IFB # AC-26-B-0002-S DATE: January 12, 2026

ADDENDUM NO. 1

PROJECT: OXFORD RENOVATIONS
OXFORD, ALABAMA

All Bidders of Record
This Addendum forms a part of the Contract Documents, dated December 17, 2025, and modifies the original project Manual and Drawings. All Bidders shall acknowledge receipt of this Addendum in the space provided on the Bid Form. Failure to do so may subject Bidder to disqualification. Perform all work in no more than 524 calendar days in accordance with the Milestone Dates for this project.
This Addendum consists of Two Hundred Ninety Two (292) Pages.

A. MODIFICATIONS TO CONTRACTUAL/LEGAL REQUIREMENTS:

1. Refer to Advertisement for Bids:

   A. A Pre-Bid Conference was conducted at 1:00 p.m., Wednesday, January 2, 2026, at FMTC Building 2299, Anniston, Alabama. See attached Minutes of the Meeting and Sign in Sheet of those in attendance.

2. Refer to Plans and Specifications – General Historical Data for Oxford Readiness Center Utility Costs:

   A. **CLARIFICATION: The Alabama Power cost is as follows:**
   September 2025 - $1,812.13
   October 2025 - $1,920.13
   November 2025 - $1,671.82
   December 2025 - $1,476.44

   The Spire cost is as follows:
   September 2025 - $69.77
   October 2025 - $65.31
   November 2025 - $1,486.32

   The Oxford Water Works cost is as follows:
   September 2025 - $86.60
   October 2025 - $76.60

3. Refer to Specifications, 00 01 10 Table of Contents:

   A. **MODIFY**: See attached revised Table of Contents.

4. Refer to Specifications, 00 01 15 List of Drawings:

   A. **MODIFY:** See attached revised List of Drawings.

5. Refer to Specifications, 00 41 00 Proposal Form:

   A. **MODIFY:** See attached revised Proposal Form.

6. Refer to Specifications, Section 01 10 00 Summary of Work:

   A. See attached revised Summary of Work.

   B. **CLARIFICATION:** The project has been divided into three separate Bid Items **(Bid Items (BID ITEM A, BID ITEM B, BID ITEM C and their corresponding ALTERNATES**) to clearly identify each structure and the work associated with it. This structure supports internal accounting requirements tied to multiple funding sources. However, The Armory Commission cannot assure that all bid items and/or alternates

will be awarded due to funding constraints. No alternates will be considered unless the corresponding bid item is accepted.

7. Refer to Specifications, Section 01 22 00 Unit Prices:

   A. **MODIFY:** Add Unit Price No. 1: Cost per linear foot $_____ for providing and completely installing FE-6 Perimeter Security Fencing.

8. Refer to Specifications, Section 01 23 00 Alternates:

   A. Add the following Alternates:

      1. BI.A: Alternate No. A-7: Each bidder shall include on their proposal an Alternate price including all labor, materials, taxes, overhead, profit, etc. to install **1.5" Asphalt Pavement Overlay.**
      2. BI.B: Alternate No. Alternate No. B-2: Each bidder shall include on their proposal an Alternate price including all labor, materials, taxes, overhead, profit, etc. to install **1.5" Asphalt Pavement Overlay.**
      3. BI.C: Alternate No. C-5: Each bidder shall include on their proposal an Alternate price including all labor, materials, taxes, overhead, profit, etc. to install **1.5" Asphalt Pavement Overlay.**
      4. **CLARIFICATION:** Alternate A-2 – Means and Methods are not dictated, field verify existing conditions.

9. Refer to Specifications, Section 01 25 13 Product Substitution Procedures:

   A. **MODIFY:** See attached revised Section.

10. Refer to Specifications, Section 01 25 14 Substitution Request During Construction:

    A. **MODIFY:** See attached revised Section.

11. Refer to Specifications, Section 01 26 00 Contract Modification Procedures:

    A. **MODIFY:** See attached revised Section.

12. Refer to Specifications, Section 01 26 14 Change Order Recap Form:

    A. **MODIFY:** See attached revised Section.

13. Refer to Specifications, Section 01 32 00 Construction Progress Documentation:

    A. **MODIFY:** See attached revised Section.

14. Refer to Specifications, Section 01 32 01 Project Schedule:

    A. **MODIFY:** See attached revised Section.

15. Refer to Specifications, Section 01 40 00 Quality Requirements:

    A. **MODIFY:** See attached revised Section.

16. Refer to Specifications, Section 01 50 00 Temporary Facilities and Controls:

    A. **MODIFY:** See attached revised Section.

17. Refer to Specifications, Section 01 60 00 Product Requirements:

    A. **MODIFY:** See attached revised Section.

18. Refer to Specifications, Section 01 73 29 Cutting and Patching:

    A. **MODIFY:** See attached revised Section.

19. Refer to Specifications, Section 01 78 13 Project Closeout Checklist:

    A. **MODIFY** : See attached revised Section

20. Refer to Specifications, Section 01 78 39 Project Record Documents:

    A. **MODIFY** : See attached revised Section.

21. Refer to Specifications, Section 01 78 46 Attic Stock Spreadsheet:

    A. **ADD** attached Section 01 78 46 Attic Stock Spreadsheet.

22. Refer to Specifications, Section 01 91 13 General Commissioning Requirements:

    A. **MODIFY:** See attached revised Section.

23. Refer to Specifications, Division 2 Site Construction:

    A. **ADD:** Attached Section 02 82 33 Asbestos Removal is hereby a part of the Contract Documents.

24. Refer to Specifications, Division 2 Site Construction:

    A. **ADD:** Attached Section 02 82 34 Certificate of Worker's Acknowledgement is hereby a part of the Contract Documents.

25. Refer to Specifications, Division 7, Thermal and Moisture Protection:

    A. **ADD:** Attached Section 07 21 19 Foamed In Place Insulation is hereby a part of the Contract Documents.

26. Refer to Specifications, Division 8, Doors and Windows:

    A. **ADD:** Attached Section 08 33 10 Overhead Coiling Doors is hereby a part of the Contract Documents.

    B. Section 08 33 10, 2.1 Overhead Coiling Doors: Clopay-Cornell-Cookson ESD 20 Insulated Coiling Door is afforded Prior Approval subject to strict conformance with the plans and specifications

    C. **ADD:** Attached Section 08 33 24 Overhead Coiling Counter Fire Shutters is hereby a part of the Contract Documents.

27. Refer to Specifications, Division 9, Finishes:

    A. **MODIFY:** See attached revised Section 09 30 00 Tile.

    B. **MODIFY:** See attached revised Section 09 51 13 Acoustical Panel Ceilings.

    C. **ADD:** Attached Section 09 62 20 Rubber Recreational and Athletic Flooring is hereby a part of the Contract Documents.

    D. **MODIFY:** See attached revised Section 09 65 00 Resilient Flooring.

    E. **ADD:** Attached Section 09 67 20 Epoxy Flooring is hereby a part of the Contract Documents.

F. **MODIFY:** See attached revised Section 09 90 00 Painting.

G. **DELETE:** Delete Section 09 91 10 Surface Refinishing of Glazed and CMU Surfaces in its entirety.

28. Refer to Specifications, Division 10, Specialties:

A. **ADD:** Attached Section 10 21 00 Toilet Partitions – Phenolic is hereby a part of the Contract Documents.

B. **DELETE:** Delete Bradley Section 10 21 00 Toilet Partitions – Stainless Steel in its entirety.

C. **ADD:** Attached Section 10 51 13 Metal Lockers is hereby a part of the Contract Documents.

29. Refer to Specifications, Division 11, Equipment:

A. **DELETE:** Delete Section 11 22 13 Security Vault Door in it entirety.

B. **MODIFY:** See attached revised Section 11 40 00 Food Service Equipment.

30. Refer to Specifications, Division 12, Furnishings:

A. **DELETE:** Delete Section 12 20 00 Window Treatment section in its entirety.

B. **ADD:** Attached Section 12 49 10 Horizontal Louver Blinds is hereby a part of the Contract Documents.

31. Refer to Specifications, Division 32, Exterior Improvements:

A. **ADD:** Attached Section 32 31 13 Fences and Gates is hereby a part of the Contract Documents.

32. Refer to Plans and Specifications:

A. ***CLARIFICATION:*** This facility does not have an existing fire protection sprinkler system, there is not one to be installed in this project.

B. **CLARIFICATION:** There is no work to be completed on the Fire Alarm in this project.

C. **CLARIFICATION:** This project does not require BIM Modeling.

D. **CLARIFICATION:** Refer to Specifications for Background Check Information.

33 Refer to Plans and Specifications, Bid Items B and C:

A. **CLARIFICATION:** Bid Item B: All stored items shall be removed by the Contractor and stored during construction. Contractors option for relocating within the building or the Assembly Hall during construction.

B. **CLARIFICATION:** Bid Item C: The Contractor is to provide two 8ft x 40ft Conex storage containers for the unit items in Building C. Once the conexes are on site the Owner will notify the unit to come and place all the unit items in Building C into the two containers. The unit will provide locks to secure the storage containers. The containers will remain on site until the project is complete and the unit has relocated the contents into Building C.

34. Refer to Plans, Architectural / Mechanical Demolition Plans:

    A. Note #34 is removal of windows as indicated on plans. Note #36 removal of HVAC window unit. Refer to Mechanical Drawings for Demolition Scope.

35. Refer to Plans, Sheet BI.A/A1.1 and BI.A/E3.1:

    A. ***CLARIFICATION***: Alternates are provided to accommodate varying funding initiatives. The Lighting Alternate shall be accepted in conjunction with Base Bid Item A.

    B. **CLARIFICATION:** Insulation with furring, refer to Work Note #8 on Plans.

36. Refer to Plans, Sheet BI.A/A1.3:

    A. **CLARIFICATION:** All work shown on this Sheet is under Alternate A-5, First and Second Level.

37. Refer to Plans, Sheet BI.A/A1.4, Detail Q:

    A. Revise Note, "NEW CONTINUOUS 3 X 3 X 12 GA. EXPANDED METAL WIRE MESH WELDED TO RAILS, PAINT TO MATCH RAILS, TYP.COLOR TO BE SELECTED BY ARCHITECT."

38. Refer to Plans, Detail C./BI.A/A7.1:

    A. **CLARIFICATION:** The Contractor is responsible for the lockers in the latrines. Refer to attached Specification Section 10 51 13, Metal Lockers

39. Refer to Plans, Sheet BI.A/A7.1 and attached SD-2:

    A. Revise the accessory bubbles as indicated and clouded

40. Refer to Plans, Sheet BI/A / D1.1:

    A. Revise Note 31 to read "REMOVE AND DISCARD EXISTING EXHAUST HOOD IN ITS ENTIRETY. COORDINATE WITH INSTALLATTION OF NEW HOOD, PATCH AND REPAIR ROOF AS REQUIRED."

41. Refer to Plans, Sheet BI.A/K1.1 – Equipment Schedule:

    A. **MODIFY:** Manufacturer of Item No. 3 to "John Boos" Model PRW22.

    B. **MODIFY**: Quantity of Item No. 10a to (1).

    C. **MODIFY:** Note 5 as follows, "Government furnished shall be installed by Contractor."

42. Refer to Plans, Sheet K1.1, SD-9 and Specification Section 11 40 00 and Cut Sheets:

    A. Revised Table and Specifications have been Provided. In instances where two models are provided Contractor has option to provide equal products. (ie. John Boos or Advance Tabco).

43. Refer to Plans, Sheet C100 and SD-11:

    A. Water service and water faucet at existing wash rack to be removed. Water line to be capped at existing building. Railroad cross ties, parking signage and gravel bed in front of readiness center shown to be removed. Existing concrete wash pad and silt box shown to be removed. Existing drainage lines to be capped in place.

44. Refer to Plans, Sheet C200, SD-1 and Specification Section 32 31 13 Chain Link Fencing and Gates:

    A. Three existing gates are shown to be replaced as specified.

45. Refer to Plans, Sheet C200 and attached SD-1 through SD-8:

    A. See attached SD-1 through SD-8 for Elevations and Details of New Chain Link Fencing and Gates.

46. Refer to Plans, Sheet C200:

    A. Note #9 Revision: “12’X12’ Heavy Duty Concrete Dumpster Pad Req. See Detail Sheet C400 (TYP.) REINFORCED CONCRETE WITH #4 1'-0" O.C. WWF."

    B. **CLARIFICATION**: Note 10 requires a full-depth pavement patch only at locations where the existing pavement is trenched to install the proposed 2-inch water service. This requirement is limited strictly to the utility trench limits and does not apply to the remainder of the parking lot. Alternate A7 includes a mill and overlay of the entire parking lot area. Outside of the water service trench, no additional full-depth pavement patching is required.

    C. **CLARIFICATION:** The circles with “24” and 31” represent the parking stall counts. Any callout that has a note associated with it will have a leader attached to it.

47. Refer to Plans, Sheet C200 and SD-12:

    A. Area of concrete pad removal shown to be sodded.

48. Refer to Plans, Sheet C200 and SD-14:

    A. Note #16 Revision: “20’X12’ heavy duty concrete dumpster pad required. See Detail Sheet C400 (typ.) Reinforced concrete with #4 1'-0" o.c. WWF Dumpster pad location relocated to align with center of drive aisle. Dumpster located 12.5’ from the northeast corner of existing parking lot.".

49. Refer to Plans, Sheet BI.C/P1.1:

    A. **DELETE** Sheet in its entirety. Oil Water Separator has been omitte3d from the project.

50. Refer to Plans, Sheet BI.A/P4.1 and attached SD-10:

    A. Showerheads have been relocated to match architectural plans.

    B. In Women’s Shower, revise the location of the shower heads to match the location indicated on the architectural floor plan.

END OF ADDENDUM NO. 1

JMR+H Architecture, PC
445 Dexter Avenue, Suite 5050
Montgomery, Alabama 36104
Telephone: (334) 420-5672
Fax: (334) 420-5692
specs@jmrha.com

PRE-BID CONFERENCE

Oxford Renovations Oxford, Alabama

IFB#: AC-26-B-0002-S

Minutes

Friday, January 2, 2026
1:00 P.M.
Fort Henry Stegall, 33 Meadow Avenue, Oxford, Alabama 36203

Architect's Project Manager
Jim Robinson, JMR+H Architects
334-320-8277
jrobinson@jmrha.com

Owner's Project Manager:
Mitch Tucker, CFMO
334-703-5052
James.m.tucker156.nfg@army.mil

ALL ATTENDEES: PLEASE SIGN-IN ON THE FORM PROVIDED

NOTE: THE INFORMATION CONTAINED IN THIS DOCUMENT DESCRIBES CONTRACT REQUIREMENTS. PLEASE RETAIN THIS AGENDA AND THE SUBSEQUENT MINUTES OF THIS MEETING FOR YOUR RECORDS.

OWNER

- The OWNER is the Armory Commission of Alabama (ACA), represented by:
  Erich Babbitt - Contracting Officer (KO)
  Rodney Middleton - Contracting Officer's Representative (COR)
  Alyssa Caffey - Contracting Officer's Representative (COR)
  The A/E, CFMO, P/M, and tenants do NOT represent the OWNER and cannot approve any changes to the Contract Documents.

CONTRACT

- This will be a contract between The Armory Commission of Alabama (State Contract) and the General Contractor.
- Payments will be made via State check or via direct deposit from the State.
- General Contractor (GC) **partial lien waivers are not applicable to State contracts**.
- Owner's project budget may be found at https://smd.alabama.gov/construction-and-facilities-contracting-current-advertisements/

Davis-Bacon Act

- Davis-Bacon Act does NOT apply to State of Alabama projects.

Liquidated Damages DO Apply

- See General Conditions paragraph 51 for amounts and application.

RECEIPT OF PROPOSALS

- All entities bidding must be registered to do business in the State of Alabama. All bidders bidding in amounts exceeding $100,000.00 must be licensed under the provisions of Title 34, Chapter 8, Code of Alabama, 1975.

Sealed bids will be received by The Armory Commission of Alabama, at the State Military Department Building, 1720 Cong. W.L. Dickinson Drive, (P.O. Box 3711), Montgomery, Alabama, **until 2:00 p.m., Central Time, Thursday, January 15, 2026**, for the **Oxford Renovations, Oxford, Alabama** (IFB# AC-26-B-0002-S), at which time they will be publicly opened and read in the Second Floor Classroom (Room 201), of the State Military Department, 1720 Cong. W.L. Dickinson Drive, Montgomery, AL.

PRE-BID CONFERENCE

Oxford Renovations Oxford, Alabama

IFB#: AC-26-B-0002-S

- **After the date and hour set for Bid Opening, Changes by telegram, written communication or facsimile will not be accepted** (Para 10 – Instructions to Bidders). Changes may only be made on the outside of the bid package envelopes in the form of an "add" or "deduct." If the sum of the bid is revealed on the envelope, the bid no longer constitutes a sealed bid and must be rejected.
- On the day of the bid opening, allow for time to clear gate security. **Contractors are encouraged to be there by 1:00 PM to ensure access. Must have current Driver's License, Insurance, and Vehicle Registration to clear the gate security.**
- Ensure the proposal is addressed to The Armory Commission of Alabama. **All blanks on the Proposal Forms must be filled.** Do not add any information that is not called for.

Bid prices do NOT include Sales or Use Taxes in accordance with Act 2013-205.

- Bid Proposal Form includes estimated sales tax amount. This does not determine the low bidder.
- For additional information concerning this guidance, taxpayers should contact the Sales and Use Tax Division at 334-242-1574.
- The Dept of Revenue will issue a tax abatement number to the successful bidder for use on this contract.

- **Proposal envelopes MUST include all of the following:**
  - Sealed envelope containing:
    - **TWO** (2) completed with ORIGINAL signature(s) proposal forms and
    - ONE Bid Bond (5% not to exceed $10,000.00) with correct Power of Attorney, OR A certified check (5% not to exceed $10,000.00), made payable to the Owner.
  - Typed or written on the outside of the envelope:
    - The word "BID"
    - The project name
    - The project Invitation to Bid (IFB) Number
    - The Bidders' name.
    - The Bidder's Alabama General Contractor's licensure number.

- In accordance with Paragraph 12 of the Instructions to Bidders, "Bid may be rejected if they contain any omissions, alterations of forms, additions not called for, conditional bids, alternate. bids unless called for, incomplete bids, erasures, or irregularities of any kind. Bids in which the unit or lump sum prices bid are obviously unbalanced may be rejected."

- Bid Bonds - Certified checks or bid bonds (Power of Attorney is required) payable to The Armory Commission of Alabama in an amount not less than five (5) per cent of the amount of the bid, but in no event more than $10,000.00 per project, must accompany the bidder's proposal.
  - Bid Bond must list Armory Commission of Alabama as Owner and must be accompanied by the power of attorney for the person signing on behalf of the surety. **Be sure the Power of Attorney signee is from the same Surety company.**
  - Bid Bond must be fully executed by all parties. Please carefully check your forms and signatures.
- Disclosure Statement – Armory Commission of Alabama prefers this be completed and included with your bid.

PRE-BID CONFERENCE

Oxford Renovations Oxford, Alabama

IFB#: AC-26-B-0002-S

Requests for Information

- Due no later than: **Friday, January 9, 2026,** at **2:00 P.M.**

Must be emailed to Renae Williams of JMR+H Architecture, PC at specs@jmrha.com

- All RFI's will be answered through Addenda.

Prior Approval

- This project requires, and the State solicits, full competition; however, pre-bidding equal status of products is requested to ensure equality of products being proposed. (See Substitution Request Form in the specifications.) **All product substitutions should be requested prior to bid and per the Contract Documents.** (Instructions to Bidders paragraphs 3 & 4, General Conditions 2.C.5.). Substitutions by RFI approved by the AE and Owner no later than the above-stated due date for RFI's will be included in Addenda and distributed to all plan holders.

Authorities with Jurisdiction

- State Division of Construction Management (formerly Building Commission) – None
- Local Building Authority (city or county) – None
- OSHA – YES
- State Insurance Department (workman's comp, etc.) – YES
- State Fire Marshal and deputies - YES.
- EPA/ADEM – YES
- Corps of Engineers - None

E-Verify

- This project will require E-verification and Memorandum of Understanding prior to contract execution.

Allowances

No specified allowances.

Utilities

- Utilities are to remain in the name of the owner. The contractor will be billed monthly for utility costs. Prorated billing will be addressed when appropriate.
- Dumpsters are the GC's responsibility.
- Portable toilets are the GC's responsibility.

Testing and Certifications

- **All testing and certifications in the specifications are solely the G.C.'s responsibility** i.e., material testing, core samples, site utility location, ADEM requirements, US Fish and Wildlife Service requirements, Corp of Engineers requirements, etc.
- Destructive testing - No one is authorized to perform any destructive testing at the site who is not under contract with The Armory Commission of Alabama.
- All field quality control and minimum system tests of new or affected systems with reports to the Owner and AE as required by drawings and specifications.

Attic Stock

- REQUIRED as per specifications.

CONSTRUCTION PERIOD

Per specifications Section 01 10 00, the General Contractor shall perform all work in not more than **569 calendar days.**

1. The **Notice to Proceed (NTP) is 14 calendar days** from the email delivery of the fully executed contract to the Contractor, unless otherwise agreed upon, in writing, by the Owner and the Contractor. However, in no case will the NTP be later than December 31 of the calendar year in which the contract is executed. **Contract Time begins at the NTP.**
2. The Contractor has **524 calendar days**, from Notice to Proceed 3.01.A.1. (above), to perform all work. This includes providing all required operator training, the "Punch-List Inspection", correcting all deficiencies noted in the "Punch-List Inspection", and successful completion of the Final Inspection – with no noted deficiencies.
3. The Contractor has **45 calendar days**, from 3.01.A.2. (above), to have submitted a complete Project Closeout package, as detailed and defined in Sections 01 77 00 and 01 78 13.

Pre-Work Requirements (Provide Prior to Pre-Construction Conf., if possible)

- Contractor must provide Construction Schedule (General Conditions Para. 9), Schedule of Values, Draw Schedule, List of Subs (Para. 40), and Superintendent (Para 18).
- Submittals Schedule & RFI Log template.
- Schedule of Values - Break out materials and labor for each category on separate lines. Must also contain separate line(s) for each allowance as applicable.
- Schedule of Values must also contain a separate line for Closeout Documents at 2.5% of the contract price.

Quarterly Jobs Reports

- Jobs Reports are required and must be submitted once per quarter on the EXCEL spreadsheet supplied. Jobs reports are due on the last business day of each quarter. Report labor hours for the General Contractor and direct sub-contractors for each trade classification. Davis Bacon Act does not apply.

Superintendent

- Must be a full-time employee of G.C.
- Must be available for the Owner to contact by phone and email 24/7 in case of emergencies.
- Superintendent must be always on-site while work is taking place. If the superintendent must leave the site for a short period of time, an acting superintendent is to be designated to be always on site and readily available to the Owner. Contact information is to be provided to the Owner's Representative and the AE.

Modifications to GC Contract (reviewed at Pre-Construction Conference)

- By Alabama law, there is a 25% cap on overhead and profit for combined GC plus sub-contractors' work. General Contractor-only work is capped at 15%.
- See Special Conditions paragraph 19 and Specification section 01 26 00 for all requirements.
- The Owner's Representatives (KO and COR) are the only ones who shall be allowed to request and approve modifications to the contract.

Weather Days

- Must be **requested monthly** by GC with back-up documentation to the Architect – simultaneous with OACs. **Delayed reporting of weather days will be rejected**.
- Must be requested on the form at Section 00 63 56 and in accordance with General Conditions paragraph 22.

- **ONLY** above-normal rainfall may be claimed. See Project Manual Section 00 63 56.
- Contract Modifications for weather delays only are typically held until the end of the project to benefit the GC on surety costs.

Impact Days

- The GC should maintain all documentation on timelines of orders placed and order confirmations. GC to notify AE of substantial delays ASAP.
- Manufacturer's stated delays and projected delivery dates should be documented in writing.
- Owner will pay Stored Materials (less retainage) according to specifications and State of Alabama contracts as long as they are in secured facilities.
- GC's and sub-contractors shall break pricing into material and labor to make reporting on any delays and impacts to schedule easier to document.
- Owner will review submittal logs, order confirmations, and monthly schedule updates to determine project impact.

Retainage

- By Alabama law - 5% up to 50% of total contract amount (General Conditions paragraph 28 and Code of Alabama 39-2-12(c).
- This is a state law and cannot be altered. Retainage will be paid at Final Payment after all Close-Out requirements are received and approved.

Warranty and Maintenance Requirements

- Required Warranties –
    - GC One Year Guarantee (General Conditions paragraph 49)
    - Special Warranties (as required by individual specification sections but also must meet more stringent State laws and requirements i.e., roofing warranties).
- Applicable laws must be "State of Alabama".
- Venue (for arbitration or lawsuits) City and/or County where project is located in Alabama.
- GC is responsible for providing complete, registered warranties. Owner strongly suggests sending a draft warranty through an RFI to the AE for review prior to execution.
- **Warranties must start no later than Final Acceptance** and run for full term as required in Contract documents. For manufacturers who insist on starting their warranty period prior to Final Acceptance, the GC will be responsible for supplying an interim warranty and maintenance contract for the extra time prior to Final Acceptance.
- Maintenance required to meet manufacturers' warranties: the GC is required to perform all manufacturers' required maintenance after installation and for the duration of the One Year GC Warranty period, i.e., until one year after Final Acceptance – NOT INSTALLATION. This will be per manufacturer's requirements and whatever is needed to maintain their warranty and will be documented to the Owner (Armory Commission) through the A/E.

Worksite Safety

- **Safety is solely GC's responsibility.** The GC should have required safety gear for loan to site visitors and should notify the Owner and AE of his safety requirements while visiting the site.
- OSHA has jurisdiction over State of Alabama projects.

Protection of Surrounding Work

- GC should record existing conditions of site, building, and equipment prior to mobilization.
- General Contractor is responsible for repairing or replacing damaged existing-to-remain materials and/or conditions to the satisfaction of the Owner.

Project Site Access/Security Issues

- General Contractor will have full access to the site for the duration of work.
- Standard work week is Monday – Friday, 7:00 A.M. – 5:30 P.M. If working outside normal hours, notice must be made in writing to the Architect and coordinated with the Owner and local User's security at least one week in advance. Access may be denied at any time due to training activities or holidays.
- This is a gun free, drug free installation. This installation has secure access requirements. All individuals are to adhere to all rules for entering the site and buildings.
- The site will be unoccupied during construction.

Owner/Architect/Contractor Meetings (OAC's)

- **General Contractor** is responsible for running monthly OAC meetings unless agreed otherwise with the AE and Owner's Representative. Provide agenda and draft submittal forms to A/E at least 2 days prior to the meeting for review and additional items of discussion.
- Required items to discuss: Schedule, RFIs, RFPs, Change Order Requests, Contract Modifications, Submittal logs and As-builts. Pay Applications may be presented for review by the AE at the OAC meeting.
- Contractor must provide updated Construction Schedule (General Conditions Para. 9), Schedule of Values, and Draw Schedule at each meeting.
- Update the RFI Log for each OAC meeting.
- Request weather delay days beyond the allowances indicated in the specification for the month at each OAC.

INSPECTIONS

Training and Inspections

- The Owner does not accept "substantial completions".
- Owner's Operator Training - ALL TRAINING MUST BE COMPLETED PRIOR TO SCHEDULING THE PUNCH LIST INSPECTION. Provide 2 weeks' advance notice for Owner's operator training to both the A/E and Owner's Project Manager. G.C. is required to video tape all training. Failure to complete all operator training prior to the Punch List Inspection may result in the inspection being cancelled and rescheduled once all operator training is complete.
- Punchlist Inspection – Do not call for a Punch List Inspection with the Owner until all GC requirements are completed and the GC has performed their own inspection and completed all items on the list. The Punch List Inspection will include review of O/M manuals and Record Documents mark-ups. Failure of the G.C. to provide O/M manuals or Record Documents mark-ups for review may result (at the discretion of the Owner's Representative) to the inspection being "continued" until such time as they have been presented to the A/E, plus one week for review and scheduling.
- Final Inspection – **GC to provide 3 final and complete hard sets of the O/M manuals and Record Documents to the Architect prior to inspection**. Failure to provide all sets of O/M Manuals and final Record Documents will result in the inspection being cancelled and rescheduled at G.C.'s sole expense.
- Year-End Inspection – An inspection will be scheduled near the end of the GC's 1-year warranty period to review or correct any warranty items that may have been discovered during this time.

CLOSE-OUT PERIOD

Project Closeout

- Refer to specifications 01 77 00 (Project Closeout), 01 78 13 (Project Closeout Checklist) and 01 78 39 (Project Record Documents).
- All closeout documents must be submitted and accepted **PRIOR** to the processing of the final payment.

Completion Advertisement

- The Certificate of Completion must be issued BEFORE the Completion Advertisement is run. Generally, the certificate will be issued on the day of Final Inspection.
- The cost and scheduling of the Completion Advertisement is solely the G.C.'s responsibility.
- The Affidavit must be signed by the publisher or someone in their organization with knowledge that the ad has run. (Code of Alabama 39-1-1(f)).
- The form of advertisement can be found at 00 65 13 and the sample affidavit can be found at 00 65 15.

Project Overview

- The intent and meaning of the Contract Documents are that the Contractor shall provide labor, plant, materials, supplies, equipment, transportation facilities and appurtenances thereto which are indicated or reasonably implied by the Drawings and Specifications.
- A general description of the Work is as follows:

BID ITEM A – BUILDING 'A' READINESS BUILDING AND SITEWORK

Alternate No. A-1: Each bidder shall include on their proposal an Alternate price including all labor, material, taxes, overhead, profit, etc. to **provide all work related to Electrical Lighting in Bid Item A** as shown on the drawings and specified herein.

Alternate No. A-2: Each bidder shall include on their proposal an Alternate price including all labor, materials, taxes, overhead, profit, etc. to **add Storefront Windows Types S1, S2 and S3** as shown on the drawings and specified herein.

Alternate No. A-3: Each bidder shall include on their proposal an Alternate price including all labor, materials, taxes, overhead, profit, etc. to **add 14' High Overhead Door in Assembly Hall** as shown on the drawings and specified herein.

Alternate No. A-4: Each bidder shall include on their proposal an Alternate price including all labor, materials, taxes, overhead, profit, etc. to **add Standing Seam Metal Roof and Insulated Metal Panels in Assembly Hall** as shown on the drawings and specified herein.

Alternate No. A-5: Each bidder shall include in their proposal an Alternate price including all labor, materials, taxes, overhead, profit, etc. to **add Mezzanine Build Out** as shown on the drawings and specified herein.

Alternate No. A-6: Each bidder shall include on their proposal an Alternate price including all labor, materials, taxes, overhead profit, etc. to install new **1 ½" furring channels with 5/8" gypsum board** painted finish. Infill with 1 ½" rigid insulation / steel furring system adhered to existing wall. **NOTE: In Rooms 122 – 126 ensure that fasteners extend into wood furring only and not existing exterior wall.** Note: In Kitchen 111 Female 110, Male 108, and Lockers 106, gypsum board shall be moisture resistant. See Interior elevations and finish schedule.

Alternate No. A-7: Each bidder shall include on their proposal an Alternate price including all labor, materials, taxes, overhead, profit, etc. to install **1.5" Asphalt Pavement Overlay.**

BID ITEM B – BUILDING 'B' METAL STORAGE BUILDIING

Alternate No. B-1: Each bidder shall include in their proposal an Alternate price including all labor, materials, taxes, overhead, profit, etc. to **provide all work related to Electrical Lighting in Bid Item B.**

Alternate No. B-2: Each bidder shall include on their proposal an Alternate price including all labor, materials, taxes, overhead, profit, etc. to install **1.5" Asphalt Pavement Overlay.**

BID ITEM C – BUILDING "C" MASONRY MAINTENANCE BUILDING

Alternate No. C-1: Each bidder shall include in their proposal an Alternate price including all labor, materials, taxes, overhead, profit, etc. to **provide all work related to Electrical Lighting in Bid Item C.**

Alternate No. C-2: Each bidder shall include in their proposal an Alternate price including all labor, materials, taxes, overhead, profit, etc. to **replace Roof Panels** as shown on drawings and specified herein.

Alternate No. C-3: Each bidder shall include in their proposal an Alternate price including all labor, materials, taxes, overhead, profit, etc. to **replace Windows** as shown in drawings and specified herein.

Alternate No. C-4: Each bidder shall include in their proposal an Alternate price including all labor, materials, taxes, overhead, profit, etc. to **New Offices** as shown on drawings and specified herein.

Alternate No. C-5: Each bidder shall include on their proposal an Alternate price including all labor, materials, taxes, overhead, profit, etc. to install **1.5" Asphalt Pavement Overlay.**

Taxes shall be listed separately from the bid proposal cost, as indicated on the Proposal Bid

Comments and Questions:

We had a discussion about the dollar amount for the monthly utility bill since the GC will have to pay the Guard each month for the utilities. The Guard will provide that information to be put in an addendum.

There was a discussion about the order of award.

JMR+H
Architecture, PC

OXFORD RENOVATIONS
OXFORD, ALABAMA
IFB# AC-26-B-0002-S
Pre-Bid Conference
January 2, 2026 1:00 PM

	NAME	COMPANY	TELEPHONE / FAX #	E-MAIL ADDRESS
1.	Jim Robinson	JMR+H Architects	334-320-8277	jrobinson@jmrha.com
2.	Stephen Truss	1 53rd BSB Co	334-322-9225	Stephen.b.truss.mil@army.mil
3.	Rafe Stewart	Dominguez Design-Build	(850) 665-2993	rafe@DDBconstruct.com
4.	Justin Jones	Southeastern Industrial	(662) 341 2192	Justin@SE-ind.com
5.	Wes Corn	Wilgore Const Inc	256 330 9530	wesleycorn.kciegual.com
6.	Curtis VanTassell	Greer Building Contr.	256/949-0996	Curtis@GreerBuilding.com
7.	MARK GARNER	SOUTHEASTERN INDUSTRIAL	205.281-7009	mark@se-ind.com
8.	Craig Allen	BOI Electric	205-777-2285	Callen@boielectric.com
9.	Kanda Floyd	Hale Bldg Co.	256 237-4961	kanda@halebldg.com
10.	Ginny Farley	Trawick Contractors, Inc.	205-591-2056	ginnyf@trawickco.com
11.	Brendan McLeod	Alabama Roofing	256-831-9000	brendan@alabamaroofing.net
12.	Jason McRae	Murray Construction	205.802.3917	jmcrae@murray-construction
13.	Scott Arrington	Hurst Construction	256-310-0146	scotta@hurstconstruction.com
	JOEL TUCKER	HUDAK CONSTRUCTION	256-547-4101	JTUCKER@HUDAKCONSTRUCTION.COM

JMR+H
Architecture, PC

	NAME	COMPANY	TELEPHONE / FAX #	E-MAIL ADDRESS
14.	Ethan Johnson	Bradshaw and Pitts	256.499.2498	ejohnson@bradshawandpitts.com
15.	Michelle Wells	ALARNG-CFMO-DPM	256-375-840	pamela.m.wells5.nfg@army.mil
16.	Rodney Middleton	SMD	334-301-0384	rodney.l.middleton5.nfg@army.mil
17.	Alyssa Carney	SMD	(334)260-6355	alyssa.carney@smd.alabama.gov
18.	Casey Barker	Taylor Corp.	(256) 283-1258	casey@taylorcorporation.com
19.	LANCE BELLENGER	ALARNG CFMO	334-290-4720	lance.p.bellenger.nfg@army.mil
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SPECIFICATIONS

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OXFORD RENOVATIONS
OXFORD, ALABAMA

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4	C200	Site Layout and Utility Plan
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ADVERTISEMENT FOR BIDS
OXFORD RENOVATION
OXFORD, ALABAMA

Sealed bids will be received by The Armory Commission of Alabama, at the State Military Department Building, 1720 Cong. W.L. Dickinson Drive, (P.O. Box 3711), Montgomery, Alabama, until 2:00 p.m., Central Time, Thursday, January 15, 2026, for Oxford Renovation, Oxford, AL (IFB# AC-26-B-0002-S), at which time they will be publicly opened and read in the Room 201, of the State Military Department, 1720 Cong. W.L. Dickinson Drive, Montgomery, Alabama 36109.

Certified checks or bid bonds (Power of Attorney is required) payable to The Armory Commission of Alabama in an amount not less than five (5) per cent of the amount of the bid, but in no event more than $10,000.00 per project, must accompany the bidder's proposal. Completed Disclosure Statements are preferred to accompany the proposal. Performance and Payment bonds will be required at the signing of the contract.

All entities must be registered to do business in the State of Alabama. All bidders bidding in amounts exceeding $100,000.00 must be licensed under the provisions of Title 34, Chapter 8, Code of Alabama, 1975.

Plans and specifications are open to public inspection at the State Military Department, 1720 Cong. W.L. Dickinson Drive, State Property and Disbursing Office, Montgomery, AL 36109. Point of contact: Lance Bellenger, lance.p.bellenger.nfg@army.mil.

Plans and specifications may be obtained from the Architects, JMR+H Architecture, Attn: Renae Williams, specs@jmrha.com, upon deposit of $300.00 per set, which will be refunded in full upon return of documents in good condition within ten (10) calendar days of the bid date. Questions should be addressed, in writing, to Renae Williams at JMR+H Architecture, specs@jmrha.com no later than 2:00 p.m. CT, Friday, January 09, 2026.

Only those bidders who have officially received “Bid Documents” from JMR+H Architecture, will be included on the distribution lists as “official plan holders” for Addenda or other project information during the bidding period. Any prospective bidders other than “official plan holders” must notify, in writing, JMR+H Architecture of their intent to bid the project by 2:00 p.m., CDT, Friday, January 09, 2026.

A Pre-Bid Conference will be conducted at 1:00 p.m., Friday, January 02, 2026, at the Fort Henry Stegall, 33 Meadow Avenue, Oxford, AL 36201. All bidders are strongly encouraged to attend. Any errors or omissions made as a result of not attending will not be grounds for additional compensation.

Erich Babbitt
Contracting Officer

SECTION 00 41 00 – PROPOSAL FORM
(Revised: 31 October 2024)

IFB # AC-26-B-0002-S
BID OPENING DATE:_____
BIDDER _____
CONTRACTOR'S LICENSE NO. _____

TO: The Armory Commission of Alabama
State Military Property and Disbursing Officer
Headquarters, Alabama National Guard
1720 Cong. W.L. Dickinson Drive
Montgomery, Alabama 36109-0711

PROJECT: Oxford Renovations
Oxford, Alabama

In compliance with your Invitation for Bid, the undersigned hereby proposes to furnish the plant, labor, materials, and equipment and perform all work for the above described project in strict accordance with the specifications, drawings, and addenda number _____ for consideration of the following prices (bid prices do NOT include Sales or Use Taxes in accordance with Act 2013-205):

BID

PERFORM ALL WORK IN ACCORDANCE WITH THE DRAWINGS & SPECIFICATIONS FOR:
Oxford Renovations, Oxford, Alabama

BID ITEM A:	**Building A Readiness Building and Site Work**	**$**_____
Alternate A-1:	**All work related to Electrical Light Fixtures**	**$**_____
Alternate A-2:	**Storefront Windows Types S1, S2 and S3**	**$**_____
Alternate A-3:	**14' High Overhead Door in Assembly Hall**	**$**_____
Alternate A-4:	**Standing Seam Metal Roof & Insulated Metal Panels in Assembly Hall**	**$**_____
Alternate A-5:	**Mezzanine Build Out**	**$**_____
Alternate A-6:	**Install New 1 ½" furring channels w/ 5/8" gyp board and infill w/ rigid insulation steel furring System**	
Alternate A-7:	**1.5" Asphalt Pavement Overlay**	**$**_____
BID ITEM B:	**Building B Metal Storage Building**	**$**_____
Alternate B-1:	**All work related to Electrical Lighting**	**$**_____
Alternate B-2:	**1.5" Asphalt Pavement Overlay**	**$**_____
BID ITEM C:	**Building C Masonry Maintenance Building**	**$**_____
Alternate C-1:	**All work related to Electrical Lighting**	**$**_____
Alternate C-2:	**Replace Roof Panels**	**$**_____
Alternate C-3:	**Replace Windows**	**$**_____
Alternate C-4:	**New Offices**	**$**_____
Alternate C-5:	**1.5" Asphalt Pavement Overlay**	**$**_____

ACCOUNTING OF SALES TAX

Pursuant to Act 2013-205, section 1(g) the Contractor accounts for sales tax NOT in the bid form as follows:

ESTIMATED SALES TAX AMOUNT

BID ITEM A:	**Building A Readiness Building and Site Work**	**$**_____
Alternate A-1:	**All work related to Electrical Light Fixtures**	**$**_____
Alternate A-2:	**Storefront Windows Types S1, S2 and S3**	**$**_____
Alternate A-3:	**14' High Overhead Door in Assembly Hall**	**$**_____
Alternate A-4:	**Standing Seam Metal Roof & Insulated Metal Panels in Assembly Hall**	**$**_____
Alternate A-5:	**Mezzanine Build Out**	**$**_____
Alternate A-6:	**Install New 1 ½" furring channels w/ 5/8" gyp board and infill w/ rigid insulation steel furring System**	
Alternate A-7:	**1.5" Asphalt Pavement Overlay**	**$**_____

BID ITEM B: Building B Metal Storage Building **$_____**

Alternate B-1: All work related to Electrical Lighting **$_____**
Alternate B-2: 1.5" Asphalt Pavement Overlay **$_____**

BID ITEM C: Building C Masonry Maintenance Building **$_____**

Alternate C-1: All work related to Electrical Lighting **$_____**
Alternate C-2: Replace Roof Panels **$_____**
Alternate C-3: Replace Windows **$_____**
Alternate C-4: New Offices **$_____**
Alternate C-5: 1.5" Asphalt Pavement Overlay **$_____**

Failure to provide an accounting of sales tax shall render the bid non-responsive. Other than determining responsiveness, sales tax accounting shall not affect the bid pricing nor be considered in the determination of the lowest responsible and responsive bidder.

UNIT PRICES
Providing and completely installing FE-6 Perimeter Security Fencing
$_____per LF

TIME LIMIT: These bids are subject to an acceptance period of thirty (30) days.

A. All amounts and totals given will be subject to verification by the State. In case of variation between unit bid price and total shown by bidder, the unit price will be considered to be his bid. The State reserves the right to award the work on the basis of any bid or any combination of bids and to increase or decrease the quantities of any item listed in this bid at the price quoted for that particular item.

B. Bids shall be for the entire work and shall have each blank space filled in to include the "Estimated Sales Tax Accounting".

C. The quantities of each item of the bid as finally ascertained at the close of the contract will determine the total payment to accrue under the contract.

D. The bidder, upon request of written notice of award of the contract within thirty (30) days after the date of opening of bids, agrees that he will execute the construction contract in accordance with this bid as accepted, and if the consideration of the contract will exceed $100,000.00 in amount, will furnish to the State a Performance Bond and a Payment Bond on AGO Forms, with good and sufficient surety or sureties as required by the specifications, at the time the contract is executed.

E. It is hereby warranted that in the event award is made to the undersigned, there will be furnished under this contract or used in the performance of the work covered by this contract, only such unmanufactured articles, materials, and supplies as have been mined or produced in the United States, and only such manufactured articles, materials, or supplies mined, produced or manufactured, as the case may be, in the United States, except as indicated in the bid documents..

F. The bidder further agrees that if awarded the contract, he will commence work within ten (10) calendar days after notice to proceed date and that he will fully complete the work ready for use not later than **569 calendar days** after notice to proceed date.

FIRM NAME _____

ADDRESS _____

_____

PHONE _____

FAX _____

EMAIL _____

BY _____

SIGNATURE

PRINTED NAME_____

TITLE _____

STATE OF ALABAMA
CONTRACTOR'S LICENSE NO. _____

NOTES:

All bidders must be licensed under the provisions of Title 34, Chapter 8, Code of Alabama, 1975, as amended.

On projects bid at $100,000.00 or more, the bidder must include his license number on the bid form in the prescribed place and on the outside of the envelope containing the bid, or otherwise the bid will not be considered.

Bid Prices do not include Sales or Use Taxes but these taxes are identified in the Estimated Sales Tax Amount section of this bid form.

SECTION 01 10 00 - SUMMARY OF WORK

(Revision Date: 17 August 2021)

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division-01 Specification sections, apply to work in this section.

1.02 WORK COVERED BY CONTRACT DOCUMENTS

A. The Project consists of work as described in the drawings and specifications entitled: Oxford Renovations prepared by JMR+H Architecture, PC, dated December 17, 2025.

B. The types of work specified in this section include the following:
   1. Furnishing of all labor, materials, tools, equipment, staging areas, hoisting, qualified personnel and proper supervision for the work described in the drawings and specifications.
   2. Protection of the buildings, grounds, building personnel and visitors.

C. Work to be performed under a single prime contract.

1.03 WORK UNDER OTHER CONTRACTS

A. The Owner may at times have other work in progress at the site.

B. Contractor shall cooperate fully with separate contractors (if any) so that work under those contracts may be carried out smoothly, without interfering with or delaying work under either contract.

1.04 CONTRACTOR USE OF PREMISES

A. General: During the construction period the Contractor shall have access to all areas of the building where work is to be undertaken.

B. OWNER OCCUPANCY
   1. Reference Section 00 73 00 – Special Conditions of the Contract, Paragraph 14.

1.05 JOB CONDITIONS

A. Coordinate all work under this contract with interfacing and adjoining work for proper sequencing of each installation. Ensure best possible weather resistance and durability of the work and protection of materials and finishes.

B. The Contractor is responsible for the water tightness of the Existing Building during the construction contract period (after work of this contract begins). In the event the Contractor fails to maintain buildings in a watertight condition, the Contractor shall be responsible for any damage caused to the Owner's property.

C. In the event emergency action must be taken by the Owner's maintenance forces to protect property, due to the Contractor’s failure to maintain buildings in a watertight condition, the Contractor shall be responsible for all of the Owners' labor and materials cost incurred due to emergency action and he shall reimburse the Owner for such cost by standard Change Order procedure.

D. Work under this contract must be completed in a continuous fashion. If the Contract Documents show phased work, the phasing plan must be followed, unless the Contractor has requested, and received, written approval from the Owner to deviate from the phasing plan shown in the Contract Documents.

E. CONTRACTOR USE OF SITE AND PREMISES
   1. Provide access to and from site as required by law and by Owner:
      a. Emergency Building Exits During Construction: Keep all exits required by code open during construction period; provide temporary exit signs if exit routes are temporarily altered.
      b. Do not obstruct roadways, sidewalks, or other public ways without permit.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 WORK SEQUENCE

A. The Notice to Proceed (NTP) is **14** calendar days from the email delivery of the fully executed contract to the Contractor, unless otherwise agreed upon, in writing, by the Owner and the Contractor.

B. Contract Time begins at the NTP.

C. Perform all work in not to exceed **569 Days** in accordance with the following (calculated as the sum of 3.01.C.1 through 3.01.C.2. [inclusive]):

1. The Contractor has **524 Days** calendar days to perform all Work, including but not limited to the following: providing all required operator training, the “Punch-List Inspection”, correcting all deficiencies noted in the “Punch-List Inspection”, and successful completion of the Final Inspection – with no noted deficiencies.
2. The Contractor has **45** days, from 3.01.C.1. (above), to have submitted a complete Project Closeout package, as detailed and defined in Sections 01 77 00 and 01 78 13.

3.02 LIQUIDATED DAMAGES

A. If final completion is not achieved within the time for contraction noted above, liquidated damages will be assessed in the amount of 6% per annum.

B. The liquidated damages assessed will be deducted from the final pay application prior to payment by the Owner.

END OF SECTION

SECTION 01 22 00 - UNIT PRICES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division-01 Specification sections, apply to this Section.

1.02 SUMMARY

A. This Section specifies administrative and procedural requirements for unit prices.
   1. A unit price is an amount proposed by Bidders and stated on the Proposal Form as a price per unit of measurement for materials or services that will be added to or deducted from the Contract Sum by Contract Modification in the event the estimated quantities of Work required by the Contract Documents are increased or decreased.
   2. Unit prices include all necessary material, overhead, profit and applicable taxes.
   3. Refer to the individual Specification Sections for construction activities requiring the establishment of unit prices.

B. Schedule: A “Unit Price Schedule” included on the Proposal Form. Specification Section contains requirements for materials and methods described under each unit price.
   1. The Owner reserves the right to reject the Contractor’s measurement of work-in-place that involves use of established unit prices, and to have this Work measured by an independent surveyor acceptable to the Contractor at the Owner’s expense.

PART 2 - PRODUCTS (NOT

APPLICABLE) PART 3 - EXECUTION

3.01 UNIT PRICE SCHEDULE, (TO BE QUOTED ON THE PROPOSAL FORM)

A. UNIT PRICE NO. 1: Cost per linear foot $_____ for providing and completely installing FE-6 Perimeter Security Fencing.

END OF SECTION

SECTION 01 23 00 - ALTERNATES

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes: Administrative and procedural requirements for Additive Alternates.

1.02 DEFINITIONS

A. Alternate: An amount proposed by bidders and stated on the Bid Form for certain work defined in the Bidding Requirements that may be added to or deducted from the Base Bid amount if Owner decides to accept a corresponding change either in the amount of construction to be completed or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.
   1. The cost or credit for each alternate is the net addition to or deduction from the Contract Sum to incorporate alternate into the Work. No other adjustments are made to the Contract Sum.

1.03 PROCEDURES

A. Coordination: Modify or adjust affected adjacent work as necessary to completely integrate work of the alternate into Project.
   1. Include as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not indicated as part of alternate.

B. Notification: Immediately following award of the Contract, notify each party involved, in writing, of the status of each alternate. Indicate if alternates have been accepted, rejected, or deferred for later consideration. Include a complete description of negotiated modifications to alternates.

C. Execute accepted alternates under the same conditions as other work of the Contract.

D. Schedule: A Schedule of Alternates is included at the end of this Section. Specification Sections referenced in schedule contain requirements for materials necessary to achieve the work described under each alternate.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 SCHEDULE OF ALTERNATES

BID ITEM A – BUILDING 'A' READINESS BUILDING AND SITEWORK

A. Alternate No. A-1: Each bidder shall include on their proposal an Alternate price including all labor, material, taxes, overhead, profit, etc. to **provide all work related to Electrical Lighting in Bid Item A** as shown on the drawings and specified herein.

B. Alternate No. A-2: Each bidder shall include on their proposal an Alternate price including all labor, materials, taxes, overhead, profit, etc. to **add Storefront Windows Types S1, S2 and S3** as shown on the drawings and specified herein.

C. Alternate No. A-3: Each bidder shall include on their proposal an Alternate price including all labor, materials, taxes, overhead, profit, etc. to **add 14' High Overhead Door in Assembly Hall** as shown on the drawings and specified herein.

D. Alternate No. A-4: Each bidder shall include on their proposal an Alternate price including all labor, materials, taxes, overhead, profit, etc. to **add Standing Seam Metal Roof and Insulated Metal Panels in Assembly Hall** as shown on the drawings and specified herein.

E. Alternate No. A-5: Each bidder shall include on their proposal an Alternate price including all labor, materials, taxes, overhead, profit, etc. to **add Mezzanine Build Out** as shown on the drawings and specified herein.

F. Alternate No. A-6: Each bidder shall include on their proposal an Alternate price including all labor, materials, taxes, overhead profit, etc. to install new **1 ½" furring channels with 5/8" gypsum board** painted finish. Infill with 1 ½" rigid insulation / steel furring system adhered to existing wall. **NOTE: In Rooms 122 – 126 ensure that fasteners extend into wood furring only and not existing exterior wall.** Note: In Kitchen 111 Female 110, Male 108, and Lockers 106, gypsum board shall be moisture resistant. See Interior elevations and finish schedule.

G. Alternate No. A-7: Each bidder shall include on their proposal an Alternate price including all labor, materials, taxes, overhead, profit, etc. to install **1.5" Asphalt Pavement Overlay.**

BID ITEM B – BUILDING 'B' METAL STORAGE BUILDIING

A. Alternate No. B-1: Each bidder shall include on their proposal an Alternate price including all labor, materials, taxes, overhead, profit, etc. to **provide all work related to Electrical Lighting in Bid Item B.**

B. Alternate No. B-2: Each bidder shall include on their proposal an Alternate price including all labor, materials, taxes, overhead, profit, etc. to install **1.5" Asphalt Pavement Overlay.**

BID ITEM C – BUILDING "C" MASONRY MAINTENANCE BUILDING

A. Alternate No. C-1: Each bidder shall include on their proposal an Alternate price including all labor, materials, taxes, overhead, profit, etc. to **provide all work related to Electrical Lighting in Bid Item C.**

C. Alternate No. C-2: Each bidder shall include on their proposal an Alternate price including all labor, materials, taxes, overhead, profit, etc. to **replace Roof Panels** as shown on drawings and specified herein.

D. Alternate No. C-3: Each bidder shall include on their proposal an Alternate price including all labor, materials, taxes, overhead, profit, etc. to **replace Windows** as shown on drawings and specified herein.

D. Alternate No. C-4: Each bidder shall include on their proposal an Alternate price including all labor, materials, taxes, overhead, profit, etc. to **New Offices** as shown on drawings and specified herein.

E. Alternate No. C-5: Each bidder shall include on their proposal an Alternate price including all labor, materials, taxes, overhead, profit, etc. to install **1.5" Asphalt Pavement Overlay.**

END OF SECTION

SECTION 01 25 13 - PRODUCT SUBSTITUTION PROCEDURES

PART 1 - GENERAL:

1.01 SUMMARY

A. Section Includes: Administrative and procedural requirements for handling requests for substitutions made AFTER award of the Contract.

B. Related Sections:
   1. 00 43 25 - Substitution Request Form During Bidding.
   2. 00 72 00 - General Conditions of the Contract
   3. 01 25 14 - Substitution Request Form During Construction.
   4. 01 33 00 - Submittal Procedures

1.02 DEFINITIONS

A. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.

1.03 SUBMITTALS

A. Substitution Request Form: Submit all substitution requests using the form provided in this Project Manual. Use Section 01 25 14 - Substitution Request Form During Construction.
   1. Product substitutions will NOT be considered after award of the Contract unless the above substitution form is used.
   2. Architect will reject incomplete forms.

B. Substitution Requests: Submit three (3) copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number(s), Specification Section title(s), Drawing number(s), and Drawing title(s).
   1. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
      a. Statement indicating why specified material or product cannot be provided.
      b. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by Owner and separate contractors that will be necessary to accommodate proposed substitution.
      c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
      d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
      e. Samples, where applicable or requested.
      f. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.
      g. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
      h. Research/evaluation reports evidencing compliance with building code in effect for Project, from a model code organization acceptable to the Owner.
      i. Detailed comparison of Contractor's Construction Schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating lack of availability or delays in delivery.
      j. Cost information, including a proposal of change, if any, in the Contract Sum.
      k. Contractor's certification that proposed substitution complies with requirements in the Contract Documents and is appropriate for applications indicated.
      l. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.
   2. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within seven (7) days of receipt of a request for substitution. Architect will notify Contractor of acceptance or rejection of proposed substitution.

PART 2 - PRODUCTS

2.01 PRODUCT SUBSTITUTIONS

A. Timing: Architect will consider requests for substitution if received within twenty (20) days after Notice to Proceed. Requests received after that time may be considered or rejected at discretion of Architect.

B. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:
   1. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Architect for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.
   2. Requested substitution does not require extensive revisions to the Contract Documents.
   3. Requested substitution is consistent with the Contract Documents and will produce indicated results.
   4. Substitution request is fully documented and properly submitted.
   5. Requested substitution will not adversely affect Contractor's Construction Schedule.
   6. Requested substitution has received necessary approvals of authorities having jurisdiction.
   7. Requested substitution is compatible with other portions of the Work.
   8. Requested substitution has been coordinated with other portions of the Work.
   9. Requested substitution provides specified warranty.
   10. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

C. Exceptions: The following are not considered substitutions and are not subject to requirements specified in this Section:
   1. Substitutions requested during the Bidding period, and accepted via Addenda.
   2. Revisions to Contract Documents requested by the Owner.
   3. Specified options on products and construction methods included in Contract Documents.

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01 25 14 - SUBSTITUTION REQUEST FORM DURING CONSTRUCTION

(CONTRACTOR SHALL USE THIS FORM FOR SUBMITTING SUBSTITUTION REQUEST AFTER AWARD OF CONTRACT. OTHER FORMS OF SUBSTITUTION REQUESTS WILL NOT BE CONSIDERED.)

Project: OXFORD RENOVATIONS
OXFORD, ALABAMA

Substitution Request Number: _____

IFB #: _____

Architect: JMR+H Architecture, PC
445 Dexter Avenue, Suite 5050
Montgomery, AL 36104

From: _____

Re: _____

Specification Title : _____ Section : _____

Description : _____ Page: _____ Article/Paragraph: _____

Proposed Substitution: _____

Manufacturer: _____ Address: _____ Phone: _____

Trade Name: _____ Model No.: _____

Installer: _____ Address: _____ Phone: _____

History: New Product 1 – 4 years old 5 – 10 years old Exceeds 10 years old

Differences between proposed substitution and specified product: _____
_____
_____
_____

Point by Point comparative data attached – REQUIRED BY ARCHITECT

Reason for not providing specified item: _____

_____

_____

_____

Similar Installation:

Project: _____ Architect: _____

Address: _____ Owner: _____

_____Date Installed: _____

Proposed substitution affects other parts of Work: ___ No ___ Yes:
Explain_____

_____

_____

Savings to Owner for accepting substitution: _____ ($ _____)

Proposed substitution changes Contract Time: ___No ___ Yes [Add] [Deduct] _____ days.

NOTE: Acceptance of substitution request by the Architect will require the Contractor to submit a change order request in accordance with the General Conditions of the Contract. Should the Owner reject the change order request, the Substitution Request is therefore rejected, and the Contractor must comply with the requirements of the Contract Documents as if the request was rejected by the Architect.

Supporting Data Attached:

Drawings Product Data Samples Tests Reports _____

The Undersigned Certifies:

Proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product. Same warranty will be furnished for proposed substitution as for specified product. Same maintenance service and source of replacement parts, as applicable, is available. Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule. Cost data as stated above is complete. Claims for additional costs related to accepted substitution which may subsequently become apparent are to be waived. Proposed substitution does not affect dimensions and functional clearances. Payment will be made for changes to building design, including A/E design, detailing, and construction costs caused by the substitution. Coordination, installation, and changes in the Work as necessary for accepted substitution will be complete in all respects.

Submitted By: _____ Signed By: _____

Firm:

_____

Address:

_____

_____

Telephone: _____ Fax: _____

E-mail: _____ Website: _____

Attachments:

_____

_____

A/E's REVIEW AND ACTION (to be filled-in by Architect/Engineer)

Substitution Approved
Substitution Approved as Noted
Substitution Rejected
Substitution Request Received Too Late

Signed By: _____ Date: _____

Additional Comments:

Contractor **Subcontractor** **Supplier** **Manufacturer** **A/E**

END OF SECTION

SECTION 01 26 00 - CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

A. This Section specifies administrative and procedural requirements for handling and processing Contract modifications.

B. Related Sections include the following:

1. Specification 00 72 00 General Conditions of the Contract, Specification 00 73 00 Special Conditions of the Contract and Specification 01 26 14 Change Order Recap Form.

1.03 MINOR CHANGES IN THE WORK

A. All changes in the Work will only be authorized by a fully executed Contract Modification Form, executed by both the Contractor and the Owner, or as otherwise authorized by the General Conditions of the Contract.

1.04 PROPOSAL REQUESTS

A. Owner-Initiated Proposal Requests: Owner will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.

1. Proposal Requests issued by Owner are for information only. Do not consider them instructions either to stop work in progress or to execute the proposed change.
2. Within time specified in Proposal Request after receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change. The submission shall include:
    a. A list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
    b. Indication of applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
    c. Costs of labor directly attributable to the change.
    d. An updated Contractor's Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
    e. Other requirements of the General Conditions of the Contract.
    f. Change Order Request Recap Form (01 26 14) completed by the Contractor.
    g. Submission will be made as one complete packet, via electronic mail, to the Architect.

B. Contractor-Initiated Proposals: If latent or unforeseen conditions require modifications to the Contract, Contractor may propose changes by submitting a request for a change to Architect.

1. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time. The submission shall include:
    a. A list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
    b. Indication of applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
    c. Costs of labor directly attributable to the change.
    d. An updated Contractor's Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
    e. Other requirements of the General Conditions of the Contract.
    f. Change Order Request Recap Form (01 26 14) completed by the Contractor.

g. Submission will be made as one complete packet, via electronic mail, to the Architect.

C. Proposal Request Form: Request for Proposal will be on Owner’s approved form.

1.05 CHANGE ORDER PROCEDURES

A. On Owner's approval of a Proposal Request, the Owner will issue a Contract Modification for signatures of Owner, Surety and Contractor on Owner’s “Contract Modification / Supplemental Agreement Form”.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

Change Proposal Recap Sheet

Date: _____
Contractor Name: _____
Project Name: _____
Contract Number : _____
Reference RFP or RFI Number: _____

Initiated By: (Check One)
- Owner/Architect
- Contractor
- Subcontractor

Brief Description of Proposed Change: _____

GENERAL CONTRACTOR Direct Cost Summary

Item/Description *	Quantity	Unit	Amount					
			Unit $	Material	Unit $	Labor	Unit $	Equipment
				$0.00		$0.00		$0.00
				$0.00		$0.00		$0.00
				$0.00		$0.00		$0.00
				$0.00		$0.00		$0.00
				$0.00		$0.00		$0.00
				$0.00		$0.00		$0.00
				$0.00		$0.00		$0.00
				$0.00		$0.00		$0.00
				$0.00		$0.00		$0.00
			Sub Totals:	$0.00		$0.00		$0.00

Material:	$0.00
Labor:	$0.00
Equipment:	$0.00
Prime Contractor Subtotal:	$0.00

SUBCONTRACTOR Direct Cost Summary

Item/Description *	Quantity	Unit	Amount							
			Unit $	Material	Unit $	Labor	Unit $	Equipment	Unit $	Sub-sub
				$0.00		$0.00		$0.00		$0.00
				$0.00		$0.00		$0.00		$0.00
				$0.00		$0.00		$0.00		$0.00
				$0.00		$0.00		$0.00		$0.00
				$0.00		$0.00		$0.00		$0.00
				$0.00		$0.00		$0.00		$0.00
				$0.00		$0.00		$0.00		$0.00
				$0.00		$0.00		$0.00		$0.00
			Sub Totals:	$0.00		$0.00		$0.00		$0.00

Material:	$0.00
Labor:	$0.00
Equipment:	$0.00
Sub-sub	$0.00
Subcontractors Subtotal:	$0.00

Mark-up Calculations

Subcontractors Subtotal:	$0.00	
Prime Cntrtr Subtotal:	$0.00	
Total Direct Cost:	$0.00	
GC OH&P on Own Work:	$0.00	15%
Total OH&P on Sub Work:	$0.00	25%

Total Cost Change _____ Add / Deduct
$0.00

Total Time Change **0** Calendar Days (Critical path impacts only)

* Materials permanently installed in the building shall be sales tax free.
* Any requests for additional time are only considered if the critical path of the project is extended. Attach additional pages with explanation of how the change affects the critical path of the project.

SECTION 01 32 00 - CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes: Administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:
   1. Contractor's Construction Schedule.
   2. Submittals Schedule.
   3. Daily construction reports.
   4. Field condition reports.

B. Related Sections:
   1. Section 012900 - Payment Procedures: Submitting the Schedule of Values.
   2. Section 013100 - Project Management and Coordination: Submitting and distributing meeting and conference minutes.
   3. Section 013300 - Submittal Procedures: Submitting schedules and reports.
   4. Section 014000 - Quality Assurance: Submitting a schedule of tests and inspections.

1.02 DEFINITIONS

A. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction project. Activities included in a construction schedule consume time and resources.
   1. Critical activities are activities on the critical path. They must start and finish on the planned early start and finish times.
   2. Predecessor Activity: An activity that precedes another activity in the network.
   3. Successor Activity: An activity that follows another activity in the network.

B. Fragment: A partial or fragmentary network that breaks down activities into smaller activities for greater detail.

C. Major Area: A story of construction, a separate building, or a similar significant construction element.

1.03 SUBMITTALS

A. Submittals Schedule: Submit three (3) copies of schedule. Arrange the following information in a tabular format:
   1. Scheduled date for first submittal.
   2. Specification Section number and title.
   3. Submittal category (action or informational).
   4. Name of subcontractor.
   5. Description of the Work covered.
   6. Scheduled date for Architect's final release or approval.

B. Field Condition Reports: Submit two (2) copies at time of discovery of differing conditions.

1.04 COORDINATION

A. Coordinate preparation and processing of schedules and reports with performance of construction activities and with scheduling and reporting of separate contractors.

B. Coordinate Contractor's Construction Schedule with the Schedule of Values (01 29 00) and Contractors Draw Schedule (00 62 83), list of subcontracts, Submittals Schedule, progress reports, payment requests, and other required schedules and reports.
   1. Secure time commitments for performing critical elements of the Work from parties involved.
   2. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.

PART 2 - PRODUCTS

2.01 SUBMITTALS SCHEDULE

A. Preparation: Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, resubmittal, ordering, manufacturing, fabrication, and delivery when establishing dates.
   1. Coordinate Submittals Schedule with list of subcontracts, the Schedule of Values, and Contractor's Construction Schedule.
   2. Submit concurrently with the first complete submittal of Contractor's Construction Schedule.

2.02 CONTRACTOR'S CONSTRUCTION SCHEDULE, GENERAL

A. Time Frame: Extend schedule from date established for the NTP to date of Final Completion.
   1. Contract completion date shall not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by Change Order.

B. Activities: Treat each story or separate area as a separate numbered activity for each principal element of the Work. Comply with the following:
   1. Activity Duration: Define activities so no activity is longer than 20 days, unless specifically allowed by Ownert.
   2. Procurement Activities: Include procurement process activities for the following long lead items and major items, requiring a cycle of more than 60 days, as separate activities in schedule. Procurement cycle activities include, but are not limited to, submittals, approvals, purchasing, fabrication, and delivery.
   3. Submittal Review Time: Include review and resubmittal times indicated in Section 01 33 00 - Submittal Procedures in schedule. Coordinate submittal review times in Contractor's Construction Schedule with Submittals Schedule.
   4. Startup and Testing Time: Include not less than three (3) days for startup and testing.
   5. Project Completion: Indicate completion in advance of date established for Project Completion, and allow time for Architect's administrative procedures necessary for certification of Project Completion.

C. Constraints: Include constraints and work restrictions indicated in the Contract Documents and as follows in schedule, and show how the sequence of the Work is affected.
   1. Phasing: Arrange list of activities on schedule by phase.
   2. Work by Owner: Include a separate activity for each portion of the Work performed by Owner.
   3. Work Restrictions: Show the effect of the following items on the schedule:
      a. Coordination with existing construction.
      b. Limitations of continued occupancies.
      c. Uninterruptible services.
      d. Partial occupancy before Final Acceptance.
      e. Use of premises restrictions.
      f. Provisions for future construction.
      g. Seasonal variations.
      h. Environmental control.
   4. Work Stages: Indicate important stages of construction for each major portion of the Work.

D. Milestones: Include milestones indicated in the Contract Documents in schedule, including, but not limited to, the Notice to Proceed, Punch List Inspection, and Final Inspection.

E. Contract Modifications: For each proposed contract modification and concurrent with its submission, prepare a time-impact analysis using fragments to demonstrate the effect of the proposed change on the overall project schedule.

2.03 CONTRACTOR'S CONSTRUCTION SCHEDULE (CPM SCHEDULE)

A. General: Prepare network diagrams using AON (activity-on-node) format. Submit two (2) opaque copies of initial schedule, large enough to show entire schedule for entire construction period.

B. CPM Schedule: Submit Contractor's Construction Schedule, simultaneously with the Schedule of Values (01 29 00) and the Draw Schedule (00 62 83), using a computerized, time-scaled CPM network analysis diagram for the Work in accordance with General Conditions, Article 9.

1. Failure to include any work item required for performance of this Contract shall not excuse Contractor from completing all work within applicable completion dates, regardless of Owner's approval of the schedule.
2. Establish procedures for monitoring and updating CPM schedule and for reporting progress. Coordinate procedures with progress meeting and payment request dates.
3. Use "one workday" as the unit of time. Include list of nonworking days and holidays incorporated into the schedule.

C. CPM Schedule Preparation: Prepare a list of all activities required to complete the Work. Using the preliminary network diagram, prepare a skeleton network to identify probable critical paths.
1. Activities: Indicate the estimated time duration, sequence requirements, and relationship of each activity in relation to other activities. Include estimated time frames for the following activities:
   a. Preparation and processing of submittals.
   b. Mobilization and demobilization.
   c. Purchase of materials.
   d. Delivery.
   e. Fabrication.
   f. Utility interruptions.
   g. Installation.
   h. Work by Owner that may affect or be affected by Contractor's activities.
   i. Testing and commissioning.
2. Critical Path Activities: Identify critical path activities, including those for interim completion dates. Scheduled start and completion dates shall be consistent with Contract milestone dates.
3. Processing: Process data to produce output data on a computer-drawn, time-scaled network. Revise data, reorganize activity sequences, and reproduce as often as necessary to produce the CPM schedule within the limitations of the Contract Time.
4. Format: Mark the critical path. Locate the critical path near center of network; locate paths with most float near the edges.
   a. Subnetworks on separate sheets are permissible for activities clearly off the critical path.

D. Initial Issue of Schedule: Prepare initial network diagram from a list of straight "early start-total float" sort. Identify critical activities. Prepare tabulated reports showing the following:
1. Contractor or subcontractor and the Work or activity.
2. Description of activity.
3. Principal events of activity.
4. Immediate preceding and succeeding activities.
5. Early and late start dates.
6. Early and late finish dates.
7. Activity duration in workdays.
8. Total float or slack time.
9. Average size of workforce.

E. Schedule Updating: Concurrent with making revisions to schedule, prepare tabulated reports showing the following:
1. Identification of activities that have changed.
2. Changes in early and late start dates.
3. Changes in early and late finish dates.
4. Changes in activity durations in workdays.
5. Changes in the critical path.
6. Changes in total float or slack time.
7. Changes in the Contract Time.

2.04 REPORTS

A. Daily Construction Reports: Prepare a daily construction report recording the following information concerning events at Project site:
1. List of subcontractors at Project site.
2. Equipment at Project site.

3. Material deliveries.
4. High and low temperatures and general weather conditions.
5. Accidents.
6. Stoppages, delays, shortages, and losses.
7. Meter readings and similar recordings.
8. Orders and requests of authorities having jurisdiction.
9. Services connected and disconnected.
10. Equipment or system tests and startups.

B. Field Condition Reports: Immediately on discovery of a difference between field conditions and the Contract Documents, prepare and submit a detailed report. Submit with a request for interpretation. Include a detailed description of the differing conditions, together with recommendations for changing the Contract Documents.

PART 3 - EXECUTION

3.01 CONTRACTOR'S CONSTRUCTION SCHEDULE

A. Contractor's Construction Schedule Updating: At monthly intervals, update schedule to reflect actual construction progress and activities. Issue schedule one week before each regularly scheduled progress meeting.
   1. Revise schedule immediately after each meeting or other activity where revisions have been recognized or made. Issue updated schedule concurrently with the report of each such meeting.
   2. Include a report with updated schedule that indicates every change, including, but not limited to, changes in logic, durations, actual starts and finishes, and activity durations.
   3. As the Work progresses, indicate Actual Completion percentage for each activity.

B. Distribution: Distribute copies of approved schedule to Architect, Owner, separate contractors, testing and inspecting agencies, and other parties identified by Contractor with a need-to-know schedule responsibility.
   1. Post copies in Project meeting rooms and temporary field offices.
   2. When revisions are made, distribute updated schedules to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in performance of construction activities.

END OF SECTION

SECTION 01 32 01 – PROJECT SCHEDULE
(Revised 3 August 2021)

-- End of Section Table of Contents --

SECTION 01 32 01 - PROJECT SCHEDULE

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

U.S. ARMY CORPS OF ENGINEERS (USACE)

ER 1-1-11	(1995) Administration -- Progress, Schedules, and Network Analysis Systems

1.2 SUBMITTALS

Owner approval is required for submittals with an "Owner" Classification. Submittals not having an "Owner" classification are for Contractor Quality Control approval. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Preliminary Project Schedule; Owner

Initial Project Schedule; Owner

Periodic Schedule Update;

1.3 PROJECT SCHEDULER QUALIFICATIONS

Designate an authorized representative to be responsible for the preparation of the schedule and all required updating and production of reports. The authorized representative must have a minimum of two years' experience scheduling construction projects similar in size and nature tothis project with scheduling software that meets the requirements of this specification. Representative must have a comprehensive knowledge of CPM scheduling principles and application.

PART 2 PRODUCTS

2.1 SOFTWARE

The scheduling software utilized to produce and update the schedules required herein must be capable of meeting all requirements of this specification.

2.1.1 Owner's Default Software

The Owner does not currently use a scheduling software.

2.1.2 Contractor Software

Scheduling software used by the contractor must be commercially available.

PART 3 EXECUTION

3.1 GENERAL REQUIREMENTS

Prepare for approval a Project Schedule, as specified herein. Show in the schedule the proposed sequence to perform the work and dates contemplated for starting and completing all schedule activities. The scheduling of the entire project is required. The scheduling of construction is the responsibility of the Contractor. Contractor management personnel must actively participate in its development. Subcontractors and suppliers working on the project must also contribute in developing and maintaining an accurate Project Schedule. Provide a schedule that is a forward planning as well as a project monitoring tool. Use the Critical Path Method (CPM) of network calculation to generate all Project Schedules. Prepare each Project Schedule using the Precedence Diagram Method (PDM).

3.2 PROJECT SCHEDULE DETAILED REQUIREMENTS

3.2.1 Level of Detail Required

Develop the Project Schedule to the appropriate level of detail to addressmajor milestones and to allow for satisfactory project planning and execution. Failure to develop the Project Schedule to an appropriate level of detail will result in its disapproval. The Contracting Officer will consider, but is not limited to, the following characteristics and requirements to determine appropriate level of detail:

3.2.2 Activity Durations

Reasonable activity durations are those that allow the progress of ongoing activities to be accurately determined between update periods. Less than 2 percent of all non-procurement activities may have Original Durations (OD) greater than 20 work days or 30 calendar days.

3.2.3 Procurement Activities

Include activities associated with the critical submittals and their approvals, procurement, fabrication, and delivery of long lead materials,equipment, fabricated assemblies, and supplies. Long lead procurement activities are those with an anticipated procurement sequence of over 90 calendar days.

3.2.4 Mandatory Tasks

Include the following activities/tasks in the initial project schedule andall updates.

a. Submission, review and acceptance of SD-01 Preconstruction Submittals (individual activity for each).

b. Long procurement activities

c. Submission and approval of testing and air balance (TAB).

d. Submission of TAB specialist design review report.

e. Building commissioning - Functional Performance Testing.

f. Controls testing plan submission.

g. Controls testing.

h. Performance Verification testing.

i. Other systems testing, if required.

j. Contractor's punch list inspection.

k. Correction of punch list from Contractor's punch list inspection.

l. Owner’s punch list inspection.

m. Correction of punch list from Owner’s punch list inspection.

n. Final inspection.

3.2.5 Owner Activities

Show Owner and other agency activities that could impact progress. These activities include, but are not limited to: approvals, acceptance, environmental permit approvals by Alabama Department of Environmental Management (ADEM), inspections, utility tie-in, Government Furnished Equipment (GFE) and Notice to Proceed (NTP) for phasing requirements.

3.2.6 Standard Activity Coding Dictionary

Use an activity coding structure. Develop and assign all Activity Codes to activities as detailed herein.

3.2.6.1 Area of Work Coding (AREA)

Assign Work Area code to activities based upon the work area in which the activity occurs. Define work areas based on resource constraints or spaceconstraints that would preclude a resource, such as a particular trade or craft work crew from working in more than one work area at a time due to restraints on resources or space. Examples of Work Area Coding include different areas within a floor of a building, different floors within a building, and different buildings within a complex of buildings. Activities cannot have more than one Work Area Code.

Not all activities are required to be Work Area coded. A lack of Work Area coding indicates the activity is not resource or space constrained.

3.2.6.2 Modification Number (MODF)

Assign a Modification Number Code to any activity or sequence of activities added to the schedule as a result of a Contract Modification, when approved by Contracting Officer. Key all Code values to the Owner's modification numbering system. An activity can have only one Modification Number Code.

3.2.6.3.1.1 Bid Item Coding (BIDI)

Assign a Bid Item Code to all activities using the Contract Line Item Schedule (CLIN) to which the activity belongs, even when an activity isnot cost loaded. An activity can have only one BIDI Code.

3.2.6.4 Phase of Work Coding (PHAS)

Assign Phase of Work Code to all activities. Examples of phase of work are procurement phase and construction phase. Each activity can have only one Phase of Work code.

a. Code proposed fast track construction phases proposed to allow filtering and organizing the schedule by fast track construction packages.

b. If the contract specifies phasing with separately defined performance periods, identify a Phase Code to allow filtering and organizing the schedule accordingly.

3.2.7 Contract Milestones and Constraints

Milestone activities are to be used for significant project events including, but not limited to, project phasing, project start and end activities, or interim completion dates. The use of artificial float constraints such as "zero free float" or "zero total float" are prohibited.

Mandatory constraints that ignore or effect network logic are prohibited.No constrained dates are allowed in the schedule other than those specified herein. Submit additional constraints to the Contracting Officer for approval on a case by case basis.

3.2.7.1 Project Start Date Milestone and Constraint

The first activity in the project schedule must be a start milestone titled "NTP Issued," which must have a "Start On" constraint date equal to the date that the NTP is issued.

3.2.7.2 End Project Finish Milestone and Constraint

The last activity in the schedule must be a finish milestone titled "EndProject."

Constrain the project schedule to the Contract Completion Date in such a way that if the schedule calculates an early finish, then the float calculation for "End Project" milestone reflects positive float on the longest path. If the project schedule calculates a late finish, then the"End Project" milestone float calculation reflects negative float on the longest path. The Owner is under no obligation to accelerate Owner activities to support a Contractor's early completion.

3.2.7.3 Interim Completion Dates and Constraints

Constrain contractually specified interim completion dates to show negative float when the calculated late finish date of the last activityin that phase is later than the specified interim completion date.

3.2.7.3.1 Start Phase

Use a start milestone as the first activity for a project phase. Call thestart milestone "Start Phase X" where "X" refers to the phase of work.

3.2.7.3.2 End Phase

Use a finish milestone as the last activity for a project phase. Call the finish milestone "End Phase X" where "X" refers to the phase of work.

3.2.8 Calendars

Schedule activities on a Calendar to which the activity logically belongs. Develop calendars to accommodate any contract defined work period such as a 7-day calendar for Owner Acceptance activities,concrete cure times, etc. Develop the default Calendar to match the
physical work plan with non-work periods identified including weekends and holidays. Develop Seasonal Calendar(s) and assign to seasonally affected activities as applicable.

3.2.9 Open Ended Logic

Only two open ended activities are allowed: the first activity "NTP Issued" may have no predecessor logic, and the last activity "End Project" may have no successor logic.

Predecessor open-ended logic may be allowed in a time impact analyses upon the Contracting Officer's approval.

3.2.10 Default Progress Data Disallowed

Actual Start and Finish dates must not automatically update with default mechanisms included in the scheduling software. Updating of the percent complete and the remaining duration of any activity must be independent functions. Disable program features that calculate one of these parameters from the other.

3.2.11 Out-of-Sequence Progress

Address out of sequence progress or logic changes in the periodic schedule update meetings.

3.2.12 Added and Deleted Activities

Do not delete activities from the project schedule or add new activitiesto the schedule without approval from the Contracting Officer. Activity ID and description changes are considered new activities and cannot be changed without Contracting Officer approval.

3.2.13 Original Durations

Activity Original Durations (OD) must be reasonable to perform the work item. OD changes are prohibited unless justification is provided and approval is granted by the Owner.

3.2.14 Leads, Lags, and Start to Finish Relationships

Lags must be reasonable as determined by the Owner and not used in place of realistic original durations, must not be in place to artificially absorb float, or to replace proper schedule logic.

3.2.14.1 Leads (negative lags) are prohibited.

3.2.14.2 Start to Finish (SF) relationships are prohibited.

3.2.15 Retained Logic

Schedule calculations must retain the logic between predecessors and successors ("retained logic" mode) even when the successor activity(s) starts and the predecessor activity(s) has not finished (out-of-sequenceprogress). Software features that in effect sever the tie between predecessor and successor activities when the successor has started and the predecessor logic is not satisfied ("progress override") are not be allowed.

3.2.16 Percent Complete

Update the percent complete for each activity started, based on the realistic assessment of earned value. Activities which are complete but for remaining minor punch list work and which do not restrain the initiation of successor activities may be declared 100 percent complete to allow for proper schedule management. Percent complete must be updated no later than each OAC/Periodic Schedule Update meeting.

3.2.17 Remaining Duration

Update the remaining duration for each activity based on the number ofestimated work days it will take to complete the activity. Remaining duration may not mathematically correlate with percentage found under paragraph entitled Percent Complete.

3.2.18 Cost Loading of Closeout Activities

Cost load the "Correction of punch list from Owner’s punch list inspection" activity(ies) not less than 1 percent of the present contractvalue. Activity(ies) may be declared 100 percent complete

upon the Owner's verification of completion and correction of all punch list work identified during Owner's punch list inspection(s) – i.e. upon issuance of a fully executed Certificate of Final Completion.

3.2.18.1 As-Built Drawings / O&M Manuals

Activity will be declared 100 percent complete upon the Owner's approval and acceptance of the as-built drawings which will happen no earlier than Owner's Final Inspection.

3.2.19 Early Completion Schedule and the Right to Finish Early

An Early Completion Schedule is an Initial Project Schedule (IPS) that indicates all scope of the required contract work will be completed beforethe contractually required completion date.

3.2.19.1 The Owner is under no obligation to accelerate work items the Owner is responsible for to ensure that the early completion is met nor is the Owner responsible to modify incremental funding (if applicable) for the project to meet the contractor's accelerated work.

3.3 PROJECT SCHEDULE SUBMISSIONS

Provide the submissions as described below. The data and CPM/GANTT Charts (submitted in Adobe via CD/DVD and in hard copy) required for each submission are contained in paragraph SUBMISSION REQUIREMENTS. If the Contractor fails or refuses to furnish the information and schedule updates as set forth herein, then the Contractor may be deemed not to have provided an estimate upon which a progress payment can be made.

Review comments made by the Owner on the schedule(s) do not relieve the Contractor from compliance with requirements of the Contract Documents.

3.3.1 Preliminary Project Schedule Submission

Within 14 calendar days after the Notice to Proceed (NTP) is issued submit the Preliminary Project Schedule defining the planned operations detailed for the first 90 calendar days for approval. The Preliminary Project Schedule may be summary in nature for the remaining performance period. It must be early start and late finish constrained and logically tied as specified. The Preliminary Project Schedule forms the basis for the Initial Project Schedule specified herein and must include all of the required plan and program preparations, submissions and approvals identified in the contract (for example, Quality Control Plan, Safety Plan, and Environmental Protection Plan) as well as, permitting activities and other non-construction activities intended to occur within the first 90 calendar days. Activity code any activities that are summary in nature after the first 90 calendar days with Bid Item (CLIN) code (BIDI).

3.3.2 Initial Project Schedule Submission

Submit the Initial Project Schedule for approval within 28 calendar days after notice to proceed is issued. The schedule must demonstrate a reasonable and realistic sequence of activities which represent all work through the entire contract performance period.

3.3.3 Periodic Schedule Updates

Update the Project Schedule on a regular basis, monthly at a minimum. Provide a Periodic Schedule Update for review at the schedule update meetings as prescribed in the paragraph PERIODIC SCHEDULE REVIEW MEETINGS. These updates will enable the Owner to assess Contractor's progress.

3.3.3.1 Update information including Actual Start Dates (AS), Actual Finish Dates (AF),

Remaining Durations (RD), and Percent Complete.

3.4 SUBMISSION REQUIREMENTS

Submit the following items for the Preliminary Schedule, Initial Schedule,and every Periodic Schedule Review meeting throughout the life of the project:

3.4.1 Data CD/DVDs

For the Preliminary and Initial Schedules, provide two sets of data CD/DVDs containing the current project schedule in Adobe format. Label each CD/DVD indicating the type of schedule (Preliminary or Initial), full contract number, Data Date and file name. Each schedule must have a unique file name and use project specific settings.

3.4.2 Hard Copies

Provide two hard copies for each of the Preliminary, Initial and Periodic Schedule Review meetings in CPM/GANTT chart form.

3.4.3 CPM/GANTT Chart

The CPM/GANTT Chart is required for the Preliminary, Initial and Periodic Schedule Review meetings. Depict and display the order and interdependence of activities and the sequence in which the work is to be accomplished. The Contracting Officer will use, but is not limited to, the following conditions to review compliance with this paragraph:

3.4.3.1 Continuous Flow

Show a continuous flow from left to right with no arrows from right to left. Show the activity number, description, and duration.

3.4.3.2 Project Milestone Dates

Show dates on the diagram for start of project, any contract required interim completion dates, and contract completion dates.

3.4.3.3 Critical Path

Show all activities on the critical path. The critical path is defined as the longest path.

3.4.3.4 Banding

Organize activities using the WBS or as otherwise directed to assist in the understanding of the activity sequence. Typically, this flow will group activities by major elements of work, category of work, work area and/or responsibility.

3.5 PERIODIC SCHEDULE UPDATE

3.5.1 Periodic Schedule Review Meetings/OAC

Conduct periodic schedule review meetings, concurrently with all OAC meetings, for the purpose of reviewing the proposed Periodic Schedule Update and progress payment. Conduct meetings at least monthly within five days of the proposed schedule data date. The Contractor's authorized scheduler must organize, group, sort, filter, perform schedule revisions as needed and review functions as

requested by the Contractor and/or Owner. The meeting is a working interactive exchange which allows the Owner and Contractor the opportunity to review the updated schedule on a real time and interactive basis. The Contractor's Project Manager and scheduler must attend the meeting with the authorized representative of the Contracting Officer. The Superintendent, foremen and major subcontractors must attend the meeting as required to discuss the project schedule and work.

3.6 REQUESTS FOR TIME EXTENSIONS

Provide a justification of delay to the Contracting Officer in accordance with the contract provisions and clauses for approval within 10 days of a delay occurring. Also prepare a time impact analysis for each Owner request for proposal (RFP) to justify time extensions.

3.6.1 Justification of Delay

Provide a description of the event(s) that caused the delay and/or impact to the work. As part of the description, identify all schedule activities impacted. Provide a time impact analysis that demonstrates the effects of the delay or impact on the project completion date or interim completion date(s). Evaluate multiple impacts chronologically; each with its own justification of delay. With multiple impacts consider any concurrency of delay.

3.6.2 Time Impact Analysis (Prospective Analysis)

Prepare a time impact analysis for approval by the Contracting Officer based on the industry standard. Utilize a copy of the last approved schedule prior to the first day of the impact or delay for thetime impact analysis. If Contracting Officer determines the time framebetween the last approved schedule and the first day of impact is too great, prepare an interim updated schedule to perform the time impact analysis. Unless approved by the Contracting Officer, no other changes may be incorporated into the schedule being used to justify the time impact.

3.6.3 Time Extension

The Contracting Officer must approve the Justification of Delay including the time impact analysis before a time extension will be granted. No time extension will be granted unless the delay consumes all available Project Float and extends the projected finish date ("End Project" milestone) beyond the Contract Completion Date. The time extension will be in calendar days.

Actual delays that are found to be caused by the Contractor's own actions,which result in a calculated schedule delay will not be a cause for an extension to the performance period, completion date, or any interim milestone date.

3.7 FAILURE TO ACHIEVE PROGRESS

Should the progress fall behind the approved project schedule for reasons other than those that are excusable within the terms of the contract, the Contracting Officer may require provision of a written recovery plan for approval. The plan must detail how progress will be made-up to include which activities will be accelerated by adding additional crews, longer work hours, extra work days, etc.

3.7.1 Artificially Improving Progress

Artificially improving progress by means such as, but not limited to, revising the schedule logic, modifying or adding constraints, shortening activity durations, or changing calendars in the project schedule is prohibited. Indicate assumptions made and the basis for any logic, constraint, duration and calendar changes used in the creation of the recovery plan. Any additional resources, manpower, or daily and weekly work hour changes proposed in the recovery plan must be evident at the work site and documented in the daily report.

3.7.2 Failure to Perform

Failure to perform work and maintain progress in accordance with the supplemental recovery plan may result in the full range of options available to the Contracting Officer; including, but not limited to, the Contractor being declared “non-responsible” and barred from bidding on future projects for a period of time, Liquidated Damages being imposed on the Contractor or early termination of the project.

3.8 OWNERSHIP OF FLOAT

Float available in the schedule, at any time, may not be considered for the exclusive use of either the Owner or the Contractor including activity and/or project float. Activity float is the number of work days that an activity can be delayed without causing a delay to the "End Project" finish milestone. Project float (if applicable) is the number of work days between the projected early finish and the contract completion date milestone.

-- End of Section --

SECTION 01 40 00 - QUALITY REQUIREMENTS

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes:
   1. Quality Control Requirements.
   2. Administrative and procedural requirements for quality assurance and quality control.

B. Related Sections:
   1. Section 01 32 00 - Construction Progress Documentation: Developing a schedule of required tests and inspections.
   2. Section 01 73 29 - Cutting and Patching: Repair and restoration of construction disturbed by testing and inspecting activities.
   3. Divisions 02 through 50 Sections: Specific test and inspection requirements.

1.02 QUALITY CONTROL REQUIREMENTS

A. General: The Contractor shall establish a system of inspections and tests of his work and that of his subcontractors to insure that all applicable requirements of the specifications are met.
   1. The Contractor shall be diligent to insure that the quality of workmanship is satisfactory, that dimensional requirements are met, that defective materials are not used and that all required control and laboratory testing procedures are effected.
   2. Where specific testing procedures are not stipulated, the Contractor shall establish and conduct a test procedure to insure adherence to specified quality.
   3. The Contractor shall make an initial inspection of each phase of work as soon as a representative portion has been completed, and the Contractor shall make daily follow-up inspections, to insure that an acceptable quality of work is established and maintained.
   4. The Contractor shall perform a pre-final inspection and work off all punch list items prior to Architect's or Owner's inspection(s).

1.03 DEFINITIONS

A. Conventional Inspections: Inspections, not specifically required by Code, which are considered essential to the proper performance of the building systems.

B. Inspections: Evaluation of systems, primarily requiring observation and engineering judgment.

C. Quality-Control Services: Conventional inspections, special inspections, tests, and related actions, including reports performed by Contractor, by independent agencies, and by governing authorities. Services do not include contract enforcement activities performed by Architect.

D. Special Inspections: Inspections, required by Code, which monitor the quality of materials and workmanship critical to the structural integrity of the building.

E. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.

F. Mockups: Full-size, physical assemblies that are constructed on-site. Mockups are used to verify selections made under sample submittals, to demonstrate aesthetic effects and, where indicated, qualities of materials and execution, and to review construction, coordination, testing, or operation; they are not Samples. Approved mockups establish the standard by which the Work will be judged.

G. Laboratory Mockups: Full-size, physical assemblies that are constructed at testing facility to verify performance characteristics.

H. Preconstruction Testing: Tests and inspections that are performed specifically for the Project before products and materials are incorporated into the Work to verify performance or compliance with specified criteria.

I. Product Testing: Tests and inspections that are performed by an NRTL, an NVLAP, or a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction and the Owner, to establish product performance and compliance with industry standards.

J. Source Quality-Control Testing: Tests and inspections that are performed at the source, i.e., plant, mill, factory, or shop.

K. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.

L. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.

M. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.
   1. Using a term such as "carpentry" does not imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as "carpenter." It also does not imply that requirements specified apply exclusively to tradespeople of the corresponding generic name.

N. Experienced: When used with an entity, "experienced" means having successfully completed a minimum of five previous projects similar in size and scope to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

1.04 QUALITY ASSURANCE AND CONTROL SERVICES REQUIREMENTS

A. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
   1. Specific quality-assurance and -control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.
   2. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and -control procedures that facilitate compliance with the Contract Document requirements.

B. Requirements for Contractor to provide quality-assurance and -control services required by Architect, Owner, the Contract Documents or authorities having jurisdiction are not limited by provisions of this Section.

1.05 CONFLICTING REQUIREMENTS

A. General: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement, unless directed otherwise by the Owner. Refer uncertainties and requirements that are different, but apparently equal, to the Architect, in writing, for the Owner’s decision before proceeding.

B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Architect, in writing, for the Owner’s decision before proceeding.

1.06 SUBMITTALS

A. Qualification Data: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.

B. Reports: Prepare and submit certified written reports that include the following:
   1. Date of issue.
   2. Project title and number.
   3. Name, address, and telephone number of testing agency.
   4. Dates and locations of samples and tests or inspections.
   5. Names of individuals making tests and inspections.
   6. Description of the Work and test and inspection method.
   7. Identification of product and Specification Section.
   8. Complete test or inspection data.
   9. Test and inspection results and an interpretation of test results.

10. Record of temperature and weather conditions at time of sample taking and testing and inspecting.
11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
12. Name and signature of laboratory inspector.
13. Recommendations on retesting and re-inspecting.

C. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

1.07 QUALITY ASSURANCE

A. General: Qualifications paragraphs in this Article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.

B. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.

C. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

D. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar to those indicated for this Project in material, design, and extent.

F. Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E 548; and with additional qualifications specified in individual Sections; and where required by authorities having jurisdiction, that is acceptable to authorities.
1. NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7.
2. NVLAP: A testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program.

G. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

H. Mockups: Before installing portions of the Work requiring mockups, build mockups for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work:
1. Build mockups in location and of size indicated or, if not indicated, as directed by Architect.
2. Notify Architect seven days in advance of dates and times when mockups will be constructed.
3. Demonstrate the proposed range of aesthetic effects and workmanship.
4. Obtain Architect's approval of mockups before starting work, fabrication, or construction.
5. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
6. Demolish and remove mockups when directed, unless otherwise indicated.

1.08 QUALITY CONTROL

A. Owner Responsibilities: Where quality-control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency to perform these services.

1. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of types of testing and inspecting they are engaged to perform.
2. Payment for these services will be made from allowances, as authorized by the Owner.
3. Costs for retesting and reinspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor, and the Contract Sum will be adjusted by Change Modification.

B. Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction, at no additional expense to the Owner or Architect. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.
   1. Where services are not indicated as Owner's responsibility, engage a qualified testing agency to perform these quality-control services.
   2. Contractor shall not employ same entity engaged by Owner, unless agreed to in writing by Owner.
   3. Notify testing agencies and Architect at least 24 hours in advance of time when Work that requires testing or inspecting will be performed.
   4. For all quality-control services that are not indicated as Owner's responsibility, submit a certified written report, in duplicate, of each quality-control service.
   5. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
   6. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.

C. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Section 01 33 00 - Submittal Procedures.

D. Retesting/Re-inspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and re-inspecting, for construction that replaced Work that failed to comply with the Contract Documents.

E. Testing Agency Responsibilities: Cooperate with Architect and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
   1. Notify Architect, Owner, and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
   2. Determine the location from which test samples will be taken and in which in-situ tests are conducted.
   3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
   4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
   5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
   6. Do not perform any duties of Contractor.

F. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
   1. Access to the Work.
   2. Incidental labor and facilities necessary to facilitate tests and inspections.
   3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
   4. Facilities for storage and field curing of test samples.
   5. Delivery of samples to testing agencies.
   6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
   7. Security and protection for samples and for testing and inspecting equipment at Project site.

G. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and -control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.
   1. Schedule times for tests, inspections, obtaining samples, and similar activities.

1.09 STANDARD AND INDUSTRY SPECIFICATIONS

A. Any material or operation specified by reference to the published specification of a manufacturer, The American Society for Testing and Materials (ASTM), The American Standards Association (ASA), Federal Specifications, or other published standard shall comply with the requirements of the current specification or standard listed. Should there be a discrepancy between the referenced specification and the contract documents the latter shall govern unless written interpretation is obtained from the Owner. Should there be discrepancies among referenced specifications or standards, the more stringent requirements shall govern.

B. The Contractor shall, if requested, furnish an affidavit from the manufacturer(s) certifying that the materials or products being furnished meet the requirements specified. Such certification, however, shall not relieve the Contractor from the responsibility of complying with other requirements of the contract documents.

1.10 MANUFACTURER'S DIRECTIONS

A. All manufactured articles, materials, and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned as directed by the manufacturers unless herein specified to the contrary. Should there be a discrepancy between an installation as required by the drawings and/or specifications and the manufacturer's directions and/or recommendations, such discrepancy shall be brought to the attention of the Architect and shall be resolved before the work may proceed.

1.11 APPROVED MATERIAL REQUIREMENTS

A. In the event the architectural, plumbing, mechanical and/or electrical requirements of any "APPROVED" material is different from that specified and/or as indicated on the drawings, any additional cost involved shall be the responsibility of the Contractor. No extra cost to the Owner or Architect will be allowed because of the use of such materials.

1.12 USE OF FOREIGN MATERIALS

A. The Contractor shall agree to use in the execution of this contract only materials, supplies, and products manufactured, mined, processed or otherwise produced in accordance with the Buy American Act (41 USC 10a-10d).

1.13 EXAMINATION OF SURFACES AND/OR CONDITIONS

A. The Contractor shall examine all surfaces on which, or against which, their work is to be applied and shall notify the Architect in writing of any defects the Contractor may discover which, in the Contractor's opinion, would be detrimental to the proper installation or operation of the Contractor's products. Commencing of work by the Contractor denotes acceptance by Contractor of all surfaces and conditions affecting Contractor's work.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 REPAIR AND PROTECTION

A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
   1. Comply with the Contract Document requirements for Section 01 73 29 - Cutting and Patching.

B. Protect construction exposed by or for quality-control service activities.

C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION

SECTION 01 50 00 - TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.01 TEMPORARY OFFICES AND SHEDS

A. At the Contractor's Option, he may provide an office, storage sheds, and other structures as may be necessary to carry on the work.

B. Storage sheds shall be of sufficient size to hold materials required on the job site at one time, and shall have floors raised at least 1' 0" above the ground on heavy joists or sleepers. Sheds shall be watertight.

1.02 TELEPHONE (CONTRACTORS OPTION)

A. The Contractor may install, at his own expense, a single party job telephone, which shall be available for the use of all persons concerned with the construction of the project. All official long distance calls shall be paid by the General Contractor.

1.03 TOILET FACILITIES

A. The Contractor shall, at the beginning of the work, provide on the premises toilet facilities and enclosures for the use of all workmen on the project; shall maintain same in a sanitary condition; and shall remove same at the completion of the building and/ or when directed by the Architect or Owner.

B. The toilets shall, in construction details, equipment connections, and maintenance conform to all rules, regulations, and requirements of the City or County Health Department having jurisdiction.

1.04 RODENT AND VERMIN CONTROL

A. The Contractor shall provide on the job site ample and suitable containers with covers, and shall be fully responsible for containing and removing from the site all refuse from meals eaten on the site and other rodent or vermin attracting refuse. If the Contractor has the entire site the Contractor is solely responsible for ensuring that the site is rodent and vermin free at the Final Inspection.

1.05 SIGNS

A. No signs will be allowed on the premises except as required by the project specifications and/or as approved by the Owner.

1.06 PROTECTION

A. Provide and maintain all fences, planking, bridges, bracing, shoring, sheet piling, lights, barricades, warning signs, and guards as necessary for the protection of streets, sidewalks, landscaping, adjoining property, and the streets adjacent.

B. Provide protection for all shrubs, trees, lawns, walks, roads, drives, adjacent buildings and equipment, both on and off property, and in roads and streets adjacent.

1.07 REMOVAL

A. Temporary facilities shall be removed promptly as each becomes no longer required, but in all cases no later than the date of Final Acceptance.

1.08 STORAGE AND PARKING AREA

A. The amount of area and location that may be used for parking, storage of materials, equipment, sheds, and offices shall be as indicated by the Drawings or as directed by the Owner.

1.09 FIRST AID PROTECTION

A. General Contractor shall provide the following:
   1. First Aid Accident Cabinets.
   2. Emergency telephone numbers posted at telephone.

1.10 FIRE PRECAUTION DURING CONSTRUCTION

A. Emergency fire protection shall be provided for temporary sheds, new work, stacked materials, etc., using extinguishers, water pails and small hose streams, said equipment conforming to the requirements of the National Board of Fire Underwriters and relevant Insurance Co. Particular care shall be exercised when using open flame and welding and cutting equipment; use only flameproof type tarpaulins. Keep site clean and orderly with proper protection of combustibles while in use and in storage.

END OF SECTION

SECTION 01 60 00 - PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.01 PRODUCTS AND MATERIALS

A. Products, Materials, and manufactured items or articles of like nature, shall as nearly as possible, be of one brand or manufacturer. No changes or substitutions shall be made without written consent of the Owner.

1.02 TRADE NAMES

A. The use of manufacturer's names and model numbers are given to establish a standard of manufacture and not intended to be restrictive or preferential. Similar, equal, and approved materials of other manufacturers will be acceptable, subject to the approval of the Owner, pursuant to requirements set forth in Instruction to Bidders and as required by the Specifications.

1.03 MEASUREMENTS

A. Before ordering any material or doing any work, the Contractor shall verify all measurements of the building and shall be responsible for correctness of same. No extra charge or compensation will be allowed because of differences between actual measurements and the dimensions indicated on the Drawings. Any Differences which may be found, shall be submitted to the Architect for consideration before proceeding with the work.

1.04 SALVAGEABLE MATERIAL

A. Any salvageable material and or equipment shall remain the property of the Owner and upon removal from its existing location shall be stored where directed by the Owner. In the event that the Owner does not wish to keep the salvaged material, it shall be the responsibility of the Contractor to remove same promptly form the site.

PART 2 - PRODUCTS

2.01 PRODUCT OPTIONS

A. General Product Requirements: Provide products that comply with the Contract Documents, that are undamaged, and unless otherwise indicated, that are new at time of installation.

B. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.

C. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.

D. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.

E. Where products are accompanied by the term “as selected,” Architect will make selection.

F. Where products are accompanied by the term “match sample,” sample to be matched is Architect’s.

G. Descriptive, performance, and reference standard requirements in the Specifications establish “salient characteristics” of products.

H. Or Equal: Where products are specified by name and accompanied by the term “or equal” or “or approved equal” or “or approved,” comply with provisions in “Comparable Products” Article to obtain approval for use of an unnamed product.

I. Product and Manufacturer Source: Where specification paragraphs or subparagraphs titled “Product” name a single product and manufacturer, provide the product names, unless otherwise indicated.

2.02 PRODUCT SUBSTITUTIONS

A. Proposed Substitutions During Bidding: In the technical sections of the specifications under Products heading, where only one manufacturer’s specific data - including material, model, specification, finish, color, or other specific identification - is noted, it is to indicate standards required and that manufacturer’s data is automatically approved. If another manufacturers

propose to bid on the work, including any other manufacturer listed in the specification section as a manufacturer, the Bidder shall submit full data to the Architect no later than 10 days prior to bid date and shall gain specific approval, via Addendum, on specific products prior to bidding. In the event submitted data of any manufacturer gains approval through this method, the manufacturer and the specific products will be published in an addendum prior to bid date. Only manufacturer's products listed in the original specifications or listed as approved in a subsequent addendum shall be used on the project. No other manufacturers or their products will be considered without prior written consent from the Owner.

B. Proposed Substitutions After Commencement Of The Work: Requests received during construction may be considered only when all of the following specific conditions are satisfied. IF the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:

1. Submission, and approval of, Substitution Request Form During Construction – 01 25 14.
2. None of the approved products of the specified type are available.
3. Requested substitution has been coordinated with other portions of the Work.
4. Requested substitution provides specified warranty.
5. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

END OF SECTION

SECTION 01 73 29 - CUTTING AND PATCHING

PART 1 - GENERAL

1.01 CUTTING AND PATCHING PROPOSAL:

A. Submit a proposal describing procedures at least 10 days before the time cutting and patching will be performed, requesting approval to proceed. Include a description of cutting and patching and changes to existing construction, a list of products to be used and firms or entities that will perform the Work, dates when cutting and patching will be performed, and a list of utilities that cutting and patching procedures will disturb or affect.

B. Structural Elements: Where cutting and patching involve adding reinforcement to structural elements, submit details and engineering calculations showing integration of reinforcement with original structure.
   1. Architect's Approval: Obtain approval of cutting and patching proposal before cutting and patching. Approval does not waive right to later require removal and replacement of unsatisfactory work.

C. Structural Elements: Do not cut and patch structural elements in a manner that could change their load-carrying capacity or load-deflection ratio.

D. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety.

E. Visual Requirements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.
   1. If possible, retain original Installer or fabricator to cut and patch exposed Work listed below. If it is impossible to engage original Installer or fabricator, engage another recognized, experienced, and specialized firm.

F. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during cutting and patching operations, by methods and with materials so as not to void existing warranties.

PART 2 - PRODUCTS

2.01 GENERAL:

A. Comply with requirements specified in other Sections of these Specifications.

B. Existing Materials: Use materials identical to existing materials. For exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible.
   1. If identical materials are unavailable or cannot be used, use materials that, when installed, will match the visual and functional performance of existing materials.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed.

B. Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
   1. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.

C. Temporary Support: Provide temporary support of Work to be cut.

D. Protection: Protect existing construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.

E. Adjoining Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.

F. Existing Services: Where existing services are required to be removed, relocated, or abandoned, bypass such services before cutting to minimize interruption of services to occupied areas or the remainder of the building(s).

G. Performance: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
   1. Cut existing construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.

H. Cutting: Cut existing construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
   1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
   2. Existing Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
   3. Concrete or Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
   4. Excavating and Backfilling: Comply with requirements in applicable Division 2 Sections where required by cutting and patching operations.
   5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
   6. Proceed with patching after construction operations requiring cutting are complete.

I. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections of these Specifications.
   1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.
   2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
   3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove existing floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
   4. Ceilings: Patch, repair, or re-hang existing ceilings as necessary to provide an even-plane surface of uniform appearance.
   5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition.

END OF SECTION

SECTION 01 78 13 - PROJECT CLOSEOUT CHECKLIST

(Revised: 31 October 2024)

PART 1 - GENERAL:

1.01 SUMMARY

A. This Section consists of a shortform checklist for required closeout documents / submittals.

1.02 RELATED SECTIONS

A. Section 01 77 00 - Project Closeout

1.03 REQUIREMENTS

A. See Section 01 77 00 for the full requirements of each of the follwoing:
   1. Fully executed copy of the Certificate of Final Completion with copy of original punchlist
   2. Original Affidavit of “Advertisement of Completion” - a copy of the ad must be attached to the affidavit form. (Not required if original awarded contract is less than $100,000.00)
   3. General Contractor’s Affidavit of Release of Liens
   4. General Contractor’s Affidavit of Payment of Debts and Claims - AIA G706A or approved equal
   5. Consent of Surety to Final Payment AIA G707 or approved equal (Not required if original awarded contract is less than $100,000.00)
   6. General Contractors “One Year Guarantee”
   7. General Contractor’s “State of Alabama Roof Guarantee" - if applicable
   8. Other warranties as required by contract
   9. As-Built Drawings - Changes should be legible, in permanent ink, and supplemented by detailed sketches or drawings when necessary
   10. Operating and Maintenance Manuals / Submittal / Product Literature & Technical Data

1.04 SUBMITTALS

A. Closeouts shall be submitted to the Architect in the following packages:
   1. Package #1 - **Final Pay Application Package** contains at least two (2) original pay applications with items #1 - #5 attached with binder clip or stapled - not in three ring binder or paper clipped.
   2. Package #2 - **Warranty Package** contains items #6 - #8 attached with binder clip or stapled - not in three ring binder or paper clipped.
   3. Package #3 - **Copy Package** contains copies of items #1 - #8 attached with binder clip or stapled - not in three ring binder or paper clipped.
   4. Package #4 - **Compact Disc Package** contains scans of items #1 - #10 in PDF format on a single CD, three CDs total, with each item saved by number from 1.03.A (above).

END OF SECTION

SECTION 01 78 39 - PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.01 SUMMARY

A. This section includes administrative and procedural requirements for Project Record Documents, including the following:
   1. Record Drawings (As-Builts)
   2. Record Product Data

B. Related Sections:
   1. Section 01 77 00 - Project Closeout

1.02 SUBMITTALS

1.03 RECORD DRAWINGS: COMPLY WITH THE FOLLOWING:

A. Record Drawings - number of copies:

1. Punch-list Inspection: Submit one marked-up (red-lined) Record Drawings to the Architect and Owner's Representative at the start of the Punch-list Inspection for review. Any noted deficiencies are to be corrected prior to the Final Inspection.

2. Final Inspection: Submit three marked-up (red-lined) Record Drawings and three electronic CD copies containing all drawings in PDF format to the Owner at the start of the Final Inspection. Failure to provide the Record Prints (hard copy and/or CD), in the required quantities at the start of the Final Inspection, may result in the Owner immediately terminating the Final Inspection.

B. Record Project Data - number of copies:

1. Punch-list Inspection: Submit one set of Record Product Data for each item to the Architect and Owner's Representative at the start of the Punch-list Inspection for review. Any noted deficiencies are to be corrected prior to the Final Inspection.

2. Final Inspection: Submit three sets of corrected, bound Record Product Data and three electronic CD copies containing all Record Product Data in PDF format to the Owner at the start of the Final Inspection. Failure to provide the Record Product Data (hard copy and/or CD), in the required quantities at the start of the Final Inspection, may result in the Owner immediately terminating the Final Inspection.

PART 2 - PRODUCTS

2.01 RECORD DRAWINGS

A. Record Prints: Maintain one set of black-line white prints of the Contract Drawings and Shop Drawings at Project Site.
   1. Preparation: Mark Record Prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to prepare the marked-up Record Prints.
      a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
      b. Accurately record information in an understandable drawing technique.
      c. Record data as soon as possible after obtaining it. Record and check the markup before enclosing concealed installations.
      d. Content: Types of items requiring marking include, but are not limited to, the following:
         1) Dimensional changes to Drawings
         2) Revisions to details shown on Drawings
         3) Depths of foundations below first floor
         4) Locations and depths of underground utilities
         5) Revisions to routing of piping and conduits
         6) Revisions to electrical circuitry
         7) Actual equipment locations
         8) Duct size and routing
         9) Locations of concealed internal utilities
         10) Changes made by Change Order or Construction Change Directive

11) Changes made following Contract Modifications
12) Details not on the original Contract Drawings
13) Field records for variable and concealed conditions
14) Record information on the Work that is shown only schematically
15) Changes made by Addenda
16) Changes/Clarifications made by Contract Directive
17) Changes made by approved Shop Drawings

e. Mark Contract Drawings or Shop Drawings, whichever is most capable of showing actual physical conditions, completely and accurately. If Shop Drawings are marked, show cross-reference on the Contract Drawings and physically append the Shop Drawings to final Record Drawings.
f. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at the same location.
g. Mark important additional information that was either shown schematically or omitted from original Drawings.
h. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, Addendum number(s), and similar identification, where applicable.

B. Record Drawings: When authorized, prepare a full sets of drawings of the corrected Contract Drawings, and record copy of all Shop Drawings.
1. Incorporate changes and additional information previously marked on Record Prints. Erase, redraw and add details and notation where applicable.
2. Refer instances of uncertainty to Architect for resolution.
3. Architect will furnish Contractor one set of Contract Drawings in electronic format, or .pdf files, for use in recording information.
4. Print the Contract Drawings and Shop Drawings for use as Record Drawings.

C. Format: Identify and date Record Drawing; include the designation “PROJECT RECORD DRAWING (AS-BUILTS)” in prominent location on the cover sheet.
1. Record Drawings: Organize into bound sets. Place Drawings in durable tube-type drawing containers with end caps. Mark end cap of each container with identification. If container does not include a complete set, identify Drawings included.
2. Identification: As follows:
a. Project name
b. Date
c. Designation “PROJECT RECORD DRAWINGS (AS-BUILTS)”
d. Name of Architect
e. Name of Contractor

2.02 RECORD PRODUCT DATA

A. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.
1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
2. Include significant changes in the product delivered to Project site and changes in manufacturer’s written instructions for installation.
3. Note related Change Orders, Record Specifications, and Record Drawings where applicable.

PART 3 - EXECUTION

3.01 RECORDING AND MAINTENANCE

A. Recording: Maintain one copy of each submittal during the construction period for Project Record Document purposes. Post changes and modifications to Project Record Documents as they occur; do not wait until the end of the project.

B. Maintenance of Record Documents and Samples: Store Record Documents and Samples in the field office apart from the Contract Documents used for construction. Do not use Project Record Documents for construction purposes. Maintain Record Documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to Project Record Documents for Owner’s and Architect’s reference during normal working hours.

END OF SECTION

Maintenance Materials (Attic Stock)/Replacement Stock List

Material Name	% Materials	Manufacturer	Mfr. Number	Description	Product Type (mech, elect, HVAC, plumbing, controls, etc.)	Est. Current Cost	Date of Entry
Interior Items							
Ceiling Tiles	5%						
Window coverings	5%						
Ceramic Wall Tiles - field tiles	3%						
Ceramic Wall Tiles - specialty tiles	10%						
Paint	5% - not less than 1 gallon						
Flooring							
Carpet Tiles	5%						
Resilient Base	10 LF per 500 LF						
Resilient Flooring -Tiles	1 Box per 50 Boxes						
Hard Tile	3%						
Grout	5%						
Electrical							
Lamps (each type)	5%						
Exterior Items							
Paint	5% - not less than 1 gallon						
Brick/Split Face CMU	3%						
Wall pack lamps	5% - not less than 1						

SECTION 01 91 13 - GENERAL COMMISSIONING REQUIREMENTS
(Revision Date: 9 April 2021)

PART 1 - GENERAL

1.1 DESCRIPTION

A. Commissioning: Commissioning is a systematic process of ensuring that all building energy systems perform interactively according to the design intent and the Owner's operational needs. The commissioning process for this project shall encompass and coordinate the traditionally separate functions of system documentation, equipment startup, control system calibration, testing and balancing, and performance testing. Commissioning during the construction phase includes a commissioning kick-off meeting, pre-functional checks, and any site visits prior to functional performance testing of mechanical and electrical systems. The acceptance phase includes the functional testing of the mechanical and electrical systems at the time each Bid Item is ready for the Owner's occupancy. Commissioning is intended to achieve the following specific objectives according to the Contract Documents:

1. Verify that applicable equipment and systems are installed according to the manufacturer's recommendations and to industry accepted minimum standards and that they receive adequate operational checkout by installing contractors.
2. Verify and document proper performance of equipment and systems.
3. Verify that the Owner's operating personnel are adequately trained.

B. The commissioning process does not take away from or reduce the responsibility of the system designers or installing contractors to provide a finished and fully functioning product.

C. Abbreviations: The following are common abbreviations used in the Specifications and in the Commissioning Plan. Definitions are found in Section 1.6.

A/E	Architect/Engineer	FPT	Functional Performance Test
CxA	Commissioning Authority	GC	General Contractor (prime)
CxE	Electrical Commissioning Specialist	CxM	Mechanical Commissioning Specialist
TAB	Test and Balance	PM	Project Manager
Cx	Commissioning	PFT	Pre-functional Test Checklist

1.2 COORDINATION

A. Commissioning Team: The members of the commissioning team consist of the Commissioning Authority (CxA), the Mechanical Commissioning Specialist (CxM), the Electrical Commissioning Specialist (CxE), the Project Manager (PM), the Field Coordinator (FC), the General Contractor (GC or Contractor), the Architect/Engineer and design engineers (particularly the mechanical and electrical engineers), the Mechanical Contractor (MC), the Electrical Contractor (EC), the TAB representative (TAB), the Controls Contractor (CC), and any other installing subcontractors or suppliers of equipment. If known, the Owner's building or plant operator/engineer is also a member of the commissioning team.

B. Management: The CxA is hired by the Owner or Owner's Representative directly. The CxA directs and coordinates the commissioning activities and is part of the PM team. All members work together to fulfill their contracted responsibilities and meet the objectives of the Contract Documents. The CxA's responsibilities are the same regardless of who hired the CxA. Refer to Section 019113 Part 1.5 for additional management details.

C. Scheduling: The CxA will work with the PM, OR, and GC according to protocols established herein to schedule the commissioning activities. The CxA will provide sufficient notice to the OR and GC for scheduling commissioning activities. The GC will integrate all commissioning activities into the master schedule. All parties will address scheduling problems and make necessary notifications in a timely manner in order to expedite the commissioning process.

D. The CxA will provide the initial schedule of primary commissioning events at the commissioning scoping meeting. The Construction Phase Commissioning Plan provides a format for this schedule. As construction progresses, more detailed schedules are developed by the CxA. The Commissioning Plan also provides a format for detailed schedules.

1.3 COMMISSIONING PROCESS

A. Commissioning Plan: The commissioning plan provides guidance in the execution of the commissioning process. Just after the initial commissioning scoping meeting, the CxA will update the plan which is then considered the "final" plan, though it will continue to evolve and expand as the project progresses. The Commissioning Plan will act as a complementary document to the Specifications.

B. Commissioning Process: The following narrative provides a brief overview of the typical commissioning tasks during construction and the general order in which they occur.

1. Commissioning during construction begins with a scoping meeting conducted by the CxA where the commissioning process is reviewed with the commissioning team members.
2. The CxA will provide to the Owner, who will issue to the Contractor as a contract directive, the mechanical and electrical contractors Pre-Functional Test (PFT) procedures that are based on the contract documents, manufacturers' start-up procedures, and best practices developed by the HVAC and Electrical industries.
3. In general, the checkout and performance verification proceeds from simple to complex; from component level to equipment to systems and intersystem levels with pre-functional checklists being completed before functional testing.
4. The Contractor, under their own direction, execute and document the pre-functional checklists and perform startup and initial checkout. The CxA documents that the checklists and startup were completed according to the approved plans. This may include the CxA or technical Cx representatives witnessing start-up of selected equipment.
5. The CxA develops specific equipment and system functional performance test procedures. The Owner will provide the test procedures to the Contractor by contract directive. The Contractor will review the procedures and conduct internal tests of equipment and systems prior to requesting official functional performance testing with the CxA or technical Cx representatives. This helps the Contractor verify that the systems are ready for official testing, and it also minimizes failed tests and retesting efforts.
6. The functional performance testing procedures are executed by the Contractor in accordance with the approved schedule and documented by the CxA.
7. Items of non-compliance in material, installation, or setup are corrected at the Contractor's sole expense and the system retested.
8. Deferred testing is conducted as specified or required.

1.4 RELATED WORK

A. Specific commissioning requirements are given in the following sections of these specifications. All of the following sections apply to the Work of this section.

1. Section 01 77 00 "Project Closeout" defines Substantial Completion and Functional Completion milestones, relative to commissioning.
2. Section 23 08 00 "Commissioning of HVAC Systems" describes the mechanical contractor's responsibilities to commissioning as called out in Section 01 91 13 "General Commissioning Requirements."
3. Section 26 08 00 "Commissioning of Electrical Systems" describes the electrical contractor's responsibilities to commissioning as called out in Section 01 91 13 "General Commissioning Requirements."
4. Section 28 08 00 "Commissioning of Fire Alarm Systems" describes the fire alarm contractor's responsibilities to commissioning as called out in Section 01 91 13 "General Commissioning Requirements."

1.5 RESPONSIBILITIES

A. The responsibilities of various parties in the commissioning process are provided in this section. The responsibilities of the mechanical contractor, TAB and controls contractor are in Division 23. The responsibilities of the electrical contractor are in Division 26. The responsibilities of the Fire Alarm Contractor are in Division 28. It is noted that the services for the Project Manager, Field Coordinator, Architect/Engineer, mechanical and electrical designers/engineers, and Commissioning Authority are not provided for in this contract. That is, the Contractor is not responsible for providing their services. Their responsibilities are listed here to clarify the commissioning process.

B. All Parties

1. Follow the Commissioning Plan.
2. Attend commissioning scoping meeting and additional meetings, as necessary.

C. Commissioning Authority (CxA)

The CxA is not responsible for design concept, design criteria, compliance with codes, design, or general construction scheduling, cost estimating, or construction management. The CxA may assist with problem-solving non-conformance or deficiencies, but ultimately, that responsibility resides with the General Contractor and the A/E. The primary role of the CxA is to develop and coordinate the execution of a testing plan, observe, and document performance that systems are functioning in accordance with the documented design intent and in accordance with the Contract Documents. The Contractors will provide all tools or the use of tools to start, check out, and functionally test equipment and systems, except for specified testing with portable data- loggers, which shall be supplied and installed by the CxA.

1. Construction and Acceptance Phases

a. Coordinates the commissioning activities in a logical, sequential, and efficient manner using consistent protocols and forms, centralized documentation, clear and regular communications and consultations with all necessary parties, frequently updated timelines and schedules, and technical expertise.
b. Plan and conduct a commissioning scoping meeting.
c. Request and review additional information required to perform commissioning tasks,

including O&M materials, contractor start-up, and checkout procedures.

d. Before startup, gather and review the current control sequences and interlocks, and work with the Contractor and Architect until sufficient clarity has been obtained, in writing, to be able to write detailed testing procedures.
e. Write and distribute pre-functional tests and checklists to the Owner.
f. Draft pre-functional tests and checklist completion by reviewing pre-functional check-list reports and by site observation and spot checking.
g. With necessary assistance and review from the Contractor, write the functional performance test procedures for equipment and systems. This may include energy management control system trending, stand-alone datalogger monitoring, or manual functional testing.
h. Analyze any functional performance trend logs and monitoring data to verify performance.
i. Coordinate, witness, and perform functional performance tests performed by the Contractor. Coordinate retesting as necessary until satisfactory performance is achieved.
j. Maintain a master deficiency and resolution log (Issue Log). Provide the PM with electronic copy of issues with recommended actions.
k. Compile test data, inspection reports, and certificates, and provide a final commissioning report (as described in this section) to the Owner.

2. Warranty Period

a. Coordinate and supervise required seasonal or deferred testing and deficiency corrections.

D. General Contractor (GC)

1. Construction and Acceptance Phase

a. Facilitate the coordination of the commissioning work by the CxA, and with the PM, ensure that commissioning activities are being scheduled into the master schedule.
b. Include the cost of commissioning in the total contract price.
c. Furnish a copy of all construction documents, addenda, change orders, and approved submittals and shop drawings related to commissioned equipment to the CxA.
d. A representative shall attend a commissioning scoping meeting and other necessary meetings scheduled by the CxA to facilitate the Cx process.
e. Coordinate owner training on commissioned systems. Provide minimum 10 days' notice prior to scheduling training activities. Provide training agenda and training sign-in sheet to document attendance. Provide copies of training agenda and completed sign-in sheet to CxA.
f. Prepare O&M manuals according to the Contract Documents, including clarifying and updating the original sequences of operation to as-built conditions.

2. Warranty Period

a. Ensure that the seasonal or deferred functional performance testing is executed, as witnessed by the CxA, according to the specifications.
b. Ensure that deficiencies are corrected and make necessary adjustments to O&M manuals and as-built drawings for applicable issues identified in any seasonal testing.

1.6 DEFINITIONS

A. Acceptance Phase - phase of construction after startup and initial checkout when functional performance tests, O&M documentation review, and training occurs.

B. Basis of Design (BOD) - The basis of design is the documentation of the primary thought processes and assumptions behind design decisions that were made to meet the design intent. The basis of design describes the systems, components, conditions, and methods chosen to meet the intent. Some reiterating of the design intent may be included.

C. Commissioning Authority (CxA) - an independent agent, not otherwise associated with the A/E team members or the Contractor, though he/she may be hired as a subcontractor to them. The CxA directs and coordinates the day-to-day commissioning activities. The CxA does not take an oversight role and will not make recommendations to the General Contractor for remediation. The CxA is part of the Owner's team and shall report directly to the Owner.

D. Commissioning Plan - an overall plan, developed before or after bidding, that provides the organization, schedule, allocation of resources, and documentation requirements of the commissioning process.

E. Control system - the central building energy management control system

F. Data-logging - monitoring flows, currents, status, pressures, etc. of equipment using stand-alone data-loggers separate from the control system.

G. Deferred Functional Performance Tests - FPTs that are performed later, after beneficial occupancy or final acceptance, due to partial occupancy, equipment, seasonal requirements, design, or other site conditions that disallow the test from being performed.

H. Deficiency - a condition in the installation or function of a component, piece of equipment, or system that is not in compliance with the Contract Documents (that is, does not perform properly or is not complying with the design intent).

I. Design Intent (Also see OPR) - a dynamic document that provides the explanation of the ideas, concepts, and criteria that are considered to be very important to the owner. It is initially the outcome of the programming and conceptual design phases. Sometimes it is referred to as Owner's Project Requirements.

J. Design Narrative or Design Documentation - sections of either the Design Intent or Basis of Design.

K. Electrical Commissioning Specialist (CxE) - commissioning specialist that reports directly to the CxA and performs the technical work associated with each electrical system to be commissioned.

L. Factory Testing - testing of equipment on-site or at the factory, by factory personnel with an Owner's representative present.

M. Functional Performance Test (FPT) - test of the dynamic function and operation of equipment and systems using manual (direct observation) or monitoring methods. Functional performance testing is the dynamic testing of systems (rather than just components) under full operation (e.g., the chiller pump is tested interactively with the chiller functions to see if the pump ramps up and down to maintain the differential pressure setpoint). Systems are tested under various modes, such as during low cooling or heating loads, high loads, component failures, unoccupied, varying

outside air temperatures, fire alarm, power failure, etc. The systems are run through all the control system's sequences of operation and components are verified to be responding as the sequences state. Traditional air or water test and balancing (TAB) is not functional testing, in the commissioning sense of the word. TAB's primary work is setting up the system flows and pressures as specified, while functional testing is verifying that which has already been set up. The commissioning authority develops the functional test procedures in a sequential written form, coordinates, oversees, and documents the actual testing, which is usually performed by the installing contractor or vendor. FPTs are performed after pre-functional checklists, start-up, and TAB are complete.

N. Indirect Indicators - indicators of a response or condition, such as a reading from a control system screen reporting a damper to be 100% closed.

O. Manual Test - using hand-held instruments, immediate control system read-outs, or direct observation to verify performance (contrasted to analyzing monitored data taken over time to make the "observation").

P. Mechanical Commissioning Specialist (CxM) – commissioning specialist that reports directly to the CxA and performs the technical work associated with each mechanical system to be commissioned.

Q. Monitoring - the recording of parameters (flow, current, status, pressure, etc.) of equipment operation using data-loggers or the trending capabilities of control systems.

R. Non-Compliance - see Deficiency.

S. Non-Conformance - see Deficiency,

T. Over-written Value - writing over a sensor value in the control system to see the response of a system (e.g., changing the outside air temperature value from 50°F to 75°F to verify economizer operation). See also "Simulated Signal."

U. Owner-Contracted Tests - tests paid for by the Owner outside the GC's contract. These tests will not be repeated during functional tests if properly documented.

V. Owner's Project Requirements (OPR) – A written document that details the functional requirements of a project and the expectations of how it will be used and operated. These include project goals, measurable performance criteria, cost considerations, benchmarks, success criteria, and supporting information. (The term Design Intent is used by some Owners for their Commissioning Process Owner's Project Requirements.)

W. Phased Commissioning - commissioning that is completed in phases (by floors or by building, for example) due to the size of the structure or other scheduling issues, in order minimize the total construction time.

X. Pre-functional Test (PFT) - a list of items to inspect and elementary component tests to conduct to verify proper installation of equipment, provided by the CxA to the Sub. Pre-functional tests are checklists to primarily conduct static inspections and procedures to prepare the equipment or system for initial operation (e.g., belt tension, oil levels OK, labels affixed, gages in place, sensors calibrated, etc.). However, some pre-functional tests entail simple testing of the function of a component, a piece of equipment, or system (such as measuring the voltage imbalance on a three-phase pump motor of a chiller system). The word pre-functional refers to before functional testing. Pre-functional tests augment and are combined with the manufacturer's start-up checklist. Even without a commissioning process, contractors typically perform some, if not many, of the pre-functional test items a CxA will recommend. However, few contractors document in writing the execution of these checklist items. Therefore, for most equipment, the contractors execute

the checklists on their own. The CxA only requires that the procedures be documented in writing and does not witness much of the pre-functional tests, except for larger or more critical pieces of equipment.

Y. Recommendations to the Owner - acceptance that a piece of equipment or system has been properly installed and is functioning in the tested modes according to the Contract Documents.

Z. Sampling - Functionally testing only a fraction of the total number of identical or near identical pieces of equipment. Refer to 019113 Part 3.5 E.

AA. Seasonal Performance Tests - FPT that are deferred until the system(s) will experience conditions closer to their design conditions.

BB. Simulated Condition - condition that is created for the purpose of testing the response of a system (e.g., applying a hair blower to a space sensor to see the response in a VAV box).

CC. Simulated Signal - disconnecting a sensor and using a signal generator to send an amperage, resistance, or pressure to the transducer and DDC system to simulate a sensor value.

DD. Specifications - the construction specifications of the Contract Documents

EE. Startup - the initial starting or activating of dynamic equipment, including executing pre-functional checklists

FF. Systems, Subsystems, Equipment, and Components: Where these terms are used together or separately, they shall mean "as-built" systems, subsystems, equipment, and components.

GG. Test Procedures - the step-by-step process which must be executed to fulfill the test requirements. The test procedures are developed by the CxA, CxM, and CxE.

HH. Test Requirements - requirements specifying what modes and functions, etc., shall be tested. The test requirements are not the detailed test procedures. The test requirements are specified in the Contract Documents (Sections 23 08 00; 26 08 00, etc.).

II. Trending - monitoring using the building control system.

1.7 SYSTEMS TO BE COMMISSIONED

A. The following equipment and systems will be commissioned in this project. Equipment types and quantities will vary per Bid Item.

1. Mechanical:

a. Geothermal loop field with associated pumps and heat exchangers
b. Hydronic building loop pumps
c. Air/dirt separators
d. Geothermal water-source heat pumps
e. Water-cooled variable refrigerant flow (VRF) heat recovery units
f. Air-cooled VRF outdoor units
g. VRF indoor evaporator units
h. Electric cooling / gas heating split-system units
i. Packaged DX gas-fired air-conditioning units
j. Ductless air-conditioning units and/or heat pumps
k. Through-wall heat pump units

l. Exhaust/supply fans
m. Destratification fans
n. Electric wall heaters
o. Gas-fired unit heaters
p. Gas infrared heaters
q. Dehumidifiers
r. Kitchen hoods and associated exhaust/supply fans
s. Carbon monoxide detection system
t. Gas submeters
u. Water submeters
v. Testing, Adjusting and Balancing (TAB) work
w. Central Building Automation System including linkage of remote monitoring and control sites

2. Electrical:

a. Lighting controls (interior and exterior)
b. Exit egress lighting
c. Power
    i. Service entrance equipment
    ii. Panelboards
    iii. Disconnect switches
    iv. Receptacles
    v. Manual transfer switches and pin & sleeve connectors
    vi. Submeters
d. Fire alarm and mass notification systems

PART 2 - PRODUCTS

2.1 TEST EQUIPMENT

A. All standard testing equipment required to perform startup and initial checkout and required functional performance testing shall be provided by the Contractor.

B. Special equipment, tools, and instruments (only available from vendor, specific to a piece of equipment) required for testing equipment, according to these Contract Documents shall be included in the base bid price to the Contractor and left on site, except for stand-alone data-logging equipment that may be used by the CxA.

C. Data-logging equipment and software required to test equipment may be provided by the CxA but shall not become the property of the Contractor.

D. All testing equipment shall be of sufficient quality and accuracy to test and/or measure system performance with the tolerances specified in the Specifications. If not otherwise noted, the following minimum requirements apply: Temperature sensors and digital thermometers shall have a certified calibration within the past year to accuracy of 0.5 deg-F and a resolution of + or - 0.1 deg-F. Relative humidity sensors and digital hygrometers shall have a certified calibration within the past year to accuracy of + or – 2.0% of the value range being measured (not full range of meter). Pressure sensors shall have an accuracy of + or - 2.0% of the value range being measured (not full range of meter) and have been calibrated within the last year. All equipment shall be calibrated according to the manufacturer’s recommended intervals and when dropped or damaged. Calibration tags shall be affixed or certificates readily available.

E. Refer to Part 3.5 E for details regarding equipment that may be required to simulate required test conditions.

PART 3 - EXECUTION

3.1 MEETINGS

A. Scoping Meeting: Within 60 days of commencement of construction, the CxA will schedule, plan, and conduct a commissioning scoping meeting with the entire commissioning team in attendance. Meeting minutes will be distributed to all parties by the CxA. Information gathered from this meeting will allow the CxA to revise the Preliminary Commissioning Plan to its “final” version, which will also be distributed to all parties.

3.2 REPORTING

A. The CxA will provide regular reports to the Owner with increasing frequency as construction and commissioning progresses.

B. The CxA will regularly communicate with all members of the commissioning team, keeping them apprised of commissioning progress and scheduling changes through memos, progress reports, etc.

C. Testing or review approvals and non-conformance and deficiency reports are made regularly with the review and testing as described in later sections.

D. A final summary report (about four to six pages, not including backup documentation) by the CxA will be provided to the Owner, focusing on evaluating commissioning process issues and identifying areas where the process could be improved. All acquired documentation, logs, minutes, reports, deficiency lists, communications, findings, unresolved issues, etc., will be compiled in appendices and provided with the summary report.

3.3 SUBMITTALS

A. The CxA will provide the Contractor with a specific request for the type of submittal documentation the CxA requires to facilitate the commissioning work. These requests will be integrated into the normal submittal process and protocol of the construction team. At mini- mum, the request will include the manufacturer and model number, the manufacturer’s printed installation and detailed start-up procedures, full sequences of operation, O&M data, performance data, any performance test procedures, control drawings, and details of owner contracted tests. ALL SUBMITTALS SHALL BE PROVIDED IN PDF ELECTRONIC FORMAT. In addition, the installation and checkout materials that are actually shipped inside the equipment and the actual field checkout sheet forms to be used by the factory or field technicians shall be submitted to the CxA. All documentation requested by the CxA will be included by the Contractor in their O&M manual contributions.

B. The CxA will review and approve submittals related to the commissioned equipment for conformance to the Contract Documents as it relates to the commissioning process, to the functional performance of the equipment, and adequacy for developing test procedures. This review is intended primarily to aid in the development of functional testing procedures and only secondarily to verify compliance with equipment specifications. The Commissioning Authority will

review the submittals concurrently with the Owner and will notify the Owner and PM of items missing or areas that are not in conformance with Contract Documents and which requires resubmission.

C. The CxA may request additional design narrative from the A/E and/or Contractor, depending on the completeness of the design intent documentation and sequences provided with the Specifications.

D. These submittals to the CxA do not constitute compliance for O&M manual documentation. The O&M manuals are the responsibility of the Contractor, though the CxA will review them.

3.4 START-UP, PREFUNCTIONAL CHECKLISTS, AND INITIAL CHECKOUT

A. The following procedures apply to all equipment to be commissioned, according to Section 1.7, Systems to be Commissioned. Some systems that are not comprised of actual dynamic machinery, e.g., electrical system power quality, may have very simplified PFC's and startup.

B. General. Pre-functional checklists are important to ensure that the equipment and systems are hooked up and operational. It ensures that functional performance testing (in-depth system checkout) may proceed without unnecessary delays. Each piece of equipment receives full pre-functional checkout. No sampling strategies are used. The pre-functional testing for a given system must be successfully completed prior to formal functional performance testing of equipment or subsystems of the given system.

C. Start-up and Initial Checkout Plan: The CxA shall assist the commissioning team members responsible for startup of any equipment in developing detailed start-up plans for all equipment. The primary role of the CxA in this process is to ensure that there is written documentation that each of the manufacturer-recommended procedures have been completed. Parties responsible for pre-functional checklists and startup are identified in the commissioning scoping meeting and in the checklist forms.

1. The CxA adapts, if necessary, the representative pre-functional checklists and procedures from the Commissioning Plan. These checklists indicate required procedures to be executed as part of startup and initial checkout of the systems and the party responsible for their execution.
2. These checklists and tests are provided by the CxA to the Contractor. The Contractor determines which trade is responsible for executing and documenting each of the line item tasks and notes that trade on the form. Each form will have more than one trade responsible for its execution.
3. The Contractor is responsible for developing the full start-up plan by combining (or adding to) the CxA's checklists with the manufacturer's detailed start-up and checkout procedures from the O&M manual and the normally used field checkout sheets. The plan will include checklists and procedures with specific boxes or lines for recording and documenting the checking and inspections of each procedure and a summary statement with a signature block at the end of the plan.

   The full start-up plan could consist of something as simple as:

   a. The CxA copies the manufacturer's startup and initial checkout procedures from O&M submittals.
   b. The CxA marks the applicable areas in the procedures and makes initial and date lines at each procedure or section.
   c. The CxA transmits these procedures and the original pre-functional checklist procedures (see 1 above) to the Contractor as the startup and initial checkout plan.

4. The Contractor submits the full startup plan to the CxA for review and approval.
5. The CxA reviews and approves the procedures and the format for documenting them, noting any procedures that need to be added.

D. Execution of Pre-Functional Checklists and Startup

1. Four weeks prior to startup, the Contractor schedules startup and checkout with the PM, A/E, and CxA. The performance of the pre-functional checklists, startup, and checkout are directed and executed by the designee of the Contractor (i.e., Sub or vendor). When checking off pre-functional checklists, signatures may be required for verification of completion of their work.
2. The Contractor's designee (i.e., Subs and vendors) shall execute startup and provide the CxA with a signed and dated copy of the completed start-up and pre-functional tests and checklists.
3. Only individuals that have direct knowledge and witnessed that a line-item task on the pre-functional checklist was actually performed shall initial or check that item off. It is not acceptable for witnessing supervisors to fill out these forms.

E. Deficiencies, Non-Conformance, and Approval in Checklists and Startup.

1. The Contractor shall clearly list any outstanding items of the initial start-up and pre-functional procedures that were not completed successfully, at the bottom of the procedures form or on an attached sheet. The procedures form and any outstanding deficiencies are provided to the CxA within two days of test completion.
2. The CxA reviews the report and submits either a non-compliance report or an approval form to the Contractor, A/E, and PM. The CxA shall work with the Contractor to correct and re-test deficiencies or uncompleted items. The CxA will involve the PM and others as necessary. The Contractor shall correct all areas that are deficient or incomplete in the checklists and tests in a timely manner and shall notify the CxA as soon as outstanding items have been corrected and resubmit an updated start-up report and a Statement of Correction on the original non-compliance report. When satisfactorily completed, the CxA recommends approval of the execution of the checklists and startup of each system to the PM using a standard form.
3. Items left incomplete, which later cause deficiencies or delays during functional testing, may result in back-charges to the responsible party. Refer to Part 3.6 herein for details.

3.5 FUNCTIONAL PERFORMANCE TESTING

A. This sub-section applies to all commissioning functional testing for all divisions.

B. The general list of equipment to be commissioned is found in Paragraph 1.7.

C. Objectives and Scope: The objective of functional performance testing is to demonstrate that each system is operating according to the documented design intent and Contract Documents. Functional testing facilitates bringing the systems from a state of substantial completion to full dynamic operation. Additionally, during the testing process, areas of deficient performance are identified and corrected, improving the operation and functioning of the systems.

In general, each system should be operated through all modes of operation (seasonal, occupied, unoccupied, warm-up, cool-down, part-and full-load) where there is a specified system response. Verifying each sequence in the sequences of operation is required. Proper responses to such modes and conditions as power failure, freeze condition, low oil pressure, no flow, equipment failure, etc., shall also be tested.

D. Development of Test Procedures. Before test procedures are written, the CxA shall obtain all requested documentation and a current list of change orders affecting equipment or systems, including an updated points list, program code, control sequences and parameters. Using the testing parameters and requirements in Sections 23 08 00, 26 08 00, and 28 08 00, the CxA shall develop specific test procedures and forms to verify and document proper operation of each piece of equipment and system. The Contractor shall provide limited assistance to the CxA in developing the procedures review (answering questions about equipment, operation, sequences, etc.). Prior to execution, the CxA shall provide a copy of the test procedures to the Contractor who shall review the tests for feasibility, safety, equipment, and warranty protection. The CxA may submit the tests to the A/E for review, if requested by the Owner.

The test procedure forms developed by the CxA shall include (but not be limited to) the following information:

1. System and equipment or component name(s)
2. Equipment location and ID number
3. Unique test ID number and reference to unique pre-functional checklist and start-up documentation ID numbers for the piece of equipment
4. Date
5. Project name
6. Participating parties
7. A copy of the specification section describing the test requirements
8. A copy of the specific sequence of operations or other specified parameters being verified
9. Formulas used in any calculations
10. Required pre-test field measurements
11. Instructions for setting up the test.
12. Special cautions, alarm limits, etc.
13. Specific step-by-step procedures to execute the test, in a clear, sequential, and repeatable format
14. Acceptance criteria of proper performance with a Yes / No check box to allow for clearly marking whether or not proper performance of each part of the test was achieved.
15. A section for comments
16. Signatures and date block for the CxA

E. Test Methods.

1. Functional performance testing and verification may be achieved by manual testing (persons manipulate the equipment and observe performance) or by monitoring the performance and analyzing the results using the control system's trend log capabilities or by stand-alone data-loggers. CxA may substitute specified methods or require an additional method to be executed, other than what was specified, with the approval of the Owner. This may require a change order and adjustment in charge to the Owner. The CxA will determine which method is most appropriate for tests that do not have a method specified.

F. Coordination and Scheduling: The Contractor shall provide sufficient notice to the CxA regarding their completion schedule for the pre-functional checklists and startup of all equipment and systems. The CxA will schedule functional tests through the PM, GC, and A/E. The CxA or technical Cx representatives shall direct, witness, and document the functional testing of all equipment and systems. The Contractor shall execute the tests.

In general, functional testing is conducted after pre-functional testing and startup has been satisfactorily completed. The control system must have been sufficiently tested by the Contractor and found in accordance with the Contract Documents by the CxA before it is used for TAB or to verify performance of other components or systems. The air and water balancing

is to be completed and de-bugged before functional testing of air-related or water-related equipment or systems. Testing proceeds from components to subsystems to systems. When the proper performance of all interacting individual systems has been achieved, the interface or coordinated responses between systems is checked. The Contractor is responsible for reviewing the functional testing procedure documents provided by the CxA and conducting internal tests of equipment and systems prior to requesting official functional performance testing with the CxA or technical Cx representatives. This allows the Contractor to verify that the systems are ready for official testing, and it also minimizes failed tests and retesting efforts. Functional Performance Testing will occur simultaneously for all buildings in a particular Bid Item, so all systems and equipment in that Bid Item must be ready for final testing prior to the arrival of the CxA. If the CxA, CxM, or CxE arrive on-site for FPT's and it becomes evident that some or all systems are not ready for final testing (i.e., other than minor operational issues, equipment and systems do not perform as expected when going through the various control sequences), the tests will be considered "failed." **The Owner reserves the right to deduct from the Contract Amount the costs to the Owner for re-testing for failed tests**.

G. Problem Solving: The CxA will recommend solutions to problems found. However, the burden of responsibility to solve, correct, and retest problems is with the Contractor.

3.6 DOCUMENTATION, NON-CONFORMANCE, AND APPROVAL OF TESTS

A. Documentation: The CxA, CxM, or CxE shall witness and document the results of all functional performance tests using the specific procedural forms developed for that purpose. Prior to testing, these forms are provided to the Contractor for review. The CxA will include the filled-out forms in the final commissioning report.

B. Non-Conformance

1. The CxA will record the results of the functional test on the procedure or test form. All deficiencies or non-conformance issues shall be noted and reported to the Owner on a standard non-compliance form.
2. Corrections of minor deficiencies identified may be made during the tests at the discretion of the CxA. In such cases the deficiency and resolution will be documented on the procedure form.
3. Every effort will be made to expedite the testing process and minimize unnecessary delays, while not compromising the integrity of the procedures. However, the CxA will not be pressured into overlooking deficient work or loosening acceptance criteria to satisfy scheduling or cost issues, unless there is an overriding reason to do so at the request of the Owner.
4. As tests progress and a deficiency is identified, the CxA discusses the issue with the Contractor.

    a. When there is no dispute on the deficiency and the Contractor accepts responsibility to correct it:

        1) The CxA documents the deficiency and the Contractor's response and intentions and they go on to another test or sequence. The deficiency is added to the Issue Log. A copy is provided to the Contractor and CxA. The Contractor corrects the deficiency, signs the Issue Log correction certifying that the equipment is ready to be retested and sends it back to the CxA.
        2) The CxA reschedules the test and the test is repeated.

    b. If there is a dispute about a deficiency regarding whether it is a deficiency or who is responsible:

1) The deficiency shall be documented on the non-compliance form with the Contractor's response and a copy given to the Owner and to the A/E.
2) Resolutions are made at the lowest management level possible. Other parties are brought into the discussions as needed. Final interpretive authority is with the Owner. Final acceptance authority is also with the Owner.
3) The CxA documents the resolution process.
4) Once the interpretation and resolution have been decided, the appropriate party corrects the deficiency, signs the statement of correction on the non-compliance form, and provides it to the CxA. The CxA reschedules the test and the test is repeated until satisfactory performance is achieved.

5. Cost of Retesting

a. The cost of retesting will be allocated in accordance with the General Conditions of the Contract.

6. The Contractor shall respond in writing to the CxA and Owner at least as often as commissioning meetings are being scheduled concerning the status of each apparent outstanding discrepancy identified during commissioning. Discussion shall cover explanations of any disagreements and proposals for their resolution.
7. The CxA retains the original non-conformance forms until the end of the project.
8. Any required retesting by the Contractor shall not be considered a justified reason for a claim of delay or for a time extension.

C. Failure Due to Manufacturer Defect: If 10%, or three, whichever is greater, of identical pieces (size alone does not constitute a difference) of equipment fail to perform to the Contract Documents (mechanically or substantively) due to manufacturing defect, not allowing it to meet its submitted performance spec, all identical units may be considered unacceptable by the Owner. In such case, the Contractor shall provide the Owner with the following:

1. Within one week of notification from the Owner, the Contractor or manufacturer's representative shall examine all other identical units making a record of the findings. The findings shall be provided to the Owner within two weeks of the original notice.
2. Within two weeks of the original notification, the Contractor or manufacturer shall provide a signed and dated, written explanation of the problem, cause of failures, etc. and all proposed solutions which shall include full equipment submittals. The proposed solutions shall not significantly exceed the specification requirements of the original installation.
3. The Owner will determine whether a replacement of all identical units or a repair is acceptable.
4. Two examples of the proposed solution will be installed by the Contractor, and the Owner will be allowed to test the installations for up to one week, upon which the Owner will decide whether to accept the solution.
5. Upon acceptance, the Contractor and/or manufacturer shall replace or repair all identical items, at their expense. The replacement/repair work shall proceed with reasonable speed beginning within one week from when parts can be obtained.

D. Approval: The CxA notes each satisfactorily demonstrated function on the test form. Formal approval of the functional test is made later after review by the CxA and by the Owner. The CxA recommends acceptance of each test to the Owner using a standard form. The Owner gives final approval on each test using the same form, providing a signed copy to the CxA and the Contractor.

3.7 OPERATION AND MAINTENANCE MANUALS

A. Standard O&M Manuals

1. The specific content and format requirements for the standard O&M manuals are detailed in Section 01 77 00.

B. Commissioning Report

1. The CxA is responsible to compile, organize, and index the following commissioning data by equipment into labeled, indexed, and tabbed electronic media and deliver it to the Owner. The format of the manuals shall be:

a. Executive Summary
b. Cx Meeting Minutes
c. Commissioning Specifications
d. Commissioning Plan
e. Issue Log
f. Commissioning Forms (Pre-functional Test forms, Functional Performance Test Forms and Trend Log)
g. Equipment Start-up Reports
h. Training Reports
i. Additional Forms and Reports (TAB Report, BAS Point-to Point Check List, As- Built Control Drawings, O&M Manuals).

3.8 DEFERRED TESTING

A. Unforeseen Deferred Tests: If any check or test cannot be completed due to the building structure, required occupancy condition, or other deficiency, execution of checklists and functional testing may be delayed upon approval of the Owner. These tests will be conducted in the same manner as the seasonal tests as soon as possible. Services of necessary parties will be negotiated.

B. Seasonal Testing: During the warranty period, seasonal testing (tests delayed until weather conditions are closer to the system's design) specified in Section 23 08 00 shall be completed as part of this contract. The CxA shall coordinate this activity. Tests will be executed, documented and deficiencies corrected by the Contractor, with PM facilities staff and the CxA witnessing. Any final adjustments to the O&M manuals and as-builts due to the testing will be made.

3.9 WRITTEN WORK PRODUCTS

A. The commissioning process generates a number of written work products described in various parts of the Specifications. The Commissioning Plan—Construction Phase, lists all the formal written work products, describes briefly their contents, who is responsible to create them, their due dates, who receives and approves them, and the location of the specification to create them. In summary, the written products are as follows:

Product	Developed By
1. Final commissioning plan	CxA
2. Meeting minutes	CxA
3. Commissioning schedules	CxA with GC and PM
4. Equipment documentation submittals	GC
5. Sequence clarifications	GC and A/E as needed
6. Pre-functional checklists	CxA
7. Startup and initial checkout plan	GC and CxA (compilation of existing documents)

8.	Startup and initial checkout	GC forms filled out
9.	Final TAB report	TAB
10	Issues log (deficiencies)	CxA
11.	Commissioning Progress Record	CxA
12.	Deficiency reports	CxA
13.	Functional test forms	CxA
14.	Final commissioning report	CxA

END OF SECTION 01 91 13

SECTION 02-8233 – ASBESTOS REMOVAL

PART 1 GENERAL

1.01 RELATED DOCUMENTS

General provisions of the contract, including General and Supplementary Conditions and other Specification sections apply to work of this specification, which has been prepared by Environmental-Materials Consultants, Inc.

1.02 PROJECT/WORK IDENTIFICATION

A. Summary by References: Work of the Contract can be summarized by references to the Contract, General Conditions, Supplementary Conditions, Specification Sections, addenda, and modifications to the contract documents issued subsequent to the initial printing of this specification and including but not necessarily limited to printed material referenced by any of these. Work of the contract is also unavoidably affected or influenced by governing regulations, natural phenomenon including weather conditions, and other forces outside the contract documents.

B. Abbreviated Written Summary: Briefly and without force and effect upon the contract documents, the work of this Section can be summarized as follows:

Controlled preparation, removal, clean up, and disposal of floor tile, mastic, exterior caulk and window glazing putty within the specified areas of the ANG facilities as described in this specification section and on the attached drawing.

C. Consultant: The Consultant for the asbestos removal work included in this project is:

Environmental-Materials Consultants, Inc.
2027 Chestnut Street
Montgomery, Alabama 36106
334-265-4000

The Consultant may also provide administration, observation, and/or monitoring services for the Owner. Services provided by the Consultant do not in any way relieve the Contractor of his obligation to perform the work in conformity with the drawing, specification, and governmental regulations.

This specification section and associated drawing were prepared by Trent S. Hill, REM, CESCO. Mr. Hill is accredited in the State of Alabama as an asbestos project designer. His current accreditation number is APD0721708327.

1.03 COORDINATION AND SCHEDULING

A. In order to prevent the uncontrolled release of asbestos fibers and exposure of renovation workers and other building occupants to elevated airborne asbestos concentrations, it is necessary to properly remove asbestos-containing materials prior to commencement of renovation activities.

B. The General Contractor and all subcontractors must be aware of the location of asbestos materials within the renovation areas and must coordinate their activities to ensure that asbestos materials are only disturbed under controlled conditions as specified herein.

C. The Contractor must coordinate the asbestos removal work with the ALARNG in order to properly segregate work areas from areas that must remain fully or partially occupied or operational, or in which other special considerations are required.

D. Coordinate with the ALARNG's representative to shut down and tag out fire alarm equipment, electrical circuits, HVAC equipment, and other utilities servicing the asbestos removal work areas, or that may otherwise be hazardous to contractor personnel.

E. The asbestos removal work is to be performed in no more than 5 days, and/or at the time specified by the ALARNG or Project Architect.

1.04 REGULATORY REQUIREMENTS

A. By executing the Contract, the Contractor does hereby acknowledge awareness and familiarity with the contents and requirements of the regulations, codes, and standards listed in this section and assume responsibility for the performance of the Work in strict compliance therewith and for every instance of failure to comply therewith.

B. The current issue of each document shall govern. Where conflict among requirements or with these specifications exists, the more stringent requirements shall apply.

1. U. S. Department of Labor, Occupational Safety and Health Administration (OSHA): Construction Industry Standards (Code of Federal Regulations Title 29, Part 1926).
2. U. S. Department of Labor, Occupational Safety and Health Administration (OSHA): Construction Standard for Asbestos (Code of Federal Regulations Title 29, Part 1926.1101).
3. U. S. Department of Labor, Occupational Safety and Health Administration (OSHA): Personal Protective Equipment Standard (Code of Federal Regulations Title 29, Part 1910.132).
4. U. S. Department of Labor, Occupational Safety and Health Administration (OSHA): Respiratory Protection Standard (Code of Federal Regulations Title 29, Part 1910.134).
5. U. S. Department of Labor, Occupational Safety and Health Administration (OSHA): Hazard Communication Standard (Code of Federal Regulations Title 29, Part 1910.1200).
6. U. S. Environmental Protection Agency (EPA): National Emissions Standards for Hazardous Air Pollutants (NESHAP), 40 CFR, Part 61, Subparts A and M.
7. U. S. Environmental Protection Agency (EPA): "Asbestos Containing Materials in Schools; Final Rule and Notice" (Code of Federal Regulations Title 40, Part 763.80).
8. U. S. Environmental Protection Agency (EPA): "Model Accreditation Plan" (Code of Federal Regulations Title 40, Part 763).
9. U. S. Environmental Protection Agency (EPA): "Asbestos School Hazard Abatement Reauthorization Act (ASHARA)" (Code of Federal Regulations Title 40, Part 763).
10. U. S. Department of Transportation (DOT): Transportation Standards (Code of Federal Regulations Title 49, Part 100 - 185).
11. The Alabama Asbestos Contractors Accreditation Act, 89-517.
12. All other Federal, State, County, and City regulations, codes, and ordinances as applicable.

C. This list is provided as a convenience to the Contractor and is not to be considered all inclusive of the codes, standards, regulations, and laws. It is the sole responsibility of the Contractor to maintain a safe work site.

1.05 SUBMITTALS

A. Submit to the Consultant for their review the following Pre-Job Submittals. The Pre-Job Submittals are to be submitted in electronic format on a CD, or by email. The listed documents must be combined into a single document in Portable Document Format (PDF). They must be arranged in the order listed below, and except for tabs or explanatory letters, only the listed documents are to be included. The Work of this specification may not proceed until the complete Pre-Job Submittal package has been reviewed and approved by the Consultant.

Note: The Consultant will only accept complete sets of both Pre and Post-Job Submittals. If incomplete sets are submitted, the Consultant or their representative will prepare correspondence advising the contractor that their submittal is incomplete, and then the Consultant will discard the incomplete submittals.

1. Copy of Contractor's "Notice of impending commencement of asbestos removal work" which was submitted in writing not fewer than ten days before work commences on the Project to:

   The Alabama Department of Environmental Management
   Attention: Mr. Donald Barron
   Air Division
   P.O. Box 301463
   Montgomery, Alabama 36130-1463

2. Copy of the Contractor's ADEM certificate to perform asbestos removal work within the State of Alabama.
3. Copies of the Safe State Certificates of Accreditation for the workers and supervisors that will be assigned to the project.
4. Signed statement from the Asbestos Removal Contractor certifying that all of his employees that will be on site have had medical evaluations by a licensed physician within the last twelve months.
5. Documentation of respiratory protection training and fit testing for each Contractor employee that will be on site. Fit testing dates must be within 1-year of the anticipated project completion date.
6. Individually signed Worker's Acknowledgment forms by each and every worker to be utilized on the project. A copy of this form is included in this specification section.

Note: The asbestos removal contractor is required to submit a signed Worker's Acknowledgment form from each of his personnel, and his subcontractor personnel, who are present at the job site during the course of the project. For those personnel who are not asbestos removal workers or supervisors, and who will not enter the work area, the Contractor can cross out and initial the paragraphs that address respiratory protection, training, and medical examination, if those personnel are not required to participate in those programs.

7. Copy of the Contractor's written OSHA Hazard Communication Program, Contingency/Emergency Plan, and Safety Program.
8. The names, titles, and telephone numbers of at least two Contractor representatives that can be contacted in the event of an emergency.
9. Letter from the chosen waste disposal facility indicating that they will accept the waste from this project and are permitted by ADEM to accept asbestos waste.
10. Copy of any applicable permits required by the City of Oxford.
11. Safety Data Sheets (SDSs) for all chemicals that will be used or that will be present on the job site.

B. Submit to the Consultant for his review the following Post-Job Submittals. The Post-Job Submittals are to be submitted in electronic format on a CD, or by email. The listed documents must be combined into a single document in Portable Document Format (PDF). They must be arranged in the order listed below, and except for tabs or explanatory letters, only the listed documents are to be included. Requests for final payment will not be approved until the Post-Job Submittal package has been reviewed and approved by Consultant.

1. Receipts from landfill operator, which acknowledges the Contractor's delivery(s) of waste material and includes the signature of an authorized representative of the landfill. Receipts must show the quantity accepted, the delivery date, and the project title.
2. Copies of daily sign-in/sign-out logs. These logs shall include the name, date, time entering and leaving work area, company or agency represented, and reason for entry for every person entering the work area.
3. Copies of daily project log, including descriptions of daily work activities and any unexpected situations or unusual events that occurred.
4. Copies of the Safe State Certificates, documentation of respiratory protection training and fit testing, and signed Worker Acknowledgment forms for any workers or supervisors that worked on the project but whose documentation was not included with the pre-job submittals.

1.06 QUALITY CRITERIA

A. The Asbestos Removal Contractor shall be approved by the Alabama Department of Environmental Management in accordance with the Alabama Asbestos Contractors Accreditation Act and have a record of not less than two years successful experience in asbestos removal and related work similar in scope and magnitude to this Project.

B. The Asbestos Removal Contractor shall maintain on site a superintendent who is accredited and has not less than one year of full-time experience in responsible charge of asbestos removal operations in similar scope and magnitude to this Project within the two-year period preceding start of project.

C. Use only experienced, Safe State accredited asbestos removal workers to perform the Work.

1.07 PERSONAL PROTECTION

A. Prior to commencement of work, all workers shall be instructed in, and shall be knowledgeable of, the appropriate procedures for personal protection involving asbestos removal.

B. Contractor acknowledges and agrees that he is solely responsible for enforcing worker protection requirements at least equal to those specified in these specifications.

C. Provide workers with personally issued and marked respiratory equipment approved by NIOSH and OSHA to be suitable for the asbestos exposure levels encountered in the work areas according to OSHA 29 CFR 1926, or as more stringently specified elsewhere in the Contract Documents.

D. Where respirators with disposable filters are used, provide sufficient filters for replacement as necessary by the workers or as required in the Contract Documents. Use P100 particulate filters. Stack particulate filters with organic vapor filters when necessary for both particulate and organic vapor protection.

E. Provide respiratory protection at all times which is in compliance with or in excess of the Occupational Safety and Health Administration guidelines for respiratory protection.

F. Provide respiratory protection from the time that the first operation involved in the Project requires contact with asbestos-containing materials until acceptance of final air test results by the Consultant. Minimum respiratory protection requirements are:

Fiber Concentration	Respiratory Protection
start-up (if anticipated ≤0.2 f/cc)	PAPR
<0.1 f/cc	half face respirator
0.1 to 0.2 f/cc	PAPR
>0.2 f/cc	supplied air

If solvents are used to remove mastics provide workers with appropriate respiratory protection for organic vapor concentrations that may be present.

G. Permit no visitors, except governmental inspectors having jurisdiction, in the work areas after commencement of asbestos disturbance or removal.

H. Provide workers with sufficient sets of protective disposable clothing, consisting of full-body coveralls, head covers, gloves, and foot covers; of sizes to properly fit individual workers.

I. Provide eye protection, hearing protection, foot protection, protection from electrical shock, fall protection, and hard hats as required for job conditions or by applicable safety regulations. Leave reusable footwear, hard hats, and eye protection devices in the contaminated equipment room until the end of the asbestos abatement work, at which time such items shall be disposed of as asbestos waste or decontaminated for reuse.

J. Provide protective clothing for use by the Consultant or his representative. Furnish protective clothing in as many sets as required for monitoring.

1.08 AIR MONITORING

A. The Consultant may perform daily air monitoring for the Owner. This air monitoring will be conducted during the removal and clean-up operations. The Consultant will perform clearance air monitoring for the Owner.

B. Notify Consultant of the commencement of asbestos removal at least five days in advance and provide at least 72-hour prior notification for observations as noted throughout these specifications.

C. Daily air monitoring samples will be analyzed by phase contract microscopy (PCM) in general accordance with the procedures outlined in the NIOSH 7400 Method. Such testing for the Owner does not relieve the Contractor of providing necessary tests required by other regulations, codes, and standards for the protection of his workers, or for any other purposes.

D. Services provided by the Consultant shall not relieve the Contractor of his obligation to perform the work in conformity with the drawing, specification, and governmental regulations.

1.09 WORK AREA CLEARANCE

A. Contractor release criteria:

The work areas are considered ready for re-occupancy when all of the work is completed, the work area is visually clean, and airborne fiber levels have been reduced to the level specified below.

B. Clearance Testing

1. Perform cleaning of all surfaces in work area and any other immediately adjacent contaminated areas.
2. Upon notice from the Contractor that work areas and all other contaminated and cleaned areas are ready for Clearance Testing, the Consultant will perform visual observations and air tests. For Clearance the work area must be visually clean, and the airborne fiber concentration must be equal to or less than 0.01 fibers per cubic centimeter (f/cc).
3. Areas which do not comply with the standard of cleaning shall continue to be cleaned by and at the Contractor's expense until the specified standard of cleaning is achieved as evidenced by visual observations and results of air sampling tests by Consultant as previously specified. The cost of all follow-up observations, sampling and analyses necessitated by the failure of previous observations and/or air tests to meet the clearance criteria shall be borne by the Contractor and are anticipated to be approximately $725-$750, depending on the number of PCM analyses.
4. When the airborne fiber concentration of 0.01 f/cc or less is achieved and the area has been decontaminated, the decontamination enclosure system shall be removed, the area thoroughly cleaned and materials from the equipment room and shower disposed of as contaminated waste. The remaining barriers between contaminated and clean areas and all seals on openings into the work area and fixtures shall be removed and disposed of as contaminated waste.

C. Final Observation:

Final observation of the cleaning work of this Section may be performed by the Consultant to determine if the areas are visibly clean.

D. Contractor's Representation:

By requesting that Clearance be performed in a work area, the Contractor or his representative represents that all of the asbestos work for that work area has been performed as specified and he agrees that should it be subsequently discovered that all of the work was not performed as specified he will take those steps necessary to cause it to be performed as specified; to include re-mobilization, preparation, abatement, cleanup, and disposal.

1.10 WORKSITE CONDITIONS

Worker and Visitor Procedures: The Contractor and/or subcontractor is hereby advised that asbestos has been determined by the U. S. Government to be a CANCER CAUSING AGENT. Contractor and/or subcontractor shall provide workers and visitors with respirators that, at a minimum, shall meet the requirements of OSHA 29 CFR 1926. Contractor shall provide protective clothing during actual asbestos removal and until air clearance tests results comply with the requirements of the Contract Documents.

PART 2 PRODUCTS

2.01 MATERIALS

A. Plastic sheeting - Shall be fire resistant, of thickness specified, and sized to minimize the frequency of joints.

B. Tape - Shall be glass fiber or other type capable of sealing joints of adjacent sheets of plastic and for attachment of plastic sheet to finished or unfinished surfaces or dissimilar materials.

C. Surfactant (wetting agent) - Shall consist of resin materials in water base which have been tested to indicate material is non-toxic and non-irritating to skin and eyes, and non-carcinogenic.

D. Sealant (encapsulant) - Shall be manufactured by reputable, established manufacturer of encapsulation/sealant materials and be approved specifically for use in asbestos-contaminated environments.

E. Organic solvent - Shall be low odor solvent formulated for removal of floor tile mastic.

F. Cardboard sheeting/boxes or other appropriate padding - Shall be as required to prevent floor tile and other sharp waste materials from puncturing disposal bags.

G. Impermeable Containers - Shall be suitable to receive and retain any asbestos-containing or contaminated materials until disposal at an approved site and shall be labeled in accordance with OSHA Regulations 29 CFR 1926. Containers must be both airtight and watertight and suitable for the waste they contain. Wastes with sharp edges or corners that could puncture plastic sheeting must be contained in more substantial containers. Use a minimum of two impermeable containers for each portion of waste.

H. Warning Labels, Signs, and Barricade Tape - Shall be as required by OSHA Regulation 29 CFR 1926.

I. Other Materials - Provide all other materials, such as lumber, plywood, carriage bolts, nails, and hardware, which may be required to construct the decontamination area and the barriers that isolate the work area(s).

2.02 TOOLS AND EQUIPMENT

A. Air Purifying Equipment - Shall be HEPA filtration systems. Ensure that no air movement system or purification equipment exhausts contaminated air from the work areas outside the work area.

B. Hand tools as needed to isolate the work areas and perform the required abatement operations.

C. HEPA Vacuum Equipment - Shall be wet/dry vacuum unit equipped with HEPA filtration system.

D. Scaffolding and/or ladders (if necessary) - Must be erected, maintained, and removed in compliance with the requirements of OSHA Regulations 29 CFR 1926, Part 1926.450 to provide access and support where required.

E. Water Sprayers - Utilize airless or other low-pressure sprayer for amended water application.

F. Garden hoses or other means to keep asbestos waste wet.

G. Dumpsters or other appropriate equipment for on-site storage and transportation of asbestos-containing waste and of construction wastes.

H. Safety equipment as required to protect workers while on the job site.

PART 3 EXECUTION

3.01 SUMMARY OF WORK

A. Work Included

1. Identify location and amount of floor tile and associated mastic as described on the floor plan drawing or in this specification.
2. Prepare the work area as specified.

3. Perform the asbestos removal and cleaning as described on the drawing or in the specification.
4. Properly clean using wet-cleaning methods and/or HEPA vacuum methods all work areas following asbestos removal.
5. Leave all work areas decontaminated and visibly clean following the work of this Section.
6. Properly dispose of asbestos-containing waste material and debris.
7. Maintain existing emergency exits or establish alternative exits satisfactory to the local fire department.

B. Approval of or acceptance by Consultant of various construction activities or methods proposed by Contractor does not constitute an assumption of liability either by the Consultant or Owner for inadequacy or adverse consequences of said activities or methods.

3.02 PREPARATION

A. Coordinate sequence of work area preparation with the Owner and General Contractor in order to properly segregate work areas from areas that must remain fully or partially occupied or operational, or in which other special considerations are required.

B. Interior Asbestos Removal Work Areas

1. Post warning signs at all entrances into the work area and set up a restricted area using asbestos warning tape.
2. Coordinate with the Architect and/or ALARNG's representative to shut down and tag out fire alarm equipment, electrical circuits, HVAC equipment, and other utilities servicing the work area or that may otherwise be hazardous to contractor personnel. Provide temporary lighting and electrical service necessary to accomplish the specified work.
3. Isolate the work area by constructing an enclosure of plastic sheeting sealed with tape and glue. Completely seal off all openings such as corridors, doorways, ducts, grilles, diffusers, and any other penetrations of the work area.
4. Seal electrical panels, switch boxes, etc. with a minimum of two layers of six-mil plastic sheeting prior to placing wall plastic.
5. Install splash guards on all walls in the work area with a minimum of one layer of four-mil plastic sheeting. Plastic sheeting shall be extended up a minimum of 3-feet from the base of the wall. Glue and tape in such a manner as to prohibit air movement across all joints and seams in plastic sheeting.
6. Install/construct worker and equipment decontamination unit in compliance with EPA and OSHA requirements, including showers with both hot and cold water.
7. Place the work area under reduced air pressure utilizing HEPA filtration systems that comply with ANSI Z9.2-79, local exhaust ventilation. Allow no air movement system or air filtering equipment to discharge unfiltered air outside the work area. Maintain a reduced pressure on the work area continuously (24 hours per day) from the start of asbestos removal and until the area has been decontaminated and certified as such by the required inspection and air testing. The reduced air pressure equipment shall have sufficient capacity to effect one air change in the work area every fifteen minutes and maintain a negative air pressure of at least -0.02 inches water. Exhaust all filtered and discharged air outside the building away from air intake devices.
8. Ensure that all barriers and plastic enclosures remain effectively sealed and taped for duration of asbestos removal and subsequent cleaning. Repair damaged barriers and remedy defects immediately upon discovery. Visually inspect enclosures at the beginning of each work period.
9. Maintain for the duration of the project from the first activity requiring disturbance of asbestos-containing materials, a sign-in/out log in the immediate area of the change room. Log shall be used by every person who enters the work areas.

C. Exterior Asbestos Removal Work Areas

1. Isolate the work area by placing barricade tape and warning signs around the areas of the building where asbestos materials will be removed. Place the tape and signs a minimum of twenty feet beyond the asbestos materials. Close all windows, doors and other openings into the building that are within twenty feet of the work area.
2. Place minimum six-mil plastic sheeting on the ground below the locations where asbestos removal will occur and extending at least ten feet beyond. Secure plastic sheeting with weights along the edges.
3. Erect ladders, scaffolding, and/or mechanical lifts in accordance with OSHA requirements to provide safe access to elevated work areas. Provide required/appropriate fall protection for workers when they are at elevated work areas.
4. Ensure that all signs, seals, and barriers remain in place for duration of asbestos removal. Repair damaged barriers and remedy defects immediately upon discovery. Visually inspect signs, seals, and barricade tape at the beginning of each work period.
5. Provide worker decontamination facilities in accordance with EPA and OSHA requirements.
6. Notify Consultant for observation of work area preparation prior to any removal of asbestos-containing material.
7. Maintain for the duration of the project from the first activity requiring disturbance of asbestos-containing materials, a sign-in/out log in the immediate area of the change room. A complete entry shall be made in this log by every person who enters the work area.

3.03 ASBESTOS REMOVAL

A. Remove and properly dispose of all asbestos-containing materials indicated to be removed in accordance with the methods and procedures outlined in the U. S. Department of Occupational Safety and Health Administration (OSHA) Asbestos Regulations (Code of Federal Regulations Title 29, Section 1926) or as more stringently specified in these specifications.

B. Removal of Floor Tile and Mastic

1. Prepare the work area as specified in Section 3.02.
2. Remove floor tile using mechanical methods that minimize breakage. Use sufficient water to keep asbestos materials wet.
3. Remove floor mastic using mechanical methods and minimum amounts of organic solvents. Use solvent materials and methods that minimize vapors. Provide workers with appropriate respiratory protection for solvent vapors as well as asbestos fibers.
4. Place removed asbestos flooring materials and debris in sealable plastic bags of six-mil minimum thickness and then in another impermeable container. Use cardboard or other padding as necessary to ensure that flooring materials do not puncture the plastic bags.
5. Label bags and containers and dispose of as asbestos-containing waste.

C. Removal of Caulk & Glazing Putty

1. Prepare work areas as specified in Section 3.03.

Note: Asbestos-containing caulk was identified around the exterior windows, along with a interior side glazing putty. *Caulk removal for door systems replacement shall also be included with this scope of work.*

2. Inspect the ground and floor surfaces below each window and door for caulk and putty debris. Collect all identifiable caulk and putty debris. Place collected caulk and putty debris in properly labeled, six-mil disposal bags and saturate with amended water.

3. Spray exposed caulk and glazing putty surfaces with encapsulant and secure the vents as necessary to prevent them from falling as they are being removed.
4. Using mechanical methods carefully remove the windows (if from the building. Carefully lower them to the ground surface. Cover sharp edges with cardboard or other appropriate padding. Wrap/seal the removed windows in a minimum of two layers of six-mil plastic sheeting and label for disposal.
5. Scrape all remnants of caulking from around the openings from which each window and door was removed. Seal removed caulking and glazing putty in properly labeled six-mil disposal bags.

3.04 CLEAN UP

A. Provide general cleaning of work area concurrently with the removal of asbestos-containing materials. Do not permit accumulation of removed materials on floor.

B. Cleaning Sequence:
   1. Remove all visible accumulations of asbestos material and debris.
   2. Wet clean all surfaces in the work area.
   3. Clean all sealed impermeable containers and all equipment (excluding that needed for further cleaning) used in the work area and remove from work area.
   4. Notify Consultant for observation of cleaning to determine completeness.
   5. Following acceptance of cleaning and following successful compliance with clearance testing requirements, carefully remove plastic sheeting from walls, folding inward to trap debris.

3.05 REMOVAL OF CONTAMINATED WASTE FROM WORK AREA

Remove sealed and labeled containers of contaminated material as follows:

A. Clean plastic bags (using HEPA or wet cleaning methods) while in the work area.

B. Pass cleaned plastic bags outside for loading.

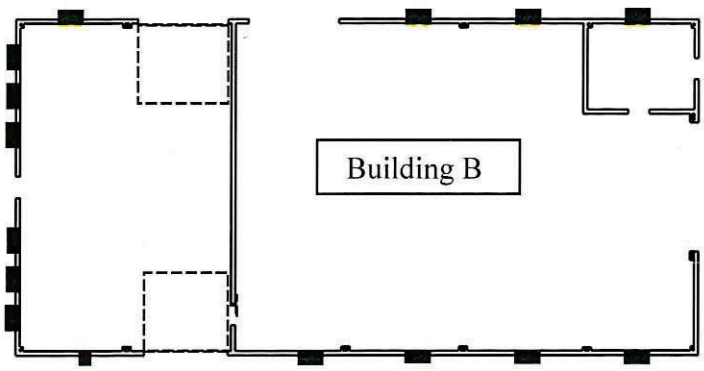
C. Seal asbestos waste in leak-proof impermeable containers labeled in accordance with OSHA 29 CFR 1926 or applicable local standards.

3.06 WASTE DISPOSAL

A. Asbestos-containing waste material and debris must be packaged in accordance with the provisions of this specification and disposed at a properly permitted "Subtitle D" municipal solid waste landfill within the State of Alabama that is also permitted to accept non-friable asbestos waste.

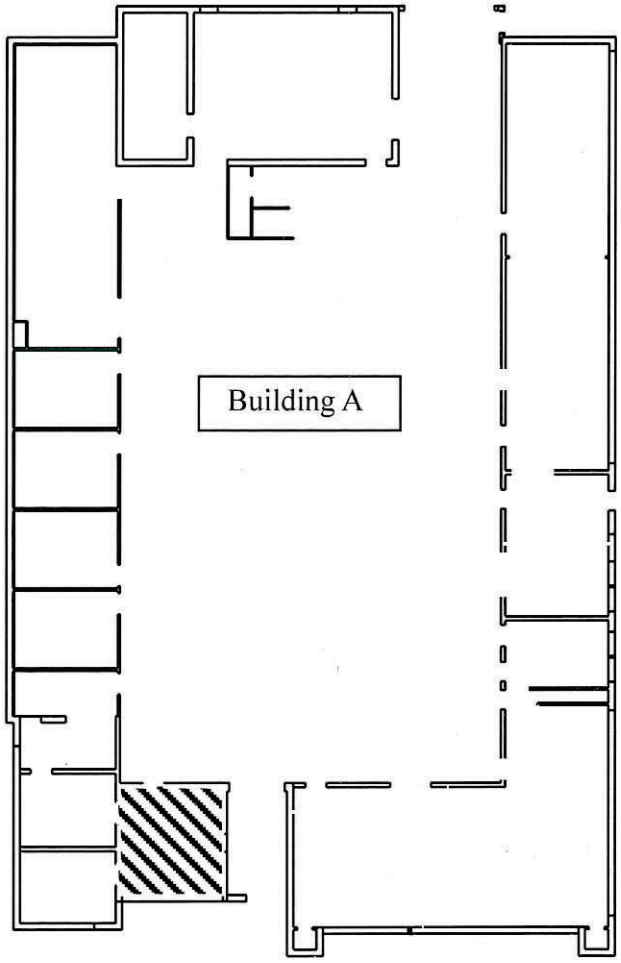
B. Dispose of asbestos-containing waste as follows:
   1. Seal asbestos waste in leak-proof impermeable containers labeled in accordance with OSHA, DOT, and EPA standards.
   2. Carefully load containerized waste on enclosed or covered trucks/dumpsters for transport. Exercise care before and during transport to ensure that no unauthorized persons have access to the material.
   3. Use only enclosed or covered trucks/dumpsters to haul impermeable containers to prevent loss or damage to container in route to the landfill.
   4. Allow only sealed plastic bags or impermeable containers to be deposited in landfill. Leave damaged, leaking, or broken plastic bags in the impermeable container and deposit entire container in landfill.
   5. Ensure that there are no visible emissions to the outside air from site where materials and waste are deposited.
   6. Retain receipts from landfill for asbestos wastes disposed.

END OF SECTION



LEGEND - Building B

Asbestos-Containing Materials	
■	exterior window caulk (white) and interior window glazing putty



Notes:

1) Due to the stage of the construction with open walls and ceilings, the contractor must prepare the work area with a sufficient amount of critical barriers to establish negative air pressure.

2) Contractor shall place at least 3-foot splash guards using 4mil plastic sheeting along all walls during mastic removal. Walls shall be clean at the time of clearance sampling.

3) The exterior caulk around exit/entrance doors is also to be removed as part for the abatement activities in Building B, if door systems are to to be replaced.

LEGEND - Building A

Asbestos-Containing Materials	
▨	area of floor tile and black mastic (under carpet)

Asbestos Removal ALARNG Oxford Readiness Center Oxford, Alabama	JOB NUMBER: MA-4335	SCALE: 1"= 30'
	DRAWING NO: 4335-01	DRAWN BY: TSH
	DATE: 07-14-22	CHECKED BY: TSH

ENVIRONMENTAL-MATERIALS CONSULTANTS, INC.

CERTIFICATE OF WORKER'S ACKNOWLEDGMENT

PROJECT NAME ALARNG Renovation - Readiness Center DATE _____

PROJECT ADDRESS Oxford, Alabama

CONTRACTOR _____

WORKING WITH ASBESTOS CAN BE DANGEROUS. INHALING ASBESTOS FIBERS HAS BEEN LINKED WITH VARIOUS TYPES OF CANCER. IF YOU SMOKE AND INHALE ASBESTOS FIBERS THE CHANCE THAT YOU WILL DEVELOP LUNG CANCER IS GREATER THAN THAT OF THE NON-SMOKING PUBLIC.

Your employer's contract with the owner for the above project requires that: You be supplied with the proper respirator and be trained in its use. You be trained in safe work practices and in the use of the equipment found on the job. You receive a medical examination. These things are to have been done at no cost to you. By signing this certification, you are assuring the owner that your employer has met these obligations to you.

RESPIRATORY PROTECTION: I have been trained in the proper use of respirators and informed of the type of respirator to be used on the above referenced project. I have a copy of the written respirator protection manual issued by my employer. I have been equipped at no cost with the respirator to be used on the above project.

TRAINING COURSE: I have been trained in the dangers inherent in handling asbestos and breathing asbestos dust and in proper work procedures and personal and area protective measures. The topics covered in the course included the following:

Physical characteristics of asbestos
Health hazards associated with asbestos
Respiratory protection
Use of protective equipment
Reduced air pressure systems
Work practices including hands on or on-job training
Personal decontamination procedures
Air monitoring, personal and area

MEDICAL EXAMINATION: I have had a medical examination within 12 months which was paid for by my employer. This examination included: health history, pulmonary function tests and may have included an evaluation of a chest x-ray.

RELEASE FROM LIABILITY: I understand the health risk associated with asbestos exposure and I do covenant to hold harmless the owner, the building manager and the engineer and their officers, directors and employees from and against any and all liability related to exposure to asbestos or asbestos-containing materials except any rights I may have under the provisions of the applicable worker's compensation laws.

Signature _____

Printed Name _____

Social Security XXX - XX - _____

Witness _____

ENVIRONMENTAL
MATERIALS
CONSULTANTS, INC.

June 14, 2022

Mr. Jeffrey S. Cahill, AIA
JMR+H Architecture, PC
445 Dexter Avenue, Suite 5050
Montgomery, AL 36104

Subject: Pre-Renovation Asbestos Survey
Alabama National Guard Armory
33 Meadow Avenue
Oxford, Alabama 36203
EMC Project No.: MA-4335

Dear Mr. Cahill:

EMC has performed a pre-renovation asbestos survey of the ANG Armory, located in Oxford, Alabama. This report presents our findings.

Background Information

The Alabama National Guard intends to renovate the referenced building. EPA's NESHAP regulations require that a pre-renovation asbestos survey & testing be performed prior to commencement of renovation activities so that any asbestos materials within the building can be properly addressed.

Asbestos Survey

On June 1, 2022, EMC personnel performed a tour of the building, noting materials that are considered suspect for asbestos. During the site visit EMC recorded the general locations of thirteen building materials that are considered suspect to contain asbestos. Bulk samples of those suspect materials were collected in general accordance with EPA recommendations. The suspect materials were given a unique identification number for sampling and reporting purposes. The identification numbers are called homogenous sampling areas (HSA). A homogeneous sampling area (HSA) is defined as being a material that is the same in type, color, texture and applied or installed during the same time of construction or renovation. After sampling, the bulk samples were forwarded to EMSL Analytical in Smyrna, GA, a NVLAP accredited laboratory. The NVLAP lab code for EMSL's Smyrna lab is 101048-1). The sampling work was performed by Mr. Carter Byrd an accredited asbestos inspector (Alabama Accreditation Number AIN022269E11740).

The bulk samples were analyzed by polarized light microscopy (PLM) coupled with dispersion staining. This technique is used to identify asbestos fibers by their shape and unique optical properties. The analyses identified three asbestos-containing materials (ACM): floor tile, black mastic, and exterior caulk. A summarization of the analytical results is provided in a table included with this report. Specific data for each sample analysis is shown on the enclosed analytical data sheets and chain of custody, based on the materials sampled by EMC.

Asbestos Comments

The EPA defines an asbestos-containing material as one containing greater than 1% asbestos. Regulated asbestos-containing materials (RACM) are those materials containing greater than 1% asbestos and can include both friable and non-friable forms. EPA's NESHAP regulation classifies all friable asbestos-containing materials as RACM and requires that they be properly removed and disposed of prior to renovation activities that may disturb them.

The floor tile and black mastic are classified as Category I non-friable ACM. These materials are regulated under NESHAP when they have become friable or will be subject to sanding, grinding, cutting or abrading. OSHA requires employers to protect their workers from airborne asbestos exposure when asbestos materials are disturbed.

The material identified as exterior caulk is classified by the EPA as Category II non-friable ACM. Category II non-friable materials are only regulated under NESHAP if they become friable or have a high probability of becoming or have become crumbled, pulverized, or reduced to a powder by forces expected to act on them. Due to the anticipated means and methods for general window renovations, the exterior caulk must be removed prior to renovation activities that might disturb it.

OSHA considers removal of the identified non-friable ACM to be Class II asbestos work, and requires establishment of regulated areas, supervision by a competent person, worker training, adherence to specified work practices, and respiratory protection (or documentation that it is not required).

Special Note: OSHA considers any material as asbestos-containing even for materials with less than 1% for worker protection.

The EPA typically requires that materials containing less than 1% asbestos, determined by PLM analysis (percentages that are visual estimations made by the laboratory's microscopist) be proven to contain less than 1% by PLM point counting analyses. EMC does not anticipate there being a change in percentages if some confirmation samples were analyzed by PLM point counting methods. However, EMC does recommend that the glazing putty identified in this survey having asbestos, even <1% be removed as part of all abatement activities.

The Alabama Department of Environmental Management (ADEM) requires that all asbestos wastes be disposed in a permitted landfill.

Limitations

EMC's observations, survey, and testing were limited to exposed materials within or on the specified space. We did not perform demolition of walls, ceilings, floors, insulations, or ductwork to observe, sample, or test underlying materials. Determination of whether a suspect material contains asbestos was generally based on analyses of the minimum number of samples allowed by the EPA's AHERA regulations. Because of variations in the composition of some materials, and our inability to visually identify those variations, it is possible that not all asbestos-containing materials were identified. This report has been prepared for the use of JMR+H Architecture and/or its representatives. No other warranties are expressed or implied.

I appreciate the opportunity for EMC to provide these services. Please do not hesitate to contact me if you have questions about this report.

Sincerely,
Environmental-Materials Consultants, Inc.

Carter Byrd
Environmental Technician

Trent S. Hill, REM, CESCO
Owner/President

REGISTERED ENVIRONMENTAL MANAGER
TRENT S. HILL
REM
12432

Enclosures

ENVIRONMENTAL
MATERIALS
CONSULTANTS, INC.
2027 Chestnut Street, Montgomery, Alabama 36106, 334-265-4000

ASBESTOS SURVEY SUMMARY
ANG Readiness Center
Oxford, Alabama
EMC Project Number MA-4335
June 01, 2022

EMC HSA#	Material Description	General Location	Asbestos
4335-01 4335-01a 4335-01a	floor tile/ tan mastic/ yellow mastic/ black	admin. office suite, offices	none detected none detected none detected
4335-02 **4335-02a**	**floor tile/ brown** **mastic/ black**	**admin. office suite and conference room**	**4% chrysotile** **5% chrysotile**
4335-03 4335-03a	9" floor tile/ green mastic/ clear	supply room	none detected none detected
4335-04 4335-04a	floor tile/ beige mastic/ yellow	supply room, under lockers	none detected none detected
4335-05	**exterior caulk/ white (brittle)**	**Building B, exterior windows**	**5% chrysotile**
4335-06	exterior caulk/ white (pliable)	Building B, exterior wall vents	none detected
4335-07	**window glazing putty/ white**	**Building B, interior side of windows**	**<1% chrysotile**
4335-08	mortar/ gray	Building B, exterior windows against brick	none detected

Materials shown in bold are asbestos-containing materials.
General location information is provided to assist in identifying the material and may not list all locations where the material exists.
The samples were analyzed by polarized light microscopy (PLM) coupled with dispersion staining.
Reported asbestos percentages are visual estimations made by the microscopist.

Special Note: Please note that the EPA typically requires that materials containing less than 1% asbestos, determined by PLM analysis (percentages that are visual estimations made by the laboratory's microscopist) be proven to contain less than 1% by PLM point counting analyses. EMC does not anticipate there being a change in percentages if some confirmation samples were analyzed by PLM point counting methods. However, due to OSHA regulations regarding worker safety with asbestos-containing materials at any percentage, EMC recommends that the glazing putty identified in this survey having asbestos, even <1% be removed as part of all abatement activities.

EMSL Analytical, Inc.

2205 Corporate Plaza Parkway SE, Suite 200 Smyrna, GA 30080
Tel/Fax: (770) 956-9150 / (770) 956-9181
http://www.EMSL.com / atlantalab@emsl.com

EMSL Order:	072203754
Customer ID:	ENVI40
Customer PO:	
Project ID:	

Attention:	Trent Hill	**Phone:**	(334) 322-1164
	Environmental Materials Consultants	**Fax:**	(334) 265-4043
	2027 Chestnut Street	**Received Date:**	06/02/2022 9:15 AM
	Montgomery, AL 36106	**Analysis Date:**	06/03/2022
		Collected Date:	
Project:	ANG-Oxford MA-4335		

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
4335-01-01-Floor Tile *072203754-0001*	Floor Tile/Tan - Admin Office Suite, Offices	Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
4335-01-01-Mastic 1 *072203754-0001A*	Floor Tile/Tan - Admin Office Suite, Offices	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
4335-01-01-Mastic 2 *072203754-0001B*	Floor Tile/Tan - Admin Office Suite, Offices	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
4335-01-02-Floor Tile *072203754-0002*	Floor Tile/Tan - Admin Office Suite, Offices	Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
4335-01-02-Mastic 1 *072203754-0002A*	Floor Tile/Tan - Admin Office Suite, Offices	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
4335-01-02-Mastic 2 *072203754-0002B*	Floor Tile/Tan - Admin Office Suite, Offices	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
4335-02-01-Floor Tile *072203754-0003*	Floor Tile/Brown (Analyze Floor Tile And Black Mastic Only) - Admin Office Conference Room	Brown Non-Fibrous Homogeneous		96% Non-fibrous (Other)	4% Chrysotile
4335-02-01-Mastic *072203754-0003A*	Floor Tile/Brown (Analyze Floor Tile And Black Mastic Only) - Admin Office Conference Room	Black Non-Fibrous Homogeneous		95% Non-fibrous (Other)	5% Chrysotile
4335-02-02 *072203754-0004*	Floor Tile/Brown (Analyze Floor Tile And Black Mastic Only) - Admin Office Conference Room				Positive Stop (Not Analyzed)
4335-03-01-Floor Tile *072203754-0005*	9" Floor Tile/Green - Supply Room	Green Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
4335-03-01-Adhesive *072203754-0005A*	9" Floor Tile/Green - Supply Room	Clear Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
4335-03-02-Floor Tile *072203754-0006*	9" Floor Tile/Green - Supply Room	Green Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
4335-03-02-Adhesive *072203754-0006A*	9" Floor Tile/Green - Supply Room	Clear Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
4335-04-01-Floor Tile *072203754-0007*	Floor Tile/Beige - Supply Room, Under Lockers	Beige Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

Initial report from: 06/03/2022 11:20:26

EMSL Analytical, Inc.
2205 Corporate Plaza Parkway SE, Suite 200 Smyrna, GA 30080
Tel/Fax: (770) 956-9150 / (770) 956-9181
http://www.EMSL.com / atlantalab@emsl.com

EMSL Order:	072203754
Customer ID:	ENVI40
Customer PO:	
Project ID:	

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
4335-04-01-Mastic *072203754-0007A*	Floor Tile/Beige - Supply Room, Under Lockers	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
4335-04-02-Floor Tile *072203754-0008*	Floor Tile/Beige - Supply Room, Under Lockers	Beige Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
4335-04-02-Mastic *072203754-0008A*	Floor Tile/Beige - Supply Room, Under Lockers	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
4335-05-01 *072203754-0009*	Exterior Caulk/White (Crumbly Like) - Exterior Windows	Gray Non-Fibrous Homogeneous		95% Non-fibrous (Other)	5% Chrysotile
4335-05-02 *072203754-0010*	Exterior Caulk/White (Crumbly Like) - Exterior Windows				Positive Stop (Not Analyzed)
4335-06-01 *072203754-0011*	Exterior Caulk/White (Stretchy Like) - Exterior Wall Vents	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
4335-06-02 *072203754-0012*	Exterior Caulk/White (Stretchy Like) - Exterior Wall Vents	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
4335-07-01 *072203754-0013*	Interior Window Glazing Putty/White - Interior Side Of Windows	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	<1% Chrysotile
4335-07-02 *072203754-0014*	Interior Window Glazing Putty/White - Interior Side Of Windows	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	<1% Chrysotile
4335-08-01 *072203754-0015*	Mortar/Gray - Exterior Windows, Against Brick	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
4335-08-02 *072203754-0016*	Mortar/Gray - Exterior Windows, Against Brick	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

Analyst(s)
Anthony Sanaie (7)
Kyle Rich (16)

Violedah Melissa Richardson
Violedah Richardson, Laboratory Manager
or Other Approved Signatory

Initial report from: 06/03/2022 11:20:26

OrderID: 072203754

Chain of Custody

Asbestos Lab Services

072203754

EMSL Analytical, Inc.
2205 Corporate Plaza SE
Suite 200
Smyrna, GA. 30080
Phone: (770) 956-9150

Please print all information legibly.

Company:	Environmental-Materials Consultants, Inc.	*Bill To:*	Environmental-Materials Consultants, Inc.
Address1:	2027 Chestnut Street	*Address1:*	2027 Chestnut Street
Address2:		*Address2:*	
City, State:	Montgomery, Alabama	*City, State:*	Montgomery, Alabama
Zip/Post Code:	36106	*Zip/Post Code:*	36106
Country:		*Country:*	
Contact Name:	Trent Hill	*Attn:*	Trent Hill
Phone:	334-265-4000	*Phone:*	334-265-4000
Fax:	334-265-4043	*Fax:*	334-265-4043
Email:	thill@emcinc.net	*Email:*	thill@emcinc.net
EMSL Rep:		*P.O. Number:*	
Project Name/Number:	ANG-Oxford MA-4335		

MATRIX			TURNAROUND			
☐ Air	☐ Soil	☐ Micro-Vac	☐ 3 Hours	☐ 6 Hours	☐ Same Day or 12 Hours*	☑ 24 Hours (1 day)
☑ Bulk	☐ Drinking Water		☐ 48 Hours (2 days)	☐ 72 Hours (3 days)	☐ 96 Hours (4 days)	☐ 120 Hours (5 days)
☐ Wipe	☐ Wastewater		☐ 144+ hours (6-10 days)			

TEM AIR, 3 hours, 6 hours, Please call ahead to schedule. There is a premium charge for 3-hour tat, please call 1-800-220-3675 for price prior to sending samples. You will be asked to sign an authorization form for this service.

***12 hours (must arrive by 11:00a.m. Mon -Fri.), Please Refer to Price Quote**

☑ Stop on 1st Positive

PCM - Air
- ☐ NIOSH 7400(A) Issue 2: August 1994
- ☐ OSHA w/TWA
- ☐ Other:

PLM - Bulk
- ☑ EPA 600/R-93/116
- ☐ EPA Point Count
- ☐ NY Stratified Point Count
- ☐ PLM NOB (Gravimetric) NYS 198.1
- ☐ NIOSH 9002:
- ☐ EMSL Standard Addition:

SEM Air or Bulk
- ☐ Qualitative
- ☐ Quantitative

TEM Air
- ☐ AHERA 40 CFR, Part 763 Subpart E
- ☐ NIOSH 7402
- ☐ EPA Level II

TEM BULK
- ☐ Drop Mount (Qualitative)
- ☐ Chatfield SOP - 1988-02
- ☐ TEM NOB (Gravimetric) NYS 198.4
- ☐ EMSL Standard Addition:

PLM Soil
- ☐ EPA Protocol Qualitative
- ☐ EPA Protocol Quantitative
- ☐ EMSL MSD 9000 Method fibers/gram

TEM WATER
- ☐ EPA 100.1
- ☐ EPA 100.2
- ☐ NYS 198.2

TEM Microvac/Wipe
- ☐ ASTM D 5755-95 (quantative method)
- ☐ Wipe Qualitative

XRD
- ☐ Asbestos
- ☐ Silica NIOSH 7500

OTHER
- ☐

1 of 2

OrderID: 072203754

Chain of Custody Asbestos Lab Services

Client Sample # (s) 16 **Total Samples #:** _____

Relinquished: Carter Byrd Carter Byrd **Date:** 06/01/2022 **Time:** 5:00 pm

Received: _____ **Date:** 6/2/2022 **Time:** 9:15 am. OF2

Sample ID	Description/Location	Material Description
4335-01-01	admin office suite, offices	floor tile/ tan
4335-01-02	"	"
4335-02-01	admin office conference room	floor tile/ brown (analyze floor tile and black mastic only)
4335-02-02	"	"
4335-03-01	supply room	9" floor tile/ green
4335-03-02	"	"
4335-04-01	supply room, under lockers	floor tile/ beige
4335-04-02	"	"
4335-05-01	exterior windows	exterior caulk/ white {crumbly like}
4335-05-02	"	"
4335-06-01	exterior wall vents	exterior caulk/ white {stretchy like}
4335-06-02	"	"
4335-07-01	interior side of windows	interior window glazing putty/ white
4335-07-02	"	"
4335-08-01	exterior windows, against brick	mortar/ gray
4335-08-02	"	"

2 of 2

OXFORD RENOVATIONS
OXFORD, ALABAMA

CERTIFICATE OF WORKER'S ACKNOWLEDGMENT

PROJECT NAME ALARNG Renovation - Readiness Center DATE _____

PROJECT ADDRESS Oxford, Alabama

CONTRACTOR _____

WORKING WITH ASBESTOS CAN BE DANGEROUS. INHALING ASBESTOS FIBERS HAS BEEN LINKED WITH VARIOUS TYPES OF CANCER. IF YOU SMOKE AND INHALE ASBESTOS FIBERS THE CHANCE THAT YOU WILL DEVELOP LUNG CANCER IS GREATER THAN THAT OF THE NON-SMOKING PUBLIC.

Your employer's contract with the owner for the above project requires that: You be supplied with the proper respirator and be trained in its use. You be trained in safe work practices and in the use of the equipment found on the job. You receive a medical examination. These things are to have been done at no cost to you. By signing this certification, you are assuring the owner that your employer has met these obligations to you.

RESPIRATORY PROTECTION: I have been trained in the proper use of respirators and informed of the type of respirator to be used on the above referenced project. I have a copy of the written respirator protection manual issued by my employer. I have been equipped at no cost with the respirator to be used on the above project.

TRAINING COURSE: I have been trained in the dangers inherent in handling asbestos and breathing asbestos dust and in proper work procedures and personal and area protective measures. The topics covered in the course included the following:

Physical characteristics of asbestos
Health hazards associated with asbestos
Respiratory protection
Use of protective equipment
Reduced air pressure systems
Work practices including hands on or on-job training
Personal decontamination procedures
Air monitoring, personal and area

MEDICAL EXAMINATION: I have had a medical examination within 12 months which was paid for by my employer. This examination included: health history, pulmonary function tests and may have included an evaluation of a chest x-ray.

RELEASE FROM LIABILITY: I understand the health risk associated with asbestos exposure and I do covenant to hold harmless the owner, the building manager and the engineer and their officers, directors and employees from and against any and all liability related to exposure to asbestos or asbestos-containing materials except any rights I may have under the provisions of the applicable worker's compensation laws.

Signature _____

Printed Name _____

Social Security XXX - XX - _____

Witness _____

SECTION 07 21 19: FOAMED-IN-PLACE INSULATION

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Foamed-in-Place Insulation of the following types:
   1. Open-cell, spray applied, polyurethane foam insulation.

B. Accessories.

1.2 RELATED SECTIONS

A. Section 07 21 19 - Foamed-In-Place Insulation.

1.3 REFERENCES

A. ASTM International (ASTM):
   1. ASTM C518 - Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus.
   2. ASTM D1621 - Standard Test Method for Compressive Properties of Rigid Cellular Plastics.
   3. ASTM D1622 - Standard Test Method for Apparent Density of Rigid Cellular Plastics.
   4. ASTM D1623 - Standard Test Method for Tensile and Tensile Adhesion Properties of Rigid Cellular Plastics.
   5. ASTM D2126 - Standard Test Method for Response of Rigid Cellular Plastics to Thermal and Humid Aging.
   6. ASTM D2842 - Standard Test Method for Water Absorption of Rigid Cellular Plastics.
   7. ASTM D2856 - Standard Test Method for Open-Cell Content of Rigid Cellular Plastics by the Air Pycnometer.
   8. ASTM D6226 - Standard Test Method for Open Cell Content of Rigid Cellular Plastics.
   9. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
   10. ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements.
   11. ASTM E96 - Standard Test Methods for Water Vapor Transmission of Materials.
   12. ASTM E413 - Classification for Rating Sound Insulation.
   13. ASTM E423 - Standard Test Method for Normal Spectral Emittance at Elevated Temperatures of Nonconducting Specimens.
   14. ASTM E2178 - Standard Test Method for Air Permeance of Building Materials.
   15. ASTM G21 - Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi.

B. ICC Evaluation Service (ICC-ES):
   1. ICC-ES AC377 - Acceptance Criteria for Spray-Applied Foam Plastic Insulation.

C. International Association of Plumbing and Mechanical Officials (IAPMO).

D. Spray Polyurethane Foam Alliance: Professional Certification Program (SPFA PCP).

1.4 SUBMITTALS

A. Submit under provisions of Section 01 33 00 - Administrative Requirements.

B. Product Data: Submit manufacturer's product data, including surface preparation and application instructions.

C. Manufacturer's Certification:
   1. Submit manufacturer's certification that materials comply with specified requirements and are suitable for intended application.
   2. Submit manufacturer's certification from SPFA PCP as Accredited Supplier Company.
   3. Submit evidence that manufacturer has Dunn & Bradstreet rating of 5A or can supply performance bond.

D. Product Evaluation Reports: Submit manufacturer's product evaluation reports from accredited evaluation service.

E. Manufacturer's Project References: Submit manufacturer's list of 5 successfully completed polyurethane foam insulation projects of similar size and scope, including project name and location, name of architect, and type and quantity of materials furnished.

F. Applicator's Project References: Submit applicator's list of successfully completed polyurethane foam insulation projects, including project name and location, name of architect, and type and quantity of materials applied.

G. Warranty Documentation: Submit manufacturer's standard warranty.

1.5 QUALITY ASSURANCE

A. Manufacturer's Qualifications:
   1. Manufacturer regularly engaged, for a minimum of 10 years, in the manufacturing of polyurethane foam insulation of similar type to that specified.
   2. Accreditation: SPFA PCP as Accredited Supplier Company.

B. Applicator's Qualifications:
   1. Applicator regularly engaged, for a minimum of 5 years, in application of polyurethane foam insulation of similar type to that specified.
   2. Certified by manufacturer to install their products.
   3. Use persons trained by manufacturer in polyurethane foam insulation application or certified by SPFA PCP as Master Installer - Insulation, Closed Cell.

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.

1.6 PRE-INSTALLATION CONFERENCE

A. Convene a conference approximately two weeks before scheduled commencement of the Work.

B. Require attendance of parties directly affecting Work of this Section, including Contractor, Architect, applicator, and manufacturer's representative.

C. Review the Following:
1. Materials.
2. Protection of in-place conditions.
3. Surface preparation.
4. Application.
5. Field quality control.
6. Cleaning.
7. Protection.
8. Coordination with other Work.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Delivery Requirements: Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name and manufacturer.

B. Storage and Handling Requirements:
1. Store and handle materials in accordance with manufacturer's instructions.
2. Keep materials in manufacturer's original, unopened containers and packaging until application.
3. Store materials in clean, dry area indoors.
4. Store materials at 70 to 80 degrees F (21 to 27 degrees C) a minimum of 48 hours before use.
5. Store materials out of direct sunlight.
6. Protect materials from freezing.
7. Protect materials during storage, handling, and application to prevent contamination or damage.

1.8 PROJECT CONDITIONS

A. Ambient and Substrate Temperatures: As recommended by Manufacturer.

B. Moisture: Do not apply polyurethane foam insulation when moisture in form of rain, snow, ice, fog, frost, or dew is expected during application.

C. Relative Humidity: Do not apply polyurethane foam insulation when relative humidity over 85 percent is expected during application.

D. Wind: Do not apply polyurethane foam insulation with wind speed above 12 mph (19 kmh).

E. Do not apply polyurethane foam insulation under ambient conditions outside manufacturer's limits.

1.9 WARRANTY

A. Manufacturer's Warranty: Provide manufacturer's standard limited warranty.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer: Carlisle Spray Foam Insulation (SFI), Basis of Design or prior approved equivalent.

B. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.

2.25 OPEN-CELL, SPRAY APPIED POLYURETHANE INSULATION

A. Basis of Design :**SealTite PRO Open Cell.** SealTite PRO Open Cell is a two component, light density, one to one by volume spray-applied polyurethane foam insulation. SealTite PRO Open Cell contains ZERO ozone depleting blowing agents and can be used in Assembly specific attic or crawlspace applications without an Ignition Barrier.

Physical Property	Test Method ASTM	SealTite™ Pro Open Cell	SealTite™ Pro High Yield	SealTite™ Pro No Mix	SealTite™ Pro No Trim 21	SealTite™ Pro OCX
R-Value, @ 1"	C 518	3.7	3.6	3.8	4.4	3.7
R-Value, @ 3.5"	C 518	13	13	13	15	12
Core Density, lb/cf	D 1622	0.50	0.45	0.5	0.75	0.5
Open-cell content, %, min.	D 2856	90	97	97	97	95
Air Impermeable, max, (L/s-m2) @ 3.5"	E 283	0.02	0.02	0.02	0.02	0.02
Tensile Strength, psi, min.	D 1623	3	5	5.19	4.7	3.71
Dimensional Stability, 28 days, percent volume change, max.	D 2126	15	15	5	4	15
Flame Spread, max.	E-84	25	10	20	20	0
Smoke Development, max.	E-84	450	250	400	400	300

2.2 ACCESSORIES

A. Primer: as recommended by Manufacturer.

PART 3 EXECUTION

3.1 EXAMINATION

A. Examine areas to receive polyurethane foam insulation.

B. Notify Architect of conditions that would adversely affect application.

C. Do not begin surface preparation or application until unacceptable conditions are corrected.

3.2 PREPARATION

A. Protection of In-Place Conditions:
1. Protect adjacent surfaces from contact with overspray.
2. Protect electrical outlet and junction boxes from contact with polyurethane foam

insulation.

B. Surface Preparation:
   1. Prepare surfaces in accordance with manufacturer's instructions.
   2. Remove dirt, dust, debris, oil, grease, rust, loose scale, ice, frost, moisture, and other surface contaminants which could adversely affect application of polyurethane foam insulation.

3.3 INSTALLATION

A. Spray-apply polyurethane foam insulation in accordance with manufacturer's instructions at locations indicated on the Drawings.

B. Material Temperature: Maintain materials in containers at 65 to 85 degrees F (18 to 29 degrees C) while in use.

C. Ensure substrates are dry during application.

D. Insulation Thickness:
   1. Maximum Pass Thickness: 4 inches (102 mm).
   2. Total Thickness: Indicated on the Drawings.

E. Apply polyurethane foam insulation to uniform thickness without voids, pinholes, cracks, and crevices.

3.4 FIELD QUALITY CONTROL

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

B. Inspect completed application of polyurethane foam insulation, including:
   1. Total thickness.
   2. Free of voids, pinholes, cracks, and crevices.
   3. Adhesion to substrate.

3.5 CLEANING AND PROTECTION

A. Promptly clean surfaces that receive overspray of polyurethane foam insulation.

B. Do not use harsh cleaning materials or methods that could damage surfaces.

C. Protect Work of this Section from damage during construction.

END OF SECTION

DIVISION 8: DOORS AND WINDOWS
Section 08 33 10: Overhead Coiling Doors

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and any general provisions of the Contract for each Prime Contract, including General and Supplementary Conditions and specific requirements apply to this Section.

1.2 SUMMARY

A. This Section includes overhead coiling metal doors.

B. Types of overhead coiling doors include the following:

1. Insulated slat overhead door.

C. Operation of overhead coiling doors include the following:

1. Electric motor operation.

D. Provide complete operating door assemblies including door curtains, guides, counterbalance mechanism, hardware, operators, and installation accessories.

E. Field painting is specified in Division 9.

F. Electrical connections for powered operators and accessories are specified in Division 16.

1.3 SUBMITTALS

A. General: Submit the following according to Conditions of Contract.

B. Product data, roughing-in diagrams, and installation instructions for each type and size of overhead coiling door.

1. Provide operating instructions and maintenance information.
2. Provide information describing fire-release system including electrical rough-in instructions.

C. Shop drawings for special components and installations that are not dimensioned or detailed in manufacturer's data sheets.

1.4 QUALITY ASSURANCE

A. Manufacturer's Qualifications: Furnish each overhead coiling door as a complete unit produced by one manufacturer, including hardware, accessories, mounting and installation components.

1. Furnish overhead coiling door units by one manufacturer for entire Project.

B. Insert and Anchorages: Furnish inserts and anchoring devices that must be set in concrete or built into masonry to install units. Provide setting drawings, templates, instructions, and directions to install anchorage devices. Coordinate delivery with other work to avoid delay.

1. See concrete and masonry Sections of these specifications regarding installation of inserts and anchorage devices.

C. Wind Loading: Design and reinforce overhead coiling doors to withstand a 20-psf (85-mph) wind-loading pressure.

D. Provide manufacturer's standard UL-labeled smoke detectors and electromechanical door-holder-release devices where indicated.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated in the Work include, but are not limited to, the following:

1. Apton Rolling Doors, A Gichner Systems Group, Inc.
2. Atlas Roll-Lite Overhead Doors/Div. of MASCO.
3. Ceco/Windsor Door--Div. of the Ceco Corp.
4. The Cookson Co.
5. Cornell Iron Works Inc.
6. Dynamic Closures Corp.
7. Mahon Door Corp.
8. Overhead Door Corp.
9. Pacific Rolling Door Co.
10. Raynor Garage Door.
11. Southwestern Steel Rolling Door Co.
12. Wayne-Dalton Corp.
13. J. G. Wilson Corp.

2.2 DOOR CURTAIN MATERIALS AND CONSTRUCTION

A. Door Curtain: Fabricate overhead coiling door curtain at locations identified on plans of interlocking slats, designed to withstand required wind loading, in a continuous length for width of door without splices. Unless otherwise indicated, provide slats of material gage recommended by door manufacturer for size and type of door required, and as follows:

1. Steel Door Curtain Slats: Structural quality, cold-rolled galvanized steel sheets complying with ASTM A 446, Grade A, with G90 zinc coating, complying with ASTM A 525.
2. Size shall be as shown on drawings.

B. Endlocks: Malleable iron castings galvanized after fabrication, secured to curtain slats with galvanized rivets. Provide locks on alternate curtain slats for curtain alignment and resistance against lateral movement.

C. Windlocks: Malleable iron castings secured to curtain slats with galvanized rivets. Unless otherwise recommended by door manufacturer, provide windlocks on doors exceeding 16 feet wide. Space windlocks approximately 24 inches o.c. on both edges of curtain.

D. Bottom Bar: Consisting of two angles, each not less than 1-1/2 by 1-1/2 by 1/8 inch thick, either galvanized or stainless steel or aluminum extrusions to suit type of curtain slats.

E. Weather Seals: Provide vinyl or neoprene weatherstripping for exterior exposed doors, except

where otherwise indicated. At door heads, use 1/8-inch-thick continuous sheet secured to inside of curtain coil hood. At door jambs, use 1/8-inch-thick continuous strip secured to exterior side of jamb guide.

2.3 COUNTERBALANCING MECHANISM

A. General: Counterbalance doors by means of adjustable steel helical torsion spring, mounted around a steel shaft and in a spring barrel, and connected to door curtain with required barrel rings. Use grease-sealed bearings or self-lubricating graphite bearings for rotating members.

B. Counterbalance Barrel: Fabricate spring barrel of hot-formed structural-quality carbon steel, welded or seamless pipe, of sufficient diameter and wall thickness to support roll-up of curtain without distortion of slats and to limit barrel deflection to not more than 0.03 inch per foot of span under full load.

C. Provide spring balance of one or more oil-tempered, heat-treated steel helical torsion springs. Size springs to counterbalance weight of curtain, with uniform adjustment accessible from outside barrel. Provide cast steel barrel plugs to secure ends of springs to barrel and shaft.

D. Fabricate torsion rod for counterbalance shaft of cold-rolled steel in size required to hold fixed spring ends and carry torsional load.

E. Brackets: Provide mounting brackets of manufacturer's standard design, either cast iron or cold-rolled steel plate with bell mouth guide groove for curtain.

F. Hood: Form to entirely enclose coiled curtain and operating mechanism at opening head and act as weather seal. Contour to suit end brackets to which hood is attached. Roll and reinforce top and bottom edges for stiffness. Provide closed ends for surface-mounted hoods and any portion of between-jamb mounting projecting beyond wall face. Provide intermediate support brackets as required to prevent sag.

2.4 PRIME PAINTING

A. General: Shop-clean and -prime ferrous metal and galvanized surfaces, exposed and unexposed, except tightly joined and lubricated surfaces, with door manufacturer's standard rust-inhibitive primer. Use primer that is compatible with finish painting.

2.5 ELECTRIC DOOR OPERATORS

A. General: Furnish electric door operator assembly of size and capacity recommended and provided by door manufacturer; complete with electric motor and factory-prewired motor controls, gear-reduction unit, solenoid-operated brake, remote control stations, control devices, conduit and wiring from controls to motor and central stations, and accessories required for proper operation. Interface with electronic system graphic panel operation.

B. Provide hand-operated disconnect or a mechanism for automatically engaging a sprocket-and-chain operator and releasing brake for emergency manual operation. Mount disconnect and operator so they are accessible from floor level. Include interlock device to automatically prevent motor from operating when emergency operator is engaged.

C. Design operator so that motor may be removed without disturbing limit-switch adjustment and without affecting emergency auxiliary operator.

E. Door Operator Type: Provide wall- or bracket-mounted door operator units consisting of electric motor, worm gear drive from motor to reduction gear box, chain or worm gear drive from reduction box to gear wheel mounted on counterbalance shaft, and a disconnect-release for manual operation. Provide motor and drive assembly of horsepower and design as determined by door manufacturer for size of door required.

F. Electric Motors: Provide high-starting torque, reversible, Class A insulated electric motors with overload protection. Size motor to move door in either direction, from any position, at not less than 2/3 foot nor more than 1 foot per second.

1. Coordinate wiring requirements and current characteristics of motors with building electrical system.
2. Furnish open drip-proof type motor.

G. Remote Control Station: Provide momentary-contact, three-button control station with push-button controls labeled "Open," "Close," and "Stop."

1. Provide interior units, full-guarded, surface-mounted, heavy-duty, with general-purpose NEMA Type 1 enclosure.

PART 3 - EXECUTION

3.1 INSTALLATION

A. General: Install door and operating equipment complete with necessary hardware, jamb and head mold strips, anchors, inserts, hangers, and equipment supports according to final shop drawings, manufacturer's instructions, and as specified.

B. After completing installation, including work by other trades, lubricate, test, and adjust doors to operate easily, free from warp, twist, or distortion.

C. Train Owner's maintenance personnel on procedures and schedules related to door operation, servicing, preventive maintenance, and procedures for resetting closing devices after activation.

END OF SECTION 08 33 10

DIVISION 8: DOORS AND WINDOWS
Section 08 33 24: Overhead Coiling Counter Fire Shutters

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and any general provisions of the Contract for each Prime Contract, including General and Supplementary Conditions and Construction Manager's specific requirements apply to this Section.

1.2 SUMMARY

A. This Section includes overhead coiling counter fire shutters.

B. Types of overhead coiling doors include the following:

1. Primed 16 ga. steel rolling counter fire shutter with appropriate fusible link operation and interlocked with the fire alarm system. Shutters at interior labeled hollow metal view window openings shall be 1 ½ hr. rated with manual reset and integral frame and U.L. labeled sill equal to Cornell Iron - Works.

C. Operation of overhead coiling counter fire shutters include the following:

1. Manual operation at all hollow metal view window openings.
2. Electric motor operation with control units at all counter installations.

D. Provide complete operating door assemblies including door curtains, guides, counterbalance mechanism, hardware, and installation accessories.

E. Field painting is specified in Division 9.

F. Fire alarm connections to smoke & fire detection shall be coordinated with Division 17.

1.3 SUBMITTALS

A. General: Submit the following according to Conditions of Contract.

B. Product data, roughing-in diagrams, and installation instructions for each type and size of overhead coiling door.

1. Provide operating instructions and maintenance information.
2. Provide information describing fire-release system including electrical rough-in instructions.

C. Shop drawings for special components and installations that are not dimensioned or detailed in manufacturer's data sheets.

D. UL label certification for oversized fire-rated doors and frames that each assembly has been constructed with materials and methods equivalent to requirements for labeled construction.

1.4 QUALITY ASSURANCE

A. Manufacturer's Qualifications: Furnish each overhead coiling door as a complete unit produced by one manufacturer, including hardware, accessories, mounting and installation components.

1. Furnish overhead coiling door units by one manufacturer for entire Project.

B. Insert and Anchorages: Furnish inserts and anchoring devices that must be set in concrete or built into masonry to install units. Provide setting drawings, templates, instructions, and directions to install anchorage devices. Coordinate delivery with other work to avoid delay.

1. See concrete and masonry Sections of these specifications regarding installation of inserts and anchorage devices.

C. Fire Door Assemblies: Furnish fire door assemblies that comply with NFPA No. 80 and have been fire tested, rated, and labeled according to ASTM E 152. Furnish each door with a metal UL label as evidence of rating, with label indicating rating in hours of duration of exposure to fire, and a letter designation of location for which the assembly is designed.

D. Oversized Fire Doors: Where fire door assemblies exceed size for which testing and labeling service is offered, furnish UL "Certificate of Inspection" for oversized doors in lieu of label, certifying that design, materials, and construction are equal to doors tested and labeled by UL. If applicable.

E. Automatic Closing: Provide automatic closing device and governor, operating when activated by temperature rise and melting of 160 degrees F (71 degrees C) fusible link. Construct governor unit to be inoperative during normal door operations. Design release mechanism to reset easily. Release shall be by contactor to fire alarm system or local smoke detection.

F. Provide manufacturer's standard UL-labeled smoke detectors and electromechanical door-holder-release devices where indicated.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated in the Work include, but are not limited to, the following:

1. Apton Rolling Doors, A Gichner Systems Group, Inc.
2. Atlas Roll-Lite Overhead Doors/Div. of MASCO.
3. Ceco/Windsor Door--Div. of the Ceco Corp.
4. The Cookson Co.
5. Cornell Iron Works Inc.
6. Dynamic Closures Corp.
7. Mahon Door Corp.
8. Overhead Door Corp.
9. Pacific Rolling Door Co.
10. Raynor Garage Door.
11. Southwestern Steel Rolling Door Co.
12. Wayne-Dalton Corp.
13. J. G. Wilson Corp.

2.2 DOOR CURTAIN MATERIALS AND CONSTRUCTION

A. Door Curtain: Fabricate overhead coiling door curtain of interlocking slats, designed to withstand required wind loading, in a continuous length for width of door without splices. Unless otherwise indicated, provide slats of material gage recommended by door manufacturer for size and type of

door required, and as follows:

1. Steel Door Curtain Slats: Structural quality, cold-rolled galvanized steel sheets complying with ASTM A 446, Grade A, with G90 zinc coating, complying with ASTM A 525.

    a. Furnish manufacturer's standard S-configuration slats.

2.3 COUNTERBALANCING MECHANISM

A. General: Counterbalance doors by means of adjustable steel helical torsion spring, mounted around a steel shaft and in a spring barrel, and connected to door curtain with required barrel rings. Use grease-sealed bearings or self-lubricating graphite bearings for rotating members.

B. Counterbalance Barrel: Fabricate spring barrel of hot-formed structural-quality carbon steel, welded or seamless pipe, of sufficient diameter and wall thickness to support roll-up of curtain without distortion of slats and to limit barrel deflection to not more than 0.03 inch per foot of span under full load.

C. Provide spring balance of one or more oil-tempered, heat-treated steel helical torsion springs. Size springs to counterbalance weight of curtain, with uniform adjustment accessible from outside barrel. Provide cast steel barrel plugs to secure ends of springs to barrel and shaft.

D. Fabricate torsion rod for counterbalance shaft of cold-rolled steel in size required to hold fixed spring ends and carry torsional load.

E. Brackets: Provide mounting brackets of manufacturer's standard design, either cast iron or cold-rolled steel plate with bell mouth guide groove for curtain.

F. Hood: Form to entirely enclose coiled curtain and operating mechanism at opening head and

act as weather seal. Contour to suit end brackets to which hood is attached. Roll and reinforce top and bottom edges for stiffness. Provide closed ends for surface-mounted hoods and any portion of between-jamb mounting projecting beyond wall face. Provide intermediate support brackets as required to prevent sag.

1. Fabricate steel hoods for doors of not less than 0.0276-inch-thick (24-gage) hot-dip galvanized steel sheet with G 90 zinc coating, complying with ASTM A 525.
2. Furnish automatic drop baffle to guard against passage of smoke or flame.

2.4 PRIME PAINTING

A. General: Shop-clean and -prime ferrous metal surfaces, exposed and unexposed, except tightly joined and lubricated surfaces and galvanized metal, with door manufacturer's standard rust-inhibitive primer. Use primer that is compatible with finish painting.

2.5 MANUAL DOOR OPERATORS

A. Provide manual operator as follows:

1. Manual Push-Up Operation at Hollow Metal View Window Installations.

2.6 ELECTRIC SHUTTER OPERATORS

A. General: Furnish size and capacity recommended and provided by door manufacturer; complete

with electric motor and factory-prewired motor controls, gear-reduction unit, solenoid-operated brake, remote control stations, control devices, conduit and wiring from controls to motor and central stations, and accessories required for proper operation.

B. Provide hand-operated disconnect or a mechanism for automatically engaging a sprocket-and-chain operator and releasing brake for emergency manual operation. Mount disconnect and operator so they are accessible from floor level. Include interlock device to automatically prevent motor from operating when emergency operator is engaged.

C. Design operator so that motor may be removed without disturbing limit-switch adjustment and without affecting emergency auxiliary operator.

D. Door Operator Type: Provide wall or bracket-mounted door operator units consisting of electric motor, worm gear drive from motor to reduction gear box, chain or worm gear drive from reduction box to gear wheel mounted on counterbalance shaft, and a disconnect-release for manual operation. Provide motor and drive assembly of horsepower and design as determined by door manufacturer for size of door required.

E. Electric Motors: Provide high-starting torque, reversible, Class A insulated electric motors with overload protection. Size motor to move door in either direction, from any position, at not less than 2/3 foot nor more for size of door required.

1. Coordinate wiring requirements and current characteristics of motors with building electrical system.
2. Furnish open drip-proof type motor.

F. Remove Control Station: Provide momentary-contact, keyed control station with keyed controls labeled “Open”, “Close” and “Stop”.

1. Provide interior units, full-guarded, surface-mounted, heavy-duty, with general-purpose NEMA Type 1 enclosure.

PART 3 - EXECUTION

3.1 INSTALLATION

A. General: Install door and operating equipment complete with necessary hardware, jamb and head mold strips, anchors, inserts, hangers, and equipment supports according to final shop drawings, manufacturer's instructions, and as specified.

1. Install fire-rated doors to comply with NFPA 80.

B. After completing installation, including work by other trades, lubricate, test, and adjust doors to operate easily, free from warp, twist, or distortion.

1. Test door closing when activated by smoke-detector fire-release system. Reset door-closing mechanism after successful test.

C. Train Owner's maintenance personnel on procedures and schedules related to door operation, servicing, preventive maintenance, and procedures for resetting closing devices after activation.

END OF SECTION 08 33 24

SECTION 09 30 00
TILE

TILE

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and any general provisions of the Contract for each Prime Contract, including General and Supplementary Conditions specific requirements apply to this Section.

B. See ID Drawings for additional hard tile manufacturers and special instructions regarding finishes.

1.02 SUMMARY

A. This Section includes the following:
   1. Porcelain wall tile.
   2. Stone thresholds.
   3. Cementitious backer units.
   4. Porcelain Tile

B. Related Sections: The following sections contain requirements that relate to this Section:
   1. Division 3 Section "Concrete Work" for monolithic slab finishes specified for tile substrates.
   2. Division 7 Section "Joint Sealers" for sealing of expansion, contraction, control, and isolation joints in tile surfaces.

1.03 SUBMITTALS

A. General: Submit the following in accordance with Conditions of Contract.

B. Product data for each type of product specified.

C. Shop drawings indicating tile patterns and locations and widths of expansion, contraction, control, and isolation joints in tile substrates and finished tile surfaces.
   1. Locate precisely each joint and crack in tile substrates by measuring, record measurements on shop drawings, and coordinate them with tile joint locations, in consultation with Architect.

D. Samples for initial selection purposes in form of manufacturer's color charts consisting of actual tiles or sections of tile showing full range of colors, textures, and patterns available for each type and composition of tile indicated. Include samples of grout and accessories involving color selection.

E. Samples for verification purposes of each item listed below, prepared on samples of size and construction indicated, products involve color and texture variations, in sets showing full range of variations expected.
   1. Each type and composition of tile and for each color and texture required, at least 12 inches square, mounted on plywood or hardboard backing and grouted.
   2. Full-size units of each type of trim and accessory for each color required.
   3. Stone thresholds in 6-inch lengths.
   4. Metal edge strips in 6-inch lengths.

F. Master grade certificates for each shipment, type, and composition of tile, signed by tile manufacturer and Installer.

G. Material test reports from qualified independent testing laboratory indicating and interpreting test results relative to compliance of tile and tile setting and grouting products with requirements indicated.

H. Qualification data for firms and persons specified in "Quality Assurance" article to demonstrate their capabilities and experience. Include list of completed projects with project names, addresses, names of Architects and Owners, plus other information specified.

1.04 QUALITY ASSURANCE

A. Installer Qualifications: Engage an experienced Installer who has successfully completed tile installations similar in material, design, and extent to that indicated for Project.

B. Preinstallation Conference: Conduct conference at Project site to comply with requirements of Division 1 Section "Project Meetings".

1.05 DELIVERY, STORAGE, AND HANDLING

A. Deliver and store packaged materials in original containers with seals unbroken and labels intact until time of use. Comply with requirement of ANSI A137.1 for labeling sealed tile packages.

B. Prevent damage or contamination to materials by water, freezing, foreign matter, and other causes.

1.06 PROJECT CONDITIONS

A. Maintain environmental conditions and protect work during and after installation to comply with referenced standards and manufacturer's printed recommendations.

B. Vent temporary heaters to exterior to prevent damage to tile work from carbon dioxide buildup.

C. Maintain temperatures at 50 deg F (10 deg C) or more in tiled areas during installation and for 7 days after completion, unless higher temperatures are required by referenced installation standard or manufacturer's instructions.

1.07 EXTRA MATERIALS

A. Deliver extra materials to Owner. Furnish extra materials that match products installed as described below, packaged with protective covering for storage and identified with labels clearly describing contents.
   1. Tile and Trim Units: Furnish quantity of full-size units equal to 3 percent of amount installed, for each type, composition, color, pattern, and size.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated in the Work include, but are not limited to, the following:

B. **See Drawings for additional manufacturers and finishes:**
   1. Dry-Set Mortars and Grouts:
      a. Bonsal
      b. Bostik Construction Products Div.
      c. Laticrete International Inc.
      d. Summitville Tiles, Inc.
   2. Latex-Emulsion-Based Latex-Portland Cement Mortars:
      a. Bonsal
      b. Bostik Construction Products Div.
      c. Laticrete International Inc.
      d. Summitville Tiles, Inc.
   3. Commercial Portland Cement Grouts:
      a. Bonsal
      b. Bostik Construction Products Div.
      c. Laticrete
      d. Summitville
   4. Porcelain Wall / Base Tile and Floor Tile

a. Daltile: Modern Textile
b. Stonepeak: Simply Modern

2.02 PRODUCTS, GENERAL

A. ANSI Standard for Ceramic Tile: Comply with ANSI A137.1 "American National Standard Specifications for Ceramic Tile" for types, compositions, and grades of tile indicated.
   1. Furnish tile complying with "Standard Grade" requirements unless otherwise indicated.

B. ANSI Standard for Tile Installation Materials: Comply with ANSI standard referenced with products and materials indicated for setting and grouting.

C. Colors, Textures, and Patterns: Where manufacturer's standard products are indicated for tile, grout, and other products requiring selection of colors, surface textures, patterns, and other appearance characteristics, provide specific products or materials compling with the following requirements:
   1. Provide selections made by Architect from manufacturer's full range of standard colors, textures, and patterns for products of each manufacturer's first two groups.

D. Factory Blending: For tile exhibiting color variations within the ranges selected during sample submittals, blend tile in factory and package accordingly so that tile units taken from one package show the same range in colors as those taken from other packages and match approved samples.

2.03 MOUNTING:

A. Where factory-mounted tile is required, provide back- or edge-mounted tile assemblies as standard with manufacturer unless another mounting method is indicated.
   1. Where tile is indicated for installation in wet areas, do not use back- or edge-mounted tile assemblies unless tile manufacturer specifies that this type of mounting is suitable for these kinds of uses and has been successfully used on other projects.

2.04 FACTORY-APPLIED TEMPORARY PROTECTIVE COATING:

A. Where indicated under tile type, protect exposed surfaces of tile against adherence of mortar and grout by precoating them with a continuous film of petroleum paraffin wax, applied hot. Do not coat unexposed tile surfaces.

2.05 TILE PRODUCTS

2.06 TRIM UNITS:

A. Provide tile trim units to match characteristics of adjoining flat tile and to comply with following requirements:
   1. Size: As indicated, coordinated with sizes and coursing of adjoining flat tile where applicable.
   2. Shapes: As follows, selected from manufacturer's standard shapes:
      a. Base for Portland Cement Mortar Installations: Coved.
      b. Base for Thinset Mortar Installations: Straight.
      c. Wainscot Cap for Portland Cement Mortar Installations: Bullnose cap.
      d. Wainscot Cap for Thinset Mortar Installations: Surface bullnose.
      e. External Corners for Portland Cement Mortar Installations: Bullnose shape with a radius of at least 3/4 inch unless otherwise indicated.
      f. External Corners for Thinset Installations: Surface bullnose.
      g. Internal Corners: Field-butted square corners, except use coved base and cap angle pieces designed to member with stretcher shapes.

2.07 STONE THRESHOLDS

A. General: Provide stone that is uniform in color and finish, fabricated to sizes and profiles indicated or required to provide transition between tile surfaces and adjoining finished floor surfaces.

B. Marble Thresholds: Provide marble thresholds complying with ASTM C 503 requirements for exterior use and for abrasion resistance where exposed to foot traffic, a minimum hardness of 10 per ASTM C 241.
   1. Provide white, honed marble complying with MIA Group "A" requirements for soundness. Shall be equal to Georgia Marble Co. Install at toilet doors, shower and drying locations and as otherwise noted on finish schedule and detailed on drawings. Provide special shaped marble thresholds at showers as detailed on the drawings.

2.08 WATERPROOFING FOR THINSET TILE INSTALLATIONS

A. Polyethylene Sheet Waterproofing: Manufacturer's standard proprietary product consisting of composite sheets, 60 inches wide by a nominal thickness of 0.030, composed of an inner layer of chlorinated polyethylene sheet faced on both sides with laminated high-strength nonwoven polyester material, designed for embedding in latex-portland cement mortar, and as substrate for latex-portland cement mortar setting bed.

B. Latex Rubber Waterproofing: Manufacturer's standard factory- prepackaged, job-mixed, proprietary two-part formulation consisting of liquid latex rubber and powder for trowel application and glass fiber fabric reinforcing.

C. Synthetic Polymer Waterproofing: Manufacturer's standard proprietary product consisting of factory-prepackaged, job-mixed two-component synthetic polymer formulation for trowel application and glass fiber fabric reinforcing.

D. Urethane Waterproofing and Tile-Setting Adhesive: Manufacturer's standard proprietary product consisting of one-part liquid-applied urethane in a consistency suitable for trowel application and intended for use as both waterproofing and tile-setting adhesive in a two-step process.

E. Available Products: Subject to compliance with requirements, products which may be incorporated in the Work include, but are not limited to, the following:
   1. Polyethylene Sheet Waterproofing:
      a. "Nobleseal TS"; Noble Co. (distributed by H.B. Fuller Co.)
   2. Latex Rubber Waterproofing:
      a. "Laticrete 301/335 Waterproof Membrane"; Laticrete International Inc.
   3. Synthetic Polymer Waterproofing:
      a. "Planicrete W"; Mapei Corp.
   4. Urethane Waterproofing and Tile-Setting Adhesive:
      a. "Hydroment Ultra-Set"; Bostik Construction Products Div.

F. Shower pans shall be equal to Oatey, 40 mil PVC and shall be installed in all shower and drying areas in accordance with pan manufacturer's written instructions.

2.09 SETTING MATERIALS

A. Portland Cement Mortar Installation Materials: Provide materials complying with ANSI A108.1 and as specified below.
   1. Cleavage Membrane: Asphalt felt, ASTM D 226, Type I (No. 15), or polyethylene sheeting ASTM D 4397, 4.0 mils thick.

2.10 REINFORCING WIRE FABRIC: GALVANIZED WELDED WIRE FABRIC, 2 INCHES BY 2 INCHES - WO.3 BY WO.3 (16 ASW GAGE OR 0.0625 INCH DIAMETER); COMPLY WITH ASTM A 185 AND ASTM A 82 EXCEPT FOR MINIMUM WIRE SIZE.

A. Dry-Set Portland Cement Mortar: ANSI A118.1.

B. Latex-Portland Cement Mortar: ANSI A118.4, composition as follows:

2.11 PREPACKAGED DRY MORTAR MIX COMPOSED OF PORTLAND CEMENT, GRADED AGGREGATE, AND THE FOLLOWING DRY POLYMER ADDITIVE IN THE FORM OF A REEMULSIFIABLE POWDER TO WHICH ONLY WATER IS ADDED AT JOB SITE.

2.12 GROUTING MATERIALS

A. Sand-Portland Cement Grout: ANSI A108.10, composed of white or gray cement and white or colored aggregate as required to produce color indicated.

B. Dry-Set Grout: ANSI A118.6, color as indicated.

C. Latex-Portland Cement Grout: ANSI A118.6, color as indicated, composition as follows:
   1. Prepackaged dry grout mix composed of portland cement, graded aggregate, and the following dry polymer additive in the form of a reemulsifiable powder to which only water is added at job site.

2.13 ELASTOMERIC SEALANTS

A. General: Provide manufacturer's standard chemically curing, elastomeric sealants of base polymer indicated that comply with requirements of Division 7 Section "Joint Sealers," including ASTM C 920 as referenced by Type, Grade, Class, and Uses.

B. Colors: Provide colors of exposed sealants to match colors of grout in tile adjoining sealed joints unless otherwise indicated.

C. One-Part Mildew-Resistant Silicone Sealant: Type S; Grade NS; Class 25; Uses NT, G, A, and as applicable to nonporous joint substrates indicated, O; formulated with fungicide, intended for sealing interior ceramic tile joints and other nonporous substrates that are subject to in-service exposures of high humidity and temperature extremes.

D. Multipart Pourable Urethane Sealant for Use T: Type M; Grade P; Class 25; Uses T, M, A, and as applicable to joint substrates indicated, O.

E. Chemical-Resistant Sealants: For chemical-resistant floors, provide sealants compatible with chemical-resistant mortars and grouts, approved for use indicated by manufacturers of both mortar/grout and sealant and with chemical-resistance properties equivalent to mortar/grout.

F. Available Products: Subject to compliance with requirements, products which may be incorporated in the Work include, but are not limited to, the following:
   1. One-Part Mildew-Resistant Silicone Sealant:
      a. "Dow Corning 786"; Dow Corning Corp.
      b. "SCS 1702"; General Electric Co.
      c. "863 #345 White"; Pecora Corp.
      d. "Rhodorsil 6B White"; Rhone-Poulenc Inc.
      e. "Proglaze White"; Tremco Corp.
   2. Multipart Pourable Urethane Sealant:
      a. "Chem-Calk 550"; Bostik Construction Products Div.
      b. "Vulkem 245"; Mameco International, Inc.
      c. "Urexpan NR-200"; Pecora Corp.
      d. "THC-900"; Tremco Corp.

2.14 CEMENTITIOUS BACKER UNITS (GLASS MESH MORTAR UNITS)

A. Proprietary backing units with glass fiber mesh reinforcing and water-resistant coating on both faces, complying with ANSI 118.9 and the following requirements:
   1. Cement-Coated Portland Cement Panels: High-density portland cement surface coating on both faces and lightweight concrete core composed of portland cement and expanded ceramic aggregate; fabricated in panels 7/16-inch thick by 36 inches wide by 36, 48, 60, 64, or 72 inches long and weighing 3.2 to 3.8 psf.
   2. Vinyl-Coated Portland Cement Panels: Core formed in a continuous process from aggregated portland cement slurry and reinforced with vinyl-coated woven glass fiber mesh embedded in both surfaces, with one face smooth and other textured; fabricated in

panels 1/2-inch thick and by 36 inches wide by 48, 60, and 72 inches long; and weighing 3 lbs psf.

B. Mortar Unit Finishing Materials: Tape and joint compounds as recommended by manufacturer of cementitious backer units.

C. Available Products: Subject to compliance with requirements, cementitious backer units which may be incorporated in the Work include, but are not limited to, the following:

2.15 "WONDER-BOARD"; MODULARS INC.

1. "Durock Tile Backer Board"; Durabond Div., USG Industries, Inc.

2.16 MISCELLANEOUS MATERIALS

A. Metal Edge Strips: Zinc alloy or stainless steel terrazzo strips, 1/8-inch wide at top edge with integral provision for anchorage to mortar bed or substrate unless otherwise indicated.

B. Temporary Protective Coating: Provide product indicated below that is formulated to protect exposed surfaces of tile against adherence of mortar and grout, is compatible with tile and mortar/grout products, and is easily removable after grouting is completed without damaging grout or tile.

1. Petroleum paraffin wax, fully refined, tasteless, odorless, containing at least 0.5 percent oil with a melting point of 120 deg F (49 deg C) to 140 deg F (60 deg C) per ASTM D 87.
2. Grout release in form of manufacturer's standard proprietary liquid coating that is specially formulated and recommended for use as a temporary protective coating for tile.

2.17 MIXING MORTARS AND GROUT

A. Mix mortars and grouts to comply with requirements of referenced standards and manufacturers including those for accurate proportioning of materials, water, or additive content; type of mixing equipment, selection of mixer speeds, mixing containers, mixing time, and other procedures needed to produce mortars and grouts of uniform quality with optimum performance characteristics for application indicated.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine substrates and areas where tile will be installed, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of installed tile.

1. Verify that substrates for setting tile are firm, dry, clean, and free from oil or waxy films and curing compounds.
2. Verify that installation of grounds, anchors, recessed frames, electrical and mechanical units of work, and similar items located in or behind tile has been completed before installing tile.

B. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.02 PREPARATION

A. Blending: For tile exhibiting color variations within the ranges selected during sample submittals, verify that tile has been blended in factory and packaged accordingly so that tile units taken from one package show the same range in colors as those taken from other packages and match approved samples. If not factory blended, either return to manufacturer or blend tiles at Project site before installing.

B. Field-Applied Temporary Protective Coating: Where indicated under tile type or needed to prevent adhesion or staining of exposed tile surfaces by grout, protect exposed surfaces of tile against adherence of mortar and grout by precoating them with a continuous film of temporary protective coating indicated below, taking care not to coat unexposed tile surfaces:

1. Petroleum paraffin wax, applied hot.
2. Grout release.
3. Petroleum paraffin wax or grout release.

3.03 INSTALLATION, GENERAL

A. ANSI Tile Installation Standard: Comply with parts of ANSI 108 series of tile installation standards included under "American National Standard Specifications for the Installation of Ceramic Tile" that apply to type of setting and grouting materials and methods indicated.

B. TCA Installation Guidelines: TCA "Handbook for Ceramic Tile Installation"; comply with TCA installation methods indicated.

C. Extend tile work into recesses and under or behind equipment and fixtures to form a complete covering without interruptions except as otherwise shown. Terminate work neatly at obstructions, edges, and corners without disrupting pattern or joint alignments.

D. Accurately form intersections and returns. Perform cutting and drilling of tile without marring visible surfaces. Carefully grind cut edges of tile abutting trim, finish, or built-in items for straight aligned joints. Fit tile closely to electrical outlets, piping, fixtures, and other penetrations so that plates, collars, or covers overlap tile.

E. Jointing Pattern: Unless otherwise shown, lay tile in grid pattern. Align joints when adjoining tiles on floor, base, walls, and trim are same size. Lay out tile work and center tile fields in both directions in each space or on each wall area. Adjust to minimize tile cutting. Provide uniform joint widths unless otherwise shown.
   1. For tile mounted in sheets, make joints between tile sheets same width as joints within tile sheets so that extent of each sheet is not apparent in finished work.

F. Lay out tile wainscots to next full tile beyond dimensions indicated.

G. Expansion Joints: Locate expansion joints and other sealant-filled joints, including control, contraction, and isolation joints, where indicated during installation of setting materials, mortar beds, and tile. Do not saw cut joints after installation of tiles.
   1. Locate joints in tile surfaces directly above joints in concrete substrates.
   2. Prepare joints and apply sealants to comply with requirements of Division 7 Section "Joint Sealers."

H. Grout tile to comply with the requirements of the following installation standards:
   1. For ceramic tile grouts (sand-portland cement, dry-set, commercial portland cement, and latex-portland cement grouts), comply with ANSI A108.10.
   2. For chemical-resistant epoxy grouts, comply with ANSI A108.6.
   3. For chemical-resistant furan grouts, comply with ANSI A108.8.

I. At showers, tubs and similar wet areas, install cementitious backer units and treat joints to comply with manufacturer's instructions for type of application indicated.

3.04 WATERPROOFING FOR THINSET TILE INSTALLATIONS

A. Install waterproofing in compliance with waterproofing manufacturer's instructions to produce a waterproof membrane of uniform thickness bonded securely to substrate.

B. Do not install tile over waterproofing until waterproofing has cured and been tested to determine that it is watertight.

3.05 FLOOR INSTALLATION METHODS

A. Porcelain Tile: Install tile to comply with requirements indicated below for setting bed methods, TCA installation methods related to types of subfloor construction, and grout types:
   1. Portland Cement Mortar: ANSI A108.1
      a. Bond Coat: Portland cement paste or dust coat on plastic bed.
   2. Bond Coat: Latex-portland cement mortar on cured bed, ANSI A108.5.
      a. Bond Coat: Dry-set portland cement mortar on cured bed, ANSI A108.5.
      b. Bond Coat: Portland cement paste or dust coat on plastic bed or the following thin-set mortar on cured bed, ANSI A108.5, at Contractor's option:
         1) Latex-portland cement mortar.
         2) Dry-set portland cement mortar.

c. Concrete Subfloors, Interior: TCA F111 (cleavage membrane).
d. Concrete Subfloors, Interior: TCA F112 (bonded).
e. Concrete Subfloors, Interior, Waterproofing Membrane: TCA F121.
f. Grout: Sand-portland cement.
g. Grout: Commercial portland cement.
h. Grout: Dry-set.
i. Grout: Latex-portland cement.

B. Quarry Tile: Install tile to comply with requirements indicated below for setting-bed method, TCA installation method related to type of subfloor construction, and grout type:
1. Portland Cement Mortar: ANSI A108.1.
a. Bond Coat: Portland cement paste or dust coat on plastic bed.
b. Bond Coat: Latex-portland cement mortar on cured bed, ANSI A108.5.
c. Bond Coat: Dry-set portland cement mortar on cured bed, ANSI A108.5.
d. Bond Coat: Portland cement paste or dust coat on plastic bed or the following thin-set mortar on cured bed, ANSI A108.5, at Contractor's option:
1) Latex-portland cement mortar.
2) Dry-set portland cement mortar.
e. Concrete Subfloor, Interior: TCA F111 (cleavage membrane).
f. Concrete Subfloor, Interior: TCA F112 (bonded).
g. Concrete Subfloor, Interior: TCA F114 (with chemical- resistant resin grout).
h. Grout: Sand-portland cement.
i. Grout: Latex-portland cement.
j. Grout: Commercial portland cement.
2. Latex-Portland Cement Mortar: ANSI A108.5.
3. Dry-Set Portland Cement Mortar: ANSI A108.5.
a. Concrete Subfloor, Exterior: TCA F102.
b. Concrete Subfloor, Interior: TCA F113.
c. Concrete Subfloor, Interior: TCA F115 (with chemical-resistant resin grout).
d. Cementitious Backer Unit Underlayment, Interior: TCA F144.
e. Grout: Sand-portland cement.
f. Grout: Latex-portland cement.
g. Grout: Commercial portland cement.

C. Stone Thresholds: Install stone thresholds at locations indicated; set in same type of setting bed as abutting field tile unless otherwise indicated.
1. Set thresholds in latex-portland cement mortar for locations where mortar bed would otherwise be exposed above adjacent nontile floor finish.

D. Metal Edge Strips: Install at locations indicated or where exposed edge of tile flooring meets carpet, wood, or other flooring that finishes flush with top of tile.

3.06 WALL TILE INSTALLATION METHODS

A. Install types of tile designated for wall application to comply with requirements indicated below for setting-bed methods, TCA installation methods related to subsurface wall conditions, and grout types:
1. Portland Cement Mortar: ANSI A108.1.
a. Masonry or Concrete, Interior: TCA W211 (bonded).
b. Solid Backing, Interior: TCA W221 (membrane, lath, and scratch coat).
c. Solid Backing, Interior: TCA W222 (one-coat method).
d. Metal Studs, Interior: TCA W241.
e. Shower Receptors, Metal or Wood Studs: TCA B416.
f. Grout: Sand-portland cement.
g. Grout: Commercial portland cement.
h. Grout: Dry-set.

i. Grout: Latex-portland cement.
j. Grout: Elastomeric grout for pregrouted sheets.

2. Latex-Portland Cement Mortar: ANSI A108.5.
3. Dry-Set Portland Cement Mortar: ANSI A108.5.
   a. Masonry, Interior: TCA W202.
   b. Wood or Metal Studs, Interior: TCA W243.
   c. Cementitious Backer Units, Interior: TCA W244.
   d. Shower Receptors, Cementitious Backer Units: TCA B415.
   e. Grout: Sand-portland cement.
   f. Grout: Commercial portland cement.
   g. Grout: Dry set.
   h. Grout: Latex-portland cement.
   i. Grout: Elastomeric for pregrouted sheets.

3.07 CLEANING AND PROTECTION

A. Cleaning: Upon completion of placement and grouting, clean all ceramic tile surfaces so they are free of foreign matter.
   1. Remove latex-portland cement grout residue from tile as soon as possible.
   2. Unglazed tile may be cleaned with acid solutions only when permitted by tile and grout manufacturer's printed instructions, but no sooner than 14 days after installation. Protect metal surfaces, cast iron, and vitreous plumbing fixtures from effects of acid cleaning. Flush surface with clean water before and after cleaning.
   3. Remove temporary protective coating by method recommended by coating manufacturer that is acceptable to brick and grout manufacturer. Trap and remove coating to prevent it from clogging drains.

B. Finished Tile Work: Leave finished installation clean and free of cracked, chipped, broken, unbonded, and otherwise defective tile work.

C. Provide final protection and maintain conditions in a manner acceptable to manufacturer and installer that ensures that tile is without damage or deterioration at time of Substantial Completion.
   1. When recommended by tile manufacturer, apply a protective coat of neutral protective cleaner to completed tile walls and floors. Protect installed tile work with kraft paper or other heavy covering during construction period to prevent staining, damage, and wear.
   2. Prohibit foot and wheel traffic from tiled floors for at least 7 days after grouting is completed.

D. Before final inspection, remove protective coverings and rinse neutral cleaner from tile surfaces.

END OF SECTION

DIVISION 9: FINISHES
Section 09 51 13: Acoustical Panel Ceilings

PART 1 - GENERAL

1.01 RELATED SECTIONS

A. Section 09 21 16 - Gypsum Board Assemblies.

1.02 REFERENCES

A. ASTM C423 - Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method.

B. ASTM C635 - Manufacturing of Metal Suspension Systems.

C. ASTM C636 - Installation of Metal Suspension Systems in non-seismic applications.

D. ASTM D3273-00 - Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber

E. ASTM D3274 - Standard Test Method for Evaluating Degree of Surface Disfigurement of Paint Films by Microbial (Fungal or Algal) Growth or Soil and Dirt Accumulation

F. ASTM D5116-06 - Standard Guide for Small-Scale Environmental Chamber Determinations of Organic Emissions From Indoor Materials/Products

G. ASTM E580 - Installation of Metal Suspension Systems in Areas Requiring Moderate Seismic Restraint.

H. ASTM E84 - Surface Burning Characteristics of Building Materials.

I. ASTM E119 - Fire Tests of Building Construction and Materials.

J. ASTM E1264 - Classification for Acoustical Ceiling Products.

K. ASTM E1414 - Airborne Sound Attenuation Between Rooms Sharing a Common Ceiling Plenum.

L. CISCA Ceiling Systems Installation Handbook.

M. Fire-response tests are performed by a testing and inspecting agency that is acceptable to authorities having jurisdiction and that performs testing and follow-up services.

N. Fire-resistance-rated, acoustical tile ceilings are indicated by design designations listed in the UL "Fire Resistance Directory," in the Warnock Hersey "Certification Listings," or in the listing of another qualified testing and inspecting agency.

1.03 SUBMITTALS

A. Coordination drawings: Submit reflected ceiling plans that are coordinated with mechanical, electrical and security work at acoustical ceilings. Show ceiling suspension members, method of anchorage of hangers and ceiling mounted work including light fixtures and air grilles.

B. 6"x12" samples of each tile type, pattern, and color required.

C. Set of 12-inch- long samples of suspension system members.

D. Set of 12-inch- long samples of exposed moldings for each color and system type required.

E. Submit certificates from manufacturers of acoustical ceiling units and suspension systems attesting that their products comply with specification requirements and warranties.

1.04 DELIVERY AND STORAGE OF MATERIALS

A. All materials shall be delivered in their original unopened packages and stored in an enclosed shelter providing protection from damage and exposure to the elements.

B. Storage:
   1. Panels: Storage time of materials at the job site should be as short as possible, and environmental conditions should be as near as possible to those specified for occupancy (see no. 1.05 below). Excess humidity during storage can cause expansion of material and possible warp, sag, or poor fit after installation. Chemical changes in the mat and/or coatings can be aggravated by excess humidity and cause discoloration during storage, even in unopened cartons. Cartons should be removed from pallets and stringers to prevent distortion of material. Long-term (6- 12 months) storage under uncontrolled environmental conditions should be avoided.

   2. Suspension System: Store in manner that will prevent warping, scratches, or damage of any kind.

C. Handling: Handle in such manner to ensure against racking, distortion, or physical damage of any kind.

D. Damaged or deteriorated materials should be removed from the premises. Immediately before installation, to stabilize tile and panels, store them at a location where temperature and humidity conditions duplicate those ambient during installation and anticipated for occupancy.

1.05 ENVIRONMENTAL CONDITIONS

A. Installation of acoustical panels shall not begin until building is enclosed, permanent heating and cooling equipment is in operation, and residual moisture from plaster, concrete, or terrazzo work has dissipated. CLIMAPLUS™ acoustical ceilings can be installed prior to building enclosure and permanent heating and cooling equipment is in operation.

B. Do not use ceiling panels in extreme or continuous high humidity, or areas exposed directly to weather or water. Ceiling panels are sized and designed for use within the standard occupancy range of temperature and humidity, 65-85 °F (18-29 °C), no more than 70% RH (relative humidity). Humidity can greatly affect product dimensional stability and sag resistance. Sag can become noticeable during periods of high humidity lasting only a few hours. CLIMAPLUS ceilings, if used with DONN® Brand Suspension Systems, can withstand temperatures from 60-104 °F (32-40 °C) and relative humidity up to 90%-100% RH. See USG Interiors Inc. for specific Warranty information.

C. Allow time for dimensional changes in ceiling panels stored at temperature/humidity conditions well outside of those recommended for service. With increases in temperature/humidity, these products expand (up to 1/64 in./ft. (4.3 mm/m) at 85 °F (29 °C)/90% RH) and may not fit into a fixed grid. Conversely, with decreases, these products will be undersize, but expand to normal when standard ambient conditions return.

D. For some pattern edge details, if perimeter panels must be cut smaller, the cut edge must be field-rabbited, or the wall angle must be lowered by (1/4") (3/8") (Reveal Depth).

E. Formaldehyde VOC Classification, as tested by ASTM D5116 and according to standards established by the Collaborative for High-Performance Schools (CHPS), the State of Washington, the American Society of Heating, Refrigeration and Air-Conditioning Engineers (ASHRAE), and the American National Standards Institute (ANSI) & The California Office of Environmental Health Hazard Assessment(COEHHA).

    1. For environments where LOW or Formaldehyde FREE VOC classification for emissions and performance are required, use USG Products. USG's Products are classified as LOW or Formaldehyde FREE meeting the most stringent VOC emission standards as defined:

        a. “Formaldehyde-free”
            1. The California Office of Environmental Health Hazard Assessment recognizes products with emissions of less than 3 parts per billion (ppb) as "formaldehyde-free".

        b. "Low Formaldehyde"
            1. The Collaborative for High Performance Schools standard for VOC emissions limits the amount to 13.5ppb = 0.0135 ppm = 16.5µg/m3 as a Low Formaldehyde VOC Class panels.

1.06 QUALITY ASSURANCE

A. Single Source Responsibility: To obtain combined warranty for the Donn Brand suspension system and the acoustical panel, color match or ceiling panel and suspension system compatibility, all acoustical panel and suspension system components shall be produced and supplied by one manufacturer. Materials supplied by more than one manufacturer are not acceptable.

B. Subcontractor qualifications: Installer shall have successful experience in the installation of suspended ceiling systems on projects with requirements similar to requirements specified.

C. Requirements of regulatory agencies: Codes and regulations of authorities having jurisdiction.

D. Source quality control:

    1. Test reports: Manufacturer will provide test certification for minimum requirements as tested in accordance with applicable industry standards and/or to meet performance standards specified by various agencies.

    2. Changes from system: System performance following any substitution of materials or change in assembly design must be certified by the manufacturer.

    3. All ceiling panel cartons must contain UL label for acoustical compliance.

4. All suspension system cartons must contain UL label for load compliance per ASTM C635.

1.07 PROJECT CONDITIONS

A. Existing conditions: (include specific alteration work requirements for project).

B. Environmental requirements for interior installation: Building shall be enclosed with windows and exterior doors in place and glazed, and roof watertight before installation of ceiling system and related ceiling components. Climatic Condition Range for panels used on this project are as follows:
   1. ClimaPlus Ceilings: 60-104°F (16-29°C) with a max 90% RH.
      a. ACT 1, ACT 2
   2. ClimaPlus Ultra Ceilings: 60-104°F (16-29°C) with a max 95% RH.
      a. ACT 3

   CLIMAPLUS ceilings used with DONN Brand Suspension Systems can be used when building is not enclosed and in higher temperature, relative-humidity range.

C. Coordination with other work:

   1. General: Coordinate with other work supported by or penetrating through the ceiling, including mechanical and electrical work and partition systems.

   2. Mechanical work: Ductwork above ceiling shall be complete, and permanent heating and cooling systems operating to climate conditions prior to installation of ceiling components.

   3. Electrical work: Installation of conduit above ceiling shall be complete before installation of ceiling components.

   4. Fire protection work: Fire protection lines and/or equipment occurring above ceiling shall be completed and tested before ceiling components are installed.

D. Protection:

   1. Personnel: Follow good safety and industrial hygiene practices during handling and installing of all products and systems, with personnel to take necessary precautions and wear appropriate personal protective equipment as needed. Read material safety data sheets and related literature for important information on products before installation. Contractor to be solely responsible for all personal safety issues during and subsequent to installation; architect, specifier, owner, and manufacturer will rely on contractor’s performance in such regard.

   2. Protect completed work above ceiling system from damage during installation of ceiling components.

PART 2 - PRODUCTS

2.01 MATERIALS

Note: Specification is written based on USG ceiling and grid products. Other acceptable manufacturers are **Armstrong** and **Celotex**.

A. ACT 1

1. Water Felted, Mineral-Base with painted finish Acoustical Panels for Acoustical Panel Ceiling.

    a. Available Products
        1. USG Corporation: “Radar ClimaPlus” - Item Number: 2210.
    b. Classification: Provide panels complying with ASTM E 1264 for type, form, and pattern as follows:
        1. Type and Form: Type III, Form 2.
        2. Pattern: Pattern C,D,E.
        3. Surface Burning Characteristics: Class A.
    c. Color: White Only.
    d. Recycled Content: Not less than 36.5.
    e. LR: Not less than 0.84.
    f. NRC: Not less than 0.55 in accordance with ASTM C423. Product to have UL acoustical compliance.
    g. CAC: Not less than 33 in accordance with ASTM E1414. Product to have UL acoustical compliance.
    h. Edge Detail: Reveal sized to fit flange of exposed suspension system members. Square Edge.
    i. Thickness: 5/8" inch.
    j. Size: 2' x 2'
    k. Formaldehyde VOC Classification: "*Low*" as defined by CHPS at 13.5 ppb = 0.0135 ppm = 16.5µg/m3
    l. Panel Warranty: When used with a USG Donn Brand suspension system, this panel has a 30 year warranty that it shall be free from manufacturing defects. When used without a USG Donn Brand suspension system, the period of warranty is 10 years.

2. Metal Suspension System for Acoustical Panel Ceiling.

    a. General: ASTM C635, commercial quality pretreated and painted hot-dipped galvanized cold-rolled steel, exposed surfaces prefinished in manufacturer's standard corrosion resistant enamel paint finish; color: Flat White #050 or as selected from manufacturer's standard colors.
    b. Available Products
        1. USG Corporation: "Donn DX/DXL"
    c. Suspension System Components:
        1. Fire Rated Main Tees: UL Classified Intermediate Duty Classification; double-web design; 1-1/2" high; rectangular top bulb; 15/16" exposed flange with roll-formed steel cap; cross tee holes and hanger wire holes at 6" o.c.; convenience holes at approximately 2" o.c.; integral reversible splices.
        2. Cross Tees:
            a. 1-1/2" high; roll-formed into double-web design with rectangular bulb; 15/16" exposed flange with prepainted steel cap; high tensile steel end clips clenched to web.
            b. 1" high; roll-formed into double-web design with rectangular bulb; 15/16" exposed flange with prepainted steel cap; high tensile steel end clips clenched to web.
            c. Main tees and cross tees shall be positively locked, yet shall be removable without the use of tools.
    d. Accessories:

1. Wall Molding: Angle shape; 7/8" mounting flange by 7/8" face flange; hemmed edges; exposed surface pre-finished to match suspension system components.
    a. Inside Corner: Field-mitered joints at wall molding.
    b. Inside Corner: Prefabricated corner cap; formed to 90° angle; hemmed edge; size and finish to match wall molding.
    c. Outside Corner: Prefabricated corner cap; formed to 90° angle; hemmed edge; size and finish to match wall molding.
2. Shadow Molding: Formed steel section; exposed surfaces to match suspension system components.
    a. 7/8" exposed flange; 3/4" x 3/4" reveal; 7/8" mounting flange.
3. Channel Molding: U-shape; hemmed edges; exposed surfaces pre-finished to match suspension system components; 1" or 1/2" exposed flange by depth as required for ceiling material.

B. ACT 2

1. Gypsum Core, vinyl faced Acoustical Panels for Acoustical Panel Ceiling.

    a. Available Products
        1. USG Corporation: “Sheetrock Brand Lay-In Ceiling Panel ClimaPlus” - Item Number: 3260.
    b. Classification: Provide panels complying with ASTM E 1264 for type, form, and pattern as follows:
        1. Type and Form: Type XX.
        2. Pattern: Pattern G - smooth, unperforated.
        3. Surface Burning Characteristics: Class A.
    c. Fire Resistance: Acceptable for use in UL Fire Rated Designs.
    d. Color: White Only.
    e. Recycled Content: Not less than 23.
    f. LR: Not less than 0.77.
    g. NRC: Not less than in accordance with ASTM C423. Product to have UL acoustical compliance.
    h. CAC: Not less than 35 in accordance with ASTM E1414. Product to have UL acoustical compliance.
    i. Edge Detail: Reveal sized to fit flange of exposed suspension system members. Square Edge.
    j. Thickness: 1/2" inch.
    k. Size: 2' x 2'
    l. Panel Warranty: When used with a USG Donn Brand suspension system, this panel has a 30 year warranty that it shall be free from manufacturing defects. When used without a USG Donn Brand suspension system, the period of warranty is 10 years.

2. Metal Suspension System for Acoustical Panel Ceiling.

    a. General: ASTM C635, commercial quality pretreated and painted hot-dipped galvanized cold-rolled steel body and aluminum cap, exposed surfaces prefinished in manufacturer's standard enamel paint finish; color Flat White #050.
    b. Available Products
        1. USG Corporation: "Donn ZXLA"
    c. Suspension System Components:

1. Fire Rated Main Tees: Intermediate Duty Classification; roll-formed from prepainted galvanized steel with Double-web design; 1-1/2" high; rectangular top bulb; 15/16" exposed flange with roll-formed prepainted aluminum cap; cross tee holes and hanger wire holes at 6" o.c.; convenience holes approx. 2" o.c.; integral reversible splices.
2. Cross Tees:
    a. 1-1/2" high; roll-formed from painted galvanized steel into double-web design with rectangular bulb; 15/16" exposed flange with aluminum cap; Stainless Steel clips clenched to the web.
    b. Main tees and cross tees shall be positively locked, yet shall be removable without the use of tools.

d. Accessories:
1. Wall Molding: Galvanized angle shape; 7/8" mounting flange by 7/8" face flange; hemmed edges; exposed surface pre-finished to match suspension system components.
    a. Inside and Outside Corners: Field-mitered joints at wall molding.
2. Wall Molding: Aluminum angle shape; 7/8" mounting flange by 7/8" face flange; hemmed edges; exposed surface pre-finished to match suspension system components.
    a. Inside and Outside Corners: Field-mitered joints at wall molding.
3. Channel Molding: U-shape; 1-9/16" x 1/2" x 1" aluminum; exposed surface pre-finished to match suspension system components; hemmed edges.

PART 3 - EXECUTION

3.01 GENERAL

A. Standard for Ceiling Suspension System Installations: Comply with ASTM C636.

B. Standard for Ceiling Suspension Systems Requiring Seismic Restraint: Comply with ASTM E 580.

C. CISCA Ceilings Systems Handbook.

3.02 INSPECTION

A. Examine areas to receive ceiling panels for conditions that will adversely affect installation. Provide written report of discrepancies.

B. Do not start work until unsatisfactory conditions are corrected.

C. Work to be concealed: Verify work above ceiling is complete and installed in manner that will not affect layout and installation of ceiling panels.

D. Beginning of installation shall signify acceptance of conditions in areas to receive ceiling panels.

E. Fire-rating requirements: Construction above fire-rated assembly shall meet requirements of UL Design specified in *2: Products.*

3.03 PREPARATION

A. Field dimensions must be verified prior to installation.

3.04 INSTALLATION

A. Standard reference: Install ceiling panels and suspension system, including necessary hangers, grillage, splines, and other supporting hardware, in accordance with ASTM C636, CISCA Ceiling Systems Handbook, (UL Design) and any applicable code requirement.

B. Manufacturer's reference: Install ceiling panels in exposed grid systems, supported on all edges, in accordance with manufacturer's warranty.

C. Drawing reference: Install ceiling panels in accordance with approved shop drawings.

D. Hanger Wires:
   1. Spacing: Space hanger wires on main tees not more than 48 inches o.c. a maximum of 48" o.c., attaching hangers directly to the structure above, or as required to support loads.
   2. Limitations: Do not support wires from mechanical and/or electrical equipment, piping or other equipment occurring above ceiling.

E. Accessories: Install accessories as applicable to meet project requirements.

F. Install edge moldings and trim of type indicated at perimeter of acoustical ceiling area and where necessary to conceal edges of acoustical tiles.

G. Install suspension system runners so they are square and securely interlocked with one another. Remove and replace dented, bent, or kinked members.

H. Install acoustical tiles in coordination with suspension system.
   1. Fit adjoining tile to form flush, tight joints. Scribe and cut tile for accurate fit at borders and around penetrations through tile.
   2. Remove and replace any damaged tiles.

3.05 CLEANING

A. Suspension System: Remove panel material and perform any necessary cleaning maintenance with non-solvent based commercial cleaner.

B. Immediately remove any corrosive substances or chemicals that would attack painted finishes (i.e. wallpaper adhesives).

C. Touch up all minor scratches and spots, as acceptable, or replace damaged sections when touch-up is not permitted.

D. Painting: Repainting of suspension member shall be with a high-quality solvent base enamel paint and applied as recommended by paint manufacturer. Ceiling panels may be touched-up by spraying a thinned, non-bridging vinyl-acrylic flat wall paint. The type of paint selected and the method of application can alter the acoustical performance and fire ratings of any acoustical product. Therefore, USG Interiors, Inc. cannot guarantee that the field-painted panels will match the published performance.

E. Removal of debris: Remove all debris resulting from work of this section.

Summary Table

ACT 1 – Bid Item Nos 1 and 2 where scheduled

Tile/Panel:

- Radar ClimaPlus Panels
- 2210

Grid:

- Donn DX/DXL
- Intermediate Duty

ACT 2 - Bid Item Nos 1 and 2 where scheduled

Tile/Panel:

- Sheetrock Brand Lay-In Ceiling Panel ClimaPlus, Vinyl
- 3260

Grid:

- Donn ZXLA
- Intermediate Duty

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END OF SECTION 09 51 13

DIVISION 9 FINISHES
Section 09 62 20 Rubber Recreational and Athletic Flooring

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Rubber Recreational and Athletic Flooring.

1.2 RELATED SECTIONS

A. Cast-In-Place Concrete.

B. Rough Carpentry.

1.3 REFERENCES

A. ASTM D 412 - Standard Test Methods for Vulcanized Rubber and Thermoplastic Rubbers and Thermoplastic Elastomers--Tension.

B. ASTM D 624 - Standard Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers.

C. ASTM D 746 - Standard Test Method for Brittleness Temperature of Plastics and Elastomers by Impact.

D. ASTM D 2047 - Standard Test Method for Static Coefficient of Friction of Polish-Coated Floor Surfaces as Measured by the James Machine.

E. ASTM D 2240 - Standard Test Method for Rubber Property--Durometer Hardness.

F. ASTM E 648 - Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source.

G. MIL-M-15562 - Dielectric Strength.

H. NFPA 253 - Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source.

1.4 SUBMITTALS

A. Submit under provisions of Section 01 33 00.

B. Product Data: Manufacturer's descriptive literature for specified flooring tiles; include documentation of conformance to specified requirements.

C. Shop Drawings: Dimensioned plans, to scale, indicating layout of flooring tiles in areas to receive them.

D. Selection Samples: Two sets of color chips representing manufacturer's full range of available flooring tile colors.

E. Verification Samples: Two samples, minimum size 6 inches (152 mm) square, representing actual color and finish of flooring tiles to be installed.

F. Quality Assurance Submittals: Manufacturer's printed installation instructions; include product storage requirements.

G. Closeout Submittals:
1. Manufacturer's recommendations for cleaning and maintaining flooring.
2. Warranty documents specified in WARRANTY Article of this section.

1.5 QUALITY ASSURANCE

A. Qualifications:
1. Manufacturer: Minimum five (5) years documented experience producing flooring similar to those specified in this section.
2. Installer: Minimum three (3) years documented experience installing flooring similar to those specified in this section.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Store flooring tile in manufacturer's unopened packaging until installation.

B. Maintain storage area conditions for flooring tile in accordance with manufacturer's instructions until installation.

C. Do not store flooring tile outside.

D. Do not store unprotected flooring tile under fluorescent lighting for period longer than 30 calendar days; cover flooring tile with dark color polyethylene sheeting, or other light-protective covering.

1.7 PROJECT CONDITIONS

A. Field Measurements: When project conditions permit, take field measurements of areas to receive flooring tile; note discrepancies on submitted shop drawings.

1.8 WARRANTY

A. Manufacturer's Warranty: Manufacturer's standard warranty against defects in products.

1.9 MAINTENANCE

A. Extra Materials: Supply extra floor tiles, in quantities to equal 5 percent of installed tile for each type tile specified, for Owner's maintenance stock.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Subject to compliance with requirements, Rubber Recreational and Athletic Flooring that may be incorporated into the work include, but are not limited to, the following:

1. MONDO S.p.A. or prior approved equivalent.

2.2 RUBBER RECREATIONAL AND ATHLETIC FLOORING

RB-1 MONDO SPORT IMPACT 6MM CO-Vulcanized Multi-Layer, Color TBD

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that sub-floors to receive flooring are level to within flooring manufacturer's requirements, and without large cracks, depressions, or indentations.

B. Installer's Examination:
1. Have installer of this section examine conditions under which construction activities of this section are to be performed, then submit written notification if such conditions are unacceptable.
2. Transmit two copies of installer's report to Architect within 24 hours of receipt.
3. Beginning construction activities of this section before unacceptable conditions have been corrected is prohibited.
4. Beginning construction activities of this section indicates installer's acceptance of conditions.

3.2 PREPARATION

A. Remove dust, debris, moisture, and powder accumulations from surfaces to receive flooring.

3.3 INSTALLATION

A. Install flooring, without adhesives, in accordance with shop drawings and manufacturer's instructions.

B. Do not install tiles over carpet.

3.4 PROTECTION

A. Protect installed products of this section from damage to function or finish by subsequent construction activities.

B. Repair minor damage to finishes in accordance with manufacturer's recommendations.

C. Replace products having damage to function, and products having damage to finishes which cannot be repaired to Architect's acceptance.

END OF SECTION

SECTION 09 65 00
RESILIENT FLOORING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Resilient tile flooring.

B. Resilient base.

C. Installation accessories.

1.02 RELATED REQUIREMENTS

A. Section 01 61 16 - Volatile Organic Compound (VOC) Content Restrictions.

B. Section 09 05 61 - Common Work Results for Flooring Preparation: Removal of existing floor coverings, cleaning, and preparation.

1.03 REFERENCE STANDARDS

A. ASTM E648 - Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source; 2023.

B. ASTM F1066 - Standard Specification for Vinyl Composition Floor Tile; 2023.

C. ASTM F1700 - Standard Specification for Solid Vinyl Floor Tile; 2020.

D. ASTM F1861 - Standard Specification for Resilient Wall Base; 2021.

E. NFPA 253 - Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source; 2023.

F. RFCI (RWP) - Recommended Work Practices for Removal of Resilient Floor Coverings; 2018.

1.04 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements for submittal procedures.

B. Product Data: Provide data on specified products, describing physical and performance characteristics; including sizes, patterns and colors available; and installation instructions.

C. Verification Samples: Submit two samples, 4 by 4 inch (102 by 102 mm) in size illustrating color and pattern for each resilient flooring product specified.

D. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
   1. See Section 01 60 00 - Product Requirements, for additional provisions.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing specified flooring with minimum three years documented experience.

B. Installer Qualifications: Company specializing in installing specified flooring with minimum three years documented experience.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Upon receipt, immediately remove any shrink-wrap and check materials for damage and the correct style, color, quantity and run numbers.

B. Store all materials off of the floor in an acclimatized, weather-tight space.

C. Maintain temperature in storage area between 55 degrees F (13 degrees C) and 90 degrees F (72 degrees C).

D. Protect roll materials from damage by storing on end.

E. Do not double stack pallets.

1.07 FIELD CONDITIONS

A. Store materials for not less than 48 hours prior to installation in area of installation at a temperature of 70 degrees F (21 degrees C) to achieve temperature stability. Thereafter, maintain conditions above 55 degrees F (13 degrees C).

PART 2 PRODUCTS

2.01 TILE FLOORING

A. Vinyl Composition Tile - Type VCT1: Homogeneous, with color extending throughout thickness.
   1. Manufacturers:
      a. Armstrong Flooring; Standard Excelon: www.armstrongflooring.com.
      b. TarKett VCT II
      c. Substitutions: With prior approved equivalent during bidding. See Section 01 60 00 - Product Requirements.
   2. Minimum Requirements: Comply with ASTM F1066, of Class corresponding to type specified.
   3. Critical Radiant Flux (CRF): Minimum 0.45 watt per square centimeter, when tested in accordance with ASTM E648 or NFPA 253, Class I.
   4. Smoke Evolution: 450 or less, as tested in accordance with ASTM E 662.
   5. Size: 12 by 12 inch (305 by 305 mm).
   6. VOC Content Limits: As specified in Section 01 61 16.
   7. Thickness: 0.125 inch (3.2 mm).
   8. Pattern: As indicated on the drawings. Center tile so that no less than 1/2 of the tile along perimeter.
   9. Color: Determined by Architect, approved by Owner.

B. Vinyl Composition Tile – Static B Dissipated, Type SDT-1. Homogeneous, with color extending throughout thickness.
   1. Manufacturers:
      a. Armstrong Flooring SDT Excelon SDT www.armstrongflooring.com
      b. Substitutions: With prior approved equivalent during bidding. See Section 01 60 00 Product Requirements.,
   2. Minimum Requirements: Comply with ASTM F1066, of Class corresponding to type specified.
   3. Critical Radiant Flux (CRF): Minimum 0.45 watt per square centimeter, when tested in accordance with ASTM E648 or NFPA 253, Class I.
   4. Smoke Evolution: 450 or less, as tested in accordance with ASTM E 662.
   5. Size: by 12 inch (305 by 305 mm).
   6. VOC Content Limits: As specified in Section 01 61 16.
   7. Thickness: 0.125 inch (3.2 mm).
   8. Pattern: As indicated on drawings. Center tile so that no less than ½ of the tile along perimeter.
   9. Color: Determined by Architect, and approved y Owner.

2.02 RESILIENT BASE

A. Resilient Base - RB1: ASTM F1861, Type TP, rubber, thermoplastic; style as scheduled.
   1. Critical Radiant Flux (CRF): Minimum 0.45 watt per square centimeter, when tested in accordance with ASTM E648 or NFPA 253.
   2. Products:
      a. Basis of Design: ROPPE
      b. Substitutions: With Prior approved equivalent. See Section 01 60 00 - Product Requirements.
   3. Height: 4 inches (100 mm).
   4. Thickness: 0.125 inch (3.2 mm).

5. Finish: Satin.
6. Length: Roll.
7. Color: As indicated on drawings.
8. Accessories: Pre-molded external corners and internal corners.

2.03 ACCESSORIES

A. Primers, Adhesives, and Seam Sealer: Waterproof; types recommended by flooring manufacturer for the product being installed.

B. Moldings, Transition and Edge Strips: Same material as flooring.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that surfaces are flat to tolerances acceptable to flooring manufacturer, free of cracks that might telegraph through flooring, clean, dry, and free of curing compounds, surface hardeners, and other chemicals that might interfere with bonding of flooring to substrate.

B. Verify that wall surfaces are smooth and flat within the tolerances specified for that type of work, are dust-free, and are ready to receive resilient base.

3.02 PREPARATION

A. Remove existing resilient flooring and flooring adhesives; follow the recommendations of RFCI (RWP).

B. Prepare floor substrates as recommended by flooring and adhesive manufacturers.

C. Remove subfloor ridges and bumps. Fill minor low spots, cracks, joints, holes, and other defects with subfloor filler to achieve smooth, flat, hard surface.

D. Prohibit traffic until filler is fully cured.

E. Clean substrate.

3.03 INSTALLATION - GENERAL

A. Starting installation constitutes acceptance of subfloor conditions.

B. Install in accordance with manufacturer's written instructions.

C. Adhesive-Applied Installation:
1. Spread only enough adhesive to permit installation of materials before initial set.
2. Fit joints and butt seams tightly.
3. Set flooring in place, press with heavy roller to attain full adhesion.

D. Where type of floor finish, pattern, or color are different on opposite sides of door, terminate flooring under centerline of door.

E. Install edge strips at unprotected or exposed edges, where flooring terminates, and where indicated.
1. Resilient Strips: Attach to substrate using adhesive.

F. Scribe flooring to walls, columns, cabinets, floor outlets, and other appurtenances to produce tight joints.

3.04 INSTALLATION - TILE FLOORING

A. Mix tile from container to ensure shade variations are consistent when tile is placed, unless otherwise indicated in manufacturer's installation instructions.

B. Lay flooring with joints and seams parallel to building lines to produce symmetrical pattern.

C. Install loose-laid tile, fit interlocking edges tightly.

3.05 INSTALLATION - RESILIENT BASE

A. Fit joints tightly and make vertical. Maintain minimum dimension of 18 inches (45 mm) between joints.

B. Install base on solid backing. Bond tightly to wall and floor surfaces.

C. Scribe and fit to door frames and other interruptions.

3.06 CLEANING

A. Remove excess adhesive from floor, base, and wall surfaces without damage.

B. Clean in accordance with manufacturer's written instructions.

3.07 PROTECTION

A. Prohibit traffic on resilient flooring for 48 hours after installation.

END OF SECTION

SECTION 09 67 20
EPOXY FLOORING

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

A. This Section includes one resinous flooring system, with one urethane-urea resin.
   1. Application Method: Troweled screed, and sanded. Resilient terrazzo-like.

1.03 SUBMITTALS

A. Product Data: For each type of product indicated. Include manufacturer's technical data, application instructions, and recommendations for each resinous flooring component required.

B. Samples for Verification: For each resinous flooring system required, 6 inches (150 mm) square, applied to a rigid backing by Installer for this Project.

C. Product Schedule: Use resinous flooring designations indicated in Part 2 and room designations indicated on Drawings in product schedule.

D. Installer Certificates: Signed by manufacturer certifying that installers comply with specified requirements.

E. Maintenance Data: For resinous flooring to include in maintenance manuals.

1.04 QUALITY ASSURANCE

A. No request for substitution shall be considered that would change the generic type of floor system specified (i.e. urethane-urea based resilient mortar with stain-resistant clear topcoat). Equivalent materials of other manufacturers may be substituted only on approval of Architect or Engineer. Request for substitution will only be considered only if submitted 10 days prior to bid date. Request will be subject to specification requirements described in this section.

B. Installer Qualifications: Engage an experienced installer who is experienced in applying resinous flooring systems similar in material, design, and extent to those indicated for this Project, whose work has resulted in applications with a record of successful in-service performance, and who is acceptable to resinous flooring manufacturer.
   1. Engage an installer who is certified in writing by resinous flooring manufacturer as qualified to apply resinous flooring systems indicated.
   2. Contractor shall have completed at least 10 projects of similar size and complexity.

C. Source Limitations: Obtain primary resinous flooring materials, including primers, resins, hardening agents, grouting coats, and topcoats, through one source from a single manufacturer, with not less than ten years of successful experience in manufacturing and installing principal materials described in this section. Provide secondary materials, including patching and fill material, joint sealant, and repair materials, of type and from source recommended by manufacturer of primary materials.

D. Manufacturer Field Technical Service Representatives: Resinous flooring manufacture shall retain the services of Field Technical Service Representatives who are trained specifically on installing the system to be used on the project.
   1. Field Technical Services Representatives shall be employed by the system manufacture to assist in the quality assurance and quality control process of the installation and shall be available to perform field problem solving issues with the installer.

E. Mockups: Apply mockups to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
   1. Apply full-thickness mockups on 48-inch- (1200-mm-) square floor area selected by Architect.
      a. Include 48-inch (1200-mm) length of integral cove base.

2. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

F. Pre-installation Conference:
1. General contractor shall arrange a meeting not less than thirty days prior to starting work.
2. Attendance:
a. General Contractor
b. Architect/Owner's Representative.
c. Manufacturer/Installer's Representative.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials in original packages and containers, with seals unbroken, bearing manufacturer's labels indicating brand name and directions for storage and mixing with other components.

B. Store materials to prevent deterioration from moisture, heat, cold, direct sunlight, or other detrimental effects.

C. All materials used shall be factory pre-weighed and pre-packaged in single, easy to manage batches to eliminate on site mixing errors. No on site weighing or volumetric measurements allowed.

1.06 PROJECT CONDITIONS

A. Environmental Limitations: Comply with resinous flooring manufacturer's written instructions for substrate temperature, ambient temperature, moisture, ventilation, and other conditions affecting resinous flooring application.
1. Maintain material and substrate temperature between 65 and 85 deg F (18 and 30 deg C) during resinous flooring application and for not less than 24 hours after application.

B. Lighting: Provide permanent lighting or, if permanent lighting is not in place, simulate permanent lighting conditions during resinous flooring application.

C. Close spaces to traffic during resinous flooring application and for not less than 24 hours after application, unless manufacturer recommends a longer period.

D. Concrete substrate shall be properly cured for a minimum of 30 days. A vapor barrier must be present for concrete subfloors on or below grade. Otherwise, an osmotic pressure resistant grout must be installed prior to the resinous flooring

E. WARRANTY

F. Manufacturer shall furnish a single, written warranty covering both material and workmanship for a period of one (1) one year from date of installation, or provide a joint and several warranty signed on a single document by material manufacturer and applicator jointly and severally warranting the materials and workmanship for a period of (1) one year from date of installation. A sample warranty letter must be included with submittal package or submittal package will be returned ‘revise and resubmit’.

PART 2 PRODUCTS

2.01 RESINOUS FLOORING

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

B. Products: Provide the following:
1. Stonhard, Inc.; Stonres RTZ®. Contact L. Chris Eicher 615.424.2224 or ceicher@stonhard.com

C. System Characteristics:
1. Color and Pattern: As indicated in finish legend drawings.
2. Wearing Surface: Smooth.
3. Integral Cove Base: **FOUR** inches (4”) height, integral base.
4. Overall System Thickness: 3/16 inch.

D. System Components: Manufacturer's standard components that are compatible with each other and as follows:
   1. Primer Coat:
      a. Material Basis: Stonhard Standard Primer.
      b. Resin: (2) two component epoxy.
      c. Formulation Description: 100 percent solids.
      d. Application Method: squeegee back roll.
      e. Number of Coats: One.
   2. Primer Coat 2:
      a. Material Basis: Stonhard SL Primer.
      b. Resin: (3) three component epoxy.
      c. Formulation Description: 100 percent solids.
      d. Application Method: squeegee back roll onto wet standard primer.
      e. Number of Coats: One.
   3. Body Coat:
      a. Material Basis: Stonres Mortar base.
      b. Resin: Urethane
      c. Formulation Description: Comprised of a (3) three-component mortar, consisting of pigmented urethane resin, curing agent, and selected, colored aggregates.
      d. Application Method: Screed Rake
         1) Free-Flowing Mortar: Uniformly spread mortar over substrate using manufacturer's specially designed screed rake adjusted to manufacturer's recommended height. Spike-roll the mortar to remove any rake lines, using manufacturer’s specially designed spike roller.
         2) Sanding: Sand surface of the cured mortar according to manufacturer’s recommended equipment and procedures.
   4. Grout coat:
      a. Material Basis: Stonres grout coat.
      b. Resin: Urethane
      c. Formulation Description: (2) two-component, 100% aliphatic, polyaspartic urethane.
      d. Type: Clear
      e. Finish: gloss.
      f. Number of Coats: one.
   5. Topcoat: Chemical resistant and high UV stability.
      a. Material Basis: Stonseal CF7 clear flat.
      b. Resin: Aliphatic polyurethane.
      c. Formulation Description: (2) two-component, flat, aliphatic polyurethane topcoat.
      d. Type: Clear
      e. Finish: Matte.
      f. Number of Coats: two (2).

2.02 ACCESSORY MATERIALS

A. Moisture Mitigation: Use kind and type recommended by the manufacturer, and compatible with the floor products listed. Allowances to be made if moisture transmission exceeds rates listed in section 3.1.B.3. Allowances to be made for Stonfil OP2 or Stondri MVT.

B. Floor Strips: Use kind and type recommended by manufacturer, and compatible with floor products listed. Use strips for termination of floor and division of colors and patterns. See floor finish plan for location and patterns. Consult manufacturer’s product installation data for strip dimensions.

C. Pitching and Leveling: Use a (3) three-component fast setting troweled epoxy grout or mortar. Resinous epoxy based grout or mortar designed for permanent repairs under flooring system. Stonhard, Stonset TG5 or Stonclad GS. See drawings for fill locations. Use standard drain details, saw cut and chase.

PART 3 EXECUTION

3.01 PREPARATION

A. General: Prepare and clean substrates according to resinous flooring manufacturer's written instructions for substrate indicated. Provide clean, dry, and neutral Ph substrate for resinous flooring application.

B. Concrete Substrates: Provide sound concrete surfaces free of laitance, glaze, efflorescence, curing compounds, form-release agents, dust, dirt, grease, oil, and other contaminants incompatible with resinous flooring.
   1. Mechanically prepare substrates as follows:
      a. Shot-blast surfaces with an apparatus that abrades the concrete surface, contains the dispensed shot within the apparatus, and recirculates the shot by vacuum pickup.
      b. Comply with ASTM C 811 requirements, unless manufacturer's written instructions are more stringent.
   2. Repair damaged and deteriorated concrete according to resinous flooring manufacturer's written recommendations.
   3. Verify that concrete substrates are dry.
      a. Perform in situ probe test, ASTM F 2170. Proceed with application only after substrates do not exceed a maximum potential equilibrium relative humidity of 85 percent.
      b. Perform anhydrous calcium chloride test, ASTM F 1869. Proceed with application only after substrates have maximum moisture-vapor-emission rate of 3 lb of water/1000 sq. ft. of slab in 24 hours.
      c. Perform additional moisture tests recommended by manufacturer. Proceed with application only after substrates pass testing.
   4. Verify that concrete substrates have neutral Ph and that resinous flooring will adhere to them. Perform tests recommended by manufacturer. Proceed with application only after substrates pass testing.

C. Resinous Materials: Mix components and prepare materials according to resinous flooring manufacturer's written instructions.

D. Use patching and fill material to fill holes and depressions in substrates according to manufacturer's written instructions.

E. Treat control joints and other nonmoving substrate cracks to prevent cracks from reflecting through resinous flooring according to manufacturer's written recommendations. Allowances for Stonproof CT5.

3.02 APPLICATION

A. General: Apply components of resinous flooring system according to manufacturer's written instructions to produce a uniform, monolithic wearing surface of thickness indicated.
   1. Coordinate application of components to provide optimum adhesion of resinous flooring system to substrate, and optimum inter-coat adhesion.
   2. Cure resinous flooring components according to manufacturer's written instructions. Prevent contamination during application and curing processes.
   3. At substrate expansion and isolation joints, provide joint in resinous flooring to comply with resinous flooring manufacturer's written recommendations.
      a. Apply joint sealant to comply with manufacturer's written recommendations.

B. Integral Cove Base: High performance, mortar consisting of epoxy resin, curing agent and selected, graded aggregates blended with inorganic pigments, high solids epoxy mortar system. Top coat with Stonkote GS4, pigmented epoxy top coat.

C. Apply Standard and SL Primer over prepared substrate at manufacturer's recommended spreading rate wet on wet application.

D. Free-Flowing Mortar: Mix mortar material according to manufacturer's recommended procedures. Uniformly spread mortar over substrate using manufacturer's specially designed

screed rake adjusted to manufacturer's recommended height. Spike roll the mortar to remove any rake lines, using manufacturer's specially designed spike roller.

E. Sanding: Sand surface of the cured mortar according to manufacturer's recommended equipment and procedures. Thoroughly clean and vacuum the surface of the base once all sanding has been completed.

F. Grout coat: Mix and apply two coats of grout coat sealer with strict adherence to manufacturer's installation procedures and coverage rates.

G. Topcoat: Mix and roller apply the matte, UV resistant topcoat with strict adherence to manufacturer's installation procedures and coverage rates.

3.03 TERMINATIONS

A. Chase edges to "lock" the coating system into the concrete substrate along lines of termination.

B. Penetration Treatment: Lap and seal coating onto the perimeter of the penetrating item by bridging over compatible elastomer at the interface to compensate for possible movement.

C. Trenches: Continue coating system into trenches to maintain monolithic protection. Treat cold joints to assure bridging of potential cracks.

D. Treat floor drains by chasing the coating to lock in place at point of termination.

3.04 JOINTS AND CRACKS

A. Treat control joints to bridge potential cracks and to maintain monolithic protection.

B. Treat cold joints and construction joints to bridge potential cracks and to maintain monolithic protection on horizontal and vertical surfaces as well as horizontal and vertical interfaces.

C. Discontinue floor coating system at vertical and horizontal contraction and expansion joints by installing backer rod and compatible sealant after coating installation is completed. Provide sealant type recommended by manufacturer for traffic conditions and chemical exposures to be encountered.

3.05 FIELD QUALITY CONTROL

A. Material Sampling: Owner may at any time and any numbers of times during resinous flooring application require material samples for testing for compliance with requirements.
   1. Owner will engage an independent testing agency to take samples of materials being used. Material samples will be taken, identified, sealed, and certified in presence of Contractor.
   2. Testing agency will test samples for compliance with requirements, using applicable referenced testing procedures or, if not referenced, using testing procedures listed in manufacturer's product data.
   3. If test results show applied materials do not comply with specified requirements, pay for testing, remove noncomplying materials, prepare surfaces coated with unacceptable materials, and reapply flooring materials to comply with requirements.

3.06 CLEANING, PROTECTING, AND CURING

A. Cure resinous flooring materials in compliance with manufacturer's directions, taking care to prevent contamination during stages of application and prior to completion of curing process. Close area of application for a minimum of 18 hours.

B. Protect resinous flooring materials from damage and wear during construction operation. Where temporary covering is required for this purpose, comply with manufacturer's recommendations for protective materials and method of application. General Contractor is responsible for protection and cleaning of surfaces after final coats.

C. Cleaning: Remove temporary covering and clean resinous flooring just prior to final inspection. Use cleaning materials and procedures recommended by resinous flooring manufacturer

END OF SECTION

DIVISION 9: FINISHES
Section 09 90 00: Painting

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and any general provisions of the Contract for all Bid Items, including General and Supplementary Conditions and Construction Manager's specific requirements apply to this Section.

1.2 SUMMARY

A. This Section includes surface preparation, coatings and finishes for exposed interior and exterior items and surfaces.

1. Surface preparation and all materials specified in this section are in addition to shop-priming and surface treatment specified under other sections.

B. Paint exposed surfaces whether or not colors are designated in schedules, except where a surface or material is specifically indicated not to be painted or is to remain natural. Where an item or surface is not specifically mentioned, material shall be as indicated in the coating schedule and color shall be same as adjacent surfaces.

1. This section includes field coating of exposed bare and covered piping and ductwork (including color coding), hangars, exposed steel and iron work, and primed metal surfaces of mechanical and electrical equipment.

C. Painting is not required on pre-finished items, finished metal surfaces, concealed surfaces, operating parts, and labels.

1. Pre-finished items not to be painted include (but are not limited to) the following items:

a. Metal toilet enclosures.
b. Acoustic materials.
c. Architectural woodwork and casework.
d. Finished mechanical and electrical equipment.
e. Light fixtures.
f. Switchgear.
g. Distribution cabinets.

2. Concealed surfaces not to be painted include (but are not limited to) the following items:

a. Foundation spaces.
b. Furred areas.
c. Utility tunnels.
d. Pipe spaces.
e. Duct shafts.

3. Finished metal surfaces not to be painted include (but are not limited to) the following items:

a. Anodized aluminum.
b. Stainless steel.

c. Chromium plate.
d. Copper.
e. Bronze.
f. Brass.

4. Operating parts not to be painted include (but are not limited to) the following items:

a. Valve and damper operators.
b. Linkages.
c. Sensing devices.
d. Motor and fan shafts.

5. Labels: Do not paint over Underwriters Laboratories, Factory Mutual or other code-required labels or equipment name, identification, performance rating, or nomenclature plates.

D. Related Sections: The following Sections contain requirements that relate to this Section.

1. Division 5 Section “Metal Fabrications” for shop-priming ferrous metal.
2. Division 6 Section “Interior Architectural Woodwork” for shop-priming interior architectural woodwork.
3. Division 8 Section “Standard Steel Doors and Frames” for shop-priming steel doors and frames.
4. Divisions 15 and 16: Painting mechanical and electrical work is specified in Divisions 15 and 16 respectively.

1.3 ABBREVIATIONS

ANSI	American National Standards Institute
DFT	Dry Film Thickness
DFTPC	Dry Film Thickness Per Coat
mil (or “M”)	Thousandths of an Inch
NACE	National Association of Corrosion Engineers
OSHA	Occupational Safety and Health Act
SFPG	Square Feet Per Gallon
SFPGPC	Square Feet Per Gallon Per Coat
-SP	Surface Preparation
SSPC	Steel Structures Painting Council

1.4 SUBMITTALS

A. Submit materials according to Conditions of the contract and in accordance with “PART MATERIALS”, herein.

B. Furnish product data sheets for each coating system used herein, including Technical Data Sheets, and colors available (where applicable) for each product used in the coating system, except for products applied by equipment manufacturers.

C. Samples for Verification Purposes: Provide samples of each color and material to be applied, with texture to simulate actual conditions, on representative samples of the actual substrate.

1. Provide stepped samples, defining each separate coat, including block fillers and primers. Use representative colors when preparing samples for review. Resubmit until required sheen, color, and texture are achieved.
2. Provide a list of material and application for each coat of each sample. Label each sample as to location and application.
3. Submit samples on the following substrates for the Architect's review of color and texture only:

    a. Concrete: Provide two 4-inch-square samples for each color and finish.
    b. Concrete Masonry: Provide two 4-by-8-inch samples of masonry, with mortar joint in the center, for each color and finish.
    c. Painted Wood: Provide two 12-inch-square samples of each color and material on hardboard.
    d. Stained or Natural Wood: Provide two 4-by-8-inch samples of natural and stained wood finish on actual wood surfaces.
    e. Ferrous Metal: Provide two 4-inch-square samples of flat metal and two 8-inch-long samples of solid metal for each color and finish.

1.5 QUALITY ASSURANCE

A. Applicator's experience: Minimum 5 year's practical experience in application of specified products on projects of similar size and scope. Applicator shall have successfully completed 5 similar projects within the last 3 years. General Contractor shall provide reference names and telephone numbers upon request.

B. Single-Source Responsibility: Provide primers and undercoat materials produced by the same manufacturer as the finish coats.

C. Field Samples: On wall surfaces and other exterior and interior components, duplicate finishes of prepared samples. Provide full-coat finish samples on at least 100 square feet of surface until required sheen, color, and texture are obtained; simulate finished lighting conditions for review of in-place samples.

1. Final acceptance of colors will be from job-applied samples.

2. The Architect will select one room or surface to represent surfaces and conditions for each type of coating and substrate to be painted. Apply coatings in this room or surface according to the schedule or as specified.

    a. After finished are accepted, this room will be used to evaluate coating systems of a similar nature as the job standard.

1.6 MATERIAL DELIVERY, HANDLING, AND STORAGE

A. Deliver materials to project site in undamaged, unopened containers that plainly show, at time of use:

1. Product name and manufacturer.
2. Product Description (generic classification or binder type).
3. Date of manufacture.
4. Contents by volume.
5. Batch number.
6. Shelf-life.
7. Color.

8. Mixing, thinning, and application instructions.

B. Store materials in a protected area that is heated or cooled to maintain a temperature range recommended by coating manufacturer.

1. Protect from freezing.
2. Take necessary measures to ensure that workers and work areas are protected from fire and health hazards resulting from handling, mixing, and application.

1.7 ENVIRONMENTAL REQUIREMENTS

A. Coatings shall only be applied during good painting weather. Air and surface temperatures shall be within limits described by the manufacturer for the coating being applied and surface temperatures shall be at least 5° F above the dew point of ambient air. Work areas shall be reasonably free of airborne dust and smoke at time of application and during cure or drying.

1. Cold weather painting: Follow manufacturer's product data sheets for application temperature limits and accelerated curing charts. Contact manufacturer for any deviations from published guidelines.

B. Abrasive blasting shall only be performed when relative humidity is less than 85% and when surface temperature is at least 5° F above the dew point of ambient air.

1.8 WARRANTY

A. The General Contractor shall warrant to the owner and guarantee the Work under this section against defective workmanship and material as outlined in the Contract Documents.

PART 2 MATERIALS

2.1 All materials specified herein are Basis of Design for use on this project. Acceptable prior approved Manufacturers: Tnemec, PPG Architectural Finishes, Inc. - Pittsburgh Paints, Sherwin-Williams, ICI and Benjamin Moore.

2.2 Materials specified are those which have been evaluated for the specific service. Products are listed to establish a *standard of quality and performance*. Requests for substitution must be approved in writing ten (10) days prior to date of bid. Substitute systems must have required documentation. The burden of proof of the merit of the proposed substitute is upon the proposer. The decision of the Architect regarding approval or disapproval of the proposed substitution shall be final.

2.3 SUBSTITUTIONS

A. Requests for substitution shall contain the following technical product information:

1. Full name and number of each product
2. Complete descriptive literature
3. Directions for use
4. Generic Vehicle Type
5. Material Safety Data Sheets (MSDS)
6. Certification that all products are formulated free of lead and chromates
7. Percent (%) Solids by Volume

8. Recommended Dry Film Thickness per coat
9. Independent certified test reports showing results to equal the performance criteria of the products specified.

B. Materials supplied by other manufacturers may be considered for substitution if the following prevailing conditions exist:

1. Performance criteria of the specified materials are exceeded by the submitted alternate materials as listed in paragraph 2.1 and detailed on the technical data sheets of each specified product.
2. No products shall be considered that would decrease film thicknesses or offer a change in generic type of coating specified.
3. The submittal must compare the performance criteria of the specified material with that of submitted material and be documented in a side by side manner for thorough Architect review.
4. Substitute materials must be for complete systems and not individual products combined with the specified materials. Performance criteria for all products within a system must meet or exceed the specified materials.
5. Only one (1) alternate submittal will be received for this specification and must be accompanied by a detailed statement of the sum to be added or deducted from the base bid.

C. Materials supplied by other manufacturers must include the following performance data as certified by a qualified testing laboratory:

1. ASTM B117 Method of Salt Spray (Fog) Testing
2. ASTM D149 Method of Dielectric Breakdown Voltage and Dielectric Strength Electrical Insulating Materials of Commercial Power Frequencies.
3. ASTM D3359 Method for Measuring Adhesion by Test Tape.
4. ASTM D3363 Method for Film Hardness by Pencil Test.
5. ASTM D4060 Method for Abrasion Resistance of Organic Coatings by the Taber Abrader.
6. ASTM D4541 Method for Pull-Off Strength of Coats Using Portable Adhesion Testers.
7. ASTM 4585 Practice Testing the Water Resistance of Coatings Using Controlled Condensation.
8. ASTM G53 Practice for Operating Light and Water Exposure of Non-metallic Materials.

PART 3 EXECUTION

3.1 GENERAL

A. Surface Preparation Inspection:

1. Inspect and provide substrate surfaces prepared in accordance with these Specifications and the printed instructions and recommendations of the manufacturer whose product is to be applied.
2. Provide Architect minimum 14 day's advance notice prior to start of surface preparation work or coating application.
3. Perform work only in presence of Architect, unless Architect grants prior approval to perform work in Architect's absence.

3.2 PROTECTION OF MATERIALS NOT TO BE PAINTED

A. Remove, mask, or otherwise protect hardware, lighting fixtures, switch plates, aluminum surfaces, machined surfaces, couplings, shafts, bearings nameplates, and other surfaces not intended to be painted. Provide protection to prevent coating materials from falling on or marring adjacent surfaces. Protect working parts of mechanical and electrical equipment from damage. Mask openings in motors to prevent paint and other materials from entering.

3.3 APPLICATION SAFETY

A. Perform painting work in accordance with recommendations of the following:

1. Coating manufacturer's printed instructions.
2. NACE guidelines, contained in the publication, "Manual for Painter Safety."
3. Federal, State, and Local agencies having jurisdiction.

B. The General Contractor will be solely and completely responsible for conditions of the jobsite, including safety of all persons (including facility employees) and property during performance of the work. The General Contractor will comply with all safety training requirements promulgated or required for this project.

C. Surface Preparation and Coating Precautions:

1. Ventilation: During field abrasive blasting, nozzle operators shall wear air-supplied helmets and all other persons who are exposed to blasting dust shall wear filter-type respirators and safety goggles or other personal protective equipment required by local, state, and federal safety regulations. When coatings are applied inside confined spaces, all persons exposed to toxic vapors shall wear air-supplied masks.

2. Grounding: Precautions shall be taken during blast cleaning and coating operations to prevent accumulation of charges of static electricity. Blasting hoses, coating lines, etc. shall be grounded to meet local, state, and federal safety regulations. Note that sparking due to improper grounding may result in explosion of concentrated solvent vapors.

3. Lighting: Spark-proof artificial lighting shall be provided for all work inside confined spaces. Lightbulbs shall be guarded to prevent breakage. Lighting fixtures and flexible cords shall comply with the requirements of NFPA 70, National Electrical Code, for the atmosphere in which they will be used. Note that sparking may result in explosion of concentrated solvent vapors.

4. Toxicity: Most protective coatings contain solvents and other raw materials that can be health hazards if appropriate safety precautions are not taken. Personal exposure to solvent vapors shall be maintained below the permissible exposure limit (PEL). Follow local, state, and federal safety regulations and applicable hazardous warning information on container labels, manufacturer’s literature, and material safety data sheets (MSDS) prior to storage, handling, and use.

5. Fire: During mixing and application of coatings, all flames, welding, and smoking shall be prohibited in the vicinity. An appropriate type of fire extinguisher shall be kept within the areas of mixing and application operations.

6. Blasting and Coating Operations: All blasting and coating operations shall be carried out in compliance with local, state, and federal regulations. General Contractor shall adhere to all applicable safety, environmental, emissions, noise, and material disposal regulations.

3.4 PAINT MIXING AND THINNING

A. Multiple-Component Coatings:

1. Prepare using all the contents of the container for each component as packaged and directed by paint manufacturer. No partial batches will be permitted.
2. Thinning, when permitted, will be done in strict accordance with the most current manufacturer's printed product data sheet.
3. Do not use multiple-component coatings after they have been mixed beyond their pot life.

B. Keep paint materials sealed when not in use.

C. When multiple coats of material are applied within a given system, alternate color (job tint) coats to provide a visual reference that the required number of coats have been applied.

3.5 FIELD ABRASIVE BLASTING

A. Perform abrasive blasting for items and equipment where specified and as required to restore damaged surfaces previously shop or field blasted and primed. Materials, equipment, and procedures shall be in accordance with recommendations of the Steel Structures Painting Council (SSPC) or the National Association of Corrosion Engineers (NACE).

3.6 PREPARATION OF SURFACES

A. Metal Surface Preparation:

1. General: Conform to current Steel Structures Painting Council (SSPC) Specifications as follows:

a. Solvent Cleaning: SSPC-SP 1
b. Hand Tool Cleaning: SSPC-SP 2
c. Power Tool Cleaning: SSPC-SP 3
d. Commercial Blast Cleaning: SSPC-SP 6 or NACE No. 3
e. Brush-Off Blast Cleaning: SSPC-SP 7 or NACE No. 4
f. Near-White Blast Cleaning: SSPC-SP 10 or NACE No. 2
g. Power Tool Cleaning to Bare Metal: SSPC-SP 11

2. Field Blasting: Where OSHA or EPA regulations preclude standard abrasive blast cleaning, wet or vacu-blast methods may be required. Follow coating manufacturer's recommendations for wet blast additives and first coat application. Blast Cleaning Requirements:

a. Comply with applicable federal, state, and local air pollution and environmental control regulations for blast cleaning and disposition of spent aggregate and debris.
b. Alternatives to standard abrasive blast cleaning methods shall be subject to Architect review.

3. Hand tool clean areas that cannot be cleaned by power tool cleaning.

B. Concrete, Masonry, and Stucco Surface Preparation:

1. Complete and cure concrete, masonry, and stucco construction at least 28 days before

starting surface preparation work.

2. Remove oil, grease, dirt, salts, curing agents, other chemicals, loose materials, or foreign matter by solvent, detergent washing, or other suitable cleaning methods.
3. Clean concrete, masonry, and stucco surfaces of mortar and grout spillage and other surface deposits using one of the following:

    a. Nonmetallic fiber brushing with a solution of muratic acid (1 part muratic acid/3 parts water), followed by rinsing with clean water.

    b. Brush-off blasting per SSPC-SP7 or NACE No. 4.

    c. Water blasting

4. Determine alkalinity and moisture content of surfaces by performing ASTM D 4262 “Standard Test Method for pH of Chemically Cleaned or Etched Concrete Surfaces” and, respectively, ASTM D 4263 “Standard Test Method for Indicating Moisture Content in Concrete by the Plastic Sheet Method”. If surfaces are sufficiently alkaline to cause the coatings to blister or “burn”, correct this condition by using “Chlor*Rid Concentrate” added to water in a 100-to-1 concentration while pressure washing. An alternate method is to apply “Chlor*Rid Direct-To-Surface” by roller or squeegee and rinsed thoroughly using clean water.
5. Leave surfaces clean, with adequate surface profile, and (unless otherwise required for proper adhesion) dry prior to painting.

C. Drywall Surface Preparation: Fill and sand smooth all cracks, holes and other surface imperfections. Insure that all drywall is clean and dry prior to coating application. While coating is curing/drying keep dust and surface contaminants to a minimum.

3.7 APPLICATION OF COATINGS

A. General:

1. Inspection: Schedule inspection with Architect in advance for prepared surfaces and all coats prior to restarting coating applications.
2. Apply coatings in accordance with manufacturer's printed data sheets. Allow sufficient time between coats to insure complete curing of previously applied coatings.
3. Paint units or structures to be bolted together prior to their assembly, when possible.
4. The term exposed surfaces includes areas visible when permanent or built-in fixtures, convector covers, covers for finned tube radiation, grilles, and similar components are in place. Extend coatings in these areas, as required, to maintain the system integrity and provide desired protection.
5. Paint surfaces behind moveable equipment and furniture the same as exposed surfaces. Before the final installation of equipment, paint surfaces behind permanently fixed equipment or furniture with prime coat only.
6. Paint interior surfaces of ducts, where visible through registers or grilles, with Series 66-IN06 (Black) Hi-build Epoxoline.
7. Paint back sides of access panels and removable or hinged covers to match existing surfaces.
8. Finish interior of wall and base cabinets and similar field-finished casework to match exterior.
9. Finish exterior doors on tops, bottoms, and side edges same as exterior faces.
10. Omit primer on metal surfaces that have been shop-primed and touch-up painted.
11. Colors, surface preparation, and paint systems are detailed in “PART 4”, herein.

B. Shop Primed or Factory Finished Surfaces:

1. After welding, prepare and prime holdback areas as required for specified paint system. Apply primer according to manufacturer's instructions.
2. Hand or power sand areas of chipped, peeled, or abraded coating, feathering the edges. Apply the specified spot primer to cover the area.
3. For two-component coatings, consult the coatings manufacturer for specific procedures relating to the manufacturer's products.
4. Prior to application of finish coats, clean shop primed surfaces free of dirt, oil, and grease per SSPC-SP1 and apply a mist coat of specified primer at 1.0 MDFT.

C. Manufacturer Applied Paint Systems:

1. Repair abraded areas on factory finished items in accordance with the equipment manufacturer's directions.
2. Carefully blend repaired areas into original finish.

D. Film Thickness

1. Coverage is listed as either total minimum dry film thickness in mils (MDFT) or the spreading rate in square feet per gallon (SFPG). Per coat determinations are listed as MDFTPC and SFPGPC.
2. Number of coats: Minimum required irrespective of coating thickness. Additional coats may be required to achieve minimum required coating thickness, depending on method of application, differences in atmospheric conditions, and individual manufacturer's products.
3. Maximum film build per coat shall not exceed coating manufacturer's printed recommendations.
4. Give particular attention to edges, angles, flanges, and other similar areas where insufficient film thicknesses are likely to be present, and ensure proper millage in these areas.
5. Dry Film Thickness Testing:
   a. Check each coat for correct millage. Do not take DFT measurements until coatings have cured a minimum of 8 hours.
   b. After repaired and recoated areas have cured sufficiently, final tests will be conducted be the Architect, measuring coating thickness, as specified in mils, with a magnetic type dry film thickness gauge as outlined in SSPC-PA2 “Measurement of Dry Paint Thickness with Magnetic Gauges”..

E. Mechanical and Electrical Work: Painting mechanical and electrical work is limited to items exposed in mechanical equipment rooms and in occupied spaces.

F. Mechanical items to be painted include (but are not limited to) the following:

1. Piping, pipe hangars, and supports.
2. Heat exchangers.
3. Tanks.
4. Ductwork.
5. Insulation.
6. Supports.
7. Motors and mechanical equipment.
8. Accessory items.

G. Electrical items to be painted include (but are not limited to) the following:

1. Conduit and fittings.
2. Switchgear.

H. Unsatisfactory Application:

1. If an item has improper finish color or insufficient film thickness, clean and recoat the surface with specified material to obtain specified sheen, color, texture, and coverage.
2. Hand or power sand visible areas of chipped, peeled, or abraded paint, and feather the edges. Follow with primer and finish coat in accordance with the specifications. Depending on extent of repair, finish sanding and additional topcoats may be required.
3. Evidence of runs, drips, bridges, shiners, laps, or other imperfections shall be cause for rejection.
4. Repair defects in coating system per written recommendations of coating manufacturer.
5. Leave all staging up until the Architect has inspected surface or coating.
6. Replace staging removed prior to approval of the Architect.

3.8 CLEANUP AND REMOVAL OF WASTE

A. Place cloths and waste that might constitute a fire hazard in closed metal containers or destroy at the end of each day.

B. Upon completion of work, remove all staging and scaffolding from site.

C. Completely remove paint drips, overspray, or stains from surfaces not scheduled to be painted, and leave entire job clean.

D. Remove and dispose of, in a manner legal in the State of Alabama, all rubbish, empty containers, coating materials (including spent solvents), leaving the premises in an acceptable condition.

PART 4 COATING SYSTEMS

4.0 PROTECTIVE COATING SYSTEMS

System No.	Title
1	Exposed Metal--Exterior
2	Exposed Metal--Interior
3	Precast Concrete, Masonry, and Concrete—Interior
4	Gypsum Board/Drywall
5	Woodwork and Hardboard
6	Stained Woodwork---Where Indicated
7	Cast In Place Concrete - Exterior

System No. 1 Exposed Metal--Exterior (including Section 08331, Overhead Coiling Doors):
This systems is only applicable at Bid Item No. 1

Surface Prep.	Paint Material	Min. Coats, Cover
Abrasive or Centrifugal Wheel Blast (SSPC-SP 6 Commercial Blast Cleaning)	Series 132, ProTuff SW Pro Acrylic DTM	1 Coat, 4.0-6.0 MDFT
	Series 66 Epoxoline, SW Pro Industrial Pre Catalyzed Urethane	1 Coat, 3.0-5.0 MDFT
	Series 1095 Endura-Shield SW Pro Industrial Pre Catalyzed Urethane	1 Coat, 2.0-3.0 MDFT

System No. 2 Exposed Metal--Interior (including ferrous metals, access doors, steel security furnishings, security equipment, steel mechanical grilles, exposed sprinkler piping and fire extinguisher cabinets unless otherwise shown):

Surface Prep.	**Paint Material**	**Min. Coats, Cover**
Abrasive or Centrifugal Wheel Blast (SSPC-SP 6 Commercial Blast Cleaning)	Series 132, ProTuff, SW Pro Acrylic DTM	1 Coat, 4.0-6.0 MDFT
	Series 113 Tneme-Tufcoat SW Metalatex Acrylic Coating	1 Coat, 3.0-5.0 MDFT
	Series 297 Enviro-Glaze SW Metalatex Acreylic Coating	1 Coat, 2.0 – 3.0 MDFT

System No. 3 Concrete and Masonry – Interior:

Surface Prep.	**Paint Material**	**Min. Coats, Cover**
Dry & Clean	Series 130, Envirofill SW Conflex Block Filler	1 Coat, 75 SFPG
	Series 113 Tneme – Tufcoat SW Pro Industrial Acrylic Coating	1 Coat, 3.0-5.0 MDFT
	Series 297 Enviro-Glaze SW Pro Industrial Acrylic Coating	1 Coat, 2.0 – 3.0 MDFT

System No. 4 Gypsum Board (Drywall):

Surface Prep.	**Paint Material**	**Min. Coats, Cover**
Dry & Clean	PVA Drywall Primer and Sealer	1 Coat, 1.0-2.0 MDFT
	Series 113 H.B, Tneme-Tufcoat, SW Pro Industrial Acrylic Coating	2 Coats, 3.0-4.0 MDFTPC

System No. 5 Woodwork and Hardboard (including interior doors, cabinets and wood trim unless otherwise shown):

Surface Prep.	Paint Material	Min. Coats, Cover
Dry & Clean – Sand Smooth fill nicks and nail holes with appropriate filler	Series 10-99W, Tnemec Primer, SW Multi-Purpose Acrylic Alkyd Primer	1 Coat, 2.0-3.0 MDFT
	Series 1029, Enduratone, SW Pro Industrial Acrylic Coating	2 Coats, 1.0-3.0 MDFTPC

System No. 6 Stained Woodwork:

1. Stained-Varnish Rubbed Finish: Three finish coats over stain plus filler on open-grain wood. Wipe filler before applying first varnish coat.

   a. Stain Coat: Oil-type interior wood stain.

      1) ICI: 96XX Wonder Woodstain Alkyd Stain.
      2) Fuller: 640-XX Pen-Chrome Interior Oil Base Wood Stain.
      3) Moore: 241 Moore's Interior Wood Finished Penetrating Stain.
      4) PPG: 77-302 Rez Medium Tint Base.
      5) P & L: S-Series Tonetic Wood Stain.
      6) S-W: Oil Stain A-48 Series.

   b. First Coat: Cut shellac.

      1) ICI: 4900 Wonder Woodsealer Quick-Dry Sealer.
      2) Moore: 413 Moore's Interior Wood Finishes Quick-Dry Sanding Sealer.
      3) PPG: 77-30 Quick Drying Sanding Sealer.
      4) S-W: Pro-Mar Varnish Sanding Sealer B26V3.

   c. Filler Coat: Paste wood filler.

      1) ICI: 4800 Wonder Woodstain Interior Paste Wood Filler.
      2) Fuller: 680-00 Pen Chrome Paste Wood Filler.
      3) Moore: Benwood Paste Wood Filler #238.
      4) PPG: (none required)
      5) S-w: Sher-Wood Fast-Dry Filler.

   d. Second and Third Coats: Oil rubbing varnish.

      1) ICI: 4600 Wonder Woos Stain Alkyd Stain Varnish.
      2) Fuller: 653-01 EPA Complaint Clear Polyurethane Satin Finish.
      3) Moore: Benwood Stain Finish Varnish #404.
      4) PPG: 77-7 Rez Stain Varnish.
      5) P & L: Clear Finish Glass.

System No. 7 Exterior Cast-In-Place Concrete

Surface Prep.	**Paint Material**	**Min. Coats, Cover**
Dry & Clean	1 Coat Exterior Concrete and Masonry Primer	1 Finish Coat Flat Acrylic Finish

PART 5 - PAINTED GRAPHIC SIGNAGE

5.0 See drawings for special painted signage. Edges of letters and figures shall be straight sharp and concise.

Painting subcontractor through General Contractor shall furnish templates for all text/copy scheduled above for paste-up approval on project site. Paint one (1) full sample for approval by A/E and Owner's Representative before any work is begun.

END OF SECTION 09 90 00

SECTION 10 21 00
TOILET PARTITIONS - PHENOLIC

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Phenolic Toilet Compartment Partitions:
   1. Overhead braced.
   2. Floor anchored.
   3. Ceiling hung.
   4. Floor and ceiling anchored.
   5. Privacy Screens:
      a. Floor anchored.
      b. Floor and ceiling anchored.
   6. Urinal Screens:
      a. Wall hung with wing brackets.
      b. Wall hung with brackets.
      c. Floor anchored.
      d. Government flanged with wing bracket.

1.2 RELATED SECTIONS

A. Section 03 30 00 - Cast-in-Place Concrete. For compartment anchorage to concrete substrates.

B. Section 04 20 00 - Unit Masonry. For compartment anchorage to masonry substrates.

C. Section 05 40 00 - Cold-Formed Metal Framing. For miscellaneous structural and support metal components required to secure compartments.

D. Section 06 10 00 - Rough Carpentry. For compartment anchorage to frame walls.

1.3 REFERENCES

A. ASTM International (ASTM):
   1. ASTM A240 - Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications.
   2. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
   3. ASTM A666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar.
   4. ASTM A743/A 743M - Standard Specification for Castings, Iron-Chromium, Iron-Chromium-Nickel, Corrosion Resistant, for General Application.
   5. ASTM B86 - Standard Specification for Zinc and Zinc-Aluminum (ZA) Alloy Foundry and Die Castings.
   6. ASTM B221 - Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
   7. ASTM D2794 - Standard Test Method for Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact).
   8. ASTM D6578 / D6578M - Standard Practice for Determination of Graffiti Resistance.
   9. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.

B. International Code Council (ICC)/American National Standards Institute (ANSI):
   1. ICC/ANSI A117.1 - Accessible and Usable Buildings and Facilities, as applicable to

toilet compartments designated as accessible.

C. United States Department of Justice:
1. Americans with Disabilities Act (ADA):
a. Excerpt from 28CFR Part 36 - ADA Standards for Accessible Design.

D. GREENGUARD Environmental Institute (GREENGUARD):
1. GREENGUARD certified low emitting products.

1.4 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. Product Test Reports: By qualified independent testing agency indicating compliance of products with requirements.
3. Preparation instructions and recommendations.
4. Storage and handling requirements and recommendations.
5. Typical installation methods.
6. Maintenance and cleaning instructions.

C. Verification Samples: Two representative units of each type, size, pattern, and color.
1. Size: 2 x 2 inch (52 x 52 mm) minimum, in type of finish specified.

D. Shop Drawings: Include details of materials, construction, and finish.
1. Include relationship with adjacent construction.
2. Overall product dimensions, floor plan, elevations, sections, and details.
3. Choice of options with details.

E. Warranty: Sample of special warranty.

F. LEED Submittals:
1. Product Data for Credit MR 4: For products having recycled content, documentation indicating percentages by weight of postconsumer and preconsumer recycled content. Include breakout costs for each product with recycled content.
2. Laboratory Test Reports for Credit IEQ 4: For paints and coatings and adhesives, documentation indicating that products 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."

1.5 QUALITY ASSURANCE

A. Manufacturer Qualifications: Approved manufacturer listed in this section, with minimum five years' experience in the manufacture of toilet compartments.
1. Manufacturers seeking approval must submit the following in accordance with Division 01 requirements:
a. Product data, including test data from qualified independent testing agency indicating compliance with requirements.
b. Samples of each component of product specified.
c. List of successful installations of similar products available for evaluation by Architect.

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

C. Installer Qualifications: Company specializing in performing Work of this section with

minimum three years documented experience with projects of similar scope and complexity.

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

E. 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.

1.6 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.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Do not deliver toilet compartments to site until building is enclosed and HVAC systems are in operation.

B. Deliver toilet compartments in manufacturer's original packaging.

C. Store in an upright condition. and handle in strict compliance with manufacturer's written instructions and recommendations.

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

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 recommended limits.

1.9 WARRANTY

A. Special Manufacturer's Warranty: Manufacturer's form in which manufacturer agrees to repair or replace products that fail in materials or workmanship during the following period after substantial completion:
   1. Stainless Toilet Partitions: Against rust-out: 15 years.
      a. Chrome Hardware: 5 years.
      b. Stainless Steel Hardware: Lifetime.
   2. Powder Coated Steel Toilet Partitions: Against rust-out: 15 years.
   3. Phenolic Core Toilet Partitions: Against delamination: 3 years.
   4. Phenolic Core Toilet Partitions: Euro style. 5 years.
   5. Plastic Toilet Partitions: Against corrosion, breakage, and delamination: 15 years.
   6. Glass Toilet Partitions: 5 years.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer: Bradley Corp., which is located at: W142 N9101 Fountain Blvd.; Menomonee Falls, WI 53051; Toll Free Tel: 800-BRADLEY; Tel: 262-251-6000; Fax: 262-

251-5817; Email:request info (john.Suberlak@bradleycorp.com);
Web:http://www.bradleycorp.com

B. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.

2.2 PERFORMANCE REQUIREMENTS

A. Accessibility Requirements: Comply with requirements of ICC/ANSI 117.1, and with requirements of authorities having jurisdiction.

B. Surface-Burning Characteristics: As determined by testing identical products according to ASTM E 84 by qualified testing agency. Identify products with appropriate markings of applicable testing agency.
1. Phenolic Core Partitions:
   a. Flame-Spread Index: 30.
   b. Smoke-Developed Index: 110.
2. Phenolic Core Partitions: Euro style, LOFT and FLOAT.
   a. ASTM E84 Class B - Flame-spread, smoke developed.
   b. Flame-Spread Index: 216 - 75.
   c. Smoke-Developed Index: 0 - 450.
3. Plastic Toilet Partitions:
   a. Flame-Spread Index: 75. For ASTM E84 Class B combustion requirement.
   b. Flame-Spread Index: 200. For ASTM E84 Class B combustion requirement.
   c. Smoke-Developed Index: 450.
4. Stainless Steel Partitions:
   a. Flame-Spread Index: 0.
   b. Smoke-Developed Index: 0.
5. Steel Powder Coated Partitions:
   a. Flame-Spread Index: 0.
   b. Smoke-Developed Index: 0.

C. Indoor Environmental Quality Certification: Certificate indicating products have been certified under the following programs, or a comparable certification acceptable to Owner:
1. GREENGUARD Indoor Air Quality Certified.
2. GREENGUARD Certified for Children and Schools.

2.3 PHENOLIC CORE TOILET PARTITIONS

A. Materials:
1. Phenolic Core: Compressed cellulose impregnated with phenolic resins. Smooth material, without creases or ripples.
2. Zinc Aluminum Magnesium and Copper Alloy (Zamac): ASTM B 86.
3. Stainless Steel Sheet: ASTM A 240 or A 666, 300 series.
4. Stainless Steel Castings: ASTM A 743/A 743M.
5. Aluminum: ASTM B 221.

B. Toilet Compartment Partitions:
1. Overhead Braced Basis of Design: Bradley, Mills Partitions, Sentinel, Series 400.
2. Floor Anchored Basis of Design: Bradley, Mills Partitions, Sentinel, Series 500.
3. Ceiling Hung Basis of Design: Bradley, Mills Partitions, Sentinel, Series 600.
4. Floor and Ceiling Anchored Basis of Design: Bradley, Mills Partitions, Sentinel, Series 700.

C. Privacy Screens:
1. Floor Anchored Basis of Design: Bradley, Mills Partitions, Floor Braced, Series 500.
2. Floor and Ceiling Anchored Basis of Design: Bradley, Mills Partitions, Floor to Ceiling,

Series 700.

D. Urinal Screens:
   1. Wall Hung with Wing Bracket Basis of Design: Bradley, Mills Partitions, Model No. 2.
      a. Chrome plated wing bracket for mounting to wall.
   2. Floor Anchored Basis of Design: Bradley, Mills Partitions, Model No. 3.
      a. Floor mounted, requiring concrete floor, minimum 3 inches thick for anchoring.
      b. Where indicated on Drawings, modify to become floor-to-ceiling mounted by changing mounting pilaster.
   3. Wall-Hung with Brackets Basis of Design: Bradley, Mills Partitions, Model No. 4.
   4. Government-Flanged with Wing Bracket Basis of Design: Bradley, Mills Partitions, Model No. 5. Provide with continuous bracket in addition to wing bracket.

E. General Construction: Door, Panel, and Pilaster.
   1. Form edges with 15 degree bevel without crown molding. Finish edges smooth.
      a. Exposed Surfaces: No pitting, visible seams, fabrication marks, stains, telegraphing of core material, or other imperfections.
      b. Core Material: Manufacturer's solid resin core of thickness required to provide finished thickness for doors, panels, and pilasters.

F. Door Construction: 3/4 inch (19 mm) thick.

G. Panel Construction: 1/2 inch (13 mm) thick.

H. Pilaster Construction: 3/4 inch (19 mm) thick.
   1. Pilaster with mechanically fastened leveling bar reinforcement with zinc-plated jack bolt for leveling.

I. Headrail: Extruded anodized aluminum headrail with anti-grip profile. Fasteners for attachment to pilaster and stainless steel brackets to secure to wall.

J. Shoes: Height: 4 inches (102 mm) minimum. Material: 304 stainless steel. Finish: No. 4 satin brushed. Concealed retainer clips to attach to pilaster.

K. Urinal-Screen Construction: Matching toilet compartment panel construction

L. Urinal-Screen Post: Manufacturer's standard post design.
   1. Material: Match pilaster thickness and construction.
   2. Material: 1-3/4 inch (44 mm) square aluminum tube with satin finish.
   3. Shoe: Matching pilaster.
   4. Shoe and Sleeve Cap: Matching pilaster.

M. Brackets aka. Fittings:
   1. Stirrup Type: Ear or U-brackets; chrome-plated Zamac.
   2. Stirrup Type: Ear or U-brackets; stainless steel.
   3. Full-Height, Continuous Type: Manufacturer's design; aluminum.
   4. Full-Height, Continuous Type: Manufacturer's design; stainless steel.

N. Phenolic Core Finish: Manufacturer's standard impregnated color.
   1. One color in each room.
   2. Two colors in each room.
   3. Color: As selected by Architect from manufacturer's full range.

O. Hardware:
   1. Standard Duty: Manufacturer's chrome-plated Zamac castings. Corrosion-resistant, tamper-resistant fasteners:
      a. Adjustable Self-Closing Hinges: Holds doors open any angle up to 90 degrees.

Emergency Access: Lift door. Mount with stainless steel through-bolts.

b. Latch and Keeper: Surface-mounted slide latch. Flat rubber-faced combination door strike and keeper. Emergency access provision. Meet requirements for accessibility at accessible compartments.

c. Coat Hook: Combination hook and rubber-tipped stop, sized to prevent door from hitting compartment-mounted accessories. Formed L-shaped hook without stop at outswing doors. Wall Bumper: Where door abuts wall.

d. Door Pull: Standard unit on outside of inswing doors. Pulls on both sides of outswing doors.

2. Heavy Duty: Manufacturer's heavy-duty stainless steel castings, including stainless steel tamper-resistant fasteners:

a. Adjustable Self-Closing Hinges: Holds doors open any angle up to 90 degrees. Emergency Access: Lift door. Mount with stainless steel through-bolts.

b. Latch and Keeper: Emergency access provisions meeting accessibility requirements at accessible compartments.

1) Latch Type: Surface-mounted slide.

2) Door Strike and Keeper Combination, Rubber-Faced: Flat.

c. Coat Hook: Combination hook and rubber-tipped stop, sized to prevent door from hitting compartment-mounted accessories. Formed L-shaped hook without stop at outswing doors. Wall Bumper: Where door abuts wall.

d. Door Pull: Standard unit on outside of inswing doors. Pulls on both sides of outswing doors.

P. Fabrication:

1. Overhead-Braced Units: Manufacturer's corrosion-resistant supports, leveling mechanism, and anchors at pilasters to suit floor conditions. Shoes at pilasters to conceal supports and leveling mechanism.

2. Floor-and-Ceiling Anchored Units: Manufacturer's corrosion-resistant anchoring assemblies with leveling adjustment at tops and bottoms of pilasters. Shoes at pilasters to conceal anchorage.

3. Ceiling-Hung Units: Manufacturer's corrosion-resistant anchoring assemblies with leveling adjustment nuts at pilasters for connection to structural support above finished ceiling. Assemblies that support pilasters from structure without transmitting load to finished ceiling. Sleeve caps at tops of pilasters to conceal anchorage.

4. Floor-and-Ceiling-Anchored Units: Manufacturer's corrosion-resistant anchoring assemblies with leveling adjustment at tops and bottoms of pilasters. Shoes and sleeve caps at pilasters to conceal anchorage.

5. Urinal-Screen Posts: Manufacturer's corrosion-resistant anchoring assemblies.

a. Leveling Adjustment: At bottoms of posts.

b. Leveling Adjustment: At tops and bottoms of posts.

c. Caps, shoes, and covers at posts to conceal anchorage.

6. Door Size and Swings: Unless otherwise indicated;

a. In-Swinging Doors for Standard Toilet Compartments: 26 inch (660 mm) wide.

b. Out-swinging doors with 32 inch (813 mm) wide minimum clear opening for compartments designated as accessible: 36 inch (914 mm) wide

PART 3 EXECUTION

3.1 EXAMINATION

A. Examine work area to verify that measurements, substrates, supports, and environmental conditions are in accordance with manufacturer's requirements to allow installation.

B. Do not begin installation until substrates have been properly constructed and prepared. To manufacturer's requirements.

C. If substrate preparation is the responsibility of another installer, notify Architect in writing 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, approved submittals, and in proper relationship with adjacent construction. Install units rigid, straight, level, and plumb. Secure units in position with manufacturer's recommended anchoring devices.

B. Install toilet partitions and screens in spaces with operating, temperature controlled HVAC systems. Shield partitions and screens from direct sunlight.

C. Clearances: Install with clearances indicated on Drawings. Where clearances are not indicated, allow maximum 1/2 inch (13 mm) between pilasters and panels, and 1 inch (25 mm) between panels and walls.

D. Stirrup Brackets: Secure panels to walls and to pilasters with no fewer than:
   1. Two brackets attached near top and bottom of panel.
   2. Three brackets attached at midpoint and near top and bottom of panel.
   3. Locate wall brackets so holes for wall anchors occur in masonry or tile joints. Align brackets at pilasters with brackets at walls.

3.4 ADJUSTING

A. Hardware Adjustment: Adjust and lubricate hardware according to hardware manufacturer's written instructions for proper operation.
   1. In-Swing Doors: Set hinges to hold doors open approximately 15 degrees from closed position when unlatched.
   2. Out-Swing Doors: Set hinges to return doors to fully closed position.
   3. Privacy Screen Doors: Set hinges to return doors to fully closed position.

3.5 FIELD QUALITY CONTROL

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

B. Manufacturer's Services: Coordinate manufacturer's services in accordance with appropriate sections in Division 01.

3.6 CLEANING AND PROTECTION

A. Remove packaging and construction debris and legally dispose of offsite.

B. Clean partition and screen surfaces with materials and cleansers in accordance with manufacturer's recommendations.

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

END OF SECTION

DIVISION 10: SPECIALTIES
Section 10 51 13: Metal Lockers

PART I - General

1.1 Related Documents

A. Drawings and any general provisions of the Contract for all Bid Items, including General and Supplementary Conditions and Program Manager's specific requirements apply to this section.

1.2 Summary

A. Types of products in this section include the following:

1. Standard storage lockers. (Double-tier 12"w. x 15"d. x 72"h. with legs each – refer to plan for quantity required.

1.3 Submittals

A. Submit the following in accordance with Conditions of Contract.

B. Product data and installation instructions for metal locker units.

1.4 Quality Assurance

A. Uniformity: Provide metal lockers that are standard products of single manufacturer, with interchangeable like parts. Include necessary mounting accessories, fittings, and fastenings.

1.5 Job Conditions

Do not deliver metal lockers until building is enclosed and ready for locker installation. Protect from damage during delivery, handling, storage, and installation.

PART II - PRODUCTS

2.1 Manufacturers

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated in the Work include but not limited to the following:

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1. **HADRIAN – EMPEROR (BASIS OF DESIGN)**
2. Lyon Metal Products, Inc. or an approved equal.
3. Penco, or approved equal.
4. Tiffin Metal Products
5. DSM Law Enforcement Products.
6. Fasco Security Products

2.2 Materials

A. Sheet Steel: Prime, high grade Class I, mild cold-rolled and leveled furniture steel, free from buckle, scale, and surface imperfections.

B. Fasteners: Cadmium, zinc, or nickle plated steel; exposed bolt heads, slotless type; self-locking nuts or lock washers for nuts on moving parts.

C. Equipment: Hooks and hang rods of cadmium-plated or zinc-plated steel.

2.3 Fabrication General

A. Construction: Fabricate lockers square, rigid, and without warp, with metal faces flat and free of dents or distortion. Make exposed metal edges safe to touch. Weld frame members together to form rigid, one-piece structure. Weld, bolt, or rivet other joints and connections. Grind exposed welds flush. Do not expose bolts or rivet heads on fronts of locker doors or frames.

B. Frames: Fabricate of 16-gage channels or 12-gage angles, minimum, with continuous stop/strike formed on verticle members.

C. Finishing: Chemically pretreat metal with degreasing and phophatizing process. Apply baked-on enamel finish to all surfaces, exposed and concealed, except plated and nonferrous metal.

D. Color: Provide lockers units in color(s) selected by Architect from manufacturer's standards. Concealed parts may be manufacturer's standard neutral color.

2.4 Storage Lockers

A. Body: Fabricate back and sides of minimum 24-gage steel, with double-flanged connections extending full height. Form and bottom of not less than 24-gage steel, with flanged edges.

B. Door: One-piece, minimum 16-gage sheet steel, flanged at all edges, constructed to prevent springing when opening or closing. Fabricate to swing 180 degrees.

1. Ventilation: Provide stamped, louvered vents in door face, as follows:
2. Double-tier lockers: Not fewer than six (6), six inch (6) louver openings top of each locker.
3. Hinges: Steel, full-loop, 5-knuckle, tight pin. Weld to inside of frame and secure to door with not fewer than 2 factory-installed fasteners that are completely concealed and tamperproof when door is closed.

C. Recessed Handle and Latch: Positive automatic, prelocking, pry-resistant latch and pull with rubber silencers; chromium-plated, heavy-duty, vandalproof lift-up handle, containing strike and coin operation for padlock; and with latching action as follows:

1. Double-tier lockers: Not less than 2-point latching.

D. Equipment: Furnish each locker with the following items, unless otherwise shown:

1. Double-tier Units: One double-prong hook.

E. Number Plates: Manufacturer's standard etched, embossed, or stamped, nonferrous metal number plates with numerals not less than 3/8 inches high. Number lockers in sequence by Architect. Attach plated to each locker door, near top, centered, with at least 2 fasteners of same finish as number plate.

F. Continuous Closed "2" Type: Minimum 12-gauge cold-rolled steel, fabricated in lengths as long as practicable to enclose base of lockers without additional fastening devices. Factory-finish metal base to match lockers.

G. Separators: Provide horizontal dividers of not less than 16-gage sheet steel between doors of multiple-tier lockers to ensure rigidity.

H. Top Closures: Provide flat top closure and flat cover top filler as required to seal top of lockers.

I. Locks: Provide where required entirely stainless steel, type 304 nickle bearings to interlock with frame upright and shall operate on quarters. Lock shall be convertible to non-coin operation if desired.

PART III - EXECUTION

3.1 Installation

A. Install metal lockers on concrete bases at locations shown in accordance with manufacturer's instructions for plumb, level, rigid, and flush installation.

B. Space fastenings about 48 inches o.c. unless otherwise recommended by manufacturer, and apply through backup reinforcing plates where necessary to avoid metal distortion, using concealed fasteners.

C. Install trim, metal base, flat top units, and metal filler panels, and end panels, using concealed fasteners. Provide flush, hairline joints against adjacent surfaces.

3.2 Adjust and Clean

A. Adjust doors and latches to operate easily without binding.

B. Touch-up marred finishes, but replace units that cannot be restored to factory-finished appearance. Use only materials and procedures recommended or furnished by locker manufacturer.

END OF SECTION 10 51 13

SECTION 11 40 00 – FOOD SERVICE EQUIPMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. All work included under this Section is subject to Architect's provisions covering: Invitation to Bid, Proposal Form, Instructions to Bidders, General Conditions, and all other Supplementary General Conditions as may be added.

1.2 SCOPE OF WORK

A. All specified equipment to be delivered to the job site, freight prepaid, uncrated, assembled, and set in place, ready for final connections, where required, as specified in Divisions 15000 and 16000 of Performance Criteria.

B. Related Sections include the following:
   1. Division 15000 – Mechanical
      a. Provide all water lines, drains, and other necessary work, including final connections to equipment.
      b. Provide all faucets, special switches, valves, traps, labor, and materials to make final connections to the equipment unless specified in this Section.
   2. Division 16000 - Electrical
      a. Provide all electrical utility lines, disconnect switches, and other work, including final connections to equipment.

1.3 DESCRIPTION

A. The extent of the Food Service Equipment is shown on the Drawings, Equipment Schedule, and Specifications of this Section of Performance Criteria. Each model number includes the code *C013 as a suffix. This code is known as the Specifier Identification System. It is not to be removed by the bidders. Its purpose is to identify the specifier to the vendors providing the equipment in the event it is necessary to communicate questions, clarifications, and comments from prior to bidding award through the final purchase. It is to be used on all correspondence, including fax and e-mail, when communicating with manufacturer representatives and factories.

B. The plans indicate the location of the equipment. Slight changes due to the varying dimensions of equipment and wall construction shall be permitted with approval by the Architect.

C. These typed Specifications shall be closely correlated with the Drawings and Schedule. Each complements the other, and cross-reference shall be necessary to fulfill the requirements of these Specifications. All information shown on Drawings and listed in Schedules are to be incorporated as part of the written Specifications.

D. Conflict in Plans and Specifications where changes, alterations, additions, or deductions are necessary, or where exceptions are taken with regard to sizes, locations, and other details shown on plans, shall be reported in writing for a decision by the Architect.

E. The Contractor shall be responsible for seeing that the equipment can be entered through openings before doors and walls are finished.

1.4 WORK BY OTHERS

A. All Plumbing, Steam, Electrical, and Ventilation Work required in connection with this Section shall be done by the other Contractor unless specifically called for in the itemized Equipment

Specifications. Work of others shall include but not be limited to exhaust fans and ductwork associated with the ventilation of hood, roughing-in to points indicated on the mechanical, plumbing, electrical plans, and final connections from rough-in points to various pieces equipment requiring such connections and the supplying of all necessary materials and labor for this work except as specified or scheduled.

B. Tile bases, below the various item, is equipment shall be provided by others.

C. Refrigeration Work to be performed under this Section, except for electrical and plumbing connection to compressors, blower coils controls, etc., provided by others, is as listed in the itemized specifications.

D. All line and disconnect switches, safety cut-outs, control panels, fuse boxes, or other electrical controls, fittings, and connections shall be furnished and installed by others. Starting switches shall be provided by Food Service Equipment Supplier as specified under General Specifications. Those starting switches furnished loose as standardized by Food Service Equipment Supplier manufacturers (other than fabricated items) shall be installed and connected by others.

E. Any sleeves or conduit required for refrigeration and tubing lines shall be furnished and installed by others. Refrigeration alarm system connection by others.

F. FSEC to provide drawings showing locations and sizes of all necessary sleeves for refrigeration lines, drain lines, etc. Actual sleeves & penetrations through building walls and floors to be provided by the General Contractor.

G. The electrical sub-contractor shall make all final connections to the equipment shown on Drawings or specified, and it shall be the responsibility of the electrical sub-contractor to check all equipment to determine where starters, contractors, switches, and other items are required.

H. The plumbing-sub-contractor shall make all final connections to the equipment shown on Drawings or specified, and it shall be the responsibility of the plumbing sub-contractor to provide traps, tailpieces, and fittings, water piping, floor drains, shut off valves, and all other necessary fittings. The Food Equipment Supplier shall provide faucets and all lever waste drains, hose reels with mixing valves to the plumbing sub-contractor for connection and installation.

I. The mechanical sub-contractor shall make final connections to the equipment shown on Drawings or specified, and it shall be the responsibility of the mechanical sub-contractor to provide and install necessary ventilation facilities of sufficient capacity to operate the equipment. Mechanical work to be done by the Food Service Equipment Supplier is listed in the itemized equipment specifications.

J. The General Contractor shall provide openings and passageways of sufficient to sustain the weight of the Food Service Equipment Supplier, and he shall provide openings and passageways of sufficient size to permit the delivery and erection of the equipment to their respective locations without dismantling. Coordination of these openings is critical for the equipment installation. The General Contractor shall provide a depressed floor for drains grates and walk-in cooler/freezer when noted.

1.5 QUALITY ASSURANCE

A. The equipment furnished under this Section to be supplied by one Kitchen Equipment Company.

B. Permits and Certificates:
   1. All laws, codes, ordinances, and regulations bearing on the conduct of the work as drawn and specified shall be complied with and give all notices required. Any work upon which an inspection certificate by local authorities or any governing body is required, such Inspection Certificate or Certificates shall be obtained and paid.

C. Certificates of acceptance or of completion as required and issued by the State, Municipal, or other authorities shall be procured and delivered to the Owners. The Owners may withhold payments that are due or which may become due until the necessary Certificates are obtained and delivered to Owners.

D. All safety devices and all accessories required to comply with regulations and governing codes shall be provided, regardless of whether or not specified or called for in the following technical divisions of the equipment list portion of this Section of Specifications.

E. Applicable Manufacturing Standards:
   1. Special fabrication items shall be manufactured in compliance with Standard No. 2 of the National Sanitation Foundation Testing Laboratory and shall bear the NSF Seal of Approval.

F. Equipment pieces shall be manufactured in compliance with Standards No. 3, 4, 5, 6, 7, 8, 12, 13, 18, 20, 21, 25, 29, 35, 37, 51, 59, and 61, where applicable, of NSF Testing Laboratories and bear the Seal of Approval. This shall include any pending standards, which shall become applicable at the time equipment is delivered.

G. Electrical Equipment shall conform to the standards of the National Electrical Manufacturers Association (NEMA). Equipment shall have conveniently located control switches, enclosed case type, comply with State of Alabama Electric Code, and bear the label from an approved Testing Laboratory. (UL or ETL)

H. Electrically heated and motor-driven fixtures shall be for the current shown in the Mechanical and Electrical plans. These items of equipment shall have mounted motor starters, switches, and controls. All shall be required for each fixture or complete Section of a fixture, or as specified.

I. Miscellaneous Requirements:
   1. Plumbing:
      a. Provide chrome-plated faucets specified certified to NSF standard 61, Section 9. All backsplash-mounted faucets shall be provided with double male nipples having locknuts for rigidly securing the faucet to the backsplash. Nipple-locknut assembly shall be provided under this Section as part of the faucet.
      b. Provide all wastes incorporated in the custom-built fabricated Food Service Equipment. Provide all wastes with a chrome-plated tailpiece.
   2. Electrical:
      a. Interwiring of Food Service Equipment between heating elements, switches, starters, thermostats, outlets, motors, and solenoids shall be complete to the junction box, terminal box, or disconnect switch (should Specifications call for disconnect switch to be provided in this Section).
      b. Provide grounded receptacles specified under item No. of detail Specifications or as shown on the Contract Drawings. All receptacles to be as specified and furnished with stainless steel faceplate.
      c. All electrically operated equipment to be in accordance with the codes, regulations and the laws of the State of Alabama.
   3. Safety:
      a. All Food Service Equipment provided under this Contract shall be manufactured and installed in conformance with the Williams-Steiger Occupational Safety Health Act of 1970.
   4. Coordination:
      a. Coordinate with Project's plumbers and electricians to help cut or knock out holes in the stainless steel tables, counters, and cabinet bases to allow for efficient utility connections to equipment.

J. Contractor shall be held responsible and liable for any and all changes or variances from

Performance Criteria without written authorization from Architect for said changes or variances.

1.6 REFERENCES

A. The Drawings indicate the desired basic arrangement and dimensions of the equipment. Minor deviations may be substituted for approval provided basic requirements are met, and no major rearrangement of service to the equipment is required to affect the proposed alteration. These deviations shall be made without expense to the Owner.

B. Operational and functional tests of the installed equipment are required. Defects or deficiencies shall be corrected to the satisfaction of the Architect or Owners at the expense of the Contractor. Consult the Mechanical and Electrical Connections Drawings and their accompanying Specifications to determine additional requirements of the work and shall cooperate with all trades to ensure a satisfactory installation.

C. The electrical wiring of motors, motor starters, switches, and thermostats of the equipment shall be an integral part of the unit, which shall contain a junction box for connection of electrical service. All motor-driven equipment shall have thermal overload and underload protection.

D. Furnish on each motor-driven appliance or electrically heated unit; a suitable mounted control switch or starter of proper type in accordance with UL or ETL Codes. All controls mounted on vertical surfaces of fixtures shall be set into recessed die-stamped stainless steel cups or otherwise indented to prevent damage to the control switch.

1.7 SUBMITTALS

A. Refer to Division 01 requirements for Submittals

B. FSEC shall verify all field measurements on the job site to ensure proper fitting of all equipment. Within four (4) weeks after award of the Contract, FSEC is to electronically submit PDF format to the Architect for tentative approval, all dimensioned rough-in drawings, equipment submittal brochures, fabrication, and manufacturer's shop drawings.
   1. Partial submittals will not be accepted and will be stamped Revise / Resubmit. The reproduction of original contract documents is not acceptable for use as a submittal.

C. After the initial review of submittal data, revise and resubmit only the datasheet, coversheets, or rough-in and shop drawings that have been modified or revised. The entire submittal is not required for a resubmission. After two resubmissions, the FSEC may be charged a fee for Camacho's continuous re-evaluation. This will be billed as an additional service.

D. Field Measurements
   1. Measurements required to size and place Food Service Equipment are to be verified with on-site field dimensions. Do not rely on or measure drawings for actual on-site dimensions. Dimensions shall be taken from the actual structure, giving given due consideration to any architectural, structural, or mechanical discrepancies that may occur during the construction of the building. Field dimensions shall be taken at the earliest opportunity so as not to delay deliveries. Notify the Food Service Consultant of the earliest date and time. FSEC shall be responsible for the proper fit of all equipment furnished under this Section of the Contract. Gaps over ¼" wide are not acceptable. Weld on of additional closure pieces to comply with gaps requirement is not allowed.

E. Rough-In Drawings:
   1. Prepare and submit rough-in drawings showing all utility rough-ins for kitchen equipment items, including items listed as "Future, Existing-Relocate, and Owner Furnished" (min. scale of 1/4"=1' -0"). Drawings to indicate the size and location of all utilities, floor depressions, raised bases, and wall openings for equipment. The item numbers shown on the rough-in drawings shall be the same as shown on contract documents. Drawings shall

be dimensioned to the stub up or stub out, not to the connection on the equipment. FSEC shall be responsible for conforming to these conditions with equipment and connections thereto. In the event rough-in has been completed before the award of the Contract, the FSEC shall thoroughly investigate and field verify the provided rough-in locations and provide equipment to suit building conditions.

2. Provide equipment floor plan with itemized equipment, to include all utility loads.
3. Electrical rough-in plans are to be dimensioned to indicate the above-finished floor (AFF) height. 90º plug heads are recommended where available. Verify all NEMA plug types, length of cords, equipment connections lengths. Lengths are to be of adequate distance for outlets available and to allow equipment to be placed as shown on contract documents. Show convivence receptacle location.
4. Plumbing rough-in plans are to be dimensioned to indicate the above-finished floor (AFF) height.
5. Ventilation rough-in plans are to be dimensioned and indicate above finished floor (AFF) height.
6. Special conditions plan indicating dimensions and locations of:
   a. Raised pads.
   b. Wall openings for pass through equipment.
   c. Floor drains.
   d. Wall backing.
   e. Recessed or wall-mounted control panels.
7. Provide a refrigeration system schematic piping plan indicating line size, elevation, trap locations, and all specified components required for the refrigeration system installation. The plan is to include equipment and parts provided by the Refrigeration Equipment Manufacturer. Verify refrigeration sizing is proper for line lengths determined by actual field conditions.

F. Equipment Cut Sheets:
   1. The following instructions for Rough-In and Equipment submittal are in addition to any requirements given elsewhere in the Documents.
   2. Prepare and submit equipment cut sheets showing all M'Manufacturer's data sheets describing equipment as specified. Include items listed as Future, Existing-Relocate, and Owner Furnished". The item numbers shown on the submittal shall be the same as shown on contract documents. The equipment cut sheets are to be provided using Auto Quotes format or similar, including coversheets for each item. Where a piece of equipment is used and specified with multiple item numbers assigned, the first item is to be provided with a cover sheet and datasheet. For additional identical items, provide cover sheets only. Provide the following information on the coversheets:
      a. Project name.
      b. FSEC name
      c. Foodservice Consultant name.
      d. Item Number.
      e. Equipment description.
      f. Quantity.
      g. Written specification/description of equipment provided.
      h. Accessories.
      i. Utilities.

G. LEED Submittals: Provide product cut sheets noting ENERGY STAR rating for ENERGY STAR eligible equipment.

H. Shop Drawings
   1. Custom stainless steel equipment, walk-in cooler/freezer and refrigeration, exhaust hoods, utility distribution systems, dishwashers, scullery equipment, and other shop drawings shall be provided on similar size drawing sheets as contract documents. All shop drawings shall be detailed and fully dimensioned to a minimum scale of ¾" = 1' -0". Elevations and

sections to be detailed to a minimum scale of 1-1/2" = 1' -0"). Show all materials, gauges, and methods of construction, including relation to adjoining and related work when cutting or close-fitting is required. Show all reinforcements, wall plates, and backing, anchorage, other work required for a complete installation of fixtures. Drawings to show item number and quantity required for each detail. Omissions and discrepancies on approved drawings shall not relieve the FSEC of providing items as specified and shown on contract drawings.

2. Show adjacent walls, columns, and identify countertop equipment showing item numbers and descriptions.
3. Show all components that are included in fabricated equipment.
4. For equipment with load centers (panels), indicate total electrical calculations, including circuits. Provide an electrical diagram for on-site electricians.
5. Provide color, pattern, or finishes for laminated, fiberglass, paint, or stain for approval by the Architect/Owner.

I. Verify size and weight information of the service ware (glasses, plates, trays, cups, etc.) for self – leveling dispensing, ware washing, and mobile equipment with the Owner. Verify carts, racks, and dollies can fit into fixed equipment (roll-in refrigeration, combi ovens, walk-ins, counters, etc.)

1.8 HANDLING AND STORAGE

A. Protect metal and millwork product finishes from damage during shipping, storage, handling, installation, and construction of other work in the same spaces. Wrap and crate each item of equipment as needed for protection from damage.

B. Cover exposed stainless steel surfaces and millwork surfaces with a self-adhesive protective paper of a type recommended by the metal and millwork manufacturer, and do not remove until work is installed and ready for cleaning and start-up.

1.9 SCHEDULING

A. Schedules and Reports:
   1. Establish earliest and latest job site delivery dates of FSES provided equipment

B. Delivery of Owner furnished equipment for installation shall take place at a time to be determined by Owners, but not necessarily during regular working hours.

1.10 SUBSTITUTION

A. Substitution of Materials and Equipment:
   1. Whenever a material, article, or piece of equipment is identified on the Drawings or in the Specifications by reference to manufacturers' or vendors' names, trade names, catalog numbers, or the like, it is so identified for the purpose of establishing a standard. Any material, article, or piece of equipment of other manufacturers or vendors which shall perform adequately the duties imposed by the general design, shall be considered equally acceptable provided, in the opinion of the Architect, it is of comparable substance, construction, appearance, and function. It shall not be purchased or installed without Architect's written approval. Substitute items shall be submitted to Architect at least ten days before the bid date for review and consideration. Items that are acceptable shall be so stated in an Addendum.

1.11 WARRANTY

A. Workmanship and Guarantees:
   1. Equipment shall be delivered in an undamaged condition upon completion. All workmanship and labor shall be of the best in their respective fields and skilled mechanics of the trades involved.

B. All equipment, as specified in this Section, shall be guaranteed for one year from the time of substantial completion. If, at any time within this warranty period of one year, any equipment that is found to be faulty due to poor workmanship, inferior or defective materials, replace said pieces or correct each defective part at no cost to Owners.
   1. Refrigerated items shall have an additional four-year warranty on the compressor unit. On extended compressor warranty, only labor charges after the first year shall be paid.

C. At the end of the first year, assign extended warranties to Owners on equipment having more than a 1-year warranty from the manufacturer.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Stainless steel shall be austenitic steel alloy and must meet the requirements of the American Iron and Steel Institute Designations for Type 201 and Type 304 Stainless steel. Type 430 Stainless steel (straight chrome - no nickel) shall not be acceptable for custom-built fabricated equipment.

B. All sheets shall have a genuine mill finish of not less than commercial No. 4 on the exposed side and with not less than No. 2 on the unexposed side. All stainless steel shall be stretcher leveled, with a thickness of:
   1. 14 Gauge - Not less than 0.075 Inch
   2. 16 Gauge - Not less than 0.063 Inch
   3. 18 Gauge - Not less than 0.050 Inch
   4. 20 Gauge - Not less than 0.038 Inch

C. Welding shall be of electric arc or oxy-acetylene gas. Welding shall be done with a rod of the same material and full penetration in the entire length of the joint. Welds to be flat without buckles, voids or imperfections. All welds shall be ground flush with adjacent surfaces, conditioned to eliminate dangerous surfaces. All shear cuts or bends that tend to open the surface of the metal shall be rewelded, ground, and polished. All edges are to be ground and filed to eliminate sharp or rough edges.

D. When stainless steel sheets have the grain running in different directions, the sheets shall be so jointed, and welds run and finished in such a manner as to make the sheets appear as one continuous product.

E. Gauges:
   1. All Gauges of metals, where specified, shall be manufactured to the standards set forth by the US. Standard for Sheet Metal.
   2. Unless specified, no material shall be finished lighter than 20 gauge for custom-built fabricated equipment.

F. Sound-Deadening:
   1. The undersides of dish tables shall be sound-deadened to no less than 1/8 inch thick and allowed to dry thoroughly before being finished with two coats of paint.

2.2 FABRICATION

A. Products manufactured by Atlanta Custom Fabricator, Low Temp, and Titan Fabricator, modified to comply with specifications, are acceptable.

B. Metal Tops for Tables:
   1. Shall be constructed of 14 gauge stainless steel with butt joints welded, ground, and polished smooth, resulting in a one-piece top without joints and crevices. Tops are to be

reinforced by means of 14 gauge stainless steel channel irons, 1 inch by 5 inches by 1 inch. Securely fastened to the underside, on 30-inch centers, by studs or welding in a vermin-proof manner. Freestanding ends are to be turned down 1-3/4 inch on bull-nose edge, or 2-inch rolled down the edge with all exposed corners rounded on a 2-1/2 inch radius, or bull-nose corner. Where the table borders on or is adjacent to the wall, there is to be a 4-inch high backsplash with a 1-inch turn back to the wall with welded enclosed ends, unless otherwise specified. See Drawings for typical details.

2. Sleeves:
   a. Where legs, standards, pipes, or pipe chases come through a work area or tabletop, they shall pass through 3-inch high stainless steel sleeves, with the periphery fully welded and polished to match adjacent surfaces.

C. Cabinet Bases:
1. Tops shall be as otherwise specified for metal tops. Tops to be secured to the body by concealed studs welded to the underside of the top. Studs to pass through holes of the body frame and be securely fastened with stainless steel lock washers and nuts. Bases shall be covered back and ends with continuous sheets of 18 gauge stainless steel, folded into the front opening. The cabinet shall have two shelves, one lower and one intermediate. All shelves shall be constructed of 16 gauge stainless steel and shall be fixed type. Bases shall be supported on 8 inches high legs NSF approved stainless steel legs with adjustable stainless steel bullet feet.

D. Sinks:
1. Shall be constructed of 14 gauge stainless steel sheets with all interior corners rounded on at least a 1/2 inch radius. All bottom corners shall be fully coved. All joints to be welded, ground, polished, and made to match adjacent surfaces. Provide each sink with a 2-inch chromium-plated waste outlet with a stainless steel strainer and Chromium Plated tailpiece. Provide with a rotary lever handle waste valve. Wastes are to be depressed in sink bottoms with bottoms inclining down towards the wastes. Waste for pot sink shall be rotary Model No. B-3940-01, T & S Brass; chrome draining, flat strainer with overflow. Wastes for prep sinks shall be rotary Model No. B-3940, T & S Brass, chrome draining or approved Model by Component Hardware Group, Inc and T & S Brass and Bronze Works. The rotary handle shall have front stainless steel bracket support welded to the underside of the sink compartment. Backsplash against wall shall be 8 inches high with 2-inch turned back on a 45-degree angle with enclosed welded ends. Support sinks on legs and gussets, as specified, with braces from front to rear only. See Drawings for backsplash typical details.
2. All backsplashes against the wall shall be sealed with clear Polysulphide Sealant.
3. Each compartment shall have a cut-out on the rear to accommodate overflow assembly provided with drain assembly. Overflow and drain assemblies shall be installed and made watertight.

E. Welded Insert Sinks:
1. Shall be sized and shaped as specified with the same construction as required for other sinks except that no backsplash is required. The sinks are to be welded into tabletops. All welds are to be ground and polished smooth. Provide with wastes as specified for sinks.

F. Drain Tables and Drain Boards:
1. Shall be constructed of 14 gauge stainless steel, size, and shape as specified. They are to be made integral with sinks. The front and free ends are to be constructed with a minimum of 3 inches high 1-1/4 inch to 1-1/2 inch rolled rim on a 180-degree turn, unless otherwise specified. Backsplash shall be the same height as for sinks, same construction, and integrally welded with sink. Construct drain tables or boards to allow liquids to drain into sinks.

G. Welded Undershelves:
1. Undershelves are to be constructed in sections of 18 gauge stainless steel and notched

out to fit around legs and be fixed type. Intermediate shelves are to be constructed of 18 gauge stainless steel and be fixed type construction unless otherwise specified.

H. Welded Overshelves:
1. Overshelves shall be fabricated of 16 gauge stainless steel with edges rolled down or up and supported as specified.
2. Overshelves mounted on tabletops shall be supported by 16 gauge stainless steel tubular legs. Legs are to be securely fastened to the tabletop with fasteners similar to Model No. 1655000272, manufactured by Kason Food Service or an approved manufacturer.

I. Welded Wall Shelves:
1. Wall Shelves shall be fabricated of 16 gauge stainless steel and the same construction as "Overshelves." Secure brackets to the wall with stainless steel screws with expansion shields. Brackets shall be spaced on a maximum of 4 feet on center.
2. Wall shelves shall be supported on the table's extended rear legs with cantilevered supports of 14 gauge stainless steel flag brackets.

J. Hinged Doors:
1. Hinged Doors: All hinged doors shall be double pan construction, 18 gauge stainless steel face, 20 gauge stainless steel rear, unless otherwise specified. Doors shall be a maximum of 1-5/8 inches thick, filled with sound-deadening material. Provide door front with an integral horizontal pull, the full length of the door front.
2. Mount hinged doors on a lift-off welded stainless steel hinges Model No. M74-8000, manufactured by Component Hardware. Products manufactured by Kason Food Service, modified to comply with specifications, are acceptable.
3. All corners shall be welded, ground, and filed smooth.

K. Legs, Braces, Gussets, Feet:
1. The height of tables and other fabricated items of equipment shall be as specified. Legs shall be of 1-5/8 inch outside diameter, stainless steel 16 gauge tube spaced at intervals of 60".
2. Legs are to be braced by 1-5/8 inch outside diameter stainless steel 16 gauge tube undershelf, welded to legs., 10 inches above the floor. Weld all around the periphery at the joint to legs and grind smooth. The braces shall be constructed to form rectangular, or "H" frames, and there shall be at least one brace welded to each leg.
3. Gussets shall be stainless steel NSF approved, cylindrical type with the setscrew. Leg gussets are to be welded to the underside of tables, to reinforcing channels, and the underside of sinks. Gussets shall be Model No. A20-0206 manufactured by Component Hardware Group Inc. or comparable stainless steel gussets manufactured by Standard-Keil Hardware Manufacturing Company, United Showcase, Component Hardware, and Kason Food Service.
4. The feet shall be stainless steel adjustable bullet shape, fully enclosed, tightly fitting the leg. Provide 1 inch up and down adjustment from the central position, at no time exposing any threads. Adjustments are to be easily made by hand without the use of tools. For counters and cabinet bases, the feet shall be the same as for above. Feet having the comparable quality to Component Hardware Group, Inc. and Kason Food Service are approved. Legs for cabinet base shall be 8 inches high, including feet. Freestanding sinks shall be supported on legs and feet as specified, with bracing from front to rear only.
5. Where flanged feet are specified, provide stainless steel flanged feet, which can be securely fastened to the floor. Provide flanged feet, which can be securely fastened to the floor, for any table with plumbing connections.

L. Casters:
1. Plate Type: Provide stainless steel swivel plate casters. Provide with 5-inch Ply-Loc gray wheels with 1-1/4" tread, zerk grease fittings and seals, and a 250-pound capacity. Front casters to have brakes, manufactured by Component Hardware Model No. CMPI-5RPB or

equal manufactured by Jarvis Casters or Colson Caster.

2. Stem Type: Plate Type: Provide stainless steel swivel plate casters. Provide with 5-inch Ply-Loc gray wheels with 1-1/4" tread, zerk grease fittings and seals, and a 250-pound capacity. Front casters to have brakes, manufactured by Component Hardware Model No. CM54-5RPB or equal manufactured by Jarvis Casters or Colson Caster.

M. Rough Edges:
1. All ends and edges which are rough or sharp shall be filed and ground to a safe, smooth finish before delivery to the job site.

2.3 MISCELLANEOUS ACCESSORIES

A. Water Filters:
1. Provide water filters for all ice-making, hot and cold beverage equipment, and all steam boilers. All filter units are to be provided with shut-off valves and quick change filters.
2. Stainless FSEC to ensure water supply is comprehensively tested, and that water filter specified effectively treats water to within manufacturer's water standards.

B. Steel Enclosures:
1. Provide 20 gauge stainless steel trim to fill in wall openings at Pass-Thru Cabinets. Trim will overlap the wall by approximately 2 inches and be within 1/2 inch of cabinets on the side. Provide for a 3 inch opening between the top of the cabinet and wall.

PART 3 - EXECUTION

3.1 DEMONSTRATION AND INSTRUCTION MANUALS

A. At a time as designated by the Architect or Owners, demonstrate the operation, care, and minor maintenance of the equipment supplied. Supply the Architect with an affidavit signed by the Owners or Food Service Manager/Director that this service was rendered and performed.

B. At the start of the operation, devote one full working day to monitoring all equipment operations. The purpose of this day is to ensure equipment is in proper working order at the start.

C. Submit to Owners at time of demonstrations two digital copies (flash drive, CD, or alternate digital device) containing:
1. Instructions.
2. Warranties.
3. Parts list of all bought out items provided under this Section.
4. List of names, addresses, and telephone numbers of local authorized servicing agencies.
5. The videos are to show and detail the proper care and maintenance of equipment.

3.2 FIELD MEASUREMENTS

A. Field measurements shall be made, giving due consideration to any Architectural, Mechanical, or Structural discrepancies which may occur during the construction of the building. No extra compensation shall be allowed for any difference between actual dimensions secured at the job site and the measurements indicated on the Contract Drawings.

B. Any differences that may be found during field measurements shall be submitted to the Architect for consideration before proceeding with the fabrication or supplying of any equipment.

3.3 INSTALLATION

A. Dispose of all packaging and debris per Construction Waste Management Plan.

B. Make arrangements for receiving equipment and make delivery into the building. Do not consign

any equipment to the Owners or to any other Contractor unless written acceptance from them and satisfactory arrangements have been made for the payment of freight and all handling charges.

C. Deliver all equipment into the building, uncrate, assemble, level and repair any damaged or abraded surfaces. Set equipment temporarily in its final locations, permitting the mechanical and electrical trades to take the necessary measures for the connection of the service lines; then move the equipment sufficiently to permit the installation of such service lines. After which, realign equipment level and plumb, making the final erection as shown on the Contract Drawings. All equipment shall be installed so as to eliminate objectionable vibration.

D. The Contractor shall have a competent Food Service Equipment foreman on the premises to assist in furnishing information and supervising the installation of Food Service Equipment under this Section. This foreman shall verify the correct locations for Rough-Ins.

3.4 LUBRICATION - OIL AND GREASE

A. Each moving part in the entire food facility installation shall be provided with suitable bearings with provision for greasing or with grease gun connections suited to a high-pressure gun for distributing heavy oil or light grease. Points of lubrication shall be readily accessible.

3.5 KITCHEN EQUIPMENT

A. It is the responsibility of the foodservice equipment dealer to ensure that any products by manufacturers listed as being acceptable to the original specification, in fact, meet the design and performance specifications of the original specification in every way.

B. The intent of the prime specification is to set forth the level of quality and features/options that are desired by the Owner. All features and options of the prime specification must be included with and product substituted from the list of approved manufacturers.

C. Reference Kitchen Floor Plan for the location of equipment. Obtain equipment of like families through the same manufacturer.

END OF SECTION 11 40 00

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JMR+H Architecture, PC

Project

Oxford Renovations

ITEM 1 - CONVECTION OVEN (1 REQ'D)

Cooking Performance Group Model 351FEC100D Dimensions: 54.125(h) x 38.125(w) x 41.5(d)

Cooking Performance Group FEC-100-D single deck full size electric convection oven is an invaluable asset to any commercial kitchen. It features a temperature range of 150 to 500 degrees Fahrenheit and is powered by an 11 kW heater and built-in convection fan. The fan circulates the heat throughout the cooking chamber for even distribution. The fan is also adjustable between 2 modes, cook and cool down, and 2 speeds, high and low. 3 adjustable wire racks, which can be moved into 11 different positions. Two independent glass doors feature Bakelite handles to provide comfortable heat resistance and to provide visibility while closed. Freestanding, Single Deck, 2 Door, 3 Racks.

1 ea 1 year parts & labor warranty on all electrical equipment, standard

ELECTRICAL

	VOLTS	CYCLE	PHASE	CONN	AFF	NEMA	AMPS	KW	HP	MCA	MOCP
1	240		1				50	11			

ITEM 2 - EXHAUST HOOD (1 REQ'D)

Model CUSTOM Dimensions: 10'-0"(w) x 3'-6"(d)

New Commercial Hood, Refer to Mechanical Drawings for Specifications and Installation. Ensure Code Compliant Curb is Provided.

Approved Equals: Accurex, Captive Air, Larkin

ITEM 2a - FIRE SUPPRESSION SYSTEM (1 REQ'D)

Captive-Aire Model CUSTOM

New Exhaust Hood Fire Suppression System - See Item 2 - Built into hood - included as an integral part of hood. Refer to Mechanical Drawings for Specifications and Installation.

Approved Equals: Accurex, Captive Air, Larkin

ITEM 3 - POT RACK (2 REQ'D)

John Boos Model PRW22 Dimensions: 16(h) x 60(w) x 12(d)

Pot Rack, wall mount, double bar, 60" L, 3/16" x 2" stainless steel flat bar, includes (10) stainless steel double hooks, NSF, CSA-Sanitation

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ITEM 4 - NOT USED

ITEM 5 - THREE (3) COMPARTMENT SINK (1 REQ'D)

John Boos Model 3PB244-2D24 Dimensions: 44.0625(h) x 123.25(w) x 33.5(d)

Pro-Bowl Bakery Sink, 3-compartment, 123-1/4"W x 33-1/2"D x 44-1/16"H overall size, (3) 20"W x 28" front-to-back x 14" deep compartments, (2) 24" left & right drainboards, 10"H boxed backsplash with 45° top and 2" return, (1) set of splash mount faucet holes with 8" centers, 3-1/2" die-stamped drain opening, fully welded front apron, 16/300 stainless steel construction, stainless steel legs, bracing, & adjustable bullet feet, NSF, CSA- Sanitation

2 pr	Model X-0414A Additional pair of 1" faucet holes, per pair (modification)
10 ft	Model SD-1LF Sound Deadening, spray on undercoating (per linear foot)
1 ea	Model BES-L&R Left & Right End Splash, 10"H with boxed end, stainless steel, each
2 ea	Model X-0411A Additional length of drainboard, (per 6" intervals each board) (modification)
1 ea	Model X-0440B Disposal cut-out with collar (collar supplied by KEC) (modification)
1 pr	Model X-0440A Vac breaker holes in backsplash, per pair (modification)
1 ea	Model X-0440DA Stainless steel disposal switch plate, (11" x 17") (modification)
1 ea	Model X-0002F For 1-5/8" round O.D. 16 gauge stainless steel legs & bracing in lieu of 1-5/8" round O.D. 16 gauge stainless steel legs & 1-1/4" round O.D. bracing (per leg set)
1 st	Model CAS05 Flange Feet, adjustable, stainless steel (set of 4)
1 ea	Model X-0414C Over flow hole, rear centered (modification)
1 ea	Model X-0431A Sink heater holes punched (Refer to Schedule for Heater Supply)
3 ea	Model PB-LWB Lever waste support arm bracket
1 ea	Note: Provisions made at factory for installation.

WATER

	HOT SIZE	HOT AFF	HOT GPH	COLD SIZE	COLD AFF	FILTERED SIZE	FILTERED AFF	CONDENSER INLET SIZE	CONDENSER OUTLET SIZE
1									
2									
3									

WASTE

	INDIRECT SIZE	DIRECT SIZE
1	**3-1/2"**	
2	**3-1/2"**	
3	**3-1/2"**	

PLUMBING 1 REMARKS

Compartment 1

PLUMBING 2 REMARKS

Compartment 2

PLUMBING 3 REMARKS

Compartment 3

ITEM 5a - WALL / SPLASH MOUNT FAUCET (1 REQ'D)

T&S Brass Model B-0231

Sink Mixing Faucet, 12" swing nozzle, wall mounted, 8" centers on sink faucet with 1/2" IPS eccentric flanged female inlets, lever handles

1 ea	Model B-0230-K Installation Kit , (2) 1/2" NPT nipples, lock nuts & washers, (2) short "Ell" 1/2" NPT female x male

WATER

	HOT SIZE	HOT AFF	HOT GPH	COLD SIZE	COLD AFF	FILTERED SIZE	FILTERED AFF	CONDENSER INLET SIZE	CONDENSER OUTLET SIZE
1	**1/2"**			**1/2"**					

WASTE

	INDIRECT SIZE	DIRECT SIZE
1		

ITEM 5b - PRE-RINSE FAUCET ASSEMBLY (1 REQ'D)

T&S Brass Model B-0133-ADF12

8" wall mount mixing faucet with polished chrome plated brass body, add-on faucet with compression cartridge and lever handle, 12" swing nozzle with stream regulator outlet, 18" riser, 44" flexible stainlesssteel hose with heat resistant handle, 1.15 GPM spray valve, compression cartridges with spring checks, lever handles, 1/2" NPT female inlets, 6" adjustable wall bracket,spray valve holder and overhead spring.

1 ea Model 018200-40 Replacement Hex Swivel, low-lead, rubber seals, chrome-plated brass, 7/8" NPT, NSF (for pre-rinse hose & spray valves)

1 ea Required Installation Kit , (2) 1/2" NPT nipples, lock nuts & washers, (2) short "Ell" 1/2" NPT female x male

1 ea Model B-0155-LNEZ Add-on Faucet, for Pre-Rinse Units, 12" nozzle, includes 3" nipple

	WATER									WASTE		
	HOT SIZE	HOT AFF	HOT GPH	COLD SIZE	COLD AFF	FILTERED SIZE	FILTERED AFF	CONDENSER INLET SIZE	CONDENSER OUTLET SIZE		INDIRECT SIZE	DIRECT SIZE
1	1/2"			1/2"						1		

ITEM 5c - SINGLE-HOLE FAUCET (1 REQ'D)

T&S Brass Model B-0700/193L

Single Sink Faucet, heavy duty, 1/2" IPS female inlet, 4" wall to center of spout, four arm handle, "C" (or "H")

	HOT SIZE	HOT AFF	HOT GPH	COLD SIZE	COLD AFF	FILTERED SIZE	FILTERED AFF	CONDENSER INLET SIZE	CONDENSER OUTLET SIZE		INDIRECT SIZE	DIRECT SIZE
1				1/2"						1		

ITEM 6 - REACH-IN FREEZER (1 Provided - Existing)

Turbo Air Dimensions: Approx. 78(h) x 51.75(w) x 30.75(d) / T-49

Existing Reach-In Freezer to Remain, Industrial Clean Equipment, Contractor to ensure required Connections are Provided Prior to Installation.

ITEM 7 - REACH-IN REFRIGERATOR (1 Provided - Existing)

Turbo Air Dimensions: Approx. 78(h) x 51.75(w) x 30.75(d) / T-35F-HC

Existing Reach-In Freezer to Remain, Industrial Clean Equipment, Contractor to ensure required Connections are Provided Prior to Installation.

ITEM 8 & 8a - ICE BIN & CUBER (1 Provided - Existing)

Manitowoc

Existing Ice Bin and Cuber to Remain, Industrial Clean Equipment, Contractor to ensure required Connections are Provided Prior to Installation.

ELECTRICAL

(Verify Prior to Installation)

	VOLTS	CYCLE	PHASE	CONN	AFF	NEMA	AMPS	KW	HP	MCA	MOCP
1	115	60	1				14.4				

WATER (Verify Prior to Installation)

	HOT SIZE	HOT AFF	HOT GPH	COLD SIZE	COLD AFF	FILTERED SIZE	FILTERED AFF	CONDENSER INLET SIZE	CONDENSER OUTLET SIZE
1				3/8"					

WASTE

	INDIRECT SIZE	DIRECT SIZE
1	1/2"	

PLUMBING 1 REMARKS

Drain for ice maker

ITEM 9 - RANGE, 60", 6 BURNERS, 24" GRIDDLE (1 Provided - Existing)

Vulcan Approx. Dimensions: 58(h) x 60(w) x 34(d)

Existing Vulcan Stove / Griddle to Remain, Industrial Clean Equipment, Contractor to ensure required Connections are Provided Prior to Installation. If Quick Disconnect isn't provided, please provide DORMONT 175KIT48

ITEM 10 - COFFEE BREWER (1 REQ'D)

BUNN Model 33200.0015 Dimensions: 20.75(h) x 16.25(w) x 8(d)

33200.0015 Coffee Brewer, Bunn VPR Black 12 cup pourover, with 2 brewer warmers, brews 3.8gallons per hour, black plastic SplashGard® funnel, 120V/60/1- ph, 1575w, 13.1 amps, cord attached, UL, NSF

1 ea Equipment discount category net prices must be rounded to the nearest dollar

1 ea Model 06100.0101 06100.0101 Easy Pour® Coffee Decanter, 64 oz., drip-proof, fast-pour-lip, plastic decanter with black plastic handle and stainless steel bottom, 1-pack (call for pricing on orders over 239 decanters)

1 ea Model 06101.0101 06101.0101 Easy Pour® Coffee Decanter, 64 oz., drip-proof, fast-pour-lip, plastic decanter 1 with orange plastic handle and stainless steel bottom, 1-pack (call for pricing on orders over 239 decanters)

ELECTRICAL

	VOLTS	CYCLE	PHASE	CONN	AFF	NEMA	AMPS	KW	HP	MCA	MOCP
1	120	60	1				13.1	1.575			

ITEM 10b - COFFEE DECANTER (1 REQ'D)

BUNN Model 06100.0101

06100.0101 Easy Pour® Coffee Decanter, 64 oz., drip-proof, fast-pour-lip, plastic decanter with black plastic handle and stainless steel bottom, 1-pack (call for pricing on orders over 239 decanters)

ITEM 10c - COFFEE DECANTER (1 REQ'D)

BUNN Model 06101.0101

06101.0101 Easy Pour® Coffee Decanter, 64 oz., drip-proof, fast-pour-lip, plastic decanter 1 with orange plastic handle and stainless steel bottom, 1-pack (call for pricing on orders over 239 decanters)

ITEM 11 - NOT USED

ITEM 12 - DISPOSER (1 REQ'D)

Salvajor Model 200-SA-ARSS-LD

Disposer, Sink Assembly, with sink collar (size to be specified), 2-HP motor, auto reversing magnetic, with start/stop push button, drain/flush/time delay, with safety line disconnect & energy/water saving switch, includes sink collar with stopper, chrome plated vacuum breaker, solenoid with flow control & fixed nozzle, heat treated aluminum alloy housing, UL, CSA, CE

1 ea 208v/60/1-ph, 12.1 amps

1 ea 6-1/2" sink mount

ELECTRICAL

	VOLTS	CYCLE	PHASE	CONN	AFF	NEMA	AMPS	KW	HP	MCA	MOCP
1									2		

WATER

	HOT SIZE	HOT AFF	HOT GPH	COLD SIZE	COLD AFF	FILTERED SIZE	FILTERED AFF	CONDENSER INLET SIZE	CONDENSER OUTLET SIZE
1				1/2"					

WASTE

	INDIRECT SIZE	DIRECT SIZE
1		2"

ITEM 13 - SINK HEATER (1 REQ'D)

Hatco Model 3CS-9 Dimensions: 12.63(h) x 6.75(w) x 16.88(d)

Sink Heater, electric, undersink design, electric operation, stainless steel front, for over 21" square sink area, 9.0 kW, NSF, cULus, Made in USA

1 ea NOTE: Sale of this product must comply with Hatco's Minimum Resale Price Policy; consult order acknowledgement for details

1 ea NOTE: Includes 24/7 parts & service assistance, call 800-558-0607

1 ea 208v/50/60/1-ph, 43.3 amps

1 ea Model TEMP MON Temperature monitor (built-in), (Available at time of purchase only)

1 ea Model SSBB Stainless steel body and base

ELECTRICAL

	VOLTS	CYCLE	PHASE	CONN	AFF	NEMA	AMPS	KW	HP	MCA	MOCP
1								9.0			
2	208	50/60	1				43.3				

WATER

	HOT SIZE	HOT AFF	HOT GPH	COLD SIZE	COLD AFF	FILTERED SIZE	FILTERED AFF	CONDENSER INLET SIZE	CONDENSER OUTLET SIZE
1									

WASTE

	INDIRECT SIZE	DIRECT SIZE
1	3/4"	

ITEM 14 - BOOSTER HEATER, ELECTRIC (1 REQ'D)

Hatco Model S-15 Dimensions: 31.13(h) x 23.63(w) x 22.75(d)

Imperial Booster Heater, Electric, 16-gallon storage capacity, 15-KW, stainless steel front panel, powder-coated silver-gray hammertone body, 6" plastic non-adjustable legs, Castone tank, NSF, cUL, UL

1 ea NOTE: Sale of this product must comply with Hatco's Minimum Resale Price Policy; consult order acknowledgement for details

1 ea NOTE: Includes 24/7 parts & service assistance, call 800-558-0607

1 ea One year parts and labor warranty, ten year warranty on Castone tank, standard

1 ea 208v/60/1-ph, 72 amps

1 ea Model QSSSA-LEGS (QUICK SHIP ACCESSORY) Additional stainless steel adjustable legs, 6" - 7"

1 ea Model SSBB Stainless steel body and base

ELECTRICAL

	VOLTS	CYCLE	PHASE	CONN	AFF	NEMA	AMPS	KW	HP	MCA	MOCP
1								15.0			
2	208	60	1				72.0				

WATER

	HOT SIZE	HOT AFF	HOT GPH	COLD SIZE	COLD AFF	FILTERED SIZE	FILTERED AFF	CONDENSER INLET SIZE	CONDENSER OUTLET SIZE
1	3/4"								

WASTE

	INDIRECT SIZE	DIRECT SIZE
1		

PLUMBING 1 REMARKS

3/4" hot water outlet size

ITEM 15 - AIR CURTAIN (1 REQ'D)

Berner Model SLC07-1042A Dimensions: 8.5(h) x 42.06(w) x 8.5(d)

Sanitation Series Low Profile Air Curtain, 42"L, unheated, (1) 1/5 hp motor, for doors up to 7' high, aluminized steel cabinet, baked-on electrostatic white powdered coated aluminum steel cabinet, interior or exterior mounting, UL, cULus, UL EPH listed for NSF 37, MADE IN USA

- 1 ea Five year parts warranty (unheated units)
- 1 ea Model A 120v/60/1-ph
- 1 ea Model 9503SD020-P Automatic Door Switch, plunger type, activates air door when door opens, single phase only & max. amp draw of 20 amps
- 1 ea Model 505CRD163SJT-03B 3' Cord & Plug factory mounted (120 volt only)
- 1 ea White powder coat exterior finish standard

ELECTRICAL

	VOLTS	CYCLE	PHASE	CONN	AFF	NEMA	AMPS	KW	HP	MCA	MOCP
1									1/5		
2	120	60	1								
3											

ELECTRICAL 3 REMARKS

3' cord & plug

ITEM 16 - EXHAUST HOOD (1 REQ'D)

Model CUSTOM Dimensions: 4'-0"(w) x 3'-0"(d)

New Commercial Hood, Refer to Mechanical Drawings for Specifications and Installation. Ensure Code Compliant Curb is Provided.

Approved Equals: Accurex, Captive Air, Larkin

ITEM 16a - FIRE SUPPRESSION SYSTEM (1 REQ'D)

Captive-Aire Model CUSTOM

New Exhaust Hood Fire Suppression System - See Item 2 - Built into hood - included as an integral part of hood. Refer to Mechanical Drawings for Specifications and Installation.

Approved Equals: Accurex, Captive Air, Larkin

ITEM 17 - EXHAUST (1 REQ'D)

Mechanical Systems Exhaust

New Mechanical Systems Exhaust. Refer to Mechanical Drawings for Specifications and Installation.

ITEM 18 - EXHAUST (1 REQ'D)

Mechanical Systems Exhaust

New Mechanical Systems Exhaust. Refer to Mechanical Drawings for Specifications and Installation.

ITEM 19 - EXHAUST (1 REQ'D)

Mechanical Systems Exhaust

New Mechanical Systems Exhaust. Refer to Mechanical Drawings for Specifications and Installation.

ITEM 20 - WORK TABLE, 30" STAINLESS STEEL TOP (1 REQ'D)

Eagle Group Model BPT-3096SL Dimensions: 35.75(h) x 96(w) x 30(d)

Work Table, 96"W x 30"D x 35-3/4"H overall size, 18 gauge type 430 stainless steel construction. Top features rolled rim on front and rear, with square bend on ends. 15⁄8″-diameter stainless steel legs. 18 gauge stainless steel undershelf. Adjustable stainless steel bullet feet

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ITEM 21 - WIRE SHELVING (4 REQ'D)

Uline Model H-8288Z Dimensions: 86(h) x 36(w) x 24(d)

Coated shelving provides superior chemical resistance. Recommended for wet environments, labs and kitchen coolers. Epoxy coating withstands harsh cleaning, salt and water. Shelves adjust in 1" increments. NSF certified. Zinc Coating.

- 4 ea Model H-1205WH Set of 4 Polyurethane Casters
- 3 ea Model H-6780Z Additional Epoxy Wire Shelves - 36 x 24", Zinc, Includes snap-on plastic shelf supports

---

ITEM 22 - WIRE SHELVING (1 REQ'D)

Uline Model H-8289Z Dimensions: 86(h) x 48(w) x 24(d)

Coated shelving provides superior chemical resistance. Recommended for wet environments, labs and kitchen coolers. Epoxy coating withstands harsh cleaning, salt and water. Shelves adjust in 1" increments. NSF certified. Zinc Coating.

- 1 ea Model H-1205WH Set of 4 Polyurethane Casters
- 1 ea Model H-6781Z Additional Epoxy Wire Shelves - 36 x 24", Zinc, Includes snap-on plastic shelf supports

---

ITEM 23 - WORK TABLE, 30" STAINLESS STEEL TOP (1 REQ'D)

Eagle Group Model T2472SEM-BS Dimensions: 35.75(h) x 72(w) x 24(d)

Work Table, 72"W x 24"D x 35-3/4"H overall size, Top constructed of 14/304 stainless steel, with 21⁄16″ marine counter style edging on all four sides and 41⁄2″ backsplash. Adjustable undershelf constructed of 18/304 stainless steel with marine edge. Top reinforced with stainless steel hat channels and sound deadened. Constructed with uni-lok® patented gusset system with the gussets recessed into the hat channels to reduce lateral movement. 15⁄8″-diameter stainless steel legs, with stainless steel gussets and 1″ stainless steel adjustable bullet feet.

ITEM 24 - REACH-IN FREEZER (1 REQ'D)

Turbo Air Model TSF-23SD-N-(L) Dimensions: 78.25(h) x 27 (w) x 30.375(d)

Freezer, reach-in, one-section, 21.7 cu. ft. exterior LED digital thermometer, door open beep, self-diagnostic monitoring system, hot gas condensate system, automatic fan motor delays, door pressure release, LED interior lighting, self-cleaning condenser device, (1) hinged solid door with recessed handle & lock, (6) PE coated wire shelves, stainless steel front & sides, aluminum interior with stainless steel floor, 4" swivel casters, top mount self-contained compressor, R290 Hydrocarbon refrigerant, 1/2 HP, 115v/60/1-ph, 4.8 amps, NEMA 5-15P, ETL-Sanitation, cETLus, ENERGY STAR®

- 1 ea 3 year parts & labor warranty, standard
- 1 ea Additional 2 year compressor warranty (7 year total), standard
- 1 ea Self-contained refrigeration, standard
- 1 ea Self-cleaning condenser device equipped, standard
- 1 ea Left door hinged left, right door hinged right, standard
- 1 ea Model M726500200 Set of 5” Casters

ELECTRICAL

	VOLTS	CYCLE	PHASE	CONN	AFF	NEMA	AMPS	KW	HP	MCA	MOCP
1	115	60	1	Cord & Plug		5-15P	4.8		1/2		

ITEM 25 - WARMING CABINET (1 REQ'D)

Vulcan Model VP18-1M3ZN Dimensions: 71(h) x 25.25 (w) x 30.75(d)

Warming Cabinet, reach-in, section, Eighteen level heated holding and proofing cabinet, Vulcan Model No. VP18. Heavy duty 20 gauge polished stainless steel cabinet. Four 5" casters, two swivel with brakes, two rigid. Glass door with heavy duty hinges, door latch mechanism and gaskets. Adjustable interior pan supports adjust on 3" centers and are removable for easy cleaning. Accommodates up to eighteen 18" x 26" sheet pans and thirty six 12" x 20" x 2¾" steam table pans. Includes 1⁄2 gallon water pan for proofing, drip trough and removable condensation pan on the bottom of cabinet. Top mounted, control panel includes fan on/off switch, dial thermostat adjustable from ambient to 190°F, cabinet temperature thermometer, and switch to change from proofing to holding. 2,000 total watt heating elements with stainless steel cover, 16.7 total amp draw. One year limited parts and labor warranty. After the first year, 10-year parts warranty on the heating elements. Requires 120 volt single phase power supply. Furnished with top mounted power cord with strain relief and NEMA 5-20 plug. Furnished with ten pairs of tray slides. Includes 1⁄2 gallon water pan for proofing, drip trough and removable condensation pan on the bottom of cabinet.

1 ea 1 year limited parts and labor warranty
1 ea lifetime warranty on the heating elements
1 ea Left door hinged left, right door hinged right, standard

ELECTRICAL

	VOLTS	CYCLE	PHASE	CONN	AFF	NEMA	AMPS	KW	HP	MCA	MOCP
1	120		1	Cord & Plug		5-15P	16.7	2			

ITEM 26 - HAND WASHING SINK (1 REQ'D)

Advance Tabco Model 7-PS-40 Dimensions: 13(h) x 17.25(w) x 15.25(d)

One piece Deep Drawn sink bowl design, Sink bowl is 10" x 14" x 5", Keyhole wall mount bracket, Stainless steel basket drain 1-1/2" IPS, Splash mounted 4" O.C. gooseneck faucet furnished with aerator

2 ea Faucet supply is 1/2" IPS male thread hot and cold
1 ea Heavy gauge type 304 series stainless steel
1 ea Wall mounting bracket is galvanized and of offset design
Includes Faucet
All fittings are brass / chrome plated
Back & Side Splash
K-59 Splash Mt Faucet,
Lever Operated 3 1/2" Basket Drain w/ Overflow & P-Trap
1 ea Wall Bracket
2 ea. 7 3/4" High Welded Left & Right Side Splashes
3 ea One sheet of stainless steel - No Seams
1 ea All sink bowls have a large liberal radii with a minimum dimension of 2" and are rectangular in design for increased capacity.

WATER

	HOT SIZE	HOT AFF	HOT GPH	COLD SIZE	COLD AFF	FILTERED SIZE	FILTERED AFF	CONDENSER INLET SIZE	CONDENSER OUTLET SIZE
1	1/2"			1/2"					

WASTE

	INDIRECT SIZE	DIRECT SIZE
1	1-1/2"	

ITEM 27 - URN STAND—ENCLOSED BASE (1 REQ'D)

Eagle Group Model US3CB Dimensions: 34.5(h) x 48(w) x 22.5625(d)

Eagle Enclosed Base Urn Stand with Sliding Doors. Top to be 16/430 stainless steel with heavy gauge stainless steel body, and full depth stainless steel undershelf. Stainless steel sliding doors on front with recessed handles. Urn trough slopes to a 1″ drain and furnished with a removable stainless steel louvered grate. 15⁄8″ O.D. stainless steel tubular legs with adjustable bullet feet.

1 ea Center Shelf
1 ea Set of Casters
1 ea Spec Master Marine Edge

ITEM 28 - HOT FOOD STEAM TABLE (1 REQ'D)

Volrath Model 38203 Dimensions: 34(h) x 46.5(w) x 29.5(d)

ServeWell® SL Hot Food Tables are designed to hold heated prepared foods at temperatures above the HACCP "danger zone" of 140 F (60 C). The performance standard is measured using the NSF mixture preheated to 165 F (73.9 C). The electric unit will hold the temperature of this product above 150 F (65.6 C). The temperature will be maintained when the food product and inset are used with a standard inset cover, the proper water level is maintained in the well, and the food product is stirred regularly. Thermoset Fiber-Reinforced Resin Wells – self-insulating and maximum energy efficiency. Will not rust or pit. Clean easily by wiping off water deposits from the non-metallic surface. Thermostatic Heat Controls – automatically adjust for water temperature and food volume changes to reduce food waste. Low-water Indicator Light – eliminates guesswork. Dome Heating Elements – use up to 25% less energy and concentrate energy into the wells. Non-stick surface prevents scale build-up for easy cleaning and longer operating life. Wells – Wide no-drip lips on wells keep top surface dry. Equipped with individual brass drain valves.

1 ea 4" (10.2 cm) swivel wheels, two with brakes
3 ea 6" deep food pans
1 ea 46½" x 23½" (118.1 x 59.7 cm) Buffet Breath Guard
1 ea 42½" x 8" (107.95 x 20.32 cm) Customer Side Plate Rest

ELECTRICAL

	VOLTS	CYCLE	PHASE	CONN	AFF	NEMA	AMPS	KW	HP	MCA	MOCP
1	120	30	1			5-30P	17.5	21			

ITEM 29 - REFRIGERATED FOOD STATION MOBILE W/ SOLID BASE (1 REQ'D)

Volrath Model R38733 Dimensions: 35(h) x 60(w) x 24(d)

Vollrath Affordable Portable™ refrigerated cold stations are constructed of vinyl-clad, 20-gauge carbon steel. 60" Granite 3 Pan Electric Mobile Refrigerated Cold Food Station w/ Solid Base. Foamed-in-place polyurethane foam insulation. 4 Pan Refrigerated Cold Station with Cafeteria Breath Guard

1 ea 8' Power Cord
3 ea 6" deep food pans
1 ea enclosed clear acrylic breath guards with 12" (30.5 cm) clearance. NSF2 Certified.
1 ea 24" (61 cm) plate rest with mounting kit
1 ea NF39924 Fits 24" (61 cm) Affordable Portable™

ELECTRICAL

	VOLTS	CYCLE	PHASE	CONN	AFF	NEMA	AMPS	KW	HP	MCA	MOCP
1	120	60	1			5-15P	5.2		1/4		

ITEM 30 - HEATED HOLDING CABINET (1 Provided - Existing)

Metro Approx. Dimensions: 58(h) x 60(w) x 34(d)

Existing Heated Holding Cabinet to Remain, Industrial Clean Equipment, Contractor to ensure required Connections are Provided Prior to Installation.

ITEM 31 - POT RACK, CEILING MOUNTED (1 REQ'D)

Advance Tabco Model SC-72 Dimensions: 16(h) x 72(w) x 12(d)

Pot Rack, ceiling mount, double bar, 72" L, 3/16" x 2" stainless steel flat bar, includes (18) stainless steel double hooks, NSF, CSA-Sanitation

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ITEM 32 - REACH-IN REFRIGERATOR (1 REQ'D)

Turbo Air Model TSR-49SD-N6 Dimensions: 78.25(h) x 54.375(w) x 30.375(d)

M3 Refrigerator, reach-in, two-section, 41.1 cu. ft. exterior LED digital thermometer, door open beep, self-diagnostic monitoring system, hot gas condensate system, automatic fan motor delays, door pressure release, LED interior lighting, self-cleaning condenser device, (2) hinged solid door with recessed handle & lock, (6) PE coated wire shelves, stainless steel front & sides, aluminum interior with stainless steel floor, 4" swivel casters, top mount self-contained compressor, R290 Hydrocarbon refrigerant, 1/5 HP, 115v/60/1-ph, 2.3 amps, NEMA 5-15P, ETL-Sanitation, cETLus, ENERGY STAR®

1 ea 3 year parts & labor warranty, standard
1 ea Additional 2 year compressor warranty (7 year total), standard
1 ea Self-contained refrigeration, standard
1 ea Self-cleaning condenser device equipped, standard
1 ea Left door hinged left, right door hinged right, standard

ELECTRICAL

	VOLTS	CYCLE	PHASE	CONN	AFF	NEMA	AMPS	KW	HP	MCA	MOCP
1	115	60	1	Cord & Plug		5-15P	2.3		1/5		

ITEM 5d- TWIST HANDLE WASTE OUTLET (1 REQ'D)

Encore D50-7100 Waste Twst 1.5.

Twist Lever Handle, 3 Pieces

TRUE MANUFACTURING CO., INC.
U.S.A. FOODSERVICE DIVISION
2001 East Terra Lane • O'Fallon, Missouri 63366-4434 • (636)240-2400
Fax (636)272-2408 • Toll Free (800)325-6152 • Intl Fax# (001)636-272-7546
Parts Dept. (800)424-TRUE • Parts Dept. Fax# (636)272-9471 • www.truemfg.com

Project Name: _____
Location: _____
Item #: _____ *Qty:* _____
Model #: _____

AIA #

SIS #

Model:
T-35F-HC

T-Series:
Reach-In Solid Swing Door -10°F Freezer with Hydrocarbon Refrigerant

T-35F-HC

- True's solid door reach-in's are designed with enduring quality that protects your long term investment.
- Designed using the highest quality materials and components to provide the user with colder product temperatures, lower utility costs, exceptional food safety and the best value in today's food service marketplace.
- Factory engineered, self-contained, capillary tube system using environmentally friendly R290 hydro carbon refrigerant that has zero (0) ozone depletion potential (ODP), & three (3) global warming potential (GWP).
- High capacity, factory balanced refrigeration system that maintains -10°F (-23.3°C) temperatures. Ideal for both frozen foods and ice cream.
- Stainless steel solid doors and front. The finest stainless available with higher tensile strength for fewer dents and scratches.
- Adjustable, heavy duty PVC coated shelves.
- Positive seal self-closing doors. Lifetime guaranteed door hinges and torsion type closure system.
- Automatic defrost system time-initiated, temperature-terminated. Saves energy consumption and provides shortest possible defrost cycle.

Bottom mounted units feature:

- "No stoop" lower shelf.
- Storage on top of cabinet.
- Compressor performs in coolest, most grease free area of kitchen.
- Easily accessible condenser coil for cleaning.

ROUGH-IN DATA

Specifications subject to change without notice.
Chart dimensions rounded up to the nearest ⅛" (millimeters rounded up to next whole number).

Model	Doors	Shelves	Cabinet Dimensions (inches) (mm) W	D	H*	HP	Voltage	Amps	NEMA Config.	Cord Length (total ft.) (total m)	Crated Weight (lbs.) (kg)
T-35F-HC	2	6	39½ 1004	29½ 750	78⅜ 1991	1 N/A	115/60/1	9.6 N/A	5-15P	9 2.74	390 177

* Height does not include 5" (127 mm) for castors or 6" (153 mm) for optional legs.

MADE WITH INNOVATION IN THE USA · 5 YEAR COMPRESSOR WARRANTY USA · c UL us · CLASSIFIED UL EPA · natural refrigerant.

5/20 Printed in U.S.A.

APPROVALS:

AVAILABLE AT:

EXISTING EQUIPMENT

Model:
T-35F-HC

T-Series:
Reach-In Solid Swing Door -10°F Freezer with Hydrocarbon Refrigerant

STANDARD FEATURES

DESIGN
- True's commitment to using the highest quality materials and oversized refrigeration systems provides the user with colder product temperatures, lower utility costs, exceptional food safety and the best value in today's food service marketplace.

REFRIGERATION SYSTEM
- Factory engineered, self-contained, capillary tube system using environmentally friendly R290 hydro carbon refrigerant that has zero (0) ozone depletion potential (ODP), & three (3) global warming potential (GWP).
- High capacity, factory balanced refrigeration system that maintains -10°F (-23.3°C) temperatures. Ideal for both frozen foods and ice cream.
- State of the art, electronically commutated evaporator and condenser fan motors. ECM motors operate at higher peak efficiencies and move a more consistent volume of air which produces less heat, reduces energy consumption and provides greater motor reliability.
- Bottom mounted condensing unit positioned for easy cleaning. Compressor runs in coolest and most grease free area of the kitchen. Allows for storage area on top of unit.
- Automatic defrost system time-initiated, temperature-terminated. Saves energy consumption and provides shortest possible defrost cycle.

CABINET CONSTRUCTION
- Exterior - Stainless steel front. Anodized quality aluminum ends. Corrosion resistant GalFan coated steel back.
- Interior - attractive, NSF approved, clear coated aluminum liner. Stainless steel floor with coved corners.
- Insulation - entire cabinet structure and solid doors are foamed-in-place using a high density, polyurethane insulation that has zero ozone depletion potential (ODP) and zero global warming potential (GWP).
- Welded, heavy duty steel frame rail, black powder coated for corrosion protection.
- Frame rail fitted with 4" (102 mm) diameter stem castors - locks provided on front set.

DOORS
- Stainless steel exterior with clear aluminum liners to match cabinet interior. Doors extend full width of cabinet shell. Door locks standard.
- Lifetime guaranteed recessed door handles. Each door fitted with 12" (305 mm) long recessed handle that is foamed-in-place with a sheet metal interlock to ensure permanent attachment.
- Positive seal self-closing doors. Lifetime guaranteed door hinges and torsion type closure system.
- Magnetic door gaskets of one piece construction, removable without tools for ease of cleaning.

SHELVING
- Six (6) adjustable, heavy duty PVC coated wire shelves 17 ½"L x 22 ⅜"D (445 mm x 569 mm). Four (4) chrome plated shelf clips included per shelf.
- Shelf support pilasters made of same material as cabinet interior; shelves are adjustable on ½" (13 mm) increments.

LIGHTING
- Interior lighting - safety shielded. Lights activated by rocker switch mounted above doors.

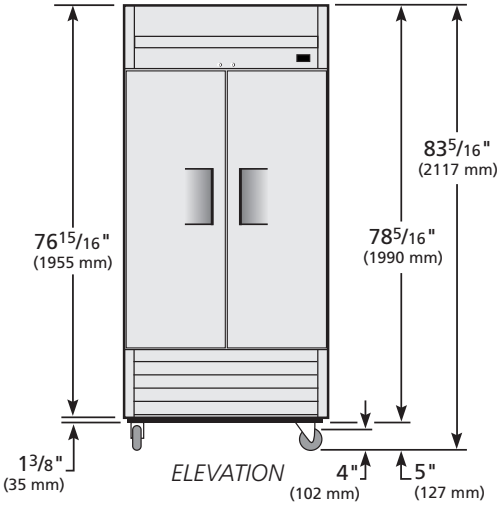
MODEL FEATURES
- Exterior temperature display.
- Evaporator is epoxy coated to eliminate the potential of corrosion.
- Rear airflow guards prevent product from blocking optimal airflow.
- NSF/ANSI Standard 7 compliant for open food product.

ELECTRICAL
- Unit completely pre-wired at factory and ready for final connection to a 115/60/1 phase, 15 amp dedicated outlet. Cord and plug set included.

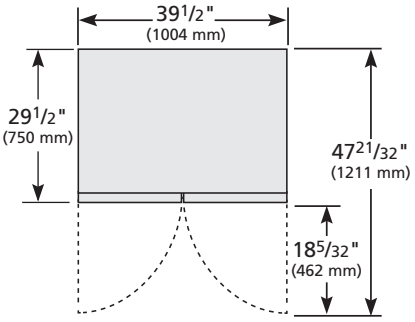
115/60/1
NEMA-5-15R

OPTIONAL FEATURES/ACCESSORIES
Upcharge and lead times may apply.
- ❑ 6" (153 mm) standard legs.
- ❑ 6" (153 mm) seismic/flanged legs.
- ❑ Additional shelves.

PLAN VIEW



ELEVATION



PLAN VIEW

3 YEAR PARTS + LABOR
7 YEAR COMPRESSOR
WARRANTY
(U.S.A. only)

METRIC DIMENSIONS ROUNDED UP TO THE NEAREST WHOLE MILLIMETER

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

Model	Elevation	Right	Plan	3D	Back
T-35F-HC	TFEY18E	TFEY04S	TFEY04P	TFEY183	

TRUE MANUFACTURING CO., INC.
2001 East Terra Lane • O'Fallon, Missouri 63366-4434 • (636)240-2400 • Fax (636)272-2408 • Toll Free (800)325-6152 • Intl. Fax# (001)636-272-7546 • www.truemfg.com

MANITOWOC®

INDIGO® NXT

iT0300 Ice Cube Machine

Models

☐ IDT-0300A ☑ IYT-0300A ☐ IDT-0300W ☐ IYT-0300W

ENERGY STAR

Indigo Series iT-300
Ice Machine on D-400 Bin
*Ice Machine and Bin sold separately

Designed for operators who know that ice is critical to their business, the Indigo®w Series ice machine's preventative diagnostics continually monitor itself for reliable ice production. Improvements in cleanability and programmability make your ice machine easy to own and less expensive to operate.

- **Space-Saving Design** – Measures only 16.5" high (42 cm) and 30" wide (76.20 cm) allowing it to fit on top of dispensers when a low ceiling is an issue.
- **easyTouch® Display**- New icon based touch screen takes the guess work out of owning and operating an ice machine.
- **Programmable Ice Production** – Now its super easy to program your ice machine to be off at certain times of the day to save money with fluctuating electrical rates. Also programmable by daily ice production volume and night time programming.
- **Easy to Clean Foodzone** – Hinged front door swings out for easy access. Removable water-trough, distribution tube, curtain, and sensing probes for fast and efficient cleaning. Select components made with AlphaSan® antimicrobial.
- **Intelligent Diagnostics** – Provide 24 hour preventative maintenance and diagnostic feedback for trouble free operation.
- **Acoustical Ice Sensing Probe** – Unique patented technology allows for reliable operation in challenging water conditions and environments.
- **DuraTech™ Exterior** – Provides superior corrosion resistant above stainless steel. Innovative clear-coat resists fingerprints and dirt making it easier to keep clean.
- **Available LuminIce II Virus and Bacteria Inhibitor**- Controls viruses, bacteria, mold and yeast within the food zone to keep the ice machine clean longer. A new sanitation icon lets you know the operational status.
- **Active sense** - Insures consistent ice harvest in all environmental conditions. This software solution works in conjunction with the acoustical ice sensing probe improving reliability and performance.

COMMERCIAL WARRANTY
ICE MAKER: 3 YEAR PARTS AND LABOR
EVAPORATOR: 5 YEAR
COMPRESSOR: 5 YEAR PARTS 3 YEAR LABOR

Ice Machine Electric

115/60/1 standard.
(208-230/60/1 and 230/50/1 also available.)

Minimum circuit ampacity:

Air-cooled:	115v: 8.8	208-230v: 4.2
Water-cooled:	115v: 7.9	*208-230v: 3.8*

Maximum fuse size:
15 amps *1ph*

Specifications

BTU Per Hour:
4,600 (average), 5,450 (peak)

Refrigerant:
R410A CFS - Free Lowers global warming by 48%

Operating Limits:

- Ambient Temperature Range: 40 to 110 F (4.4 to 43.3 C)
  Water Temperature Range: 40 to 90 F (4.4 to 32.2 C)
- Potable Water Pressure: Min. 20 psi (137.9 kPA) Max. 80 psi (551.1 kPA)
- Condenser Water Pressure: Min. 20 psi (137.9 kPA) Max. 276 psi (551.1 kPA)

Ice Shape

Half Dice
⅜" x 1⅛" x ⅞"
(.95 x 2.86 x 2.22 cm)

Dice
⅞" x ⅞" x ⅞"
(2.22 x 2.22 x 2.22 cm)

CALIFORNIA LOW LEAD QUALIFIED

2110 South 26th Street
Manitowoc, WI 54220

Tel: 1.920.682.0161
Fax: 1.920.683.7589

www.manitowocice.com

WELBILT®

iT0300 Ice Cube Machine

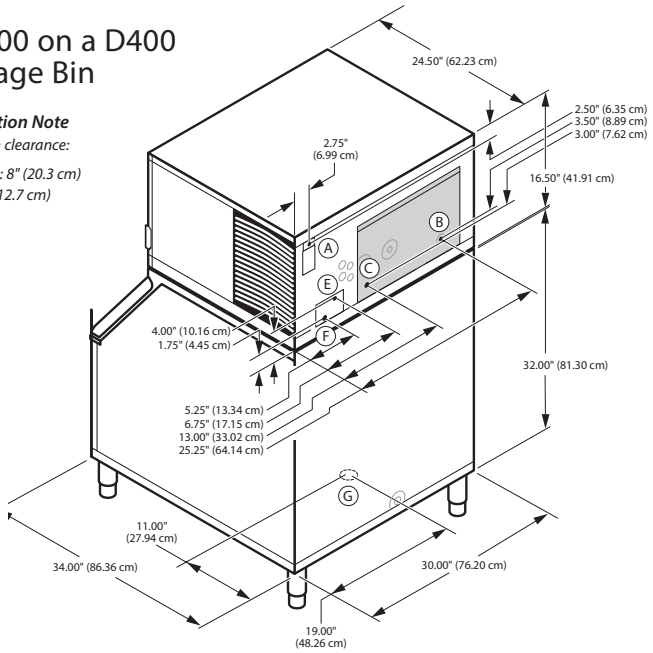
MANITOWOC

EXISTING EQUIPMENT

iT0300 Ice Cube Machine

iT0300 on a D400 Storage Bin

Installation Note
Minimum clearance:
Top/Sides: 8" (20.3 cm)
Back: 5" (12.7 cm)



Ⓐ Electrical Entrance (2) Options
Ⓑ 3/8" (0.95 cm) F.P.T. Water Condenser Inlet (water-cooled units)
Ⓒ 1/2" (1.27 cm) F.P.T. Water Condenser Outlet (water-cooled units)
Ⓓ 1/2" (1.27 cm) Auxillary Base Drain Socket
Ⓔ 3/8" (0.95 cm) F.P.T. Ice Making Water Inlet
Ⓕ 1/2" (1.27 cm) F.P.T. Ice Making Water Drain
Ⓖ 3/4" (1.91 cm) Bin Drain

Space-Saving Designs

	iT0300 D-400 ✓
Height	54.50" 138.43 cm
Width	30.00" 76.20 cm
Depth	34.00" 86.30 cm
Bin Storage	365 lbs. 165.7 kgs.

Height includes adjustable bin legs 6.00" to 8.00", (15.24 to 20.32 cm) set at 6.00" (15.24 cm).

Storage bin rated at application capacity based on 90% of the volume x 33 lbs/ft3 average density of ice.

Specifications

	Model	Ice Shape	Ice Production 24 Hours		Power Usage kWh/100 lbs. @90°Air/70°F	Water Usage/ 100 lbs. 45.4 kgs. of Ice
			70°Air/ 50°F Water	90°Air/ 70°F Water	1 Ph	Potable Water
AIR-COOLED	IDT0300A	dice	305 lbs.	230 lbs.	6.35 ★	20.0 gal
			138 kgs.	194 kgs.		75.7 L
	IYT0300A	half-dice	310 lbs.	230 lbs.	5.99 ★	20.0 gal
			141 kgs.	104 kgs.		75.7 L
WATER-COOLED	IDT0300W	dice	305 lbs.	258 lbs.	4.76	20.0 gal
			138 kgs.	117 kgs.		75.7 L
	IYT0300W	half-dice	310 lbs.	260 lbs.	4.74	20.0 gal
			141 kgs.	118 kgs.		75.7 L
	* Water-cooled Condenser Water Usage / 100 lbs. /45.4 kgs. Of Ice: 140 gal / 564 L . * Water-cooled models are excluded from ENERGY STAR qualification.					

Order ice storage bin separately.
**denotes Energy Star 3.0*

Accessories

LuminIce® II Virus and Bacteria Inhibitor
controls viruses and bacteria inside the ice machine.

External Scoop holder
Protect the ice scoop with the NSF approved versatile scoop holder.

Arctic Pure® Water Filters
Reduces sediment and chlorine odors for better tasting ice.

iAuCS®
schedules and performs routine ice machine cleaning automatically.

2110 South 26th Street
Manitowoc, WI 54220

Tel: 1.920.682.0161
Fax: 1.920.683.7589

www.manitowocice.com
6585C 06/20

WELBILT

Metro C5 6 Series Heated Holding Cabinet

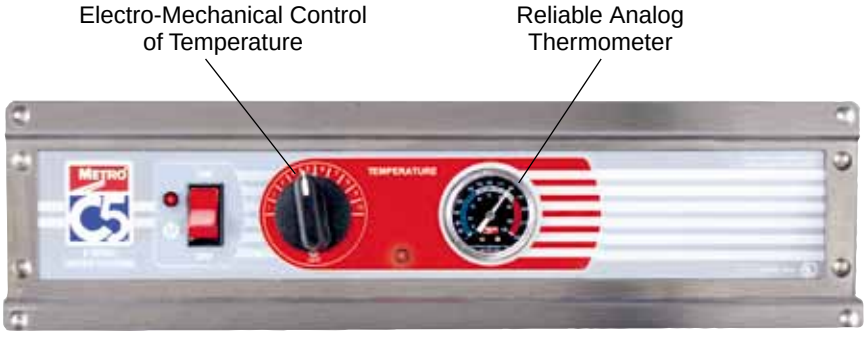
- **Control:** The 6 Series provides control of temperature for safe and hot food. Temperature is displayed on an "always-on" analog thermometer for continuous monitoring of the cabinet temperature, even when turned off or unplugged.
- **Performance:** Rapid heat-up and recovery times are achieved with a thermostatically controlled ducted heating system.
- **Passive Humidity:** An integral water pan system can be used to add humidity to the cabinet environment, improving food quality.
- **Configurations:**
  - Sizes: Full Height, 3/4 Height, 1/2 Height, and Under Counter.
  - Doors: Full Length Solid, Full Length Clear, Dutch Solid, Dutch Clear. All are lift off and field reversible.
  - Reach-In or Pass-Thru (not available on under counter and 3/4 height).
  - Materials: Stainless Steel and Aluminum.
- **Capacity:** Universal slides hold 18"x26" sheet pans or 12"x20" steam table pans on adjustable 1 1/2" increments. Lip load slides hold 18"x26" sheet pans on 1 1/2" increments. Optional Wire Shelf interfaces with universal slide system to accommodate small items and pans.
- **Reliability:** Reliability and durability are designed into C5 from the ground up. High-quality components and robust construction provide a long life of service and worry-free use.
- **Top-Mounted Controls:** Ergonomic user-friendly controls are mounted at the top of the cabinet for easier access, better readability, to prevent damage, and to simplify cleaning.
- **ENERGY STAR:** Full Height, 3/4 Height, and 1/2 Height Stainless Steel reach-in models with solid doors, and 1/2 Height Stainless Steel reach-in models with clear doors are ENERGY STAR rated.

Full Height Dutch Solid Doors

Under Counter Full Solid Door | *1/2 Height Full Clear Door* | *3/4 Height Full Solid Door* | *Full Height Dutch Clear Doors*

6 Series Controller:

- **Temperature:** The easy-to-use dial puts you in control of cabinet temperature.
- **Reliable Readout:** Measures and displays actual cabinet temperature even when the cabinet is off.
- **Analog Thermometer:** An "always-on" thermometer makes it ideal for transport applications.



All Metro Catalog Sheets are available on our website: **www.metro.com**

L02-197
Printed in U.S.A. Rev. 5/18

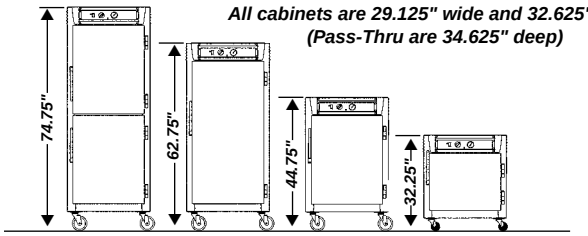
EXISTING EQUIPMENT

Job _____

Metro C5 6 Series Heated Holding Cabinet

We put space to work.

Specifications

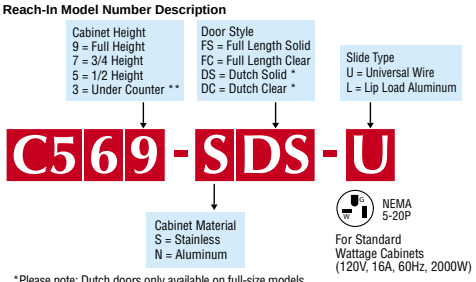


- **Cabinet Material:** Type 304 stainless steel; 20-gauge polished exterior; 22-gauge interior, or .063" aluminum, brushed exterior, natural interior.
- **Insulation:** Full perimeter, 2.5" thick, high-density fiberglass. R Value=9.9
- **Casters:** Four casters with 5" donut neoprene wheel, double ball bearing swivel, ball bearing axle, nickel plated, two with brake. 3" rubber casters on Under Counter models.
- **Doors:**
  - Solid doors are fully insulated, double-panel construction.
  - Clear doors are double-pane, tempered glass. Argon filled with Low-E coating.
- **Hinges:** Self-closing, lift-off, double hinged, with long-life nylon bearings.
- **Gaskets:** High temperature, cabinet mounted, Santoprene gaskets.
- **Latches:** Chrome plated, high-strength magnetic pull latch with lever-action release.
- **Handles:** Four built-in polymer handles.
- **Universal Slides:** Universal wire slides; 1/4" diameter nickel-chrome wire adjustable on 1 1/2" increments. Type 304, stainless steel vertical uprights.
- **Lip Load Slides:** 1 1/2"x1 1/2"x.063" extruded aluminum channel slides on stainless steel vertical uprights.
- **Display and Controls:** Analog cabinet thermometer with independent thermostat control knob.
- **Heat Generation System:** Thermostatically controlled 1950 Watt heating element, ball bearing blower motor, and ducted air system.
- **Cord:** 7 1/2' cord with NEMA 5-20P plug. Cord mounted on top (Full, 3/4, Pass Thru) or back (1/2, Under Counter) can be field reversed.
- **Thermal Performance:** 200° F maximum temperature.
- **Recommended Clearances from Enclosures:** 1 1/2" clearance from cabinet walls on sides and back, and 6" clearance on top. Minimum 1/2" clearance above under counter units is required.
- **Slide Capacities:**

Cabinet Size	Universal Wire Pan Capacity**				Lip Load Pan Capacity
	Slide Pairs Provided	Max.*	18"x26"	12"x20"x2.5" GN 1/1	18"x26"
Full Height	18	37	18	34	35
Full Height Dutch	18	35	17	32	34
3/4 Height	14	29	13	26	27
1/2 Height	8	17	8	16	17
Under Counter	5	10	5	10	10

*Maximum number of slide pairs @ 1 1/2" spacing. Additional slide pairs ordered separately.
**Capacity based on standard number of slides provided.

Reach-In Model Number Description



*Please note: Dutch doors only available on full-size models.
**Please note: Under counter not available in 120V, 2000W.

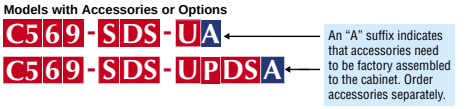
Pass-Thru Model Number Description

*Please note: Pass-Thru is only available on Full and 1/2 Height Models.

Low Watt Model Number Description

Export Model Number Description

Models with Accessories or Options



Options/Accessories

- Small Item Shelf (C5-SHELF-S)
- Universal Slide Pair, Chrome (C5-USLIDEPR-C)
- Universal Slide Pair, Stainless (C5-USLIDEPR-S)
- Flush Door Latch (C5-LATCHFLUSH)*
- Key Locking Door Latch (C5-LATCHLOCK)*
- Travel Latch/Hasp (C59-TRVL)*
- Full Perimeter Bumper (C5-PERMBUMP)
- Control Panel Cover (C5-COVER)
- Bumper & Drip Trough (C5-BUMPDRIP)
- Rear Push Handle (C5-HANDLE)
- 6" Stainless Steel Legs (C5-SSLEGS)
- 6" Casters (C5-6CASTER)
- 5" Rear Rigid Casters (C5-5RDGCSTR)
- Straight Plug, 20 Amp, 120V (C5-STRPLG-20)
- Straight Plug, 15 Amp, 120V (C5-STRPLG-15)
- Twist Lock Plug, 20 Amp, 120V (C5-RTWSTPLG
- Twist Lock Plug, 15 Amp, 120V (C5-RTWSTPLG-15)
- Factory Left Hand Hinging (DD3768)
- Factory Same-Side Pass-thru Door Hinging (C5-SAMESIDE)
- Stainless Steel Universal Slide Upgrades
  - Full Height (C5-USLIDE-9S)
  - 3/4 Height (C5-USLIDE-7S)
  - 1/2 Height (C5-USLIDE-5S)
  - Under Counter (C5-USLIDE-3S)

Please note: (1) door latch must be ordered for each door (i.e.- dutch doors require (2) door latches; pass-thru dutch doors require (4) door latches)

Metro Heated cabinets are for hot food holding applications only.

EXISTING EQUIPMENT

TRUE MANUFACTURING CO., INC.
U.S.A. FOODSERVICE DIVISION
2001 East Terra Lane • O'Fallon, Missouri 63366-4434 • (636)240-2400
Fax (636)272-2408 • Toll Free (800)325-6152 • Intl Fax# (001)636-272-7546
Parts Dept. (800)424-TRUE • Parts Dept. Fax# (636)272-9471 • www.truemfg.com

Project Name: _____
Location: _____
Item #: _____ *Qty:* _____
Model #: _____

AIA #
SIS #

Model:
T-49-HC

T-Series:
Reach-In Solid Swing Door Refrigerator with Hydrocarbon Refrigerant

T-49-HC

- True's solid door reach-in's are designed with enduring quality that protects your long term investment.
- Designed using the highest quality materials and components to provide the user with colder product temperatures, lower utility costs, exceptional food safety and the best value in today's food service marketplace.
- Factory engineered, self-contained, capillary tube system using environmentally friendly R290 hydro carbon refrigerant that has zero (0) ozone depletion potential (ODP), & three (3) global warming potential (GWP).
- High capacity, factory balanced refrigeration system that maintains cabinet temperatures of 33°F to 38°F (.5°C to 3.3°C) for the best in food preservation.
- Adjustable, heavy duty PVC coated shelves.
- Positive seal self-closing doors. Lifetime guaranteed door hinges and torsion type closure system.

Bottom mounted units feature:

- "No stoop" lower shelf.
- Storage on top of cabinet.
- Compressor performs in coolest, most grease free area of kitchen.
- Easily accessible condenser coil for cleaning.

ROUGH-IN DATA

Specifications subject to change without notice.
Chart dimensions rounded up to the nearest ⅛" (millimeters rounded up to next whole number).

Model	Doors	Shelves	Cabinet Dimensions (inches) (mm) W	D	H*	HP	Voltage	Amps	NEMA Config.	Cord Length (total ft.) (total m)	Crated Weight (lbs.) (kg)
T-49-HC	2	6	54⅛ 1375	29½ 750	78⅜ 1991	½ ⅓	115/60/1 230-240/50/1	5.4 2.4	5-15P ▲	9 2.74	450 205

* Height does not include 5" (127 mm) for castors or 6" (153 mm) for optional legs.

▲ Plug type varies by country.

MADE WITH INNOVATION IN THE USA · 5 YEAR COMPRESSOR WARRANTY USA · ENERGY STAR · c UL us · CLASSIFIED · natural refrigerant.

5/20 Printed in U.S.A.

APPROVALS:

AVAILABLE AT:

Model:
T-49-HC

T-Series:
Reach-In Solid Swing Door Refrigerator with Hydrocarbon Refrigerant

STANDARD FEATURES

DESIGN
- True's commitment to using the highest quality materials and over sized refrigeration systems provides the user with colder product temperatures, lower utility costs, exceptional food safety and the best value in today's food service marketplace.

REFRIGERATION SYSTEM
- Factory engineered, self-contained, capillary tube system using environmentally friendly R290 hydro carbon refrigerant that has zero (0) ozone depletion potential (ODP), & three (3) global warming potential (GWP).
- High capacity, factory balanced refrigeration system that maintains cabinet temperatures of 33°F to 38°F (.5°C to 3.3°C) for the best in food preservation.
- State of the art, electronically commutated evaporator and condenser fan motors. ECM motors operate at higher peak efficiencies and move a more consistent volume of air which produces less heat, reduces energy consumption and provides greater motor reliability.
- Bottom mounted condensing unit positioned for easy maintenance. Compressor runs in coolest and most grease free area of the kitchen. Allows for storage area on top of unit.

CABINET CONSTRUCTION
- Exterior - Stainless steel front. Anodized quality aluminum ends. Corrosion resistant GalFan coated steel back.
- Interior - attractive, NSF approved, clear coated aluminum liner. Stainless steel floor with coved corners.
- Insulation - entire cabinet structure and solid door are foamed-in-place using a high density, polyurethane insulation that has zero ozone depletion potential (ODP) and zero global warming potential (GWP).
- Welded, heavy duty steel frame rail, black powder coated for corrosion protection.
- Frame rail fitted with 4" (102 mm) diameter stem castors - locks provided on front set.

DOORS
- Stainless steel exterior with clear aluminum liner to match cabinet interior. Doors extend full width of cabinet shell. Door locks standard.
- Lifetime guaranteed recessed door handles. Each door fitted with 12" (305 mm) long recessed handle that is foamed-in-place with a sheet metal interlock to ensure permanent attachment.
- Positive seal self-closing doors. Lifetime guaranteed door hinges and torsion type closure system.
- Magnetic door gaskets of one piece construction, removable without tools for ease of cleaning.

SHELVING
- Six (6) adjustable, heavy duty PVC coated wire shelves 24 9/16"L x 22 3/8"D (624 mm x 569 mm). Four (4) chrome plated shelf clips included per shelf.
- Shelf support pilasters made of same material as cabinet interior; shelves are adjustable on ½" (13 mm) increments.

LIGHTING
- LED Interior lighting - safety shielded. Lights activated by rocker switch mounted above doors.

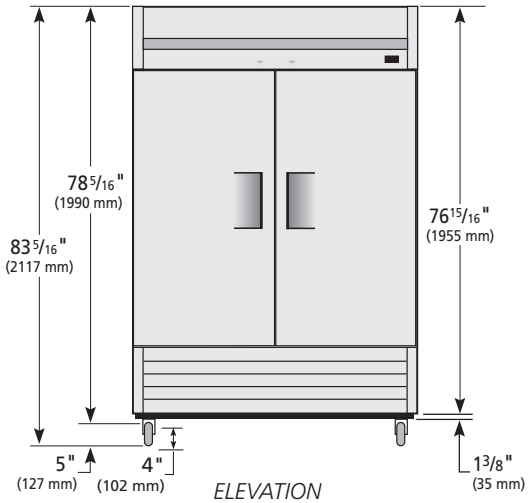
MODEL FEATURES
- Exterior temperature display.
- Evaporator is epoxy coated to eliminate the potential of corrosion.
- NSF/ANSI Standard 7 compliant for open food product.

ELECTRICAL
- Unit completely pre-wired at factory and ready for final connection to a 115/60/1 phase, 15 amp dedicated outlet. Cord and plug set included.

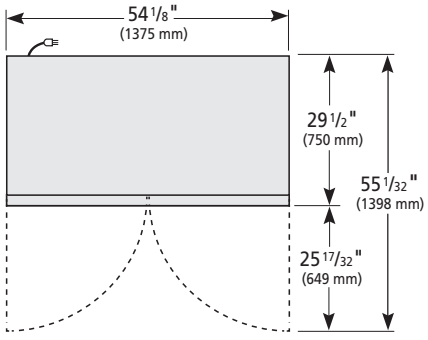
115/60/1
NEMA-5-15R

OPTIONAL FEATURES/ACCESSORIES
Upcharge and lead times may apply.
- ❑ 230 - 240V / 50 Hz.
- ❑ 6" (153 mm) standard legs.
- ❑ 6" (153 mm) seismic/flanged legs.
- ❑ 2½" (64 mm) standard legs.
- ❑ Alternate door hinging (factory installed).
- ❑ Half door bun tray racks. Each holds up to eleven 18"L x 26"D (458 mm x 661 mm) sheet pans (sold separately).
- ❑ Full door bun tray racks. Each holds up to twenty-two 18"L x 26"D (458 mm x 661 mm) sheet pans (sold separately).

PLAN VIEW



ELEVATION



PLAN VIEW

3 YEAR PARTS + LABOR / 7 YEAR COMPRESSOR
WARRANTY
(U.S.A. only)

METRIC DIMENSIONS ROUNDED UP TO THE NEAREST WHOLE MILLIMETER

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

Model	Elevation	Right	Plan	3D	Back
T-49-HC					

TRUE MANUFACTURING CO., INC.
2001 East Terra Lane • O'Fallon, Missouri 63366-4434 • (636)240-2400 • Fax (636)272-2408 • Toll Free (800)325-6152 • Intl. Fax# (001)636-272-7546 • www.truemfg.com

EXISTING EQUIPMENT

Item # _____ C.S.I. Section 11420

RESTAURANT RANGES

VULCAN

63" GAS RESTAURANT RANGE
6 OPEN BURNERS & 24" GRIDDLE

Model V60F-1

- ☐ **V60F-1** 2 Standard Ovens / 24" Griddle / Natural Gas
- ☐ **V60F-2** 2 Standard Ovens / 24" Griddle / Propane

STANDARD FEATURES

- Fully MIG welded frame
- Stainless steel front, backriser, lift-off high shelf
- 6" Stainless steel adjustable legs
- 28,000 BTU/hr open top burners with lift-off heads
- Individual pilot for each burner
- 12" x 12" cast top grates with aeration bowls
- Welded crumb tray
- 35,000 BTU/hr standard oven cavity measures 26¼"d x 22"w x 14½"h
- Oven thermostat adjusts from Low to 500°F
- One oven rack and four rack positions for each oven
- ⅝" thick x 24"w griddle, 30,000 BTU/hr.
- ¾" rear gas connection and gas pressure regulator
- One year limited parts and labor warranty

SPECIFICATIONS

63" wide gas restaurant range, Vulcan Model No. V60F-1. Stainless steel front, sides, backriser, high shelf, oven handle and bullnose. High temperature burner T knobs with set screw. Nickle plated bullet feet. Porcelain door liner and oven bottom. Six 28,000 BTU/hr. cast top burners with lift-off burner heads. Individual pilot for each burner. 12" x 12" cast top grates with aeration bowls. Heavy duty top grates and burner heads. ⅝" thick x 24"w griddle, 30,000 BTU/hr. Compression spring door hinge system for durability. 35,000 BTU/hr. Two standard ovens each measure 26¼"w x 22"d x 14½"h. Thermostat adjusts from Low to 500°F. One oven rack with four rack positions for each oven. ¾" rear gas connection and gas pressure regulator. Total input: 268,000 BTH/hr.

Exterior Dimensions:

32"d x 63"w x 58"h on 6" adjustable legs

ACCESSORIES (Packaged & Sold Separately)

- ☐ Extra oven rack, includes set of of two rack guides
- ☐ Reinforced backriser and high shelf for mounting salamander broiler
- ☐ Set of six casters (two locking)

Side mounted grease trough

VULCAN

a division of ITW Food Equipment Group LLC

P.O. Box 696 ■ Louisville, KY 40201 ■ Toll-free: 1-800-814-2028 ■ Local: 502-778-2791 ■ Quote & Order Fax: 1-800-444-0602

EXISTING EQUIPMENT

RESTAURANT RANGES

VULCAN

63" GAS RESTAURANT RANGE
6 OPEN BURNERS & 24" GRIDDLE

INSTALLATION INSTRUCTIONS

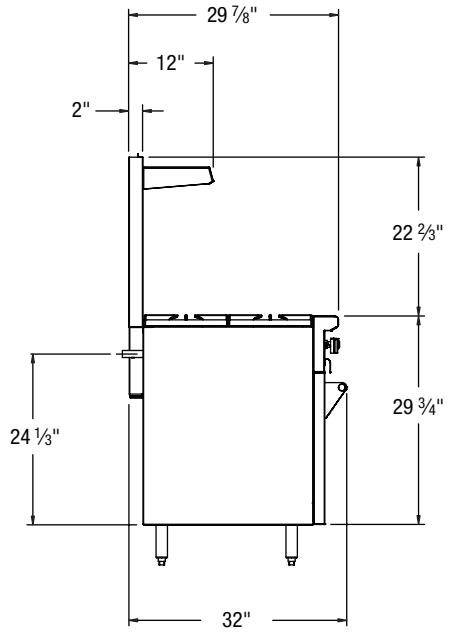
1. A pressure regulator sized for this unit is included. Natural gas 5.0" W.C., propane gas 10.0" W.C.
2. Gas line connecting to range must be ¾" or larger. If flexible connectors are used, the inside diameter must be ¾" or larger.
3. An adequate ventilation system is required for commercial cooking equipment. Information may be obtained by writing to the National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02269, www.NFPA.org. When writing, refer to NFPA No. 96.
4. These units are manufactured for installation in accordance with ANSZ223.1A (latest edition), National Fuel Gas Code. Copies may be obtained from The American Gas Association, 400 N Capitol St. NW, Washington, DC 20001, www.AGA.org.
5. **Clearances**

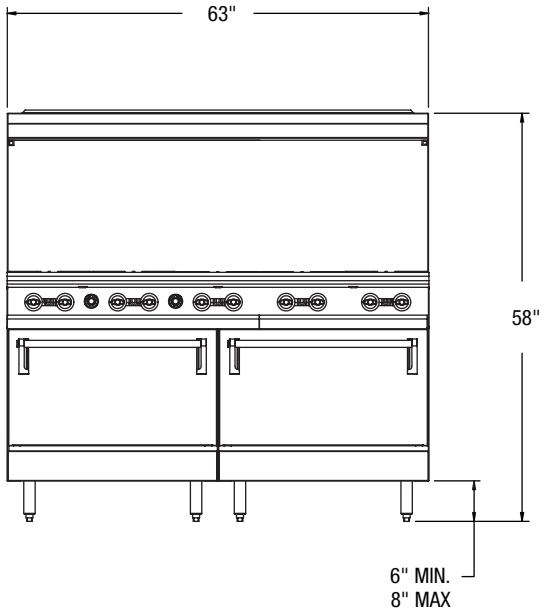
	Rear	Sides
Combustible	6"	10"
Standard Oven Non-combustible	0"	0"
Convection Oven Non-combustible	Min. 4"	0"

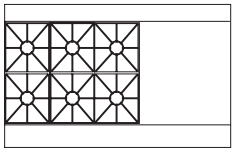
6. For proper combustion, install equipment on adjustable legs or casters provided with unit.

NOTE: In line with its policy to continually improve its product, Vulcan reserves the right to change materials and specifications without notice.

Specify type of gas when ordering.
Specify altitude when above 2,000 feet.





TOP CONFIGURATION	MODEL NUMBER	DESCRIPTION	TOTAL INPUT BTU / HR	SHIPPING WEIGHT LBS / KG
	**V60F-1**	6 Burners / 2 Standard Ovens / 24" Griddle Natural Gas	268,000	815 / 370
	V60F-2	6 Burners / 2 Standard Ovens / 24" Griddle Propane	268,000	815 / 370

This appliance is manufactured for commercial use only and is not intended for home use.

VULCAN
a division of ITW Food Equipment Group LLC

P.O. Box 696 ■ Louisville, KY 40201 ■ Toll-free: 1-800-814-2028 ■ Local: 502-778-2791 ■ Quote & Order Fax: 1-800-444-0602

ADVANCE TABCO
SMART FABRICATION™

STAINLESS STEEL

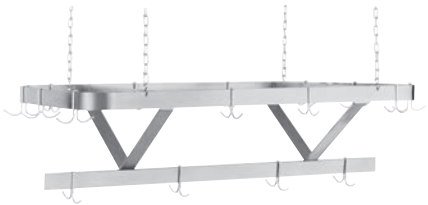
POT RACKS

Item #: _____ Qty #: _____

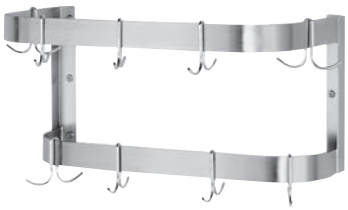
Model #: _____

Project #: _____

CEILING MOUNTED



WALL MOUNTED



SHELF w/ POT RACK

Ceiling Mounted

L	S/S	POWDER COATED	# of Hooks	Wt
36”	SC-36	GC-36	12	42 lbs.
48”	SC-48	GC-48	12	48 lbs.
60”	SC-60	GC-60	18	54 lbs.
72”	SC-72	GC-72	18	60 lbs.
84”	SC-84	GC-84	18	66 lbs.
96”	SC-96	GC-96	18	80 lbs.
108”	SC-108	GC-108	18	86 lbs.
120”	SC-120	GC-120	18	92 lbs.
132”	SC-132	GC-132	18	98 lbs.
144”	SC-144	GC-144	18	104 lbs.

Wall Mounted NSF

L	S/S	POWDER COATED	# of Hooks	Wt
24”	SW-24	GW-24	12	18 lbs.
36”	SW-36	GW-36	12	22 lbs.
48”	SW-48	GW-48	12	26 lbs.
60”	SW-60	GW-60	18	30 lbs.
72”	SW-72	GW-72	18	34 lbs.
84”	SW-84	GW-84	18	44 lbs.
96”	SW-96	GW-96	18	48 lbs.
108”	SW-108	GW-108	18	52 lbs.
120”	SW-120	GW-120	18	56 lbs.
132”	SW-132	GW-132	18	60 lbs.
144”	SW-144	GW-144	18	64 lbs.

Shelf with Pot Rack NSF

L	12” Wide	Wt	15” Wide	Wt	18” Wide	Wt	# of Hooks
36”	PS-12-36	20 lbs.	PS-15-36	25 lbs.	PS-18-36	30 lbs.	6
48”	PS-12-48	30 lbs.	PS-15-48	35 lbs.	PS-18-48	40 lbs.	6
60”	PS-12-60	40 lbs.	PS-15-60	45 lbs.	PS-18-60	50 lbs.	9
72”	PS-12-72	50 lbs.	PS-15-72	55 lbs.	PS-18-72	60 lbs.	9
84”	PS-12-84	60 lbs.	PS-15-84	65 lbs.	PS-18-84	70 lbs.	9
96”	PS-12-96	70 lbs.	PS-15-96	75 lbs.	PS-18-96	80 lbs.	9
108”	PS-12-108	80 lbs.	PS-15-108	85 lbs.	PS-18-108	90 lbs.	9
120”	PS-12-120	90 lbs.	PS-15-120	95 lbs.	PS-18-120	100 lbs.	9
132”	PS-12-132	100 lbs.	PS-15-132	105 lbs.	PS-18-132	110 lbs.	9
144”	PS-12-144	110 lbs.	PS-15-144	115 lbs.	PS-18-144	120 lbs.	9

Units 8 ft. and larger are furnished with three (3) sets of supports brackets.

FEATURES: (Ceiling Mounted)

Ceiling suspension with chain hangers. Optional stainless steel Flat Bar in lieu of Chain available. Use **TA-98**.

MATERIAL:

Flat steel bar is 2” x 1/4”, either stainless steel or powder coated (as specified).

Pot hooks are plated.

24” long chain hangers are plated.

CONSTRUCTION:

All welded stainless steel units are blended to a satin finish.

All powder coated units are coated with FDA approved material.

FEATURES: (Wall Mounted)

Secured to wall by means of bolts through welded brackets. (Hardware not provided)

MATERIAL:

Flat steel bar is 2” x 1/4”, either stainless steel or powder coated (as specified).

Pot hooks are plated.

CONSTRUCTION:

All welded stainless steel units are blended to a satin finish.

All powder coated units are coated with FDA approved material.

FEATURES: (Shelf/Pot Rack)

A dual purpose unit for shelf and utensil storage.

Secured to wall by means of bolts through welded brackets. (Hardware not provided)

MATERIAL:

Flat stainless steel bar is 2” x 1/4”.
Pot hooks are plated.
Type “430” stainless steel shelf.

CONSTRUCTION:

All welded stainless steel units are blended to a satin finish.

ADVANCE TABCO
SMART FABRICATION™
www.advancetabco.com

Customer Service Available To Assist You 1-800-645-3166 8:30 am - 7:00 pm E.S.T.

For Orders & Customer Service:
Email: customer@advancetabco.com or **Fax:** 631-242-6900

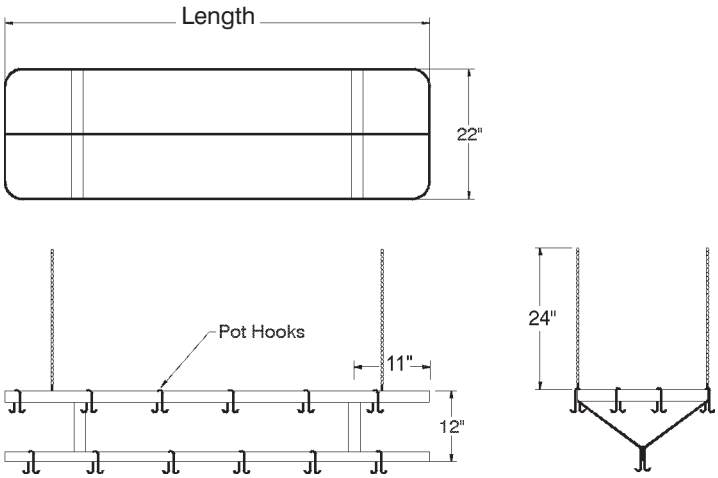
For Smart Fabrication™ Quotes:
Email: smartfab@advancetabco.com or **Fax:** 631-586-2933

DETAILS and SPECIFICATIONS

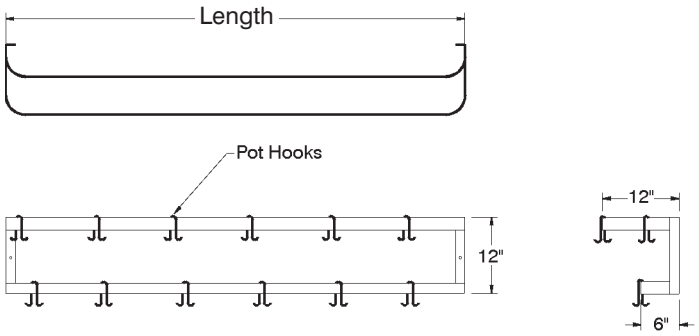
TOL ± .500”

ALL DIMENSIONS ARE TYPICAL

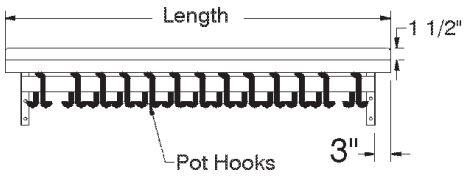
Ceiling Mounted



Wall Mounted



Shelf with Pot Rack



Width	A
12”	10 1/2”
15”	13 1/2”
18”	16 1/2”

Load Capacity = 20 lbs. per sq. ft.

(Evenly Distributed Weight)

ADVANCE TABCO

SMART FABRICATION™

325 Wireless Boulevard, Hauppauge, NY 11788

ADVANCE TABCO is constantly engaged in a program of improving our products. Therefore, we reserve the right to change specifications without prior notice.

SANITATION CERTIFIED LOW PROFILE 7
Ambient (Unheated) Air Curtain
Data Sheet

For Mounting Heights To 7' (insect control)

STANDARD CONSTRUCTION

- EPH Listed per NSF 37
- 8 1/2" high x 8" deep
- 1/5 hp single speed motor(s)
- White or black aluminum exterior cover
  Optional: Custom Color or Stainless)
- Wall & Top Mounting

5 Year Limited Warranty

Made in USA

for outdoor use

FDA RECOMMENDED

USDA COMPLIANCE

Air Curtain Fans for ANSI/NSF37 Customer Entry maximum mounting height is 7'

MODEL	Nozzle Width (in)	Max Vel. at Nozzle (fpm)	Avg. Outlet Vel. (fpm)	Air Volume (cfm)	Outlet Vel. Uniformity	Power Rating (kW)	Motor(s) @ hp	Net Wt. (lbs)
SLC07-1036A	34.62	3,621	1,786	1,020	92%	0.32	1 @ 1/5	35
SLC07-1042A	40.62	3,439	1,773	1,188	93%	0.32	1 @ 1/5	38
SLC07-1048A	46.62	3,274	1,769	1,360	94%	0.32	1 @ 1/5	42
SLC07-1060A	58.13	2,984	1,727	1,656	95%	0.32	1 @ 1/5	49
SLC07-1072A	71.37	2,913	1,725	2,031	95%	0.32	1 @ 1/5	56
SLC07-2084A	83.50	3,439	1,725	2,376	93%	0.64	2 @ 1/5	76
SLC07-2096A	95.50	3,274	1,727	2,720	94%	0.64	2 @ 1/5	84
SLC07-2108A	107.00	3,274	1,709	3,016	94%	0.64	2 @ 1/5	91
SLC07-2120A	118.50	2,984	1,695	3,312	95%	0.64	2 @ 1/5	98

NOTE: Operation at 50 Hz will generate approximately a 17% reduction in air performance.

See sheet EP-300 for amp draws/total load requirements.

MODEL NUMBER CONFIGURATION

SLC07-1 036 A A-SS

Series	# of Motors	Opening Width	Heat	Voltage	Cabinet Finish
SLC07	1, 2	036" - 120"	A=Ambient	*A=120/1/60 B=208/1/60 J=240/1/60 V=220/1/50	White *(leave blank)* BK=Black
					Opt. Cabinet Finish
					SS=Stainless Steel CC=Custom Color

*Suitable for 50hz

make sure to specify Cabinet Finish if other than white

VELOCITY PROFILE: *Model SLC07-1036A*			
Distance from Nozzle (ft)	2	3	4
Core Velocity (fpm)	1986	1643	1407

Sound level measured 10' (3m) from the unit in free field:
1 & 2 motor(s): 54 dBA & 57 dBA

Berner reserves the right to alter specifications without prior notice.

SANITATION CERTIFIED LOW PROFILE 7

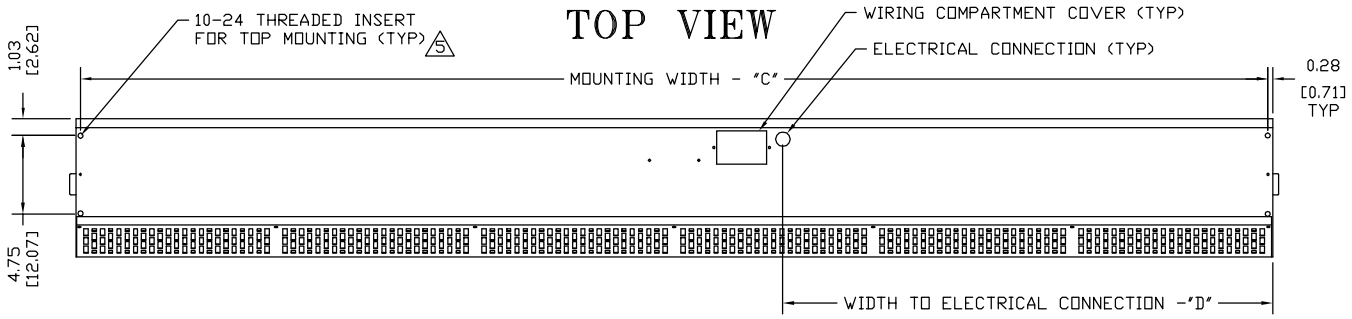
Ambient (Unheated) Air Curtain
Electrical Performance Sheet

MODEL	120/1/60 (voltage code A) MOTOR AMP DRAW = 3.4 each			208/1/60 (voltage code B) MOTOR AMP DRAW = 1.7 each			240/1/60 (voltage code J) or 220/1/50 (voltage code V) MOTOR AMP DRAW = 1.7 each		
	# CKTS	AMPS PER CIRCUIT	BREAKER RATING PER CIRCUIT	# CKTS	AMPS PER CIRCUIT	BREAKER RATING PER CIRCUIT	# CKTS	AMPS PER CIRCUIT	BREAKER RATING PER CIRCUIT
SLC07-1036A SLC07-1042A SLC07-1048A SLC07-1060A SLC07-1072A	1	3.4	15	1	1.7	15	1	1.7	15
SLC07-2084A SLC07-2096A SLC07-2108A SLC07-2120A	1	6.8	15	1	3.4	15	1	3.4	15

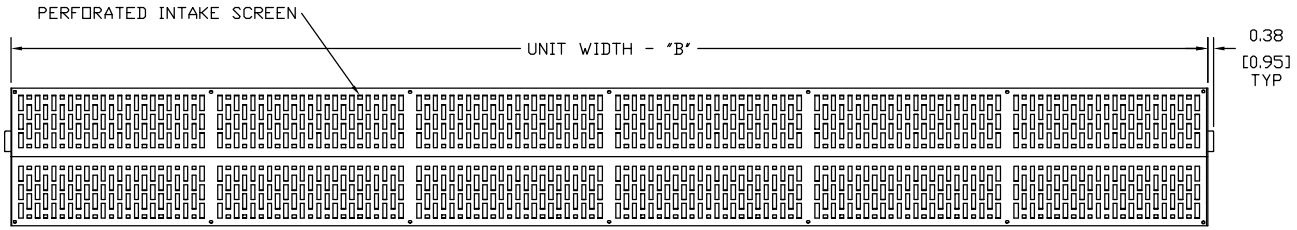
Berner reserves the right to alter specifications without prior notice.

SLC07
AMBIENT SYSTEM
SINGLE SPEED

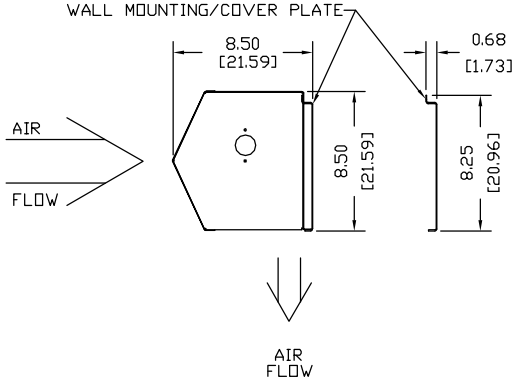
TOP VIEW



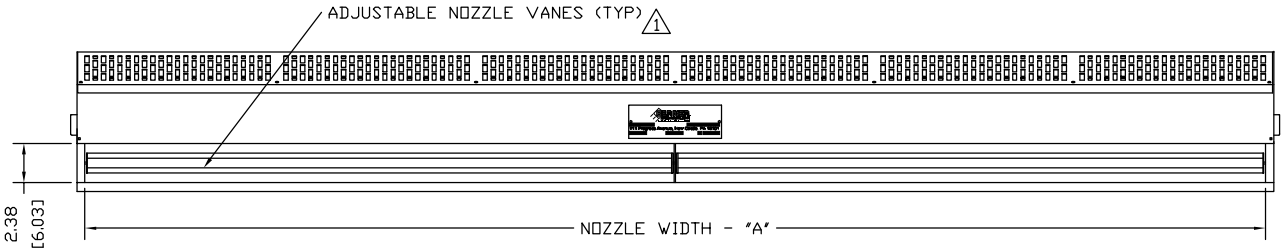
FRONT VIEW



END VIEW



BOTTOM VIEW



MODEL 6	NOZZLE WIDTH "A"	UNIT WIDTH "B"	MOUNTING WIDTH "C"	ELECTRIC WIDTH "D"
SLC07-1036A	34.62 [87.95]	36.06 [91.60]	35.50 [90.17]	11.43 [29.05]
SLC07-1042A	40.62 [103.17]	42.06 [106.83]	41.50 [105.41]	17.06 [43.33]
SLC07-1048A	46.62 [118.41]	48.06 [122.07]	47.50 [120.65]	17.12 [43.50]
SLC07-1060A	58.13 [147.65]	59.55 [151.26]	59.00 [149.86]	23.18 [58.88]
SLC07-1072A	71.37 [181.28]	72.81 [184.94]	72.25 [183.52]	29.50 [74.93]
SLC07-2084A	83.50 [212.09]	84.94 [215.74]	84.38 [214.31]	17.06 [43.33]
SLC07-2096A	95.50 [242.57]	96.94 [246.23]	96.38 [244.79]	17.12 [43.50]
SLC07-2108A	107.00 [271.78]	108.44 [275.44]	107.88 [274.00]	17.12 [43.50]
SLC07-2120A	118.50 [300.99]	119.94 [304.65]	119.38 [303.21]	23.18 [58.88]

CLASSIFIED UL EPH
ANSI/NSF 37
Air Curtain Fans for Customer Entry
12CS

NOTES:

1. AIR CURTAIN MUST BE INSTALLED SO AIR STREAM IS NOT OBSTRUCTED WHEN DEFLECTED 20° TO EITHER SIDE OF ℄.
2. ELECTRICAL CONNECTIONS TO BE FLEXIBLE.
3. FIELD VERIFY DIMENSIONS.
4. ANCHORS TO SUPPORTING STRUCTURE BY OTHERS.
5. ADEQUACY OF SUPPORTING STRUCTURE IS TO BE VERIFIED BY A PROFESSIONAL STRUCTURAL ENGINEER.
6. LETTER "A" IN MODEL NUMBER DESIGNATES AMBIENT UNIT.
7. DIMENSIONS IN INCHES [CENTIMETERS].

PROJECT		
LOCATION		
ARCHITECT		
ENGINEER		
DWG. NO.	SLC07-AMB	TITLE: BERNER MODEL SLC07 CURTAIN AMBIENT SYSTEM
DATE	28MAR2016	
BY	S. Beil	
REPLACES	14OCT14	BERNER INTERNATIONAL CORP. NEW CASTLE,PA.
BY	S. Beil	

VPR w/2 Glass Decanters (1U/1L Warmer)

20.2" x 15.9" x 8.7"
(51.3cm x 40.4cm x 22.1cm)

- Internal components are constructed from stainless steel
- Just pour cold water in top and coffee brews immediately
- Pourover brewer requires no plumbing – completely portable
- SplashGard® funnel deflects hot liquids away from the hand
- Two individually controlled warmers
- 12 Cup Glass Decanters included

Agency:

Specifications

Product #: 33200.0015

Water Access: Not Plumbed

Finish: Black

Funnel: Black Plastic

Warmers: One Upper/ One Lower

Additional Features

2 Glass Decanters Included

Electrical & Capacity

Volts	Amps	Watts	Cord Attached	Plug Type	8oz cups/hr 236ml cups/hr	Input H²O Temp.	Phase	# Wires plus Ground	Hertz
120	13.1	1575	Yes	NEMA 5-15P	62	60°F (15.5°C)	1	2	60

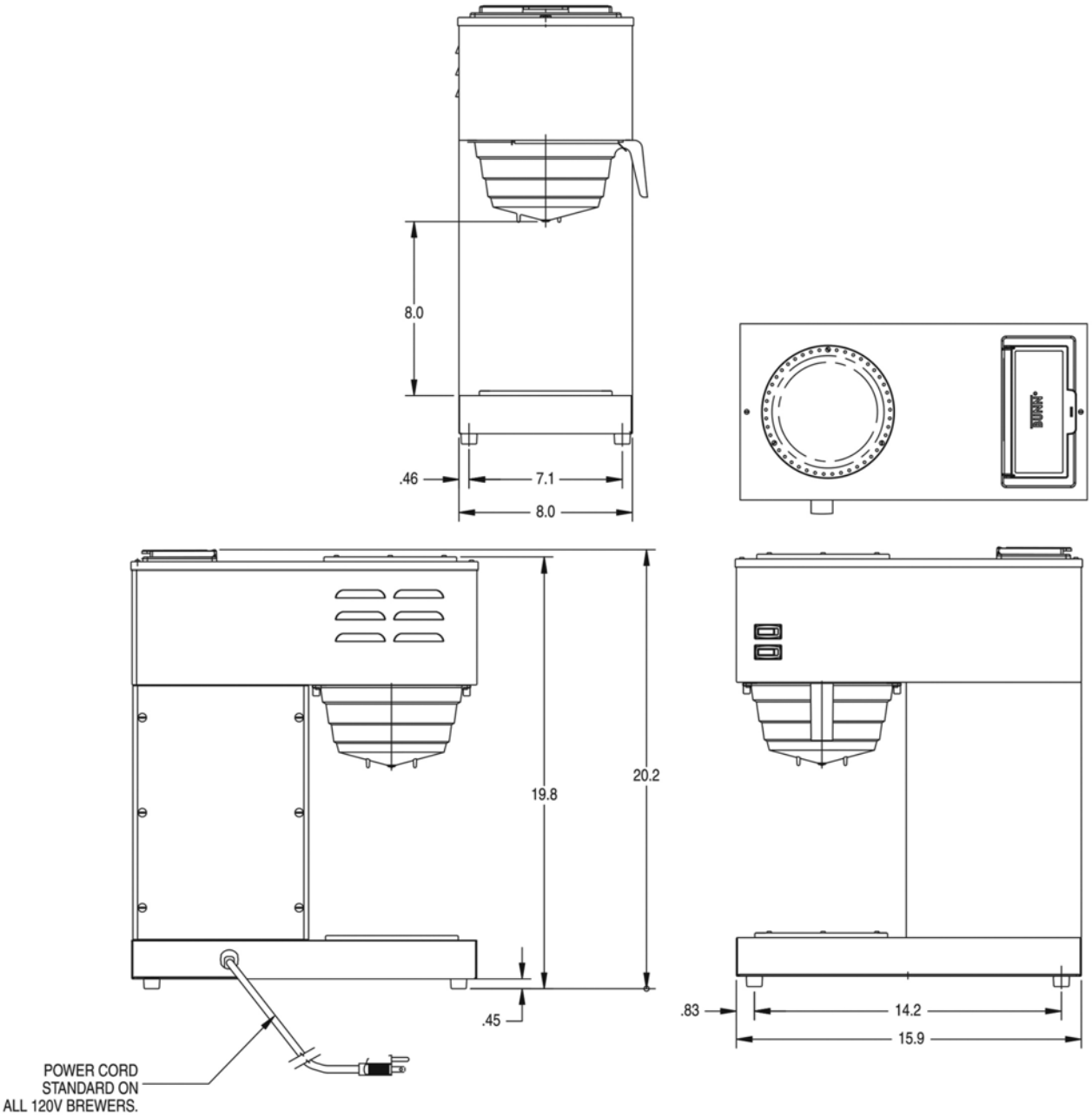
Plumbing Requirements

PSI	kPa	Fitting Supplied	Water Flow Required (GPM)
-	-	-	-

CAD Drawings

2D	Revit	KLC
●		

Created on: 02/06/2019



	Unit			Shipping				
	Width	**Height**	**Depth**	**Width**	**Height**	**Depth**	**Weight**	**Volume**
English	8.7 in.	20.2 in.	15.9 in.	11.6 in.	34.3 in.	18.9 in.	23.600 lbs	4.171 ft³
Metric	22.1 cm	51.3 cm	40.4 cm	29.5 cm	87.1 cm	48.0 cm	10.705 kgs	0.118 m³

Created on: 02/06/2019

Serving & Holding Options: VPR w/2 Glass Decanters (1U/1L Warmer)(33200.0015)

EASY POUR®,(BLK) 1/CS

Product #:06100.0101

EASY POUR®,(BLK) 2/CS

Product #:06100.0102

EASY POUR®,(BLK) 3/CS

Product #:06100.0103

EASY POUR®,(BLK) 6/CS

Product #:06100.0106

EASY POUR®,(BLK) 12/CS

Product #:06100.0112

EASY POUR®,(BLK) 24/CS

Product #:06100.0124

EASY POUR,(BLK) 6-1/CS

Product #:06100.0156

EASY POUR®,(ORN) 1/CS

Product #:06101.0101

EASY POUR®,(ORN) 2/CS

Product #:06101.0102

EASY POUR®,(ORN) 3/CS

Product #:06101.0103

EASY POUR®,(ORN) 6/CS

Product #:06101.0106

EASY POUR,(ORN) 12/CS

Product #:06101.0112

EASY POUR®,(ORN) 24/CS

Product #:06101.0124

DECANTER,GLASS-BLK 12C 24/CS

Product #:42400.0024

DECANTER,GLASS-BLK 12CUP 1PK

Product #:42400.0101

DECANTER,GLASS-BLK 12C 3/CS

Product #:42400.0103

DECANTER,GLASS-ORN 12C 24/CS

Product #:42401.0024

DECANTER, GLASS-ORN 12 CUP 1PK

Product #:42401.0101

DECANTER,GLASS-ORN 12C 3/CS

Product #:42401.0103

Created on: 02/06/2019

CHANNEL MANUFACTURING, INC.

Item No. _____

Quantity _____

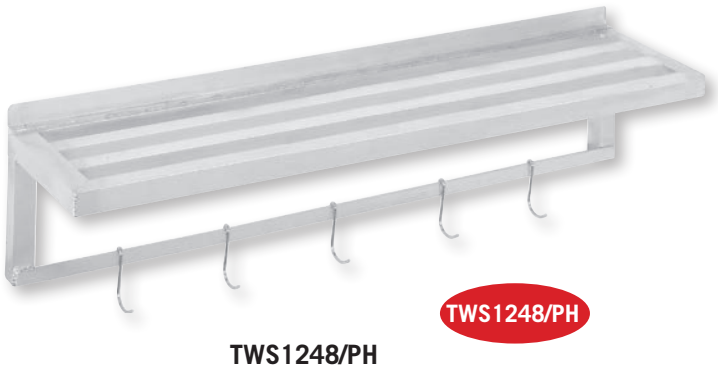
Job Name _____

Spec No. _____

SHELVING

WALL SHELVING

ALUMINUM CONSTRUCTION



TWS1248/PH
Shown with *optional*
Pot Hooks (5) and Bar (**/PH**)

Custom Sizes Available, TWS models only.

Tubular Wall Shelving

Model	W	D	Weight
TWS1236	36"	12"	9
TWS1248	48"	12"	11
TWS1260	60"	12"	13
TWS1836	36"	18"	12
TWS1848	48"	18"	14
TWS1860	60"	18"	16

APPLICATION:
Tubular construction allows for dissipation of condensation.

CONSTRUCTION:
Heavy duty, high tensile extruded aluminum. Type 6063-T5 alloy. Lifetime guarantee against rust.

SPECIFICATIONS:
- Available with Optional Pot Hooks (5) and Bar (as shown); add /PH to model number
- Fully assembled and ready for use

Solid Knock Down Wall Shelving

Model	W	D	Weight
AWS1224	24"	12"	9
AWS1236	36"	12"	11
AWS1248	48"	12"	13

SPECIFICATIONS:
- Furnished with a 1 1/2" downward front edge and 1 1/2" turn up edge on back and 1/2" return edge
- Shipped knock-down, easy to assemble

MADE IN THE USA NSF

Notes

55 Channel Drive • Port Washington, NY11050-2216
8891 NW 102nd Street • Medley, FL 33178
Tel: 516-944-6271 • Fax: 516-944-0625
Toll Free: 866-712-7283
www.channelmfg.com • Email: sales@channelmfg.com

Terms & Conditions

Please visit www.channelmfg.com for pricing.

GENERAL INFORMATION

- All previous Prices & Discounts are hereby withdrawn.
- All prices are F.O.B. factory, Port Washington, NY or Medley, FL.
- All prices shown are in U.S. Dollars.
- Terms: Net 30 days to trade of established credit only.
- All prices, specifications and discounts are subject to change without notice. The manufacturer reserves the right to make changes in design or material when deemed necessary.
- Prices herein do not include Federal Excise, Municipal or other use tax. We cannot assume responsibility for collecting any taxes other than New York State Tax.
- All merchandise leaves the factory in first class condition. Delivery to the carrier relieves us of further responsibility. For damages or loss while in transit, file claim against carrier promptly. Notify factory immediately if shortages occur.
- Delivery is contingent upon fires, strikes, delays in transportation and other causes beyond our control. We will endeavor to ship with requested carrier, but if carrier does not service our factory location, we will make shipment by that method which in our opinion is most practical. Under no circumstances will we assume responsibility for any difference in freight charges or re-evaluated freight charges.
- All orders shipped are Prepaid and Add unless otherwise specified.
- A 10% upcharge of the freight cost will be added as a handling fee for Prepaid and Add shipments.
- All orders subject to acceptance by our office.
- All weights shown are approximate.
- C.O.D. shipments will be made only upon receipt of a 25% Deposit Accompanying Order.
- Minimum charge for any single transaction is $25.00 Net, exclusive of freight or UPS charges.
- No part of this catalog may be reproduced in any manner whatsoever without written permission from CHANNEL MANUFACTURING.
- CHANNEL makes no recommendations concerning the use or suitability of plastic products shown in this catalog. CHANNEL hereby disclaims, and buyer assumes all risks and liabilities for determining the suitability of those products in buyers particular application or use.
- Those items with the symbol [UPS] can be shipped via United Parcel Service.

RETURNS

- All items in this catalog are made to order upon the receipt of a Purchase Order and are NOT ELIGIBLE FOR RETURN.
- Orders for stainless items or special fabricated items are not subject to return or cancellation under any circumstances.
- On return shipments, where orders have been correctly filled out and are not defective, a 25% handling charge will be applied. All incoming freight or express charges must be prepaid and the merchandise properly packed to prevent damage in transit.
- Do not return equipment without written authorization. All requests for eligible returns must be made within 30 days of our invoice date.

CREDIT & COLLECTION

- No merchandise will be shipped to an account which is not up to date in payments.
- If it is necessary to turn over an account for collection, all charges incurred in doing so will be added to the total amount due.

WARRANTY

- CHANNEL warrants its equipment to be free from failure as a result of defects in materials or workmanship for a period of: Two (2) Year Parts, Ninety (90) Days Labor.
- The factory reserves the right to replace or repair said item upon inspection. Transportation charges are not included. Any changes or alterations of original equipment or parts thereof voids this warranty.
- This warranty does not apply under the following conditions: Neglect or abuse of equipment and/or improper installation.
- CHANNEL warrants that the aluminum products listed in their most recent price list (casters and other fastening devices excluded) will not rust or corrode for the period of time the original purchaser owns it, provided the products are used within the following restrictions: 1) Your CHANNEL product must be used for its intended purpose. 2) Your CHANNEL product must not be loaded beyond the product's published capacity. 3) Your CHANNEL product must be cleaned on a periodic basis every 3 to 4 weeks, be cleaned within accepted industry standards with a cleansing agent generally accepted by the industry, and the label directions of the specific cleaning agent must be followed.
- Claims must be filed in writing to: Channel Mfg., 55 Channel Dr., Port Washington, NY, 11050. If requested, the damaged product will be returned to the above address at the owner's expense for inspection and approval.

CHANNEL MANUFACTURING, INC.

55 Channel Drive • Port Washington, NY11050-2216
8891 NW 102nd Street • Medley, FL 33178
Tel: 516-944-6271 • Fax: 516-944-0625 • Toll Free: 866-712-7283
www.channelmfg.com • Email: sales@channelmfg.com

351FEC100D

Cooking Performance Group FEC-100-D Single Deck Standard Depth Full Size Electric Convection Oven - 240V, 1 Phase, 11 kW

Item #: 351FEC100D Qty: _____

Project: _____

Approval: _____ Date: _____

Features

- Includes cook and cool down modes and a temperature range of 150 to 500 degrees Fahrenheit
- Two-speed fan evenly disperses heat throughout cavity for cooking efficiency
- Full size cavity houses 3 adjustable wire shelves
- Independent glass doors with Bakelite handles; porcelain interior sides and floor for easy cleaning
- 240V, 11 kW

Technical Data

Width	38 1/8 Inches
Depth	41 1/2 Inches
Height	54 1/8 Inches
Amps	50 Amps
Phase	1 Phase
Voltage	240 Volts
Door Type	Glass
Installation Type	Freestanding
Number of Decks	Single
Number of Doors	2 Doors
Number of Racks	3
Oven Interior Style	Standard Depth
Pan Type	Full Size Food Pans Full Size Sheet Pans
Plug Type	Hardwire
Power Type	Electric
Size	Full Size
Temperature Range	150 - 500 Degrees F

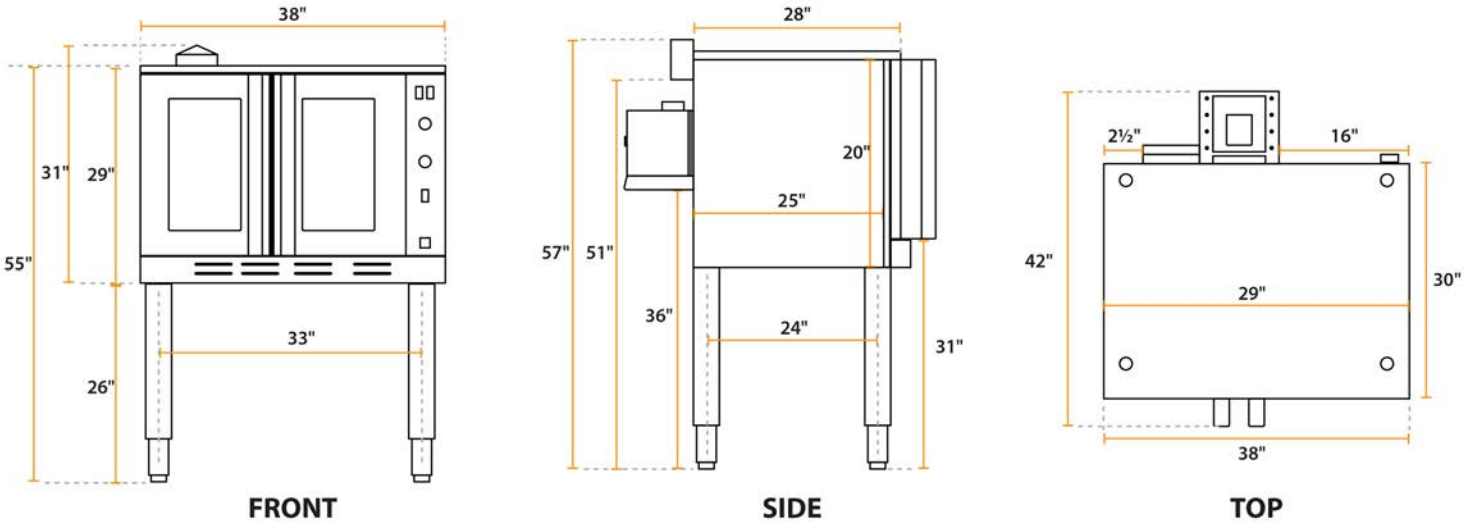
Certifications

ETL US & Canada

ETL Sanitation

Hardwired

Plan View



Notes & Details

Perfect for virtually all cooking and baking applications, this Cooking Performance Group FEC-100-D single deck full size electric convection oven is an invaluable asset to any commercial kitchen. It features a temperature range of 150 to 500 degrees Fahrenheit and is powered by an 11 kW heater and built-in convection fan. The fan circulates the heat throughout the cooking chamber for even distribution. The fan is also adjustable between 2 modes, cook and cool down, and 2 speeds, high and low. This gives you control over the oven's functioning so that it's always operating in the best manner for your tried-and-true or experimental recipes!

The interior of the oven is made with porcelain sides and floor for easy cleaning. It also includes 3 adjustable wire racks, which can be moved into 11 different positions to best suit your menu. Two independent glass doors feature Bakelite handles to provide comfortable heat resistance and to provide visibility while closed. This gives you the ability to check on dishes without releasing hot air and reducing the chamber temperature. This particular oven requires a 240V electrical connection for operation.

⚠ **WARNING:** This product can expose you to chemicals including lead, which are known to the State of California to cause cancer, birth defects, or other reproductive harm. For more information, go to www.p65warnings.ca.gov.

Limited Service **Warranty**

Valid only in the Contiguous United States

1 Year Warranty

Unless otherwise stated, Cooking Performance Group warrants to the original purchaser of new equipment, that covered models of equipment will be free of defects in material and workmanship for a period of 1 year from the original date of delivery, when installed by a qualified installer where applicable. Warranty coverage is valid only in the contiguous United States to commercial customers. A claim under this warranty must be made by the original purchaser within the prescribed time from the original date of delivery of the equipment. Warranty is not transferrable. Coverage cannot be modified after the time of purchase. CPG will repair, replace with equivalent equipment, or refund the purchase price of the equipment at CPG's discretion to satisfy warranty obligation.

Covered Series of Equipment

This warranty applies to all Cooking Performance Group equipment items, when installed by a qualified installer where applicable.

Coverage Limitations

The 1 year warranty does not cover:

- Failure to install and/or use equipment within proper operating conditions specified by Cooking Performance Group. This includes but is not limited to residential, outdoor, or mobile applications.
- Issues related to improper installation. Issues related to the installation are the responsibility of the installer. CPG requires qualified installation on gas equipment.
- Any adjustments necessitated by improper operating conditions.
- Damage caused by improper electrical connection, power failure, or generators.
- Failure to properly maintain the unit including all preventative maintenance and cleaning.
- Installation in non-commercial or residential applications.
- Equipment sold or used outside of the contiguous United States, equipment purchased second-hand, equipment sold by an unauthorized reseller, and equipment expressly sold without warranty coverage.
- Equipment without a valid serial number and proof of purchase, or other way to verify warranty coverage.
- Equipment that has not been used appropriately or was subject to misuse, neglect, abuse, accident, alteration, negligence, damage during transit, delivery or installation, fire, flood, or an act of God.
- Equipment that has been altered, modified, or repaired by anyone other than an authorized service agency outside of preventative maintenance and cleaning.
- Parts deemed by CPG to be normal wear and tear parts, including hoses and select glass, plastic, or rubber components.

This warranty is only valid for straight time labor rates, and does not cover overtime, holiday or off-hour and weekend rates. Cooking Performance Group reserves the right to deny coverage after a service technician is on site based on the above exclusions. Cooking Performance Group and its authorized dealers will not be responsible for service charges incurred on non-warranty matters.

Limited Service **Warranty**

Residential, Food Truck, and Non-Commercial Warranty

Valid only in the Contiguous United States

Cooking Performance Group warrants all new equipment sold to residential, food truck, and other non-commercial customers to be operational upon delivery and proper installation, not to exceed a period of 30 days from the date of delivery. Contact your authorized place of purchase for assistance. A list of authorized dealers can be found at **www.CookingPerformanceGroup.com**

Outside of the Contiguous United States Warranty

Products sold into Alaska, Hawaii, other US territories outside of the Contiguous United States, and Canada shall be backed by replacement coverage on items that can ship via normal parcel shipping, excluding the cost of shipping and any applicable duties, taxes, and fees. Items that must ship LTL/common carrier will be provided replacement parts, excluding labor costs, or reimbursed in the form of store credit for the value of the item only, excluding all applicable shipping costs, duties, taxes, and fees, at the place of purchase following appropriate troubleshooting steps.

For Warranty Inquiries or Service

Please contact Ready Kitchen Warranty via one of the below methods. You will need your model number, serial number, and original order number to make an inquiry or claim. Including pictures or video, as well as a description of the problem, will help to expedite claim processing time.

- Email **help@ReadyKitchenWarranty.com**
- Visit the customer portal at **www.ReadyKitchenWarranty.com**
- Call 717-381-4844

This warranty is only valid for equipment purchased from an authorized dealer. A list of authorized dealers for your state can be found by going to **www.CookingPerformanceGroup.com**

EAGLE GROUP®

Profit from the Eagle Advantage®

Specification Sheet

Item No.: _____

Project No.: _____

S.I.S. No.: _____

Worktables with Backsplash and Stainless Steel Base with Undershelf —Spec-Master® Marine Series

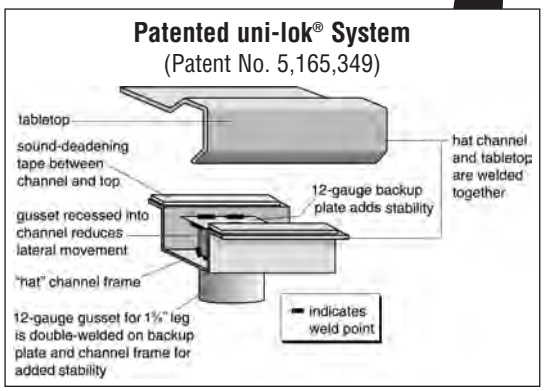
Short Form Specifications

Eagle worktables, Spec-Master® Marine series, model _____. Top constructed of 14/304 stainless steel, with 2⅛″ marine counter style edging on all four sides and 4½″ backsplash. Adjustable undershelf constructed of 18/304 stainless steel with marine edge. Top reinforced with stainless steel hat channels and sound deadened. Constructed with uni-lok® patented gusset system with the gussets recessed into the hat channels to reduce lateral movement. 1⅝″-diameter stainless steel legs, with stainless steel gussets and 1″ stainless steel adjustable bullet feet.

MODELS:

❑ *T2424SEM-BS*	❑ *T24108SEM-BS*	❑ *T3072SEM-BS*	❑ *T3660SEM-BS*
❑ *T2430SEM-BS*	❑ *T24120SEM-BS*	❑ *T3084SEM-BS*	❑ *T3672SEM-BS*
❑ *T2436SEM-BS*	❑ *T24132SEM-BS*	❑ *T3096SEM-BS*	❑ *T3684SEM-BS*
❑ *T2448SEM-BS*	❑ *T24144SEM-BS*	❑ *T30108SEM-BS*	❑ *T3696SEM-BS*
❑ *T2460SEM-BS*	❑ *T3030SEM-BS*	❑ *T30120SEM-BS*	❑ *T36108SEM-BS*
❑ *T2472SEM-BS*	❑ *T3036SEM-BS*	❑ *T30132SEM-BS*	❑ *T36120SEM-BS*
❑ *T2484SEM-BS*	❑ *T3048SEM-BS*	❑ *T30144SEM-BS*	❑ *T36132SEM-BS*
❑ *T2496SEM-BS*	❑ *T3060SEM-BS*	❑ *T3648SEM-BS*	❑ *T36144SEM-BS*

worktable with backsplash and adjustable undershelf



Tabletop
- Patented uni-lok® gusset system (patent #5,165,349): gussets are recessed into hat channel, reducing lateral movement.
- Top reinforced with welded-on hat channel.
- Sound-deadened between top and channels.
- 4½″ (114mm)-high 90° backsplash with 1″ (25mm) turn at 90°.
- Marine counter edge on front and ends.
- 14 gauge type 304 polished stainless steel.

Adjustable Undershelf
- Heavy gauge stainless steel.
- Gusset welded to each corner.
- Heavy duty marine edge design.

Legs—1⅝″ (41mm)-diameter
- Tables 96″ (2438mm) and longer come with six legs or more.
- Heavy gauge stainless steel.
- 1″ (25mm) adjustable stainless steel feet.

Options / Accessories

❑ Drawer
❑ Lock
❑ Casters
❑ Stainless steel bullet feet
❑ Overshelves
❑ Power strip (for material handling)
❑ Duplex receptacles
❑ Pot rack
❑ Sink
❑ Additional undershelf
❑ Stabilizer Bar (for 30″- and 36″-wide tables)

Certifications / Approvals

NSF

AUTOQUOTES

KCL

EAGLE GROUP
100 Industrial Boulevard, Clayton, DE 19938-8903 USA
Phone: 302-653-3000 • Fax: 302-653-2065
www.eaglegrp.com

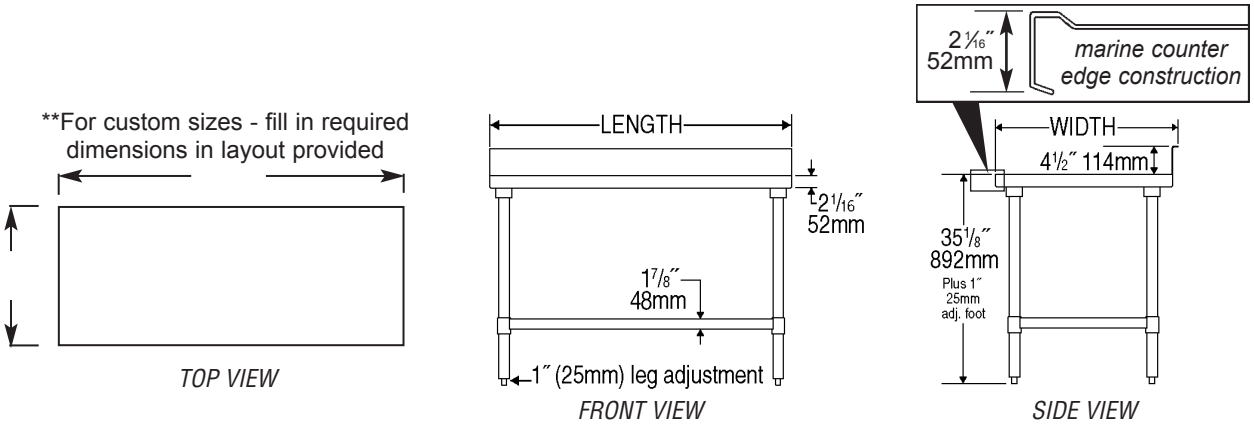
Foodservice Division: Phone 800-441-8440
MHC/Retail Display Divisions: Phone 800-637-5100

For custom configuration or fabrication needs, contact our **SpecFAB® Division.**
Phone: 302-653-3000 • Fax: 302-653-3091 • e-mail: specfab@eaglegrp.com

EAGLE GROUP®
Profit from the Eagle Advantage®

Item No.: _____
Project No.: _____
S.I.S. No.: _____

Worktables with Backsplash and Stainless Steel Base with Undershelf—Spec-Master® Marine Series



model #	# of legs	width in.	width mm	length in.	length mm	weight lbs.	weight kg
T2424SEM-BS	4	24″	610	24″	610	47	21.3
T2430SEM-BS	4	24″	610	30″	762	53	24.0
T2436SEM-BS	4	24″	610	36″	914	58	26.3
T2448SEM-BS	4	24″	610	48″	1219	69	31.3
T2460SEM-BS	4	24″	610	60″	1524	80	36.3
T2472SEM-BS	4	24″	610	72″	1829	94	42.6
T2484SEM-BS	4	24″	610	84″	2134	107	48.5
T2496SEM-BS	6	24″	610	96″	2438	125	56.7
T24108SEM-BS	6	24″	610	108″	2743	156	70.3
T24120SEM-BS	6	24″	610	120″	3048	169	76.7
T24132SEM-BS	8	24″	610	132″	3353	183	83.0
T24144SEM-BS	8	24″	610	144″	3658	196	88.9
T3030SEM-BS	4	30″	762	30″	762	55	24.9
T3036SEM-BS	4	30″	762	36″	914	58	26.3
T3048SEM-BS	4	30″	762	48″	1219	77	34.9
T3060SEM-BS	4	30″	762	60″	1524	89	40.4
T3072SEM-BS	4	30″	762	72″	1829	103	46.3
T3084SEM-BS	4	30″	762	84″	2134	119	54.0
T3096SEM-BS	6	30″	762	96″	2438	143	64.9
T30108SEM-BS	6	30″	762	108″	2743	165	74.4
T30120SEM-BS	6	30″	762	120″	3048	187	84.8
T30132SEM-BS	8	30″	762	132″	3353	207	93.9
T30144SEM-BS	8	30″	762	144″	3658	228	103.4
T3648SEM-BS	4	36″	914	48″	1219	85	38.6
T3660SEM-BS	4	36″	914	60″	1524	99	44.9
T3672SEM-BS	4	36″	914	72″	1829	117	53.1
T3684SEM-BS	4	36″	914	84″	2134	135	61.2
T3696SEM-BS	6	36″	914	96″	2438	145	65.8
T36108SEM-BS	6	36″	914	108″	2743	186	84.4
T36120SEM-BS	6	36″	914	120″	3048	211	95.7
T36132SEM-BS	8	36″	914	132″	3353	238	108.0
T36144SEM-BS	8	36″	914	144″	3658	263	119.3

EAGLE GROUP
100 Industrial Boulevard, Clayton, DE 19938-8903 USA
Phone: 302-653-3000 • Fax: 302-653-2065
www.eaglegrp.com
Foodservice Division: Phone 800-441-8440
MHC/Retail Display Divisions: Phone 800-637-5100

Printed in U.S.A.

Rev. 01/12

EAGLE GROUP®
Profit from the Eagle Advantage®

Specification Sheet

Item No.: _____
Project No.: _____
S.I.S. No.: _____

Urn Stands—Enclosed Base

Short Form Specifications

Eagle Enclosed Base Open Front Urn Stand, model _____. Top to be 16/430 stainless steel with heavy gauge stainless steel body and full depth stainless steel undershelf. Urn trough slopes to a 1″ drain and furnished with a removable stainless steel louvered grate. 1⅝″ O.D. stainless steel tubular legs with adjustable bullet feet.

Eagle Enclosed Base Urn Stand with Sliding Doors, model _____. Top to be 16/430 stainless steel with heavy gauge stainless steel body, and full depth stainless steel undershelf. Stainless steel sliding doors on front with recessed handles. Urn trough slopes to a 1″ drain and furnished with a removable stainless steel louvered grate. 1⅝″ O.D. stainless steel tubular legs with adjustable bullet feet.

urn stand with sliding doors

MODELS:

❑ ***US30B*** ❑ ***US40B*** ❑ ***US50B***
❑ ***US3CB*** ❑ ***US4CB*** ❑ ***US5CB***

Construction

- Top is constructed of 16 gauge type 430 series stainless steel with hat channel support.
- Table body is constructed of highly polished 20 gauge stainless steel.
- Legs are 1⅝″ (41mm) O.D. stainless steel tubing fitted with adjustable, non-marking plastic feet.
- Bottom shelf is full depth of unit and welded to outer wrapper.
- Urn trough is 4¾″ (121mm) wide across top, sloped toward 1″ (25mm) drain and complete with full length removable louvered grate.

Sliding doors (when indicated)

- 22 gauge stainless steel construction complete with recessed stainless steel handle.
- Doors sit within an exclusive rollerless track assembly, providing easier cleaning and lower maintenance.

Options / Accessories

❑ Center shelf
❑ Overshelf
❑ Serving shelf
❑ Tray slide
❑ Tray shelf
❑ Casters
❑ Stainless steel feet
❑ Spec-Master® marine edge
❑ Decorative laminates

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Certifications / Approvals

NSF

AUTOQUOTES
KCL

For custom configuration or fabrication needs, contact our **SpecFAB Division.**
Phone: 302-653-3000 • Fax: 302-653-3091 • e-mail: specfab@eaglegrp.com

Spec sheets available for viewing, printing or downloading from our online literature library at *www.eaglegrp.com*

EAGLE GROUP®
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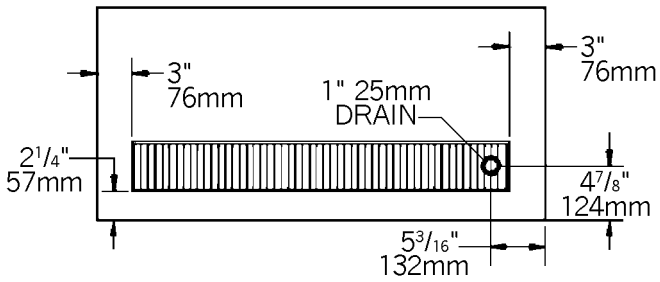
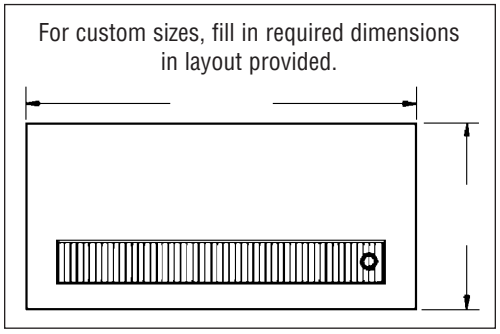
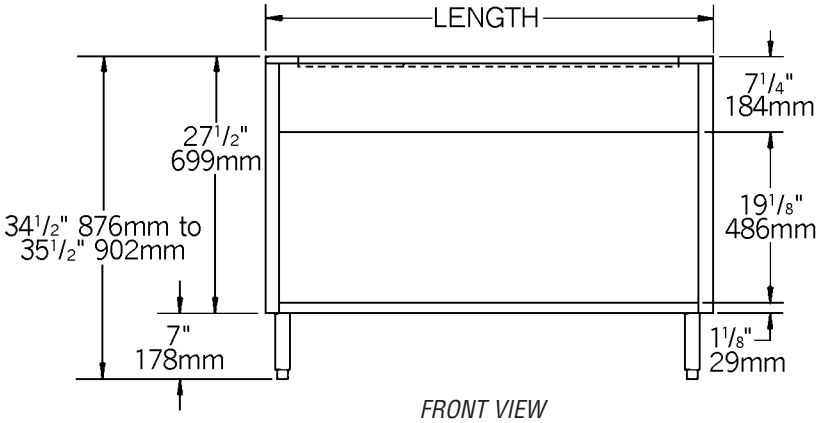
Item No.: _____
Project No.: _____
S.I.S. No.: _____

Urn Stands—Enclosed Base

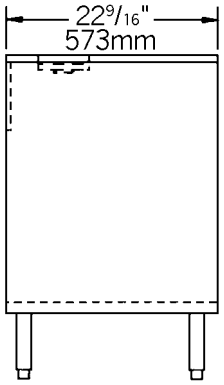


TOP VIEW





FRONT VIEW



SIDE VIEW

WITH OPEN FRONT			WITH SLIDING DOORS				
	weight			weight		length	
model #	lbs.	kg	model #	lbs.	kg	in.	mm
US3OB	225	102.1	***US3CB***	233	105.7	48″	1219
US4OB	265	120.2	***US4CB***	274	124.3	63½″	1613
US5OB	305	138.3	***US5CB***	315	142.9	79″	2007

All models available with casters. To order, add prefix **"P"** to model number. Example: **P**US5OB
If urn trough is desired on rear side, add suffix **"R"** to model number. Example: US3OB**R**

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Rev. 06/08

BlendPort™
AN ECONOMICAL SOLUTION
An Eagle Group Company

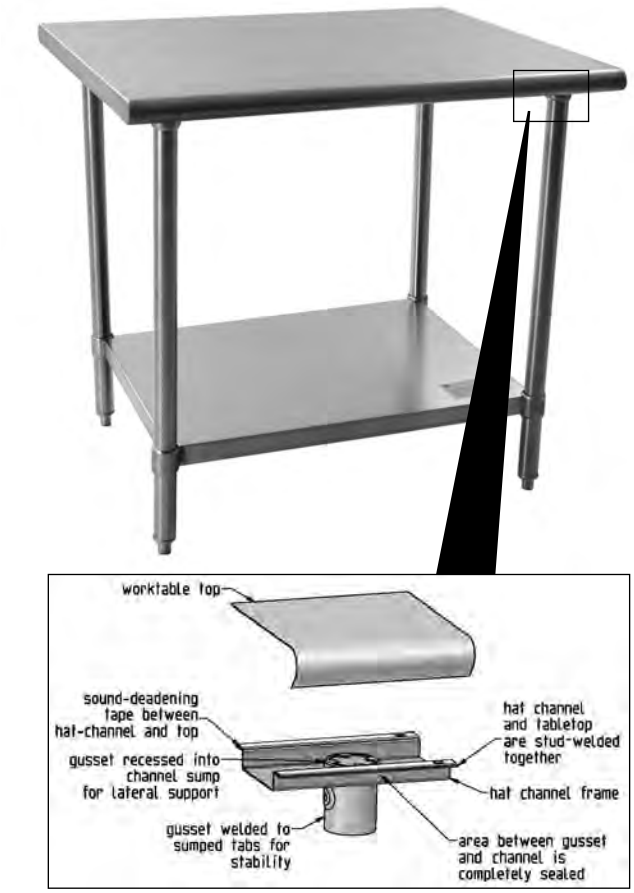
Specification Sheet

Item No.: _____
Project No.: _____
S.I.S. No.: _____

BlendPort™ SL Series All-Stainless Steel Worktables with Flat Top

Short Form Specifications

BlendPort™ SL Series Worktables with Flat Top, model _____. 18 gauge type 430 stainless steel construction. Top features rolled rim on front and rear, with square bend on ends. 1⅝″-diameter stainless steel legs. 18 gauge stainless steel undershelf. Adjustable stainless steel bullet feet.



- 18 gauge type 430 stainless steel construction.
- Top features hemmed rolled rim edge on front and rear, with square bend on sides, and is sound-deadened.
- Top reinforced with welded-on hat channels, which allow for mounting optional drawers.
- 1⅝″-diameter stainless steel legs.
- Stainless steel gussets.
- Adjustable stainless steel bullet feet.
- 18 gauge stainless steel undershelf.

width x length	weight	model #
24″ x 24″	42 lbs.	**BPT-2424SL**
24″ x 30″	45 lbs.	**BPT-2430SL**
24″ x 36″	50 lbs.	**BPT-2436SL**
24″ x 48″	61 lbs.	**BPT-2448SL**
24″ x 60″	71 lbs.	**BPT-2460SL**
24″ x 72″	82 lbs.	**BPT-2472SL**
24″ x 96″	114 lbs.	**BPT-2496SL**
30″ x 24″	48 lbs.	**BPT-3024SL**
30″ x 30″	49 lbs.	**BPT-3030SL**
30″ x 36″	52 lbs.	**BPT-3036SL**
30″ x 48″	68 lbs.	**BPT-3048SL**
30″ x 60″	79 lbs.	**BPT-3060SL**
30″ x 72″	92 lbs.	**BPT-3072SL**
30″ x 96″	126 lbs.	**BPT-3096SL**

Optional Drawers for SL Series Worktables

16″ x 20″.
Fully enclosed.
Features roller slides.

description	model #
For 24″-wide tables	**BPD-1620-24T**
For 30″-wide tables	**BPD-1620-30T**

BlendPort™
An Eagle Group Company
100 Industrial Boulevard, Clayton, DE 19938-8903 USA
Phone: 800-441-8440 • Fax: 302-653-2065

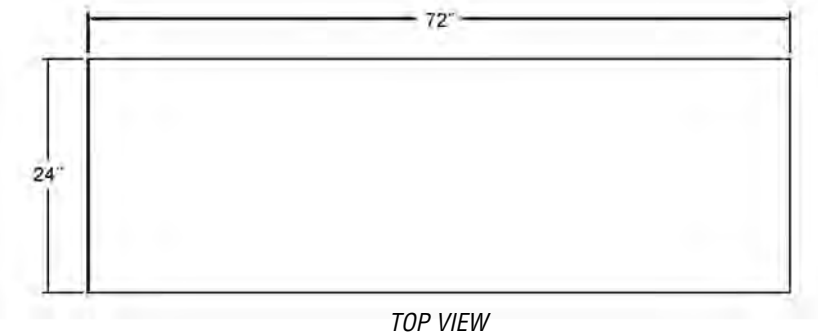
Certifications / Approvals

NSF

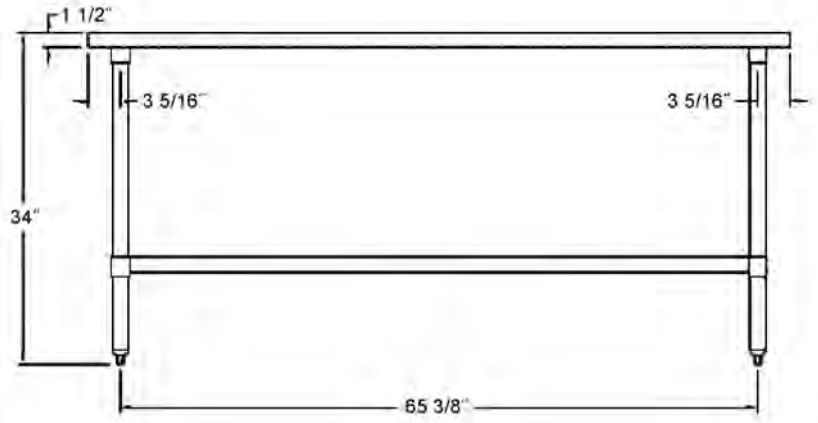
BlendPort™
AN ECONOMICAL SOLUTION
An Eagle Group Company

Item No.: _____
Project No.: _____
S.I.S. No.: _____

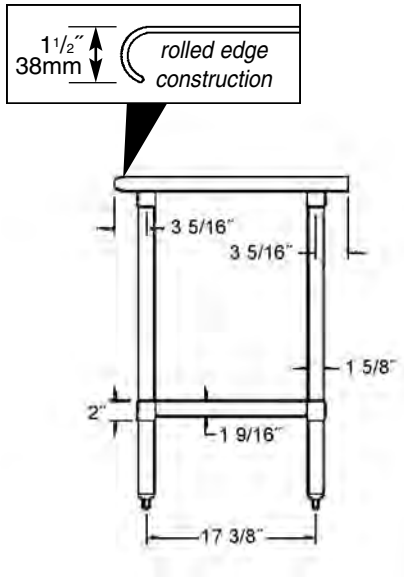
BlendPort™ SL Series All-Stainless Steel Worktables with Flat Top



TOP VIEW



FRONT VIEW



SIDE VIEW

(Note: #BPT-2472SL shown)

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Phone: 800-441-8440 • Fax: 302-653-2065

Printed in U.S.A.

Rev. 11/11

EPOXY WIRE SHELVING

Coated shelving provides superior chemical resistance.

- Recommended for wet environments, labs and kitchen coolers.
- Epoxy coating withstands harsh cleaning, salt and water.
- Shelves adjust in 1" increments.
- NSF certified.
- Optional 5" locking polyurethane swivel casters for portability.

63" HEIGHT EPOXY WIRE SHELVING — Zinc or Green

MODEL NO.	DIMENSIONS W x D x H	NO. OF SHELVES	SHELF CAP. (LBS.)	WT. (LBS.)	PRICE EACH 1	PRICE EACH 3+	ADD TO CART
H-6763	36 x 18 x 63"	4	800	53	$203	$192	Specify Color
H-6764	48 x 18 x 63"		800	64	226	215	Specify Color
H-6765	60 x 18 x 63"		650	82	282	271	Specify Color
H-6766	72 x 18 x 63"		650	94	351	339	Specify Color
H-6767	36 x 24 x 63"	4	800	66	226	215	Specify Color
H-6768	48 x 24 x 63"		800	78	294	282	Specify Color
H-6769	60 x 24 x 63"		650	98	339	329	Specify Color
■ H-6770	72 x 24 x 63"		650	122	408	396	Specify Color
H-1205WH*	Set of 4 Polyurethane Casters			12	75	72	Specify Color

ADDITIONAL SHELVES (2 PER BOX)				
MODEL NO.	WT. (LBS.)	PRICE PER BOX 1	PRICE PER BOX 3+	ADD TO CART
H-6776	20	$101	$96	Specify Color
H-6777	26	106	102	Specify Color
H-6778	34	133	128	Specify Color
H-6779	40	167	162	Specify Color
H-6780	28	107	103	Specify Color
H-6781	35	137	131	Specify Color
H-6782	42	166	161	Specify Color
■ H-6783	54	192	188	Specify Color

* Chrome or Black

■ SHIPS UNASSEMBLED VIA MOTOR FREIGHT

72" HEIGHT EPOXY WIRE SHELVING — Zinc or Green

MODEL NO.	DIMENSIONS W x D x H	NO. OF SHELVES	SHELF CAP. (LBS.)	WT. (LBS.)	PRICE EACH 1	PRICE EACH 3+	ADD TO CART
H-6771	36 x 18 x 72"	4	800	55	$215	$203	Specify Color
H-4306	48 x 18 x 72"		800	66	237	226	Specify Color
H-3818	60 x 18 x 72"		650	84	294	282	Specify Color
H-6772	72 x 18 x 72"		650	96	362	351	Specify Color
H-4307	36 x 24 x 72"	4	800	68	237	226	Specify Color
H-3819	48 x 24 x 72"		800	80	306	294	Specify Color
H-3820	60 x 24 x 72"		650	100	351	339	Specify Color
■ H-3821	72 x 24 x 72"		650	124	419	408	Specify Color
H-1205WH*	Set of 4 Polyurethane Casters			12	75	72	Specify Color

ADDITIONAL SHELVES (2 PER BOX)				
MODEL NO.	WT. (LBS.)	PRICE PER BOX 1	PRICE PER BOX 3+	ADD TO CART
H-6776	20	$101	$96	Specify Color
H-6777	26	106	102	Specify Color
H-6778	34	133	128	Specify Color
H-6779	40	167	162	Specify Color
H-6780	28	107	103	Specify Color
H-6781	35	137	131	Specify Color
H-6782	42	166	161	Specify Color
■ H-6783	54	192	188	Specify Color

* Chrome or Black

■ SHIPS UNASSEMBLED VIA MOTOR FREIGHT

86" HEIGHT EPOXY WIRE SHELVING — Zinc or Green

MODEL NO.	DIMENSIONS W x D x H	NO. OF SHELVES	SHELF CAP. (LBS.)	WT. (LBS.)	PRICE EACH 1	PRICE EACH 3+	ADD TO CART
H-8284	36 x 18 x 86"	4	800	57	$227	$215	Specify Color
H-8285	48 x 18 x 86"		800	68	248	237	Specify Color

ADDITIONAL SHELVES (2 PER BOX)				
MODEL NO.	WT. (LBS.)	PRICE PER BOX 1	PRICE PER BOX 3+	ADD TO CART
H-6776	20	$101	$96	Specify Color
H-6777	26	106	102	Specify Color

H-8286	60 x 18 x 86"	4	650	86	307	294	Specify Color
H-8287	72 x 18 x 86"		650	98	375	362	Specify Color
H-8288	36 x 24 x 86"	4	800	70	248	237	Specify Color
H-8289	48 x 24 x 86"		800	82	316	306	Specify Color
H-8290	60 x 24 x 86"		650	102	361	351	Specify Color
■ H-8291	72 x 24 x 86"		650	126	431	419	Specify Color
H-1205WH*	Set of 4 Polyurethane Casters			12	75	72	Specify Color

* Chrome or Black

■ SHIPS UNASSEMBLED VIA MOTOR FREIGHT

H-6778	34	133	128	Specify Color
H-6779	40	167	162	Specify Color
H-6780	28	107	103	Specify Color
H-6781	35	137	131	Specify Color
H-6782	42	166	161	Specify Color
■ H-6783	54	192	188	Specify Color

T&S BRASS AND BRONZE WORKS, INC.
2 Saddleback Cove / P.O. Box 1088
Travelers Rest, SC 29690

Travelers Rest, SC: 800-476-4103 • Simi Valley, CA: 800-423-0150 • Fax: 864-834-3518 • www.tsbrass.com

Model No.
B-0231

Item No.

ADA Compliant

This Space for Architect/Engineer Approval

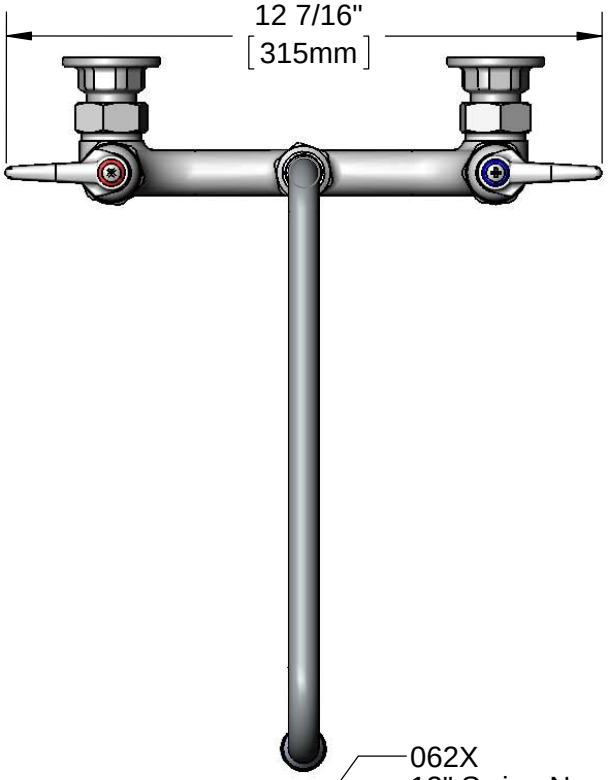
Job Name_____Date_____

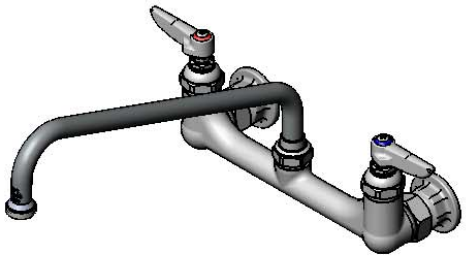
Model Specified_____ Quantity_____

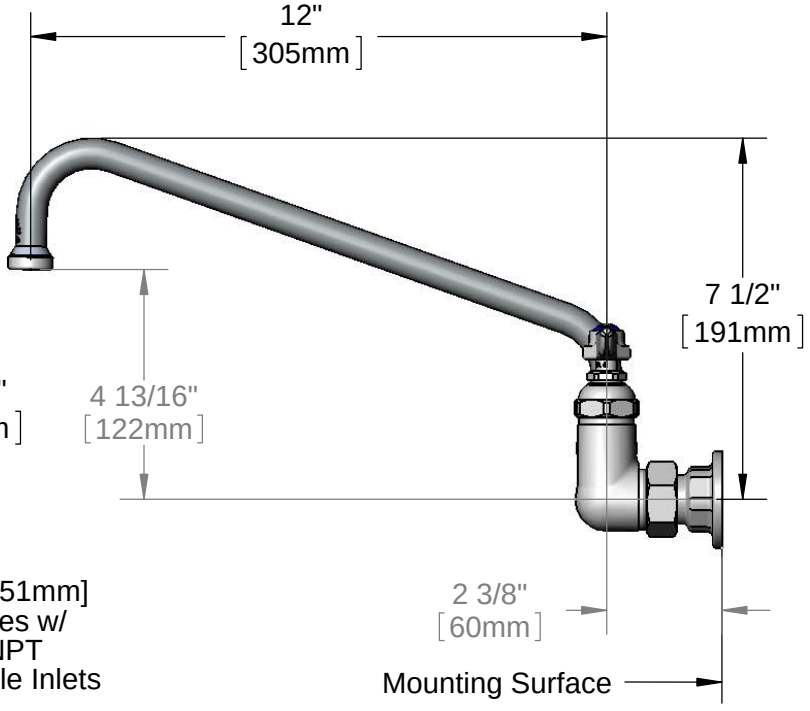
Customer/Wholesaler_____

Contractor_____

Architect/Engineer_____







Product Specifications:
8" Wall Mount Mixing Faucet w/ Eterna Cartridges, Lever Handles, 12" Swing Nozzle & 1/2" NPT Female Inlets

Product Compliance:
ASME A112.18.1 / CSA B125.1
NSF 61 - Section 9
NSF 372 (Low Lead Content)
ANSI A117.1 (ADA)

Drawn: DHL	Checked: JRM	Approved: JHB	Date: 03/17/14	Scale: 1:4	Sheet: 1 of 2

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Travelers Rest, SC 29690

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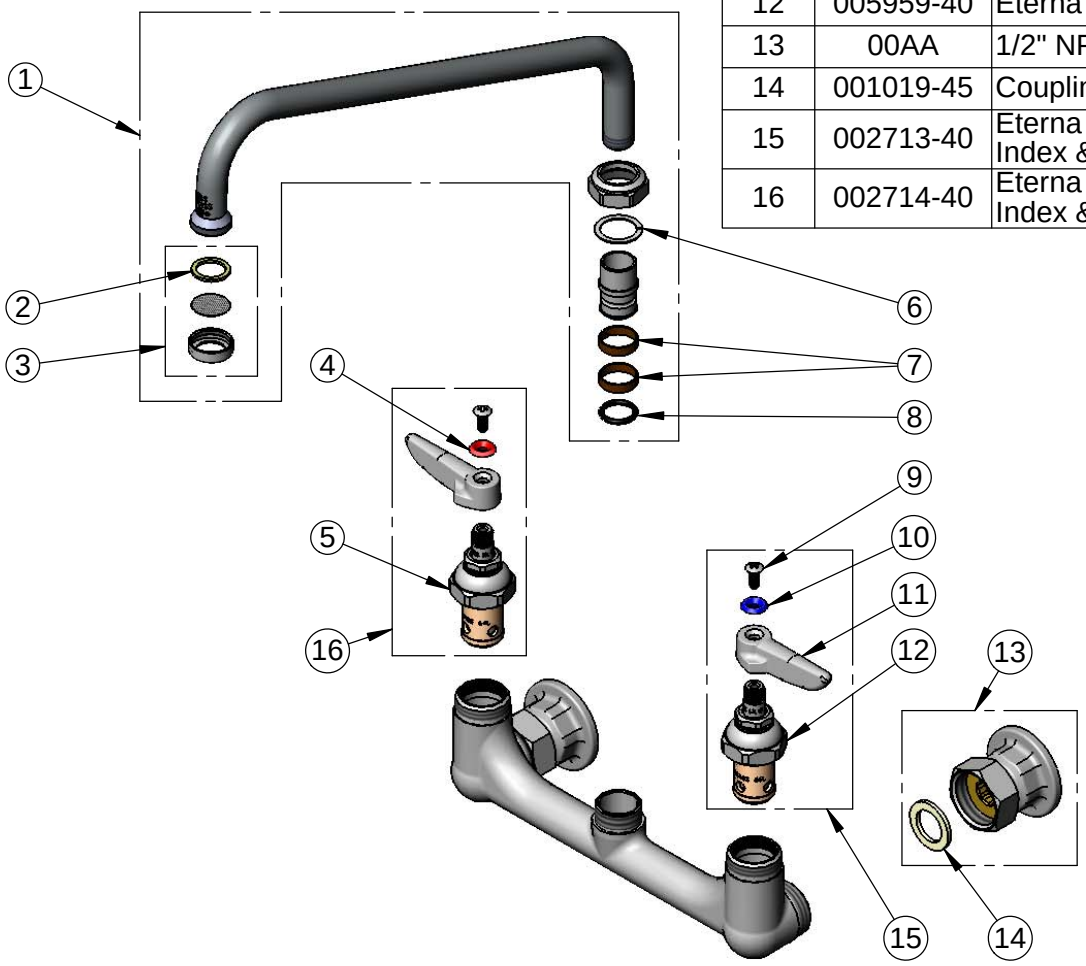
Model No. **B-0231**

Item No.

ITEM NO.	SALES NO.	DESCRIPTION
1	062X	12" Swing Nozzle
2	001048-45	Nozzle Tip Washer
3	B-PT	Stream Regulator Outlet
4	001661-45	Red Index-HW
5	005960-40	Eterna Cartridge, RTC
6	009538-45	Swivel Washer
7	011429-45	Swivel Sleeves (2)
8	001074-45	O-Ring
9	000922-45	Lever Handle Screw
10	001660-45	Blue Index-CW
11	001638-45	Lever Handle
12	005959-40	Eterna Cartridge, LTC
13	00AA	1/2" NPT Female Eccentric Flange
14	001019-45	Coupling Nut Washer
15	002713-40	Eterna Cartridge, LTC w/ Handle, Index & Screw
16	002714-40	Eterna Cartridge, RTC w/ Handle, Index & Screw



Product Specifications:
8" Wall Mount Mixing Faucet w/ Eterna Cartridges, Lever Handles, 12" Swing Nozzle & 1/2" NPT Female Inlets

Product Compliance:
ASME A112.18.1 / CSA B125.1
NSF 61 - Section 9
NSF 372 (Low Lead Content)
ANSI A117.1 (ADA)

Drawn:	Checked:	Approved:	Date:	Scale:	Sheet:
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2 Saddleback Cove / P.O. Box 1088
Travelers Rest, SC 29690

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Model No.
B-0230-K

Item No.

This Space for Architect/Engineer Approval

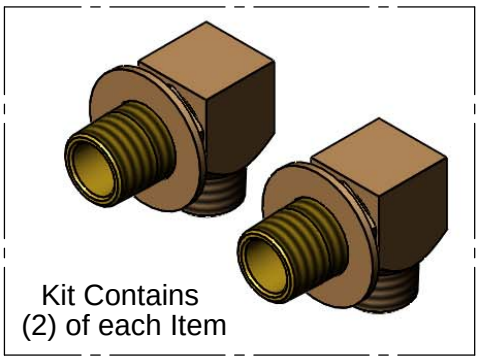
Job Name_____Date_____

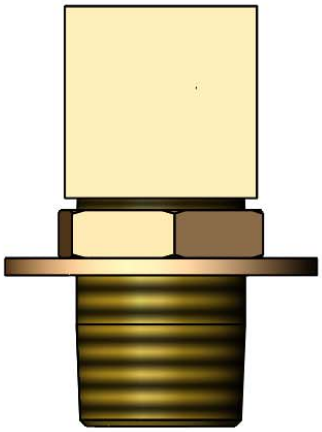
Model Specified_____ Quantity_____

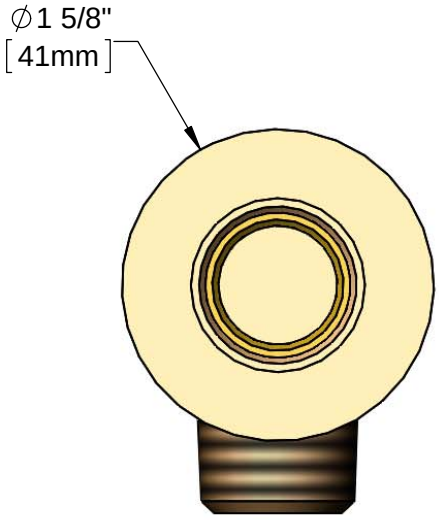
Customer/Wholesaler_____

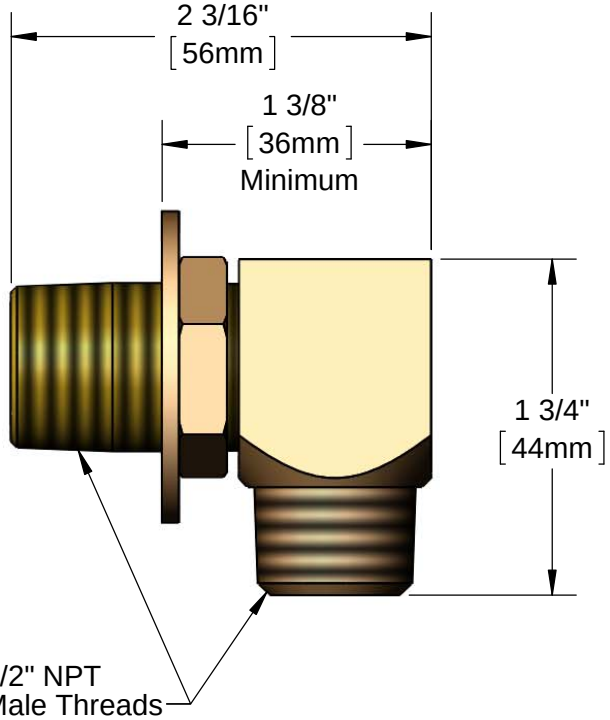
Contractor_____

Architect/Engineer_____









Product Specifications:
1/2" NPT Male Elbow Kit w/ Lock Nut & Washer

Product Compliance:

ASME A112.18.1 / CSA B125.1
NSF 61 - Section 9
NSF 372 (Low Lead Content)

Drawn: DHL	Checked: JRM	Approved: JHB	Date: 03/13/14	Scale: 1:1	Sheet: 1 of 2

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2 Saddleback Cove / P.O. Box 1088
Travelers Rest, SC 29690

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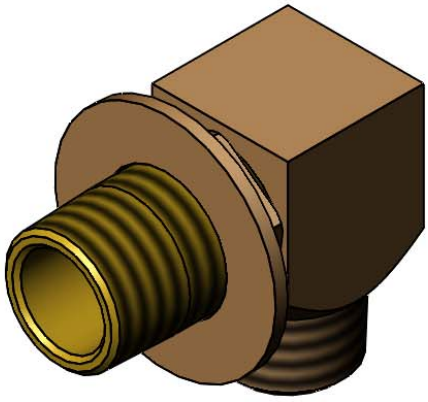
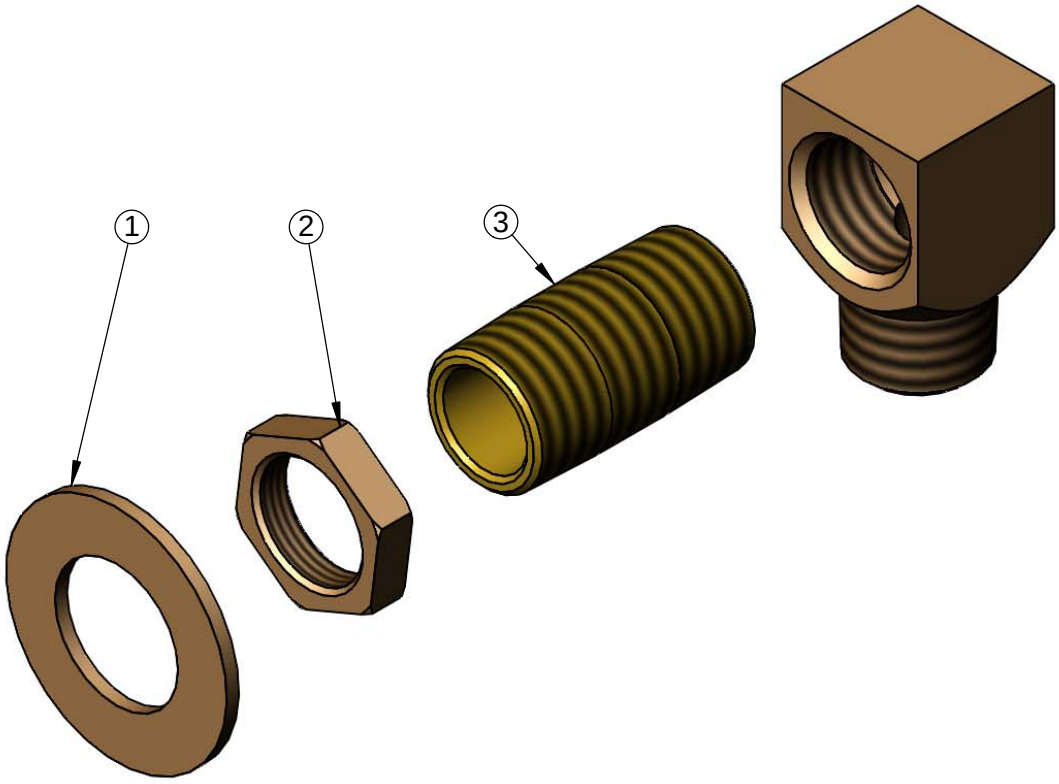
Model No.
B-0230-K

Item No.

ITEM NO.	SALES NO.	DESCRIPTION
1	000999-45	Brass Lock Washer
2	002954-45	Shank Lock Nut
3	013357-20	1/2" NPT x 1-5/8" Lg. Close Nipple





Product Specifications:
1/2" NPT Male Elbow Kit w/ Lock Nut & Washer

Product Compliance:

ASME A112.18.1 / CSA B125.1
NSF 61 - Section 9
NSF 372 (Low Lead Content)

Drawn: DHL	Checked: JRM	Approved: JHB	Date: 03/13/14	Scale: NTS	Sheet: 2 of 2

T&S BRASS AND BRONZE WORKS, INC.

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Travelers Rest, SC 29690

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Model No.

B-0133-B

Item No.

This Space for Architect/Engineer Approval

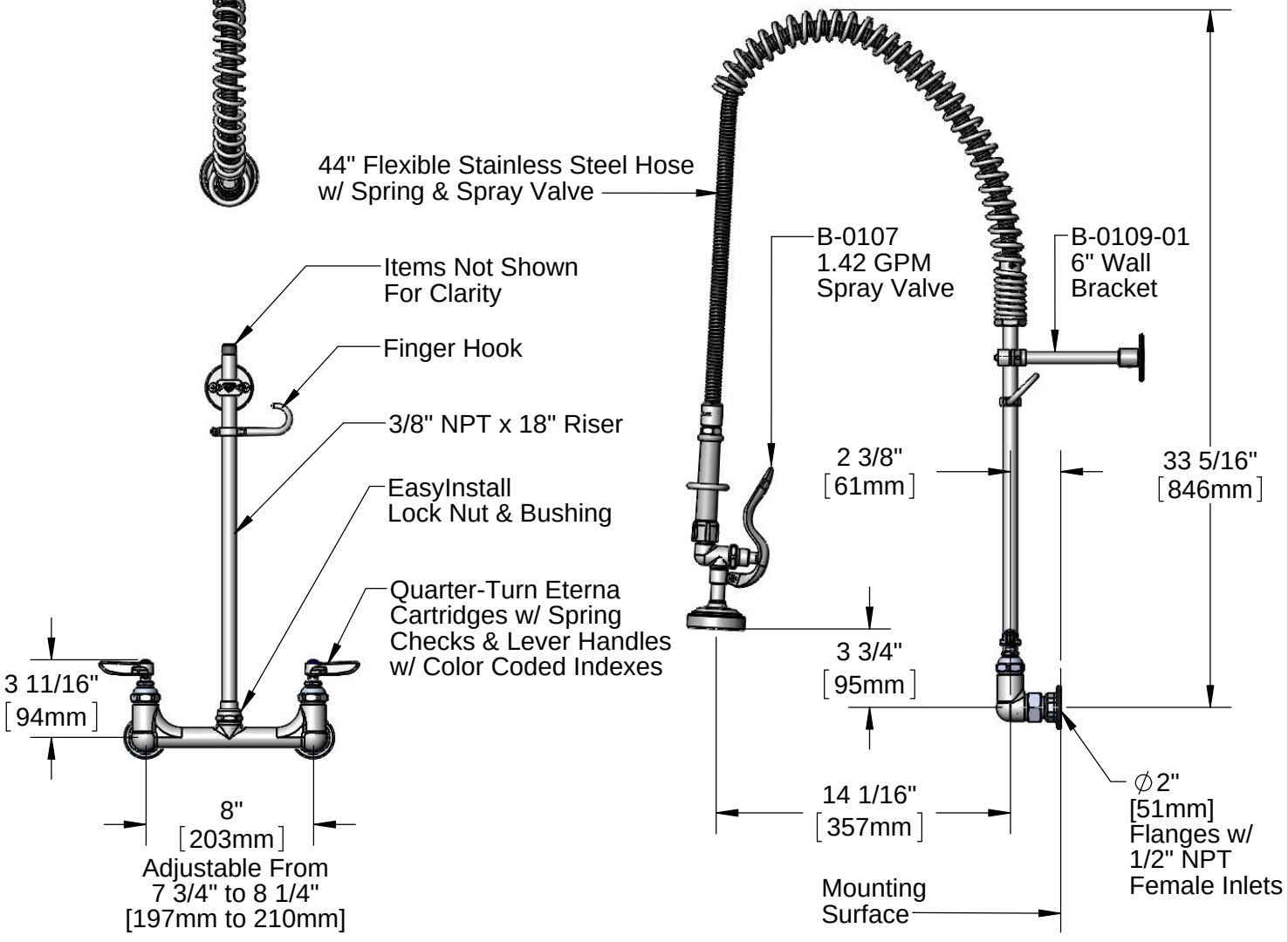
Job Name_____Date_____

Model Specified_____ Quantity_____

Customer/Wholesaler_____

Contractor_____

Architect/Engineer_____



Product Specifications:

Pre-Rinse Unit: EasyInstall 8" Wall Mount Mixing Faucet, Eterna Cartridges w/ Spring Checks, Lever Handles, 44" Flexible Stainless Steel Hose, 1.42 GPM Spray Valve, 6" Wall Bracket & 1/2" NPT Female Inlets

Product Compliance:

ASME A112.18.1 / CSA B125.1
NSF 61 - Section 9
NSF 372 (Low Lead Content)
EPAct 2005 (PRSV)

Drawn:	Checked:	Approved:	Date:	Scale:	Sheet:
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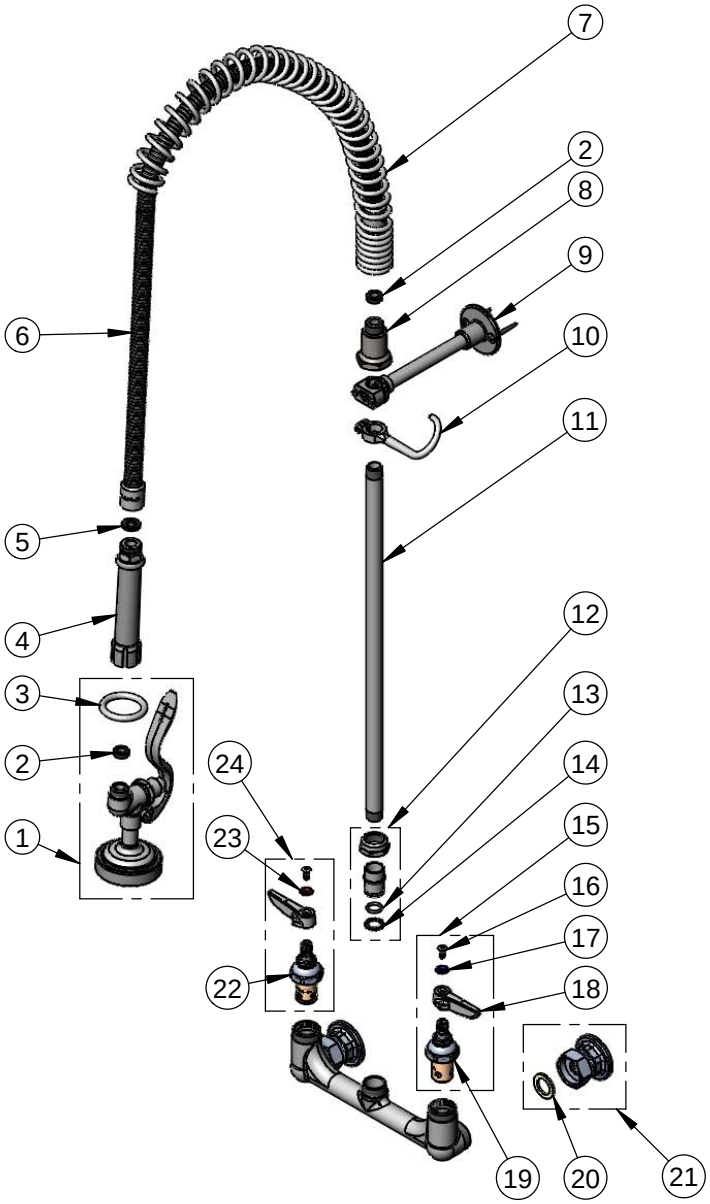
T&S BRASS AND BRONZE WORKS, INC.
2 Saddleback Cove / P.O. Box 1088
Travelers Rest, SC 29690

Travelers Rest, SC: 800-476-4103 • Simi Valley, CA: 800-423-0150 • Fax: 864-834-3518 • www.tsbrass.com

Model No.
B-0133-B

Item No.



ITEM NO.	SALES NO.	DESCRIPTION
1	B-0107	1.42 GPM Spray Valve
2	010476-45	#27 Washer
3	000907-45	Spray Valve Hold Down Ring
4	002987-40	Grip Handle
5	001014-45	Washer, B-0100 Hose Barrel
6	B-0044-H2A	44" Flexible Stainless Steel, Less Handle
7	000888-45	EasyInstall Overhead Spring
8	000821-40	Spring Body
9	B-0109-01	6" Wall Bracket
10	004R	Finger Hook
11	000369-40	3/8" NPT x 18" Riser
12	EZ-K	EasyInstall Kit: Nut, Bushing, O-ring & Lock Washer
13	001065-45	O-Ring
14	014200-45	Star Washer, Anti-Rotation
15	002711-40	Quarter-Turn Eterna Cartridge, LTC w/ Spring Check, Handle, Index & Screw
16	000922-45	Lever Handle Screw
17	001660-45	Blue Index-CW
18	001638-45	Lever Handle
19	012442-40	Quarter-Turn Eterna Cartridge, LTC w/ Spring Check
20	001019-45	Coupling Nut Washer
21	00AA	1/2" NPT Female Eccentric Flange
22	012443-40	Quarter-Turn Eterna Cartridge, RTC w/ Spring Check
23	001661-45	Red Index-HW
24	002712-40	Quarter-Turn Eterna Cartridge, RTC w/ Spring Check, Handle, Index & Screw

Product Specifications:
Pre-Rinse Unit: EasyInstall 8" Wall Mount Mixing Faucet, Eterna Cartridges w/ Spring Checks, Lever Handles, 44" Flexible Stainless Steel Hose, 1.42 GPM Spray Valve, 6" Wall Bracket & 1/2" NPT Female Inlets

Product Compliance:
ASME A112.18.1 / CSA B125.1
NSF 61 - Section 9
NSF 372 (Low Lead Content)
EPAct 2005 (PRSV)

Drawn:	Checked:	Approved:	Date:	Scale:	Sheet:
DHL	JRM	JHB	08/27/15	NTS	2 of 2

T&S BRASS AND BRONZE WORKS, INC.
2 Saddleback Cove / P.O. Box 1088
Travelers Rest, SC 29690

Travelers Rest, SC: 800-476-4103 • Simi Valley, CA: 800-423-0150 • Fax: 864-834-3518 • www.tsbrass.com

Model No.
018200-40
Item No.

This Space for Architect/Engineer Approval

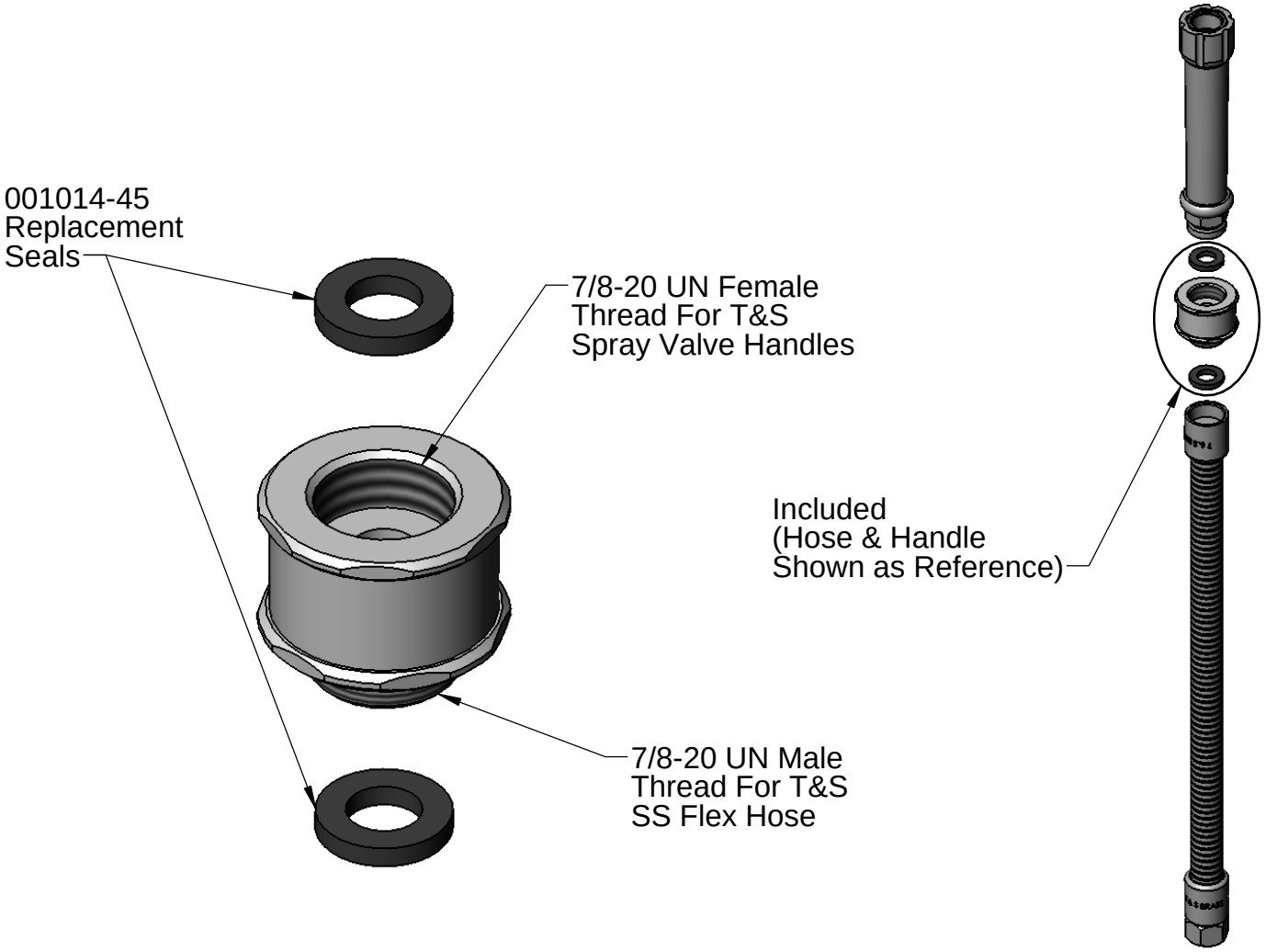
Job Name_____Date_____

Model Specified_____ Quantity_____

Customer/Wholesaler_____

Contractor_____

Architect/Engineer_____



Product Specifications:
Hex Swivel for Pre-Rinse Hose & Spray Valve

Product Compliance:
ASME A112.18.1 / CSA B125.1
NSF 61 - Section 9
NSF 372 (Low Lead Content)

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Model No.
B-0230-K

Item No.

This Space for Architect/Engineer Approval

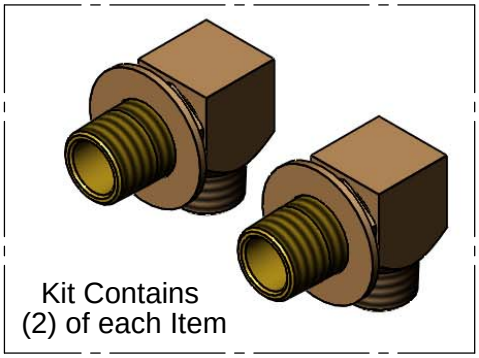
Job Name_____Date_____

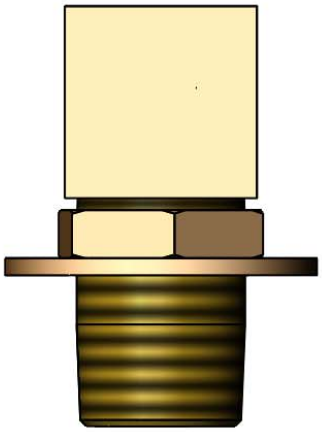
Model Specified_____ Quantity_____

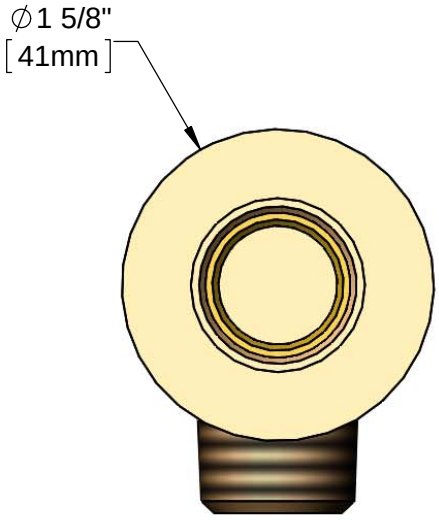
Customer/Wholesaler_____

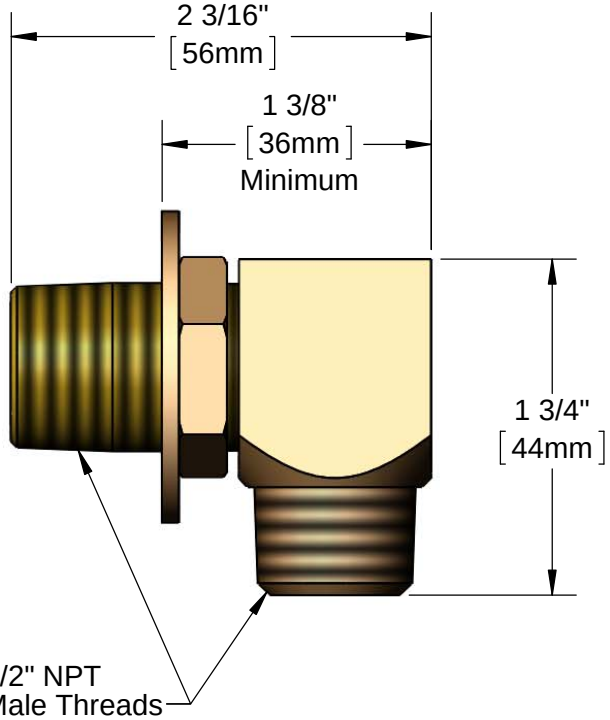
Contractor_____

Architect/Engineer_____









Product Specifications:
1/2" NPT Male Elbow Kit w/ Lock Nut & Washer

Product Compliance:

ASME A112.18.1 / CSA B125.1
NSF 61 - Section 9
NSF 372 (Low Lead Content)

Drawn: DHL	Checked: JRM	Approved: JHB	Date: 03/13/14	Scale: 1:1	Sheet: 1 of 2

T&S BRASS AND BRONZE WORKS, INC.
2 Saddleback Cove / P.O. Box 1088
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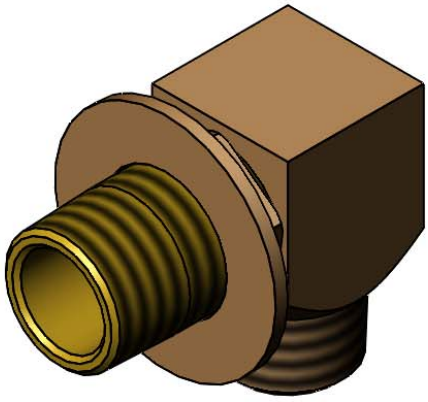
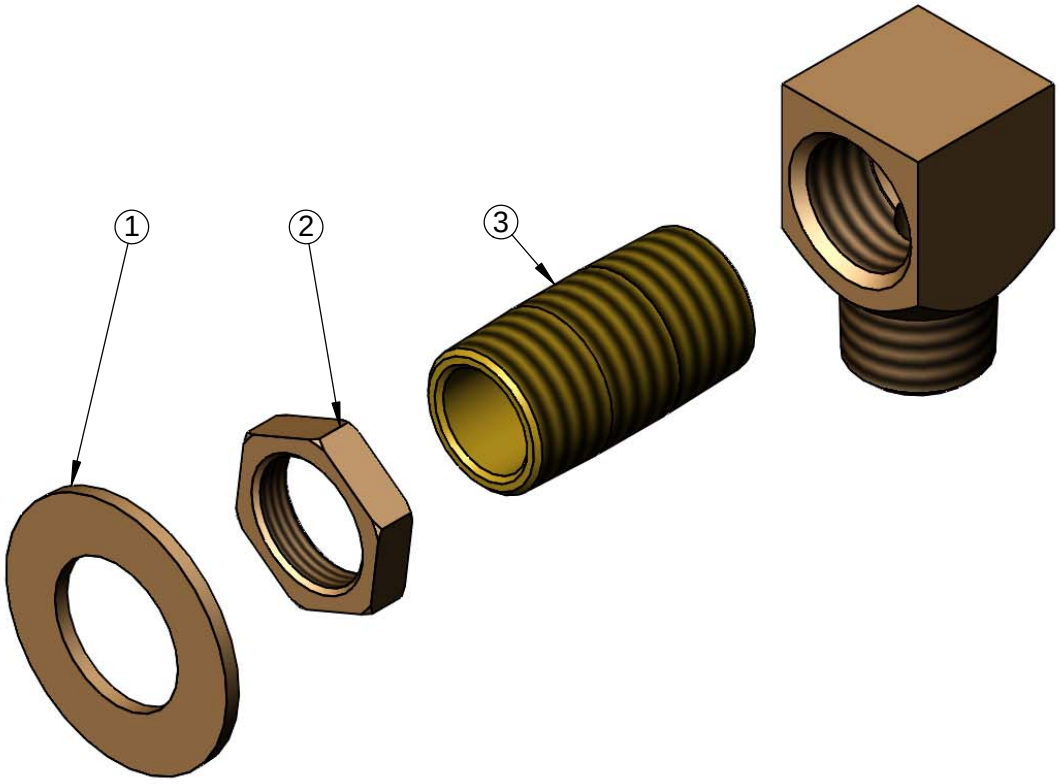
Model No.
B-0230-K

Item No.

ITEM NO.	SALES NO.	DESCRIPTION
1	000999-45	Brass Lock Washer
2	002954-45	Shank Lock Nut
3	013357-20	1/2" NPT x 1-5/8" Lg. Close Nipple





Product Specifications:
1/2" NPT Male Elbow Kit w/ Lock Nut & Washer

Product Compliance:

ASME A112.18.1 / CSA B125.1
NSF 61 - Section 9
NSF 372 (Low Lead Content)

Drawn:	Checked:	Approved:	Date:	Scale:	Sheet:
DHL	JRM	JHB	03/13/14	NTS	2 of 2

T&S BRASS AND BRONZE WORKS, INC.
2 Saddleback Cove / P.O. Box 1088
Travelers Rest, SC 29690

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Model No.
B-0156
Item No.

ADA Compliant

This Space for Architect/Engineer Approval

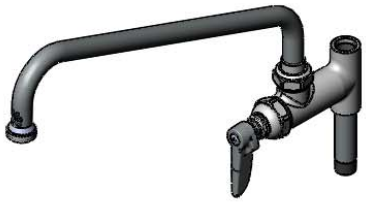
Job Name_____Date_____

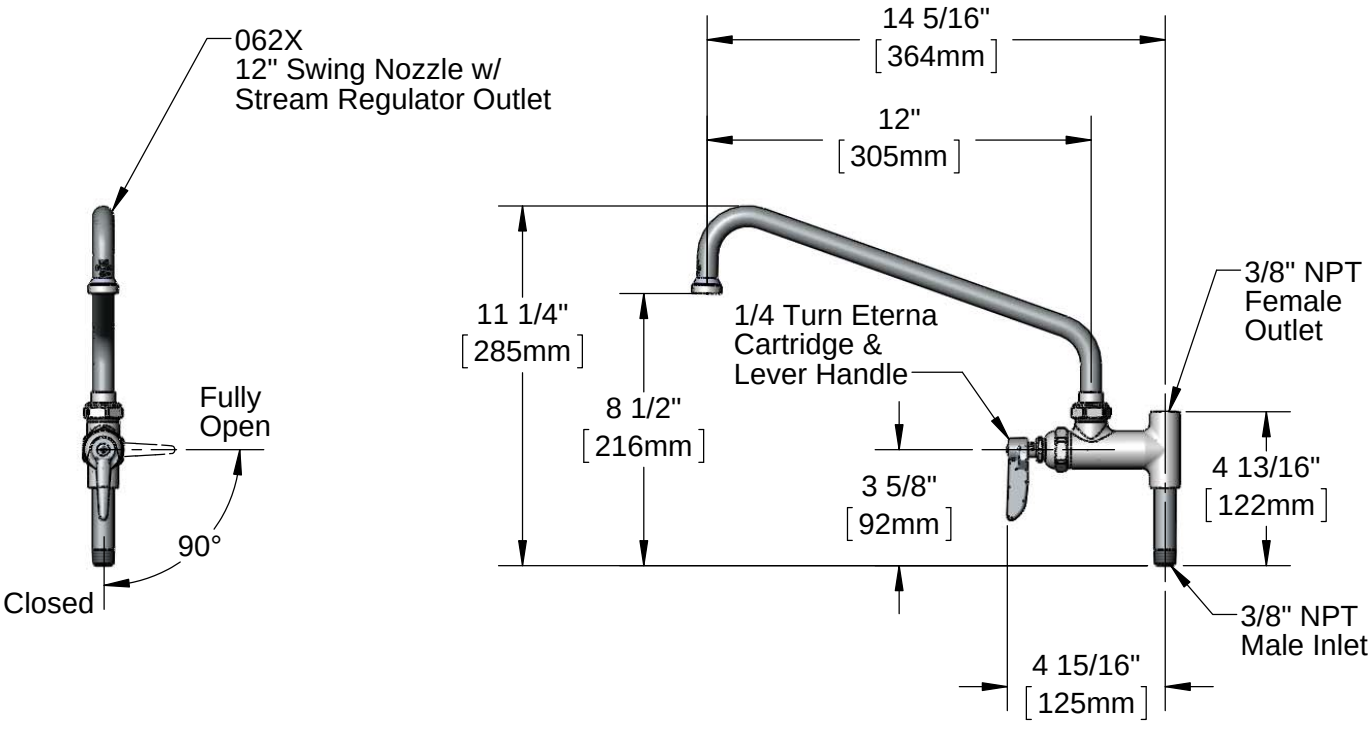
Model Specified_____ Quantity_____

Customer/Wholesaler_____

Contractor_____

Architect/Engineer_____





Notes:
1. The Add-On Faucet is an Addition to Pre-Rinse Units and is Installed in Outlets of Base Mixing Faucets of Units Before Fitting Riser Pipes

2. Lever Handle Controls Water On-Off Thru Nozzle Only. Pressure is Always "On" in the Riser Pipe (Controlled by Base Mixing Faucet)

Product Specifications:
Add-On Faucet w/ 1/4 Turn Eterna Cartridge, Lever Handle & 12" Swing Nozzle w/ Stream Regulator Outlet

Product Compliance:
ASME A112.18.1 / CSA B125.1
NSF 61 - Section 9
NSF 372 (Low Lead Content)
ANSI A117.1 (ADA)

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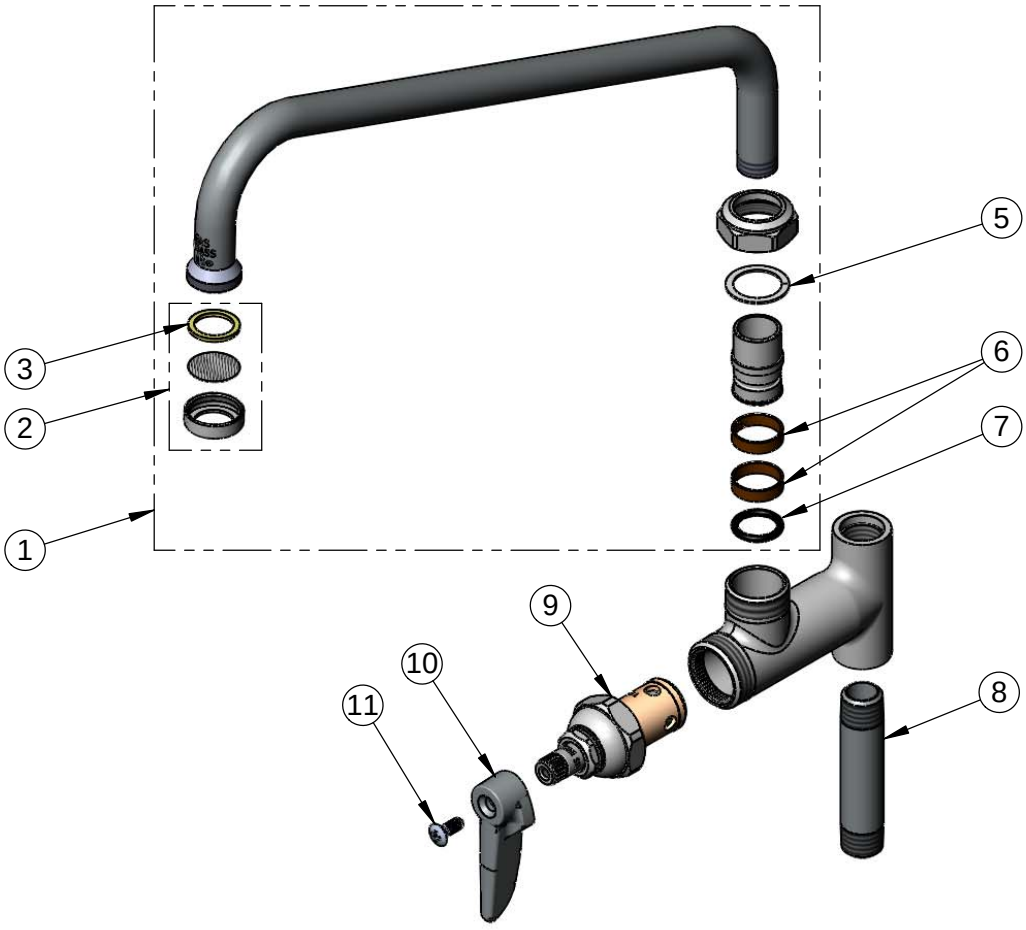
T&S BRASS AND BRONZE WORKS, INC.
2 Saddleback Cove / P.O. Box 1088
Travelers Rest, SC 29690

Travelers Rest, SC: 800-476-4103 • Simi Valley, CA: 800-423-0150 • Fax: 864-834-3518 • www.tsbrass.com

Model No. **B-0156**

Item No.

ITEM NO.	SALES NO.	DESCRIPTION
1	062X	12" Swing Nozzle
2	B-PT	Stream Regulator Outlet
3	001048-45	Nozzle Tip Washer
5	009538-45	Swivel Washer
6	011429-45	Swivel Sleeves (2)
7	001074-45	O-Ring
8	000358-40	Nipple, 3/8" NPT x 3"
9	005960-40QT	1/4 Turn Eterna Cartridge, RTC
10	001638-45	Lever Handle
11	000922-45	Lever Handle Screw



Product Specifications:
Add-On Faucet w/ 1/4 Turn Eterna Cartridge, Lever Handle & 12" Swing Nozzle w/ Stream Regulator Outlet

Product Compliance:
ASME A112.18.1 / CSA B125.1
NSF 61 - Section 9
NSF 372 (Low Lead Content)
ANSI A117.1 (ADA)

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JBC	JRM	JHB	04/10/15	NTS	2 of 2

T&S BRASS AND BRONZE WORKS, INC.
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Model No.
B-0700

Item No.

ADA Compliant

This Space for Architect/Engineer Approval

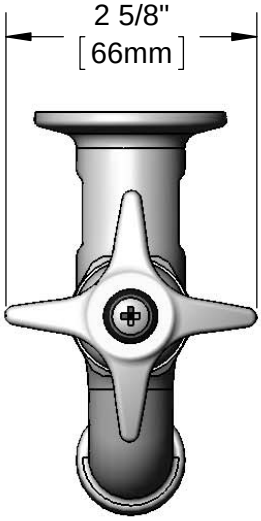
Job Name_____Date_____

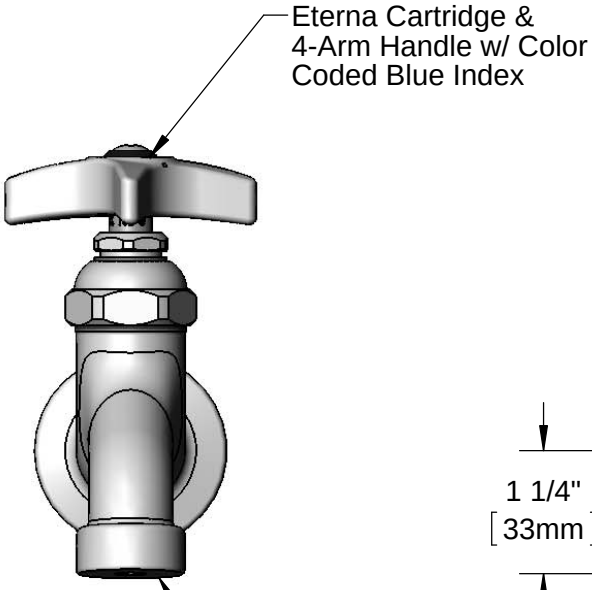
Model Specified_____ Quantity_____

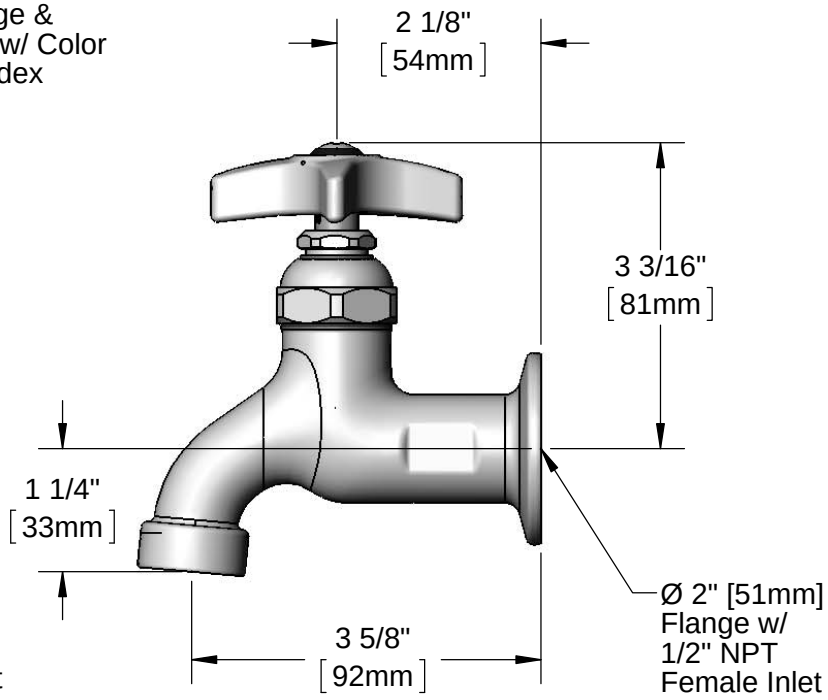
Customer/Wholesaler_____

Contractor_____

Architect/Engineer_____







Product Specifications:
Single Sink Wall Mount Faucet, Eterna Cartridge, 4-Arm Handle w/ Blue Index, Plain End Outlet & 1/2" NPT Female Inlet

Product Compliance:
ASME A112.18.1 / CSA B125.1
NSF 61 - Section 9
NSF 372 (Low Lead Content)
ANSI A117.1 (ADA)

Drawn:	KJG	Checked:	JRM	Approved:	JHB	Date:	06/20/14	Scale:	1:2	Sheet:	1 of 2

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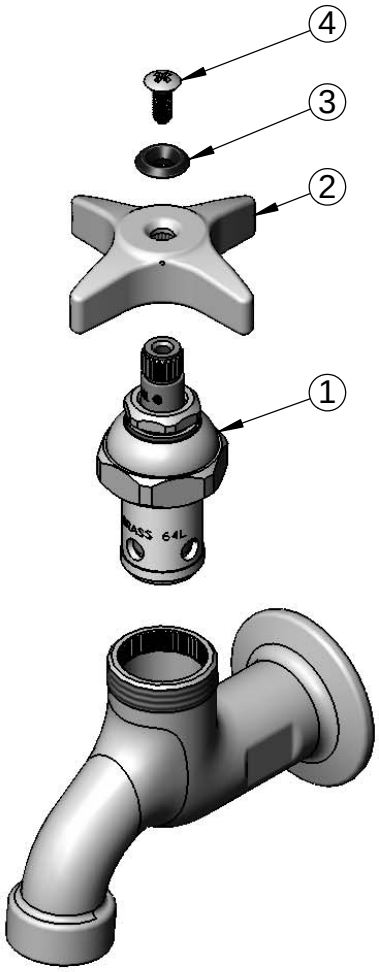
Model No. **B-0700**

Item No.

ITEM NO.	SALES NO.	DESCRIPTION
1	005960-40	Eterna Cartridge, RTC
2	002521-45	4-Arm Handle
3	001660-45	Blue Index-CW
4	000922-45	Lever Handle Screw



Product Specifications:
Single Sink Wall Mount Faucet, Eterna Cartridge, 4-Arm Handle w/ Blue Index, Plain End Outlet & 1/2" NPT Female Inlet

Product Compliance:
ASME A112.18.1 / CSA B125.1
NSF 61 - Section 9
NSF 372 (Low Lead Content)
ANSI A117.1 (ADA)

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KJG	JRM	JHB	06/20/14	NTS	2 of 2

Project _____

Item # _____

Quantity _____

3CS Sanitizing Sink Heaters

Models: 3CS-3, -4, -6, -9,
3CS-3B, -4B, -6B, -9B

The Hatco 3CS Sanitizing Sink Heater makes manual warewashing faster and more convenient. Designed to fit under the center of the sink, it maintains a continuous supply of sanitizing rinse water without taking up valuable sink space.

3CS-9 with optional temperature monitor

Standard features

- Perfect for 3- or 4-compartment sinks, pot and pan sinks and bar sinks
- Stainless steel front, powdercoated silver-gray hammertone body and convenient side drain
- Equipped with an Energy Cut-Off (ECO) for built-in protection against higher-than-normal water temperature
- Power On/Off toggle switch activates the heater, and a yellow light indicates when power is on
- A red light is an overtemp indicator pointing out the need to refill unit with water and reset
- Meets NSF Standard of 180°F (82°C) for dish sanitizing
- Shipped ready to install with all gaskets and fittings, as well as a five-year limited warranty

Options (available at time of purchase only)

☐ All Stainless Steel Body and Base
☐ Temperature Monitor (Built-in) (Not available with Light)
☐ Temperature Light (Not available with Monitor)
☐ CSA Wiring (Canada only)
☐ Security Package (Torx® Screws and Control Cover)
☐ 480 Volt
☐ Shipboard use

Accessories

☐ Flush Kit (Flush Hose, Stopper and Adapter)

For operation, location and safety information, please refer to the Installation & Operating Manual.

MADE IN THE USA

HATCO CORPORATION | P.O. Box 340500 Milwaukee, WI 53234-0500 U.S.A.
(800) 558-0607 | (414) 671-6350 | www.hatcocorp.com | support@hatcocorp.com

3CS Sanitizing Sink Heaters

Models: 3CS-3, -4, -6, -9, 3CS-3B, -4B, -6B, -9B

SPECIFICATIONS
3CS Sanitizing Sink Heaters

The shaded areas contain electrical information for International models only

Model	Sink Area	Voltage 50/60Hz	kW	Phase	Amps	Wiring Sizing AWG◊†	Fuse or Circuit Breaker◊	Ship Weight*
3CS-3	15" (381 mm) Sq. or less	208	3.0	Single	14.4	12	20	24 lbs. (11 kg)
		240			12.5			
		480			6.3	14	15	
		220-230-240	2.5-2.8-3.0	Single	11.5-12.0-12.5	12	20	24 lbs. (11 kg)
3CS-4	16"-18" (406-457 mm) Sq.	208	4.5	Single	22	10	30	24 lbs. (11 kg)
		240			18.8			
		480	4.5	Three▯	9.4	14	15	
		220-230-240	3.8-4.1-4.5	Three▯	17.2-18.0-18.8	10	30	24 lbs. (11 kg)
		380-400-415	3.8-4.1-4.5		9.9-10.4-10.8	14	15	
3CS-6	19"-21" (483-533 mm) Sq.	208	6.0	Single	29	8	40	26 lbs. (12 kg)
		240			25			
		480			12.5	12	20	
		220-230-240	5.0-5.5-6.0	Single	23-24-25	8	40	26 lbs. (12 kg)
		208	6.0	Three▯	25	8	40	26 lbs. (12 kg)
		240			21.7	10	30	
		480			10.8	14	15	
		380-400-415	5.6-6.3-6.7	Three▯	14.8-15.6-16.2	12	20	27 lbs. (12 kg)
3CS-9	21"-25" (533-635 mm) Sq.	208	9.0	Single	43.3	4	60	27 lbs. (12 kg)
		240			37.5	6	50	
		480			18.8	10	30	
		208	9.0	Three▯	37.5	6	50	27 lbs. (12 kg)
		240			32.5	8	40	
		480			16.2	12	20	
3CS-3B	15" (381 mm) Sq. or less	208	3.0	Three (Bal.)	8.3	14	15	30 lbs. (14 kg)
		240			7.2			
		480			3.6			
		380-400-415	2.8-3.1-3.4	Three (Bal.)	4.3-4.5-4.7	14	15	30 lbs. (14 kg)
3CS-4B	16"-18" (406-457 mm) Sq.	208	4.5	Three (Bal.)	12.5	12	20	30 lbs. (14 kg)
		240			10.8			
		480			5.4			
		380-400-415	3.8-4.1-4.5	Three (Bal.)	5.7-6.0-6.2	14	15	30 lbs. (14 kg)
3CS-6B	19"-21" (483-533 mm) Sq.	208	6.0	Three (Bal.)	18.8	10	30	30 lbs. (14 kg)
		240			14.4	12	20	
		480			7.2	14	15	
		380-400-415	5.6-6.3-6.7	Three (Bal.)	8.6-9.0-9.4	14	15	30 lbs. (14 kg)
3CS-9B	21"-25" (533-635 mm) Sq.	208	9.0	Three (Bal.)	25	10	40	33 lbs. (15 kg)
		240			21.7		30	
		480			10.8	14	15	
		440	9.0	Three (Bal.)	11.8	15	15	33 lbs. (15 kg)
		380-400-415	7.5-8.3-9.0		11.4-12.0-12.5	12	20	

◊ Wire size is based on THHN wire for branch circuit protection at 0.91 derate factor. Circuit breakers and fused disconnects are to be mounted remote and wired by contractor. Sizes are based on the 2002 NEC table 310-16. Conduit size based on conductors plus ground wire sizing per Table C1 from Appendix C.

† Based upon THHN wire rated 90ºC.

* Shipping weight includes packaging.

▯ Open Delta–standard construction (Amperage higher than Balanced 3-phase).

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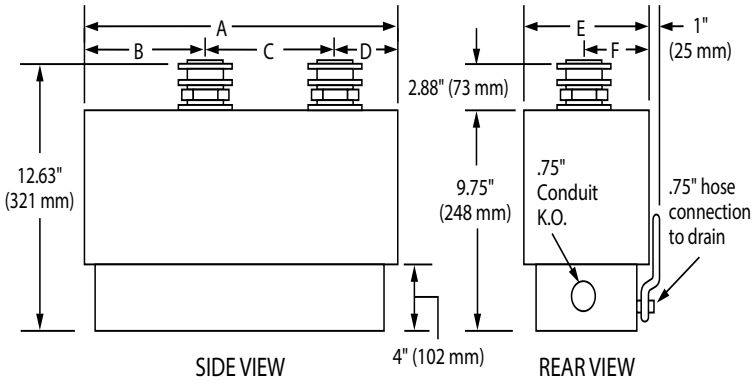
3CS Sanitizing Sink Heaters

Models: 3CS-3, -4, -6, -9, 3CS-3B, -4B, -6B, -9B



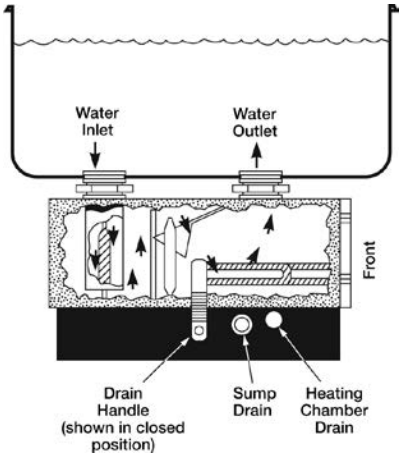
Dimensions

Model	A	B	C	D	E	F
3CS-3, -4, -6, -9 (1- or 3-Phase)	16.88" (429 mm)	5.5" (140 mm)	8.5" (216 mm)	2.88" (73 mm)	6.75" (171 mm)	3.38" (86 mm)
3CS-9 480V (1- or 3-Phase)	17.13" (435 mm)	4.63" (117 mm)	8.5" (216 mm)	4" (102 mm)	8" (203 mm)	4" (102 mm)
3CS-3B, -4B, -6B, -9B (Bal. 3-Phase)	17.13" (435 mm)	4.63" (117 mm)	8.5" (216 mm)	4" (102 mm)	8" (203 mm)	4" (102 mm)

SIZING INFORMATION

For a Sink Heater: MINIMUM 2000 WATTS (2.2 WATTS PER SQUARE CM) PER SQUARE FOOT of vessel top.

3CS Sink Heates are sized based on 140ºF supply water with a 30 minute preheat period to reach the sanitizing temperature. Sink Heaters are mounted into the third compartment sink with standard plumbing fittings provided. Two 2" diameter holes are required for these fittings and a full size template is provided to located holes in the sink. The 3CS Sink Heater is easily attached to the plumbing fittings with self-contained unions.



WATER QUALITY REQUIREMENTS

Incoming water in excess of 3.0 grains of hardness per gallon (GPG) (.75 grains of hardness per liter) must be treated and softened before being supplied to hot water dispenser(s). Water containing over 3.0 GPG (.75 GPL) will decrease efficiency and reduce the operating life of the unit.

Note: Product failure caused by liming or sediment buildup is not covered under warranty.

PRODUCT SPECS
3CS Sanitizing Sink Heaters

The electric heater shall be manufactured by the Hatco Corporation, Milwaukee, WI 53234 U.S.A.

The electric heater to maintain the final sanitizing rinse in a third compartment sink shall be rated at ... kw, ... volts, ... phase. The heater shall be complete with all internal plumbing and wiring ready for external installation to the bottom of sink.

The heater tank shall be of stainless steel construction and dual reservoir design; one reservoir to contain a permanently submerged heating element, the other to trap and collect soil which can be emptied easily by a convenient drain.

The sink heater shall be equipped with an On/Off reset switch and optional indicator lights (or gauge) to signal operating conditions.

The heater shall consist of stainless steel front and powder-coated silver-gray hammertone body (or stainless steel body and base).

Warranty consists of 24/7 parts and service assistance (U.S. and Canada only).

HATCO CORPORATION | P.O. Box 340500 Milwaukee, WI 53234-0500 U.S.A.

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ITEM#

IMPERIAL ELECTRIC BOOSTER WATER HEATERS

Models S-6, -7, -9, -12, -13, -15, -17, -18, -24, -27, -30, -36, -39, -40, -45, -54, -57

The Hatco Imperial Electric Booster Water Heater combines quality construction and rugged dependability to provide up to 573 GPH (2169 LPH) of sanitizing rinse water. Dishes and flatware *air-dry* instantly to save time, space, and money. Storage capacity is 16 gallons (60 liters).

FLEXIBILITY

Models available from 6kW to 57kW in 208, 240, and 480 volts with other voltages available. The Imperial Electric Booster Heater thermostats can be lowered to a 140° F (60° C) setting for low-temp dishmachines.

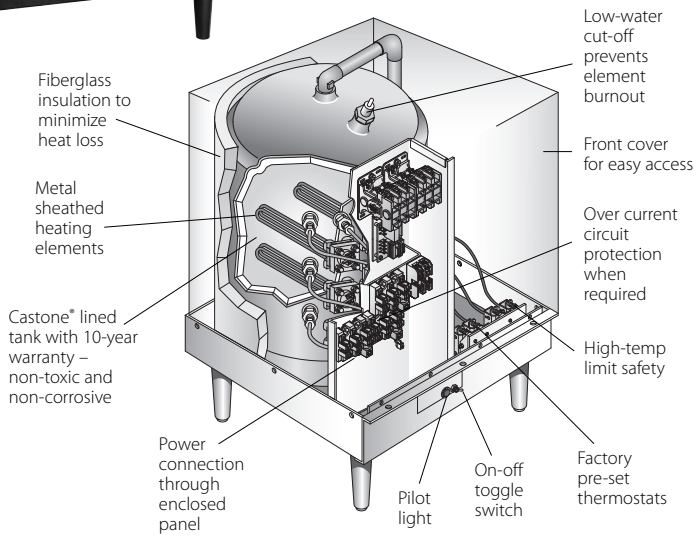
Service area is accessible from the front to permit easy installation, even next to other equipment.

QUALITY

The following features assure the finest performance for years to come:

- All models include a Castone® lined tank with a 10-year limited warranty.
- Features include a temperature/pressure relief valve, a pressure reducing valve, two temperature/pressure gauges, a high-temperature limit control, pilot indicator light, On-Off switch, and a low-water cut-off to prevent element burnout due to low water condition.
- Each booster has a built-in heat trap and fiberglass insulation to minimize heat loss.
- Hatco electric booster heaters are factory pre-plumbed and pre-wired with calibrated immersion thermostats and high-temperature limit switch.
- A stainless steel front panel and powder- coated silver-gray hammertone body is standard on all Imperial models.

Model S-54



Water Temperature Recovery Table

Imperial Model	40° F (22° C) Rise	70° F (39° C) Rise
S-6	60 gph (227 lph)	34 gph (129 lph)
S-7	70 gph (265 lph)	40 gph (151 lph)
S-9	90 gph (341 lph)	52 gph (197 lph)
S-12	120 gph (454 lph)	69 gph (261 lph)
S-13	135 gph (511 lph)	77 gph (292 lph)
S-15	151 gph (572 lph)	86 gph (326 lph)
S-17	173 gph (655 lph)	99 gph (375 lph)
S-18	181 gph (685 lph)	103 gph (390 lph)
S-24	241 gph (912 lph)	138 gph (522 lph)
S-27	271 gph (1026 lph)	155 gph (587 lph)
S-30	301 gph (1139 lph)	172 gph (651 lph)
S-36	361 gph (1367 lph)	206 gph (780 lph)
S-39	391 gph (1480 lph)	224 gph (848 lph)
S-40	407 gph (1541 lph)	232 gph (878 lph)
S-45	452 gph (1711 lph)	258 gph (977 lph)
S-54	542 gph (2052 lph)	310 gph (1174 lph)
S-57	573 gph (2169 lph)	326 gph (1234 lph)

WATER QUALITY REQUIREMENTS

Incoming water in excess of 3.0 grains of hardness per gallon (GPG) (.75 grains of hardness per liter) must be treated and softened before being supplied to booster heater(s). Water containing over 3.0 GPG (.75 GPL) will decrease the efficiency and reduce the operating life of the unit.

Note: Product failure caused by liming or sediment buildup is not covered under warranty.

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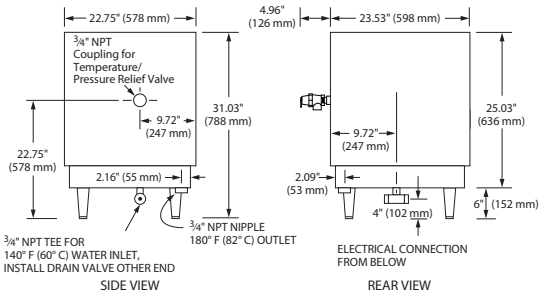
Form No. S Spec Sheet

Printed in U.S.A.
September 2012

ITEM#

IMPERIAL ELECTRIC BOOSTER WATER HEATERS

Models S-6, -7, -9, -12, -13, -15, -17, -18, -24, -27, -30, -36, -39, -40, -45, -54, -57



DIMENSIONS

23.625"W† x 22.75"D x 31.125"H with 6" (152 mm) legs (598 x 578 x 788 mm).

† Add 5" (127 mm) for pressure relief valve.

Working Pressure of Tanks: 150 psi (1034 kPa) – tested at 300 psi (2069 kPa).

VOLTAGE

208, 240, and 480 volts available. Export voltages available.

SPECIFICATIONS

			1-Phase		3-Phase		
Model	kW	Volts	Amps	Breaker/ Fuse Size	Amps	Breaker/ Fuse Size	Shipping Weight
S-6*	6	208	29	40	25*	40	200 lbs. (91 kg)
		240	25	40	22*	30	
		480	–	–	11*	15	
S-7*	7	208	34	50	29*	40	200 lbs. (91 kg)
		240	29	40	25*	40	
		480	–	–	13*	20	
S-9*	9	208	43	60	38*	50	200 lbs. (91 kg)
		240	38	50	33*	50	
		480	–	–	16*	20	
S-12	12	208	58	90	33	50	200 lbs. (91 kg)
		240	50	70	29	40	
		480	–	–	14.5	20	
S-13	13.5	208	65	90	38	50	200 lbs. (91 kg)
		240	56.3	90	33	50	
		480	–	–	16.3	30	
S-15	15	208	72	90	41.7	60	200 lbs. (91 kg)
		240	62.5	90	36.1	50	
		480	–	–	18.1	30	
S-17‡	17.2	208	–	–	47.9	60	200 lbs. (91 kg)
S-18§	18	208	86.5	125	–	–	200 lbs. (91 kg)
		240	75	100	43.4	60	
		480	–	–	21.7	30	
S-24	24	208	115.4	150	67.7	90	214 lbs. (97 kg)
		240	100	125	57.8	90	
		480	–	–	29.9	40	
S-27	27	208	129.8	175	75	100	214 lbs. (97 kg)
		240	112.5	150	65	90	
		480	–	–	32.5	50	

			1-Phase		3-Phase		
Model	kW	Volts	Amps	Breaker/ Fuse Size	Amps	Breaker/ Fuse Size	Shipping Weight
S-30	30	208	144	200	83.3	125	214 lbs. (97 kg)
		240	125	175	72.3	100	
		480	–	–	36	50	
S-36	36	208	173	225	100	125	214 lbs. (97 kg)
		240	150	200	86.7	125	
		480	–	–	43.3	60	
S-39	39	208	187.5	250	108	150	214 lbs. (97 kg)
		240	163.5	225	94	125	
		480	–	–	47	60	
S-40	40.5	208	–	–	112	150	224 lbs. (102 kg)
		240	–	–	97	125	
		480	–	–	49	60	
S-45·	45	208	–	–	125	175	224 lbs. (102 kg)
		240	188	250	108	150	
		480	–	–	54	70	
S-54··	54	208	–	–	150	200	224 lbs. (102 kg)
		240	–	–	130	175	
		480	–	–	65	90	
S-57··	57	208	–	–	158.4	200	224 lbs. (102 kg)
		240	–	–	137.3	175	
		480	–	–	68.6	90	

* Only 6, 7, & 9kW Models, 208 and 240 volts only, can be field converted to single phase (units are shipped 3-phase open delta). Larger branch circuit required than for balanced 3-phase of equal kW. (Balanced 3-phase available, consult factory.)

‡ 17.2kW models available in 208V 3-phase only.

§ 18kW models not available in 208V 3-phase.

· Not available in 208V single phase.

·· Not available in 208V or 240V single phase.

OPTIONS (NOT FOR RETROFIT)

- ❑ All Stainless Steel Body and Base
- ❑ Security Package

ACCESSORIES

- ❑ Blended Phosphate Water Treatment System (Not for potable water use)
- ❑ Shock Absorber – To Reduce Water Hammer
- ❑ Back Pressure Relief Valve
- ❑ Brass Pressure Reducing Valve with Bypass
- ❑ Floor Mounting Hardware
- ❑ Adjustable Stainless Steel Legs 6" to 7" (152 to 178 mm)

PRODUCT SPECS

Electric Booster Water Heater

The Electric Booster Water Heater to supply the final 180°F (82°C) rinse for the dishwasher shall be an Imperial Model ... as manufactured for commercial use by the Hatco Corporation, Milwaukee, WI 53234 U.S.A.

With 24/7 service (U.S. and Canada only), the booster shall have the capacity to heat ... gph (lph) from ....°F to 180° F (... °C to 82° C) and it shall be rated at ... kW, ... volts, ... phase. The tank shall be designed for a working pressure of 150 psi (1034 kPa) and include a Hatco Castone® lining.

The heater shall be complete with all internal plumbing, including ¾" NPT pipe and fittings for inlet and outlet. All controls shall be built-in, including contactors and prewired in accordance with UL #1453 and 422.11 NEL 2002. Proper surface mounting circuit breaker or fused disconnect switch shall be provided by electrical contractor.

Electric heating elements shall be metal sheathed, controlled by ambient compensating thermostats. The booster shall be protected with high temperature limit switch (ECO) and low-water cut-off.

The heater shall consist of stainless steel front and silver-gray hammertone body with standard 6" (152 mm) legs (or stainless steel body, base, and stainless steel adjustable legs).

The heater shall include a temperature/pressure relief valve, high-temperature pressure reducing valve with bypass, and two indicating temperature/pressure gauges.

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Form No. S Spec Sheet

Printed in U.S.A.
September 2012

Water Heater Data

PLUMBING DATA

Dielectric couplings should be used in connecting dissimilar metals, such as galvanized to copper, to prevent electrolysis.

All Hatco Booster Water Heaters require ¾" piping.

A check valve should not be installed in the supply line to the booster heater.

All shut-off valves must be gate or ball valves – not globe valves.

ELECTRICAL DATA

$$\left(\frac{\text{GPH} \times \text{°F Temp. Rise}}{400} = \text{kW}\right)$$

NOTE: GPH is gallons per hour.

SEE BOOSTER HEATER SIZING CHART, PAGES 158-160.

ELECTRICAL FORMULAS

$$\frac{\text{Watts}}{\text{Volts}} = \text{Amps}$$ 1-phase

$$\frac{\text{Watts} \times .86}{\text{Volts}} = \text{Amps}$$ 3-phase (open delta)

$$\frac{\text{Watts}}{\text{Volts} \times 1.73} = \text{Amps}$$ 3-phase (balanced delta)

NOTE: When primary temperatures are less than 100°F consult factory for suitable booster heater.

WATER TEMPERATURE RECOVERY TABLE IN GPH °F RISE

kW	30°	40°	50°	60°	70°	80°	90°	100°
4	54	40	32	27	23	20	18	16
5	67	50	40	33	29	25	22	20
6	80	60	48	40	34	30	27	24
7	94	70	56	47	40	35	31	28
9	120	90	72	60	52	45	40	36
9.9	132	99	79	66	57	50	44	40
10.5	140	105	84	70	60	53	47	42
11.4	153	114	92	76	65	57	51	46
12	161	120	96	80	69	60	54	48
13.5	181	135	108	90	77	68	60	54
15	201	151	120	100	86	75	67	60
17.25	231	173	139	115	99	87	77	69
18	241	181	145	120	103	90	80	72
24	321	241	193	161	138	120	107	96
27	361	271	217	181	155	135	120	108
30	401	301	241	201	172	151	134	120
36	482	361	289	241	206	181	161	145
39	522	391	313	261	224	196	174	157
40.5	542	407	325	271	232	203	181	163
45	602	452	361	301	258	226	201	181
54	723	542	434	361	310	271	241	217
57	763	573	458	381	326	286	254	229

Sizing Chart For Low-Temp Dishmachines

BOOSTERS RATED AT 30°F RISE

Dishwasher Model Number	Electric Compact Booster	Electric Imperial Booster
AMERICAN DISH SERVICE		
AH, AH-3D, AH-3D-S, AHC, AHC-3D, AHC-3D-S, ET-A, ET-AF, ET-AH, ET-A-M, ET-AH-M, ET-A-3, ET-AH-3, L-90-3D, L-90-3D-K, L-90-3D-K-S, L-90-3D-S, L-90-3DC, L-90-3DC-K, L-90-3DC-K-S, L-90-3DC-S, L-90-3DW, L-90-3DW-K, L-90-3DW-K-S, L-90-3DW-S, L-90-3DWC, L-90-3DWC-K, L-90-3DWC-K-S, L-90-3DWC-S, WH, WHC	C-4	S-6
A-3D, A-3D-S, A, AC, AC-3D, AC-3D-S, AH-B, ET-AF-3, ET-AF-M, HT-25, L-60-3D, L-60-3D-K, L-60-3D-K-S, L-60-3D-S, L-60-3DC, L-60-3DC-K, L-60-3DC-K-S, L-60-3DC-S, L-60-3DW, L-60-3DW-K, L-60-3DW-K-S, L-60-3DW-S, L-60-3DWC, L-60-3DWC-K, L-60-3DWC-K-S, L-60-3DWC-S, L-72-3D, L-72-3D-K, L-72-3D-K-S, L-72-3D-S, L-72-3DC, L-72-3DC-K, L-72-3DC-K-S, L-72-3DC-S, L-72-3DW, L-72-3DW-K, L-72-3DW-K-S, L-72-3DW-S, L-72-3DWC, L-72-3DWC-K, L-72-3DWC-K-S, L-72-3DWC-S, W, WC	C-5	S-6
A-B, AD-25, SS-25, 5-AH, 5-AHS	C-6	S-6
AF, AF-3D, AF-3D-S, AF-B, AFC, AFC-3D, AFC-3D-S, AFW, AFWC, 5, 5-S	C-7	S-7
ADC-44, ADC-66, 5-AG, 5-AGS, 5-CD-LF, 5-CD-RF	C-9	S-9
BLAKESLEE		
U21-C	C-4	S-6
D-8-LT	C-6	S-6
DD-8-LT, R-CC64-LT, R-EE-LT	C-12	S-12
Series XF-EE-LT, XF-PEE-LT, XF-LL-LT, XF-PLL-LT, XF-MM-LT, XF-PMM-LT, XF-EEE-LT, XF-LLL-LT, XF-MMM-LT	C-13	S-13
Series R-L-LT, R-PL-LT, R-M-LT, R-PM-LT, F-L-LT, F-PL-LT, F-M-LT, F-PM-LT (single tank)	C-36	S-36
Series "R"&"F"-CC-LT, -EE-LT, -LL-LT, -MM-LT, -LLL-LT, -MMM-LT, -PCC-LT, -PEE-LT, -PLL-LT, -PMM-LT (multi-tank)	C-24	S-24
Series XF-L-LT, XF-PL-LT, XF-M-LT, XF-PM-LT (single tank)	C-54	S-54
Series XF-PEE-LT, XF-PLL-LT, XF-PMM-LT, XF-EEE-LT, XF-LLL-LT, XF-MMM-LT (multi-tank)	C-36	S-36
FA (Flight-A-Round) and RA (Rack-A-Round) use comparable "F" listing.		

Dishwasher Model Number	Electric Compact Booster	Electric Imperial Booster
CHAMPION		
ULD, ULF	C-6	S-6
DLF	C-13	S-13
KL44, KL66	C-36	S-36
CMA DISHMACHINES		
A-1, AH-1, C-1, VAC-1, A-3, AH-3, C-3, L-1C, VAC-3, VAC-4, VAC-5, L-1X	C-4	S-6
A-2, AH-1, AH-2, AH-3, B-3, C-1, C-2, C-3, EVA-1, EVA-2, EVA-3, EVA-4, EVA-5, VAC-2	C-6	S-6
B-1	C-7	S-7
B-2	C-9	S-9
CMA-44L with tank heater, CMA-66L	C-24	S-24
CVA-1, CVA-2, CVA-3, CVA-4	C-6	S-6
CVA-5	C-7	S-7
HOBART		
LX-18C, LX-30C, LX-40C, WM-5C, SR24C	C-4	S-6
LT-1	C-6	S-6
AM-14, AM-14C	C-7	S-7
C44A, CRS66A, CPW80A	C-27	S-27
FT-800	C-30	S-30
JACKSON		
Conserver 24LT, 200LT, ES1000 (Ecolab/Jackson)	C-4	S-6
Conserver 1, Conserver XL, ES2000 (Ecolab/Jackson)	C-9	S-9
Conserver 2, Conserver XL2, ES4000 (Ecolab/Jackson)	C-15	S-15
AJ-44, AJ-66, AJ-80	C-18	S-18
KNIGHT EQUIPMENT LTD.		
KLE-112-HL	C-5	S-6
KLE-117i, KLE-117c, KLE-175GT, KLE-175GTM	C-9	S-9
KLE-235d	C-13	S-13
KLE-175GT Corner, KLE-175GTM Corner	C-12	S-12

Low-Temp Sizing Data

Chemical low-temp dishwashers are most effective when supplied with a 140°F hot water supply. Sometimes this water temperature is not available due to undersized primary water heaters or local safety codes. Hatco can provide a pre-heater for chemical low-temp dishwashers to provide an adequate supply of 140°F hot water for proper operation.

NOTE: When ordering a heater for use with a chemical low-temp dishwasher, thermostat adjustments for low-temp applications are the responsibility of the installer.

To properly size a Hatco heater for low-temp use:

1. Determine the required temperature rise by subtracting the available hot water supply temperature from 140°F. This should be a minimum of 20°F.
2. Determine the water usage by consulting the dishwasher data plate, literature, or NSF listing. This should be shown as gallons per hour (GPH).
3. Use the Hatco formula for sizing or the sizing chart on this page to determine the required kW and select the appropriate Hatco model.

Booster Heater Sizing Chart

Dishwasher Model Number	Electric Compact Booster Temperature Rise 40°F	Electric Compact Booster Temperature Rise 70°F	Electric Imperial Booster Temperature Rise 40°F	Electric Imperial Booster Temperature Rise 70°F	Gas Powermite® Booster▲ Temperature Rise 40°F	Gas Powermite® Booster▲ Temperature Rise 70°F
ADAMATION						
CSL-1390, CA-2, CA-3, CA-4, SLAP 44	C-39	(2)C-36	S-39	(2)S-36	PMG-200	(2)PMG-200
CA, CA-1	C-54	(2)C-45	S-54	(2)S-45	PMG-200	(2)PMG-200
ALVEY						
FLC-10, SL-2S			S-6	S-9		
FLC-12, CL-1, CL-1Turntable, SA-5A			S-7	S-12		
FL-2S			S-9	S-13		
KS-70, KS70M SB			S-9	S-15		
SL-2D			S-13	S-18		
FLC-36			S-15	S-27		
KS-88-C			S-18	S-30		
KS-70-N, KS-88-N			S-39	(2)S-40		
AMERICAN DISH SERVICE						
AF-ES, AFC-ES	C-4	C-7	S-4	S-7		
HT-25	C-7	C-12	S-7	S-12		
ADC-44, ADC-66	C-12	C-24	S-12	S-24		PMG-100
BLAKESLEE						
UC-21A, UC-21B	C-4	C-4	S-6	S-6	PMG-60	PMG-60
UC-21	C-6	C-12	S-6	S-12	PMG-60	PMG-60
D-8	C-9	C-13	S-9	S-13	PMG-60	PMG-60
D-9	C-12	C-17	S-12	S-17	PMG-60	PMG-100
Series "R"&"F"-CC, -EE, -LL, -MM, -LLL, -MMM, -PCC, -PEE, -PLL, -PMM (multi-tank) with suffix "LC"	C-13	C-24	S-13	S-24	PMG-200	PMG-200/100
Series XF-EE, XF-LL	C-17	C-30	S-17	S-30	PMG-100	PMG-200
Series XF-LL, XF-PLL, XF-MM, XF-PMM, XF-EEE, XF-LLL, XF-MMM (Multi-tank) with suffix "LC"	C-17	C-30	S-17	S-30	PMG-200	PMG-200/100
DD-8	C-18	C-30	S-18	S-30	PMG-100	PMG-200
Series F-E, FA-EE, FA-PEE, FA-LL, FA-PLL, FA-MM, FA-PMM, F-EEE, FA-EEE, FA-LLL, FA-MMM, F-PE	C-30	C-54	S-30	S-54	PMG-200	PMG-200/100
Series R-L, R-PL, R-M, R-PM, F-L, F-PL, F-M, F-PM (single tank)	C-36	C-54	S-36	S-54	PMG-200	(2)PMG-200
Series XF-L, XF-PL, XF-M, XF-PM (single tank)	(2)C-36		(2)S-36			
Series R-E, R-PE, XF-PEE, XF-PLL, XF-PMM, XF-EEE, XF-LLL, XF-MMM (multi-tank) FA (Flight-A-Round) and RA (Rack-A-Round) use comparable "F" listing.	C-45	(2)C-30	S-45	(2)S-30	PMG-200	(2)PMG-200
XF-EE, XF-EE-LT (with LT suffix)	C-17	C-36	S-17	S-36	PMG-100	PMG-200
CHAMPION						
U-H1, UH-200, UH-200B, U-HB	C-4	C-6	S-6	S-6	PMG-60	PMG-60
UL-100, UH-100B, UH-170B, UH-200B, DH-2000	C-6	C-9	S-6	S-9	PMG-60	PMG-60
UL-150	C-4	C-7	S-6	S-7	PMG-60	PMG-60
UH-150, UH-150B, UH-100, UH-100B, DHB-VS	C-5	C-9	S-6	S-9	PMG-60	PMG-60
D-H1, D-HB, D-H1T, D-HBT	C-9	C-13	S-9	S-13	PMG-60	PMG-60
44 DRWS, 66 DRPWWS, 80 DRHDPWWS, 70 DRFFPWWS	C-9	C-13	S-9	S-13	PMG-60	PMG-100
PP-28	C-27	C-45	S-27	S-45	PMG-100	PMG-200
D-H1C, D-H1TC	C-9	C-18	S-9	S-18	PMG-60	PMG-100
DL-1000, DH-1000, DHB-VS	C-6	C-12	S-6	S-12	PMG-60	PMG-60
44DR, 66DRPW, 80DRHDFW, 70DRFFPW, 54DR, 76DRPW, 80DRFFPW, 90DRHDPW	C-12	C-24	S-12	S-24	PMG-60	PMG-100
44-WS, 66 WSPW, 66-WS, 64, 70WSFFPW, 80WSHDPW, 90FFPW, 100HDPW, 86 PW, 84, 106 PW, 120 HDPW, 110 FFPW	C-15	C-24	S-15	S-24	PMG-60	PMG-100
UC-CW6-WS	C-24	C-36	S-24	S-36	PMG-100	PMG-200
US-CW8-WS	C-24	C-39	S-24	S-39	PMG-100	PMG-200
44, 66 PW, 70FFPW, 80HDPW	C-27	C-54	S-27	S-54	PMG-100	PMG-200
54, 76PW, 80FFPW, 90HDPW,	C-24	C-45	S-24	S-45	PMG-100	PMG-200
40-KB, 40-KB-2-2, 40-KFWB, 40-KPRB, 40-KPRB-2-2, 40KPRB-2-3, 44LT, 60-KB, 60-KB-2-2, 60-KFWB, 60-KFWB-2-2, 60-KPRB, 60-KPRB-2-3, 64KB, 64-KB Corner, 64-KPRB, 64-KPRB Corner, 64 Modular, 66LT, 86 Modular	C-30	C-54	S-30	S-54	PMG-200	PMG-200/100
44-KB, 44-KB Corner, 44-KPRB, 44-KPRB Corner, 54-KB, 54-KB Corner, 54-KPRB, 54-KPRB Corner, 44 Modular, 66 PW Modular, UC** Series 6' Center, UC-C4	C-36	C-57	S-36	S-57	PMG-200	PMG-200/100
UC-CW4	C-36	(2)C-36	S-36	(2)S-36	PMG-200	PMG-200/100
UC-C	C-45	(2)C-36	S-45	(2)S-36	PMG-200	PMG-200/100
UC**CW Series 6' Center	C-45	(2)C-39	S-45	(2)S-39	PMG-200	(2)PMG-200
W-6-WS, W6	C-45	(2)C-45	S-45	(2)S-40	PMG-200	(2)PMG-200

▲Powermite installations above 2,000 ft. will reduce the above capacities and may require change of pressure and/or orifices in certain models at time of install to meet IAS safety compliance. These modifications are the responsibility of the installer. Consult "Installation and Operating Manual" for sizing adjustments and orifice changes.

Booster Heater Sizing Chart

Dishwasher Model Number	Electric Compact Booster Temperature Rise 40°F	Electric Compact Booster Temperature Rise 70°F	Electric Imperial Booster Temperature Rise 40°F	Electric Imperial Booster Temperature Rise 70°F	Gas Powermite® Booster▲ Temperature Rise 40°F	Gas Powermite® Booster▲ Temperature Rise 70°F
CMA DISHMACHINES						
CMA-180	C-7	C-12	S-7	S-12		
CMA-44/66	C-24	C-36	S-24	S-36	PMG-100	PMG-200
CMA-44H with tank heater, CMA-66H	C-36	C-45	S-36	S-45	PMG-100	PMG-200
EST-44/66	C-12	C-24	S-12	S-24	PMG-60	PMG-100
HOBART						
AM-15F	C-4	C-6	S-6	S-9	PMG-60	PMG-60
LXiC, LXiGC, LX-18C, LX-30C, LX-40C, AM-15F	C-4	C-7	S-6	S-6	PMG-60	PMG-60
LX-30, SR24, SR24H	C-4	C-7	S-6	S-7	PMG-60	PMG-60
LX-18, AM-14F, AM-15, AM-15T	C-5	C-9	S-6	S-9	PMG-60	PMG-60
WM-5C	C-6	C-9	S-6	S-9		PMG-100
WM-5 (Without sump heater)	C-7	C-12	S-7	S-12		
AM-14T, AM-14TC	C-7	C-12	S-7	S-12	PMG-60	PMG-60
AM-14, AM-14C	C-9	C-12	S-9	S-12	PMG-60	
AM-12, AM-12C*	C-9	C-12	S-9	S-12	PMG-60	PMG-100
UW-50			S-15	S-24		
OR **Opti-RinSe C44A,CRS-66A,CCS-66A, CPW-80A, C54A, CRS-76A, CCS-76A, CPW-90A, C64A, CRS-86A, CCS-86A, CPW-100A, C88A, CRS-110A, CCS-11-0A, CPW-124A**	C-15	C-27	S-15	S-27	PMG-100	PMG-200
C-54A, CRS-76A, CPW-90A, CCS-76A	C-39	(2)C-36	S-39	(2)S-36	PMG-200	PMG-200/100
C-44A, CRS-66A, CCS-66A, CPW-80A, C-64A, CRS-86A, CCS-86A, CPW-100A	C-30	C-54	S-30	S-54	PMG-200	PMG-200/100
C-88A, CRS-110A, CPW-124A, CCS-110A	C-36	C-54	S-36	S-54	PMG-200	PMG-200/100
Opti-RinSe C44AW, CRS-66AW, CCS-66AW, CPW-80AW	C-9	C-15	S-9	S-15	PMG-60	PMG-100
OR **C-44AW, CRS-66AW, CPW-80AW, CCS-66AW**	C-12	C-24	S-12	S-24	PMG-100	PMG-100
C-44, CRS-66, CPW-80	C-36	C-54	S-36	S-54	PMG-200	PMG-200/100
CL44e, CL66e	C-13	C-24	S-13	S-24	PMG-100	PMG-200
CLPS66e	C-15	C-30	S-15	S-30	PMG-100	PMG-200
C-54, CRS-76, CPW-90	C-54	(2)C-39	S-54	(2)S-39	PMG-200/100	(2)PMG-200
C-64W, CRS-86W, CPW-100W, C-88W, CRS-110W, CPW-124W, CCS-86W	C-24	C-36	S-24	S-36	PMG-100	PMG-200
C-64, CRS-86, CPW-100	C-45	(2)C-36	S-45	(2)S-36	PMG-200	PMG-200/100
FT800W, FT-900W	C-24	C-39	S-24	S-39	PMG-200	PMG-200
FT-600, FT-700	C-54	(2)C-39	S-54	(2)S-39	PMG-200/100	(2)PMG-200
FT800	C-39	(2)C-39	S-39	(2)S-39	PMG-200	(2)PMG-200
FT900	C-36	C-57	S-36	S-57	PMG-200	PMG-200/100
FT800S, FT-900S	C-39	(2)C-36	S-39	(2)S-36	PMG-200	PMG-200/100
UTW-28, UTW-28C			S-18	S-36		
FRC and FR (Fast Rack Series) use comparable "C" line listing.						
INSINGER						
GS 302, GS-14	C-4	C-4	S-6	S-6	PMG-60	PMG-60
45SA-5	C-4	C-7	S-6	S-7	PMG-60	PMG-60
Commander 18-5 Series, CS-5, CS-5C, CS-5CH, CS-5H, Ensign 40-2	C-6	C-12	S-6	S-12	PMG-60	PMG-100
Commander 18-6 Series, 18-6H	C-6	C-12	S-6	S-12	PMG-60	PMG-100
Commander 18-6, 18-6H (Built-In)	ABB-13.5	ABB-13.5				
Admiral 44-4, 66-4, Speeder 64, 86-3, Clipper (all)	C-15	C-27	S-15	S-27	PMG-100	PMG-200
Admiral 44-4, 66-4 (Built-In)	ABB-15-8	ABB-27-8				
135-20, 185-20, 250-20, 60-20, 85-20, R-106-2	C-24	C-45	S-24	S-45	PMG-100	PMG-200
Century (all)	C-24	C-45	S-24	S-45	PMG-100	PMG-200
Trac 878	C-24	C-36	S-24	S-36	PMG-100	PMG-200
Century 14, Clipper RC-##-RPW-W	C-24	C-39	S-24	S-39	PMG-100	PMG-200
Super 106-2,Trac 321, Trac 321-2/RPW	C-27	C-45	S-27	S-45	PMG-100	PMG-200
Defender Flight Machine	C-36	C-54	S-36	S-54	PMG-200	(2)PMG-200
Master RC 3-tank Flight Machine	C-15	C-27	S-15	S-27	PMG-200	(2)PMG-200
Master RC 4-tank Flight Machine	C-36	C-57	S-36	S-57		
CA-3①			S-9	S-24	PMG-200	
DA-3①			(2)S-9	(2)S-24		
For outdated models, consult factory for correct booster.						

* Model AM-12 with serial no. 12-067-357 or below and model AM-12C with serial no. 12-067-537 or below require slightly larger booster than listed.

OR C Models with serial no. 85-1041605 or greater use Opti-RinSe.

Shaded area indicates older models prior to Opti-RinSe.

▲ Powermite installations above 2,000 ft. will reduce the above capacities and may require change of pressure and/or orifices in certain models at time of install to meet IAS safety compliance. These modifications are the responsibility of the installer. Consult "Installation and Operating Manual" for sizing adjustments and orifice changes.

① Consult factory - special plumbing may apply.

Booster Heater Sizing Chart

Dishwasher Model Number	Electric Compact Booster Temperature Rise 40°F	Electric Compact Booster Temperature Rise 70°F	Electric Imperial Booster Temperature Rise 40°F	Electric Imperial Booster Temperature Rise 70°F	Gas Powermite® Booster▲ Temperature Rise 40°F	Gas Powermite® Booster▲ Temperature Rise 70°F
JACKSON						
JP-24, JP-24B, JP-24F, JP-24BF	C-4	C-6	S-6	S-6	PMG-60	PMG-60
24B Series		C-4		S-6		PMG-60
10AB, 10APRB		C-5		S-6		PMG-60
44CE*, 66 CERPW	C-30	C-54	S-30	S-54	PMG-200	
54CE, 76 CERPW	C-36	(2)C-30	S-36	(2)S-30	PMG-200	
64CE, 86 CERPW	C-27	C-39	S-27	S-39	PMG-200	
100	C-12	C-24	S-12	S-24	PMG-100	
100B, 100PRB, 150B, 150PRB		C-9		S-9		
150	C-12	C-18	S-12	S-18		PMG-100
200	C-7	C-12	S-7	S-12	PMG-60	PMG-60
200B		C-6		S-6		PMG-60
Tempstar GPX						PMG-60
Tempstar, Tempstar SDS, Tempstar HH	C-6	C-12	S-6	S-12	PMG-100	PMG-100
TS-44, TS-66	C-24	C-36	S-24	S-36	PMG-100	PMG-200
AJ-44, AJ-66, AJ-80, WH-44, ES-4400, ES-6600 (ECOLAB/JACKSON)	C-24	C-45	S-24	S-45	PMG-100	PMG-200
AJ-54, AJ-76, AJ-90	C-30	C-54	S-30	S-54	PMG-200	PMG-200/100
AJ-64, AJ-86, AJ-100	C-24	C-39	S-24	S-39	PMG-100	PMG-200
* Model #44CE w/SN1999 or below requires larger booster than listed.						
KNIGHT EQUIPMENT LTD.						
KLE-112-HL	C-7	C-12	S-7	S-12	PMG-60	PMG-60
MEIKO						
K-44, K-66, K-80	C-24	C-36	S-24	S-36	PMG-100	PMG-200
K-54, K-76, K-90, K-64, K-86, K-100	C-24	C-45	S-24	S-45	PMG-100	PMG-200
METALWASH/INTEDGE						
FW4	C-12	C-18	S-12	S-18	PMG-60	PMG-100
RS-30A, RS-28L			S-15	S-24		
RT-74, RT-60, RT-42B, RT-42BC			S-27	S-40		
RS-2R			S-30	S-45		
STERO						
ER-44, ER-44-10, ER-66S, ER-76S, ER-76SC	C-15	C-24	S-15	S-24	PMG-60	PMG-100
ER-64, ER-86S, ER-94S, ER-94SC	C-15	C-24	S-15	S-24	PMG-60	PMG-100
SCT-44-10-LW, SCT-44-LW, SCT-66S-LW, SCT-76S-LW, SCT-76SC-LW, SCT-90S-LW	C-15	C-24	S-15	S-24	PMG-60	PMG-100
SC-1-2-4-LW, SC-1-6-4-LW, SC-2-4-LW, SC-5-2-4-LW, SC-5-6-4-LW, SC-6-4-LW	C-15	C-24	S-15	S-24	PMG-100	PMG-200
SCT-64, SCT-86S, SCT-94S, SCT-94SC	C-24	C-45	S-24	S-45	PMG-100	PMG-200
SCT-108S, SCT-108SC, SCT-76, SCT-94SM	C-30	C-54	S-30	S-54	PMG-200	PMG-200/100
SC-6-4, SCT-44, SCT-44-10, SCT-66S, SCT-76S, SCT-76SC, SCT-90S	C-36	C-54	S-36	S-54	PMG-200	PMG-200/100
SCT-120S, SCT-120SC, SCT-120SM, SCT-150SM	C-36	C-57	S-36	S-57	PMG-200	PMG-200/100
STW-110, SC-1-2-7-4, SC-1-6-3-4, SC-1-6-7-4, SC-2-7-4, SC-5-2-7-4, SC-5-6-3-4, SC-5-6-7-4, SC-6-3-4, SC-6-7-4	C-30	C-54	S-30	S-54	PMG-200	PMG-200/100
SC-1-2-4, SC-1-6-4, SC-2-4, SC-5-2-4, SC-5-6-4	C-36	(2)C-57	S-36	(2)S-57	PMG-200	(2)PMG-200
SCT-44-10-SC-1-3-4, SCT-44-10-3-4, SCT-44-SC-1-3-4, SCT-44-SC-3-4, SCT-54-SC-1-3-4, SCT-54-SC-3-4, SCT-76S-SC-3-4	C-36	C-54	S-36	S-54	PMG-200	(2)PMG-200
STPC (Four tank)	C-24	C-45	S-24	S-45	PMG-100	PMG-200
STPCW (Four tank)	C-27	C-45	S-27	S-45	PMG-100	PMG-200
STPC	C-30	C-54	S-27	S-54	PMG-200	PMG-200/100
STPCW	C-36	(2)C-30	S-36	(2)S-30	PMG-200	PMG-200/100
SD-2RA, SDRA, SDRA-PACK	C-12	C-18	S-12	S-18	PMG-60	PMG-100
U-31-A, U-31-AC			S-24	S-45	PMG-100	PMG-200
U-31-A2			(2)S-24	(2)S-45	PMG-200	(2)PMG-200
STBUW-1	C-45	(2)C-36	S-45	(2)S-36		
SC-2-3-4, SC-5-2-3-4	C-30	C-45	S-30	S-45	PMG-200	
SC20-1 (low temp.)	C-12		S-12		PMG-60	
SC20-2 (low temp.)	C-12	C-24	S-12	S-24		PMG-100
SC-2-8, SC-2-9, SC-1-2-8, SC-5-6-8, SC-6-8, SC-6-9, SC-1-6-8, SC-5-6-9, SC-5-2-9, SC-1-6-9, SC-5-2-8 (low temp.)	C-18	C-36	S-18	S-36	PMG-100	PMG-200

▲Powermite installations above 2,000 ft. will reduce the above capacities and may require change of pressure and/or orifices in certain models at time of install to meet IAS safety compliance. These modifications are the responsibility of the installer. Consult "Installation and Operating Manual" for sizing adjustments and orifice changes.

This selector chart is based on 40°F and 70°F temperature rises, 20 psi flow pressure, and minimum rinse cycle timer setting in NSF listing.

All booster heaters are rated at 100% of the capacity of the dishwashers as recommended by the National Sanitation Foundation. Where make-up water for wash tank is provided from final rinse supply, chart recommendations are based upon this additional demand (not over 2 GPM) as required by NSF.

All sizings shown are that of the dishwasher manufacturers. Hatco Corporation is not responsible for incorrect sizing applications.

ELECTRICAL DATA

$$\left(\frac{\text{GPH x °F Temp. Rise}}{400} = \text{kW}\right)$$

NOTE: GPH is gallons per hour.

Electrical Ratings For Hatco Water Heaters

Watts	Volts	Phase	Amps	Breaker or Fuse size
4kW	208	1	19	30
	240	1	17	30
	480	1	8	15
5kW	208	1	24	30
	240	1	21	30
	480	1	10	15
6kW	208	1	29	40
	208	3	25†	40
	240	1	25	40
	240	3	22†	30
	480	3	11†	15
	600	3	5.7	15
7kW	208	1	34	50
	208	3	29†	40
	240	1	29	40
	240	3	25†	40
	480	3	13†	20
	600	3	6.7	15
9kW	208	1	43	60
	208	3	38†	50
	240	1	38	50
	240	3	33†	50
	480	3	16.3†	30
	600	3	8.7	15
9.9kW	208	1	47.5	60
	208	3 (BAL.)	27.5	40
10.4kW	208	3 (BAL.)	28.8	40
11.4kW	240	1	47.5	60
	240	3 (BAL.)	27.5	40
	480	3 (BAL.)	13.7	20
12kW	208	1	58	90
	208	3	33	50
	240	1	50	70
	240	3	29	40
	480	3	14.5	20
	600	3	11.6	20
13.5kW	208	1	65	90
	208	3	38	50
	240	1	56.3	90
	240	3	33	50
	480	3	16.3	30
	600	3	13	20
15kW	208	1	72	90
	208	3	41.7	60
	240	1	62.5	90
	240	3	36.1	50
	480	3	18.1	30
	600	3	14.5	20
17.25kW	208	3	47.9	60
18kW	208	1	86.5	125
	240	1	75	100
	240	3	43.4	60
	480	3	21.7	30
	600	3	17	30

Watts	Volts	Phase	Amps	Breaker or Fuse size
24kW	208	1	115.4	150
	208	3	66.7	90
	240	1	100	125
	240	3	57.8	90
	480	3	29.9	40
	600	3	23	30
27kW	208	1	129.8	175
	208	3	75	100
	240	1	112.5	150
	240	3	65	90
	480	3	32.5	50
	600	3	26	40
30kW	208	1	144	200
	208	3	83.3	125
	240	1	125	175
	240	3	72.3	100
	480	3	36	50
	600	3	28.9	40
36kW	208	1	173	225
	208	3	100	125
	240	1	150	200
	240	3	86.7	125
	480	3	43.3	60
	600	3	34.7	50
39kW	208	1	187.5	250
	208	3	108	150
	240	1	163.5	225
	240	3	94	125
	480	3	47	60
	600	3	37.6	50
40.5kW	208	3	112.5	150
	240	3	97.5	125
	480	3	48.8	70
	600	3	39	50
45kW	208	3	125	175
	240	1	188	250
	240	3	108	150
	480	3	54	70
	600	3	43.4	60
54kW	208	3	150	200
	240	3	130	175
	480	3	65	90
	600	3	52	70
57kW	208	3	158.4	200
	240	3	137.3	175
	480	3	68.6	90
	600	3	54.9	70

† Open Delta (unbalanced load) amperage of high leg indicated.

USE COPPER WIRE ONLY

ELECTRICAL FORMULAS

$\frac{\text{Watts}}{\text{Volts}} = \text{Amps}$ 1-phase

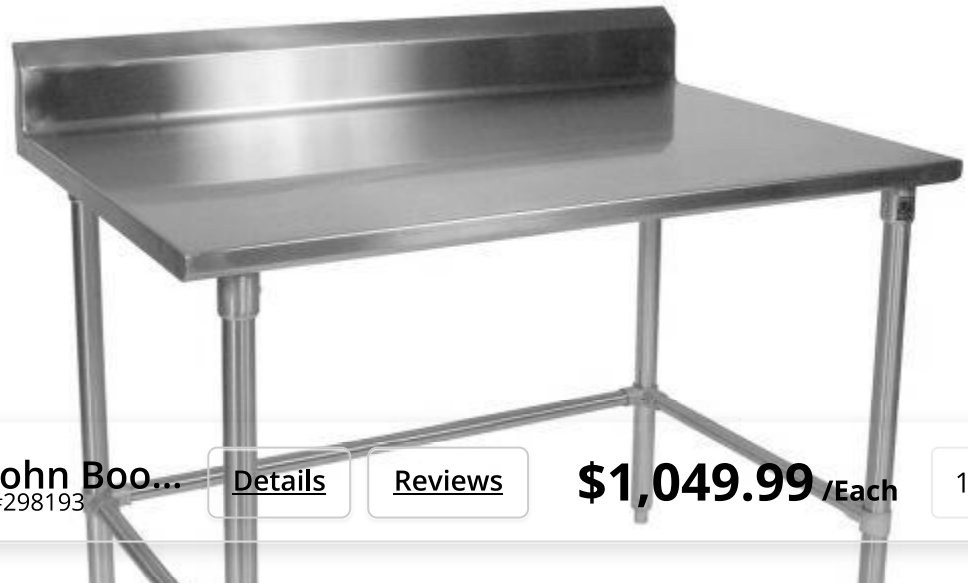
$\frac{\text{Watts x .86}}{\text{Volts}} = \text{Amps}$ 3-phase (open delta)

$\frac{\text{Watts}}{\text{Volts x 1.73}} = \text{Amps}$ 3-phase (balanced delta)

John Boos ST6R5-3072SBK Stainless Steel 72" x 30" Rear Riser Top Work Table w/ Adjustable Stainless Bracing

John Boos ST6R5-3072SBK Stainless Steel 72" x 30" Rear Riser Top Work Table w/ Adjustable Stainless Bracing

Item: #298193 MFG: #ST6R5-3072SBK GTIN: #0662969299156



John BOOS
Since 1887

ITEM #: _____ QTY: _____
MODEL #: _____
PROJECT NAME: _____

010719

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"3PB-2D" PRO-BOWL COMPARTMENT SINKS 16GA

3 COMPARTMENT WITH 2 DRAIN BOARD - STAINLESS STEEL BASE

FEATURES:

- STANDARD 16GA TYPE 300 STAINLESS STEEL WITH #4 POLISH, SATIN FINISH
- 12" & 14" DEEP BOWLS
- ALL CORNERS, BOTH VERTICAL AND HORIZONTAL, COVED AT 5/8" RADIUS
- BOTTOMS OF BOWLS FORMED FOR DRAINAGE TO 3-1/2" DIAMETER DIE STAMPED OPENING
- FULL LENGTH **10" HIGH BOXED BACKSPLASH,** WITH 2" RETURN TO WALL AT 45 DEGREE AND 3/4" TURNED DOWN REAR LIP
- 8" ON-CENTER, 1" FAUCET HOLES IN BACKSPLASH
- 1" FAUCET HOLES IN BACKSPLASH
- SOLID STAINLESS STEEL FRONT PANEL, TYPE 300 STAINLESS STEEL WITH #4 POLISH, SATIN FINISH
- ALL OUTSIDE CORNERS OF ASSEMBLY ARE BULLNOSED TO PROVIDE SAFE, CLEAN, AND POLISHED EDGE

CONSTRUCTION:

- TOP: STAINLESS STEEL SINKS ARE TIG WELDED, EXPOSED WELDS ARE POLISHED TO MATCH ADJACENT SURFACE
- BASE: STAINLESS STEEL BASES, STANDARD K.D.

MATERIAL:

- BOWLS & TOP: 16GA TYPE 300 STAINLESS STEEL WITH #4 POLISH, SATIN FINISH
- LEGS: 1-5/8" ROUND O.D. STAINLESS STEEL
- BRACING: 1-1/4" ROUND O.D. STAINLESS STEEL
- GUSSETS: STAINLESS STEEL
- FEET: 1" ADJUSTABLE STAINLESS STEEL BULLET FEET

16GA - "3PB-2D" PRO-BOWL SERIES SINK

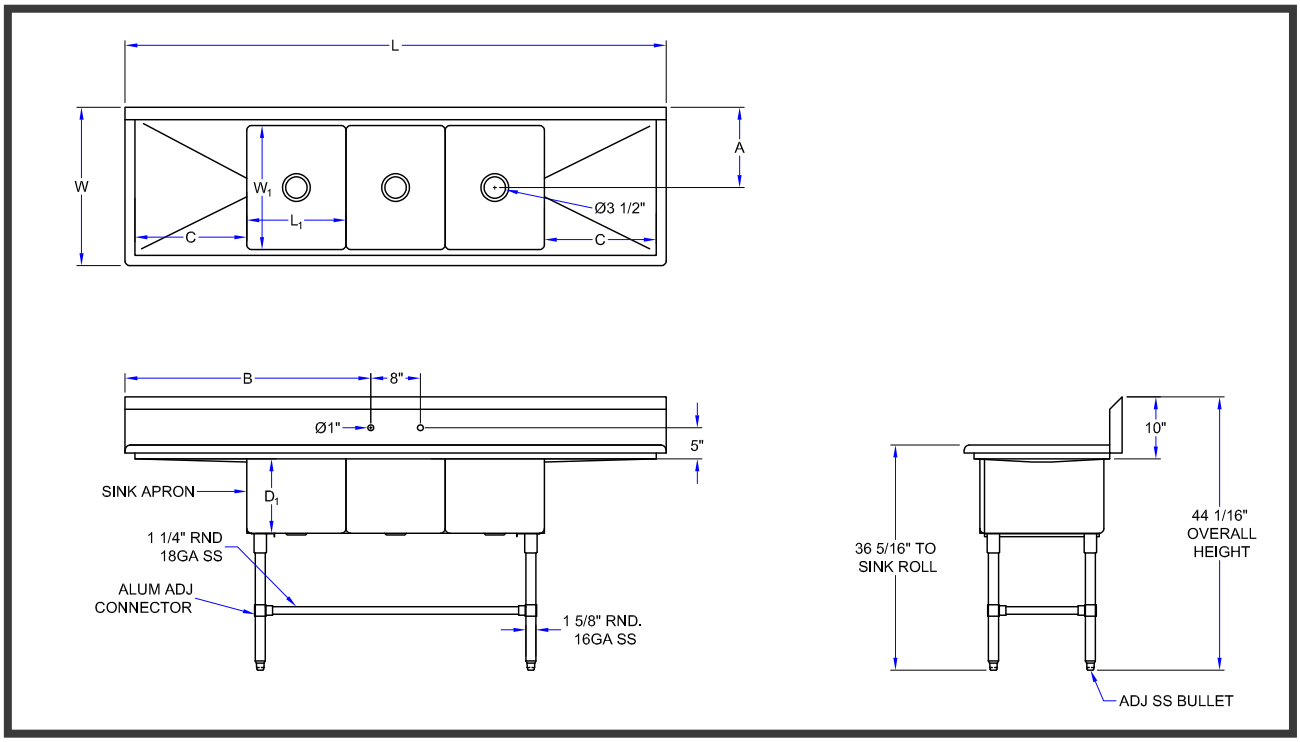
12" DEEP	QTY	14" DEEP	QTY
3PB1620-2D18		3PB16204-2D18	
3PB1620-2D24		3PB16204-2D24	
3PB1620-2D30		3PB16204-2D30	
3PB18-2D18		3PB184-2D18	
3PB18-2D24		3PB184-2D24	
3PB18-2D30		3PB184-2D30	
3PB1824-2D18		3PB18244-2D18	
3PB1824-2D24		3PB18244-2D24	
3PB1824-2D30		3PB18244-2D30	
3PB20-2D18		3PB204-2D18	
3PB20-2D24		3PB204-2D24	
3PB20-2D30		3PB204-2D30	
3PB24-2D24 *		3PB244-2D24 *	
3PB24-2D30 *		3PB244-2D30 *	
3PB3024-2D30 *		3PB30244-2D30 *	
3PB3024-2D36 *		3PB30244-2D36 *	

* WITH TWO SETS OF FAUCET HOLES 8" O/C

OPTIONAL ACCESSORIES

DESCRIPTION	QTY
END SPLASHES, R, L, OR BOTH	
FAUCETS	
ADD-A-FAUCETS	
PRE-RINSE UNITS	
LEVEL WASTE	
OVERSHELVES	
POT RACK	

DETAILED SPECIFICATIONS



16GA - "3PB-2D" PRO-BOWL SERIES SINK

12" DEEP	14" DEEP	L	W	L1	W1	A	B	C
3PB1620-2D18	3PB16204-2D18	87-1/4"	25-1/2"	16"	20"	12-15/16"	39-5/8"	18"
3PB1620-2D24	3PB16204-2D24	99-1/4"	25-1/2"	16"	20"	12-15/16"	45-5/8"	24"
3PB1620-2D30	3PB16204-2D30	111-1/4"	25-1/2"	16"	20"	12-15/16"	51-5/8"	30"
3PB18-2D18	3PB184-2D18	93-1/4"	23-1/2"	18"	18"	11-15/16"	42-5/8"	18"
3PB18-2D24	3PB184-2D24	105-1/4"	23-1/2"	18"	18"	11-15/16"	48-5/8"	24"
3PB18-2D30	3PB184-2D30	117-1/4"	23-1/2"	18"	18"	11-15/16"	54-5/8"	30"
3PB1824-2D18	3PB18244-2D18	93-1/4"	29-1/2"	18"	24"	14-15/16"	42-5/8"	18"
3PB1824-2D24	3PB18244-2D24	105-1/4"	29-1/2"	18"	24"	14-15/16"	48-5/8"	24"
3PB1824-2D30	3PB18244-2D30	117-1/4"	29-1/2"	18"	24"	14-15/16"	54-5/8"	30"
3PB20-2D18	3PB204-2D18	99-1/4"	25-1/2"	20"	20"	12-15/16"	45-5/8"	18"
3PB20-2D24	3PB204-2D24	111-1/4"	25-1/2"	20"	20"	12-15/16"	51-5/8"	24"
3PB20-2D30	3PB204-2D30	123-1/4"	25-1/2"	20"	20"	12-15/16"	57-5/8"	30"
3PB24-2D24	3PB244-2D24	123-1/4"	29-1/2"	24"	24"	14-15/16"	45-5/8"	24"
3PB24-2D30	3PB244-2D30	135-1/4"	29-1/2"	24"	24"	14-15/16"	51-5/8"	30"
3PB3024-2D30	3PB30244-2D30	153-1/4"	29-1/2"	30"	24"	14-15/16"	57-5/8"	30"
3PB3024-2D36	3PB30244-2D36	165-1/4"	29-1/2"	30"	24"	14-15/16"	63-5/8"	36"

SOME UNITS SHIP UNASSEMBLED FOR REDUCED SHIPPING COST. ALL DIMENSIONS ARE TYPICAL. TOLERANCE +/- .500"

John Boos & Co. is constantly engaged in a program of improving products and therefore reserves the right to change specifications without prior notice.

John BOOS
Since 1887

ITEM #: _____ QTY: _____
MODEL #: _____
PROJECT NAME: _____

090518

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"PRW" POT RACKS - STAINLESS STEEL

WALL MOUNT & STAINLESS STEEL HOOKS

FEATURES:

- TYPE 300 STAINLESS STEEL
- ALL RACKS PROVIDED W/ TYPE 300 STAINLESS STEEL HOOKS (SEE CHART FOR QUANTITY PER SIZE)
- WELDED SETUP
- NSF AND CSA CERTIFIED

MATERIAL:

- MADE OF 3/16" X 2" STAINLESS STEEL FLAT BAR

PRW11

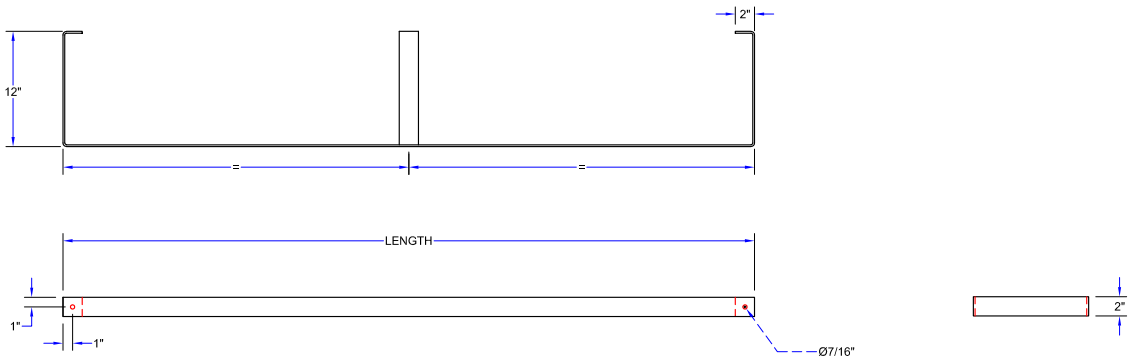
PRW21

POT RACKS - STAINLESS STEEL

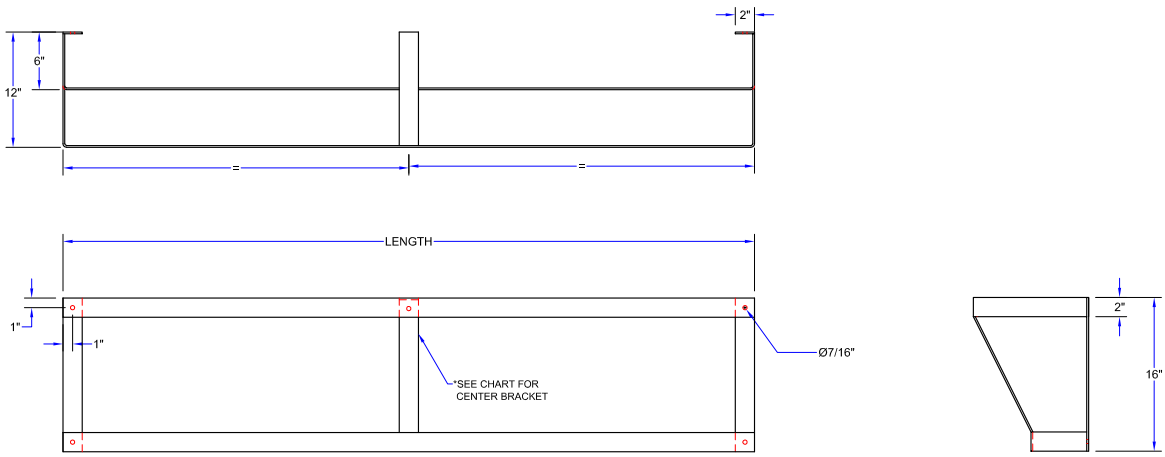
SINGLE	QTY	DOUBLE	QTY
PRW11A		PRW21A	
PRW11		PRW21	
PRW12		PRW22	
PRW13		PRW23	
PRW13A		PRW23A	
PRW14		PRW24	
PRW14A		PRW24A	
PRW15		PRW25	
PRW16		PRW26	
PRW17		PRW27	

DETAILED SPECIFICATIONS

PRW1



PRW2



POT RACKS - STAINLESS STEEL

LENGTH	SINGLE	HOOKS	WEIGHT (LBS)	DOUBLE	HOOKS	WEIGHT (LBS)
36"	PRW11A	3	6	PRW21A	6	11
48"	PRW11	4	8	PRW21	8	15
60"	PRW12	5	11	PRW22	10	18
72"	PRW13	6	13	PRW23	12	22
84"	PRW13A	7	15	PRW23A	14	25
96"	PRW14	8	17	PRW24	16	29
108"	PRW14A	9	19	PRW24A	18	33
120"	PRW15	10	21	PRW25	20	37
132"	PRW16	11	22	PRW26	22	40
144"	PRW17	12	24	PRW27	24	43

SOME UNITS SHIP UNASSEMBLED FOR REDUCED SHIPPING COST. ALL DIMENSIONS ARE TYPICAL. TOLERANCE +/- .500"

John Boos & Co. is constantly engaged in a program of improving products and therefore reserves the right to change specifications without prior notice.

2 HP Model 200

JOB: _____ Item No.: _____

NEMA 4 Watertight Controls

MSS

MRSS

ARSS-2

ARSS

Optional Line Disconnect (LD) available on MSS, MRSS, & ARSS

FOOD WASTE DISPOSER SPECIFICATIONS

CORROSION RESISTANT BODY
Permanent molded from heat treated aluminum alloy.

EXTENDED LIP WATER SEAL
Protects the motor from damage by water.

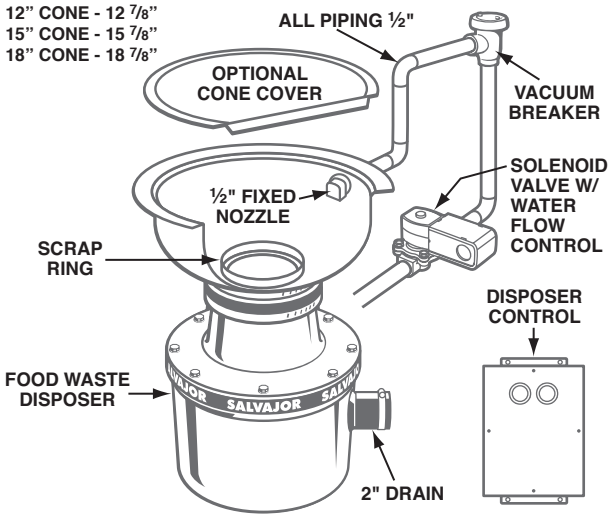
TAPERED ROLLER BEARING
Provides longer motor life, quiet operation and shock absorbing.

WATER COOLED MOTOR
Provides maximum efficiency and longer life.

QUIET OPERATION
Extra thick rubber mounting adaptor and drain outlet isolates sound and eliminates vibration.

Cone Assembly

TABLE CUT-OUT:
12" CONE - 12 7/8"
15" CONE - 15 7/8"
18" CONE - 18 7/8"



NOTE: INSTALL PER ALL APPLICABLE CODES

FULL LOAD AMPS

❑	115 Volts	1 Phase	24 Amps
❑	208 Volts	1 Phase	12.1 Amps
❑	230 Volts	1 Phase	12.0 Amps
❑	208 Volts	3 Phase	6.6 Amps
❑	230 Volts	3 Phase	6.0 Amps
❑	460 Volts	3 Phase	3.0 Amps

◆ SPECIFY EXACT OPERATING VOLTAGE ◆

Salvajor Model 200

Food Waste Disposer 2 HP – 1 Phase & 3 Phase

D E T A I L S A N D D I M E N S I O N S

SPECIFICATIONS:

MOUNTING – Rubber adaptor above grind chamber and rubber drain outlet isolates sound and eliminates vibration. No metal to metal contact.

EXTERIOR HOUSING – Permanent molded from heat treated, corrosion resistant aluminum alloy then computer machined to a smooth polished finish. Paint free.

SHREDDER – 8 inch diameter, machined high strength, wear resistant hardened carbide alloy.

ROTOR – 8 inch diameter with 4 cutter bars, machined high strength, wear resistant hardened carbide alloy.

MOTOR – 2 HP totally enclosed. Water cooled for efficiency and longer life. Built-in manual reset thermal overload protection. Available in 208 volts or 115/230 volts, 60 cycle, 1 phase and 208-230/460 volts, 60 cycle, 3 phase.

BEARINGS – Tapered roller (top)
Sealed ball (bottom)

SEAL – Extended Lip Water Seal.

WATER REQUIREMENT – 5 gallons of cold water per minute.

WASTE OUTLET – Rubber drain accepts 2" piping.

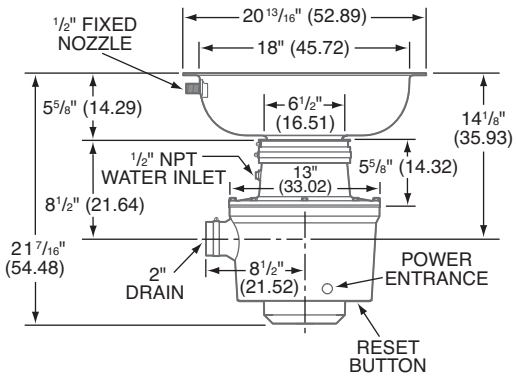
DUAL DIRECTION GRINDING – Designed to operate in either direction. Direction of rotation can be controlled when installed with automatic reversing controls. ***Reversing rotation can double cutting teeth life.***

LEG SUPPORT (Optional) – Single leg, adjustable.

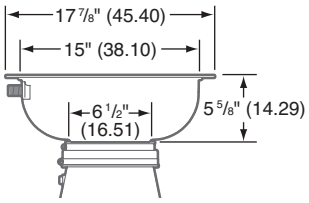
ASSEMBLIES: (See Specification Sheet)
CA – Cone Assembly with 12", 15" or 18" Cone
SA – Sink Assembly with 3½" or 6½" Sink Collar

DISPOSER CONTROLS: (See Specification Sheet)
MSS: (Non Reversing)
MRSS: (Manual Reversing)
ARSS-2: (Automatic Reversing)
ARSS: (Automatic Reversing with Water Saver)

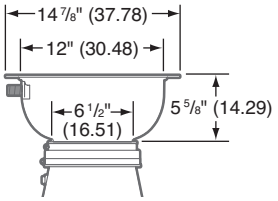
☐ **18" CONE**



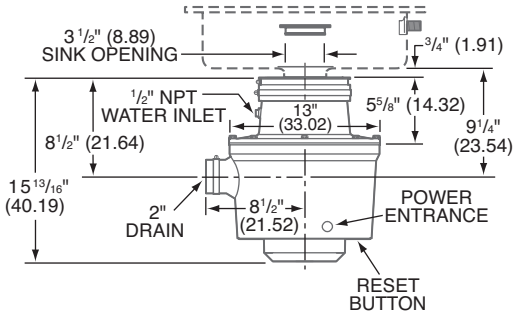
☐ **15" CONE**



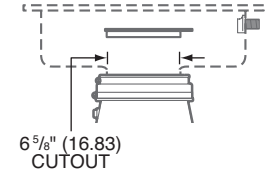
☐ **12" CONE**



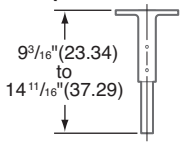
☐ **3½" SINK MOUNT**



☐ **6½" SINK MOUNT**



☐ **ADJUSTABLE LEG (OPTIONAL)**



NOTE: Dimensions in parenthesis are in centimeters
(Specifications subject to change without notice)
Current specification details may be found online at www.salvajor.com

SAMPLE SPECIFICATION

200-CA-18		MSS	(230/60/3)
Model	Cone Size	Disposer Control	Electrical Specs.
Assembly			

◆ SPECIFY EXACT OPERATING VOLTAGE ◆

The Salvajor Company 4530 East 75th Terrace Kansas City, Missouri 64132-2081, USA
1-800-SALVAJOR (816) 363-1030 FAX: 1-800-832-9373
www.salvajor.com Email: sales@salvajor.com service@salvajor.com

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Form No.S200 (06-17)

CHANNEL MANUFACTURING, INC.

Item No. _____

Quantity _____

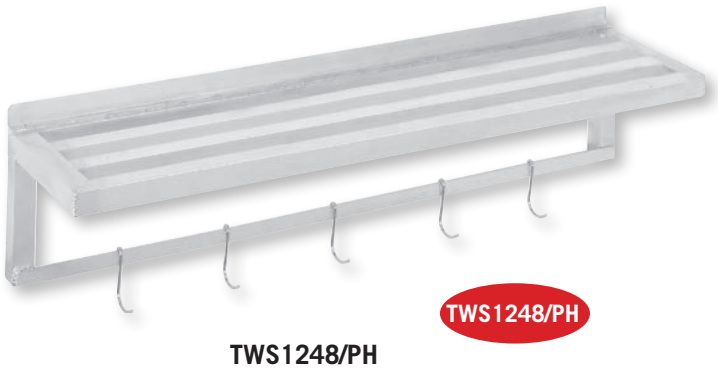
Job Name _____

Spec No. _____

SHELVING

WALL SHELVING

ALUMINUM CONSTRUCTION



TWS1248/PH
Shown with *optional*
Pot Hooks (5) and Bar (**/PH**)

Custom Sizes Available, TWS models only.

Tubular Wall Shelving

Model	W	D	Weight
TWS1236	36"	12"	9
TWS1248	48"	12"	11
TWS1260	60"	12"	13
TWS1836	36"	18"	12
TWS1848	48"	18"	14
TWS1860	60"	18"	16

APPLICATION:
Tubular construction allows for dissipation of condensation.

CONSTRUCTION:
Heavy duty, high tensile extruded aluminum. Type 6063-T5 alloy. Lifetime guarantee against rust.

SPECIFICATIONS:
- Available with Optional Pot Hooks (5) and Bar (as shown); add /PH to model number
- Fully assembled and ready for use

Solid Knock Down Wall Shelving

Model	W	D	Weight
AWS1224	24"	12"	9
AWS1236	36"	12"	11
AWS1248	48"	12"	13

SPECIFICATIONS:
- Furnished with a 1 1/2" downward front edge and 1 1/2" turn up edge on back and 1/2" return edge
- Shipped knock-down, easy to assemble

MADE IN THE USA NSF

Notes

55 Channel Drive • Port Washington, NY11050-2216
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ADVANCE TABCO®
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STAINLESS STEEL

HAND SINKS
SIDE SPLASH UNITS

Keyhole Bracket for easier installation and greater stability.

7-PS-40

7-PS-66
7-PS-66-NF (Faucet Not Included)

Item #: _____ *Qty #:* _____

Model #: _____

Project #: _____

STANDARD FEATURES:

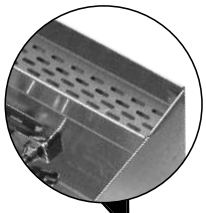
One piece **Deep Drawn** sink bowl design.
Sink bowl is 10" x 14" x 5".
Keyhole wall mount bracket.
Stainless steel basket drain 1-1/2" IPS.
Splash mounted 4" O.C. gooseneck faucet furnished with aerator.

7-PS-40 & 7-PS-66 Series Specific Features:
Welded 7 3/4" high side splashes.
7-PS-66W includes K-316 Wrist Handle Faucet
7-PS-40 lever operated drain and built-in overflow with plastic overflow tube and spring clamps. P-Trap is 1 1/2" IPS.

7-PS-56 Specific Features:
Space Saver Sink bowl is 9" x 9" x 5".
7 3/4" high side splashes.
Flat-Top Strainer 1-1/2" IPS.

7-PS-76 Specific Features:
12" high side splashes.
Includes 17 1/4" x 3" x 2 5/16" Full length removable Utility Tray for use with 12" Side Splash Units.
Lever operated drain and built-in overflow with plastic overflow tube and spring clamps. P-Trap is 1 1/2" IPS.

7-PS-87 Specific Features:
Same features as 7-PS-40 Plus C-Fold Paper Towel & Soap Dispenser.



Includes Removable Rear Utility Tray

7-PS-76

7-PS-66W

7-PS-66L (Shown)
or 7-PS-66R

7-PS-87

7-PS-56 **SPACE SAVER**
9" x 9" x 5" Bowl

CONSTRUCTION:

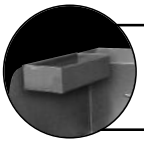
All TIG welded.
Welded areas blended to match adjacent surfaces and to a satin finish.
Die formed Countertop Edge with a 3/8" No-Drip offset.
One sheet of stainless steel - No Seams.
All sink bowls have a large liberal radii with a minimum dimension of 2" and are rectangular in design for increased capacity.

MATERIAL:

Heavy gauge type 304 series stainless steel.
Wall mounting bracket is galvanized and of offset design.
All fittings are brass / chrome plated unless otherwise indicated.

MECHANICAL:

Faucet supply is 1/2" IPS male thread hot and cold.



REMOVABLE UTILITY TRAY 7-PS-48
8" x 3" x 2 5/16" Tray - Tray hem allows to hang from any standard side splash.Perforated for water drainage.

Faucets Are AB1953 Lead Free Compliant.

For Replacement Faucets & Upgrades, Drains & Accessories visit our website at www.advancetabco.com

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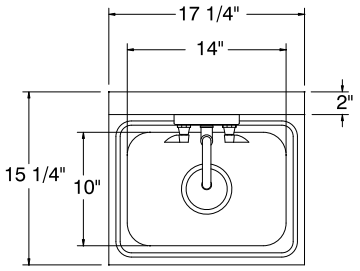
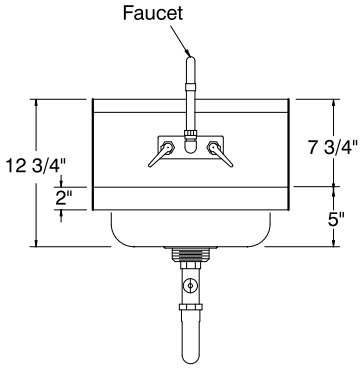
DIMENSIONS and SPECIFICATIONS

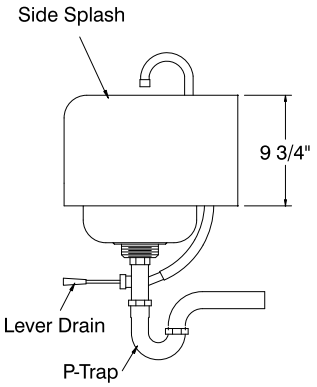
TOL Overall: ± .500" Interior: ± .250" **FITTINGS SUPPLIED AS SHOWN** **ALL DIMENSIONS ARE TYPICAL**

7-PS-40, 7-PS-66, 7-PS-66-NF, 7-PS-66W & 7-PS-66RorL
(7-PS-66 Series Excludes P-Trap & Lever Drain & Overflow)



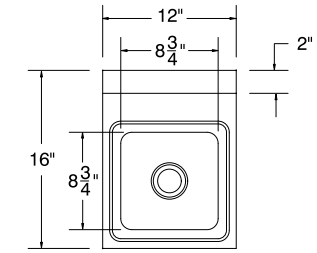
TOP VIEW FOR
7-PS-40 & 7-PS-66 Series

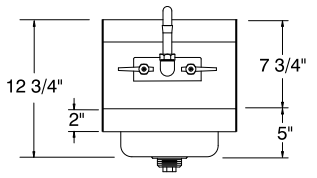


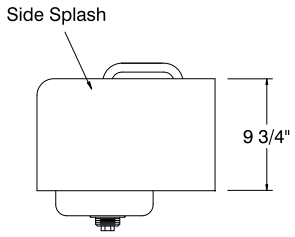


7-PS-40 - 22 lbs.
7-PS-66 - 19 lbs.
7-PS-66-NF - 19 lbs.
7-PS-66W -22 lbs.
7-PS-66RorL - 20 lbs.

7-PS-56

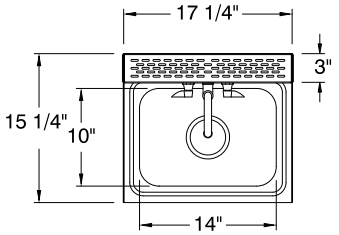


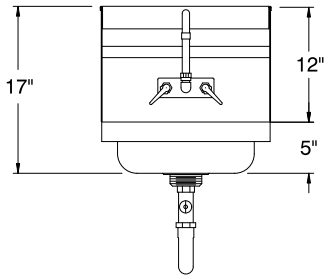


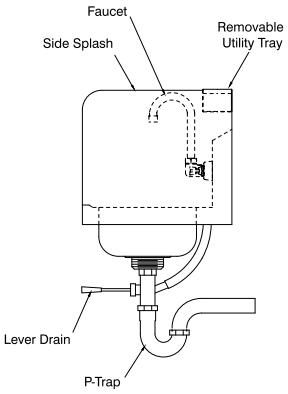


14 lbs.

7-PS-76

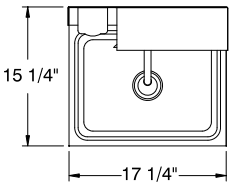


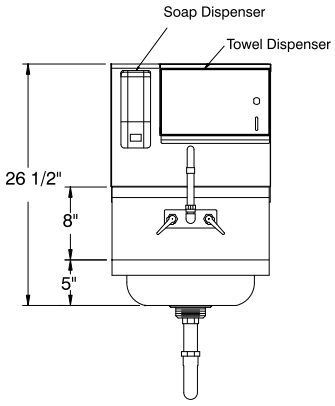


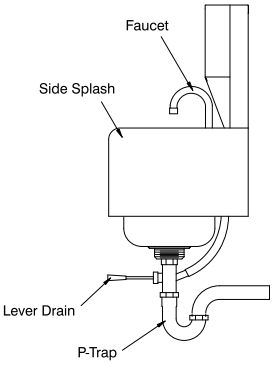


27 lbs.

7-PS-87







34 lbs.

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Project :	
Model # :	
Item # :	Qty :
Available W/H :	
Approval :	

Solid Door Freezer

Reach-In Bottom Mount
Super Deluxe Series

Model : TSF-23SD-N

FEATURES & BENEFITS

Self-Cleaning Condenser
The accumulation of dust in the condenser can cause the failure or breakdown of refrigerators. Refrigerators run normally until they reach a certain level of accumulation. At some point, when they are over the limit, their performance drops quickly resulting in damage to, or disposal of the stored products inside. The Self-Cleaning Condenser device keeps the condenser clean and prevents system failure by automatically brushing daily.

Digital temperature control & monitor system
- Keep food products safe by maintaining constant temperatures.
- Alarms that sound when doors are not sealed shut; protect against food spoilage that originates from cold air leaks.
- Early warning alarm program detects issues before malfunction occurs.
- Digital display allows for easy monitoring.
- Programs interpret the condition of refrigeration systems by self-diagnosis.
- Rapid cool-down function (Turbo Freeze).
- Smart defrost system will defrost as needed.
- Automatic evaporator fan motor delays.

Hydrocarbon refrigerants (R-290)
With innovative and eco-friendly technology, Turbo Air brings you hydrocarbon refrigerators designed to meet the new standards of the EPA and DOE in 2017. Hydrocarbon refrigerants do not deplete the ozone layer and have very low contribution to global warming (ODP-0, GWP-3).

Stainless steel cabinet construction
The Turbo Air Super Deluxe model boasts a stainless steel interior and exterior (galvanized steel top, bottom and back). It guarantees the utmost in cleanliness and long product life. Sharp corners and edges have been rounded to reduce the risk of injury. The Super Deluxe adds a touch of style to the most refined setting.

Sturdy, clean stainless steel shelving
Shelves are the most important part of cleanliness as they come in direct contact with food. After a while, PVC coated wire shelves may peel, rust and lead to unsanitary conditions. Only the Turbo Air Super Deluxe series uniquely provides stainless steel shelving.

Door pressure release device
Pressure relief doors are designed to eliminate vacuum pressure and allow easy, instant door opening.

High-density polyurethane insulation
The entire cabinet structure and solid doors are foamed-in-place using high density, CFC free polyurethane insulation.

Left hinged model available

LED interior lighting

Bottom mount compressor

Freezer holds -10°F ~ 0°F for the best in frozen food preservation

Patented Self-Cleaning Condenser

This product is equipped with a fine mesh filter to the front of the condenser to catch dust, and a rotating brush that moves up and down daily to remove excess buildup outward and away.

NATURAL Refrigerant · SPEC ISO 9001:2008 · Intertek · Intertek · 3 YEAR WARRANTY · Compressor 5 YEAR WARRANTY (U.S.A only) · ENERGY STAR® Qualified

Model	Swing Door	CU./FT.	#of Shelves	HP	AMPS	Crated Weight (lbs.)	L x D x H* (inches)
TSF-23SD-N	**1**	**19**	**3**	**1/2**	**4.8**	**293**	**27 x 30 3/8 x 78 1/4**

Ver.20171006

* Height does not include 5" caster height or 6" optional legs.

Solid Door Freezer

Reach-In Bottom Mount
Super Deluxe Series

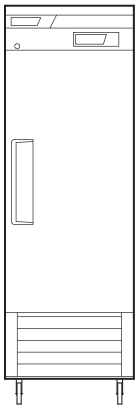
Model : TSF-23SD-N

ELECTRICAL DATA	
Voltage	115/60/1
Plug Type	NEMA 5-15P
Full Load Amperes	4.8
Compressor HP	1/2
Feed Wires with Ground	3
Cord Length (ft.)	9
Refrigerant	R-290
DIMENSIONAL DATA	
# of Doors	1
# of Racks Accepted	1
Net Capacity (cu. ft.)	19
Ext. Length Overall (in.)	27 (686mm)
Ext. Depth Overall (in.)	30 3/8 (770mm)
Ext. Height Overall (in.)*	78 1/4 (1987mm)
Int. Length Overall (in.)	23 (584mm)
Int. Depth Overall (in.)	26 1/4 (666mm)
Int. Height Overall (in.)	60 (1524mm)
Gross Weight (lbs.)	293
# of Shelves	3
Shelf Size (L x D) (in.)	22 x 23 1/2

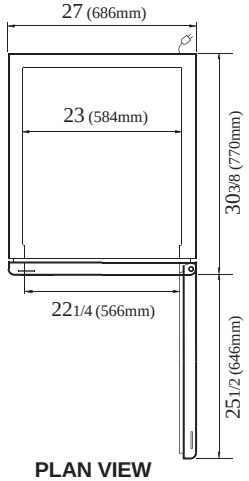
Design and specifications subject to change without notice.
Actual shipping weight may differ due to extra packing materials for product protection.
* Height does not include 5" caster height or 6" optional legs.

PLAN VIEW

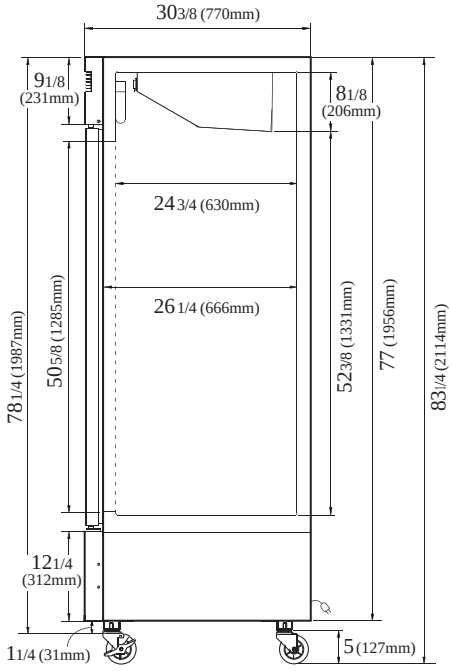
(unit : inch)



FRONT VIEW



PLAN VIEW



SIDE VIEW

WARRANTY : 3 Year Parts and Labor Warranty
Additional 2 Year Warranty on Compressor

- ***Anti-corrosion coated evaporator***
- ***Door locks standard***
- ***Positive seal self-closing doors***
- ***Easy replaceable one piece magnetic door gaskets***
- ***Self-contained system***
- ***Solid and sturdy grille design***
- ***Standard 4" dia. swivel casters with locks on the front set***
- ***Legs available (optional)***
- ***Full and half pan racks available (optional)***

OPTIONAL ACCESSORIES :

- ☐ 5" caster, ½" diameter & 13 TPI: M726500100 (non-brake), M726500200 (w/ brake)
- ☐ 6" stainless steel leg: 30221M0600
- ☐ Additional stainless steel shelf: 30278Q0100
- ☐ Half door bun tray rack: TSP-2224 (each holds up to six 18"L x 26"D sheet pans)
- ☐ Full door bun tray rack: TSP-2250 (each holds up to fifteen 18"L x 26"D sheet pans)

Ver.20171006

NATURAL Refrigerant · ENERGY STAR® Qualified

- **Turbo Air** : 800-627-0032
- **GK** : 800-500-3519
- **Warranty** : 800-381-7770
- **AC** : 888-900-1002

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Project :	
Model # :	
Item # :	Qty :
Available W/H :	
Approval :	

Solid Door Refrigerator

Reach-In Bottom Mount
Super Deluxe Series

Model : TSR-49SD-N6

FEATURES & BENEFITS

Self-Cleaning Condenser
The accumulation of dust in the condenser can cause the failure or breakdown of refrigerators. Refrigerators run normally until they reach a certain level of accumulation. At some point, when they are over the limit, their performance drops quickly resulting in damage to, or disposal of the stored products inside. The Self-Cleaning Condenser device keeps the condenser clean and prevents system failure by automatically brushing daily.

Digital temperature control & monitor system
- Keep food products safe by maintaining constant temperatures.
- Alarms that sound when doors are not sealed shut; protect against food spoilage that originates from cold air leaks.
- Early warning alarm program detects issues before malfunction occurs.
- Digital display allows for easy monitoring.
- Programs interpret the condition of refrigeration systems by self-diagnosis.
- Rapid cool-down function (Turbo cooling).
- Automatic evaporator fan motor delays.

Hydrocarbon refrigerants (R-600a)
With innovative and eco-friendly technology, Turbo Air brings you hydrocarbon refrigerators designed to meet the new standards of the EPA and DOE in 2017. Hydrocarbon refrigerants do not deplete the ozone layer and have very low contribution to global warming (ODP-0, GWP-3).

Stainless steel cabinet construction
The Turbo Air Super Deluxe model boasts a stainless steel interior and exterior (galvanized steel top, bottom and back). It guarantees the utmost in cleanliness and long product life. Sharp corners and edges have been rounded to reduce the risk of injury. The Super Deluxe adds a touch of style to the most refined setting.

Sturdy, clean stainless steel shelving
Shelves are the most important part of cleanliness as they come in direct contact with food. After a while, PVC coated wire shelves may peel, rust and lead to unsanitary conditions. Only the Turbo Air Super Deluxe series uniquely provides stainless steel shelving.

Door pressure release device
Pressure relief doors are designed to eliminate vacuum pressure and allow easy, instant door opening.

High-density polyurethane insulation
The entire cabinet structure and solid doors are foamed-in-place using high density, CFC free polyurethane insulation.

LED interior lighting

Bottom mount compressor

Refrigerator holds 33°F ~ 38°F for the best in food preservation

Patented Self-Cleaning Condenser

This product is equipped with a fine mesh filter to the front of the condenser to catch dust, and a rotating brush that moves up and down daily to remove excess buildup outward and away.

NATURAL Refrigerant · SPEC ISO 9001:2008 · Intertek · Intertek · 3 YEAR WARRANTY · Compressor 5 YEAR WARRANTY (U.S.A only) · ENERGY STAR® Qualified

Model	Swing Door	CU./FT.	#of Shelves	HP	AMPS	Crated Weight (lbs.)	L x D x H* (inches)
TSR-49SD-N6	2	41.1	6	1/5	2.3	427	54 3/8 x 30 3/8 x 78 1/4

Ver.20170830

* Height does not include 5" caster height or 6" optional legs.

Solid Door Refrigerator

Reach-In Bottom Mount
Super Deluxe Series

Model : TSR-49SD-N6

ELECTRICAL DATA	
Voltage	115/60/1
Plug Type	NEMA 5-15P
Full Load Amperes	2.3
Compressor HP	1/5
Feed Wires with Ground	3
Cord Length (ft.)	9.8
Refrigerant	R-600a
DIMENSIONAL DATA	
# of Doors	2
# of Racks Accepted	2
Net Capacity (cu. ft.)	41.1
Ext. Length Overall (in.)	54 3/8 (1382mm)
Ext. Depth Overall (in.)	30 3/8 (770mm)
Ext. Height Overall (in.)*	78 1/4 (1987mm)
Int. Length Overall (in.)	50 1/2 (1283mm)
Int. Depth Overall (in.)	26 1/4 (666mm)
Int. Height Overall (in.)	60 (1524mm)
Gross Weight (lbs.)	427
# of Shelves	6
Shelf Size (L x D) (in.)	24 1/2 x 23 1/2

Design and specifications subject to change without notice.
Actual shipping weight may differ due to extra packing materials for product protection.
* Height does not include 5" caster height or 6" optional legs.

- **WARRANTY : 3 Year Parts and Labor Warranty**
  Additional 2 Year Warranty on Compressor

- ***Door locks standard***
- ***Anti-Corrosion Coated Evaporator***
- ***Positive seal self-closing doors***
- ***Easy replaceable one piece magnetic door gaskets***
- ***Self-contained system***
- ***Solid and sturdy grille design***
- ***Standard 4" dia. swivel casters with locks on the front set***
- ***Legs available (optional)***
- ***Full and half pan racks available (optional)***

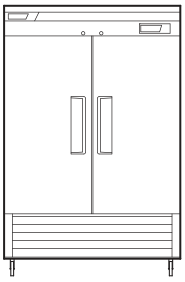
OPTIONAL ACCESSORIES :

- ❑ 5" caster, ½" diameter & 13 TPI: M726500100 (non-brake), M726500200 (w/ brake)
- ❑ 6" stainless steel leg: 30221M0600
- ❑ Additional stainless steel shelf: 30278Q0200
- ❑ Half door bun tray rack: TSP-2224 (each holds up to six 18"L x 26"D sheet pans)
- ❑ Full door bun tray rack: TSP-2250 (each holds up to fifteen 18"L x 26"D sheet pans)

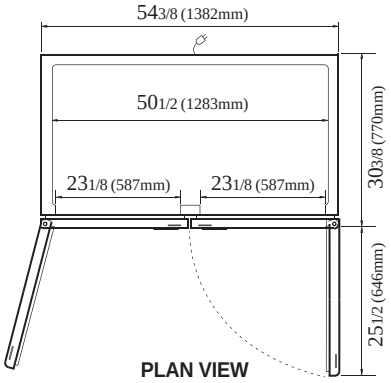
Ver.20170830

PLAN VIEW

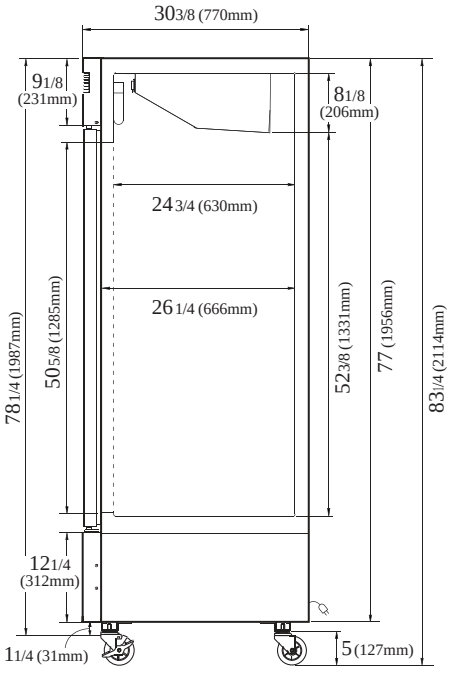
(unit : inch)



FRONT VIEW



PLAN VIEW



SIDE VIEW

NATURAL Refrigerant · ISO 9001:2008 · Intertek · Intertek · 3 YEAR WARRANTY · Compressor 5 YEAR WARRANTY (U.S.A only) · ENERGY STAR® Qualified

- **Turbo Air** : 800-627-0032
- **GK** : 800-500-3519
- **Warranty** : 800-381-7770
- **AC** : 888-900-1002

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EPOXY WIRE SHELVING

Coated shelving provides superior chemical resistance.

- Recommended for wet environments, labs and kitchen coolers.
- Epoxy coating withstands harsh cleaning, salt and water.
- Shelves adjust in 1" increments.
- NSF certified.
- Optional 5" locking polyurethane swivel casters for portability.
- Specify color: Zinc or Green.

4 SHELF UNITS

DIMENSIONS W x D	SHELF CAP. (LBS.)	63" HEIGHT MODEL NO.	63" HEIGHT PRICE EACH 1	63" HEIGHT PRICE EACH 3+	63" HEIGHT WT. (LBS.)	72" HEIGHT MODEL NO.	72" HEIGHT PRICE EACH 1	72" HEIGHT PRICE EACH 3+	72" HEIGHT WT. (LBS.)	86" HEIGHT MODEL NO.	86" HEIGHT PRICE EACH 1	86" HEIGHT PRICE EACH 3+	86" HEIGHT WT. (LBS.)
36 x 18"	800	H-6763	$203	$192	53	H-6771	$215	$203	55	H-8284	$227	$215	57
48 x 18"	800	H-6764	226	215	64	H-4306	237	226	66	H-8285	248	237	68
60 x 18"	650	H-6765	282	271	82	H-3818	294	282	84	H-8286	307	294	86
72 x 18"	650	H-6766	351	339	94	H-6772	362	351	96	H-8287	375	362	98
36 x 24"	800	H-6767	226	215	66	H-4307	237	226	68	H-8288	248	237	70
48 x 24"	800	H-6768	294	282	78	H-3819	306	294	80	H-8289	316	306	82
60 x 24"	650	H-6769	339	329	98	H-3820	351	339	100	H-8290	361	351	102
72 x 24"	650	■H-6770	408	396	122	■H-3821	419	408	124	■H-8291	431	419	126
H-1205WH	Set of 4 Polyurethane Casters					1/$75 3+/$72			12				

■SHIPS UNASSEMBLED VIA MOTOR FREIGHT

ADDITIONAL SHELVES

MODEL NO.	DIMENSIONS W x D	QTY./ BOX	PRICE PER BOX 1	PRICE PER BOX 3+	WT. (LBS.)
H-6776	36 x 18"	2	$101	$96	20
H-6777	48 x 18"		106	102	26
H-6778	60 x 18"		133	128	34
H-6779	72 x 18"		167	162	40
H-6780	36 x 24"	2	107	103	28
H-6781	48 x 24"		137	131	35
H-6782	60 x 24"		166	161	42
■H-6783	72 x 24"		192	188	54

■SHIPS UNASSEMBLED VIA MOTOR FREIGHT

63" HEIGHT

72" HEIGHT

86" HEIGHT

SOLID WALL-MOUNT SHELVING

Add extra storage above kitchen sinks, counters or prep areas.

- Solid, 16-gauge **stainless steel.**
- NSF certified.
- Includes mounting hardware.

Type 304 — EASY ASSEMBLY. SHIPS VIA UPS.

MODEL NO.	DIMENSIONS W x D x H	CAPACITY (LBS.)	PRICE EACH 1	PRICE EACH 2+	WT. (LBS.)
H-7498	36 x 12 x 10"	175	$100	$95	11
H-7499	48 x 12 x 10"		115	110	15
H-7500	60 x 12 x 10"		135	130	18

ALUMINUM DUNNAGE RACKS

Keep ingredients and produce off the floor.

- All-welded bulk storage for coolers and freezers.
- Won't rust or corrode in extreme environments.

NSF Certified — ■SHIPS VIA MOTOR FREIGHT

MODEL NO.	DIMENSIONS W x D x H	CAPACITY (LBS.)	PRICE EACH 1	PRICE EACH 3+	WT. (LBS.)
H-7494	36 x 20 x 12"	2,000	$83	$78	8
H-7495	36 x 24 x 12"		94	88	10
■H-7496	48 x 20 x 12"	2,000	94	88	10
■H-7497	48 x 24 x 12"		110	105	12

STAINLESS MOBILE SHELVING

Trustworthy and durable. Store and transport everything you need for your lab or kitchen.

- Type 304 **stainless steel** absolutely will not rust.
- Open wire maximizes airflow, reduces dirt and dust buildup. Easy to clean.
- Shelves adjust in 1" increments. • NSF certified.
- 5" stainless steel locking swivel casters.

69" HEIGHT

MODEL NO.	DIMENSIONS W x D x H	SHELF QTY.	CAPACITY (LBS.)	PRICE EACH 1	PRICE EACH 3+	WT. (LBS.)
H-9486	48 x 24 x 69"	4	1,000	$840	$820	96
H-9487	60 x 24 x 69"			965	945	114
■H-9488	72 x 24 x 69"			1,145	1,125	130

■SHIPS UNASSEMBLED VIA MOTOR FREIGHT

78" HEIGHT

MODEL NO.	DIMENSIONS W x D x H	SHELF QTY.	CAPACITY (LBS.)	PRICE EACH 1	PRICE EACH 3+	WT. (LBS.)
H-9489	48 x 24 x 78"	4	1,000	$850	$830	98
H-9490	60 x 24 x 78"			975	955	116
■H-9491	72 x 24 x 78"			1,155	1,135	132

■SHIPS UNASSEMBLED VIA MOTOR FREIGHT

STAINLESS STEEL SECURITY CARTS

Safely store and transport valuable goods in commercial kitchens and labs.

- Type 304 **stainless steel** will not rust. Resists the harshest conditions.
- Lockable double doors for maximum security. Use with padlocks, see page 506.
- Two heavy-duty shelves adjust in 1" increments. • Open wire design for visibility.

MODEL NO.	DIMENSIONS L x W x H	SHELF QTY.	CAPACITY (LBS.)	PRICE EACH 1	PRICE EACH 3+	WT. (LBS.)
H-6839	36 x 24 x 69"	3	1,000	$1,470	$1,420	192
H-6840	48 x 24 x 69"			1,685	1,635	233
H-6841	60 x 24 x 69"			1,850	1,800	270

SHIPS UNASSEMBLED VIA MOTOR FREIGHT

- Maneuvers easily on 5" lockable stainless steel swivel casters.

SOLID TOP WIRE CARTS

Store and transport supplies in kitchens and cleanrooms.

- Solid top shelf for smaller items.
- Shelves adjust in 1" increments.
- Rustproof stainless steel. NSF certified.
- 5" nylon locking swivel casters.

Type 304 Stainless Steel

MODEL NO.	DIMENSIONS L x W x H	SHELF QTY.	CAPACITY (LBS.)	PRICE EACH 1	PRICE EACH 3+	WT. (LBS.)
H-7488	39 x 18 x 41"	2	1,000	$480	$460	44
H-7489	39 x 24 x 41"			540	520	52

SHIPS UNASSEMBLED VIA UPS

SERVICE CARTS

Compact carts move easily through cafés and hospitals.

- Top 2 shelves have 1" lip with an open front.
- Shelves are 12" apart.
- Bumpers protect walls, tables and doors.
- 4" rubber swivel casters: 2 locking.

Type 430 Stainless Steel

MODEL NO.	DIMENSIONS L x W x H	SHELF QTY.	CAPACITY (LBS.)	PRICE EACH 1	PRICE EACH 3+	WT. (LBS.)
H-7490	28 x 17 x 33"	3	500	$215	$205	39
H-7491	31 x 19 x 33"			245	235	42

SHIPS UNASSEMBLED VIA UPS

Project:

Item Number:

Quantity:

AFFORDABLE PORTABLE™ REFRIGERATED COLD FOOD STATIONS

Affordable Portable™ Refrigerated Cold Food Station

DESCRIPTION & FEATURES

- Vollrath Affordable Portable™ refrigerated cold stations are constructed of vinyl-clad, 20-gauge carbon steel.
- Foamed-in-place polyurethane foam insulation.
- 1 (2.54 cm) drain makes clean-up easy.
- Fully enclosed clear acrylic breath guards with 12" (30.5 cm) clearance. NSF2 Certified.
- The refrigerated cold stations are available in four versatile colors: granite, walnut woodgrain, black and cherry woodgrain.
- 18 gauge 300 series stainless steel work surfaces.
- 8 ft. power cord
- Locking casters included.
- **Affordable Portable™ orders cannot be canceled or returned.**

Lighting (requires Buffet breath guard, bulbs not included)

- Factory-installed option
- 120V

AGENCY CERTIFICATIONS

c UL us LISTED NSF

Due to continued product improvement, please consult www.vollrathco.com for current product specifications.

MODELS

Description	Black	Walnut Woodgrain	Granite	Cherry Woodgrain
3 Pan (46") Cold Food Station Base – 120V				
Solid base	R38713	R38950	R38733	R38773
Solid w/lights	R3871346	R3895046	R3873346	R3877346
Open Storage	R38714	R38951	R38734	R38774
Open w/lights	R3871446	R3895146	R3873446	R3877446
Storage w/door	R38715	R38952	R38735	R38775
Storage w/door, w/lights	R3871546	R3895246	R3873546	R3877546
Cafeteria unit❶	R39713	R39950	R39733	R39773
Cafeteria unit w/open storage❶	R39714	R39951	R39734	R39774
Cafeteria unit w/storage door❶	R39715	R39952	R39735	R39775
4 Pan (60") Cold Food Station Base – 120V				
Solid base	R38716	R38960	R38736	R38776
Solid w/lights	R3871660	R3896060	R3873660	R3877660
Open Storage	R38717	R38961	R38737	R38777
Open w/lights	R3871760	R3896160	R3873760	R3877760
Storage w/door	R38718	R38962	R38738	R38778
Storage w/door, w/lights	R3871860	R3896260	R3873860	R3877860
Cafeteria unit❶	R39716	R39959	R39736	R39776
Cafeteria unit w/open storage❶	R39717	R39961	R39737	R39777
Cafeteria unit w/storage door❶	R39718	R39962	R39738	R39778

❶ Includes Cafeteria breath guard with acrylic panel.

ELECTRICAL SPECIFICATIONS

Incandescent lamps only (40W maximum per fixture)

Description	HP	Volts	Hz	Amps	Electrical Service Amps	Plug
3 Pan	1/5	120	60	3.8	15	5-15P
4 Pan	1/4			5.2		5-15P
3 Pan with Lights	1/5			4.4		5-15P
4 Pan with Lights	1/4			6		5-15P

120V

5-15R

WARRANTY: All models shown come with Vollrath's standard warranty against defects in materials and workmanship. For full warranty details, please refer to the Vollrath Equipment and Smallwares Catalog.

Approvals	Date

Affordable Portable™ Refrigerated Cold Food Stations

The Vollrath Company, L.L.C.

Setting the Standard™

www.vollrathco.com

The Vollrath Company, L.L.C.
1236 North 18th Street
Sheboygan, WI 53081-3201 U.S.A.
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Canada Customer Service: 800.695.8560
Main Fax: 800.752.5620 or 920.459.6573

Technical Services: 800.628.0832
Technical Services Fax: 920.459.6573

AFFORDABLE PORTABLE™ REFRIGERATED COLD FOOD STATIONS

ACCESSORIES AND ADD-ONS

Cashier Station

- Stable stainless steel work surface
- Wide enough for almost any register or terminal
- Open base and bottom shelf for extra storage
- Cash drawer not available
- Unit depth: 24" (61 cm)

Description	Dimensions (LxH) Inches (CM)	Black	Walnut Woodgrain	Granite	Cherry Woodgrain
Cashier Station	24 x 35 (60.9 x 89)	38700	38905	38720	38760

Plate Rests

- Stainless steel
- Designed for Affordable Portable™ only
- Non-folding plate rests are easily removed to allow serving units to be transported through doorways.
- Surface width: 7" (17.8 cm)

Item	Description	Case Lot
NF38992	24" (61 cm) plate rest with mounting kit	1
NF38993	46" (117 cm) plate rest with mounting kit	1
NF38994	60" (152 cm) plate rest with mounting kit	1

Tray Slides

- 300 series stainless steel
- Non-folding tray slides are easily removed to allow serving units to be transported through doorways.
- Overall width: 11½" (29.2 cm)
- Tray surface: 11" (27.9 cm)

Item	Description	Case Lot
NF39924	Fits 24" (61 cm) Affordable Portable™	1
NF39946	Fits 46" (117 cm) Affordable Portable™	1
NF39960	Fits 60" (152 cm) Affordable Portable™	1

Cutting Boards

- Polyethylene
- Non-folding cutting boards are easily removed to allow serving units to be transported through doorways.
- Surface width: 7" (17.8 cm)

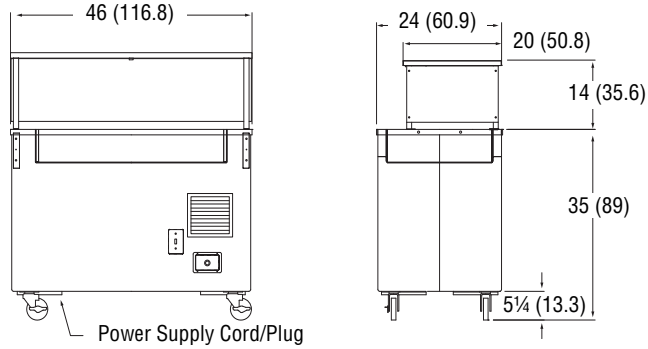
Item	Description	Case Lot
NF39824	Fits 24" (61 cm) Affordable Portable™	1
NF39846	Fits 46" (117 cm) Affordable Portable™	1
NF39860	Fits 60" (152 cm) Affordable Portable™	1

STORAGE OPENING DIMENSIONS

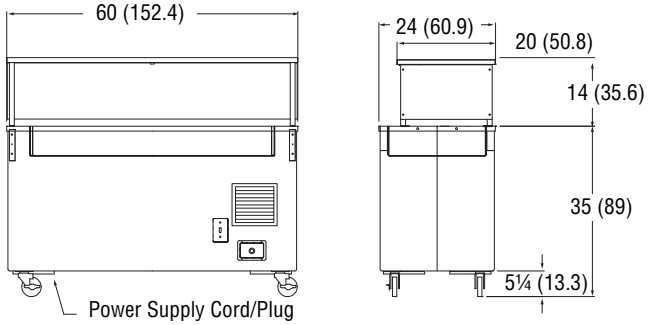
Description	Dimensions (L x W x H): IN (CM)
60" Unit	50 x 23 x 16½ (127 x 58 x 42)
46" Unit	36 x 23 x 16½ (91.5 x 58 x 42)

DIMENSIONS

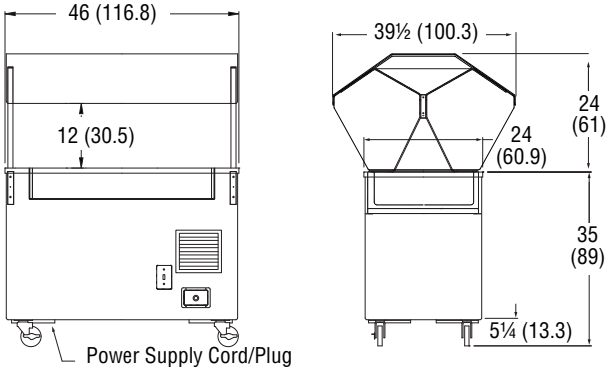
3 Pan Refrigerated Cold Station with Cafeteria Breath Guard



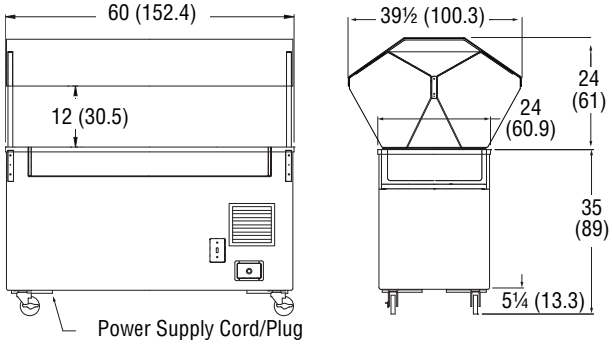
4 Pan Refrigerated Cold Station with Cafeteria Breath Guard



3 Pan Refrigerated Cold Station with Buffet Breath Guard



4 Pan Refrigerated Cold Station with Buffet Breath Guard



VOLLRATH® Setting the Standard™

www.vollrathco.com

The Vollrath Company, L.L.C.
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Sheboygan, WI 53081-3201 U.S.A.
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Canada Customer Service: 800.695.8560
Main Fax: 800.752.5620 or 920.459.6573

Technical Services: 800.628.0832
Technical Services Fax: 920.459.6573

 Form Number L35755 Rev. 3/11
Printed in USA

Project:

Item Number:

Quantity:

SERVEWELL® SL HOT FOOD TABLE

ServeWell® SL 3-Well Hot Food Table

DESCRIPTION

ServeWell® SL hot food tables are streamlined versions of the original, providing incredible value, with the rugged performance you've grown to expect. We build each ServeWell® SL unit with heavy-gauge stainless steel, and engineer the body, legs, and base for strength and durability. The complete line of ServeWell® food tables is designed to eliminate the frustrations you have had with traditional food service units.

Vollrath offers the first truly innovative design in value-priced mobile serving equipment. The heart of this revolutionary line is the Hot Food Table, available in 3, 4, and 5 well configurations.

Each well will accept full-size or fractional pans to 6" (15.24 cm) deep, and can be used with standard adaptor plates and insets for serving flexibility.

FEATURES

- ❑ **Thermoset Fiber-Reinforced Resin Wells –** self-insulating and maximum energy efficiency. Will not rust or pit. Clean easily by wiping off water deposits from the non-metallic surface.
- ❑ **Thermostatic Heat Controls –** automatically adjust for water temperature and food volume changes to reduce food waste.
- ❑ **Capillary Tube Thermostats –** control supply power only when needed for maximum power efficiency.
- ❑ **Low-water Indicator Light –** eliminates guesswork.
- ❑ **Dome Heating Elements –** use up to 25% less energy and concentrate energy into the wells. Non-stick surface prevents scale build-up for easy cleaning and longer operating life.
- ❑ **Wells –** Wide no-drip lips on wells keep top surface dry. Equipped with individual brass drain valves.
- ❑ Recommend using up to 4" (10.2 cm) deep food pans – standard and fractional sizes.
- ❑ 6¼" (15.875 cm) wide x 3/8" (9.5 mm) thick polyethylene NSF-approved cutting board optional.
- ❑ Mechanical guards on all controls and power switch for safety and reliability.
- ❑ 10ft. (3 meters) power cord bottom-mounted to stay out of the way.
- ❑ Standard adjustable stationary legs or optional caster set.
- ❑ Shipped knocked down.
- ❑ 38203 plugs into standard 15A household or commercial receptacle (no special wiring required).

Agency Certifications

c UL us NSF

MODELS

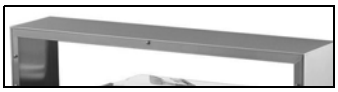
Model	Description	Model	Description
38203	480W/120V 3 Well	38215	700W/120V 5 Well
38204	480W/120V 4 Well	38217	600-800W/208-240V 3 Well
38205	480W/120V 5 Well	38218	600-800W/208-240V 4 Well
38213	700W/120V 3 Well	38219	600-800W/208-240V 5 Well
38214	700W/120V 4 Well		

PERFORMANCE CRITERIA

ServeWell® SL Hot Food Tables are designed to hold heated prepared foods at temperatures above the HACCP "danger zone" of 140° F (60° C). The performance standard is measured using the NSF mixture preheated to 165° F (73.9° C). The electric unit will hold the temperature of this product above 150° F (65.6° C). The temperature will be maintained when the food product and inset are used with a standard inset cover, the proper water level is maintained in the well, and the food product is stirred regularly.

ACCESSORIES

Work/Overshelf w/o Acrylic Panel

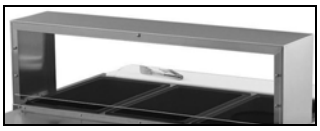


Item	Length x Height
38043	46" x 13" (117 cm x 33 cm)
38044	60¾" x 13" (154 cm x 33 cm)
38045	75½" x 13" (192 cm x 33 cm)

Double-Deck Overshelf w/o Acrylic Panel (Not pictured)

Item	Length x Width x Height
38033	46" x 10" x 26" (117 cm x 25.4 cm x 66 cm)
38034	60¾" x 10" x 26" (154 cm x 25.4 cm x 66 cm)
38035	75½" x 10" x 26" (191 cm x 25.4 cm x 66 cm)

Single Deck Cafeteria Guard



Item	Length x Height
38053	46" x 13" (117 cm x 33 cm)
38054	60¾" x 13" (154 cm x 33 cm)
38055	75½" x 13" (192 cm x 33 cm)

Buffet Breath Guards*

* For units only with 4 guide holes per side.

Item	Length x Width
38063	46½" x 23½" (118.1 x 59.7 cm)
38064	61¼" x 23½" (155.6 x 59.7 cm)
38065	76" x 23½" (193 x 59.7 cm)

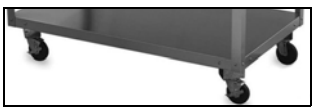
Cutting Board

Item	Length x Width
2342901	46½" x 6¼" (118.1 x 15.875 cm)
2343101	61¼" x 6¼" (155.6 x 15.875 cm)
2343201	76" x 6¼" (193 x 15.875 cm)

Customer Side Plate Rest

Item	Length x Width
38093	42½" x 8" (107.95 x 20.32 cm)
38094	57½" x 8" (146.05 x 20.32 cm)
38095	72" x 8" (182.88 x 20.32 cm)

Caster Set



Item	Description
38099	4" (10.2 cm) swivel wheels, two with brakes

Approvals

Date:

ServeWell® SL Hot Food Table

The Vollrath Company, L.L.C.

VOLLRATH® Setting the Standard™

www.vollrathco.com

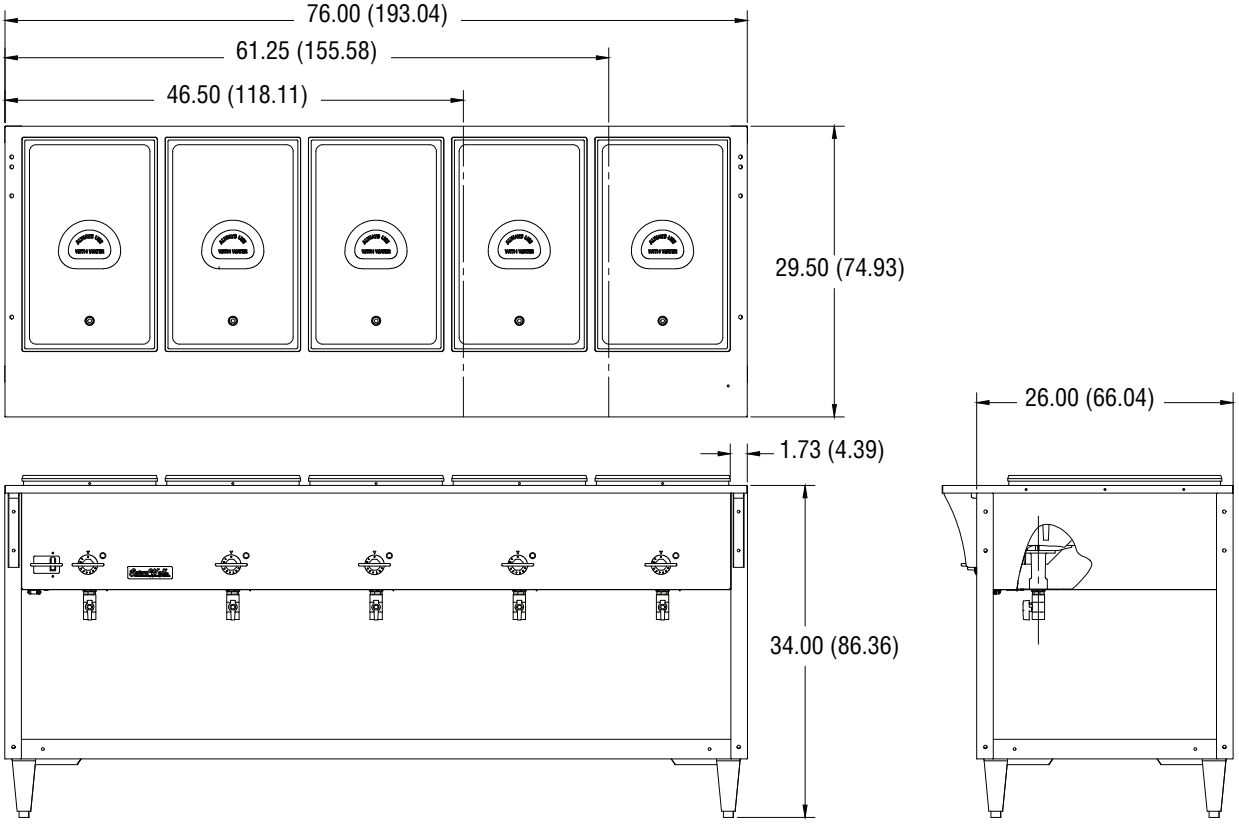
The Vollrath Company, L.L.C.
1236 North 18th Street
Sheboygan, WI 53081-3201
U.S.A.
Main Tel: 800.628-0830
Service Tel: 800.628.0832
FAX: 800.752.5620

Vollrath of Canada, Co.
Tel: 800.695.8560
FAX: 800.752.5620

SERVEWELL® SL HOT FOOD TABLE

DIMENSIONS

- ❑ Overall Dimensions:
- ❑ Dimensions shown in inches (cm).



SPECIFICATIONS

Item	Description	Dimensions: IN(CM)	Volts Single Phase Only	Watts Per Well	Watts Total	Electrical Service (A)	Amps	Plug
700W/120V								
38213	3-well	46½ x 29½ x 34 (118.1 x 74.9 x 86)	120V	700	2100	30	17.5	5-30P
38214	4-well	61¼ x 29½ x 34 (155.6 x 74.9 x 86)	120V	700	2800	30	23.3	5-30P
38215	5-well	76 x 29½ x 34 (193 x 74.9 x 86)	120V	700	3500	50	29.2	5-50P
480W/120V								
38203	3-well	46½ x 29½ x 34 (118.1 x 74.9 x 86)	120V	480	1440	15	12	5-15P
38204	4-well	61¼ x 29½ x 34 (155.6 x 74.9 x 86)	120V	480	1920	20	16	5-20P
38205	5-well	76 x 29½ x 34 (193 x 74.9 x 86)	120V	480	2400	30	20	5-30P
600-800W/208-240V								
38217	3-well	46½ x 29½ x 34 (118.1 x 74.9 x 86)	208-240V	600-800	1800-2400	15	10	6-15P
38218	4-well	61¼ x 29½ x 34 (155.6 x 74.9 x 86)	208-240V	600-800	2400-3200	20	13.3	6-20P
38219	5-well	76 x 29½ x 34 (193 x 74.9 x 86)	208-240V	600-800	3000-4000	30	16.7	6-30P

Notes: Dedicated circuit may be required for higher currents.
ServeWell® Hot Food Table orders cannot be cancelled or returned.

Receptacle Configurations

120V	208-240V
 5-15R	 6-15R
 5-20R	 6-20R
 5-30R	 6-30R
 5-50R	

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www.vollrathco.com

Form Number L35721 Rev. 10/09
Printed in USA

Item # _____ C.S.I. Section 11420

HEATED HOLDING

VP18
18 PAN NON-INSULATED HEATED HOLDING & PROOFING CABINET

Model VP18

C UL US LISTED

UL LISTED EPH

SPECIFICATIONS

Eighteen level heated holding and proofing cabinet, Vulcan Model No. VP18. Heavy duty 20 gauge polished stainless steel cabinet. Four 5" casters, two swivel with brakes, two rigid. Glass door with heavy duty hinges, door latch mechanism and gaskets. Adjustable interior pan supports adjust on 3" centers and are removable for easy cleaning. Accommodates up to eighteen 18" x 26" sheet pans and thirty six 12" x 20" x 2¾" steam table pans. Includes ½ gallon water pan for proofing, drip trough and removable condensation pan on the bottom of cabinet. Top mounted, control panel includes fan on/off switch, dial thermostat adjustable from ambient to 190°F, cabinet temperature thermometer, and switch to change from proofing to holding. 2,000 total watt heating elements with stainless steel cover, 16.7 total amp draw. One year limited parts and labor warranty. After the first year, 10-year parts warranty on the heating elements. Requires 120 volt single phase power supply. Furnished with top mounted power cord with strain relief and NEMA 5-20 plug.

Exterior Dimensions:

25¼" W x 30¾" D x 71" H

UL Listed. Classified by UL to NSF Std. #4.

STANDARD FEATURES

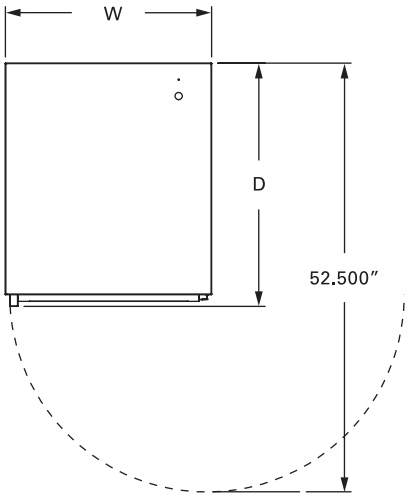
- Eighteen level heated holding and proofing cabinet accepts eighteen 18" x 26" pans or thirty-six 12" x 20" pans.
- Heavy duty 20 gauge polished stainless steel cabinet.
- Set of 5" casters, two swivel with brakes and two rigid.
- Full size glass door with field reversible heavy duty hinges, door latch mechanism, and gaskets provide visibility of the contents in the cabinet.
- Adjustable interior pan supports adjust on 3" centers and are removable for easy cleaning.
- Top mounted, control panel includes fan on/off switch, dial thermostat adjustable from ambient to 190°F, cabinet temperature thermometer, and switch to change from proofing to holding.
- Top mounted control panel is easy to use and out of the way of brooms, mops, and feet. Control panel on top eliminates removing control panel for cleaning.
- Fan and air tunnel provide even heat distribution.
- 2,000 total watt heating elements with stainless steel cover, 16.7 amps total draw.
- Requires 120 volt, single phase power supply.
- Furnished with top mounted power cord with strain relief and NEMA 5-20 plug (except for Canada which comes with a 5-30 plug).
- Furnished with ten pairs of tray slides.
- Includes ½ gallon water pan for proofing, drip trough and removable condensation pan on the bottom of cabinet.
- One year limited parts and labor warranty. After the first year, 10-year parts warranty on the heating elements.

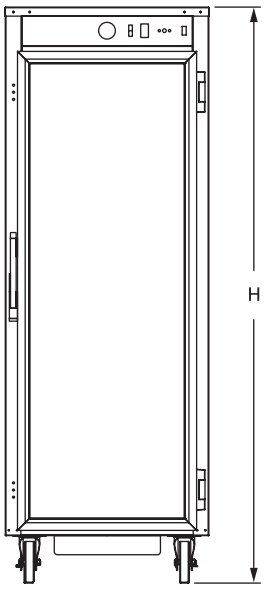
VULCAN

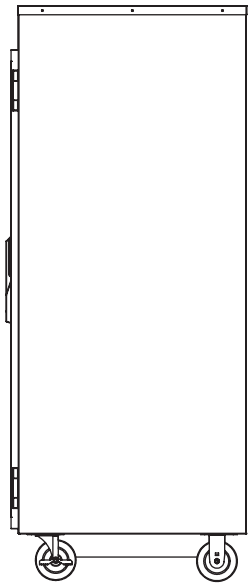
a division of ITW Food Equipment Group LLC

P.O. Box 696 ■ Louisville, KY 40201 ■ Toll-free: 1-800-814-2028 ■ Local: 502-778-2791 ■ Quote & Order Fax: 1-800-444-0602

VP18
18 PAN NON-INSULATED HEATED HOLDING & PROOFING CABINET







CAPACITY		DIMENSIONS	ELECTRICAL			SHIPPING WEIGHTS
18" X 26" PANS	12" X 20" PANS	EXTERIOR	VOLTS	WATTS	AMPS	LBS / KG
18	36	25¼" W x 30¾" D x 71" H	120	2,000	16.7	236 lbs. / 107 kg.

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DIVISION 12: FURNISHINGS
Section 12 49 10: Horizontal Louver Blinds

PART 1 - GENERAL

1.01 DESCRIPTION

A. 1" Horizontal Louver Blinds With Aluminum Slats furnished by Owner and Installed by Contractor.

1.02 DELIVERY, STORAGE AND HANDLING

A. Product to be delivered in manufacturer's original packaging.
B. Products to be handled and stored to prevent damage to materials, finishes and operating mechanisms. Store in a clean, dry area, laid flat to prevent sagging and twisting of packaging.

PART 2 – PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

A. Bali, Hunter-Douglas, Levolor or approved equal.

PART 3 – EXECUTION

3.01 INSPECTION

A. Installer shall be responsible for inspection of jobsite, approval of mounting surfaces, verification of field measurements and installation conditions. Installation shall commence when satisfactory conditions are met.

3.02 INSTALLATION

A. Install blinds in accordance with manufacturer's instructions including recommended support brackets and fasteners.

B. Install blinds with adequate clearance to permit smooth operation of the blinds. Demonstrate blinds to be in smooth, uniform working order.

3.03 MAINTENANCE AND CLEANING

A. Maintain and clean blinds in accordance with manufacturer's instructions.

END OF SECTION 12 49 10

SECTION 32 31 13
CHAIN LINK FENCES AND GATES

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
1. Fence framework, fabric, and accessories.
2. Excavation for post bases.
3. Concrete foundation for posts.
4. Manual gates and related hardware.

B. Related Sections:
1. Drawings and general provisions of the Contract including General and Supplemental General Conditions, and Technical Specifications.

1.2 UNIT PRICE – MEASUREMENT AND PAYMENT

A. Chain Link Fencing:
1. Basis of Measurement: Linear feet of fence at ground level.
2. Basis of Payment: Includes all labor, equipment and materials associated with the installation of chain link fencing at the locations indicated on the plans. Includes grading, excavation for post footings, concrete, posts, backfill, chain link fence fabric, ties, wire, bracing, barbed wire, and all related appurtenances.

B. Gates:
1. Basis of Measurement: Linear feet of gate from post to post at ground level for each type of gate.
2. Basis of Payment: Includes all labor, equipment and materials associated with the installation of gates at the size and locations indicated on the plans. Includes grading, excavation for post footings, concrete, posts, backfill, chain link fence fabric, ties, wire, bracing, hinges, hasps, and all related appurtenances.

1.3 REFERENCES

A. ASTM International:
1. ASTM A121 - Standard Specification for Zinc-Coated (Galvanized) Steel Barbed Wire.
2. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
3. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
4. ASTM A392 - Standard Specification for Zinc-Coated Steel Chain-Link Fence Fabric.
5. ASTM A491 - Standard Specification for Aluminum-Coated Steel Chain-Link Fence Fabric.
6. ASTM A585 - Standard Specification for Aluminum-Coated Steel Barbed Wire.
7. ASTM A792/A792M - Standard Specification for Steel Sheet, 55% Aluminum- Zinc Alloy-Coated by the Hot-Dip Process.
8. ASTM A1011/A1011M - Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low- Alloy with Improved Formability.
9. ASTM B429 - Standard Specification for Aluminum-Alloy Extruded Structural Pipe

and Tube.
10. ASTM C94/C94M - Standard Specification for Ready-Mixed Concrete.
11. ASTM F567 - Standard Practice for Installation of Chain-Link Fence.
12. ASTM F668 - Standard Specification for Poly (Vinyl Chloride) (PVC)-Coated Steel Chain Link Fence Fabric.
13. ASTM F900 - Standard Specification for Industrial and Commercial Swing Gates.
14. ASTM F934 - Standard Specification for Standard Colors for Polymer-Coated Chain Link Fence Materials.
15. ASTM F1043 - Standard Specification for Strength and Protective Coatings on Metal Industrial Chain Link Fence Framework.
16. ASTM F1083 - Standard Specification for Pipe, Steel, Hot-Dipped Zinc-Coated (Galvanized) Welded, for Fence Structures.
17. ASTM F1184 - Standard Specification for Industrial and Commercial Horizontal Slide Gates.

B. Chain Link Fence Manufacturers Institute:
1. CLFMI - Product Manual.

1.4 SYSTEM DESCRIPTION

A. Fence Height: 6’-0” w/ 1’-0” (3) strand barbed wire, see drawings..

B. Line Post Spacing: At intervals not exceeding 10 feet on straight sections and 8 feet on curved sections.

C. Refer to drawings for locations and quantities.

1.5 SUBMITTALS

A. Section 01330 - Submittal Procedures.

B. Shop Drawings: Indicate plan layout, spacing of components, post foundation dimensions, hardware anchorage, gates, and schedule of components.

C. Product Data: Submit data on fabric, posts, accessories, fittings and hardware.

1.6 CLOSEOUT SUBMITTALS

A. Project Record Documents: Accurately record actual locations of property perimeter posts relative to property lines and easements.

B. Operation and Maintenance Data: Procedures for submittals.

1.7 QUALITY ASSURANCE

A. Supply material in accordance with CLFMI - Product Manual.

B. Perform installation in accordance with ASTM F567.

1.8 QUALIFICATIONS

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

B. Installer: Company specializing in performing work of this section with minimum three years documented experience.

1.9 DELIVERY, STORAGE AND HANDLING

A. Section 01600 - Product Requirements.

B. Deliver fence fabric and accessories in packed cartons or firmly tied rolls.

C. Identify each package with the manufacturer's name.

D. Store fence fabric and accessories in secure and dry place.

PART 2 PRODUCTS

2.1 MATERIALS

A. Framing (Steel): ASTM F1083 Schedule 40 galvanized steel pipe, welded construction, minimum yield strength of 25 ksi; coating conforming to ASTM F1043 Type A on pipe exterior and interior.

B. Fabric Wire (Steel): ASTM A392 zinc coated wire fabric.

C. Concrete: Type specified in Section 03300.

2.2 COMPONENTS

A. Line Posts: 2.375 inch outside diameter, commercial quality.

B. Corner and Terminal Posts: 3.0 inch outside diameter, commercial quality.

C. Gate Posts: 4.0 inch outside diameter, commercial quality for all gates with an opening greater than 6 feet. Openings less than 6 feet shall require 3.0 inch outside diameter posts.

D. Top and Brace Rail: 1.625-inch diameter, plain end, sleeve coupled.

E. Gate Frame: 1.625-inch diameter for welded fabrication.

F. Fabric: 2 inch diamond mesh interwoven wire, 11gage thick, top salvage knuckle end closed, bottom selvage knuckle end closed. Galvanized, to match the existing fencing at the facility.

G. Tension Wire: 7 gage thick steel, single strand.

H. Tie Wire: Aluminum alloy steel wire.

2.3 ACCESSORIES

A. Caps: Cast steel galvanized; sized to post diameter, set screw retainer.

B. Fittings: Sleeves, bands, clips, rail ends, tension bars, fasteners and fittings; aluminum.

C. Gate Hardware: Fork latch with gravity drop.

2.4 GATES

A. General:
1. Gate Types, Opening Widths and Directions of Operation: As indicated on Drawings.

B. Swing Gates:
1. Fabricate gates to permit 180-degree swing.
2. Gates Construction: ASTM F900 with welded corners. Use of corner fittings is not permitted.

2.5 FINISHES

A. Components and Fabric: Galvanized to ASTM A123/A123M for components; ASTM A153/A153M for hardware; ASTM A392 for fabric; 1.2 oz/sq ft coating.

B. Components and Fabric: Galvanized, to match existing.

C. Hardware: Galvanized to ASTM A153/A153M, 1.8 oz/sq ft coating.

D. Accessories: Same finish as fabric.

E. Furnish and install black privacy slats match existing.

PART 3 EXECUTION

3.1 INSTALLATION

A. Install framework, fabric, accessories and gates in accordance with ASTM F567.

B. Set intermediate, terminal, gate, and all other posts plumb, in concrete footings with top of footing 2 inches above finish grade. Slope top of concrete for water runoff.

C. Line Post Footing Depth Below Finish Grade: ASTM F567, 2.0 feet.

D. Corner, Gate and Terminal Post Footing Depth Below Finish Grade: ASTM F567, 3.0 feet.

E. Brace each gate and corner post to adjacent line post with horizontal center brace rail and diagonal truss rods. Install brace rail one bay from end and gate posts.

F. Install top rail through line post tops and splice with 6-inch-long rail sleeves.

G. Install center and bottom brace rail on corner gate leaves.

H. Place fabric on outside of posts and rails.

I. Do not stretch fabric until concrete foundation has cured 7 days.

J. Stretch fabric between terminal posts or at intervals of 100 feet maximum, whichever is less.

K. Position bottom of fabric 2 inches above finished grade.

L. Fasten fabric to top rail, line posts, braces, and bottom tension wire with tie wire at maximum 15 inches on centers.

M. Attach fabric to end, corner, and gate posts with tension bars and tension bar clips.

N. Install bottom tension wire stretched taut between terminal posts.

O. Support gates from gate posts. Do not attach hinged side of gate from building wall.

P. Install posts with 6 inches maximum clear opening from end posts to buildings, fences and other structures.

Q. Excavate holes for posts to diameter and spacing indicated on Drawings without disturbing underlying materials.

R. Center and align posts. Place concrete around posts and vibrate or tamp for consolidation. Verify vertical and top alignment of posts and make necessary corrections.

3.2 ERECTION TOLERANCES

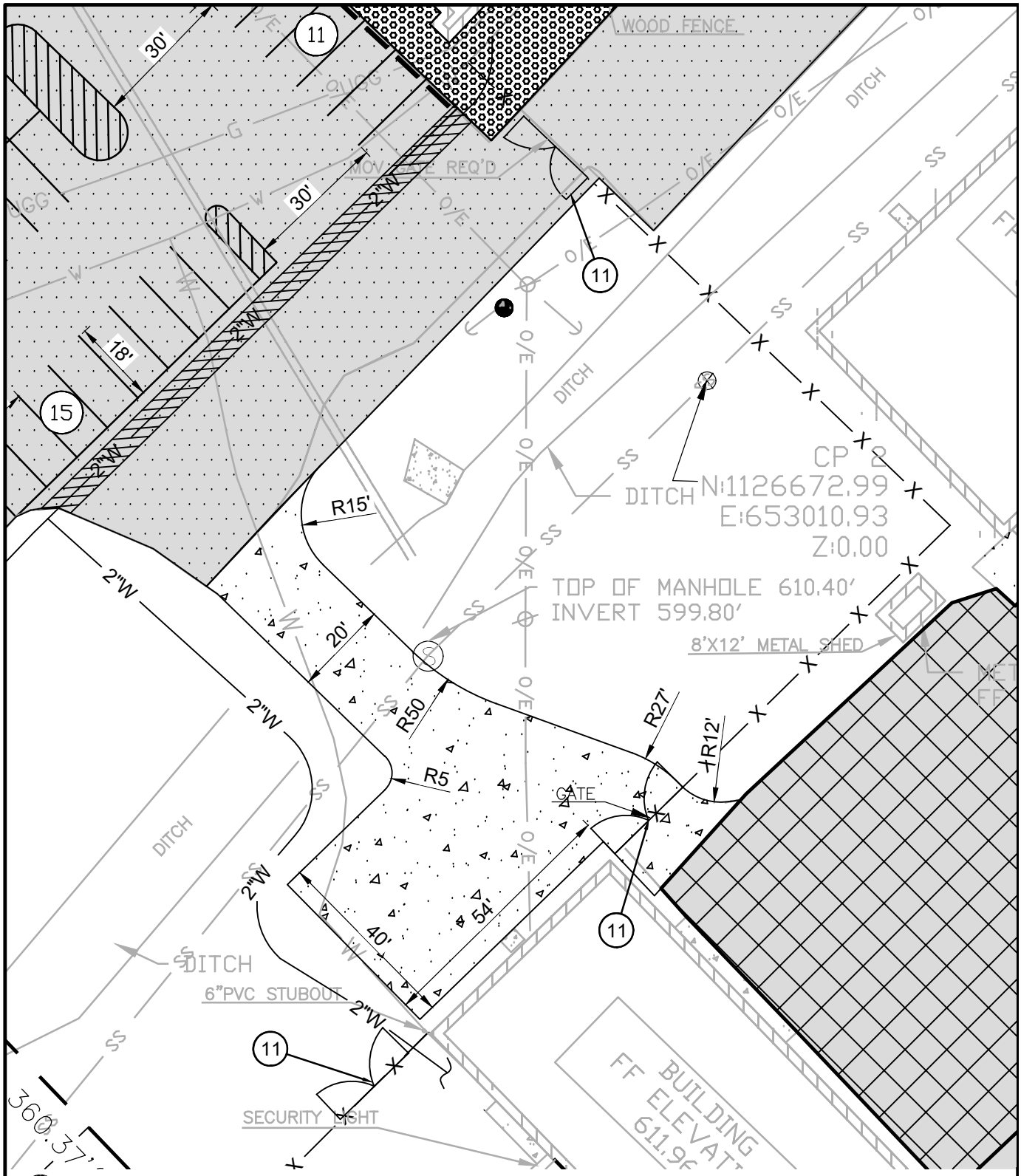
A. Section 01400 - Quality Requirements.

B. Maximum Variation from Plumb: 1/4 inch.

C. Maximum Offset from Indicated Position: 1 inch.

D. Minimum distance from property line: 12 inches.

END OF SECTION



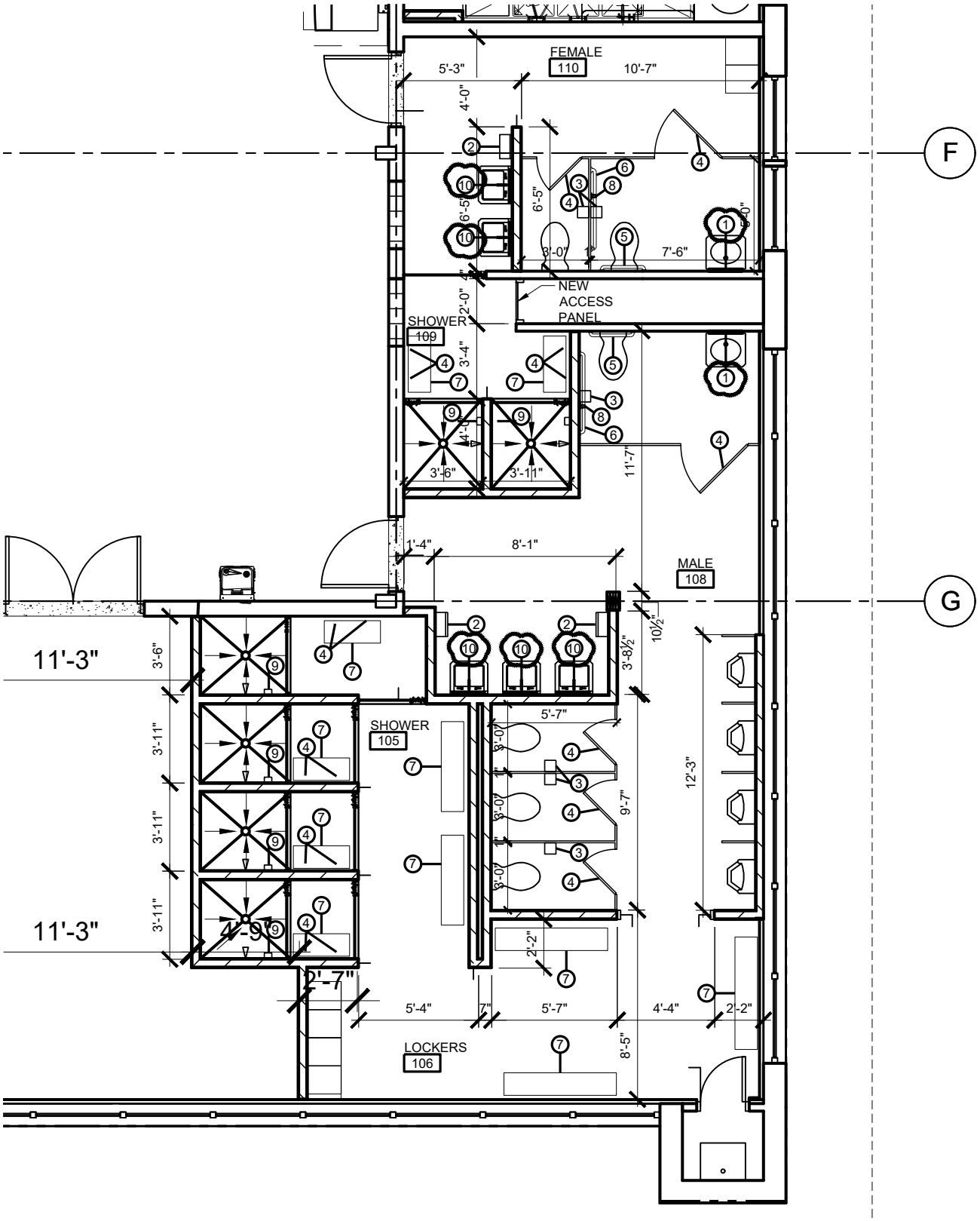
11 REPLACE EXISTING MOV GATE AS SPECIFIED (TYP.)

GSA JOB #22-0105
OXFORD RENOVATION
JANUARY 6, 2026

SD-1

1"=30'

GONZALEZ - STRENGTH & ASSOCIATES, INC.
CIVIL & TRANSPORTATION ENGINEERING - LAND SURVEYING - LAND PLANNING
LANDSCAPE ARCHITECTURE - PIPELINE ENGINEERING & SURVEYING
1550 WOODS OF RIVERCHASE DRIVE SUITE 200
HOOVER, ALABAMA 35244
PHONE: (205) 942-2486
WWW.GONZALEZ-STRENGTH.COM
an LJA company



21-1134
OXFORD RENOVATION
7 JANUARY 2026
BI.A/A7.1

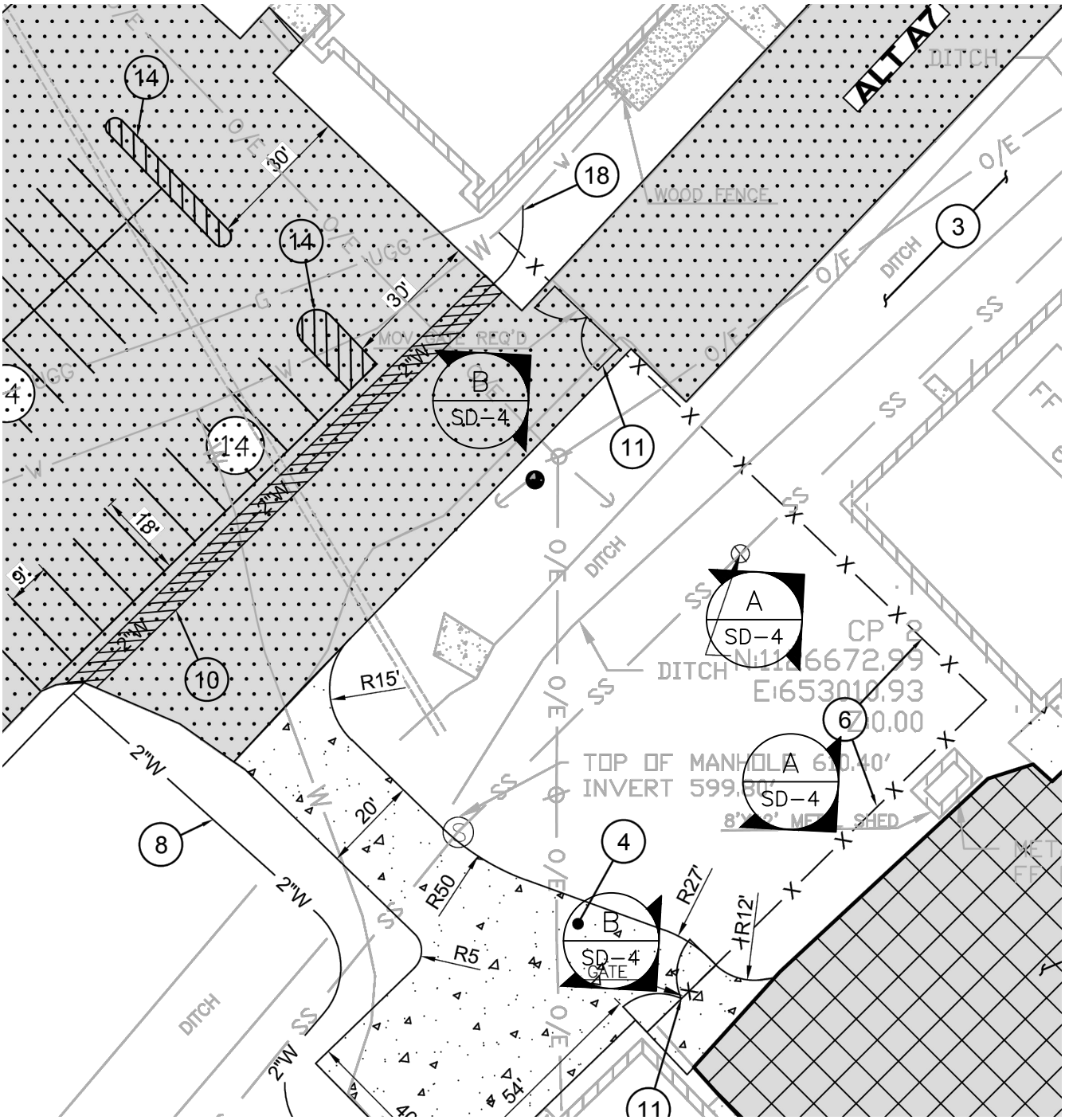
SD-2

1
A7.1

LARGE SCALE FLOOR PLAN

SCALE:NOT TO SCALE

JMR+H
Architecture, PC



N

PARTIAL SITE PLAN

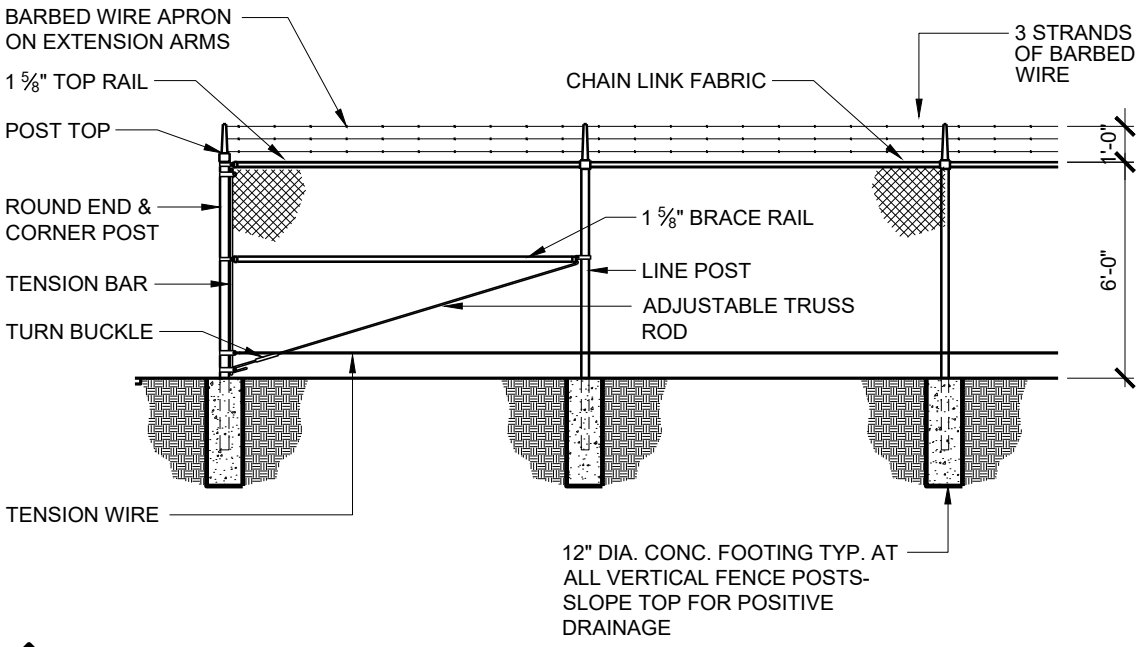
SCALE: 1/32"=1'-0"

21-1134
OXFORD RENOVATION
7 JANUARY 2026
C200

SD-3

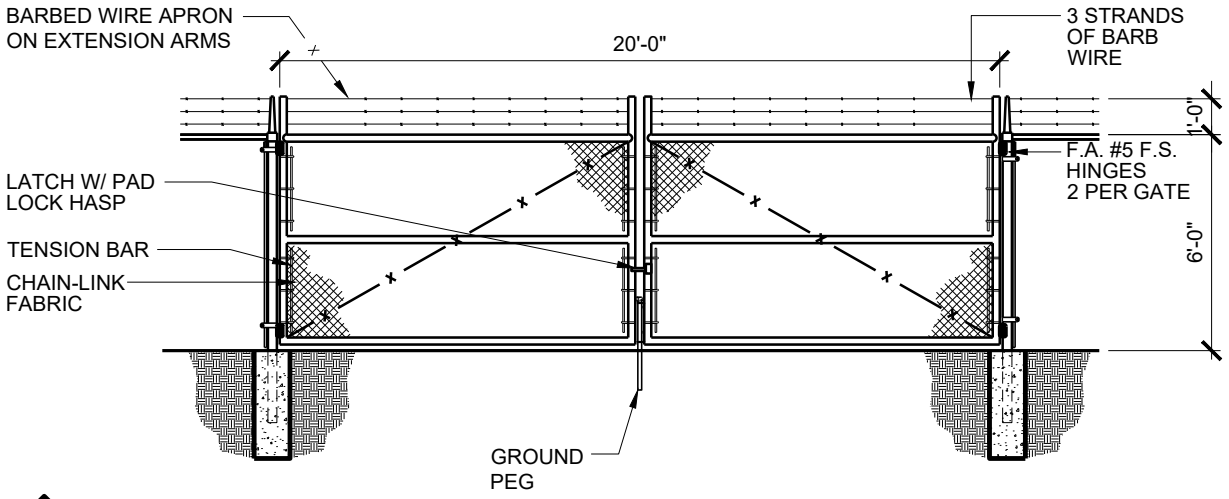
JMR+H

Architecture, PC



A SD-4 6' FENCE W/ BARBED WIRE

SCALE: 1/4"=1'-0"



B SD-4 DOUBLE SWING GATE

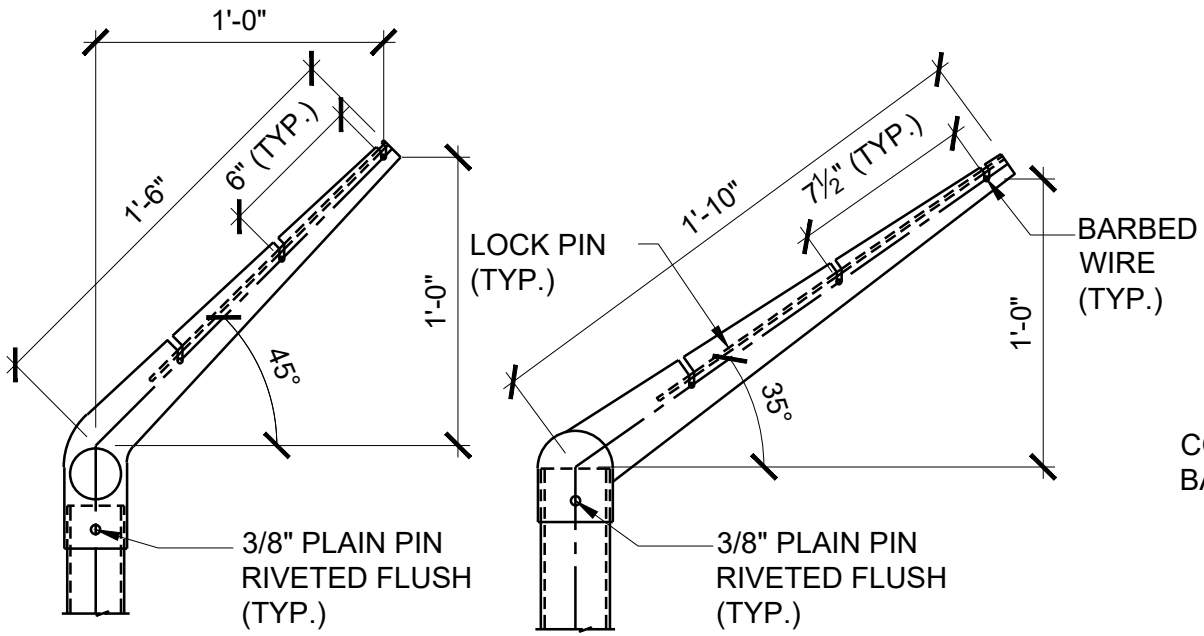
SCALE: 1/4"=1'-0"

21-1134
OXFORD RENOVATION
7 JANUARY 2026
C200

SD-4

JMR+H

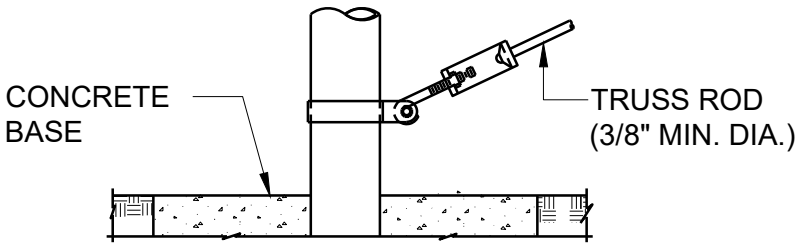
Architecture, PC



1 SD-5

EXTENSION ARM DETAILS

SCALE: 1 1/2"=1'-0"



2 SD-5

TRUSS ROD & BAND

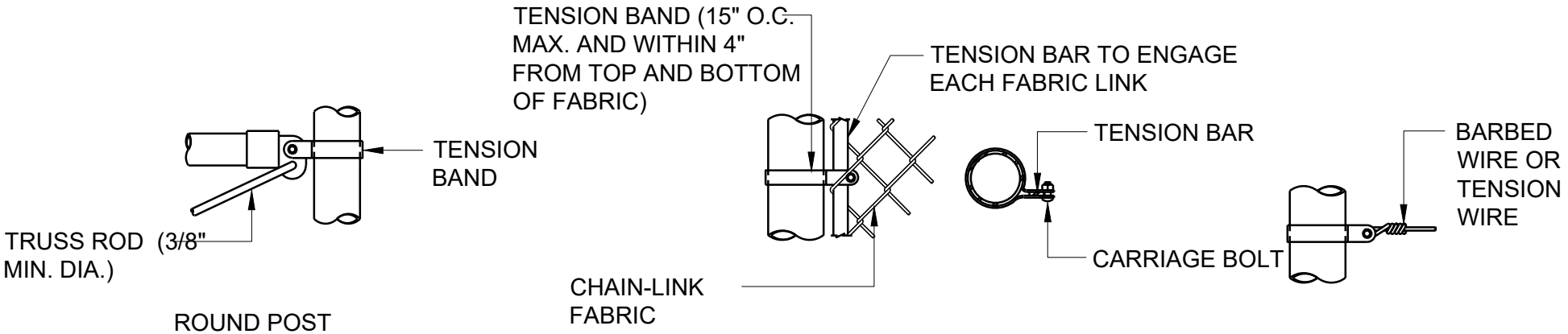
SCALE: 1 1/2"=1'-0"

21-1134
OXFORD RENOVATION
7 JANUARY 2026
C200

SD-5

JMR+H

Architecture, PC



3
SD-6

FASTENING DETAILS

SCALE: 1 1/2"=1'-0"

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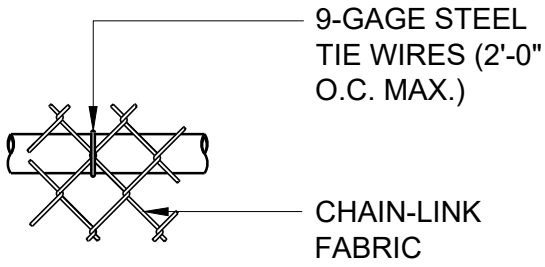
SD-6

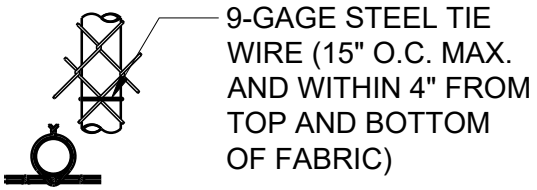
JMR+H
Architecture, PC



TOP OR BRACE RAIL ATTACHMENT

4 / SD-7

SCALE: 1 1/2" =1'-0"



ROUND POST

LINE POST ATTACHMENT

5 / SD-7

SCALE: 1 1/2"=1'-0"

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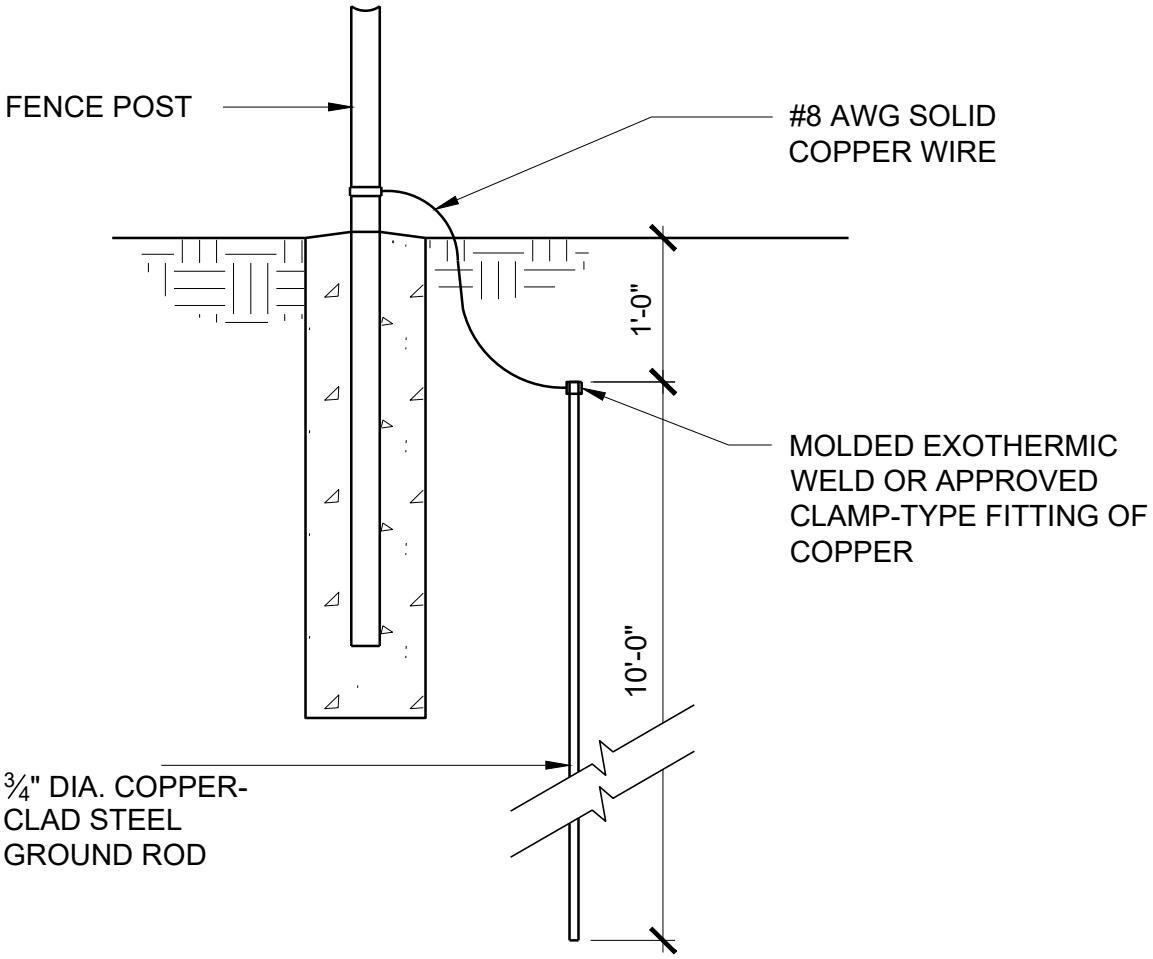

6
SD-8

GROUNDING DETAIL

SCALE: 3/4"=1'-0"

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C200

SD-8

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Architecture, PC

EQUIPMENT SCH

ITEM NO	CONTRACTOR FURNISHED (A)	GOVERNMENT FURNISHED (C)	QTY	EQUIPMENT CATEGORY	MANUFACTURER	MODEL NUMBER	VOLTS	PHASE	KW	HP	AMPS	DIRECT	PLUG	NEMA
1		●	1	CONVECTION OVEN	COOKING PERFORMANCE GROUP	351FEC-100-D	240	1	11		50	X		
2	●		1	HOOD, EXHAUST, GREASE (LIGHTS)	EQUALS: ACCUREX, CAPTIVE AIR, LARKIN	CUSTOM	120	1				X		
2a	●		1	HOOD, EXHAUST, GREASE (FIRE SYSTEM)	KH-1 (MECHANICAL DWGS)	PANEL	120	1				X		
3	●		2	WALL MOUNTED POT RACK	JOHN BOOS	PRW22								
4				NOT USED										
5	●		1	THREE (3) COMPARTMENT POT SINK	JOHN BOOS	3PB24-2D24								
5a	●		1	WALL/SPLASH MOUNT FAUCET	T&S BRASS	B-0231								
5b	●		1	PRE-RINSE FAUCET	T&S BRASS	B-0133-ADF12								
5c	●		1	SINGLE HOLE FAUCET	T&S BRASS	B-0700/193L								
5d	●		3	TWIST HANDLE WASTE OUTLET	ENCORE	D50-7100								
6		●	1	REACH-IN FREEZER (EXISTING TO REMAIN)	TURBO AIR	EXIST. / T-49	115	1		1/2	9.1		X	5-15P
7		●	1	REACH-IN REFRIGERATOR (EXISTING TO REMAIN)	TURBO AIR	EXIST. / T-35F-HC	115	1		3/4	9.8		X	5-15P
8		●	1	ICE MAKER (EXISTING TO REMAIN)	MANITOWOC ICE	EXIST. / IYT-0300A	115	1	5.99		8.8		X	5-15P
8a		●	1	ICE MAKER BIN (EXISTING TO REMAIN)	MANITOWOC ICE	EXIST. / D400	115	1					X	5-15P
9		●	1	RANGE, HEAVY DUTY, GAS (EXISTING TO REMAIN)	VULCAN (6 BURNER GRIDDLE)	EXISTING / V60F-1								
10		●	1	COFFEE BREWER W/ TWO WARMERS	BUNN	33200.0015	120	1	1.575		13.1		X	5-15P
10a		●	1	DECANTER EASY POUR - BLACK HANDLE	BUNN	06100.0101								
10b		●	1	DECANTER EASY POUR - ORANGE HANDLE	BUNN	06101.0101								
11				NOT USED										
12	●		1	DISPOSER	SALVAJOR	200-SA-ARSS-LD	115/230	1	1.492	2	24.0	X		
13	●		1	SINK HEATER & SANITIZER	HATCO	3CS-9	240	1	9.0		37.5	X		
14	●		1	WATER HEATER, BOOSTER	HATCO	S-15	240	1	15.0		62.5	X		
15	●		1	AIR CURTAIN (FLY FAN)	BERNER	SLC07-1042A	120	1	0.32	1/5	3.4			
16	●		1	HOOD, EXHAUST, GREASE (LIGHTS)	EQUALS: ACCUREX, CAPTIVE AIR, LARKIN	CUSTOM	120	1				X		
16a	●		1	HOOD, EXHAUST, GREASE (FIRE SYSTEM)	KH-2 (MECHANICAL DWGS)	PANEL	120	1				X		
17	●		1	EXHAUST	NEW, REFER TO MECHANICAL	MECHANICAL DWG								
18	●		1	EXHAUST	NEW, REFER TO MECHANICAL	MECHANICAL DWG								
19	●		1	EXHAUST	NEW, REFER TO MECHANICAL	MECHANICAL DWG								
20		●	1	WORK TABLE	EAGLE GROUP - BLEND PORT	BPT-3096SL								
21		●	4	EPOXY COATED WIRE SHELVING	ULINE	H-8288Z								
21a		●	3	EPOXY COATED WIRE SHELVING	ULINE	H-6780Z								
22		●	1	EPOXY COATED WIRE SHELVING	ULINE	H-8289Z								
22a		●	1	EPOXY COATED WIRE SHELVING	ULINE	H-6781Z								
23		●	1	WORK TABLE W/ BACKSPLASH	EAGLE GROUP	T2472SEM-BS								
24		●	1	REACH-IN FREEZER	TURBO AIR	TSF-23SD-N-(L)	115	1		1/2	4.8		X	5-15P
25		●	1	GLASS DOOR WARMING CABINET	VULCAN	VP18-1M3ZN	120	1			16.7		X	5-15P
26	●		1	HAND WASHING SINK	ADVANCE TABCO	7-PS-40								
27		●	1	BEVERAGE COUNTER	EAGLE GROUP	US3CB								
28		●	1	HOT FOOD STEAM TABLE	VOLRATH	38213 / 3-WELL	120	1			17.5		X	5-30P
29		●	1	REFRIGERATED FOOD STATION MOBILE	VOLRATH	R38733	120	1			5.2		X	5-15P
30		●	1	HEATED HOLDING CABINET (3/4 HEIGHT)	METRO (EXISTING TO REMAIN)	C565-SFS-U	120	1			1.95		X	5-20P
31	●		1	POT RACK, CEILING MOUNTED	ADVANCE TABCO	SC-72								
32		●	1	REACH-IN REFRIGERATOR	TURBO AIR	TSR-49SD-N6	115	1		1/5	2.3		X	5-30P

NOTE:
1. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE ALL PLUMBING / ELECTRICAL IS INSTALLED FOR ALL REQUIRED EQUIPMENT IN THIS CONTRACT, GOVERNMENT FURNISHED AND C
2. CONTRACTOR TO VERIFY ALL EXISTING EQUIPMENT CONNECTIONS PRIOR TO RE-INSTALLATION.
3. REFER TO MECHANICAL DRAWINGS FOR ALL MECHANICAL SPECIFICATIONS.
4. INDUSTRIAL CLEAN ALL EXISTING EQUIPMENT TO REMAIN.
5. GOVERNMENT FURNISHED SHALL BE INSTALLED BY CONTRACTOR.

21-1134
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BI.A / K1.1

SD-9

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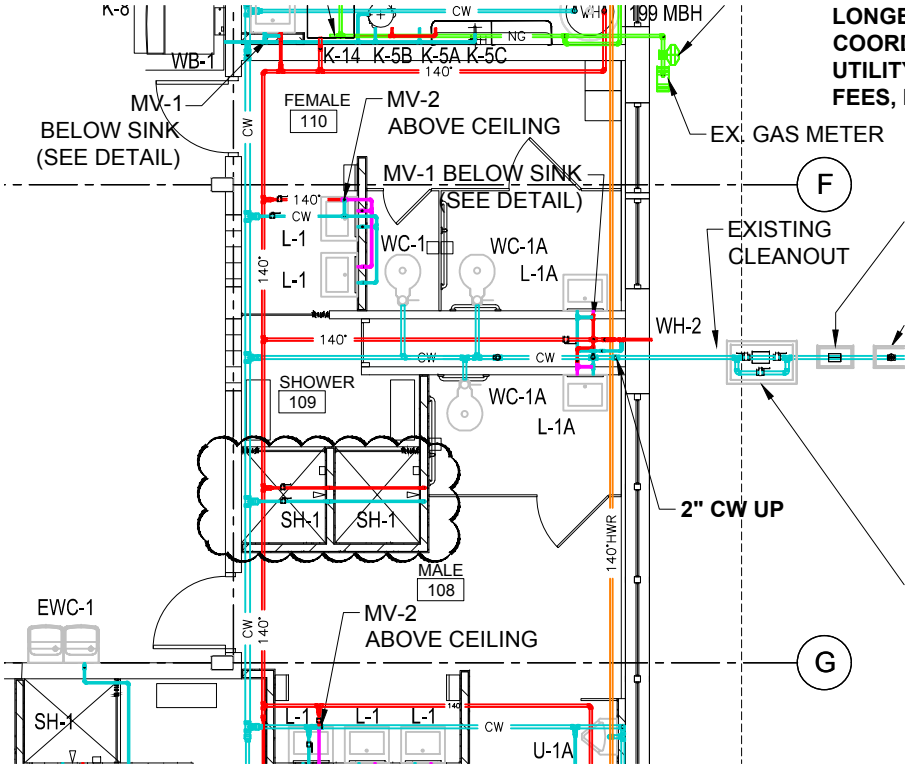
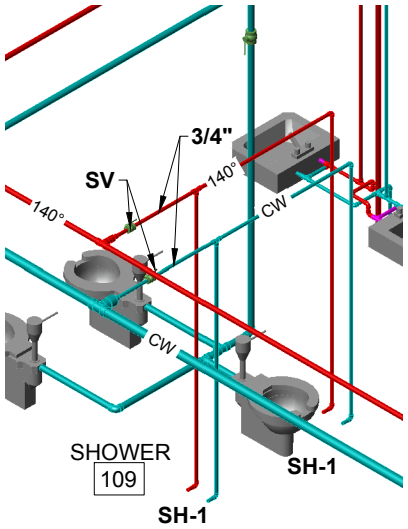




WATER RISER DIAGRAM

SCALE: NOT TO SCALE

ALABAMA REGISTERED
No.14102
PROFESSIONAL
ENGINEER
RANDALL D. WHORTON
1-8-26

N E W S

REVISED WATER PLUMBING PLAN

SCALE: 1/8" = 1'-0"

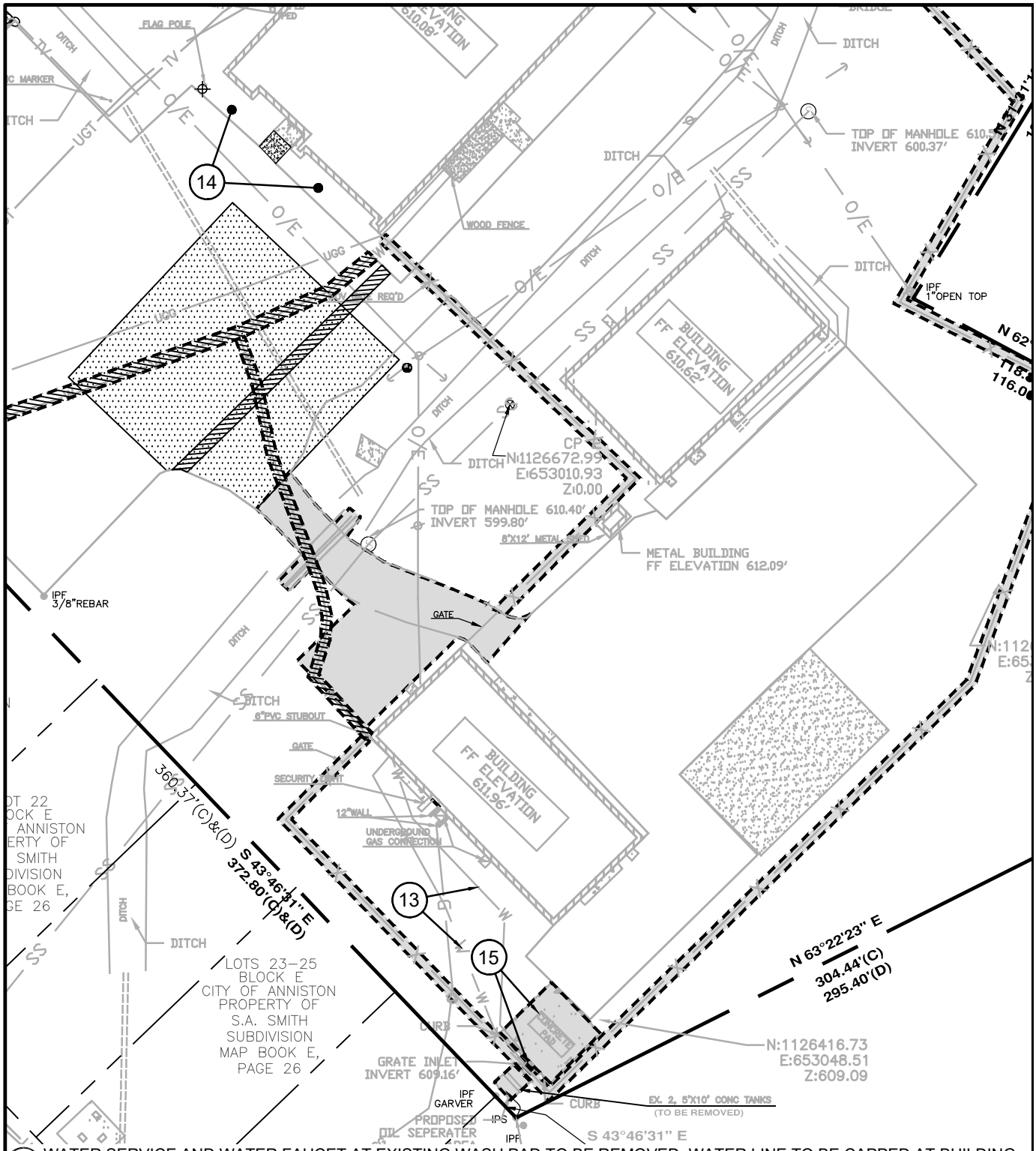
4' 0 4' 8' 16'

SCALE

21-1134
OXFORD RENOVATION
8 JANUARY 2026
BI.A / P4.1

SD-10

JMR+H
Architecture, PC



13 WATER SERVICE AND WATER FAUCET AT EXISTING WASH PAD TO BE REMOVED. WATER LINE TO BE CAPPED AT BUILDING (TYP.)

14 RAILROAD CROSS TIES, PARKING SIGNAGE AND GRAVEL BED IN FRONT OF READINESS CENTER TO BE REMOVED. CONTRACTOR TO FILL ANY AND ALL HOLES CREATED FROM SIGNAGE REMOVAL (TYP.)

15 EXISTING CONCRETE WASH PAD AND SILT BOX TO BE REMOVED. EXISTING DRAINAGE LINES TO BE CAPPED IN PLACE (TYP.)

GSA JOB #22-0105
OXFORD RENOVATION
JANUARY 6, 2026
SD-11

1"=60'

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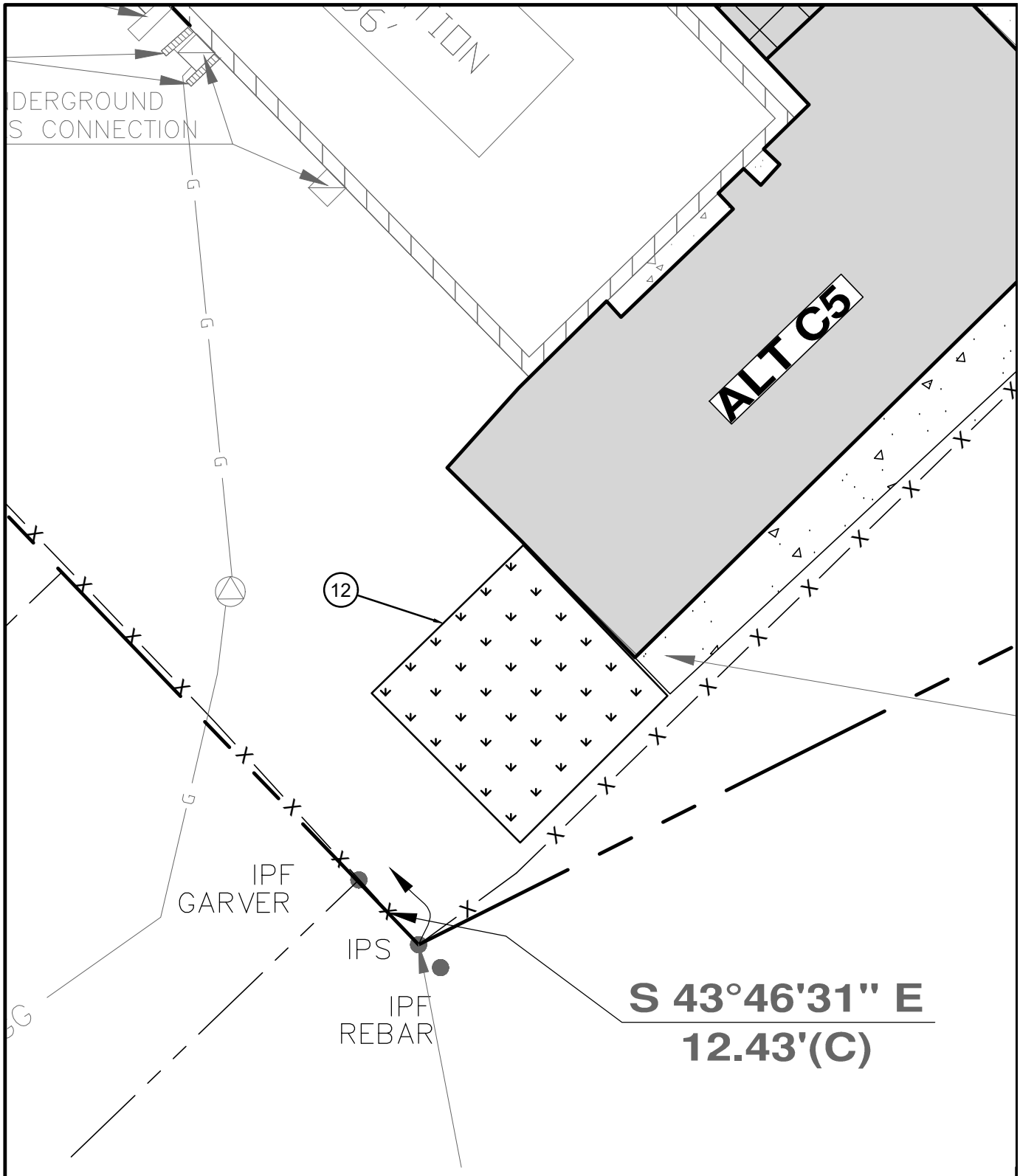
LANDSCAPE ARCHITECTURE - PIPELINE ENGINEERING & SURVEYING
1550 WOODS OF RIVERCHASE DRIVE SUITE 200
HOOVER, ALABAMA 35244
PHONE: (205) 942-2486
WWW.GONZALEZ-STRENGTH.COM
an LJA company



12 AREA OF CONCRETE PAD REMOVAL TO BE SODDED (TYP.)

GSA JOB #22-0105
OXFORD RENOVATION
JANUARY 6, 2026
SD-12

1"=20'

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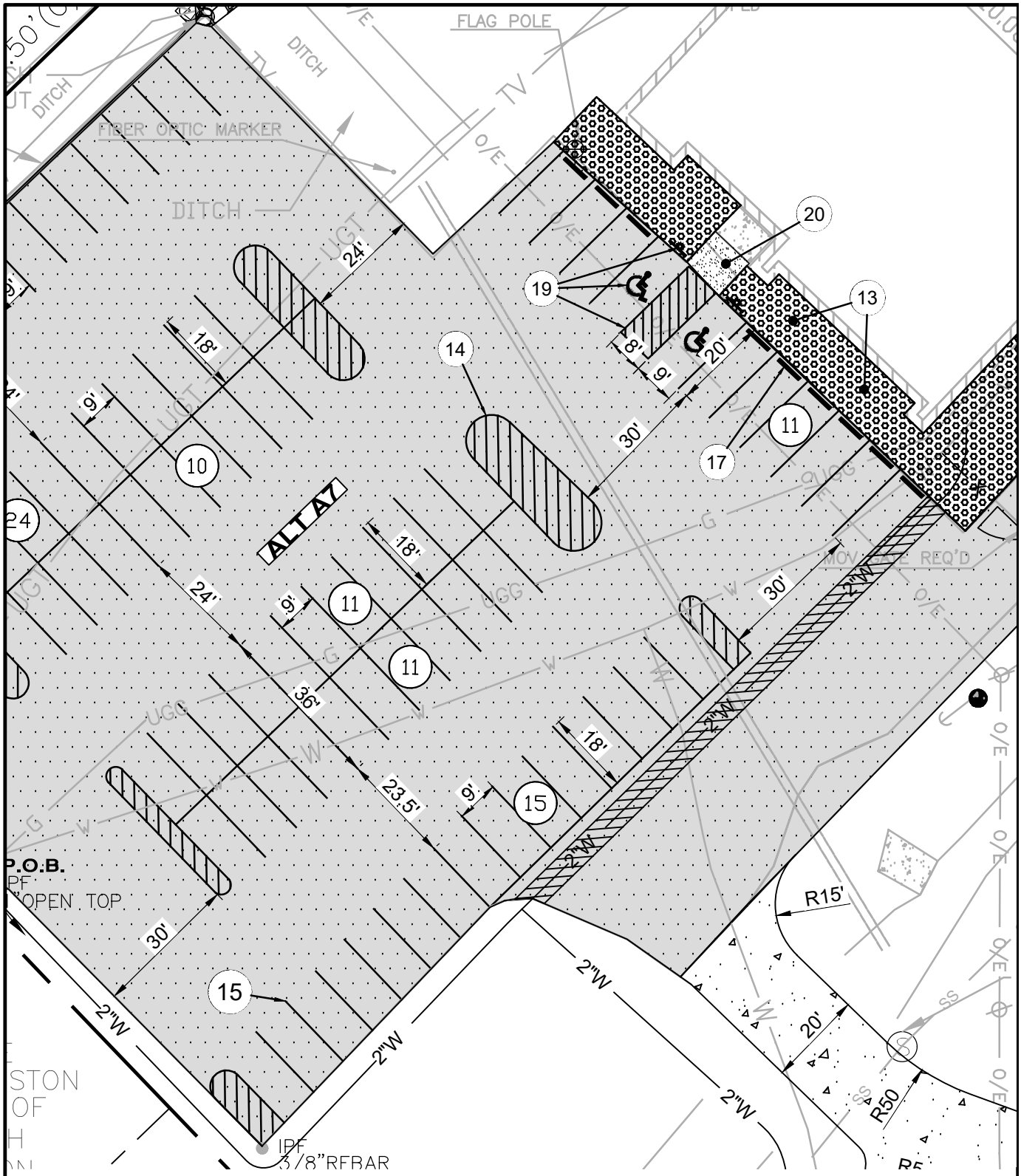

13 PEA GRAVEL INSTALLATION REQ'D.

14 BID ITEM A ALTERNATE A7 POV PARKING STRIPED ISLAND REQ'D (TYP.)

15 BID ITEM A ALTERNATE A7 4" POV PARKING STRIPE REQ'D (TYP.)

17 PARKING WHEEL STOP REQ'D. (TYP.)

19 ACCESSIBLE SIGN, SYMBOL, AND AISLE REQ'D. (TYP.)

20 CONCRETE SIDEWALK SECTION REQ'D. (TYP.)

XX PARKING COUNT SYMBOL

GSA JOB #22-0105
OXFORD RENOVATION
JANUARY 6, 2026

SD-13

1"=30'

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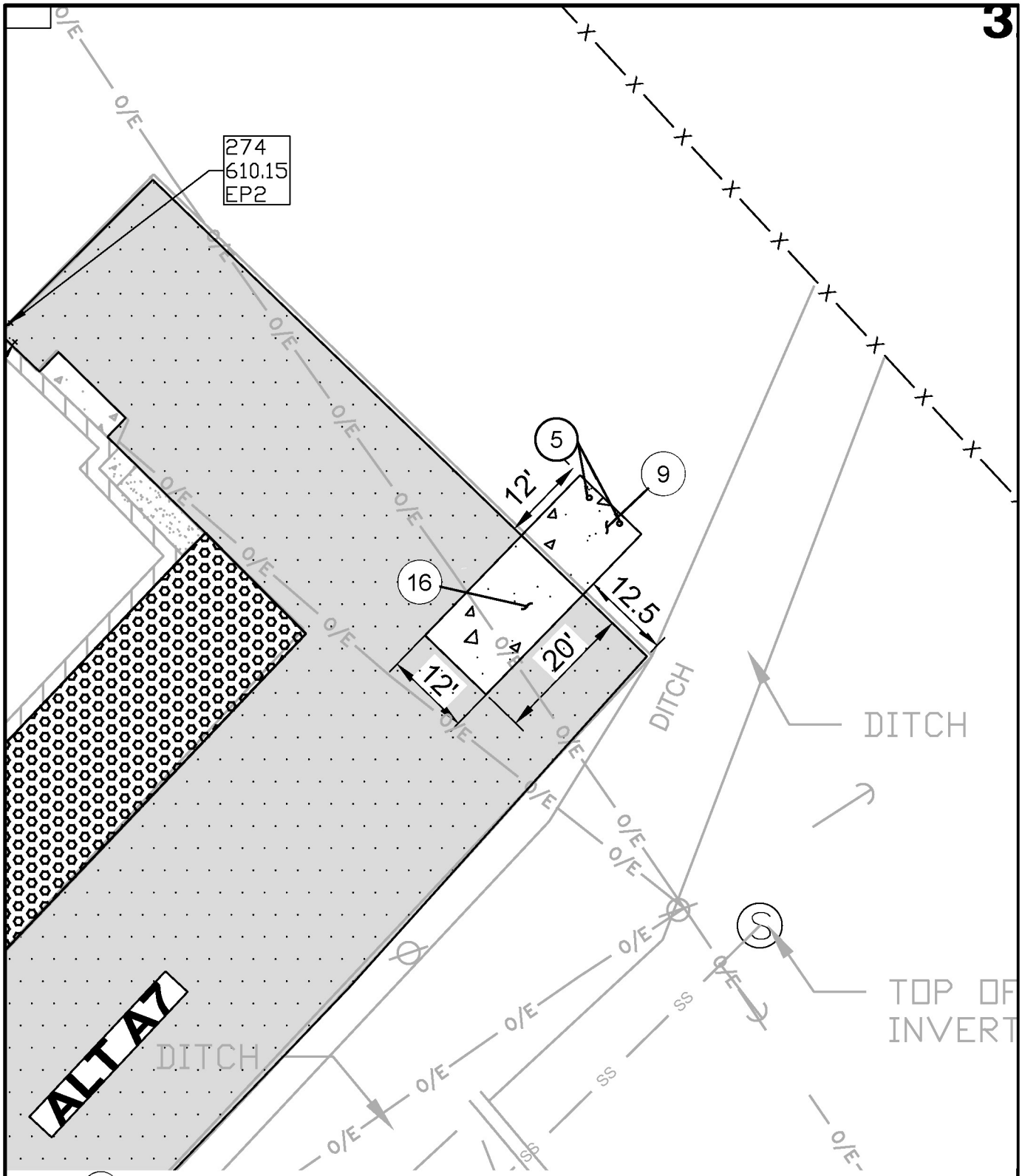

5 (2) 4" CONCRETE FILLED PIPE BOLLARDS 5' APART ON CENTER OF DUMPSTER PAD REQ'D. (TYP.)

9 12'x12' HEAVY DUTY CONCRETE DUMPSTER PAD REQ'D. SEE DETAIL SHEET C400 (TYP.)

16 20' X 12' HEAVY DUTY CONCRETE APRON REQ'D. SEE DETAIL SHEET C400 (TYP.)

GSA JOB #22-0105
OXFORD RENOVATION
JANUARY 6, 2026
SD-14

1"=20'

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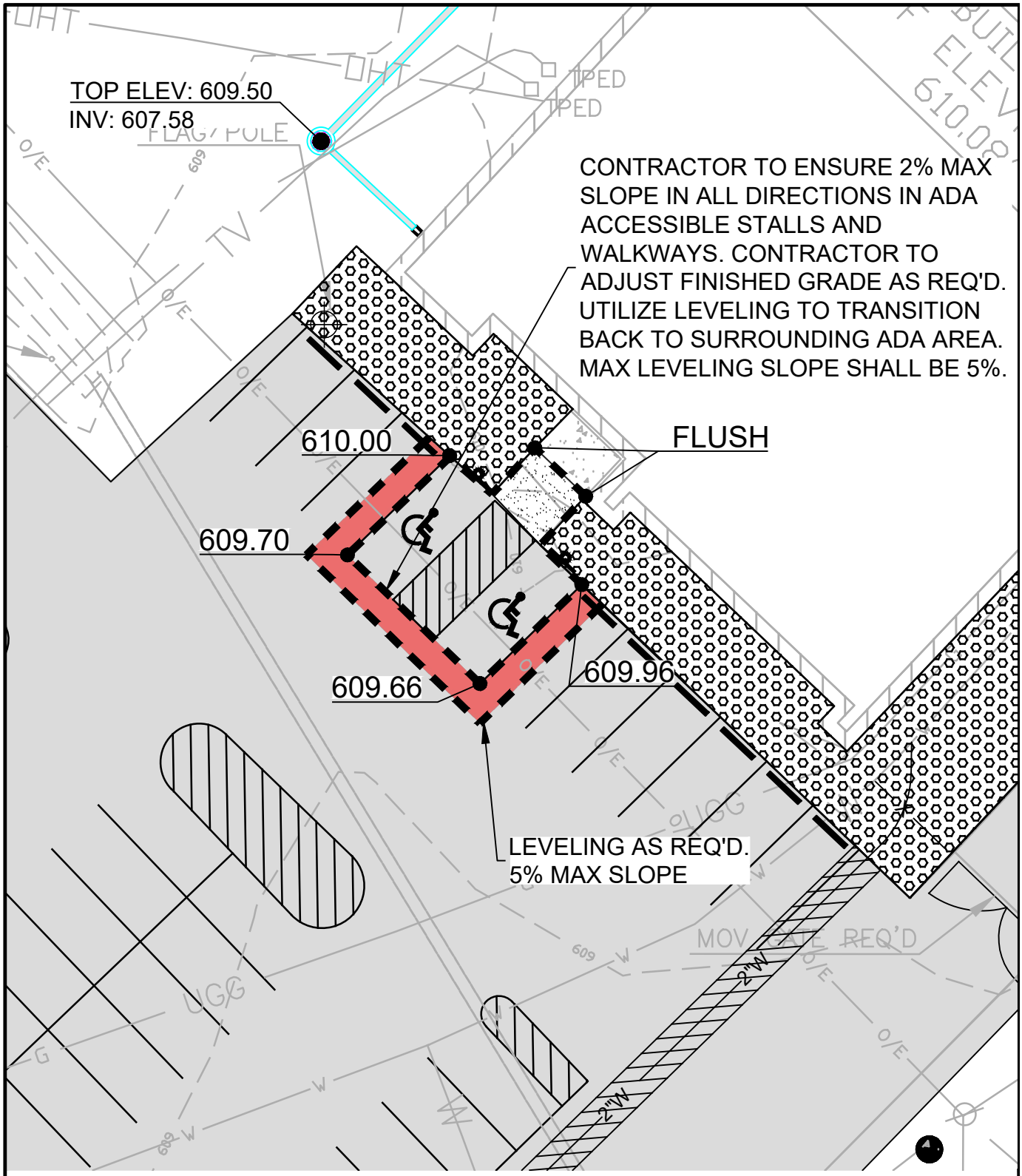

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JANUARY 6, 2026

SD-15

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