schedule and attached specifications for minimum design standards.

8. Question – "*Is contractor responsible for materials testing, compaction testing, etc.?*"
    a. Response – Yes, see specification section 01400, 1.6 Testing and Inspection Services.

9. Question – "*How should the yard/buried piping be split amongst the provided Bid Items on the Bid Form?*"
    a. Response – Additional bid item has been added to break out site piping into single line item; see attached, updated Bid Form.

10. Question – "*Should cement-lined or ceramic epoxy lined piping be provided for Force Mains? Both are listed in Specification 02536, but it does not assign which should be provided?*"
    a. Response – Either lining method is acceptable.

11. Question – "*What pipe joints should be provided for Ductile Iron Force Main Piping? "Mechanical joint or push-on joint" is listed. Please also confirm MJ fittings with retainer glands and thrust blocks are to be provided on all DI Piping, as described in Note 7 on "Restrained Joint Lengths Table" Detail on Drawing C-803?*"
    a. Response – Either joint restraint method is acceptable.

12. Question – "*Are AWWA C110 fittings to be used for both MJ and FLG type fittings? Or is AWWA C153 also acceptable?*"
    a. Response – AWWA C110 and AWWA C153 are both acceptable.

13. Question – "*Please provide requirements for type of flange gaskets and flange fasteners to be provided?*"
    a. Response – Joints shall be mechanical and conform to AWWA C111; all bolts and nuts for mechanical joints shall be high-strength, low-alloy steel in accordance with AWWA C111. All gaskets shall be for a standard mechanical joint of BUNA-S (SBR Buna) in accordance with ANSI/ AWWA C111/ A21.4. Bolts shall be A4-70 (or equivalent) Stainless Steel.

14. Question – "*Please confirm SDR 21 PVC is to be provided for the WAS FM as shown on the Drawings and not SDR 26 as described in Specification 02536?*"
    a. Response – SDR 21 PVC should be provided as shown on the drawings.

15. Question – "*Most of the buried Water line on Drawing C-303 is 1-1/2" size. Ductile iron fittings are called out to be used but are not available in 1-1/2" size. Should a different type of fitting be provided or should the line size change?*"
    a. Response – PVC fittings are acceptable.

16. Question – "*The connection of the 6" WAS FM to Cell No. 2 is not clearly shown. Should this be taken to the extent shown on Drawing C-202 and turned 90 degrees into Cell No. 2?*"
    a. Response – See updated Sheets C-202 and C-802.

17. Question – "*No Specification is provided for the Ductile Iron Piping that is for air service. Should this be unlined? Any gasket/joint/fitting type requirements?*"
    a. Response – Unlined, flanged fittings, high temperature gaskets.

18. Question – "*Can you provide As Builts for the UV Electrical Installed? Need to know where conduit runs go to install the vale between the manhole and pump.*"
    a. Response – CDG does not have as-built information on the existing UV system.

19. Question – "*C-405/C-406, Do the 12" through wall pipes need to be stainless steel? Or can this be DIP?*"
    a. Response – Stainless steel or epoxy coated ductile iron due to corrosive environment.

20. Question – "*Are the Pressure relief Valves in the slab of the SBR required?*"
    a. Response – Yes, PRVs are required.

21. Question – "*Can the onsite soil be used as back fill around the cast in place structures?*"
    a. Response – Onsite soil can be utilized for fill if conditioning is completed to meet compaction requirements. See geotechnical report for information on existing soils.

22. Question – "*Where is the 7.5 hp Sludge Wasting Pump listed on Sheet E-102 located?*"
    a. Response – See updated Sheet E-102.

23. Question – "*What type of control valves are to be provided at the Influent Flow Diverter and the Influent Piping up to SBR Tanks No. 1 &2? Do these fall under the "Pilot Operated Control Valves" Section in 02085-2.10?*"
    a. Response – Control valves for the SBR are outlined in Specification Section 11390, 2.08 "Influent Valve". Valves for Influent Flow Diversion shall be eccentric plug valves with actuators.

24. Question – "*Are all air/butterfly control valves on the blower discharge line to be provided as part of the SBR Equipment package? Or should four of these be provided by the Contractor? There are 6 total, but only 2 listed in Specification 11390.*"
    a. Response – 6 total valves by SBR manufacturer. See updates to Specification Section 11390.

25. Question – "*Attached C-406. Should this air piping on Sheet C-406 be above the HWL*?"
    a. Response – See updated Sheet C-406.

CHANGES TO THE PROJECT MANUAL:

DOCUMENT 00412 – BID FORM

1. Replace the published document with the attached document notated as Addendum 2 (3 pages).

DOCUMENT 01200 – PRICE AND PAYMENT PROCEDURES

1. Replace the published document with the attached document notated as Addendum 2 (5 pages).

DOCUMENT 08100 – METAL DOORS & FRAMES

1. Insert attached document (3 pages).

DOCUMENT 08211 – FLUSH WOOD DOORS

1. Insert attached document (3 pages).

DOCUMENT 083336 – OVERHEAD COILING DOORS

1. Insert attached document (4 pages).

DOCUMENT 085113 – ALUMINUM WINDOWS

1. Insert attached document (5 pages).

DOCUMENT 08711 – DOOR HARDWARE

1. Insert attached document (8 pages).

DOCUMENT 08800 – GLAZING

1. Insert attached document (6 pages).

DOCUMENT 11220 – REFRIGERATED SAMPLER

1. Add "Hach" to Section 2.1 as an acceptable refrigerated sampler manufacturer.

DOCUMENT 11390 – SEQUENCING BATCH REACTOR

1. Replace line 1.03, C, 6. with the following:
   "6. Blower Motor Size, min. hp……..75"
2. Replace line 2.03, D, 6. with the following:
   "6. Minimum allowable HP……..75"
3. Replace line 2.04, A, 1. with the following:
   "1. Valve quantity, per each SBR Basin……..3"

DOCUMENT 16157 – VARIABLE FREQUENCY DRIVES

1. Add "Danfoss" as an acceptable variable frequency drive manufacturer.

CHANGES TO CONSTRUCTION PLANS:

1. Sheet C-202: Overall Site Plan & Geometric Control Plan
   a. Remove Sheet C-202: Overall Site Plan & Geometric Control Plan and replace with attached, updated Sheet C-202: Overall Site Plan & Geometric Control Plan notated as Addendum 2.

2. Sheet C-303: Yard Piping Plan

a. Remove Sheet C-303: Yard Piping Plan and replace with attached, updated Sheet C-303: Yard Piping Plan notated as Addendum 2.

3. Sheet C-406: SBR Details
   a. Remove Sheet C-406: SBR Details and replace with attached, updated Sheet C-406: SBR Details notated as Addendum 2.

4. Sheet C-802: Standard Details
   a. Remove Sheet C-802: Standard Details and replace with attached, updated Sheet C C-802: Standard Details notated as Addendum 2.

5. Sheet A1.1: Schedules and Details
   a. Remove Sheet A1.1: Schedules and Details and replace with attached, updated Sheet A1.1: Schedules and Details notated as Addendum 2.

6. Sheet E-102: One Line Diagram
   a. Remove Sheet E-102: One Line Diagram and replace with attached, updated E-102: One Line Diagram notated as Addendum 2.

7. Sheet E-103: Panel Boards Schedule
   a. Remove Sheet E-103: Panel Boards Schedule and replace with attached, updated E-103: Panel Boards Schedule notated as Addendum 2.

8. Sheet E-104: Electrical Site Plan
   a. Remove Sheet E-104: Electrical Site Plan and replace with attached, updated E-104: Electrical Site Plan notated as Addendum 2.

9. Sheet E-106: Admin Building
   a. Remove Sheet E-106: Admin Building and replace with attached, updated E-106: Admin Building notated as Addendum 2.

ISSUED THIS 5th DAY OF DECEMBER 2024.

_____

Carmen D. Chosie, PE
Project Manager

END OF DOCUMENT

ADDENDUM 2

DOCUMENT 00412

BID FORM

To: City of Springville

Project: Water Reclamation Facility Improvements

Date: _____

Submitted by: _____
(full name)

(full address) _____

_____

1. OFFER

Having examined the Place of the Work and all matters referred to in the Instructions to Bidders and the Contract Documents prepared by the Engineer for the above-mentioned project, we, the undersigned, hereby offer to enter into a Contract to perform the Work for the Unit Prices listed in this bid form in lawful money of the United States of America.

We have included the Bid Bond as required by the Instruction to Bidders.

All applicable federal and State of Alabama taxes are included in the Unit Prices.

Explanations of Bid Items are described in Section 01200 - Price and Payment Procedures.

2. ACCEPTANCE

This offer shall be open to acceptance and is irrevocable for sixty (60) days from the bid closing date.

If this bid is accepted by the Owner within the time period stated above, we will, unless otherwise allowed by the Owner:

- Execute the Agreement within seven (7) days of receipt of Notice of Award.
- Furnish the required bonds and insurance within fourteen (14) days of receipt of Notice of Award.
- Commence work within seven (7) days after written Notice to Proceed

If this bid is accepted within the time stated, and we fail to commence the Work, or we fail to provide the required bonds, the security deposit shall be forfeited as damages to the Owner by reason of our failure, limited in amount to the lesser of the face value of the security deposit or the difference between this bid and the bid upon which a Contract is signed.

In the event our bid is not accepted within the time stated above, the required security deposit will be returned to the undersigned, in accordance with the provisions of the Instructions to Bidders; unless a mutually satisfactory arrangement is made for its retention and validity for an extended period of time.

3. CONTRACT TIME AND LIQUIDATED DAMAGES

If this Bid is accepted:

- The Work will be substantially completed in **three hundred and eighty (380)** calendar days from the Notice to Proceed.
- Liquidated damages of **$500.00** shall be paid by Contractor for each day beyond the agreed upon substantial completion date.

4. ADDENDA

The following Addenda have been received. The modifications to the Bid Documents noted below have been considered and all costs are included in the Bid Price.

Addendum No._____ Dated _____

Addendum No._____ Dated _____

5. BID FORM SIGNATURES

The Corporate Seal of

_____

(Bidder - print the full name of your firm)

was hereunto affixed in the presence of:

_____

(Authorized signing officer Title)

(Seal)

_____

(Authorized signing officer Title)

(Seal)

If the Bid is a joint venture or partnership, add additional forms of execution for each member of the joint venture in the appropriate form or forms as above.

ADDENDUM 2

Bid Form
Water Reclamation Facility Improvments
City of Springville
ADEM CWSRF Project No. CS011086-01

BASE BID

NO.	DESCRIPTION	UNIT	QTY	UNIT PRICE	EXTENSION PRICE
1.	Mobilization (Not to Exceed 5% of Bid)	LS	1	$	$
2.	Erosion Control, Grassing and Restoration	LS	1	$	$
3.	Headworks	LS	1	$	$
4.	Influent Lift Station	LS	1	$	$
5.	1.8 MGD Sequencing Batch Reactor (SBR) Equipment in Concrete Tanks	LS	1	$	$
6.	Administration Building	LS	1	$	$
7.	Emergency Standby Generator with ATS and Concrete Pad	LS	1	$	$
8.	Site Piping	LS	1	$	$
				TOTAL BASE BID:	$

END OF DOCUMENT

ADDENDUM 2

SECTION 01200

PRICE AND PAYMENT PROCEDURES

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Schedule of values.

B. Applications for payment.

C. Change procedures.

D. Defect assessment.

E. Unit prices.

F. Alternates.

1.2 SCHEDULE OF VALUES

A. Submit printed schedule on Contractor's standard form or electronic media printout.

B. Submit Schedule of Values in duplicate within 15 days after date established in Notice to Proceed.

C. Include in each line item, amount of Allowances specified in this section. For unit cost Allowances, identify quantities taken from Contract Documents multiplied by unit cost to achieve total for each item.

D. Revise schedule to list approved Change Orders, with each Application for Payment.

1.3 APPLICATIONS FOR PAYMENT

A. Submit four copies of each application on Contractor's electronic media driven form.

B. Content and Format: Utilize Schedule of Values for listing items in Application for Payment.

C. Submit updated construction schedule with each Application for Payment.

D. Payment Period: Contractor to submit Pay Request, with the agreed upon quantities shown, on the first working day of the month for the previous month.

E. Submit with transmittal letter as specified for Submittals in Section 01330.

F. Substantiating Data: When submitting Pay Request that includes a pay request for stored materials, Contractor must also submit a paid invoice for all materials listed for reimbursement.

1.4 CHANGE PROCEDURES

A. Submittals: Submit name of individual authorized to receive change documents, and be responsible for informing others in Contractor's employ or Subcontractors of changes to the Work.

B. The Engineer will advise of minor changes in the Work not involving adjustment to Contract Sum/Price or Contract Time by issuing supplemental instructions.

C. Contractor may propose changes by submitting a request for change to Engineer, describing proposed change and its full effect on the Work. Include a statement describing reason for the change, and effect on Contract Sum/Price and Contract Time with full documentation and a statement describing effect on Work by separate or other Contractors.

D. Stipulated Sum/Price Change Order: Based on Proposal Request and Contractor's fixed price quotation.

E. Unit Price Change Order: For contract unit prices and quantities, the Change Order will be executed on fixed unit price basis.

F. Execution of Change Orders: Engineer will issue Change Orders for signatures of parties as provided in Conditions of the Contract.

G. Correlation Of Contractor Submittals:
1. Promptly revise Schedule of Values and Application for Payment forms to record each authorized Change Order as separate line item and adjust Contract Sum/Price.
2. Promptly revise progress schedules to reflect change in Contract Time, revise sub-schedules to adjust times for other items of work affected by the change, and resubmit.
3. Promptly enter changes in Project Record Documents.

1.5 DEFECT ASSESSMENT

A. Replace the Work, or portions of the Work, not conforming to specified requirements.

B. If, in the opinion of the Engineer, it is not practical to remove and replace the Work, the Engineer will direct appropriate remedy or adjust payment.

C. The defective Work may remain, but unit sum/price will be adjusted to new sum/price at discretion of Engineer.

D. Defective Work will be partially repaired to instructions of Engineer, and unit sum/price will be adjusted to new sum/price at discretion of Engineer.

E. Individual specification sections may modify these options or may identify specific formula or percentage sum/price reduction.

F. Authority of Engineer to assess defects and identify payment adjustments is final.

G. Non-Payment For Rejected Products: Payment will not be made for rejected products for any of the following:
1. Products wasted or disposed of in a manner that is not acceptable.
2. Products determined as unacceptable before or after placement.
3. Products not completely unloaded from transporting vehicle.
4. Products placed beyond lines and levels of required Work.
5. Products remaining on hand after completion of the Work.
6. Loading, hauling, and disposing of rejected products.

1.6 UNIT PRICES

A. Authority: Measurement methods are delineated in Section 1.7 of this Specification.

B. Measurement methods delineated in individual specification sections complement criteria of this section. In event of conflict, requirements of individual specification section govern.

C. Take measurements and compute quantities. Engineer will verify measurements and quantities.

D. Unit Quantities: Quantities and measurements indicated in Bid Form are for contract purposes only. Quantities and measurements supplied or placed in the Work shall determine payment.
1. When actual Work requires more or fewer quantities than those quantities indicated, provide required quantities at unit sum/prices contracted.

E. Payment Includes: Full compensation for required labor, products, tools, equipment, plant and facilities, transportation, services and incidentals; erection, application or installation of item of the Work; overhead and profit.

F. Final payment for Work governed by unit prices will be made on basis of actual measurements and quantities accepted by Engineer multiplied by unit sum/price for Work incorporated in or made necessary by the Work.

1.7 EXPLANATION OF BID ITEMS

A. **Bid Item No. 1 – Mobilization:** See Specification Section 02050.

B. **Bid Item No. 2 – Erosion Control, Grassing and Restoration:** Includes, but is not limited to, all necessary labor, materials, equipment, purchase, transport, loading/unloading, installation, maintenance and removal of the erosion and sediment control plan/devices. Also includes fine grading, topsoil placement, temporary and permanent seeding, fertilization, mulching, watering, mowing and other necessary maintenance, restoration of all structures damaged or otherwise disturbed by construction to pre-construction

conditions or better. Payment will be made at the contract lump sum price bid and shall include any incidentals necessary to complete the work in accordance with these plans and specifications.

C. **Bid Item No. 3 – Headworks:** Includes all labor, materials and equipment necessary to install screening equipment in a concrete channel in accordance with Section 11331 and refrigerated sampler(s) in accordance with Section 11220. Work shall include screening components including semi-cylindrical screen basket, concentric screw conveyor/dewatering screw, screenings press with drive unit, support structure, weather protection system, electrical control system, concrete channel with removable aluminum grating, refrigerated sampler, ancillary piping and equipment required to provide a complete and properly functioning system. Payment will be made at the contract lump sum price bid and shall include any incidentals necessary to complete the work in accordance with these plans and specifications.

D. **Bid Item No. 4 – Influent Lift Station:** Includes all labor, materials and equipment necessary to install packaged submersible lift station in accordance with Section 11217. Work shall include pre-engineered, factory-built, automatically controlled above ground lift station including station enclosure, station base, wet well, submersible pumps, guide rails and accessories, pump hoist, electrical control system, liquid level control system, valves, piping, pressures gauges, ancillary piping and equipment required to provide a complete and properly functioning system. Payment will be made at the contract lump sum price bid and shall include any incidentals necessary to complete the work in accordance with these plans and specifications.

E. **Bid Item No. 5 – 1.8 MGD Sequencing Batch Reactor (SBR) Equipment in Concrete Tanks:** Includes all labor, materials and equipment necessary to install sequencing batch reactor equipment in concrete tanks in accordance with Section 11390. Work shall include sequencing batch reactor (SBR) equipment including diffuser system, mixing system, decanter system, sludge wasting pumps, valving, level sensors, DO problems, access walkways, electrical control system, ancillary piping and equipment required to provide a complete and properly functioning system. Payment will be made at the contract lump sum price bid and shall include any incidentals necessary to complete the work in accordance with these plans and specifications.

F. **Bid Item No. 6 – Administration Building**: Includes providing all labor and furnishing all equipment and tools to install a pre-engineered metal building with concrete foundation and associated wiring and other appurtenances required to form a complete and functioning system as shown on Drawings. Payment will be made at the contract lump sum price bid and shall include any incidentals necessary to complete the work in accordance with these plans and specifications.

G. **Bid Item No. 7 – Emergency Standby Generator with ATS and Concrete Pad**: Includes providing all labor and furnishing all equipment and tools to install a standby generator system with automatic transfer switch and concrete equipment pad with associated wiring and other appurtenances required to form a complete and functioning system as shown on Drawings. Payment will be made at the contract lump sum price bid and shall include any

incidentals necessary to complete the work in accordance with these plans and specifications.

H. **Bid Item No. 8 – Site Piping**: Includes all material, equipment associated with excavation (includes rock excavation), bedding, installation of pipe at locations shown on plans, installation of detector wire and tape, installation of ductile iron fittings, installation of transition fittings, flow meters, actuated valves, "mega-lug" retainer glands, concrete thrust blocks, maintenance of wastewater flow, native soil backfill, compaction, testing, cleanup, traffic control, and all related items. No additional payment will be made for retainer glands or concrete thrust blocks. Payment shall be Lump Sum and shall include any incidentals necessary to complete the work in accordance with the plans and specifications.

I. The items in the Bid Form are intended to provide full compensation to the Contractor for providing a complete and functional project. Any major items deemed by the proposed bidder to be missing in the Bid Form shall be called to the attention of the Engineer prior to the bid so that an Addendum can be considered. Payment for any minor items necessary to satisfactorily complete the project which are not listed in the Bid Form shall be included in the prices bid for items in the Bid Form. No additional payment will be made for these minor items.

1.8 ALTERNATES

A. Alternates quoted on Bid Forms will be reviewed and accepted or rejected at Owner's option. Accepted Alternates will be identified in Owner-Contractor Agreement.

B. Coordinate related work and modify surrounding work.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

SECTION 08100 - METAL DOORS & FRAMES

PART 1 - GENERAL

1.1 Related Documents

A. The General Provisions of the Contract, including Division 1, General Requirements, apply to the work specified in this section.

1.2 Description of Work

A. The work covered by this Section consists of furnishing and installing all metal doors, frames and related items required to complete the work indicated on the drawings and as specified herein.

1.3 Submittal

A. Shop drawings and manufacturers data shall be submitted in quintuplicate to the Architect for review prior to fabrication. Shop drawings shall meet all the requirements as set forth under the General Conditions.

PART 2 - PRODUCTS

2.1 Materials

A. Hollow Metal Doors: Doors shall be of flush construction 1-3/4" thick with panels of 18 gage A60 galvanized steel. Doors shall be reinforced, stiffened, sound deadened and insulated with impregnated Kraft honeycomb core completely filling the inside of the doors and laminated to both inside faces of the panels. Doors shall have continuous vertical mechanical interlocking joints at lock and hinge edges. Doors shall have beveled, 1/8" in 2" hinge and lock edges. Top and bottom 14 gage A60 galvanized reinforcing channels shall be spot welded within the door.

B. Frames: Frames shall be formed or rolled of not less than 16 gage A60 galvanized steel. Heads and jambs shall have mitered corners, reinforced and shall be continuously welded and ground off smooth. Frames shall be delivered with removable steel angle spreader welded to the bottom of frames to insure parallel alignment. Three (3) 16 gage adjustable steel anchors shall be provided for each jamb. Frames shall be drilled for three (3) rubber mutes. Frames shall be properly reinforced to receive hardware.

C. Reinforcement: Hollow metal units shall be prepared to receive finish hardware, including cutouts, reinforcing, drilling and tapping in accordance with hardware schedule and templates. Preparation shall comply with applicable requirements of ANSI A115 “Specifications for Door and Frame Preparation”. Reinforcement shall be as follows:

1. Hinges: Steel plate 3/16" thick x 1 ½" wide x 6" longer than hinges, secured by not less than 6 spot welds.

2. Locks and Flush Bolts: 12 gage sheet steel, secured by not less than 2 spot welds.

3. Closers: 12 gage sheet steel, secured by not less than 6 spot welds.

4. Strike Plates: Steel plate 3/16" thick x 1 ½" wide x 3" long, secured by not less than 2 spot welds.

Plates shall be pre-drilled and tapped in the shop except for surface applied hardware which may be field drilled and tapped.

D. Paint: Doors, frames and louvers shall be bonderized and finished with one coat of baked-on zinc chromate rust inhibiting primer.

E. Anchors: Jamb anchors shall be 16 gage galvanized steel adjustable, masonry "T", wood stud anchors welded inside the frame. Three (3) anchors shall be provided for each jamb. Floor anchors shall be 14 gage galvanized steel, clip type with 2 holes for fasteners. Clips shall be welded to each jamb and mullion which extends to the floor.

F. Accessories: Plaster guards of 26 gage steel shall be welded to frames at the back of hardware cutouts where mortar or other materials might obstruct hardware installation. Plastic plugs shall be installed in holes for rubber mutes to keep holes clear during construction. Provide all other accessories required to complete the work. Provide 3 rubber silencers per door.

G. Mullions, Transom Bars, Frames for Glass, Stops and Molding: Mullions, transom bars and frames for glass shall be closed or tubular sections similar to door frames. Bars shall be fastened to frames by butt welding with joint reinforced with concealed clip angles of same metal and thickness as frames. Stops and molding shall be formed or heavy gage sheet steel to dimension shown or as required for proper installation. Stops and molding shall be applied with counter sunk tamper-proof screws spaced uniformly not more than 8" o.c. Corner shall be butted with only a hairline joint visible.

H. Contractor shall verify all requirements for installation of glass, hardware, etc. Any conflicts shall be brought to the attention of the Architect prior to bidding. Failure to do so will not relieve the Contractor of the responsibility of furnishing materials required for proper installation.

I. Fire door and frame assemblies where required on the drawings shall have been investigated and successfully tested in accordance with the latest revision of ASTM Designation E-152. The door and frame shall each have an attached label indicating the applicable fire test rating.

2.2 Manufacturer

A. Hollow metal doors and frames shall be by the same manufacturer. Units shall be manufactured by Steelcraft, Amweld, Republic, Ceco, Truscon or other approved manufacturer.

PART 3 - EXECUTION

3.1 Installation

A. Installation of hollow metal units and accessories shall be in accordance with the approved shop drawings, manufacturer's data and instructions, and as specified herein.

B. Frames shall be accurately set in position, plumbed, aligned and braced securely until permanent anchors are set. Floor anchors shall be set with powder-activated fasteners. Jamb anchors shall be securely anchored in masonry walls. All frames set in masonry shall be filled completely with grout. Temporary braces and spreaders shall not be removed until wall construction

is complete and anchors properly set and secured.

C. Doors shall be fitted accurately to frames with proper clearances as specified in S.D.I.
100. Installation of finish hardware is specified in Section 08700.

3.2 Adjustment and Protection

A. Doors and frames shall be properly protected during storage and after installation. Units with dents or imperfect seams will not be acceptable. Filling of dents and/or other repair work at the job site will not be permitted. Immediately after installation, units shall be sanded to remove any rusted or damaged areas in prime coat and touched up with a compatible air-drying primer.

B. Check and readjust operation of hollow metal units and hardware prior to final inspection. Leave work in complete and proper operating condition. Remove and replace defective work, including doors or frames which are warped, bowed or otherwise unacceptable.

END OF SECTION 08100

SECTION 08211 - FLUSH WOOD DOORS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Solid-core doors with wood-veneer faces.
   2. Shop priming flush wood doors.
   3. Factory fitting flush wood doors to frames and factory machining for hardware.

B. Related Requirements:
   1. Section 08348 "Wood Sound-Control Door Assemblies" for acoustic flush wood doors.
   2. Section 08800 "Glazing" for glass view panels in flush wood doors.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of door.

B. Shop Drawings: Indicate location, size, and hand of each door; elevation of each kind of door; construction details not covered in Product Data; and the following:
   1. Dimensions and locations of blocking.
   2. Dimensions and locations of mortises and holes for hardware.
   3. Dimensions and locations of cutouts.
   4. Undercuts.
   5. Requirements for veneer matching.
   6. Doors to be factory finished and finish requirements.
   7. Fire-protection ratings for fire-rated doors.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

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:
   1. Algoma Hardwoods, Inc.
   2. Ampco.
   3. Chappell Door Co.
   4. Eggers lndustries.
   5. General Veneer Manufacturing Co.
   6. Graham Wood Doors; an Assa Ablov Group company.
   7. Haley Brothers, lnc.
   8. Ipik Door Company.
   9. Lambton Doors.
   10. Marlite.
   11. Marshfield Door Systems. Inc.
   12. Mohawk Doors; a. Masonite company.
   13. Oshkosh Door Company.
   14. Poncraft Door Company.
   15. Vancouver Door Company.
   16. VT Industries. Inc.

2.2 FLUSH WOOD DOORS, GENERAL

A. Quality Standard: In addition to requirements specified, comply with WDMA LS.I-A, "Architectural Wood Flush Doors."

B. Low-Emitting Materials: Fabricate doors with adhesives and composite wood products that do not contain urea formaldehyde.

C. WDMA LS.1-A Performance Grade:

1. Heavy Duty unless otherwise indicated.

D. Fire-Rated Wood Doors: Doors complying with NFPA 80 that are listed and labeled by a qualified testing agency, for fire-protection ratings indicated, based on testing at positive pressure according to NFPA 252 or UL l0C.

1. Cores: Provide core specified or mineral core as needed to provide fire-protection rating indicated.
2. Edge Construction: Provide edge construction with intumescent seals concealed by outer stile. Comply with specified requirements for exposed edges.
3. Pairs: Provide fire-retardant stiles that are listed and labeled for applications indicated without formed-steel edges and astragals. Provide stiles with concealed intumescent seals. Comply with specified requirements for exposed edges.

E. Smoke- and Draft-Control Door Assemblies: Listed and labeled for smoke and draft control, based on testing according to UL 1784.

F. Particleboard-Core Doors:
1. Particleboard: ANSI A208.1, Grade LD-1 , made with binder containing no urea-formaldehyde.
2. Blocking: Provide wood blocking in particleboard-core doors as needed to eliminate through-bolting hardware.
3. Provide doors with glued-wood-stave or structural-composite-lumber cores instead of particleboard cores for doors indicated to receive exit devices.

G. Structural-Composite-Lumber-Core Doors:
1. Structural Composite Lumber: WDMA LS. I 0.
a. Screw Withdrawal, Face: 700 lbf (3100 N).
b. Screw Withdrawal, Edge: 400 lbf (1780 N).

H. Mineral-Core Doors:
1. Core: Noncombustible mineral product complying with requirements of referenced quality standard and testing and inspecting agency for fire-protection rating indicated.
2. Blocking: Provide composite blocking with improved screw-holding capability approved for use in doors of fire-protection ratings indicated as needed to eliminate through-bolting hardware.
3. Edge Construction: At hinge stiles, provide laminated-edge construction with improved screw-holding capability and split resistance. Comply with specified requirements for exposed edges.

2.3 DOORS FOR OPAQUE FINISH

A. Interior Solid-Core Doors:
1. Grade: Premium.
2. Faces: Any closed-grain hardwood of mill option.
3. Core: Either glued wood stave or structural composite lumber.
4. Construction: Five or seven plies. Stiles and rails are bonded to core, then entire unit is abrasive planed before veneering. Faces are bonded to core using a hot press.

B. Interior Hollow-Core Doors:
1. Grade: Premium.
2. Faces: Any closed-grain hardwood of mill option.

2.4 LIGHT FRAMES AND LOUVERS

A. Wood-Veneered Beads for Light Openings in Fire-Rated Doors: Manufacturer's standard wood-veneered noncombustible beads matching veneer species of door faces and approved for use in doors of fire-protection rating indicated. Include concealed metal glazing clips where required for opening size and fire-protection rating indicated.

B. Metal Frames for Light Openings in Fire-Rated Doors: Manufacturer's standard frame formed of 0.048-inch- (1.2-mm-) thick, cold-rolled steel sheet; factory primed for paint finish; and approved for use in doors of fire-protection rating indicated.

2.5 FABRICATION

A. Factory fit doors to suit frame-opening sizes indicated. Comply with clearance requirements of referenced quality standard for fitting unless otherwise indicated.
   1. Comply with NFPA 80 requirements for fire-rated doors.
B. Factory machine doors for hardware that is not surface applied.
C. Openings: Factory cut and trim openings through doors.
   1. Light Openings: Trim openings with moldings of material and profile indicated.
   2. Glazing: Factory install glazing in doors indicated t0 be factory finished. Comply with applicable requirements in Section 08800 "Glazing."

2.6 SHOP PRIMING

A. Doors for Opaque Finish: Shop prime faces, all four edges, edges of cutouts, and mortises with one coat of wood primer specified in Section 09911 "Exterior Painting." and Section 09912" Interior Painting."

2.7 FACTORY FINISHING

A. General: Comply with referenced quality standard for factory finishing. Complete fabrication, including fitting doors for openings and machining for hardware that is not surface applied, before finishing.
   1. Finish faces, all four edges, edges of cutouts, and mortises. Stains and fillers may be omitted on top and bottom edges, edges of cutouts, and mortises.
B. Use only paints and coatings that comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

PART 3 - EXECUTION

3.1 INSTALLATION

A. Hardware: For installation, see Section 08712 "Door Hardware (Descriptive Specification)."
B. Installation Instructions: Install doors to comply with manufacturer's written instructions and referenced quality standard, and as indicated.
   1. Install fire-rated doors according to NFPA 80.
   2. Install smoke- and draft-control doors according to NFPA 105.
C. Job-Fitted Doors: Align and fit doors in frames with uniform clearances and bevels as indicated below; do not trim stiles and rails in excess of limits set by manufacturer or permitted for fire-rated doors. Machine doors for hardware. Seal edges of doors, edges of cutouts, and mortises after fitting and machining.
   1. Clearances: Provide 1/8 inch (3.2 mm) at heads, jambs, and between pairs of doors. Provide 1/8 inch (3.2 mm) from bottom of door to top of decorative floor finish or covering unless otherwise indicated. Where threshold is shown or scheduled, provide 1/4 inch (6.4 mm) from bottom of door to top of threshold unless otherwise indicated.
      a. Comply with NFPA 80 for fire-rated doors.
D. Factory-Fitted Doors: Align in frames for uniform clearance at each edge
E. Factory-Finished Doors: Restore finish before installation if fitting or machining is required at Project site.

END OF SECTION 08211

SECTION 083336 - OVERHEAD COILING DOORS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Overhead coiling service doors.

1.2 DESIGN / PERFORMANCE REQUIREMENTS

A. Section 05500 – Metal Fabrications: Support framing and framed opening.
B. Section 16130 – Raceway and Boxes: Conduit from electric circuit to door operator and from door operator to control station.
C. Section 16150 – Wiring Connections: Power to disconnect.

1.3 REFERENCES

A. ANSI/DASMA 108 – American National Standards Institute Standard Method for Testing Sectional Garage Doors and Rolling Doors: Determination of Structural Performance Under Uniform Static Air Pressure Difference.
B. NFRC 102 – Test Procedure for Measuring the Steady-State Thermal Transmittance of Fenestration Systems.
C. ASTM E 90 – Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Element.
D. ASTM E 330 – Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference.
E. ASTM A 653 – Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
F. ASTM A 666 – Standard Specification for Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar.
G. ASTM A 924 – Standard Specification for General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process.
H. ASTM B 221 – Standard Specification of r Aluminum and Aluminum-Allory Extruded Bars, Rods, Wire, Profiles, and Tubes.
I. NEMA 250 – Enclosures for Electrical Equipment (1000 Volts Maximum).
J. NEMA MG 1 – Motors and Generators.

1.4 DESIGN/PERFORMANCE REQUIREMENTS

A. Overhead coiling insulated doors:
    1. Wind Loads: Design door assembly to withstand wind/suction load of 20 psf (958 Pa) without damage to door or assembly components in conformance with ASTM E 330.
    2. Operation: Design door assembly, including operator, to operate for not less than 20,000 cycles.
B. Single-Source Responsibility: Provide doors, tracks, motors, and accessories form one manufacturer for each type of door. Provide secondary components from source acceptable to manufacturer of primary components.
C. Products Requiring Electrical Connection: Listed and classified by Underwriters Laboratories, Inc. acceptable to authority having jurisdiction as suitable for purpose specified.

1.5 SUBMITTALS

A. Submit under provisions of Section 01300.
B. Product Data: Manufacturer’s data sheets on each product to be used, including:
    1. Preparation instructions and recommendations.
    2. Storage and handling requirements and recommendations.
    3. Details of construction and fabrication.
    4. Installation instructions.
C. Shop Drawings: Include detailed plans, elevations, and details of framing member, anchoring methods, required clearances, hardware, and accessories. Include relationship with adjacent construction.

D. Selection Samples: for each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.
E. Verification Samples: For each finish product specified, two samples, minimum size 6 inches (150 mm) long, representing actual product, color and patterns.
F. Manufacturer's Certificates: Certify products meet or exceed specified requirements.
G. Operation and Maintenance Data: Submit lubrication requirements and frequency, and periodic adjustments required.

1.6 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in performing Work of this section with a minimum of five years' experience in the fabrication and installation of security closures.
B. Installer Qualifications: Installer Qualifications: Company specializing in performing Work of this section with minimum three years and approved by manufacturer.
C. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
    1. Finish areas designated by Architect.
    2. Do not proceed with remaining work until workmanship, color, and sheen are approved by Architect.
    3. Refinish mock-up area as required to produce acceptable work.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until ready for installation.
B. Protect materials from exposure to moisture. Do not deliver until after wet work is complete and dry.
C. Store materials in a dry, warm, ventilated weathertight location.

1.8 PROJECT CONDITIONS

A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

1.9 COORDINATION

A. Coordinate work with other operations and installation of adjacent materials to avoid damage to installed materials.

1.10 WARRANTY

A. Warranty: Manufacturer's limited door and operator system, except the counterbalance spring and finish, to be free from defects in materials and workmanship for 3 years or 20,000 cycles, whichever occurs first.
B. Warranty: Manufacturer's limited door system warranty for 2 years for all parts and components.
C. PowderGuard Finish
    1. PowderGuard Premium applied to curtain, guides, bottom bar, and headplates: Manufacturer's limited Premium Finish warranty for 2 years.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer: Overhead Door Corp. or "approved equal"
B. Requests for substitutions will be considered in accordance with provisions of Section 01600.

2.2 INSULATED OVERHEAD COILING SERVICE DOORS

A. Overhead Coiling Stormtite Insulated Service Doors: Overhead Door Corporation Model 625.
    1. Curtain: Interlocking roll-formed slats as specified following. End locks shall be attached to each end of alternate slats to prevent lateral movement.
        a. Flat profile type F-265i for doors up to 40 feet (12.19 m) wide.

b. Front slat fabricated of :
    1) 24 gauge galvanized steel.
c. Slat cavity filled with CFC-free foamed-in-place, polyurethane insulation.
    1) R-Value: 7.7, U-Value: 0.13
    2) Sound Rating: STC-21

2. Performance:
    a. Through Curtain Sound Rating: Sound Rating: STC-28 (STC-30+ with HZ noise generator) as per ASTM E 90.
    b. Installed System Sound Rating: STC-21 as per ASTM E 90.
    c. U-factor: 0.91 NFRC test report, maximum U-factor of no higher than 1.00.
    d. Air Infiltration: Meets ASHRAE 90.1 & IECC 2012/2015 C402.4.3 Air leakage <1.00 cfm/ft2
3. Slats and Hood Finish:
    a. Galvanized Steel: slats and hood galvanized in accordance with ASTM A 653 and receive rust-inhibitive, roll coating process, including 0.2 mils thick baked-on prime paint, and 0.6 mils thick baked-on polyester top coat.
        1) Powder Coat:
            (a) PowderGuard Premium powder coat color as selected by the Architect.
        2) Non-galvanized exposed ferrous surfaces shall receive one coat of rust-inhibitive primer.
            (a) PowderGuard Premium powder coat color as selected by the Architect.
4. Weatherseals:
    a. Vinyl bottom seal, exterior guide and internal hood seals.
    b. Interior guide weatherseal.
    c. Lintel weatherseal.
    d. Air Infiltration Package, IECC 2012/2015 listed; product to meet C402.4.3. 2012 Air leakage <1.00 cfm/ft2.
        1) Air infiltration perimeter seal package includes: guide cover, guide cap, dual brush exterior guide seal, 4 inch finned lintel brush seal and vinyl bottom seal.
5. Bottom Bar:
    a. Two prime painted steel angles minimum thickness 1/8 inch (3mm) bolted back to back to reinforce curtain in the guides.
6. Brackets:
    a. Hot rolled prime painted steel to support counterbalance, curtain and hood.
7. Finish; Bottom Bar, Guides, Headplate and Brackets:
    a. Finish: PowderGuard Premium powder coat color as selected by the Architect.
8. Counterbalance: Helical torsion spring type housed in a steel tube or pipe barrel, supporting the curtain with deflection limited to 0.03 inch per foot of span. Counterbalance is adjustable by means of an adjusting tension wheel.
9. Hood: Provide with internal hood baffle weatherseal.
    a. 24 gauge galvanized steel with intermediate supports as required.
10. Manual Operation:
    a. Chain hoist
    b. Crank operation
11. Electric Motor Operation: Provide UL listed electric operator, size as recommended by manufacturer to move door in either direction at not less than 2/3 foot nor more than 1 foot per second.
    a. Sensing Edge Protection:
        1) Pneumatic sensing edge.
    b. Operator Controls:
        1) Push-button operated control stations with open, close, and stop buttons.
        2) Controls for interior location.
        3) Controls surface mounted.
    c. Special Operation:
        1) Vehicle detector operation.
    d. Motor Voltage: 115/230 single phase, 60 Hz.

12. Windload Design:
    a. Standard windload shall be 20 PSF.
13. Locking:
    a. Chain keeper locks for chain hoist operation.
14. Wall Mounting Condition:
    a. Between jambs mounting.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify opening sizes, tolerances and conditions are acceptable.
B. Examine conditions of substrates, supports, and other conditions under which this work is to be performed.
C. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

A. Clean surfaces thoroughly prior to installation.
B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.3 INSTALLATION

A. Install in accordance with manufacturer's instructions.
B. Use anchorage devices to securely fasten assembly to wall construction and building framing without distortion or stress.
C. Securely and rigidly brace components suspended from structure. Secure guides to structural members only.
D. Fit and align assembly including hardware; level and plumb, to provide smooth operation.
E. Coordinate installation of electrical service with Section 16150. Complete wiring from disconnect to unit components.
F. Coordinate installation of sealants and backing materials at frame perimeter as specified in Section 07900.
G. Install perimeter trim and closures.
H. Instruct Owner’s personnel in proper operating procedures and maintenance schedule.

3.4 ADJUSTING

A. Test for proper operation and adjust as necessary to provide proper operation without binding or distortion.
B. Adjust hardware and operating assemblies for smooth and noiseless operation.

3.5 CLEANING

A. Clean curtain and components using non-abrasive materials and methods recommended by manufacturer.
B. Remove labels and visible markings.
C. Touch-up, repair or replace damaged products before Substantial Completion.

3.6 PROTECTION

A. Protect installed products until completion of project.

END OF SECTION 083336

SECTION 085113 - ALUMINUM WINDOWS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Aluminum Windows.

1.2 REFERENCES

A. ASTM International (ASTM):
1. ASTM E283 - Standard Test Method for Determining Rate of Air Leakage through Exterior Windows, Curtain Walls, and Doors under Specified Pressure Differences across the Specimen.
2. ASTM E330 - Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference.
3. ASTM E331 - Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference.
4. ASTM E547 - Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Cyclic Static Air Pressure Difference.
5. ASTM F588 - Standard Test Methods for Measuring the Forced Entry Resistance of Window Assemblies, Excluding Glazing Impact.

B. American Architectural Manufacturers Association (AAMA):
1. AAMA/WDMA/CSA 101/I.S.2/A440 - North American Fenestration Standard/Specification for Windows, Doors, and Skylights.
2. AAMA 507 - Standard Practice for Determining the Thermal Performance Characteristics of Fenestration Systems in Commercial Buildings.
3. AAMA 611 - Voluntary Specification for Anodized Aluminum.
4. AAMA 701 - Voluntary Specification for Pile Weather stripping and Replaceable Fenestration Weather seals.
5. AAMA 800 - Voluntary Specifications and Test Methods for Sealants.
6. AAMA 910 - Voluntary Life Cycle Specifications and Test Methods for AW Class Architectural Windows and Doors.
7. AAMA 1503.1 - Voluntary Test Method for Thermal Transmittance and Condensation Resistance of Windows, Doors and Glazed Wall Sections.
8. AAMA 2603 - Voluntary Specification, Performance Requirements and Test Procedures for Pigmented Organic Coatings on Aluminum Extrusions and Panels.
9. AAMA 2604 - Voluntary Specification, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels.
10. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels.

C. National Fenestration Rating Council (NFRC):
1. NFRC 102 - Procedure for Measuring the Steady-State Thermal Transmittance of Fenestration Systems.
2. NFRC 500 - Procedure for Determining Fenestration Product Condensation Resistance Values.

1.3 SUBMITTALS

A. Submit under provisions of Section 01 30 00 - Administrative Requirements.

B. Product Data:
1. Manufacturer's data sheets on each product to be used.
2. Preparation instructions and recommendations.
3. Storage and handling requirements and recommendations.

4. Typical installation methods.

C. Verification Samples: Two representative units of each type, size, pattern and color.

D. Shop Drawings: Include details of materials, construction and finish. Include relationship with adjacent construction.

1.4 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with a minimum five years documented experience.

B. Installer Qualifications: Company specializing in performing Work of this section with minimum two years documented experience with projects of similar scope and complexity.

C. Source Limitations: Provide each type of product from a single manufacturing source to ensure uniformity.

D. Mock-Up: Construct a mock-up with actual materials in sufficient time for Architect's review and to not delay construction progress. Locate mock-up as acceptable to Architect and provide temporary foundations and support.
1. Intent of mock-up is to demonstrate quality of workmanship and visual appearance.
2. If mock-up is not acceptable, rebuild mock-up until satisfactory results are achieved.
3. Retain mock-up during construction as a standard for comparison with completed work.
4. Do not alter or remove mock-up until work is completed or removal is authorized.

1.5 PRE-INSTALLATION CONFERENCE

A. Convene a conference approximately two weeks before scheduled commencement of the Work. Attendees shall include Architect, Contractor and trades involved. Agenda shall include schedule, responsibilities, critical path items and approvals.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Store and handle in strict compliance with manufacturer's written instructions and recommendations.

B. Protect from damage due to weather, excessive temperature, and construction operations.

1.7 PROJECT CONDITIONS

A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.

1.8 WARRANTY

A. Manufacturer's Warranty: Provide manufacturer's standard limited warranty.
1. Warranty Term, Window Material and Workmanship: 1 year.
2. Warranty Term, Anodized Finish: 1 year.
3. Warranty Term, Organic Finish: 10 years.
4. Warranty Term, Insulated Glass: 5 years.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer: Wintech Inc. or approved “Equal” **

B. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.
   1. Trim: Extruded aluminum trim. Finished to match window system.
      a. To be selected by Architect.
      b. Extruded aluminum clips** NOTE TO SPECIFIER ** Delete basis of design options not required.
      c. .
      d. Sash Extrusions: Tubular.
      e. Sash Components: Mechanically fastened.
      f. No fasteners, components, or hardware shall bridge the thermal barrier.
   2. Thermal Barrier: Manufacturer's standard.
      a. Continuous around frame and sash perimeter.
      b. Frames shall be stacked during the pour and debridge process.
   3. Fasteners: Aluminum, stainless steel, or other corrosion resistant material. Concealed wherever possible.
   4. Sealant: Compliant with AAMA 800.
      Appropriate for window application and approved by window Manufacturer.
   5. Glazing: Interior glazed with 1 inch (25 mm) insulated glazing.

2.2 ALUMINUM WINDOWS, 2500 SERIES

A. General:
   1. Window Construction:
      a. Material: Extruded aluminum, 6063-T6 alloy and tempered.
      b. Frame Depth: Not less than 2-7/16 inches (62 mm).
      c. Frame Members: Mechanically fastened.
      d. Frame Joints: Cope and joined neatly.
      e. Sash Extrusions: Tubular.
      f. Sash Components: Mechanically fastened.
      g. No fasteners, components, or hardware shall bridge the thermal barrier.
   2. Thermal Barrier: Manufacturer's standard.
      a. Continuous around frame and sash perimeter.
      b. Frames shall be stacked during the pour and debridge process.
   3. Fasteners: Aluminum, stainless steel, or other corrosion resistant material. Concealed wherever possible.
   4. Sealant: Compliant with AAMA 800.
      a. Appropriate for window application and approved by window Manufacturer.
      b. Refer to Section 07 91 23 - Backer Rods.
   5. Weep System: Drainage system to prevent water from collecting in sill track.
   6. Fin Package: Continuous extruded aluminum snap-in nail fin. Finished to match window system.
      a. Other damage that would cause the unit to be inoperable at 90 psf (4309 Pa) positive and negative pressure.

B. Basis of Design: Series 2520 Fixed Window, CW-PG60-FW; as manufactured by Window Technologies Inc.
   1. Performance Requirements:
      a. Test Units:
         1) Test units shall follow the requirements set forth in AAMA/WDMA/CSA 101/I.S.2/A440.
         2) Test unit size shall be 60 x 60 inches (1524 x 1524 mm).
      b. Air Infiltration (ASTM E283): Not to exceed 0.02 cfm/SF of unit at static air pressure different of 1.57 psf (75 Pa).

c. Water Resistance (ASTM E331 and ASTM E547): No uncontrolled water leakage at static air pressure different of 12 psf (575 Pa).
d. Uniform Load Deflection (ASTM E330): No member shall deflect more than L/175 of its span at 60 psf (2873 Pa) positive and negative pressure.
e. Uniform Load Structural (ASTM E330): No glass breakage, permanent damage to fasteners, hardware parts, support arms, or actuating mechanisms, nor any other damage that would cause the unit to be inoperable at 90 psf (4309 Pa) positive and negative pressure.
f. Force Entry Resistance (ASTM F588): Level 40.
g. Condensation Resistance Factor (AAMA 1503.1): Not less than 63 when glazed with 0.24 center of glass U-Factor.
h. Condensation Resistance (NFRC 500): Not less than 45 when glazed with 0.24 center of glass U-Factor.
i. U-Factor (NFRC 102): Not more than 0.36 when glazing U-factor is 0.24, center of glass.

2. Frame and Sash: Minimum wall thickness of 0.062 inches (1.6 mm).
3. Configuration: Fixed window.

4. Glazing: Interior glazed with 1 inch (25 mm) insulated glazing.
5. Size: As indicated on Drawings.
6. Size: _____.
7. Weather strip: Compatible with aluminum, UV degradation resistant, and weather resistant.
8. Painted:
   a. System: Manufacturer's standard polyester powder coating, complying with AAMA 2604.
   b. System: Manufacturer's standard two-coat 70 percent fluoropolymer resin based coating, complying with AAMA 2605.
   c. System: Manufacturer's standard polyester powder coating, complying with AAMA 2605.
   d. Color: As approved by Architect

2.3 EXAMINATION

A. Do not begin installation until substrates have been properly constructed and prepared.

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

2.4 PREPARATION

A. Clean surfaces thoroughly prior to installation.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

2.5 INSTALLATION

A. Install in accordance with manufacturer's instructions, approved submittals, and in proper relationship with adjacent construction.

B. Plumb and align window faces in a single plane for each wall plane. Erect windows square and true.

C. Adequately anchor window units to maintain positions permanently when subjected to normal thermal movement, specified building movement, and specified wind loads.

D. Seal joints at perimeters in accordance with approved shop drawings to provide a watertight installation. Wipe excess sealant and leave all exposed surfaces and joints clean and smooth.

2.6 FIELD QUALITY CONTROL

A. Field Inspection: Coordinate field inspection in accordance with appropriate sections in Division 01.

2.7 ADJUSTING

A. Adjusted windows for smooth waterproof transitions.

2.8 CLEANING AND PROTECTION

A. Clean products in accordance with the manufacturer's recommendations.

B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION 085113

SECTION 08711 - DOOR HARDWARE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following:
   1. Commercial door hardware for the following:
      a. Swinging doors.
      b. Other doors to the extent indicated.
   2. Cylinders for doors specified in other Sections.

B. Related Sections include the following:
   1. Division 8 Section "Aluminum Entrances and Storefronts" for entrance door hardware, except cylinders.

1.3 SUBMITTALS

A. Product Data: Include installation details, material descriptions, dimensions of individual components and profiles, and finishes.

B. Samples for Initial Selection: Manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available for each type of door hardware indicated.

C. Door Hardware Schedule: Prepared by or under the supervision of supplier, detailing fabrication and assembly of door hardware, as well as procedures and diagrams. Coordinate the final Door Hardware Schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.
   1. Format: Comply with scheduling sequence and vertical format in DHI's "Sequence and Format for the Hardware Schedule."
   2. Organization: Organize the Door Hardware Schedule into door hardware sets indicating complete designations of every item required for each door or opening.
   3. Content: Include the following information:
      a. Type, style, function, size, label, hand, and finish of each door hardware item.
      b. Manufacturer of each item.
      c. Fastenings and other pertinent information.
      d. Location of each door hardware set, cross-referenced to Drawings, both on floor plans and in door and frame schedule.
      e. Explanation of abbreviations, symbols, and codes contained in schedule.
      f. Mounting locations for door hardware.
      g. Door and frame sizes and materials.
   4. Submittal Sequence: Submit the final Door Hardware Schedule at earliest possible date, particularly where approval of the Door Hardware Schedule must precede fabrication of other work that is critical in the Project construction schedule. Include Product Data, Samples, Shop Drawings of other work affected by door hardware, and other information essential to the coordinated review of the Door Hardware Schedule.

D. Keying Schedule: Prepared by or under the. supervision of supplier, detailing Owner's final keying instructions for locks. Include schematic keying diagram and index each key set to unique door designations.

E. Qualification Data: For firms and persons specified in "Quality Assurance" Article.

F. Maintenance Data: For each type of door hardware to include in maintenance manuals specified in Division I .

G. Warranties: Special warranties specified in this Section.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: An experienced installer who has completed door hardware similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.

B. Supplier Qualifications: Door hardware supplier with warehousing facilities in Project's vicinity and who is or employs a qualified Architectural Hardware Consultant, available during the course of the Work to consult with Contractor, Architect, and Owner about door hardware and keying.
   1. Scheduling Responsibility: Preparation of door hardware and keying schedules.

C. Architectural Hardware Consultant Qualifications: A person who is currently certified by the Door and Hardware Institute as an Architectural Hardware Consultant and who is experienced in providing consulting services for door hardware installations that are comparable in material, design, and extent to that indicated for this Project.

D. Source Limitations: Obtain each type and variety of door hardware from a single manufacturer, unless otherwise indicated.

E. Regulatory Requirements: Comply with provisions of the following:
   1. Where indicated to comply with accessibility requirements, comply with Americans with Disabilities Act (ADA), "Accessibility Guidelines for Buildings and Facilities (ADAAG)," ANSI Al 17.1, FED-STD-795, "Uniform Federal Accessibility Standards," as follows:
      a. Handles, Pulls, Latches, Locks, and other Operating Devices: Shape that is easy to grasp with one hand and does not require tight grasping, tight pinching, or twisting of the wrist.
      b. Door Closers: Comply with the following maximum opening-force requirements indicated:
         1) Interior Hinged Doors: 5 lbs applied perpendicular to door.
         2) Fire Doors: Minimum opening force allowable by authorities having juris-diction.
      c. Thresholds: Not more than 1/2 inch high. Bevel raised thresholds with a slope of not more than 1 :2.
   2. NFPA 101: Comply with the following for means of egress doors:
      a. Latches, Locks, and Exit Devices: Not more than 15 lbf to release the latch. Locks shall not require the use of a key, tool, or special knowledge for operation.
      b. Door Closers: Not more than 30 lbfto set door in motion and not more than 15 lbf to open door to minimum required width.
      c. Thresholds: Not more than 1/2 inch high.

F. Fire-Rated Door Assemblies: Provide door hardware for assemblies complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire ratings indicated, based on testing according to NFPA 252.
   1. Test Pressure: Test at atmospheric pressure.

G. Keying Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Meetings." Incorporate keying conference decisions into final keying schedule after reviewing door hardware keying system including, but not limited to, the following:
   1. Function of building, flow of traffic, purpose of each area, degree of security required, and plans for future expansion.
   2. Preliminary key system schematic diagram.
   3. Requirements for key control system.
   4. Address for delivery of keys.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Inventory door hardware on receipt and provide secure lock-up for door hardware delivered to Project site.

B. Tag each item or package separately with identification related to the final Door Hardware

Schedule, and include basic installation instructions with each item or package.

C. Deliver keys to Owner by registered mail or overnight package service.

1.6 COORDINATION

A. Templates: Obtain and distribute to the parties involved templates for doors, frames, and other work specified to be factory prepared for installing door hardware. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing door hard-ware to comply with indicated requirements.

1.7 WARRANTY

A. General Warranty: Special warranties specified in this Article 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. Special Warranty: Written warranty, executed by manufacturer agreeing to repair or replace components of door hardware that fail in materials or workmanship within specified warranty period. Failures include, but are not limited to, the following:
   1. Structural failures including excessive deflection, cracking, or breakage.
   2. Faulty operation of operators and door hardware.
   3. Deterioration of metals, metal finishes, and other materials beyond normal weathering.

C. Warranty Period: Three years from date of Substantial Completion, unless otherwise indicated.

D. Warranty Period for Manual Closers: 10 years from date of Substantial Completion.

1.8 MAINTENANCE SERVICE

A. Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions as needed for Owner's continued adjustment, maintenance, and removal and replacement of door hardware.

B. Maintenance Service: Beginning at Substantial Completion, provide six months' full maintenance by skilled employees of door hardware Installer. Include quarterly preventive maintenance, repair or replacement of worn or defective components, lubrication, cleaning, and adjusting as required for proper door hardware operation. Provide parts and supplies as used in the manufacture and installation of original products.

PART 2 - PRODUCTS

2.1 HINGES AND PIVOTS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   1. Hinges:
      a. Hager Companies (HAG).
      b. McKinney Products Company; Div. of ESSEX Industries, Inc. (MCK).
      c. Stanley Commercial Hardware; Div. of The Stanley Works (SCH).

B. Template Requirements: Except for hinges and pivots to be installed entirely (both leaves) into wood doors and frames, provide only template-produced units.

C. Hinge Weight: Unless otherwise indicated, provide the following:
   1. Entrance Doors: Heavy-weight hinges.
   2. Doors with Closers: Antifriction-bearing hinges.
   3. Interior Doors: Standard-weight hinges.

D. Fasteners: Comply with the following:
   1. Machine Screws: For metal doors and frames. Install into drilled and tapped holes.
   2. Screws: Phillips flat-head screws; machine screws (drilled and tapped holes) for metal doors. Finish screw heads to match surface of hinges.

2.2 LOCKS AND LATCHES

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   1. Mechanical Locks and Latches:
      a. Sargent Manufacturing Company; Div. of ESSEX Industries, Inc. (SGT).
      b. Yale Security Inc.; Div. of Williams Holdings (YAL).

B. Lock Trim: Comply with the following:
   1. Lever: Cast
   2. Knob: Wrought, forged, or cast.
   3. Escutcheon (Rose): Wrought, forged, or cast.
   4. Dummy Trim: Match lever lock trim and escutcheons.

C. Lock Throw: Comply with testing requirements for length of bolts to comply with labeled fire door requirements, and as follows:
   1. Bored Locks: Minimum 1/2-inch latchbolt throw.
   2. Mortise Locks: Minimum 3/4-inch latchbolt throw.
   3. Deadbolts: Minimum I-inch bolt throw.

D. Rabbeted Doors: Provide special rabbeted front and strike on locksets for rabbeted meeting stiles.

E. Backset: 2-3/4 inches, unless otherwise indicated.

2.3 DOOR BOLTS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   1. Surface Bolts:
      a. Glynn-Johnson; an Ingersoll-Rand Company (GJ).
      b. Hager Companies (HAG).
      c. Ives: H. B. Ives (IVS).
      d. Rockwood Manufacturing Company (RM).
      e. Triangle Brass Manufacturing Company, Inc. (TBM).
   2. Flush Bolts:
      a. Glynn-Johnson; an Ingersoll-Rand Company (GJ).
      b. Ives: H. B. Ives (IVS).
      c. Sargent Manufacturing Company; Div. of ESSEX Industries, Inc. (SGT).
      d. Triangle Brass Manufacturing Company, Inc. (TBM).
      e. Rockwood Manufacturing Company (RM)

B. Bolt Throw: Comply with testing requirements for length of bolts to comply with labeled fire door requirements, and as follows:
   1. Half-Round Surface Bolts: Minimum 7/8-inch throw.
   2. Interlocking Surface Bolts: Minimum 15/16-inch throw.
   3. Fire-Rated Surface Bolts: Minimum 1-inch throw; listed and labeled for fire-rated doors.
   4. Mortise Flush Bolts: Minimum 3/4-inch throw.

2.4 EXIT DEVICES

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   1. Sargent Manufacturing Company; Div. of ESSEX Industries, Inc. (SGT).
   2. Von Duprin; an Ingersoll-Rand Company (VD).
   3. Yale Security Inc.; Div. of Williams Holdings (YAL).

B. Outside Trim: material and finish to match locksets, unless otherwise indicated.
   1. Match design for locksets and latchsets, unless otherwise indicated.

2.5 CYLINDERS AND KEYING

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   1. Cylinders: Same manufacturer as for locks and latches.

2. Key Control Systems:
    a. Key Control Systems, Inc. (KCS).
    b. Major Metalfab Co. (MM).
    c. Sargent Manufacturing Company; Div. of ESSEX Industries, Inc. (SGT).
    d. Sunroc Corporation (SUN).

B. Cylinders: Manufacturer's standard tumbler type, constructed from brass or bronze, stainless steel, or nickel silver, and similar to those listed in the hardware schedule on the drawings.

C. Keying System: Unless otherwise indicated, provide a factory-registered keying system complying with the following requirements:
1. Grand Master Key System: Cylinders are operated by a change key, a master key, and a grand master key.

D. Keys: Provide nickel-silver keys complying with the following:
1. Quantity: In addition to one extra blank key for each lock, provide the following:
    a. Cylinder Change Keys: Three.
    b. Master Keys: Five.
    c. Grand Master Keys: Five.

E. Key Control System: BHMA Grade 1 system, including key-holding hooks, labels, two sets of key tags with self-locking key holders, key-gathering envelopes, and temporary and permanent markers. Contain system in metal cabinet with baked-enamel finish.
1. Wall-Mounted Cabinet: Cabinet with hinged-panel door equipped with key-holding pan-els and pin-tumbler cylinder door lock.
2. Capacity: Able to hold keys for 150 percent of the number of locks.
3. Cross-Index System: Set up by key control manufacturer, complying with the following:
    a. Card Index: Furnish four sets of index cards for recording key information. In-clude three receipt forms for each key-holding hook.

2.6 ACCESSORIES FOR PAIRS OF DOORS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the fol-lowing:
1. Coordinators:
    a. Glynn-Johnson; an Ingersoll-Rand Company (GJ).
    b. Ives: H. B. Ives (IVS).
    c. Triangle Brass Manufacturing Company, Inc. (TBM).

2.7 CLOSERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the fol-lowing:
1. Surface-Mounted Closers:
    a. DORMA Door Controls Inc.; Member of The DORMA Group (DC).
    b. LCN Closers; an Ingersoll-Rand Company (LCN).
    c. Sargent Manufacturing Company; Div. of ESSEX Industries, Inc. (SGT).
    d. Yale Security Inc.; Div. of Williams Holdings (YAL).
2. Closer Holder Release Devices:
    a. DORMA Door Controls Inc.; Member of The DORMA Group (DC).
    b. LCN Closers; an Ingersoll-Rand Company (LCN).
    c. Sargent Manufacturing Company; Div. of ESSEX Industries, Inc. (SGT) ..
    d. Yale Security Inc.;, Div. of Williams Holdings (Y AL).

B. Size of Units: Unless otherwise indicated, comply with manufacturer's written recommendations for size of door closers depending on size of door, exposure to weather, and anticipated frequency of use. Provide factory-sized closers, adjustable to meet field conditions and requirements for opening force.

2.8 PROTECTIVE TRIM UNITS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the fol-lowing:
   1. Metal Protective Trim Units:
      a. Ives: H. B. Ives (IVS).
      b. Triangle Brass Manufacturing Company, Inc. (TBM).

B. Materials: Fabricate protection plates from the following:
   1. Aluminum: 0.050 inch thick; beveled top and 2 sides.

C. Fasteners: Provide manufacturer's standard exposed fasteners for door trim units consisting of either machine or self-tapping screws.

2.9 STOPS AND HOLDERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the fol-lowing:
   1. DORMA Door Controls Inc.; Member of The DORMA Group (DC).
   2. Glynn-Johnson; an Ingersoll-Rand Company (GJ).
   3. Ives: H.B. Ives (NS).
   4. Sargent Manufacturing Company; Div. of ESSEX Industries, Inc. (SGT).
   5. Triangle Brass Manufacturing Company, Inc. (TBM).
   6. Yale Security Inc.; Div. of Williams Holdings (YAL).

B. Floor Stops: For doors, unless wall or other type stops are scheduled or indicated. Do not mount floor stops where they will impede traffic.
   1. Where floor or wall stops are not appropriate, provide overhead holders.

C. Silencers for Metal Door Frames: BHMA Grade 1; neoprene or rubber, minimum diameter
   1/2 inch; fabricated for drilled-in application to frame.

2.10 DOOR GASKETING

A. Manufacturers: Subject to compliance with requirements, provide products by one of the
   following:
   1. Door Gasketing:
   a. National Guard Products, Inc. (NGP).
   b. Pemko Manufacturing Co., Inc. (PEM).

B. General: Provide continuous weather-strip gasketing on exterior doors and provide smoke,
   light, or sound gasketing on interior doors where indicated or scheduled. Provide noncorrosive fasteners for exterior applications and elsewhere as indicated.
   1. Perimeter Gasketing: Apply to head and jamb, forming seal between door and frame.

C. Air Leakage: Not to exceed 0.50 cfm per foot of crack length for gasketing other than for smoke control, as tested according to ASTM E 283.

D. Fire-Labeled Gasketing: Assemblies complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire ratings indi-cated, based on testing according to UL 1 OB or NFP A 252.

E. Replaceable Seal Strips: Provide only those units where resilient or flexible seal strips are easi-ly replaceable and readily available from stocks maintained by manufacturer.

F. Gasketing Materials: Comply with ASTM D 2000 and AAMA 701/702.

2.11 THRESHOLDS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the fol-lowing:
   1. National Guard Products, Inc. (NGP).

2. Pemko Manufacturing Co., Inc. (PEM).

2.12 MISCELLANEOUS DOOR HARDWARE

A. Manufacturers: Subject to compliance with requirements, provide products by one of the fol-lowing:
   1. Hager Companies (HAG).
   2. Ives: H. B. Ives (IVS).
   3. Triangle Brass Manufacturing Company, Inc. (TBM).

2.13 FABRICATION

A. Base Metals: Produce door hardware units of base metal, fabricated by forming method indicated, using manufacturer's standard metal alloy, composition, temper, and hardness. Furnish metals of a quality equal to or greater than that of specified door hardware units and BHMA A156.18 for finishes. Do not furnish manufacturer's standard materials or forming methods if different from specified standard.

B. Fasteners: Provide door hardware manufactured to comply with published templates generally prepared for machine, wood, and sheet metal screws. Provide screws according to commercially recognized industry standards for application intended. Provide Phillips flat-head screws with finished heads to match surface of door hardware, unless otherwise indicated.
   1. Concealed Fasteners: For door hardware units that are exposed when door is closed, ex-cept for units already specified with concealed fasteners. Do not use through bolts for in-stallation where bolt head or nut on opposite face is exposed unless it is the only means of securely attaching the door hardware. Where through bolts are used on hollow door and frame construction, provide sleeves for each through bolt.
   2. Steel Machine or Wood Screws: For the following fire-rated applications:
      a. Mortise hinges to doors.
      b. Strike plates to frames.
      c. Closers to doors and frames.
   3. Steel Through Bolts: For the following fire-rated applications, unless door blocking is provided:
      a. Surface hinges to doors.
      b. Closers to doors and frames.
      c. Surface-mounted exit devices.
   4. Spacer or Sex Bolts: For through bolting of hollow metal doors.

2.14 FINISHES

A. Standard: Comply with BHMA A156.18.

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

C. 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 the same piece are not acceptable. 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

3.1 EXAMINATION

A. Examine doors and frames, with Installer present, for compliance with requirements for installation tolerances, labeled fire door assembly construction, wall and floor construction, and other conditions affecting performance.

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

3.2 PREPARATION

A. Steel Doors and Frames: Comply with DHI Al 15 series.
   1. Surface-Applied Door Hardware: Drill and tap doors and frames according to SDI 107.

3.3 INSTALLATION

A. Mounting Heights: Mount door hardware units at heights indicated in following applicable publications, unless specifically indicated or required to comply with governing regulations:
   1. Standard Steel Doors and Frames: DHI's "Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames."
   2. Custom Steel Doors and Frames: DHI's "Recommended Locations for Builders' Hardware for Custom Steel Doors and Frames."

B. Install each door hardware item to comply with manufacturer's written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim units with finishing work specified in Division 9 Sections. Do not install sur-facemounted items until finishes have been completed on substrates involved.
   1. Set units level, plumb, and true to line and location. Adjust and reinforce attachment substrates as necessary for proper installation and operation.
   2. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors according to industry standards.

C. Key Control System: Place keys on markers and hooks in key control system cabinet, as deter-mined by final keying schedule.

D. Thresholds: Set thresholds for exterior and acoustical doors in full bed of sealant complying with requirements specified in Division 7 Section "Joint Sealants."

3.4 ADJUSTING

A. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.
   1. Spring Hinges: Adjust to achieve positive latching when door is allowed to close freely from an open position of 30 degrees.
   2. Door Closers: Adjust sweep period so that, from an open position of 70 degrees, the door will take at least 3 seconds to move to a point 3 inches from the latch, measured to the leading edge of the door.

B. Six-Month Adjustment: Approximately six months after date of Substantial Completion, In-staller shall perform the following:
   1. Examine and readjust each item of door hardware as necessary to ensure function of doors, door hardware, and electrified door hardware.
   2. Consult with and instruct Owner's personnel on recommended maintenance procedures.
   3. Replace door hardware items that have deteriorated or failed due to faulty design, materials, or installation of door hardware units.

3.5 CLEANING AND PROTECTION

A. Clean adjacent surfaces soiled by door hardware installation.

B. Clean operating items as necessary to restore proper function and finish.

C. Provide final protection and maintain conditions that ensure door hardware is without damage or deterioration at time of Substantial Completion.

END OF SECTION 08711

SECTION 08800 - GLAZING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes glazing for the following products and applications, including those speci-fied in other Sections where glazing requirements are specified by reference to this Section:

1. Windows.
2. Doors.
3. Glazed entrances.
4. Storefront framing.

1.3 DEFINITIONS

A. Manufacturer: A firm that produces primary glass or fabricated glass as defined in referenced glazing publications.

B. Interspace: Space between lites of an insulating-glass unit that contains dehydrated air or a specified gas.

C. Deterioration of insulating Glass: Failure of the hermetic seal under normal use that is attributed to the manufacturing process and not to causes other than glass breakage and practices for maintaining and cleaning insulating glass contrary to manufacturer's written instructions. evidence of failure is the obstruction of vision by dust, moisture, or film on interior surfaces of glass.

1.4 PERFORMANCE REQUIREMENTS

A. General: Provide glazing systems capable of withstanding normal thermal movement and wind and impact loads (where applicable) without failure, including loss or glass breakage attributa-ble to the following: defective manufacture, fabrication, and installation; failure of sealants or gaskets to remain watertight and airtight; deterioration of glazing materials; or other defects in construction.

B. Glass Design: Glass thicknesses indicated are minimums and are for detailing only. Confirm glass thicknesses by analyzing Project loads and in-service conditions. Provide glass lites for various size openings in nominal thicknesses indicated, but not less than thicknesses and in strengths (annealed or heat treated) required to meet or exceed the following criteria:

1. Glass Thicknesses: Select minimum glass thicknesses to comply with ASTM E 1300, according to the following requirements:
   a. Minimum Glass Thickness for Exterior Lites: Not less than 6 mm.

C. Thermal Movements: Provide glazing that allows for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures acting on glass framing members and glazing components. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

1. Temperature Change (Range): 120 degree F, ambient; 180 degree F, material surfaces.

D. Thermal and Optical Performance Properties: Provide glass with performance properties specified based on manufacturer's published test data, as determined according to procedures indicated below:

1. Center-of-Glass U-Values: NFRC 100 methodology using LBL-35298 WINDOW 4.1 computer program, expressed as Btu/ sq. ft. x h x deg F.
2. Center-of-Glass Solar Heat Gain Coefficient: NFRC 200 methodology using LBL-35298 WINDOW 4.1 computer program.
3. Solar Optical Properties: NFRC 300.

1.5 SUBMITTALS

A. Product Data: For each glass product and glazing material indicated.

B. Samples: For the following products, in the form of 12-inch- square Samples for glass.
   1. Wired glass.
   2. Fire Lite.
   3. Insulating glass for each designation indicated.
   4. For each color (except black) of exposed glazing sealant indicated.

C. Glazing Schedule: Use same designations indicated on Drawings for glazed openings in preparing a schedule listing glass types and thicknesses for each size opening and location.

D. Product Certificates: Signed by manufacturers of glass and glazing products certifying that products furnished comply with requirements.

E. Qualification Data: For firms and persons specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: An experienced installer who has completed glazing similar in material, design, and extent to that indicated for Project and whose work has resulted in construction with a record of successful in-service performance.

B. Source Limitations for Clear Glass: Obtain clear float glass from one primary-glass manufacturer.

C. Source Limitations for Insulating Glass: Obtain insulating-glass units from one manufacturer using the same type of glass and other components for each type of unit indicated.

D. Source Limitations for Glazing Accessories: Obtain glazing accessories from one source for each product and installation method indicated.

E. Fire-Rated Door Assemblies: Assemblies complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire ratings indicated, based on testing according to NFP A 252.

F. Fire-Rated Window Assemblies: Assemblies complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire ratings indicated, based on testing according to NFPA 257.

G. Glazing Publications: Comply with published recommendations of glass product manufacturers and organizations below, unless more stringent requirements are indicated. Refer to these publications for glazing terms not otherwise defined in this Section or in referenced standards.
   1. GANA Publications: GANA'S "Glazing Manual" and "Laminated Glass Design Guide."
   2. SIGMA Publications: SIGMA TM-3000, "Vertical Glazing Guidelines," and SIGMA TB-3001, "Sloped Glazing Guidelines."

H. Insulating-Glass Certification Program: Permanently marked either on spacers or on at least one component lite of units with appropriate certification label of the following inspecting and testing agency:
   1. Insulating Glass Certification Council.
   2. Associated Laboratories, Inc.
   3. National Accreditation and Management Institute.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Protect glazing materials according to manufacturer's written instructions and as needed to pre-vent damage to glass and glazing materials from condensation, temperature changes, direct exposure to sun, or other causes.

B. For insulating-glass units that will be exposed to substantial altitude changes, comply with insulating-glass manufacturer's written recommendations for venting and sealing to avoid hermetic seal ruptures.

1.8 PROJECT CONDITIONS

A. Environmental Limitations: Do not proceed with glazing when ambient and substrate temperature conditions are outside limits permitted by glazing material manufacturers and when glazing channel substrates are wet from rain, frost, condensation, or other causes.

1. Do not install liquid glazing sealants when ambient and substrate temperature conditions are outside limits permitted by glazing sealant manufacturer or below 40 degree F.

1.9 WARRANTY

A. General Warranty: Special warranties specified in this Article 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. Manufacturer's Special Warranty on Insulating Glass: Written warranty, made out to Owner and signed by insulating-glass manufacturer agreeing to furnish replacements for insulating-glass units that deteriorate as defined in "Definitions" Article, f.o.b. the nearest shipping point to Project site, within specified warranty period indicated below.

1. Warranty Period: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PRODUCTS AND MANUFACTURERS

A. Products: Subject to compliance with requirements, provide one of the products indicated.

2.2 PRIMARY FLOAT GLASS

A. Float Glass: ASTM C 1036, Type I (transparent glass, flat), Quality q3 (glazing select); class as indicated in schedules at the end of Part 3.

2.3 INSULATING GLASS

A. Insulating-Glass Units: Preassembled units consisting of glass lites separated by a dehydrated airspace that is hermetically dual sealed with a primary seal of polisobutylene (PIB), or thermoplastic spacer (TPS) and a secondary seal of silicone sealant. Units shall comply with ASTM E 2190 and with requirements specified in this Article and as follows:

B. Insulating Glass IG: Where glass of this designation is indicated, provide insulating-glass units complying with the following:

1. Products: Provide one of the following:
   a. PPG Industries, Inc. (Basis of Design)
   b. AFG Industries, Inc.
   c. Guardian Industries.
   d. Libbey-Owens-Ford
2. Overall Unit Thickness and Thickness of Each Lite: 25 and 6 mm measured perpendicularly from outer surfaces of glass lites at unit's edge
3. Interspace Content (Cavity): ½" (Air Fill).
4. Outdoor Lite:
   Basis of Design:¼" PPG Graylite II High Performance Tint.
   a. Kind: (Fully Tempered - Safety Glass)

C. Sealing System: Dual seal, with primary and secondary sealants as follows:

1. Manufacturer's standard sealants.

D. Spacer Specifications: Manufacturer's standard spacer material and construction.

2.4 ELASTOMERIC GLAZING SEALANTS

A. General: Provide products of type indicated, complying with the following requirements:
   1. Compatibility: Select glazing sealants that are compatible with one another and with other materials they will contact, including glass products, seals of insulating-glass units, and glazing channel substrates, under conditions of service and application, as demonstrated by sealant manufacturer based on testing and field experience.
   2. Suitability: Comply with sealant and glass manufacturers' written instructions for selecting glazing sealants suitable for applications indicated and for conditions existing at time of installation.
   3. Colors of Exposed Glazing Sealants: As selected by Architect from manufacturer's full range for this characteristic.

B. Elastomeric Glazing Sealant Standard: Comply with ASTM C 920 and other requirements indicated for each liquid-applied, chemically curing sealant in the Glazing Sealant Schedule at the end of Part 3, including those referencing ASTM C 920 classifications for type, grade, class, and uses.

2.5 GLAZING GASKETS

A. Dense Compression Gaskets: Molded or extruded gaskets of material indicated below, complying with standards referenced with name of elastomer indicated below, and of profile and hard-ness required to maintain watertight seal:
   1. Neoprene, ASTM C 864.
   2. EPDM, ASTM C 864.
   3. Silicone, ASTM C 1115.
   4. Thermoplastic polyolefin rubber, ASTM C 1115.
   5. Any material indicated above.

B. Soft Compression Gaskets: Extruded or molded, closed-cell, integral-skinned gaskets of material indicated below; complying with ASTM C 509, Type II, black; and of profile and hardness required to maintain watertight seal:
   1. Neoprene.
   2. EPDM.
   3. Silicone.
   4. Thermoplastic polyolefin rubber.
   5. Any material indicated above.

2.6 MISCELLANEOUS GLAZING MATERIALS

A. General: Provide products of material, size, and shape complying with referenced glazing standard, requirements of manufacturers of glass and other glazing materials for application indicated, and with a proven record of compatibility with surfaces contacted in installation.

B. Cleaners, Primers, and Sealers: Types recommended by sealant or gasket manufacturer.

C. Setting Blocks: Elastomeric material with a Shore A durometer hardness of 85, plus or minus 5.

D. Spacers: Elastomeric blocks or continuous extrusions with a Shore A durometer hardness required by glass manufacturer to maintain glass lites in place for installation indicated.

E. Edge Blocks: Elastomeric material of hardness needed to limit glass lateral movement (side walking).

2.7 FABRICATION OF GLASS AND OTHER GLAZING PRODUCTS

A. Fabricate glass and other glazing products in sizes required to glaze openings indicated for Project, with edge and face clearances, edge and surface conditions, and bite complying with writ-ten instructions of product manufacturer and referenced glazing standard, to comply with sys-tem performance requirements.

B. Grind smooth and polish exposed glass edges.

PART 3 – EXECUTION

3.1 EXAMINATION

A. Examine framing glazing, with Installer present, for compliance with the following:
   1. Manufacturing and installation tolerances, including those for size, squareness, and off-sets at comers.
   2. Presence and functioning of weep system.
   3. Minimum required face or edge clearances.
   4. Effective sealing between joints of glass-framing members.

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

3.2 PREPARATION

A. Clean glazing channels and other framing members receiving glass immediately before glazing. Remove coatings not firmly bonded to substrates.

3.3 GLAZING - GENERAL

A. Comply with combined written instructions of manufacturers of glass, sealants, gaskets, and other glazing materials, unless more stringent requirements are indicated, including those in referenced glazing publications.

B. Glazing channel dimensions, as indicated on Drawings, provide necessary bite on glass, mini-mum edge and face clearances, and adequate sealant thicknesses, with reasonable tolerances. Adjust as required by Project conditions during installation.

C. Protect glass edges from damage during handling and installation. Remove damaged glass from Project site and legally dispose of off Project site. Damaged glass is glass with edge damage or other imperfections that, when installed, could weaken glass and impair performance and appearance.

D. Apply primers to joint surfaces where required for adhesion of sealants, as determined by pre-construction sealant-substrate testing.

E. Install setting blocks in sill rabbets, sized and located to comply with referenced glazing publi-cations, unless otherwise required by glass manufacturer. Set blocks in thin course of compati-ble sealant suitable for heel bead.

F. Do not exceed edge pressures stipulated by glass manufacturers for installing glass lites.

G. Provide spacers for glass lites where the length plus width is larger than 50 inches as follows:
   1. Locate spacers directly opposite each other on both inside and outside faces of glass. In-stall correct size and spacing to preserve required face clearances, unless gaskets and glazing tapes are used that have demonstrated ability to maintain required face clearances and to comply with system performance requirements.
   2. Provide 1/8-inch minimum bite of spacers on glass and use thickness equal to sealant width. With glazing tape, use thickness slightly less than final compressed thickness of tape.

H. Provide edge blocking where indicated or needed to prevent glass lites from moving sideways in glazing channel, as recommended in writing by glass manufacturer and according to requirements in referenced glazing publications.

I. Set glass lites in each series with uniform pattern, draw, bow, and similar characteristics.

J. Where wedge-shaped gaskets are driven into one side of channel to pressurize sealant or gasket on opposite side, provide adequate anchorage so gasket cannot walk out when installation is subjected to movement.

K. Square cut wedge-shaped gaskets at comers and install gaskets in a manner recommended by gasket manufacturer to prevent comers from pulling away; seal comer joints and butt joints with sealant recommended by gasket manufacturer.

3.4 GASKET GLAZING (DRY)

A. Fabricate compression gaskets in lengths recommended by gasket manufacturer to fit openings exactly, with stretch allowance during installation.

B. Insert soft compression gasket between glass and frame or fixed stop so it is securely in place with joints miter cut and bonded together at corners.

C. Center glass lites in openings on setting blocks and press firmly against soft compression gasket by inserting dense compression gaskets formed and installed to lock in place against faces of removable stops. Start gasket applications at corners and work toward centers of openings. Compress gaskets to produce a weathertight seal without developing bending stresses in glass. Seal gasket joints with sealant recommended by gasket manufacturer.

D. Install gaskets so they protrude past face of glazing stops.

3.5 PROTECTION AND CLEANING

A. Protect exterior glass from damage immediately after installation by attaching crossed streamers to framing held away from glass. Do not apply markers to glass surface. Remove nonpermanent labels, and clean surfaces.

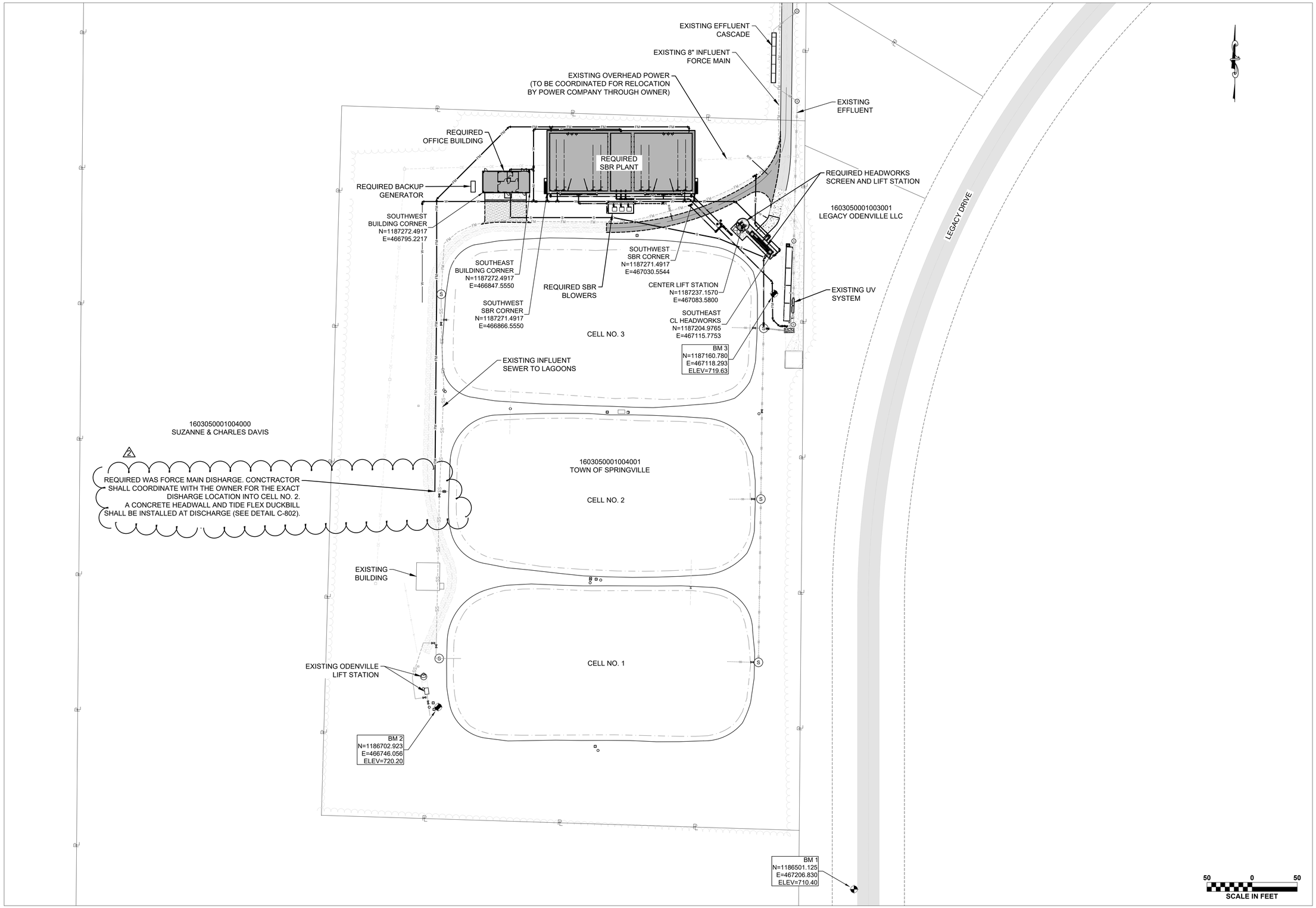
B. Protect glass from contact with contaminating substances resulting from construction operations, including weld splatter. If, despite such protection, contaminating substances do come into contact with glass, remove them immediately as recommended by glass manufacturer.

C. Examine glass surfaces adjacent to or below exterior concrete and other masonry surfaces at frequent intervals during construction, but not less than once a month, for build-up of dirt, scum, alkaline deposits, or stains; remove as recommended by glass manufacturer.

D. Remove and replace glass that is broken, chipped, cracked, abraded, or damaged in any way, including natural causes, accidents, and vandalism, during construction period.

E. Wash glass on both exposed surfaces in each area of Project not more than four days before date scheduled for inspections that establish date of Substantial Completion. Wash glass as recommended by glass manufacturer.

END OF SECTION 08800



CDG
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DOTHAN, AL 36301
PH: (334) 677-9431

OVERALL SITE PLAN & GEOMETRIC CONTROL PLAN
WATER RECLAMATION FACILITY IMPROVEMENTS
CITY OF SPRINGVILLE
SPRINGVILLE, ST. CLAIR COUNTY, ALABAMA

ALABAMA LICENSED No. 36280 PROFESSIONAL ENGINEER CARMEN D. CHOSIE

THIS BAR IS ONE INCH ON THE ORIGINAL
0 1"
IF NOT ONE INCH ADJUST SCALES ACCORDINGLY

SCALE:	1" = 50'
DATE:	November 2024

REVISION	DATE
2 ADD. NO. 2	12.05.24

PROJECT NO. **R954719170**

SHEET NO. C-202

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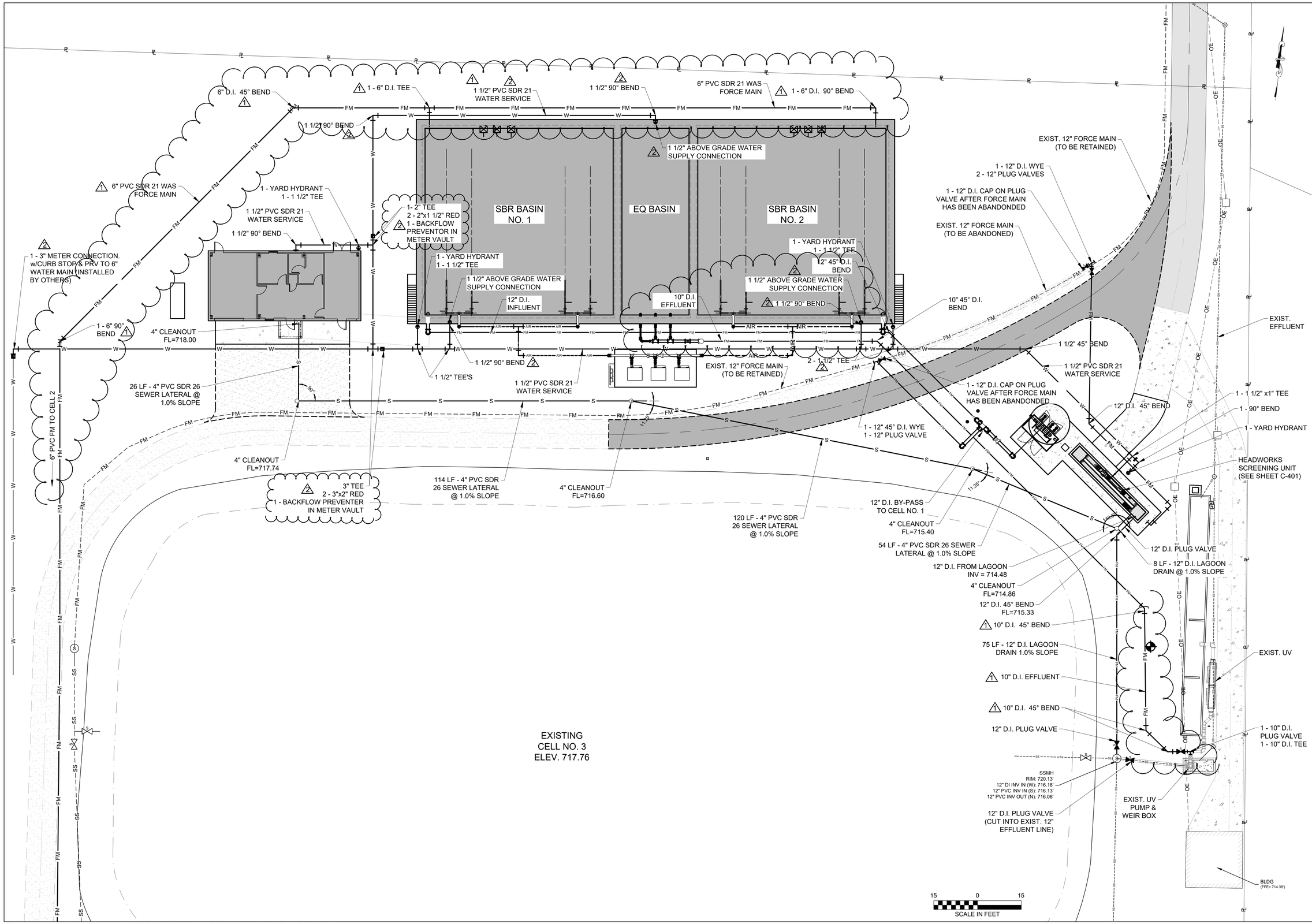

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YARD PIPING PLAN
WATER RECLAMATION FACILITY IMPROVEMENTS
CITY OF SPRINGVILLE
SPRINGVILLE, ST. CLAIR COUNTY, ALABAMA

ALABAMA LICENSED No. 36280 PROFESSIONAL ENGINEER CARMEN D. CHOISE

THIS BAR IS ONE INCH ON THE ORIGINAL
0 1"
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SCALE:
DATE: **November 2024**

REVISION	DATE
1 ADD. NO. 1	11.21.24
2 ADD. NO. 2	12.05.24

PROJECT NO. **R954719170**

SHEET NO. C-303

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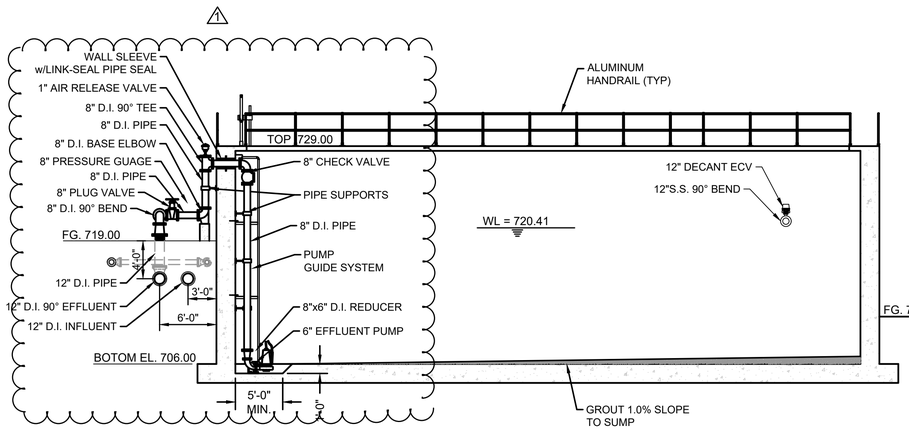
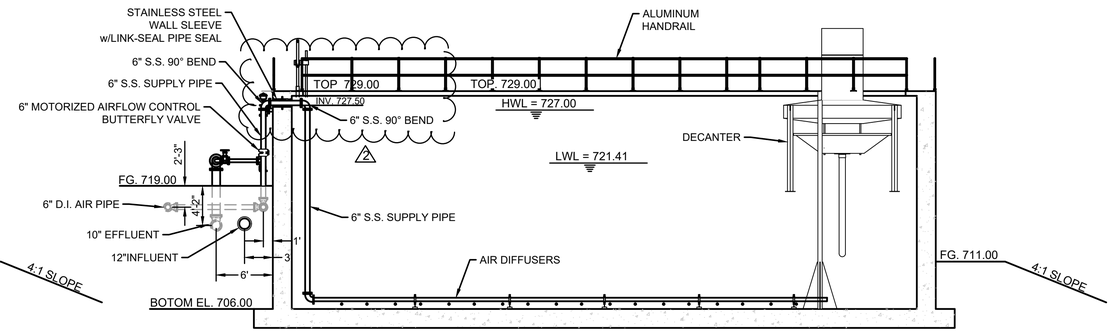
EQUIPMENT SPECIFICATION SECTION	
05511	ALUMINUM STAIRS AND LADDERS
11251	ELECTRIC VALVE ACTUATORS
11390	SEQUENCING BATCH REACTOR

PIPING NOTES:

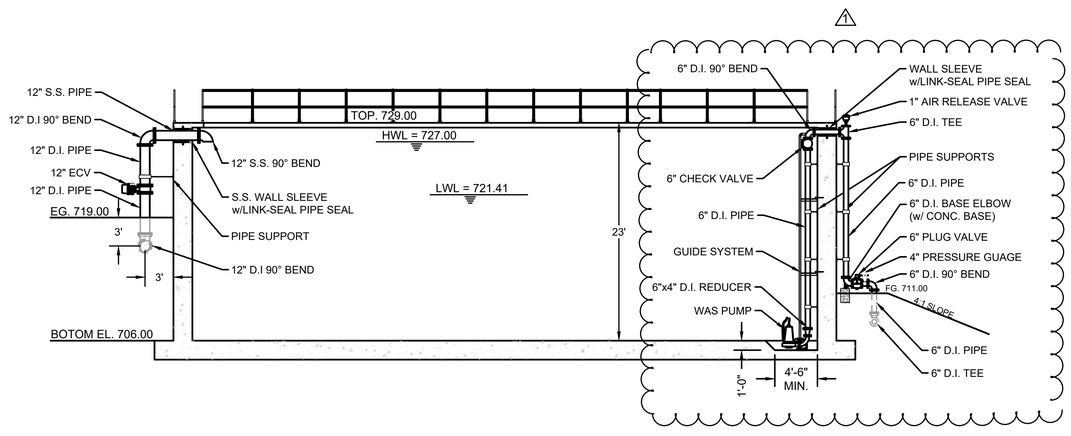
1. ALL DUCTILE IRON PIPE SHALL BE CL 350
2. ALL STAINLESS STEEL PIPE SHALL BE SCH. 40 TYPE 316



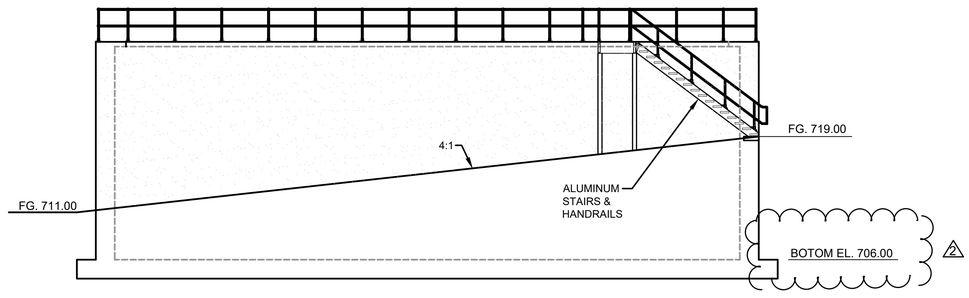
SECTION VIEW D-D
SCALE: 1/8"=1'-0"



SECTION VIEW E-E
SCALE: 1/8"=1'-0"



SECTION VIEW F-F
SCALE: 1/8"=1'-0"



SECTION VIEW H-H
SCALE: 1/8"=1'-0"

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SBR DETAILS
WATER RECLAMATION FACILITY IMPROVEMENTS
CITY OF SPRINGVILLE
SPRINGVILLE, ST. CLAIR COUNTY, ALABAMA

ALABAMA LICENSED No. 36280 PROFESSIONAL ENGINEER CARMEN D. CHOSIE

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0 1"
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SCALE:	1/8" = 1'-0"
DATE:	November 2024

REVISION	DATE
1 ADD. NO. 1	11.21.24
2 ADD. NO. 2	12.05.24

PROJECT NO. R954719170

SHEET NO. C-406

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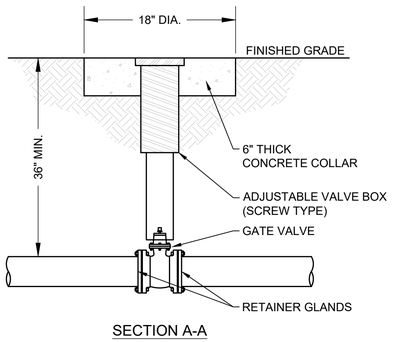
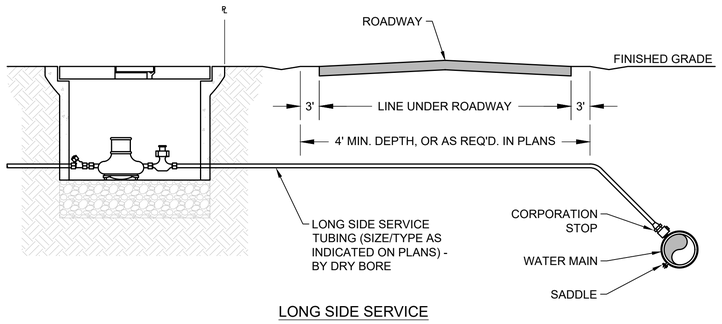
PLAN

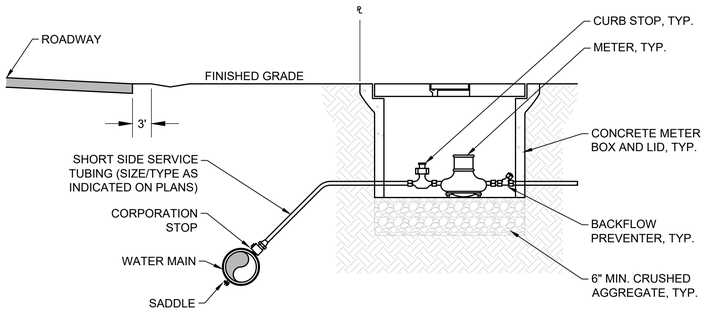


SECTION A-A

GATE VALVE AND BOX DETAIL
NOT TO SCALE

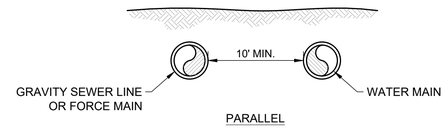


LONG SIDE SERVICE

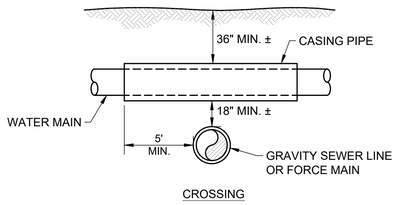


SHORT SIDE SERVICE

TYPICAL SERVICE CONNECTION AND METER ASSEMBLY
NOT TO SCALE

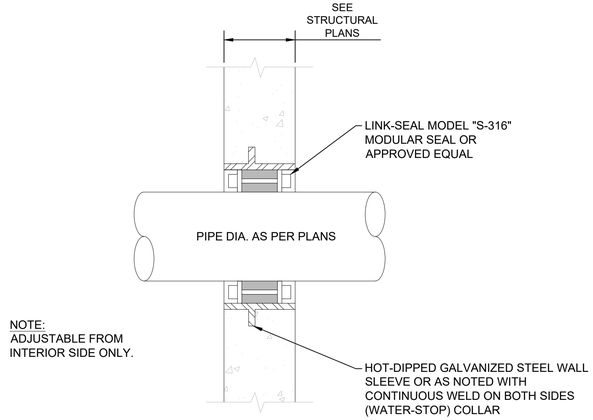


PARALLEL

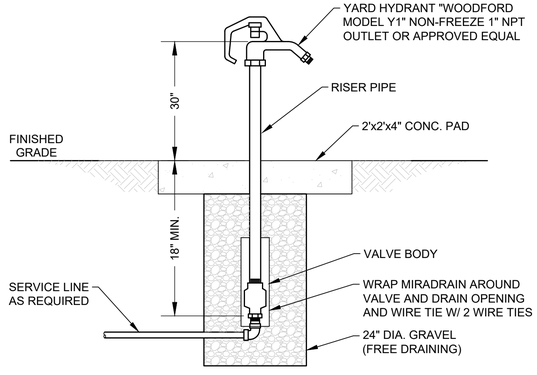


CROSSING

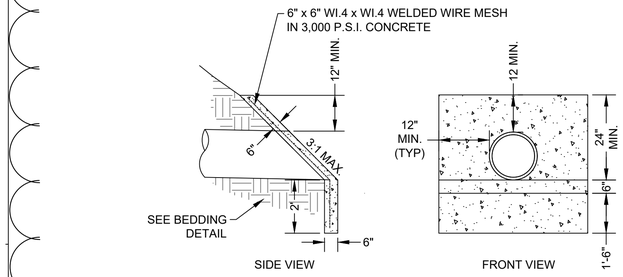
DETAILS OF UTILITY SEPARATION
NOT TO SCALE



TYPICAL THROUGH WALL PIPE SEAL DETAIL
N.T.S.



YARD HYDRANT (FROST PROOF)
NOT TO SCALE



SLOPE PAVED HEADWALL
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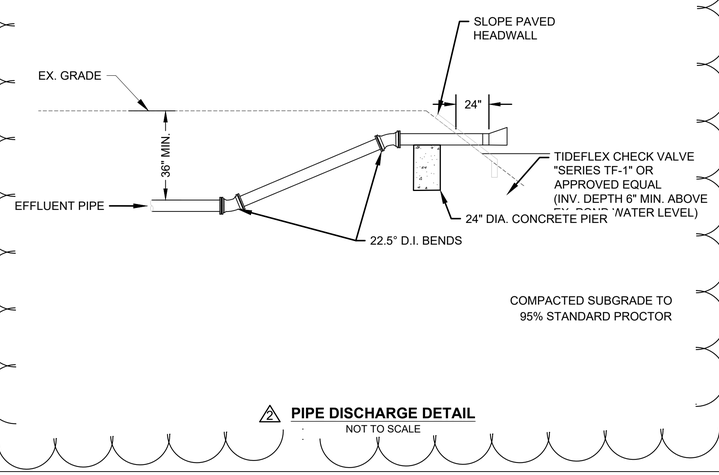

PIPE DISCHARGE DETAIL
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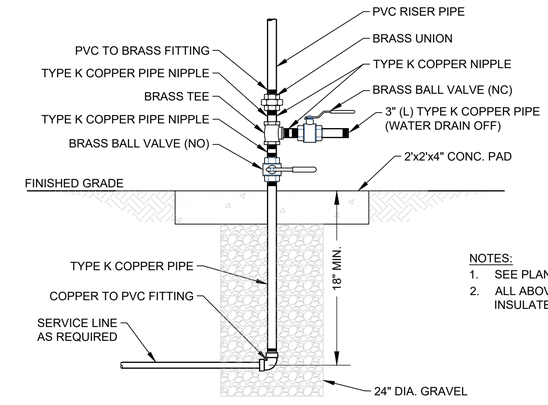

NOTES:
1. SEE PLANS FOR PIPE SIZE.
2. ALL ABOVE GROUND PIPE SHALL BE INSULATED AND HEAT TRACED.

ABOVE GRADE WATER SUPPLY CONNECTION
NOT TO SCALE

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STANDARD DETAILS

WATER RECLAMATION FACILITY IMPROVEMENTS
CITY OF SPRINGVILLE
SPRINGVILLE, ST. CLAIR COUNTY, ALABAMA

ALABAMA LICENSED No. 36280 PROFESSIONAL ENGINEER CARMEN D. CHOSIE

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0 1"
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SCALE:	AS NOTED
DATE:	November 2024

REVISION	DATE
2 ADD. NO. 2	12.05.24

PROJECT NO. **R954719170**

SHEET NO. C-802

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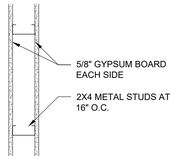
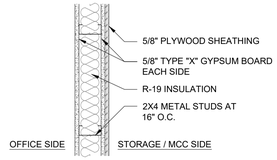
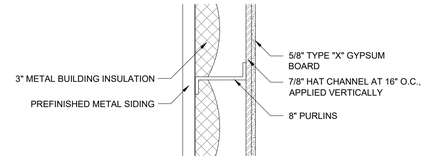


1 A1.1 2X4 INTERIOR WALL
1" = 1'-0" 0 6" 1'0" 1'6"



2 A1.1 STORAGE / MCC WALL
1" = 1'-0" 0 6" 1'0" 1'6"



3 A1.1 EXTERIOR WALL
1" = 1'-0" 0 6" 1'0" 1'6"

FINISH SCHEDULE

OFFICES

FLOOR	- BRUSHED SMOOTH CONCRETE
WALLS	- PAINTED SMOOTH GYPSUM BOARD
CEILING	- 2X2 ACT DROP CEILING

RESTROOM

FLOOR	- BRUSHED SMOOTH CONCRETE
WALLS	- PAINTED SMOOTH GYPSUM BOARD
CEILING	- 2X2 ACT DROP CEILING

MCC / EQUIPMENT STORAGE

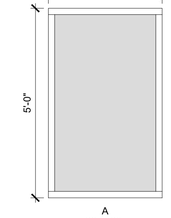
FLOOR	- BRUSHED SMOOTH CONCRETE
WALLS	- UNFINISHED PLYWOOD AT OFFICE
CEILING	- GYPSUM BOARD

WALL LEGEND

EXTERIOR WALL
- PREFINISHED METAL SIDING EXTERIOR
- 3" METAL BUILDING INSULATION
- 8" PURLINS
- 7/8" HAT CHANNEL APPLIED VERTICALLY AT 16" O.C.
- 5/8" TYPE "X" GYPSUM BOARD

2X4 PARTITION STUD WALL
- 2X4 STUDS AT 16" O.C.
- 5/8" GYPSUM BOARD EACH SIDE

MCC SEPARATION WALL
- 2X4 STUDS AT 16" O.C.
- 5/8" TYPE 'X' GYPSUM BOARD EACH SIDE
- 5/8" PLYWOOD OVER GYPSUM BOARD ON STORAGE / MCC SIDE
- R-19 INSULATION



A
36" x 60"
FIXED WINDOW

4 A1.1 WINDOW TYPES
1/2" = 1'-0" 0 1'0" 2'0" 3'0"

ADD. #2
1
1

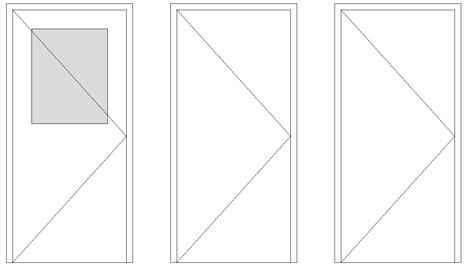
DOOR SCHEDULE

	DOOR							FRAME	
		SIZE				FIRE			
MARK	TYPE	WD	HGT	THK	MATL	RATING	HARDWARE	MATL	NOTES
100	A	3'-0"	6'-8"	1-3/4"	MTL	-	SET 1	HM	
101	B	3'-0"	6'-8"	1-3/4"	MTL	-	SET 1	HM	
102	B	3'-0"	6'-8"	1-3/8"	MTL	20 MIN	SET 7	HM	ADD DOOR STOP
103	C	3'-0"	6'-8"	1-3/8"	WD	-	SET 2	HM	RESTROOM SIGNAGE
104	B	2'-6"	6'-8"	1-3/8"	MTL	-	SET 6	HM	AIR VENT IN DOOR
105	C	3'-0"	6'-8"	1-3/8"	WD	-	SET 5	HM	
106	B	3'-0"	6'-8"	1-3/8"	MTL	20 MIN	SET 3	HM	
107	E	3'-0"	9'-0"	1-3/4"	MTL	-	SET 7	HM	PAIR; 24" LOUVERS
108	D	10'-0"	10'-0"	1-3/8"	MTL	-	SET 4	HM	ROLL-UP DOOR
109	B	3'-0"	6'-8"	1-3/4"	MTL	-	SET 1	HM	

DOOR HARDWARE SCHEDULE

HARDWARE	SET 1	SET 2	SET 3	SET 4	SET 5	SET 6	SET 7
(1) THRESHOLD	●						
(1) CLOSER	●		●				
(1) DEADBOLT	●						
(1) KEYED LOCKSET (LEVER)	●				●		●
(1) PRIVACY LOCKSET (LEVER)		●					
(1) PASSAGE LOCKSET (LEVER)			●			●	
(3) BUTT HINGES	●	●	●		●	●	●
(1) STOP		●	●		●		
(1) PANIC HARDWARE	●						●
(1) ROLL-UP DOOR KIT				●			

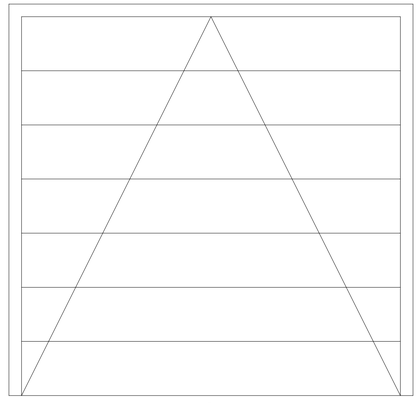
NOTES:



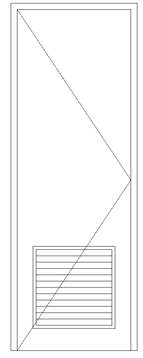
A
METAL DOOR W/ HALF GLASS

B
HOLLOW METAL DOOR

C
WOOD DOOR



D
ROLL-UP DOOR



E
CUSTOM HOLLOW METAL DOOR W/ 24" SQUARE LOUVER

5 A1.1 DOOR TYPES
1/2" = 1'-0" 0 1'0" 2'0" 3'0"

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WATER RECLAMATION FACILITY IMPROVEMENTS
CITY OF SPRINGVILLE
SPRINGVILLE, ST. CLAIR COUNTY, ALABAMA

STATE OF ALABAMA · BILLY M SNELL · 4161 · REGISTERED ARCHITECT · 12/2/2024

SCHEDULES AND DETAILS

THIS BAR IS ONE INCH ON THE ORIGINAL
0 1"
IF NOT ONE INCH ADJUST SCALES ACCORDINGLY

SCALE:

DATE: **November 2024**

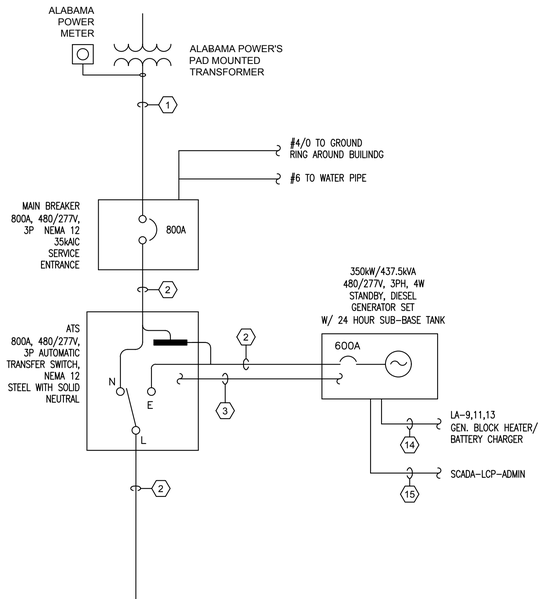
REVISION

1) CORRECTION TO DOOR SCHEDULE FOR FIRE RATED DOORS. 12/2/2024 SEE ADDENDUM #2 FOR MORE INFORMATION.

PROJECT NO. **R954719170**

A1.1
SHEET NO.

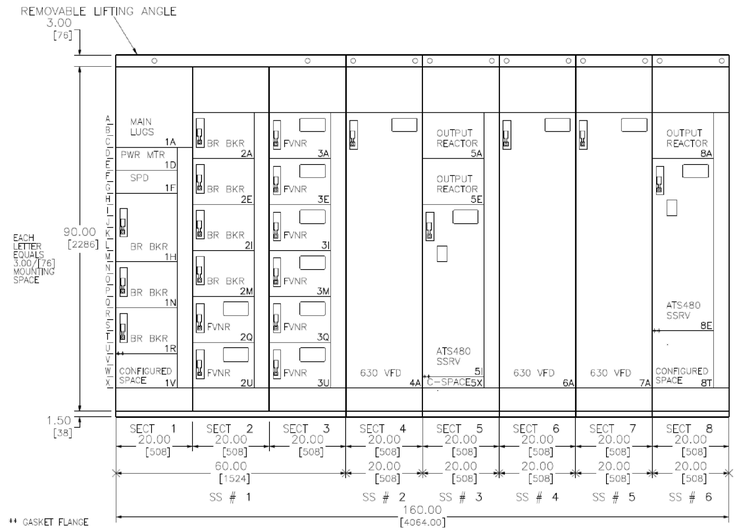
NOTES:
1. CONTRACTOR SHALL PROVIDE A 4" CONCRETE HOUSEKEEPING PAD FOR ALL FREE STANDING EQUIPMENT, INCLUDING, BUT NOT LIMITED TO THE MCC AND TRANSFORMER.



CONDUCTOR/CONDUIT SCHEDULE

1 2 RINS OF 4 - 600 Kcmil IN 3.5" C.	11 3 #2 & 1 #6 GND (VFD CABLE) & 3 #14 IN 2.5" C.
2 2 RUNS OF 4-600 Kcmil & 1 #10 GND IN 3.5" C.	12 3 #10 & 1 #10 GND IN 1" C.
3 4 #14 (GEN START) & 4 #14 SPARE IN 1" C.	13 3 #1 & 1 #8 GND IN 1.25" C.
4 3 #6, 5 #14 & 1 #10 GND IN 1" C.	14 4 #10 & 1 #10 GND IN 1" C.
5 3 #6, 3 #14 & 1 #10 GND IN 1" C.	15 10 #14 & 4 #14 SPARE IN 1" C.
6 3 #12, 2 #14 & 1 #12 GND IN 1" C.	16 4 #3/0 & 1 #6 GND IN 2" C.
7 2" C. (SUBMERSIBLE CABLE BY VENDOR)	17 3 #3/0 & 1 #6 GND IN 2" C.
8 3 #10, 5 #14 & 1 #10 GND IN 1" C.	18 3 #4 & 1 #8 GND IN 1" C.
9 3 #10, 3 #14 & 1 #10 GND IN 1" C.	19 3 #1/0 & 1 #6 GND IN 1.5" C.
10 3 #2 & 1 #6 GND (VFD CABLE) & 5 #14 IN 2.5" C.	

NOTE: CONTRACTOR SHALL CONFIRM WITH MANUFACTURER'S SHOP DRAWING IF THERMOSTAT AND/OR SPACE HEATERS ARE REQUIRED.



MCC ELEVATION

MCC ONE LINE DIAGRAM

CDG
170 E. MAIN ST.
DOTHAN, AL 36301
PH: (334) 677-9431

ONE LINE DIAGRAM

WASTE WATER TREATMENT PLANT UPGRADES
CITY OF SPRINGVILLE
SPRINGVILLE, ALABAMA

ALABAMA LICENSED PROFESSIONAL ENGINEER DAVID M. ZIMMER 11-13-24

THIS BAR IS ONE INCH ON THE ORIGINAL
0 1"
IF NOT ONE INCH ADJUST SCALES ACCORDINGLY

SCALE:	AS NOTED
DATE:	May 2024
REVISION	DATE
2 ADD. NO. 2	12.05.24

PROJECT NO: R954719170

SHEET NO. E-102

PANEL HA

SERVICE 480V,3Ø,3W | MTG SURFACE | A.I.C. 65,000 | MAIN 200A M.L.O. | REMARKS ADMIN BLDG

NO.	LOAD DESCRIPTION	LOAD(kVA) A	B	C	TRIP	PHASE	TRIP	LOAD(kVA) A	B	C	LOAD DESCRIPTION	NO.
1	TRANSFORMER XFMR-TA (45kVA)	15			70	A B C	15	0.5			SBR 1 INFLUENT VALVE	2
3			15						0.5			4
5				15						0.5		6
7	SPARE				15		15	0.5			SBR 2 INFLUENT VALVE	8
9									0.5			10
11										0.5		12
13	SPARE				20		15	0.5			12" ACTUATOR - PUMP STATION TO SBR	14
15									0.5			16
17										0.5		18
19	SPARE				30		15	0.5			12" ACTUATOR - PUMP STATION TO LAGOON	20
21									0.5			22
23										0.5		24
25	SPACE										SPACE	26
27	SPACE										SPACE	28
29	SPACE										SPACE	30
31	SPACE										SPACE	32
33	SPACE										SPACE	34
35	SPACE										SPACE	36
37	SPACE										SPACE	38
39	SPACE										SPACE	40
41	SPACE										SPACE	42

CONNECTED LOAD: A 16 kVA | B 16 kVA | C 16 kVA | TOTAL 48 kVA

NOTE:

PANEL LA

SERVICE 208/120V,3Ø,4W | MTG SURFACE | A.I.C. 10,000 | MAIN 150A M.B. | REMARKS PROVIDE WITH FEED THRU LUGS

NO.	LOAD DESCRIPTION	LOAD(kVA) A	B	C	TRIP	PHASE	TRIP	LOAD(kVA) A	B	C	LOAD DESCRIPTION	NO.
1	SITE LIGHTS (3)	0.3			20	A B C	20	0.5			FUTURE GATE OPERATOR	2
3	SITE LIGHTS (3)		0.3		20				0.5			4
5	SITE RECEPTACLE AT BLOWER			0.18	20					0.5		6
7	SBR LIGHTS (MIDDLE) - 4	0.18			20		20	0.5			SPARE	8
9	GENERATOR BLOCK HEATER		1.5		20		45		4.0		SBR CONTROL PANEL / LCP-SBR	10
11				1.5			20				SPARE	12
13	GENERATOR BATTERY CHARGER	1.0			20		20				SPARE	14
15	INFLUENT SAMPLER		0.5		20		20				SPARE	16
17	HEADWORKS SCREEN HEAT TRACE			1.5	20						SPACE	18
19	SBR LIGHTS (NORTH) - 5	0.8			20						SPACE	20
21	SBR LIGHTS (SOUTH) - 6		0.5		20						SPACE	22
23	SBR RECEPTACLES (NORTH) - 5			0.72	20						SPACE	24
25	SBR RECEPTACLES (SOUTH) - 4	0.72			20						SPACE	26
27	BLOWERS 1, 2, 3 ENCLOSURE FANS/LGTS		1.8		20						SPACE	28
29	SPARE			0.1	20						SPACE	30
31	SPARE				20						SPACE	32
33	SPARE				20						SPACE	34
35	SPARE				20						SPACE	36
37	SPARE				20						SPACE	38
39	SPARE				20						SPACE	40
41	SPARE				20						SPACE	42

CONNECTED LOAD: A 15.8 kVA | B 14.16 kVA | C 12.95 kVA | TOTAL 42.91 kVA

NOTE: 1. PROVIDE WITH FEED THRU LUGS
2. PROVIDE WITH HEAT TRACE GROUND FAULT

NOTE 2

LIGHTING FIXTURE SCHEDULE

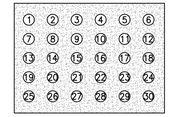
TYPE	SYMBOL	DESCRIPTION	MANUFACTURER	MOUNTING	VOLT/PHASE	LAMP
A		1'x4' INDUSTRIAL LED / VAPOR TIGHT / RUGGED AND WET LOCATION FIXTURE	CREE C-VT-A-LIN4-52L-40K	CEILING	120V/1PH	LED
B		LED AREA LIGHT MOUNTED ON 25 FT. SQUARE STRAIGHT ALUMINUM POLE	FIXTURE: CAT#CREE ARE-EDG-4MP-XX-06-E-UL-XX-700-40K-XXX (BXALx806E-UD7) WITH INTEGRAL PHOTOCELL POLE:CAT#LYTE POLE 105-6025-25 W/ 12X12 SQUARE BASE PLATE	POLE SEE DETAIL	120V/1PH	60 WHITE LEDs, VERTICAL BASE-UP
C		10 FT. STANCHION MOUNT, 6,741 LUMENS LED FIXTURE RATED FOR WET LOCATIONS, POLYCARBONATE LENS	CROUSE HINDS CAT#PVM-7L-J-R1-UNV1-S890-S903-D2S20 (NO PHOTOCELL). DARK BRONZE.	RAIL, SEE DETAIL	120V/1PH	LED 54 WATTS

NOTE: SEE DRAWING AB:E-101 FOR ADDITIONAL LIGHT FIXTURES.

PANEL LB

SERVICE 208/120V,3Ø,4W | MTG SURFACE | A.I.C. 10,000 | MAIN 150A M.L.O. | REMARKS

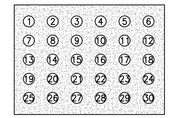
NO.	LOAD DESCRIPTION	LOAD(kVA) A	B	C	TRIP	PHASE	TRIP	LOAD(kVA) A	B	C	LOAD DESCRIPTION	NO.
1	HP-2	1.6			20	A B C	25	1.2			HP-1	2
3			1.6						1.2			4
5	WATER HEATER			2.0	30		50			4.0	AHU-1	6
7		2.0						4.0				8
9	MCC ROOM RECEPTS.		0.54		20		20		0.72		WORK ROOM RECEPTS.	10
11	WORK ROOM RECEPTS.			1.08			20			0.72	RECEPTION RECEPTS.	12
13	RESTROOM RECEPTS.	1.5			20		20	1.5			AIR COMPRESSOR	14
15	EQUIP. STORAGE RECEPTS.		0.9		20		20		0.9		EQUIP. STORAGE RECEPTS.	16
17	LIGHTS			0.97	20		20			0.18	EXTEIOR BLDG. LIGHTS	18
19	SPARE				20						SPACE	20
21	SPARE				20						SPACE	22
23	SPARE				20						SPACE	24
25	SPARE				20						SPACE	26
27	SPARE				20						SPACE	28
29	SPARE				20						SPACE	30
31	SPARE				20						SPACE	32
33	SPARE				20						SPACE	34
35	SPARE				20						SPACE	36
37	SPARE				20						SPACE	38
39	SPARE				20						SPACE	40
41	SPARE				20						SPACE	42



DB–4

1–2" PVC C. (480V EX. UV PNL MP TO MCC)
2–1.5" PVC C. (CONTROLS TO SBR CP)
3–2" PVC C. (480V SCREEN CP TO MCC)
4–1" PVC C. (120V TO PANEL LA)
4–2" PVC C. (480V IPS CP TO MCC)
6–1.5" PVC C. (CONTROLS TO SBR CP)
7–1" RGS C. (SIGNALS)
8–2" PVC C. (480V TO MCC)
9–1" PVC C. (120V TO PANEL LA)
10–1" RGS C. (SIGNALS TO SBR CP)
11–1" PVC C. (120V POWER TO SBR CP)
12–1" PVC C. (CONTROLS TO SBR CP)
13–1" PGS C. (SIGNALS TO SBR CP)
14–1" PVC C. (120V POWER TO SBR CP)
15–1" PVC C. (SBR 2 MIXER TO MCC)
16–1" PVC C. (480V TO PANEL HA)
17–1" PVC C. (SPARE)
18–1" PVC C. (SPARE)
19–1" PVC C. (POST EQ PUMP #1 480V TO MCC)
20–1" PVC C. (POST EQ PUMP #2 480V TO MCC)
21–1" PVC C. (POST EQ PUMP #3 480V TO MCC)
22–1" PVC C. (120V POWER)
23–1" RGS C. (SIGNALS TO SBR CP)
24–1" PVC C. (CONTROLS TO SBR CP)
25–2.5" PVC C. (BLOWER #1 480V TO MCC)
26–2.5" PVC C. (BLOWER #2 480V TO MCC)
27–2.5" PVC C. (BLOWER #3 480V TO MCC)
28–1" PVC C. (120V POWER TO PANEL LA)
29–1" PVC C. (SPARE)
30–1" PVC C. (SPARE)

2



DB–5

1–2" PVC C. (480V EX. UV PNL MP TO MCC)
2–1.5" PVC C. (CONTROLS TO SBR CP)
3–2" PVC C. (480V SCREEN CP TO MCC)
4–1" PVC C. (120V TO PANEL LA)
4–2" PVC C. (480V IPS CP TO MCC)
6–1.5" PVC C. (CONTROLS TO SBR CP)
7–1" RGS C. (SIGNALS TO SBR CP)
8–2" PVC C. (480V TO MCC)
9–1" PVC C. (120V TO PANEL LA)
10–1" RGS C. (SIGNALS TO SBR CP)
11–1" PVC C. (120V POWER)
12–1" PVC C. (CONTROLS TO SBR CP)
13–1" PGS C. (SIGNALS TO SBR CP)
14–1" PVC C. (120V POWER TO SBR CP)
15–1" PVC C. (SBR 2 MIXER TO MCC)
16–1" PVC C. (480V TO PANEL HA)
17–1" PVC C. (SPARE)
18–1" PVC C. (SPARE)
19–1" PVC C. (POST EQ PUMP #1 480V TO MCC)
20–1" PVC C. (POST EQ PUMP #2 480V TO MCC)
21–1" PVC C. (POST EQ PUMP #3 480V TO MCC)
22–1" PVC C. (120V POWER)
23–1" RGS C. (SIGNALS TO SBR CP)
24–1" PVC C. (CONTROLS TO SBR CP)
25–2.5" PVC C. (BLOWER #1 480V TO MCC)
26–2.5" PVC C. (BLOWER #2 480V TO MCC)
27–2.5" PVC C. (BLOWER #3 480V TO MCC)
28–1" PVC C. (120V POWER TO PANEL LA)
29–1" PVC C. (SPARE)
30–1" PVC C. (SPARE)

2

DB–10

1–2" PVC C. (480V EX. UV PNL MP TO MCC)
2–1" PVC C. (CONTROLS TO SBR CP)
3–2" PVC C. (480V SCREEN CP TO MCC)
4–1" PVC C. (120V TO PANEL LA)
5–1" PVC C. (CONTROLS FROM UV TO SBR CP)
6–1" RGS C. (#16 TSP FROM UV TO SBR CP)

DB–11

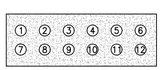
1–2" PVC C. (480V EX. MOP TO MCC)
2–1" PVC C. (CONTROLS FROM UV TO SBR CP)
3–1" RGS C. (#16 TSP FROM UV TO SBR CP)

DB–12

1–2" PVC C. (480V EX. UV PNL MP TO MCC)
2–1" PVC C. (120V TO PANEL LA)
3–1" PVC C. (SPARE)

NOTE USED
DB–6

NOTE USED
DB–8



DB–9

1–2" PVC C. (480V EX. UV PNL MP TO MCC)
2–1" PVC C. (CONTROLS)
3–1.25" PVC C. (480V SCREEN CP TO MCC)
4–1" PVC C. (120V TO PANEL LA)
4–1" PVC C. (480V IPS CP TO MCC)
6–1" PVC C. (CONTROLS TO SBR CP)
7–1" RGS C. (SIGNALS TO SBR CP)
8–1" PVC C. (480V VALVES TO PANEL HA)
9–1" PVC C. (120V TO PANEL LA)
10–1" RGS C. (SIGNALS TO SBR CP)
11–1" PVC C. (SPARE)
12–1" PVC C. (SPARE)

DB–13

1–2" PVC C. (480V IPS CP TO MCC)
2–1" PVC C. (CONTROLS)
3–1" RGS C. (SIGNALS)

DB–16

1–1" PVC C. (CONTROLS TO SBR CP)
2–1" PGS C. (SIGNALS TO SBR CP)
3–1" PVC C. (120V POWER)
4–1" PVC C. (SBR 2 MIXER TO MCC)

DB–18

2

1–2.5" PVC C. (BLOWER #1 480V TO MCC)
2–2.5" PVC C. (BLOWER #2 480V TO MCC)
3–2.5" PVC C. (BLOWER #3 480V TO MCC)
4–1" PVC C. (120V POWER TO PANEL LA)
5–1" PVC C. (SPARE)
6–1" PVC C. (SPARE)

DB–20

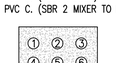
1–2" PVC C. (CONTROLS TO SBR CP)
2–1.5" RGS C. (SIGNALS TO SBR CP)
3–1" PVC C. (120V POWER TO PANEL LA)
4–1" PVC C. (120V POWER OT SBR CP)

DB–22

1–1.5" PVC C. (CONTROLS TO SBR CP)
2–1" RGS C. (SIGNALS TO SBR CP)
3–1" PVC C. (120V POWER TO PANEL LA)
4–1" PVC C. (120V POWER OT SBR CP)

DB–14

1–2" PVC C. (480V VALVES TO PANEL HA)
2–1" PVC C. (120V TO PANEL LA)
3–1" RGS C. (SIGNALS TO SBR CP)



DB–17

1–1" PVC C. (POST EQ PUMP #1 480V TO MCC)
2–1" PVC C. (POST EQ PUMP #2 480V TO MCC)
3–1" PVC C. (POST EQ PUMP #3 480V TO MCC)
4–1" PVC C. (120V POWER)
5–1" RGS C. (SIGNALS TO SBR CP)
6–1" PVC C. (CONTROLS TO SBR CP)

DB–19

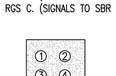
1–1.5" PVC C. (CONTROLS TO SBR CP)
2–1" RGS C. (SIGNALS TO SBR CP)
3–1" PVC C. (120V POWER)
4–1" PVC C. (IFV1 480V TO PANEL HA)

DB–21

1–1.5" PVC C. (CONTROLS TO SBR CP)
2–1" RGS C. (SIGNALS TO SBR CP)
3–1" PVC C. (120V POWER TO PANEL LA)
4–1" PVC C. (120V POWER OT SBR CP)

DB–23

1–1.5" PVC C. (CONTROLS TO SBR CP)
2–1" RGS C. (SIGNALS TO SBR CP)
3–1" PVC C. (120V POWER TO PANEL LA)
4–1" PVC C. (120V POWER OT SBR CP)



DB–15

1–1.5" PVC C. (CONTROLS TO SBR CP)
2–1" RGS C. (SIGNALS TO SBR CP)
3–1" PVC C. (120V POWER)
4–1" PVC C. (IFV2 480V TO PANEL HA)

DB–1

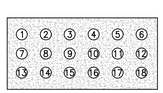
1–3.5" PVC C. (480V TO MB)
2–3.5" PVC C. (480V TO MB)

DB–2

1–3.5" PVC C. (480V TO ATS)
2–3.5" PVC C. (480V TO ATS)
3–1" PVC (120V POWER TO PANEL LA)
4–1" PVC (CONTROLS TO ATS)
5–1" PVC (SIGNALS TO ATS)
6–1" PVC (CONTROLS TO SCADA–LCP–MAIN)

DB–3

1–1" PVC C. (SPARE TO SBR CP)
2–1" RGS C. (SPARE TO SBR CP)
3–1" PVC C. (120V POWER TO PANEL LA)



DB–7

1–2" PVC C. (480V EX. UV PNL MP TO MCC)
2–1" PVC C. (CONTROLS)
3–2" PVC C. (480V SCREEN CP TO MCC)
4–1" PVC C. (120V TO PANEL LA)
4–2" PVC C. (480V IPS CP TO MCC)
6–1" PVC C. (CONTROLS TO SBR CP)
7–1" RGS C. (SIGNALS TO SBR CP)
8–2" PVC C. (480V TO PANEL HA)
9–1" PVC C. (120V TO PANEL LA)
10–1" RGS C. (SIGNALS TO SBR CP)
11–1" PVC C. (120V POWER TO SBR CP)
12–1.5" PVC C. (CONTROLS TO SBR CP)
13–1" PGS C. (SIGNALS TO SBR CP)
14–1" PVC C. (120V POWER)
15–1" PVC C. (SBR 2 MIXER TO MCC)
16–1" PVC C. (SPARE)
17–1" PVC C. (SPARE)
18–1" PVC C. (SPARE)

CDG
170 E. MAIN ST.
DOTHAN, AL 36301
PH: (334) 677-9431

PENAL BOARD & DUCTBANK SCHEDULES

WASTE WATER TREATMENT PLANT UPGRADES
CITY OF SPRINGVILLE
SPRINGVILLE, ALABAMA

ALABAMA LICENSED PROFESSIONAL ENGINEER
11-13-24
DAVID M. ZIMMER

THIS BAR IS ONE INCH ON THE ORIGINAL
0 1"
IF NOT ONE INCH ADJUST SCALES ACCORDINGLY

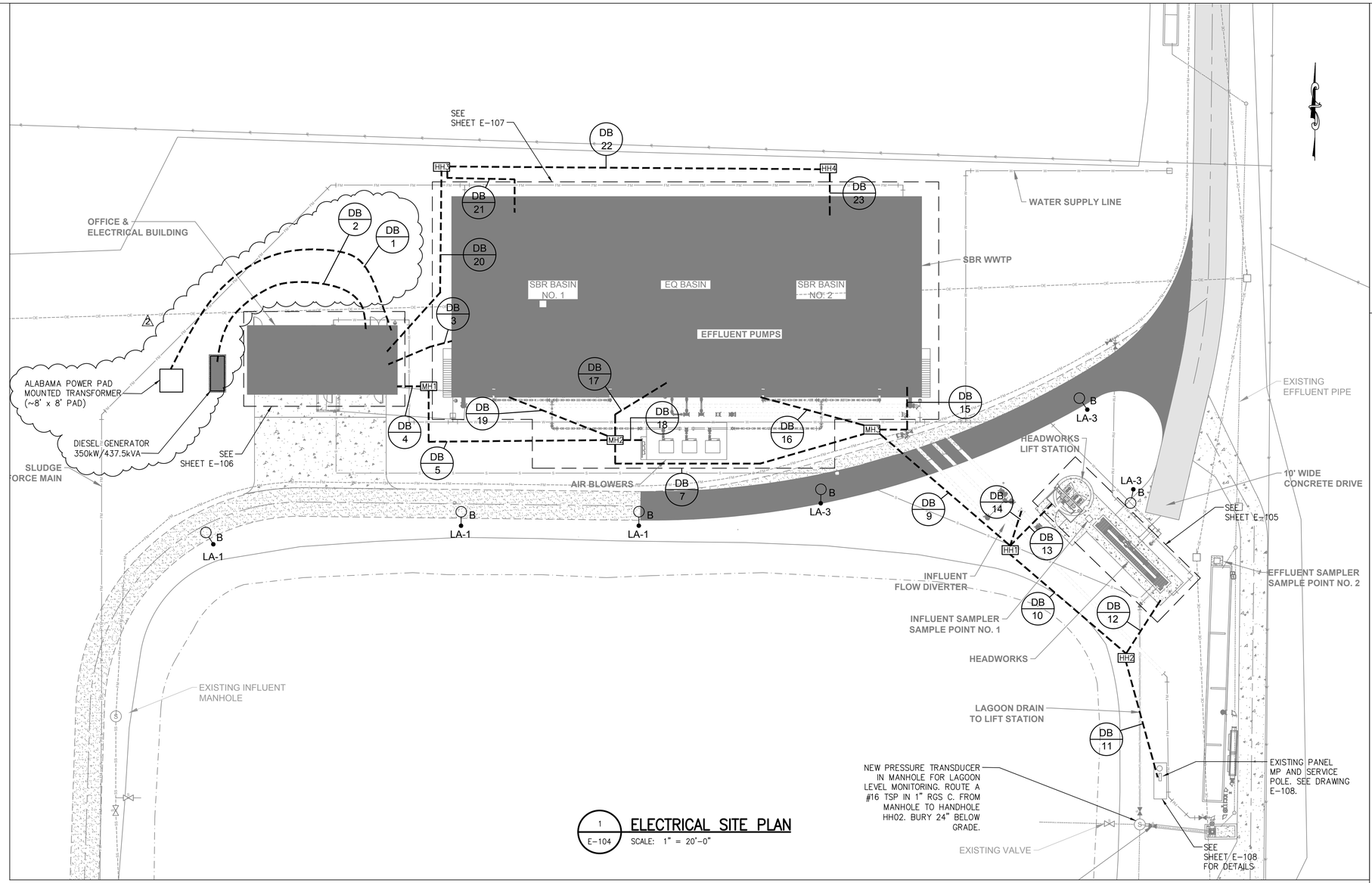
SCALE:	AS NOTED
DATE:	**May 2024**
2 ADD. NO. 2	12.05.24

PROJECT NO: **R954719170**

SHEET NO. E-103

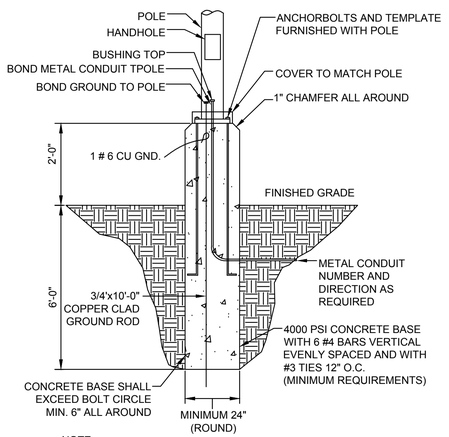
NOTES:

1. FIELD COORDINATE THE FINAL LOCATION OF ALABAMA POWER'S TRANSFORMER.
2. ALL DUCTANKS SHALL BE CONCRETE ENCASED. REINFORCE UNDER ROADWAYS.
3. ALL HANDHOLES SHALL BE SIZED PER NEC. SEE DETAIL A/E113. CONTRACTOR MY USE QUAZITE TYPE HANDHOLES WITH TRAFFIC RATED COVERS FOR THE HHS* HANDHOLES. INSTALL ON 7" BED OF CRUSHED STONE.
4. ALL SITE LIGHTS CIRCUITS SHALL BE 3 #8's IN 1" CONDUIT. LIGHTING CONDUITS DO NOT NEED TO BE CONCRETE ENCASED.
5. SEE HAND HOLE DETAIL A/E-113 FOR HANDHOLES HH1, HH2, HH3, AND HH4.
6. SEE MANHOLE DETAIL F/E-113 FOR MANHOLES MH1, MH2, AND MH3.
7. IN MANHOLES AND HANDHOLES, CONTRACTOR SHALL BUNDLE ALLL #16 TWISTED SHIELD PAIRS AND PROVIDE SHIELDING TO PROTECT FROM 480V CABLES. ROUTE 480V POWER ON OPPOSITE WALLS OF MANHOLES AND HANDHOLES. IN GENERAL, ROUTE THE SHIELDED CABLES IN CONDUIT ON END OF DUCTBANK AND PUT SPARES BETWEEN SHIELDED CABLES.



1 / E-104 ELECTRICAL SITE PLAN

SCALE: 1" = 20'-0"



NOTE:
1. POLE AND BASE WITH LUMINARES SHALL BE RATED FOR 100 MPH WIND LOADING WITH 1.3 GUST FACTOR.

TYPE B POLE BASE DETAIL

DETAIL A / E-104

CDG
170 E. MAIN ST.
DOTHAN, AL 36301
PH: (334) 677-9431

ELECTRICAL SITE PLAN

WASTE WATER TREATMENT PLANT UPGRADES
CITY OF SPRINGVILLE
SPRINGVILLE, ALABAMA

ALABAMA LICENSED PROFESSIONAL ENGINEER DAVID M. ZIMMER 11-13-24

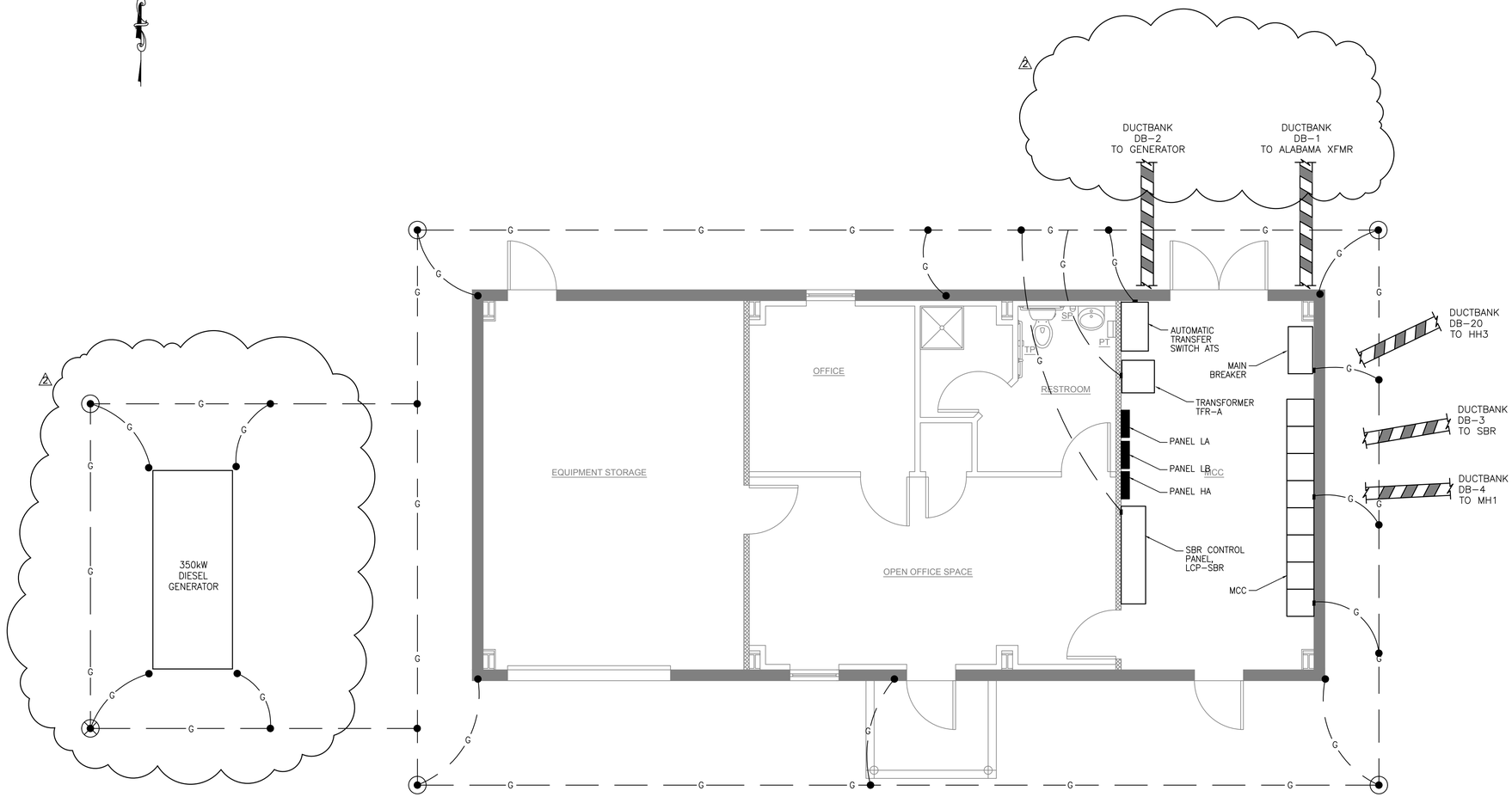
THIS BAR IS ONE INCH ON THE ORIGINAL (0 — 1")
IF NOT ONE INCH ADJUST SCALES ACCORDINGLY

SCALE:	AS NOTED
DATE:	November 2024
REVISION	DATE
2 ADD. NO. 2	12.05.24

PROJECT NO: **R954719170**

SHEET NO. E-104

NOTES:
1. INSTALL MCC AND TFR-A ON CONCRETE HOUSEKEEPING PAD.
2. EXTEND #4/0 BARE COPPER GROUND WIRES IN ALL DUCTBANKS. GROUND AT MANHOLES AND HANDHOLES.



1 / E-107 ADMIN BUILDING GROUNDING PLAN
SCALE: 1/4" = 1'-0"

CDG
170 E. MAIN ST.
DOTHAN, AL 36301
PH: (334) 677-9431

ADMIN BUILDING
WASTE WATER TREATMENT PLANT UPGRADES
CITY OF SPRINGVILLE
SPRINGVILLE, ALABAMA

ALABAMA LICENSED PROFESSIONAL ENGINEER
DAVID M. ZIMMER
11-13-24

THIS BAR IS ONE INCH ON THE ORIGINAL
0 1"
IF NOT ONE INCH ADJUST SCALES ACCORDINGLY

SCALE:	AS NOTED
DATE:	**November 2024**
REVISION	DATE
2 ADD. NO. 2	12.05.24

PROJECT NO: **R954719170**

SHEET NO. E-106