

The City of Forest Park

Request for Bids

FOREST PARK - GILLEM PUBLIC SAFETY BUILDING

Mandatory Pre- Bid Conference: Friday, December 17, 2021 at 11:00 a.m. (local time)
City of Forest Park City Hall
745 Forest Parkway, Forest Park, GA 30297

Bid Deadline: Friday, January 28, 2022 at 2:00 p.m.

<p style="text-align: center;">ADDENDUM #4 Issued January 13, 2022</p>

*Acknowledgment of receipt of this addendum **MUST BE SIGNED AND INCLUDED IN YOUR RESPONSE TO THE RFB.***

REVISION(S)

1. A revision was made to the bid submittal deadline. Sealed Bids will be received by the City of Forest Park at Forest Park City Hall, City Council Meeting Room located at 745 Forest Parkway, Forest Park GA, 30297 until **2:00 PM EST on Friday, January 28, 2022** and then publicly opened and read aloud.
2. The deadline for questions has been extended until **5:00 PM EST on Wednesday, January 19, 2022**. All questions must be submitted in writing to the City of Forest Park; Attention: A. Girard Geeter - Procurement Manager, via email at ageeter@forestparkga.gov. **Reference: "Forest Park - Gillem Public Safety Building"**. A response to such questions will be answered by addenda and posted to the City's website and all other sites listed on the Invitation to Bid.
3. All FF&E has been removed from the general contractor's scope. Bidders are to **Void "Alternate No. 4 – Omit all FF&E"** on the current Bid Form. Additionally, Bidders should submit their Bid Security on the approved Bid Bond form provided with Addendum No 3. Please reference revised Bid Form regarding the deletion of Alternate #4 included in this addendum.

QUESTION(S):

1. What is the estimated construction budget?

ANSWER:

The Forest Park-Gillem Public Safety Building is slated to cost around \$5 million, with construction expected to be completed by January 2023. Exact budgetary figures and construction timelines are contingent upon the selected bidder.

2. Good evening looking over your upcoming project, we are a LSBE with Clayton County will the certification be accepted for the city of Forest Park for the 25% Participation goal. It's no problem if not just need to know to send in with the paperwork if so. Please advise

ANSWER:

If the Bidder will be the LSBD and Prime Contractor on the project, the Bidder will exceed the goal and will receive 100% LSBD participation. The Bidder should provide their proof of certification letter and complete the LSBD Form 3, listing themselves as the LSBD to perform the work. Please reference Section II, Instructions to Bidders, ARTICLE 13 – LOCAL, SMALL BUSINESS, DIVERSITY PROGRAM for more details.

3. We are bidding the Gillem Public Safety Building - Forest Park, GA project. We would like the opportunity to bid with all the GC's on this project. Can you share the GC bid list with us so we can contact them and submit our proposal?

ANSWER:

Please refer to the Pre- Bid Meeting Sign-in Sheet available on the City's website for a list of all General Contractors bidding on the project.

4. I was instructed by Kathy Barker of Precision Planning Inc to email you regarding the Public Safety Building in Forest Park bidding on 1/18/2022. As a four-fold door manufacturer, my company would like to be listed as an alternate to Door Engineering in spec 08 35 13. My normal process is to contact the project architect for such a request. I'm hoping you could advise me on this procedure. Once it is clear who I should be contacting, I will submit an official request for substitution.

ANSWER:

Substitution requests should be submitted on the approved form and come from a general contractor rather than from manufacturers or distributors. Bidders may reference Instructions to Bidders Article 11 and General Conditions Article 6.05 – Substitution request is denied due to lack of warranty information and materials used in construction of the doors do not appear to meet the specifications.

5. The spec section for furniture was not included in the project manual issued. Please advise.

ANSWER:

The City has chosen to exclude the FF&E from the General Contractors Scope. Bidders shall omit all work associated with Specification Section 12 40 00 from their bid. Bidders shall include all other work associated with Division 10, 11, and 12 specifications in their bids as currently indicated in the bidding documents. Pricing for bid alternate #4 shall not be required to be provided on the bid form.

6. Section 1.05 calls for AISC certified fabricator and erector. Due to the small size of steel framing, can these requirements be waived?

ANSWER:

No, The Engineer is not able to waive this requirement.

7. Addendum 1 provided lists of SLBE's from Forest Park, and Dekalb Co. and Dekalb Co. Water Authority. Is the addendum expanding the area of SLBE's qualified for the project to all of these lists?

ANSWER:

Bidders may use any source to find qualified subcontractors to meet the LSBSD goal however, The City encourages Bidders to first make use of the provided links available on the City's website. An updated list of firms from Clayton County, Clayton County Water Authority, and Local Forest Park Businesses has been provided on the City's website. Please use these lists as your first place in seeking out firms for LSBSD participation. Bidders may reference Section II, Instructions to Bidders, ARTICLE 13 – LOCAL, SMALL BUSINESS, DIVERSITY PROGRAM for more details.

8. We've had a request for CAD files from an earthwork contractor to provide prior to bid.

ANSWER:

PPI has provided the City's program manager with a CAD files for distribution to the General Contractor once project has been awarded. CAD files shall not be provided prior to bid. All bids shall be based on pdf bidding documents provided and cut fill calculations indicated on drawings.

9. (Division 26-28, Dwg Ref Low Voltage) Is any narrative available on low voltage systems?

ANSWER:

Refer to specification divisions 27 and 28 along with Technology Drawings included in the bidding documents.

10. (Division 26-28, Dwg Ref Low Voltage) Is any low voltage systems to be included in the contractors scope?

ANSWER:

Yes, Refer to specification divisions 27 and 28 along with Technology Drawings included in the bidding documents.

11. (Division 26) Is a lightning protection system intended?

ANSWER:

Yes, Refer to Specification Section 26 41 13 and Electrical Drawings included in the bidding documents.

12. (Division 26, Dwg Ref E001) Review main panel size, 400 Amp is indicated.

ANSWER:

Yes, Electrical service size is 400A / 480V / 3ph as indicated in the bidding documents.

13. (Division 9) For floor finishes shall we assume polished concrete throughout?

ANSWER:

No, Refer to Interior Design Drawings and Division 9 Specifications included in bidding documents for floor finishes.

14. (Division 9) for the exterior skin is a metal building system intended?

ANSWER:

No, Refer to drawings and specifications included in the bidding documents for construction type and details.

15. (Division 9) If a metal building system skin is intended we will assume an interior metal wall skin. Advise if another exterior wall system is intended for the union hall building.

ANSWER:

This question appears to be regarding another project and therefore is not applicable.

16. Please provide spec section for thin brick (proposed veneer over precast walls).

ANSWER:

Refer to Specification Section 03 41 00 and Architectural Drawings included in the bidding documents.

17. Please provide spec section for manufactured stone and precast cap (proposed finishes at monument sign).

ANSWER:

- a. Refer to attached Specification Section 04 73 00 Manufactured Stone Veneer.
- b. Precast Cap shall be architectural integral color precast concrete coping cap custom shape to match adjacent Gillem Logistics monument signs. Provide product data and shop drawing submittal for architect review prior to fabrication. Provide 12"x12" physical sample submittal for Architect review prior to fabrication. Fabricator shall be a PCI-Certified plant for Group A, Category A1-Architectural Cladding and Loadbearing Units. Installer/Erector shall have a minimum 2 years' experience and have completed three (3) successful projects of similar nature within the past 5 years. Provide Coloring Admixture compliant

with ASTM C 979, synthetic or natural mineral-oxide pigments or colored water-reducing admixtures, temperature stable, and nonfading. Pigment color to be selected by Architect from manufacturer's full range of standard and specialty colors. Provide light sand blast finish on all exposed surfaces.

18. Utility plan states "tapping saddle and tapping gate valve for connection not existing water main to be provided and installed by developer" (City of Forest Park listed as developer in plans). Is this correct or should GCs include cost to tap existing main?

ANSWER:

GC shall include all labor and materials associated with installation of the water tap. All meter/tap/impact fees shall be paid for by the Owner.

19. Are meter/tap/impact fees applicable for this project? If so, would Clayton County be the AHJ?

ANSWER:

GC shall include all labor and materials associated with installation of the water tap. All meter/tap/impact fees shall be paid for by the Owner.

20. Sheet A5.1: Building Elevations: indicates a building address (what size are these numbers).

ANSWER:

Building Address numbers indicated by keynote #E18 on sheet A5.1 shall be 8" tall. Please disregard reference to Sign Type E in this location.

21. Sheet ID.51: Interior Signage Notes and Details: Sign Types E, F, G, H, and I do not have material type called out. Please verify what we are quoting.

ANSWER:

- a. Sign Types E & F : Rowmark 1/8" 2-ply red/white, ultra-matte, front engravable, no frame
- b. Sign Types G, H & I : Rowmark 1/8" 2-ply white/black, ultra-matte, front engravable, no frame

22. Sign Type G: drawing shows qty 4 (floor plan shows qty 5) please verify quantities.

ANSWER:

Refer to 1/ID2.1 and 1/ID5.1 of the bidding documents. Quantities for sign type G are indicated correctly in both locations on the bidding documents.

23. Good day Monday and in going through the Project Manual; I noticed that Section IV (Bid Bond) and Section V (Contractor Furnished Documents) are missing; can you please advise.

ANSWER:

Please refer to the Bid Bond Form provided in Addendum No. 3. The documents received from the Bidder will be the Contractor Furnished Documents.

24. Just tried reaching out but wasn't able to get you. Not sure if I'm in the right place but I'm looking to speak with the person that's in charge of construction for the New Gillem Public Safety Building. Would you mind helping me find the best contact for this project?

ANSWER:

Per the bid documents, all questions must be emailed to the City's Contact: ageeter@forestparkga.gov

25. I came across the New Gillem Public Safety Building project in Forest Park GA. Will there be a need for any furniture on this one? We are a full-service commercial furniture dealership that carries over 300 lines that fit all budgets and needs. We also have a wide variety of lines on state contract. We would love to get involved on this project if there are any FF&E needs. What steps do we need to take to bid on this?

ANSWER:

Please submit your contact details to ageeter@forestparkga.gov to be placed on a bid list for these items at a later time.

26. Good day Thursday and is there a specification for the access gate, "Q" as listed on page C2.1.

ANSWER:

Refer to attached Specification Section 32 31 11 - Slide Gate Operator.

27. I go over the spec, but I don't see bid bond form. Can we use AIA Document A310 standard bid bond form? Please forward it to the architect to review it.

ANSWER:

Please refer to the Bid Bond Form provided in Addendum No. 3.

28. What is to be used for the base plates of the HSS posts in 1/S3.6? The base is not on precast but poured in place.

ANSWER:

These columns and base plates will be designed and supplied by the precast manufacturer as it supports their product.

29. The ladders on A3.3 say to refer to specifications. There are no specifications for aluminum ladders.

ANSWER:

Refer to Specification Section 07 72 33 Roof Specialties and Accessories, paragraph 2.04.

30. Are there elevations available that show the thin brick referenced in Interior Keynote 9 on ID2.1?

ANSWER:

The thin brick indicated by keynote 9 on ID2.1 refers to the integral thin brick on the precast concrete wall panel which is left exposed on the interior in Shared Conference 147 at this location. Refer to Specification Section 03 41 00 for additional information on the thin brick.

31. For floor tile installation, are we to assume waterproofing at all floors, or crack iso at all non-shower tile floors?

ANSWER:

For all tile installations, refer to Specification Section 09 30 13. The specified waterproofing and crack prevention product shall be used under the entire tile floor installation. This product shall extend up walls a minimum of 4" in all locations. In the shower areas, the product shall extend up the walls to the ceiling. Manufacture's details shall be submitted with the submittal for this specification section prior to installation and approved by the architect.

32. 1/ID3.2 – Is wall tile typical at all walls in the shower room, or only at the wet wall?

ANSWER:

Wall tile is typical, floor to ceiling, on all walls of rooms noted to receive wall tile. Refer to Finish Plan 1/ID2.1.

33. CTB-1 is listed as the base in the unisex toilets but is not on the finish schedule. Please advise.

ANSWER:

CTB-1 is Daltile - Volume 1.0 - Stereo Grey VL73 - matte finish - 6x12 cove P36C9 with PC36C9 outside corner cove units.

34. Should dilex be included in unisex toilets?

ANSWER:

Remove Schluter Dilex from the project. All tile walls shall have cove base tile CBT-1 noted above.

35. Corridor 148 ID2.1 – is CB-1 an error? Please confirm that RB-1 should be used.

ANSWER:

RB-1 should be used.

36. Corridor 124 calls for RB-3, please confirm RB-1 should be used instead.

ANSWER:

RB-1 should be used.

37. Please confirm the location for the shower curbs in the following rooms, the plans are unclear: 123, 120, 119, 114.

ANSWER:

Refer to Enlarged Restroom Plan 1/A2.4. The curb, as shown in detail 9/ID1.0, encloses the shower stall underneath the shower curtain.

38. Please advise the finishes for EMS storage 141B.

ANSWER:

The EMS storage 141B have the same finishes as the storage listed above it - CONC flooring, PT-1 paint on walls, RB-1 base and PT-9 paint on ceiling.

39. Company office 111 is showing CB-1 base, but CB-1 is not listed on the finish schedule. Please advise.

ANSWER:

RB-1 should be used.

40. Officer bunks 112, 113 are showing RB-3, but RB-3 is not listed on the finish schedule. Please advise.

ANSWER:

RB-1 should be used.

41. Restroom 114 – please confirm which wall tile is to be used, CT-1 or CT-3?

ANSWER:

As indicated on ID2.1, CT-3 should be used for the wall tile.

42. BAM04-07 is an incomplete spec. The BAM is the compressor part of the unit pictured. The 04-07 is what size compressor you can get in that compressor cabinet. The different sizes are listed below.

BAM04 is 5.8 cfm 5000 psi max
BAM05 is 8.6 cfm 5000 psi max
BAM06 is 13.1 cfm 5000 psi max
BAM07 is 18.7 cfm 5000 psi max

BAM06X is 10.2 cfm 6000 psi max
BAM06H is 14 cfm 6000 psi max
BAM057H is 20.7 cfm 6000 psi max

I quoted the BAM06H. I also added the CMM- Electronic carbon monoxide and filter monitor so it would meet NFPA requirements. Also they did not say if they wanted this unit with a two bottle or three bottle fill station. Will they be filling 4500 psi or 5500 psi SCBA bottles

I quoted the three bottle for 5500 psi. it will also work with 4500 psi. SCBA bottles
They did not have a spec for how many storage bottle they wanted in it. Also are they UN/ISO or ASME. I quoted four UN/ISO. This is what we use most of the time.

ANSWER:

Refer to attached revised specification 11 41 00.

43. Will hand-delivered bid packages for the subject project be accepted on bid day? The bidding documents are unclear on the matter. If so, please provide location address. Thank you.

ANSWER:

All hand-delivered bids must be delivered to the City of Forest Park City Hall located at 745 Forest Parkway, Forest Park GA, 30297. Bids will be accepted no later than 2:00pm on January 28, 2022 at City Hall.

44. Just to confirm that drawings dated 10/26/2021 are ready to bid despite the NOT FOR CONSTRUCTION note right above the drawings?

ANSWER:

This project's bid documents were posted December 1, 2021 on the City's website and all other sites specified in the Invitation to Bid.

45. Does conference room 147 get ceiling speakers, or will the TVs use their individual speakers?

ANSWER:

No, Ceiling speakers will not be required in Conference Room 147. TV's in this space will use their individual speakers.

46. Do you require a matrix video switcher in conference room 147 or will the 5 displays in the room all show the same source image?

ANSWER:

No, a Matrix video switcher is not required. Each TV will receive its own dedicated input to include broadband & internet.

47. Is a control system/touch panel required in Day Room 106? Should it be wall mounted if so?

ANSWER:

No, a control system is not required in Dayroom 106.

48. I see on drawing T2.1 a TV2 in room 111? Is that for CCTV or AV? If for AV, what is the source video for this display and where is it located?

ANSWER:

TV2 in Company Office 111 shall have its own dedicated input to include broadband and internet service and will be used for AV purposes. Provide a TV2 style plate per detail 5/T5.2 at this location in lieu of a type "MM" style plate.

49. For the paging system, are the speakers in the apparatus bay wall mounted or pendant speakers?

ANSWER:

Paging Speakers in the apparatus bay shall be wall mounted at 12'-0" AFF.

50. Will gas heating and Dx cooling EAT and LAT for TERV be required?

ANSWER:

Yes, Revise Energy Recovery Ventilator Schedule as follows:

- a. EAT DW/WB: (SUMMER) 86.1°F / 72.2°F (WINTER) 17°F / 15°F
- b. LAT DB/WB: (SUMMER) 79.8°F / 63.1°F (WINTER) 54.1°F / 46.0°F
- c. CFM: 1,200

51. Is it the intention to single source Trane as the RTU & TERV equipment supplier? City standard is Carrier.

ANSWER:

Specifications and drawings shall be revised to indicate Carrier as the basis of design to meet City standards. Refer to revised equipment selections below and attached revised Specification Sections 23 72 23 and 23 74 15:

- a. RTU-1: CARRIER 48GC
 - i. Revise Nominal Tons to 3 ton
 - ii. Revise Fan CFM to 900
 - iii. Revise RTU Voltage to 208V/3ph
- b. RTU-2: CARRIER 48FC
- c. RTU-3: CARRIER 48FC
- d. RTU-4: CARRIER 62X
- e. RTU-5: CARRIER 48FC

f. TERV-1: CARRIER 62XK10

52. Shouldn't the RTU's all be SZVAV units with HGRH? There is always a humidity issue in fire stations without active humidity controls.

ANSWER:

Yes, refer to revised HVAC equipment selections indicated above.

53. Is bipolar being used to reduce OA delivery or reduce virus transmission?

ANSWER:

All UV light and bipolar requirements shall be omitted. Refer to revised equipment selections indicated above. Delete Rooftop Unit Schedule note number 7.

54. Is a BAS or DDC system required for this project?

ANSWER:

Specification Section 23 09 23 is very confusing. No, a BAS or DDC system shall be required for this project. Omit Specification Section 23 09 23 in its entirety. Provide new 7-day programmable wall mounted wireless communications thermostat with tamper resistant cover, digital display, password protection, and dehumidification control. Carrier model: 33CONNECTSTAT for each individual RTUs and for the TERV. Minimum range shall be 50-degree F to 95-degree F.

55. Will domestic water heater condensate neutralization basins be required?

ANSWER:

Yes, provide one condensate neutralization basin for each water heater unit and route to floor drain.

56. Good morning, according to pg C4.1, you have directed a 2.5" Copper pipe to be installed, however they no longer manufacture 2.5" Copper pipe, what do you direct us to install.

ANSWER:

If the specified product is no longer available due to manufacturing or supply chain issues please submit a product substitution request per section 01 63 00 for the proposed alternative product which is readily available for review

SIGNATURE

COMPANY NAME

TITLE

DATE

SECTION 00 41 00

BID FORM

Bid for General Contracting for the **Gillem Public Safety Building**

Bid submitted by:

_____ (Hereinafter referred to as "BIDDER")
(Name of Contractor)

City of Forest Park (Hereinafter referred to as "OWNER")
745 Forest Parkway
Forest Park, Georgia 30267

Ladies and Gentlemen:

The BIDDER, by making a bid, represents that the following have taken place:

- The BIDDER has read and understands the bidding documents and the bid is made in accordance therewith.
- The BIDDER has read and understands the bidding or contract documents to the extent that such documentation relates to the work for which the bid is submitted and to other portions of the project, if any, being bid concurrently or presently under construction.
- The BIDDER has visited the site, become familiar with local conditions under which the work is to be performed, and has correlated the BIDDER'S personal observations with the requirements of the proposed contract documents.
- The BID is based upon the materials, equipment, and systems required by the bidding documents without exception.
- The BIDDER has studied and compared the bidding documents with each other and has reported to the architect in writing any errors, inconsistencies, or ambiguities discovered.
- The BIDDER hereby agrees to commence work under this contract on or before a date to be specified in a written "Notice to Proceed" of OWNER and to fully complete the project within the time frame as described in Section 00 11 13, Advertisement for Bids.
- The BIDDER acknowledges receipt of the following addenda:

ADDENDUM NO.	DATE RECEIVED

- The BIDDER understands that the OWNER reserves the right to reject any or all bids and to waive any informalities in the bidding.

- The BIDDER agrees that his bid shall be binding and may not be withdrawn for a period of sixty (60) calendar days after the scheduled closing time for receiving bids.
- The BIDDER agrees that the bid security attached in the sum of five (5%) percent of the total bid is to become the property of the OWNER in the event the Contract and bonds are not executed within the time set forth, as liquidated damages for the delay and additional expense to the OWNER caused thereby.
- The BIDDER proposed to furnish all services, labor and materials required by them for the entire work and to **include a Construction Contingency Allowance amount equal to five (5%) percent of the Lump Sum Base Bid Amount indicated below within the Lump Sum Base Bid** in accordance with said documents for the sum of:

LUMP SUM BASE BID

\$ _____
 _____ (Dollars) (\$ _____)

Which sum is hereinafter called the "Base Bid".

The undersigned further proposes that should any of the following Alternates (*refer to Spec Section 01 23 00 for descriptions*) be accepted and be incorporated in the Contract, the Base Bid will be altered in each case as follows:

Alternate No. 1 – Overhead Sectional Doors in Lieu of Four-Fold Folding Doors at Apparatus Bay:

DEDUCT \$ _____
 (\$ _____) Dollars

Alternate No. 2 – Omit Plymovent Exhaust Extraction System:

DEDUCT \$ _____
 (\$ _____) Dollars

Alternate No. 3 – Omit all site lighting:

DEDUCT \$ _____
 (\$ _____) Dollars

Alternate No. 4 – Omit all FF&E and Food Service Equipment:

DEDUCT \$ _____
 (\$ _____) Dollars

Alternate No. 5 – Utilize Fiber-Cement cladding system in lieu of Composite Metal Panel system:

DEDUCT \$ _____
 (\$ _____) Dollars

Alternate No. 6 – Omit Stainless Steel Corner Guards:

DEDUCT \$ _____
 (\$ _____) Dollars

Alternate No. 7 – Omit Lightning Protection System:

DEDUCT \$ _____
 (\$ _____) Dollars

SCHEDULE OF UNIT PRICES & ALLOWANCES

<u>ITEM</u>	<u>UNIT</u>	<u>COST/UNIT</u>	<u>ALLOWANCE</u>
<p><u>Unit Price Allowance No. 1 – Unsuitable Material:</u> Removal and disposal off-site of unsuitable materials. Removal must be approved by, monitored, and quantified by the Owner’s Geotechnical Engineer.</p> <p>Note: Contractor shall include 500 cubic yards of removal and disposal off-site of unsuitable materials in the base bid price in addition to what is required to achieve design grades.</p>	500 CY	_____/CY	\$ _____
<p><u>Unit Price Allowance No. 2 – Suitable Soils:</u> Provide suitable soil from off-site and compact in place to replace excavated rock or unsuitable soil. Haul in and compaction must be approved by, monitored, and quantified by the Owner’s Geotechnical Engineer.</p> <p>Note: Contractor shall include 500 cubic yards of haul in and compacted suitable soils from off-site in the base bid price in addition to what is required to achieve design grades.</p>	500 CY	_____/CY	\$ _____
<p><u>Unit Price Allowance No. 3 – #57 Stone or GAB:</u> Haul in #57 stone or GAB to replace excavated rock or unsuitable soil. Haul in and placement must be approved by, monitored, and quantified by the Owner’s Geotechnical Engineer.</p> <p>Note: Contractor shall include 100 tons of haul in and placement of #57 stone or GAB in the base bid price in addition to what is shown on the Civil Drawings.</p>	100 TONS	_____/TON	\$ _____
<p><u>Unit Price Allowance No. 4 – Geotechnical Fabric:</u> Material and placement of geotechnical Fabric (Mirafi 600X or equal) To be used as directed by Architect, without restriction at the unit price.</p> <p>Note: Contractor shall include 100 square yards of geotechnical fabric in the base bid price.</p>	100 SY	_____/SY	\$ _____

<u>ITEM</u>	<u>UNIT</u>	<u>COST/UNIT</u>	<u>ALLOWANCE</u>
<u>Unit Price Allowance No. 5 – Construction Contingency:</u> Provide a contingency allowance in the amount of 5% of the lump sum base bid amount.	N/A	5%	\$ _____

These Unit Prices and Allowances are submitted as part of the Lump Sum Bid: The BIDDER declares that they understand that the Contract Sum may be decreased at the unit prices listed above. The BIDDER declares that they understand that the quantities of work shown are subject to either increase or decrease, and that should the quantities of any of the items of work be increased, the BIDDER proposed to do the additional work at the unit prices listed herein; and should the quantities be decreased, the BIDDER also understands that payment will be made on the basis of actual quantities at the unit price proposal and will make no claim for anticipated profits for any decrease in quantities and that the actual quantities will be determined upon completion of the work; at which time adjustment will be made to the Contract Sum.

Respectfully Submitted:

By: _____
(Signature)

Title: _____

Business Address: _____

Federal I.D. or Social Security No.: _____

ATTEST: _____
(Signature)

Name: _____
(Please Type)

NOTE: Attest for a corporation must be by the corporate secretary; for a partnership by another partner; for an individual by a Notary.

END OF SECTION 00 41 00

SECTION 04 73 00

MANUFACTURERD STONE VENEER

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 synthetic stone veneer in the following applications:
 - 1. Adhered to wood framing and sheathing.
- B. Related Sections: The following Sections contain requirements that relate to this Section:
 - 1. Division 7 Section "Flashing and Sheet Metal" for exposed sheet-metal flashing installed in synthetic stone veneer.
 - 2. Division 7 Section "Joint Sealants" for sealing joint in mockup.

1.3 SUBMITTALS

- B. General: Submit each item in this Article according to the Conditions of the Contract and Division 1 Specification Sections.
- C. Product data for synthetic stone material, accessories, and other manufactured product specified in the installation, including but not limited to:
 - 1. Preparation instructions
 - 2. Storage and handling instructions
 - 3. Installation standards and methods
- C. Samples for initial selection of the following:
 - 1. Synthetic stone samples in small-scale form showing the full range of colors and textures available.
 - 2. Colored-masonry mortar samples showing the full range of colors available.
- D. Shop Drawings: Submit details depicting manufacturer recommended installation details and flashing techniques. Coordinate those with project specific conditions.
Samples for verification of the following:
 - 1. Full-size units for each different exposed masonry unit required showing the full range of exposed colors, textures, and dimensions to be expected in the completed construction.
 - 2. Colored-masonry mortar samples for each color required showing the full range of colors expected in the finished construction. Make samples using the same sand and mortar ingredients to be used on the Project. Label samples to indicate type and amount of colorant used.
- E. Qualification data for firms and persons specified in the "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.

SECTION 04 73 00

MANUFACTURERD STONE VENEER

- F. Close Out Submittal: Provide manufacturer's maintenance instructions and warranty. Include recommendations for cleaning stone and repairing broken or missing pieces.

1.4 REFERENCES

- A. ASTM C39, ASTM C1670, ASTM C1780

1.5 QUALITY ASSURANCE

- A. Single-Source Responsibility for Mortar Materials: Obtain mortar ingredients of a uniform quality, including color for exposed masonry, from one manufacturer for each cementitious component and from one source or producer for each aggregate.
- B. Mockup: Prior to installing units, construct a sample wall panel to verify selections made under sample submittals and to demonstrate aesthetic effects as well as other qualities of materials and execution. Build mockup to comply with the following requirements, using materials indicated for final unit of Work.
 - 1. Locate mockup on site in a location acceptable to Architect.
 - 2. Build mockup of typical wall area.
 - a. Include sealant-filled joint complying with requirements of Division 7 Section "Joint Sealants."
 - b. Include fiber cement abutting material with sill and flashing installed.
 - 3. Clean exposed faces of mockups with manufacturer approved cleaner.
 - 4. Notify Architect one week in advance of the dates and times when mockups will be constructed.
 - 5. Protect accepted mockup from the elements with weather-resistant membrane.
 - 6. Retain and maintain mockup during construction in an undisturbed condition as a standard for judging the completed Work.
 - a. Acceptance of mockup is for color, texture, and blending of manufactured stone; relationship of mortar and sealant colors to masonry unit colors; tooling of joints; aesthetic qualities of workmanship; and other material and construction qualities specifically approved by Architect in writing.
 - b. Acceptance of mockup does not constitute approval of deviations from the Contract Documents contained in mockup, unless such deviations are specifically approved by Architect in writing.
 - c. When directed, demolish and remove mockup from Project site.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Store manufactured stone on elevated platforms, under cover, and in a dry location to prevent their deterioration or damage due to moisture, temperature changes, contaminants, corrosion, and other causes. If units become wet, do not install until they are in an air-dried condition.
- B. Store cementitious materials on elevated platforms, under cover, and in a dry location.
- C. Store aggregates where grading and other required characteristics can be maintained and contamination avoided.
- D. Store manufactured stone accessories, including metal items, to prevent corrosion and accumulation of dirt and oil.

1.7 PROJECT CONDITIONS

SECTION 04 73 00

MANUFACTURERD STONE VENEER

- A. Protection of Manufactured Stone: During erection, cover tops of walls, projections, and sills with waterproof sheeting at end of each day's work. Cover partially completed masonry when construction is not in progress.
 - 1. Extend cover a minimum of 24 inches (600 mm) down both sides and hold cover securely in place.
- B. Stain Prevention: Prevent grout, mortar, and soil from staining the face of manufactured stone. Immediately remove grout, mortar, and soil that come in contact with such manufactured stone.
 - 1. Protect base of walls from rain-splashed mud and mortar splatter by coverings spread on ground and over wall surface.
 - 2. Protect sills, ledges, and projections from mortar droppings.
 - 3. Protect surfaces of window and door frames, as well as similar products with painted and integral finishes, from mortar droppings.
 - 4. Turn scaffold boards near the wall on edge at the end of each day to prevent rain from splashing mortar and dirt on completed manufactured stone.
- C. Cold-Weather Requirements: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen subgrade or setting beds. Remove and replace manufactured stone damaged by frost or freezing conditions. Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen substrates. Do not use units containing visible frozen moisture. Do not use calcium chloride or anti-freeze admixtures. Comply with the following requirements:
 - 1. Cold-Weather Construction: When the ambient temperature is within the limits indicated, use the following procedures:
 - a. 40 to 32 deg F (4 to 0 deg C): Heat mixing water or sand to produce mortar temperatures between 40 and 120 deg F (4 and 49 deg C).
 - b. Do not conduct masonry operations when temperature falls below 32 deg F (0 deg C).
 - 2. Cold-Weather Protection: When the mean daily temperature is within the limits indicated, provide the following protection:
 - a. 40 to 25 deg F (4 to -4 deg C): Cover masonry with a weather-resistant membrane for 48 hours after construction.
 - 3. Cold-Weather Cleaning: Use liquid cleaning methods only when air temperature is 40 deg F (4 deg C) and above and will remain so until masonry has dried out, but not less than 7 days after completion of cleaning.
- D. Hot-Weather Requirements: If temperature exceeds 90 degrees F, additional water may be needed on the scratch-coated surface and the backs of the manufactured stone veneer units being applied. Providing shade and/or frequent misting of the wall may be required. Consult with mortar manufacturer to determine if mortar mix hot weather mix options are available. Local building code hot weather methods should be followed.

1.8 WARRANTY

- A. Limited Warranty on Materials: 50 year material-only on veneer installed in accordance with manufacturer's written instructions and recommendations.
 - 1. Provide new materials in lieu of defectivematerials.
- B. Installer shall provide a two-year warranty on installation.

1.9 EXTRA MATERIALS

SECTION 04 73 00

MANUFACTURERD STONE VENEER

- A. Provide extra units in shapes, colors and sizes employed.
 - 1. Provide 5 percent of the coverage area for corners and flats.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Manufactured Stone:
 - a. Cultured Stone by Boral; Del Mare LedgeStone “Black Isle” (Basis of design)
 - b. Native Custom Stone: Country Villa Profiles.
 - c. Coronado Stone Products.
 - b. Architect approved equal prior to bid.
 - 2. Portland Cement, Mortar Cement, Masonry Cement, and Lime:
 - a. Blue Circle Williams
 - b. RMC Allied Readymix
 - c. Lafarge Corporation.
 - d. Lehigh Portland Cement Co.
 - e. Coosa Masonry Cements
 - f. Grant Cement Co.

2.2 MATERIALS

- A. General: Provide shapes indicated and as follows for manufactured stone units required. Provide special shapes for corners, pier caps, penetrations, water table/sills, and other special conditions.
- B. Manufactured Stone Veneer Performance Requirements: Conforming to ASTM C 1670 and as follows:
 - 1. Compressive Strength: Not less than 1800 psi (12.4 MPa) average for 5 specimens and not less than 2100 psi (14.4 MPa) for individual specimen when tested in accordance with ASTM C 39 & ASTM C 192.
 - 2. Bond Between Manufactured Masonry Unit, Mortar and Backing: Not less than 50 psi (345 kPa) when tested in accordance with ASTM C 482 using Type S mortar.
 - 3. Thermal Resistance: R-value of not less than 0.355 per inch (25.4 mm) of thickness when tested in accordance with ASTM C 177.
 - 4. Freeze/Thaw: No disintegration and less than 3 percent weight loss when tested in accordance with ASTM C 67.
 - 5. Water Absorption: Tested in accordance with UBC 15-5 9-22% depending on density value.
 - 6. Unit Weight: Not more than 15 psf (73 kg/m²) saturated.
 - 7. Surface Burning Characteristics: Not more than the following when tested in accordance with UL 723:
 - a. Flamespread: 25.
 - b. Smoke Development: 450.
 - 8. UV Stable - Mineral oxide pigments.
- C. Certifications:
 - 1. ICC ES AC 51 Acceptance Criteria for Manufactured Stone Veneer

SECTION 04 73 00

MANUFACTURERD STONE VENEER

2. ICC Evaluation Service - Evaluation Report ESR 1364 & ASTM C 1670.
3. HUD Material Release Number 1316c
4. UL Tested for Surface Burning Characteristics
5. Texas Department of Insurance Product Evaluation EC-21
6. Florida Product Approval Number FL15047

D. Mortar: Comply with NCMA installation guidelines.

1. Masonry cement (Type N), ASTM C270.
2. Admixtures: Comply with ASTM C1384.
3. Bonding Agents: Comply with ASTM C1059.
4. Coloring pigments: Comply with ASTM C979.

E. Weather-Resistant Barrier: Refer to Drawings.

F. Metal Lath: 18 gauge galvanized woven wire mesh, or galvanized [2.5 lb. Flat diamond mesh].

2.3 MANUFACTURED UNITS

A. Cultured Stone Del Mare LedgeStone "Black Isle": Includes matching corner pieces.

1. Heights: Variable from 2 inches to 8 inches (50 mm to 200 mm).
2. Lengths: Variable from 4 inches to 20 inches (100 mm to 500 mm).
3. Color Blend to be determined by Architect.

B. Architectural Trim Stones

PART 3 – EXECUTION

3.1 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared in conformance with ASTM C 1780 for the backup wall system indicated on the Drawings.
- B. 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. Install manufactured stone masonry veneer in accordance with NCMA Installation Guide for Adhered Manufactured Stone Veneer, ASTM C 1780 and applicable Codes.
- C. Install/Apply Related Materials in accordance with type of substrate and manufactured stone veneer manufacture's installation instructions.
- D. General:

SECTION 04 73 00

MANUFACTURERD STONE VENEER

1. Walls: Provide with Blended Color / Texture specified.
 2. Special Shapes: Color to match stones specified.
 - a. Provide Stones manufactured specifically for installation at corners where located on the Drawings. Install outside corner pieces with alternating short and long legs.
 3. Mortar Joints:
 - a. Style: Standard 1/2 inch tooled.
 - b. Tool all grout joints.
 4. Stone Direction: Random placement
 5. Doors & Wall Openings: Install corner trim stones
 6. Sills: Install Sills where located on the Drawings.
 7. Caps: Install Flagstone pier caps where located on the Drawings.
- E. Seal all joints at wall openings and penetrations with a sealant approved for use with masonry products.
- F. Flashing: Coordinate with Flashings specified in Section 07 62 00 - Sheet Metal Flashing and Trim.

3.4 FIELD QUALITY CONTROL

- A. Manufacturer's Field Services: Provide periodic site visits as requested by Architect. Report any discrepancies to the Contractor with copies to the Architect within 24 hours of each visit.

3.5 CLEANING

- A. Clean manufactured masonry in accordance with manufacturer's installation instructions.

3.6 PROTECTION

- A. Protect finished work from rain and work on either side of the wall during and for 48 hours following installation.
- B. Protect installed products until completion of project.
- C. Clean prior to project closeout.
- D. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION 04 73 00

SECTION 11 41 00

MISCELLANEOUS EQUIPMENT

PART 1 – GENERAL

1.01 DESCRIPTION OF WORK

- A. This Section covers miscellaneous equipment complete.
 - 1. Provide all labor, materials, and equipment necessary to install complete all equipment as shown on the Drawings and specified herein.
 - 2. Provide all anchors, chairs, fastenings, cutouts, and bases necessary for the proper installation and anchoring of this equipment.
 - 3. Provide UL approved plugs and cords for items powered by plugging into receptacle. Provide all line switches, safety cutouts, control panels, fittings, etc., and their connections between equipment and rough-ins at walls and floors.
- B. Related Work Specified Elsewhere:
 - 1. Refer to all Sections in Division 1, General Requirements.
 - 2. Division 23, Section “HVAC Mechanical”.
 - 3. Division 26, Section “Electrical”.
 - 4. Division 22, Section Plumbing

1.02 SUBMITTALS

- A. General: Submittals shall be in accordance with Specification Section 01 33 00.
- B. Submit product data for each type of equipment specified and accessories.
- C. Submit manufacturer’s installation instructions, operation manual and maintenance data.
- D. Submit manufacturer’s standard warranty.
- E. Include warranty and operations and maintenance manuals in project close-out documents.

1.03 JOB CONDITIONS

- A. Protection:
 - 1. Protect all Work until Substantial Completion of the Project. Keep all items covered and otherwise protected from damage by other trades. Replace or repair all damaged items.

PART 2 – PRODUCTS

2.01 MATERIALS – ALL EQUIPMENT WILL BE PROVIDED BY THE GENERAL CONTRACTOR IN ACCORDANCE WITH THE ATTACHED SCHEDULE AND PRODUCT INFORMATION SHEETS. THE CONTRACTOR SHALL COORDINATE DELIVERY OF ALL EQUIPMENT AND SHALL INSTALL ALL EQUIPMENT AND MAKE ALL EQUIPMENT CONNECTIONS AS PART OF THE CONTRACT FOR CONSTRUCTION.

2.02 THE CONTRACTOR SHALL REVIEW THE SCHEDULE OF EQUIPMENT, PRODUCT DATA SHEETS, AND MANUFACTURER’S INSTALLATION REQUIREMENTS AND

SECTION 11 41 00

MISCELLANEOUS EQUIPMENT

SHALL PROVIDE MATERIALS AND LABOR FOR REQUIRED BLOCKING, EQUIPMENT PADS, ANCHORAGE COMPONENTS, AND ALL OTHER REQUIRED ACCESSORIES FOR COMPLETE INSTALLATION OF ALL EQUIPMENT.

- 2.03 Products shall be as indicated in schedule below. Any substitutions shall be submitted to Architect for review prior to Bid.**

PART 3 – EXECUTION

3.01 PREPARATION

A. Field Measurements:

1. Verify all pertinent dimensions of the building and conditions at job site before start of fabrication. Check all walls and corners for squareness and clearances. Evaluate access to the various areas and provide the equipment in increments which will pass freely through provided openings.

3.02 INSTALLATION/APPLICATION/PERFORMANCE/ERECTION

A. Installation:

1. Set in place and install all equipment according to the manufacturer's instructions.
2. Do all Work at times when construction and all other trades have advanced to the point that will permit equipment installation.

3.03 ADJUSTMENT AND CLEANING

- A. Make all adjustments necessary prior to turning building over to Owner.
- B. Wipe equipment down after tests and adjustments to bring to clean sanitary condition at the time the building is turned over to the Owner.

REFER TO SCHEDULE ON FOLLOWING PAGE

MISCELLANEOUS EQUIPMENT

3.04 SCHEDULES

Reference Plan Keynote: 9

Item: Hazmat Flammable Liquid Storage Cabinet



Manufacturer: Global Industries, Inc. / Wilray Safety Storage Cabinets
 Model Number: Cabinet: WQ248171YL / Spill Kit: WQ921174
 Item/Description: Flammable liquid 30 Gallon (PCS-330) storage cabinet with 18-gauge double wall steel construction, self-closing/self-latching doors, leak-proof sill and sump, galvanized shelves, vent inlet/outlet, 4" raised legs and intumescent fire seals. Provide 5-gallon universal spill response kit with cabinet unit.
 Dimensions: 30 Gallon - 42"w x 20"d x 44"h
 Finish: Standard bright yellow.

Reference Plan Keynote: CC

Item: Commercial Mop Bucket with Ringer and Mops



Manufacturer: Rubbermaid
 Model Number: Mop Bucket FG757688YEL / Mop Handle FGH225000000 / Mop Head FGF21700WH00
 Item/Description: 44 Qt. Polypropylene Mop Bucket and Wringer with aluminum mop handle and cut end mop head. Provide two mop handles and two mop heads per mop bucket/wringer.
 Dimensions: 17"w x 24"d x 38"h - 44 QT. Bucket and 60" mop handle
 Finish: Standard yellow.

MISCELLANEOUS EQUIPMENT

Reference Plan Keynote: 5

Item: Wall Mounted Gear Grid Lockers



Manufacturer: Gear Grid, LLC
Model Number: GEARGRID Wall Mounted Storage System
Item/Description: Gear Grid wall mounted lockers with secure grid doors, adjustable wire shelving, heavy duty 1¼” steel tubing, ¼” cold-rolled wire side, back and shelves, 1 top shelf, 1 bottom shelf, 3 apparel hooks and nameplate slot.
Dimensions: 20”w x 20”d x 79”h
Finish: Standard red powder coated.

Specification Item Number: 5

Item: Stand-Alone Gear Grid Lockers

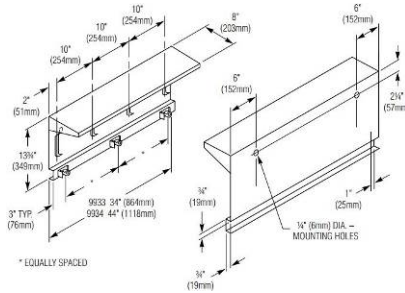


Manufacturer: Gear Grid, LLC
Model Number: GEARGRID Stand-Alone 6-Pack
Item/Description: 20” Gear Grid stand-alone lockers with secure grid doors, adjustable wire shelving, heavy duty 1¼” steel tubing, ¼” cold-rolled wire side, back and shelves, 1 top shelf, 1 bottom shelf, 3 apparel hooks and nameplate slot. Base frame shall be epoxy bolted to floor.
Dimensions: 75”w x 47”d x 83”h
Finish: Standard red powder coated.

MISCELLANEOUS EQUIPMENT

Reference Plan Keynote: CC

Item: Utility Shelf with Hooks and Holders



Manufacturer: Bradley Corporation
 Model Number: 9934
 Item/Description: Wall mounted 18 gauge stainless steel utility shelf with 5 stainless steel hooks and 4 spring-activated rubber cam holders.
 Dimensions: 44" w x 8" d x 13.75" h
 Finish: Standard satin finish stainless steel.

Reference Plan Keynote: 6

Item: Air Tank Filler Station (M-BAC Modular Breathing Air Center)



Manufacturer: Mako Compressors
 Model Number: BAM07H compressor with SCFS3-4HP bottle storage
 Item/Description: Breathing air module [BAM] 6000 psi, 1800 rpm, 20.7 cfm.
 SCBA Stationary Fill Station [SCFS] 3 position, with pressure selector valve
 Dimensions: 45 1/2" w x 86" d x 70" h
 Finish: Standard finish.
 Accessories: 50 foot spring rewind hose reel, Mako 5-year extended warranty, CO & Moisture Monitor [CMM], MBAC Kit with center storage module

MISCELLANEOUS EQUIPMENT

Reference Plan Keynote: 8

Item: Air Compressor



Manufacturer: Kobalt
Model Number: XC802000
Item/Description: Electric air compressor, 5 HP, 4 cylinders.
Dimensions: 28" w x 26" d x 70" h
Finish: Standard finish.

Reference Plan Keynote: 7

Item: 5-Shelf Mini Mobile Hose System



Manufacturer: Gear Grid, LLC
Model Number: GEARGRID 5-Shelf Mini Mobile Hose Storage
Item/Description: Gear Grid mobile hose with 4 locking casters designed to accommodate 1000' of 2.5" hose.
Dimensions: 80" w x 20" d x 59" h
Finish: Standard red powder coated.

MISCELLANEOUS EQUIPMENT

Reference Plan Keynote: 20

Item: Four Burner Gas Grill with Timer Shut-off



Manufacturer: Weber
Model Number: E-470
Item/Description: Four burner natural gas grill with stainless steel grate, rotisserie, smoke box, handle light, side burner and side shelf, 48,000 BTU. Provide automatic gas timer shut-off valve.
Dimensions: 26.5”d x 66”w x 50.5”h
Finish: Stainless Steel.

END OF SECTION 11 41 00

SECTION 23 72 23

TEMPERING ENERGY RECOVERY UNIT

PART 1 – GENERAL

1.01 DESCRIPTION

- A. This section specifies requirements for both rooftop and indoor Tempering Energy Recovery Ventilator (TERV) units.

1.02 RELATED SECTIONS:

- A. Division 23 Section “General Provisions HVAC”
- B. Division 23 Section “Operation and Maintenance of HVAC Systems”
- C. Division 23 Section “Vibration Isolation”
- D. Division 23 Section “Refrigerant Piping and Accessories”
- E. Division 23 Section “Ductwork”

1.03 SUBMITTALS

- A. General: Submittals shall be in accordance with Specification Section 01 33 00.
- B. Provide data on unit performance including, but not limited to, entering and leaving air temperatures, airflow and total static pressure, fan motor horsepower, total and sensible heat recovery, cooling coil capacity and heating section capacity.
- C. Provide Shop Drawing showing unit dimensions, weight, electrical requirements, service access requirements and duct connection sizes and locations.
- D. Provide manufacturer’s instructions, indicate installation and support requirements.
- E. Provide operation and maintenance data; include start-up instructions, assembly drawings and parts list.

1.04 QUALITY ASSURANCE

- A. Unit shall carry UL label of approval and bear AMCA certified rating seals for air performance.
- B. The ERV manufacturer shall provide a one-year warranty minimum on all parts. Enthalpy wheels shall carry a 5-year warranty.

PART 2 – PRODUCTS

2.01 TEMPERING ENERGY RECOVERY VENTILATORS

- A. Tempering Energy Recovery Ventilators (TERV) shall be enthalpy-type, air to air heat exchangers utilizing desiccant-type heat wheels. Unit shall include motorized heat wheel assembly, outside air supply fan, exhaust fan, supply filter, motorized by-pass damper, cooling and heating section as scheduled, **hot gas reheat with modulating valves**, variable speed drive (when scheduled), pre-wired single point electrical connection, motor starter with thermal overload protection, disconnect switch and 24 volt temperature control. TERV shall be rooftop mounted as scheduled on the Drawings. Minimum summer heat wheel design efficiency shall be 80%.

- B. Housing shall be heavy gage galvanized steel with 1" rigid board fiberglass insulation with foil facing. Maximum unit height shall not exceed 8'-6". Hinged and gasketed access doors shall be provided for both supply and exhaust fan compartments. Heat wheel shall be easily accessible for inspection, removal and cleaning. Units scheduled for rooftop installation shall have weather resistant gasketing and seals and housing shall be suitable for outdoor installations.
- C. Supply fan shall be arranged for blow through configuration and exhaust fan for draw through. Fans shall be forward curved type, statically and dynamically balanced at the factory prior to shipment. Adjustable sheaves shall be provided for independent balancing of supply and exhaust.
- D. Motors shall be high-efficiency, heavy-duty type, furnished at specified voltage and phase. Bearings shall be selected for minimum (L10) life in excess 100,000 hours.
- E. Filters shall be provided upstream of the supply fan and upstream of the exhaust side of the heat wheel. Filters shall be 2" thick UL listed Class 2 type with a minimum MERV 13 Rating. Filters shall be Airguard, American Air Filter, Farr or equal.
- F. Airflow direction and inlet and outlet locations shall be as shown on Drawings. Indoor TERVs shall have provisions for suspending from ceiling and mounting on floor. Rooftop TERVs shall include supply and exhaust weather hoods to prevent water entry.
- G. Rooftop TERVs shall include a full perimeter type roof curb supplied by unit manufacturer for field assembly. Curb shall be 12" high (minimum) insulated, with raised cant.
- H. Direct expansion TERV's shall include the following:
 - 1. Refrigerant coils shall be direct expansion type with a total capacity as scheduled. Coils shall be constructed with aluminum plate fins mechanically bonded to non-ferrous tubing with all joints brazed. Coil shall have factory installed refrigerant metering device, refrigerant line fittings that permit mechanical connections and pitched condensate drain pan designed to prevent standing water. Provide controls to maintain coil leaving air temperature setpoint.
 - 2. Aircooled compressorized condensing section shall be integral to the TERV and include hermetic reciprocating or scroll compressors, 1750 rpm, vibration isolated and crankcase heater protected. Compressor shall be thermal overload protected. Condenser coils shall have copper tubes with mechanically bonded aluminum fins. Coils shall be factory pressure and leak tested. Refrigerant circuits shall be completely pre-piped and tested with sight glasses, suction and liquid accumulators. Provide a minimum of two stages of cooling. Condenser fans shall be statically and dynamically balanced direct driven motors with thermal overload protection.
 - 3. Hot gas reheat coils shall be direct expansion type with a total capacity as scheduled. Coils shall be constructed with aluminum plate fins mechanically bonded to non-ferrous tubing with all joints brazed. Coil shall have factory installed refrigerant flow control device and controls to maintain coil leaving air temperature setpoint.
- I. Indirect fired gas furnace shall be 80% efficient, UL Certified and Listed to ANSI Standard Z83.8 - 1996, CGA approved per 2.6 - M96 and have a blow through fan design. Furnace shall be capable of operation with natural gas and have a power venting system. The burner and heat exchanger shall be constructed of aluminized steel. Standard furnace features shall include main gas pressure regulator, main gas valve, electronic staging, electronic intermittent pilot ignition, high limit and a 24-volt control transformer.
- J. Motorized exhaust air damper shall open when unit is operating. Units with direct expansion cooling coils shall include a motorized modulating return air damper and motorized modulating outside air damper interlocked to maintain constant airflow. VERIFY MANUFACTURERS
- K. TERVs shall be manufactured by ~~Carrier Trane~~, no other manufacturer allowed for this project .

3.01 INSTALLATION

- A. See the Drawings for scheduled capacities and requirements.
- B. Install TERV units per manufacturer's installation instructions.

END OF SECTION 23 72 23

SECTION 23 74 15

UNITARY AIR CONDITIONING UNIT

PART 1 – GENERAL

1.01 DESCRIPTION

- A. This section specifies the requirements for unitary air conditioning units.

1.02 RELATED SECTIONS

- A. Section 23 00 10 General Provisions HVAC
- B. Section 23 01 00 Operation and Maintenance of HVAC Systems
- C. Section 23 05 00 Common Work Results for HVAC
- D. Section 23 31 00 Ductwork

1.03 SUBMITTALS

- A. See General Conditions for submittal procedure.
- B. Provide data on unit performance including, but not limited to, entering air temperatures, airflow, external and total static pressure, supply fan motor horsepower, total and sensible capacity, applicable ARI SEER, EER and IPLV values.
- C. Provide shop drawing showing unit dimensions, weight, electrical requirements, service access requirements and duct connection sizes and locations.
- D. Provide manufacturer's instructions, indicate installation and support requirements.
- E. Provide operation and maintenance procedures; include start-up instructions, assembly drawings and parts list.

1.04 QUALITY ASSURANCE

- A. Units shall be factory run tested.
- B. Cooling capacities shall be rated in accordance with the applicable ARI Standard: ARI 210/240 or ARI 340/360.

1.05 EXTENDED WARRANTY

- A. All compressors shall have extended compressor warranty for four years after the completion of the one-year initial warranty.

PART 2 – PRODUCTS

2.01 UNITARY AIR CONDITIONING UNITS 6 TONS AND SMALLER

- A. Units shall be factory fabricated, tested and assembled single zone constant volume direct expansion type complete with compressor, condenser fan, evaporator fan, filters, weatherproof housing, scheduled heating section, controls and piping ready for operation. Units shall be configured for supply and return duct connections as shown on the drawings.
- B. Casing shall be phosphatized steel finished with an enamel or galvanized paint. Service panels shall be provided to access filters, supply fan and control sections. Other interior components shall be accessible through gasketed removable panels. All interior sections of casing in contact with the airstream shall be insulated with 1" thick mat faced fiberglass insulation.
- C. Curb shall be built in accordance with National Roofing Contractors Guidelines, constructed of minimum 14-gauge steel and finished in galvanized or baked enamel paint. Gasketing shall be provided between casing and the curb.
- D. Gas heating section shall have a corrosion resistant heat exchanger with forced combustion blower and pilotless ignition, suitable for use with natural gas. Provide a single stage of heat.
- E. Units shall utilize R-410a refrigerant **and Hot Gas Reheat with modulating valves.**
- F. Refrigeration system shall include hermetic reciprocating or scroll compressors, 1750 rpm, vibration isolated and crankcase heater protected. Compressor shall be thermal overload protected. Evaporator and condenser coils shall have copper tubes with mechanically bonded aluminum fins. Coils shall be factory pressure and leak tested. Evaporator coil shall utilize fixed orifice expansion device. Circuits shall be completely pre-piped and tested with sight glasses, refrigerant filter driers, suction and liquid accumulators.
- G. Condenser fan shall be statically and dynamically balanced direct driven motors with thermal overload protection. Evaporator fan shall be forward curved direct drive type. Fan shall be statically and dynamically balanced. Supply fan shall be driven by high efficiency motor.
- H. Filters shall be 2" thick UL listed Class 2 type with a minimum MERV 6 Rating (ASHRAE 52.2-1999) with not more than a 0.25" initial pressure loss at 500 FPM face velocity. Filters shall be Airguard DP40, American Air Filter AM-200E, Farr 30/30 or equal.
- I. Units shall be furnished with motorized 25% outside air damper. Damper shall open to provide scheduled minimum outside air when supply fan runs, and close when supply fan is off, or when unit is operating in un-occupied mode.
- J. Controls shall include high and low-pressure cutouts for compressor, complete economizer change over and mixed air control sequencing mechanical cooling as required, electronic supply air control to reset supply air temperature based on outdoor air, anti-recycle timers on cooling steps, and keep outside air damper closed during "warm up" cycle.
- K. Units shall be completely prewired with all internal fuses, contactors and controls terminated in a single point power connection, suitable for single point service disconnect.
- L. Units installed on the roof shall be equipped for through the curb power and control wiring connections.
- M. Units shall be provided with a factory installed photoelectric type smoke detector in the supply air section when scheduled or shown on the drawings. Detector shall be wired to stop the supply fan upon activation.

- N. Unitary air-cooled air conditioners shall meet or exceed ASHRAE 90.1-2004 and DOE mandated Performance Requirements:

<65,000 BTUH, Min Efficiency = 12.0 SEER for 3-phase equipment

<65,000 BTUH, Min Efficiency = 13.0 SEER for 1-phase equipment

≥65,000 BTUH but < 135,000 BTUH, Min Efficiency = 10.3 EER*

*Deduct 0.2 from the required EER/IPLV for units with a heating section other than electric resistance.

- O. Warm air furnaces/air conditioning units shall meet or exceed ASHRAE 90.1-2004 Performance Requirements:

<225,000 BTUH Min. Efficiency = 78% AFUE or 80% thermal efficiency, Et

- P. See drawing schedule for capacities. Units shall be Trane, JCI, Carrier, or Daiken.

PART 3 – EXECUTION

3.01 CONDENSATE DRAINS

- A. Pipe condensate drains full size with galvanized pipe union, and trap to a point three feet away from the unit, and terminate on the roof. Support with treated wood 2" x 4" blocks on roof and secure with galvanized straps.

3.02 CURBS

- A. Install roof curbs and units level. Do not remove deck inside curbs except for duct openings. Seal openings between duct roof penetration and deck with duct sealer and insulate entire interior of curb under unit with 4" thick 3 lb density duct liner.

END OF SECTION 23 74 15

SECTION 32 31 11

SLIDE GATE OPERATOR

PART I – GENERAL

1.1. INCLUDED IN THIS SECTION

- A. Pre-wired, self-contained, slide gate operator for horizontal sliding gates, including factory drive rail to be installed on gate provided by others.

1.2. RELATED WORK SPECIFIED ELSEWHERE

- A. Fencing: Refer to Drawings.
- B. Cast in place concrete: Refer to Drawings and Division 3.
- C. Electrical service and connections: Refer to Drawings and Division 26.

1.3. SUBMITTALS

- A. General: Submittals shall be in accordance with Specification Section 01 33 00.
- B. Submit drawings showing connections to adjacent construction, range of travel, and all electrical and mechanical connections to the operator. Drawings shall also show the size and location of the concrete mounting pad. Underground electrical runs and inductive vehicle obstruction loop locations shall be indicated on shop drawings.
- C. Installation Instructions: Submit four (4) copies of manufacturer's installation instructions for this specific project.
- D. Test reports:
 - 1) Submit affidavits from the manufacturer demonstrating that the gate mechanism has been tested to 200,000 cycles without breakdown.
 - 2) Each operator shall bear a label indicating that the operator mechanism has been tested for full power and pressure of all hydraulic components, full stress tests of all mechanical components and electrical tests of all overload devices.
- E. Submit General Contractor's certification and confirmation that the gate operator is fully coordinated with building electrical systems and access controls.

1.4. QUALITY ASSURANCE

- A. Manufacturer: A company specializing in the manufacture of hydraulic gate operators of the type specified, with a minimum of ten (10) years of experience.
- B. Installer: A minimum of three (3) years of experience installing similar equipment, provide proof of attending a HySecurity factory technical training within previous three (3) years, or obtain other significant manufacturer endorsement of technical aptitude, if required, during the submittal process.

1.5. CODES AND REGULATORY REQUIREMENTS

- A. Operators shall be built to UL 325 standards and be listed by a testing laboratory. Complete all electrical work according to local codes and National Electrical code. All fieldwork shall be performed in a neat and professional manner, completed to journeyman standards.
- B. Current safety standards require the use of multiple external sensors to be capable of reversing the gate in either direction upon sensing an obstruction. See also 2.2D.

SECTION 32 31 11

SLIDE GATE OPERATOR

- C. Current safety standards require gate operators to be designed and labeled for specific usage classes. HySecurity model SlideDriver 40 (222 E ST) is listed for use in all UL 325 Usage Classes I, II, III, and IV.
- 1.6. PRODUCT DELIVERY AND STORAGE
- A. Store products upright in the original shipping containers, covered, ventilated and protected from all weather conditions.
- 1.7. WARRANTY
- A. Provide a five-year limited warranty against all defects in materials or workmanship. Defective materials shall be replaced with comparable materials furnished by the manufacturer, at no cost to the owner.
 - 1) To ensure validation of warranty, return completed warranty registration form (included in Installation and Reference manual) to manufacturer.

PART II – PRODUCTS

2.1. GATE OPERATORS

- A. HySecurity gate operator model SlideDriver 40 (222 EST) with Smart Touch Controller. HySecurity, Kent, WA, Telephone: 800-321-9947; Website: www.hysecurity.com. (Basis of Design).
- B. Architect approved equal prior to bid.

2.2. OPERATION

- A. Operation shall be by means of a metal rail passing between a pair of solid metal wheels with polyurethane treads. Operator motors shall be hydraulic, geroller type, and system shall not include belts, gears, pulleys, roller chains or sprockets to transfer power from operator to gate panel. The operator shall generate a minimum horizontal pull of 300 pounds without the drive wheels slipping and without distortion of supporting arms. Operator shall be capable of handling gates weighing up to 4,000 pounds. Gate panel velocity shall not be less than 1.0 foot per second and shall be stopped gradually to prevent shock loads to the gate and operator assembly. The "soft stop" feature of the gate operator shall be controlled by two adjustable hydraulic brake valves (one for each direction).
- B. Standard mechanical components shall include as a minimum:
 - 1) Supporting arms: Cast aluminum channel. Arms shall incorporate a fully bushed, 1-1/2" bronze bearing surface, acting on arm pivot pins. (item 2 below)
 - 2) Arm pivot pins: 3/4" diameter, stainless steel, with integral tabs for ease of removal.
 - 3) Tension spring: 2-1/2" heavy duty, 800 pound capacity.
 - 4) Tension adjustment: Finger tightened nut, not requiring the use of tools.
 - 5) Drive release: Must instantly release tension on both drive wheels, and disengage them from contact with drive rail in a single motion, for manual operation.
 - 6) Limit switches: Fully adjustable, toggle types, with plug connection to control panel.
 - 7) Electrical enclosure: Oversized, metal, with hinged lid gasketed for protection from intrusion of foreign objects, and providing ample space for the addition of accessories.
 - 8) Chassis: 1/4" steel base plate, and 12 Ga. sides and back welded and ground smooth.
 - 9) Cover: 16 Ga. zinc plated steel with textured TGIC polyester powder coat finish. All joints welded.
 - 10) Finish: Zinc plated steel with textured TGIC polyester powder coat finish, proven to withstand 1000-hour salt spray test.
 - 11) Drive wheels: Two 6" Dia. metal hub with polyurethane tread.
 - 12) Drive rail: Shall be extruded 606I T6, not less than 1/8" thick. Drive rail shall incorporate

SECTION 32 31 11

SLIDE GATE OPERATOR

alignment pins for ease of replacement or splicing. Pins shall enable a perfect butt splice.

- 13) Hydraulic hose: Shall be 1/4" synthetic, rated to 2750 PSI.
- 14) Hydraulic valves: Shall be individually replaceable cartridge type, in an integrated hydraulic manifold.
- 15) Hose fittings: At manifold shall be quick-disconnect type, others shall be swivel type.
- 16) Hydraulic fluid: High performance type with a viscosity index greater than 375 and temperature range -40F to 167F degrees.
- 17) A zero to 2,000 PSI pressure gauge, mounted on the manifold for diagnostics, shall be a standard component.
- 18) The hydraulic fluid reservoir shall be formed from a single piece of metal, non-welded, and shall be powder painted on the inside and the outside, to prevent fluid contamination.

C. Minimum standard electrical components:

- 1) Pump motor: Shall be a 1 HP, 56C, TEFC, continuous duty motor, with a service factor of 1.15, or greater. GC shall be responsible for coordinating motor power requirements with Electrical service provided. Refer to electrical drawings sheet E6.2 Panel H1.
- 2) All components shall have overload protection.
- 3) Controls: Smart Touch Controller Board with 256K of program memory containing:
 - a) inherent entrapment sensor;
 - b) built in "warn before operate" system;
 - c) built in timer to close;
 - d) liquid crystal display for reporting of functions;
 - e) 26 programmable output relay options;
 - f) anti-tailgate mode;
 - g) built-in power surge/lightning strike protection;
 - h) menu configuration, event logging and system diagnostics easily accessible with a PC and HySecurity's free START software;
 - i) RS232 port for connection to laptop or other computer peripheral and RS485 connection of Master/Slave systems or network interface.
- 4) Transformer: 75 VA, non-jumpered taps, for all common voltages.
- 5) Control circuit: 24VDC.

D. Required external sensors: See 1.5B. Installer shall ensure that the automated gate system conforms to the latest revisions of UL 325 and ASTM F2200. Photo eyes and gate edges shall be installed such that the gate is capable of reversing in either direction upon sensing an obstruction.

E. Required control devices: gate operator shall interface with card reader, vehicle loop detectors and building security system via HyNet Gateway Accessory.

F. Other options required to be included:

- 1) Gate edge and transmitter radio reversing device.
- 2) HY-5A plug in loop detectors.
- 3) HySecurity factory drive rail.
- 4) HyNet Gateway Accessory and mounting kit.
- 5) 480V/3-Phase. Contractor shall fully coordinate all electrical characteristics with building electrical and security systems prior to submittals, ordering and installation.

2.3. FACTORY TESTING

A. Fully assemble and test, at the factory, each gate operator to assure smooth operation, sequencing and electrical connection integrity. Apply physical loads to the operator to simulate field conditions. Tests shall simulate physical and electrical loads equal to the fully rated capacity of the operator components.

B. Check all mechanical connections for tightness and alignment. Check all welds for completeness and continuity. Check welded comers and edges to assure they are square and straight.

SECTION 32 31 11

SLIDE GATE OPERATOR

- C. Inspect painted finish for completeness. Touch up imperfections prior to shipment.
- D. Check all hydraulic hoses and electrical wires to assure that chafing cannot occur during shipping or operation.

PART III – EXECUTION

3.1. SITE EXAMINATION

- A. Locate concrete mounting pad in accordance with approved shop drawings.
- B. Make sure that gate is operating smoothly under manual conditions before installation of gate operators. Do not proceed until gate panel is aligned and operates without binding.

3.2. INSTALLATION

- A. Install gate operator in accordance with the manufacturer's printed instructions, current at the time of installation. Coordinate locations of operators with contract drawings, other trades and shop drawings.
- B. Installer shall verify that the electric service to the operator is fully coordinated and complies with manufacturer's requirements.

3.3. FIELD QUALITY CONTROL

- A. Test gate operator through ten full cycles and adjust for operation without binding, scraping or uneven motion. Test limit switches for proper "at rest" gate position.
- B. All anchor bolts shall be fully concealed in the finished installation.
- C. Owner, or Owner's representative, shall complete "punch list" with installing contractor prior to final acceptance of the installation and submit completed warranty documentation to manufacturer.

3.4. CONTINUED SERVICE AND DOCUMENTATION

- A. Train Owner's personnel on how to safely shut off electrical power, release and manually operate the gate. Additionally, demonstrate the general maintenance of the gate operator and accessories and provide one (1) copy of "Installation and Reference" manual for the Owner's use. Manuals will identify parts of the equipment for future procurement. Direct maintenance personnel to HySecurity's website, specifically the technical support sections.

END OF SECTION 32 31 11